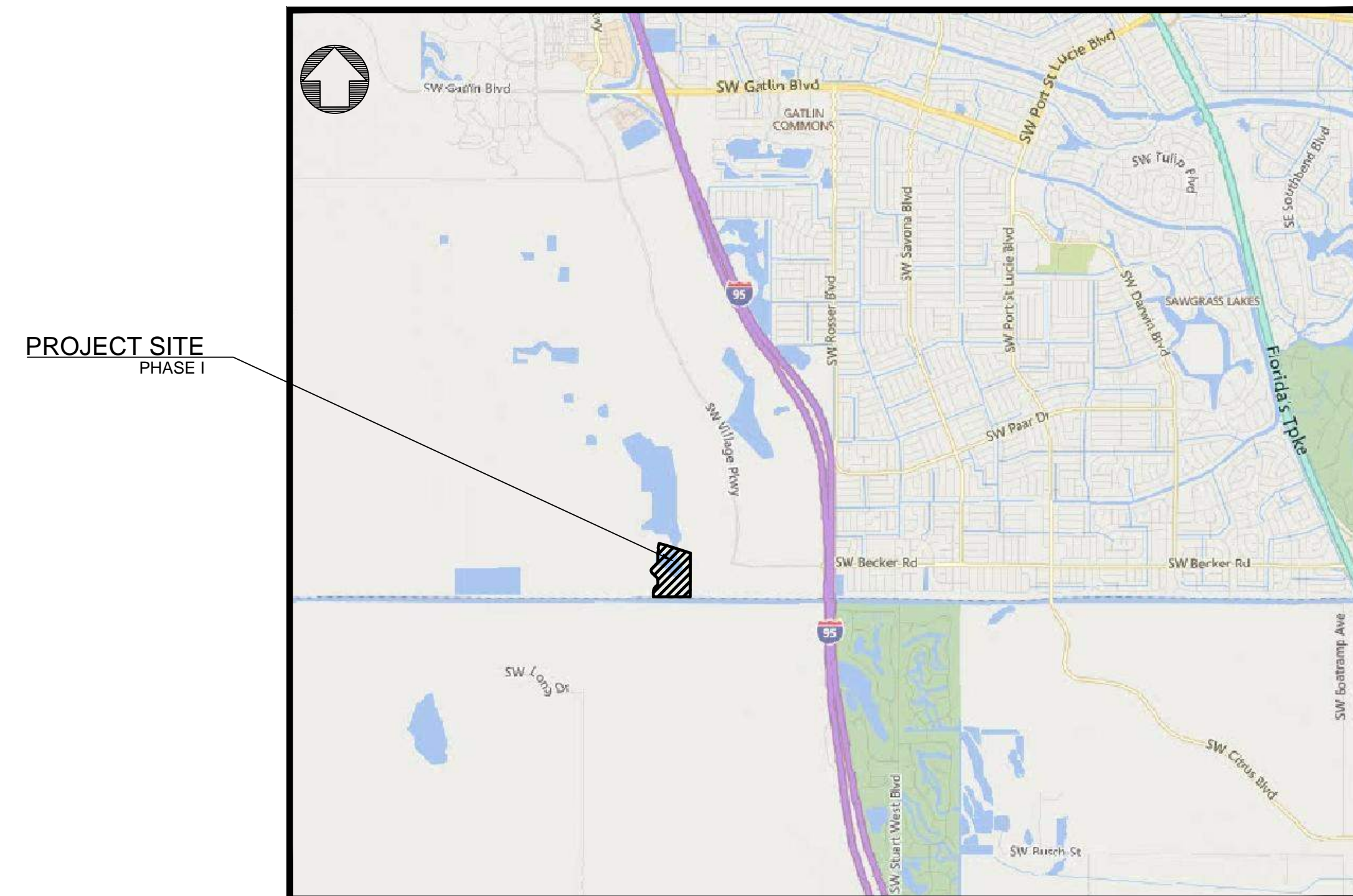
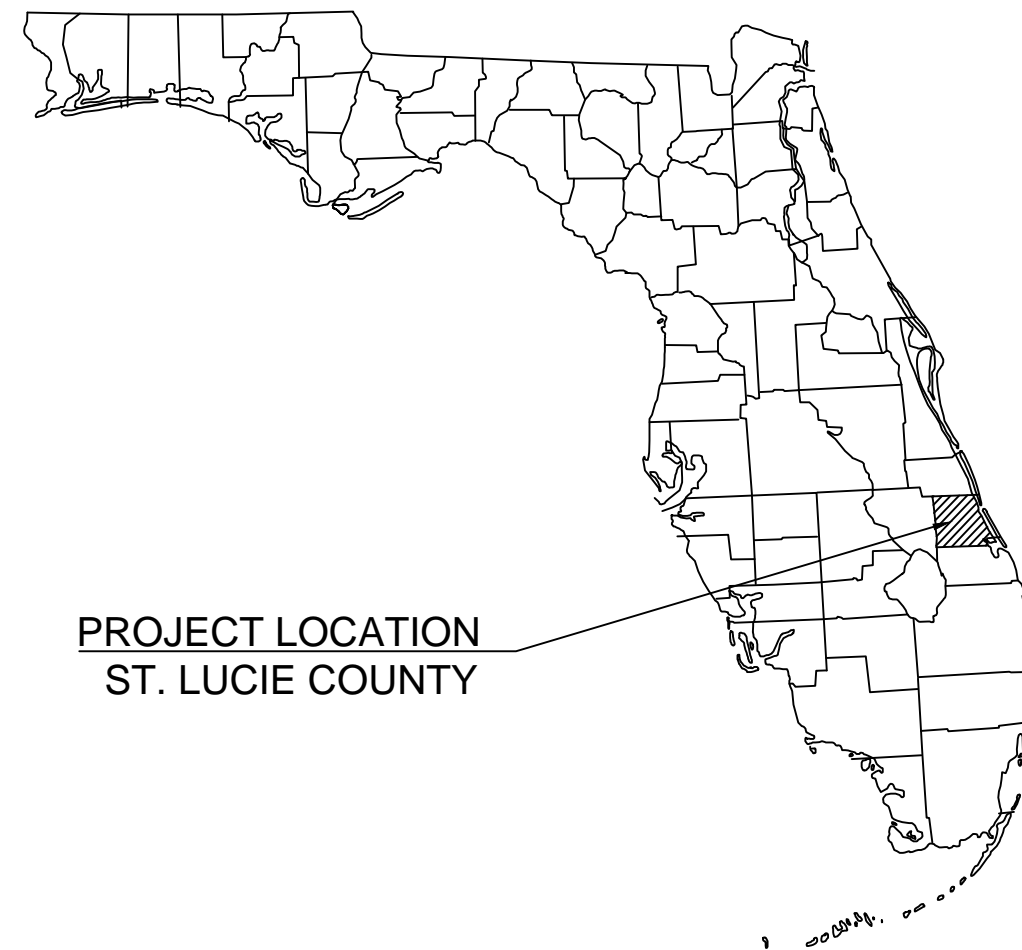


# BELTERRA PHASE 1 AT SOUTHERN GROVE

## F/K/A GHO HOMES AT SOUTHERN GROVE PORT ST. LUCIE, FLORIDA ENGINEERING PLANS

ISSUED DATE: 3/03/2022



LOCATION MAP  
N.T.S.

### LEGAL DESCRIPTION

PARCEL IDENTIFICATION NO.: 4315-700-0032-000-1

BELTERRA PHASE 1 PLAT 1 AS RECORDED IN PLAT BOOK 94 PAGES 23-29 OF THE PUBLIC RECORDS OF ST. LUCIE COUNTY, FLORIDA, LYING IN SECTION 34, TOWNSHIP 37 SOUTH, RANGE 39 EAST, CITY OF PORT ST. LUCIE, ST. LUCIE COUNTY, FLORIDA

COMMENCING AT THE SOUTHWEST CORNER OF SAID PARCEL 29; THENCE SOUTH 89°54'26" EAST, ALONG THE SOUTH LINE OF SAID PARCEL 29, A DISTANCE OF 2973.41 FEET TO THE POINT OF BEGINNING; THENCE NORTH 00°00'00" EAST A DISTANCE OF 199.48 FEET TO THE POINT OF CURVATURE OF A CIRCULAR CURVE TO THE RIGHT, HAVING A RADIUS OF 322.00 FEET, AND A CENTRAL ANGLE OF 64°51'21"; THENCE NORTHERLY AND NORTHEASTERLY, ALONG THE ARC OF SAID CURVE A DISTANCE OF 364.49 FEET; THENCE NORTH 00°00'00" WEST A DISTANCE OF 275.36 FEET; THENCE NORTH 45°49'01" WEST A DISTANCE OF 330.78 FEET TO THE POINT OF CURVATURE OF A CIRCULAR CURVE TO THE RIGHT, HAVING A RADIUS OF 137.00 FEET, AND A CENTRAL ANGLE OF 90°00'00"; THENCE NORTHERLY AND NORTHEASTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 215.20 FEET; THENCE NORTH 44°10'59" EAST A DISTANCE OF 341.67 FEET; THENCE NORTH 00°15'20" EAST A DISTANCE OF 414.49 FEET; THENCE NORTH 13°12'01" EAST A DISTANCE OF 139.99 FEET; THENCE NORTH 22°52'19" WEST A DISTANCE OF 61.88 FEET; THENCE NORTH 12°46'16" EAST A DISTANCE OF 189.66 FEET TO A POINT ON THE ARC OF A CIRCULAR CURVE TO THE RIGHT, HAVING A RADIUS OF 4925.00 FEET, AND A CENTRAL ANGLE OF 4°54'24"; THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 421.77 FEET; THENCE SOUTH 72°19'20" EAST A DISTANCE OF 946.81 FEET; THENCE SOUTH 00°02'49" WEST A DISTANCE OF 1832.63 FEET; THENCE NORTH 89°54'26" WEST A DISTANCE OF 1542.48 FEET TO THE POINT OF BEGINNING.

SAID LANDS HAVING AN AREA OF 67.796 ACRES MORE OR LESS.

### PROJECT TEAM

**OWNER/DEVELOPER**  
GRBK GHO HOMES, LLC  
590 NW MERCANTILE PLACE  
PORT ST. LUCIE, FL 34986

**CIVIL ENGINEER**  
WILLIAM R. BARBARO, P.E.  
CARNAHAN PROCTOR & CROSS  
814 S. MILITARY TRAIL  
DEERFIELD BEACH, FL 33442

**SURVEYOR**  
LONDON M. CROSS, P.S.M.  
CARNAHAN PROCTOR & CROSS  
814 S. MILITARY TRAIL  
DEERFIELD BEACH, FL 33442

### ADDITIONAL GOVERNING AGENCIES

**PLANNING/ZONING**  
CITY OF PORT ST. LUCIE  
121 S.W. PORT ST. LUCIE BLVD  
PORT ST. LUCIE, FL 34984

**FIRE CHIEF**  
ST. LUCIE COUNTY FIRE DISTRICT  
5160 NW MILNER DRIVE  
PORT ST. LUCIE, 34983

**UTILITY/ENGINEERING**  
CITY OF PORT ST. LUCIE  
121 S.W. PORT ST. LUCIE BLVD  
PORT ST. LUCIE, FL 34984

### Legend

Infrastructure sheets  
for Plat 2

Final Limits of Infrastructure for Plat  
Number 2 (18 Sheets)

### Sheet List Table

Sheet Number	Sheet Title
CV-1	COVER
GN-1	GENERAL NOTES & SPECIFICATIONS
GN-2	GENERAL NOTES & SPECIFICATIONS
SP-1	SITE PLAN
KEY-1	LEGEND, ABBREVIATIONS & KEY SHEET
ECP-1	ENVIRONMENTAL CONSIDERATION PLAN
EC-1	EROSION & SEDIMENT CONTROL PLAN
EC-2	EROSION & SEDIMENT CONTROL DETAILS
D-1	DRAINAGE PLAN
D-2	DRAINAGE PLAN
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D-4	DRAINAGE PLAN
GP-1	GRADING PLAN
GP-2	GRADING PLAN
GP-3	GRADING PLAN
GP-4	GRADING PLAN
GEO-1	GEOMETRY PLAN
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GEO-3	GEOMETRY PLAN
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SEC-1	TYPICAL CROSS SECTIONS
PGDD-1	PAVING GRADING & DRAINAGE DETAILS
PGDD-2	PAVING GRADING & DRAINAGE DETAILS
PMS-1	PAVEMENT MARKINGS & SIGNAGE
MU-1	MASTER UTILITY PLAN
WS-1	WATER & SEWER PLAN
WS-2	WATER & SEWER PLAN
WS-3	WATER & SEWER PLAN
WS-4	WATER & SEWER PLAN
WSD-1	WATER & SEWER DETAILS
WSD-2	WATER & SEWER DETAILS
WSD-3	WATER & SEWER DETAILS
WSD-4	WATER & SEWER DETAILS
WSD-5	WATER & SEWER DETAILS
WSD-6	WATER & SEWER DETAILS
SS-1	SANITARY SEWER PROFILE
SS-2	SANITARY SEWER PROFILE
SS-3	SANITARY SEWER PROFILE
SS-4	SANITARY SEWER PROFILE
LS-1	LIFT STATION DETAILS
FA-1	FIRE ACCESS PLAN
LPP-1	LIGHTING AND PHOTOMETRICS PLAN

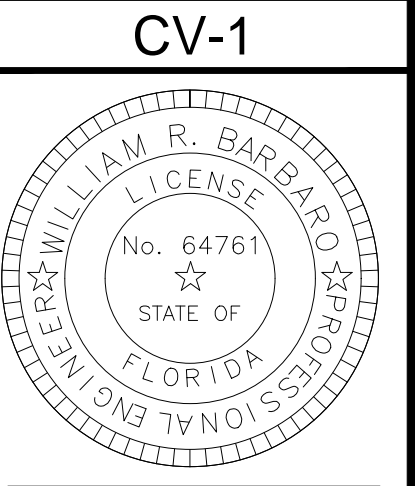
NO	DATE	BY	APRV	REVISIONS
1	02/15/22	RP	WRB	REVISED PER PSL COMMENTS
2	12/15/21	RP	WRB	REVISED PER PSL COMMENTS

BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL

COVER



SCALE: N.T.S.  
DATE: 12/08/21  
DRAWN BY: R.P.  
CHECKED BY: W.R.B.  
DESIGNED BY: R.F.



2/09/21 p:\projects\_2019\deerfield\_shore\southern\_grove\cod\vd\Planset\190214-COV.dwg



X. EARTHWORK AND COMPACTION

A. GENERAL

- 1. NONE OF THE EXISTING MATERIAL IS TO BE INCORPORATED IN THE LIMEROCK BASE.
2. ALL SUBGRADE UNDER PAVED AREAS SHALL HAVE A MINIMUM LBR VALUE OF 40 AND SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
3. ALL FILL MATERIAL IN AREAS NOT TO BE PAVED SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
4. A 2" BLANKET OF TOP SOIL SHALL BE PLACED OVER ALL AREAS TO BE SODDED.
5. SOD SHALL BE ST. AUGUSTINE, BITTER BLUE OR FLORATAM AND SHALL BE PLACED ON THE GRADED TOP SOIL AND WATERED TO INSURE SATISFACTORY CONDITION UPON FINAL ACCEPTANCE OF THE PROJECT.
6. WHEN WORKING IN AND AROUND EXISTING DRAINAGE CANALS OR LAKES, APPROPRIATE SILT BARRIERS SHALL BE INSTALLED.

A. ON-SITE:

- 1. ALL ORGANIC AND OTHER UNSUITABLE MATERIAL WITHIN THREE FEET OF AREAS TO BE PAVED SHALL BE REMOVED.
2. SUITABLE BACKFILL SHALL BE MINIMUM LBR 40 MATERIAL COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180 FOR THREE (3) FEET BEYOND THE PERIMETER OF THE PAVING.

XI. STORM DRAINAGE

A. CONTRACTOR MAY UTILIZE ONE OF THE FOLLOWING MATERIALS.

1. ALUMINUM:

- A. PIPE SHALL BE ALUMINUM, MANUFACTURED IN CONFORMANCE WITH ASTM B209.
B. PIPE SHALL BE SPIRAL RIB DRAINAGE PIPE WITH 3/4" BY 3/4" RIBS, APPROXIMATELY 7-1/2" ON CENTER. GAUGE THICKNESS SHALL MEET FDOT STANDARD 945-1.
C. PIPE COUPLING BANDS SHALL BE 12" WIDE STANDARD SPLIT BANDS OF THE SAME ALLOY AS THE PIPE AND MAY BE ONE GAUGE LIGHTER THAN THE PIPE.
D. POLYURETHANE OR OTHER SEALANT SHALL BE USED WITH COUPLING BANDS ON ALL NON-PERFORATED PIPE.

2. REINFORCED CONCRETE PIPE (RCP):

CONCRETE PIPE FOR STORM SEWERS SHALL CONFORM TO ASTM L70-79, TABLE III, WALL B, OR LATEST REVISION. ALL PIPE SHALL HAVE MODIFIED TONGUE AND GROOVE JOINTS, AND HAVE RUBBER GASKETS, UNLESS OTHERWISE SPECIFIED.

3. POLYPROPYLENE PIPE (PPP):

POLYPROPYLENE PIPE SHALL HAVE A SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS. MANNING'S "N" VALUE FOR USE IN DESIGN SHALL BE 0.012. POLYPROPYLENE PIPE MEETS OR EXCEEDS AASHTO M330 OR ASTM F2881 (12"-60"). PIPE SHALL BE JOINED BY WATERTIGHT, GASKETED INTEGRAL BELL, REINFORCED BY A POLYMER COMPOSITE BAND & SPIGOT. THE JOINT SHALL BE WATERTIGHT ACCORDING TO THE REQUIREMENTS OF ASTM D3212. POLYPROPYLENE COMPOUND SHALL BE IMPACT MODIFIED COPOLYMER MEETING AASHTO M330 OR ASTM F2881 (12"-60"). INSTALLATION SHALL BE IN ACCORDANCE WITH ASTM D2321.

4. MISCELLANEOUS:

- A. BEDDING AND INITIAL BACKFILL OVER DRAINAGE PIPES SHALL BE SAND WITH NO ROCK LARGER THAN 1" DIAMETER.
B. BACKFILL MATERIAL UNDER PAVED AREAS SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
C. BACKFILL MATERIAL UNDER AREAS NOT TO BE PAVED SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
D. CATCH BASINS SHALL BE PRECAST MINIMUM 3000 PSI CONCRETE AND GRADE 40 REINFORCED STEEL.

5. INSTALLATION:

- A. PIPE SHALL BE PLACED ON STABLE GRANULAR MATERIAL FREE OF ROCK FORMATION OTHER FOREIGN FORMATIONS, AND CONSTRUCTED TO UNIFORM GRADE AND LINE.
B. BACKFILL MATERIAL SHALL BE WELL GRADED GRANULAR MATERIAL WELL TAMPED IN LAYERS NOT TO EXCEED SIX INCHES (6").
C. PROVIDE A MINIMUM PROTECTIVE COVER OF 18 INCHES OVER STORM SEWER AND AVOID UNNECESSARY CROSSING BY HEAVY CONSTRUCTION VEHICLES DURING CONSTRUCTION.
D. THE CONTRACTOR SHALL NOTIFY THE LOCAL WATER CONTROL DISTRICT AT LEAST 24 HOURS PRIOR TO THE START OF THE CONSTRUCTION AND INSPECTION.

XII. STORM DRAINAGE PRE-TREATMENT/EXFILTRATION SYSTEM

- A. ANY CONFLICT WITH EXISTING OR PROPOSED UTILITIES SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER. ANY IMPERMEABLE MATERIAL ENCOUNTERED IN THE EXCAVATION FOR THE DRAIN FIELD SHALL BE REMOVED AS DIRECTED BY THE ENGINEER.
B. THE TRENCH LINER SHALL BE TYPAR SPUN BONDED POLYPROPYLENE FILTER FABRIC AS MANUFACTURED BY THE DUPONT COMPANY, OR APPROVED EQUAL. IT SHALL BE USED ON THE SIDES AND TOP OF DRAIN FIELD DITCH. THE TOP SECTION OF THE MATERIAL SHALL BE LAPPED A MINIMUM OF 24 INCHES AND THE CONTRACTOR SHALL TAKE EXTREME CARE IN BACKFILLING TO AVOID BUNCHING OF THE FABRIC.
C. PERFORATED PIPE WITHIN THE DRAIN FIELD SHALL HAVE 3/8 INCH PERFORATIONS 360' AROUND THE PIPE WITH APPROXIMATELY 120 PERFORATIONS PER FOOT OF PIPE.
D. PERFORATED PIPE SHALL TERMINATE FIVE FEET (5') FROM THE DRAINAGE STRUCTURE. THE REMAINING FIVE FEET (5') SHALL BE NON-PERFORATED PIPE.
E. PIPES SHALL TERMINATE TWO FEET (2') FROM THE END OF THE TRENCH OR CONNECT TO ADDITIONAL CATCH BASINS.

XIII. PAVING

A. GENERAL:

- 1. ALL UNDERGROUND UTILITIES SHALL BE COMPLETED PRIOR TO THE CONSTRUCTION OF LIMEROCK BASE AND PRIOR TO PLACEMENT OF THE PAVEMENT.
2. ALL EXISTING PAVEMENT CUT OR DAMAGED BY CONSTRUCTION SHALL BE PROPERLY RESTORED AT THE CONTRACTOR'S EXPENSE.
3. WHERE PROPOSED PAVEMENT IS TO BE CONNECTED TO EXISTING PAVEMENT, THE EXISTING EDGE OF PAVEMENT SHALL BE SAW CUT.
4. ALL STREET CORNER PAVEMENT RADII SHALL BE 40 FEET UNLESS OTHERWISE NOTED ON THE PLANS.
5. UPON COMPLETION OF DRAINAGE IMPROVEMENTS AND LIMEROCK BASE CONSTRUCTION (AND BEFORE PLACING ASPHALT PAVEMENT) THE CONTRACTOR SHALL FURNISH THE ENGINEER OF RECORD AND THE CITY OF PORT ST. LUCIE "AS-BUILT" PLANS FOR THESE IMPROVEMENTS, SHOWING THE LOCATIONS AND THE PERTINENT GRADES OF ALL DRAINAGE INSTALLATIONS AND THE FINISHED ROCK GRADES OF THE ROAD CROWN AND EDGE OF PAVEMENT AT 50 FEET INTERVALS. THESE "AS-BUILTS" SHALL BE APPROVED BY THE CITY PRIOR TO THE PLACEMENT OF ASPHALT.

B. MATERIALS:

- 1. BASE COURSE SHALL BE CRUSHED LIMEROCK MIAMI OOLITE WITH A MINIMUM OF 70% CARBONATES OF CALCIUM AND MAGNESIUM (60% FOR LOCAL STREETS AND PARKING AREAS) AND A MINIMUM LIMEROCK BEARING RATIO 100.
2. PRIME COAT AND TACK COAT SHALL MEET F.D.O.T. STANDARDS.
3. SURFACE COURSE SHALL BE EQUAL TO F.D.O.T. SP 9.5 ASPHALT.
4. REINFORCED CONCRETE SLABS SHALL BE CONSTRUCTED OF CLASS I CONCRETE WITH A MINIMUM STRENGTH OF 3,000 PSI AND SHALL BE REINFORCED WITH A 6" X 6" NO. 6 GAUGE WIRE MESH.

C. INSTALLATION:

- 1. LIMEROCK BASE MATERIAL SHALL BE 8 INCHES THICK AND SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T180-C.
2. LIMEROCK BASE MATERIAL SHALL BE PLACED IN MAXIMUM 6" LIFTS. BASES GREATER THAN 6" SHALL BE PLACED IN TWO OR MORE EQUAL LIFTS.
3. ASPHALTIC CONCRETE SHALL BE A MINIMUM OF 1" THICK AND SHALL BE PLACED TWO 1" LIFTS. (NOTE: SECOND LIFT TO BE PLACED AFTER A MINIMUM OF 80% OF THE HOUSES HAVE BEEN COMPLETED OR AS DIRECTED BY THE CITY ENGINEER..
4. PRIME COAT SHALL BE PLACED ON ALL LIMEROCK BASES IN ACCORDANCE WITH F.D.O.T. STANDARDS.
5. TACK COAT SHALL BE PLACED AS REQUIRED IN ACCORDANCE WITH F.D.O.T. STANDARDS.

D. TESTING:

- ALL SUBGRADE, LIMEROCK AND ASPHALT TESTS REQUIRED SHALL BE TAKEN AT THE DIRECTION OF THE ENGINEER AND/OR THE CITY OF PORT ST. LUCIE.
1. THE FINISHED SURFACE OF THE BASE COURSE AND THAT OF THE WEARING SURFACE SHALL NOT VARY MORE THAN 1/4" FROM THE TEMPLATE. ANY IRREGULARITIES EXCEEDING THIS LIMIT SHALL BE CORRECTED.
2. DENSITY TESTS SHALL BE TAKEN BY AN INDEPENDENT TESTING LABORATORY, CERTIFIED BY THE STATE OF FLORIDA, AND TAKEN AS DIRECTED BY THE ENGINEER AND THE CITY OF PORT ST. LUCIE.
3. ALL TESTING COSTS (PAVING) SHALL BE PAID FOR BY THE OWNER EXCEPT THOSE TESTS FAILING TO MEET THE SPECIFIED REQUIREMENTS, WHICH ARE TO BE PAID BY THE CONTRACTOR.

XIV. SIGNING AND MARKING

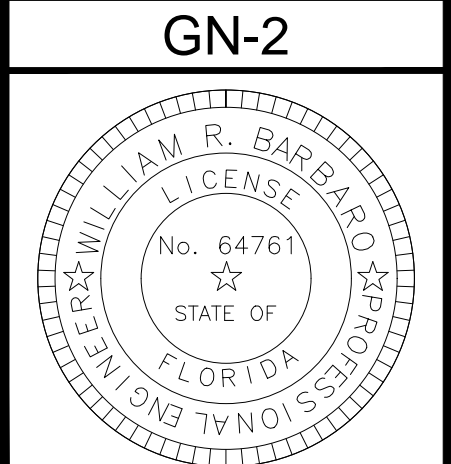
- A. ALL STRIPING AND SIGNAGE SHALL BE IN ACCORDANCE WITH FDOT AND LATEST EDITION OF MUTCD.

Table with 2 columns: REVISIONS, APPROVED, BY, DATE, NO.

BELTERRA PHASE 1 AT SOUTHERN GROVE
PORT ST. LUCIE COUNTY, FL
GENERAL NOTES & SPECIFICATIONS



Table with 2 columns: SCALE, DATE, DRAWN BY, CHECKED BY, DESIGNED BY.



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SITE DATA	
TOTAL SITE AREA	2,953,723 sf (67.81ac)
FUTURE LAND USE	NCD
CURRENT ZONING	MPUD
PROPOSED ZONING	MPUD
PARCEL ID	4315-700-0032-000-1
TOTAL LOTS IN PHASE I	150** units
62'X140' LOTS	76** units (50.67%)
72'X140' LOTS	74 units (49.33%)
DENSITY	2.21** DU/ac
BUILDING SETBACK	
FRONT BUILDING SETBACK	18'
SIDE BUILDING SETBACK	6'
REAR BUILDING SETBACK	10'

\*\*DUE TO A TEMPORARY ACCESS TO THE SITE, THIS LOT WILL NOT BE DEVELOPED DURING THIS PROJECT PHASE. LOT WILL BE DEVELOPED UPON COMPLETION OF PHASE 2 OF THE PROJECT WHEN A PERMANENT SECONDARY ENTRANCE WILL BE AVAILABLE FOR EMERGENCY ACCESS.

LAND USE TABLE AREA DESIGNATION	Phase 1 GHO HOMES			BECKER ROAD			TOTAL (GHO HOMES + BECKER ROAD)		
	S.F.	ACRE	PERCENT	S.F.	ACRE	PERCENT	S.F.	ACRE	PERCENT
GROSS SITE AREA	2,953,723	67.81	100.00 %	409,028	9.39	100.00 %	3,362,751	77.20	100.00 %
PERVIOUS AREA	1,326,402	30.45	44.91 %	142,877	3.28	34.93 %	1,469,279	33.73	43.69 %
IMPERVIOUS AREA *	1,087,693	24.97	36.82 %	265,716	6.10	64.96 %	1,353,409	31.07	40.25 %
BUILDING	670,388	15.39	22.70 %	0	0.00	0.00 %	670,388	15.39	19.94 %
PAVEMENT	417,305	9.58	14.13 %	265,716	6.10	64.96 %	683,021	15.68	20.31 %
WATER MANAGEMENT	539,708	12.39	18.27 %	0	0.00	0.00 %	539,708	12.39	16.05 %
PERVIOUS / IMPERVIOUS RATIO	1.22			0.54			1.09		

\* DOES NOT INCLUDE STORMWATER MANAGEMENT PONDS.

DESCRIPTION	FOUND (YES/NO)	AGENCY CONTACT INFORMATION	MANAGEMENT PLAN (YES/NO)	RELOCATION PLAN (YES/NO)																			
WETLANDS	NO	N/A	N/A	N/A																			
RARE HABITAT	NO	N/A	N/A </tr <tr> <td>THREATENED SPECIES</td> <td>NO</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>ENDANGERED SPECIES</td> <td>NO</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>SPECIES OF SPECIAL CONCERN</td> <td>NO</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>INVASIVE/EXOTIC VEGETATION</td> <td>YES</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr>	THREATENED SPECIES	NO	N/A	N/A	N/A	ENDANGERED SPECIES	NO	N/A	N/A	N/A	SPECIES OF SPECIAL CONCERN	NO	N/A	N/A	N/A	INVASIVE/EXOTIC VEGETATION	YES	N/A	N/A	N/A
THREATENED SPECIES	NO	N/A	N/A	N/A																			
ENDANGERED SPECIES	NO	N/A	N/A	N/A																			
SPECIES OF SPECIAL CONCERN	NO	N/A	N/A	N/A																			
INVASIVE/EXOTIC VEGETATION	YES	N/A	N/A	N/A																			

ENVIRONMENTAL SITE ASSESSMENT

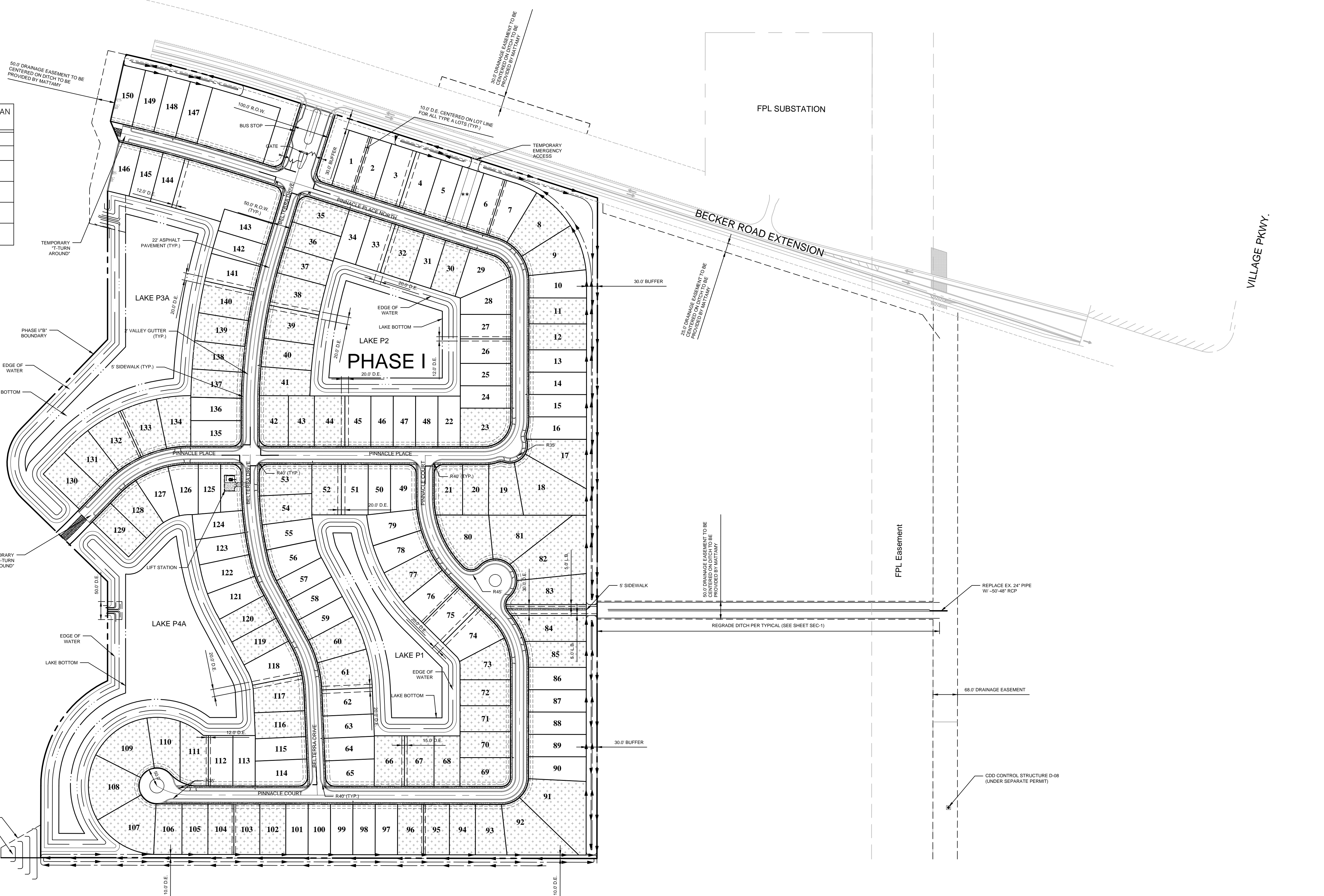
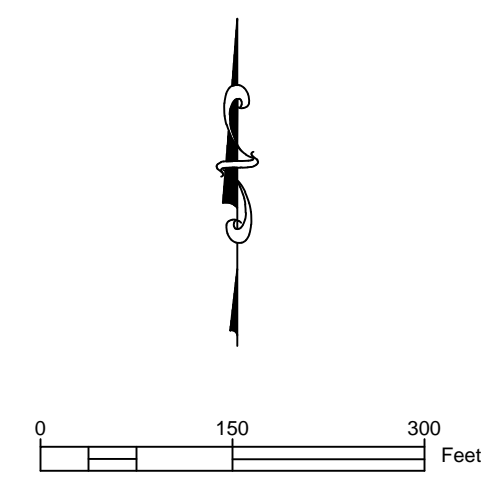
LISTED SPECIES WERE NOT OBSERVED DURING THIS EVENT, HOWEVER BASED ON THE HABITAT BEING PRESENT AND THE CRESTED CARACARA CONSULTATION AREA, IT IS RECOMMENDED THAT A SURVEY FOR THIS SPECIES BE CONDUCTED DURING THE ACTIVE NESTING SEASON (JANUARY - APRIL). NO NATIVE HABITAT WAS OBSERVED ON SITE.

NOTES:

- EACH LOT TO HAVE WATER AND SEWER SERVICES.
- THE PROPERTY OWNER, CONTRACTOR, AND AUTHORIZED REPRESENTATIVES SHALL PROVIDE PICKUP, REMOVAL, AND DISPOSAL OF LITTER WITHIN THE PROJECT LIMITS AND SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE AREA FROM THE EDGE OF PAVEMENT TO THE PROPERTY LINE WITHIN THE CITY'S RIGHT-OF-WAY IN ACCORDANCE WITH CITY CODE, SECTION 41.08 (G).

Legend

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- 62' x 140' LOTS
- 72' x 140' LOTS
- D.E. DRAINAGE EASEMENT
- L.B. LANDSCAPE BUFFER



FUTURE PHASE II

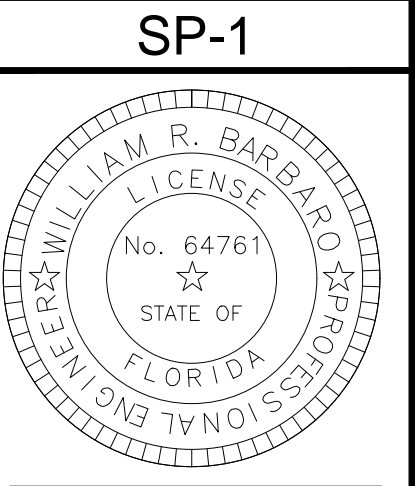
BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL

SITE PLAN



CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
PHONE: (854) 972-3859 FAX: (854) 972-4178

SCALE:	AS SHOWN
DATE:	12/08/21
DRAWN BY:	R.P.
CHECKED BY:	W.R.B
DESIGNED BY:	R.F.



CITY OF PORT ST. LUCIE  
PROJECT NO. P21-271  
PSLUSD FILE NO. 5336

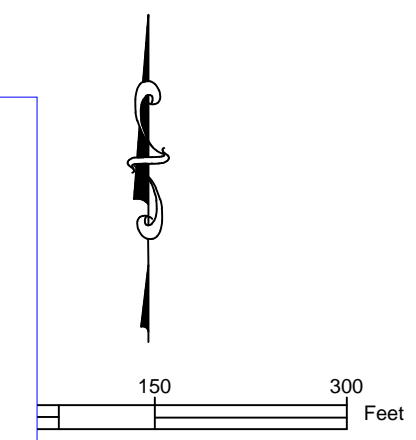
WILLIAM R. BARBARO, P.E.  
FL. REGISTRATION NO. - 64761

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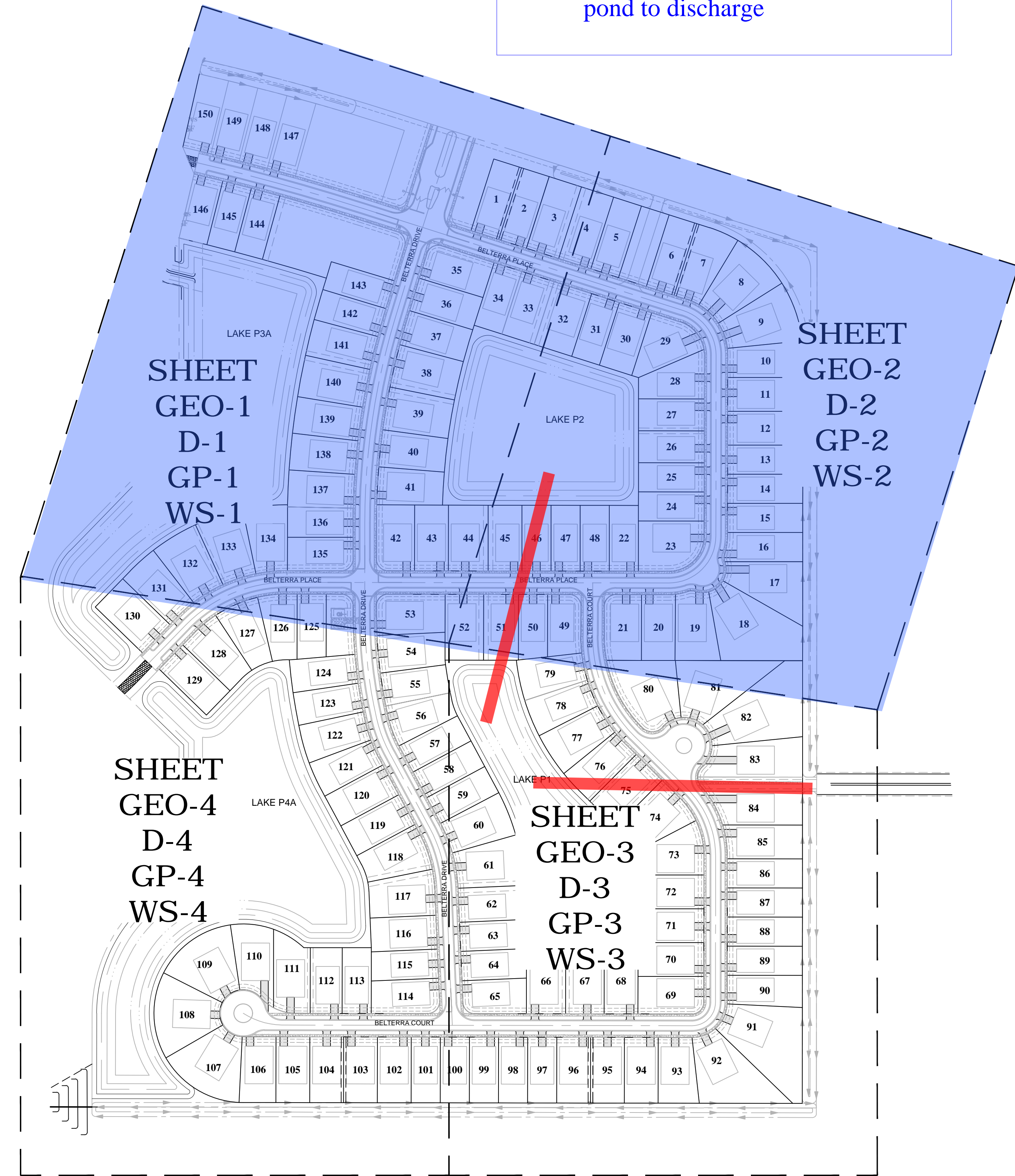
**Legend:**

- Sheets of Phase 1
- Outfall/interconnect Stormwater route from the model area pond to discharge



Legend		Legend	
Exist.	Prop.	Exist.	Prop.
	PROPERTY LINE		CONCRETE PAVEMENT
	PROJECT LIMIT LINE		HEAVY DUTY PAVEMENT
	RIGHT-OF-WAY/PROPERTY LINE		RIPRAP
	EASEMENT		CONSTRUCTION ENTRANCE
	BUILDING SETBACK		TOP & BOTTOM OF CURB ELEVATION
	BASELINE		SPOT ELEVATION
	CONSTRUCTION LAYOUT		TOP & BOTTOM OF WALL ELEVATION
	ZONING LINE		BORING LOCATION
	TOWN LINE		TEST PIT LOCATION
	LIMIT OF DISTURBANCE		MONITORING WELL
	WETLAND LINE WITH FLAG		UNDERDRAIN
	FLOODPLAIN		OVERFLOW DRAIN
	BORDERING LAND SUBJECT TO FLOODING		DRAINAGE LINE
	WETLAND BUFFER ZONE		ROOF DRAIN
	NO DISTURB ZONE		SEWER LINE
	200' RIVERFRONT AREA		OVERHEAD WIRE
	GRAVEL ROAD		WATER LINE
	EDGE OF PAVEMENT		FIRE PROTECTION LINE
	BITUMINOUS CURB		DOMESTIC WATER LINE
	CONCRETE CURB		GAS LINE
	CAPE COD BERM		UNDERGROUND ELECTRIC
	EXTRUDED CONCRETE CURB		TELEPHONE LINE
	MONOLITHIC CONCRETE CURB		FIRE ALARM
	PRECAST CONC. CURB		CABLE TV
	SLOPED GRAN. EDGING		CATCH BASIN
	VERT. GRAN. CURB		DOUBLE CATCH BASIN
	LIMIT OF CURB TYPE		GUTTER INLET
	SAWCUT		DRAIN MANHOLE
	BUILDING		TRENCH DRAIN
	BUILDING ENTRANCE		PLUG OR STUB
	LOADING DOCK		FLARED END SECTION
	BOLLARD		HEADWALL
	DUMPSTER PAD		SEWER MANHOLE
	SIGN		CURB STOP
	DOUBLE SIGN		WATER GATE
	STEEL GUARDRAIL		TAPPING SLEEVE & VALVE
	WOOD GUARDRAIL (SQUARE POST)		SIAMESE CONNECTION
	WOOD GUARDRAIL (ROUND POST)		FIRE HYDRANT
	PATH		WATER METER
	TREE LINE		POST INDICATOR VALVE
	WIRE FENCE		WATER WELL
	CHAIN LINK FENCE		GAS GATE
	POST AND RAIL FENCE		GAS METER
	STOCKADE FENCE		ELECTRIC MANHOLE
	STONE WALL		ELECTRIC METER
	RETAINING WALL		LIGHT POLE
	STREAM / POND / WATER COURSE		TELEPHONE MANHOLE
	DETENTION BASIN		TRANSFORMER PAD
	HAY BALES		UTILITY POLE
	SILT FENCE		GUY POLE
	MINOR CONTOUR		GUY WIRE & ANCHOR
	MAJOR CONTOUR		WOOD POWER POLE
	PARKING COUNT		CONCRETE POWER POLE
	COMPACT PARKING STALLS		METAL POWER POLE
	DOUBLE YELLOW LINE		HAND HOLE
	STOP LINE		PULL BOX
	CROSSWALK		
	ACCESSIBLE CURB RAMP		
	HANDICAP PARKING		
	VAN-ACCESSIBLE HANDICAP PARKING		
	Matchline - See Plan		MATCHLINE

Abbreviations	
General	
ABAN	ABANDON
ACR	ACCESSIBLE CURB RAMP
ADJ	ADJUST
APPROX	APPROXIMATE
BIT	BITUMINOUS
BS	BOTTOM OF SLOPE
CONC	CONCRETE
EL	ELEVATION
ELEV	ELEVATION
EXIST	EXISTING
F&I	FURNISH AND INSTALL
FDN	FOUNDATION
FG	FINISH GRADE
GRAN	GRANITE
GTD	GRADE TO DRAIN
LA	LANDSCAPE AREA
MAX	MAXIMUM
MIN	MINIMUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PERF	PERFORATED
PROP	PROPOSED
REM	REMOVE
RET	RETAIN
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
TS	TOP OF SLOPE
TYP	TYPICAL
Utility	
ACOMP	ASPHALT COATED CORRUGATED METAL PIPE
B.O.	BLOWOFF
CAP	CORRUGATED ALUMINUM PIPE
C&C	CUT AND CAPPED
CIP	CAST IRON PIPE
CIT	CHANGE IN TYPE
COND	CONDUIT
DI	DUCTILE IRON PIPE
FES	FLARED END SECTION
F&G	FRAME AND GRATE
F&C	FRAME AND COVER
GT	GREASE TRAP
HH	ELECTRIC HANDHOLE
HW	HEADWALL
HYD	HYDRANT
INV	INVERT ELEVATION
I=	INVERT ELEVATION
PWW	PAVED WATER WAY
PVC	POLYVINYLCHLORIDE PIPE
P.U.E.	PUBLIC UTILITY EASEMENT
P.O.S.	POINT OF SERVICE
RCP	REINFORCED CONCRETE PIPE
R=	RIM ELEVATION
SEP.	SEPARATION
TSV	TAPPING SLEEVE, VALVE AND BOX
U.E.	UTILITY EASEMENT
UP	UTILITY POLE



BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL

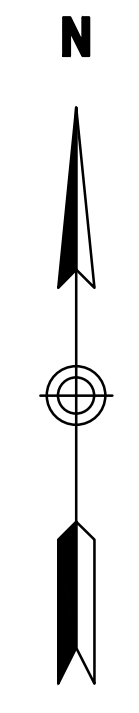
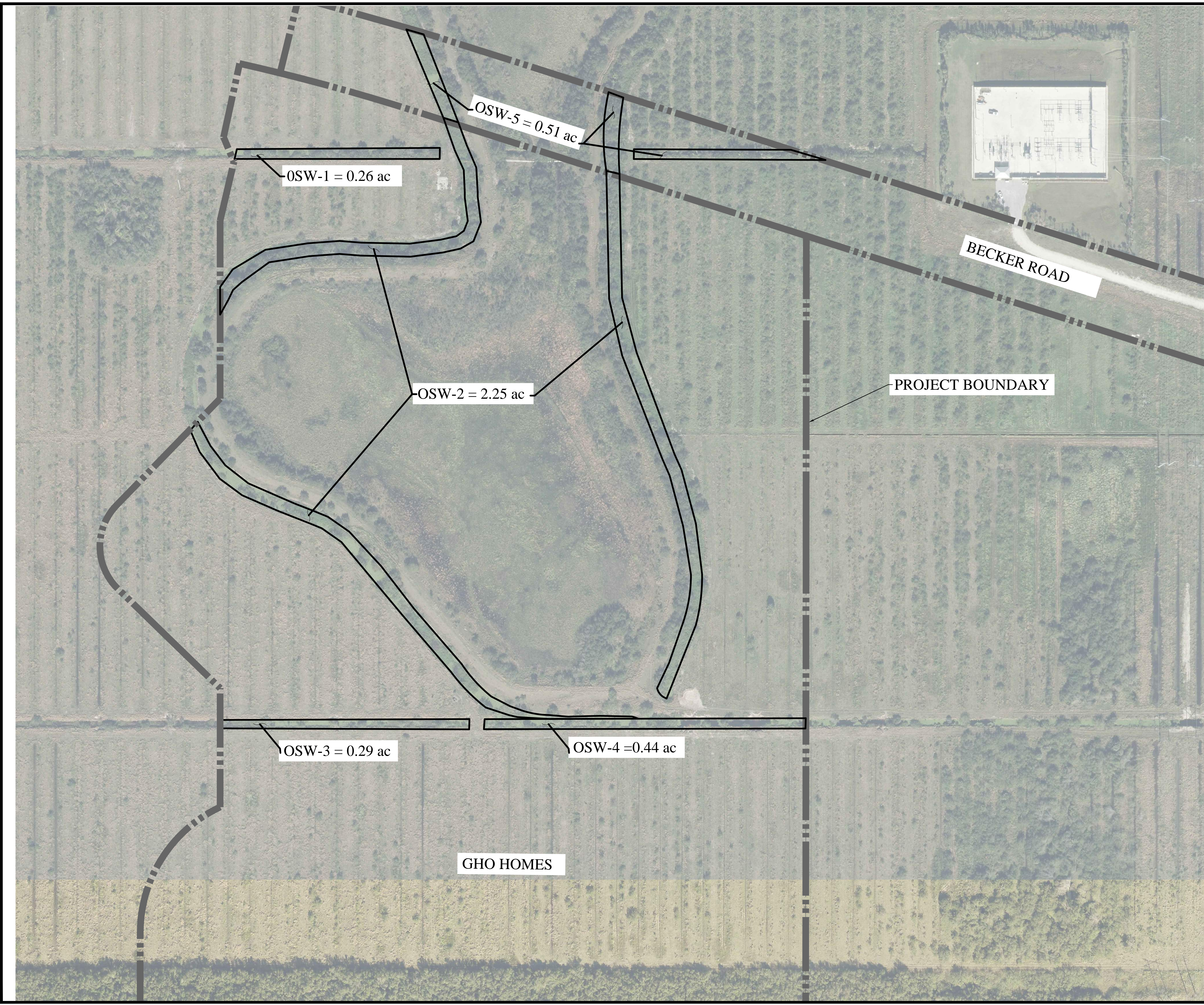
LEGEND, ABBREVIATIONS & KEY  
SHEET

CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
PHONE: (854) 972-3859 FAX: (854) 972-4178  
CPC AUTH. NO. 00029398

SCALE:	AS SHOWN
DATE:	12/08/21
DRAWN BY:	R.P.
CHECKED BY:	W.R.B
DESIGNED BY:	R.F.

**KEY-1**

P:\Projects\_2019\Deerfield Share\Southern Grove\cad\Plan\190214-ECP.dwg



GHO HOMES	
OSW-1	0.26 ac
OSW-2	2.25 ac
OSW-3	0.29 ac
OSW-4	0.44 ac
<b>Total</b>	<b>3.24 ac</b>

BECKER ROAD	
OSW-5	0.51 ac
<b>Total</b>	<b>0.51 ac</b>



NO	DATE	BY	APRV	REVISIONS

BELTERRA PHASE 1 AT SOUTHERN GROVE  
 PORT ST. LUCIE COUNTY, FL  
**ENVIRONMENTAL CONSIDERATION PLAN**

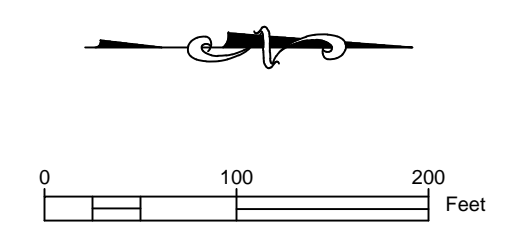
**CPM**  
 CARNAHAN PROCTOR & CROSS  
 CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
 814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
 PHONE: (854) 972-3869 FAX: (854) 972-4178  
 FILE NO. 190214  
 CPG AUTH. NO. 00002936

SCALE:  
 DATE: 12/08/21  
 DRAWN BY: R.P.  
 CHECKED BY: W.R.B.  
 DESIGNED BY: R.F.

**ECP-1**

WILLIAM R. BARBARO, P.E.  
 FL. REGISTRATION NO. - 64761

2/09/21 P:\Projects\_2019\Deerfield Shore\Southern Grove\cod\ld\Ploaset\190214-EC.dwg



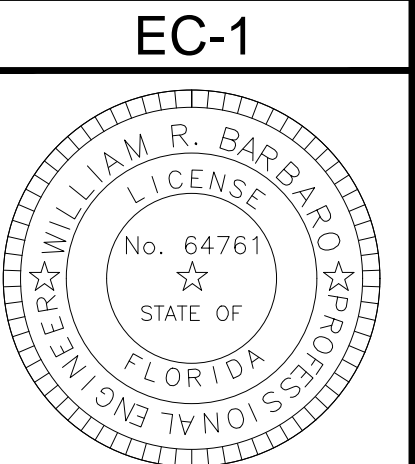
Legend	
	PROPERTY LINE
	SILT FENCE
	INLET PROTECTION
	FLOATING TURBIDITY BARRIER
	CONSTRUCTION ENTRANCE/ SOIL TRACKING PREVENTION

NO	DATE	BY	APRV	REVISIONS

**BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL**

**EROSION & SEDIMENT CONTROL PLAN**

SCALE:	AS SHOWN
DATE:	12/08/21
DRAWN BY:	R.P.
CHECKED BY:	W.R.B
DESIGNED BY:	R.F.



CITY OF PORT ST. LUCIE  
PROJECT NO. P21-271  
PSLUSD FILE NO. 5336

WILLIAM R. BARBARO, P.E.  
FL. REGISTRATION NO. - 64761

Section 1	Project Name and location information:	GHO Homes at Southern Grove Located at the south west intersection of Becker Road and Village Parkway in the City of Port St. Lucie.
Section 2	Describe the nature of the construction activity:	Construction activity consists of a new development located west of the intersection of Becker Road and SW Village Pkwy Dr. 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. 2. Clearing and grubbing, earthwork. 3. Storm sewer construction. 4. Water and wastewater utility construction. 5. Earthwork associated with roadway, curb, subgrade, base and pavement. 6. Landscaping
Section 4	Total area of the site:	67.80 acres
Section 5	Total area of the site to be disturbed:	67.80 acres
Section 6	Existing data describing the soil or quality of any stormwater discharge from the site:	Before Construction - Agricultural Use: C=0.3 During Construction - Disturbed Uplands & Partial Construction: C = 0.3-0.7 After Construction: C=0.7-0.9
Section 7	Estimate the drainage area size for each discharge point:	The drainage area size is 67.80 acres shown from the single discharge point shown on the plans.
Section 8	Latitude and longitude of each discharge point and identify the receiving water or MSA for each discharge point:	The ultimate receiving water for stormwater runoff is the South Florida Water Management District (SFWMD) C-23 Canal. There is one discharge point for the project. It is located at Lat. 27° 12'22.8" N, Long. 80° 24'55.3" 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. 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 in February 2020 and end February 2021. 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. Install silt fences, Type III, around all ditch bottom inlets on the project, and the project perimeter. Filter cloth under the grates on catch basins may be used in lieu of a silt fence. 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: Seed and mulch, and sod.  Permanent: 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 SWPPP.	
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: Silt Fence in accordance with the Florida Sediment and Erosion Control Manual. Floating turbidity barrier in accordance with the Florida Sediment and Erosion Control Manual. Soil tracking prevention device in accordance with the Florida Sediment and Erosion Control Manual. A stabilized construction entrance to be constructed per the Florida Sediment and Erosion Control Manual. 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.  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.	
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 n 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 n 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:  • 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. • Maintenance shall be performed on the rock entrance when any void spaces are full of sediment. • 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. • Bare areas of the site that were previously seeded shall be reseeded per manufacturer's instructions. • Mulch and sod that has been washed out shall be replaced immediately. • 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."  Name (Operator and/or Responsible Authority) _____ Date _____	

Section 21	Name	Title	Company Name, Address and Phone Number	Date

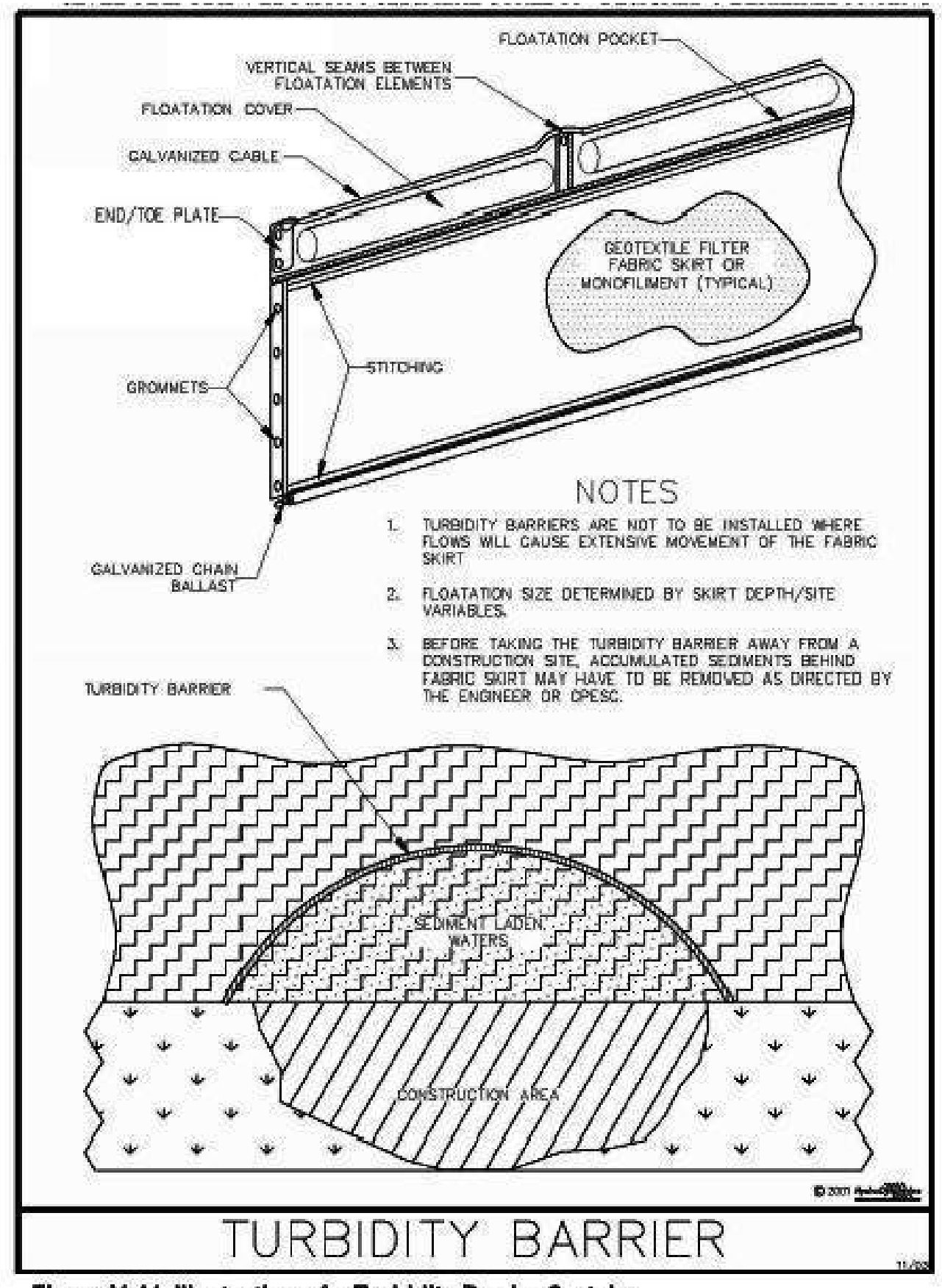


Figure V-44: Illustration of a Turbidity Barrier  
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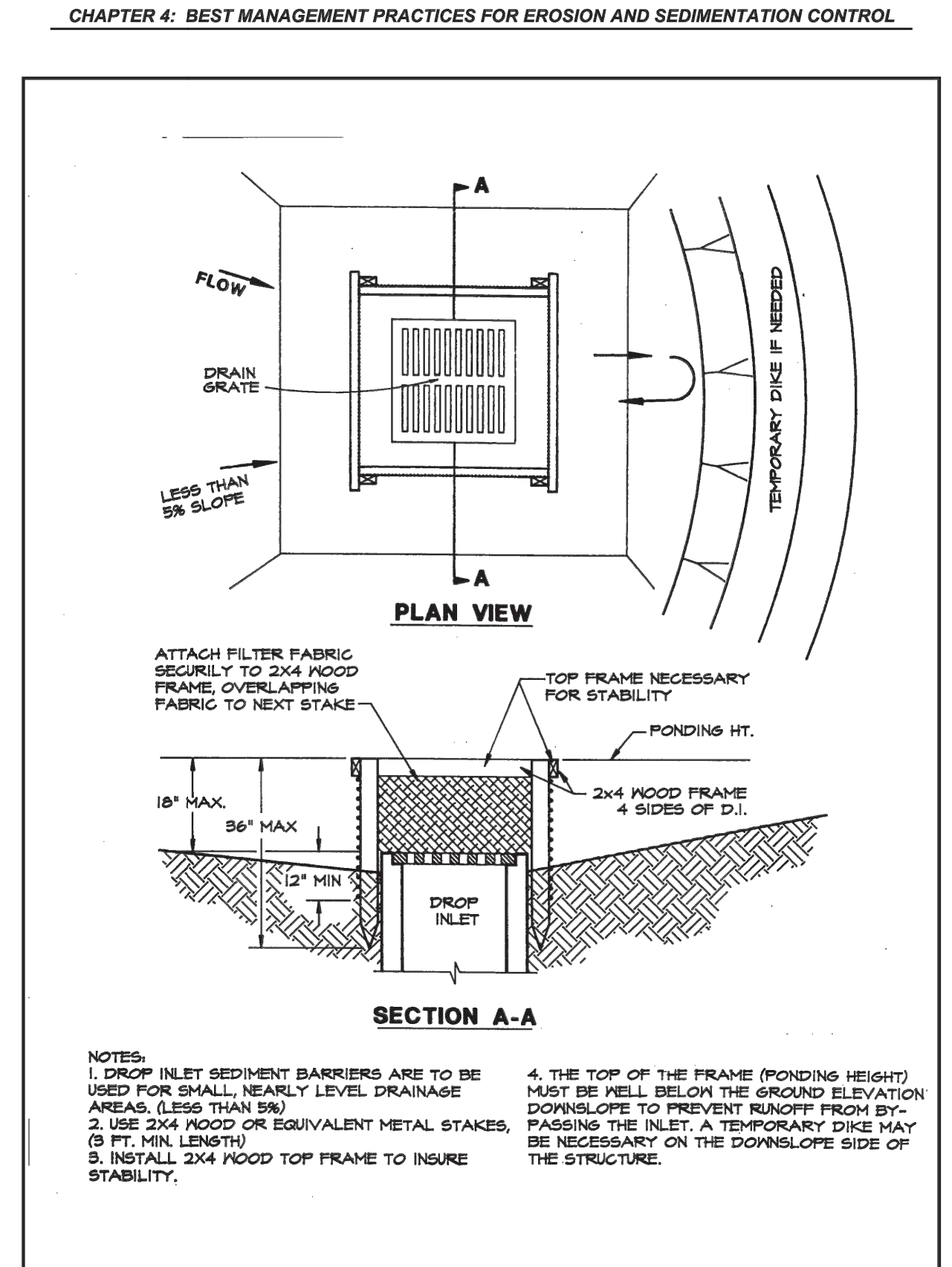


Figure 4.5a: Silt Fence Drop Inlet Sediment Barrier  
Source: Erosion Draw

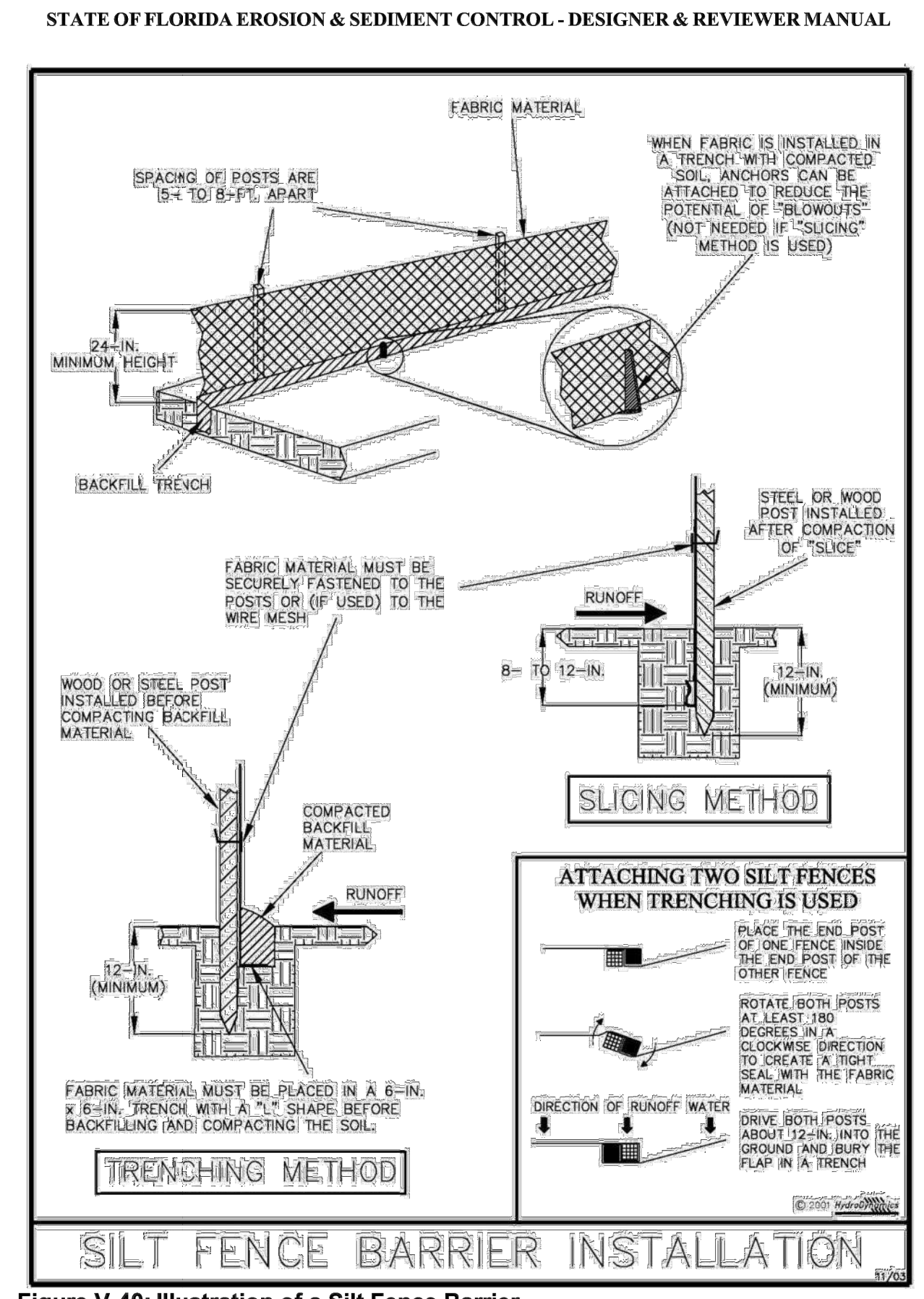


Figure V-40: Illustration of a Silt Fence Barrier  
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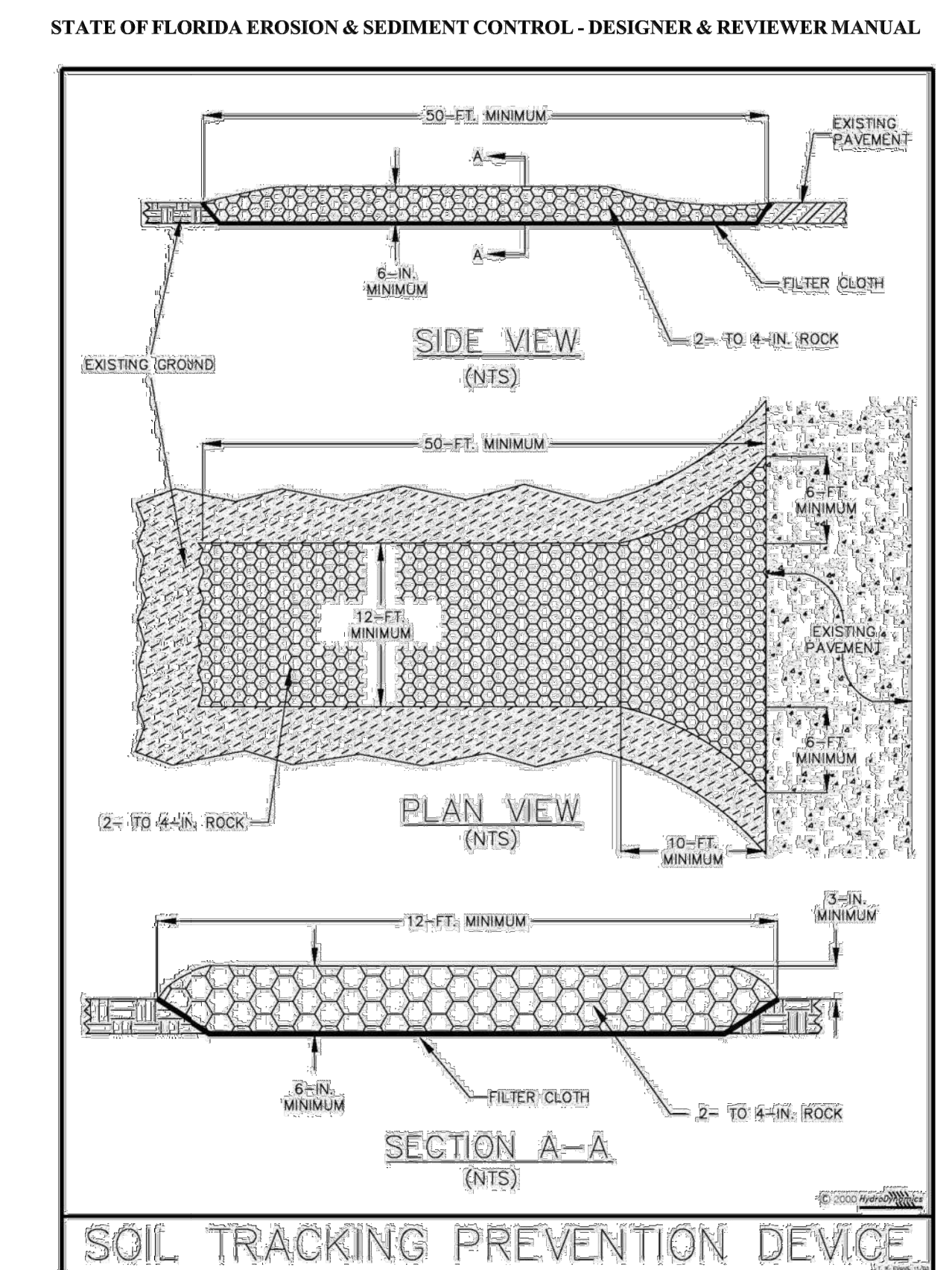


Figure V-52: Illustration of a Soil Tracking Prevention Device  
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REVISIONS					
APPROV					
DATE					
NO					

BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL

EROSION & SEDIMENT CONTROL DETAILS

CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
PHONE: (854) 972-3659 FAX: (854) 972-4178  
CPC AUTH. NO. 00020936

SCALE: AS SHOWN  
DATE: 12/08/21  
DRAWN BY: R.P.  
CHECKED BY: W.R.B.  
DESIGNED BY: R.F.

EC-2

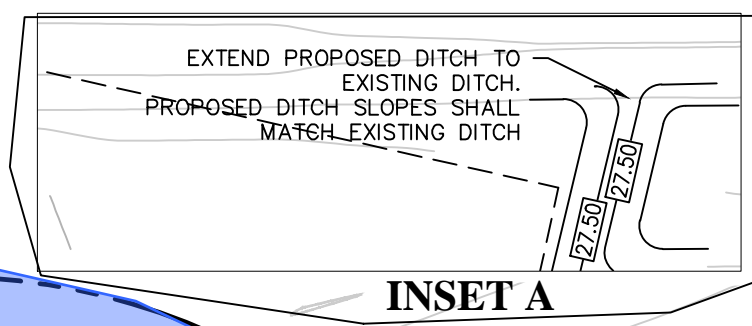
WILLIAM R. BARBARO, P.E.  
LICENSE NO. 64761  
STATE OF FLORIDA  
PROFESSIONAL ENGINEER

CITY OF PORT ST. LUCIE  
PROJECT NO. P21-271  
PLSULD FILE NO. 5336

WILLIAM R. BARBARO, P.E.  
FL REGISTRATION NO. - 64761



2/09/21 p:\projects\_2019\deerfield\_shore\southern\_grove\cod\190214-PCD.dwg



INSET A

NAME/STATION	TYPE	EP	INVERTS
CB #1 STA.102+13.97 OFF:-11.00	GUTTER INLET TYPE P (4' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.30	23.18 (N) 24" 23.18 (S) 30"
CB #2 STA.102+13.94 OFF:-11.00	GUTTER INLET TYPE P (4' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.30	23.28 (S) 24"
CB #3 STA.5+35.09 OFF:-11.00	GUTTER INLET TYPE J (5' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.20	22.28 (SE) 36" 20.30 (W) 36"
CB #4 STA.5+62.77 OFF:-11.00	GUTTER INLET TYPE J (5' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.20	22.18 (NW) 36" 20.06 (E) 36"
CB #5 STA.127+12.87 OFF:-11.00	GUTTER INLET TYPE P (4' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.30	23.18 (SE) 24" 23.18 (NW) 24"
CB #6 STA.127+12.87 OFF:-11.00	GUTTER INLET TYPE P (4' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.30	23.28 (NW) 24"
CB #7 STA.108+20.66 OFF:-11.00	GUTTER INLET TYPE J (5' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.26	17.10 (N) 42" 17.10 (S) 48"
CB #8 STA.108+14.90 OFF:-11.00	GUTTER INLET TYPE J (5' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.30	17.20 (S) 42" 18.97 (N) 36"
CB #32 STA.0+12.00 OFF:35.50	CURB INLET TYPE P (4' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	29.38	19.70 (E) 18"
CB #33 STA.0+12.38 OFF:-35.51	CURB INLET TYPE P (4' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	30.00	19.56 (W) 18" 19.56 (E) 24"

- NOTES:
- ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
  - CONVERSION TO NGVD29 = 1.468 + NAVD88
  - ALL DE-MUCKED ORGANIC MATERIALS WILL BE STOCKPILED AND UTILIZED ONSITE TO PROVIDE A LAYER OF TOPSOIL FOR THE COMMON AREA LANDSCAPING AREAS.
  - AT ALL LOW POINTS SHOWN IN THE PLAN, INSTALL A MINIMUM OF 100 LF OF UNDERDRAIN SYSTEM ON EACH SIDE OF THE STRUCTURE PARALLEL TO THE CENTERLINE OF THE ROAD.
  - ALL UNDERDRAIN PIPE NOT TERMINATED IN A CATCH BASIN, A CLEANOUT SHALL BE INSTALLED IN ACCORDANCE WITH FDOT INDEX 440-002.

Legend

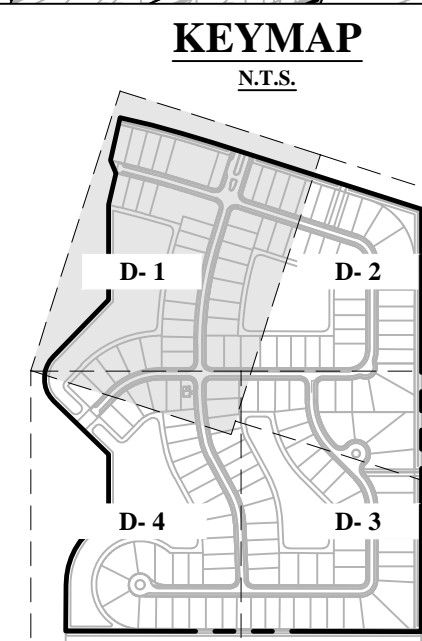
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- MATCHLINE
- UNDERDRAIN PIPE (100 LF - 6")
- EXISTING ELEVATION (NAVD)
- PROPOSED ELEVATION (NAVD)
- STREET LIGHTS
- EDGE OF WATER
- SLOPE BREAK POINT
- BOTTOM OF LAKE

NAME/STATION	TYPE	RIM	INVERTS
MH #6 STA.108+14.90 OFF:-214.99	STORM MANHOLE TYPE J (7' DIA.) (FDOT INDEX #425-010) W/ TYPE 7 TOP & TYPE 1 COVER (FDOT INDEX #425-001)	31.00	19.09 (S) 36" 19.09 (W) 24"

LAKE P3A  
C.W.E. = 25.50'  
T.O.B. = 4.75 AC.  
C.W.E. = 3.60 AC.

Legend:

Limits of Phase 1 Plat 2



KEYMAP

SEE SHEET D-2 FOR CONTINUATION

SEE BECKER ROAD PLANS FOR CONTINUATION

BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL

DRAINAGE PLAN

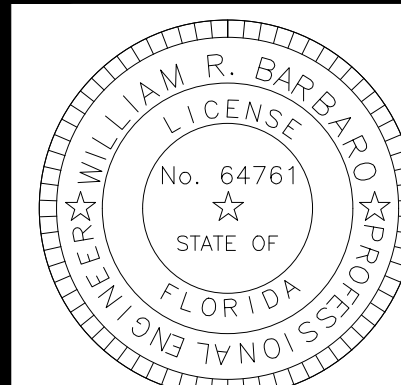


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CPC AUTH. NO. 000029398

SCALE: AS SHOWN  
DATE: 12/08/21  
DRAWN BY: R.P.  
CHECKED BY: W.R.B.  
DESIGNED BY: R.F.

D-1

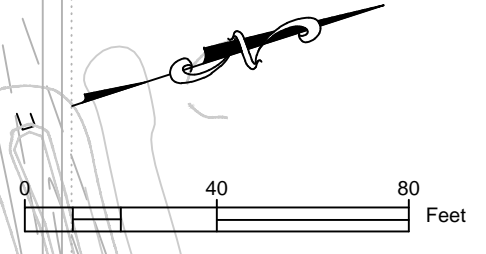
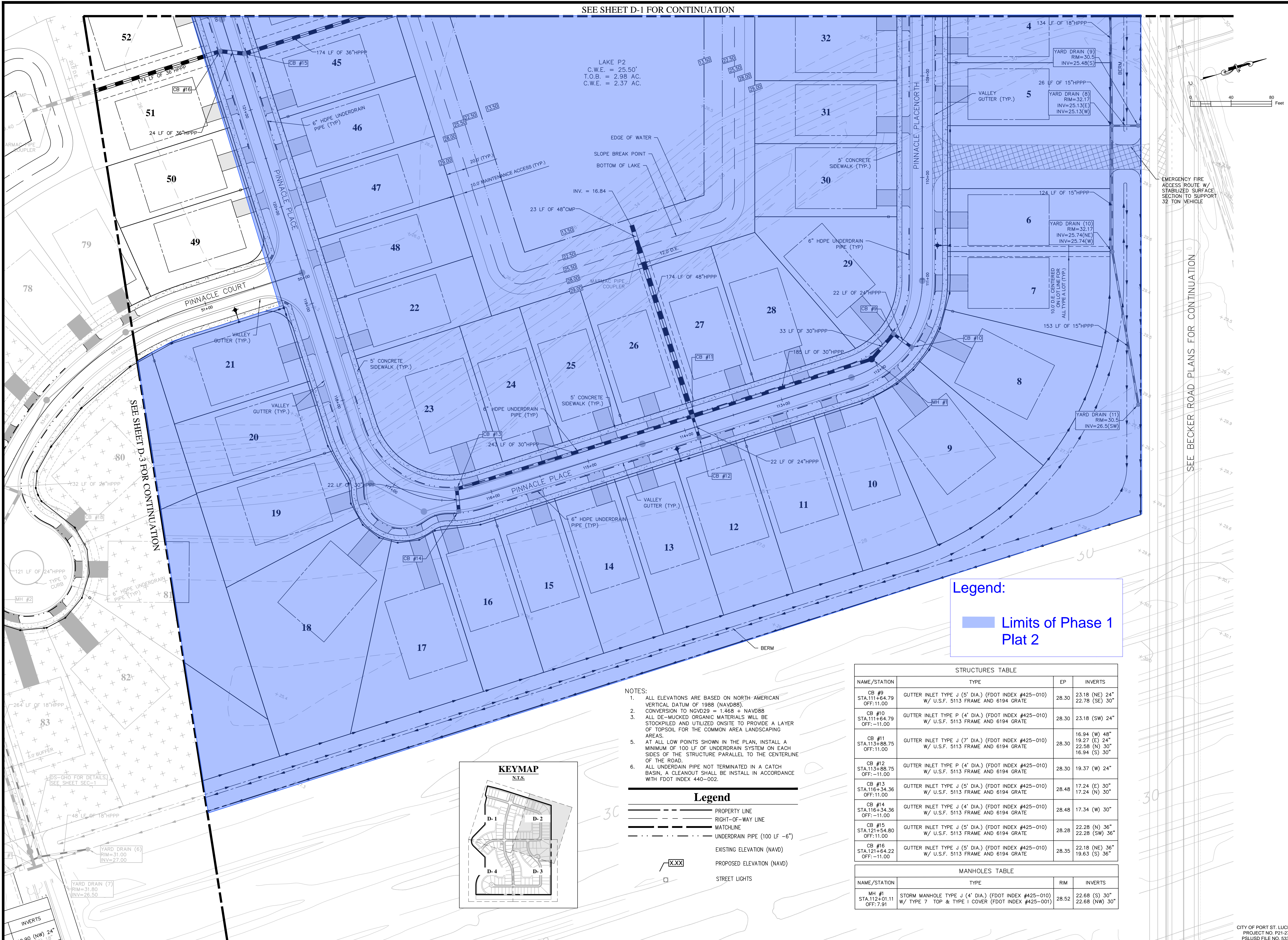


CITY OF PORT ST. LUCIE  
PROJECT NO. P21-271  
PSLUSD FILE NO. 5336

WILLIAM R. BARBARO, P.E.  
FL. REGISTRATION NO. - 64761

REVISIONS

NO	DATE	BY	APRV	WRB	REVISOR PER PSL COMMENTS
02/15/22		RP			

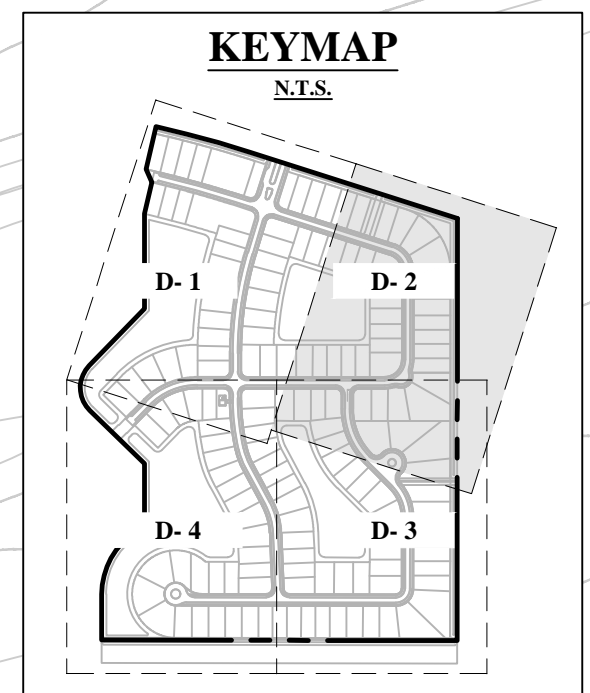


SEE SHEET D-3 FOR CONTINUATION

SEE BECKER ROAD PLANS FOR CONTINUATION

**Legend:**  
 Limits of Phase 1 Plat 2

- NOTES:**
1. ALL ELEVATIONS ARE BASED ON NORTH-AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
  2. CONVERSION TO NGVD29 = 1.468 + NAVD88
  3. ALL DE-MUCKED ORGANIC MATERIALS WILL BE STOCKPILED AND UTILIZED ON-SITE TO PROVIDE A LAYER OF TOPSOIL FOR THE COMMON AREA LANDSCAPING AREAS.
  5. AT ALL LOW POINTS SHOWN IN THE PLAN, INSTALL A MINIMUM OF 100 LF OF UNDERDRAIN SYSTEM ON EACH SIDES OF THE STRUCTURE PARALLEL TO THE CENTERLINE OF THE ROAD.
  6. ALL UNDERDRAIN PIPE NOT TERMINATED IN A CATCH BASIN, A CLEANOUT SHALL BE INSTALL IN ACCORDANCE WITH FDOT INDEX 440-002.



- Legend**
- PROPERTY LINE
  - RIGHT-OF-WAY LINE
  - MATCHLINE
  - UNDERDRAIN PIPE (100 LF -6")
  - EXISTING ELEVATION (NAVD)
  - PROPOSED ELEVATION (NAVD)
  - STREET LIGHTS

**STRUCTURES TABLE**

NAME/STATION	TYPE	EP	INVERTS
CB #9 STA.111+64.79 OFF:11.00	GUTTER INLET TYPE J (5' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.30	23.18 (NE) 24" 22.78 (SE) 30"
CB #10 STA.111+64.79 OFF:-11.00	GUTTER INLET TYPE P (4' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.30	23.18 (SW) 24"
CB #11 STA.113+88.75 OFF:11.00	GUTTER INLET TYPE J (7' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.30	16.94 (W) 48" 19.27 (E) 24" 22.58 (N) 30" 16.94 (S) 30"
CB #12 STA.113+88.75 OFF:-11.00	GUTTER INLET TYPE P (4' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.30	19.37 (W) 24"
CB #13 STA.116+34.36 OFF:11.00	GUTTER INLET TYPE J (5' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.48	17.24 (E) 30" 17.24 (N) 30"
CB #14 STA.116+34.36 OFF:-11.00	GUTTER INLET TYPE J (4' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.48	17.34 (W) 30"
CB #15 STA.121+54.80 OFF:11.00	GUTTER INLET TYPE J (5' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.28	22.28 (N) 36" 22.28 (SW) 36"
CB #16 STA.121+64.22 OFF:-11.00	GUTTER INLET TYPE J (5' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.35	22.18 (NE) 36" 19.63 (S) 36"

**MANHOLES TABLE**

NAME/STATION	TYPE	RIM	INVERTS
MH #1 STA.112+01.11 OFF:7.91	STORM MANHOLE TYPE J (4' DIA.) (FDOT INDEX #425-010) W/ TYPE 7 TOP & TYPE I COVER (FDOT INDEX #425-001)	28.52	22.68 (S) 30" 22.68 (NW) 30"

BELTERRA PHASE 1 AT SOUTHERN GROVE  
 PORT ST. LUCIE COUNTY, FL

**DRAINAGE PLAN**

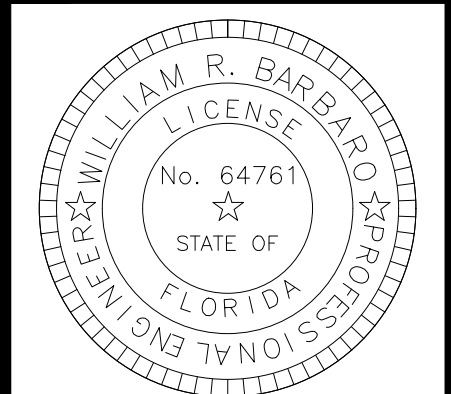
NO	DATE	BY	APRV	REVISIONS
1	02/15/22	RP	WRB	REVISED PER PSL COMMENTS



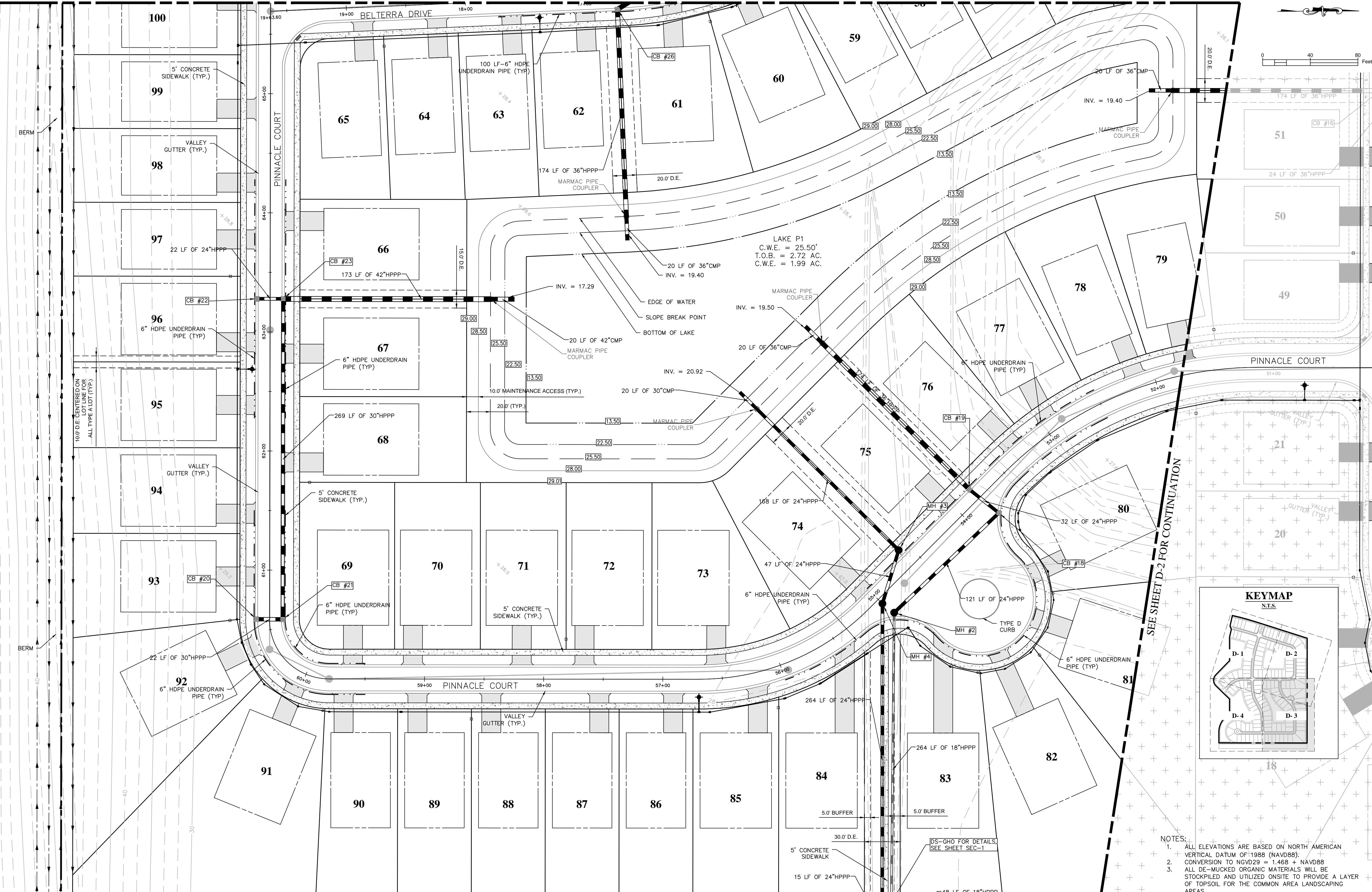
CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
 814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
 PHONE: (854) 972-3859 FAX: (854) 972-4178  
 CFC AUTH. NO. 00029398

SCALE: AS SHOWN  
 DATE: 12/08/21  
 DRAWN BY: R.P.  
 CHECKED BY: W.R.B.  
 DESIGNED BY: R.F.

**D-2**



2/09/21 p:\projects\_2019\deerfield\_shore\southern\_grove\cod\plan\190214-PCD.dwg



STRUCTURES TABLE

NAME/STATION	TYPE	EP	INVERTS
CB #18 STA.53+77.05 OFF:-20.53	GUTTER INLET TYPE P (5' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.25	20.30 (SE) 24" 19.85 (SW) 24"
CB #19 STA.53+80.54 OFF:11.00	GUTTER INLET TYPE J (5' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.30	19.75 (NE) 24" 19.75 (SW) 36"
CB #20 STA.60+58.69 OFF:-11.00	GUTTER INLET TYPE J (4' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.30	18.17 (N) 30"
CB #21 STA.60+58.69 OFF:11.00	GUTTER INLET TYPE J (5' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.30	18.07 (W) 30" 18.07 (S) 30"
CB #22 STA.63+27.79 OFF:-11.00	GUTTER INLET TYPE P (4' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.32	17.58 (N) 24"
CB #23 STA.63+27.79 OFF:11.00	GUTTER INLET TYPE J (7' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.32	17.48 (N) 42" 17.48 (S) 24" 17.48 (E) 30"

STRUCTURES TABLE

NAME/STATION	TYPE	EP	INVERTS
CB #26 STA.16+72.64 OFF:-11.00	GUTTER INLET TYPE J (6' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.16	22.60 (NW) 36" 19.53 (E) 36"
DS-GHO STA.55+95.82 OFF:-228.44	STORM MANHOLE TYPE J (7' DIA.) (FDOT INDEX #425-010) W/ TYPE 7 TOP & TYPE I COVER (FDOT INDEX #425-001)	SEE SHEET SEC-1	SEE SHEET SEC-1
MH #8 STA.55+98.25 OFF:-242.48	STRAIGHT CONC. ENDWALL (FDOT INDEX #430-030)	20.00	(W) 24"

MANHOLES TABLE

NAME/STATION	TYPE	RIM	INVERTS
MH #2 STA.54+98.39 OFF:-17.33	STORM MANHOLE TYPE P (4' DIA.) (FDOT INDEX #425-010) W/ TYPE 7 TOP & TYPE I COVER (FDOT INDEX #425-001)	29.05	20.90 (NW) 24" 20.90 (E) 18"
MH #3 STA.54+58.54 OFF:17.00	STORM MANHOLE TYPE J (7' DIA.) (FDOT INDEX #425-010) W/ TYPE 7 TOP & TYPE I COVER (FDOT INDEX #425-001)	29.02	21.20 (SW) 24" 21.20 (E) 24"
MH #4 STA.54+98.94 OFF:-5.00	STORM MANHOLE TYPE J (7' DIA.) (FDOT INDEX #425-010) W/ TYPE 7 TOP & TYPE I COVER (FDOT INDEX #425-001)	29.00	21.30 (W) 24" 21.30 (E) 24"

- NOTES:
- ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).  
CONVERSION TO NGVD29 = 1.468 + NAVD88
  - ALL DE-MULCHED ORGANIC MATERIALS WILL BE STOCKPILED AND UTILIZED ONSITE TO PROVIDE A LAYER OF TOPSOIL FOR THE COMMON AREA LANDSCAPING AREAS.
  - AT ALL LOW POINTS SHOWN IN THE PLAN, INSTALL A MINIMUM OF 100 LF OF UNDERDRAIN SYSTEM ON EACH SIDE OF THE STRUCTURE PARALLEL TO THE CENTERLINE OF THE ROAD.
  - ALL UNDERDRAIN PIPE NOT TERMINATED IN A CATCH BASIN, A CLEANOUT SHALL BE INSTALLED IN ACCORDANCE WITH FDOT INDEX 440-002.

**Legend**

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- MATCHLINE
- UNDERDRAIN PIPE (100 LF -6")
- EXISTING ELEVATION (NAVD)
- PROPOSED ELEVATION (NAVD)
- STREET LIGHTS

NO	DATE	BY	APPROV	REVISIONS

BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL

**DRAINAGE PLAN**

**KEYMAP**  
N.T.S.

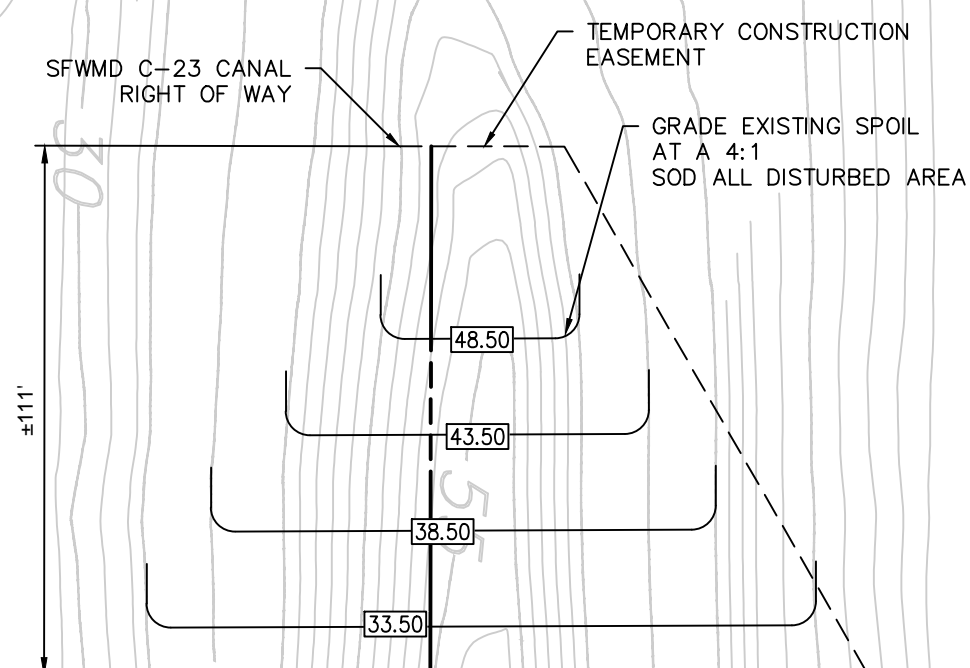
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DATE: 12/08/21  
DRAWN BY: R.P.  
CHECKED BY: W.R.B.  
DESIGNED BY: R.F.

**D-3**

CITY OF PORT ST. LUCIE  
PROJECT NO. P21-271  
PLSUD FILE NO. 5336

WILLIAM R. BARBARO, P.E.  
FL. REGISTRATION NO. - 64761

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- NOTES:
1. ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
  2. CONVERSION TO NAVD29 = 1.468 + NAVD88
  3. ALL DE-MUCKED ORGANIC MATERIALS WILL BE STOCKPILED AND UTILIZED ONSITE TO PROVIDE A LAYER OF TOPSOIL FOR THE COMMON AREA LANDSCAPING AREAS.
  4. AT ALL LOW POINTS SHOWN IN THE PLAN, INSTALL A MINIMUM OF 100 LF OF UNDERDRAIN SYSTEM ON EACH SIDE OF THE STRUCTURE PARALLEL TO THE CENTERLINE OF THE ROAD.
  5. ALL UNDERDRAIN PIPE NOT TERMINATED IN A CATCH BASIN, A CLEANOUT SHALL BE INSTALLED IN ACCORDANCE WITH FDOT INDEX 440-002.

**Legend**

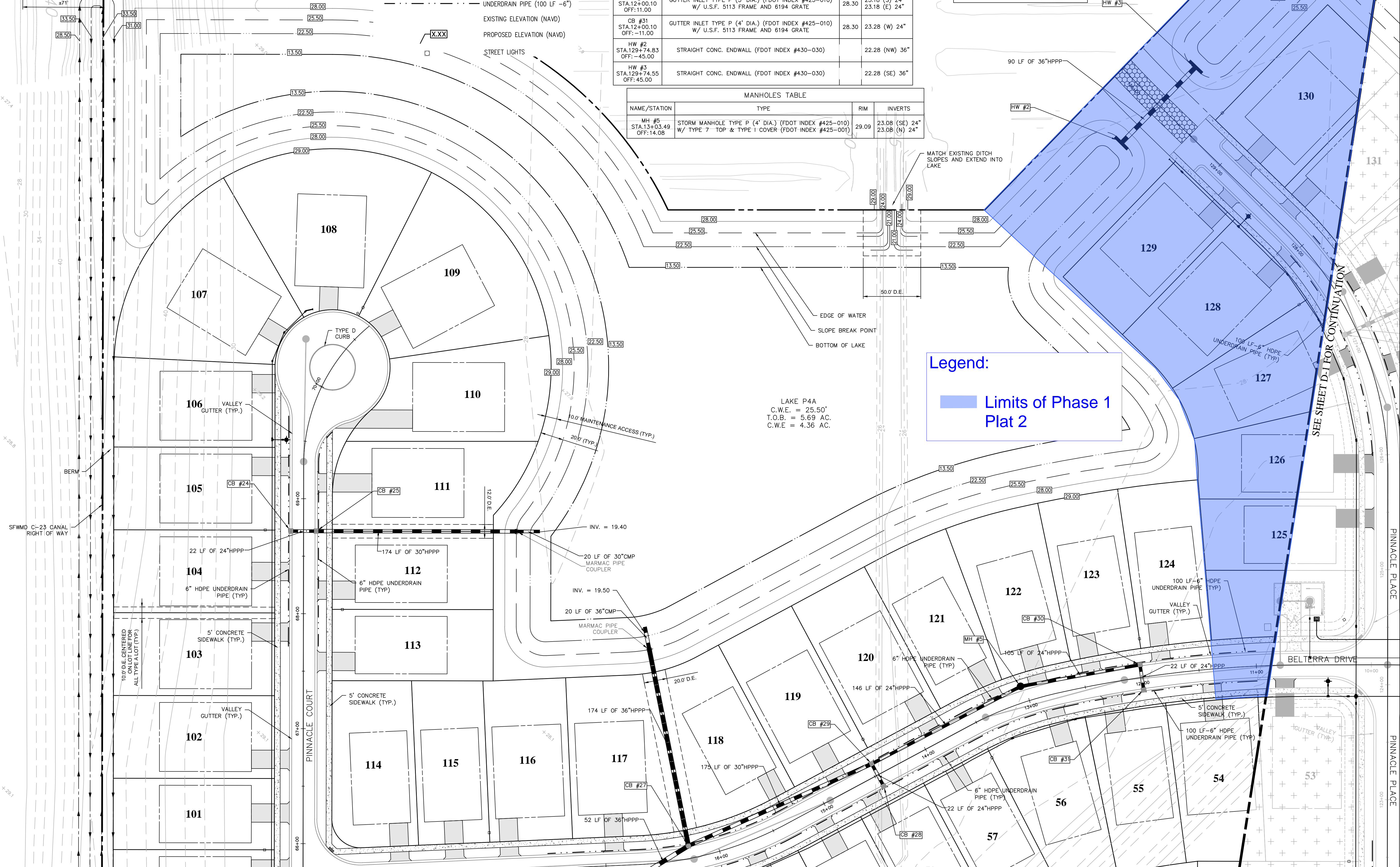
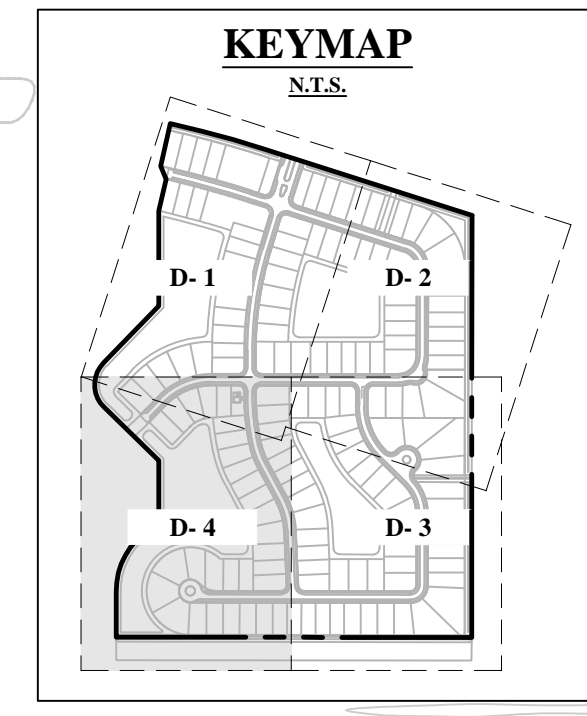
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- MATCHLINE
- UNDERDRAIN PIPE (100 LF -6")
- EXISTING ELEVATION (NAVD)
- PROPOSED ELEVATION (NAVD)
- STREET LIGHTS

**STRUCTURES TABLE**

NAME/STATION	TYPE	EP	INVERTS
CB #24 STA.68+71.78 OFF:-11.00	GUTTER INLET TYPE P (4' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.30	19.70 (N) 24" 19.60 (S) 24"
CB #25 STA.68+71.78 OFF:11.00	GUTTER INLET TYPE J (4' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.30	22.60 (SE) 36" 22.28 (W) 36" 22.68 (NW) 30"
CB #27 STA.16+25.70 OFF:11.00	GUTTER INLET TYPE P (4' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.30	23.18 (SW) 24"
CB #28 STA.14+47.14 OFF:-11.00	GUTTER INLET TYPE J (5' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.30	23.18 (NE) 24" 22.78 (SE) 30" 22.98 (NW) 24"
CB #30 STA.12+00.10 OFF:11.00	GUTTER INLET TYPE P (5' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.30	23.18 (S) 24" 23.18 (E) 24"
CB #31 STA.12+00.10 OFF:11.00	GUTTER INLET TYPE P (4' DIA.) (FDOT INDEX #425-010) W/ U.S.F. 5113 FRAME AND 6194 GRATE	28.30	23.28 (W) 24"
HW #2 STA.129+74.83 OFF:-45.00	STRAIGHT CONC. ENDWALL (FDOT INDEX #430-030)	22.28	(NW) 36"
HW #3 STA.129+74.50 OFF:45.00	STRAIGHT CONC. ENDWALL (FDOT INDEX #430-030)	22.28	(SE) 36"

**MANHOLES TABLE**

NAME/STATION	TYPE	RIM	INVERTS
MH #5 STA.13+03.49 OFF:14.08	STORM MANHOLE TYPE P (4' DIA.) (FDOT INDEX #425-010) W/ TYPE 7 TOP & TYPE 1 COVER (FDOT INDEX #425-001)	29.09	23.08 (SE) 24" 23.08 (N) 24"



**Legend:**

■ Limits of Phase 1 Plat 2

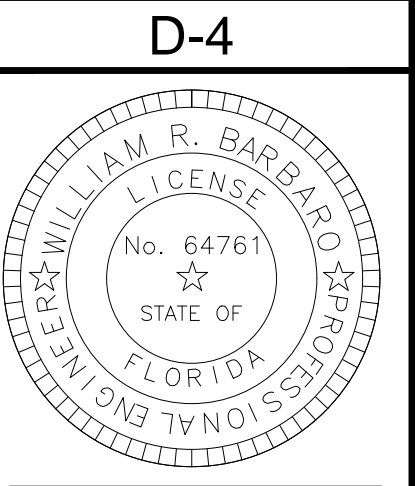
BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL

DRAINAGE PLAN



CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
PHONE: (854) 972-3859 FAX: (854) 972-4178  
CPC AUTH. NO. 00029398

SCALE: AS SHOWN  
DATE: 12/08/21  
DRAWN BY: R.P.  
CHECKED BY: W.R.B.  
DESIGNED BY: R.F.

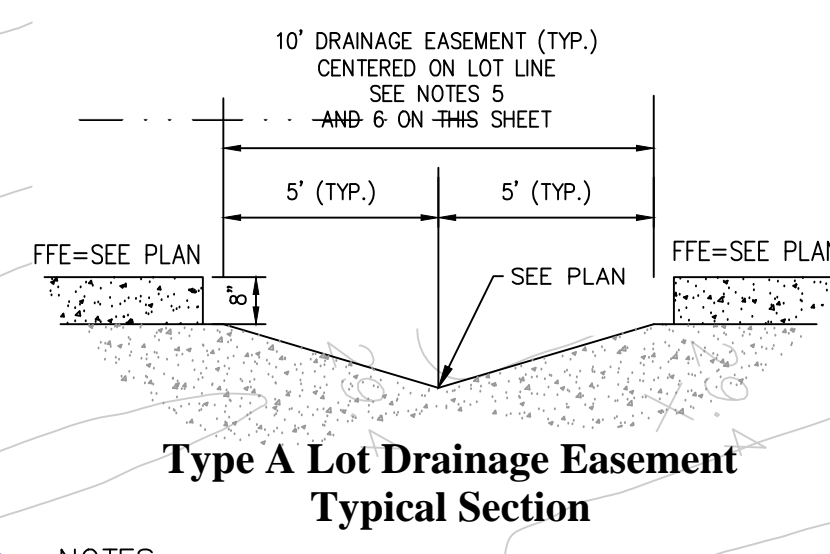


CITY OF PORT ST. LUCIE  
PROJECT NO. P21-271  
PLSUD FILE NO. 5336

WILLIAM R. BARBARO, P.E.  
FL. REGISTRATION NO. - 64761

SEE SHEET D-3 FOR CONTINUATION

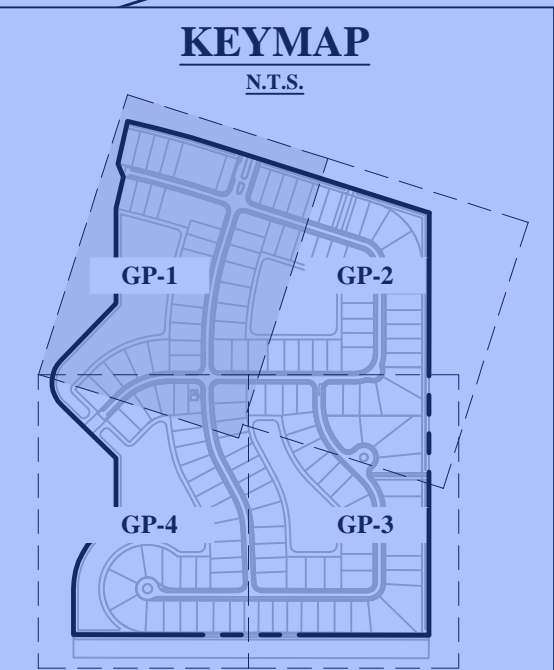
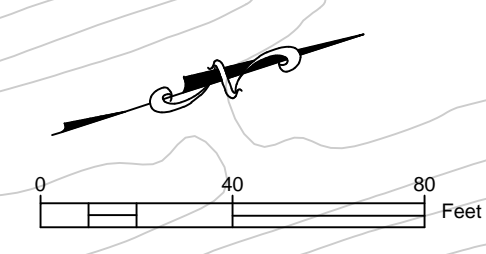
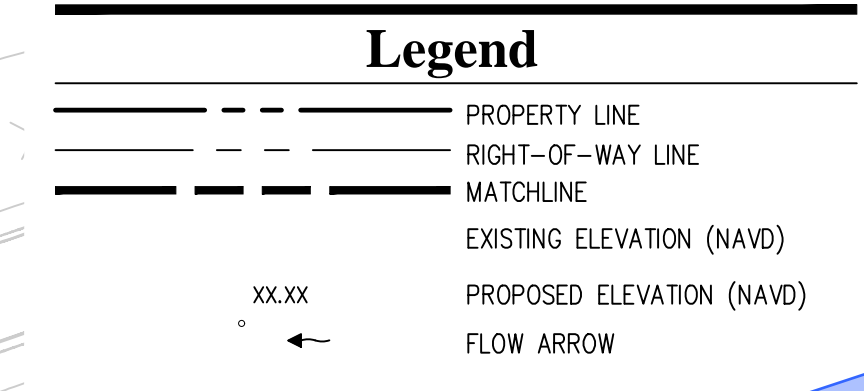
SEE SHEET D-1 FOR CONTINUATION



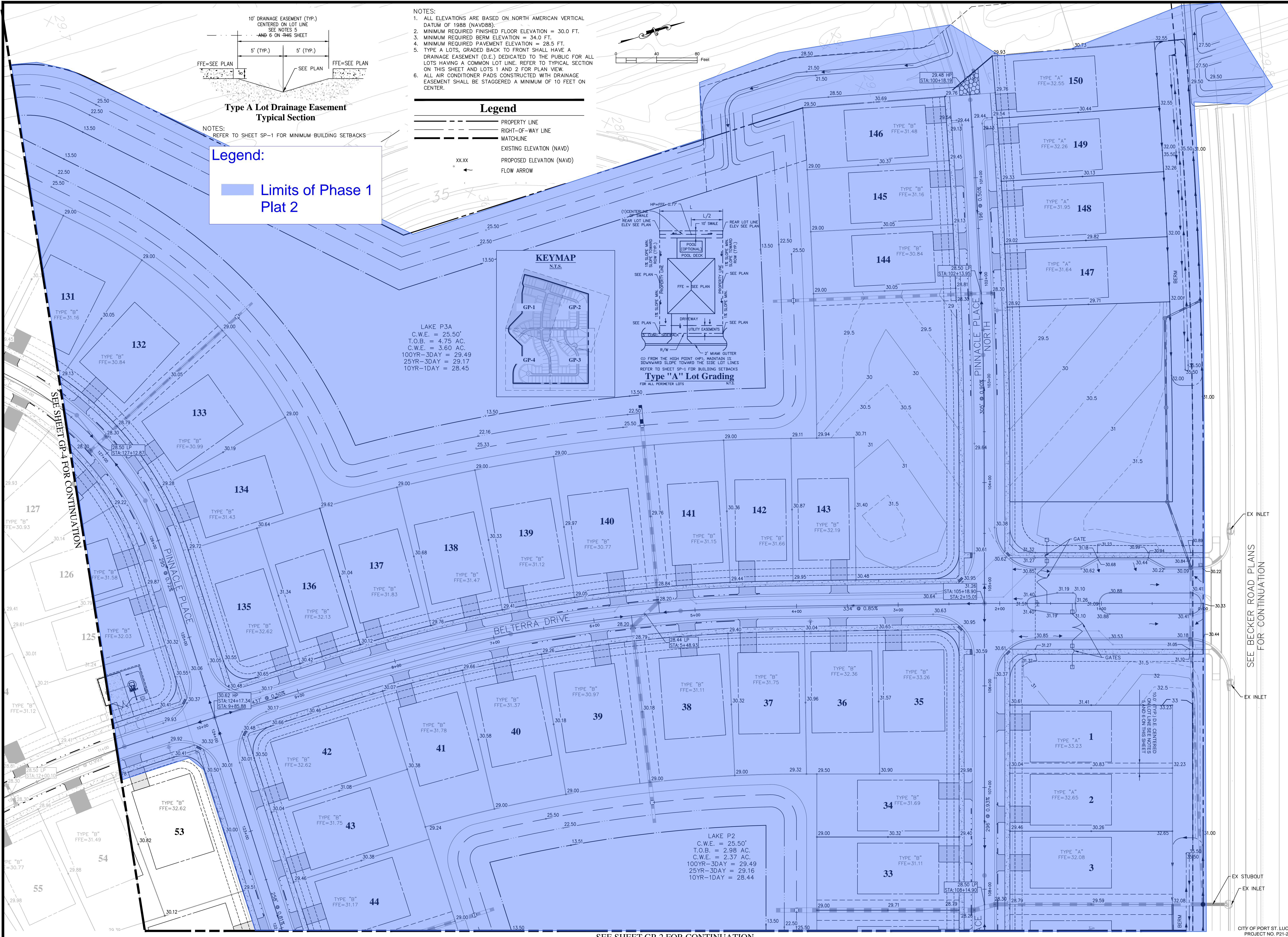
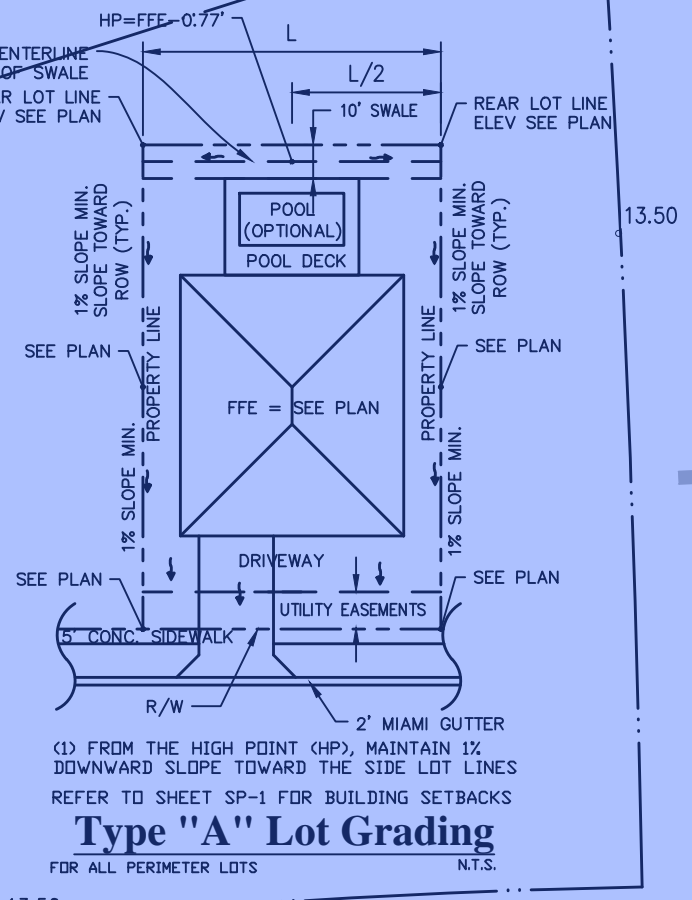
NOTES:  
REFER TO SHEET SP-1 FOR MINIMUM BUILDING SETBACKS

**Legend:**  
 Limits of Phase 1 Plat 2

- NOTES:**
1. ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
  2. MINIMUM REQUIRED FINISHED FLOOR ELEVATION = 30.0 FT.
  3. MINIMUM REQUIRED BERM ELEVATION = 34.0 FT.
  4. MINIMUM REQUIRED PAVEMENT ELEVATION = 28.5 FT.
  5. TYPE A LOTS, GRADED BACK TO FRONT SHALL HAVE A DRAINAGE EASEMENT (D.E.) DEDICATED TO THE PUBLIC FOR ALL LOTS HAVING A COMMON LOT LINE. REFER TO TYPICAL SECTION ON THIS SHEET AND LOTS 1 AND 2 FOR PLAN VIEW.
  6. ALL AIR CONDITIONER PADS CONSTRUCTED WITH DRAINAGE EASEMENT SHALL BE STAGGERED A MINIMUM OF 10 FEET ON CENTER.



LAKE P3A  
 C.W.E. = 25.50'  
 T.O.B. = 4.75 AC.  
 C.W.E. = 3.60 AC.  
 100YR-3DAY = 29.49  
 25YR-3DAY = 29.17  
 10YR-1DAY = 28.45



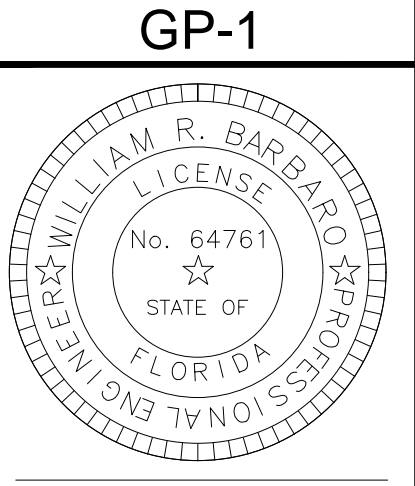
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BELTERRA PHASE 1 AT SOUTHERN GROVE  
 PORT ST. LUCIE COUNTY, FL

GRADING PLAN



SCALE: AS SHOWN  
 DATE: 12/08/21  
 DRAWN BY: R.P.  
 CHECKED BY: W.R.B.  
 DESIGNED BY: R.F.



CITY OF PORT ST. LUCIE  
 PROJECT NO. P21-271  
 PLSUSD FILE NO. 5336

WILLIAM R. BARBARO, P.E.  
 FL REGISTRATION NO. - 64761

NO	DATE	BY	APRV	REVISIONS

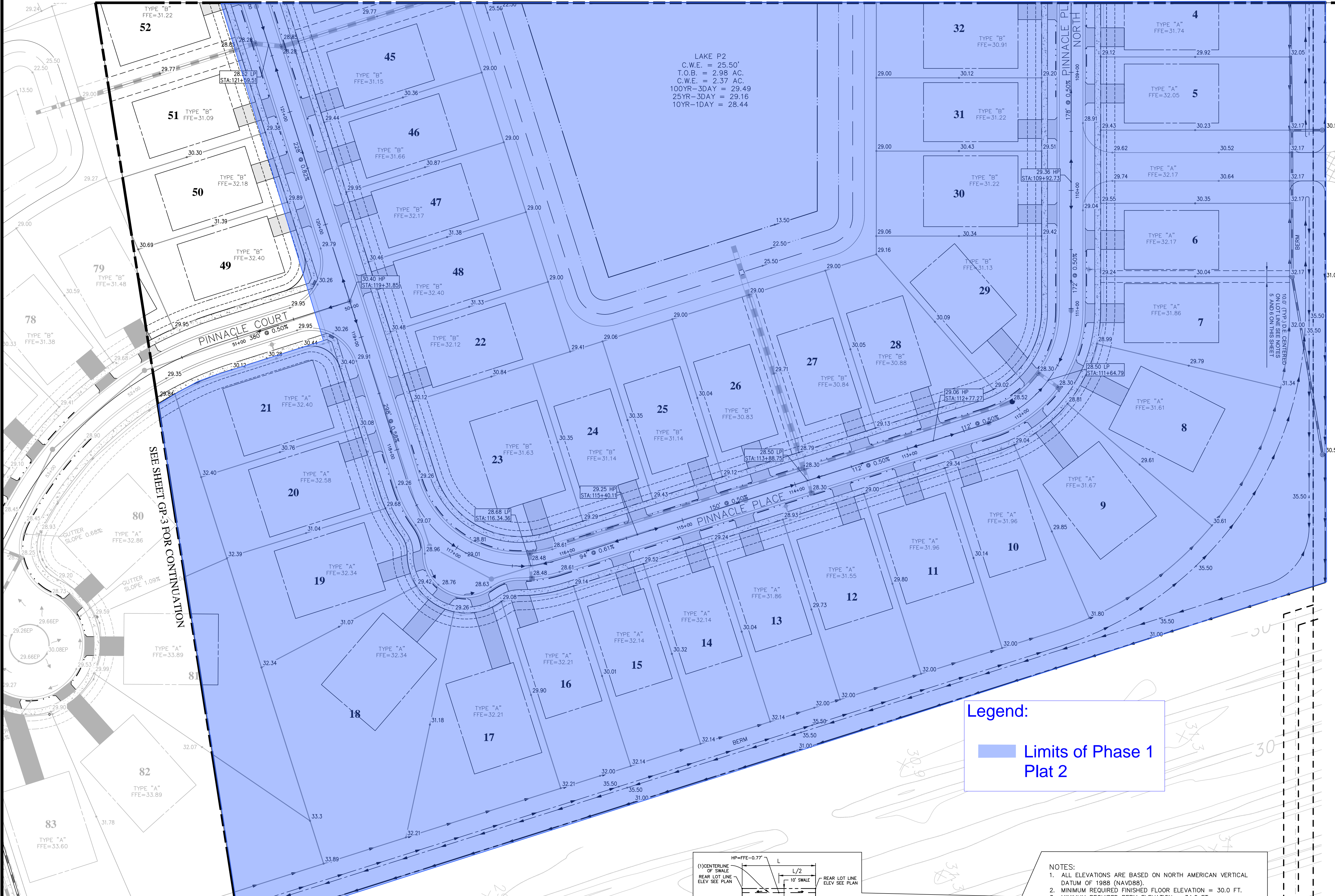
SEE SHEET GP-2 FOR CONTINUATION

SEE BECKER ROAD PLANS FOR CONTINUATION

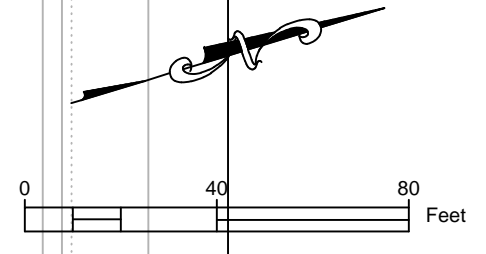
SEE SHEET GP-4 FOR CONTINUATION

FILE NO. 190214

CPC AUTH. NO. 000029336



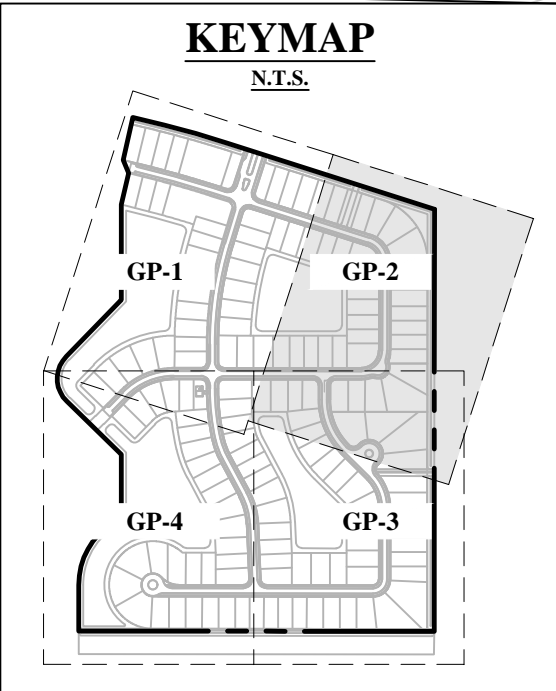
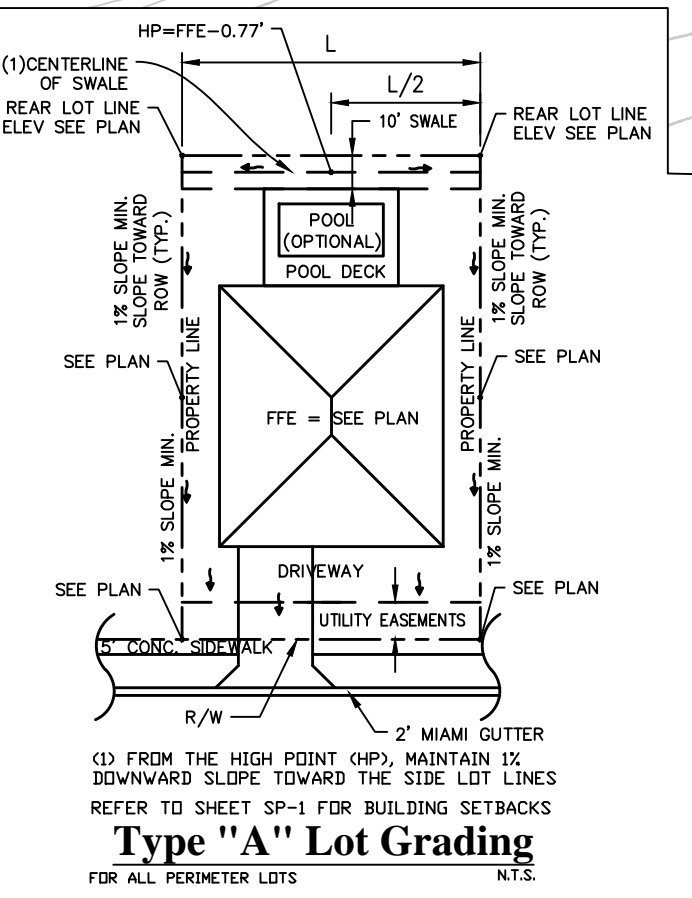
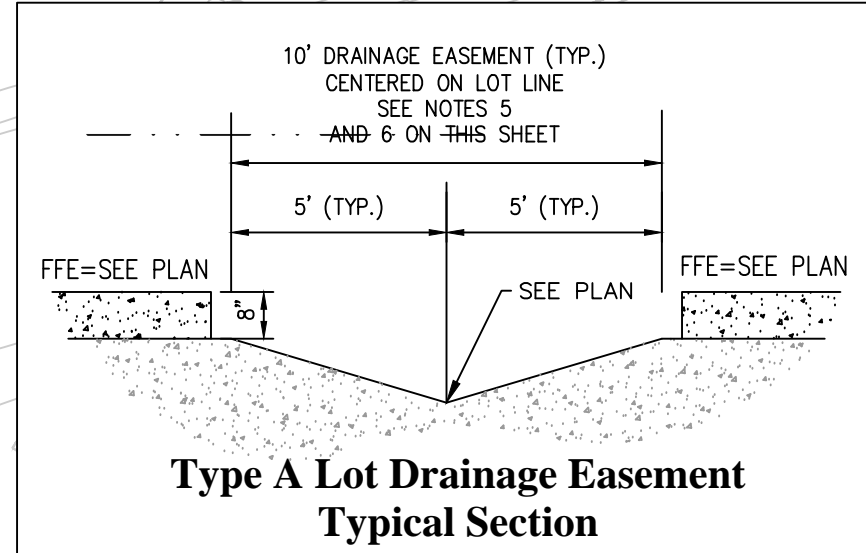
LAKE P2  
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 T.O.B. = 2.98 AC.  
 C.W.E. = 2.37 AC.  
 100YR-3DAY = 29.49  
 25YR-3DAY = 29.16  
 10YR-1DAY = 28.44



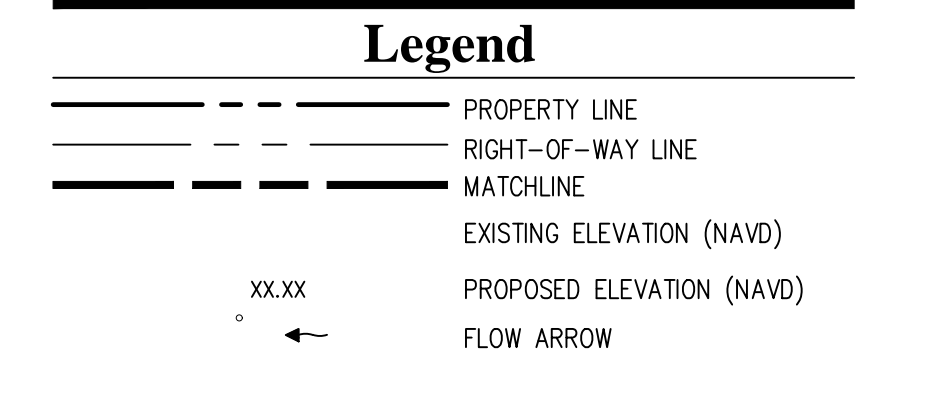
SEE SHEET GP-3 FOR CONTINUATION

SEE BECKER ROAD PLANS FOR CONTINUATION

Legend:  
 Limits of Phase 1 Plat 2



- NOTES:
1. ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
  2. MINIMUM REQUIRED FINISHED FLOOR ELEVATION = 30.0 FT.
  3. MINIMUM REQUIRED BERM ELEVATION = 34.0 FT.
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  5. TYPE A LOTS, GRADED BACK TO FRONT SHALL HAVE A DRAINAGE EASEMENT (D.E.) DEDICATED TO THE PUBLIC FOR ALL LOTS HAVING A COMMON LOT LINE. REFER TO TYPICAL SECTION ON THIS SHEET AND LOTS 1 AND 2 FOR PLAN VIEW.
  6. ALL AIR CONDITIONER PADS CONSTRUCTED WITH DRAINAGE EASEMENT SHALL BE STAGGERED A MINIMUM OF 10 FEET ON CENTER.



NO	DATE	BY	APRV	REVISIONS
1	02/15/22	RP		WRB REVISED PER PSL COMMENTS

BELTERRA PHASE 1 AT SOUTHERN GROVE  
 PORT ST. LUCIE COUNTY, FL

**GRADING PLAN**

CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
 814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
 PHONE: (854) 972-3959 FAX: (854) 972-4178  
 CPC AUTH. NO. 000029398

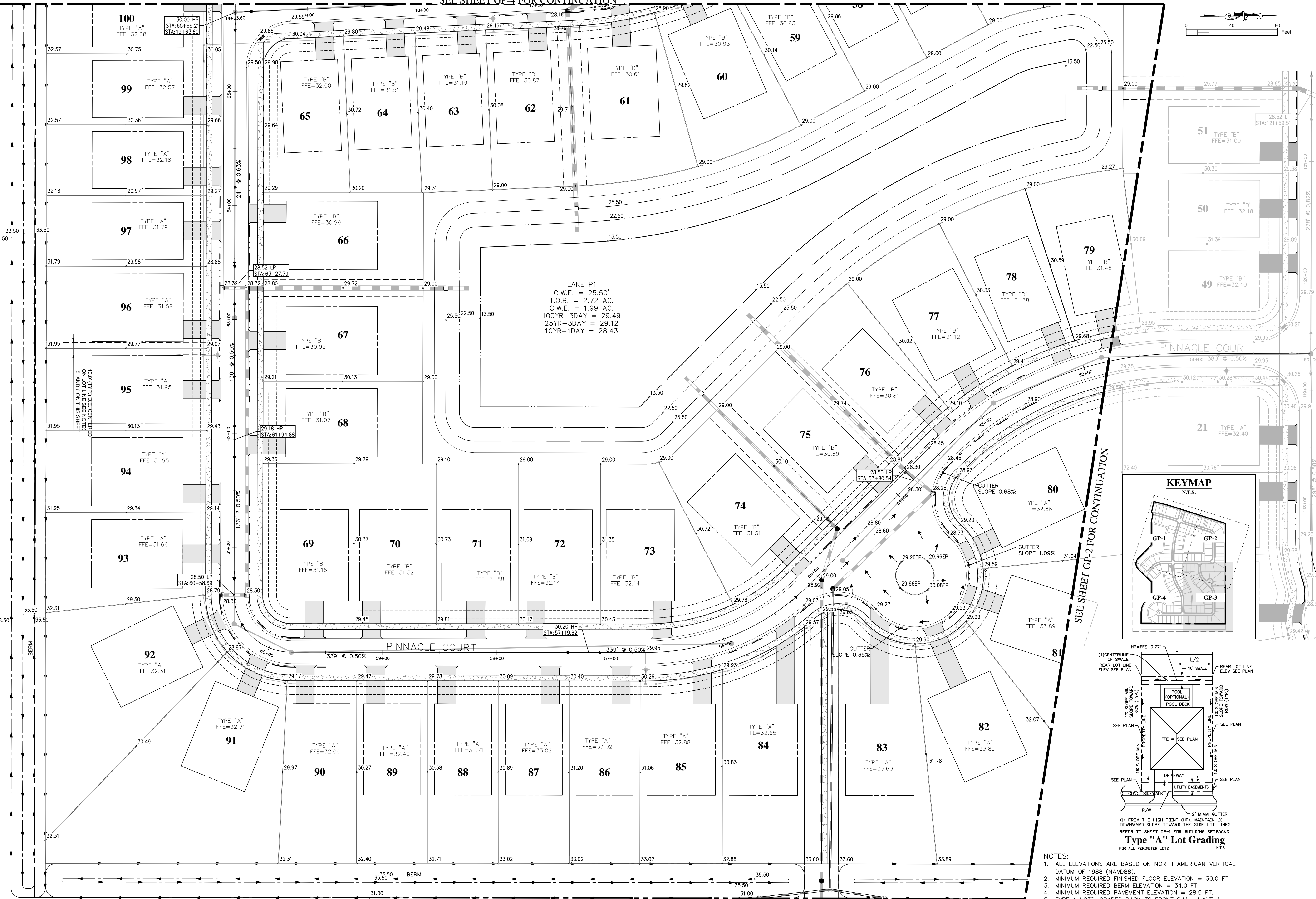
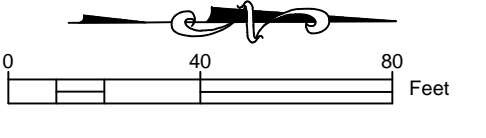
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 DESIGNED BY: R.F.

**GP-2**

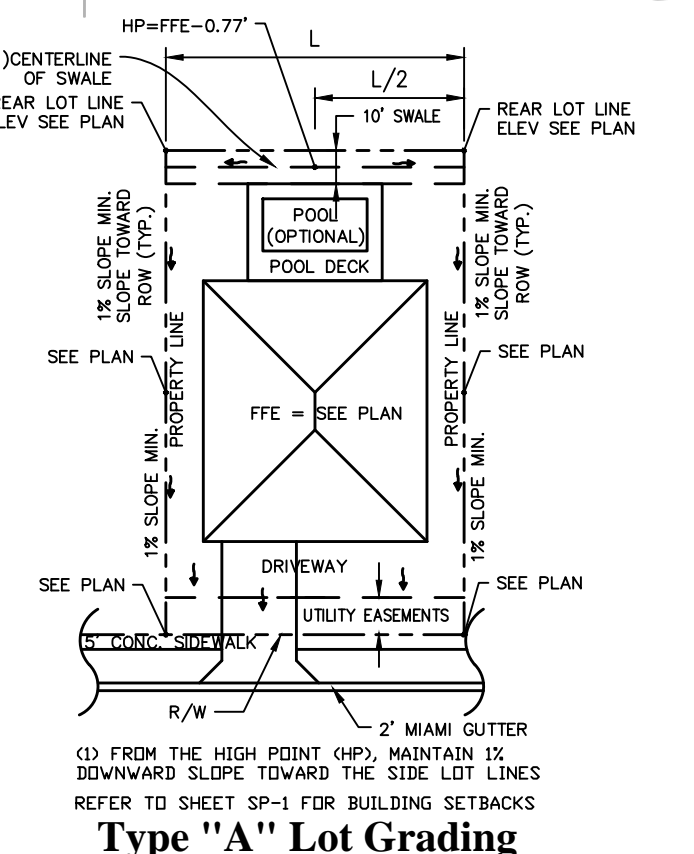
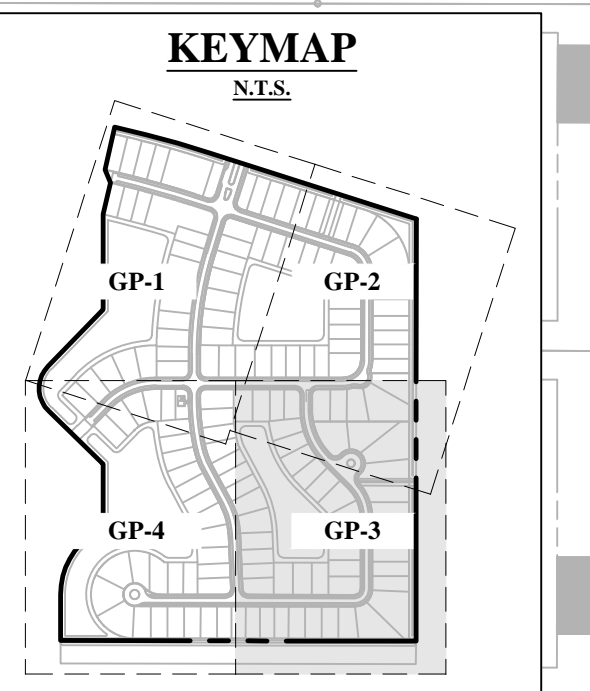
WILLIAM R. BARBARO, P.E.  
 FL. REGISTRATION NO. - 64761

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SEE SHEET GP-4 FOR CONTINUATION



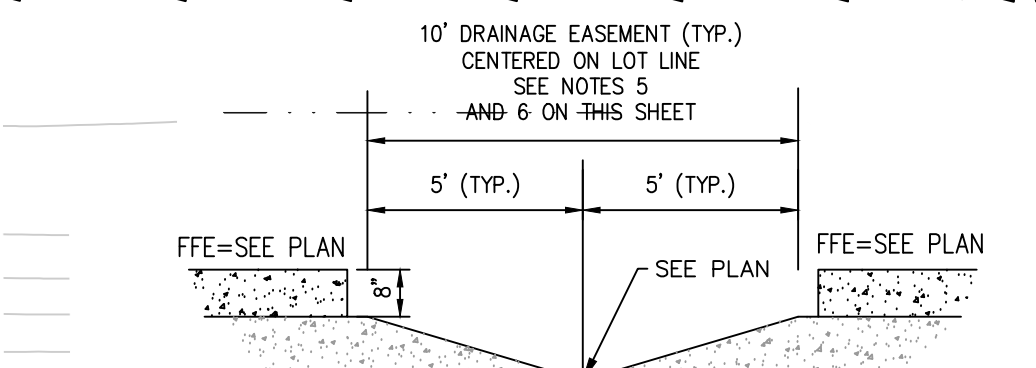
LAKE P1  
 C.W.E. = 25.50'  
 T.O.B. = 2.72 AC.  
 C.W.E. = 1.99 AC.  
 100YR-3DAY = 29.49  
 25YR-3DAY = 29.12  
 10YR-1DAY = 28.43



- NOTES:
- ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD8).
  - MINIMUM REQUIRED FINISHED FLOOR ELEVATION = 30.0 FT.
  - MINIMUM REQUIRED BERM ELEVATION = 34.0 FT.
  - MINIMUM REQUIRED PAVEMENT ELEVATION = 28.5 FT.
  - TYPE A LOTS, GRADED BACK TO FRONT SHALL HAVE A DRAINAGE EASEMENT (D.E.) DEDICATED TO THE PUBLIC FOR ALL LOTS HAVING A COMMON LOT LINE. REFER TO TYPICAL SECTION ON THIS SHEET AND LOTS 1 AND 2 FOR PLAN VIEW.
  - ALL AIR CONDITIONER PADS CONSTRUCTED WITH DRAINAGE EASEMENT SHALL BE STAGGERED A MINIMUM OF 10 FEET ON CENTER.

**Legend**

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- MATCHLINE
- EXISTING ELEVATION (NAVD)
- PROPOSED ELEVATION (NAVD)
- FLOW ARROW



- NOTES:
- REFER TO SHEET SP-1 FOR MINIMUM BUILDING SETBACKS

BELTERRA PHASE 1 AT SOUTHERN GROVE  
 PORT ST. LUCIE COUNTY, FL

GRADING PLAN

**CPC**  
 CARNAHAN PROCTOR & CROSS  
 CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
 814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
 PHONE: (854) 972-3859 FAX: (854) 972-4178  
 CPC AUTH. NO. 000029398

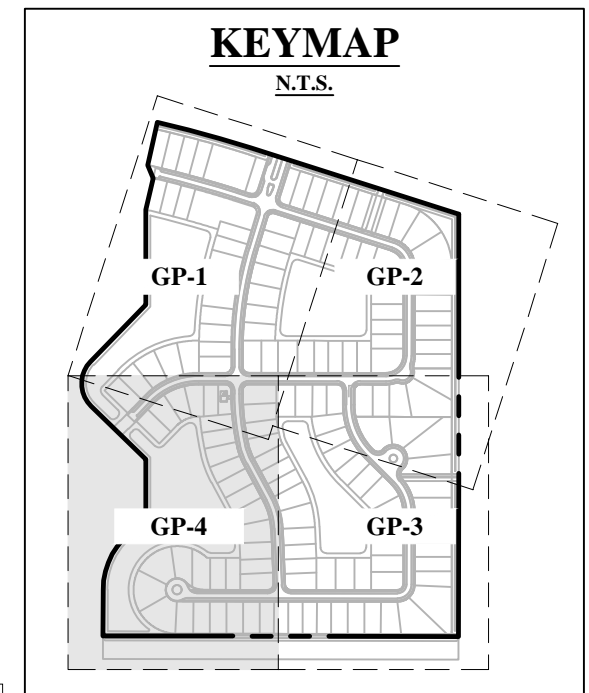
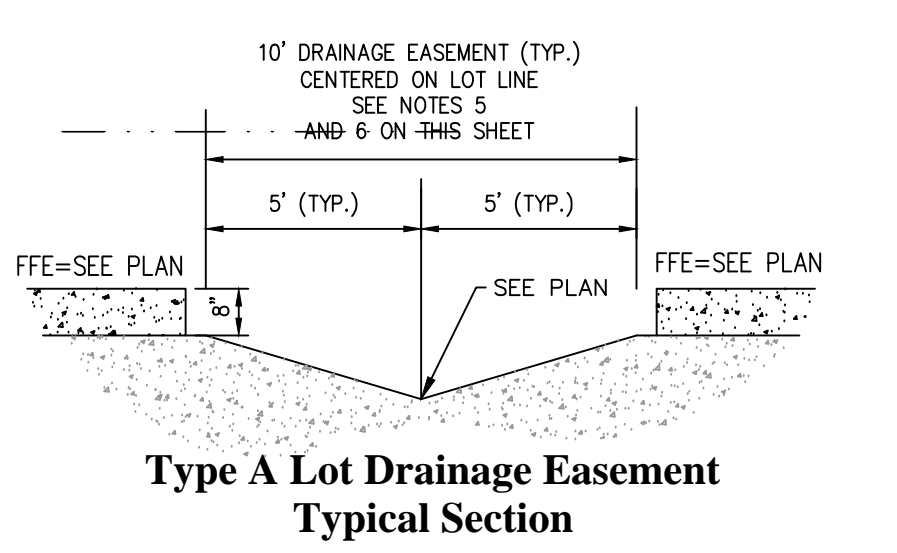
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DRAWN BY:	R.P.
CHECKED BY:	W.R.B.
DESIGNED BY:	R.F.

**GP-3**

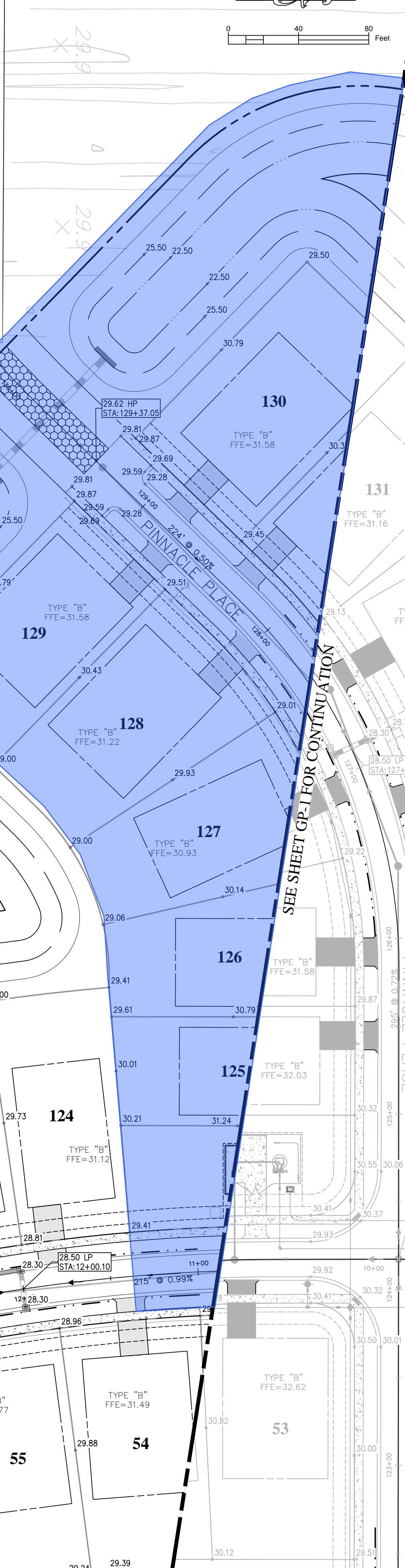
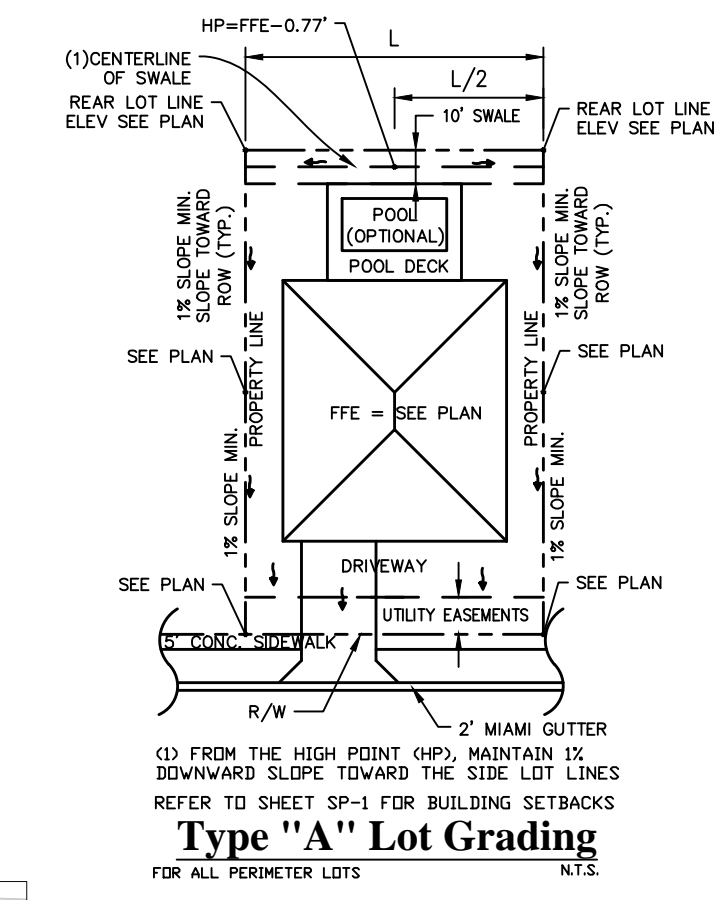
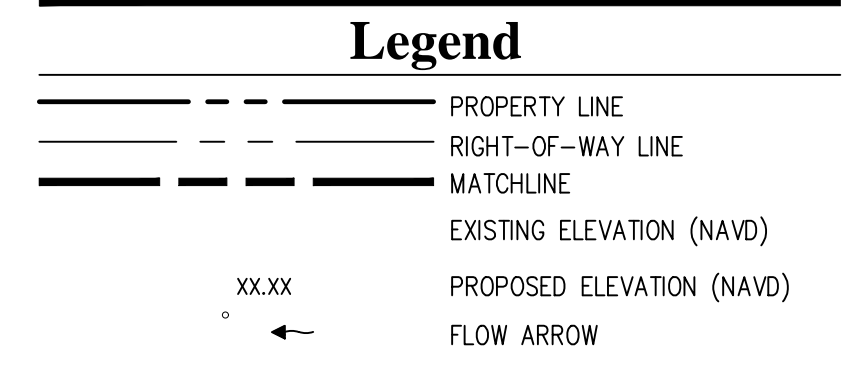
WILLIAM R. BARBARO, P.E.  
 FL. REGISTRATION NO. - 64761

NO.	DATE	BY	APPROV.	REVISIONS

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- NOTES:
1. ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
  2. MINIMUM REQUIRED FINISHED FLOOR ELEVATION = 30.0 FT.
  3. MINIMUM REQUIRED BERM ELEVATION = 34.0 FT.
  4. MINIMUM REQUIRED PAVEMENT ELEVATION = 28.5 FT.
  5. TYPE A LOTS, GRADED BACK TO FRONT SHALL HAVE A DRAINAGE EASEMENT (D.E.) DEDICATED TO THE PUBLIC FOR ALL LOTS HAVING A COMMON LOT LINE. REFER TO TYPICAL SECTION ON THIS SHEET AND LOTS 1 AND 2 FOR PLAN VIEW.
  6. ALL AIR CONDITIONER PADS CONSTRUCTED WITH DRAINAGE EASEMENT SHALL BE STAGGERED A MINIMUM OF 10 FEET ON CENTER.



Legend:

■ Limits of Phase 1 Plat 2

LAKE P4A  
 C.W.E. = 25.50'  
 T.O.B. = 5.89 AC.  
 C.W.E. = 4.36 AC.  
 100YR-3DAY = 29.49  
 25YR-3DAY = 29.17  
 10YR-1DAY = 28.45

10% FROM CENTERED ON LOT LINE SEE NOTES 5 AND 6 ON THIS SHEET

SEE SHEET GP-3 FOR CONTINUATION

NO	DATE	BY	APPROV	REVISIONS

BELTERRA PHASE 1 AT SOUTHERN GROVE  
 PORT ST. LUCIE COUNTY, FL

GRADING PLAN

CARNAHAN PROCTOR & CROSS  
 CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
 814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
 PHONE: (854) 972-3859 FAX: (854) 972-4178  
 CFC AUTH. NO. 000029398

SCALE: AS SHOWN  
 DATE: 12/08/21  
 DRAWN BY: R.P.  
 CHECKED BY: W.R.B.  
 DESIGNED BY: R.F.

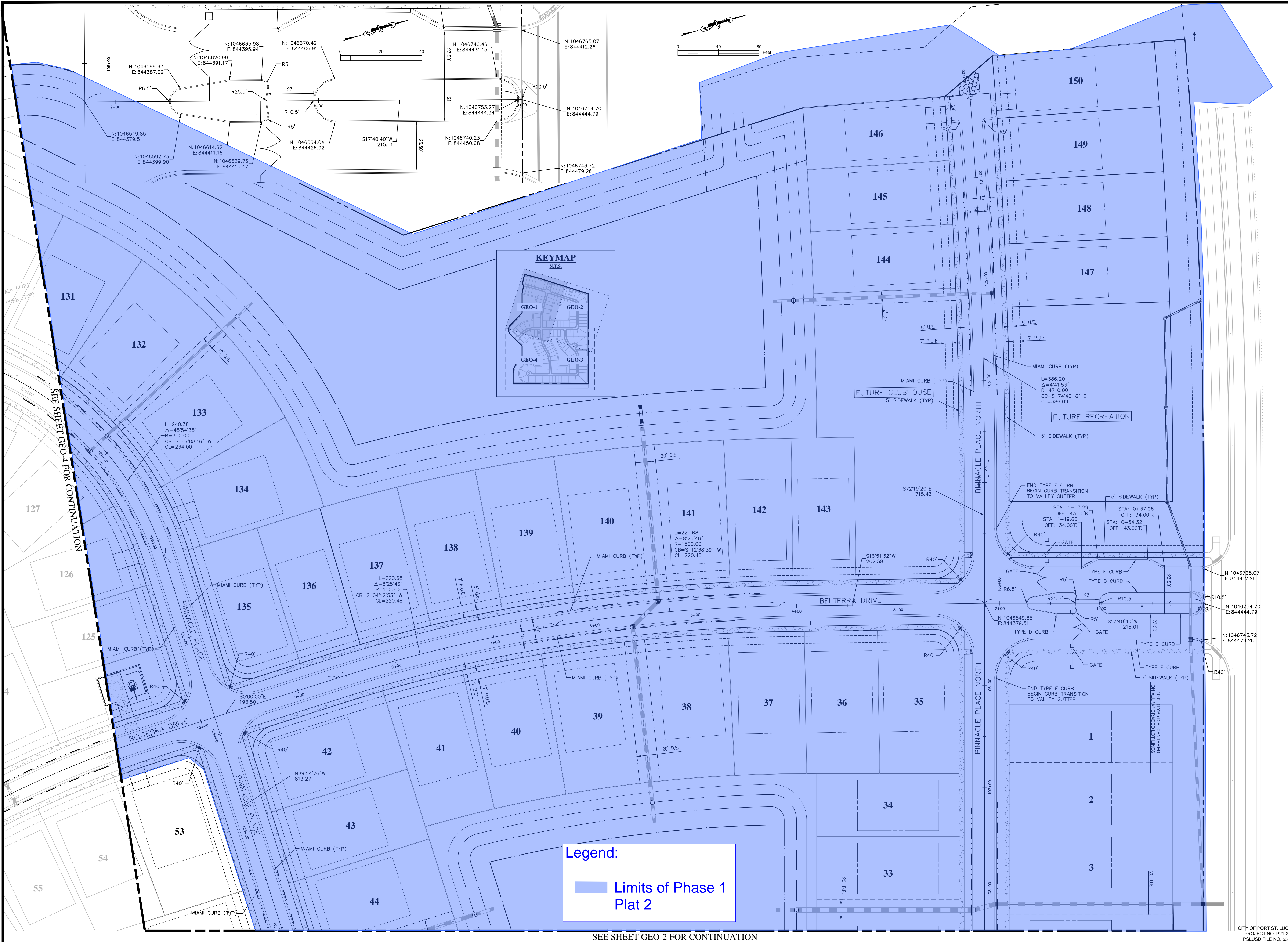
GP-4

WILLIAM R. BARBARO, P.E.  
 FL. REGISTRATION NO. - 64761

CITY OF PORT ST. LUCIE  
 PROJECT NO. P21-271  
 PLSUD FILE NO. 5336



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Legend:  
Limits of Phase 1 Plat 2

SEE SHEET GEO-2 FOR CONTINUATION

SEE SHEET GEO-4 FOR CONTINUATION

NO	DATE	BY	APRV	REVISIONS

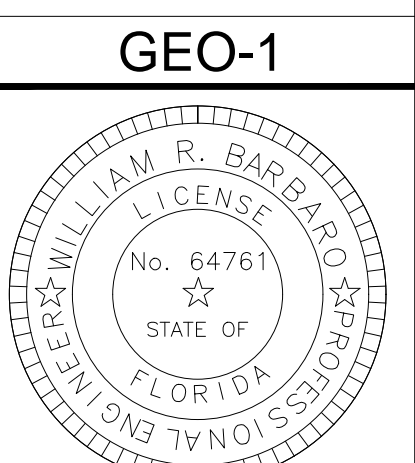
BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL

GEOMETRY PLAN



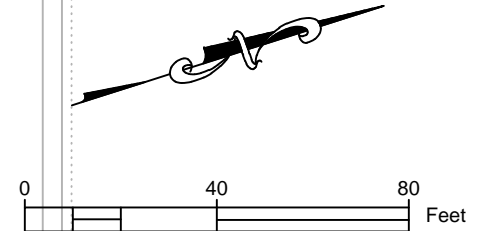
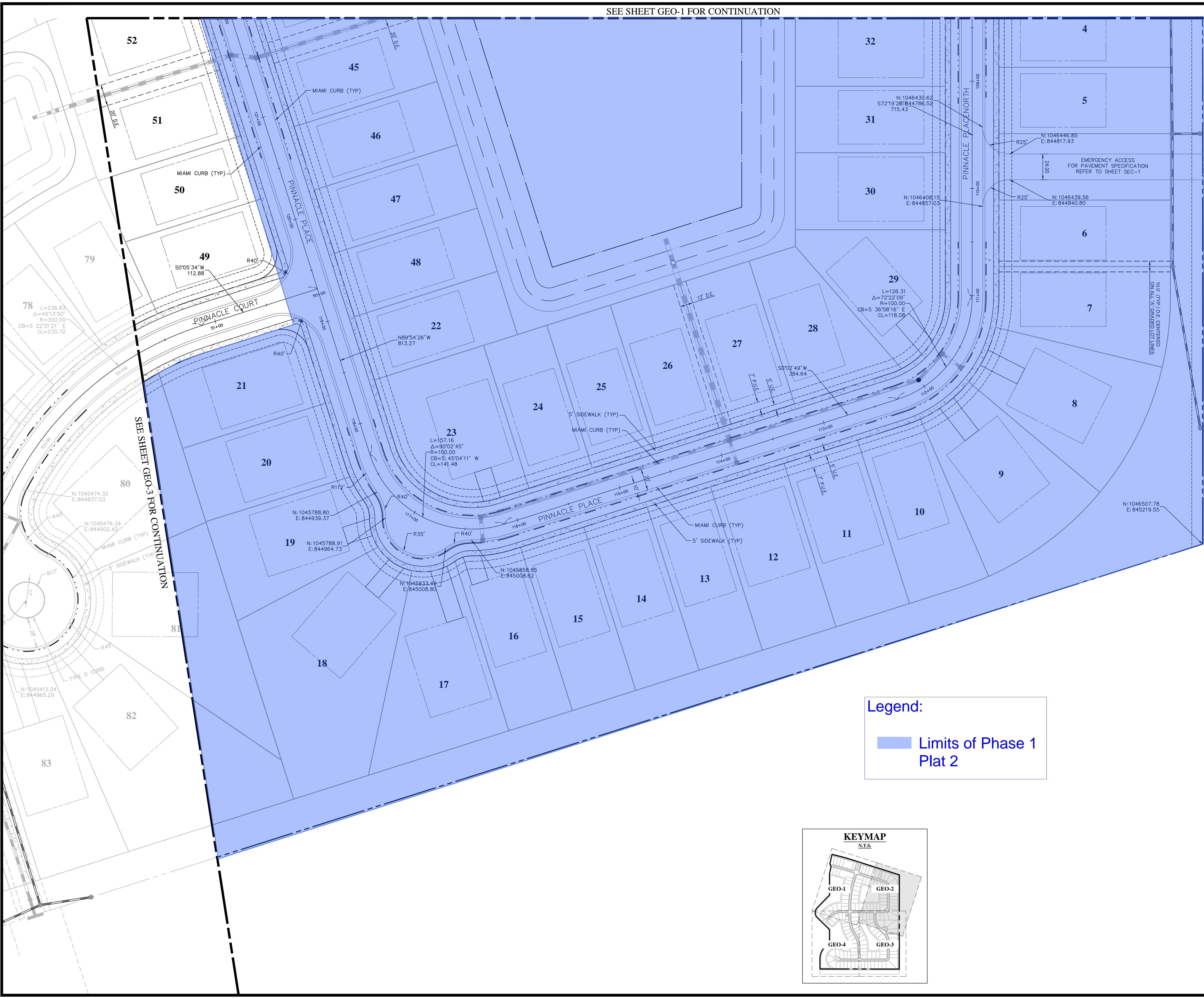
CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
PHONE: (854) 972-3559 FAX: (854) 972-4178  
CPC AUTH. NO. 00002836

SCALE: AS SHOWN  
DATE: 12/08/21  
DRAWN BY: R.P.  
CHECKED BY: W.R.B.  
DESIGNED BY: R.F.



CITY OF PORT ST. LUCIE  
PROJECT NO. P21-271  
P&L USD FILE NO. 5335  
WILLIAM R. BARBARO, P.E.  
FL. REGISTRATION NO. - 64761

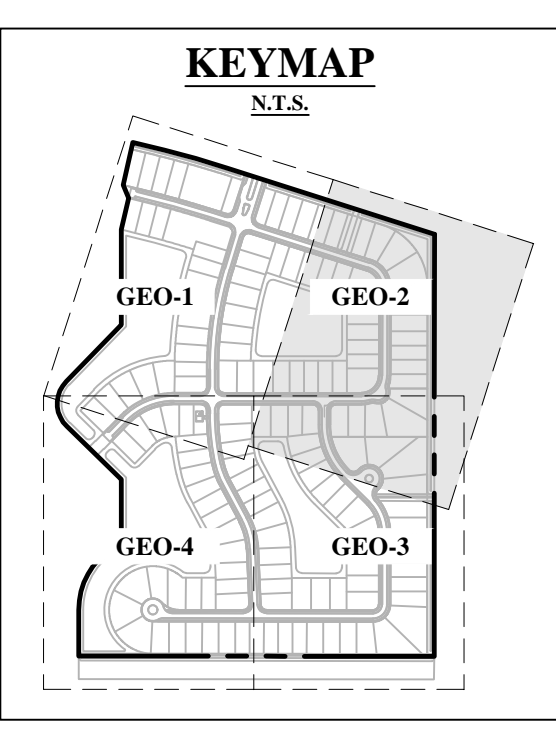
SEE SHEET GEO-1 FOR CONTINUATION



SEE SHEET GEO-3 FOR CONTINUATION

**Legend:**

Limits of Phase 1 Plat 2



NO	DATE	BY	APRV	REVISIONS

**BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL**

**GEOMETRY PLAN**

SCALE:	AS SHOWN
DATE:	12/08/21
DRAWN BY:	R.P.
CHECKED BY:	W.R.B
DESIGNED BY:	R.F.

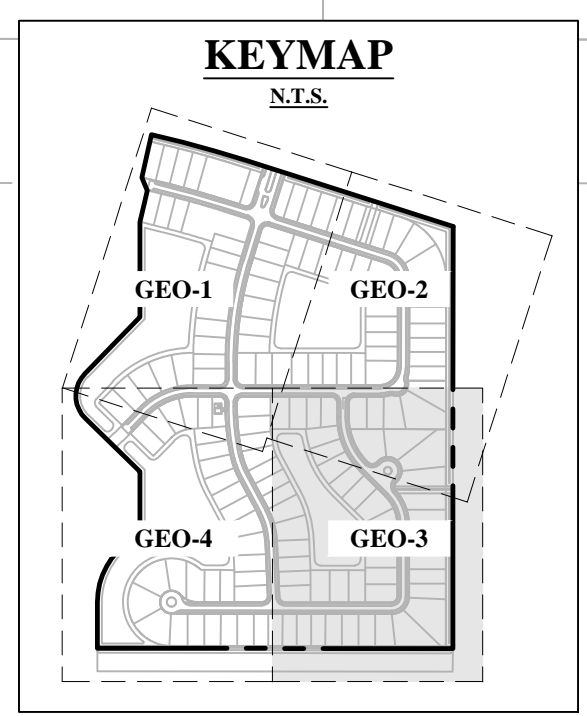
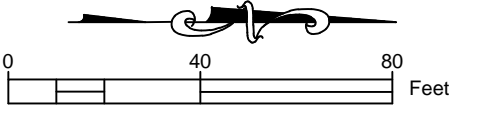
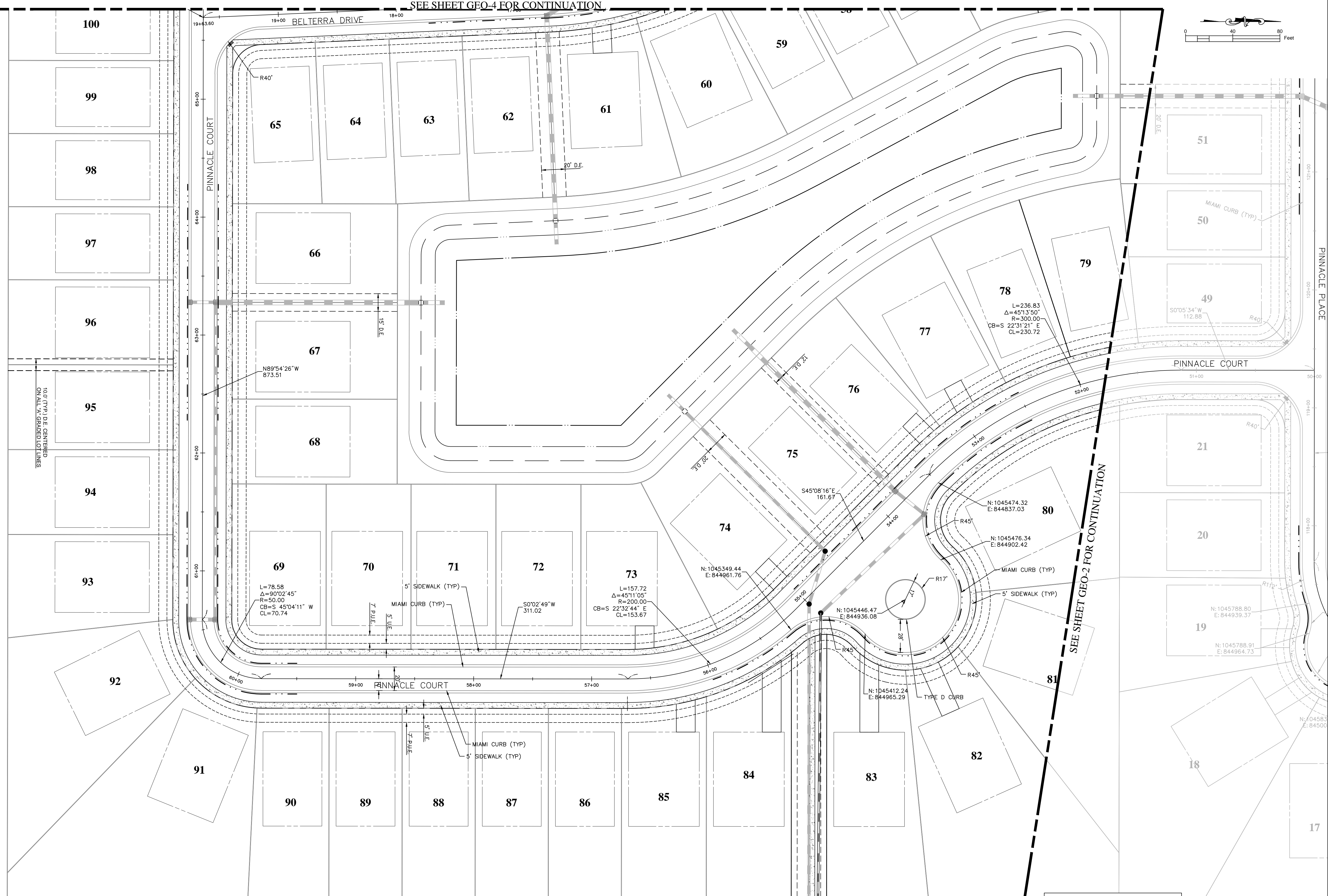
**GEO-2**

WILLIAM R. BARBARO, P.E.  
FL. REGISTRATION NO. - 64761

2/09/21 p:\projects\_2019\deerfield\_shore\southern\_grove\cod\planset\190214-GEO.dwg

2/09/21 P:\Projects\_2019\Deerfield Shore\Southern Grove\cod\plan\190214-GEO.dwg

SEE SHEET GEO-4 FOR CONTINUATION



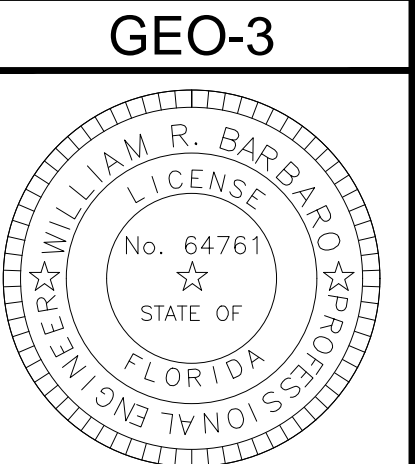
NO	DATE	BY	APRV	REVISIONS

BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL

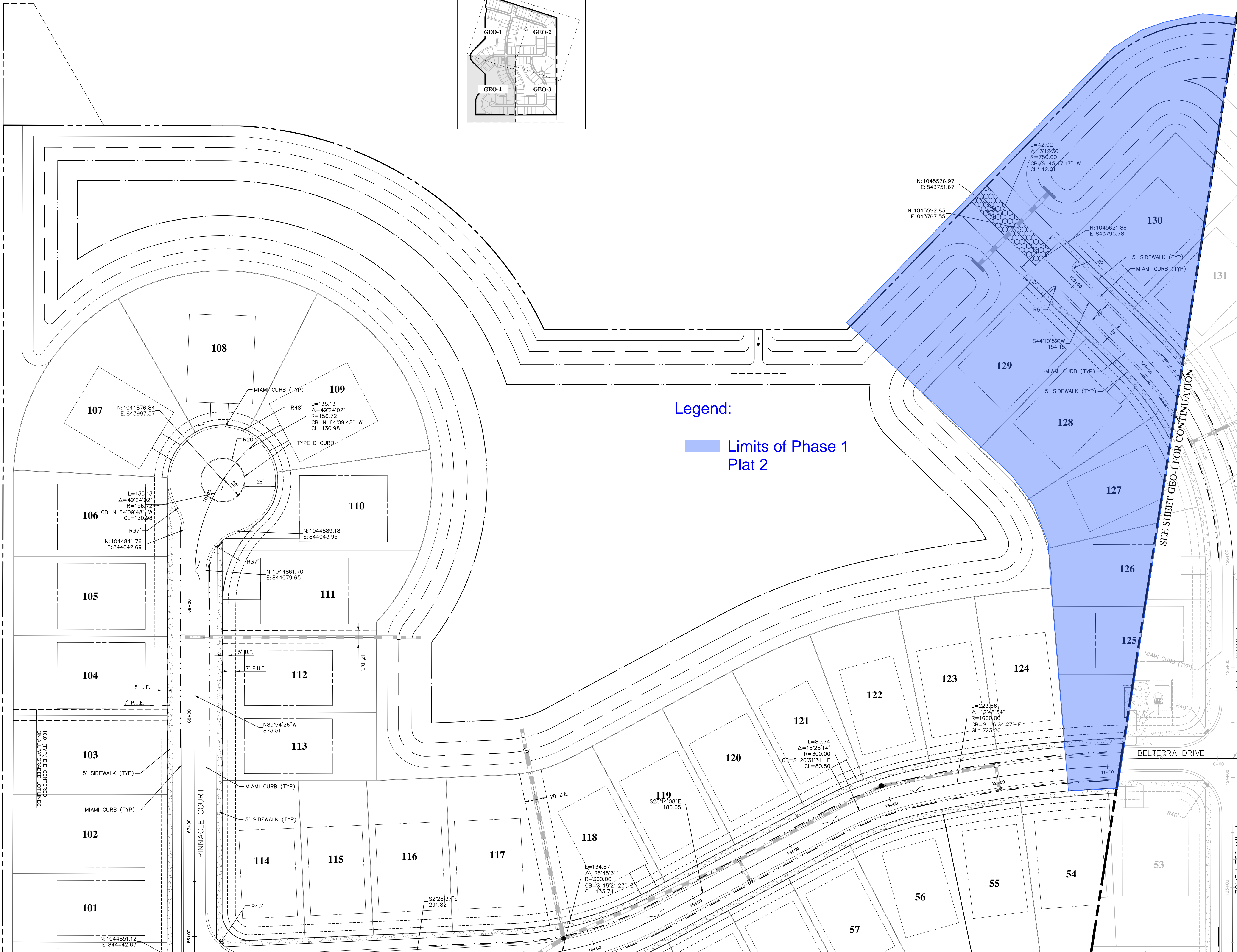
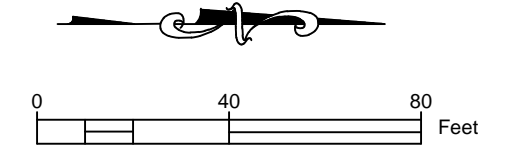
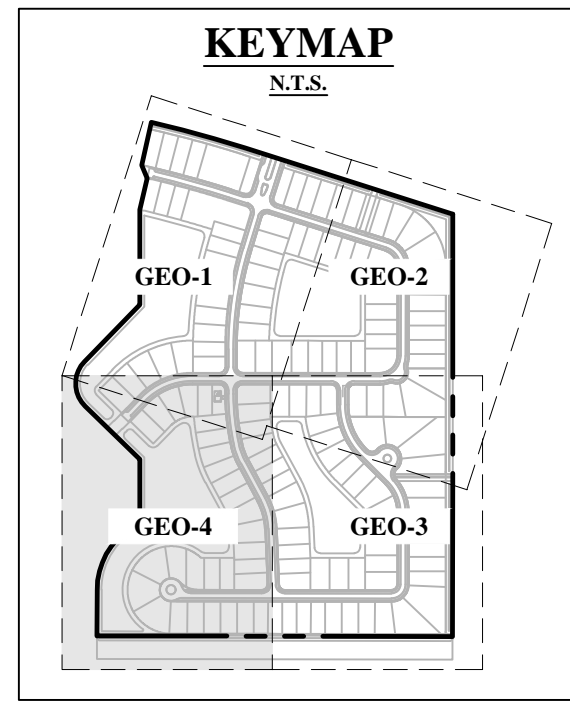
GEOMETRY PLAN



SCALE: AS SHOWN  
DATE: 12/08/21  
DRAWN BY: R.P.  
CHECKED BY: W.R.B.  
DESIGNED BY: R.F.



2/09/21 P:\Projects\_2019\Deerfield Shore\cod\ld\Pionset\190214--GEO.dwg



Legend:  
■ Limits of Phase 1 Plat 2

SEE SHEET GEO-1 FOR CONTINUATION

SEE SHEET GEO-3 FOR CONTINUATION

NO	DATE	BY	APRV	REVISIONS

BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL

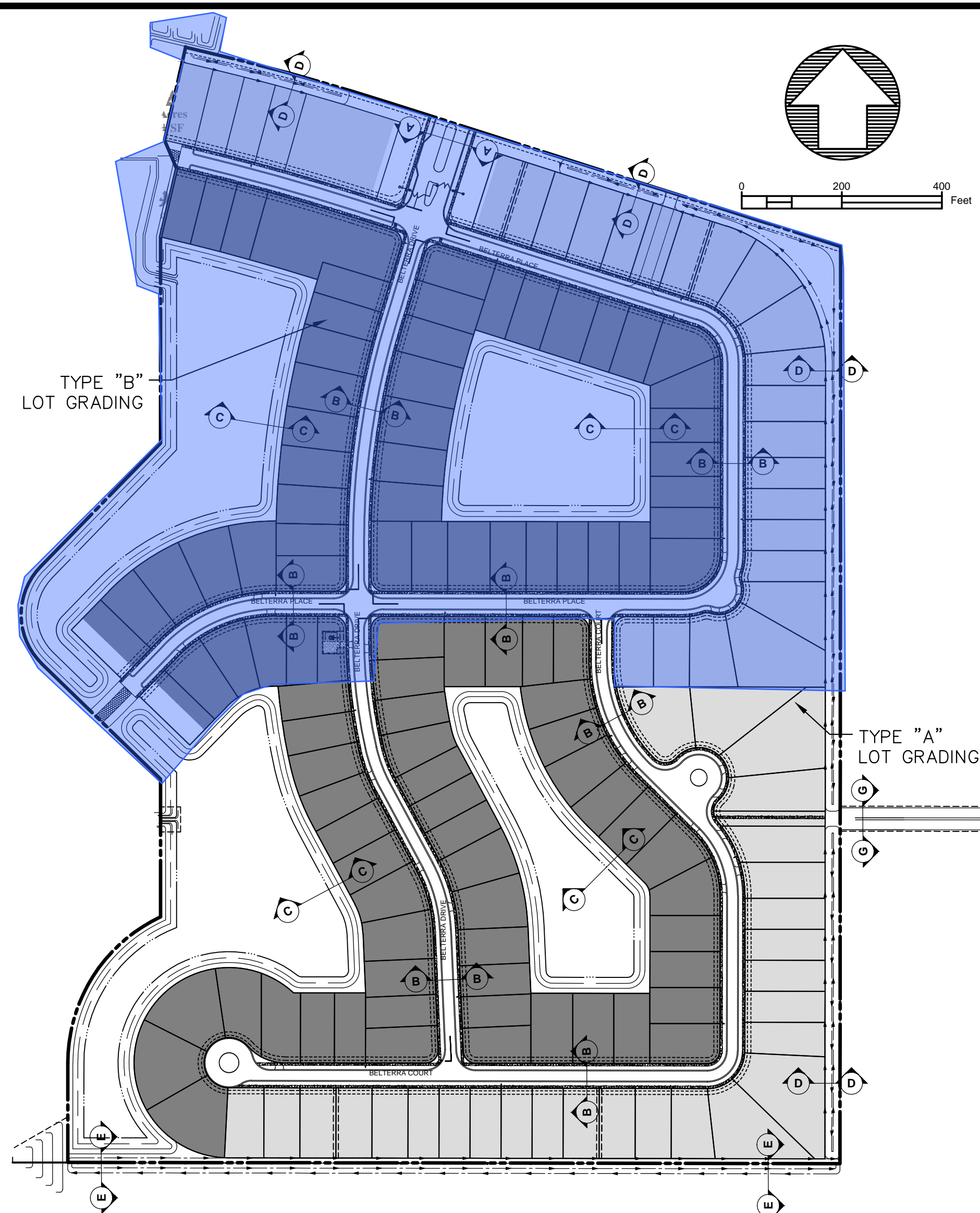
**GEOMETRY PLAN**

CARNAHAN PROCTOR & CROSS  
CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
PHONE: (854) 972-3859 FAX: (854) 972-4178  
CPC AUTH. NO. 00002936

SCALE: AS SHOWN  
DATE: 12/08/21  
DRAWN BY: R.P.  
CHECKED BY: W.R.B.  
DESIGNED BY: R.F.

**GEO-4**

WILLIAM R. BARBARO, P.E.  
FL. REGISTRATION NO. - 64761



**Legend:**

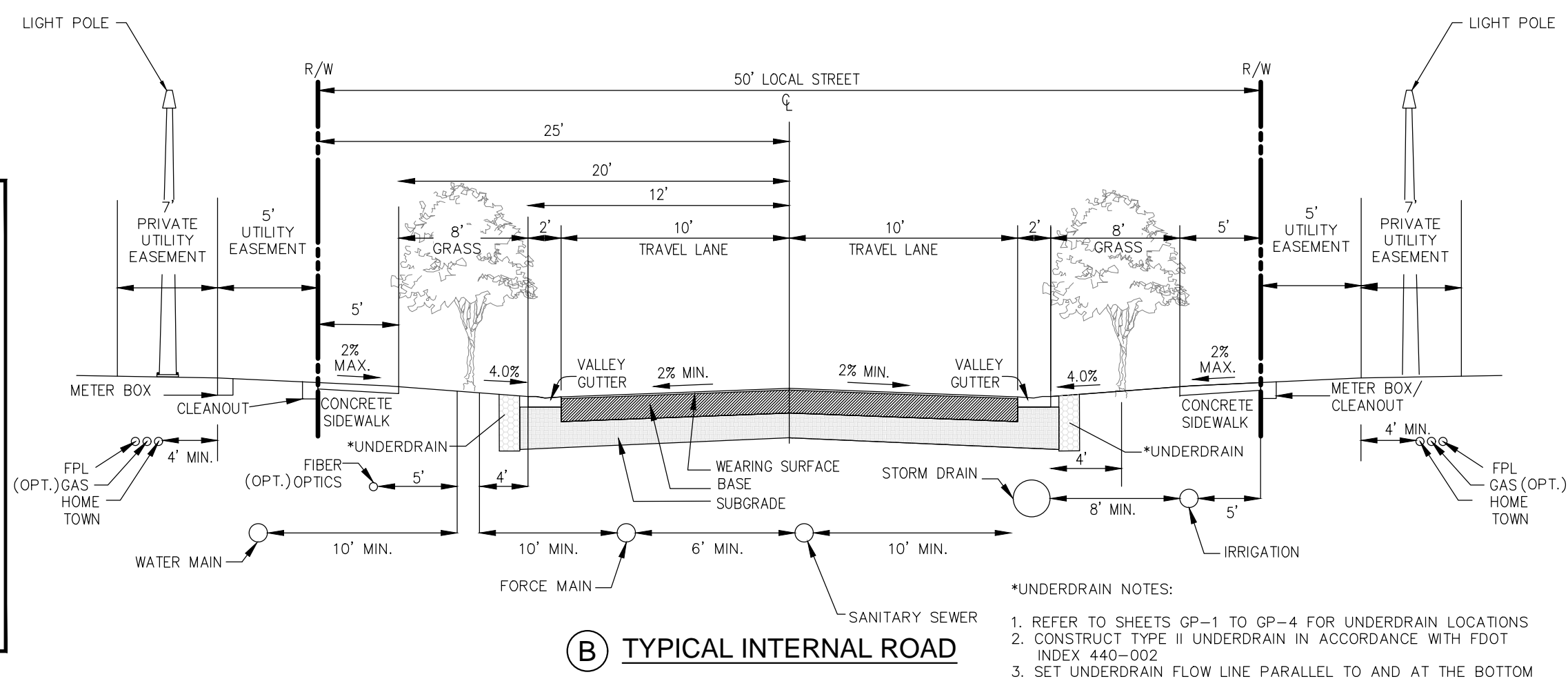
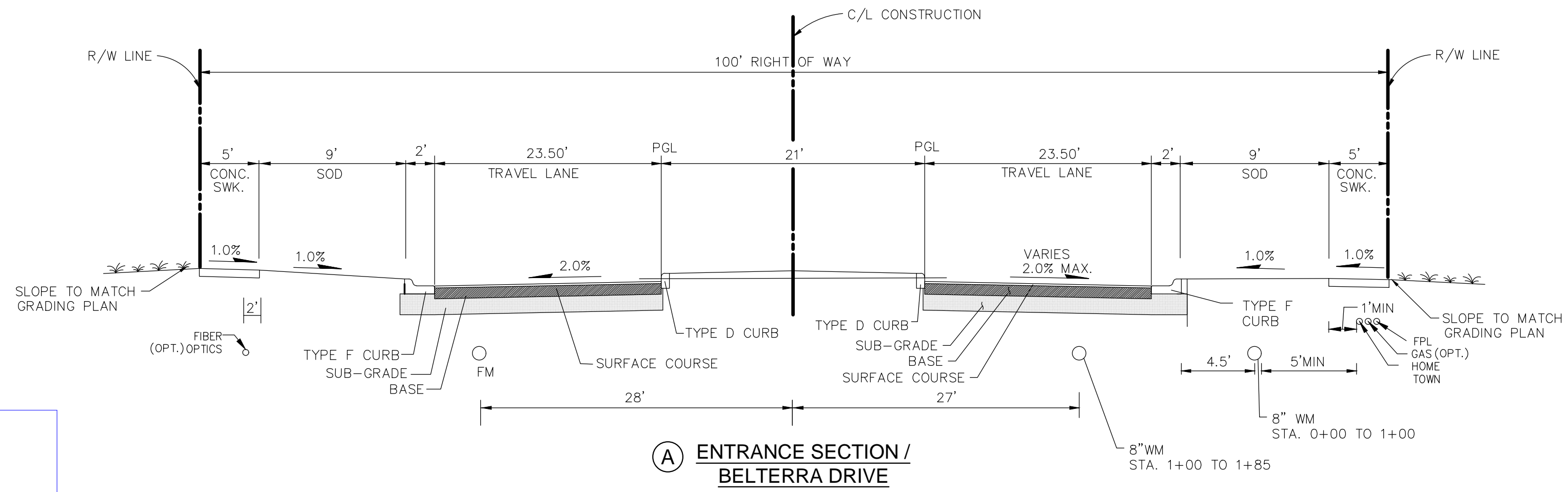
■ Limits of Phase 1 Plat 2

**PAVEMENT STRUCTURE – INTERNAL ROADS/ PARKING LOT**  
 SURFACE COURSE: 2 INCHES OF FDOT TYPE SP 9.5 ASPHALTIC CONCRETE MIX (FDOT SPEC. SECTION 334)  
 BASE: 8" LIMEROCK BASE MIN. LBR 100, 98% MAX. DENSITY PER AASHTO T-180.  
 SUB-GRADE: 12" STABILIZED SUBGRADE COMPACTED TO MIN 98% OF THE SOILS MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T-180) VALUE. SUBGRADE SHALL HAVE AN LBR GREATER OR EQUAL TO 40.

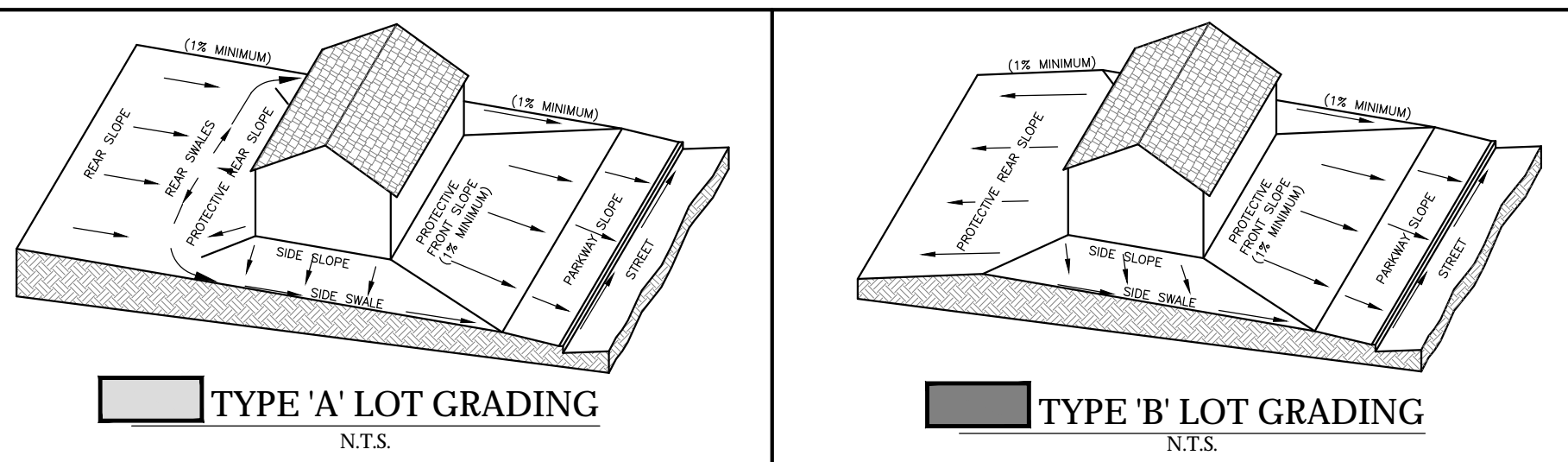
1 – SURFACE COURSE	2"	0.44/in.	0.88
2 – BASE	8"	0.18/in.	1.44
3 – SUB-GRADE	12"	0.08/in.	0.96

STRUCTURE NUMBER = 3.28

**NOTES:**  
 1. ALL SWALES & NON PAVED AREAS TO BE SODDED UNLESS OTHERWISE NOTED.

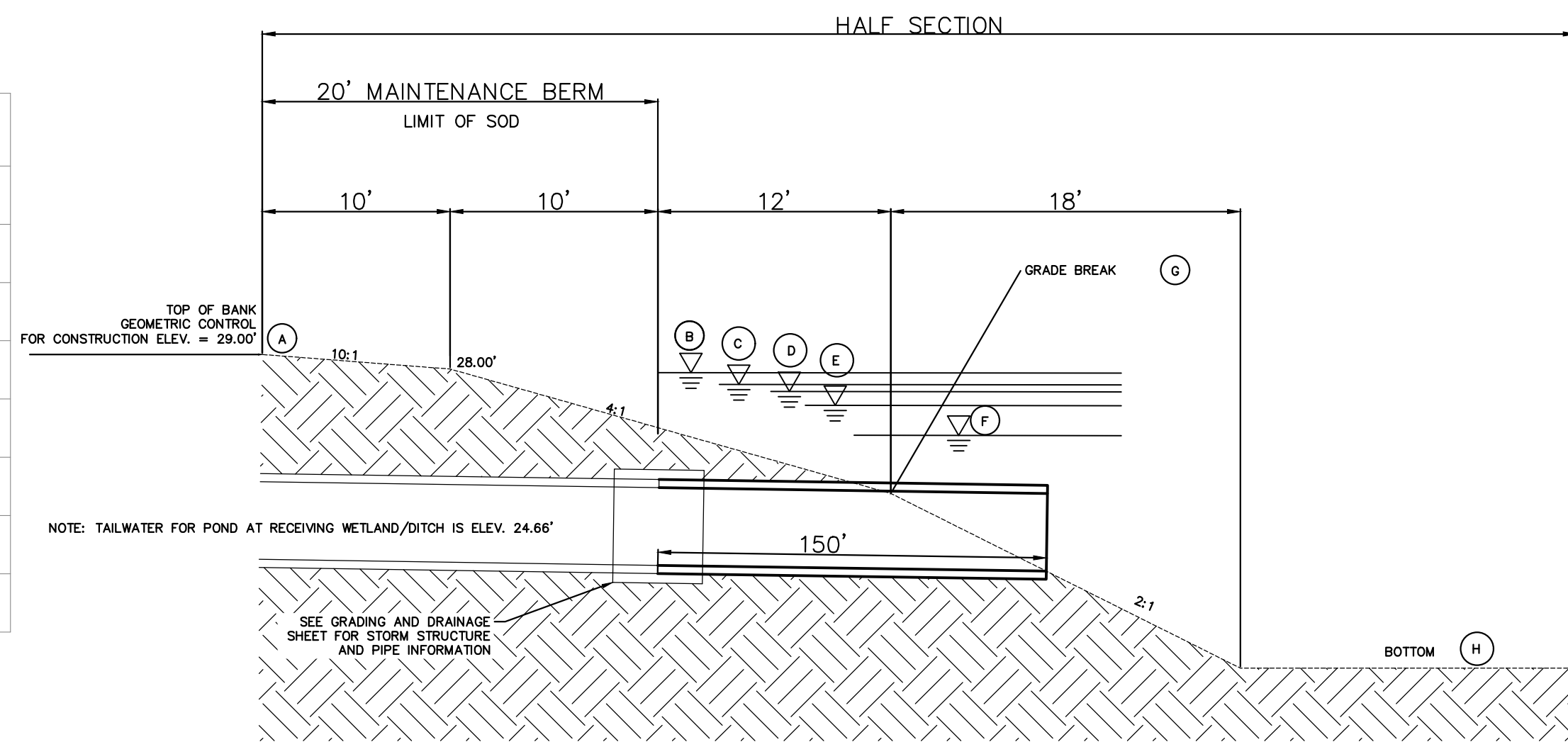


**\*UNDERDRAIN NOTES:**  
 1. REFER TO SHEETS GP-1 TO GP-4 FOR UNDERDRAIN LOCATIONS  
 2. CONSTRUCT TYPE II UNDERDRAIN IN ACCORDANCE WITH FDOT INDEX 440-302  
 3. SET UNDERDRAIN FLOW LINE PARALLEL TO AND AT THE BOTTOM OF THE SUBGRADE ELEVATION

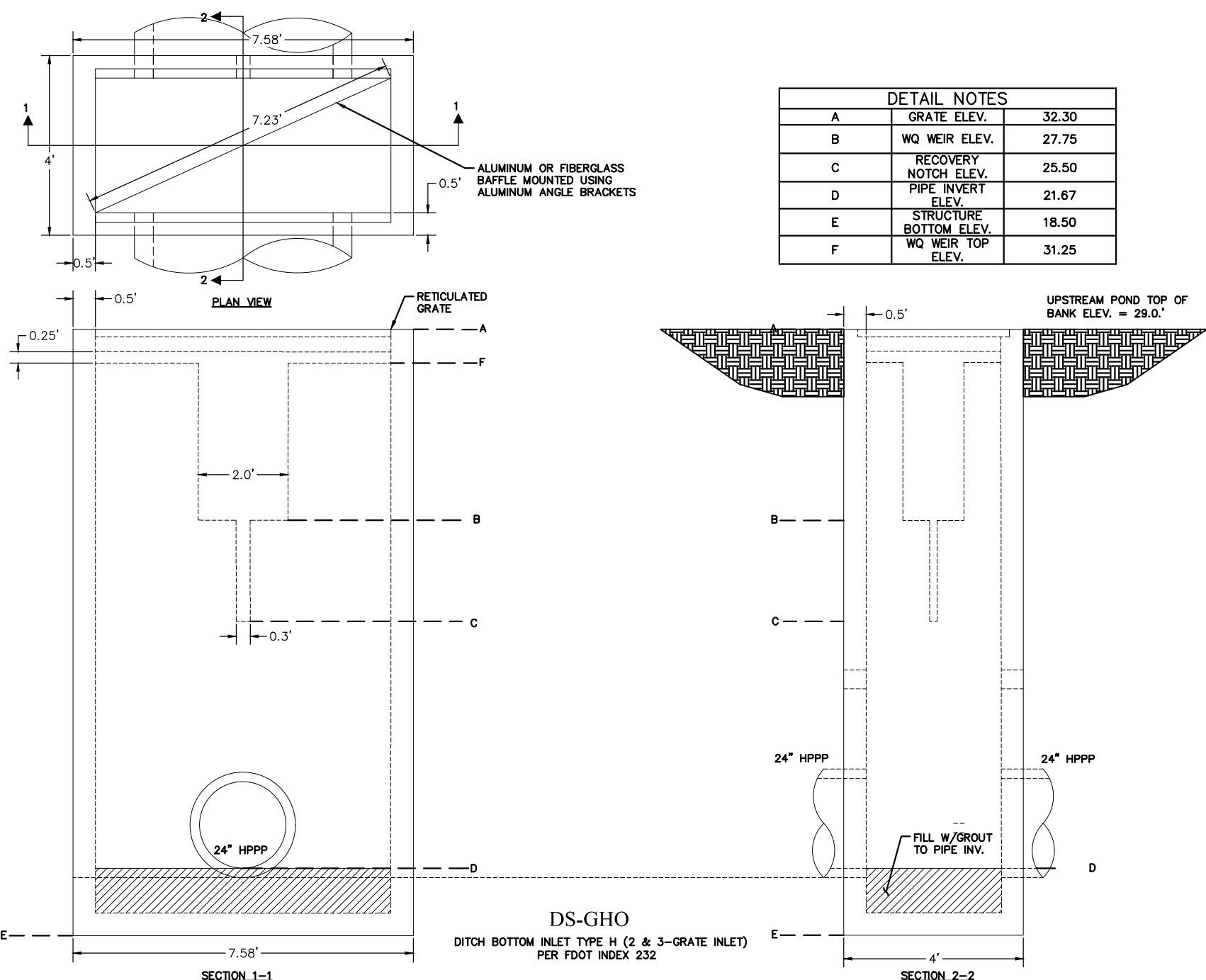


**TYPICAL LOT GRADING**

LOCATION	IDENTIFICATION	ELEVATION
A	TOP OF BANK ELEV.	29.00'
B	100YR-72HR POND PEAK STAGE	29.49'
C	25YR-72HR PEAK STAGE	29.17'
D	10YR-72HR POND PEAK STAGE	28.87'
E	10YR-24HR PEAK STAGE	28.45'
F	NWL ELEVATION	25.50'
G	GRADE BREAK ELEV.	22.50'
H	BOTTOM ELEV.	13.50'

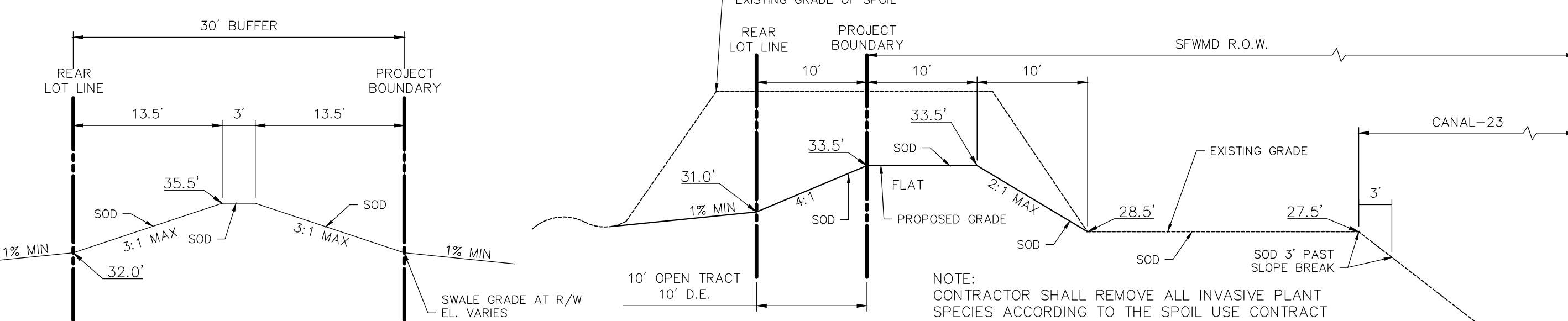


**LAKE SECTION**

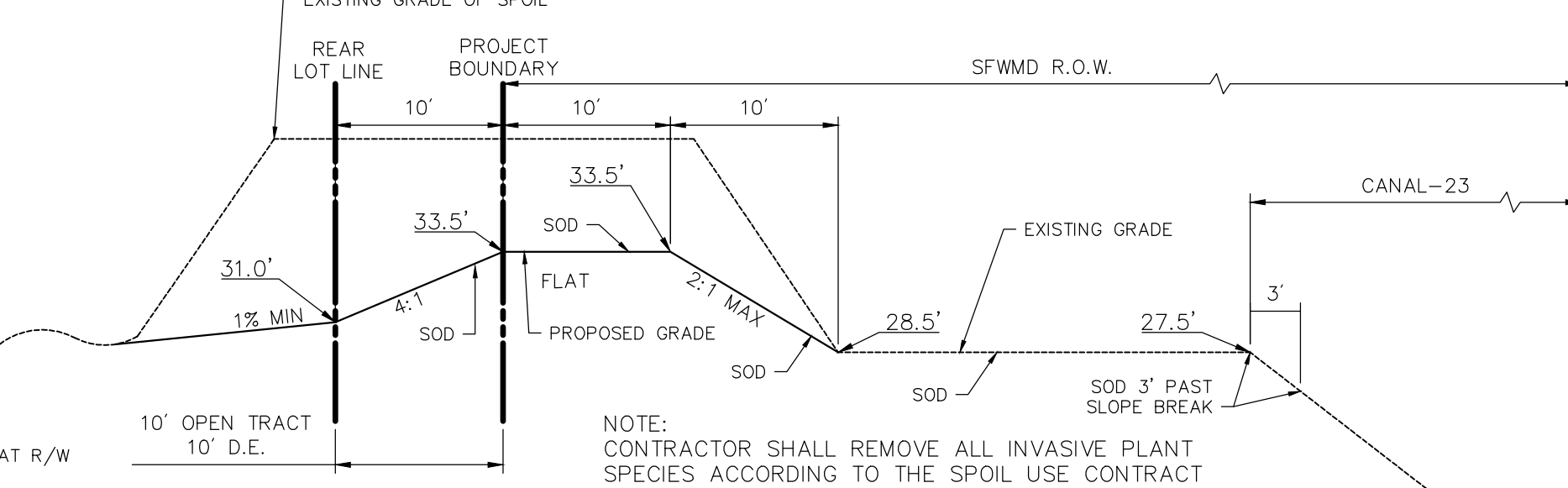


**DETAIL NOTES**

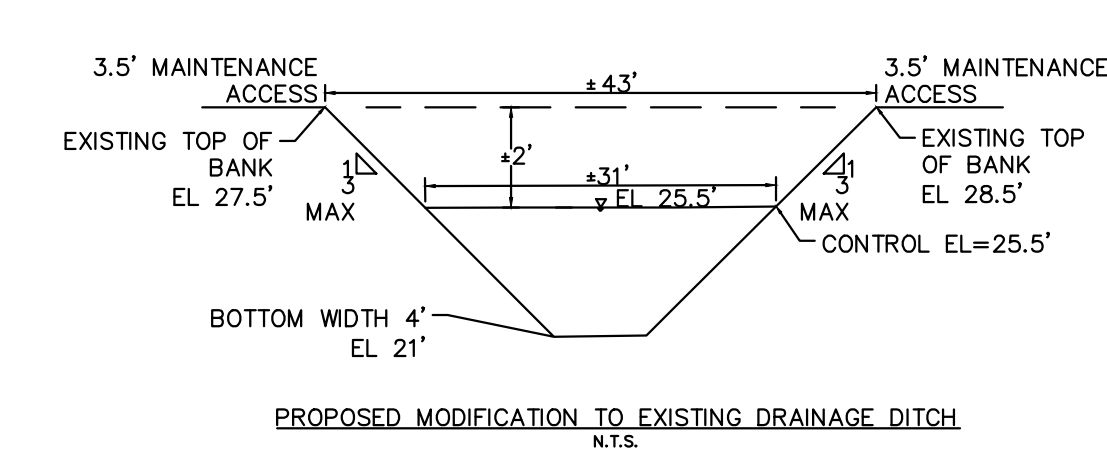
A	GRATE ELEV.	32.30
B	WO WEIR ELEV.	27.75
C	RECOVERY NOTCH ELEV.	25.50
D	PIPE INVERT ELEV.	21.67
E	STRUCTURE BOTTOM ELEV.	18.50
F	WO WEIR TOP ELEV.	31.25



**NORTH/ EAST BERM SECTION**



**SOUTH BERM SECTION**



**NOTE:**  
 1. REMOVE VEGETATION AND SEDIMENT DEPOSITS FROM EXISTING DITCH.  
 2. DITCH BANKS TO BE STABILIZED AND SODDED TO A MIN OF 5' BEYOND THE TOP OF BANK.  
 3. BACKFILL AND STABILIZE ALL AREAS OF EROSION ALONG DITCH BANK.

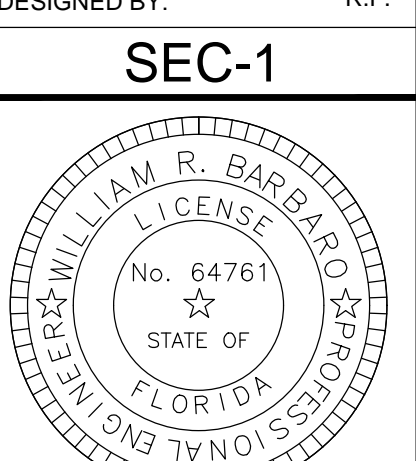
**DRAINAGE DITCH**

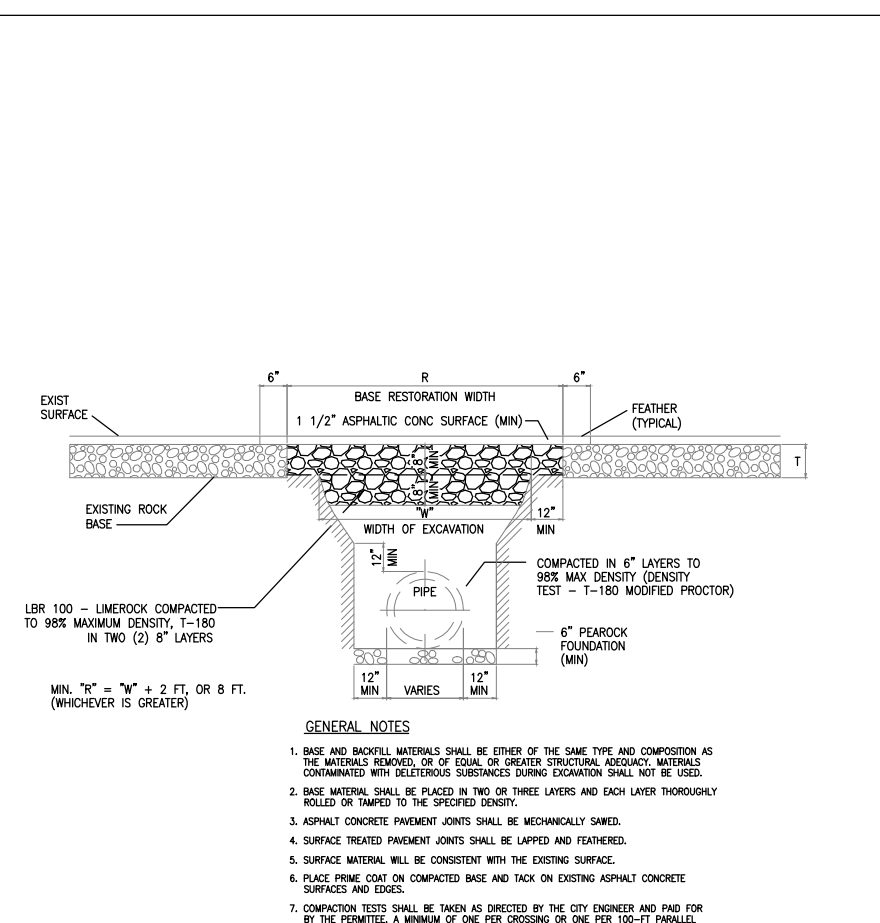
BELTERRA PHASE 1 AT SOUTHERN GROVE  
 PORT ST. LUCIE COUNTY, FL

TYPICAL CROSS SECTIONS

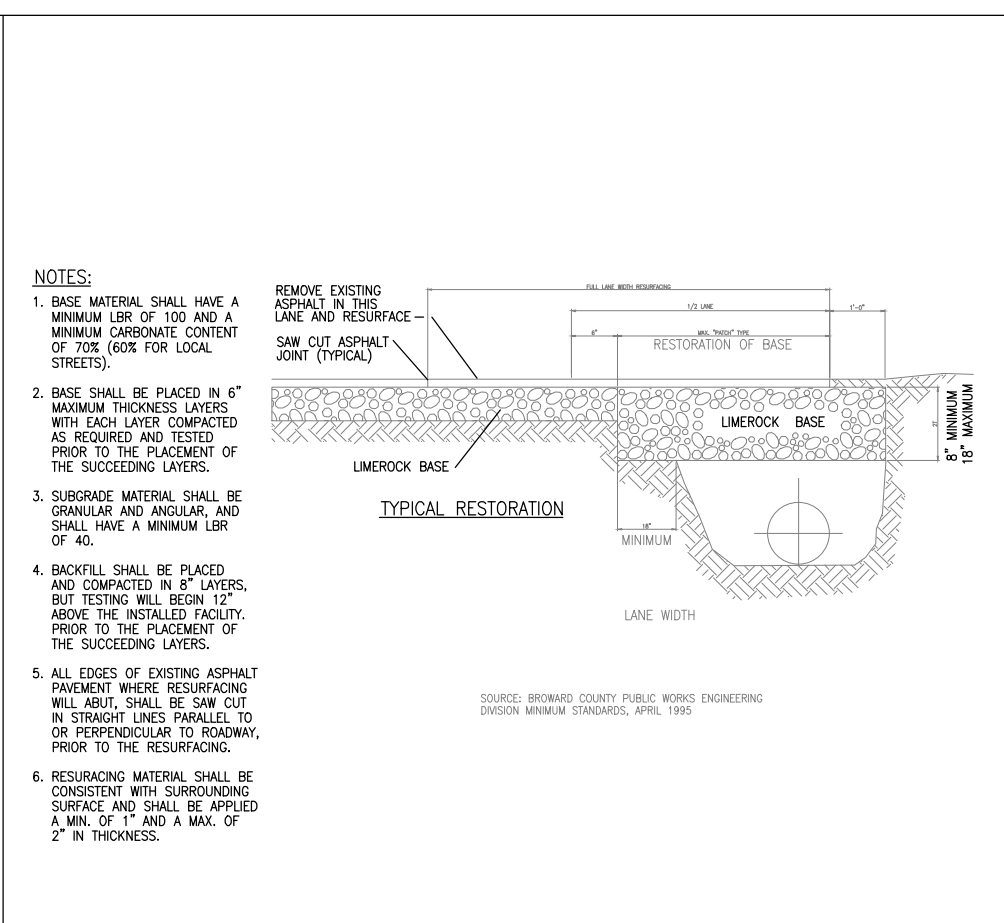


SCALE: N.T.S.  
 DATE: 12/08/21  
 DRAWN BY: R.P.  
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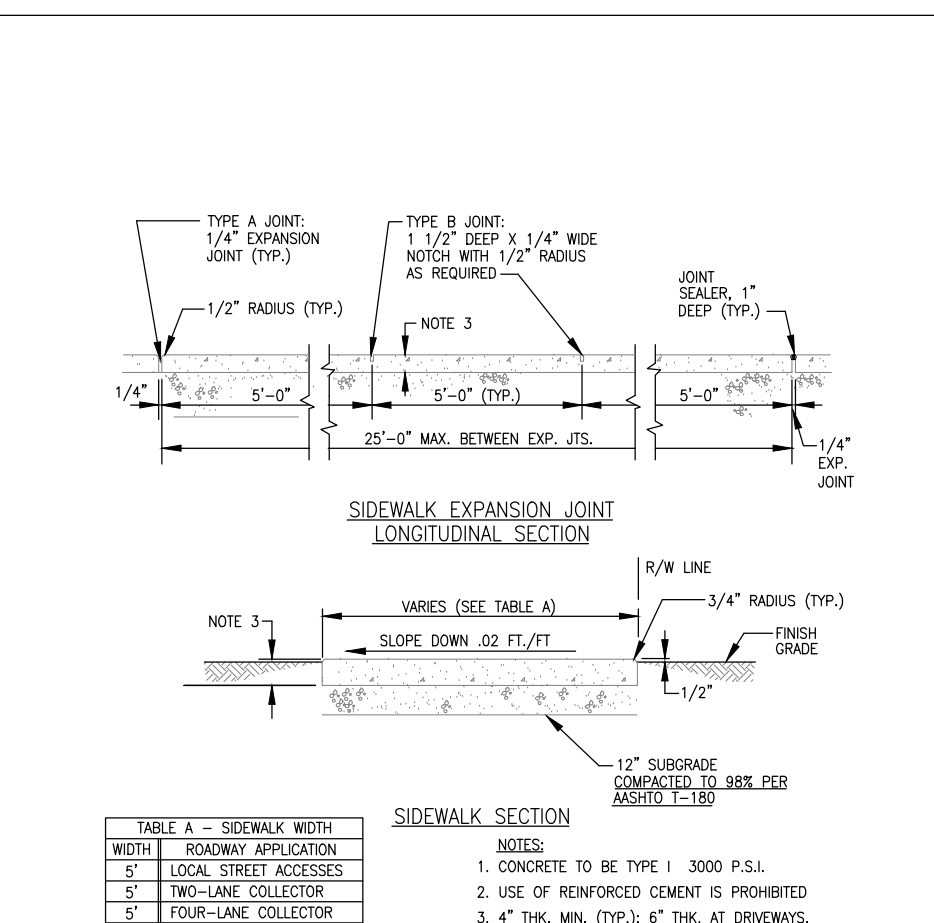




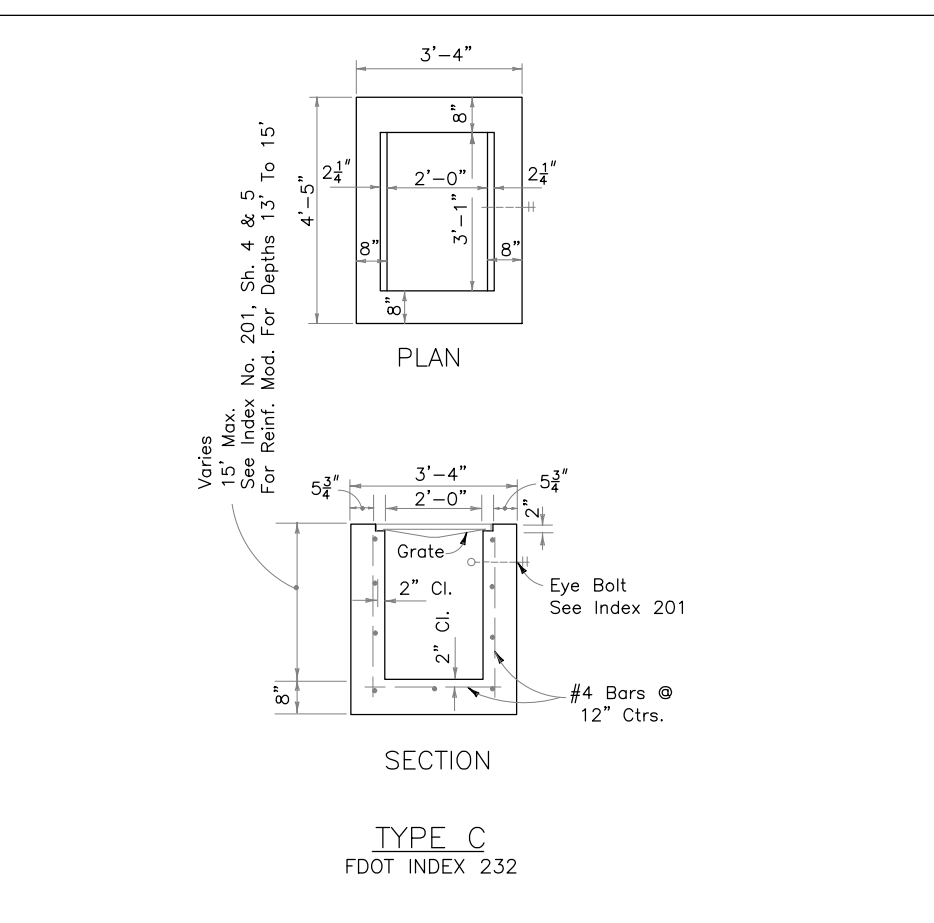
RESTORATION OF FLEXIBLE PAVEMENT - CROSSINGS



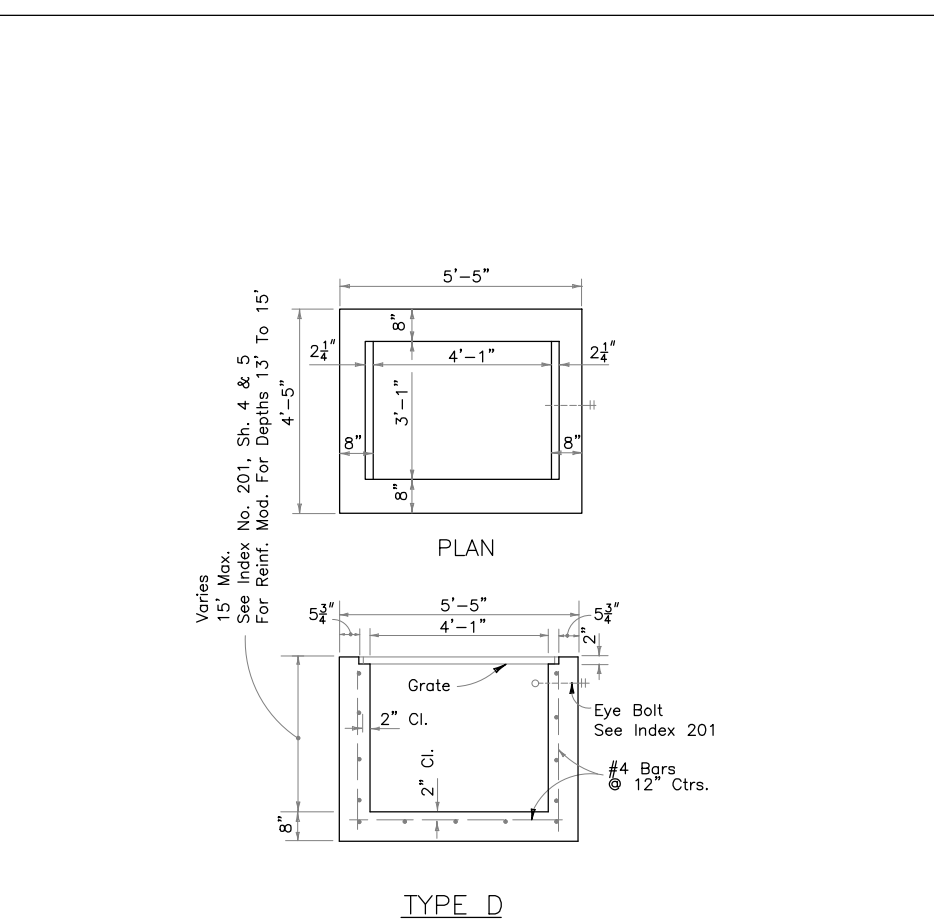
RESTORATION OF FLEXIBLE PAVEMENT LONGITUDINAL AND TRANSVERSE CUTS



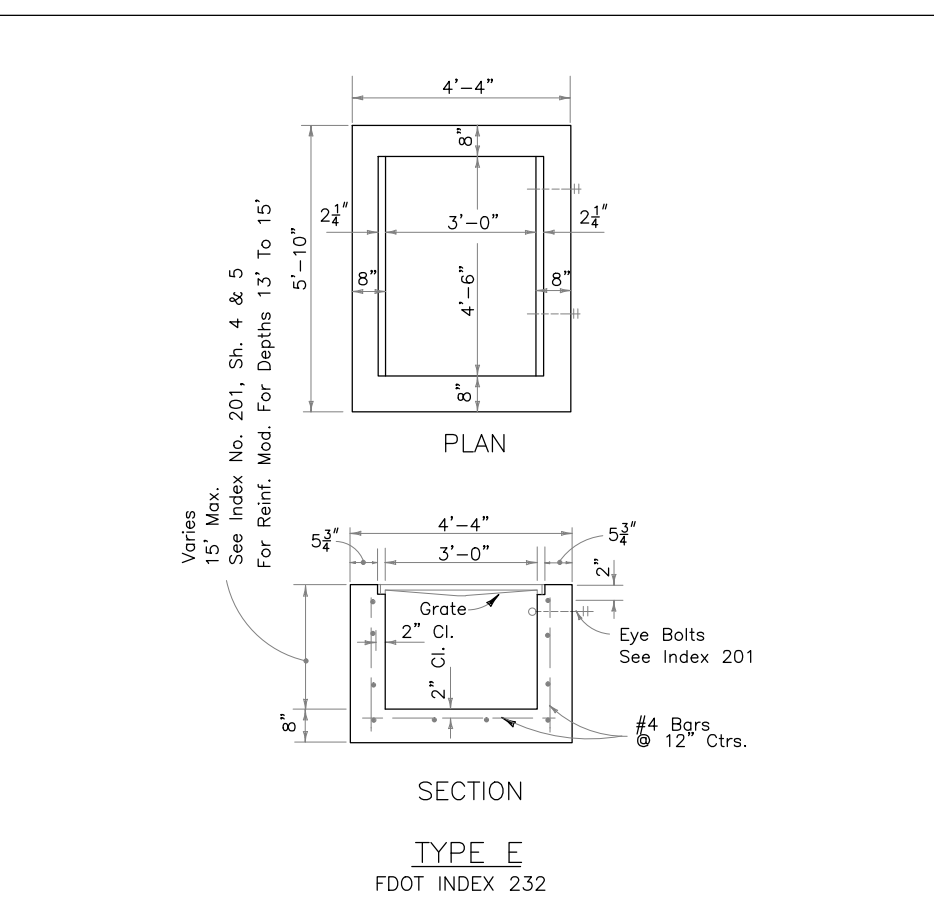
TYPICAL SIDEWALK DETAILS



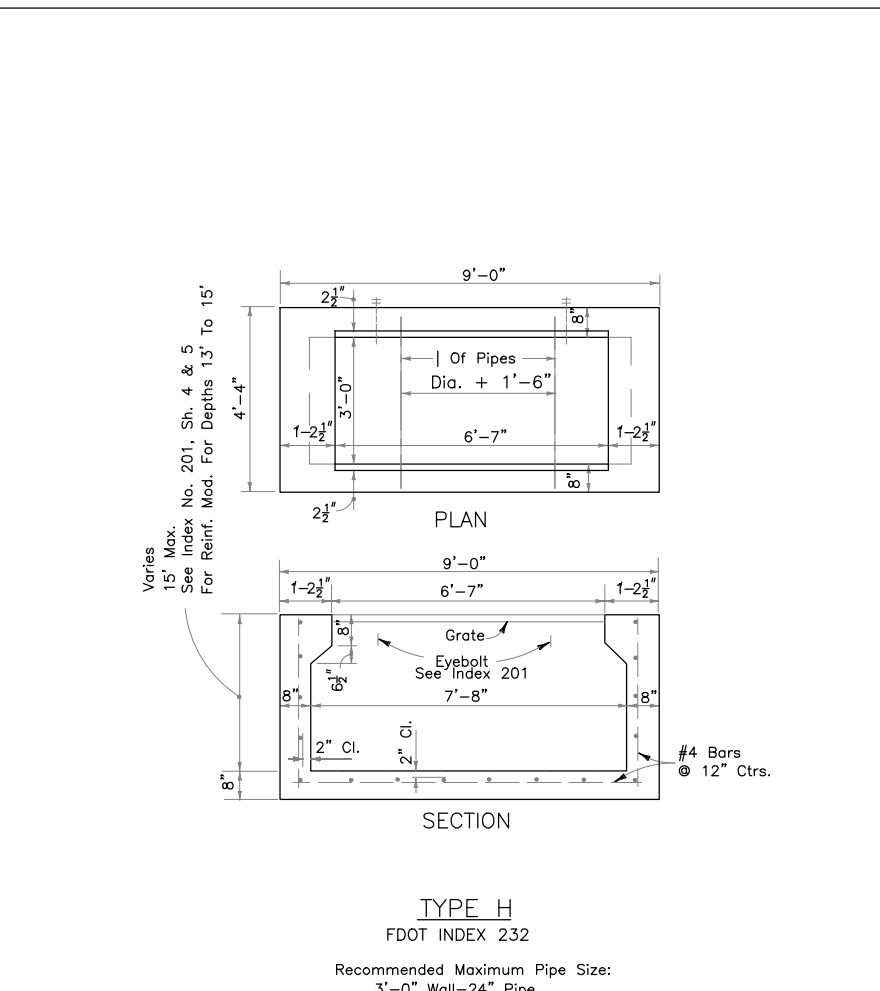
STORM INLET DETAIL TYPE 'C' (1 OF 6)



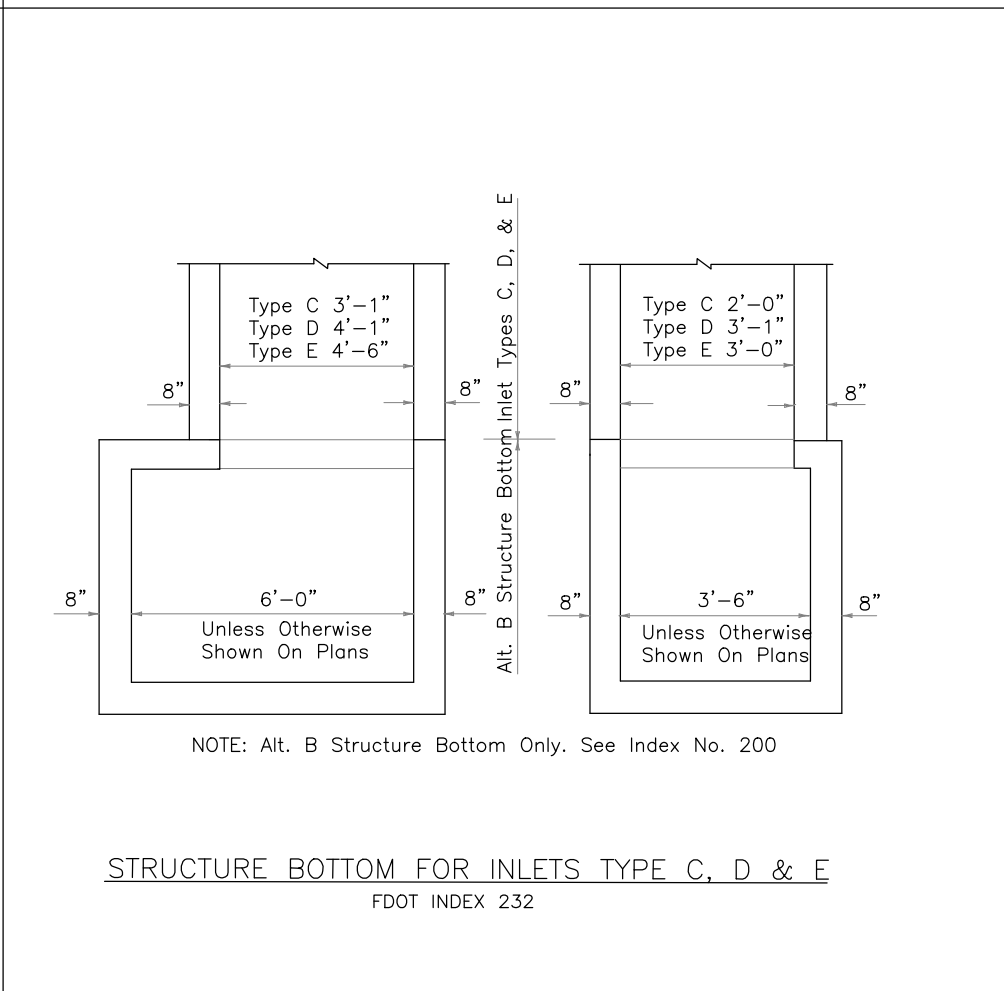
STORM INLET DETAIL TYPE 'D' (2 OF 6)



STORM INLET DETAIL TYPE 'E' (3 OF 6)



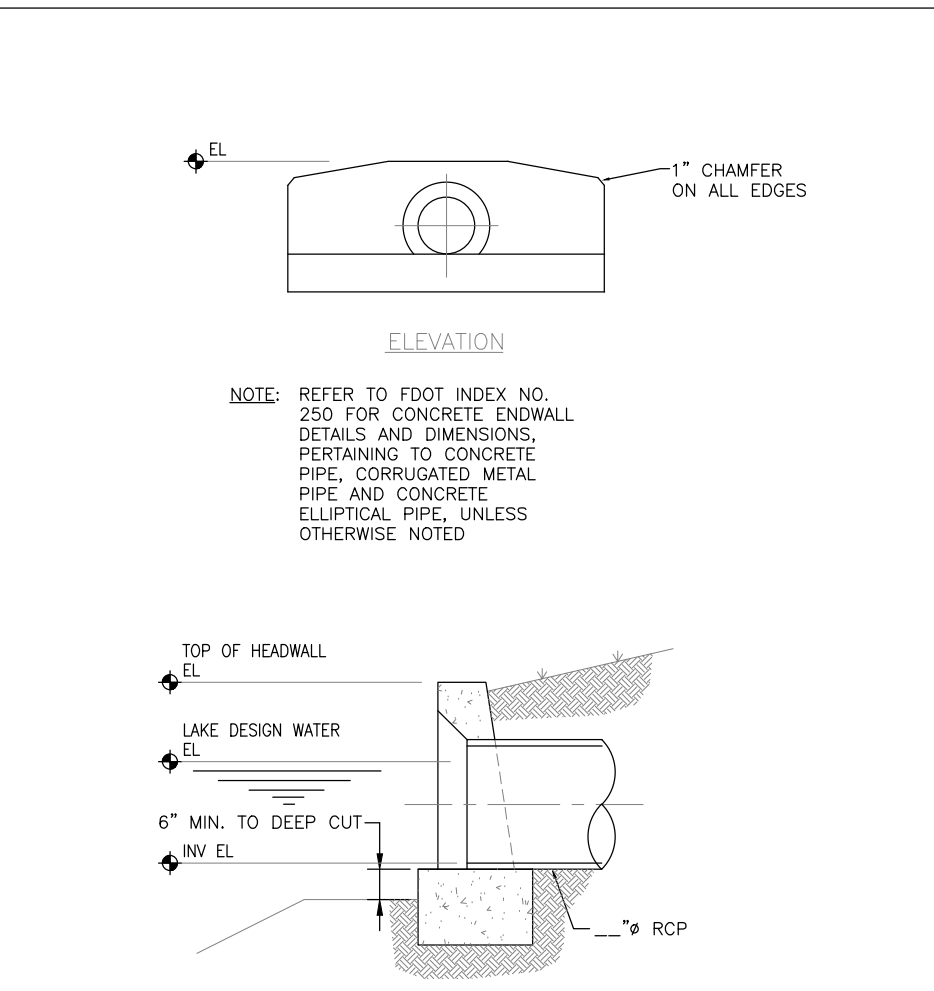
STORM INLET DETAIL TYPE 'H' (4 OF 6)



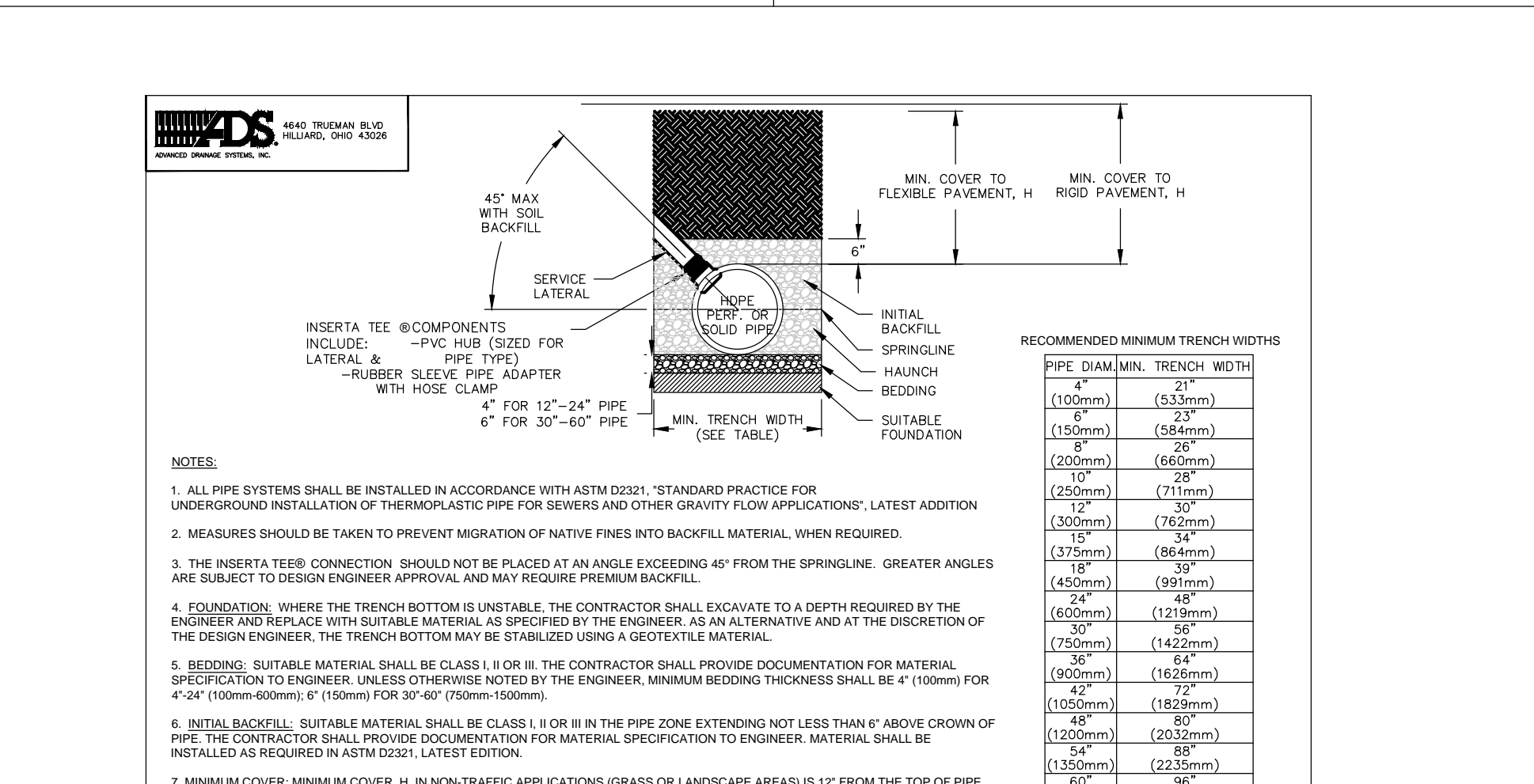
STRUCTURE BOTTOM FOR INLETS TYPE 'C', 'D' & 'E'



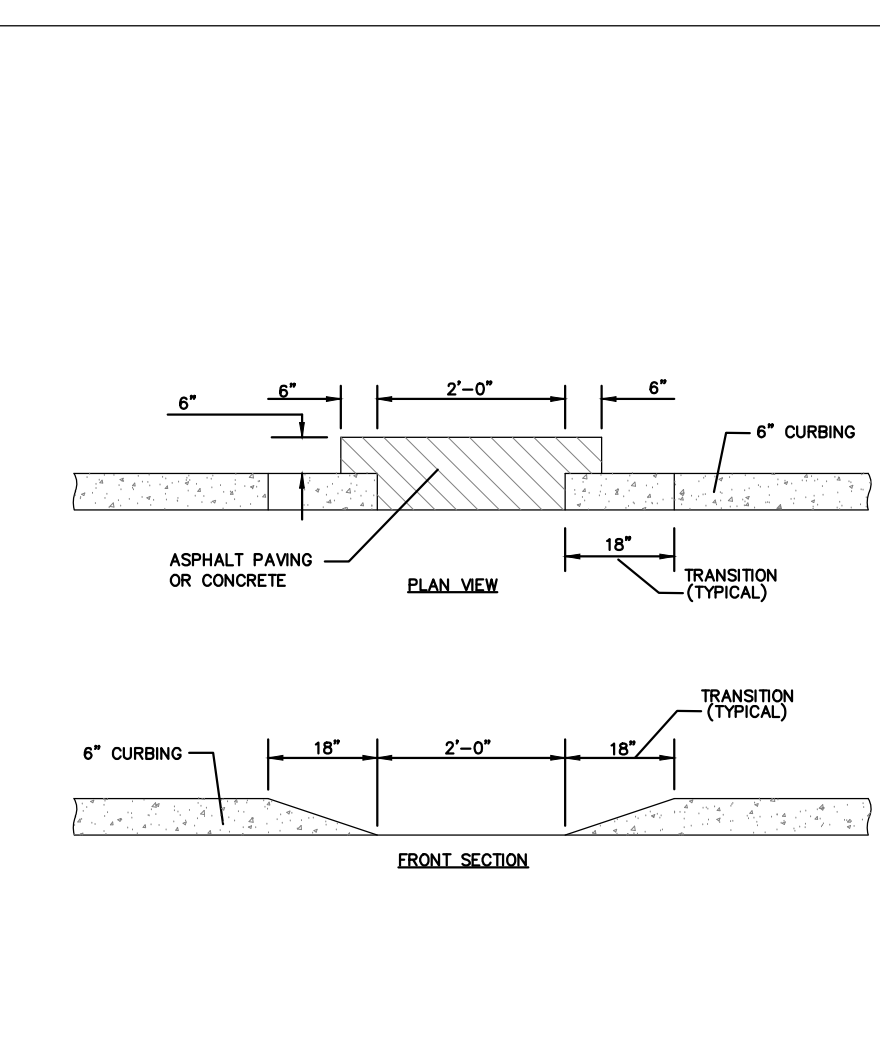
STORM INLET DETAIL - GENERAL NOTES (6 OF 6)



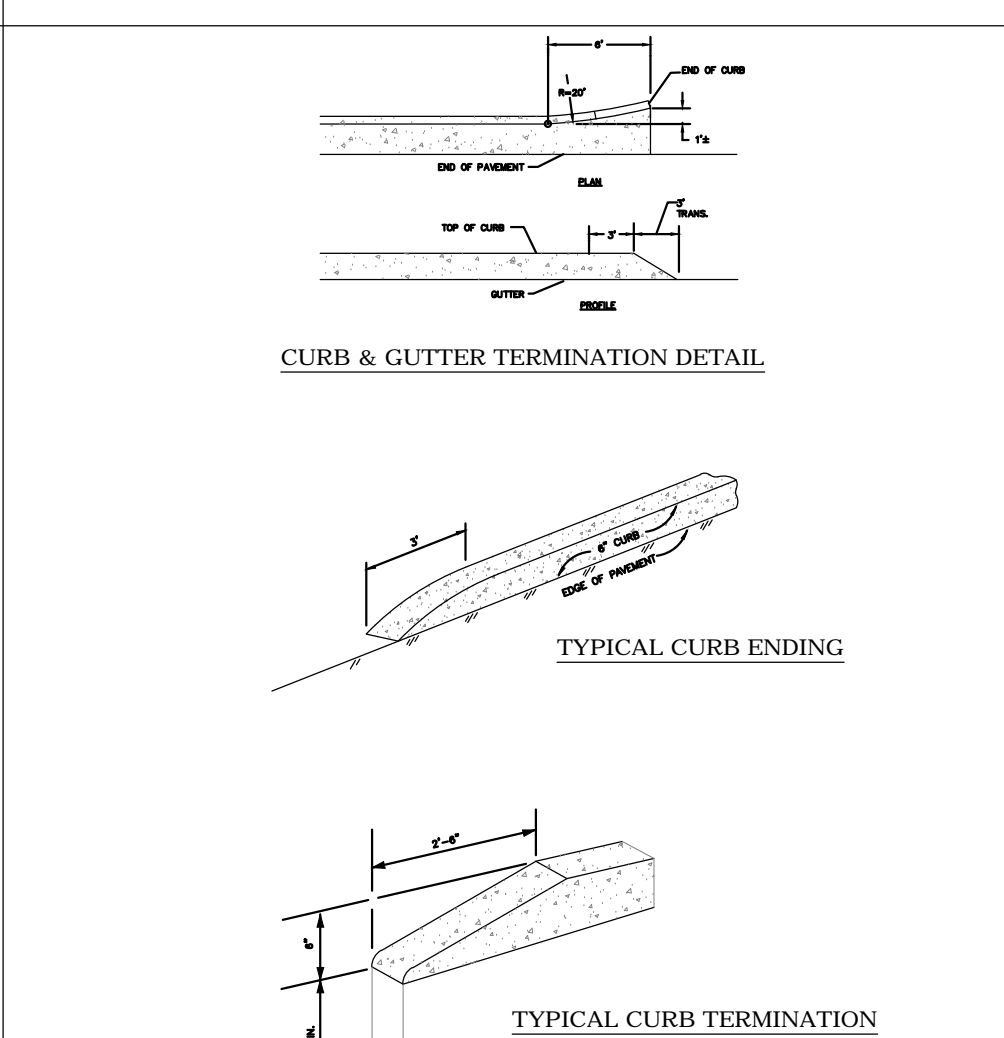
CONCRETE HEADWALL DETAIL



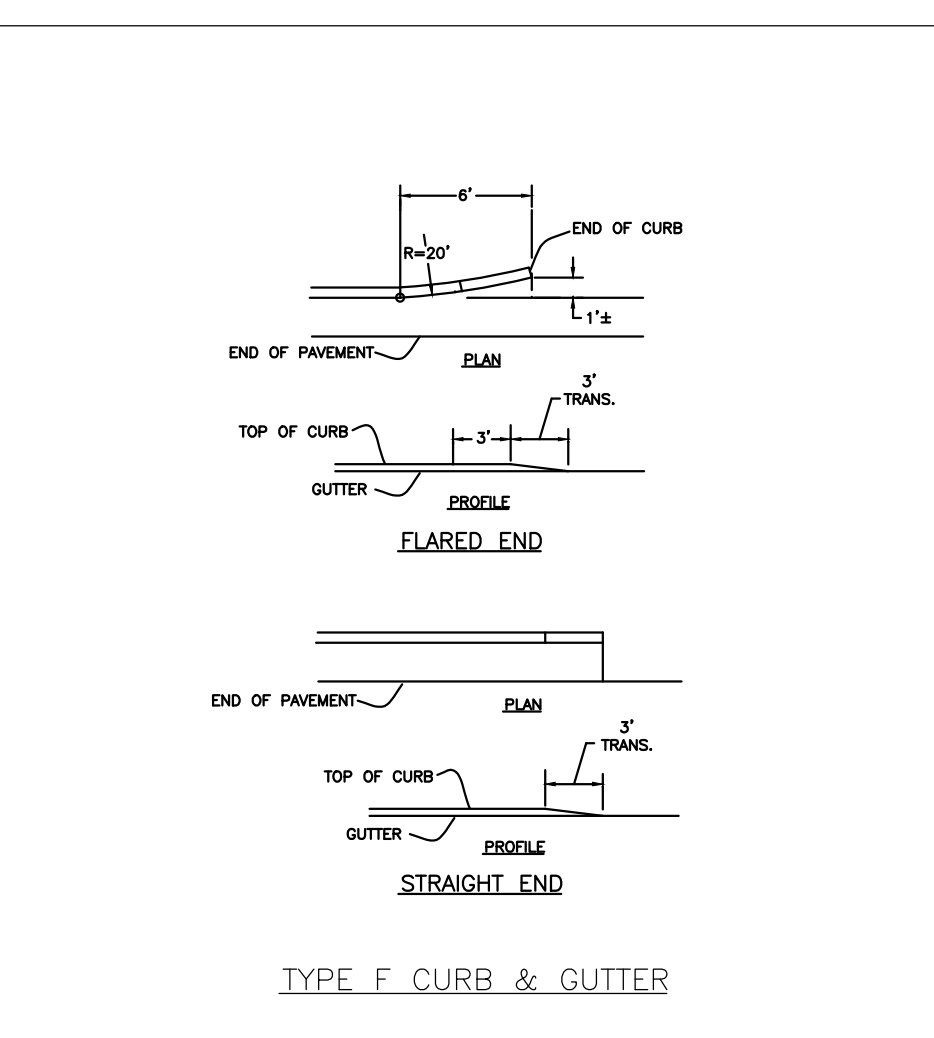
ADS INSERTA TEE



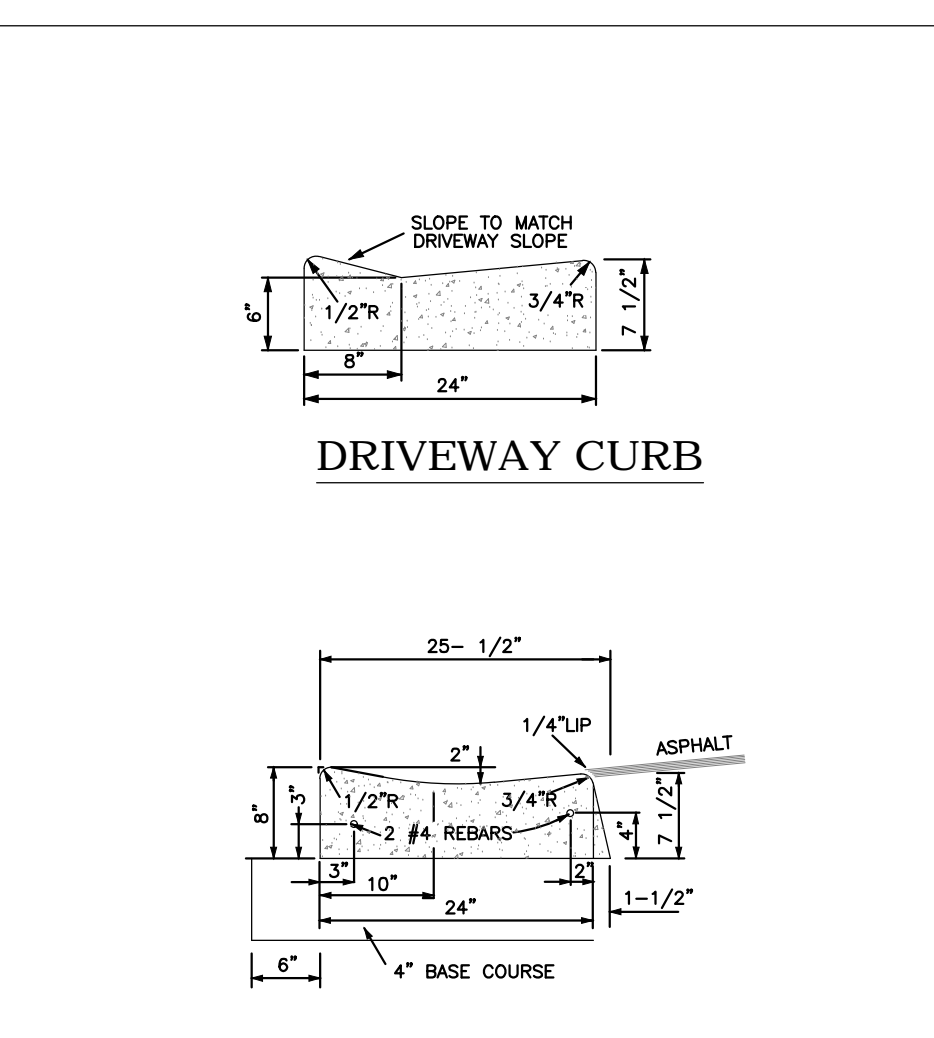
CURB OPENING DETAIL



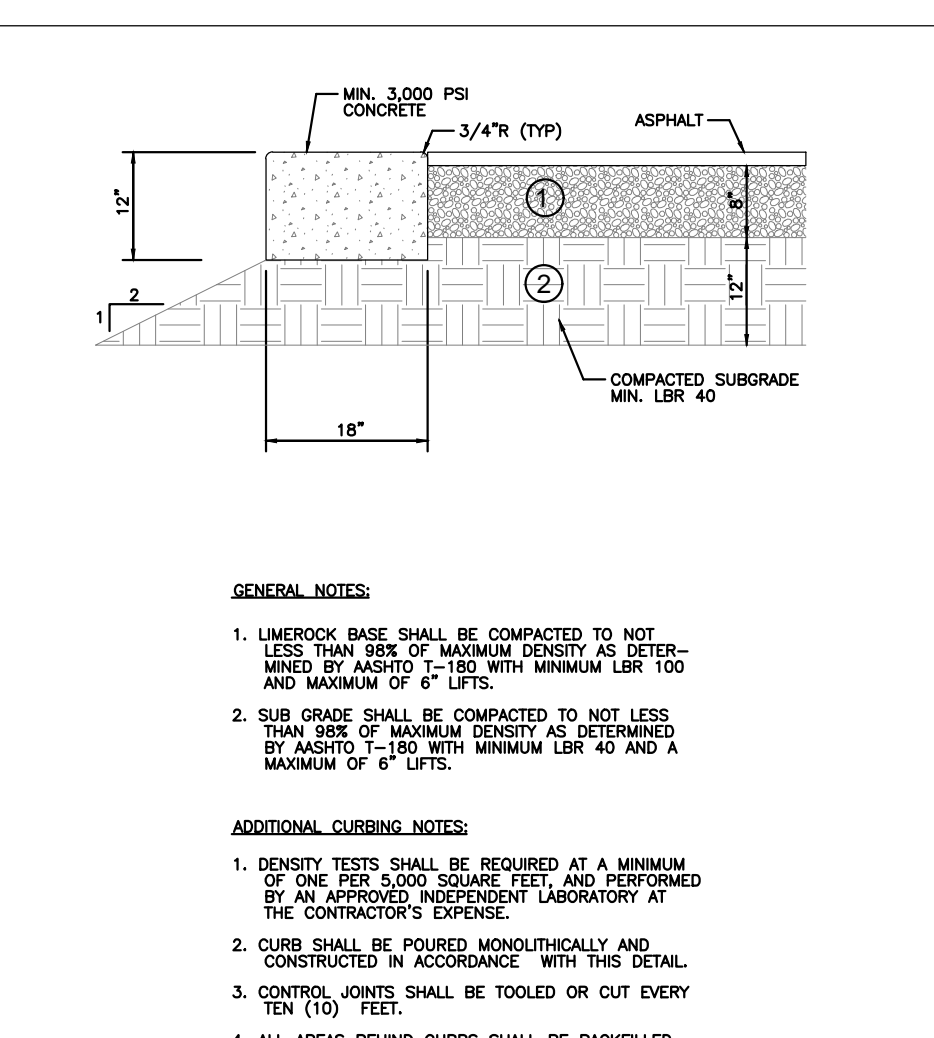
CURB TERMINATION DETAILS



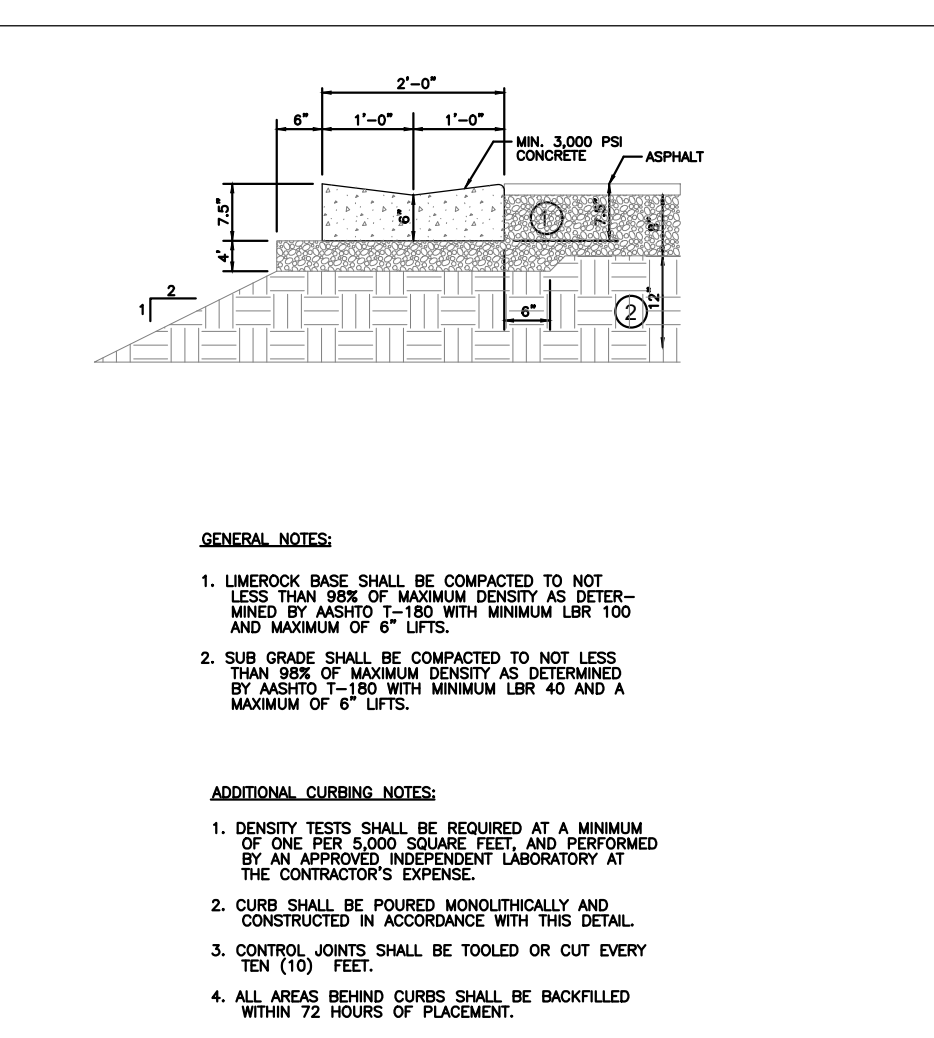
CURB FLARED AND STRAIGHT ENDS



DRIVEWAY CURB & GUTTER



HEADER CURB DETAIL



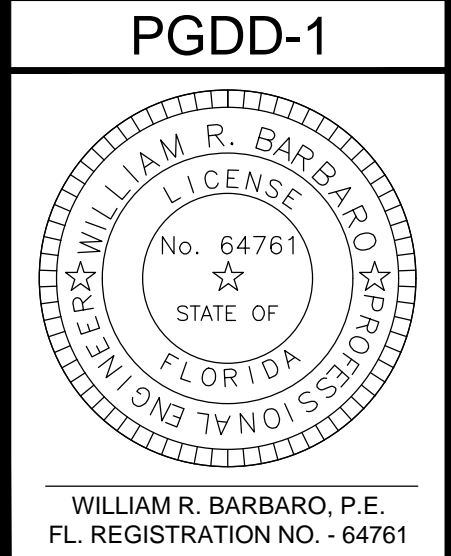
VALLEY GUTTER DETAIL

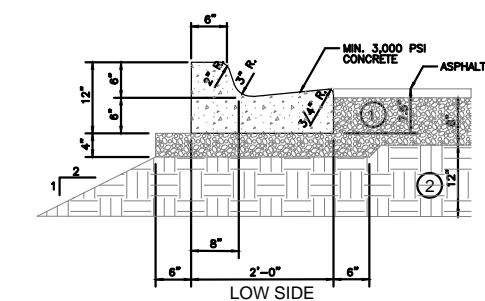
NO	DATE	BY	APPROV	REVISIONS

BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL  
PAVING GRADING & DRAINAGE  
DETAILS



SCALE: N.T.S.  
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DRAWN BY: R.P.  
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DESIGNED BY: R.F.

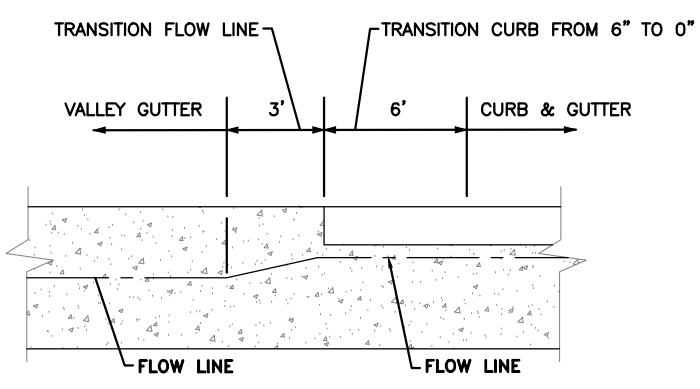




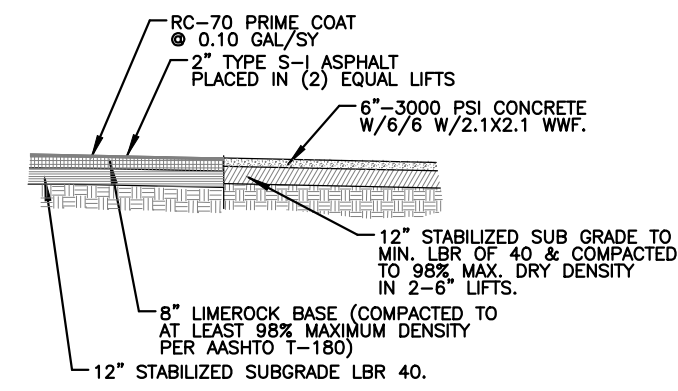
**TYPE "F" CURB AND GUTTER DETAIL**

NOTE: SEE PLAN FOR THE USE OF APPROVED MATERIALS. THE BACK OF CURB SHALL BE 6" MIN.

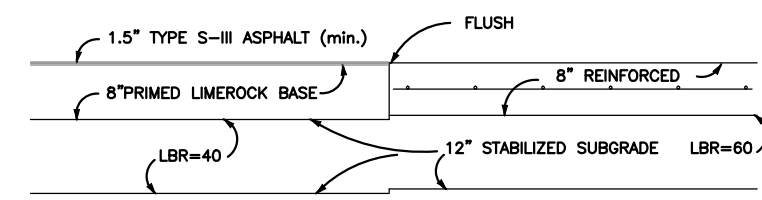
ADDITIONAL NOTES:  
 1. MINIMUM PIPE SHALL BE COMPACTED TO 98% MAXIMUM DENSITY PER AASHTO T-99.  
 2. THE PIPE SHALL BE SET IN A 6" MIN. BED OF 3/4" WASHED ROCK.  
 3. THE PIPE SHALL BE SET IN A 6" MIN. BED OF 3/4" WASHED ROCK.  
 4. THE PIPE SHALL BE SET IN A 6" MIN. BED OF 3/4" WASHED ROCK.  
 5. THE PIPE SHALL BE SET IN A 6" MIN. BED OF 3/4" WASHED ROCK.



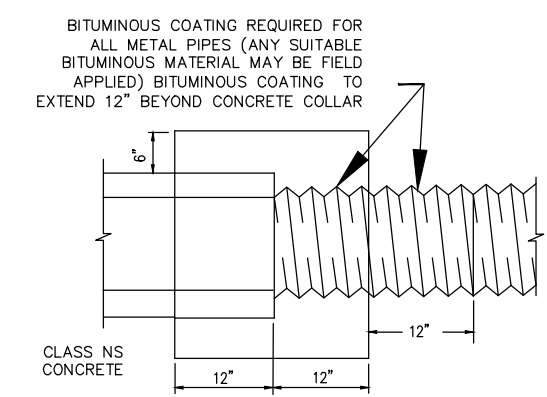
**TRANSITION CURB AND GUTTER TO VALLEY GUTTER**



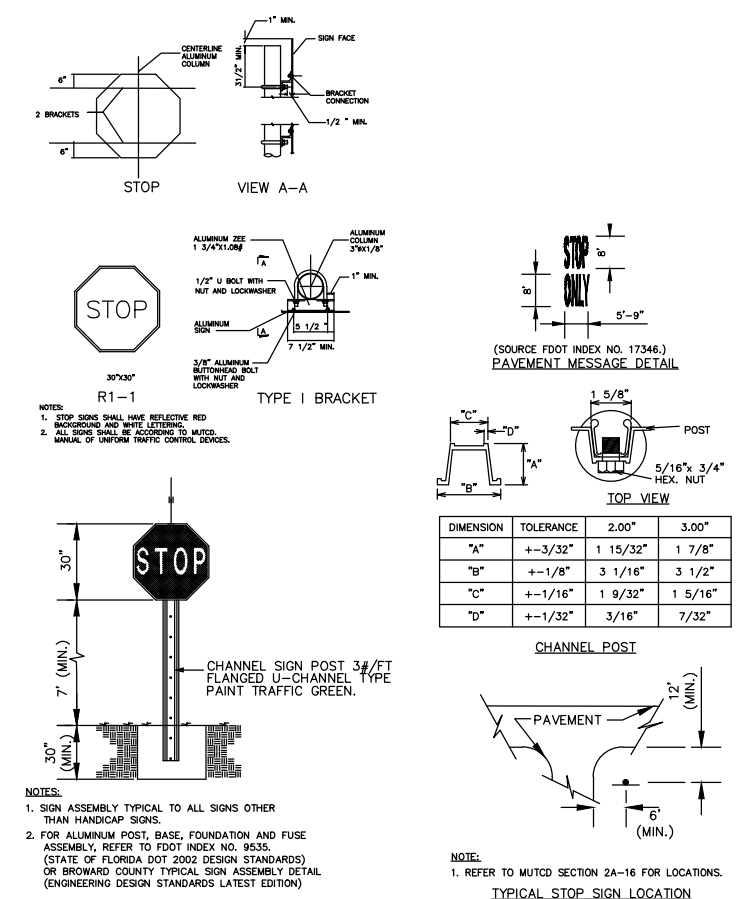
**ASPHALT-CONCRETE CONNECTION DETAIL**



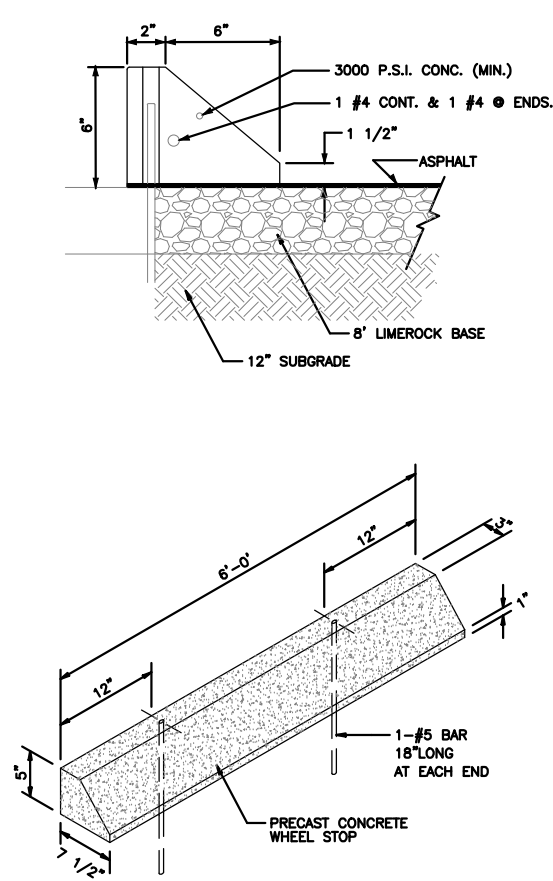
**TYPICAL ASPHALT/CONCRETE JOINT**



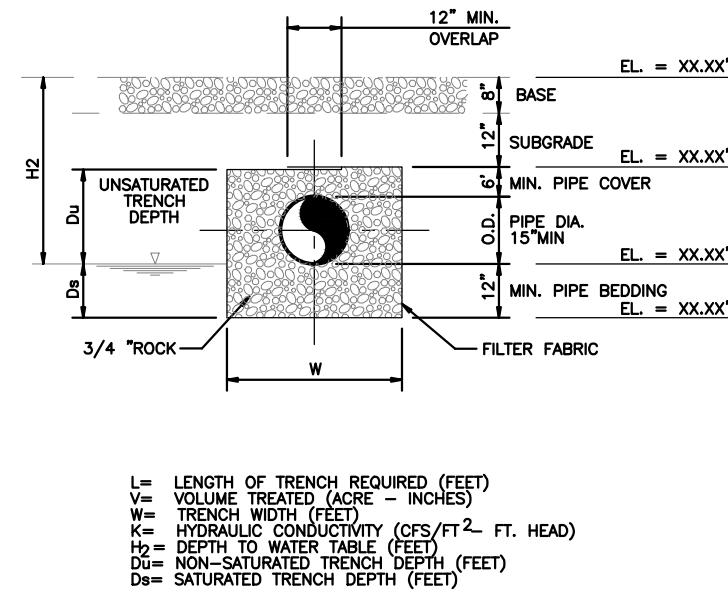
**CONCRETE JACKET DETAIL**



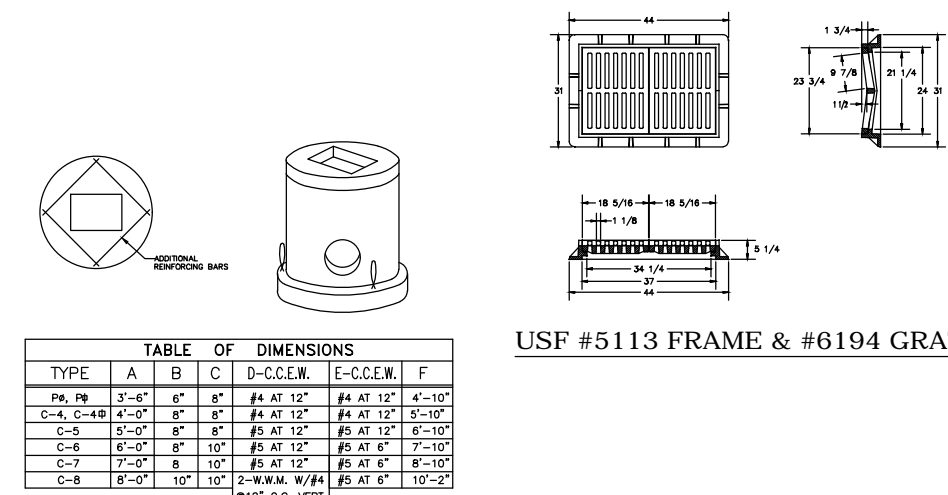
**STOP SIGN AND TYPICAL SIGN BRACKET DETAIL**



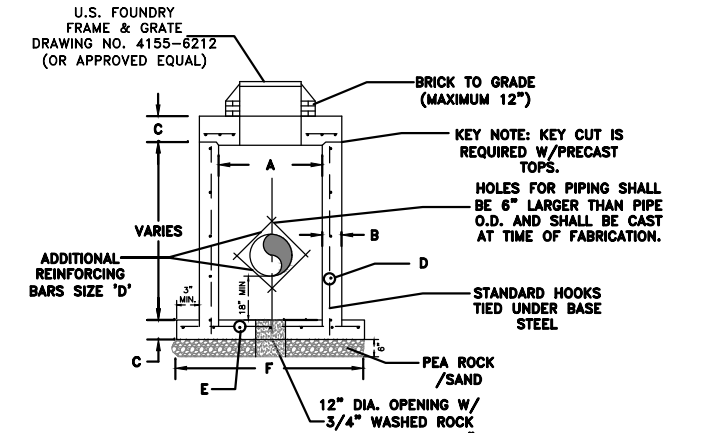
**WHEELSTOP DETAIL**



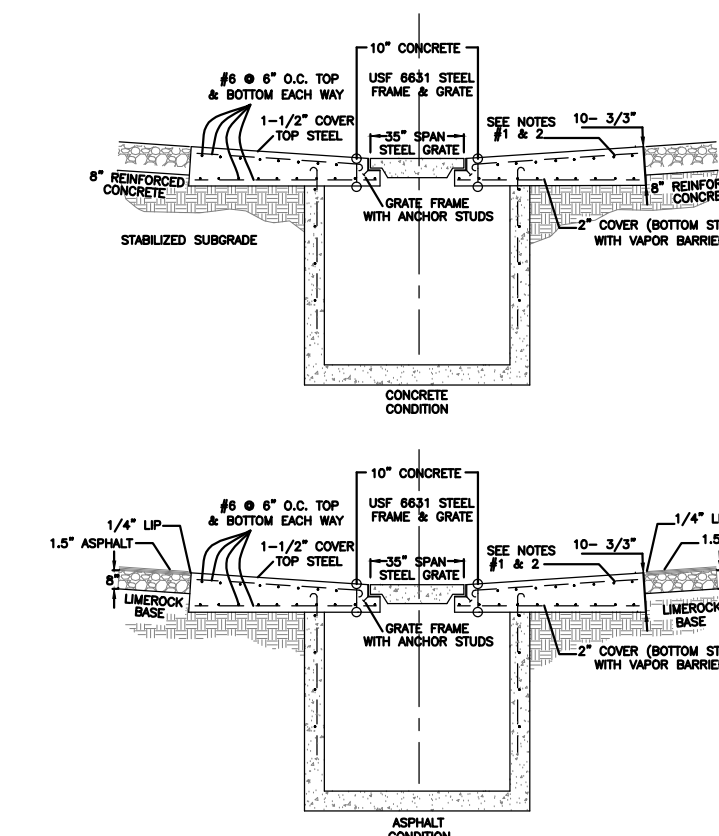
**TYPICAL EXFILTRATION TRENCH**



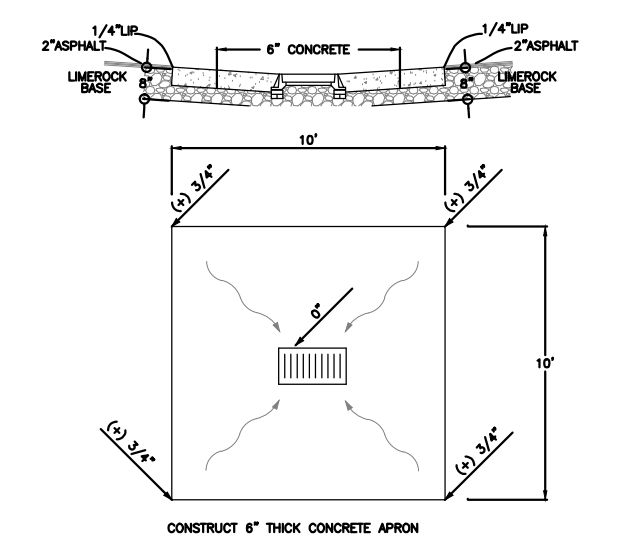
**PRECAST ROUND OR RECTANGULAR CATCH BASIN**



**PRECAST DRAINAGE MANHOLE**



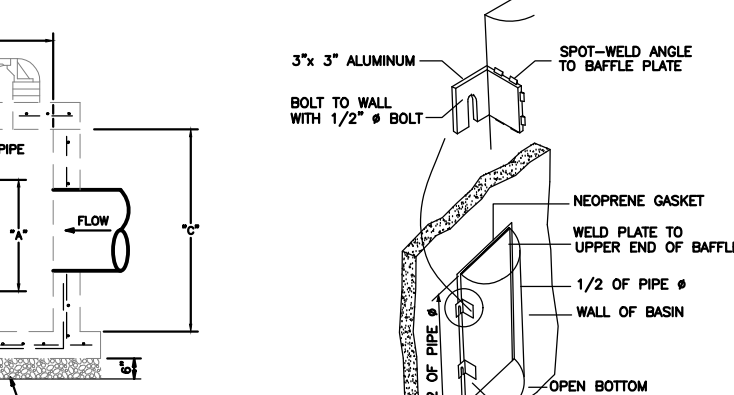
**TYPICAL ASPHALT APRON**



**TYPICAL USF #4155 GRATE & APRON**

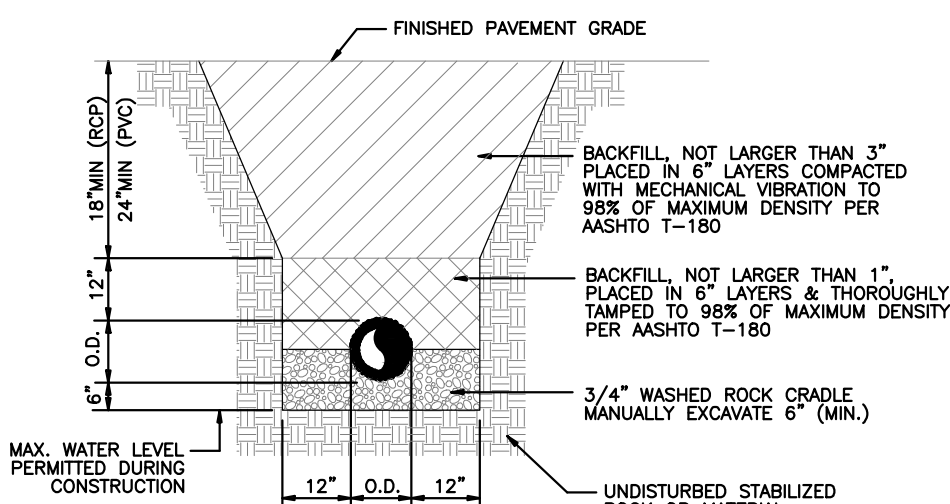
**CROSS-SECTION ASPHALT APRON**

**TYPICAL USF #6631 GRATE & APRON**

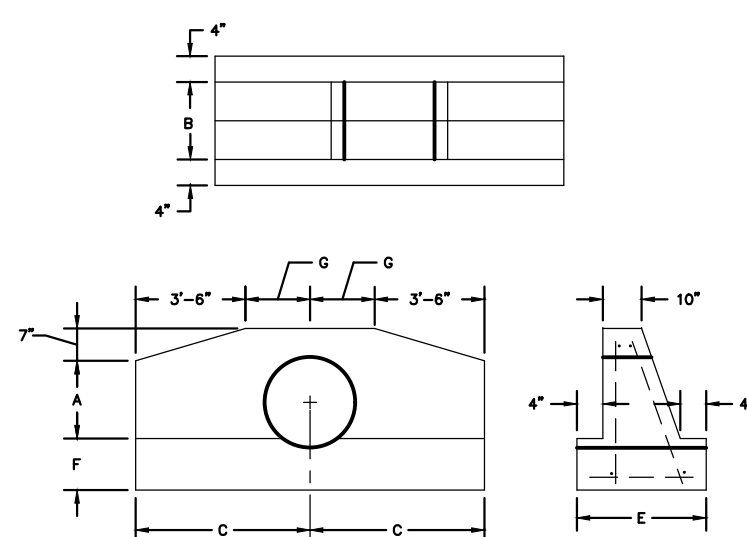


**POLLUTION RETARDANT BAFFLE**

PIPE DIAMETER	BATTLE SCHEDULE
12"	24"
15"	30"
18"	36"
21"	42"
24"	48"
27"	54"
30"	60"
33"	66"
36"	72"
39"	78"
42"	84"
45"	90"
48"	96"
51"	102"
54"	108"
57"	114"
60"	120"



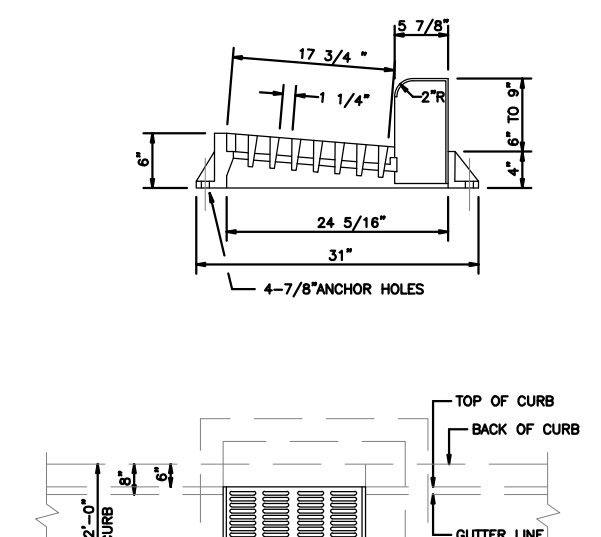
**PIPE INSTALLATION TRENCH DETAIL**



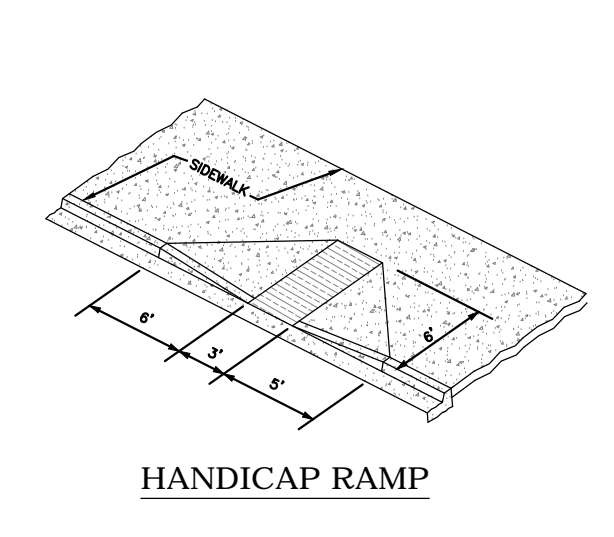
**F.D.O.T. STRAIGHT ENDWALL**

PIPE SIZE	A	B	C	E	F	G
15"	1'-11"	1'-2"	4'-0"	1'-10"	1'-2"	0'-6"
18"	2'-2"	1'-3"	4'-8"	1'-11"	1'-3"	1'-0"
24"	2'-8"	1'-4"	5'-0"	2'-0"	1'-4"	1'-6"

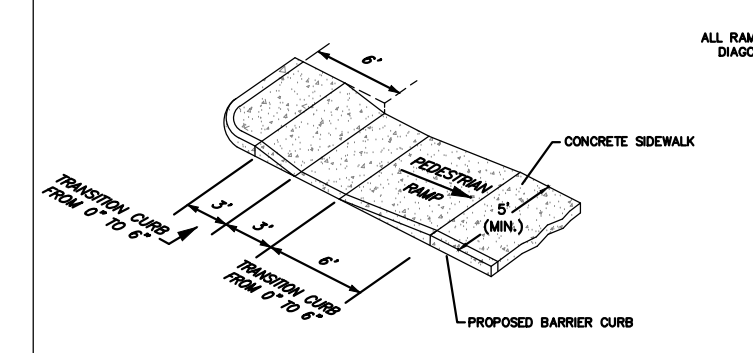
NOTE: REFER TO FOOT INDEX NO. 250 FOR ADDITIONAL DETAILS AND SPECIFICATIONS



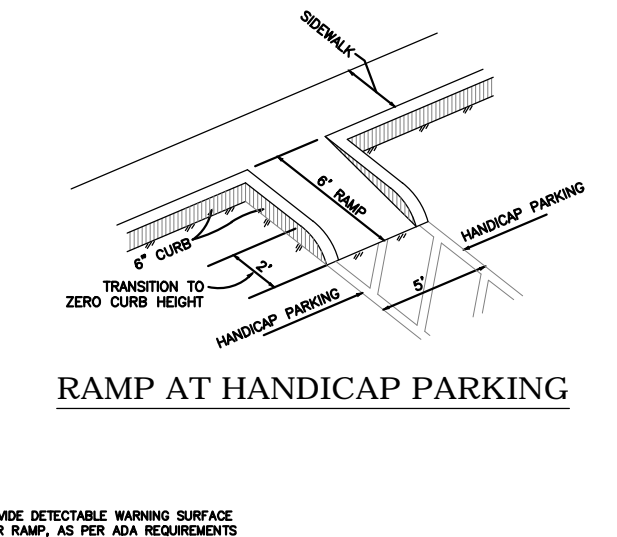
**CURB & GUTTER INLET (USF 5130-6168)**



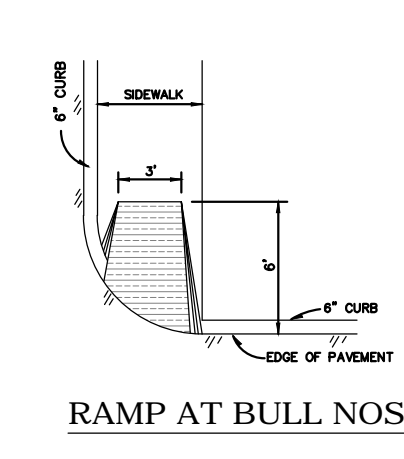
**HANDICAP RAMP**



**SAMPLE PEDESTRIAN RAMPS**



**RAMP AT HANDICAP PARKING**



**RAMP AT BULL NOSE**

BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL

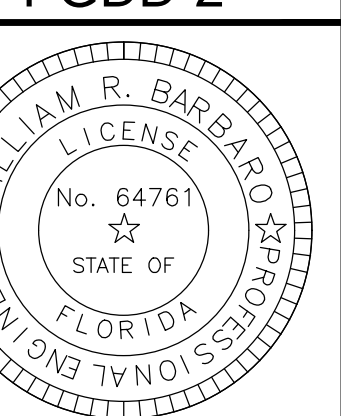
PAVING GRADING & DRAINAGE  
DETAILS



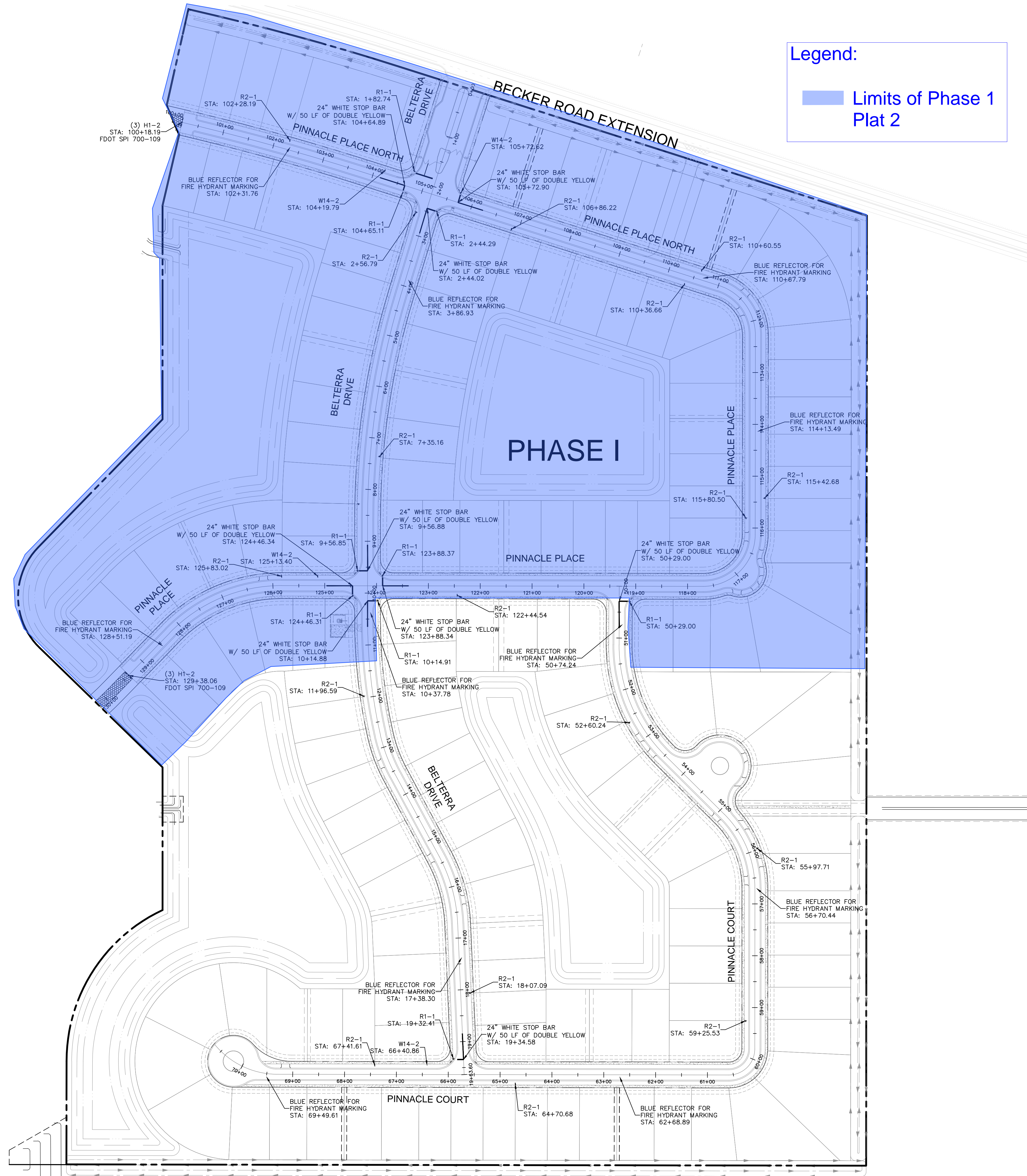
CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
PHONE: (854) 972-3859 FAX: (854) 972-4178

SCALE: N.T.S.  
DATE: 12/08/21  
DRAWN BY: R.P.  
CHECKED BY: W.R.B.  
DESIGNED BY: R.F.

PGDD-2

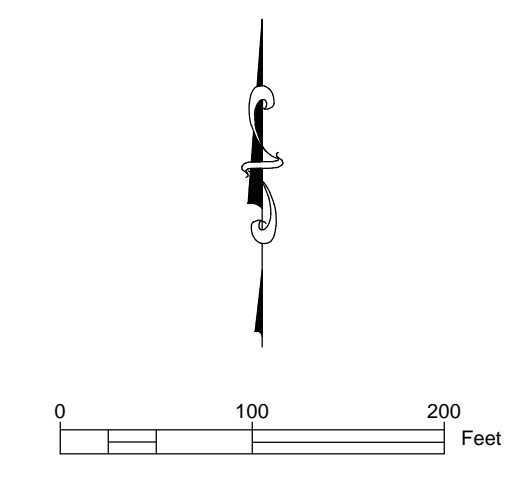


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**Legend:**  
 Limits of Phase 1 Plat 2

**Legend**  
 - - - - - PROPERTY LINE  
 - - - - - RIGHT-OF-WAY LINE



**GENERAL NOTES:**

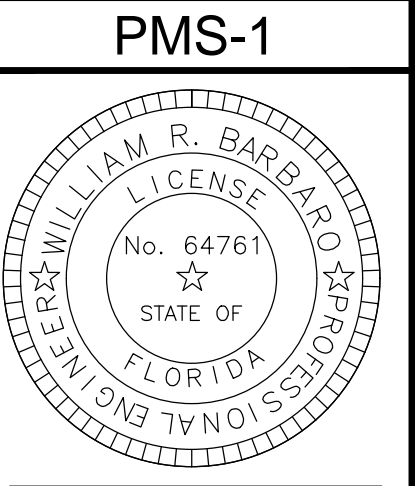
- ALL SIGNS SHALL MEET FDOT AND MUTCD SPECIFICATIONS, LATEST EDITION, FOR FACE OF SIGN, LOCATION AND POLE MOUNTING HEIGHT.
- PRIOR TO FABRICATION THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER AND THE CITY OF PORT ST. LUCIE FOR APPROVAL.
- ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC AND FULLY RETROREFLECTORIZED.
- ALL PAVEMENT MARKINGS, REFLECTORS, AND SIGNING SHALL BE IN ACCORDANCE WITH FLORIDA DEPARTMENT OF TRANSPORTATION AND "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), LATEST EDITION.
- ALL TRAFFIC CONTROL SIGNS SHALL BE PLACED OUTSIDE OF THE REQUIRED CLEAR ZONE.
- ALL STOP BARS TO BE A MINIMUM OF 4 FEET BEHIND CROSSWALK OR SIDEWALK.

Sign Summary			
M.U.T.C.D. Number	Specification Width	Specification Height	Desc.
R1-1	30"	30"	
R2-1	24"	30"	
H1-2	18"	18"	
W14-2	30"	30"	

BELTERRA PHASE 1 AT SOUTHERN GROVE  
 PORT ST. LUCIE COUNTY, FL  
 PAVEMENT MARKINGS & SIGNAGE



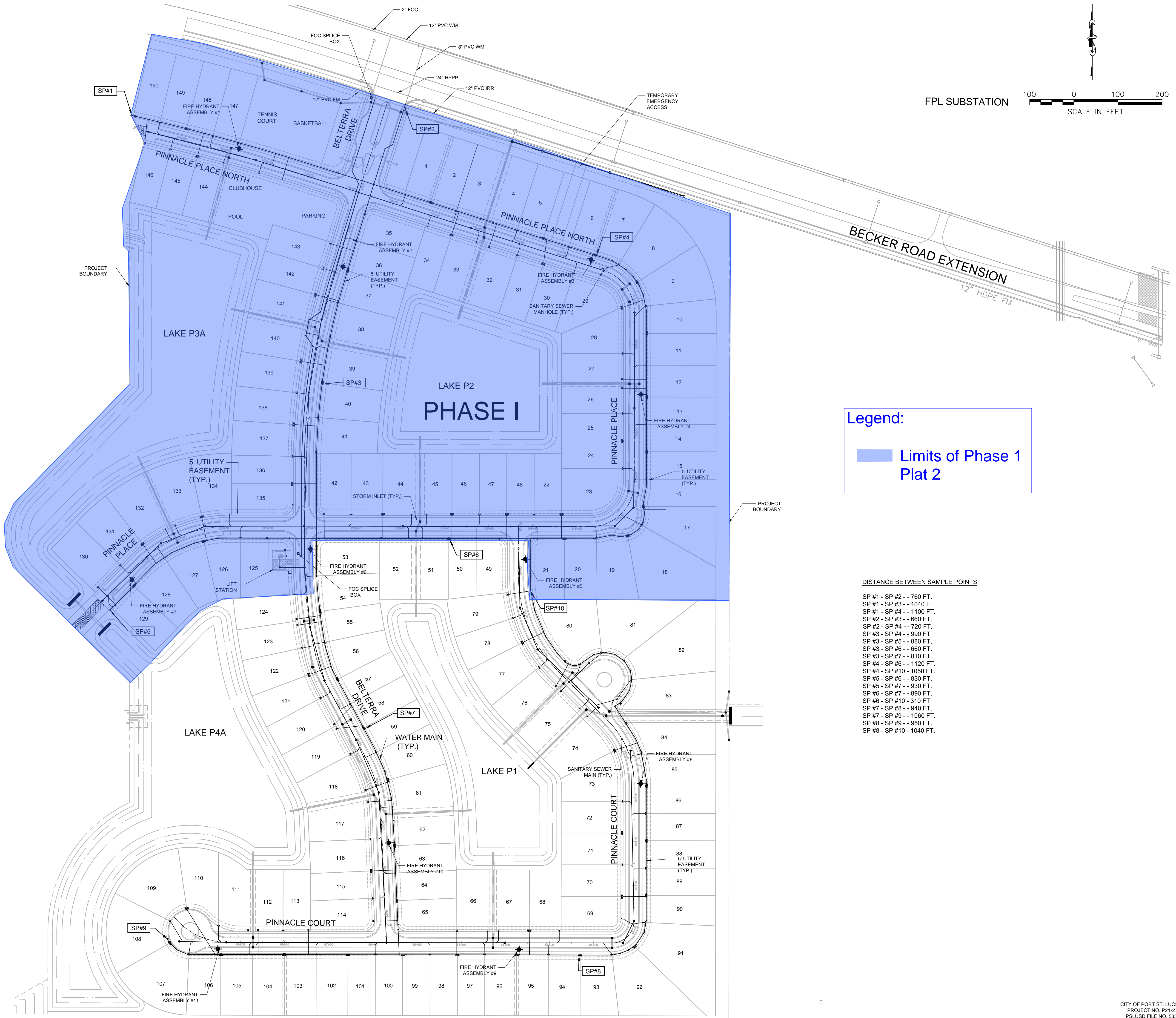
SCALE: AS SHOWN  
 DATE: 12/08/21  
 DRAWN BY: R.P.  
 CHECKED BY: W.R.B.  
 DESIGNED BY: R.F.





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FUTURE  
PHASE II



**Legend:**  
 Limits of Phase 1 Plat 2

**DISTANCE BETWEEN SAMPLE POINTS**

- SP #1 - SP #2 -- 760 FT.
- SP #1 - SP #3 -- 1040 FT.
- SP #1 - SP #4 -- 1100 FT.
- SP #2 - SP #3 -- 660 FT.
- SP #2 - SP #4 -- 720 FT.
- SP #3 - SP #4 -- 990 FT.
- SP #3 - SP #5 -- 880 FT.
- SP #3 - SP #6 -- 660 FT.
- SP #3 - SP #7 -- 810 FT.
- SP #4 - SP #6 -- 1120 FT.
- SP #4 - SP #10 - 1050 FT.
- SP #5 - SP #6 -- 830 FT.
- SP #5 - SP #7 -- 930 FT.
- SP #6 - SP #7 -- 890 FT.
- SP #6 - SP #10 - 310 FT.
- SP #7 - SP #9 -- 940 FT.
- SP #7 - SP #9 -- 1060 FT.
- SP #8 - SP #9 -- 950 FT.
- SP #8 - SP #10 - 1040 FT.

NO	DATE	BY	APRV	REVISIONS

**BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL**

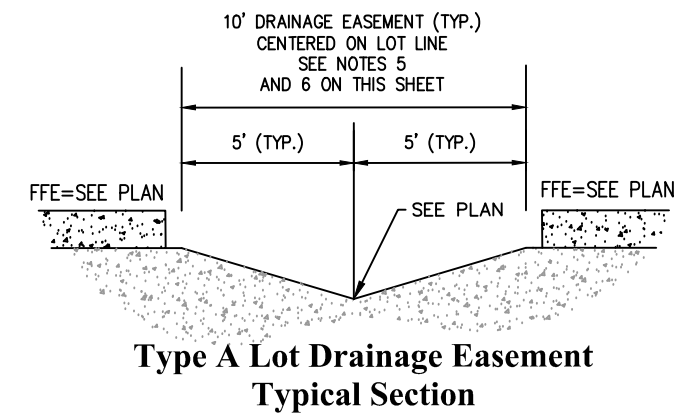
**MASTER UTILITY PLAN**

**CARNAHAN PROCTOR & CROSS**  
 CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
 814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
 PHONE: (854) 972-3559 FAX: (854) 972-4178  
 FILE NO. 190214  
 CPC AUTH. NO. 00002936

SCALE: AS SHOWN  
 DATE: 12/08/21  
 DRAWN BY: R.P.  
 CHECKED BY: W.R.B.  
 DESIGNED BY: R.F.

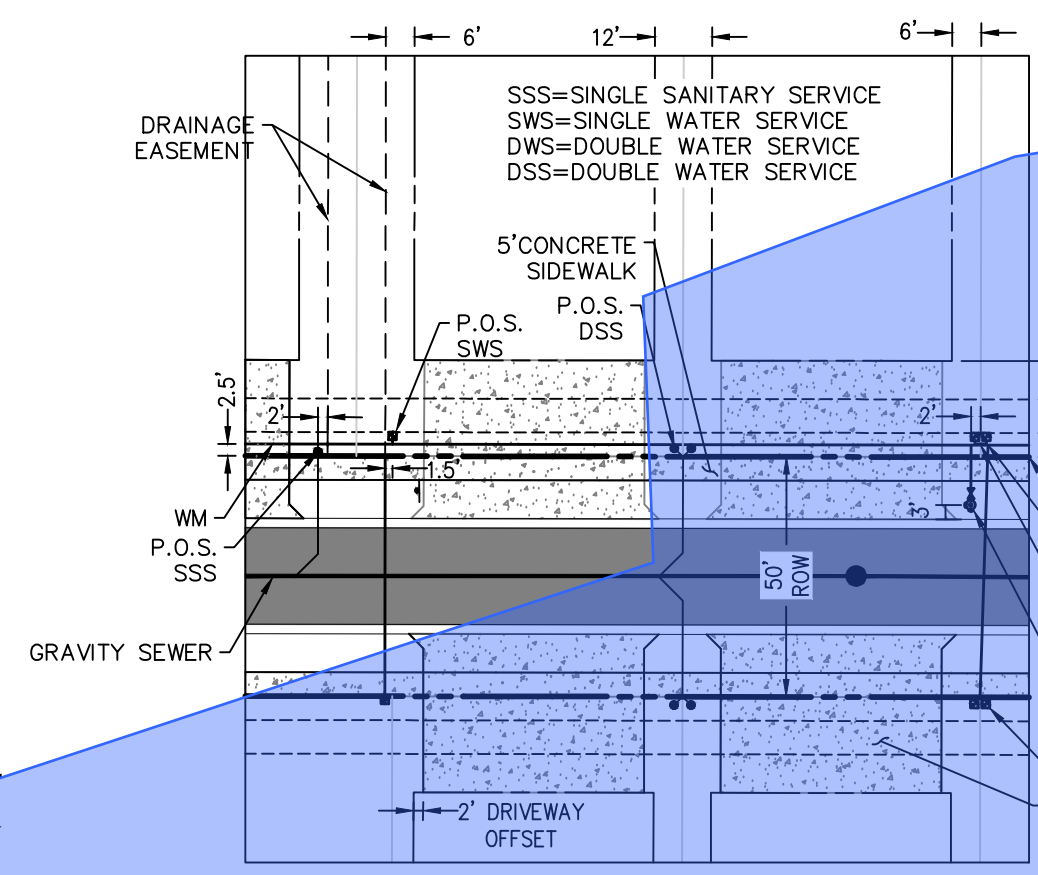
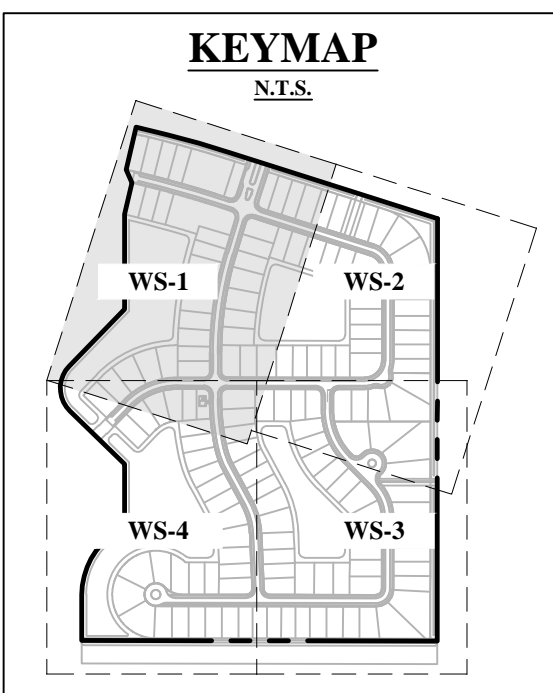
**MU-1**

WILLIAM R. BARBARO, P.E.  
 FL. REGISTRATION NO. - 64761

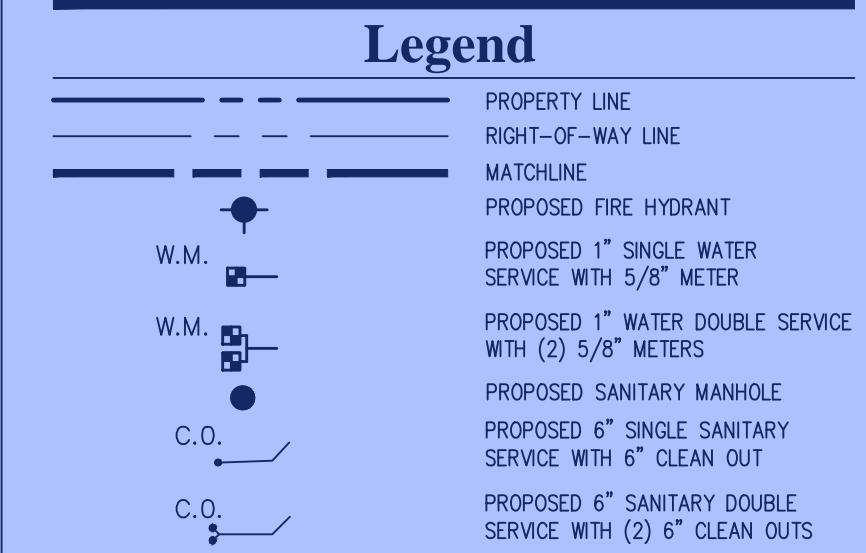


**Type A Lot Drainage Easement Typical Section**

- NOTES:
1. REFER TO SHEET SP-1 FOR MINIMUM BUILDING SETBACKS.
  2. REFER TO NOTES 5 & 6 ON SHEET GP-1 FOR ADDITIONAL CONDITIONS.
  3. SIDE LOT SWALE EASEMENT PER SFVMD PERMIT.

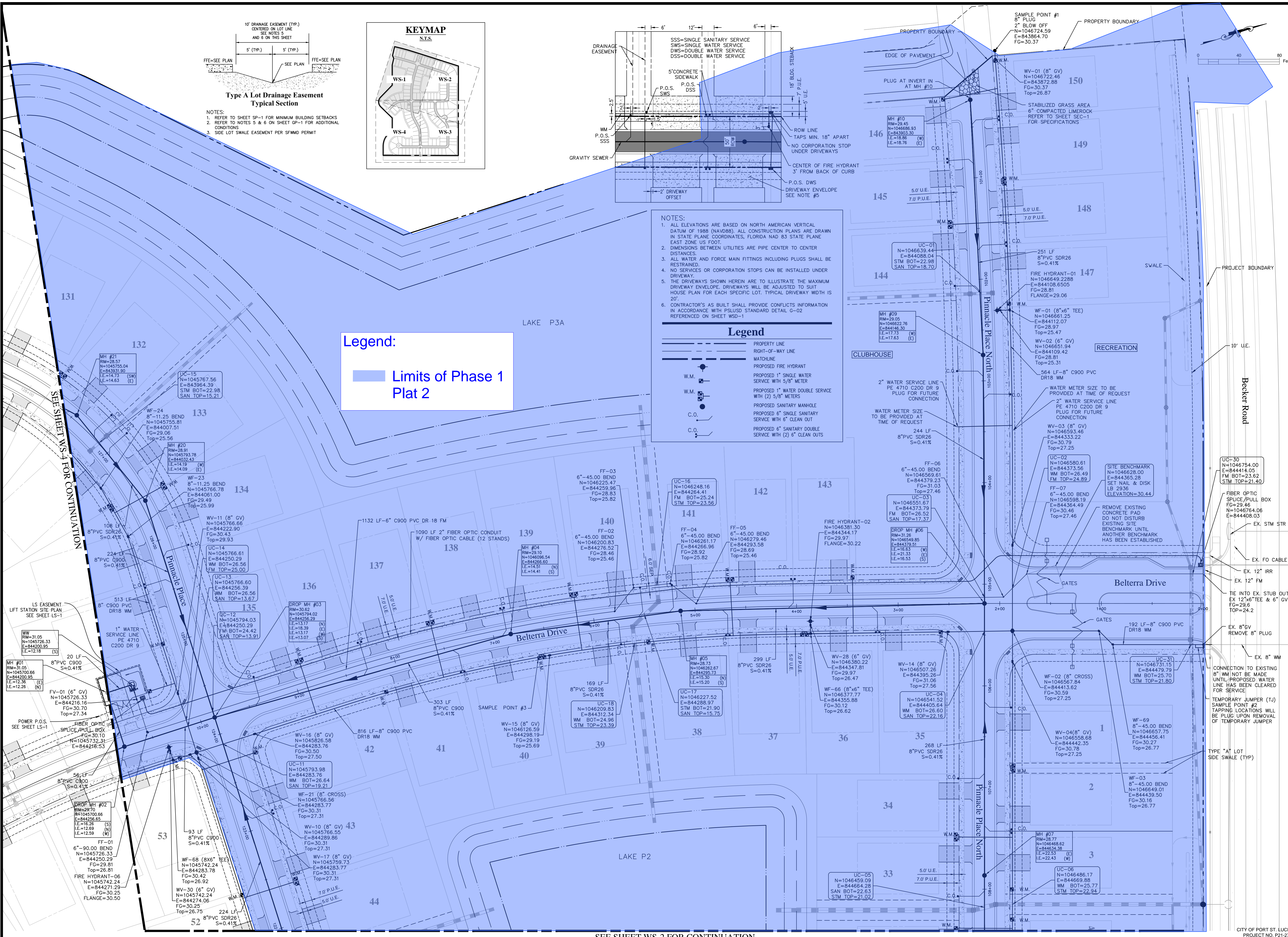


- NOTES:
1. ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). ALL CONSTRUCTION PLANS ARE DRAWN IN STATE PLANE COORDINATES, FLORIDA NAD 83 STATE PLANE EAST ZONE US FOOT.
  2. DIMENSIONS BETWEEN UTILITIES ARE PIPE CENTER TO CENTER DISTANCES.
  3. ALL WATER AND FORCE MAIN FITTINGS INCLUDING PLUGS SHALL BE RESTRAINED.
  4. NO SERVICES OR CORPORATION STOPS CAN BE INSTALLED UNDER DRIVEWAY.
  5. THE DRIVEWAYS SHOWN HEREIN ARE TO ILLUSTRATE THE MAXIMUM DRIVEWAY ENVELOPE. DRIVEWAYS WILL BE ADJUSTED TO SUIT HOUSE PLAN FOR EACH SPECIFIC LOT. TYPICAL DRIVEWAY WIDTH IS 20'.
  6. CONTRACTOR'S AS BUILT SHALL PROVIDE CONFLICTS INFORMATION IN ACCORDANCE WITH PLUSUD STANDARD DETAIL G-02 REFERENCED ON SHEET WSD-1.



**Legend:**

■ Limits of Phase 1 Plat 2



NO.	DATE	BY	APPROV.	REVISIONS
1	12/15/21	RP	WRB	REVISED PER PSL COMMENTS

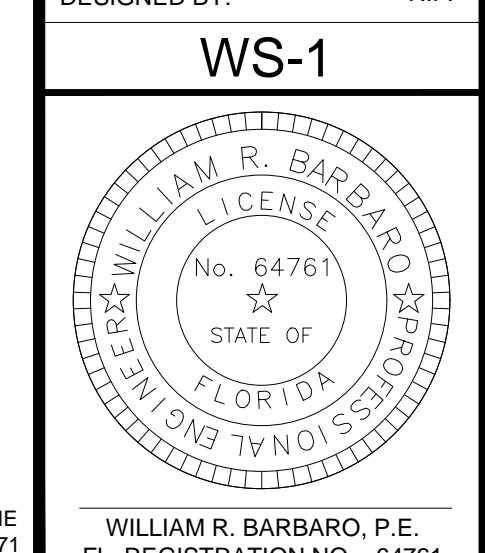
**BELTERRA PHASE 1 AT SOUTHERN GROVE**  
**PORT ST. LUCIE COUNTY, FL**

**WATER & SEWER PLAN**

FILE NO. 190214



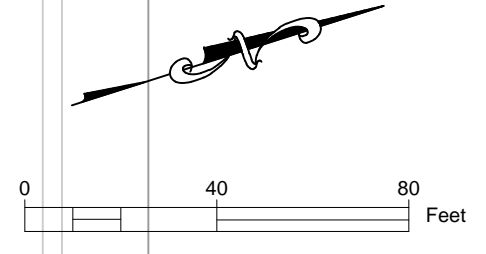
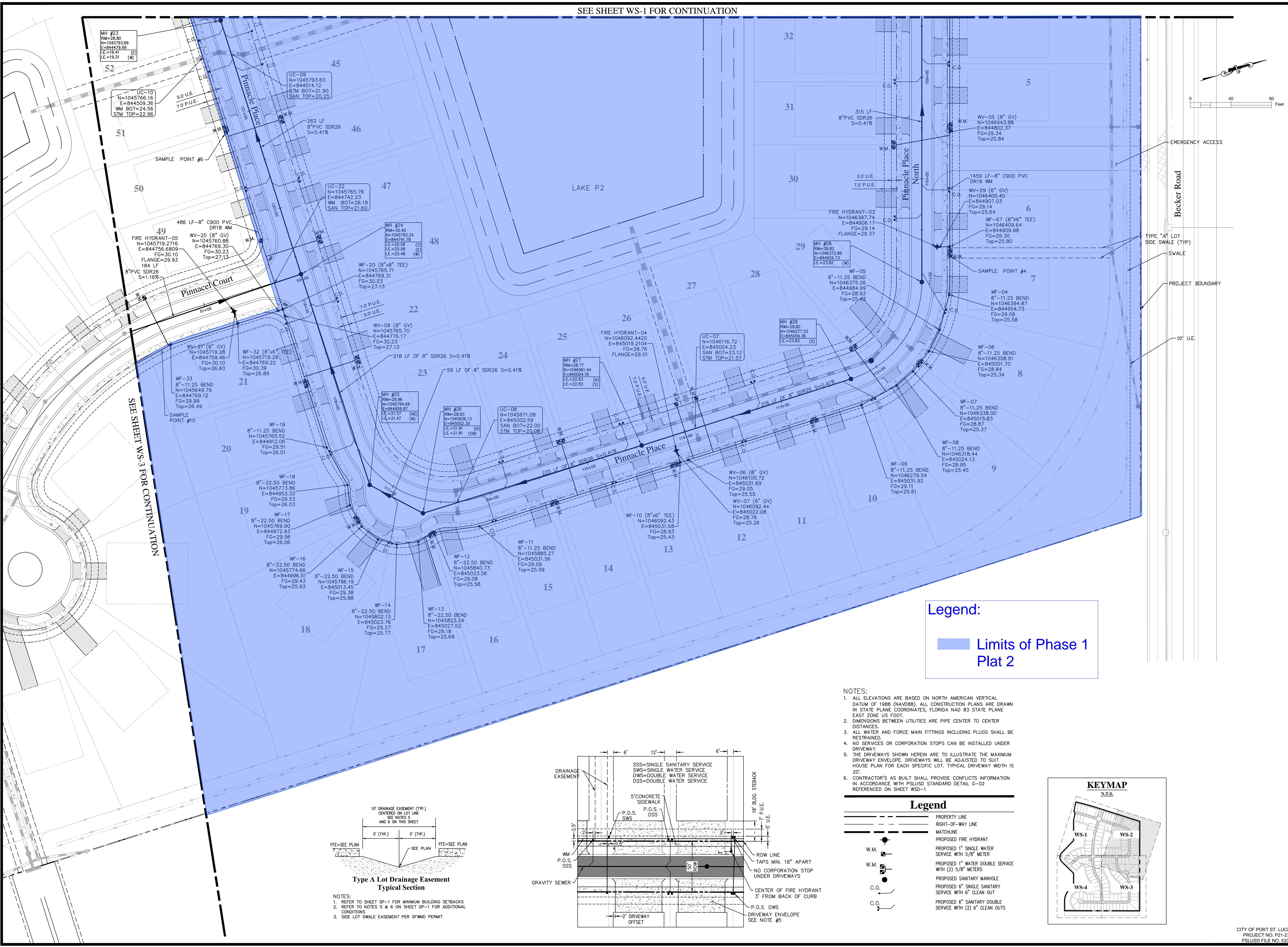
SCALE: AS SHOWN  
 DATE: 12/08/21  
 DRAWN BY: R.P.  
 CHECKED BY: W.R.B.  
 DESIGNED BY: R.F.



2/09/21 p:\projects\2019\deerfield\_shore\southern\_grove\psl\190214-WS.dwg

SEE SHEET WS-2 FOR CONTINUATION

CITY OF PORT ST. LUCIE  
 PROJECT NO. P21-271  
 PSLUD FILE NO. 5336

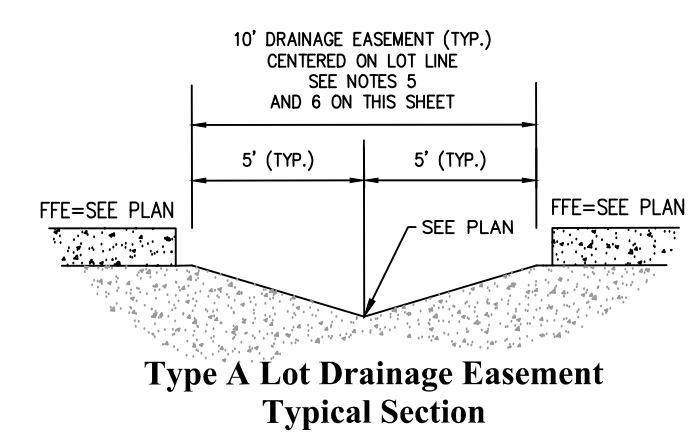


SEE SHEET WS-3 FOR CONTINUATION

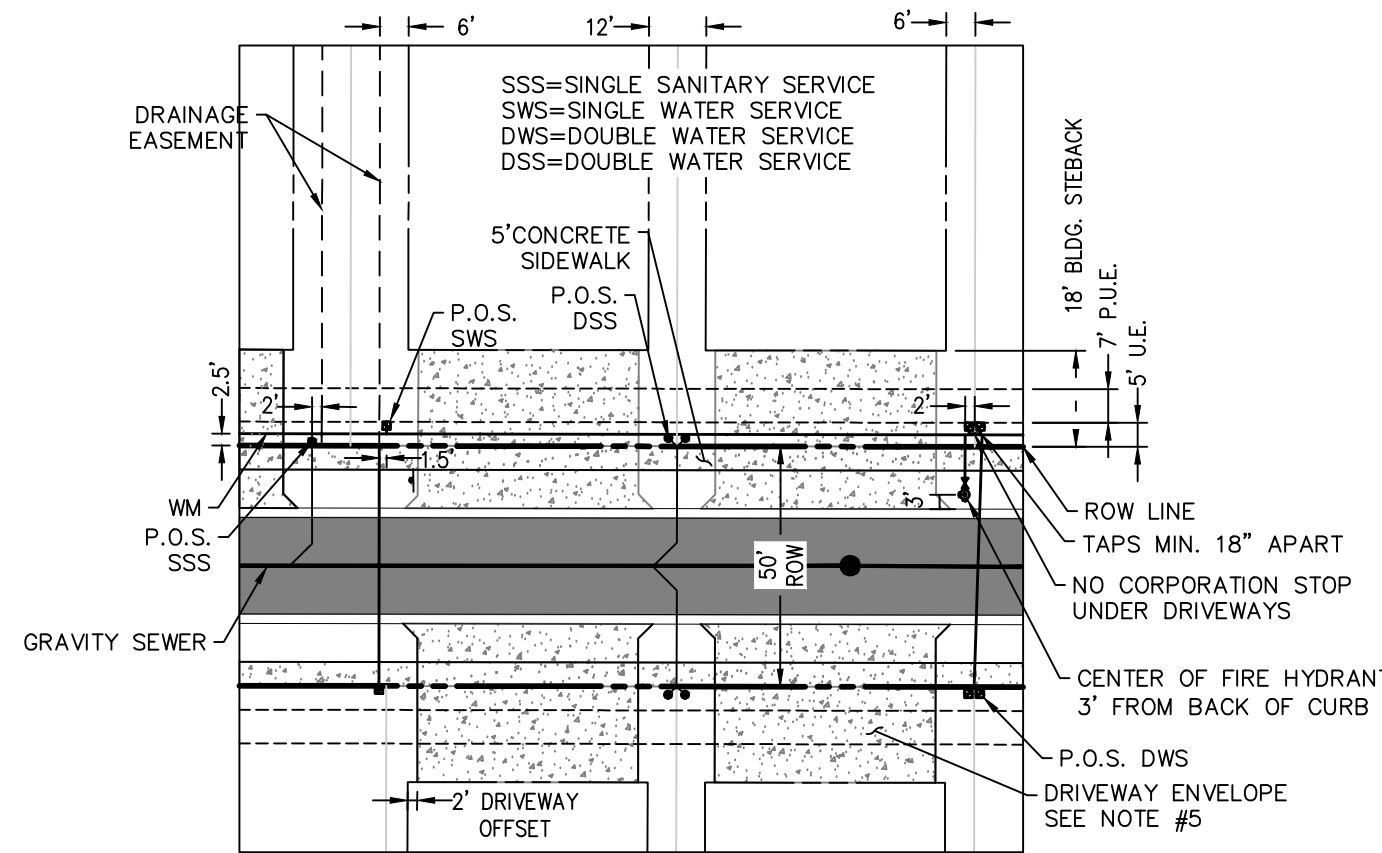
**Legend:**

— Limits of Phase 1 Plat 2

- NOTES:**
1. ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). ALL CONSTRUCTION PLANS ARE DRAWN IN STATE PLANE COORDINATES, FLORIDA NAD 83 STATE PLANE EAST ZONE US FOOT.
  2. DIMENSIONS BETWEEN UTILITIES ARE PIPE CENTER TO CENTER DISTANCES.
  3. ALL WATER AND FORCE MAIN FITTINGS INCLUDING PLUGS SHALL BE RESTRAINED.
  4. NO SERVICES OR CORPORATION STOPS CAN BE INSTALLED UNDER DRIVEWAY.
  5. THE DRIVEWAYS SHOWN HEREIN ARE TO ILLUSTRATE THE MAXIMUM DRIVEWAY ENVELOPE. DRIVEWAYS WILL BE ADJUSTED TO SUIT HOUSE PLAN FOR EACH SPECIFIC LOT. TYPICAL DRIVEWAY WIDTH IS 20'.
  6. CONTRACTOR'S AS BUILT SHALL PROVIDE CONFLICTS INFORMATION IN ACCORDANCE WITH PLSUSD STANDARD DETAIL G-02 REFERENCED ON SHEET WSD-1

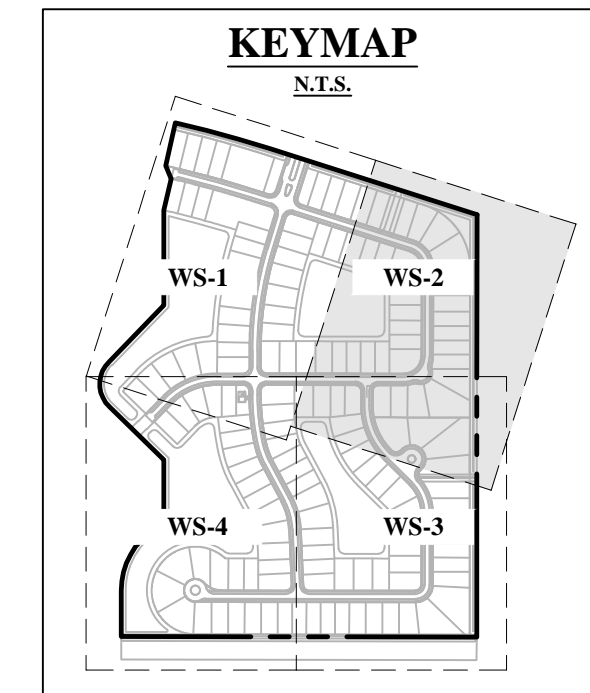


- NOTES:**
1. REFER TO SHEET GP-1 FOR MINIMUM BUILDING SETBACKS.
  2. REFER TO NOTES 5 & 6 ON SHEET GP-1 FOR ADDITIONAL CONDITIONS.
  3. SIDE LOT SWALE EASEMENT PER SFWM PERMIT



**Legend**

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- MATCHLINE
- PROPOSED FIRE HYDRANT
- PROPOSED 1" SINGLE WATER SERVICE WITH 5/8" METER
- PROPOSED 1" WATER DOUBLE SERVICE WITH (2) 5/8" METERS
- PROPOSED SANITARY MANHOLE
- PROPOSED 6" SINGLE SANITARY SERVICE WITH 6" CLEAN OUT
- PROPOSED 6" SANITARY DOUBLE SERVICE WITH (2) 6" CLEAN OUTS



NO	DATE	BY	APRV	REVISIONS
1	12/15/21	RP	WRB	REVISED PER PSL COMMENTS

BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL

**WATER & SEWER PLAN**

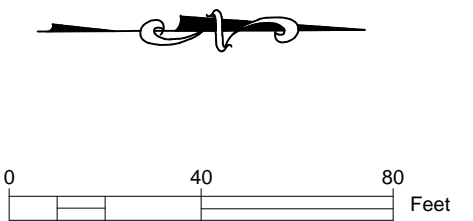
**CARNAHAN PROCTOR & CROSS**  
CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
PHONE: (854) 972-3959 FAX: (854) 972-4178  
CPC AUTH. NO. 00002939

SCALE: AS SHOWN  
DATE: 12/08/21  
DRAWN BY: R.P.  
CHECKED BY: W.R.B.  
DESIGNED BY: R.F.

**WS-2**

WILLIAM R. BARBARO, P.E.  
FL. REGISTRATION NO. - 64761

SEE SHEET WS-4 FOR CONTINUATION



TYPE "A" LOT SIDE SWALE (TYP)

SEE SHEET WS-2 FOR CONTINUATION

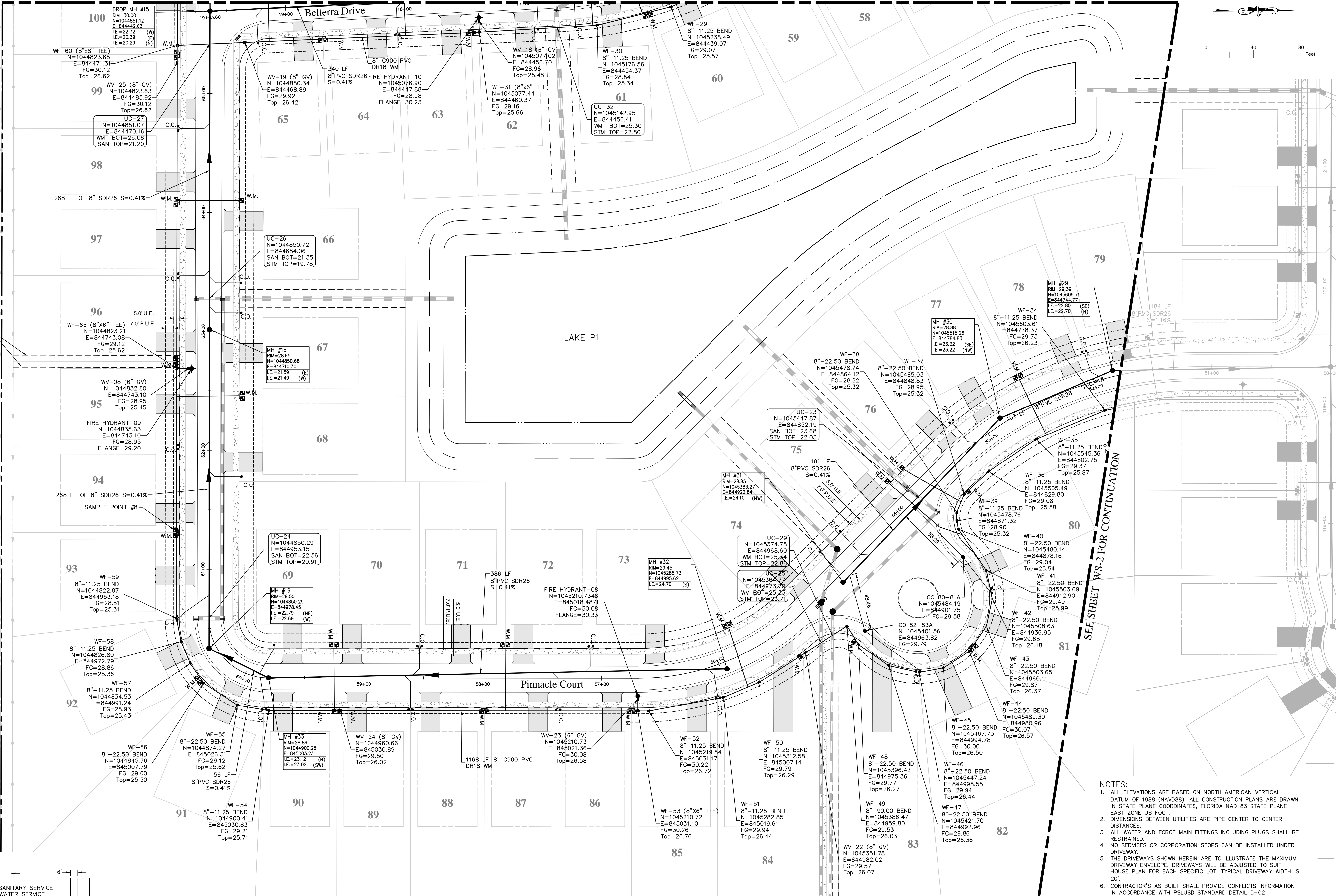
BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL

WATER & SEWER PLAN

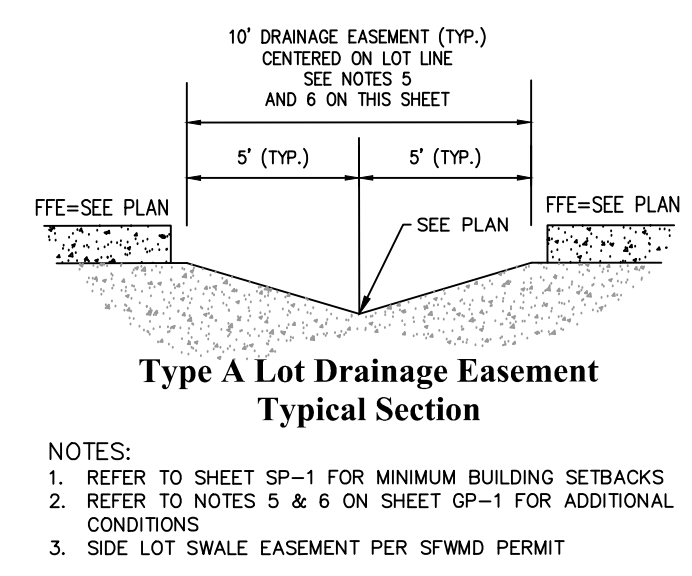
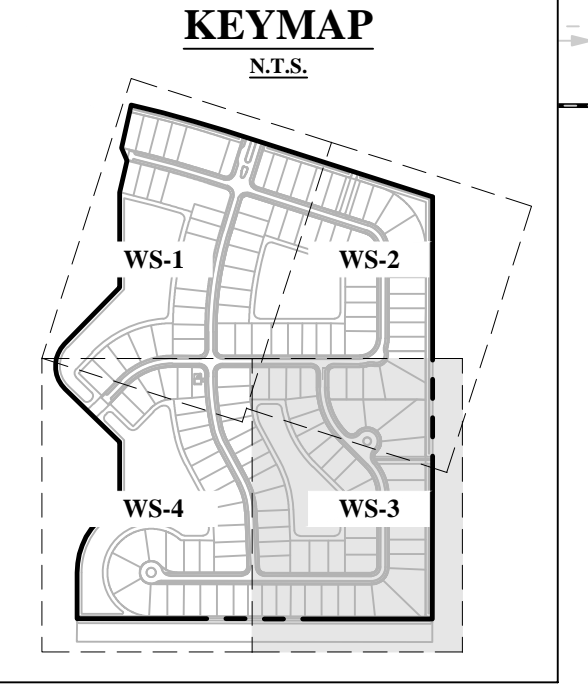
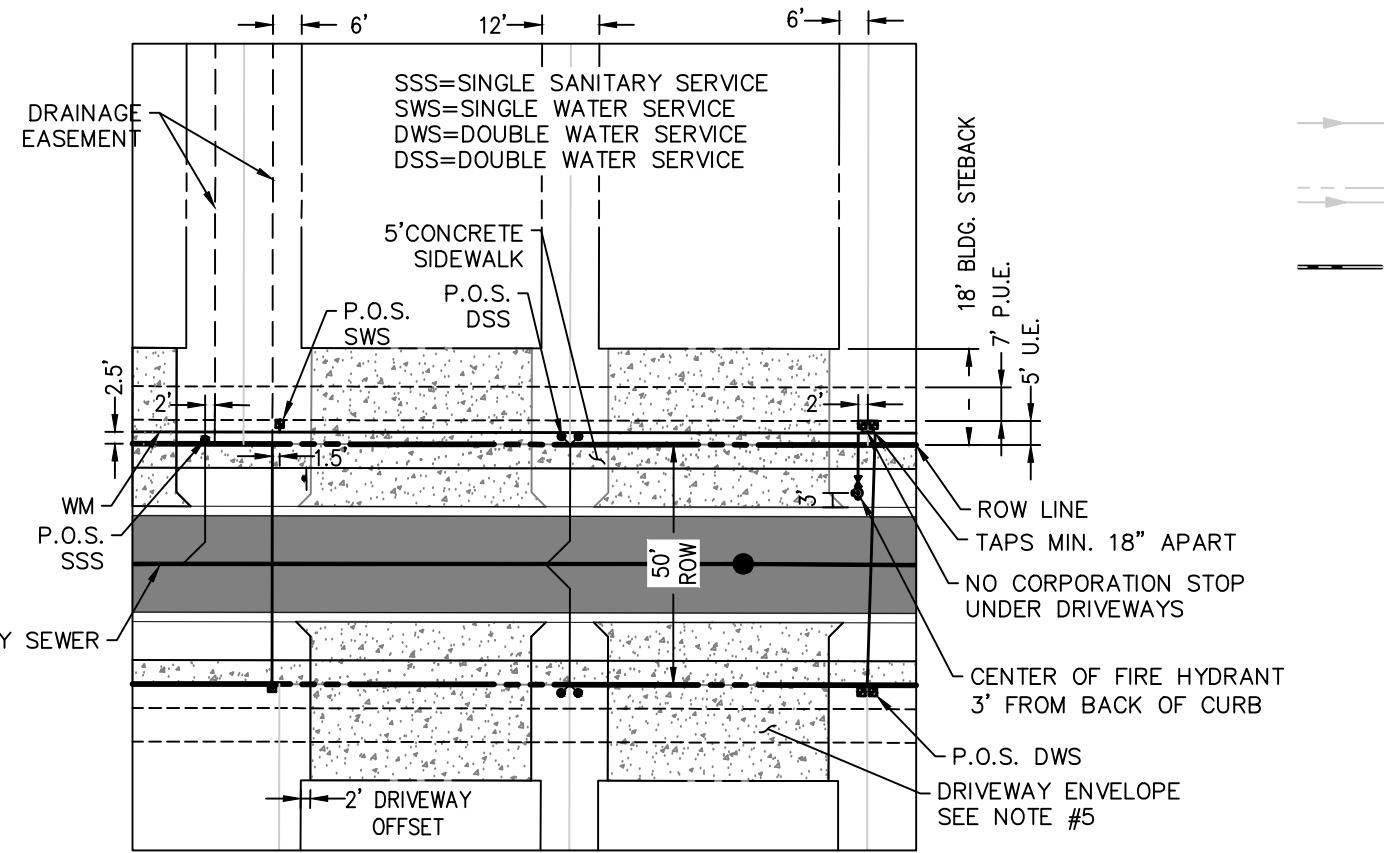
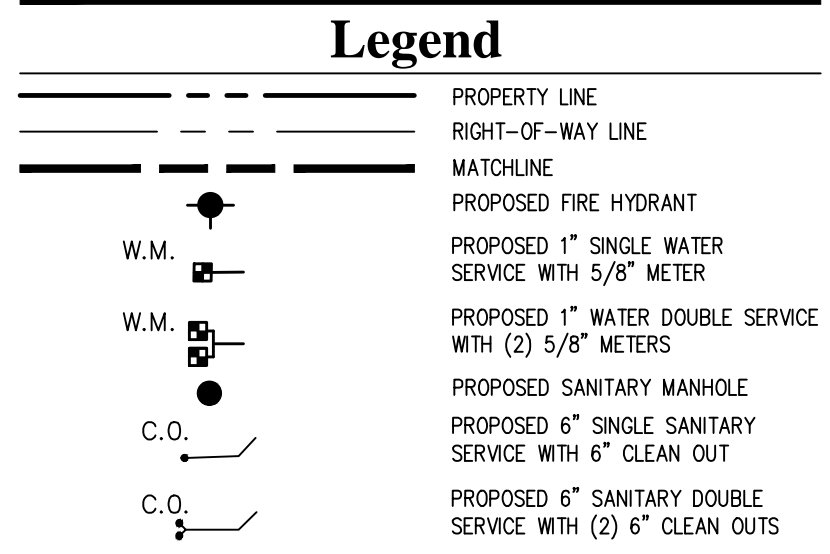


SCALE: AS SHOWN  
DATE: 12/08/21  
DRAWN BY: R.P.  
CHECKED BY: W.R.B.  
DESIGNED BY: R.F.

Professional Engineer seal for William R. Barbaro, P.E., License No. 64761, State of Florida. Includes project title 'WS-3' and registration information.



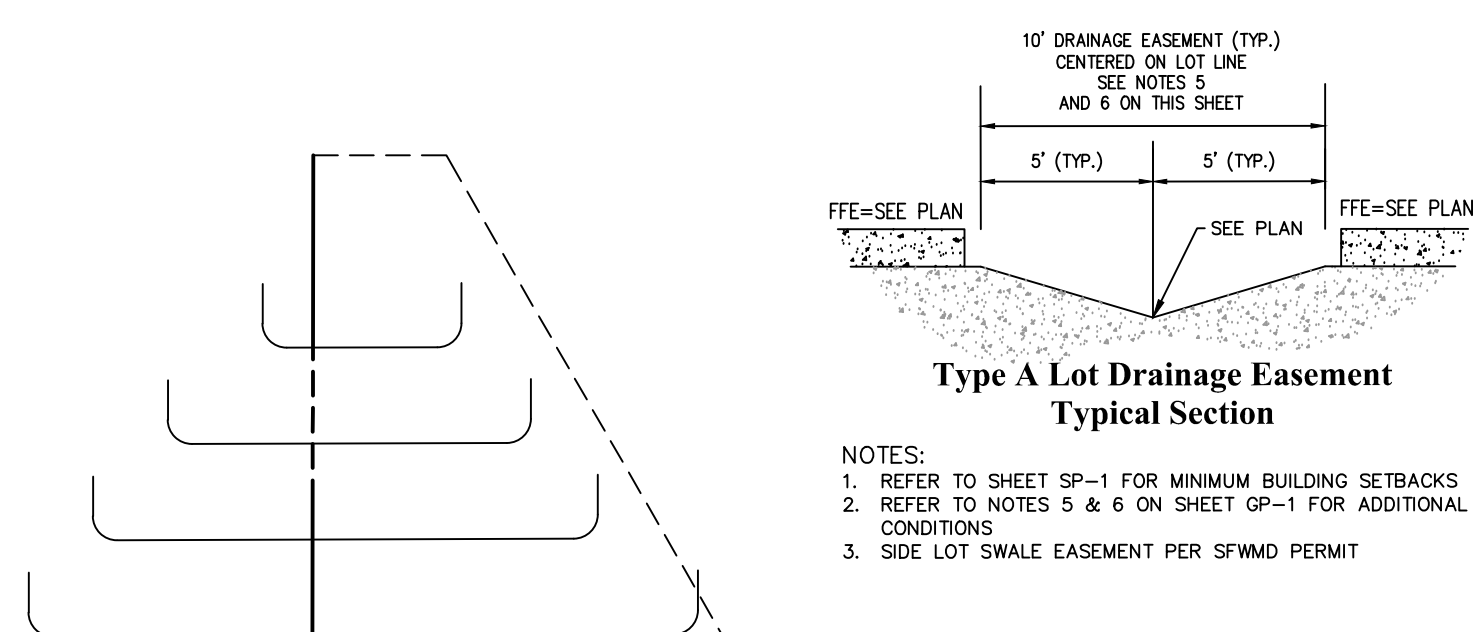
- NOTES:
1. ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). ALL CONSTRUCTION PLANS ARE DRAWN IN STATE PLANE COORDINATES, FLORIDA NAD 83 STATE PLANE EAST ZONE US FOOT.
2. DIMENSIONS BETWEEN UTILITIES ARE PIPE CENTER TO CENTER DISTANCES.
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5. THE DRIVEWAYS SHOWN HEREIN ARE TO ILLUSTRATE THE MAXIMUM DRIVEWAY ENVELOPE. DRIVEWAYS WILL BE ADJUSTED TO SUIT HOUSE PLAN FOR EACH SPECIFIC LOT. TYPICAL DRIVEWAY WIDTH IS 20'.
6. CONTRACTOR'S AS BUILT SHALL PROVIDE CONFLICTS INFORMATION IN ACCORDANCE WITH PLSUSD STANDARD DETAIL C-02 REFERENCED ON SHEET WSD-1



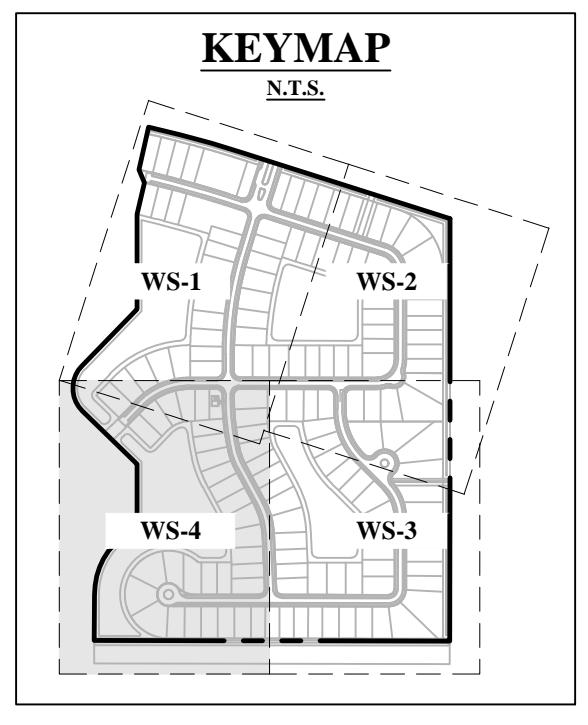
- NOTES:
1. REFER TO SHEET SP-1 FOR MINIMUM BUILDING SETBACKS
2. REFER TO NOTES 5 & 6 ON SHEET GP-1 FOR ADDITIONAL CONDITIONS
3. SIDE LOT SWALE EASEMENT PER SFWMD PERMIT

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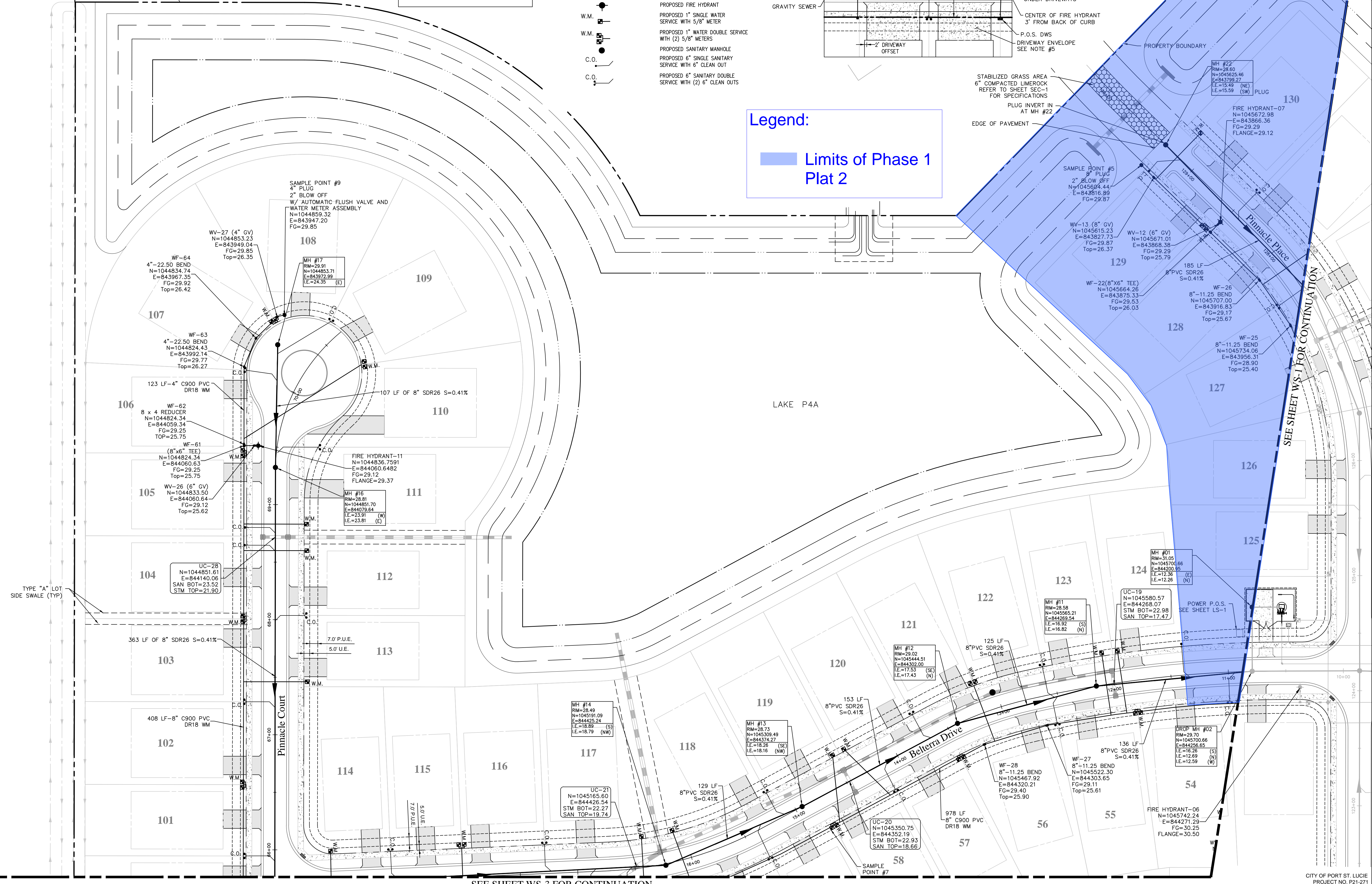
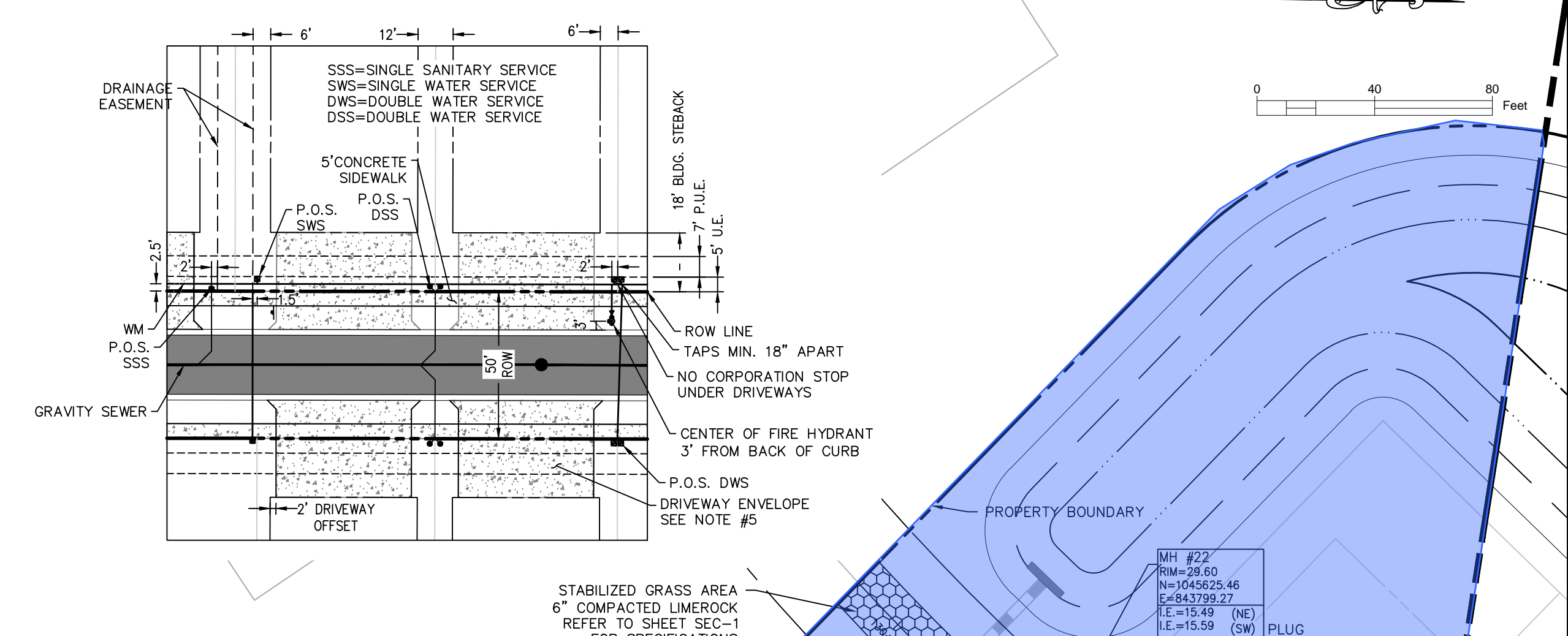
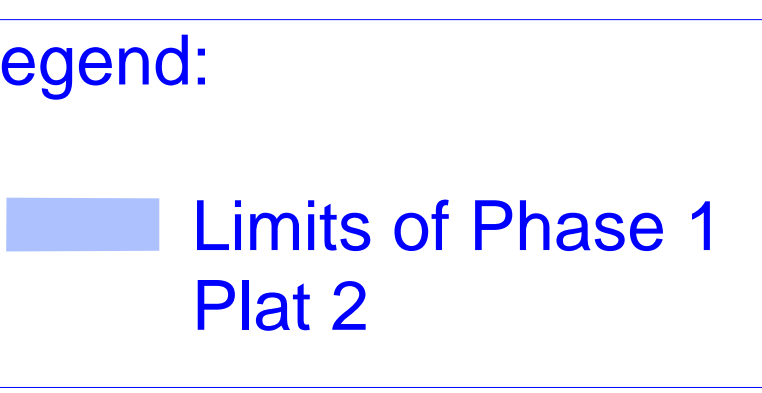
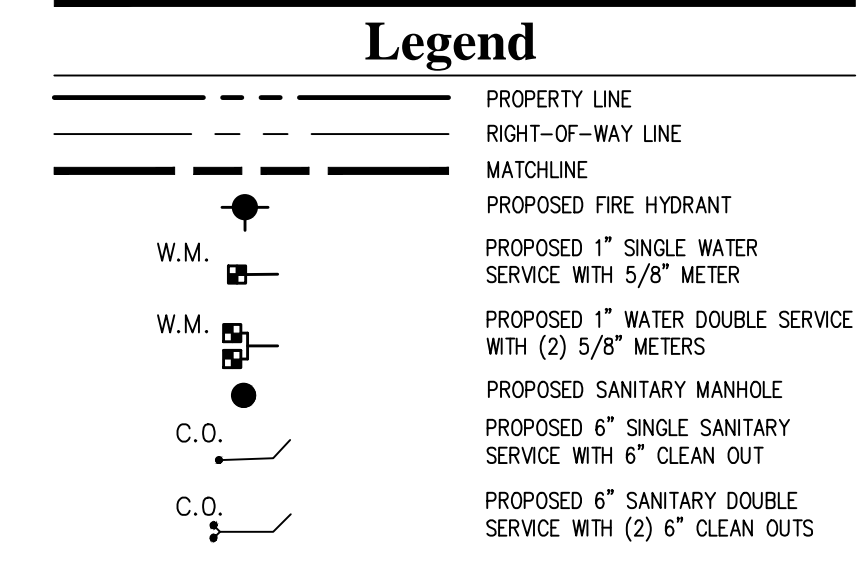
2/09/21 P:\Projects\_2019\Deerfield Shore\Southern Grove\cod\190214-WS.dwg



**Type A Lot Drainage Easement Typical Section**  
 NOTES:  
 1. REFER TO SHEET SP-1 FOR MINIMUM BUILDING SETBACKS  
 2. REFER TO NOTES 5 & 6 ON SHEET GP-1 FOR ADDITIONAL CONDITIONS  
 3. SIDE LOT SWALE EASEMENT PER SFMWD PERMIT



- NOTES:**
- ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). ALL CONSTRUCTION PLANS ARE DRAWN IN STATE PLANE COORDINATES, FLORIDA NAD 83 STATE PLANE EAST ZONE US FOOT.
  - DIMENSIONS BETWEEN UTILITIES ARE PIPE CENTER TO CENTER DISTANCES.
  - ALL WATER AND FORCE MAIN FITTINGS INCLUDING PLUGS SHALL BE RESTRAINED.
  - NO SERVICES OR CORPORATION STOPS CAN BE INSTALLED UNDER DRIVEWAYS.
  - THE DRIVEWAYS SHOWN HEREIN ARE TO ILLUSTRATE THE MAXIMUM DRIVEWAY ENVELOPE. DRIVEWAYS WILL BE ADJUSTED TO SUIT HOUSE PLAN FOR EACH SPECIFIC LOT. TYPICAL DRIVEWAY WIDTH IS 20'.
  - CONTRACTOR'S AS BUILT SHALL PROVIDE CONFLICTS INFORMATION IN ACCORDANCE WITH PLSUD STANDARD DETAIL G-02 REFERENCED ON SHEET WSD-1



SEE SHEET WS-3 FOR CONTINUATION

SEE SHEET WS-1 FOR CONTINUATION

NO	DATE	BY	APPROVED	REVISIONS
1	12/15/21	RP	WRB	REVISED PER PSL COMMENTS

**BELTERRA PHASE 1 AT SOUTHERN GROVE  
 PORT ST. LUCIE COUNTY, FL**

**WATER & SEWER PLAN**

FILE NO. 190214

**CARNAHAN PROCTOR & CROSS**  
 CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
 814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
 PHONE: (954) 972-3659 FAX: (954) 972-4178

SCALE: AS SHOWN  
 DATE: 12/08/21  
 DRAWN BY: R.P.  
 CHECKED BY: W.R.B.  
 DESIGNED BY: R.F.

**WS-4**

WILLIAM R. BARBARO, P.E.  
 FL. REGISTRATION NO. - 64761

CITY OF PORT ST. LUCIE  
 PROJECT NO. P21-271  
 PLSUD FILE NO. 5336

### HORIZONTAL BENDS

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

**NOTES:**

- 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
- 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 PLSUSD.

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

**PIPELINE RESTRAINT REQUIREMENTS (HORIZONTAL)**

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	159	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	257	71
42"	29	8	58	16	120	34	289	80
48"	32	9	64	18	133	37	320	89

**NOTES:**

- 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
- WHEN CONDITIONS DIFFER FROM THE ABOVE, THE ENGINEER-OF-RECORD (EOR) SHALL SUBMIT CALCULATIONS FOR REVIEW AND APPROVAL OF PLSUSD.
- ALL JOINTS BETWEEN UPPER AND LOWER BENDS SHALL BE RESTRAINED.

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

**PIPELINE RESTRAINT REQUIREMENTS (VERTICAL)**

DATE: 2019  
SCALE: N.T.S.  
SHEET: 2 OF 3

### REDUCER

DIAMETER	L = RETAINED LENGTH AT LARGER SIZE OF REDUCER (FEET)													
	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
48"														

**NOTES:**

- 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
- 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 PLSUSD.

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

**PIPELINE RESTRAINT REQUIREMENTS (REDUCER)**

DATE: 2019  
SCALE: N.T.S.  
SHEET: 3 OF 3

**NOTES:**

- AUTOMATIC FLUSHING VALVES SHALL BE PROVIDED AT ALL DEAD ENDS UNLESS OTHERWISE APPROVED IN WRITING BY THE PLSUSD.
- AT THE DIRECTION OF THE PLSUSD, BOLLARDS MAY BE REQUIRED TO PREVENT DAMAGE FROM ACCIDENTS. REFER TO DETAIL G-14 FOR BOLLARD INSTALLATION.
- UPON WRITTEN REQUEST BY PLSUSD A RESIDENTIAL TYPE WATER METER MAY BE REQUIRED.

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

**AUTOMATIC FLUSHING VALVE FOR WATER MAINS**

DATE: 2019  
SCALE: N.T.S.  
SHEET: 1 OF 1

**NOTES:**

- A CHAIN LINK FENCE, AT LEAST 6' HIGH SHALL BE PROVIDED.
- VINYL COATED STEEL WOVEN WIRE FABRIC SHALL BE STRETCHED TIGHT WITH STRETCHER BARS AND STRAPS. FASTENED TOP & BOTTOM AT LINE POSTS WITH GALVANIZED PIG RING TIES.
- THE GATE SHALL BE SEMI-TRANSPARENT TO ALLOW FOR VISUAL INSPECTION BY PLSUSD.
- GATES TO BE SECURED OPEN WITH GATE STOP SET IN CONCRETE.
- ALL MATERIAL SHALL BE BLACK IN COLOR.

MINIMUM CONSTRUCTION STANDARDS FOR CITY OF PORT ST. LUCIE  
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**FENCE DETAILS**

DATE: 2019  
SCALE: N.T.S.  
SHEET: 1 OF 1

**NOTES:**

- THE ABOVE DETAIL IS FOR A TYPICAL PIG LAUNCHING / RECOVERY STATION. THE ENGINEER-OF-RECORD SHALL SUBMIT DRAWING DETAILS FOR THE PIG LAUNCHING STATION WITH DIMENSIONS FOR THE CONTAINMENT BOX, PIPE SIZES & LENGTH, AND SPECIFICATIONS FOR ALL COMPONENTS AND FITTINGS.
- PIG RECOVERY STATION WILL BE REVERSE TO FLOW.
- CONTAINMENT BOX SIZE VARIES TO ALLOW ACCESSIBILITY TO BOLTS OF PLUG. PER QUALIFIED PRODUCT LIST.
- VARIES WITH MAIN SIZE IN ORDER TO OFFSET CONTAINMENT BOX FROM MAIN LINE.
- THE BOTTOM OF CONTAINMENT BOX SHALL BE COVERED WITH 8 INCHES OF #57 STONE OVER FILTER FABRIC.
- ALL FITTINGS BELOW-GROUND SHALL BE MECHANICAL JOINT.

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

**PIG LAUNCHING / RECOVERY STATION**

DATE: 2019  
SCALE: N.T.S.  
SHEET: 1 OF 1

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

**BOLLARD DETAIL**

FILE NAME: G-15  
DATE: 2019  
SCALE: N.T.S.  
SHEET: 1 OF 1

**BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL**

**WATER & SEWER DETAILS**

REVISIONS  
APPROVED BY  
DATE  
NO.

**CARNAHAN PROCTOR & CROSS**  
CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
PHONE: (854) 972-3959 FAX: (854) 972-4178  
CPC AUTH. NO. 00002939

SCALE: AS SHOWN  
DATE: 12/08/21  
DRAWN BY: R.P.  
CHECKED BY: W.R.B  
DESIGNED BY: R.F.

**WSD-2**

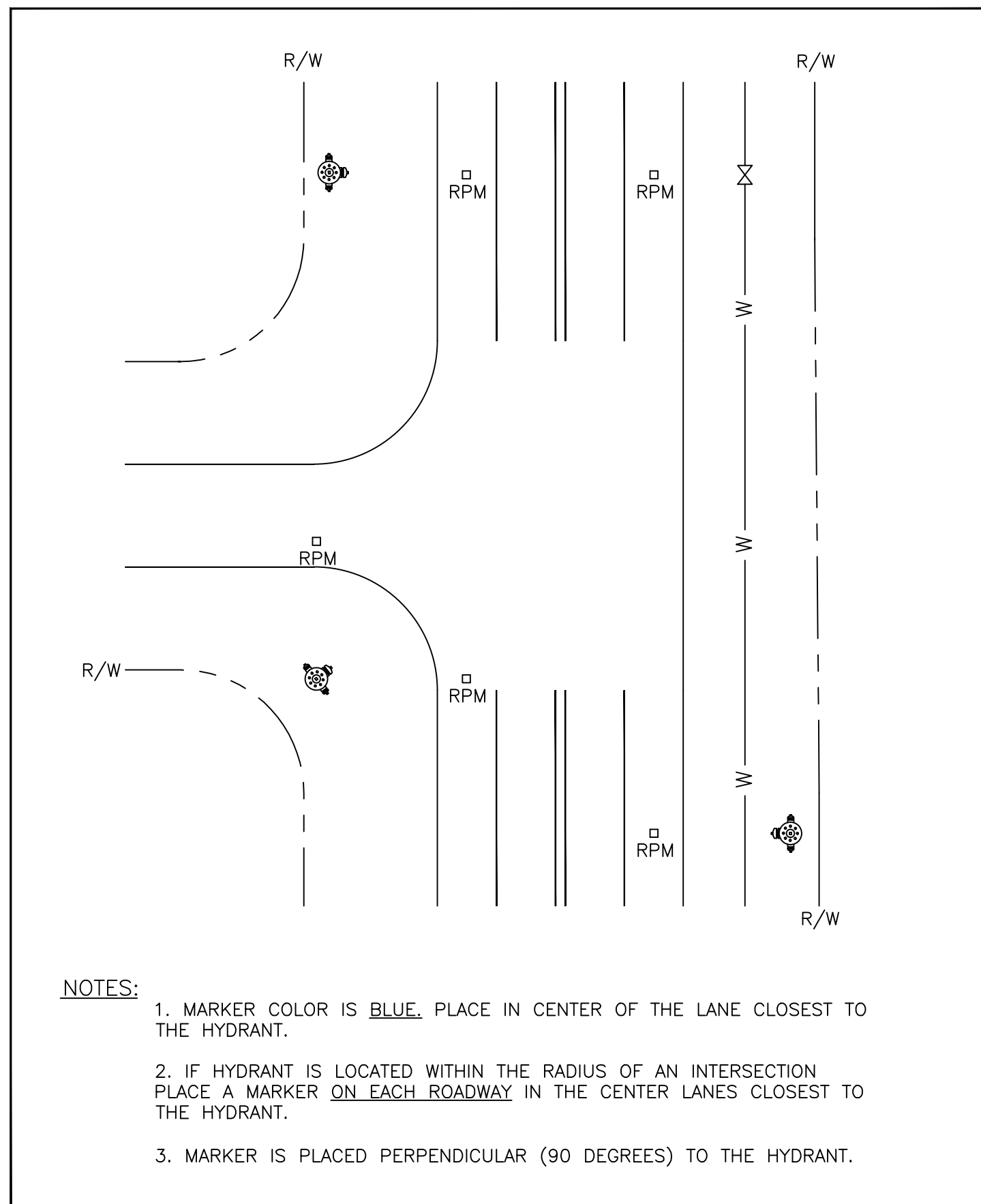
WILLIAM R. BARBARO  
LICENSE  
No. 64761  
STATE OF FLORIDA  
PROFESSIONAL ENGINEER

CITY OF PORT ST. LUCIE  
PROJECT NO. P21-271  
PLSUSD FILE NO. 5336

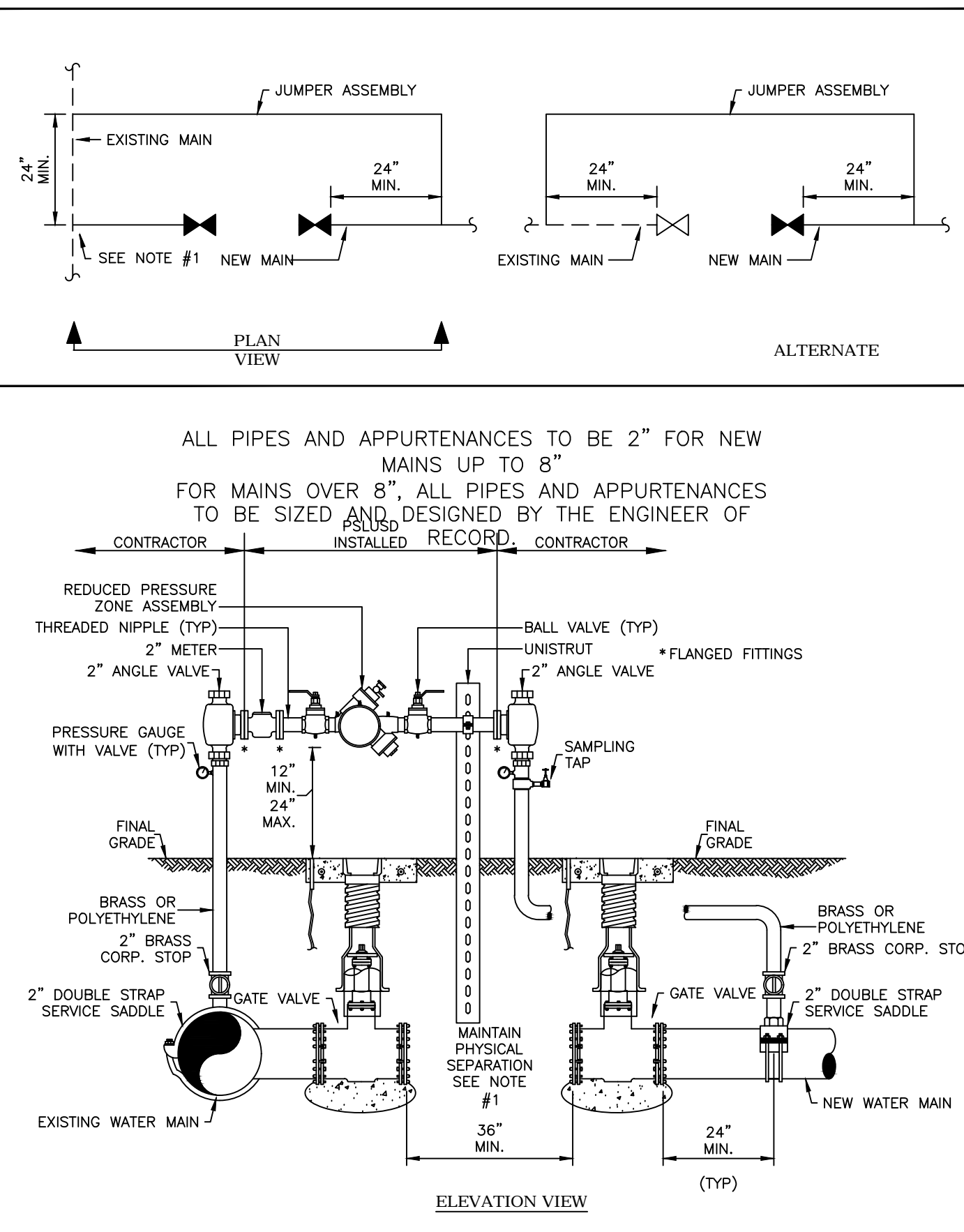
WILLIAM R. BARBARO, P.E.  
FL. REGISTRATION NO. - 64761

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2 / 09 / 21 P: \Projects\_2019\Deerfield Share\cod\ld\Pionset\190214-WSD.dwg



- NOTES:**
1. MARKER COLOR IS BLUE. PLACE IN CENTER OF THE LANE CLOSEST TO THE HYDRANT.
  2. IF HYDRANT IS LOCATED WITHIN THE RADIUS OF AN INTERSECTION PLACE A MARKER ON EACH ROADWAY IN THE CENTER LANES CLOSEST TO THE HYDRANT.
  3. MARKER IS PLACED PERPENDICULAR (90 DEGREES) TO THE HYDRANT.



ALL PIPES AND APPURTENANCES TO BE 2" FOR NEW MAINS UP TO 8"  
 FOR MAINS OVER 8", ALL PIPES AND APPURTENANCES TO BE SIZED AND DESIGNED BY THE ENGINEER OF PSLUSD

- 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 DETERMINED 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. THIS 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.

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

**FIRE HYDRANT REFLECTIVE PAVEMENT MARKER PLACEMENT GUIDELINE**  
 DETAIL: W-08  
 DATE: 2019  
 SCALE: N.T.S.  
 SHEET: 1 OF 1

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

**TEMPORARY JUMPER CONNECTION (UP TO 8" PIPE)**  
 DETAIL: W-09  
 DATE: 2019  
 SCALE: N.T.S.  
 SHEET: 1 OF 2

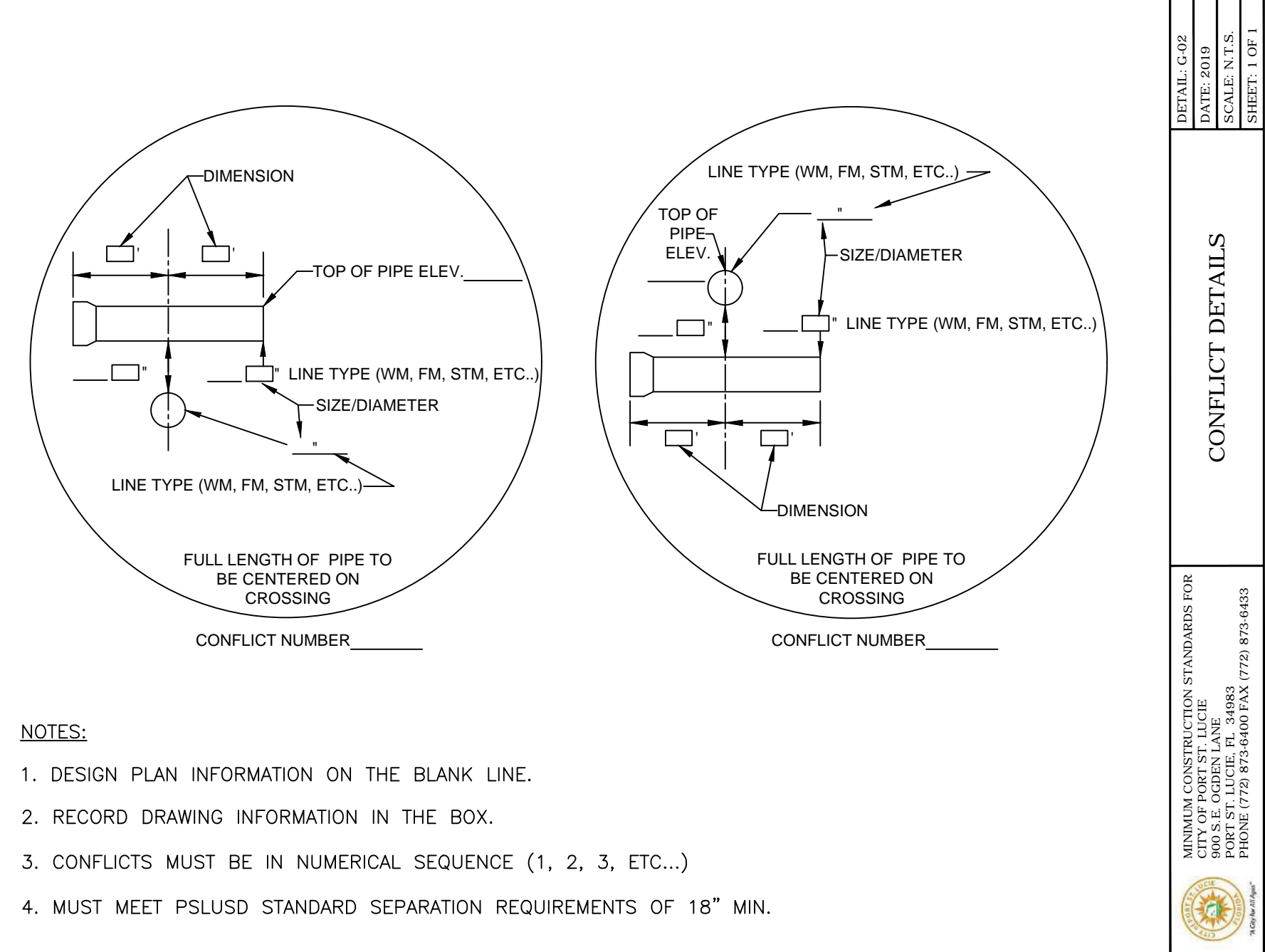
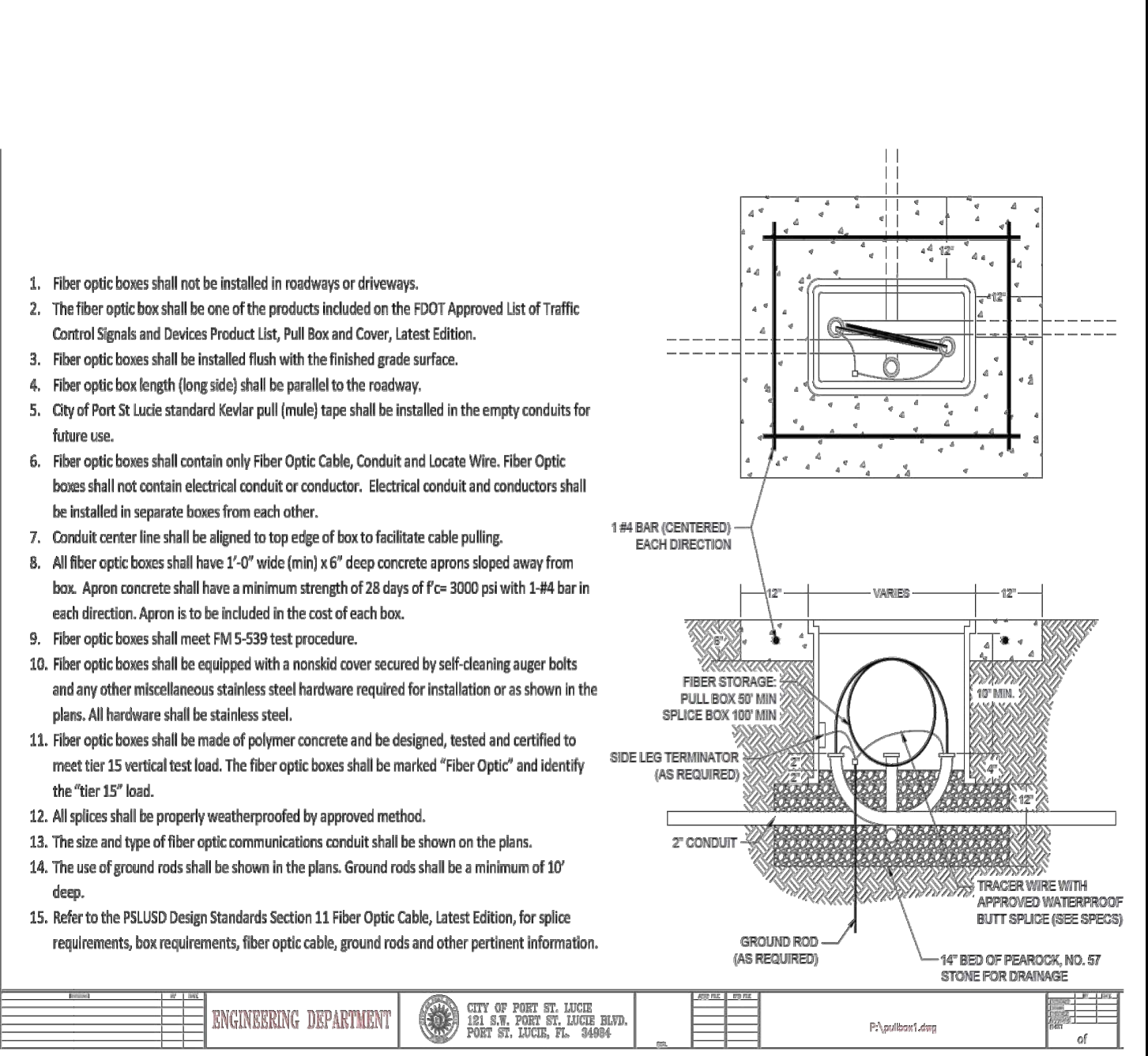
MINIMUM CONSTRUCTION STANDARDS FOR CITY OF PORT ST. LUCIE  
 900 S.E. OGDEN LANE  
 PORT ST. LUCIE, FL 34983  
 PHONE (772) 873-6400 FAX (772) 873-6433

**TEMPORARY JUMPER CONNECTION**  
 DETAIL: W-09  
 DATE: 2019  
 SCALE: N.T.S.  
 SHEET: 2 OF 2

**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), VACUUM SANITARY SERVICE, STORM SEWER, STORM SEWER FORCE MAIN	10' MINIMUM	18" MINIMUM	18" MINIMUM
ALL OTHER FACILITIES, INCLUDING BUT NOT LIMITED TO: TELEPHONE, CABLE TV, POWER, ETC.	5' MINIMUM	18" MINIMUM	3' MINIMUM
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  
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 PORT ST. LUCIE, FL 34983  
 PHONE (772) 873-6400 FAX (772) 873-6433

**STANDARD SEPARATION REQUIREMENTS**  
 DETAIL: C-01  
 DATE: 2019  
 SCALE: N.T.S.  
 SHEET: 1 OF 1

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

**TEMPORARY JUMPER CONNECTION (UP TO 8" PIPE)**  
 DETAIL: W-09  
 DATE: 2019  
 SCALE: N.T.S.  
 SHEET: 1 OF 2

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

**TEMPORARY JUMPER CONNECTION**  
 DETAIL: W-09  
 DATE: 2019  
 SCALE: N.T.S.  
 SHEET: 2 OF 2

**CONFLICT DETAILS**  
 DETAIL: C-02  
 DATE: 2019  
 SCALE: N.T.S.  
 SHEET: 1 OF 1

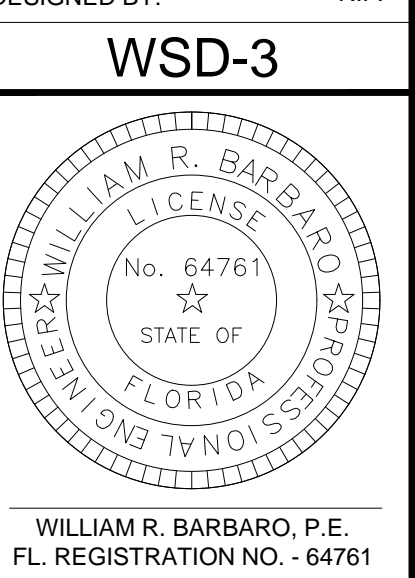
BELTERRA PHASE 1 AT SOUTHERN GROVE  
 PORT ST. LUCIE COUNTY, FL

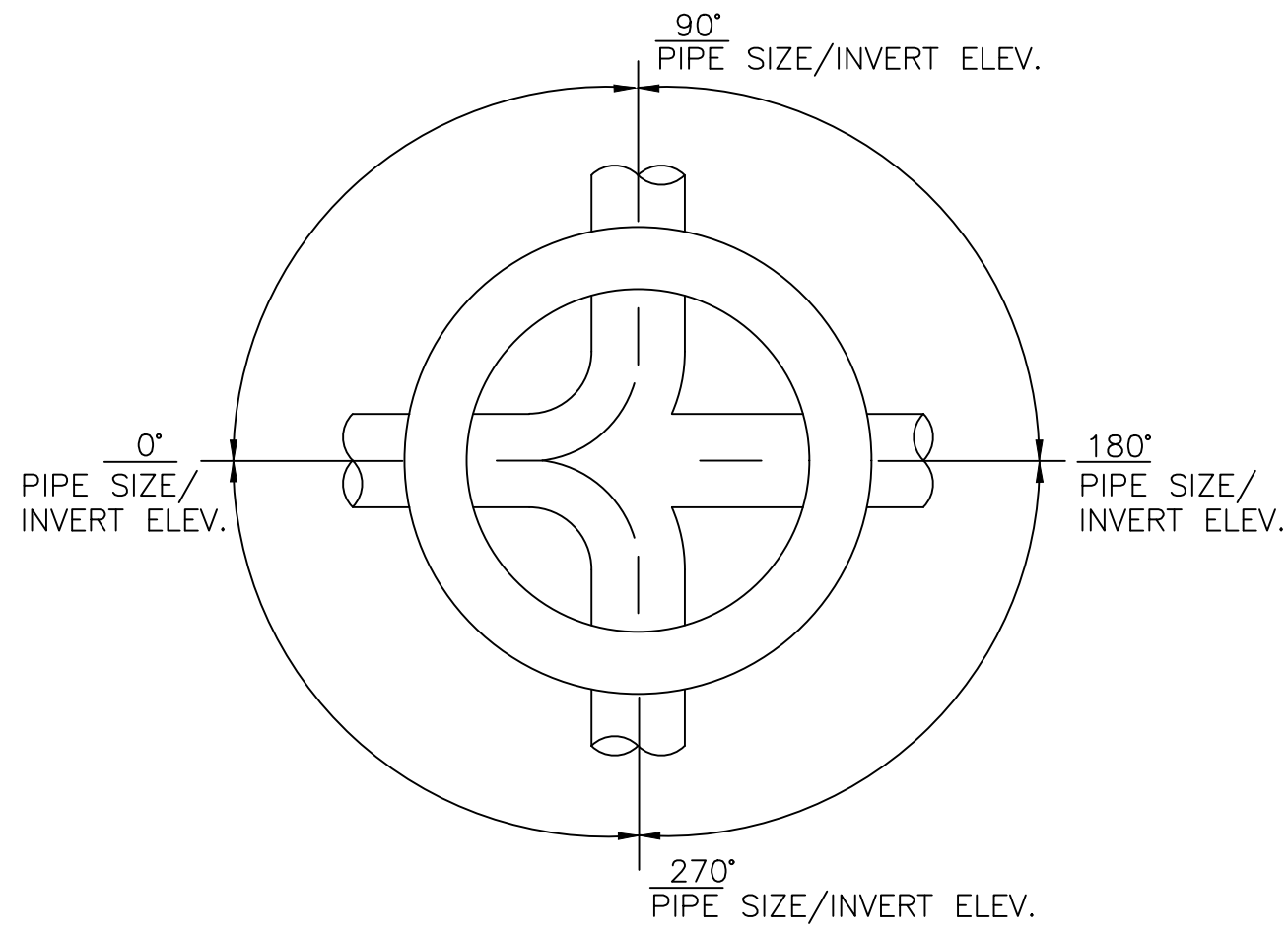
WATER & SEWER DETAILS



CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
 814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
 PHONE: (854) 972-3559 FAX: (854) 972-4178

SCALE: AS SHOWN  
 DATE: 12/08/21  
 DRAWN BY: R.P.  
 CHECKED BY: W.R.B.  
 DESIGNED BY: R.F.

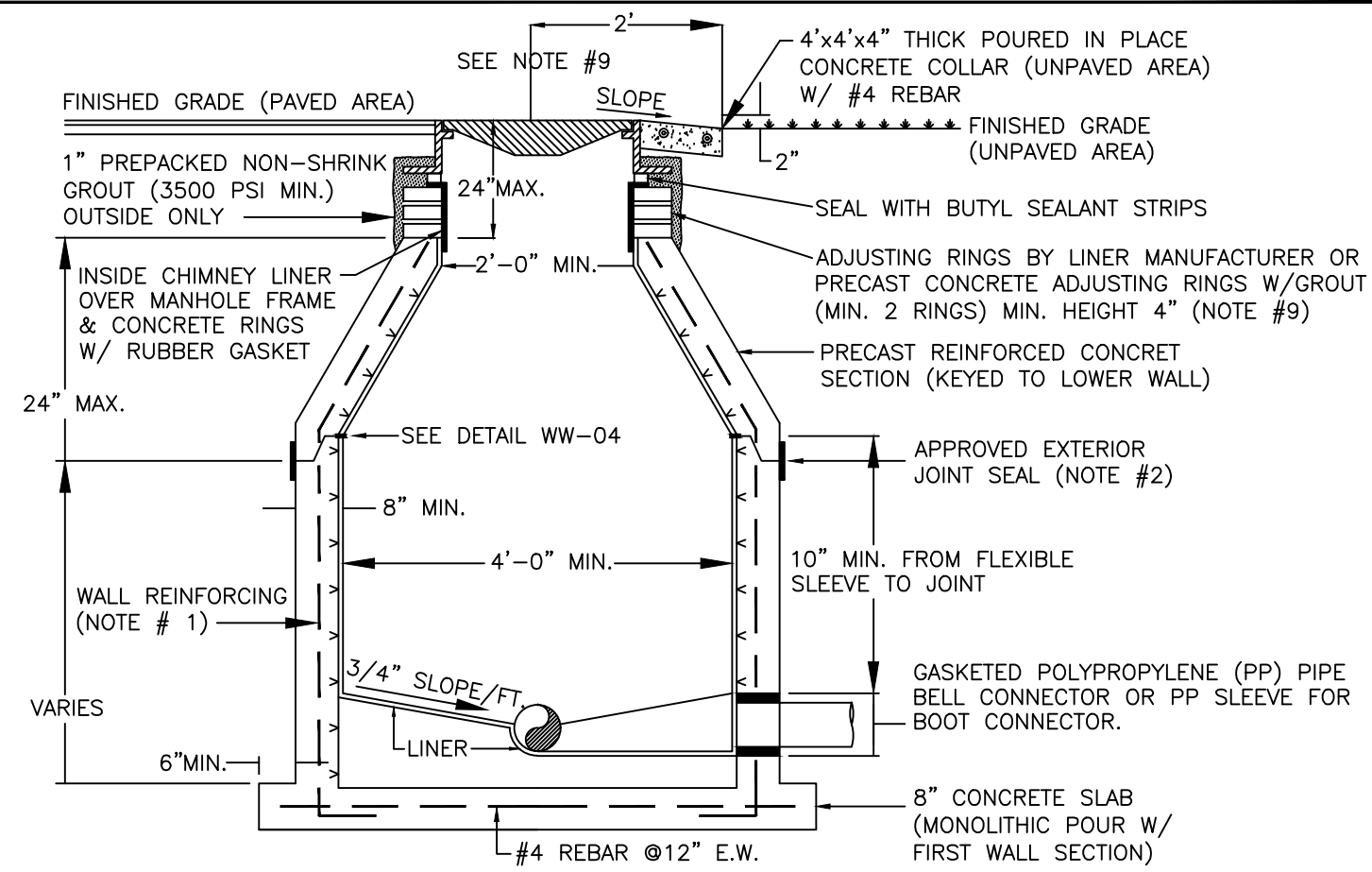




PLAN VIEW

NOTES:

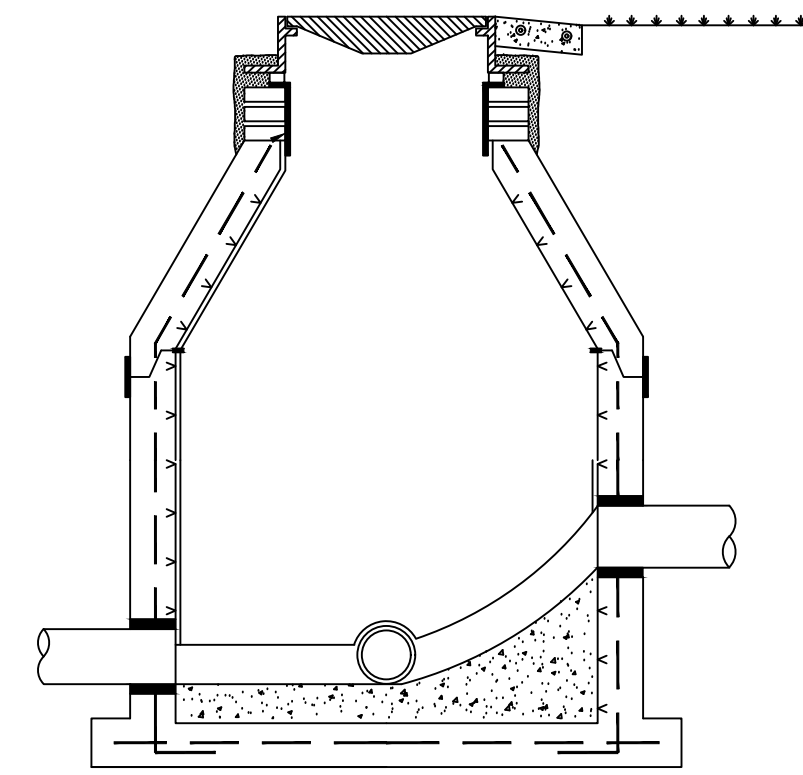
1. THE ENGINEER-OF-RECORD SHALL SUBMIT TO PSLUSD THE SHOP DRAWINGS FOR EACH STRUCTURE, PROVIDING THE DIAMETER OF EACH PIPE, INVERT ELEVATION OF EACH PIPE, RIM ELEVATION AND THE NUMBER OF DEGREES BETWEEN PIPES. (15 DEGREE INCREMENTS IF POSSIBLE)
2. MANHOLE INTERIOR SHALL BE LINED UTILIZING A CORROSION BARRIER SYSTEM. LISTED ON THE PSLUSD QUALIFIED PRODUCT LIST.
3. MANHOLE EXTERIOR SHALL BE COATED WITH A PRIMER AND TWO COATS OF A WATER BASED EPOXY 3-5 MILS EACH PER THE PSLUSD SPECIFICATIONS. APPLICATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION.



NOTES:

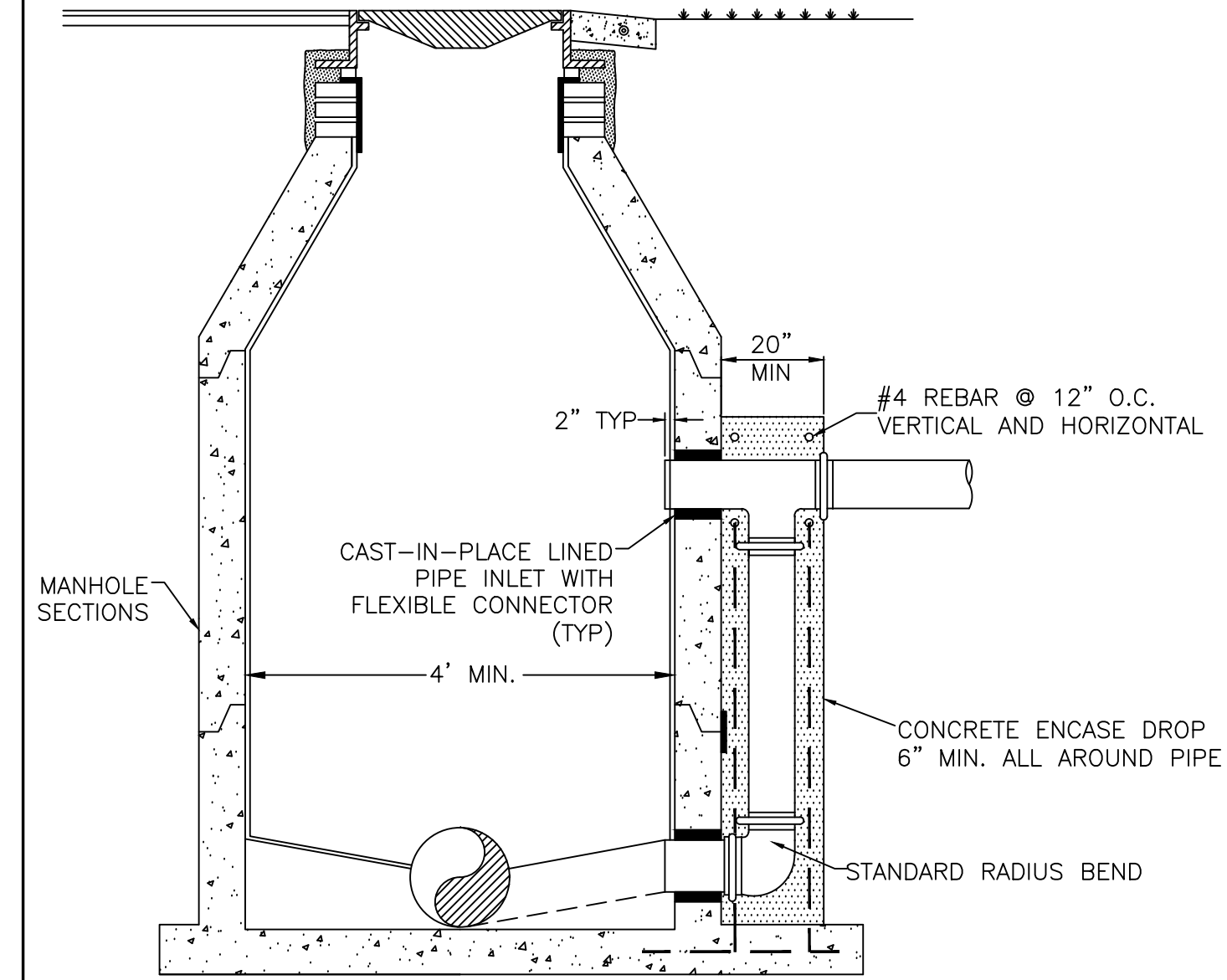
1. MANHOLE FABRICATION SHALL BE IN ACCORDANCE W/ ASTM C-478, LATEST REVISION.
2. SEALANT SHALL BE APPLIED PER MANUFACTURER'S SPECIFICATION BETWEEN MANHOLE SECTIONS & AT ALL JOINTS (SEE DETAIL WW-04). ALSO AN APPROVED EXTERNAL JOINT SEAL MAY BE APPLIED AT THE JOINTS. (EXTERNAL JOINT SEAL IS OPTIONAL)
3. ALL PIPE OPENINGS SHALL BE GAS AND WATER TIGHT WITH NO EXPOSED CONCRETE SURFACES.
4. CAST OPENINGS SHALL BE MANUFACTURED WITH PRECAST HOLE W/ CAST-IN LINER SLEEVE SIZED FOR APPROPRIATE PIPE AND FLEXIBLE CONNECTOR. APPROVED FLEXIBLE MANHOLE CONNECTORS SHALL BE USED AT PIPE CONNECTIONS. HOLE SIZE PER BOOT MANUFACTURER'S SPECIFICATIONS. DOUBLE STAINLESS STEEL PIPE CLAMPS MUST BE INSTALLED ON THE FLEXIBLE SLEEVES WHERE REQUIRED BY BOOT MANUFACTURER'S INSTALLATION INSTRUCTIONS.
5. FLOW CHANNELS SHALL BE CONSTRUCTED TO DIRECT FLOW INTO FLOW STREAM (SEE DETAIL WW-01).
6. LIFT HOLES ARE PERMITTED BUT MUST BE GROUTED ONCE MANHOLE IS IN PLACE.
7. MANHOLE AND BASE WILL BE LINED INSIDE WITH AN APPROVED LINER SYSTEM.
8. AN APPROVED COVER & FRAME SHALL BE PROVIDED. APPROVED INSIDE MANHOLE CHIMNEY SEALANT SHALL BE APPLIED OVER THE MANHOLE FRAME, CONCRETE RINGS, AND LINER SECTION IN ACCORDANCE WITH THE SPECIFICATIONS.
9. MAXIMUM HEIGHT OF CHIMNEY SHALL NOT EXCEED 24 INCHES INCLUDING FRAME CASTING.

CONT. ON SHEET 2 OF 2



NOTES:

10. EXCAVATION, DEWATERING, BACKFILL & COMPACTION SHALL BE CONDUCTED IN ACCORDANCE W/ THE PSLUSD UTILITY STANDARDS. DENSITY TESTS SHALL BE PERFORMED AND SUBMITTED AS REQUIRED.
11. THE MANHOLE BASE SHALL BE CONSTRUCTED AS SHOWN IN THIS DETAIL WHERE THE DROP IN INVERT EXCEEDS 0.1' BUT IS LESS THAN 2'. FOR DROPS 2' OR GREATER A DROP CONNECTION PER DETAIL WW-03 SHALL BE USED.
12. THE MANHOLE SHALL BE CONSTRUCTED AS SHOWN IN THIS DETAIL WHERE THE DROP IN INVERT EXCEEDS 0.1' BUT IS LESS THAN 2'. FOR DROPS 2' OR GREATER A DROP CONNECTION PER DETAIL WW-03 SHALL BE USED.



NOTES:

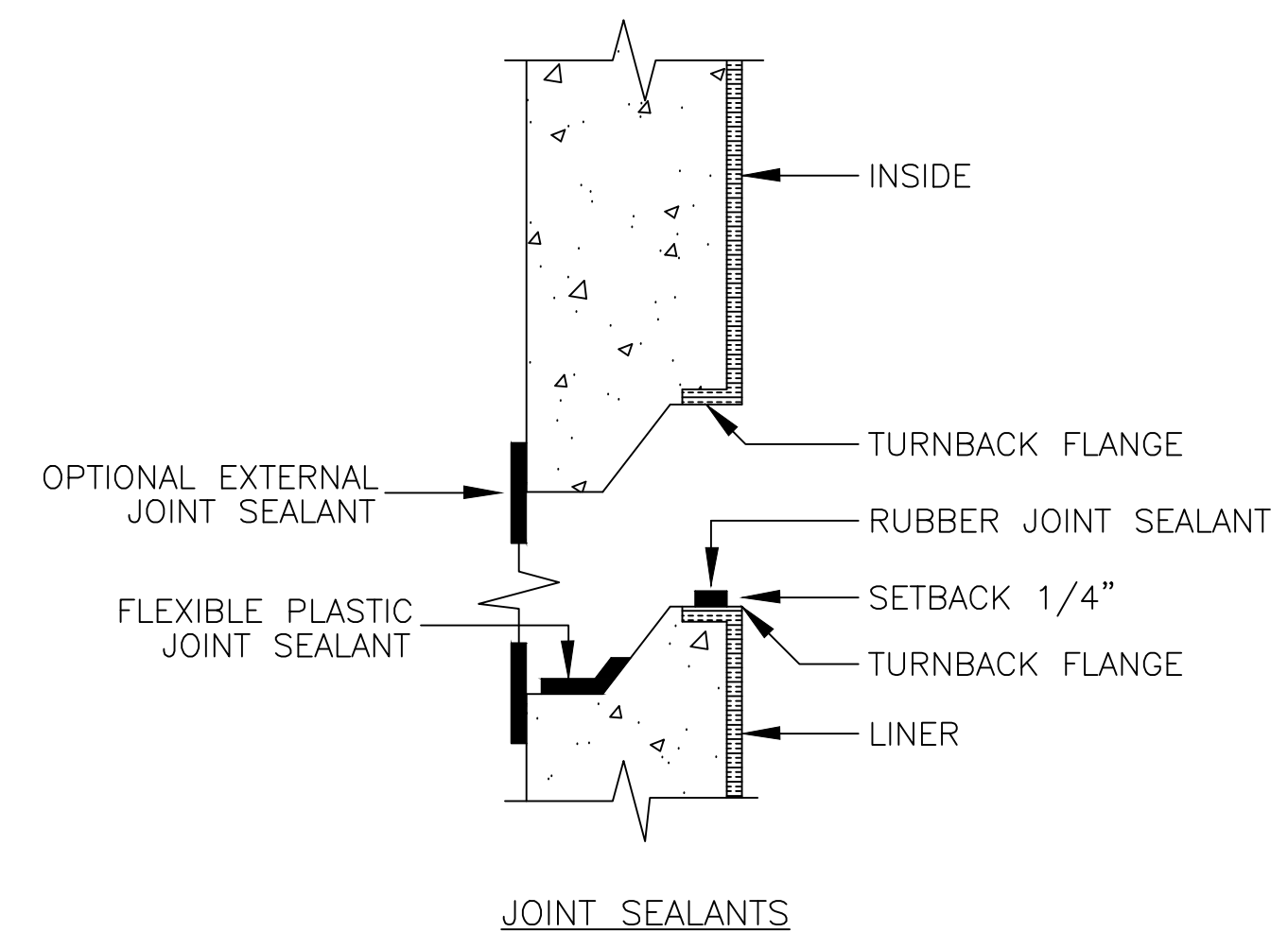
1. A DROP CONNECTION IS REQUIRED WHENEVER AN INFLUENT INVERT IS LOCATED 2' OR HIGHER THAN THE DOWNSTREAM INVERT CHANNEL. MANHOLES WITH A DROP 2.0 FEET OR LESS SHALL BE IN ACCORDANCE WITH DETAIL WW-02.
2. MANHOLE CONSTRUCTION SHALL BE IN ACCORDANCE WITH DETAIL WW-02.
3. PVC SDR 26 PIPE WITH PVC SDR 26 FITTINGS SHALL BE UTILIZED IN THE DROP ASSEMBLY.

	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	INVERT FLOW CHANNELS FOR MANHOLES	DETAIL: WW-01 DATE: 2019 SCALE: N.T.S. SHEET: 1 OF 1
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	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 PRECAST MANHOLE	DETAIL: WW-02 DATE: 2019 SCALE: N.T.S. SHEET: 1 OF 2
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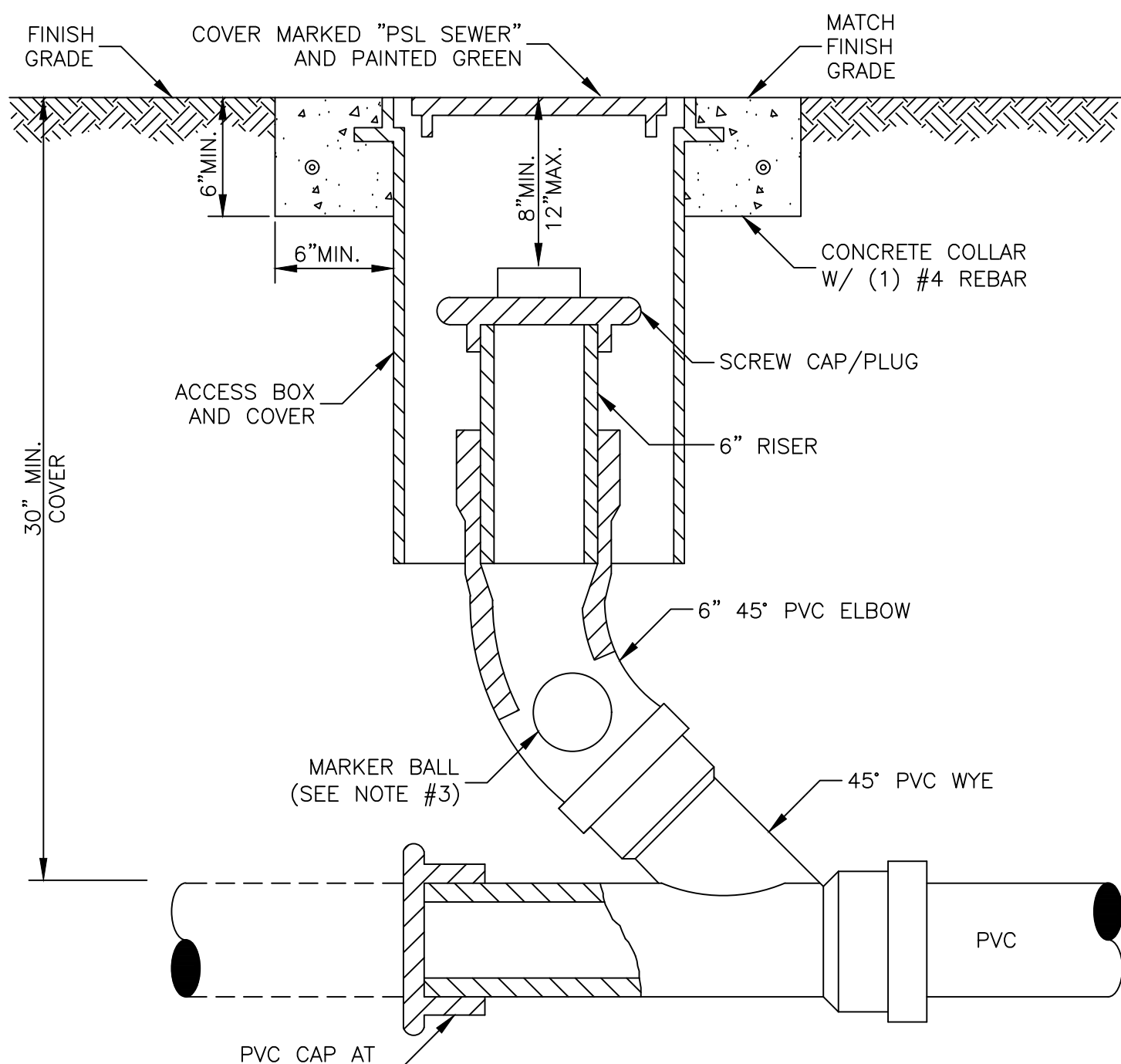
	MINIMUM CONSTRUCTION STANDARDS FOR CITY OF PORT ST. LUCIE 900 S.E. OGDEN LANE PORT ST. LUCIE, FL 34983 PHONE: (772) 873-6400 FAX (772) 873-6433	STANDARD PRECAST MANHOLE (DROP)	DETAIL: WW-02 DATE: 2019 SCALE: N.T.S. SHEET: 2 OF 2
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	MINIMUM CONSTRUCTION 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	OUTSIDE DROP MANHOLE	DETAIL: WW-03 DATE: 2019 SCALE: N.T.S. SHEET: 1 OF 1
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NOTES:

1. APPROVED JOINT SEALANTS SHALL BE USED.
2. WELDED CAP STRIPS AT JOINTS OR WELDED JOINTS MAY BE ACCEPTABLE IF APPROVED IN WRITING BY PSLUSD.



NOTES:

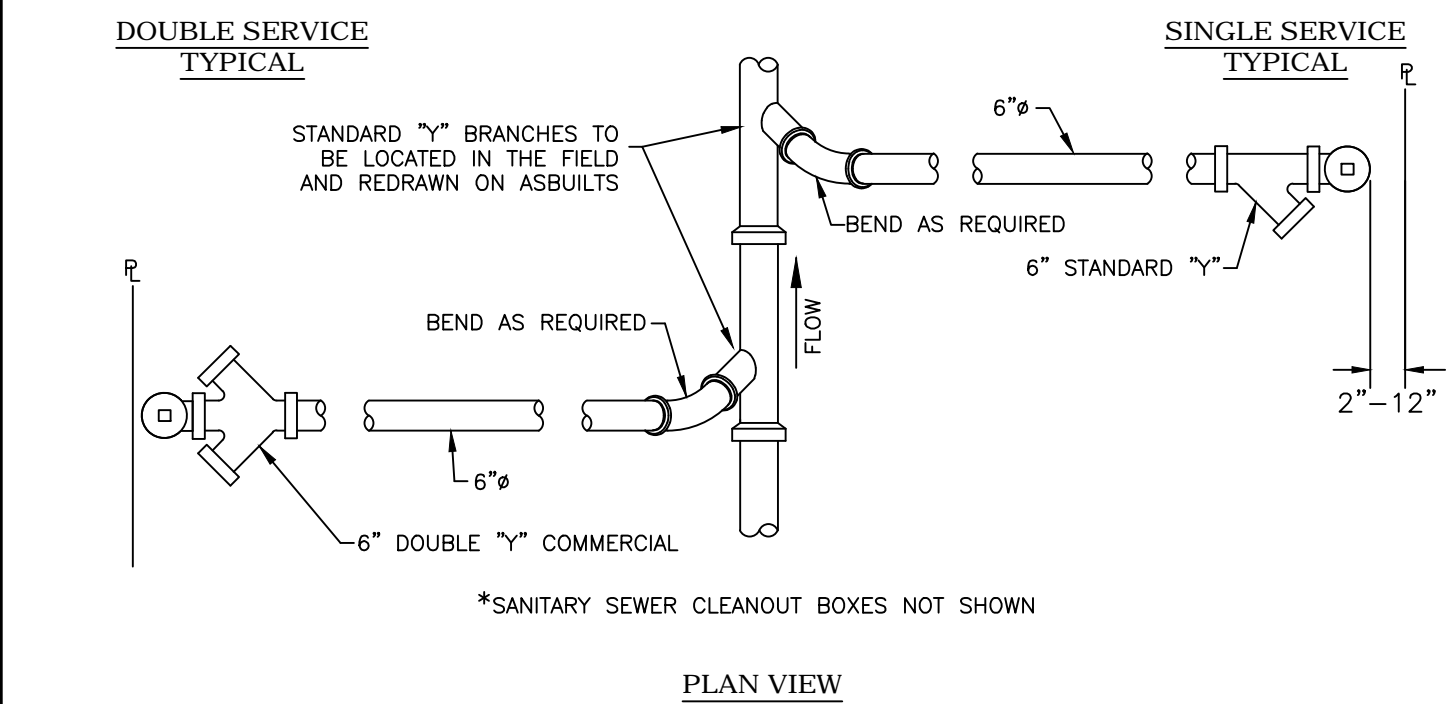
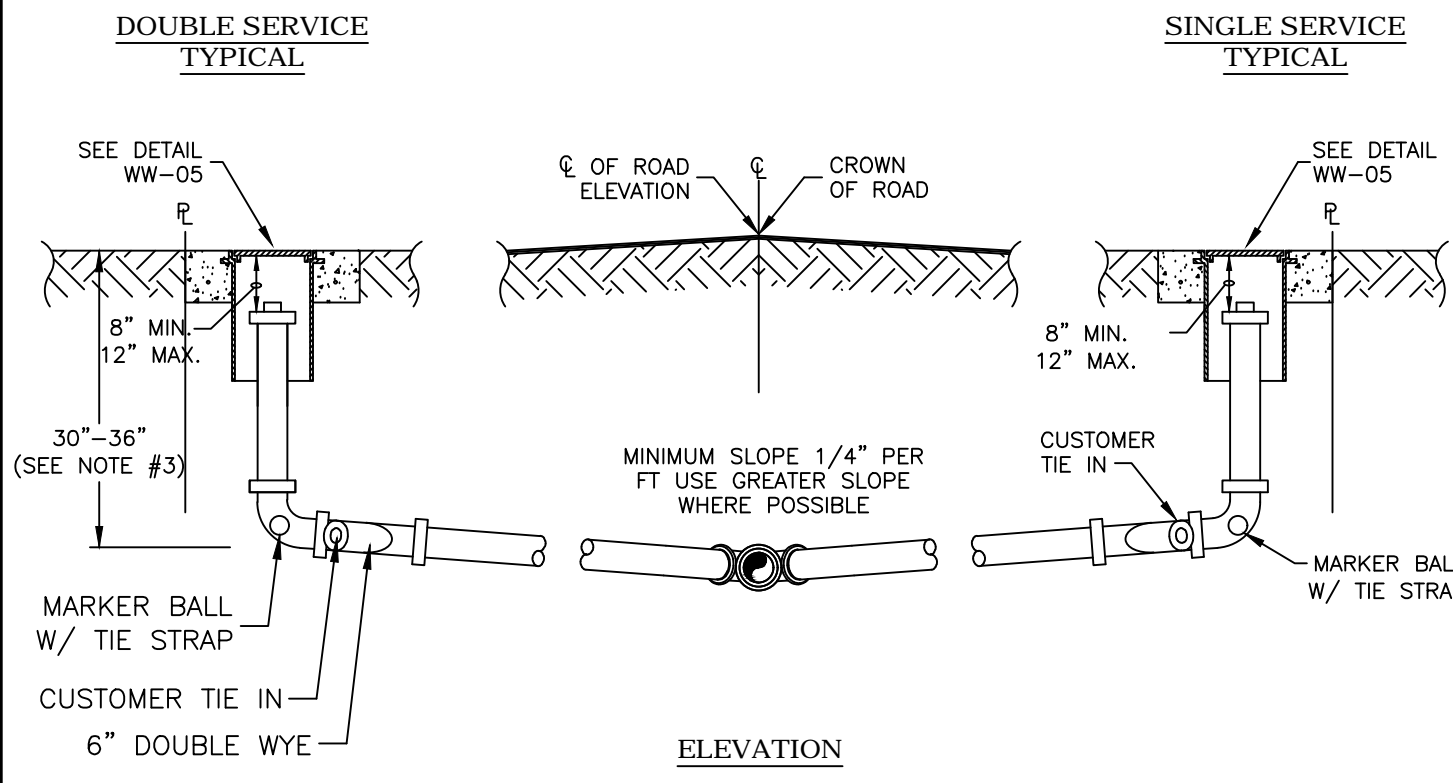
1. AN ACCESS BOX AND COVER SHALL BE USED.
2. CLEANOUT ASSEMBLY SHALL BE INSTALLED AT A MAXIMUM 75' INTERVALS AND AT TERMINAL POINT OF THE PSLUSD RESPONSIBILITY. THE LOCATION SHALL BE IN ACCORDANCE WITH THE PSLUSD UTILITY STANDARDS.
3. MARKER BALL SHALL BE STRAPPED TO THE ELBOW.

	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	MANHOLE / WETWELL JOINT DETAIL	DETAIL: WW-04 DATE: 2019 SCALE: N.T.S. SHEET: 1 OF 1
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	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	SANITARY SEWER CLEANOUT	DETAIL: WW-05 DATE: 2019 SCALE: N.T.S. SHEET: 1 OF 1
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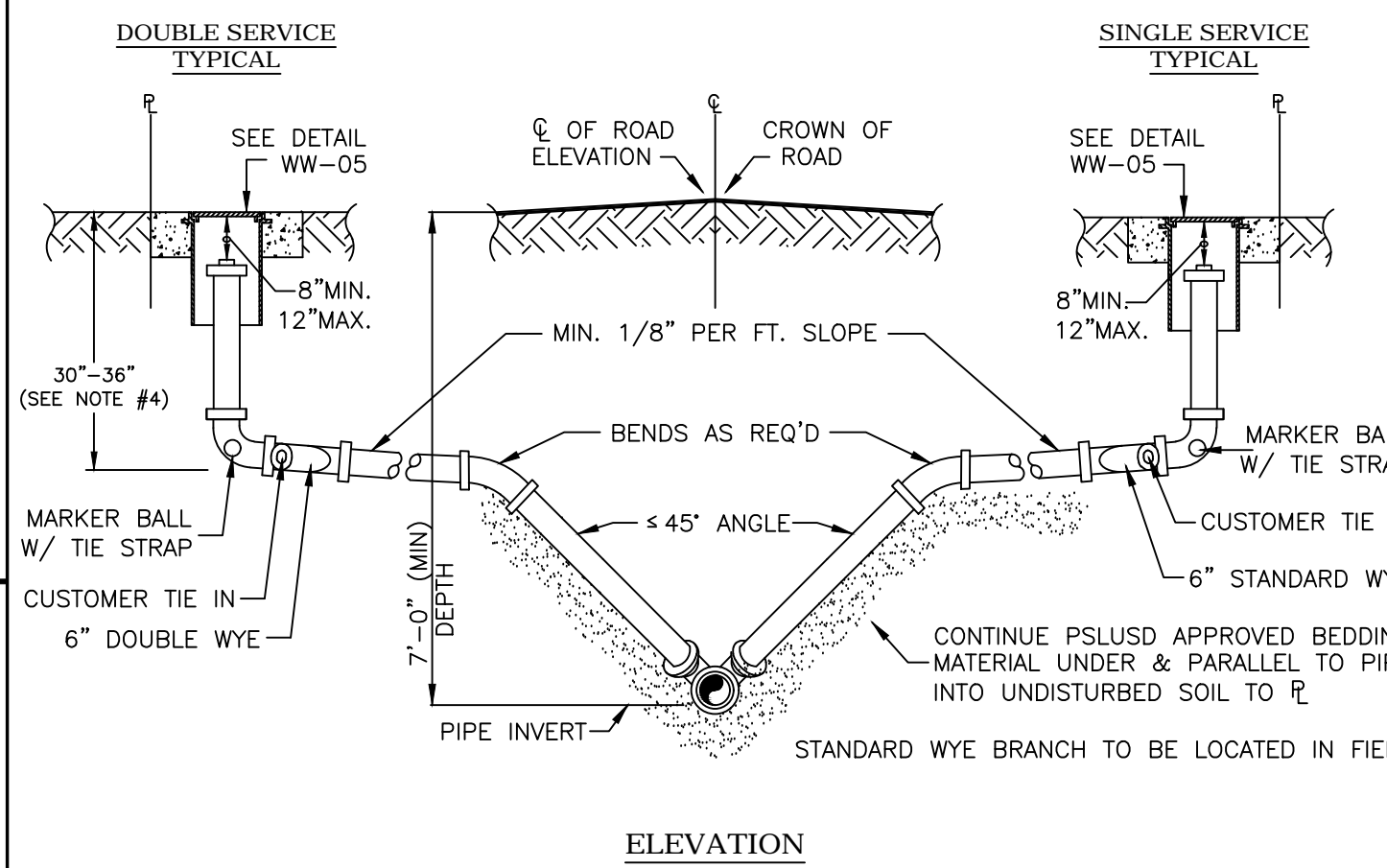
	MINIMUM CONSTRUCTION STANDARDS FOR CITY OF PORT ST. LUCIE 900 S.E. OGDEN LANE PORT ST. LUCIE, FL 34983 PHONE: (772) 873-6400 FAX (772) 873-6433	SANITARY SEWER LATERAL (SHALLOW)	DETAIL: WW-06 DATE: 2019 SCALE: N.T.S. SHEET: 1 OF 1
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	MINIMUM CONSTRUCTION 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	SANITARY SEWER LATERAL (DEEP)	DETAIL: WW-07 DATE: 2019 SCALE: N.T.S. SHEET: 1 OF 1
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NOTES:

1. SANITARY SEWER LATERALS SHALL BE 6" IN DIAMETER.
2. THE ENGINEER OF RECORD SHALL ENSURE THAT THE PROPOSED PLUMBING STUB-OUT ELEVATION FOR EACH BUILDING WILL ALLOW FOR A GRAVITY CONNECTION TO THE SANITARY SEWER LATERAL WITH THE REQUIRED SLOPE. HORIZONTAL AND VERTICAL SEPARATION SHALL BE MAINTAINED AS REQUIRED IN THE UTILITY STANDARDS MANUAL.



NOTES:

1. PSLUSD APPROVED BEDDING MATERIAL SHALL BE USED FOR EXCAVATION BACK FILL.
2. LOCATE MARKER BALL WITH TIE STRAPS TO BE ATTACHED TO 6" ELBOW.
3. THE ENGINEER OF RECORD SHALL ENSURE THAT THE PROPOSED PLUMBING STUB-OUT ELEVATION FOR EACH BUILDING WILL ALLOW FOR A GRAVITY CONNECTION TO THE SANITARY SEWER LATERAL WITH THE REQUIRED SLOPE. HORIZONTAL AND VERTICAL SEPARATION SHALL BE MAINTAINED AS REQUIRED IN THE UTILITY STANDARDS MANUAL.

	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	MANHOLE / WETWELL JOINT DETAIL	DETAIL: WW-04 DATE: 2019 SCALE: N.T.S. SHEET: 1 OF 1
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	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	SANITARY SEWER CLEANOUT	DETAIL: WW-05 DATE: 2019 SCALE: N.T.S. SHEET: 1 OF 1
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	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	SANITARY SEWER LATERAL (SHALLOW)	DETAIL: WW-06 DATE: 2019 SCALE: N.T.S. SHEET: 1 OF 1
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	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	SANITARY SEWER LATERAL (DEEP)	DETAIL: WW-07 DATE: 2019 SCALE: N.T.S. SHEET: 1 OF 1
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BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL

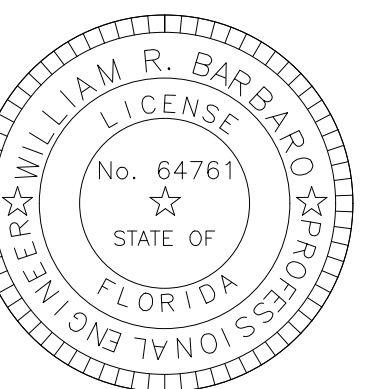
WATER & SEWER DETAILS



CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
PHONE: (954) 972-3959 FAX: (954) 972-4178

SCALE: AS SHOWN  
DATE: 12/08/21  
DRAWN BY: R.P.  
CHECKED BY: W.R.B.  
DESIGNED BY: R.F.

WSD-4



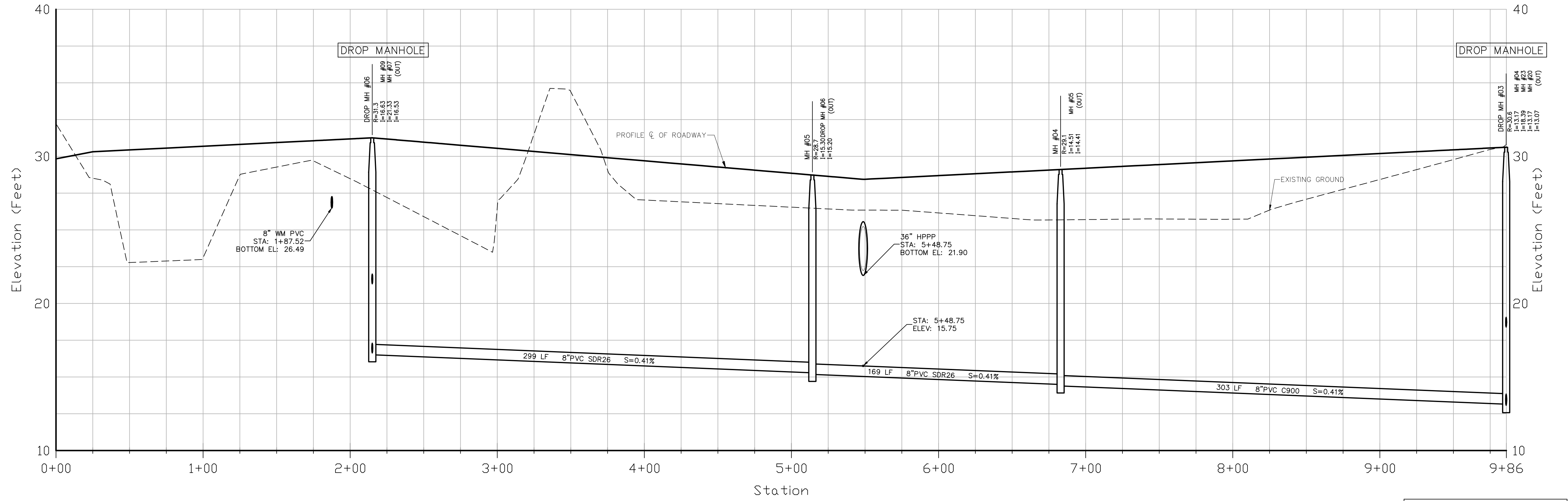
CITY OF PORT ST. LUCIE  
PROJECT NO. P21-271  
PSLUSD FILE NO. 5336

WILLIAM R. BARBARO, P.E.  
FL. REGISTRATION NO. - 64761

2/09/21 P:\Projects\_2019\Deerfield Share\Southern Grove\cod\ld\Pionset\190214-WSD.dwg

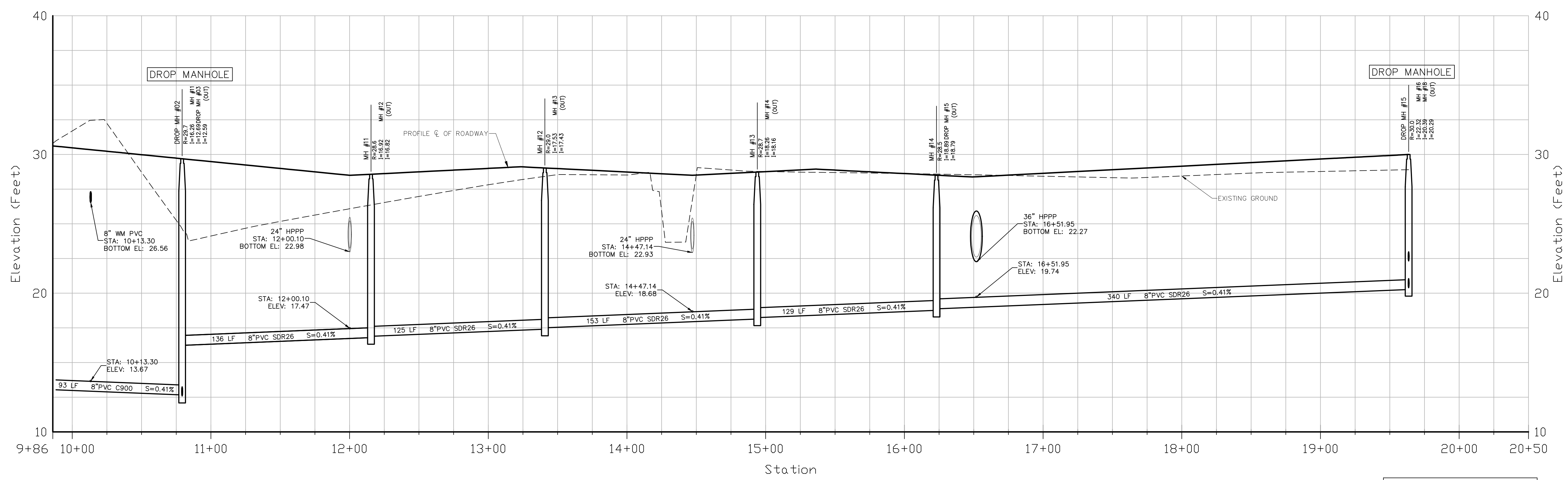


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BELTERRA DRIVE  
STA. 00+00 TO STA. 9+86

HORIZONTAL SCALE: 1" = 40'  
VERTICAL SCALE: 1" = 4'



BELTERRA DRIVE  
STA. 9+86 TO STA. 20+50

HORIZONTAL SCALE: 1" = 40'  
VERTICAL SCALE: 1" = 4'

BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL

SANITARY SEWER PROFILE

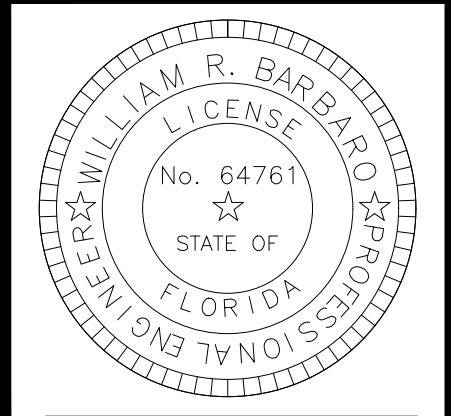
NO	DATE	BY	APRV	REVISIONS



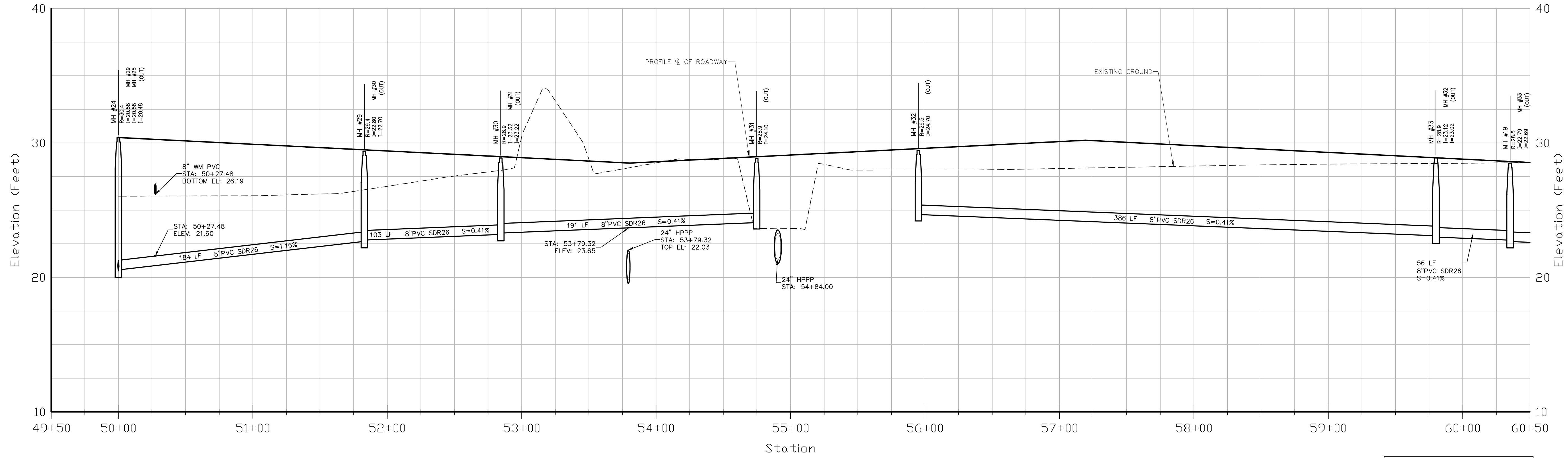
CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
PHONE: (854) 972-3859 FAX: (854) 972-4178  
FILE NO. 190214  
CPC AUTH. NO. 00002936

SCALE:	AS SHOWN
DATE:	12/08/21
DRAWN BY:	R.P.
CHECKED BY:	W.R.B
DESIGNED BY:	R.F.

SS-1

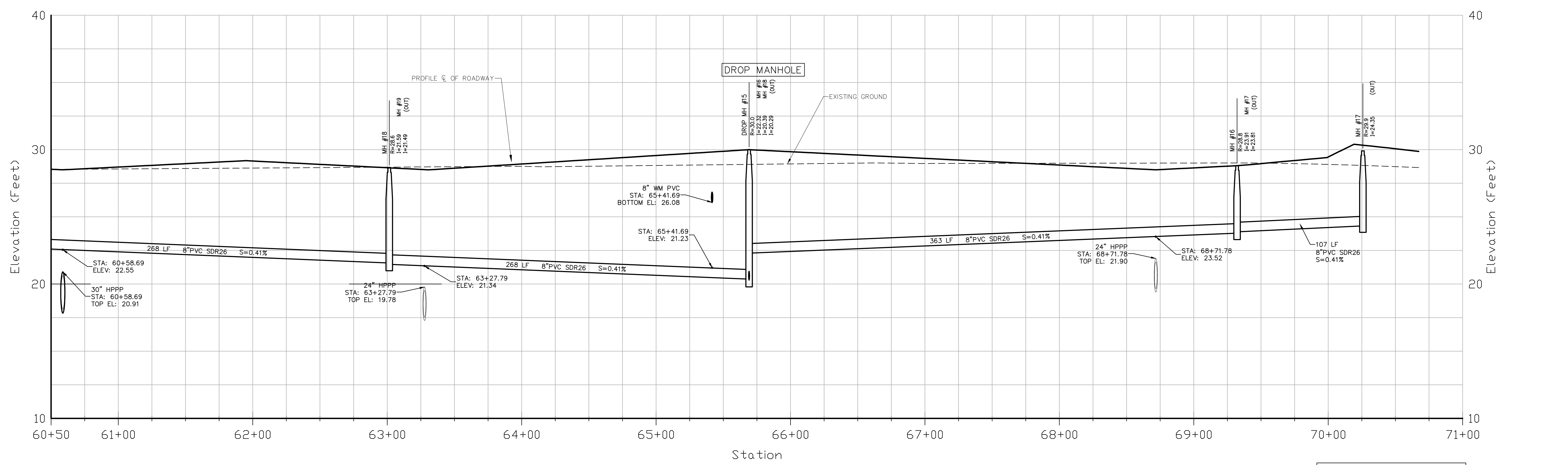


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PINNACLE COURT  
STA. 49+50 TO STA. 60+50

HORIZONTAL SCALE: 1" = 40'  
VERTICAL SCALE: 1" = 4'



PINNACLE COURT  
STA. 60+50 TO STA. 71+00

HORIZONTAL SCALE: 1" = 40'  
VERTICAL SCALE: 1" = 4'

BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL

SANITARY SEWER PROFILE

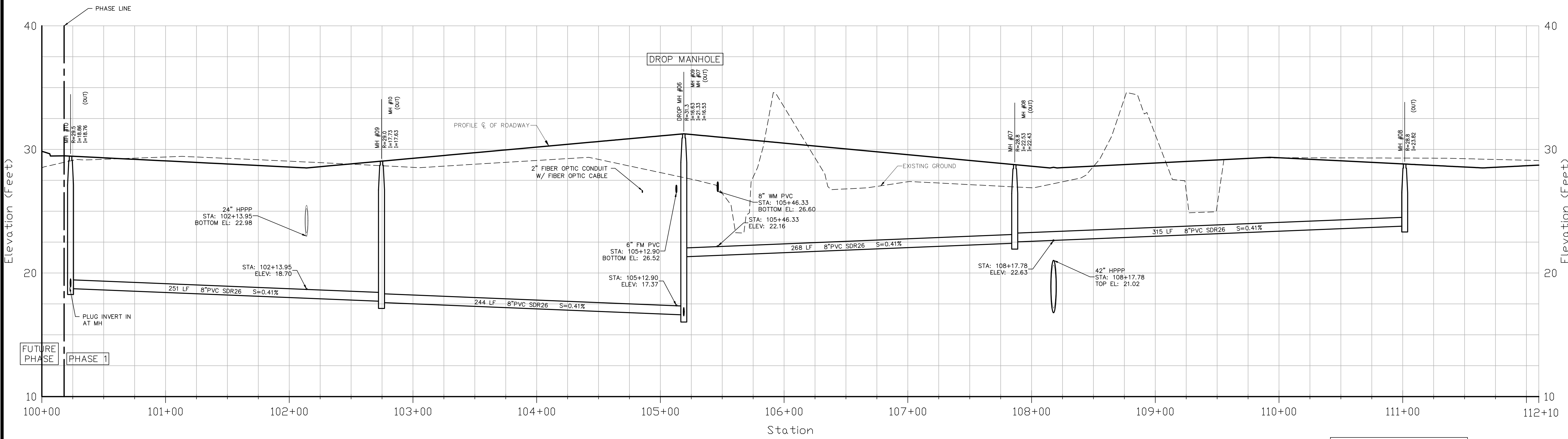
NO	DATE	BY	APPROV	REVISIONS
1	12/15/21	RP	WRB	REVISED PER PSL COMMENTS

**CARNAHAN PROCTOR & CROSS**  
CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
PHONE: (854) 972-3859 FAX: (854) 972-4178  
CPC AUTH. NO. 00002936 FILE NO. 190214

SCALE:	AS SHOWN
DATE:	12/08/21
DRAWN BY:	R.P.
CHECKED BY:	W.R.B
DESIGNED BY:	R.F.

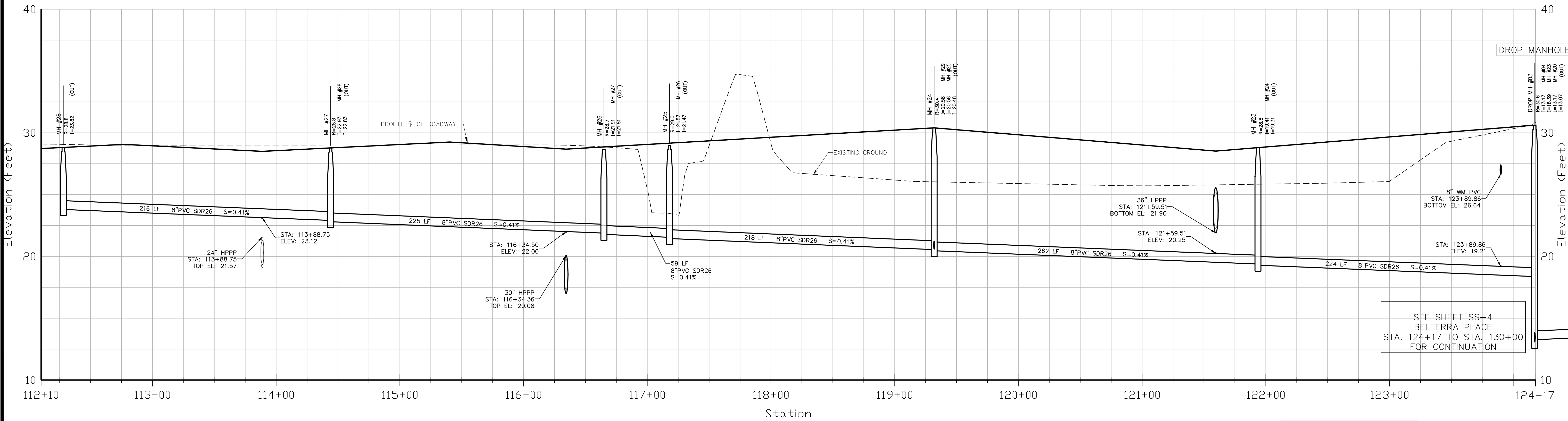
**SS-2**

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PINNACLE PLACE NORTH  
STA. 100+00 TO STA. 112+10

HORIZONTAL SCALE: 1" = 40'  
VERTICAL SCALE: 1" = 4'



PINNACLE PLACE  
STA. 112+10 TO STA. 124+17

HORIZONTAL SCALE: 1" = 40'  
VERTICAL SCALE: 1" = 4'

SEE SHEET SS-4  
BELTERRA PLACE  
STA. 124+17 TO STA. 130+00  
FOR CONTINUATION

NO	DATE	BY	APPROV	REVISIONS

BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL

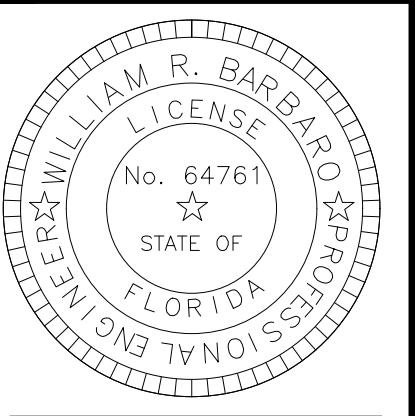
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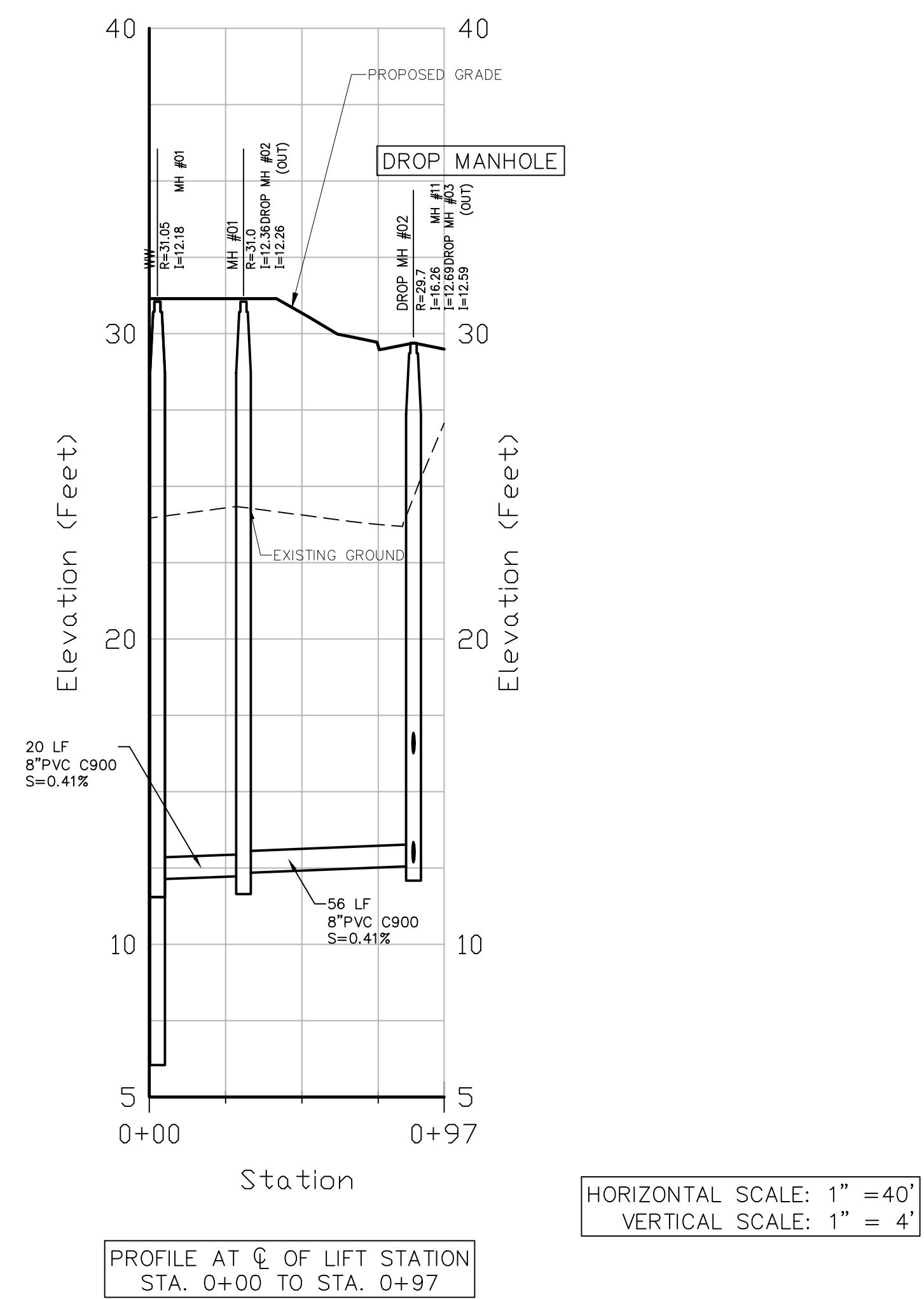
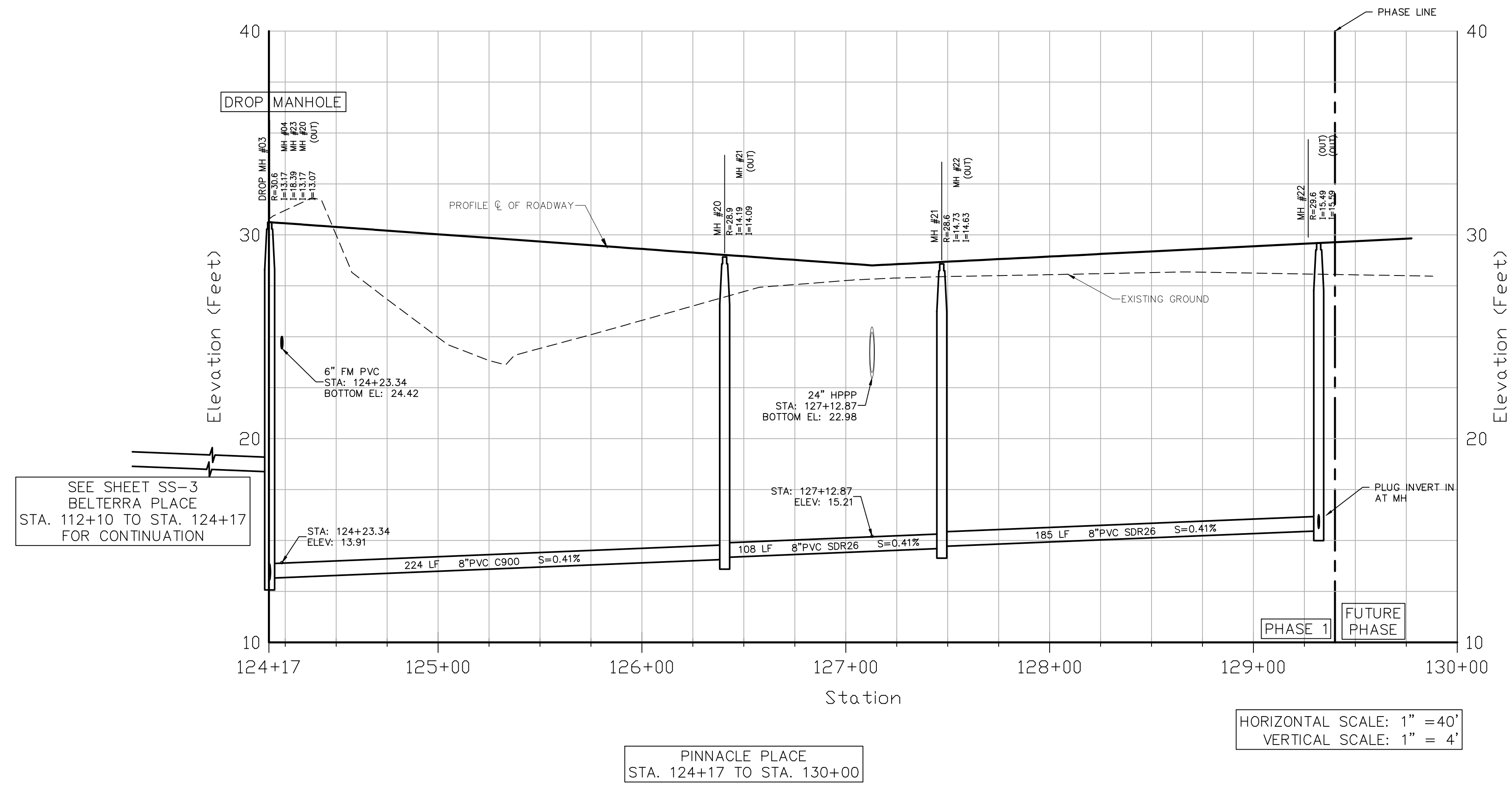
CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
PHONE: (854) 972-3859 FAX: (854) 972-4178  
CPC AUTH. NO. 00002936

SCALE: AS SHOWN  
DATE: 12/08/21  
DRAWN BY: R.P.  
CHECKED BY: W.R.B.  
DESIGNED BY: R.F.

SS-3



CITY OF PORT ST. LUCIE  
PROJECT NO. P21-271  
PLSUD FILE NO. 5336  
WILLIAM R. BARBARO, P.E.  
FL. REGISTRATION NO. - 64761



BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL

SANITARY SEWER PROFILE

NO	DATE	BY	APRV	REVISIONS

**CPM**  
CARNAHAN PROCTOR & CROSS

CIVIL ENGINEERING | CONSTRUCTION SERVICES | GEOMATICS  
814 S. MILITARY TRAIL, DEERFIELD BEACH, FLORIDA 33442  
PHONE: (854) 972-3859 FAX: (854) 972-4178  
CPC AUTH. NO. 00002936 FILE NO. 190214

SCALE:	AS SHOWN
DATE:	12/08/21
DRAWN BY:	R.P.
CHECKED BY:	W.R.B
DESIGNED BY:	R.F.

SS-4

WILLIAM R. BARBARO, P.E.  
FL. REGISTRATION NO. - 64761

NOTES:

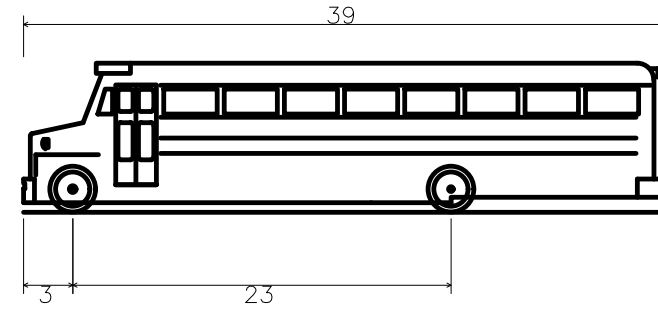
1. THE FIRE TRUCK UTILIZED IN THIS SIMULATION WAS BASED ON THE SPECIFICATIONS PROVIDED BY THE ST. LUCIE COUNTY FIRE DISTRICT:
  - 1.1. WEIGHT 77,000 POUNDS (38 TON)
  - 1.2. WHEEL BASE 21.5'
  - 1.3. TURNING RADIUS 41.5'
2. A SCHOOL BUS WAS UTILIZED IN THIS ANALYSIS AT THE ENTRANCE TURNAROUND, TO DEMONSTRATE THAT A BUS CAN ENTER/EXIT THE DEVELOPMENT WITHOUT BACKING UP AT A CLOSED GATE.

Legend

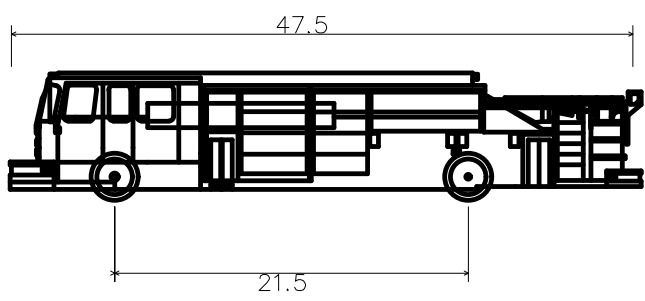
PROPERTY LINE

Legend:

Limits of Phase 1  
Plat 2



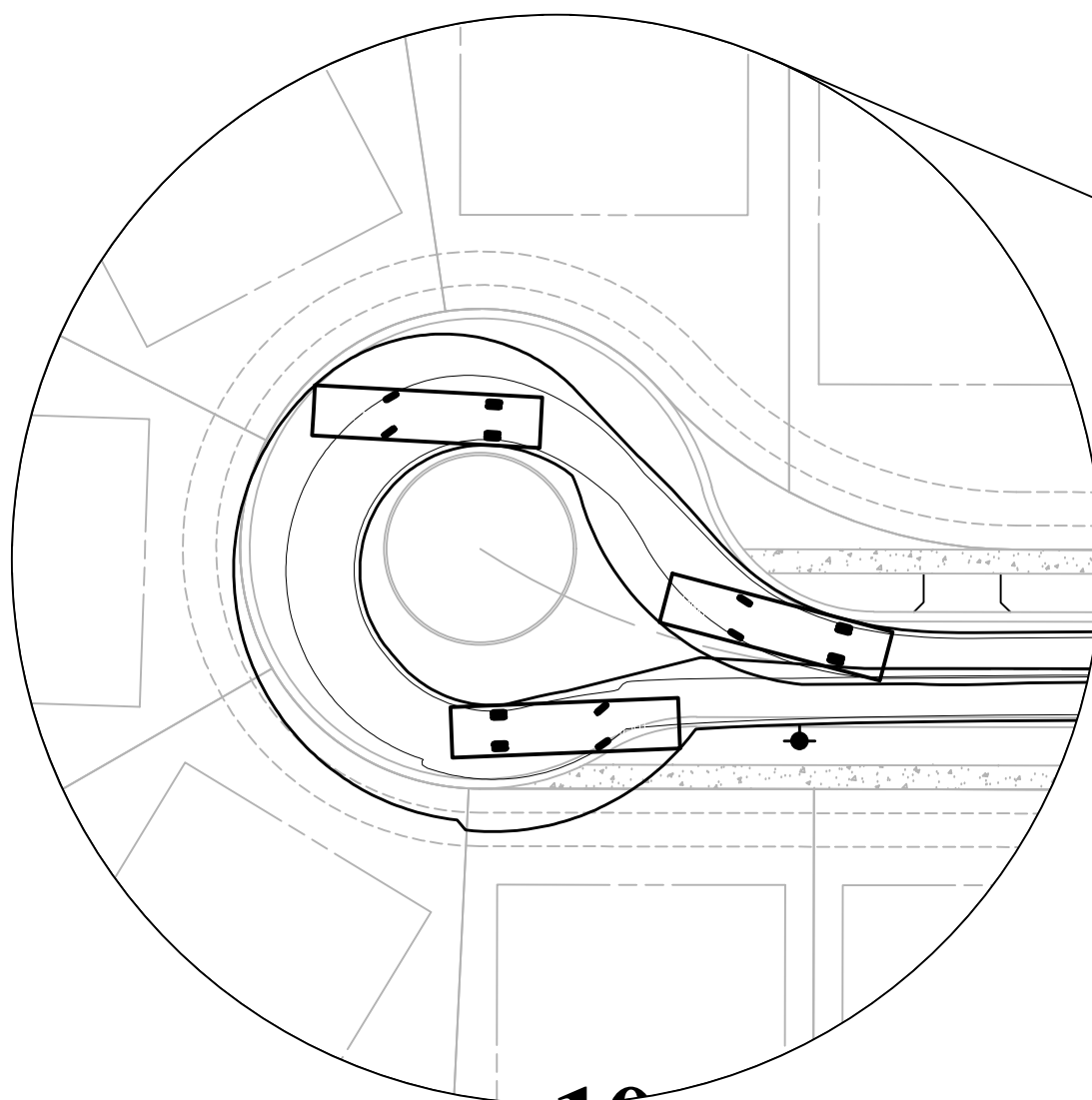
School Bus  
Overall Length 39.000ft  
Overall Width 8.063ft  
Overall Body Height 9.063ft  
Min Body Ground Clearance 0.583ft  
Track Width 8.000ft  
Lock-to-lock time 5.00s  
Curb to Curb Turning Radius 38.600ft



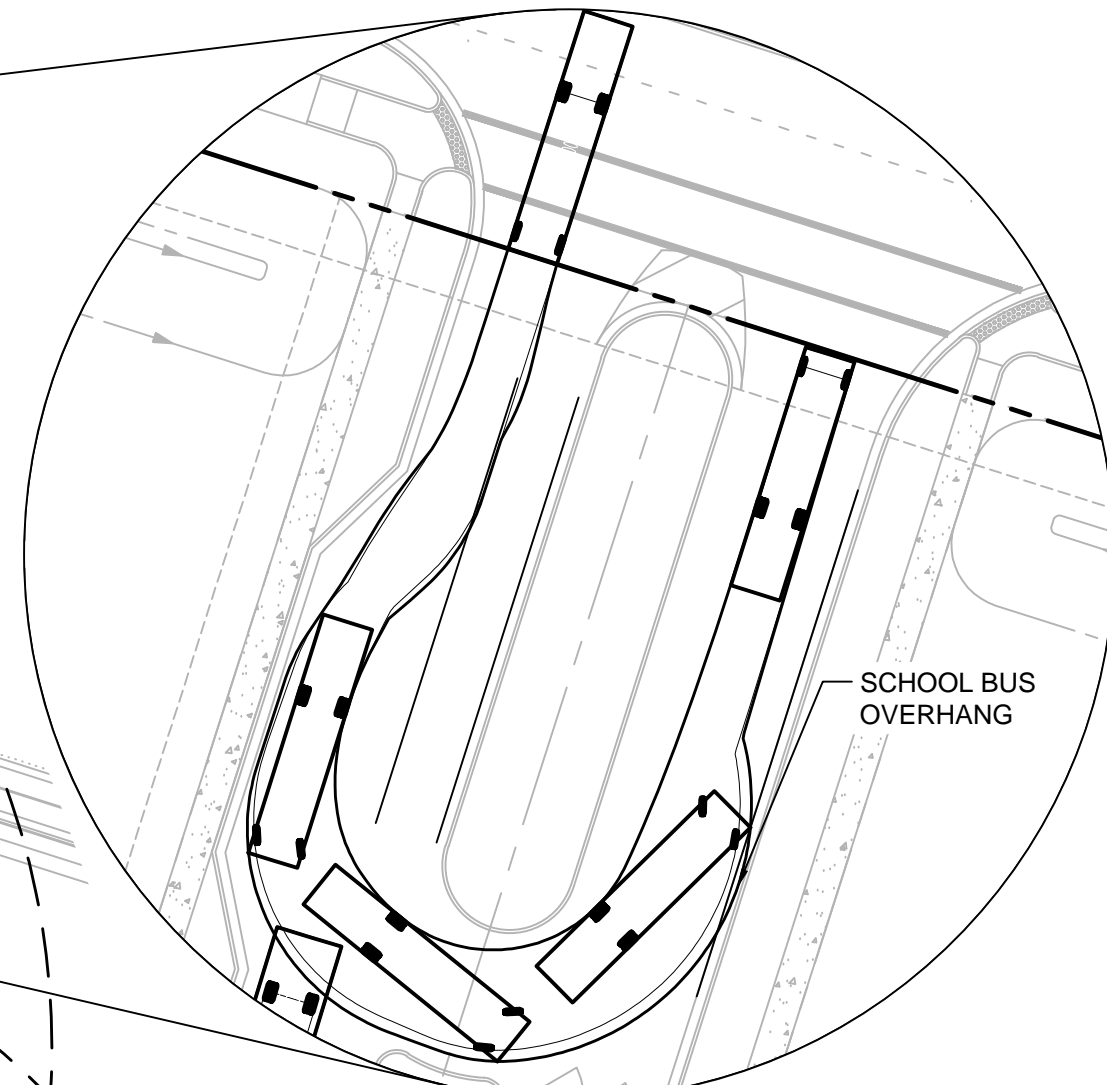
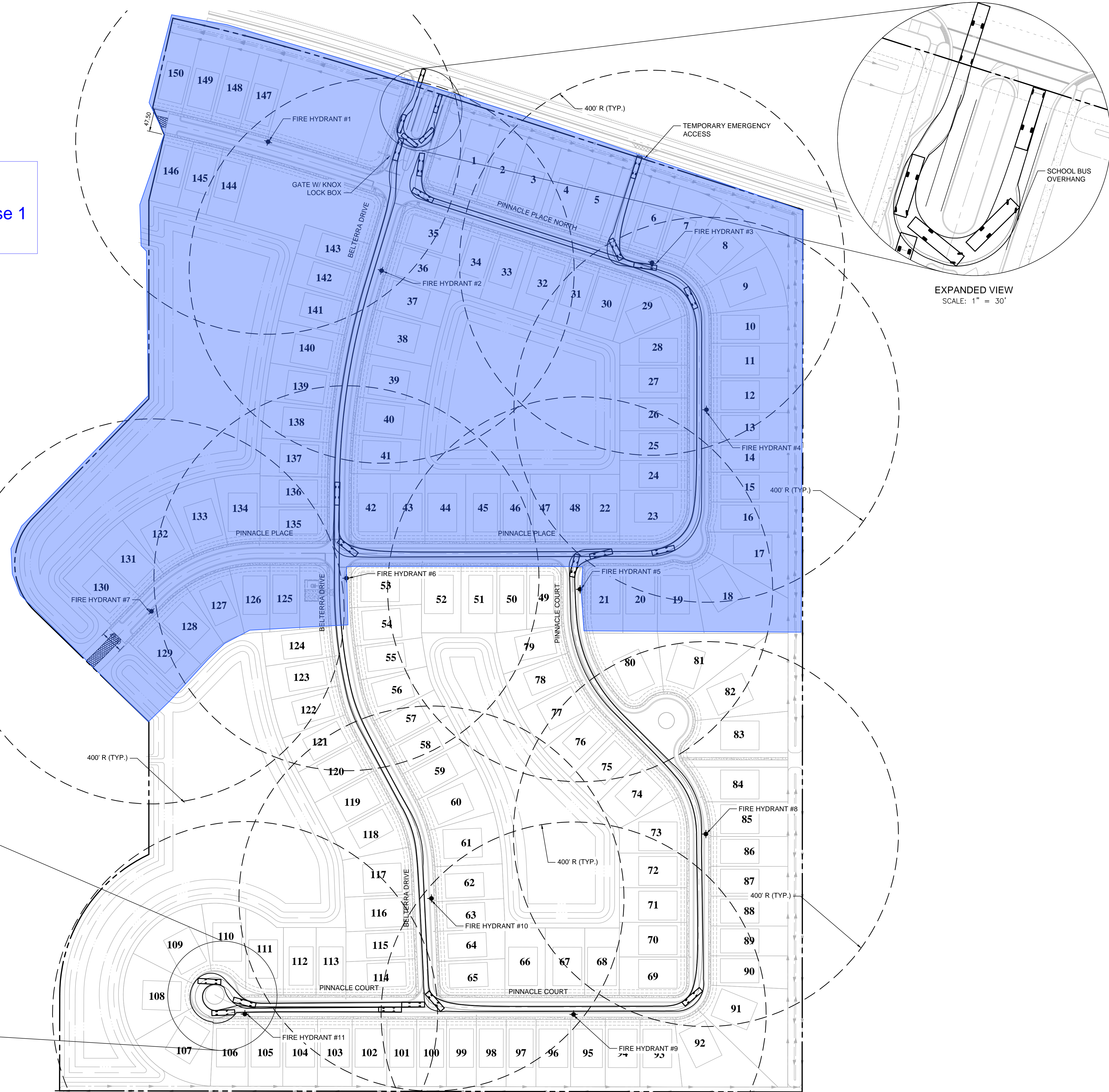
Ladder Fire Truck Port St. Lucie (47.5ft)  
Overall Length 47.500ft  
Overall Width 10.500ft  
Overall Body Height 7.745ft  
Min Body Ground Clearance 0.656ft  
Track Width 8.167ft  
Lock-to-lock time 5.00s  
Curb to Curb Turning Radius 41.500ft

Fire Flow Calculation:

1. PER NFPA 18.4.5.1.2 FFPC 5TH EDITION, THE MINIMUM FIRE FLOW AND FLOW DURATION REQUIREMENTS FOR ONE- AND TWO- FAMILY DWELLINGS HAVING A FIRE FLOW AREA THAT DOES NOT EXCEED 5000 SQUARE FEET SHALL BE 1000 GPM FOR 1 HOUR. ALL HOMES CONSTRUCTED IN SAID SUBDIVISION SHALL BE UNDER 5000 SQUARE FEET.
2. PER NFPA 18.4.5.2 FFPC 5TH EDITION, THE MINIMUM FIRE FLOW AND FLOW DURATION REQUIREMENTS FOR A TYPE VB BUILDING HAVING A FIRE FLOW AREA OF 4800 SQUARE FEET SHALL BE 1750 GPM FOR 2 HOURS.



EXPANDED VIEW  
SCALE: 1" = 40'



EXPANDED VIEW  
SCALE: 1" = 30'

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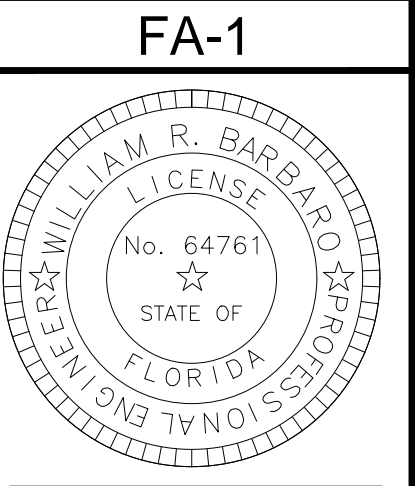
NO.	DATE	BY	APPROV	REVISIONS

BELTERRA PHASE 1 AT SOUTHERN GROVE  
PORT ST. LUCIE COUNTY, FL

FIRE ACCESS PLAN



SCALE: AS SHOWN  
DATE: 12/08/21  
DRAWN BY: R.P.  
CHECKED BY: W.R.B.  
DESIGNED BY: R.F.



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