

# JET DRIVE RECREATIONAL AREA FORT WALTON BEACH, FLORIDA



**VICINITY MAP**  
NOT TO SCALE

**DUTY TO INDEMNIFY**

THE CONTRACTOR SHALL DEFEND, INDEMNIFY, KEEP AND SAVE HARMLESS THE OWNER AND ENGINEER AND THEIR RESPECTIVE MEMBERS, REPRESENTATIVES, AGENTS AND EMPLOYEES, IN BOTH INDIVIDUAL AND OFFICIAL CAPACITIES, AGAINST ALL SUITS, CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING ATTORNEY'S FEES, CAUSED BY, GROWING OUT OF, OR INCIDENTAL TO THE PERFORMANCE OF THE WORK UNDER THE CONTRACT BY THE CONTRACTOR OR ITS SUBCONTRACTORS TO THE FULL EXTENT AS ALLOWED BY THE LAWS OF THE STATE OF FLORIDA AND NOT BEYOND ANY EXTENT WHICH WOULD RENDER THESE PROVISIONS VOID OR UNENFORCEABLE. IN THE EVENT OF ANY SUCH INJURY (INCLUDING DEATH) OR LOSS OR DAMAGE, OR CLAIMS THEREFORE, THE CONTRACTOR SHALL GIVE PROMPT NOTICE TO THE OWNER.

**LEGAL DESCRIPTION**

(AS FURNISHED)

LOT ONE, HENDRICK PARK SUBDIVISION REPLAT OF A PORTION OF HOME GARDENS SUBDIVISION. AS RECORDED IN PLAT BOOK 27, PAGE 11 OF OKALOOSA COUNTY PUBLIC RECORDS.

**CITY OF FORT WALTON BEACH**

MAYOR: DICK RYNEARSON  
COUNCIL MEMBER: NIC ALLEGRETTO  
COUNCIL MEMBER: DAVID SCHMIDT  
COUNCIL MEMBER: TRAVIS SMITH  
COUNCIL MEMBER: GLORIA DEBERRY  
COUNCIL MEMBER: BRYCE JETER  
COUNCIL MEMBER: LARRY PATRICK  
COUNCIL MEMBER: PAYNE WALKER



**UTILITY PROVIDERS**

(WATER/SEWER)  
CITY OF FORT WALTON BEACH  
7 HOLLYWOOD BOULEVARD NW  
FORT WALTON BEACH, FLORIDA 32547  
PHONE: (850) 833-9613  
EMAIL: dpayne@fwb.org

(TELEPHONE)  
CENTURYLINK  
411 MARY ESTHER CUTOFF  
FT. WALTON BEACH, FL 32548  
(850) 244-1150

(ELECTRIC)  
FLORIDA POWER & LIGHT  
140 HOLLYWOOD BLVD SW  
FT. WALTON BEACH, FL 32548  
(800) 225-5797

(GAS)  
OKALOOSA GAS DISTRICT  
20 HUGHES STREET NE  
FT. WALTON BEACH, FL 32548  
(850) 729-4700

**CLIENT INFORMATION**

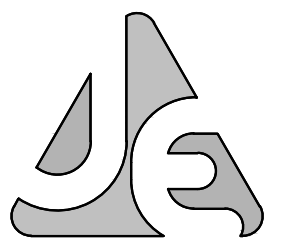
CITY OF FORT WALTON BEACH  
C/O DANIEL J. PAYNE, P.E.  
PUBLIC WORKS & UTILITY SERVICES DIRECTOR  
107 MIRACLE STRIP PARKWAY SW  
FORT WALTON BEACH, FLORIDA 32547  
PHONE: (850) 833-9613  
EMAIL: dpayne@fwb.org

**NOTE**

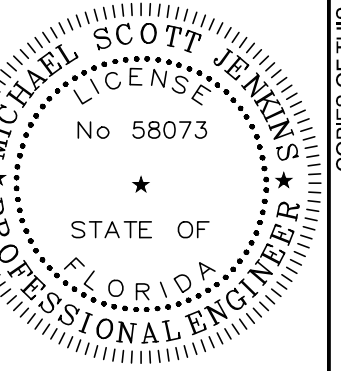
USE LATEST FORT WALTON BEACH AND/OR F.D.O.T. TECHNICAL SPECIFICATIONS AND DETAILS UNLESS OTHERWISE NOTED.

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**JENKINS ENGINEERING, INC.**  
73 EGLIN PARKWAY NE, SUITE 203  
FORT WALTON BEACH, FLORIDA 32548  
PHONE 850.837.2448  
FAX 850.837.2450  
JEICIVIL.COM



M. SCOTT JENKINS, P.E.  
FL REGISTRATION NO. 58073

BY	DATE	DESCRIPTION
MPF	8/19/2023	REVISED PER CITY OF FORT WALTON BEACH REVIEW COMMENTS
MPF	10/21/2023	REVISED PER PARKING REQUIREMENT IN SITE DATA TABLE
MPF	8/11/2024	REVISED PER PICKERBALL COURTS ADDITION

CITY OF FORT WALTON BEACH  
**JET DRIVE RECREATIONAL AREA**  
FORT WALTON BEACH, FLORIDA  
**COVER SHEET**  
NOT VALID UNLESS BEARING ENGINEER'S ORIGINAL SIGNATURE

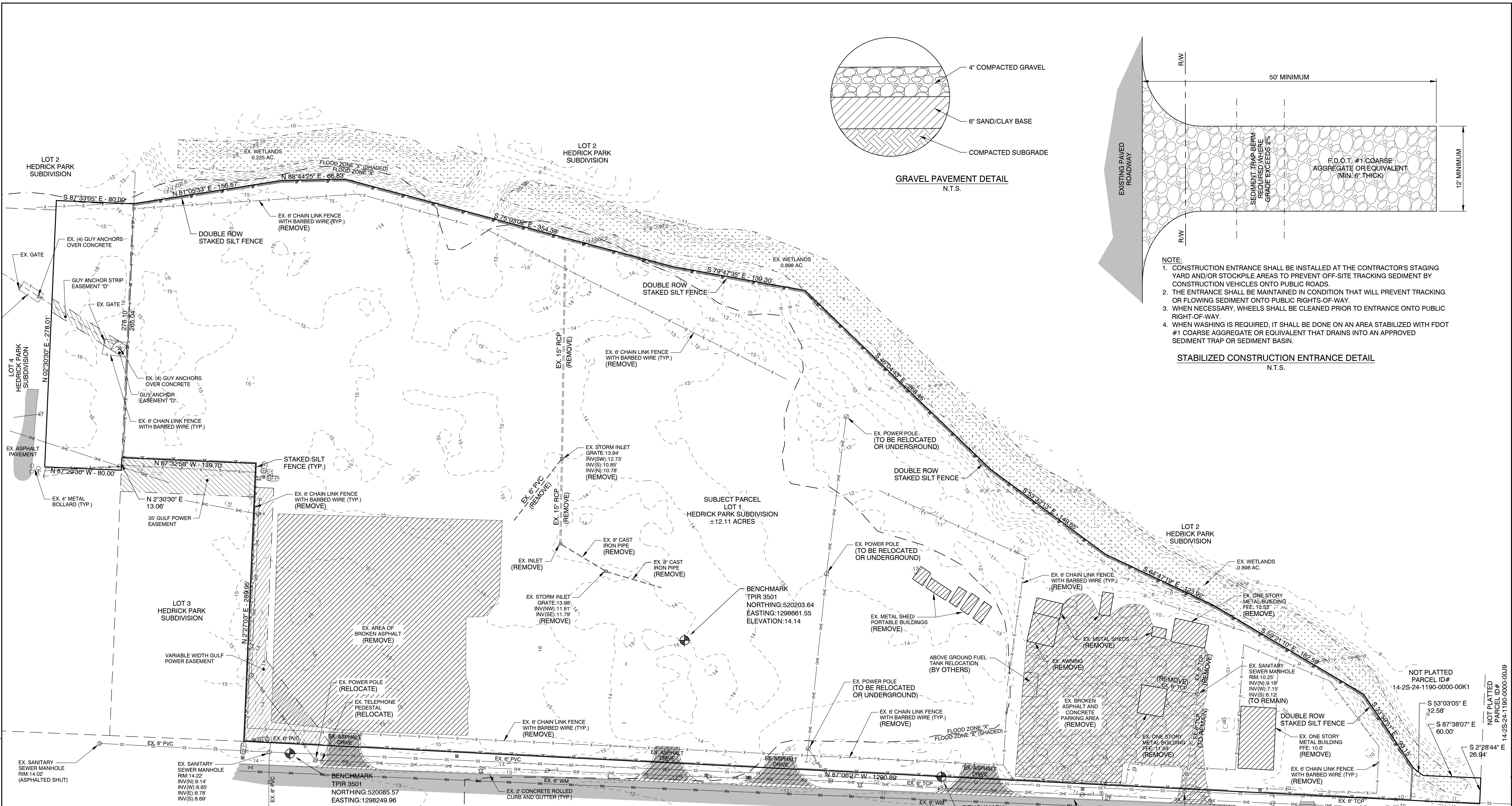
JOB: 14-16-018  
DATE: 03-2023  
DESIGNED: MSJ  
DRAWN: MPF

BAR IS ONE INCH ON ORIGINAL  
0" 1"  
IF NOT ONE INCH ON THIS SHEET  
ADJUST SCALES ACCORDINGLY

DRAWING NUMBER  
01 OF 16

SHEET NUMBER  
**C01**

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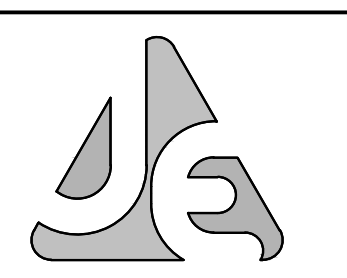
- NOTE:**
- CONSTRUCTION ENTRANCE SHALL BE INSTALLED AT THE CONTRACTOR'S STAGING YARD AND/OR STOCKPILE AREAS TO PREVENT OFF-SITE TRACKING SEDIMENT BY CONSTRUCTION VEHICLES ONTO PUBLIC ROADS.
  - THE ENTRANCE SHALL BE MAINTAINED IN CONDITION THAT WILL PREVENT TRACKING OR FLOWING SEDIMENT INTO PUBLIC RIGHTS-OF-WAY.
  - WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
  - WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH FDOT #1 COARSE AGGREGATE OR EQUIVALENT THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

**STABILIZED CONSTRUCTION ENTRANCE DETAIL**  
N.T.S.

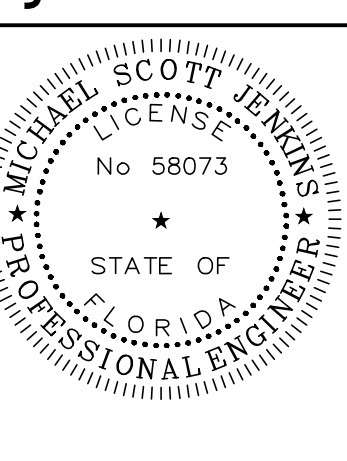
- DEMOLITION NOTES**
- REMOVE PAVEMENT, BUILDINGS, BASE COURSE AND CURBING.
  - REMOVE EXISTING UTILITY SERVICES, COORDINATE WITH UTILITY COMPANIES AT LEAST 48 HOURS PRIOR TO COMMENCING WORK.
  - CONTRACTOR SHALL DISPOSE OF ALL DEBRIS OFF-SITE AND BE IN COMPLIANCE WITH FEDERAL, STATE AND COUNTY LAWS AND REGULATIONS.
  - CONTRACTOR SHALL RETAIN ALL SOIL EROSION SEDIMENTATION ON-SITE BY USING STAKED SILT FENCE.
  - EXISTING WATER SERVICES WITHIN THE PROPERTY MUST BE LOCATED, DISCONNECTED AND CAPPED AT THE MAIN LINE AND REMOVED FROM THE SITE.

**SIGNAGE NOTE**  
"CONSTRUCTION ZONE AHEAD" SIGNAGE TO BE PLACED AT BOTH ENDS OF CONSTRUCTION ZONE, WITHIN VIEW OF TRAFFIC, AND REMAIN IN PLACE FOR THE DURATION OF CONSTRUCTION ACTIVITY.

- EROSION NOTES**
- EROSION PROTECTION: SOIL EROSION SEDIMENTATION MUST BE CONTROLLED AND RETAINED ON SITE DURING CONSTRUCTION. THEREFORE, EROSION PROTECTION, SUCH AS STAKED BALED HAY AND SILT FENCE BARRIERS, MUST BE INSTALLED PRIOR TO START OF CONSTRUCTION.
  - SILT FENCE BARRIER SHALL BE INSTALLED AS SHOWN ON PLANS, AND IN ALL AREAS SUBJECT TO SOIL EROSION SEDIMENTATION.
  - SILT FENCE TO BE CONSTRUCTED AND MAINTAINED AROUND ALL INLETS; ALSO ACROSS ALL COURSE AT EDGE OF SITE AND AT 150' INTERVALS.



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JEICVIL.COM



M. SCOTT JENKINS, P.E.  
FL REGISTRATION NO. 58073

NO.	DATE	DESCRIPTION
1	8/18/2023	REVISED PER CITY OF FORT WALTON BEACH REVIEW COMMENTS

**JET DRIVE RECREATIONAL AREA**  
FORT WALTON BEACH, FLORIDA

**EXISTING CONDITIONS**

CITY OF FORT WALTON BEACH

JOB: 14-16-018  
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DRAWN: MPF

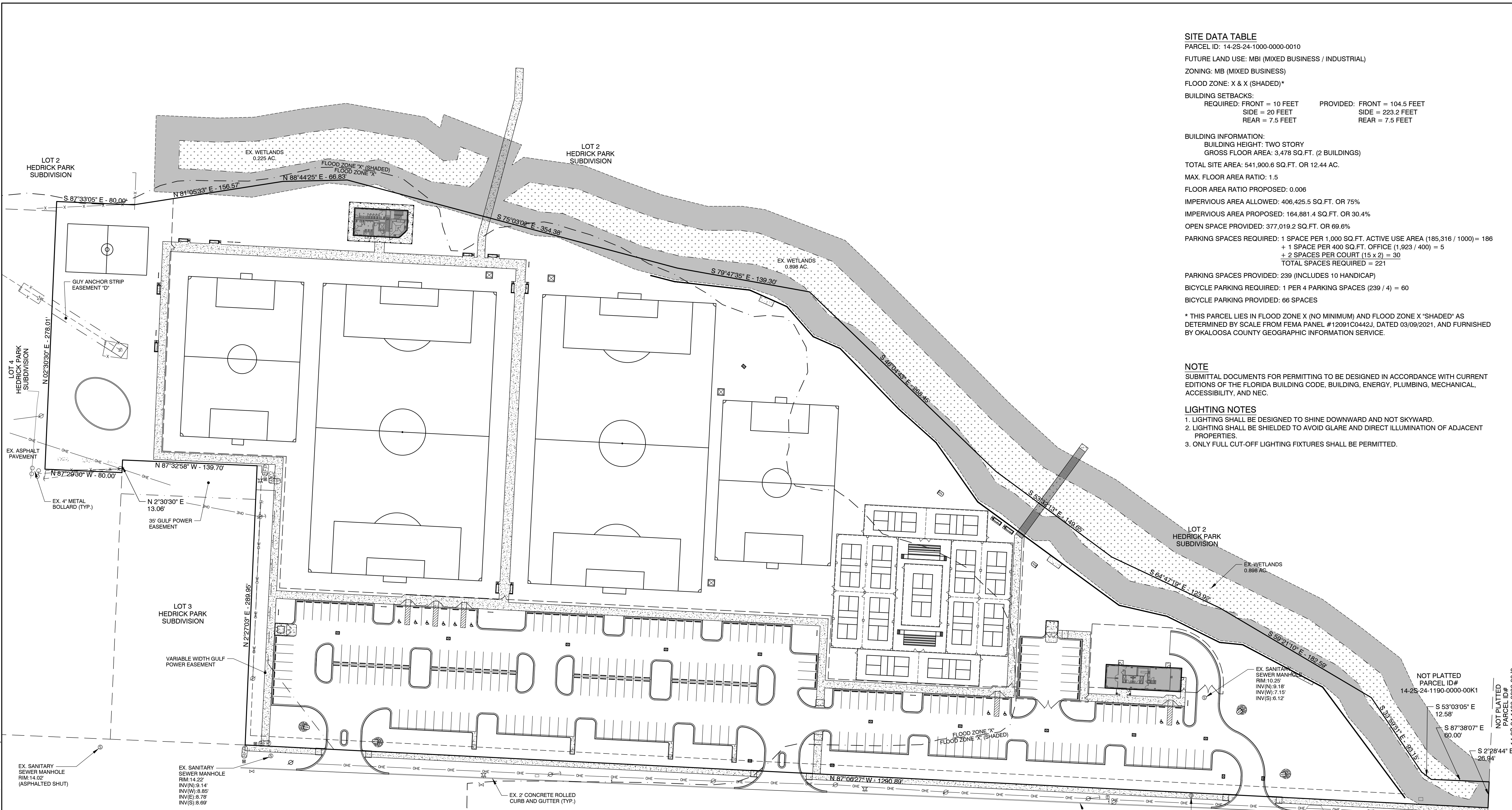
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SHEET NUMBER  
**C02**

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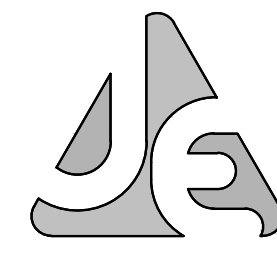
**SITE DATA TABLE**  
 PARCEL ID: 14-2S-24-1000-0000-0010  
 FUTURE LAND USE: MBI (MIXED BUSINESS / INDUSTRIAL)  
 ZONING: MB (MIXED BUSINESS)  
 FLOOD ZONE: X & X (SHADED)\*  
 BUILDING SETBACKS:  
 REQUIRED: FRONT = 10 FEET      PROVIDED: FRONT = 104.5 FEET  
           SIDE = 20 FEET         SIDE = 223.2 FEET  
           REAR = 7.5 FEET        REAR = 7.5 FEET

**BUILDING INFORMATION:**  
 BUILDING HEIGHT: TWO STORY  
 GROSS FLOOR AREA: 3,478 SQ.FT. (2 BUILDINGS)  
 TOTAL SITE AREA: 541,900.6 SQ.FT. OR 12.44 AC.  
 MAX. FLOOR AREA RATIO: 1.5  
 FLOOR AREA RATIO PROPOSED: 0.006  
 IMPERVIOUS AREA ALLOWED: 406,425.5 SQ.FT. OR 75%  
 IMPERVIOUS AREA PROPOSED: 164,881.4 SQ.FT. OR 30.4%  
 OPEN SPACE PROVIDED: 377,019.2 SQ.FT. OR 69.6%  
 PARKING SPACES REQUIRED: 1 SPACE PER 1,000 SQ.FT. ACTIVE USE AREA (185,316 / 1000) = 186  
                                   + 1 SPACE PER 400 SQ.FT. OFFICE (1,923 / 400) = 5  
                                   + 2 SPACES PER COURT (15 x 2) = 30  
                                   TOTAL SPACES REQUIRED = 221  
 PARKING SPACES PROVIDED: 239 (INCLUDES 10 HANDICAP)  
 BICYCLE PARKING REQUIRED: 1 PER 4 PARKING SPACES (239 / 4) = 60  
 BICYCLE PARKING PROVIDED: 66 SPACES

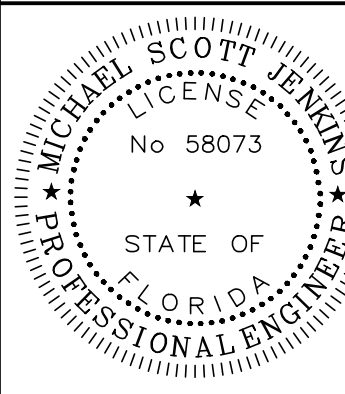
\* THIS PARCEL LIES IN FLOOD ZONE X (NO MINIMUM) AND FLOOD ZONE X "SHADED" AS DETERMINED BY SCALE FROM FEMA PANEL #12091C0442J, DATED 03/09/2021, AND FURNISHED BY OKALOOSA COUNTY GEOGRAPHIC INFORMATION SERVICE.

**NOTE**  
 SUBMITTAL DOCUMENTS FOR PERMITTING TO BE DESIGNED IN ACCORDANCE WITH CURRENT EDITIONS OF THE FLORIDA BUILDING CODE, BUILDING, ENERGY, PLUMBING, MECHANICAL, ACCESSIBILITY, AND NEC.

**LIGHTING NOTES**  
 1. LIGHTING SHALL BE DESIGNED TO SHINE DOWNWARD AND NOT SKYWARD.  
 2. LIGHTING SHALL BE SHIELDED TO AVOID GLARE AND DIRECT ILLUMINATION OF ADJACENT PROPERTIES.  
 3. ONLY FULL CUT-OFF LIGHTING FIXTURES SHALL BE PERMITTED.



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 JEICVIL.COM



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CITY OF FORT WALTON BEACH

**JET DRIVE RECREATIONAL AREA**  
 FORT WALTON BEACH, FLORIDA

**OVERALL SITE LAYOUT**  
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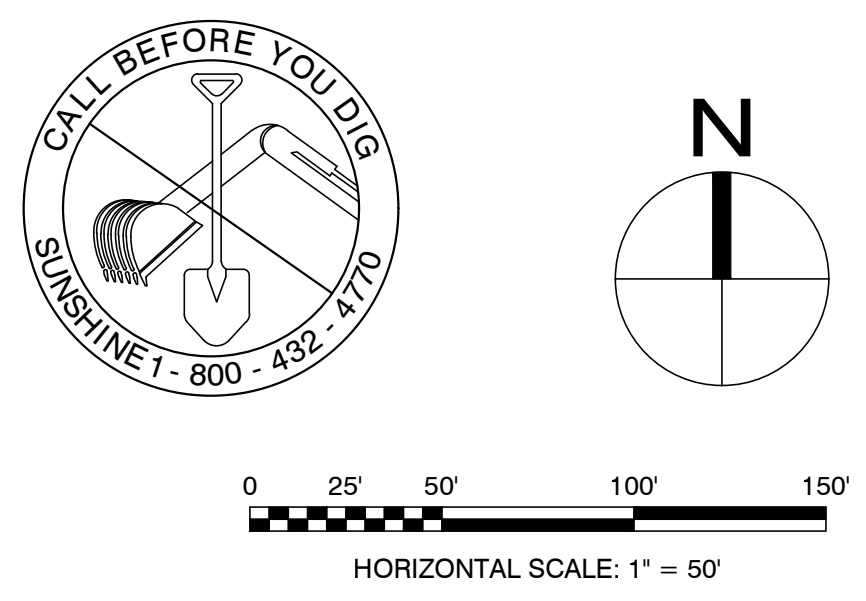
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 DRAWN: MPF

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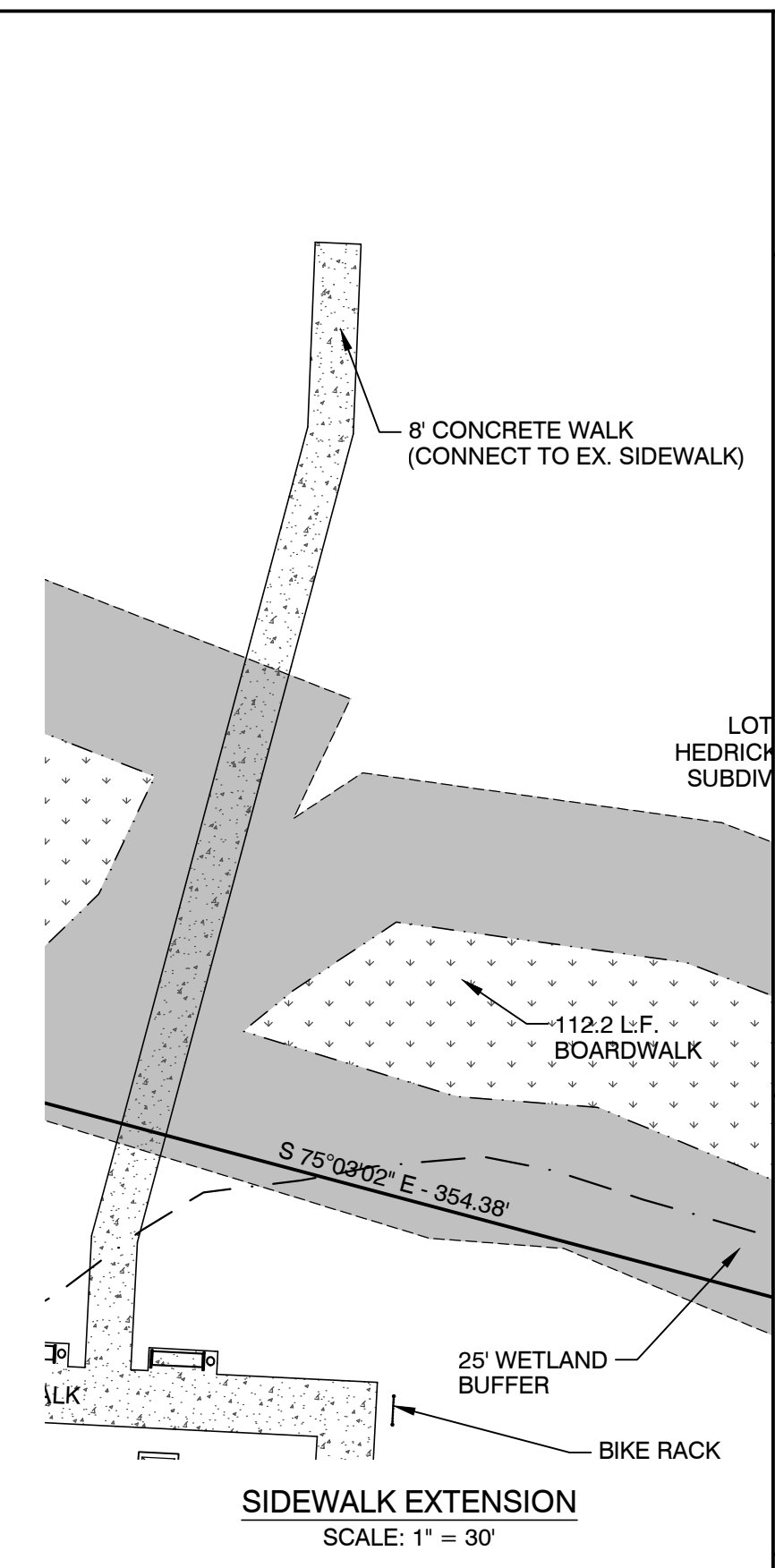
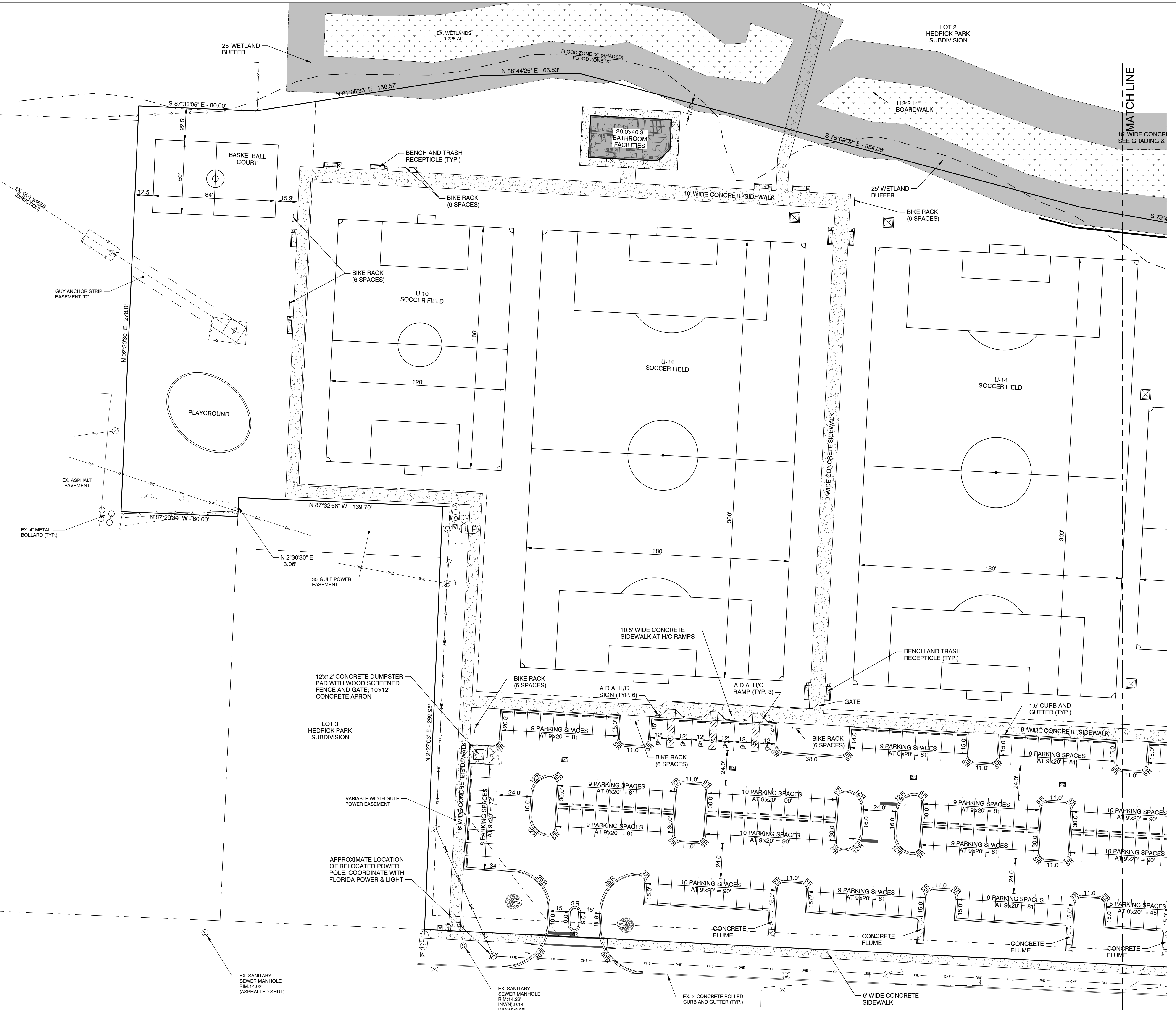
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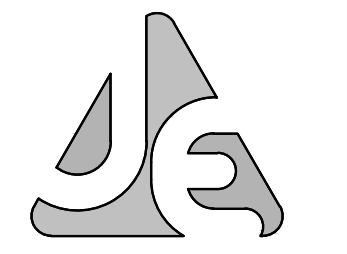
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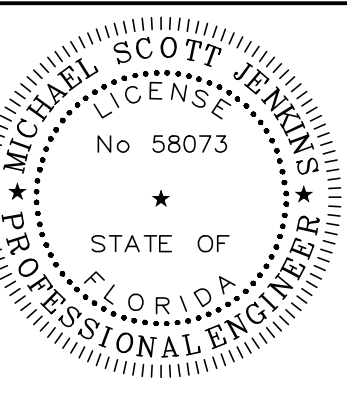


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**CITY OF FORT WALTON BEACH**

**JET DRIVE RECREATIONAL AREA**  
FORT WALTON BEACH, FLORIDA

**SITE PLAN I**

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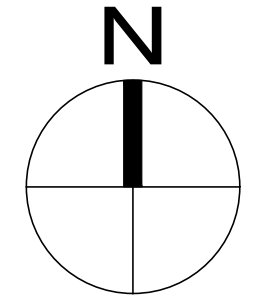
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04 OF 16

SHEET NUMBER  
**C04**

**CALL BEFORE YOU DIG**  
SUNSHINE 1-800-432-4170



**DIMENSION NOTE**  
ALL CURB DIMENSIONS ARE TO FLOW LINE  
UNLESS OTHERWISE NOTED.

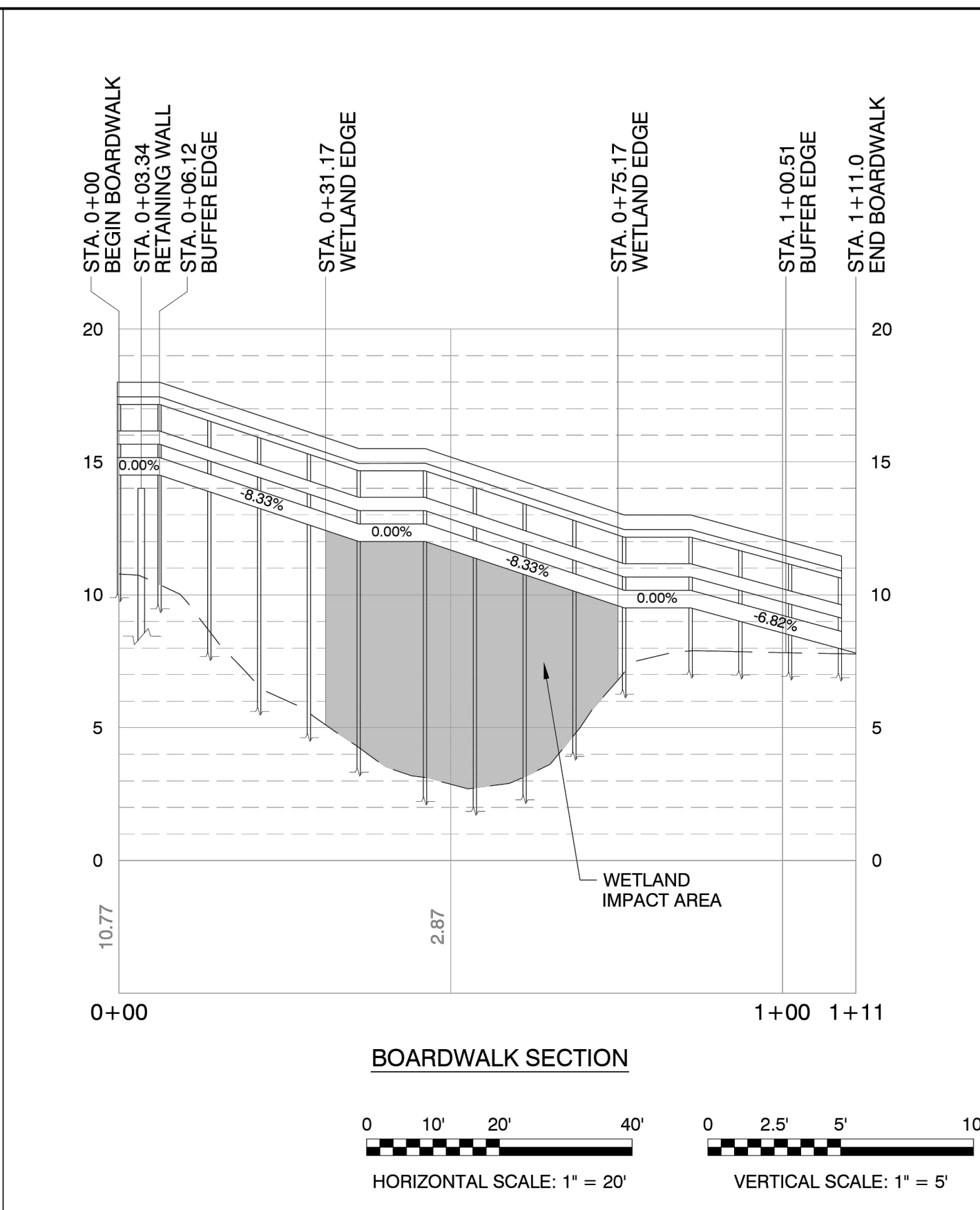
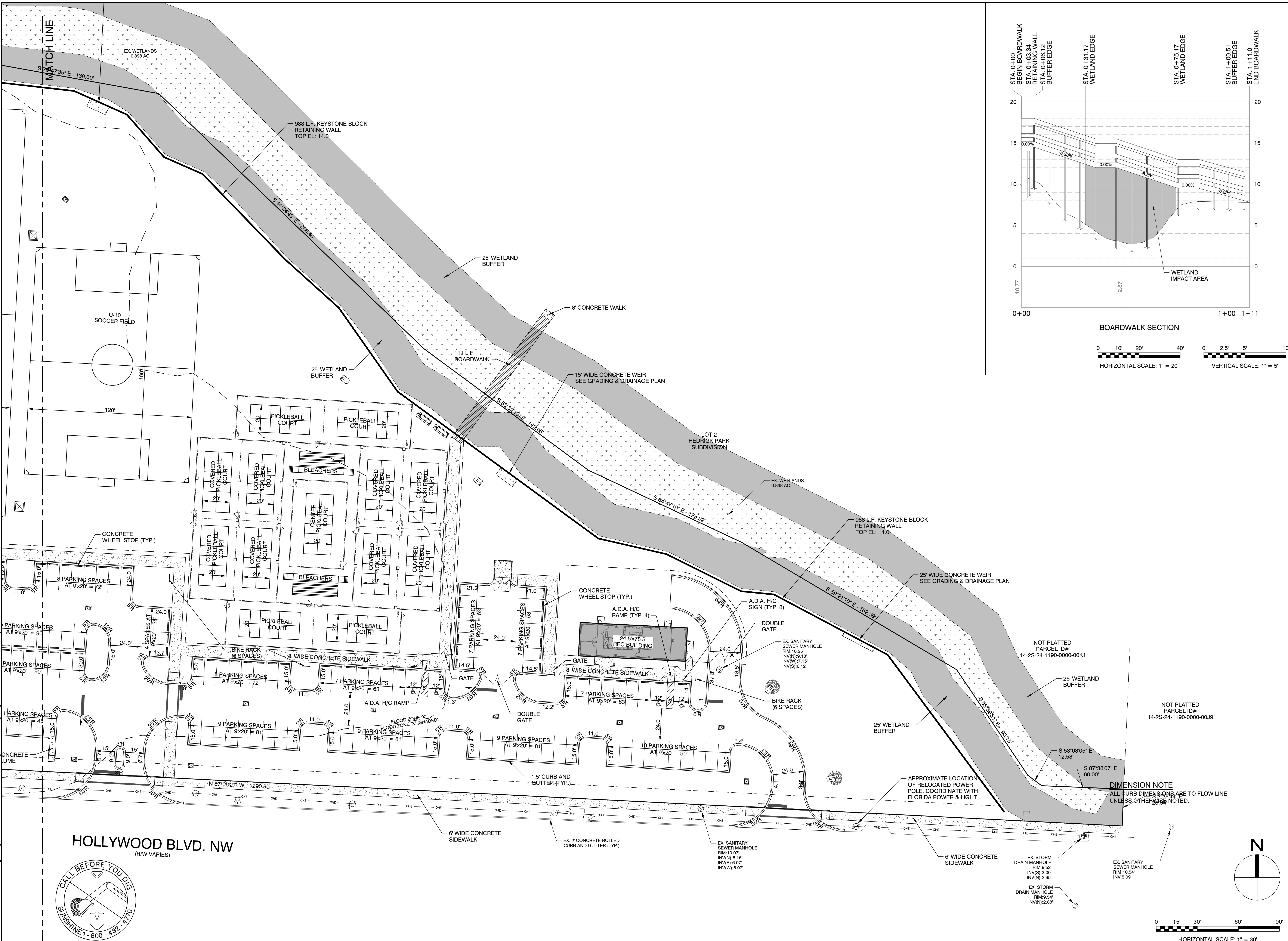


HORIZONTAL SCALE: 1" = 30'

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 FORT WALTON BEACH, FLORIDA 32548  
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**PROFESSIONAL ENGINEER**  
 MICHAEL SCOTT JENKINS  
 LICENSE No. 58073  
 STATE OF FLORIDA

M. SCOTT JENKINS, P.E.  
 FL REGISTRATION NO. 58073

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1	8/19/2023	REVISED PER CITY OF FORT WALTON BEACH REVIEW COMMENTS
3	6/11/2024	REVISED PER PICKLEBALL COURTS ADDITION

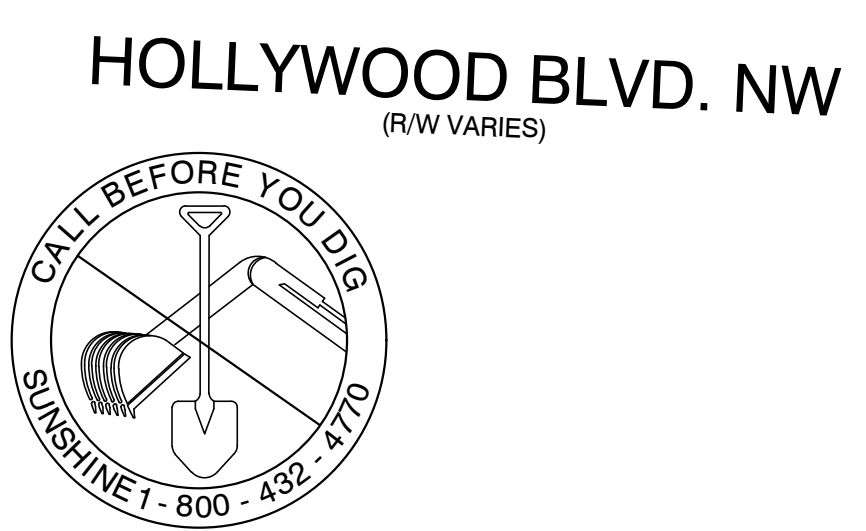
**CITY OF FORT WALTON BEACH**  
**JET DRIVE RECREATIONAL AREA**  
 FORT WALTON BEACH, FLORIDA  
**SITE PLAN II**

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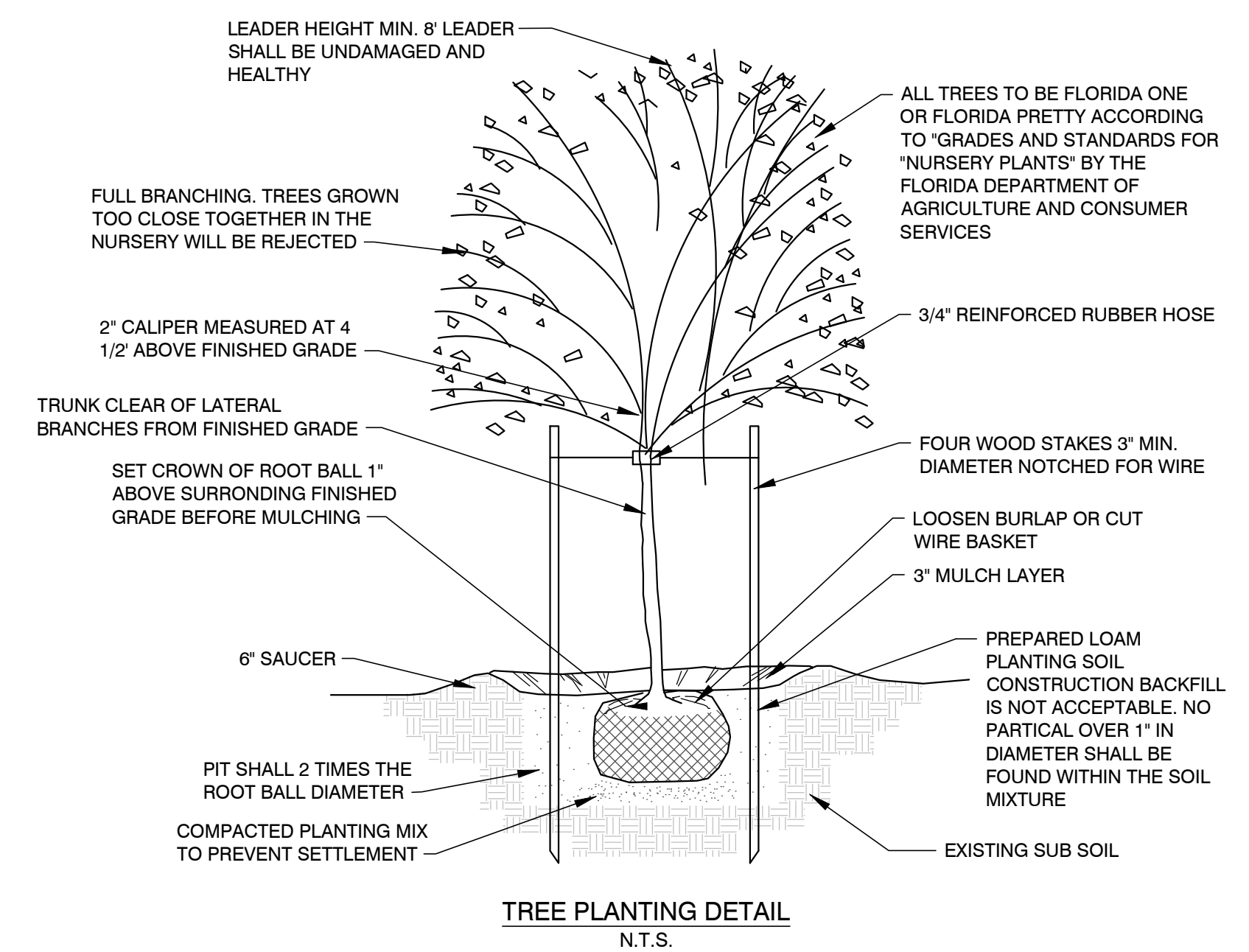
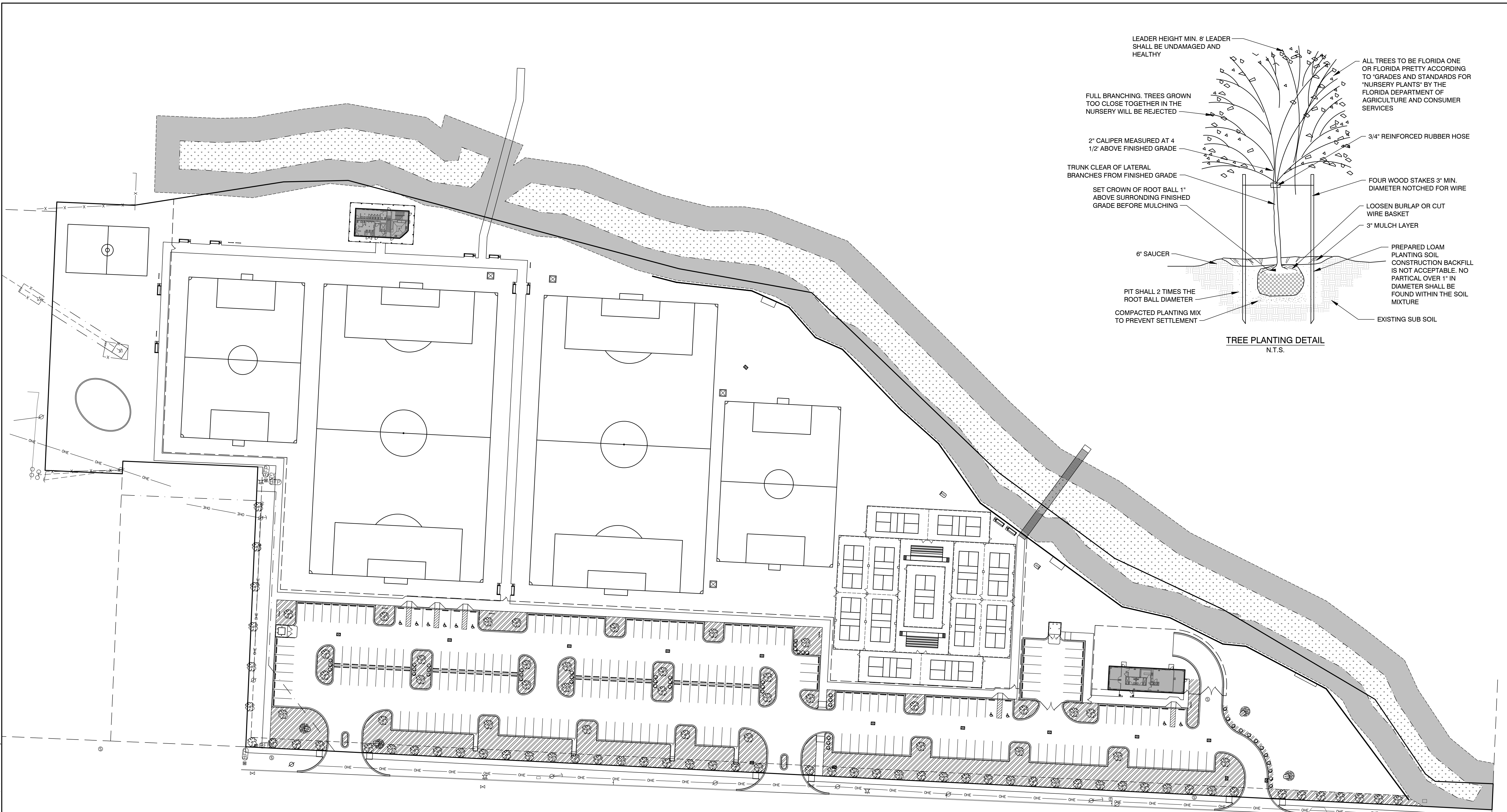
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**DESIGNED:** MSJ  
**DRAWN:** MPF

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- LANDSCAPE NOTES**
1. ALL PRICES OF PLANT MATERIAL SHALL INCLUDE PINE MULCH, TREE STAKING AND BED PREPARATION.
  2. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING OF ALL PLANT MATERIAL DURING THE CONSTRUCTION OF THE PROJECT, UNTIL SUCH TIME AS SUBSTANTIAL COMPLETION. AT THAT TIME, IT SHALL BECOME THE RESPONSIBILITY OF THE MAINTENANCE CONTRACTOR SELECTED BY THE OWNER.
  3. WHERE SOD OR SEED IS SHOWN GOING DIRECTLY UP TO THE BUILDING, CONTRACTOR SHALL LEAVE A 8" MULCH BORDER BETWEEN THE SOD AND THE BUILDING FOR EASY MAINTENANCE.
  4. THE ENGINEER RESERVES THE RIGHT TO REJECT ANY AND ALL PLANT MATERIAL WHICH DOES NOT MEET THE SPECIFICATIONS IN SIZE OR SHAPE.
  5. ALL LANDSCAPING WITHIN THE CLEAR VISIBILITY TRIANGLE SHALL COMPLY WITH SIGHT REQUIREMENTS.
  6. TREES SHALL HAVE A MINIMUM INSTALLED HEIGHT OF 6' AT THE TIME OF PLANTING.
  7. ALL PLANT MATERIAL SHALL BE DROUGHT AND SALT TOLERANT.

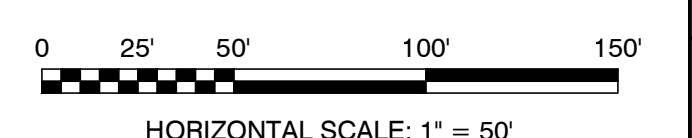
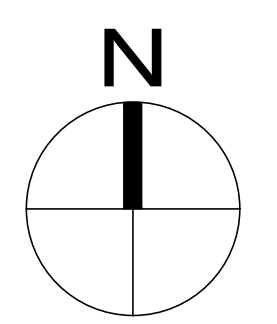
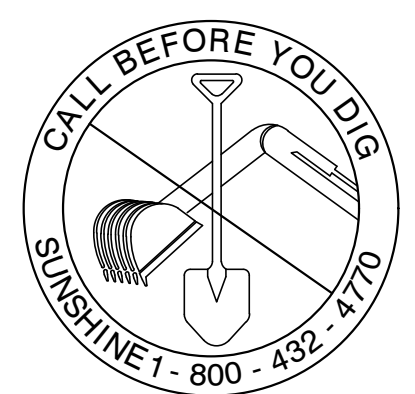
**BUFFER REQUIREMENTS:**  
 10' FRONT LANDSCAPE BUFFER: 1 CANOPY TREE PER 25 L.F. (1,220 / 25) = 49  
 PROVIDED: 49 CANOPY TREES

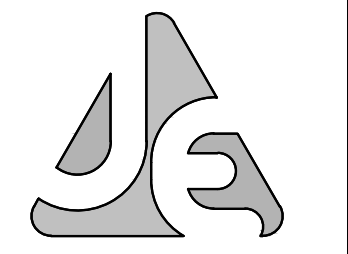
5' LANDSCAPE BUFFER: 1 CANOPY TREE PER 50 L.F. (290 / 50) = 6  
 PROVIDED: 6 CANOPY TREES

**VEHICULAR USE REQUIREMENT:**  
 VEHICULAR USE PLANTING AREA = 38,983 SQ. FT.  
 REQUIRED: 1 CANOPY TREE PER LANDSCAPE ISLAND = 34  
 PROVIDED: 34 CANOPY TREES

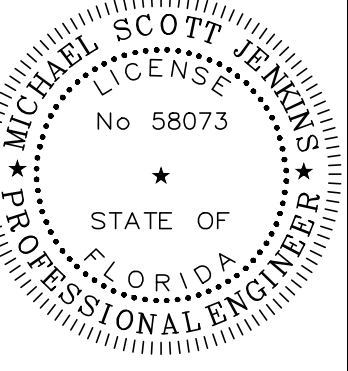
**IRRIGATION NOTE:**  
 IRRIGATION DESIGN TO BE THE RESPONSIBILITY OF THE CONTRACTOR.

SYM	TYPE	COMMON NAME	SCIENTIFIC NAME	HT.	CAL.	ROOT	REMARKS	COUNT
	CANOPY	LIVE OAK	Quercus virginiana	6'	3"	B&B	FULL, WELL SHAPED	89
	SHRUB	DWARF OLEANDER	Nerium oleander	-	-	-	-	48
	GROUND COVER (BERMUDA TIFF TOUGH)							





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CITY OF FORT WALTON BEACH

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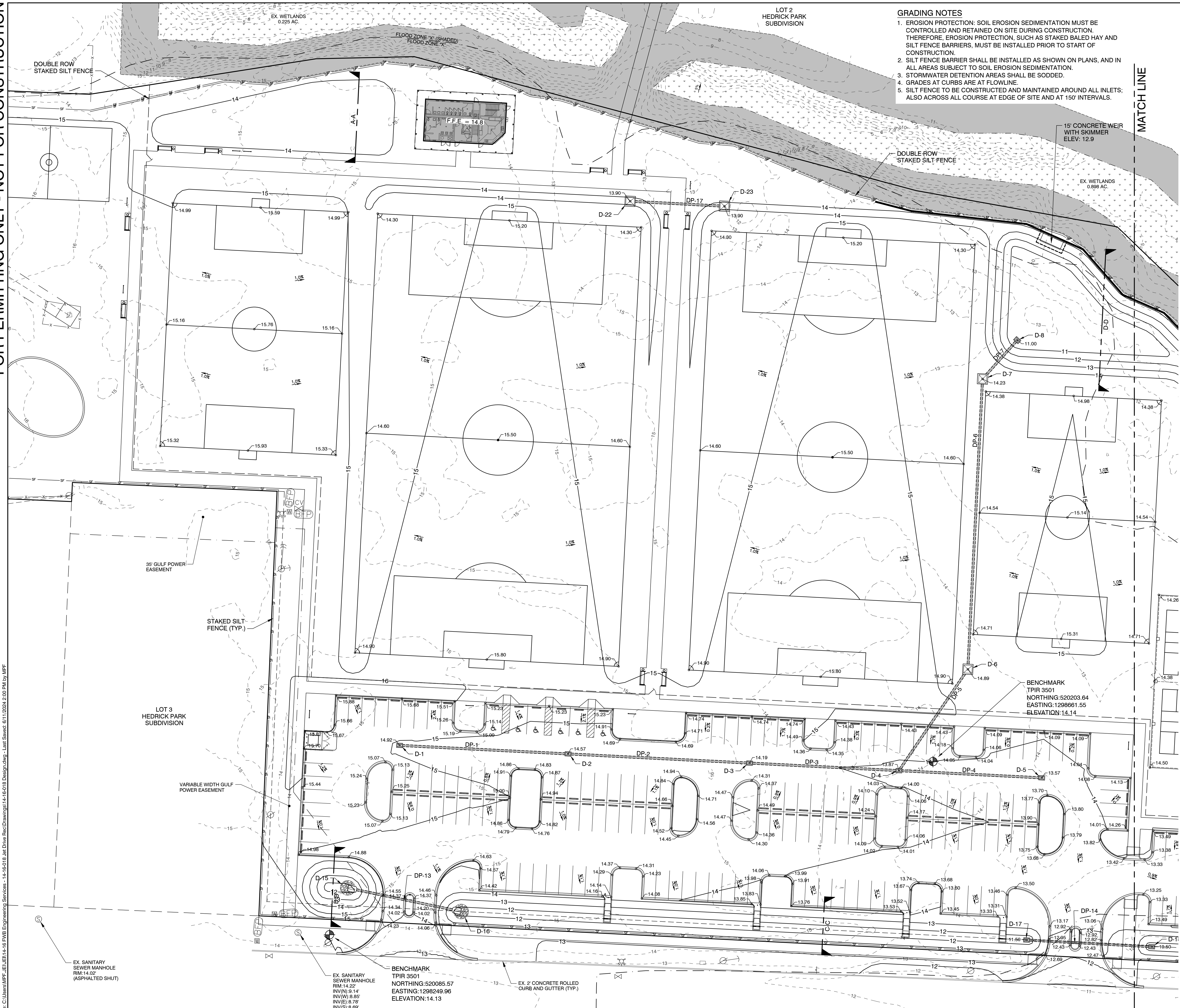
**LANDSCAPE PLAN**  
NOT VALID UNLESS BEARING ENGINEER'S ORIGINAL SIGNATURE

JOB:	14-16-018
DATE:	03-2023
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DRAWN:	MPF

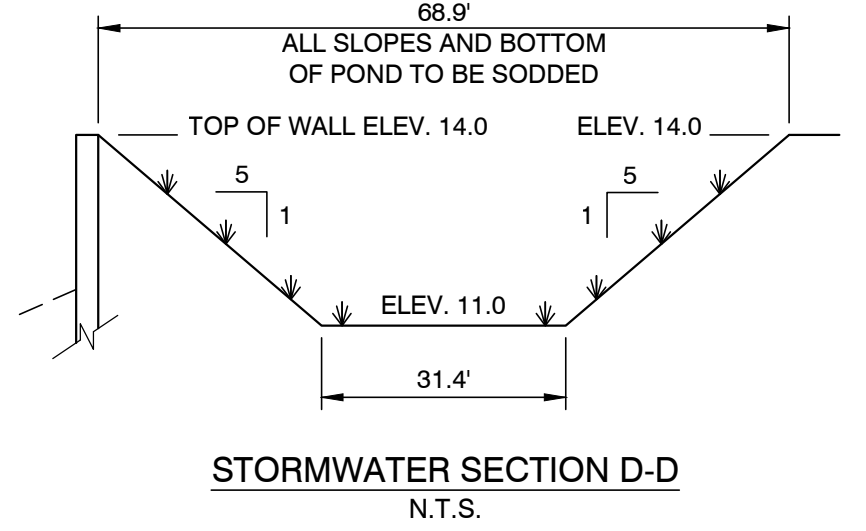
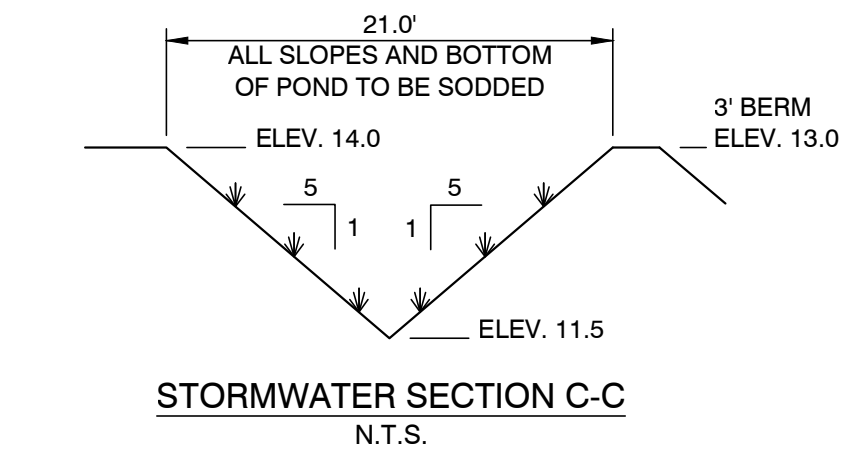
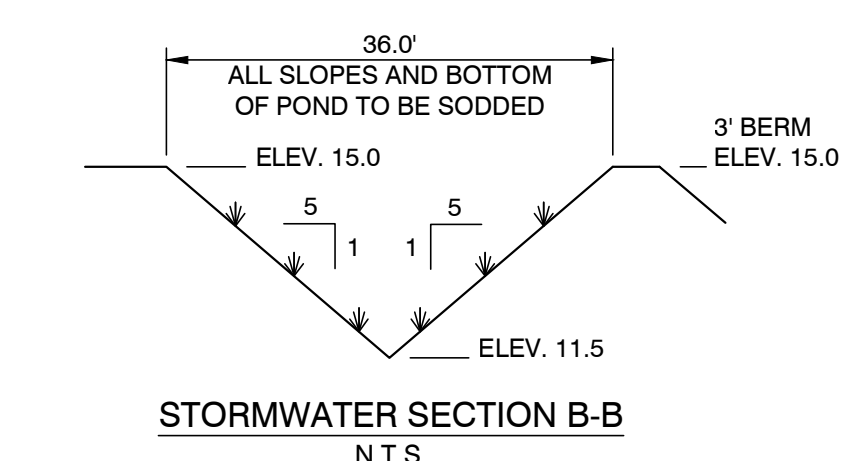
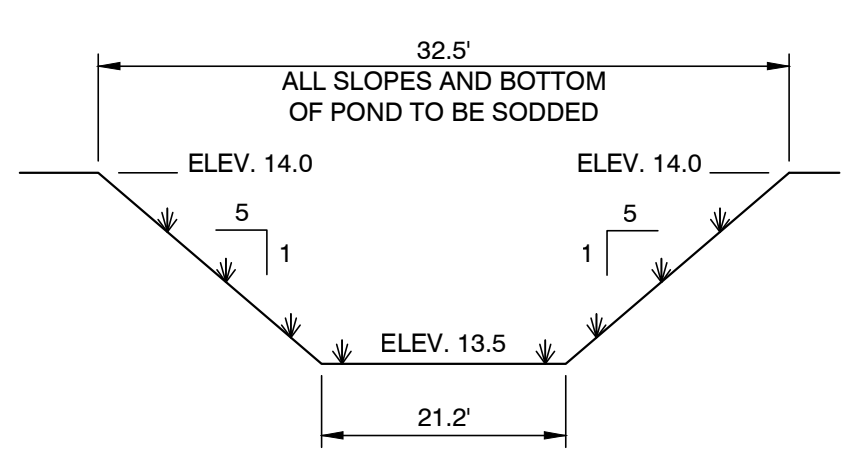
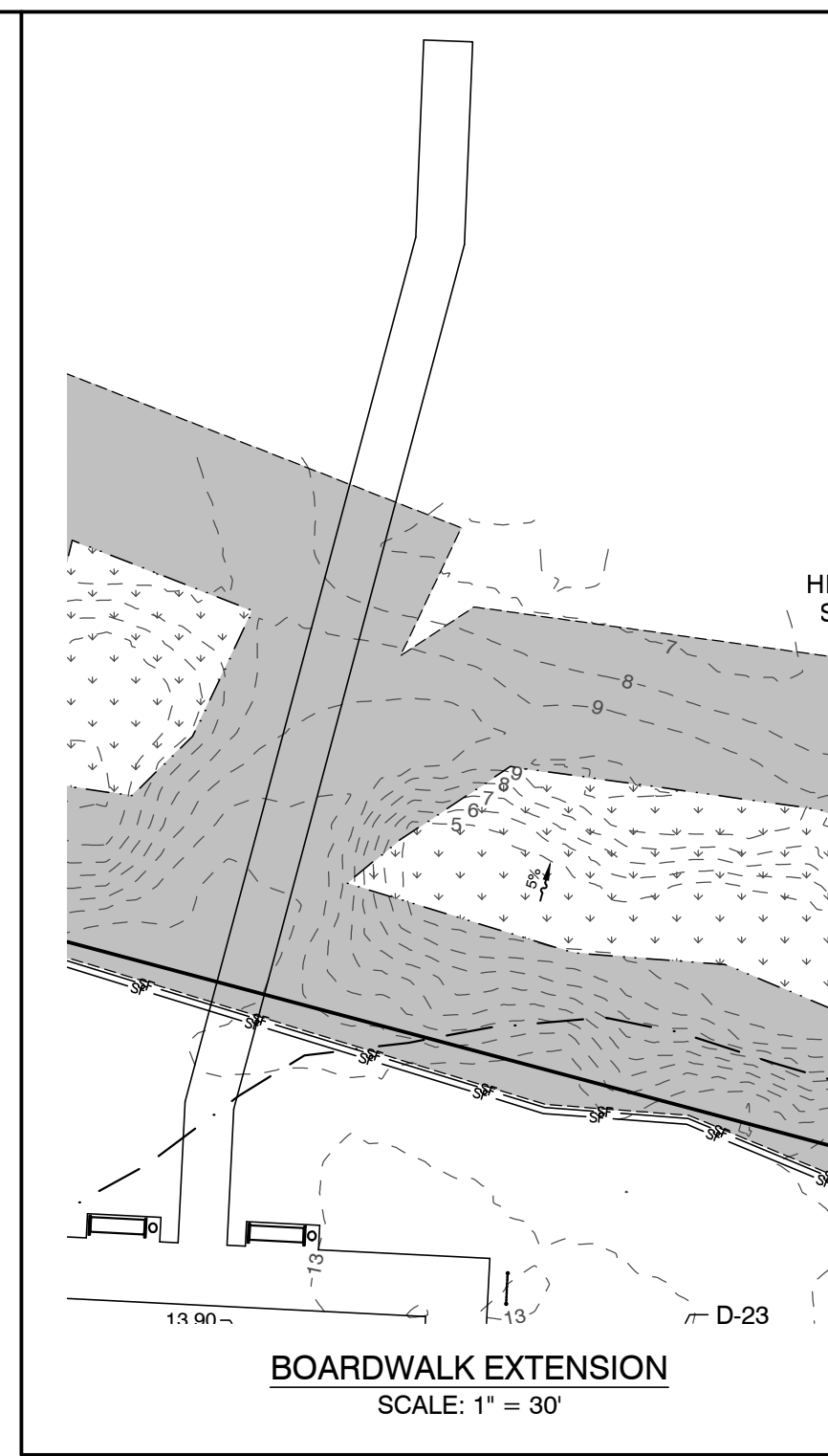
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DRAWING NUMBER	06 OF 16
SHEET NUMBER	<b>C06</b>

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- GRADING NOTES**
1. EROSION PROTECTION: SOIL EROSION SEDIMENTATION MUST BE CONTROLLED AND RETAINED ON SITE DURING CONSTRUCTION. THEREFORE, EROSION PROTECTION, SUCH AS STAKED BALED HAY AND SILT FENCE BARRIERS, MUST BE INSTALLED PRIOR TO START OF CONSTRUCTION.
  2. SILT FENCE BARRIER SHALL BE INSTALLED AS SHOWN ON PLANS, AND IN ALL AREAS SUBJECT TO SOIL EROSION SEDIMENTATION.
  3. STORMWATER DETENTION AREAS SHALL BE SODDED.
  4. GRADES AT CURBS ARE AT FLOWLINE.
  5. SILT FENCE TO BE CONSTRUCTED AND MAINTAINED AROUND ALL INLETS; ALSO ACROSS ALL COURSE AT EDGE OF SITE AND AT 150' INTERVALS.



**CALL BEFORE YOU DIG**  
SUNSHINE-1-800-432-4170

**HORIZONTAL SCALE: 1" = 30'**

**JENKINS ENGINEERING, INC.**  
73 EGLIN PARKWAY NE, SUITE 203  
FORT WALTON BEACH, FLORIDA 32548  
PHONE 850.837.2448  
FAX 850.837.2450  
JEICVIL.COM

**MICHAEL SCOTT JENKINS**  
LICENSE  
No. 58073  
STATE OF FLORIDA  
PROFESSIONAL ENGINEER

M. SCOTT JENKINS, P.E.  
FL REGISTRATION NO. 58073

REV	DATE	DESCRIPTION
1	8/18/2023	REVISED PER CITY OF FORT WALTON BEACH REVIEW COMMENTS

CITY OF FORT WALTON BEACH

**JET DRIVE RECREATIONAL AREA**  
FORT WALTON BEACH, FLORIDA

**GRADING & DRAINAGE PLAN I**  
NOT VALID UNLESS BEARING ENGINEER'S ORIGINAL SIGNATURE

JOB: 14-16-018  
DATE: 03-2023  
DESIGNED: MSJ  
DRAWN: MPF

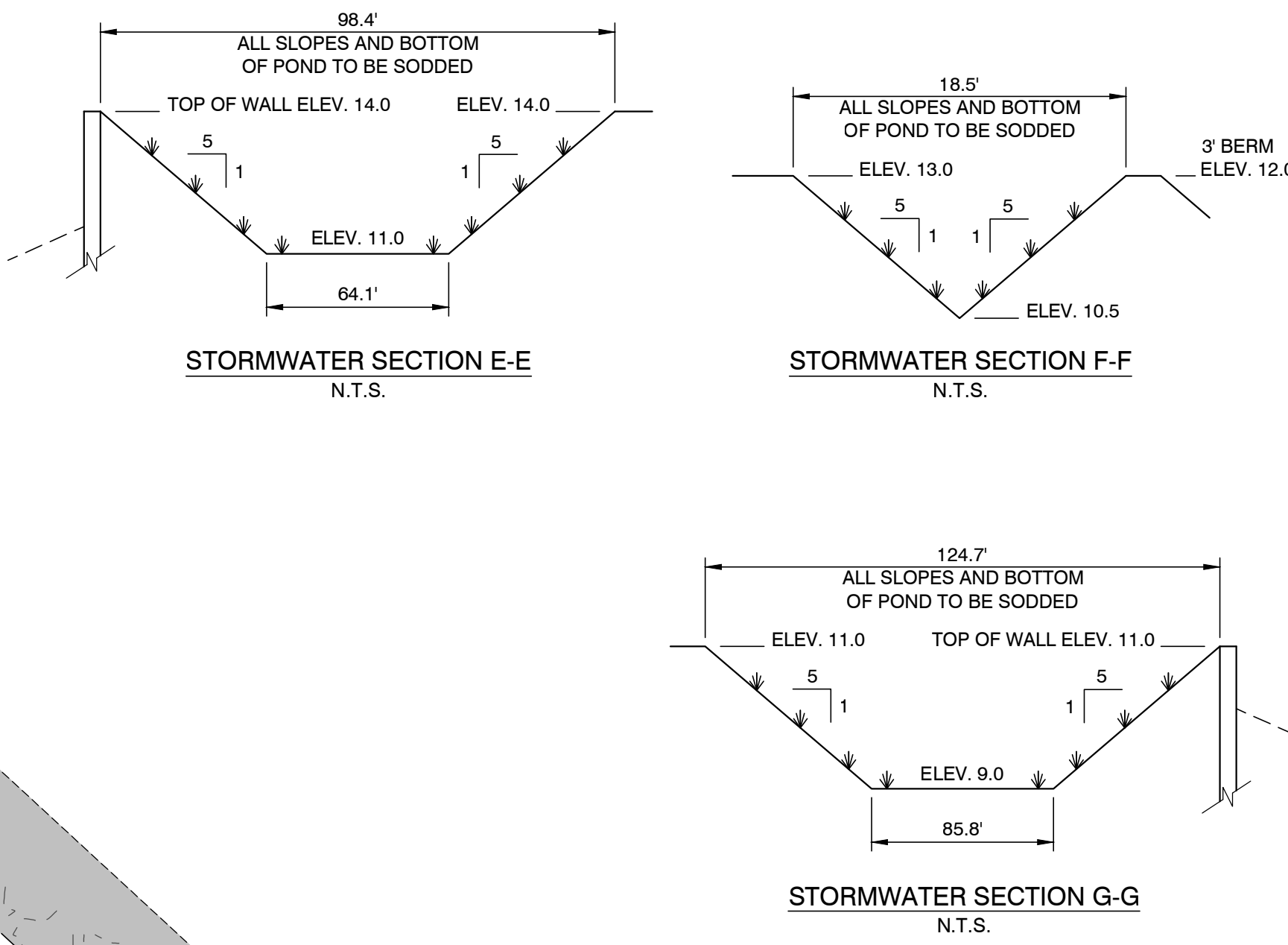
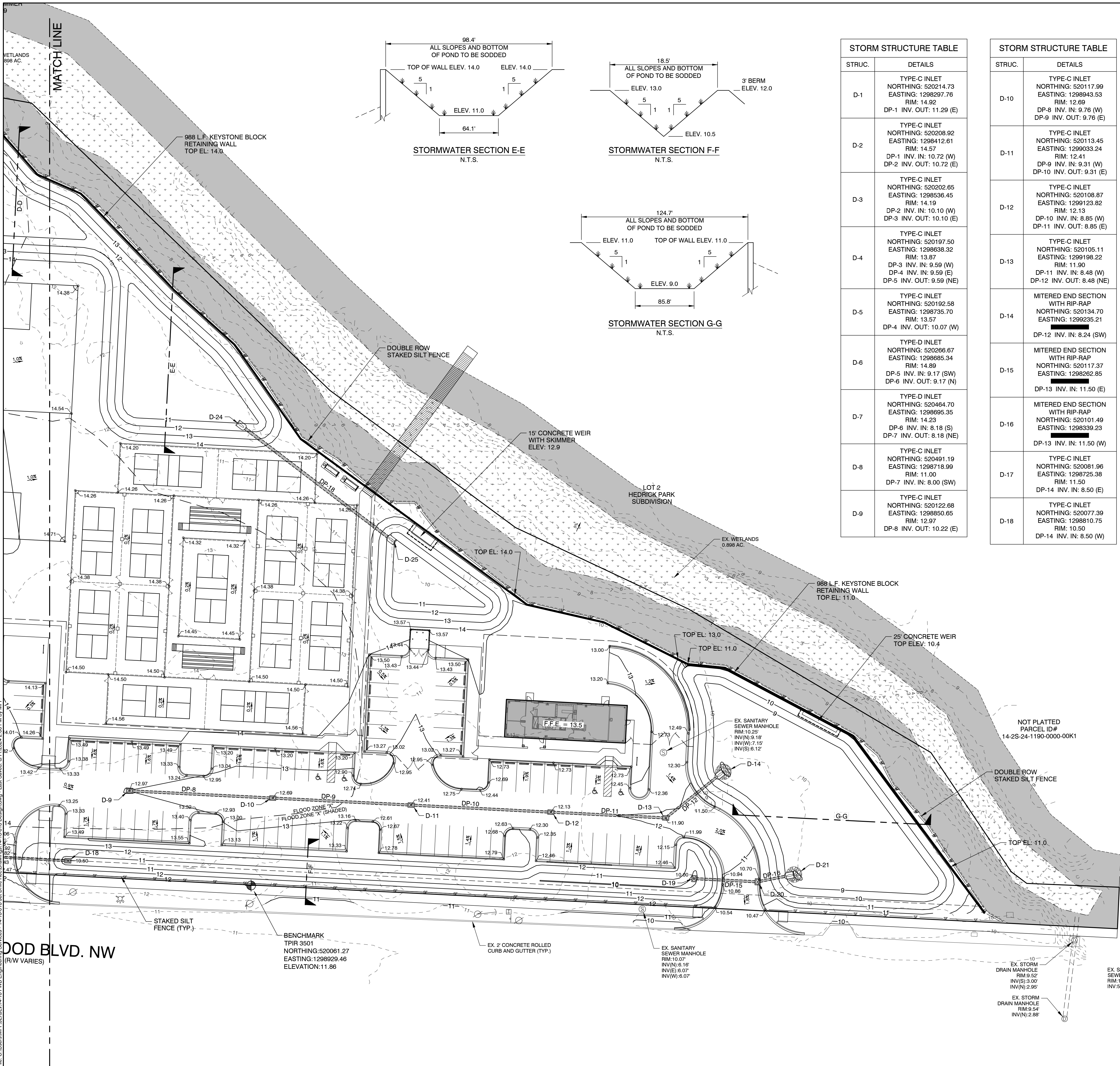
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DRAWING NUMBER  
07 OF 16

SHEET NUMBER  
**C07**

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STORM STRUCTURE TABLE	
STRUC.	DETAILS
D-1	TYPE-C INLET NORTHING: 520214.73 EASTING: 1298297.76 RIM: 14.92 DP-1 INV. IN: 11.29 (E)
D-2	TYPE-C INLET NORTHING: 520208.92 EASTING: 1298412.61 RIM: 14.57 DP-1 INV. IN: 10.72 (W) DP-2 INV. OUT: 10.72 (E)
D-3	TYPE-C INLET NORTHING: 520202.65 EASTING: 1298536.45 RIM: 14.19 DP-2 INV. IN: 10.10 (W) DP-3 INV. OUT: 10.10 (E)
D-4	TYPE-C INLET NORTHING: 520197.50 EASTING: 1298638.32 RIM: 13.87 DP-3 INV. IN: 9.59 (W) DP-4 INV. IN: 9.59 (E) DP-5 INV. OUT: 9.59 (NE)
D-5	TYPE-C INLET NORTHING: 520192.58 EASTING: 1298735.70 RIM: 13.57 DP-4 INV. OUT: 10.07 (W)
D-6	TYPE-D INLET NORTHING: 520266.67 EASTING: 1298685.34 RIM: 14.89 DP-5 INV. IN: 9.17 (SW) DP-6 INV. OUT: 9.17 (N)
D-7	TYPE-D INLET NORTHING: 520464.70 EASTING: 1298695.35 RIM: 14.23 DP-6 INV. IN: 8.18 (S) DP-7 INV. OUT: 8.18 (NE)
D-8	TYPE-C INLET NORTHING: 520491.19 EASTING: 1298718.99 RIM: 11.00 DP-7 INV. IN: 8.00 (SW)
D-9	TYPE-C INLET NORTHING: 520122.68 EASTING: 1298850.85 RIM: 12.97 DP-8 INV. OUT: 10.22 (E)

STORM STRUCTURE TABLE	
STRUC.	DETAILS
D-10	TYPE-C INLET NORTHING: 520117.99 EASTING: 1298943.53 RIM: 12.69 DP-8 INV. IN: 9.76 (W) DP-9 INV. OUT: 9.76 (E)
D-11	TYPE-C INLET NORTHING: 520113.45 EASTING: 1299033.24 RIM: 12.41 DP-9 INV. IN: 9.31 (W) DP-10 INV. OUT: 9.31 (E)
D-12	TYPE-C INLET NORTHING: 520108.87 EASTING: 1299123.82 RIM: 12.13 DP-10 INV. IN: 8.85 (W) DP-11 INV. OUT: 8.85 (E)
D-13	TYPE-C INLET NORTHING: 520105.11 EASTING: 1299198.22 RIM: 11.90 DP-11 INV. IN: 8.48 (W) DP-12 INV. OUT: 8.48 (NE)
D-14	MITERED END SECTION WITH RIP-RAP NORTHING: 520134.70 EASTING: 1299235.21 DP-12 INV. IN: 8.24 (SW)
D-15	MITERED END SECTION WITH RIP-RAP NORTHING: 520117.37 EASTING: 1298262.85 DP-13 INV. IN: 11.50 (E)
D-16	MITERED END SECTION WITH RIP-RAP NORTHING: 520101.49 EASTING: 1298339.23 DP-13 INV. IN: 11.50 (W)
D-17	TYPE-C INLET NORTHING: 520081.96 EASTING: 1298725.38 RIM: 11.50 DP-14 INV. IN: 8.50 (E)
D-18	TYPE-C INLET NORTHING: 520077.39 EASTING: 1298810.75 RIM: 10.50 DP-14 INV. IN: 8.50 (W)

STORM STRUCTURE TABLE	
STRUC.	DETAILS
D-19	TYPE-C INLET NORTHING: 520065.78 EASTING: 1299216.58 RIM: 10.00 DP-15 INV. OUT: 8.32 (E)
D-20	TYPE-C INLET NORTHING: 520063.70 EASTING: 1299257.61 RIM: 10.69 DP-15 INV. IN: 8.12 (W) DP-16 INV. OUT: 8.11 (E)
D-21	MITERED END SECTION WITH RIP-RAP NORTHING: 520068.32 EASTING: 1299280.89 DP-16 INV. IN: 8.00 (W)
D-22	TYPE-D INLET NORTHING: 520585.94 EASTING: 1298455.00 RIM: 13.90 DP-17 INV. IN: 11.00 (E)
D-23	TYPE-D INLET NORTHING: 520582.56 EASTING: 1298519.32 RIM: 13.90 DP-17 INV. IN: 11.00 (W)
D-24	MITERED END SECTION WITH RIP-RAP NORTHING: 520360.99 EASTING: 1298821.16 DP-18 INV. IN: 11.00 (SE)
D-25	MITERED END SECTION WITH RIP-RAP NORTHING: 520283.96 EASTING: 1299022.35 DP-18 INV. IN: 11.00 (NW)

STORM PIPE TABLE	
RUN	DETAILS
DP-1	115.0 L.F. 15"Ø N12 HDPE AT 0.50%
DP-2	124.0 L.F. 15"Ø N12 HDPE AT 0.50%
DP-3	102.0 L.F. 15"Ø N12 HDPE AT 0.50%
DP-4	97.5 L.F. 15"Ø N12 HDPE AT 0.50%
DP-5	83.6 L.F. 15"Ø N12 HDPE AT 0.50%
DP-6	198.3 L.F. 15"Ø N12 HDPE AT 0.50%
DP-7	35.5 L.F. 15"Ø N12 HDPE AT 0.50%
DP-8	93.0 L.F. 15"Ø N12 HDPE AT 0.50%
DP-9	89.8 L.F. 15"Ø N12 HDPE AT 0.50%
DP-10	90.7 L.F. 15"Ø N12 HDPE AT 0.50%
DP-11	74.5 L.F. 15"Ø N12 HDPE AT 0.50%
DP-12	47.4 L.F. 15"Ø N12 HDPE AT 0.50%
DP-13	78.0 L.F. 15"Ø N12 HDPE AT 0.00%
DP-14	85.5 L.F. 15"Ø N12 HDPE AT 0.00%
DP-15	41.1 L.F. 15"Ø N12 HDPE AT 0.51%
DP-16	23.7 L.F. 15"Ø N12 HDPE AT 0.48%
DP-17	64.4 L.F. 15"Ø N12 HDPE AT 0.00%
DP-18	127.2 L.F. 18"Ø N12 HDPE AT 0.00%

- GRADING NOTES**
- EROSION PROTECTION: SOIL EROSION SEDIMENTATION MUST BE CONTROLLED AND RETAINED ON SITE DURING CONSTRUCTION. THEREFORE, EROSION PROTECTION, SUCH AS STAKED BALED HAY AND SILT FENCE BARRIERS, MUST BE INSTALLED PRIOR TO START OF CONSTRUCTION.
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PHONE 850.837.2448  
FAX 850.837.2450  
JEICVIL.COM

M. SCOTT JENKINS, P.E.  
FL REGISTRATION NO. 58073

REV	DATE	DESCRIPTION
1	8/19/2023	REVISED PER CITY OF FORT WALTON BEACH REVIEW COMMENTS
2	6/11/2024	REVISED PER PICKERBALL COURTS ADDITION

CITY OF FORT WALTON BEACH

**JET DRIVE RECREATIONAL AREA**  
FORT WALTON BEACH, FLORIDA

**GRADING & DRAINAGE PLAN II**

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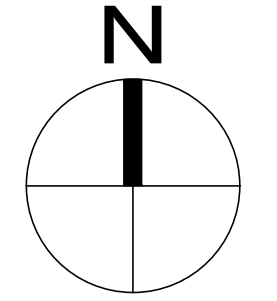
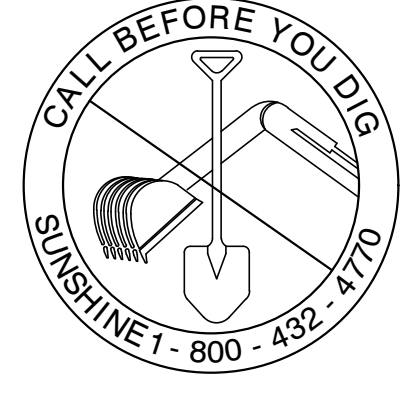
JOB:	14-16-018
DATE:	03-2023
DESIGNED:	MSJ
DRAWN:	MPF

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DRAWING NUMBER	08 OF 16
SHEET NUMBER	C08

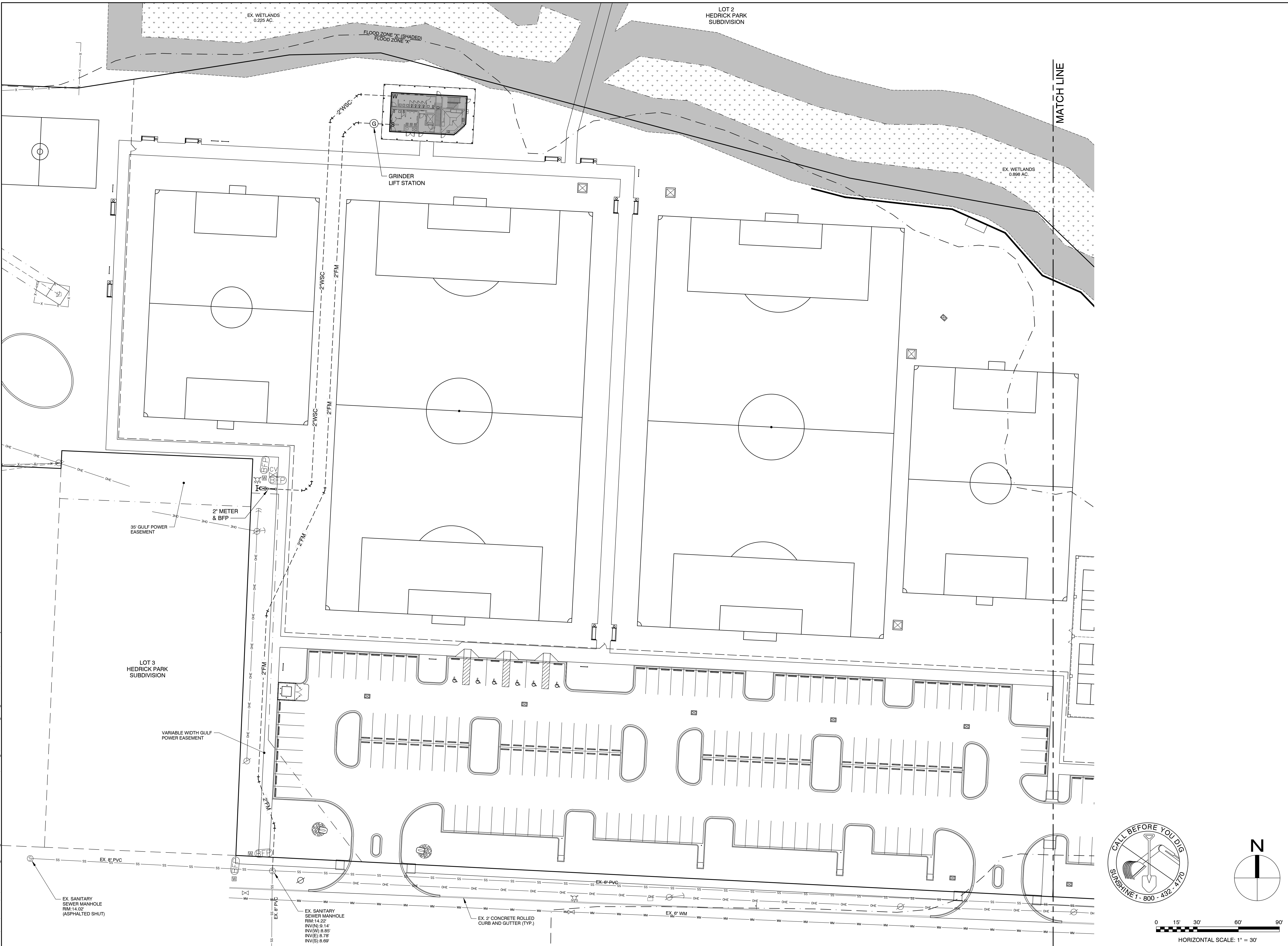
DOD BLVD. NW  
(RW VARIES)

BENCHMARK  
TP1R 3501  
NORTHING: 520061.27  
EASTING: 1298929.46  
ELEVATION: 11.88



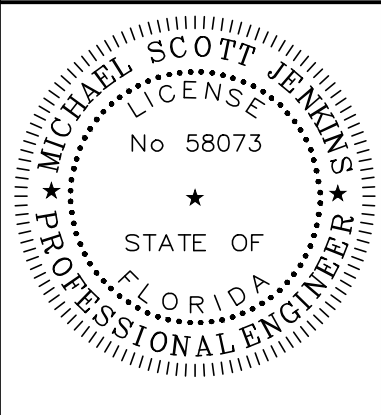


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 FORT WALTON BEACH, FLORIDA 32548  
 PHONE 850.837.2448  
 FAX 850.837.2450  
 JEICIVIL.COM



M. SCOTT JENKINS, P.E.  
 FL REGISTRATION NO. 58073

REV	DATE	DESCRIPTION
1	01/18/2023	REVISED PER CITY OF FORT WALTON BEACH REVIEW COMMENTS

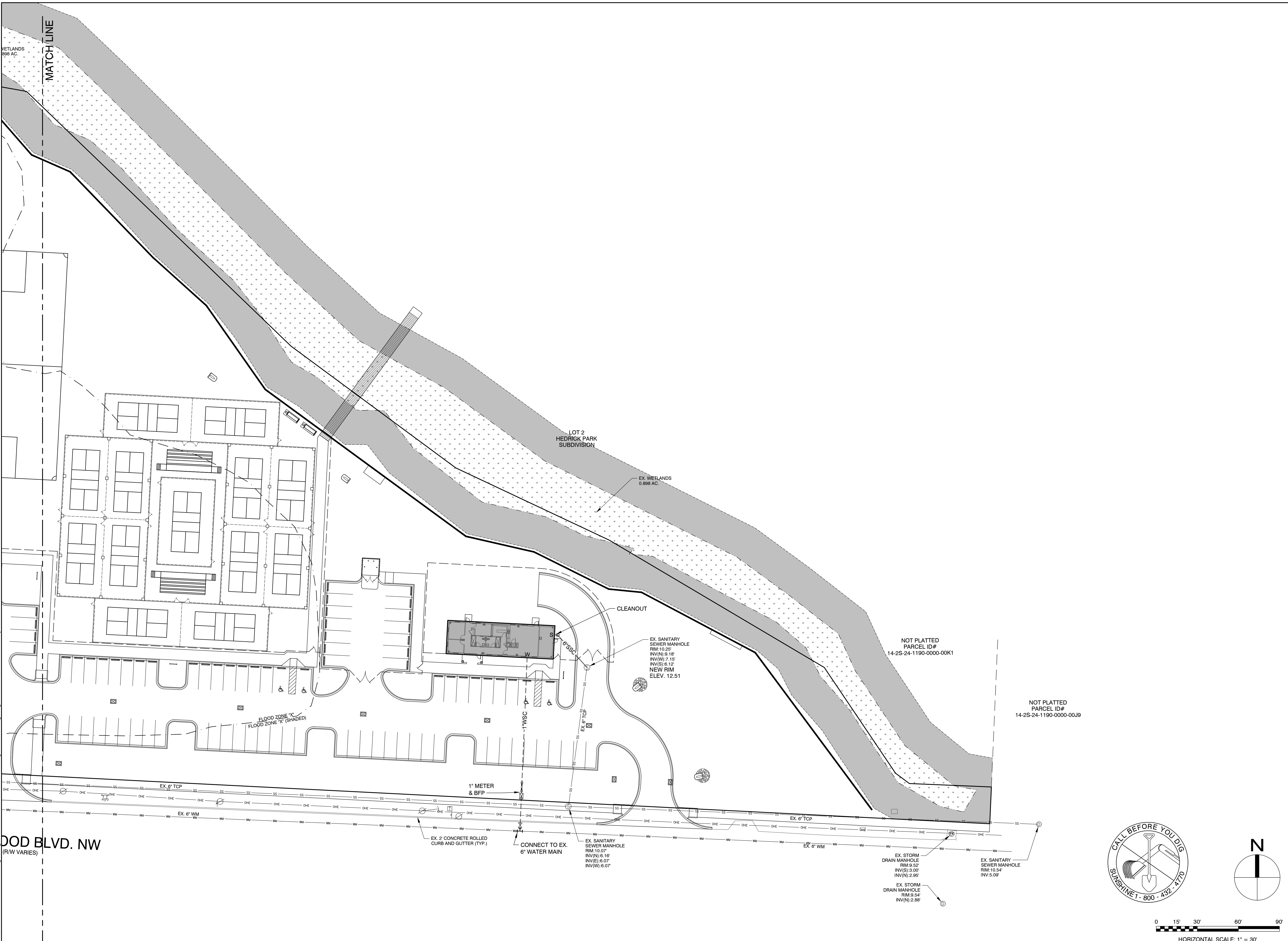
CITY OF FORT WALTON BEACH  
**JET DRIVE RECREATIONAL AREA**  
 FORT WALTON BEACH, FLORIDA  
**UTILITY PLAN I**  
NOT VALID UNLESS BEARING ENGINEER'S ORIGINAL SIGNATURE

JOB: 14-16-018  
 DATE: 03-2023  
 DESIGNED: MSJ  
 DRAWN: MPF

BAR IS ONE INCH ON ORIGINAL  
 0 15' 30' 60' 90'  
 HORIZONTAL SCALE: 1" = 30'

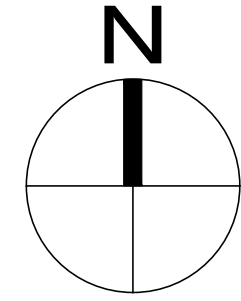
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**C09**

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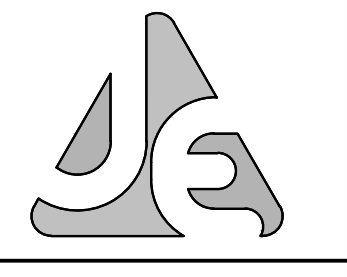


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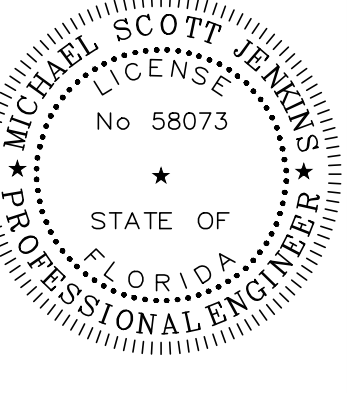
DOD BLVD. NW  
(R/W VARIES)



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 FORT WALTON BEACH, FLORIDA 32548  
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M. SCOTT JENKINS, P.E.  
FL REGISTRATION NO. 58073

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1	8/19/2023	REVISED PER CITY OF FORT WALTON BEACH REVIEW COMMENTS
2	6/11/2024	REVISED PER PICKERBALL COURTS ADDITION
3		

CITY OF FORT WALTON BEACH  
**JET DRIVE RECREATIONAL AREA**  
 FORT WALTON BEACH, FLORIDA  
**UTILITY PLAN II**  
NOT VALID UNLESS BEARING ENGINEER'S ORIGINAL SIGNATURE

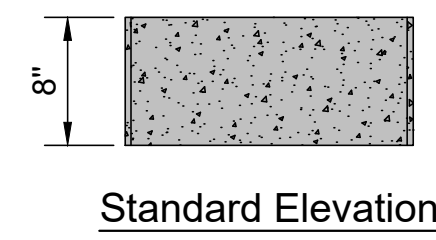
JOB: 14-16-018  
 DATE: 03-2023  
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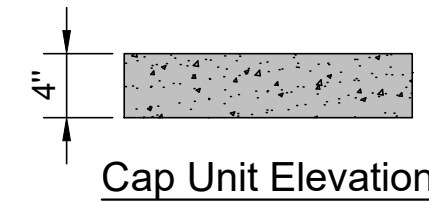
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SHEET NUMBER  
**C10**

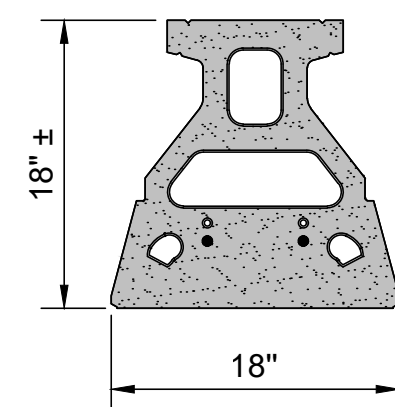
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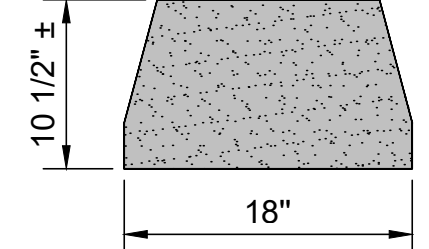
Standard Elevation



Cap Unit Elevation



Standard Plan



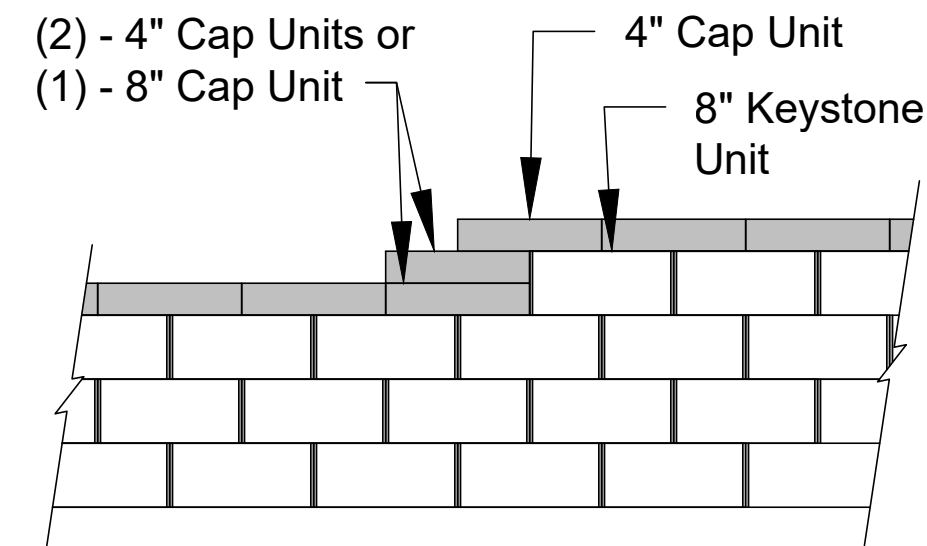
Cap Unit Plan

Straight Split Cap Unit Option

\* Dimensions & Availability Will Vary by Region

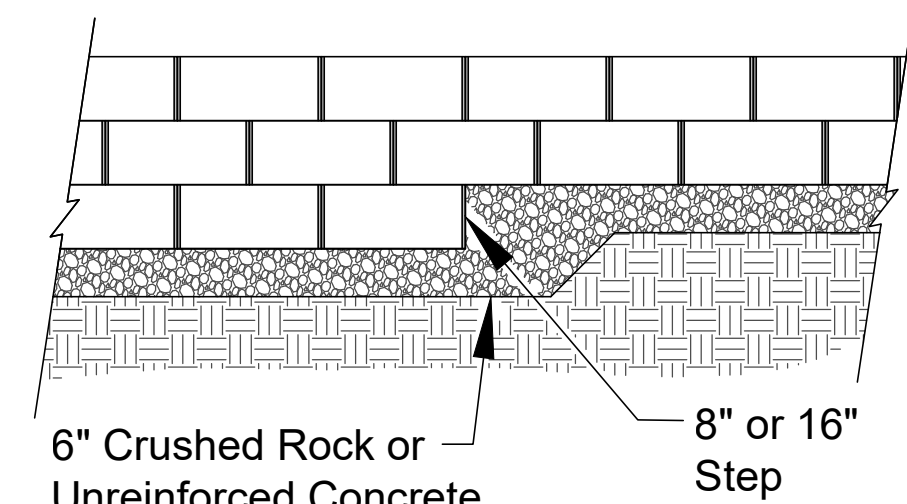
Standard Unit

\* Dimensions May Vary by Region

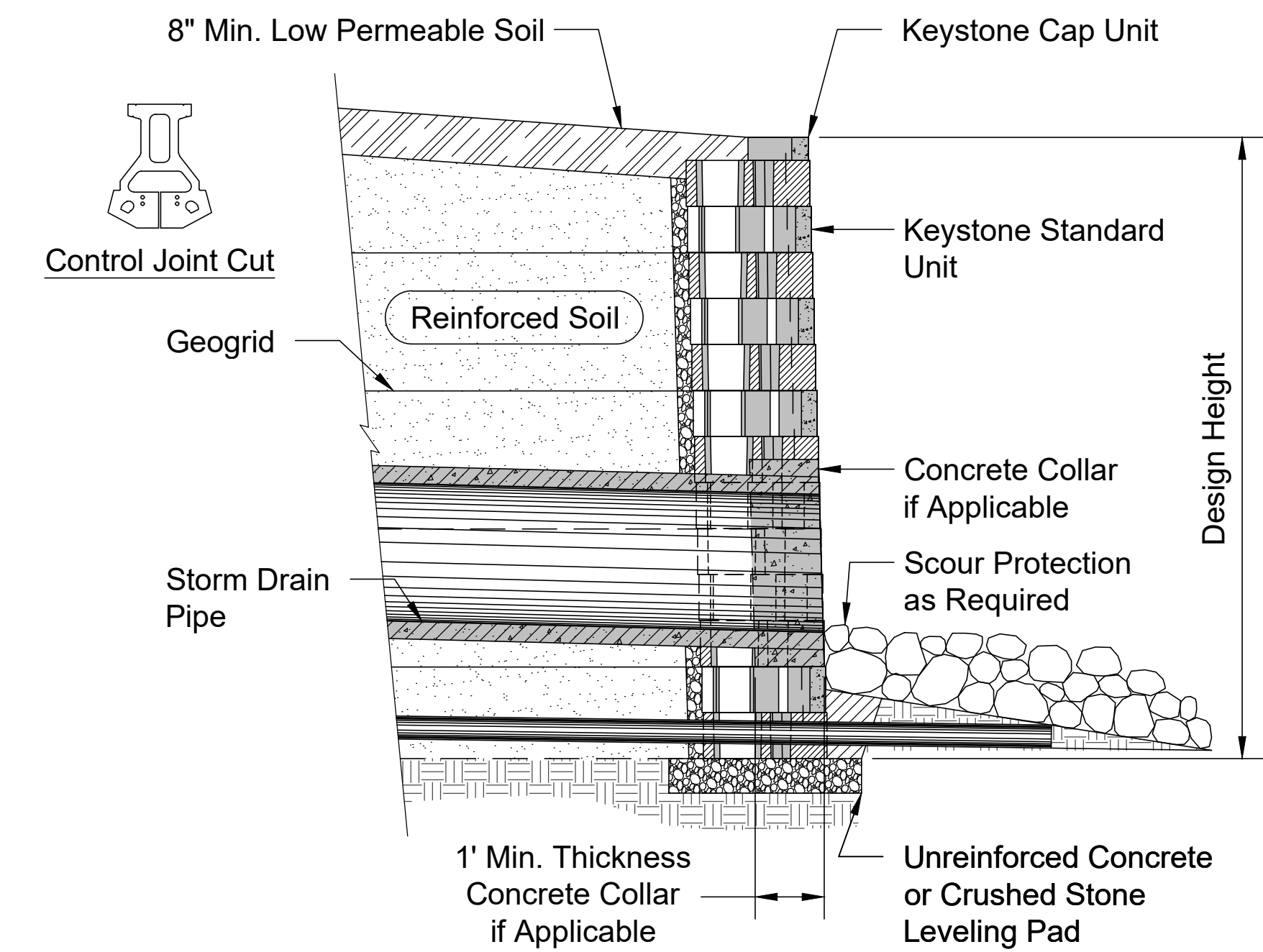


Note:  
1. Secure all cap units with Keystone Kapseal or equal.

Top of Wall Steps



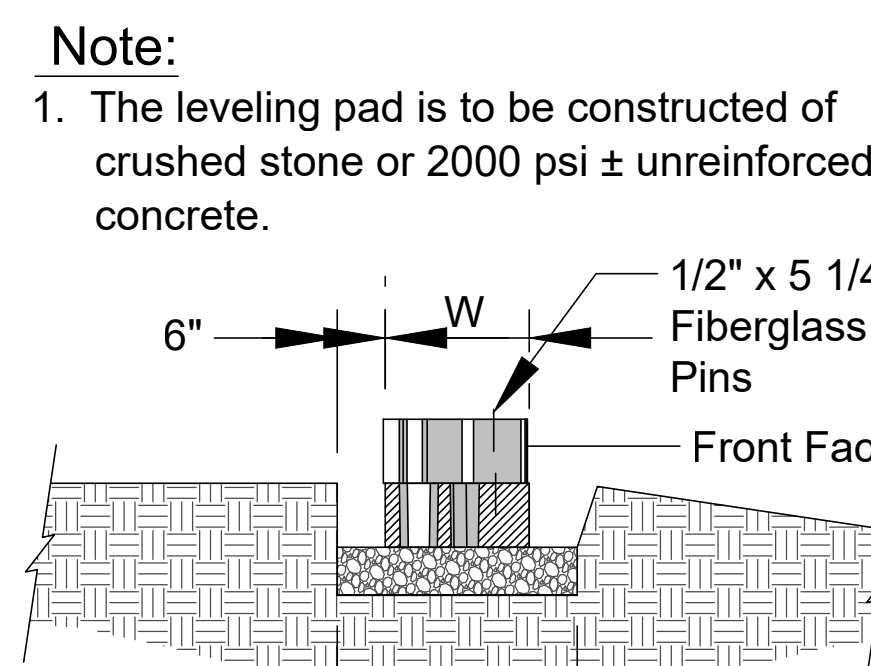
Elevation



Typical Pipe Outlet Section

Standard Unit - Near Vertical Setback

Note:  
For pipes larger than 24", a concrete collar may be cast around pipe for ease of construction and appearance.



Section

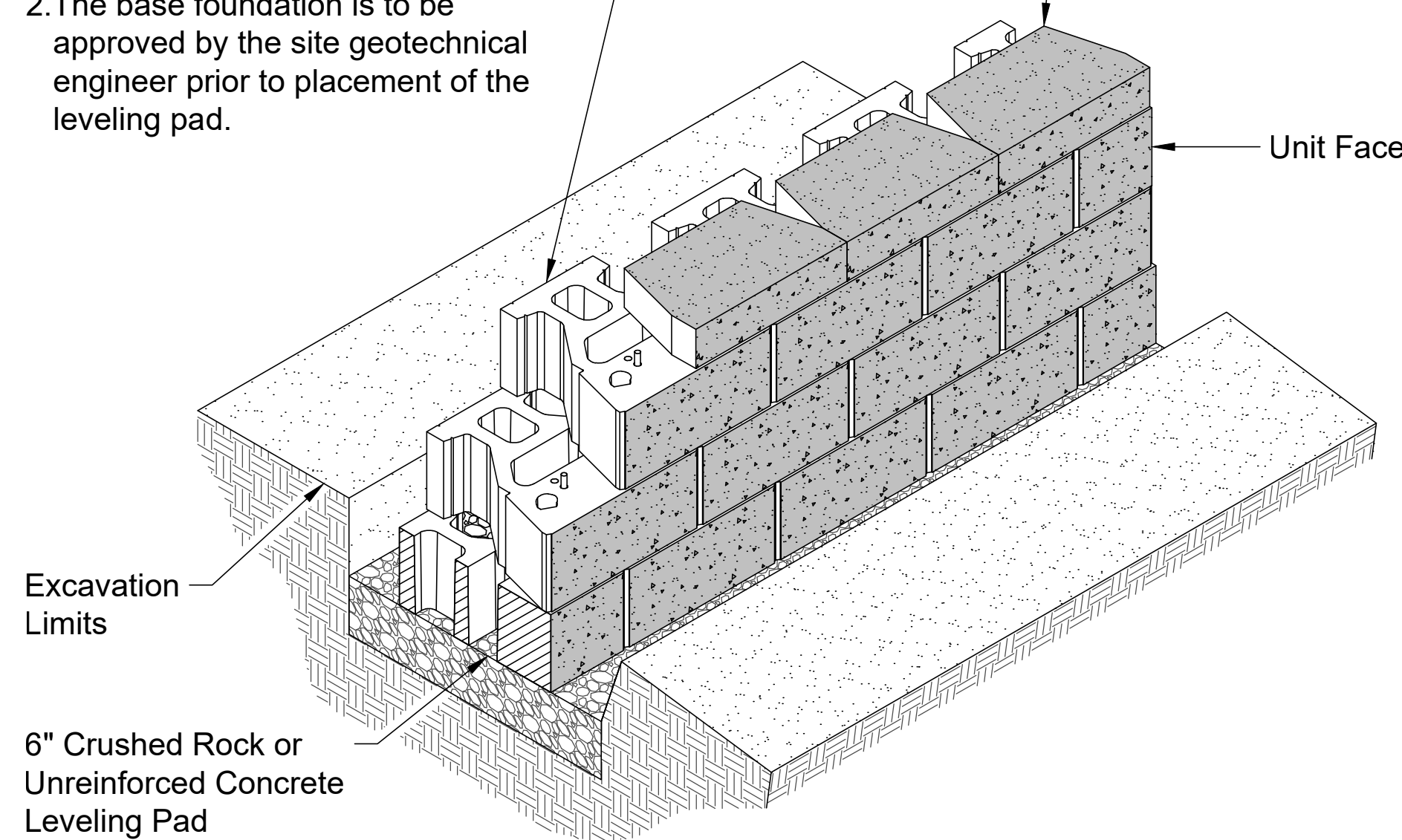
Leveling Pad Detail

**Base Leveling Pad Notes:**

- The leveling pad is to be constructed of crushed stone or 2,000 psi ± unreinforced concrete
- The base foundation is to be approved by the site geotechnical engineer prior to placement of the leveling pad.

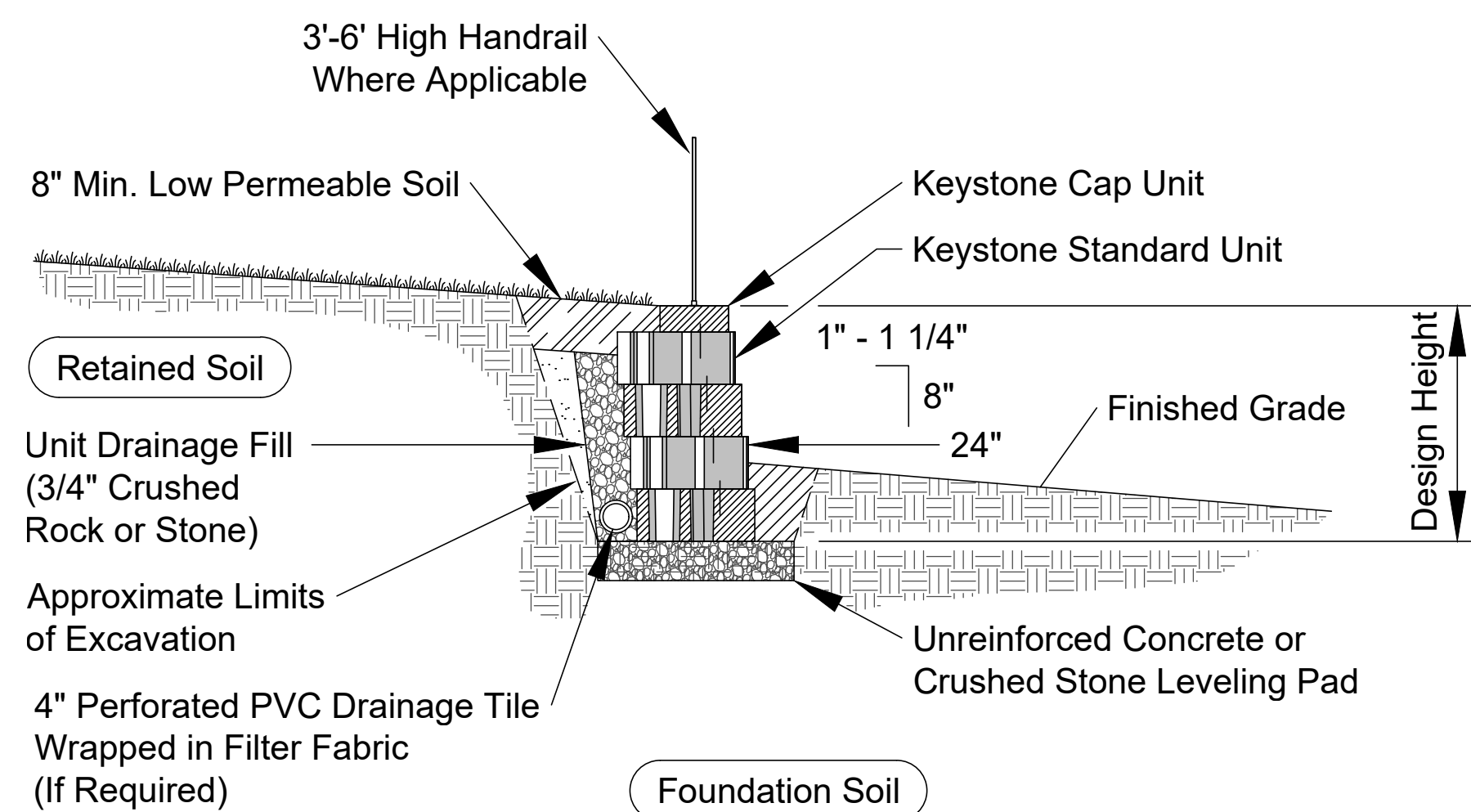
Standard Unit	
Width:	18"
*Depth:	18"
Height:	8"
*Weight:	108 lbs

Cap Unit	
Width:	18"
*Depth:	10 1/2"
Height:	4"
*Weight:	50 lbs



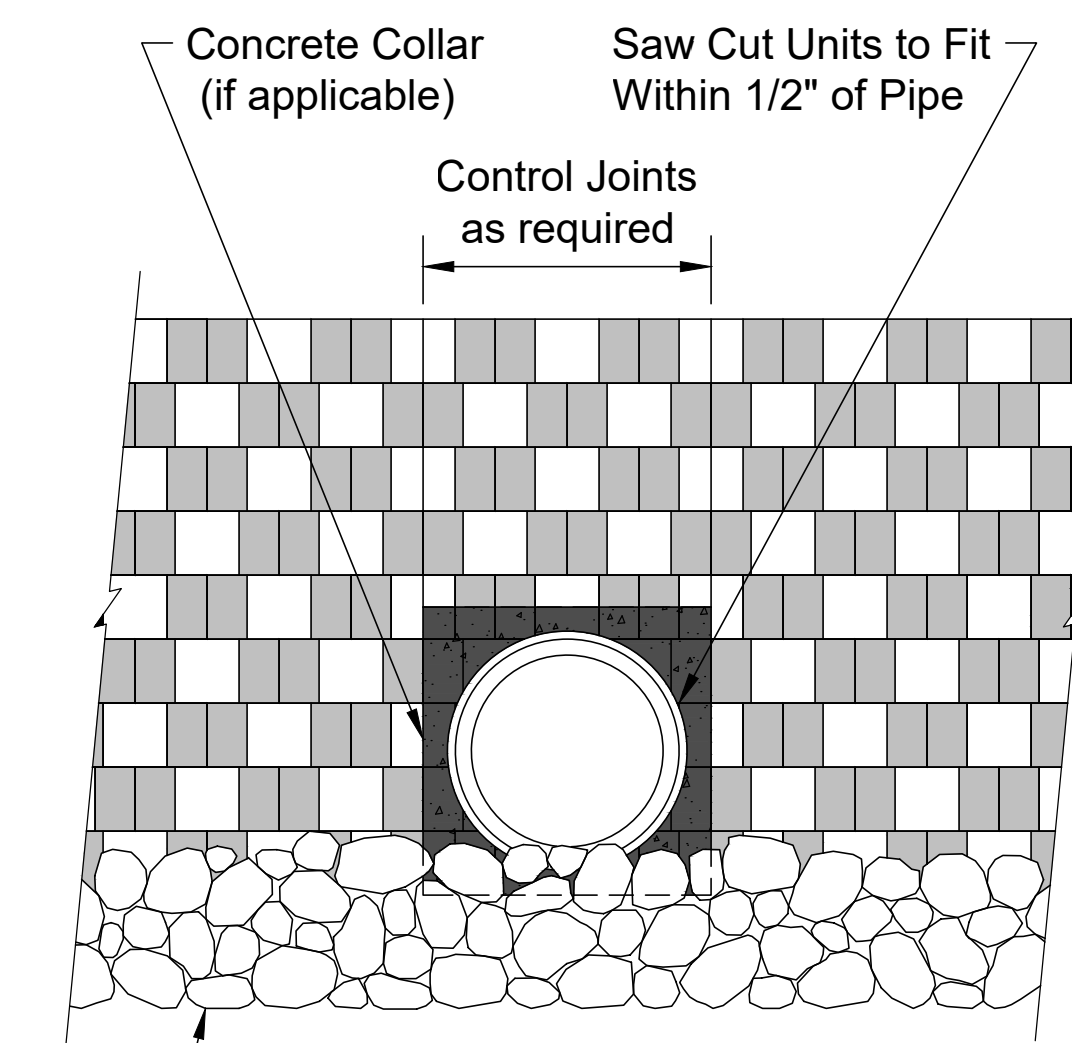
Standard Unit/Base Pad Isometric Section View

\* Dimensions & Weight May Vary by Region

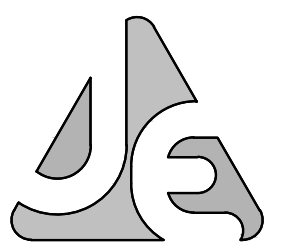


Typical Gravity Wall Section

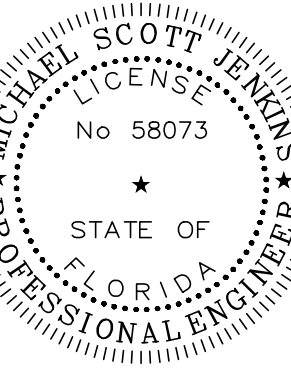
Standard Unit - 1" Setback



Typical Pipe Outlet Detail



**JENKINS ENGINEERING, INC.**  
73 EGLIN PARKWAY NE, SUITE 203  
FORT WALTON BEACH, FLORIDA 32548  
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JEICIVIL.COM



M. SCOTT JENKINS, P.E.  
FL REGISTRATION NO. 58073

BY: MFF

DATE: 8/18/2023

REVISION: 1

DESCRIPTION: REVISED PER CITY OF FORT WALTON BEACH REVIEW COMMENTS

NOT VALID UNLESS BEARING ENGINEER'S ORIGINAL SIGNATURE

CITY OF FORT WALTON BEACH

JET DRIVE RECREATIONAL AREA

FORT WALTON BEACH, FLORIDA

KEYSTONE RETAINING WALL DETAILS

JOB: 14-16-018

DATE: 03-2023

DESIGNED: MSJ

DRAWN: MPF

BAR IS ONE INCH ON ORIGINAL

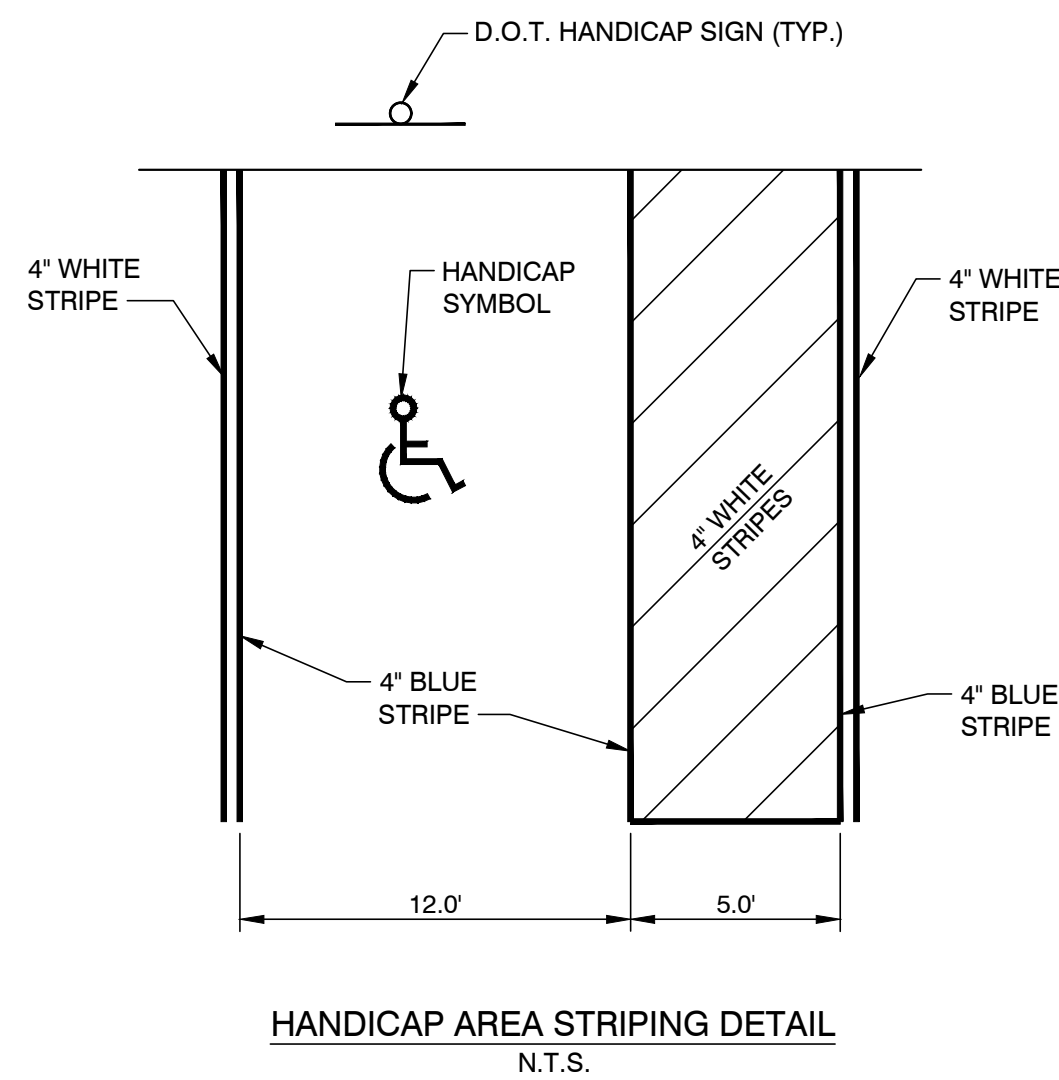
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DRAWING NUMBER

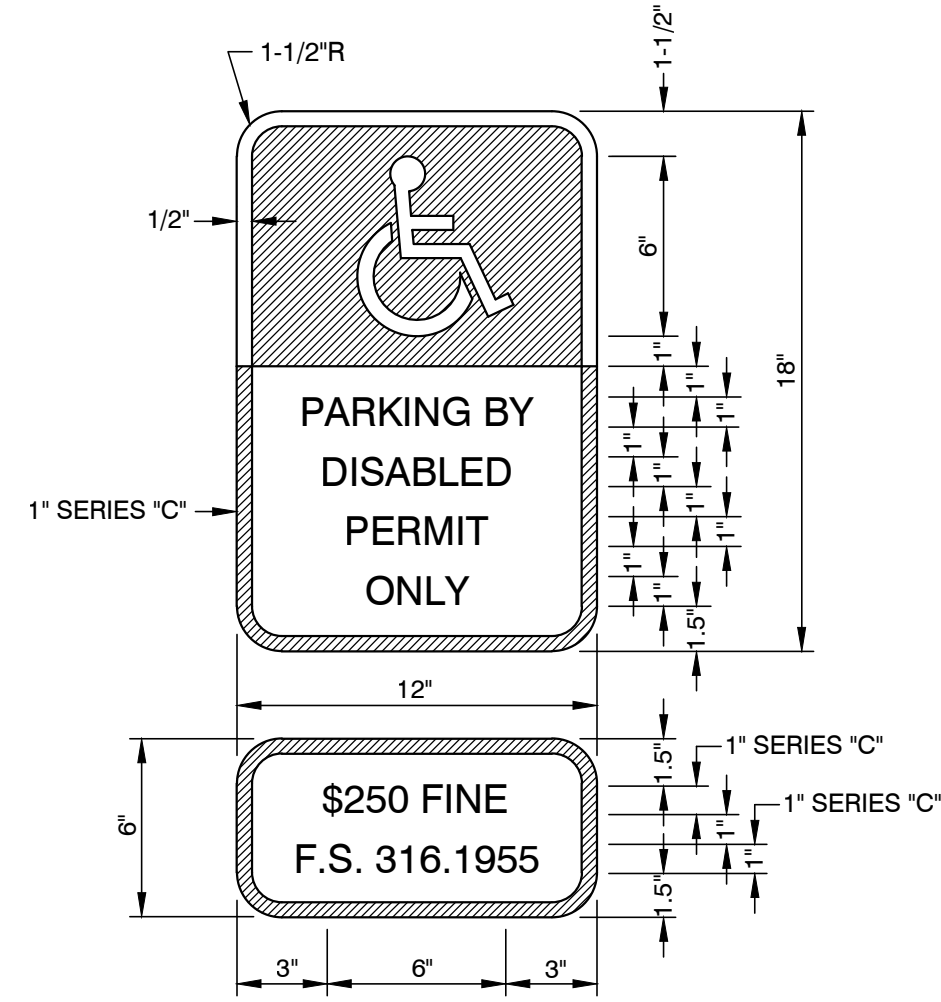
11 OF 16

SHEET NUMBER

C11

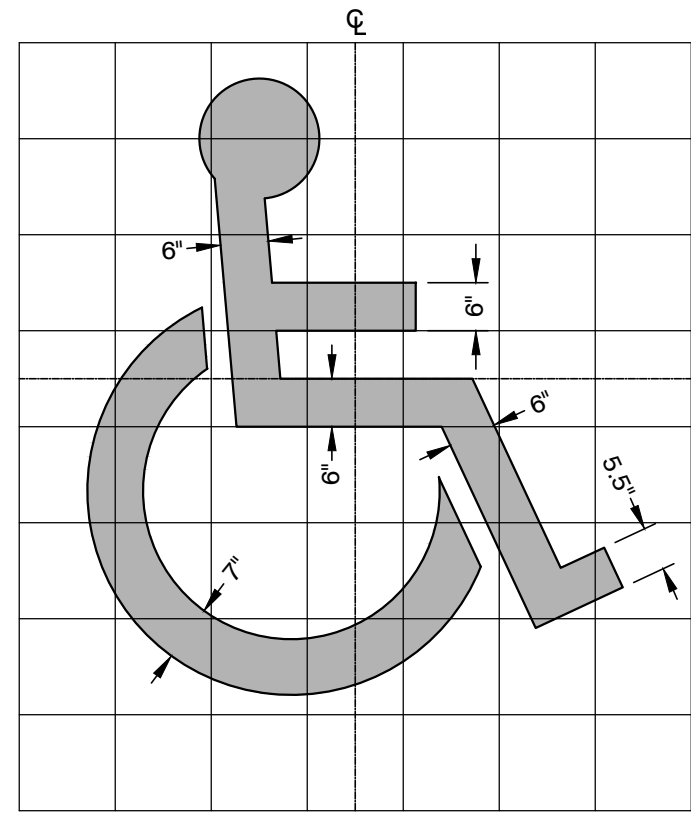


NOTE:  
HANDICAP PARKING SPACES SHALL BE A MINIMUM OF TWELVE (12) FEET WIDE, MEASURED FROM CENTER TO CENTER OF THE BLUE DEMARCATION LINES AS PER CHAPTER 6, SECTION 6.04.061 OF THE OKALOOSA COUNTY LDC.



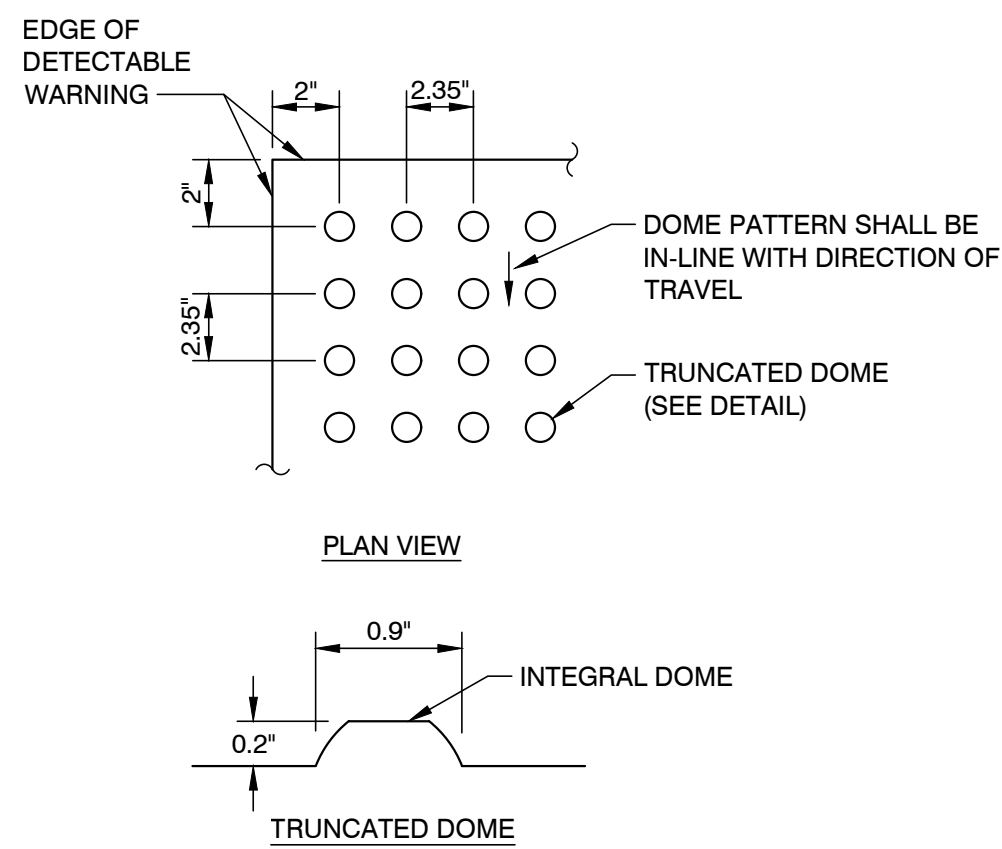
(FTP - 55) COLOR  
BACKGROUND WHITE  
LEGEND & BORDER BLACK

THIS PANEL SHALL BE INSTALLED UNDER THE FTP-25 OR FTP-26 HANDICAP PARKING SIGN.

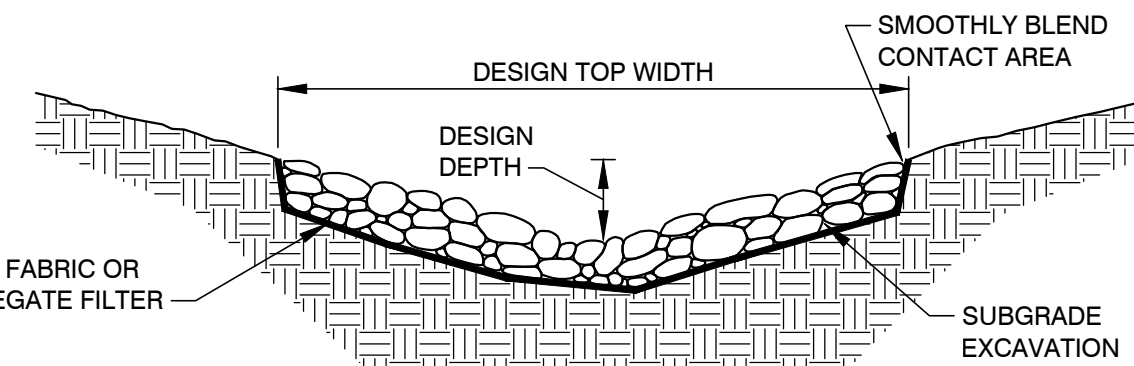
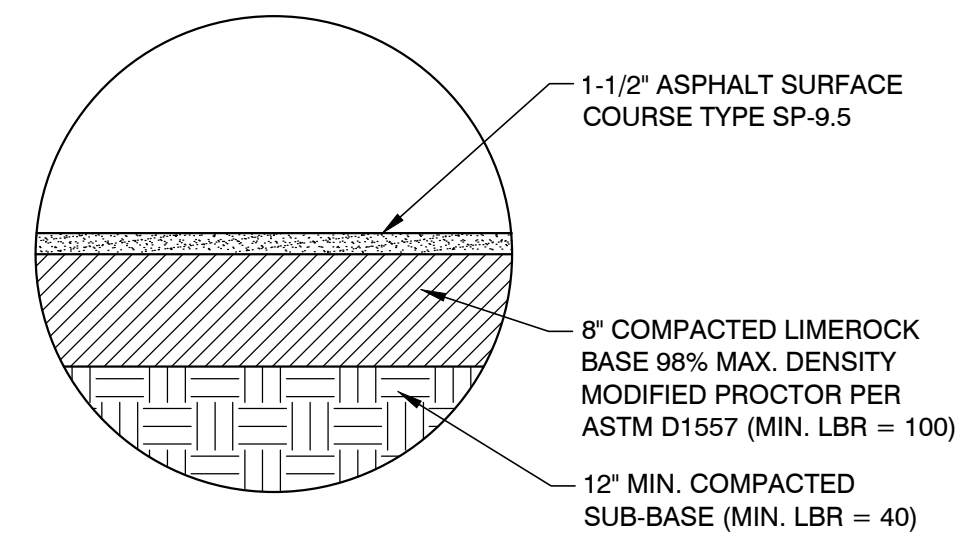
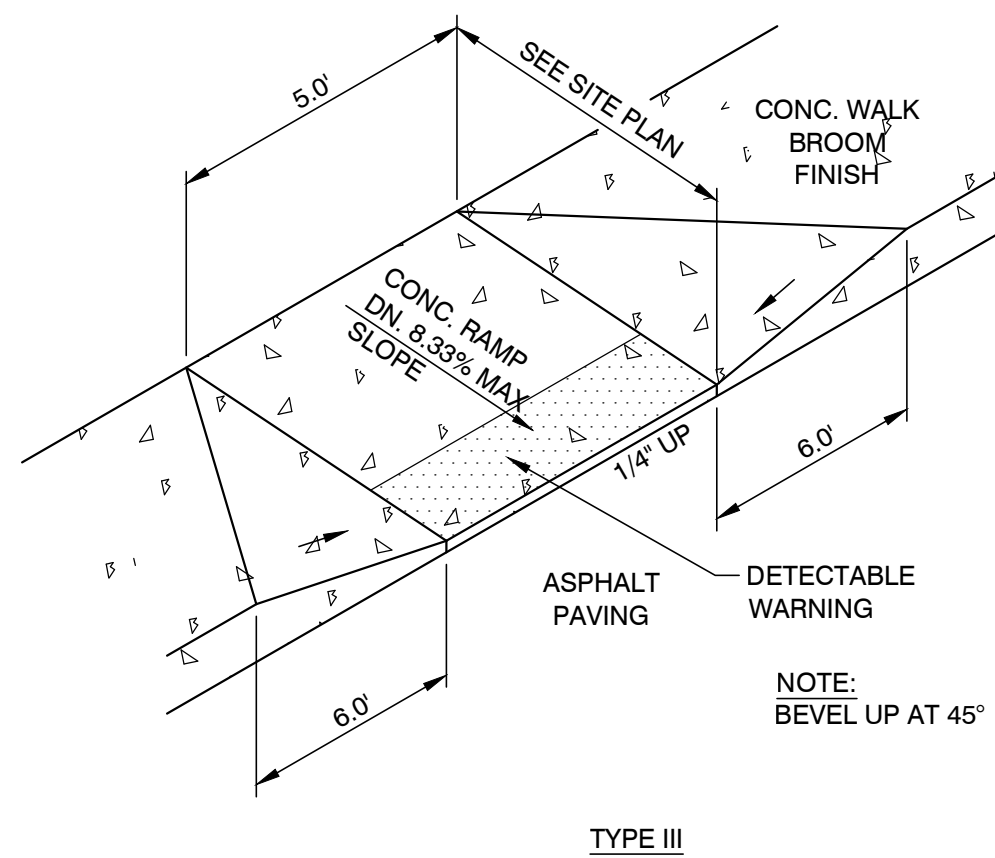


COLOR CONTRAST  
CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUNDS - EITHER LIGHT CHARACTERS ON A DARK BACKGROUND OR DARK CHARACTERS ON A LIGHT BACKGROUND.

NOTE:  
SYMBOL SHALL BE PAINTED BLUE AND TO THE DIMENSIONS SHOWN.

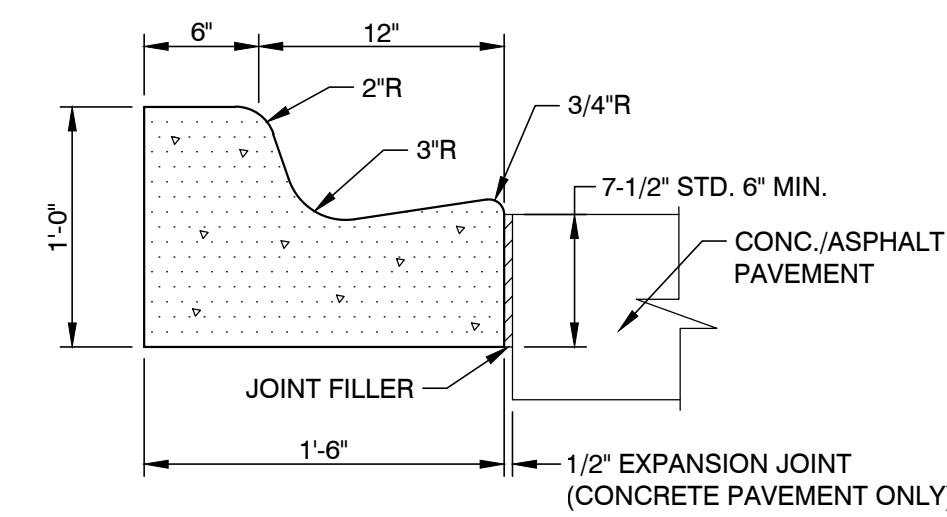


NOTE:  
CURB RAMP DETECTABLE WARNING SURFACES SHALL EXTEND THE FULL WIDTH OF THE RAMP AND IN THE DIRECTION OF TRAVEL 24" FROM THE BACK OF CURB. DETECTABLE WARNING SURFACES SHALL BE CONSTRUCTED BY TEXTURING A TRUNCATED DOME PATTERN IN CONFORMANCE WITH U.S. DEPARTMENT OF JUSTICE A.D.A. STANDARDS FOR ACCESSIBLE DESIGN, A.D.A. ACCESSIBILITY GUIDELINES, SECTION 4.29.2, (DETAIL SHOWN ABOVE). TRANSITION SLOPES ARE NOT TO HAVE DETECTABLE WARNINGS.

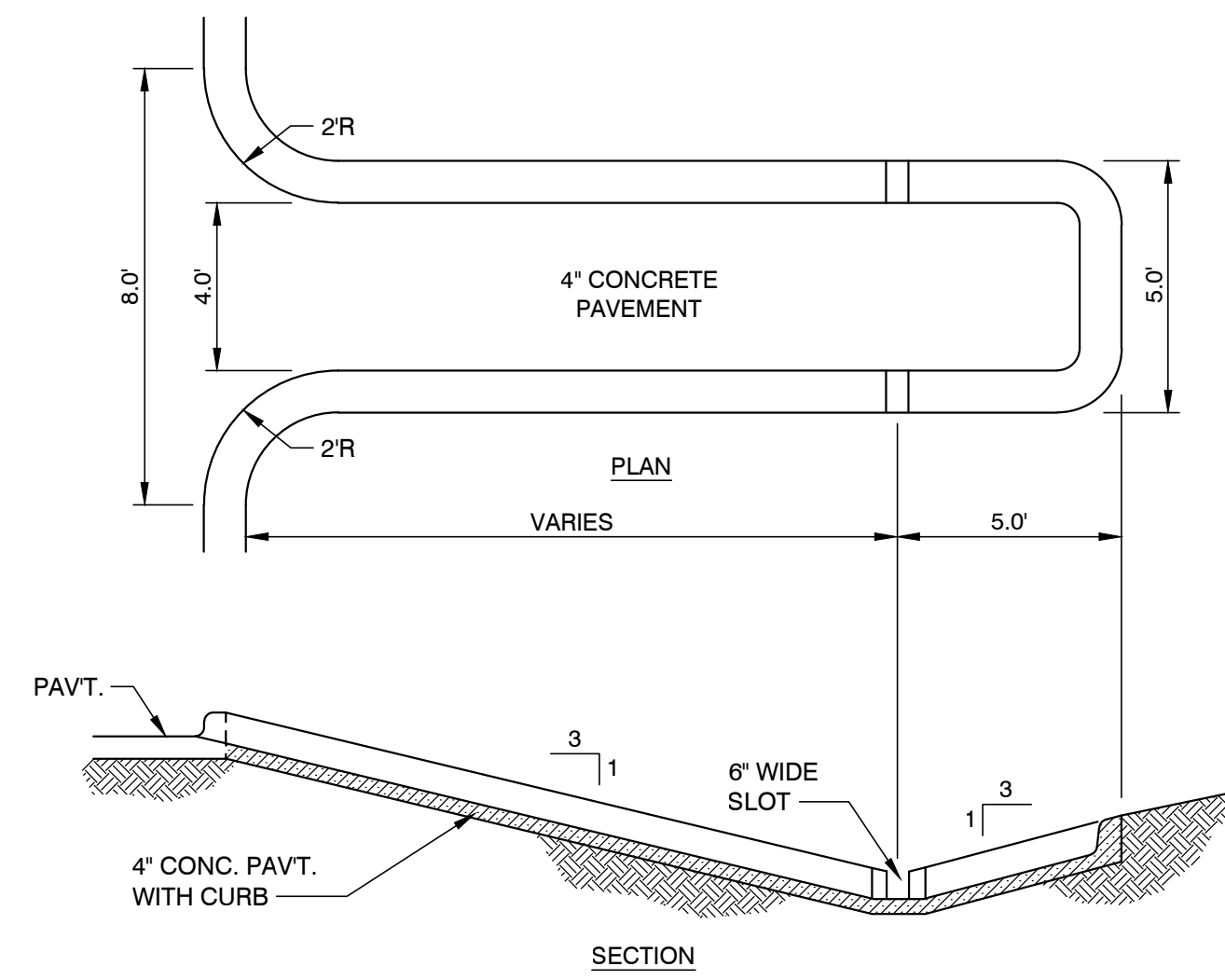


NOTE:  
ROCK USED SHALL BE ANGULAR AND OF SUFFICIENT RANGE IN SIZE TO FIT TIGHTLY TOGETHER WHEN HAND PLACED

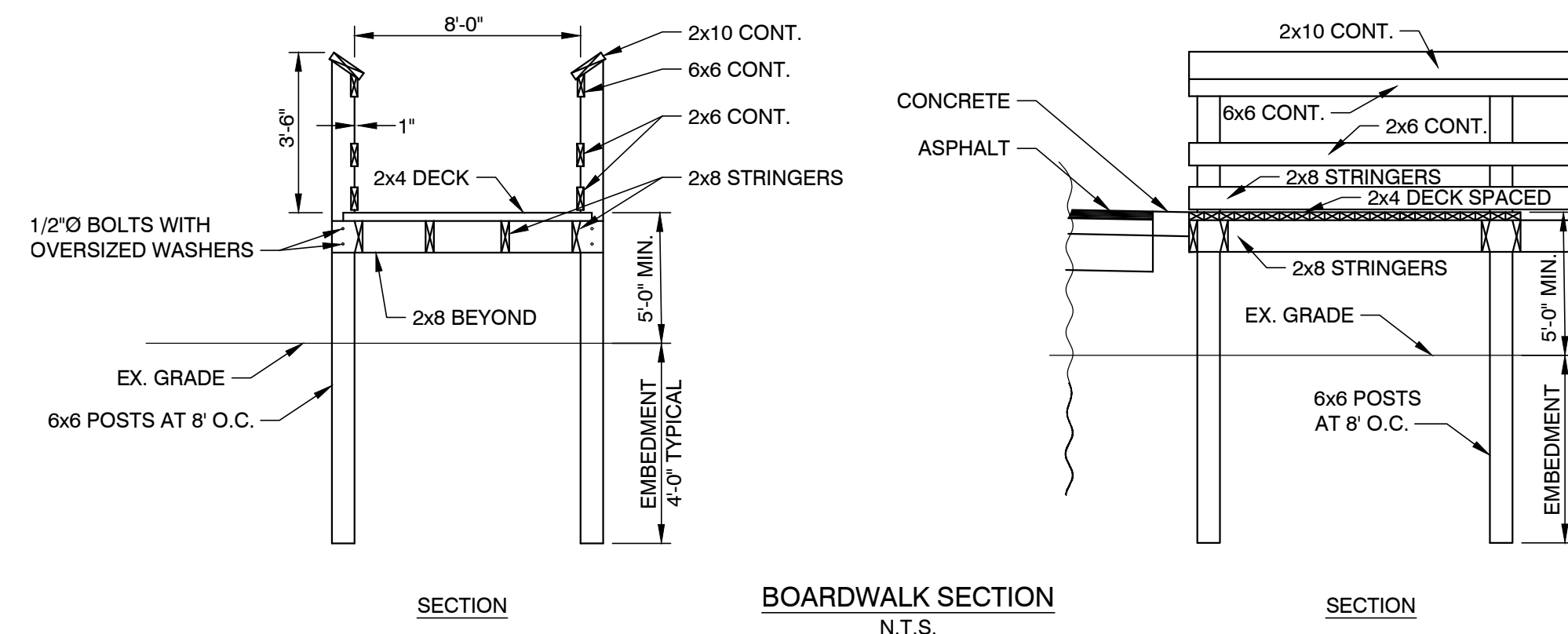
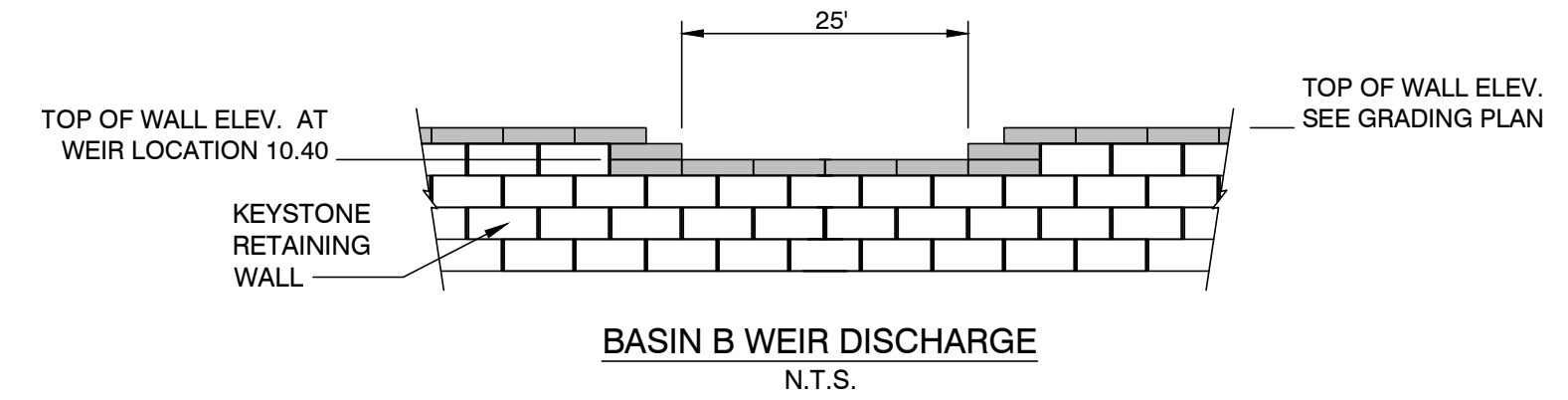
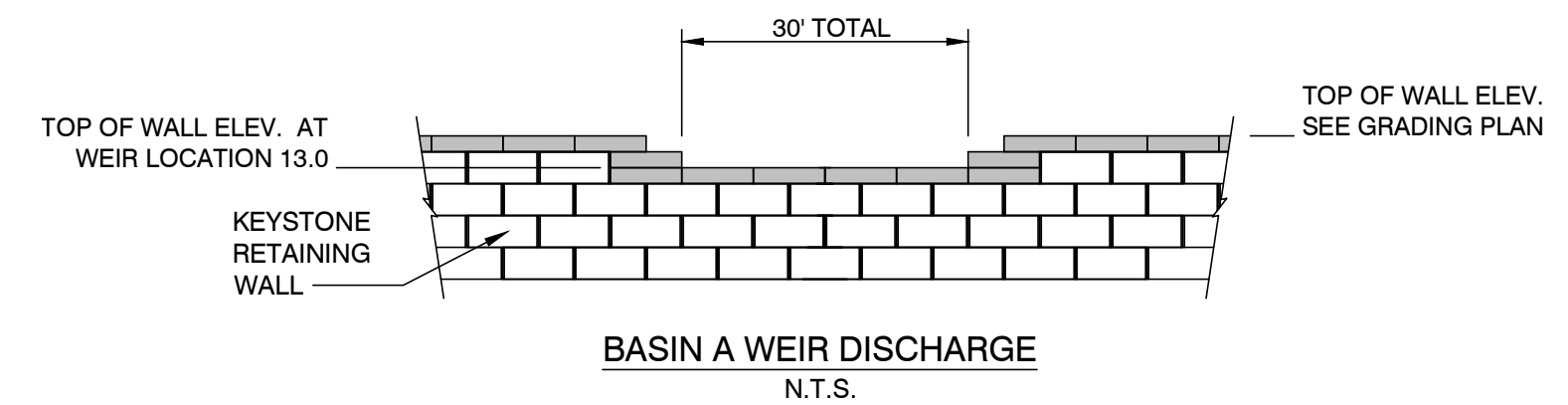
CONCRETE CURB & GUTTER DETAIL  
N.T.S.



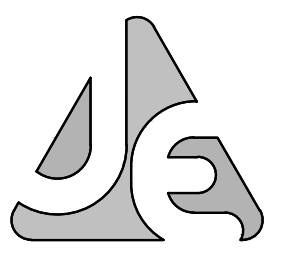
CONCRETE CURB & GUTTER DETAIL  
N.T.S.



CONCRETE FLUME DETAIL  
N.T.S.



- NOTES:
1. ALL FERROUS METALS TO BE PAINTED, GALVANIZED OR OTHERWISE TREATED FOR RUST.
  2. ALL PAINTS AND SIMILAR FINISHES MUST MEET CURRENT CSPSC REGULATIONS FOR LEAD IN PAINT. NO LEAD IS PERMITTED ON THIS PROJECT.
  3. ALL WOOD TO BE TREATED TO RESIST ROT OF INSECTS.
  4. ALL HARDWARE TO BE INSTALLED SO THAT IT DOESN'T LOOSEN OR IS NOT ALLOWED TO BE REMOVED WITHOUT THE USE OF TOOLS. LOCK WASHERS, SELF-LOCKING NUTS OR OTHER LOCKING MEANS ARE TO BE PROVIDED TO PREVENT DETACHMENT.
  5. NO SHARP POINTS, CORNERS OR EDGES ON ANY COMPONENT WILL BE ALLOWED. ALL WOOD MEMBERS AND EDGES ARE TO BE SANDED SMOOTH. ALL METAL EDGES ARE TO BE GROUNDED SMOOTH.
  6. NO PROTRUSIONS OR DANGEROUS PROJECTIONS ON FACILITY WILL BE PERMITTED IF A POSSIBILITY OF ENTANGLEMENT OF CHILDREN'S CLOTHING EXISTS.
  7. NO CONDITIONS ARE TO EXIST THAT PRESENT POSSIBLE PINCHING, CRUSHING OR SHEARING POINTS, OR HEAD, LEG OR HAND ENTRAPMENT. NO CONDITIONS ARE TO BE ALLOWED THAT MAY ENTRAP THE BODY OR ANY OF ITS PARTS.



**JENKINS ENGINEERING, INC.**  
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FAX 850.837.2450  
JEICVIL.COM



M. SCOTT JENKINS, P.E.  
FL REGISTRATION NO. 58073

BY: MPF

DATE: 8/18/2023

REVISION: 1

DESCRIPTION: REVISED PER CITY OF FORT WALTON BEACH REVIEW COMMENTS

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City of Fort Walton Beach Engineering Standards Manual November 2012 14.1.a

### SILT FENCE

**NOTE:**  
SILT FENCE TO BE CONSTRUCTED AND MAINTAINED AROUND ALL INLETS, ALSO ACROSS DRAINAGE COURSE AT EDGE OF SITE.

**EROSION NOTES:**

1. ALL SILT FENCING SHALL BE INSTALLED AND SPACED ACCORDING TO FOOT INDEX #102.
2. EROSION PROTECTION, SUCH AS STAKED BALED HAY AND SILT FENCE BARRIERS, MUST BE INSTALLED PRIOR TO START OF CONSTRUCTION.
3. SILT FENCE BARRIER SHALL BE INSTALLED AS SHOWN ON PLANS, AND IN ALL AREAS SUBJECT TO SOIL EROSION/SEDIMENTATION, ESPECIALLY ADJACENT TO ALL BODIES OF WATER AND WETLAND AREAS WHERE THERE IS A POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION.
4. SEDIMENT AND EROSION CONTROL DEVICES SHALL REMAIN IN PLACE THROUGHOUT CONSTRUCTION AND SHALL BE REMOVED AT COMPLETION OF THE PROJECT.

City of Fort Walton Beach Engineering Standards	SILT FENCE	SCALE: NTS	6-26-2012	DRAWING # ESM-3.01
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Attachment: Engineering Standards Manual Draft (2016 - Approval of the Engineering Standards Manual)

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City of Fort Walton Beach Engineering Standards Manual November 2012 14.1.a

### FLOATING TURBIDITY BARRIER

**GENERAL NOTES:**

1. ALL TURBIDITY BARRIERS SHALL BE INSTALLED ACCORDING TO FOOT INDEX #103.
2. TURBIDITY BARRIERS SHALL BE PROVIDED WHERE CONSTRUCTION ACTIVITIES HAVE BEEN PERMITTED AND WHERE SEDIMENT MOVEMENT INTO TIDAL AND NON-TIDAL WATERCOURSES IS UNAVOIDABLE.
3. TURBIDITY CURTAINS SHALL BE INSTALLED PARALLEL TO TIDAL AND NON-TIDAL FLOWS.
4. UNDER NO CIRCUMSTANCE SHALL PERMITTED LAND DISTURBING ACTIVITIES CREATE VIOLATIONS OF STATE WATER QUALITY STANDARDS.

City of Fort Walton Beach Engineering Standards	FLOATING TURBIDITY BARRIER	SCALE: NTS	6-28-2012	DRAWING # ESM-3.02
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Attachment: Engineering Standards Manual Draft (2016 - Approval of the Engineering Standards Manual)

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City of Fort Walton Beach Engineering Standards Manual November 2012 14.1.a

### INLET PROTECTION

**GENERAL NOTES:**

1. ALL INLET PROTECTION SHALL BE INSTALLED AND SPACED ACCORDING TO FOOT INDEX #102.
2. THE DRAINAGE AREA SHALL BE NO LARGER THAN 1 ACRE.
3. A SILT FENCE BARRIER IS AN ACCEPTABLE ALTERNATIVE TO STRAW BALES.

City of Fort Walton Beach Engineering Standards	INLET PROTECTION	SCALE: NTS	6-28-2012	DRAWING # ESM-3.03
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City of Fort Walton Beach Engineering Standards Manual November 2012 14.1.a

### TYPE "C" CATCH BASIN

**TYPE "C" CATCH BASIN DETAIL (F.D.O.T. INDEX No. 232)**

City of Fort Walton Beach Engineering Standards	TYPE "C" CATCH BASIN	SCALE: NTS	6-28-2012	DRAWING # ESM-4.03
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City of Fort Walton Beach Engineering Standards Manual November 2012 14.1.a

### TYPE "D" CATCH BASIN

**TYPE "D" CATCH BASIN DETAIL (F.D.O.T. INDEX No. 232)**

City of Fort Walton Beach Engineering Standards	TYPE "D" CATCH BASIN	SCALE: NTS	6-28-2012	DRAWING # ESM-4.04
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Attachment: Engineering Standards Manual Draft (2016 - Approval of the Engineering Standards Manual)

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City of Fort Walton Beach Engineering Standards Manual November 2012 14.1.a

### MITERED END SECTION AND CONCRETE COLLAR

City of Fort Walton Beach Engineering Standards	MITERED END SECTION AND CONCRETE COLLAR	SCALE: NTS	6-28-2012	DRAWING # ESM-4.07
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City of Fort Walton Beach Engineering Standards Manual November 2012 14.1.a

### BICYCLE PARKING

**NOTES:**

1. BICYCLE PARKING SHALL BE LOCATED AS NEAR TO THE PRINCIPLE ENTRANCE OF THE BUILDING AS PRACTICABLE.
2. EACH BICYCLE SPACE SHALL BE A MINIMUM OF 2' WIDE AND 6' LONG.
3. BICYCLE PARKING SHALL BE LOCATED SO AS NOT TO IMPEDE PEDESTRIAN MOVEMENT.

City of Fort Walton Beach Engineering Standards	BICYCLE PARKING	SCALE: NTS	7-11-2012	DRAWING # ESM-6.01
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City of Fort Walton Beach Engineering Standards Manual November 2012 14.1.a

### STANDARD SIDEWALK

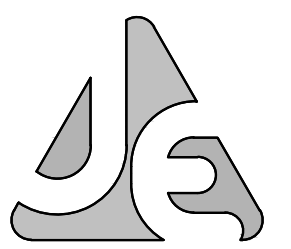
**NOTES:**

1. CROSS SLOPE NOT TO EXCEED 1:50 (2%).
2. RUNNING SLOPE NOT TO EXCEED 1:12 (8.33%), WITH 5' X 5' LEVEL LANDINGS EVERY 20'
3. MIN. CLEAR WIDTH AROUND OBSTACLES SHALL BE 36 INCHES.
4. WIDTH OF SIDEWALK AS REQUIRED BY ORDINANCE.
5. LOCATION OF SIDEWALK PREFERABLY 2' FROM R/W LINE.
6. SIDEWALK TO BE A MIN. 3,000 PSI CONCRETE.
7. CONCRETE SHALL BE CURED MIN. 24 HOURS AFTER POURING.
8. 3" DEEP, TOOLED CONTROL JOINTS SHALL BE PROVIDED AT A DISTANCE EQUAL TO THE SIDEWALK WIDTH OR EVERY 5', WHICHEVER IS LESS.
9. EXPANSION JOINTS SHALL BE PROVIDED AT A MAX. OF 50' AND WHERE CONCRETE IS PLACED ADJACENT TO EXISTING CURB, DRIVEWAYS, BUILDINGS AND WALKWAYS.

City of Fort Walton Beach Engineering Standards	STANDARD SIDEWALK	SCALE: NTS	7-16-2012	DRAWING # ESM-7.01
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Attachment: Engineering Standards Manual Draft (2016 - Approval of the Engineering Standards Manual)

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**JENKINS ENGINEERING, INC.**  
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M. SCOTT JENKINS, P.E.  
 FL REGISTRATION NO. 58073

BY: MFF

REV	DATE	DESCRIPTION
1	8/18/2023	REVISED PER CITY OF FORT WALTON BEACH REVIEW COMMENTS

CITY OF FORT WALTON BEACH  
**JET DRIVE RECREATIONAL AREA**  
 FORT WALTON BEACH, FLORIDA  
**MISCELLANEOUS DETAILS II**

JOB: 14-16-018  
 DATE: 03-2023  
 DESIGNED: MSJ  
 DRAWN: MFF

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**C13**

City of Fort Walton Beach Engineering Standards Manual November 2012 14.1.a

### STANDARD SIDEWALK

NOTES:

- CROSS SLOPE NOT TO EXCEED 1:50 (2%).
- RUNNING SLOPE NOT TO EXCEED 1:12 (8.33%), WITH 5' X 5' LEVEL LANDINGS EVERY 20'.
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- WIDTH OF SIDEWALK AS REQUIRED BY ORDINANCE.
- LOCATION OF SIDEWALK PREFERABLY 2' FROM R/W LINE.
- SIDEWALK TO BE A MIN. 3,000 PSI CONCRETE.
- CONCRETE SHALL BE CURED MIN. 24 HOURS AFTER POURING.
- 3" DEEP, TOoled CONTROL JOINTS SHALL BE PROVIDED AT A DISTANCE EQUAL TO THE SIDEWALK WIDTH OR EVERY 5', WHICHEVER IS LESS.
- EXPANSION JOINTS SHALL BE PROVIDED AT A MAX. OF 50' AND WHERE CONCRETE IS PLACED ADJACENT TO EXISTING CURB, DRIVEWAYS, BUILDINGS, AND WALKWAYS.

City of Fort Walton Beach Engineering Standards	STANDARD SIDEWALK	SCALE: NTS	7-16-2012	DRAWING # ESM-7.01
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City of Fort Walton Beach Engineering Standards Manual November 2012 14.1.a

### STANDARD COMMERCIAL DRIVEWAY

NOTES:

- IF STREET HAS BEEN OVERLAYED, INTO GUTTER, MATCH CONCRETE TO CONCRETE AND ASPHALT TO ASPHALT.
- CURB TO BE 3000 PSI CONCRETE.

City of Fort Walton Beach Engineering Standards	STANDARD COMMERCIAL DRIVEWAY	SCALE: NTS	7-16-2012	DRAWING # ESM-7.04
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City of Fort Walton Beach Engineering Standards Manual November 2012 14.1.a

### STANDARD CONCRETE DUMPSTER PAD

NOTES:

- DIMENSIONS ARE MINIMUM INSIDE MEASUREMENTS.
- DUMPSTER TO BE SCREENED FROM THE STREET. GATE CLEARANCE FOR DUMPSTER TO BE NO LESS THAN 10'-6".
- RECOMMENDED SIZE OF PAD TO AVOID RUTS IN ASPHALT FROM FRONT TIRES OF TRUCK. CITY WILL NOT BE RESPONSIBLE FOR RUTS IN UNDER-DESIGNED SURFACE.

City of Fort Walton Beach Engineering Standards	STANDARD CONCRETE DUMPSTER PAD	SCALE: NTS	7-16-2012	DRAWING # ESM-8.01
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City of Fort Walton Beach Engineering Standards Manual November 2012 14.1.a

### NUMBERS TO CALL FOR LINE SPOTS AND OTHER UTILITY INFORMATION

THE FOLLOWING UTILITIES ARE LOCATED WITHIN THE RIGHT-OF-WAYS OF THE CITY OF FORT WALTON BEACH, AND THE OWNERS MAY OR MAY NOT SUBSCRIBE TO A REGISTERED UNDERGROUND UTILITY PROTECTION SERVICE.

WATER/SEWER - CITY OF FORT WALTON BEACH	(850) 833-9613
OKALOOSA COUNTY	(850) 651-7176
GAS - OKALOOSA COUNTY GAS DISTRICT	(850) 729-4880
TV - COX COMMUNICATIONS	(850) 862-4144
TELEPHONE - CENTURY LINK A T & T	(855) 742-6062 (800) 778-9140
FIBER - CENTURY LINK A T & T	(855) 742-6062 (903) 753-3145
COX COMMUNICATIONS	(352) 337-2052
SOUTHERN LIGHT	(251) 259-0807
ELECTRIC - GULF POWER	(800) 778-9140
OKALOOSA COUNTY TRAFFIC	(850) 651-7295

48 HOURS BEFORE YOU DIG  
CALL SUNSHINE STATE ONE CALL  
1-800-432-4770

City of Fort Walton Beach Engineering Standards	NUMBERS TO CALL FOR LINE SPOTS	SCALE: NTS	10-3-2012	DRAWING # ESM-9.01
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City of Fort Walton Beach Engineering Standards Manual November 2012 14.1.a

### WATER & SEWER MAIN CROSSING/SEPARATION

City of Fort Walton Beach Engineering Standards	WATER & SEWER MAIN CROSSING/SEPARATION	SCALE: NTS	10-3-2012	DRAWING # ESM-9.04
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Attachment: Engineering Standards Manual Draft (2016 - Approval of the Engineering Standards Manual)

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City of Fort Walton Beach Engineering Standards Manual November 2012 14.1.a

### GATE VALVE - 12" & SMALLER

GENERAL NOTES:

- GATE VALVE SHALL BE OF THE RESILIENT SEAT TYPE.
- PVC EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
- THE ACTUATING NUT FOR DEEPER VALVES SHALL BE EXTENDED TO COME UP TO 4 FOOT DEPTH BELOW FINISHED GRADE.

City of Fort Walton Beach Engineering Standards	GATE VALVE - 12" & SMALLER	SCALE: NTS	10-3-2012	DRAWING # ESM-9.11
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City of Fort Walton Beach Engineering Standards Manual November 2012 14.1.a

### 3/4" - 2" WATER METER INSTALLATION

GENERAL NOTES:

- ALL FITTINGS SHALL BE BRASS WITH COMPRESSION/PACK JOINT TYPE CONNECTIONS.
- NO SERVICE LINE SHALL TERMINATE UNDER A DRIVEWAY.
- ALL SERVICE TAPS TO BE LOCATED IN FIELD. TAPS SHALL BE NO CLOSER THAN AND WILL NOT BE SET IN DRAINAGE DRENCHES, CEMENTS, OR SIDEWALKS.

City of Fort Walton Beach Engineering Standards	3/4" - 2" WATER METER INSTALLATION	SCALE: NTS	10-3-2012	DRAWING # ESM-9.13
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14.1.a

**JENKINS ENGINEERING, INC.**  
73 EGLIN PARKWAY NE, SUITE 203  
FORT WALTON BEACH, FLORIDA 32548  
PHONE 850.837.2448  
FAX 850.837.2450  
JEICVIL.COM

BY: M. SCOTT JENKINS, P.E.  
FL REGISTRATION NO. 58073

REVISIONS:

REV	DATE	DESCRIPTION
1	8/18/2023	REVISED PER CITY OF FORT WALTON BEACH REVIEW COMMENTS

CITY OF FORT WALTON BEACH  
JET DRIVE RECREATIONAL AREA  
FORT WALTON BEACH, FLORIDA  
MISCELLANEOUS DETAILS III  
NOT VALID UNLESS BEARING ENGINEER'S ORIGINAL SIGNATURE

JOB: 14-16-018  
DATE: 03-2023  
DESIGNED: MSJ  
DRAWN: MPF

BAR IS ONE INCH ON ORIGINAL  
IF NOT ONE INCH ON THIS SHEET  
ADJUST SCALES ACCORDINGLY

DRAWING NUMBER  
14 OF 16  
SHEET NUMBER  
C14

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

1 SPECIFICATION: CLEARING AND GRUBBING

All site Clearing and Grubbing shall be in accordance with section 110 of the "Florida Department of Transportation Specifications for Road and Bridge Construction" unless modified herein. This work shall be performed in the following areas:

- All street rights-of-way.
- All areas where excavation or embankment are to take place.
- Detention areas.

In addition, certain other areas where underground utilities are to be installed are to be cleared and grubbed to the extent necessary to properly install the utilities. Such work shall be incidental to the contract unit price for the utility to be installed.

1.1 SCOPE:

Site clearing work includes, but is not limited to:

- Removal of trees and other vegetation.
- Topsoil stripping.
- Clearing and grubbing.
- Removing above grade improvements.
- Removing below grade improvements.

1.2 JOB CONDITIONS:

Traffic: Conduct site clearing operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from the Owners and/or Local approving authority.

Clearing and Protection in Construction Areas: Preserve trees 6 inches or larger measured breast height (6"dbh) where possible within construction area.

Protection of Existing Improvements: Provide protection necessary to prevent damage to existing improvements indicated to remain in place.

Protect improvements on adjoining properties and on project site.

Restore damaged improvements to original condition as acceptable to the Owner.

1.3 LIMITATIONS:

Clearing will be limited to the extent necessary to allow for construction of the proposed improvements as a result of:

- Need for access to the project site for construction equipment.
- Essential grade changes.
- Surface water drainage and utility installation.
- Location of driveways, buildings, and required parking.

1.4 CLEARING AND GRUBBING:

Remove trees, shrubs, grass, other vegetation, improvements, or obstructions interfering with the installation of new construction. Removal includes digging out stumps and roots. Do not remove items elsewhere on site or premises unless specifically indicated. Disposal of trees, limbs, stumps, and debris shall be the responsibility of the Contractor.

Strip topsoil to whatever depths encountered to prevent intermingling with underlying subsoil or other objectionable material. Cut heavy growths of grass from areas before stripping.

Stockpile topsoil in storage piles in areas shown or where directed by the Owner. Construct storage piles to freely drain surface water. Cover storage piles if required to prevent windblown dust.

Dispose of unsuitable or excess topsoil same as specified for waste material.

1.5 FILLING:

Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.

Place fill material in horizontal layers not exceeding 6" loose depth, and thoroughly compact to density equal to adjacent ground, unless otherwise shown on the plans.

1.6 REMOVAL OF IMPROVEMENTS:

Remove existing above and below grade improvements and abandoned underground piping or conduit necessary to permit construction and other work.

1.7 DISPOSAL OF WASTE MATERIALS:

No burning of any material, debris, or trash will be allowed.

Remove waste materials from project site on a daily basis, and dispose of off-site in an approved area.

2 SPECIFICATION: EXCAVATION, EMBANKMENT AND SUBGRADE

2.1 EXCAVATION, EMBANKMENT AND SUBGRADE:

Section 120 of the Florida D.O.T. Specification. All subgrade fill material, and the top 12 inches in cut area, shall be compacted to 100 percent of maximum density as determined to AASHTO T-99. The Subgrade Compaction (Stabilization) shall conform to Section 160 of the Florida D.O.T. Specifications. In most cases this will consist of compacting existing cleaned soil. However, it is the Contractor's responsibility to assure that the finished roadbed section meets bearing value requirements, regardless of the quantity of stabilizing materials to be added. One field density test shall be taken for each 5000 square feet or fraction thereof.

Where required subgrade density cannot be obtained, unsuitable material shall be removed so that the road base will be constructed on a minimum of 3 feet of suitable, properly compacted material. This work shall be included in the contract lump sum price for earth excavation.

2.2 SOIL CEMENT BASE:

The detailed specifications of the soil cement base course are to be determined by an independent testing laboratory after testing of the material the Contractor proposes to use. Moisture and cement content will be specified by the laboratory. However, as a guide for bid purposes, estimate 12% cement by weight and include a price reduction schedule if tests show less cement is required. The soil cement mix will be at optimum moisture content, i.e., neither mushy nor dry, but containing sufficient moisture to make a firm case when squeezed in the hand. Water should not appear on the hand when so squeezed. This requires 5 to 6 gallons per square yard but actual quantity of water to be added will depend on latent moisture in the base material. From a practical standpoint, the highest moisture content should be maintained that permits packing and finishing without surface checking, showing or rutting during compaction and finishing operations.

The freshly compacted and finished soil-cement mix must be adequately cured. An application of bituminous material such as RC-2, MC-3, RT-5 or asphaltic emulsion at a rate of 0.15 to 0.20 gal per square yard is preferred as the curing medium. Waterproof paper or moist hay is acceptable if properly maintained.

2.3 SAND-CLAY BASE COURSE:

The following tests shall be performed prior to placing the material on the roadbed:

Composition and gradation	Percent of material passing the 10-mesh sieve
Clay (material smaller than 0.005mm)	8 to 21
Silt (material from 0.005 to 0.005mm)	0 to 10
Combined clay and silt	8 to 25
Limerock Bearing Ration Value (LBR)	Of at least 75
Liquid Limit	Not greater than 25
Plasticity Index	Not greater than 6

The results of these tests shall be submitted to the engineer for approval. The base course shall be compacted to not less than 98 percent of the maximum density as determined by AASHTO T-180. One density test shall be taken for each 5000 square feet or fraction thereof.

CONTINUED ON NEXT COLUMN

Note: Sand Clay base material shall not be used in areas where the seasonal high groundwater table is within two (2) feet of the bottom of the base material.

2.4 LIMEROCK BASE COURSE:

Shall be constructed in accordance with Section 200 of the Florida D.O.T. Specifications for Road and Bridge Construction. The material shall meet the requirements of Section 911 of the Specifications. Tests necessary to determine compliance with Section 911 shall be performed prior to placing the material on the subgrade. These tests include:

Test	Requirement
Liquid Limit	Less than 35
Plastic Index	Non-Plastic
Gradation	97% passing 3.5 inch sieve
Limerock Bearing Ratio	Not less than 100

The results of these tests shall be submitted to the engineer for approval. After approval of the material, the limerock base course shall be placed in accordance with Section 200. The base course shall be compacted to not less than 98 percent of the maximum density as determined by AASHTO T-180. A minimum of three density tests shall be made on each day's compaction operations. More frequent tests shall be made as deemed necessary by the Engineer. The base shall be installed to a compacted thickness as shown on the plans, plus or minus one half inch. Deviations from this specification shall be corrected as indicated in the State Specifications.

2.5 GRADED AGGREGATE BASE COURSE:

Shall comply with the requirements of Section 204 of the Florida D.O.T. Specifications. Tests necessary to determine compliance with Section 204 shall be performed prior to placing the material. These tests include:

- Soundness Loss, Sodium, Sulfate: AASHTO T-104.
- Percent Wear: AASHTO T-96 (Grading A).
- Sieve Analysis.
- Limerock Bearing Ratio Value.

The results of these tests shall be submitted to the engineer for approval. After the approval of the material, the graded aggregate base course shall be placed in accordance with Section 204. The base course shall be compacted to a density of not less than 100 percent of the maximum density as determined by AASHTO T-180. At least three density tests shall be made on each day's final compaction operation of each course, and the density determinations shall be made at more frequent intervals if deemed necessary by the Engineer.

2.6 ASPHALT BASE COURSE:

Shall comply with the requirements of Sections 280, 330, 331 and 916 of the Florida D.O.T. Specifications. The design mix for Asphaltic Base Course Type 3 shall conform to the requirements in Tables 331-1 and 331-2. The minimum Marshall stability shall be 1000 lbs./sq. in. as indicated in Table 331-2. Percent bitumen by weight of total mix: 5.0 (minimum). Two copies each of the actual design mix shall be submitted to the Engineer. Written approval of the Asphalt base course design mix must be obtained from the engineer prior to commencing base course construction. Once the design mix has been approved by the engineer, sieve analysis tolerances indicated in Table 331-5 are allowable during construction. If sieve analysis values fall outside these tolerances, design mix must be resubmitted for acceptance. After the approval of the mix design, the Asphalt base course shall be placed in accordance with Section 280 and compacted in accordance with Section 330-10.

NOTE: STORMWATER DRAINAGE SHALL BE CONTROLLED DURING ALL PHASES OF CONSTRUCTION.

3 SPECIFICATION: ASPHALT CONCRETE PAVING

3.1 SCOPE:

This section includes materials and work required for installation of flexible asphaltic concrete pavement for parking and drive areas shown on the plans.

3.2 APPLICABLE PUBLICATIONS:

The publications listed below form a part of this specification to the extent referenced. The publications shall be the most current issue and are referred to in the text by the basic designation only. The following are minimum requirements and shall govern except that all local, state, and/or federal codes and ordinances shall govern when their requirements are in excess hereof. All asphalt construction shall be in accordance with applicable sections of the "Florida Department of Transportation Specifications for Road and Bridge Construction" unless modified herein.

Florida Department of Transportation Specifications:	
Section 901	Course Aggregate
Section 902	Fine Aggregate
Section 916	Bituminous Materials
Section 917	Mineral Filler
Section 300	Bituminous Treatments, Surface Courses and Concrete Pavement
Section 331	Type S Asphalt Concrete

American Society for Testing and Materials (ASTM) Publications:	
D 1557	Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb (4.54 kg) Rammer and 18-in. (457mm) Drop
D 1557	Marshall Stability Mix Design

3.3 SUBMITTALS:

Asphalt Design Mix: Before any asphalt surface is constructed, submit two copies of each of the actual design mix to the Engineer and Owner.

Written approval of the asphaltic concrete design mix must be obtained from the Engineer and Owner prior to commencing asphalt pavement construction.

Material Certificates: Furnish copies of materials certificates signed by material producer and Contractor, certifying that each material item complies with, or exceeds specified requirements.

Asphalt extraction tests.

Aggregate gradation tests.

Marshall stability tests.

3.4 JOB CONDITIONS:

Weather limitations: Apply prime and tack coats when ambient temperature is above 40 degrees, and when temperature has not been below 35 degrees for 12 hours prior to application. Do not apply when base is wet or contains excess moisture.

3.5 MATERIALS:

Mineral Filler: Rock dust, hydraulic cement, or other inert material complying with Section 917 of the Florida D.O.T. Specification.

Asphalt Cement: The bituminous material shall be AC-20, viscosity grade and comply with Section 916 of the Florida D.O.T. Specification.

Course Aggregate: Comply with Section 901 of the Florida D.O.T. Specification.

Fine Aggregate: Comply with Section 902 of the Florida D.O.T. Specification.

Prime Coat and Tack Coat: The bituminous material for the Prime Coat shall be MC-70. The bituminous material for the Tack Coat shall be AC-20, or Emulsified asphalt, grade RS-2 and comply with the requirements in Section 300 and 916 of the Florida D.O.T. Specifications.

Asphaltic Concrete Design Mixes: Asphalt shall conform to the requirements for Type S Asphalt as indicated in Section 331 of the Florida D.O.T. Specifications.

Mix shall be within sieve analysis and bitumen range given in Section 331 of the Florida D.O.T. Specifications.

Minimum Marshall stability shall be in 1500 lbs./sq. in. as indicated in Table 331-2 of the Florida D.O.T. Specifications.

Percent bitumen by weight of total weight mix: 5.0 - 8.5.

CONTINUED ON NEXT COLUMN

Once design mix has been accepted by Engineer and Owner, sieve analysis tolerances indicated in Table 331-5 are allowable during construction. If sieve analysis values fall outside these tolerances, design mix must be resubmitted for acceptance.

Provide asphalt-aggregate mixture as recommended by local or state paving authorities to suit project conditions. Use locally available materials and gradations which meet Florida D.O.T. Specifications and exhibit satisfactory record on previous installations.

3.6 BASE COURSE PREPARATION:

Prior to construction of the base course, the top 12 inches of subgrade shall be compacted to a minimum soil density of 98% of the Modified Proctor Test Density (ASTM 1557). The subgrade shall be sterilized by a borate or chlorate sterilant containing not less than 25% sodium chlorate and shall be mixed thoroughly with water at the rate of 1-1/2 lbs. of sterilant per gallon of water. The sterilant shall be applied evenly at the rate of 0.2 gallons per square yard to subgrades that are less than 12" below original grades. If prepared base course will not be immediately covered with asphalt on the same day and wind-blown seeds will contaminate the base course surface, the sterilants shall be applied to the base course contaminate the base course.

Remove loose material from compacted base material surface immediately before applying prime coat.

Proof roll prepared base material surface to ensure unstable areas have been corrected and are ready to receive paving.

Prime Coat:

- Apply bituminous prime coat to base material surfaces where asphaltic concrete paving will be constructed.
- Apply bituminous prime coat in accordance with Section 300 of Florida D.O.T. Specifications.
- Apply at minimum rate of not less than 0.15 gal./sq. yd. over compacted base material. Apply material to penetrate and seal, but not flood, surface.
- Cure and dry as long as necessary to attain penetration and evaporation of volatile.

Tack Coat:

- Tack coat shall be applied in accordance with Section 300 of Florida D.O.T. Specifications. Apply to contact surfaces of previously constructed asphalt or portland cement and concrete and surfaces abutting or projecting into asphalt concrete pavement.
- Apply tack coat to full depth asphalt base course and sand asphalt base course. Apply emulsified asphalt tack coat between each lift or later of full depth asphalt and sand asphalt bases and on surface of such bases where asphaltic concrete paving will be constructed.
- Distribute at rate of 0.08 ga./sq. yd. of surface.
- Allow to dry until at proper condition to receive paving.

3.7 PLACING ASPHALT MIX:

Place asphalt concrete mixture on prepared surface, spread, and strike off. Spread mixture at the following minimum temperatures:

- When ambient temperature is between 40 degrees F and 50 degrees F: 285 degrees F.
- When ambient temperature is between 50 degrees F and 60 degrees F: 280 degrees F.
- When ambient temperature is higher than 60 degrees F: 275 degrees F.

Place inaccessible and small areas by hand. Place each course to required grade, cross-section, and compacted thickness.

Paver Placing:

- Place in strips not less than 10'-0" wide, unless otherwise acceptable to the Contracting Officer.
- After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips.

Joints:

- Construct joints between old and new pavements as detailed in the plans.
- Joints between successive days work shall be constructed to ensure continuous bond between adjoining work.
- Construct joints to have same texture, density, and smoothness as other sections of asphalt concrete course.
- Clean contact surfaces and apply tack coat.

3.8 COMPACTION:

Each lift of asphalt shall be compacted to a minimum of 98% of the Marshall test ASTM D1559. Begin rolling when mixture will bear roller weight without excessive displacement. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.

Breakdown Rolling:

- Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge.
- Check surface after breakdown rolling, and repair displaced areas by loosening and filling, if required, with hot material.
- Second Rolling:
- Follow breakdown rolling as soon as possible, while mixture is hot.
- Continue second rolling until mixture has been thoroughly compacted.

Finish Rolling:

- Perform finish rolling while mixture is still warm enough for removal of roller marks.
- Continue rolling until roller marks are eliminated and course has attained maximum density.

Patching:

- Remove and replace paving areas mixed with foreign materials and defective areas.
- Cut out such areas and fill with fresh, hot asphalt concrete.
- Compact by rolling to maximum surface density and smoothness.

Protection:

- After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
- Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.9 FIELD QUALITY CONTROL:

An independent Testing Laboratory, selected and paid by the contractor shall be retained to perform construction testing of in-place asphalt courses for Asphalt Extraction, Aggregate gradation, Marshall Stability, thickness and surface smoothness.

Thickness: In-place compacted thickness shall not be less than thickness specified on the drawings.

Surface Smoothness: Testing shall be performed on the finished surface of each asphalt concrete course for smoothness, using 10'-0" straightedge applied parallel with, and at right angles to centerline of paved area. The variation of the surface from the edge of the straight edge between any two contact points shall not exceed 1/4". Check surface areas at intervals necessary to eliminate ponding areas. Repair or remove and replace unacceptable paving as directed by the Contracting Officer.

Asphalt content, Aggregate gradation, and Marshall Stability shall be as specified in Section 331 of the Florida D.O.T. Specifications.

4 SPECIFICATION: PORTLAND CEMENT CONCRETE PAVING

4.1 SCOPE:

This section includes sidewalks, curbs, and miscellaneous concrete pavement.

4.2 APPLICABLE PUBLICATIONS:

The publications listed below form a part of this specification to the extent referenced. The publications shall be the most current issue and are referred to in the text by the basic designation only. The following are minimum requirements and shall govern except that all local, state, and/or federal codes and ordinances shall govern when their requirements are in excess hereof. All concrete construction shall be in accordance with applicable sections of the "Florida Department of Transportation Specifications for Road and Bridge Construction" unless modified herein.

CONTINUED ON NEXT COLUMN

Florida Department of Transportation Specifications:

- Section 345 Portland Cement Concrete
- Section 350 Cement Concrete Pavement
- Section 520 Concrete Gutter, Curb Elements and Traffic Separator
- Section 931 Metal Accessory Materials for Concrete Pavement and Concrete Structures

American Society for Testing and Materials (ASTM) Publications:

- A 615 Deformed and Plain Billet Steel Bars for Concrete Reinforcement
- D 1557 Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb. (4.54 kg) Rammer and 18-in. (457mm) Drop
- D 1751 Preformed Expansion Joint Filler for Concrete Paving and Structural Construction. (Nonextruding and Resilient Bituminous Types)

4.3 SUBMITTALS:

Material Certifications: Furnish copies of materials certificates signed by material producer and Contractor, certifying that each material item complies with, or exceeds, specified requirements.

4.4 MATERIALS:

Forms:

- Steel, wood, or other suitable material of size and strength to retain horizontal and vertical alignment until removed.
- Use straight forms, free of distortion and defects.
- Use flexible spring steel forms or laminated boards to form radius bends as required.

Form Release Agent:

- Coat forms with nonstaining type coating that will not discolor or deface surface of concrete.

Welded Wire Mesh:

- Welded plain cold-drawn steel wire fabric. Furnish in flat sheets, not rolls, unless otherwise acceptable to Contracting Officer. Welded wire mesh shall be free from rust, dirt, foreign matter and shall not be stored directly on the ground. Wire fabric shall comply with Sections 931 of the Florida D.O.T. Specifications.

Reinforcing Bars:

- Deformed steel bars, ASTM A 615, Grade 40. Reinforcing bars shall be free from rust, dirt, foreign matter and shall not be stored directly on the ground. Deformed steel bars shall comply with Section 931 of the Florida D.O.T. Specifications.

Concrete Materials:

- Comply with requirements of Sections 345 and 350 of the Florida D.O.T. Specifications for concrete materials, admixture, bonding materials, curing materials, and others as required.

Joint Fillers:

- Resilient premolded bituminous impregnated fiberboard units complying with ASTM D 1751. Joint fillers shall comply with Section 932 of the Florida D.O.T. Specifications.

4.5 MIXING:

Design mix to produce normal weight concrete consisting of Portland cement, aggregate, water-reducing or high-range water reducing admixture (super-plasticizer), air-entraining admixture and water to produce following properties:

- Compressive Strength: Minimum 3,000 psi for curb and walkways and 4,000 psi for pavement, at 28 days. In addition, concrete for pavement shall have a minimum modulus of rupture of 600 psi.
- Slump Range: 3" - 5".
- Air Content: 3% to 6%.

4.6 PREPARATION:

Surface Preparation:

- Remove loose material from compacted base material surface immediately before placing concrete.
- Compact the top 12 inches of subgrade to a minimum soil density of 98% for the Modified Proctor Test (ASTM D 1557) to result in a minimum modulus of subgrade reaction (k) of 150 psi/in. Proof-roll prepared base material surface to check for unstable areas. The paving work shall begin after the unsuitable areas have been corrected and are ready to receive paving. Compaction testing for the base material shall be completed prior to the placement of the paving.

4.7 CONCRETE INSTALLATION:

Form Construction:

- Set forms to required grades and lines, rigidly braces and secured. Install sufficient quantity of forms to allow continuous progress of work and so that forms can remain in place at least 24 hours after concrete placement.
- Check completed formwork for grade and alignment to following tolerances:
- Top of forms not more than 1/8" in 10'-0".
- Vertical face on longitudinal axis, not more than 1/4" in 10'-0".
- Clean forms after each use, and coat with form release agent as often as required to ensure separation from concrete without damage.

Reinforcement:

- Locate, place, and support reinforcement to ensure compliance with plans.

Concrete Placement:

- Comply with requirements of Sections 345, 350, and 520 of Florida D.O.T. Specifications for mixing and placing concrete.

Do not place concrete until base material and forms have been checked for line and grade. Moisture base material if required to provide uniform dampened condition at time concrete is placed. Concrete shall not be placed around manholes or other structures until they are at the required finish elevation and alignment.

Place concrete using methods, which prevent segregation of mix. Consolidate concrete along face of forms and adjacent to transverse joints with internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Consolidate with care to prevent dislocation of reinforcing, dowels, and joint devices.

Deposit and spread concrete in continuous operation between transverse joints, as far as possible. If interrupted for more than 1/2 hour place construction joint.

Curbs and Gutters:

Automatic machine may be used for curb and gutter placement at Contractor's option. Machine placement must produce curbs and gutters to required cross section, lines, grades, and jointing as specified for formed concrete. If results are not acceptable, remove and replace with formed concrete as specified.

4.8 JOINT CONSTRUCTION:

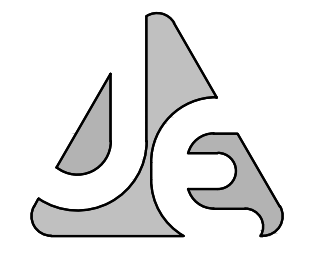
Weakened-Plane (Contraction) Joints:

- Provide weakened-plane (contraction) joints, sectioning concrete into areas at 15'-0" o.c. maximum each way.
- Sidewalks shall have contraction joints at 5'-0" o.c.
- Construct weakened-plane joints for depth equal to at least 1/4 concrete thickness.

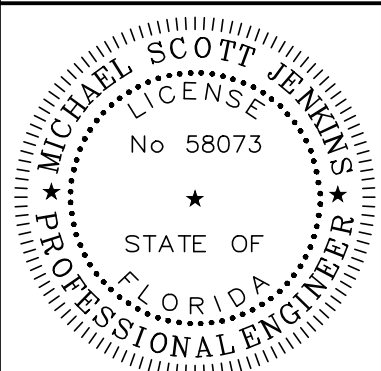
Tooled Joints:

Form weakened-plane joints in fresh concrete by grooving top portion with recommended cutting tool and finishing edges with jointer.

CONTINUED ON NEXT SHEET



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FL REGISTRATION NO. 58073


BY	DATE	DESCRIPTION
MPF	9/18/2023	REVISED PER CITY OF FORT WALTON BEACH REVIEW COMMENTS

CITY OF FORT WALTON BEACH

**JET DRIVE RECREATIONAL AREA**  
FORT WALTON BEACH, FLORIDA

**SPECIFICATIONS I**  
NOT VALID UNLESS BEARING ENGINEER'S ORIGINAL SIGNATURE

<b>JOB:</b>	14-16-018
<b>DATE:</b>	03-2023
<b>DESIGNED:</b>	MSJ
<b>DRAWN:</b>	MPF

BAR IS ONE INCH ON ORIGINAL  
0"  1"

IF NOT ONE INCH ON THIS SHEET  
ADJUST SCALES ACCORDINGLY

**DRAWING NUMBER**  
15 OF 16

**SHEET NUMBER**  
**C15**

Construction Joints:

Plan concrete placement such that construction joints fall at expansion joints as detailed in the plans.

Expansion Joints:

Provide premolded joint filler for expansion joints abutting concrete curbs, catch basins, manholes, inlets, structures, walks, and other fixed objects.

Locate expansion joints at 40'-0" o.c. maximum for each pavement lane or for curb.

Located expansion joints at 50'-0" o.c. maximum for walkways.

Joint Fillers:

Extend joint fillers full-width and depth of joint, and not less than 1/2" or more than 1" below finished surface where joint sealer is indicated.

Furnish joint filler in one-piece lengths for full width being placed, wherever possible. Where more than one length is required, lace or clip joint filler sections together.

Joint Sealants:

Exterior pavement joint sealants shall be composed of a non-priming, pourable, self-leveling type polyurethane sealant, such as grey shep-calk, or approved equal suitable for use in pavements and sidewalks.

4.9 CONCRETE FINISHING:

After striking-off and consolidating concrete, smooth surface by screeding and floating. Adjust floating to compact surface and produce uniform texture.

After floating, test surface for trueness with 10'-0" straightedge (maximum deviation of 1/4 inch). Distribute concrete as required to remove surface irregularities, and refloat repaired areas to provide continuous smooth finish.

Work edges of slabs, gutters, back top edge of curb, and formed joints with an edging tool, and round to 1/2" radius. Eliminate tool marks on concrete surface.

After completion of floating and troweling when excess moisture or surface sheen has disappeared, complete surface finish as follows:

Curbs, Gutters, and Walks:

Broom finish by drawing fine-hair broom across concrete surface perpendicular to line of traffic. Repeat operation if required to provide fine line texture.

Inclined Slab Surfaces:

Provide coarse, nonslip finish by scoring surface with stiff-bristled broom perpendicular to line of traffic.

Paving:

Burlap finish by dragging seamless strip of damp burlap across concrete perpendicular to line of traffic. Repeat operation to provide gritty texture.

Do not remove forms for 24 hours after concrete has been placed. After form removal, clean ends of joints and point up any minor honeycombed areas. Remove and replace areas or section with major defects, as directed.

Protect and cure finished concrete paving in accordance with "Florida Department of Transportation Specifications for Road and Bridge Construction" Section 350-13.

4.10 CLEANING AND ADJUSTING:

Repair or replace broken or defective concrete as directed.

Protect concrete from damage until acceptance of work. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials.

Sweep concrete pavement and wash free of stains, discolorations, dirt, and other foreign material just prior to final inspection.

5 SPECIFICATION: FENCING

The Contractor shall install fencing as shown on the plans and in accordance with the manufacturer's brochure. The following are minimum requirements and shall govern except that all local, state and/or federal codes and ordinances shall govern when their requirements are in excess hereof.

5.1 MATERIAL CERTIFICATES:

Furnish copies of materials certificates signed by material producer and Contractor, certifying that each material item complies with, or exceeds, specified requirements.

5.2 MATERIALS:

All materials and equipment incorporated in the work shall be new, clean, and free of visual defects unless otherwise specified, and that all work will be of good quality, free from faults and defects and in conformance with the Contract Documents. All work not conforming to these requirements may be considered defective.

Height shall be as required as shown on the construction plans.

Fabric shall be #9 gauge, chain link open heart steel wire, hot-dipped galvanized after weaving with minimum coating of 2.0 ounce of zinc per square foot or aluminum coating with .40 ounces per square foot, woven in 2' diamond mesh.

Line post, top, intermediate and bottom rails, shall be 1-5/8" O.D. steel pipe, weight 2.27 lbs. per foot, hot-dipped galvanized. Set 36" deep in concrete.

Terminal, corner, gate and pull posts shall be 3" O.D. pipe, 5.79 lbs. Set 36" deep in concrete.

Concrete for setting posts shall be Portland Cement complying with ASTM C-150, aggregates complying with ASTM C-33, and clean water. Mix materials to obtain concrete with a minimum 28-day compressive strength of 2,500 psi.

Stretcher bar bands, tie wires, hog rings, couplings, nuts, stretcher bars, bolts, and miscellaneous fastening devices shall be manufacturer's standard for heavy construction fence.

Swing gates shall consist of the following components.

2" O.D. steel pipe 2.72 lbs. per foot, hot-dipped galvanized. Each frame to be equipped with 3/8" diameter adjustable truss rods.

Hinges shall be hot-dipped galvanized pressed steel or malleable iron to suit gate size, non-lift-off type. Hinges shall be offset to permit 180 degrees opening. Provide one (1) pair of hinges per lead.

Latch shall be forked type to permit operation from either side with provisions to lock both sides with padlock.

5.3 ACCEPTABLE MANUFACTURERS:

Cyclone Fence, Page Fence, and Hackney Corporation.

6 SPECIFICATION: TRAFFIC STRIPING AND PAINTING

The Contractor shall paint traffic striping as shown on the plans. The following are minimum requirements and shall govern except that all local, state and/or federal codes and ordinances shall govern when their requirements are in excess hereof. All traffic striping and painting shall be in accordance with Sections 710 and 971 of the Florida Department of Transportation Roadway and Traffic Design Standards'.

6.1 MATERIAL CERTIFICATES:

Furnish copies of materials certificates signed by material producer and Contractor, certifying that each material item complies with, or exceeds, specified requirements.

6.2 TRAFFIC STRIPING AND PAINTING:

Traffic control markings shall be marked on pavement as indicated on drawings.

Paint shall be in sealed containers that plainly show the designated name, formula or specification number, batch number, color, date of manufacture, manufacturer's name, formulation number, and directions, all of which shall be plainly legible at the time of use. The paint shall be homogeneous, easily stirred to smooth consistency, and shall show no hard sediment or other objectionable characteristics during a storage period of six months.

All machines, tools, and equipment used in performance of the work shall be approved and maintained in satisfactory operating condition. Hand-operated push-type machines of a type commonly used for application of paint to pavement surfaces shall be acceptable for marking small street and parking areas. Applicator machines shall be equipped with necessary paint tanks and spraying nozzles, and shall be capable of applying paint uniformly at the coverage specified. Sandblasting equipment shall be provided as required for cleaning surfaces to be painted. Hand-operated spray guns shall be provided for use in areas where push-type machines cannot be used.

New pavement surfaces shall be allowed to cure for a period of not less than thirty days before application of marking materials. All surfaces to be marked shall be thoroughly cleaned before application of the paint. Dust, dirt, and other granular surface deposits shall be removed by sweeping, blowing with methods as required. Rubber deposits, surface laitance, existing paint markings and other coatings adhering to the pavement shall be completely removed with scrapers, wire brushes, sandblasting, approved chemicals, or mechanical abrasion as directed.

Paint shall be applied evenly to the pavement surface to be coated at a rate of 105 plus or minus 5 square feet per gallon. Paint shall be applied as shown on the drawings.

Paint shall be applied to clean, dry surfaces, and unless otherwise approved, only when air and pavement temperatures are above 40 degrees F and less than 95 degrees F. Paint temperature shall be maintained within these same limits. Paint shall be applied pneumatically with approved equipment at rate of coverage specified herein. The Contractor shall provide guidelines and templates as necessary to control paint application. Special precautions shall be taken in marking numbers, letters, and symbols. All edges of marking shall be sharply outlined. The maximum drying time requirements of the paint specifications will be strictly enforced, to prevent undue softening bitumen, and pickup, displacement, or discoloration by tires of traffic. If there is a deficiency in drying of the markings, painting operations shall be discontinued until cause of the slow drying is determined and corrected.

Suitable warning signs shall be placed near the beginning of the work site and well ahead of the work site for alerting approaching traffic from both directions. Small markers shall be placed along newly painted lines to control traffic and prevent damage to newly painted surfaces. Painting equipment shall be marked with large warning signs indication that slow moving painting equipment is in operation.

Markings which must be visible at night shall be reflectorized unless ambient illumination assures adequate visibility.

7 SPECIFICATION: WATER DISTRIBUTION SYSTEM

The Contractor shall provide and install all materials for a potable water distribution system as shown on the drawings and in this specification. In addition, he shall obtain all permits and conduct all tests required by local, state and federal authorities and as specified on these drawings.

7.1 MATERIALS:

All materials and equipment incorporated in the work shall be new, clean, and free of visual defects unless otherwise specified, and that all work will be of good quality, free from faults and defects and in conformance with the Contract Documents. All work not conforming to these requirements may be considered defective.

Piping less than 4 inches in diameter:

- Polyvinyl Chloride (PVC) 160 psi, SDR 26 ASTM D-2241
- Polyethylene pipe 160 psi, SDR 9 ASTM D-3350 & ASTM D-2239
- Polyethylene tubing 200 psi, SDR 9 ASTM D-3350 & ASTM D-2737

Piping greater than 4 inches in diameter:

- Polyvinyl Chloride (PVC) 150 psi AWWA C-900 (DR 18)
- Ductile Iron (Class 50) ANSI A21.51

Joints for PVC pipes:

- Joints shall comply with ASTM D-3139
- No solvent cements or toxic lubricant will be allowed.
- Expansion capability will be provided.

Joints for Ductile Iron pipes:

- Joints shall comply with AWWA C-153 or AWWA C-110

Gate Valves:

- Valves shall comply with AWWA C-509
- 200 psi iron body, bronze mounted, non-rising stems with square operating nuts and a suitable valve box.

7.2 INSTALLATION:

Shall comply with all local, state and federal regulations. The Contractor shall provide proper facilities for handling and laying pipe and accessories. No pipe will be laid in unsuitable weather or in water. The Contractor will verify all field dimensions with the design Engineer (including Field Stake-Out) prior to commencing work. The Contractor shall notify the Engineer at 24 hours prior to installing any portion of the water main distribution system. He shall also stake all service connections and provide as-built dimensions to the Engineer. Connections to the existing system shall be coordinated with the Utility Company. Minimal service interruption shall occur and traffic safeguards shall be taken.

The Contractor shall conduct hydrostatic pressure and leakage tests as follows: Apply 150 psi or 150% of the working pressure whichever is greater to the test line. Duration of the pressure test shall be at least two (2) hours. After 1/2 hour, check pressure. If pressure has dropped, inspect for leaks and correct as required. Repeat tests until there are no leaks or pressure loss. Pressure must hold for two hours.

Note: The Contractor shall notify the Utility Company and the Engineer at least 48 hours prior to conducting pressure and leakage tests. A 3/4 inch hose bib connection will be required for gauge connection.

The Contractor shall sterilize the lines by chlorinating at 40 to 50 ppm, injecting at a corporation stop and operating all valves and accessories. Flush system. Subsequent tests on replacement water shall show a chemical and bacterial count equal to the supply main. Samples shall be taken and tested at the expense of the Contractor, and results shall be acceptable to local, state and federal agencies of interest.

7.3 NOTES:

All water piping and fittings used shall be National Sanitation Foundation (N.S.F.) approved for potable water.

A minimum separation of 10 ft. horizontal, outside to outside and 18 inches vertical is required between all water lines and the sanitary sewer system.

When trench excavation depth exceeds five feet, the Contractor shall provide trench protection (shields, sloping, shoring, etc.) and shall comply with OSHA Standard 29 CFR, Section 1926.650 Subpart P.

In accordance with rules of the Florida Department of Environmental Protection (DEP), Chapter 62-555, the Engineer of record will be responsible for observation of construction of the Potable Water System. The Engineer shall be notified at commencement and completion of construction. To assure compliance with plans and specifications, said Engineer will report to DEP upon completion of construction and cleaning and disinfecting described above before the system can be placed in service.

All PVC potable water lines and services will be marked with No. 14 copper insulated tracer wire to enable location with a Ferrous Metal Detector. The tracer wire will be placed 12 inches above and throughout the length of all such pipe.

7.4 FIRE HYDRANTS:

All fire hydrants shall be 6 inch, three way hydrants with two 2-1/2 inch hose nozzles and one 4-1/2 inch pumper nozzle, designed for 150 lbs working pressure or 300 lbs hydrostatic pressure and shall conform to the latest specifications of the AWWA. All working parts shall be bronze. All hose threads shall be National Standard Threads. Hydrants shall have a mechanical joint end inlet. Hydrants shall be Traffic Breakaway Model. The hydrant main valve shall be a compression type that closes with the water pressure. Hydrants shall have not less than a 5-1/4 inch valve opening. All hydrants shall be equipped with automatic self-oiling reservoirs that lubricate the stem threads and all bearing surfaces each time the hydrant is operated. Hydrants shall be painted one coat of red iron oxide, zinc oxide primer conforming to Steel Structures Painting Council SSPC-paint 25 and two finish coats of silicone alkyl paint conforming to Steel Structures Painting Council

SSPC-paint 21. Fire hydrants shall be painted in accordance with NFPA 291, Recommended Practice For Fire Flow Testing and Marking of Hydrants.

8 SPECIFICATION: SANITARY SEWER SYSTEM

The Contractor shall provide and install all gravity sewer material shown on the drawings and in this specification. In addition, he shall obtain all permits and conduct all tests required by local, state and federal authorities and as specified on these drawings.

8.1 MATERIALS:

All materials and equipment incorporated in the work shall be new, clean, and free of visual defects unless otherwise specified, and that all work will be of good quality, free from faults and defects and in conformance with the Contract Documents. All work not conforming to these requirements may be considered defective.

Piping:

- PVC Gravity Sewer ASTM D-3034, SDR-35
- Ductile Iron Pipe (D.I.P.) ANSI A21.51
- PVC Force Mains (160 psi) ASTM D-1784 and D-2241

Joints:

- PVC, Rubber Ring ASTM D-1869
- D.I.P. Joints, Rubber Gasket ANSI A21.11

NOTE: ALL JOINTS TO BE BELL AND SPIGOT TYPE.

Concrete:

- Poured or Pre-cast 4000 psi at 28 days

8.2 INSTALLATION:

Shall comply with all local, state and federal regulations. The Contractor shall provide proper facilities for handling and laying pipe and accessories. Trenches shall be properly prepared; pipe shall be supported over its full length and bell holes hand dug as required. No pipe will be laid in unsuitable weather or in water. The Contractor will verify all field dimensions and report all discrepancies (including field stake-out) prior to commencing work. The Contractor shall notify the Engineer at least 24 hours prior to installing any portion of the sanitary sewer system. He shall also stake all service connections and provide as-built dimensions to the Engineer. Manholes, cleanouts and the like shall be located, built and sized as shown on these drawings. Connections with existing sewer systems shall be coordinated by the Contractor with the utility company.

A minimum separation of 10 ft. horizontal measured outside to outside and 18 inches vertical is required between sanitary sewer lines and all water lines.

When trench excavation depth exceeds five feet, the Contractor shall provide trench protection (shields, sloping, shoring, etc.) and shall comply with OSHA Standard 29 CFR, Section 1926.650 Subpart P.

In accordance with rules of the Florida Department of Environmental Protection (DEP), Chapter 62-604, the Engineer of record will be responsible for observation of construction of the Sanitary Sewer System. The Engineer shall be notified at commencement and completion of construction. To assure compliance with plans and specifications said Engineer will report to DEP upon completion of construction before the system can be placed in service.

The Contractor shall coordinate all tests with the utility company and the Engineer. All lines, fittings and manholes shall be clean and dry before conducting tests. Tests and subsequent corrections shall be at the expense of the Contractor.

8.3 GRAVITY SEWERS:

Leakage tests by infiltration and/or infiltration will be made on all pipe. The Engineer shall have the option determining which test shall be employed. Generally, if the groundwater table is below the bottom of the pipe, an exfiltration test shall be used. Duration of test shall be not less than two (2) hours. Visible leaks encountered shall be corrected regardless of leakage test results. Leakage as measured by either the infiltration or exfiltration test shall not exceed 0.157 gallons per inch diameter per 100 feet of pipe per hour. When leakage exceeds the maximum amount specified, satisfactory correction shall be made and retesting accomplished.

Deflection testing shall be done on all flexible pipe at the direction of the Engineer. Testing shall be done using a mandrel having a diameter equal to 95 percent of the inside diameter of the pipe. When a deflection device is used in lieu of the mandrel, such device shall be approved by the Engineer prior to use. No pipe deflection shall exceed 5 percent.

8.4 FORCE MAINS:

The Contractor shall conduct hydrostatic pressure and leakage tests as follows:

Apply 100 psi or 150% of the working pressure, whichever is greater, to the test line. Duration of the pressure test shall be at least two (2) hours. After 1/2 hour, check pressure, if pressure has dropped, inspect for leaks and correct as required. Repeat tests until there are no leaks or pressure loss. Pressure must hold for two hours.

Note: The Contractor shall notify the Utility Company and the Engineer at least 24 hours prior to conducting pressure and leakage tests.

Force mains shall have thrust blocks designed for 100 psi test pressure. Force mains shall be colored other than white to distinguish from water lines. Force mains in the right-of-way shall have 30 inches (minimum) cover over the crown.

All sanitary sewer force mains will be marked with No. 14 copper insulated tracer wire to enable location with a Ferrous Metal Detector. The tracer wire will be placed 12 inches above and throughout the length of all such pipes.

8.5 MANHOLES:

Shape: All manholes will be eccentric or as specified on the drawings.

Setting Manhole Castings: The frame of the casting shall be set in a full mortar bed composed of one part Portland Cement to two parts of fine aggregate.

Note: The minimum compressive strength required at twenty-eight days is 4000 lbs. per sq. inch. The minimum amount of water shall be used to produce a workable mix and shall not exceed six (6) U.S. Gallons per sack of cement. Concrete shall conform to ASTM C-94.

Pre-cast Reinforced Concrete Manhole Sections: Pre-cast reinforced concrete manhole sections shall conform to ASTM C-478. All joints for pre-cast sections shall be approved by the Engineer.

Castings: Cast iron frames and covers shall conform to the drawings in all essentials of design. All castings shall be made of clean, even grain, tough gray cast iron. The quality of iron in the castings shall conform to the current ASTM Specification A-48 for Class 20 Gray Iron Castings. The weight of castings shall be as shown in the plans. Castings shall be smooth, true to pattern, and free from projections, sand holes, or defects. A raised work "SEWER" shall be cast on the upper non-skid surface of all manhole covers. The portion of the frame and cover which forms the cover seat shall be machined so that no rocking of the cover is possible. The castings shall be coated with coal tar pitch varnish. On roadways the frame and cover shall be set flush with and in the plane of the surface. In other locations they shall be set to grades determined by the Engineer. A shop drawing of the manhole frame and cover must be approved by the Engineer for all covers and frames furnished on the project.

Water-Proofing: Both concrete and pre-cast sections below grade shall be painted on the outside with either two coats of bitumastic paint or a heavy layer of emulsified asphalt to water-proof completely. Manholes shall be inspected for water tightness prior to being placed in service. All incoming and outgoing sewer lines shall be plugged and the manhole filled with water to a level to create a minimum positive head of two feet or above the highest section joint. If the water level drop exceeds 1/8" per vertical foot of manhole depth in 5 minutes, the manhole shall have failed the test.

8.6 GENERAL:

Grout all riser joints and entry pipes.  
Provide neat cement seals for pre-cast units.  
Minimum radius allowed is 20 inches.  
Invert grouting shall be uniform and smooth-sloped to center line of pipe.

Note: Roof drains, foundation drains and all other clean water connections to the sanitary sewer system are prohibited.

9 SPECIFICATION: STORM SEWER SYSTEM

The Contractor shall provide and install all storm sewer material shown on the drawings and in this specification. In addition, he shall obtain all permits and conduct all tests required by local, state and federal authorities and as specified.

9.1 MATERIALS:

Corrugated Polyethylene Pipe: Shall comply with section 948 of the latest edition "Florida Department of Transportation Specifications for Road and Bridge Construction" unless modified herein. Pipes 12 inches to 24 inches in diameter shall comply with ASTM F-405 and ASTM F-667. Joints shall be by means of dimpled band. If used outside of dry wells, joints shall be wrapped in filtercloth 2 feet in width and with 2 feet of overlap on the diameter. This pipe, in the perforated form, shall be used inside dry wells. It may be used outside dry wells only when used with a filter sock. Perforations shall be 1/4 inch diameter and spaced 10 inches on center in the valley of the corrugations.

Polyvinyl-Chloride Pipe: Shall comply with section 948 of the latest edition "Florida Department of Transportation Specifications for Road and Bridge Construction" unless modified herein. Polyvinyl-Chloride Pipe shall meet the requirements of ASTM D 3034, SDR-35, or ASTM F 949, profile wall without perforations. Polyvinyl-Chloride Pipe for use as underdrain shall conform to the requirements of ASTM F 758 or ASTM F 949. Also, PVC underdrain manufactured from PVC pipe meeting ASTM D 3033 or ASTM D 3034, perforated in accordance with the perforation requirements given in AASHTO M 36, or AASHTO M 196 will be permitted.

Reinforced Concrete Pipe: Shall comply with requirements of ASTM C-76, Class III, unless otherwise indicated on the Drawings, and shall be installed with rubber gasketed joints complying with ASTM C-443. Install rubber gaskets in strict accordance with pipe manufacturer's recommendations.

Manholes: Precast reinforced concrete manhole sections shall conform to ASTM Specification C-478. Construct manholes of precast concrete sections as required by Drawings to size, shape, and depth indicated, but never less than 4'-0" inside diameter. All joints for precast sections shall be approved by the engineer.

Inlets and Catch Basins: Precast reinforced concrete Inlets and Catch Basin sections shall conform to ASTM C-478. Construct Inlets and Catch Basins of precast concrete construction as required by drawings to size, shape and depth indicated.

Main and Lateral Pipes: Neatly cut off main and lateral pipes flush with inside of manhole or inlet where they enter structure walls. Dress all irregularities and rough edges with non-shrinking group (inside and outside).

Where pipes enter or exit manholes, a "Kor-N-Seal" molded neoprene boot with stainless steel internal and external bands as manufactured by the National Pollution Control Systems, Inc., Nashua, New Hampshire, or a polyurethane joint with a short transition joint as manufactured by Moorform Corporation, Centralia, Illinois, or an approved equal (or superior) connection shall be provided.

Cast Iron Frames, Covers, and Grates: After completion of manhole inlet, set cast iron frame in full mortar bed after adjusting to required elevation. Cast iron frames and covers shall conform to the drawings in all essentials of design. All castings shall be made of clean, even grain, tough gray cast iron. The quality of iron in the castings shall conform to the current ASTM Specification A-48 for Class 20 Gray Iron Castings. The weight of castings shall be as shown in the plans. Castings shall be smooth, true to pattern, and free from projections, sand holes, or defects. A raised word "STORM SEWER" shall be cast on the upper non-skid surface of all manhole covers. The portion of the frame and cover which forms the cover seat shall be machined so that no rocking of the cover is possible. The castings shall be coated with coal tar pitch varnish. On roadways the frame and cover shall be set flush with and in the plane of the surface. In other locations they shall be set to grades determined by the engineer. The frame and cover shall be heavy duty traffic bearing.

Plastic Filter Fabric: Plastic Filter Fabric shall be the non-woven type and shall comply with sections 514 and 985 of the latest edition "Florida Department of Transportation Specifications for Road and Bridge Construction" unless modified herein.

Concrete: Concrete shall comply with Section 345 of the latest edition "Florida Department of Transportation Specifications for Road and Bridge Construction" unless modified herein. Minimum compressive strength at 28 days shall be 4,000 psi.

9.2 DETENTION AREAS AND GRASSED SWALES:

Swales must be landscaped with seeding, sodding, or sprigging, which does not inhibit the infiltration rate of the soil. Engineer requires 48 hours notice prior to landscaping of infiltration areas to make appropriate inspections.

The system will require periodic maintenance for continued proper operation. This will include, as a minimum: A) removal of silt debris from surface infiltration areas and catch basins, and B) maintenance of vegetative cover in surface infiltration areas.

9.3 STORMWATER DRYWELLS:

Drywells shall be constructed to the dimensions as detailed in the plans. The washed granular material shall have of a void ratio of not less than 0.4 and the gradation shall conform to section 901 of the latest edition "Florida Department of Transportation Specifications for Road and Bridge Construction". The dry well shall be completely wrapped in woven (as opposed to spun) filter cloth with a minimum 2 feet of overlap at field joints. The dry well shall contain perforated pipes as detailed in the plans.

9.4 INSTALLATION:

The Contractor shall comply with all local, state and federal regulations. The Contractor shall provide proper facilities for handling and laying pipe and accessories. Trenches shall be properly prepared; pipe shall be supported over its full length and bell holes hand dug as required. No pipe will be laid in unsuitable weather or in water. The Contractor will verify all field dimensions and report all discrepancies (including field stake-out) prior to commencing work. The contractor shall notify the Engineer at least 24 hours prior to installing any portion of the storm sewer system. He shall also stake all service connections and provide as-built dimensions to the Engineer. Manholes, cleanouts and the like shall be located, built and sized as shown on these drawings. Connections with existing storm sewer systems shall be coordinated by the Contractor with the Utility Authority. Adequate traffic control shall be provided.

A minimum separation of 10 ft. horizontal measured outside to outside and 18 inches vertical is required between storm sewer lines and all water lines.

When trench excavation depth exceeds five feet, the Contractor shall provide trench protection (shields, sloping, shoring, etc.) and shall comply with OSHA Standard 29 CFR, Section 1926.650 Subpart P.

In accordance with rules of the Florida Department of Environmental Protection (DEP), Chapter 62-25, the Engineer of record will be responsible for observation of construction of the Storm Sewer System. The Engineer shall be notified at commencement and completion of construction. To assure compliance with plans and specifications, said Engineer will report to DEP upon completion of construction before the system can be placed in service.

9.5 TESTS:

The Contractor shall coordinate all Tests and Inspections with the Utility Authority and the Engineer. All lines, fittings and manholes shall be clean and dry before the Inspector is summoned. Tests and subsequent corrections shall be at the expense of the Contractor.

Non-Perforated Storm Sewers: Leakage tests by exfiltration and/or infiltration will be made on all pipe as deemed by the Engineer. The Engineer shall have the option determining which test shall be employed. Generally, if the groundwater table is below the bottom of the pipe, an exfiltration test shall be used. Duration of test shall be not less than two (2) hours. Visible leaks encountered shall be corrected regardless of leakage test results. Leakage as measured by either the infiltration or exfiltration test shall not exceed 0.2 gallons per inch diameter per 100 feet of pipe per hour. When leakage exceeds the maximum amount specified, satisfactory correction shall be made and retesting accomplished.

Deflection testing shall be done on all flexible pipe at the direction of the Engineer. Testing shall be done using a mandrel having a diameter equal to 95 percent of the inside diameter of the pipe. When a deflection device is used in lieu of the mandrel, such device shall be approved by the Engineer prior to use. No pipe deflection shall exceed 5 percent.

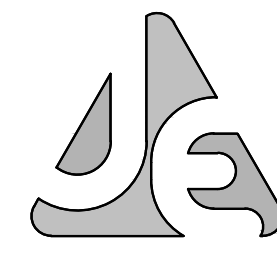
9.6 EROSION PROTECTION:

New and existing drainage structures shall be protected from soil erosion sedimentation by placing baled hay around structures.

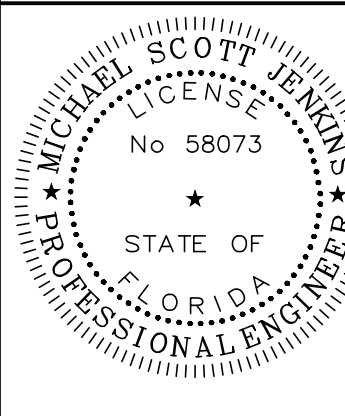
Staked baled hay and silt fence barriers shall be installed downhill from any earthwork activity, and in all areas subject to soil erosion, prior to start of construction.

Soil erosion sedimentation shall be controlled during all phases of construction.

ALL SOIL EROSION SEDIMENTATION SHALL BE RETAINED ON SITE.



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M. SCOTT JENKINS, P.E.  
FL REGISTRATION NO. 58073

BY	MRF								
REVISION	DESCRIPTION	DATE	REV	1	9/18/2023	REVISED PER CITY OF FORT WALTON BEACH REVIEW COMMENTS	DATE	REV	1

CITY OF FORT WALTON BEACH

**JET DRIVE RECREATIONAL AREA**  
FORT WALTON BEACH, FLORIDA

**SPECIFICATIONS II**

NOT VALID UNLESS BEARING ENGINEER'S ORIGINAL SIGNATURE

JOB:	14-16-018
DATE:	03-2023
DESIGNED:	MSJ
DRAWN:	MPF

BAR IS ONE INCH ON ORIGINAL  
0 1"  
IF NOT ONE INCH ON THIS SHEET  
ADJUST SCALES ACCORDINGLY

DRAWING NUMBER  
16 OF 16

SHEET NUMBER  
**C16**