SITE PLAN REVIEW COMMITTEE MEETING
ZEPHYRHILLS, FLORIDA

Tuesday, October 17, 2023
9:30 AM

Zephyrhills City Hall — **Council Chambers**

The city will maintain a quorum in the Council Chambers but will host a GoTo meeting to allow the public/applicants to attend virtually. Please use the following information to access the meeting.

Site Plan Review Committee
Oct 17, 2023, 9:30 AM – 12:30 PM (America/New_York)
Please join my meeting from your computer, tablet or smartphone.
https://meet.goto.com/774626885
You can also dial in using your phone.

Access Code:
774-626-885
United States:
+1 (571) 317-3122

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https://meet.goto.com/install
Call to Order –Todd Vandeberg

1. PLANNING ITEMS
    - 1.1 **SPR-57-22 Cottages at Abbott Station**-Construction plans for 178 Villas in Silver Oaks Village(near the YMCA). Location is 37110 Eiland Blvd, Parcel #03-26-21-0010-12200-0000.
        1. Construction Plans Cottages at Abbott Station
    - 1.2 **PUD-0018-23 Healthier Stay PUD Minor Amendment**-Parcel #04-26-21-0000-00200-0000,petitioning for minor amendment for a future addition of a recreational sports center.
        1. Healthier Stay Plans
    - 1.3 **SPR-0073-23 -Zephyr Commons lot 2** commercial project in the Zephyr Commons

shopping center development. Located at 7988 Gall Blvd, Parcel#35-25-21-0130-00000-0021.

1. ZEPHYR COMMONS LOT 2 PRELIMINARY PLANS

1.4 **SPR-63-23 Calumet Townhomes – CR 54 .3 miles east of 12th St.-**A review of a 4.7 acre parcel with 64 townhome units. The City recently annexed the parcel into the City with an R-4 zoning and RU FLU. The applicant has been working with Pasco County for ROW dedications and improvements over the past few months since this was last reviewed on May 23, 2023.

1. Calumet TH-Pasco Co FL-LP-2_2023-09-28 sealed
2. Calumet TH-Pasco Co FL-LP-3_2023-09-28 sealed
3. Civil Site Plans (9-29-2023)
4. CRL
5. Stormwater Report (9-27-2023)
6. Calumet TH-Pasco Co FL-LP-0_2023-09-28 sealed
7. Calumet TH-Pasco Co FL-LP-1_2023-09-28 sealed

1.5 **SPR-0072-23 - Professional Hair Lab** - Site plan review for Professional Hair Lab additional building in the existing Margolin Industrial Park. The proposed building will be built on the existing building pad that was constructed when the original building was constructed. The original site has all utilities run to the proposed or future building pad and all stormwater infrastructure was constructed at that time.

1. Site Plan Review Form_RCF Signed R1 9.29.2023
2. Stormwater Report 09-28-23 Hair Lab_SS
3. Arch Plans COVER B1 B2 B3 (8-23-23)
4. C - .0 Full Set of Civil Palns_SS
5. Dewberry Stormwater Report
6. Quit Claim Deed Hair Lab 2020

ADJOURN

*** PLEASE NOTE: This is a Public Meeting. Should any interested party seek to appeal any decisionmade by the Council with respect to any matter considered at such meeting or hearing, he or she will need a record of the proceedings, and that, for such purpose, he or she may need to ensure that a verbatim record of the proceeding is made, which record includes the testimony and evidence upon which the appeal is to be based. F.S. 286.0105. If you are a person with a disability which requires reasonable accommodation in order to participate in this meeting, please contact the City Clerk at 813/780-0000 at least 48 hours prior to the public hearing. A.D.A. and F.S. 286.26.**

COTTAGES AT ABBOTT STATION

PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SECTION 03, TOWNSHIP 26 SOUTH, RANGE 21 EAST

CITY OF ZEPHYRHILLS, PASCO COUNTY COUNTY, FLORIDA

CONSTRUCTION PLAN

Robert D Fudge

Digitally signed by Robert D Fudge
Date: 2023.10.10 14:52:35 -04'00'

ROBERT D. FUDGE, STATE OF FLORIDA PROFESSIONAL ENGINEER, LICENSE NO. 59925.

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY ROBERT D. FUDGE, P.E. ON THE DATE INDICATED HERE.

DIGITAL SIGNATURE (SHA1 THUMBPRINT 3C A6 88 19 24 BA A8 9A 72 5E 22 D1 28 51 6B EC C6 E5 CF EB)

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE DIGITAL SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SOURCE REFERENCE:

ALL PROPOSED BUILDING UNIT TYPE FOOTPRINTS TAKEN FROM ARCHITECTURAL PLANS PREPARED BY DESIGN EDGE AND PROVIDED TO FLD&P ON 07-21-23.

PROPOSED CLUBHOUSE AND POOL AREA TAKEN FROM AN ARCHETURAL PLAN LAYOUT PROVIDED BY THE CLIENT ON 09-13-23.

PROPOSED PARKING GARAGES TAKEN FROM ARCHITECTURAL PLANS PREPARED BY GODDEN SUDIK ARCHITECTS AND PROVIDED TO FLD&P ON 09-22-23.

LEGAL DESCRIPTION:

PARCEL 1
A PORTION OF TRACT "E", SILVER OAKS VILLAGE – PHASE ONE, AS RECORDED IN PLAT BOOK 35, PAGES 63 THROUGH 67, PUBLIC RECORDS OF PASCO COUNTY, FLORIDA, BEING FURTHER DESCRIBED AS FOLLOWS: BEGIN AT THE SOUTHEAST CORNER OF TRACT "E", SILVER OAKS VILLAGE – PHASE ONE, AS RECORDED IN PLAT BOOK 35, PAGES 63 THROUGH 67, PUBLIC RECORDS OF PASCO COUNTY, FLORIDA; THENCE N 89°36'36" W., ALONG THE SOUTHERLY BOUNDARY THEREOF A DISTANCE OF 306.26 FEET, THENCE CONTINUING ALONG SAID SOUTHERLY BOUNDARY N 53° 26' 11" W., A DISTANCE OF 41.38 FEET TO THE WESTERLY BOUNDARY OF SAID TRACT "E"; THENCE NORTHERLY, 70.48 FEET, ALONG SAID WESTERLY BOUNDARY AND ALONG THE ARC OF A CURVE TO THE LEFT, (SAID CURVE HAVING A RADIUS OF 440.00 FEET, CENTRAL ANGLE OF 09° 10' 40", AND A CHORD BEARING AND DISTANCE OF N 20° 34' 13" E., 70.40 FEET); THENCE CONTINUE ALONG SAID WESTERLY BOUNDARY, N 15° 58' 53" E., A DISTANCE OF 155.59 FEET; THENCE DEPARTING SAID WESTERLY BOUNDARY, S. 89° 36' 36" E., A DISTANCE OF L08.74 FEET; THENCE N 00° 59' 44" E., A DISTANCE OF 20.12 FEET; THENCE S 89° 00' 16" E., A DISTANCE OF 25.83 FEET; THENCE N 45° 59' 44" E., A DISTANCE OF 79.33 FEET; THENCE N 44° 30' 32" W., A DISTANCE OF 14.26 FEET TO A POINT ON THE NORTHERLY BOUNDARY OF SAID TRACT "E", THENCE ALONG SAID NORTHERLY BOUNDARY, 17.94 FEET ALONG THE ARC OF A CURVE TO THE LEFT (SAID CURVE HAVING A RADIUS OF 54.00 FEET, CENTRAL ANGLE OF 19° 01'50", AND A CHORD BEARING AND DISTANCE OF N 35° 49' 33" E., 17.85 FEET; THENCE CONTINUE ALONG SAID NORTHERLY BOUNDARY, S 89° 00' 16" E., A DISTANCE OF 85.43 FEET TO NORTHEAST CORNER OF SAID TRACT "E"; THENCE S 00° 59' 44" W., ALONG THE EASTERLY BOUNDARY OF SAID TRACT "E", A DISTANCE OF 339.45 FEET TO THE POINT OF BEGINNING.

PARCEL 2:
TRACT "G", SILVER OAKS VILLAGE – PHASE ONE, AS RECORDED IN PLAT BOOK 35, PAGES 63 THROUGH 67, PUBLIC RECORDS OF PASCO COUNTY, FLORIDA; LESS AND EXCEPT THOSE LANDS AS CONVEYED BY WARRANTY DEED RECORDED AUGUST 22, 2013 IN OFFICIAL RECORDS BOOK 8921, PAGE 1406, OF THE PUBLIC RECORDS OF PASCO COUNTY, FLORIDA, AS BEING FURTHER DESCRIBED AS:

A PORTION OF TRACT "G" OF SILVER OAKS VILLAGE – PHASE ONE AS RECORDED IN PLAT BOOK 35, PAGES 63 THROUGH 67 OF THE PUBLIC RECORDS OF PASCO COUNTY, FLORIDA BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHWEST CORNER OF TRACT "G" OF SILVER OAKS VILLAGE – PHASE ONE AS RECORDED IN PLAT BOOK 35, PAGES 63 THROUGH 67 OF THE PUBLIC RECORDS OF PASCO COUNTY, FLORIDA; THENCE ALONG THE EASTERLY RIGHT OF WAY LINE OF ABBOTT STATION DRIVE BEING A CURVE CONCAVE TO THE SOUTHEAST HAVING A RADIUS OF 1280.00 FEET, A CHORD BEARING OF N. 15° 41' 01"E. A CHORD DISTANCE OF 54.93 FEET; THENCE 54.94 FEET ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 02° 27'33" TO THE POINT OF BEGINNING; THENCE CONTINUE ALONG SAID CURVE CONCAVE TO THE SOUTHEAST HAVING A RADIUS OF 1280.00 FEET, A CHORD BEARING OF N. 17° 48' 35" E. A CHORD DISTANCE OF 40.07 FEET; THENCE 40.07 FEET ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 01° 47' 37", THENCE S. 73° 52' 35" E., LEAVING SAID RIGHT OF WAY A DISTANCE OF 61.34 FEET; THENCE S. 16° 03' 12" W., A DISTANCE OF 40.04 FEET; THENCE N. 73° 52' 35" W. A DISTANCE OF 62.57 FEET TO THE POINT OF BEGINNING.

ALSO LESS AND EXCEPT:
A PORTION OF TRACT "G" OF SILVER OAKS VILLAGE – PHASE ONE AS RECORDED IN PLAT BOOK 35, PAGES 63 THROUGH 67 OF THE PUBIC RECORDS OF PASCO COUNTY, FLORIDA BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT THE SOUTHWEST CORNER OF TRACT "G" OF SILVER OAKS VILLAGE – PHASE ONE AS RECORDED IN PLAT BOOK 35, PAGES 63 THROUGH 67 OF THE PUBLIC RECORDS OF PASCO COUNTY, FLORIDA; THENCE ALONG THE EASTERLY RIGHT OF WAY LINE OF ABBOTT STATION DRIVE BEING A CURVE CONCAVE TO THE SOUTHEAST HAVING A RADIUS OF 1280.0 FEET, A CHORD BEARING OF N15° 41' 01"E a CHORD DISTANCE OF 54.93 FEET; THENCE 54.94 FEET ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 02° 27' 33"; THENCE S73° 52' 35"E LEAVING SAID RIGHT OF WAY A DISTANCE OF 62.57 FEET; THENCE S16° 03' 12"W A DISTANCE OF 43.70 FEET TO THE SOUTH LINE OF SAID TRACT "G"; THENCE N84° 06' 49"W ALONG SAID SOUTH LINE OF TRACT "G" A DISTANCE OF 63.21 FEET TO THE POINT OF BEGINNING.

SUBJECT TO AND TOGETHER WITH AN EASEMENT FOR INGRESS AND EGRESS BEING DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHWEST CORNER OF TRACT "G" OF SILVER OAKS VILLAGE – PHASE ONE AS RECORDED IN PLAT BOOK 35, PAGES 63 THROUGH 67 OF THE PUBLIC RECORDS OF PASCO COUNTY, FLORIDA; THENCE ALONG THE EASTERLY RIGHT OF WAY LINE OF ABBOTT STATION DRIVE BEING A CURVE CONCAVE TO THE SOUTHEAST HAVING A RADIUS OF 1280.00 FEET, A CHORD BEARING OF N. 15° 35' 38" E., A CHORD DISTANCE OF 50.93 FEET; THENCE 50.94 FEET ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 02° 16' 48" TO THE POINT OF BEGINNING; THENCE CONTINUE ALONG SAID CURVE CONCAVE TO THE SOUTHEAST HAVING A RADIUS OF 1280.00 FEET, A CHORD BEARING OF N. 16° 54' 47"E., A CHORD DISTANCE OF 8.00 FEET; THENCE 8.00 FEET ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 00° 21' 29"; THENCE S. 73° 52' 35" E., LEAVING SAID RIGHT OF WAY A DISTANCE OF 62.50 FEET; THENCE S. 16° 03' 12" W., A DISTANCE OF 8.00 FEET; THENCE N. 73° 52' 35" W., A DISTANCE OF 62.62 FEET TO THE POINT OF BEGINNING.

PARCEL 3:
TRACT "H", SILVER OAKS VILLAGE – PHASE ONE, AS RECORDED IN PLAT BOOK 35, PAGES 63 THROUGH 67, PUBLIC RECORDS OF PASCO COUNTY, FLORIDA.

PARCEL 4:
TRACT "J", SILVER OAKS VILLAGE – PHASE ONE, AS RECORDED IN PLAT BOOK 35, PAGES 63 THROUGH 67, PUBLIC RECORDS OF PASCO COUNTY, FLORIDA;

PARCEL5:
A PORTION OF TRACTS 106 119 & 122 OF ZEPHYRHILLS COLONY COMPANY LANDS ACCORDING TO THE MAP OR PLAT THEREOF RECORDED IN PLAT BOOK 1, PAGE 55 & PORTION OF PLATTED R/W VACATED PER OFFICIAL RECORDS BOOK 3604, PAGE 1997, OF THE PUBLIC RECORDS OF PASCO COUNTY, FLORIDA AND BEING DESCRIBED AS: COMMENCE SE CORNER OF SW1/4 OF SW1/4 OF SECTION 3, TOWNSHIP 26 SOUTH 21 EAST, THENCE N 01 DEG 10' 47" W 25.01 FEET ALONG THE EAST BOUNDARY OF SAID 1/4-1/4 TO NORTH R/W LINE OF GEIGER RD FOR POB; THENCE N 89 DEG 34' 57" W ALONG SAID R/W 365.03 FEET; THENCE N 0 DEG 02' 53" W 40.55 FEET; THENCE ALONG 335 FT RADIUS CURVE TO THE RIGHT, CHORD BEARING OF N 10 DEG 01' 13" E 117.13 FEET; THENCE N 20 DEG 05' 19" E 124.64 FT; THENCE N 49 DEG 05' 23" W 237.46 FT TO EASTERLY R/W LINE OF ZEPHYRHILLS BYPASS WEST; THENCE ALONG SAID R/W ALONG 1530 FOOT RADIUS CURVE TO THE LEFT, CHORD BEARING N 39 DEG 01' 53" E 91.44 FEET MOL; THENCE N52 DEG 30' 51" W 15 FEET; THENCE ALONG ARC OF 1515 FOOT RADIUS CURVE TO THE LEFT, CHORD BEARING N 27 DEG 59' 20" E 499.94 FEET MOL; THENCE LEAVE R/W S 74 DEG 01' 07" E 205.50 FEET; THENCE S 15 DEG 58' 53" W 133.21 FEET; THENCE S 74 DEG 01' 07" E 40 FEET;THENCE S 15 DEG 58' 53" W 32.95 FEET; THENCE ALONG 440 FOOT RADIUS CURVE TO THE RIGHT, CHORD S 20 DEG 34' 13" W 70.40 FEET; THENCE S 53 DEG 26' 11" E 41.38 FEET; THENCE S 89 DEG 36' 36" E 15 FEET; THENCE S 01 DEG 10' 47" W ALONG EAST BOUNDARY OF R/W 634.88 FEET MOL TO POB.

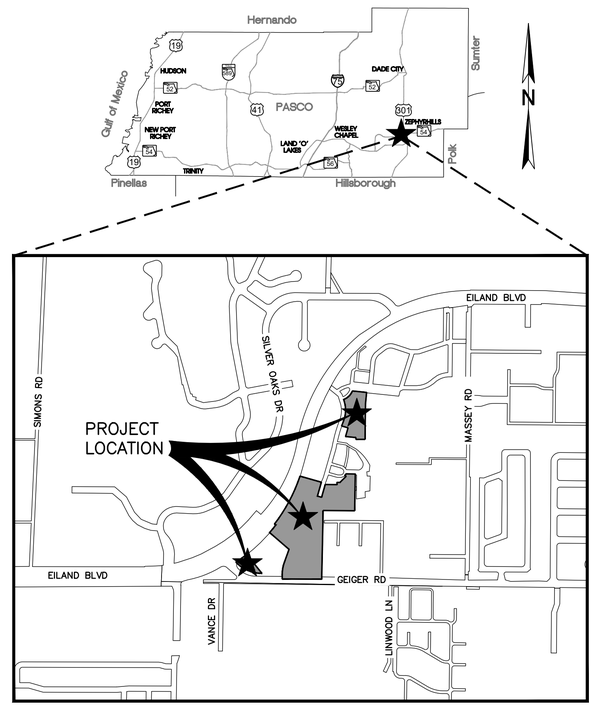
PARCEL 6:
A PORTION OF TRACTS 121 & 122 OF ZEPHYRHILLS COLONY COMPANY LANDS ACCORDING TO THE MAP OR PLAT THEREOF RECORDED IN PLAT BOOK 1, PAGE 55, OF THE PUBLIC RECORDS OF PASCO COUNTY, FLORIDA AND BEING DESCRIBED AS: COMMENCE AT SE CORNER OF SW1/4 OF SW1/4 OF SECTION 3, TOWNSHIP 26 SOUTH, RANGE 21 EAST, THENCE N 01 DEG 10' 47" W 25.01 FEET TO NORTH LINE OF GEIGER RD; THENCE N 89 DEG 34' 57" W 553.07 FEET; THENCE N 00 DEG 25' 03" E 50 FEET FOR POB; THENCE ALONG CURVE TO THE RIGHT, RADIUS OF 335.62 FEET, ARC DISTANCE OF 268.45 FEET, CHORD BEARING N 66 DEG 40' 03" W 261.35 FEET; THENCE ALONG CURVE TO THE LEFT, RADIUS OF 1530 FEET, ARC DISTANCE OF 124.74 FEET, CHORD BEARING N 54 DEG 08' 37" E 124.71 FEET; THENCE S 38 DEG 11' 32" E 224.65 FEET TO POB.

LEGAL DESCRIPTION: (PARCELS 2, 3 AND 4)

A PARCEL OF LAND BEING A PORTION OF TRACT "G" AND ENCOMPASSING TRACTS 'H' AND "J", SILVER OAKS VILLAGE – PHASE ONE, AS RECORDED IN PLAT BOOK 35 PAGE(S) 63 THROUGH 67 OF THE PUBLIC RECORDS OF PASCO COUNTY, FLORIDA AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT THE NORTHEAST CORNER OF SAID TRACT "J", SAID POINT ALSO BEING ON THE SOUTH RIGHT OF WAY LINE OF PICKETTS MILL AVENUE; THENCE S.05 DEGREES 50'39"W., ON THE EAST LINE OF SAID TRACT "J", A DISTANCE OF 104.52 FEET TO THE SOUTHEAST CORNER OF SAID TRACT "J" ALSO BEING THE NORTHEAST CORNER OF SAID TRACT "H"; THENCE S00 DEGREES 48'57"W., ON THE EAST LINE OF SAID TRACT(S) "H" AND "G", A DISTANCE OF 329.99 FEET TO THE SOUTHEAST CORNER OF SAID TRACT "G", THENCE ON THE SOUTH LINE OF SAID TRACT "G" THE FOLLOWING FOUR (4) COURSES, (1) N.89 DEGREES 45'13"W., A DISTANCE OF 84.18 FEET, (2) N.00 DEGREES 59'45"E., A DISTANCE OF 16.32 FEET, (3) N.84 DEGREES 10'31"W., A DISTANCE OF 81.19 FEET, AND (4) N.84 DEGREES 10'31"W., A DISTANCE OF 15.24 FEET; THENCE N.16 DEGREES 04'31"E., DEPARTING THE SOUTH LINE OF SAID TRACT "G", A DISTANCE OF 43.61 FEET; THENCE CONTINUE N.16 DEGREES 04'31"E., A DISTANCE OF 40.01 FEET; THENCE N.73 DEGREES 55'01"W., A DISTANCE OF 61.32 FEET TO A POINT ON THE WEST LINE OF SAID TRACT "G" ALSO BEING A POINT ON THE EAST RIGHT OF WAY LINE OF ABBOTT STATION DRIVE AND A POINT ON A CURVE TO THE LEFT; THENCE ON THE WEST LINE OF SAID TRACT(S) "G", "H" AND "J" ALSO BEING THE EAST RIGHT OF WAY LINE OF SAID ABBOTT STATION DRIVE THE FOLLOWING FIVE (5) COURSES (1) ON A CURVE TO THE LEFT HAVING A RADIUS OF 1280.00 FEET, A CENTRAL ANGLE OF 02 DEGREES 21'13", A CHORD LENGTH OF 52.58 FEET AND A CHORD BEARING OF N.19 DEGREES 53'15"E., THENCE ON THE ARC OF SAID CURVE, AN ARC LENGTH OF 52.58 FEET TO THE END OF SAID CURVE, (2) ON A CURVE TO THE LEFT HAVING A RADIUS OF 270.35 FEET, A CENTRAL ANGLE OF 10 DEGREES 14'30", A CHORD LENGTH OF 48.26 FEET AND A CHORD BEARING OF N.15 DEGREES 57'52"E., THENCE ON THE ARC OF SAID CURVE, AN ARC LENGTH OF 48.31 FEET, (3) ON A CURVE TO THE LEFT HAVING A RADIUS OF 270.35 FEET, A CENTRAL ANGLE OF 21 DEGREES 05'01", A CHORD LENGTH OF 98.92 FEET AND A CHORD BEARING OF N.00 DEGREES 16'53"E., THENCE ON THE ARC OF SAID CURVE, AN ARC LENGTH OF 99.48 FEET, (4) ON A CURVE TO THE LEFT HAVING A RADIUS OF 270.35 FEET, A CENTRAL ANGLE OF 07 DEGREES 15'01", A CHORD LENGTH OF 34.19 FEET AND A CHORD BEARING OF N.13 DEGREES 54'14"W., THENCE ON THE ARC OF SAID CURVE, AN AC LENGTH OF 34.21 FEET AND (5) N.17 DEGREES 29'20"W., A DISTANCE OF 17.40 FEET TO A POINT ON THE SOUTH RIGHT OF WAY LINE OF PICKETTS MILL AVENUE; THENCE ON A CURVE TO THE LEFT HAVING A RADIUS OF 147.00 FEET, A CENTRAL ANGLE OF 45 DEGREES 17'30", A CHORD LENGTH OF 113.20 FEET AND A CHORD BEARING OF N.45 DEGREES 40'23"E., THENCE ON THE ARC OF SAID CURVE, AN ARC LENGTH OF 116.20 FEET; THENCE S.84 DEGREES 08'36"E., ON THE SOUTH RIGHT OF WAY LINE OF SAID PICKETTS MILL AVENUE, A DISTANCE OF 132.45 FEET TO THE POINT OF BEGINNING. PARCEL CONTAINS 1.80 ACRES, MORE OR LESS.

LOCATION MAP



DRAWING INDEX

SHEET #	DESCRIPTION
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2	GENERAL NOTES
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5	TYPICAL ROADWAY SECTIONS & DETAILS
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• 9-10	OVERALL UTILITY PLANS
11-12	SITE PLANS
12A	GRASS PARKING PLAN
12B	OFF-SITE MULTI-PURPOSE TRAIL PLAN
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20	GRADING CROSS-SECTIONS
• 21	INTERSECTION GRADING PLANS
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•	SHEETS OMITTED FROM SWFWMD SUBMITTAL

VERTICAL DATUM:

ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM, 1988 ADJUSTMENT (NAVD 88). ADD 0.84 FEET TO CONVERT TO NATIONAL GEODETIC VERTICAL DATUM, 1929 ADJUSTMENT (NGVD 29).

• PER THE ALTERNATE STANDARDS FOR TRACT 'K' OF THE SILVER OAKS PUD

SITE DATA

PROPERTY LOCATION
NORTHEAST CORNER OF EILAND BOULEVARD AND GEIGER ROAD, WITHIN THE SILVER OAKS VILLAGE CENTER (PORTION OF TRACT 'K' OF SILVER OAKS MASTER PLAN).

TAX PARCEL ID
PARCEL 1: 03-26-21-0200-00000-00E1
PARCEL 2: 03-26-21-0200-00000-00G0
PARCEL 3: 03-26-21-0200-00000-00H0
PARCEL 4: 03-26-21-0200-00000-00J0
PARCEL 5: 03-26-21-0010-12200-0000
PARCEL 6: 03-26-21-0010-12200-0010

TOTAL PROJECT AREA
520,970 SF (11.96 ACRES)

PROPERTY ZONING
PLANNED USE DEVELOPMENT

FUTURE LAND USE
RESIDENTIAL URBAN

***RESIDENTIAL GROSS DENSITY**
MAX NUMBER OF UNITS ALLOWED = 224 DWELLING UNITS
NUMBER OF UNITS PROPOSED = 176 DWELLING UNITS

***OPEN SPACE**
N/A

PROPOSED MAXIMUM BUILDING HEIGHT
35 FEET

TOTAL IMPERVIOUS AREA
263,236 SF (6.04 ACRES) (50.5%)

EXISTING SOIL TYPES (NRCS CLASSIFICATION)
LAKE FINE SANDS
ARREDONDO FINE SANDS

PARKING STALL DIMENSIONS
REQUIRED: 9' X 20'
PROPOSED: 9' X 18'†

†2 ADDITIONAL FEET ARE PROVIDED WITH OVERHANG (6' SIDEWALKS W/CURB)

***BUILDING SETBACKS**
10 FEET, ALL SIDES

***BUILDING SEPARATION**
10 FEET, ALL SIDES

***LANDSCAPE BUFFERS**
6 FEET, ALL SIDES UNLESS OTHERWISE NOTED ON THE PRELIMINARY PLAN

PARKING (PROPOSED)

STANDARD PARKING SPACES	=	161 (9'X18')
PARALLEL PARKING SPACES	=	78 (8'X23')
GARAGE PARKING	=	28
HC PARKING SPACES	=	18 (12'X18')
GRASS PARKING	=	15 (9'X20')
TOTAL PARKING SPACES	=	300

PARKING RATIO
300 SPACES / 176 UNITS = 1.7

COMPREHENSIVE PLAN COMPLIANCE
ALL DESIGN COMPONENTS ARE IN COMPLIANCE WITH THE CITY OF ZEPHYRHILLS COMPREHENSIVE PLAN

NEAREST WELL LOCATION
APPROXIMATELY 0.26 MILES TO THE SOUTHWEST OF THE PROJECT IS THE WELLHEAD FOR THE WHPA ID 846

DEVELOPER CONTACT INFORMATION
BRUCE PEELE
GK FLORIDA, LLC
8605 EXPLORER DRIVE, SUITE 250
COLORADO SPRINGS, CO. 80920
PHONE: (719) 598-5190
EMAIL: BPEELE@GOODWINKNIGHT.COM

NO	DATE	REVISIONS
1	10-10-2023	REVISED PARKING COUNT AND PARKING RATIO PER CITY COMMENTS

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Engineer # EB 19, LC # 30088
Survey # LB8304

PREPARED FOR
GK FLORIDA, LLC
8605 EXPLORER DRIVE, SUITE 250
COLORADO SPRINGS, CO 80920
PHONE: (719) 598-5190 - EMAIL: BPEELE@GOODWINKNIGHT.COM

PROJECT NAME: COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME: COVER SHEET

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	1 OF 42

Oct 10, 2023 @ 1:49pm P:\1089\Proj\Data\Construct\Plans\1089-GK-HCS.dwg - ropgon

GENERAL NOTES

1. ALL ELEVATIONS ARE BASED ON NAVD–1988 DATUM.

2. THE PROJECT IS WITHIN FLOOD ZONES X, A, AND AE, AS SHOWN ON FLOOD INSURANCE RATE MAP NUMBERS 12101C0452F DATED 09/26/2014.

3. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN THE VICINITY OF TREES TO REMAIN AND IS RESPONSIBLE FOR ANY DAMAGE RESULTING FROM HIS WORK.

4. THE LOCATION OF EXISTING UTILITIES ARE APPROXIMATELY AS SHOWN. THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE EXACT LOCATION OF THE UTILITIES PRIOR TO CONSTRUCTION IN THEIR VICINITY. THE CONTRACTOR SHALL NOTIFY ALL CONCERNED PUBLIC AGENCIES AND UTILITY COMPANIES IN THE AREA PRIOR TO CONSTRUCTION, INCLUDING 'SUNSHINE' AT 811.

5. THE CONTRACTOR SHALL EXPOSE ALL EXISTING UTILITIES TO BE EXTENDED, CONNECTED TO, OR CROSSED FOR VERIFICATION OF THEIR LOCATION AND ELEVATION. CONFLICTS, IF ANY, SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION.

6. TELEPHONE AND CABLE SERVICES CAN BE PROVIDED BY SPECTRUM, INC..

7. ELECTRICAL SERVICE WILL BE PROVIDED BY DUKE ENERGY.

8. ALL OPEN/DISTURBED AREAS TO BE STABILIZED AS SOON AS PRACTICAL. AREAS WHERE SOD IS REQUIRED ON A SLOPE SHALL BE STAKED AS NECESSARY TO PREVENT DISPLACEMENT.

9. APPROXIMATELY 30,000 CY OF IMPORT FILL MATERIAL IS ANTICIPATED ON THIS PROJECT.

10. STREET LIGHTING WILL BE DESIGNED AND CONSTRUCTED PER ALL APPLICABLE MUNICIPALITY CODES AND DESIGN STANDARDS.

11. DURING CONSTRUCTION ACTIVITIES, SHOULD EVIDENCE OF HISTORIC RESOURCES, INCLUDING, BUT NOT LIMITED TO, ABORIGINAL OR HISTORIC POTTERY, PREHISTORIC STONE TOOLS, BONE OR SHELL TOOLS, HISTORIC TRASH PITS, OR HISTORIC BUILDING FOUNDATIONS BE DISCOVERED, WORK SHALL COME TO AN IMMEDIATE STOP AND THE FLORIDA DEPARTMENT OF HISTORIC RESOURCES (STATE HISTORIC PRESERVATION OFFICER) SHALL BE NOTIFIED IMMEDIATELY.

12. IF, DURING CONSTRUCTION, EVIDENCE OF STATE AND FEDERALLY PROTECTED PLANTS AND/OR ANIMAL SPECIES, OTHER THAN THOSE IDENTIFIED ON THE PERMITS ISSUED FOR THE PROJECT, WORK SHALL STOP IMMEDIATELY, AND THE MUNICIPALITY AND RELEVANT GOVERNMENTAL AGENCIES SHALL BE NOTIFIED WITHIN TWO WORKING DAYS.

13. THE OWNER/DEVELOPER WILL PROVIDE COPIES OF THE APPROVED PERMITS FROM THE RESPECTIVE GOVERNING AGENCIES, PRIOR TO ISSUANCE OF THE SDP.

14. NO IRRIGATION SYSTEM OR LANDSCAPING SHALL BE INSTALLED IN ANY CITY, COUNTY OF STATE RIGHT–OF–WAY WITHOUT ISSUANCE OF APPROPRIATE RIGHT–OF–WAY USE PERMITS.

15. OWNER/DEVELOPER ACKNOWLEDGES THAT THE SITE, FUTURE BUILDING PERMITS, ETC., SHALL COMPLY WITH REZONING/MPUD CONDITIONS.

16. ALL STRUCTURES INCLUDING BUFFER WALLS, RETAINING WALLS, SIGNAGE, ETC., REQUIRE SEPARATE BUILDING PERMITS. TO BE OBTAINED BY OTHERS.

17. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME, FAMILIAR WITH PERMIT CONDITIONS, AND INSPECTION REQUIREMENTS, OF THE GOVERNMENTAL AGENCIES AND COMPLY WITH ALL CONDITIONS/REQUIREMENTS.

18. CONTRACTOR SHALL CHECK PLANS FOR CONFLICTS AND DISCREPANCIES PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICT BEFORE PERFORMING ANY WORK IN THE AFFECTED AREA.

19. CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, ABOVE OR BELOW GROUND, THAT OCCURS AS A RESULT OF THE CONTRACTOR'S WORK.

20. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL PRECAST AND MANUFACTURED ITEMS TO THE ENGINEER. FAILURE TO OBTAIN ENGINEER'S COMMENTS BEFORE INSTALLATION MAY RESULT IN REPLACEMENT AT CONTRACTOR'S EXPENSE.

21. CONTRACTOR SHALL VERIFY THE LENGTHS OF ALL PIPE PRIOR TO BIDDING, NO EXTRAS WILL BE APPROVED FOR ADDITIONAL LENGTHS, EXCEPT AS THE RESULT OF PLAN CHANGES.

22. ADJUSTMENTS OF INLETS, JUNCTION BOXES, MANHOLE TOPS, WATER VALVES, WATER METERS, ETC., SHALL BE INCLUDED IN THE CONTRACTOR'S BID AND NO CLAIM SHALL BE MADE AGAINST THE OWNER FOR THESE ADJUSTMENTS, IF REQUIRED.

23. THE CONTRACTOR SHALL NOT ENTER, OR IN ANY WAY ALTER, WETLAND AREAS, EXCEPT AS AUTHORIZED BY THE APPROVED ENVIRONMENTAL PERMIT. ALL WORK ADJACENT TO OPEN WATER, OR WETLANDS, SHALL BE IN COMPLIANCE WITH ALL APPROVED PERMITS.

24. DRAINAGE EASEMENTS AND UTILITY EASEMENTS SHOWN ON THE PLANS SHALL BE GRANTED AND DEDICATED THROUGH THE MUNICIPALITY. PONDS SHALL BE WITHIN DRAINAGE EASEMENTS AND THE WETLANDS SHALL BE WITHIN WETLAND CONSERVATION EASEMENTS.

25. ALL WORK WITHIN ANY ROW WILL REQUIRE A ROW USE PERMIT.

26. PRIOR TO CONSTRUCTION, OF ANY STRUCTURES ALL STRUCTURES THAT HAVE A FOOTER, REGARDLESS OF SIZE, A BUILDING PERMIT SHALL BE OBTAINED FROM THE MUNICIPALITY.

27. CONSERVATION AREAS, DETENTION PONDS AND BUFFER EASEMENTS SHALL BE OWNED AND MAINTAINED BY A HOME OWNERS ASSOCIATION, COMMUNITY DEVELOPMENT DISTRICT OR OTHER APPROVED ENTITY. THE MUNICIPALITY SHALL NOT OWN OR MAINTAIN ANY OF THE ABOVE.

28. NO BUFFER SHALL ENCROACH INTO THE CLEAR SITE TRIANGLE, AS DEFINED BY THE MUNICIPAL CODES AND STANDARDS, SO AS TO BLOCK CLEAR SITE VISIBILITY. ALL CLEAR–SITE AREAS SHALL BE KEPT FREE OF ANY SIGNAGE, PLANTINGS, TREES, ETC. IN EXCESS OF THREE–AND–A–HALF (3 ½) FEET IN HEIGHT.

29. LANDSCAPING AND PLANTING WITHIN THE SITE SHALL CONFORM TO THE APPROVED LANDSCAPING PLANS.

30. ALL ROADS WITHIN THE SUBDIVISION WILL BE MAINTAINED BY THE MANAGING MEMBER/OWNER. THE ROADWAY DESIGN SPEED OF THIS PROJECT IS NOTED ON SHEET 5.

31. ANY OFF–SITE DISTURBANCE SHALL BE RESTORED TO THE PRE OR BETTER CONDITION.

SAFETY

32. DURING THE CONSTRUCTION OF THIS PROJECT, ALL FEDERAL, STATE AND LOCAL SAFETY REGULATIONS ARE TO BE ENFORCED. THE CONTRACTOR OR HIS REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE CONTROL AND SAFETY OF THE PUBLIC AND THE SAFETY OF ALL PERSONNEL ON–SITE, AT ALL TIMES.

33. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION IN AREAS OF BURIED UTILITIES AND SHALL PROVIDE THE TIME NEEDED BY THE UTILITY COMPANIES TO FIELD LOCATE EXISTING UNDERGROUND UTILITIES. CALL 'SUNSHINE' 811.

34. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY AND ENFORCE ALL APPLICABLE SAFETY REGULATIONS. THE ABOVE INFORMATION HAS BEEN PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY AND DOES NOT IMPLY THAT THE OWNER OR ENGINEER WILL INSPECT AND/OR ENFORCE SAFETY REGULATIONS.

35. CONTRACTOR SHALL PROVIDE AND MAINTAIN ITS OWN SAFETY EQUIPMENT IN ACCORDANCE WITH ITS HEALTH & SAFETY PROGRAM AND ALL OTHER APPLICABLE HEALTH AND SAFETY REQUIREMENTS. THE CONTRACTOR IS ALSO RESPONSIBLE FOR PROVIDING ITS EMPLOYEES AND SUBCONTRACTORS WITH ADEQUATE INFORMATION AND TRAINING TO ENSURE THAT ALL EMPLOYEES, SUBCONTRACTORS, SUBCONTRACTOR'S EMPLOYEES, ETC., COMPLY WITH ALL APPLICABLE REQUIREMENTS. CONTRACTOR SHALL REMAIN IN COMPLIANCE WITH ALL OCCUPATION SAFETY AND HEALTH REGULATIONS AS WELL AS ENVIRONMENTAL PROTECTION LAWS.

36. ALL EXCAVATIONS BY THE CONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF THE DEPARTMENT OF LABOR'S OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION RULES AND REGULATIONS. PARTICULAR ATTENTION SHALL BE GIVEN TO 29 CFR PART 1926, SUBPART P.

37. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXCAVATIONS AGAINST COLLAPSE AND SHALL PROVIDE BRACING, SHEETING AND/OR SHORING AS NECESSARY. ALL LABOR SAFETY REGULATIONS SHALL CONFORM TO THE PROVISIONS SET FORTH BY OSHA IN THE FEDERAL REGISTER OF THE DEPARTMENT OF TRANSPORTATION.

38. THE MINIMUM STANDARDS AS SET FORTH IN THE CURRENT EDITION OF THE 'THE STATE OF FLORIDA, MANUAL OF TRAFFIC CONTROL, AND SAFE PRACTICES FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS' SHALL BE FOLLOWED IN THE INSTALLATION, MAINTENANCE AND REMOVAL OF ALL TRAFFIC CONTROL DEVICES, WARNING DEVICES AND BARRIERS NECESSARY TO PROTECT THE PUBLIC AND WORKMEN FROM HAZARDS WITHIN THE PROJECT LIMITS.

39. ALL TRAFFIC CONTROL MARKINGS AND DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES PREPARED BY THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION.

40. CONTRACTOR IS TO PROVIDE THE APPLICABLE MUNICIPALITY A MAINTENANCE OF TRAFFIC PLAN PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN THE R.O.W.

CLEARING AND SITE PREPARATION

41. THE LOCATION OF ALL EXISTING UTILITIES SHOWN ON THE PLANS HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE PROVIDED AS SUCH FOR THE CONTRACTOR/SUBCONTRACTORS. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR ACCURACY. IT SHALL BE THE CONTRACTOR'S/SUBCONTRACTOR'S RESPONSIBILITY TO CONTACT 'SUNSHINE 811' TO MAKE THE NECESSARY ARRANGEMENTS FOR EXACT LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR/SUBCONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING ANY UNDERGROUND UTILITY.

42. ALL CONSTRUCTION DEBRIS AND OTHER WASTE MATERIAL SHALL BE DISPOSED OF OFF–SITE IN ACCORDANCE WITH APPLICABLE REGULATIONS.

43. BEFORE ANY SITE WORK BEGINS, ALL TREES TO REMAIN MUST BE PROTECTED BY TREE PROTECTION BARRICADES MEETING THE MINIMUM CODE REQUIREMENTS OF THE LOCAL MUNICIPALITY, PROTECTIVE BARRICADES SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION ACTIVITIES ARE COMPLETED.

44. DURING LAND ALTERATION AND CONSTRUCTION ACTIVITIES THE CONTRACTOR SHALL NOT PLACE SOIL DEPOSITS, CONSTRUCTION MATERIAL, MACHINERY OR OTHER EQUIPMENT WITHIN THE DRIP LINE OF A TREE TO REMAIN ON THE SITE.

45. ALL TREES SHOWN TO REMAIN, AS SHOWN ON THE CONSTRUCTION PLANS, SHALL BE PROTECTED IN ACCORDANCE WITH THE LOCAL REGULATORY AGENCY'S TREE ORDINANCE AND DETAILS CONTAINED IN THESE PLANS. THE CONTRACTOR SHALL MAINTAIN THESE TREES IN GOOD CONDITION UNTIL ALL CONSTRUCTION HAS BEEN COMPLETED.

46. ALL TRIMMING UNDERTAKEN ON A TREE PROTECTED BY THE PROVISIONS OF THE LAND DEVELOPMENT CODE SHALL BE PRUNED IN ACCORDANCE WITH THE NATIONAL ARBORIST ASSOCIATION (NAA) PRUNING STANDARDS.

47. ALL TREE ROOTS EXISTING WITHIN APPROVED AREAS AND ORIGINATING FROM A PROTECTED TREE, SHALL BE SEVERED CLEAN AT THE LIMITS OF THE PRESERVED AREA AS SHOWN ON THE TREE REMOVAL PLAN.

EROSION/SEDIMENT/TURBIDITY CONTROL

48. ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FLORIDA STORMWATER EROSION AND SEDIMENTATION CONTROL INSPECTOR'S MANUAL PUBLISHED BY FDEP.

49. ALL COSTS ASSOCIATED WITH SEDIMENT, TURBIDITY AND EROSION CONTROL, ARE TO BE INCLUDED IN THE DEWATERING COSTS OF THE ITEM THAT REQUIRES DEWATERING.

50. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENTATION CONTROLS AND ALL REPORTING AND MAINTENANCE REQUIREMENTS UNTIL SUCH TIME AS THE PROJECT INFRASTRUCTURE IS ACCEPTED BY THE MUNICIPALITY.

51. THE CONTRACTOR SHALL SCHEDULE OPERATIONS IN AREAS OF UNPROTECTED ERODIBLE SOIL SO THAT EXPOSED AREAS ARE THE MINIMUM NECESSARY FOR EFFICIENT CONSTRUCTION OPERATIONS. TEMPORARY OR PERMANENT EROSION CONTROL WILL BE INSTALLED AS SOON AS PRACTICAL IN ORDER TO ENSURE SEDIMENT DOES NOT LEAVE THE SITE.

52. THE CONTRACTOR SHALL PROVIDE ROUTINE MAINTENANCE OF PERMANENT AND TEMPORARY EROSION CONTROL FEATURES UNTIL THE PROJECT IS COMPLETE AND THE SITE IS FULLY STABILIZED.

53. THE CONTRACTOR SHALL CONTROL ALL FUGITIVE DUST ORIGINATING ON THIS PROJECT BY WATERING OR OTHER METHODS AS NECESSARY.

54. NO WATER FROM DEWATERING ACTIVITIES SHALL LEAVE THE SITE UNLESS IN CONFORMANCE WITH THE APPROVED DEWATERING PLAN.

55. ALL MEANS/METHODS/TECHNIQUES SHOWN ABOVE SHALL BE CONSIDERED MINIMUM REQUIREMENTS AND THE CONTRACTOR SHALL USE WHATEVER METHODS DEEMED NECESSARY TO PREVENT EROSION AND SILTATION.

56. ALL SEDIMENT, TURBIDITY AND EROSION CONTROL DEVICES SHALL BE PROPERLY INSTALLED BEFORE THE BEGINNING OF CONSTRUCTION AND MAINTAINED THROUGHOUT CONSTRUCTION UNTIL THE SITE IS PERMANENTLY STABILIZED.

PAVING, GRADING AND DRAINAGE

57. ALL ROADWAY CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST VERSION OF THE 'MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS', STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION.

58. SEDIMENT CONTROL SHALL BE COMPLETED, AT LOCATION SHOWN ON THE PLANS, PRIOR TO ANY CONSTRUCTION ACTIVITIES IN THE VICINITY OF WETLAND AREAS AND SHALL BE MAINTAINED THROUGH PROJECT COMPLETION.

59. CONTRACTOR SHALL OBTAIN THE NECESSARY DEWATERING PERMITS FROM THE LOCAL WATER MANAGEMENT DISTRICT OR OTHER REGULATORY AGENCY.

60. SHOULD LIMESTONE BEDROCK BE ENCOUNTERED DURING CONSTRUCTION, ALL CONSTRUCTION IN THAT AREA SHALL CEASE, AND THE CONTRACTOR SHALL CONTACT THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT (SWFWMD), AND THE OWNER'S ENGINEER.

61. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING APPLICABLE TESTING WITH THE GEOTECHNICAL ENGINEER. TEST WILL BE REQUIRED FOR SUBGRADE, BASE COURSE AND ASPHALT SURFACE COURSE. ALL TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MUNICIPALITY.

62. CONTRACTOR TO REVIEW SOILS REPORTS AND BORINGS PRIOR TO BIDDING THE PROJECT AND COMMENCING CONSTRUCTION.

63. MATERIALS AND CONSTRUCTION METHODS FOR STREETS AND STORM DRAINAGE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LOCAL REGULATORY AGENCY AND THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST REVISION AND SUPPLEMENTAL SPECIFICATIONS.

64. ALL DRAINAGE STRUCTURE GRATES AND COVERS WITHIN TRAFFIC AREAS SHALL BE RATED FOR H–20 LOADINGS.

65. ALL STORM DRAINAGE STRUCTURES DEEPER THAN 10 FEET SHALL INCLUDE LADDER BARS.

66. ALL BACKFILL OVER STORM PIPES THAT ARE TO BE INSTALLED UNDER ROADWAYS OR WITHIN THE EMBANKMENT, ETC. OF THE ROADWAY SHALL BE COMPACTED TO 100 PERCENT DENSITY AS DETERMINED BY AASHTO T–99 PER THE MOST RECENT EDITION OF FLORIDA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, SECTION 125.8.3

67. NO EXCAVATIONS SHALL EXTEND BELOW THE PERMITTED ELEVATIONS SHOWN ON THE APPROVED PLANS. NO CONFINING UNIT OF CLAYEY MATERIAL SHALL BE BREACHED, OR LIMESTONE MATERIAL EXCAVATED, IF THESE MATERIALS ARE ENCOUNTERED WITHIN THE PERMITTED EXCAVATION ELEVATIONS. IF ANY LOWER CONFINING UNIT OF CLAYEY MATERIALS OR LIMESTONE MATERIALS ARE BREACHED ABOVE THE PERMITTED ELEVATIONS, THE EXCAVATION OPERATIONS SHALL CEASE IN THE AREA AND THE CONTRACTOR SHALL CONTACT BOTH THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT AND THE OWNER'S ENGINEER. SWFWMD MUST ALSO BE CONTACTED IF ANY EXCAVATION OF CLAYS UNINTENTIONALLY BREACHES THE CONFINING LAYER.

68. ALL PORTIONS OF STORM DRAINAGE SYSTEM SHALL BE SUBJECT TO A VISUAL OBSERVATION BY THE OWNER'S ENGINEER PRIOR TO THE PLACEMENT OF BACKFILL. CONTRACTOR TO NOTIFY THE OWNER'S ENGINEER 48 HOURS IN ADVANCE TO SCHEDULE.

69. GEOTECHNICAL ENGINEER TO SUPPLY THE ENGINEER WITH A PHOTOCOPY OF ALL TESTS RESULTS. THE GEOTECHNICAL ENGINEER IS TO CERTIFY TO THE ENGINEER OF RECORD, IN WRITING, THAT ALL TESTING REQUIREMENTS REQUIRED BY LOCAL REGULATORY AGENCY AND THE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) HAVE BEEN SATISFIED.

70. PIPE LENGTHS INDICATED ARE APPROXIMATE AND MEASUREMENTS ARE TO CENTER OF STRUCTURES FOR INLETS AND STORM MANHOLES. MITERED END SECTIONS AND FLARED END SECTIONS ARE APART OF PIPE LENGTHS. CURB INLET STATIONS AND OFFSETS ARE CALCULATED TO EDGE OF PAVEMENT, CENTER OF BOX. ALL PIPE LENGTHS ARE APPROXIMATE.

71. CONTRACTOR SHALL TRIM, TACK AND MATCH EXISTING PAVEMENT AT LOCATIONS WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT.

72. CONTRACTOR SHALL INSTALL 1/2" BITUMINOUS EXPANSION JOINT MATERIAL WITH SEALER AT ABUTMENT OF CONCRETE AND STRUCTURES.

73. ALL PAVEMENT MARKINGS SHALL CONFORM TO FDOT STANDARD INDEX NO. 17346, SHEETS 1–7.

74. ALL UNDERGROUND UTILITIES INCLUDING CONDUITS FOR ELECTRICAL, CABLE, IRRIGATION AND TELEPHONE, ETC., SHALL BE INSTALLED PRIOR TO PAVEMENT CONSTRUCTION.

75. ALL STREETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MUNICIPALITY REGULATIONS AND ORDINANCES.

76. AFTER CONSTRUCTION OF EACH POND CONTROL STRUCTURE IS COMPLETED, A PERMANENT BENCHMARK SHALL BE ESTABLISHED ADJACENT TO OR ON THE OUTFALL STRUCTURE.

77. A GEOTECHNICAL TESTING COMPANY SHALL BE PRESENT DURING ALL PHASES OF POND EXCAVATION, TO OBSERVE POND EXCAVATION ACTIVITIES. SHOULD LIMEROCK BE ENCOUNTERED EXCAVATION IN THE AREA SHALL STOP AND A MINIMUM OF 2 FEET OF CLAY SHALL BE BACKFILLED AND COMPACTED TO THE GEOTECH'S SATISFACTION.

78. IT SHALL BE OWNERS RESPONSIBILITY TO INSPECT AND MAINTAIN THE WATER RETENTION SYSTEM ON A REGULAR BASIS.

79. ALL STORM SEWER PIPE SHALL BE REINFORCED CONCRETE CLASS III (ASTM C–76) WITH RUBBER GASKET JOINTS UNLESS OTHERWISE NOTED ON PLANS. ALL INLETS, MANHOLES AND JUNCTION BOXES SHALL CONFORM TO THE FLORIDA DOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION LATEST EDITION. ALL INLETS AND JUNCTION BOXES SHALL HAVE MANHOLE LIDS FOR MAINTENANCE ACCESS, AND ALL PIPE SHALL BE CUT FLUSH WITH INSIDE WALLS.

80. CONTRACTOR SHALL PREVENT FLOATATION OF STRUCTURES DURING CONSTRUCTION.

81. CONTRACTOR TO SOD ANY SUMPS WITHIN ONE WEEK FOLLOWING CONSTRUCTION.

82. THE STORM DRAINAGE PIPING, AND FILTRATION SYSTEM (IF ANY) SHALL BE REVIEWED BY THE OWNER'S ENGINEER PRIOR TO THE PLACEMENT OF BACKFILL. CONTRACTOR TO NOTIFY THE ENGINEER 48 HOURS IN ADVANCE TO SCHEDULE.

83. THE CONTRACTOR SHALL MAINTAIN THE STORM DRAINAGE SYSTEMS UNTIL FINAL ACCEPTANCE OF THE PROJECT. THE STORM SYSTEM WILL BE REVIEWED BY THE OWNER'S ENGINEER PRIOR TO FINAL ACCEPTANCE.

84. NO RELOCATION OR MODIFICATION OF PROPOSED STORM SEWER SYSTEM SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF BOTH THE OWNER'S ENGINEER AND THE MUNICIPALITY.

SANITARY SEWER AND WATER DISTRIBUTION

85. ALL SEWER AND WATER PIPE MATERIAL AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY.

86. SEWER SERVICE WILL BE PROVIDED BY THE CITY OF ZEPHYRHILLS BY CONNECTING TO AN EXISTING SEWER SYSTEM.

87. POTABLE WATER SERVICE WILL BE PROVIDED BY THE CITY OF ZEPHYRHILLS BY CONNECTING TO AN EXISTING WATER SYSTEM.

88. COVER OVER THE WATERMAIN SHALL BE A MINIMUM OF 36" AND A MAXIMUM OF 42" BELOW FINISH GRADE.

89. POTABLE WATER LINE DISTANCES SHOWN BETWEEN CENTERS OF MAIN FITTINGS ARE 'APPROXIMATE'.

90. ALL WATER LINE PIPE JOINTS SHALL BE A MINIMUM OF 10 FEET FROM THE CENTERLINE OF ANY STORM SEWER STRUCTURE (MANHOLES, INLETS OR CATCH BASINS).

91. CONFLICTS OF WATER LINES WITH SANITARY SEWER LINES AND STORM SEWER PIPE SHALL BE RESOLVED BY ADJUSTING WATER LINES AS NECESSARY.

92. SOLVENT CEMENTING IS NOT PERMITTED FOR PVC PIPE JOINTING.

93. WATER LINES AND FORCE MAINS DEFLECTING AROUND INLETS, TREES AND OTHER OBSTRUCTIONS SHALL USE THE MUNICIPALITY'S PIPE DEFLECTION METHOD.

94. ALL WATER MAINS SHALL MAINTAIN A HORIZONTAL SEPARATION OF 10 FEET FROM ALL SANITARY SEWER, STORM SEWER AND FORCE MAINS WHERE POSSIBLE WITH 6' HORIZONTAL SEPARATION BEING THE ABSOLUTE MINIMUM. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. A MINIMUM VERTICAL SEPARATION OF 18 INCHES SHALL BE MAINTAINED BETWEEN THE OUTSIDE BOTTOM OF THE UPPER PIPE AND THE OUTSIDE TOP OF THE LOWER PIPE.

95. WHERE SANITARY SEWERS, FORCE MAINS, RECLAIMED WATER MAINS AND STORM SEWERS MUST CROSS A POTABLE WATER MAIN WITH LESS THAN 18 INCHES VERTICAL DISTANCE: (1) BOTH THE SEWER AND WATER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (DIP) AT THE CROSSING. A SANITARY SEWER OR FORCE MAIN MAY BE C900 PVC AT THE CROSSING. LENGTHS OF DIP MUST BE USED SO THAT THERE IS A 10 FOOT MINIMUM SEPARATION AT ANY TWO JOINTS OR ONE OF THE CROSSING MAINS SHALL BE ENCLOSED WITHIN A 20 FOOT STEEL OR PVC CASING CENTERED ON THE CROSSING. WHERE WATER MAIN CROSSES BELOW SEWER MAIN, ENCASEMENT OF BOTH MAINS IS MANDATORY.

96. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING SHALL BE LEAK FREE AND MECHANICALLY RESTRAINED, 6 INCHES OF CLEARANCE (MINIMUM) MUST BE MAINTAINED AT THE CROSSINGS.

97. ALL CROSSINGS SHALL BE ARRANGED SO THAT THE SEWER PIPE JOINTS AND THE WATER MAIN JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING.

98. WHERE A NEW PIPE CONFLICT WITH AN EXISTING PIPE, THE NEW PIPE SHALL BE DIP AND THE CROSSING SHALL BE ARRANGED TO MEET THE REQUIREMENTS ABOVE.

99. A MINIMUM OF 10–FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN ANY TYPE OF SEWER AND WATER MAIN IN PARALLEL INSTALLATIONS WHENEVER POSSIBLE. IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN A 10–FOOT HORIZONTAL SEPARATION, THE WATER MAIN MUST BE LAID IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER OR FORCE MAIN AT SUCH AN ELEVATION THAT THE BOTTOM TO THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER. IF IT IS NOT POSSIBLE TO MAINTAIN A VERTICAL DISTANCE OF 18 INCHES IN PARALLEL INSTALLATIONS, THE WATER MAIN, SEWER LINE OR FORCE MAIN SHALL BE CONSTRUCTED OF DIP WITH A MINIMUM VERTICAL DISTANCE OF 6 INCHES WITH THE WATER MAIN ABOVE THE SEWER. JOINTS ON THE WATER MAIN SHALL BE LOCATED AS FAR APART AS POSSIBLE FROM THE JOINTS ON THE SEWER LINE OR FORCE MAIN.

100. ALL PVC WATER MAINS 4–12 INCHES SHALL BE IN ACCORDANCE WITH AWWA C–900 STANDARDS. ALL PVC WATER MAINS 2–3 INCHES SHALL BE CLASS 1120 OR 1220 (SDR 21) AND MEET REQUIREMENTS OF ASTM D–2241, WATER MAINS SMALLER THAN 2 INCHES SHALL BE CLASS 1120 AND 1220 SCHEDULE 80 AND MEET REQUIREMENTS OF ASTM D–1785.

101. DUCTILE IRON PIPE SHALL CONFORM TO ANSI STANDARDS A21.51, MINIMUM CLASS 50, IN AREAS WHERE THE SOIL IS CORROSIVE OR HIGH GROUND WATER IS EXPECTED, THE PIPE SHALL BE INSTALLED IN LOOSE POLYETHYLENE ENCASEMENT NOT LESS THAN 8 MILS THICK IN ACCORDANCE WITH ANSI SPECIFICATIONS A21.51.

102. SANITARY SEWER MAINS AND LATERALS SHALL HAVE A MINIMUM COVER OF THREE (3) FEET BELOW PAVEMENT, ETC.

103. SANITARY SEWERS, FORCE MAINS AND STORM SEWERS CROSSING WATER MAIN SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE BOTTOM OF THE UPPER PIPE AND THE OUTSIDE TOP OF THE LOWER PIPE.

104. NON–METALLIC PIPE WILL BE INSTALLED WITH 2 PAIR, 12 GAUGE, COPPER TRACER WIRE.

105. AT THE TERMINATION OF EACH WATER MAIN, A GATE VALVE THE SAME SIZE AS THE WATER MAIN AND 2" TEMPORARY BLOW–OFF SHALL BE INSTALLED. VALVES AND BLOW–OFFS SHALL BE RESTRAINED AND CONSTRUCTED IN ACCORDANCE WITH THE CURRENT MUNICIPALITY'S REQUIREMENTS.

106. HYDRANTS SHALL BE FLOW TESTED AND COLOR CODED BY THE CONTRACTOR WHILE THE OWNER'S ENGINEER AND THE MUNICIPALITY'S UTILITY INSPECTOR ARE PRESENT. THE CAPS (TOP AND 3 SIDES) ARE TO BE COLOR CODED PER THE MUNICIPALITY AND NFPA CODES AND STANDARDS. BOTH THE OWNER'S ENGINEER AND THE MUNICIPALITY'S INSPECTOR WILL BE GIVEN 48 HOURS (2 WORKING DAYS) NOTICE.

107. FIRE HYDRANTS SHALL BE INSTALLED AND IN SERVICE PRIOR TO BRINGING COMBUSTIBLES ON SITE.

108. RAISED PAVEMENT MARKINGS INDICATING FIRE HYDRANT LOCATIONS SHALL BE MADE PER THE MUNICIPALITY'S REQUIREMENTS.

109. ALL COMPONENTS OF WATER SYSTEM, INCLUDING FITTINGS, THRUST BLOCKING, HYDRANT, CONNECTIONS AND VALVES SHALL REMAIN UNCOVERED UNTIL PROPERLY PRESSURE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE MUNICIPALITY.

110. CONTRACTOR TO PERFORM CHLORINATING AND BACTERIOLOGICAL SAMPLING AND OBTAIN CLEARANCE OF DOMESTIC WATER SYSTEM IN ACCORDANCE WITH THE MUNICIPALITY'S REQUIREMENTS. REPORTS TO BE PROVIDED TO THE OWNER'S ENGINEER.

111. THE CONTRACTOR SHALL PREVENT FLOTATION OF ALL MANHOLES, AND OTHER STRUCTURES DURING THE ENTIRE CONSTRUCTION PROCESS.

112. CONTRACTOR TO CLEAN AND FLUSH WATER SERVICE CONNECTION PRIOR TO PLACING INTO SERVICE.

113. ALL POLYVINYL CHLORIDE PIPE SHALL BE LAID WITH 2 PAIR INSULATED 12 GAUGE A.W.G. SOLID STRAND COPPER WIRE WOUND AROUND THE PIPE FORMING ONE COMPLETE SPIRAL PER JOINT OF PIPE. WIRE IS TO BE CONTINUOUS AND SECURED TO ALL VALVES, TEES, AND ELBOWS. SERVICING TO BE DONE IN CONFORMANCE WITH THE MUNICIPALITY'S STANDARDS, ASTM D–1248.

114. ALL SANITARY SEWER MANHOLE COVERS SHALL BE TRAFFIC RATED FOR H–20 LOADING.

115. IF SANITARY SEWER PLUGS ARE REQUIRED, THEY SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL CERTIFICATION HAS BEEN COMPLETED. DEBRIS SHALL NOT BE ALLOWED TO ENTER THE EXISTING SANITARY SEWER SYSTEM.

116. THE INTERIOR AND EXTERIOR OF ALL PRECAST MANHOLES SHALL BE COATED WITH AT LEAST 15 MILS DRY THICKNESS OF PROCO EP–214–351 EPOXI–MASTIC AS MANUFACTURED BY PROTECTIVE COATINGS, INC. OR APPROVED EQUAL (APPROVED IN WRITING).

117. THE LOCAL MUNICIPALITY WILL PROVIDE WATER TAP, SET THE METER AND A B.F.P.D. (BACK FLOW PREVENTOR DEVICE) IF APPLICABLE, AT THE OWNER'S EXPENSE. CONTRACTOR RESPONSIBLE FOR ALL ASSOCIATED FEES. DUCTILE IRON PIPE FROM THE TAP TO THE BACKFLOW PREVENTION DEVICE, AND ONE JOINT BEYOND THE DEVICE, SHALL BE D

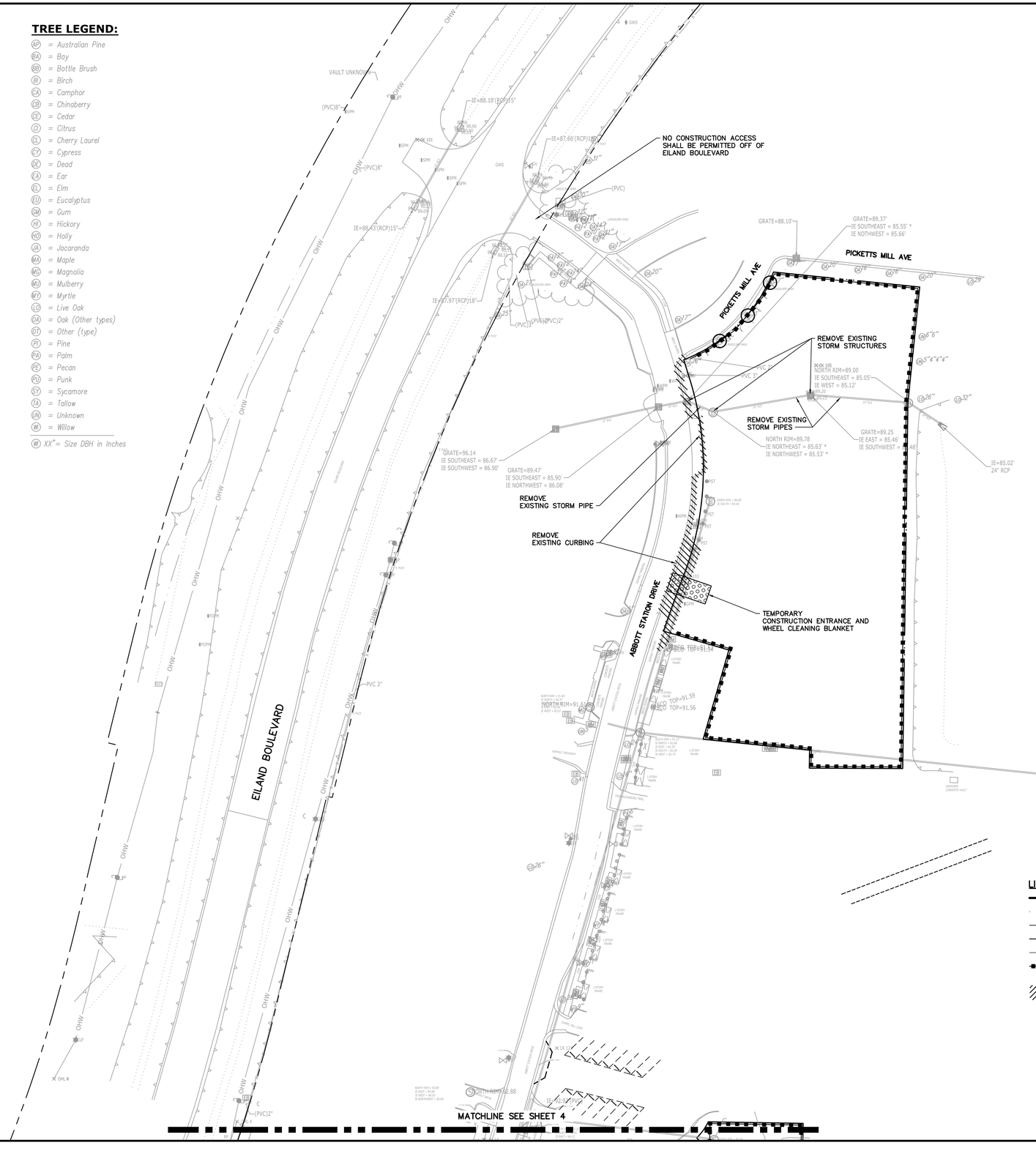
SURVEYOR'S REPORT

1. THIS SURVEY NOT VALID UNLESS STAMPED OR EMBOSSED WITH A SURVEYOR'S SEAL.
2. UNDERGROUND ENCROACHMENTS SUCH AS UTILITIES AND FOUNDATIONS, THAT MAY EXIST, HAVE NOT BEEN LOCATED.
3. SUBJECT PROPERTY LIES WITHIN FLOOD ZONE "X" AND "AE" (ELEVATION 89.1') ACCORDING TO FLOOD INSURANCE RATE MAP 12101C0452F, PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, LAST REVISED SEPTEMBER 26, 2014.
4. PARCEL NUMBERS, OWNERS NAME, ADDRESS AND ZONING SHOWN HEREON OBTAINED FROM THE PASCO COUNTY PROPERTY APPRAISERS WEB SITE.
5. BEARINGS SHOWN HEREON ARE RELATIVE TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE, 1983–2011 ADJUSTMENT HOLDING THE EAST LINE TRACT(S) "G" AND "H", SILVER OAKS VILLAGE –PHASE ONE AS RECORDED IN PLAT BOOK 35 PAGE(S) 63 THROUGH 67 OF THE PUBLIC RECORDS OF PASCO COUNTY, FLORIDA AS BEING S.00 DEGREES 48'57"W.
6. LEGAL DESCRIPTION SHOWN HEREON IN ACCORD WITH THAT SHOWN IN THE COMMITMENT FOR TITLE INSURANCE SUPPLIED FOR THE PREPARATION OF THIS SURVEY.
7. LEGAL DESCRIPTION (PARCEL 2, 3 AND 4) PREPARED BY THE UNDERSIGNED SURVEYOR.
8. COMMITMENT FOR TITLE INSURANCE SUPPLIED BY OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, COMMITMENT NO. REVISED 01/20/2022 – SL, ISSUING OFFICE FILE NO. SMITH CATTLE / PREMIER HOUSING, ISSUING OFFICE: 2025 E. 7TH AVENUE; TAMPA, FLORIDA 33605, FILE NO. 21138060 LWW AND WITH A COMMITMENT DATE OF JANUARY 6, 2022 AT 8:00AM.
9. ITEMS 1, 2, 3, 4, 6, 7, 8, AND 9 REFERENCED IN SCHEDULE B–II OF THE COMMITMENT FOR TITLE INSURANCE HAVE NOT BEEN GRAPHICALLY DEPICTED ON THE SURVEY AS THEY ARE NOT MATTERS OF SURVEY.
10. EASEMENTS OR CLAIMS OF EASEMENTS NOT SHOWN IN PUBLIC RECORD, IF ANY, (SCHEDULE B–II NO.5) HAVE BEEN GRAPHICALLY DEPICTED ON THE SURVEY.
11. ALL PERTINENT MATTERS AS SHOWN ON PLAT OF ZEPHYRHILLS COLONY COMPANY RECORDED IN PLAT BOOK L, PAGE 55 (SCHEDULE B–II NO.10) HAVE BEEN GRAPHICALLY DEPICTED ON THE SURVEY.
12. ALL PERTINENT MATTERS AS SHOWN ON PLAT OF SILVER OAKS VILLAGE – PHASE ONE RECORDED IN PLAT BOOK 35 PAGE 63 (SCHEDULE B–II NO. 11) HAVE BEEN GRAPHICALLY DEPICTED ON THE SURVEY.
13. EASEMENT IN FAVOR OF FLORIDA POWER CORPORATION AS RECORDED IN OFFICIAL RECORDS BOOK 104 PAGE 514 HAS NOT BEEN GRAPHICALLY DEPICTS ON THE SURVEY AS THE DOCUMENT WAS NOT AVAILABLE FOR DOWNLOAD FROM THE PASCO COUNTY CLERK OF THE CIRCUIT COURT WEB SITE.
14. OIL, GAS, MINERAL, OR OTHER RESERVATIONS AS SET FORTH IN NOTICE OF INTEREST IN REAL PROPERTY RECORDED APRIL 18, 1977 IN OFFICIAL RECORDS BOOK 886, PAGE 1686; AS AFFECTED BY QUIT CLAIM DEED RECORDED JUNE 9, 1998 IN OFFICIAL RECORDS BOOK 3948, PAGE 1385, AS CORRECTED IN QUIT CLAIM DEED RECORDED OCTOBER 23, 1998 IN OFFICIAL RECORDS BOOK 4028, PAGE 1604, HAS NOT BEEN GRAPHICALLY DEPICTS ON THE SURVEY AS THE DOCUMENT WAS NOT AVAILABLE FOR DOWNLOAD FROM THE PASCO COUNTY CLERK OF THE CIRCUIT COURT WEB SITE.
15. ORDINANCE NO. 412 (ANNEXATION) RECORDED FEBRUARY 27, 1987 IN OFFICIAL RECORDS BOOK 1584, PAGE 1442 (SCHEDULE B–II NO.14 HAS NOT BEEN GRAPHICALLY DEPICTED ON THE SURVEY AS IT IS NOT A MATTER OF SURVEY.
16. ORDINANCE NO. 433 (PLANNED UNIT DEVELOPMENT) RECORDED JANUARY 13, 1998 IN OFFICIAL RECORDS BOOK 1672, PAGE 677, RE–RECORDED MAY 13, 1988 IN OFFICIAL RECORDS BOOK 1705, PAGE 1695; TOGETHER WITH ORDINANCE NO. 784–01 RECORDED OCTOBER 8, 2001 IN OFFICIAL RECORDS BOOK 4741, PAGE 1001; ORDINANCE NO. 1327–17 RECORDED MAY 16, 2017 IN OFFICIAL RECORDS BOOK 9540, PAGE 3645 (SCHEDULE B–II NO. 15) HAVE NOT BEEN GRAPHICALLY DEPICTED ON THE SURVEY AS THEY ARE NOT MATTERS OF SURVEY.
17. EASEMENT IN FAVOR OF FLORIDA POWER CORPORATION AS RECORDED IN OFFICIAL RECORDS BOOK 1680, PAGE 504 (SCHEDULE B–II NO. 16) HAS NOT BEEN GRAPHICALLY DEPICTS ON THE SURVEY AS THE DOCUMENT WAS NOT AVAILABLE FOR DOWNLOAD FROM THE PASCO COUNTY CLERK OF THE CIRCUIT COURT WEB SITE.
18. COVENANTS, CONDITIONS, EASEMENTS, AND RESTRICTIONS AS SET FORTH IN SUPPLEMENTAL DECLARATION AND AMENDMENT TO MASTER DECLARATION OF COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS FOR SILVER OAKS VILLAGE RECORDED IN OFFICIAL RECORDS BOOK 8921, PAGE 1392 (SCHEDULE B–II NO. 17) HAVE NOT BEEN GRAPHICALLY DEPICTED ON THE SURVEY AS THEY ARE NOT MATTERS OF SURVEY.
19. EASEMENT IN FAVOR OF GTE FLORIDA INCORPORATED AS RECORDED IN OFFICIAL RECORDS BOOK 3991 PAGE 1430 (SCHEDULE B–II NO. 18) HAS BEEN GRAPHICALLY DEPICTED ON THE SURVEY.
20. EASEMENT IN FAVOR OF PROGRESS ENERGY AS RECORDED IN OFFICIAL RECORDS BOOK 7231 PAGE 246 (SCHEDULE B–II NO. 19) HAS BEEN GRAPHICALLY DEPICTED ON THE SURVEY.
21. EASEMENT FOR INGRESS/EGRESS AS CONTAINED IN WARRANTY DEED RECORDED IN OFFICIAL RECORDS BOOK 8921 PAGE 1406 (SCHEDULE B–II NO. 20) HAS BEEN GRAPHICALLY DEPICTED ON THE SURVEY.
22. OIL, GAS, MINERAL, OR OTHER RESERVATIONS AS SET FORTH IN STATEMENT OF CLAIM OF MINERAL INTEREST RECORDED IN OFFICIAL RECORDS BOOK 8949, PAGE 3525 (SCHEDULE B–II NO. 21) HAVE NOT BEEN GRAPHICALLY DEPICTED ON THE SURVEY. PER SCHEDULE B–II OF THE COMMITMENT FOR TITLE INSURANCE., THE RIGHTS OF ENTRY AND/OR EXPLORATION HAVE BEEN RELEASED OR ELIMINATED OF RECORD.
23. EASEMENT IN FAVOR OF DUKE ENERGY IN OFFICIAL RECORDS BOOK 10344 PAGE 1752 (SCHEDULE B–II NO. 22) HAS NOT BEEN GRAPHICALLY DEPICTED ON THE SURVEY. IT SHOULD BE NOTED THAT THIS IS A "BLANKET EASEMENT" THAT ENCOMPASSES ALL OF SUBJECT PROPERTY.

TREE LEGEND:

- (AP) = Australian Pine
- (BA) = Bay
- (BB) = Bottle Brush
- (B) = Birch
- (CA) = Camphor
- (CB) = Chinaberry
- (CE) = Cedar
- (C) = Citrus
- (CL) = Cherry Laurel
- (CY) = Cypress
- (DE) = Dead
- (EA) = Ear
- (EL) = Elm
- (EU) = Eucalyptus
- (GM) = Gum
- (H) = Hickory
- (HO) = Holly
- (JA) = Jacaranda
- (MA) = Maple
- (MG) = Magnolia
- (MU) = Mulberry
- (MY) = Myrtle
- (LO) = Live Oak
- (OA) = Oak (Other types)
- (OT) = Other (type)
- (PI) = Pine
- (PA) = Palm
- (PC) = Pecan
- (PU) = Punk
- (SY) = Sycamore
- (TA) = Tallow
- (UN) = Unknown
- (W) = Willow

(W) XX"= Size DBH in Inches



EXISTING WELL ABANDONMENT NOTE:

IF ANY EXISTING WELLS ARE ENCOUNTERED, WELL IS TO BE PLUGGED AND ABANDONED BY A FLORIDA LICENSED WATER CONTRACTOR PER RULE 40D–3.531(2), F.A.C.

LINETYPE LEGEND:

- = BOUNDARY
- = TOE OF SLOPE
- = TOP OF BANK
- = RIGHT–OF–WAY
- = CENTERLINE
- = SILT FENCE
- = EXISTING FEATURES TO BE REMOVED
- = EXISTING TREE TO BE PROTECTED
- = EXISTING TREE TO BE REMOVED
- = TEMPORARY CONSTRUCTION ACCESS

ROBERT D. FUDGE, STATE OF FLORIDA PROFESSIONAL ENGINEER, LICENSE NO. 59925.

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY ROBERT D. FUDGE, P.E. ON THE DATE INDICATED HERE.

DIGITAL SIGNATURE (SHA1 THUMBPRINT 3C A6 86 19 24 BA A8 9A 72 5E 22 D1 28 51 6B EC C6 E5 CF EB)

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NO	DATE	REVISIONS

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PROJECT NAME: COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME: EXISTING CONDITIONS AND DEMOLITION PLAN (1)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	3 OF 42

Oct 10, 2023 @ 11:48pm P:\1089\Proj Data\ConstDocs\Plans\1089-GK-PXCON.dwg - tpogan

LINETYPE LEGEND:

= BOUNDARY
= TOE OF SLOPE
= TOP OF BANK
= RIGHT-OF-WAY
= CENTERLINE
= SILT FENCE
= EXISTING FEATURES TO BE REMOVED
= EXISTING TREE TO BE PROTECTED
= EXISTING TREE TO BE REMOVED
= TEMPORARY CONSTRUCTION ACCESS

MATCHLINE SEE SHEET 3

TEMPORARY CONSTRUCTION ENTRANCE AND WHEEL CLEANING BLANKET

REMOVE EXISTING TREES (TYP)

REMOVE EXISTING SIGN

REMOVE EXISTING SIGNS, PAVEMENT, CURBING

REMOVE EXISTING SEWER

REMOVE EXISTING TREES (TYP)

REMOVE EXISTING SEWER MH

REMOVE EXISTING SIGN

REMOVE EXISTING SEWER

REMOVE EXISTING SEWER MH

REMOVE EXISTING STORM INLET

REMOVE EXISTING SEWER

EXISTING TREES TO REMAIN (TYP)

REMOVE EXISTING SEWER MH

REMOVE EXISTING TREES (TYP)

NOTE:

ALL CONSTRUCTION ACCESS SHALL BE MADE FROM GEIGER ROAD.

TEMPORARY CONSTRUCTION ENTRANCE AND WHEEL CLEANING BLANKET

REMOVE EXISTING OHW, POWER POLE, POST, AND ELECTRICAL EQUIP.

REMOVE EXISTING FENCE

REMOVE EXISTING CULVERT

REMOVE EXISTING DRIVEWAY

GEIGER ROAD

N

0 25 50 100

EXISTING WELL ABANDONMENT NOTE:

IF ANY EXISTING WELLS ARE ENCOUNTERED, WELL IS TO BE PLUGGED AND ABANDONED BY A FLORIDA LICENSED WATER CONTRACTOR PER RULE 40D-3.531(2), F.A.C.

ABBREVIATION LEGEND:

A/C	= AIR CONDITIONER	(M)	= MEASURED DATA
ADW	= ASPHALT DRIVEWAY	MAS	= MASONRY
BC	= BACK OF CURB	MB	= MAILBOX
BWF	= WIRE OR BARBED WIRE FENCE	MES	= MITERED END SECTION
(C)	= CALCULATED DATA	MOL	= MORE OR LESS
CB	= CABLE / TELECOMMUNICATIONS BOX	NAD	= NORTH AMERICAN DATUM
CCR	= CERTIFIED CORNER RECORD	NAVD	= NORTH AMERICAN VERTICAL DATUM
CDW	= CONCRETE DRIVEWAY	NGVD	= NATIONAL GEODETIC VERTICAL DATUM
CLF	= CHAIN LINK FENCE	NP	= NORMAL POOL ELEVATION
CMP	= CORRUGATED METAL PIPE	NR	= NON-RADIAL
CO	= CLEANOUT	OA	= OVERALL
CONC	= CONCRETE	OHW	= OVERHEAD WIRE
CPB	= CONDO PLAT BOOK	ORB	= OFFICIAL RECORDS BOOK
CPP	= CORRUGATED PLASTIC PIPE	(P)	= PLAT DATA
CSW	= CONCRETE SIDEWALK	PAO	= PROPERTY APPRAISERS OFFICE
C/C	= COVERED CONC	PB	= PLAT BOOK
(D)	= DEED DATA	PED	= PEDESTRIAN CROSSWALK SIGNAL
DB	= DEED BOOK	PG(S)	= PAGE(S)
DBH	= DIAMETER BREAST HEIGHT	PL	= PROPERTY LINE
DMH	= DRAINAGE MANHOLE	POB	= POINT OF BEGINNING
EB	= ELECTRIC BOX	POC	= POINT OF COMMENCEMENT
ELEC	= ELECTRIC	POL	= POINT ON LINE
EOW	= EDGE OF WATER	PP	= POWER/UTILITY POLE
EP	= EDGE OF PAVEMENT	PVC	= POLYVINYLCHLORIDE PIPE
EPM	= ELECTRIC PAINT MARK	PVCF	= PVC FENCE
ERCP	= ELLIPTICAL REINFORCED CONCRETE PIPE	RCP	= REINFORCED CONC PIPE
ESMT	= EASEMENT	R/W	= RIGHT-OF-WAY
FFE	= FINISHED FLOOR ELEVATION	SCM	= SET 4"x4" CONCRETE MONUMENT PRM LB 8342
FH	= FIRE HYDRANT	SEC	= SECTION, TOWNSHIP AND RANGE
FCM	= FOUND CONCRETE MONUMENT (AS NOTED)	SHW	= SEASONAL HIGH WATER ELEVATION
FDOT	= FLORIDA DEPARTMENT OF TRANSPORTATION	SIR	= SET IRON ROD 1/2" LB 8342
FIR	= FOUND IRON ROD (AS NOTED)	SMH	= SANITARY MANHOLE
FND	= FOUND NAIL AND DISK (AS NOTED)	SND	= SET NAIL AND DISK LB 8342
FNL	= FOUND NAIL	SPM	= SANITARY PAINT MARK
FOB	= FIBER OPTIC BOX	S/W	= SIDEWALK
FOP	= FOUND OPEN PIPE	WDF	= WOOD FENCE
FOV	= FIBER OPTIC VAULT	WM	= WATER METER
FPP	= FOUND PINCHED PIPE	WPM	= WATER PAINT MARK
FRS	= FOUND RAILROAD SPIKE	WV	= WATER VALVE
FXC	= FOUND X-CUT	TBM	= TEMPORARY BENCHMARK
GI	= GRATE INLET	THH	= TRAFFIC HAND HOLE
GPM	= GAS PAINT MARK	TOB	= TOP OF BANK
GUY	= GUY ANCHOR	TOS	= TOE OF SLOPE
GV	= GAS VALVE	TSB	= TRAFFIC SIGNAL BOX
IE	= INVERT ELEVATION	TSP	= TRAFFIC SIGNAL POLE
IHH	= IRRIGATION HAND HOLE	TSV	= TRAFFIC SIGNAL VAULT
IV	= IRRIGATION VALVE	VCP	= VITRIFIED CLAY PIPE
(L)	= LEGAL DESCRIPTION DATA	DIP	= DUCTILE IRON PIPE
LP	= LIGHT POLE		

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NO	DATE	REVISIONS

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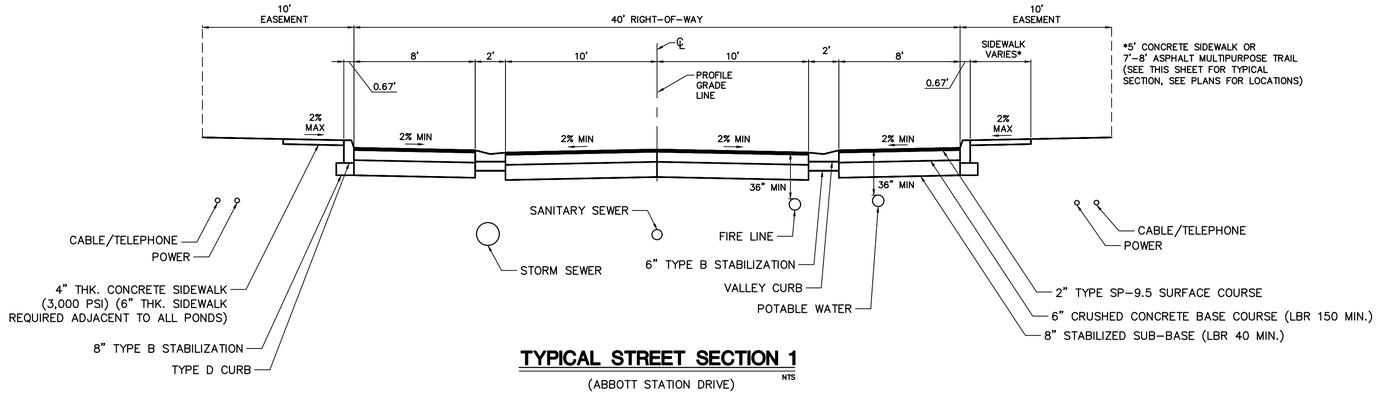
PHONE: (719) 598-5190 - EMAIL: BPEELE@GOODWINKNIGHT.COM

PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
EXISTING CONDITIONS AND DEMOLITION PLAN (2)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	4 OF 42

Oct 10, 2023 @ 1:49pm P:\1089\Pro\Bdta\Constdocs\Plans\1089-GK-PVCON.dwg - rpagan



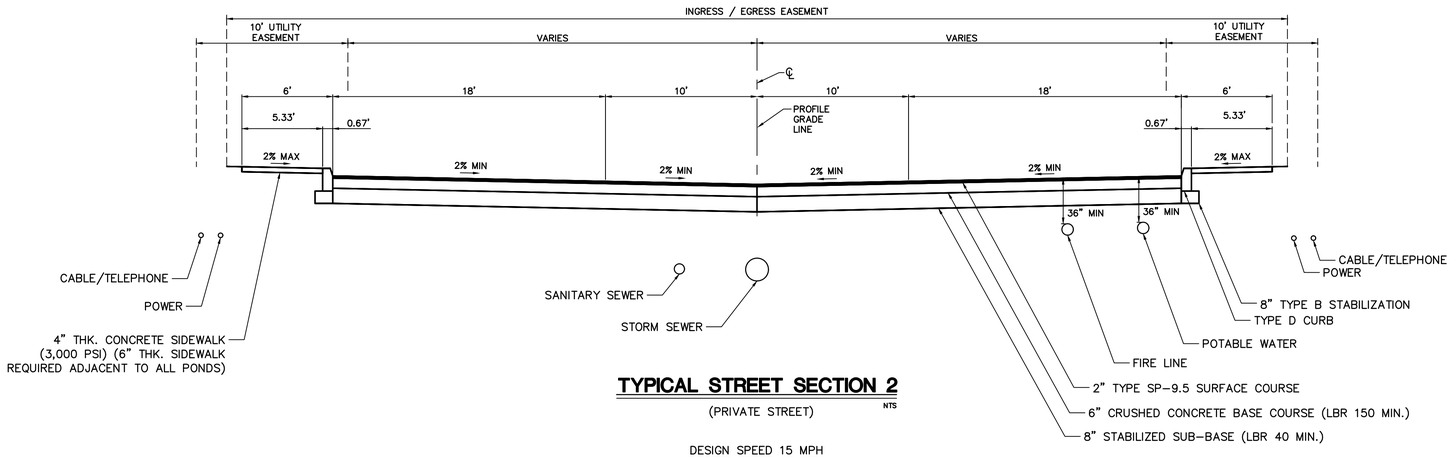
TYPICAL STREET SECTION 1

NTS

(ABBOTT STATION DRIVE)

DESIGN SPEED 30 MPH
POSTED SPEED 30 MPH

NOTE: THIS ROW SECTION APPLIES TO ABBOTT STATION DR.



TYPICAL STREET SECTION 2

NTS

(PRIVATE STREET)

DESIGN SPEED 15 MPH
POSTED SPEED 10 MPH
NOTE: THIS ROW SECTION APPLIES TO INTERIOR LOCAL STREETS

PAVEMENT SPECIFICATIONS:

NOTE:
ALL BASE AND SUB-GRADE SHALL BE COMPACTED IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, JULY 2018 (OR LATEST).

STRUCTURAL NUMBER CALCULATION FOR TYP. STREET SECTIONS – CRUSHED CONCRETE BASE

2" ASPHALT	2 X 0.44	= 0.88
6" CRUSHED CONCRETE BASE (LBR-150)	6 X 0.18	= 1.08
8" STABILIZED SUB-BASE (LBR-40)	8 X 0.08	= 0.64
TOTAL PROVIDED		= 2.60

ALTERNATE BID

STRUCTURAL NUMBER CALCULATION FOR TYP. STREET SECTIONS – LIMEROCK BASE

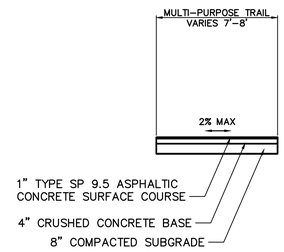
2" ASPHALT	2 X 0.44	= 0.88
8" LIMEROCK BASE (LBR-100)	8 X 0.18	= 1.44
12" STABILIZED SUB-BASE (LBR-20)	8 X 0.04	= 0.32
TOTAL PROVIDED		= 2.64

** LIMEROCK MATERIAL IS ONLY TO BE USED WHERE A TWO-FOOT MINIMUM SEPARATION IS ACHIEVABLE BETWEEN THE SUBGRADE COURSE AND SEASONAL HIGH WATER (SHW) OR ENCOUNTERED PERCHED CONDITIONS. CRUSHED CONCRETE BASE TO BE INSTALLED IF THE REQUIRED SEPARATION CANNOT BE ACHIEVED OR PERCHED CONDITIONS EXIST.

ALTERNATE BID

STRUCTURAL NUMBER CALCULATION FOR TYP. STREET SECTIONS – SOIL CEMENT BASE

2" ASPHALT	2 X 0.44	= 0.88
8" SOIL CEMENT BASE (300 PSI)	8 X 0.15	= 1.20
12" STABILIZED SUB-BASE (LBR-20)	12 X 0.04	= 0.48
TOTAL PROVIDED		= 2.56



ASPHALT MULTI-PURPOSE TRAIL TYPICAL SECTION

NTS

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NO	DATE	REVISIONS
1	10-10-2023	ADDED MULTI-PURPOSE TRAIL TYPICAL SECTION AND REVISED TRAIL WIDTH

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Survey # LB8342

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PROJECT NAME: COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

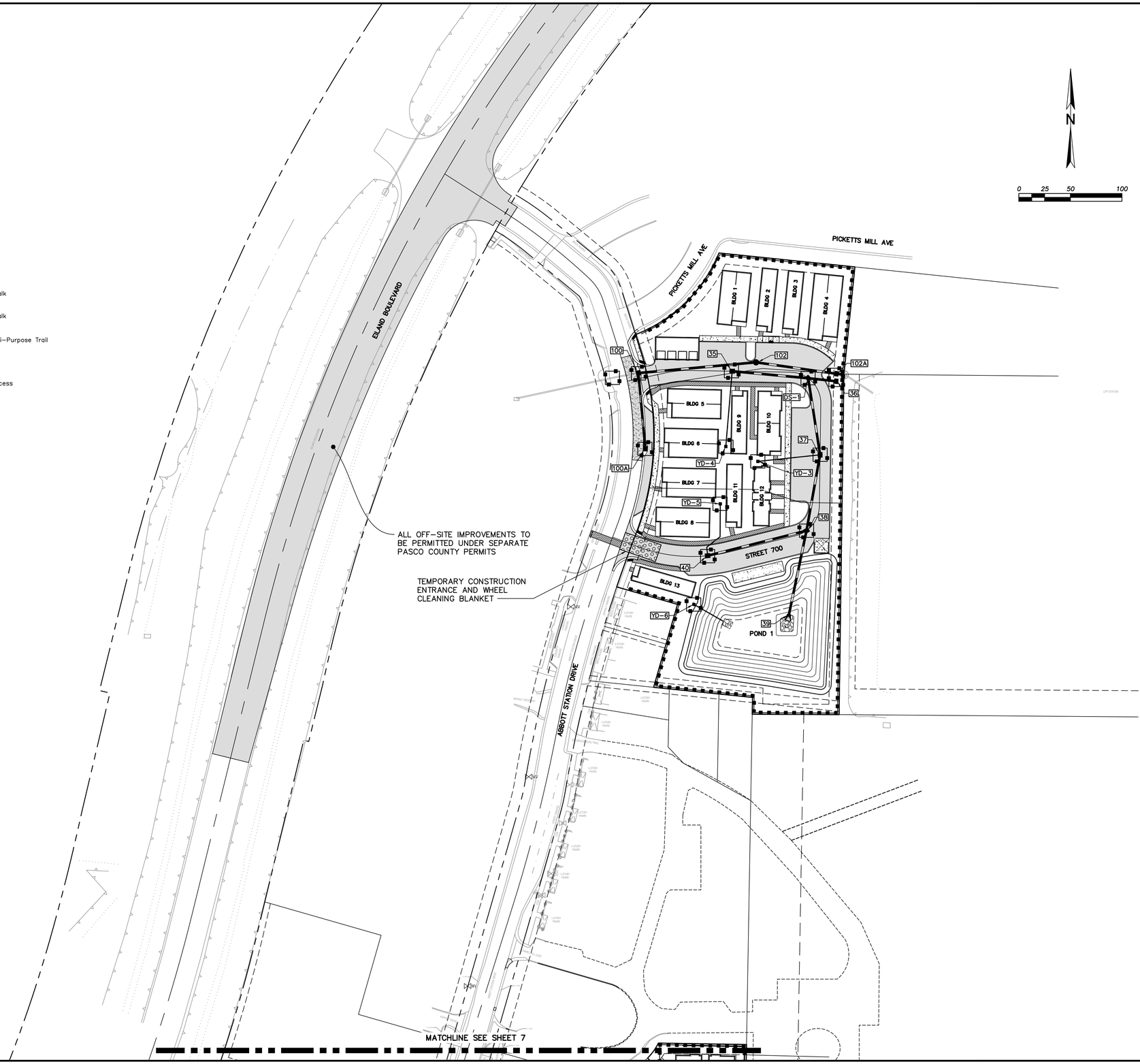
SHEET NAME: TYPICAL ROADWAY SECTIONS & DETAILS

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	5 OF 42

Oct 10, 2023 @ 1:50pm P:\1089\Proj\Data\ConstDocs\Plans\1089-DK-PTYP.dwg -- rpapin

LEGEND

- 24 = Proposed Storm Structure Number
- +43.8 = Proposed Spot Elevation
- +40.7 = Existing Spot Elevation
- = Overland Flow Direction
- = Swale Flow Direction
- = Concentrated Drainage Flow Direction
- = Proposed Storm Structure & Pipe
- = Proposed Silt Fence
- = Floating Turbidity Barrier
- = Proposed Double Silt Fence
- UD = Proposed 6" Underdrain (Unless Otherwise Noted)
- = Wetland/Surface Water Jurisdictional Limit
- = Wetland Buffer Line
- = FEMA Line
- = Phase Line
- = Proposed 4' Concrete Sidewalk
- = Proposed 6' Concrete Sidewalk
- = Proposed 6'-8' Asphalt Multi-Purpose Trail
- DE/AE = Drainage/Access Easement
- = Temporary Construction Access
- = Inlet Protection



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NO	DATE	REVISIONS
1	10-10-2023	GENERAL STORM LAYOUT REVISIONS

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Engineer # - CA No. 33088
Survey # - LB8342

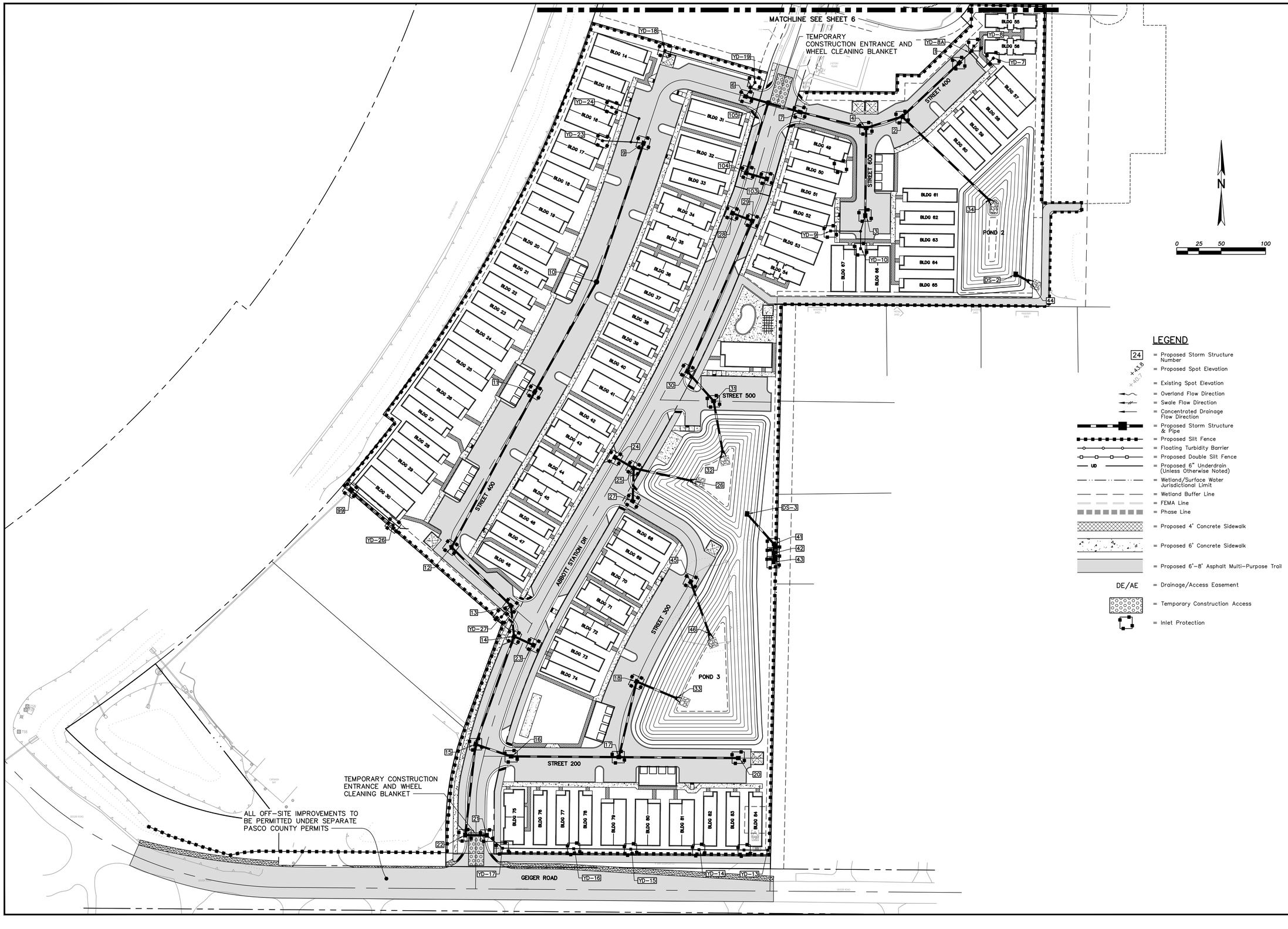
PREPARED FOR
GK FLORIDA, LLC
8605 EXPLORER DRIVE, SUITE 250
COLORADO SPRINGS, CO 80920
PHONE: (719) 598-5190 - EMAIL: BPEELE@GOODWINKNIGHT.COM

PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
DRAINAGE & SURFACE WATER POLLUTION PREVENTION PLAN (1)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	6 OF 42

Oct 10, 2023 @ 1:50pm P:\1089\ProjData\ConstDocs\Plans\1089-GK-PSWPP.dwg - rpogan



LEGEND

- 24 = Proposed Storm Structure Number
- +43.8 / +40.7 = Proposed Spot Elevation
- = Existing Spot Elevation
- = Overland Flow Direction
- = Swale Flow Direction
- = Concentrated Drainage Flow Direction
- = Proposed Storm Structure & Pipe
- = Proposed Silt Fence
- = Floating Turbidity Barrier
- = Proposed Double Silt Fence
- UD = Proposed 6" Underdrain (Unless Otherwise Noted)
- = Wetland/Surface Water Jurisdictional Limit
- = Wetland Buffer Line
- = FEMA Line
- = Phase Line
- = Proposed 4' Concrete Sidewalk
- = Proposed 6' Concrete Sidewalk
- = Proposed 6'-8' Asphalt Multi-Purpose Trail
- DE/AE = Drainage/Access Easement
- = Temporary Construction Access
- = Inlet Protection

ROBERT D. FUDGE, STATE OF FLORIDA PROFESSIONAL ENGINEER, LICENSE NO. 55925.

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NO	DATE	REVISIONS
1	10-10-2023	GENERAL STORM LAYOUT REVISIONS

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Engineer # - CA No. 33088
Survey # - LB8342

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8605 EXPLORER DRIVE, SUITE 250
COLORADO SPRINGS, CO 80920
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PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
DRAINAGE & SURFACE WATER POLLUTION PLAN (2)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	7 OF 42

Oct 10, 2023 @ 1:50pm P:\1089\ProjData\ConstDocs\Plans\1089-GK-PSWPP.dwg - rpogan

1. SITE DESCRIPTION

A. PROJECT DESCRIPTION:

OWNER/APPLICANT PROPOSES TO REMOVE IMPERVIOUS MATERIAL SUCH AS SLABS, PAVEMENT, WALLS AND EXISTING PARKING AREAS, IF ANY, AS DEPICTED IN THE SITE PLAN. CONSTRUCTION WILL ALSO CONSIST OF CLEARING, GRUBBING, EARTHWORK, BACK FILLING, RESTORATION OF VEGETATIVE COVER, AND THE ADDITION OF PROPOSED BUILDINGS, SIDEWALKS, MISC. PAVEMENT AND DRAINAGE FACILITIES.

B. SOIL DISTURBING ACTIVITIES:

SOIL DISTURBING ACTIVITIES FOR THIS PROJECT WILL INCLUDE CLEARING, GRUBBING, EARTHWORK, REMOVAL OF IMPERVIOUS MATERIALS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVING TEMPORARY OR PERMANENT STABILIZATION AS SOON AS POSSIBLE FOR AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED. IN NO CASE SHALL THE AREA BE EXPOSED FOR MORE THAN FOURTEEN (14) CALENDAR DAYS.

C. TOTAL PROJECT AREA: 11.96 ACRES
THE PROJECT CONSISTS OF REMOVAL OF STRUCTURES, PAVEMENT AND CONCRETE WALKS DURING THE CLEARING AND GRUBBING AND EARTHWORK OPERATIONS. TREES TO BE REMOVED AS PART OF THIS PERMIT ARE SHOWN ON THE APPROVED PLANS.

D. TOTAL AREA TO BE DISTURBED: 11.96 ACRES
THE CONTRACTOR SHALL MINIMIZE THE ACREAGES OF DISTURBED SOIL IN THE PROJECT AT ALL TIMES.

E. (1) RUNOFF COEFFICIENTS BEFORE CW(B), DURING CW(D) AND AFTER CW(A) CONSTRUCTION:

RUNOFF COEFFICIENT FOR:
OPEN SPACE: C = 0.2
IMPERVIOUS SURFACES: C = 0.90
IMPERVIOUS AREAS, EXPOSED SOIL, ETC., DURING CONST: C = 0.35

WEIGHTED RUNOFF COEFFICIENT:
CW(B): 0.61
CW(D): 0.82
CW(A): 0.61

DESCRIPTION OF SOIL OR QUALITY OF DISCHARGE

THE PASCO COUNTY SOIL SURVEY IDENTIFIES THE SURROUNDING SOILS AS:

LAKE FINE SAND AND ARREDONDO FINE SAND.

2. CONTROLS

NARRATIVE –SEQUENCE OF SOIL DISTURBING ACTIVITIES AND IMPLEMENTATION OF CONTROLS:

CONSTRUCTION ACTIVITIES –GENERAL

CONSTRUCTION ACTIVITIES ON THIS PROJECT CONSIST OF CLEARING, GRUBBING, EARTHWORK, REMOVAL OF IMPERVIOUS MATERIAL, BACK FILLING, GRADING AND THE ADDITION OF PROPOSED BUILDINGS, SIDEWALKS, MISC. PAVEMENT AND DRAINAGE FACILITIES. THE CONTRACTOR'S WORK WILL ENSURE THAT HE WILL USE ENVIRONMENTALLY SENSITIVE CONSTRUCTION PRACTICES THROUGHOUT THE ENTIRE CONSTRUCTION PROCESS.

OFF–SITE RUNOFF SHALL BE DIVERTED AWAY OR THROUGH THE CONSTRUCTION AREA.

COMPLIANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN IS A REQUIREMENT OF THE PROJECT CONTRACT DOCUMENTS CONSTRUCTION–RELATED INFORMATION REQUIRED BY THE NDPES PERMIT, BUT NOT SPECIFICALLY INDICATED IN THE STORMWATER POLLUTION PREVENTION PLAN, CAN BE FOUND IN THE APPROVED PLANS.

THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING A STABILIZED CONSTRUCTION ENTRANCE FOR VEHICLES ENTERING OR LEAVING THE SITE. THE CONTRACTOR'S REPRESENTATIVE SHALL BE RESPONSIBLE FOR MONITORING THE SYSTEM AND PROVIDING REPAIRS, ETC., AS NEEDED.

CONSTRUCTION ACTIVITIES

PRIOR TO COMMENCEMENT, THE CONTRACTOR SHALL PROVIDE A DETAILED CONSTRUCTION SCHEDULE INDICATING DATES OF MAJOR GRADING ACTIVITIES, SEQUENCING OF TEMPORARY AND PERMANENT SOIL DISTURBING ACTIVITIES, ON ALL PORTIONS OF THE SITE. THE CONTRACTOR SHALL ALSO INSTALL EROSION AND SEDIMENT CONTROL ITEMS AS DELINEATED AND DESCRIBED ON SHEET 8 IN THE CONSTRUCTION DRAWINGS.

THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SEDIMENT CONTROL AS SOON AS POSSIBLE IN AREAS WHERE CONSTRUCTION HAS TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE SHALL THE TIME BE GREATER THAN FOURTEEN (14) DAYS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISCHARGING THE DEWATERING FLOW IN ACCORDANCE WITH THE APPROVED DEWATERING PLAN. AT NO TIME SHALL THE CONTRACTOR DISCHARGE DEWATERING FLOW DIRECTLY TO THE EXISTING STORMWATER MANAGEMENT SYSTEM OR OTHER AREAS NOT IN CONFORMANCE WITH THE APPROVED DEWATERING PLAN.

EROSION AND SEDIMENT CONTROL SHALL BE MAINTAINED AND MAY BE REMOVED ONLY WHEN PERMANENT STABILIZATION IS ESTABLISHED AND ALL PROJECT CONSTRUCTION HAS BEEN COMPLETED.

A. EROSION AND SEDIMENT CONTROLS:

(1) STABILIZATION PRACTICES TO BE IMPLEMENTED:

STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE GREATER THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED. ALL DISTURBED AREAS WILL BE SEEDED AND MULCHED OR SODDED FOLLOWING CONSTRUCTION.

(2) STRUCTURAL PRACTICES WILL INCLUDE:

ROCK BEDDING AT CONSTRUCTION ENTRANCE
STAKED SILT FENCES
INLET SEDIMENT TRAP

B. OTHER CONTROLS:

(1) WASTE DISPOSAL:

THE CONTRACTOR SHALL PROVIDE LITTER CONTROL AND COLLECTION DURING CONSTRUCTION ALL ACTIVITIES. SHOULD FERTILIZER, HYDROCARBON, OR OTHER CHEMICAL CONTAINERS BE USED THEY SHALL BE DISPOSED OF BY THE CONTRACTOR ACCORDING TO EPA'S STANDARD PRACTICES AS DETAILED BY THE MANUFACTURER. IN ADDITION, NO SOLID MATERIALS INCLUDING BUILDING AND CONSTRUCTION MATERIALS SHALL BE BURIED ON–SITE.

(2) OFF–SITE VEHICLE TRACKING:

OFF–SITE VEHICLE TRACKING MUST BE CONTROLLED BY THE FOLLOWING METHODS:

LOADED HAUL TRUCKS TO BE COVERED WITH TARPAULIN
EXCESS DIRT ON ROAD REMOVED DAILY
STABILIZED CONSTRUCTION ENTRANCE

(3) SANITARY WASTE:

ALL SANITARY WASTE MUST BE COLLECTED FROM PORTABLE UNITS BY A LICENSED SANITARY MANAGEMENT CONTRACTOR, IN ACCORDANCE WITH STATE REGULATIONS.

(4) FERTILIZERS AND PESTICIDES:

FERTILIZERS AND SOIL STERILIZERS WILL BE USED ON THIS PROJECT IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AT THE DISCRETION OF THE CONTRACTOR WITH COORDINATION OF THE OWNER.

(5) NON–STORMWATER DISCHARGE (INCLUDING SPILL REPORTING):

A. THE CONTRACTOR WILL PROVIDE THE APPLICANT WITH AN EROSION CONTROL PLAN THAT INCLUDES A DETAILED RESPONSE FOR SPILL CONTAINMENT AND REPORTING.

B. APPROVED STATE, LOCAL PLANS OR STORMWATER PERMITS:

SWFWMD

3. MAINTENANCE:

GENERAL

CONTRACTOR SHALL COMPLY WITH ALL METHODS, REPORTING, ETC., REQUIREMENTS OF THE LATEST EDITION OF THE FLORIDA STORMWATER EROSION AND SEDIMENTATION CONTROL INSPECTOR'S MANUAL PUBLISHED BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND REPAIRS OF EROSION, SEDIMENT AND TURBIDITY CONTROL DEVICES AND REMOVAL OF ALL DEVICES AFTER THE NOTICE OF TERMINATION. CONTRACTOR WILL PREPARE DAILY REPORTS REGRADING THE REVIEW OF ALL SITE EROSION CONTROL DEVICES. REPORTS WILL BE KEPT ON SITE FOR EASY REVIEW BY REGULATORY AGENCY PERSONNEL, ENGINEER OF RECORD, ETC.

COST OF MAINTENANCE AND REPAIR, REQUIRED FOR THE CONTROL AND ABATEMENT OF EROSION AND WATER POLLUTION, SHALL BE INCLUDED IN THE COST OF THE PAY ITEMS FOR THIS PROJECT.

THE CONTRACTOR SHALL MAINTAIN RAIN GAUGES ON THE PROJECT SITE AND RECORD DAILY AND WEEKLY RAINFALL ALL EROSION, TURBIDITY AND SEDIMENT CONTROL DEVICES WILL BE MAINTAINED IN GOOD WORKING ORDER AT ALL TIMES. IF A REPAIR IS NECESSARY, IT SHALL BE INITIATED WITHIN 24 HOURS.

STRUCTURAL PRACTICES AND CONTROLS:

THE FOLLOWING PRACTICES WILL BE USED TO MAINTAIN EROSION AND SEDIMENT CONTROLS:

SEDIMENT WILL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED ONE–THIRD THE HEIGHT OF THE FENCE.

TEMPORARY AND PERMANENT SEEDING, SODDING ETC. SHALL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND HEALTHY GROWTH.

STABILIZED CONSTRUCTION ENTRANCE SHALL BE MAINTAINED TO PREVENT CLOGGING OF ROCK BEDDING.

4. INSPECTION:

THE CONTRACTOR'S DAILY INSPECTION REPORTS, REQUIRED FOR THE CONTROL AND ABATEMENT OF EROSION AND WATER POLLUTION, SHALL BE INCLUDED IN THE COST OF THE PAY ITEMS FOR THIS PROJECT. THE CONTRACTOR SHALL USE THE STANDARD CONSTRUCTION INSPECTION REPORT FORM FOR DAILY INSPECTIONS. REPORTS MUST BE STORED ON SITE.

5. TRACKING AND REPORTING:

THE CONTRACTOR SHALL PREPARE A WEEKLY REPORT DOCUMENTING THE DAILY INSPECTIONS AND MAINTENANCE OF REPAIRS TO THE EROSION AND SEDIMENT CONTROL DEVICES. WEEKLY REPORTS SHALL BE STORED ON SITE. PREPARATION OF THE CONTRACTOR'S WEEKLY REPORTS OF INSPECTION, MAINTENANCE AND REPAIRS REQUIRED FOR THE CONTROL AND ABATEMENT OF EROSION AND WATER POLLUTION, SHALL BE INCLUDED IN THE COST OF PAY ITEMS FOR THE PROJECT.

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT CERTIFICATION

CONSTRUCTION SURFACE WATER MANAGEMENT PLAN (CSWMP)

a. THE CSWMP CONSISTS OF PLAN SHEETS 6, AND # SHOWING EROSION PROTECTION DEVICES TO BE UTILIZED ON THE PROJECT.

b. THE APPLICANT/OWNER OR AUTHORIZED AGENT HAS REVIEWED THE CSWMP AND HAS SIGNED THE CSWMP WHERE REQUIRED BELOW.

c. THE CSWMP SHALL BE PART OF THE FINAL CONSTRUCTION PLANS FOR THE PERMITTED SURFACE WATER MANAGEMENT SYSTEM.

SIGNATURE: _____

NAME: _____ DATE: _____

APPLICANT	OWNER	AUTHORIZED AGENT (SITE CONTRACTOR)
☐	☐	☐

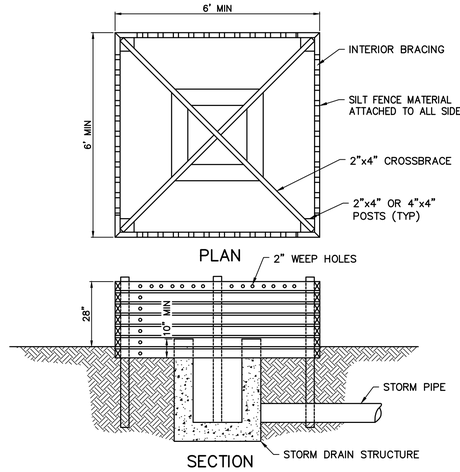
I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERTY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION. THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

_____ _____
NAME (OPERATOR AND/OR RESPONSIBLE AUTHORITY) DATE

NAME	TITLE	COMPANY NAME, ADDRESS AND PHONE NUMBER	DATE
*			

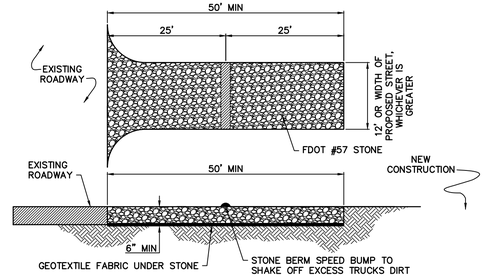
I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND, AND SHALL COMPLY WITH, THE TERMS AND CONDITIONS OF THE STATE OF FLORIDA, GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES AND THIS STORMWATER POLLUTION PREVENTION PLAN PREPARED THEREUNDER.

* NPDES CONTRACTOR AND SUBCONTRACTOR CERTIFICATION
TO BE COMPLETED AFTER CONTRACTORS HAVE BEEN SELECTED.



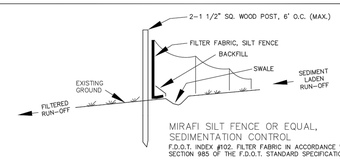
INLET SEDIMENT BARRIER
FILTER FABRIC WITH SUPPORTING FRAME

NTS



TEMPORARY CONSTRUCTION ACCESS

NTS



MIRAFI SILT FENCE OR EQUAL,
SEDIMENTATION CONTROL
F.D.O.T. INDEX #102. FILTER FABRIC IN ACCORDANCE WITH SECTION 985 OF THE F.D.O.T. STANDARD SPECIFICATIONS.

NOTES:
1. TEMPORARY EROSION CONTROL STRUCTURE TO BE UTILIZED DURING CONSTRUCTION AT AREAS DESIGNATED BY ENGINEER OR AREAS ON–SITE WHERE UNSTABILIZED GRADES MAY CAUSE EROSION PROBLEMS. EROSION CONTROL STRUCTURE MAY BE REMOVED AFTER UPSLOPE AREA HAS BEEN STABILIZED BY SOD, OR COMPACTED AS DETERMINED BY CONTRACTOR.
2. CONSTRUCT STORMWATER SYSTEMS BEFORE ANY BUILDING OR ROAD CONSTRUCTION IS STARTED.
   a.) PROTECT SYSTEM FROM SILTING AND DEBRIS BY METHODS PROVIDED IN DETAILS.
   b.) PROTECT SWALE BOTTOM FROM SEALING BY EXCAVATING ALL SILT DEPOSITS DURING CONSTRUCTION. THIS SHALL BE DONE BEFORE SOD & SEEDING & MULCHING IS FINISHED

EROSION CONTROL STRUCTURE

NOT TO SCALE

THE FOLLOWING LIST REPRESENTS A BASIC EROSION AND SEDIMENT CONTROL PROGRAM WHICH IS TO BE IMPLEMENTED TO HELP PREVENT OFF–SITE SEDIMENTATION DURING AND AFTER CONSTRUCTION OF THE PROJECT.

PERMANENT EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AT THE EARLIEST PRACTICAL TIME CONSISTENT WITH GOOD CONSTRUCTION PRACTICES. ONE OF THE FIRST CONSTRUCTION ACTIVITIES SHOULD BE THE PLACEMENT OF PERMANENT AND TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AROUND THE PERIMETER OF THE PROJECT OR THE INITIAL WORK AREA TO PROTECT THE PROJECT, ADJACENT PROPERTIES AND WATER RESOURCES.

TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE COORDINATED WITH PERMANENT MEASURES TO ASSURE ECONOMICAL, EFFECTIVE AND CONTINUOUS CONTROL THROUGHOUT THE CONSTRUCTION PHASE. TEMPORARY MEASURES SHALL NOT BE CONSTRUCTED FOR EXPEDIENCY IN LIEU OF PERMANENT MEASURES.

EROSION AND SEDIMENT CONTROL MEASURES SHALL BE ADEQUATELY MAINTAINED TO PERFORM THEIR INTENDED FUNCTION DURING CONSTRUCTION OF THE PROJECT.

NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BARRIERS SHALL BE ACCOMPLISHED PROMPTLY.

SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RAINFALL. THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE–HALF THE HEIGHT OF THE BARRIER.

MATERIAL FROM SEDIMENT TRAPS SHALL NOT BE STOCKPILED OR DISPOSED OF IN A MANNER WHICH MAKES THEM READILY SUSCEPTIBLE TO BEING WASHED INTO ANY WATERCOURSE BY RUNOFF OR HIGH WATER.

ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE BARRIERS ARE NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

ZEPHYRHILLS UTILITIES DEPARTMENT WATER & WASTEWATER

CITY OF ZEPHYRHILLS STANDARD DETAILS

CITY OF ZEPHYRHILLS UTILITY DEPARTMENT
39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542
PHONE (813)780-0029 FAX (813)780-0613

NOVEMBER 2021

G-1

ROBERT D. FUDGE, STATE OF FLORIDA PROFESSIONAL ENGINEER, LICENSE NO. 55925.

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4845 SOPRIS CREEK DRIVE, SUITE 250
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PHONE: (719) 598-5190 - EMAIL: BPEELE@GOODWINKNIGHT.COM

PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
DRAINAGE & SURFACE WATER POLLUTION PLAN (3)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	8 OF 42

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LEGEND

- = Proposed Water Line, Valve, & Services
- = Proposed Reclaimed Water, Valve, & Services
- FM = Proposed Force Main
- WM = Existing Water Line & Valve
- FM = Existing Force Main
- R = Existing Force Main
- = Proposed Storm Sewer
- S = Proposed Sanitary Sewer & Services
- 50 = Proposed Sanitary Sewer Manhole Number
- FHA = Proposed Fire Hydrant Assembly (See Paving, Grading, And Drainage Plans For Finished Grade Elevation)
- BO = Proposed Blowoff Assembly
- = Existing Fire Hydrant
- CIP = Chlorine Injection Point
- SP = Sample Point

NOTE:

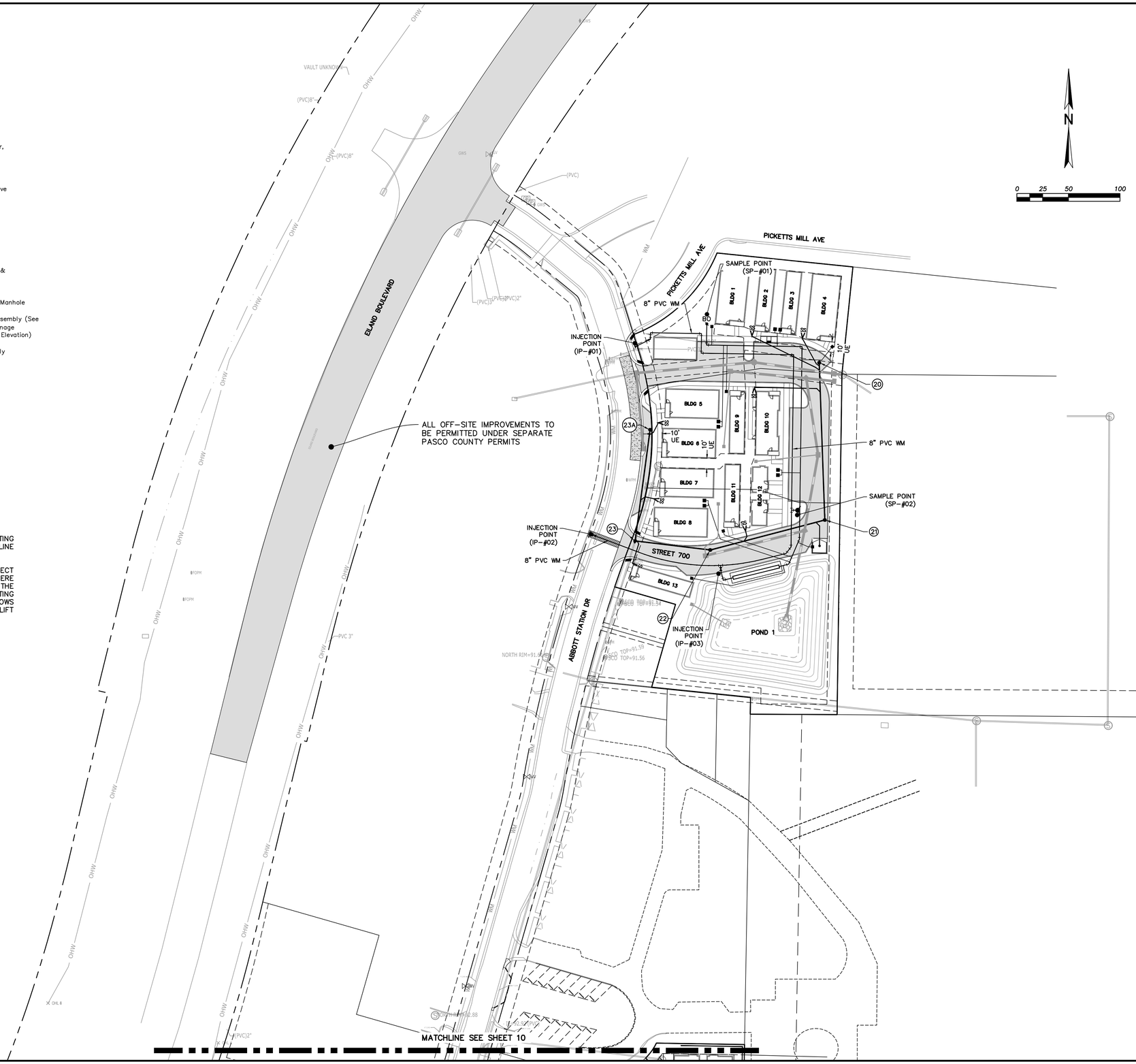
# INDICATES MANHOLE TO BE LINED

NOTES

UTILITY CONNECTIONS:

1. WATER SERVICES TO BE PROVIDED BY CONNECTING TO, AND EXTENDING, THE EXISTING WATER MAIN TRUNKLINE WITHIN ABBOT STATION DRIVE.

2. WASTE WATER SERVICE WILL BE PROVIDED BY DIRECT CONNECTION TO THE EXISTING GRAVITY LINE WHERE POSSIBLE, OTHERWISE FLOWS WILL BE DIRECTED TO THE PROPOSED LIFT STATION AND PUMPED TO THE EXISTING GRAVITY LINE WITHIN ABBOT STATION DRIVE. ALL FLOWS WILL ULTIMATELY BE RECEIVED BY THE EXISTING LIFT STATION DESIGNED FOR THIS PORTION OF SILVER OAKS.



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PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
OVERALL UTILITY PLAN (1)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
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SHEET	9 OF 42

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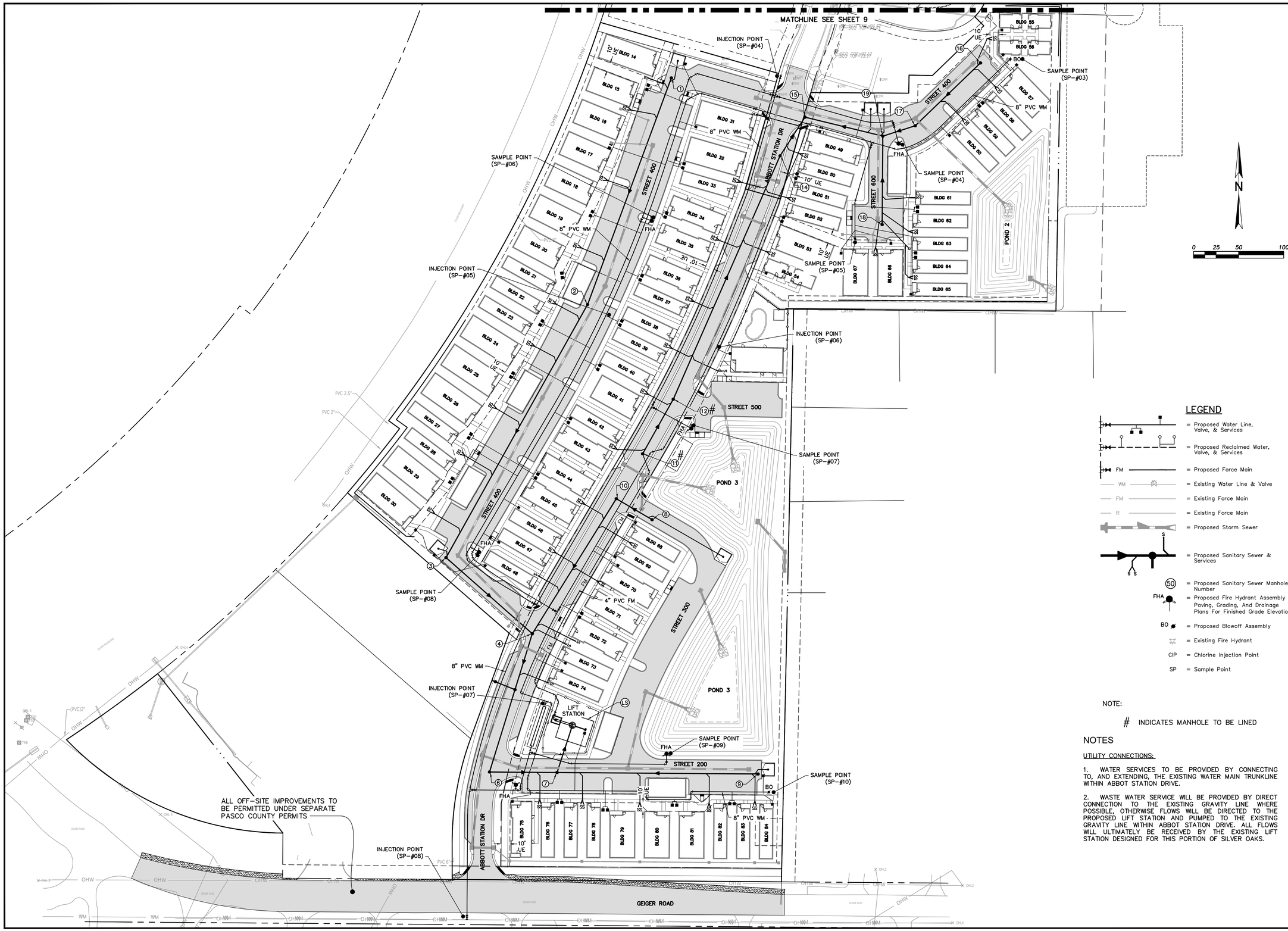

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NOTE:

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NOTES

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1. WATER SERVICES TO BE PROVIDED BY CONNECTING TO, AND EXTENDING, THE EXISTING WATER MAIN TRUNKLINE WITHIN ABBOT STATION DRIVE.

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PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
OVERALL UTILITY PLAN (2)

PROJECT ID	1089
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SHEET	10 OF 42

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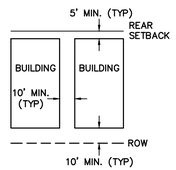
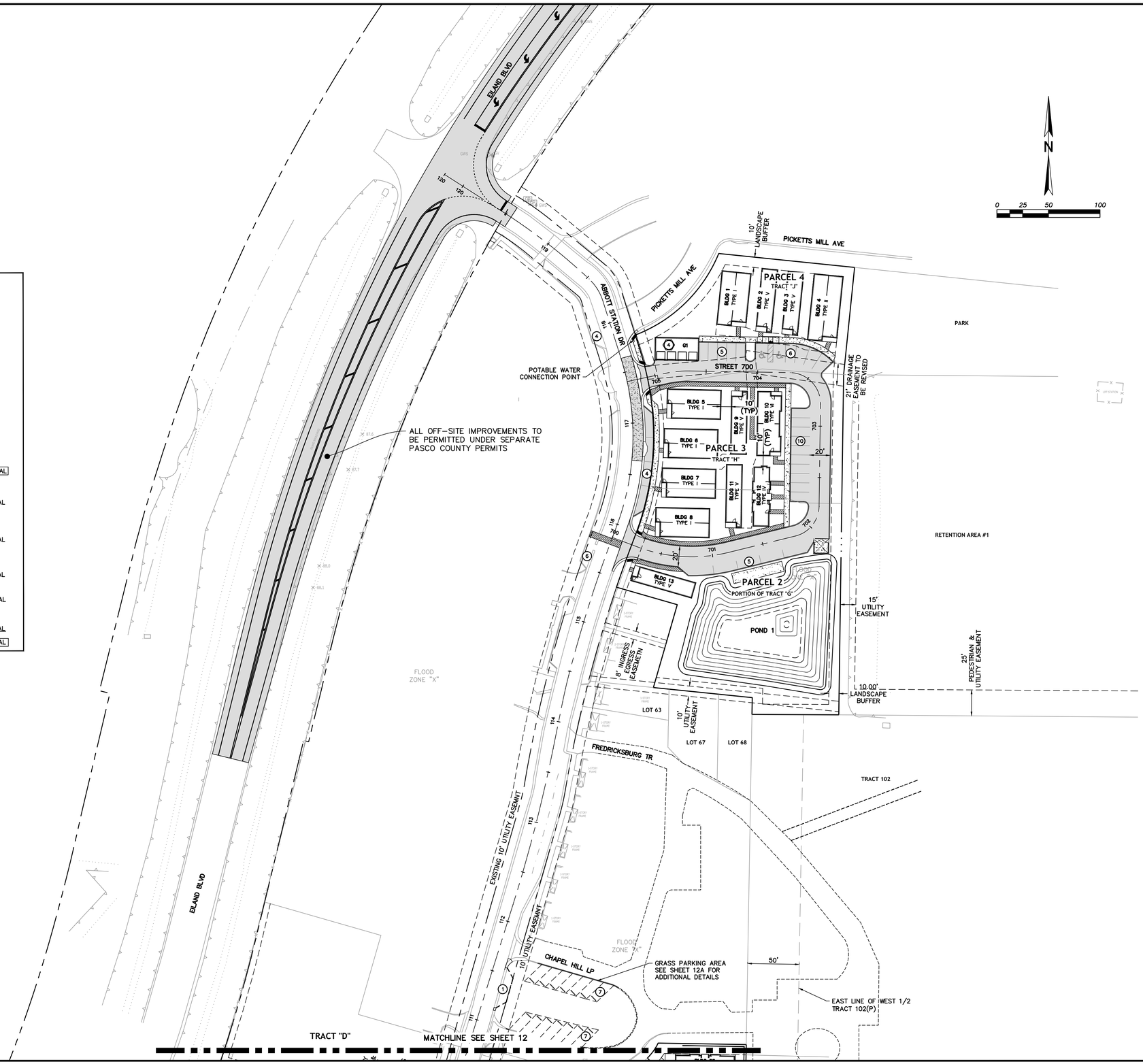
LEGEND

	BOUNDARY LINE	
	CENTERLINE	
	BUFFERS & EASEMENTS	
	RETENTION AREA	
	6' TALL OPAQUE FENCE	
	FEMA DESIGNATION LINE	
(3)	PARKING SPACE COUNT	272
(4) G2	GARAGE – PARKING 1 UNIT (4 BAY)	7 EA 28
		300 TOTAL
TYPE I	COTTAGE TYPE I 1 BEDROOM (2 UNITS)	18 EA 36 TOTAL
TYPE II	COTTAGE TYPE II 2 BEDROOM (2 UNITS)	10 EA 20 TOTAL
TYPE IV	COTTAGE TYPE IV STUDIO (4 UNITS)	4 EA 16 TOTAL
TYPE V	COTTAGE TYPE V 1&2 BEDROOM (2 UNITS)	40 EA 80 TOTAL
TYPE VI (3 BEDROOM)	COTTAGE TYPE VI 3 BEDROOM (2 UNITS)	12 EA 24 TOTAL
		176 TOTAL



TYPICAL BUILDING SETBACK DETAIL
SETBACKS PER SILVER OAKS VILLAGE PUD
PARCEL K ALTERNATIVE STANDARDS
NTS



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NO	DATE	REVISIONS
1	10-10-2023	ADDED ADDITIONAL OFF-SITE PARKING DETAIL AND PARKING COUNT PER CITY COMMENTS. GENERAL LAYOUT REVISIONS. ADDED BUILDING SETBACK DETAIL PER CITY COMMENTS.

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PHONE: (719) 598-5190 - EMAIL: BPEELE@GOODWINKNIGHT.COM

PROJECT NAME: COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME: SITE PLAN (1)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	11 OF 42

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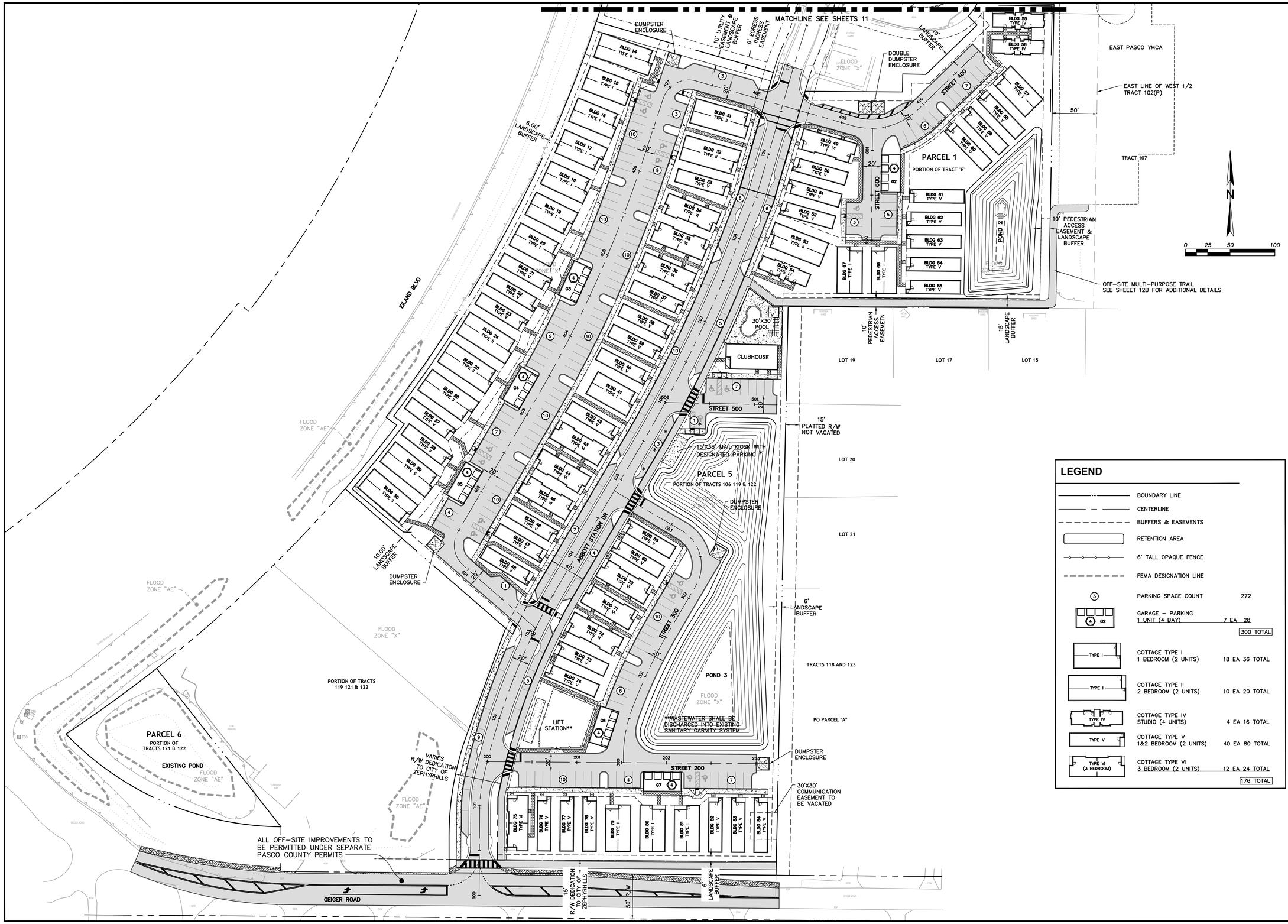

LEGEND

	BOUNDARY LINE	
	CENTERLINE	
	BUFFERS & EASEMENTS	
	RETENTION AREA	
	6' TALL OPAQUE FENCE	
	FEMA DESIGNATION LINE	
3	PARKING SPACE COUNT	272
4 G2	GARAGE – PARKING 1 UNIT (4 BAY)	7 EA 28
		300 TOTAL
TYPE I	COTTAGE TYPE I 1 BEDROOM (2 UNITS)	18 EA 36 TOTAL
TYPE II	COTTAGE TYPE II 2 BEDROOM (2 UNITS)	10 EA 20 TOTAL
TYPE IV	COTTAGE TYPE IV STUDIO (4 UNITS)	4 EA 16 TOTAL
TYPE V	COTTAGE TYPE V 1&2 BEDROOM (2 UNITS)	40 EA 80 TOTAL
TYPE VI (3 BEDROOM)	COTTAGE TYPE VI 3 BEDROOM (2 UNITS)	12 EA 24 TOTAL
		176 TOTAL

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PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
SITE PLAN (2)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	12 OF 42

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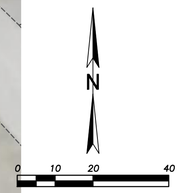
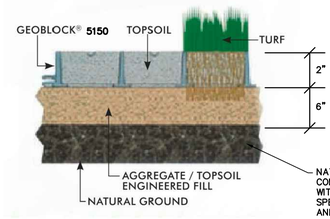


GEOBLOCK® SYSTEM CROSS SECTION:

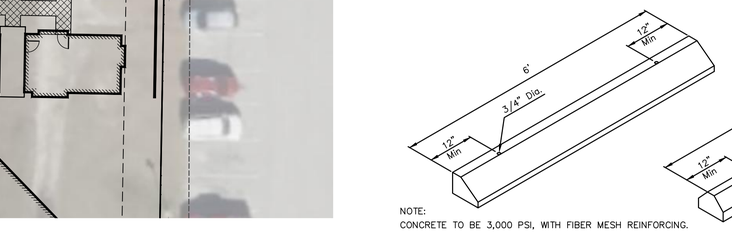


NOTES:

1. SUITABLE TOPSOIL SHOULD BE A GOOD QUALITY, DRAINABLE SOIL AND NOT BE COMPACTED WITHIN THE GEOBLOCK® UNIT.THE TOPSOIL SHOULD BE PULVERIZED PRIOR TO FILLING THE GEOBLOCK® CELLS AND CONTAIN SUFFICIENT ORGANIC CONTENT TO SUPPORT VEGETATIVE GROWTH. TOPSOIL SUCH AS SANDY LOAM IS RECOMMENDED. CLAY AND CLAY LOAM MATERIAL ARE NOT RECOMMENDED.
2. A RECOMMENDED 'ENGINEERED BASE' IS A HOMOGENOUS MIXTURE CONSISTING OF 1) A CLEAR-STONE/CRUSHED ROCK HAVING AN AASHTO # 5 OR SIMILAR DESIGNATION BLENDED WITH 2) PULVERIZED TOPSOIL AND 3) A VOID COMPONENT GENERALLY CONTAINING AIR AND/OR WATER. THIS HOMOGENOUS MIXTURE WILL PROMOTE VEGETATIVE GROWTH AND PROVIDE REQUIRED STRUCTURAL SUPPORT.
3. THE AGGREGATE PORTION SHALL HAVE A PARTICLE RANGE FROM 9.5 TO 25 MM (0.375 TO 1.0 IN) WITH A D50 OF 13 MM (0.5 IN). THE PERCENTAGE VOID-SPACE OF THE AGGREGATE PORTION WHEN COMPACTED SHALL BE AT LEAST 30%. THE PULVERIZED TOPSOIL PORTION SHALL EQUAL 25% +/- OF THE TOTAL VOLUME AND BE ADDED AND BLENDED TO PRODUCE A HOMOGENOUS MIXTURE PRIOR TO PLACEMENT. ONCE PLACED, THE MIXTURE SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
4. SAW-CUT PAVEMENT AT INTERFACE EDGE TO PROPOSED RIBBON CURB.

STABILIZED GRASS PARKING DETAIL NTS

THIS SECTION TO BE UTILIZED TO CONSTRUCT PARKING IN GRASSED AREAS

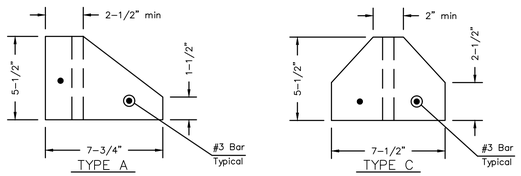


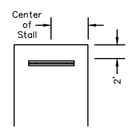
NOTES:

1. CURB TO BE CONSTRUCTED OF 28 DAY 3,000 PSI CONCRETE.
2. CONSTRUCTION JOINT REQUIRED EVERY 10' MAXIMUM.
3. SUB-BASE TO BE COMPACTED AND TESTED TO 98% MINIMUM DENSITY WITH LBR-40 BASED ON AASHTO T-180 MODIFIED PROCTOR TEST.

RIBBON CURB DETAIL NTS

NOTE:
CONCRETE TO BE 3,000 PSI, WITH FIBER MESH REINFORCING.





NOTES:

1. WHEEL STOPS TO BE PLACED 2' BACK, AS SHOWN ABOVE. CENTERED IN THE PARKING STALL.
2. WHEEL STOPS CAN BE PAINTED IN A CONTRASTING COLOR SUCH AS GRAY, YELLOW OR BLACK. BLUE SHALL BE USED FOR HANDICAP PARKING STALLS.

REINFORCED CONCRETE WHEEL STOPS NTS

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PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
GRASS PARKING PLAN

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	12A OF 42

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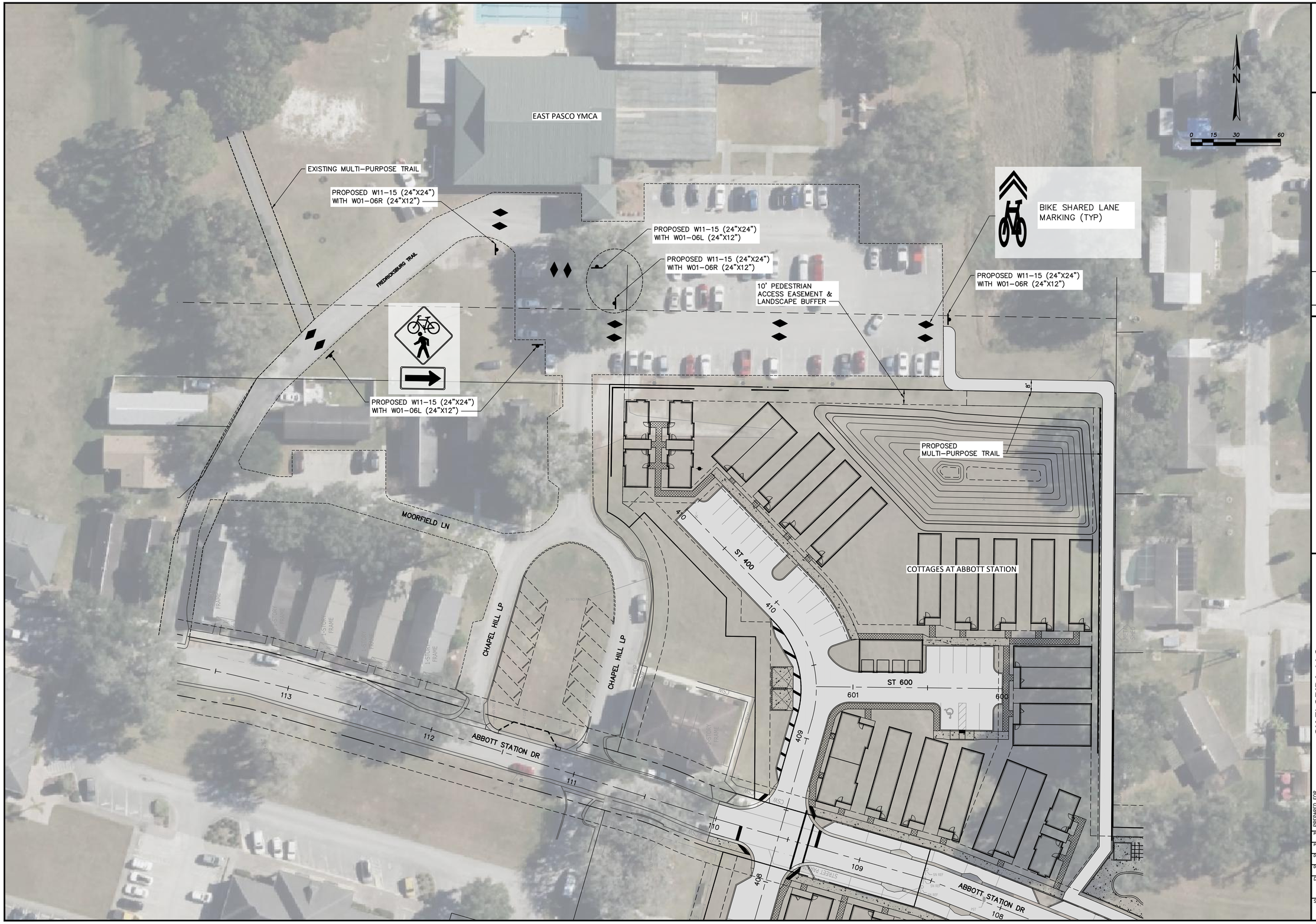

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PREPARED FOR

PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
OFF-SITE MULTI-PURPOSE TRAIL PLAN

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	12B OF 42

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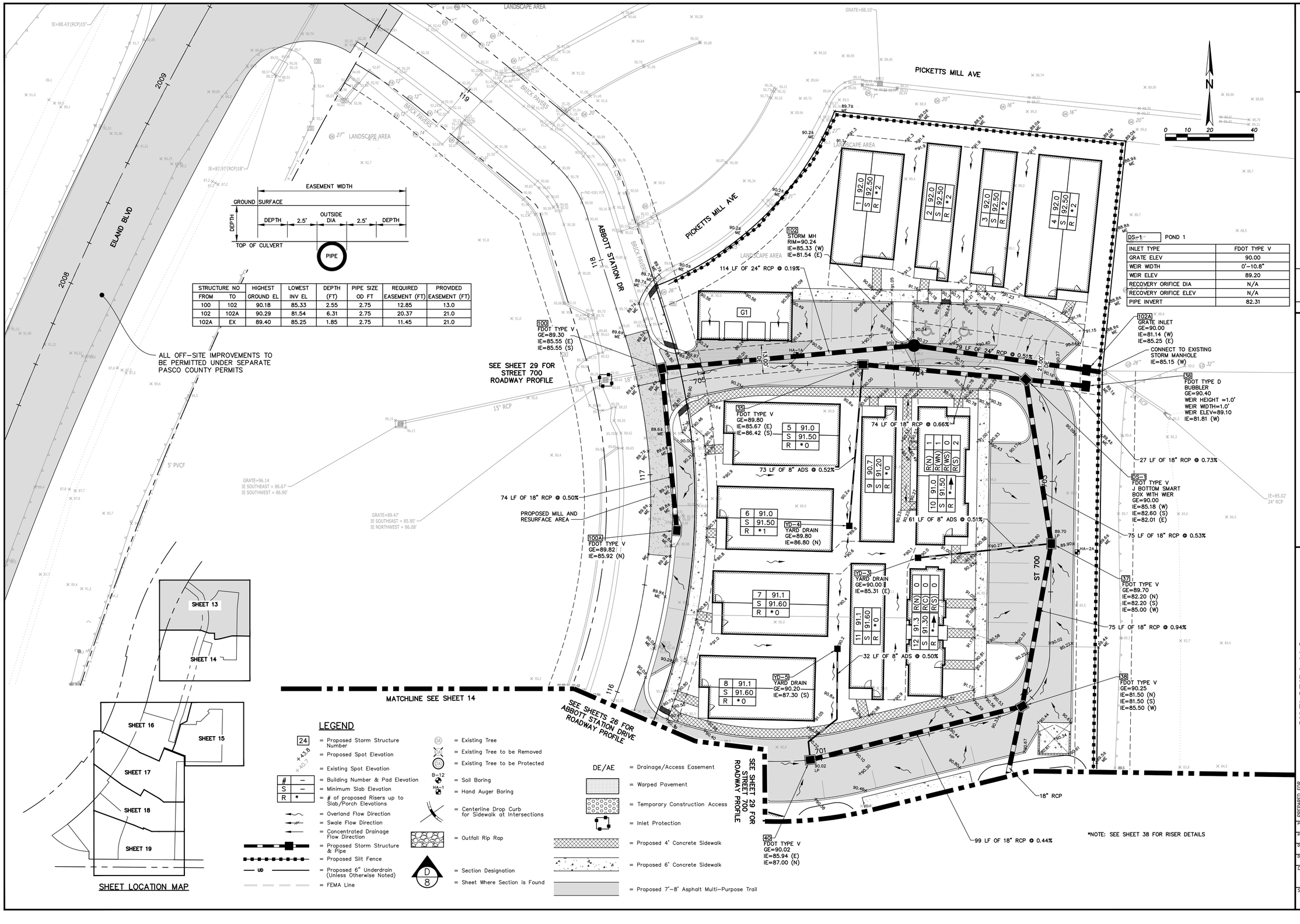

STRUCTURE NO		HIGHEST	LOWEST	DEPTH	PIPE SIZE	REQUIRED	PROVIDED
FROM	TO	GROUND EL	INV EL	(FT)	OD FT	EASEMENT (FT)	EASEMENT (FT)
100	102	90.18	85.33	2.55	2.75	12.85	13.0
102	102A	90.29	81.54	6.31	2.75	20.37	21.0
102A	EX	89.40	85.25	1.85	2.75	11.45	21.0

LEGEND

- 24 = Proposed Storm Structure Number
- +43.8 = Proposed Spot Elevation
- +43.7 = Existing Spot Elevation
- # = Building Number & Pad Elevation
- S = Minimum Slab Elevation
- R = # of proposed Risers up to Slab/Porch Elevations
- = Overland Flow Direction
- = Swale Flow Direction
- = Concentrated Drainage Flow Direction
- = Proposed Storm Structure & Pipe
- = Proposed Silt Fence
- UD = Proposed 6" Underdrain (Unless Otherwise Noted)
- = FEMA Line
- = Existing Tree
- = Existing Tree to be Removed
- = Existing Tree to be Protected
- B-12 = Soil Boring
- HA-1 = Hand Auger Boring
- = Centerline Drop Curb for Sidewalk at Intersections
- = Outfall Rip Rap
- D/8 = Section Designation
- = Sheet Where Section is Found
- DE/AE = Drainage/Access Easement
- = Warped Pavement
- = Temporary Construction Access
- = Inlet Protection
- = Proposed 4" Concrete Sidewalk
- = Proposed 6" Concrete Sidewalk
- = Proposed 7'-8" Asphalt Multi-Purpose Trail

SHEET LOCATION MAP

SHEET 13
SHEET 14
SHEET 15
SHEET 16
SHEET 17
SHEET 18
SHEET 19

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NO	DATE	REVISIONS
1	10-10-2023	GENERAL GRADING AND STORM STRUCTURE REVISIONS

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PHONE: (719) 598-5190 - EMAIL: BPEEL@GOODWINKNIGHT.COM

PROJECT NAME: COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME: PAVING, GRADING, & DRAINAGE PLAN (1)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	13 OF 42

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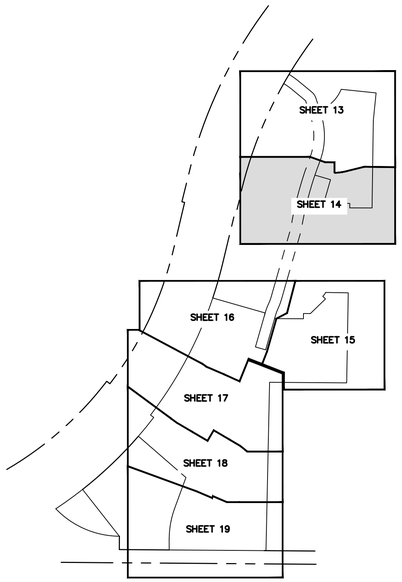

SHEET LOCATION MAP

LEGEND

- 24 = Proposed Storm Structure Number
- +43.8 = Proposed Spot Elevation
- ×43.7 = Existing Spot Elevation
- 13 | 91.2 / S | 91.70 / R | *0 = Building Number & Pad Elevation; Minimum Slab Elevation; # of proposed risers up to slab/porch elevations
- = Overland Flow Direction
- = Swale Flow Direction
- = Concentrated Drainage Flow Direction
- = Proposed Storm Structure & Pipe
- = Proposed Silt Fence
- UD = Proposed 6" Underdrain (Unless Otherwise Noted)
- = FEMA Line
- = Existing Tree
- = Existing Tree to be Removed
- = Existing Tree to be Protected
- B-12 = Soil Boring
- HA-1 = Hand Auger Boring
- = Centerline Drop Curb for Sidewalk at Intersections
- = Outfall Rip Rap
- = Warped Pavement
- D / 8 = Section Designation; Sheet Where Section is Found
- DE/AE = Drainage/Access Easement
- = Temporary Construction Access
- = Inlet Protection
- = Proposed 4' Concrete Sidewalk
- = Proposed 6' Concrete Sidewalk
- = Proposed 7'-8' Asphalt Multi-Purpose Trail

*NOTE: SEE SHEET 38 FOR RISER DETAILS

N

0 10 20 40

MATCHLINE SEE SHEET 13

SEE SHEETS 26 FOR ABBOTT STATION DRIVE ROADWAY PROFILE

SEE SHEET 29 FOR STREET 700 ROADWAY PROFILE

OPEN CUT AND PATCH TO FACILITATE UTILITIES INSTALLATION (MATCH EXISTING GRADE)

83 LF OF 18" RCP @ 0.36%

MASTER METER PAD (SEE UTILITITY PLANS FOR DETAILS)

YD-6 YARD DRAIN GE=89.70 IE=84.50 (SE)

39 FES IE=81.20 (N)

POND 1

33 LF OF 8" ADS @ 1.51%

D-1 11

P-1A 20

NODE / POND 1	
TOB	=90.6
DHW100-240	=89.67
DHW100-24	=89.35
BOTT	=84.0
SHW	=82.0

2-STORY FRAME

1-STORY FRAME

ASPHALT DRIVEWAY

ASPHALT PARKING

BRICK PAVERS

CONCRETE PARKING

ABBOTT STATION DRIVE

FREDERICKSBURG TRAIL

GRASS LINED SWALE VARIES
6" MIN.
4:1 MAX
4:1 MAX
3' BOTTOM

TYPICAL SWALE SECTION D-1 / 14
NTS

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NO	DATE	REVISIONS
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PROJECT NAME: COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME: PAVING, GRADING, & DRAINAGE PLAN (2)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	14 OF 42

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SHEET 13
SHEET 14
SHEET 16
SHEET 15
SHEET 17
SHEET 18
SHEET 19

SHEET LOCATION MAP

SEE SHEET 28 FOR STREET 400 ROADWAY PROFILE

SEE SHEET 16

MATCHLINE SEE SHEET 16

MATCHLINE SEE SHEET 17

CHAPEL HILL LOOP

BEGIN RETAINING WALL

PROPOSED 118 LF OF RETAINING WALL
(DESIGN BY OTHERS)
TOP OF WALL = 90.70
HEIGHT VARIES = 1.75'–2.7'

END RETAINING WALL

BEGIN RETAINING WALL

PROPOSED 25 LF OF RETAINING WALL
(DESIGN BY OTHERS)
TOP OF WALL = 90.4
HEIGHT VARIES = 1.6'–2.2'

END RETAINING WALL

END RETAINING WALL

FUTURE OFF–SITE MULTI–PURPOSE TRAIL (BY OTHERS)

PROPOSED 281 LF OF RETAINING WALL
(DESIGN BY OTHERS)
TOP OF WALL = VARIES
HEIGHT VARIES = 1.0'–3.6'

SEE SHEET 5 FOR A TYPICAL SECTION OF THE ASPHALT TRAIL

WALL DESIGN (BY OTHERS) TO ACCOUNT FOR POTENTIAL HORIZONTAL PERCOLATION THROUGH WALL AREA DURING STORM EVENTS

SEE SHEET 29 FOR STREET 600 ROADWAY PROFILE

YD–8
YARD DRAIN
GE=89.78
IE=86.88 (SW)

9 LF OF 8" ADS @ 0.50%

YD–8A
STORM MH
RIM=90.26
IE=86.84 (NE)
IE=87.00 (SE)
IE=84.05 (SW)

16 LF OF 8" ADS @ 1.23%

1 FDOT TYPE V
GE=90.10
IE=83.85 (SW)
IE=83.85 (NE)

2 FDOT TYPE V
GE=90.69
IE=81.35 (SE)
IE=83.60 (NE)
IE=81.35 (W)

4 FDOT TYPE V
GE=91.74
IE=81.55 (S)
IE=81.55 (E)
IE=85.52 (W)

7 FDOT TYPE V
GE=91.92
IE=86.80 (W)
IE=85.90 (E)

23 LF OF 8" ADS @ 1.30%

YD–7
YARD DRAIN
GE=90.50
IE=87.50 (SW)

15 LF OF 8" ADS @ 1.31%

77 LF OF 18" RCP @ 0.50%

42 LF OF 18" RCP @ 0.47%

88 LF OF 18" RCP @ 0.48%

135 LF OF 24" RCP @ 0.23%

99 LF OF 18" RCP @ 1.98%

3 FDOT TYPE V
GE=91.22
IE=83.50 (N)
IE=86.92 (S)

20 LF OF 8" ADS @ 2.54%

18 LF OF 8" ADS @ 0.71%

34 LF OF 8" ADS @ 0.44%

YD–9
YARD DRAIN
GE=91.50
IE=87.20 (E)

YD–10
YARD DRAIN
GE=91.36
IE=88.50 (N)

YD–12A
STORM MH
RIM=91.38
IE=87.05 (W)
IE=88.00 (S)
IE=87.05 (N)

34 FES
IE=81.04 (NW)

DS–2
GRATE INLET
GE=90.33
IE=85.60 (SE)

44 FES
IE=85.30 (NW)

15 LF OF 18" RCP @ 2.01%

POND 2

PB–2

HA–2

P–2
20

TW=92.30
TW=92.20
TW=92.20
TW=90.00
TW=89.60
TW=88.50

8' ASPHALT TRAIL
8' ASPHALT TRAIL

METAL SHED
WOODEN SHED
MASONRY SHED

49	92.9	R(W)	*1
S	93.40	R(NW)	*0
R		R(NE)	*0
		R(E)	*1
50	92.9		
S	93.40		
R	*1		
51	92.8		
S	93.30		
R	*1		
52	92.6		
S	93.10		
R	*0		
53	93.0		
S	93.50		
R	*1		
55	91.8		
S	92.30		
R	*0		
55	91.8		
S	92.30		
R	*1		
56	91.8		
S	92.30		
R	*0		
56	91.8		
S	92.30		
R	*1		
57	91.8		
S	92.10		
R	*1		
58	91.6		
S	92.10		
R	*0		
59	91.6		
S	92.10		
R	*0		
60	91.7		
S	92.20		
R	*1		
61	92.5		
S	93.00		
R	*0		
62	92.5		
S	93.00		
R	*0		
63	92.2		
S	92.70		
R	*0		
64	92.2		
S	92.70		
R	*0		
65	92.2		
S	92.70		
R	*0		
66	92.3		
S	92.80		
R	*1		
67	92.3		
S	92.80		
R	*0		

NODE / POND 2

TOB	=90.5
$DHW_{100-240}$	=89.89
DHW_{100-24}	=89.16
BOTT	=83.0
SHW	=80.2

DS–2 POND 2

INLET TYPE	MOD. FDOT TYPE D
GRATE ELEV	90.33
WEIR WIDTH	0'–9"
WEIR ELEV	89.25
RECOVERY ORIFICE DIA	N/A
RECOVERY ORIFICE ELEV	N/A
PIPE INVERT	85.60

LEGEND

- 24 = Proposed Storm Structure Number
- +43.8 = Proposed Spot Elevation
- +40.1 = Existing Spot Elevation
- 56 | 91.8 / S | 92.30 / R | *1 = Building Number & Pad Elevation / Minimum Slab Elevation / # of proposed Risers up to Slab/Porch Elevations
- = Overland Flow Direction
- = Swale Flow Direction
- = Concentrated Drainage Flow Direction
- = Proposed Storm Structure & Pipe
- = Proposed Silt Fence
- UD = Proposed 6" Underdrain (Unless Otherwise Noted)
- = FEMA Line
- 24 = Existing Tree
- = Existing Tree to be Removed
- 24 = Existing Tree to be Protected
- B–12 = Soil Boring
- HA–1 = Hand Auger Boring
- = Centerline Drop Curb for Sidewalk at Intersections
- = Outfall Rip Rap
- D / 8 = Section Designation / Sheet Where Section is Found
- DE/AE = Drainage/Access Easement
- = Temporary Construction Access
- = Inlet Protection
- = Proposed 4' Concrete Sidewalk
- = Proposed 6' Concrete Sidewalk
- = Proposed 7'–8' Asphalt Multi–Purpose Trail
- = Warped Pavement

0 10 20 40

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NO	DATE	REVISIONS
1	10–10–2023	GENERAL GRADING AND STORM STRUCTURE REVISIONS

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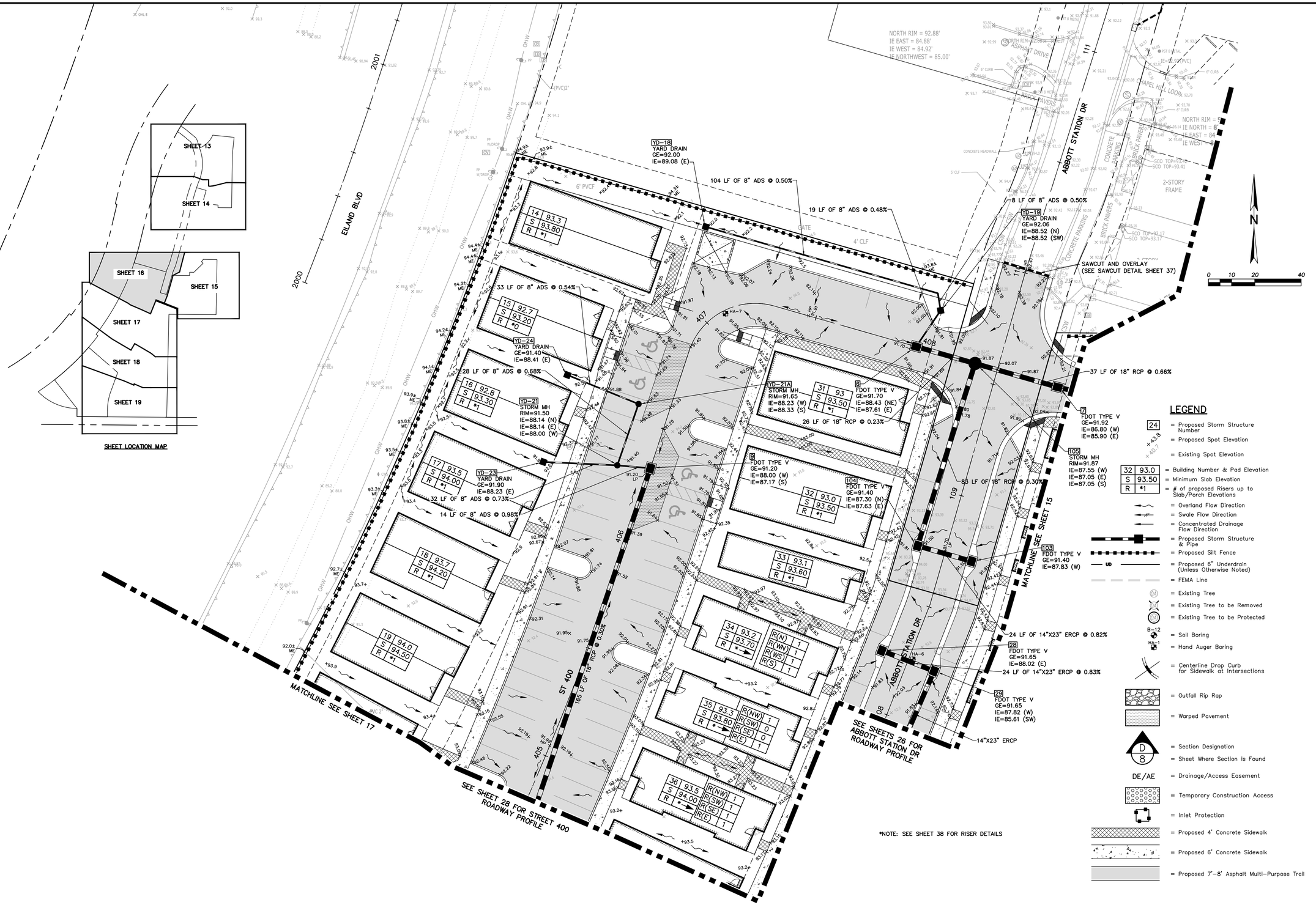
PHONE: (719) 598–5190 - EMAIL: BPEELE@GOODWINKNIGHT.COM

PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
PAVING, GRADING, & DRAINAGE PLAN (3)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	15 OF 42

Oct 10, 2023 @ 11:53pm P:\1089\Pro\Plots\ConstDocs\Plans\1089–GK–PP003.dwg – rpogan



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NO	DATE	REVISIONS
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PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
PAVING, GRADING, & DRAINAGE PLAN (4)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	16 OF 42

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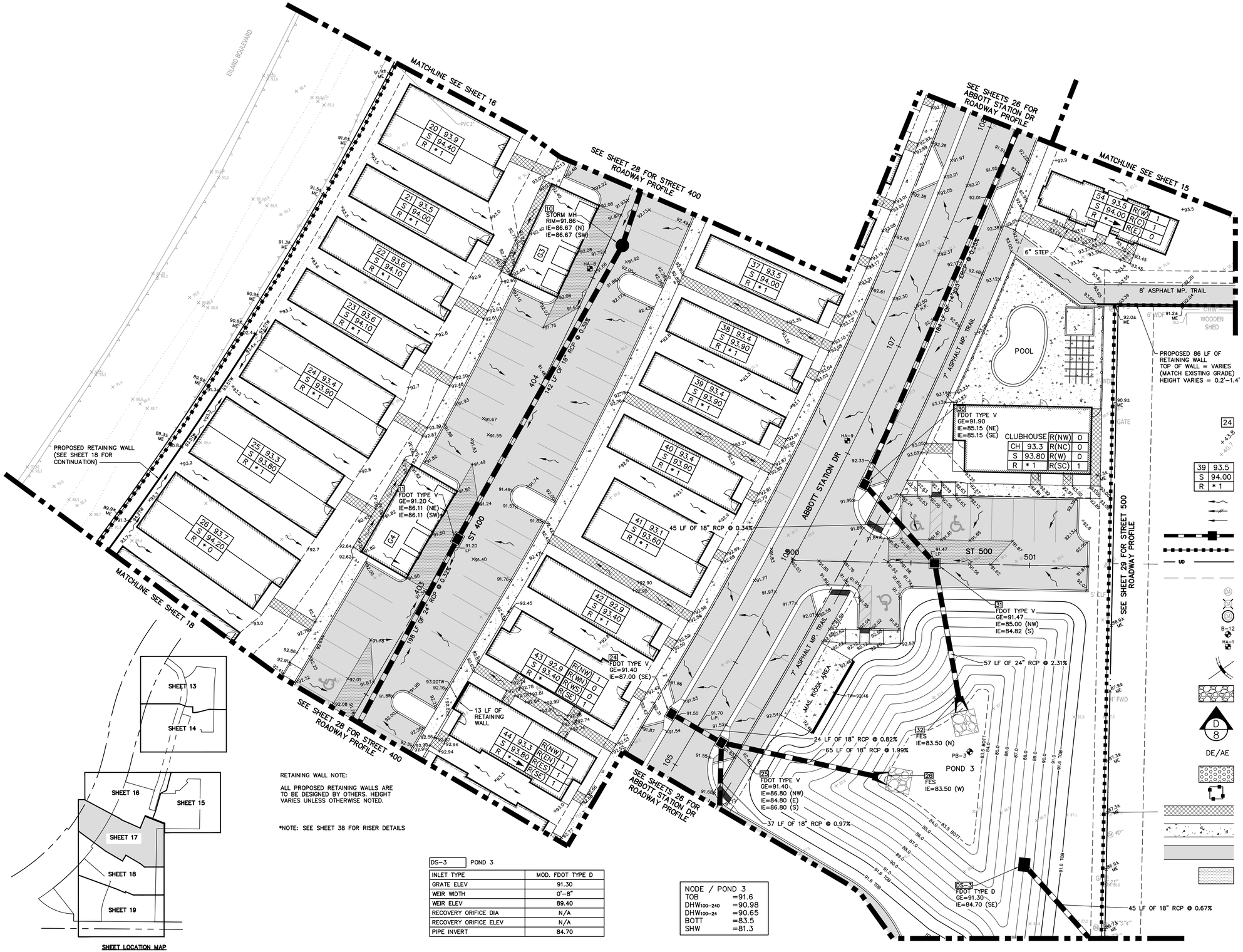

RETAINING WALL NOTE:

ALL PROPOSED RETAINING WALLS ARE TO BE DESIGNED BY OTHERS. HEIGHT VARIES UNLESS OTHERWISE NOTED.

*NOTE: SEE SHEET 38 FOR RISER DETAILS

DS-3	POND 3
INLET TYPE	MOD. FDOT TYPE D
GRATE ELEV	91.30
WEIR WIDTH	0'-8"
WEIR ELEV	89.40
RECOVERY ORIFICE DIA	N/A
RECOVERY ORIFICE ELEV	N/A
PIPE INVERT	84.70

NODE / POND 3	
TOB	=91.6
$DHW_{100-240}$	=90.98
DHW_{100-24}	=90.65
BOTT	=83.5
SHW	=81.3

SHEET LOCATION MAP

LEGEND

- 24 = Proposed Storm Structure Number
- +43.6 = Proposed Spot Elevation
- +40.7 = Existing Spot Elevation
- 39 / S 94.00 / R *1 = Building Number & Pad Elevation, Minimum Slab Elevation, # of proposed Risers up to Slab/Porch Elevation
- = Overland Flow Direction
- = Swale Flow Direction
- = Concentrated Drainage Flow Direction
- = Proposed Storm Structure & Pipe
- = Proposed Silt Fence
- UD = Proposed 6" Underdrain (Unless Otherwise Noted)
- = FEMA Line
- (DA) = Existing Tree
- = Existing Tree to be Removed
- (DA) = Existing Tree to be Protected
- B-12 = Soil Boring
- HA-1 = Hand Auger Boring
- = Centerline Drop Curb for Sidewalk at Intersections
- = Outfall Rip Rap
- D / 8 = Section Designation, Sheet Where Section is Found
- DE/AE = Drainage/Access Easement
- = Temporary Construction Access
- = Inlet Protection
- = Proposed 4' Concrete Sidewalk
- = Proposed 6' Concrete Sidewalk
- = Proposed 7'-8' Asphalt Multi-Purpose Trail
- = Warped Pavement

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PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
PAVING, GRADING, & DRAINAGE PLAN (5)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	17 OF 42

Oct 10, 2023 @ 11:54pm P:\1089\Proj\Data\ConstDocs\Plans\1089-DK-PP025.dwg - ftoppan

LEGEND

- 24 = Proposed Storm Structure Number
- +43.8 / +40.1 = Proposed Spot Elevation
- = Existing Spot Elevation
- 27 | 94.0 = Building Number & Pad Elevation
- S | 94.50 = Minimum Slab Elevation
- R | *0 = # of proposed Risers up to Slab/Porch Elevations
- = Overland Flow Direction
- = Swale Flow Direction
- = Concentrated Drainage Flow Direction
- = Proposed Storm Structure & Pipe
- = Proposed Silt Fence
- UD = Proposed 6" Underdrain (Unless Otherwise Noted)
- = FEMA Line
- = Existing Tree
- = Existing Tree to be Removed
- = Existing Tree to be Protected
- B-12 / HA-1 = Soil Boring / Hand Auger Boring
- = Centerline Drop Curb for Sidewalk at Intersections
- = Outfall Rip Rap
- = Warped Pavement
- D / 8 = Section Designation / Sheet Where Section is Found
- DE/AE = Drainage/Access Easement
- = Temporary Construction Access
- = Inlet Protection
- = Proposed 4" Concrete Sidewalk
- = Proposed 6" Concrete Sidewalk
- = Proposed 7'-8' Asphalt Multi-Purpose Trail

N

0 10 20 40

EILAND BLVD

PROPOSED 334 LF OF RETAINING WALL
TOP OF WALL = VARIES
HEIGHT VARIES = 0.2'-3.7'

RETAINING WALL NOTE:

ALL PROPOSED RETAINING WALLS ARE TO BE DESIGNED BY OTHERS. HEIGHT VARIES UNLESS OTHERWISE NOTED.

99 GRATE INLET
GE=90.70
IE=86.40 (SW)
IE=87.30 (SE)

62 LF OF 8" ADS @ 0.49%

YD-26 YARD DRAIN
GE=90.50
IE=87.60 (NW)

SEE SHEET 28 FOR STREET 400 ROADWAY PROFILE

MATCHLINE SEE SHEET 17

198 LF OF 24" RCP @ 0.32%

ST 400

13 LF OF RETAINING WALL
TW EL=93.80

15 LF OF RETAINING WALL

12 GRATE INLET
GE=91.41
IE=85.48 (NE)
IE=85.48 (SE)

94 LF OF 30" RCP @ 0.30%

13 FDOT TYPE V
GE=91.28
IE=85.14 (NW)
IE=85.14 (S)
IE=86.97 (SW)

17 LF OF 8" ADS @ 0.44%

YD-27 YARD DRAIN
GE=91.90
IE=87.04 (NE)

35 LF OF 30" RCP @ 0.35%

14 FDOT TYPE V
GE=91.10
IE=85.02 (N)
IE=85.02 (S)
IE=86.80 (SE)

129 LF OF 30" RCP @ 0.35%

24 LF OF 18" RCP @ 0.82%

23 FDOT TYPE V
GE=91.10
IE=87.00 (NW)

SEE SHEETS 26 FOR ABBOTT STATION DR ROADWAY PROFILE

MATCHLINE SEE SHEET 19

ABBOTT STATION DR

7' ASPHALT MP. TRAIL

STREET 300

SEE SHEETS 26 FOR ABBOTT STATION DR ROADWAY PROFILE

37 LF OF 18" RCP @ 0.97%

27 FDOT TYPE V
GE=91.56
IE=87.16 (N)

10 LF OF 18" RCP @ -0.50%

10 LF OF 18" RCP @ -0.50%

SERIES OF BUBBLER BOXES FOR ALLOWABLE DISCHARGE (TYP)

41 FDOT TYPE D BUBBLER
GE=88.30
WEIR HEIGHT=1.6
WEIR WIDTH=1.0
WEIR ELEV=86.7
IE=84.40 (NW)
IE=84.40 (S)

42 FDOT TYPE D BUBBLER
GE=88.30
WEIR HEIGHT=1.6
WEIR WIDTH=1.0
WEIR ELEV=86.7
IE=84.45 (N)
IE=84.45 (S)

43 FDOT TYPE D BUBBLER
GE=88.30
WEIR HEIGHT=1.6
WEIR WIDTH=1.0
WEIR ELEV=86.7
IE=84.50 (N)

45 FDOT TYPE D
GE=91.53
IE=84.12 (S)

62 LF OF 18" RCP @ 1.00%

46 FDOT TYPE D
GE=85.29
IE=83.50 (N)

18 FDOT TYPE V
GE=91.20
IE=83.70 (S)
IE=83.70 (SE)

48 LF OF 36" RCP @ 0.42%

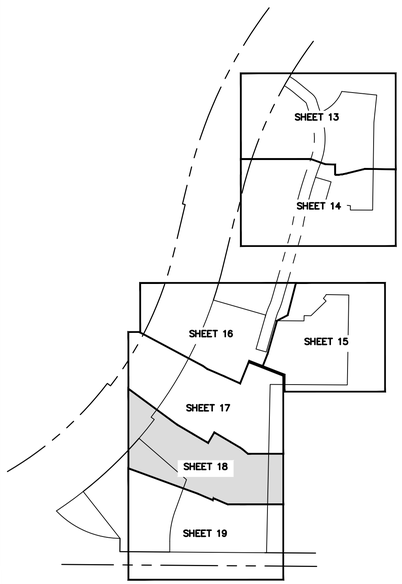
33 FES
IE=83.50 (NW)

POND 3

NODE / POND 3	
TOB	=91.6
DHW100-240	=90.98
DHW100-24	=90.65
BOTT	=83.5
SHW	=81.3

*NOTE: SEE SHEET 38 FOR RISER DETAILS

SHEET LOCATION MAP



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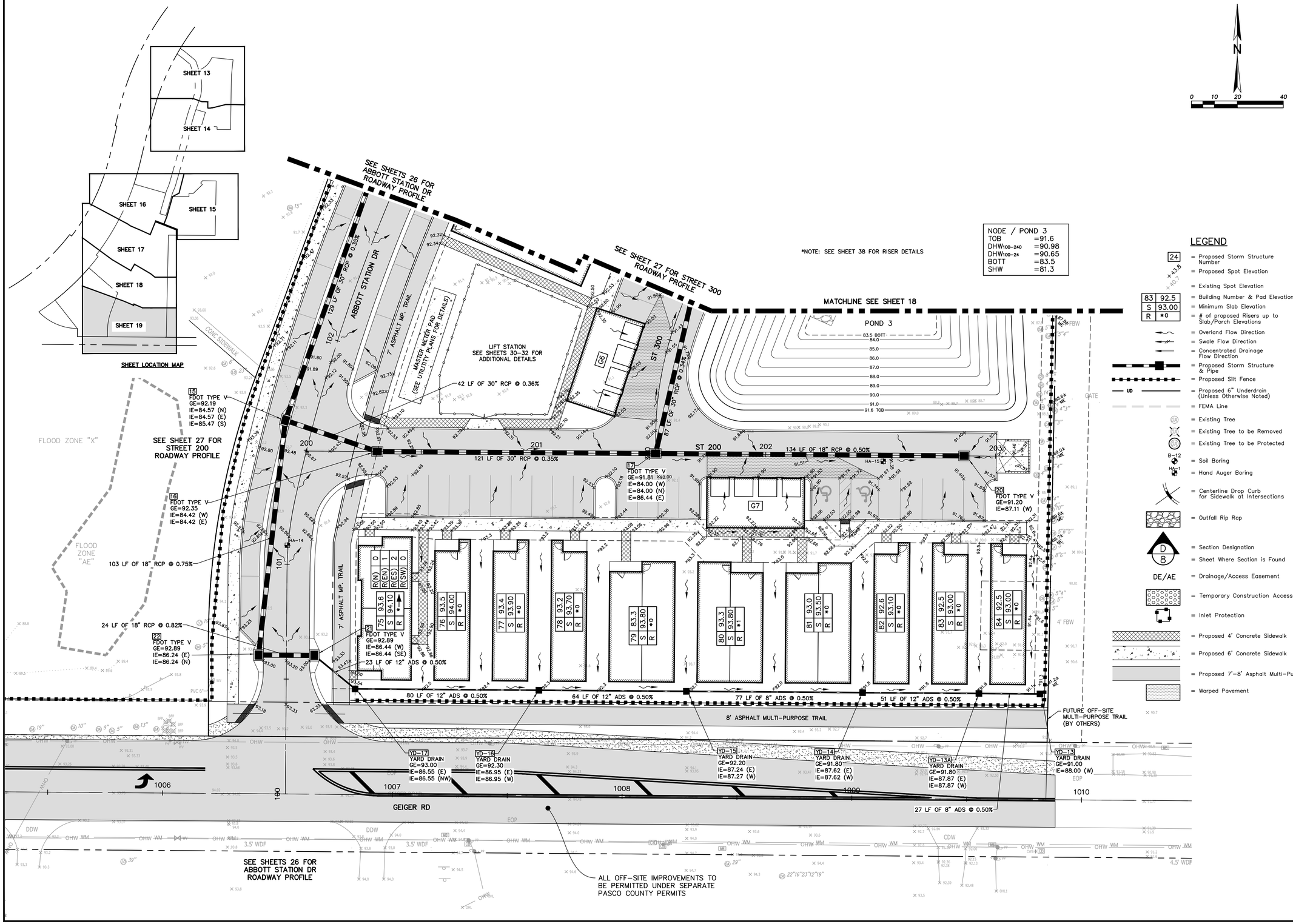
PROJECT NAME: COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME: PAVING, GRADING, & DRAINAGE PLAN (6)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	18 OF 42

P-3A 20

Oct 10, 2023 @ 11:55am P:\1089\ProBoth\ConstDocs\Plans\1089-DR-PP026.dwg - rpapin



LEGEND

- 24 = Proposed Storm Structure Number
- +43.8 / 40.7 = Proposed Spot Elevation
- = Existing Spot Elevation
- 83 | 92.5; S | 93.00; R | *0 = Building Number & Pad Elevation, Minimum Slab Elevation, # of proposed Risers up to Slab/Porch Elevations
- = Overland Flow Direction
- = Swale Flow Direction
- = Concentrated Drainage Flow Direction
- = Proposed Storm Structure & Pipe
- = Proposed Silt Fence
- UD = Proposed 6" Underdrain (Unless Otherwise Noted)
- = FEMA Line
- = Existing Tree
- = Existing Tree to be Removed
- = Existing Tree to be Protected
- B-12 = Soil Boring
- HA-1 = Hand Auger Boring
- = Centerline Drop Curb for Sidewalk at Intersections
- = Outfall Rip Rap
- D/8 = Section Designation, Sheet Where Section is Found
- DE/AE = Drainage/Access Easement
- = Temporary Construction Access
- = Inlet Protection
- = Proposed 4' Concrete Sidewalk
- = Proposed 6' Concrete Sidewalk
- = Proposed 7'-8' Asphalt Multi-Purpose Trail
- = Warped Pavement

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PHONE: (719) 598-5190 - EMAIL: BPEELE@GOODWINKNIGHT.COM

PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
PAVING, GRADING, & DRAINAGE PLAN (7)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	19 OF 42

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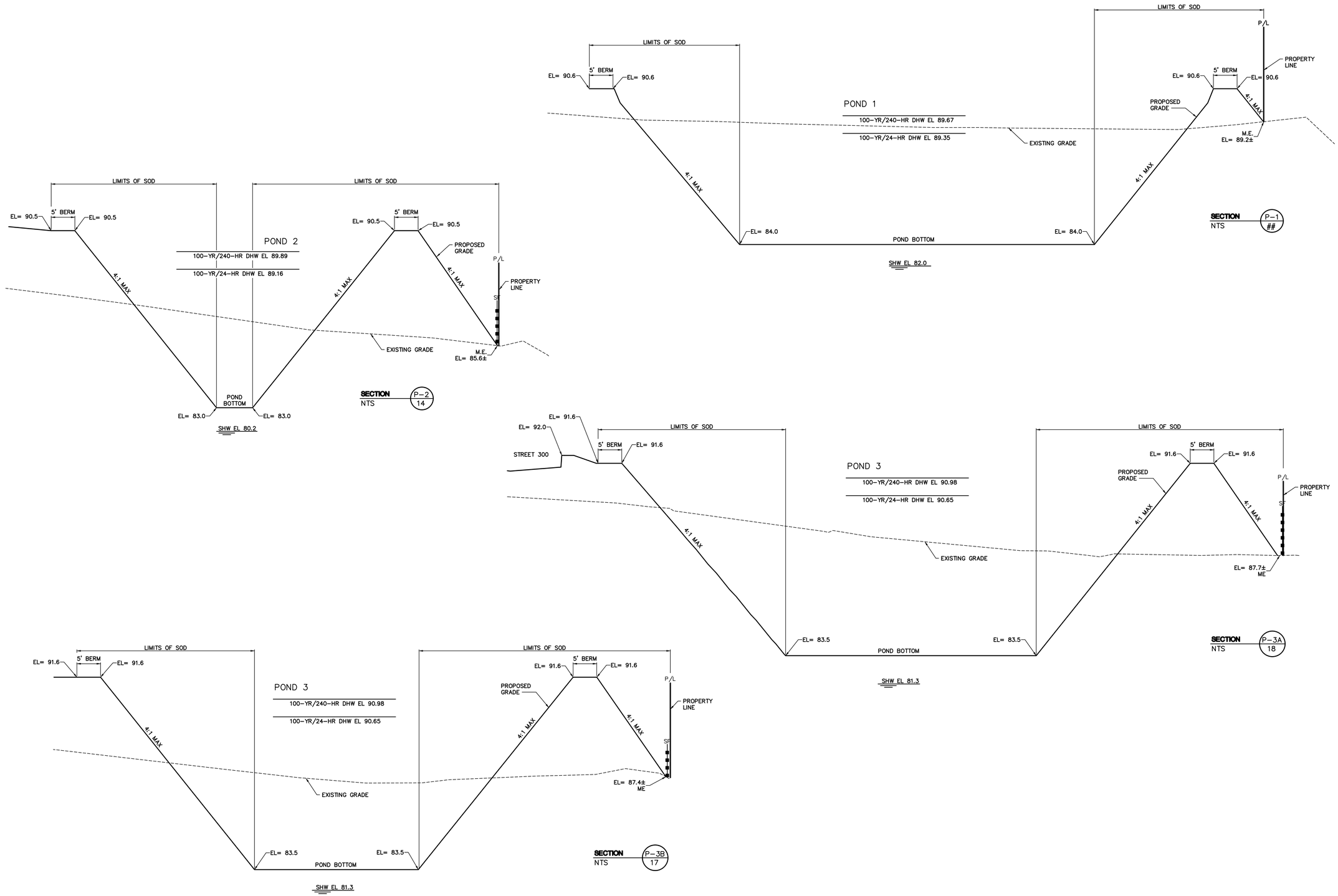

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NO	DATE	REVISIONS

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PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
GRADING CROSS SECTIONS

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	20 OF 42

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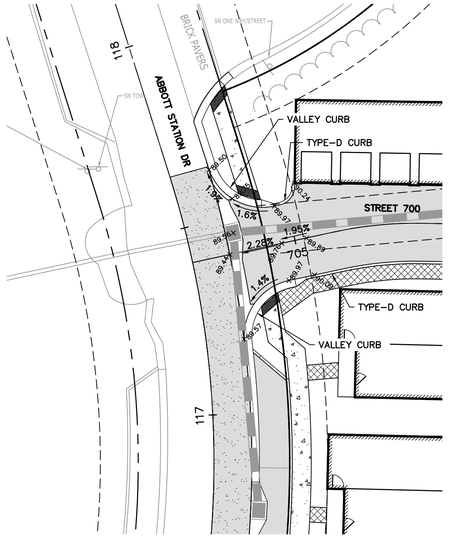
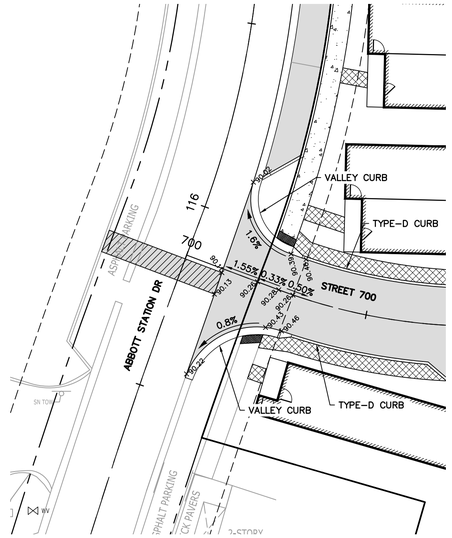
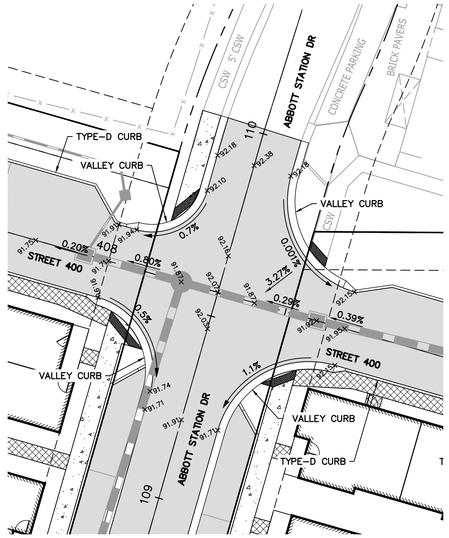


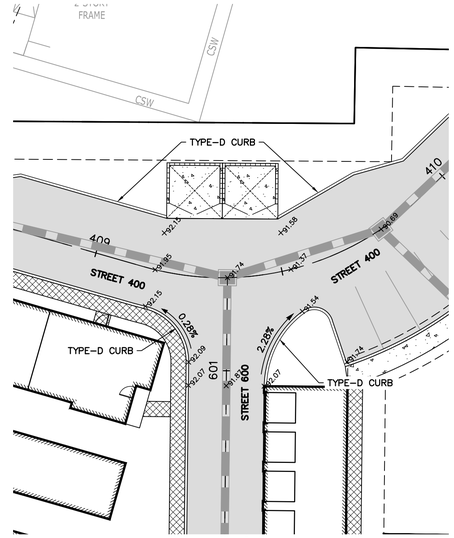
INTERSECTION OF ABBOTT STATION DRIVE
AND STREET 700



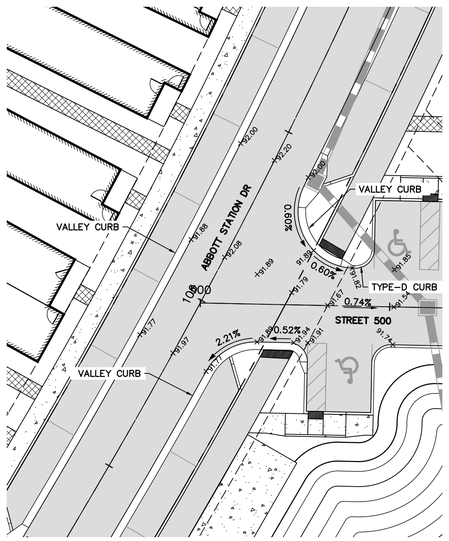
INTERSECTION OF ABBOTT STATION DRIVE
AND STREET 700



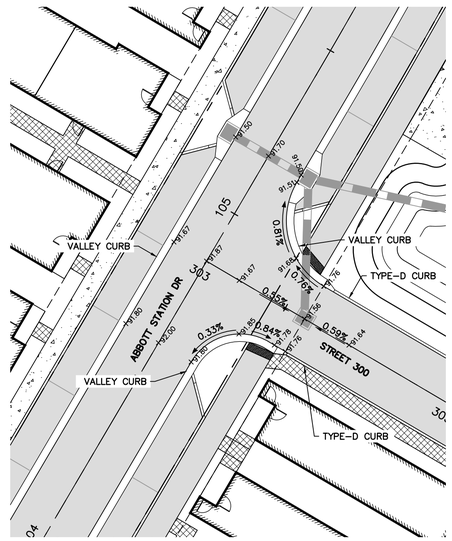
INTERSECTION OF ABBOTT STATION DRIVE
AND STREET 400



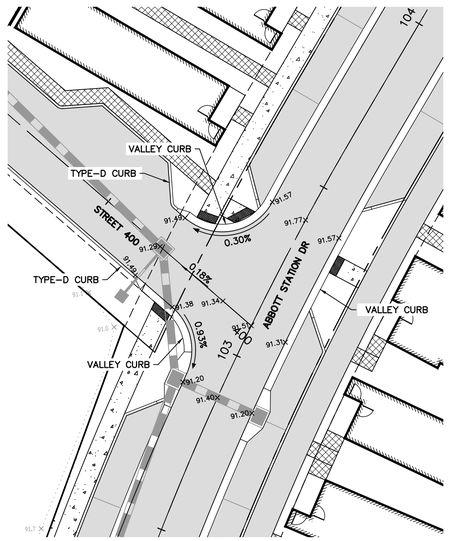
INTERSECTION OF STREET 600
AND STREET 400



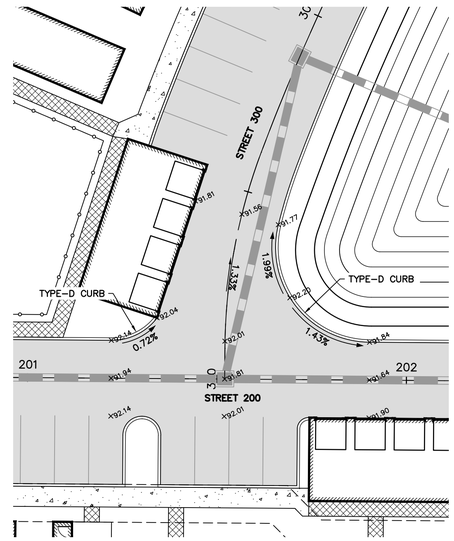
INTERSECTION OF ABBOTT STATION DRIVE
AND STREET 500



INTERSECTION OF ABBOTT STATION DRIVE
AND STREET 300



INTERSECTION OF ABBOTT STATION DRIVE
AND STREET 400



INTERSECTION OF STREET 300
AND STREET 200

0' 10' 20'
SCALE: 1"= 20'

NORTH AND SCALE APPLICABLE TO ALL PLAN VIEWS UNLESS OTHERWISE NOTED.

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NO	DATE	REVISIONS
1	10-10-2023	GENERAL GRADING REVISIONS

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Survey # LB8342

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PHONE: (719) 598-5190 - EMAIL: BPEELE@GOODWINKNIGHT.COM

PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
INTERSECTION GRADING PLANS

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	21 OF 42

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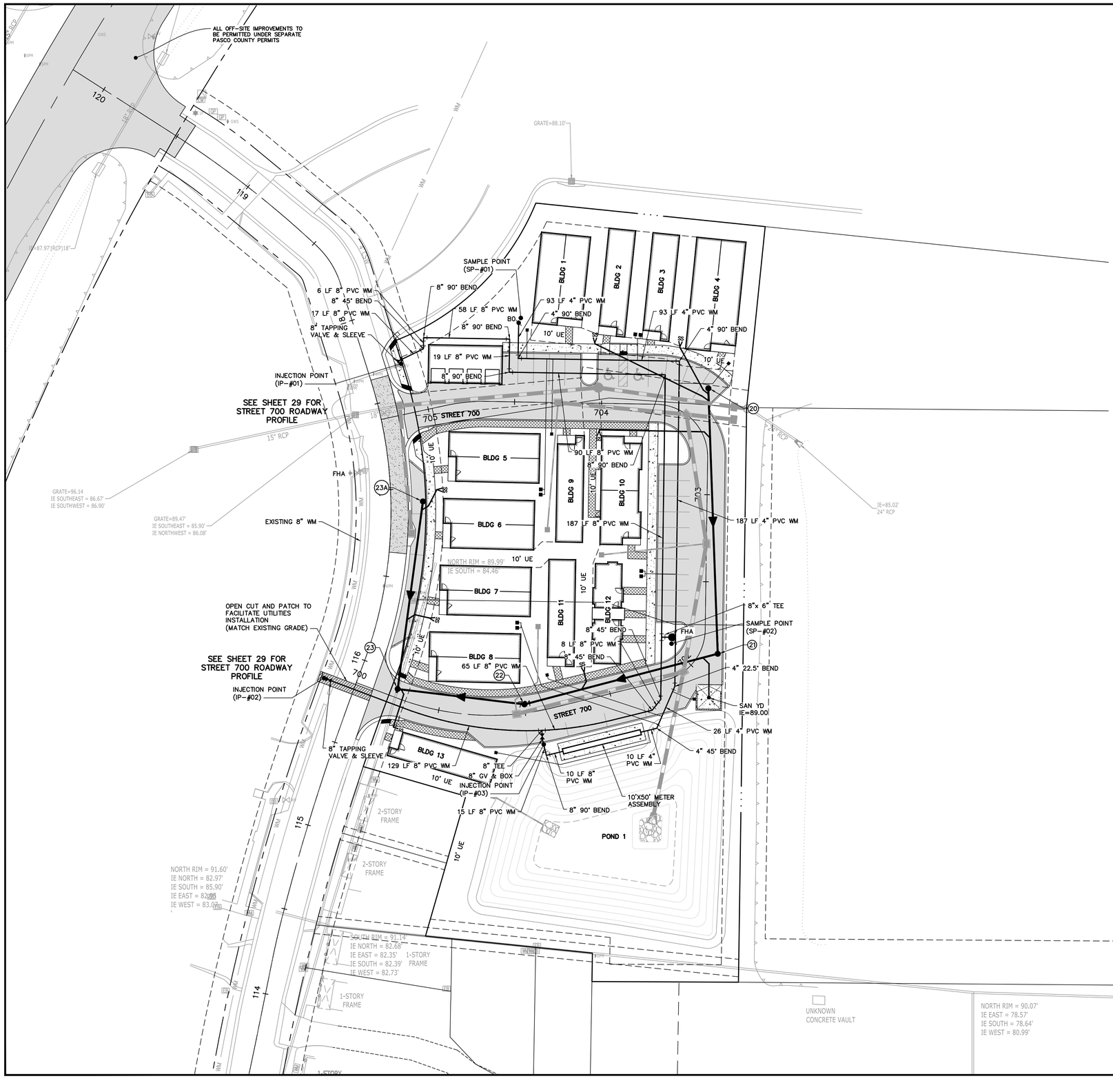

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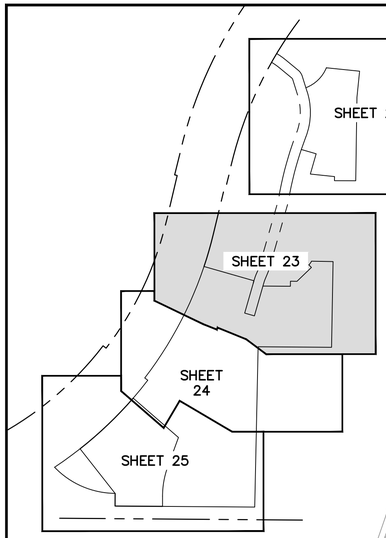
PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
UTILITY PLAN (1)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	22 OF 42

Oct 10, 2023 @ 1:58pm P:\1089\Pro-Plots\ConstDocs\Plans\1089-GK-PUTL1.dwg - rpippin



SHEET LOCATION MAP

LEGEND

- = Proposed Fire Line, & Valve
- = Proposed Water Line, Valve, & Services
- FM = Proposed Force Main
- WM = Existing Water Line & Valve
- FM = Existing Force Main
- S = Proposed Storm Sewer
- S CO S S = Proposed Sanitary Sewer & Services/Cleanout
- (50) = Proposed Sanitary Sewer Manhole Number
- FHA = Proposed Fire Hydrant Assembly (See Paving, Grading, And Drainage Plans For Finished Grade Elevation)
- BO = Proposed Blowoff Assembly
- = Existing Fire Hydrant
- CIP = Chlorine Injection Point
- SP = Sample Point

✳ LOTS WITH THIS ASTERISK HAVE A SANITARY SEWER LATERAL THAT CROSSES OVER THE TOP OF THE STORM PIPE

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PROJECT NAME: COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN
SHEET NAME: UTILITY PLAN (2)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	23 OF 42

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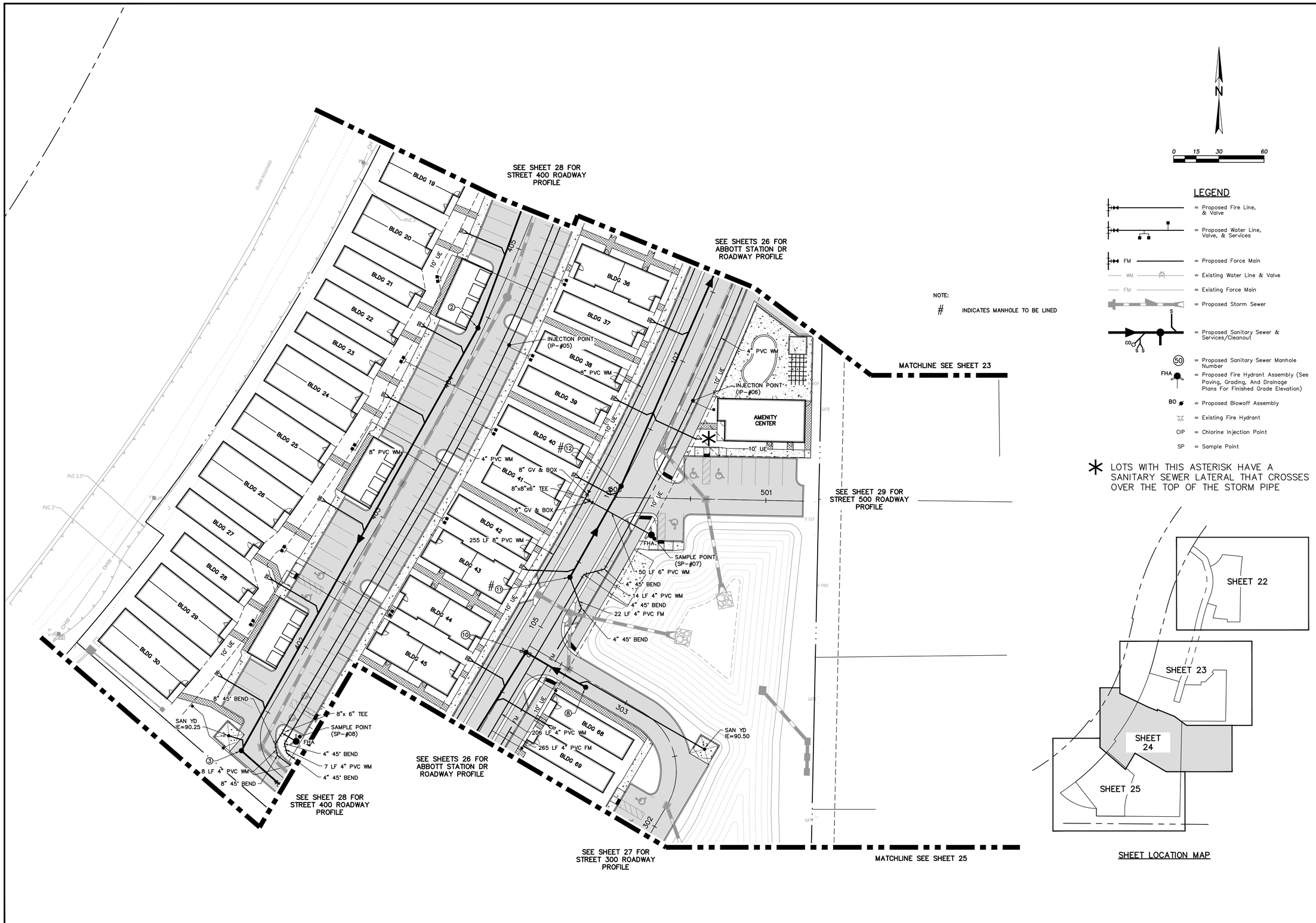

NOTE:

# INDICATES MANHOLE TO BE LINED

0 15 30 60

LEGEND

- = Proposed Fire Line, & Valve
- = Proposed Water Line, Valve, & Services
- FM = Proposed Force Main
- WM = Existing Water Line & Valve
- FM = Existing Force Main
- = Proposed Storm Sewer
- = Proposed Sanitary Sewer & Services/Cleanout
- 50 = Proposed Sanitary Sewer Manhole Number
- FHA = Proposed Fire Hydrant Assembly (See Paving, Grading, And Drainage Plans For Finished Grade Elevation)
- BO = Proposed Blowoff Assembly
- = Existing Fire Hydrant
- CIP = Chlorine Injection Point
- SP = Sample Point

* LOTS WITH THIS ASTERISK HAVE A SANITARY SEWER LATERAL THAT CROSSES OVER THE TOP OF THE STORM PIPE

SHEET LOCATION MAP

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NO	DATE	REVISIONS
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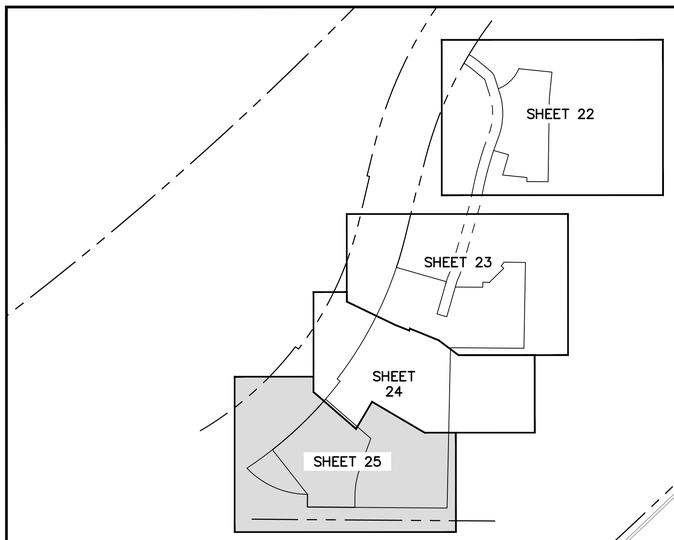
PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
UTILITY PLAN (3)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	24 OF 42

Oct 10, 2023 @ 1:59pm P:\1089\Proj\Data\ConstDocs\Plans\1089-GK-PUTIL3.dwg - rpogan



SHEET LOCATION MAP

MATCHLINE SEE SHEET 24

SEE SHEETS 28 FOR STREET 400 ROADWAY PROFILE

SEE SHEETS 26 FOR ABBOTT STATION DR ROADWAY PROFILE

SEE SHEETS 27 FOR STREET 300 ROADWAY PROFILE

SEE SHEET 27 FOR STREET 200 ROADWAY PROFILE

LEGEND

- = Proposed Fire Line, & Valve
- = Proposed Water Line, Valve, & Services
- FM = Proposed Force Main
- WM = Existing Water Line & Valve
- FM = Existing Force Main
- = Proposed Storm Sewer
- = Proposed Sanitary Sewer & Services/Cleanout
- (50) = Proposed Sanitary Sewer Manhole Number
- FHA = Proposed Fire Hydrant Assembly (See Paving, Grading, And Drainage Plans For Finished Grade Elevation)
- BO = Proposed Blowoff Assembly
- = Existing Fire Hydrant
- CIP = Chlorine Injection Point
- SP = Sample Point

N

0 15 30 60

91 LF 8" PVC WM
8" GV & BOX
DROP MH (5A) RIM=92.35 IE=88.68 (W) IE=82.52 (E)
8" TEE
CONNECT TO EXISTING 4" PVC @ MH INV= 88.68±
23 LF OF 8" PVC @ 1.28%
4" 90° BEND
37 LF 4" PVC WM
218 LF 8" PVC WM
40 LF 8" PVC WM
8" TEE
8" GV & BOX
144 LF 8" PVC WM
6"x 8" REDUCER
6" GV & BOX
8"x 6" TAPPING SLEEVE
INJECTION POINT (SP-#08)
INJECTION POINT (SP-#07)
10'X50' METER ASSEMBLY
8" 22.5° BEND
8"x 6" TEE
107 LF 8" PVC WM
99 LF 4" PVC WM
4" 22.5° BEND
99 LF 4" PVC WM
51 LF 8" PVC WM
110 LF 4" PVC WM
4" PVC WM
4" GV & BOX
4" TEE
100 LF 4" PVC WM
4" PVC FM
4" 45° BEND
7 LF 4" PVC FM
4" 45° BEND
22 LF 4 PVC FM
4" 45° BEND
9 LF 4" PVC FM
4" 90° BEND
4" TEE
6'(MIN)
4" 45° BEND
20 LF 4" PVC FM
4" GV & BOX
8" 22.5° BEND
8" 90° BEND
4" 90° BEND
86 LF 4" PVC WM
95 LF 4" PVC WM
9 LF 4" PVC WM
4" 90° BEND
107 LF 8" PVC WM
SAMPLE POINT (SP-#09)
8"x 6" REDUCER
SAMPLE POINT (SP-#10)
ALL OFF-SITE IMPROVEMENTS TO BE PERMITTED UNDER SEPARATE PASCO COUNTY PERMITS
SAN YD IE=89.80
BLDG 46
BLDG 47
BLDG 48
BLDG 70
BLDG 71
BLDG 72
BLDG 73
BLDG 74
BLDG 75
BLDG 76
BLDG 77
BLDG 78
BLDG 79
BLDG 80
BLDG 81
BLDG 82
BLDG 83
BLDG 84
STREET 400
ABBOTT STATION DR
STREET 300
STREET 200
10' UE
CONC SIDEWALK
ELAND BOULEVARD
GEIGER ROAD
CONC PARKING
CARWASH BAY
SN HOSPITAL
SN 45MPH
1002
1003
1004
1005
1006
1007
1008
1009
1010

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Survey # LB8342

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800 EXPLORER DRIVE, SUITE 250
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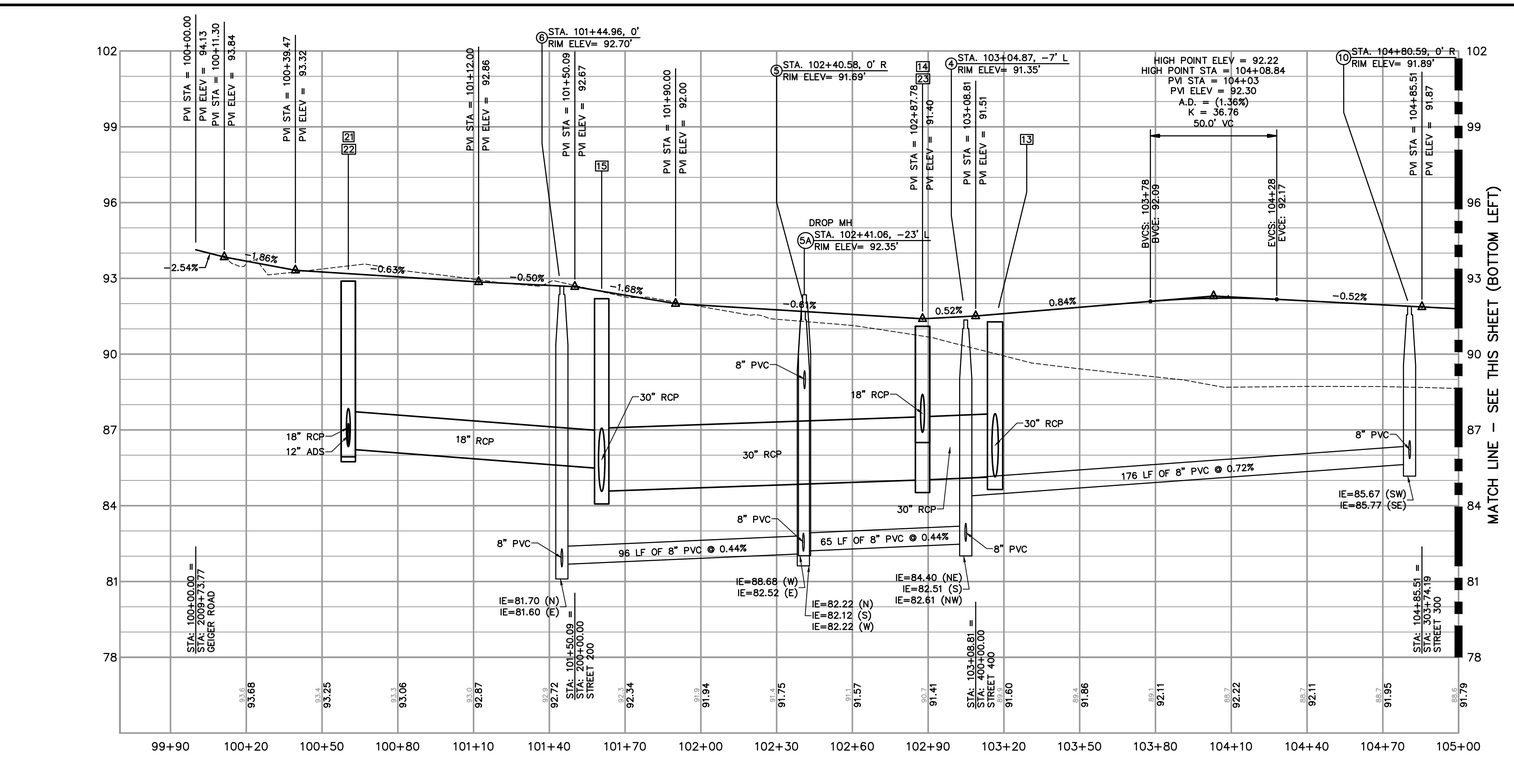
PHONE: (719) 598-5190 - EMAIL: BREELE@GODDVINKNIGHT.COM

PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

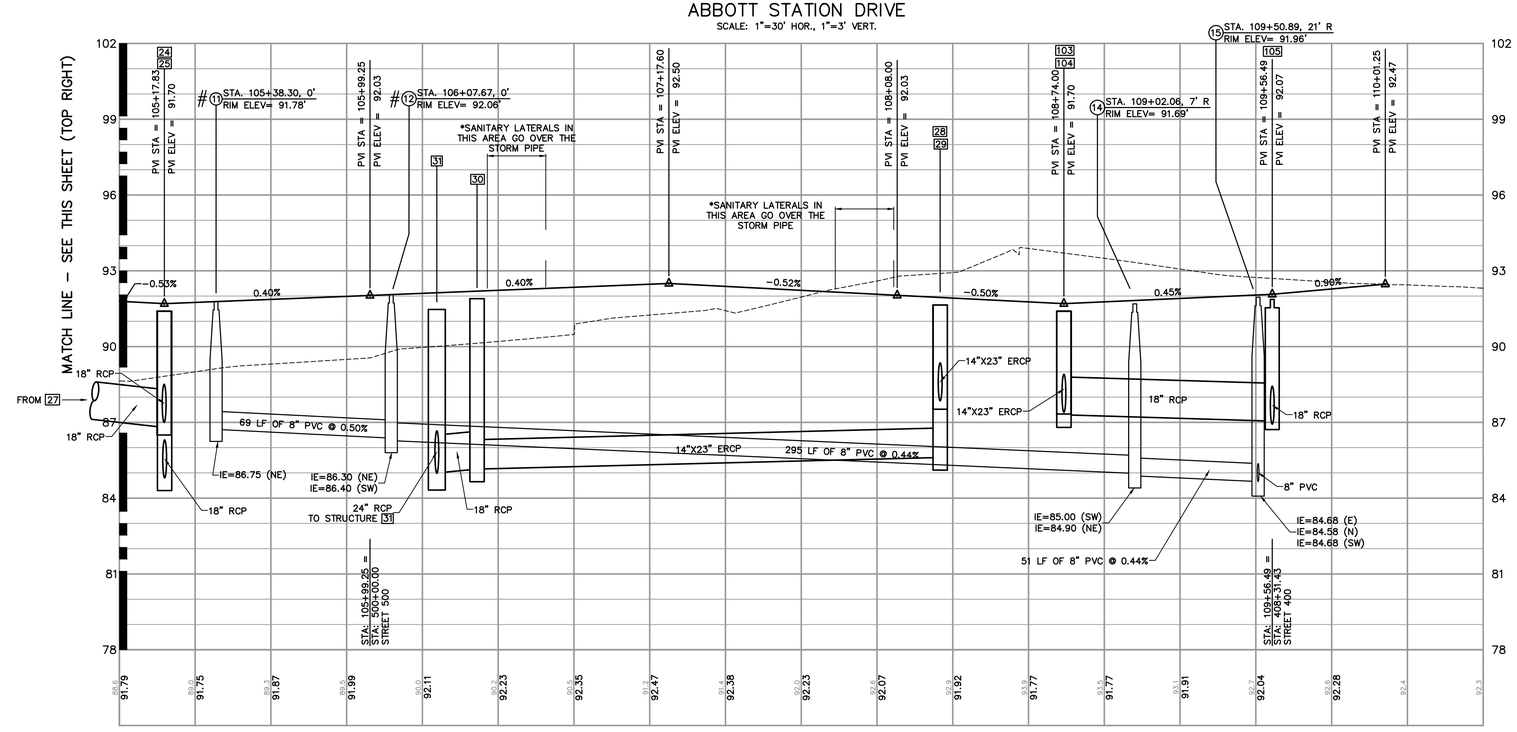
SHEET NAME
UTILITY PLAN (4)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	25 OF 42

Oct 10, 2023 @ 1:39pm P:\1089\Proj\Data\ConstDocs\Plans\1089-GK-PUTL4.dwg - rpogon



ABBOTT STATION DRIVE
SCALE: 1"=30' HOR., 1"=3' VERT.



ABBOTT STATION DRIVE
SCALE: 1"=30' HOR., 1"=3' VERT.

NOTE:
# INDICATES MANHOLE TO BE LINED

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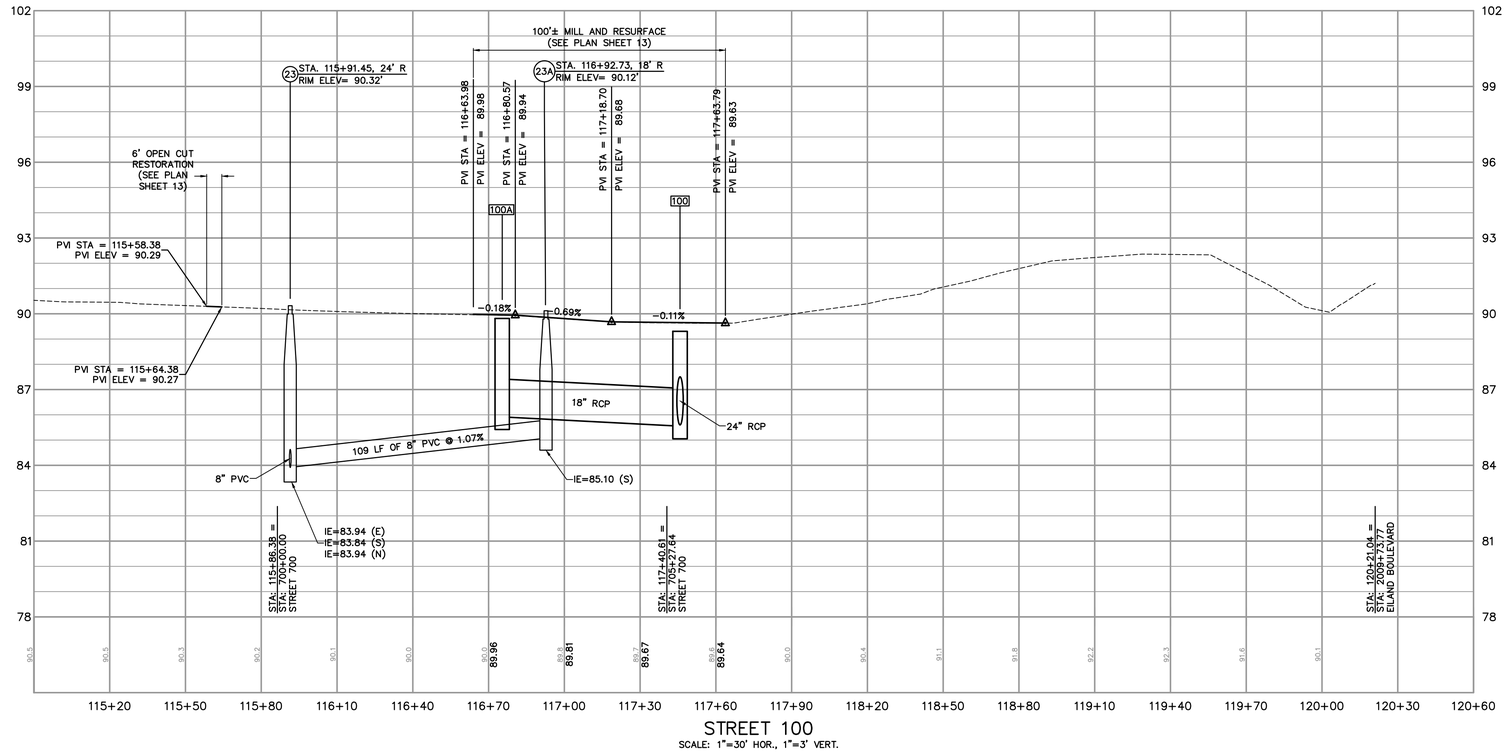
PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

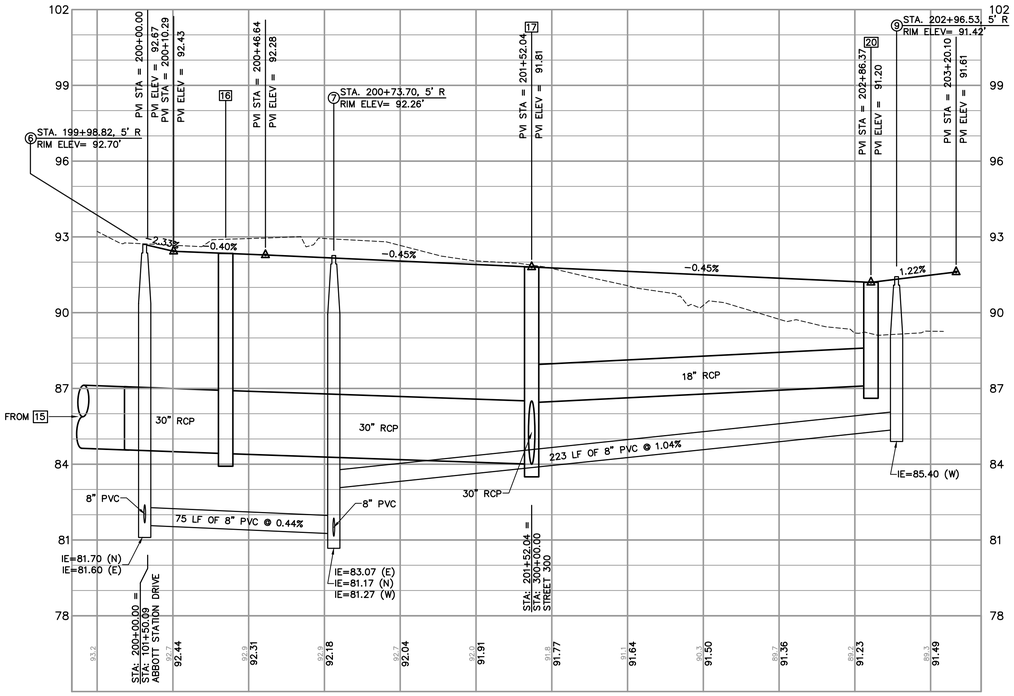
SHEET NAME
ROADWAY PROFILE (1)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	26 OF 42

Oct 10, 2023 @ 2:20pm P:\1089\ProData\Construtcion\Plans\1089-GK-PPROF.dwg - rpogon



STREET 100
SCALE: 1"=30' HOR., 1"=3' VERT.



STREET 200
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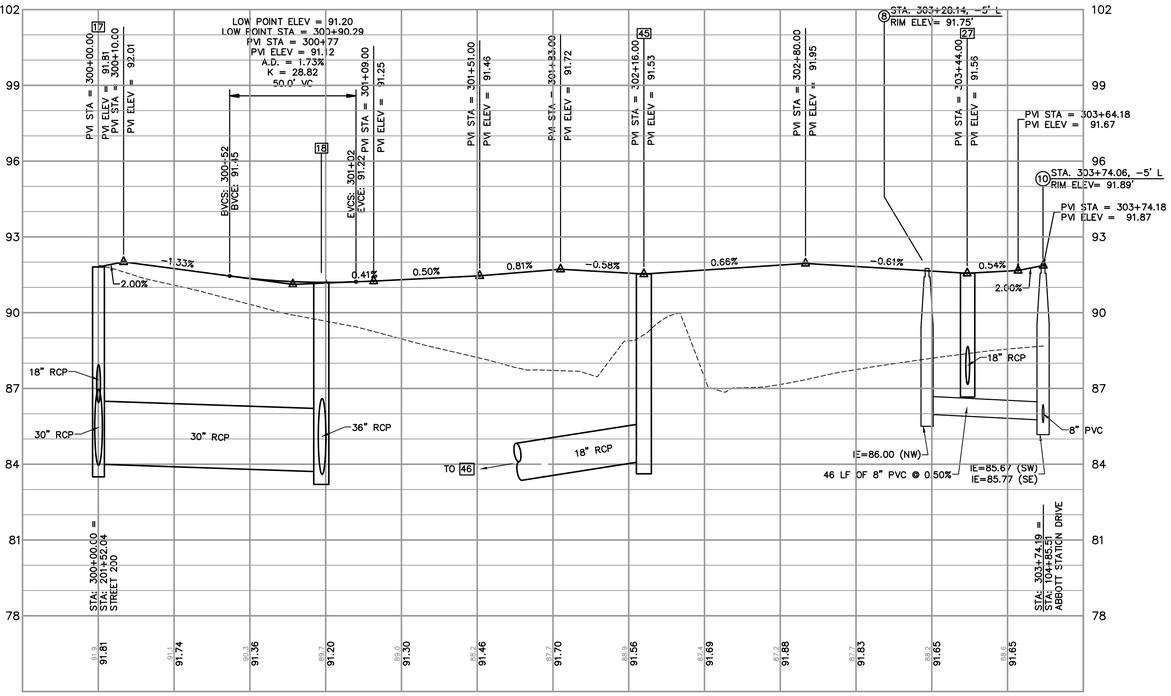

STREET 300
SCALE: 1"=30' HOR., 1"=3' VERT.

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Engineer # 55925
Survey # 6813242

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9696 EASTCHESTER DRIVE, SUITE 250
COLORADO SPRINGS, CO 80920
PHONE: (719) 598-5190 - EMAIL: BPEELE@GOODWINKNIGHT.COM

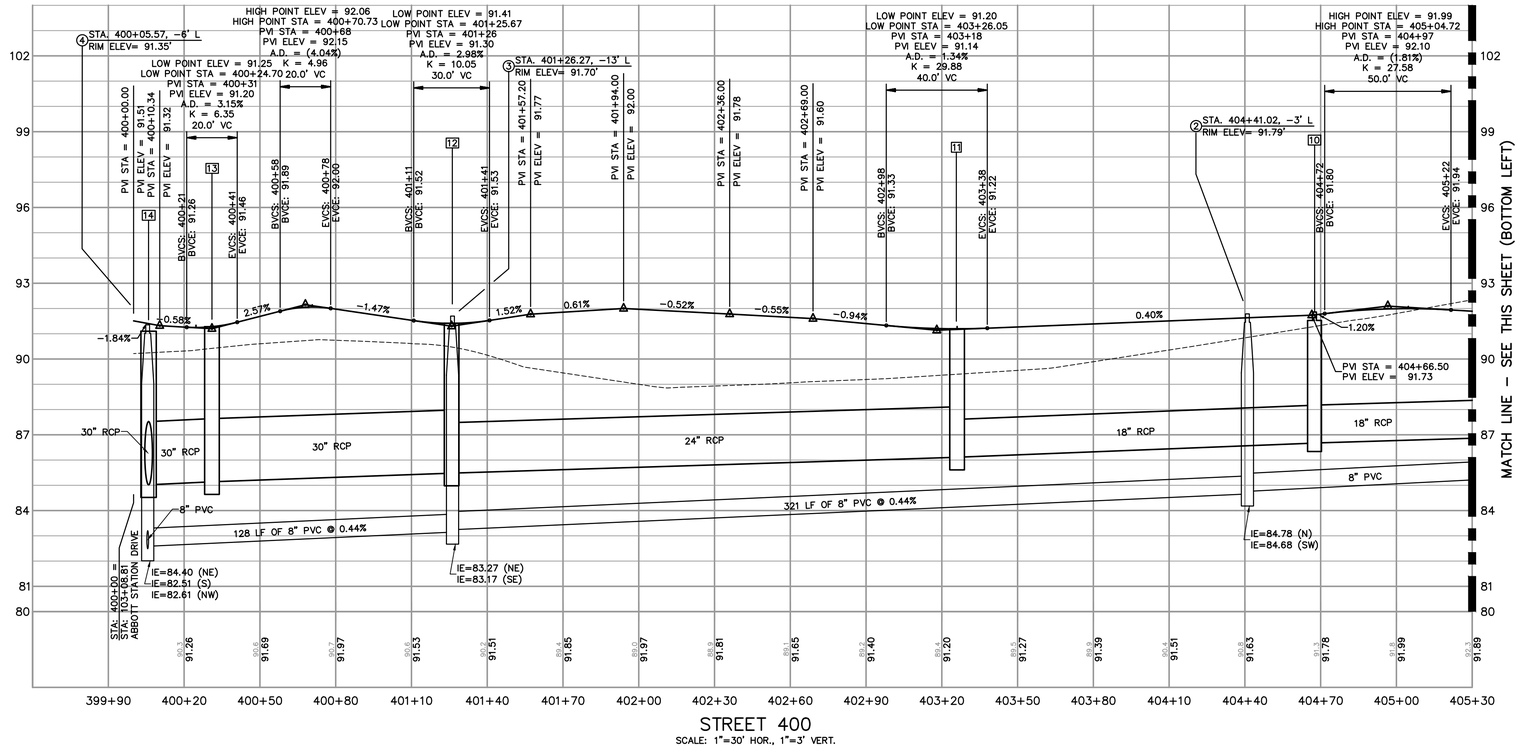
PREPARED FOR

PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

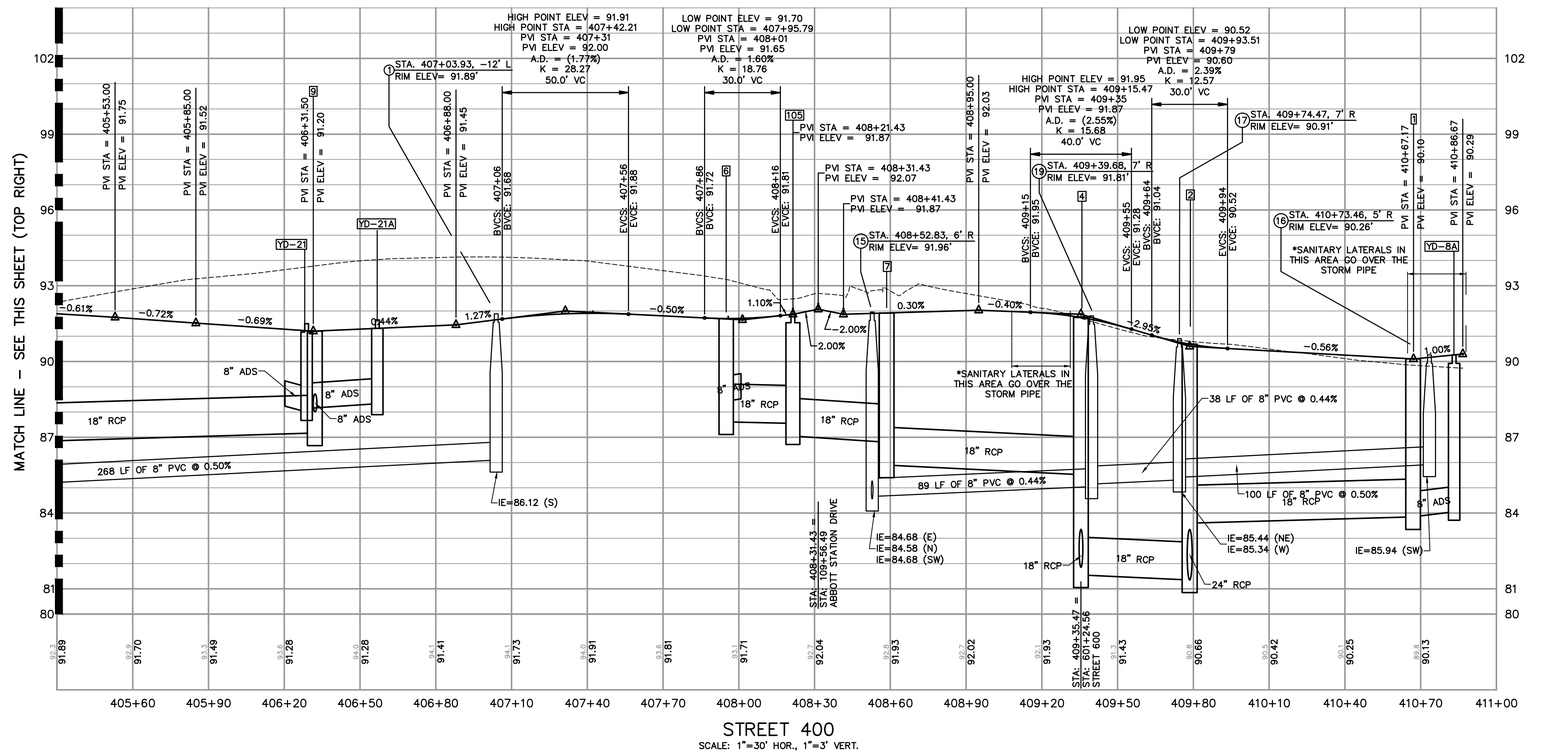
SHEET NAME
ROADWAY PROFILE (2)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	27 OF 42

Oct 10, 2023 @ 2:00pm P:\1089\ProjData\Construction\Plans\1089-GK-PPROF.dwg - rpogon



STREET 400
SCALE: 1"=30' HOR., 1"=3' VERT.



STREET 400
SCALE: 1"=30' HOR., 1"=3' VERT.

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PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
ROADWAY PROFILE (3)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	28 OF 42

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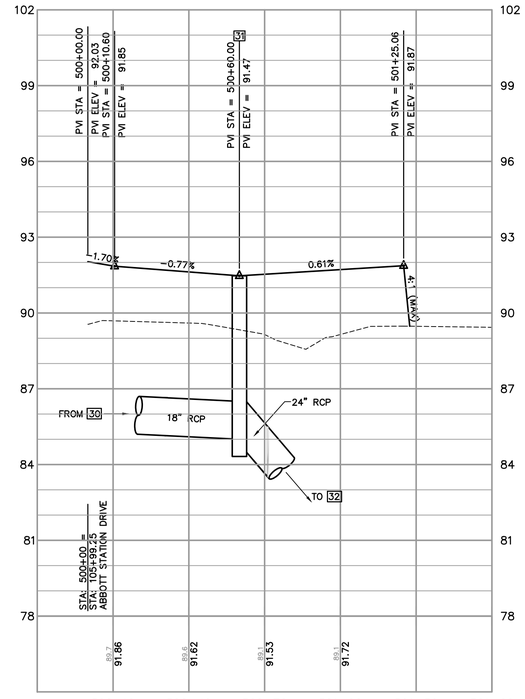
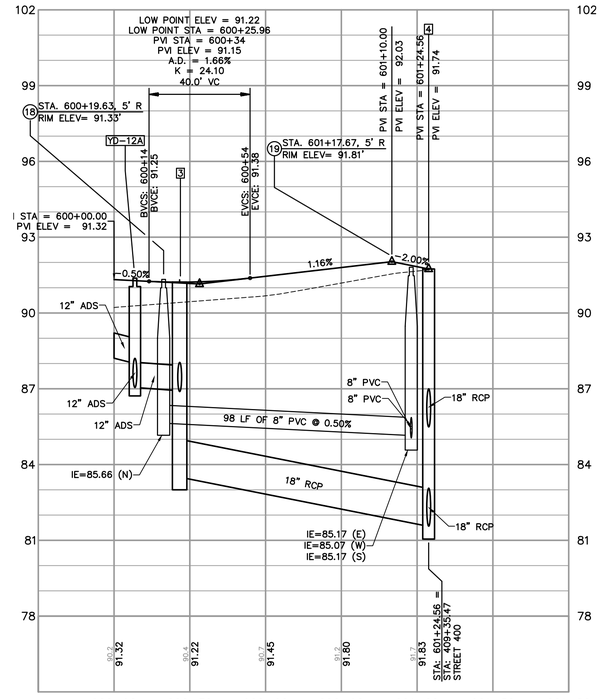


STREET 500
SCALE: 1"=30' HOR., 1"=3' VERT.



STREET 600
SCALE: 1"=30' HOR., 1"=3' VERT.

STREET 700
SCALE: 1"=30' HOR., 1"=3' VERT.

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NO	DATE	REVISIONS
1	10-10-2023	GENERAL STRUCTURE REVISIONS

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Engineer # : FL No. 33088
Survey # : LB8342

PREPARED FOR
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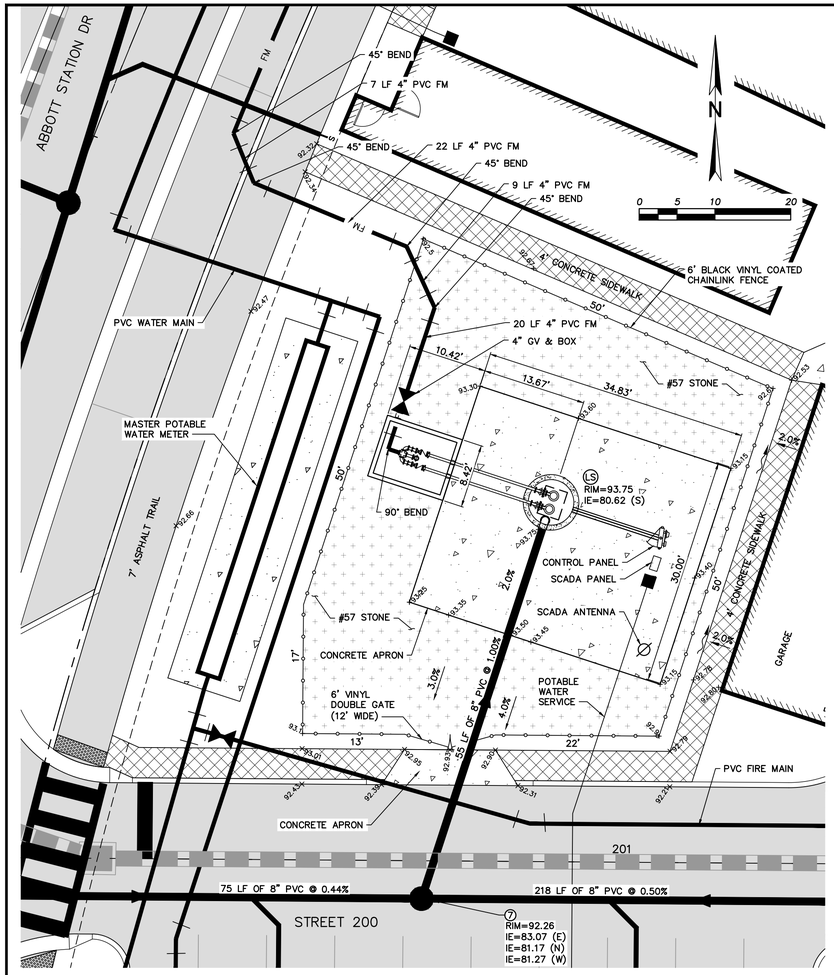
6806 EXPLORER DRIVE, SUITE 250
COLORADO SPRINGS, CO 80920
PHONE: (719) 598-5190 - EMAIL: BPEELE@GOODWINKNIGHT.COM

PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
ROADWAY PROFILE (4)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	29 OF 42

Oct 10, 2023 @ 2:00pm P:\1089\ProjData\Constdocs\Plans\1089-GK-PPROF.dwg - rpogon

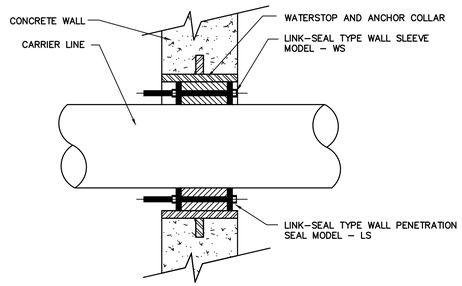


SANITARY LIFT STATION (SITE PLAN)

SCALE: 1"=10'

NOTE:

TOP OF LIFT STATION SHALL BE 12" ABOVE THE 100 YR BFE EL OR 12" ABOVE CENTERLINE OF ROAD, WHICHEVER IS GREATER.



WALL PENETRATION SEAL DETAIL

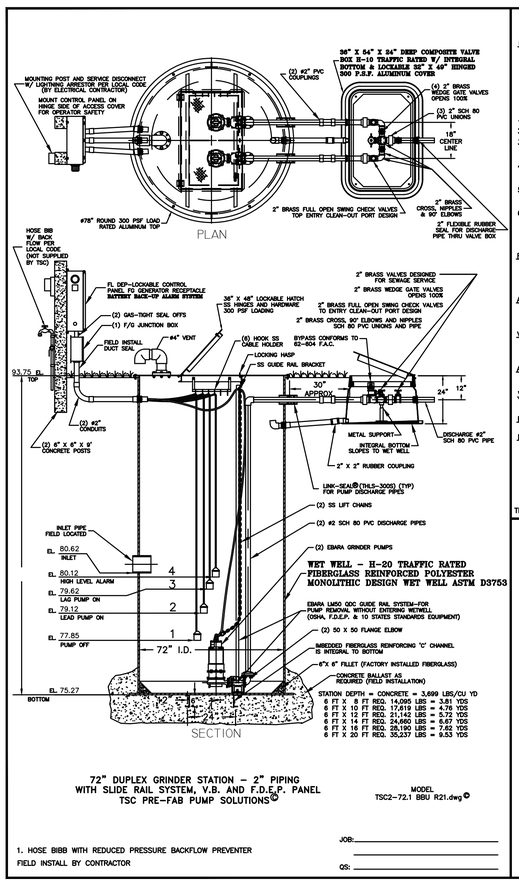
NTS

GENERAL NOTES:

1. ALL PIPING WITHIN THE WETWELL AND ALL ABOVE GROUND PIPING SHALL BE MANUFACTURED FLANGED PIPE. FIELD FABRICATED FLANGES (UNI–FLANGE OR MEGAFLANGE) WILL NOT BE PERMITTED.
2. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE PROVIDED WITH CERAMIC EPOXY INTERIOR LINING (PROTECTO 401), UNLESS PIPING IS STAINLESS STEEL.
3. ALL UNDERGROUND FITTINGS SHALL BE RESTRAINED MECHANICAL JOINT AND SHALL BE PROVIDED WITH PROTECTO 401 INTERIOR LINING.
4. IF LIFT CABLES ARE USED, LIFTING RINGS SHALL BE PROVIDED EVERY 4 FT.
5. INDIVIDUAL WALL PENETRATION SLEEVES SHALL BE PROVIDED FOR EACH PUMP CABLE.
6. ALL HARDWARE (INCLUDING FLANGE BOLTS & NUTS) SHALL BE STAINLESS STEEL.
7. ALL ABOVE GROUND PIPING SHALL BE PAINTED SAFETY GREEN.
8. SLAB ELEVATION SHALL BE 12 IN. ABOVE C/L OF ROADWAY OR 12 IN. ABOVE 100 YEAR FLOOD PLAIN – WHICHEVER IS HIGHER.
9. TECHNICAL SPECIFICATIONS SHALL BE MOST CURRENT COPY OF CITY OF ZEPHYRHILLS – TECHNICAL STANDARDS FOR WASTEWATER AND RECLAIMED WATER.
10. POSITION PANEL BOX SO OPERATOR'S BACK IS NOT TO WET WELL WHILE FACING BOX. PANEL BOX SHALL BE LOCATED TO ALLOW UNOBSTRUCTED ACCESS TO WET WELL BY EQUIPMENT UTILIZING PAVED ACCESS ROAD. (SEE UTILITY DETAIL S–10 FOR SPECIFIC LOCATION)
11. THE CONTROL CIRCUITRY SHALL PROVIDE FOR ALTERNATING OPERATION OF THE LEAD PUMP UNDER NORMAL CONDITIONS. PASCO COUNTY STANDARDS FOR DESIGN AND CONSTRUCTION OF WATER, WASTEWATER, AND RECLAIMED WATER FACILITIES. JUNE 1995.
12. CONTRACTOR SHALL PREVENT FLOTATION OF PUMP STATION DURING ALL PHASES OF CONSTRUCTION. SEE DESIGN DATA, C.Y. OF BALLAST REQUIRED.
13. PUMP STATION SHALL BE EQUIPPED WITH AN EFFECTIVE METHOD FOR DETECTING SHAFT SEAL FAILURE OR POTENTIAL SEAL FAILURE. PUMPS SHALL BE PROVIDED WITH SEAL FAILURE PROBES THAT WILL CAUSE A RED LIGHT TO TURN ON AT THE CONTROL PANEL.
14. EMERGENCY BACK–UP BATTERY OPERATED AUDIO ALARM SYSTEM WITH INDEPENDENT FLOAT SHALL BE PROVIDED AS REQUIRED BY CITY OF ZEPHYRHILLS UTILITIES DEPARTMENT.
15. AREAS WITHIN THE PUMP STATION TRACT SHALL BE COVERED WITH 4" OF #57 STONE. STONE SHALL BE INCLUDED WITH THE PUMP STATION COSTS.
16. ALL UNDERGROUND PIPING, ELECTRIC, WATER SERVICE, ETC., SHALL BE WITHIN THE PUMPING STATION TRACT/PARCEL AS DESIGNATED ON THE PLANS.
17. THE DEVELOPER'S GEOTECHNICAL ENGINEER SHALL PROVIDE THE WET WELL FOUNDATION DESIGN.
18. DISCHARGE PIPING WITHIN THE WETWELL SHALL BE SCH 40, 316 L S.S. MANUFACTURED FLANGED PIPE. FIELD FABRICATED FLANGES (UNI–FLANGE OR MEGAFLANGE) WILL NOT BE PERMITTED.

SANITARY LIFT STATION 1 - DESIGN DATA

FLOW		WELL	
UNITS	*176 RESIDENTIAL*	INSIDE DIA OF WET WELL	*6.00 FEET*
COMMERCIAL	*N/A*	TOP ELEVATION	*93.75 FEET*
OFFICE	*N/A*	BOTTOM ELEVATION	*75.27 FEET*
AVERAGE DAILY FLOW	*15.01 GPM*	INVERT ELEVATION	*80.62 FEET*
DESIGN PEAK FLOW	*57.02 GPM (USE 80.00 GPM)*	CY OF BALLAST REQ'D	*9.53 CY*
STATIC HEAD LOSS	*14.54 FEET*		
FRICTION HEAD LOSS	*6.56 FEET*	**WET WELL HATCH OPENING**	
PLUS MANIFOLD HEAD	*N/A*	*BASED ON MANUFACTURERS RECOMMENDATIONS*	
TOTAL DYNAMIC HEAD	*35.00 FEET*	*(WITH SAFETY NET)*	
PUMP		**TOP SLAB**	
MAKE	*EBARA*	*AS SHOWN W/EXP JOINTS*	
MODEL	*50 DGF*		
IMPELLER	*4-7/8" INCH*	**PIPING**	
MOTOR	*3 HP, 3,600 RPM*	PUMP DISCHARGE SIZE	*2 INCH*
	230V, 3 PHASE, 60 HZ	WET WELL PIPING	*2 INCH*
SOLID	*N/A (GRINDER PUMP)*	FORCE MAIN SIZE	*4 INCH*
ALARMS		**DESIGN POINT**	*80 GPM @ 27 FEET TDH*
BACK-UP AUDIBLE ALARM ON EL	*81.15 FEET*		
AUDIBLE ALARM ON EL	*80.12 FEET*	**OPERATING POINT**	*84 GPM @ 27 FEET TDH*
LIGHT ON EL	*80.00 FEET*		
LAG PUMP ON EL	*79.62 FEET*	**DESIGN ELEVATIONS**	
LEAD PUMP ON EL	*79.12 FEET*	BFE (100 YR)	*90.65 FEET*
PUMP OFF EL (LWL)	*77.85 FEET*	CENTERLINE OF ROAD	*92.26 FEET*



72" DUPLEX GRINDER STATION – 2" PIPING WITH SLIDE RAIL SYSTEM, V.B. AND F.D.E.P. PANEL TSC PRE–FAB PUMP SOLUTIONS©

MODEL TSC2–72.1 BBU R21.dwg©

1. HOSE BIBB WITH REDUCED PRESSURE BACKFLOW PREVENTER FIELD INSTALL BY CONTRACTOR

JOB: _____

QS: _____

GENERAL NOTES

FURNISH AND INSTALL EBARA SUBMERSIBLE PUMPS:

DESIGN CONDITION:

MODEL	32DGFU / 50DGFU	3.00	HP
GPM	80.00 GPM	35.00	FT/TDH
VOLTAGE	208 / 230 / 460	SINGLE OR THREE	PHASE
DISCHARGE	2"	4–7/8"	IMPELLER

SEWAGE GRINDER PUMP: 1. RATED FOR TWENTY (20) STARTS PER HOUR.

2. AIR FILLED MOTOR DESIGNED FOR SEWAGE APPLICATION WITH CLASS F INSULATION.
3. DUAL MECHANICAL SHAFT SEALS (SILICON CARBIDE / SILICON CARBIDE) LOCATED OUT OF THE PUMPAGE, IN A SEPARATE OIL FILLED CHAMBER.
4. HIGH TEMPERATURE BALL BEARINGS B–10 RATING OF 60,000 HOURS, UPPER BEARING – SINGLE ROW AND LOWER BEARINGS – DOUBLE ROW TYPE.
5. PUMP SHAFT HORSEPOWER (BHP) SHALL NOT EXCEED MOTOR RATED HORSEPOWER THROUGHOUT THE ENTIRE OPERATING RANGE OF THE PUMP PERFORMANCE CURVE.
6. SINGLE PHASE MOTORS SHALL BE DUAL WOUND, CAPACITOR START–RUN AND CAPABLE OF OPERATING ON 208/230 VOLT WITH A 10% TOLERANCE VOLTAGE (190 TO 260). THREE PHASE MOTORS SHALL BE DUAL WOUND AND CAPABLE OF OPERATING ON 208/230 VOLT WITH A 10% TOLERANCE VOLTAGE (190 TO 260) OR OPERATE ON 460 VOLT BY CHANGING THE MOTOR LEADS INSIDE THE PUMP.

FIBERGLASS WET WELL: SHALL BE A ONE PIECE UNIT WITH INTEGRAL BOTTOM, WALL AND UPPER FLANGE. THE ENTIRE FIBERGLASS WET WELL SHALL HAVE A DYNAMIC LOAD RATING OF 16,000 FT/LBS. EACH UNIT MUST BE SERIAL NUMBERED TO IDENTIFY THE TEST PROCEDURE. ASTM D 3753 & H–20 SPECIFICATIONS SHALL BE REQUIRED AS MINIMUM.

ALUMINUM HATCH: TSC MODEL–78R (78") ROUND WITH 36" X 48" LOCKABLE HATCH, REINFORCED FOR LOAD RATING OF 300 LBS/FT WITH HOLD OPEN SAFETY ARM, LOCKING DEVICE FOR HASP TYPE PADLOCK AND STAINLESS STEEL HARDWARE.

VALVE BOX: FIBERGLASS COMPOSITE (H–10 TRAFFIC RATED) WITH INTEGRAL BOTTOM. (FOR 1 1/4" AND 2" DISCHARGE PIPING SXS HEADER SYSTEM) SHALL BE 36" X 54" X 24" WITH 32" X 49" LIMITED ACCESS LID

ACCESSORIES: #304 S/S – GUIDE RAILS, UPPER GUIDE RAIL BRACKETS, CABLE HOLDER, ANCHOR BOLTS AND PUMP LIFTING CHAINS.

VALVES : SHALL BE SEWAGE SERVICE DESIGN BRASS SWING CHECK VALVES WITH TOP ENTRY CLEAN–OUT PORT AND BRASS WEDGE GATE VALVES OPEN 100%.

PIPING: 2" SCHEDULE 80 PVC.

FLOAT SWITCHES: UL LISTED SJ ELECTRO MODEL (SJ 30 SWENO).

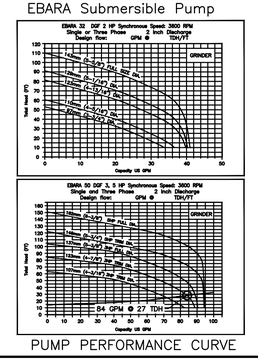
PUMP SUPPLIER SHALL PROVIDE SUBMERSIBLE PUMPS, SLIDE RAIL ASSEMBLIES, CONTROL PANEL, JUNCTION BOX, FLOAT SWITCHES, ALUMINUM HATCH AND ACCESSORIES TO INSURE PROPER OPERATION AND WARRANTY.

THE COMPLETE PACKAGE PUMPING STATION SHALL HAVE PUMP BASES, SLIDE RAIL ASSEMBLIES AND DISCHARGE PIPING ASSEMBLED BY TECHNICAL SALES CORPORATION READY TO SHIP FOR FIELD INSTALLATION.

THE MANUFACTURER OF PRE–FAB PUMP SOLUTIONS©:

TECHNICAL SALES CORPORATION, 4621 N. HALE AVE TAMPA, FL 33614 (813)876–9256

EBARA Submersible Pump



PUMP PERFORMANCE CURVE

CONTROL PANEL –SHALL CONFORM TO FL DEP 62–604 F.A.C.

CONTROL PANEL SHALL BE TSC MODEL # 38–D IN NEMA 4X FIBERGLASS ENCLOSURE. THE PANEL SHALL MEET STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP), ENVIRONMENTAL PROTECTION COMMISSION (EPC) AND LOCAL CODE REQUIREMENTS GOVERNING PRIVATE LIFT STATIONS.

FLOAT SWITCHES AND CONTROL SYSTEM SHALL BE UL LISTED AND INTRINSICALLY SAFE. ALL COMPONENTS SHALL BE UL LISTED.

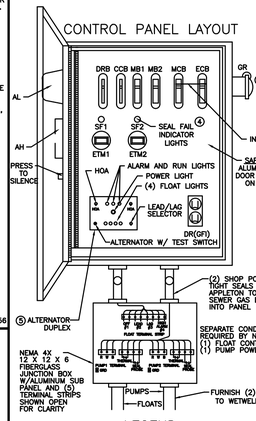
A JUNCTION BOX IS REQUIRED, WITH SHOP POURED SEALS BETWEEN BOX AND CONTROL PANEL TO PREVENT SEWER GAS ENTRY INTO CONTROL PANEL.

ELECTRICAL CONTRACTOR TO PROVIDE SERVICE DISCONNECT WITH LIGHTNING ARRESTOR MOUNTED PER LOCAL CODES.

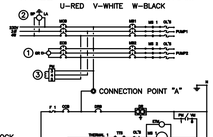
THE CONTROL PANEL SHALL BE SUITABLY INSTALLED TO PREVENT SETTLING OR TIPPING.

BATTERY BACK–UP ALARM SYSTEM TO BE INCORPORATED INTO CONTROL PANEL PER THE "10 STATES STANDARDS"

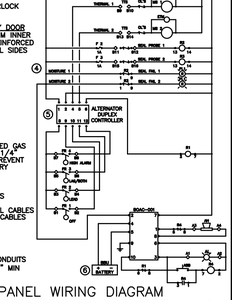
CONTROL PANEL LAYOUT



SINGLE PHASE WIRING DIAGRAM



THREE PHASE WIRING DIAGRAM



LEGEND

AH	ALARM HORN	
AL	ALARM LIGHT	
(5) ASB	ALARM SILENCE BUTTON	
(5) ATS	ALTERNATOR W/TEST SWITCH	
(6) BBU	BATTERY (BACK–UP UNIT)	
CCB	CONTROL CIRCUIT BREAKER	
DR	DUPLEX RECEPTACLE	
DRB	DUPLEX RECEPTACLE BREAKER	
ECB	EMERGENCY CIRCUIT BREAKER	
ETM	ELAPSED TIME METER	
F	FUSE	
FL	FLASHER	
FS	FLOAT SWITCH (REGULATOR)	
(1) GR	GENERATOR RECEPTACLE	
GRD	GROUND	
HOA	HAND–OFF–AUTOMATIC SELECTOR	
LA	LIGHTNING ARRESTOR	
MB	MOTOR BREAKER	
MCB	MAIN CIRCUIT BREAKER	
MS	MOTOR STARTER	
N	NEUTRAL	
OL'S	OVERLOAD HEATERS	
(3) PM	PHASE MONITOR	
PTS	PUMP TERMINAL STRIP	
R	RELAY	
RC	RUN CAPACITOR	
RD	DISCHARGE RESISTOR	
RL	PUMP RUN INDICATORS	
RTS	REGULATOR TERMINAL STRIP	
SC	START CAPACITOR	
(4) SF	SEAL FAIL (SHAFT)	
SR	START RELAY	
(2) SP	SURGE PROTECTOR	
TTS	THERMAL TERMINAL STRIP	

PANEL WIRING DIAGRAM

PANELS SHALL CONFORM TO FLORIDA DEP 62–604 F.A.C.

1. GENERATOR RECEPTACLE FOR EMERGENCY POWER CONNECTION WITH INTERLOCK
2. SURGE PROTECTION AND LIGHTNING PROTECTION ON ALL INCOMING LEGS
3. PHASE PROTECTION SHALL BE PROVIDED
4. SHAFT SEAL FAIL DETECTION
5. ALTERNATOR W/TEST SWITCH
6. BATTERY BACK–UP UNIT

PANEL MANUFACTURER SHALL BE A "UL" LISTED SHOP.

TSC DUPLEX GRINDER PUMP STATION
FIBERGLASS WET WELL

TECHNICAL SALES CORPORATION
TSC PRE–FAB PUMP SOLUTIONS©
WATERWORKS & WASTEWATER SPECIALTIES
Representing Innovative Manufacturers
MODEL TSCE2–72.1 BBU©
4621 N. HALE AVENUE TAMPA, FL 33614
PH (813)876–9256
FAX (813)874–1194
EMAIL: Sales@TSCTampa.com
REV–3 SCALE: N.T.S.

72" DUPLEX STATION – 2" PIPING, SLIDE RAIL SYSTEM, V.B. W/ DOUBLE DOOR & F.D.E.P. PANEL TSCE2–72.1 BBU R21©

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Engineer # 55925
Survey # LB8342

PREPARED FOR

GK FLORIDA, LLC
8055 EAST DRAKE DRIVE, SUITE 200
COLORADO SPRINGS, CO 80920
PHONE: (719) 598–5190 – EMAIL: BPEELE@GOODWINKNIGHT.COM

PROJECT NAME: **COTTAGES AT ABBOTT STATION**
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME: **LIFT STATION SITE PLAN & DETAILS**

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	30 OF 42

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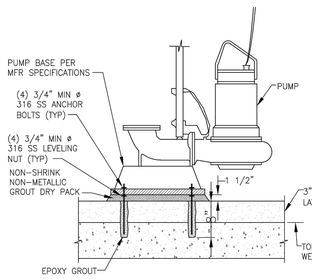

PUMP BASE DETAIL

NTS

ZEPHYRHILLS UTILITIES DEPARTMENT — WASTEWATER DIVISION

CITY OF ZEPHYRHILLS STANDARD DETAILS

CITY OF ZEPHYRHILLS UTILITY DEPARTMENT
39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542
PHONE (813)780-0029 FAX (813)780-0613

NOVEMBER 2021

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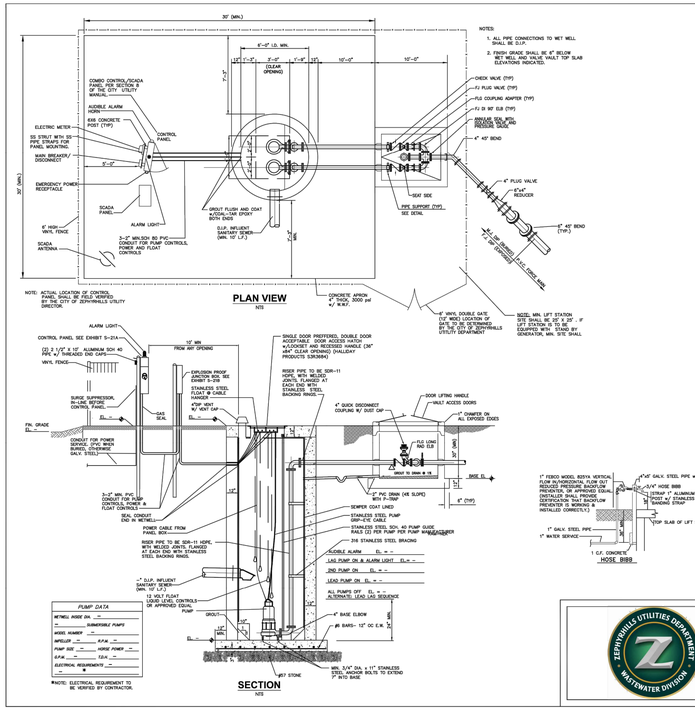

PLAN VIEW

NTS

SECTION

NTS

DUPLEX LIFT STATION

ZEPHYRHILLS UTILITIES DEPARTMENT — WASTEWATER DIVISION

CITY OF ZEPHYRHILLS STANDARD DETAILS

CITY OF ZEPHYRHILLS UTILITY DEPARTMENT
39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542
PHONE (813)780-0029 FAX (813)780-0613

NOVEMBER 2021

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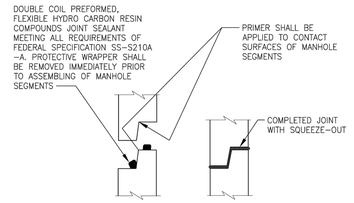

MANHOLE OR LIFT STATION
PRECAST SEGMENT JOINT W SEALANT

NTS

ZEPHYRHILLS UTILITIES DEPARTMENT — WASTEWATER DIVISION

CITY OF ZEPHYRHILLS STANDARD DETAILS

CITY OF ZEPHYRHILLS UTILITY DEPARTMENT
39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542
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NOVEMBER 2021

S-4C

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COLORADO SPRINGS, CO 80920
PHONE: (719) 598-5190 - EMAIL: BPEEL@GOODWINKNIGHT.COM

PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
LIFT STATION DETAILS (1)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	31 OF 42

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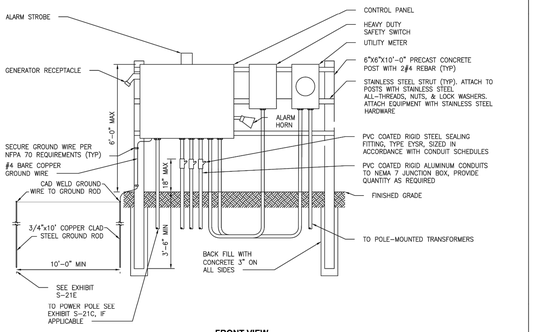


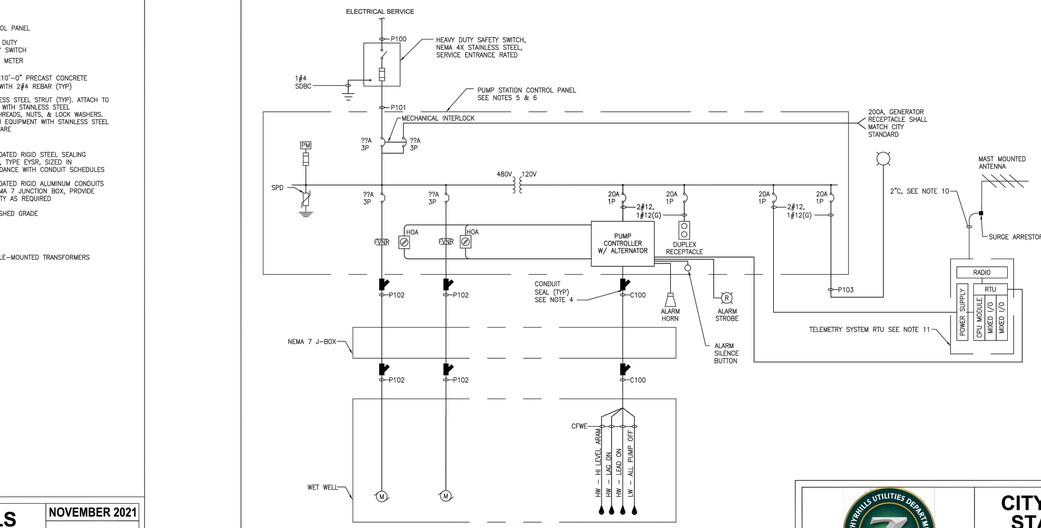
FRONT VIEW
(FACES NORTH)

CONTROL PANEL DETAIL
NTS

CITY OF ZEPHYRHILLS STANDARD DETAILS	NOVEMBER 2021
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT 39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542 PHONE (813)780-0029 FAX (813)780-0613	S-21A

POWER AND CONTROL WIRING SCHEDULE

CIRCUIT NUMBER	STARTER SIZE	POWER (120/240 VOLT, 3ϕ, 4W) PHASE CNDCT	NEUTRAL CNDCT	GROUND WIRE	HTR CKT	CONDUIT SIZE	NAME PLATE
P100	–	3#3/0	1#3/0	–	–	4"	MAIN POWER
P101	–	3#3/0	1#3/0	1#6	–	2"	MAIN POWER
P102	FVNR	CFWE	–	–	–	2" MIN	PUMP POWER SEE NOTE 2
P103	–	1#12	1#12	1#12	–	½"	LIGHT FIXTURE
C100	–	CFWE	–	–	–	2" MIN	4 FLOAT SWITCH CABLES



PUMP STATION / ELECTRICAL ONE-LINE DIAGRAM
NTS

NOTES

1. CONDUCTORS EXITING CONTROL PANEL SHALL BE TYPE THWN INSULATED COPPER. INTERNAL CONTROL PANEL WIRING SHALL BE TYPE MTW OR AS REQUIRED BY THE MANUFACTURER.
2. PROVIDE A SURGE PROTECTION DEVICE (SPD) ON THE LOAD SIDE OF THE MAIN CIRCUIT BREAKER. SPD SHALL BE AN ADVANCED PROTECTION TECHNOLOGIES TE/4XT, PQ PROTECTION PQC100, OR APPROVED EQUAL.
3. PROVIDE A NEMA 7 EXPLOSION-PROOF JUNCTION BOX WITH DIN RAIL MOUNTED NON-ARCING TERMINAL STRIPS FOR SPLICING POWER AND CONTROL WIRES.
4. SEALING FITTING SHALL BE CROUSE HINDS TYPE EYS OR EQUAL. TYPICAL SEAL FOR ALL CONDUITS BETWEEN THE CONTROL PANEL AND THE WETWELL.
5. THE PUMP CONTROL PANEL ENCLOSURE SHALL BE NEMA 3R STAINLESS STEEL FITTED WITH A 3 POINT LOCKABLE LATCH AND DEAD FRONT PANEL.
6. ALL CONNECTIONS TO THE STATION SHALL BE INTRINSICALLY SAFE AND THE PANEL SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

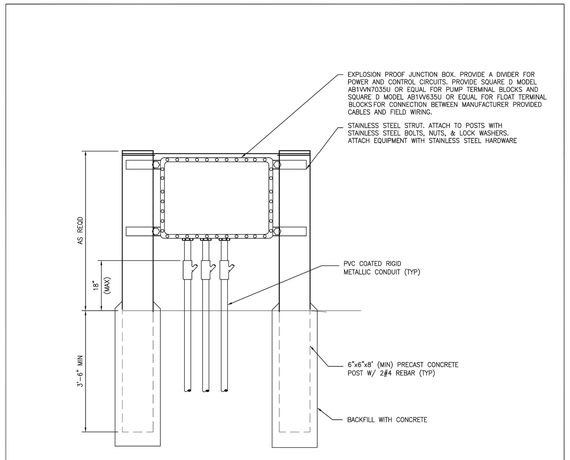
BILL OF MATERIALS

QTY	ABBR.	DESCRIPTION	MANUFACTURER, PART #
1	ENC	ENCLOSURE, 304SS UL 4X	HOFFMAN, A-36X30125SLFSPTM
1	MCB	MAIN CIRCUIT BREAKER	SQ. D, QOU370
1	ECB	EMERGENCY CIRCUIT BREAKER	SQ. D, QOU370
2	PCB1,2	PUMP CIRCUIT BREAKER	SQ. D, QOU335
1	XSCB	XFMR SECONDARY CIR. BRKR.	SQ. D, QOU120
1	CCB	CONTROL CIRCUIT BREAKER	SQ. D, QOU110
1	RTUCB	RTU CIRCUIT BREAKER	SQ. D, QOU110
1	GFICB	GFI CIRCUIT BREAKER	SQ. D, QOU115
2	MS1, 2	MOTOR STARTER	SQ. D, 8536 S003 V02
8	OL	OVERLOAD	SQ. D, B-40
1	GR	GENERATOR RECEPTACLE	LEVITON, 41109WW
2	F1-2	FUSE 30A CLASS CC 600V	FERRAZ, ATQR-20
1	XFMR	TRANSFORMER 480/120 1.5KVA	EATON, C1500K2A
1	GFI	120V RECEPTACLE	H&L, 15951
1	ML	MAINTENANCE LIGHT	UTILITECH, GU93180-78-WH
1	AL	ALARM LIGHT	EDWARDS, 125078HF120AB
1	AH	ALARM HORN	INGRAM, AH1548G
1	ASB	ALARM SILENCE BUTTON	SQ. D, 9001-SW1BH5
2	R1-2	CONTROL RELAY	ALLEN-BRADLEY, 700-HB33A1 120V
2	CT	CURRENT TRANSFORMER	EL, 33FT-500
1	BATT	BATTERY	POWER SONIC, PS-1270
1	F4	BATTERY FUSE	BUSSMANN, ATC1
1	AMS	AMMETER SELECTOR SWITCH	ABB, S107ZA-26
1	AM	AMMETER	RED LION, PAU0700
1	F3	AMMETER FUSE 8A 500V	FERRAZ, ATQ-8
1	SS1	LIGHTNING ARRESTOR	SQ. D, 8871-SSGA3650
1	SS2	LIGHTNING ARRESTOR	DITEK, DTK-120HW
1	TCU	PUMP CONTROL UNIT – TCU001	DFS, DFS-00367-008-01
1		CONFIGURATION CONNECTOR ASSEMBLY	DFS, DFS-00392-008-09
8	DF3-DF10	FUSE, BUSS	DFS, DFS-00271-008-09L 15AMP SLOW BLOW
8	DF3-DF10	FUSE HOLDER, MAGO	DFS, DFS-00393-008-01
4	47K	RESISTOR BLOCK, MAGO	DFS, DFS-00271-008-01
1	TPS	TRANSIENT FILTER SHILD	DFS, DFS-00308-008-02
1	PF	ANTENNA SURGE SUPPRESTOR	POLY PHASER, IS-950UX-C2

INFORMATION PROVIDED BY UNITRON CONTROLS AND INCLUDED FOR REFERENCE.

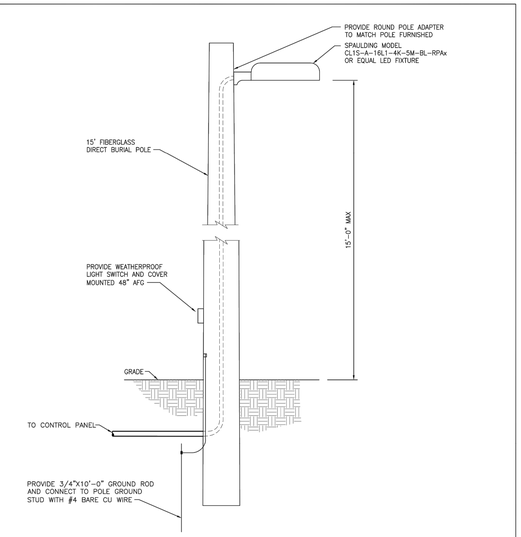
7. THE CONTROL PANEL INTEGRATED INTERRUPT RATING SHALL BE EQUAL TO THE AVAILABLE FAULT CIRCUIT CURRENT AT THE POINT OF INSTALLATION WITH A MINIMUM OF 22,000 RMS SYMMETRICAL AMPS.
8. ALL WORK SHALL BE INSTALLED PER LATEST ADOPTED NATIONAL ELECTRICAL CODE (NFPA 70).
9. ALL EXPOSED CONDUITS AND RUNS BETWEEN THE WETWELL AND THE CONTROL PANEL SHALL BE PVC COATED RIGID GALVANIZED STEEL. ALL BELOW GRADE CONDUITS SHALL BE SCHEDULE 80 PVC.
10. PROVIDE ANTENNA, COAXIAL CABLE, ANTENNA MAST AND ALL APPURTENANCES AS RECOMMENDED BY THE RTU MANUFACTURER. SECURE CABLE TO THE ANTENNA MAST WITH STAINLESS STEEL CABLE TIES AS RECOMMENDED BY THE RTU MANUFACTURER.
11. CONTRACTOR SHALL PROVIDE THE TELEMETRY SYSTEM RTU AND ALL REQUIRED SCADA EQUIPMENT. THE TELEMETRY SYSTEM SHALL BE AS APPROVED BY THE CITY AND SHALL CONFORM TO THEIR STANDARDS.

CITY OF ZEPHYRHILLS STANDARD DETAILS	NOVEMBER 2021
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT 39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542 PHONE (813)780-0029 FAX (813)780-0613	S-21



EXPLOSION PROOF JUNCTION BOX MOUNTING DETAIL
NTS

CITY OF ZEPHYRHILLS STANDARD DETAILS	NOVEMBER 2021
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT 39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542 PHONE (813)780-0029 FAX (813)780-0613	S-21B



LIGHT FIXTURE DETAIL
NTS

CITY OF ZEPHYRHILLS STANDARD DETAILS	NOVEMBER 2021
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT 39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542 PHONE (813)780-0029 FAX (813)780-0613	S-21C

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Engineer # 55925
Survey # LB8342

PREPARED FOR
GK FLORIDA, LLC
6900 EXCHANGE DRIVE, SUITE 250
COLORADO SPRINGS, CO 80920
PHONE: (719) 598-5190 - EMAIL: BPEELE@GOODWINKNIGHT.COM

PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
LIFT STATION DETAILS (2)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	32 OF 42

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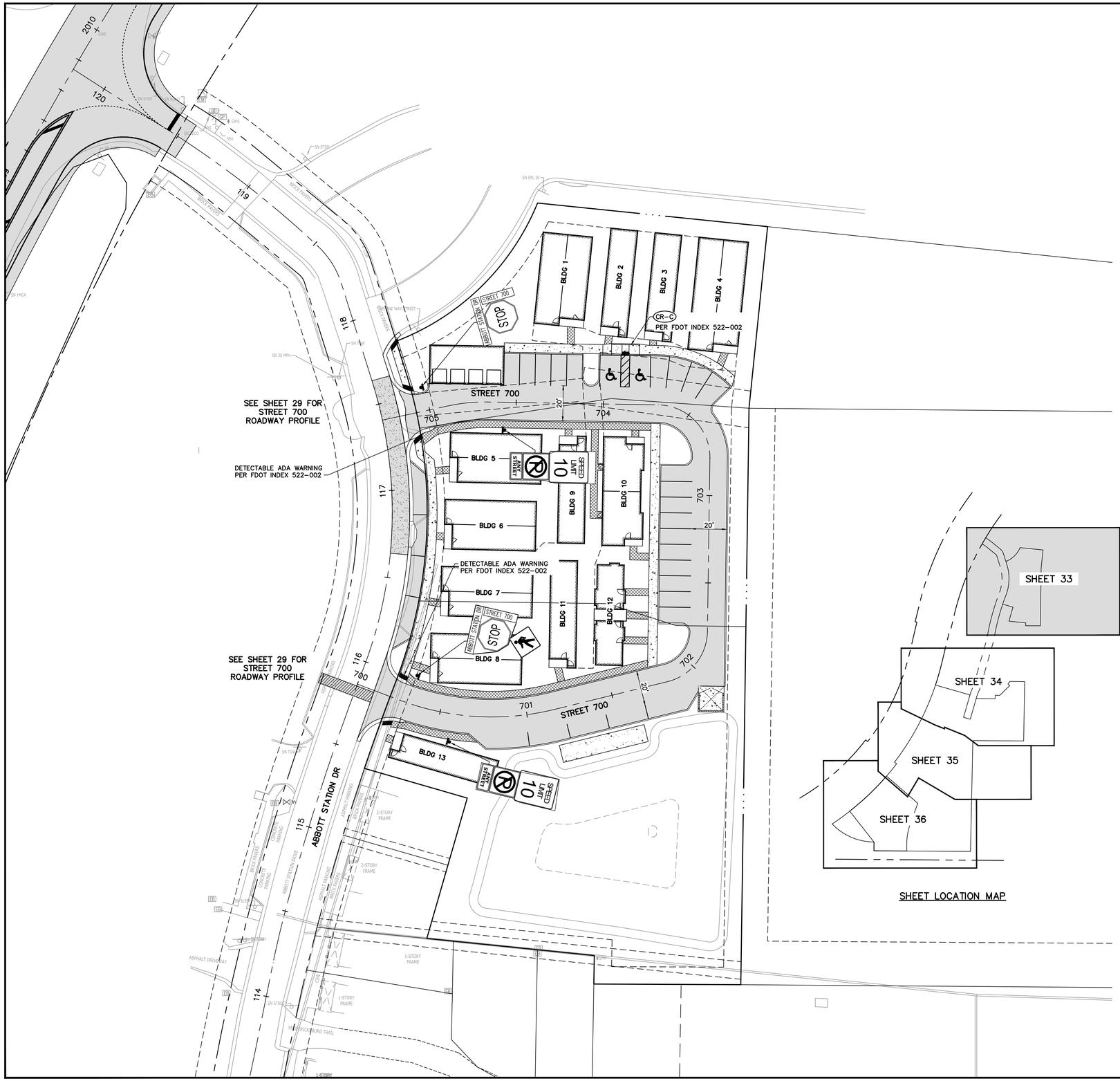

SIGNAGE LEGEND

- STREET NAME D3-1 = Street Name Sign (2xD3) Public Road (White on Green) Varies x 8"
- = Warning Sign (W1-1 R or L) 36" x 36"
- 15 M.P.H = Advisory Speed (W13-1) 18" x 18"
- = Crosswalk Warning Sign (W11-2) 30" x 30"
- = Downward Diagonal Arrow (W16-7P) 24" x 12"
- = Reflective Marker Sign (OM4-1) 18" x 18"
- = Type III Barricade
- SPEED LIMIT 30 = Regulatory Speed Sign (R2-1 30 MPH) 24" x 30" with No Parking Sign (R8-3A) and supplemental plate (ANY STREET)
- ANY STREET = No Parking Sign (R8-3A) 24" x 30" and supplemental plate (ANY STREET) 24" x 6"
- DEAD END = Dead End (W14-1) 30" x 30"
- NO OUTLET = No Outlet (W14-2A) 36" x 8"
- STOP = Stop Sign (R1-1) 30" x 30"
- ONLY = Right Lane Turn Right (R3-5R) 30" x 36"

N

0 15 30 60

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Engineer # EB 33088
Survey # LB8342

PREPARED FOR
GK FLORIDA, LLC
8605 EXPLORER DRIVE, SUITE 250
COLORADO SPRINGS, CO 80920
PHONE: (719) 598-5190 - EMAIL: BPEELE@GOODWINKNIGHT.COM

PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
SIGNAGE & PAVEMENT MARKING PLAN (1)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	33 OF 42

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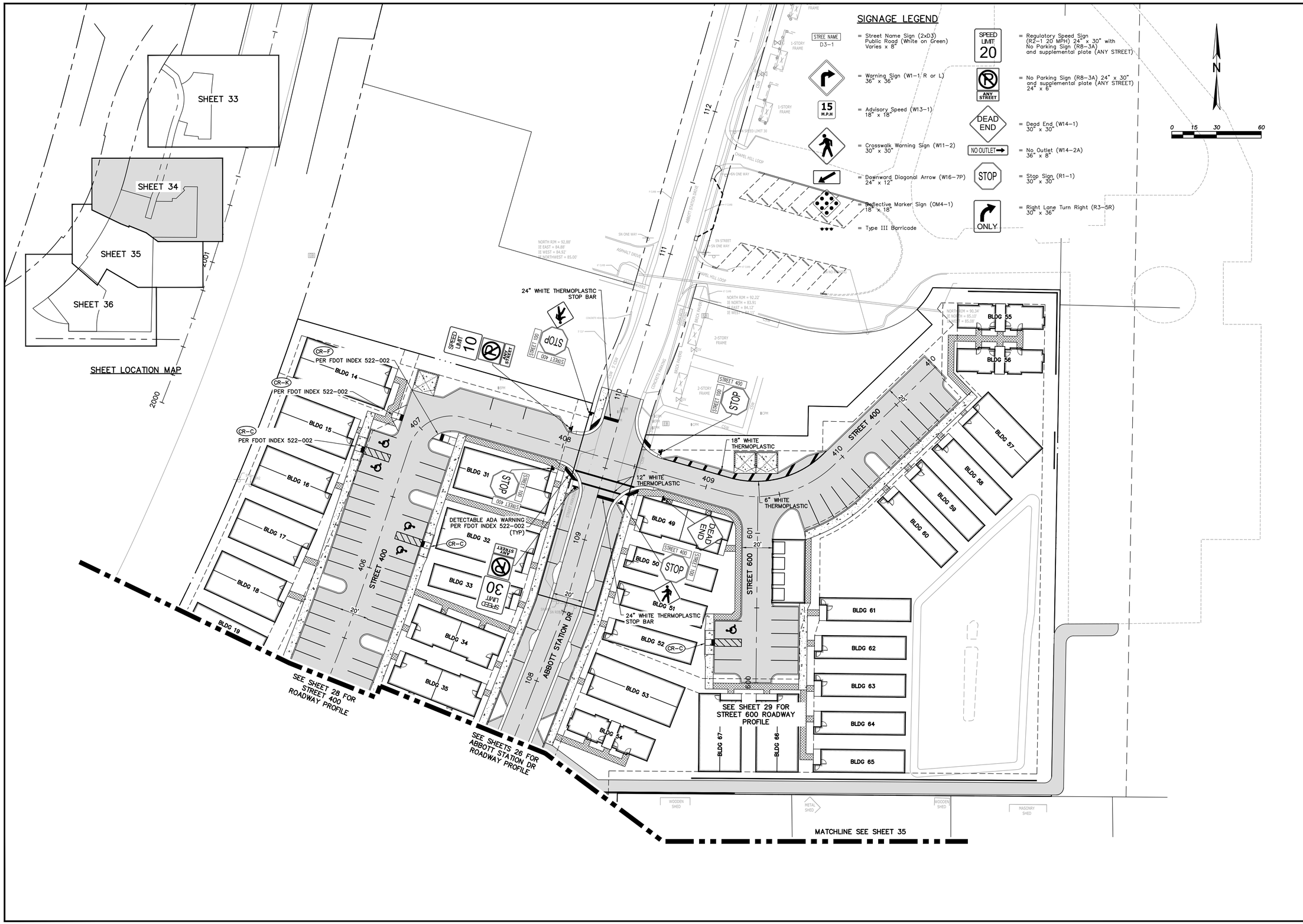

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Engineer # - CA No. 33088
Survey # - LB8342

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8605 EXPLORER DRIVE, SUITE 250
COLORADO SPRINGS, CO 80920
PHONE: (719) 598-5190 - EMAIL: BPEELE@GOODWINKNIGHT.COM

PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
SIGNAGE & PAVEMENT MARKING PLAN (2)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	34 OF 42

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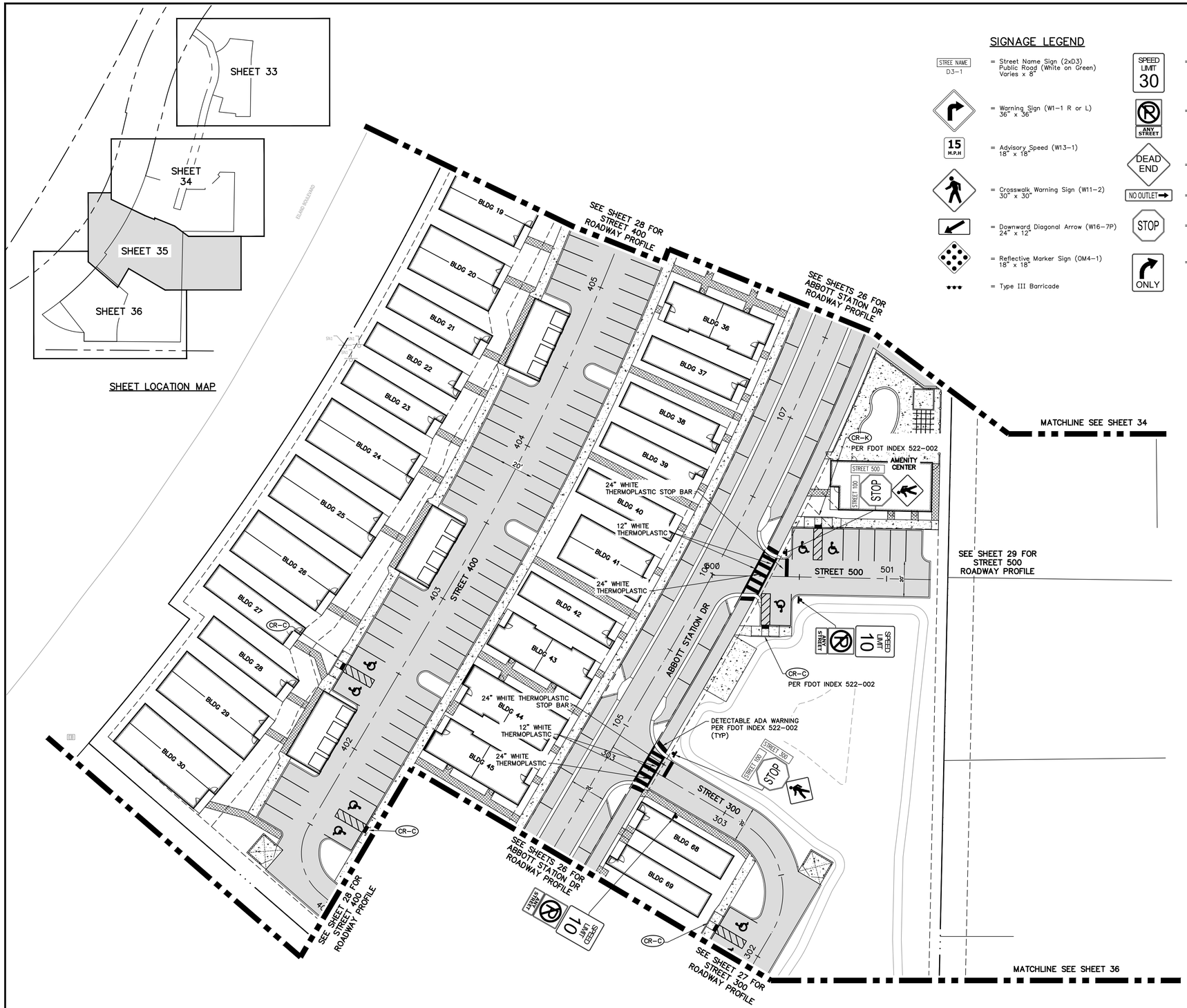

SIGNAGE LEGEND

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8605 EXPLORER DRIVE, SUITE 250
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PHONE: (719) 598-5190 - EMAIL: BPEELE@GOODWINKNIGHT.COM

PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
SIGNAGE & PAVEMENT MARKING PLAN (3)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	35 OF 42

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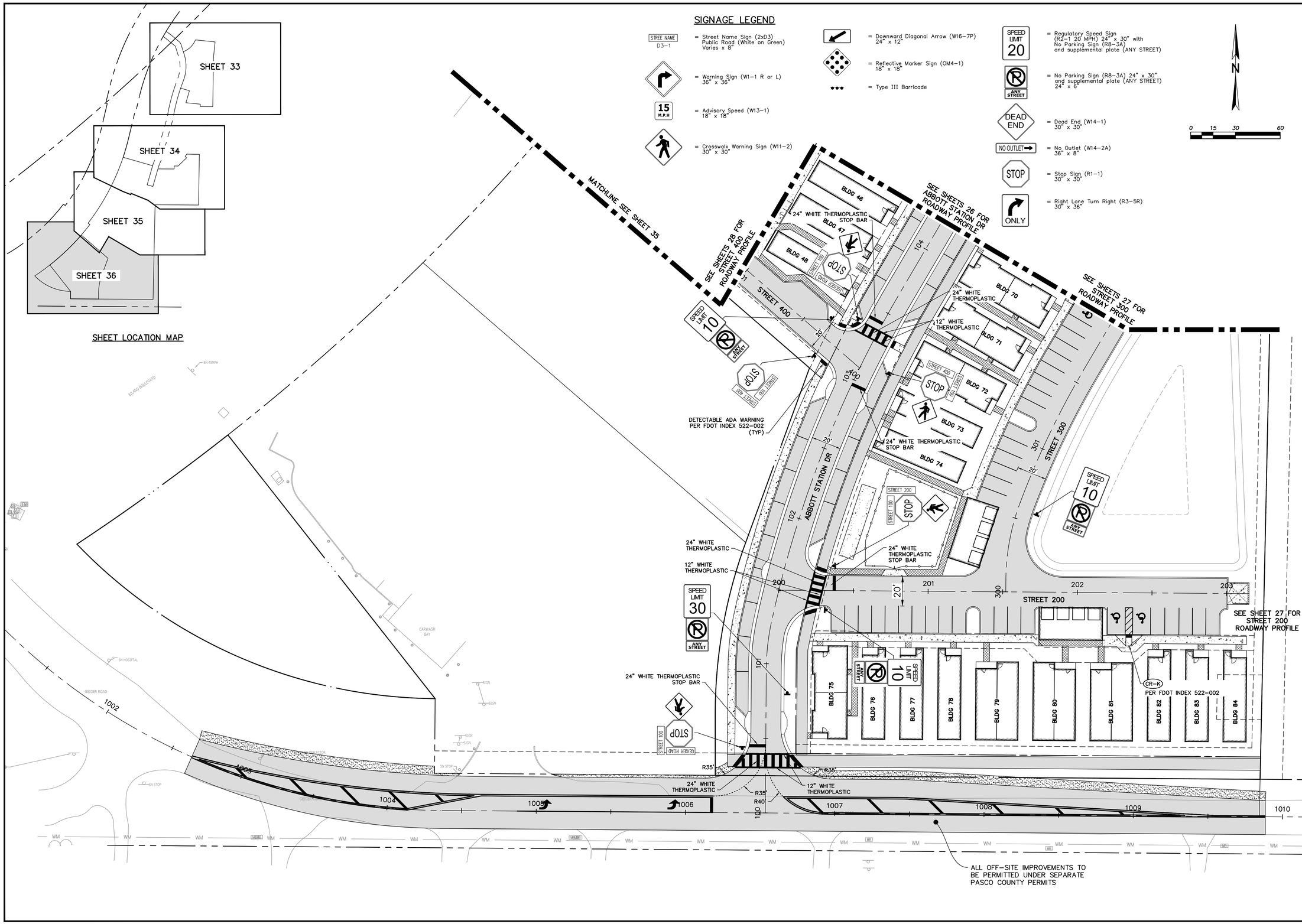

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PROJECT NAME: COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME: SIGNAGE & PAVEMENT MARKING PLAN (4)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	36 OF 42

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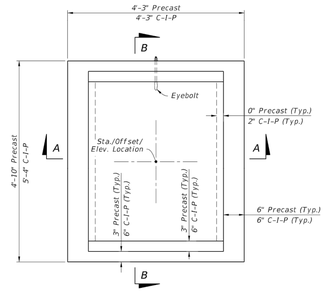
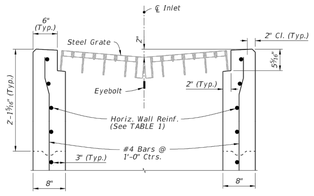
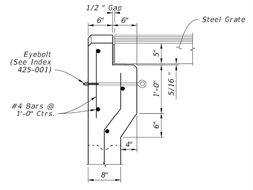


PLAN

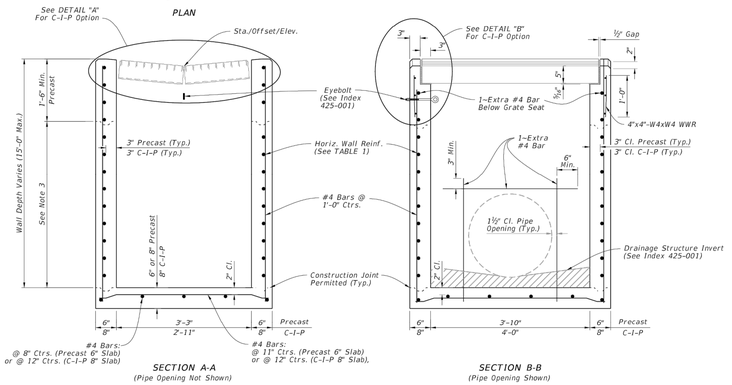


DETAIL "A"



DETAIL "B"

CAST-IN-PLACE OPTION



SECTION A-A
(Pipe Opening Not Shown)

SECTION B-B
(Pipe Opening Shown)

TABLE 1 HORIZONTAL WALL REINFORCING SCHEDULE				
WALL DEPTH	SCHEDULE	AREA (in.²/ft.)	MAX. SPACING	
			BARS	WWR
0' - 5'	A12	0.20	12"	8"
5' - 9'	A6	0.20	6"	5"
9' - 12'	A4	0.20	4"	3"
9' - 15'	B5.5	0.24	5½"	5"

NOTES:

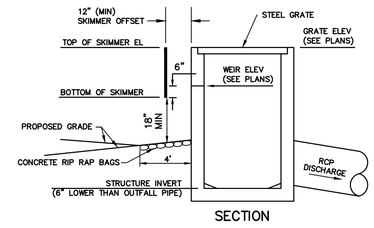
1. *Plan View: Grate, Concrete Ditch Pavement, and Sod not shown on structure detail.*
2. *Precast Shown, Cast-In-Place (C-I-P) similar.*
3. *Construction joints permitted between these limits. See Index 425-001 for minimum dimensions.*

DIMENSIONAL AND REINFORCING DETAILS

DIMENSIONAL AND REINFORCING DETAILS

LAST REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	GUTTER INLET TYPE V	INDEX	SHEET
10/01/20	REVISION			425-041	2 of 4

10/01/2021 1:49:24 PM



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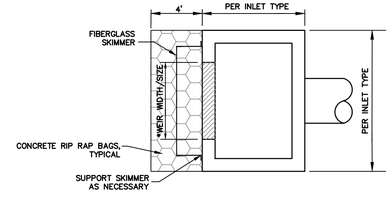


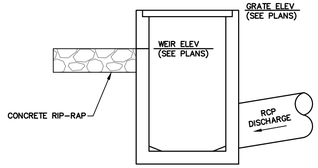
PLAN

TYPICAL DROP STRUCTURE FDOT TYPE (SEE PLANS)

DROP STRUCTURE DETAIL

*NOTE: THE USE OF LONG WEIRS MAY REQUIRE THE USE OF THE BOX SIDES FOR THE WEIR CONSTRUCTION

NTS



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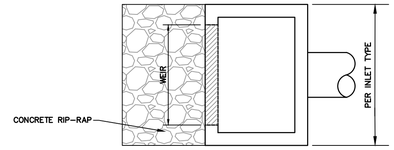
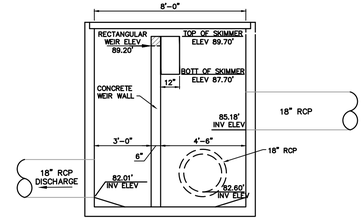


PLAN

BUBBLER DETAIL

NTS



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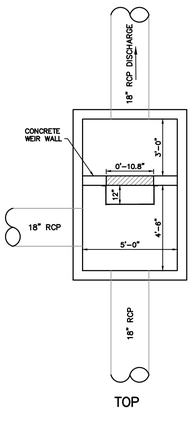
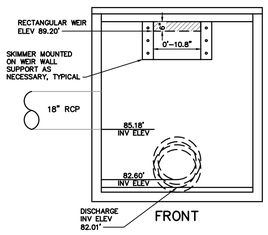


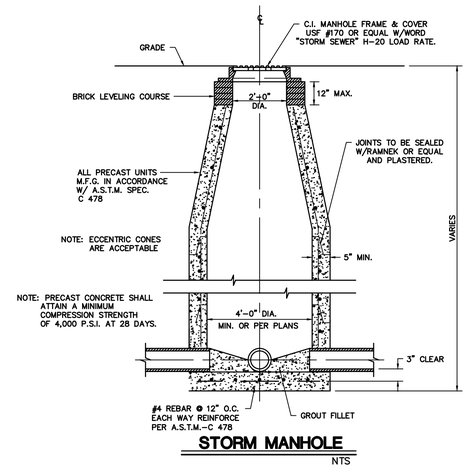
TOP



FRONT

DS-1
DROP STRUCTURE WITH RECTANGULAR ORIFICE DETAIL

NTS



STORM MANHOLE

NTS

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1	10-10-2023	REVISED DS-1 DETAIL

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Engineer # 55925
Survey # LB8342

PREPARED FOR

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8605 SANTA FE DRIVE, SUITE 250
COLORADO SPRINGS, CO 80920
PHONE: (719) 598-5190 - EMAIL: BPEELE@GOODWINKNIGHT.COM

PROJECT NAME: COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME: PAVING, GRADING, & DRAINAGE DETAILS (1)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	37 OF 42

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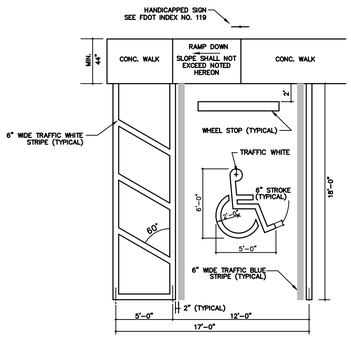

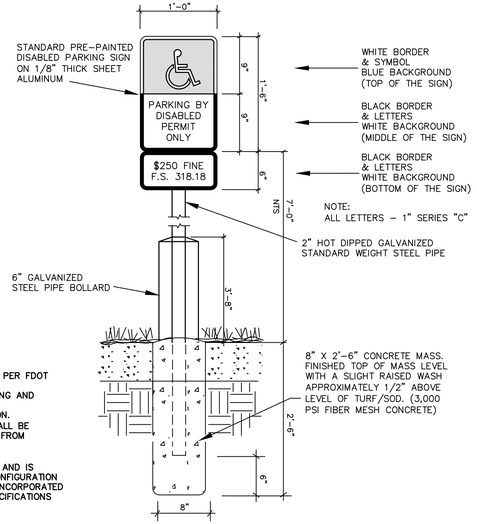

NOTES
1. ACCESS AISLE AND PARKING SPACES TO BE STRIPPED AND MARKED PER FDOT INDEX 17346.
2. REFER TO SECT. 11-4.6 OF THE FLORIDA BUILDING CODE FOR PARKING AND PASSENGER LOADING ZONES.
3. REFER TO SECT. 4.6.2 OF THE FLORIDA BUILDING CODE FOR LOCATION. "ACCESSIBLE PARKING SPACES SERVING A PARTICULAR BUILDING SHALL BE LOCATED ON THE SHORTEST SAFELY ACCESSIBLE ROUTE OF TRAVEL FROM ADJACENT PARKING TO AN ACCESSIBLE ENTRANCE"
4. STANDARD SPACES 9'X20'.
5. RECOMMENDED ACCESSIBLE PARKING SPACE DESIGN IS GENERALIZED AND IS INCLUDED HEREIN FOR INFORMATIONAL PURPOSES. THE SPECIFIC CONFIGURATION FOR THIS PROJECT VARIES FROM IT IN THAT THE ACCESS AISLE IS INCORPORATED INTO THE ADJACENT SIDEWALK. ALL STRIPING AND DIMENSIONAL SPECIFICATIONS ON THIS DETAIL STILL APPLY.

TYPICAL HANDICAPPED STALL
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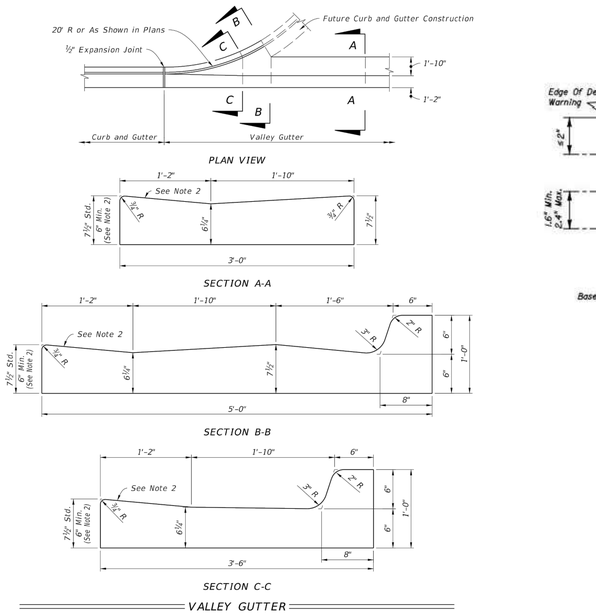
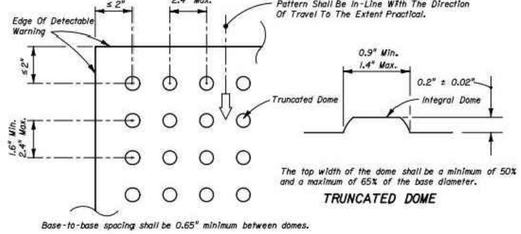
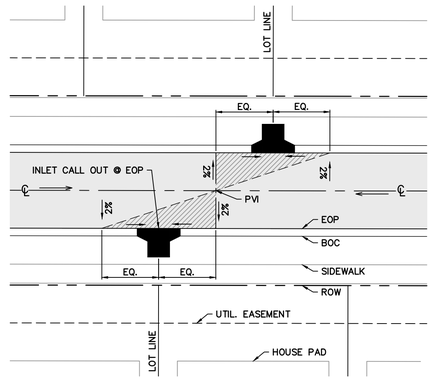


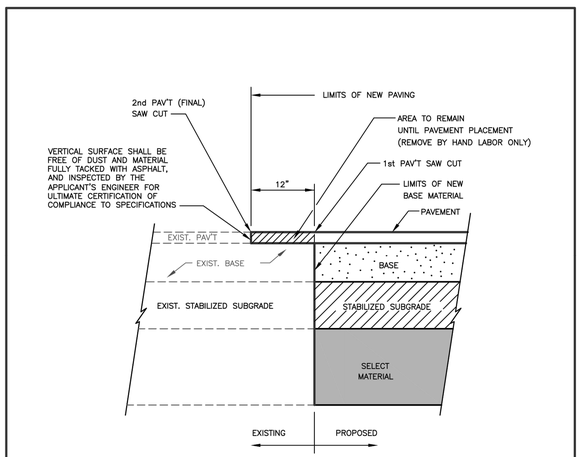


All Sidewalk Curb Ramps Shall Have Detectable Warning Surfaces That Extend The Full Width Of The Ramp And In The Direction Of Travel 24 Inches (610 mm) From The Back Of Curb.

CURB RAMP DETECTABLE WARNING DETAIL



PAVEMENT WARP DETAIL
NTS



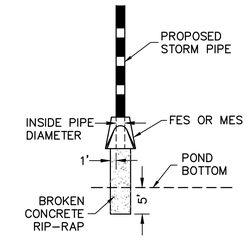
SECTIONAL VIEW
NTS

NOTES:

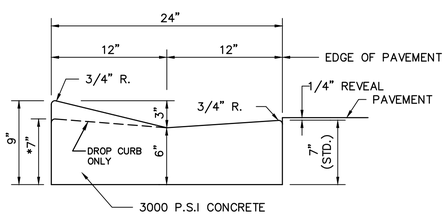
1. THE DEVELOPER'S ENGINEER SHALL INVESTIGATE THE EXISTING PAVEMENT LAYER TYPES AND DEPTHS BY RESEARCHING "RECORD/AS-BUILT DRAWINGS" AND/OR PERFORM GEOTECHNICAL BORINGS.
2. THE NEW PAVEMENT SHALL PROVIDE THE MINIMUM STRUCTURAL NUMBER AS FOLLOWS: TYPE 2 - 2.34, TYPE 1 - 3.50, COLLECTOR 3.70, ARTERIAL 4.00.

NOTE:
NO DEVIATIONS TO THIS DETAIL WILL BE PERMITTED UNLESS APPROVED BY THE COUNTY ENGINEER.
ANY PROPOSED ALTERATIONS SHALL BE CLEARLY IDENTIFIED AND HIGHLIGHTED ON DETAIL.

PASCO COUNTY ENGINEERING SERVICES	PAVEMENT TIE-IN SAW CUT DETAIL	Sheet No. 1 of 1
DESIGN STANDARDS	APPROVED BY JCW; BCC APPROVAL; REVISED	Index No. 101

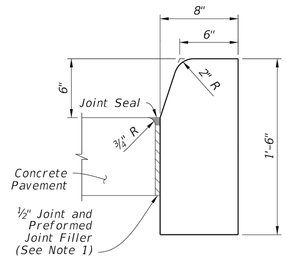


OUTFALL RIP RAP DETAIL
NTS



* DROP CURB AT SIDEWALK LOCATIONS AS INDICATED ON PAVING, GRADING & DRAINAGE PLAN SHEETS.

24" CONCRETE VALLEY CURB
NTS

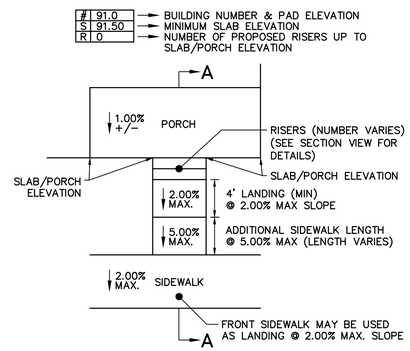


NOTE: For use adjacent to concrete or flexible pavement, concrete shown.

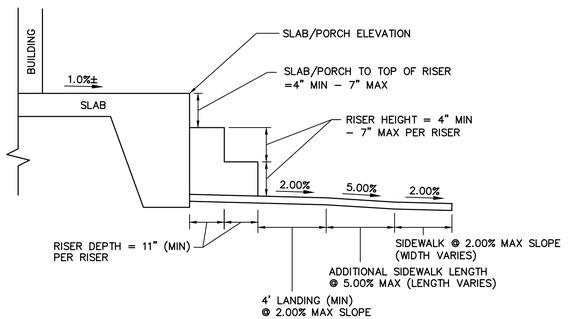
TYPE D

NOTES:

1. *For Type A, Type B, and Type D Curb: Expansion joint, preformed joint filler and joint seal are required between curbs and concrete pavement only, see Sheet 3.*
2. *For Type E, Type F, Drop Curb, and Valley Gutter: When used on high side of roadways, match the cross slope of the gutter to the cross slope of the adjacent pavement. The thickness of the lip is 6", unless otherwise shown on Plans.*
3. *For Type RA, rotate entire section so that gutter cross slope matches slope of adjacent circulating roadway pavement.*
4. *For details depicting usage of Type A Curb adjacent to flexible pavement see Sheet 3.*



PLAN VIEW (TYP)
NTS



SECTION A-A
NTS

PORCH RISER DETAIL
NTS

ROBERT D. FUDGE, STATE OF FLORIDA PROFESSIONAL ENGINEER, LICENSE NO. 55925.

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY ROBERT D. FUDGE, P.E. ON THE DATE INDICATED HERE.

DIGITAL SIGNATURE (SHA1 THUMBPRINT 3C A6 86 19 24 BA AB 9A 72 5E 22 D1 28 51 6B EC C6 E5 CF E8)

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NO	DATE	REVISIONS
1	10-10-2023	ADDED PORCH RISER DETAIL

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PROJECT NAME: COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME: PAVING, GRADING, & DRAINAGE DETAILS (2)

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SHEET	38 OF 42

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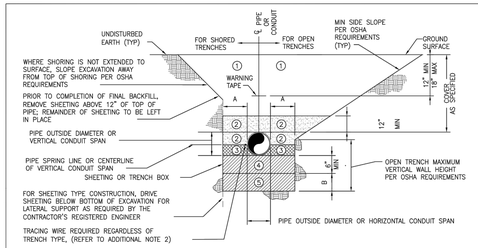


NOMINAL PIPE DIAMETER OR HORIZONTAL CONDUIT SPAN (INCHES)	MINIMUM SIDEWALL CLEARANCE A (INCHES)	ADDITIONAL EXCAVATION DEPTH (1) B (INCHES)
LESS THAN 24	12	12
24 AND GREATER	18	18

(1) REQUIRED WHERE UNSUITABLE MATERIAL IS ENCOUNTERED.

ZONE NO.	ZONE NAME	MATERIAL	COMPACTION
1	FINAL BACKFILL	AS SPECIFIED	AT LEAST 95% MODIFIED PROCTOR MAXIMUM DRY DENSITY ASTM D-1557 (98% WHEN UNDER PAVEMENT)
2	INITIAL BACKFILL		
3	HAUNCHING		
4	BEDDING		
5	FOUNDATION		

TRENCH ZONE NOTES:

(1) FINAL BACKFILL SHALL BE INSTALLED IN LIFTS NOT EXCEEDING 6 INCHES, LOOSE MEASUREMENT. REFER TO ADDITIONAL NOTE 3.

(2) INITIAL BACKFILL SHALL BE INSTALLED IN LIFTS NOT EXCEEDING 6 INCHES, LOOSE MEASUREMENT. ALL LIFTS SHALL BE COMPACTED BY HAND TAMPING OR AN APPROVED METHOD OF MECHANICAL TAMPING. REFER TO ADDITIONAL NOTE 3.

(3) HAUNCHING SHALL BE IN COMPLETELY DEWATERED TRENCHES IN LIFTS NOT EXCEEDING 6 INCHES, LOOSE MEASUREMENT. ALL LIFTS SHALL BE COMPACTED BY HAND TAMPING. HAUNCHING SHALL BE BROUGHT UP EQUALLY ON BOTH SIDES OF THE PIPE.

(4) BEDDING SHALL BE INSTALLED IN COMPLETELY DEWATERED TRENCHES IN LIFTS NOT EXCEEDING 6 INCHES, LOOSE MEASUREMENT, AND SHALL BE COMPACTED BY HAND OR MECHANICAL TAMPING. PROPERLY SHAPED BELL HOLES SHALL BE EXCAVATED IN THE BEDDING TO PERMIT ASSEMBLY OF THE PIPE. REFER TO ADDITIONAL NOTE 3.

(5) NATIVE, UNDISTURBED MATERIAL IN COMPLETELY DEWATERED TRENCHES MEETING THE COMPACTION AND MATERIAL REQUIREMENTS FOR COMPACTED BEDDING MATERIAL NEED NOT BE REPLACED OR REWORKED, EXCEPT FOR SHAPING OF THE BELL HOLES, AND WHERE REFILL IS REQUIRED.

FOUNDATION SHALL BE REQUIRED WHERE UNSUITABLE MATERIAL IS ENCOUNTERED. FOUNDATION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS FOR BEDDING. REFER TO ADDITIONAL NOTE 3.

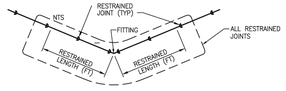
ADDITIONAL NOTES:

1. FOR TRENCHES IN VEHICULAR TRAFFIC AREAS OR BENEATH SURFACE IMPROVEMENTS (EG, SLABS, ASPHALT, ETC.) SEE CONTRACT SPECIFICATIONS FOR ADDITIONAL COMPACTION REQUIREMENTS. SEE DRAWINGS FOR SURFACE IMPROVEMENT AND /OR RESTORATION DETAILS WHERE APPLICABLE.
2. TRACING WIRE SHALL BE INSTALLED ON THE SIDE OF THE PIPE AND ATTACHED TO THE PIPE EVERY 10' W/ A NYLON WIRE TIE. IF THE WIRE IS DAMAGED OR NEEDS TO BE EXTENDED A 3M WATERPROOF TYPE UF SPLICE SHALL BE INSTALLED TO REPAIR THE WIRE. THE ENDS OF THE TRACING WIRE SHALL BE BROUGHT UP IN EVERY VALVE BOX ON THE LINE AND AT THE HYDRANT VALVES. THERE SHALL BE A MINIMUM COIL OF 3' LEFT UNDER THE VALVE BOX COVER. THE WIRE SHALL BE TESTED TO VERIFY CONDUCTIVITY.
3. ALTERNATIVE LIFT THICKNESSES, NOT EXCEEDING 12 INCHES LOOSE MEASUREMENT, ARE ACCEPTABLE IN TRENCH ZONES 1, 2, 4, AND 5 PROVIDED 1) THE LIFT THICKNESS DOES NOT EXCEED THE MAXIMUM VALUE RECOMMENDED IN WRITING BY THE APPLICABLE PIPE MANUFACTURER AND 2) FIELD TEST RESULTS CONFIRM THAT THE SPECIFIED COMPACTION REQUIREMENTS ARE BEING MET.

TYPICAL UTILITY TRENCH DETAIL

NTS

CITY OF ZEPHYRHILLS STANDARD DETAILS	NOVEMBER 2021
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT 39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542 PHONE (813)780-0029 FAX (813)780-0613	G-3



PIPE SIZE	FITTING								
	90° BEND	45° BEND	45° BEND (VERT)	22 1/2° BEND	22 1/2° BEND (VERT)	11 1/4° BEND	11 1/4° BEND (VERT)	VALVE, DEAD END OR REDUCER	TEE (BRANCH)
8"	37	16	45	8	14	4	7	107	107
6"	29	12	34	6	11	3	6	82	82
4"	17	8	16	4	8	2	4	38	37

NOTES:

A. RESTRAINED LENGTHS ARE IN FEET AND ARE FOR POLYETHYLENE WRAPPED DUCTILE IRON PIPE UNLESS OTHERWISE NOTED.

B. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION REGARDING RESTRAINED JOINTS.

C. THE SCHEDULE SHOWN IS FOR THE FOLLOWING SERVICE CONDITIONS 150 PSIG TEST PRESSURE; POORLY GRADED COARSE SAND; 36 INCHES COVER, TYPE 3 TRENCH CONDITIONS; AND 1.5 SAFETY FACTOR.

D. RESTRAINED LENGTHS SHOWN IN TABLE ARE IN FEET AND ARE MINIMUM LENGTHS REQUIRED IN EACH DIRECTION FROM FITTINGS OR VALVES.

E. ALL PIPE SHALL BE RESTRAINED TO THE NEXT JOINT BEYOND THE RESTRAINED LENGTH GIVEN.

F. RESTRAINED LENGTH FOR REDUCERS SHALL BE BASED ON THE SIZE OF THE LARGEST END OF THE REDUCER.

G. CONTRACTOR SHALL HAVE FLORIDA LICENSED PROFESSIONAL ENGINEER VERIFY ALL THE RESTRAINED LENGTHS SHOWN IN THE TABLE ABOVE ARE ADEQUATE FOR ALL VARYING SOIL CONDITIONS ON THE PROJECT. THE CONTRACTOR'S ENGINEER SHALL PROVIDE A SIGNED AND SEALED STATEMENT THAT ALL PIPING WAS INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE TABLE ABOVE OR IN ACCORDANCE WITH THE FINDINGS OF THE CONTRACTOR'S PROFESSIONAL ENGINEER, WHICHEVER ARE MORE STRINGENT. CONTRACTOR'S COST FOR MEETING THESE REQUIREMENTS SHALL BE INCLUDED IN THEIR BID.

H. FOR CONNECTION OF PIPING TO EXISTING PIPING, WHEN THE REQUIRED RESTRAINED JOINT PIPE LENGTHS TO PREVENT PIPE MOVEMENT CANNOT BE ATTAINED IN ACCORDANCE WITH RESTRAINED JOINT SCHEDULE, THE APPROPRIATE TEE, VALVES, BEND AND/OR CROSS FITTING(S) SHALL BE FULLY RESTRAINED IN ACCORDANCE WITH EXHIBIT G-6A TO PREVENT PIPE MOVEMENT.

J. WHERE HDD CONNECTS TO PUSH-ON JOINT PIPING, THIS CONNECTION SHALL BE TREATED AS DEAD END W/ RESPECT TO THE RESTRAINED JOINT SCHEDULE.

RESTRAINED JOINT SCHEDULE

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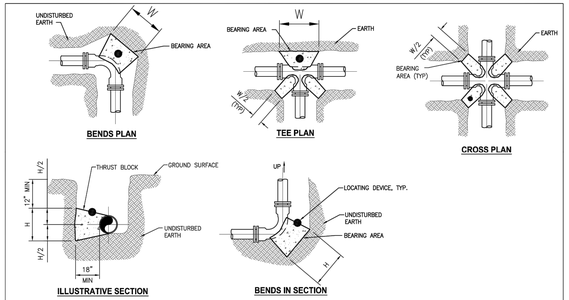


REACTION BLOCK BEARING AREA DIMENSIONS					
FITTING	11 1/4° BEND	22 1/2° BEND	45° BEND	90° BEND	TEE/CROSS/ PLUGS/CAPS
SIZE (in)	H x W (in)	H x W (in)	H x W (in)	H x W (in)	H x W (in)
4	11x11	15x15	20x20	28x28	23x23
6	15x15	21x21	29x29	40x40	32x33
8	20x20	27x27	38x38	52x52	44x44
10	24x24	33x33	47x47	63x63	52x53
12	28x28	40x40	55x55	75x75	63x63
14	33x33	46x46	64x64	87x87	72x73
16	37x37	52x52	73x73	99x99	83x83
18	42x42	58x58	82x82	111x111	93x93
24	56x56	77x77	108x108	146x146	123x123

REACTION BLOCK NOTES

A. BASED ON 150 PSI PRESSURE & 1500 PSF SOIL BEARING VALUE, 2.0 SAFETY FACTOR, WATER TABLE BELOW THE THRUST BLOCK, VERTICAL BLOCK FACE, AND A MINIMUM THICKNESS OF 18 INCHES

B. BEARING AREAS FOR PLUGS SHALL BE THE SAME AS FOR TEES.

C. FORM REACTION BLOCKS TO KEEP CONCRETE CLEAR OF JOINTS AND BOLTS.

D. REQUIRED REACTION BLOCK BEARING AREA SHALL BE PLACED AGAINST UNDISTURBED MATERIAL. WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE ALL LOOSE MATERIAL AND EXTEND REACTION BLOCK TO UNDISTURBED MATERIAL.

E. PLACE PRESSURE TREATED WOOD BOARDS IN FRONT OF PLUG, AT TEE, CROSS OR END OF PIPE BEFORE POURING CONCRETE REACTION BLOCK.

F. BACKFILL SHALL CONSIST ENTIRELY OF CLEAN SAND AND ROCK FRAGMENTS. ANY MUCK ENCOUNTERED SHALL BE REPLACED WITH BACKFILL COMPACTED TO 95% MODIFIED PROCTOR MAXIMUM DRY DENSITY, ASTM D1557.

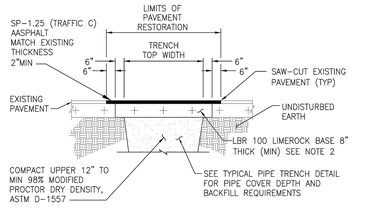
G. NOT USED.

H. CONTRACTOR SHALL HAVE FLORIDA LICENSED PROFESSIONAL ENGINEER VERIFY ALL THE REACTION BLOCK SIZES SHOWN IN THE TABLE ABOVE ARE ADEQUATE FOR ALL VARYING SOIL CONDITIONS ON THE PROJECT. THE CONTRACTOR'S ENGINEER SHALL PROVIDE A SIGNED AND SEALED STATEMENT THAT ALL REACTION BLOCKS WERE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE TABLE ABOVE OR IN ACCORDANCE WITH THE FINDINGS OF THE CONTRACTOR'S PROFESSIONAL ENGINEER, WHICHEVER ARE MORE STRINGENT. CONTRACTOR'S COST FOR MEETING THESE REQUIREMENTS SHALL BE INCLUDED IN THEIR BID.

TYPICAL REACTION BLOCK (THRUST BLOCK) DETAILS

NTS

CITY OF ZEPHYRHILLS STANDARD DETAILS	NOVEMBER 2021
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT 39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542 PHONE (813)780-0029 FAX (813)780-0613	G-6A



NOTES:

1. ASPHALT PAVEMENT RESTORATION DETAIL APPLIES TO CITY ROADS, DRIVEWAYS, PRIVATE ROADS, DRIVES, MISCELLANEOUS PATCHES, AND SIMILAR RESTORATION.
2. NEW LIMEROCK TO BE COMPACTED TO NOT LESS THAN 98%. MODIFIED PROCTOR DRY DENSITY, ASTMD-1557.
3. FOR COUNTY ROADS AND STATE ROADS, DESIGN SHALL BE IN COMPLIANCE WITH PASCO COUNTY STANDARDS AND FDOT STANDARDS RESPECTFULLY.

ASPHALT PAVEMENT RESTORATION

NTS

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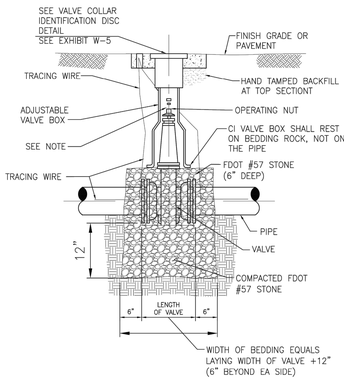

NOTES:

1. EXTENSION OF VALVE BOX SHALL BE SET SO AS TO RESERVE 1/2 OF THE ADJUSTMENT LENGTH FOR FUTURE USE.
2. VALVE STEM EXTENSION(S) REQ'D TO MAINTAIN 2' DEPTH TO OPERATING NUT ON DEPRESSED MAIN W/36" OR MORE COVER.

GATE VALVE BOX

NTS

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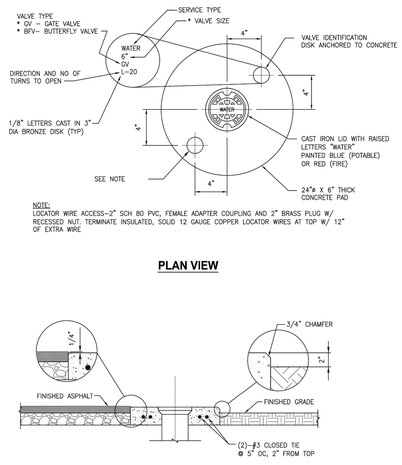

VALVE COLLAR AND IDENTIFICATION DISK

NTS

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ROBERT D. FUDGE, STATE OF FLORIDA PROFESSIONAL ENGINEER, LICENSE NO. 55925.

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY ROBERT D. FUDGE, P.E. ON THE DATE INDICATED HERE.

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PREPARED FOR

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GENERAL NOTES:

1. A MASTER METER ASSEMBLY SHALL BE DIRECTLY ACCESSIBLE BY BOOM TRUCK OFF A COMMON BASE ROW, OR BY AN INTERIOR ROAD THAT IS NOT BLOCKED BY A WALL OR GATE. THE ACCESS ROAD SHALL BE 12 FT WIDE (MIN.) AND PAVED (CONCRETE OR ASPHALT)
2. ALL ABOVE GROUND PIPES AND FITTINGS SHALL BE CLASS 53 D.I.P. FOR 4 INCH AND LARGER PIPE.
3. CERTIFICATION BY THE CITY OF PROPER INSTALLATION AND OPERATION WILL BE REQUIRED PRIOR TO ACCEPTANCE BY THE CITY.
4. THE CITY WILL FURNISH AND INSTALL THE METER/BACKFLOW ASSEMBLY AFTER INSTALLATION FEES HAVE BEEN PAID. THE CONTRACTOR WILL BE REQUIRED TO INSTALL THE METER/BACKFLOW FOR 3" AND LARGER METERS.
5. THE 6 INCH CONCRETE SLAB SHALL BE REINFORCED WITH 6x6–W1.4xW1.4 WELDED WIRE FABRIC AND SHALL BE TYPE I, PORTLAND CEMENT WITH A MINIMUM 28–DAY STRENGTH OF 3000psi.
6. SLAB WIDTH AND LENGTH SHALL VARY WITH ASSEMBLY. THE TOP OF SLAB SHALL BE 2 INCHES ABOVE FINISHED GRADE.
7. THE METER ASSEMBLY & BOLLARDS SHALL BE PAINTED IN ACCORDANCE WITH SSPC STANDARDS. COLOR TO BE CHOSEN BY THE CITY.
8. IF THE METER ASSEMBLY IS LOCATED WITHIN A TRAFFIC/VEHICLE AREA (PARKING LOT, DRIVEWAY, OR WITHIN 15 FT OF EDGE OF PAVEMENT/BACK OF CURB), METERS UP TO 2 INCHES SHALL HAVE A MINIMUM OF 4 TRAFFIC BOLLARD PROTECTION POSTS, AND FOR METERS 3 INCHES & LARGER A MINIMUM OF 6 TRAFFIC BOLLARDS ARE REQUIRED.

TEMPORARY METER NOTES:

1. THE IN–LINE VALVE IS TO REMAIN CLOSED UNTIL AFTER THE CONSTRUCTION AND ACCEPTANCE OF THE DEVELOPMENT WATER DISTRIBUTION SYSTEM.
2. THE METER ASSEMBLY IS TO BE REMOVED AFTER FINAL ACCEPTANCE OF THE WATER DISTRIBUTION SYSTEM BY THE CITY OF ZEPHYRHILLS HEALTH DEPARTMENT AND THE CITY OF ZEPHYRHILLS PLANNING DEPARTMENT.
3. ALL CONSTRUCTION MUST MEET APPLICABLE STATE AND/OR LOCAL ROADWAY/ROADSIDE DESIGN STANDARDS INCLUDING, BUT NOT LIMITED TO, CLEAR ZONE REQUIREMENTS.

GENERAL WATER METER ASSEMBLY NOTES RESIDENTIAL OR COMMERCIAL DEVELOPMENT

NTS

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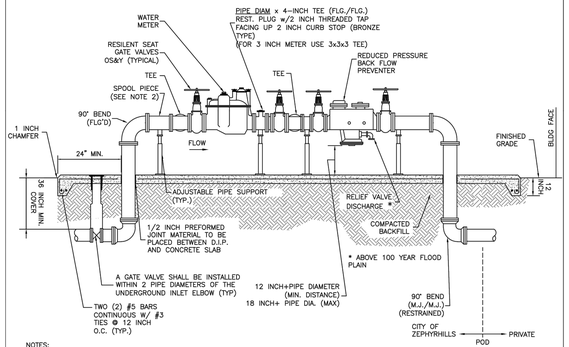
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT
39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542
PHONE (813)780-0029 FAX (813)780-0613
NOVEMBER 2021
W-16E



NOTES:

1. SEE EXHIBIT W–1 FOR GENERAL WATER METER ASSEMBLY NOTES.
2. WATER METER SIZE/STYLE TO BE DETERMINED BY ENGINEER AS WELL AS UPSTREAM AND DOWNSTREAM SPOOL LENGTHS.
3. SEE GENERAL CONSTRUCTION NOTES (ATTACHMENT E) FOR PAINTING REQUIREMENTS.
4. BOLLARDS ARE REQUIRED IN HIGH TRAFFIC OR NEAR VEHICLE MOVEMENT AREAS.
5. "CRITICAL INSTALLATION" MEANS A FACILITY THAT CANNOT BE WITHOUT WATER DURING MAINTENANCE, TESTING, REPAIR, OR REPLACEMENT OF A SINGLE BACKFLOW ASSEMBLY. DUAL ASSEMBLIES ALLOW THE ABOVE WITHOUT SERVICE INTERRUPTIONS.
6. ALL ABOVE GRADE VALVES TO BE OS&Y. VALVE HANDWHEELS SHALL BE LOCKED WITH CORROSION–RESISTANT CHAINS (CITY OF ZEPHYRHILLS TO PROVIDE THE LOCKS).
7. THE CITY WILL FURNISH METER/BACKFLOW ASSEMBLY AFTER INSTALLATION FEES HAVE BEEN PAID. CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLATION OF 3" AND LARGER METERS.

WATER METER ASSEMBLY COMMERCIAL 3 INCH AND LARGER (PROFILE)

NTS

CITY OF ZEPHYRHILLS STANDARD DETAILS
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT
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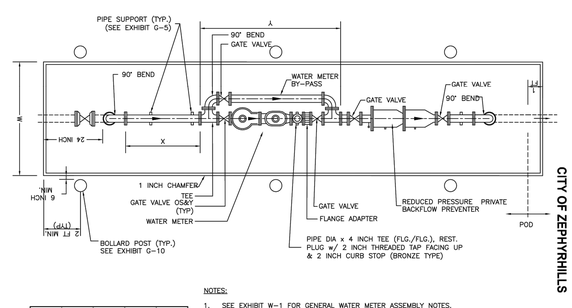
NOVEMBER 2021
W-16B

CITY OF ZEPHYRHILLS STANDARD DETAILS
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT
39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542
PHONE (813)780-0029 FAX (813)780-0613
NOVEMBER 2021
W-16C



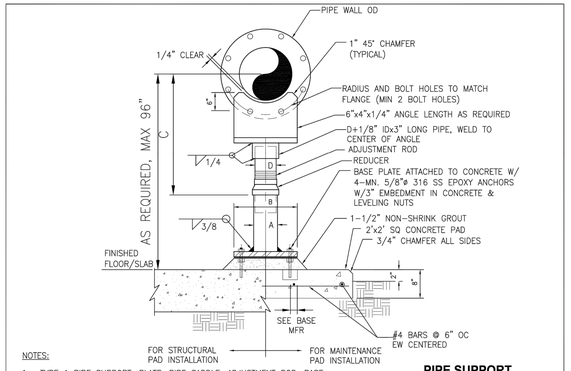
METER SIZE	L (MIN)	X	Y	W
8"	24'–6"	64"	112"	9'
6"	23'–6"	48"	98"	9'
4"	22'–8"	32"	73"	7'
3"	21'–6"	24"	62"	7'

NOTES:

1. SEE EXHIBIT W–1 FOR GENERAL WATER METER ASSEMBLY NOTES.
2. WATER METER SIZE/STYLE TO BE DETERMINED BY ENGINEER AS WELL AS UPSTREAM AND DOWNSTREAM SPOOL LENGTHS.
3. SEE GENERAL CONSTRUCTION NOTES (ATTACHMENT E) FOR PAINTING REQUIREMENTS.
4. BOLLARDS ARE REQUIRED IN HIGH TRAFFIC OR NEAR VEHICLE MOVEMENT AREAS.
5. THE CITY WILL FURNISH METER/BACKFLOW ASSEMBLY AFTER INSTALLATION FEES HAVE BEEN PAID. CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLATION OF 3" AND LARGER METERS.

MASTER WATER METER ASSEMBLY COMMERCIAL FOR 3 INCH AND LARGER (PLAN)

NTS



NOTES:

1. TYPE 1 PIPE SUPPORT: PLATE, PIPE SADDLE, ADJUSTMENT ROD, BASE PLATE, ETC. SHALL BE HOT DIP GALVANIZED CARBON STEEL. REDUCER SHALL BE CAST IRON.
2. TYPE 2 PIPE SUPPORT: PLATE, PIPE SADDLE, ADJUSTMENT ROD, REDUCER, BASE PLATE , ETC. SHALL BE 300 SERIES STAINLESS STEEL.
3. HOT DIP GALVANIZE ENTIRE PIPE SUPPORT AND STEEL BASE PLATE AFTER FABRICATION (EXCEPT FOR STAINLESS STEEL FASTENING HARDWARE).
4. ALL HARDWARE SHALL BE 316 SS.
5. SEE PLANS AND SECTIONS FOR PIPE CENTERLINE ELEVATION REQUIREMENTS.
6. PROVIDE RIGID INSULATION PROTECTION SHIELD WHERE PIPING IS INSULATED.
7. BASE PLATES SHALL BE SQUARE AND BE 3/8–INCH THICK FOR PIPE SIZES THROUGH 10–INCH. FOR ALL LARGER PIPES BEING SUPPORTED, THE BASE PLATES SHALL BE 1/2–INCH THICK.

PIPE SUPPORT DIMENSION TABLE

PIPE SIZE	A	B	C MIN	C MAX	D
INCHES					
4	4	9	9 1/4	14	3
5	4	9	10	14 3/4	3
6	4	9	10 1/2	15 1/4	3
8	4	9	11 3/4	16 1/2	3
10	4	9	13 1/2	18 1/4	3
12	4	9	15	19 3/4	3
14	4	11	16 1/4	20 3/4	3
16	4	11	17 3/4	22 1/4	3
18	6	13 1/2	19 1/2	24	4
20	6	13 1/2	21	25 1/2	4
24	6	13 1/2	23 3/4	28 1/4	4

FLANGE TYPE PIPE SUPPORT DETAIL

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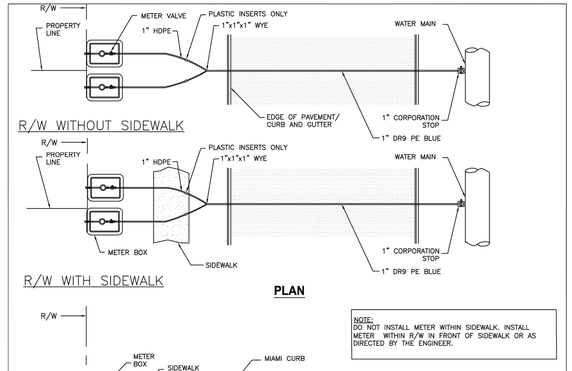
G-5A



METER SIZE	SERVICE LINE SIZE (inches)	CASING SIZE (inches)
3/4 & 1 Inch Dual Service	1	N/A

RESIDENTIAL DUAL LOT METERED SERVICE (FAR SIDE)

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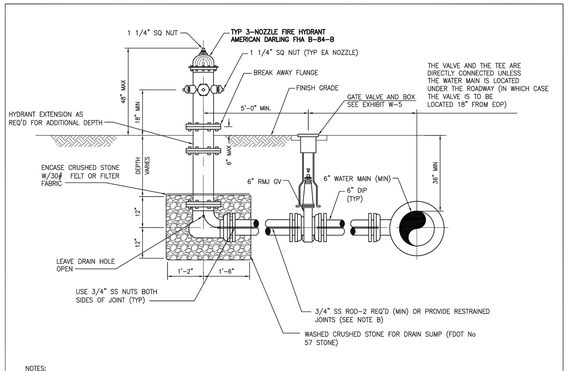
W-9H



NOTES:

A. FIRE HYDRANT INSTALLATION SHALL BE IN ACCORDANCE WITH THE CITY'S LAND DEVELOPMENT CODE.

B. 3/4" STAINLESS STEEL ROD CUT AND THREADED AS REQUIRED, OR PROVIDE RESTRAINED JOINTS.

C. FIRE HYDRANTS SHALL BE INSTALLED BETWEEN 3' AND 7' FROM EDGE OF PAVEMENT.

D. TIE RODS, NUTS, WASHERS AND OTHER FASTENERS SHALL BE GALVANIZED OR TYPE 316 STAINLESS STEEL.

E. A 1 1/2" PUMPER NOZZLE TO BE PERPENDICULAR TO CENTERLINE OF MAJOR STREET.

F. FIRE HYDRANT ASSEMBLY INCLUDES ALL THAT IS SHOWN INCLUDING DI PIPE TO R/W, DIP TEE AT MAIN, HYDRANT, REDUCERS, VALVE, HYDRANT EXTENSIONS, VALVE EXTENSIONS, ALL PIPING AND MISCELLANEOUS APPURTENANCES REQUIRED FOR A COMPLETE INSTALLATION.

G. FOR FIRE HYDRANTS ALONG PAVED ROADWAYS, INSTALL RAISED PAVEMENT MARKER FOR FIRE HYDRANT IDENTIFICATION. MARKER SHALL BE BLUE AND IN ACCORDANCE WITH FDOT 706. MARKER SHALL BE LOCATED IN THE CENTER OF CLOSEST LANE PERPENDICULAR TO FIRE HYDRANT.

FIRE HYDRANT DETAIL

NTS

CITY OF ZEPHYRHILLS STANDARD DETAILS
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT
39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542
PHONE (813)780-0029 FAX (813)780-0613
NOVEMBER 2021
W-10

ROBERT D. FUDGE, STATE OF FLORIDA PROFESSIONAL ENGINEER, LICENSE NO. 55925.

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PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
UTILITY DETAILS (2)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	40 OF 42

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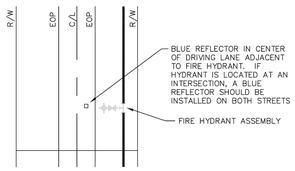

FIRE HYDRANT REFLECTOR DETAIL

NOT TO SCALE

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CITY OF ZEPHYRHILLS UTILITY DEPARTMENT
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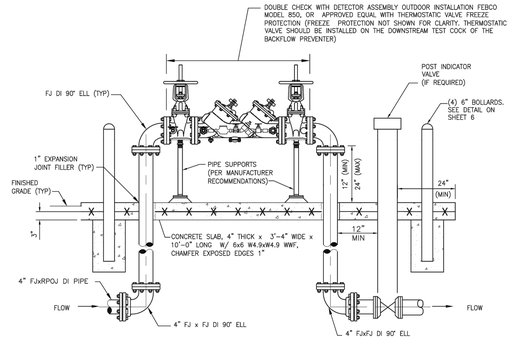
W-11



NOTES:

1. ALL PIPE AND FITTINGS SHALL BE DUCTILE IRON, CLASS 53, CEMENT LINED INTERIOR WITH FLANGE FITTINGS FOR ABOVE GROUND USE. MANUFACTURERS RESTRAINED JOINTS SHALL BE USED FOR UNDERGROUND PIPING.
2. CERTIFICATION BY THE CITY OF PROPER INSTALLATION AND OPERATION WILL BE REQUIRED PRIOR TO ACCEPTANCE BY THE CITY.
3. ALL BACKFLOW ASSEMBLIES OR DEVICES MUST HAVE ASSE APPROVAL. THE BACKFLOW PREVENTION DEVICE ASSEMBLY SHALL BE A DOUBLE CHECK PRESSURE DEVICE AS LISTED ON THE APPROVED LIST OF THE UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION FOR CROSS CONNECTION AND HYDRAULIC RESEARCH FOR INSTALLATIONS WHERE CHEMICALS ARE ADDED TO THE FIRE SUPPRESSION SYSTEM. IF NO CHEMICALS ARE ADDED, A DUAL CHECK BACKFLOW PREVENTER CAN BE USED.
4. THE 6 INCH CONCRETE SLAB SHALL BE REINFORCED WITH 6x6–W1.4xW1.4 WELDED WIRE FABRIC AND SHALL BE TYPE I, PORTLAND CEMENT WITH A MINIMUM 28–DAY STRENGTH OF 3000psi.
5. SLAB WIDTH SHALL BE 5 FT TYPICAL AND LENGTH SHALL VARY WITH ASSEMBLY.
6. BOLLARDS NEEDED IN HIGH TRAFFIC OR VEHICLE MOVEMENT AREAS.
7. ALL ABOVE GRADE VALVES TO BE OS&Y. VALVE HAND WHEELS SHALL BE LOCKED WITH CORROSION–RESISTANT CHAINS (THE CITY TO PROVIDE THE LOCKS).

BACKFLOW PREVENTION ASSEMBLY (FOR FIRE SERVICE ONLY)

NTS

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CITY OF ZEPHYRHILLS UTILITY DEPARTMENT
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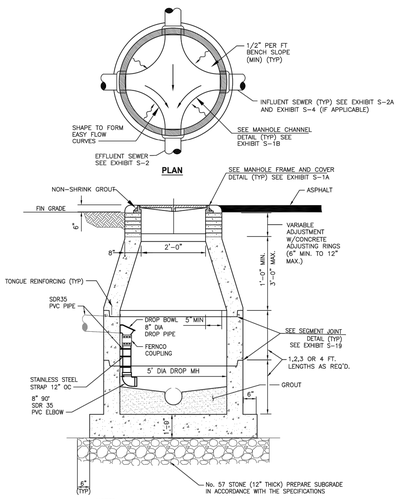
W-12



NOTES:

1. CONNECTIONS AND GROUTING IN MANHOLE ARE SCHEMATIC. SEE ACTUAL DWGS FOR PIPE DIAMETERS, LOCATIONS AND INVERTS.
2. COAT OUTSIDE OF MANHOLE AS SPECIFIED.
3. LINE INSIDE OF MANHOLE AS SPECIFIED.
4. RISERS SHALL BE CONCENTRIC WHEN POSSIBLE.

SECTION

MANHOLE W/ DROP PIPE

NTS

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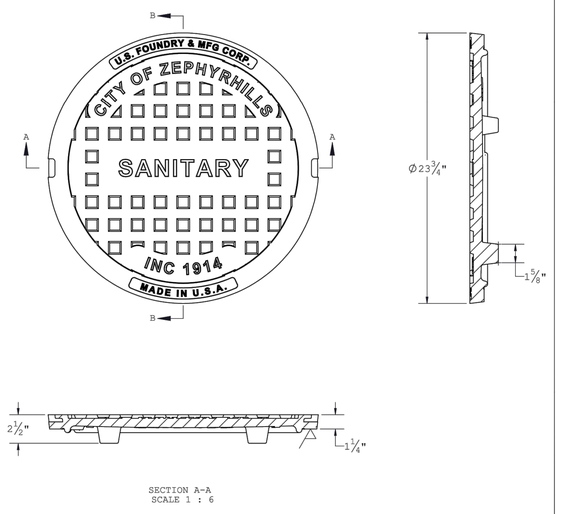
S-2A



MANHOLE COVER DETAIL

NOT TO SCALE

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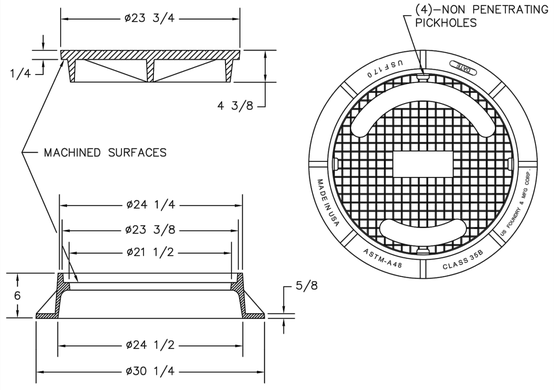
S-3



MANHOLE COVER DETAIL FOR PAVED AREAS

NOT TO SCALE

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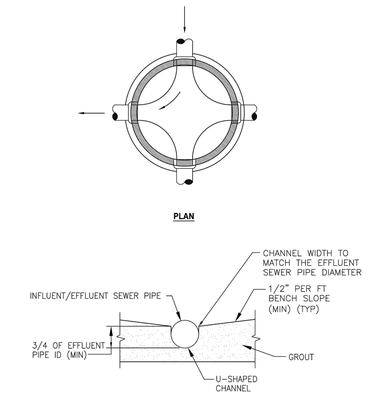
S-3A



NOTES:

1. TROWEL SLOPES AND CHANNELS SMOOTH TO PREVENT COLLECTION OF MATERIALS.
2. ALL INVERTS SHALL BE CONSTRUCTED IN A MANOR TO ALLOW FOR EASY INSERTION OF A SEWER CAMERA/TRANSPORTER
3. ALL MANHOLES, REGARDLESS OF OUTLETS, SHALL HAVE THIS CROSS CONFIGURATION."

MANHOLE - U-SHAPED CHANNEL

NTS

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S-4

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PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
UTILITY DETAILS (3)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	41 OF 42

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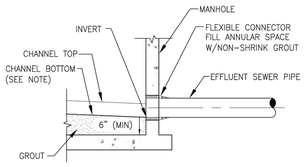

NOTE:
PROVIDE SMOOTH TRANSITION IN CHANNEL BOTTOM FROM INFLUENT IE TO EFFLUENT IE.

MANHOLE - CONNECTION TO EFFLUENT GRAVITY SEWER

NTS

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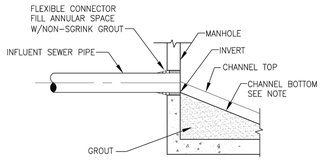
S-4A



NOTE:
PROVIDE SMOOTH TRANSITION IN CHANNEL BOTTOM FROM INFLUENT IE TO EFFLUENT IE.

MANHOLE - CONNECTION TO INFLUENT GRAVITY SEWER

NTS

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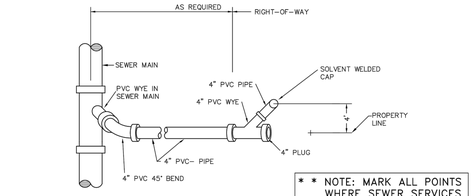
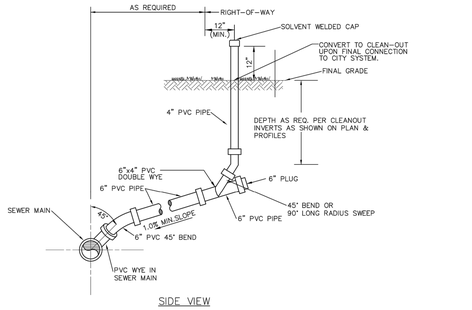
S-4B



PLAN VIEW

** NOTE: MARK ALL POINTS WHERE SEWER SERVICES CROSS CURB WITH A "S" MARK IN CONCRETE.



SIDE VIEW

SANITARY SEWER SERVICE

PVC SINGLE SERVICE

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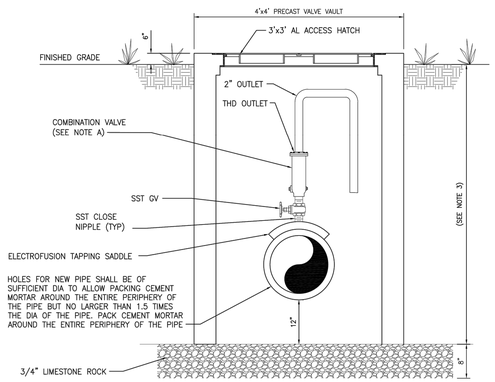
S-5



NOTES:
A. FOR SEWAGE FORCE MAINS, REPLACEMENT VALVE SIZE SHALL MATCH EXISTING VALVE TO BE REPLACED.
B. THE VALVE VAULT IS NOT DESIGNED FOR VEHICULAR TRAFFIC LOADS AND IS NOT INTENDED FOR PLACEMENT WITHIN THE TRAVELED WAY.
C. NOMINAL 36" MIN. ENGINEER MAY ADJUST AS REQUIRED BASED ON FINAL DESIGN.

TYPICAL UNDERGROUND COMBINATION AIR RELEASE VALVE DETAIL

NTS

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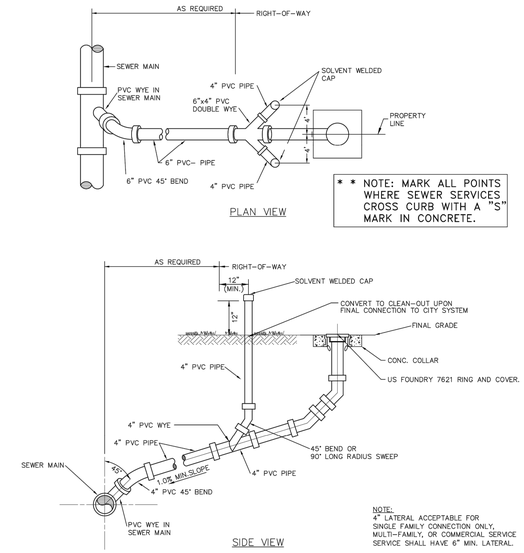
S-13



PLAN VIEW

** NOTE: MARK ALL POINTS WHERE SEWER SERVICES CROSS CURB WITH A "S" MARK IN CONCRETE.

NOTE:
4" LATERAL ACCEPTABLE FOR SINGLE FAMILY CONNECTION ONLY, MULTI-FAMILY, OR COMMERCIAL SERVICE SERVICE SHALL HAVE 6" MIN. LATERAL.

SIDE VIEW

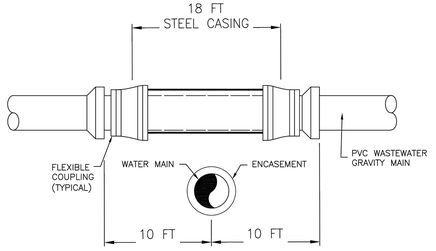
SANITARY SEWER SERVICE

PVC DOUBLE SERVICE
NOT TO SCALE

CITY OF ZEPHYRHILLS STANDARD DETAILS
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT
39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542
PHONE (813)780-0029 FAX (813)780-0613

NOVEMBER 2021

S-6



NOTES:
1. WHERE WATER AND SEWER CROSS WITH LESS THAN 18 INCHES OF VERTICAL CLEARANCE, THE GRAVITY SEWER SHALL CONSIST OF 18 FT OF STEEL ENCASED PVC PIPE CENTERED ON THE POINT OF THE CROSSING AS DETAILED ABOVE.
2. WHERE WATER MAIN CROSSES BELOW SEWER MAIN, BOTH THE GRAVITY AND THE WATER MAIN MUST BE ENCASED.

GRAVITY MAIN AND WATER MAIN INTERSECTION DETAIL

NTS

CITY OF ZEPHYRHILLS STANDARD DETAILS
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT
39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542
PHONE (813)780-0029 FAX (813)780-0613

NOVEMBER 2021

S-16

ROBERT D. FUDGE, STATE OF FLORIDA PROFESSIONAL ENGINEER, LICENSE NO. 55925.

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY ROBERT D. FUDGE, P.E. ON THE DATE INDICATED HERE.

DIGITAL SIGNATURE (SHA1 THUMBPRINT 3C A6 86 19 24 BA AB 9A 72 5E 22 D1 28 51 6B EC C6 E5 CF E8)

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NO	DATE	REVISIONS

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Florida Land Design & Permitting

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TRINITY, FLORIDA 34655
PHONE: (727) 478-2421
www.fldandp.com
E-mail: info@fldandp.com
Engineer # 24,145, 33088
Survey # 6883

PREPARED FOR

GK FLORIDA, LLC
6805 EXECUTIVE DRIVE, SUITE 250
COLORADO SPRINGS, CO 80920
PHONE: (719) 598-5190 - EMAIL: BPEELE@GOODWINKNIGHT.COM

PROJECT NAME
COTTAGES AT ABBOTT STATION
PORTION OF TRACT "K" OF THE SILVER OAKS MASTER PLAN

SHEET NAME
UTILITY DETAILS (4)

PROJECT ID	1089
PROJECT NO	2023-1089
DESIGNED	DJA
CHECKED	RDF
DRAWN	AVS
QC	EM
DATE	JULY 21, 2023
SHEET	42 OF 42

Oct 10, 2023 @ 2:54pm P:\1089\ProjData\Constdocs\Plans\1089-GK-PDUTIL.dwg – rpagan

LEGAL DESCRIPTION

(LANDS DESCRIBED IN OFFICIAL RECORDS BOOK 7896, PAGE 1672 OF THE PUBLIC RECORDS OF PASCO COUNTY, FLORIDA)

"COMMENCE AT THE SOUTHEAST CORNER OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SAID SECTION 4, TOWNSHIP 26 SOUTH, RANGE 21 EAST, PASCO COUNTY, FLORIDA, THENCE RUN WEST 700 FEET, THENCE NORTHERLY 780 FEET PARALLEL TO THE EAST BOUNDARY LINE OF SAID NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4, THENCE EAST 700 FEET TO SAID EAST BOUNDARY LINE OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4, AND THENCE RUN SOUTH TO THE POINT OF BEGINNING."

CONTAINING 12.526 ACRES, MORE OR LESS.

SITE DATA

PARCEL ID: 04-26-21-0000-00200-0000
S/T/R: 04-26-21
SITE AREA: 545,626 SF (12.526-ACRES)
EXISTING ZONING: AGRICULTURAL DISTRICT (A-C)
PROPOSED ZONING: PLANNED UNIT DEVELOPMENT (PUD)
EXISTING FUTURE LAND USE: RES-6
PROPOSED FUTURE LAND USE: MIXED USE (MU)
EXISTING USE: TWO SINGLE FAMILY DETACHED RESIDENCES
WATER/WASTEWATER SERVICE AREA: CITY OF ZEPHYRHILLS
FLOODZONE: "X" PER FEMA PANEL 12101C0289F
STORMWATER: BASIN OF SPECIAL CONCERN

AREA BREAKDOWN
EXISTING SITE AREA: SITE AREA: 545,626 SF (12.526-ACRES)
OUTPARCEL "A": 1.65-ACRES
OUTPARCEL "B": 0.75-ACRES
RIGHT OF WAY DEDICATION: 0.542-ACRES
HEALTHIER STAY PROJECT AREA: 9.584-ACRES

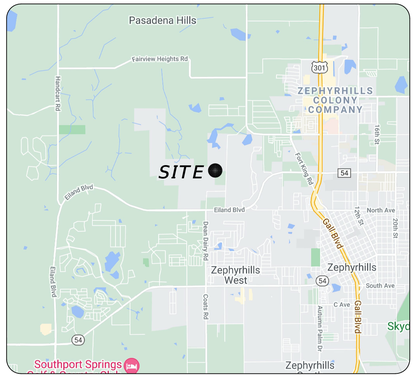
LEGEND

- EXISTING PROPERTY LINE
- PROPERTY TO BE DEDICATED AS RIGHT OF WAY
- PROPOSED BUILDING
- PROPOSED PAVEMENT

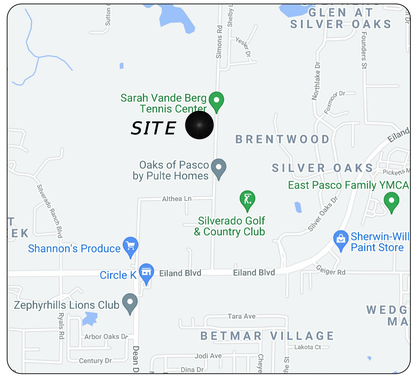
DEVELOPMENT CRITERIA

RESIDENTIAL
PROJECT AREA: 5.51-ACRES
PROPOSED DENSITY: 14 UNITS / ACRE (MAX.)
SETBACKS:
FRONT: 25'
SIDE: 7.5'
REAR: 25'
MINIMUM LOT WIDTH:
SINGLE FAMILY ATTACHED: 60-FEET
SINGLE FAMILY DETACHED: 20-FEET
HEIGHT: TWO STORY MAXIMUM
PRIVATE RIGHT OF WAY WIDTH:
ONE WAY-25'; TWO WAY-40'

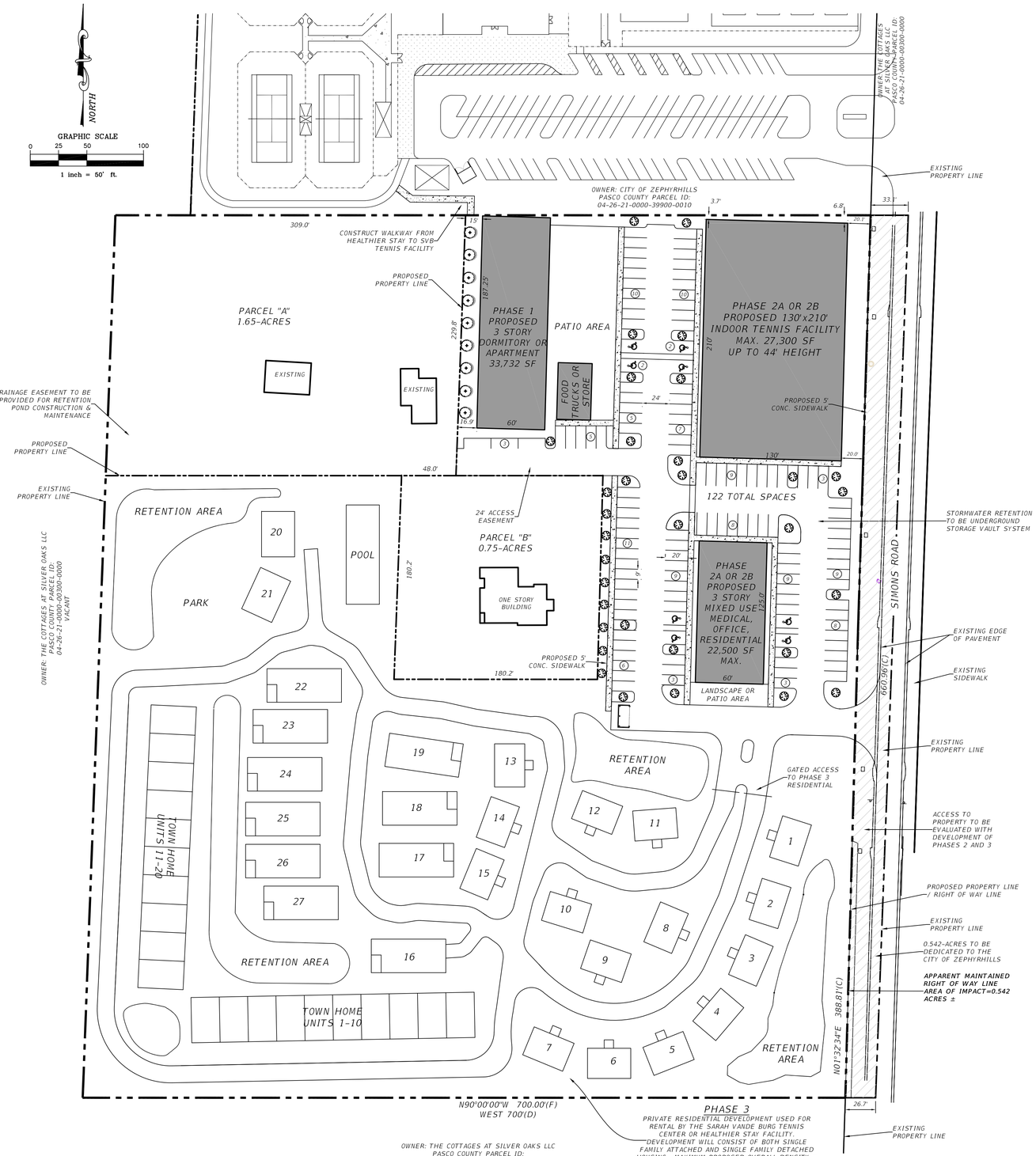
COMMERCIAL
PROJECT AREA: 4.07-ACRES
PROPOSED F.A.R.: 85,032 / 177,293 = 0.48 (0.50 MAX)
SETBACKS:
FRONT: 20'
SIDE: 0'
REAR: 10'
HEIGHT: 48' MAXIMUM
PARKING:
PHASE 1 LIVING SPACE: PROVIDED AT ADJACENT SVB TENNIS CENTER
PHASE 2 INDOOR TENNIS BUILDING:
NA - SHARED PARKING WITH SVB, HEALTHIER STAY AND OTHER OFFSITE PROPERTY
PHASE 2 MIXED USE BUILDING:
22,500 SF @ 5 SPACES / 1000 SF = 113 SPACES
TOTAL REQUIRED PARKING = 113 SPACES
TOTAL PROVIDED PARKING = 122 SPACES



VICINITY MAP
N.T.S.



LOCATION MAP
N.T.S.



NO.	DATE	REVISION
0	06/29/21	PD SUBMITTAL

CPWG ENGINEERING, INC.
3918 N. HIGHLAND AVE.
TAMPA, FL
813-361-2644

cpwg AT THE READY.

MICHAEL STALZER, PE
FLORIDA REG. PROF. ENGINEER No.: 79953

DEVELOPER:
SVB PROPERTIES, LLC.
6585 SIMONS ROAD
ZEPHYRHILLS, FL 33541

HEALTHIER STAY

PLANNED DEVELOPMENT PLAN

SHEET NUMBER 1
OF 2 SHEETS

LEGAL DESCRIPTION

(LANDS DESCRIBED IN OFFICIAL RECORDS BOOK 7896, PAGE 1672 OF THE PUBLIC RECORDS OF PASCO COUNTY, FLORIDA)

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SINGLE FAMILY DETACHED: 20-FEET
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ONE WAY-25'; TWO WAY-40'

ALTERNATE DEVELOPMENT PLAN
RECREATION/SPORTS CENTER

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PROJECT AREA: 4.07-ACRES
PROPOSED F.A.R.: 85,032 / 177,293 = 0.48 (0.50 MAX)
SETBACKS:
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SIDE: 0'
REAR: 10'
HEIGHT: 48' MAXIMUM
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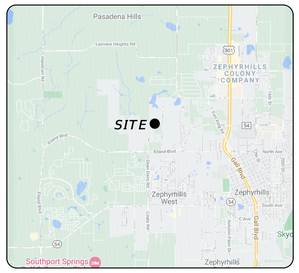
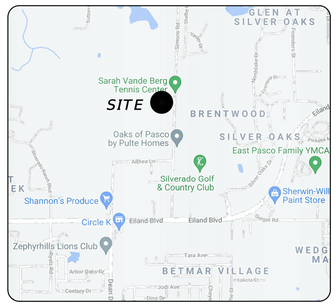


VICINITY MAP
N.T.S.



LOCATION MAP
N.T.S.

HEIDT DESIGN
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Transportation Engineering
Ecological Services • Landscape Architecture

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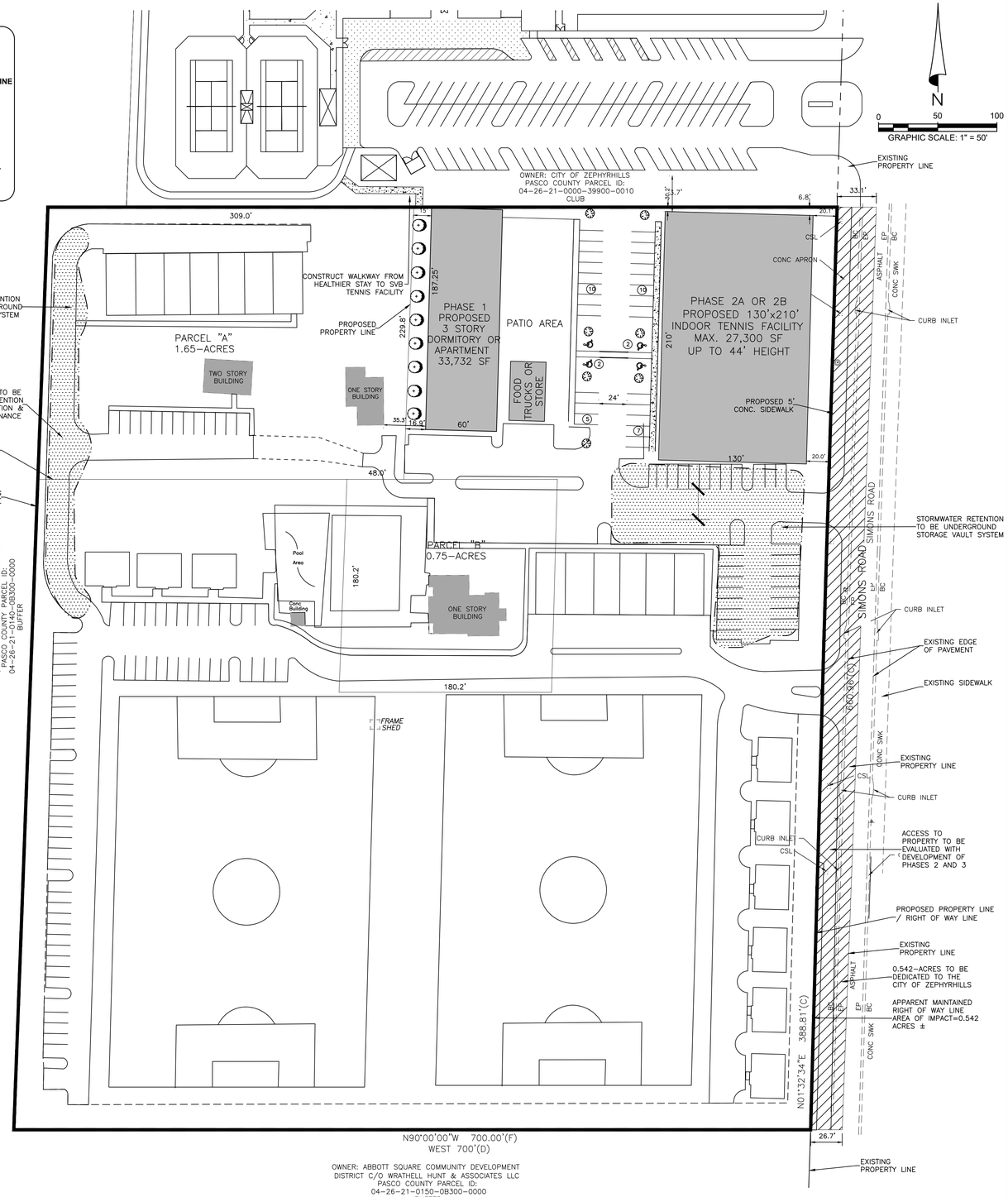

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5904-A Hampton Oaks Pkwy.
Tampa, Florida 33610
Office: 813-253-5311
Fax: 813-464-7629
www.HeidtDesign.com

HEALTHIER STAY
PLANNED DEVELOPMENT
ALTERNATE SITE PLAN
SVB PROPERTIES, LLC.
PREPARED FOR: 6585 SIMONS ROAD ZEPHYRHILLS, FL 33541

NO.	DATE	DESCRIPTION
1	00/00/0000	PD SUBMITTAL

PROJECT NO:	MAR-SH-1001
FILESR_PD-PLAN_ALT-LAYOUT	
DESIGN BY:	SM
DRAWN BY:	SM

2 of 2

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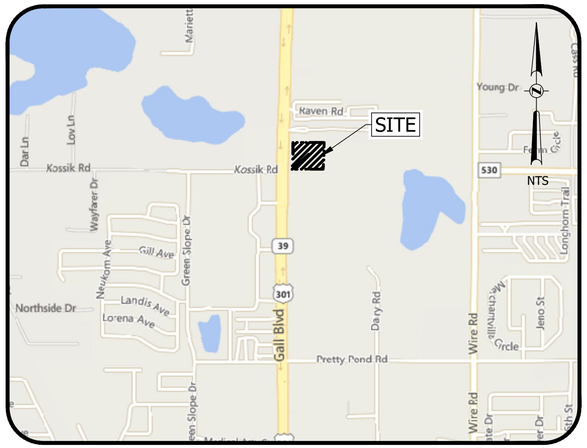
R:\SAV SIMONS RD\MASTER PLAN\COMMUNITY PLANNING\ZONING\CADSR_PD-PLAN_ALT-LAYOUT DWG-L-700 2023/10/03 1:52 PM SAM MIRZA

LOCATION MAP



MAP REFERENCES

BOUNDARY AND TOPOGRAPHIC SURVEY

INFORMATION TAKEN FROM TOPOGRAPHIC SURVEY "TOPOGRAPHIC SURVEY WITH TREES" FOR "PORTION LOT 2, ZEPHYR COMMONS" PREPARED BY JOHN WABY, PLS, OF AVID GROUP DATED 08/21/2023.

EXISTING UTILITY & DRAINAGE

INFORMATION TAKEN FROM "ZEPHYR COMMONS MATTRES FIRM AS-BUILT SURVEY" FOR "PARCEL 3 @ ZEPHYR COMMONS" PREPARED BY HEINKEL CONSTRUCTION, INC. DATED 05/10/2014.

LEGAL DESCRIPTION

SEE LEGAL DESCRIPTIONS FOR THE FOLLOWING PROJECTS:

A PORTION OF LOT 2, ZEPHYR COMMONS PHASE 1 AS RECORDED IN PLAT BOOK 65, PAGE 132 OF THE PUBLIC RECORDS OF PASCO COUNTY, FLORIDA.

PROFESSIONAL TEAM

CIVIL ENGINEER/PLANNER:
AVID GROUP
2300 CURLEW ROAD SUITE 201
PALM HARBOR, FLORIDA 34683
PHONE: (727) 789-9500

GEOTECHNICAL ENGINEER:
UNIVERSAL ENGINEERING SCIENCES
9802 PALM RIVER RD.
TAMPA, FLORIDA, 33619
PHONE: (813) 740-8506

SURVEYOR:
AVID GROUP
2300 CURLEW ROAD SUITE 201
PALM HARBOR, FLORIDA 34683
PHONE: (727) 789-9500

ARCHITECT:
DTI ARCHITECTS
14215 NW 80TH AVENUE, SUITE 303
MIAMI LAKES, FL 33016
PHONE: (786) 235-9097

LANDSCAPE ARCHITECT:
CJM DESIGNS, LLC
2116 RIVERS EDGE COURT
CLEARWATER, FLORIDA 33763
PHONE: (727) 430-5038

UTILITY COMPANIES

FIBER, CABLE:
BRIGHT HOUSE NETWORKS
30432 SR 54
WESLEY CHAPEL, FL 33543
CONTACT: MIKE KIKER
PHONE: (813) 862-0522 EXT: 84263

WATER & SEWER:
CITY OF ZEPHYRHILLS
39421 SOUTH AVE
ZEPHYRHILLS, FL 33542
CONTACT: BRUCE SELLERS
PHONE: (813) 780-0000 EXT: 3567

ELECTRIC:
DUKE ENERGY
2501 25TH ST N
ST. PETERSBURG, FL 33713
CONTACT: MEGAN VONSTETINA
PHONE: 717-893-9394

CABLE/FIBER/PHONE:
FRONTIER COMMUNICATIONS
3712 W. WALNUT ST
TAMPA, FL 33607
CONTACT: CARLOS BATES
PHONE: (941) 906-6709

GAS:
TECO PEOPLES GAS
1400 CHANNELSIDE DR
TAMPA, FL 33605
CONTACT: JACK EVERIDGE
PHONE: (813) 309-5966

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K:\PROJECTS\2900-2999\2980045\DWG\CURRENT\CIVIL\PSP2980045-COV.DWG, 8/28/2023 2:42:31 PM, Ryan Fallin

PRELIMINARY SITE PLAN

FOR

LOT 2 @ ZEPHYR COMMONS

SECTION 35, TOWNSHIP 25 SOUTH, RANGE 21 EAST
CITY OF ZEPHYRHILLS, FLORIDA

Prepared For:

SF ZEPHYR COMMONS OUTPARCELS LP

2851 JOHN STREET. SUITE ONE
MARKHAM, ONTARIO L3R 5R7 CA
PHONE: (954) 557-6879

Prepared By:

CIVIL ENGINEERING
LAND PLANNING
TRAFFIC/TRANSPORTATION
SURVEYING
GIS

2300 CURLEW ROAD STE 201
PALM HARBOR, FLORIDA
34683

PHONE (727) 789-9500
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REVISIONS

PLAN INDEX

SHEET INDEX

Sheet Number	Sheet Title
01	COVER SHEET
02	EXISTING SITE CONDITION PLAN
03	PRELIMINARY SITE PLAN
04	TRUCK TURN EXHIBIT
L1	LANDSCAPE PLAN

RYAN T. FALLIN
LICENSE
NO. 91887
STATE OF
09/28/2023
FLORIDA
PROFESSIONAL ENGINEER

SITE DATA

PROPERTY OWNER:
SF ZEPHYR COMMONS OUTPARCELS LP
2851 JOHN STREET. SUITE ONE
MARKHAM, ONTARIO L3R 5R7 CA
PHONE: (954) 557-6879

PROPERTY LOCATION:
7988 GALL BOULEVARD
ZEPHYRHILLS, FL 33541

PROPERTY PARCEL I.D. NUMBER:
35-25-21-0130-00000-0021

PROPERTY ZONING:
"C-2" (COMMUNITY COMMERCIAL)

FUTURE LAND USE:
VILLAGE CENTER - MIXED USE

BUILDING SETBACK REQUIREMENTS:
FRONT: 30'
SIDE: 0'
REAR: 20'

LANDSCAPE BUFFER REQUIREMENTS:
US-301 - TYPE D - 20 FEET
KOSSIK RD - TYPE D - 20 FEET (*16')
EAST TYPE A - 10 FEET
SOUTH TYPE A - 5 FEET (10' CUMULATIVE WITH ADJACENT PROPERTY)

PROPERTY USE:

	EXISTING	PROPOSED
USE:	UNIMPROVED COMMERCIAL	C-2 COMMUNITY COMMERCIAL

MAXIMUM BUILDING HEIGHT:

	ALLOWED	PROPOSED
HEIGHT:	30'/ 2 STORIES	LESS THAN 25'/ 1 STORY

LOT COVERAGE CALCULATIONS:

	EXISTING		PROPOSED	
BUILDING AREA	0 SF	0.00%	4,615 SF	12.13%
VEHICULAR USE AREA	0 SF	0.00%	20,916 SF	54.98%
SIDEWALK/MISC CONC. AREA	0 SF	0.00%	950 SF	2.50%
TOTAL IMPERVIOUS AREA	0 SF	0.00%	26,481 SF	69.61%
TOTAL PERVIOUS AREA	38,043 SF	100.00%	11,562 SF	30.39%
TOTAL SITE AREA	38,043 SF	100.00%	38,043 SF	100.00%

PARKING (REQUIRED):
1 PARKING SPACE PER 150 SF OF FLOOR AREA
4615 SF/150 SF = 31 SPACES REQUIRED

HC SPACES REQUIRED: 2
STANDARD STALL SIZE = 9' x 20'
HC STALL SIZE = 12' x 20'

FAR: 0.50 (MAX)
38,333 SF X 0.50 = 19,166 SF
BUILDING AREA = 4615 SF
FAR: = 0.120

ISR: 0.80 (MAX)
38,333 SF X 0.80 = 30,666 SF

PARKING (PROPOSED):
STANDARD PARKING SPACES = 37
HC SPACES = 2
TOTAL PARKING SPACES = 39

FLOOD ZONE:
THIS PROPERTY LIES IN FLOOD ZONE "X ", AS PER FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP; COMMUNITY PANEL No. 12101C 0289 F, DATED 09/25/2014.

NOTES:
1. BUILDINGS AND ARCHITECTURE TO BE DESIGNED IN ACCORDANCE WITH DESIGN GUIDELINES FOR ZEPHYR COMMONS.
2. STORMWATER MANAGEMENT IS PROVIDED OFF-SITE IN A MASTER DRAINAGE RETENTION AREA.
3. PROJECT IS IN COMPLIANCE WITH THE COMPREHENSIVE PLAN

Always call 811 two full business days before you dig
Sunshine811.com

LOT 2 @ ZEPHYR COMMONS
AVID GROUP JOB # 2980045
DATE: 08/27/2023



0' 50' 100'

1" = 50'

LEGEND

	SITE BOUNDARY LINE
	CENTER LINE OF ROAD
	RIGHT-OF-WAY
	EXISTING EDGE OF PAVEMENT
EC	EROSION CONTROL
SF	SILT FENCE
116	EXISTING CONTOURS
	EXISTING STORM PIPE
	EXISTING STORM STRUCTURES
TYP	TYPICAL
S/W	SIDEWALK
LF	LINEAR FEET
SF	SQUARE FEET
	EXISTING FLOW ARROW



Natural Resources Conservation Service | Web Soil Survey, National Cooperative Soil Survey | 8/21/2023 Page 1 of 3

Soil Map—Pasco County, Florida

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
32	Lake fine sand, 0 to 5 percent slopes	1.4	100.0%
Totals for Area of Interest		**1.4**	**100.0%**

NO.	DATE	DESCRIPTION	BY
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REVISIONS

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CAD FILE: 2980045
PROJ. MANAGER: R. FALLIN
PROJ. #: 2980045
DATE: 08/17/2023

RYAN T. FALLIN
LICENSE
NO. 91887
STATE OF FLORIDA
09/28/2023
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GIS
605 E. ROBINSON ST STE 240
ORLANDO, FLORIDA
32801
PHONE (407) 248-9505
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AVID GROUP®

LOT 2 @ ZEPHYR COMMONS

CITY OF ZEPHYRHILLS, FLORIDA

EXISTING SITE CONDITION PLAN

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SHEET NO. **02**

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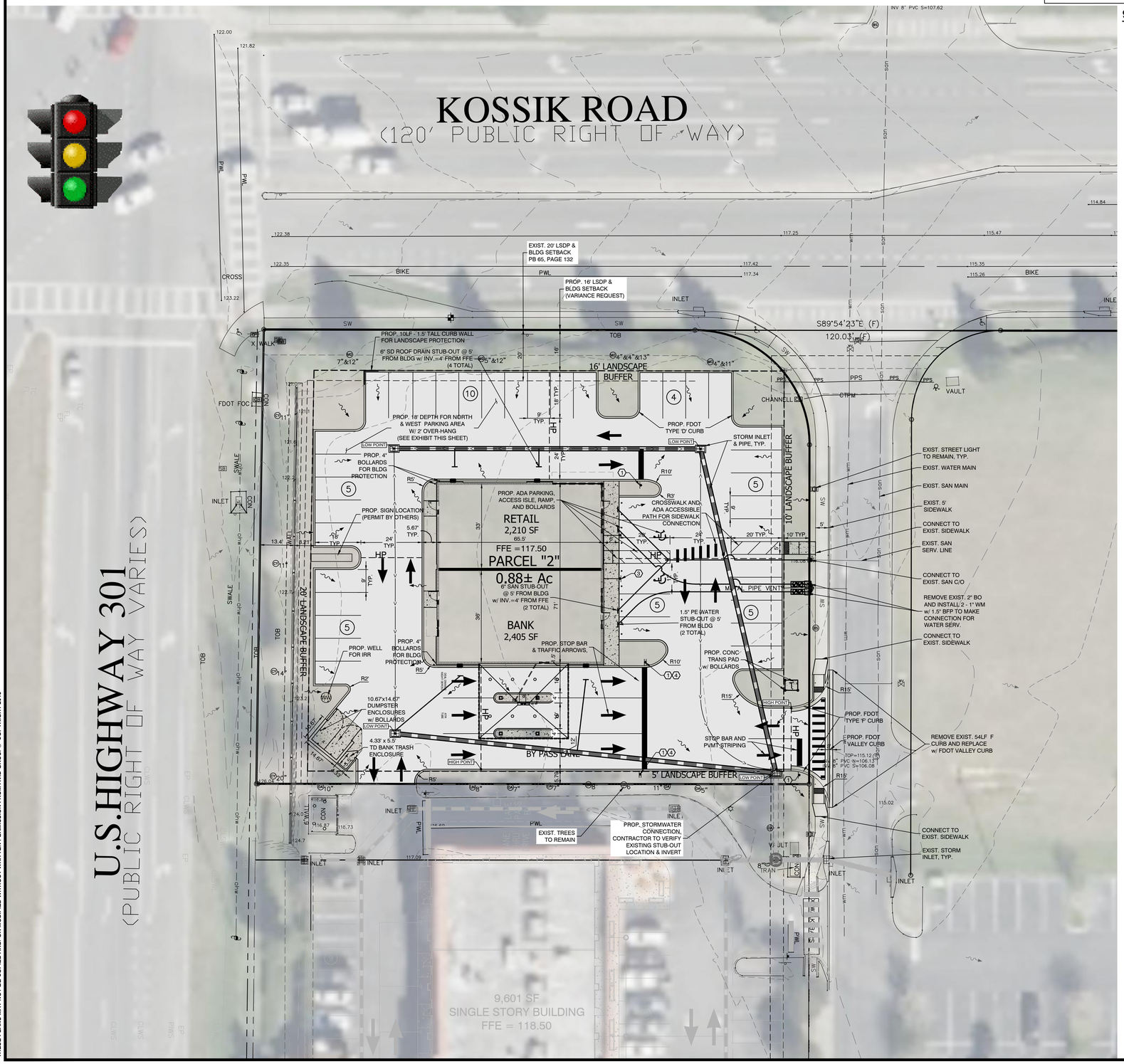
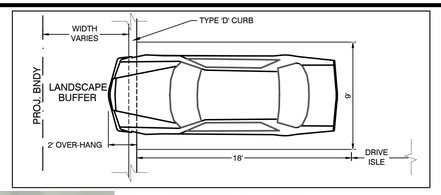
K:\PROJECTS\2980\2980045\DWG\CURRENT\CIVIL\PSP\2980045 EXISTING SITE CONDITION PLAN.DWG, 9/28/2023 2:42:39 PM, Ryan Fallin





9'x18' PARKING LAYOUT w/ 2' OVER-HANG - EXHIBIT

SITE LEGEND

- HANDICAP PARKING
- SITE BOUNDARY LINE
- CENTER LINE OF ROAD
- PROPOSED CURB
- EXISTING EDGE OF PAVEMENT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED ASPHALT PAVEMENT
- HP — HIGH POINT
- HC — HANDICAP
- (8) — 8 PARKING SPACES
- PROPOSED FLOW ARROW
- EXISTING FLOW ARROW
- EXISTING STORM PIPE
- PROPOSED STORM PIPE
- EXISTING STORM INLETS
- PROPOSED STORM INLETS
- EXISTING PAVEMENT ARROWS
- PROPOSED PAVEMENT ARROWS
- 116 — EXISTING CONTOURS
- SAN — SANITARY SERVICE LINE
- WATER SERVICE LINE

0' 20' 40'
1" = 20'

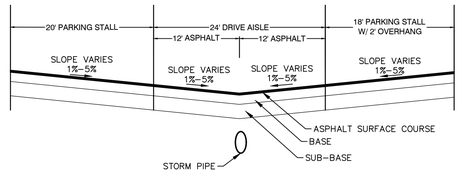
SIGN LEGEND

KEY	SIGN	I.D.	DESCRIPTION	SIZE
1	STOP	R1-1	STOP	30" x 30" 36" x 36"
2	ONLY	FTP-54R-06	RIGHT TURN ONLY	30" x 24"
3	HANDICAPPED PARKING PENALTY $250 - $500	ADA	ADA ACCESSIBLE PARKING (SEE DETAIL)	12" x 18" 12" x 6"
4	DO NOT ENTER	R5-1	DO NOT ENTER	30" x 30"
5		R4-7	KEEP RIGHT	30" x 24"

ALL SIGNS SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND FDOT STANDARD PLANS INDEX 700-102 "SPECIAL SIGN DETAILS".

STRIPING NOTES:

1. ALL NON-HANDICAP PARKING LOT STRIPING ON ASPHALT SHALL BE 4" WIDE WHITE, UNLESS OTHERWISE SPECIFIED IN THESE PLANS.
2. SEE DETAILS FOR HANDICAP PARKING.
3. STRIPING AND PAVEMENT MARKINGS SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND FDOT STANDARD PLANS INDEX 711-001 "PAVEMENT MARKINGS".
4. PAINT STRIPING IN ALL PARKING LOT AND ASPHALT PAVEMENT AREAS SHALL BE CONSTRUCTED WITH A PAINT PRODUCT THAT PROVIDES A HIGH SLIP-RESISTANT FINISH AND PREVENTS INDIVIDUALS FROM SLIPPING WHEN STEPPING ON THE STRIPING IN BOTH WET AND DRY PAVEMENT CONDITIONS.



TYPICAL DRIVE AISLE
SCALE: 1" = 10'

NOTE: FINAL PAVEMENT SECTION WILL BE PER THE RECOMMENDATIONS OF THE GEOTECH REPORT

BUILDING REFERENCE:

BUILDING OUTLINE BASED UPON PLANS PROVIDED BY DTI ARCHITECTS ASSOCIATES, INC., WITH AN ISSUE DATE OF 05/17/2023.

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REVISIONS

NOT VALID WITHOUT ORIGINAL SIGNATURE BY A REGISTERED PROFESSIONAL
AVID GROUP#: 2980045
CAD FILE: 2980045
PROJ. MANAGER: R. FALLIN
PROJ. #: 2980045
DATE: 08/17/2023

RYAN T. FALLIN
LICENSE
NO. 91887
STATE OF FLORIDA
09/28/2023
PROFESSIONAL ENGINEER

SF ZEPHYR COMMONS OUTPARCELS LP

605 E. ROBINSON ST STE 240
ORLANDO, FLORIDA
32801
PHONE (407) 248-9505
AVIDGROUP.COM

CIVIL ENGINEERING
LAND PLANNING
PERMITTING
TRANSPORTATION
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GIS

AVID GROUP®

LOT 2 @ ZEPHYR COMMONS
CITY OF ZEPHYRHILLS, FLORIDA
PRELIMINARY SITE PLAN

SHEET NO. **03**

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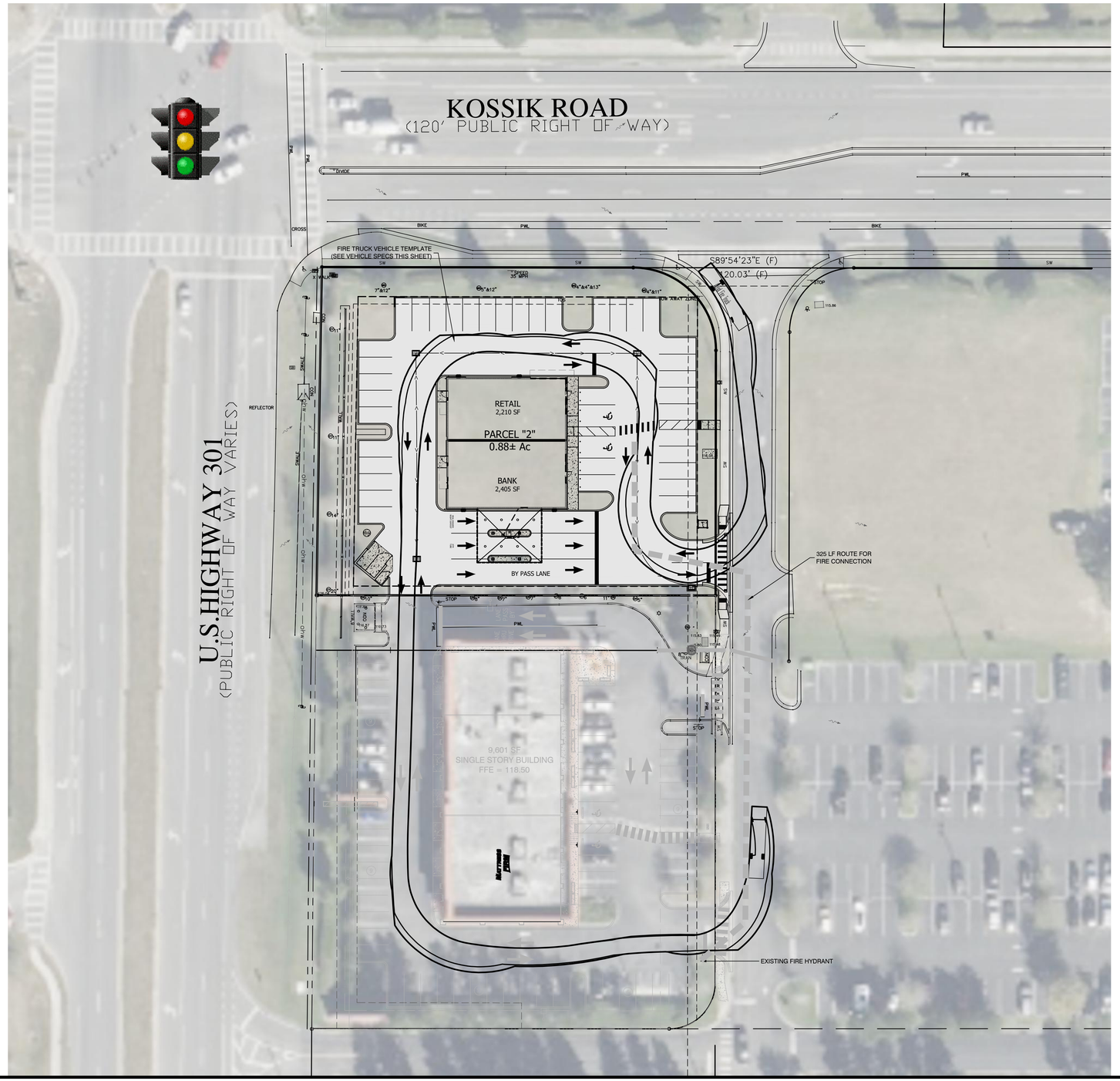

0' 30' 60'
1" = 30'

SITE LEGEND

- HANDICAP PARKING
- SITE BOUNDARY LINE
- CENTER LINE OF ROAD
- PROPOSED CURB
- EXISTING EDGE OF PAVEMENT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED ASPHALT PAVEMENT
- HP — HIGH POINT
- HC — HANDICAP
- 8 — 8 PARKING SPACES
- PROPOSED FLOW ARROW
- EXISTING FLOW ARROW
- EXISTING STORM PIPE
- PROPOSED STORM PIPE
- EXISTING STORM INLETS
- PROPOSED STORM INLETS
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- PROPOSED PAVEMENT ARROWS
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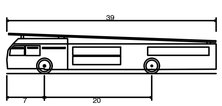
- SAN — SANITARY SERVICE LINE
- WATER SERVICE LINE



39' FIRE FOR ZEPHYRHILLS

Aerial Fire Truck	
Overall Length	39.000ft
Overall Width	8.167ft
Overall Body Height	7.500ft
Min Body Ground Clearance	0.750ft
Track Width	8.167ft
Lock-to-lock time	5.00s
Max Wheel Angle	45.00°

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REVISIONS

NOT VALID WITHOUT ORIGINAL SIGNATURE BY A REGISTERED PROFESSIONAL AVID GROUP® COA 6139, LB 7345

PROJ. MANAGER: R. FALLIN
PROJ. #: 2980045
DATE: 08/17/2023

RYAN T. FALLIN
LICENSE
NO. 91887
STATE OF FLORIDA
09/28/2023
PROFESSIONAL ENGINEER

SF ZEPHYR COMMONS OUTPARCELS LP

AVID GROUP®
CIVIL ENGINEERING 605 E ROBINSON ST STE 240
LAND PLANNING ORLANDO, FLORIDA
TRAFFIC 32801
TRANSPORTATION PHONE (407) 248-0505
SURVEYING AVIDGROUP.COM
GIS

LOT 2 @ ZEPHYR COMMONS
CITY OF ZEPHYRHILLS, FLORIDA
TRUCK TURN EXHIBIT

SHEET NO 04

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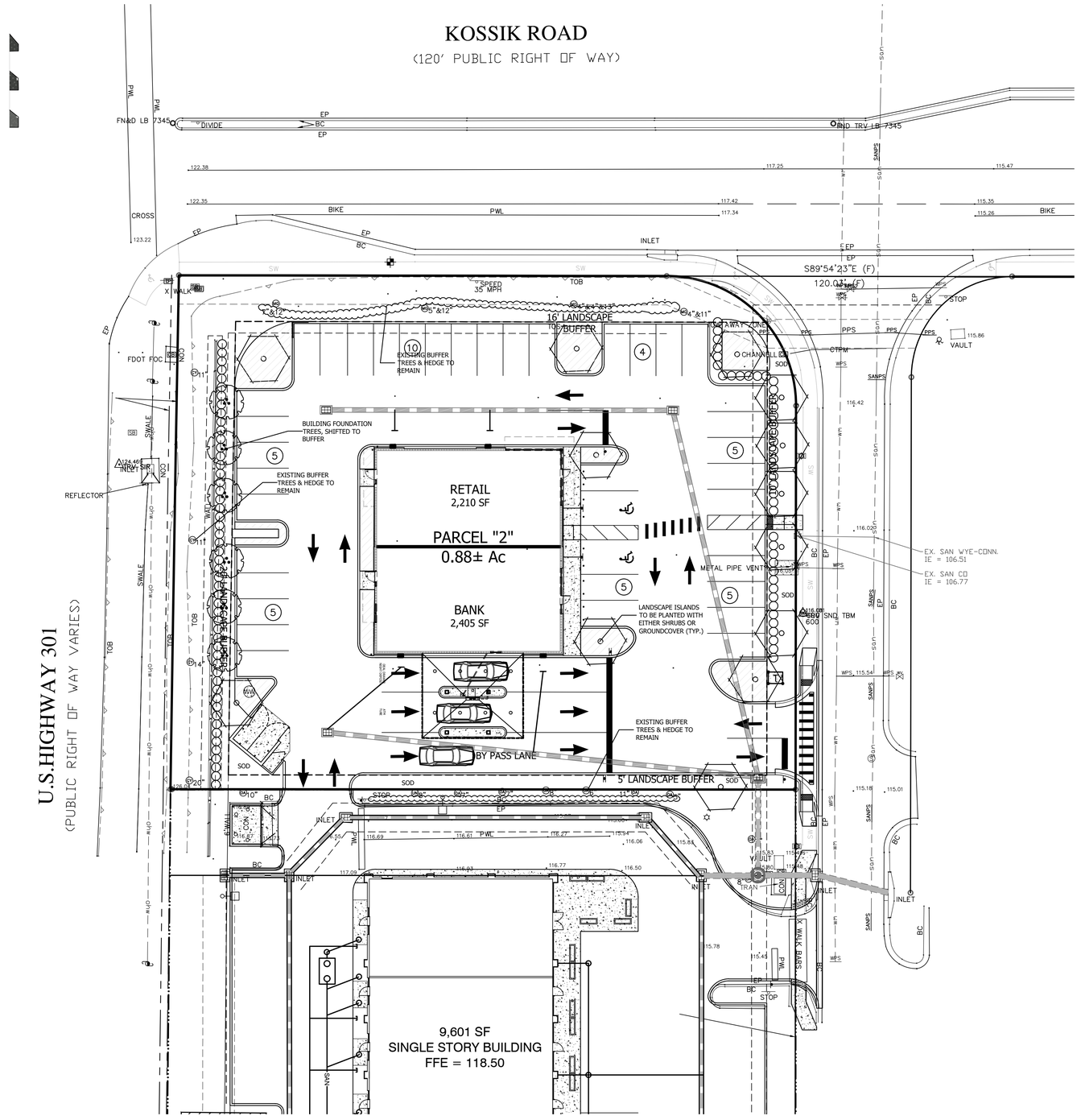

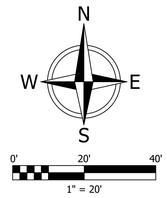

VEHICULAR USE AREA CALCULATIONS

VEHICULAR USE AREA = 20,860 S.F.
REQUIRED INTERIOR GREEN AREA (20,860 X 10%) = 2,086 S.F.
INTERIOR GREEN AREA PROVIDED = 2,200 S.F.
INTERIOR TREES REQUIRED (2,086/200) = 10
INTERIOR TREES PROVIDED = 10

PLANT KEY

SYM.	QTY.	TYPE	SIZE
TREES			
	13	CANOPY TREE	3" CAL. 10' HT. X 4' SPD.
	6	UNDERSTORY TREE	3 TRUNK MIN. 1" CAL. PER TRUNK
SHRUB/GROUNDCOVER			
	TBD	INTERIOR VUA SHRUBS/GC	1 GAL. FULL
	TBD	BUFFER SHRUBS	3 GAL. 24" HT X 18" SPD. 36" O.C.
SOD			
SOD	TBD	ARGENTINE BAHIA	

NO.	DATE	DESCRIPTION	BY
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PROJ. MANAGER: C. MORAHAN
PROJ. # 29800045
DATE: 9/28/2023

REGISTERED LANDSCAPE ARCHITECT
CATHERINE J. MORAHAN
LA0001559
09/28/2023
STATE OF FLORIDA

SF ZEPHYR COMMONS OUTPARCELS LP

CJM DESIGNS, LLC
3333 SAN PEDRO STREET
CLEARWATER, FLORIDA 33759
PHONE: (727) 430-5038

LOT 2 @ ZEPHYR COMMONS

CITY OF ZEPHYRHILLS, FLORIDA

PRELIMINARY LANDSCAPE PLAN

Always call 811 two full business days before you dig
Sunshine811.com

SHEET NO. **L1**

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K:\PROJECTS\29000\29800445\DOC\INBOX\CJM DESIGNS\29800445-LSP.DWG, 9/28/2023 2:42:23 PM, Ryan Fallin

STAFF REPORT

To:

From:

RE: **SPR-63-23 Calumet Townhomes – CR 54 .3 miles east of 12th St.-**A review of a 4.7 acre parcel with 64 townhome units. The City recently annexed the parcel into the City with an R-4 zoning and RU FLU. The applicant has been working with Pasco County for ROW dedications and improvements over the past few months since this was last reviewed on May 23, 2023.

Date: **October 17, 2023**

I. BACKGROUND & INFORMATION

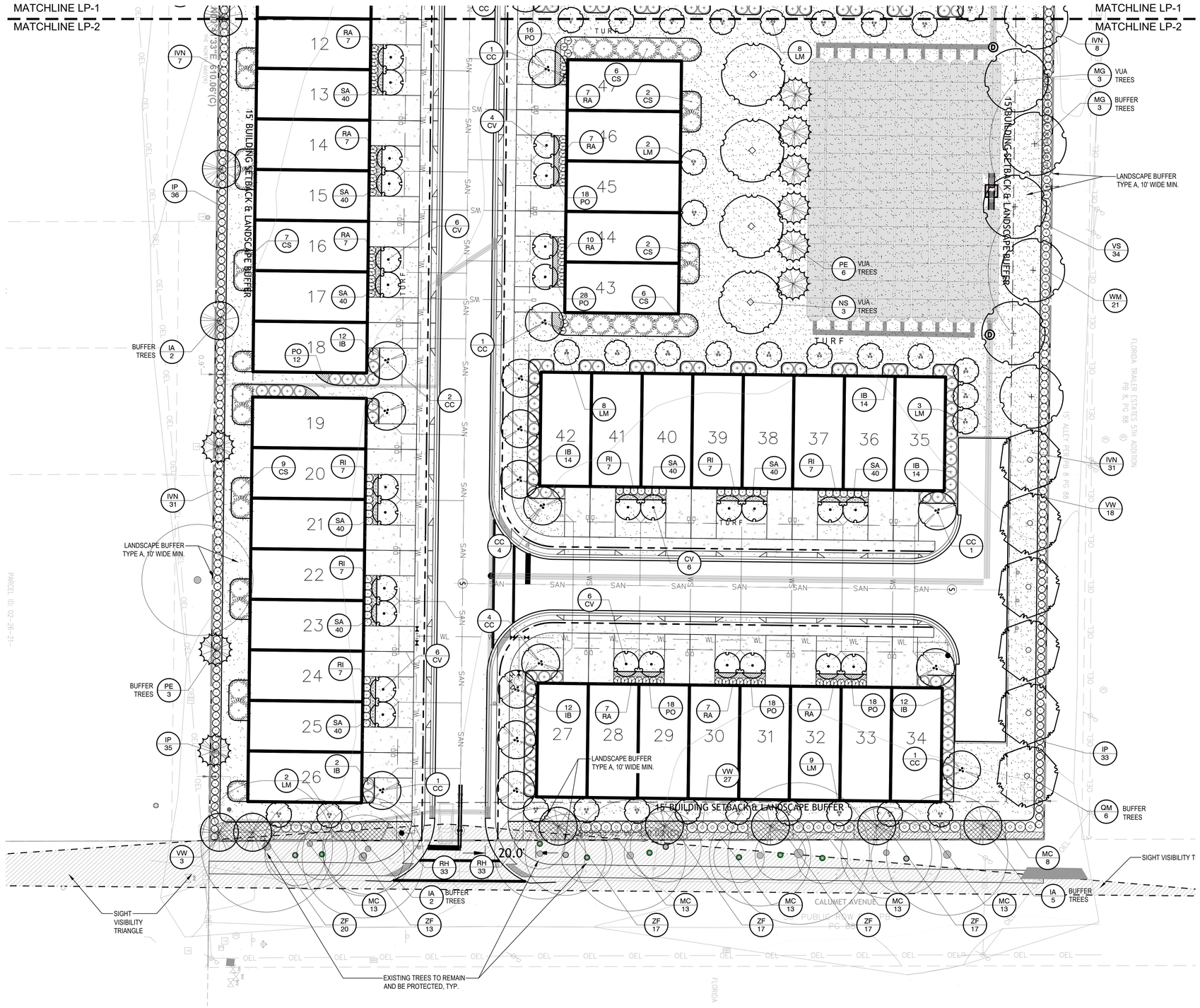
A. History | Application Summary
B. Site Information
    1. Applicant/Owner:
    2. File #:
    3. Historic Designation:
    4. Acreage:
    5. Existing Land Use:
    6. Current FLU:
    7. Proposed FLU:
    8. Existing Zoning:
    9. Current Zoning:

II. DATA & ANALYSIS

A. Character Analysis
B. Compatibility Analysis
C. Natural & Historic Resources Analysis
D. Public Service Analysis & Impact
E. Comprehensive Plan Consistency

III. RECOMMENDATION

A. Staff / Site Plan Review Committee
B. Historic Preservation Board
C. Planning Commission
D. Board of Adjustment



NORTH

Scale 1" = 20'

NOTE: PRINTED DRAWING SIZE MAY HAVE CHANGED FROM ORIGINAL. VERIFY SCALE USING BAR SCALE ABOVE.

SEE SHEET LP-0 FOR LANDSCAPE SCHEDULE

Digitally signed by Kenneth D Bates
Reason: LA#6666710, State of Florida
Date: 2023.09.28 22:45:37 -06'00'

REGISTERED LANDSCAPE ARCHITECT KENNETH DALE BATES LA#6666710 STATE OF FLORIDA

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB	ISSUE DATE:	3/31/23
CHECKED BY:	AH	APPROVED BY:	LB	JOB NO.:	22-548

NO.	BY	DATE	REVISION DESCRIPTION

3 WORKING DAYS BEFORE YOU DIG CALL SUNSHINE STATE ONE CALL OF FLORIDA 1-800-432-4770 FOR THE LOCATION OF UNDERGROUND FACILITIES

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

EVERGREEN DESIGN GROUP
(800) 680-6630
2255 Glades Road, Suite 324A
Boca Raton, FL 33431
www.EvergreenDesignGroup.com
LA #6666710

BEACON CIVIL ENGINEERING
LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME: LANDSCAPE PLAN

SHEET NUMBER: LP-2

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PLANTING SPECIFICATIONS

GENERAL

A. QUALIFICATIONS OF LANDSCAPE CONTRACTOR
1. ALL LANDSCAPE WORK SHOWN ON THESE PLANS SHALL BE PERFORMED BY A SINGLE FIRM SPECIALIZING IN LANDSCAPE PLANTING.
2. A LIST OF SUCCESSFULLY COMPLETED PROJECTS OF THIS TYPE, SIZE AND NATURE MAY BE REQUESTED BY THE OWNER FOR FURTHER QUALIFICATION MEASURES.
3. THE LANDSCAPE CONTRACTOR SHALL HOLD A VALID CONTRACTOR'S LICENSE ISSUED BY THE APPROPRIATE LOCAL JURISDICTION.

B. SCOPE OF WORK
1. WORK COVERED BY THESE SECTIONS INCLUDES THE FURNISHING AND PAYMENT OF ALL MATERIALS, LABOR, SERVICES, EQUIPMENT, LICENSES, TAXES AND ANY OTHER ITEMS THAT ARE NECESSARY FOR THE EXECUTION, INSTALLATION AND COMPLETION OF ALL WORK, SPECIFIED HEREIN AND / OR SHOWN ON THE LANDSCAPE PLANS, NOTES, AND DETAILS.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION OVER SUCH WORK, INCLUDING ALL INSPECTIONS AND PERMITS REQUIRED BY FEDERAL, STATE AND LOCAL AUTHORITIES IN SUPPLY, TRANSPORTATION AND INSTALLATION OF MATERIALS.
3. THE LANDSCAPE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITY LINES (WATER, SEWER, ELECTRICAL, TELEPHONE, GAS, CABLE, TELEVISION, ETC.) PRIOR TO THE START OF ANY WORK.

PRODUCTS

A. ALL MANUFACTURED PRODUCTS SHALL BE NEW.
B. CONTAINER AND BALLED-AND-BURLAPPED PLANTS:
1. ALL PLANT MATERIAL SHALL BE FLORIDA NO. 1 OR BETTER ACCORDING TO GRADES AND STANDARDS FOR NURSERY PLANTS, CURRENT EDITION AT TIME OF INSTALLATION.
2. FURNISH NURSERY-GROWN PLANTS COMPLYING WITH ANSI Z60.1-2014. PROVIDE WELL-SHAPED, FULLY BRANCHED, HEALTHY, VIGOROUS STOCK FREE OF DISEASE, INSECTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALD, INJURIES, ABRASIONS, AND DISFIGUREMENT. ALL PLANTS WITHIN A SPECIES SHALL HAVE SIMILAR SIZE, AND SHALL BE OF A FORM TYPICAL FOR THE SPECIES. ALL TREES SHALL BE OBTAINED FROM SOURCES WITHIN 200 MILES OF THE PROJECT SITE, AND WITH SIMILAR CLIMACTIC CONDITIONS.
3. ROOT SYSTEMS SHALL BE HEALTHY, DENSELY BRANCHED ROOT SYSTEMS, NON-POT-BOUND, FREE FROM ENCIRCLING AND/OR GIRDLING ROOTS, AND FREE FROM ANY OTHER ROOT DEFECTS (SUCH AS J-SHAPED ROOTS).
4. ANY PLANT DEEMED UNACCEPTABLE BY THE LANDSCAPE ARCHITECT OR OWNER SHALL BE IMMEDIATELY REMOVED FROM THE SITE AND SHALL BE REPLACED WITH AN ACCEPTIBLE PLANT OF LIKE TYPE AND SIZE AT THE CONTRACTOR'S OWN EXPENSE. ANY PLANTS APPEARING TO BE UNHEALTHY, EVEN IF DETERMINED TO STILL BE ALIVE, SHALL NOT BE ACCEPTED. THE LANDSCAPE ARCHITECT AND OWNER SHALL BE THE SOLE JUDGES AS TO THE ACCEPTABILITY OF PLANT MATERIAL.
5. ALL TREES SHALL BE STANDARD IN FORM, UNLESS OTHERWISE SPECIFIED. TREES WITH CENTRAL LEADERS WILL NOT BE ACCEPTED IF LEADER IS DAMAGED OR REMOVED. PRUNE ALL DAMAGED TWIGS AFTER PLANTING.
6. CALIPER MEASUREMENTS FOR STANDARD (SINGLE TRUNK) TREES SHALL BE AS FOLLOWS: SIX INCHES ABOVE THE ROOT FLARE FOR TREES UP TO AND INCLUDING FOUR INCHES IN CALIPER, AND TWELVE INCHES ABOVE THE ROOT FLARE FOR TREES EXCEEDING FOUR INCHES IN CALIPER.
7. MULTI-TRUNK TREES SHALL BE MEASURED BY THEIR OVERALL HEIGHT, MEASURED FROM THE TOP OF THE ROOT BALL.
8. ANY TREE OR SHRUB SHOWN TO HAVE EXCESS SOIL PLACED ON TOP OF THE ROOT BALL, SO THAT THE ROOT FLARE HAS BEEN COMPLETELY COVERED, SHALL BE REJECTED.

C. SOD: PROVIDE WELL-ROOTED SOD OF THE VARIETY NOTED ON THE PLANS. SOD SHALL BE CUT FROM HEALTHY, MATURE TURF WITH SOIL THICKNESS OF 3/4" TO 1". EACH PALLET OF SOD SHALL BE ACCOMPANIED BY A CERTIFICATE FROM SUPPLIER STATING THE COMPOSITION OF THE SOD.

D. TOPSOIL: SANDY TO CLAY LOAM TOPSOIL, FREE OF STONES LARGER THAN ½ INCH, FOREIGN MATTER, PLANTS, ROOTS, AND SEEDS.

E. COMPOST: WELL-COMPOSTED, STABLE, AND WEED-FREE ORGANIC MATTER, pH RANGE OF 5.5 TO 8; MOISTURE CONTENT 35 TO 55 PERCENT BY WEIGHT; 100 PERCENT PASSING THROUGH 3/4-INCH SIEVE; SOLUBLE SALT CONTENT OF 5 TO 10 DECISIEMENS/M; NOT EXCEEDING 0.5 PERCENT INERT CONTAMINANTS AND FREE OF SUBSTANCES TOXIC TO PLANTINGS. NO MANURE OR ANIMAL-BASED PRODUCTS SHALL BE USED.

F. PLANTING MIX FOR POTS: AN EQUAL PART MIXTURE OF TOPSOIL, SAND AND COMPOST. INCORPORATE "GELSCAPE", AS MADE BY AMEREQ, INC., (800) 832-8788, AT THE RATE OF 3 LB. PER CUBIC YARD OF PLANTING MIX.

G. FERTILIZER: GRANULAR FERTILIZER CONSISTING OF NITROGEN, PHOSPHORUS, POTASSIUM, AND OTHER NUTRIENTS IN PROPORTIONS, AMOUNTS, AND RELEASE RATES RECOMMENDED IN A SOIL REPORT FROM A QUALIFIED SOIL-TESTING AGENCY (SEE BELOW).

H. PALM MAINTENANCE SPIKES: AS MANUFACTURED BY THE LUTZ CORP, (800) 203-7740, OR APPROVED EQUAL.

I. MULCH: SIZE, TYPE, AND DEPTH AS INDICATED ON PLANS, FREE FROM DELETERIOUS MATERIALS AND SUITABLE AS A TOP DRESSING OF TREES AND SHRUBS.

J. TREE STAKING AND GUYING
1. STAKES: 6' LONG GREEN METAL T-POSTS.
2. GUY AND TIE WIRE: ASTM A 641, CLASS 1, GALVANIZED-STEEL WIRE, 2-STRAND, TWISTED, 0.106 INCH DIAMETER.
3. STRAP CHAFING GUARD: REINFORCED NYLON OR CANVAS AT LEAST 1-1/2 INCH WIDE, WITH GROMMETS TO PROTECT TREE TRUNKS FROM DAMAGE.

K. PRE-EMERGENT HERBICIDES: ANY GRANULAR, NON-STAINING PRE-EMERGENT HERBICIDE THAT IS LABELED FOR THE SPECIFIC ORNAMENTALS OR TURF ON WHICH IT WILL BE UTILIZED. PRE-EMERGENT HERBICIDES SHALL BE APPLIED PER THE MANUFACTURER'S LABELED RATES.

METHODS

A. SOIL PREPARATION
1. BEFORE STARTING WORK, THE LANDSCAPE CONTRACTOR SHALL VERIFY THAT THE GRADE OF ALL LANDSCAPE AREAS ARE WITHIN +/-0.1' OF FINISH GRADE. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY SHOULD ANY DISCREPANCIES EXIST.
2. SOIL TESTING:
a. AFTER FINISH GRADES HAVE BEEN ESTABLISHED, CONTRACTOR SHALL HAVE SOIL SAMPLES FROM THE PROJECT'S LANDSCAPE AREAS TESTED BY AN ESTABLISHED SOIL TESTING LABORATORY. EACH SAMPLE SUBMITTED TO THE LAB SHALL CONTAIN NO LESS THAN ONE QUART OF SOIL, TAKEN FROM BETWEEN THE SOIL SURFACE AND 6" DEPTH. IF NO SAMPLE LOCATIONS ARE INDICATED ON THE PLANS, THE CONTRACTOR SHALL TAKE A MINIMUM OF THREE SAMPLES FROM VARIOUS REPRESENTATIVE LOCATIONS FOR TESTING.
b. THE CONTRACTOR SHALL HAVE THE SOIL TESTING LABORATORY PROVIDE RESULTS FOR THE FOLLOWING: SOIL TEXTURAL CLASS, GENERAL SOIL FERTILITY, pH, ORGANIC MATTER CONTENT, SALT (CEC), LIME, SODIUM ADSORPTION RATIO (SAR) AND BORON CONTENT.
c. THE CONTRACTOR SHALL ALSO SUBMIT THE PROJECT'S PLANT LIST TO THE LABORATORY ALONG WITH THE SOIL SAMPLES.
d. THE SOIL REPORT PRODUCED BY THE LABORATORY SHALL CONTAIN RECOMMENDATIONS FOR THE FOLLOWING (AS APPROPRIATE): SEPARATE SOIL PREPARATION AND BACKFILL MIX RECOMMENDATIONS FOR GENERAL ORNAMENTAL PLANTS, XERIC PLANTS, TURF, AND NATIVE SEED, AS WELL AS PRE-PLANT FERTILIZER APPLICATIONS AND RECOMMENDATIONS FOR ANY OTHER SOIL RELATED ISSUES. THE REPORT SHALL ALSO PROVIDE A FERTILIZER PROGRAM FOR THE ESTABLISHMENT PERIOD AND FOR LONG-TERM MAINTENANCE.
3. THE CONTRACTOR SHALL INSTALL SOIL AMENDMENTS AND FERTILIZERS PER THE SOILS REPORT RECOMMENDATIONS. ANY CHANGE IN COST DUE TO THE SOIL REPORT RECOMMENDATIONS, EITHER INCREASE OR DECREASE, SHALL BE SUBMITTED TO THE OWNER WITH THE REPORT.
4. FOR BIDDING PURPOSES ONLY, THE SOIL PREPARATION SHALL CONSIST OF THE FOLLOWING:
a. TURF: INCORPORATE THE FOLLOWING AMENDMENTS INTO THE TOP 8" OF SOIL BY MEANS OF ROTOTILLING AFTER CROSS-RIPPING:
i. NITROGEN STABILIZED ORGANIC AMENDMENT - 4 CU. YDS. PER 1,000 S.F.
ii. PREPLANT TURF FERTILIZER (10-20-10 OR SIMILAR, SLOW RELEASE, ORGANIC) - 15 LBS PER 1,000 S.F.
iii. "CLAY BUSTER" OR EQUAL - USE MANUFACTURER'S RECOMMENDED RATE
b. TREES, SHRUBS, AND PERENNIALS: INCORPORATE THE FOLLOWING AMENDMENTS INTO THE TOP 8" OF SOIL BY MEANS OF ROTOTILLING AFTER CROSS-RIPPING:
i. NITROGEN STABILIZED ORGANIC AMENDMENT - 4 CU. YDS. PER 1,000 S.F.
ii. 12-12-12 FERTILIZER (OR SIMILAR, ORGANIC, SLOW RELEASE) - 10 LBS. PER CU. YD.
iii. "CLAY BUSTER" OR EQUAL - USE MANUFACTURER'S RECOMMENDED RATE
iv. IRON SULPHATE - 2 LBS. PER CU. YD.
5. IN THE CONTEXT OF THESE PLANS, NOTES, AND SPECIFICATIONS, "FINISH GRADE" REFERS TO THE FINAL ELEVATION OF THE SOIL SURFACE (NOT TOP OF MULCH) AS INDICATED ON THE GRADING PLANS.
a. BEFORE STARTING WORK, THE LANDSCAPE CONTRACTOR SHALL VERIFY THAT THE ROUGH GRADES OF ALL LANDSCAPE AREAS ARE WITHIN +/-0.1' OF FINISH GRADE. SEE SPECIFICATIONS FOR MORE DETAILED INSTRUCTION ON TURF AREA AND PLANTING BED PREPARATION.
b. CONSTRUCT AND MAINTAIN FINISH GRADES AS SHOWN ON GRADING PLANS, AND CONSTRUCT AND MAINTAIN SLOPES AS RECOMMENDED BY THE GEOTECHNICAL REPORT. ALL LANDSCAPE AREAS SHALL HAVE POSITIVE DRAINAGE AWAY FROM STRUCTURES AT THE MINIMUM SLOPE SPECIFIED IN THE REPORT AND ON THE GRADING PLANS, AND AREAS OF POTENTIAL PONDING SHALL BE REGRADED TO BLEND IN WITH THE SURROUNDING GRADES AND ELIMINATE PONDING POTENTIAL.
c. THE LANDSCAPE CONTRACTOR SHALL DETERMINE WHETHER OR NOT THE EXPORT OF ANY SOIL WILL BE NEEDED, TAKING INTO ACCOUNT THE ROUGH GRADE PROVIDED, THE AMOUNT OF SOIL AMENDMENTS TO BE ADDED (**BASED ON A SOIL TEST**, PER SPECIFICATIONS), AND THE FINISH GRADES TO BE ESTABLISHED.
d. ENSURE THAT THE FINISH GRADE IN SHRUB AREAS IMMEDIATELY ADJACENT TO WALKS AND OTHER WALKING SURFACES, AFTER INSTALLING SOIL AMENDMENTS, IS 3" BELOW THE ADJACENT FINISH SURFACE, IN ORDER TO ALLOW FOR PROPER MULCH DEPTH. TAPER THE SOIL SURFACE TO MEET FINISH GRADE, AS SPECIFIED ON THE GRADING PLANS, AT APPROXIMATELY 18" AWAY FROM THE WALKS.
e. ENSURE THAT THE FINISH GRADE IN TURF AREAS IMMEDIATELY ADJACENT TO WALKS AND OTHER WALKING SURFACES, AFTER INSTALLING SOIL AMENDMENTS, IS 1" BELOW THE FINISH SURFACE OF THE WALKS. TAPER THE SOIL SURFACE TO MEET FINISH GRADE, AS SPECIFIED ON THE GRADING PLANS, AT APPROXIMATELY 18" AWAY FROM THE WALKS.
f. SHOULD ANY CONFLICTS AND/OR DISCREPANCIES ARISE BETWEEN THE GRADING PLANS, GEOTECHNICAL REPORT, THESE NOTES AND PLANS, AND ACTUAL CONDITIONS, THE CONTRACTOR SHALL IMMEDIATELY BRING SUCH ITEMS TO THE ATTENTION OF THE LANDSCAPE ARCHITECT, GENERAL CONTRACTOR, AND OWNER.
6. ONCE SOIL PREPARATION IS COMPLETE, THE LANDSCAPE CONTRACTOR SHALL ENSURE THAT THERE ARE NO DEBRIS, TRASH, OR STONES LARGER THAN 1" REMAINING IN THE TOP 6" OF SOIL.

B. SUBMITTALS
1. THE CONTRACTOR SHALL PROVIDE SUBMITTALS AND SAMPLES, IF REQUIRED, TO THE LANDSCAPE ARCHITECT, AND RECEIVE APPROVAL IN WRITING FOR SUCH SUBMITTALS BEFORE WORK COMMENCES.
2. SUBMITTALS SHALL INCLUDE PHOTOS OF PLANTS WITH A RULER OR MEASURING STICK FOR SCALE. PHOTOS OR SAMPLES OF ANY REQUIRED MULCHES, AND SOIL TEST RESULTS AND PREPARATION RECOMMENDATIONS FROM THE TESTING LAB (INCLUDING COMPOST AND FERTILIZER RATES AND TYPES, AND OTHER AMENDMENTS FOR TREE/SHRUB, TURF, AND SEED AREAS AS MAY BE APPROPRIATE).
3. SUBMITTALS SHALL ALSO INCLUDE MANUFACTURER CUT SHEETS FOR PLANTING ACCESSORIES SUCH AS TREE STAKES AND TIES, EDGING, AND LANDSCAPE FABRICS (IF ANY).
4. WHERE MULTIPLE ITEMS ARE SHOWN ON A PAGE, THE CONTRACTOR SHALL CLEARLY INDICATE THE ITEM BEING CONSIDERED.

C. GENERAL PLANTING
1. REMOVE ALL NURSERY TAGS AND STAKES FROM PLANTS.
2. EXCEPT IN AREAS TO BE PLANTED WITH ORNAMENTAL GRASSES, APPLY PRE-EMERGENT HERBICIDES AT THE MANUFACTURER'S RECOMMENDED RATE.
3. TRENCHING NEAR EXISTING TREES:
a. CONTRACTOR SHALL NOT DISTURB ROOTS 1-1/2" AND LARGER IN DIAMETER WITHIN THE CRITICAL ROOT ZONE (CRZ) OF EXISTING TREES, AND SHALL EXERCISE ALL POSSIBLE CARE AND PRECAUTIONS TO AVOID INJURY TO TREE ROOTS, TRUNKS, AND BRANCHES. THE CRZ IS DEFINED AS A CIRCULAR AREA EXTENDING OUTWARD FROM THE TREE TRUNK, WITH A RADIUS EQUAL TO 1' FOR EVERY 1" OF TRUNK DIAMETER-AT-BREAST-HEIGHT (4.5' ABOVE THE AVERAGE GRADE AT THE TRUNK).
b. ALL EXCAVATION WITHIN THE CRZ SHALL BE PERFORMED USING HAND TOOLS. NO MACHINE EXCAVATION OR TRENCHING OF ANY KIND SHALL BE ALLOWED WITHIN THE CRZ.
c. ALTER ALIGNMENT OF PIPE TO AVOID TREE ROOTS 1-1/2" AND LARGER IN DIAMETER. WHERE TREE ROOTS 1-1/2" AND LARGER IN DIAMETER ARE ENCOUNTERED IN THE FIELD, TUNNEL UNDER SUCH ROOTS. WRAP EXPOSED ROOTS WITH SEVERAL LAYERS OF BURLAP AND KEEP MOIST. CLOSE ALL TRENCHES WITHIN THE CANOPY DRIP LINES WITHIN 24 HOURS.
d. ALL SEVERED ROOTS SHALL BE HAND PRUNED WITH SHARP TOOLS AND ALLOWED TO AIR-DRY. DO NOT USE ANY SORT OF SEALERS OR WOUND PAINTS.

D. TREE PLANTING
1. TREE PLANTING HOLES SHALL BE EXCAVATED TO MINIMUM WIDTH OF TWO TIMES THE WIDTH OF THE ROOTBALL, AND TO A DEPTH EQUAL TO THE DEPTH OF THE ROOTBALL LESS TWO TO FOUR INCHES.
2. SCARIFY THE SIDES AND BOTTOM OF THE PLANTING HOLE PRIOR TO THE PLACEMENT OF THE TREE. REMOVE ANY GLAZING THAT MAY HAVE BEEN CAUSED DURING THE EXCAVATION OF THE HOLE.
3. TO CONTAINER AND BALLED AND BURLAPPED TREES, TO REMOVE ANY POTENTIALLY GIRDLING ROOTS AND OTHER ROOT DEFECTS, THE CONTRACTOR SHALL SHAVE A 1" LAYER OFF OF THE SIDES AND BOTTOM OF THE ROOTBALL OF ALL TREES JUST BEFORE PLACING INTO THE PLANTING PIT. DO NOT "TEASE" ROOTS OUT FROM THE ROOTBALL.
4. INSTALL THE TREE ON UNDISTURBED SUBGRADE SO THAT THE TOP OF THE ROOTBALL IS TWO TO FOUR INCHES ABOVE THE SURROUNDING GRADE.
5. BACKFILL THE TREE HOLE UTILIZING THE EXISTING TOPSOIL FROM ON-SITE. ROCKS LARGER THAN 1" DIA. AND ALL OTHER DEBRIS SHALL BE REMOVED FROM THE SOIL PRIOR TO THE BACKFILL. SHOULD ADDITIONAL SOIL BE REQUIRED TO ACCOMPLISH THIS TASK, USE STORED TOPSOIL FROM ON-SITE OR IMPORT ADDITIONAL TOPSOIL FROM OFF-SITE AT NO ADDITIONAL COST TO THE OWNER. IMPORTED TOPSOIL SHALL BE OF SIMILAR TEXTURAL CLASS AND COMPOSITION IN THE ON-SITE SOIL.
6. TREES SHALL NOT BE STAKED UNLESS LOCAL CONDITIONS (SUCH AS HEAVY WINDS OR SLOPES) REQUIRE STAKES TO KEEP TREES UPRIGHT. SHOULD STAKING BE REQUIRED, THE TOTAL NUMBER OF TREE STAKES (BEYOND THE MINIMUMS LISTED BELOW) WILL BE LEFT TO THE LANDSCAPE CONTRACTOR'S DISCRETION. SHOULD ANY TREES FALL OR LEAN, THE LANDSCAPE CONTRACTOR SHALL STRAIGHTEN THE TREE, OR REPLACE IT SHOULD IT BECOME DAMAGED. TREE STAKING SHALL ADHERE TO THE FOLLOWING GUIDELINES:

a.	1"-2" TREES	TWO STAKES PER TREE
b.	2-1/2"-4" TREES	THREE STAKES PER TREE
c.	TREES OVER 4" CALIPER	GUY AS NEEDED
d.	MULTI-TRUNK TREES	THREE STAKES PER TREE MINIMUM, QUANTITY AND POSITIONS AS NEEDED TO STABILIZE THE TREE

7. UPON COMPLETION OF PLANTING, CONSTRUCT AN EARTH WATERING BASIN AROUND THE TREE. COVER THE INTERIOR OF THE TREE RING WITH MULCH (TYPE AND DEPTH PER PLANS).

E. SHRUB, PERENNIAL, AND GROUNDCOVER PLANTING
1. DIG THE PLANTING HOLES TWICE AS WIDE AND 2" LESS DEEP THAN EACH PLANT'S ROOTBALL. INSTALL THE PLANT IN THE HOLE. BACKFILL AROUND THE PLANT WITH SOIL AMENDED PER SOIL TEST RECOMMENDATIONS.
2. WHEN PLANTING IS COMPLETE, INSTALL MULCH (TYPE AND DEPTH PER PLANS) OVER ALL PLANTING BEDS, COVERING THE ENTIRE PLANTING AREA.

F. SODDING
1. SOD VARIETY TO BE AS SPECIFIED ON THE LANDSCAPE PLAN.
2. LAY SOD WITHIN 24 HOURS FROM THE TIME OF STRIPPING. DO NOT LAY IF THE GROUND IS FROZEN.
3. LAY THE SOD TO FORM A SOLID MASS WITH TIGHTLY FITTED JOINTS. BUTT ENDS AND SIDES OF SOD STRIPS - DO NOT OVERLAP. STAGGER STRIPS TO OFFSET JOINTS IN ADJACENT COURSES.
4. ROLL THE SOD TO ENSURE GOOD CONTACT OF THE SOD'S ROOT SYSTEM WITH THE SOIL UNDERNEATH.
5. WATER THE SOD THOROUGHLY WITH A FINE SPRAY IMMEDIATELY AFTER PLANTING TO OBTAIN AT LEAST SIX INCHES OF PENETRATION INTO THE SOIL BELOW THE SOD.

G. MULCH
1. INSTALL MULCH TOPDRESSING, TYPE AND DEPTH PER MULCH NOTE, IN ALL PLANTING AREAS AND TREE RINGS.
2. DO NOT INSTALL MULCH WITHIN 6" OF TREE ROOT FLARE EXCEPT AS MAY BE NOTED ON THESE PLANS. MULCH COVER WITHIN 6" OF CONCRETE WALKS AND CURBS SHALL NOT PROTRUDE ABOVE THE FINISH SURFACE OF THE WALKS AND CURBS. MULCH COVER WITHIN 12" OF WALLS SHALL BE AT LEAST 3" LOWER THAN THE TOP OF WALL.

H. CLEAN UP
1. DURING LANDSCAPE PREPARATION AND PLANTING, KEEP ALL PAVEMENT CLEAN AND ALL WORK AREAS IN A NEAT, ORDERLY CONDITION.
2. LEGALLY DISPOSE ALL EXCAVATED MATERIALS OFF THE PROJECT SITE.

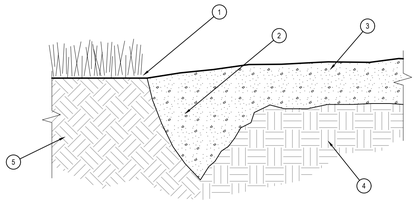
I. INSPECTION AND ACCEPTANCE
1. UPON COMPLETION OF THE WORK, THE LANDSCAPE CONTRACTOR SHALL PROVIDE THE SITE CLEAN, FREE OF DEBRIS AND TRASH, AND SUITABLE FOR USE AS INTENDED. THE LANDSCAPE CONTRACTOR SHALL THEN REQUEST AN INSPECTION BY THE OWNER TO DETERMINE FINAL ACCEPTABILITY.
2. WHEN THE INSPECTED PLANTING WORK DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS, THE LANDSCAPE CONTRACTOR SHALL REPLACE AND/OR REPAIR THE REJECTED WORK TO THE OWNER'S SATISFACTION WITHIN 24 HOURS.
3. THE LANDSCAPE MAINTENANCE PERIOD WILL NOT COMMENCE UNTIL THE LANDSCAPE WORK HAS BEEN RE-INSPECTED BY THE OWNER AND FOUND TO BE ACCEPTABLE. AT THAT TIME, A WRITTEN NOTICE OF FINAL ACCEPTANCE WILL BE ISSUED BY THE OWNER, AND THE MAINTENANCE AND GUARANTEE PERIODS WILL COMMENCE.

J. LANDSCAPE MAINTENANCE
1. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL WORK SHOWN ON THESE PLANS FOR 90 DAYS BEYOND FINAL ACCEPTANCE OF ALL LANDSCAPE WORK BY THE OWNER. LANDSCAPE MAINTENANCE SHALL INCLUDE WEEKLY SITE VISITS FOR THE FOLLOWING ACTIONS (AS APPROPRIATE): PROPER PRUNING, RESTAKING OF TREES, RESETTING OF PLANTS THAT HAVE SETTLED, MOWING AND AERATION OF LAWNS, WEEDING, TREATING FOR INSECTS AND DISEASES,REPLACEMENT OF MULCH, REMOVAL OF LITTER, REPAIRS TO THE IRRIGATION SYSTEM DUE TO FAULTY PARTS AND/OR WORKMANSHIP, AND THE APPROPRIATE WATERING OF ALL PLANTINGS. THE LANDSCAPE CONTRACTOR SHALL MAINTAIN THE IRRIGATION SYSTEM IN PROPER WORKING ORDER, WITH SCHEDULING ADJUSTMENTS BY SEASON TO MAXIMIZE WATER CONSERVATION.
2. SHOULD SODDED AREAS NOT BE COVERED BY AN AUTOMATIC IRRIGATION SYSTEM, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING THESE AREAS AND OBTAINING A FULL, HEALTHY STAND OF PLANTS AT NO ADDITIONAL COST TO THE OWNER.
3. TO ACHIEVE FINAL ACCEPTANCE AT THE END OF THE MAINTENANCE PERIOD, ALL OF THE FOLLOWING CONDITIONS MUST OCCUR:
a. THE LANDSCAPE SHALL SHOW ACTIVE, HEALTHY GROWTH (WITH EXCEPTIONS MADE FOR SEASONAL DORMANCY). ALL PLANTS NOT MEETING THIS CONDITION SHALL BE REJECTED AND REPLACED BY HEALTHY PLANT MATERIAL PRIOR TO FINAL ACCEPTANCE.
b. ALL HARDSCAPE SHALL BE CLEANED PRIOR TO FINAL ACCEPTANCE.
c. SODDED AREAS MUST BE ACTIVELY GROWING AND MUST REACH A MINIMUM HEIGHT OF 1 1/2 INCHES BEFORE FIRST MOWING. BARE AREAS LARGER THAN TWELVE SQUARE INCHES MUST BE RESODDED PRIOR TO FINAL ACCEPTANCE. ALL SODDED TURF SHALL BE NEATLY MOWED.

K. WARRANTY PERIOD, PLANT GUARANTEE AND REPLACEMENTS
1. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL TREES, SHRUBS, PERENNIALS, SOD, AND IRRIGATION SYSTEMS FOR A PERIOD OF ONE YEAR FROM THE DATE OF THE OWNER'S FINAL ACCEPTANCE (90 DAYS FOR ANNUAL PLANTS). THE CONTRACTOR SHALL REPLACE, AT HIS OWN EXPENSE AND TO THE SATISFACTION OF THE OWNER, ANY PLANTS WHICH DIE IN THAT TIME, OR REPAIR ANY PORTIONS OF THE IRRIGATION SYSTEM WHICH OPERATE IMPROPERLY.
2. AFTER THE INITIAL MAINTENANCE PERIOD AND DURING THE GUARANTEE PERIOD, THE LANDSCAPE CONTRACTOR SHALL ONLY BE RESPONSIBLE FOR REPLACEMENT OF PLANTS WHEN PLANT DEATH CANNOT BE ATTRIBUTED DIRECTLY TO OVERWATERING OR OTHER DAMAGE BY HUMAN ACTIONS.

L. PROVIDE A MINIMUM OF (2) COPIES OF RECORD DRAWINGS TO THE OWNER UPON COMPLETION OF WORK. A RECORD DRAWING IS A RECORD OF ALL CHANGES THAT OCCURRED IN THE FIELD AND THAT ARE DOCUMENTED THROUGH CHANGE ORDERS, ADDENDA, OR CONTRACTOR/CONSULTANT DRAWING MARKUPS.

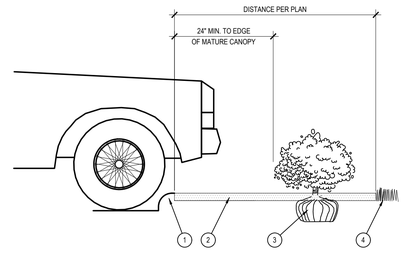
NOTE: PROPERTY OWNER IS RESPONSIBLE FOR MAINTENANCE OF ALL CODE REQUIRED LANDSCAPING AFTER THE 90 DAYS ESTABLISHMENT PERIOD.



1. FINISH GRADE FOR LAWN
2. EARTHSPACE EDGE WITH 5"-6" OF MULCH AT EDGE (FLUSH WITH TOP OF LAWN).
3. MULCH PER SPECIFICATIONS
4. SOIL MIX PER SPECIFICATIONS
5. EXISTING SOIL

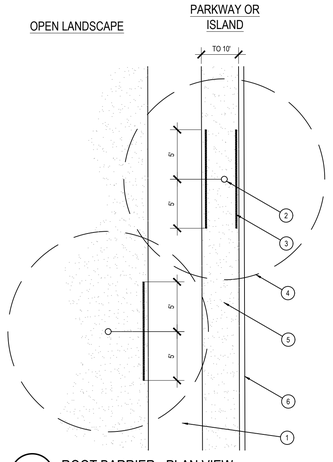
NOTES:
USE WHEREVER MULCHED TRANSITION TO TURF AREA, INCLUDING ALL TREE MULCH RINGS, SHRUBS, BEDS, MASS PLANTING, ETC., EXCEPT WHERE NOTED OTHERWISE. SOIL EDGING HAS BEEN CALLED OUT.

D EARTH/SPADE EDGE
SCALE: NOT TO SCALE



1. CURB.
2. MULCH LAYER.
3. PLANT.
4. TURF (WHERE SHOWN ON PLAN).

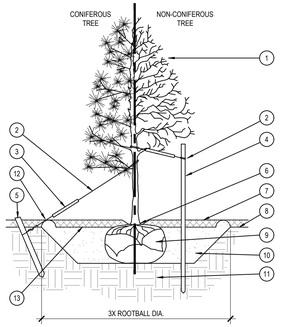
E PLANTING AT PARKING AREA
SCALE: NOT TO SCALE



1. TYPICAL WALKWAY OR PAVING
2. TREE TRUNK
3. LINEAR ROOT BARRIER MATERIAL. SEE PLANTING NOTES FOR TYPE AND MANUFACTURER. INSTALL PER MANUFACTURER'S SPECIFICATIONS.
4. TREE CANOPY
5. TYPICAL PLANTING AREA
6. TYPICAL CURB AND GUTTER

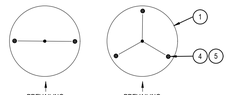
NOTES:
1) INSTALL ROOT BARRIERS NEAR ALL NEWLY-PLANTED TREES THAT ARE LOCATED WITHIN FIVE (5) FEET OF PAVING OR CURBS.
2) BARRIERS SHALL BE LOCATED IMMEDIATELY ADJACENT TO HARDSCAPE. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR USE ROOT BARRIERS OF A TYPE THAT COMPLETELY ENCIRCLE THE ROOTBALL.

F ROOT BARRIER - PLAN VIEW
SCALE: NOT TO SCALE



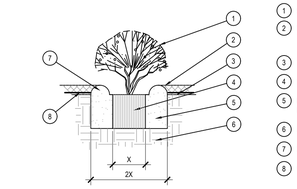
1. TREE CANOPY.
2. CINCH-TIES (24" BOX/2" CAL. TREES AND SMALLER) OR 12 GAUGE GALVANIZED WIRE WITH NYLON TREE STRAPS AT TREE AND STAKE (36" BOX/2.5" CAL. TREES AND LARGER). SECURE TIES OR STRAPS TO TRUNK JUST ABOVE LOWEST MAJOR BRANCHES.
3. 24" X 3/4" P.V.C. MARKERS OVER WIRES.
4. GREEN STEEL T-POSTS. EXTEND POSTS 12" MIN. INTO UNDISTURBED SOIL.
5. PRESSURE-TREATED WOOD DEADMAN, TWO PER TREE (MIN.). BURY OUTSIDE OF PLANTING PIT AND 18" MIN. INTO UNDISTURBED SOIL.
6. TRUNK FLARE.
7. MULCH, TYPE AND DEPTH PER PLANS. DO NOT PLACE MULCH WITHIN 6" OF TRUNK.
8. FINISH GRADE.
9. ROOT BALL.
10. BACKFILL. AMEND AND FERTILIZE ONLY AS RECOMMENDED IN SOIL FERTILITY ANALYSIS.
11. UNDISTURBED NATIVE SOIL.
12. 4" HIGH EARTHEN WATERING BASIN.
13. FINISH GRADE.

STAKING EXAMPLES (PLAN VIEW)



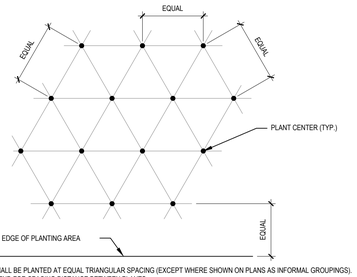
NOTES:
1. SCARIFY SIDES OF PLANTING PIT PRIOR TO SETTING TREE.
2. REMOVE EXCESS SOIL APPLIED ON TOP OF THE ROOTBALL THAT COVERS THE ROOT FLARE. THE PLANTING HOLE DEPTH SHALL BE SUCH THAT THE ROOTBALL RESTS ON UNDISTURBED SOIL, AND THE ROOT FLARE IS 2"-4" ABOVE FINISH GRADE.
3. FOR B&B TREES, CUT OFF BOTTOM 1/3 OF WIRE BASKET BEFORE PLACING TREE IN HOLE, CUT OFF AND REMOVE REMAINDER OF BASKET AFTER TREE IS SET IN HOLE. REMOVE ALL NYLON TIES, TWINE, ROPE, AND OTHER PACKING MATERIAL. REMOVE AS MUCH BURLAP FROM AROUND ROOTBALL AS IS PRACTICAL.
4. REMOVE ALL NURSERY STAKES AFTER PLANTING.
5. FOR TREES 36" BOX/2.5" CAL. AND LARGER, USE THREE STAKES OR DEADMEN (AS APPROPRIATE), SPACED EVENLY AROUND TREE.
6. STAKING SHALL BE TIGHT ENOUGH TO PREVENT TRUNK FROM BENDING, BUT LOOSE ENOUGH TO ALLOW SOME TRUNK MOVEMENT IN WIND.

A TREE PLANTING
SCALE: NOT TO SCALE



1. SHRUB, PERENNIAL, OR ORNAMENTAL GRASS.
2. MULCH, TYPE AND DEPTH PER PLANS. PLACE NO MORE THAN 1" OF MULCH WITHIN 6" OF PLANT CENTER.
3. FINISH GRADE.
4. ROOT BALL.
5. BACKFILL. AMEND AND FERTILIZE ONLY AS RECOMMENDED IN SOIL FERTILITY ANALYSIS.
6. UNDISTURBED NATIVE SOIL.
7. 3" HIGH EARTHEN WATERING BASIN.
8. WEED FABRIC UNDER MULCH.

B SHRUB AND PERENNIAL PLANTING
SCALE: NTS



NOTE: ALL PLANTS SHALL BE PLANTED AT EQUAL TRIANGULAR SPACING (EXCEPT WHERE SHOWN ON PLANS AS INFORMAL GROUPINGS). REFER TO PLANT LEGEND FOR SPACING DISTANCE BETWEEN PLANTS.

1) STEP 1: DETERMINE TOTAL PLANTS FOR THE AREA WITH THE FO

PRELIMINARY DEVELOPMENT PLAN/ CONSTRUCTION PLAN/STORMWATER MANAGEMENT PLANS AND REPORT

FOR

CALUMET TOWN SUBDIVISION

PASCO COUNTY, FLORIDA

SECTION 02, TOWNSHIP 26S, RANGE 21E

DRAWING LIST

SHEET NO.	SHEET TITLE
C-0.0	COVER SHEET
C-1.0	CONSTRUCTION NOTES
C-2.0	DEMOLITION AND SITE PREPERATION PLAN
C-2.1	DEMOLITION DETAILS
C-2.2	SWPPP
C-2.3	SWPPP NOTES
C-3.0	PRELIMINARY PLAT
C-3.1	TRACT PLAN
C-3.2	AERIAL SITE PLAN
C-3.3	TYPICAL SECTION
C-4.0	SITE PLAN
C-4.1	SITE PLAN EXHIBITS
C-4.2	SITE PLAN DETAILS
C-5.0	SIGNING AND PAVEMENT PLAN
C-5.1	SIGNING AND PAVEMENT DETAILS
C-5.2	SIGNING AND PAVEMENT DETAILS
C-6.0	GRADING PLAN
C-6.1	GRADING SITE CROSS SECTIONS
C-6.2	GRADING SITE CROSS SECTIONS
C-6.3	STORM PIPE PROFILES
C-6.4	GRADING DETAILS
C-6.5	GRADING DETAILS
C-6.6	GRADING DETAILS
C-6.7	GRADING DETAILS
C-6.8	GRADING DETAILS
C-6.9	STORMTECH
C-7.0	MASTER UTILITY PLAN
C-7.1	UTILITY PLAN (SANITARY)
C-7.2	UTILITY PLAN (WATER)
C-7.3	UTILITY DETAILS
C-7.4	UTILITY DETAILS
C-7.5	UTILITY DETAILS
C-7.6	UTILITY DETAILS
C-7.7	UTILITY DETAILS
C-7.8	PUMP STATION DETAILS (1 OF 2)
C-7.9	PUMP STATION DETAILS (2 OF 2)
C-8.0	PLAN AND PROFILE
C-8.1	PLAN AND PROFILE
C-9.0	OFFSITE - ROADWAY
C-9.1	OFFSITE - PAVEMENT MARKINGS
C-9.2	OFFSITE - MAINTAINENCE OF TRAFFIC
C-9.3	OFFSITE - MOT DETAILS
C-9.4	OFFSITE - MOT DETAILS

VERTICAL DATUM

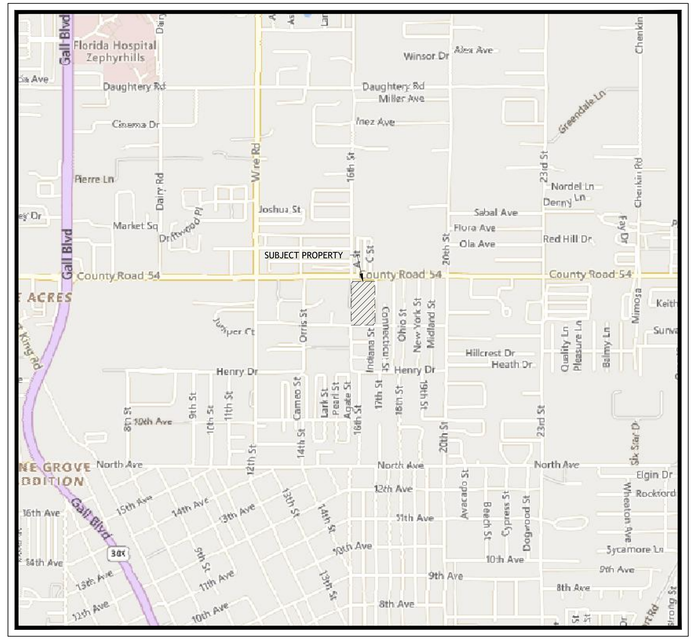
ELEVATIONS SHOWN HEREIN ARE BASED ON THE (NAVD) 88 AND SAID ELEVATIONS ARE BASED ON BENCHMARKS RESEARCHED BY THE SURVEYOR



LOCATION MAP

150 0 150

SCALE : 1" = 150'



VICINITY MAP

SCALE: 1" = 1000'

LEGAL DESCRIPTION

BEGIN AT THE NORTHWEST CORNER OF THE EAST 1/2 OF THE SOUTHEAST 1/4 ON THE SOUTH RIGHT-OF-WAY OF STATE ROAD 54, SECTION 2, TOWNSHIP 26 SOUTH, RANGE 21 EAST, PASCO COUNTY, FLORIDA AND RUN THENCE EAST 330.00 FEET; THENCE SOUTH 660.00 FEET; THENCE WEST 330.00 FEET; THENCE NORTH 660.00 FEET TO THE POINT OF BEGINNING.

SUBJECT TO EASEMENTS, RESTRICTIONS, AND RESERVATIONS OF RECORD.

DEVELOPMENT TEAM

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TAMPA, FL 33626
CONTACT: LAURIE BURCAW, P.E.
PHONE: (813) 523-7412
INFO@BEACONCIVIL.COM

ENGINEER
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ENVIRONMENT ALIST
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WWW.CLEMENTI-EC.COM

SURVEYOR
ALPHA LAND SURVEYING
10024 PALERMO CIRCLE
SUITE 202
TAMPA, FL 34208
CONTACT: FRED FRANKLIN, P.S.E
PHONE: (813) 221-2144
FRANKLIN@ALSM96.COM

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB
CHECKED BY:	AH	APPROVED BY:	LB

ISSUE DATE: 9/28/23
JOB NO.: 22-548

NO.	BY	DATE	REVISION DESCRIPTION
1	CB	5/30/23	1ST ROUND JURISDICTIONAL COMMENTS
2	CB	8/31/23	2ND ROUND JURISDICTIONAL COMMENTS

3 WORKING DAYS
BEFORE YOU DIG
CALL SUNSHINE STATE
ONE CALL OF FLORIDA
1-800-432-4770
FOR THE LOCATION OF
UNDERGROUND UTILITIES

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

Laurie S Burcaw

Digitally signed by Laurie S Burcaw
DN: C=US, O=Florida, dnQualifier=A01410C0000017ACA4A498D0000449D, CN=Laurie S Burcaw
Reason: I am the author of this document
Location:
Date: 2023.09.29 16:38:33-04'00'
Foxit PDF Editor Version: 12.1.1

LAURIE S. BURCAW
LICENSED
No. 46064
STATE OF FLORIDA
PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.

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BEACON
CIVIL ENGINEERING

LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
COVER SHEET

SHEET NUMBER:
C-0.0

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GENERAL NOTES:

1. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES, AFFECTING THIS WORK, PRIOR TO CONSTRUCTION.

2. PRIOR TO THE INITIATION OF SITE CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ANY EXISTING UTILITIES INCLUDING GAS, WATER, ELECTRIC, COMMUNICATIONS, CABLE TV, SANITARY AND STORM SEWERS, ON AND/OR ADJACENT TO THE SITE, REMOVE OR CAP AS NECESSARY.

3. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN AREAS OF BURIED UTILITIES AND SHALL CALL "SUNSHINE" AT 1-800-432-4770, AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, TO ARRANGE FOR FIELD LOCATIONS OF BURIED UTILITIES.

4. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, ABOVE OR BELOW GROUND, THAT MAY OCCUR AS A RESULT OF THE WORK PERFORMED, BY THE CONTRACTOR OR SUBCONTRACTORS, AS CALLED FOR IN THESE CONTRACT DOCUMENTS.

5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH THE PERMIT INSPECTION AND CERTIFICATION REQUIREMENTS SPECIFIED BY THE VARIOUS GOVERNMENTAL AGENCIES AND THE ENGINEER. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION, AND SCHEDULE INSPECTIONS ACCORDING TO AGENCY INSTRUCTIONS/REQUIREMENTS.

6. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL PRE-CAST AND MANUFACTURED ITEMS TO THE OWNER'S ENGINEER FOR APPROVAL, PRIOR TO ORDERING. FAILURE TO OBTAIN APPROVAL BEFORE INSTALLATION MAY RESULT IN REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.

7. ALL UTILITY SERVICE STUB-OUTS (WATER, SANITARY SEWER, etc.) ARE TO BE INSTALLED TO WITHIN 5' OF BUILDING(S), UNLESS OTHERWISE NOTED ON PLANS.

8. CONTRACTOR TO COORDINATE WITH THE APPLICABLE ELECTRIC UTILITY SUPPLIER REGARDING ANY NECESSARY RELOCATION(S) OF UNDERGROUND AND/OR OVERHEAD ELECTRIC FACILITIES, AND FOR THE LOCATION AND INSTALLATION OF TRANSFORMER PAD(S) AND ASSOCIATED ELECTRIC FACILITIES.

9. SAFETY:
   A. DURING THE CONSTRUCTION AND/OR MAINTENANCE OF THIS PROJECT, ALL SAFETY REGULATIONS ARE TO BE ENFORCED. THE CONTRACTOR OR HIS REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE CONTROL AND SAFETY OF THE TRAVELING PUBLIC AND THE SAFETY OF HIS/HER PERSONNEL.

   B. LABOR SAFETY REGULATIONS SHALL CONFORM TO THE PROVISIONS SET FORTH BY OSHA IN THE FEDERAL REGISTER OF THE DEPARTMENT OF TRANSPORTATION.

   C. THE MINIMUM STANDARDS AS SET FORTH IN THE CURRENT EDITION OF "THE STATE OF FLORIDA, MANUAL ON TRAFFIC CONTROL AND SAFE PRACTICES FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS" SHALL BE FOLLOWED IN THE DESIGN, APPLICATION, INSTALLATION, MAINTENANCE AND REMOVAL OF ALL TRAFFIC CONTROL DEVICES, WARNING DEVICES AND BARRIERS NECESSARY TO PROTECT THE PUBLIC AND CONSTRUCTION PERSONNEL FROM HAZARDS WITHIN THE PROJECT LIMITS.

   D. ALL TRAFFIC CONTROL MARKINGS AND DEVICES SHALL CONFORM TO THE PROVISIONS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES PREPARED BY THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION, FDOT INDICES AND GOVERNING JURISDICTION FACILITY DESIGN GUIDELINES (LATEST EDITIONS).

   E. ALL SUBSURFACE CONSTRUCTION SHALL COMPLY WITH THE "TRENCH SAFETY ACT". THE CONTRACTOR SHALL INSURE THAT THE METHOD OF TRENCH PROTECTION AND CONSTRUCTION IS IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS.

   IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY AND ENFORCE ALL APPLICABLE SAFETY REGULATIONS. THE ABOVE INFORMATION HAS BEEN PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY AND DOES NOT IMPLY THAT THE OWNER OR ENGINEER WILL INSPECT AND/OR ENFORCE SAFETY REGULATIONS.

10. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ANY "ON-SITE PIPING PERMITS" (IF REQUIRED) FOR CONSTRUCTION OF THE PROPOSED UTILITY FACILITIES. THIS PERMIT MUST BE OBTAINED BY A DULY LICENSED PLUMBING CONTRACTOR (OR CLASS A GENERAL CONTRACTOR) PRIOR TO THE START OF CONSTRUCTION. THESE PLANS AND ANY SUBSEQUENT REVISIONS TO THESE PLANS, THAT ARE ISSUED BY THE ENGINEER, WILL BE SUBJECT TO THE APPROVAL CONDITIONS OF THIS PERMIT.

11. THE GRAPHIC INFORMATION DEPICTED ON THESE PLANS HAS BEEN COMPILED TO PROPORTION BY SCALE AS ACCURATELY AS POSSIBLE. HOWEVER, DUE TO REPRODUCTIVE DISTORTION, REDUCTION, AND/OR REVISIONS, INFORMATION CONTAINED HEREIN IS NOT INTENDED TO BE SCALED FOR CONSTRUCTION PURPOSES.

12. ALL SPECIFICATIONS AND DOCUMENTS REFERENCED HEREIN SHALL BE OF THE LATEST REVISION.

13. ALL UNDERGROUND UTILITIES MUST BE IN-PLACE, TESTED AND INSPECTED PRIOR TO BASE AND SURFACE CONSTRUCTION.

14. WORK PERFORMED UNDER THIS CONTRACT SHALL INTERFACE SMOOTHLY WITH ANY OTHER WORK BEING PERFORMED ON-SITE BY OTHER CONTRACTORS/ SUBCONTRACTORS AND UTILITY COMPANIES. IT WILL BE NECESSARY FOR THE GENERAL CONTRACTOR TO COORDINATE AND SCHEDULE ITS ACTIVITIES ACCORDINGLY.

AS-BUILT:

UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL FURNISH THE OWNER'S ENGINEER WITH COMPLETE "AS-BUILT" INFORMATION, CERTIFIED BY A REGISTERED LAND SURVEYOR. THIS "AS-BUILT" INFORMATION SHALL INCLUDE INVERT ELEVATIONS, DRAINAGE STRUCTURES, WEIRS, LOCATIONS OF STRUCTURES FOR ALL UTILITIES INSTALLED, AS WELL AS TOP OF BANK, TOE OF SLOPE AND GRADE BREAK LOCATIONS AND ELEVATIONS FOR POND AND DITCH/SWALE CONSTRUCTION. NO ENGINEER'S CERTIFICATIONS FOR CERTIFICATE OF OCCUPANCY (C.O.) PURPOSES WILL BE MADE UNTIL THIS INFORMATION HAS BEEN RECEIVED AND APPROVED BY THE OWNER'S ENGINEER.

CLEARING AND SITE PREPARATION NOTES :

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSTALLATION OF THE EROSION CONTROL DEVICES, AS SHOWN ON THE CONSTRUCTION PLANS, PRIOR TO ANY SITE CLEARING. REFER TO THE "EROSION CONTROL NOTES" SECTION CONTAINED HEREIN FOR ADDITIONAL REQUIREMENTS.

2. PRIOR TO ANY SITE CLEARING, ALL TREES SHOWN TO REMAIN, AS INDICATED ON THE CONSTRUCTION PLANS, SHALL BE PROTECTED IN ACCORDANCE WITH LOCAL TREE ORDINANCES, AND DETAILS CONTAINED IN THESE PLANS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THESE TREES IN GOOD CONDITION. NO TREE(S) SHOWN TO REMAIN SHALL BE REMOVED WITHOUT WRITTEN APPROVAL FROM THE OWNER AND THE LOCAL AGENCY HAVING JURISDICTION OVER THESE ACTIVITIES.

3. THE CONTRACTOR SHALL CLEAR AND GRUB ONLY THOSE PORTIONS OF THE SITE NECESSARY FOR CONSTRUCTION. ALL DISTURBED AREAS MUST BE SEEDED, MULCHED, SODDED OR PLANTED WITH OTHER APPROVED LANDSCAPE MATERIAL, IMMEDIATELY FOLLOWING CONSTRUCTION.

4. STRIPPED TOPSOIL REMOVED DURING CLEARING AND GRUBBING ACTIVITIES SHALL BE STOCKPILED, TO BE USED FOR LANDSCAPING PURPOSES, UNLESS OTHERWISE DIRECTED BY THE OWNER. REMAINING EARTHWORK THAT RESULTS FROM CLEARING AND GRUBBING OR SITE EXCAVATION IS TO BE UTILIZED ON-SITE, PROVIDED THE MATERIAL IS DEEMED SUITABLE BY THE OWNER'S SOILS TESTING COMPANY. EXCESS MATERIAL IS TO EITHER BE STOCKPILED ON-SITE, AS DIRECTED BY THE OWNER OR OWNER'S ENGINEER, OR REMOVED FROM THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ANY PERMITS THAT ARE NECESSARY FOR REMOVING EXCESS EARTHWORK FROM THE SITE.

5. ALL CONSTRUCTION DEBRIS AND OTHER WASTE MATERIAL SHALL BE DISPOSED OF OFF-SITE, BY THE CONTRACTOR, IN ACCORDANCE WITH APPLICABLE REGULATORY AGENCY REQUIREMENTS.

6. THE CONTRACTOR IS TO PREPARE THE SITE IN ACCORDANCE WITH THE SOILS REPORT, COPIES OF WHICH ARE AVAILABLE THROUGH THE OWNER OR SOILS TESTING COMPANY DIRECTLY.

EROSION CONTROL NOTES:

1. CONTRACTOR IS TO PROVIDE EROSION CONTROL/SEDIMENTATION BARRIERS (HAY BALES OR SILTATION CURTAINS) TO PREVENT SILTATION OF ADJACENT PROPERTY, STREETS, STORM SEWERS AND WATERWAYS. IN ADDITION, CONTRACTOR SHALL PLACE STRAW, MULCH OR OTHER SUITABLE MATERIAL ON GROUND IN AREAS WHERE CONSTRUCTION RELATED TRAFFIC IS TO ENTER AND EXIT SITE. IF, IN THE OPINION OF THE ENGINEER AND/OR LOCAL AUTHORITIES, EXCESSIVE QUANTITIES OF EARTH ARE TRANSPORTED OFF-SITE EITHER BY NATURAL DRAINAGE OR BY VEHICULAR TRAFFIC, THE CONTRACTORS IS TO REMOVE SAID EARTH TO THE SATISFACTION OF THE ENGINEER AND/OR AUTHORITIES.

2. THE CONTRACTOR SHALL LIMIT THE DISCHARGE OF TURBID WATERS OFF-SITE, OR INTO ON-SITE/OFF-SITE WETLANDS (IF APPLICABLE), TO NO MORE THAN THE SPECIFIED NTU's (NEPHELOMETRIC TURBIDITY UNITS) GOVERNED BY THE APPLICABLE GOVERNING JURISDICTION, ABOVE BACKGROUND LEVELS.

3. IF WIND EROSION BECOMES SIGNIFICANT DURING CONSTRUCTION, THE CONTRACTOR SHALL STABILIZE THE AFFECTED AREA USING SPRINKLING, IRRIGATION OR OTHER ACCEPTABLE METHODS.

4. CONTRACTOR SHALL INSPECT AND MAINTAIN ON A DAILY BASIS ALL EROSION/SEDIMENTATION CONTROL FACILITIES.

5. THE CONTRACTOR SHALL ENSURE THAT SILTATION ACCUMULATIONS GREATER THAN THE LESSER OF 12 INCHES OR ONE-HALF THE DEPTH OF THE SILTATION CONTROL BARRIER SHALL BE IMMEDIATELY REMOVED AND PLACED IN UPLAND AREAS.

6. CONTRACTOR SHALL MAKE SURE THAT UNDUE SOIL/SAND IS NOT TRACKED OFFSITE, IF IT BECOMES AN ISSUE, CONTRACTOR SHALL ADD A CONSTRUCTION ENTRANCE WITH SEDIMENT REMOVAL (GRAVEL DRIVE) AND SHALL REMOVE ANY SEDIMENT/SOIL TRACKED OFFSITE DAILY OR SOONER.

CONSTRUCTION SITE WORK TESTING:

1. ALL SITE WORK CONSTRUCTION TESTING SHALL BE PERFORMED BY A CERTIFIED/LICENSED GEOTECHNICAL ENGINEERING FIRM.

2. ALL SITE WORK CONSTRUCTION TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH THE PROJECTS GEOTECHNICAL REPORT AND/OR THE TESTING PARAMETERS OF THE LOCAL MUNICIPALITY/AGENCY HAVING JURISDICTION OVER THE SITE WORK. THE MORE STRINGENT REQUIREMENTS SHALL APPLY.

3. COPIES OF PASSING TEST RESULTS SHALL BE PROVIDED TO THE DEVELOPER, ENGINEER OF RECORD, CONTRACTOR AND LOCAL MUNICIPALITY/AGENCY FOR PURPOSES, SUCH AS BUT NOT LIMITED TO, CERTIFICATION, AND ACCEPTANCE OF FACILITIES BY THE DEVELOPER AND/OR MUNICIPALITY/AGENCY.

4. THE SERVICES OF A CONSTRUCTION TESTING GEOTECHNICAL FIRM SHALL BE RETAINED BY THE DEVELOPER, UNLESS OTHERWISE SPECIFIED IN THE BID DOCUMENTS.

5. ENGINEER WILL NOT BE RESPONSIBLE FOR SCHEDULING, COORDINATION OR EVALUATION OF THE SOILS TESTING AND CERTIFICATIONS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE OWNER/DEVELOPER TO MAKE THE NECESSARY ARRANGEMENTS DIRECTLY WITH THE SOILS TESTING LABORATORY/GEOTECHNICAL FIRM AND THE SITE CONTRACTOR.

TESTING AND INSPECTION REQUIREMENTS (SANITARY):

1. ALL GRAVITY SEWER PIPING SHALL BE SUBJECT TO A VISUAL INSPECTION BY THE OWNERS ENGINEER AND APPLICABLE MUNICIPALITY/AGENCY. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 48 HOURS IN ADVANCE TO SCHEDULE INSPECTION(S). THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COSTS ASSOCIATED WITH A TELEVISED INSPECTION (TV) OF THE PROPOSED GRAVITY SEWER LINE CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE COPIES OF THE TV INSPECTION TAPE TO THE ENGINEER, THE OWNER AND THE APPLICABLE MUNICIPALITY/AGENCY.

2. THE CONTRACTOR SHALL PERFORM AN INFILTRATION/EXFILTRATION TEST ON ALL GRAVITY SEWERS IN ACCORDANCE WITH THE REGULATORY AGENCY HAVING JURISDICTION. SAID TESTS ARE TO BE CERTIFIED BY THE ENGINEER OF RECORD AND SUBMITTED TO THE REGULATORY AGENCY FOR APPROVAL. THE SCHEDULING, COORDINATION AND NOTIFICATION OF ALL PARTIES IS THE CONTRACTOR'S RESPONSIBILITY.

3. ALL FORCE MAINS (IF APPLICABLE) SHALL BE SUBJECT TO A HYDROSTATIC PRESSURE TEST IN ACCORDANCE WITH THE REGULATORY AGENCY HAVING JURISDICTION. SAID TESTS ARE TO BE CERTIFIED BY THE ENGINEER OF RECORD AND SUBMITTED TO THE REGULATORY AGENCY FOR APPROVAL. THE SCHEDULING, COORDINATION AND NOTIFICATION OF ALL PARTIES IS THE CONTRACTORS' RESPONSIBILITY.

PAVING AND GRADING NOTES:

1. ALL DELETERIOUS SUBSURFACE MATERIAL (I.E. MUCK, PEAT, BURIED DEBRIS) IS TO BE EXCAVATED IN ACCORDANCE WITH THESE PLANS OR AS DIRECTED BY THE OWNER, THE OWNERS ENGINEER, OR OWNERS SOILS TESTING COMPANY. DELETERIOUS MATERIAL IS TO BE STOCKPILED OR REMOVED FROM THE SITE AS DIRECTED BY THE OWNER. EXCAVATED AREAS ARE TO BE BACKFILLED WITH APPROVED MATERIALS AND COMPACTED AS SHOWN ON THESE PLANS. CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ANY PERMITS THAT ARE NECESSARY FOR REMOVING DELETERIOUS MATERIAL FROM THE SITE.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXCAVATIONS AGAINST COLLAPSE AND WILL PROVIDE BRACING, SHEETING OR SHORING AS NECESSARY. DEWATERING METHODS SHALL BE USED AS REQUIRED TO KEEP TRENCHES DRY WHILE PIPE AND APPURTENANCES ARE BEING PLACED.

3. ALL NECESSARY FILL AND EMBANKMENT THAT IS PLACED DURING CONSTRUCTION SHALL CONSIST OF MATERIAL SPECIFIED BY THE OWNER'S SOILS TESTING COMPANY OR ENGINEER AND BE PLACED AND COMPACTED ACCORDING TO THESE PLANS.

4. PROPOSED SPOT ELEVATIONS REPRESENT FINISHED PAVEMENT OR GROUND SURFACE GRADES UNLESS OTHERWISE NOTED.

5. IT MAY BE NECESSARY TO FIELD ADJUST PAVEMENT ELEVATIONS TO PRESERVE THE ROOT SYSTEMS OF TREES SHOWN TO BE SAVED. CONTRACTOR TO COORDINATE WITH OWNER'S ENGINEER PRIOR TO ANY ELEVATION CHANGES.

6. CONTRACTOR SHALL SAW CUT, TACK AND MATCH EXISTING PAVEMENT AT LOCATIONS WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT, PER DETAILS HEREIN.

7. CURBING SHALL BE PLACED AT THE EDGES OF ALL PAVEMENT, UNLESS OTHERWISE NOTED. REFER TO THE LATEST EDITION OF F.D.O.T. "FDOT DESIGN MANUAL (FDM)" FOR DETAILS AND SPECIFICATIONS OF ALL F.D.O.T. TYPE CURB AND GUTTERS CALLED FOR IN THESE PLANS.

8. PRIOR TO CONSTRUCTING CONCRETE PAVEMENT, THE CONTRACTOR IS TO SUBMIT A PROPOSED JOINTING PATTERN TO THE SOILS ENGINEER FOR APPROVAL.

9. CONTRACTOR TO PROVIDE A 1/2" TO 1" BITUMINOUS EXPANSION JOINT MATERIAL WITH SEALER AT ABUTMENT OF CONCRETE AND OTHER MATERIALS (STRUCTURES, OTHER PLACED CONCRETE, ETC.)

10. ALL PAVEMENT MARKINGS SHALL BE MADE IN ACCORDANCE WITH F.D.O.T. STANDARD INDEX # 711-001.

11. THE CONTRACTOR WILL STABILIZE, BY SEED AND MULCH, SOD, OR OTHER APPROVED MATERIALS, ANY DISTURBED AREAS WITHIN ONE WEEK FOLLOWING CONSTRUCTION OF THE UTILITY SYSTEMS AND PAVEMENT AREAS. CONTRACTOR SHALL MAINTAIN SUCH AREAS UNTIL FINAL ACCEPTANCE BY OWNER. CONTRACTOR TO COORDINATE WITH OWNER REGARDING TYPE OF MATERIAL, LANDSCAPING AND IRRIGATION REQUIREMENTS.

TESTING AND INSPECTION REQUIREMENTS (PAVING/GRADING):

1. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING APPLICABLE TESTING WITH THE SOILS ENGINEER. TESTS WILL BE REQUIRED PURSUANT WITH SITE SPECIFIC GEOTECHNICAL REPORT FOR THE SITE, AS WELL AS THE TESTING SCHEDULE REQUIRED BY FDOT AND THE AFFECTED MUNICIPALITY. UPON COMPLETION OF WORK, THE SOILS ENGINEER WILL SUBMIT CERTIFICATIONS TO THE OWNER AND OWNER'S ENGINEER STATING THAT ALL REQUIREMENTS HAVE BEEN MET.

2. A QUALIFIED TESTING LABORATORY SHALL PERFORM ALL TESTING NECESSARY TO ASSURE COMPLIANCE OF THE IN-PLACE MATERIALS AS REQUIRED BY THESE PLANS AND THE VARIOUS AGENCIES. SHOULD ANY RETESTING BE REQUIRED DUE TO THE FAILURE OF ANY TESTS TO MEET THE REQUIREMENTS, THE CONTRACTOR WILL BEAR ALL COSTS OF SAID RETESTING.

SANITARY SYSTEM NOTES:

1. ALL DIP PIPE SHALL BE CLASS 50 OR HIGHER. ADEQUATE MEASURES AGAINST CORROSION SHALL BE UTILIZED.

2. ALL PVC PIPE SHALL BE SOLID WALL POLYVINYL CHLORIDE PIPE AND COMPLY WITH ASTM D 3034 AND ALL APPLICABLE ASTM DOCUMENTS AS COVERED IN SECTION No. 2 OF ASTM D 3034. MAIN LINES SHALL BE A MINIMUM OF 8" DIAMETER, AND LATERALS SHALL BE A MINIMUM 6 " DIAMETER.

3. ALL SANITARY SEWER MAINS, LATERALS AND FORCE MAINS SHALL HAVE A MINIMUM OF 36 INCHES OF COVER, UNLESS OTHERWISE NOTED ON PLANS.

4. ALL GRAVITY SEWERS MUST BE SDR 26 PVC OR DIP CLASS 54 PIPE. ALTERNATIVES MUST BE APPROVED BY APPLICABLE JURISDICTION/ENGINEER OF RECORD. ELASTOMERIC GASKET JOINTS SHALL BE UTILIZED FOR PVC PIPE, AND SHALL COMPLY WITH ASTM F477, ASTM D3231 & ASTM F1336. JOINTS SHALL COMPLY WITH ASTM D3212.

5. ALL PVC FORCE MAINS (IF REQUIRED) SHALL BE CLASS 200, DR 14 FOR 4" DIAMETER, AND CLASS 150, DR 18 FOR 6" TO 12" DIAMETER PIPE, IN ACCORDANCE WITH AWWA C900 STANDARDS. PVC FORCE MAIN PIPE SMALLER THAN 4" DIAMETER SHALL BE CLASS 200, SDR 21, IN ACCORDANCE WITH ASTM D 2241. FORCE MAINS SHALL BE SPIRAL WRAPPED WITH 2 INCH WIDE DARK GREEN STICK-ON VINYL TAPE. FORCE MAINS WITHIN THE RIGHT-OF-WAY SHALL BE CLASS 52 DIP, MINIMUM 3" DIAMETER.

6. ALL SANITARY MANHOLES SHALL BE LOCATED NO MORE THAN 400 FEET APART AND SHALL CONFORM TO THE DETAILS CONTAINED HEREIN, AS WELL AS WITH ASTM C478.

7. ALL DUCTILE IRON PIPE SHALL MEET REQUIREMENTS OF AWWA C151, ANSI SPEC. A21.51.

8. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE PROVIDED WITH A VIRGIN POLYETHYLENE INTERIOR LINING COMPLYING WITH ASTM D 1248 (40 MILS THICK) HEAT BONDED TO THE INTERIOR OF ALL PIPES. ALL DIP PIPE SHALL HAVE A STANDARD OUTSIDE COATING COMPLYING WITH ASTM C151-8.1.

9. ALL SLOPES FOR GRAVITY SEWER MAINS AND SERVICE CONNECTIONS SHALL COMPLY WITH THE FOLLOWING MINIMUM GRADES: 6" @ 1.00%, 8" @ 0.50%.

10. ALL SANITARY SEWER WORK SHALL CONFORM WITH APPLICABLE JURISDICTIONAL STANDARD SPECIFICATIONS.

11. PRIOR TO COMMENCING WORK WHICH REQUIRES CONNECTING PROPOSED FACILITIES TO EXISTING LINES OR APPURTENANCES, THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION(S) OF EXISTING CONNECTION POINT(S) AND NOTIFY THE OWNER'S ENGINEER OF ANY CONFLICTS OR DISCREPANCIES.

12. SANITARY SEWER MAINS SHALL HAVE SUITABLE MAGNETIC LOCATOR TAPE(S) BURIED AT LEAST 18 INCHES ABOVE THE MAIN LINES.

13. FORCE MAINS SHALL HAVE SUITABLE MAGNETIC LOCATOR TAPE(S) BURIED AT LEAST 18 INCHES ABOVE THE FORCE MAIN.

WATER SYSTEM NOTES :

1. SANITARY SEWERS, FORCE MAINS, AND STORM SEWERS SHOULD ALWAYS CROSS UNDERNEATH WATER MAINS. INSTALLATIONS OF SANITARY SEWERS, FORCE MAINS AND STORM SEWERS, AT CROSSINGS OF WATER MAINS, SHALL BE PERFORMED SO AS TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE, WHENEVER POSSIBLE. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER JOINTS AND WATER JOINTS SHALL BE EQUIDISTANT FROM THE POINT OF CROSSING WITH NO LESS THAN 10 FEET BETWEEN ANY TWO JOINTS. WHERE SANITARY SEWERS, FORCE MAINS, AND STORM SEWERS MUST CROSS A WATER MAIN WITH LESS THAN 18 INCHES VERTICAL DISTANCE, BOTH THE SEWER AND THE WATER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (DIP), AT THE CROSSING. (DIP IS NOT REQUIRED FOR STORM SEWERS IF IT IS NOT AVAILABLE IN THE SIZE PROPOSED.). SUFFICIENT LENGTHS OF DIP MUST BE USED TO PROVIDE A MINIMUM SEPARATION OF 10 FEET BETWEEN ANY TWO (2) JOINTS IN LIEU OF DIP, THE SANITARY SEWER MAY BE PLACED IN A SLEEVE FOR 20 FEET CENTERED ON THE POINT OF CROSSING. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE LEAK FREE, AND MECHANICALLY RESTRAINED. A MINIMUM VERTICAL CLEARANCE OF 6 INCHES MUST BE MAINTAINED AT THE CROSSING, WHERE THERE IS NO ALTERNATIVE TO SEWER PIPES CROSSING OVER WATER MAINS, THE CRITERIA FOR MINIMUM SEPARATION OF 18 INCHES BETWEEN LINES, AND 10 FEET BETWEEN JOINTS CENTERED AT THE POINT OF CROSSING SHALL BE REQUIRED. THE WATER MAIN SHALL BE PLACED IN A SLEEVE FOR 20 FEET CENTERED ON THE POINT OF CROSSING. ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT DAMAGE TO THE WATER MAIN. ALL CROSSINGS SHALL BE ARRANGED SO THAT THE SEWER PIPE JOINTS AND THE WATER MAIN PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING (i.e.. PIPES CENTERED ON THE CROSSING). WHERE A PROPOSED PIPE CONFLICTS WITH AN EXISTING PIPE, THE PROPOSED PIPE SHALL BE CONSTRUCTED OF DIP, AND THE CROSSING SHALL BE ARRANGED SO AS TO SATISFY THE REQUIREMENTS IDENTIFIED ABOVE.

   WHEN THE RECLAIMED WATER LINE IS TRANSPORTING WATER FOR PUBLIC ACCESS IRRIGATION:
   MAXIMUM OBTAINABLE SEPARATION OF RECLAIMED WATER LINES AND DOMESTIC WATER LINES SHALL BE PRACTICED. A MINIMUM HORIZONTAL SEPARATION OF FIVE FEET (CENTER TO CENTER) OR THREE FEET (OUTSIDE TO OUTSIDE) SHALL BE MAINTAINED BETWEEN RECLAIMED WATER LINES AND EITHER POTABLE WATER MAINS OR SEWAGE COLLECTION LINES. AN 18 INCH VERTICAL SEPARATION SHALL BE MAINTAINED AT CROSSINGS.

   WHEN THE RECLAIMED WATER LINE IS TRANSPORTING WATER FOR NON-PUBLIC ACCESS IRRIGATION:
   THE RECLAIMED WATER MAIN SHALL BE TREATED LIKE A SANITARY SEWER, AND A 10-FT. HORIZONTAL AND 18 INCH VERTICAL SEPARATION SHALL BE MAINTAINED BETWEEN THE RECLAIMED WATER MAIN AND ALL EXISTING OR PROPOSED POTABLE WATER MAINS. NO MINIMUM SEPARATION IS REQUIRED BETWEEN THE RECLAIMED WATER MAIN AND SANITARY SEWERS, OTHER THAN NECESSARY TO ENSURE STRUCTURAL INTEGRITY AND PROTECTION OF THE LINES THEMSELVES.

2. A MINIMUM 10 FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN ANY TYPE OF SEWER (INCLUDING FORCE MAINS) AND EXISTING OR PROPOSED WATER MAINS, IN PARALLEL INSTALLATIONS, WHENEVER POSSIBLE. THE DISTANCE FOR SEPARATION SHALL BE MEASURED EDGE TO EDGE. IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN A 10 FOOT HORIZONTAL SEPARATION, THE WATER MAIN MUST BE INSTALLED IN A SEPARATE TRENCH, OR IN AN UNDISTURBED EARTH SHELF, LOCATED ON ONE SIDE OF THE SEWER OR FORCE MAIN, AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER LINE, AND WATER AND SEWER JOINTS SHALL BE STAGGERED. WHERE IT IS NOT POSSIBLE TO MAINTAIN A VERTICAL DISTANCE OF 18 INCHES, IN PARALLEL INSTALLATIONS, THE WATER MAIN SHALL BE CONSTRUCTED OF DIP AND THE SEWER OR FORCE MAIN SHALL BE CONSTRUCTED OF DIP (IF AVAILABLE IN THE SIZE PROPOSED), WITH A MINIMUM VERTICAL DISTANCE OF 6 INCHES. THE WATER MAIN SHOULD ALWAYS BE LOCATED ABOVE THE SEWER. JOINTS ON THE WATER MAIN SHALL BE LOCATED AS FAR APART AS POSSIBLE FROM JOINTS ON THE SEWER OR FORCE MAIN (i.e.. STAGGERED JOINTS).

3. ALL DIP PIPE SHALL BE MW CLASS 50 OR PRESSURE CLASS 250. REFER TO NOTE #: 8 BELOW FOR ADDITIONAL DIP SPECIFICATIONS. ADEQUATE MEASURES AGAINST CORROSION SHALL BE UTILIZED.

4. ALL WATER MAIN PIPE FITTINGS AND APPURTENANCES SHALL BE INSTALLED TO COMPLY WITH APPLICABLE UTILITY DEPARTMENT SPECIFICATIONS.

5. ALL WATER MAINS SHALL BE INSTALLED WITH A MINIMUM OF 36 INCHES OF COVER. WHERE POSSIBLE, 48" MAXIMUM COVER.

6. ALL WATER SERVICE LINES, VALVES AND METERS SHALL BE INSTALLED TO COMPLY WITH APPLICABLE MUNICIPALITY/AGENCY DEPARTMENT STANDARDS AND SPECIFICATIONS.

7. THRUST BLOCKING/RESTAINED JOINTS SHALL BE PROVIDED AT ALL FITTINGS AND HYDRANTS, IN ACCORDANCE WITH APPLICABLE UTILITY DEPT. SPECIFICATIONS.

8. ALL DUCTILE IRON PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA C151/A21.51. PIPE SHALL BE FURNISHED IN 18 OR 20 FOOT SECTIONS, PIPE THICKNESS SHALL BE CLASS 50, UNLESS OTHERWISE SPECIFIED..

9. ALL WATER SYSTEM CONSTRUCTION, UP TO AND INCLUDING POINT OF METERING AND BACK FLOW PREVENTION (IF REQUIRED), SHALL BE BUILT ACCORDING TO THE PREVIOUSLY REFERENCED STANDARDS AND SPECIFICATIONS.

10. ALL ON-SITE FIRE HYDRANTS SHALL BE PAINTED WITH HIGH GRADE ENAMEL FEDERAL, COLOR SHALL COMPLY WITH APPLICABLE UTILITY HAVING JURISDICTION, AND BE OSHA APPROVED, AND MUST BE LOCATED A MINIMUM OF 6 FEET, OR AS APPROVED BY THE APPLICABLE JURISDICTION, FROM THE EDGE OF PAVEMENT OR BACK OF CURB, OTHERWISE BOLLARDS WILL BE REQUIRED FOR PROTECTION. ALL FIRE HYDRANTS SHALL COMPLY WITH AWWA STANDARDS C502-80 THEREOF.

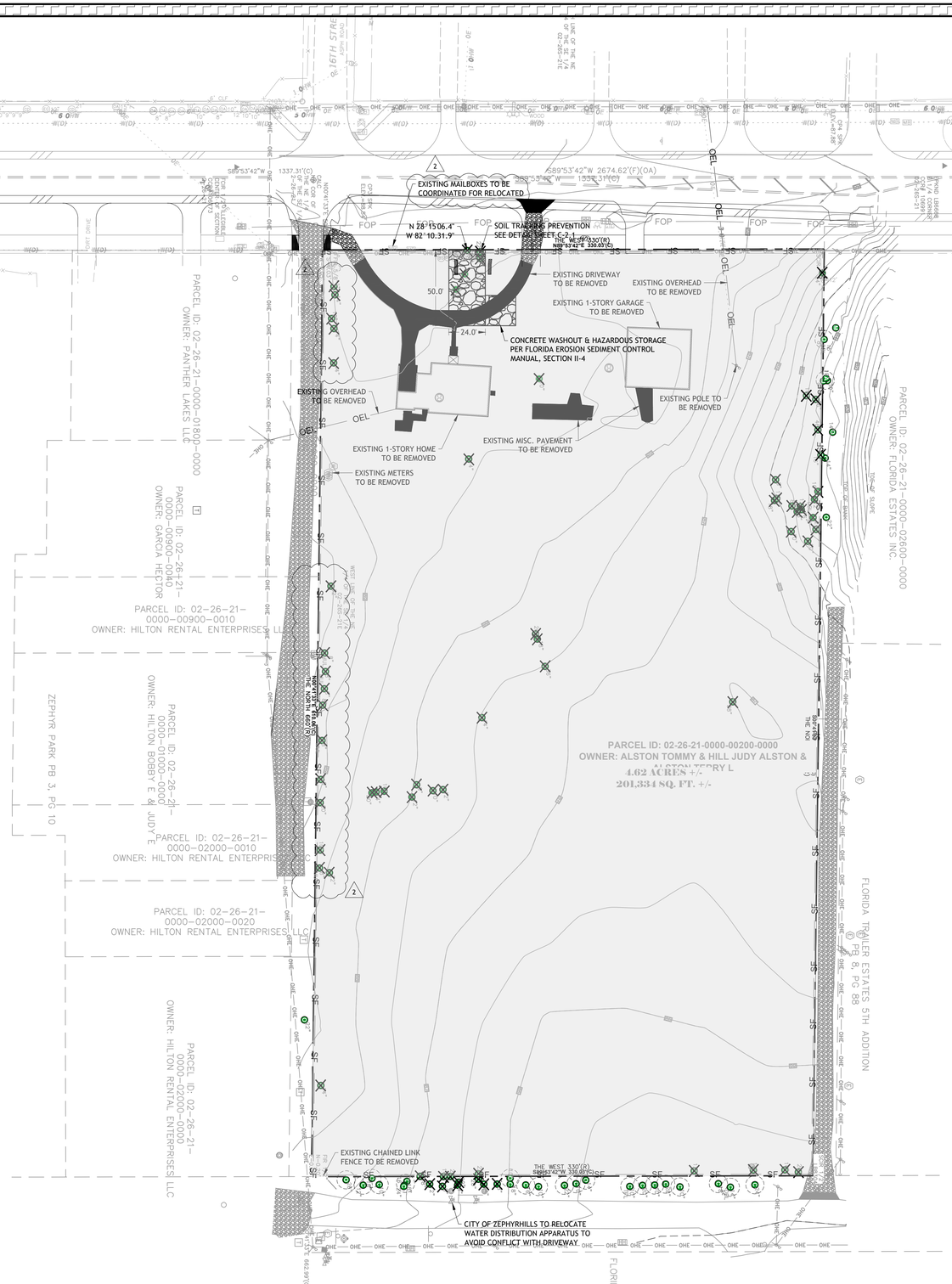
11. CONTRACTOR TO INSTALL TEMPORARY BLOWOFFS, AT THE END(S) OF PROPOSED WATER MAINS AND SERVICE LATERALS TO BUILDING(S), TO ASSURE ADEQUATE FLUSHING AND DISINFECTION/CHLORINATION.

12. ALL WATER MAINS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH AWWA MANUAL M23, CONCERNING HYDROSTATIC TESTING OF PVC PIPING. OFF-SITE UTILITIES HYDROSTATIC TESTING TO BE WITNESSED BY MUNICIPAL UTILITY DEPARTMENT INSPECTOR.

13. ALL WATER MAINS SHALL BE STERILIZED IN ACCORDANCE WITH THE APPLICABLE SECTION OF THE LATEST AWWA SPECIFICATION C651 AND JURISDICTIONAL UTILITY DEPARTMENT SPECIFICATIONS.

14. ALL PVC WATER MAIN, 4" TO 12" DIAMETER PIPING, SHALL CONFORM TO AWWA C900 (DR 18) STANDARD SPECIFICATIONS, PRESSURE CLASS 150 PSI. ALL PVC WATER MAIN PIPING LESS THAN 4" DIAMETER SHALL BE SCHEDULE 80, PRESSURE CLASS 200 PSI.

15. ALL PVC WATER MAINS SHALL HAVE A SUITABLE MAGNETIC LOCATOR TAPE BURIED OVER THE WATER MAIN, BURIED NO LESS THAT 18 INCHES ABOVE MAIN LINES. THE TAPE SHALL BE AT LEAST 5-1/2 MILS THICK, 2 INCH MINIMUM WIDTH, AND MADE WITH AN ALUMINUM MATERIAL SANDWICHED BETWEEN 2 LAYERS OF POLYETHYLENE. IT SHALL HAVE IMPRINTED, IN PERMANENT BLACK INK WITH ONE INCH TALL LETTERS, "CAUTION: WATER LINE BURIED BELOW", ON BLUE BACKGROUND. THE TAPE SHALL BE CONTINUOUS BETWEEN VALVES, AND SECURED TO E


EXISTING MAILBOXES TO BE COORDINATED FOR RELOCATED
SOIL TRACKING PREVENTION SEE DETAIL SHEET C-2.1
N 28°15'06.4" W 82° 10.31.9"
EXISTING DRIVEWAY TO BE REMOVED
EXISTING OVERHEAD TO BE REMOVED
EXISTING 1-STORY GARAGE TO BE REMOVED
CONCRETE WASHOUT & HAZARDOUS STORAGE PER FLORIDA EROSION SEDIMENT CONTROL MANUAL, SECTION II-4
EXISTING POLE TO BE REMOVED
EXISTING MISC. PAVEMENT TO BE REMOVED
EXISTING 1-STORY HOME TO BE REMOVED
EXISTING METERS TO BE REMOVED
EXISTING CHAINED LINK FENCE TO BE REMOVED
CITY OF ZEPHYRHILLS TO RELOCATE WATER DISTRIBUTION APPARATUS TO AVOID CONFLICT WITH DRIVEWAY
PARCEL ID: 02-26-21-0000-00200-0000
OWNER: ALSTON TOMMY & HILL JUDY ALSTON &
4.62 ACRES +/-
201,334 SQ. FT. +/-
PARCEL ID: 02-26-21-0000-02600-0000
OWNER: FLORIDA ESTATES INC.
PARCEL ID: 02-26-21-0000-01800-0000
OWNER: PANTHER LAKES LLC
PARCEL ID: 02-26-21-0000-00900-0040
OWNER: GARCIA HECTOR
PARCEL ID: 02-26-21-0000-00900-0010
OWNER: HILTON RENTAL ENTERPRISES LLC
PARCEL ID: 02-26-21-0000-01000-0000
OWNER: HILTON BOBBY E & JUDY E
PARCEL ID: 02-26-21-0000-02000-0010
OWNER: HILTON RENTAL ENTERPRISES LLC
PARCEL ID: 02-26-21-0000-02000-0020
OWNER: HILTON RENTAL ENTERPRISES LLC
PARCEL ID: 02-26-21-0000-02000-0000
OWNER: HILTON RENTAL ENTERPRISES LLC
ZEPHYR PARK PB 3, PG 10
FLORIDA TRAILER ESTATES 5TH ADDITION PB 8, PG 88
FLORIDA TRAILER ESTATES 5TH ADDITION PB 8, PG 88
S89°53'42"W 2674.62'(F)(OA)
S89°53'42"W 1337.31'(C)
N00°03'33"W 1337.31'(C)
THE WEST 330'(R) S89°53'42"W 330.03'(C)
THE NORTH 660'(R) N89°53'42"E 660.06'(C)
THE NORTH 660'(R) S89°53'42"W 660.06'(C)
THE EAST 660'(R) N00°03'33"W 660.06'(C)
THE SOUTH 660'(R) N89°53'42"E 660.06'(C)
THE SOUTH 660'(R) S89°53'42"W 660.06'(C)
THE NE COR OF THE SE 1/4 OF THE SW 1/4 OF SEC 2-26-21
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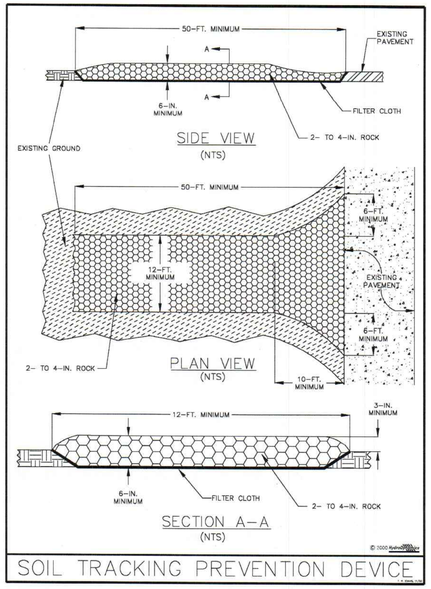

Figure V-52: Illustration of a Soil Tracking Prevention Device

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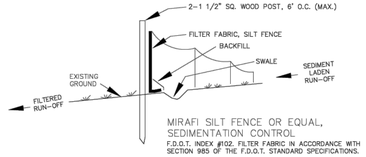


NOTES:

1. TEMPORARY EROSION CONTROL STRUCTURE TO BE UTILIZED DURING CONSTRUCTION AT AREAS DESIGNATED BY ENGINEER OR AREAS ON-SITE WHERE UNSTABILIZED GRADES MAY CAUSE EROSION PROBLEMS. EROSION CONTROL STRUCTURE MAY BE REMOVED AFTER UPSLOPE AREA HAS BEEN STABILIZED BY SOD, OR COMPACTED AS DETERMINED BY CONTRACTOR.
2. CONSTRUCT STORMWATER SYSTEMS BEFORE ANY BUILDING OR ROAD CONSTRUCTION IS STARTED.
   a.) PROTECT SYSTEM FROM SILTING AND DEBRIS BY METHODS PROVIDED IN DETAILS.
   b.) PROTECT SWALE BOTTOM FROM SEALING BY EXCAVATING ALL SILT DEPOSITS DURING CONSTRUCTION. THIS SHALL BE DONE BEFORE SOD & SEEDING & MULCHING IS FINISHED

EROSION CONTROL STRUCTURE

NOT TO SCALE

THE FOLLOWING LIST REPRESENTS A BASIC EROSION AND SEDIMENT CONTROL PROGRAM WHICH IS TO BE IMPLEMENTED TO HELP PREVENT OFF-SITE SEDIMENTATION DURING AND AFTER CONSTRUCTION OF THE PROJECT.

PERMANENT EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AT THE EARLIEST PRACTICAL TIME CONSISTENT WITH GOOD CONSTRUCTION PRACTICES. ONE OF THE FIRST CONSTRUCTION ACTIVITIES SHOULD BE THE PLACEMENT OF PERMANENT AND TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AROUND THE PERIMETER OF THE PROJECT OR THE INITIAL WORK AREA TO PROTECT THE PROJECT, ADJACENT PROPERTIES AND WATER RESOURCES.

TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE COORDINATED WITH PERMANENT MEASURES TO ASSURE ECONOMICAL, EFFECTIVE AND CONTINUOUS CONTROL THROUGHOUT THE CONSTRUCTION PHASE. TEMPORARY MEASURES SHALL NOT BE CONSTRUCTED FOR EXPEDIENCY IN LIEU OF PERMANENT MEASURES.

EROSION AND SEDIMENT CONTROL MEASURES SHALL BE ADEQUATELY MAINTAINED TO PERFORM THEIR INTENDED FUNCTION DURING CONSTRUCTION OF THE PROJECT.

NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BARRIERS SHALL BE ACCOMPLISHED PROMPTLY.

SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RAINFALL. THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.

MATERIAL FROM SEDIMENT TRAPS SHALL NOT BE STOCKPILED OR DISPOSED OF IN A MANNER WHICH MAKES THEM READILY SUSCEPTIBLE TO BEING WASHED INTO ANY WATERCOURSE BY RUNOFF OR HIGH WATER.

ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE BARRIERS ARE NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

CITY OF ZEPHYRHILLS STANDARD DETAILS

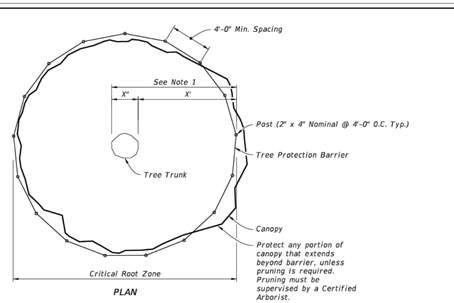
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT
39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542
PHONE (813)780-0029 FAX (813)780-0613

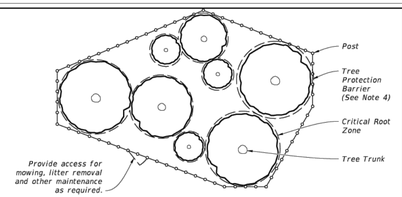
NOVEMBER 2021

G-1

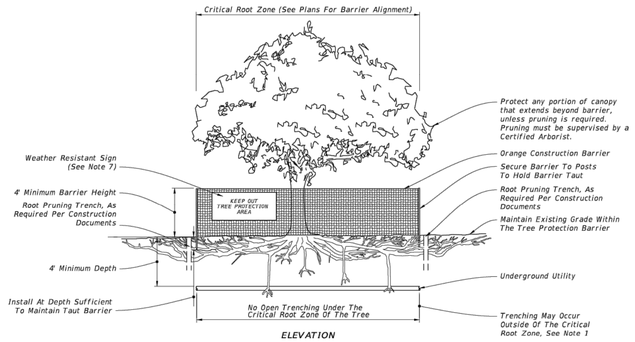
NOTES:

1. *Critical Root Zone: Extends in all directions from trunk of tree to a distance equal to one foot per inch of trunk diameter at breast height.*
2. *Staging, storage, dumping, washing and operation of equipment is not permitted within the limits of the tree protection barrier, including during barrier installation.*
3. *Install all tree protection prior to commencement of construction and remove when directed by the Engineer. Maintain protection at all times.*
4. *For closely spaced groups of trees, place the tree protection barrier around the entire group.*
5. *Inspect trunk protection and tree quarterly to prevent girdling. Adjust bands to allow tree growth as needed.*
6. *See plans for any additional requirements or modifications within the tree protection area.*
7. *Place weather resistant sign every 50' along the barrier, with 6" minimum text height and provide text in English and Spanish. Sign should read " Keep Out Tree Protection Area".*
8. *Alternate tree protection systems approved by the Engineer may be used in lieu of the tree protection barrier detailed on this Index as long as the critical root zone is protected.*
9. *The Critical Root Zone may be reduced, in the field, by a certified Arborist or Landscape Architect.*

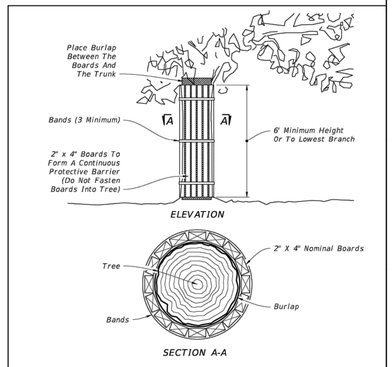




PROTECTION BARRIER FOR TREE GROUPINGS



TREE PROTECTION BARRIER



NOTES:

1. *Trunk protection may be used when Tree Protection Barrier can not be reasonably erected, when approved by Engineer.*
2. *See Selective Clearing and Grubbing Plan for location of trunk protection, when applicable.*
3. *Adjust bands to allow tree growth (inspect quarterly to prevent girdling).*

TRUNK PROTECTION

LAST REVISION	DESCRIPTION:	FY 2023-24 STANDARD PLANS	TREE PROTECTION AND PRESERVATION	INDEX	SHEET
11/01/18	REVISION	FDOT		110-100	1 of 1

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DESIGNED BY:	LB	ISSUE DATE:	9/28/23
DRAWN BY:	CB	JOB NO.:	22-548
CHECKED BY:	AH	APPROVED BY:	LB

NO.	BY	DATE	REVISION DESCRIPTION
1	CB	5/30/23	1ST ROUND JURISDICTIONAL COMMENTS
2	CB	8/31/23	2ND ROUND JURISDICTIONAL COMMENTS

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FOR THE LOCATION OF UNDERGROUND UTILITIES

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

LAURIE S. BURCAW
LICENSED
No. 46064
STATE OF FLORIDA
PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.

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LAURIE S. BURCAW, PE #46064

BEACON ENGINEERING
CIVIL ENGINEERS
LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
DEMOLITION DETAILS

SHEET NUMBER:
C-2.1

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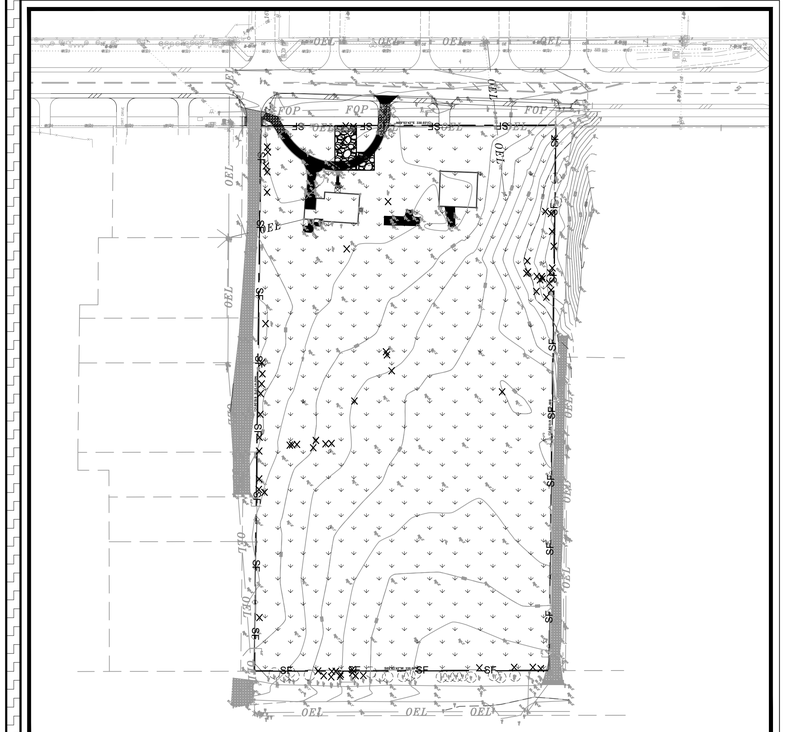
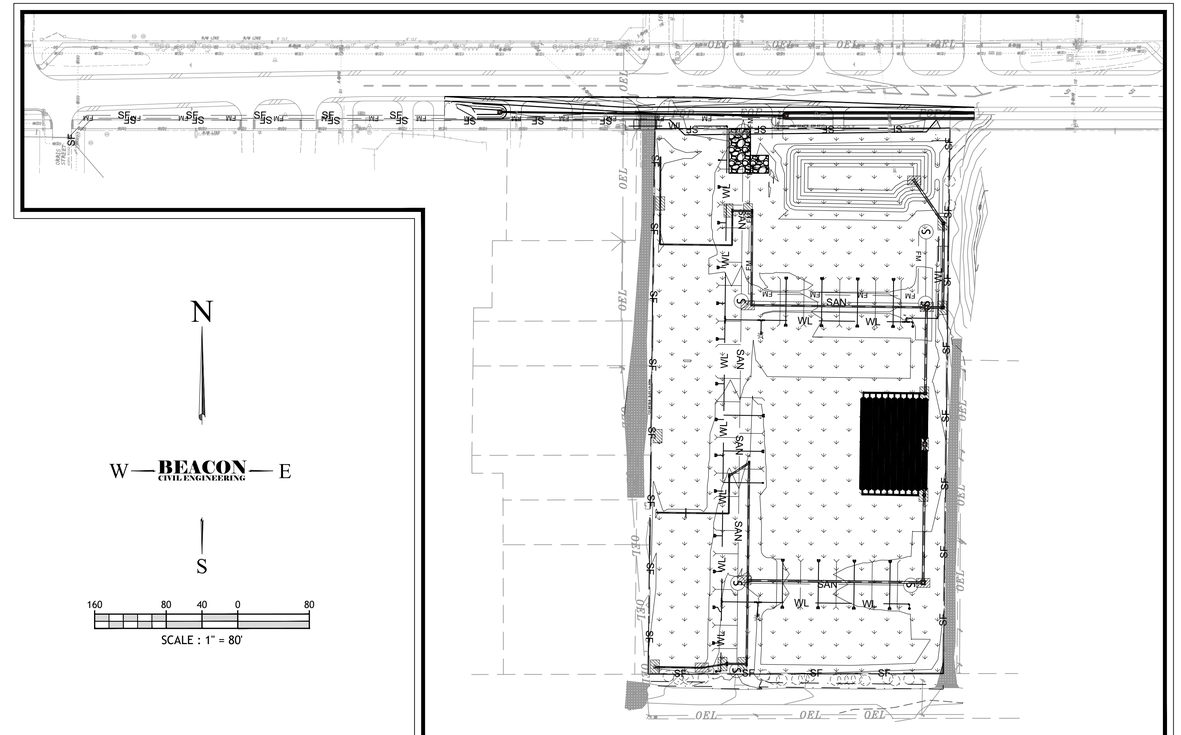
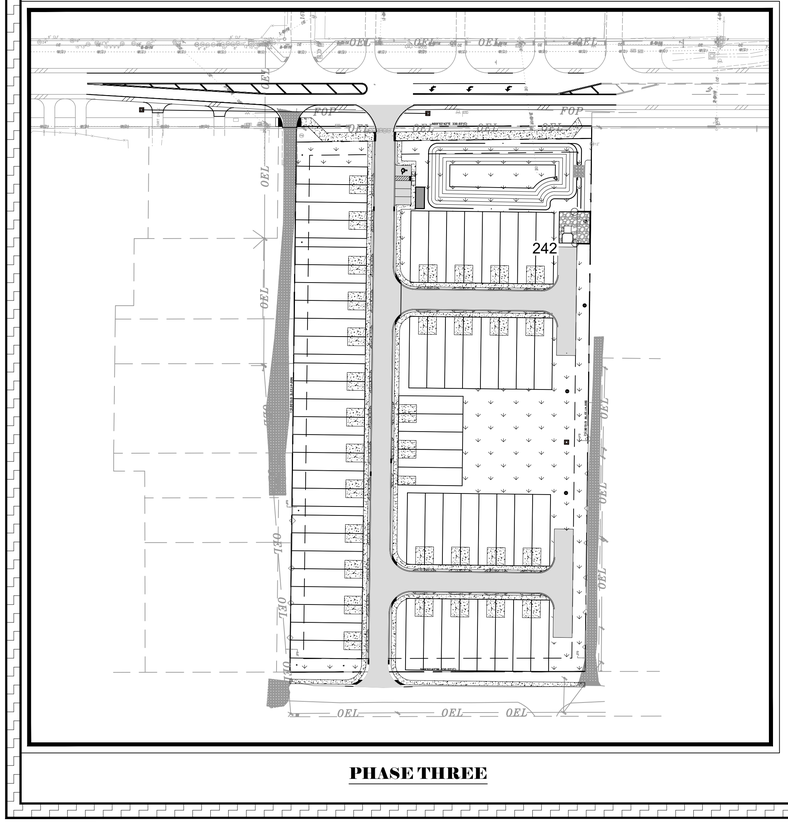


PHASE ONE



PHASE TWO



PHASE THREE

N

W — BEACON CIVIL ENGINEERING — E

S

160 80 40 0 80

SCALE : 1" = 80'

PHASE I LEGEND

- CONSTRUCTION DRIVE. SEE DETAIL SHEET C-2.1
- SF — SILT FENCE. SEE DETAIL SHEET C-2.1
- STOCKPILE LOCATION
- EXISTING FLOW ARROW
- INLET PROTECTION
- TEMPORARY NATIVE SEED BLEND

PHASE II LEGEND

- W — PROPOSED WATER PIPE
- SAN — PROPOSED SANITARY SEWER PIPE
- FM — PROPOSED FORCE MAIN PIPE
- SF — SILT FENCE. SEE DETAIL SHEET C-3.1
- PROPOSED STORMWATER PIPE
- PROPOSED INLET
- PROPOSED WATER VALVE
- TEMPORARY NATIVE SEED BLEND
- INLET PROTECTION
- PROPOSED SANITARY SEWER MANHOLE
- X.XX — PROPOSED MAJOR CONTOUR
- X.XX — PROPOSED MINOR CONTOUR

PHASE III LEGEND

- PERMANENT NATIVE SEED BLEND

SWPPP STANDARD NOTES

1. SEDIMENT CONTROL PRACTICES MUST BE ESTABLISHED ON ALL DOWN GRADIENT PERIMETERS BEFORE ANY UPGRADIENT LAND DISTURBING ACTIVITIES BEGIN. THESE PRACTICES MUST REMAIN IN PLACE UNTIL FINAL STABILIZATION HAS BEEN ACHIEVED IN ACCORDANCE WITH SECTION C EROSION CONTROL REQUIREMENTS.
2. IF DOWN GRADIENT TREATMENT SYSTEM IS OVERLOADED ADDITIONAL UP GRADIENT SEDIMENT CONTROL PRACTICES MUST BE INSTALLED TO ELIMINATE OVERLOADING. THE SWPPP MUST BE AMENDED TO IDENTIFY THE ADDITIONAL PRACTICES.
3. ALL STORM DRAIN INLETS MUST BE PROTECTED BY APPROVED BMPS DURING CONSTRUCTION UNTIL ALL POTENTIAL SOURCES FOR DISCHARGE HAVE BEEN STABILIZED. THESE DEVICES MUST BE MAINTAINED UNTIL FINAL STABILIZATION IS ACHIEVED. INLET PROTECTION MAY BE REMOVED IF A SPECIFIC SAFETY CONCERN (STREET FLOODING/FREEZING) HAS BEEN IDENTIFIED.
4. TEMPORARY STOCKPILES MUST HAVE SILT FENCE OR OTHER EFFECTIVE SEDIMENT CONTROLS ON THE DOWN GRADIENT SIDE OF THE STOCKPILE AND SHALL NOT BE PLACED AT LEAST 25 FEET FROM ANY ROAD, WETLAND, PROTECTED WATER, DRAINAGE CHANNEL, OR STORM WATER INLETS. STOCKPILE LEFT FOR MORE THAN 14 DAYS MUST BE STABILIZED WITH MULCH, VEGETATION, TARPS OR OTHER APPROVED MEANS.
5. VEHICLE TRACKING OF SEDIMENT FROM PROJECT SHALL BE MINIMIZED BY APPROVED BMPS. THESE SHALL BE INSTALLED AND MAINTAINED AT THE CITY APPROVED ENTRANCES. INDIVIDUAL LOTS SHALL EACH BE REQUIRED TO INSTALL AND MAINTAINED ENTRANCES THROUGHOUT THE CONSTRUCTION BUILDING UNTIL A PAVED DRIVEWAY IS INSTALL.
6. SEDIMENT THAT HAS WASHED OR TRACKED FROM SITE BY MOTOR VEHICLES OR EQUIPMENT SHALL BE CLEANED FROM PAVED SURFACES THROUGHOUT THE DURATION OF CONSTRUCTION.
7. SILT FENCE OR OTHER APPROVED SEDIMENT CONTROL DEVICES MUST BE INSTALLED IN ALL AREAS AS SHOWN ON THE SWPPP.
8. SILT FENCE OR OTHER APPROVED SEDIMENT CONTROL DEVICES SHALL BE REQUIRED ALONG THE ENTIRE CURB LINE, EXCEPT FOR APPROVED OPENING WHERE CONSTRUCTION ENTRANCE WILL BE INSTALLED OR DRAINAGE FLOWS AWAY FROM CURB. THIS DEVICE MUST BE MAINTAINED UNTIL FINAL STABILIZATION IS ACHIEVED. DITCH CHECKS SHALL BE REQUIRED IN DITCH BOTTOMS. SPACING FOR THE CHECK MUST BE AS FOLLOWS: [HEIGHT IN FEET (OF THE SEDIMENT DEVICE USED)] X 100 / SLOPE GRADIENT
9. DUST CONTROL MEASURES, SUCH AS APPLICATION OF WATER MUST BE PERFORMED PERIODICALLY DUE TO WEATHER, CONSTRUCTION ACTIVITY, AND/OR AS DIRECTED BY THE CITY.
10. FLOWS FROM DIVERSION CHANNELS OR PIPES (TEMPORARY OR PERMANENT) MUST BE ROUTED TO SEDIMENTATION BASINS OR APPROPRIATE ENERGY DISSIPATERS TO PREVENT THE TRANSPORT OF SEDIMENT TO OUTFLOW OR LATERAL CONVEYORS AND TO PREVENT EROSION AND SEDIMENT BUILDUP WHEN RUNOFF FLOWS INTO THE CONVEYORS.
11. A CONCRETE WASHOUT SHALL BE INSTALLED ON PROJECTS THAT REQUIRE THE USE OF CONCRETE. ALL LIQUID AND SOLID WASTES GENERATED BY CONCRETE WASHOUT OPERATIONS MUST BE CONTAINED IN A LEAK-PROOF ONTAINMENT FACILITY OR IMPERMEABLE LINER. A SIGN MUST BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY TO INFORM OPERATORS TO UTILIZE THE PROPER FACILITIES.
12. ALL SEDIMENT CONTROL MEASURES SHALL BE USED AND MAINTAINED FOR THE DURATION OF THE PROJECT UNTIL FINAL STABILIZATION HAS BEEN ACHIEVED ACCORDANCE WITH SECTION C EROSION CONTROL REQUIREMENTS. IF CONSTRUCTION OPERATIONS OR NATURAL EVENTS DAMAGE OR INTERFERE WITH ANY EROSION CONTROL MEASURES, THEY MUST BE RESTORED TO SERVE THEIR INTENDED FUNCTION.
13. ADDITIONAL SEDIMENT CONTROL MEASURES SHALL BE ADDED AS NECESSARY TO EFFECTIVELY PROTECT THE NATURAL RESOURCES OF THE CITY. THE TEMPORARY AND PERMANENT EROSION CONTROL PLANS SHALL BE REVISED AS NEEDED BASED ON CURRENT SITE CONDITIONS AND TO COMPLY WITH ALL APPLICABLE REQUIREMENTS.
14. RESTRICT CLEARING AND GRADING WITHIN 20 FEET OF AN EXISTING WETLAND BOUNDARY TO PROVIDE FOR A PROTECTIVE BUFFER STRIP OF NATURAL VEGETATION.

AREA SUMMARY (ACRES)

TOTAL PARCEL AREA	4.62
ON-SITE DISTURBED AREA	4.62
OFF-SITE DISTURBED AREA	0.39
TOTAL DISTURBED AREA	5.01
PROPOSED IMPERVIOUS AREA AT COMPLETION WITHIN PROPERTY AREA	2.26
PROPOSED PERVIOUS AREA AT COMPLETION WITHIN PROPERTY AREA	2.36

SOILS MAP LEGEND

15	TAVARES FINE SAND-URBAN LAND COMPLEX, 0 TO 5 PERCENT SLOPES

CULTURAL RESOURCES NOTE
NO CULTURAL RESOURCES HAVE BEEN IDENTIFIED ON THIS SITE.

NOTE: BLACK TONE INDICATES ITEMS TO BE REMOVED/DEMOLISHED. LIGHTER TONE INDICATES EXISTING CONDITION TO REMAIN.

CONSTRUCTION SCHEDULE

CONSTRUCTION SEQUENCE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
STARTING AND COMPLETION DATES		■					■					
INITIAL EROSION CONTROL BMPS INSTALLATION		■										
INTERMEDIATE EROSION CONTROL BMPS			■	■	■							
FINAL PHASE E&SC BMPS						■	■					
MAINTENACE OF E&SC PRACTICES		■	■	■	■	■	■					
DEMOLITION		■										
INSTALLATION / REMOVAL OF TEMPORARY SEDIMENT BASINS		■										
RETROFITTING OF DENTENTION POND (N/A)												
CLEARING AND GRUBBING		■										
GRADING		■	■									
STORM AND SANITARY SEWER INSTALLATION			■	■								
PAVING					■	■						
BUILDING CONSTRUCTION			■	■	■	■	■					
TEMPORARY GRASSING @ 14 DAY INTERVALS				■	■							
PERMANENT GRASSING @ 30 DAY INTERVALS						■	■					
REMOVAL OF TEMPORARY BMPS							■					
FINAL CLEAN-UP							■					

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DESIGNED BY:	LB	DRAWN BY:	CB	ISSUE DATE:	9/28/23
CHECKED BY:	AH	APPROVED BY:	LB	JOB NO.:	22-548

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LAURIE S. BURCAW LICENSE No. 46064 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.

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LAURIE S. BURCAW, PE #46064

BEACON CIVIL ENGINEERING
LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME: SWPPP

SHEET NUMBER: C-2.2

B:\Projects\2022\22548 Calumet Towns\DWG\Civil\22-548_SWPPP.dwg 9/29/2023 10:01 AM

PROJECT NAME AND LOCATION INFORMATION:	CALUMET TOWNHOMES ZEPHERHILLS, FLORIDA
DESCRIBE THE NATURE OF THE CONSTRUCTION ACTIVITY:	CONSTRUCT CALUMET TOWHOMES. STORMWATER RUN THROUGH UNDERGROUND CHANBERS BEFORE EMPTING INTO EXISTING STORMWATER SYSTEM. UNDERGROUND UTILITIES WILL BE INSTALLED THROUGHOUT THE DEVELOPMENT.
DESCRIBE THE INTENDED SEQUENCE OF MAJOR SOIL DISTURBING ACTIVITIES:	THE SEQUENCE OF MAJOR SOIL DISTURBANCE WILL START WITH THE CLEARING THE LAND AND EXCAVATING THE PONDS. THE INSTALLATION OF UTILITIES WILL FOLLOW AFTER THE ROAD GRADE ARE ROUGHED IN. FINAL PAD GRADES.
TOTAL AREA OF THE SITE:	4.62 AC
TOTAL AREA OF THE SITE TO BE DISTURBED:	4.62 AC
EXISTING DATA DESCRIBING THE SOIL OR QUALITY OF ANY STORMWATER DISCHARGE FROM THE SITE:	SEE GEOTECHNICAL AND DRAINAGE REPORT
EXISTING DATA DESCRIBING THE SOIL OR QUALITY OF ANY STORMWATER DISCHARGE FROM THE SITE:	SEE GEOTECHNICAL AND DRAINAGE REPORT
ESTIMATE THE DRAINAGE AREA SIZE FOR EACH DISCHARGE POINT:	0.13 2
LATITUDE AND LONGITUDE OF EACH DISCHARGE POINT AND IDENTIFY THE RECEIVING WATER OR MS4 FOR EACH DISCHARGE POINT:	LATITUDE: N 28° 15' 06.4" LONGITUDE: W 82° 10' 13.9"

GIVE A DETAILED DESCRIPTION OF ALL CONTROLS, BEST MANAGEMENT PRACTICES (BMPS) AND MEASURES THAT WILL BE IMPLEMENTED AT THE CONSTRUCTION SITE FOR EACH ACTIVITY IDENTIFIED IN THE INTENDED SEQUENCE OF MAJOR SOIL DISTURBING ACTIVITIES SECTION. PROVIDE TIME FRAMES IN WHICH THE CONTROLS WILL BE IMPLEMENTED. NOTE: ALL CONTROLS SHALL BE CONSISTENT WITH PERFORMANCE STANDARDS FOR EROSION AND SEDIMENT CONTROL AND STORMWATER TREATMENT SET FORTH IN S. 62-40.432, F.A.C., THE APPLICABLE STORMWATER OR ENVIRONMENTAL RESOURCE PERMITTING REQUIREMENTS OF THE DEPARTMENT OR A WATER MANAGEMENT DISTRICT, AND THE GUIDELINES CONTAINED IN THE FLORIDA DEVELOPMENT MANUAL: A GUIDE TO SOUND LAND AND WATER MANAGEMENT (DEP, 1988) AND ANY SUBSEQUENT AMENDMENTS.

1. PRIOR TO CLEARING, A SILT FENCE (TRENCHED 4 INCHES DEEP AND BACKED FILLED ON THE UPHILL SIDE), SHALL BE INSTALLED AROUND THE PERIMETER OF THE SITE.
2. DURING, THE CLEARING, GRUBBING, AND SITE GRADING STAGES, AREAS THAT ARE DISTURBED MORE THAN 7 DAYS SHALL BE STABILIZED RYE GRASS.
3. AFTER THE INITIAL SITE GRADING WORK, ALL PROPOSED INLETS/OUTFALLS, ONCE INSTALLED, SHALL BE PROTECTED FROM EROSION AND SEDIMENT RUNOFF USING PROPERLY INSTALLED INLET PROTECTION. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENT STABILIZATION METHODS (IF OTHER METHODS ARE UTILIZED, THIS SWPPP WILL BE MODIFIED.
4. ALL INSTALLATION SHALL BE COMMENCED AS DEPICTED ON THE ATTACHED SITE PLAN AND DETAIL SHEET.

DESCRIBE ALL TEMPORARY AND PERMANENT STABILIZATION PRACTICES. STABILIZATION PRACTICES INCLUDE TEMPORARY SEEDING, MULCHING, PERMANENT SEEDING, GEOTEXTILES, SODSTABILIZATION, VEGETATIVE BUFFER STRIPS, PROTECTION OF TREES, VEGETATIVE PRESERVATIONS, ETC.

1. TEMPORARY SEEDING SHALL BE RYE GRASS APPLIED AT THE MANUFACTURE'S RECOMMENDATION TO ANY DISTURBED AREAS THAT ARE INACTIVE MORE THAN 7 DAYS.
2. MULCHING PRACTICES AND SOD SHALL BE APPLIED TO REQUIRED AREAS.
3. FILTER FABRIC SHALL BE PLACED UNDER THE ROCK ENTRANCE/EXIT AND STORMWATER RETENTION OUTFALL.

DESCRIBE ALL STRUCTURAL CONTROLS TO BE IMPLEMENTED TO DIVERT STORMWATER FLOW FROM EXPOSED SOILS AND STRUCTURAL PRACTICES TO STORE FLOWS, RETAIN SEDIMENT ON-SITE OR IN ANY OTHER WAY LIMIT STORMWATER RUNOFF. THESE CONTROLS INCLUDE SILT FENCES, EARTH DIKES, DIVERSIONS, SWALES, SEDIMENT TRAPS, CHECK DAMS, SUBSURFACE DRAINS, PIPE SLOPE DRAINS, LEVEL SPREADERS, STORM DRAIN INLET PROTECTION, ROCK OUTLET PROTECTION, REINFORCED SOIL RETAINING SYSTEMS, GABIONS, COAGULATING AGENTS AND TEMPORARY OR PERMANENT SEDIMENT BASINS.

1. A SILT FENCE REINFORCED SHALL BE PLACED AROUND THE ENTIRE PERIMETER IN ADDITION TO A VEGETATION BARRIER THAT SHALL BE PLACED AROUND THE VEGETATIVE BUFFERS.
2. INLET(S)/OUTFALLS SHALL BE PROTECTED WITH PROPERLY INSTALLED INLET/OUTLET PROTECTION.
3. ROCK OUTLET PROTECTION LINED WITH FILTER FABRIC SHALL BE INSTALLED AT ALL FLUME OUTFALL POINTS.

DESCRIBE ALL SEDIMENT BASINS TO BE IMPLEMENTED FOR AREAS THAT WILL DISTURB 10 OR MORE ACRES AT ONE TIME. THE SEDIMENT BASINS (OR AN EQUIVALENT ALTERNATIVE) SHOULD BE ABLE TO PROVIDE 3,600 CUBIC FEET OF STORAGE FOR EACH ACRE DRAINED. TEMPORARY SEDIMENT BASINS (OR AN EQUIVALENT ALTERNATIVE) ARE RECOMMENDED FOR DRAINAGE AREAS UNDER 10 ACRES.

NO SEDIMENT BASIN ARE BEING PROPOSED. SILT FENCE IS TO BE INSTALLED AROUND THE PERIMETER OF THE SITE. THE SILT FENCE WILL PREVENT POLLUTANTS FROM EXITING THE SITE.

DESCRIBE ALL PERMANENT STORMWATER MANAGEMENT CONTROLS SUCH AS, BUT NOT LIMITED TO, DETENTION OR RETENTION SYSTEMS OR VEGETATED SWALES THAT WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS.

SEE CONSTRUCTION PLANS FOR LOCATION OF PERMANENT CONTROL STRUCTURES.

DESCRIBE IN DETAIL CONTROLS FOR THE FOLLOWING POTENTIAL POLLUTANTS:

WASTE DISPOSAL, THIS MAY INCLUDE CONSTRUCTION DEBRIS, CHEMICALS, LITTER, AND SANITARY WASTES:	ALL CONSTRUCTION MATERIALS AND DEBRIS WILL BE PLACED IN A DUMPSTER AND HAILED OFF SITE TO A LANDFILL OR OTHER PROPER DISPOSAL. THE DUMPSTER SHALL BE LOCATED AS SHOWN ON THE SITE PLAN. NO MATERIALS WILL BE BURNED ON SITE. TO BE COMPLETED BY CONTRACTOR.
OFFSITE VEHICLE TRACKING FROM CONSTRUCTION ENTRANCES/EXITS:	OFFSITE VEHICLE TRACKING OF SEDIMENTS AND DUST GENERATION WILL BE MINIMIZED VIA A ROCK CONSTRUCTION ENTRANCE, DAILY STREET SWEEPING AND THE USE OF WATER TO KEEP DUST DOWN. TO BE COMPLETED BY CONTRACTOR.
THE PROPER APPLICATION RATES OF ALL FERTILIZERS, HERBICIDES AND PESTICIDES USED AT THE CONSTRUCTION SITE:	FERTILIZERS AND PESTICIDES WILL BE USED AT A MINIMUM AND IN ACCORDANCE WITH THE MANUFACTURE'S SUGGESTION APPLICATION RATES. THE FERTILIZER AND PESTICIDES WILL BE STORED IN A COVERED SHED, IN THE STOCKPILE AREA, AS INDICATED ON SITE PLAN. TO BE COMPLETED BY CONTRACTOR.
THE STORAGE, APPLICATION, GENERATION AND MIGRATION OF ALL TOXIC SUBSTANCES:	A SPILL PREVENTION PLAN IS IN PLACE. A DOUBLE WALLED FUEL TANK SHALL BE PLACED ON A DRIP PAN TO CONTAIN AND PREVENT ANY LEAKS OR DRIPS FROM BEING DISCHARGED IN THE STORMWATER RUNOFF. ALL PAINTS AND OTHER CHEMICALS WILL BE STORED IN A LOCKED COVERED SHED AS INDICATED ON SITE MAP. TO BE COMPLETED BY CONTRACTOR.
OTHER:	PORT-O-LETS WILL BE PLACED AWAY FROM STORM SEWER SYSTEMS, STORM INLETS, SURFACE WATERS AND WETLANDS. SPECIFIC PLACEMENT IS DEPICTED ON THE SITE MAP. NO VEHICLE MAINTENANCE SHALL BE CONDUCTED ON-SITE TO BE COMPLETED BY CONTRACTOR.

PROVIDE A DETAILED DESCRIPTION OF THE MAINTENANCE PLAN FOR ALL STRUCTURAL AND NON-STRUCTURAL CONTROLS TO ASSURE THAT THEY REMAIN IN GOOD AND EFFECTIVE OPERATING CONDITION.

1. SILT FENCE SHALL BE INSPECTED AT LEAST WEEKLY, ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN THEY REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
2. MAINTENANCE SHALL BE PERFORMED ON THE ROCK ENTRANCE WHEN ANY VOIDS SPACES ARE FULL OF SEDIMENT.
3. INLETS/OUTFALLS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAIN EVENT AND ANY REQUIRED REPAIRS TO THE SILT FENCE OR FILTER FABRIC SHALL BE PERFORMED IMMEDIATELY.
4. BARE ARES OF THE SITE THAT WERE PREVIOUSLY SEEDED SHALL BE RESEEDED PER MANUFACTURE'S INSTRUCTIONS.
5. MULCH AND SOD THAT HAS BEEN WASHED OUT SHALL BE REPLACED IMMEDIATELY.
6. MAINTAIN ALL OTHER AREAS OF THE SITE WITH PROPER CONTROLS AS NECESSARY.

TO BE COMPLETED BY CONTRACTOR.

INSPECTIONS: DESCRIBE THE INSPECTION AND INSPECTION DOCUMENTATION PROCEDURES, AS REQUIRED BY PART V.D.4. OF THE PERMIT. INSPECTIONS MUST OCCUR AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM EVENT THAT IS 0.50 INCHES OR GREATER (SEE ATTACHED FORM).

QUALIFIED PERSONNEL WILL INSPECT ALL POINTS OF DISCHARGE, ALL DISTURBED AREAS OF CONSTRUCTION THAT HAVE NOT BEEN STABILIZED, CONSTRUCTED AREAS AND LOCATIONS WHERE VEHICLES ENTER AND EXIT THE SITE AT LEAST ONE EVERY 7 CALENDAR DAYS OR WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT THAT IS 0.5 INCHES OR GREATER. WHERE SITES HAVE BEEN FULLY STABILIZED, SAID INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE A MONTH UNTIL THE NOTICE OF TERMINATION IS FILED.

TO BE COMPLETED BY CONTRACTOR.

IDENTIFY AND DESCRIBE ALL SOURCES OF NON-STORMWATER DISCHARGES AS ALLOWED IN PART IV.A.3. OF THE PERMIT. FLOWS FROM FIRE FIGHTING ACTIVITIES DO NOT HAVE TO BE LISTED OR DESCRIBED.

IT IS EXPECTED THAT THE FOLLOWING NON-STORMWATER DISCHARGE MAY OCCUR FROM THE SITE CONSTRUCTION PERIODS: WATER FROM WATER LINE FLUSHING, PAVEMENT WASH WATER (WHERE NO SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE OCCURRED), AND UNCONTAMINATED GROUNDWATER (FROM DEWATERING EXCAVATION). IF SAID DISCHARGES DO OCCUR, THEY WILL BE DIRECTED TO THE TEMPORARY SEDIMENT BASIN PRIOR TO DISCHARGE. TURBID WATER FROM THE STORMWATER POND SHALL NOT BE PUMPED DIRECTLY INTO EITHER OF THE RECEIVING WATER. ANY PUMPED WATER FROM THE STORMWATER POND SHALL BE TREATED SO AS TO NOT ALLOW A DISCHARGE OF POLLUTED STORMWATER. TREATMENT CAN INCLUDE SILT FENCE, SETTLING PONDS, THE PROPER USE OF FLOCCULATING AGENTS OR OTHER APPROPRIATE MEANS.

TO BE COMPLETED BY CONTRACTOR.

THIS SWPPP MUST CLEARLY IDENTIFY, FOR EACH MEASURE IDENTIFIED WITHIN THE SWPPP, THE CONTRACTOR(S) OR SUBCONTRACTOR(S) THAT WILL IMPLEMENT EACH MEASURE. ALL CONTRACTOR(S) AND SUBCONTRACTOR(S) IDENTIFIED IN THE SWPPP MUST SIGN THE FOLLOWING CERTIFICATION:

"I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND, AND SHALL COMPLY WITH, THE TERMS AND CONDITIONS OF THE STATE OF FLORIDA GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES AND THIS STORMWATER POLLUTION PREVENTION PLAN PREPARED THEREUNDER."

NAME	TITLE	COMPANY NAME, ADDRESS AND PHONE NUMBER	DATE

SITE MAP

A SITE MAP MUST BE DEVELOPED AND MUST CONTAIN, AT A MINIMUM, THE FOLLOWING INFORMATION:
1. DRAINAGE PATTERNS,
2. APPROXIMATE SLOPES AFTER MAJOR GRADING ACTIVITIES,
3. AREAS OF SOIL DISTURBANCE,
4. OUTLINE ALL AREAS THAT ARE NOT TO BE DISTURBED,
5. LOCATION OF ALL MAJOR STRUCTURAL AND NON-STRUCTURAL CONTROLS,
6. THE LOCATION OF EXPECTED STABILIZATION PRACTICES,
7. WETLANDS AND SURFACE WATERS, AND
8. LOCATIONS WHERE STORMWATER MAY DISCHARGE TO A SURFACE WATER ORMS4.

STORMWATER POLLUTION PREVENTION PLAN

"I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

NAME (OPERATOR OR RESPONSIBLE AUTHORITY _____ DATE _____

STORMWATER POLLUTION PREVENTION PLAN INSPECTION REPORT FORM

INSPECTIONS MUST OCCUR AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM EVENT THAT IS 0.50 INCHES OR GREATER

PROJECT NAME: CALUMET TOWNHOMES FDEP NPDES STORMWATER IDENTIFICATION NUMBER: FLR10_____

LOCATION	RAIN DATA	TYPE OF CONTROL (SEE BELOW)	DATE INSTALLED/MODIFIED	CURRENT CONDITION (SEE BELOW)	CORRECTIVE ACTION/OTHER REMARKS

CONDITION CODE:
G = GOOD M = MARGINAL, NEEDS MAINTENANCE OR REPLACEMENT SOON P = POOR, NEEDS IMMEDIATE MAINTENANCE OR REPLACEMENT C = NEEDS TO BE CLEANED O = OTHER

CONTROL TYPE CODE:

1. SILT FENCE	10. STORM DRAIN INLET PROTECTION	19. REINFORCED SOIL RETAINING SYSTEM	28. TREE PROTECTION
2. EARTH DIKES	11. VEGETATIVE BUFFER STRIP	20. GABION	29. DETENTION POND
3. STRUCTURAL DIVERSION	12. VEGETATIVE PRESERVATION AREA	21. SEDIMENT BASIN	30. RETENTION POND
4. SWALE	13. RETENTION POND	22. TEMPORARY SEED / SOD	31. WASTE DISPOSAL / HOUSEKEEPING
5. SEDIMENT TRAP	14. CONSTRUCTION ENTRANCE STABILIZATION	23. PERMANENT SEED / SOD	32. DAM
6. CHECK DAM	15. PERIMETER DITCH	24. MULCH	33. SAND BAG
7. SUBSURFACE DRAIN	16. CURB AND GUTTER	25. HAY BALES	34. OTHER
8. PIPE SLOPE DRAIN	17. PAVED ROAD SURFACE	26. GEOTEXTILE	
9. LEVEL SPREADERS	18. ROCK OUTLET PROTECTION	27. RIP-RAP	

INSPECTOR INFORMATION:

NAME _____ QUALIFICATION _____ DATE _____

THE ABOVE SIGNATURE ALSO SHALL CERTIFY THAT THIS FACILITY IS IN COMPLIANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN AND THE STATE OF FLORIDA GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES IF THERE ARE NOT ANY INCIDENTS OF NON-COMPLIANCE IDENTIFIED ABOVE.

"I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

NAME (RESPONSIBLE AUTHORITY _____ DATE _____

LAURIE S. BURCAW LICENSE No. 46064 STATE OF FLORIDA PROFESSIONAL ENGINEER

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB
CHECKED BY:	AH	APPROVED BY:	LB

ISSUE DATE: 9/28/23
JOB NO.: 22-548

NO.	BY	DATE	REVISION DESCRIPTION
1	CB	5/30/23	1ST ROUND JURISDICTIONAL COMMENTS
2	CB	8/31/23	2ND ROUND JURISDICTIONAL COMMENTS

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CALL SUNSHINE STATE
ONE CALL OF FLORIDA
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This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

LAURIE S. BURCAW, PE #46064

BEACON
CIVIL ENGINEERING
LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
SWPPP NOTES

SHEET NUMBER:
C-2.3

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N — BEACON CIVIL ENGINEERING — S

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60 30 15 0 30

SCALE : 1" = 30'

SITE INFORMATION:

SITE DATA

TOTAL SITE AREA:	4.62 AC (201,319.51 SF)
DEVELOPABLE SITE AREA:	4.62 AC (201,319.51 SF)
ZONING JURISDICTION:	CITY OF ZEPHYRHILLS
PARCEL #'s:	02-26-21-0000-00200-0000
LOCATION:	1,410' EAST OF THE INTERSECTION OF COUNTY ROAD 54 E & 12TH STREET
EXISTING USE:	VACANT LOT
PROPOSED USE:	SINGLE FAMILY RESIDENTIAL
FLOOD ZONE:	ZONE "X" PER FEMA FIRM PANEL NUMBER: 12101C0293F, DATED 09/26/2014
ZONING:	R4 - CITY OF ZEPHYRHILLS
FUTURE LAND USE: (2)	RU
LOT COUNT:	64 LOTS (±2,800 S.F. PER LOT)
LOT SQ. FOOTAGE:	±179,200 S.F. (COMBINED TOTAL)
UNIT TYPE:	SINGLE FAMILY TOWNHOMES
DENSITY:	20.0 PER ACRE
MAX. UNITS CALCULATION:	UPLANDS AREA x 6 UNITS PER AC x 1.25
MAX ALLOWABLE UNITS:	4.62 AC x 20 x 1.25 = 115.5 UNITS
PARK AREA REQUIRED:	2.30 AC (2)
PARK AREA PROVIDED:	0.80 AC

LANDSCAPE BUFFERS

NORTH:	15' TYPE 'D' BUFFER
EAST:	15' TYPE 'B' BUFFER
SOUTH:	15' TYPE 'B' BUFFER
WEST:	15' TYPE 'B' BUFFER

YARD SETBACKS

FRONT:	10'
SIDES:	10'
REAR:	10'

ROADWAY DESIGN DATA

ROADWAY TYPE:	TYPE 2
MIN. DESIGN SPEED:	25 MPH
MAX DESIGN SPEED:	35 MPH
PROPOSED SPEED:	25 MPH

NOTE: ALL ROADWAYS TO BE PRIVATELY OWNED & MAINTAINED.

OTHER SURFACE WATERS

POND 1: 0.13

O & M NOTE:
PLEASE REFER TO TRACT EXHIBIT FOR O & M RESPONSIBILITIES.

LOT SIZES

LOT NUMBERS	TYP. LENGHT	TYP. WIDTH	COUNT
1 - 64	80'	20'	64

TOTALS

64	80' x 20'

LOT DIMENSIONAL STANDARDS

SINGLE FAMILY

a. MINIMUM LOT WIDTH 60 FEET
b. MINIMUM LOT DEPTH 100 FEET (2)
c. MINIMUM FRONT-YARD SETBACK 25 FEET FOR GARAGE /20 FEET FOR RESIDENCE
d. MINIMUM SIDE-YARD SETBACK OF 5 FEET
e. MINIMUM REAR-YARD SETBACK 15 FEET
f. MAXIMUM HEIGHT OF 45 FEET

LEGAL DESCRIPTION

BEGIN AT THE NORTHWEST CORNER OF THE EAST 1/2 OF THE SOUTHEAST 1/4 ON THE SOUTH RIGHT-OF-WAY OF STATE ROAD 54, SECTION 2, TOWNSHIP 26 SOUTH, RANGE 21 EAST, PASCO COUNTY, FLORIDA AND RUN THENCE EAST 330.00 FEET; THENCE SOUTH 660.00 FEET; THENCE WEST 330.00 FEET; THENCE NORTH 660.00 FEET TO THE POINT OF BEGINNING.

SUBJECT TO EASEMENTS, RESTRICTIONS, AND RESERVATIONS OF RECORD.

SITE NOTES

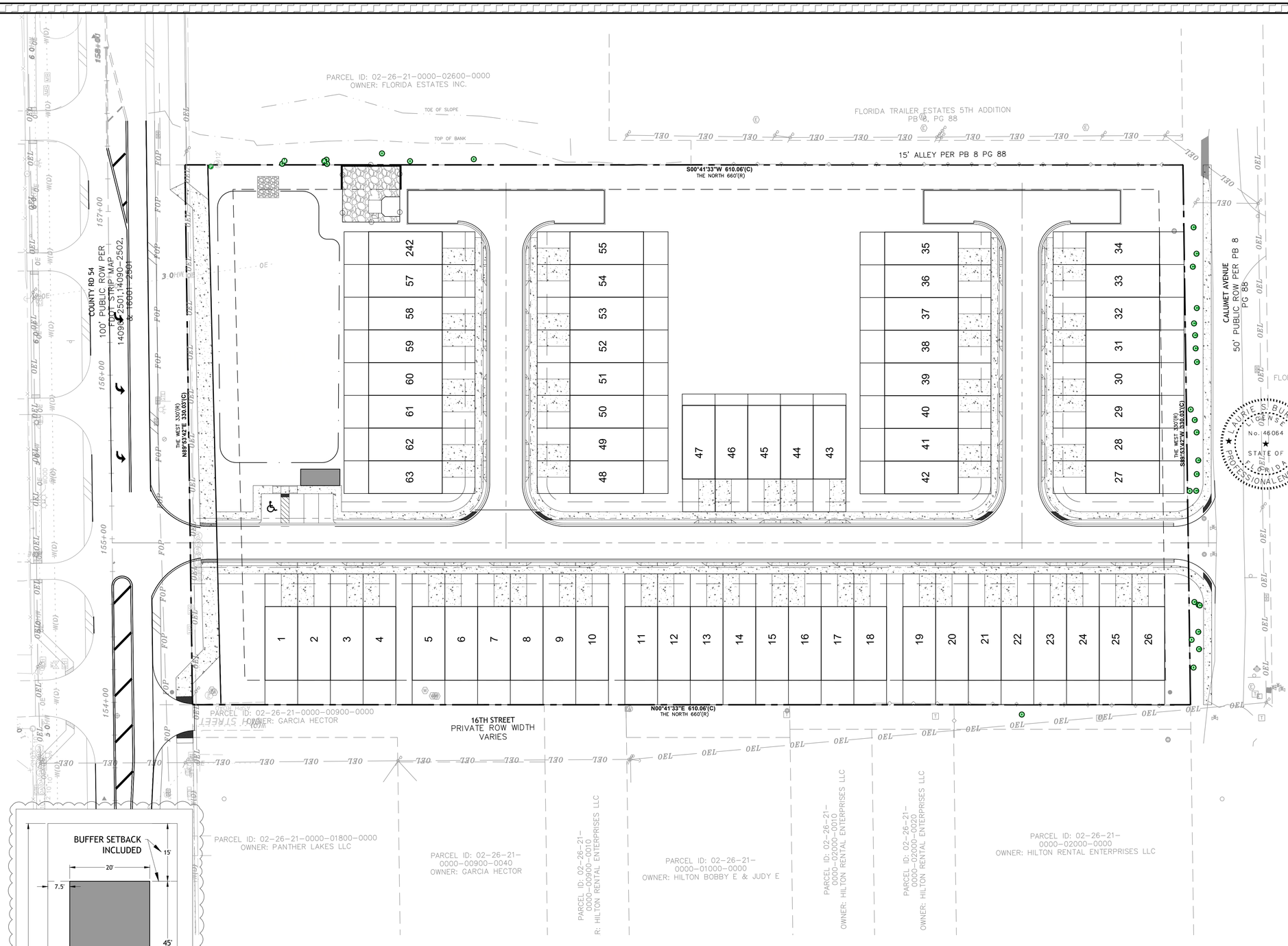
1. ALL PROPOSED ROADS SHALL BE PRIVATELY OWNED, AND SHALL CONFORM TO THE *MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION, AND MAINTENANCE OF STREETS AND HIGHWAYS*.
2. SITE SHALL UTILIZE FIRE HYDRANTS FOR FIRE PROTECTION.
3. PROPOSED DEVELOPMENT IS NOT LOCATED IN MANDATORY HURRICANE EVACUATION ZONE.
4. PROPOSED DEVELOPMENT IS NOT LOCATED IN A TRANSPORTATION CORRIDOR.
5. MAILBOX KIOSKS SHALL BE LOCATED IN THE RIGHT OF WAY.

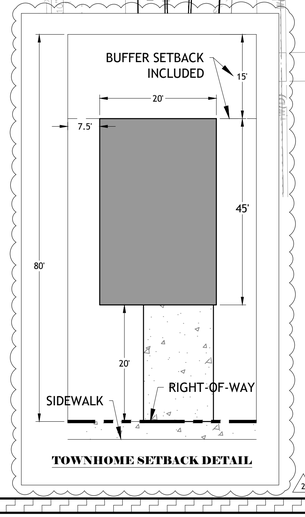
PASCO COUNTY FIRE PROTECTION NOTES

1. ALL PROJECTS MUST COMPLY WITH PASCO COUNTY FIRE HYDRANT ORDINANCE NO. 46-51
2. FIRE HYDRANTS SHALL BE INSTALLED AND IN SERVICE PRIOR TO THE ACCUMULATION OF COMBUSTIBLES.
3. PER THE NATIONAL FIRE PROTECTION ASSOCIATION, NFPA-1, 16.4.3.1.3: WHERE UNDERGROUND WATER MAINS AND HYDRANTS ARE TO BE PROVIDED, THEY SHALL BE INSTALLED, COMPLETED, AND IN SERVICE PRIOR TO CONSTRUCTION WORK.
4. PER NFPA-1, 18.3.4.1: CLEARANCES OF 7.5 FEET IN FRONT OF AND TO THE SIDES OF THE FIRE HYDRANT WITH A 4-FOOT CLEARANCE TO THE REAR MUST BE MAINTAINED AT ALL TIMES.
5. GATED ENTRIES REQUIRE A SIREN OPERATING SYSTEM OR A 3M OPTICOM SYSTEM FOR EMERGENCY ACCESS.

GENERAL NOTES:

1. ALL ROADWAYS, RIGHT OF WAYS, PONDS & DRAINAGE SYSTEM SHALL BE MAINTAINED BY THE H.O.A.
2. THE SUBJECT PROPERTY WAS REZONED PRIOR TO THE ORIGINAL ADOPTION OF THE COMPREHENSIVE PLAN JUNE 15, 1989. THEREFORE, THE GROSS DENSITY SHALL NOT EXCEED 4.5 DWELLING UNITS PER ACRE AND THE PROJECT SHALL COMPLY WITH ALL APPLICABLE POLICES AND STANDARDS OF THE CITY OF ZEPHYRHILLS.
3. ALL OPEN PLAY AREAS ADJACENT TO RETENTION PONDS WILL BE SEPARATED BY A TRANSPARENT FENCE OR LANDSCAPE BUFFER FOUR (4) FEET IN HEIGHT PER LDC 905.1.F.5.
4. THE FINISHED FLOOR ELEVATIONS FOR THE DEVELOPMENT WERE SET A MINIMUM OF 1 FT ABOVE THE 100-YEAR DHW OF THE PONDS IN THE DEVELOPMENT.
5. SIDEWALKS ARE TO BE CONSTRUCTED WITH NATURALLY COLORED CONCRETE





TOWNHOME SETBACK DETAIL

DEVELOPMENT TEAM

DEVELOPER/OWNER
CALUMET TOWN, LLC.
8345 GUNN HIGHWAY
TAMPA, FL 33626
CONTACT: LAURIE BURCAW, P.E.
PHONE: (813) 523-7412
INFO@BEACONCIVIL.COM

ENGINEER
BEACON CIVIL ENGINEERING, LLC.
8345 GUNN HIGHWAY
TAMPA, FL 33626
CONTACT: LAURIE BURCAW, P.E.
PHONE: (813) 523-7412
INFO@BEACONCIVIL.COM

ENVIRONMENT ALIST
CLEMENTI ENVIROMENTAL CONSULTING, LLC.
620 EAST TWIGGS STREET
SUITE 206
TAMPA, FL 33602
CONTACT: ABBEY NAYLOR
PHONE: (813) 227-8901
WWW.CLEMENTI-EC.COM

SURVEYOR
ALPHA LAND SURVEYING
10024 PALERMO CIRCLE
SUITE 202
TAMPA, FL 34208
CONTACT: FRED FRANKLIN, P.S.E
PHONE: (813) 221-2144
FRANKLIN@ALSM96.COM

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB
CHECKED BY:	AH	APPROVED BY:	LB

ISSUE DATE: 9/28/23
JOB NO.: 22-548

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LAURIE S. BURCAW
PROFESSIONAL ENGINEER
No. 46064
STATE OF FLORIDA

This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.

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LAURIE S. BURCAW, PE #46064

BEACON CIVIL ENGINEERING

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TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
PRELIMINARY PLAT

SHEET NUMBER:
C-3.0

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DESCRIPTION	ACERAGE	COLOR	O&M
RESEIDENTIAL	2.66		HOA
RIGHT-OF-WAY	0.72		HOA
PARK AND OPEN SPACE	0.80		HOA
DRAINAGE	0.27		HOA
PARKING AREA	0.02		HOA
LIFT STATION	0.03		CoZ
R.O.W. DEDICATION	0.12		

2

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CHECKED BY:	AH	APPROVED BY:	LB	JOB NO.:	22-548

NO.	BY	DATE	REVISION DESCRIPTION
1	CB	5/30/23	1ST ROUND JURISDICTIONAL COMMENTS
2	CB	8/31/23	2ND ROUND JURISDICTIONAL COMMENTS

3 WORKING DAYS
BEFORE YOU DIG
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ONE CALL OF FLORIDA
1-800-432-4770
FOR THE LOCATION OF
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LAURIE S. BURCAW
LICENSED
No. 46064
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.

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LAURIE S. BURCAW, PE #46064

BEACON
CIVIL ENGINEERING
LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:

TRACT PLAN

SHEET NUMBER:

C-3.1

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Zoning Petition: 02-26-21-0000-00200-0000

Zone ID	Petition	Request	Description	Name	Applicant	Action	Date
9545	SE5900	TRAVEL TRAILER PARK	Agricultural-Residential District	AR	ALSTON	APP W/ CONDS	APRIL 2002
9545	RZ5891	R1MH TO AR	Agricultural-Residential District	AR	ALSTON	APP W/ CONDS	APRIL 2002
14064	ORIGINAL	N/A	Agricultural-Residential District	AR	N/A	N/A	11/19/75
5773	ORIGINAL	N/A	Single-Family and Mobile Home District	R1MH	N/A	APP	11/19/75
11086	ORD1168-12	R1MH (ORIG) TO ZH	City of Zephyrhills	ZH	FISHER	N/A	12/01/12

N

W — BEACON CIVIL ENGINEERING — E

S

100 50 25 0 50

SCALE : 1" = 50'

COUNTRY ROAD 54 E

ORRIS STREET

16TH STREET

NEW YORK STREET

OHIO STREET

CONNECTICUT STREET

CALUMET AVENUE

STREET A

STREET B

STREET C

02-26-21-0000-01800-0000

02-26-21-0000-00900-0040

02-26-21-0000-00900-0010

02-26-21-0000-01000-0000

02-26-21-0000-02000-0010

02-26-21-0000-02000-0020

02-26-21-0000-02000-0000

02-26-21-0000-02600-0000

02-26-21-0140-49900-0000

02-26-21-0000-00200-0000

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

63 62 61 60 59 58 57 242

48 49 50 51 52 53 54 55

47 46 45 44 43

42 41 40 39 38 37 36 35

27 28 29 30 31 32 33 34

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB
CHECKED BY:	AH	APPROVED BY:	LB

ISSUE DATE: 9/28/23

JOB NO.: 22-548

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LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:

AERIAL SITE PLAN

SHEET NUMBER:

C-3.2

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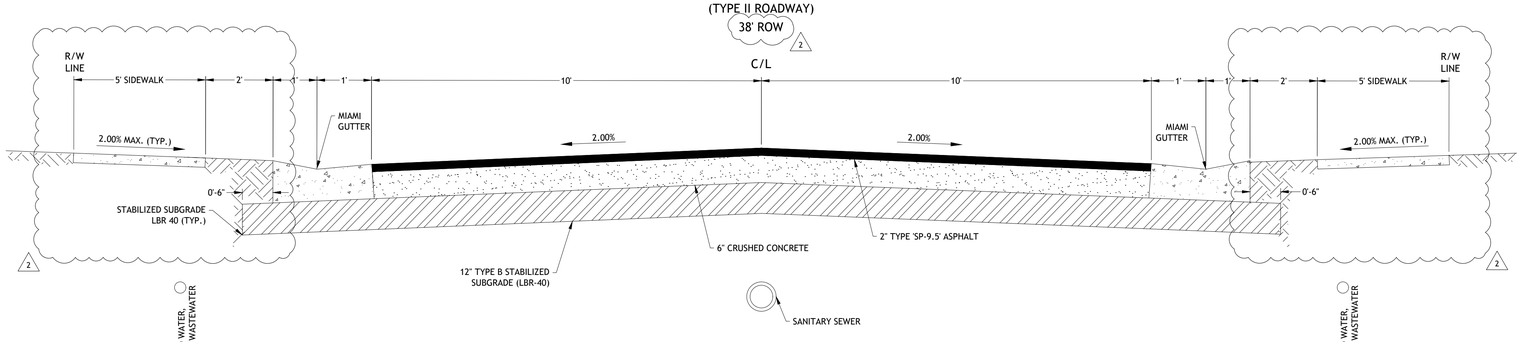
TYPICAL SECTION 1
(TYPE II ROADWAY)
38' ROW

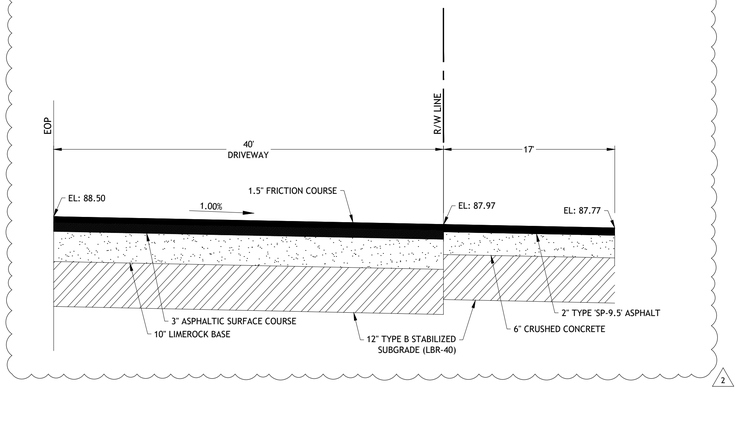


STRUCTURAL NUMBER=2.70
TYPE SP-9.5 ASPHALT @ .44 (2.0") = 0.66
LBR 100 CRUSHED CONCRETE @ .18 (6") = 1.08
TYPE B STABILIZED (LBR-40) @ .08 (12") = 0.96

TYPICAL ROADWAY SECTION (RESIDENTIAL)

N.T.S.

DRIVEWAY SECTION
(COUNTY ROAD 54 CONNECTION)
N.T.S.



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CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
TYPICAL SECTION

SHEET NUMBER:
C-3.3

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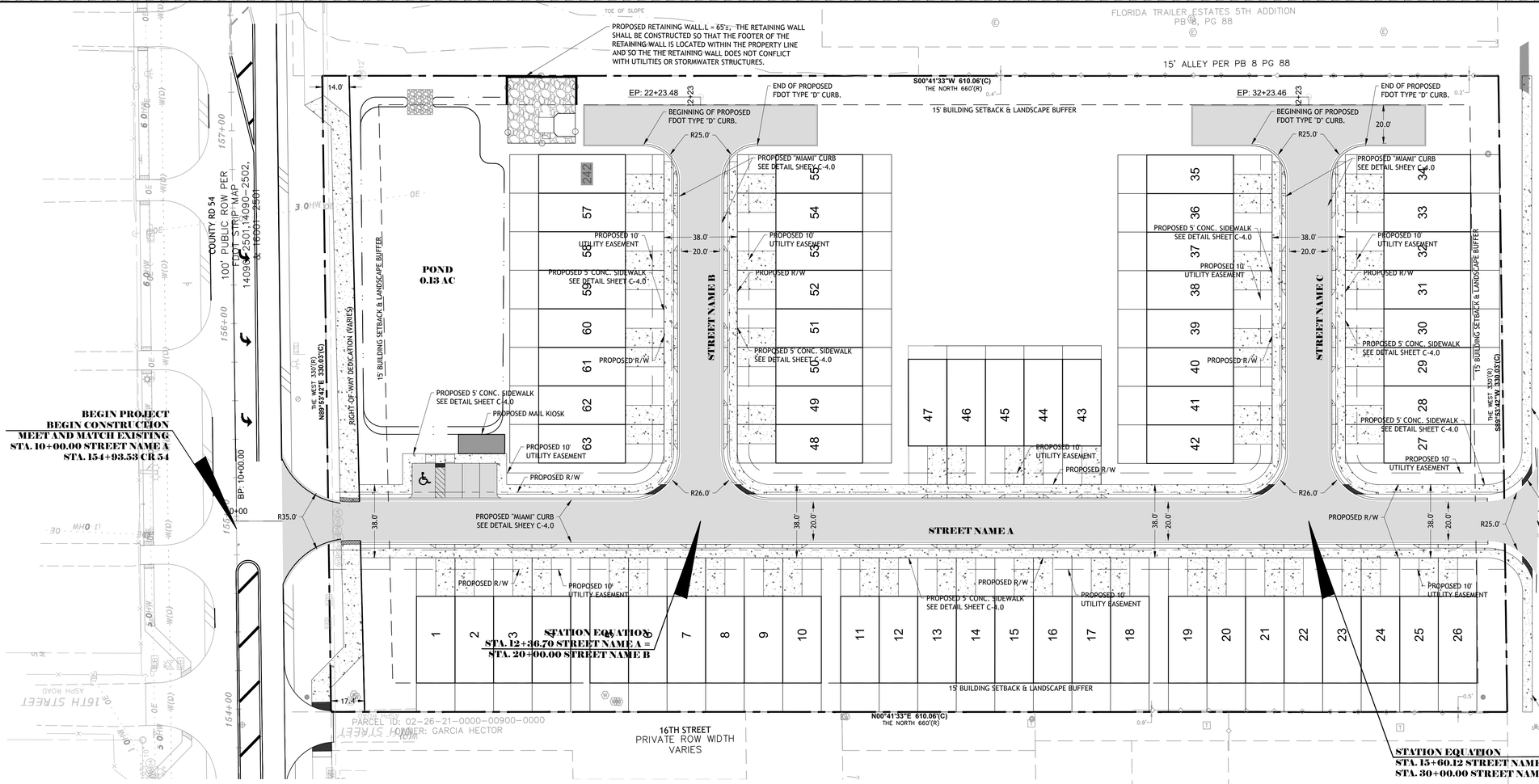


DEVELOPMENT TEAM

DEVELOPER/OWNER
CALUMET TOWN, LLC.
8345 GUNN HIGHWAY
TAMPA, FL 33626
CONTACT: LAURIE BURCAW, P.E.
PHONE: (813) 523-7412
INFO@BEACONCIVIL.COM

ENGINEER
BEACON CIVIL ENGINEERING, LLC.
8345 GUNN HIGHWAY
TAMPA, FL 33626
CONTACT: LAURIE BURCAW, P.E.
PHONE: (813) 523-7412
INFO@BEACONCIVIL.COM

ENVIRONMENT ALIST
CLEMENTI ENVIROMENTAL CONSULTING, LLC.
620 EAST TWIGGS STREET
SUITE 206
TAMPA, FL 33602
CONTACT: ABBEY NAYLOR
PHONE: (813) 227-8901
WWW.CLEMENTI-EC.COM

SURVEYOR
ALPHA LAND SURVEYING
10024 PALERMO CIRCLE
SUITE 202
TAMPA, FL 34208
CONTACT: FRED FRANKLIN, P.S.E
PHONE: (813) 221-2144
FRANKLIN@ALSM96.COM

UTILITY PROVIDERS

POTABLE WATER FACILITIES:	CITY OF ZEPHYRHILLS
SEWERAGE FACILITIES:	CITY OF ZEPHYRHILLS
FIRE SERVICE:	PASCO COUNTY M.S.T.U.
ELECTRICAL SERVICE:	WITHLACOOCHEE RIVER ELECTRIC COOP, INC.

OWNER FURTHER DOES HEREBY GRANT, CONVEY, WARRANT AND DEDICATE TO THE COUNTY A NON-EXCLUSIVE FLOW THROUGH EASEMENT AND REASONABLE RIGHT OF ACCESS TO ENSURE THE FREE FLOW OF WATER FOR GENERAL PUBLIC DRAINAGE PURPOSES OVER, THROUGH AND UNDER ALL PRIVATE DRAINAGE EASEMENTS OR COMMONLY OWNED PROPERTY SHOWN ON THIS PLAT. IN THE EVENT THE OWNER, THE DISTRICT OR THE ASSOCIATION [USE THE ONE(S) APPLICABLE] FAILS TO PROPERLY MAINTAIN ANY PRIVATE DRAINAGE EASEMENTS/FACILITIES PREVENTING THE FREE FLOW OF WATER, THE COUNTY SHALL HAVE THE REASONABLE RIGHT, BUT NOT THE OBLIGATION, TO ACCESS AND ENTER UPON ANY PRIVATE DRAINAGE EASEMENT FOR THE PURPOSE OF PERFORMING MAINTENANCE TO ENSURE THE FREE FLOW OF WATER.

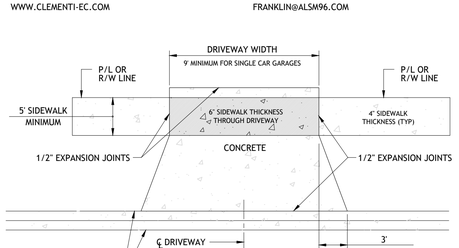
LOT DIMENSIONAL STANDARDS

SINGLE FAMILY
a. MINIMUM LOT WIDTH 20 FEET
b. MINIMUM LOT DEPTH 80 FEET
c. MINIMUM FRONT-YARD SETBACK 20 FEET
d. MINIMUM SIDE-YARD SETBACK OF 7.5 FEET
e. MINIMUM REAR-YARD SETBACK 15 FEET
f. MAXIMUM HEIGHT OF 45 FEET

LEGAL DESCRIPTION

BEGIN AT THE NORTHWEST CORNER OF THE EAST 1/2 OF THE SOUTHEAST 1/4 ON THE SOUTH RIGHT-OF-WAY OF STATE ROAD 54, SECTION 2, TOWNSHIP 26 SOUTH, RANGE 21 EAST, PASCO COUNTY, FLORIDA AND RUN THENCE EAST 330.00 FEET; THENCE SOUTH 660.00 FEET; THENCE WEST 330.00 FEET; THENCE NORTH 660.00 FEET TO THE POINT OF BEGINNING.

SUBJECT TO EASEMENTS, RESTRICTIONS, AND RESERVATIONS OF RECORD.

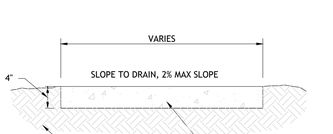


DRIVEWAY DETAIL

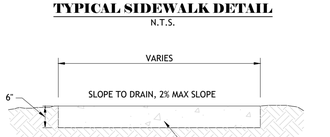
DRIVEWAY NOTES:

1. DRIVEWAY CONSTRUCTION FROM EDGE OF PAVEMENT TO THE PROPERTY LINE SHALL CONSIST OF ONE OF THE FOLLOWING:

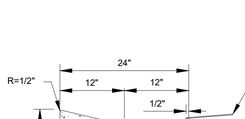
   a. SIX (6) INCHES LIME ROCK WITH ONE AND A HALF INCH (1.5") ASPHALT



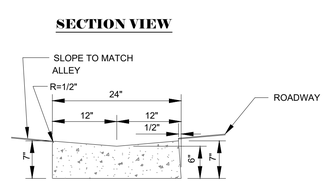
TYPICAL SIDEWALK DETAIL
N.T.S.



TYPICAL 6" SIDEWALK DETAIL IN DRIVEWAY LOCATIONS
N.T.S.



SECTION VIEW



DROP SECTION VIEW AT DRIVEWAY

SITE NOTES

1. ALL PROPOSED ROADS SHALL BE PRIVATELY OWNED, AND SHALL CONFORM TO THE *MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION, AND MAINTENANCE OF STREETS AND HIGHWAYS.*
2. SITE SHALL UTILIZE FIRE HYDRANTS FOR FIRE PROTECTION.
3. PROPOSED DEVELOPMENT IS NOT LOCATED IN MANDATORY HURRICANE EVACUATION ZONE.
4. PROPOSED DEVELOPMENT IS NOT LOCATED IN A TRANSPORTATION CORRIDOR.
5. MAILBOX KIOSKS SHALL BE LOCATED IN THE RIGHT OF WAY.

PASCO COUNTY FIRE PROTECTION NOTES

1. ALL PROJECTS MUST COMPLY WITH PASCO COUNTY FIRE HYDRANT ORDINANCE NO. 46-51
2. FIRE HYDRANTS SHALL BE INSTALLED AND IN SERVICE PRIOR TO THE ACCUMULATION OF COMBUSTIBLES.
3. PER THE NATIONAL FIRE PROTECTION ASSOCIATION, NFPA-1, 16.4.3.1.3: WHERE UNDERGROUND WATER MAINS AND HYDRANTS ARE TO BE PROVIDED, THEY SHALL BE INSTALLED, COMPLETED, AND IN SERVICE PRIOR TO CONSTRUCTION WORK.
4. PER NFPA-1, 18.3.4.1: CLEARANCES OF 7.5 FEET IN FRONT OF AND TO THE SIDES OF THE FIRE HYDRANT WITH A 4-FOOT CLEARANCE TO THE REAR MUST BE MAINTAINED AT ALL TIMES.
5. GATED ENTRIES REQUIRE A SIREN OPERATING SYSTEM OR A 3M OPTICOM SYSTEM FOR EMERGENCY ACCESS.

GENERAL NOTES:

1. ALL ROADWAYS, RIGHT OF WAYS, PONDS & DRAINAGE SYSTEM SHALL BE MAINTAINED BY THE H.O.A.
2. THE SUBJECT PROPERTY WAS REZONED PRIOR TO THE ORIGINAL ADOPTION OF THE COMPREHENSIVE PLAN JUNE 15, 1989. THEREFORE, THE GROSS DENSITY SHALL NOT EXCEED 4.5 DWELLING UNITS PER ACRE AND THE PROJECT SHALL COMPLY WITH ALL APPLICABLE POLICIES AND STANDARDS OF THE CITY OF ZEPHYRHILLS. 2
3. ALL OPEN PLAY AREAS ADJACENT TO RETENTION PONDS WILL BE SEPARATED BY A TRANSPARENT FENCE OR LANDSCAPE BUFFER FOUR (4) FEET IN HEIGHT PER LDC 905.1.F.5.
4. THE FINISHED FLOOR ELEVATIONS FOR THE DEVELOPMENT WERE SET A MINIMUM OF 1 FT ABOVE THE 100-YEAR DHW OF THE PONDS IN THE DEVELOPMENT.
5. SIDEWALKS ARE TO BE CONSTRUCTED WITH NATURALLY COLORED CONCRETE

SITE INFORMATION:

SITE DATA

TOTAL SITE AREA:	4.62 AC (201,319.51 SF)
DEVELOPABLE SITE AREA:	4.62 AC (201,319.51 SF)
ZONING JURISDICTION:	CITY OF ZEPHYRHILLS
PARCEL #'s:	02-26-21-0000-00200-0000
LOCATION:	1,410' EAST OF THE INTERSECTION OF COUNTY ROAD 54 E & 12TH STREET
EXISTING USE:	VACANT LOT
PROPOSED USE:	SINGLE FAMILY RESIDENTIAL
FLOOD ZONE:	ZONE "X" PER FEMA FIRM PANEL NUMBER: 12101C0293F, DATED 09/26/2014
ZONING:	R4 - CITY OF ZEPHYRHILLS
FUTURE LAND USE:	RU 2
LOT COUNT:	64 LOTS (±2,800 S.F. PER LOT)
LOT SQ. FOOTAGE:	±179,200 S.F. (COMBINED TOTAL)
UNIT TYPE:	SINGLE FAMILY TOWNHOMES
DENSITY:	20.0 PER ACRE
MAX. UNITS CALCULATION:	UPLANDS AREA x 6 UNITS PER AC x 1.25
MAX ALLOWABLE UNITS:	4.62 AC x 20 x 1.25 = 115.5 UNITS
PARK AREA REQUIRED:	2.30 AC
PARK AREA PROVIDED:	0.80 AC

LANDSCAPE BUFFERS

NORTH:	15' TYPE 'D' BUFFER
EAST:	15' TYPE 'B' BUFFER
SOUTH:	15' TYPE 'B' BUFFER
WEST:	15' TYPE 'B' BUFFER

YARD SETBACKS

FRONT:	10'
SIDES:	10'
REAR:	10'

ROADWAY DESIGN DATA

ROADWAY TYPE:	TYPE 2
MIN. DESIGN SPEED:	25 MPH
MAX DESIGN SPEED:	35 MPH
PROPOSED SPEED:	25 MPH

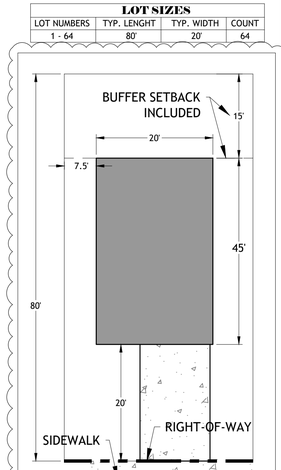
NOTE: ALL ROADWAYS TO BE PRIVATELY OWNED & MAINTAINED.

OTHER SURFACE WATERS
POND 1: 0.13

TOTALS	
64	80' x 20'

LOT SIZES

LOT NUMBERS	TYP. LENGHT	TYP. WIDTH	COUNT
1 - 64	80'	20'	64



TOWNHOME SETBACK DETAIL

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB	ISSUE DATE:	9/28/23
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ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
SITE PLAN

SHEET NUMBER:
C-4.0

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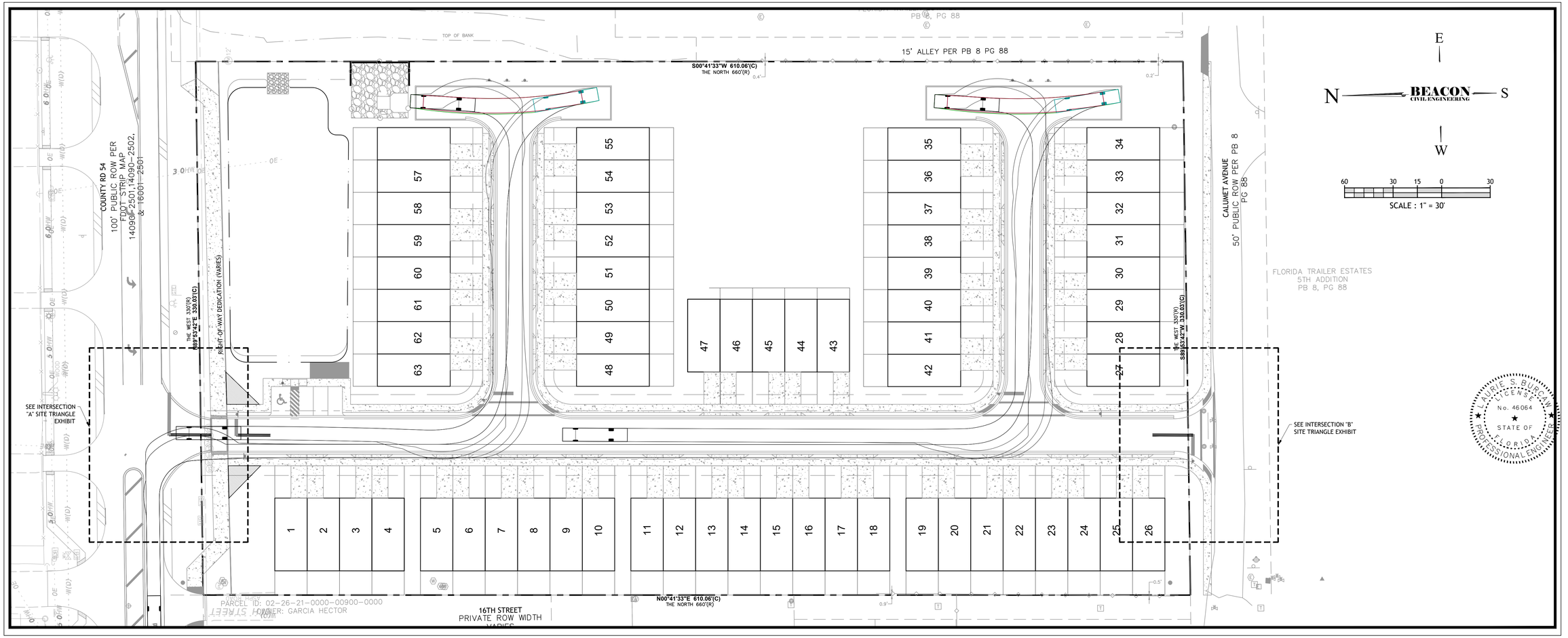

FIRE APPARATUS TURNING MOVEMENT EXHIBIT
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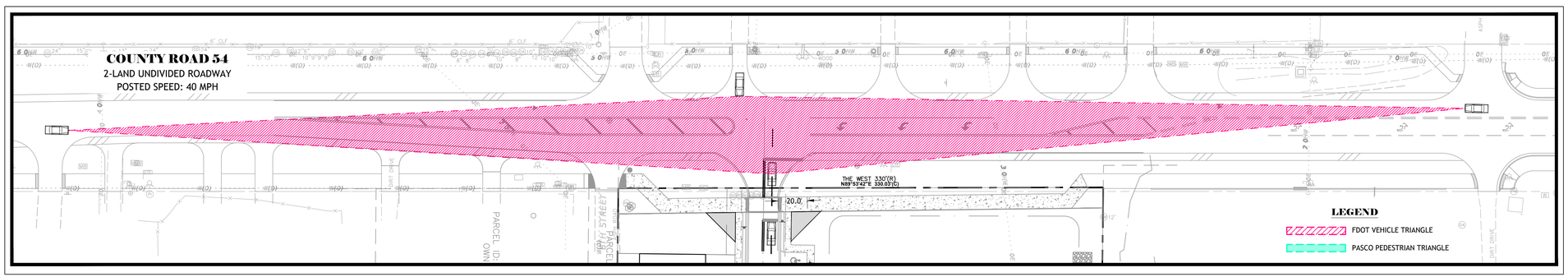
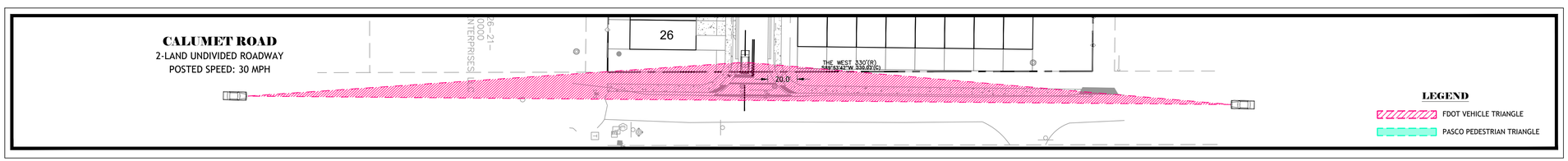
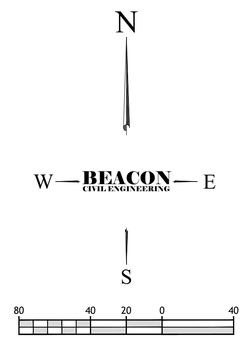


INTERSECTION "A" SIGHT TRIANGLE EXHIBIT
SCALE: 1" - 40'



INTERSECTION "B" SIGHT TRIANGLE EXHIBIT
SCALE: 1" - 40'



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SHEET NAME:
SITE PLAN EXHIBITS

SHEET NUMBER:
C-4.1

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GENERAL NOTES:

1. Cross Slopes and Grades:

   A. Sidewalk, ramp, and landing slopes (i.e. 0.02, 0.05, and 1:12) shown in this Index are maximums. With approval of the Engineer, provide the minimum feasible slope where the requirements cannot be met.

   B. Landings must have cross-slopes less than or equal to 0.02 in any direction.

   C. Maintain a single longitudinal slope along each side of the curb ramp. Ramp slopes are not required to exceed 15 feet in length.

   D. Joints permitted at the location of Slope Breaks. Otherwise locate joints in accordance with Index 522-001. No joints are permitted within the ramp portion of the Curb Ramp.

2. Curb, Curb and Gutter and/or Sidewalk:

   A. Refer to Index 522-001 for concrete thickness and sidewalk details.

   B. Remove any existing curb, curb and gutter, or sidewalk to the nearest joint beyond the curb transition or to the extent that no remaining section is less than 5 feet long.

   C. Width of Curb Ramp is 4'-0" minimum. Match sidewalk or Shared Use Path width as shown in the Plans.

3. Curb Ramp Alpha-Identification:

   A. Sidewalk curb ramp alpha-identifications (e.g. CR-A) are provided for reference purposes in the Plans.

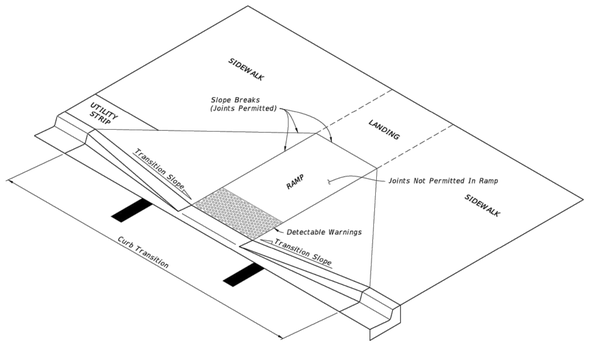
   B. Alpha-identifications CR-I and CR-J are intentionally omitted.

4. Detectable Warnings:

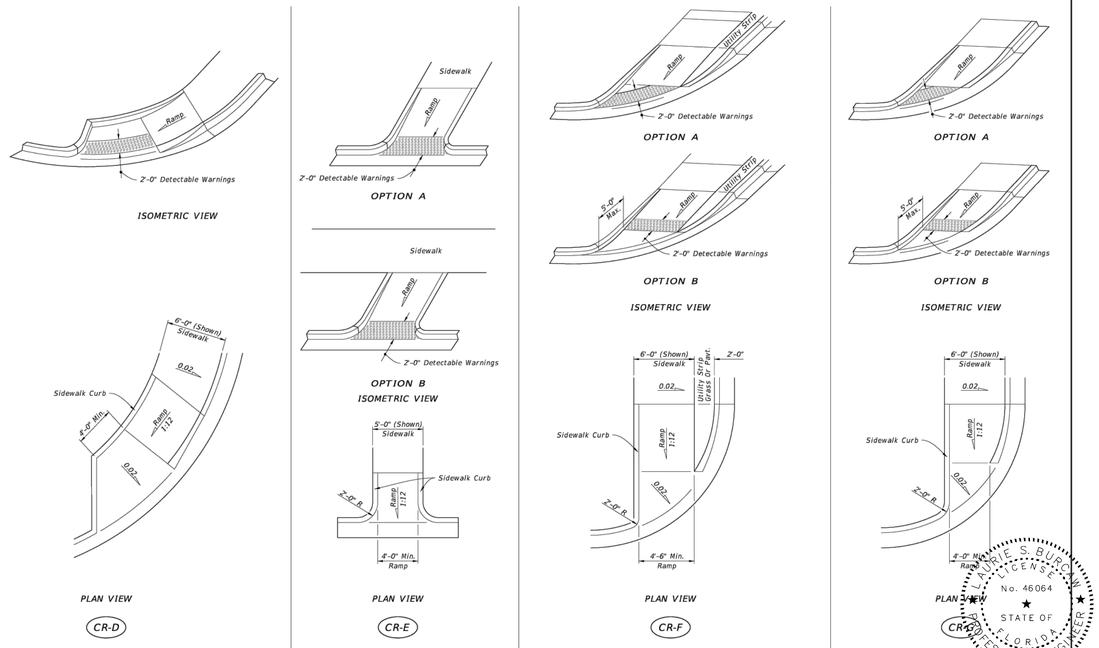
   A. Install detectable warnings in accordance with Specification 527.

   B. Place detectable warnings across the full width of the ramp or landing, to a minimum depth of 2 feet measured perpendicular to the curb line and no greater than 5 feet from the back of the curb or edge of pavement.

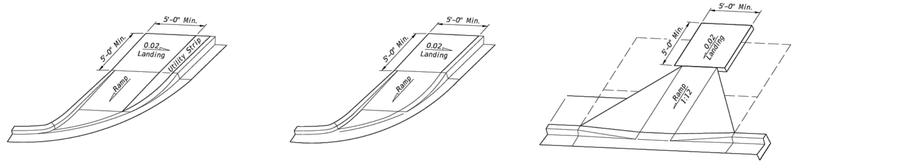
   C. If detectable warnings are shown in the Plans on slopes greater than 5%, align the truncated domes with the centerline of the ramp; otherwise, the truncated domes are not required to be aligned.



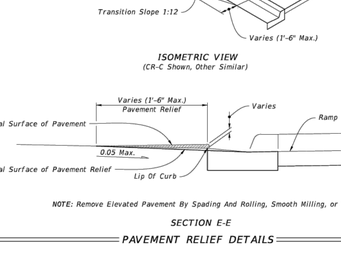
CURB RAMP NOMENCLATURE



SIDEWALK CURB RAMPS CR-D, CR-E, CR-F & CR-G



LANDINGS FOR CURB RAMPS WITHOUT SIDEWALKS
(See CR-F, CR-G & CR-K Respectively For Detectable Warning Details/Options)



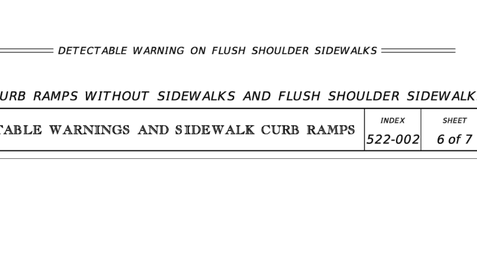
ISOMETRIC VIEW
(CR-C Shown, Other Similar)



NOTE: Remove Elevated Pavement By Spading And Rolling, Smooth Milling, or Grinding.

SECTION E-E

PAVEMENT RELIEF DETAILS

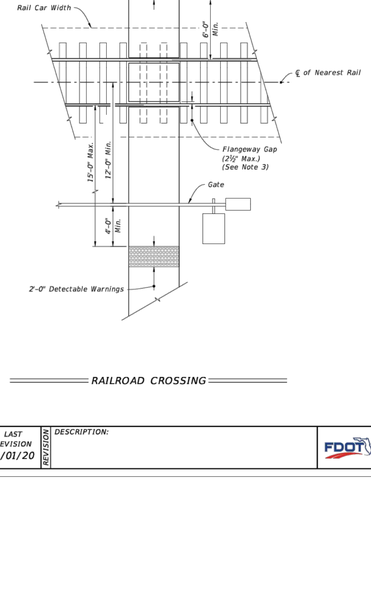


DETECTABLE WARNING ON FLUSH SHOULDER SIDEWALKS

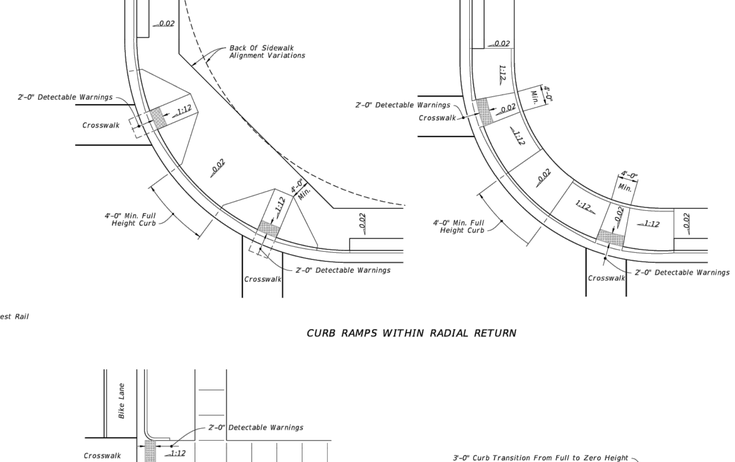
CURB RAMPS WITHOUT SIDEWALKS AND FLUSH SHOULDER SIDEWALKS

NOTES:

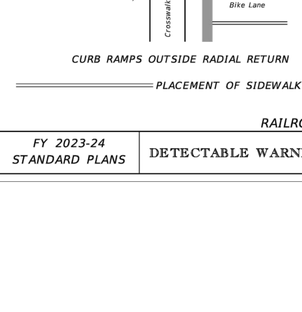
1. Where crosswalk markings are used, ramps must fall within the crosswalk limits. A clear space of 48" minimum is required at the bottom of the ramp within a marked crosswalk. If crosswalk markings are not present, a clear space of 48" minimum is required at the bottom of the ramp outside of active travel lanes.
2. Crosswalk widths and configurations vary; must conform to Index 711-001.
3. Flangeway Gap may be up to 3" for Freight-only Railways.



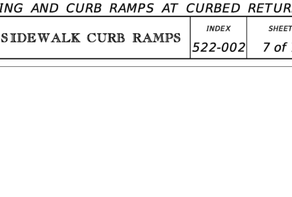
RAILROAD CROSSING



CURB RAMPS WITHIN RADIAL RETURN



CURB RAMPS OUTSIDE RADIAL RETURN



LINEAR SIDEWALK RAMPS

PLACEMENT OF SIDEWALK CURB RAMPS AT CURBED RETURNS (TYP.)

RAILROAD CROSSING AND CURB RAMPS AT CURBED RETURNS

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB	ISSUE DATE:	9/28/23
CHECKED BY:	AH	APPROVED BY:	LB	JOB NO.:	22-548

NO.	BY	DATE	REVISION DESCRIPTION
1	CB	5/30/23	1ST ROUND JURISDICTIONAL COMMENTS
2	CB	8/31/23	2ND ROUND JURISDICTIONAL COMMENTS

3 WORKING DAYS BEFORE YOU DIG CALL SUNSHINE STATE ONE CALL OF FLORIDA 1-800-432-4770
FOR THE LOCATION OF UNDERGROUND UTILITIES

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This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

LAURIE S. BURCAW, PE #46064

BEACON CIVIL ENGINEERING

LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:

SITE PLAN DETAILS

SHEET NUMBER:

C-4.2

LAURIE S. BURCAW LICENSE No. 46064 STATE OF FLORIDA PROFESSIONAL ENGINEER

10/6/2022 2:15:08 PM
10/6/2022 2:15:11 PM
12/13/2022 8:33:09 AM

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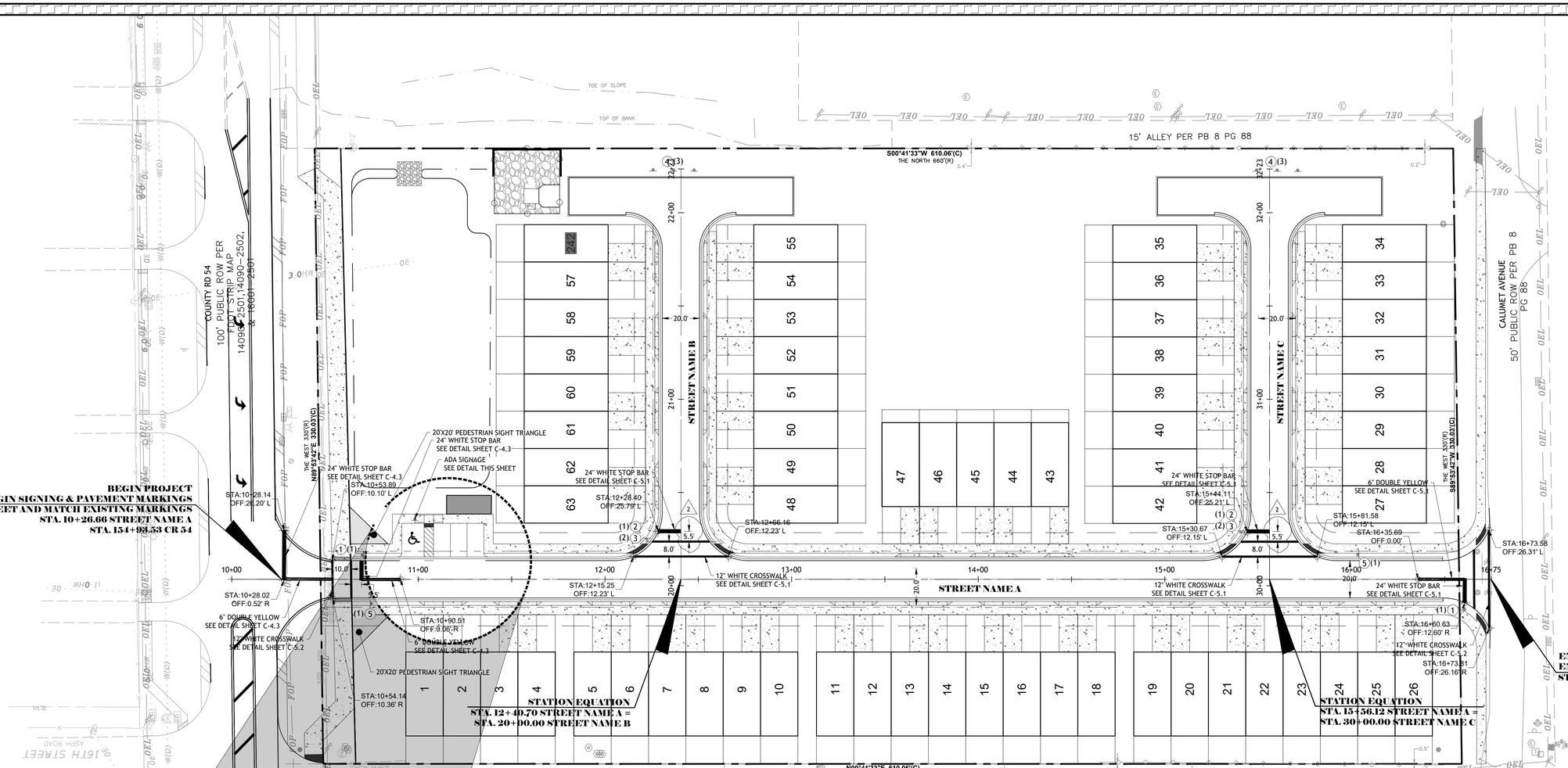
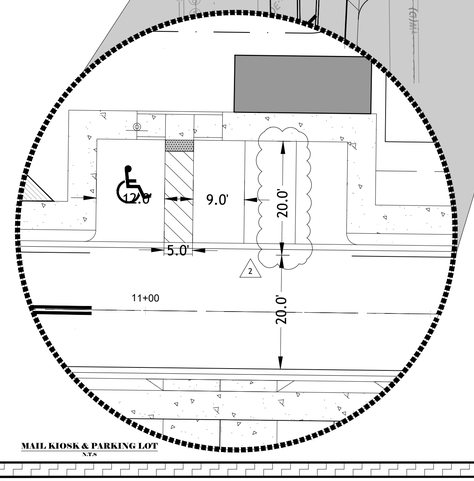


STATION EQUATION
STA. 12+40.70 STREET NAME A =
STA. 20+00.00 STREET NAME B

STATION EQUATION
STA. 15+56.12 STREET NAME A =
STA. 30+00.00 STREET NAME C

END SINGING & PAVEMENT MARKINGS
END PROJECT
STA. 16+75.00

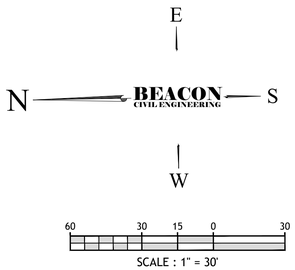


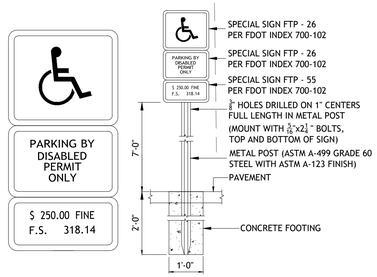
MAIL KIOSK & PARKING LOT
N.T.S.

SIGN NUMBER	SIGN	DESCRIPTION	REFERENCE	SIZE
①	STOP	STOP	R1-1	36"X36"
②	STOP	STOP	R1-1	30"X30"
③	STREET	STREET SIGN	R2-5cP	VARIES
④		OBJECT MARKER	OM4-1	18"X18"
⑤	SPEED LIMIT 25	SPEED LIMIT	R2-1	24"X36"

TRAFFIC CONTROL & SIGNAGE NOTES

1. ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN CONFORMANCE WITH THE FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND FDOT STANDARDS.
2. SEE SHEETS C-5.1 THROUGH C-5.2 FOR TRANSPORTATION DETAILS.
3. ALL PROPOSED SIGNS SHALL BE ADJUSTED BY THE CONTRACTOR AS NECESSARY TO MAINTAIN FDOT STANDARDS AND CONFORMANCE.
4. CONTRACTOR MUST CONTACT E.O.R. PRIOR TO ORDERING STREET NAME SIGNS. APPROVED STREET NAMES CANNOT BE DETERMINED UNTIL PLAT HAS BEEN RECORDED.
5. SIDEWALKS WILL BE PROVIDED ON BOTH SIDES OF ALL ROADS INCLUDING NON-LOT AREAS. UNLESS OTHERWISE NOTED, ALL SIDEWALKS SHALL BE FIVE (5) FEET IN WIDTH, 4" THICK CONCRETE, AND 3000 PSI, FIBER REINFORCED. SIDEWALKS SHALL BE CONSTRUCTED ON A NON-YIELDING SUB-GRADE, AND 6" IN THICKNESS IS REQUIRED WHERE SIDEWALKS AND DRIVEWAYS CROSS.
6. THE SIDEWALK THAT IS TO BE CONSTRUCTED BY THE INDIVIDUAL IS TO BE CONSTRUCTED PRIOR TO THE ISSUANCE OF THE CERTIFICATE OF OCCUPANCY TO ITS CORRESPONDING DWELLING UNIT. ALONG NON-LOT AREAS, SIDEWALKS SHALL BE CONSTRUCTED ALONG WITH INFRASTRUCTURE IMPROVEMENTS TO PROVIDE AN UN-INTERRUPTED SIDEWALK THROUGHOUT THE SUBDIVISION. MAINTENANCE OF THE SIDEWALK WILL BE THE RESPONSIBILITY OF THE HOMEOWNER'S ASSOCIATION, OR AN ENTITY OTHER THAN THE CITY ZEPHYRHILLS.
7. SIDEWALK CLEAR ZONE SHALL BE FREE OF OBSTACLES INCLUDING SHRUBS, TREES, FENCES, ABOVE GROUND UTILITIES, GUY ANCHORS, SIGN POSTS, ETC.
8. EXISTING STRIPING AND PAVEMENTS MARKINGS TO BE REMOVED SHALL BE DONE VIA HYDROBLASTING, AS GRINDING IS NOT PERMITTED.
9. ANY TRAFFIC CONTROL DEVICE FOR A PRIVATE ROADWAY PLACED IN A COUNTY OR STATE R.O.W. SHALL BE INSTALLED ON THE APPROPRIATE BREAKAWAY POST ASSEMBLY.
10. STREET NAME SIGNS SHALL BE 6" ON LOCAL ROADS & 9" ON COLLECTOR & ARTERIAL ROADS. SIX INCH SIGNS SHALL HAVE 4" SERIES C LETTERS & 9" SIGNS SHALL HAVE 6" SERIES B LETTERS. ALL STREET NAME SIGNS ON PRIVATE ROADS SHALL HAVE D3 STREET NAME SIGNS WITH THE COLORS REVERSED; WHITE BACKGROUND WITH GREEN LETTERS & BORDER. AT INTERSECTIONS WITH COUNTY MAINTAINED ROADS, THE COUNTY MAINTAINED ROADS SHALL BE GREEN BACKGROUND WITH WHITE LETTERS & BORDER.
11. ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN CONFORMANCE WITH THE FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND FLORIDA DEPARTMENT OF TRANSPORTATION STANDARDS STREET NAMES SHALL BE 6" ON LOCAL ROADS AND 9" ON COLLECTOR AND ARTERIAL ROADS. SIX-INCH SIGNS SHALL HAVE 4" SERIES C LETTER AND 9" SIGNS SHALL HAVE 6 SERIES B LETTERS. ALL STREET SIGNS ON PRIVATE STREETS (NON-COUNTY MAINTAINED) SHALL BE STANDARD D3 STREET NAME SIGNS WITH THE COLORS REVERSED; WHITE BACKGROUND WITH GREEN LETTERS AND BOARDER. AT INTERSECTIONS WITH COUNTY MAINTAINED ROADS, THE COUNTY MAINTAINED ROAD SHALL BE GREEN BACKGROUND WITH WITH WHITE LETTERS AND BOARDER

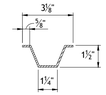




ELEVATION

SIGN NOTES:
1. METAL POST TO BE GALVANIZED. ALL BOLTS, NUTS, WASHERS AND SCREWS MUST BE RUSTPROOF.
2. CONCRETE FOR FOOTING SHALL BE PORTLAND CEMENT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 P.S.I.
3. SIGNS WILL BE FABRICATED BY USING REFLECTING COATING IN THE SYMBOL, MESSAGE AND BORDER APPLIED TO A SHEET ALUMINUM BACKING (.080) IN THICKNESS.
4. MESSAGE LETTERING SHALL BE UPPER CASE (WHITE)(SERIES B) 2" HIGH IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
5. THE SYMBOL IS COMPOSED OF TWO ELEMENTS, A WHITE WHEELCHAIR FIGURE (WHICH SHOULD ALWAYS FACE RIGHT) ON A SQUARE BACKGROUND, INTERNATIONAL BLUE IN COLOR (FED. STD. 595a, COLOR #15180).
6. SIGN POST SHALL BE MIN. 2'-0" CLEAR FROM BACK OF CURB.

SIGN DETAILS
N.T.S.



METAL POST DETAIL
WEIGHT OF POST SHALL BE 2 LBS./FT. MIN.

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB	ISSUE DATE:	9/28/23
CHECKED BY:	AH	APPROVED BY:	LB	JOB NO.:	22-548

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LAURIE S. BURCAW
LICENSED
No. 46064
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

LAURIE S. BURCAW, PE #46064

BEACON
CIVIL ENGINEERING
LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

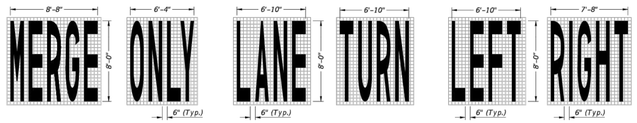
CALUMET TOWNS

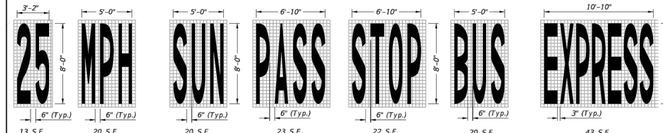
CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

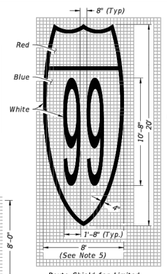
SHEET NAME:
SIGNING AND PAVEMENT PLAN

SHEET NUMBER:
C-5.0

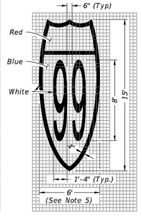
B:\Projects\2022\22548 Calumet Towns\DWG\Civil\22-548_SIGNING.dwg 9/29/2023 10:04 AM



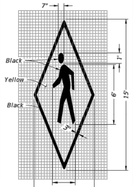




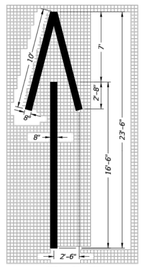
Route Shield for Limited Access Roadways (Interstate Route Shield Shown; U.S. and State Route Shield Similar)
128 S.F.



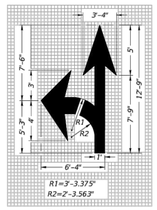
Route Shield for Arterials and Collectors (Interstate Route Shield Shown; U.S. and State Route Shield Similar)
72 S.F.



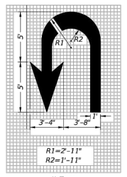
In Pavement Warning Marking
45 S.F.



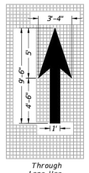
Wrong-Way Arrow
24 S.F.



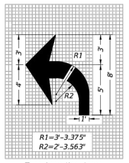
Turn and Through Lane-Use Arrow
29 S.F.



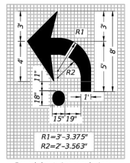
U Turn Lane-Use Arrow
27 S.F.



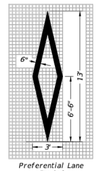
Through Lane-Use Arrow
12 S.F.



Turn Lane-Use Arrow (Left Turn Shown – Right Turn Similar)
17 S.F.



Roundabout Approach Arrow
19 S.F.



Preferential Lane Symbol
11 S.F.

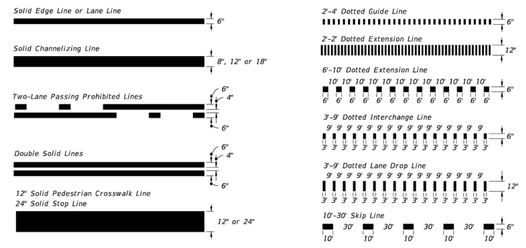
PAVEMENT MESSAGES NOTES:

1. Place all pavement messages 25' back from the stop line.
2. Dimensions are within 1" ±.
3. All grids are 4" x 4".
4. All pavement messages must be white except Route Shields and In Pavement Warning Markings.
5. Increase width of route shield for routes with three digits.

PAVEMENT MESSAGE AND ARROW DETAILS

10/7/2022 2:50:13 PM

LAST REVISION 11/01/21	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	PAVEMENT MARKINGS	INDEX 711-001	SHEET 1 of 13



PAVEMENT MARKING LINES



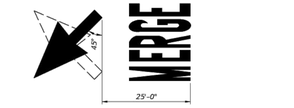
10'-30' SKIP LINE WITH CONTRAST MARKINGS



DOTTED LINE WITH ALTERNATING CONTRAST MARKINGS
(3'-9' Dotted Line Shown, Other Dotted Lines Similar)

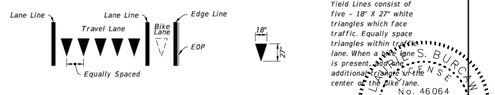


LONGITUDINAL SOLID LANE LINE WITH CONTRAST MARKINGS
(Not For Use On Edge Lines)



MARKINGS FOR MERGE

Direction of Traffic

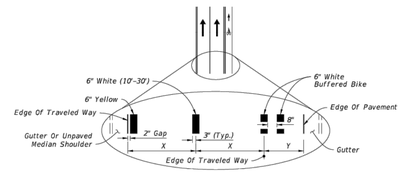


Yield Lines consist of five - 18" X 27" white triangles which face traffic. Equally space triangles within the lane. When a bike lane is present, add one additional triangle at the center of the bike lane.

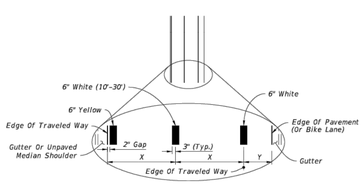
YIELD LINES

10/7/2022 2:50:19 PM

LAST REVISION 11/01/22	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	PAVEMENT MARKINGS	INDEX 711-001	SHEET 2 of 13



CURB AND GUTTER



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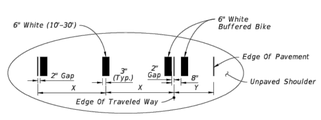
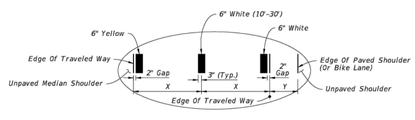


FLUSH SHOULDER

X = LANE WIDTH (FT.)
Y = BUFFERED BIKE LANE WIDTH (FT.)

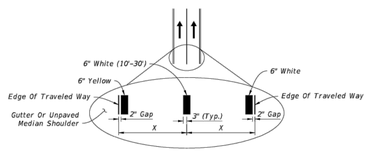
STRIPING FOR BUFFERED BIKE LANE



FLUSH SHOULDER

X = LANE WIDTH (FT.)
Y = PAVED SHOULDER / BIKE LANE

STRIPING WITH SHOULDER OR NON-BUFFERED BIKE LANE



X = LANE WIDTH (FT.)

STRIPING WITH NO SHOULDER OR BIKE LANE

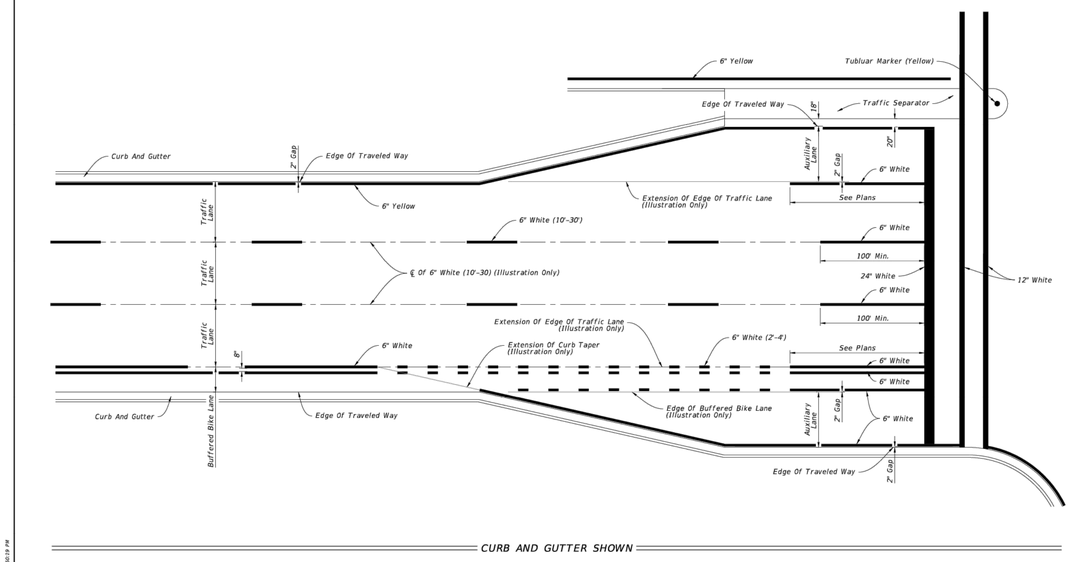
NOTES:

1. Lane widths (X) may not be same for each lane in the section.
2. For placement of RPMs, see Index 706-001.

PLACEMENT OF LONGITUDINAL PAVEMENT MARKINGS

10/7/2022 2:50:19 PM

LAST REVISION 11/01/21	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	PAVEMENT MARKINGS	INDEX 711-001	SHEET 3 of 13



CURB AND GUTTER SHOWN

PLACEMENT OF LONGITUDINAL PAVEMENT MARKINGS

10/7/2022 2:50:19 PM

LAST REVISION 11/01/21	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	PAVEMENT MARKINGS	INDEX 711-001	SHEET 5 of 13

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB	ISSUE DATE:	9/28/23
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NO.	BY	DATE	REVISION DESCRIPTION
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8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
SIGNING AND PAVEMENT DETAILS

SHEET NUMBER:
C-5.1

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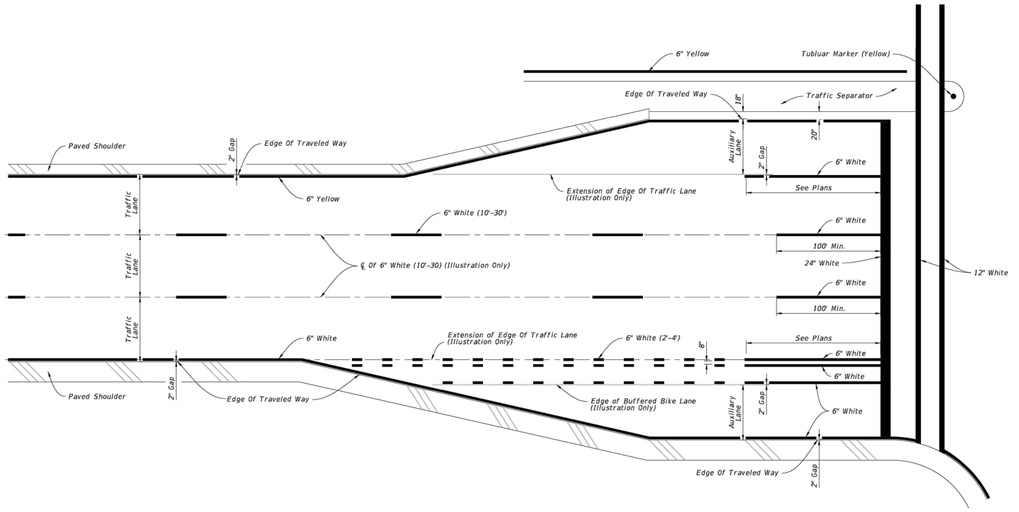

FLUSH SHOULDER SHOWN

PLACEMENT OF LONGITUDINAL PAVEMENT MARKINGS

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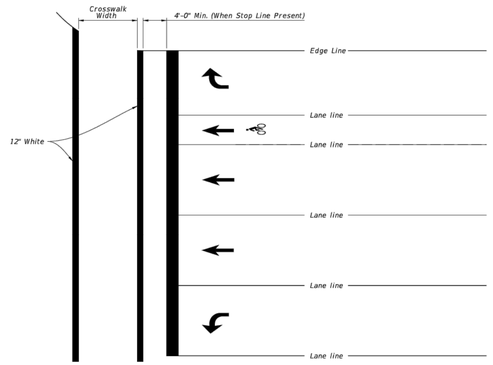
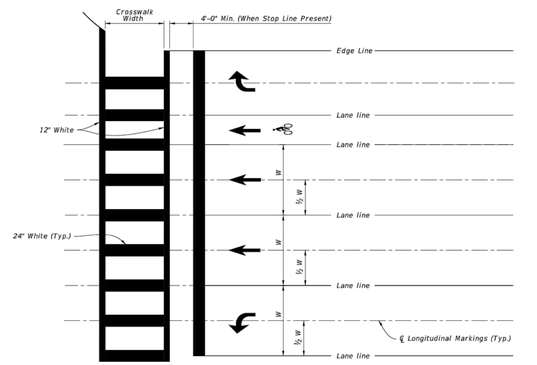


STANDARD CROSSWALK DETAILS



SPECIAL EMPHASIS CROSSWALK DETAILS

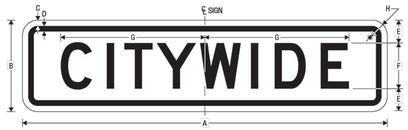
NOTES:

1. *For crosswalk width, exceed width of the adjacent sidewalk, but do not make width less than 6' for intersection crosswalks and 10' for midblock crosswalks. Measure width from the inside of the transverse crosswalk markings.*
2. *When the Special Emphasis Crosswalk is not perpendicular to the lane lines, make the longitudinal markings parallel to the lane lines.*
3. *Refer to Index 522-002 when Curb Ramps are present.*

LAURIE S. BURCAW LICENSED No. 46064 STATE OF FLORIDA PROFESSIONAL ENGINEER

LAST REVISION 11/01/21	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	PAVEMENT MARKINGS	INDEX 711-001	SHEET 9 of 13

R2-5aP, R2-5bP, R2-5cP
Issued 3/1/2012



R2-5aP
CITYWIDE (PLAQUE)



R2-5bP
NEIGHBORHOOD (PLAQUE)



R2-5cP
RESIDENTIAL (PLAQUE)

★ Increase character spacing 50%.
★★ Reduce character spacing 20%.

A	B	C	D	E	F	G	H	J	K	L	M
24	6	0.375	0.375	1.5	3 D*	9.484	1	3 B	10.354	3 C	10.219
30	9	0.375	0.625	2.5	4 D*	12.646	1.5	4 B**	13.006	4 C**	12.981

COLORS: LEGEND, BORDER — BLACK
BACKGROUND — WHITE (RETROREFLECTIVE)



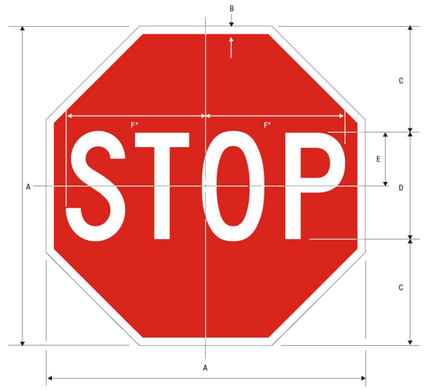
R2-1
SPEED LIMIT (ENGLISH)

*Optically space numerals about centerline

A	B	C	D	E	F	G	H	J	K	L
18	24	.375	.625	3	3 E	2	8 E	7.188	5.5	1.5
C 24	30	.375	.625	4	4 E	2	10 E	9.563	7.313	1.5
36	48	.625	.875	6	6 E	5	14 E	14.375	11	2.25
48	60	.75	1.25	8	8 E	6	16 E	19.125	14.625	3

COLORS: LEGEND — BLACK
BACKGROUND — WHITE (RETROREFLECTIVE)

1-10



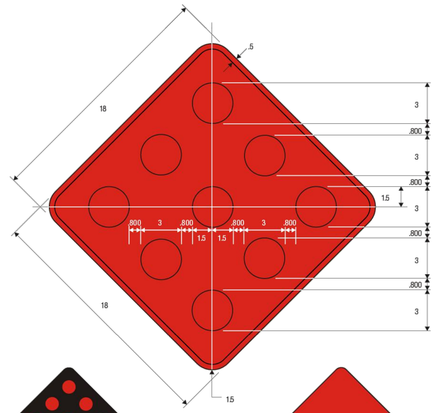
R1-1
STOP

*Reduce spacing 40%

A	B	C	D	E	F
18	.375	6	6 C	3	7.75
24	.625	8	8 C	4	10
C 30	.75	10	10 C	5	12.5
36	.875	12	12 C	6	15
48	1.25	16	16 C	8	20

COLORS: LEGEND — WHITE (RETROREFLECTIVE)
BACKGROUND — RED (RETROREFLECTIVE)

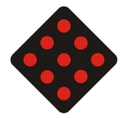
1-1



OM4-1

OM4-1 COLORS:

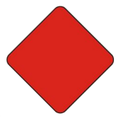
REFLECTORS — RED (RETROREFLECTIVE)
BACKGROUND — RED
BORDER — RED (RETROREFLECTIVE)



OM4-2

OM4-2 COLORS:

REFLECTORS — RED (RETROREFLECTIVE)
BACKGROUND — BLACK



OM4-3

OM4-3 COLORS:

SIGN PANEL — RED (RETROREFLECTIVE)

11-4

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CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
SIGNING AND PAVEMENT DETAILS

SHEET NUMBER:
C-5.2

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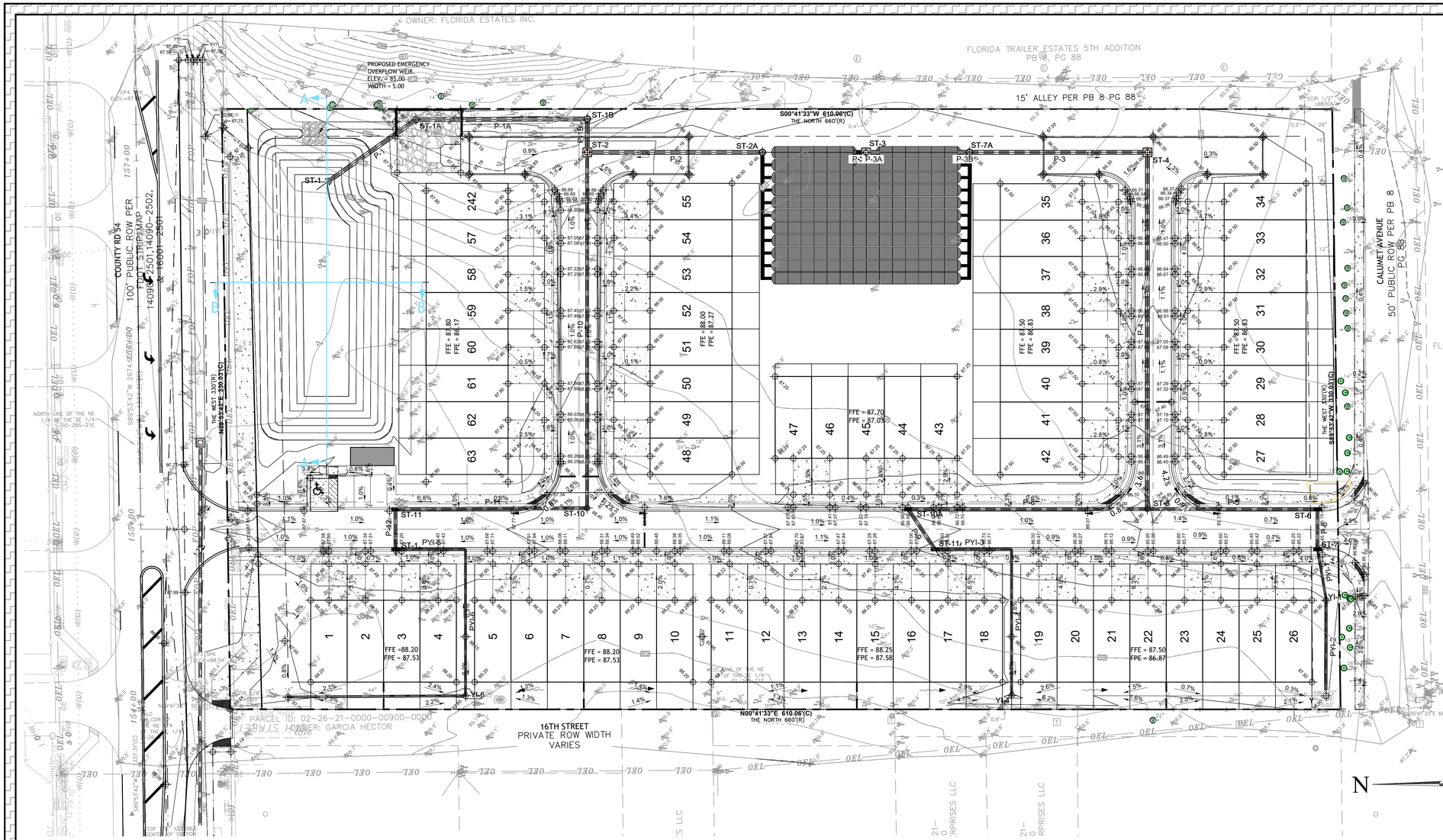


LEGEND

- PROPOSED STORMWATER PIPE
- PROPOSED FDOT TYPE 'C' INLET
- ADA PARKING STALLS. 2% MAX SLOPES IN ALL DIRECTIONS
- ⊗ 1.00 — PROPOSED SPOT ELEVATION
- ⊗ 1.50 / 1.00 — PROPOSED TOP OF CURB/BOTTOM OF CURB SPOT ELEVATION
- ⊗ M.E. ±1.00 — MATCH EXISTING ELEVATION
- PROPOSED SLOPE INDICATOR
- DIRECTIONAL DRAINAGE FLOW ARROW
- HA-# — GEOTECH BORING LOCATION. SEE GEOTECH REPORT FOR DETAILS.
- PROPOSED RIDGE LINE
- OPEN TRENCH
- X.XX — PROPOSED MAJOR CONTOUR
- X.XX — PROPOSED MINOR CONTOUR

VERTICAL DATUM

ELEVATIONS SHOWN HEREIN ARE BASED ON THE (NAVD) 88 AND SAID ELEVATIONS ARE BASED ON BENCHMARKS RESEARCHED BY THE SURVEYOR

GRADING & DRAINAGE NOTES

1. JURISDICTIONAL LAND DISTURBANCE PERMIT SHALL BE DISPLAYED ON SITE AT ALL TIMES DURING CONSTRUCTION AND BE VISIBLE TO THE PUBLIC.
2. TWO PERMANENT BENCHMARKS ON-SITE SHALL BE ESTABLISHED BY CONTRACTOR PRIOR TO STARTING CONSTRUCTION.
3. PROPOSED SPOT ELEVATIONS ARE TO THE TOP OF PAVEMENT UNLESS OTHERWISE NOTED.
4. ALL REQUIRED FILL SHALL BE CLEAN, SUITABLE MATERIAL.
5. ALL AREAS DISTURBED OUTSIDE LIMITS OF GRADING SHOWN ON THE PLANS SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER BY THE CONTRACTOR.
6. CONTRACTOR SHALL MEET AND MATCH EXISTING (M.E.) PAVEMENT ALONG SAW-CUT LIMITS.
7. LENGTH OF PROPOSED RIP-RAP PADS AT PIPE OUTLET STRUCTURES SHALL BE A MINIMUM LENGTH OF SIX TIMES THE DIAMETER OF THE PIPE, IF APPLICABLE.
8. ALL FILL SHOULD BE PLACED IN THIN, HORIZONTAL LOOSE LIFTS, MAXIMUM 6 INCHES, AND COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698). A FLORIDA REGISTERED PROFESSIONAL SOILS ENGINEER SHALL CERTIFY THE SOIL COMPACTION PRIOR TO THE INSTALLATION OF PAVEMENTS, CURBS, SIDEWALKS OR FOOTINGS OF ANY TYPE. COMPACTION OF THE UPPER 6 INCHES OF SOIL BENEATH PAVEMENTS AND SLAB-ON-GRADE SHOULD BE COMPACTED TO AT LEAST 98%.
9. STORMWATER PONDS AND OUTLET STRUCTURES SHALL BE FULLY CONSTRUCTED AND OPERATIONAL PRIOR TO ANY OTHER CONSTRUCTION OR GRADING ON THE SITE AND MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
10. REFER TO LANDSCAPE PLAN FOR REQUIRED TREE AND GROUND COVER PLANTINGS.
11. SURFACE GRADE SLOPES SHALL BE A MINIMUM OF 1.00%
12. 4:1 MAXIMUM CUT AND FILL SLOPES
13. ADA ACCESSIBLE AREAS SHALL NOT HAVE A MAXIMUM CROSS-SLOPE THAT EXCEEDS 2.00% AND MAX LONGITUDINAL SLOPE OF 5.00% UNLESS A RAMP IS SPECIFIED. IF DISCREPANCIES OCCUR CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD IMMEDIATELY TO CONFIRM DESIGN TO ENSURE ADA ACCESSIBLE STANDARDS ARE MET.
14. ALL TRENCHING AND BACKFILL OPERATIONS SHALL COMPLY WITH GOVERNING JURISDICTIONAL STANDARDS. SEE SHEET C-6.2 FOR PIPE TRENCHING DETAILS.
15. SEE SHEET C-6.2 THRU C-6.6 FOR DETAILS.
16. ALL INLET GRATES SUBJECTED TO VEHICLE LOADING SHALL MEET H-20 TRAFFIC LOADING STANDARDS.

BUILDING ACCESS AND PROTECTION NOTES

1. THE CONTRACTOR SHALL MAINTAIN ACCESS FOR EMERGENCY VEHICLES AROUND AND TO ALL BUILDINGS UNDER CONSTRUCTION WITH A MINIMUM WIDTH OF 20 FT. THE ACCESS TO BUILDINGS WITH SPRINKLER OR STANDPIPE SYSTEMS SHALL BE WITHIN 40 FT OF THE FIRE DEPARTMENT CONNECTION ACCORDING TO NFPA 1141 3-1.
2. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AWAY FROM BUILDING IN ALL AREAS AROUND BUILDING.

E

N — BEACON CIVIL ENGINEERING — S

W

60 30 15 0 30

SCALE : 1" = 30'

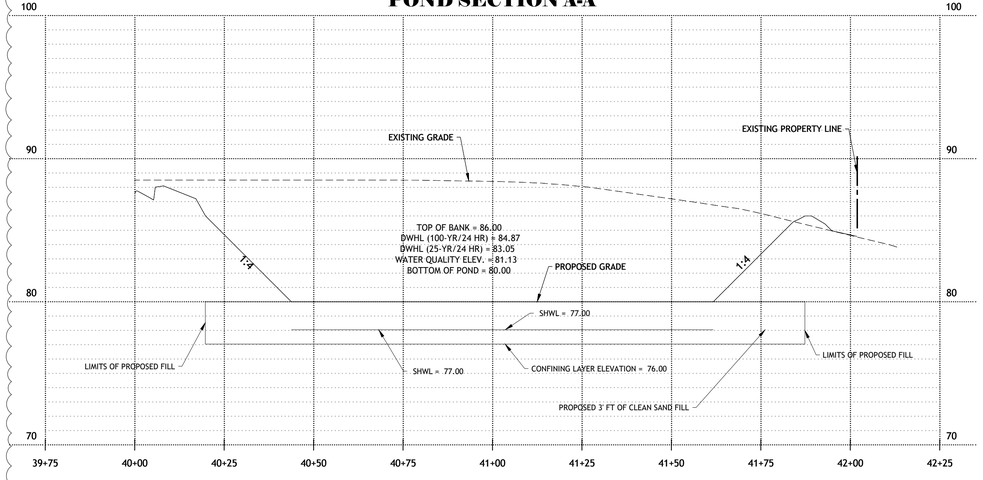
EXISTING PERVIOUS/IMPERVIOUS

PERVIOUS	
OPEN SPACE:	201,319.51 SF/ 4.62 AC/ 100%
TOTAL PERVIOUS AREA:	201,319.51 SF/ 4.62 AC/ 100%

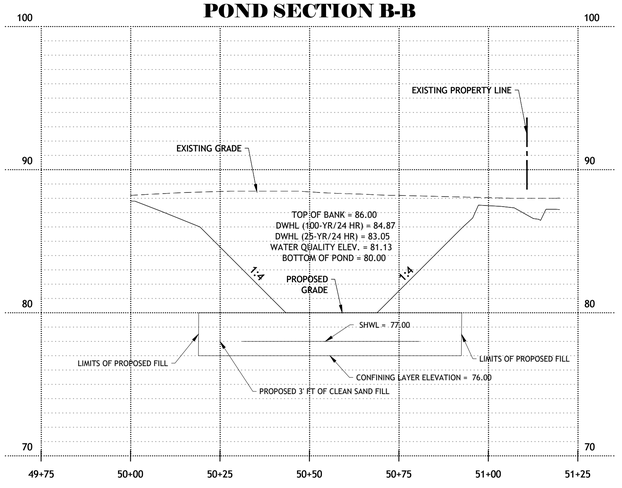
PROPOSED PERVIOUS/IMPERVIOUS

PERVIOUS	
R/W DEDICATION:	5,173.96 SF/ 0.19 AC/ 2%
LANDSCAPE AREA:	93,112.00 SF/ 2.07 AC/ 46%
TOTAL PERVIOUS AREA:	98,285.96 SF/ 2.26 AC/ 48%
IMPERVIOUS	
BUILDING AREA:	57,597.00 SF/ 1.32 AC/ 29%
ASPHALT PAVEMENT AREA:	24,192.25 SF/ 0.55 AC/ 12%
CONCRETE PAVEMENT AREA:	11,712.00 SF/ 0.27 AC/ 6%
SIDEWALK AREA:	9,532.30 SF/ 0.22 AC/ 5%
TOTAL IMPERVIOUS AREA:	103,033.55 SF/ 2.36 AC/ 52%

POND SECTION A-A



POND SECTION B-B



1

STRUCTURE TABLE

NAME	STRUCTURE TYPE	STRUCTURE DATA
ST-1	MITERED END SECTION	RIM: 82.58' P-1 IE IN: 80.00'
ST-1A	MANHOLE	RIM: 87.40' P-1A IE IN: 80.00' P-1 IE OUT: 80.00'
ST-1B	MANHOLE	RIM: 84.88' P-1B IE IN: 80.00' P-1A IE OUT: 80.00'
ST-2	FDOT TYPE C INLET	RIM: 86.62' P-10 IE IN: 80.00' P-2 IE IN: 80.00' P-1B IE OUT: 80.00'
ST-2A	MANHOLE	RIM: 87.45' P-2 IE OUT: 80.15'
ST-3	FDOT TYPE C INLET	RIM: 87.11' P-3A IE IN: 80.15' P-2A IE OUT: 80.15'
ST-4	FDOT TYPE C INLET	RIM: 85.94' P-4 IE IN: 80.30' P-3 IE OUT: 80.30'
ST-5	MANHOLE	RIM: 85.90' P-8 IE IN: 80.60' P-5 IE OUT: 80.60' P-4 IE OUT: 80.60'
ST-6	FDOT TYPE V INLET	RIM: 85.13' P-5 IE IN: 80.75' P-6 IE OUT: 80.75'
ST-7	FDOT TYPE V INLET	RIM: 85.13' P-6 IE IN: 80.85' PYI-1 IE OUT: 81.89'
ST-7A	MANHOLE	RIM: 87.26' P-3 IE IN: 80.15' P-3B IE OUT: 80.15'

STRUCTURE TABLE

NAME	STRUCTURE TYPE	STRUCTURE DATA
ST-10	MANHOLE	RIM: 88.45' P-11 IE IN: 80.55' P-10 IE OUT: 80.55'
ST-10A	FDOT TYPE V INLET	RIM: 86.93' P-9 IE IN: 80.80' P-8 IE OUT: 80.80'
ST-11	FDOT TYPE V INLET	RIM: 87.17' P-12 IE IN: 80.70' P-11 IE OUT: 80.70'
ST-11A	FDOT TYPE V INLET	RIM: 86.93' P-9 IE OUT: 80.90' PYI-3 IE OUT: 82.41'
ST-12	FDOT TYPE V INLET	RIM: 87.18' P-12 IE OUT: 80.80' PYI-5 IE OUT: 83.37'
YI-1	YARD DRAIN	RIM: 86.90' PYI-1 IE IN: 81.99' PYI-2 IE OUT: 81.99'
YI-2	YARD DRAIN	RIM: 86.90' PYI-2 IE IN: 82.15'
YI-4	YARD DRAIN	RIM: 86.90' PYI-4 IE IN: 82.92'
YI-6	YARD DRAIN	RIM: 87.85' PYI-6 IE IN: 83.70' PYI-7 IE OUT: 83.70'
YI-7	YARD DRAIN	RIM: 87.75' PYI-7 IE IN: 83.89'

PIPE TABLE

PIPE NAME	MATL	SIZE	LENGTH	SLOPE
P-1	REINFORED CONCRETE	24"	56 LF	0.00%
P-1A	REINFORED CONCRETE	24"	94 LF	0.00%
P-1B	REINFORED CONCRETE	24"	18 LF	0.00%
P-2	REINFORED CONCRETE	24"	96 LF	0.16%
P-2A	REINFORED CONCRETE	24"	7 LF	0.00%
P-3	REINFORED CONCRETE	24"	98 LF	0.15%
P-3A	REINFORED CONCRETE	24"	7 LF	0.00%
P-3B	REINFORED CONCRETE	24"	6 LF	0.00%
P-4	REINFORED CONCRETE	24"	196 LF	0.15%
P-5	REINFORED CONCRETE	18"	93 LF	-0.16%
P-6	REINFORED CONCRETE	18"	22 LF	-0.45%
P-8	REINFORED CONCRETE	18"	131 LF	0.15%
P-9	REINFORED CONCRETE	18"	26 LF	0.38%
P-10	REINFORED CONCRETE	18"	196 LF	0.28%
P-11	REINFORED CONCRETE	18"	105 LF	0.14%
P-12	REINFORED CONCRETE	18"	22 LF	0.45%
PYI-1	12" HDPE	12"	28 LF	-0.35%
PYI-2	12" HDPE	12"	52 LF	-0.30%
PYI-3	12" HDPE	12"	42 LF	-0.62%
PYI-4	12" HDPE	12"	81 LF	-0.31%
PYI-5	12" HDPE	12"	38 LF	-0.43%
PYI-6	12" HDPE	12"	80 LF	-0.20%
PYI-7	12" HDPE	12"	97 LF	-0.20%

ISSUED FOR PERMITTING

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CHECKED BY:	AH	APPROVED BY:	LB

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LAURIE S. BURCAW, PE #46064

BEACON CIVIL ENGINEERING

LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:

GRADING PLAN

SHEET NUMBER:

C-6.0

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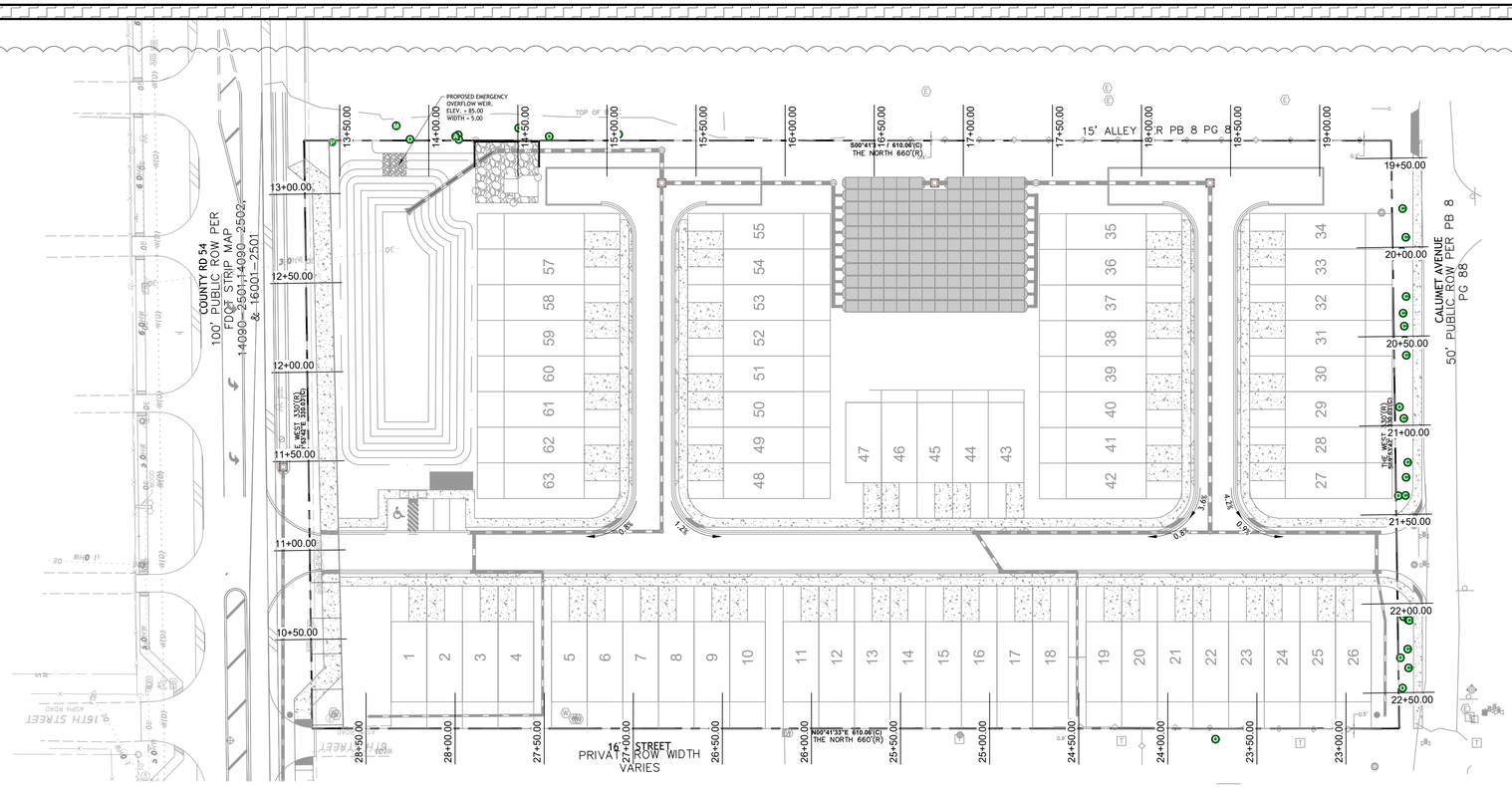

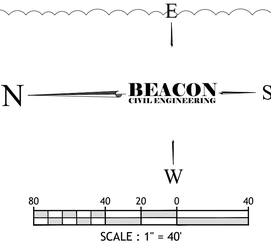

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CHECKED BY:	AH	APPROVED BY:	LB

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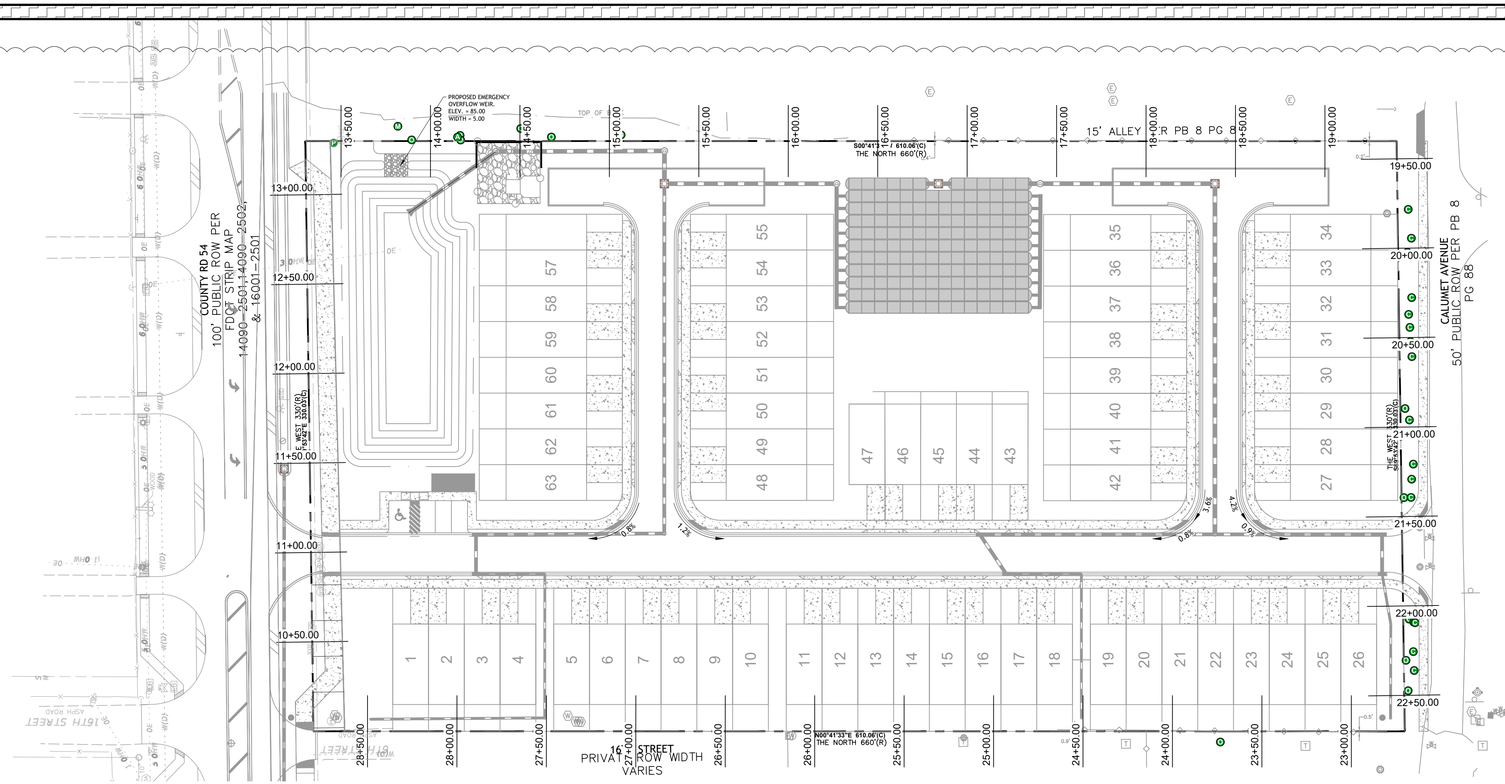
COUNTY RD 54
100' PUBLIC ROW PER
FDOT STRIP MAP
14090-2501,14090-2502,
& 16001-2501
PROPOSED EMERGENCY
OVERFLOW WEIR.
ELEV. = 85.00
WIDTH = 5.00
TOP OF
S00°41'33"E 610.06'(C)
THE NORTH 660'(R)
15' ALLEY PER PB 8 PG 8
CALUMET AVENUE
50' PUBLIC ROW PER PB 8
PG 88
THE WEST 330'(R)
16' STREET
PRIVATE ROW WIDTH
VARIES
S00°41'33"E 610.06'(C)
THE NORTH 660'(R)
13+00.00
12+50.00
12+00.00
11+50.00
11+00.00
10+50.00
13+50.00
14+00.00
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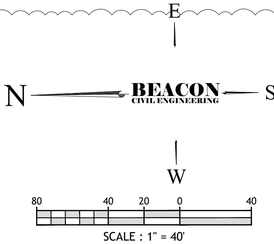

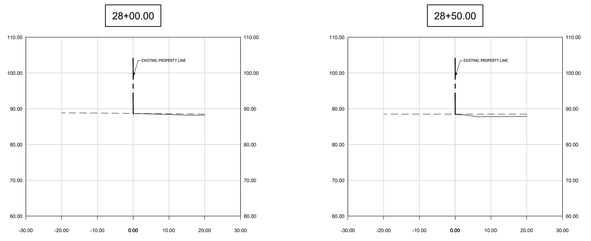

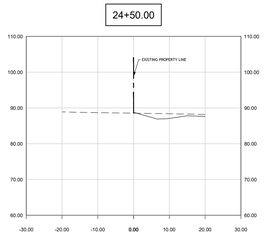

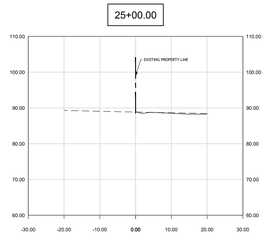

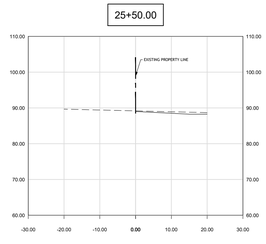

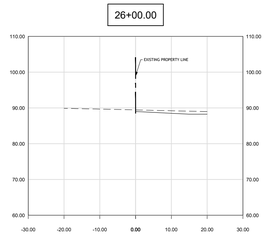

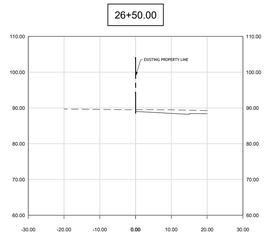

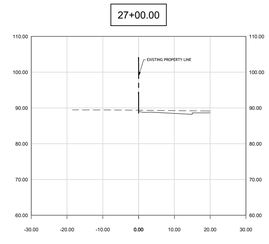

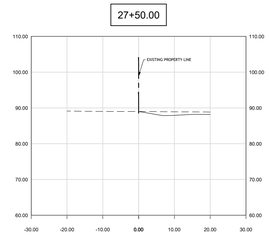

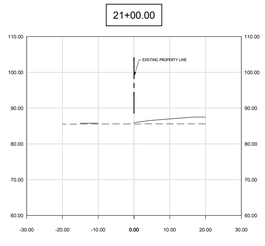

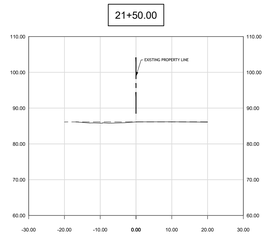

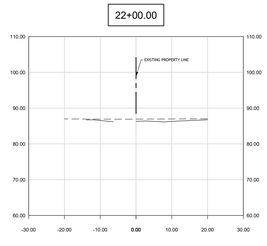

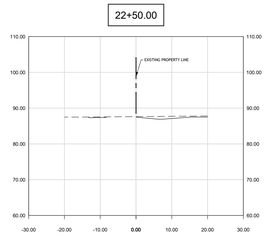

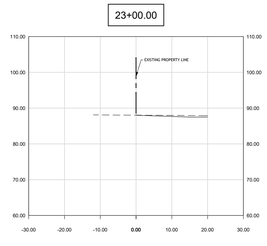

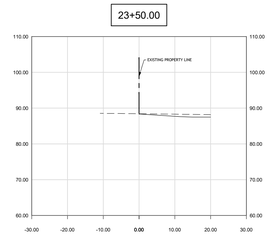

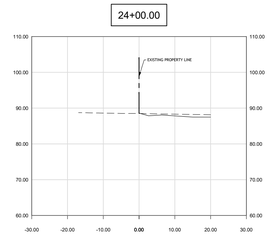

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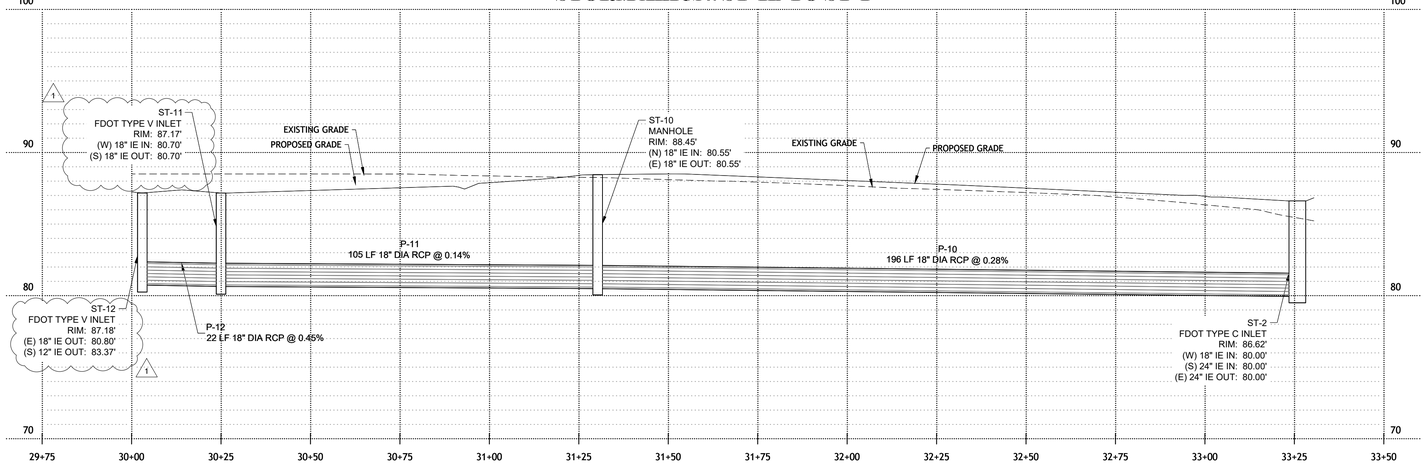
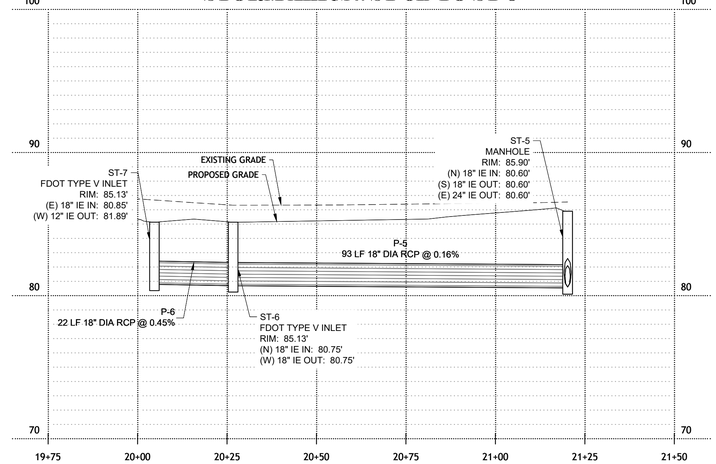
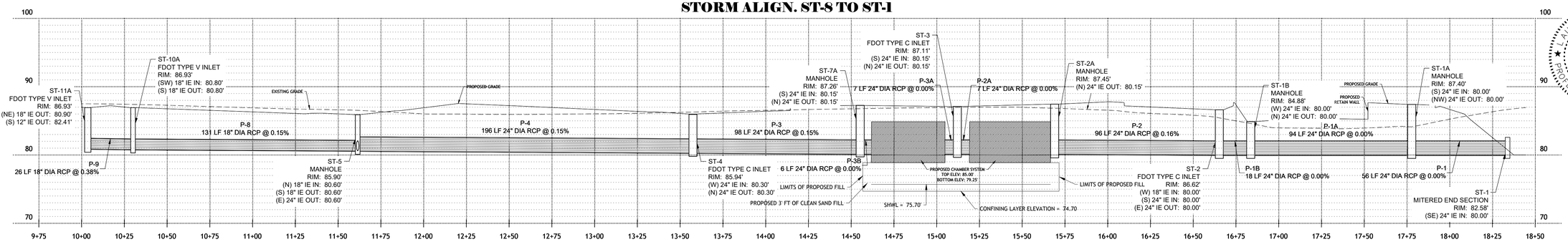
STORM ALIGN. ST-4B TO ST-4



STORM ALIGN. ST-6B TO ST-6



STORM ALIGN. ST-8 TO ST-1



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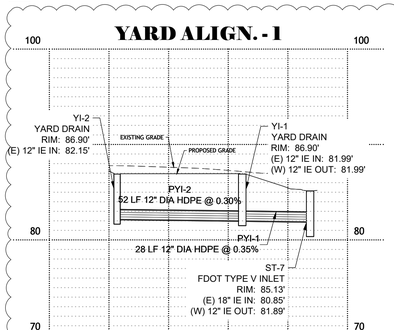
YARD ALIGN. - 1



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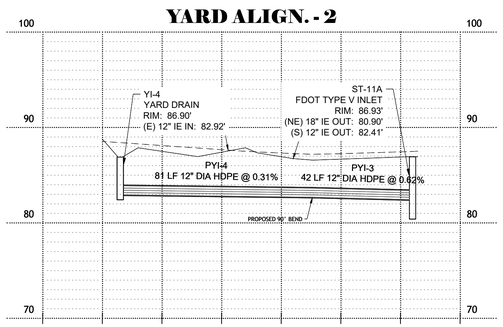
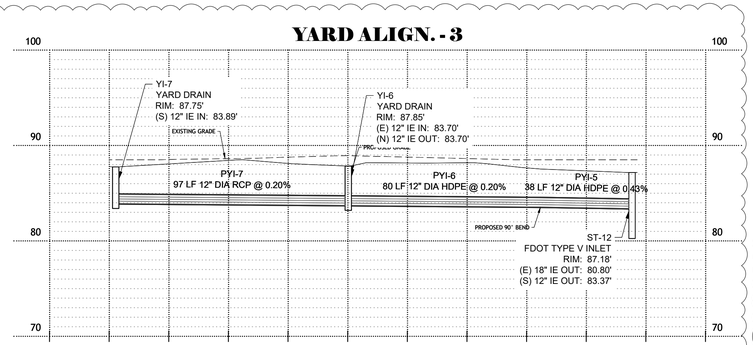


YARD ALIGN. - 3



1

STRUCTURE TABLE

NAME	STRUCTURE TYPE	STRUCTURE DATA
ST-1	MITERED END SECTION	RIM: 82.58' P-1 IE IN: 80.00'
ST-1A	MANHOLE	RIM: 87.40' P-1A IE IN: 80.00' P-1 IE OUT: 80.00'
ST-1B	MANHOLE	RIM: 84.88' P-1B IE IN: 80.00' P-1A IE OUT: 80.00'
ST-2	FDOT TYPE C INLET	RIM: 86.62' P-1O IE IN: 80.00' P-2 IE IN: 80.00' P-1B IE OUT: 80.00'
ST-2A	MANHOLE	RIM: 87.45' P-2 IE OUT: 80.15'
ST-3	FDOT TYPE C INLET	RIM: 87.11' P-3A IE IN: 80.15' P-2A IE OUT: 80.15'
ST-4	FDOT TYPE C INLET	RIM: 85.94' P-4 IE IN: 80.30' P-3 IE OUT: 80.30'
ST-5	MANHOLE	RIM: 85.90' P-8 IE IN: 80.60' P-5 IE OUT: 80.60' P-4 IE OUT: 80.60'
ST-6	FDOT TYPE V INLET	RIM: 85.13' P-5 IE IN: 80.75' P-6 IE OUT: 80.75'
ST-7	FDOT TYPE V INLET	RIM: 85.13' P-6 IE IN: 80.85' PYI-1 IE OUT: 81.89'
ST-7A	MANHOLE	RIM: 87.26' P-3 IE IN: 80.15' P-3B IE OUT: 80.15'

STRUCTURE TABLE

NAME	STRUCTURE TYPE	STRUCTURE DATA
ST-10	MANHOLE	RIM: 88.45' P-11 IE IN: 80.55' P-10 IE OUT: 80.55'
ST-10A	FDOT TYPE V INLET	RIM: 86.93' P-9 IE IN: 80.80' P-8 IE OUT: 80.80'
ST-11	FDOT TYPE V INLET	RIM: 87.17' P-12 IE IN: 80.70' P-11 IE OUT: 80.70'
ST-11A	FDOT TYPE V INLET	RIM: 86.93' P-9 IE OUT: 80.90' PYI-3 IE OUT: 82.41'
ST-12	FDOT TYPE V INLET	RIM: 87.18' P-12 IE OUT: 80.80' PYI-5 IE OUT: 83.37'
YI-1	YARD DRAIN	RIM: 86.90' PYI-1 IE IN: 81.99' PYI-2 IE OUT: 81.99'
YI-2	YARD DRAIN	RIM: 86.90' PYI-2 IE IN: 82.15'
YI-4	YARD DRAIN	RIM: 86.90' PYI-4 IE IN: 82.92'
YI-6	YARD DRAIN	RIM: 87.85' PYI-6 IE IN: 83.70' PYI-7 IE OUT: 83.70'
YI-7	YARD DRAIN	RIM: 87.75' PYI-7 IE IN: 83.89'

PIPE TABLE

PIPE NAME	MATL	SIZE	LENGTH	SLOPE
P-1	REINFORED CONCRETE	24"	56 LF	0.00%
P-1A	REINFORED CONCRETE	24"	94 LF	0.00%
P-1B	REINFORED CONCRETE	24"	18 LF	0.00%
P-2	REINFORED CONCRETE	24"	96 LF	0.16%
P-2A	REINFORED CONCRETE	24"	7 LF	0.00%
P-3	REINFORED CONCRETE	24"	98 LF	0.15%
P-3A	REINFORED CONCRETE	24"	7 LF	0.00%
P-3B	REINFORED CONCRETE	24"	6 LF	0.00%
P-4	REINFORED CONCRETE	24"	196 LF	0.15%
P-5	REINFORED CONCRETE	18"	93 LF	-0.16%
P-6	REINFORED CONCRETE	18"	22 LF	-0.45%
P-8	REINFORED CONCRETE	18"	131 LF	0.15%
P-9	REINFORED CONCRETE	18"	26 LF	0.38%
P-10	REINFORED CONCRETE	18"	196 LF	0.28%
P-11	REINFORED CONCRETE	18"	105 LF	0.14%
P-12	REINFORED CONCRETE	18"	22 LF	0.45%
PYI-1	12" HDPE	12"	28 LF	-0.35%
PYI-2	12" HDPE	12"	52 LF	-0.30%
PYI-3	12" HDPE	12"	42 LF	-0.62%
PYI-4	12" HDPE	12"	81 LF	-0.31%
PYI-5	12" HDPE	12"	38 LF	-0.43%
PYI-6	12" HDPE	12"	80 LF	-0.20%
PYI-7	12" HDPE	12"	97 LF	-0.20%

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SHEET NUMBER:

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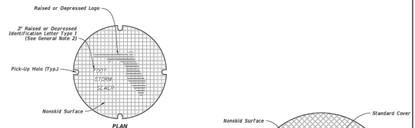
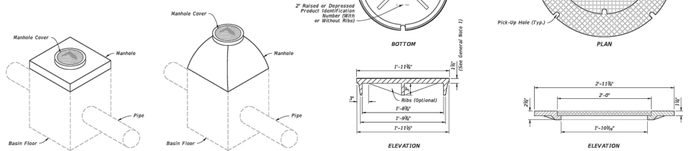
GENERAL NOTES:

1. Use a 1-piece cover, unless the 2-piece cover is called for in the Plans, except at inlets and manholes with sump bottoms. Use the 2-piece cover when the sump depth exceeds 2', unless otherwise noted.
2. Include "Adjustable" on the cover for Type 1 manhole adjustable frames.
3. For square or rectangular precast drainage structures, use either deformed or smooth WWR meeting the requirements of Specification 934. Lap splice the reinforcement in the walls and lapped in accordance with Option 1 or 3 as shown in the Wall Reinforcing Splice Details.
4. Lap splice horizontal steel in the walls of rectangular structures in accordance with Option 1, 2 or 3 as shown in the Wall Reinforcing Splice Details.
5. Welding of splices and lugs is permitted. Use AASHTO M259 requirements and restrictions on welds.
6. Rebar straight end embedment of peripheral reinforcement may be used in lieu of ACI standard hooks for top and bottom slabs, except when hooks are specifically called for in the Plans.
7. Precast opening for pipe must be the pipe OD plus 6" (± 2" tolerance). Use mortar to seal the pipe into the opening of such a mix that shrinkage will not cause leakage into or out of the structure. Dry-pack mortar may be used to seal openings less than 2'0" wide.

TABLE OF CONTENTS:

Sheet	Description
1	General Notes, Contents, Manhole Top Overview, and Manhole Covers
2	Manhole Frames and Manhole Tops
3	Inlet Locking Grates, Subgrade and Base Temporary Drains, and Pipe to Structure Filter Fabric Wrap
4	Drainage Structure Invert, Sump Bottom, Wall Reinforcing Splice Details, and Typical Slab to Wall Details
5	Precast Option and Equivalent Reinforcement substitution
6	Construction Joints and Minimum Box Riser Segment Dimensions
7	Skewed Pipe in Rectangular Structures
8	Miscellaneous Pipe Connection Details



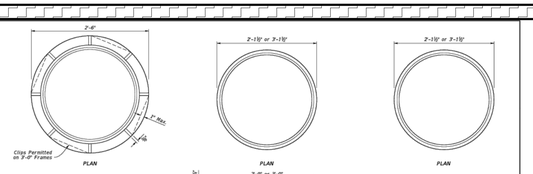


MANHOLE TOPS — MANHOLE COVERS

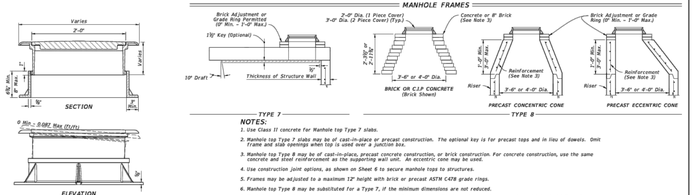
TABLE 1
WEIGHT OF CASTINGS (lb)

Frame Type	2'-0" OPENING Frame	Cover	Total	3'-0" OPENING 2-Piece Cover Inside/Outside	Total
I	155	190	320	190 / 220	410
II	145	190	255	190 / 220	410
III	90	190	180	190 / 205	410

NOTE: Frame Type 1 in Table 1, includes Adjustable frames.



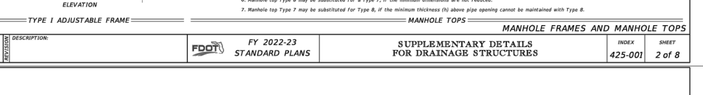
MANHOLE FRAMES



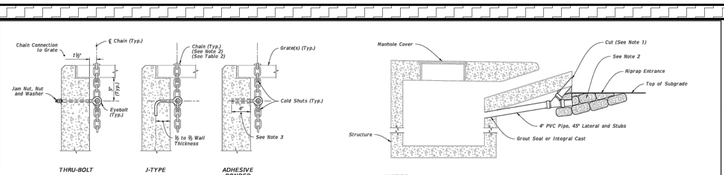
TYPE 7 — TYPE 8

NOTES:

1. Use Class II concrete for Manhole top Type 7 slabs.
2. Manhole top Type 7 slabs may be of cast-in-place or precast construction. The optional key is for precast tops and in lieu of dowels. Omit frame and slab openings when top is used over a junction box.
3. Manhole top Type 8 may be of cast-in-place, precast concrete construction, or brick construction. For concrete construction, use the same concrete and steel reinforcement as the supporting wall unit. An eccentric cone may be used.
4. Use construction joint options, as shown on Sheet 6 to secure manhole tops to structures.
5. Frames may be adjusted to a maximum 12" height with brick or precast ASTM C478 grade rings.
6. Manhole top Type 8 may be substituted for a Type 7, if the minimum dimensions are not reduced.
7. Manhole top Type 7 may be substituted for Type 8, if the minimum thickness (h) above pipe opening cannot be maintained with Type 8.



TYPE I ADJUSTABLE FRAME — MANHOLE TOPS — MANHOLE FRAMES AND MANHOLE TOPS

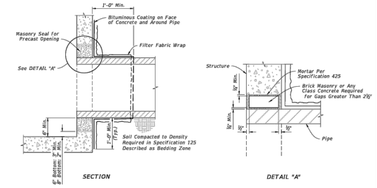


NOTES:

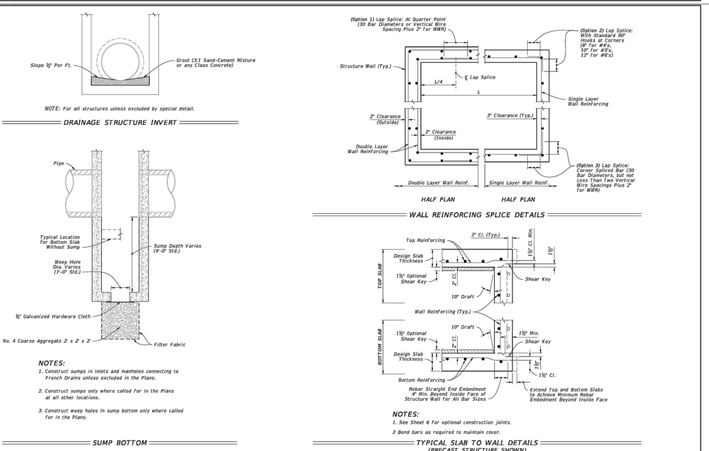
1. Install either a ⅝" ø x 1" Diameter Threaded Straight (Thru-Bolt), a J-Type, or an adhesive Bonded Anchor Eyebolt.
2. Install a ⅝" Chain and ⅝" Cold Shuts. When chaining two grates together provide adequate loop for easy handling.
3. Install adhesive bonded anchor within with a minimum of 4" embedment, and in accordance with Specification 416.

TABLE 2
EYEBOLT AND CHAIN REQUIREMENTS

Index Number	Inlet Type	Eyes Bolts	Length of Chain	Handling & Remarks
425-030	1	1	4'-0"	Slide & Spin
	2	2	2 @ 4'-0"	Slide & Spin
425-037	N/A	1	3'-8"	Slide or Slide & Spin
425-032	N/A	1	3'-8"	Slide & Spin
425-040	S	1	4'-0"	Slide & Spin
425-041	S	1	4'-0"	Slide & Spin
425-050	A	1	3'-0"	Slide
425-051	B	1	3'-0"	Slide & Spin
	C	1	2'-6"	Slide & Spin
	D	1	2'-6"	Slide & Spin
425-052	E	2	2 @ 2'-6"	Slide & Spin
	H	2	2 @ 2'-6"	Flip Ctr. Grate and Slide & Spin Single Free Grate
			1 or 2 @ 1'-6"	Center Grate(s) Chained to One End Grate
	I	1	3'-6"	Flip or Slide & Spin
425-053	G	1	6'-0"	Slide
			2'-6"	Lifting Loop
425-054	J	1	4'-0"	Slide & Spin



LOCKING GRATES TO INLETS — PIPE TO STRUCTURE FILTER FABRIC WRAP



NOTES:

1. Construct sumps in inlets and manholes connecting to French Drains unless excluded in the Plans.
2. Construct sumps only where called for in the Plans at all other locations.
3. Construct weep holes in sump bottom only where called for in the Plans.

SUMP BOTTOM

NOTES:

1. See Sheet 6 for optional construction joints.
2 Bend bars as required to maintain cover.

TYPICAL SLAB TO WALL DETAILS (PRECAST STRUCTURE SHOWN)

DRAINAGE STRUCTURE INVERT, SUMP BOTTOM, WALL REINFORCING SPLICE DETAILS, AND TYPICAL SLAB TO WALL DETAILS

EXAMPLE TABLE OF EQUIVALENT STEEL AREA

SCHEDULE	GRADE 60 REINFORCING BAR: Bar Size & Spacing	GRADE 60 REINFORCING BAR: Steel Area (in²/ft)	EQUIVALENT GRADE 45 REINFORCING BAR: Bar Size & Spacing	EQUIVALENT GRADE 45 REINFORCING BAR: Steel Area (in²/ft)	EQUIVALENT 65 KSI SMOOTH WELDED WIRE REINFORCEMENT: Style Designation	EQUIVALENT 65 KSI SMOOTH WELDED WIRE REINFORCEMENT: Steel Area (in²/ft)	EQUIVALENT 70 KSI DEFORMED WELDED WIRE REINFORCEMENT: Style Designation	EQUIVALENT 70 KSI DEFORMED WELDED WIRE REINFORCEMENT: Steel Area (in²/ft)
A	#3 @ 6'0" Ctrs. #4 @ 12" Ctrs.	0.20	#3 @ 4'0" Ctrs. #4 @ 8" Ctrs. #5 @ 12" Ctrs.	0.30	7"x7"-W4.6xW4.6 4"x4"-W6.2xW6.2 6"x6"-W9.2xW9.2	0.1846	7"x7"-D4.3xD4.3 4"x4"-D5.7xD5.7 6"x6"-D8.6xD8.6	0.1714
B	#3 @ 5'0" Ctrs. #4 @ 10" Ctrs.	0.24	#3 @ 3'0" Ctrs. #4 @ 6'0" Ctrs. #5 @ 10" Ctrs.	0.36	7"x7"-W5.5xW5.5 4"x4"-W7.4xW7.4 6"x6"-W11.1xW11.1	0.2215	7"x7"-D5.1xD5.1 4"x4"-D6.8xD6.8 6"x6"-D10.3xD10.3	0.2057
Special 1	#3 @ 3" Ctrs., #4 @ 6" Ctrs., #5 @ 9" Ctrs.	0.267	#4 @ 2"Ctrs., #4 @ 4" Ctrs., #5 @ 6" Ctrs.	0.40	7"x7"-W6.2xW6.2 4"x4"-W8.2xW8.2 6"x6"-W12.3xW12.3	0.2463	7"x7"-D5.7xD5.7 4"x4"-D7.6xD7.6 6"x6"-D11.4xD11.4	0.2289
C	#3 @ 3'0" Ctrs. #4 @ 6'0" Ctrs. #5 @ 9" Ctrs.	0.37	#4 @ 4" Ctrs. #5 @ 6'0" Ctrs. #6 @ 9'0" Ctrs.	0.555	7"x7"-W8.5xW8.5 4"x4"-W11.4xW11.4 6"x6"-W17.1xW17.1	0.3415	7"x7"-D7.9xD7.9 4"x4"-D10.6xD10.6 6"x6"-D15.9xD15.9	0.3171
D	#4 @ 6'0" Ctrs. #5 @ 7" Ctrs. #6 @ 10" Ctrs.	0.53	#4 @ 3" Ctrs. #5 @ 4'0" Ctrs. #6 @ 6'0" Ctrs.	0.795	7"x7"-W12.2xW12.2 4"x4"-W16.3xW16.3 6"x6"-W24.5xW24.5	0.4892	7"x7"-D11.4xD11.4 4"x4"-D15.1xD15.1 6"x6"-D22.7xD22.7	0.4543
E	#4 @ 3" Ctrs. #5 @ 4" Ctrs. #6 @ 7" Ctrs.	0.73	#5 @ 3'0" Ctrs. #6 @ 4'0" Ctrs. #7 @ 6'0" Ctrs.	1.095	7"x7"-W16.8xW16.8 4"x4"-W22.5xW22.5 6"x6"-W33.7xW33.7	0.6738	7"x7"-D15.6xD15.6 4"x4"-D20.9xD20.9 6"x6"-D31.3xD31.3	0.6257
F	#5 @ 3'0" Ctrs. #6 @ 3" Ctrs. #7 @ 7" Ctrs.	1.06	#6 @ 3" Ctrs. #7 @ 4'0" Ctrs. #8 @ 6" Ctrs.	1.59	7"x7"-W24.5xW24.5 4"x4"-W32.6xW32.6 6"x6"-W48.9xW48.9	0.9785	7"x7"-D22.7xD22.7 4"x4"-D30.3xD30.3 6"x6"-D45.4xD45.4	0.9086
Special 2	#5 @ 3" Ctrs. #6 @ 3" Ctrs. #7 @ 5'0" Ctrs.	1.24	#7 @ 4" Ctrs. #8 @ 5" Ctrs.	1.86	7"x7"-W28.6xW28.6 4"x4"-W38.2xW38.2 6"x6"-W57.2xW57.2	1.1446	7"x7"-D26.6xD26.6 4"x4"-D35.4xD35.4 6"x6"-D53.1xD53.1	1.0629
G	#6 @ 3'0" Ctrs. #7 @ 3" Ctrs.	1.46	#7 @ 3" Ctrs. #8 @ 4" Ctrs.	2.19	7"x7"-W33.7xW33.7 4"x4"-W44.9xW44.9	1.3477	7"x7"-D31.3xD31.3 4"x4"-D41.7xD41.7	1.2514

NOTES:

1. See inlet indexes for optional precast inlet construction details up to depths of 15'.
2. Interior dimensions of an All "D" Bottom may be adjusted to reflect those inlet interior dimensions when precast units are used in conjunction with All, "B" Structure Bottoms, Index 425-010.
3. Use concrete meeting the requirements of Specification of ASTM C478 or Class IV for precast structures with 8" wall or slab thickness.
4. Reinforcement may be deformed bar reinforcement or welded wire reinforcement. Bar reinforcement other than 60 ksi may be used, however only two grades are recognized: Grade 40 and Grade 60. Smooth welded wire reinforcement will be recognized as having a design strength of 65 ksi and deformed welded wire reinforcement will be recognized as having a design strength of 70 ksi. The area of reinforcement required may be adjusted in accordance with the Equivalent Steel Area Table provided. Use the following equations to determine the steel area and spacing for bars not otherwise specified:

   Grade 40 Steel Area = As40= 60/40 x As60

   Smooth Welded Wire Reinforcement Steel Area = As65= 60/65 x As60

   Deformed Welded Wire Reinforcement Steel Area = As70= 60/70 x As60

   When a reduced area of reinforcement is provided, any maximum bar spacing shown must also be reduced as determined by the following equations, unless otherwise shown:

   Max. Grade 40 Bar Spacing = Grade 60 Bar Spacing

   Max. Smooth Welded Wire Spacing = Grade 60 Bar Spacing x 0.86

   Max. Deformed Welded Wire Spacing = Grade 60 Bar Spacing x 0.74

   When an increased area of reinforcing is provided, the maximum bar spacing may be increased by the squared ratio of increased steel area, but not to exceed 12".

   $\text{Max. Bar Spacing Provided or Max. Bar Spacing Required} \times \left(\frac{\text{Steel Area Provided}}{\text{Min. Steel Area Required}}\right)^2$

   Use wire no smaller than W3.1 or D4.0, or larger and with spacing 6" or less. Use bar reinforcement no smaller than #3 or larger than #8 bars. Where the calculated steel area or one (1) grade more size to be acceptable at the higher value. Use maximum bar spacing no greater than two (2) times the slab thickness with a maximum spacing of 12" or three (3) times the wall thickness, with a maximum spacing of 18" for vertical bars and 12" for horizontal bars. Wires smaller than W3.1 or D4.0 may be used in the walls of ASTM C 478 round structure bottoms and round risers.

5. Fiber-reinforced concrete may be substituted for conventional steel reinforcement in accordance with the Structures Design Guidelines. Submit shop drawings corresponding to an approved fiber-reinforced concrete mix design for approval to the State Drainage Office.

PRECAST OPTION AND EQUIVALENT REINFORCEMENT SUBSTITUTION



NOTES:

1. One or more types of joints may be used in a single structure, except brick wall structure. Brick wall construction is permitted on circular units only.
2. All grouted joints are to have a maximum thickness of 1".
3. Keyways are to be a minimum of 1½" deep.
4. Joint dowels are to be #4 bars, 12" long with a minimum of 6 bars per joint approximately evenly spaced for circular structures or 3 bars per 1.2' spacing for rectangular structures. Bars may be either Adhesive Bonded Dowels in accordance with Specification 416, or placed approximately 6" into fresh concrete leaving the remainder to extend into the secondary cast. Welded wire reinforcement may be substituted for the dowel bar in accordance with the equivalent steel area table on Sheet 5.
5. Minimum cover on dowel reinforcing bars is 2" to outside face of structure.
6. Seal joints between wall segments and between wall segments and top or bottom slabs with preformed plastic gasket material inaccordance with Specification 430 or non-shrink grout in accordance with Specification 934.
7. Insert products approved by the Engineer may be used in lieu of dowel embedment.

CONSTRUCTION JOINT OPTIONS

NOTES:

1. Segments may be inverted. Opening for pipe is the pipe OD plus 6" (± 2" tolerance).
2. If h can not be attained, then a top or bottom slab must be attached to the segment as shown below.

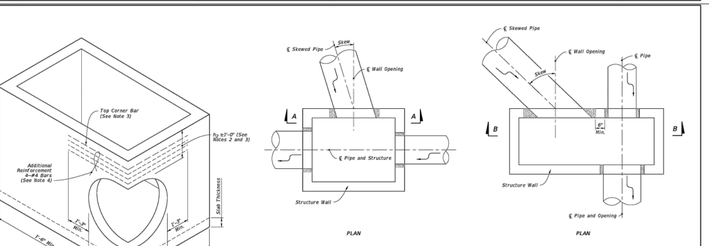


NOTES:

1. h may be less than 6" when approved by the Engineer, but not for inlet segments at finish grade elevations.
2. Dowel construction joint or monolithic cast only.

MINIMUM BOX AND RISER SEGMENT DIMENSIONS

CONSTRUCTION JOINT OPTIONS AND MINIMUM BOX AND RISER SEGMENT DIMENSIONS



NOTES:

1. Submit Shop Drawings of corner openings for approval by the Engineer.
2. h_2 may be less than 1'-0" when a minimum 1'-0" deep segment, 8" slab or curb inlet is provided above the corner opening.
3. For inlet segments at finish grade elevation, substitute a #8 Bar for the top corner bar when h_2 or $h_3 < 2'$-0".
4. Install bars continuously around corner and evenly spaced. Tie additional reinforcement to the outside of vertical wall reinforcement.
5. Dowel construction joint or monolithically cast wall and slabs.

PIPE OPENING AT CORNER — SKEWED PIPE IN RECTANGULAR STRUCTURES (See Table 4 on Sheet 8)

SKEWED PIPE IN RECTANGULAR STRUCTURES

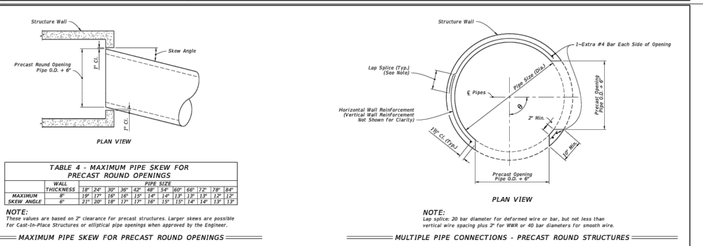


TABLE 4 - MAXIMUM PIPE SKEW FOR PRECAST ROUND OPENINGS

WALL THICKNESS	PIPE SIZE 18"	24"	30"	36"	42"	48"	54"	60"	66"	72"	78"	84"
MAXIMUM SKEW ANGLE	8"	19°	14°	10°	8°	7°	6°	5°	5°	4°	3°	3°
	9"	21°	16°	12°	10°	8°	7°	6°	5°	5°	4°	3°

NOTE: These values are based on 2" clearance for precast structures. Larger skews are possible for Cast-in-Place Structures or elliptical pipe openings when approved by the Engineer.

MAXIMUM PIPE SKEW FOR PRECAST ROUND OPENINGS

NOTE: Lap splice: 20 bar diameter for deformed wire or bar, but not less than vertical wire spacing plus 2" for WWR or 40 bar diameters for smooth wire.

MULTIPLE PIPE CONNECTIONS - PRECAST ROUND STRUCTURES

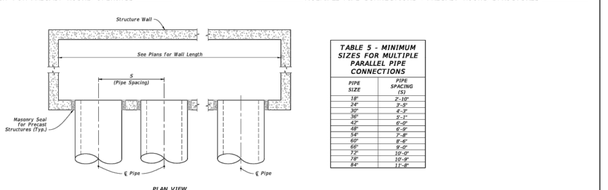


TABLE 5 - MINIMUM SIZES FOR MULTIPLE PARALLEL PIPE CONNECTIONS

PIPE SIZE	PIPE SPACING (S)
18"	3'-0"
24"	3'-6"
30"	4'-3"
36"	5'-1"
42"	6'-0"
48"	6'-9"
54"	7'-8"
60"	8'-6"
66"	9'-4"
72"	10'-0"
78"	10'-9"
84"	11'-8"

MULTIPLE PARALLEL PIPE CONNECTIONS - RECTANGULAR STRUCTURES

MISCELLANEOUS PIPE CONNECTION DETAILS

GENERAL NOTES:

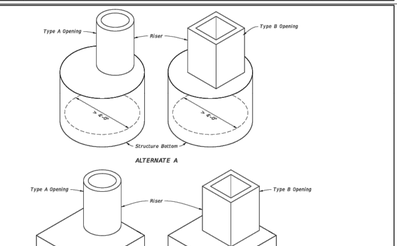
1. Work this Index with Specification 425 and Index 425-001.
2. Type P standard structure bottoms are 4'-0"diameter and smaller (All. A) and 3'-6" square (All. B). Larger standard structure bottoms are designated Type J. Risers are permitted for all structures.
3. Walls of circular structures (All. A)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

REINFORCEMENT NOTES:

1. Locate wall reinforcement in rectangular structures as shown in the WALL REINFORCEMENT SPLICE DETAILS in Index 425-001.
2. Provide a minimum 2"clear cover for all reinforcement unless otherwise noted and except for 36"diameter ASTM C478 units.
3. Additional bars used to restrain hole formers for precast structures with grouted pipe connections may be left flush with the hole surface.
4. Cut or bend reinforcement at pipe openings to maintain cover.
5. Remove exposed ends of reinforcing at precast pipe openings and grouted joints to 1" below the concrete surface and seal with a Type F Epoxy meeting the requirements of Specification 926.
6. Equivalent area smooth or deformed welded wire reinforcement may be substituted in accordance with Index 425-001.

TABLE OF CONTENTS:

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



STRUCTURE BOTTOMS TYPE J AND P

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB	ISSUE DATE:	9/28/23
CHECKED BY:	AH	APPROVED BY:	LB	JOB NO.:	22-548

NO.	BY	DATE	REVISION DESCRIPTION
1	CB	5/30/23	1ST ROUND JURISDICTIONAL COMMENTS
2	CB	8/31/23	2ND ROUND JURISDICTIONAL COMMENTS

3 WORKING DAYS BEFORE YOU DIG CALL SUNSHINE STATE ONE CALL OF FLORIDA 1-800-432-4770

FOR THE LOCATION OF UNDERGROUND UTILITIES

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

LAURIE S. BURCAW, PE #46064

LAURIE S. BURCAW — STATE OF FLORIDA — No. 46064 — PROFESSIONAL ENGINEER

TABLE 6 Minimum Value for H

Pipe Dia.	Skew Angle	H Minimum
18" – 36"	0° – 30°	3'-6" & 4'-0"
	31° – 45°	4'-0" & 4'-6"
42" – 72"	0° – 45°	4'-0" & 4'-6"

BEACON CIVIL ENGINEERING

LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:

GRADING DETAILS

SHEET NUMBER:

C-6.4

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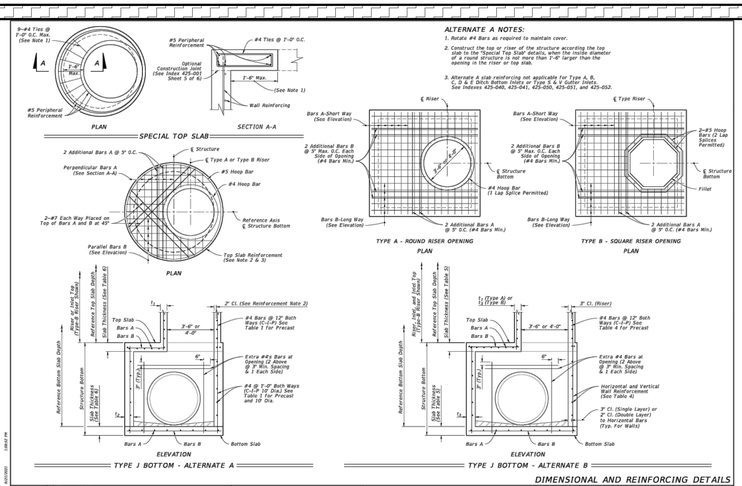


ALTERNATE A NOTES:

1. Rotate #4 Bars as required to maintain cover.
2. Construct the top or riser of the structure according the top slab to the "Special Top Slab" details, when the inside diameter or width of the structure is greater than 7'-0" larger than the opening in the riser or top slab.
3. Alternate A slab reinforcing not applicable for Type A, B, C, D & E Ditch Bottom Inlets or Type S & V Gutter Inlets. See Indexes 425-040, 425-041, 425-050, 425-051, and 425-052.

DIMENSIONAL AND REINFORCING DETAILS

LAST REVISION 11/01/20 — DESCRIPTION:

FDOT FY 2022-23 STANDARD PLANS — STRUCTURE BOTTOMS TYPE J AND P — INDEX 425-010 — SHEET 2 of 4

TABLE 1 - ALTERNATE A - STRUCTURES

TYPE	STRUCTURE/RISER DIAMETER (Ft)	CAST-IN-PLACE STRUCTURES CLASS II CONCRETE			PRECAST ITEMS CLASS II CONCRETE			ASTM C478
		T_1 RISER BOTTOM (In.)	T_2 TOP (In.)	A_s (in^2/ft.)	T_1 RISER BOTTOM (In.)	T_2 TOP (In.)	A_s (in^2/ft.)	T_1 or T_2 (in^2/ft.)
P	3'-0"	6	8	0.20	6	8	0.20	4** 0.103
P	4'-0"	6	8	0.20	6	8	0.20	5** 0.130
J	5'-0"	–	8	0.20	–	8	0.20	6** 0.150
J	6'-0"	–	8	0.20	–	8	0.20	7 0.180
J	7'-0"	–	8	0.20	–	8	0.20	7 0.210
J	8'-0"	–	8	0.20	–	8	0.20	8 0.240
J	10'-0"+/-2"	–	10	0.40/#	–	10	0.40/#	10 0.300
J	12'-0"	–	10	0.60/#	–	12	0.60/#	12 0.360
J	14'-0"	–	–	–	–	40	–	10 –
J	16'-0"	–	–	–	–	40	–	10 –
J	20'-0"	35	–	–	–	–	–	9 –
J	20'-0"	30	–	–	–	10	–	10 19

t_1 and t_2= Wall Thickness.
A_s= Vertical and horizontal areas of reinforcement.
##Provide 0.20 sq. in/ft. at each face, 12" max. bar spacing.
**Modified minimum wall thickness.
***Min. total circumferential reinforcement for continuous steel hoops:
A2 = 0.40 sq. in. for riser section height equal or less than 7'-0" (2 hoop min.)
A_s = 0.60 sq. in. for riser section height more than 7'-0" up to 14'-0" (3 hoop min.)
Areas of reinforcing for precast items are based on Grade 60 reinforcing.
No reduction in the area of reinforcement is allowed for welded wire fabric in Table 1.
Area of vertical reinforcing may be reduced in accordance with ASTM C478.

TABLE 2 - ALTERNATE B SQUARE AND RECTANGULAR STRUCTURES

TYPE	WALL LENGTH (FT.)	MAX. DEPTH (FT.)	WALL THICKNESS (T_1) C/A A_s (in^2/ft.)	PRECAST
			# Riser # Bottom	
P	w.3'-0"	40	8	6
J	4'-0"	40	8	6
J	5'-0"	37	–	6
J	6'-0"	35	–	6
J	5'-0"x7'-0"	40	8	6
J	6'-0"x8'-0"	40	8	6
J	10'-0"x12'-0"	50	10	9
J	12'-0"	50	10	9
J	14'-0"	40	10	9
J	20'-0"	35	–	9
J	20'-0"	30	10	10

See Table 4 for Reinforcing Schedule.

TABLE 3 - REINFORCING SCHEDULE

GRADE 60 BARS OR 65 KSI & 70 KSI WELDED WIRE REINFORCING

SCHEDULE	GRADE 60 AREA (in^2/ft)	GR 60 BARS (In.)	MAXIMUM SPACING WWR EQUIV. AREA 65 KSI (in^2)	70 KSI (in^2)
A12	0.20	12	4	3½
A6	0.20	6	5	4½
B10	0.24	10	8	7½
B5.5	0.24	5½	5	4
C8.5	0.37	8½	6	5
C5	0.37	5	3	2½
D7	0.53	7	6	5
D4.5	0.53	4½	4	3½
E5	0.73	5	4	4
E3	0.73	3	3	3
F5	1.06	5	4	4
F3.5	1.06	3½	3	3
G5	1.45	5	4	4
G3.5	1.45	3½	3	3
H4	1.71	4	3	3

TABLE 4 - WALL DESIGNS - RECTANGULAR STRUCTURES

VERTICAL REINFORCING WALL DEPTH	VERTICAL REINFORCING SCHEDULE	HORIZONTAL REINFORCING WALL DEPTH	HORIZONTAL REINFORCING SCHEDULE	WALL THICKNESS
SIZE: 3'-6" & RISER				
to1'-7" + 40"	A12	to1'-7" + 10"	B10	6"/8"
		10" + 18"	B5.5	6"/8"
		18" + 29"	C8.5	6"/8"
		29" - 40"	C5.5	6"/8"
SIZE: 4'-0"				
to1'-7" + 40"	A12	to1'-7" + 6"	B10	6"/8"
		6" + 10"	B5.5	6"/8"
		10" + 20"	C8.5	6"/8"
		20" + 28"	C5.5	6"/8"
		28" - 40"	D4.5	6"/8"
SIZE: 5'-0"				
to1'-7" + 40"	A12	to1'-7" + 5"	B5.5	6"/8"
		5" + 9"	C8.5	6"/8"
		9" + 15"	C5.5	6"/8"
		15" + 22"	D4.5	6"/8"
		22" - 40"	E3	8"
SIZE: 6'-0"				
to1'-7" + 26"	A12	to1'-7" + 3"	C5.5	6"/8"
		3" + 9"	D4.5	6"/8"
		9" + 16"	E3	8"
26" - 40"	A12	26" - 40"	D7	8"
SIZE: 7'-0"				
to1'-7" + 20"	A12	to1'-7" + 7"	B10	6"/8"
20" - 40"	B10	7" - 10"	B5.5	8"
		10" + 20"	C8.5	8"
		20" + 30"	D7	8"
		30" - 40"	E5	8"
SIZE: 8'-0"				
to1'-7" + 20"	A12	to1'-7" + 6"	B5.5	8"
20" - 40"	B10	6" - 13"	C8.5	8"
		13" + 22"	D7	8"
		22" - 30"	E5	8"
		30" - 40"	F5	8"
SIZE: 9'-0"				
to1'-7" + 12"	A12	to1'-7" + 6"	C8.5	8"
12" + 28"	C8.5	6" - 13"	D7	8"
		13" + 22"	E5	8"
		22" - 31"	F5	8"
		31" - 40"	F5	8"
SIZE: 10'-0"				
to1'-7" + 40"	A12	to1'-7" + 10"	D7	8"
		10" + 17"	E5	8"
		17" - 30"	F5	8"
		30" - 40"	G5	8"

VERTICAL REINFORCING WALL DEPTH	VERTICAL REINFORCING SCHEDULE	HORIZONTAL REINFORCING WALL DEPTH	HORIZONTAL REINFORCING SCHEDULE	WALL THICKNESS
SIZE: 10'-0" (Precast Only)				
	Inside/Outside		Inside/Outside	
26" - 40"	D7 / D7	26" - 40"	F5 / F5	9"
SIZE: 12'-0"				
	Inside/Outside		Inside/Outside	
to1'-7" + 10"	B10 / B10	to1'-7" + 10"	C8.5 / C8.5	10"
10" + 17"	D7 / D7	10" + 17"	D7 / D7	10"
17" + 24"	E5 / E5	17" + 24"	F5 / F5	10"
24" - 40"	F5 / F5	24" - 40"	F5 / F5	10"
SIZE: 12'-0" (Precast Only)				
	Inside/Outside		Inside/Outside	
to1'-7" + 12"	B10 / B10	to1'-7" + 10"	D7 / D7	9"
12" + 24"	C8.5 / C8.5	10" + 17"	D4.5 / D4.5	9"
24" - 40"	D7 / D7	17" + 23"	E5 / E5	9"
		23" + 32"	F5 / F5	9"
		32" - 40"	G5 / G5	9"
SIZE: 14'-0" (Precast Only)				
	Inside/Outside		Inside/Outside	
to1'-7" + 10"	C8.5 / C8.5	to1'-7" + 9"	D7 / D7	9"
10" + 19"	D7 / D7	9" + 17"	D4.5 / D4.5	9"
19" + 27"	E5 / E5	17" + 25"	E5 / E5	9"
27" - 40"	F5 / F5	25" - 40"	F5 / F5	9"
SIZE: 16'-0"				
	Inside/Outside		Inside/Outside	
to1'-7" + 10"	C8.5 / C8.5	to1'-7" + 13"	D7 / D7	10"
10" + 20"	D7 / D7	13" + 20"	E5 / E5	10"
20" + 28"	E5 / E5	20" + 28"	F5 / F5	10"
28" - 40"	F5 / F5	28" - 40"	G5 / G5	10"
SIZE: 18'-0" (Precast Only)				
	Inside/Outside		Inside/Outside	
to1'-7" + 10"	D7 / D7	to1'-7" + 12"	E5 / E5	10"
10" + 19"	E5 / E5	12" + 20"	F5 / F5	10"
19" + 27"	F5 / F5	20" + 30"	G5 / G5	10"
27" - 40"	G5 / G5	30" - 40"	H4 / H4	10"
SIZE: 20'-0" (Precast Only)				
	Inside/Outside		Inside/Outside	
to1'-7" + 8"	C8.5 / C8.5	to1'-7" + 14"	B10 / B10	10"
8" + 19"	D7 / D7	14" + 24"	B5.5 / B5.5	10"
19" + 27"	E5 / E5	24" + 34"	C8.5 / C8.5	10"
27" - 40"	F5 / F5	34" - 40"	C5 / C5	10"
SIZE: 9'-0"				
to1'-7" + 12"	C8.5 / C8.5	to1'-7" + 14"	B10 / B10	8"
12" + 28"	C8.5 / C8.5	14" + 24"	B5.5 / B5.5	8"
		24" + 34"	C8.5 / C8.5	8"
		34" - 40"	C5 / C5	8"
SIZE: 9'-6" (Precast Only)				
to1'-7" + 12"	B10 / B10	to1'-7" + 14"	B10 / B10	8"
12" + 27"	C8.5 / C8.5	14" + 24"	B5.5 / B5.5	8"
27" - 40"	D7 / D7	24" - 34"	C8.5 / C8.5	8"
		34" - 40"	C5 / C5	8"

See Table 4 for Reinforcing Schedule.

TABLE 4 NOTES:

1. Wall depth is measured to the top of the bottom slab for boxes and to the top of the footing for walls with footings.
2. Wall height is the distance between top of lower slab to bottom of upper slab for multiple box units. Wall heights exceeding 5'-6" or 10' for wall lengths exceeding 12'.
3. Wall lengths exceeding 8'-0" require two layers of reinforcing (See Table 4) with 2" of cover from the horizontal bars to the inside and outside faces for each layer.
4. Wall lengths exceeding the dimensions or depths shown in Table 4, or 12'-0" diameter require a special design.
5. Wall thickness and reinforcing for rectangular structures is based on the longer wall length.

TABLES 1, 2, 3, AND 4

LAST REVISION 11/01/20 — DESCRIPTION:

FDOT FY 2022-23 STANDARD PLANS — STRUCTURE BOTTOMS TYPE J AND P — INDEX 425-010 — SHEET 3 of 4

TABLE 5 - SLAB DESIGNS - SQUARE AND RECTANGULAR STRUCTURES

(ALL SLABS 8" THICK EXCEPT AS NOTED - REINFORCING PARALLEL TO SHORT WAY AND LONG WAY)

SHORT-WAY SLAB DEPTH	SHORT-WAY SCHEDULE (Bars A)	LONG-WAY SLAB DEPTH	LONG-WAY SCHEDULE (Bars B)
SIZE: 3'-6" x UNLIMITED			
to1'-7" + 19"	B10	to1'-7" + 24"	B10
19" - 31"	B5.5	24"-40"	B5.5
31" - 40"	C6.5		
SIZE: 4' x UNLIMITED			
to1'-7" + 7"	B5.5	to1'-7" + 19"	C8.5
7" - 22"	C8.5	19" - 28"	D7
22" - 32"	D7	28" - 40"	E5
32" - 40"	E5		
SIZE: 4' x 6'			
to1'-7" + 13"	C6.5	to1'-7" + 19"	C5.5
13" + 29"	D7	19" - 28"	D4.5
29" - 40"	E5	28" - 40"	E3
SIZE: 4' x 7'			
to1'-7" + 6"	C8.5	to1'-7" + 16"	C6.5
6" - 16"	D7	16" - 25"	D4.5
16" - 28"	E5	25" - 40"	E3
28" - 40"	F5		
SIZE: 4' x 8'			
to1'-7" + 12"	C6.5	to1'-7" + 19"	C5.5
12" - 29"	D7	19" - 28"	D4.5
29" - 40"	E5	28" - 40"	E3
SIZE: 4' x 9'			
to1'-7" + 12"	C6.5	to1'-7" + 19"	C5.5
12" - 29"	D7	19" - 28"	D4.5
29" - 40"	E5	28" - 40"	E3
SIZE: 4' x 10'			
to1'-7" + 12"	C6.5	to1'-7" + 19"	C5.5
12" - 29"	D7	19" - 28"	D4.5
29" - 40"	E5	28" - 40"	E3
SIZE: 4' x 11'			
to1'-7" + 12"	C6.5	to1'-7" + 19"	C5.5
12" - 29"	D7	19" - 28"	D4.5
29" - 40"	E5	28" - 40"	E3
SIZE: 4' x 12'			
to1'-7" + 12"	C6.5	to1'-7" + 19"	C5.5
12" - 29"	D7	19" - 28"	D4.5
29" - 40"	E5	28" - 40"	E3
SIZE: 5' x UNLIMITED			
to1'-7" + 7"	C6.5	to1'-7" + 8"	B10
7" - 17"	D7	8" - 14"	B5.5
17" - 24"	E5	14" - 20"	C6.5
24" - 32"	F5	20" - 32"	D7
SIZE: 5' x 6'			
to1'-7" + 7"	C6.5	to1'-7" + 8"	B5.5
7" - 17"	D7	8" - 14"	C6.5
17" - 24"	E5	14" - 21"	D4.5
24" - 32"	F5	21" - 32"	E5
SIZE: 5' x 7'			
to1'-7" + 7"	C6.5	to1'-7" + 8"	B5.5
7" - 17"	D7	8" - 14"	C6.5
17" - 24"	E5	14" - 21"	D4.5
24" - 32"	F5	21" - 32"	E5
SIZE: 5' x 8'			
to1'-7" + 7"	C6.5	to1'-7" + 8"	B5.5
7" - 17"	D7	8" - 14"	C6.5
17" - 24"	E5	14" - 21"	D4.5
24" - 32"	F5	21" - 32"	E5
SIZE: 5' x 9'			
to1'-7" + 7"	C6.5	to1'-7" + 8"	B5.5
7" - 17"	D7	8" - 14"	C6.5
17" - 24"	E5	14" - 21"	D4.5
24" - 32"	F5	21" - 32"	E5
SIZE: 5' x 10'			
to1'-7" + 7"	C6.5	to1'-7" + 8"	C6.5
7" - 17"	D7	8" - 14"	D4.5
17" - 24"	E5	14" - 21"	E5
24" - 32"	F5	21" - 32"	F5
SIZE: 5' x 11'			
to1'-7" + 7"	C6.5	to1'-7" + 8"	C6.5
7" - 17"	D7	8" - 14"	D4.5
17" - 24"	E5	14" - 21"	E5
24" - 32"	F5	21" - 32"	F5
SIZE: 6' x UNLIMITED			
to1'-7" + 8"	C6.5	to1'-7" + 8"	B5.5
8" - 14"	D7	8" - 14"	C6.5
14" - 24"	E5	14" - 21"	D4.5
24" - 32"	F5	21" - 32"	E5
SIZE: 6' x 6'			
to1'-7" + 8"	C6.5	to1'-7" + 8"	C6.5
8" - 14"	D7	8" - 14"	D4.5
14" - 24"	E5	14" - 21"	E5
24" - 32"	F5	21" - 32"	F5
SIZE: 6' x 7'			
to1'-7" + 8"	C6.5	to1'-7" + 8"	C6.5
8" - 14"	D7	8" - 14"	D4.5
14" - 24"	E5	14" - 21"	E5
24" - 32"	F5	21" - 32"	F5
SIZE: 6' x 8'			
to1'-7" + 8"	C6.5	to1'-7" + 8"	C6.5
8" - 14"	D7	8" - 14"	D4.5
14" - 24"	E5	14" - 21"	E5
24" - 32"	F5	21" - 32"	F5
SIZE: 6' x 9'			
to1'-7" + 8"	C6.5	to1'-7" + 8"	C6.5
8" - 14"	D7	8" - 14"	D4.5
14" - 24"	E5	14" - 21"	E5
24" - 32"	F5	21" - 32"	F5
SIZE: 6' x 10'			
to1'-7" + 8"	C6.5	to1'-7" + 8"	C6.5
8" - 14"	D7	8" - 14"	D4.5
14" - 24"	E5	14" - 21"	E5
24" - 32"	F5	21" - 32"	F5
SIZE: 6' x 11'			
to1'-7" + 8"	C6.5	to1'-7" + 8"	C6.5
8" - 14"	D7	8" - 14"	D4.5
14" - 24"	E5	14" - 21"	E5
24" - 32"	F5	21" - 32"	F5
SIZE: 7' x 7'			
to1'-7" + 8"	C6.5	to1'-7" + 8"	C6.5
8" - 14"	D7	8" - 14"	D4.5
14" - 24"	E5	14" - 21"	E5
24" - 32"	F5	21" - 32"	F5
SIZE: 7' x 9'			
to1'-7" + 9"	C6.5	to1'-7" + 9"	C6.5
9" - 15"	D7	9" - 15"	D4.5
15" - 25"	E5	15" - 23"	E5
25" - 34"	F5	23" - 32"	F5
SIZE: 7' x 10'			
to1'-7" + 9"	C6.5	to1'-7" + 9"	C6.5
9" - 15"	D7	9" - 15"	D4.5
15" - 25"	E5	15" - 23"	E5
25" - 34"	F5	23" - 32"	F5
SIZE: 7' x 11'			
to1'-7" + 9"	C6.5	to1'-7" + 9"	C6.5
9" - 15"	D7	9" - 15"	D4.5
15" - 25"	E5	15" - 23"	E5
25" - 34"	F5	23" - 32"	F5
SIZE: 7' x 12'			
to1'-7" + 9"	C6.5	to1'-7" + 9"	C6.5
9" - 15"	D7	9" - 15"	D4.5
15" - 25"	E5	15" - 23"	E5
25" - 34"	F5	23" - 32"	F5

TABLE 6 - SLAB DESIGNS ROUND STRUCTURES

SLAB DEPTH	SLAB THICKNESS	REINF. (J-WAY) SCHEDULE
SIZE: 3'-6" DIAMETER		
2'-13"	6" Precast	C6.5
0.5" x 30"	8"	A6
30"-42"	8"	B5.5
SIZE: 4'-0" DIAMETER		
to0.5" x 13"	8"	A6
13" x 30"	8"	B5.5
30"-42"	8"	C6.5
SIZE: 5'-0" DIAMETER		
to0.5" x 13"	8"	B5.5
13" x 26"	8"	C6.5
26" x 35"	8"	D7
35"-48"	8"	D4.5
SIZE: 6'-0" DIAMETER		
to0.5" x 9"	8"	B5.5
9" x 15"	8"	C6.5
15" x 22"	8"	C5.5
22" x 30"	8"	D4.5
30"-48"	8"	E5
SIZE: 7'-0" DIAMETER		
to0.5" x 6"	8"	C3.5
6" x 16"	8"	D4.5
16" x 23"	8"	E5
23" x 27"	8"	E3
27"-48"	8"	F3.5
SIZE: 8'-0" DIAMETER		
to0.5" x 10"	8"	D4.5
10" x 16"	8"	E5
16" x 19"	8"	E3
19" x 25"	8"	F3.5
25"-48"	10"	F5
SIZE: 10'-0" DIAMETER		
to0.5" x 12"	10"	D4.5
12" x 20"	10"	E5
20" x 28"	10"	F5
28"-60"	10"	G3.5
SIZE: 12'-0" DIAMETER		
to0.5" x 9"	10"	D4.5
9" x 13"	10"	E5
13" x 18"	10"	F5
18" x 30"	10"	G3.5
26"-82"	12"	G3.5

SLAB AND WALL DESIGN TABLE NOTES

1. Size is the inside dimension(s) of a structure.
2. Slab reinforcement is appropriate for top, intermediate, and bottom slabs.
3. Bottom Slabs for precast 3'-0" x 3'-0" rectangular structures at 1% depth or less, may be 6" thick.
4. Slab depth is measured from finished grade to top of slab.
5. Reinforcing schedules with larger areas of steel may be substituted for schedules with smaller bar or wire spacing, except that Schedule B10 may not be substituted for Schedule A6. See Index 425-001 for allowable bar spacing adjustments when larger areas of reinforcing are substituted.

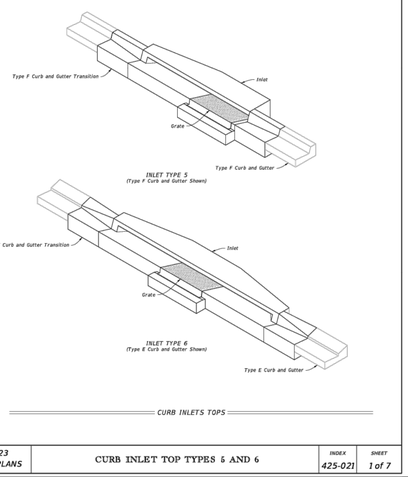
TABLES 5 AND 6

LAST REVISION 11/01/20 — DESCRIPTION:

FDOT FY 2022-23 STANDARD PLANS — STRUCTURE BOTTOMS TYPE J AND P — INDEX 425-010 — SHEET 4 of 4

GENERAL NOTES:

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



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2	Type 5 and 6 Dimensional Details
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6	Alternate Welded Wire Reinforcing (WWR) Details
7	Grate, Anchor, and Grouting Details

LAST REVISION 11/01/20 — DESCRIPTION:

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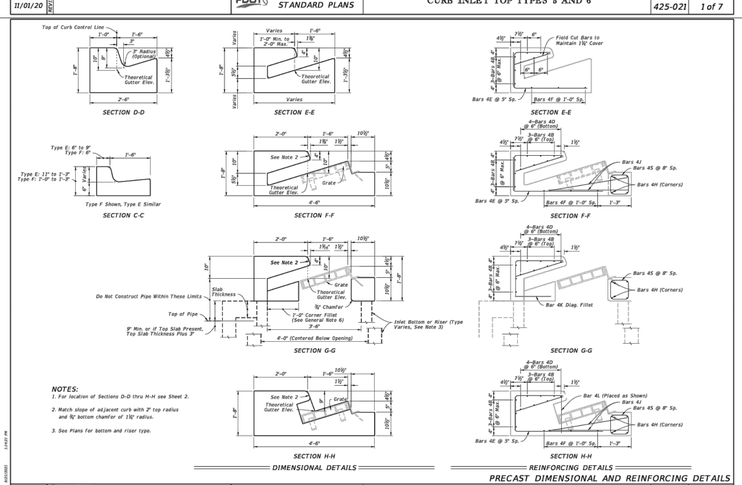

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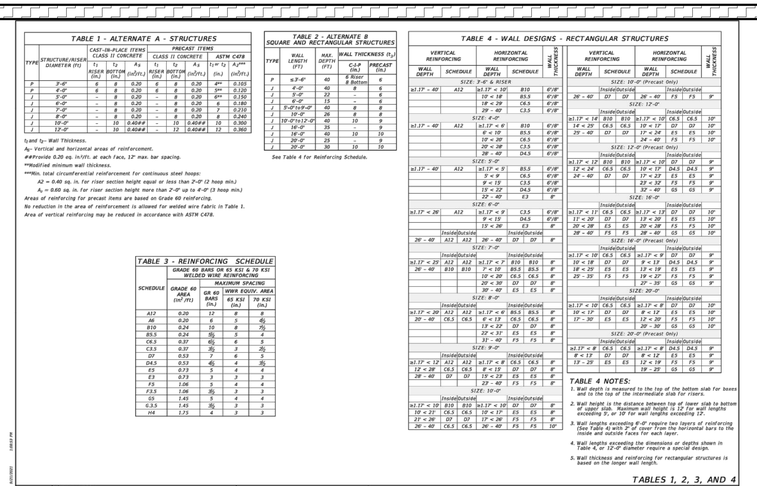

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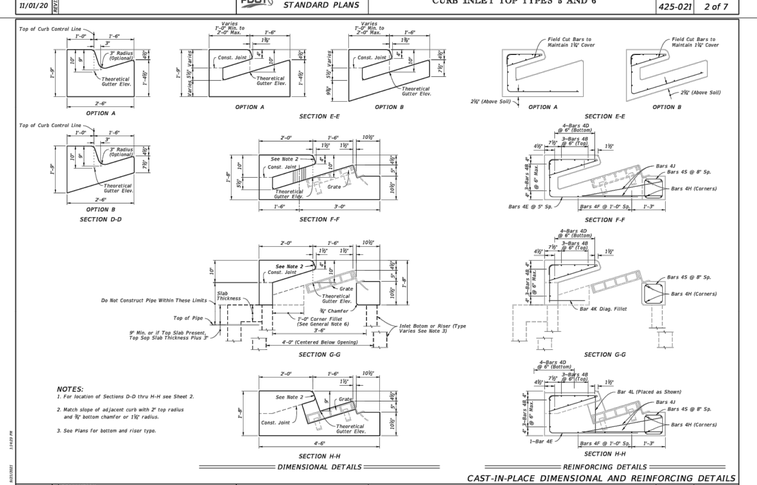

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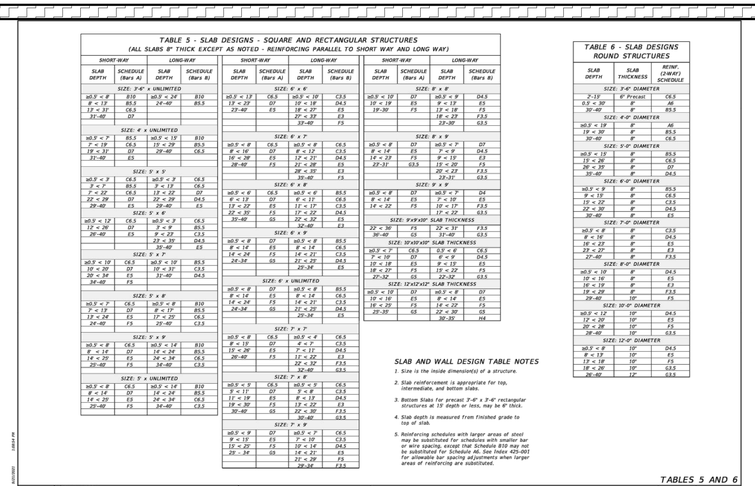


LAST REVISION 11/01/20 — DESCRIPTION:

FDOT FY 2022-23 STANDARD PLANS — CURB INLET TOP TYPES 5 AND 6 — INDEX 425-021 — SHEET 3 of 7

BILL OF REINFORCING STEEL

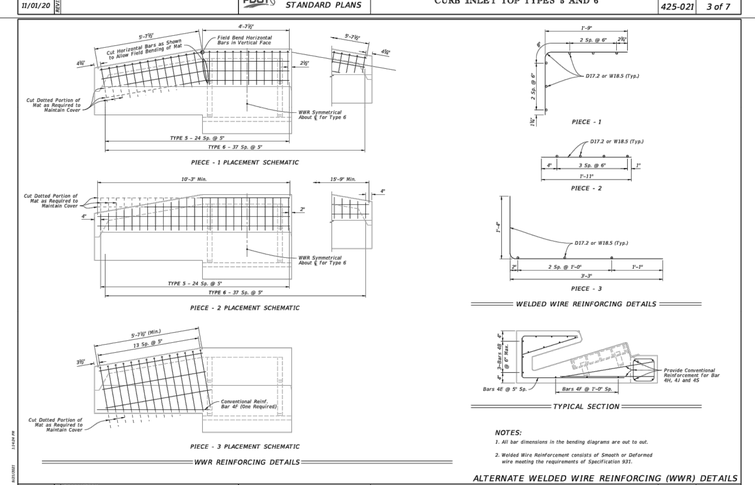
MARK	SIZE	TYPE 5 INLET NO.	TYPE 5 INLET LENGTH	TYPE 6 INLET NO.	TYPE 6 INLET LENGTH
A (Precast)	4	25	3'-7"	38	3'-7"
A (C-I-P)	4	25	2'-10"	38	2'-10"
B	4	6	10'-3"	6	13'-9"
C	4	25	11" to 1'-11"	38	11" to 1'-11"
D	4	6	10'-3"	4	13'-9"
E	4	16	4'-115/8"	30	4'-115/8"
F	4	3	6'-0"	6	6'-0"
H	4	4	6'-6"	4	6'-6"
J	4	4	3'-0"	4	3'-0"
K (Fillet)	4	2	2'-3"	2	2'-3"
L (Precast)	4	1	1'-4"	0	----
L (C-I-P)	4	10	1'-4"	9	1'-4"
S	4	7	9'-2"	7	9'-2"

NOTES:

1. All bar dimensions in the bending diagrams are out to out.
2. Bars 4A and 4E may be combined into a single bar.
3. Welded Wire Reinforcement consists of smooth or deformed wire meeting the requirements of Specification 931.

LAST REVISION 11/01/20 — DESCRIPTION:

FDOT FY 2022-23 STANDARD PLANS — CURB INLET TOP TYPES 5 AND 6 — INDEX 425-021 — SHEET 6 of 7



LAST REVISION 11/01/20 — DESCRIPTION:

FDOT FY 2022-23 STANDARD PLANS — CURB INLET TOP TYPES 5 AND 6 — INDEX 425-021 — SHEET 3 of 7

ISSUED FOR PERMITTING

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE	NO.:	REVISION DESCRIPTION
LB	CB	LB	AH	9/18/23		ISSUE DATE:
						JOB NO.: 22-548
				5/30/23	1	1ST ROUND JURISDICTIONAL COMMENTS
BY		CB	CB	8/31/23	2	2ND ROUND JURISDICTIONAL COMMENTS

3 WORKING DAYS BEFORE YOU DIG CALL SUNSHINE STATE ONE CALL OF FLORIDA 1-800-432-4770
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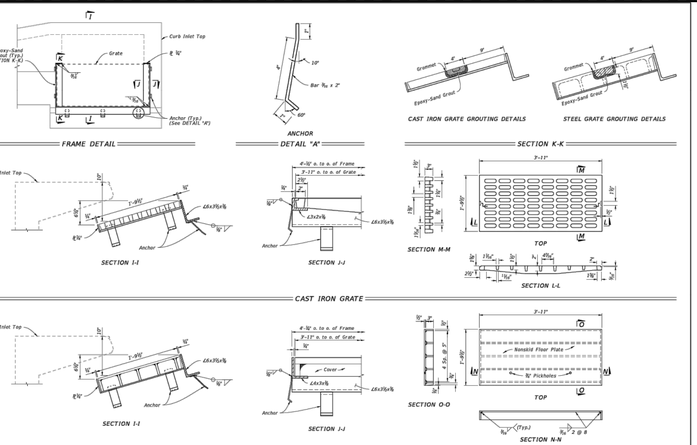
FLORIDA 33542

SHEET NAME:

GRADING DETAILS

SHEET NUMBER:

C-6.5



GRATE, ANCHOR, AND GROUTING DETAILS

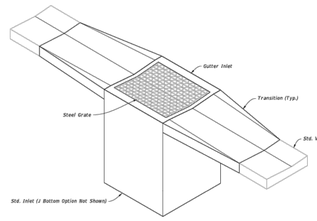
LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2022-23 STANDARD PLANS	CURB INLET TOP TYPES 5 AND 6	INDEX 425-021	SHEET 7 of 7

GENERAL NOTES:

1. Work this Index with Index 425-001 and Index 425-010.
2. All reinforcing is Grade 60 bars with 2" min. cover unless otherwise noted. See Index 425-001 for equivalent area of welded wire fabric. Cut or bend bars out of way of pipe to clear pipe ℄ℊ.
3. Chamfer all exposed edges and corners ¾" or tool to ¾" radius.
4. Dimensions are for both precast and cast-in-place inlets unless otherwise noted.

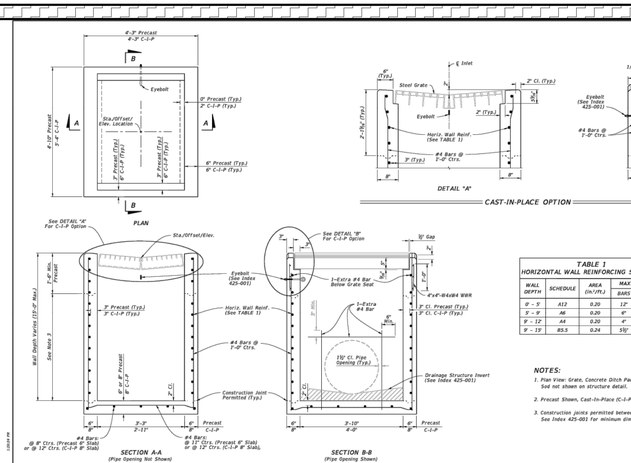
TABLE OF CONTENTS:

Sheet	Description
1	General Notes and Contents
2	Dimensional and Reinforcing Details
3	Steel Grate Details
4	Alternate A Structure Bottom – Top Slab Details



GUTTER INLET TYPE V
(Pipe Opening Not Shown)

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2022-23 STANDARD PLANS	GUTTER INLET TYPE V	INDEX 425-041	SHEET 1 of 4



DIMENSIONAL AND REINFORCING DETAILS

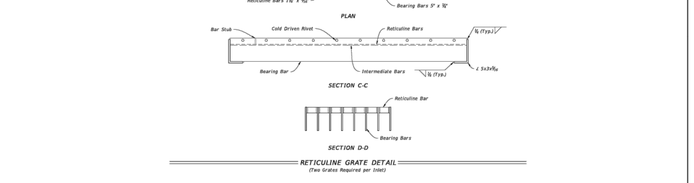
LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2022-23 STANDARD PLANS	GUTTER INLET TYPE V	INDEX 425-041	SHEET 2 of 4

TABLE 1
HORIZONTAL WALL REINFORCING SCHEDULE

WALL DEPTH	SCHEDULE	AREA (in²/ft.)	MAX. SPACING BARS	MAX. SPACING WWR
0' - 5'	A12	0.20	12"	8"
5' - 9'	A6	0.20	6"	5"
9' - 12'	A4	0.20	4"	3"
9' - 15'	B5.5	0.24	5½"	5"

NOTES:

1. Plan View: Grate, Concrete Ditch Pavement, and Sod not shown on structure detail.
2. Precast Shown, Cast-In-Place (C-I-P) similar.
3. Construction joints permitted between these limits. See Index 425-001 for minimum dimensions.



RETICULINE GRATE DETAIL
(Two Grates Required per Inlet)

STEEL GRATE DETAILS

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2022-23 STANDARD PLANS	GUTTER INLET TYPE V	INDEX 425-041	SHEET 3 of 4

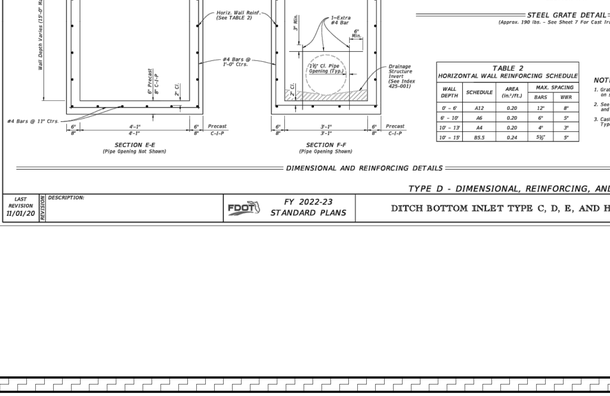


TABLE 3
TOP SLAB REINFORCING SCHEDULE

SCHEDULE	GRADE 60 (BAR) OR 65 KSI & 70 KSI (WIRE FABRIC) In²/Ft.
A	0.20
B	0.24
C	0.37
D	0.53
E	0.73
F	1.06
G	1.45

TABLE 4
TOP SLAB WITH CENTERED OPENING

STRUCTURE DEPTH	SLAB THICKNESS	REINFORCING (2 WAY) SCHEDULE
SIZE: 5'-0"		
≥0.5'<10'	9½"	C
10'<40'	9½"	D
SIZE: 6'-0"		
0.5'<8'	9½"	B
8'<10'	9½"	C
10'<30'	9½"	D
30'<37'	9½"	E
37'-40'	9½"	G
SIZE: 8'-0"		
≥0.5'<9'	11½"	C
9'<11'	11½"	D
11'<23'	11½"	E
23'<33'	11½"	F
33'-40'	11½"	G

TABLE 2
TOP SLAB OPENING

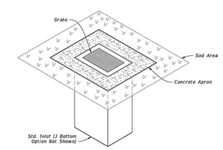
DIAMETER	OPENING SIZE Min.	Max.
5'-0" to 8'-0"	3'-11" x 4'-0"	3'-3" x 3'-10"

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2022-23 STANDARD PLANS	GUTTER INLET TYPE V	INDEX 425-041	SHEET 4 of 4

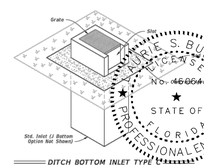
ALTERNATE A STRUCTURE BOTTOM - TOP SLAB DETAILS

GENERAL NOTES:

1. Work this Index with Index 425-001 and Index 425-010.
2. Chamfer all exposed edges and corners ¾" chamfer or tooled to ¾" radius.
3. All reinforcing is Grade 60 bars with 2" minimum. cover unless otherwise noted. Cut or bend bars for 1½" clearance around pipe opening. Provide one additional #4 bar above and at each side of pipe opening.
4. Use Concrete Apron on inlets without slots and inlets with non-traversable slots only when called for in the Plans.
5. Quantities are for informational and estimating purposes only.



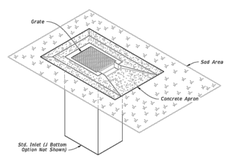
DITCH BOTTOM INLET TYPE C
TRAVERSABLE
(Without Slot – Type D, E, and H Similar, Pipe Connection Not Shown)



DITCH BOTTOM INLET TYPE C
NON-TRAVERSABLE
(Slot > 7" Shown – Type D, E, and H Similar, Pipe Connection Not Shown)

TABLE OF CONTENTS:

Sheet	Description
1	General Notes and Contents
2	Type C – Dimensional, Reinforcing, and Grate Details
3	Type D – Dimensional, Reinforcing, and Grate Details
4	Type E – Dimensional, Reinforcing, and Grate Details
5	Type H (2 & 3 Grate) – Dimensional, Reinforcing, and Steel Grate Details
6	Type H (4 Grate) – Dimensional, Reinforcing, and Steel Grate Details
7	Cast Iron Grate Details
8	Non-Traversable Inlet Details
9	Traversable Inlet Without Slot Details
10	Traversable Inlet With Slot Details
11	Case 1 – Add Traversable Slots to Existing Inlets
12	Case 2 – Add Traversable Slots (Partial) to Existing Inlets
13	Case 3 – Add Traversable Slots (Partial) to Existing Inlets and Ditch Block
14	Alternate A Structure Bottom – Top Slab Details



DITCH BOTTOM INLET TYPE C
NON-TRAVERSABLE
(Single Slot < 7" Shown, Double Slot, Type D, and E Similar, Pipe Connection Not Shown)

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2022-23 STANDARD PLANS	DITCH BOTTOM INLET TYPE C, D, E, AND H	INDEX 425-052	SHEET 1 of 14

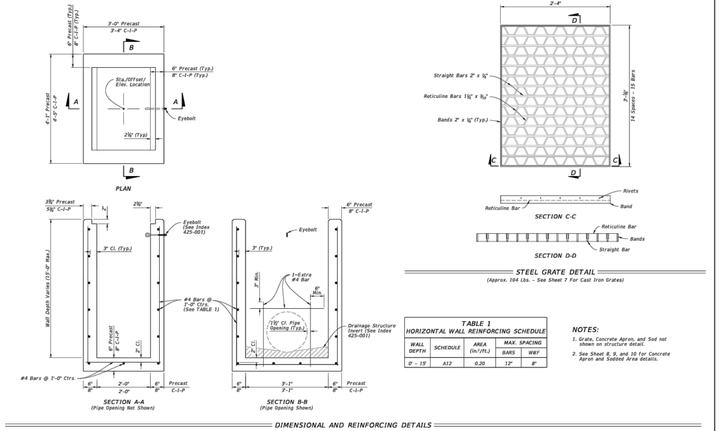


TABLE 1
HORIZONTAL WALL REINFORCING SCHEDULE

WALL DEPTH	SCHEDULE	AREA (in²/ft.)	MAX. SPACING BARS	MAX. SPACING WWR
0' - 5'	A12	0.20	12"	8"
5' - 9'	A6	0.20	6"	5"
9' - 12'	A4	0.20	4"	3"
9' - 15'	B5.5	0.24	5½"	5"

NOTES:

1. Grate, Concrete Apron, and Sod not shown on structure detail.
2. See Sheet 6, 9, and 10 for Concrete Apron and Sodded Area details.

DIMENSIONAL AND REINFORCING DETAILS

TYPE C - DIMENSIONAL, REINFORCING, AND STEEL GRATE DETAILS

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2022-23 STANDARD PLANS	DITCH BOTTOM INLET TYPE C, D, E, AND H	INDEX 425-052	SHEET 2 of 14

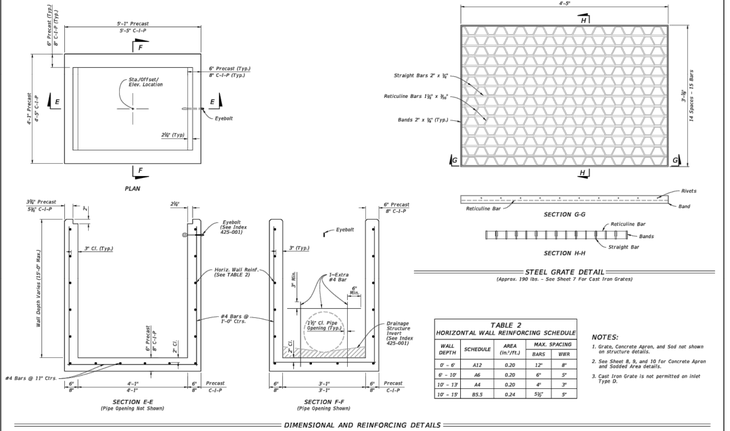


TABLE 2
HORIZONTAL WALL REINFORCING SCHEDULE

WALL DEPTH	SCHEDULE	AREA (in²/ft.)	MAX. SPACING BARS	MAX. SPACING WWR
0' - 6'	A12	0.20	12"	8"
6' - 10'	A6	0.20	6"	5"
10' - 13'	A4	0.20	4"	3"
10' - 15'	B5.5	0.24	5½"	5"

NOTES:

1. Grate, Concrete Apron, and Sod not shown on structure details.
2. See Sheet 6, 9, and 10 for Concrete Apron and Sodded Area details.
3. Cast Iron Grate is not permitted on inlet Type D.

DIMENSIONAL AND REINFORCING DETAILS

TYPE D - DIMENSIONAL, REINFORCING, AND STEEL GRATE DETAILS

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2022-23 STANDARD PLANS	DITCH BOTTOM INLET TYPE C, D, E, AND H	INDEX 425-052	SHEET 3 of 14

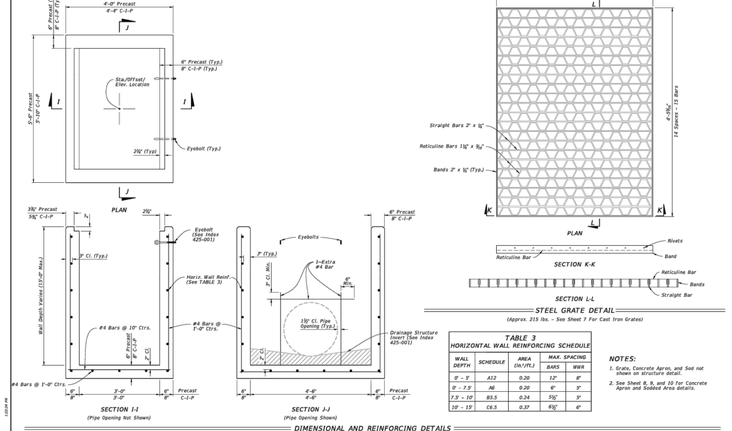


TABLE 3
HORIZONTAL WALL REINFORCING SCHEDULE

WALL DEPTH	SCHEDULE	AREA (in²/ft.)	MAX. SPACING BARS	MAX. SPACING WWR
0' – 7.5'	A12	0.20	12"	8"
7.5' – 10'	B5.5	0.24	5½"	5"
10' – 15'	C6.5	0.37	4½"	4"

NOTES:

1. Grate, Concrete Apron, and Sod not shown on structure detail.
2. See Sheet 6, 9, and 10 for Concrete Apron and Sodded Area details.

DIMENSIONAL AND REINFORCING DETAILS

TYPE E - DIMENSIONAL, REINFORCING, AND STEEL GRATE DETAILS

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2022-23 STANDARD PLANS	DITCH BOTTOM INLET TYPE C, D, E, AND H	INDEX 425-052	SHEET 4 of 14

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NO.	BY	DATE	REVISION DESCRIPTION
1	CB	5/30/23	1ST ROUND JURISDICTIONAL COMMENTS
2	CB	8/31/23	2ND ROUND JURISDICTIONAL COMMENTS

DESIGNED BY: LB | DRAWN BY: CB | ISSUE DATE: 9/28/23
CHECKED BY: AH | APPROVED BY: LB | JOB NO.: 22-548

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CALUMET ROAD
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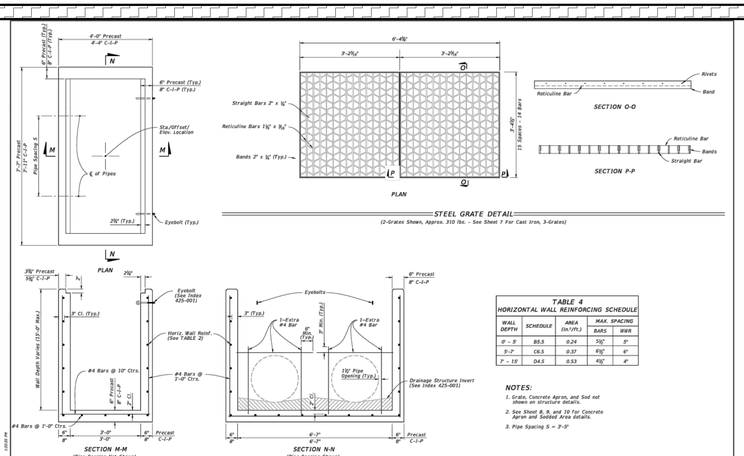
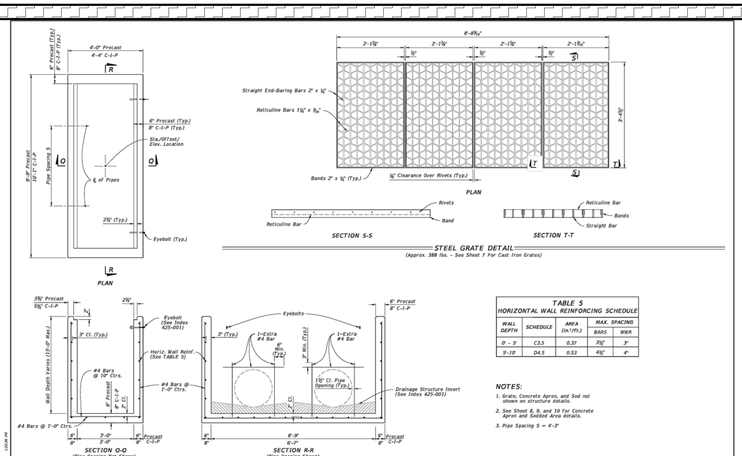
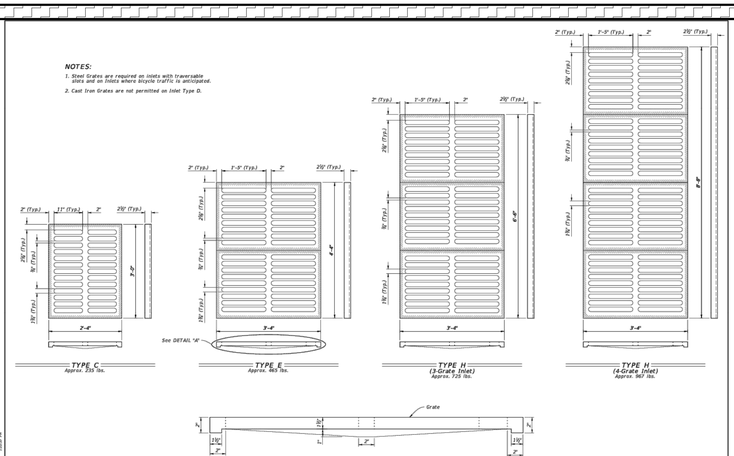
PASCO COUNTY,
FLORIDA 33542

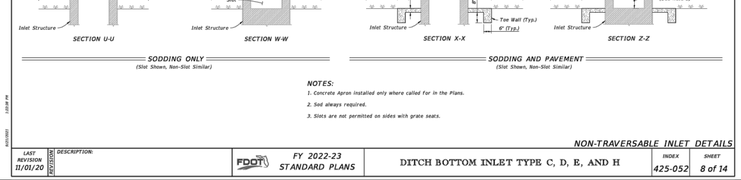
SHEET NAME:
GRADING DETAILS

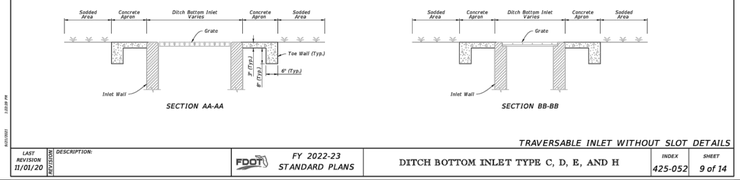
SHEET NUMBER:
C-6.6

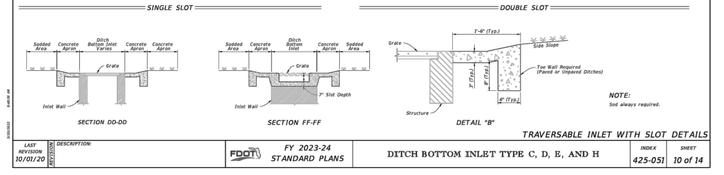


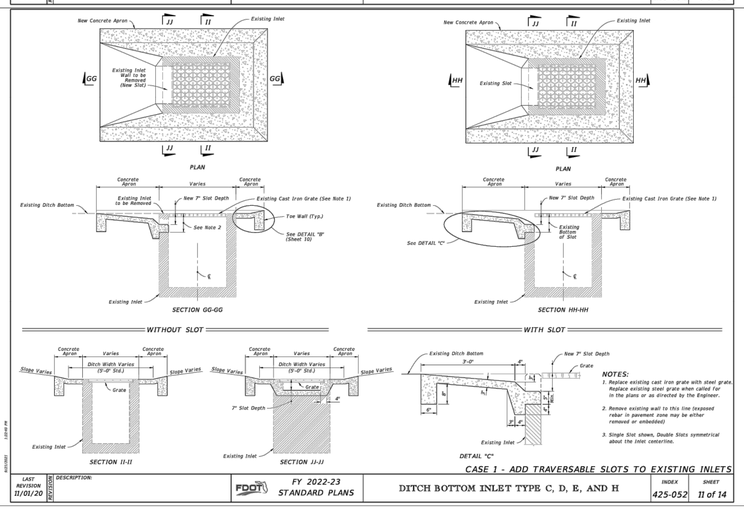


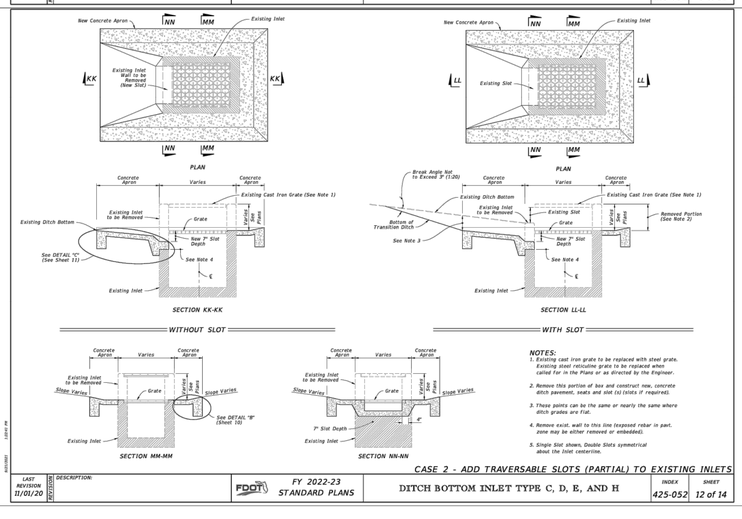


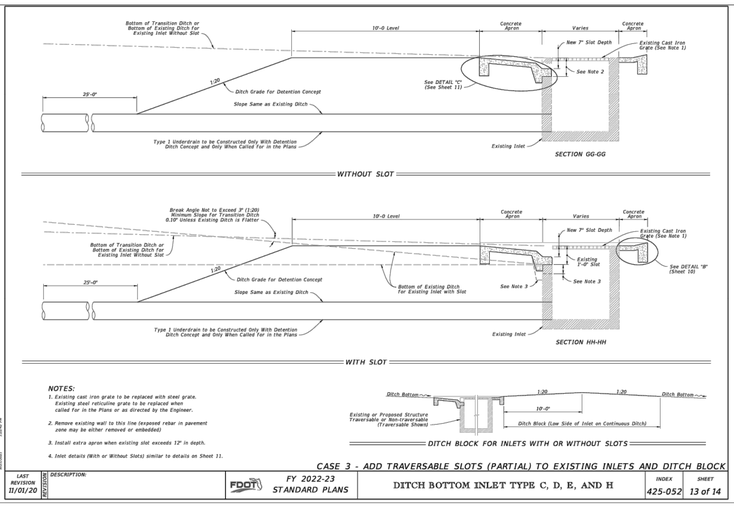












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DESIGNED BY:	LB	DRAWN BY:	CB
CHECKED BY:	AH	APPROVED BY:	LB

ISSUE DATE: 9/28/23
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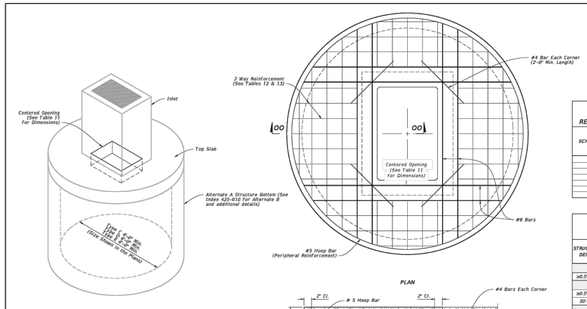
FLORIDA 33542

SHEET NAME:
GRADING DETAILS

SHEET NUMBER:
C-6.7



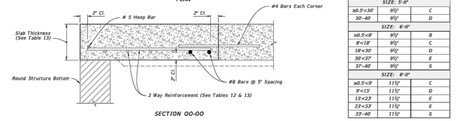


TABLE 11
TOP SLAB OPENINGS

DIAMETER	OPENING SIZE	
	Min.	Max.
4'-0"	2'-0" x 3'-7"	2'-9" x 3'-1"
5'-0"	2'-0" x 3'-7"	3'-1" x 4'-1"
6'-0"	2'-0" x 3'-7"	3'-0" x 4'-8"
8'-0"	2'-0" x 3'-7"	3'-0" x 4'-8"

TABLE 12
TOP SLAB REINFORCING SCHEDULE

SCHEDULE	GRADE 60 (BAR) OR 65 KSI & 70 KSI (WIRE REINFORCING) MATERIAL
A	0.20
B	0.29
C	0.44
D	0.53
E	0.73
F	1.06
G	1.45

TABLE 13
TOP SLAB WITH CENTERED OPENING

STRUCTURE DEPTH	SLAB THICKNESS	REINFORCING (2 WAY) SCHEDULE
SIZE: 4'-0"		
≈0.5'<10'	9½"	B
SIZE: 5'-0"		
≈0.5'<10'	9½"	C
10'-40'	9½"	D
SIZE: 6'-0"		
≈0.5'<8'	9½"	B
8'<16'	9½"	C
16'<30'	9½"	D
30'<37'	9½"	E
37'-40'	9½"	G
SIZE: 8'-0"		
≈0.5'<9'	11½"	C
9'<13'	11½"	D
13'<23'	11½"	E
23'<33'	11½"	E
33'-40'	11½"	G

TOP SLAB REINFORCEMENT DETAILS

ALTERNATE A STRUCTURE BOTTOM - TOP SLAB DETAILS

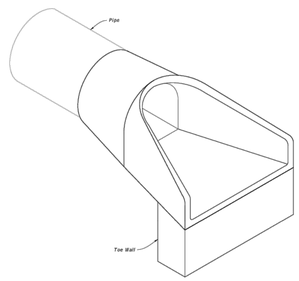
LAST REVISION 10/01/20	DESCRIPTION:	FDOT FY 2022-23 STANDARD PLANS	DITCH BOTTOM INLET TYPE C, D, E, AND H	INDEX 425-052	SHEET 14 of 14

GENERAL NOTES:

1. Provide Flared end sections meeting the requirements of ASTM C76 with the exception that dimensions and reinforcement meet the criteria in the table on sheet 2. Circumferential reinforcement may consist of either one cage or two cages of steel. Use concrete compressive strength of 4000 psi.
2. Connections between the flared end section and the pipe culvert may be any of the following types unless otherwise shown on the plans.
   a. Joints meeting the requirements of Section 449 of the Standard Specifications (O-Ring Gasket). Flared end section joint dimensions and tolerances shall be identical or compatible to those used in the pipe culvert joint. When pipe culvert and flared end section manufacturers are different, the manufacturer of the flared end sections must certify the compatibility of joint designs.
   b. Joints sealed with preformed plastic gaskets. Use gaskets that meet the requirements Specification 942-2 of the Standard Specifications and the minimum sizes for gaskets as specified for equivalent sizes of elliptical pipe.
   c. Reinforced concrete jackets, as detailed on sheet 2. When non-coated corrugated metal pipe is called for in the Plans, use bituminous coated pipe in the jacketed area as specified on Index 430-001. Construct concrete jacket as specified in Index 430-001.
3. Cast Toe Walls in place using Class II Concrete.
4. On skewed pipe culverts place the flared end sections in line with the pipe culvert. Warp the side slopes as required to fit the flared end sections.
5. Quantities shown are for estimating purposes only.

TABLE OF CONTENTS:

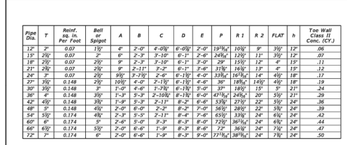
Sheet	Description
1	General Notes and Contents
2	Straight Flare, Optional Shape Details, and Reinforced Concrete Jacket Detail



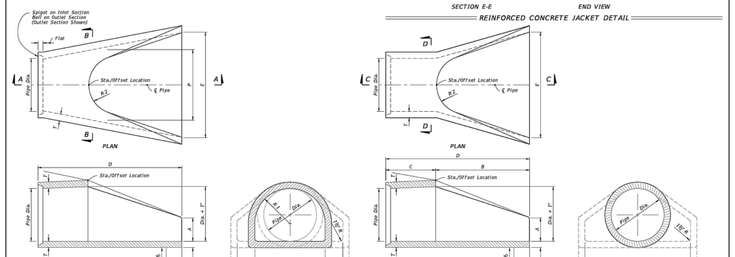
FLARED END SECTION

LAST REVISION 11/01/21	DESCRIPTION:	FDOT FY 2022-23 STANDARD PLANS	FLARED END SECTION	INDEX 430-020	SHEET 1 of 2

Pipe Dia.	T	Reinf. Weight Per Foot	Bell Height Spigot	A	B	C	D	E	P	R1	R 2	FLAT	h	Toe Wall Volume Conc. (C.Y.)
12"	2"	0.07	1½"	9"	2'-0"	4'-0⅝"	6'-0⅝"	2'-0"	19⅝"	10½"	9"	9½"	12"	.06
15"	2½"	0.07	2"	9"	2'-3"	3'-10"	6'-1"	2'-0"	24⅝"	12½"	11"	10½"	12"	.07
18"	2½"	0.07	2½"	9"	2'-3"	3'-10"	6'-1"	2'-0"	29"	15½"	12"	9"	13"	.11
21"	2½"	0.07	2½"	9"	2'-11"	3'-2"	6'-1"	2'-0"	33⅞"	19½"	13"	8"	13"	.12
24"	3"	0.07	2½"	9½"	3'-10½"	2'-6"	6'-1⅜"	4'-0"	38⅝"	16⅝"	14"	4½"	18"	.17
27"	3½"	0.148	2½"	10½"	4'-0"	2'-11½"	6'-1⅜"	4'-0"	38"	18⅝"	14½"	4½"	18"	.19
30"	3½"	0.148	3"	11'-0"	4'-0"	3'-3⅝"	6'-1⅜"	5'-0"	37"	18½"	15"	5"	21"	.24
36"	4"	0.148	3½"	1'-3"	5'-3"	2'-10½"	6'-1⅜"	6'-0"	47⅛"	24½"	20"	5½"	21"	.39
42"	4½"	0.148	3½"	1'-3"	5'-3"	3'-1½"	6'-2"	6'-6"	53⅞"	27½"	22"	5½"	24"	.46
48"	5"	0.148	4½"	1'-3"	6'-0"	3'-2"	7'-0"	7'-0"	59½"	28½"	22"	5½"	24"	.59
54"	5½"	0.174	4½"	2'-3"	5'-3"	2'-11"	8'-4"	7'-6"	65½"	33½"	24"	4½"	24"	.62
60"	6"	0.174	5"	2'-6"	5'-0"	3'-3"	8'-3"	8'-0"	73½"	36½"	24"	4½"	24"	.64
66"	6½"	0.174	5½"	2'-0"	6'-6"	1'-9"	8'-3"	8'-6"	73"	36½"	24"	7½"	24"	.67
72"	7"	0.174	6"	2'-0"	6'-6"	1'-9"	8'-3"	9'-0"	73⅞"	36⅝"	24"	7½"	24"	.70



REINFORCED CONCRETE JACKET DETAIL



STRAIGHT FLARE — OPTIONAL SHAPE

LAST REVISION 11/01/21	DESCRIPTION:	FDOT FY 2022-23 STANDARD PLANS	FLARED END SECTION	INDEX 430-020	SHEET 2 of 2

ISSUED FOR PERMITTING

DESIGNED BY:	LB	ISSUE DATE:	9/28/23
DRAWN BY:	CB	JOB NO.:	22-548
APPROVED BY:	LB		

NO.	BY	DATE	REVISION DESCRIPTION
1	CB	5/30/23	1ST ROUND JURISDICTIONAL COMMENTS
2	CB	8/31/23	2ND ROUND JURISDICTIONAL COMMENTS

3 WORKING DAYS BEFORE YOU DIG CALL SUNSHINE STATE ONE CALL OF FLORIDA 1-800-432-4770
FOR THE LOCATION OF UNDERGROUND UTILITIES

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

LAURIE S. BURCAW LICENSE No. 46064 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

LAURIE S. BURCAW, PE #46064

BEACON ENGINEERING
CIVIL ENGINEERS
LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
GRADING DETAILS

SHEET NUMBER:
C-6.8

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Advanced Drainage Systems, Inc.

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MC-3500 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-3500.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM

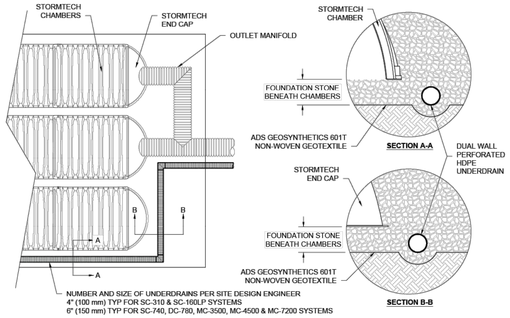
1. STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONE/SHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
10. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
11. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

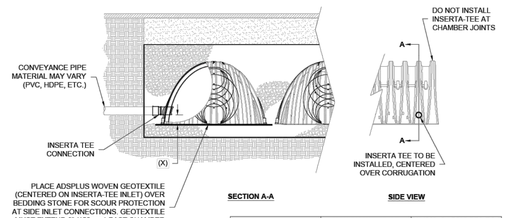
1. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



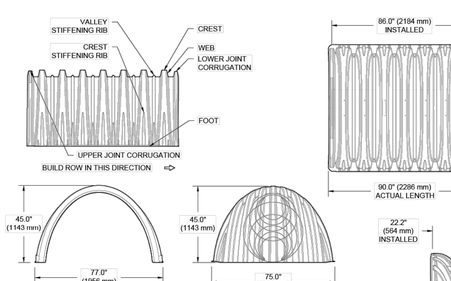
5 UNDERDRAIN DETAIL



CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)
MC-7200	12" (300 mm)	8" (200 mm)
INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON		

NOTES:
- PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.
- CONTACT ADS ENGINEERING SERVICES IF INSERTA TEE INLET MUST BE RAISED AS NOT ALL INVERTS ARE POSSIBLE.

6 INSERTA-TEE SIDE INLET DETAIL



NOMINAL CHAMBER SPECIFICATIONS

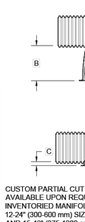
SIZE (W X H X INSTALLED LENGTH)		77.0" X 45.0" X 86.0"	(1956 mm X 1143 mm X 2184 mm)
CHAMBER STORAGE		109.9 CUBIC FEET	(3.11 m³)
MINIMUM INSTALLED STORAGE*		175.0 CUBIC FEET	(4.96 m³)
WEIGHT		134 lbs.	(60.8 kg)
NOMINAL END CAP SPECIFICATIONS			
SIZE (W X H X INSTALLED LENGTH)		75.0" X 45.0" X 22.2"	(1905 mm X 1143 mm X 564 mm)
END CAP STORAGE		14.9 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*		45.1 CUBIC FEET	(1.28 m³)
WEIGHT		49 lbs.	(22.2 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION, 6" (152 mm) STONE BETWEEN CHAMBERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"
END CAPS WITH A WELDED CROWN PLATE END WITH "C"

PART #	STUB	B	C
MC3500EPP06T	6" (150 mm)	33.21" (844 mm)	---
MC3500IEPP06B		---	0.66" (17 mm)
MC3500IEPP08T	8" (200 mm)	31.16" (791 mm)	---
MC3500IEPP08B		---	0.81" (21 mm)
MC3500IEPP10T	10" (250 mm)	29.04" (738 mm)	---
MC3500IEPP10B		---	0.93" (24 mm)
MC3500IEPP12T	12" (300 mm)	26.36" (670 mm)	---
MC3500IEPP12B		---	1.35" (34 mm)
MC3500IEPP15T	15" (375 mm)	23.39" (594 mm)	---
MC3500IEPP15B		---	1.50" (38 mm)
MC3500EPP18TC	18" (450 mm)	20.03" (509 mm)	---
MC3500EPP18TW			
MC3500IEPP18BC		---	1.77" (45 mm)
MC3500IEPP18BW			
MC3500EPP24TC	24" (600 mm)	14.48" (368 mm)	---
MC3500EPP24TW			
MC3500IEPP24BC		---	2.06" (52 mm)
MC3500IEPP24BW			
MC3500EPP30BC	30" (750 mm)	---	2.75" (70 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PARTIAL CUT INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN "B" ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

2 MC-3500 TECHNICAL SPECIFICATIONS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

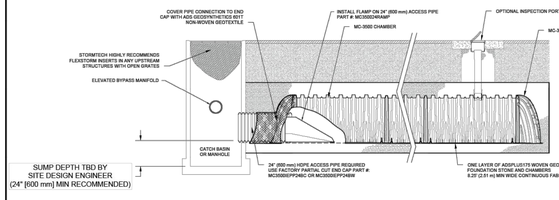
STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

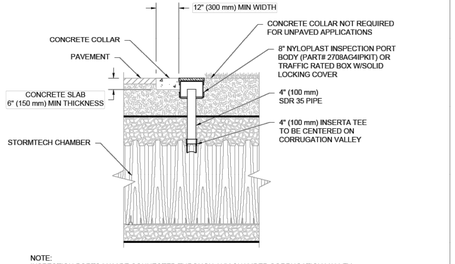
STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

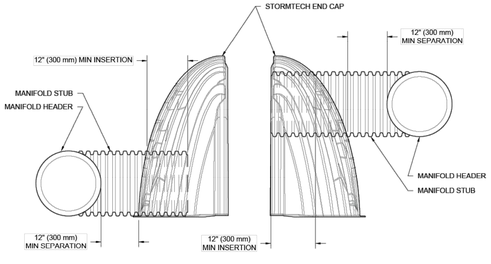


3 MC-3500 ISOLATOR ROW PLUS DETAIL



NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.

4 4" PVC INSPECTION PORT DETAIL (MC SERIES CHAMBER)



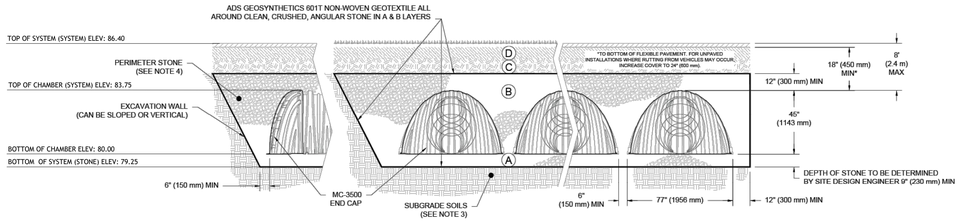
NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

7 MC-SERIES END CAP INSERTION DETAIL

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS
2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

1 MC-3500 CROSS SECTION DETAIL

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB	ISSUE DATE:	9/28/23
CHECKED BY:	AH	APPROVED BY:	LB	JOB NO.:	22-548

NO.	BY	DATE	REVISION DESCRIPTION
1	CB	5/30/23	1ST ROUND JURISDICTIONAL COMMENTS
2	CB	8/31/23	2ND ROUND JURISDICTIONAL COMMENTS

DRAWN: DATE:
REVIEWED: PROJECT NO:
REV: NOT TO SCALE

3 WORKING DAYS BEFORE YOU DIG CALL SUNSHINE STATE ONE CALL OF FLORIDA 1-800-432-4770 FOR THE LOCATION OF UNDERGROUND UTILITIES

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL NOTIFY ALL UTILITIES PRIOR TO THE START OF CONSTRUCTION BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

MC-3500 STANDARD DETAILS

ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS DETAIL BASED ON REFERENCED STANDARDS. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT. ANY ENGINEERING OR DESIGN SERVICES PERFORMED BY OTHERS MUST BE DONE BY A LICENSED ENGINEER. THE SITE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION AND SEALING THE DOCUMENT. IT IS THE SITE DESIGN ENGINEER'S RESPONSIBILITY TO GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT, UNLESS THE PLANS ARE SIGNED AND SEALED BY THE SITE DESIGN ENGINEER. THE SITE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION AND SEALING THE DOCUMENT. IT IS THE SITE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR USE ON THIS PROJECT.

StormTech® Chamber System
888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD
HILLIARD, OH 43026

SHEET

BEACON CIVIL ENGINEERING
LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

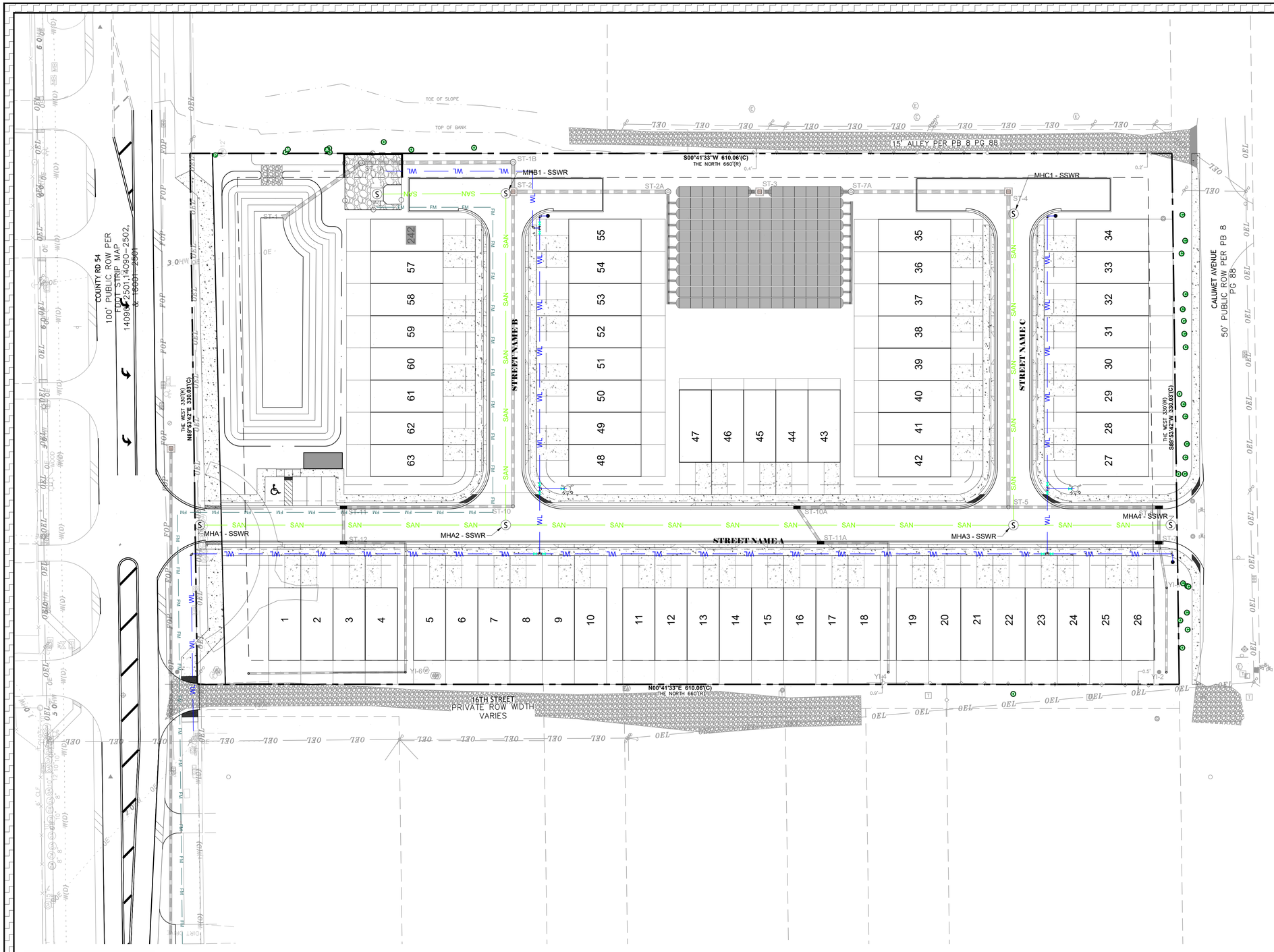
LAURIE S. BURCAW, PE #46064

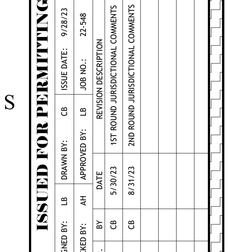
CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME: STORMTECH

SHEET NUMBER: C-6.9





LEGEND

- PROPOSED WATER PIPE
- PROPOSED SANITARY SEWER PIPE
- PROPOSED SANITARY FORCE MAIN
- PROPOSED RECLAIMED WATER
- PROPOSED OPEN TRENCH
- PROPOSED WATER METER AND BACKFLOW PREVENTER
- PROPOSED WATER VALVE
- PROPOSED DOUBLE WATER SERVICE
- PROPOSED SANITARY SEWER SERVICE
- PROPOSED SANITARY SEWER CLEANOUT
- PROPOSED SANITARY SEWER MANHOLE
- UTILITY CROSSING INDICATOR. SEE UTILITY CROSSING TABLE THIS SHEET, FOR DETAILS
- PROPOSED FIRE HYDRANT ASSEMBLY

NOTE: LIGHTER TONE INDICATES EXISTING CONDITION

UTILITY NOTES

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3. ALL PUBLIC UTILITIES INSPECTIONS SHALL BE SCHEDULED BY THE CONTRACTOR AT LEAST 72 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITY.
4. ALL UTILITY CONDUIT MATERIAL FOR TELEPHONE, CABLE, AND ELECTRIC SHALL BE INSTALLED PER UTILITY PROVIDER SPECIFICATIONS BY THE CONTRACTOR.
5. ALL CONSTRUCTION MATERIALS MUST BE CHOSEN FROM THE APPROVED PRODUCTS LIST.
6. CONTRACTOR IS TO INSTALL UTILITIES PER THE CITY OF ZEPHYRHILLS TECHNICAL STANDARDS FOR WASTEWATER AND RECLAIMED WATER AND TECHNICAL STANDARDS FOR WATER DISTRIBUTION SYSTEMS CONSTRUCTION SPECIFIC MANUAL.
7. VERTICAL UTILITY CLEARANCES ARE TO BE MEET REQUIREMENTS SHOWN ON DETAIL G-4
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21. CONTRACTOR SHALL VERIFY LOOP DETECTORS TO AVOID UTILITY CONFLICTS PRIOR TO CONSTRUCTION, IF APPLICABLE.
22. CONTRACTOR SHALL PROTECT ALL UTILITIES OUTSIDE LIMITS OF CONSTRUCTION UNLESS OTHERWISE NOTED IN THE CONSTRUCTIONS PLANS OR SPECIFICATIONS.
23. ALL DISTURBED AREAS WITHIN THE SIDEWALK/ CURB AND GUTTER/ ROAD PAVEMENT SHALL BE RESTORED TO ITS ORIGINAL OR BETTER CONDITIONS.
18. THE LOCATION OF ALL NEWLY INSTALLED FIRE HYDRANTS SHALL BE IDENTIFIED WITH A BLUE REFLECTIVE PAVEMENT MARKER INSTALLED ON THE ROADWAY, PERPENDICULAR TO THE FIRE HYDRANT. THE REFLECTIVE MARKER WILL BE LOCATED IN THE CENTER OF THE LANE CLOSEST TO THE HYDRANT, IF APPLICABLE.
19. IF APPLICABLE, THE CONTRACTOR WILL BE RESPONSIBLE FOR THE FLOW TESTING AND COLOR CODING OF ALL NEWLY INSTALLED FIRE HYDRANTS IN THE GOVERNING JURISDICTION(S) RIGHT OF WAY AND UTILITY EASEMENTS THAT ARE TO BE DEDICATED TO GOVERNING JURISDICTION(S) PRIOR TO THE FINAL INSPECTION OF THE PROJECT. THE CONTRACTOR SHALL REFER TO NFPA STANDARD 291 FOR FLOW TESTING AND COLOR CODING METHODS AND PROCEDURES.
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33. PIPES TO BE CONNECTED CONSISTENT WITH DETAIL G-11.
34. GATE VALVES TO BE ENCASED AND COVERED CONSISTENT WITH DETAILS W3 AND W5.
35. NEAR SIDE WATER SERVICES ARE TO BE INSTALLED PER DETAILS W-9A, W-9D AND W-9E.
36. FAR SIDE WATER SERVICES ARE TO BE INSTALLED PER DETAILS W-9, W-9A, W-9F, W-9G AND W-9H.
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38. SINGLE WATER SERVICES ARE TO BE INSTALLED PER DETAIL W-9B.
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40. FIRE HYDRANTS TO BE INSTALLED PER DETAILS W-10 AND W-11.
41. WATER METERS TO BE DEMARCATED CONSISTENT WITH DETAIL W-20.
42. MANHOLES TO BE INSTALLED PER DETAIL S-1.
43. MANHOLE COVERS TO BE INSTALLED PER DETAIL S-1A.
44. SEE DETAIL S-1B FOR CHANNELING INTERNAL TO MANHOLE
45. PIPE CONNECTIONS TO BE INSTALLED PER DETAILS S-2, S-2A AND S-3.
46. SEE DETAILS S-5, S-6 AND S-7 FOR SANITARY SERVICE CONNECTION CONNECTION TO GRAVITY SEWER.
47. GRAVITY CLEANOUTS TO BE IN INSTALLED PER DETAILS S-8 AND S-9.
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49. ALL GRAVITY SEWER LINES ARE TO BE DR-18 UNLESS OTHERWISE NOTED

STRUCTURE TABLE

NAME	STRUCTURE TYPE	STRUCTURE DATA
MHA1 - SSWR	SANITARY MANHOLE	RIM: 87.92' SSP-1 IE OUT: 77.94'
MHA2 - SSWR	SANITARY MANHOLE	RIM: 87.64' SSP-1 IE IN: 77.20' SSP-2 IE OUT: 77.20' SSP-4 IE OUT: 77.15'
MHA3 - SSWR	SANITARY MANHOLE	RIM: 86.31' SSP-2 IE IN: 78.49' SSP-3 IE OUT: 78.49' SSP-6 IE OUT: 78.49'
MHA4 - SSWR	SANITARY MANHOLE	RIM: 86.07' SSP-3 IE IN: 78.86'
MHB1 - SSWR	SANITARY MANHOLE	RIM: 86.09' SSP-4 IE IN: 76.36' SSP-5 IE OUT: 76.26'
MHB2 - SSWR	SANITARY MANHOLE	RIM: 79.57' SSP-5 IE IN: 76.02'
MHC1 - SSWR	SANITARY MANHOLE	RIM: 84.40' SSP-6 IE IN: 79.28'

PIPE TABLE

PIPE NAME	MATL	SIZE	LENGTH	SLOPE
SSP-1	PVC	8"	190 LF	0.39%
SSP-2	PVC	8"	315 LF	-0.41%
SSP-3	PVC	8"	98 LF	-0.38%
SSP-4	PVC	8"	206 LF	0.38%
SSP-5	PVC	8"	80 LF	0.30%
SSP-6	PVC	8"	194 LF	-0.41%

SANITARY CONNECTION TO EXISTING MANHOLE NOTES

1. TAP TO DIRECTLY INTO MANHOLE SHALL BE MADE USING 10" SDR 26 PIPE
2. THE CONNECTION TO THE MANHOLE SHALL INCLUDE A NEOPRENE GASKET AND STAINLESS STREET CLAMP MANHOLE WATER STOP SELECTED FROM THE APPROVED PRODUCTS LIST.
3. CONTRACTOR IS TO CORE DRILL OR BUST OUT MANHOLE WALL DIRECTLY ABOVE MANHOLE TABLE.
4. PROPOSED PIPE SHALL EXTEND APPROXIMATELY 1" BEYOND NEWLY CORED HOLE
5. CORE HOLE SHALL BE FILLED WITH NON-SHRINK GROUT SUCH AS "PRECO PLUG" OR APPROVED EQUIVALENT. WALLS SHALL BE TOWELED SMOOTH
6. A CURVED TROUGH SHALL BE FORMED IN/ON MANHOLE TABLE TO DIRECT FLOW INTO THE MAIN INVERT.
7. A CITY TAP SHALL BE HELD BEFORE BACKFILLING COMMENCES. WORK MUST BE VISIBLE AND DEWATERED DURING INSPECTION
8. BACKFILL SHALL BE CAREFULL PLACED AND TAMPED AROUND THE CONNECTION SO AS TO PREVENT ANY SETTLEMENT OR MOVEMENT AND SHALL COMMENCE ONLY AFTER NON-SHRINK GROUT HAS SUFFICIENTLY HARDENED

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB
CHECKED BY:	AH	APPROVED BY:	LB

ISSUE DATE: 9/28/23
JOB NO.: 22-548

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LAURIE S. BURCAW
STATE OF FLORIDA
No. 46064
PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

LAURIE S. BURCAW, PE #46064

BEACON
CIVIL ENGINEERING
LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
MASTER UTILITY PLAN

SHEET NUMBER:
C-7.0

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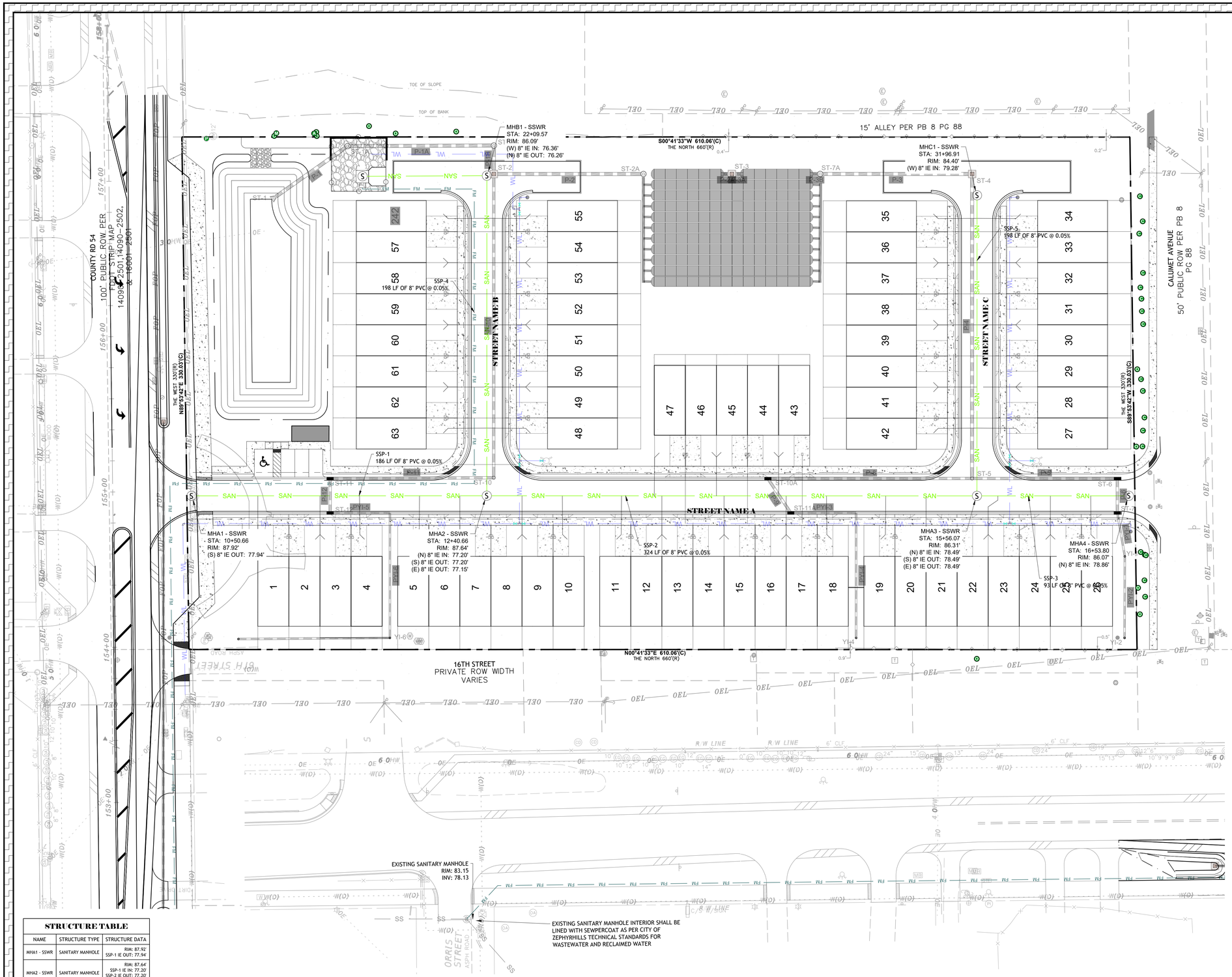

E

N — BEACON CIVIL ENGINEERING — S

W

60 30 15 0 30

SCALE : 1" = 30'

LEGEND

- PROPOSED WATER PIPE
- PROPOSED SANITARY SEWER PIPE
- PROPOSED SANITARY FORCE MAIN
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STRUCTURE TABLE

NAME	STRUCTURE TYPE	STRUCTURE DATA
MHA1 - SSWR	SANITARY MANHOLE	RIM: 87.92' SSP-1 IE OUT: 77.94'
MHA2 - SSWR	SANITARY MANHOLE	RIM: 87.64' SSP-1 IE IN: 77.20' SSP-2 IE OUT: 77.20' SSP-4 IE OUT: 77.15'
MHA3 - SSWR	SANITARY MANHOLE	RIM: 86.31' SSP-2 IE IN: 78.49' SSP-3 IE OUT: 78.49' SSP-6 IE OUT: 78.49'
MHA4 - SSWR	SANITARY MANHOLE	RIM: 86.07' SSP-3 IE IN: 78.86'
MHB1 - SSWR	SANITARY MANHOLE	RIM: 86.09' SSP-4 IE IN: 76.36' SSP-5 IE OUT: 76.26'
MHB2 - SSWR	SANITARY MANHOLE	RIM: 79.57' SSP-5 IE IN: 76.02'
MHC1 - SSWR	SANITARY MANHOLE	RIM: 84.40' SSP-6 IE IN: 79.28'

PIPE TABLE

PIPE NAME	MATL	SIZE	LENGTH	SLOPE
SSP-1	PVC	8"	190 LF	0.39%
SSP-2	PVC	8"	315 LF	-0.41%
SSP-3	PVC	8"	98 LF	-0.38%
SSP-4	PVC	8"	206 LF	0.38%
SSP-5	PVC	8"	80 LF	0.30%
SSP-6	PVC	8"	194 LF	-0.41%

SANITARY CONNECTION TO EXISTING MANHOLE NOTES

1. TAP TO DIRECTLY INTO MANHOLE SHALL BE MADE USING 10" SDR 26 PIPE
2. THE CONNECTION TO THE MANHOLE SHALL INCLUDE A NEOPRENE GASKET AND STAINLESS STREET CLAMP MANHOLE WATER STOP SELECTED FROM THE APPROVED PRODUCTS LIST SHOWN ON SHEET C-6.6
3. CONTRACTOR IS TO CORE DRILL OR BUST OUT MANHOLE WALL DIRECTLY ABOVE MANHOLE TABLE.
4. PROPOSED PIPE SHALL EXTEND APPROXIMATELY 1" BEYOND NEWLY CORED HOLE
5. CORE HOLE SHALL BE FILLED WITH NON-SHRINK GROUT SUCH AS "PRECO PLUG" OR APPROVED EQUIVALENT. WALLS SHALL BE TOWELED SMOOTH
6. A CURVED TROUGH SHALL BE FORMED IN/ON MANHOLE TABLE TO DIRECT FLOW INTO THE MAIN INVERT.
7. A CITY TAP SHALL BE HELD BEFORE BACKFILLING COMMENCES. WORK MUST BE VISIBLE AND DEWATERED DURING INSPECTION
8. BACKFILL SHALL BE CAREFULL PLACED AND TAMPED AROUND THE CONNECTION SO AS TO PREVENT ANY SETTLEMENT OR MOVEMENT AND SHALL COMMENCE ONLY AFTER NON-SHRINK GROUT HAS SUFFICIENTLY HARDENED

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB
CHECKED BY:	AH	APPROVED BY:	LB

ISSUE DATE: 9/28/23
JOB NO.: 22-548

NO.	BY	DATE	REVISION DESCRIPTION
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LAURIE S. BURCAW
No. 46064
STATE OF FLORIDA
PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.

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LAURIE S. BURCAW, PE #46064

BEACON CIVIL ENGINEERING
LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
UTILITY PLAN (SANITARY)

SHEET NUMBER:
C-7.1

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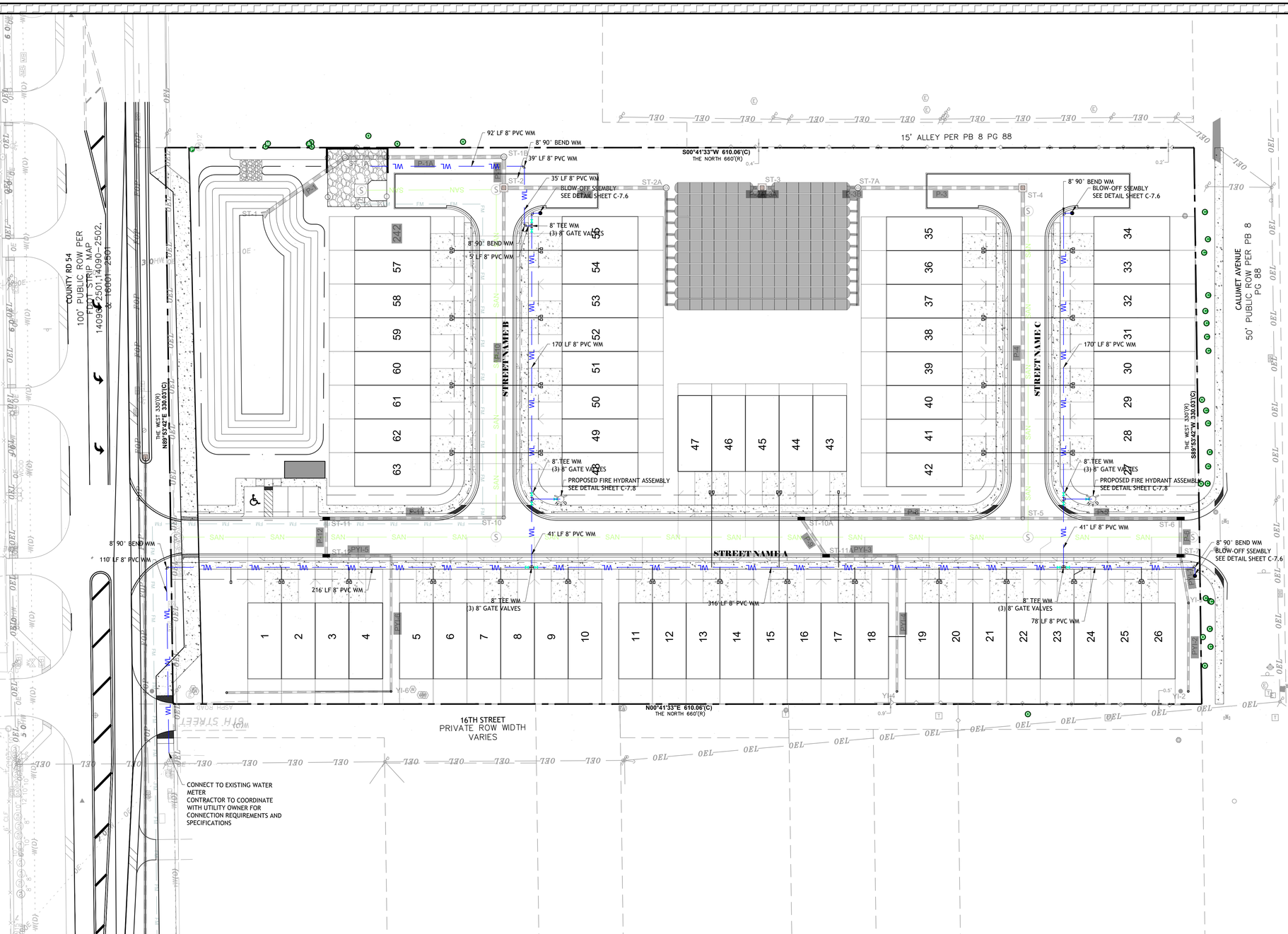

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N — BEACON CIVIL ENGINEERING — S

W

60 30 15 0 30

SCALE : 1" = 30'

LEGEND

- PROPOSED WATER PIPE
- PROPOSED SANITARY SEWER PIPE
- PROPOSED SANITARY FORCE MAIN
- PROPOSED RECLAIMED WATER
- PROPOSED OPEN TRENCH
- PROPOSED WATER METER AND BACKFLOW PREVENTER
- PROPOSED WATER VALVE
- PROPOSED DOUBLE WATER SERVICE
- PROPOSED SANITARY SEWER SERVICE
- PROPOSED SANITARY SEWER CLEANOUT
- PROPOSED SANITARY SEWER MANHOLE
- UTILITY CROSSING INDICATOR, SEE UTILITY CROSSING TABLE THIS SHEET, FOR DETAILS
- PROPOSED FIRE HYDRANT ASSEMBLY

NOTE: LIGHTER TONE INDICATES EXISTING CONDITION

UTILITY NOTES

1. REFER TO MEP PLANS FOR ALL UTILITY LEADS INTO BUILDING.
2. PRIOR TO STARTING CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES AND THEIR LOCATIONS AND ELEVATIONS. IF ANY DISCREPANCIES OCCUR, THE CONTRACTOR SHALL ALERT ENGINEER IMMEDIATELY
3. ALL PUBLIC UTILITIES INSPECTIONS SHALL BE SCHEDULED BY THE CONTRACTOR AT LEAST 72 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITY.
4. ALL UTILITY CONDUIT MATERIAL FOR TELEPHONE, CABLE, AND ELECTRIC SHALL BE INSTALLED PER UTILITY PROVIDER SPECIFICATIONS BY THE CONTRACTOR.
5. ALL CONSTRUCTION MATERIALS MUST BE CHOSEN FROM THE APPROVED PRODUCTS LIST.
6. CONTRACTOR IS TO INSTALL UTILITIES PER THE CITY OF ZEPHYRHILLS TECHNICAL STANDARDS FOR WASTEWATER AND RECLAIMED WATER AND TECHNICAL STANDARDS FOR WATER DISTRIBUTION SYSTEMS CONSTRUCTION SPECIFIC MANUAL.
7. VERTICAL UTILITY CLEARANCES ARE TO BE MEET REQUIREMENTS SHOWN ON DETAIL G-4
8. ALL NON-METALLIC PIPE WILL BE INSTALLED WITH #8 TRACER WIRE AND WARNING TAPE
9. TAPPING SLEEVE AND SADDLE TO BE INSTALLED CONSISTENT WITH DETAIL W-2
10. OVER STORY TREES SHALL NOT BE LOCATED WITHIN 12 FT OF ANY PUBLIC UNDERGROUND OR OVERHEAD UTILITY LINE.CONTRACTOR MUST COORDINATE THE SHUTDOWN OF THE EXISTING POTABLE WATER, WITH THE CITY OF ZEPHYRHILLS
21. CONTRACTOR SHALL VERIFY LOOP DETECTORS TO AVOID UTILITY CONFLICTS PRIOR TO CONSTRUCTION, IF APPLICABLE.
22. CONTRACTOR SHALL PROTECT ALL UTILITIES OUTSIDE LIMITS OF CONSTRUCTION UNLESS OTHERWISE NOTED IN THE CONSTRUCTIONS PLANS OR SPECIFICATIONS.
23. ALL DISTURBED AREAS WITHIN THE SIDEWALK/ CURB AND GUTTER/ ROAD PAVEMENT SHALL BE RESTORED TO ITS ORIGINAL OR BETTER CONDITIONS.
18. THE LOCATION OF ALL NEWLY INSTALLED FIRE HYDRANTS SHALL BE IDENTIFIED WITH A BLUE REFLECTIVE PAVEMENT MARKER INSTALLED ON THE ROADWAY, PERPENDICULAR TO THE FIRE HYDRANT. THE REFLECTIVE MARKER WILL BE LOCATED IN THE CENTER OF THE LANE CLOSEST TO THE HYDRANT, IF APPLICABLE.
19. IF APPLICABLE, THE CONTRACTOR WILL BE RESPONSIBLE FOR THE FLOW TESTING AND COLOR CODING OF ALL NEWLY INSTALLED FIRE HYDRANTS IN THE GOVERNING JURISDICTION(S) RIGHT OF WAY AND UTILITY EASEMENTS THAT ARE TO BE DEDICATED TO GOVERNING JURISDICTION(S) PRIOR TO THE FINAL INSPECTION OF THE PROJECT. THE CONTRACTOR SHALL REFER TO NFPA STANDARD 291 FOR FLOW TESTING AND COLOR CODING METHODS AND PROCEDURES.
20. ALL PROPOSED WATER SUPPLY AND FIRE HYDRANTS SHALL COMPLY NFPA-1, CHAPTER 18.3
21. CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD (E.O.R.) 72 HOURS IN ADVANCE OF ALL INSPECTIONS THAT REQUIRE THE E.O.R. OR E.O.R. REPRESENTATIVE'S PRESENCE.
22. PIPES ARE TO BE INSTALLED CONSISTENT WITH DETAILS G2 AND G3
23. VALVES ARE TO BE INCASED CONSISTENT WITH DETAIL G5
24. MANHOLES ARE TO BE INSTALLED CONSISTENT WITH DETAILS S1, S2 AND S3
25. SANITARY LATERALS ARE TO BE INSTALLED CONSISTENT WITH DETAILS S4, S5 AND S6
26. UTILITY LENGTHS ARE MEASURED FROM FITTING TO FITTING
27. ALL MATERIALS AND LABOR SHALL MEET THE SPECIFICATION REQUIRED BY THE CITY. ALL CONSTRUCTION PERFORMED UNDER THE INSPECTION OF THE COUNTY AND IN STRICT COMPLIANCE WITH THE STANDARDS OF THE COUNTY DESIGN STANDARDS
28. ALL NEWLY INSTALLED WATER DISTRIBUTION MAINS AND SERVICE LATERALS SHALL BE COLOR CODED BLUE
29. ALL NEWLY INSTALLED FORCE MAINS AND GRAVITY LINES SHALL BE COLOR CODED GREEN
30. FIRE HYDRANTS SHALL BE FLOW-TESTED AND COLOR CODED BASED ON FLOW RESULTS
31. PIPES TRENCHING TO BE CONSISTENT WITH DETAIL G-3
32. ALL FITTINGS ARE TO BE INSTALLED CONSISTENT WITH THE RETRAINED JOINT SCHEDULE SHOWN IN DETAIL G-6
33. PIPES TO BE CONNECTED CONSISTENT WITH DETAIL G-11.
34. GATE VALVES TO BE ENCASED AND COVERED CONSISTENT WITH DETAILS W3 AND W5.
35. NEAR SIDE WATER SERVICES ARE TO BE INSTALLED PER DETAILS W-9A, W-9D AND W-9E.
36. FAR SIDE WATER SERVICES ARE TO BE INSTALLED PER DETAILS W-9, W-9A, W-9F, W-9G AND W-9H.
37. DOUBLE WATER SERVICES ARE TO BE INSTALLED PER DETAIL W-9C.
38. SINGLE WATER SERVICES ARE TO BE INSTALLED PER DETAIL W-9B.
39. WATER METERS ARE TO BE ENCASED PER DETAIL W-17.
40. FIRE HYDRANTS TO BE INSTALLED PER DETAILS W-10 AND W-11.
41. WATER METERS TO BE DEMARCATED CONSISTENT WITH DETAIL W-20.
42. MANHOLES TO BE INSTALLED PER DETAIL S-1.
43. MANHOLE COVERS TO BE INSTALLED PER DETAIL S-1A.
44. SEE DETAIL S-1B FOR CHANNELING INTERNAL TO MANHOLE
45. PIPE CONNECTIONS TO BE INSTALLED PER DETAILS S-2, S-2A AND S-3.
46. SEE DETAILS S-5, S-6 AND S-7 FOR SANITARY SERVICE CONNECTION CONNECTION TO GRAVITY SEWER.
47. GRAVITY CLEANOUTS TO BE IN INSTALLED PER DETAILS S-8 AND S-9.
48. SANITARY SERVICE LINES TO BE DEMARCATED PER DETAIL S-20.
49. ALL GRAVITY SEWER LINES ARE TO BE DR-18 UNLESS OTHERWISE NOTED

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB	ISSUE DATE:	9/28/23
CHECKED BY:	AH	APPROVED BY:	LB	JOB NO.:	22-548

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LAURIE S. BURCAW
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STATE OF FLORIDA
PROFESSIONAL ENGINEER

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LAURIE S. BURCAW, PE #46064

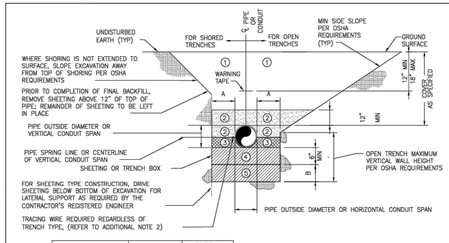
BEACON CIVIL ENGINEERING
LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
UTILITY PLAN (WATER)

SHEET NUMBER:
C-7.2



NOMINAL PIPE DIAMETER OR HORIZONTAL CONDUIT SPAN (INCHES)	MINIMUM SIDEWALL CLEARANCE A (INCHES)	ADDITIONAL EXCAVATION DEPTH (1) B (INCHES)
LESS THAN 24	12	12
24 AND GREATER	18	18

(1) REQUIRED WHERE UNSUITABLE MATERIAL IS ENCOUNTERED.

ZONE NO.	ZONE NAME	MATERIAL	COMPACTION
1	FINAL BACKFILL	AS SPECIFIED	AT LEAST 95% MODIFIED PROCTOR MAXIMUM DRY DENSITY ASTM D-1557 (98% WHEN UNDER PAVEMENT)
2	INITIAL BACKFILL		
3	HAUNCHING		
4	BEDDING		
5	FOUNDATION		

TRENCH ZONE NOTES:

(1) FINAL BACKFILL SHALL BE INSTALLED IN LIFTS NOT EXCEEDING 6 INCHES, LOOSE MEASUREMENT. REFER TO ADDITIONAL NOTE 3.

(2) INITIAL BACKFILL SHALL BE INSTALLED IN LIFTS NOT EXCEEDING 6 INCHES, LOOSE MEASUREMENT. ALL LIFTS SHALL BE COMPACTED BY HAND TAMPING OR AN APPROVED METHOD OF MECHANICAL TAMPING. REFER TO ADDITIONAL NOTE 3.

(3) HAUNCHING SHALL BE IN COMPLETELY DEWATERED TRENCHES IN LIFTS NOT EXCEEDING 6 INCHES, LOOSE MEASUREMENT. ALL LIFTS SHALL BE COMPACTED BY HAND TAMPING. HAUNCHING SHALL BE BROUGHT UP EQUALLY ON BOTH SIDES OF THE PIPE.

(4) BEDDING SHALL BE INSTALLED IN COMPLETELY DEWATERED TRENCHES IN LIFTS NOT EXCEEDING 6 INCHES, LOOSE MEASUREMENT, AND SHALL BE COMPACTED BY HAND OR MECHANICAL TAMPING. PROPERLY SHAPED BELL HOLES SHALL BE EXCAVATED IN THE BEDDING TO PERMIT ASSEMBLY OF THE PIPE. REFER TO ADDITIONAL NOTE 3.

(5) NATIVE, UNDISTURBED MATERIAL IN COMPLETELY DEWATERED TRENCHES MEETING THE COMPACTION AND MATERIAL REQUIREMENTS FOR COMPACTED BEDDING MATERIAL MAY NOT BE REPLACED OR REWORKED, EXCEPT FOR SHAPING OF THE BELL HOLES, AND WHERE REFILL IS REQUIRED.

FOUNDATION SHALL BE REQUIRED WHERE UNSUITABLE MATERIAL IS ENCOUNTERED. FOUNDATION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS FOR BEDDING. REFER TO ADDITIONAL NOTE 3.

ADDITIONAL NOTES:

1. FOR TRENCHES IN VEHICULAR TRAFFIC AREAS OR BENEATH SURFACE IMPROVEMENTS (EG, SLABS, ASPHALT, ETC.) SEE CONTRACT SPECIFICATIONS FOR ADDITIONAL COMPACTION REQUIREMENTS. SEE DRAWINGS FOR SURFACE IMPROVEMENT AND /OR RESTORATION DETAILS WHERE APPLICABLE.
2. TRACING WIRE SHALL BE INSTALLED ON THE SIDE OF THE PIPE AND ATTACHED TO THE PIPE EVERY 10' W/ A NYLON WIRE TIE. IF THE WIRE IS DAMAGED OR NEEDS TO BE EXTENDED A 3M WATERPROOF TYPE UF SPLICE SHALL BE INSTALLED TO REPAIR THE WIRE. THE ENDS OF THE TRACING WIRE SHALL BE BROUGHT UP IN EVERY VALVE BOX ON THE LINE AND AT THE HYDRANT VALVES. THERE SHALL BE A MINIMUM COIL OF 3' LEFT UNDER THE VALVE BOX COVER. THE WIRE SHALL BE TESTED TO VERIFY CONDUCTIVITY.
3. ALTERNATIVE LIFT THICKNESSES, NOT EXCEEDING 12 INCHES LOOSE MEASUREMENT, ARE ACCEPTABLE IN TRENCH ZONES 1, 2, 4, AND 5 PROVIDED 1) THE LIFT THICKNESS DOES NOT EXCEED THE MAXIMUM VALUE RECOMMENDED IN WRITING BY THE APPLICABLE PIPE MANUFACTURER AND 2) FIELD TEST RESULTS CONFIRM THAT THE SPECIFIED COMPACTION REQUIREMENTS ARE BEING MET.

TYPICAL UTILITY TRENCH DETAIL

NTS

CITY OF ZEPHYRHILLS STANDARD DETAILS
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT
39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542
PHONE (813)780-0029 FAX (813)780-0613

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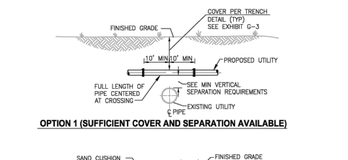
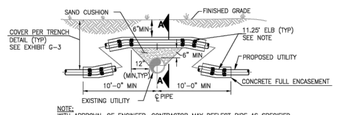


OPTION 1 (SUFFICIENT COVER AND SEPARATION AVAILABLE)



NOTE:
WITH APPROVAL OF ENGINEER, CONTRACTOR MAY DEFLECT PIPE AS SPECIFIED INSTEAD OF USING FITTINGS.

ALTERNATE OPTION 1 (SUFFICIENT COVER OR SEPARATION NOT AVAILABLE)

PROPOSED UTILITY	MINIMUM VERTICAL SEPARATION REQUIREMENTS						
	POTABLE WATER	GRAVITY SANITARY SEWER	SEWAGE FORCE MAIN	STORM	RECLAIMED WATER	ELECTRIC TELECOMMUNICATIONS	COMMENTS
POTABLE WATER	1'-0"	1'-0"(1,2)	1'-0"(1,2)	1'-0"(1)	1'-0"	1'-0"	SEE NOTE 1
GRAVITY SANITARY SEWER	1'-6"(2)	1'-0"	1'-0"	1'-0"	1'-6"(2)	1'-0"	
SEWAGE FORCE MAIN	1'-6"(2)	1'-0"	1'-0"	1'-0"	1'-6"(2)	1'-0"	SEE NOTE 2
STORM	1'-0"(1)	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
RECLAIMED WATER	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	SEE NOTE 2
ELECTRIC TELECOMMUNICATIONS	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	

(1) FAC 62-555.314
(2) FAC 62-604.400
(3) FAC 62-610.469

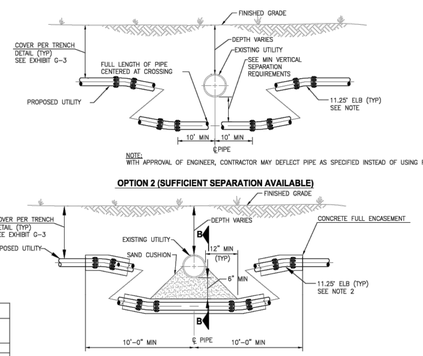
NOTES:
1. ONLY OPTION 1 CONSTRUCTION IS ALLOWED WITHOUT APPROVAL OF ENGINEER.
2. ONLY OPTION 2 CONSTRUCTION IS ALLOWED WITHOUT APPROVAL OF ENGINEER.

MINIMUM VERTICAL SEPARATION REQUIREMENTS

PROPOSED UTILITY	MINIMUM HORIZONTAL SEPARATION EXISTING UTILITY					
	POTABLE WATER	GRAVITY SANITARY SEWER	SEWAGE FORCE MAIN	STORM	RECLAIMED WATER	ELECTRIC TELECOMMUNICATIONS
POTABLE WATER	1'-0"	10'-0"(1,2)	10'-0"(1,2)	3'-0"(1)	3'-0"(1,3)	3'-0"
GRAVITY SANITARY SEWER	10'-0"(2)	1'-0"	1'-0"	3'-0"	3'-0"(2)	3'-0"
SEWAGE FORCE MAIN	10'-0"(2)	1'-0"	1'-0"	3'-0"	3'-0"(2)	3'-0"
STORM	3'-0"(1)	3'-0"	3'-0"	1'-0"	3'-0"	3'-0"
RECLAIMED WATER	3'-0"(1,3)	3'-0"(2)	3'-0"(2)	3'-0"	1'-0"	3'-0"
ELECTRIC TELECOMMUNICATIONS	3'-0"	3'-0"	3'-0"	3'-0"	3'-0"	2'-0"

(1) FAC 62-555.314
(2) FAC 62-604.400
(3) FAC 62-610.469

NOTE:
UTILITIES SHALL NOT BE INSTALLED WITHIN THE DRIP LINE OF TREES WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER.

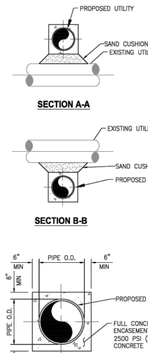


NOTE:
WITH APPROVAL OF ENGINEER, CONTRACTOR MAY DEFLECT PIPE AS SPECIFIED INSTEAD OF USING FITTINGS.

OPTION 2 (SUFFICIENT SEPARATION AVAILABLE)

NOTES:
1. FOR PROPOSED WATER MAINS, THIS OPTION IS ONLY ALLOWED WITH APPROVAL OF THE ENGINEER AND FDEP ON A CASE BY CASE BASIS.
2. WITH APPROVAL OF ENGINEER, CONTRACTOR MAY DEFLECT PIPE AS SPECIFIED INSTEAD OF USING FITTINGS.

ALTERNATE OPTION 2 (SUFFICIENT SEPARATION NOT AVAILABLE)



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UTILITY CONFLICT

CITY OF ZEPHYRHILLS STANDARD DETAILS
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT
39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542
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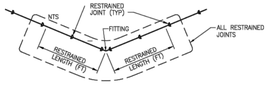

PIPE SIZE	RESTRAINED JOINT SCHEDULE								
	FITTING								
	90° BEND	45° BEND	45° BEND (VERT)	22 1/2° BEND	22 1/2° BEND (VERT)	11 1/4° BEND	11 1/4° BEND (VERT)	VALVE, DEAD END OR REDUCER	TEE (BRANCH)
8"	37	16	45	8	14	4	7	107	107
6"	29	12	34	6	11	3	6	82	82
4"	17	8	16	4	8	2	4	38	37

NOTES:
A. RESTRAINED LENGTHS ARE IN FEET AND ARE FOR POLYETHYLENE WRAPPED DUCTILE IRON PIPE UNLESS OTHERWISE NOTED.

B. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION REGARDING RESTRAINED JOINTS.

C. THE SCHEDULE SHOWN IS FOR THE FOLLOWING SERVICE CONDITIONS 150 PSIG TEST PRESSURE; POORLY GRADED COARSE SAND; 36 INCHES COVER, TYPE 3 TRENCH CONDITIONS AND 1.5 SAFETY FACTOR.

D. RESTRAINED LENGTHS SHOWN IN TABLE ARE IN FEET AND ARE MINIMUM LENGTHS REQUIRED IN EACH DIRECTION FROM FITTINGS OR VALVES.

E. ALL PIPE SHALL BE RESTRAINED TO THE NEXT JOINT BEYOND THE RESTRAINED LENGTH GIVEN.

F. RESTRAINED LENGTH FOR REDUCERS SHALL BE BASED ON THE SIZE OF THE LARGEST END OF THE REDUCER.

G. CONTRACTOR SHALL HAVE FLORIDA LICENSED PROFESSIONAL ENGINEER VERIFY ALL THE RESTRAINED LENGTHS SHOWN IN THE TABLE ABOVE ARE ADEQUATE FOR ALL VARYING SOIL CONDITIONS ON THE PROJECT. THE CONTRACTOR'S ENGINEER SHALL PROVIDE A SIGNED AND SEALED STATEMENT THAT ALL PIPING WAS INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE TABLE ABOVE OR IN ACCORDANCE WITH THE FINDINGS OF THE CONTRACTOR'S PROFESSIONAL ENGINEER, WHICHEVER ARE MORE STRINGENT. CONTRACTOR'S COST FOR MEETING THESE REQUIREMENTS SHALL BE INCLUDED IN THEIR BID.

H. FOR CONNECTION OF PIPING TO EXISTING PIPING, WHEN THE REQUIRED RESTRAINED JOINT PIPE LENGTHS TO PREVENT PIPE MOVEMENT CANNOT BE ATTAINED IN ACCORDANCE WITH RESTRAINED JOINT SCHEDULE, THE APPROPRIATE TEE, VALVES, BEND AND/OR CROSS FITTING(S) SHALL BE FULLY RESTRAINED IN ACCORDANCE WITH EXHIBIT G-6A TO PREVENT PIPE MOVEMENT.

J. WHERE HDD CONNECTS TO PUSH-ON JOINT PIPING, THIS CONNECTION SHALL BE TREATED AS DEAD END W/ RESPECT TO THE RESTRAINED JOINT SCHEDULE.

RESTRAINED JOINT SCHEDULE

NTS

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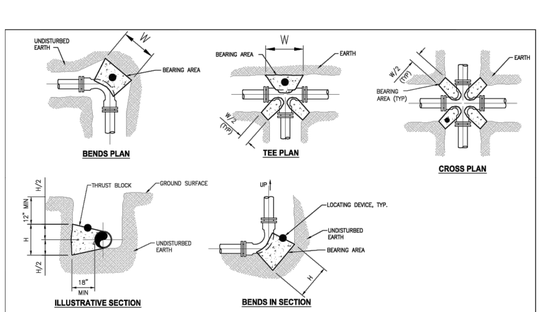
G-6



REACTION BLOCK BEARING AREA DIMENSIONS						
FITTING	11 1/4° BEND	22 1/2° BEND	45° BEND	90° BEND	TEE/CROSS/ PLUGS/CAPS	
SIZE (in)	H x W (in)	H x W (in)	H x W (in)	H x W (in)	H x W (in)	
4	11x11	15x15	20x20	28x28	23x23	
6	15x15	21x21	28x28	40x40	33x33	
8	20x20	27x27	38x38	52x52	44x44	
10	24x24	33x33	47x47	63x63	53x53	
12	28x28	40x40	55x55	75x75	63x63	
14	33x33	46x46	64x64	87x87	73x73	
16	37x37	52x52	73x73	99x99	83x83	
18	42x42	58x58	82x82	111x111	93x93	
24	55x55	77x77	108x108	148x148	123x123	

REACTION BLOCK NOTES

A. BASED ON 150 PSI PRESSURE & 1500 PSF SOIL BEARING VALUE, 2.0 SAFETY FACTOR, WATER TABLE BELOW THE THRUST BLOCK, VERTICAL BLOCK FACE, AND A MINIMUM THICKNESS OF 18 INCHES.

B. BEARING AREAS FOR PLUGS SHALL BE THE SAME AS FOR TEES.

C. FORM REACTION BLOCKS TO KEEP CONCRETE CLEAR OF JOINTS AND BOLTS.

D. REQUIRED REACTION BLOCK BEARING AREA SHALL BE PLACED AGAINST UNDISTURBED MATERIAL. WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE ALL LOOSE MATERIAL AND EXTEND REACTION BLOCK TO UNDISTURBED MATERIAL.

E. PLACE PRESSURE TREATED WOOD BOARDS IN FRONT OF PLUG, AT TEE, CROSS OR END OF PIPE BEFORE POURING CONCRETE REACTION BLOCK.

F. BACKFILL SHALL CONSIST ENTIRELY OF CLEAN SAND AND ROCK FRAGMENTS. ANY MUCK ENCOUNTERED SHALL BE REPLACED WITH BACKFILL COMPACTED TO 95% MODIFIED PROCTOR MAXIMUM DRY DENSITY, ASTM D1557.

G. NOT USED.

H. CONTRACTOR SHALL HAVE FLORIDA LICENSED PROFESSIONAL ENGINEER VERIFY ALL THE REACTION BLOCK SIZES SHOWN IN THE TABLE ABOVE ARE ADEQUATE FOR ALL VARYING SOIL CONDITIONS ON THE PROJECT. THE CONTRACTOR'S ENGINEER SHALL PROVIDE A SIGNED AND SEALED STATEMENT THAT ALL REACTION BLOCKS WERE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE TABLE ABOVE OR IN ACCORDANCE WITH THE FINDINGS OF THE CONTRACTOR'S PROFESSIONAL ENGINEER, WHICHEVER ARE MORE STRINGENT. CONTRACTOR'S COST FOR MEETING THESE REQUIREMENTS SHALL BE INCLUDED IN THEIR BID.

TYPICAL REACTION BLOCK (THRUST BLOCK) DETAILS

NTS

CITY OF ZEPHYRHILLS STANDARD DETAILS
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT
39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542
PHONE (813)780-0029 FAX (813)780-0613

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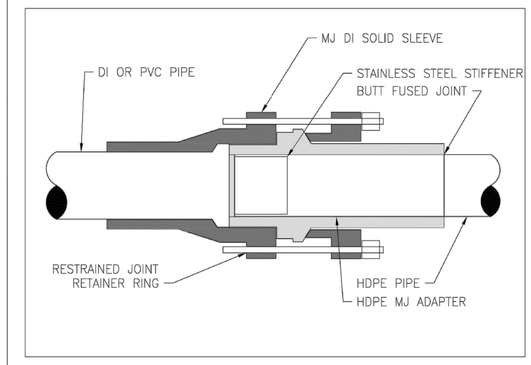

PIPING CONNECTION HDPE TO DI OR PVC

NTS

CITY OF ZEPHYRHILLS STANDARD DETAILS
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GENERAL REUSE AND EFFLUENT REUSE NOTES

1. ALL REUSE AND EFFLUENT REUSE PIPING TO BE OWNED AND MAINTAINED BY THE CITY OF ZEPHYRHILLS SHALL BE A SOLID PURPLE COLOR.
2. REUSE AND EFFLUENT REUSE MAINS TO BE PVC CONFORMING TO AWWA C-900, DR 18 FOR PIPE SIZES 4"-12". PIPES 14" & LARGER SHALL BE AWWA C-905, DR 25. PRESSURE CLASS 350 DIP IS AN ACCEPTABLE ALTERNATE. ALL COUPLINGS, CLEANING COMPOUNDS, SOLVENTS, LUBRICANTS, AND PIPE PREPARATION, FOR LAYING, SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURERS LATEST RECOMMENDATIONS.
3. DEPTH OF REUSE AND EFFLUENT REUSE LINES TO BE 36" MIN. BELOW FINISHED GRADE.
4. REUSE AND EFFLUENT REUSE MAINS TO BE LOCATED 5' FROM BACK OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
5. ALL PIPING CLEARANCES SHALL BE IN ACCORDANCE WITH CHAPTER 62-555.314, F.A.C.
6. ALL REUSE AND EFFLUENT REUSE MAINS UNDER PAVEMENT SHALL BE DUCTILE IRON PIPE AND SHALL EXTEND 5' BEYOND THE EDGE OF PAVEMENT OR BACK OF CURB, EXCEPT DIRECTIONAL BORES, WHICH SHALL BE SDR-11 HDPE.
7. ALL IRRIGATION SLEEVING UNDER PAVEMENT SHALL EXTEND 5' BEYOND THE EDGE OF PAVEMENT OR BACK OF CURB.
8. ALL OTHER REQUIREMENTS OF THE CITY WATER SYSTEM SHALL APPLY TO THE RE-USE SYSTEM.
9. PROPER SIGNAGE FOR PUBLIC ACCESS IRRIGATION AREAS TO BE SUPPLIED BY THE DEVELOPER / CONTRACTOR, IN ACCORDANCE WITH CHAPTER 62-610.418, F.A.C.

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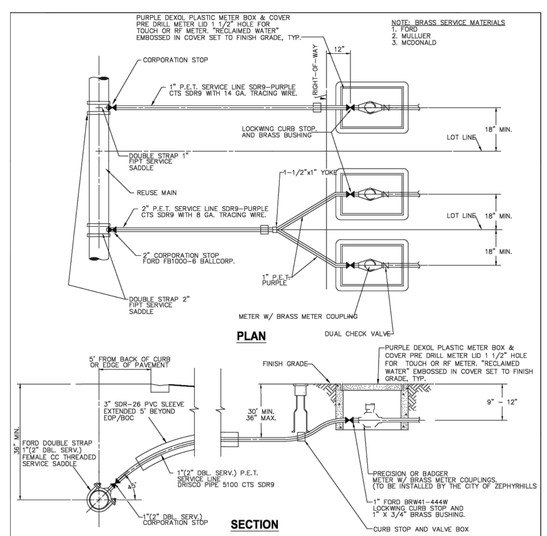
R-1



REUSE WATER SERVICE CONNECTION DETAILS

NTS

(NOTE: METERS TO BE INSTALLED BY CITY OF ZEPHYRHILLS.)

CITY OF ZEPHYRHILLS STANDARD DETAILS
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT
39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542
PHONE (813)780-0029 FAX (813)780-0613

NOVEMBER 2021

R-3

ISSUED FOR PERMITTING

NO.	BY	DATE	REVISION DESCRIPTION
1	CB	5/30/23	1ST ROUND JURISDICTIONAL COMMENTS
2	CB	8/31/23	2ND ROUND JURISDICTIONAL COMMENTS

DESIGNED BY: LB | DRAWN BY: CB | ISSUE DATE: 9/28/23
CHECKED BY: AH | APPROVED BY: LB | JOB NO.: 22-548

3 WORKING DAYS BEFORE YOU DIG CALL SUNSHINE STATE ONE CALL OF FLORIDA 1-800-432-4770
FOR THE LOCATION OF UNDERGROUND UTILITIES

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL NOTIFY ALL UTILITIES INVOLVED FOR THE EXACT LOCATION BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

LAURIE S. BURCAW LICENSE No. 46064 STATE OF FLORIDA PROFESSIONAL ENGINEER
NOVEMBER 2021

This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

LAURIE S. BURCAW, PE #46064

BEACON ENGINEERING
CIVIL ENGINEERS
LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
UTILITY DETAILS

SHEET NUMBER:
C-7.3

B:\Projects\2022\22548 Calumet Towns\DWG\Civil\22-548_UTILITY.dwg 9/29/2023 10:11 AM

REFERENCED DATA

1. TOPOGRAPHIC SURVEY WAS OBTAINED FROM _____ AND PERFORMED BY _____, DATED _____.
2. SUBSURFACE UTILITY EXPLORATION WAS OBTAINED FROM _____ AND PERFORMED _____, DATED _____.
3. ALL ELEVATIONS ARE REFERENCED TO _____. THE HORIZONTAL DATUM IS BASED ON STATE PLANE _____.
4. THE SURVEY INFORMATION CONTAINED HEREIN WAS OBTAINED FOR DESIGN PURPOSES AND MAY NOT BE AN ADEQUATE REPRESENTATION OF ACTUAL CONDITIONS FOR PROJECT CONSTRUCTION. EXISTING CONTOURS SHOWN REPRESENT INTERPOLATIONS/EXTRAPOLATIONS FROM THE BEST AVAILABLE SURVEY DATA. ALL RISKS RESULTING FROM THE USE OR INTERPRETATION OF THE SURVEY DATA SHOWN SHALL BE BORNE BY THE CONTRACTOR.
5. GEOTECHNICAL INVESTIGATION AND RECOMMENDATIONS PERFORMED BY _____. REFER TO REPORT DATED _____.
6. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH IN THE FIELD LIMITS OF CONSTRUCTION, BENCHMARKS (ELEV.), COORDINATES, CENTER LINES, AND STATIONING AS REQUIRED TO CONSTRUCT THIS PROJECT.

GENERAL

7. ALL DESIGN AND CONSTRUCTION SHALL CONFORM TO THE MINIMUM STANDARDS SET FORTH BY THE FDEP, AWWA, NSF, AND CITY OF ZEPHYRHILLS.
8. THE CONTRACTOR IS ADVISED NOT TO SCALE FROM DRAWINGS BUT TO FIELD VERIFY ALL DIMENSIONS. THE DIMENSIONS OF SPECIFIED AND FURNISHED PRODUCTS AND MATERIALS TAKE PRECEDENCE OVER DIMENSIONS INDICATED ON THE DRAWINGS. IF SIGNIFICANT DEVIATIONS OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 72 HOURS PRIOR TO CONSTRUCTION FOR A DETERMINATION AND RESOLUTION.
9. THE CONTRACTOR SHALL CHECK PLANS FOR CONFLICTS AND DISCREPANCIES PRIOR TO PERFORMING ANY WORK IN THE AFFECTED AREA.
10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH THE PERMIT AND PERMIT CONDITIONS FOR THIS PROJECT. IF THE CONTRACTOR VIOLATES THE CONDITIONS AND THE ENGINEER, THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION AND SCHEDULE INSPECTION ACCORDING TO AGENCY INSTRUCTIONS.
11. ALL WORK PERFORMED SHALL COMPLY WITH THE REGULATIONS AND ORDINANCES OF THE VARIOUS GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE WORK.

CONSTRUCTION LAYOUT/LIMITS OF CONSTRUCTION

12. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF FLORIDA FOR LAYOUT. PROOF OF LICENSE SHALL BE SUBMITTED TO THE ENGINEER BEFORE BEGINNING LAYOUT.
13. NO DISTURBANCE SHALL BE ALLOWED OUTSIDE OF THE RIGHT OF WAYS AND/OR THE LIMITS OF CONSTRUCTION SHOWN ON THE DRAWINGS UNLESS APPROVED BY THE OWNER OR SPECIFICALLY NOTED ON THE DRAWINGS.

EXISTING CONDITIONS

14. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES AFFECTING THIS WORK PRIOR TO CONSTRUCTION.
15. PRIOR TO SHOP DRAWING PREPARATION AND SUBMITTAL AND PURCHASE OF RELATED MATERIALS, THE CONTRACTOR SHALL FIELD VERIFY EXISTING UTILITIES (LOCATION, SIZE, MATERIALS OF CONSTRUCTION, OUTSIDE DIAMETER, WALL THICKNESS, ROUNDNESS, ELEVATIONS, ETC.) TO WHICH CONNECTION(S) WILL BE MADE. CONTRACTOR SHALL INCLUDE FIELD MEASUREMENTS ON SHOP DRAWINGS.
16. THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER IN WRITING IMMEDIATELY IF CONFLICTS BETWEEN THE DRAWINGS AND ACTUAL CONDITIONS ARE DISCOVERED. THE CONTRACTOR SHALL ACCURATELY RECORD ANY SUCH CONFLICTS ON THE RECORD DRAWINGS.
17. ANY PROPERTY CORNERS, MONUMENTS, OR BENCH MARKS WITHIN THE PROJECT AREA SHALL BE PROTECTED UNLESS OTHERWISE INDICATED FOR DEMOLITION. IF ANY SUCH ITEMS ARE IN DANGER OF DAMAGE OR HAVE BEEN DAMAGED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER IMMEDIATELY AND REPLACE/RESTORE THESE ITEMS AT NO COST TO THE OWNER. IF THE OWNER DECIDES TO HAVE ANOTHER PARTY PERFORM THE WORK OR INCURS RELATED EXPENSES, THE CONTRACTOR SHALL REIMBURSE THE OWNER FOR ALL COSTS ASSOCIATED WITH THE EFFORT.
18. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, WHETHER OR NOT SHOWN ON THE PLANS, THAT MAY OCCUR AS A RESULT OF THE WORK PERFORMED BY THE CONTRACTOR CALLED FOR IN THIS CONTRACT.

UTILITY COORDINATION

19. THE CONTRACTOR SHALL NOTIFY ALL UTILITIES NEAR THE PROJECT AREA AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE NOTIFYING "SUNSHINE STATE ONE CALL OF FLORIDA" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK TO HAVE ALL EXISTING UTILITIES LOCATED. THE PHONE NUMBER IS 1-800-432-4770 AND THE WEB ADDRESS IS WWW.SUNSHINE811.COM. IF THE CONTRACTOR DOES NOT USE THE WEB, THE NOTIFICATION PERIOD SHALL BE INCREASED FROM AT LEAST 48 HOURS TO AT LEAST 10 DAYS.
20. FLORIDA LAW (FS 553.851) REQUIRES THAT PERSONS MAKING EXCAVATIONS IN PUBLIC RIGHTS-OF-WAY OR EASEMENTS CONTACT THE OWNER OF ANY GAS MAIN FIRST OBTAIN INFORMATION ON LOCATIONS OF UNDERGROUND GAS PIPELINES.
21. THE CONTRACTOR IS RESPONSIBLE FOR BRACING, SHORING, OR PROVIDING OTHER MEANS NECESSARY TO PROTECT AND SUPPORT EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES (EXPOSED OR UNEXPOSED) THAT MAY BE IMPACTED BY HIS WORK.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING POWER/TELEPHONE COMPANIES AND ARRANGING TO HAVE UTILITIES POLES HELD AND/OR GUY WIRES REMOVED AND REPLACED, IF NECESSARY FOR CONSTRUCTION, AT NO ADDITIONAL COST TO THE OWNER.
23. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE PUBLIC AGENCY(IES) PRIOR TO COMMENCING WORK WITHIN THEIR JURISDICTION.

CONSTRUCTION SAFETY

24. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE OSHA EXCAVATION SAFETY STANDARDS AND TO ABIDE BY THEM AS CONCRETE UNDER THE FLORIDA TRENCH SAFETY ACT.
25. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION SAFETY.

RESTORATION

26. ALL PAVING, STABILIZED EARTH, DRIVEWAYS, CURBS, SIDEWALKS, FENCES, SOD, LANDSCAPING, CULVERTS, ETC. DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED BY AND AT THE EXPENSE OF THE CONTRACTOR TO THE SATISFACTION OF THE OWNER(S).
27. ALL EXISTING SIGNS AND MAILBOXES LOCATED WITHIN THE PROJECT SHALL BE REMOVED AND REINSTALLED OR REPLACED AS REQUIRED DURING CONSTRUCTION, AND SHALL BE PERFORMED BY AND AT THE EXPENSE OF THE CONTRACTOR TO THE SATISFACTION OF THE OWNER(S).
28. ALL SIDEWALKS DAMAGED DURING CONSTRUCTION ARE TO BE A MINIMUM WIDTH OF 5', A MINIMUM OF 4" THICK, 3,000 PSI CONCRETE, AND SHALL BE REINFORCED WITH 1.4X1.4 W.W.M., ALL IN CONFORMANCE WITH MACDILL DESIGN GUIDELINES, LATEST EDITION.

ACCESS/MAINTENANCE OF FACILITIES

29. THE CONTRACTOR SHALL PROVIDE ACCESS TO ALL EXISTING UTILITIES/FACILITIES AND MAINTAIN UNINTERRUPTED SERVICES THROUGHOUT THE CONTRACT PERIOD.

PIPING NOTES

30. LAY PIPE TO UNIFORM GRADE BETWEEN INDICATED ELEVATION POINTS. CONTRACTOR SHALL TAKE CARE TO PROVIDE PROPER GRADE ELEVATIONS AND ALIGNMENTS.
31. SIZE OF FITTINGS SHOWN ON PLANS SHALL CORRESPOND TO THE ADJACENT STRAIGHT RUN OF PIPE UNLESS NOTED OTHERWISE. TYPE OF JOINT AND FITTING MATERIAL SHALL BE AS SPECIFIED FOR THE ADJACENT STRAIGHT RUN OF PIPE UNLESS NOTED OTHERWISE.
32. ALL PIPE LENGTHS ARE APPROXIMATE. PIPE MEASUREMENTS FOR STRAIGHT ENDWALL END SECTIONS ARE TO END OF PIPE.
33. PIPE HANGERS AND SUPPORTS ARE NOT SHOWN UNLESS A SPECIAL TYPE OR ARRANGEMENT IS REQUIRED. FINAL SUPPORTS, LOCATIONS, AND TYPES SHALL BE DETERMINED BY THE CONTRACTOR AND INCLUDED IN THE PIPELINE SHOP DRAWING SUBMITTALS FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO INSTALLATION. MAXIMUM SPACING SHALL BE AS SPECIFIED.

SEWER

34. ALL WASTEWATER FORCE MAINS ARE TO BE CONSTRUCTED WITH 48" MINIMUM COVER UNLESS OTHERWISE NOTED ON THE PLANS.
35. LOW PRESSURE AIR TEST AND MEG INSPECTION ARE REQUIRED FOR THE GRAVITY COLLECTION SYSTEM. ALTERNATIVE TESTING METHODS PROPOSED BY THE CONTRACTOR MUST BE PRE-APPROVED BY CITY OF ZEPHYRHILLS.
36. MANHOLE FRAMES AND COVERS, AND CO CAPS ARE TO BE WATER TIGHT. IF NEEDED, EXISTING MANHOLE TOPS ARE TO BE ADJUSTED TO PROPOSED GRADE.
37. INFLOW PROTECTION DISHES ARE REQUIRED FOR ALL MANHOLES: STAINLESS STEEL IN PAVED AREAS, ABS IN UNPAVED AREAS.
38. ALL SEWER FORCE MAIN LINES AND GRAVITY SERVICE LINES ACCEPTED BY THE CITY OF ZEPHYRHILLS MUST BE AT LEAST FOUR INCHES (4") AND EIGHT INCHES (8") IN DIAMETER, RESPECTIVELY, EXCEPT LATERAL SEWER LINES WHICH SHALL BE NO LESS THAN SIX INCHES (6") IN DIAMETER AND ACCEPTED BY THE CITY OF ZEPHYRHILLS TO A SANITARY CLEANOUT POINT OF DEMARCATION (POD). A SANITARY CLEANOUT SHALL BE PROVIDED WITHIN 10' OF EXTERIOR BUILDING WALL FOR ALL WASTEWATER SERVICE CONNECTIONS. ALL SERVICE LINES SHALL ENTER A MANHOLE.
39. A SMALL CHECK VALVE FOLLOWED BY A PLUG VALVE SHALL BE INSTALLED AT THE CITY OF ZEPHYRHILLS POD ON GOVERNMENT OR PRIVATELY OWNED FORCE MAINS DISCHARGING FROM PRIVATELY OWNED LIFT STATIONS CONNECTING INTO THE CITY OF ZEPHYRHILLS'S UTILITY MAINS.
40. CONNECTION TO EXISTING MANHOLES AND/OR LIFT STATIONS SHALL BE BY CORE BORE WITH KOR-N-SEAL CONNECTORS.
41. ALL ELECTRICAL AND CONTROL BOXES AT LIFT STATIONS SHALL BE PAINTED MANOR HOUSE BROWN (SHERWIN WILLIAMS).
42. CONTRACTOR SHALL COORDINATE WITH CITY OF ZEPHYRHILLS ON THE LOCATION OF THE LS DRIVE BEFORE INSTALLING.

UTILITY SEPARATION

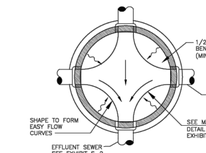
43. EACH PROPOSED UTILITY SHALL BE LAID TO ACHIEVE THE MINIMUM HORIZONTAL SEPARATION BETWEEN IT AND OTHER UTILITIES IN ACCORDANCE WITH THE TYPICAL UTILITY HORIZONTAL SEPARATION DETAIL AND FDEP REQUIREMENTS.
44. AT LOCATIONS WHERE A PROPOSED UTILITY CROSSES ANOTHER UTILITY, THE PROPOSED UTILITY SHALL BE INSTALLED IN ACCORDANCE WITH THE TYPICAL UTILITY CONFLICT DETAIL AND FDEP REQUIREMENTS.
45. IN THE EVENT THAT A UTILITY CONFLICT CAN NOT BE RESOLVED BY MAKING A MINOR ROUTE ADJUSTMENT OR BY UTILIZING THE TYPICAL UTILITY CONFLICT DETAIL, THE CONTRACTOR SHALL SUBMIT A RELOCATION PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK. ALL RELOCATION EFFORTS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER AND ANY AFFECTED UTILITY COMPANIES.

MAINTENANCE OF TRAFFIC

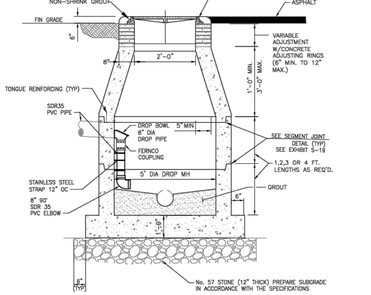
46. THE CONTRACTOR SHALL REFER TO THE "2014 FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS" FOR FDOT DESIGN INDEX 600 AND 2014 "FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AS SUPPLEMENTS TO THE INFORMATION AND DETAILS PROVIDED IN THESE CONSTRUCTION DRAWINGS.
47. ALL REFERENCED FDOT STANDARD INDEX DRAWINGS CAN BE FOUND AT WWW.DOT.STATE.FL.US/ROADDESIGN/DS/14/STDS.SHTM.
48. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFE MAINTENANCE OF PEDESTRIAN AND VEHICULAR TRAFFIC AT ALL TIMES DURING THE DURATION OF THE PROJECT.
49. THE CONTRACTOR SHALL MAINTAIN TRAFFIC IN ACCORDANCE WITH FDOT STANDARD INDEX 600 SERIES AND THE TECHNICAL SPECIFICATIONS. THE CONTRACTOR SHALL FURNISH, ERECT, AND MAINTAIN ALL NECESSARY TRAFFIC CONTROL AND SAFETY DEVICES THROUGHOUT THE DURATION OF THE PROJECT. ONE TRAFFIC LANE MUST BE MAINTAINED AT ALL TIMES WITH USE OF FLAGGER. ALL TRAFFIC LANES MUST BE OPEN FOR TRAFFIC AT THE CLOSE OF WORKDAYS. ALL SIGNING, BARRICADES, LIGHTING, AND FLAGGERS SHALL BE INCLUDED IN THE LUMP SUM COST.
50. ALL PAVEMENT MARKINGS SHALL MEET CURRENT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. STANDARDS, AND SHALL BE PAINTED IN ACCORDANCE WITH FDOT STANDARD SPECIFICATION SECTION 710.
51. SIGNS AND BARRICADES TO BE ACCORDING TO FDOT MANUAL OF SAFE PRACTICES; REFERENCE FDOT INDEXES 600 THROUGH 650 AND 17346 FOR ROADWAY AND TRAFFIC DESIGN STANDARDS LATEST EDITION.

PROJECT SPECIFIC

52. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF TWO WEEKS NOTICE TO THE OWNER (PWS-PWC) PRIOR TO MAKING THE NEW WATER MAIN TO THE AFB PUBLIC WATER SUPPLY (WS-PWC). THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND SCHEDULING EACH CONNECTION WITH THE OWNERS OF THE PWS TO ENSURE THAT THERE ARE MINIMAL INTERRUPTIONS TO EACH SYSTEM.
53. ALL UNDERGROUND UTILITIES MUST BE IN PLACE AND TESTED AND/OR INSPECTED PRIOR TO BACKFILL COMPACTION, ROAD BASE INSTALLATION, OR RESTORATION.
54. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL PRECAST AND MANUFACTURED ITEMS TO THE ENGINEER FOR APPROVAL. FAILURE TO OBTAIN APPROVAL BEFORE INSTALLATION MAY RESULT IN REMOVAL AND REPLACEMENT AT CONTRACTOR'S EXPENSE.
55. ALL ROCKS OR STONES LARGER THAN 6" IN DIAMETER SHALL BE REMOVED FROM THE BACKFILL MATERIAL. BACKFILL MATERIAL PLACED WITHIN 1-FOOT OF PIPING AND APPURTENANCES SHALL NOT CONTAIN ANY STONES LARGER THAN 2" IN DIAMETER.
56. ALL WORKMANSHIP AND MATERIALS USED IN THE CONSTRUCTION OF THIS PROJECT SHALL CONFORM TO FDOT'S STANDARD SPECIFICATIONS FOR ROADWORK AND BRIDGE CONSTRUCTION, LATEST EDITION, AWWA, NSF, AND THE LATEST CITY OF ZEPHYRHILLS STANDARDS, UNLESS OTHERWISE INDICATED.
57. [ENGINEER TO ADD MORE AS NEEDED]
58. ABANDON PIPING IN PLACE:
   2" AND SMALLER CAP AND ABANDON IN PLACE.
   3" AND LARGER CAP AND GROUT FILL IN PLACE.



PLAN

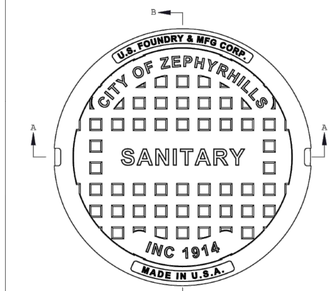


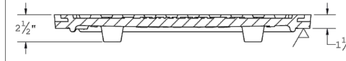
NOTES:
1. CONNECTIONS AND GROUTING IN MANHOLE ARE SCHEMATIC. SEE ACTUAL DWGS FOR PIPE DIAMETERS, LOCATIONS AND INVERTS.
2. COAT OUTSIDE OF MANHOLE AS SPECIFIED.
3. LINE INSIDE OF MANHOLE AS SPECIFIED.
4. RISERS SHALL BE CONCENTRIC WHEN POSSIBLE.

SECTION

MANHOLE W/ DROP PIPE

NTS

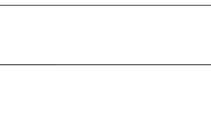




SECTION A-A
SCALE 1 : 6

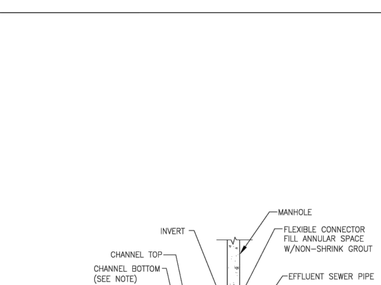
MANHOLE COVER DETAIL

NOT TO SCALE



MANHOLE COVER DETAIL FOR PAVED AREAS

NOT TO SCALE



NOTE:
PROVIDE SMOOTH TRANSITION IN CHANNEL BOTTOM FROM INFLUENT IE TO EFFLUENT IE.

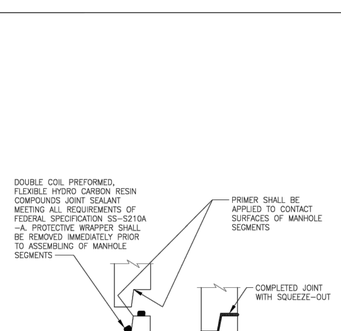
MANHOLE - CONNECTION TO EFFLUENT GRAVITY SEWER

NTS

NOTE:
PROVIDE SMOOTH TRANSITION IN CHANNEL BOTTOM FROM INFLUENT IE TO EFFLUENT IE.

MANHOLE - CONNECTION TO INFLUENT GRAVITY SEWER

NTS



MANHOLE OR LIFT STATION PRECAST SEGMENT JOINT W SEALANT

NTS

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB	ISSUE DATE:	9/28/23
CHECKED BY:	AH	APPROVED BY:	LB	JOB NO.:	22-548

NO.	BY	DATE	REVISION DESCRIPTION
1	CB	5/30/23	1ST ROUND JURISDICTIONAL COMMENTS
2	CB	8/31/23	2ND ROUND JURISDICTIONAL COMMENTS

3 WORKING DAYS BEFORE YOU DIG CALL SUNSHINE STATE ONE CALL OF FLORIDA 1-800-432-4770
FOR THE LOCATION OF UNDERGROUND UTILITIES

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL NOTIFY ALL UTILITIES SUFFICIENTLY IN ADVANCE OF THEIR BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

LAURIE S. BURCAW — LICENSE — No. 46064 — STATE OF FLORIDA — PROFESSIONAL ENGINEER
NOVEMBER 2021

This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.

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LAURIE S. BURCAW, PE #46064

BEACON ENGINEERING
CIVIL ENGINEERS
LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
UTILITY DETAILS

SHEET NUMBER:
C-7.4

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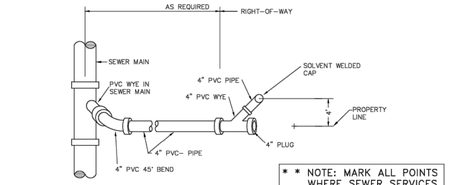
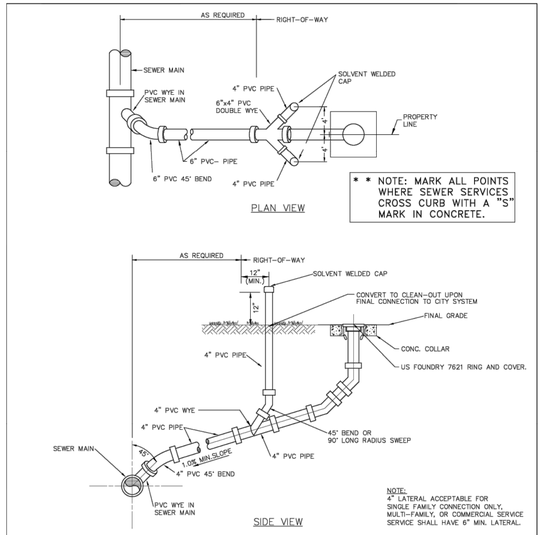


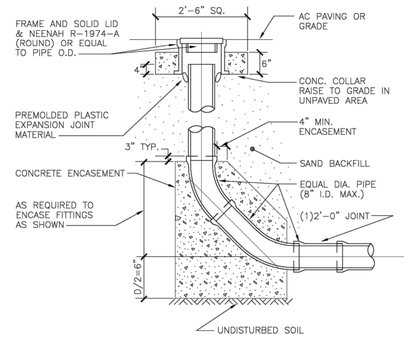
SANITARY SEWER SERVICE

PVC SINGLE SERVICE



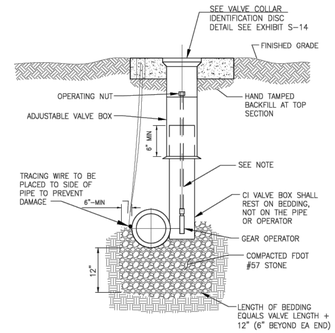
SANITARY SEWER SERVICE

PVC DOUBLE SERVICE
NOT TO SCALE



GRAVITY CLEANOUT

NOT TO SCALE

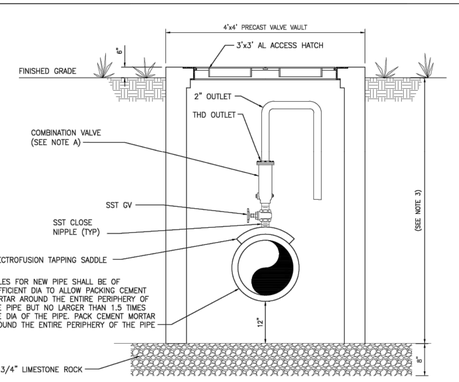


NOTES:

1. VALVE STEM EXTENSION(S) REQ'D TO MAINTAIN 2' DEPTH TO OPERATING NUT ON DEPRESSED MAIN W/36" OR MORE COVER.
2. EXTENSION OF VALVE BOX SHALL BE SET SO AS TO RESERVE 1/2 OF THE ADJUSTMENT LENGTH FOR FUTURE USE.

PLUG VALVE

NTS



NOTES:

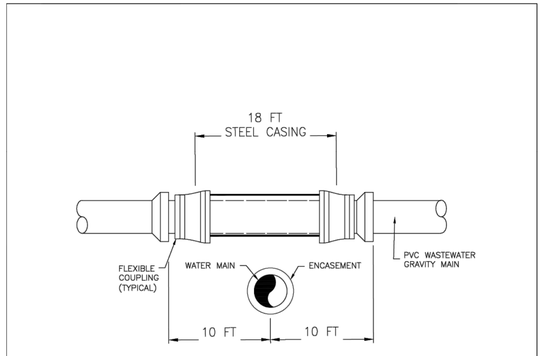
A. FOR SEWAGE FORCE MAINS, REPLACEMENT VALVE SIZE SHALL MATCH EXISTING VALVE TO BE REPLACED.

B. THE VALVE VAULT IS NOT DESIGNED FOR VEHICULAR TRAFFIC LOADS AND IS NOT INTENDED FOR PLACEMENT WITHIN THE TRAVELED WAY.

C. NOMINAL 36" MIN. ENGINEER MAY ADJUST AS REQUIRED BASED ON FINAL DESIGN.

TYPICAL UNDERGROUND COMBINATION AIR RELEASE VALVE DETAIL

NTS

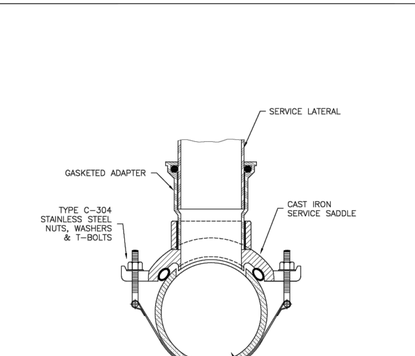


NOTES:

1. WHERE WATER AND SEWER CROSS WITH LESS THAN 18 INCHES OF VERTICAL CLEARANCE, THE GRAVITY SEWER SHALL CONSIST OF 18 FT OF STEEL ENCASED PVC PIPE CENTERED ON THE POINT OF THE CROSSING AS DETAILED ABOVE.
2. WHERE WATER MAIN CROSSES BELOW SEWER MAIN, BOTH THE GRAVITY AND THE WATER MAIN MUST BE ENCASED.

GRAVITY MAIN AND WATER MAIN INTERSECTION DETAIL

NTS



SECTION

SEWER LATERAL RETROFIT

NTS

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB
CHECKED BY:	AH	APPROVED BY:	LB

ISSUE DATE: 9/28/23
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LAURIE S. BURCAW
LICENSED
No. 46064
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.

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LAURIE S. BURCAW, PE #46064

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CIVIL ENGINEERS
LAND DEVELOPMENT ENGINEERS
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CALUMET TOWNS

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ZEPHYRHILLS,
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SHEET NAME:
UTILITY DETAILS

SHEET NUMBER:
C-7.5

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REFERENCED DATA

1. TOPOGRAPHIC SURVEY WAS OBTAINED FROM _____ AND PERFORMED BY _____, DATED _____
2. SUBSURFACE UTILITY EXPLORATION WAS OBTAINED FROM _____ AND PERFORMED _____, DATED _____
3. ALL ELEVATIONS ARE REFERENCED TO _____. THE HORIZONTAL DATUM IS BASED ON STATE PLANE _____.
4. THE SURVEY INFORMATION CONTAINED HEREIN WAS OBTAINED FOR DESIGN PURPOSES AND MAY NOT BE AN ADEQUATE REPRESENTATION OF ACTUAL CONDITIONS FOR PROJECT CONSTRUCTION. EXISTING CONTOURS SHOWN REPRESENT INTERPOLATIONS/EXTRAPOLATIONS FROM THE BEST AVAILABLE SURVEY DATA. ALL RISKS RESULTING FROM THE USE OR INTERPRETATION OF THE SURVEY DATA SHOWN SHALL BE BORNE BY THE CONTRACTOR.
5. GEOTECHNICAL INVESTIGATION AND RECOMMENDATIONS PERFORMED BY _____, REFER TO REPORT DATED _____.
6. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH IN THE FIELD LIMITS OF CONSTRUCTION, BENCHMARKS (ELEV.), COORDINATES, CENTER LINES, AND STATIONING AS REQUIRED TO CONSTRUCT THIS PROJECT.

GENERAL

7. ALL DESIGN AND CONSTRUCTION SHALL CONFORM TO THE MINIMUM STANDARDS SET FORTH BY THE FDEP, AWWA, NSF, AND CITY OF ZEPHYRHILLS.
8. THE CONTRACTOR IS ADVISED NOT TO SCALE FROM DRAWINGS BUT TO FIELD VERIFY ALL DIMENSIONS. THE GUARANTEED SPECIFICATIONS AND FURNISHED PRODUCTS AND MATERIALS TAKE PRECEDENCE OVER DIMENSIONS INDICATED ON THE DRAWINGS. IF SIGNIFICANT DEVIATIONS OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 72 HOURS PRIOR TO CONSTRUCTION FOR A DETERMINATION AND RESOLUTION.
9. THE CONTRACTOR SHALL CHECK PLANS FOR CONFLICTS AND DISCREPANCIES PRIOR TO PERFORMING ANY WORK IN THE AFFECTED AREA.
10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH THE PERMIT AND INSPECTION REQUIREMENTS SPECIFIED BY THE VARIOUS GOVERNMENTAL AGENCIES AND THE ENGINEER. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION AND SCHEDULE INSPECTION ACCORDING TO AGENCY INSTRUCTIONS.
11. ALL WORK PERFORMED SHALL COMPLY WITH THE REGULATIONS AND ORDINANCES OF THE VARIOUS GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE WORK.

CONSTRUCTION LAYOUT/LIMITS OF CONSTRUCTION

12. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF FLORIDA FOR LAYOUT. PROOF OF LICENSE SHALL BE SUBMITTED TO THE ENGINEER BEFORE BEGINNING LAYOUT.
13. NO DISTURBANCE SHALL BE ALLOWED OUTSIDE OF THE RIGHT OF WAYS AND/OR THE LIMITS OF CONSTRUCTION SHOWN ON THE DRAWINGS UNLESS APPROVED BY THE OWNER OR SPECIFICALLY NOTED ON THE DRAWINGS.

EXISTING CONDITIONS

14. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES AFFECTING THIS WORK PRIOR TO CONSTRUCTION.
15. PRIOR TO SHOP DRAWING PREPARATION AND SUBMITTAL AND PURCHASE OF RELATED MATERIALS, THE CONTRACTOR SHALL FIELD VERIFY EXISTING UTILITIES (LOCATION, SIZE, MATERIALS OF CONSTRUCTION, OUTSIDE DIAMETER, WALL THICKNESS, ROUNDNESS, ELEVATIONS, ETC.) TO WHICH CONNECTION(S) WILL BE MADE. CONTRACTOR SHALL INCLUDE FIELD MEASUREMENTS ON SHOP DRAWINGS.
16. THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER IN WRITING IMMEDIATELY IF CONFLICTS BETWEEN THE DRAWINGS AND ACTUAL CONDITIONS ARE DISCOVERED. THE CONTRACTOR SHALL ACCURATELY RECORD ANY SUCH CONFLICTS ON THE RECORD DRAWINGS.
17. ANY PROPERTY CORNERS, MONUMENTS, OR BENCH MARKS WITHIN THE PROJECT AREA SHALL BE PROTECTED UNLESS OTHERWISE INDICATED FOR DEMOLITION. IF ANY SUCH ITEMS ARE IN DANGER OF DAMAGE OR HAVE BEEN DAMAGED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER IMMEDIATELY AND REPLACE/RESTORE THESE ITEMS AT NO ADDITIONAL COST TO THE OWNER. IF OWNER CHOOSES TO SELF PERFORM THE WORK OR INCUR ASSOCIATED COSTS, THE CONTRACTOR SHALL REIMBURSE THE OWNER FOR ALL COSTS ASSOCIATED WITH THE EFFORT.
18. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, ABOVE OR BELOW GROUND THAT MAY OCCUR AS A RESULT OF THE WORK PERFORMED BY THE CONTRACTOR CALLED FOR IN THIS CONTRACT.

UTILITY COORDINATION

19. THE CONTRACTOR SHALL NOTIFY ALL UTILITIES NEAR THE PROJECT AREA AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE NOTIFYING "SUNSHINE STATE ONE CALL OF FLORIDA" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK TO HAVE ALL EXISTING UTILITIES LOCATED. THE PHONE NUMBER IS 1-800-432-4770 AND THE WEB SITE IS WWW.CALLSUNSHINE.COM. IN INSTANCES WHERE CROSSINGS OCCURS IN RESTRICTED TIME, THE NOTIFICATION PERIOD SHALL BE INCREASED FROM AT LEAST 48 HOURS TO AT LEAST 10 DAYS.
20. FLORIDA LAW (FS 553.851) REQUIRES THAT PERSONS MAKING EXCAVATIONS IN PUBLIC STREETS, ALLEYS, RIGHT-OF-WAYS OR UTILITY EASEMENTS MUST FIRST OBTAIN INFORMATION ON LOCATIONS OF UNDERGROUND GAS PIPELINES.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BRACING, SHORING, OR PROVIDING OTHER MEANS NECESSARY TO PROTECT AND SUPPORT EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES (EXPOSED OR UNEXPOSED) THAT MAY BE IMPACTED BY HIS WORK.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING POWER/TELEPHONE COMPANIES AND ARRANGING TO HAVE UTILITIES POLES HELD AND/OR GUY WIRES REMOVED AND REPLACED, IF NECESSARY FOR CONSTRUCTION, AT NO ADDITIONAL COST TO THE OWNER.
23. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE PUBLIC AGENCY(IES) PRIOR TO COMMENCING WORK WITHIN THEIR JURISDICTION.

CONSTRUCTION SAFETY

24. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE OSHA EXCAVATION SAFETY STANDARDS AND TO ABIDE BY THEM AS COVERED UNDER THE FLORIDA TRENCH SAFETY ACT.
25. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION SAFETY.

RESTORATION

26. ALL PAVING, STABILIZED EARTH, DRIVEWAYS, CURBS, SIDEWALKS, FENCES, SOD, LANDSCAPING, CULVERTS, ETC. DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED BY AND AT THE EXPENSE OF THE CONTRACTOR TO THE SATISFACTION OF THE OWNER.
27. ALL EXISTING SIGNS AND MAILBOXES LOCATED WITHIN THE PROJECT SHALL BE REMOVED AND RESTALLED OR REPLACED AS REQUIRED DURING CONSTRUCTION, AND SHALL BE RESTORED BY AND AT THE EXPENSE OF THE CONTRACTOR TO THE SATISFACTION OF THE OWNER.
28. ALL SIDEWALKS DAMAGED DURING CONSTRUCTION ARE TO BE A MINIMUM WIDTH OF 5', A MINIMUM OF 4" THICK, 3,000 PSI CONCRETE, AND SHALL BE REINFORCED WITH 1.6X1.6 W.W.M., ALL IN CONFORMANCE WITH MACDILL DESIGN GUIDELINES, LATEST EDITION.

ACCESS/MAINTENANCE OF FACILITIES

29. THE CONTRACTOR SHALL PROVIDE ACCESS TO ALL EXISTING UTILITIES/FACILITIES AND MAINTAIN UNINTERRUPTED SERVICES THROUGHOUT THE CONTRACT PERIOD.

PIPING NOTES

30. LAY PIPE TO UNIFORM GRADE BETWEEN INDICATED ELEVATION POINTS. CONTRACTOR SHALL TAKE CARE TO PROVIDE PROPER GRADE ELEVATIONS AND ALIGNMENTS.
31. SIZE OF FITTINGS SHOWN ON PLANS SHALL CORRESPOND TO THE ADJACENT STRAIGHT RUN OF PIPE UNLESS NOTED OTHERWISE. TYPE OF JOINT AND FITTING MATERIAL SHALL BE AS SPECIFIED FOR THE ADJACENT STRAIGHT RUN OF PIPE UNLESS NOTED OTHERWISE.
32. ALL PIPE LENGTHS ARE APPROXIMATE. PIPE MEASUREMENTS FOR STRAIGHT ENDWALL END SECTIONS ARE TO END OF PIPE.
33. PIPE HANGERS AND SUPPORTS ARE NOT SHOWN UNLESS A SPECIAL TYPE OR CONFIGURATION IS REQUIRED. FINAL SUPPORTS, LOCATIONS, AND TYPES SHALL BE DETERMINED BY THE CONTRACTOR AND INCLUDED IN THE PIPELINE DRAWING SUBMITTALS FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO INSTALLATION. MAXIMUM SPACING SHALL BE AS SPECIFIED.

WATER

34. ALL WATER PIPES ARE TO BE CONSTRUCTED WITH 36" MINIMUM COVER UNLESS OTHERWISE NOTED ON THE PLANS. ALL WATER MAINS ARE DR-18 PVC UNLESS OTHERWISE NOTED.
35. FURNISH AND INSTALL 8 GAUGE TRACER WIRE ON ALL MAIN PIPELINES. WIRE TO EXTEND INTO EACH VALVE BOX WITH SUFFICIENT EXCESS TO BRING WIRE THREE FEET ABOVE FINISH GRADE.
36. WATER SYSTEMS ARE TESTED TO A MINIMUM OF 150 PSI FOR TWO-HOUR DURATION AS PER AWWA C-600 STANDARDS.
37. ALL FIRE FLOW LINES WILL RUN SEPARATE FROM THE DOMESTIC WATER MAINS AND HAVE A FIRE DETECTION METER AND A FIRE LINE BACK FLOW PREVENTION ASSEMBLY (BFP). ASSEMBLY SHALL INCLUDE A LOW FLOW BY-PASS METER.
38. ALL POTABLE WATER CONNECTIONS SHALL BE MADE WITH CUTTING-IN TEES WITH VALVES. ANY EXCEPTIONS TO THIS WILL REQUIRE CITY OF ZEPHYRHILLS APPROVAL. WHEN ALLOWED BY CITY OF ZEPHYRHILLS, HOT TAP ("WET TAP") CONNECTIONS SHALL BE PERFORMED BY A LICENSED, UNDERGROUND CONTRACTOR, WITH ADVANCE NOTIFICATION (72 HOURS) TO THE CITY OF ZEPHYRHILLS INSPECTOR.
39. WATER TAPPING SADDLES SHALL BE DOUBLE STRAP BRASS OR DUCTILE IRON OR EPOXY COATED STEEL WITH STAINLESS STEEL HARDWARE. TIE STRAPS AND BOLTS SHALL BE CORROSION RESISTANT ALLOY STEEL. FULL CIRCLE STAINLESS STEEL TAPPING SADDLE SLEEVE WITH RESILIENT SEATED TAPPING VALVE SHALL BE USED FOR PROPOSED WATER AND FORCE MAIN CONNECTIONS.
40. ALL FIRE HYDRANTS SHALL BE PAINTED IN ACCORDANCE WITH AGRMA 07-07 (MAY 2007). CAPS SHALL BE PAINTED WITH REFLECTIVE-TYPE PAINT.

	BARREL COLOR	DISTRIBUTION SYSTEM TYPE
	SILVER	PUBLIC (POTABLE)
	RED	FIRE PROTECTION (POTABLE WITH BFP)
	PURPLE	RECLAIMED (NON-POTABLE)
CAPS		RATED CAPACITY (AT 20PSI RESIDUAL PRESSURE)
	SAFETY BLUE	1000+ GPM
	GREEN	1000-1499 GPM
	ORANGE	500-999 GPM
	RED	<500 GPM

UTILITY SEPARATION

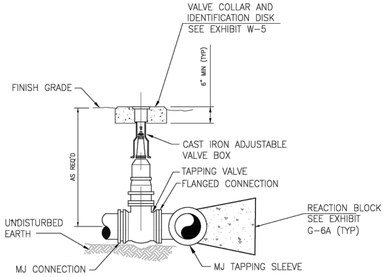
41. EACH PROPOSED UTILITY SHALL BE LAID TO ACHIEVE THE MINIMUM HORIZONTAL SEPARATION BETWEEN IT AND OTHER UTILITIES IN ACCORDANCE WITH THE TYPICAL UTILITY HORIZONTAL SEPARATION DETAIL AND FDEP REQUIREMENTS.
42. AT LOCATIONS WHERE A PROPOSED UTILITY CROSSES ANOTHER UTILITY, THE PROPOSED UTILITY SHALL BE INSTALLED IN ACCORDANCE WITH THE TYPICAL UTILITY CONFLICT DETAIL AND FDEP REQUIREMENTS.
43. IN THE EVENT THAT A UTILITY CONFLICT CAN NOT BE RESOLVED BY MAKING A MINOR ROUTE ADJUSTMENT OR BY UTILIZING THE TYPICAL UTILITY CONFLICT DETAIL, THE CONTRACTOR SHALL SUBMIT A RELOCATION PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. ALL RELOCATION EFFORTS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER AND ANY AFFECTED UTILITY COMPANIES.

MAINTENANCE OF TRAFFIC

44. THE CONTRACTOR SHALL REFER TO THE "2014 FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS" FOR FOOT DESIGN INDICES AND 2014 "FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AS SUPPLEMENTS TO THE INFORMATION AND DETAILS PROVIDED IN THESE CONSTRUCTION DRAWINGS.
45. ALL REFERENCED FDOT STANDARD INDEX DRAWINGS CAN BE FOUND AT WWW.DOT.STATE.FL.US/ROADDESIGN/DS/14/VSTDS.SHTM.
46. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFE MAINTENANCE OF PEDESTRIAN AND VEHICULAR TRAFFIC AT ALL TIMES DURING THE DURATION OF THE PROJECT.
47. THE CONTRACTOR SHALL MAINTAIN TRAFFIC IN ACCORDANCE WITH FDOT STANDARD INDEX 600 SERIES AND THE TECHNICAL SPECIFICATIONS. THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN ALL TRAFFIC CONTROL DEVICES AS REQUIRED FOR THE WORK. THROUGHOUT THE PROJECT, ONE TRAFFIC LANE MUST BE MAINTAINED AT ALL TIMES WITH USE OF FLAGGER. ALL TRAFFIC LANES MUST BE OPEN FOR TRAFFIC AT THE CLOSE OF WORKSHIFTS. ALL SIGNING, BARRICADES, LIGHTING, AND FLAGGERS SHALL BE INCLUDED IN THE LUMP SUM COST.
48. ALL PAVEMENT MARKINGS SHALL MEET CURRENT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES STANDARDS, AND SHALL BE PAINTED IN ACCORDANCE WITH FDOT STANDARD SPECIFICATION SECTION 710.
49. SIGNS AND BARRICADES TO BE ACCORDING TO FDOT MANUAL OF SAFE PRACTICES; REFERENCE FDOT INDEXES 600 THROUGH 650 AND 17349 FYR ROADWAY AND TRAFFIC DESIGN STANDARDS LATEST EDITION.

PROJECT SPECIFIC

50. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF TWO WEEKS NOTICE TO THE OWNER PRIOR TO CONNECTING THE NEW WATER MAIN TO THE AFB PUBLIC WATER SUPPLY (AFB-PWS). THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND SCHEDULING EACH CONNECTION WITH THE OWNER AND THE AFB-PWS TO ENSURE THAT THERE ARE MINIMAL INTERRUPTIONS TO EACH SYSTEM.
51. ALL UNDERGROUND UTILITIES MUST BE IN PLACE AND TESTED AND/OR INSPECTED PRIOR TO BACKFILL, COMPACTION, ROAD BASE INSTALLATION, OR RESTORATION.
52. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL PRECAST AND MANUFACTURED ITEMS TO THE ENGINEER FOR APPROVAL. FAILURE TO OBTAIN APPROVAL BEFORE INSTALLATION MAY RESULT IN REMOVAL AND REPLACEMENT AT CONTRACTOR'S EXPENSE.
53. ALL ROCKS OR STONES LARGER THAN 6" IN DIAMETER SHALL BE REMOVED FROM THE BACKFILL MATERIAL. BACKFILL MATERIAL PLACED WITHIN 1'-0"OT OF PIPING AND APPURTENANCES SHALL NOT CONTAIN ANY STONES LARGER THAN 2" IN DIAMETER.
54. ALL WORKMANSHIP AND MATERIALS USED IN THE CONSTRUCTION OF THIS PROJECT SHALL CONFORM TO FDOT'S STANDARD SPECIFICATIONS FOR ROADWORK AND BRIDGE CONSTRUCTION, LATEST EDITION, AWWA, NSF, AND THE LATEST CITY OF ZEPHYRHILLS STANDARDS, UNLESS OTHERWISE INDICATED.
55. [ENGINEER TO ADD MORE AS NEEDED]
56. ABANDON PIPING IN PLACE:
    2" AND SMALLER CAP AND ABANDON IN PLACE.
    3" AND LARGER CAP AND GROUT FILL IN PLACE.

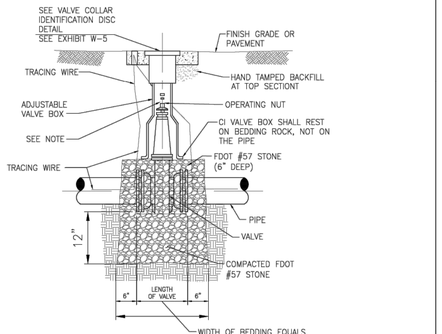


NOTES:

1. ALL BRASS/STAINLESS PIPE AND FITTINGS SHALL BE THREADED SCH. 40.
2. CAM-LOCK MALE ADAPTER & DUST CAP SHALL BE ALUMINUM/THREADED.
3. ACTUAL LENGTH OF BRASS/STAINLESS PIPELINE TO BE DETERMINED IN THE FIELD.
4. DEFLECT OR INSTALL FITTINGS AS REQUIRED TO MAINTAIN COVER AND TO SET BLOW-OFF ASSEMBLY PLUMB.
5. EXTENSION OF VALVE BOX SHALL BE SET SO AS TO RESERVE 1/2 OF THE ADJUSTMENT LENGTH FOR FUTURE USE.
6. VALVE STEM EXTENSION(S) REQ'D TO MAINTAIN 2' DEPTH TO OPERATING NUT ON DEPRESSED MAIN W/36" OR MORE COVER.

WET TAPPING SLEEVE AND VALVE DETAIL

NTS



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GATE VALVE BOX

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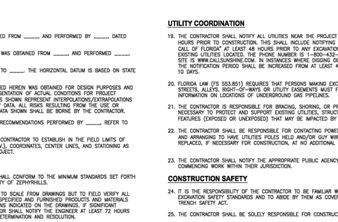
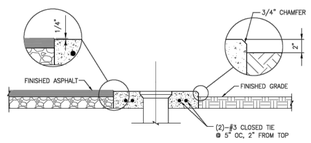


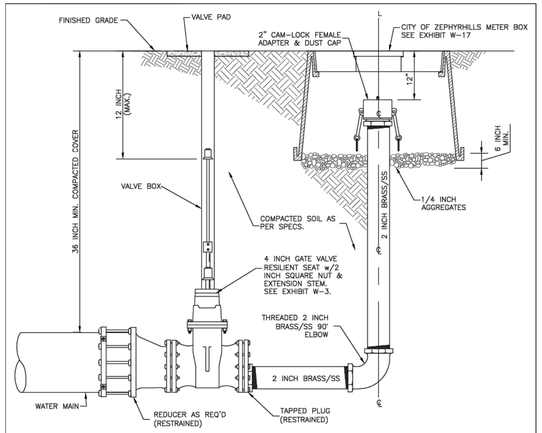
NOTE:
LOCATOR WIRE ACCESS–2" SCH 80 PVC, FEMALE ADAPTER COUPLING AND 2" BRASS PLUG W/ RECESSED NUT. TERMINATE INSULATED, SOLID 12 GAUGE COPPER LOCATOR WIRES AT TOP W/ 12" OF EXTRA WIRE

PLAN VIEW



VALVE COLLAR AND IDENTIFICATION DISK

NTS

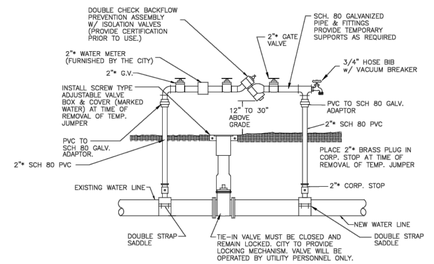


NOTES:

1. ALL BRASS/STAINLESS PIPE AND FITTINGS SHALL BE THREADED SCH. 40.
2. CAM–LOCK MALE ADAPTER & DUST CAP SHALL BE ALUMINUM/THREADED.
3. ACTUAL LENGTH OF BRASS/STAINLESS PIPELINE TO BE DETERMINED IN THE FIELD.
4. DEFLECT OR INSTALL FITTINGS AS REQUIRED TO MAINTAIN COVER AND TO SET BLOW–OFF ASSEMBLY PLUMB.

BLOWOFF ASSEMBLY

NTS



TEMPORARY JUMPER CONNECTION DETAIL

NTS

NOTE: LOCATION TO BE DETERMINED AT TIME OF PRECONSTRUCTION CONFERENCE W/ CITY.

* MINIMUM SIZE REQUIRED OR SIZE AS REQUIRED TO PROVIDE FLUSHING VELOCITY.

TEMPORARY JUMPER CONNECTION NOTES

1. A TEMPORARY JUMPER CONNECTION IS REQUIRED AT ALL CONNECTIONS BETWEEN EXISTING ACTIVE WATER MAINS AND PROPOSED NEW WATER MAIN IMPROVEMENTS.
2. THE DETAILS TO BE USED FOR FILLING ANY WATER MAIN OF ANY SIZE FROM EXISTING ACTIVE WATER MAINS AND FOR FLUSHING OF NEW MAINS UP TO 8" DIAMETER (2.5 FPS MINIMUM VELOCITY) AND FOR PULLING BACTERIOLOGICAL SAMPLES FROM ANY NEW WATER MAIN OF ANY SIZE. THE JUMPER CONNECTION SHALL BE MAINTAINED UNTIL AFTER FILLING, FLUSHING, TESTING AND DISINFECTION OF THE NEW MAIN HAS BEEN SUCCESSFULLY COMPLETED AND CLEARANCE FOR USE FROM THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) AND OTHER PERTINENT AGENCIES HAS BEEN RECEIVED. THE JUMPER CONNECTION SHALL ALSO BE USED TO MAINTAIN A MINIMUM PRESSURE OF 20 psi IN THE NEW MAINS ALL THE TIME AFTER DISINFECTION AND UNTIL THE FDEP CLEARANCE LETTER IS OBTAINED. ADEQUATE THRUST BLOCKING AND/OR RESTRAINTS SHALL BE PROVIDED TEMPORARILY, AS REQUIRED. PIPE AND FITTINGS USED FOR CONNECTING THE NEW PIPE TO THE EXISTING PIPE SHALL BE DISINFECTED PRIOR TO INSTALLATION IN ACCORDANCE WITH AWWA C651, 1992 EDITION. THIS TAPPING SLEEVE AND THE EXTERIOR OF THE MAIN TO BE TAPPED SHALL BE DISINFECTED BY SPRAYING OR SWABBING PER SECTION II OF AWWA C561–92.
3. FLUSHING OF 8" DIAMETER AND LARGE WATER MAINS MAY BE DONE THROUGH THE TIE–IN VALVE, IN THE PRESENCE OF THE UTILITY DEPART. THE UTILITY DEPARTMENT WILL NOTIFIED IN WRITING 48 HOURS PRIOR TO THE FLUSHING OF SAID MAINS.

   THE FOLLOWING PROCEDURES SHALL BE FOLLOWED:

   A. THE TIE–IN VALVES SHALL BE OPERATED AND PRESSURE TESTED IN THE PRESENCE OF THE UTILITY COMPANY AND ENGINEER TO VERIFY WATER TIGHTNESS PRIOR TO THE TIE–IN, VALVES WHICH ARE NOT WATERTIGHT SHALL BE REPLACED OR A NEW VALVE INSTALLED IMMEDIATELY ADJACENT TO THE LEAKING VALVE.

   B. THE TEMPORARY JUMPER CONNECTION SHALL BE CONSTRUCTED AS DETAILED. THE JUMPER CONNECTION SHALL BE USED TO FILL THE NEW WATER MAIN AND FOR PROVIDING WATER FOR BACTERIOLOGICAL SAMPLING OF THE NEW MAIN AS REQUIRED BY THE FDEP PERMIT.

      – FLUSHING SHALL NOT BE ATTEMPTED DURING PEAK DEMAND HOURS OF THE EXISTING WATER MAIN.

      – ALL DOWNSTREAM VALVES IN THE NEW SYSTEM MUST BE OPEN PRIOR TO OPENING THE TIE–IN VALVE.

      – PROVIDE FOR AND MONITOR THE PRESSURE AT THE TIE–IN POINT, THE PRESSURE IN THE EXISTING MAIN MUST NOT DROP BELOW 35 psi.

      – TIE–IN VALVE SHALL BE OPENED A FEW TURNS ONLY, ENSURING A PRESSURE DROP ACROSS THE VALE IS ALWAYS GRATER THAN 10 psi.

   C. THE TIE–IN VALVE SHALL BE LOCKED CLOSED BY THE CITY UNTIL FLUSHING BEGINS.

   D. THE TIE–IN VALVE SHALL BE OPENED ONLY A FEW TURNS FOR FLUSHING OF THE NEW MAIN. THE PROCEDURE SHALL BE DIRECTED BY THE CITY AND OBSERVED BY THE ENGINEER.

   E. AFTER FLUSHING, THE TIE–IN VALVE SHALL BE CLOSED AND LOCKED IN THE CLOSED POSITION BY THE CITY.
4. THE CITY SHALL TEST THE RPZ BACKFLOW PREVENTION DEVICE AT THE TIME OF INSTALLATION.
5. EXCEPT AS REQUIRED TO FLUSH LINES OF GREATER THAN 8" IN DIAMETER, THE TIE–IN VALVE SHALL REMAIN CLOSED AND SHALL BE LOCKED IN THE CLOSED POSITION BY THE CITY. THE TIE–IN VALVE SHALL REMAIN LOCKED CLOSED UNTIL THE NEW SYSTEM HAS BEEN CLEARED FOR USE BY FDEP AND ALL OTHER PERTINENT AGENCIES.
6. UPON RECEIPT OF CLEARANCE FOR USE FROM FDEP AND ALL OTHER PERTINENT AGENCIES, THE CONTRACTOR SHALL REMOVE THE JUMPER CONNECTION, THE CORPORATION STOPS ARE TO BE CLOSED AND PLUGGED WITH 2" BRASS PLUGS.
7. ALL INSTALLATION AND MAINTENANCE OF THE TEMPORARY JUMPER CONNECTION AND ASSOCIATED BACKFLOW PREVENTION DEVICE FITTINGS, VALVE, ETC., SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

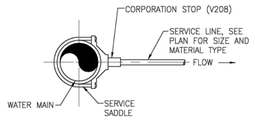
ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB	ISSUE DATE:	9/28/23
CHECKED BY:	AH	APPROVED BY:	LB	JOB NO.:	22-548

NO.	BY	DATE	REVISION DESCRIPTION
1	CB	5/30/23	1ST ROUND JURISDICTIONAL COMMENTS
2	CB	8/31/23	2ND ROUND JURISDICTIONAL COMMENTS

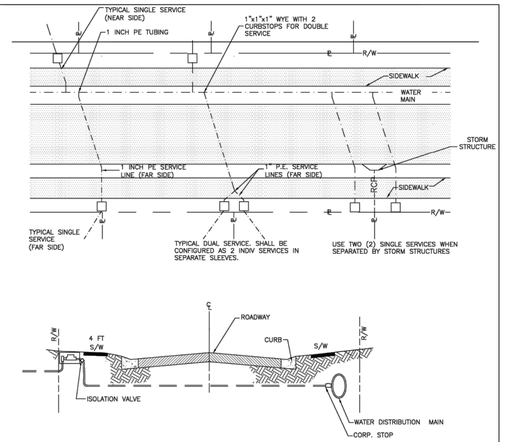
3 WORKING DAYS BEFORE YOU DIG CALL SUNSHINE STATE ONE CALL OF FLORIDA 1-800-432-4770
FOR THE LOCATION OF UNDERGROUND UTILITIES

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EX



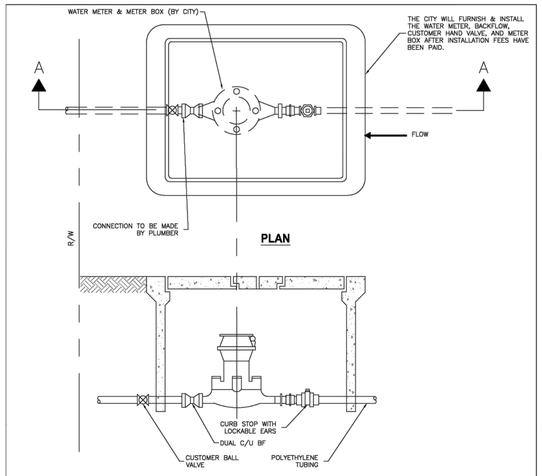
NOTE:
1. SIZE OF SERVICE SADDLE OUTLET, CORPORATION STOP, ADAPTERS, ETC. SHALL BE THE SAME AS THE SERVICE LINE SIZE UNLESS NOTED OTHERWISE
2. PLASTIC INSERTS ONLY (NO METAL) FOR ¾" AND 1" POLY CONNECTIONS.

SERVICE TAP
NTS



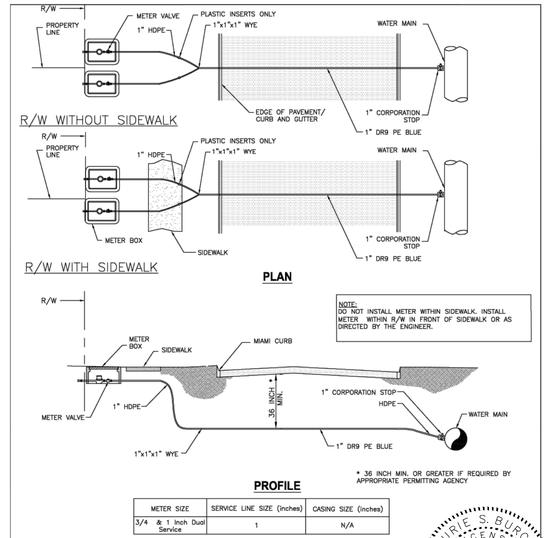
NOTES:
1. EACH SERVICE SHALL TERMINATE AT A CURB STOP(S) WHICH SHALL BE BURIED APPROXIMATELY 8 INCHES BELOW FINAL GRADE AND SHALL BE CLEARLY MARKED WITH A 2 INCH x 2 INCH x 18 INCH STAKE WITH THE TOP PAINTED BLUE AND MARKED WITH THE LOT(S) NUMBER SERVED.
2. STATIONING NOT REQUIRED IF SERVICE IS LOCATED ON LOT LINE.
3. 18 INCH MIN. SPACING BETWEEN SERVICE TAPS ON WATER MAIN SHALL BE MAINTAINED.
4. A NEAR SIDE DUAL SERVICE CONNECTION SERVICING MORE THAN ONE RESIDENCE IS ONLY ALLOWED WHERE RECLAIMED WATER SERVICE IS AVAILABLE.
5. SEAL END OF CASING SIMILAR TO EXHIBIT G-7.

RESIDENTIAL SINGLE METER SERVICE (NEAR AND FAR SIDE)
NTS



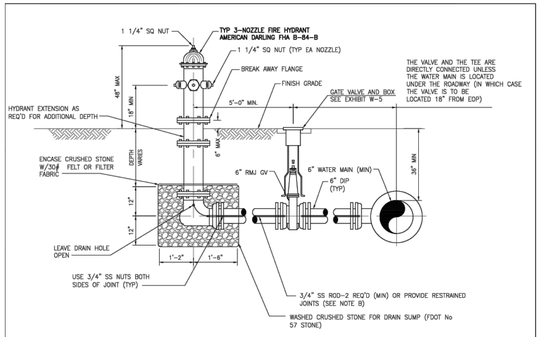
NOTE:
1. NO SERVICE LINE SHALL TERMINATE UNDER A DRIVEWAY.

RESIDENTIAL SINGLE METER SERVICE (NEAR AND FAR SIDE)
NTS



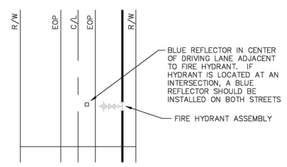
METER SIZE	SERVICE LINE SIZE (inches)	CASING SIZE (inches)
3/4 & 1 Inch Dual Service	1	N/A

RESIDENTIAL DUAL LOT METERED SERVICE (FAR SIDE)
NTS

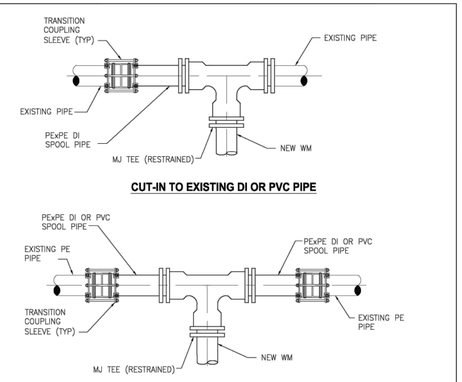


NOTES:
A. FIRE HYDRANT INSTALLATION SHALL BE IN ACCORDANCE WITH THE CITY'S LAND DEVELOPMENT CODE.
B. 3/4" STAINLESS STEEL ROD CUT AND THREADED AS REQUIRED, OR PROVIDE RESTRAINED JOINTS.
C. FIRE HYDRANTS SHALL BE INSTALLED BETWEEN 3' AND 7' FROM EDGE OF PAVEMENT.
D. TIE RODS, NUTS, WASHERS AND OTHER FASTENERS SHALL BE GALVANIZED OR TYPE 316 STAINLESS STEEL.
E. 4 1/2" PUMPER NOZZLE TO BE PERPENDICULAR TO CENTERLINE OF MAJOR STREET.
F. FIRE HYDRANT ASSEMBLY INCLUDES ALL THAT IS SHOWN INCLUDING DI PIPE TO R/W, DIP TEE AT MAIN, HYDRANT, REDUCERS, VALVE, HYDRANT EXTENSIONS, VALVE EXTENSIONS, ALL PIPING AND MISCELLANEOUS APPURTENANCES REQUIRED FOR A COMPLETE INSTALLATION.
G. FOR FIRE HYDRANTS ALONG PAVED ROADWAYS, INSTALL RAISED PAVEMENT MARKER FOR FIRE HYDRANT IDENTIFICATION. MARKER SHALL BE BLUE AND IN ACCORDANCE WITH FDOT 706. MARKER SHALL BE LOCATED IN THE CENTER OF CLOSEST LANE PERPENDICULAR TO FIRE HYDRANT.

FIRE HYDRANT DETAIL
NTS

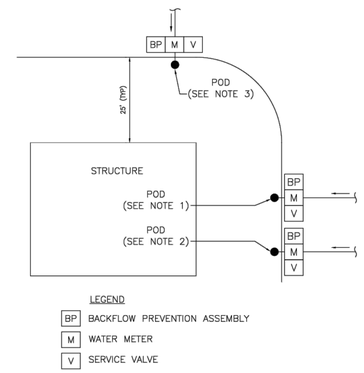


FIRE HYDRANT REFLECTOR DETAIL
NOT TO SCALE



NOTES:
1. RESTRAIN ALL PIPING IN ACCORDANCE WITH EXHIBIT G-6 OR AS DIRECTED BY THE CITY
2. SPOOL AND SLEEVE PIPING LAYOUT TO BE SIMILAR FOR CUT-IN CROSS.
3. ALL BURIED DUCTILE IRON PIPE AND FITTINGS SHALL BE POLYWRAPPED PER HILLSBOROUGH COUNTY STANDARDS
4. FOR ASBESTOS-CEMENT (AC) PIPE, REMOVE 10 FT. (MIN) OF PIPE ON EITHER SIDE OF THE NEW TEE AND REPLACE WITH DIP OR C900 PVC WHERE FEASIBLE. AS PROJECT CONDITIONS ALLOW, NO AC JOINTS SHALL BE ALLOWED WITHIN 15 FT. ON EITHER SIDE OF THE NEW TEE.

CUT-IN-TEE
NTS



NOTES:
1. POD IS THE DOWNSTREAM SIDE OF THE WATER METER, BACKFLOW ASSEMBLY, OR VALVE.
2. POD IS WHERE THE SERVICE LINE ENTERS THE PROPERTY LINE WHEN NO COMPONENTS ARE LOCATED WITHIN 25' OF A STRUCTURE.
3. POD SHOULD BE AT THE PROPERTY LINE/RIGHT OF WAY LINE FOR ALL INSTALLATIONS. METERS SHOULD BE LOCATED AT THE RIGHT OF WAY LINE.

POINTS OF DEMARCATION POTABLE WATER SERVICE
NTS

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB	ISSUE DATE:	9/28/23
CHECKED BY:	AH	APPROVED BY:	LB	JOB NO.:	22-548

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LAURIE S. BURCAW LICENSE No. 46064 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

LAURIE S. BURCAW, PE #46064

BEACON ENGINEERING
CIVIL ENGINEERS
LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
UTILITY DETAILS

SHEET NUMBER:
C-7.7

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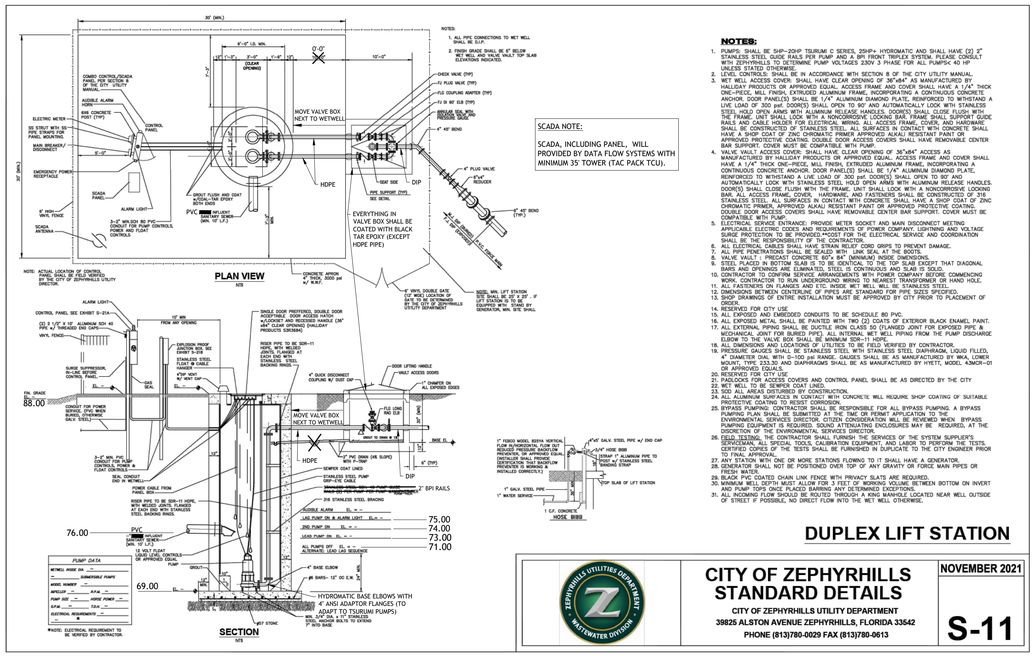


NOTES:

1. PUMPS: SHALL BE 5HP–20HP TSURUMI C SERIES, 2SHP+ HYDROMATIC AND SHALL HAVE (2) 2" STAINLESS STEEL GUIDE RAILS PER PUMP AND A 316 FROST TRIPLEX SYSTEM. PLEASE CONSULT WITH ZEPHYRHILLS TO DETERMINE PUMP VOLTAGES 230V 3 PHASE FOR ALL PUMPS< 40 HP UNLESS STATED OTHERWISE.
2. LEVEL CONTROLS: SHALL BE IN ACCORDANCE WITH SECTION 8 OF THE CITY UTILITY MANUAL.
3. WET WELL ACCESS COVER: SHALL HAVE CLEAR OPENING OF 36"x84" AS MANUFACTURED BY HALLIDAY PRODUCTS OR APPROVED EQUAL. ACCESS FRAME AND COVER SHALL HAVE A 1/4" THICK ONE–PIECE, MILL FINISH, EXTRUDED ALUMINUM FRAME, INCORPORATED IN A CONTINUOUS CONCRETE ANCHOR. DOOR PANEL(S) SHALL BE 1/4" ALUMINUM DIAMOND PLATE, DOOR(S) SHALL BE HINGED AT THE REAR AND OPEN AUTOMATICALLY TO 90° AND AUTOMATICALLY LOCK WITH STAINLESS STEEL HOLD OPEN ARMS WITH ALUMINUM RELEASE HANDLES. DOOR(S) SHALL CLOSE FLUSH WITH THE FRAME. UNIT SHALL LOOK WITH A NONCORROSIVE LOCKING BAR. FRAME SHALL SUPPORT GUIDE RAILS AND CABLE HOLDER FOR ELECTRICAL WIRING. ALL ACCESS FRAME, COVER, AND HARDWARE SHALL BE CONSTRUCTED OF STAINLESS STEEL. ALL SURFACES IN CONTACT WITH CONCRETE SHALL HAVE A SHOP COAT OF ZINC CHROMATIC PRIMER, APPROVED ALKALI RESISTANT PAINT OR APPROVED PROTECTIVE COATING. DOUBLE DOOR ACCESS COVERS SHALL HAVE REMOVABLE CENTER BAR SUPPORT. COVER MUST BE COMPATIBLE WITH PUMP.
4. VALVE VAULT ACCESS COVER: SHALL HAVE CLEAR OPENING OF 36"x84" ACCESS AS MANUFACTURED BY HALLIDAY PRODUCTS OR APPROVED EQUAL. ACCESS FRAME AND COVER SHALL HAVE A 1/4" THICK ONE–PIECE, MILL FINISH, EXTRUDED ALUMINUM FRAME, INCORPORATED IN A CONTINUOUS CONCRETE ANCHOR. DOOR PANEL(S) SHALL BE 1/4" ALUMINUM DIAMOND PLATE, DOOR(S) SHALL BE HINGED AT THE REAR AND OPEN AUTOMATICALLY TO 90° AND AUTOMATICALLY LOCK WITH STAINLESS STEEL HOLD OPEN ARMS WITH ALUMINUM RELEASE HANDLES. DOOR(S) SHALL CLOSE FLUSH WITH THE FRAME. UNIT SHALL LOOK WITH A NONCORROSIVE LOCKING BAR. ALL ACCESS FRAME, COVER, AND HARDWARE SHALL BE CONSTRUCTED OF STAINLESS STEEL. ALL SURFACES IN CONTACT WITH CONCRETE SHALL HAVE A SHOP COAT OF ZINC CHROMATIC PRIMER, APPROVED ALKALI RESISTANT PAINT OR APPROVED PROTECTIVE COATING. DOUBLE DOOR ACCESS COVERS SHALL HAVE REMOVABLE CENTER BAR SUPPORT. COVER MUST BE COMPATIBLE WITH PUMP.
5. ELECTRICAL SERVICE ENTRANCE: PROVIDE METER SOCKET AND MAIN DISCONNECT MEETING APPLICABLE ELECTRIC CODES AND REQUIREMENTS OF POWER COMPANY. LIGHTNING AND VOLTAGE SURGE PROTECTION TO BE PROVIDED PCOST FOR THE ELECTRICAL SERVICE AND COORDINATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
6. ALL PIPE SUPPORTS SHALL BE STAINLESS STEEL U–BOLT GRIPS TO PREVENT DAMAGE.
7. ALL PIPE PENETRATIONS SHALL BE SEALED WITH LINK SEAL AT THE BOOTS.
8. VALVE VAULT : PRECAST CONCRETE 60"x 84" (MINIMUM) INSIDE DIMENSIONS.
9. STEEL PLACED IN BOTTOM SLAB IS TO BE IDENTICAL TO THE TOP SLAB EXCEPT THAT DIAGONAL BARS AND OPENINGS ARE ELIMINATED. STEEL IS CONTINUOUS AND SLAB IS SOLID.
10. WORK SHALL INCLUDE ALL EXCAVATION, BACKFILL, AND RESTORATION OF ROADWAY. COMMENCING WORK, CONTRACTOR TO RUN UNDERGROUND WIRING TO NEAREST TRANSFORMER OR HAND HOLE.
11. ALL FASTENERS ON FLANGES AND ETC. INSIDE WET WELL WILL BE STAINLESS STEEL.
12. DIMENSIONS BETWEEN CENTERLINE OF PIPES ARE STANDARD FOR PUMP SIZES SPECIFIED.
13. SHOP DRAWINGS OF ENTIRE INSTALLATION MUST BE APPROVED BY CITY PRIOR TO PLACEMENT OF ORDER.
14. RESERVED FOR CITY USE
15. ALL EXPOSED AND EMBEDDED CONDUITS TO BE SCHEDULE 80 PVC.
16. ALL EXPOSED METAL SHALL BE PAINTED WITH TWO (2) COATS OF EXTERIOR BLACK ENAMEL PAINT.
17. ALL EXTERNAL PIPING SHALL BE DUCTILE IRON CLASS 50 (FLANGED JOINT FOR EXPOSED PIPE & MECHANICAL JOINT FOR BURIED PIPE). ALL INTERNAL WET WELL PIPING FROM PUMP DISCHARGE ELBOW TO THE VALVE BOX SHALL BE MINIMUM SDR–11 HDPE.
18. PRESSURE GAUGES SHALL BE 4" DIAL WITH 0–100 psi RANGE, SUPPLIED BY CONTRACTOR.
19. PRESSURE GAUGES SHALL BE STAINLESS STEEL CASE WITH STAINLESS STEEL DIAPHRAGM, LIQUID FILLED, 4" DIAMETER DIAL WITH 0–100 psi RANGE. GAUGES SHALL BE AS MANUFACTURED BY WIKA, LOWER MOUNT, TYPE 233.50 AND DIAPHRAGMS SHALL BE AS MANUFACTURED BY HYETT, MODEL 43MCR–01 OR APPROVED EQUALS.
20. RESERVED FOR CITY USE
21. PADLOCKS FOR ACCESS COVERS AND CONTROL PANEL SHALL BE AS DIRECTED BY THE CITY
22. ALL VALVES TO BE RESILIENT SEAT LINED.
23. SOD ALL AREAS DISTURBED BY CONSTRUCTION.
24. ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE WILL REQUIRE SHOP COATING OF SUITABLE PROTECTIVE COATING TO RESIST CORROSION.
25. BYPASS PUMPING: CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BYPASS PUMPING. A BYPASS PUMPING PLAN SHALL BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL. THE ENVIRONMENTAL SERVICES DIRECTOR, CITIZEN CONSIDERATION WILL BE REVIEWED WHEN BYPASS PUMPING EQUIPMENT IS REQUIRED. SOUND ATTENUATING ENCLOSURES MAY BE REQUIRED, AT THE DISCRETION OF THE ENVIRONMENTAL SERVICES DIRECTOR.
26. FIELD TESTING: THE CONTRACTOR SHALL FURNISH THE SERVICES OF THE SYSTEM SUPPLIER'S REPRESENTATIVE, SPECIAL TOOLS, CALIBRATION EQUIPMENT, AND LABOR TO PERFORM THE TESTS, OBSERVATIONS. COPIES OF THE TESTS SHALL BE FURNISHED IN DUPLICATE TO THE CITY ENGINEER PRIOR TO FINAL APPROVAL.
27. ANY STATION WITH ONE OR MORE STATIONS FLOWING TO IT SHALL HAVE A GENERATOR.
28. GENERATOR SHALL NOT BE POSITIONED OVER TOP OF ANY GRAVITY OR FORCE MAIN PIPES OR FRESH WATER.
29. BLACK PVC COATED CHAIN LINK FENCE WITH PRIVACY SLATS ARE REQUIRED.
30. ALL PUMPS SHALL BE TESTED IN LINE FOR 3 TEST OF WORKING AND REQUIRED. THE DIFFERENCE BETWEEN BOTTOM ON INVERT AND PUMP TOPS ONCE PLACED BARRING ANY DETERMINED EXCEPTIONS.
31. ALL INCOMING FLOW SHOULD BE ROUTED THROUGH A KING MANHOLE LOCATED NEAR WELL OUTSIDE OF STREET IF POSSIBLE, NO DIRECT FLOW INTO THE WET WELL OTHERWISE.

DUPLEX LIFT STATION

CITY OF ZEPHYRHILLS STANDARD DETAILS	NOVEMBER 2021
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT 39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542 PHONE (813)780-0029 FAX (813)780-0613	S-11

POWER AND CONTROL WIRING SCHEDULE

CIRCUIT NUMBER	STARTER SIZE	POWER (120/240 VOLT, 3ø, 4W) PHASE CNDCT	NEUTRAL CNDCT	GROUND WIRE	INTR CKT	CONDUIT SIZE	NAME PLATE
P100	–	1ø3/0	1ø3/0	–	–	4"	
P101	–	3ø4/0	1ø3/0	1#6	–	4"	MAIN POWER
P102	FVNR	CWE			–	2" MIN	PUMP POWER SEE NOTE 2
P103	–	1#12	1#12	1#12	–	3/4"	LIGHT FIXTURE
C100	–	CFWE	–	–	–	2" MIN	4 FLAT SWITCH CABLES

NOTES

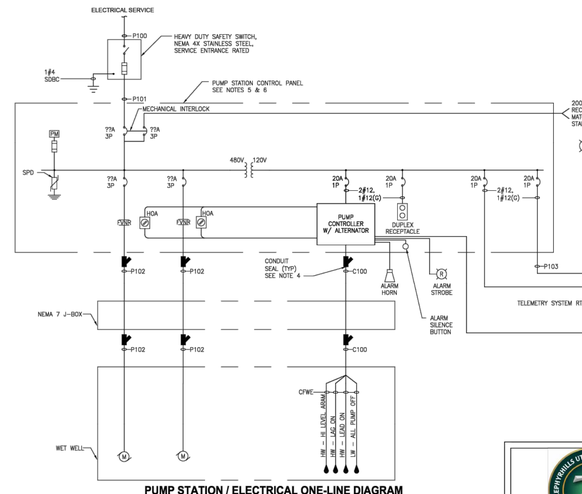
1. CONDUCTORS EXITING CONTROL PANEL SHALL BE TYPE THWN INSULATED COPPER. INTERNAL CONTROL PANEL WIRING SHALL BE TYPE MTW OR AS REQUIRED BY THE MANUFACTURER.
2. PROVIDE A SURGE PROTECTION DEVICE (SPD) ON THE LOAD SIDE OF THE MAIN CIRCUIT BREAKER. SPD SHALL BE AN ADVANCED PROTECTION TECHNOLOGIES TZ/AXT, PQ PROTECTION PQC100, OR APPROVED EQUAL.
3. PROVIDE A NEMA 7 EXPLOSION–PROOF JUNCTION BOX WITH DIN RAIL MOUNTED NON–ARCING TERMINAL STRIPS FOR SPLICING POWER AND CONTROL WIRES.
4. SEALING FITTING SHALL BE CROUSE HINDS TYPE EYS OR EQUAL TYPICAL SEAL FOR ALL CONDUITS BETWEEN THE CONTROL PANEL AND THE WETWELL.
5. THE PUMP CONTROL PANEL ENCLOSURE SHALL BE NEMA 3R STAINLESS STEEL FITTED WITH A 3 POINT LOCKABLE LATCH AND DEAD FRONT PANEL.
6. ALL CONNECTIONS TO THE STATION SHALL BE INTRINSICALLY SAFE AND THE PANEL SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

BILL OF MATERIALS

QTY	ABBR	DESCRIPTION	MANUFACTURER, PART #
1	ENC	ENCLOSURE, 30X20 UL 4X	HOFFMAN, A-30X20125SLP3PTM
1	MCB	MAIN CIRCUIT BREAKER	SQ. D, QOU370
1	ECB	EMERGENCY CIRCUIT BREAKER	SQ. D, QOU370
2	PCB1,2	PUMP CIRCUIT BREAKER	SQ. D, QOU335
1	WSCB	RTWR SECONDARY CIR. BRKR.	SQ. D, QOU120
1	CCB	CONTROL CIRCUIT BREAKER	SQ. D, QOU110
1	RTUCB	RTU CIRCUIT BREAKER	SQ. D, QOU110
1	GFCB	GFI CIRCUIT BREAKER	SQ. D, QOU115
2	MS1, 2	MOTOR STARTER	SQ. D, 8536 SO03 V02
6	OL	OVERLOAD	SQ. D, B–40
1	GR	GENERATOR RECEPTACLE	LIVFTON, 4100RRW
2	F1–2	FUSE 30A CLASS CC 600V	FERRAZ, ATDR–25
1	MTWR	TRANSFORMER 480/120 1.5KVA	EATON, ET150KSA
1	GFI	120V RECEPTACLE	PASS, 15W51
1	ML	MAINTENANCE LIGHT	UTILITECH, SUU182–TB–WH
1	AL	ALARM LIGHT	SIGNALMAN, 4107WH12GHS
1	HA	ALARM HORN	SIGNALMAN, 441SAWH
1	ASB	ALARM SILENCE BUTTON	SQ. D, 9001–SW81BH5
1	R1–3	CONTROL RELAY	ALLEN–BRADLEY, 700–HB33A1 120V
2	CT	CURRENT TRANSFORMER	EL, 25F1–500
1	BATT	BATTERY	POWER SONIC, PS–1270
1	F4	BATTERY FUSE	BUSSMANN, AYC1
1	AS	AMMETER SELECTOR SWITCH	ABB, S1T053–U5
1	AM	AMMETER	RED LION, PAXL050
1	F3	AMMETER FUSE 8A 500V	FERRAZ, ATQ–8
1	SS1	LIGHTNING ARRESTOR	SQ. D, 6677–1030A3650
1	SS2	LIGHTNING ARRESTOR	EATON, SVA–120HW
1	TCU	PUMP CONTROL UNIT – TCU001	OPS, SPS–003367–008–21
1		CONFIGURATION CONNECTOR ASSEMBLY	OPS, SPS–003362–008–39
8	SF3–SF10	FUSE, BUSS	OPS, SPS–003371–008–09, 1AMP SLOW BLOW
8	SF3–SF10	FUSE HOLDER, MNDO	OPS, SPS–003363–008–31
4	KTR	RESISTOR BLOCK, MNDO	OPS, SPS–003371–008–97
1	SHS	TRANSIENT FLUX SHIELD	OPS, SPS–003368–008–92
1	SV	ANTENNA SURGE SUPPRESSOR	POLY PHASER, IS–850X–C2

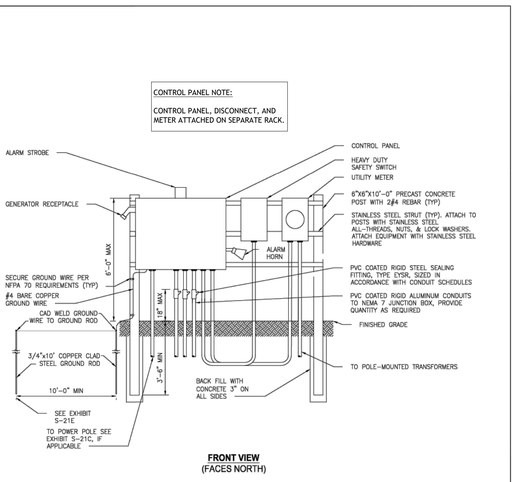
INFORMATION REQUIRED BY UNITRON CONTROLS AND INCLUDED FOR REFERENCE

7. THE CONTROL PANEL INTEGRATED INTERRUPT RATING SHALL BE EQUAL TO THE AVAILABLE FAULT CIRCUIT CURRENT AT THE POINT OF INSTALLATION WITH A MINIMUM OF 22,000 RMS SYMMETRICAL AMPS.
8. ALL WORK SHALL BE INSTALLED PER LATEST ADOPTED NATIONAL ELECTRICAL CODE (NFPA 70).
9. ALL EXPOSED CONDUITS AND RUNS BETWEEN THE WETWELL AND THE CONTROL PANEL SHALL BE PVC COATED RIGID GALVANIZED STEEL. ALL BELOW GRADE CONDUITS SHALL BE SCHEDULE 80 PVC.
10. PROVIDE ANTENNA, COAXIAL CABLE, ANTENNA MAST AND ALL APPURTENANCES AS RECOMMENDED BY THE RTU MANUFACTURER. SECURE CABLE TO THE ANTENNA MAST WITH STAINLESS STEEL CABLE TIES AS RECOMMENDED BY THE RTU MANUFACTURER.
11. CONTRACTOR SHALL PROVIDE THE TELEMETRY SYSTEM RTU AND ALL REQUIRED SCADA EQUIPMENT. THE TELEMETRY SYSTEM SHALL BE AS APPROVED BY THE CITY AND SHALL CONFORM TO THEIR STANDARDS.



PUMP STATION / ELECTRICAL ONE–LINE DIAGRAM
NTS

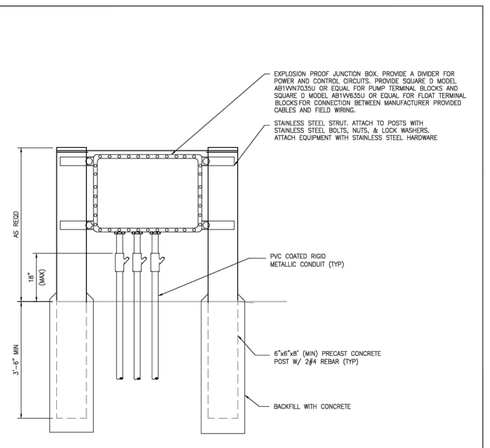
CITY OF ZEPHYRHILLS STANDARD DETAILS	NOVEMBER 2021
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT 39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542 PHONE (813)780-0029 FAX (813)780-0613	S-21



FRONT VIEW
(FACES NORTH)

CONTROL PANEL DETAIL
NTS

CITY OF ZEPHYRHILLS STANDARD DETAILS	NOVEMBER 2021
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT 39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542 PHONE (813)780-0029 FAX (813)780-0613	S-21A



EXPLOSION PROOF JUNCTION BOX MOUNTING DETAIL
NTS

CITY OF ZEPHYRHILLS STANDARD DETAILS	NOVEMBER 2021
CITY OF ZEPHYRHILLS UTILITY DEPARTMENT 39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542 PHONE (813)780-0029 FAX (813)780-0613	S-21B

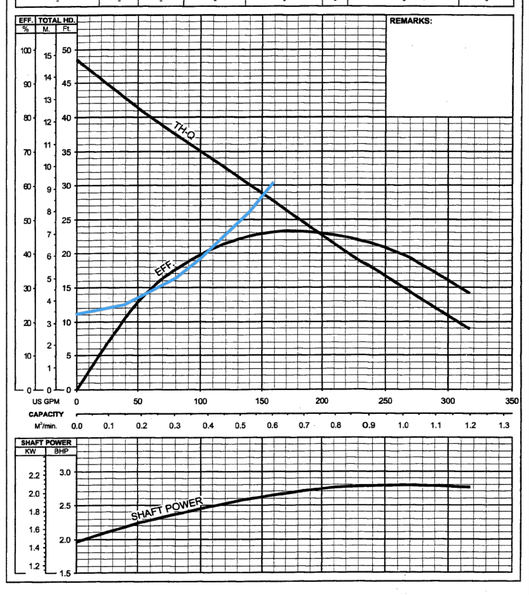
Nov. 00 — 60-PC-C-04

TSURUMI PUMP — **C – SERIES** CUTTER-TYPE - SEWAGE & WASTEWATER PUMPS — **PERFORMANCE CURVE**

MODEL	BORE	HP	KW	RPM	SOLIDS DIA	LIQUID	SG.	VISCOSITY	TEMP.
(TOS) 100C42.2	4"/100mm	3	2.2	1700	1.73"/44mm	Water	1.0	1.81 CST	60°F

PUMP TYPE	PHASE	VOLTAGE	AMPERAGE	HZ	STARTING METHOD	INS. CLASS
Cutter-Type - Sewage & Wastewater	3	208 / 230 / 460	9.3 / 8.6 / 4.3	60	Direct On Line	E

CURVE No.	DATE	PHASE	VOLTAGE	AMPERAGE	HZ	STARTING METHOD	INS. CLASS
-	-	-	-	-	-	-	-



TOP OF WETWELL	**88.00**	Feet
TOP OF VALVEBOX	**88.00**	Feet
INLET INVERT	**76.00**	Feet
HIGH LEVEL ALARM	**75.00**	Feet
LAG PUMP ON	74.00	Feet
LEAD PUMP ON	73.00	Feet
PUMPS OFF	71.00	Feet
BOTTOM OF WETWELL	69.00	Feet
TOTAL DEPTH	**19.00**	

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB	ISSUE DATE:	9/28/23
CHECKED BY:	BY	APPROVED BY:	AH	JOB NO.:	22-548

NO.	DATE	REVISION DESCRIPTION
1	5/30/23	1ST ROUND JURISDICTIONAL COMMENTS
2	8/31/23	2ND ROUND JURISDICTIONAL COMMENTS

3 WORKING DAYS BEFORE YOU DIG CALL SUNSHINE STATE ONE CALL OF FLORIDA 1-800-432-4770
FOR THE LOCATION OF UNDERGROUND UTILITIES

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

LAURIE S. BURCAW, PE #46064

LAURIE S. BURCAW — No. 46064 — STATE OF FLORIDA — PROFESSIONAL ENGINEER

BEACON ENGINEERING
CIVIL ENGINEERING
LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
PUMP STATION DETAILS (1 OF 2)

SHEET NUMBER:
C-7.8

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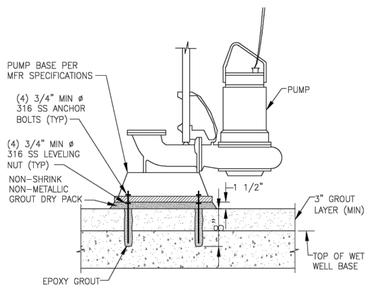
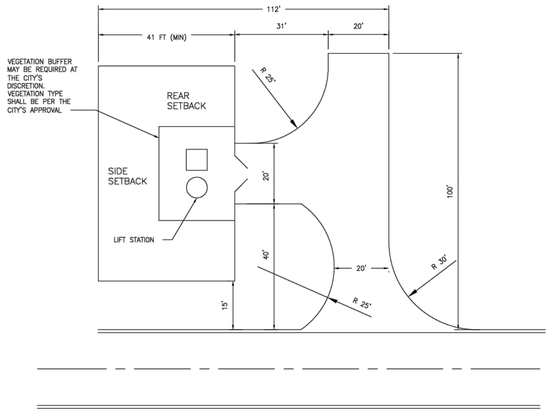


PUMP BASE DETAIL

NTS



NOTE: THE DIMENSIONS ARE BASED ON THE MINIMUM PUMP STATION LAYOUT AS SHOWN IN EXHIBIT S-16A

TURNAROUND DETAIL LAYOUT 'A' (WHEN REQUIRED)

NTS

ZEPHYRHILLS UTILITIES DEPARTMENT WASTEWATER DIVISION	**CITY OF ZEPHYRHILLS STANDARD DETAILS** CITY OF ZEPHYRHILLS UTILITY DEPARTMENT 39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542 PHONE (813)780-0029 FAX (813)780-0613	NOVEMBER 2021 **S-18**

ZEPHYRHILLS UTILITIES DEPARTMENT WASTEWATER DIVISION	**CITY OF ZEPHYRHILLS STANDARD DETAILS** CITY OF ZEPHYRHILLS UTILITY DEPARTMENT 39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542 PHONE (813)780-0029 FAX (813)780-0613	NOVEMBER 2021 **S-19**

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB
CHECKED BY:	AH	APPROVED BY:	LB

ISSUE DATE: 9/28/23
JOB NO.: 22-548

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LAURIE S. BURCAW LICENSE No. 46064 STATE OF FLORIDA PROFESSIONAL ENGINEER

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CALUMET TOWNS

CALUMET ROAD
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PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
PUMP STATION DETAILS (2 OF 2)

SHEET NUMBER:
C-7.9

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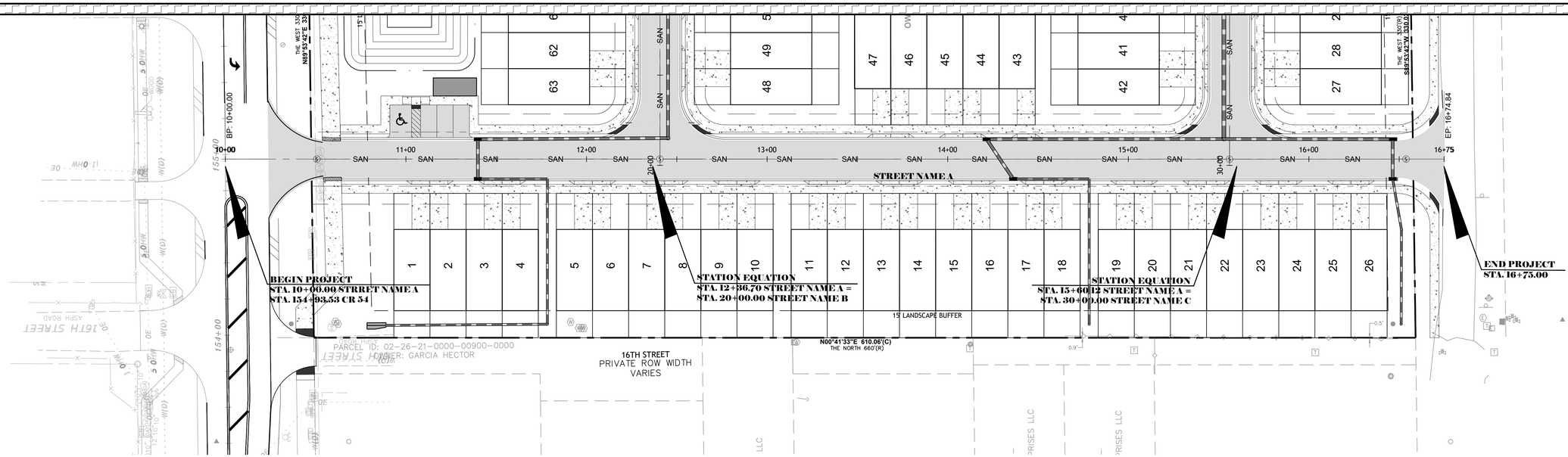
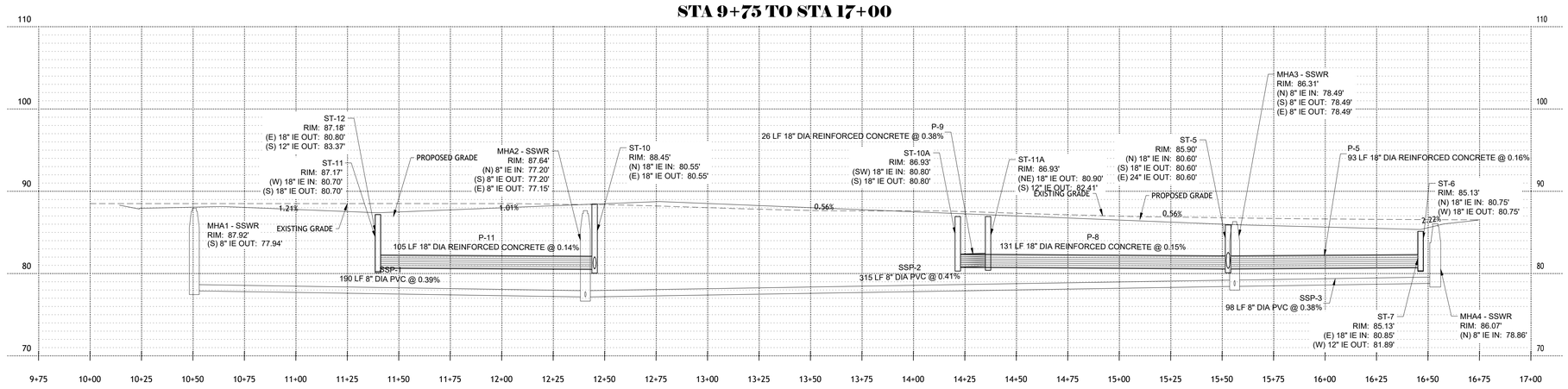


STREET NAME A
STA 9+75 TO STA 17+00



SANITARY

STRUCTURE TABLE		
NAME	STRUCTURE TYPE	STRUCTURE DATA
MHA1 - SSWR	SANITARY MANHOLE	RIM: 87.92' SSP-1 IE OUT: 77.94
MHA2 - SSWR	SANITARY MANHOLE	RIM: 87.64' SSP-1 IE IN: 77.20' SSP-2 IE OUT: 77.20' SSP-4 IE OUT: 77.15'
MHA3 - SSWR	SANITARY MANHOLE	RIM: 86.31' SSP-2 IE IN: 78.49' SSP-3 IE OUT: 78.49' SSP-6 IE OUT: 78.49'
MHA4 - SSWR	SANITARY MANHOLE	RIM: 86.07' SSP-3 IE IN: 78.86'
MHB1 - SSWR	SANITARY MANHOLE	RIM: 86.09' SSP-4 IE IN: 76.36' SSP-5 IE OUT: 76.26'
MHB2 - SSWR	SANITARY MANHOLE	RIM: 79.57' SSP-5 IE IN: 76.02'
MHC1 - SSWR	SANITARY MANHOLE	RIM: 84.40' SSP-6 IE IN: 79.28'

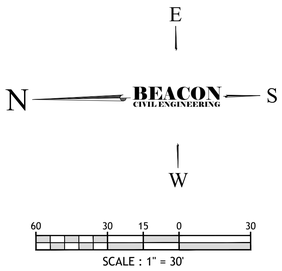
PIPE TABLE				
PIPE NAME	MATL	SIZE	LENGTH	SLOPE
SSP-1	PVC	8"	190 LF	0.39%
SSP-2	PVC	8"	315 LF	-0.41%
SSP-3	PVC	8"	98 LF	-0.38%
SSP-4	PVC	8"	206 LF	0.38%
SSP-5	PVC	8"	80 LF	0.30%
SSP-6	PVC	8"	194 LF	-0.41%

STRUCTURE TABLE		
NAME	STRUCTURE TYPE	STRUCTURE DATA
ST-1	MITERED END SECTION	RIM: 82.58' P-1 IE IN: 80.00'
ST-1A	MANHOLE	RIM: 87.40' P-1A IE IN: 80.00' P-1 IE OUT: 80.00'
ST-1B	MANHOLE	RIM: 84.88' P-1B IE IN: 80.00' P-1A IE OUT: 80.00'
ST-2	FDOT TYPE C INLET	RIM: 86.62' P-10 IE IN: 80.00' P-2 IE IN: 80.00' P-1B IE OUT: 80.00'
ST-2A	MANHOLE	RIM: 87.45' P-2 IE OUT: 80.15'
ST-3	FDOT TYPE C INLET	RIM: 87.11' P-3A IE IN: 80.15' P-2A IE OUT: 80.15'
ST-4	FDOT TYPE C INLET	RIM: 85.94' P-4 IE IN: 80.30' P-3 IE OUT: 80.30'
ST-5	MANHOLE	RIM: 85.90' P-8 IE IN: 80.60' P-5 IE OUT: 80.60' P-4 IE OUT: 80.60'
ST-6	FDOT TYPE V INLET	RIM: 85.13' P-5 IE IN: 80.75' P-6 IE OUT: 80.75'
ST-7	FDOT TYPE V INLET	RIM: 85.13' P-6 IE IN: 80.85' PYI-1 IE OUT: 81.89'
ST-7A	MANHOLE	RIM: 87.26' P-3 IE IN: 80.15' P-3B IE OUT: 80.15'

STORM

STRUCTURE TABLE		
NAME	STRUCTURE TYPE	STRUCTURE DATA
ST-10	MANHOLE	RIM: 88.45' P-11 IE IN: 80.55' P-10 IE OUT: 80.55'
ST-10A	FDOT TYPE V INLET	RIM: 86.93' P-9 IE IN: 80.80' P-8 IE OUT: 80.80'
ST-11	FDOT TYPE V INLET	RIM: 87.17' P-12 IE IN: 80.70' P-11 IE OUT: 80.70'
ST-11A	FDOT TYPE V INLET	RIM: 86.93' P-9 IE OUT: 80.90' PYI-3 IE OUT: 82.41'
ST-12	FDOT TYPE V INLET	RIM: 87.18' P-12 IE OUT: 80.80' PYI-5 IE OUT: 83.37'
YI-1	YARD DRAIN	RIM: 86.90' PYI-1 IE IN: 81.99' PYI-2 IE OUT: 81.99'
YI-2	YARD DRAIN	RIM: 86.90' PYI-2 IE IN: 82.15'
YI-4	YARD DRAIN	RIM: 86.90' PYI-4 IE IN: 82.92'
YI-6	YARD DRAIN	RIM: 87.85' PYI-6 IE IN: 83.70' PYI-7 IE OUT: 83.70'
YI-7	YARD DRAIN	RIM: 87.75' PYI-7 IE IN: 83.89'

PIPE TABLE					P
PIPE NAME	MATL	SIZE	LENGTH	SLOPE	PIPE NAME
P-1	REINFORCED CONCRETE	24"	56 LF	0.00%	PYI-7
P-1A	REINFORCED CONCRETE	24"	94 LF	0.00%	
P-1B	REINFORCED CONCRETE	24"	18 LF	0.00%	
P-2	REINFORCED CONCRETE	24"	96 LF	0.16%	
P-2A	REINFORCED CONCRETE	24"	7 LF	0.00%	
P-3	REINFORCED CONCRETE	24"	98 LF	0.15%	
P-3A	REINFORCED CONCRETE	24"	7 LF	0.00%	
P-3B	REINFORCED CONCRETE	24"	6 LF	0.00%	
P-4	REINFORCED CONCRETE	24"	196 LF	0.15%	
P-5	REINFORCED CONCRETE	18"	93 LF	-0.16%	
P-6	REINFORCED CONCRETE	18"	22 LF	-0.45%	
P-8	REINFORCED CONCRETE	18"	131 LF	0.15%	
P-9	REINFORCED CONCRETE	18"	26 LF	0.38%	
P-10	REINFORCED CONCRETE	18"	196 LF	0.28%	
P-11	REINFORCED CONCRETE	18"	105 LF	0.14%	
P-12	REINFORCED CONCRETE	18"	22 LF	0.45%	
PYI-1	PVC	12"	28 LF	-0.35%	
PYI-2	PVC	12"	52 LF	-0.30%	
PYI-3	PVC	12"	42 LF	-0.62%	
PYI-4	PVC	12"	81 LF	-0.31%	
PYI-5		12"	38 LF	-0.43%	
PYI-6		12"	80 LF	-0.20%	



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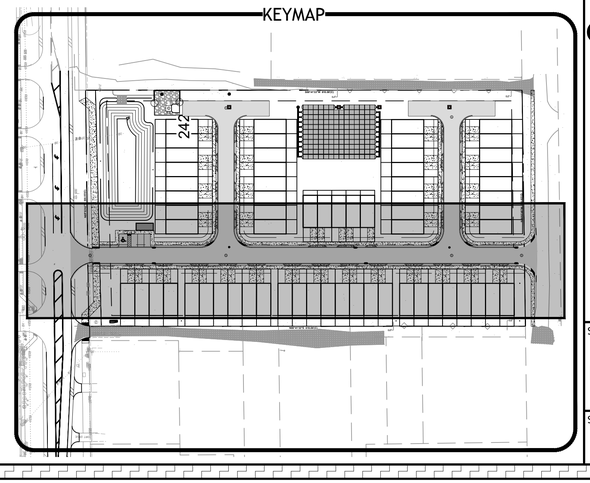

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CHECKED BY:	AH	APPROVED BY:	LB	JOB NO.:	22-548

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8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
PLAN AND PROFILE

SHEET NUMBER:
C-8.0

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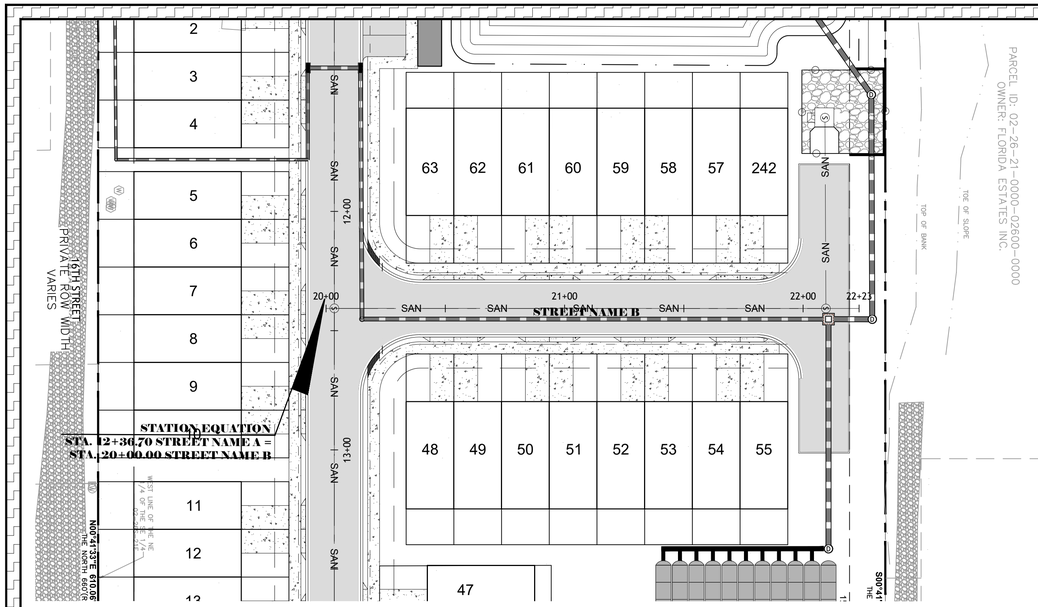
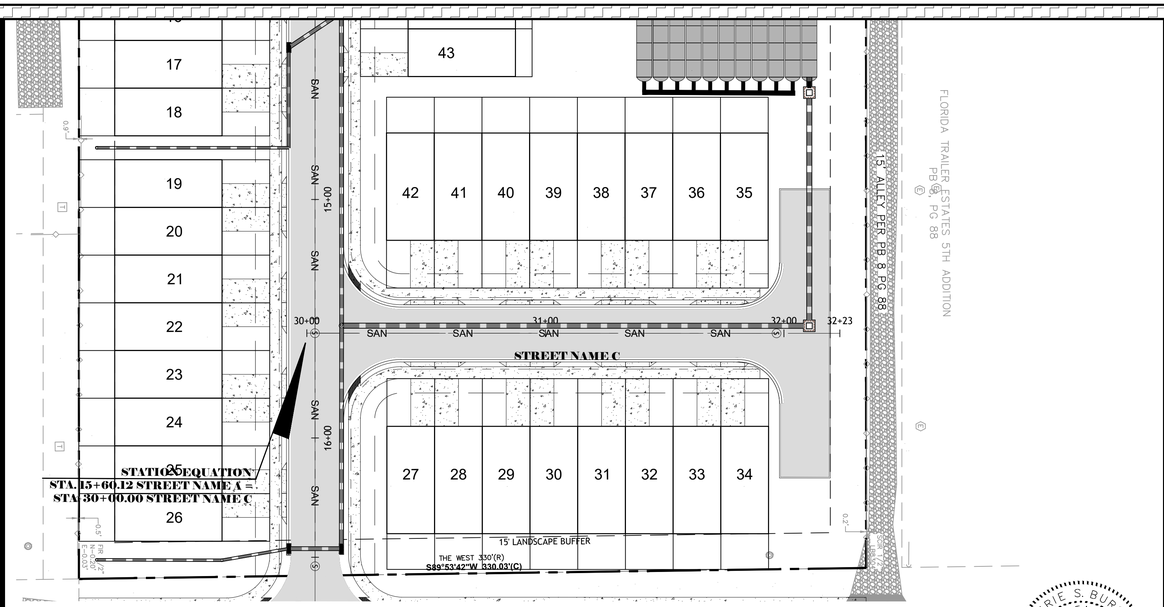
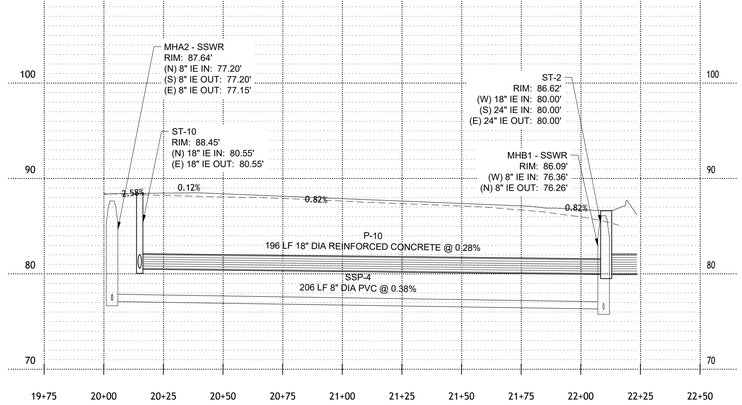
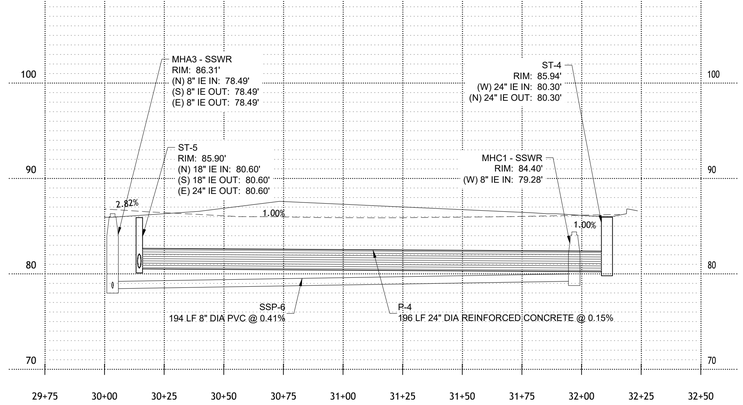




STREET NAME B
STA 19+75 TO STA 22+50



STREET NAME C
STA 29+75 TO STA 32+50



N

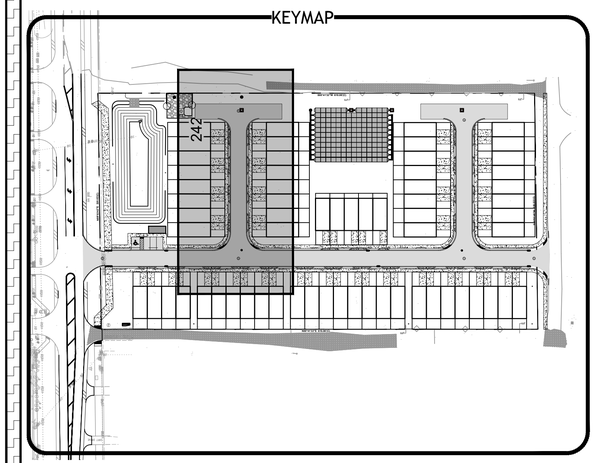
W — BEACON CIVIL ENGINEERING — E

S

60 30 15 0 30

SCALE : 1" = 30'

KEYMAP



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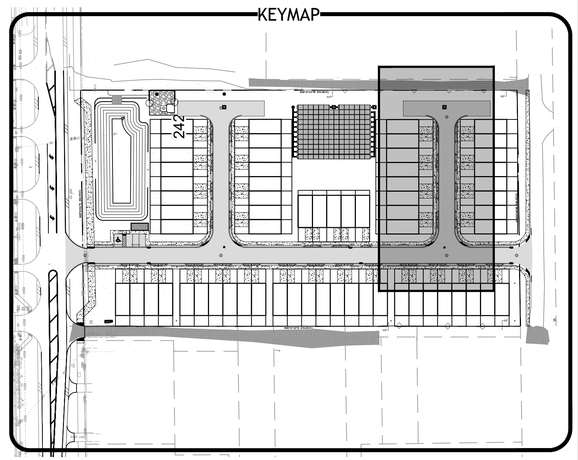

SANITARY

STRUCTURE TABLE

NAME	STRUCTURE TYPE	STRUCTURE DATA
MHA1 - SSWR	SANITARY MANHOLE	RIM: 87.92' SSP-1 IE OUT: 77.94'
MHA2 - SSWR	SANITARY MANHOLE	RIM: 87.64' SSP-1 IE IN: 77.20' SSP-2 IE OUT: 77.20' SSP-4 IE OUT: 77.15'
MHA3 - SSWR	SANITARY MANHOLE	RIM: 86.31' SSP-2 IE IN: 78.49' SSP-3 IE OUT: 78.49' SSP-6 IE OUT: 78.49'
MHA4 - SSWR	SANITARY MANHOLE	RIM: 86.07' SSP-3 IE IN: 78.86'
MHB1 - SSWR	SANITARY MANHOLE	RIM: 86.09' SSP-4 IE IN: 76.36' SSP-5 IE IN: 76.26'
MHB2 - SSWR	SANITARY MANHOLE	RIM: 79.57' SSP-5 IE IN: 76.02'
MHC1 - SSWR	SANITARY MANHOLE	RIM: 84.40' SSP-6 IE IN: 79.28'

PIPE TABLE

PIPE NAME	MATL	SIZE	LENGTH	SLOPE
SSP-1	PVC	8"	190 LF	0.39%
SSP-2	PVC	8"	315 LF	-0.41%
SSP-3	PVC	8"	98 LF	-0.38%
SSP-4	PVC	8"	206 LF	0.38%
SSP-5	PVC	8"	80 LF	0.30%
SSP-6	PVC	8"	194 LF	-0.41%

STRUCTURE TABLE

NAME	STRUCTURE TYPE	STRUCTURE DATA
ST-1	MITERED END SECTION	RIM: 82.58' P-1 IE IN: 80.00'
ST-1A	MANHOLE	RIM: 87.40' P-1A IE IN: 80.00' P-1 IE OUT: 80.00'
ST-1B	MANHOLE	RIM: 84.88' P-1B IE IN: 80.00' P-1A IE OUT: 80.00'
ST-2	FDOT TYPE C INLET	RIM: 86.62' P-10 IE IN: 80.00' P-2 IE IN: 80.00' P-1B IE OUT: 80.00'
ST-2A	MANHOLE	RIM: 87.45' P-2 IE OUT: 80.15'
ST-3	FDOT TYPE C INLET	RIM: 87.11' P-3A IE IN: 80.15' P-2A IE OUT: 80.15'
ST-4	FDOT TYPE C INLET	RIM: 85.94' P-4 IE IN: 80.30' P-3 IE OUT: 80.30'
ST-5	MANHOLE	RIM: 85.90' P-8 IE IN: 80.60' P-5 IE OUT: 80.60' P-4 IE OUT: 80.60'
ST-6	FDOT TYPE V INLET	RIM: 85.13' P-5 IE IN: 80.75' P-6 IE OUT: 80.75'
ST-7	FDOT TYPE V INLET	RIM: 85.13' P-6 IE IN: 80.85' PYI-1 IE OUT: 81.89'
ST-7A	MANHOLE	RIM: 87.26' P-3 IE IN: 80.15' P-3B IE OUT: 80.15'

STORM

STRUCTURE TABLE

NAME	STRUCTURE TYPE	STRUCTURE DATA
ST-10	MANHOLE	RIM: 88.45' P-11 IE IN: 80.55' P-10 IE OUT: 80.55'
ST-10A	FDOT TYPE V INLET	RIM: 86.93' P-9 IE IN: 80.80' P-8 IE OUT: 80.80'
ST-11	FDOT TYPE V INLET	RIM: 87.17' P-12 IE IN: 80.70' P-11 IE OUT: 80.70'
ST-11A	FDOT TYPE V INLET	RIM: 86.93' P-9 IE OUT: 80.90' PYI-3 IE OUT: 82.41'
ST-12	FDOT TYPE V INLET	RIM: 87.18' P-12 IE OUT: 80.80' PYI-5 IE OUT: 83.37'
YI-1	YARD DRAIN	RIM: 86.90' PYI-1 IE IN: 81.99' PYI-2 IE OUT: 81.99'
YI-2	YARD DRAIN	RIM: 86.90' PYI-2 IE IN: 82.15'
YI-4	YARD DRAIN	RIM: 86.90' PYI-4 IE IN: 82.92'
YI-6	YARD DRAIN	RIM: 87.85' PYI-6 IE IN: 83.70' PYI-7 IE OUT: 83.70'
YI-7	YARD DRAIN	RIM: 87.75' PYI-7 IE IN: 83.89'

PIPE TABLE

PIPE NAME	MATL	SIZE	LENGTH
P-1	REINFORCED CONCRETE	24"	56 LF
P-1A	REINFORCED CONCRETE	24"	94 LF
P-1B	REINFORCED CONCRETE	24"	18 LF
P-2	REINFORCED CONCRETE	24"	96 LF
P-2A	REINFORCED CONCRETE	24"	7 LF
P-3	REINFORCED CONCRETE	24"	98 LF
P-3A	REINFORCED CONCRETE	24"	7 LF
P-3B	REINFORCED CONCRETE	24"	6 LF
P-4	REINFORCED CONCRETE	24"	196 LF
P-5	REINFORCED CONCRETE	18"	93 LF
P-6	REINFORCED CONCRETE	18"	22 LF
P-8	REINFORCED CONCRETE	18"	131 LF
P-9	REINFORCED CONCRETE	18"	26 LF
P-10	REINFORCED CONCRETE	18"	196 LF
P-11	REINFORCED CONCRETE	18"	105 LF
P-12	REINFORCED CONCRETE	18"	22 LF
PYI-1	PVC	12"	28 LF
PYI-2	PVC	12"	52 LF
PYI-3	PVC	12"	42 LF
PYI-4	PVC	12"	81 LF
PYI-5		12"	38 LF
PYI-6		12"	80 LF

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LAURIE S. BURCAW LICENSE NO. 46064 STATE OF FLORIDA PROFESSIONAL ENGINEER

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LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:

PLAN AND PROFILE

SHEET NUMBER:

C-8.1

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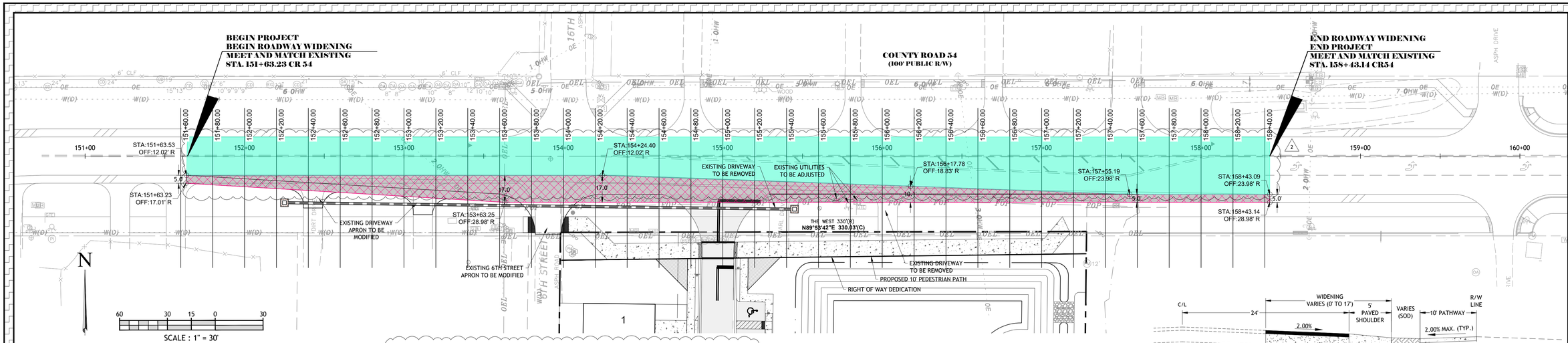


TYPICAL ROADWAY SECTION
N.T.S.

MILLING
MILL EXISTING ASPHALT PAVEMENT (1" AVG. DEPTH)

RESURFACING
FRICTION COURSE FC-9.5 (TRAFFIC C - PG 76-22) (1.5")

WIDENING
LIMEROCK BASE COURSE, LBR 100 (10")
TYPE SP-12.5 STRUCTURAL COURSE (TRAFFIC C) (3")
FRICTION COURSE FC-12.5 (TRAFFIC C) (1.5")

SHOULDER PAVEMENT
OPTIONAL BASE GROUP 1
FRICTION COURSE FC-12.5 (TRAFFIC C) (1.5")

N

60 30 15 0 30
SCALE : 1" = 30'

W — BEACON CIVIL ENGINEERING — E

S

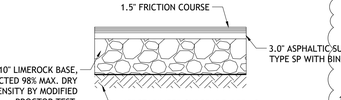
LEGEND

- PARCEL BOUNDARY LINE
- PROPOSED ROADWAY WIDENING
- PROPOSED ROADWAY MILLING

GRADING LEGEND

- ⊗ 1.00 — PROPOSED SPOT ELEVATION
- ⊗ 1.50 / 1.00 — PROPOSED TOP OF CURB/BOTTOM OF CURB SPOT ELEVATION
- ⊗ M.E. ±1.00 — MATCH EXISTING ELEVATION
- #% — PROPOSED SLOPE INDICATOR
- DIRECTIONAL DRAINAGE FLOW ARROW
- X.XX — PROPOSED MAJOR CONTOUR
- X.XX — PROPOSED MINOR CONTOUR

NOTE: LIGHTER TONE INDICATES EXISTING CONDITION



PROFILE VIEW

ASPHALT NOTES

1. THE ASPHALT SURFACE COURSE SHOULD CONFORM TO THE MOST RECENT EDITION OF THE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION.
2. THE BASE COURSE SHOULD CONFORM TO THE LATEST EDITION OF FDOT ROAD AND BRIDGE CONSTRUCTION SPECIFICATIONS SUPPLEMENTAL SECTION 204. BASE COURSE SHALL BE COMPACTED TO 98% OF THE MODIFIED PROCTOR (ASTM D-1557) MAXIMUM DRY DENSITY.
3. ASPHALT SHOULD BE COMPACTED TO A MINIMUM OF 93% OF LABORATORY MAXIMUM DESIGN MIX DENSITY DETERMINED FROM SPECIFIC GRAVITY METHODS WITH IND. TEST TOLERANCE OF +2% AND -1.2% OF DESIGN Gmm.
4. PLASTIC CLAY SHALL NOT BE ALLOWED TO STABILIZE THE SUBGRADE.
5. CRUSHED CONCRETE SHALL BE SOURCED FROM APPROVED FDOT SUPPLIER.
6. CONTRACTOR SHALL REFER TO GEOTECHNICAL REPORT BY GROUND DOWN ENGINEERING DATED DECEMBER 2021

ASPHALT PAVEMENT SECTION

N.T.S.

ROADWAY QUANTITIES

PAY ITEM	DESCRIPTION	QUANTITY
107-1	LITTER REMOVAL	0.75 AC
107-2	MOWING	0.75 AC
110-1-1	CLEAR & GRUBBING	0.75 AC
160-4	TYPE B STABILIZATION	820 SY
285-701	OPTIONAL BASE, BASE GROUP 01	370 SY
285-709	OPTIONAL BASE, BASE GROUP 09	450 SY
327-70-1	MILLING EXISTING ASPHALT PAVEMENT (1" AVERAGE DEPTH)	2,150 SY
334-1-13	SUPERPAVE ASPHALTIC CONCRETE, TRAFFIC C	11.4 TN
337-7-82	ASPHALTIC CONCRETE FRICTION COURSE, TRAFFIC C, FC-9.5, PG 76-22	1,074.8 TN
337-7-83	ASPHALTIC CONCRETE FRICTION COURSE, TRAFFIC C, FC-12.5, PG 76-22	5.8 TN
522-1	CONCRETE SIDEWALK, 4" THICK	33.3 SY
570-1-2	PERFORMANCE TURF, SOD	50 SY

GENERAL NOTES:

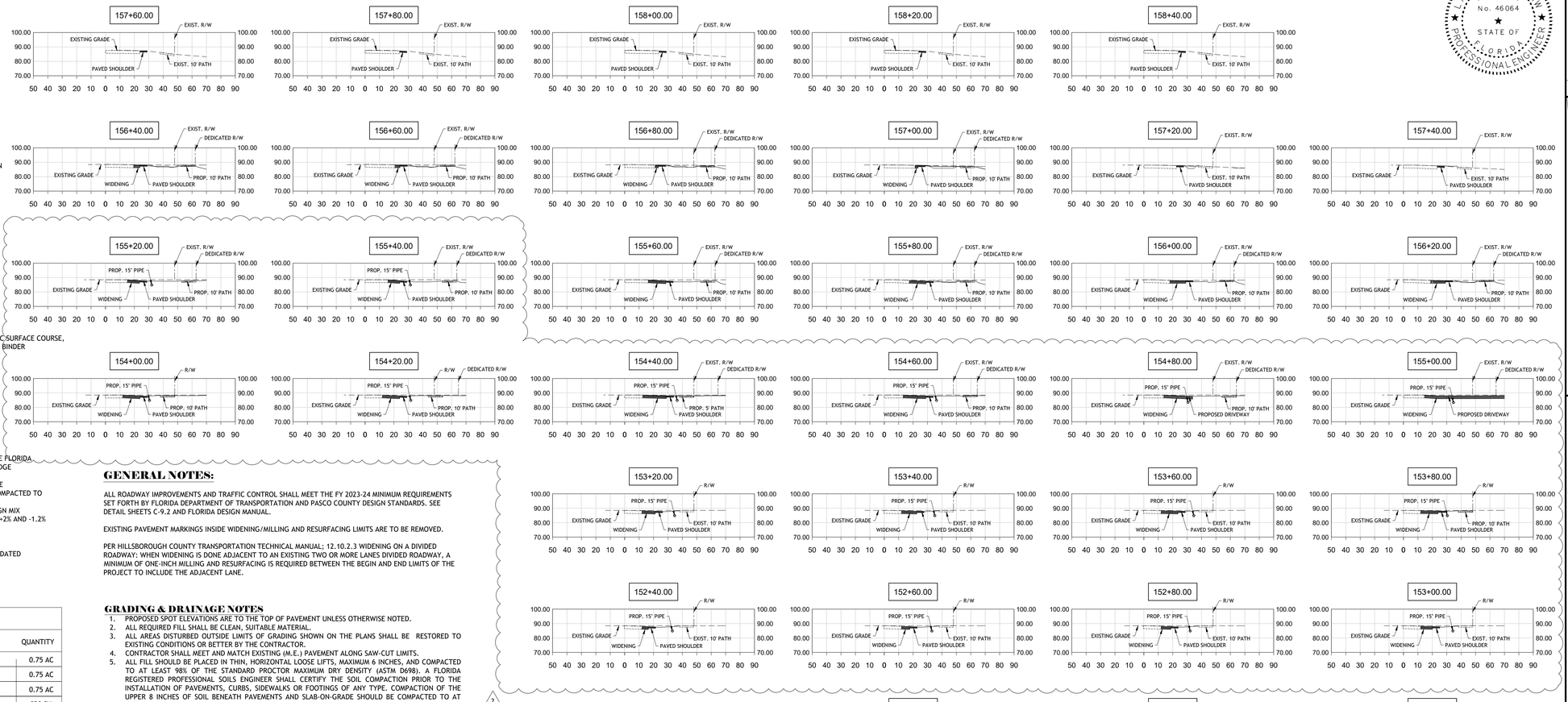
ALL ROADWAY IMPROVEMENTS AND TRAFFIC CONTROL SHALL MEET THE FY 2023-24 MINIMUM REQUIREMENTS SET FORTH BY FLORIDA DEPARTMENT OF TRANSPORTATION AND PASCO COUNTY DESIGN STANDARDS. SEE DETAIL SHEETS C-9.2 AND FLORIDA DESIGN MANUAL.

EXISTING PAVEMENT MARKINGS INSIDE WIDENING/MILLING AND RESURFACING LIMITS ARE TO BE REMOVED.

PER HILLSBOROUGH COUNTY TRANSPORTATION TECHNICAL MANUAL; 12.10.2.3 WIDENING ON A DIVIDED ROADWAY: WHEN WIDENING IS DONE ADJACENT TO AN EXISTING TWO OR MORE LANES DIVIDED ROADWAY, A MINIMUM OF ONE-INCH MILLING AND RESURFACING IS REQUIRED BETWEEN THE BEGIN AND END LIMITS OF THE PROJECT TO INCLUDE THE ADJACENT LANE.

GRADING & DRAINAGE NOTES

1. PROPOSED SPOT ELEVATIONS ARE TO THE TOP OF PAVEMENT UNLESS OTHERWISE NOTED.
2. ALL REQUIRED FILL SHALL BE CLEAN, SUITABLE MATERIAL.
3. ALL AREAS DISTURBED OUTSIDE LIMITS OF GRADING SHOWN ON THE PLANS SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER BY THE CONTRACTOR.
4. CONTRACTOR SHALL MEET AND MATCH EXISTING (M.E.) PAVEMENT ALONG SAW-CUT LIMITS.
5. ALL FILL SHOULD BE PLACED IN THIN, HORIZONTAL LOOSE LIFTS, MAXIMUM 6 INCHES, AND COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698). A FLORIDA REGISTERED PROFESSIONAL SOILS ENGINEER SHALL CERTIFY THE SOIL COMPACTION PRIOR TO THE INSTALLATION OF PAVEMENTS, CURBS, SIDEWALKS OR FOOTINGS OF ANY TYPE. COMPACTION OF THE UPPER 8 INCHES OF SOIL BENEATH PAVEMENTS AND SLAB-ON-GRADE SHOULD BE COMPACTED TO AT LEAST 98%.
6. STORMWATER PONDS AND OUTLET STRUCTURES SHALL BE FULLY CONSTRUCTED AND OPERATIONAL PRIOR TO ANY OTHER CONSTRUCTION OR GRADING ON THE SITE AND MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
7. SURFACE GRADE SLOPES SHALL BE A MINIMUM OF 1.00%
8. 4:1 MAXIMUM CUT AND FILL SLOPES
9. ADA ACCESSIBLE AREAS SHALL NOT HAVE A MAXIMUM CROSS-SLOPE THAT EXCEEDS 2.00% AND MAX LONGITUDINAL SLOPE OF 5.00% UNLESS A RAMP IS SPECIFIED. IF DISCREPANCIES OCCUR CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD IMMEDIATELY TO CONFIRM DESIGN TO ENSURE ADA ACCESSIBLE STANDARDS ARE MET.
10. SEE SHEET C-3.2 FOR DETAILS.
11. ALL INLET GRATES SUBJECTED TO VEHICLE LOADING SHALL MEET H-20 TRAFFIC LOADING STANDARDS.



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CHECKED BY:	AH	APPROVED BY:	LB	JOB NO.:	22-548

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LAURIE S. BURCAW
LICENSED
No. 46064
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
OFFSITE - ROADWAY

SHEET NUMBER:
C-9.0

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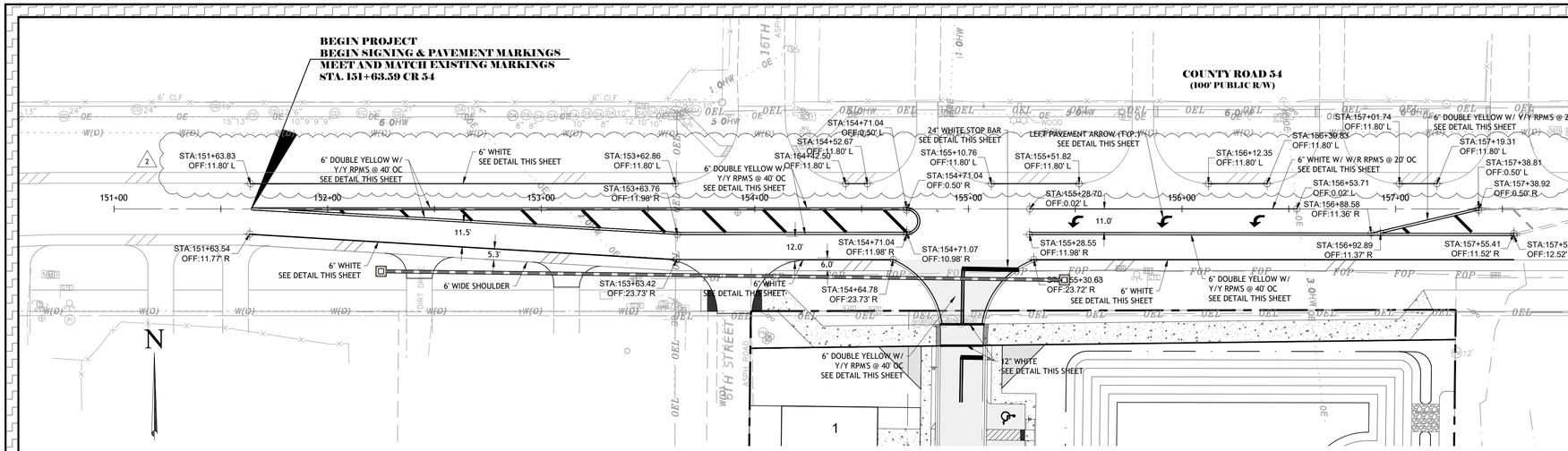

W — **BEACON** CIVIL ENGINEERING — E

S

60 30 15 0 30

SCALE : 1" = 30'

GENERAL NOTES:

ALL SIGNING AND PAVEMENT IMPROVEMENTSMEET THE LATEST MINIMUM REQUIREMENTS SET FORTH BY FLORIDA DEPARTMENT OF TRANSPORTATION AND PASCO COUNTY DESIGN STANDARDS. SEE DETAIL THIS SHEET

EXISTING PAVEMENT MARKINGS INSIDE WIDENING/MILLING AND RESURFACING LIMITS ARE TO BE REMOVED.

PAVEMENT MARKINGS QUANTITIES

PAY ITEM	DESCRIPTION	QUANTITY
706-1-3	RAISED PAVEMENT MARKER, W/R	8 EA
706-1-3	RAISED PAVEMENT MARKER, Y/Y	44 EA
710-11-101	PAINTED PAVEMENT MARKING, STANDARD, WHITE, SOLID, 6" (2)	0.26 GM
710-11-123	THERMOPLASTIC, STANDARD, WHITE, SOLID, 12" FOR CROSSWALK	50 LF
710-11-170	PAINTED PAVEMENT MARKING, STANDARD, WHITE, ARROW, LEFT	3 EA
710-11-201	PAINTED PAVEMENT MARKING, STANDARD, YELLOW, SOLID, 6"	0.32 GM
710-11-224	PAINTED PAVEMENT MARKING, STANDARD, YELLOW, SOLID FOR DIAGONAL OR CHEVRON, 18"	50 LF
711-11-123	THERMOPLASTIC, STANDARD, WHITE, SOLID, 12" FOR CROSSWALK	120 LF
711-11-170	THERMOPLASTIC, STANDARD, WHITE, ARROW, LEFT	3 EA
711-11-224	THERMOPLASTIC, STANDARD, YELLOW, SOLID FOR DIAGONAL OR CHEVRON, 18"	50 LF
711-15-101	THERMOPLASTIC, STANDARD, OPEN-GRADED ASPHALT, WHITE, SOLID, 6" (2)	0.26 GM
711-15-201	THERMOPLASTIC, STANDARD, OPEN-GRADED ASPHALT, YELLOW, SOLID, 6"	0.32 GM

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LAURIE S. BURCAW — 2 — 09/29/2023 — No. 46064 — STATE OF FLORIDA — PROFESSIONAL ENGINEER

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CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
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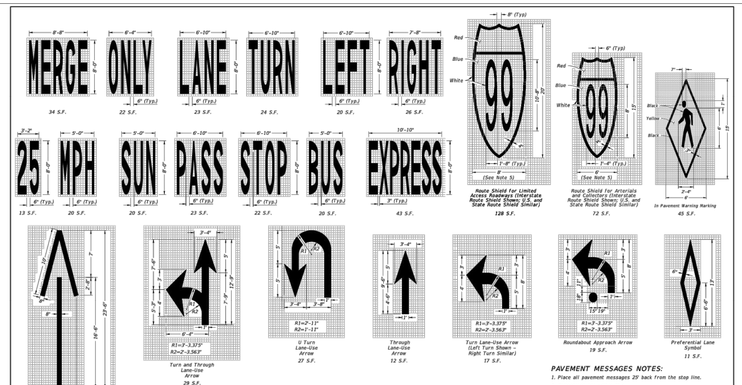
FLORIDA 33542

SHEET NAME:
OFFSITE - PAVEMENT MARKINGS

SHEET NUMBER:
C-9.1

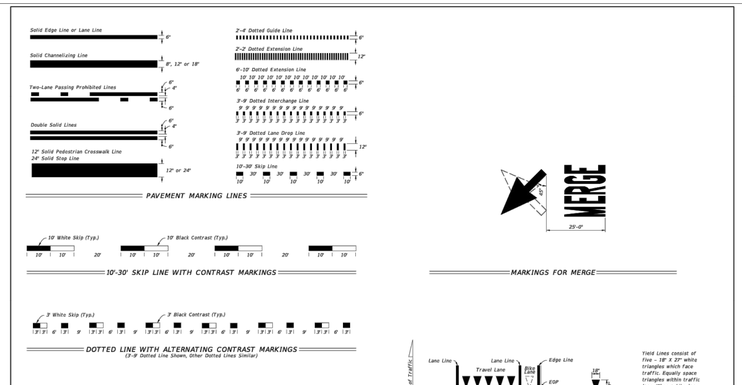


PAVEMENT MESSAGE AND ARROW DETAILS

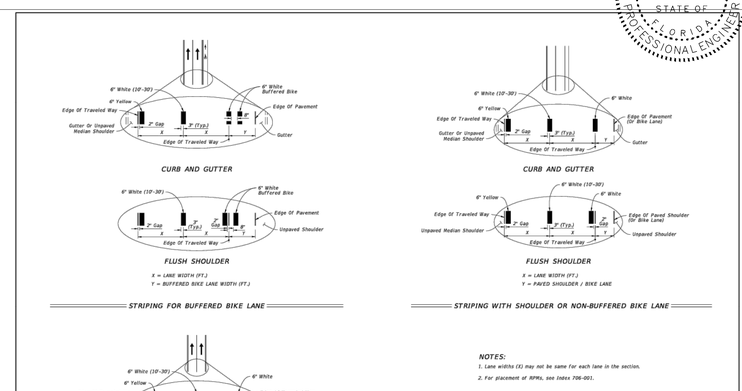
PAVEMENT MESSAGES NOTES:

1. Place all pavement messages 25' back from the stop line.
2. Dimensions are within 1" ±.
3. All grids are 4' x 4'.
4. All pavement messages must be white except Route Shields and In Pavement Warning Markings.
5. Increase width of route shield for routes with three digits.

LAST REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	PAVEMENT MARKINGS	INDEX	SHEET
11/01/21				711-001	1 of 13



LAST REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	PAVEMENT MARKINGS	INDEX	SHEET
11/01/22				711-001	2 of 13

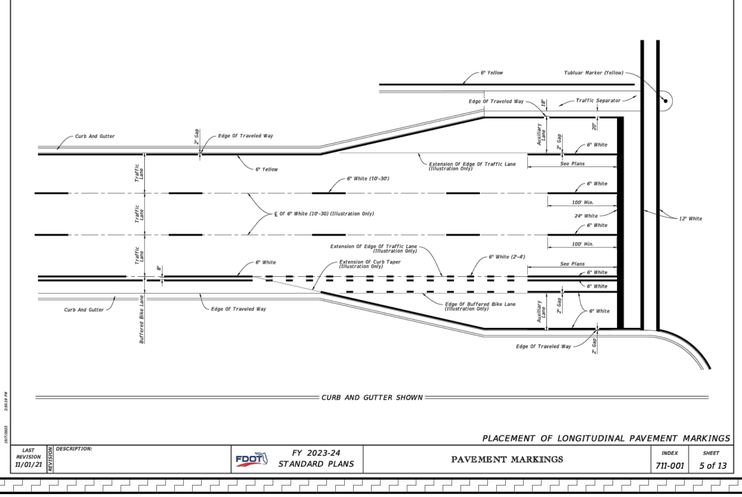


NOTES:

1. Lane widths (X) may not be same for each lane in the section.
2. For placement of RPMs, see Index 706-001.

PLACEMENT OF LONGITUDINAL PAVEMENT MARKINGS

LAST REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	PAVEMENT MARKINGS	INDEX	SHEET
11/01/21				711-001	3 of 13



PLACEMENT OF LONGITUDINAL PAVEMENT MARKINGS

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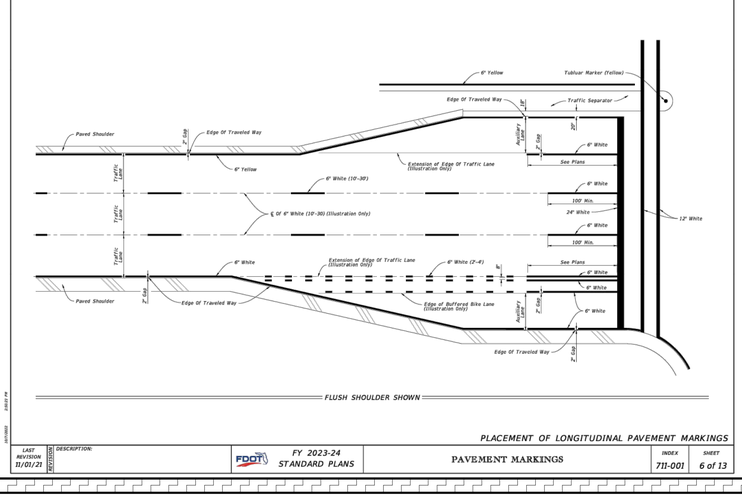
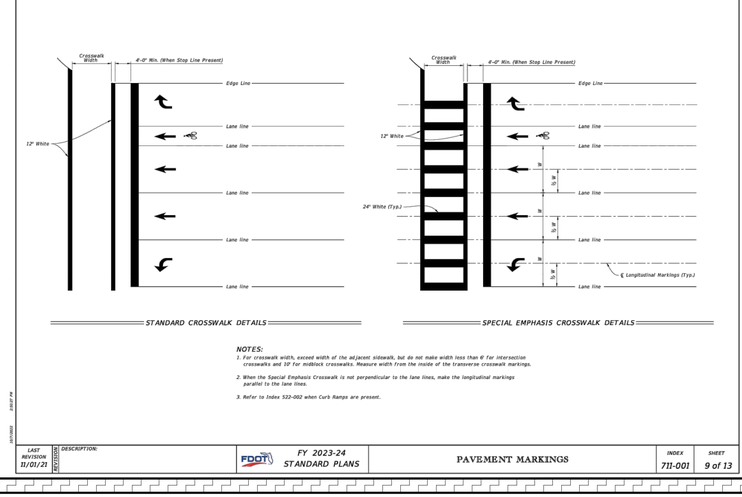
11/01/21				711-001	5 of 13



PLACEMENT OF LONGITUDINAL PAVEMENT MARKINGS

LAST REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	PAVEMENT MARKINGS	INDEX	SHEET
11/01/21				711-001	6 of 13



NOTES:

1. For crosswalk width, exceed width of the adjacent sidewalk, but do not make width less than 6' for intersection crosswalks and 10' for midblock crosswalks. Measure width from the inside of the transverse crosswalk markings.
2. When the Special Emphasis Crosswalk is not perpendicular to the lane lines, make the longitudinal markings parallel to the lane lines.
3. Refer to Index 522-002 when Curb Ramps are present.

LAST REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	PAVEMENT MARKINGS	INDEX	SHEET
11/01/21				711-001	9 of 13

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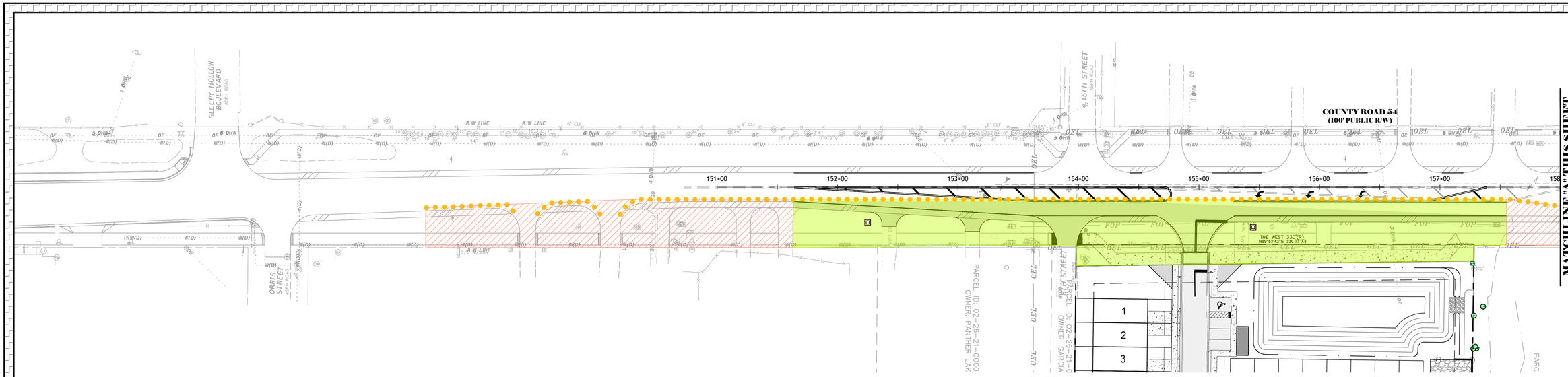
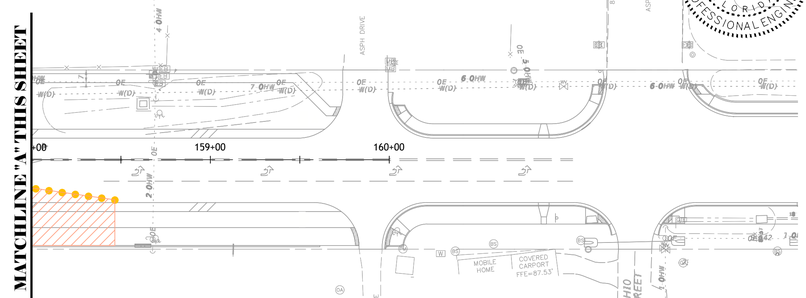




PAVEMENT MARKINGS QUANTITIES		
PAY ITEM	DESCRIPTION	QUANTITY
102-1	MAINTENANCE OF TRAFFIC	1 LS
102-4	PEDESTRIAN DETOUR	1 LS
102-60	WORK ZONE SIGN	
	W20-1F (ROAD WORK AHEAD)	30 ED*
	W21-5A (RIGHT SHOULDER CLOSED)	30 ED*
	G20-2 (END ROAD WORK)	30 ED*
102-74-1	CHANNELIZING DEVICE - TYPES I, II, DI, VP, DRUM OR LCD	3,300 ED*
102-74-2	CHANNELIZING DEVICE - TYPE III	150 ED*
107-1	LITTER REMOVAL AND DISPOSAL	0.75 AC
110-1-1	CLEARING AND GRUBBING	0.75 AC

* MULTIPLE OF 30 DAY PERIOD

N

W — BEACON CIVIL ENGINEERING — E

S

80 40 20 0 40

SCALE : 1" = 40'

TRAFFIC CONTROL GENERAL NOTES:

1. THE MAINTAINED REGULATORY SPEEDS FOR CR 54 IS 40 MPH, AND SHALL REMIAN DURING ALL TRAFFIC CONTROL.
2. PER FDOT SPECIFICATIONS 8-6.4, SUSPENSIONS OF CONTRACTOR'S OPERATIONS - HOLIDAYS AN SPECIAL EVENTS, SPECIAL EVENT DAYS FOR THE PROJECT INCLUDE:
   - MEMORIAL DAY
   - JUNETEENTH NATIONAL INDEPENDENCE DAY
   - INDEPENDENCE DAY
   - LABOR DAY
3. WORKZONE CONSTRUCTION WILL BE ACCEPTABLE EXCEPT FOR DURING THE AM PEAK HOURS (7AM TO 9AM) AND PM PEAK HOURS (4PM TO 6PM).
4. ALL LANES MUST BE OPENED TO NORMAL TRAFFIC WITHIN 12 HOURS OF AN EVACUATION NOTICE FOR A HURRICANE OR ANY OTHER EMERGENCY EVENT AND SHALL REMAIN OPEN FOR THE DURATION OF THE EVENT AS DIRECTED BY THE ENGINEER.
5. CONTRACTOR SHALL COORDINATE WITH PINELLAS SUNCOAST TRANSIT AUTHORITY (PSTA) TO MAINTAIN ACCESS TO BUST STOPS DURING CONSTRUCTION, AT THE CONTRACTOR'S EXPENSE. DURING THE HOURS OUTSIDE OF CONSTRUCTION, PSTA BUS STOPS SHALL REMAIN OPEN.
6. LANE LINES AND THRU MOVEMENT ARROW DESIGNATIONS SHOWN ON TTCP PLAN SHEETS ARE FOR LANE IDENTIFICATION AND DIRECTION OF TRAFFIC ONLY. TURN LANE ARROWS WILL BE INSTALLED FOR EACH PHASE (IF APPLICABLE).
7. WHEN A DRIVEWAY IS CLOSED, TYPE 3 BARRICADES TO BE USED TO CLOSE ACCESS.

CONTRACTOR SHALL PROTECT ALL ITEMS OUTSIDE LIMITS OF CONSTRUCTION UNLESS OTHERWISE NOTED IN THE CONSTRUCTION PLANS R SPECIFICATIONS

CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES (LOCATIONS AND ELEVATIONS) PRIOR TO STARTING CONSTRUCTION AND ALERT ENGINEER TO ANY DISCREPANCIES IMMEDIATELY.

LEGEND:

- WORK ZONE
- BUFFER ZONE
- CHANNELIZING DEVICE
- TRAVEL DIRCETION
- PROPERTY BOUNDARY

PHASE I NOTES:

1. UTILITIES TO BE RELOCATED PRIOR TO CONTRACTOR BEGINNING WORK.
2. INSTALL ADVANCE WARNING SIGNS AND REMOVE CONFLICTING PAVEMENT MARKINGS AND SIGNS IN ACCORDANCE WITH APPROPRIATE INDICIES.
3. INSTALL CHANNELIZING DEVICES TO REGULATE TRAFFIC AND OPEN AND CLOSE DRIVEWAYS (IF APPLICABLE)
4. REMOVE CHANNELIZING DEVICES

DESIGN STANDARDS:

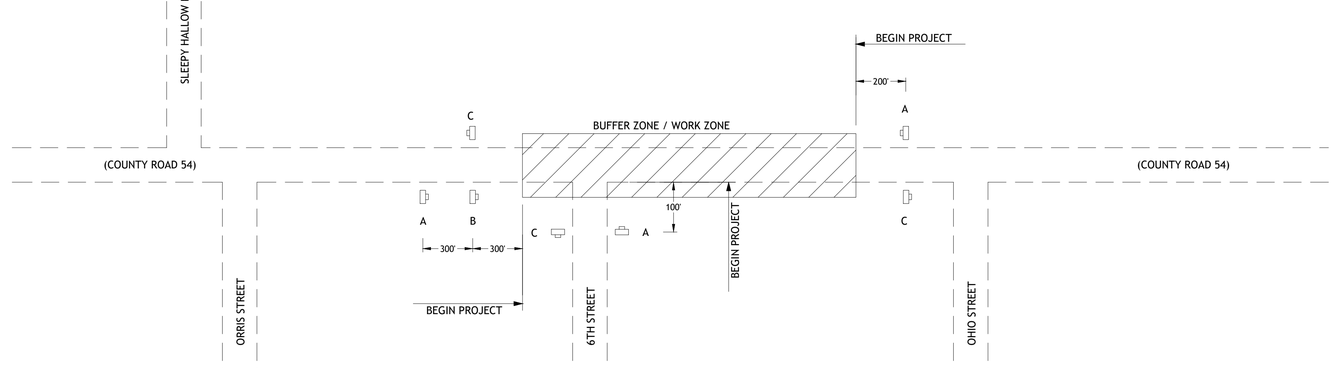
TEMPORARY TRAFFIC CONTROL PLAN USE THE FOLLOWING FDOT DESIGN STANDARDS FY 2023-24 FOLLOWING INDICIES: 102-120, 102-600, 102-602 & 102-660.

PHASE II NOTES:

1. UTILITIES TO BE RELOCATED PRIOR TO CONTRACTOR BEGINNING WORK.
2. INSTALL ADVANCE WARNING SIGNS AND REMOVE CONFLICTING PAVEMENT MARKINGS AND SIGNS IN ACCORDANCE WITH APPROPRIATE INDICIES.
3. INSTALL CHANNELIZING DEVICES TO REGULATE TRAFFIC AND OPEN AND CLOSE DRIVEWAYS (IF APPLICABLE)
4. REMOVE CHANNELIZING DEVICES

WIDENING NOTES:

1. INSTALL ADVANCE WARNING SIGNS AND REMOVE CONFLICTING PAVEMENT MARKINGS AND SIGNS IN ACCORDANCE WITH APPROPRIATE INDICIES.
2. INSTALL CHANNELIZING DEVICES TO REGULATE TRAFFIC AND OPEN AND CLOSE DRIVEWAYS (IF APPLICABLE)
3. REMOVE CHANNELIZING DEVICES



PROJECT ADVANCED SIGNING SCHEME

NOTE: CONTRACTOR IS TO PLACE BEGIN/END PROJECT ADVANCE SIGNING SCHEME AT THE BEGIN AND END PROJECT LIMITS FOR THE DURATION OF THE PROJECT



A W20-1F | B W21-5A | C G20-2

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB	ISSUE DATE:	9/28/23
CHECKED BY:	AH	APPROVED BY:	LB	JOB NO.:	22-548

NO.	BY	DATE	REVISION DESCRIPTION
1	CB	5/30/23	1ST ROUND JURISDICTIONAL COMMENTS
2	CB	8/31/23	2ND ROUND JURISDICTIONAL COMMENTS

3 WORKING DAYS BEFORE YOU DIG CALL SUNSHINE STATE ONE CALL OF FLORIDA 1-800-432-4770

FOR THE LOCATION OF UNDERGROUND UTILITIES

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

LAURIE S. BURCAW LICENSED No. 46064 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

LAURIE S. BURCAW, PE #46064

BEACON CIVIL ENGINEERING
CONSULTANT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626
LAND DEVELOPMENT ENGINEERING

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

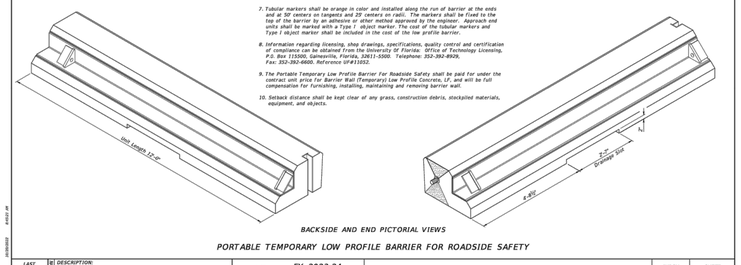
SHEET NAME:
OFFSITE - MAINTAINENCE OF TRAFFIC

SHEET NUMBER:
C-9.2

B:\Projects\2022\22548 Calumet Towns\DWG\Civil\22-548_OFFSITE.dwg 9/29/2023 10:16 AM

GENERAL NOTES:

1. Pursuant to 35 United States Code, Chapter 18, also known as the Bayh Dole Act of 1980, the non mountable curb was developed through Federal Funding. The 'Portable Temporary Low Profile Barrier For Roadside Safety' is a licensed design by the University Of Florida. Any infringement on the rights of the designer shall be the sole responsibility of the user.
2. This Index is provided by the Florida Department Of Transportation solely for use by the Department and its assignees. The purpose for this Index is to indicate the approval of use of the barrier on the State Highway System; to provide sufficient information for identifying the barrier unit; and, to provide general installation geometry for the barrier.
3. This legally mandated relationship is unique to federally funded University patents that Department contractors use on Contracts. Pursuant to federal law, the University may pursue royalties for a valid patent. Only those barrier units cast by producers licensed by the University Of Florida will be allowed for installation on the State Highway System in Florida. Barrier wall units shall conform to Specification 521 and shall be produced in Department-approved plants with quality control plans for precasting concrete barrier walls. The barrier shall bear a Florida Department Approved mark, consisting of a serial number to the manufacturer, the producing precast concrete plant and the date of production. This permanent identification mark will serve as certification that the unit has been manufactured in accordance with University of Florida drawings and specifications, and the approved quality control program.
4. The low profile barrier is to be installed only with hardware and accessories furnished by the licensed producer. The barrier shall be used for no purpose other than an interconnected segments in a run of barrier. Low profile barrier wall units shall maintain firm contact with adjoining units. Nuts on tensioning rods shall be installed snug tight.
5. The low profile barrier is applicable for work zone speeds of 45 mph or less.
6. If the plans specify Low Profile Barrier then substitution with other barrier types is not permitted.
7. Tubular markers shall be orange in color and installed along the run of barrier at the ends and at 50' centers on tangents and 25' centers on radii. The markers shall be fixed to the top of the barrier by an adhesive or other method approved by the engineer. Approach end units shall be marked with a Type 1 object marker. The cost of the tubular markers and Type 1 object marker shall be included in the cost of the low profile barrier.
8. Information regarding licensing, shop drawings, specifications, quality control and certification of compliance can be obtained from the University Of Florida; Office of Technology Licensing, P.O. Box 115500, Gainesville, Florida, 32611-5500. Telephone: 352-392-8929, Fax: 352-392-4600. Reference UF#13052.
9. The Portable Temporary Low Profile Barrier For Roadside Safety shall be paid for under the contract unit price for Barrier Wall (Temporary) Low Profile Concrete, LF, and will be full compensation for furnishing, installing, maintaining and removing barrier wall.
10. Setback distance shall be kept clear of any grass, construction debris, stockpiled materials, equipment, and objects.



BACKSIDE AND END PICTORIAL VIEWS

PORTABLE TEMPORARY LOW PROFILE BARRIER FOR ROADSIDE SAFETY

LAST REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	LOW PROFILE BARRIER	INDEX 102-120	SHEET 1 of 5
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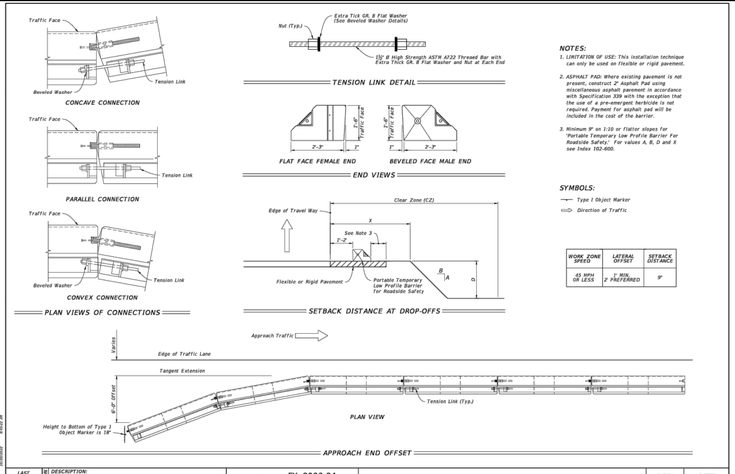

NOTES:

1. LIMITATION OF USE: This installation technique can only be used on flexible or rigid pavement.
2. ASPHALT PAD: Where existing pavement is not present, construct 2" Asphalt Pad using miscellaneous asphalt pavement in accordance with Specification 339 with the exception that the use of a pre-emergent herbicide is not required. Payment For asphalt pad will be included in the cost of the barrier.
3. Minimum 9" on 1:10 Taper or Flatter slopes for 'Portable Temporary Low Profile Barrier For Roadside Safety'. For values A, B, D and X see Index 102-600.

SYMBOLS:

Type 1 Object Marker
Direction of Traffic

WORK ZONE SPEED	LATERAL OFFSET	SETBACK DISTANCE
45 MPH OR LESS	1' MIN. 2' PREFERRED	9'

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SHEET TABLE OF CONTENTS

SHEET	TABLE OF CONTENTS
1	General Notes, TTC Tables
2	Definitions Temporary Traffic Control Devices Overhead Work Railroads Sight Distance Above Ground Hazard
3	Clear Zone Widths For Work Zones Superelevation Length of Lane Closures Overweight/Oversize Vehicles Lane Widths High-Visibility Safety Apparel Speed Reduction Signing
4	Flagger Control Survey Work Zones Signs
5	Work Zone Sign Supports
6	Commonly Used Warning and Regulatory Signs In Work Zones
7	Rumblers/Crosswalks/Joints Truck Mounted Attenuators Signals Channelizing Devices Channelizing Devices Consistency Advanced Warning Arrow Boards
8	Drop-Offs In Work Zones
9	Business Entrance Temporary Asphalt Separator
10	Channelizing Devices Notes Temporary Barrier Notes
11	Pavement Markings

GENERAL NOTES:

1. This Index contains information specific to the Federal and State guidelines and standards for the preparation of traffic control plans and for the execution of traffic control in work zones, for construction, maintenance, utility work and incident management activities on streets and highways. For highways, roads and streets off the State Highway System, the local agency (City/County) having jurisdiction may adopt requirements based on the minimum requirements provided in the MUTCD.
2. Use this Index in accordance with the Plans and Indexes 102-601 through 102-680. Indexes 102-601 through 102-680 are Department-specific typical applications of commonly encountered situations. Adjust device location or number thereof as recommended by the Worksite Traffic Supervisor and approved by the Engineer. Devices include, but are not limited to, flaggers, portable temporary signals, signs, pavement markings, and channelizing devices. Comply with MUTCD or applicable Department criteria for any changes and document the reason for changes.
3. Except for emergencies, any road closure on State Highway System must comply with Section 335.15, F.S.

TABLE 1
CHANNELIZING DEVICE SPACING

Work Zone Speed (mph)	Max. Spacing (feet) Cones or Tubular Markers		Type I Barricades, Type III Barricades, Vertical Panels, or Drums	
	Taper	Tangent	Taper	Tangent
≤ 45	25	50	25	50
≥ 50	25	50	50	100

TABLE 2
TAPER LENGTH "L"

Work Zone Speed (mph)	Min. Length (feet)
≤ 40	$L = \frac{WS^2}{60}$
≥ 45	$L = WS$

Where W = width of offset
S = speed in mph

TABLE 3
WORK ZONE SIGN SPACING "X"

Road Type	Min. Spacing (feet)
Arterials and Collectors with Work Zone Speed ≤ 40 mph	350
Arterials and Collectors with Work Zone Speed ≥ 45 mph	500
Limited Access Roadways *	1,500

* For Limited access roadways with work zone speed ≥ 55 mph, the minimum spacing may be reduced in accordance with the MUTCD and as approved by the Engineer.

TABLE 4
BUFFER LENGTH "B"

Work Zone Speed (mph)	Min. Length (feet)
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730

Note: When Buffer Length "B" is shorter than the Taper Length, the greatest length possible, but not less than 155 feet.

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DEFINITIONS:

Regulatory Speed (In Work Zones)

The maximum permitted travel speed posted for the work zone is indicated by the regulatory speed limit signs. The work zone speed must be shown or noted in the plans. This speed should be used as the minimum design speed to determine runout lengths, departure rates, flare rates, lengths of need, clear zone widths, taper lengths, crash cushion requirements, marker spacings, superelevation and other similar features.

Advisory Speed

The maximum recommended travel speed through a curve or a hazardous area.

Travel Way

The portion of the roadway for the movement of vehicles. For traffic control through work zones, travel way may include the temporary use of shoulders and any other permanent or temporary surface intended for use as a lane for the movement of vehicular traffic.

a. Travel Lane: The designated widths of roadway pavement marked to carry through traffic and to separate it from opposing traffic or traffic occupying other traffic lanes.

b. Auxiliary Lane: The designated widths of roadway pavement marked to separate speed change, turning, passing and climbing maneuvers from through traffic.

Detour, Lane Shift, and Diversion

A detour is the redirection of traffic onto another roadway to bypass the temporary traffic control zone. A lane shift is the redirection of traffic onto a different section of the permanent pavement. A diversion is the redirection of traffic onto a temporary roadway, usually adjacent to the permanent roadway and within the limits of the right of way.

Aboveground Hazard

An aboveground hazard is any object, material or equipment other than traffic control devices that encroaches upon the travel way or that is located within the clear zone which does not meet the Department's safety criteria, i.e., anything that is greater than 4" in height and is firm and unyielding or doesn't meet breakaway requirements.

TEMPORARY TRAFFIC CONTROL DEVICES:

1. All temporary traffic control devices shall be ON the Department's Approved Products List (APL). Ensure the appropriate APL number is presently marked on the device in a readily visible location.
2. All temporary traffic control devices shall be removed as soon as practical when they are no longer needed. When work is suspended for short periods of time, temporary traffic control devices that are no longer appropriate shall be removed or covered. Do not store temporary traffic control devices on the shoulder, sidewalk, or other roadway facility not affected by the work when work is suspended.
3. Arrow Boards, Portable Changeable Message Signs, Radar Speed Display Trailer, Portable Regulatory Signs, and any other trailer mounted device shall be delineated with a channelizing device placed at each corner when in use and shall be moved outside the travel way and clear zone or be shielded by a barrier or crash cushion when not in use.

OVERHEAD WORK:

Work is only allowed over a traffic lane when one of the following options is used:

OPTION 1 (OVERHEAD WORK USING A MODIFIED LANE CLOSURE)

Overhead work using a modified lane closure is allowed if all of the following conditions are met:

a. Work operation is located in a signalized intersection and limited to signals, signs, lighting and utilities.
b. Work operations are 60 minutes or less.
c. No encroachment by any part of the work activities and equipment within an overhead work area that is high-intensity, rotating, flashing, oscillating, or strobe lights operating.
d. Aerial lift equipment in the work area has high-intensity, rotating, flashing, oscillating, or strobe lights operating.
e. Aerial lift equipment is placed directly below the work area to close the lane.
f. Traffic control devices are placed in advance of the vehicle/equipment closing the lane using a minimum 100 foot taper.
g. Volume or complexity of the roadway may dictate additional devices, signs, Flagmen and/or a traffic control officer.

OPTION 2 (OVERHEAD WORK ABOVE AN OPEN TRAFFIC LANE)

Overhead work above a open traffic lane is allowed if all of the following conditions are met:

a. Work operation is located on a utility pole, light pole, signal pole, or their appurtenances.
b. Work operations are 60 minutes or less.
c. No encroachment by any part of the work activities and equipment within an area bounded by 2 feet outside the edge of travel way and 18 feet high.
d. Aerial lift equipment in the work area has high-intensity, rotating, flashing, oscillating, or strobe lights operating.
e. Volume or complexity of the roadway may dictate additional devices, signs, Flagmen and/or a traffic control officer.
g. Adequate precautions are taken to prevent parts, tools, equipment and other objects from falling into open lanes of traffic.
h. Other Governmental Agencies, Rail Facilities, or Codes may require a greater clearance. The greater clearance required prevails as the rule.

OVERHEAD WORK: (Cont.)

OPTION 4 (OVERHEAD WORK MAINTAINING TRAFFIC WITH NO ENCROACHMENT BELOW THE OVERHEAD WORK AREA)

Traffic shall be detoured, shifted, diverted or paved as to not encroach in the area directly below the overhead work operations in accordance with the appropriate index drawing or detailed in the plans. This option applies to, but not limited to, the following construction activities:

a. Beam, girder, segment, and bent/pier cap placement.
b. Form and falsework placement and removal.
c. Concrete placement.
d. Nailing construction located at edge of deck.
e. Structure demolition.

OPTION 5 (CONDUCTOR/CABLE PULLING ABOVE AN OPEN TRAFFIC LANE)

Overhead cable and/or de-energized conductor installations initial pull to proper tension shall be done in accordance with the appropriate Index or temporary traffic control plan.

Continuous pulling operations of secured cable and/or conductors are allowed over open lane(s) of traffic with no encroachment by any part of the work activities, materials or equipment within the minimal vertical clearance above the travel way. The utility shall take precautions to ensure that pull ropes and conductors/cables at no time fall below the minimum vertical clearance.

On Limited Access facilities, a site specific temporary traffic control plan is required. The temporary traffic control plan shall include:

a. The temporary traffic control set up for the initial pulling of the pull rope across the roadway.
b. During pulling operations, advance warning consisting of no less than a Changeable Message Sign upstream of the work area with alternating messages, "Overhead Work Ahead" and "Be Prepared to Stop" followed by a traffic control officer and police vehicle with blue lights flashing during the pulling operation.

RAILROADS:

Railroad crossings affected by a construction project should be evaluated for traffic controls to reduce queuing on the tracks. The evaluation should include as a minimum: traffic volumes, distance from the tracks to the intersections, lane closure or taper locations, signal timing, etc.

SIGHT DISTANCE:

1. Tapers: Transition tapers should be obvious to drivers. If restricted sight distance is a problem (e.g., a sharp vertical or horizontal curve), the taper should begin well in advance of the view obstruction. The beginning of tapers should not be hidden behind curves.
2. Intersections: Traffic control devices at intersections must provide sight distances for the road user to perceive potential conflicts and to traverse the intersection safely. Construction equipment and materials shall not restrict intersection sight distance.

ABOVEGROUND HAZARD:

1. Aboveground hazards (see definitions) are to be considered work areas during working hours and treated with appropriate work zone traffic control procedures. During nonworking hours, all objects, materials and equipment that constitute an aboveground hazard must be stored/placed outside the travel way and clear zone or be shielded by a barrier or crash cushion.
2. For aboveground hazards within a work zone the clear zone required should be based on the regulatory speed posted during construction.

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CLEAR ZONE WIDTHS FOR WORK ZONES:

The term 'clear zone' describes the unobstructed relatively flat area, impacted by construction, extending outward from the edge of the traffic lane. The table below gives clear zone widths in work zones for medians and roadside conditions other than for roadside canals; where roadside canals are present, clear zone widths are to conform with the distances to canals as described in the FDOT Design Manual 215.

TABLE 5
CLEAR ZONE WIDTHS FOR WORK ZONES

WORK ZONE SPEED (MPH)	TRAVEL LANES & MULTILANE RAMPS (Feet)	AUXILLIARY LANES & SINGLE LANE RAMPS (Feet)
60-70	30	18
55	24	14
45-50	18	10
30-40	14	10
ALL SPEEDS CURB & GUTTER	4' BEHIND FACE OF CURB	4' BEHIND FACE OF CURB

NOTE: For temporary conditions where existing curb has been removed but not reconstructed, curb and gutter values may be used.



SPEED REDUCTION SIGNING

NOTES:

1. X = Work Zone Sign Spacing
2. When called for in the Plans, use this detail in accordance with the Plans and Standard Plans. Place the speed reduction signs W3-5 and R2-1) in advance of the "Road Work Ahead" sign (W20-1F) as shown.
3. Do not use this detail in conjunction with the Materiel Awareness System.
4. For speed reductions greater than 10 MPH, reduce the speed in 10 MPH increments of 'X' distance. Do not reduce the speed below the minimum statutory speed for the class of facility.
5. Place additional "Speed Limit" signs (R2-1) at intervals of no more than one mile for rural conditions and 1,000 feet for urban conditions.
6. For undivided roadways, omit the signs shown in the median.
7. Remove temporary regulatory speed signs as soon as the conditions requiring the reduced speed no longer exist. Once the work zone regulatory speeds are removed, the regulatory speed existing prior to construction will automatically go back into effect.

SUPERELEVATION:

Horizontal curves constructed in conjunction with work zone traffic control should have the required superelevation applied to the design radii. Under conditions where normal crown controls curvature, the minimum radii that can be applied are listed in the table below.

TABLE 6
MINIMUM RADII FOR NORMAL CROWN

WORK ZONE POSTED SPEED	MINIMUM RADIUS
MPH	Feet
70	4050
65	3130
60	2400
55	1840
50	1390
45	1080
40	820
35	610
30	430
Superelevate When Smaller Radii is Used	

LENGTH OF LANE CLOSURES:

For interstates and state highways with a posted speed of 50MPH or greater, lane closures must not exceed 3 miles (includes taper, buffer, and work zone) in any given direction and must not close two consecutive interchanges.

OVERWEIGHT/OVERSIZE VEHICLES:

Restrictions to Lane Widths, Heights or Load Capacity can greatly impact the movement of over dimensioned loads. The Contractor shall notify the Engineer who in turn shall notify the State Permits Office, phone no. (850) 410-5777, at least seven calendar days in advance of implementing a maintenance of traffic plan which will impact the "Over Dimensioned/Oversized" vehicles. Information provided shall include location, type of restriction (height, width or weight) and restriction time frames. When the roadway is restored to normal service the State Permits Office shall be notified immediately.

LANE WIDTHS:

Lane widths of through roadways should be maintained through work zone travel ways wherever practical. Provide minimum widths for work zone travel lanes as follows: 11' for Interstate with at least one 12 lane open to traffic in each direction, unless formally accepted by the Federal Highway Administration; 11' for all other limited access roadways; and 10' for all other facilities.

HIGH-VISIBILITY SAFETY APPAREL:

All high-visibility safety apparel shall meet the requirements of the International Safety Equipment Association (ISEA) and the American National Standards Institute (ANSI) for "High-Visibility Safety Apparel", and labeled as ANSI/ISEA 107-2004 or newer. The apparel background (color) material color shall be either fluorescent orange-red or fluorescent yellow-green as defined by the standard. The retroreflective material shall be orange, yellow, white, silver-white, or a fluorescent version of these colors, and shall be visible at a minimum distance of 1,000 feet. Class 3 apparel may be substituted for Class 2 apparel. Replace apparel that is not visible at 1,000 feet.

WORKERS: All workers within the right-of-way shall wear ANSI/ISEA Class 2 apparel. Workers operating machinery or equipment in which loose clothing could become entangled during operation shall wear fitted high-visibility safety apparel. Workers inside the bucket of a bucket truck are not required to wear high-visibility safety apparel.

UTILITIES: When other industry apparel safety standards require utility workers to wear apparel that is inconsistent with FDOT requirements such as NFPA, OSHA, ANSI, etc., the other standards for apparel may prevail.

FLAGGERS: For daytime activities, Flaggers shall wear ANSI/ISEA Class 2 apparel. For nighttime activities, Flaggers shall wear ANSI/ISEA Class 3 apparel.

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FLAGGER CONTROL:

Regulatory Speed (In Work Zones)

Where Flaggers are used, a FLAGGER symbol or legend sign must replace the WORKERS symbol or legend sign.

The Flagger must be clearly visible to approaching traffic for a distance sufficient to permit proper response by the motorist to the Flagging instructions, and to permit traffic to reduce speed or to stop as required before entering the work site. Flaggers shall be positioned to maintain maximum color contrast between the Flagger's high-visibility safety apparel and equipment and the work area background.

Hand-Signaling Devices

STOP/SLOW paddles are the primary hand-signaling device. The STOP/SLOW paddle shall have an octagonal shape on a rigid handle. If The STOP/SLOW paddle is placed on a rigid staff, the minimum length of the staff, measured from the bottom of the paddle to the end of the staff that rests on the ground, must not be less than 6 ft. STOP/SLOW paddles shall be at least 24 inches wide with letters at least 6 inches high and should be fabricated from light weight material. The background of the STOP face shall be red with white letters and border. The background of the SLOW face shall be orange with black letters and border. When used at night-time, the STOP/SLOW paddle shall be retroreflectorized.

Flag use is limited to immediate emergencies, intersections, and when working on the centerline or shared left turn lanes where two (2) Flaggers are required and there is opposing traffic in the adjacent lanes. Flags, when used, shall be a minimum of 24 inches square, made of a good grade of red material, and securely fastened to a staff that is approximately 36 inches in length. When used at nighttime, flags shall be retroreflectorized.

Flashlight, lantern or other lighted signal that will display a red warning light shall be used at night.

Flagger Stations

Flagger stations shall be located far enough in advance of the work area so that approaching road users will have sufficient distance to stop before entering the work area. When used at nighttime, the Flagger station shall be illuminated.

SURVEY WORK ZONES:

The SURVEY CREW AHEAD symbol or legend sign shall be the principal Advance Warning Sign used for Traffic Control Through Survey Work Zones and may replace the ROAD WORK AHEAD sign when lane closures occur, at the discretion of the Party Chief.

When Traffic Control Through Work Zones is being used for survey purposes only, the END ROAD WORK sign as called for in certain 102 Series of Indexes should be omitted.

Survey Between Active Traffic Lanes or Shared Left Turn Lanes

The following provisions apply to Main Roadway Traffic Control Work Zones. These provisions must be adjusted by the Party Chief to fit roadway and traffic conditions when the Survey Work Zone includes intersections.

(A) A STOP IN YOUR LANE (MOT-1-06) sign shall be added to the Advance Warning Sign sequence as the second most immediate sign from the work area.

(B) Elevation Surveys-Cones may be used at the discretion of the Party Chief to protect prism holder and Flagger(s). Cones, if used, may be placed at up to 50' intervals along the break line throughout the work zone.

SURVEY WORK ZONES: (Cont.)

(C) Horizontal Control-With traffic flow in the same direction, cones shall be used to protect the backsight tripod and/or instrument. Cones shall be placed at the equipment, and up to 50' intervals for at least 200' towards the flow of traffic.

(D) Horizontal Control-With traffic flow in opposite directions, cones shall be used to protect the backsight tripod and/or instrument. Cones shall be placed at the equipment, and up to 50' intervals for at least 200 in both directions towards the flow of traffic.

SIGNS:

SIGN MATERIALS

Mesh signs and non-retroreflective vinyl signs may only be used for daylight operations. Non-retroreflective vinyl signs must meet the requirements of Specifications Section 994.

Retroreflective vinyl signs meeting the requirements of Specification Section 994 may be used for daylight or night operations not to exceed 1 day except as noted in the Indexes.

Rigid or Lightweight sign panels may be used in accordance with the vendor APL drawing for the sign stand in which they are attached.

INTERSECTING ROAD SIGNING

Signing for the control of traffic entering and leaving work zones by way of intersecting crossroads shall be adequate to make drivers aware of work zone conditions. When work operations exceed 60 minutes, place the ROAD WORK AHEAD sign on the side street entering the work zone.

ADJOINING AND/OR OVERLAPPING WORK ZONE SIGNING

Adjoining work zones may not have sufficient spacing for standard placement of signs and other traffic control devices in their advance warning areas or in some cases other areas within their traffic control zones. Where such restraints or conflicts occur or are likely to occur, one of the following methods will be employed to avoid conflicts and prevent conditions that could lead to misunderstanding on the part of the driving public as to the intended travel way by the traffic control procedure applied:

(A) For scheduled projects the engineer in responsible charge of project design will resolve anticipated work zone conflicts during the development of the project traffic control plan. This may entail revision of plans on preceding projects and coordination of plans on concurrent projects.

(B) Unanticipated conflicts arising between adjoining in progress highway construction projects will be resolved by the Resident Engineer for projects under his residency, and, by the District Construction Engineer for in progress projects under adjoining residencies.

(C) The District Maintenance Engineer will resolve anticipated and occurring conflicts within scheduled maintenance operations.

(D) The Unit Maintenance Engineer will resolve conflicts that occur within routine maintenance works; between routine maintenance work, unscheduled work and/or permitted work; and, between unit controlled maintenance works and highway construction projects.

SIGNS: (Cont.)

SIGN COVERING AND INTERMITTENT WORK STOPPAGE SIGNING

Existing or temporary traffic control signs that are no longer applicable or are inconsistent with intended travel paths shall be removed or fully covered.

Sign blanks or other available material completely cover the sign face. Rigid sign coverings shall be the same size as the sign it is covering and secured in a manner to prevent movement.

Sign covers are incidental to work operations and are not paid for directly.

SIGNING FOR DETOURS, LANE SHIFTS AND DIVERSIONS

Detours should be signed clearly over their entire length. Detours should not be easily determined how to re-enter the original highway. An Advance Turn (W1-4) warning sign should be used for the advance warning for a lane shift. A diversion should be signed as a lane shift.

EXTENDED DISTANCE ADVANCE WARNING SIGNS

Advance Warning Signs shall be spaced at 1,000' intervals on freeways and more when limited sight distance or the nature of the highway requires a motorist to bring their vehicle to a stop. Extended Distance Advance Warning Signs may be required on any type roadway, but particularly on high speed multilane divided highways where vehicle speed is generally in the upper range (45 MPH or more).

UTILITY WORK AHEAD SIGN

The UTILITY WORK AHEAD (W21-7) sign may be used as an alternate to the ROAD WORK AHEAD or the ROAD WORK 3.5 YT (W20-1) sign for utility operations on or adjacent to a highway.

LENGTH OF ROAD WORK SIGN

The length of road work sign (G20-3) bearing the legend ROAD WORK NEXT ____ MILES is required for all projects of more than 2 miles in length. The number of miles entered should be rounded up to the nearest mile. The sign shall be located at begin construction points.

GROOVED PAVEMENT AHEAD SIGN

The GROOVED PAVEMENT AHEAD sign is required 500 feet in advance of a milled or grooved surface open to traffic. The W8-15P placard should be used in conjunction with the GROOVED PAVEMENT AHEAD sign.

END ROAD WORK SIGN

The END ROAD WORK sign (G20-2) should be installed on all projects, but may be omitted where the work operation is less than 1 day. The sign should be placed approximately 500 feet beyond the end of a construction or maintenance project unless other distance is called for in the plans. When other Construction or Maintenance Operations occur within 1 mile this sign should be omitted and signing coordinated in accordance with Index 102-600, ADJOINING AND/OR OVERLAPPING WORK ZONE SIGNING.

LAST REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES	INDEX 102-600	SHEET 4 of 11
11/01/20						

NOTES:

1. All signs shall be post mounted when work operations exceed one day except for:
   a. Road closure signs mounted in accordance with the vendor drawing for the Type III Barricade shown on the APL.
   b. Pedestrian and bicycle advanced warning or pedestrian regulatory signs mounted on sign supports in accordance with the vendor drawing shown on the APL.
   c. Median barrier mounted signs per Index 700-012.
   d. Bridge mounted signs per Index 700-012.
2. Unless shielded with barrier or outside of the Clear Zone, signs mounted on temporary supports or barricades, and barricade/sign combination must be crashworthy in accordance with NCHRP 350 requirements and included on the Approved Products List (APL).
3. Use only approved systems listed on the Department's Approved Products List (APL).
4. Manufacturers seeking approval of U-Channel and steel square tube sign support assemblies for inclusion on the Approved Products List (APL) must submit a APL application, design calculations (for square tube only), and detailed drawings showing the product meets all the requirements of this Index.
5. Provide 3 lb/ft Steel U-Channel Posts with a minimum section modulus of 0.451 in³ for 60 ksi steel, a minimum section modulus of 0.37 in³ for 70 ksi steel, or a minimum section modulus of 0.34 in³ for 80 ksi steel.
6. Provide 4 lb/ft Steel U-Channel Posts with a minimum section modulus of 0.58 in³ for 60 ksi steel, or a minimum section modulus of 0.47 in³ for 70 ksi or 80 ksi steel.
7. U-channel posts shall conform with ASTM A 499, Grade 60, or ASTM A 576, Grade 1080 (with a minimum yield strength of 80 ksi). Square tube posts shall conform with ASTM A 653, Grade 50, or ASTM A 1011, Grade 50.
8. Sign attachment bolts, washers, nuts, and spacers shall conform with ASTM A307 or A 36.
9. Install 4 lb/ft Steel U-Channel Posts with approved breakaway splice in accordance with the manufacturer's detail shown on the APL.
10. The contractor may install 3 lb/ft Steel U-Channel Posts with approved breakaway splice in accordance with the manufacturer's detail shown on the APL.
11. Install all posts plumb.
12. The contractor may set posts in preformed holes to the specified depth with suitable backfill tamped securely on all sides, or drive 3 lb/ft sign posts and any size base post in accordance with the manufacturer's detail shown on the APL.

TABLE 7
POST AND FOUNDATION TABLE FOR WORK ZONE SIGNS

SIGN SHAPE	SIGN SIZE (inches)	NUMBER OF STEEL U-CHANNEL POSTS
Octagon	30x30	1
Triangle	36x36x36	1
	48x48x48	2
	60x60x60	2
Rectangle (W x H)	24x18	1
	24x30	1
	30x24	1
	36x18	1
	36x24	1
	48x24	1
	48x30	1
	48x36	2
	60x30	2
	60x36	2
	54x36	2
	48x60	2
	72x48	2
	96x48	2
Square	36x36	2
	48x48	2
Diamond	48x48	2
Circle	36Ø	2

Notes For Table:

1. Use 3 lb/ft posts for Clear Height up to 10' and 4 lb/ft posts for Clear Height up to 12'.
2. Minimum foundation depth is 4.0' for 3 lb/ft posts and 4.5' for 4 lb/ft posts.
3. For both 3 lb/ft and 4 lb/ft base or sign posts installed in rock, a minimum cumulative depth of 2' of rock layer is required.
4. The soil plate as shown on the APL vendor drawing is not required for base posts or sign posts installed in existing rock (as defined in Note 3), asphalt roadway, shoulder pavement or soil under sidewalk.
5. For diamond warning signs with supplement plaque (up to 5 ft² in area), use 4 lb/ft posts for up to 10 ft Clear Height (measure to the bottom of diamond warning sign).

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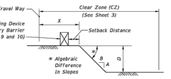
EXIT OPEN E3-2/ R/O
EXIT CLOSED E3-2a/ R/O
ROAD WORK NEXT 10 MILES G20-1/ R/O
END ROAD WORK G20-2/ R/O
FAST FOR SLOW G20-4/ R/O
DETOUR W4-8/ R/O
DETOUR W4-8A/ R/O
END DETOUR W4-8B/ R/O
DETOUR W4-8BL/ R/O
DETOUR W4-8R/ R/O
W4-10L/ R/O
W4-10R/ O/B
CW/CCW W7-1/ W/R
STOP W3-1/ W/R
YIELD W3-2/ W/R
SPEED LIMIT XX R2-1/ R/W
DO NOT PASS W4-1/ R/W
PASS WITH CARE W4-2/ R/W
TRUCKS USE RIGHT LANE W4-4/ R/W
W4-5/ R/W
W4-8/ R/W
KEEP LEFT W4-7A/ R/W
KEEP RIGHT W4-7AR/ R/W
KEEP LEFT W4-7BL/ R/W
KEEP RIGHT W4-7BR/ R/W
NAV LANE W4-11/ R/W
NO NAV LANE CENTER W4-12/ R/W
FISHBONE DIAGONAL W8-8/ R/W
DIAGONAL CLOSED W8-9/ R/W
ROAD NARROWS W8-9B/ R/W
NARROW BRIDGE W5-1/ R/W
ONE LANE BRIDGE W5-2/ R/W
TWO-WAY TRAFFIC W6-1/ R/W
W6-2/ R/W
W6-3/ R/W
BUMP W8-1/ R/W
DIP W8-2/ R/W
PAVEMENT ENDS W8-3/ R/W
SOFT SHOULDER W8-4/ R/W
W8-5/ R/W
TRUCK CROSSING W8-6/ R/W
LOOSE GRAVEL W8-7/ R/W
ROUGH ROAD W8-8/ R/W
LOW SHOULDER W8-9/ R/W
SHOULDER DROP OFF W8-9a/ R/O
UNEVEN LANES W8-11/ R/W
W8-15P/ R/W
LEFT LANE ENDS W9-1L/ R/W
RIGHT LANE ENDS W9-1R/ R/W
ONE ENDS MERGE AHD W9-2L/ R/W
LANE ENDS MERGE AHD W9-2R/ R/W
W10-1/ R/O
W11-1/ R/O
W11-2/ R/O
W12-1/ R/O
W12-2/ R/O
12'-6" W13-1/ R/O
W13-1/ R/O
W16-1P/ R/W
W16-2P/ R/W
XXX FEET W16-2P/ R/W
W16-1P/ R/W
W20-1A/ R/O
ROAD WORK 500 FT W20-1B/ R/O
ROAD WORK 1000 FT W20-1C/ R/O
ROAD WORK 15 MILE W20-1D/ R/O
ROAD WORK 1 MILE W20-1E/ R/O
ROAD WORK AHEAD W20-1F/

DROP-OFF CONDITION NOTES

1. These conditions and treatments can be applied only in work areas that fall within a properly signed work zone.
2. When drop-offs occur within the clear zone due to construction or maintenance activities, protection devices are required (See Table 8). A drop-off is defined as a drop in elevation, parallel to the adjacent travel lanes, greater than 2" with slope (Alt) steeper than 1:4. In superelevated sections, the algebraic difference in slopes should not exceed 0.25 (See Drop-off Condition Detail).
3. Drop-offs may be mitigated by placement of slopes with optional base material per Specifications Section 285. Slopes shallower than 1:4 may be required to avoid algebraic difference in slopes greater than 0.25. Include the cost for the placement and removal of the material in Maintenance of Traffic, LS. Use of this treatment in lieu of a temporary barrier is not eligible for CSJP consideration. Conduct daily inspections for deficiencies related to erosion, excessive slopes, rutting or other adverse conditions. Repair any deficiencies immediately.
4. For Setback Distance, refer to the Index or Approved Products List (APL) drawing of the selected barrier.
5. For Conditions 1 and 3 provided in Table 8, any drop-off condition that is created and restored within the same work period will not be subject to use of temporary barriers; however, channelizing devices will be required.
6. When permanent curb heights are ≤ 6", no channelizing device will be required. For curb heights < 6", see Table 8.



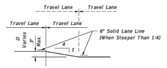
DROP-OFF CONDITION DETAIL

Table 8
Drop-off Protection Requirements

Condition	X (ft)	D (in)	Device Required
1	0-12	> 3	Temporary Barrier
2	> 12-CZ	> 3 to ≤ 5	Channelizing Device
3	0-CZ	> 5	Temporary Barrier
4	Removal of Bridge or Retaining Wall Barrier		Temporary Barrier
5	Removal of portions of Bridge Deck		Temporary Barrier

TRAVEL LANE TREATMENT FOR MILLING OR RESURFACING NOTES

1. This treatment applies to resurfacing or milling operations between adjacent travel lanes.
2. Whenever there is a difference in elevation between adjacent travel lanes, the W8-11 sign with "UNEVEN LANES" is required at intervals of ½ mile maximum.
3. If D is 1½" or less, no treatment is required.
4. Treatment allowed only when D is 3" or less.
5. If the slope is steeper than 1:4 (not to be steeper than 1:1), the R4-1 and MOT-1-06 signs shall be used as a supplement to the W8-11; this condition should never exceed 3 miles in length.



TRAVEL LANE TREATMENT FOR MILLING OR RESURFACING DETAIL

PEDESTRIAN WAY DROP-OFF CONDITION NOTES

1. A pedestrian way drop-off is defined as:
   a. a drop in elevation greater than 10" that is closer than 2' from the edge of the pedestrian way
   b. a slope steeper than 1:2 that begins closer than 2' from the edge of the pedestrian way when the total drop-off is greater than 60"
2. Protect any drop-off adjacent to a pedestrian way with pedestrian longitudinal channelizing devices, temporary barrier wall, or approved handrail.

DROP-OFFS IN WORK ZONES

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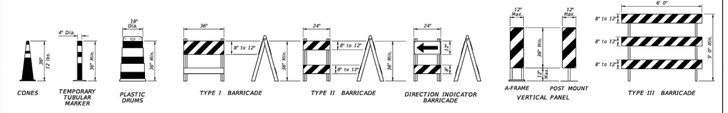
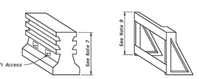


CHANNELIZING DEVICES

CHANNELIZING DEVICE NOTES:

1. The details shown on this sheet are for the following purposes:
   a. For ease of identification and
   b. To provide information that supplements or supersedes that provided by the MUTCD.
2. The Type III Barricade shall have a unit length of 6'-0" only. When barricades of greater lengths are required these lengths shall be in multiples of the 6'-0" unit.
3. No sign panel should be mounted on any channelizing device unless the channelizing device/sign combination was found to be crashworthy and the sign panel is mounted in accordance with the vendor drawing for the channelizing device shown on the Approved Products List (APL).
4. Ballast shall not be placed on top rails or any striped rails or higher than 13" above the driving surface.
5. The direction indicator barricade may be used in tapers and transitions where specific directional guidance to drivers is necessary. If used, direction indicator barricades shall be used in series to direct the driver through the transition and into the intended travel lane.
6. The splicing of sheeting is not permitted on channelizing devices or MOT signs.
7. For rails less than 3'-0" long, 4" stripes shall be used.
8. Cones shall:
   a. Be used only in active work zones where workers are present.
   b. Be reflectorized as per the MUTCD with Department-approved reflective collars when used at night.
9. For pedestrian longitudinal channelizing devices, the device shall have a minimum of 9" continuous detectable edging above the walkway. A gap not exceeding a height of 2" is allowed to facilitate drainage. The top surface of the device shall be a minimum height of 32" and have a 12" or less difference in any plane at all connection points between the devices to facilitate hand trailing. The bottom and the top surface of the device shall be in the same vertical plane. If pedestrian drop-off protection is required, the device shall have a footprint or offset of at least 2', otherwise the device must be at least 42" in height above the walkway and be anchored or ballasted to withstand a 200 lb lateral point load at the top of the device.



PEDESTRIAN LONGITUDINAL CHANNELIZING DEVICES

TEMPORARY BARRIER NOTES:

1. Where a barrier is specified, any of the types below may be used in accordance with the applicable Index:

Index	Description
102-100	Temporary Barrier
102-120	Low Profile Barrier
536-001	Guardrail

2. Trailer Mounted Barriers may be used to provide positive protection for workers within the work areas. APL drawings may be used as a guide to develop project specific Temporary Traffic Control Plans that are signed and sealed by the Contractor's Engineer.

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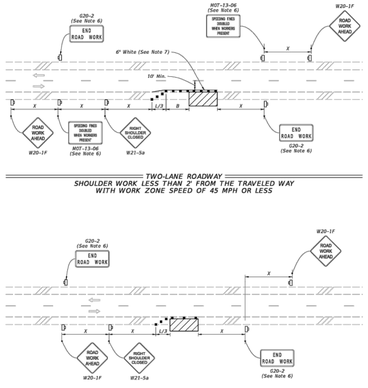
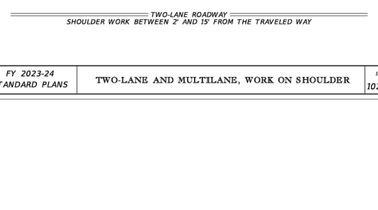
NOTE:

1. This Index applies to Two-Lane, Two-Way and Multilane Roadways, including Medians of divided roadways, with work on the shoulder.
2. L = Taper Length
   X = Work Zone Sign Spacing
   B = Buffer Length
   See Index 102-600 for "L", "X", "B", and channelizing device spacing values.
3. Where work activities are between 2' and 15' from the edge of traveled way, the Engineer may omit signs and channelizing devices for work operations 60 minutes or less.
4. When four or more work vehicles enter the through traffic lanes in a one hour period (excluding establishing and terminating the work area), use a Flagger or lane closure to accommodate work vehicle ingress and egress.
5. For work less than 2' from the traveled way and work zone speed is greater than 45 MPH, use a lane closure.
6. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" Signs (G20-2) along with the associated work zone sign spacing distances may be omitted when the work operation is in place for 24 hours or less.
7. Temporary pavement markings may be omitted when the work operation is in place for 3 days or less.
8. Omit "Shoulder Closed" signs (W21-5a) along with associated work zone sign spacing distances for work on the median.
9. When there is no paved shoulder, the "Worker" sign (W21-1) may be used instead of the "Shoulder Closed" sign (W21-5a).



TWO-LANE ROADWAY
SHOULDER WORK LESS THAN 2' FROM THE TRAVELED WAY WITH WORK ZONE SPEED OF 45 MPH OR LESS



TWO-LANE ROADWAY
SHOULDER WORK BETWEEN 2' AND 15' FROM THE TRAVELED WAY

SYMBOLS:
- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Lane Identification and Direction of Traffic

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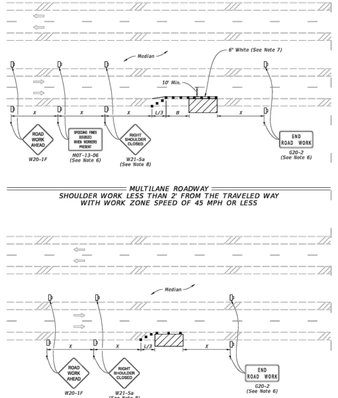
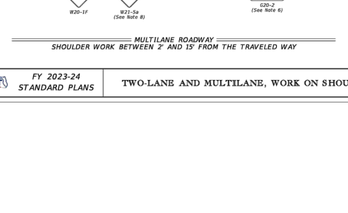


MULTILANE ROADWAY
SHOULDER WORK LESS THAN 2' FROM THE TRAVELED WAY WITH WORK ZONE SPEED OF 45 MPH OR LESS



MULTILANE ROADWAY
SHOULDER WORK BETWEEN 2' AND 15' FROM THE TRAVELED WAY

SYMBOLS:
- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Lane Identification and Direction of Traffic

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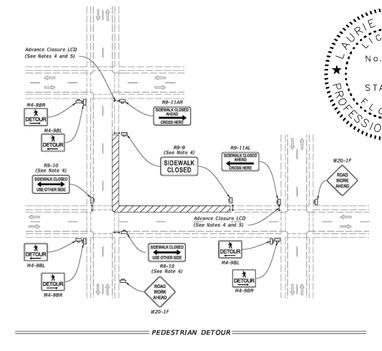
NOTES:

1. Cover or deactivate pedestrian traffic signal display(s) controlling closed crosswalks.
2. Place pedestrian LCDs across the full width of the closed sidewalk.
3. For post mounted signs located near or adjacent to a sidewalk, maintain a minimum 7' clearance from the bottom of the sign panel to the surface of the sidewalk.
4. "Sidewalk Closed" signs (R9-11X) may be mounted on pedestrian LCDs in accordance with the manufacturer's instructions.
5. Omit the Advance Closure LCD if it blocks access to other pedestrian facilities (e.g., transit stops, residences, or business entrances).

SYMBOLS:
- Work Area
- Work Zone Sign
- Pedestrian Longitudinal Channelizing Device (LCD)
- Lane Identification and Direction of Traffic



PEDESTRIAN DETOUR

LAST REVISION	DESCRIPTION:	FY 2023-24 STANDARD PLANS	SIDEWALK CLOSURE	INDEX	SHEET
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ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB	ISSUE DATE:	9/28/23
CHECKED BY:	BY	APPROVED BY:	AH	JOB NO.:	22-548

NO.	BY	DATE	REVISION DESCRIPTION
1	CB	5/30/23	1ST ROUND JURISDICTIONAL COMMENTS
2	CB	8/31/23	2ND ROUND JURISDICTIONAL COMMENTS

3 WORKING DAYS BEFORE YOU DIG CALL SUNSHINE STATE ONE CALL OF FLORIDA 1-800-432-4770
FOR THE LOCATION OF UNDERGROUND UTILITIES

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

LAURIE S. BURCAW
LICENSE
No. 46064
STATE OF FLORIDA
PROFESSIONAL ENGINEER

LAURIE S. BURCAW, PE #46064

BEACON
CIVIL ENGINEERS

LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
OFFSITE - MOT DETAILS

SHEET NUMBER:
C-9.4

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Beacon
CIVIL ENGINEERING

8345 Gunn Highway
Tampa, Florida 33626

09/18/2023
City of Zephyrhills
5335 8th St.
Zephyrhills, FL 33542

RE:	Comment Response Letter
Project Name:	Calumet Townhomes
Project No.	SPR-0063-23

Dear Reviewer,

A request for additional information was received from your office with the following outstanding issues. Please see below for our comment responses.

Stormwater Calculations:

1. Drainage report indicates water quality calculations provided in Appendix G. No water quality calculations were noted. Please provide water quality analysis. The required treatment volume per SWFWMD Basis of Review is as follows:
   c. On-line treatment system
      1. An on-line treatment system shall treat the runoff from the first one-inch of rainfall; or as an option for projects or project sub-units with drainage areas less than 100 acres, the first one-half inch of run-off. In determining the runoff from one-inch of rainfall, the applicant must provide calculations determining runoff from the directly connected impervious and semi-impervious areas separately from any other contributing area.

      Note, in reviewing the ICPR analysis, it appears that treatment was provided based on ½" of rainfall, not 1" of rainfall or the optional ½" of runoff. Please clarify and update water quality calculations as necessary.

      Not Resolved. Per the response provided, the intent was to provide treatment for ½" of runoff, however per the second paragraph, the system only provides treatment for the first ½" of rainfall.

      The routing method provided would demonstrate treatment of ½" of rainfall, not ½" of runoff.

      For example, Basin 1 CN = 74.07. From TR-55, where S = (1000/74.07)-10 = 3.5 and Q = (0.5-.2(3.5))2/(1+.8(3.5) = 0.12" of treatment would be provided, not the ½" required.

      ICPR will utilize the same methodology. For the same basin, ½" of rainfall would yield 0.76 AC x 0.12" = 357 cf of runoff. Where ½" of runoff = 0.72 ac x ½" = 1,380 cf.

      Per a discussion with SFWMD staff, the method provided would not meet SWFWMD requirements.

Please update the treatment to provide either the 1" of rainfall or ½" of runoff. Per a discussion with SWFWMD staff, recommended method would be to calculate the ½" runoff volume and set the initial stage in the pond at the corresponding elevation.

Response: To address this review comment, the water quality volumes for Stormwater Pond 1 and the StormTech Systems were calculated separately. The areas for the basins that flow into Stormwater Pond 1 were summed up with a result of 92,347.20 sf. Then, the total area was used to calculate the water quality volume using ½" over the total basin area with a result of 3,847.80 cf. The water quality elevation in the Stormwater Pond 1 for 3,847.80 cf was determined to be 81.13'. The water quality elevation of 81.13' was set as the initial stage in the pond. ICPR4 was then routed to demonstrate the water quality volume percolates in 36 hours.

This same process was performed for the water quality volume for the StormTech Chambers.

2. Area for Basin 5 in ICPR analysis (0.13 acres) does not match CN calculations (0.24 acres). Please update calculations and/or ICPR analysis as necessary. – Resolved, however now the CN for Basin 11 in ICPR (57.9) does not match the calculated CN (75.9).

   Please update the ICPR routing to reflect the correct CN value.

   Response: The CN for Basin 11 has been revised to match the calculated CN of 75.9.

3. Aquifer base for ICPR routings should be set at confining layer elevation as obtained from physical site/soil conditions as typically outlined in the geotechnical report, not elevation 0.0. This results in inaccurate drawdown results. Provide backup data for elevation used. Typically, if no confining layer is found, the bottom of boring is utilized. If bottom of boring is used for pond, provide assurance from geotechnical engineer that clayey sand stratum encountered in borings P-1 and P-2 will not inhibit infiltration.

   For the stormtech chambers, the only boring provided is HA-5 with a boring depth of 6'. If an aquifer depth and/or groundwater elevation is to be used lower than the boring provided, provide assurance from geotechnical engineer for values to be used. It appears that based on the nearest borings B-1 to B-3, a potential confining layer was encountered around elevation 13'. Not Resolved. The aquifer base for the pond was updated based on field data, however the aquifer base for the chamber system is still set at 0.

   Based on the recommended aquifer base of 8' below existing grade per the geotechnical engineer as indicated in your response, the corresponding elevation of the aquifer base would be approximately elevation 80 based on an average elevation of 88 of the two borings provided. Please justify the elevation 74 (-14') utilized in the ICPR routing.

   Please update ICPR routings a andnd recovery based on field data and geotechnical engineer's recommendations.

Response: The ICPR4 model was revised to provide 1/2" over the total basin areas that flow to the Stormwater Pond 1 and StormTech system as described in review Comment 1 above. Per the Geotechnical Report, the average seasonal high water table is 11' below existing grade. Therefore, a clean sand fill will be placed below Stormwater Pond 1 and the StormTech system. See Stormwater Pond 1 cross sections for additional details. See Sheet C-6.3 for additional details for the StormTech system.

4. Boring profiles for hand augers missing from the geotechnical report. Please provide boring profiles. Not Resolved

   Response: The hand auger data is included on page 4 of the Geotechnical Report, See Appendix B of the drainage report.

5. The pipe lengths in the plans and ICPR analysis are inconsistent, specifically Pipe 1 and Pipe 11. Please review and update as necessary. Not Resolved. Pipe data node data, stormtech data, etc. omitted from drainage calculations.

   Response: For Pipe 1, the total length of the pipe is 59.5', which is correct. The total length of pipe includes the RCP pipe plus the length of pipe located within the mitered end section. The length of Pipe 11 has been updated in the ICRP4 model.

   The StormTech data was previously submitted in the Appendix. All pipe data, node data and StormTech data was provided in Appendix titled ICPR4 Inputs and all results are located in the Appendix titled ICPR4 results.

Sheet C-2.2

1. Drainage Area size for drainage point listed as 0.28 (ac?). Please verify. Not Resolved.
   Response: Area has been updated see sheet C-2.2

Sheet C-3.0

1. Future Land Use references Residential 9 (County). City land use is RU. Please revise. Not Resolved. City land use is RU, not RV. Please revise.

   Response: FLU has been corrected see sheets C-3.0 and C-4.0

2. Density calculation shown as 92.4 is incorrect. Please revise. Not Resolved. Density is still showing 92.4 du/ac.

   Response: Information has been revised see sheets C-3.0 and C-4.0Gr

3. Maximum units calculation is incorrect. Maximum density for R4 is 20 du/ac. Please revise. Reference LDC 7.01.00. Not Resolved. Max density is 20 du/ac.

Response: Information has been revised see sheets C-3.0 and C-4.0

4. Park area required and provided appear incorrect. Please revise. Not Resolved. Unclear what this references. Please discuss with Planning Department.

   Response: Required and provided park areas are shown on the Site Data Table on sheet C-4.0.

5. Lot dimensional standards appear incorrect. Please revise. Not Resolved. Minimum lot width listed at 50', lot depth 110', etc. Please correct lot dimensional standards to match this project.

   Response: Lot dimensional standards have been revised.

6. General Notes #2 and #3 do not appear applicable to this project. Not Resolved. General Notes #2 and #3 reference Pasco County LDC. This project is within the city limits of Zephyrhills.

   Response: Information has been revised see sheets C-3.0 and C-4.0

7. Townhome setback detail is not correct. Lot width and side setbacks do not match plans. Please revise. Not Resolved. Townhome setback detail was not corrected. Lot width would be 35' based on the detail as the minimum TH width would be 20' and the setbacks would be 7.5'. Please revise to be consistent with the project.

   Response: 35' dimension has been added see sheets C-3.0 and C-4.0

Sheet C-3.1

1. Will the lift station be dedicated to the city? If so, indicate O&M as the city. Not Resolved. O&M entity listed as O&M. If city, list as City of Zephyrhills.

   Response: City of Zephyrhills has been listed.

Sheet C-3.3

1. ROW width is noted as 52'. As crushed concrete sources can vary, recommend adding a specification for crushed concrete, i.e. LBR 100, compaction, etc. which can be verified at testing. Not Resolved. ROW width still listed at 52'. Per detail, ROW width would be closer to 30'. Please verify ROW width and correct detail.

   Response: ROW width has been verified at 30' and detail corrected accordingly.

Sheet C-4.0

1. Refer to sheet C-3.0 comments regarding notes and details which are duplicated on this sheet. Not Resolved. See sheet C-3.0 comments above.

   Response: Information has been updated accordingly.

2. Code requires 2 parking spaces per dwelling unit. Please confirm 2 parking spaces are provided per each dwelling unit. Reference LDC 7.03.04. Not Resolved. Response is "acknowledge." Provide documentation confirming 2 parking spaces will be provided per dwelling unit.

   Response: There is one garage space and one space located within the driveway.

3. Driveways at townhomes appear to be too short to meet minimum parking requirements (9' x 20' parking spaces). Driveway dimensions not provided but scale to 10' x 16'. Please provide driveway dimensions to verify minimum parking space dimensions. Unless approved by city staff, required parking cannot encroach on sidewalks. Reference LDC 7.03.04. Not Resolved. Detail provided indicates 20' parking space depth from face of building to ROW. Detail does not show location of proposed sidewalk. Parking spaces cannot encroach into sidewalk. Please add proposed sidewalk to detail and verify a clear distance of 20' is provided from the face of building to the sidewalk.

   Response: ROW has been adjusted to 38' and buildings shifted to allow for 20' parking.

4. Add clear site triangles per section 7.03.03.04 for intersections on CR 54 and Calumet Avenue. Please confirm clear view is maintained on landscape plans. – Not Resolved. Thank you for the sight triangles added on sheet C4.1. It appears that landscaping is proposed within the sight triangles. Please add sight triangles to landscape plan and confirm clear line of sight will be maintained.

   Response: Site triangles are now included on the landscape plans.

5. Confirm with Public Works and Planning if sidewalk is required on Calumet Avenue. Not Resolved.

   Response: Sidewalk has been added along Calumet Ave the width of the property.

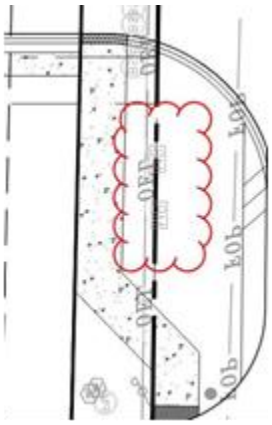
6. Confirm with Public Works and Planning if roadway improvements are needed on Calumet Avenue. Roadway appears substandard. Not Resolved.

   Response: Calumet Avenue is Substandard Road. The developer is responsible for paying a Fair Share towards improvements required to bring Calumet Ave to County Standards.

Sheet C-5.0

1. What is the intent with the existing mailboxes that will be impacted by the proposed entrance? The mailboxes appear to be for properties outside of this project. Will these be relocated? Not Resolved. See Google Earth image below and excerpt from sheet C3.0 indicating the location of the existing mailboxes. Response indicates mailboxes will be removed. It appears that the mailboxes are for properties outside of the proposed project. Has the removal been coordinated with the adjacent landowners?





Response: The removal has been coordinated with the adjacent landowners.

2. Provide dimensions at kiosk parking and ADA space. Minimum standard parking dimensions are 9' x 20'. Reference LDC 7.03.04. Not Resolved. Detail provided but indicates a parking space dimension of 9' x 18'. City minimum parking space is 9' x 20'. Please provide the minimum parking space dimension of 20'.

Response: Dimensions have been revised sheet C-5.0

3. Provide minimum 4' separation between stop bar and crosswalk. Plans indicate 5' to be provided from center of 24" stop bar to center of 12" crosswalk stripe which does not meet the 4' minimum. Reference FDOT index 711-001 (shown on sheet C-5.2). Not Resolved. Correct separation provided at entrance on SR54. Internal dimensions were not revised.

Response: Paint has been revised accordingly.

Sheet C-6.0

1. Clarify ground cover (sod, seed, etc.) within retention pond. Typically side slopes would be sodded and pond bottom seeded. Landscape plan does not address. Not Resolved. Response was "Acknowledge." Please clarify what landscape material is proposed within the pond and add to the plans and/or landscape plan.

Response: Ground cover is specified on landscape plans.

Sheet C-6.7

1. ADS detail indicates design minimums and depth of stone to be determined by site design engineer. Please provide site specific design information for stormtech trench: number of chambers, depth of stone, cover, trench length, width, etc. Partially Resolved. Add top of stone elevation to sheet C-6.9. Detail indicates 12" (minimum), ICPR calls for 15". Plans should clearly indicate the required stone .

Response: Elevations have been provided see sheet C-6.9

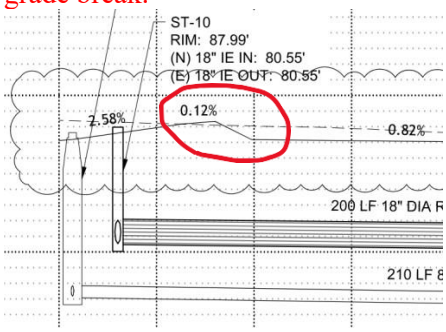
Sheets C-8.0 and C-8.1

1. Add roadway slopes to proposed profiles as well as PVI elevations. Partially Resolved. Please provide PVI station and elevations to the roadway plan and profiles.

Response: Information has been provided.

2. Road grades and grade breaks on streets B and C appear to be steep near Road A intersection. I will review when slopes and PVI elevations are provided. Not Resolved. Clarify design speed utilized for roadway design. Per FDOT Greenbook standards, at the lowest design speed, the maximum grade break without a vertical curve is 1.2%. Various locations appear to have grade breaks exceeding maximum standards.

   Clarify proposed roadway grades on Street B between station 20+25 and 20+50. Based on the information provided, a significant drop is proposed. The roadway grades provided do not seem to reflect the profile grade line as proposed. Please provide PVI station/elevations at each proposed grade break.



   Clarify proposed roadway grades on Street C between station 30+25 and 30+50. Based on the information provided, a significant "hump" is proposed. The roadway grades provided do not seem to reflect the profile grade line as proposed. Please provide PVI station/elevations at each proposed grade break.

   Response: Roadway has been reviewed and revised accordingly.

- Sidewalk needed on Calumet
  Response: Sidewalk has been added along Calumet Road. See sheets C-4.0, C-5.0 & C-6.0.
- Roadway improvements / potential ROW dedication needed on Calumet as determined through ROW use permit
  Response: Thru coordination with the jurisdiction, Calumet Road improvements will be thru mitigation and no improvements, besides sidewalk, has been provided. See sheet C-4.0
- Parking required = 2 spaces per unit. For the driveway, you show a 20' driveway, but don't show the sidewalk that cross the driveway. The car can't block the sidewalk, the driveway is only 15' to 16'.
  Response: All units have a 1-car garage and a driveway. This accommodates for the 2 spaces per unit requirement. All driveways have been revised to be 20' long, which starts at the back of the 5' sidewalk.

Sincerely,
Beacon Civil Engineering, LLC.

Laurie Burcaw, P.E.
President

Beacon
CIVIL ENGINEERING

8345 Gunn Highway
Tampa, Florida 33626

DRAINAGE CALCULATIONS

FOR:
CALUMET TOWN SUBDIVISION

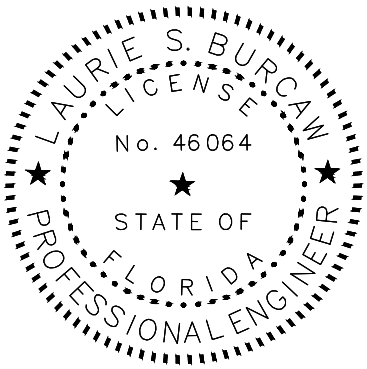
DEVELOPER/APPLICANT:
CALUMET TOWN, LLC

SUBMITTED TO:
PASCO COUNTY
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

ENGINEER OF RECORD:
LAURIE BURCAW, BEACON CIVIL ENGINEERING LLC
8345 GUNN HIGHWAY
TAMPA, FL 33626

DATE:
APRIL 3, 2023

REVISED:
MAY 29, 2023
SEPTEMBER 27,2023



Laurie S Burcaw

Digitally signed by Laurie S Burcaw
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Reason: I am the author of this document
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Date: 2023.09.29 16:41:14-04'00'
Foxit PDF Editor Version: 12.1.1

This item has been digitally signed and sealed by Laurie Burcaw, PE, on 09/29/2023.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

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APPENDIX B: GEOTECHNICAL REPORT

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APPENDIX F: ICPR4 INPUTS

APPENDIX G: ICPR4 RESULTS

APPENDIX H: OPERATIONS & MAINTENANCE MANUAL

SECTION 1.0 - GENERAL INFORMATION

This report is being produced to demonstrate the construction of the Calumet Towns Subdivision meets Pasco County and SWFWMD's quantity and flood control requirements. In accordance with Pasco County LDC Section 902 and Section 3.0 of the Environmental Resource Permit Handbook Volume II, the proposed development

- Will not cause adverse flooding on-site
- Will not cause adverse flooding or stormwater flow impacts to adjacent properties
- Will not cause adverse impacts to the County Road 64, Calumet Avenue and the right-of-way.

Project Description

The site is approximately 4.62 ac and has Property I.D. No. 02-26-21-0000-02000-0000. The site is located adjacent to and on the corner of Weeks Boulevard and Collier Parkway. The project will consist of 64 lots with a combined total of 179,200 +/- sf of single family town homes. The will consist of townhomes, a stormwater management system and water and sanitary utilities. The site is located in East Pasco Drainage Basin, which is a open basin.

SECTION 2.0 - DRAINAGE REQUIREMENTS

Water Quality Requirements

The water quality treatment will be provided by treating 0.5" of runoff depth over the entire basin area.

A chart demonstrating compliance with the SWFWMD water quality standards is included in Appendix G shows that the proposed stormwater pond will meet the requirements of an online retention treatment system as outlined in Section 4.1c in the Applicants Handbook Volume 2.

Stormwater Attenuation

The site is located in the East Pasco Watershed, which is an open basin. The proposed stormwater system does not have a positive outfall. Therefore, the stormwater system was designed to store the 100 yr/24 hr storm. The ICPR4 results can be located in Appendix G.

SECTION 3.0 - DRAINAGE ANALYSIS.

Predevelopment Conditions

In the existing condition, the property has 2 sub-basins. The stormwater for the northern sub-basin flows towards the eastern property line. The southern sub-basin flows to the southeastern corner of the site into the R.O.W.

Watershed Basin

The site is located in East Pasco Watershed, which is an open basin.

Post-development Conditions

In the post-development condition, the site will have 1 (one) stormwater ponds and 1 (one) StormTech system that will treat the water quality volume and address stormwater attenuation. Since the site is located in an open basin without a positive outfall, the stormwater ponds were designed to retain the 100 yr-24 hr storm and treat 0.5" of water over the entire site for a water quality volume.

Rainfall Intensities

For the 100 yr/24 hr storm event, a rainfall intensity of 12.6 in/hr was used.

Existing Geotechnical Conditions

Geotechnical studies have been conducted by Ground Down Engineering. These studies were referenced for determining the groundwater table and infiltration rates of the on-site soils. The Geotechnical Report references NRCS[1] soils information and soils map. The Geotechnical Report includes provides the groundwater table elevations and DRI test results. See Appendix B for the Geotechnical Report

Environmental:

The Weeks Office Park Development is located in FEMA FIRM Panel 12101C0293F and is shown to be in FEMA Zone X[2]. See Appendix C for FEMA flood map.

Curve Numbers:

The NCRS curve number method was used to estimate the runoff for the pre and post development conditions. The composite curve number calculations can be found in Appendix E.

Time of Concentration:

The basin areas are very small. Therefore, a minimum time of concentration of 15 minutes was used for the stormwater analysis.

Water Quality Treatment Criteria

A chart demonstrating compliance with the SWFWMD water quality standards is included in Appendix G shows that the proposed stormwater pond will meet the requirements of an online retention treatment system as outlined in Section 4.1c in the Applicants Handbook Volume 2.

The site is required to treat one-half inch of runoff. To address water quality, the water quality volumes for Stormwater Pond 1 and the StormTech Systems were calculated separately. The basin areas that flow into Stormwater Pond 1 were summed up with a result of 92,347.20 sf. Then, the total area was used to calculate the water quality volume using ½" over the total basin area with a result of 3,847.80 cf. The water quality elevation in Stormwater Pond 1 for 3,847.80 cf was determined to be 81.13'. The water quality elevation of 81.13' was set as the initial stage in the pond. ICPR4 was then routed to demonstrate the water quality volume will drawdown in 36 hours.

[1] Natural Resources Conservation Service
[2] FEMA Zone X limits represent an area determined to be outside the 0.2% annual chance floodplain.

This was process was performed for the StormTech system to address water quality.

The water quality calculations are located in Appendix E. The water quality charts demonstrating the water quality volumes will drawdown in 36 hours are located in Appendix G.

Drawdown Requirements

The drawdown requires that the total treatment volume must be discharged within 72 hours The applicant's handbook stipulates that any volume that has not discharged within 36 hours must be considered during other storm events. The proposed system is shown to comply with these requirements. The simulation for the water quality was modeled with 0.5" with a 1 minute duration. This will basically create 0.5" over the entire basin area being immediately routed to Pond A and Pond B.

Stormwater Attenuation:

lCPR4 modelling software was used to calculate the storage capacity of the stormwater ponds for the 100 yr/24 hr storm in the post-development development condition. The Florida Modified rainfall event was used for the model. ICPR4 inputs can be found in Appendix G.

SECTION 4.0 – SUMMARY OF ANALYSIS

Since the 100 yr/24 hr storm even is retained on-site within Stormwater Pond 1 and StormTech System 1, there is no stormwater being discharging from the proposed stormwater management system in the post-development condition. Therefore, the post-development discharge is less than the pre-development condition. Since the flow discharging from the site is less in the post-development condition, the project meets Pasco County and SWFWMD's quantity and flood control requirements.

STORMWATER POND 1	
STORM EVENT	MAX STAGE
TOP OF BANK	86.00
EMERGENCY OVERFLOW WIER	85.00
100-YEAR 24-HOUR	84.87
BOTTOM OF POND	80.00

STORMMTECH SYSTEM 1	
STORM EVENT	MAX STAGE
TOP OF SYSTEM	85.00
100-YEAR 24-HOUR	84.87
BOTTOM OF SYSTEM	79.25

The Water Quality Chart located in Appendix G demonstrates the water quality volume will drawdown in less that 36 hours. The water quality volume for Stormwater Pond 1 percolates

in approximately 1.00 hour. The water quality volume for StormTech System 1 percolates in **1.00** hour. See the percolation link results and chart in Appendix G. Therefore, the water quality requirements for Pasco County and SWFWMD District have been met.

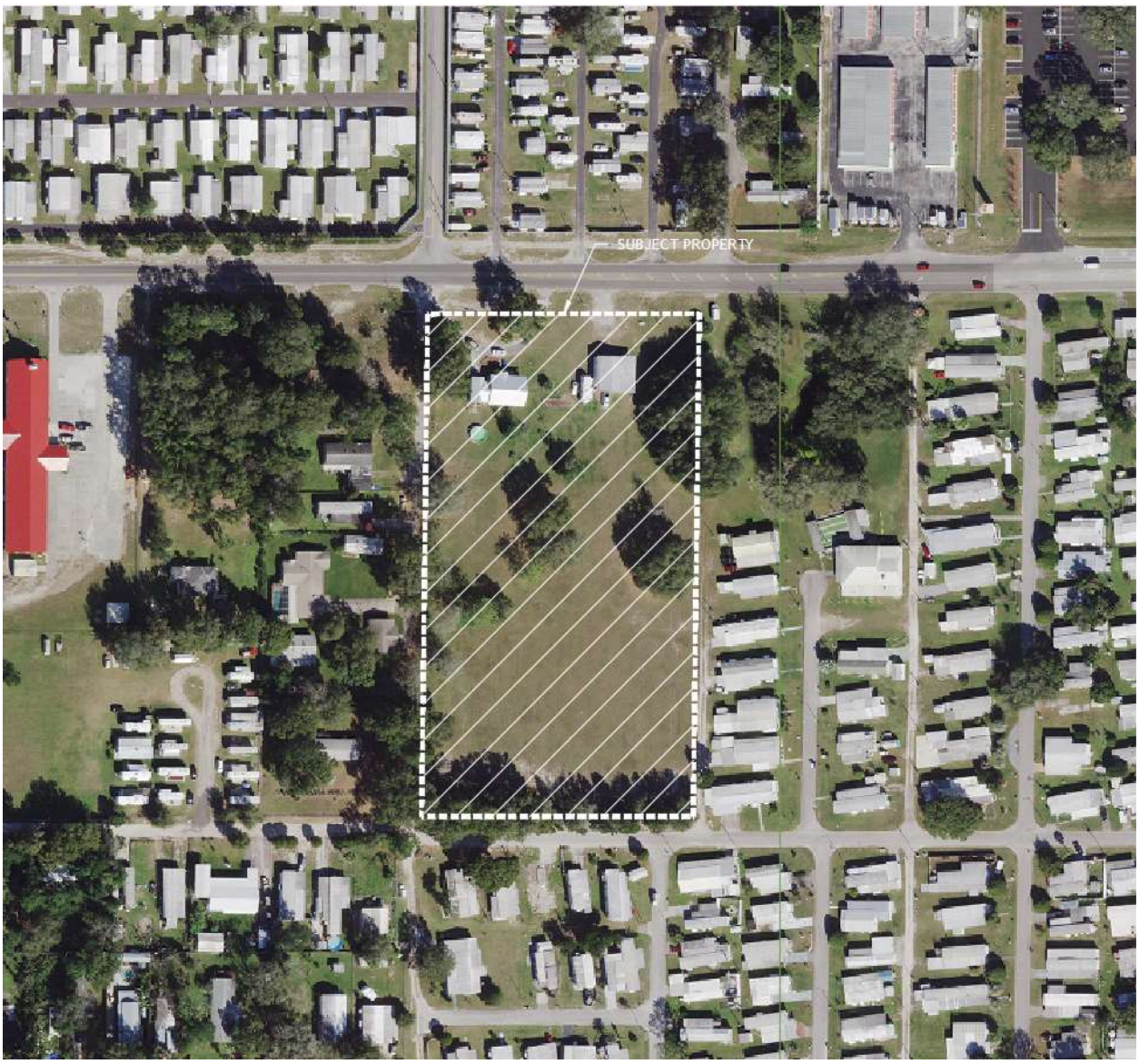
8345 Gunn Highway
Tampa, Florida 33626

APPENDICIES

APPENDIX A: AERIAL MAPS

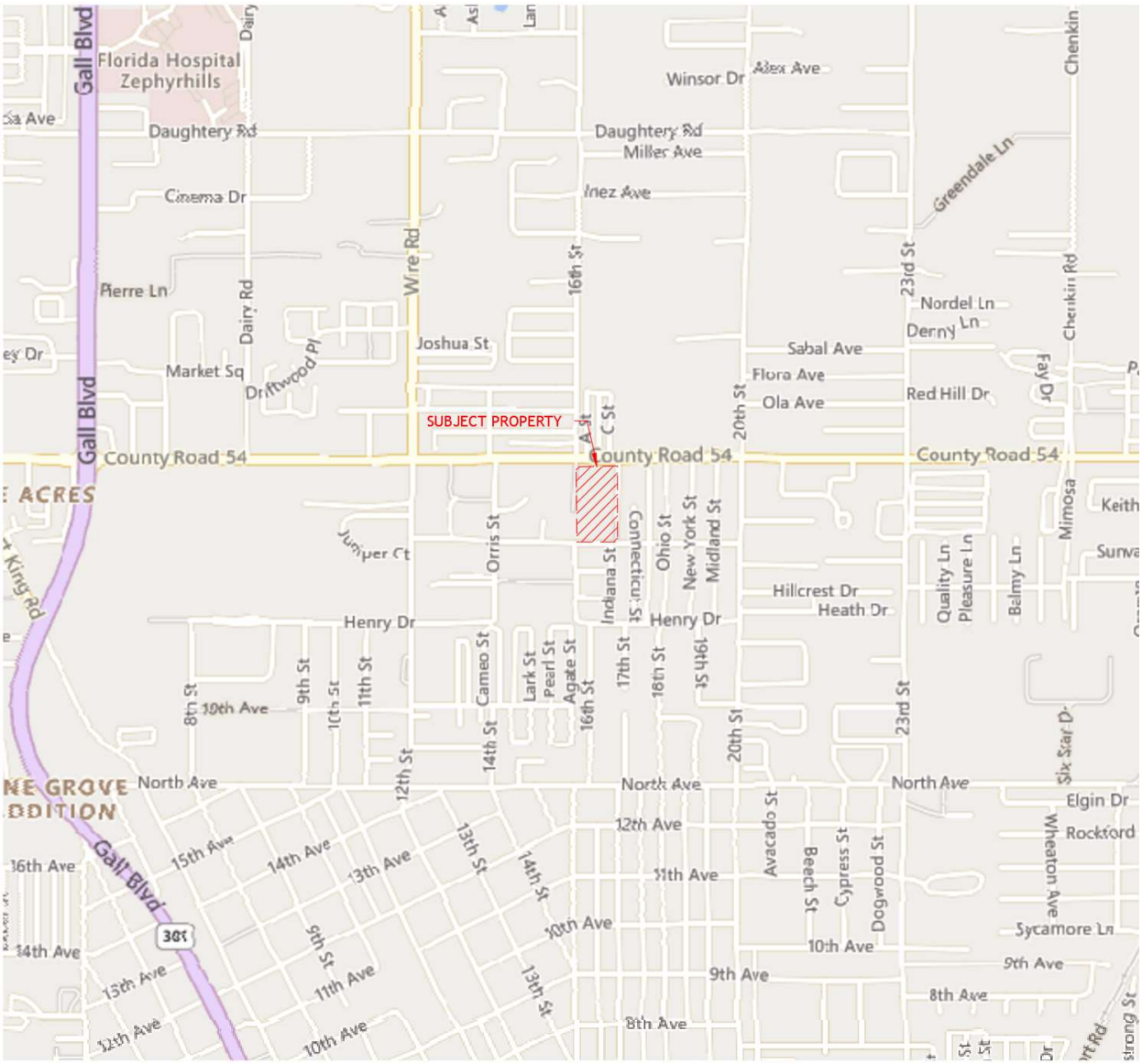
VICINITY MAP

(NTS)



VICINITY MAP

(NTS)



APPENDIX B: GEOTECHNICAL REPORT

GROUND DOWN ENGINEERING

9232 RHEA DRIVE, SUITE L
ODESSA, FL 33556

REPORT OF GEOTECHNICAL EXPLORATION
PROPOSED TOWNHOME DEVELOPMENT
38736, 38740, 38744 & 38745 CR 54
ZEPHYRHILLS, FLORIDA
PASCO COUNTY
GDE PROJECT NO.: 23-120

Prepared For:

Dennis R. Pierce
Beacon Civil Engineering, LLC
Tampa, FL

March 2023

March 7, 2023

Dennis R. Pierce
Beacon Civil Engineering, LLC
8345 Gunn Highway
Tampa, FL 33626

Report of Geotechnical Exploration
Proposed Townhome Development
38736, 38740, 38744 & 38745 County Road 54
Zephyhills, FL
Pasco County
Parcel ID: 02-26-21-0000-00200-0000
GDE Project No.: 23-120

Dear Mr. Pierce:

Ground Down Engineering, Inc. (GDE) has completed the geotechnical exploration for the referenced project that you authorized. The purposes of this study were to explore general subsurface conditions at the proposed site and to use the data obtained to develop engineering recommendations regarding the suitability of the site for the proposed construction, including foundation recommendations, pavement recommendations, structural fill recommendations, and geotechnical parameters for stormwater drainage design. This report describes our exploration procedure, presents the data obtained, and presents our conclusions and recommendations regarding the geotechnical engineering aspects of site and foundation design.

In summary, based on the results of this subsurface exploration, it appears that the soils at the site are suitable for development of the proposed townhome structures on conventional shallow foundation systems following the site preparation recommendations presented in this report.

GDE appreciates the opportunity to participate in this project and we trust that the information included in this report is sufficient for your design. If you have any questions or comments concerning the contents of this report, please contact us.

Sincerely,

Ground Down Engineering, Inc.
GDE FL Certificate of Authorization No. 9599

Brian D. Richardson, P.E.
Senior Geotechnical Engineer
FL Reg. No. 84354

Laurel A. Hall, P.E.
President
FL Reg. No. 38392

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Boring Location Plan (Figure 2)
SPT Boring Logs (Figure 3)
Graphical Results of Double Ring Infiltration Test
Custom Soil Survey Report

PROJECT INFORMATION

Existing Site

Based on the information provided for our review, we understand that a residential townhome development is planned for the subject site located at 38736, 38740, 38744 & 38745 County Road 54, Zephyrhills, Pasco County, Florida (Figure 1). The proposed development will consist of residential townhome structures with associated roadways and stormwater drainage pond. Our study addresses geotechnical design and construction recommendations for the foundations of the residential structures, pavement recommendations, recommendations for structural fill, and geotechnical parameters for stormwater drainage design.

We have assumed minor earthwork will be associated with the site development and anticipated cut and fill quantities will be less than 2 to 3 feet. Structural loading data was not available at the time of this report**.**

Project Approach

The objective of the geotechnical investigation for the proposed project was to obtain information concerning the general subsurface conditions over the site to make geotechnical engineering estimates and recommendations in each of the following areas:

- Soil stratigraphy at the boring locations and the development of the approximate soil profile.
- General location and description of potentially deleterious materials which may interfere with construction progress or new structure performance, including buried or surficial existing fills, organics, construction debris, etc.
- Identification of some critical design or construction details, including present groundwater levels and estimated wet season levels at the boring locations.
- Suitability and availability of materials found on-site, that might be excavated or moved during site grading, for use as structural fill in the building and pavement areas and as general backfill.
- Engineering criteria and recommendations for the placement and compaction of approved fill materials (if necessary) in and around the structure areas and all proposed pavement areas.
- Design and construction recommendations considering the water table conditions.

Scope of Work

To address the above objectives, our scope of work for this project included the following:

- Reviewed available published information on the site, including the United States Department of Agriculture (USDA) Soil Conservation Service (SCS) soil survey data for Pasco County.

- Conducted a subsurface exploration program consisting of soil borings and subsurface sampling. Our exploration program for this project consisted of:
    - Performing 2 SPT borings to 20 feet in the proposed pond area.
    - Performing 5 SPT borings to depths between 30 and 35 feet in the proposed building footprints.
    - Performing 6 hand auger borings within the proposed roadway alignments.
- Measured the stabilized groundwater levels at the boring locations when apparent.

- Reviewed and classified the recovered soils using the Unified Soils Classification System. Developed the general soil stratigraphy at the boring locations.

- Performed geotechnical engineering studies and analyses to develop geotechnical engineering recommendations for each of the objectives previously discussed for the proposed project.

- Prepared a geotechnical report that summarizes the course of our study, the field data generated, the subsurface conditions encountered, and our geotechnical engineering recommendations for the proposed project.

Soil Survey Review

According to the U.S.D.A. “Soil Survey of Pasco County”, the soil types present on the subject site are:

- Tavares fine sand-Urban land complex, 0 to 5 percent slopes – Tavares soil consists of moderately well drained fine sand to a depth of 80 inches below grade. Historical seasonal high groundwater level is about 18 to 42 inches below grade. Urban land consists of residential and commercial developments, streets, parking lots, and other impervious groundcover that makes soil and groundwater level identification infeasible.

SUBSURFACE EXPLORATION

Field Exploration

The procedures used by Ground Down Engineering, Inc. for field sampling and testing are in general accordance with industry standards of care and established geotechnical engineering practice. GDE located the borings within the site as indicated per the attached Boring Location Plan (Figure 2). The field testing locations should be considered approximate, a development concept plan was provided by the client.

Standard Penetration Test Borings

The SPT borings were advanced by means of a track-mounted drill rig employing wet rotary drilling techniques. The SPT testing was performed continuously in the upper ten feet and at five-foot intervals thereafter. The soil samples were obtained at the depths where the SPT testing was performed. The soil samples were then classified in the field according to the Unified Soil Classification System (ASTM D 2487).

The SPT borings were performed in general compliance with standard field penetration test procedures (ASTM D 1586-99). After drilling to the sampling depth and flushing the borehole, the standard two-inch O.D. split-barrel sampler was seated by driving it six inches into the undisturbed soil at the bottom of the borehole. The sampler was then driven an additional 12 inches by a 140-pound hammer falling 30 inches. The number of blows required to produce the 12 inches of penetration is recorded as the standard penetration test value (N). These values are plotted on the left side of the boring logs in Figure 3.

Sampling performed in the upper ten feet utilized a 24-inch long split spoon. The sampler was driven 24 inches and the blows required to drive the sampler the middle two 6-inch increments were recorded as the "N" value. Through this technique, the upper ten feet of the soil was sampled continuously. Detailed descriptions of the soils encountered during the advancement of the SPT borings are presented in the boring logs (Figure 3).

Soil Sample Handling and Classification

The soil samples obtained during the SPT borings were reviewed to confirm classifications, estimate the relative percentages of the soil's constituents (sand, clay, etc.), and identify pertinent structural features. The soils were classified according to the Unified Soil Classification System (ASTM D 2487). The stratification lines shown on the boring records represent our interpretation of approximate boundaries between soil types. The transition between strata may be gradual. Our classifications are based on an estimation of the soil properties and our engineering experience with the soils found in this geologic area.

RESULTS

Subsurface Conditions

Below 10 feet a rotary drilling technique was used along with the circulation of a clay bentonite drilling slurry to stabilize the borehole and prevent cave-in. The groundwater table was not encountered at all boring locations before commencement of wash drilling at 10 feet, after which the groundwater level in indiscernible.

Boring B-1 generally encountered a sequence of fine SAND, clayey SAND, sandy CLAY, slightly clayey SAND, sandy CLAY, and CLAY to a depth of 30 feet below existing grade. ("N" values ranged from 3 to 12 blows per foot of penetration.)

Boring B-2 generally encountered a sequence of fine SAND and sandy CLAY to a depth of 30 feet below existing grade. ("N" values ranged from 2 to 13 blows per foot of penetration.)

Boring B-3 generally encountered a sequence of fine SAND, clayey SAND, sandy CLAY, clayey SAND, and sandy CLAY to a depth of 30 feet below existing grade. ("N" values ranged from 2 to 19 blows per foot of penetration.)

Boring B-4 generally encountered a sequence of fine SAND, clayey SAND, sandy CLAY with phosphate, and sandy CLAY to a depth of 30 feet below existing grade. ("N" values ranged from 2 to 12 blows per foot of penetration.)

Boring B-5 generally encountered a sequence of fine SAND, sandy CLAY, clayey SAND, slightly clayey SAND, silty SAND, and CLAY to a depth of 35 feet below existing grade. ("N" values ranged from 2 to 18 blows per foot of penetration.)

Boring P-1 generally encountered a sequence of slightly silty fine SAND, fine SAND, clayey SAND, fine SAND, and clayey SAND to a depth of 20 feet below existing grade. ("N" values ranged from 2 to 13 blows per foot of penetration.)

Boring P-2 generally encountered a sequence of fine SAND and clayey SAND to a depth of 20 feet below existing grade. ("N" values ranged from 3 to 9 blows per foot of penetration.)

Please note that the SPT "N" values are presented adjacent to the boring logs in Figure 3. The correlation of the SPT "N" values with relative density, unconfined compressive strength, and consistency are provided in the following table:

Coarse Grained Soils		Fine Grained Soils		
Penetration Resistance N (blows/ft)	Relative Density of Sand	Penetration Resistance N (blows/ft)	Unconfined Compressive Strength of Clay (tons/ft^2)	Consistency of Clay
0-4	Very Loose	<2	<0.25	Very Soft
4-10	Loose	2-4	0.25-0.50	Soft
10-30	Medium-Dense	4-8	0.50-1.00	Medium
30-50	Dense	8-15	1.00-2.00	Stiff
>50	Very Dense	15-30	2.00-4.00	Very Stiff
		>30	>4.00	Hard

Hand Auger Borings

The hand auger boring locations are shown on the Boring Location Plan (Figure 2) in the Appendix. The borings were performed with a manually advanced hand auger. The auger was advanced by rotating it into the ground in approximate 6-inch increments. After each incremental penetration, the auger was retracted, and the soils collected in the auger bucket were classified according to the Unified Soil Classification System (ASTM D 2487).

The results of the auger borings are presented in the following table.

Hand Auger Boring ID	Depth (feet)	Soil Description (USCS Group Symbol)
HA-1	0 – 6	Brown, tan fine SAND (SP)
HA-2	0 – 6	Brown, tan fine SAND (SP)
HA-3	0 – 6	Brown, tan fine SAND (SP)
HA-4	0 – 4 4 – 6	Brown, tan fine SAND (SP) Light brown clayey SAND (SC)
HA-5	0 – 5 5 – 6	Brown, tan fine SAND (SP) Light brown clayey SAND (SC)
HA-6	0 – 6	Brown, tan fine SAND (SP)

Groundwater

The groundwater table was not encountered at any of the SPT boring locations above depths of 10 feet below existing grade and was also not encountered at the hand auger boring locations above depths of 6 feet below existing grade. Seasonal high groundwater level is estimated to be approximately 10 to 12 feet below existing grade at the locations explored. Significant fluctuations in the groundwater levels should be expected due to seasonal variations in rainfall, runoff, and other site-specific factors.

One double ring infiltration (DRI) test was conducted at about 2 feet below existing grade within the proposed pond area. The approximate testing location is shown on the attached Boring Location Plan (Figure 2). The testing was performed on March 1, 2023.

The DRI test was performed in general accordance with procedures outlined in ASTM D-3385. Graphical results of the double ring infiltration test are attached and the general test results are as follows:

Test No.	Recommended Stabilized Infiltration Rate (in/hr)
DRI-1	19

SUBSURFACE ANALYSIS

Foundation Analysis

Based on the borings performed at the site, the primary soil-related factor affecting the performance of shallow foundations is the potential total and differential settlement due to the very loose to loose near-surface sand encountered in the borings. Due to the sandy nature of the near-surface soils and placed fill (beneath the structure footprints) these settlements should occur incrementally with the application of load.

The loads imparted by the weight of placed fill can cause more settlement issues than the structural loads will. If the project schedule allows, fill material should be placed as soon as possible and allowed to remain for as long as possible until the construction is started.

It is assumed that the townhome structures will be two to three-stories in height and will incorporate typical masonry and wood frame construction, and that perimeter wall loads will be no more than 4 to 5 kips per linear foot (klf) and that interior column loads will be no more than 50 kips.

Based on the soil conditions encountered in the borings and the anticipated site preparation and footing geometry, total settlements are anticipated to be on the order of 1 inch or less, most of which are expected to occur incrementally during construction. Differential settlements are anticipated to be on the order of 1/2 inch or less. Once actual structural loads and footing dimensions are determined and site plans are finalized, GDE can re-evaluate anticipated settlements, if necessary.

Foundation Recommendations

Provided estimated settlements are within the structural tolerance, conventional shallow foundation systems consisting of perimeter wall footings and isolated pad footings should provide adequate support for the proposed structures, assuming the complete removal of all surface organic materials (vegetation), proper subgrade preparation, and proper fill placement, as described later.

Based on the data obtained from the soil borings and expected footing geometry and embedment depth, a net allowable soil bearing pressure of 1,500 psf (in excess of overburden) is estimated for the existing shallow soils found over the site and for structural fill as described in this report. This bearing pressure estimate is based on the complete removal of all surface organic materials, the removal of organic materials beneath footings (if encountered during excavation), and the filling and re-compacting described later in this report. As discussed previously, due to the sandy nature of the materials, these settlements should occur incrementally as the loads are applied.

A minimum footing width of 24 inches and a minimum depth of embedment of 18 inches should be used for footing design for the structures. Although calculated footing width based on our bearing capacity may be less than 24 inches, the 24-inch minimum width is recommended to prevent punching shear failure.

The footings should be no more than 36 inches wide for continuous footings and 72 inches wide for pad footings for the settlement estimates provided in this report to be valid.

Preliminary Pavement Design Guidelines

These pavement design guidelines are made without the benefit of specific traffic information, local constraints, or grading plans, and are intended as a general guide for the design engineer's preliminary evaluation. Site design decisions and/or local governmental requirements may obviate certain aspects of these guidelines; City or County Engineering and Design Standards as well as the FDOT Standard Specifications should also be used as a guideline.

Pavement subgrade soils are expected to be fine sands to slightly silty fine sands, as discussed in this report. Experience suggests that the near surface fine sandy soils will have a Limerock Bearing Ratio (LBR) of around 20. In general, the shallow sand deposits encountered in our exploration should be acceptable for construction and support of flexible (limerock, crushed concrete, or shell base), semi-flexible (soil-cement base) and rigid (Portland cement concrete) type pavement sections after nominal subgrade preparation.

The choice of pavement base type will depend on final pavement grades, as well as economic considerations, such as the use of underdrains to control water levels versus elevating the paved areas. Commonly, limestone or shell is utilized where the bottom of the base course remains 24 inches above the high groundwater table. Soil cement and crushed concrete base materials are less moisture sensitive than other pavement base types and are commonly used in developments where a shallow groundwater table is prevalent and the separation between the bottom of the base and high groundwater table is about 18 inches. In general, pavement component materials should meet FDOT specifications.

We anticipate that a flexible pavement will be employed for this project. For automobile parking and drives, a pavement section such as a 1-1/2 inch to 2 inches type SP 12.5/9.5 asphaltic concrete surface course along with a 6 to 8-inch base, and a 10 to 12-inch stabilized subgrade may be considered for preliminary design. For heavy duty pavement, a 2 to 3-inch type SP 12.5/9.5 asphaltic concrete surface course along with a minimum 8 to 10-inch base, and a 12-inch stabilized subgrade may be considered for preliminary design. Alternate pavement sections should achieve similar structural numbers.

Actual pavement section thickness should be determined based on the structural number required for the planned pavements, calculated from traffic loads, volume, local standards and the owner's design life requirements. We recommend that design basis pavement subgrade LBR values be selected based on tests performed on selected representative samples of the proposed pavement subgrade materials.

Anticipated Site Preparation

Conventional site preparation, including stripping, grubbing and compaction, should be adequate. After stripping and grubbing, the existing ground should be proof rolled with multiple passes of a large vibratory roller. Proofrolling can also be used to locate weak and unstable shallow soils that may require improvement prior to filling. Heavy vibratory compaction is routinely performed to improve the density and uniformity of density of the upper sands, reducing settlement and improving the support for pavements, concrete slabs and shallow foundations (for lightly loaded buildings). After proofrolling of the natural ground, approved fill can be placed and compacted in lifts to develop grades, as needed. The ground water table should be considered when designing pavement and building grades.

On Site Soil Suitability

The fine sand soils encountered at the boring locations (soil types 1, 4 & 7 on boring logs) are considered acceptable for use as fill (borrow) to support the proposed residential structures and pavements/roadways provided proper earthwork management is implemented.

If desired, blending the on-site unsuitable clayey materials with clean sand to produce suitable structural fill could be performed. A ratio of clayey soil to clean sand can be determined in the laboratory using the soils from the site. Varying mixing ratios can be tested to determine the ratio that yields material with less than 25 percent fines and a PI of less than 20. If desired, once a borrow pit is identified, we can perform the blending ratio testing which will provide the recommended ratio of clean sand fill with on-site clayey material.

Structural Fill

Definition

Soil used for structural fill can be defined as clean fine sand containing less than twelve percent material by weight that is finer than a number 200 sieve (fines) (material conforming to SP to SP-SM in the Unified Soil Classification System) and less than 5 percent organics by weight. However, materials containing up to 25 percent fines (materials conforming to SC or SM in the Unified Soil Classification System) may be utilized as structural fill, if their plasticity index is less than 20 and the working subgrade is at least 2 feet above water or groundwater level.

If fill material with higher fines content is used (< 25 percent fines), the material will require the use of compaction equipment designed for clayey soils. This includes a sheeps foot or vibratory pad foot roller. In addition, a disk could be required to assist with drying the clayey soils in order to place them at or near their optimum moisture content. These materials must be placed in 6-inch thick maximum lifts so that they can be effectively compacted with a vibratory pad foot roller.

Placement

Fill should be placed in lifts not to exceed one foot thick. The fill material should be compacted to at least 95 percent of its modified Proctor maximum dry density (ASTM D 1557). Confined areas, such as utility trenches, should be compacted with manually operated vibratory compaction equipment.

GEOLOGIC HAZARDS POTENTIAL (PASCO COUNTY REQUIREMENT)

The geotechnical Investigation and the report for this project have been prepared in conformance with section 704.4 of the Pasco County Land Development Code. Based on the results of the soil test borings performed for this project, it is GDE's opinion, within a reasonable professional probability, that there is no geologic hazard potential at the project site within the depths and areas explored by the SPT borings.

TESTING AND MONITORING

Construction monitoring and testing are essential to proper site construction and performance. Compliance with the recommended construction specification for compaction and soil types must be verified by our engineering technician familiar with the project construction. Observation of site preparation work is an integral part of the engineering recommendations contained in this report. Density tests should be performed for each lift of structural fill placed and per Pasco County Specifications.

LIMITATIONS

This report has been prepared for the exclusive use of **Beacon Civil Engineering, LLC** for the specific application to the project previously discussed. Our conclusions and recommendations have been rendered using generally accepted standards of geotechnical engineering geology practice in the state of Florida. No other warranty is expressed or implied.

Our conclusions and recommendations are based on the design information furnished to us, the data obtained from our subsurface exploration, and our experience. They do not reflect variations in the subsurface conditions that are likely to exist in the region of our borings and in unexplored areas of the site. These variations are due to the inherent variability of the subsurface conditions in this geologic region. Should variations become apparent during construction, it will be necessary to re-evaluate our conclusions and recommendations based upon our on-site observations of the conditions.

As is true with this area of Florida, the site is underlain by limestone bedrock that is susceptible to dissolution and the subsequent development of karst features such as voids and sinkholes in the natural soil overburden. Construction in a sinkhole prone area is therefore accompanied by some risk that internal soil erosion and ground subsidence could affect new structures in the future. It is not possible to investigate or design to completely eliminate the possibility of future sinkhole related problems. In any event, the Owner must understand and accept this risk.

The scope of our services does not include any environmental assessments or investigations for the possible presence of hazardous or toxic materials in the soil, groundwater or surface water within or in the general vicinity of the site studied. Any statements made in this report or shown on the test boring logs regarding unusual subsurface conditions and/or composition, odor, staining, origin or other characteristics of the surface and/or subsurface materials are strictly for the information of our client and may or may not be indicative of an environmental problem.

If changes are made in the overall design or the location of the proposed facilities, or if the finish grades differ from those discussed herein, the recommendations presented in this report must not be considered valid unless the changes are reviewed by our firm and recommendations modified or verified in writing. We should be given the opportunity to review the foundation plan, grading plan and the applicable portions of the project specifications when the design is finalized. This review will allow us to check whether these documents are consistent with the intent of our recommendations.

APPENDIX

FIGURES

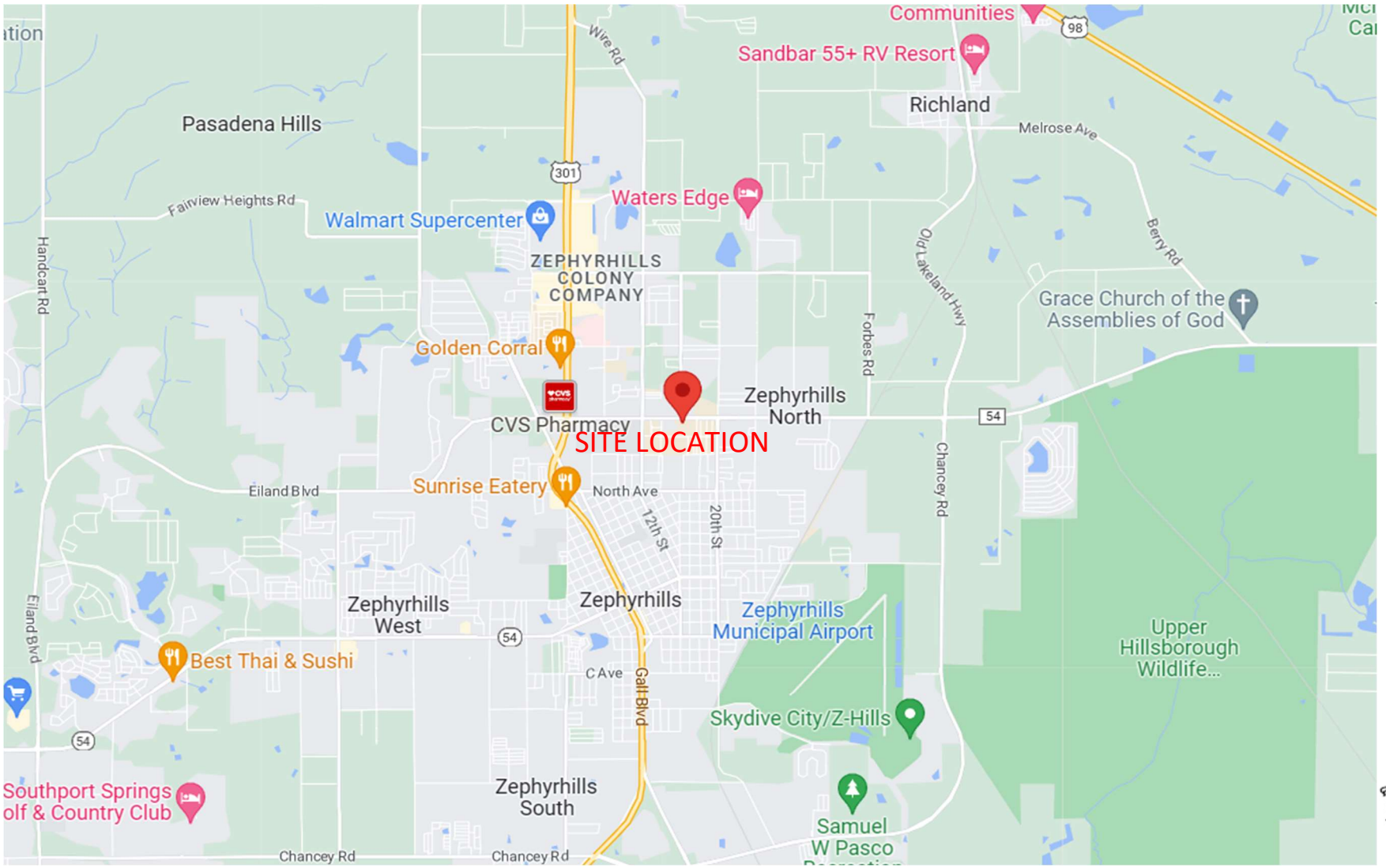
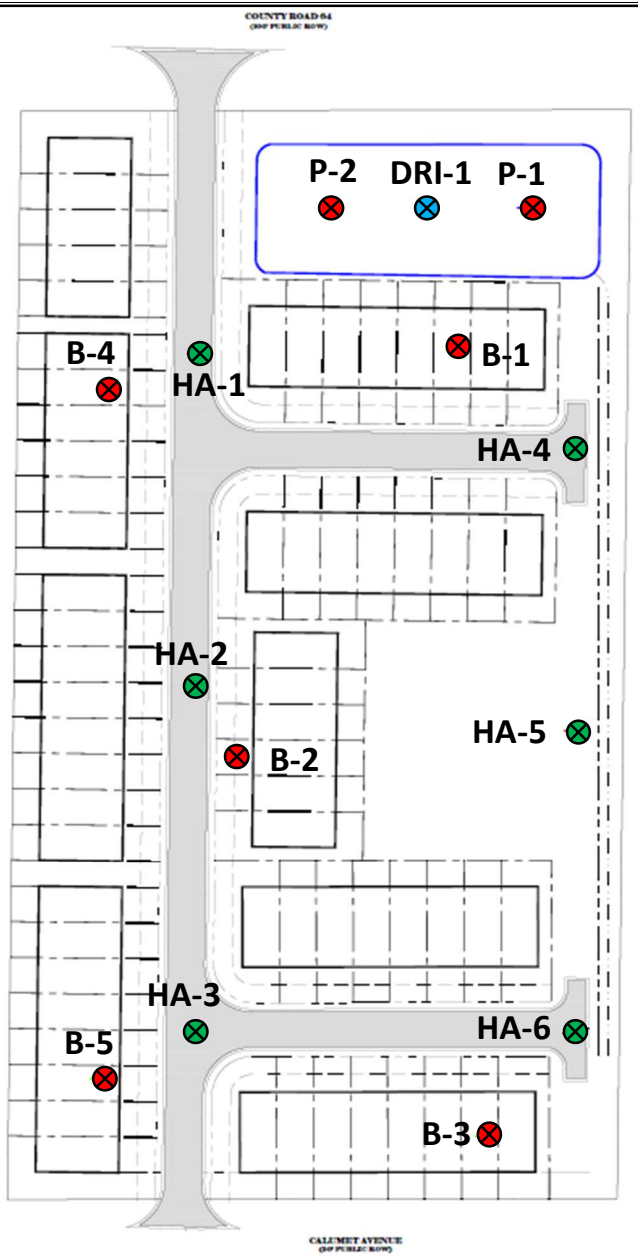


IMAGE FROM GOOGLE MAPS

GROUND DOWN ENGINEERING	PROPOSED TOWNHOME DEVELOPMENT VICINITY MAP PASCO COUNTY	DATE: 3/3/2023 Checked by: LH Drawn by : BR	GDE JOB: **23-120** ***FIGURE 1*** *PAGE 1 OF 1*



LEGEND

B-1 APPROXIMATE LOCATION OF SPT BORING

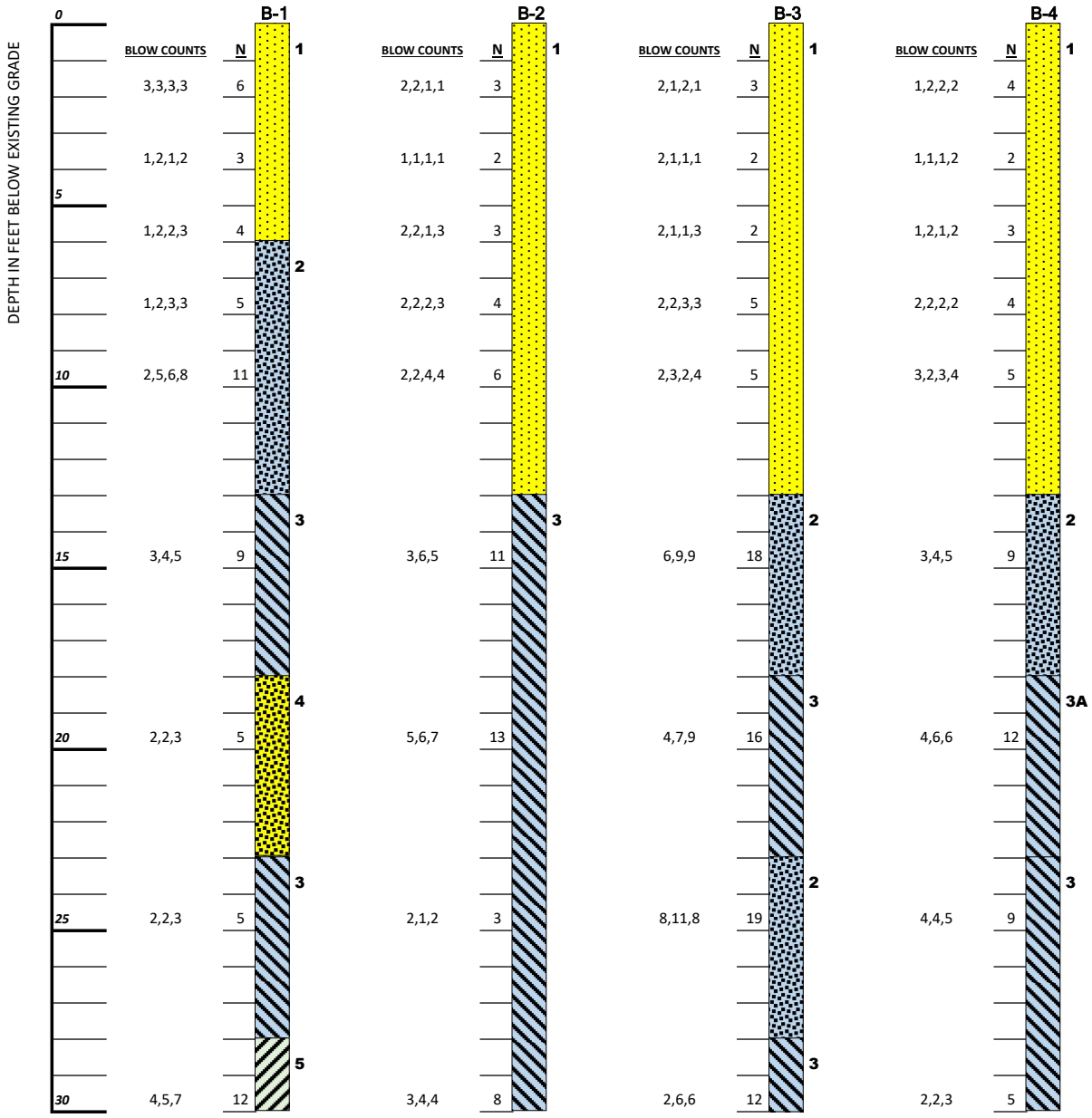
HA-1 APPROXIMATE LOCATION OF HAND AUGER BORING

DRI-1 APPROXIMATE LOCATION OF DOUBLE RING INFILTRATION TEST

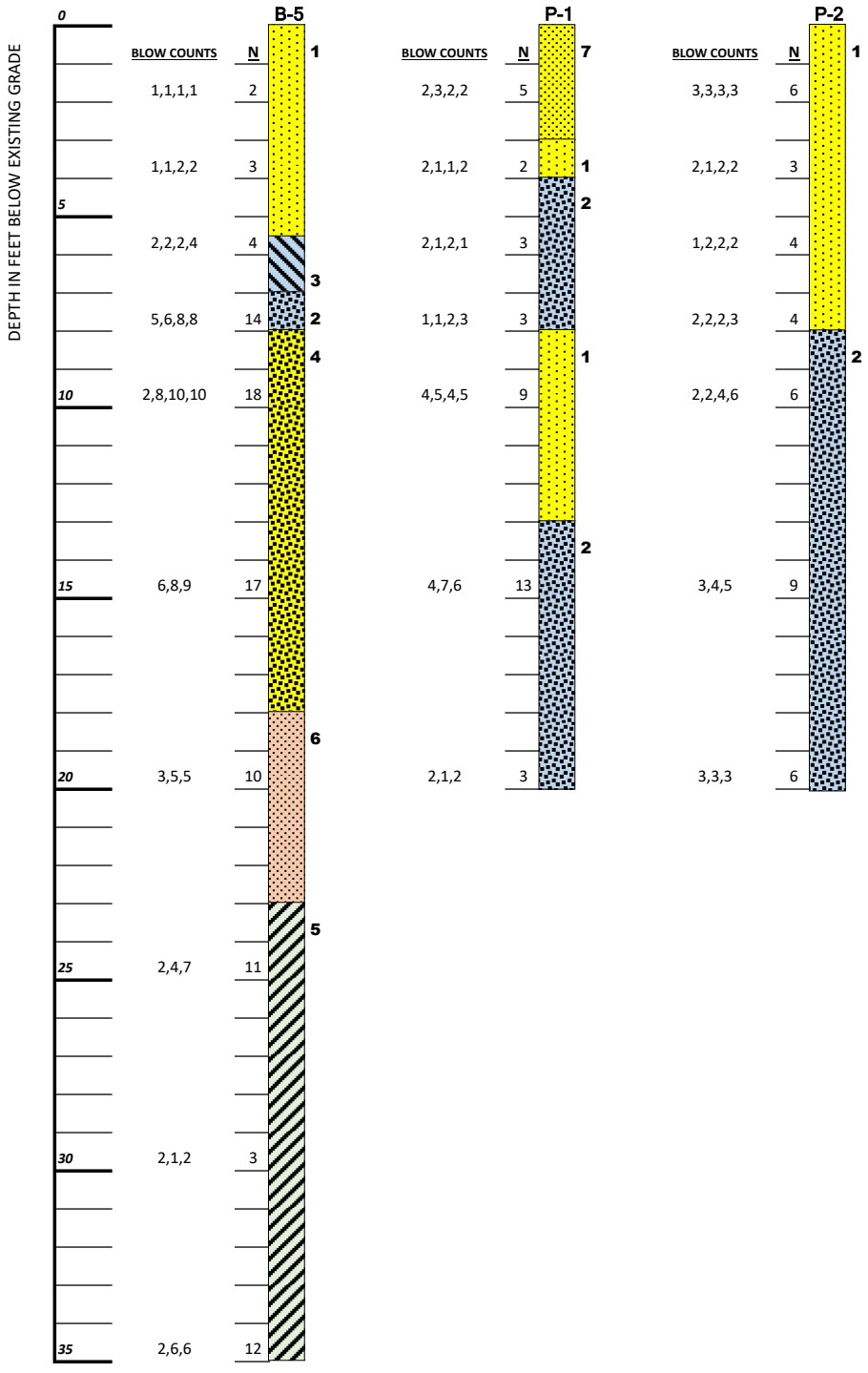
APPROXIMATE SCALE:

0' **100'**

GROUND DOWN ENGINEERING	PROPOSED TOWNHOME DEVELOPMENT	DATE: 3/3/2023	GDE JOB: **23-120**
	BORING LOCATION PLAN	Checked by: LH	***FIGURE 2***
	PASCO COUNTY	Drawn by : BR	*PAGE 1 OF 1*



GROUND DOWN ENGINEERING	PROPOSED TOWNHOME DEVELOPMENT SPT BORING LOGS PASCO COUNTY	**DATE**: 3/3/2023 **Checked by: LH** **Drawn by : BR**	**GDE JOB: 23-120** ***FIGURE 3*** ***PAGE 1 OF 3***



GROUND DOWN ENGINEERING	PROPOSED TOWNHOME DEVELOPMENT SPT BORING LOGS PASCO COUNTY	**DATE**: 3/3/2023 **Checked by: LH** **Drawn by : BR**	**GDE JOB: 23-120** ***FIGURE 3*** ***PAGE 2 OF 3***

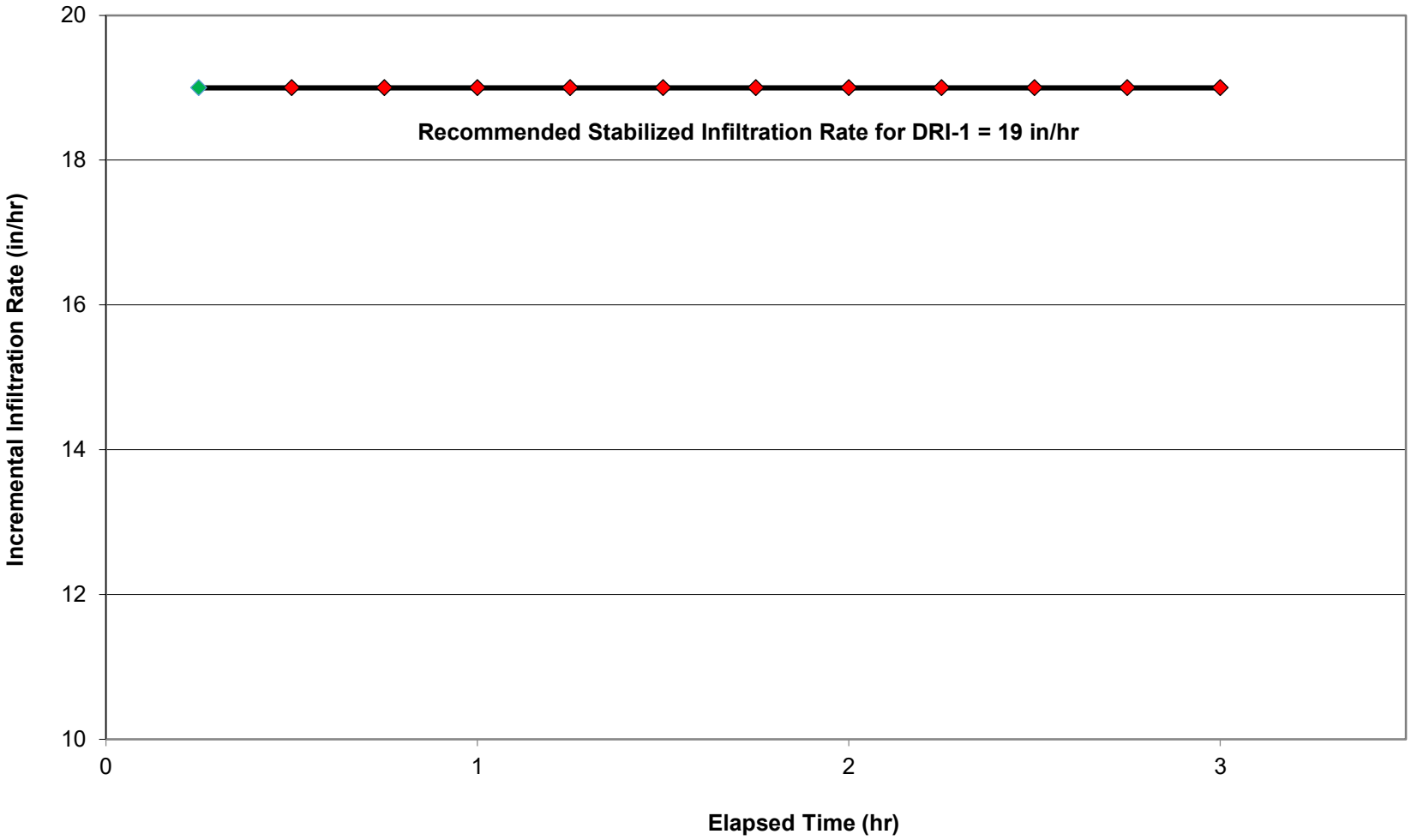
LEGEND

1	BROWN, TAN FINE SAND (SP)
2	LIGHT BROWN, LIGHT GRAY CLAYEY SAND (SC)
3	LIGHT GRAY, LIGHT BROWN, ORANGE SANDY CLAY (CL)
4	LIGHT GRAY SLIGHTLY CLAYEY SAND (SP-SC)
5	ORANGE, BROWN, GREENISH GRAY CLAY (CH)
6	LIGHT BROWN SILTY SAND (SM)
7	DARK BROWN SLIGHTLY SILTY FINE SAND (SP-SM)
A	WITH PHOSPHATE
(SP):	UNIFIED SOIL CLASSIFICATION GROUP SYMBOL
N:	STANDARD PENETRATION RESISTENCE IN BLOWS PER FOOT
NOTES:	BORINGS PERFORMED ON FEBRUARY 28, 2023;
	GROUNDWATER NOT ENCOUNTERED ABOVE DEPTHS OF 10 FEET BELOW GRADE.

GROUND DOWN ENGINEERING	PROPOSED TOWNHOME DEVELOPMENT	**DATE**: 3/3/2023	**GDE JOB: 23-120**
	SPT BORING LOGS	**Checked by: LH**	***FIGURE 3***
	PASCO COUNTY	**Drawn by : BR**	***PAGE 3 OF 3***

DRI RESULTS

Graphical Results of Double Ring Infiltration Test
Proposed Townhome Development
38736, 38740, 38744 & 38745 County Road 54
Zephyrhills, FL
GDE Project No. 23-120
Testing Performed 3-1-2023



SOIL SURVEY

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Pasco County, Florida

38736 CR 54



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

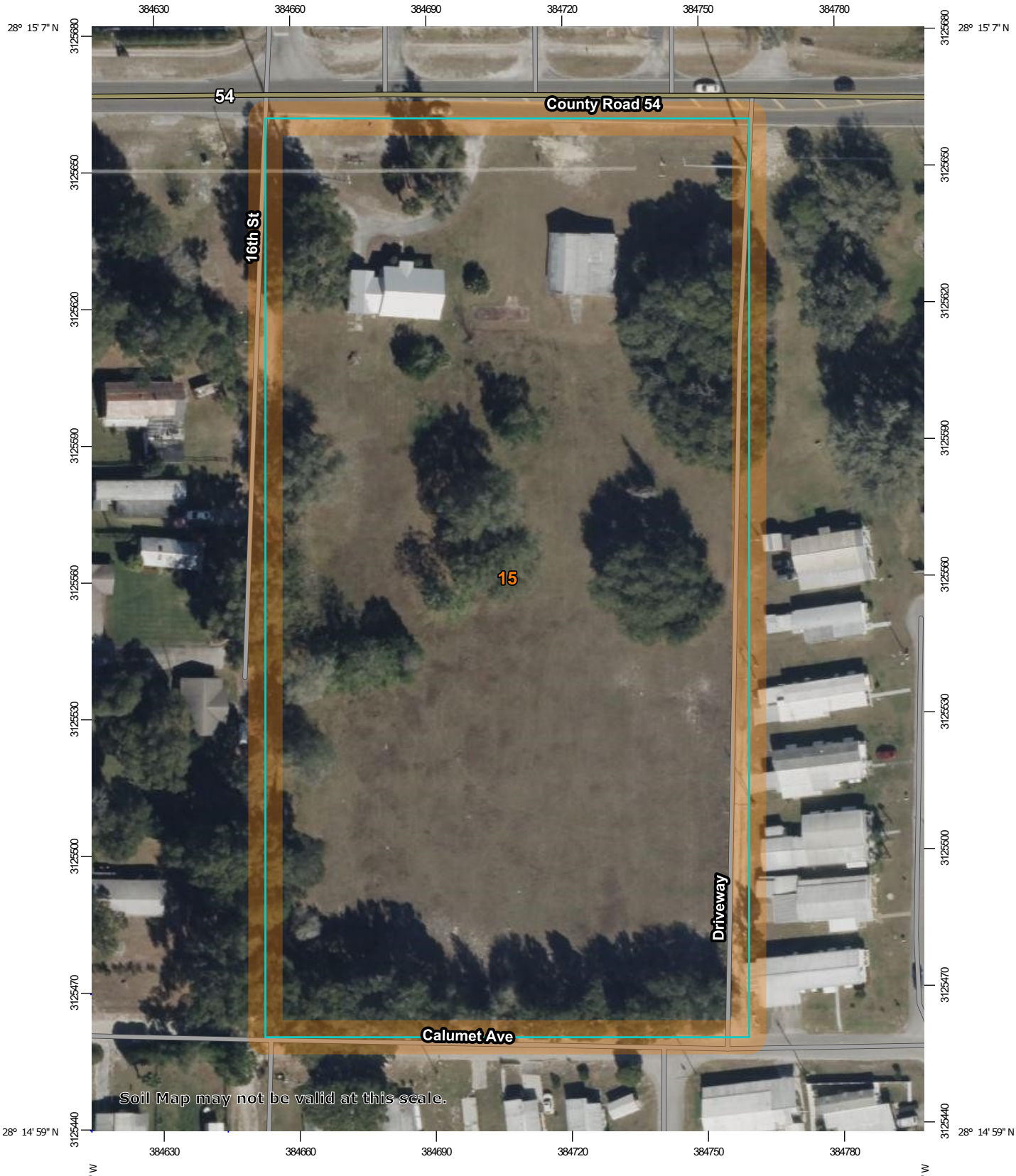
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Map Scale: 1:1,180 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Pasco County, Florida
Survey Area Data: Version 21, Sep 1, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 6, 2022—Jan 30, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
15	Tavares fine sand-Urban land complex, 0 to 5 percent slopes	5.3	100.0%
Totals for Area of Interest		**5.3**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Pasco County, Florida

15—Tavares fine sand-Urban land complex, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2y9gs
Elevation: 0 to 130 feet
Mean annual precipitation: 42 to 63 inches
Mean annual air temperature: 66 to 77 degrees F
Frost-free period: 340 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Tavares and similar soils: 43 percent
Urban land: 37 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tavares

Setting

Landform: Knolls on marine terraces, ridges on marine terraces, hills on marine terraces, flats on marine terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve, side slope, tread, rise
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Parent material: Eolian or sandy marine deposits

Typical profile

A - 0 to 6 inches: fine sand
C - 6 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Forage suitability group: Sandy soils on rises, knolls, and ridges of mesic uplands (G155XB121FL)

Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R155XY002FL), Sand Pine Scrub (R155XY001FL), Sandy soils on rises, knolls, and ridges of mesic uplands (G155XB121FL)
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Riser, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: No parent material

Interpretive groups

Land capability classification (irrigated): None specified
Forage suitability group: Forage suitability group not assigned (G155XB999FL)
Other vegetative classification: Forage suitability group not assigned (G155XB999FL)
Hydric soil rating: Unranked

Minor Components

Pomello

Percent of map unit: 6 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope, riser
Down-slope shape: Convex, linear
Across-slope shape: Linear
Other vegetative classification: Sand Pine Scrub (R155XY001FL), Sandy soils on rises and knolls of mesic uplands (G155XB131FL)
Hydric soil rating: No

Cassia

Percent of map unit: 5 percent
Landform: Knolls on marine terraces, rises on marine terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sand Pine Scrub (R155XY001FL), Sandy soils on rises and knolls of mesic uplands (G155XB131FL)
Hydric soil rating: No

Apopka

Percent of map unit: 4 percent
Landform: Ridges on marine terraces, hills on marine terraces
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope, riser
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R155XY002FL), Sandy soils on ridges and dunes of xeric uplands (G155XB111FL)
Hydric soil rating: No

Astatula

Percent of map unit: 3 percent

Landform: Knolls on marine terraces, ridges on marine terraces, hills on marine terraces
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope, riser, rise
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G155XB111FL)
Hydric soil rating: No

Adamsville

Percent of map unit: 2 percent
Landform: Knolls on marine terraces, rises on marine terraces
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Upland Hardwood Hammock (R155XY008FL), Sandy soils on rises and knolls of mesic uplands (G155XB131FL)
Hydric soil rating: No

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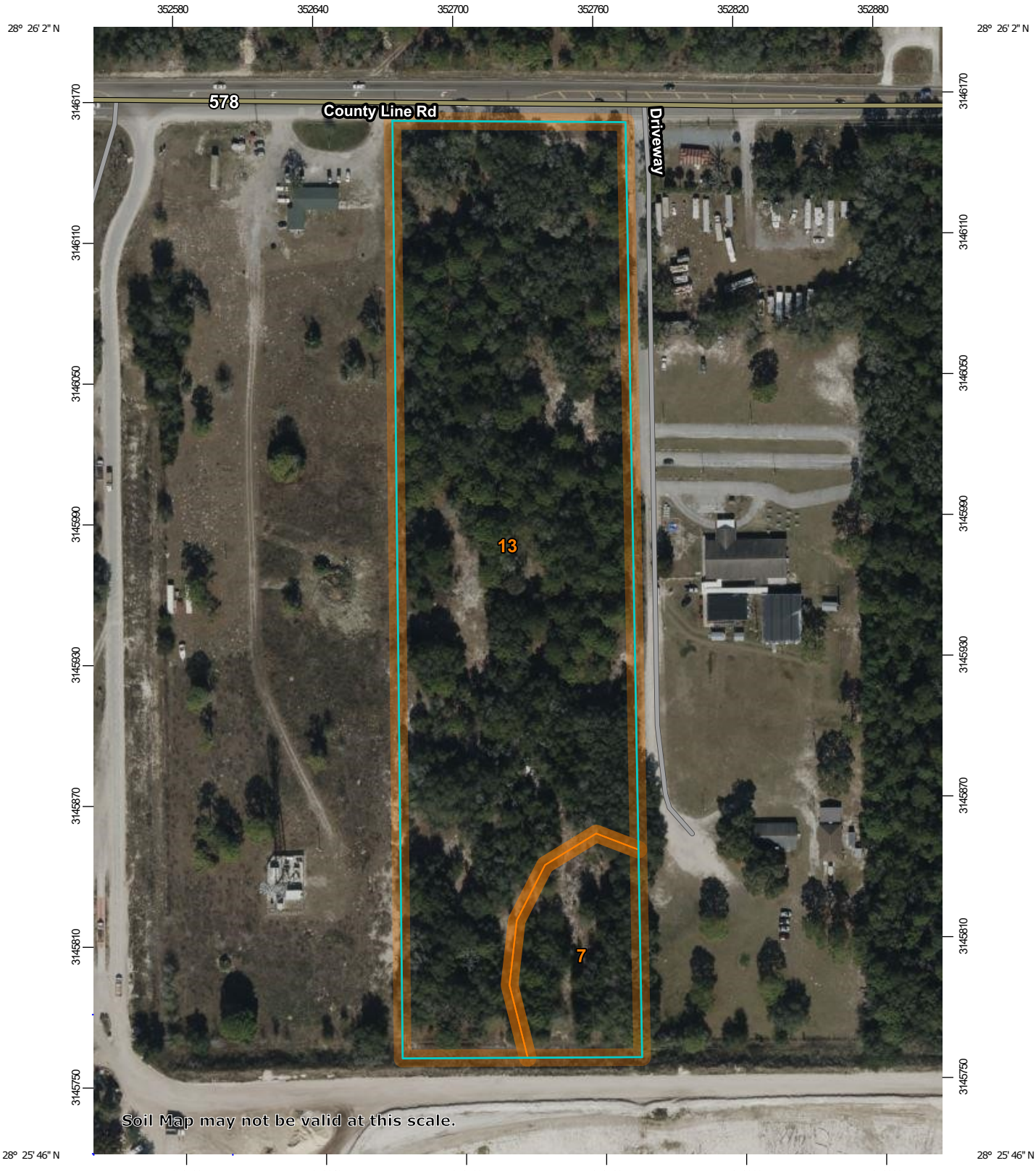


Map Scale: 1:2,350 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 30 60 120 180

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Pasco County, Florida
Survey Area Data: Version 21, Sep 1, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 6, 2022—Jan 30, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
7	Sparr fine sand, 0 to 5 percent slopes	1.1	11.3%
13	Candler fine sand, 0 to 5 percent slopes	8.9	88.7%
Totals for Area of Interest		**10.0**	**100.0%**

Pasco County, Florida

13—Candler fine sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2shkf
Elevation: 10 to 260 feet
Mean annual precipitation: 47 to 64 inches
Mean annual air temperature: 68 to 77 degrees F
Frost-free period: 290 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Candler and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Candler

Setting

Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve, tread
Down-slope shape: Linear, convex
Across-slope shape: Linear
Parent material: Sandy marine deposits and/or sandy eolian deposits

Typical profile

A - 0 to 4 inches: fine sand
E - 4 to 72 inches: fine sand
E and Bt - 72 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: A
Forage suitability group: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R154XY002FL), Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Minor Components

Astatula
Percent of map unit: 4 percent
Landform: Hills on marine terraces, knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope, riser, rise
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G155XB111FL)
Hydric soil rating: No

Apopka
Percent of map unit: 3 percent
Landform: Ridges on marine terraces, hills on marine terraces
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope, riser
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R155XY002FL), Sandy soils on ridges and dunes of xeric uplands (G155XB111FL)
Hydric soil rating: No

Adamsville
Percent of map unit: 3 percent
Landform: Knolls on marine terraces, rises on marine terraces
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Upland Hardwood Hammock (R155XY008FL), Sandy soils on rises and knolls of mesic uplands (G155XB131FL)
Hydric soil rating: No

Arredondo
Percent of map unit: 2 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, interfluve, tread
Down-slope shape: Convex
Across-slope shape: Linear

Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R154XY002FL), Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Tavares

Percent of map unit: 2 percent
Landform: Flatwoods on marine terraces, hills on marine terraces, knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve, side slope, tread, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R155XY002FL), Sand Pine Scrub (R155XY001FL), Sandy soils on rises, knolls, and ridges of mesic uplands (G155XB121FL)
Hydric soil rating: No

Millhopper

Percent of map unit: 1 percent
Landform: Flatwoods on marine terraces, rises on marine terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread, talf, rise
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on rises, knolls, and ridges of mesic uplands (G155XB121FL)
Hydric soil rating: No

Data Source Information

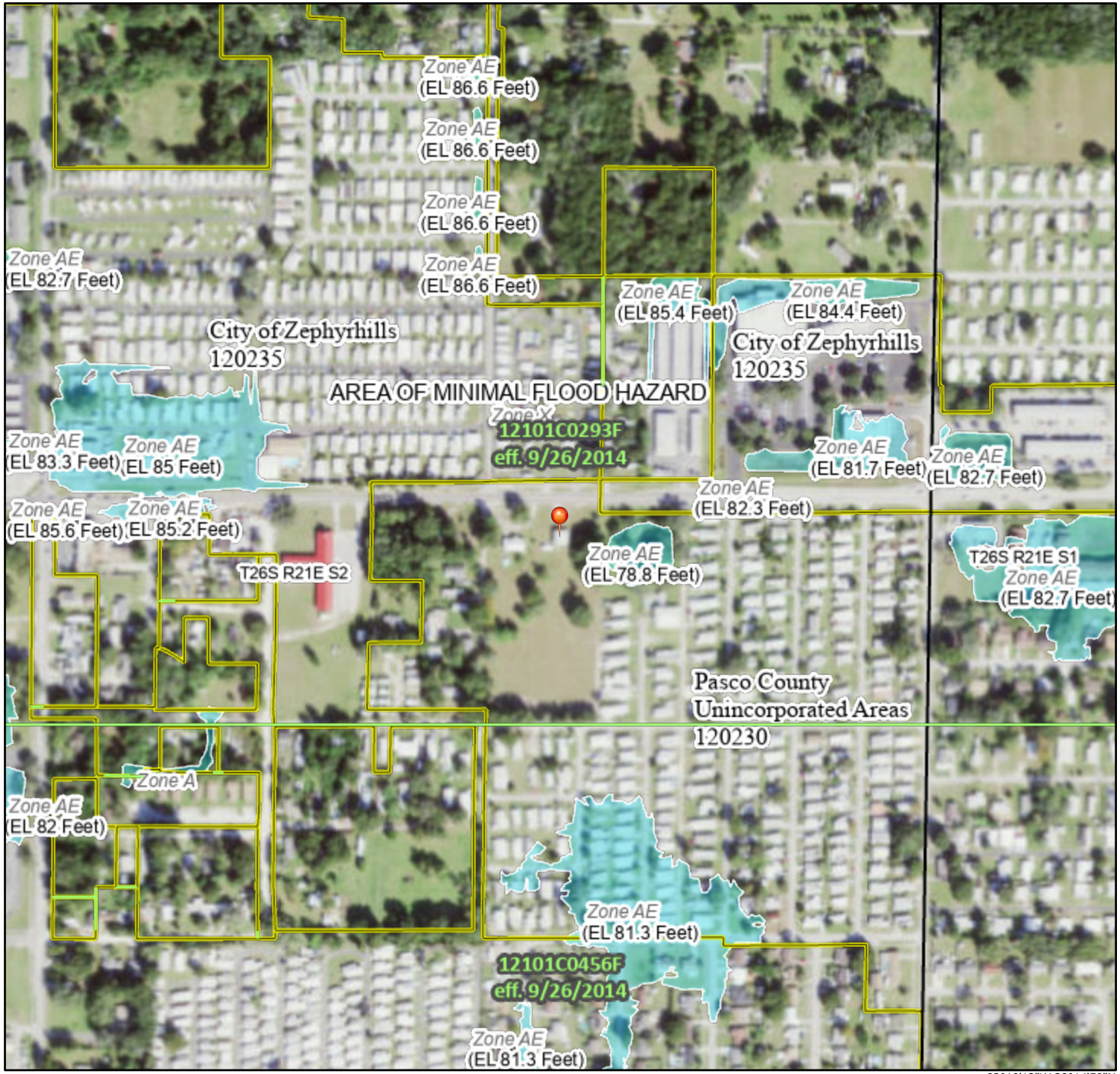
Soil Survey Area: Pasco County, Florida
Survey Area Data: Version 21, Sep 1, 2022

APPENDIX C: FEMA FLOOD MAP

National Flood Hazard Layer FIRMette

FEMA

82°10'49"W 28°15'21"N



82°10'12"W 28°14'50"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

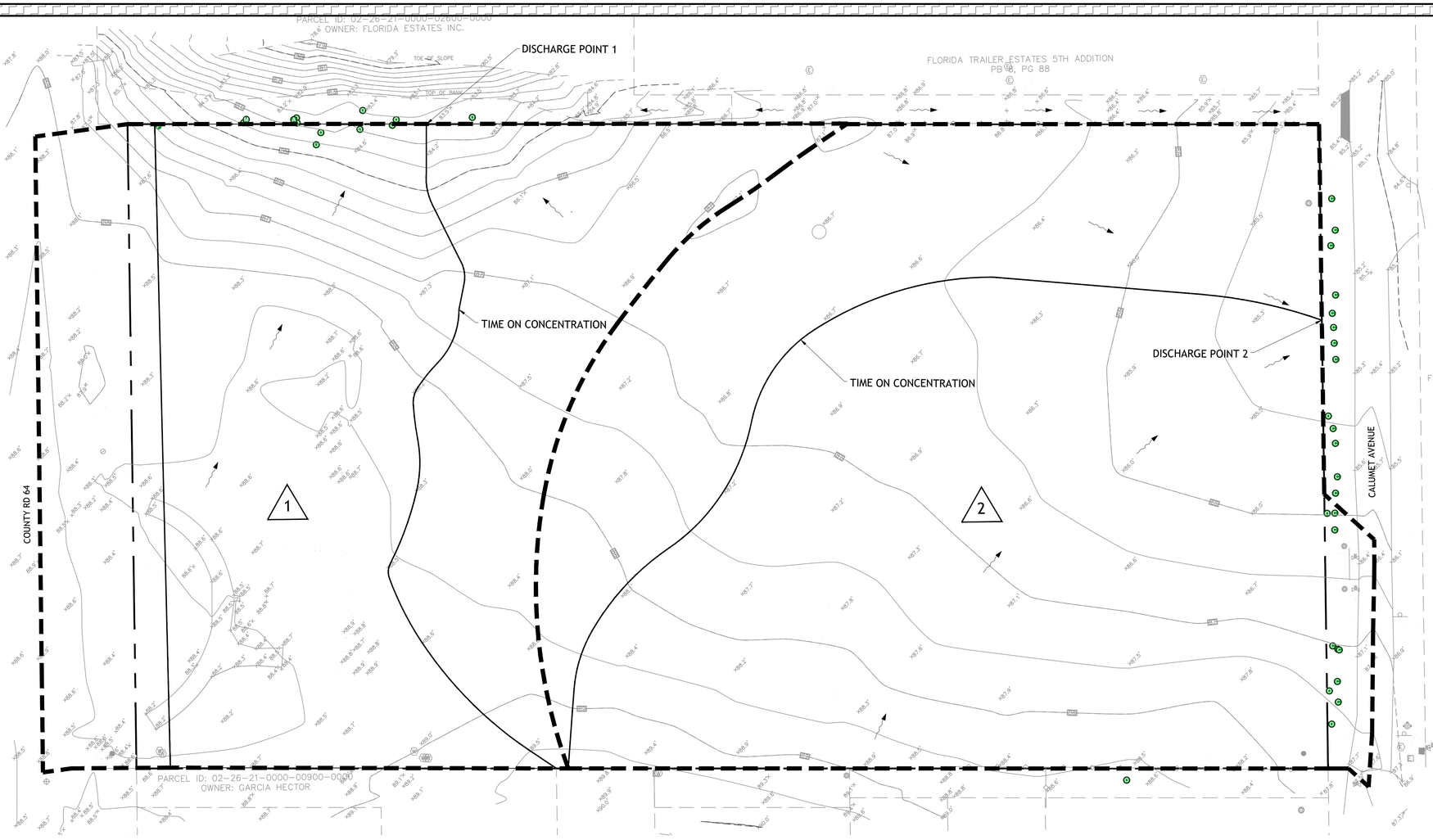
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/3/2023 at 7:22 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX D: BASIN MAPS



E

N — BEACON CIVIL ENGINEERING — S

W

60 30 15 0 30

SCALE : 1" = 30'

BASIN DATA		
BASIN ID	AREA (AC)	CN
1	1.72	44.08
2	2.79	39.00

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB	ISSUE DATE:	3/31/23
CHECKED BY:	AH	APPROVED BY:	LB	JOB NO.:	22-548

NO.	BY	DATE	REVISION DESCRIPTION
1	CB	5/30/23	1ST ROUND JURISDICTIONAL COMMENTS

3 WORKING DAYS
BEFORE YOU DIG
CALL SUNSHINE STATE
ONE CALL OF FLORIDA
1-800-432-4770
FOR THE LOCATION OF
UNDERGROUND UTILITIES

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

LAURIE S. BURCAW, PE #46064

BEACON CIVIL ENGINEERING
LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

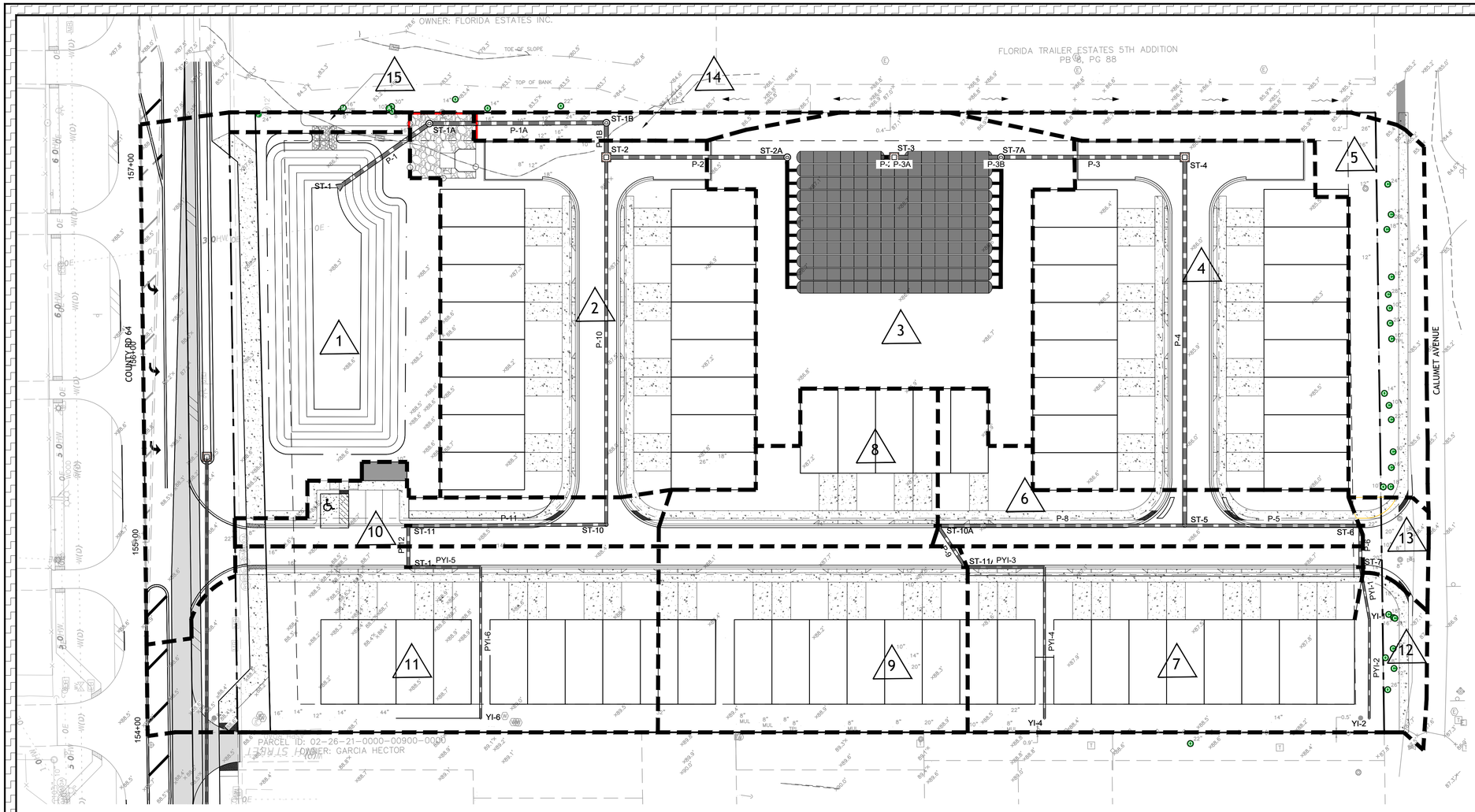
CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
PREDEVELOPMENT
DRAINAGE AREA MAP

SHEET NUMBER:
DA-1

C:\Users\hbailey\Downloads\2023-05-26\22548 Calumet Towns\DWG\Civil\22548 PREDEVELOPMENT.dwg 5/29/2023 4:00 PM



E

N — BEACON CIVIL ENGINEERING — S

W

60 30 15 0 30

SCALE : 1" = 30'

BASIN DATA

BASIN ID	AREA (AC)	CN
1	0.76	74.07
2	0.71	90.09
3	0.62	39.00
4	0.64	89.26
5	0.26	47.74
6	0.21	80.84
7	0.38	90.40
8	0.30	88.47
9	0.21	83.78
10	0.16	91.15
11	0.49	75.94
12	0.31	43.15
13	0.04	90.70
14	0.05	39.00
15	0.04	47.63

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB
CHECKED BY:	AH	APPROVED BY:	LB

ISSUE DATE: 3/31/23
JOB NO.: 22-548

NO.	BY	DATE	REVISION DESCRIPTION
1	CB	5/30/23	1ST ROUND JURISDICTIONAL COMMENTS
2	CB	8/31/23	2ND ROUND JURISDICTIONAL COMMENTS

3 WORKING DAYS
BEFORE YOU DIG
CALL SUNSHINE STATE
ONE CALL OF FLORIDA
1-800-432-4770
FOR THE LOCATION OF
UNDERGROUND UTILITIES

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

LAURIE S. BURCAW, PE #46064

BEACON CIVIL ENGINEERING
LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL. 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
POST-DEVELOPMENT DRAINAGE AREA MAP

SHEET NUMBER:
DA-2

B:\Projects\2022\22548 Calumet Towns\DWG\Civil\22548-POST DEVELOPMENT.dwg 8/27/2023 11:15 AM

APPENDIX E: CALCULATIONS

Pre Development Basin 1 Runoff Coefficient

	SF	AC	C Value
Pervious Area:	83,716.00	1.92	39
Impervious Area:	11,725.00	0.27	98
Pond Area:	0.00	0.00	100
Total Area:	95,441.00	2.19	N/A
Composite CN:			46.25

Pre Development Basin 2 Runoff Coefficient

	SF	AC	C Value
Pervious Area:	123,524.72	2.84	39
Impervious Area:	1,044.00	0.02	98
Pond Area:	0.00	0.00	100
Total Area:	124,568.72	2.86	N/A
Composite CN:			39.49

Post Development Basin 1 Runoff Coefficient

	SF	AC	C Value
Pervious Area:	13,775.00	0.32	39
Impervious Area:	9,356.00	0.21	98
Pond Area:	9,998.00	0.23	100
Total Area:	33,129.00	0.76	N/A
Composite CN:			74.07

Post Development Basin 2 Runoff Coefficient

	SF	AC	C Value
Pervious Area:	3,660.00	0.08	39
Impervious Area:	27,142.00	0.62	98
Pond Area:	0.00	0.00	100
Total Area:	30,802.00	0.71	N/A
Composite CN:			90.99

Post Develoment Basin 3 Runoff Coefficient

	SF	AC	C Value
Pervious Area:	26,915.00	0.62	39
Impervious Area:	0.00	0.00	98
Pond Area:	0.00	0.00	100
Total Area:	26,915.00	0.62	N/A
Composite CN:			39.00

Post Develoment Basin 4 Runoff Coefficient

	SF	AC	C Value
Pervious Area:	4,158.00	0.10	39
Impervious Area:	23,895.00	0.55	98
Pond Area:	0.00	0.00	100
Total Area:	28,053.00	0.64	N/A
Composite CN:			89.26

Post Develoment Basin 5 Runoff Coefficient

	SF	AC	C Value
Pervious Area:	9,714.00	0.22	39
Impervious Area:	1,690.00	0.04	98
Pond Area:	0.00	0.00	100
Total Area:	11,404.00	0.26	N/A
Composite CN:			47.74

Post Develoment Basin 5 Runoff Coefficient

	SF	AC	C Value
Pervious Area:	9,714.00	0.22	39
Impervious Area:	1,690.00	0.04	98
Pond Area:	0.00	0.00	100
Total Area:	11,404.00	0.26	N/A
Composite CN:			47.74

Post Develoment Basin 6 Runoff Coefficient

	SF	AC	C Value
Pervious Area:	2,667.00	0.06	39
Impervious Area:	6,501.00	0.15	98
Pond Area:	0.00	0.00	100
Total Area:	9,168.00	0.21	N/A
Composite CN:	.		80.84

Post Develoment Basin 7 Runoff Coefficient

	SF	AC	C Value
Pervious Area:	2,107.00	0.05	39
Impervious Area:	14,259.00	0.33	98
Pond Area:	0.00	0.00	100
Total Area:	16,366.00	0.38	N/A
Composite CN:			90.40

Post Develoment Basin 8 Runoff Coefficient

	SF	AC	C Value
Pervious Area:	2,088.00	0.05	39
Impervious Area:	10,838.00	0.25	98
Pond Area:	0.00	0.00	100
Total Area:	12,926.00	0.30	N/A
Composite CN:			88.47

Post Develoment Basin 9 Runoff Coefficient

	SF	AC	C Value
Pervious Area:	2,217.00	0.05	39
Impervious Area:	6,981.00	0.16	98
Pond Area:	0.00	0.00	100
Total Area:	9,198.00	0.21	N/A
Composite CN:			83.78

Post Develoment Basin 10 Runoff Coefficient

	SF	AC	C Value
Pervious Area:	795.00	0.02	39
Impervious Area:	6,054.00	0.14	98
Pond Area:	0.00	0.00	100
Total Area:	6,849.00	0.16	N/A
Composite CN:			91.15

Post Develoment Basin 11 Runoff Coefficient

	SF	AC	C Value
Pervious Area:	7,990.00	0.18	39
Impervious Area:	13,378.00	0.31	98
Pond Area:	0.00	0.00	100
Total Area:	21,368.00	0.49	N/A
Composite CN:			75.94

Post Develoment Basin 12 Runoff Coefficient

	SF	AC	C Value
Pervious Area:	12,662.00	0.29	39
Impervious Area:	957.00	0.02	98
Pond Area:	0.00	0.00	100
Total Area:	13,619.00	0.31	N/A
Composite CN:			43.15

Post Develoment Basin 13 Runoff Coefficient

	SF	AC	C Value
Pervious Area:	209.00	0.00	39
Impervious Area:	1,480.00	0.03	98
Pond Area:	0.00	0.00	100
Total Area:	1,689.00	0.04	N/A
Composite CN:			90.70

Post Develoment Basin 14 Runoff Coefficient

	SF	AC	C Value
Pervious Area:	2,336.00	0.05	39
Impervious Area:	0.00	0.00	98
Pond Area:	0.00	0.00	100
Total Area:	2,336.00	0.05	N/A
Composite CN:			39.00

Post Develoment Basin 15 Runoff Coefficient

	SF	AC	C Value
Pervious Area:	1,465.00	0.03	39
Impervious Area:	251.00	0.01	98
Pond Area:	0.00	0.00	100
Total Area:	1,716.00	0.04	N/A
Composite CN:			47.63

NRCS Time of Concentration

BASIN 1

Development Condition (pre or post)

Sheet Flow:

1. Surface Description (table 3-1)				
2. Manning's Roughness coeff., n	0.24	(see Table 3-1 of TR-55 at right)		
3. Flow Length, L (should be <= 100 ft)	100	ft		
4. Two-yr, 24-hr rainfall, P_2	1.3	inches		
5. Land Slope, s	0.021	ft/ft		
6. $Tt = 0.007 * (n*L)^{0.8} / (P_2^{0.5} * s^{0.4})$	0.37	hr =	21.96	min

Shallow Concentrated Flow:

7. Surface Description (paved/unpaved)				
8. Flow Length, L	298	ft		
9. Watercourse slope, s	0.013	ft/ft		
10. Average Velocity, V (figure 3-1, see below)	1.66	ft/s		
11. $Tt = L / (3600 * V)$	0.05	hr =	2.99	min

Channel Flow:

12. Cross Sectional Flow Area, a	0	sq ft		
13. Wetted Perimeter, P_w	0	ft		
14. Hydraulic radius, $r = a/P_w$	0	ft		
15. Channel Slope, s	0	ft/ft		
16. Manning's Roughness coeff., n	0			
17. $V = 1.49 * r^{2/3} * s^{1/2} / n$	0.00	ft/s		
18. Flow Length, L	0	ft		
19. $Tt = L / (3600 * V)$	0.00	ft/s	0.00	
20. Total Watershed or subarea T_c	0.42	hr =	24.95	min

NRCS Time of Concentration

BASIN 2

Development Condition (pre or post)

Sheet Flow:

1. Surface Description (table 3-1)				
2. Manning's Roughness coeff., n	0.24	(see Table 3-1 of TR-55 at right)		
3. Flow Length, L (should be <= 100 ft)	100	ft		
4. Two-yr, 24-hr rainfall, P_2	3	inches		
5. Land Slope, s	0.018	ft/ft		
6. $Tt = 0.007 * (n*L)^{0.8} / (P_2^{0.5} * s^{0.4})$	0.26	hr =	15.37	min

Shallow Concentrated Flow:

7. Surface Description (paved/unpaved)				
8. Flow Length, L	433	ft		
9. Watercourse slope, s	0.0062	ft/ft		
10. Average Velocity, V (figure 3-1, see below)	1.5	ft/s		
11. $Tt = L / (3600 * V)$	0.08	hr =	4.81	min

Channel Flow:

12. Cross Sectional Flow Area, a	0	sq ft		
13. Wetted Perimeter, P_w	0	ft		
14. Hydraulic radius, $r = a/P_w$	0	ft		
15. Channel Slope, s	0	ft/ft		
16. Manning's Roughness coeff., n	0			
17. $V = 1.49 * r^{2/3} * s^{1/2} / n$	0.00	ft/s		
18. Flow Length, L	0	ft		
19. $Tt = L / (3600 * V)$	0.00	ft/s	0.00	
20. Total Watershed or subarea T_c	0.34	hr =	20.18	min

Project:

Chamber Model -	MC-3500	
Units -	**Imperial**	Click Here for Metric
Number of Chambers -	154	
Number of End Caps -	26	
Voids in the stone (porosity) -	40	%
Base of STONE Elevation -	79.25	ft
Amount of Stone Above Chambers -	15	in
Amount of Stone Below Chambers -	9	in
Area of system -	8347	sf Min. Area - 8347 sf min. area

☑ Include Perimeter Stone in Calculations

StormTech MC-3500 Cumulative Storage Volumes

Height of System (inches)	Incremental Single Chamber (cubic feet)	Incremental Single End Cap (cubic feet)	Incremental Chambers (cubic feet)	Incremental End Cap (cubic feet)	Incremental Stone (cubic feet)	Incremental Ch, EC and Stone (cubic feet)	Cumulative System (cubic feet)	Elevation (feet)
69	0.00	0.00	0.00	0.00	278.23	278.23	29590.53	85.00
68	0.00	0.00	0.00	0.00	278.23	278.23	29312.30	84.92
67	0.00	0.00	0.00	0.00	278.23	278.23	29034.07	84.83
66	0.00	0.00	0.00	0.00	278.23	278.23	28755.83	84.75
65	0.00	0.00	0.00	0.00	278.23	278.23	28477.60	84.67
64	0.00	0.00	0.00	0.00	278.23	278.23	28199.37	84.58
63	0.00	0.00	0.00	0.00	278.23	278.23	27921.13	84.50
62	0.00	0.00	0.00	0.00	278.23	278.23	27642.90	84.42
61	0.00	0.00	0.00	0.00	278.23	278.23	27364.67	84.33
60	0.00	0.00	0.00	0.00	278.23	278.23	27086.43	84.25
59	0.00	0.00	0.00	0.00	278.23	278.23	26808.20	84.17
58	0.00	0.00	0.00	0.00	278.23	278.23	26529.97	84.08
57	0.00	0.00	0.00	0.00	278.23	278.23	26251.73	84.00
56	0.00	0.00	0.00	0.00	278.23	278.23	25973.50	83.92
55	0.00	0.00	0.00	0.00	278.23	278.23	25695.27	83.83
54	0.06	0.00	8.95	0.00	274.66	283.60	25417.03	83.75
53	0.19	0.02	29.89	0.62	266.03	296.54	25133.43	83.67
52	0.29	0.04	45.27	0.98	259.73	305.98	24836.89	83.58
51	0.40	0.05	62.16	1.34	252.83	316.33	24530.91	83.50
50	0.69	0.07	105.83	1.76	235.20	342.78	24214.58	83.42
49	1.03	0.09	158.36	2.29	213.97	374.62	23871.79	83.33
48	1.25	0.11	192.43	2.79	200.15	395.36	23497.17	83.25
47	1.42	0.13	219.02	3.29	189.31	411.62	23101.81	83.17
46	1.57	0.14	242.26	3.75	179.83	425.84	22690.19	83.08
45	1.71	0.16	262.90	4.23	171.38	438.51	22264.35	83.00
44	1.83	0.18	281.59	4.72	163.71	450.02	21825.83	82.92
43	1.94	0.20	298.42	5.21	156.78	460.41	21375.81	82.83
42	2.04	0.22	314.29	5.67	150.25	470.21	20915.40	82.75
41	2.13	0.23	328.74	6.11	144.29	479.14	20445.19	82.67
40	2.22	0.25	342.53	6.51	138.62	487.66	19966.04	82.58
39	2.31	0.27	355.25	6.91	133.37	495.52	19478.38	82.50
38	2.38	0.28	367.25	7.28	128.42	502.95	18982.86	82.42
37	2.46	0.29	378.70	7.64	123.70	510.04	18479.91	82.33
36	2.53	0.31	389.34	8.00	119.30	516.64	17969.87	82.25
35	2.59	0.32	399.44	8.35	115.12	522.91	17453.23	82.17
34	2.66	0.33	409.03	8.70	111.14	528.87	16930.32	82.08
33	2.72	0.35	418.13	9.02	107.37	534.52	16401.45	82.00
32	2.77	0.36	426.78	9.36	103.78	539.92	15866.93	81.92
31	2.82	0.37	435.00	9.68	100.36	545.04	15327.01	81.83
30	2.88	0.38	442.82	9.99	97.11	549.92	14781.98	81.75
29	2.92	0.40	450.32	10.30	93.99	554.60	14232.05	81.67
28	2.97	0.41	457.36	10.60	91.05	559.01	13677.45	81.58
27	3.01	0.42	463.92	10.89	88.31	563.12	13118.44	81.50
26	3.05	0.43	470.20	11.17	85.68	567.06	12555.33	81.42
25	3.09	0.44	476.52	11.45	83.05	571.01	11988.27	81.33
24	3.13	0.45	482.11	11.72	80.70	574.53	11417.26	81.25
23	3.17	0.46	487.51	11.98	78.44	577.93	10842.73	81.17
22	3.20	0.47	492.72	12.24	76.25	581.20	10264.80	81.08
21	3.23	0.48	497.59	12.48	74.20	584.28	9683.59	81.00
20	3.26	0.49	502.26	12.72	72.24	587.22	9099.31	80.92
19	3.29	0.50	506.70	12.95	70.37	590.02	8512.09	80.83
18	3.32	0.51	510.97	13.17	68.58	592.71	7922.07	80.75
17	3.34	0.51	514.99	13.38	66.88	595.26	7329.36	80.67
16	3.37	0.52	518.77	13.58	65.30	597.64	6734.10	80.58
15	3.39	0.53	522.45	13.77	63.75	599.96	6136.46	80.50
14	3.41	0.54	525.84	13.95	62.32	602.11	5536.50	80.42
13	3.44	0.54	529.30	14.12	60.86	604.29	4934.39	80.33
12	3.46	0.55	532.49	14.28	59.52	606.30	4330.11	80.25
11	3.48	0.56	535.72	14.44	58.17	608.33	3723.81	80.17
10	3.51	0.59	539.78	15.47	56.13	611.38	3115.48	80.08
9	0.00	0.00	0.00	0.00	278.23	278.23	2504.10	80.00
8	0.00	0.00	0.00	0.00	278.23	278.23	2225.87	79.92
7	0.00	0.00	0.00	0.00	278.23	278.23	1947.63	79.83
6	0.00	0.00	0.00	0.00	278.23	278.23	1669.40	79.75
5	0.00	0.00	0.00	0.00	278.23	278.23	1391.17	79.67
4	0.00	0.00	0.00	0.00	278.23	278.23	1112.93	79.58

WATER QUALITY CALCULATIONS FOR STORMWATER POND 1

Basin	Areas (ac)
Basin 1	0.76
Basin 2	0.71
Basin 10	0.16
Basin 11	0.49
Total (ac)	2.12
Total (sf)	92,347.20
WQV (cf)	**3,847.80**

Pond Volumes

Stage	Area (ac)	Area (sf)	Stage Volume (cf)	Cumlative Volume (cf)
80	0.066	2,874.96	0.00	0.00
81	0.094	4,094.64	3,484.80	3,484.80
82	0.125	5,445.00	4,769.82	8,254.62
83	0.158	6,882.48	6,163.74	14,418.36
84	0.195	8,494.20	7,688.34	22,106.70
85	0.235	10,236.60	9,365.40	31,472.10
86	0.276	12,022.56	11,129.58	42,601.68

WQ elevation	81.13

WATER QUALITY CALCULATIONS FOR STORMTECH SYSTEM

Basin	Areas (ac)
Basin 3	0.62
Basin 4	0.64
Basin 6	0.21
Basin 7	0.3
Basin 8	0.38
Basin 9	0.21
Basin 10	0.31
Basin 11	0.04
Total (ac)	2.71
Total (sf)	118,047.60
WQV (cf)	**4,918.65**

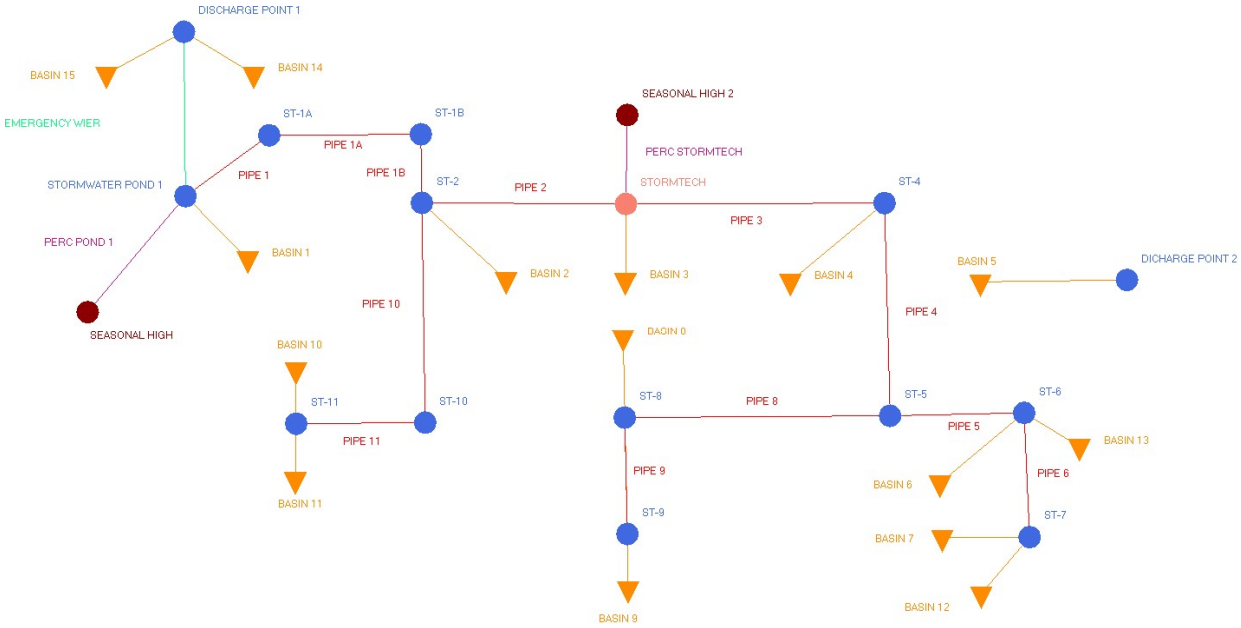
StormTech Volumes

Stage	Cumlative Volume (cf)
79.25	0.00
79.5	834.70
80	2,504.10
81	9,683.59
82	16,401.45
83	22,264.35
84	26,251.73
85	29,590.53

Stage elevation	80.19

APPENDIX F: ICPR4 INPUTS

ICPR4 NODE INPUTS FOR POST-DEVELOPMENT



Simulation: 100 Yr - 24 Hr

Scenario: Post-Development
Run Date/Time: 9/26/2023 4:55:28 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain: Global

		Opt:	
Max dZ:	1.0000 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	12.60 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 25 Yr - 24 Hr

Scenario: Post-Development
Run Date/Time: 9/26/2023 4:56:38 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources		Lookup Tables	
Rainfall Folder:		Boundary Stage Set:	
		Extern Hydrograph Set:	
Unit Hydrograph Folder:		Curve Number Set:	
		Green-Ampt Set:	
		Vertical Layers Set:	
		Impervious Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	9.00 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: Water Quality - 36 hour

Scenario:	Water Quality - 36 Hour
Run Date/Time:	9/26/2023 4:58:21 PM
Program Version:	ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	36.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain Opt: No Rainfall
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simple Basin: BASIN 1

Scenario:	Post-Development
Node:	STORMWATER POND 1
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7600 ac
Curve Number:	74.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN 10

Scenario:	Post-Development
Node:	ST-11
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1600 ac
Curve Number:	91.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN 11

Scenario:	Post-Development
Node:	ST-11
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4900 ac
Curve Number:	75.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN 12

Scenario:	Post-Development
Node:	ST-7
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.3100 ac
Curve Number:	43.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN 13

Scenario:	Post-Development
Node:	ST-6
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.0400 ac
Curve Number:	90.7
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN 14

Scenario:	Post-Development
Node:	DISCHARGE POINT 1
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.0400 ac
Curve Number:	39.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN 15

Scenario:	Post-Development
Node:	DISCHARGE POINT 1
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.0400 ac
Curve Number:	47.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN 2

Scenario:	Post-Development
Node:	ST-2
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7100 ac
Curve Number:	91.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN 3

Scenario:	Post-Development
Node:	STORMTECH
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.6200 ac
Curve Number:	39.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN 4

Scenario:	Post-Development
Node:	ST-4
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.6400 ac
Curve Number:	89.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN 5

Scenario:	Post-Development
Node:	DICHARGE POINT 2
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2600 ac
Curve Number:	47.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN 6

Scenario:	Post-Development
Node:	ST-6
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2100 ac
Curve Number:	80.8
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN 7

Scenario:	Post-Development
Node:	ST-7
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.3800 ac
Curve Number:	90.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN 8

Scenario:	Post-Development
Node:	ST-9
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.3000 ac
Curve Number:	88.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN 9

Scenario:	Post-Development
Node:	ST-9
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2100 ac
Curve Number:	83.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Weir Link: EMERGENCY WIER

Scenario:	Post-Development	**Bottom Clip**	
From Node:	STORMWATER POND 1	Default:	0.00 ft
To Node:	DISCHARGE POINT 1	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Trapezoidal	Ref Node:	
Invert:	85.00 ft	**Discharge Coefficients**	
Control Elevation:	85.00 ft	Weir Default:	2.800
Max Depth:	85.00 ft	Weir Table:	
Extrapolation Method:	Normal Projection	Orifice Default:	0.600
Bottom Width:	5.00 ft	Orifice Table:	
Left Slope:	4.000 (h:v)		
Right Slope:	4.000 (h:v)		

Comment:

Percolation Link: PERC POND 1

Scenario:	Post-Development	Surface Area Option:	Vary Based on Stage/Area Table
From Node:	STORMWATER POND 1		
To Node:	SEASONAL HIGH	Vertical Flow Termination:	Horizontal Flow Algorithm
Link Count:	1	Perimeter 1:	432.00 ft
Flow Direction:	Both	Perimeter 2:	463.00 ft
Aquifer Base Elevation:	76.00 ft	Perimeter 3:	524.00 ft
Water Table Elevation:	77.00 ft	Distance P1 to P2:	5.00 ft
Annual Recharge Rate:	0 ipy	Distance P2 to P3:	10.00 ft
Horizontal Conductivity:	28.500 fpd	# of Cells P1 to P2:	4
Vertical Conductivity:	19.000 fpd	# of Cells P2 to P3:	4
Fillable Porosity:	0.300		
Layer Thickness:	3.00 ft		

Comment:

Percolation Link: PERC STORMTECH

Scenario:	Post-Development	Surface Area Option:	User Specified
From Node:	STORMTECH	Bottom Elevation:	79.25 ft
To Node:	SEASONAL HIGH 2	Surface Area:	0.1893 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	436.00 ft
Aquifer Base Elevation:	74.70 ft	Perimeter 2:	460.00 ft
Water Table Elevation:	75.70 ft	Perimeter 3:	523.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	5.00 ft
Horizontal Conductivity:	28.500 fpd	Distance P2 to P3:	10.00 ft
Vertical Conductivity:	19.000 fpd	# of Cells P1 to P2:	4
Fillable Porosity:	0.300	# of Cells P2 to P3:	4

Layer Thickness: 3.55 ft

Comment:

Pipe Link: PIPE 1		Upstream		Downstream	
Scenario:	Post-Development	Invert:	80.00 ft	Invert:	80.00 ft
From Node:	ST-1A	Manning's N:	0.0120	Manning's N:	0.0012
To Node:	STORMWATER POND 1	Geometry: Circular		Geometry: Circular	
		Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	59.50 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.60	Top Clip			
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: PIPE 10		Upstream		Downstream	
Scenario:	Post-Development	Invert:	80.25 ft	Invert:	80.55 ft
From Node:	ST-10	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	ST-2	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	194.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.60	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: PIPE 11		Upstream		Downstream	
Scenario:	Post-Development	Invert:	80.70 ft	Invert:	80.55 ft
From Node:	ST-11	Manning's N:	0.0120	Manning's N:	0.0012
To Node:	ST-10	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft

Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	105.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.60	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: PIPE 1A		Upstream		Downstream	
Scenario:	Post-Development	Invert:	80.00 ft	Invert:	80.00 ft
From Node:	ST-1B	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	ST-1A	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	95.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.60	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: PIPE 1B		Upstream		Downstream	
Scenario:	Post-Development	Invert:	80.00 ft	Invert:	80.00 ft
From Node:	ST-2	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	ST-1B	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	24.00 ft	Max Depth:	24.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	18.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.60	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: PIPE 2		Upstream		Downstream	
Scenario:	Post-Development	Invert:	80.00 ft	Invert:	80.00 ft
From Node:	STORMTECH	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	ST-2	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	24.00 ft	Max Depth:	24.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	96.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.60	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: PIPE 3		Upstream		Downstream	
Scenario:	Post-Development	Invert:	80.15 ft	Invert:	80.00 ft
From Node:	ST-4	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	STORMTECH	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	24.00 ft	Max Depth:	24.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	98.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.60	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: PIPE 4		Upstream		Downstream	
Scenario:	Post-Development	Invert:	80.45 ft	Invert:	80.15 ft
From Node:	ST-5	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	ST-4	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	24.00 ft	Max Depth:	24.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	200.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.60	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			

Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: PIPE 5		Upstream		Downstream	
Scenario:	Post-Development	Invert:	80.60 ft	Invert:	80.45 ft
From Node:	ST-6	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	ST-5	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	94.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.60	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: PIPE 6		Upstream		Downstream	
Scenario:	Post-Development	Invert:	80.70 ft	Invert:	80.60 ft
From Node:	ST-7	Manning's N:	0.1200	Manning's N:	0.0120
To Node:	ST-6	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	24.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.60	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: PIPE 8		Upstream		Downstream	
Scenario:	Post-Development	Invert:	80.65 ft	Invert:	80.45 ft

From Node:	ST-9	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	ST-5	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	131.50 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.60	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: PIPE 9		Upstream		Downstream	
Scenario:	Post-Development	Invert:	80.75 ft	Invert:	80.65 ft
From Node:	ST-9	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	ST-8	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	24.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.60	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Node: DICHARGE POINT 2

Scenario: Post-Development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 80.00 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
85.30	5.0000	217800
80.00	5.0000	217800

Comment:

Node: DISCHARGE POINT 1

Scenario: Post-Development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 80.00 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
84.75	5.0000	217800
80.00	5.0000	217800

Comment:

Node: SEASONAL HIGH

Scenario: Post-Development
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 75.50 ft
Warning Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	75.50
0	0	0	9999.0000	75.50

Comment:

Node: SEASONAL HIGH 2

Scenario: Post-Development

Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 75.70 ft
Warning Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	75.70
0	0	0	9999.0000	75.70

Comment:

Node: ST-10

Scenario: Post-Development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 80.25 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
80.25	0.0003	13
86.38	0.0003	13

Comment:

Node: ST-11

Scenario: Post-Development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 80.65 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
80.65	0.0003	13
0.00	0.0003	13

Comment:

Node: ST-1A

Scenario: Post-Development
Type: Stage/Area
Base Flow: 0.00 cfs

Initial Stage: 80.00 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
80.00	0.0003	13
85.00	0.0003	13

Comment:

Node: ST-1B

Scenario: Post-Development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 80.00 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
80.00	0.0003	13
86.00	0.0003	13

Comment:

Node: ST-2

Scenario: Post-Development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 80.00 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
80.00	0.0003	13
86.75	0.0003	13

Comment:

Node: ST-4

Scenario: Post-Development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 80.15 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
80.15	0.0003	13
85.93	0.0003	13

Comment:

Node: ST-5

Scenario: Post-Development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 80.45 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
80.45	0.0003	13
86.08	0.0003	13

Comment:

Node: ST-6

Scenario: Post-Development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 80.60 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
80.60	0.0003	13
85.79	0.0003	13

Comment:

Node: ST-7

Scenario: Post-Development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 80.70 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
80.70	0.0003	13
85.79	0.0003	13

Comment:

Node: ST-8

Scenario: Post-Development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 81.40 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
81.40	0.0003	13
86.65	0.0003	13

Comment:

Node: ST-9

Scenario: Post-Development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 81.50 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
81.50	0.0003	13
86.65	0.0003	13

Comment:

Node: STORMTECH

Scenario: Post-Development
Type: Stage/Volume
Base Flow: 0.00 cfs
Initial Stage: 79.25 ft
Warning Stage: 0.00 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
79.25	0.00	0
79.50	0.02	871
80.00	0.10	4356
81.00	0.30	13068
82.00	0.51	22216

Stage [ft]	Volume [ac-ft]	Volume [ft3]
83.00	0.70	30492
84.00	0.84	36590
85.00	0.94	40946
85.25	0.97	42253

Comment:

Node: STORMWATER POND 1

Scenario: Post-Development
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 80.00 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
80.00	0.0660	2875
81.00	0.0940	4095
82.00	0.1250	5445
83.00	0.1580	6882
84.00	0.1950	8494
85.00	0.2350	10237
86.00	0.2760	12023

Comment:

Node: STORMTECH

Scenario: Water Quality - 36 Hour
Type: Stage/Volume
Base Flow: 0.00 cfs
Initial Stage: 80.19 ft
Warning Stage: 0.00 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
79.25	0.00	0
79.50	0.02	871
80.00	0.10	4356
81.00	0.30	13068
82.00	0.51	22216
83.00	0.70	30492
84.00	0.84	36590
85.00	0.94	40946
85.25	0.97	42253

Comment:

Node: STORMWATER POND 1

Scenario: Water Quality - 36 Hour
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 81.13 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
80.00	0.0660	2875
81.00	0.0940	4095
82.00	0.1250	5445
83.00	0.1580	6882
84.00	0.1950	8494
85.00	0.2350	10237
86.00	0.2760	12023

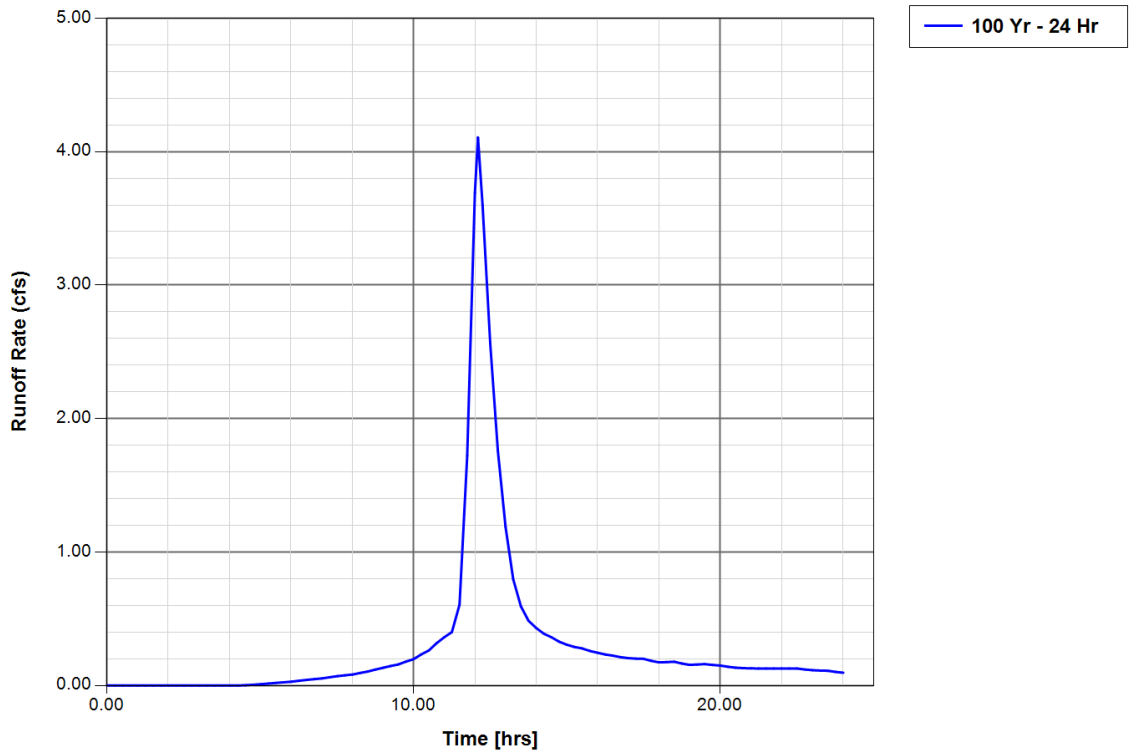
Comment:

APPENDIX G: ICPR RESULTS

Simple Basin Runoff Summary [Post-Development]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
BASIN 1	100 Yr - 24 Hr	4.11	12.1000	12.60	9.14	0.7600	74.1	0.00	0.00

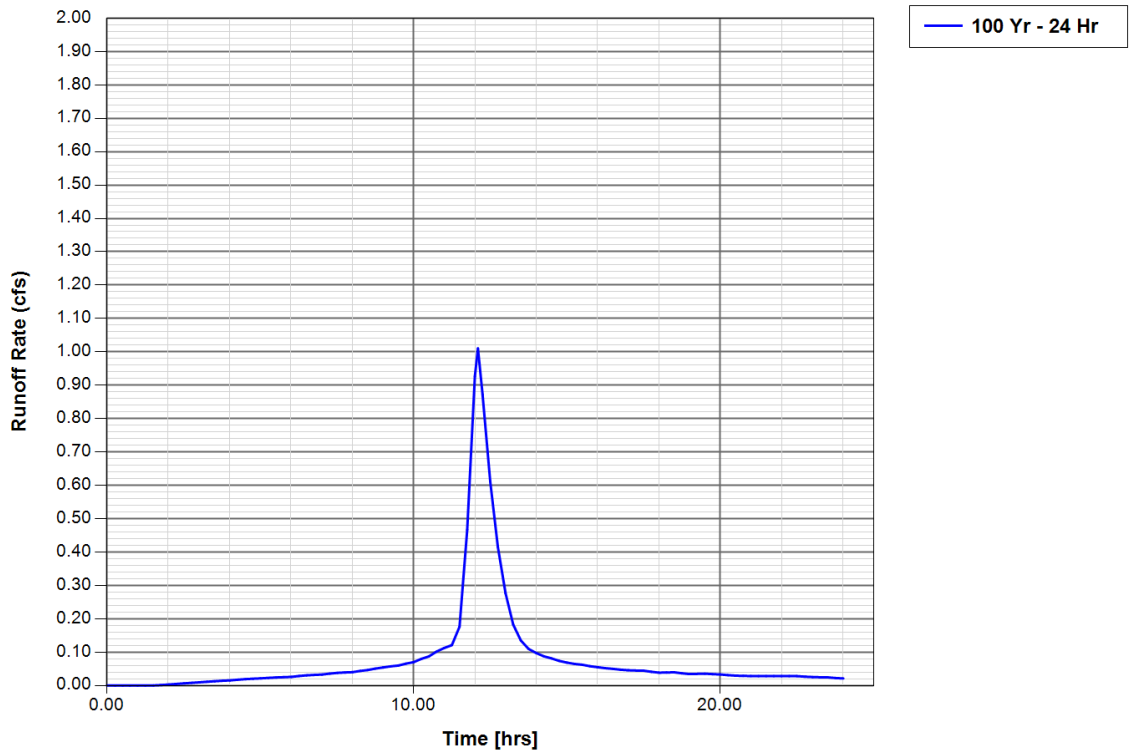
Simple Basin Runoff Rate: BASIN 1 [Post-Development]



Simple Basin Runoff Summary [Post-Development]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
BASIN 10	100 Yr - 24 Hr	1.01	12.1000	12.60	11.45	0.1600	91.2	0.00	0.00

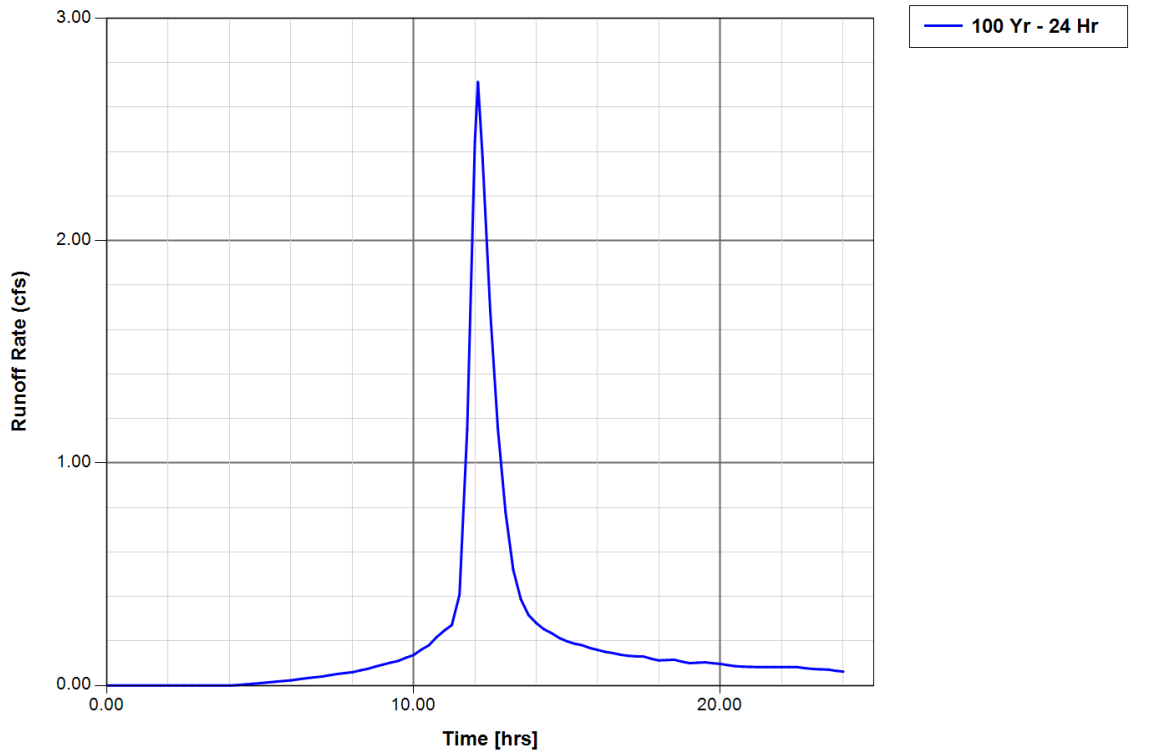
Simple Basin Runoff Rate: BASIN 10 [Post-Development]



Simple Basin Runoff Summary [Post-Development]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
BASIN 11	100 Yr - 24 Hr	2.71	12.1000	12.60	9.41	0.4900	75.9	0.00	0.00

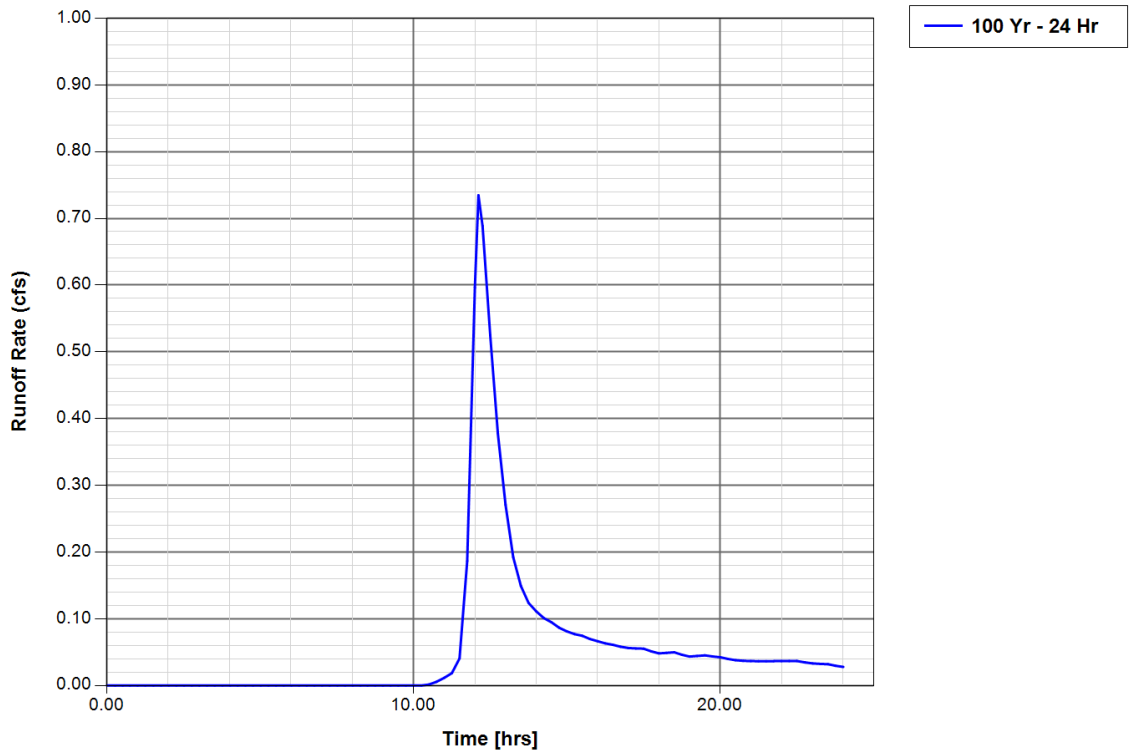
Simple Basin Runoff Rate: BASIN 11 [Post-Development]



Simple Basin Runoff Summary [Post-Development]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
BASIN 12	100 Yr - 24 Hr	0.73	12.1167	12.60	4.26	0.3100	43.1	0.00	0.00

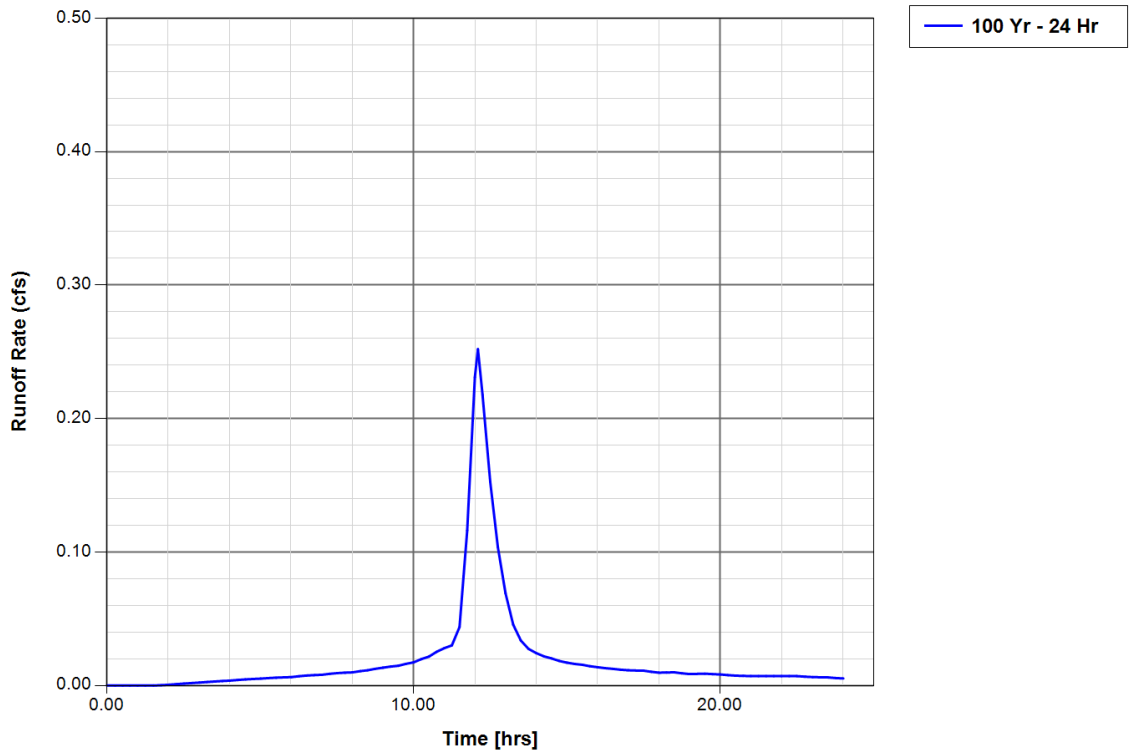
Simple Basin Runoff Rate: BASIN 12 [Post-Development]



Simple Basin Runoff Summary [Post-Development]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
BASIN 13	100 Yr - 24 Hr	0.25	12.1000	12.60	11.39	0.0400	90.7	0.00	0.00

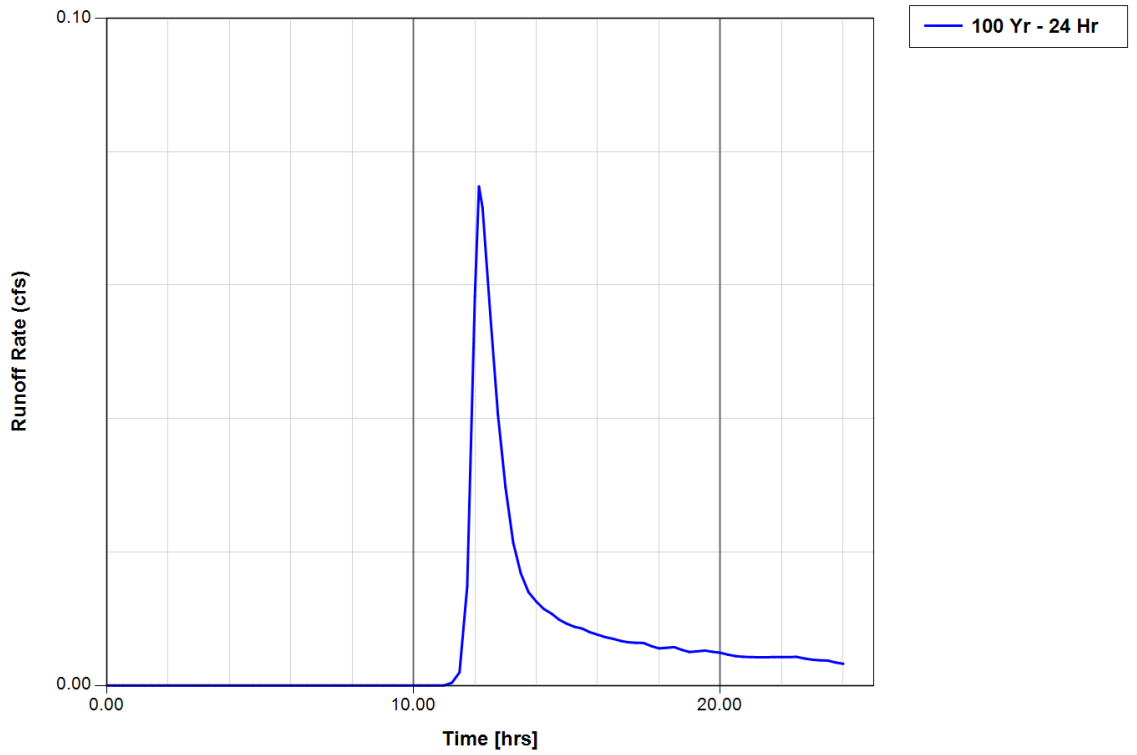
Simple Basin Runoff Rate: BASIN 13 [Post-Development]



Simple Basin Runoff Summary [Post-Development]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
BASIN 14	100 Yr - 24 Hr	0.07	12.1333	12.60	3.54	0.0400	39.0	0.00	0.00

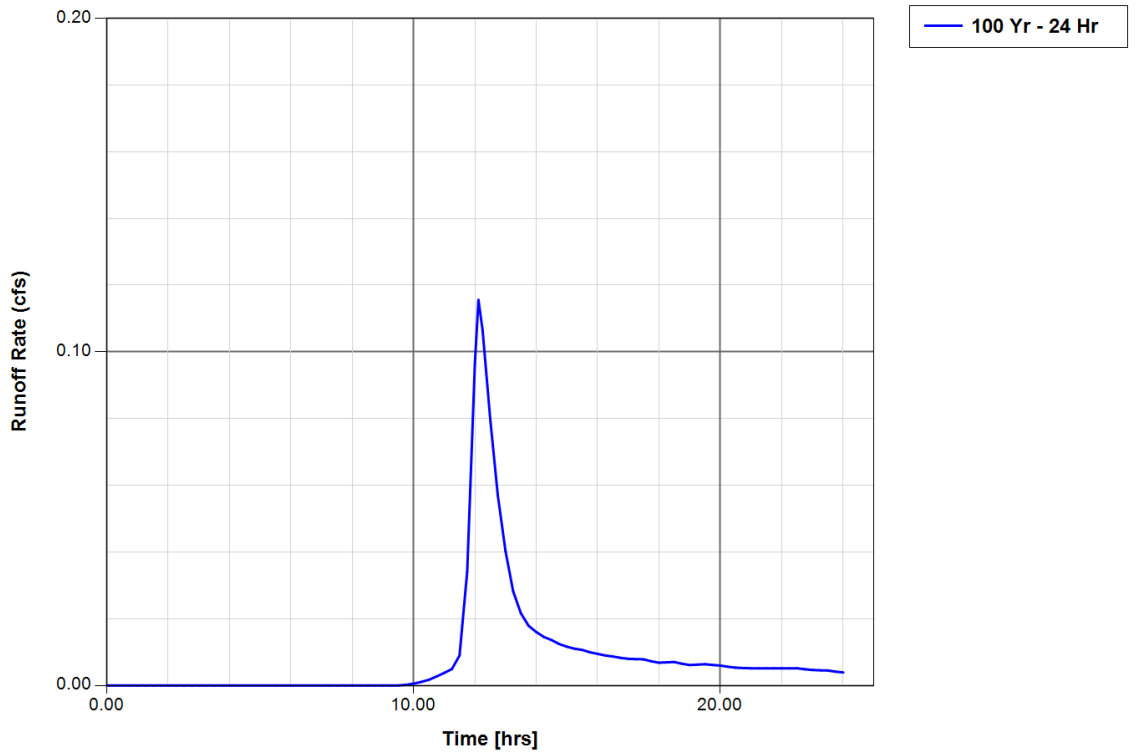
Simple Basin Runoff Rate: BASIN 14 [Post-Development]



Simple Basin Runoff Summary [Post-Development]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
BASIN 15	100 Yr - 24 Hr	0.12	12.1167	12.60	5.02	0.0400	47.6	0.00	0.00

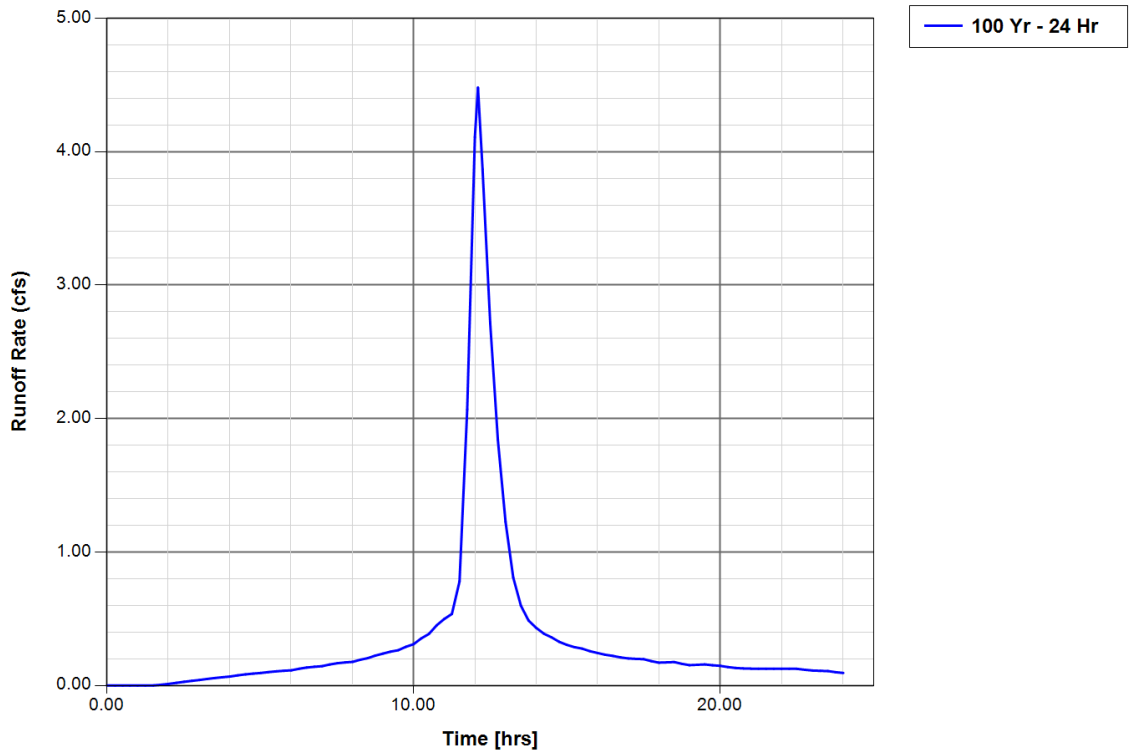
Simple Basin Runoff Rate: BASIN 15 [Post-Development]



Simple Basin Runoff Summary [Post-Development]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
BASIN 2	100 Yr - 24 Hr	4.48	12.1000	12.60	11.43	0.7100	91.0	0.00	0.00

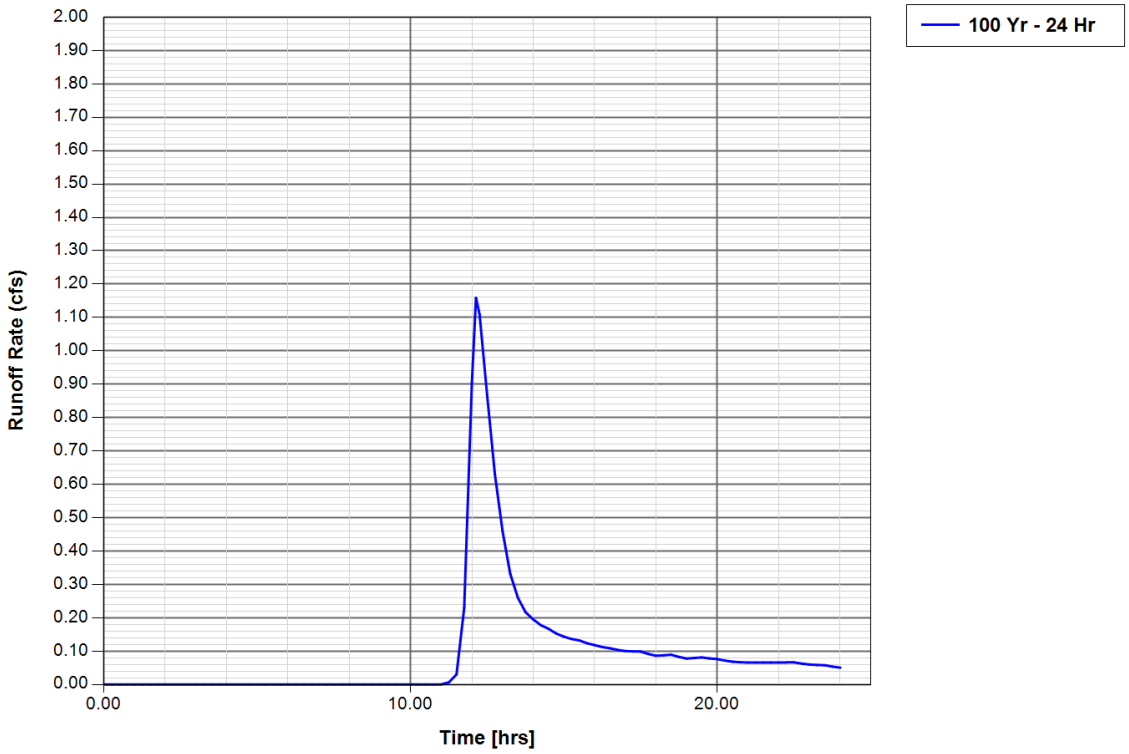
Simple Basin Runoff Rate: BASIN 2 [Post-Development]



Simple Basin Runoff Summary [Post-Development]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
BASIN 3	100 Yr - 24 Hr	1.16	12.1333	12.60	3.54	0.6200	39.0	0.00	0.00

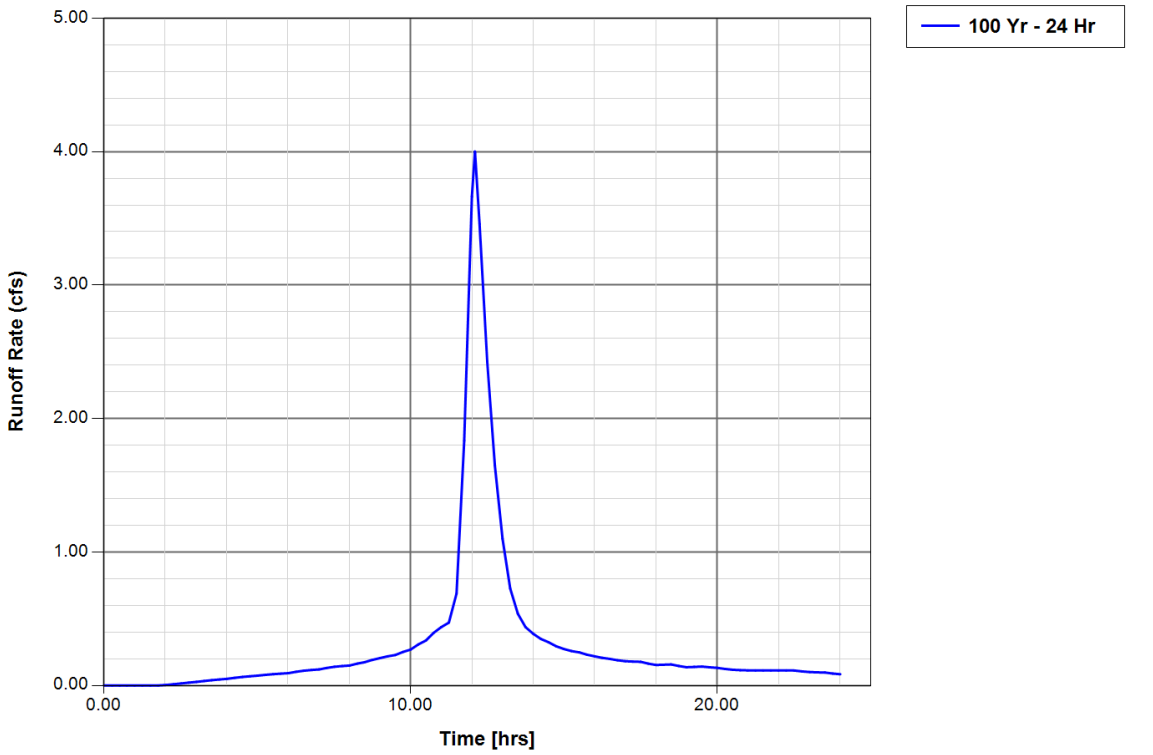
Simple Basin Runoff Rate: BASIN 3 [Post-Development]



Simple Basin Runoff Summary [Post-Development]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
BASIN 4	100 Yr - 24 Hr	4.00	12.1000	12.60	11.21	0.6400	89.3	0.00	0.00

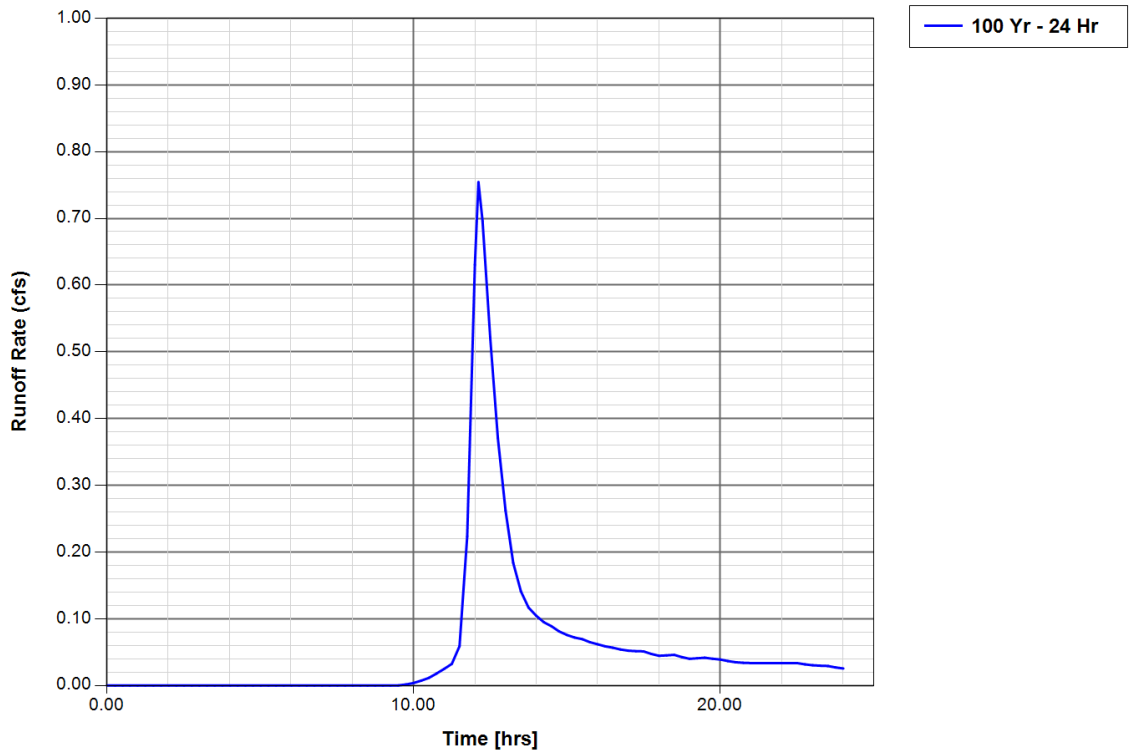
Simple Basin Runoff Rate: BASIN 4 [Post-Development]



Simple Basin Runoff Summary [Post-Development]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
BASIN 5	100 Yr - 24 Hr	0.75	12.1167	12.60	5.04	0.2600	47.7	0.00	0.00

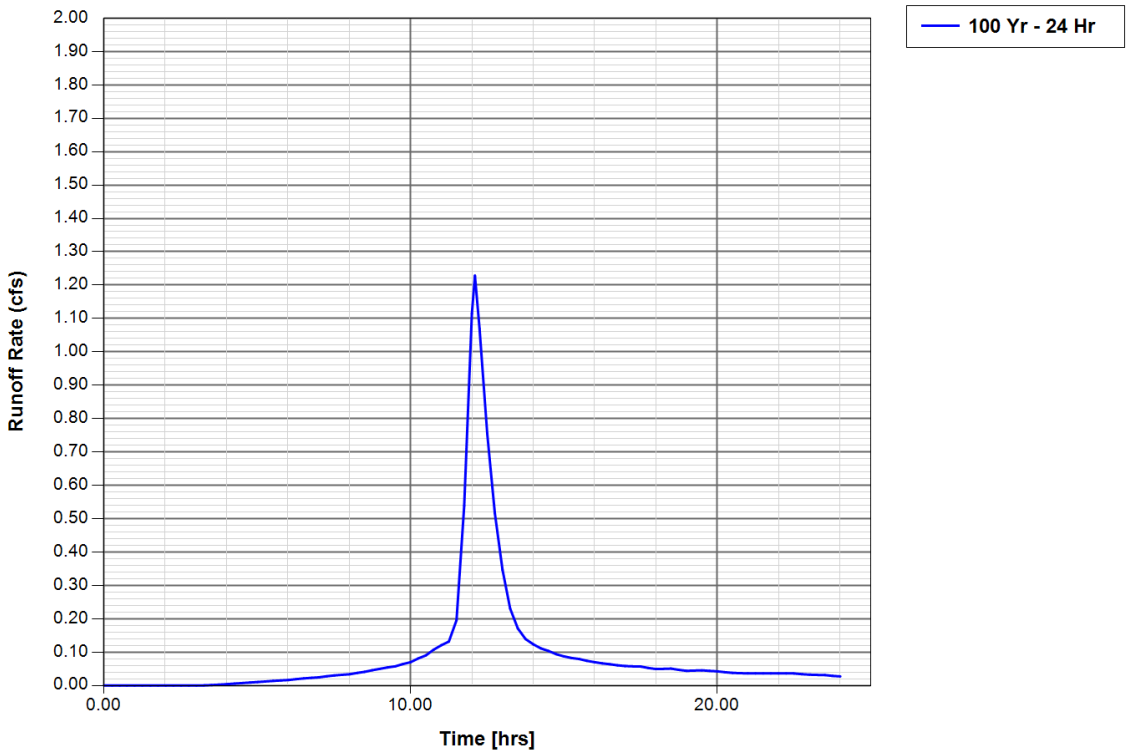
Simple Basin Runoff Rate: BASIN 5 [Post-Development]



Simple Basin Runoff Summary [Post-Development]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
BASIN 6	100 Yr - 24 Hr	1.23	12.1000	12.60	10.09	0.2100	80.8	0.00	0.00

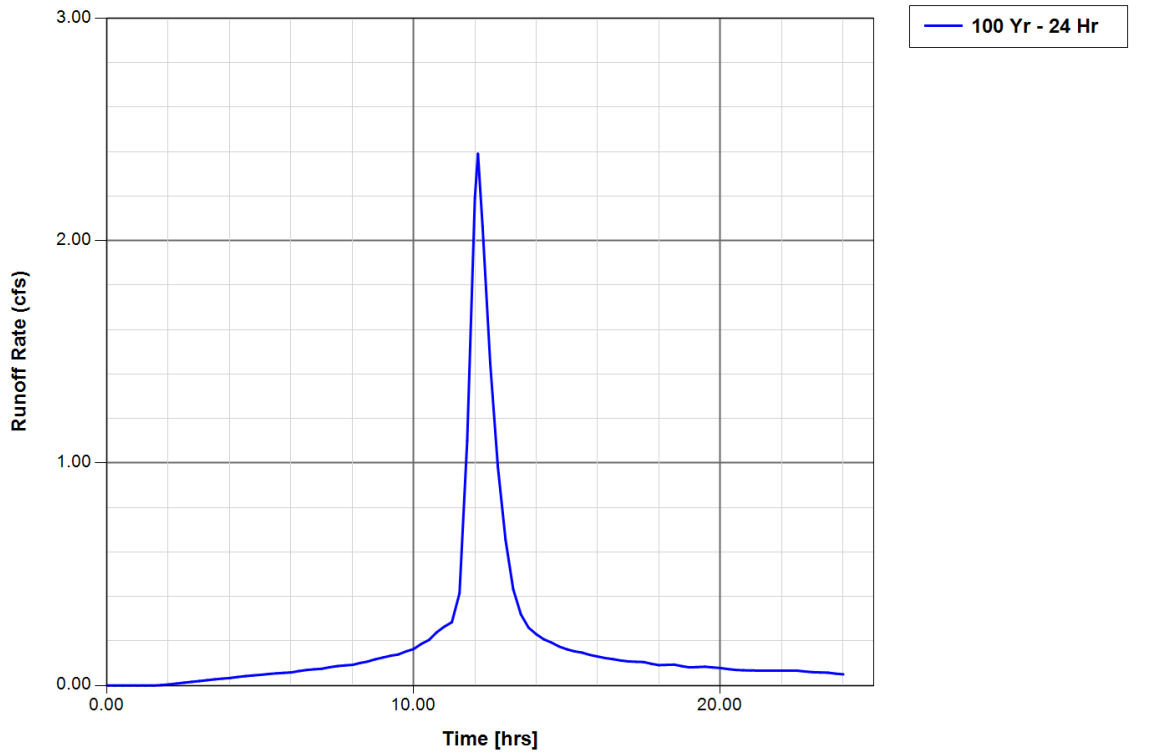
Simple Basin Runoff Rate: BASIN 6 [Post-Development]



Simple Basin Runoff Summary [Post-Development]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
BASIN 7	100 Yr - 24 Hr	2.39	12.1000	12.60	11.36	0.3800	90.4	0.00	0.00

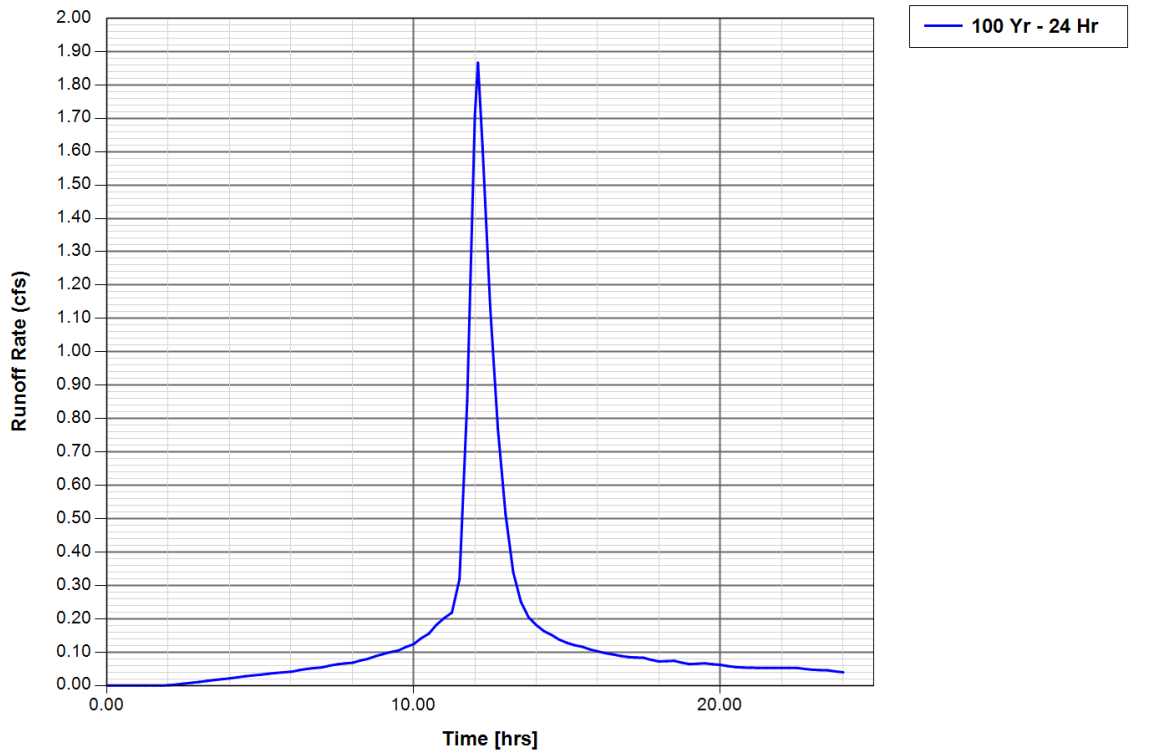
Simple Basin Runoff Rate: BASIN 7 [Post-Development]



Simple Basin Runoff Summary [Post-Development]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
BASIN 8	100 Yr - 24 Hr	1.87	12.1000	12.60	11.11	0.3000	88.5	0.00	0.00

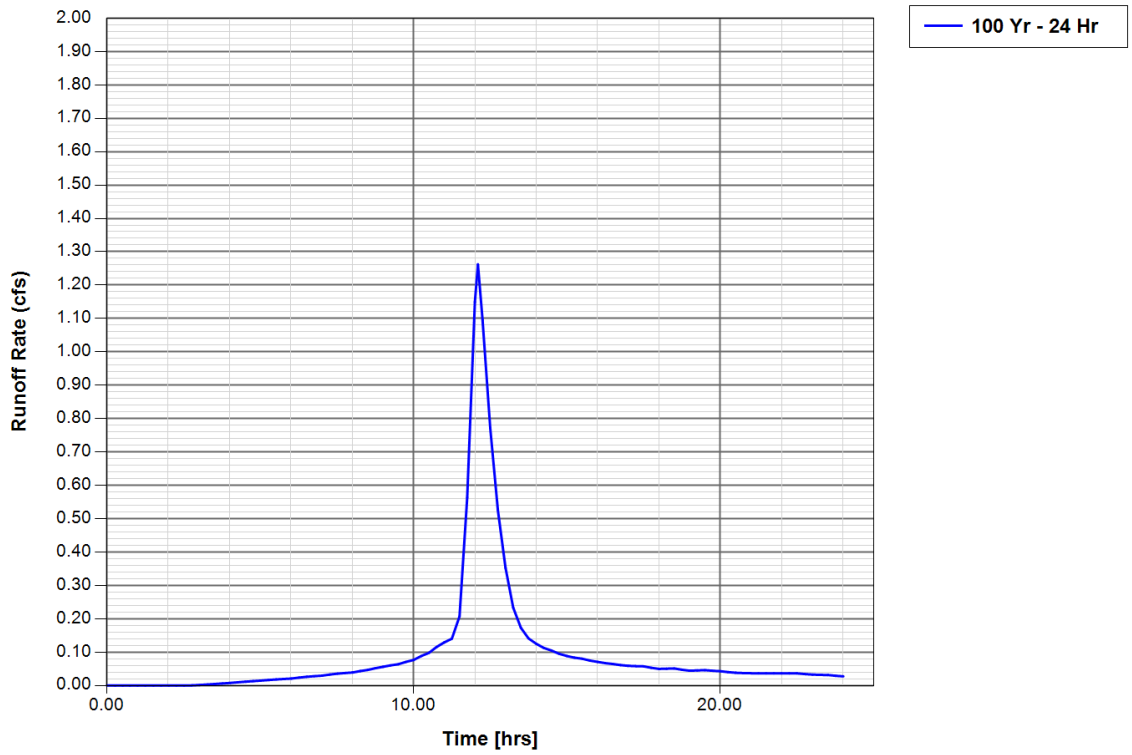
Simple Basin Runoff Rate: BASIN 8 [Post-Development]



Simple Basin Runoff Summary [Post-Development]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
BASIN 9	100 Yr - 24 Hr	1.26	12.1000	12.60	10.49	0.2100	83.8	0.00	0.00

Simple Basin Runoff Rate: BASIN 9 [Post-Development]



Link Min/Max Conditions [Post-Development]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
EMERGENCY WIER	100 Yr - 24 Hr	0.00	0.00	0.00	0.00	0.00	0.00

Link Min/Max Conditions [Post-Development]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
PERC POND 1	100 Yr - 24 Hr	0.83	0.00	0.08	0.00	0.00	0.00

Link Min/Max Conditions [Post-Development]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
PERC STORMTECH	100 Yr - 24 Hr	1.01	0.00	-0.75	0.00	0.00	0.00

Link Min/Max Conditions [Post-Development]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
PIPE 1	100 Yr - 24 Hr	3.30	0.00	0.40	1.05	1.75	1.28

Link Min/Max Conditions [Post-Development]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
PIPE 10	100 Yr - 24 Hr	3.51	0.00	-0.05	1.99	3.61	2.43

Link Min/Max Conditions [Post-Development]

Link Name	Sim Name	Max Flow	Min Flow [cfs]	Min/Max	Max Us	Max Ds	Max Avg

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
PIPE 11	100 Yr - 24 Hr	5.19	0.00	-2.55	3.11	13.22	7.89

Link Min/Max Conditions [Post-Development]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
PIPE 1A	100 Yr - 24 Hr	3.43	0.00	0.52	1.09	1.09	1.09

Link Min/Max Conditions [Post-Development]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
PIPE 1B	100 Yr - 24 Hr	10.82	-1.13	10.82	0.31	0.32	0.31

Link Min/Max Conditions [Post-Development]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
PIPE 2	100 Yr - 24 Hr	0.19	-4.44	-1.98	-0.73	-2.25	-1.43

Link Min/Max Conditions [Post-Development]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
PIPE 3	100 Yr - 24 Hr	7.64	0.00	0.40	1.34	2.45	1.71

Link Min/Max Conditions [Post-Development]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
PIPE 4	100 Yr - 24 Hr	5.84	0.00	0.27	1.42	2.26	1.50

Link Min/Max Conditions [Post-Development]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
PIPE 5	100 Yr - 24 Hr	4.36	0.00	0.04	2.47	3.67	2.80

Link Min/Max Conditions [Post-Development]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
PIPE 6	100 Yr - 24 Hr	3.00	0.00	-1.10	1.74	1.74	1.74

Link Min/Max Conditions [Post-Development]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
PIPE 8	100 Yr - 24 Hr	2.89	0.00	0.03	2.03	3.53	2.69

Link Min/Max Conditions [Post-Development]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
PIPE 9	100 Yr - 24 Hr	1.59	-0.62	-0.17	1.80	1.80	1.80

Node Max Conditions [Post-Development]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
DICHARGE POINT 2	100 Yr - 24 Hr	0.00	80.02	0.0000	0.75	0.00	217800

Node Max Conditions [Post-Development]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
DISCHARGE POINT 1	100 Yr - 24 Hr	0.00	80.01	0.0000	0.19	0.00	217800

Node Max Conditions [Post-Development]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
SEASONAL HIGH	100 Yr - 24 Hr	0.00	75.50	0.0000	0.83	0.00	0

Node Max Conditions [Post-Development]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
SEASONAL HIGH 2	100 Yr - 24 Hr	0.00	75.70	0.0000	1.01	0.00	0

Node Max Conditions [Post-Development]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ST-10	100 Yr - 24 Hr	0.00	84.87	0.0016	5.19	3.51	359

Node Max Conditions [Post-Development]

Node Name	Sim Name	Warning	Max Stage	Min/Max	Max Total	Max Total	Max Surface

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ST-11	100 Yr - 24 Hr	0.00	84.88	-0.0014	3.72	5.19	100

Node Max Conditions [Post-Development]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ST-1A	100 Yr - 24 Hr	0.00	84.87	-0.0010	3.43	3.30	168

Node Max Conditions [Post-Development]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ST-1B	100 Yr - 24 Hr	0.00	84.87	0.0028	10.82	3.43	202

Node Max Conditions [Post-Development]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ST-2	100 Yr - 24 Hr	0.00	84.87	0.0009	7.99	11.91	1116

Node Max Conditions [Post-Development]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ST-4	100 Yr - 24 Hr	0.00	84.87	-0.0010	9.83	7.64	2847

Node Max Conditions [Post-Development]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ST-5	100 Yr - 24 Hr	0.00	84.87	0.0017	7.24	5.84	1889

Node Max Conditions [Post-Development]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ST-6	100 Yr - 24 Hr	0.00	84.87	0.0010	4.48	4.36	101

Node Max Conditions [Post-Development]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ST-7	100 Yr - 24 Hr	0.00	84.88	0.0010	3.12	3.00	100

Node Max Conditions [Post-Development]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ST-8	100 Yr - 24 Hr	0.00	84.87	0.0016	1.59	0.62	100

Node Max Conditions [Post-Development]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ST-9	100 Yr - 24 Hr	0.00	84.87	-0.0030	3.13	3.50	129

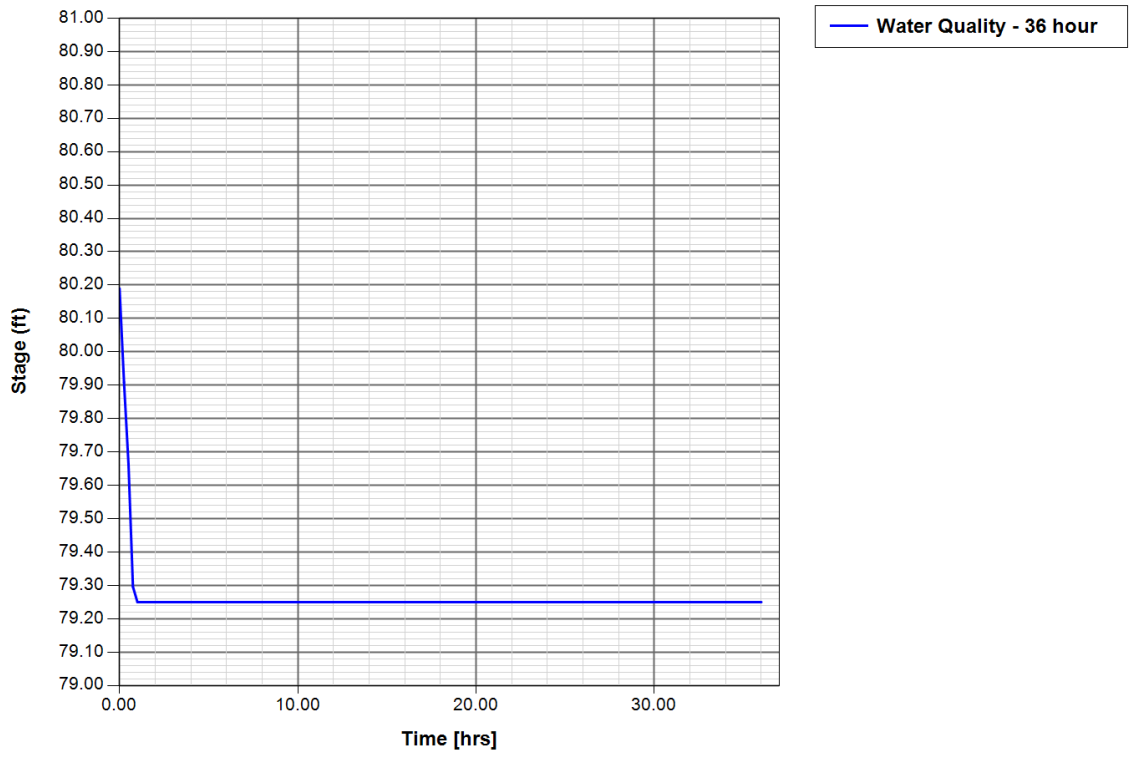
Node Max Conditions [Post-Development]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STORMTECH	100 Yr - 24 Hr	0.00	84.87	-0.0006	13.19	1.01	9993
STORMTECH	25 Yr - 24 Hr	0.00	83.05	0.0006	9.96	1.38	9993

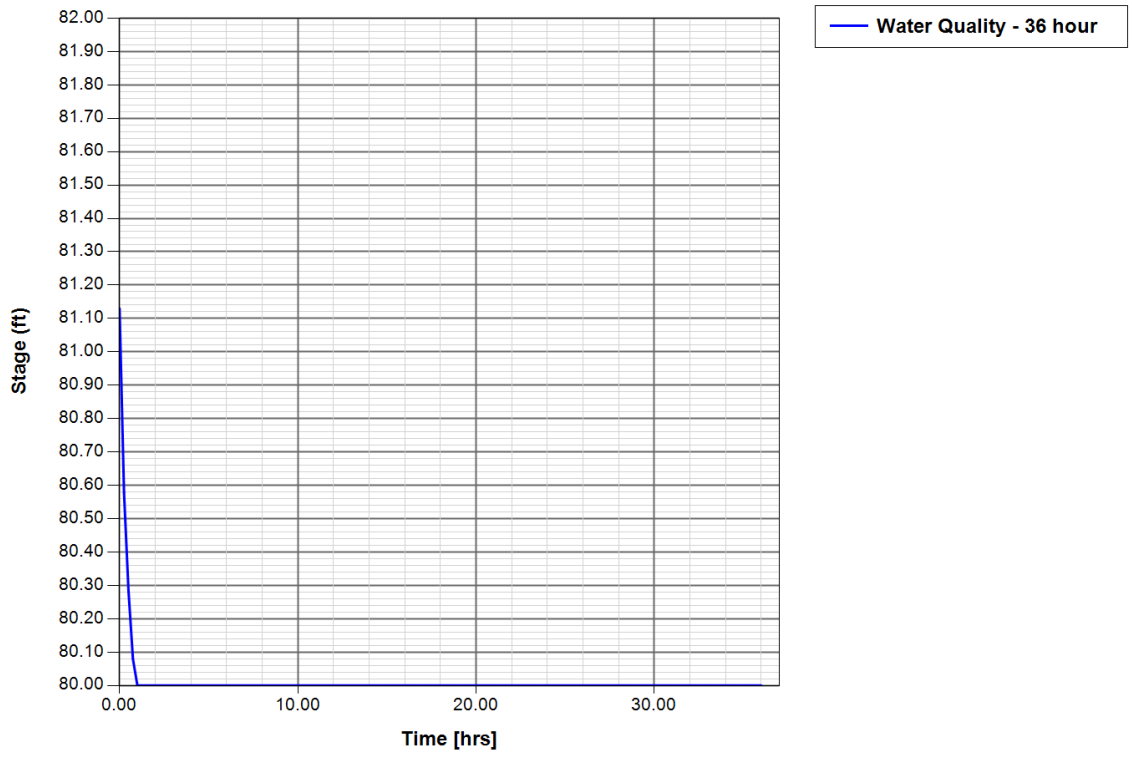
Node Max Conditions [Post-Development]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STORMWATER POND 1	100 Yr - 24 Hr	0.00	84.87	0.0005	6.96	0.83	10005
STORMWATER POND 1	25 Yr - 24 Hr	0.00	83.05	0.0004	4.57	0.65	6960

Stage [Node: STORMTECH]



Stage [Node: STORMWATER POND 1]

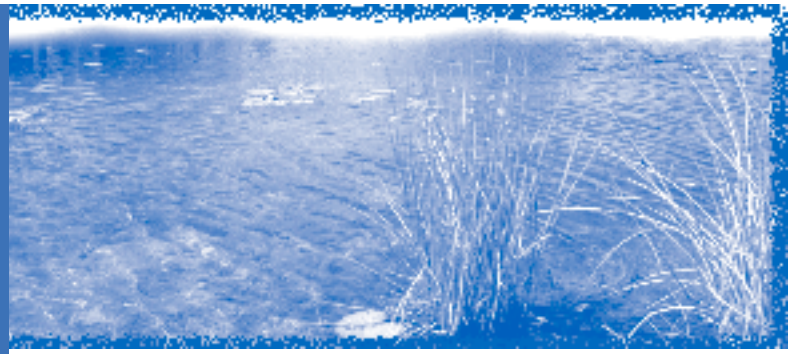


APPENDIX H: OPERATION AND MAINTENANCE PLAN

How To Operate & Maintain Your



Stormwater Management System



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Southwest Florida *Water Management District*

Stormwater Management System: It's Your Responsibility

Surface water management facilities, such as ponds, ditches and swales, are constructed to trap and filter out pollutants in stormwater runoff from roads, parking lots, buildings and lawns. Discharge of untreated water to natural lakes, creeks, and rivers is harmful to natural vegetation and wildlife; this destroys one of the very things we like best about Florida — our enjoyment of the abundant clean water for recreation and aesthetic enjoyment.

The purpose of this informational pamphlet is to provide the entity/permittee responsible for the operation and maintenance of the Stormwater Management System (SWMS) with guidelines for establishing a program of routine maintenance procedures, which should minimize problems and maximize the appearance and performance of a SWMS.

Typically, site developers are responsible for operation and maintenance until construction is complete, then they are required by permit condition to transfer this responsibility to a homeowners', condominium owners', or property owners' association. After an association is legally established and construction of the surface water management system is completed, the association will assume responsibility. The operation and maintenance entity for shopping centers, individual stores and offices typically is the landowner or a management company hired by the landowner.



Your SWMS. . .

Your (SWMS) is designed and constructed to comply with certain environmental protection criteria. Stormwater ponds and their associated surface water management facilities are designed to capture and remove pollutants from specific volumes of stormwater runoff through processes such as percolation, filtering and/or detention. As long as they are constructed properly and maintained in an effective state, water quality standards are presumed to be met.

Stormwater management systems should be inspected on a routine basis to ensure that they are functioning properly. Inspections should be scheduled on a monthly or quarterly basis and following any major rain event. More frequent inspections may be necessary during the rainy season. Keeping detailed notes on maintenance activities will help when providing a report to the Southwest Florida Water Management District (District) at the time of your 18- or 24-month inspection. Environmental Resource Permit (ERP) or your Management and Storage of Surface Waters (MSSW) permit includes a condition that specifies how often the inspection reports are due.

It would be wise to designate one individual as the person responsible for overseeing operation and maintenance activities, monitoring and reporting. This will allow that individual to become well acquainted with the SWMS. Provide this person with a copy of the permit and District-approved construction drawings should questions or issues develop.



General Maintenance

1. All stormwater pipes, inlets, catch basins, manholes, flumes, pond inflow and outfall structures (including oil skimmers), and discharge pipes should be inspected on a regular basis (monthly or quarterly) and after major rainfalls. They should be maintained by removing built-up debris and vegetation and repairing deteriorating structures.

2. Chemicals, oils, greases or similar wastes are NOT to be disposed of directly to the stormwater facility or through storm sewers. Treatment ponds are designed to treat normal road, parking lot, roof and yard runoff only. Some chemicals may interfere with a treatment pond's functions or kill vegetation and wildlife. Dispose of these potentially dangerous materials properly by taking them to recycling facilities or to collection locations sponsored by many local governments.

   Also, do not dispose of grass clippings in a SWMS. Grass clippings pose problems by smothering desirable vegetation, clogging outfall structures and, when they decompose, may cause unsightly algae blooms that can kill fish.

3. Accumulated pond sediments may contain heavy metals such as lead, cadmium and mercury, as well as other potentially hazardous materials. Therefore, sediments removed from storm sewers, inlets, pipes and ponds should be disposed of at an approved facility (check with your county Solid Waste Department or the Florida Department of Environmental Protection for disposal facilities approved to accept treatment pond sediment).

4. During any repair or maintenance activity, use care to avoid causing erosion or siltation to adjacent or off-site areas.

5. Remember, alterations (filling, enlarging, etc.) of any part of the stormwater facility is not permitted without prior approval from all applicable governing agencies.

continued on page 4

General Maintenance *continued from page 3*

6. The approved Operation and Maintenance Permit and as-built drawings are available at your local District service office. Refer to those plans and permits or additional restrictions, instructions and conditions.

7. It is usually more cost-effective to monitor and perform routine maintenance on a SWMS, rather than let it fail and have to reconstruct the entire system.

8. Mosquito growth can be minimized in a SWMS by the following measures:

   - Do not dump grass clippings or other organic debris into a SWMS — decaying grass clippings and other decomposing vegetation create ideal conditions for breeding mosquitoes.
   - Clean out any obstructions that get into the system. Debris can obstruct flow and harbor mosquito eggs and larvae.
   - Remove water lettuce and water hyacinth, which nourish and shelter mosquito larvae.
   - Stock ponds with predatory "mosquito fish" – Gambusia minnows, which may be collected from other ponds and ditches and introduced into your SWMS. Remember, the introduction of grass carp into your SWMS will require District approval.



Stormwater Management System

Ditches & Swales

(AKA Percolation Ponds)

Some Environmental Resource Permits and (Management and Storage of Surface Water Permits) require that the vegetation in some ditches be protected to offset wetland impacts permitted during construction or for water quality treatment. The permit or approved construction should clearly identify which ditch vegetation must be preserved. If you're unsure, contact your local District service office.

If vegetation is not required to be protected, ditches and swales should be periodically mowed and cleaned of accumulated refuse. During the mowing operations, ditches and swales should be inspected for bare spots, damage or erosion. Bare areas should be sodded or seeded to replace the grass cover. In the case of erosion, replace the missing soils and bring the area back to grade.

Some ditches are designed to store runoff for short periods of time utilizing ditch blocks or raised inlets. These ditch blocks or inlets should not be removed or altered.

If you are unable to identify what type of treatment method serves your development, contact your District service office. Addresses are on the back of this pamphlet.



Stormwater Management System

Dry Retention Ponds

(AKA Percolation Ponds)

How to recognize: Dry retention ponds are designed to be dry, except for 72 hours following a rain event, or a series of rain events if they occur frequently. They are sodded or grassed, with a concrete overflow structure that has a grated top and sometimes a rectangular weir cut in the side of the concrete structure.

How they work: A portion of the site's storm water percolates through the topsoil. The pollutants settle out and are trapped on the pond's bottom. Exposure to sun and oxygen helps break down the greases and oils.

Why they fail: Accumulated sediments with silts, oils and greases eventually seal off the porous bottom sands, resulting in little or no percolation through the filtering sands. Untreated water may discharge through the overflow structure if this occurs.

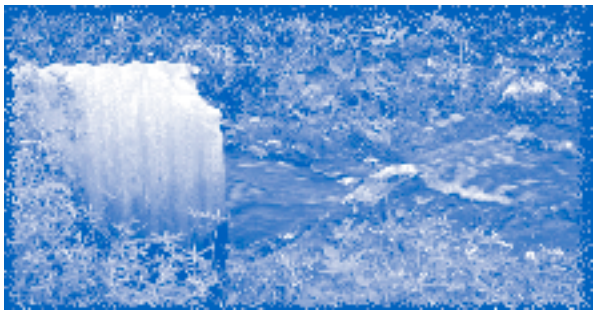


Dry Retention Ponds

(AKA Percolation Ponds)

MAINTENANCE SUGGESTIONS

1. On a monthly or quarterly basis, and following a storm event, the entity responsible for maintenance should make an inspection of the pond and its outfall structure to ensure that the system is operating properly. If standing water persists longer than 72 hours after a normal summer rain event, or if wetland vegetation such as cattails grow in the pond, the stormwater facility may be in need of repair. Repairs may be as simple as scarifying or raking the pond bottom, or may consist of removing the bottom sediment (approximately the top foot of soil) and replacing the soil with clean sand. For more information, contact your local District service office.
2. Mow frequently enough to prevent thatch buildup. Pick up grass clippings after cutting. Limit fertilizer use around the pond, and do not fertilize grass in the pond area.
3. Resod any areas (sides or bottom) where grass or sod has been removed or eroded.
4. Keep the outfall structure clear of debris and vegetation.



Effluent Filtration

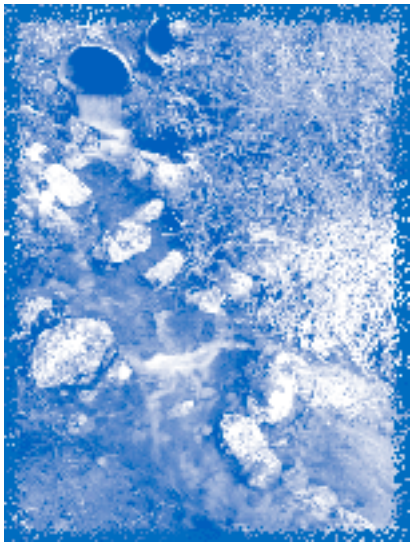
Side-drain Filtration or Underdrain Filtration

How to recognize: These ponds may either be dry or wet, but rely on a filtration system made of perforated pipe laid in a bed of filter media, such as sand, to remove pollutants. "Cleanouts," or vertical pipes with caps screwed on top, are connected to the buried pipes and extend up to the pond surface or bank. It is essential that the cap is always kept secured on the cleanout so that untreated water is not discharged through the cleanout.

How they work: A portion of the site's storm water percolates through the filter media into the perforated pipe and out through the control structure. Pollutants settle out or are trapped in the filter media. In addition, exposure to sun and oxygen helps break down the greases and oils.

Why they fail: The filter bed may become clogged with accumulated sediment, oils and greases, resulting in little or no percolation through the filtering sands. Untreated water may discharge through the overflow structure if this occurs.

For maintenance suggestions see page 9



Effluent Filtration

Side-drain Filtration or Underdrain Filtration

MAINTENANCE SUGGESTIONS

In general, if approximately 36 hours after a rain event you notice that water discharges over the top of the concrete control structure, rather than through the perforated pipe, it may be a signal that the pond is not functioning properly.

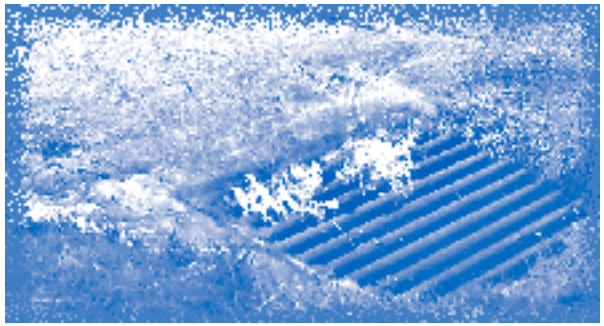
1. On a monthly or quarterly basis, and following a storm event, inspect the pond and its outfall structure to ensure that the system is operating properly.

   Repairs may be as simple as scarifying or raking the filter sand, forcing water through the cleanout to cleanse the perforated pipe, or as involved as replacing the filter media. Check construction plans or contact the District for more information if any questions arise.

2. Mow frequently enough to prevent thatch buildup. Pick up grass clippings after cutting. Limit fertilizer use around the pond, and do not fertilize grass in the pond area.

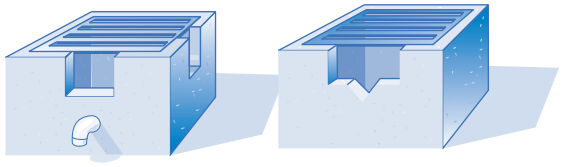
3. Resod any areas where grass has been removed or eroded. Do not sod over the filter media. Place stone or gravel over the filter media for stabilization, if necessary.

4. Keep the outfall structure clear of debris and vegetation.



Wet Detention Ponds

How to recognize: Look at the outfall structure. If it looks similar to the ones below and about a third of the pond is shallow or covered with vegetation (or recruiting vegetation if the pond is newly constructed), there's a good chance the facility is a wet detention pond.



How they work: Wet detention ponds are designed to detain storm water for several days while pollutant-laden sediments settle to the pond bottom. Additionally, sunlight and oxygen break down greases and oils. Vegetation in the shallow littoral zone (the shallow zone created near the pond outfall structure that designed to be vegetated) helps treat water through nutrient and heavy metal uptake.

Why they fail: After some years of use, wet detention ponds may fail. The control structure may become clogged with vegetation and sediment. Vegetation and sediment may accumulate in the pond, reducing the pond's ability to store storm water.

For maintenance suggestions see page 11

Stormwater Management System

Wet Detention Ponds

MAINTENANCE SUGGESTIONS

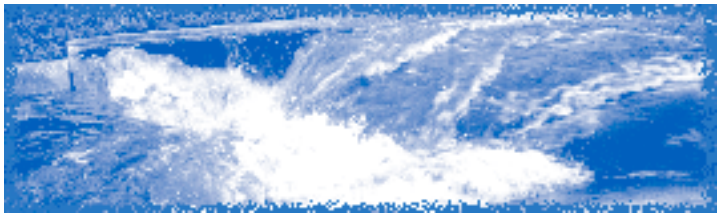
1. All sodded side slopes and berms should be maintained by the procedure outlined for ditches and swales. Inflow structures should be maintained by the procedures outlined in this brochure under "General Maintenance."

2. Maintain, rather than remove, wetland vegetation that becomes established in the littoral zone. Do not cut, mow, use herbicide or grass carp to remove any of the vegetation in the littoral zone without prior approval from the District. Refer to the conditions of the permit and construction notes for any further instructions.

3. On a monthly or quarterly basis, and after severe rainfall events, check the area in front of the outfall control structure for built-up sediments, vegetation, trash and debris that impair the operation of the structure. Remove sediment, vegetation, trash and debris to an approved disposal site.

4. When littoral zone vegetation and sediment accumulate to such an extent that water depth decreases, the littoral zone may need to be regraded and revegetated. When it appears that a pond has reached this state, it is best to contact a District representative prior to large-scale maintenance.

When wet detention pond littoral zones are intentionally planted for aesthetic purposes, or to offset wetlands' impacts, removal of weedy or exotic vegetation may be required and accompanied by replanting of desirable vegetation. Check with your local District service office to determine specific requirements.



Southwest Florida Water Management District

Southwest Florida Water Management District Service Offices

BROOKSVILLE (headquarters)
2379 Broad Street
Brooksville, Florida 34604-6899
(352) 796-7211 or 1-800-423-1476

TAMPA
7601 U.S. Hwy. 301 N.
Tampa, Florida 33637-6759
(813) 985-7481 or 1-800-836-0797

BARTOW
170 Century Blvd.
Bartow, Florida 33830-7700
(863) 534-1448 or 1-800-492-7862

SARASOTA
6750 Fruitville Road
Sarasota, Florida 34240-9711
(941) 377-3722 or 1-800-320-3503

Southwest Florida Water Management District

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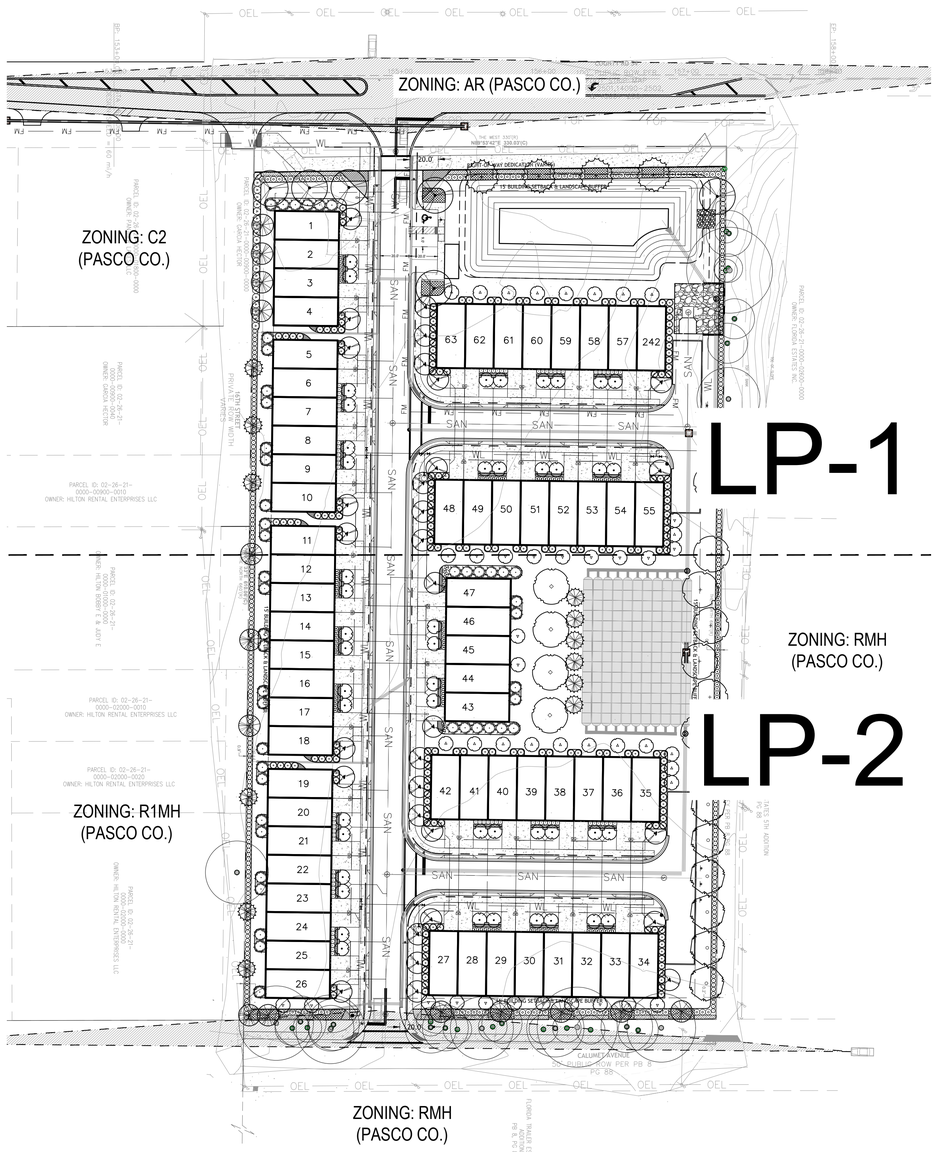
The Southwest Florida Water Management District (District) does not discriminate upon the basis of any individual's disability status. This nondiscrimination policy involves every aspect of the District's functions including one's access to, participation, employment, or treatment in its programs or activities. Anyone requiring reasonable accommodations as provided for in the Americans With Disabilities Act should contact the Communications Department at (352) 796-7211, extension 4757; TDD only 1-800-231-6103 (FL); fax (352) 754-6883; Suncom 663-6882 or view our Web site on the World Wide Web at WaterMatters.org.



NOTE: PRINTED DRAWING SIZE MAY HAVE CHANGED FROM ORIGINAL. VERIFY SCALE USING BAR SCALE ABOVE.

REQUIRED DEVELOPMENT CALCULATIONS

JURISDICTION:	CITY OF ZEPHYRHILLS, FL
ZONING:	R-4 (MULTI-FAMILY RESIDENTIAL)
PROJECT PARCEL AREA:	4.62 AC (201,319.51 SF)
BUILDING AREA:	57,600 SF
BUILDING PERIMETER:	3,330 LF

VEHICULAR USE AREA

TOTAL VEHICLE USE AREA:	30,055 SF
INTERNAL LANDSCAPE AREA REQUIRED:	3,006 SF (10%)
INTERNAL LANDSCAPE AREA PROVIDED:	68,372.5 SF

1 SHADE TREE PER 200 SF OF REQ'D LANDSCAPE AREA:

SHADE TREES REQUIRED:	15
SHADE TREES PROVIDED:	15

NOTES:
1. LANDSCAPED AREAS IN THE PARKING ISLANDS MUST EQUAL OR EXCEED A MINIMUM SIZE OF 8' X 20'.
2. EACH 8'X20' LANDSCAPED ISLAND SHALL PROVIDE A MINIMUM OF ONE (1) SHADE TREE, SHRUBS, AND GROUND COVER.

FOUNDATION PLANTING

1 ORN. TREE PER 20 LF OF FOUNDATION	167 TREES REQ'D
TREES PROVIDED	167 TREES

NOTES:
1. LANDSCAPED AREAS IN THE INTERNAL ISLANDS MUST EQUAL OR EXCEED A MINIMUM OF 100 SF AND TERMINAL ISLANDS MUST EQUAL OR EXCEED A MINIMUM OF 152 SF.
2. ONE (1) TREE MUST BE PLANTED OR RETAINED PER 200 SF OF INTERNAL PARKING AREA.
3. NO PARKING SPACE MAY BE MORE THAN 100 FEET FROM A TREE PLANTED IN A PERMEABLE ISLAND, PENINSULA, OR MEDIAN OF AN EIGHT-FOOT MINIMUM WIDTH.

LANDSCAPE BUFFER REQUIREMENT

LOCATION	BUFFER TYPE	DESCRIPTION	NOTES
ALONG NORTH BOUNDARY	D	15' WIDE MIN., 1 TREE/50 LF 5 SHRUBS PER TREE, LAWN: MAX 50%	330 LF: 1 TREE/50' = 7 TREES 35 SHRUBS + GROUNDCOVER: PROVIDED AS REQ'D
ALONG EAST BOUNDARY	A	10' WIDE MIN., 1 TREE/50 LF CONTINUOUS ROW OF EVERGREEN SHRUBS, 36" O.C.	596 LF: 1 TREE/50' = 12 TREES SHRUBS: PROVIDED AS REQ'D
ALONG SOUTH BOUNDARY	D	15' WIDE MIN., 1 TREE/50 LF 5 SHRUBS PER TREE, LAWN: MAX 50%	330 LF: 1 TREE/50' = 7 TREES 35 SHRUBS + GROUNDCOVER: PROVIDED AS REQ'D
ALONG WEST BOUNDARY	A	10' WIDE MIN., 1 TREE/50 LF CONTINUOUS ROW OF EVERGREEN SHRUBS, 36" O.C.	468 LF: 1 TREE/50' = 9 TREES SHRUBS: PROVIDED AS REQ'D
ALONG WEST BOUNDARY	B	15' WIDE MIN., 1 TREE/50 LF 6' HT VISUAL SCREEN (EG HEDGE AT 5' O.C. MAX.)	125 LF: 1 TREE/30' = 4 TREES 6' HT HEDGE: PROVIDED AS REQ'D

NOTES:
1. LANDSCAPE INSTALLATIONS SHALL BE PLACED TO AVOID CONFLICT WITH THE EXISTING AND/OR PROPOSED UTILITIES, BOTH UNDERGROUND AND OVERHEAD.
2. WHERE INTERFERENCE WITH OVERHEAD UTILITY LINES IS PROBABLE, ORNAMENTAL TREES SHALL BE PLANTED WITH A MAXIMUM SPACING OF TWENTY (20) FEET ON CENTER

PLANTING LEGEND

SYMBOL	BOTANIC NAME	COMMON NAME	MIN. SIZE	SPACING	QUANTITY	NATIVE	DROUGHT TOLERANT
SHADE TREES							
AF	Acer saccharum subsp. floridanum	Florida Maple	8'-10' ht., 3" cal.	per plan	6	YES	YES
IA	Ilex x attenuata	'East Palatka' Holly	8'-10' ht., 3" cal.	per plan	14	YES	YES
MG	Magnolia grandiflora	Southern Magnolia	8'-10' ht., 3" cal.	per plan	8	YES	YES
NS	Nyssa sylvatica	Black Gum	8'-10' ht., 3" cal.	per plan	4	YES	YES
PE	Pinus elliottii	Slash Pine	8'-10' ht., 3" cal.	per plan	12	YES	YES
QM	Quercus myrtifolia	Myrtle Oak	8'-10' ht., 3" cal.	per plan	6	YES	YES
TA	Taxodium ascendens	Pondcypress	8'-10' ht., 3" cal.	per plan	4	YES	NO
ORNAMENTAL TREES							
CS	Callistemon spp.	Bottlebrush	6' ht. trunk, 1" cal. min./cane, 3 canes min.	per plan	47	YES	NO
CC	Cercis canadensis	Eastern Redbud	6' ht. trunk, 1" cal. min./cane, 3 canes min.	per plan	31	YES	NO
CV	Chionanthus virginicus	Fringetree	6' ht. trunk, 1" cal. min./cane, 3 canes min.	per plan	46	YES	YES
LM	Lagerstoemia indica 'Muskogee'	Crepe Myrtle	6' ht. trunk, 1" cal. min./cane, 3 canes min.	per plan	46	YES	YES
6' HT HEDGE PLANTINGS							
WM	Myrica cerifera	Wax Myrtle	6' ht., 3" agg. cal. min., shear to hedge	60" o.c.	22	YES	YES
NOTE: ALL TREES SHALL BE CONTAINER-GROWN. CONTAINER SIZE AS APPROPRIATE FOR THE CALIPER SPECIFIED. SEE SPECIFICATIONS FOR PROPER ROOT QUALITY.							
SHRUBS							
IB	Ilex cornuta 'Burfordii'	Burford Holly	2 Gal. & 18" ht. min., Full	36" o.c.	189	NO	YES
IP	Illicium parviflorum	Anise	2 Gal. & 18" ht. min., Full	36" o.c.	170	YES	YES
IVN	Ilex vomitoria 'Nana'	Dwarf Yaupon Holly	2 Gal. & 18" ht. min., Full	36" o.c.	154	YES	YES
RA	Rhododendron austrinum	Florida Azalea	2 Gal. & 18" ht. min., Full	36" o.c.	94	YES	YES
RI	Rhaphiolepis indica	Indian Hawthorn	2 Gal. & 18" ht. min., Full	36" o.c.	77	NO	YES
VW	Viburnum obovatum	Walter's Viburnum	2 Gal. & 18" ht. min., Full	as shown	83	YES	NO
VS	Viburnum suspensum	Sandankwa Viburnum	2 Gal. & 18" ht. min., Full	36" o.c.	34	NO	YES
GROUNDCOVERS / PERENNIALS / ORNAMENTAL GRASSES							
MC	Muhlenbergia capillaris	Pink Muhly Grass	1 gal., full	30" o.c.	173	YES	YES
PO	Peperomia obtusifolia	Baby Rubber Plant	1 gal., full	18" o.c.	206	YES	YES
RH	Rudbeckia hirta	Black-eyed Susan	1 gal., full	18" o.c.	180	YES	YES
SA	Sisyrinchium angustifolium	Blue Eyed Grass	1 gal., full	12" o.c.	600	YES	YES
ZF	Zamia floridana	Coontie	2 Gal. & 18" ht. min., Full	36" o.c.	412	YES	YES
TURF							
	Paspalum notatum	Argentine Bahiagrass	Sod	---	---	---	---

GENERAL GRADING AND PLANTING NOTES

1. ALL PLANT MATERIAL SHALL BE FLORIDA NO. 1 OR BETTER ACCORDING TO GRADES AND STANDARDS FOR NURSERY PLANTS, CURRENT EDITION AT TIME OF INSTALLATION.
2. BY SUBMITTING A PROPOSAL FOR THE LANDSCAPE PLANTING SCOPE OF WORK, THE CONTRACTOR CONFIRMS THAT HE HAS READ, AND WILL COMPLY WITH, THE ASSOCIATED NOTES, SPECIFICATIONS, AND DETAILS WITH THIS PROJECT.
3. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL EXISTING VEGETATION (EXCEPT WHERE NOTED TO REMAIN).
4. IN THE CONTEXT OF THESE PLANS, NOTES, AND SPECIFICATIONS, "FINISH GRADE" REFERS TO THE FINAL ELEVATION OF THE SOIL SURFACE (NOT TOP OF MULCH) AS INDICATED ON THE GRADING PLANS.
   a. BEFORE STARTING WORK, THE LANDSCAPE CONTRACTOR SHALL VERIFY THAT THE ROUGH GRADES OF ALL LANDSCAPE AREAS ARE WITHIN +/-0.1' OF FINISH GRADE. SEE SPECIFICATIONS FOR MORE DETAILED INSTRUCTION ON TURF AREA AND PLANTING BED PREPARATION.
   b. CONSTRUCT AND MAINTAIN FINISH GRADES AS SHOWN ON GRADING PLANS, AND CONSTRUCT AND MAINTAIN SLOPES AS RECOMMENDED BY THE GEOTECHNICAL REPORT. ALL LANDSCAPE AREAS SHALL HAVE POSITIVE DRAINAGE AWAY FROM STRUCTURES AT THE MINIMUM SLOPE SPECIFIED IN THE REPORT AND ON THE GRADING PLANS, AND AREAS OF POTENTIAL PONDING SHALL BE REGRADED TO BLEND IN WITH THE SURROUNDING GRADES AND ELIMINATE PONDING POTENTIAL.
   c. THE LANDSCAPE CONTRACTOR SHALL DETERMINE WHETHER OR NOT THE EXPORT OF ANY SOIL WILL BE NEEDED, TAKING INTO ACCOUNT THE ROUGH GRADE PROVIDED, THE AMOUNT OF SOIL AMENDMENTS TO BE ADDED (**BASED ON A SOIL TEST**, PER SPECIFICATIONS), AND THE FINISH GRADES TO BE ESTABLISHED.
   d. ENSURE THAT THE FINISH GRADE IN SHRUB AREAS IMMEDIATELY ADJACENT TO WALKS AND OTHER WALKING SURFACES, AFTER INSTALLING SOIL AMENDMENTS, IS 1" BELOW THE ADJACENT FINISH SURFACE, IN ORDER TO ALLOW FOR PROPER MULCH DEPTH. TAPER THE SOIL SURFACE TO MEET FINISH GRADE, AS SPECIFIED ON THE GRADING PLANS, AT APPROXIMATELY 18" AWAY FROM THE WALKS.
   e. ENSURE THAT THE FINISH GRADE IN TURF AREAS IMMEDIATELY ADJACENT TO WALKS AND OTHER WALKING SURFACES, AFTER INSTALLING SOIL AMENDMENTS, IS 1" BELOW THE FINISH SURFACE OF THE WALKS. TAPER THE SOIL SURFACE TO MEET FINISH GRADE, AS SPECIFIED ON THE GRADING PLANS, AT APPROXIMATELY 18" AWAY FROM THE WALKS.
   f. SHOULD ANY CONFLICTS AND/OR DISCREPANCIES ARISE BETWEEN THE GRADING PLANS, GEOTECHNICAL REPORT, THESE NOTES AND PLANS, AND ACTUAL CONDITIONS, THE CONTRACTOR SHALL IMMEDIATELY BRING SUCH ITEMS TO THE ATTENTION OF THE LANDSCAPE ARCHITECT, GENERAL CONTRACTOR, AND OWNER.
5. ALL PLANT LOCATIONS ARE DIAGRAMMATIC. ACTUAL LOCATIONS SHALL BE VERIFIED WITH THE LANDSCAPE ARCHITECT OR DESIGNER PRIOR TO PLANTING. THE LANDSCAPE CONTRACTOR SHALL ENSURE THAT ALL REQUIREMENTS OF THE PERMITTING AUTHORITY ARE MET (I.E., MINIMUM PLANT QUANTITIES, PLANTING METHODS, TREE PROTECTION METHODS, ETC.).
   a. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR DETERMINING PLANT QUANTITIES; PLANT QUANTITIES SHOWN ON LEGENDS AND CALLOUTS ARE FOR GENERAL INFORMATION ONLY. IN THE EVENT OF A DISCREPANCY BETWEEN THE PLAN AND THE PLANT LEGEND, THE PLANT QUANTITY AS SHOWN ON THE PLAN (FOR INDIVIDUAL SYMBOLS) OR CALLOUT (FOR GROUNDCOVER PATTERNS) SHALL TAKE PRECEDENCE.
   b. **NO SUBSTITUTIONS OF PLANT MATERIALS SHALL BE ALLOWED WITHOUT THE WRITTEN PERMISSION OF THE LANDSCAPE ARCHITECT.** IF SOME OF THE PLANTS ARE NOT AVAILABLE, THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IN WRITING (VIA PROPER CHANNELS).
   c. THE CONTRACTOR SHALL, AT A MINIMUM, PROVIDE REPRESENTATIVE PHOTOS OF ALL PLANTS PROPOSED FOR THE PROJECT. THE CONTRACTOR SHALL ALLOW THE LANDSCAPE ARCHITECT AND THE OWNER/OWNER'S REPRESENTATIVE TO INSPECT, AND APPROVE OR REJECT, ALL PLANTS DELIVERED TO THE JOBSITE. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR SUBMITTALS.
6. THE CONTRACTOR SHALL MAINTAIN THE LANDSCAPE IN A HEALTHY CONDITION FOR 90 DAYS AFTER ACCEPTANCE BY THE OWNER. REFER TO SPECIFICATIONS FOR CONDITIONS OF ACCEPTANCE FOR THE START OF THE MAINTENANCE PERIOD, AND FOR FINAL ACCEPTANCE AT THE END OF THE MAINTENANCE PERIOD.
7. SEE SPECIFICATIONS AND DETAILS FOR FURTHER REQUIREMENTS.

ROOT BARRIERS

THE CONTRACTOR SHALL INSTALL ROOT BARRIERS NEAR ALL NEWLY-PLANTED TREES THAT ARE LOCATED WITHIN FIVE (5) FEET OF PAVING OR CURBS. ROOT BARRIERS SHALL BE "CENTURY" OR "DEEP-ROOT" 24" DEEP PANELS (OR EQUAL). BARRIERS SHALL BE LOCATED IMMEDIATELY ADJACENT TO HARDSCAPE. INSTALL PANELS PER MANUFACTURER'S RECOMMENDATIONS. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR USE ROOT BARRIERS OF A TYPE THAT COMPLETELY ENCIRCLE THE ROOTBALL.

MULCHES

AFTER ALL PLANTING IS COMPLETE, CONTRACTOR SHALL INSTALL 3" THICK LAYER OF 1-1/2" SHREDDED WOOD MULCH, NATURAL (UNDYED) IN ALL PLANTING AREAS (EXCEPT FOR TURF AND SEEDED AREAS). CONTRACTOR SHALL SUBMIT SAMPLES OF ALL MULCHES TO LANDSCAPE ARCHITECT AND OWNER FOR APPROVAL PRIOR TO CONSTRUCTION. ABSOLUTELY NO EXPOSED GROUND SHALL BE LEFT SHOWING ANYWHERE ON THE PROJECT AFTER MULCH HAS BEEN INSTALLED (SUBJECT TO THE CONDITIONS AND REQUIREMENTS OF THE "GENERAL GRADING AND PLANTING NOTES" AND SPECIFICATIONS).

IRRIGATION CONCEPT

1. AN AUTOMATIC IRRIGATION SYSTEM SHALL BE INSTALLED AND OPERATIONAL BY THE TIME OF FINAL INSPECTION. THE ENTIRE IRRIGATION SYSTEM SHALL BE INSTALLED BY A LICENSED AND QUALIFIED IRRIGATION CONTRACTOR.
2. THE IRRIGATION SYSTEM WILL OPERATE ON THE LOWEST QUALITY WATER AVAILABLE, AND THE SYSTEM WILL HAVE APPROPRIATE BACKFLOW PREVENTION DEVICES INSTALLED TO PREVENT CONTAMINATION OF ANY POTABLE SOURCE, IF APPLICABLE.
3. ALL NON-TURF PLANTED AREAS SHALL BE DRIP IRRIGATED. SODDED AND SEEDED AREAS SHALL BE IRRIGATED WITH SPRAY OR ROTOR HEADS AT 100% HEAD-TO-HEAD COVERAGE.
4. ALL PLANTS SHARING SIMILAR HYDROZONE CHARACTERISTICS SHALL BE PLACED ON A VALVE DEDICATED TO PROVIDE THE NECESSARY WATER REQUIREMENTS SPECIFIC TO THAT HYDROZONE.
5. THE IRRIGATION SYSTEM SHALL BE DESIGNED AND INSTALLED, TO THE MAXIMUM EXTENT POSSIBLE, TO CONSERVE WATER BY USING THE FOLLOWING DEVICES AND SYSTEMS: MATCHED PRECIPITATION RATE TECHNOLOGY ON ROTOR AND SPRAY HEADS (WHEREVER POSSIBLE), RAIN SENSORS, AND MULTI-PROGRAM COMPUTERIZED IRRIGATION CONTROLLERS FEATURING SENSORY INPUT CAPABILITIES.

NOTE: PROPERTY OWNER IS RESPONSIBLE FOR MAINTENANCE OF ALL CODE REQUIRED LANDSCAPING AFTER THE 90 DAYS ESTABLISHMENT PERIOD.

ALL PARKING LOT PLANTING AREAS RECEIVING TREES SHALL HAVE UNCOMPACTED COARSE LOAM THAT IS A MINIMUM OF 36 INCHES DEEP. ALL COMPACTED SOIL, CONTAMINATED SOIL OR ROADBASE SHALL BE REMOVED. UNDER NO CIRCUMSTANCES SHALL MEDIAN SOILS WITH GREATER THAN FIVE PERCENT OR LESS THAN 0.5 PERCENT ORGANIC MATTER BE ACCEPTED. SOILS IN PLANTING AREAS MUST BE APPRECIABLY FREE OF GRAVEL, STONES, RUBBLE OR TRASH.

Digitally signed by Kenneth D Bates
Reason: LA#6666710,
State of Florida
Date: 2023.09.28 22:45:01 -06'00'

REGISTERED LANDSCAPE ARCHITECT LA#6666710 STATE OF FLORIDA

LANDSCAPE DRAWING INDEX

#	SHEET NAME	SCALE
LP-0	OVERALL LANDSCAPE PLAN	50 SCALE
LP-1	LANDSCAPE PLAN	20 SCALE
LP-2	LANDSCAPE PLAN	20 SCALE
LP-3	PLANTING SPECIFICATIONS & DETAILS	AS SHOWN

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB	ISSUE DATE:	3/31/23
CHECKED BY:	AH	APPROVED BY:	LB	JOB NO.:	22-548

NO.	BY	DATE	REVISION DESCRIPTION

3 WORKING DAYS BEFORE YOU DIG
CALL SUNSHINE STATE ONE CALL OF FLORIDA
1-800-432-4770
FOR THE LOCATION OF UNDERGROUND UTILITIES

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

EVERGREEN DESIGN GROUP
(800) 680-6630
2355 Glades Road, Suite 324A
Boca Raton, FL 33431
www.EvergreenDesignGroup.com
LA #6666710

BEACON ENGINEERING
CIVIL ENGINEERS
LAND DEVELOPMENT ENGINEERS
8345 GUNN HIGHWAY
TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME:
OVERALL LANDSCAPE PLAN

SHEET NUMBER:
LP-0

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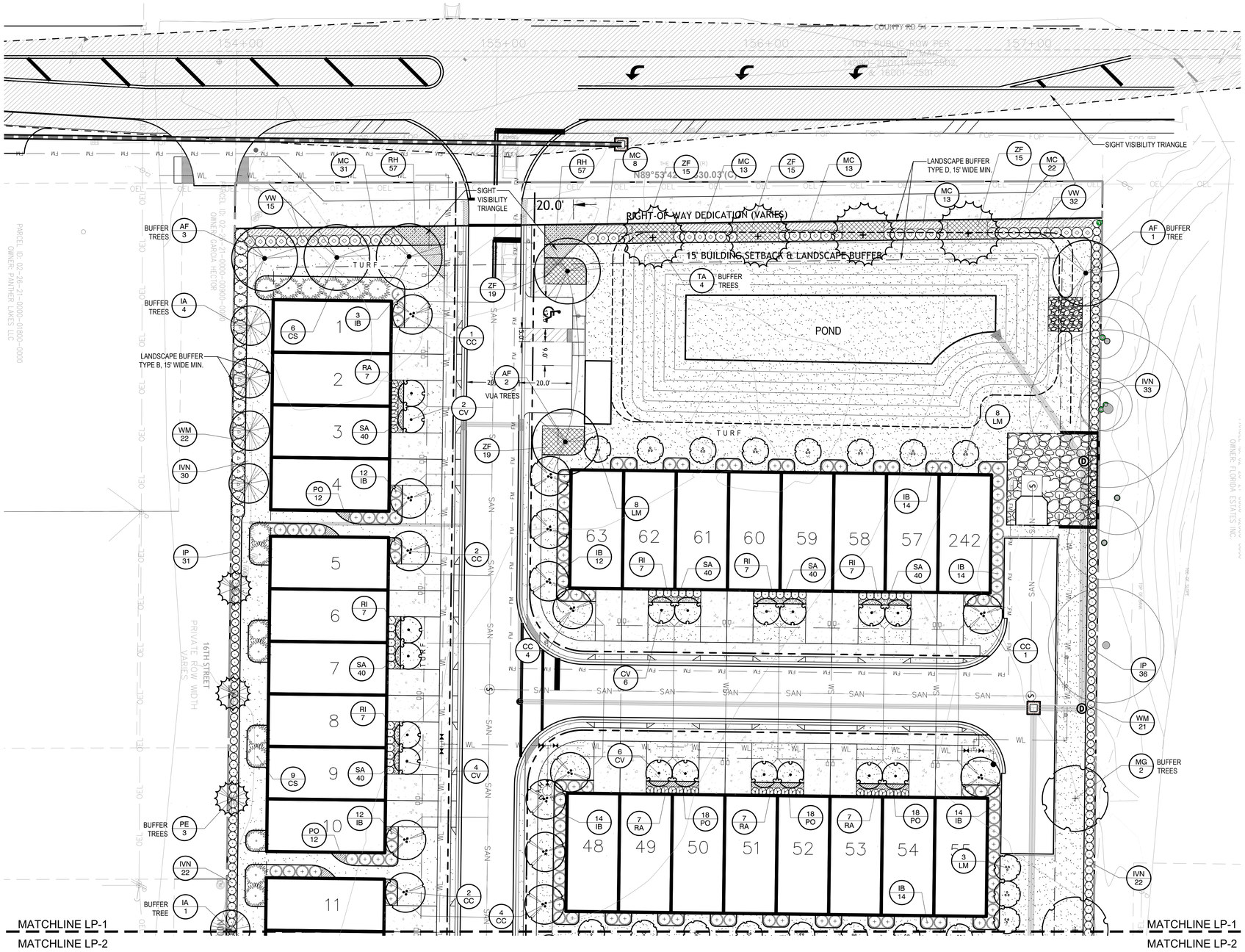

SEE SHEET LP-0 FOR LANDSCAPE SCHEDULE

Digitally signed by Kenneth D Bates
Reason: LA#6666710, State of Florida
Date: 2023.09.28 22:45:19 -06'00'

REGISTERED LANDSCAPE ARCHITECT KENNETH DALE BATES LA#6666710 STATE OF FLORIDA

ISSUED FOR PERMITTING

DESIGNED BY:	LB	DRAWN BY:	CB	ISSUE DATE:	3/31/23
CHECKED BY:	AH	APPROVED BY:	LB	JOB NO.:	22-548

NO.	BY	DATE	REVISION DESCRIPTION

3 WORKING DAYS BEFORE YOU DIG CALL SUNSHINE STATE ONE CALL OF FLORIDA 1-800-432-4770 FOR THE LOCATION OF UNDERGROUND FACILITIES

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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TAMPA, FL 33626

CALUMET TOWNS

CALUMET ROAD
ZEPHYRHILLS,
PASCO COUNTY,
FLORIDA 33542

SHEET NAME: LANDSCAPE PLAN

SHEET NUMBER: LP-1

STAFF REPORT

To:

From:

RE: **SPR-0072-23 - Professional Hair Lab - Site plan review for Professional Hair Lab additional building in the existing Margolin Industrial Park. The proposed building will be built on the existing building pad that was constructed when the original building was constructed. The original site has all utilities run to the proposed or future building pad and all stormwater infrastructure was constructed at that time.**

Date: **October 17, 2023**

I. BACKGROUND & INFORMATION

A. History | Application Summary
B. Site Information
    1. Applicant/Owner:
    2. File #:
    3. Historic Designation:
    4. Acreage:
    5. Existing Land Use:
    6. Current FLU:
    7. Proposed FLU:
    8. Existing Zoning:
    9. Current Zoning:

II. DATA & ANALYSIS

A. Character Analysis
B. Compatibility Analysis
C. Natural & Historic Resources Analysis
D. Public Service Analysis & Impact
E. Comprehensive Plan Consistency

III. RECOMMENDATION

A. Staff / Site Plan Review Committee
B. Historic Preservation Board
C. Planning Commission
D. Board of Adjustment

City of Zephyrhills
Planning Department
5335 8th Street | Zephyrhills, FL 33542
www.ci.zephyrhills.fl.us
813-780-0006

SITE PLAN REVIEW APPLICATION

Construction activity upon the land is an element in the process of community development. Such activity impacts utilities, facilities, roadways and adjacent land and their use. Therefore, in the interest of the public, health, safety, and welfare, it is necessary that these activities be carried out in a proper and orderly fashion in accordance with City standards and regulations.

This process is intended to ensure that requests meet the requirements of the City of Zephyrhills Land Development Code and site development criteria as well as those of other local, regional, and state agencies. This process is not for approval of building construction or permits as required by external agencies.

A comprehensive checklist of all required documents, plans and supporting information is contained within this application.

PLEASE NOTE: Other processes, permits, authorizations and/or fees may be required prior to construction of requested improvements including but not limited to the following:

(1) Community Redevelopment Area (CRA) Review and approval (if applicable) – *please contact the CRA Director at 813-780-0000 for more information.*
(2) Certificate of Appropriateness for properties located within a designated historic district – *please contact the Planning Department at 813-780-0006 for more information.*
(3) Impact Fees (transportation, water, sewer, recreation, school, police, fire, etc.) – p*lease contact the Building Department at 813-780-0022 for more information;*
(4) Building permits and review fees;
(5) Right-of-way utilization permits from applicable agencies;
(6) Southwest Florida Water Management District (SWFWMD) permits and authorizations;
(7) Utility permits and/or fees;
(8) Federal Aviation Administration (FAA) authorizations;
(9) Business tax receipts (BTRs);
(10) State permits and/or licenses;
(11) Development services agreements;
(12) Florida Department of Environmental Protection (FDEP) permits;
(13) FEMA authorizations.

Procedure

Pre-application Meetings: Pre-application meetings are required prior to submitting this application. To set up a pre-application meeting, please call the Planning Department at 813-780-0006. Applications will not be accepted without a meeting. Parties recommended to be in attendance are the property owner/petitioner (and/or authorized representative), developer, engineer, architect and/or landscape architect.

Application Submission: The deadline to submit applications is the last business day of the month at 4:00 PM. Incomplete applications will not be accepted unless written permission is received from the Planning Director or City Manager. Applications received after the filing deadline will be held until the next Site Plan Review cycle.

Site Plan Review Committee Meeting: Complete applications filed at or before the deadline will be scheduled for review by the Site Plan Review Committee (SPRC). The SPRC meets regularly on the third (3rd) Tuesday of the month at 9:30 AM. An authorized representative must be in attendance for this meeting.

Application Checklist

All required materials listed below shall be submitted in unison as one complete package. The City of Zephyrhills reserves the right to refuse incomplete applications and will not accept partial applications to meet filing deadline requests unless written approval is received from the Planning Director or City Manager prior to submittal.

SUPPORTIVE MATERIALS

One (1) hard copy and (1) electronic copy, provided on a CD/DVD or flashdrive, or via a Dropbox or similar link, of the following information is required:

- [X] **Application Form, Permission to reproduce and applicable Agent Authorizations**
- [ ] **Application Fee**
  Please see the city's current fee schedule for more information.
- [X] **Proof of Ownership**
- [X] **Boundary Survey and Legal Description**
- [ ] **Federal Aviation Administration (FAA) Notice and Applicable Authorizations:**
  Proposed structures within 10 nautical miles of the airport shall utilize the FAA Notice Criteria Tool (http://oeaaa.faa.gov) to determine if the FAA will require the filing of Form 7460-1, Notice of Proposed Construction or Alteration and if subsequent Aeronautical Study by the FAA is required. Final determination letters from the FAA must be submitted to the City of Zephyrhills prior to the issuance of Building Permits (Ord. 1358-18). **Application Submitted**

  **PLEASE NOTE: this process is administered through the FAA, not the City of Zephyrhills, and can take up to 90 days.*
- [ ] **Environmental Report** **N/A**
  Include an inventory of federal and state listed plant and animal species, wetlands & flood zones on the subject property.
- [ ] **Historic and Archaeological Resources Impact Report**
  Include an inventory of properties that may be impacted by the proposed project and a map of such properties, *if applicable.* **N/A**
- [X] **Drainage Review Study**
- [ ] **Traffic Study –** See section 7.03.00 of the Land Development Code. **N/A**
- [ ] **Residential Impact Statement,** *if necessary.* **N/A**

SITE DEVELOPMENT PLAN REQUIREMENTS

A minimum of seven (7) hard copies (24" X 36") and one (1) electronic copy, provided on a CD/DVD or flashdrive, or via dropbox or similar link, of the following information is required:

- [X] **Site Development Plan,** consistent with Part 6.02.00 of the Land Development Code
  - [X] Date of drawing, scale and north arrow;
  - [X] Location of property, property dimensions, abutting rights-of-way, easements, setbacks, off-street parking, ingress/egress access points, proposed landscaping, existing or proposed structures, floor area ratios, and pervious/impervious ratios;
  - [X] For all properties immediately adjacent to and/or across an alley or street, show the location of building footprints, access points, and other significant site features; and
  - [X] Grading plan (pre and post elevations).
- [X] **Stormwater Management Plan**
- [X] **Utility Plan –** Water, sewer, gas, reclaimed water, existing septic & wells, over/underground power, telephone etc.
- [X] **Landscape, buffering and Irrigation Plan**
  - [X] Requirements of LDC Section 7.06.00; and
  - [X] Tree survey, removal and/or mitigation plan along with a tree removal permit is required. The following information shall be provided in a tabulation:
    (1) The total number and inches of tree existing on the subject property and their condition (e.g., excellent, good, poor, hazardous, dead, invasive.);
    (2) Total number and inched proposed to be removed;
    (3) Required and proposed total number of trees and inches to be replaced; and
    (4) Types of trees removed and replaced.

  **PLEASE NOTE: dependent on the total number of trees per acre and percentage to be removed, mitigation may be required and/or monetary compensation to the Tree Mitigation Fund.*
- [X] **Elevations**
- [ ] **Signage Plan and Details,** ***if applicable*** **N/A**

City of Zephyrhills
Planning Department
5335 8th Street | Zephyrhills, FL 33542
www.ci.zephyrhills.fl.us
813-780-0006

OFFICE USE ONLY

File No. _____

Submittal Date _____

Project Name _____

SITE PLAN REVIEW APPLICATION FORM

PROJECT INFORMATION

PROJECT NAME: Hair Lab Zephyrhills

TYPE OF REQUEST: ☒ New Site Plan ☐ Amendment/Resubmittal

SUBJECT PROPERTY ADDRESS: 3795 Correia Drive , Zephyrhills, Florida 33542

PARCEL ID NUMBER(S): 19-26-27-0010-00000-0131

ACREAGE/SQ. FOOTAGE: Property 87,556 / 2.01 AC Project 22,959 / .53 AC

ZONING CLASSIFICATION L1

CURRENT LAND USE: L1

FUTURE LAND USE CLASSIFICATION IND

DISTRICT: ☐ FBC – Special ☐ CRA ☐ Historic District

CONTACT INFORMATION

OWNER/APPLICANT: Margolin & Sons LLC

FIRM:

ADDRESS: 31331 Makinaw Lane, Wesley Chapel, Florida 33545

PHONE NUMBER(S): EMAIL: prohairlabs@msn.com

AUTHORIZED AGENT: Steve Billiter

FIRM: Ryman Construction of Florida, Inc.

ADDRESS: 36413 SR 54, Zephyrhills, FL 33541

PHONE NUMBER(S): 813-714-3118 EMAIL: Steveb@Rymanconstruction.com

ENGINEER: Scott K. Stannard, P.E.

FIRM: Goodwyn Mills Cawood

ADDRESS: 21764 State Road 54, Lutz Florida 33849

PHONE NUMBER(S): 813-885-2032 EMAIL: scott.stannard@gmcnetwork.com

ARCHITECT:

FIRM:

ADDRESS:

PHONE NUMBER(S) EMAIL:

LANDSCAPE ARCHITECT Tim Larson

FIRM: Goodwyn Mills Cawood

ADDRESS: 21764 State Road 54, Lutz Florida 33849

PHONE NUMBER(S): 813-885-2032 EMAIL: tim.larson@gmcnetwork.com

---

Applicant, as owner and/or representative, of the above describe land agrees to pay all related costs associated with this submittal including but not limited to application fees, consultant review fees, advertisement fees, historic review fees, and tree removal/mitigation fees.

The Applicant, as owner and/or representative of the above described land shall coordinate with City Departments prior to submittal to identify future required fees which may include: impact fees, water and sewer connection fees, deposits, and drainage review and traffic review studies.

Submitted by (firm): Ryman Construction of Florida, Inc. **Date:** 9/29/2023

Signature: Steve Billiter

Printed Name: Steve Billiter

STORMWATER NARRATIVE
FOR
PROFESSIONAL HAIR LAB
Zephyrhills, FL
Building #2

LOCATED AT:

3795 Correia Drive
Zephyrhills, Pasco County, FL
Parcel ID: 19-26-27-0010-00000-0131

Prepared for:
Ryman Construction
and
Margolin & Sons LLC

Prepared By:

GMC
Architecture and Engineering

21764 State Road 54
Lutz, FL 33549
(813) 885-232
FL COA: 27575

Scott Stannard
Digitally signed by Scott Stannard
Date: 2023.09.29 11:08:46 -04'00'

Date: September 28, 2023

Scott K. Stannard, P.E.
FL Professional Engineer No. 50565
Date: September 28, 2023

PROJECT NARRATIVE FOR:
Professional Hair Lab
Margolin Industrial Park
Zephyrhills, Florida

OWNER/APPLICANT:
Margolin & Sons, LLC
31331 Makinaw Ln
Wesley Chapel, FL 33545

Ryman Construction of Florida Inc.
36413 SR 54
Zephyrhills, FL 33541

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SITE INFORMATION	PAGE 4
WETLANDS AND OTHER SURFACE WATERS	PAGE 4
FLOOD PLAIN	PAGE 4
EXISTING CONDITION	PAGE 4
PROPOSED CONDITION	PAGE 4
IMPERVIOUS AREAS AND CURVE NUMBER COMPARISON	PAGE 5
SITE SOIL INFORMATION	PAGE 6

Please see attached Dewberry Drainage Calculations – Margolin Industrial- City of Zephyrhills, FL for additional information.

SITE INFORMATION:

The proposed commercial project plans to develop an additional, or second building with associated parking and landscape islands within the existing parcel. The existing parcel has an approximate area of 2.01 acres. The proposed building is located in the Margolin Industrial Park near the cul-de-sac on Correia Drive in Zephyrhills, FL. The project is within the existing commercial industrial park. The Margolin Industrial site is located at northwest corner of Correia Drive and Trump place in Zephyrhills, Florida. The subject property is located in Pasco County Florida, Section 29, Township 23 South, Range 17 East. The existing ERP permit number is 43030633.003. The intent of this report is to provide documentation and supporting calculations related to the originally designed stormwater facility as permitted. The calculations demonstrate that the relationship between the originally permitted impervious and the proposed second building, parking and sidewalks are in compliance with the ERP.

All runoff from the proposed additional building along with proposed parking and sidewalks will be collected by roof drains and existing storm sewer inlets and conveyed to the existing stormwater pond where treatment and attenuation is provided as provided in the above referenced ERP.

WETLANDS AND OTHER SURFACE WATERS:

There are no wetlands or other surface waters located within the project area.

FLOOD PLAIN:

According to the most current Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map 12101C0459F dated Stember 26, 2014, the project area lies within Flood Zone X (area of minimal flood hazard).

EXISTING CONDITION:

The current land-use condition for the second building area is graded pad. The proposed building 2 has an approximate area of disturbance of 0.53 acres and it is part of the 2.01 acres project known as Margolin Industrial with ERP No. 430030633.003 permitted July 26, 2018.

Based on permit information associated with project Margolin Industrial (ERP #43030633.003), the existing impervious area on Margolin Industrial is 0.65 acres. The remaining allowable impervious area for building 2 is 0.47 acres. The permitted weighted CN value for the basin is 89.50, and the calculated discharge rate from the pond is 3.48 cfs during the 25-year, 24-hour storm event.

PROPOSED CONDITION:

The proposed impervious area for building 2 with associated parking and sidewalks has an approximated area of 0.29 acres. The originally allotted impervious area is 0.47 ac and the proposed impervious area is 0.29 ac which is 0.18 ac less than the allotted impervious area.

All runoff from the proposed project area will be collected by storm inlets and the roof drain system and will be conveyed to the existing Pond to receive treatment and storm attenuation. As described in the Existing Condition section, the existing pond will continue to provide quality treatment and storm attenuation to site contributing basin areas.

IMPERVIOUS AREAS AND CURVE NUMBER COMPARISON

Permitted Areas and CN Calculations

Description	Area Permitted	Area Permitted (% of Total)	CN	CN x Area	
Building, Parking & Sidewalk	0.95 ac	53%	98	93.10	
Pond	0.20 ac	11%	100	20.00	
Pervious	0.65 ac	36%	74	48.10	
Total	1.80 ac	100%		161.20	Weighted CN = 89.6

Existing Area and CN Calculations

Description	Area Existing	Areas of Permitted (% of Total)	CN	CN x Area	
Building, Parking & Sidewalk	0.57 ac	32%	98	55.86	
Remaining Building Parking & Sidewalk	0.95 – 0.57 = 0.38 ac	21%	98	37.24	
Pond	0.20 ac	11%	100	20.00	
Pervious	0.65 ac	36%	74	48.10	
Total	1.42ac (1.80)	100%		161.20	Weighted CN = 89.6

Weighted at Buildout

Proposed Area and CN Calculations

Description	Area Proposed	Areas (% of Total)	CN	CN x Area	
Building, Parking & Sidewalk	0.57 ac	32%	98	55.86	
Proposed Building Parking & Sidewalk	0.33 ac	18%	98	32.34	
Pond	0.20 ac	11%	100	20.00	
Pervious	0.70 ac	39%	74	51.80	
Total	1.80	100%		160.00	Weighted CN = 88.9

Proposed Weighted at Buildout Reduction

As the tables shows, the proposed development will not exceed the allowable impervious area allocated for the Basin. We expect the previously permitted discharge rate of 3.48 cfs from the pond during the 25-year, 24-hour storm event to remain the same after construction is completed.

SITE SOIL INFORMATION:

The site soils were obtained from the NRCS Web Soil Survey and are classified as follows:
The site is located within is an open basin. The existing project area elevations range from 76 ft on the north portion of the site to 72 ft NAVD 1988 on the southwest. In general, the entire site slopes toward the swale to the north. Based on the USDA Soil Conservation Service Soils Survey of the City of Zephyrhills, Florida the existing onsite soils are as follows.

Soil # 18 Electra Variant Hydrologic Soil Group C

Please see attached Dewberry Drainage Calculations – Margolin Industrial- City of Zephyrhills, FL for additional information.

PACKAGING FACILITY FOR
PROFESSIONAL HAIR LAB
CORNER OF TRUMP PLACE AND CORREIA DR.
ZEPHYRHILLS, FLORIDA

BUILDING DATA:

CONDITIONED OFFICE SPACE 1408 /150 = 10 PEOPLE

HAZARDOUS CONDITIONED WAREHOUSE SPACE 9600 / 500 = 19 PEOPLE

HAZARDOUS CONDITION MEZZANINE STORAGE SPACE 1408 / 500 = 3 PEOPLE

TOTAL AREA 12416 SQ. FT.

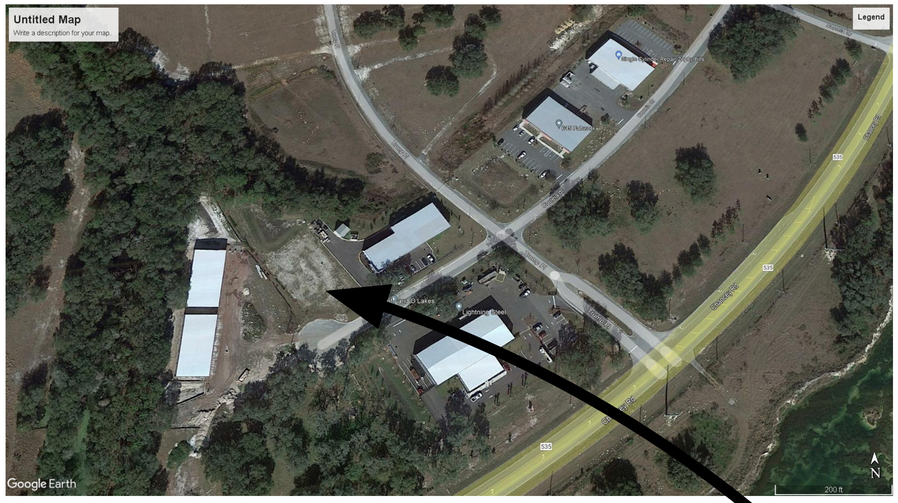
TOTAL OCCUPANCY 32 PEOPLE

OCCUPANCY CLASSIFICATION: MIXED BUSINESS OFFICE GROUP B
HIGH HAZARD GROUP H-3

CONSTRUCTION TYPE : VB

FIRE PROTECTION: SPINKLED BUILDING
OWNER TO PROVIDE MSD SHEETS FOR FIRE SPRINKLER CO

PLUMBING FIXTURES EXCEED REQUIREMENT PER TABLE
403.1 FLORIDA BUILDING CODE 2020 7TH EDITION PLUMBING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Lake Bonnet
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Lake Tamarind
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Lake Zephyrhills
Lake Zephyrhills Park
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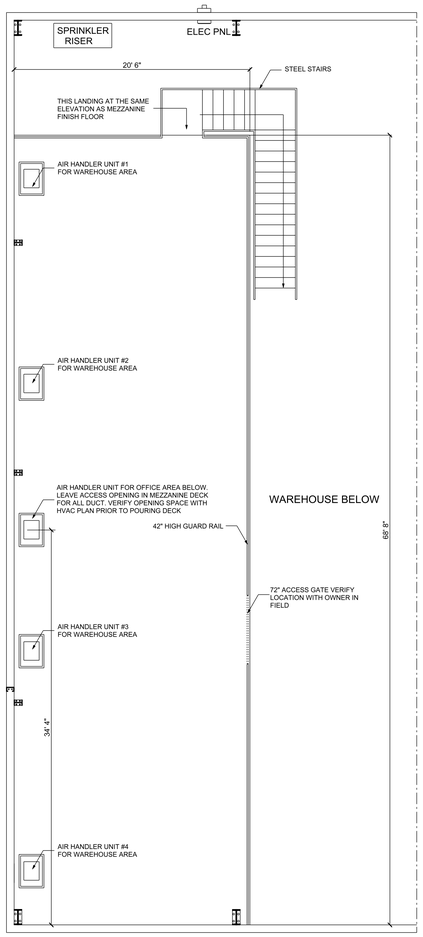
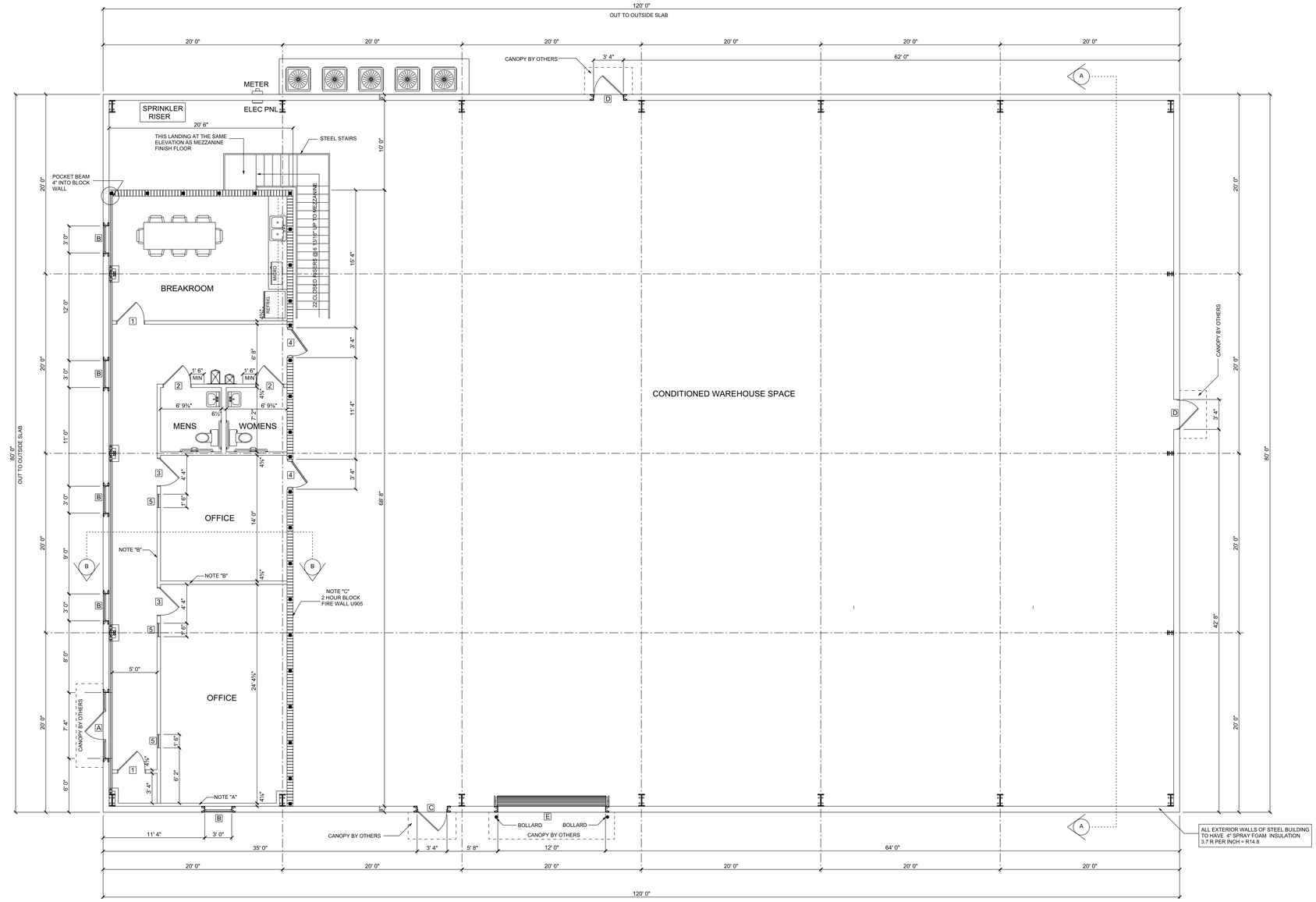


MAZZANINE FLOOR PLAN 3/16" = 1' 0"



FLOOR PLAN 3/16" = 1' 0"

NOTE "A"
3 5/8" 20 GA STEEL STUD WALL WITH 5/8" GYPSUM ON INTERIOR FACE

NOTE "B"
3 5/8" 20 GA STEEL STUD WALL WITH 5/8" GYPSUM ON EACH SIDE

NOTE "C"
2 HOUR U905 8" BLOCK WALL FIRE WALLS WITH MINIMUM 2500 PSI FILLED CELLS @ 48" OC WITH RODS FROM THE FOOTINGS TO TOP OF WALLS. WALL TO BE STRUCK JOINT PAINTED BLOCK AT WAREHOUSE SIDE. 3/4" STEEL HATCH CHANNEL @ 16" OC AND 5/8" GYPSUM BOARD ON INTERIOR SIDE.

EXTERIOR DOOR AND WINDOW SCHEDULE

CALL OUT	DESCRIPTION	FRAME	GLASS	HARDWARE
A	3'0"X7'0" STORE FRONT DOORS WITH 2'0"X7'0" SIDELIGHT EACH SIDE WIND PRESSURE +34.40 - 42.10	BRONZE ALUMINUM	TINTED INSULATED U-VAL = .45 MIN SHGC = .35 MIN	KEY CYLINER EXTERIOR WITH THUMB TURN INTERIOR PUSH BAR, CLOSURE , ADA SILL
B	48"X60" TEMP GLASS FIXED GLASS WIND PRESSURE +36.80 - 46.80	BRONZE ALUMINUM	TINTED INSULATED U-VAL = .45 MIN SHGC = .35 MIN	N / A
C	3'0"X7'0" STEEL DOOR WITH 1/2 LITE WIND PRESSURE +36.80 - 46.80	METAL	TINTED INSULATED U-VAL = .45 MIN SHGC = .35 MIN	4 - 4.5 HINGES - ADA LEVEL KEY LOCK DOOR CLOSURE - ADA SILL
D	3'0"X7'0" STEEL DOOR WIND PRESSURE +36.80 - 46.80	METAL	N / A	4 - 4.5 HINGES - ADA LEVEL KEY LOCK DOOR CLOSURE - ADA SILL
E	12'0"X14'0" OH DOOR WIND PRESSURE +30.60 - 36.80	N / A	N / A	**N / A**

INTERIOR DOOR AND WINDOW SCHEDULE

CALL OUT	DESCRIPTION	FRAME	HARDWARE
1	3'0"X7'0" X1 3/4" SOLID CORE 6 PANEL HARDBOARD DOOR	METAL	3- 4.5" HINGES ADA LEVER PASSAGE LOCK FINISH TO BE CHOSEN BY OWNER
2	3'0"X7'0" X1 3/4" SOLID CORE 6 PANEL HARDBOARD DOOR	METAL	3- 4.5" HINGES ADA LEVER PRIVACY LOCK FINISH TO BE CHOSEN BY OWNER
3	3'0"X7'0" X1 3/4" SOLID CORE 6 PANEL HARDBOARD DOOR	METAL	3- 4.5" HINGES ADA LEVER KEY LOCK FINISH TO BE CHOSEN BY OWNER
4	3'0"X7'0" X1 3/4" 120 MINUTE FIRE RATED STEEL DOOR WITH 24"X30" FIRE RATED WIRE GLASS	METAL	3- 4.5" BB HINGES ADA LEVER KEY LOCK DOOR CLOSURE ADA SILL FINISH TO BE CHOSEN BY OWNER
5	18"X84" TEMP FIXED GLASS INSTALLED 12" A.F.F.	METAL	N / A

ARKAY ENGINEERING INC.
STRUCTURAL ENGINEERS

RICHARD L. KIDDEY P.E.
FLORIDA LICENSE NUMBER 37296

I HERBY CERTIFY THAT THESE PLANS AND SPECIFICATIONS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION ARE IN COMPLIANCE WITH CHAPTER 16, SECTION 1609 OF THE FLORIDA BUILDING CODE 2020 7 TH EDITION AND ASCE 7-16 FOR 139 MPH WIND ZONE RISK CATEGORY II

ARKAY ENGINEERING INC.
STRUCTURAL ENGINEERS
1956 E. Edgewood Drive, Lakeland FL 33803
Phone 863-688-6557 Fax 863-688-6551
State of Florida Certificate of Authorization # EB9241
Richard L Kiddey P.E. - Florida License # 37296

REVISION DATE:
07-22-23
08-06-23

DRAWN BY: RW

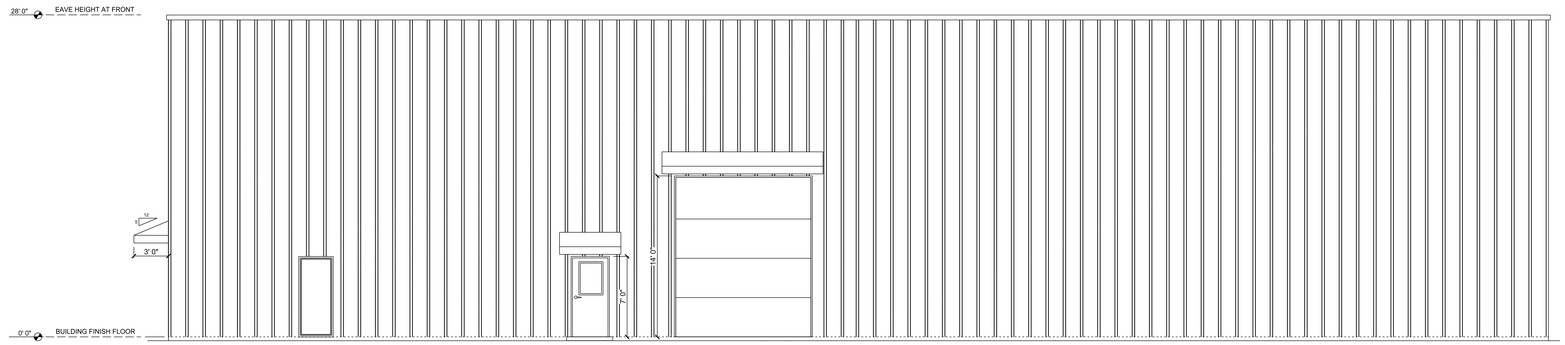
DATE: 07-06-22

JOB NO. R22-283

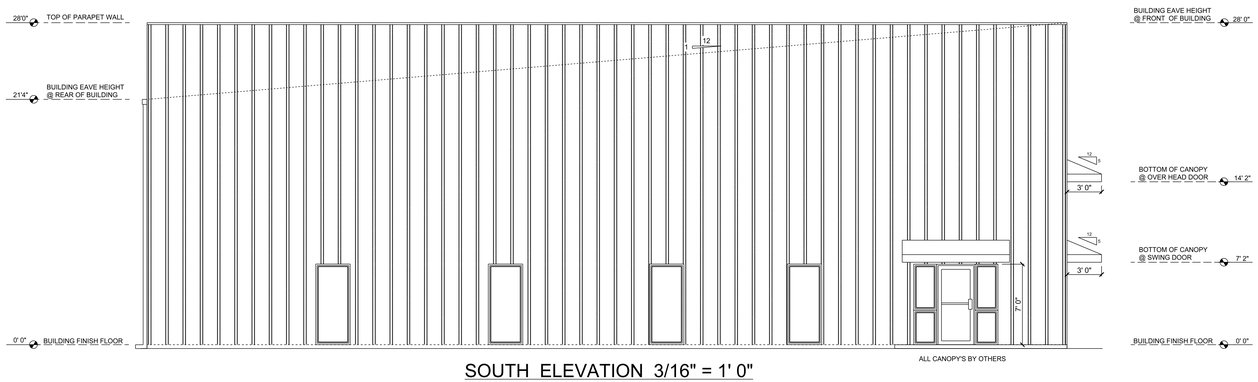
WAREHOUSE FACILITY FOR
PROFESSIONAL HAIR LAB
CORNER OF TRUMP PLACE AND CORREIA DR.
ZEPHYRHILLS, FLORIDA

B 1

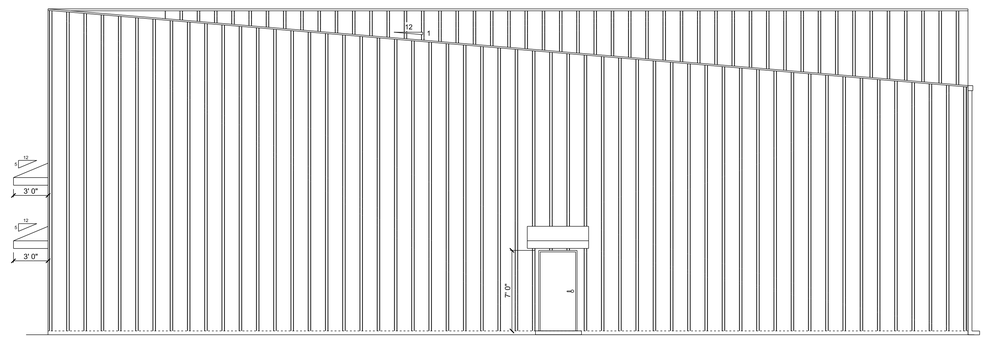
ARKAY #



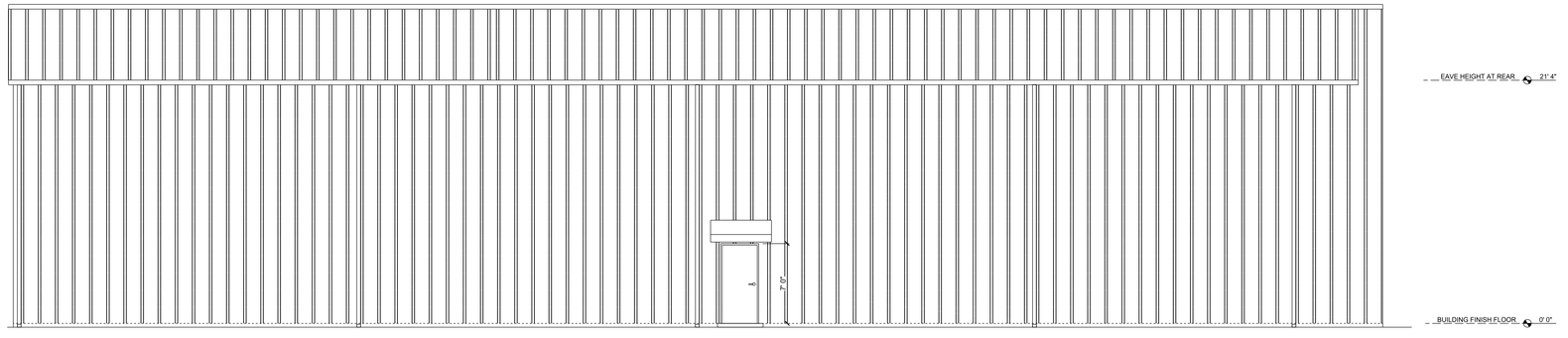
EAST ELEVATION 3/16" = 1' 0"



SOUTH ELEVATION 3/16" = 1' 0"



NORTH ELEVATION 3/16" = 1' 0"



WEST ELEVATION 3/16" = 1' 0"

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STRUCTURAL ENGINEERS

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08-06-23

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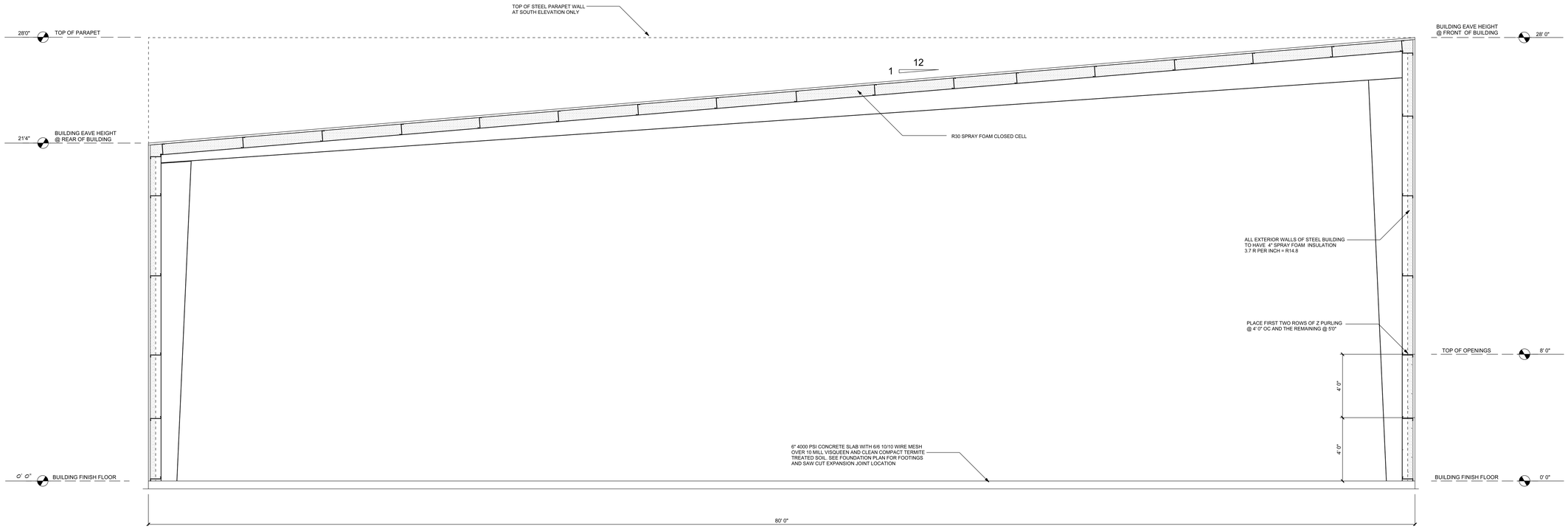
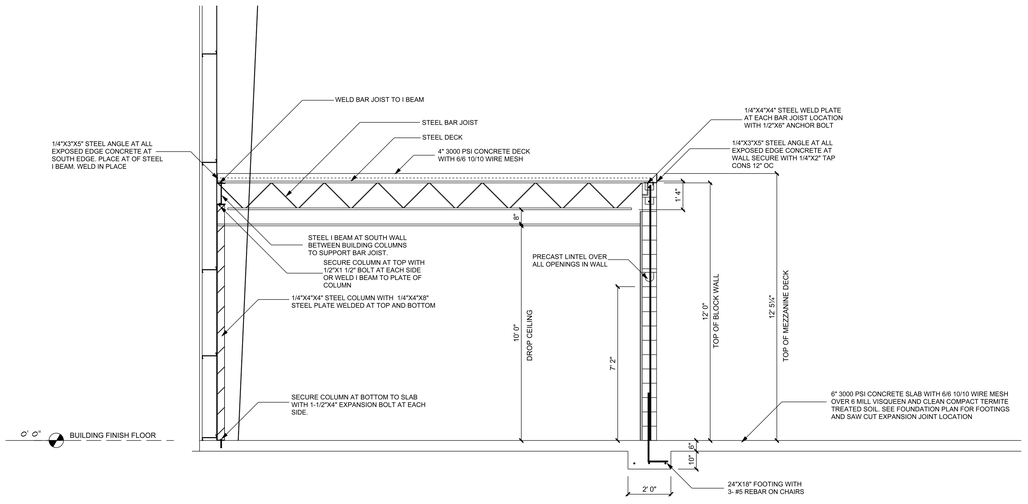
B 2

ARKAY #



CUT BUILDING SECTION (A)
NOT TO SCALE



CUT BUILDING SECTION (B)
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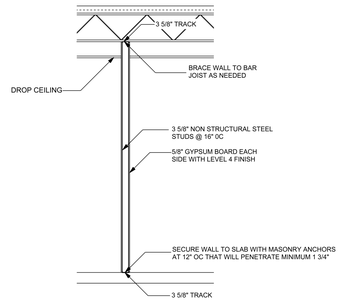
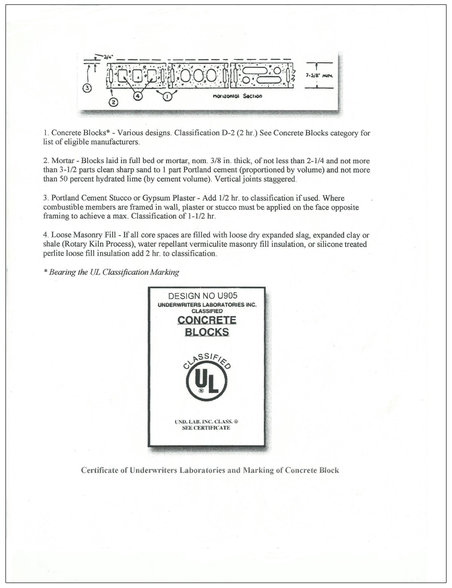


INTERIOR WALL SECTION DETAIL
NOT TO SCALE



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WAREHOUSE FACILITY FOR
PROFESSIONAL HAIR LAB
CORNER OF TRUMP PLACE AND CORREIA DR.
ZEPHYRHILLS, FLORIDA

B 3

ARKAY #

CONSTRUCTION PLANS FOR
HAIR LAB ZEPHYRHILLS

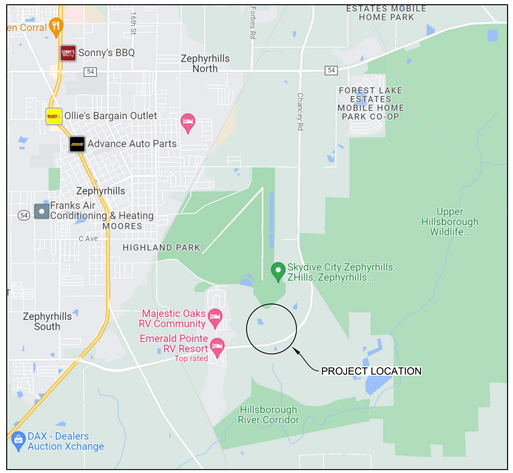
3795 CORREIA DRIVE, ZEPHYRHILLS
PASCO COUNTY, FLORIDA
PROPERTY ID NO.
19-26-22-0010-00000-0131

SITE DATA

PROPERTY ADDRESS	3795 CORREIA DRIVE, ZEPHYRHILLS, FL 33542
JURISDICTION	CITY OF ZEPHYRHILLS
PID NO.	19-26-22-0010-00000-0131
PROPERTY AREA	87,556 SF/2.01 AC
PROJECT AREA	22,959 SF/0.53 AC
UPLAND AREA	22,959 SF/0.53 AC
WETLAND AREA	NONE
EXISTING USE	VACANT
PROPOSED USE	LIGHT INDUSTRIAL
PROPOSED BUILDING AREA	12,418 SF
ALLOWABLE BUILDING HEIGHT	HEIGHT
PROPOSED BUILDING HEIGHT	28'
ALLOWABLE F.A.R.	50% FULL LOT BUILD OUT
PROPOSED F.A.R.	25.6% FULL LOT BUILD OUT
ZONING	LI (PART 6.10.01)
FUTURE LANDUSE	INDUSTRIAL
ADJACENT ZONING	
NORTH	ZONING
SOUTH	ZONING
EAST	ZONING
WEST	ZONING
ALLOWABLE SETBACK	TABLE 7.01.01 (NOTE 20)
FRONT	20'
SIDE	10'
REAR	10'
PROPOSED SETBACK	TABLE 7.01.01 (NOTE 20)
FRONT	20'
SIDE	10'
REAR	>10'
REQUIRED BUFFERS	7.06.04.01 & TABLE 7.01.01
NORTH	N/A (INTERNAL)
SOUTH	TYPE D
EAST	N/A (INTERNAL)
WEST	TYPE D (10' EXISTING)
PARKING REQUIREMENTS	7.03.04.03
OFFICE	1 SP / 200 SF
WAREHOUSE/INDUSTRIAL	1 SP / 2 EMPLOYEE
PARKING PROVIDED	
OFFICE SPACE	1408/200 = 7 SPACES
WAREHOUSE/INDUSTRIAL	20 EMP/2 = 10 SPACES
TOTAL PROVIDED	17 SPACES (INCLUDING 1 H/C)
BIKE SPACES PROVIDED	2 SPACES

SUBMITTALS & REVISIONS

AGENCY	DATE	NOTE
CITY OF ZEPHYRHILLS	9-28-23	INITIAL SUBMITTAL



19/26/22
VICINITY MAP
N.T.S

SHEET INDEX

C-0.0	COVER
C-1.0	GENERAL NOTES
C-2.0	SURVEY
C-3.0	DEMO & EROSION CONTROL
C-3.1	EROSION CONTROL NOTES & DETAILS
C-4.0	SITE
C-5.0	SITE DETAILS
C-6.0	GRADING
C-7.0	UTILITIES
C-8.0	UTILITY DETAILS
C-8.1	UTILITY DETAILS
L-1.0	LANDSCAPE PLAN
L-2.0	LANDSCAPE DETAILS

UTILITY/GOVERNMENTAL CONTACTS:

JURISDICTIONAL PLANNING & ZONING
CITY OF ZEPHYRHILLS
TODD VANDE BERG, DIRECTOR OF PLANNING
5335 8TH STREET
ZEPHYRHILLS, FL 33542
PH: (813) 780-0006

JURISDICTIONAL FIRE RESCUE
CITY OF ZEPHYRHILLS
DANIEL SPILLMAN
FIRE STATION NO. 1
6907 DAIRY ROAD
ZEPHYRHILLS, FL 33542
PHONE: (813) 780-0041

UTILITY WATER & WASTEWATER
CITY OF ZEPHYRHILLS
JOHN BOSTIC
39825 ALSTON AVENUE
ZEPHYRHILLS, FL 33542
PHONE: (813) 780-0029

JURISDICTIONAL DEVELOPMENT REVIEW
CITY OF ZEPHYRHILLS
RODNEY CORRIVEAU SENIOR PLANNER
5335 8th STREET
ZEPHYRHILLS, FL 33542
PH: 813-780-0000
EMAIL: rcorriveau@ci.zephyrhills.fl.us

PRINCIPALS & CONSULTANT CONTACTS:

OWNER
MARGOLIN & SONS LLC
31331 MAKINAW LN
WESLEY CHAPEL, FL 33545
CONTACT: RYMAN CONSTRUCTION
PH: 813-714-3118

ENGINEER
GOODWYN MILLS CAWOOD, LLC.
21764 STATE ROAD 54
LUTZ, FL 33549
CONTACT: SCOTT K. STANNARD
813-291-4250
EMAIL: scott.stannard@gmcnetwork.com

SURVEYOR:
D.C. JOHNSON ASSOCIATES, INC.
11911 SOUTH CURLEY STREET
SAN ANTONIO, FL 33576
CONTACT: ANDY GETZ
PH: 352 588 2768
EMAIL: andyg@dcjohnson.com

DEVELOPER
RYMAN CONSTRUCTION OF FLORIDA INC.
36413 SR 54
ZEPHYRHILLS, FL 33541
CONTACT: STEVE BILLITER
PH: 813-714-3118
EMAIL: steveb@rymanconstruction.com

ARCHITECT:
RANDY WATSON DESIGNS INC.
13821 U.S. HWY 98 BY PASS
DADE CITY, FL 33523
CONTACT: RANDY WATSON
PH: 352-523-2077
EMAIL:randy@randywatsondesigns.com

This item has been digitally signed and sealed by Scott K. Stannard, PE on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Scott Stannard

Digitally signed by Scott Stannard
Date: 2023.09.29 11:01:18 -04'00'

Scott K. Stannard, P.E.
FL P.E. No. 50565

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY SCOTT K. STANNARD, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

Know what's below. Call before you dig.

GMC
21764 SR 54
Lutz, FL 33549
T 813.885.2032

CLIENT NAME:
Ryman Construction of Florida
36413 SR54
Zephyrhills, FL 33541

ISSUE	DATE	
		sks
		XX

DESIGNER: LAB
DRAWN BY: LAB

HAIR LAB ZEPHYRHILLS
3795 Correia Drive
Zephyrhills, Florida

CTAM Job No.230062
Notation

COVER

Sheet No.
C-0.0

DRAWING FILE: T:\1 Projects\FLY\Kevin Ryman\CTAM\230059_Hair Lab Zephyrhills\0 DWG\1 PLANS\01 BASE\Hair Lab Base.dwg
PLOTTED: Sep 27, 2023 – 1:55pm

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UTILITY NOTES

1. ALL SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE STATE OF FLORIDA AND THE CITY OF ZEPHYRHILLS UTILITIES.
2. WATER LINES SHALL BE INSTALLED WITH A MINIMUM OF 36" OF COVER UNLESS OTHERWISE NOTED. ALL WATER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF ZEPHYRHILLS UTILITIES.
3. VALVES SHALL BE RESILIENT SEAT GATE VALVES, DIRECT BURY WITH A VALVE BOX (AWWA C509).
4. 6" WATER LINE ON-SITE SHALL BE C900 RATED PVC. ALL SERVICE LINES LESS THAN 3" IN DIAMETER SHALL BE PE.
5. SEWER LINES (INCLUDING LATERALS) SHALL BE POLYVINYL CHLORIDE (PVC) SDR 26 PER ASTM D-3034.
6. SEWER CLEANOUTS SHALL BE IN ACCORDANCE WITH THE CITY OF ZEPHYRHILLS UTILITIES DETAILS AND SPECIFICATIONS.
7. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR EXACT UTILITY EXIT POINTS, EXIT PORCHES, ETC.
8. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS AND FIELD LOCATIONS WHEN POSSIBLE, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION BY DIGGING TEST PITS BY HAND AT ALL UTILITY CROSSINGS WELL IN ADVANCE OF TRENCHING. IF CLEARANCES ARE LESS THAN SPECIFIED ON THE PLAN OR 12", WHICHEVER IS LESS, CONTACT THE DESIGN ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
9. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING POSSESSION AND/OR FINAL CONNECTION OF SERVICES.
10. A MINIMUM OF 10 FEET HORIZONTAL SEPARATION MUST BE MAINTAINED BETWEEN WATER AND SEWER LINES. THE VERTICAL SEPARATION IS TO BE A MINIMUM OF 18".
11. REFER TO THE PHOTOMETRIC AND ARCHITECTURAL PLANS FOR SITE LIGHTING ELECTRICAL DESIGN AND LAYOUT.
12. ALL SITEWORK SHALL MEET OR EXCEED THE CITY OF ZEPHYRHILLS STANDARDS AND THE SITEWORK SPECIFICATIONS.
13. CONTRACTOR TO PROVIDE ALL TRENCHING, BACKFILLING, & INSTALL ALL ELECTRICAL CONDUITS TO UTILITY COMPANY SPECIFICATIONS.
14. LOCATION OF SITE UTILITIES SHALL BE VERIFIED BY GENERAL CONTRACTOR & THE PROPER UTILITY COMPANY PROVIDING SERVICE.
15. GENERAL CONTRACTOR SHALL PROVIDE CONCRETE APRON AT ALL CLEANOUTS OUTSIDE OF BUILDING PER CITY OF ZEPHYRHILLS STANDARD DETAIL S-14.
16. GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR ALL TAP AND TIE ON FEES REQUIRED, AS WELL AS COST OF UNDERGROUND SERVICE CONNECTIONS TO THE BUILDING.
17. ELECTRICAL SERVICE TO PAD MOUNTED TRANSFORMER SHALL BE RUN UNDERGROUND, FROM ROAD RIGHT-OF-WAY TO BUILDING. ASSOCIATED MATERIALS AND COST BY GENERAL CONTRACTOR.
18. ALL ELECTRIC AND TELEPHONE EXTENSIONS INCLUDING SERVICE LINE SHALL BE CONSTRUCTED TO THE APPROPRIATE UTILITY COMPANY SPECIFICATIONS. ALL UTILITY DISCONNECTIONS SHALL BE COORDINATED WITH THE DESIGNATED UTILITY COMPANIES.
19. RESTRAINED JOINTS SHALL BE PROVIDED AT ALL BENDS, TEES, AND FIRE HYDRANTS.
20. DIMENSIONS SHOWN ARE TO CENTERLINE OF PIPE OR FITTING.
21. ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.
22. GENERAL CONTRACTOR SHALL HAVE APPROVAL OF ALL GOVERNING AGENCIES HAVING JURISDICTION OVER THIS SYSTEM PRIOR TO INSTALLATION.

POTABLE WATER PIPING SPECIFICATIONS

DUCTILE IRON PIPE (DIP) (CL-50) & FITTINGS - ALL SIZES
CEMENT MORTAR LINED

PVC WATER MAINS 4 INCHES THROUGH 12 INCHES SHALL BE IN ACCORDANCE WITH AWWA C-900 (DR18) STANDARDS.

PVC WATER MAINS 2 INCHES TO 3 INCHES SHALL BE CLASS 1120 OR 1220 (SDR 21) AND SHALL MEET REQUIREMENTS OF ASTM D-2241.

POLYETHYLENE PLASTIC PIPE 2 INCHES OR SMALLER SHALL MEET THE REQUIREMENTS OF ASTM D-3350 ANSI/AWWA C901, (SDR9)

HDPE 4 INCHES AND UP SHALL BE C-906 SDR 11

PVC FIRE LINE TO BE C-900 DR 14 OR AS SPECIFIED ON PLANS AND/OR IN STANDARD DETAILS.

WASTEWATER PIPING SPECIFICATIONS

ALL ON-SITE PVC WASTEWATER MAINS 4 INCHES THROUGH 12 INCHES SHALL BE IN ACCORDANCE WITH AWWA C-900 (SDR 35 AND/OR SDR 26 AS SPECIFIED ON PLAN)

HAZARDOUS MATERIAL MANAGEMENT & SPILL REPORTING:

ANY HAZARDOUS OR POTENTIALL HAZARDOUS MATERIAL THAT IS BROUGHT ONTO THE CONSTRUCTION SITE SHALL BE HANDLED PROPERLY TO REDUCE THE POTENTIAL FOR STORMWATER POLLUTION. ALL MATERIALS USED ON THIS CONSTRUCTION SITE SHALL BE PROPERLY STORED, HANDLED, DISPENSED, AND DISPOSED OF FOLLOWING ALL APPLICABLE LABEL DIRECTIONS. FLAMMABLE AND COMBUSTIBLE LIQUIDS SHALL BE STORED AND HANDLED ACCORDING TO APPLICABLE REGULATIONS AND, AT A MINIMUM, ACCORDING TO 29 CFR 1926.152. ONLY APPROVED CONTAINERS AND PORTABLE TANKS SHALL BE USED FOR STORAGE AND HANDLING OF FLAMMABLE AND COMBUSTIBLE LIQUIDS.

MATERAILSAFETY DATA SHEET (MSDS) INFORMATION SHALL BE KEP ON SITE FOR ANY AND ALL APPLICABLE MATERIALS. HOWEVER, MSDS MAY ALSO ACCESSED VIA TELEPHONE OR OTHER ELECTRONIC MEANS OR APPARATUS.

IN EVENT OF AN ACCIDENTAL SPILL, IMMEDIATE ACTION SHALL BE TAKEN BY THE GC TO CONTAIN AND REMVOE THE SPILLED MATERIAL. THE SPILL SHALL BE REPORTED TO THE APPROPRIATE AGENCIES IN THE REQUIRED TIME FRAMES. AS REQURIED UNDER THE PROVISIONS OF THE CLEAN WATER ACT, ANY SPILL OR DISCHARGE ENTERING WATER OF THE UNITED STATES SHALL BE PROPERLY REPORTED.

ALL HAZARDOUS MATERIALS, INCLUDING CONTAMINATED SOIL AND LIQUID CONCRETE WASTE SHALL BE DISPOSED OF BY THE CONTRACTOR IN THE MANNER SPECIFIED BY FEDERAL, STATE, AND LOCAL REGULATIONS AND BY THE MANUFACTERER OF SUCH PRODUCTS.

THE GC SHALL PREPARE A WRITTEN RECORD OF ANY SPILL AND ASSOCIATED CLEAN-UP ACTIVITIES OR PETROLEUM PRODUCTS OR HAZARDOUS MATERIALS IN EXCESS OF REPORTABLE QUANTITIES AS DEFINED BY THE EPA OR THE STATE OR LOCAL AGENCY REGULATIONS, SHALL BE IMMEDIATELY REPORTED TO THE EPS NATIONAL RESPONSE CENTER (1-800-424-8802) AND TO THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) THROUGH THE STATE WATCH OFFICE AT 1-800-320-0519.

THE STATE REPORTABLE QUANTITY FOR PETROLEUM PRODUCTS IS: 25 GALLONS OR GREATER PER FDEP PETROLEUM CONTAMINATION SITE CLEANUP CRITERIA, HTTP://WWW.DEP.STATE.FL.US/OER/REPORTABLE_INCIDENT.HTM

THE DISCHARGE SHALL BE REPORTED WITHIN 1 WEEK OF DISCOVERY, HOWEVER, DICHARGE OF REPORTABLE QUANTITIES ONTO SURFACE OF LANDS OR SURFACEOF WATERS SHALL BE REPORTAED TO THE STATE WATCH OFFICE OR FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION WEBSITE, BUREAU OF EMERGENCY RESPONSE, AS SOON AS POSSIBLE BY NO LATER THAN 24 HOURS AFTER OCCURENCE.

THE REPORTABLE QUANTITY FOR HAZARDOUS MATERIALS CAN BE FOUND IN 40 CFR 302 AND ON THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION WEBSITE AT HTTP://WWW.DEP.STATE.FL.US/WATERS/STORMWATER/NPDES /DOCS/INDGUIDE/APP_H_INDGUIDE.PDF

TO MINIMIZE THE POTENTIAL FOR A SPILL OF PETROLEUM PRODUCT OR HAZARDOUS MATERIALS TO COME IN CONTACT WITH STORMWATER, THE FOLLOWING STEPS SHALL BE IMPLEMENTED:

1) ALL MATERIAL WITH HAZARDOUS PROPERTIES, SUCH AS PESTICIDE, PETROLEUM PRODUCTS, FERTILIZERS, SOAPS, DETERGENTS, CONSTRUCTION CHEMICAL, ACIDS, BASES, PAINTS, PAINT SOLVENTS, ADDITIVE FOR SOIL STABILIZATION, CONCRETE, CURING COMPOUNDS, AND ADDITIVES, ETC., SHALL BE STORED IN A SECURE LOCATION, UNDER COVER, AND IN APPROPRIATE, TIGHTLY SEALED CONTAINERS WHEN NOT IN USE.

2) THE MINIMUM PRACTICAL QUANTITY OF ALL SUCH MATERIALS SHALL BE KEPT ON THE JOB SITE AND SCHEDULED FOR DELIVERY AS CLOSE TO TIME OF USE AS PRACTICAL.

3) A SPILL CONTROL AND CONTAINMENT KIT (CONTAINING FOR EXAMPLE, ABSORBENT MATERIAL SUCH AS KITTY LITTER OR SAWDUST, ACID, BASE, NEUTRALIZING AGENT, BROOM, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, PLASTIC AND METAL TRASH CONTAINERS, ETC.) SHALL BE PROVIDED AT THE CONSTRUCTION SITE AND ITS LOCATION(S) SHALL BE IDENTIFIED WITH LEGIBLE SIGNAGE AND SHOWN ON THE SITE MAPS.
A. THE SPILL CONTROL AND CONTAINMENT KIT SUPPLIES SHALL BE OF SUFFICIENT QUANTITIES AND APPROPRIATE CONTENT TO CONTAIN A SPILL FROM THE LARGEST PIECE OF EQUIPMENT AND FROM THE LARGEST ANTICIPATED QUANTITIES OF PRODUCTS STORED ON THE SITE AT ANY GIVEN TIME.
B. CONTENTS SHALL BE INSPECTED DAILY DURING THE DAILY STORMWATER INSPECTION.

4) ALL PRODUCTS SHALL BE STORED IN AND USED FROM THE ORIGINAL CONTAINER WITH THE ORIGINAL PRODUCT LABEL. CONTAINERS MUST BE STORED IN A MANNER TO PROTECT THEM FROM THE ELEMENTS AND INCIDENTAL DAMAGE.

5) ALL PRODUCTS SHALL BE USED IN STRICT ACCORDANCE WITH THE INSTRUCTIONS ON THE PRODUCT LABELS.

6) THE DISPOSAL OF EXCESS OR USED PRODUCTS SHALL BE IN STRICT COMPLIANCE WITH INSTRUCTIONS ON THE PRODUCT LABELS AND REGULATIONS.

WATER SYSTEM TESTING NOTES:

1. ALL COMPONENTS OF THE WATER SYSTEM, INCLUDING FITTINGS, HYDRANTS, CONNECTIONS, AND VALVES SHALL REMAIN UNCOVERED UNTIL PROPERLY PRESSURE TESTED AND ACCEPTED BY THE OWNER AND CITY OF ZEPHYRHILLS. PRESSURE TEST TO BE IN ACCORDANCE WITH CITY OF ZEPHYRHILLS SPECIFICATIONS. CONTRACTOR TO NOTIFY OWNER AND CITY OF ZEPHYRHILLS INSPECTORS 3 WORKING DAYS IN ADVANCE OR PERFORMING TEST.
2. CONTRACTOR SHALL PRESSURE TEST WATER MAINS AT 150 PSI FOR A PERIOD OF 2 HOURS IN ACCORDANCE WITH AWWA C600-87 STANDARDS. CONTRACTOR SHALL NOTIFY THE ENGINEER AND CITY OF ZEPHYRHILLS AT LEAST 72 HOURS PRIOR TO START OF ANY TEST. THE CONTRACTOR SHALL MAKE ALL NECESSARY APPLICATIONS AND ARRANGEMENTS.
3. CONTRACTOR TO PERFORM CHLORINATION AND COORDINATE BACTERIOLOGICAL SAMPLING WITH CITY OF ZEPHYRHILLS CONSTRUCTION INSPECTION SECTION IN ACCORDANCE WITH CITY OF ZEPHYRHILLS STANDARDS AND CONSTRUCTION SPECIFICATIONS AS WELL AS DEP SPECIFICATIONS FOR BACTERIOLOGICAL SAMPLING AND TESTING.
4. CONTRACTOR IS TO ASSURE THAT ALL AS-BUILT SURVEY DATA IS RECORDED AND TRANSFERRED TO THE EOR PRIOR TO COVERING OF ANY UTILITIES TO COMPLY WITH AS BUILT SURVEY REQUIREMENTS.

CONSTRUCTION NOTES;

1. WHENEVER A CONFLICT OCCURS BETWEEN ANY SPECIFICATION AND/OR REGULATORY REQUIREMENT, THE MORE STRINGENT REQUIREMENT SHALL APPLY

2. THE DRAWINGS ARE CURRENTLY UNDER REVIEW BY THE WATER MANAGEMENT DISTRICT AND OTHER REGULATORY AGENCIES. THE FINAL APPROVED PLANS MAY DEVIATE CONSIDERABLY FROM THESE DRAWINGS. THE CONTRACTOR MUST ASSURE CONSTRUCTION IS IN ACCORDANCE WITH THE APPROVED DRAWINGS. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD TO VERIFY THE CORRECT VERSION OF THE PLANS ARE BEING UTILIZED. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO INSURE ALL SUB-CONTRACTORS ON THE PROJECT HAVE THE LATEST COPIES OF THE DRAWINGS. THE ENGINEER OF RECORD WILL SUPPLY ONLY THE OWNER THE FULLY APPROVED PLANS. THE GENERAL CONTRACTOR IS TO CONTACT THE OWNER TO OBTAIN THE PLANS.

3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HIRE A LICENSED SURVEYOR TO PROVIDE ALL STAKEOUT WORK. IT IS ALSO THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THE SURVEYOR HAVE THE MOST CURRENT SET OF DRAWINGS. THE ENGINEER OF RECORD WILL NOT SEND PLANS DIRECTLY TO THE SURVEYOR.

4. THE ENGINEER OF RECORD IS NOT RESPONSIBLE, NOR LIABLE FOR ANY STAKEOUT WORK REQUIRED FOR THE PROJECT. ANY ELECTRONIC FILES UTILIZED DURING THE STAKE OUT OF THE PROJECT ARE USED AS THE SOLE DISCRETION OF THE CONTRACTOR AND SURVEYOR. CSS INC. DOES NOT WARRANT ANY STAKEOUT INFORMATION GENERATED BY ANY THIRD PARTY.

5. THE DRAWINGS SHALL NOT BE UTILIZED FOR CONSTRUCTION PRIOR TO OBTAINING REQUIRED PERMITS FROM ALL GOVERNING AGENCIES HAVING JURISDICTION OVER THE WORK. THE CONTRACTOR SHALL OBTAIN COPIES OF ALL PERMITS FOR WORK WITHIN PUBLIC EASEMENTS AND RIGHTS-OF-WAY AND INSURE THAT ALL OTHER REQUIRED PERMITS ARE APPROVED PRIOR TO COMMENCING THE WORK.

6. CONTRACTOR SHALL NOT COMMENCE CONSTRUCTION OF POTABLE WATER OR SANITARY SEWER COLLECTION SYSTEMS PRIOR TO ASSURING THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) PERMITS HAVE BEEN ACQUIRED. CONTRACTOR IS RESPONSIBLE TO REVIEW AND IMPLEMENT ANY SPECIFIC CONDITIONS DEPICTED ON FDEP PERMITS, WHICH MAY OR MAY NOT BE SHOWN HEREON.

7. UNLESS NOTED OTHERWISE, ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO FLORIDA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", LATEST EDITION.

8. CONTRACTOR IS TO COORDINATE ALL WORK WITH UTILITY COMPANIES IN ORDER TO PREVENT DAMAGE TO UTILITY LINES AND THE MAKING OF ADJUSTMENTS TO SAME, IF REQUIRED. THE CONTRACTOR SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE VARIOUS UTILITY OWNERS PRIOR TO CONSTRUCTION.

9. SURVEY INFORMATION AND LEGAL DESCRIPTIONS SHOWN HEREON WERE OBTAINED BY WILLIAMSON AND ASSOCIATED SURVEYING INC. ELEVATIONS, LOCATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN ACCORDING TO INFORMATION AVAILABLE AT THE TIME OF PLAN PREPARATION BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THE CONTRACTOR SHALL FIELD VERIFY THIS INFORMATION AND BE FAMILIAR WITH ALL SITE CONDITIONS (INCLUDING SUB-SURFACE CONDITIONS AND UTILITIES) PRIOR TO COMMENCING THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR TAKING SUCH ACTION AS NECESSARY TO ESTABLISH LOCATIONS OF UNDERGROUND UTILITIES, DAMAGES TO ANY EXISTING FACILITIES (ABOVE GROUND OR UNDERGROUND) SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. WHETHER OR NOT SHOWN HEREON. THE CONTRACTOR SHALL NOTIFY THE UNDERGROUND UTILITY NOTIFICATION CENTER (CALL SUNSHINE STATE ONE CALL AT 1-800-432-4770) 48 HOURS PRIOR TO COMMENCING ANY WORK.

10. DEMOLITION WORK SHALL NOT BE LIMITED TO THESE DOCUMENTS TO COMPLETE THE PROJECT AS SHOWN. CONTRACTOR SHALL REMOVE ALL ITEMS NECESSARY TO ALLOW FOR NEW CONSTRUCTION.

11. ALL EXISTING WELLS ON SITE ARE TO BE PROPERLY ABANDONED BY A FLORIDA LICENSED WATER WELL CONTRACTOR IN ACCORDANCE WITH RULE 40D-3.531(2), F.A.C., UNLESS OTHERWISE SHOWN.

12. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL VERIFY THE FEASIBILITY OF CONSTRUCTING GRAVITY SEWER SYSTEMS (I.E. VERIFY EXISTING INVERTS AT POINTS OF CONNECTION, EXIT INVERTS OF BUILDING PLUMBING, GREASE TRAP CONFIGURATION, MINIMUM SLOPES, ETC.)

13. REFERENCED INDEX NUMBERS REFER TO DETAILS DEPICTED IN THE F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS PLANS FY-2021-22.

14. CONSTRUCTION SHOWN ON THESE PLANS IS PERMITTED ONLY FOR THE WORK LOCATED WITHIN THE PRIVATE PROPERTY. ALL WORK WITHIN THE RIGHT-OF-WAY AND EASEMENTS WILL REQUIRE A SEPARATE PERMIT AND MAY REQUIRE AN ALTERATION TO THE CONSTRUCTION OR MATERIALS SHOWN ON THESE PLANS.

15. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MAINTENANCE OF TRAFFIC AND PEDESTRIAN PER APPROPRIATE FDOT SPECIFICATION. SEE FDOT INDEX NUMBER 102-100 THROUGH 102-670.

16. ALL WORK WITHIN THE RIGHT-OF-WAY SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF F.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION AS SUPPLEMENTED.

17. CONTRACTOR SHALL LOCATE PROPERTY LINES AS REQUIRED TO AVOID ENCROACHMENT ONTO ADJACENT PROPERTY.

18. CONTRACTOR IS TO PROVIDE EROSION CONTROL/SEDIMENT BARRIER (HAY BALES OR SILTATION CURTAIN) TO PREVENT SILTATION OF ADJACENT PROPERTY, STREETS, STORM SEWERS, AND WATERWAYS. BARRIERS ARE TO BE BUILT BEFORE LAND ALTERATION, MAINTAINED EFFECTIVELY DURING CONSTRUCTION, AND REMOVED AFTER FINAL SOIL STABILIZATION. IN ADDITION, CONTRACTOR SHALL PLACE TEMPORARY STONE CONSTRUCTION EXIT/ENTRANCE WHERE CONSTRUCTION RELATED TRAFFIC IS TO ENTER OR EXIT THE SITE. THE STONE SHALL BE CLEANED OR REPLACED REGULARLY AS NEEDED TO INSURE PROPER FUNCTION PER THE DESIGN AND DETAIL. IF, IN THE OPINION OF THE ENGINEER OR STATE/LOCAL AUTHORITIES, EXCESSIVE QUANTITIES OF EARTH ARE TRANSPORTED OFF-SITE EITHER BY NATURAL CAUSES OR VEHICULAR TRAFFIC, THE CONTRACTOR SHALL TAKE ADDITIONAL MEASURES TO CLEAN THE ADJOINING STREET AND PREVENT FUTURE TRACK OUT.

19. CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL TEMPORARY CONSTRUCTION TRAFFIC RELATED ACCESS POINTS TO THE PROJECT SITE AND/OR SPECIFIC AREAS OF WORK ON THE PROJECT SITE AS NECESSARY.

20. ALL TREES TO REMAIN MUST BE PROTECTED BY TREE PROTECTION BARRICADES MEETING THE MINIMUM STANDARDS SHOWN. PROTECTIVE BARRICADES SHALL REMAIN IN PLACE UNTIL LAND ALTERATION AND CONSTRUCTION ACTIVITIES ARE COMPLETED.

21. THE WETLAND PRESERVATION AREA SHALL BE RETAINED IN A NATURAL STATE, PER THE APPROVED PERMIT, PURSUANT TO THE CITY OF ZEPHYRHILLS, FL, LAND DEVELOPMENT CODE AS AMENDED.

22. ALL FILL SHALL CONSIST OF SATISFACTORY SOIL MATERIALS, DEFINED AS THOSE COMPLYING WITH ASTM D2487 SOIL CLASSIFICATION GROUPS GW, GP, GM, SW, AND SP FREE OF RUBBLE ORGANICS, CLAY, DEBRIS AND OTHER SIMILAR UNSUITABLE MATERIALS. UNSATISFACTORY SOIL MATERIALS ARE DEFINED AS THOSE COMPLYING WITH ASTM D2487 SOIL CLASSIFICATION GROUPS GC, SM, SC, ML, MH, CL, CH, OL, OH, AND PT. UNLESS OTHERWISE NOTED, ALL FILL SHALL BE COMPACTED TO A MINIMUM OF 95% ASSHTO T-180, METHOD D.

23. EXISTING TREES AND LANDSCAPING SHOWN THIS PLAN. SEE TREE REMOVAL PLAN FOR TREES TO BE REMOVED OR PROTECTED.

24. DURING LAND ALTERATION AND CONSTRUCTION ACTIVITIES, IT SHALL BE UNLAWFUL TO REMOVE VEGETATION, EXCEPT BY HAND, BY GRUBBING OR TO PLACE SOIL DEPOSITS, DEBRIS, SOLVENTS, CONSTRUCTION MATERIAL, MACHINERY OR OTHER EQUIPMENT OF ANY KIND WITHIN THE DRIPLINE OF A TREE TO REMAIN ON THE SITE UNLESS OTHERWISE APPROVED BY THE COUNTY.

25. TREE LIMBS SHALL BE PRUNED AS REQUIRED FOR NEW CONSTRUCTION. WHEN TREE LIMBS OVERHANG EXISTING OR NEW VEHICULAR USE AREAS, THE CONTRACTOR SHALL PRUNE SUCH TREES TO PROVIDE CLEARANCE MEETING THE STANDARDS SET FORTH BY THE FLORIDA DEPARTMENT OF TRANSPORTATION. PRUNING SHALL BE IN ACCORDANCE WITH THE AMERICAN NATIONAL STANDARDS INSTITUTE 9ANSI) A-300 PRUNING STANDARDS.

26. ALL TRIMMING UNDERTAKEN ON A TREE PROTECTED BY THE PROVISIONS OF THE LDC SHALL BE PRUNED IN ACCORDANCE WITH THE ANSI A-300 PRUNING STANDARDS

27. ALL PEDESTRIAN ROUTES,CROSSWALKS, SIDEWALKS, AND RAMPS, AS WELL AS ALL HANDICAP SIGNS, SYMBOLS, PARKING SPACES, ETC. SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH LOCAL, STATE AND FEDERAL ADA REQUIREMENTS WHETHER OR NOT SHOWN HEREON. CONTRACTOR SHALL VERIFY REQUIREMENTS WITH LOCAL INSPECTORS PRIOR TO POURING SIDEWALKS AND RAMPS.

28. OPEN CUTS WITHIN ROADWAYS WILL TYPICALLY REQUIRE AN ASPHALT OVERLAY, FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT, A LENGTH OF 100 FEET FOR ROADWAYS WITH 35 MPH SPEED LIMIT AND LESS OR 200 FEET FOR ROADWAYS WITH A SPEED LIMIT GREATER THAN 35 MPH. REFER TO PASCO COUNTY "UTILITY ACCOMMODATION GUIDE AND RIGHTS-OF-WAY USE PROCEDURES MANUAL FOR ADDITIONAL REQUIREMENTS.

29. IF UTILITY WORK WITHIN THE R.O.W. WILL BE REQUIRE, A RIGHT-OF-WAY USE PERMIT FROM CITY OF ZEPHYRHILLS OR PASCO COUNTY IF REQUIRED.

30. PORTIONS OF WORK AND/OR MATERIALS FOR THE UTILITY CONNECTIONS MAY BE PROVIDED BY THE GOVERNING MUNICIPALITY. CONTRACTOR TO VERIFY AND COORDINATE.

31. WATER AND SANITARY SEWER SYSTEMS SHALL NOT BE PLACED INTO SERVICE UNTIL INSPECTED AND APPROVED BY THE FDEP AND OTHER REQUIRED REGULATORY AGENCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING AND OBTAINING THE FOLLOWING ITEMS;
* INSPECTION APPROVALS
*SCHEDULING AT LEAST 72 HOURS PRIOR TO TESTING, HAVING THE APPROPRIATE PARTIES ON SITE TO WITNESS TEST
* LIFT STATION START UP TESTS
* CURRENT BACTERIOLOGICAL TEST RESULTS
* PRESSURE, EXFILTRATION AND OTHER REQUIRED TESTS
* AS-BUILT SURVEYS, STAMPED AND SIGNED BY PROFESSIONAL SURVEYOR
ALL APPLICABLE ITEMS SHALL BE PROVIDED TO THE ENGINEER OF RECORD A MINIMUM OF 60 DAYS PRIOR TO FINAL ACCEPTANCE AND PLACEMENT INTO OPERATION

32. IF APPLICABLE ALL MECHANICAL EQUIPMENT MUST BE SCREENED IN ACCORDANCE WITH CURRENT OSHA REGULATIONS.

33. UNLESS NOTED OTHERWISE, ALL RCP SHALL BE CLASS III, WALL 'B' PER ASTM C-76

34. PIPE LENGTHS SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE LENGTHS REQUIRED TO COMPLETE CONSTRUCTION.

35. ALL DIMENSIONS ARE TO OUTSIDE FACE OF WALL, FACE OF CURB, CENTER OR STRUCTURE, UNLESS NOTED OTHERWISE.

36. PROVIDE PAVEMENT MARKINGS AS SHOWN PER FDOT INDEX 711-001.

37. THE CONTRACTOR SHALL REPLACE ALL SOD, PAVING, STABILIZED EARTH, CURBS, DRIVEWAYS, SIDEWALKS, ETC. WITH MATERIALS OF THE SAME TYPE OR BETTER THAN THAT REMOVED DURING CONSTRUCTION.

38. PRIOR TO PAVING, THE CONTRACTOR SHALL ENSURE ALL NEW UNDERGROUND UTILITIES, I.E. ELECTRIC, IRRIGATION, ETC., HAVE BEEN INSTALLED. IF PAVING IS TO OCCUR BEFORE THE INSTALLATION OF ANY UNDERGROUND UTILITIES, THE CONTRACTOR SHALL ENSURE THE NECESSARY CONDUITS ARE PROVIDED AND SHALL COORDINATE THE LOCATIONS WITH THE CONSTRUCTION PLANS.

39. CONTRACTOR SHALL SECURE ALL OPENINGS UNDER CONSTRUCTION AT THE END OF EACH WORKING DAY.

40. GRASS SOD AND SEED SHALL BE BAHIA, UNLESS OTHERWISE SHOWN ON THE PLANS. SEED AND MULCH ALL AREAS LEFT BARREN FROM CONSTRUCTION, SOD ALL SLOPES STEEPER THAN 6:1, WHETHER OR NOT SHOWN HEREON. ALL RETENTION POND BANKS SHALL BE SODDED, REGARDLESS OF SLOPE, TO THE POND BOTTOM FOR DESIGNED DRY PONDS OR THE WATER LINE AT THE TIME OF INSTALLATION FOR DESIGNED WET PONDS. STEEP SLOPES SODDED AS SOON AS POSSIBLE AFTER FINE GRADING TO PREVENT EROSION (WITHIN 14 DAYS OF COMPLETION OF GRADING OF THAT AREA).

41. THE CONTRACTOR SHALL PROVIDE THE ENGINEER OF RECORD WITH STAMPED AND SIGNED AS-BUILT SURVEYS OF ALL WATER, SANITARY SEWER, AND STORMWATER MANAGEMENT SYSTEMS (INCLUDING THE POND OUTLET STRUCTURE) AS REQUIRED BY THE FDEP AND SWFWMD.

42. ALL 6 INCH WATER MAIN FROM THE POINT OF CONNECTION TO THE METER ASSEMBLY SHALL BE D.I.P. (CLASS 50). THE METER ASSEMBLY SHALL BE LOCATED TO BE DIRECTLY ACCESSIBLE BY THE BOOM TRUCK FROM THE COUNTY RIGHT-OF-WAY OR BY AN INTERIOR ROAD THAT IS NOT BLOCKED BY A WALL OR GATE. THE ELEVATION OF THE CONCRETE SLAB WILL BE HIGHER THAN THE IMMEDIATE SURROUNDING AREA. DO NOT MULCH THE AREA AROUND THE SLAB. DO NOT PLANT ANY LANDSCAPE THAT WILL HINDER THE DIRECT ACCESS IN THE FUTURE TO THE METER ASSEMBLY.

GENREAL NOTES:

1. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS AND FIELD CONDITIONS WHEN POSSIBLE, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL EXISTING UTILITIES BY DIGGING TEST PITS BY HAND AT ALL UTILITY CROSSINGS WELL IN ADVANCE OF TRENCHING. IF THE CLEARANCES ARE LESS THAN SPECIFIED ON THE PLANS OR 12", WHICHEVER IS LESS, CONTACT COMMERCIAL SITE SOLUTIONS, INC. (885-813-2032) AND OWNER PRIOR TO PROCEEDING WITH CONSTRUCTION.

2. THE CONTRACTOR SHALL INCLUDE IN HIS CONTRACT PRICE THE REMOVAL AND DISPOSAL OF ANY EXCESS TOPSOIL HE DETERMINES IS NOT REQUIRED TO PERFORM THE FINAL GRADING AND LANDSCAPING OPERATION.

3. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF ALL REQUIRED/NECESSARY SHEETING, SHORING, AND SPECIAL EXCAVATION MEASURES REQUIRED ON THE PROJECT TO MEET OSHA, FEDERAL, STATE AND LOCAL REGULATIONS PURSUANT TO THE INSTALLATION OF THE WORK INDICATED ON THE DRAWINGS. OWNER AND COMMERCIAL SITE SOLUTIONS, INC. ACCEPT NO RESPONSIBILITY FOR THE DESIGN TO INSTALL SAID ITEMS.

4. CALL FLORIDA ONE CALL: UTILITY LOCATOR SERVICE 72 HOURS IN ADVANCE OF DIGGING AT 1-800-432-4770.

5. ALL WORK SHALL CONFORM TO CITY OF ZEPHYRHILLS STANDARDS AND SPECIFICATIONS.

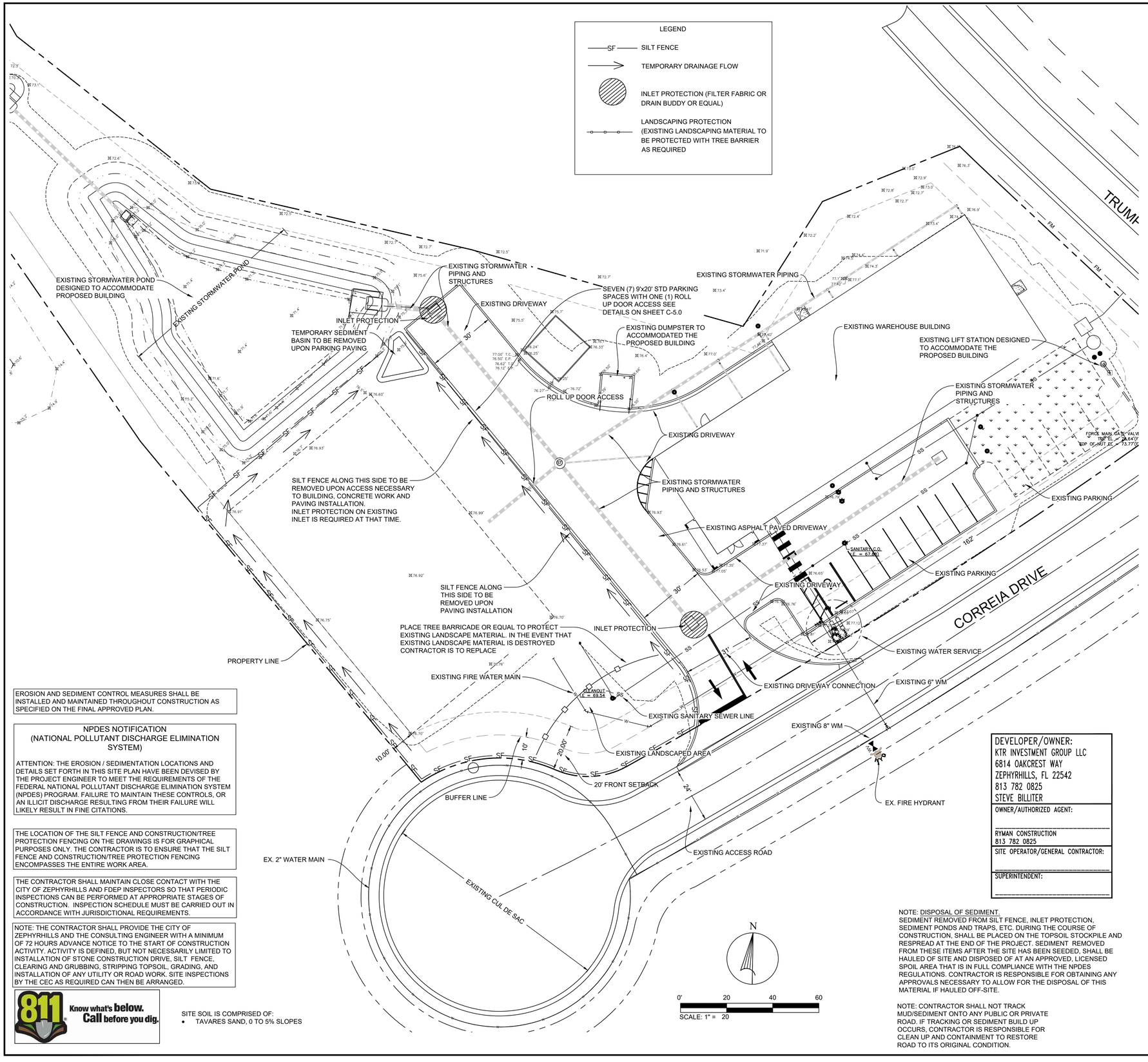
6. ALL CURB/HANDICAP RAMP DESIGNS SHALL CONFORM TO ADA OR CITY OF ZEPHYRHILLS STANDARDS, WHICHEVER IS MORE RESTRICTIVE.

7. PRE-CAST DRAINAGE AND SANITARY SEWER STRUCTURES HAVE BEEN SPECIFIED ON THE PLANS. OWNER AND COMMERCIAL SITE SOLUTIONS, INC., HOWEVER, ASSUME NO RESPONSIBILITY FOR THESE STRUCTURES AS FIELD CONDITIONS DURING CONSTRUCTION OFTEN DICTATE MINOR ELEVATION ADJUSTMENTS. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY AND EXPENSE FOR MODIFYING THESE STRUCTURES TO ACCOMMODATE THESE FIELD ADJUSTMENTS.

8. THE CONTRACTOR SHALL INCLUDE IN THE CONTRACT PRICE DAILY RECORD KEEPING OF THE AS-BUILT CONDITION OF ALL OF THE UNDERGROUND UTILITIES, CONSTRUCTION STAKEOUT ASSOCIATED WITH THE PROJECT, PREPARATION OF THE NECESSARY/REQUIRED AS-BUILT WATER AND SEWER PLANS TO BE SUBMITTED TO CITY OF ZEPHYRHILLS PUBLIC WORKS DEPARTMENT AND/OR FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, AND ALL OTHER INFORMATION REQUIRED IN CONNECTION WITH OBTAINING PERMITS TO OPERATE AND RELEASE OF BONDS.

9. ALL WATER LINE AND SEWER LINE INSTALLATION SHALL CONFORM TO THE STANDARDS AND DETAILS OF CITY OF ZEPHYRHILLS UTILITY DEPARTMENT, AND THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION CONSTRUCTION PERMIT.

10. A COPY OF THE FINANCIAL RESPONSIBILITY FORM AND THE STORM WATER POLLUTION PREVENTION PLAN MUST BE KEPT ON THE WORK SITE AND SHOWN UPON REQUEST



EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AS SPECIFIED ON THE FINAL APPROVED PLAN.

NPDES NOTIFICATION
(NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM)

ATTENTION: THE EROSION / SEDIMENTATION LOCATIONS AND DETAILS SET FORTH IN THIS SITE PLAN HAVE BEEN DEVISED BY THE PROJECT ENGINEER TO MEET THE REQUIREMENTS OF THE FEDERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PROGRAM. FAILURE TO MAINTAIN THESE CONTROLS, OR AN ILLICIT DISCHARGE RESULTING FROM THEIR FAILURE WILL LIKELY RESULT IN FINE CITATIONS.

THE LOCATION OF THE SILT FENCE AND CONSTRUCTION/TREE PROTECTION FENCING ON THE DRAWINGS IS FOR GRAPHICAL PURPOSES ONLY. THE CONTRACTOR IS TO ENSURE THAT THE SILT FENCE AND CONSTRUCTION/TREE PROTECTION FENCING ENCOMPASSES THE ENTIRE WORK AREA.

THE CONTRACTOR SHALL MAINTAIN CLOSE CONTACT WITH THE CITY OF ZEPHYRHILLS AND FDEP INSPECTORS SO THAT PERIODIC INSPECTIONS CAN BE PERFORMED AT APPROPRIATE STAGES OF CONSTRUCTION. INSPECTION SCHEDULE MUST BE CARRIED OUT IN ACCORDANCE WITH JURISDICTIONAL REQUIREMENTS.

NOTE: THE CONTRACTOR SHALL PROVIDE THE CITY OF ZEPHYRHILLS AND THE CONSULTING ENGINEER WITH A MINIMUM OF 72 HOURS ADVANCE NOTICE TO THE START OF CONSTRUCTION ACTIVITY. ACTIVITY IS DEFINED, BUT NOT NECESSARILY LIMITED TO INSTALLATION OF STONE CONSTRUCTION DRIVE, SILT FENCE, CLEARING AND GRUBBING, STRIPPING TOPSOIL, GRADING, AND INSTALLATION OF ANY UTILITY OR ROAD WORK. SITE INSPECTIONS BY THE CEC AS REQUIRED CAN THEN BE ARRANGED.

811 Know what's below. Call before you dig.

SITE SOIL IS COMPRISED OF:
- TAVARES SAND, 0 TO 5% SLOPES

DEVELOPER/OWNER:
KTR INVESTMENT GROUP LLC
6814 OAKCREST WAY
ZEPHYRHILLS, FL 22542
813 782 0825
STEVE BILLITER

OWNER/AUTHORIZED AGENT:

RYMAN CONSTRUCTION
813 782 0825

SITE OPERATOR/GENERAL CONTRACTOR:

SUPERINTENDENT:

NOTE: DISPOSAL OF SEDIMENT.
SEDIMENT REMOVED FROM SILT FENCE, INLET PROTECTION, SEDIMENT PONDS AND TRAPS, ETC. DURING THE COURSE OF CONSTRUCTION, SHALL BE PLACED ON THE TOPSOIL STOCKPILE AND RESPREAD AT THE END OF THE PROJECT. SEDIMENT REMOVED FROM THESE ITEMS AFTER THE SITE HAS BEEN SEEDED, SHALL BE HAULED OF SITE AND DISPOSED OF AT AN APPROVED, LICENSED SPOIL AREA THAT IS IN FULL COMPLIANCE WITH THE NPDES REGULATIONS. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY APPROVALS NECESSARY TO ALLOW FOR THE DISPOSAL OF THIS MATERIAL IF HAULED OFF-SITE.

NOTE: CONTRACTOR SHALL NOT TRACK MUD/SEDIMENT ONTO ANY PUBLIC OR PRIVATE ROAD. IF TRACKING OR SEDIMENT BUILD UP OCCURS, CONTRACTOR IS RESPONSIBLE FOR CLEAN UP AND CONTAINMENT TO RESTORE ROAD TO ITS ORIGINAL CONDITION.

EROSION & SEDIMENT CONTROL NOTES:

A. THE STORMWATER POLLUTION PREVENTION PLAN IS COMPRISED OF THIS DRAWING ("SITE MAP"), THE STANDARD DETAILS, THE PLAN NARRATIVE, ATTACHMENTS INCLUDED IN SPECIFICATIONS SECTION 02370 ("SWPPP"), PLUS THE PERMIT AND ALL SUBSEQUENT REPORTS AND RELATED DOCUMENTS.

B. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL OBTAIN A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN AND THE STATE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT (NPDES PERMIT) AND BECOME FAMILIAR WITH THEIR CONTENTS.

C. CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES AS REQUIRED BY THE SWPPP. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED AS DICTATED BY CONDITIONS AT NO ADDITIONAL COST OF OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION.

D. BEST MANAGEMENT PRACTICES (BMP'S) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY PERMITTING AGENCY OR OWNER.

E. SITE MAP MUST CLEARLY DELINEATE ALL STATE WATERS. PERMITS FOR ANY CONSTRUCTION ACTIVITY IMPACTING STATE WATERS OR REGULATED WETLANDS MUST BE MAINTAINED ON SITE AT ALL TIMES.

F. CONTRACTOR SHALL MINIMIZE CLEARING TO THE MAXIMUM EXTENT PRACTICAL OR AS REQUIRED BY THE GENERAL PERMIT.

G. GENERAL CONTRACTOR SHALL DENOTE ON PLAN THE TEMPORARY PARKING AND STORAGE AREA WHICH SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AND CLEANING AREA, EMPLOYEE PARKING AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.

H. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) SHALL BE DETAINED AND PROPERLY TREATED OR DISPOSED.

I. SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS SHALL BE MAINTAINED ON SITE OR READLY AVAILABLE TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.

J. DUST ON THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.

K. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORMWATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE.

L. ALL STORM WATER POLLUTION PREVENTION MEASURES PRESENTED ON THIS PLAN, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE INITIATED AS SOON AS PRACTICABLE.

M. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS STOPPED FOR AT LEAST 21 DAYS, SHALL BE TEMPORARILY SEEDED. AREAS SHALL BE SEEDED NO LATER THAN 14 DAYS FROM THE LAST CONSTRUCTION ACTIVITY OCCURRING IN THESE AREAS OR AS REQUIRED BY THE PERMIT.

N. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED SHALL BE PERMANENTLY SEEDED. THESE AREAS SHALL BE SEEDED NO LATER THAN 14 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY OCCURRING IN THESE AREAS. REFER TO THE GRADING PLAN AND/OR LANDSCAPE PLAN.

O. IF THE ACTION OF VEHICLES TRAVELING OVER THE GRAVEL CONSTRUCTION ENTRANCES IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF DIRT OR MUD, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.

P. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.

Q. CONTRACTORS OR SUBCONTRACTORS WILL BE RESPONSIBLE FOR REMOVING SEDIMENT IN THE DETENTION POND AND ANY SEDIMENT THAT MAY HAVE COLLECTED IN THE STORM SEWER DRAINAGE SYSTEMS IN CONJUNCTION WITH THE STABILIZATION OFTHE SITE.

R. ON-SITE & OFFSITE SOIL STOCKPILE AND BORROW AREAS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION THROUGH IMPLEMENTATION OF BEST MANAGEMENT PRACTICES. STOCKPILE AND BORROW AREA LOCATIONS SHALL BE FIELD-LOCATED AND NOTED ON THE SITE MAP AND PERMITTED IN ACCORDANCE WITH GENERAL PERMIT REQUIREMENTS.

S. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.

T. DUE TO THE GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) TO PREVENT EROSION.

U. ALL CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY, THIS INCLUDES BACKFILLING OF TRENCHES FOR UTILITY CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.

MAINTENANCE:

ALL MEASURES STATED ON THIS EROSION AND SEDIMENTATION CONTROL PLAN, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A 0.5" RAINFALL EVENT, AND CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR DETERIORATION.

2. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, AND RESEEDED AS NEEDED.

3. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-HALF THE HEIGHT OF THE SILT FENCE.

4. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.

5. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AS CONDITIONS DEMAND.

6. OUTLET STRUCTURES IN THE SEDIMENTATION BASIN SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES. SEDIMENT SHALL BE REMOVED FROM SEDIMENT BASIN OR TRAPS WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY 50%.

7. ALL SLOPES 3:1 AND STEEPER SHALL RECEIVE EROSION CONTROL BLANKET PER SPECS.

GMC
21764 SR 54
Lutz, FL 33549
T 813.885.2032

CLIENT NAME:
Ryman Constructiuon of Florida
36413 SR54
Zephyrhills, FL 33541

ISSUE	DATE
DESIGNER: LAB	sks
DRAWN BY: LAB	XX

HAIR LAB ZEPHYRHILLS
3795 Correia Drive
Zephyrhills, Florida

CTAM Job No.230062

Notation

Scott K. Stannard, P.E.
FL P.E. No. 50565

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY SCOTT K. STANNARD, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

DEMO & EROSION CONTROL PLAN

Sheet No.
C-3.0

DRAWING FILE: T:\1 Projects\FLK\Kerfe Ryman\CTAM230059_Hair Lab Zephyrhills\0 DWG\1 PLANS\01 BASE\Hair Lab Base.dwg
PLOTTED: Sep 27, 2023 - 1:57pm

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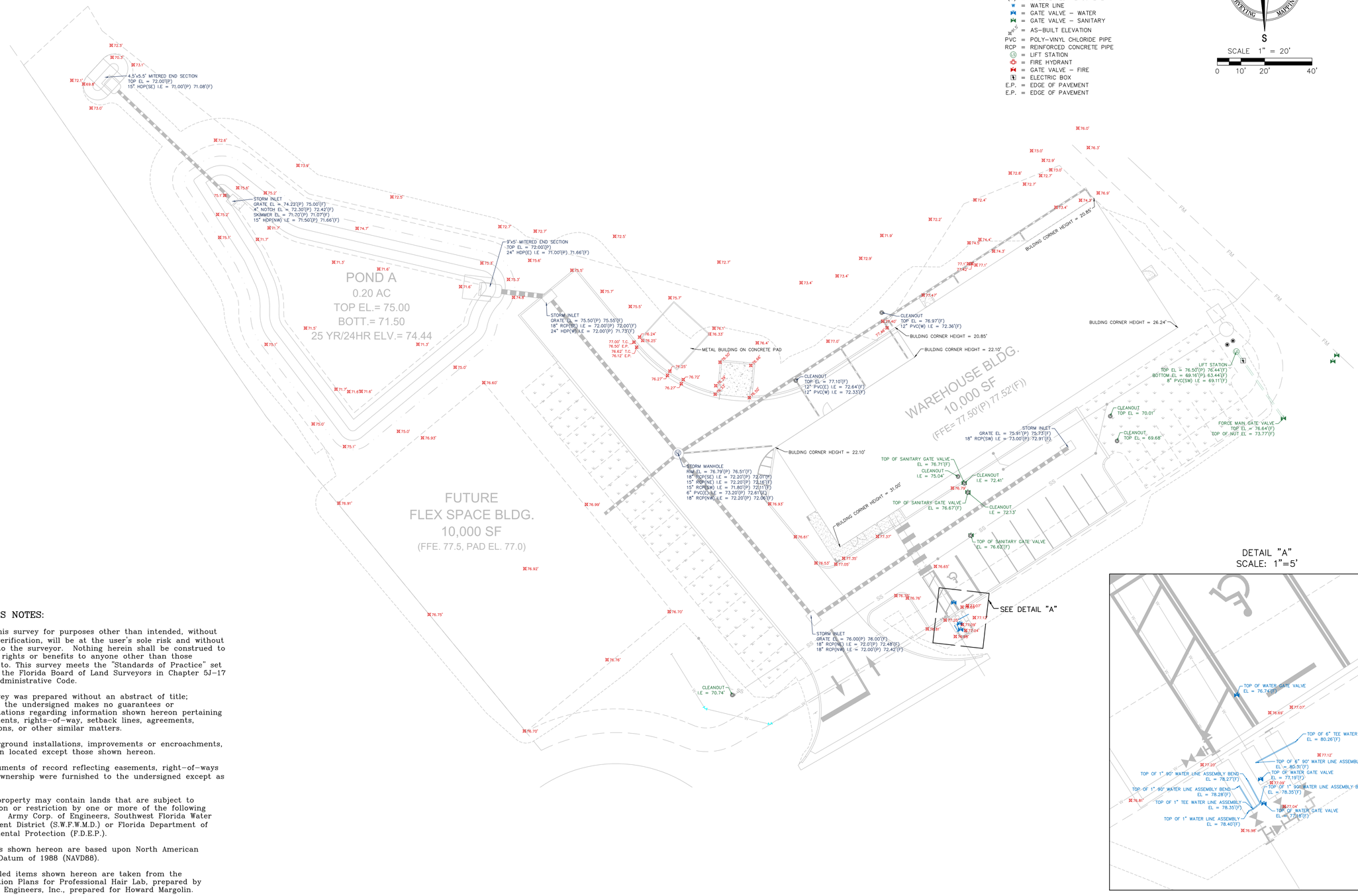
A PORTION OF

SECTION 19, TOWNSHIP 26 SOUTH, RANGE 22 EAST
PASCO COUNTY, FLORIDA



BY	REVISION	DATE

DATE OF FIELD SURVEY: 11/21/19

Andrew R. Getz
PLS/PSM License Number 7043
This survey conforms to the "Standards of Practice" set forth by the Florida Board of Land Surveyors in Chapter 5J–17 Florida Administrative Code.

Not valid without the signature and original raised seal of a Florida Licensed Surveyor and Mapper.

SEAL

DRAWN: CAG DATE: 12/4/19
CHKED: ARG DATE: 12/4/19

JOHNSON ASSOCIATES
SURVEYING AND MAPPING
Licensed Business No.: 4514
1111 Bypass Road
San Antonio, FL 33576
Phone: (352) 588–2768
Email: survey@dcjohnson.com
www.dcjohnson.com

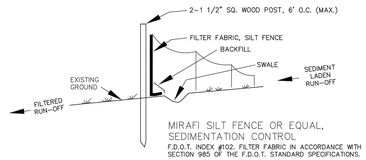
RECORD SURVEY

PREPARED FOR: Ryan Construction of Florida, Inc.

Professional Hair Lab

PROJECT NO. 2009-121C01.00001 | COUNTY: Pasco County
SEC: 19 | TWP: 26S | RNG: 22E

SCALE: As Shown
SHEET NO: 1 of 1



MIRAFI SILT FENCE OR EQUAL, SEDIMENTATION CONTROL.
F.D.O.T. INDEX #102, FILTER FABRIC IN ACCORDANCE WITH SECTION 985 OF THE F.D.O.T. STANDARD SPECIFICATIONS.

NOTES:

1. TEMPORARY EROSION CONTROL STRUCTURE TO BE UTILIZED DURING CONSTRUCTION AT AREAS DESIGNATED BY ENGINEER OR AREAS ON-SITE WHERE UNSTABILIZED GRADES MAY CAUSE EROSION PROBLEMS. EROSION CONTROL STRUCTURE MAY BE REMOVED AFTER UPSLOPE AREA HAS BEEN STABILIZED BY SOD, OR COMPACTED AS DETERMINED BY CONTRACTOR.
2. CONSTRUCT STORMWATER SYSTEMS BEFORE ANY BUILDING OR ROAD CONSTRUCTION IS STARTED.
   a.) PROTECT SYSTEM FROM SILTING AND DEBRIS BY METHODS PROVIDED IN DETAILS.
   b.) PROTECT SWALE BOTTOM FROM SEALING BY EXCAVATING ALL SILT DEPOSITS DURING CONSTRUCTION. THIS SHALL BE DONE BEFORE SOD & SEEDING & MULCHING IS FINISHED

EROSION CONTROL STRUCTURE

NOT TO SCALE

THE FOLLOWING LIST REPRESENTS A BASIC EROSION AND SEDIMENT CONTROL PROGRAM WHICH IS TO BE IMPLEMENTED TO HELP PREVENT OFF-SITE SEDIMENTATION DURING AND AFTER CONSTRUCTION OF THE PROJECT.

PERMANENT EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AT THE EARLIEST PRACTICAL TIME CONSISTENT WITH GOOD CONSTRUCTION PRACTICES. ONE OF THE FIRST CONSTRUCTION ACTIVITIES SHOULD BE THE PLACEMENT OF PERMANENT AND TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AROUND THE PERIMETER OF THE PROJECT OR THE INITIAL WORK AREA TO PROTECT THE PROJECT, ADJACENT PROPERTIES AND WATER RESOURCES.

TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE COORDINATED WITH PERMANENT MEASURES TO ASSURE ECONOMICAL, EFFECTIVE AND CONTINUOUS CONTROL THROUGHOUT THE CONSTRUCTION PHASE. TEMPORARY MEASURES SHALL NOT BE CONSTRUCTED FOR EXPEDIENCY IN LIEU OF PERMANENT MEASURES.

EROSION AND SEDIMENT CONTROL MEASURES SHALL BE ADEQUATELY MAINTAINED TO PERFORM THEIR INTENDED FUNCTION DURING CONSTRUCTION OF THE PROJECT.

NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BARRIERS SHALL BE ACCOMPLISHED PROMPTLY.

SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RAINFALL. THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.

MATERIAL FROM SEDIMENT TRAPS SHALL NOT BE STOCKPILED OR DISPOSED OF IN A MANNER WHICH MAKES THEM READILY SUSCEPTIBLE TO BEING WASHED INTO ANY WATERCOURSE BY RUNOFF OR HIGH WATER.

ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE BARRIERS ARE NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

CITY OF ZEPHYRHILLS STANDARD DETAILS

CITY OF ZEPHYRHILLS UTILITY DEPARTMENT
39825 ALSTON AVENUE ZEPHYRHILLS, FLORIDA 33542
PHONE (813)780-0029 FAX (813)780-0613

NOVEMBER 2021

G-1

811 Know what's below. Call before you dig.

GENERAL NOTES:

A. PROJECT OFFICE WALL SWPPP POSTINGS:
THE FOLLOWING ITEMS MUST BE POSTED TOGETHER IN A SINGLE, ORGANIZED LOCATION ON A WALL INSIDE THE PROJECT OFFICE: 1) SWPPPSITE MAPS (ALL PHASES), 2) SWPPP DETAIL SHEETS, 3) MAP SHOWING LOCATION OF OFFSITE IMPORT OR EXPORT FACILITY (IF APPLICABLE) 4) REVISIONS TO DETAILS, SITE MAPS, OR SWPPP RELATED RFIS, 5) SITE SWPPP BINDER, 6) SWCT PLACARD, 7) CURRENT OWNER/OPERATOR STORMWATER COMPLIANCE TRAINING CERTIFICATES FOR SUPERINTENDENTS(S) AND COMPLIANCE OFFICER(S), 8) CERTIFICATION AND/OR TRAINING CERTIFICATES REQUIRED TO PERFORM INSPECTIONS BY THE APPLICABLE CONSTRUCTION GENERAL PERMIT OR AUTHORITY HAVING JURISDICTION.

B. PERMITTED PROJECT AREA:
FOR PURPOSES OF THIS SWPPP AND ASSOCIATED STORMWATER PERMIT, PERMITTED PROJECT AREA IS DEFINED AS ANY AND ALL AREAS WITHIN THE PROJECT LIMITS OF DISTURBANCE, AS SHOWN ON THE SWPPP SITE MAPS AND IDENTIFIED IN THE NOTICE OF INTENT TO THE AGENCY. ALL GROUND-DISTURBING AND CONSTRUCTION RELATED ACTIVITIES (MATERIAL STORAGE, DUMPSTERS, PARKING AREA, PROJECT OFFICE TRAILER, ETC.) MUST BE INCLUDED WITHIN THE PERMITTED PROJECT AREA LIMITS OF DISTURBANCE.

OFF-SITE AREA(S) TO BE DISTURBED AS PART OF THIS PROJECT (NOT ON OWNER PROPERTY) INCLUDE THE CONSTRUCTION OF THE UTILITY LINE CONNECTIONS ON 6TH AVENUE, DRIVEWAY WORK ON 18TH, AND REPAIR OF ROAD, CURBING, AND DISTURBED AREAS WITHIN THE RIGHTS-OF-WAY IF THE THESE TWO ROADS.

ALL AREAS OUTSIDE THE PERMITTED PROJECT AREA (I.E. LIMITS OF DISTURBANCE)ACQUIRED FOR USE BY THE GC OR SUBCONTRACTOR OF THE GC (BORROW SOURCE, DISPOSAL AREAS, ETC.) MUST BE MANGED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAW UNDER THE STATE OF FLORIDA GENERAL NPDES PERMIT. THE CONTRACTOR IS RESPONSIBLE TO INSURE THAT ALL SUCH AREAS ARE CURRENTLY PERMITTED FOR THE INTENDED USE AND MAKING COPIES OF SAID PERMITS AVAILABLE TO THE AUTHORITY HAVING JURISDICTION UPON REQUEST.

C. SPECIAL PROJECT AREAS:
THERE ARE NO SPECIAL PROJECTS LOCATED BEYOND THE OWNER PERMITTED PROJECT AREA REQUIRING INSPECTION AND MAINTENANCE ASSOCIATED WITH THIS CONSTRUCTION PROJECT.

D. NON-STORMWATER DISCHARGES:
THE FLORIDA GENERAL PERMIT FOR STOMRWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES PROHIBITS MOST NON-STORMWATER DISCHARGES DURING THE CONSTRUCTION PHASE. ALLOWABLE NON-STORMWATER DISCHARGES THAT OCCUR DURING CONSTRUCTION ON THIS PROJECT ARE INCLUDED IN THE PART IV.A.3 OF THE GENERAL PERMIT. HTTP://WWW.DEP.STATE.FL.US/WATER/STORMWATER/NPDES/DOCS/CGP.PDF

BEST MANAGEMENT PRACTICES (BMP'S) AND CONTROLS MUST BE IMPLEMENTED FOR THE GENERAL PERIT ALLOWABLE DISCHARGES FOR THE DURATION OF THE PERMIT. THE TECHNIQUES DESCRIBED IN THIS SWPPP FOCUS ON PROVIDING CONTROL OF POLLUTANT DISCHARGES WITH PRACTICLE APPROACHES THAT UTILIZE READILY AVAILABLE EXPERTISE MATERAIL, AND EQUIPMENT.

NON-STORMWATER COMPONENTS OF THE SITE DISCHARGES MUST BE UNCONTAMINATED NON-TURBID WATER. ALL NON-STORMWATER DISCHARGES MUST BE ROUTED TO A STORMWATER CONTROL PRIOR TO DISCHARGE. WATER USED FOR CONSTRUCTION WHICH DISCHARGES FROM THE SITE MUST ORIGINATE FROM A PUBLIC WATER SUPPLY OR PRIVATE WELL APPROVED BY THE STATE HEALTH DEPARTMENT. WATER USED FOR CONSTRUCTION THAT DOES NOT ORIGINATE FROM AN APPROVED PUBLIC SUPPLY MUST NOT DISCHARGE FROM THE SITE. IT CAN BE RETAINED IN RETENTION PONDS UNTIL IT INFILTRATES OR EVAPORATES. WHEN NON-STORMWATER IS DISCHARGED FROM THE SITE, IT MUST BE DONE IN A MANNER SUCH THAT IT DOES NOT CAUSE EROSION OF THE SOIL DURING DISCHARGE.

E. POWER WASHING:
PROCESS WATER SUCH AS POWER WASHING WATER AND CONCRETE CUTTING EFFLUENT AMONG OTHERS, MUST BE COLLECTED FOR TREATMENT AND DISPOSAL. IT MUST NOT BE FLUSHED INTO THE SITE STORM DRAIN SYSTEM OR DISCHARGED OFF-SITE.

F. DISCHARGE POINTS:
ALL DISCHARGE POINTS MUST BE INSPECTED TO DETERMINE WHETHER EROSION AND SEDIMENT CONTROL MEASURES ARE EFFECTIVE IN PREVENTING DISCHARGE OR SEDIMENT FROM THE SITE AND/OR IMPACTS TO RECEIVING WATERS, SEDIMENT ACCUMULATION DOWNGRADIENT OF DISCHARGE LOCATIONS SHALL BE REPORTED AS A SEDIMENT DISCHARGE AND THE POTENTIAL UPSTREAM CASUE SHALL BE INVESTIGATED TO PREVENT FUTURE OCCURRENCE. CONTACT THE OWNER/OPERATOR AND AUTHORITY HAVING JURISDICTION TO DETERMINE APPROPRIATE ACTION FOR CLEANUP OF DISCHARGED SEDIMENT THAT MAY BE OUTSIDE OF THE LIMITS OF DISTURBANCE. SEE SAMPLING AND MONITORING PLAN IF APPLICABLE.

MAINTENANCE:

ALL MEASURES STATED ON THIS EROSION AND SEDIMENTATION CONTROL PLAN, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A 0.5" RAINFALL EVENT, AND CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

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2. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, AND RESEEDED AS NEEDED.

3. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-HALF THE HEIGHT OF THE SILT FENCE.

4. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.

5. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AS CONDITIONS DEMAND.

6. OUTLET STRUCTURES IN THE SEDIMENTATION BASIN SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES. SEDIMENT SHALL BE REMOVED FROM SEDIMENT BASIN OR TRAPS WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY 50%.

7. ALL SLOPES 3:1 AND STEEPER SHALL RECEIVE EROSION CONTROL BLANKET PER SPECS.

EROSION & SEDIMENT CONTROL NOTES:

A. THE STORMWATER POLLUTION PREVENTION PLAN IS COMPRISED OF THIS DRAWING ("SITE MAP"), THE STANDARD DETAILS, THE PLAN NARRATIVE, ATTACHMENTS INCLUDED IN SPECIFICATIONS SECTION 02370 ("SWPPP"), PLUS THE PERMIT AND ALL SUBSEQUENT REPORTS AND RELATED DOCUMENTS.

B. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL OBTAIN A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN AND THE STATE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT (NPDES PERMIT) AND BECOME FAMILIAR WITH THEIR CONTENTS.

C. CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES AS REQUIRED BY THE SWPPP. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED AS DICTATED BY CONDITIONS AT NO ADDITIONAL COST OF OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION.

D. BEST MANAGEMENT PRACTICES (BMP'S) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY PERMITTING AGENCY OR OWNER.

E. SITE MAP MUST CLEARLY DELINEATE ALL STATE WATERS. PERMITS FOR ANY CONSTRUCTION ACTIVITY IMPACTING STATE WATERS OR REGULATED WETLANDS MUST BE MAINTAINED ON SITE AT ALL TIMES.

F. CONTRACTOR SHALL MINIMIZE CLEARING TO THE MAXIMUM EXTENT PRACTICAL OR AS REQUIRED BY THE GENERAL PERMIT.

G. GENERAL CONTRACTOR SHALL DENOTE ON PLAN THE TEMPORARY PARKING AND STORAGE AREA WHICH SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AND CLEANING AREA, EMPLOYEE PARKING AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.

H. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) SHALL BE DETAINED AND PROPERLY TREATED OR DISPOSED.

I. SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS SHALL BE MAINTAINED ON SITE OR READLY AVAILABLE TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.

J. DUST ON THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.

K. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORMWATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE.

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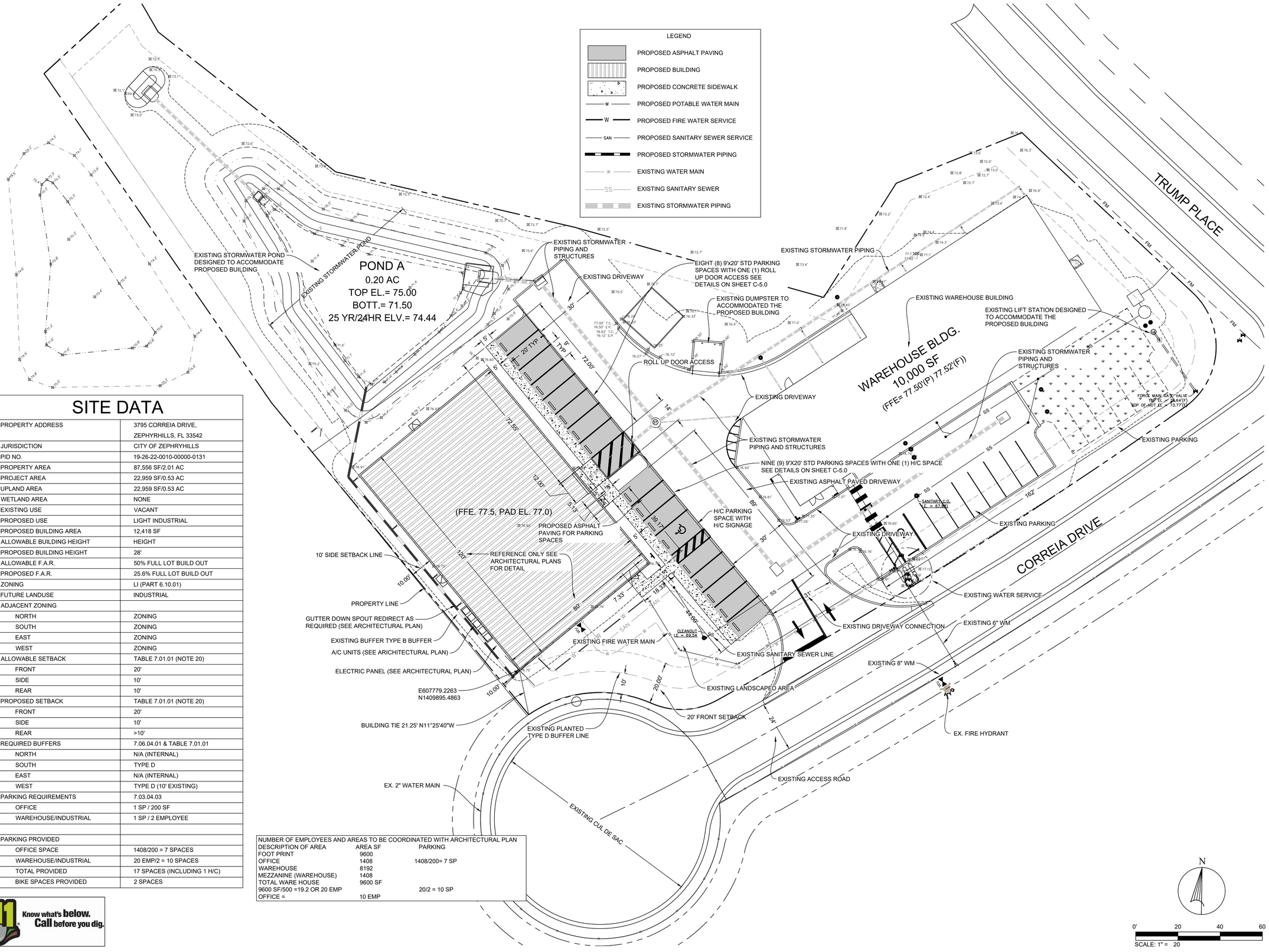
ISSUE	DATE



SITE DATA

PROPERTY ADDRESS	3795 CORREIA DRIVE, ZEPHYRHILLS, FL 33542
JURISDICTION	CITY OF ZEPHYRHILLS
PID NO.	19-26-22-0010-00000-0131
PROPERTY AREA	87,556 SF/2.01 AC
PROJECT AREA	22,959 SF/0.53 AC
UPLAND AREA	22,959 SF/0.53 AC
WETLAND AREA	NONE
EXISTING USE	VACANT
PROPOSED USE	LIGHT INDUSTRIAL
PROPOSED BUILDING AREA	12,418 SF
ALLOWABLE BUILDING HEIGHT	HEIGHT
PROPOSED BUILDING HEIGHT	28'
ALLOWABLE F.A.R.	50% FULL LOT BUILD OUT
PROPOSED F.A.R.	25.6% FULL LOT BUILD OUT
ZONING	LI (PART 6.10.01)
FUTURE LANDUSE	INDUSTRIAL
ADJACENT ZONING	
NORTH	ZONING
SOUTH	ZONING
EAST	ZONING
WEST	ZONING
ALLOWABLE SETBACK	TABLE 7.01.01 (NOTE 20)
FRONT	20'
SIDE	10'
REAR	10'
PROPOSED SETBACK	TABLE 7.01.01 (NOTE 20)
FRONT	20'
SIDE	10'
REAR	>10'
REQUIRED BUFFERS	7.06.04.01 & TABLE 7.01.01
NORTH	N/A (INTERNAL)
SOUTH	TYPE D
EAST	N/A (INTERNAL)
WEST	TYPE D (10' EXISTING)
PARKING REQUIREMENTS	7.03.04.03
OFFICE	1 SP / 200 SF
WAREHOUSE/INDUSTRIAL	1 SP / 2 EMPLOYEE
PARKING PROVIDED	
OFFICE SPACE	1408/200 = 7 SPACES
WAREHOUSE/INDUSTRIAL	20 EMP/2 = 10 SPACES
TOTAL PROVIDED	17 SPACES (INCLUDING 1 H/C)
BIKE SPACES PROVIDED	2 SPACES

NUMBER OF EMPLOYEES AND AREAS TO BE COORDINATED WITH ARCHITECTURAL PLAN

DESCRIPTION OF AREA	AREA SF	PARKING
FOOT PRINT	9600	
OFFICE	1408	1408/200= 7 SP
WAREHOUSE	8192	
MEZZANINE (WAREHOUSE)	1408	
TOTAL WARE HOUSE	9600 SF	
9600 SF/500 =19.2 OR 20 EMP		20/2 = 10 SP
OFFICE =	10 EMP	

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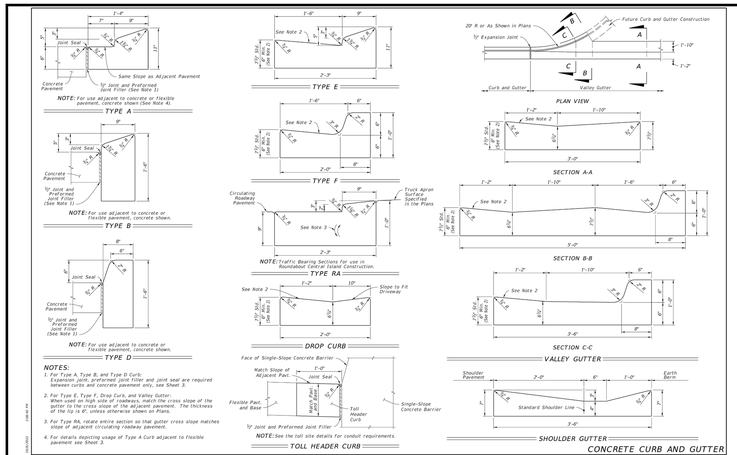
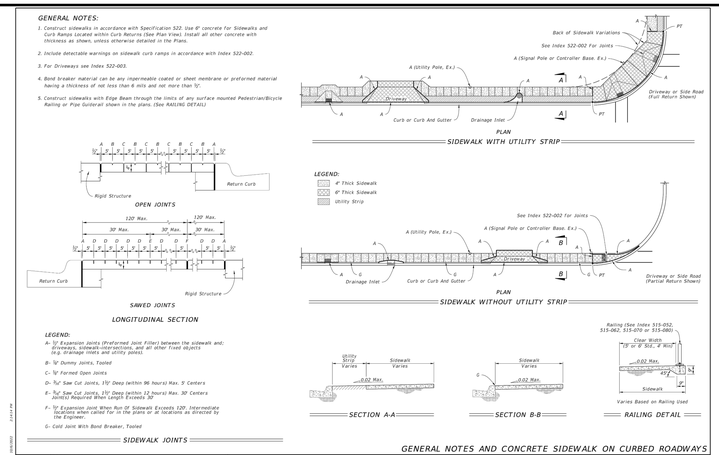


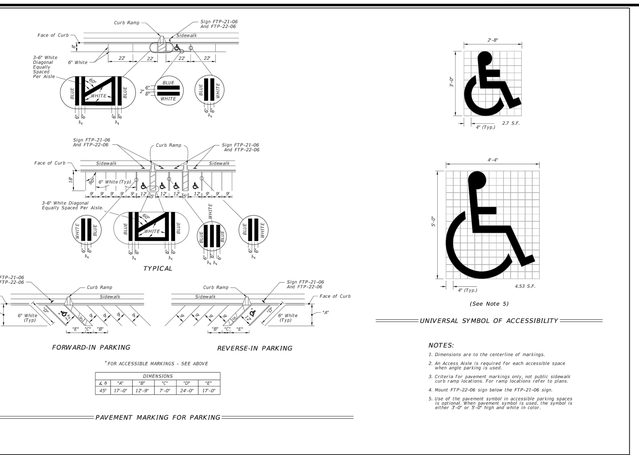
LAST REVISION	DESCRIPTION:
11/01/21	

FDOT FY 2023-24 STANDARD PLANS | CURB AND GUTTER | INDEX 520-001 | SHEET 2 of 3



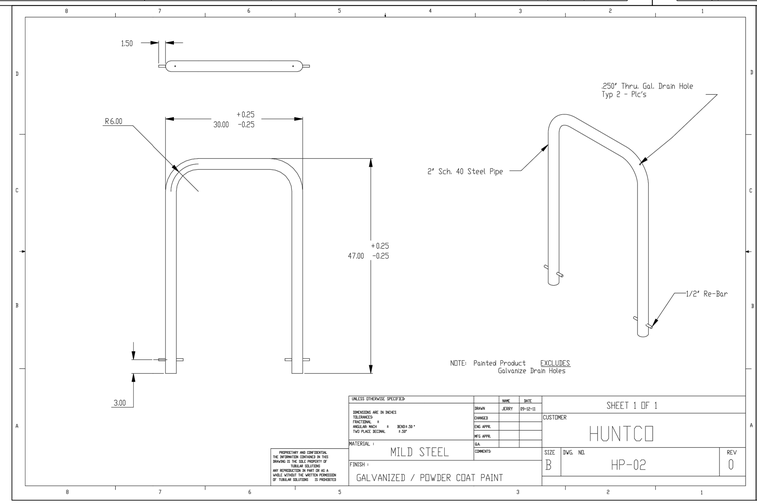
LAST REVISION	DESCRIPTION:
11/01/18	

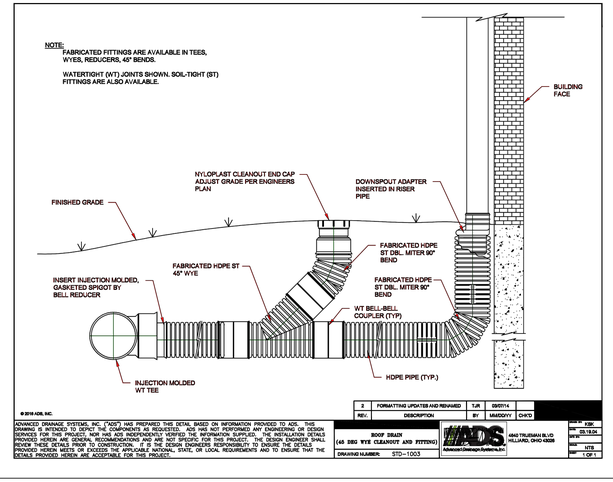
FDOT FY 2023-24 STANDARD PLANS | CONCRETE SIDEWALK | INDEX 522-001 | SHEET 1 of 2

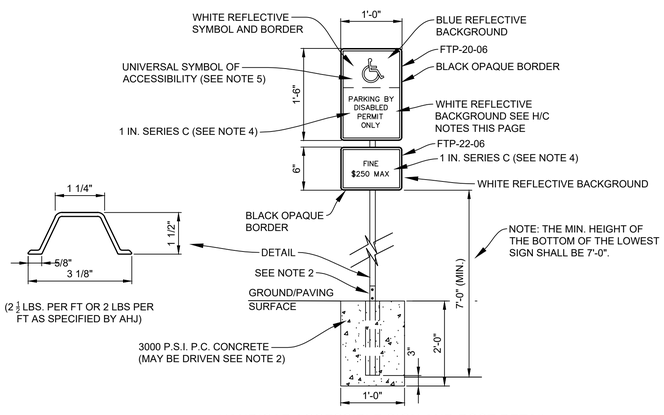


LAST REVISION	DESCRIPTION:
11/01/21	

FDOT FY 2023-24 STANDARD PLANS | PAVEMENT MARKINGS | INDEX 711-001 | SHEET 11 of 13







HANDICAP ACCESSIBLE SIGN AND POST DETAIL
N.T.S.

H/C SIGN POST NOTES:
HANDICAP SIGNAGE TO BE IN ACCORDANCE WITH FDOT DI#700-102, 700-010 AND CURRENT MUTCD

1. METAL POST TO BE GALVANIZED 2 1/2 LBS PER FT. (2 LBS PER FT. WHEN APPROVED BY AHJ). ALL BOLTS, NUTS, WASHERS, AND SCREWS MUST BE RUST PROOF.
2. CONCRETE FOR FOOTING SHALL BE PORTLAND CEMENT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI. POST MAY BE DRIVEN IN ACCORDANCE WITH FDOT DI#700-010 SHT 5 OF 10. BREAKAWAY JOINT IS REQUIRED IN ROW.
3. SIGNS SHALL BE FABRICATED BY USING REFLECTIVE COATING IN THE SYMBOL, MESSAGE AND BORDER APPLIED TO A SHEET ALUMINUM BACKING (0.080) IN. THICKNESS.
4. MESSAGE LETTERING SHALL BE UPPER CASE (BLACK) (SERIES C) 1 INCH HIGH IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. FDOT INDEX 700-102
5. THE SYMBOL IS COMPOSED OF TWO ELEMENTS, A WHITE WHEEL CHAIR FIGURE (WHICH MUST FACE RIGHT) ON A BACKGROUND, UNIVERSAL BLUE (SHADE 15180 OF FED. STD 595A) IN COLOR. 6. SIGN POST SHALL BE MIN. 2'-0" CLEAR FROM BACK OF CURB.

811 Know what's below. Call before you dig.

DRAWING FILE: T:\1 Projects\FL\Kevin Rymon\CTAM230059_Hair Lab Zephyrhills\0 DWG\1 PLANS\01 BASE\Hair Lab Base.dwg
PLOTTED: Sep 27, 2023 - 2:01pm

GMC
21764 SR 54
Lutz, FL 33549
T 813.885.2032

CLIENT NAME:
Ryman Construction of Florida
36413 SR54
Zephyrhills, FL 33541

ISSUE	DATE
DESIGNER: LAB	sks
DRAWN BY: LAB	XX

HAIR LAB ZEPHYRHILLS
3795 Correia Drive
Zephyrhills, Florida

CTAM Job No.230062
Notation

Scott K. Stannard, P.E.
FL P.E. No. 50565
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY SCOTT K. STANNARD, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SITE DETAILS

Sheet No.
C-5.0

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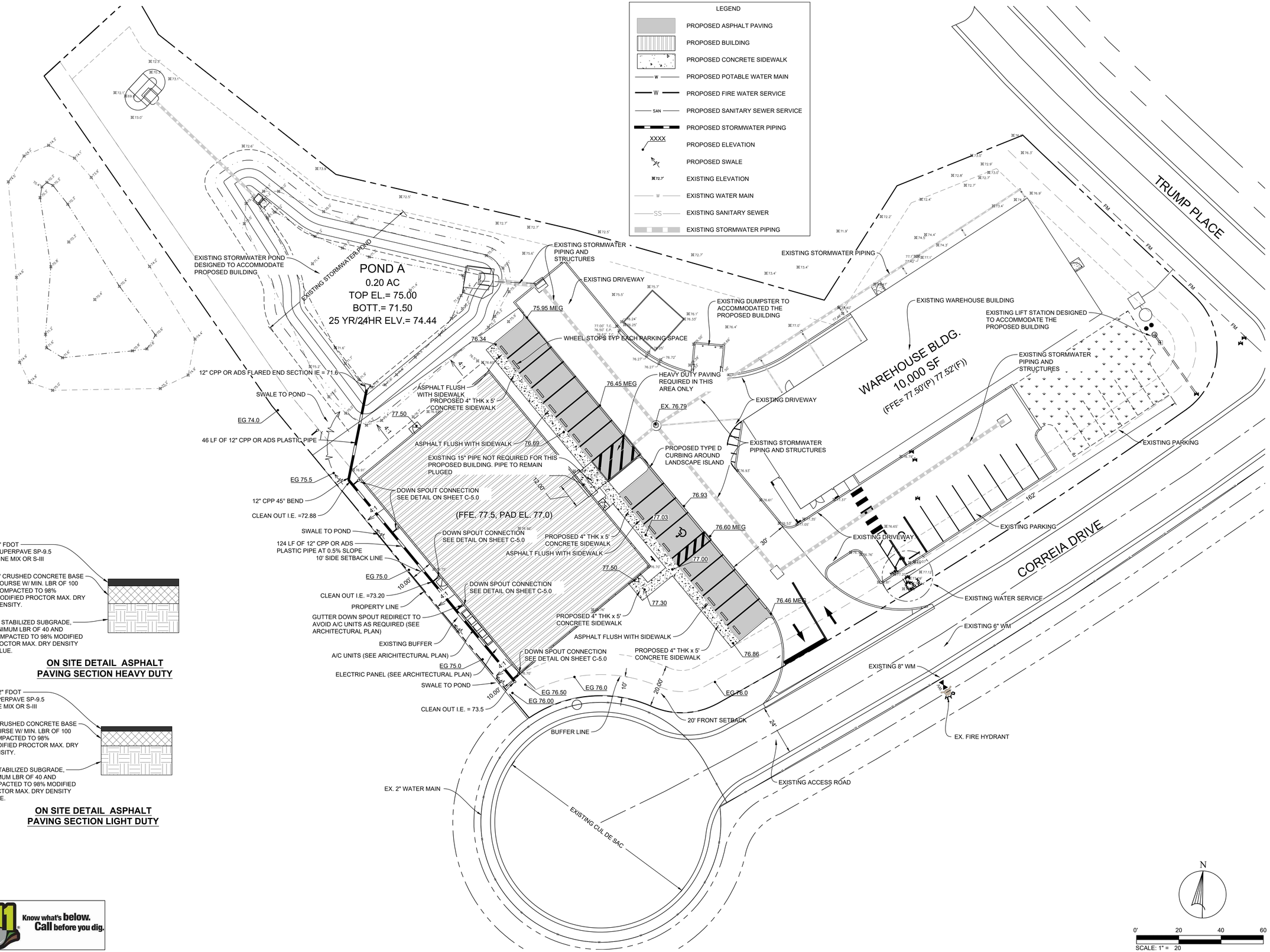

2" FDOT SUPERPAVE SP-9.5 FINE MIX OR S-III

8" CRUSHED CONCRETE BASE COURSE W/ MIN. LBR OF 100 COMPACTED TO 98% MODIFIED PROCTOR MAX. DRY DENSITY.

12" STABILIZED SUBGRADE, MINIMUM LBR OF 40 AND COMPACTED TO 98% MODIFIED PROCTOR MAX. DRY DENSITY VALUE.

ON SITE DETAIL ASPHALT PAVING SECTION HEAVY DUTY

1 1/2" FDOT SUPERPAVE SP-9.5 FINE MIX OR S-III

6" CRUSHED CONCRETE BASE COURSE W/ MIN. LBR OF 100 COMPACTED TO 98% MODIFIED PROCTOR MAX. DRY DENSITY.

12" STABILIZED SUBGRADE, MINIMUM LBR OF 40 AND COMPACTED TO 98% MODIFIED PROCTOR MAX. DRY DENSITY VALUE.

ON SITE DETAIL ASPHALT PAVING SECTION LIGHT DUTY

811 Know what's **below.** **Call** before you dig.

DRAWING FILE: T:\1 Projects\FL\Kevin Ryman\CTAM230059_Hair Lab Zephyrhills\0 DWG\1 PLANS\01 BASE\Hair Lab Base.dwg
PLOTTED: Sep 27, 2023 - 2:02pm

GMC
21764 SR 54
Lutz, FL 33549
T 813.885.2032

CLIENT NAME:
Ryman Constructiuon of Florida
36413 SR54
Zephyrhills, FL 33541

ISSUE	DATE
DESIGNER: LAB	
DRAWN BY: LAB	sks
	XX

HAIR LAB ZEPHYRHILLS
3795 Correia Drive
Zephyrhills, Florida

CTAM Job No.230062

Notation

Scott K. Stannard, P.E.
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GRADING PLAN

Sheet No.
C-6.0

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POND A
0.20 AC
TOP EL.= 75.00
BOTT.= 71.50
25 YR/24HR ELV.= 74.44

(FFE. 77.5, PAD EL. 77.0)

WAREHOUSE BLDG.
10,000 SF
(FFE= 77.50'(P)77.52'(F))

TRUMP PLACE

CORREIA DRIVE

EXISTING 6" SAN SWR C.O. I.E.= 69.82 (FIELD VERIFY)

4" 90° BEND

PROPOSED TIE IN TO EXISTING 2" PVC POTABLE WATER LINE

PROPOSED FDC WITH SIGNAGE STATING "FDC" AS PER NFPA 13 AND IN ACCORDANCE WITH PASCO COUNTY FIRE RESCUE REQUIREMENTS. SEE FIRE SPRINKLER ENGINEERS DETAILS (BY OTHERS)

6" SAN SWR CLEANOUT

2" GV AT BLDG

4" 90° BEND

CONNECTION TO PROPOSED SPRINKLER RISER SEE ARCHITECTURAL PLANS

C.O. I.E. = 70.38

TIE IN PROPOSED 6" PVC SAN SWR LINE TO EXISTING 6" PVC SAN SWR I.E. = 69.54

EXISTING 4" FIRE SERVICE LINE

CLEANOUT I.E. = 69.54

PROPOSED 44 LF OF 2" BLUE SDR9 POLYETHYLENE TUBING

APPROX. 70 LF OF 4" PVC DR14 FIRE SERVICE LINE RESTRAIN ALL JOINTS

EXISTING 2" PVC POTABLE WATER LINE FROM EXISTING 2" TEE AND VALVE AFTER METER AND BFP

EX. FIRE HYDRANT

EX. 2" WATER MAIN

FORCE MAIN GATE VALVE
TOP EL. = 76.64'(F)
TOP OF NUT EL. = 73.77'(F)

SANITARY C.O.
E. = 67.60'

N

0' 20 40 60
SCALE: 1" = 20

811 Know what's below. Call before you dig.

DRAWING FILE: T:\1 Projects\FL\Kevin Ryman\CTAM\230059_Hair Lab Zephyrhills\0 DWG\1 PLANS\01 BASE\Hair Lab Base.dwg
PLOTTED: Sep 27, 2023 - 2:03pm

GMC
21764 SR 54
Lutz, FL 33549
T 813.885.2032

CLIENT NAME:
Ryman Constructiuon of Florida
36413 SR54
Zephyrhills, FL 33541

ISSUE	DATE

DESIGNER: LAB
DRAWN BY: LAB
sks
XX

HAIR LAB ZEPHYRHILLS
3795 Correia Drive
Zephyrhills, Florida

CTAM Job No.230062

Notation

Scott K. Stannard, P.E.
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UTILITY PLAN

Sheet No.
C-7.0

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REFERENCED DATA

1. TOPOGRAPHIC SURVEY WAS OBTAINED FROM _____ AND PERFORMED BY _____ DATED _____.
2. SUBSURFACE UTILITY EXPLORATION WAS OBTAINED FROM _____ AND PERFORMED _____ DATED _____.
3. ALL ELEVATIONS ARE REFERENCED TO _____. THE HORIZONTAL DATUM IS BASED ON STATE PLANE _____.
4. THE SURVEY INFORMATION CONTAINED HEREIN WAS OBTAINED FOR DESIGN PURPOSES AND MAY NOT BE AN ADEQUATE REPRESENTATION OF ACTUAL CONDITIONS FOR PROJECT CONSTRUCTION. EXISTING CONTOURS SHOWN REPRESENT INTERPOLATIONS/EXTRAPOLATIONS FROM THE BEST AVAILABLE SURVEY DATA. ALL RISKS RESULTING FROM THE USE OR INTERPRETATION OF THE SURVEY DATA SHOWN SHALL BE BORNE BY THE CONTRACTOR.
5. GEOTECHNICAL INVESTIGATION AND RECOMMENDATIONS PERFORMED BY _____. REFER TO REPORT DATED _____.
6. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH IN THE FIELD LIMITS OF CONSTRUCTION, BENCHMARKS (TILES), COORDINATES, CENTER LINES, AND STATIONING AS REQUIRED TO CONSTRUCT THIS PROJECT.

GENERAL

7. ALL DESIGN AND CONSTRUCTION SHALL CONFORM TO THE MINIMUM STANDARDS SET FORTH BY THE FDEP, AWWA, NSF, AND CITY OF ZEPHYRHILLS.
8. THE CONTRACTOR IS ADVISED NOT TO SCALE FROM DRAWINGS BUT TO FIELD VERIFY ALL DIMENSIONS. THE DIMENSIONS OF SPECIFIED AND FURNISHED PRODUCTS AND MATERIALS SHALL TAKE PRECEDENCE OVER DIMENSIONS SHOWN ON DRAWINGS. IF DISCREPANCIES OR DEVIATIONS OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 72 HOURS PRIOR TO CONSTRUCTION FOR A DETERMINATION AND RESOLUTION.
9. THE CONTRACTOR SHALL CHECK PLANS FOR CONFLICTS AND DISCREPANCIES PRIOR TO PERFORMING ANY WORK IN THE AFFECTED AREA.
10. IF IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH THE PERMIT AND INSPECTION REQUIREMENTS SPECIFIED BY THE VARIOUS GOVERNMENTAL AGENCIES AND THE ENGINEER. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION AND SCHEDULE INSPECTION ACCORDING TO AGENCY INSTRUCTIONS.
11. ALL WORK PERFORMED SHALL COMPLY WITH THE REGULATIONS AND ORDINANCES OF THE VARIOUS GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE WORK.

CONSTRUCTION LAYOUT/LIMITS OF CONSTRUCTION

12. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF FLORIDA FOR LAYOUT. PROOF OF LICENSE SHALL BE SUBMITTED TO THE ENGINEER BEFORE BEGINNING LAYOUT.
13. NO DISTURBANCE SHALL BE ALLOWED OUTSIDE OF THE RIGHT OF WAYS AND/OR THE EASEMENTS OR PROPERTY LINES SHOWN ON THE DRAWINGS UNLESS APPROVED BY THE OWNER OR SPECIFICALLY NOTED ON THE DRAWINGS.

EXISTING CONDITIONS

14. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES AFFECTING THIS WORK PRIOR TO CONSTRUCTION.
15. PRIOR TO SHOP DRAWING PREPARATION AND SUBMITTAL AND PURCHASE OF RELATED MATERIALS, THE CONTRACTOR SHALL FIELD VERIFY EXISTING UTILITIES (LOCATION, SIZE, MATERIALS OF CONSTRUCTION, OUTSIDE DIAMETER, WALL THICKNESS, ROUNDNESS, ELEVATIONS, ETC.) TO WHICH CONNECTION(S) WILL BE MADE. CONTRACTOR SHALL INCLUDE FIELD MEASUREMENTS ON SHOP DRAWINGS.
16. THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER IN WRITING IMMEDIATELY IF CONFLICTS BETWEEN THE DRAWINGS AND ACTUAL CONDITIONS ARE DISCOVERED. THE CONTRACTOR SHALL ACCURATELY RECORD ANY SUCH CONFLICTS ON THE RECORD DRAWINGS.
17. ANY PROPERTY CORNERS, MONUMENTS, OR BENCH MARKS WITHIN THE PROJECT AREA SHALL BE PROTECTED UNLESS OTHERWISE INDICATED FOR DEMOLITION. IF ANY SUCH ITEMS ARE IN DANGER OF DAMAGE OR HAVE BEEN DAMAGED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER IMMEDIATELY AND REPLACE/RESTORE SUCH ITEMS AT NO ADDITIONAL COST TO THE OWNER. IF OWNER CHOOSES TO SELF REMEDIATE THE DAMAGE, OR INCURS RELATED EXPENSES, THE CONTRACTOR SHALL REIMBURSE THE OWNER FOR ALL COSTS ASSOCIATED WITH THE EFFORT.
18. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, ABOVE OR BELOW GROUND THAT MAY OCCUR AS A RESULT OF THE WORK PERFORMED BY THE CONTRACTOR CALLED FOR IN THIS CONTRACT.

UTILITY COORDINATION

19. THE CONTRACTOR SHALL NOTIFY ALL UTILITIES NEAR THE PROJECT AREA AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE NOTIFYING "SUNSHINE STATE ONE CALL OF FLORIDA" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK TO HAVE ALL EXISTING UTILITIES LOCATED. THE PHONE NUMBER IS 1-800-432-4770 AND THE WEB SITE IS WWW.CALLSUNSHINE.COM. IN INSTANCES WHERE ONGOING OCCURS IN WETLANDS, THE NOTIFICATION PERIOD SHALL BE INCREASED FROM AT LEAST 48 HOURS TO AT LEAST 10 DAYS.
20. FLORIDA LAW (FS 553.851) REQUIRES THAT PERSONS MAKING EXCAVATIONS IN PUBLIC RIGHTS-OF-WAYS, EASEMENTS, AND/OR UTILITY EASEMENTS MUST FIRST OBTAIN INFORMATION ON LOCATIONS OF UNDERGROUND GAS PIPELINES.
21. THE CONTRACTOR IS RESPONSIBLE FOR BRACING, SHORING, OR PROVIDING OTHER MEANS NECESSARY TO PROTECT AND SUPPORT EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES (EXPOSED OR UNEXPOSED) THAT MAY BE IMPACTED BY HIS WORK.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING POWER/TELEPHONE COMPANIES AND ARRANGING TO HAVE UTILITIES POLES HELD AND/OR GUY WIRES REMOVED AND REPLACED, IF NECESSARY FOR CONSTRUCTION, AT NO ADDITIONAL COST TO THE OWNER.
23. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE PUBLIC AGENCY(IES) PRIOR TO COMMENCING WORK WITHIN THEIR JURISDICTION.

CONSTRUCTION SAFETY

24. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE OSHA EXCAVATION SAFETY STANDARDS AND TO ABIDE BY THEM AS COVERED UNDER THE FLORIDA TRENCH SAFETY ACT.
25. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION SAFETY.

RESTORATION

26. ALL PAVING, STABILIZED EARTH, DRIVEWAYS, CURBS, SIDEWALKS, FENCES, SOD, LANDSCAPING, CULVERTS, ETC. DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED BY AND AT THE EXPENSE OF THE CONTRACTOR TO THE SATISFACTION OF THE OWNER.
27. ALL EXISTING SIGNS AND MAILBOXES LOCATED WITHIN THE PROJECT SHALL BE REMOVED AND REINSTALLED OR REPLACED AS REQUIRED DURING CONSTRUCTION, AND SHALL BE RESTORED BY AND AT THE EXPENSE OF THE CONTRACTOR TO THE SATISFACTION OF THE OWNER.
28. ALL SIDEWALKS DAMAGED DURING CONSTRUCTION ARE TO BE A MINIMUM WIDTH OF 5', A MINIMUM OF 4" THICK, 3,000 PSI CONCRETE, AND SHALL BE REINFORCED WITH 1.4X1.4 W.W.M., ALL IN CONFORMANCE WITH MACDILL DESIGN GUIDELINES, LATEST EDITION.

ACCESS/MAINTENANCE OF FACILITIES

29. THE CONTRACTOR SHALL PROVIDE ACCESS TO ALL EXISTING UTILITIES/FACILITIES AND MAINTAIN UNINTERRUPTED SERVICES THROUGHOUT THE CONTRACT PERIOD.

PIPING NOTES

30. LAY PIPE TO UNIFORM GRADE BETWEEN INDICATED ELEVATION POINTS. CONTRACTOR SHALL TAKE CARE TO PROVIDE PROPER GRADE ELEVATIONS AND ALIGNMENTS.
31. SIZE OF FITTINGS SHOWN ON DRAWINGS SHALL CORRESPOND TO THE ADJACENT STRAIGHT RUN OF PIPE UNLESS NOTED OTHERWISE. ALL JOINT AND FITTING MATERIAL SHALL BE SPECIFIED FOR THE ADJACENT STRAIGHT RUN OF PIPE UNLESS NOTED OTHERWISE.
32. ALL PIPE LENGTHS ARE APPROXIMATE. PIPE MEASUREMENTS FOR STRAIGHT ENDWALL END SECTIONS ARE TO END OF PIPE.
33. PIPE HANGERS AND SUPPORTS ARE NOT SHOWN UNLESS A SPECIAL TYPE OR CONFIGURATION IS REQUIRED. FINAL SUPPORTS, LOCATIONS, AND TYPES SHALL BE DETERMINED BY THE CONTRACTOR AND INCLUDED IN THE PIPELINE DRAWING SUBMITTALS FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO INSTALLATION. MAXIMUM SPACING SHALL BE AS SPECIFIED.

WATER

34. ALL WATER PIPES ARE TO BE CONSTRUCTED WITH 36" MINIMUM COVER UNLESS OTHERWISE NOTED ON THE PLANS. ALL WATER MAINS ARE DR-18 PVC UNLESS OTHERWISE NOTED.
35. FURNISH AND INSTALL 8 GAUGE TRACER WIRE ON ALL MAIN PIPELINES. WIRE TO EXTEND INTO EACH VALVE BOX WITH SUFFICIENT EXCESS TO BRING WIRE THREE FEET ABOVE FINISH GRADE.
36. WATER SYSTEMS ARE TESTED TO A MINIMUM OF 150 PSI FOR TWO-HOUR DURATION AS PER AWWA C 600 STANDARDS.
37. ALL FIRE FLOW LINES WILL RUN SEPARATE FROM THE DOMESTIC WATER MAINS AND HAVE A DOUBLE CHECK VALVE ASSEMBLY AND A FIRE LINE BACK FLOW PREVENTION ASSEMBLY (BFP). ASSEMBLY SHALL INCLUDE A LOW FLOW BY-PASS METER.
38. ALL POTABLE WATER CONNECTIONS SHALL BE MADE WITH CUTTING-IN TEES WITH VALVES. ANY EXCEPTIONS TO THIS WILL REQUIRE CITY OF ZEPHYRHILLS APPROVAL WHEN ALLOWED BY CITY OF ZEPHYRHILLS. ALL CUTTING-IN TEE WET TAP CONNECTIONS SHALL BE PERFORMED BY A LICENSED, UNDERGROUND CONTRACTOR, WITH ADVANCE NOTIFICATION (72 HOURS) TO THE CITY OF ZEPHYRHILLS INSPECTOR.
39. WATER TAPPING SADDLES SHALL BE DOUBLE STRAP BRASS OR DUCTILE IRON OR EPOXY COATED STEEL WITH STAINLESS STEEL HARDWARE. THE STRAPS AND BOLTS SHALL BE STAINLESS STEEL TYPE 316. SERVICE SHALL BE FULL DOUBLE STAINLESS STEEL TAPPING SADDLE SLEEVE WITH RESILIENT SEATED TAPPING VALVE SHALL BE USED FOR PROPOSED WATER AND FORCE MAIN CONNECTIONS.
40. ALL FIRE HYDRANTS SHALL BE PAINTED IN ACCORDANCE WITH AGRAM 07-07 (MAY 2007). CAPS SHALL BE PAINTED WITH REFLECTIVE-TYPE PAINT.

BARREL: COLOR	DISTRIBUTION SYSTEM TYPE
SILVER	PUBLIC (POTABLE)
RED	FIRE PROTECTION (POTABLE WITH BFP)
PURPLE	RECLAIMED (NON-POTABLE)
CAPS	RATED CAPACITY (AT 20PSI RESIDUAL PRESSURE)
SAFETY BLUE	500 GPM
GREEN	1000-1499 GPM
ORANGE	500-999 GPM
RED	<500 GPM

UTILITY SEPARATION

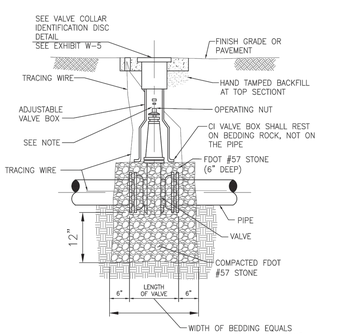
41. EACH PROPOSED UTILITY SHALL BE LAID TO ACHIEVE THE MINIMUM HORIZONTAL SEPARATION BETWEEN IT AND OTHER UTILITIES IN ACCORDANCE WITH THE TYPICAL UTILITY HORIZONTAL SEPARATION DETAIL AND FDEP REQUIREMENTS.
42. AT LOCATIONS WHERE A PROPOSED UTILITY CROSSES ANOTHER UTILITY, THE PROPOSED UTILITY SHALL BE INSTALLED IN ACCORDANCE WITH THE TYPICAL UTILITY CONFLICT DETAIL AND FDEP REQUIREMENTS.
43. IN THE EVENT THAT A UTILITY CONFLICT CAN NOT BE RESOLVED BY MAKING A MINOR ROUTE ADJUSTMENT OR BY UTILIZING THE TYPICAL UTILITY CONFLICT DETAIL, THE CONTRACTOR SHALL SUBMIT A RELOCATION PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK. ALL RELOCATION EFFORTS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER AND ANY AFFECTED UTILITY COMPANIES.

MAINTENANCE OF TRAFFIC

44. THE CONTRACTOR SHALL REFER TO THE "2014 FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS" FOR FDOT DESIGN INDEXES AND 2014 "FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND ALL SUPPLEMENTS TO THE INFORMATION AND DETAILS PROVIDED IN THESE CONSTRUCTION DRAWINGS.
45. ALL REFERENCED FDOT STANDARD INDEX DRAWINGS CAN BE FOUND AT WWW.DOT.STATE.FL.US/ROADSIGN/DS/14/DS14.SHTM.
46. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFE MAINTENANCE OF PEDESTRIAN AND VEHICULAR TRAFFIC AT ALL TIMES DURING THE DURATION OF THE PROJECT.
47. THE CONTRACTOR SHALL MAINTAIN TRAFFIC IN ACCORDANCE WITH FDOT STANDARD INDEX 600 SERIES AND THE TECHNICAL SPECIFICATIONS. THE CONTRACTOR SHALL FURNISH, ERECT, AND MAINTAIN ALL NECESSARY TRAFFIC CONTROL AND SAFETY DEVICES THROUGHOUT THE PROJECT. ONE TRAFFIC LANE MUST BE MAINTAINED AT ALL TIMES WITH FLAGGERS. TWO TRAFFIC LANES MUST BE OPEN FOR TRAFFIC AT THE CLOSE OF WORKDAYS. ALL SIGNS, BARRICADES, LIGHTING, AND FLAGGERS SHALL BE INCLUDED IN THE LUMP SUM COST.
48. ALL PAVEMENT MARKINGS SHALL MEET CURRENT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES STANDARDS. ALL MARKINGS SHALL BE PAINTED IN ACCORDANCE WITH FDOT STANDARD SPECIFICATION SECTION 710.
49. SIGNS AND BARRICADES TO BE ACCORDING TO FDOT MANUAL OF SAFE PRACTICES; REFERENCE FDOT INDICES 600 THROUGH 650 AND 17349 PER ROADWAY AND TRAFFIC DESIGN STANDARDS LATEST EDITION.

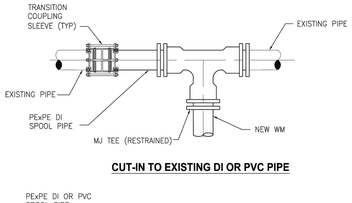
PROJECT SPECIFIC

50. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF TWO WEEKS NOTICE TO THE OWNER PRIOR TO CONNECTING THE NEW WATER MAIN TO THE AFB PUBLIC WATER SUPPLY (AFB-PWS). THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND SCHEDULING EACH CONNECTION WITH THE AFB-PWS AND THE OWNER THE PWS TO ENSURE THAT THERE ARE MINIMAL INTERRUPTIONS TO EACH SYSTEM.
51. ALL UNDERGROUND UTILITIES MUST BE IN PLACE AND TESTED AND/OR INSPECTED PRIOR TO BACKFILL COMPACTION, ROAD BASE INSTALLATION, OR RESTORATION.
52. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL PRECAST AND MANUFACTURED ITEMS TO THE ENGINEER FOR APPROVAL. FAILURE TO OBTAIN APPROVAL BEFORE INSTALLATION MAY RESULT IN REMOVAL AND REPLACEMENT AT CONTRACTOR'S EXPENSE.
53. ALL ROCKS OR STONES LARGER THAN 6" IN DIAMETER SHALL BE REMOVED FROM THE BACKFILL MATERIAL. BACKFILL MATERIAL PLACED WITHIN 1'-0"OUT OF PIPING AND APPURTENANCES SHALL NOT CONTAIN ANY STONES LARGER THAN 2" IN DIAMETER.
54. ALL WORKMANSHIP AND MATERIALS USED IN THE CONSTRUCTION OF THIS PROJECT SHALL CONFORM TO FDOT'S STANDARD SPECIFICATIONS FOR ROADWORK AND BRIDGE CONSTRUCTION, LATEST EDITION, AWWA, NSF, AND THE LATEST CITY OF ZEPHYRHILLS STANDARDS, UNLESS OTHERWISE INDICATED.
55. [ENGINEER TO ADD MORE AS NEEDED]
56. ABANDON PIPING IN PLACE:
   - 3" AND SMALLER CAP AND ABANDON IN PLACE.
   - 3" AND LARGER CAP AND GROUT FILL IN PLACE.

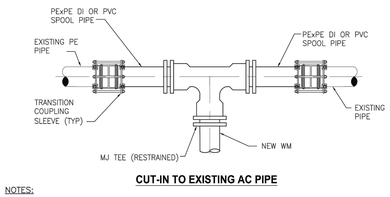


NOTES:
1. EXTENSION OF VALVE BOX SHALL BE SET SO AS TO RESERVE 1/2 OF THE ADJUSTMENT LENGTH FOR FUTURE USE.
2. VALVE STEM EXTENSION(S) REQ'D TO MAINTAIN 2' DEPTH TO OPERATING NUT ON DEPRESSED MAIN W/36" OR MORE COVER.

GATE VALVE BOX
NTS



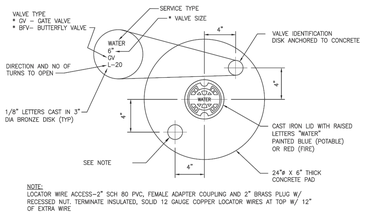
CUT-IN TO EXISTING DI OR PVC PIPE



CUT-IN TO EXISTING AC PIPE

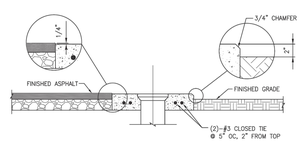
NOTES:
1. RESTRAIN ALL PIPING IN ACCORDANCE WITH EXHIBIT G-6 OR AS DIRECTED BY THE CITY
2. SPOOL AND SLEEVE PIPING LAYOUT TO BE SIMILAR FOR CUT-IN CROSS.
3. ALL BURIED DUCTILE IRON PIPE AND FITTINGS SHALL BE POLYWRAPPED PER HILLSBOROUGH COUNTY STANDARDS
4. FOR ASBESTOS-CEMENT (AC) PIPE, REMOVE 10 FT, (MIN) OF PIPE ON EITHER SIDE OF THE NEW TEE AND REPLACE WITH DIP OR C900 PVC WHERE FEASIBLE. AS PROJECT CONDITIONS ALLOW, NO AC JOINTS SHALL BE ALLOWED WITHIN 15 FT. ON EITHER SIDE OF THE NEW TEE.

CUT-IN-TEE
NTS



NOTE:
LOCATOR WIRE ACCESS-2" SCH 80 PVC, FEMALE ADAPTER COUPLING AND 2" BRASS PLUG W/ RECESSED NUT. TERMINATE INSULATED, SOLID 12 GAUGE COPPER LOCATOR WIRES AT TOP W/ 12" OF EXTRA WIRE

PLAN VIEW



VALVE COLLAR AND IDENTIFICATION DISK
NTS

GENERAL NOTES:

1. A MASTER METER ASSEMBLY SHALL BE DIRECTLY ACCESSIBLE BY BOOM TRUCK OFF A COMMON BASE ROW, OR BY AN INTERIOR ROAD THAT IS NOT BLOCKED BY A WALL OR GATE. THE ACCESS ROAD SHALL BE 12 FT WIDE (MIN.) AND PAVED (CONCRETE OR ASPHALT)
2. ALL ABOVE GROUND PIPES AND FITTINGS SHALL BE CLASS 53 D.I.P. FOR 4 INCH AND LARGER PIPE.
3. CERTIFICATION BY THE CITY OF PROPER INSTALLATION AND OPERATION WILL BE REQUIRED PRIOR TO ACCEPTANCE BY THE CITY.
4. THE CITY WILL FURNISH AND INSTALL THE METER/BACKFLOW ASSEMBLY AFTER INSTALLATION FEES HAVE BEEN PAID. THE CONTRACTOR WILL BE REQUIRED TO INSTALL THE METER/BACKFLOW FOR 3" AND LARGER METERS.
5. THE 6 INCH CONCRETE SLAB SHALL BE REINFORCED WITH 6x6-W1.4xW1.4 WELDED WIRE FABRIC AND SHALL BE TYPE I, PORTLAND CEMENT WITH A MINIMUM 28-DAY STRENGTH OF 3000psi.
6. SLAB WIDTH AND LENGTH SHALL VARY WITH ASSEMBLY. THE TOP OF SLAB SHALL BE 2 INCHES ABOVE FINISHED GRADE.
7. THE METER ASSEMBLY & BOLLARDS SHALL BE PAINTED IN ACCORDANCE WITH SSPC STANDARDS. COLOR TO BE CHOSEN BY THE CITY.
8. IF THE METER ASSEMBLY IS LOCATED WITHIN A TRAFFIC/VEHICLE AREA (PARKING LOT, DRIVEWAY, OR WITHIN 15 FT OF EDGE OF PAVEMENT/BACK OF CURB), METERS UP TO 2 INCHES SHALL HAVE A MINIMUM OF 4 TRAFFIC BOLLARD PROTECTION POSTS, AND FOR METERS 3 INCHES & LARGER A MINIMUM OF 6 TRAFFIC BOLLARDS ARE REQUIRED.

TEMPORARY METER NOTES:

1. THE IN-LINE VALVE IS TO REMAIN CLOSED UNTIL AFTER THE CONSTRUCTION AND ACCEPTANCE OF THE DEVELOPMENT WATER DISTRIBUTION SYSTEM.
2. THE METER ASSEMBLY IS TO BE REMOVED AFTER FINAL ACCEPTANCE OF THE WATER DISTRIBUTION SYSTEM BY THE CITY OF ZEPHYRHILLS HEALTH DEPARTMENT AND THE CITY OF ZEPHYRHILLS PLANNING DEPARTMENT.
3. ALL CONSTRUCTION MUST MEET APPLICABLE STATE AND/OR LOCAL ROADWAY/ROADSIDE DESIGN STANDARDS INCLUDING, BUT NOT LIMITED TO, CLEAR ZONE REQUIREMENTS.

GENERAL WATER METER ASSEMBLY NOTES RESIDENTIAL OR COMMERCIAL DEVELOPMENT
NTS

811 Know what's below. Call before you dig.

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21764 SR 54
Lutz, FL 33549
T 813.885.2032

CLIENT NAME:
Ryman Construction of Florida
36413 SR54
Zephyrhills, FL 33541

ISSUE	DATE

TREES

SYMB.	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	NATIVE FLORIDA	DROUGHT TOLERANT
Ua	1	Ulmus alata	WINGED ELM	3" CAL. MIN. - 10' MIN. HEIGHT	PER PLAN	YES	YES
Li	3	Lagerstroemia indica 'Natchez'	CRAPE MYRTLE	3" CAL. MIN. - 10' MIN. HEIGHT	PER PLAN	YES	YES

TOTAL TREES: 4

SHRUBS

SYMB.	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	NATIVE FLORIDA	DROUGHT TOLERANT
Vo	37	Viburnum obovatum	WALTER'S VIBURNUM	5 GAL. 18" MIN. HEIGHT	36" O.C. MAX.	YES	YES
Iv	22	Ilex vomitoria	YAUPON HOLLY	3 GAL 18" MIN. HEIGHT	36" O.C. MAX.	NO	YES

TOTAL SHRUBS: 59

GROUNDCOVER

SYMB.	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	NATIVE FLORIDA	DROUGHT TOLERANT
Tj	16	Trachelospermum jasminoides	CONFEDERATE JASMINE	3 GAL. MIN.	48" O.C.	NO	YES

BAHIA GRASS SOD IN ALL AREAS THAT ARE NOT PAVED, BUILDING OR POND

SOD QUANTITY SHALL BE DETERMINED BY CONTRACTOR.

NOTES:

- IF SPECIFIED PLANTS ARE UNAVAILABLE AT THE TIME OF CONSTRUCTION, CONTRACTOR MAY REPLACE SPECIFIED PLANTS WITH PLANTS APPROVED BY LANDSCAPE ARCHITECT AND COUNTY STAFF. ALTERATION TO LANDSCAPE PLAN REQUIRES WRITTEN APPROVAL FROM NATURAL RESOURCES REVIEW STAFF.
- ALL OPEN SPACE AREAS WITHIN THE PROPERTY SHALL BE SODDED UNLESS PAVED, SEEDED AND MULCHED OR PLANTED WITH SHRUBS AND GROUNDCOVER. ALL LANDSCAPED AREAS NOT SODDED SHALL BE COVERED IN MULCH UNLESS OTHERWISE NOTED. 25% MAX. OPEN SPACE TO BE COVERED WITH MULCH. PLANT BEDS SHALL BE TOP DRESSED WITH A MINIMUM OF 3" SETTLED SHREDDED ORGANIC MULCH PER SPECIFICATIONS.

THE BELOW NOTES ARE AN EXCERPT FROM THE CITY OF ZEPHYRHILLS LDC. CONTRACTOR TO COMPLY WHERE APPLICABLE.
CONTRACTOR TO BRING THE EXISTING LANDSCAPE MATERIAL UP TO COMPLIANCE WITH ZEPHYRHILLS LDC IN THE PROJECT AREA.

BUFFER DESCRIPTIONS

ZEPHYRHILLS LDC PART 7.06.041

(2) TYPE B BUFFER.

(a) A 15-FOOT WIDE BUFFER PLANTED WITH A SINGLE ROW OF SHADE TREES HAVING A MAXIMUM SPACING OF 50 FEET ON CENTER. A VISUAL SCREEN DESIGNED TO BE 80% OPAQUE WITHIN ONE YEAR AND A MINIMUM OF SIX FEET IN HEIGHT AT INSTALLATION SHALL ALSO BE PROVIDED WITH THIS BUFFER. THE SCREEN MAY INCLUDE AN OPAQUE FENCE, WALL, HEDGE, BERM OR ANY COMBINATION THEREOF. WOODEN FENCES SHALL BE PROHIBITED. WALLS AND FENCES SHALL NOT EXCEED EIGHT FEET IN HEIGHT. SHRUBS THAT ARE USED TO PROVIDE A VISUAL SCREEN SHALL BE SPACED A MAXIMUM OF FIVE FEET ON CENTER.

(b) FOR INTERIOR LOTS WITHIN A PLATTED INDUSTRIAL PARK, THE MINIMAL TYPE B LANDSCAPE BUFFER MAY BE REDUCED TO FIVE FEET TO FIT WITHIN THE MINIMUM TEN-FOOT WIDE SETBACKS. ALL PLANNING AND SCREENING REQUIREMENTS OF THIS SECTION SHALL REMAIN THE SAME.

(4) TYPE D BUFFER (RIGHT-OF-WAY BUFFER). THIS LANDSCAPE BUFFER SHALL BE REQUIRED ADJACENT TO ANY ROAD RIGHT-OF-WAY EXTERNAL TO THE DEVELOPMENT PROJECT AND ADJACENT TO ANY ACCESS ROADS INTERNAL TO A COMMERCIAL DEVELOPMENT.

(a) THE MINIMUM WIDTH OF THE RIGHT-OF-WAY BUFFER SHALL VARY ACCORDING TO THE ULTIMATE WIDTH OF THE ABUTTING RIGHT-OF-WAY AS INDICATED BELOW:

1. A RIGHT-OF-WAY WIDTH FROM ZERO TO 99 FEET WIDE REQUIRES A MINIMUM TEN-FOOT WIDE BUFFER:
2. A RIGHT-OF-WAY WIDTH OF 100 FEET OR MORE REQUIRES A MINIMUM 1 5-FOOT WIDE BUFFER; AND
3. DEVELOPMENTS OF 15 ACRES OR MORE REQUIRE A MINIMUM 20-FOOT WIDE BUFFER REGARDLESS OF THE WIDTH OF THE RIGHT-OF-WAY.

(b) SHADE TREES SHALL BE PLANTED WITH A MAXIMUM SPACING OF 50 FEET ON CENTER. PALMS MAY BE SUBSTITUTED FOR UP TO 30% OF THE REQUIRED SHADE TREES AND SHALL BE PLANTED IN CLUSTERS WITH A MINIMUM OF THREE PALMS PER CLUSTER WITH A MAXIMUM SPACING OF EIGHT FEET ON CENTER.
A MAXIMUM DISTANCE OF 50 FEET SHALL BE MAINTAINED BETWEEN ALL TYPES OF TREE PLANTINGS. THE REMAINDER OF THE BUFFER SHALL BE LANDSCAPED WITH SHRUBS, AT A MINIMUM RATE OF FIVE SHRUBS PER TREE OR PALMS, GROUND COVER AND SOD.

(c) NO MORE THAN 50% OF THE REQUIRED LANDSCAPE AREA MAY BE GRASSED, WITH THE BALANCE SHALL BE LANDSCAPED IN SHRUBS AND GROUND COVERS. NOTE: THIS REQUIREMENT WILL BE REVIEWED ON A CASE BY CASE BASIS AND A SPECIAL EXCEPTION CAN BE SUBMITTED FOR THOSE SITES THAT CANNOT MEET THIS REQUIREMENT.

(6) VEHICULAR USE AREA (VUA). A MINIMUM OF 10% OF THE VUA IS TO BE LANDSCAPED WITH ONE SHADE TREE PER 200 SQUARE FEET OF VUA. THE LANDSCAPE REQUIREMENTS FOR THE VUA CONSIST OF ONE LANDSCAPED ISLAND PER A MAXIMUM OF TEN PARKING SPACES. EACH ISLAND IS TO BE 8 FEET WIDE BY 20 FEET LONG AND WILL CONTAIN ONE SHADE TREE WITH EITHER SHRUBS OR GROUND COVER BENEATH THE TREE.

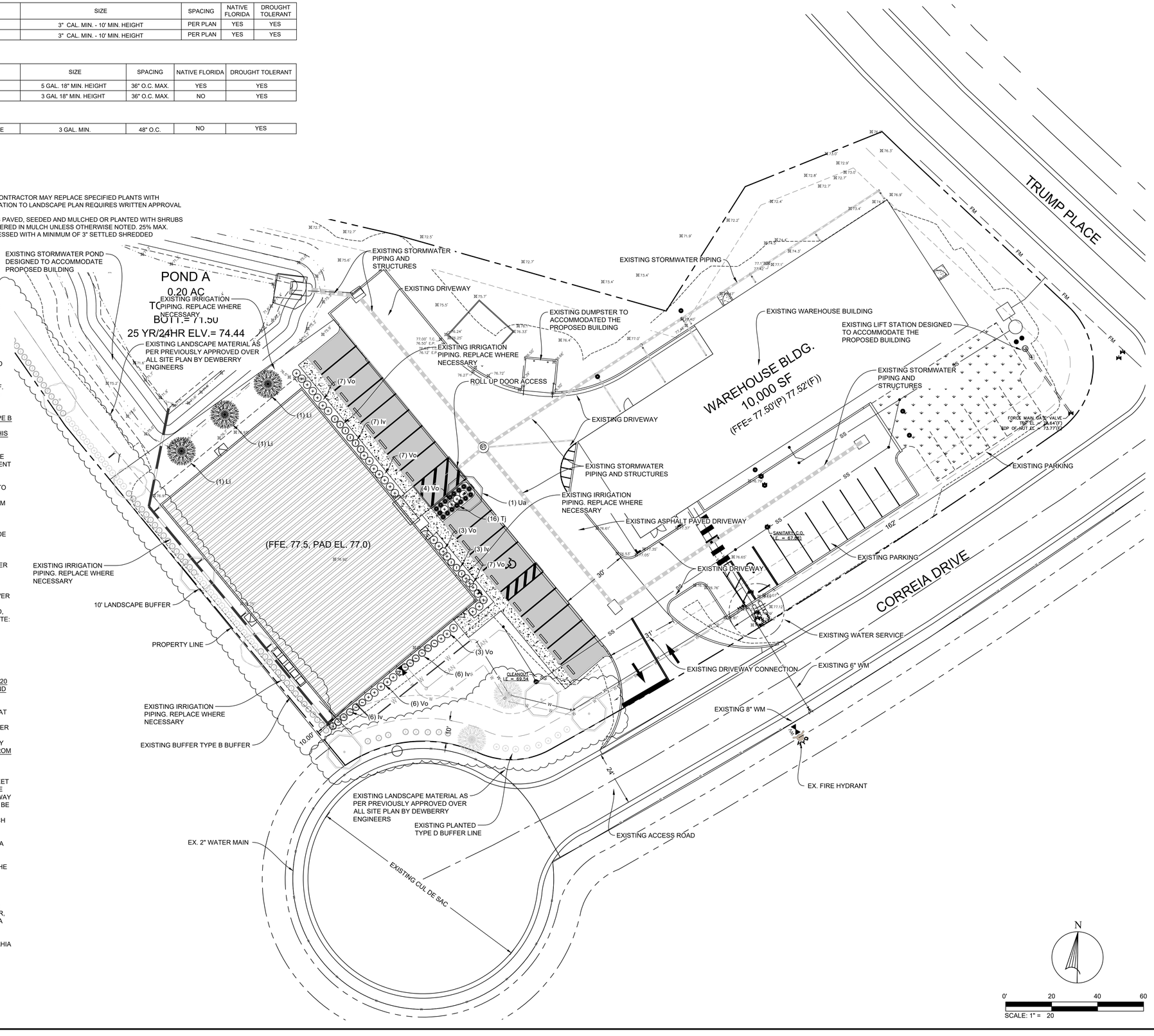
(9) SERVICE FUNCTION AREAS. AREAS OF NONRESIDENTIAL DEVELOPMENT THAT ARE UTILIZED AS LOADING AREAS OR DOCKS, OUTDOOR STORAGE, TRASH COLLECTION, MECHANICAL EQUIPMENT, TRASH COMPACTION, RECYCLING OR OTHER SERVICE FUNCTIONS SHALL BE SCREENED AND OUT OF VIEW FROM ADJACENT PROPERTIES AT GROUND LEVEL AND FROM PUBLIC RIGHTS-OF-WAY BY A MASONRY WALL A MINIMUM OF SIX FEET IN HEIGHT. INDUSTRIAL PARKS SHALL BE EXEMPT FROM THE REQUIREMENTS OF THIS SECTION.

(10) RETENTION AREAS.

(a) ALL HUMAN-MADE DRY AND WET RETENTION AREAS THAT ARE WITHIN 20 FEET OF THE PUBLIC RIGHT-OF-WAY OR LOCATED WITHIN A REQUIRED BUFFER SHALL BE LANDSCAPED. IF THE RETENTION AREA IS WITHIN 20 FEET OF A PUBLIC RIGHT-OF-WAY AND RUNS PARALLEL TO THE PUBLIC RIGHT-OF-WAY, THEN A TYPE D BUFFER WILL BE USED AND A TYPE A BUFFER WILL BE USED ON THE REMAINING SIDES OF THE RETENTION AREA. RETENTION PONDS MAY CONTAIN SPECIAL SITE FEATURES, SUCH AS FOUNTAINS AND REFLECTING POOLS. EXISTING NATURAL VEGETATION MAY BE USED IN LIEU OF NEW PLANTINGS.

(b) RETENTION/DETENTION PONDS AND SWALES SHALL BE PERMITTED WITHIN A REQUIRED BUFFER PROVIDED THEY ARE CONSISTENT WITH THE FOLLOWING CRITERIA:

1. RETENTION/DETENTION PONDS AND SWALES SHALL NOT EXCEED 50% OF THE SQUARE FOOTAGE OF ANY REQUIRED SIDE, REAR OR FRONT YARD LANDSCAPE BUFFER EXCEPT WHERE EXISTING NATIVE VEGETATION IS RETAINED AT NATURAL GRADE;
2. RETENTION/DETENTION PONDS AND SWALES SHALL NOT EXCEED, AT ANY LOCATION WITHIN THE REQUIRED BUFFER, 70% OF THE REQUIRED BUFFER WIDTH;
3. TO REDUCE SOIL EROSION AND VISUALLY SOFTEN THE EDGE OF THE WATER, TREES SHALL BE PLANTED ALONG THE BANKS OF THE POND/RETENTION AREA AT A MINIMUM RATE OF ONE TREE PER 50 LINEAL FEET OF POND BANK; AND
4. THE BANKS OF DRY RETENTION AREAS SHALL BE SODDED TO THE POND BOTTOM. WET RETENTION AREAS SHALL BE SODDED TO THE HIGH WATER LINE. BAHIA GRASS MAY BE USED OR PLANTED IN RETENTION/DETENTION AREAS, DRAINAGE AREAS AND WETLAND SETBACK AND MITIGATION AREAS.



GMC

21764 SR 54
Lutz, FL 33549
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CLIENT NAME:
Ryman Constructiuon of Florida
36413 SR54
Zephyrhills, FL 33541

ISSUE	DATE

DESIGNER: LAB
DRAWN BY: LAB
sks
XX

HAIR LAB ZEPHYRHILLS
3795 Correia Drive
Zephyrhills, Florida

CTAM Job No.230062

Notation

Timothy W. Larson, RLA
Lic. # 6667115

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LANDSCAPE PLAN

Sheet No.
L-1.0

DRAWING FILE: T:\1 Projects\FL\Kevin Ryman\CTAM230059_Hair Lab Zephyrhills\0 DWG\1 PLANS\01 BASE\Hair Lab Base.dwg
PLOTTED: Sep 27, 2023 - 2:19pm

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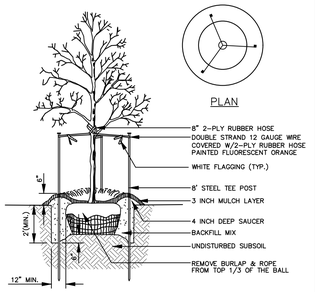

NOTE: SEE LANDSCAPE NOTES FOR THE TYPE OF MULCH MATERIAL TO USE.

TREE PLANTING DETAIL

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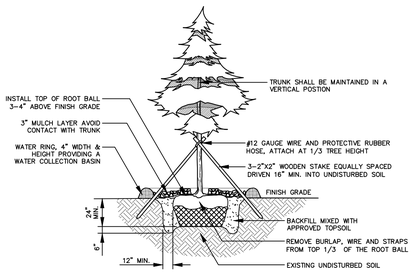
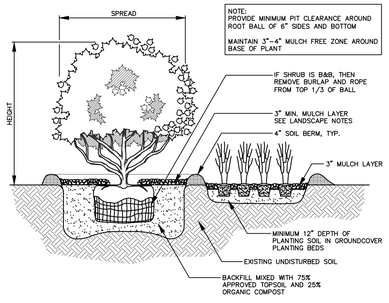


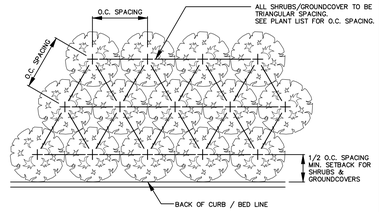
EVERGREEN TREE PLANTING DETAIL

N.T.S.



SHRUB & GROUNDCOVER PLANTING DETAIL

N.T.S.



SHRUB/GROUNDCOVER SPACING DETAIL

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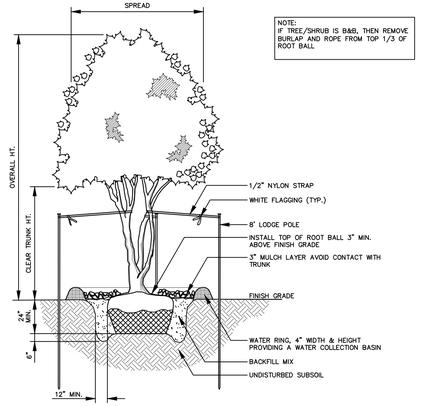
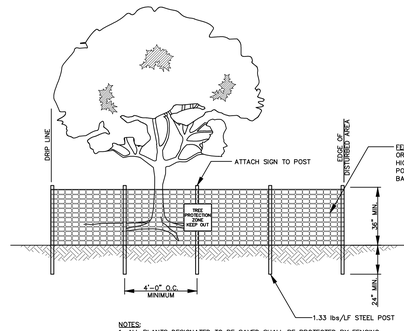


MULTI-STEM TREE/LARGE SHRUB PLANTING DETAIL



NOTES:
1. ALL PLANTS DESIGNATED TO BE SAVED SHALL BE PROTECTED BY FENCING, AS ILLUSTRATED.
2. INSTALL TREE PROTECTION FENCE AT TREE DRIP LINE OR AT EDGE OF DISTURBED AREA, AS SHOWN ON PLANS, PRIOR TO COMMENCEMENT OF CONSTRUCTION.
3. SPACE TREE PROTECTION ZONE SIGNS A MINIMUM OF ONE EVERY 300 FEET. THE SIZE OF EACH SIGN MUST BE A MINIMUM OF 2' x 2' AND BE VISIBLE FROM BOTH SIDES OF THE FENCE. THE SIGN MUST CONTAIN THE FOLLOWING LANGUAGE IN BOTH ENGLISH & SPANISH: "TREE PROTECTION ZONE, KEEP OUT".
3. THERE SHALL BE NO STORAGE OF MATERIAL WITHIN THE BOUNDARIES OF THE TREE PROTECTION FENCING.
4. TREE PROTECTION FENCING SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.

TREE PROTECTION FENCE DETAIL

NOTES:

- IF SPECIFIED PLANTS ARE UNAVAILABLE AT THE TIME OF CONSTRUCTION, CONTRACTOR MAY REPLACE SPECIFIED PLANTS WITH PLANTS APPROVED BY LANDSCAPE ARCHITECT AND COUNTY STAFF. ALTERATION TO LANDSCAPE PLAN REQUIRES WRITTEN APPROVAL.
- ALL OPEN SPACE AREAS WITHIN THE PROPERTY SHALL BE SODDED UNLESS PAVED, SEEDED AND MULCHED OR PLANTED WITH SHRUBS AND GROUNDCOVER.
- ALL LANDSCAPED AREAS NOT SODDED SHALL BE COVERED IN MULCH UNLESS OTHERWISE NOTED. PLANT BEDS SHALL BE TOP DRESSED WITH A MINIMUM OF 3" SETTLED SHREDDED ORGANIC MULCH.
- AN IRRIGATION SYSTEM SHALL BE DESIGNED AND INSTALLED TO PROVIDE 100% COVERAGE FOR ALL REQUIRED LANDSCAPING PLANT MATERIAL.

EFFICIENT IRRIGATION NOTES:
THE IRRIGATION SYSTEM USED FOR LANDSCAPE SHALL BE DESIGNED TO CORRELATE TO THE WATER USE PLANT ZONES ESTABLISHED IN THE LANDSCAPE DESIGN. THE FOLLOWING STANDARDS FOR IRRIGATING THE SITE SHALL BE USED IN THE DESIGN OF THE SYSTEM.

IN THE HIGH WATER USE ZONE, ALL PORTIONS OF THE ZONE SHALL BE PROVIDED WITH AN AUTOMATIC IRRIGATION SYSTEM WITH LOW VOLUME HEADS THAT ARE TIMED TO PRODUCE NO MORE THAN TWO INCHES OF WATER PER WEEK IN ESTABLISHED LANDSCAPES.

IN THE MODERATE WATER USE ZONE, ALL PORTIONS OF THE ZONE SHALL BE PROVIDED WITH A READILY AVAILABLE WATER SUPPLY WITHIN 100 FEET, TO SUPPLEMENT NATURAL RAINFALL WHEN NEEDED, AND TO HELP ENSURE THAT WATERING WILL TAKE PLACE UNTIL THE PLANT MATERIAL IS ESTABLISHED.

IN LOW WATER USE ZONES, ALL PORTIONS OF THE ZONE SHALL BE PROVIDED WITH A READILY AVAILABLE WATER SUPPLY WITHIN 50 FEET, TO SUPPLEMENT NATURAL RAINFALL WHEN NEEDED, AND TO HELP ENSURE THAT WATERING WILL TAKE PLACE UNTIL THE PLANT MATERIAL IS ESTABLISHED.

RAIN SENSOR DEVICES SHALL BE REQUIRED ON ALL AUTOMATIC IRRIGATION SYSTEMS TO AVOID IRRIGATION DURING PERIODS OF SUFFICIENT RAINFALL.

THE IRRIGATION SYSTEM SHALL BE DESIGNED TO MINIMIZE IRRIGATION OVERTHROW ONTO IMPERVIOUS SURFACES AND TO NEGATE ANY PONDING EFFECTS.

GENERAL LANDSCAPE NOTES

1. LANDSCAPE CONTRACTOR SHALL REVIEW ARCHITECTURAL/ENGINEERING DRAWINGS AND BECOME THOROUGHLY FAMILIAR WITH ALL SURFACE AND SUBSURFACE UTILITIES.
2. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO PREVENT CONFLICTS. COORDINATE THE PLANTING WITH THE IRRIGATION WORK TO ASSURE AVAILABILITY AND PROPER LOCATION OF IRRIGATION ITEMS AND PLANTS.
3. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS AND ALL WORK AS CALLED FOR ON THE LANDSCAPE PLANS AND IN THE LANDSCAPE SPECIFICATIONS. IN THE EVENT OF VARIATION BETWEEN QUANTITIES SHOWN ON PLANT LIST AND THE PLANS, THE PLANS SHALL CONTROL. LANDSCAPE CONTRACTOR SHALL VERIFY ALL QUANTITIES AND REPORT ANY DISCREPANCIES AT THE TIME OF BIDDING.
4. EXCEPT AS OTHERWISE SPECIFIED,THE REQUIRED LANDSCAPING SHALL BE INSTALLED ACCORDING TO ACCEPTED COMMERCIAL PLANTING PROCEDURES AS SET FORTH IN "GRADES AND STANDARDS FOR NURSERY PLANTS, STATE OF FLORIDA, DEPARTMENT OF AGRICULTURE, 1998", AND ANY AMENDMENTS THERETO.
5. EVERY POSSIBLE SAFEGUARD SHALL BE TAKEN TO PROTECT BUILDING SURFACES, EQUIPMENT AND FURNISHINGS. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE OR INJURY TO PERSON OR PROPERTY WHICH MAY OCCUR AS A RESULT OF NEGLIGENCE IN THE EXECUTION OF THE WORK.
6. ALL PLANTING SHALL BE PERFORMED BY PERSONS FAMILIAR WITH PLANTING PROCEDURE AND UNDER THE SUPERVISION OF A QUALIFIED FOREMAN.
7. ALL PLANT MATERIAL SHALL EQUAL OR EXCEED THE STANDARDS FOR FLORIDA NO. 1 AS DEFINED IN THE MOST CURRENT EDITION OF THE GRADES AND STANDARDS FOR NURSERY PLANTS, PART I AND II, PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, AND ANY AMENDMENTS THERETO. GRASS SOD SHALL BE CLEAN AND REASONABLY FREE OF WEEDS AND NOXIOUS PESTS OR DISEASES.
8. THE MINIMUM ACCEPTABLE SIZE OF ALL PLANTS, MEASURED AFTER PRUNING,WITH BRANCHES IN NORMAL POSITIONS SHALL CONFORM TO THE MEASUREMENTS SPECIFIED ON THE PLANT LIST OR AS INDICATED ON THE LANDSCAPE PLAN. HEIGHT AND SPREAD DIMENSIONS REFER TO THE MAIN BODY OF THE PLANT AND NOT EXTREME BRANCH TIP TO TIP. TRUNK DIAMETER SHALL BE MEASURED 6" ABOVE THE ROOT BALL FOR TREES UP TO 4" CALIPER AND 12" FROM ROOT BALL FOR LARGER TREES.
9. THE PROJECT LANDSCAPE ARCHITECT OR OWNER SHALL HAVE THE RIGHT, AT ANY STAGE OF THE OPERATIONS, TO REJECT ANY AND ALL WORK AND MATERIALS WHICH, IN HIS/HER OPINION, DO NOT MEET WITH THE REQUIREMENTS OF THESE SPECIFICATIONS.
10. PLANTS SHALL BE PROTECTED UPON ARRIVAL AT THE SITE BY BEING THOROUGHLY WATERED AND PROPERLY MAINTAINED UNTIL PLANTED. NO PLANTS OR PLANTING MATERIAL SHALL BE STORED IN STREET RIGHT-OF-WAY.
11. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER WATERING OF ALL PLANTS. ALL PLANTS SHALL BE THOROUGHLY WATERED AT TIME OF PLANTING AND KEPT ADEQUATELY WATERED UNTIL TIME OF ACCEPTANCE. IT SHALL BE THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT PLANTS ARE NOT OVER WATERED.
12. IT SHALL BE THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO PREVENT PLANTS FROM FALLING OR BEING BLOWN OVER, TO STRAIGHTEN AND REPLANT ALL PLANTS WHICH LEAN OR FALL AND TO REPLACE ALL PLANTS WHICH ARE DAMAGED DUE TO LACK OF PROPER GUYING OR STAKING. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED BY INSTABILITY OF ANY PLANT MATERIAL.
13. ALL TREES AND PALMS SHALL BE GUYED, STAKED OR BRACED. LANDSCAPE CONTRACTOR SHALL DETERMINE WHICH SMALL OR MULTI-STEM TREES AND SHRUBS NEED TO BE GUYED AND STAKED TO MAINTAIN PLUMB. STAKING OF TREE AND SHRUBS, IF REQUIRED, SHALL BE DONE AS PER STAKING AND GUYING DETAIL PREPARED BY THE LANDSCAPE ARCHITECT. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL GUYS AND STAKES FROM THE TREES AND JOB SITE AFTER A PERIOD OF 1 YEAR.
14. PLANTS BLOWN OVER BY HIGH WINDS, WITHIN THE GUARANTEED PERIOD, SHALL NOT BE CAUSE FOR ADDITIONAL EXPENSE TO THE OWNER, BUT SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR. DAMAGED PLANTS SHALL BE REPLACED BY THE LANDSCAPE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
15. LANDSCAPE CONTRACTOR SHALL PRUNE, SHAPE AND REMOVE DEAD FOLIAGE/LIMBS FROM EXISTING PLANT MATERIAL TO REMAIN. CONFIRM WITH THE LANDSCAPE ARCHITECT OR OWNER THE EXTENT OF WORK REQUIRED AT TIME OF BIDDING.
16. SOD SHALL BE CERTIFIED TO BE FREE OF THE IMPORTED FIRE ANT. SOD SHALL HAVE A CLEAN GROWTH OF ACCEPTABLE GRASS, REASONABLY FREE OF WEEDS WITH NOT LESS THAN 1-1/2" OF SOIL FIRMLY ADHERING TO ROOTS. IT SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO MEASURE AND DETERMINE THE EXACT AMOUNT REQUIRED. THIS AMOUNT SHALL BE VERIFIED WITH THE OWNER OR LANDSCAPE ARCHITECT BEFORE INSTALLATION.
17. ALL PLANT BEDS SHALL BE TOP DRESSED WITH A MAXIMUM OF 3" SETTLED SHREDDED ORGANIC MULCH. ALL TREES ARE TO BE MULCHED.
18. LANDSCAPE CONTRACTOR SHALL ENSURE THAT HIS/HER WORK DOES NOT INTERRUPT ESTABLISHED OR PROJECTED DRAINAGE PATTERNS.
19. LANDSCAPE CONTRACTOR SHALL ENSURE ADEQUATE VERTICAL DRAINAGE IN ALL PLANT BEDS, PLANTERS AND SOD AREAS. VERTICAL DRILLING THROUGH ANY COMPACTED FILL TO NATIVE SOIL SHALL BE ACCOMPLISHED TO ENSURE ADEQUATE DRAINAGE. IF WELL DRAINED FILL IS NECESSARY TO ENSURE POSITIVE DRAINAGE, THIS ISSUE SHALL BE BROUGHT UP BY THE LANDSCAPE CONTRACTOR AT TIME OF BIDDING.
20. ALL TREE PITS SHALL BE EXCAVATED TO SIZE AND DEPTH IN ACCORDANCE WITH THE USDA STANDARD FOR NURSERY STOCK Z60.1, UNLESS SHOWN OTHERWISE ON THE DRAWINGS, AND BACKFILLED WITH THE SPECIFIED PLANTING SOIL. LANDSCAPE CONTRACTOR SHALL TEST FILL ALL TREE PITS WITH WATER BEFORE PLANTING TO ENSURE PROPER DRAINAGE PERCOLATION IS AVAILABLE.
21. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING AND EVALUATING WHICH PLANT MATERIALS ARE SUITABLE FOR TRANSPLANTING AND SHALL VERIFY THIS WITH THE LANDSCAPE ARCHITECT OR OWNER. LANDSCAPE CONTRACTOR SHALL TAKE ALL REASONABLE AND ACCEPTABLE HORTICULTURAL MEASURES TO ENSURE THE SUCCESSFUL TRANSPLANTING OF DETERMINED PLANT MATERIALS. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY RELOCATED PLANT MATERIALS WHICH DIE IF SUCH MEASURES ARE NOT TAKEN, AS DETERMINED BY THE LANDSCAPE ARCHITECT OR OWNER. REPLACEMENT PLANTS SHALL BE OF IDENTICAL SPECIES AND SIZE IF REQUIRED.
22. MAINTENANCE SHALL COMMENCE AFTER EACH PLANT IS PLANTED AND THE MAINTENANCE PERIOD SHALL CONTINUE UNTIL THE JOB OR SPECIFIC PHASE OF THE JOB IS ACCEPTED BY THE LANDSCAPE ARCHITECT OR OWNER. EXTREME CARE SHALL BE TAKEN TO INSTRUCT THE OWNER OR OWNER REPRESENTATIVES IN GENERAL MAINTENANCE PROCEDURES.
23. PLANT MAINTENANCE SHALL INCLUDE WATERING, PRUNING WEEDING, CULTIVATING, MULCHING, TIGHTENING AND REPAIRING OF GUYS, REPLACEMENT OF SICK OR DEAD PLANTS, RESETTING PLANTS TO PROPER GRADES OR UPRIGHT POSITIONS AND RESTORATION OF THE PLANTING SAUCER AND ALL OTHER CARE NEEDED FOR PROPER GROWTH OF THE PLANTS.
24. DURING THE MAINTENANCE PERIOD AND UP TO THE DATE OF FINAL ACCEPTANCE, THE LANDSCAPE CONTRACTOR SHALL PERFORM ALL SEASONAL SPRAYING AND/OR DUSTING OF TREES AND SHRUBS. UPON COMPLETION OF ALL PLANTING, AN INSPECTION FOR ACCEPTANCE OF WORK WILL BE HELD. THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OR OWNER FOR SCHEDULING THE INSPECTION 10 DAYS PRIOR TO THE ANTICIPATED DATE. AT THE TIME OF THE INSPECTION, IF ALL THE MATERIALS ARE ACCEPTABLE, A WRITTEN NOTICE WILL BE GIVEN BY THE LANDSCAPE ARCHITECT OR OWNER TO THE LANDSCAPE CONTRACTOR STATING THE DATE WHEN THE MAINTENANCE PERIOD ENDS.
25. ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE (1) YEAR FROM THE TIME OF FINAL INSPECTION AND PLANT MATERIAL SHALL BE ALIVE AND IN SATISFACTORY GROWTH FOR EACH SPECIFIC KIND OF PLANT AT THE END OF THE GUARANTEE PERIOD.
26. AT THE END OF THE GUARANTEE PERIOD, ANY PLANT REQUIRED UNDER THIS CONTRACT WHICH IS DEAD OR NOT IN SATISFACTORY GROWTH, AS DETERMINED BY THE OWNER OR LANDSCAPE ARCHITECT, SHALL BE REMOVED AND REPLACED. REPLACEMENT PLANTS SHALL HAVE AN EXTENDED GUARANTEE, AS NOTED ABOVE, FROM TIME OF REPLACEMENT. ALL REPLACEMENTS SHALL BE PLANTED OF THE SAME KIND AND SIZE AS SPECIFIED ON THE PLANT LIST AND SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.
27. TOPSOIL SHALL BE ASTM D 5268, NATURAL, FRIABLE, FERTILE, FINE LOAMY SOIL POSSESSING CHARACTERISTICS OF REPRESENTATIVE TOPSOIL IN THE VICINITY THAT PRODUCES HEAVY GROWTH. TOPSOIL SHALL HAVE A pH RANGE OF 5.5 TO 7.4 PERCENT, FREE FROM SUBSOIL, OBJECTIONABLE WEEDS, LITTER, SODS, STIFF CLAY, STONES LARGER THAN 1 INCH IN DIAMETER, STUMPS, ROOTS, TRASH, TOXIC SUBSTANCES, OR ANY OTHER MATERIAL WHICH MAY BE HARMFUL TO PLANT GROWTH OR HINDER PLANTING OPERATIONS. TOP SOIL SHALL CONTAIN A MINIMUM OF THREE PERCENT ORGANIC MATERIAL.

GMC
21764 SR 54
Lutz, FL 33549
T 813.885.2032

CLIENT NAME:
Ryman Construction of Florida
36413 SR54
Zephyrhills, FL 33541

ISSUE	DATE	

Dewberry

ARCHITECTS ENGINEERS CONSULTANTS

Drainage Calculations

Margolin Industrial
City of Zephyrhills, FL

Margolin Industrial

Job# 50100426

May 2018

(Revised July 2018)

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Drainage Calculations

Margolin Industrial
City of Zephyrhills, FL

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Margolin Industrial

Margolin Industrial Drainage Calculations

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Section A: Project Description and General Information

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Margolin Industrial

City of Zephyrhills, FL

INTRODUCTION

The Margolin Industrial site is located at northwest corner of Correia Drive and Trump place in Zephyrhills, Florida. The subject property is located in Pasco County Florida, Section 29, Township 23 South, Range 17 East. The intent of this report is to provide documentation of the supporting calculations related to the design of the proposed Pond A serving the proposed development.

OVERALL PROJECT DESCRIPTION

The project consists of a 10,000 SF Warehouse and Future 10,000 SF Flex Building, driveway and associated parking spaces. The proposed Pond A will provide water quality treatment and attenuation for the contributing basin area. The proposed pond will discharge into the existing conveyance swale located along northern property. The Site is an outparcel of the Master Plan "Park Place Center" under ERP # 44030633.000. The subject property is not part of the master drainage pond and a new stormwater management system is proposed.

EXISTING CONDITIONS

Existing Basin Descriptions

See Section B for the predevelopment basin maps.

The majority of the property is currently vacant. The site area is 2.0 acres and the pre-development basin area is 1.80 acres. In the existing conditions the site runoff drains from the south to the north into an existing swale/wetland area. The swale conveys the stormwater west.

Existing Soils, Groundwater, and Topography

The site is located within is an open basin. The existing project area elevations range from 76 ft on the north portion of the site to 72 ft NAVD 1988 on the southwest. In general, the entire site slopes toward the swale to the north.

Based on the USDA Soil Conservation Service Soils Survey of the City of Zephyrhills, Florida the existing onsite soils are as follows:

Farmer Parcel Soils		
Soil #	Soli Name	Hydrologic Soil Group
#18	Electra Variant	C

PROPOSED DEVELOPMENT AND DESIGN CONSIDERATIONS

Proposed Basin and Structure Descriptions

See Section D for the post development basin maps.

The project consists of a 10,000 SF Warehouse and 10,000 Future Flex building, driveway and associated parking spaces. The proposed Pond A will provide water quality treatment and attenuation for the contributing basin area

This proposed pond will discharge via a control structure to a swale/wetland to the north.

Design Considerations

Water Quantity

Hydrologic soil characteristics were procured from the USDA - NRCS to develop runoff curve numbers by the methodology outlined in SCS TR-55 publication. The Time of Concentration for the drainage basin was estimated by delineating flow characteristics as overland sheet flow, shallow concentrated flow, or pipe flow, in accordance with the accepted methods presented in the SCS TR-55 publication. The storm events were modeled in ICPR3 using the SWFWMD rainfall amounts for the 10 and 25 years storm events up to 24 hours. Type C soil was considered. The 25 years/24 hour storm event was modeled in ICPR3 using a total rainfall amount of 8.3 in (See Section C).

Per the South West Florida Water Management District (SWFWMD) requirements the post-development peak discharge must not exceed pre-development rate for the mean annual – 24 hour storm event.

Below is a summary of these discharge rates:

Margolin Industrial 25y/24h Pre vs Post Discharge Rates		
Outfall	Pre Development	Post Development
Swale/Wetland	3.52 cfs	3.25 cfs

Water Quality

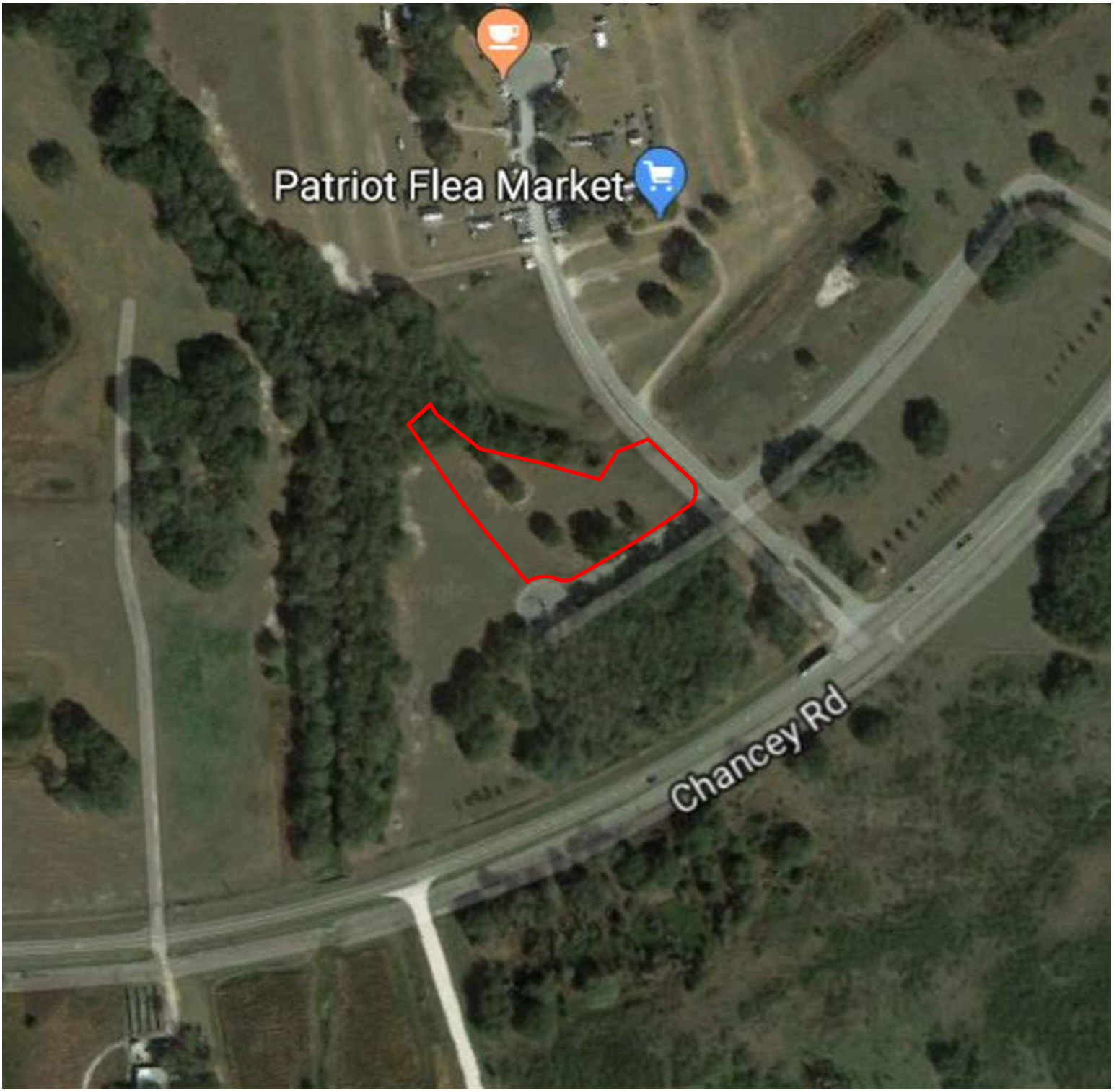
Agency Requirements - Dry Retention per Section 5.2(b) AH Vol II

SWFWMD

The required dry-retention water quality treatment volume shall be 0.075 acre-feet per the requirement:

- 0.50 inch over the contributing basin area

The Geotechnical Report was prepared by FES Group, Inc for the Park Place Center (ERP # 44030633.000). The Estimated SHW was 2.5 feet below existing surface, with an estimated elevations of 70.5'. A safety factor of 2 was used for the estimated percolation rates (see Section D). The total treatment volume percolates within 48 hours (see Section C).



MARGOLIN INDUSTRIAL

City of Zephyrhills, Florida
AERIAL

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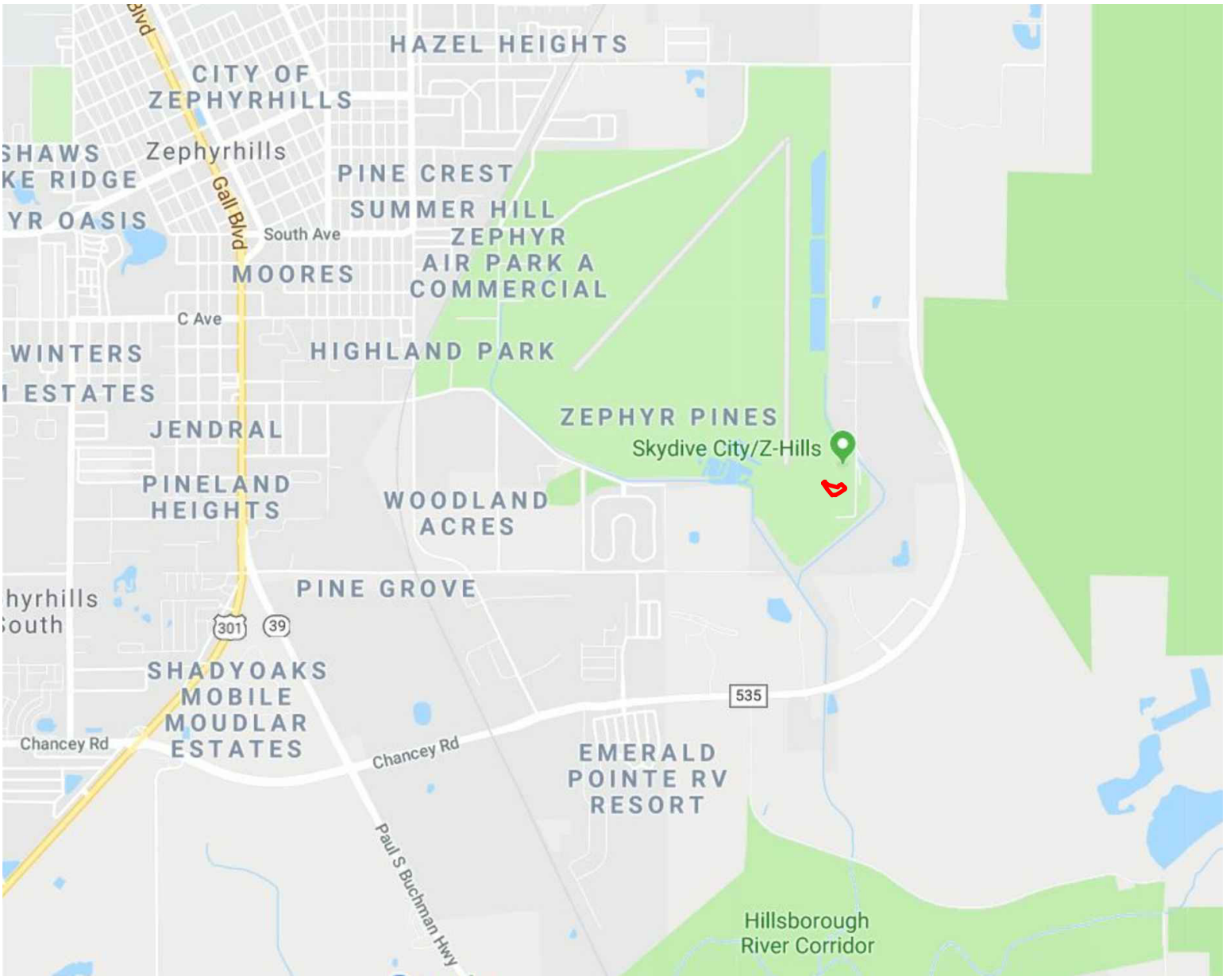
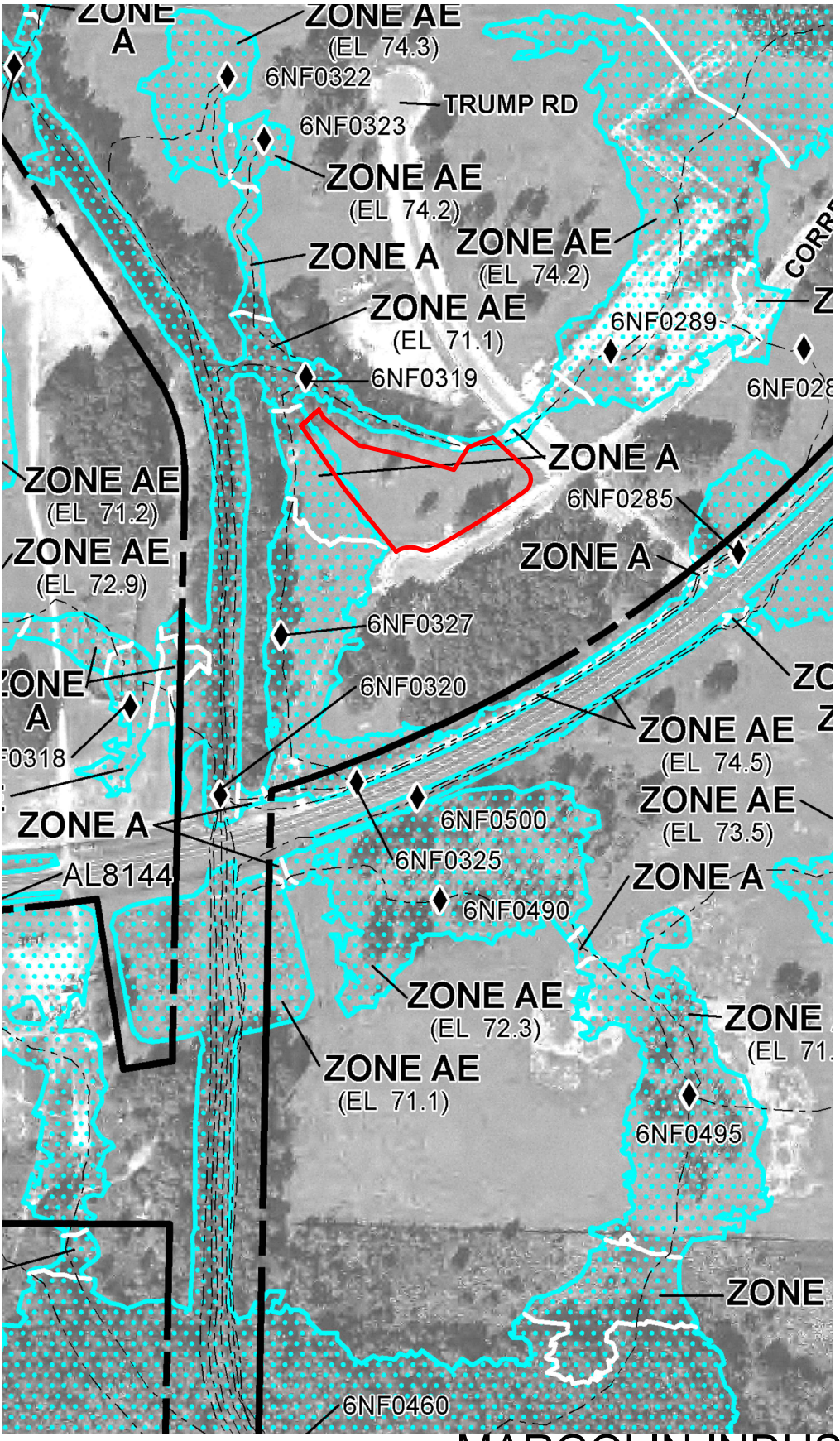


MARGOLIN INDUSTRIAL

City of Zephyrhills, Florida
LOCATION

Dewberry



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X[0.2]	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot; and areas protected by levees from 1% annual chance flood. See additional note in Watershed Table on left collar.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*
* Referenced to the North American Vertical Datum of 1988
A — A — Cross section line
23 — 23 — Transect line
97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4275000 FT E — 1000-meter Universal Transverse Mercator grid ticks, zone 17
6000000 FT — 5000-foot grid values: Florida State Plane coordinate system, West Zone (FIPSZONE = 0902), Transverse Mercator projection
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 — River Mile
222218 — Section - Township - Range
7NX1000 — Junction - Points defining locations of flow accumulation or hydraulic connectivity. The first two characters of the Junction name represents the specific watershed (as shown in the map collar locator map) in which the Junction is located (note that boundary Junctions, without an associated floodplain, are also shown).
Hydraulic Connectivity - Flow pathway between junctions.

MAP REPOSITORIES
Refer to Map Repositories List on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
September 26, 2014
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 250 500 750 1,000 FEET
150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0459F

FIRM

FLOOD INSURANCE RATE MAP

PASCO COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 459 OF 500

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PASCO COUNTY	120230	0459	F
ZEPHYRHILLS, CITY OF	120235	0459	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
12101C0459F

EFFECTIVE DATE
SEPTEMBER 26, 2014

Federal Emergency Management Agency

MARGOLIN INDUSTRIAL

City of Zephyrhills, Florida
FEMA

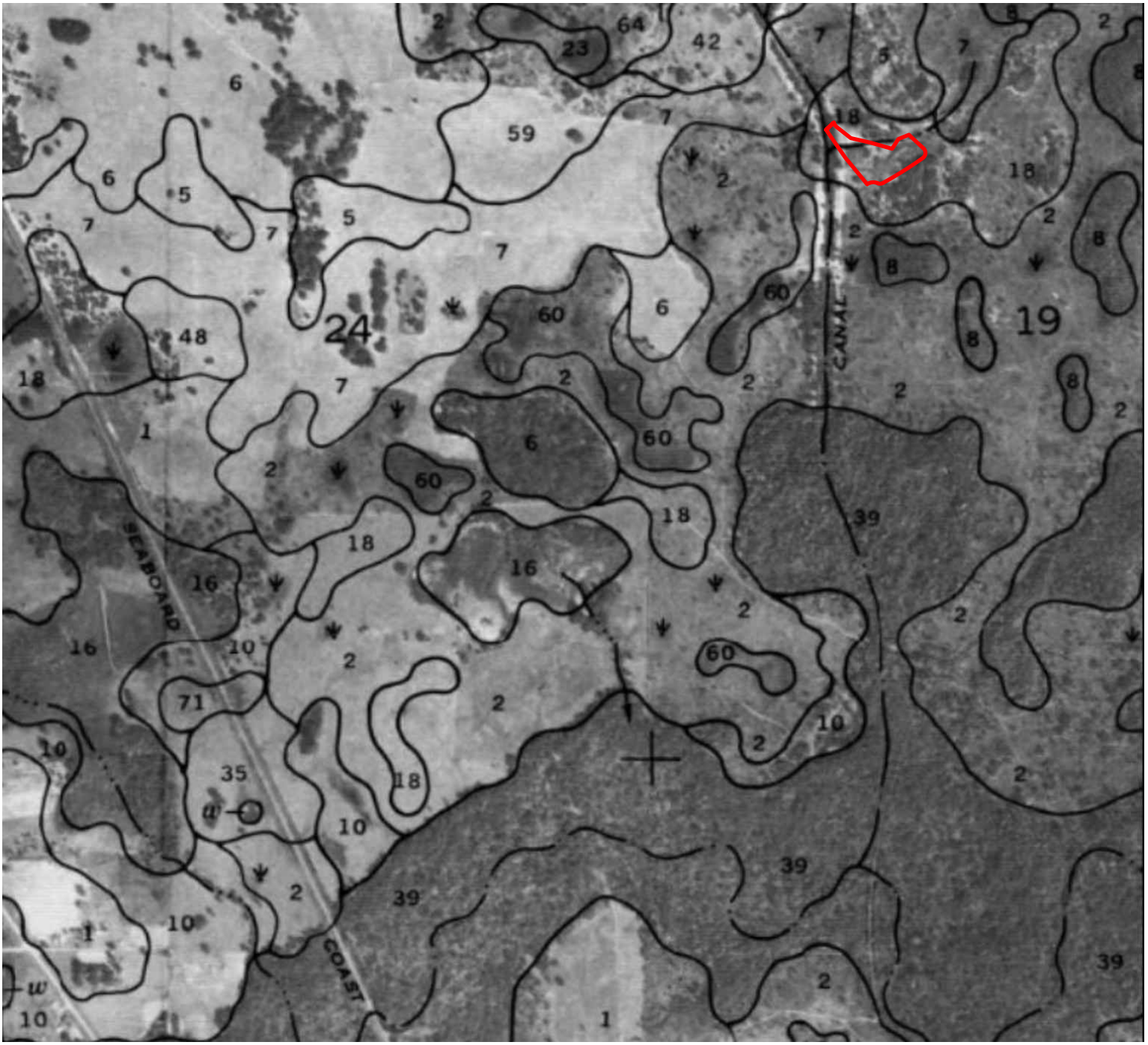


TABLE 17.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth*	Kind	Months	Depth	Hardness	Initial	Total	Uncoated steel	Concrete
					Ft			In		In	In		
18--Electra Variant	C	None	---	---	2.0-3.5	Apparent	Jul-Oct	>60	---	---	---	Low	High.
19--Paola	A	None	---	---	>6.0	---	---	>60	---	---	---	Low	High.
20--Aripeka	C	Occasional	Very brief	Jan-Dec	1.5-2.5	Apparent	Jul-Sep	23-40	Hard	---	---	High	Low.
21--Smyrna	A/D	None	---	---	0-1.0	Apparent	Jul-Oct	>60	---	---	---	High	High.
22--Basinger	A/D	None	---	---	0-1.0	Apparent	Jun-Feb	>60	---	---	---	High	Moderate.
23--Basinger	B/D	None	---	---	+2-1.0	Apparent	Jun-Feb	>60	---	---	---	High	Moderate.

Section B: Pre & Post-Development Drainage Calculations

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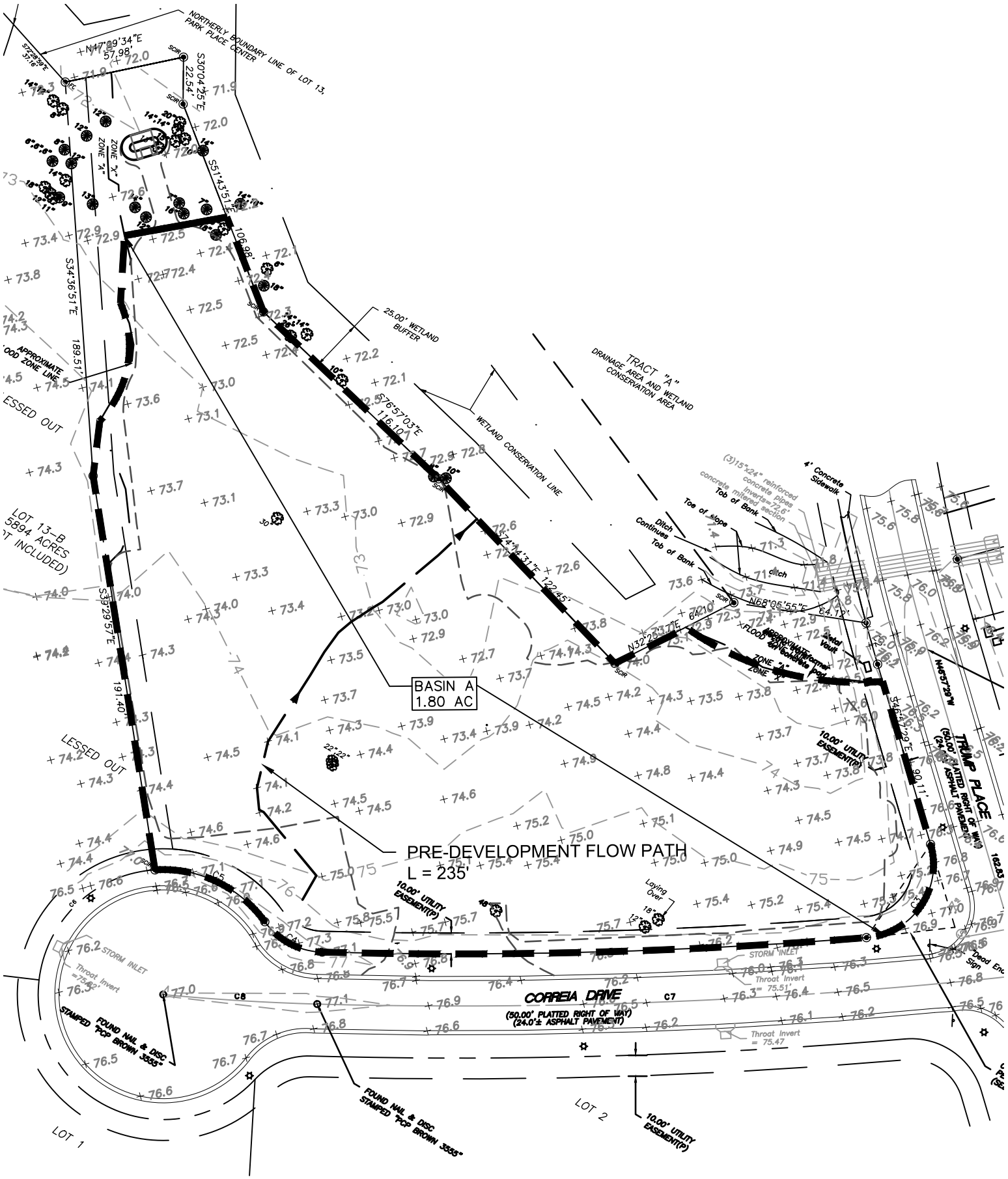
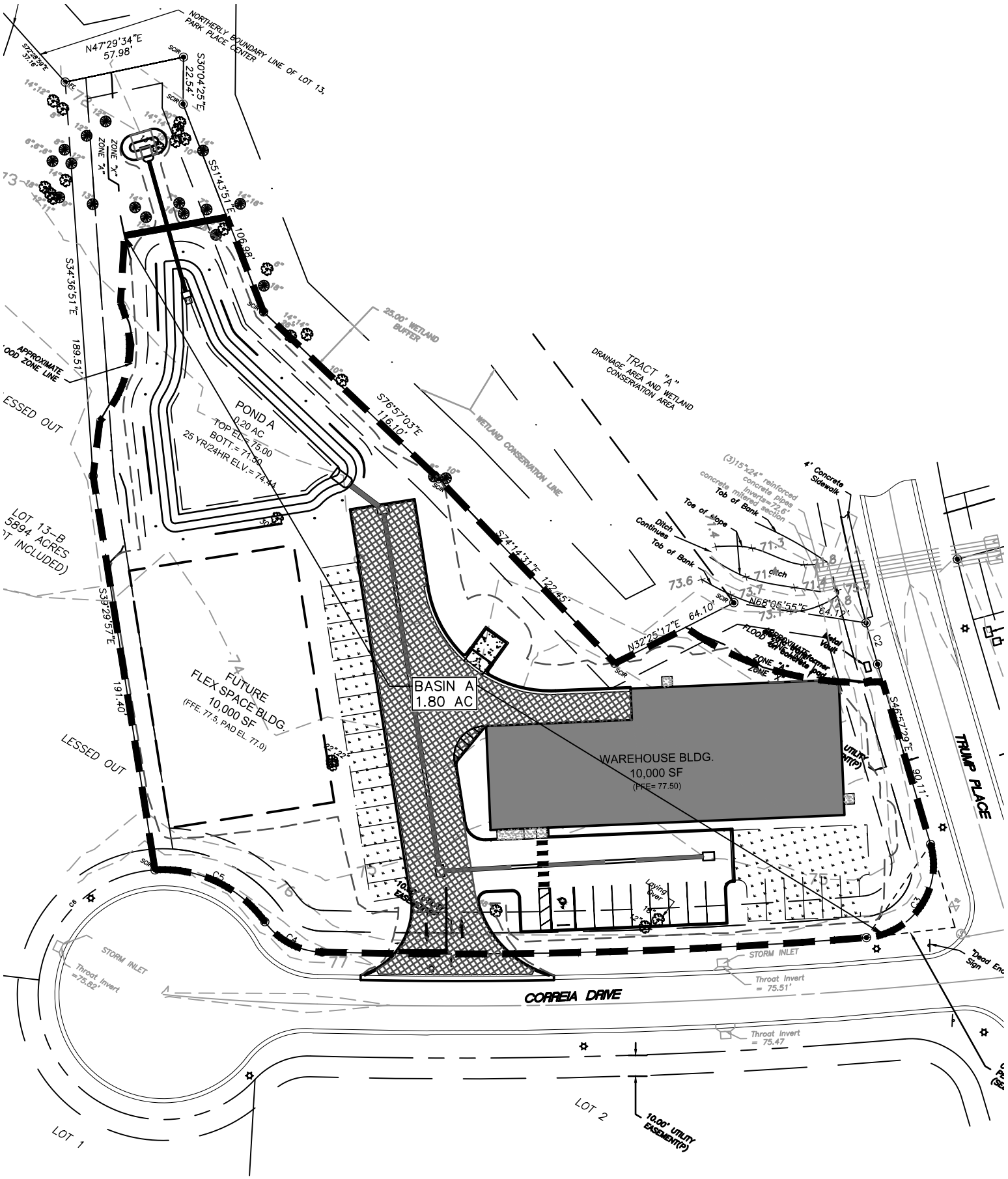


MARGOLIN INDUSTRIAL

City of Zephyrhills, Florida
PRE BASIN MAP

Dewberry®



MARGOLIN INDUSTRIAL

City of Zephyrhills, Florida

POST BASIN MAP

Dewberry

Project Number: 5E+07

Pre-Development Time of Concentration

		FIRST 300' OF PATH						REMAINING PATH								
Drainage Basin	Total Path L (ft)	L1-G (ft)	S1-G (ft/ft)	T1-G (min)	L1-C (ft)	S1-C (ft/ft)	T1-C (min)	L2-G (ft)	S2-G (ft/ft)	T2-G (min)	L2-C (ft)	S2-C (ft/ft)	T2-C (min)	L2-P (ft)	T2-P (min)	TIME Tc (min)
A	235	235	0.019149	36.5	0	0.005	0.0	0.01	50	0.0	0	1	0.0	0	0.000	36
			0													
		0	0.01	0.0	0	0.01	0.0	0	0.016	0.0	0	0.01	0.0	0	0.000	0
		0	0.01	0.0	0	0.0065	0.0	0	0.0062	0.0	0	0.005	0.0	0	0.000	0
		0	0.007	0.0	0	0.05	0.0	0	0.01	0.0	0	0.005	0.0	0	0.000	0

NOTES:

a) L1-G, S1-G & T1-G AND L1-C, S1-C AND T1-C ARE LENGTH, SLOPE AND COMPUTED TIME OF TRAVEL FOR RUNOFF OVER THE FIRST 300 FT OF UNPAVED ("G") AND PAVED ("C") AREAS, USING THE SCS TR-55 SHEET FLOW FORMULA

b) L2-G AND T2-G AND L2-C AND T2-C ARE LENGTH AND COMPUTED TIME OF TRAVEL FOR RUNOFF OVER UNPAVED AND PAVED AREAS USING THE SCS TR-55 EQUATION FOR AVG VELOCITY (SHALLOW CONC. FLOW). THE VELOCITY EQUATION FOR UNPAVED AREAS IS V=16.1345 x SQ RT (SLOPE), AND FOR PAVED AREAS IS V= 20.3282 x SQ RT (SLOPE)

c) L2-P & T2-P ARE LENGTH AND COMPUTED TIME OF TRAVEL FOR RUNOFF THROUGH STORM SEWER PIPES, WHERE THE TRAVEL TIME IS BASED ON A FLOW VELOCITY OF 4 FT/SEC.

d) THE TIME OF CONCENTRATION (Tc) IS THE SUM OF THE OF THE TRAVEL TIMES CALCULATED FOR OVERLAND FLOW AND SHALLOW CONCENTRATED FLOW WITHIN A PARTICULAR BASIN FOR THE FLOW PATH

e) FOR SHEET FLOW (FIRST 300 FT OF TRAVEL PATH) THE FOLLOWING RAINFALL AND N VALUES WERE USED:

N= 0.4 (GRASS) N= 0.011 (PAVEMENT) P2= 4.5 INCHES

MARGOLIN INDUSTRIAL SITE
PRE BASIN CURVE NUMBER CALCULATIONS

Basin #	CN=98 Impervious (ac)	Impervious (% of Total)	CN=100 Pond (ac)	Pond (% of Total)	Pervious (ac)	Pervious (% of Total)	Pervious CN	CN=90 Wetland (ac)	Wetland (% of Total)	Total (ac)	Composite CN
Basin A	**0.00**	0%	**0.00**	0%	**1.80**	100%	**74.0**	**0.00**	0%	**1.80**	**74.0**
Total:	**0.00**	0%	**0.00**	0%	**1.80**	100%		**0.00**	0%	**1.80**	**74.0**

Notes:

MARGOLIN INDUSTRIAL SITE
POST BASIN CURVE NUMBER CALCULATIONS

Basin #	CN=98 Impervious (ac)	Impervious (% of Total)	CN=100 Pond (ac)	Pond (% of Total)	Pervious (ac)	Pervious (% of Total)	Pervious CN	CN=90 Wetland (ac)	Wetland (% of Total)	Total (ac)	Composite CN
BASIN A (*)	**0.95**	53%	**0.20**	11%	**0.65**	36%	**74.0**	**0.00**	0%	**1.80**	**89.5**
Total:	**0.95**	53%	**0.20**	11%	**0.65**	36%		**0.00**	0%	**1.80**	**89.5**

Notes:

(*) Impervious area includes Future 10,000 SF Building and Future 9,000 SF parking and sidewalk impervious area

MARGOLIN INDUSTRIAL SITE
WATER QUALITY CALCULATIONS

Basin #	Pond #	Area (ac)	Water Quality 0.5 in x area (ac-ft)	W.Q. Required (ac-ft)	W.Q. Required (cf)	W.Q. Provided (ac-ft)	W.Q. Provided (cf)
BASIN A (*)		1.80	0.07				
		1.80	0.07	0.07	3259	0.08	3364

MARGOLIN INDUSTRIAL SITE

STAGE - STORAGE CALCULATIONS
POND A

ELEVATION (feet)	AREA (acres)	AVG AREA (acres)	DEPTH (feet)	STORAGE (ac-ft)	CUM STORAGE (ac-ft)	
71.50	0.085				0.00	BOTT
		0.10	0.80	0.08		
72.30	0.108				0.08	
		0.12	0.70	0.08		
73.00	0.130				0.16	
		0.15	1.00	0.15		
74.00	0.163				0.31	
		0.18	1.00	0.18		
75.00	0.199				0.49	TOP

Weir Set at =	72.30	feet	
Provided Treatment Volume =	0.08	Ac-ft	3364 cf
Required Treatment Volume =	0.07		

Section C: Pre & Post-Development ICPR Inputs and Results; Ponds Results

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Name	Simulation	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Inflow cfs	Max Outflow cfs
BNDY POST	10YR24HR	71.50	71.50	0.0000	0	2.59	0.00
BNDY POST	25YR24HR	71.50	71.50	0.0000	0	3.25	0.00
BNDY PRE	10YR24HR	71.50	71.50	0.0000	0	2.73	0.00
BNDY PRE	25YR24HR	71.50	71.50	0.0000	0	3.52	0.00
PERC	10YR24HR	70.50	70.50	0.0000	0	0.24	0.00
PERC	25YR24HR	70.50	70.50	0.0000	0	0.26	0.00
POND	10YR24HR	74.12	75.00	0.0050	7287	5.94	2.79
POND	25YR24HR	74.44	75.00	0.0050	7785	7.19	3.48

==========
==== Basins ====
==========

Name: BASIN A PRE Node: BNDY PRE Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 36.00
Area(ac): 1.800 Time Shift(hrs): 0.00
Curve Number: 74.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: BASIN POST Node: POND Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 15.00
Area(ac): 1.800 Time Shift(hrs): 0.00
Curve Number: 89.50 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

==========
==== Nodes ====
==========

Name: BNDY POST Base Flow(cfs): 0.000 Init Stage(ft): 71.500
Group: BASE Warn Stage(ft): 71.500
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	71.500
15.00	71.500
30.00	71.500

Name: BNDY PRE Base Flow(cfs): 0.000 Init Stage(ft): 71.500
Group: BASE Warn Stage(ft): 71.500
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	71.500
15.00	71.500
30.00	71.500

Name: PERC Base Flow(cfs): 0.000 Init Stage(ft): 70.500
Group: BASE Warn Stage(ft): 70.500
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	70.500
15.00	70.500
30.00	70.500

Name: POND Base Flow(cfs): 0.000 Init Stage(ft): 71.500
Group: BASE Warn Stage(ft): 75.000
Type: Stage/Area

Stage(ft)	Area(ac)
71.500	0.0850
72.300	0.1080
73.000	0.1300
74.000	0.1630
75.000	0.1990

==========
==== Drop Structures ==========
==========

Name: CS-1 From Node: POND Length(ft): 69.00
Group: BASE To Node: BNDY POST Count: 1

	UPSTREAM	DOWNSTREAM		
			Friction Equation:	Average Conveyance
Geometry:	Circular	Circular	Solution Algorithm:	Automatic
Span(in):	15.00	15.00	Flow:	Both
Rise(in):	15.00	15.00	Entrance Loss Coef:	0.000
Invert(ft):	71.500	71.000	Exit Loss Coef:	1.000
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000	Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure CS-1 ***

TABLE

Count: 1 Bottom Clip(in): 0.000
Type: Vertical: Mavis Top Clip(in): 0.000
Flow: Both Weir Disc Coef: 3.200
Geometry: Rectangular Orifice Disc Coef: 0.600

Span(in): 4.00 Invert(ft): 72.300
Rise(in): 9999.00 Control Elev(ft): 72.300

==========
==== Percolation Links ==========
==========

Name: Perc From Node: POND Flow: Both
Group: BASE To Node: PERC Count: 1

Surface Area Option: Use 1st Point in Stage/Area Table
Vertical Flow Termination: Horizontal Flow Algorithm
Aquifer Base Elev(ft): 60.000 Perimeter 1(ft): 400.000
Water Table Elev(ft): 70.500 Perimeter 2(ft): 542.000
Ann Recharge Rate(in/year): 0.000 Perimeter 3(ft): 2245.000
Horiz Conductivity(ft/day): 8.000 Distance 1 to 2(ft): 50.000
Vert Conductivity(ft/day): 8.000 Distance 2 to 3(ft): 450.000
Effective Porosity(dec): 0.200 Num Cells 1 to 2: 10
Suction Head(in): 2.000 Num Cells 2 to 3: 45
Layer Thickness(ft): 0.000

==========
==== Hydrology Simulations ==========
==========

Name: 10YR24HR
Filename: P:\50100426_Margolin Industrial Site\TECH\Civil\ICPR\10YR24HR.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 7.00

Time(hrs)	Print Inc(min)
30.000	5.00

Name: 25YR24HR
Filename: P:\50100426_Margolin Industrial Site\TECH\Civil\ICPR\25YR24HR.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 8.30

Time(hrs)	Print Inc(min)
30.000	5.00

==========
==== Routing Simulations ==========

==========

Name: 10YR24HR Hydrology Sim: 10YR24HR
Filename: P:\50100426_Margolin Industrial Site\TECH\Civil\ICPR\10YR24HR.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 30.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	15.000

Group	Run
BASE	Yes

Name: 25YR24HR Hydrology Sim: 25YR24HR
Filename: P:\50100426_Margolin Industrial Site\TECH\Civil\ICPR\25YR24HR.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 30.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	15.000

Group	Run
BASE	Yes

Project Data

Project Name:	Margolin Industrial
Simulation Description:	Treatment volume recovery
Project Number:	50100426
Engineer :	Giacomo Licari PE
Supervising Engineer:	
Date:	05-07-2018

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	60.00
Water Table Elevation, [WT] (ft datum):	70.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	8.00
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	136.0
Equivalent Pond Width, [W] (ft):	63.3

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
71.50	3700.0
72.00	4321.0
73.00	5660.0
74.00	7107.0
75.00	8655.0

Scenario Input Data

Scenario 1 :: Recovery

Hydrograph Type: Slug Load
Modflow Routing: Routed with infiltration

Treatment Volume (ft^3) 3364

Initial ground water level (ft datum) 70.50 (default)

Time After Storm Event (days)	Time After Storm Event (days)
0.100	2.000
0.250	2.500
0.500	3.000
1.000	3.500
1.500	4.000

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: none

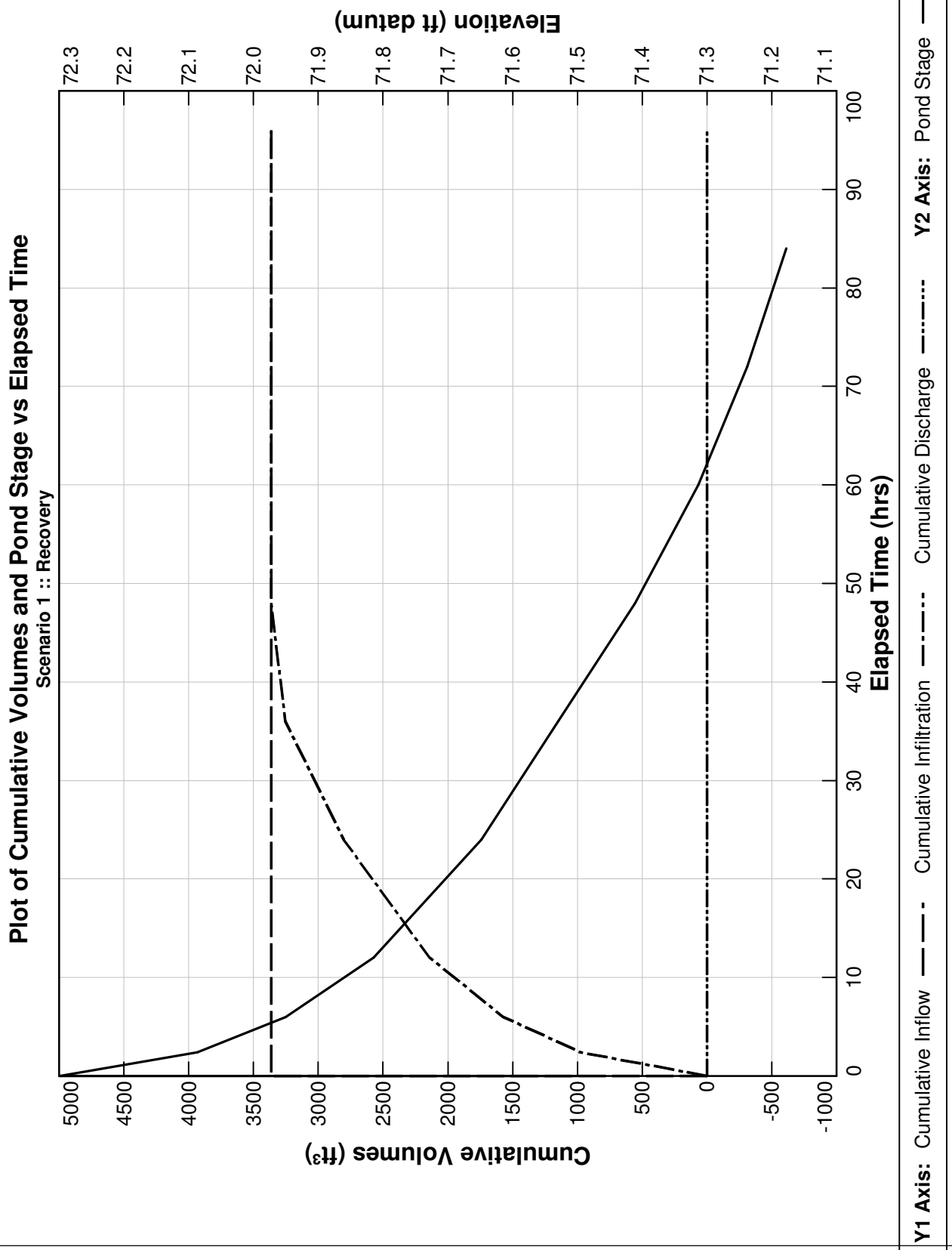
Begin Scenario 1 7/20/2018 11:43:9
End Scenario 1 7/20/2018 11:43:9

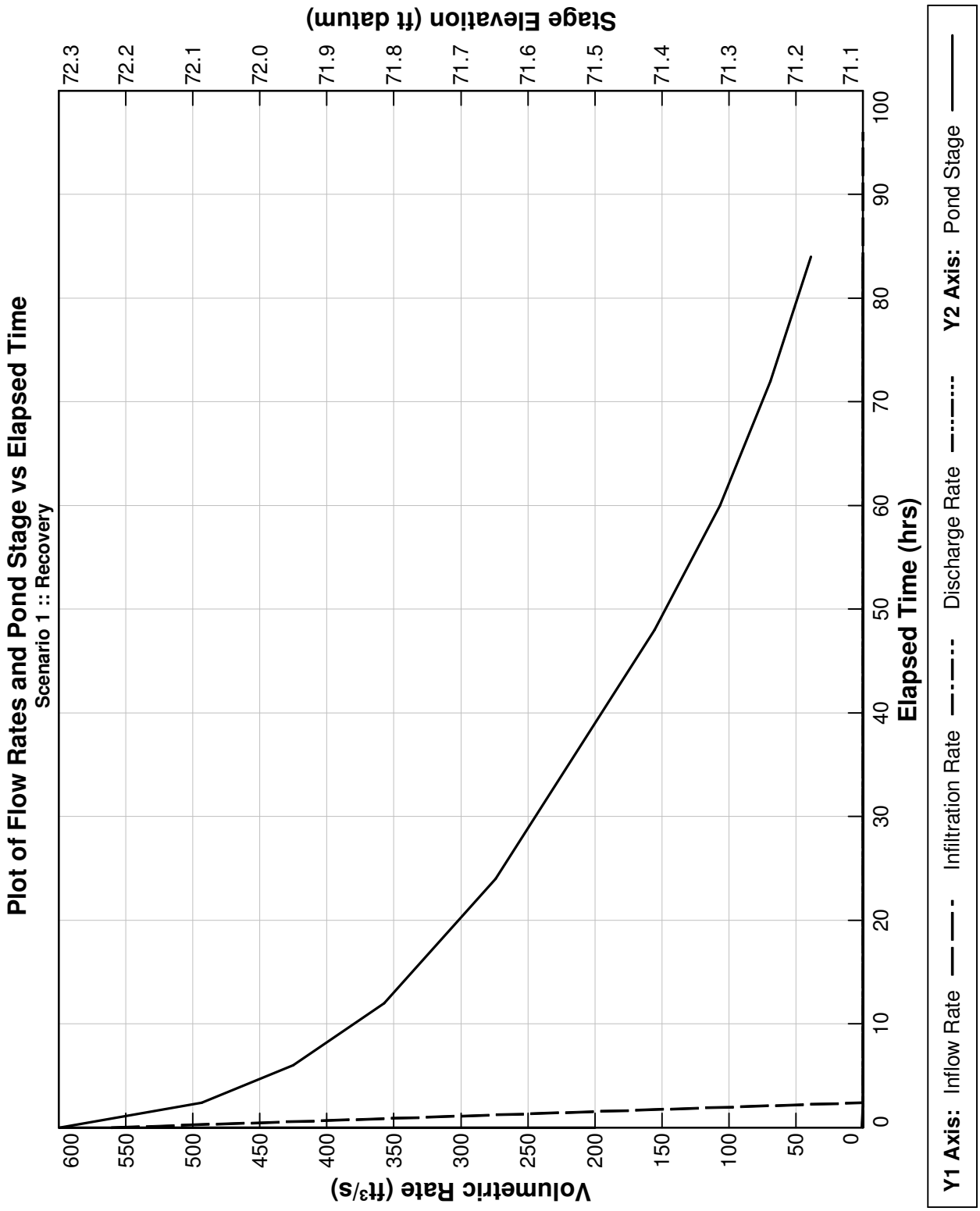
Detailed Results *:: Scenario 1 :: Recovery*

Elapsed Time	Instantaneous Inflow Rate	Outside Recharge	Stage Elevation	Infiltration Rate	Combined Instantaneous Discharge	Cumulative Inflow	Cumulative Infiltration	Combined Cumulative	
0.000	560.6667	0.00000	71.50000	0.69120	0	0.000	0.00000	0	N.A.
0.002	560.6667	0.00000	72.29958	0.69040	0	3364.000	4.14481	0	S
2.400	0.0000	0.00000	72.08704	0.08602	0	3364.000	977.59090	0	S
6.000	0.0000	0.00000	71.95020	0.03854	0	3364.000	1572.42600	0	S
12.000	0.0000	0.00000	71.81429	0.02262	0	3364.000	2139.78000	0	S
24.000	0.0000	0.00000	71.64821	0.01291	0	3364.000	2801.98000	0	S
36.000	0.0000	0.00000	71.52922	0.00650	0	3364.000	3255.34000	0	S
48.000	0.0000	0.00000	71.41121	0.00126	0	3364.000	3364.00000	0	S
60.000	0.0000	0.00000	71.31338	0.00000	0	3364.000	3364.00000	0	S
72.000	0.0000	0.00000	71.23817	0.00000	0	3364.000	3364.00000	0	S
84.000	0.0000	0.00000	71.17779	0.00000	0	3364.000	3364.00000	0	S
96.000	0.0000	0.00000	71.12787	----	----	3364.000	3364.00000	0	N.A.

Summary of Results *:: Scenario 1 :: Recovery*

	Time (hours)	Stage (ft datum)	Rate (ft^3/s)	Volume (ft^3)
Stage				
Minimum	96.000	71.13		
Maximum	0.002	72.30		
Inflow				
Rate - Maximum - Positive	0.002		560.6667	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	0.002			3364.0
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			3364.0
Infiltration				
Rate - Maximum - Positive	0.002		0.6904	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	48.000			3364.0
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			3364.0
Combined Discharge				
Rate - Maximum - Positive	None		None	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	None			None
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			0.0
Discharge Structure 1 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 2 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 3 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Pollution Abatement:				
36 Hour Stage and Infiltration Volume	36.000	71.53		3255.3
72 Hour Stage and Infiltration Volume	72.000	71.24		3364.0


Plot of Cumulative Volumes and Pond Stage vs Elapsed Time
Scenario 1 :: Recovery
Cumulative Volumes (ft³)
Elevation (ft datum)
Elapsed Time (hrs)
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
72.3
72.2
72.1
72.0
71.9
71.8
71.7
71.6
71.5
71.4
71.3
71.2
71.1
0
10
20
30
40
50
60
70
80
90
100
Y1 Axis: Cumulative Inflow
Cumulative Infiltration
Cumulative Discharge
Y2 Axis: Pond Stage


Plot of Flow Rates and Pond Stage vs Elapsed Time
Scenario 1 :: Recovery
Volumetric Rate (ft³/s)
Stage Elevation (ft datum)
Elapsed Time (hrs)
Y1 Axis: Inflow Rate Infiltration Rate Discharge Rate
Y2 Axis: Pond Stage
600
550
500
450
400
350
300
250
200
150
100
50
0
72.3
72.2
72.1
72.0
71.9
71.8
71.7
71.6
71.5
71.4
71.3
71.2
71.1
0
10
20
30
40
50
60
70
80
90
100

Section D: Geotechnical Report

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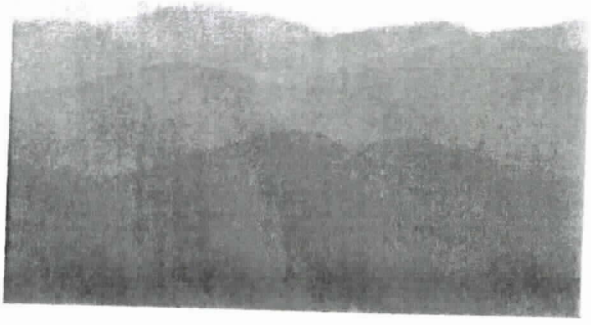

REPORT OF
PRELIMINARY GEOTECHNICAL EXPLORATION

FOR
CHANCEY ROAD DEVELOPMENT
ZEPHYRHILLS, FLORIDA

Prepared for:

CORNERSTONE ENGINEERING & ASSOCIATES, INC.

Zephyrhills, Florida

Prepared by:

FES GROUP, INC.
St. Petersburg, Florida

May 19, 2005

FES Project SG05046

Imaged As Is

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- FIGURE 1 – GENERAL SITE VICINITY MAP
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- FIGURE 3 – FIELD EXPLORATION PLAN
- FIGURE 4 - USGS SITE VICINITY MAP
- SOIL BORING LOGS
- SITE PHOTOGRAPHS

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1.0 EXECUTIVE SUMMARY

Based on the results of our subsurface exploration program, the following executive summary is presented.

- The Subject Property is located within the southwest quadrant of the intersection of Tucker Road and Chancey Road in Zephyrhills, Florida. It is understood that the property was previously undeveloped and/or utilized for cattle grazing. The property appeared to be approximately level, with the ground surface appearing to generally consist of a brown slightly silty sand (SP-SM). Significant surficial water was not observed along the existing ground surface during the time of our subsurface exploration program.

- In general, the borings primarily encountered slightly silty SAND (SP-SM) which extended from the existing ground surface to an approximate maximum depth of 15 feet below the existing ground surface elevations. Based upon the anticipated light construction and recommended site preparation, shallow foundations should be designed for a net maximum allowable bearing pressure of 3,000 pounds per square foot (psf).

- As recorded immediately after drilling during the time of our subsurface exploration, and corroborated through a visual observation of the obtained soil samples, the groundwater level was encountered at an approximate depth of 4½ to more than 15 feet below the existing ground surface elevation. Based on our review of the soil coloring characteristics, available published information, and the measured groundwater, it is estimated that the normal seasonal high groundwater level will generally be encountered approximately two feet above the measured groundwater levels.

- Based upon our evaluation and analyses, the subsurface conditions encountered should be acceptable for construction and support of a flexible (asphaltic concrete) or rigid (Portland Cement concrete) pavement structure with proper subgrade preparation procedures.

2.0 INTRODUCTION

2.1 PROJECT CHARACTERISTICS

It is our understanding that the project is expected to consist of constructing two structures; each building is expected to encompass an area of approximately 25,000 square feet. An adjacent asphaltic concrete surface parking area is proposed to be located adjacent to the building areas.

The buildings are expected to consist of prefabricated metal structures, with primary support provided by exterior interior columns. The floors of the structures are anticipated to be constructed as concrete slabs-on-grade. The finished site grades are expected to generally coincide with the existing site grades.

The maximum loadings associated with the proposed structures were not available at the time of this report. Based upon our previous experience with similar projects, however, the maximum loadings associated with the proposed structure are expected to be as follows:

Wall Load:	2 to 3 kips/linear ft.
Column Load:	100 kips
Floor Load:	100 lbs./sq. ft.

2.2 SITE DESCRIPTION

The Subject Property is located within the southwest quadrant of the intersection of Tucker Road and Chancey Road in Zephyrhills, Florida. It is understood that the property was previously underveloped and/or utilized for cattle grazing. The property appeared to gently slope toward the south, with the ground surface appearing to generally consist of a brown silty sand (SM). Significant surficial water was not observed along the existing ground surface during the time of our subsurface exploration program.

2.3 PURPOSE AND SCOPE

The purpose of this study was to obtain preliminary information on the general subsurface conditions at the proposed project site. The subsurface materials encountered were then evaluated with respect to the available project characteristics. In this regard, preliminary engineering assessments for the following items were formulated:

- General location and description of potentially deleterious materials encountered in the borings, which may interfere with construction progress or structure performance, including existing fills or surficial/subsurface organics.
- Identification of the existing groundwater levels and estimated normal seasonal high groundwater fluctuations.
- Preliminary evaluation of a shallow foundation system to be used for support of the proposed structure, with a slab-on-grade floor member. Identification of recommended shallow foundation design parameters, including allowable bearing pressures, foundation levels and expected total and differential settlements.
- Preliminary recommended soil subgrade preparation operations, including stripping, grubbing and compaction. Recommended engineering criteria for placement and compaction of approved structural fill materials.
- Determination of the infiltration characteristics of the upper soils within the area of the subject property.
- Evaluation of the suitability and availability of materials on-site that may be moved during site grading for use as structural fill in the building area, as pavement subgrade fill, and as general backfill.
- Preliminary pavement thickness design and construction suggestions, considering the encountered subgrade soils and the measured groundwater conditions.
- Presentation of construction recommendations, including expected ground water control measures, temporary slope stability recommendations, and unsuitable soil removal guidelines.

The following services were provided in order to achieve the preceding objectives:

- Reviewed readily-available published geologic and topographic information. This included information from Quadrangle Maps published by the United States Geological Survey (USGS) and the Soil Survey of Pasco County, Florida published by the United States Department of Agriculture (USDA) Soil Conservation Service (SCS).

- Executed a program of subsurface exploration consisting of subsurface sampling and field testing. Ten Standard Penetration Test (SPT) borings were performed to an approximate depth of 15 feet below the existing ground surface elevation. In each SPT boring, soil samples were collected and Standard Penetration Test resistances were measured at approximate intervals of two feet for the top 10 feet and at approximate intervals of five feet thereafter.

- Performed ten auger borings to an approximate depth of five feet below the existing grades. In each auger boring, soil samples were collected at the apparent soil stratum changes.

- Performed one Double Ring Infiltration (DRI) test in general accordance with the American Society of Testing and Materials (ASTM) test designation D-3385. The DRI test was performed at an approximate depth of one foot below the existing ground surface elevations.

- Visually classified and stratified representative soil samples in the laboratory using the Unified Soil Classification System (USCS). Identified soil conditions at each boring location and formed an opinion of the site soil stratigraphy.

- Collected groundwater level measurements and estimated normal wet seasonal high groundwater levels.

- The results of the field exploration and laboratory tests were used in the engineering analyses and in the formulation of the preliminary recommendations. The results of the subsurface exploration, including the recommendations and the data upon which they are based, are presented in this formal written report prepared by an experienced Professional Engineer.

The scope of this exploration was intended to evaluate soil conditions within the primary influence of the expected structure foundation and does not include an evaluation of potential deep soil conditions, such as sinkholes. An evaluation of potential deep soil problems may be performed at your request and with authorization. In order to perform such an evaluation, it is expected that deeper soil test borings and Ground Penetrating Radar (GPR) will be required.

The scope of our services does not include an environmental assessment or investigation for the presence or absence of hazardous or toxic materials in the soil, ground water, or surface water within or beyond the site studied. Any statements in the report regarding odors, staining of soils, or other unusual conditions observed are strictly for the information of our client.

2.4 REPORT FORMAT

This report begins with a discussion of the field program followed by a description of the general subsurface conditions. Evaluations are presented for the selected foundation alternative. The site vicinity maps are presented as Figures 1 and 2, the Field Exploration Plan is presented as Figure 3, and the USGS vicinity map is presented as Figure 4. The soil boring logs are also attached to the Appendix of this report.

3.0 FIELD EXPLORATION

In order to explore the general soil types at the subject site, and to aid in developing associated design parameters, a total of ten soil test borings and four auger borings were drilled at locations which were within the proposed development area. These boring locations were determined in the field by from existing surface features. The approximate locations of the borings are illustrated on Figure 3, which has been included in the Appendix of this report. The boring locations illustrated in the Appendix should be considered accurate only to the degree implied by the method used; if more precise locations are desired, we suggest that a registered surveyor be contacted. It is important to note that ground surface elevations at the boring locations were neither furnished nor determined prior to or during the subsurface exploration.

The soil test borings were then performed with the use of the CME Power Drill Rig using Hollow-Stem Auger (HSA) drilling procedures. The SPT borings extended to approximate depths of 15 feet below the existing ground surface elevations. The soil sampling was performed in general accordance with ASTM Test Designation D-1586 titled "Penetration Test and Split-Barrel Sampling of Soils." Samples were obtained at approximate intervals of two feet to an approximate a depth of ten 10 feet, and at intervals of 5 feet thereafter. Representative portions of these soil samples were sealed in glass jars, labeled and transferred to our laboratory for classification and testing.

The auger borings were manually performed with the use of a 3-inch outside diameter "bucket" auger. The soil sampling was performed in general accordance with ASTM Test Designation D-1452, titled "Soil Investigation and Sampling by Auger Borings." These samples were taken "continuously" from the ground surface to approximate depths of five feet below the existing ground surface elevations. Representative portions of these soil samples were sealed in containers, labeled and transferred to our laboratory for classification and testing.

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3.1 DOUBLE RING INFILTRATION (DRI) TEST

Prior to performing the DRI test, one SPT boring (Boring B-5) was performed to determine the soil type and measure the existing groundwater level and to obtain samples of the soil strata. The soils encountered are illustrated on the boring log in the Appendix of this report.. The DRI test was then performed for a total duration of 2½ hours following a saturation for ½ hours in general accordance with ASTM Test Designation D-3385, titled "Infiltration Rate of Soils in Field Using Double-Ring Infiltrometers." The DRI test was performed at a depth of approximately 1 to 2 feet below the existing ground surface elevations. The DRI test result indicated that the infiltration rate is 8.0 inches per hour. The groundwater table at the time and location of the DRI test was encountered at a depth of 8.5 feet below the existing ground surface elevation.

4.0 LABORATORY TESTING

The soil samples were transported to our laboratory and were classified by the Geotechnical Engineer using the Unified Soil Classification System in general accordance with the American Society of Testing and Materials (ASTM) Test Designation D-2488. Due to the structural characteristics of the proposed facility and the nature of the soils encountered, refined laboratory test methods were not deemed necessary. It should be noted that all soil samples will be properly disposed of thirty (30) days following the submittal of the **FES** subsurface exploration report.

5.0 GENERALIZED SUBSURFACE CONDITIONS

5.1 USGS TOPOGRAPHY SURVEY

The topographic survey map published by the United States Geological Survey (USGS) was reviewed for ground surface features at the proposed project location (see Figure 4 in the Appendix of this report). Based on this review, the natural ground surface elevation ranges from approximately +70 to +75 feet (above) the National Geodetic Vertical Datum of 1927 (NGVD). The natural ground surface appears to be generally level. The property is illustrated as being generally undeveloped.

5.2 COUNTY SOIL SURVEY

The "Soil Survey of Pasco County, Florida", published by the United States Department of Agriculture (USDA) Soil Conservation Service (SCS), was reviewed for general near-surface soil information within the general vicinity of the subject project. This information indicates that there is one primary soil mapping unit within the proposed project area. The soil map unit characteristics are tabulated below:

SOIL SERIES	HYDROLOGIC GROUP	PERMEABILITY RATING (INCHES/HOUR)	USDA SEASONAL HIGH GROUNDWATER TABLE		USDA BEDROCK DEPTH (INCHES)
			DEPTH (FEET)	MONTHS	
Pomona Fine Sand (2)	B/D	0.2 – 20	0 – 1.0	Apparent Jul - Sep	>60
Tavares Sand (6)	A	>20	3.5 – 6.0	Apparent Jun – Dec	>60
Sparr Fine Sand (7)	C	0.6 – 20	1.5 – 3.5	Apparent Jul – Oct	>60
Seller Mucky Loamy Fine Sand (8)	B/D	6.0 – 20	+2 - 0	Apparent Jun - Mar	>60
Electra Variant Fine Sand (18)	C	0.06 – 20	2.0 – 3.5	Jul - Oct	>60

5.3 SUBSURFACE CONDITIONS

The subsurface conditions encountered at the boring locations are described on the Soil Boring Logs in the Appendix. These logs represent our interpretation of the subsurface conditions based on the field logs, visual observation of field samples by an engineer, and laboratory tests of some of the field samples. The lines designating the interface between various strata on the Soil Boring Logs represent the approximate interface locations. In addition, the transition between strata may be gradual. Water levels shown on the Soil Boring Logs represent the conditions only at the time of our exploration. It should be understood that soil and rock conditions may vary between boring locations.

In general, the borings encountered very loose to medium dense silty to slightly silty SAND (SM to SP-SM) extending from below the topsoil to an approximate depth range of 5 to 12 feet below the existing ground surface elevations. The SPT values measured within this soil stratum ranged from 4 to 21 blows per foot (bpf).

Underlying the initial soil stratum, the final soil stratum consisted of loose to medium dense clayey SAND (SC) which extended to boring termination (an approximate maximum depth of 15 feet below the existing ground surface elevations). The SPT values measured within this soil stratum ranged from 6 to 23 bpf.

The subsurface exploration program indicated that the subsurface soils are generally uniform across the proposed construction site. No "raveled" conditions indicative of sinkhole type activity were encountered during this subsurface exploration program. The logs of all borings have been included in the Appendix of this report. These logs describe the visual characteristics of all soil strata encountered using the Unified Soil Classification System. Groundwater observations, sampling information and other pertinent field data and observations are also included.

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RECORDS AND DATA

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5.4 GROUNDWATER CONDITIONS

As recorded immediately after drilling during the time of our subsurface exploration, and corroborated through a visual observation of the obtained soil samples, the groundwater level was encountered at an approximate depth of 4½ to more than 15 feet below the existing ground surface elevations.

Groundwater levels tend to fluctuate during periods of prolonged drought and extended rainfall and may be affected by man-made influences. In addition, a seasonal effect may also occur during which higher groundwater levels are normally recorded in rainy seasons. Based on our review of the soil coloring characteristics, available published information, and the measured groundwater, it is estimated that the normal seasonal high groundwater level will be encountered approximately two feet above the measured groundwater levels.

If the groundwater level is critical to design or construction, groundwater observation wells should be installed on-site to monitor groundwater fluctuations over a period of time and to permit more accurate determinations of wet season and dry season levels.

6.0 PRELIMINARY DESIGN RECOMMENDATIONS

The following preliminary design recommendations have been developed on the basis of the previously-described project characteristics and subsurface conditions encountered during this exploration. The test boring data was evaluated utilizing correlations between the measured Standard Penetration Test resistances and the engineering performance characteristics of similar subsurface conditions. If there is any change in these project criteria, including project location on the site, a review must be made by **FES** to determine if any modifications to the presented recommendations will be required. The findings of such a review should be presented in a supplemental report.

Once final design plans and specifications are available, a general review by **FES** is strongly recommended as a means to check that the evaluations made in preparation of this report are correct and that earthwork and foundation recommendations are properly interpreted and implemented.

7.0 BUILDING FOUNDATIONS

7.1 GENERAL

In general, the borings encountered very loose to medium dense silty to slightly silty SAND (SM to SP-SM) extending from below the topsoil to an approximate depth range of 5 to 12 feet below the existing ground surface elevations. Underlying the initial soil stratum, the final soil stratum consisted of loose to medium dense clayey SAND (SC) which extended to boring termination (an approximate maximum depth of 15 feet below the existing ground surface elevations). Based on our extensive experience with similar subsurface soil conditions, the anticipated light construction, and the recommended site preparation, it is expected that the proposed development may be supported with the use of a shallow foundation system.

7.2 SHALLOW FOUNDATIONS

It is recommended that all foundation excavations be observed by the Geotechnical Engineer. Although not expected, foundation bearing soils which are considered to be unsatisfactory should be undercut as directed by the Geotechnical Engineer. Based on the subsurface soil conditions encountered, undercutting is not expected to be required to satisfactorily support the anticipated structures using shallow foundations.

Based upon the anticipated light construction and recommended site preparation, shallow foundations should be designed for a net maximum allowable bearing pressure of 3,000 pounds per square foot (psf). All exterior footings should be embedded so that the bottom of the foundation is a minimum of 16 inches below the adjacent grades on all sides for in order to provide confinement; interior foundations may be located at nominal depths below the floor slab elevations.

Strip or wall footings should be a minimum of 18 inches wide and pad or column footings should be a minimum of 24 inches wide. The minimum footing sizes should be used regardless of whether or not the foundation loads and allowable bearing pressures dictate a smaller size. These minimum footing sizes tend to provide adequate load bearing area to develop overall bearing capacity and account for minor variations in the bearing materials. It is important that the structural elements be centered on the footings such so that loads are transferred evenly, unless the footings are adequately proportioned for eccentric loads.

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7.3 SETTLEMENT

The settlement of shallow foundations supported on sandy type soils should occur rapidly. Thus, the majority of expected settlements should occur during construction as dead loads are imposed at the footing locations. Provided that the recommended subgrade preparation operations are properly performed, the total settlements of isolated columns and wall footings should not exceed one (1) inch, with differential settlements on the order of 50 percent of the total settlements. Differential settlements of these magnitudes are usually considered tolerable for the anticipated single story construction; the tolerance of the proposed structure to the predicted total and differential settlements should be confirmed by the Structural Engineer.

7.4 MODULUS OF SUBGRADE REACTION

Based upon the soil conditions encountered at the proposed site and the recommended site preparation operations presented in the Construction Considerations section of this report, the modulus of vertical subgrade reaction (k) for the shallow soils is expected to be on the order of 80 pounds per square inch per inch of vertical deflection (pci). For larger foundations, the k-value should be reduced in accordance with the following equation:

$$K = K_1 \left(\frac{B+1}{2B} \right)^2$$

Where B is the foundation width in feet.

It should be noted that this value is based on typical values in published literature; a plate load test may be performed to more accurately assess the actual modulus of vertical subgrade reaction.

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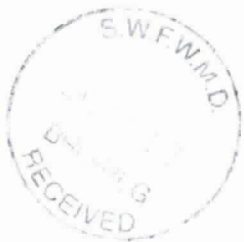
8.0 FLOOR SLAB

The floor slab may be safely supported as a slab-on-grade, provided that any undesirable surficial materials are removed and replaced with controlled structural fill. It should be noted that "floating" ground floor slabs, that is, generally ground-supported and not rigidly connected to walls or foundations, tend to reduce the possibility of cracking and displacement of the floor slabs due to differential movements between the slab and the foundation.

It is recommended that the floor slab bearing soils be covered by a lapped polyethylene sheeting in order to reduce the potential for floor dampness which can affect the performance of glued tile and carpet, if any are used. This membrane should consist of a 10-mil single layer of non-corroding, non-deteriorating polyethylene sheeting material placed so as to minimize seams and to cover all of the soil below the building floor slab. This membrane should be cut in a "cross shape" to allow for pipes or other penetrations and the membrane should extend to within ½ inch of all such pipes or penetrations. All seams of the membrane should be lapped at least 12 inches. Punctures or tears in the membrane should be repaired with the same or comparable material and sealed in a waterproof manner.

The performance of concrete floor slabs is also affected by the concrete mix that is used. A relatively high water-cement ratio of the concrete can cause aesthetic disruptions, such as unsightly slab "curling" and shrinkage cracking. Also, an additional waiting period may be required prior to installing moisture-sensitive floor covering because of the moisture loss from the concrete floor slab. For these reasons, we recommend that a concrete mix design be selected with a water-cement ratio not exceeding 0.45.



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9.0 PRELIMINARY PAVEMENT DESIGN CONSIDERATIONS

These preliminary pavement recommendations are considered minimum for the site, soil and limited traffic conditions expected. The final pavement thickness design should be determined by the project civil engineer, however, using information obtained during the Preliminary Geotechnical Exploration program and an analysis of anticipated traffic conditions.

9.1 SUBGRADE

In general, the borings encountered very loose to medium dense silty to slightly silty SAND (SM to SP-SM) extending from below the topsoil to an approximate depth range of 5 to 12 feet below the existing ground surface elevations. Based upon our evaluation and analyses, these soils should be acceptable for construction and support of a flexible (limerock or crushed concrete base) or semi-flexible (soil cement base) type pavement section after proper subgrade preparation, provided that drainage controls are implemented.

Following removal of the "Topsoil" material along the existing ground surface, the subgrade should be compacted to a minimum depth of 12 inches to at least 98 percent of the Modified Proctor maximum dry density (ASTM D-1557). Any fill utilized to elevate the cleared pavement areas to subgrade elevation should consist of reasonably clean fine sands, uniformly compacted to a minimum density of 98 percent of the soil Modified Proctor maximum dry density (ASTM D-1557).

It is important to note that no Limerock Bearing Ratio (LBR) tests were requested or performed during this subsurface exploration program. It is recommended that during the pavement design phase, LBR testing be performed on the natural subgrade materials and/or the proposed structural fill materials, as appropriate. Based on our experience with similar materials, the existing soils are expected to have an LBR value on the order of 20.

9.2 BASE

The choice of pavement base type basically will depend upon desired final pavement grades. If a minimum separation of 18 to 24 inches can be maintained between the bottom of the base and the normal seasonal high groundwater level, then a limerock base can be utilized. If a minimum separation of 12 to 18 inches can be maintained between the bottom of the base and the normal seasonal high groundwater level, a crushed concrete base can be utilized. For minimum separation of 6 to 12 inches between the bottom of the base and the normal seasonal high groundwater level, a soil cement base should be utilized.

Limerock base material should meet FDOT requirements, including compaction to 98 percent of its maximum dry density as determined by the Modified Proctor Test (ASTM D-1557) and a minimum Limerock Bearing Ratio (LBR) of 100 percent. Crushed concrete should have an LBR value of 100 percent and be graded in accordance with Florida Department of Transportation (FDOT) Standard Specification Section 204. Due to the subgrade soil conditions, it is recommended that type B stabilized subgrade (LBR = 30%) be utilized, as specified by the FDOT Standard Specifications for Road and Bridge Construction. As a minimum, the stabilized subgrade thickness should be equal to the thickness of the pavement base. Traffic should not be allowed on the subgrade before the base is placed to avoid rutting.

A soil cement base should be designed according to FDOT or PCA modified short cut design procedure. A strength of 300 psi should be achieved on laboratory-cured compressive strength specimens molded from samples taken from the base material as it is placed. A stabilized subgrade need not be incorporated with a soil cement base. However, the subgrade should be compacted to a minimum depth of 12 inches to at least 98% of the Modified Proctor Test maximum dry density, and should be firm and true to line and grade prior to paving. Before paving, the soil cement base should be checked for soundness. Traffic should not be allowed on the subgrade before the base is placed to avoid rutting.

As a guideline for pavement design, we recommend that the limerock, crushed concrete and soil cement base materials be a minimum of six (6) inches thick under parking areas and eight (8) inches thick under heavily-traveled driving aisles.

9.3 ASPHALTIC CONCRETE

The asphaltic concrete structural course should consist of at least 1½ to 2 inches of Type S asphaltic concrete material. It is recommended that at least 1½ inches of asphaltic concrete be utilized in the parking areas and 2 inches be utilized in heavily-traveled driving areas. Type S-I or S-III should be utilized because of their durability qualities. If Type S-I is selected the asphalt should be placed at least 1½ inches thick because of the larger size of the coarse aggregate. The asphaltic concrete should meet standard FDOT material requirements and placement procedures as outlined in the current FDOT Standard Specifications for Road and Bridge Construction. The asphalt should be compacted to a minimum of 96% of the Marshall maximum laboratory unit weight.

9.4 AVERAGE DAILY TRAFFIC

The following pavement designs are based upon the design methods described in the FDOT "Flexible Pavement Design Manual for New Construction and Pavement Rehabilitation" (Document No. 625-010-002-b, dated April 1, 1993). These designs present the recommended range of 18-kip-equivalent single axle loads for the "light duty" and "heavy duty" pavement sections presented.

Pavement Duty	Pavement Structural Section		SSV	Structural Number	18 Kip Equivalent Single Axle Loads (lbs)
Light	1½" Type S Asphaltic Concrete	6" Crushed Limerock	5.0	1.74	40,000
	1½" Type S Asphaltic Concrete	6" Soil Cement	5.0	1.56	20,000
Heavy	2" Type S Asphaltic Concrete	8" Crushed Limerock	5.0	2.32	200,000
	2" Type S Asphaltic Concrete	8" Soil Cement	5.0	2.08	100,000

9.5 RIGID CONCRETE PAVEMENT

As an alternate to the above referenced flexible pavement design, a rigid concrete pavement design could be used. It is recommended that the rigid concrete pavement be designed to have a minimum flexural strength of 550 psi at 28 days when tested in accordance with ASTM C-78. Based upon our experience, a minimum thickness of five inches should be utilized for standard light duty applications and a minimum thickness of six inches should be utilized for heavy-duty applications. We further recommend that a reinforcing steel mat, preferably at least size No. 3 steel bars placed sixteen inches on center. However, the steel reinforcement within the concrete pavement should be designed by the project Civil Engineer.

The following table summarizes the Average daily Traffic (ADIT) ratings for Category 1 pavements for "light duty", "medium duty" and "heavy duty" pavement sections. It should be noted that the ADTT values include only two-axle, six-tire trucks, and single or combination units with three axles or more (two-axle, four-tire trucks are excluded).

Pavement Duty	Pavement Structural Section		Subgrade Support	Modulus of Rupture	Average Daily Truck Traffic (ADTT)
Light	5" Concrete	12" Compacted Subgrade	Low	550	0.8
Medium	5.5" Concrete	12" Compacted Subgrade	Low	550	13
Heavy	6" Concrete	12" Compacted Subgrade	Low	550	130

APPENDIX

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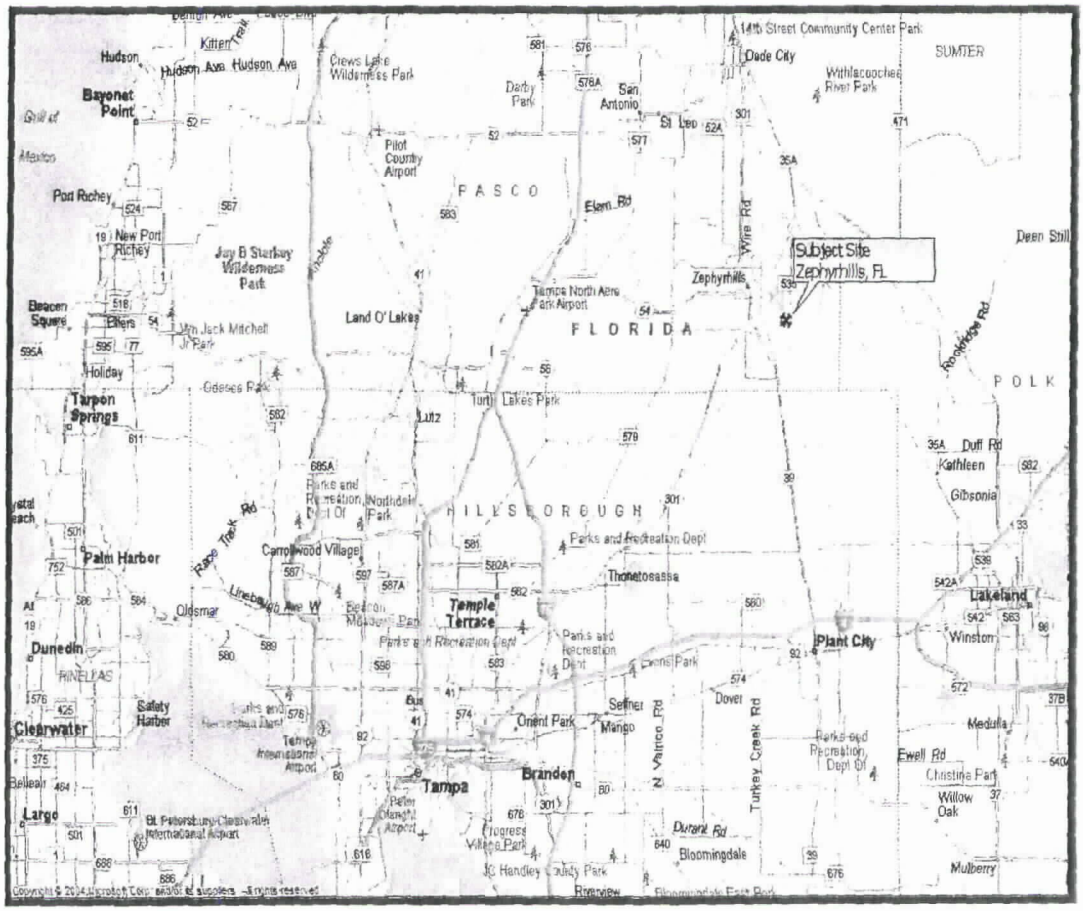
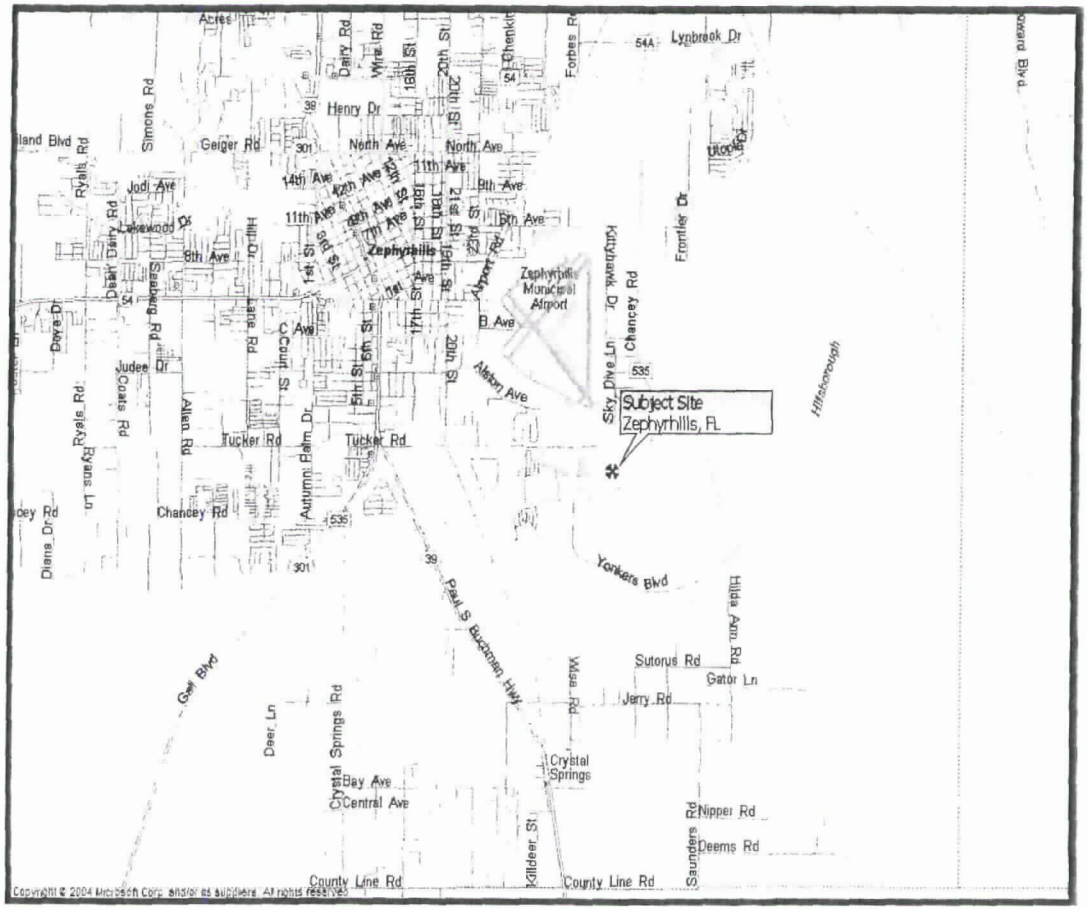
FIGURES



General Site Vicinity Map Subject Property Zephyrhills, Florida	Project No.: SG05046 Scale: As Shown Figure No.: 1	**FES Group, Inc.** 9515 International Court St. Petersburg, Florida PH: (727)-576-1985 FX: (727)-576-3761



Local Site Vicinity Map Subject Property Zephyrhills, Florida	Project No.: SG05046 Scale: As Shown Figure No.: 2	**FES Group, Inc.** 9515 International Court St. Petersburg, Florida PH: (727)-576-1985 FX: (727)-576-3761



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Field Exploration Plan Subject Property Zephyrhills, Florida	Project No.: SG05046 Scale: As Shown Figure No.: 3	**FES Group, Inc.** 9515 International Court St. Petersburg, Florida PH: (727)-576-1985 FX: (727)-576-3761

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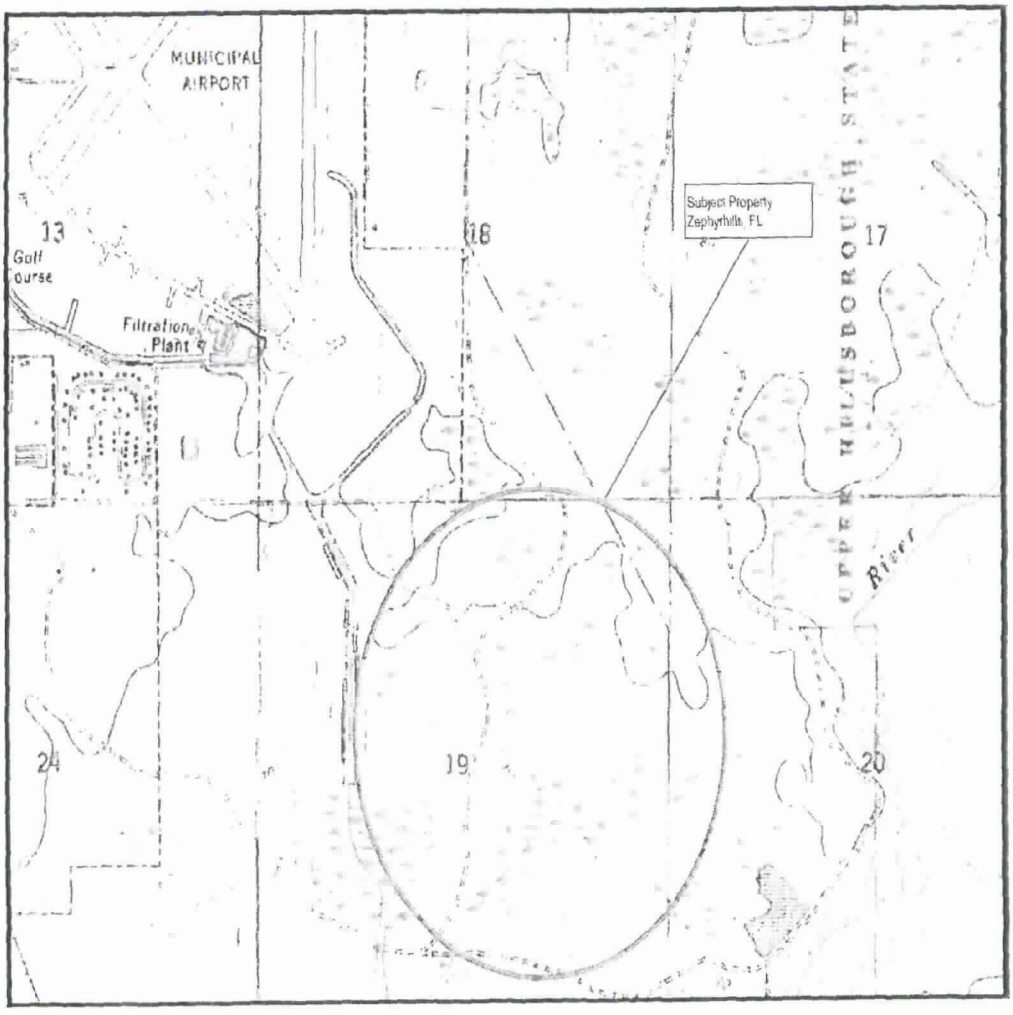

Imaged As Is

USGS Site Vicinity Map Subject Property Zephyrhills, Florida	Project No.: SG05046 Scale: As Shown Figure No.: 4	**FES Group, Inc.** 9515 International Court St. Petersburg, Florida PH: (727)-576-1985 FX: (727)-576-3761

SOIL BORING LOGS

Soil Boring Log



FES GROUP, INC.

Project Number:	SG05046	Project Name:	Chancey Road Site	Boring Number:	B-1
		Site Location:	Zephyrhills, FL	Start Date:	04/30/05
		Drilling Method:	HSA	Completion Date:	04/30/05

FEET (BLS)	SAMPLE TYPE	SAMPLE INTERVAL (BLS)	BLOW COUNT	MATERIAL DESCRIPTION	COMMENTS
0	SS	0 - 2.0	2-3-3-4	**Brown Silty Sand ("Topsoil", SM)**	
	SS	2.0 - 4.0	6-5-6-7		Groundwater Encountered 4.6 Feet BLS
5	SS	4.0 - 6.0	7-5-4-6	**Light Brown Slightly Silty Sand (SP-SM)**	
	SS	6.0 - 8.0	4-4-7-7		
10	SS	8.0 - 10.0	3-4-7-8		
15	SS	13.0 - 15.0	8-8-10-9	**Gray Clayey Sand (SC)**	
				EOB 15.0 Feet BLS	

(HA) = HAND AUGER
(MR) = MUD ROTARY
(SS) = SPLIT SPOON

(BLS) = BELOW LAND SURFACE
(EOB) = END OF BORING
(NR) = NOT RECORDED
(NA) = NOT APPLICABLE

Soil Boring Log



FES GROUP, INC.

Project Number:	SG05046	Project Name:	Chancey Road Site	Boring Number:	B-2
		Site Location:	Zephyrhills, FL	Start Date:	04/30/05
		Drilling Method:	HSA	Completion Date:	04/30/05

FEET (BLS)	SAMPLE TYPE	SAMPLE INTERVAL (BLS)	BLOW COUNT	MATERIAL DESCRIPTION	COMMENTS
0	SS	0 - 2.0	2-3-2-4	**Brown Silty Sand ("Topsoil", SM)**	
	SS	2.0 - 4.0	3-5-5-6		Groundwater Encountered 6.6 Feet BLS
5	SS	4.0 - 6.0	4-7-7-9	**Light Brown Slightly Silty Sand (SP-SM)**	
	SS	6.0 - 8.0	4-4-7-7		
10	SS	8.0 - 10.0	4-5-7-9		
				Gray Clayey Sand (SC)	
15	SS	13.0 - 15.0	10-10-12-12		
				EOB 15.0 Feet BLS	

(HA) = HAND AUGER
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Soil Boring Log

FES GROUP, INC.

Project Number: SG05046	Project Name:	Chancey Road Site	Boring Number: B-3
	Site Location:	Zephyrhills, FL	Start Date: 04/30/05
	Drilling Method:	HSA	Completion Date: 04/30/05

FEET (BLS)	SAMPLE TYPE	SAMPLE INTERVAL (BLS)	BLOW COUNT	MATERIAL DESCRIPTION	COMMENTS
0	SS	0 - 2.0	2-2-3-2	**Brown Silty Sand ("Topsoil", SM)**	
	SS	2.0 - 4.0	6-5-4-5		Groundwater Encountered 5.0 Feet BLS
5	SS	4.0 - 6.0	5-5-5-4	**Light Brown Slightly Silty Sand (SP-SM)**	
	SS	6.0 - 8.0	3-3-4-4		
10	SS	8.0 - 10.0	4-5-9-6	**Gray Clayey Sand (SC)**	
15	SS	13.0 - 15.0	10-10-12-13		
				EOB 15.0 Feet BLS	

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Soil Boring Log

FES GROUP, INC.

Project Number: SG05046	Project Name:	Chancey Road Site	Boring Number: B-4
	Site Location:	Zephyrhills, FL	Start Date: 04/30/05
	Drilling Method:	HSA	Completion Date: 04/30/05

FEET (BLS)	SAMPLE TYPE	SAMPLE INTERVAL (BLS)	BLOW COUNT	MATERIAL DESCRIPTION	COMMENTS
0	SS	0 - 2.0	3-2-2-2	**Brown Silty Sand ("Topsoil", SM)**	
	SS	2.0 - 4.0	2-2-3-4	**Light Brown Slightly Silty Sand (SP-SM)**	Groundwater Encountered 11.6 Feet BLS
5	SS	4.0 - 6.0	2-4-5-4		
	SS	6.0 - 8.0	4-4-5-5		
10	SS	8.0 - 10.0	5-6-7-7	**Gray Clayey Sand (SC) some Limestone Fragments**	
15	SS	13.0 - 15.0	10-12-46-50		
				EOB 15.0 Feet BLS	

(HA) = HAND AUGER
(MR) = MUD ROTARY
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Soil Boring Log

FES GROUP, INC.

Project Number: SG05046	Project Name:	Chancey Road Site	Boring Number: B-5
	Site Location:	Zephyrhills, FL	Start Date: 04/30/05
	Drilling Method:	HSA	Completion Date: 04/30/05

FEET (BLS)	SAMPLE TYPE	SAMPLE INTERVAL (BLS)	BLOW COUNT	MATERIAL DESCRIPTION	COMMENTS
0	SS	0 - 2.0	3-7-14-12	**Brown Silty Sand ("Topsoil", SM)**	
	SS	2.0 - 4.0	15-11-10-10	**Light Brown Slightly Silty Sand (SP-SM)**	Groundwater Encountered 8.5 Feet BLS
5	SS	4.0 - 6.0	6-7-3-3		
	SS	6.0 - 8.0	4-4-6-8		
10	SS	8.0 - 10.0	2-3-7-7	**Gray Clayey Sand (SC)**	
15	SS	13.0 - 15.0	3-3-3-3		
				EOB 15.0 Feet BLS	

(HA) = HAND AUGER
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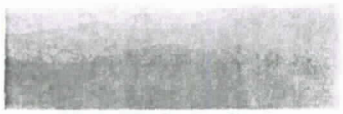
Soil Boring Log



FES GROUP, INC.

Project Number: SG05046	Project Name:	Chancey Road Site	Boring Number: B-6
	Site Location:	Zephyrhills, FL	Start Date: 04/29/05
	Drilling Method:	HSA	Completion Date: 04/29/05

FEET (BLS)	SAMPLE TYPE	SAMPLE INTERVAL (BLS)	BLOW COUNT	MATERIAL DESCRIPTION	COMMENTS
0	SS	0 - 2.0	2-3-4-4	**Brown Silty Sand ("Topsoil", SM)**	Groundwater Encountered 4.5 Feet BLS
	SS	2.0 - 4.0	4-3-4-4	**Light Brown Slightly Silty Sand (SP-SM)**	
5	SS	4.0 - 6.0	6-3-3-4		
	SS	6.0 - 8.0	7-7-14-14		
10	SS	8.0 - 10.0	7-10-12-10	**Gray Clayey Sand (SC)**	
15	SS	13.0 - 15.0	3-3-5-12		
				EOB 15.0 Feet BLS	

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Soil Boring Log



FES GROUP, INC.

Project Number: SG05046	Project Name:	Chancey Road Site	Boring Number: B-7
	Site Location:	Zephyrhills, FL	Start Date: 04/30/05
	Drilling Method:	HSA	Completion Date: 04/30/05

FEET (BLS)	SAMPLE TYPE	SAMPLE INTERVAL (BLS)	BLOW COUNT	MATERIAL DESCRIPTION	COMMENTS
0	SS	0 - 2.0	2-4-3-4	**Brown Silty Sand ("Topsoil", SM)**	Groundwater Encountered 6.6 Feet BLS
	SS	2.0 - 4.0	4-6-5-4		
5	SS	4.0 - 6.0	8-7-8-8	**Light Brown Slightly Silty Sand (SP-SM)**	
	SS	6.0 - 8.0	4-5-6-8		
10	SS	8.0 - 10.0	5-5-6-7		
				Gray Clayey Sand (SC)	
15	SS	13.0 - 15.0	9-10-12-12		
				EOB 15.0 Feet BLS	

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Soil Boring Log

FES GROUP, INC.

Project Number: SG05046	Project Name:	Chancey Road Site	Boring Number: B-8
	Site Location:	Zephyrhills, FL	Start Date: 04/29/05
	Drilling Method:	HSA	Completion Date: 04/29/05

FEET (BLS)	SAMPLE TYPE	SAMPLE INTERVAL (BLS)	BLOW COUNT	MATERIAL DESCRIPTION	COMMENTS
0	SS	0 - 2.0	2-2-2-2	**Brown Silty Sand ("Topsoil", SM)**	
	SS	2.0 - 4.0	5-4-8-8		Groundwater Encountered 5.0 Feet BLS
5	SS	4.0 - 6.0	9-9-8-6	**Light Brown Slightly Silty Sand (SP-SM)**	
	SS	6.0 - 8.0	4-4-5-7		
10	SS	8.0 - 10.0	6-10-9-11		
				Gray Clayey Sand (SC)	
15	SS	13.0 - 15.0	4-4-6-7		
				EOB 15.0 Feet BLS	



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Soil Boring Log

FES GROUP, INC.

Project Number:	SG05046		
Project Name:	Chancey Road Site	Boring Number:	B-9
Site Location:	Zephyrhills, FL	Start Date:	04/29/05
Drilling Method:	HSA	Completion Date:	04/29/05

FEET (BLS)	SAMPLE TYPE	SAMPLE INTERVAL (BLS)	BLOW COUNT	MATERIAL DESCRIPTION	COMMENTS
0				**Brown Silty Sand ("Topsoil", SM)**	
	SS	0 - 2.0	2-2-2-4		
	SS	2.0 - 4.0	3-2-3-3		Groundwater Encountered 6.5 Feet BLS
5	SS	4.0 - 6.0	4-3-5-6	**Light Brown Slightly Silty Sand (SP-SM)**	
	SS	6.0 - 8.0	4-3-2-3		
10	SS	8.0 - 10.0	4-4-2-3		
				Gray Clayey Sand (SC)	
15	SS	13.0 - 15.0	5-6-6-6		
				EOB 15.0 Feet BLS	

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Soil Boring Log

FES GROUP, INC.

Project Number: SG05046	Project Name:	Chancey Road Site	Boring Number: B-10
	Site Location:	Zephyrhills, FL	Start Date: 04/29/05
	Drilling Method:	HSA	Completion Date: 04/29/05

FEET (BLS)	SAMPLE TYPE	SAMPLE INTERVAL (BLS)	BLOW COUNT	MATERIAL DESCRIPTION	COMMENTS
0				**Brown Silty Sand ("Topsoil", SM)**	
	SS	0 - 2.0	3-2-3-3	**Light Brown Slightly Silty Sand (SP-SM)**	
	SS	2.0 - 4.0	3-3-4-6		Groundwater Not Encountered
5	SS	4.0 - 6.0	8-7-6-5		
	SS	6.0 - 8.0	8-4-6-5		
10	SS	8.0 - 10.0	3-6-11-14	**Gray Clayey Sand (SC)**	
15	SS	13.0 - 15.0	10-12-11-12		
				EOB 15.0 Feet BLS	

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Soil Boring Log

FES GROUP, INC.

Project Number:	SG05046	Project Name:	Chancey Road Site	Boring Number:	AB-1
		Site Location:	Zephyrhills, FL	Start Date:	04/29/05
		Drilling Method:	HA	Completion Date:	04/29/05

FEET (BLS)	SAMPLE TYPE	SAMPLE INTERVAL (BLS)	BLOW COUNT	MATERIAL DESCRIPTION	COMMENTS
0				**Brown Silty Sand ("Topsoil", SM)**	
1	HA	0.0 - 1.0	NA	**Light Brown Slightly Silty Sand (SP-SM)**	Groundwater Not Encountered
2	HA	1.0 - 2.0	NA		
3	HA	2.0 - 3.0	NA		
4	HA	3.0 - 4.0	NA		
5	HA	4.0 - 5.0	NA		
				EOB 5.0 Feet BLS	

(HA) = HAND AUGER
(MR) = MUD ROTARY
(SS) = SPLIT SPOON

(BLS) = BELOW LAND SURFACE
(EOB) = END OF BORING
(NR) = NOT RECORDED
(NA) = NOT APPLICABLE

Soil Boring Log

FES GROUP, INC.

Project Number: SG05046	Project Name:	Chancey Road Site	Boring Number: AB-2
	Site Location:	Zephyrhills, FL	Start Date: 04/29/05
	Drilling Method:	HA	Completion Date: 04/29/05

FEET (BLS)	SAMPLE TYPE	SAMPLE INTERVAL (BLS)	BLOW COUNT	MATERIAL DESCRIPTION	COMMENTS
0				**Brown Silty Sand ("Topsoil", SM)**	
1	HA	0.0 - 1.0	NA	**Light Brown Slightly Silty Sand (SP-SM)**	Groundwater Not Encountered
2	HA	1.0 - 2.0	NA		
3	HA	2.0 - 3.0	NA		
4	HA	3.0 - 4.0	NA		
5	HA	4.0 - 5.0	NA		
				EOB 5.0 Feet BLS	

(HA) = HAND AUGER
(MR) = MUD ROTARY
(SS) = SPLIT SPOON

(BLS) = BELOW LAND SURFACE
(EOB) = END OF BORING
(NR) = NOT RECORDED
(NA) = NOT APPLICABLE

BRO4231

Soil Boring Log

FES GROUP, INC.

Project Number:	SG05046	Project Name:	Chancey Road Site	Boring Number:	AB-3
		Site Location:	Zephyrhills, FL	Start Date:	04/29/05
		Drilling Method:	HA	Completion Date:	04/29/05

FEET (BLS)	SAMPLE TYPE	SAMPLE INTERVAL (BLS)	BLOW COUNT	MATERIAL DESCRIPTION	COMMENTS
0				**Brown Silty Sand ("Topsoil", SM)**	
1	HA	0.0 - 1.0	NA	**Light Brown Slightly Silty Sand (SP-SM)**	Groundwater Not Encountered
2	HA	1.0 - 2.0	NA		
3	HA	2.0 - 3.0	NA		
4	HA	3.0 - 4.0	NA		
5	HA	4.0 - 5.0	NA	**EOB 5.0 Feet BLS**	

(HA) = HAND AUGER
(MR) = MUD ROTARY
(SS) = SPLIT SPOON

(BLS) = BELOW LAND SURFACE
(EOB) = END OF BORING
(NR) = NOT RECORDED
(NA) = NOT APPLICABLE

Soil Boring Log

FES GROUP, INC.

Project Number: SG05046	Project Name:	Chancey Road Site	Boring Number: AB-4
	Site Location:	Zephyrhills, FL	Start Date: 04/29/05
	Drilling Method:	HA	Completion Date: 04/29/05

FEET (BLS)	SAMPLE TYPE	SAMPLE INTERVAL (BLS)	BLOW COUNT	MATERIAL DESCRIPTION	COMMENTS
0				**Brown Silty Sand ("Topsoil", SM)**	
1	HA	0.0 - 1.0	NA	**Light Brown Slightly Silty Sand (SP-SM)**	Groundwater Encountered 4.5 Feet BLS
2	HA	1.0 - 2.0	NA		
3	HA	2.0 - 3.0	NA		
4	HA	3.0 - 4.0	NA		
5	HA	4.0 - 5.0	NA	**EOB 5.0 Feet BLS**	

(HA) = HAND AUGER
(MR) = MUD ROTARY
(SS) = SPLIT SPOON

(BLS) = BELOW LAND SURFACE
(EOB) = END OF BORING
(NR) = NOT RECORDED
(NA) = NOT APPLICABLE

Soil Boring Log

FES GROUP, INC.

Project Number: SG05046	Project Name: Chancey Road Site	Boring Number:	AB-5
	Site Location: Zephyrhills, FL	Start Date:	04/29/05
	Drilling Method: HA	Completion Date:	04/29/05

FEET (BLS)	SAMPLE TYPE	SAMPLE INTERVAL (BLS)	BLOW COUNT	MATERIAL DESCRIPTION	COMMENTS
0				**Brown Silty Sand ("Topsoil", SM)**	
1	HA	0.0 - 1.0	NA	**Light Brown Slightly Silty Sand (SP-SM)**	Groundwater Encountered 4.0 Feet BLS
2	HA	1.0 - 2.0	NA		
3	HA	2.0 - 3.0	NA		
4	HA	3.0 - 4.0	NA		
5	HA	4.0 - 5.0	NA		
				EOB 5.0 Feet BLS	

(HA) = HAND AUGER
(MR) = MUD ROTARY
(SS) = SPLIT SPOON

(BLS) = BELOW LAND SURFACE
(EOB) = END OF BORING
(NR) = NOT RECORDED
(NA) = NOT APPLICABLE

SOUTHWEST FLORIDA WATER MANAGEMENT Received MAR 20 2006 APR RECORDS AND

Soil Boring Log

FES GROUP, INC.

Project Number: SG05046	Project Name:	Chancey Road Site	Boring Number: AB-6
	Site Location:	Zephyrhills, FL	Start Date: 04/29/05
	Drilling Method:	HA	Completion Date: 04/29/05

FEET (BLS)	SAMPLE TYPE	SAMPLE INTERVAL (BLS)	BLOW COUNT	MATERIAL DESCRIPTION	COMMENTS
0				**Brown Silty Sand ("Topsoil", SM)**	
1	HA	0.0 - 1.0	NA	**Light Brown Slightly Silty Sand (SP-SM)**	Groundwater Not Encountered
2	HA	1.0 - 2.0	NA		
3	HA	2.0 - 3.0	NA		
4	HA	3.0 - 4.0	NA		
5	HA	4.0 - 5.0	NA	**EOB 5.0 Feet BLS**	

(HA) = HAND AUGER
(MR) = MUD ROTARY
(SS) = SPLIT SPOON

(BLS) = BELOW LAND SURFACE
(EOB) = END OF BORING
(NR) = NOT RECORDED
(NA) = NOT APPLICABLE

Soil Boring Log

FES GROUP, INC.

Project Number: SG05046	Project Name:	Chancey Road Site	Boring Number: AB-7
	Site Location:	Zephyrhills, FL	Start Date: 04/29/05
	Drilling Method:	HA	Completion Date: 04/29/05

FEET (BLS)	SAMPLE TYPE	SAMPLE INTERVAL (BLS)	BLOW COUNT	MATERIAL DESCRIPTION	COMMENTS
0				**Brown Silty Sand ("Topsoil", SM)**	
1	HA	0.0 - 1.0	NA	**Light Brown Slightly Silty Sand (SP-SM)**	Groundwater Not Encountered
2	HA	1.0 - 2.0	NA		
3	HA	2.0 - 3.0	NA		
4	HA	3.0 - 4.0	NA		
5	HA	4.0 - 5.0	NA		
				EOB 5.0 Feet BLS	

(HA) = HAND AUGER
(MR) = MUD ROTARY
(SS) = SPLIT SPOON

(BLS) = BELOW LAND SURFACE
(EOB) = END OF BORING
(NR) = NOT RECORDED
(NA) = NOT APPLICABLE

Soil Boring Log

FES GROUP, INC.

Project Number: SG05046	Project Name:	Chancey Road Site	Boring Number: AB-8
	Site Location:	Zephyrhills, FL	Start Date: 04/29/05
	Drilling Method:	HA	Completion Date: 04/29/05

FEET (BLS)	SAMPLE TYPE	SAMPLE INTERVAL (BLS)	BLOW COUNT	MATERIAL DESCRIPTION	COMMENTS
0				**Brown Silty Sand ("Topsoil", SM)**	
1	HA	0.0 - 1.0	NA	**Light Brown Slightly Silty Sand (SP-SM)**	Groundwater Encountered 4.8 Feet BLS
2	HA	1.0 - 2.0	NA		
3	HA	2.0 - 3.0	NA		
4	HA	3.0 - 4.0	NA		
5	HA	4.0 - 5.0	NA		
				EOB 5.0 Feet BLS	

(HA) = HAND AUGER
(MR) = MUD ROTARY
(SS) = SPLIT SPOON

(BLS) = BELOW LAND SURFACE
(EOB) = END OF BORING
(NR) = NOT RECORDED
(NA) = NOT APPLICABLE

FLORIDA WATER MANAGEMENT DISTRICT MAR 20 RECEIVED

BRO4231

Soil Boring Log



FES GROUP, INC.

Project Number: SG05046	Project Name:	Chancey Road Site	Boring Number: AB-9
	Site Location:	Zephyrhills, FL	Start Date: 04/29/05
	Drilling Method:	HA	Completion Date: 04/29/05

FEET (BLS)	SAMPLE TYPE	SAMPLE INTERVAL (BLS)	BLOW COUNT	MATERIAL DESCRIPTION	COMMENTS
0				**Brown Silty Sand ("Topsoil", SM)**	
1	HA	0.0 - 1.0	NA	**Light Brown Slightly Silty Sand (SP-SM)**	Groundwater Not Encountered
2	HA	1.0 - 2.0	NA		
3	HA	2.0 - 3.0	NA		
4	HA	3.0 - 4.0	NA		
5	HA	4.0 - 5.0	NA		
				EOB 5.0 Feet BLS	

(HA) = HAND AUGER
(MR) = MUD ROTARY
(SS) = SPLIT SPOON

(BLS) = BELOW LAND SURFACE
(EOB) = END OF BORING
(NR) = NOT RECORDED
(NA) = NOT APPLICABLE

Soil Boring Log



FES GROUP, INC.

Project Number:	SG05046	Project Name:	Chancey Road Site	Boring Number:	AB-10
		Site Location:	Zephyrhills, FL	Start Date:	04/29/05
		Drilling Method:	HA	Completion Date:	04/29/05

FEET (BLS)	SAMPLE TYPE	SAMPLE INTERVAL (BLS)	BLOW COUNT	MATERIAL DESCRIPTION	COMMENTS
0				**Brown Silty Sand ("Topsoil", SM)**	
1	HA	0.0 - 1.0	NA	**Light Brown Slightly Silty Sand (SP-SM)**	Groundwater Not Encountered
2	HA	1.0 - 2.0	NA		
3	HA	2.0 - 3.0	NA		
4	HA	3.0 - 4.0	NA		
5	HA	4.0 - 5.0	NA		
				EOB 5.0 Feet BLS	

(HA) = HAND AUGER
(MR) = MUD ROTARY
(SS) = SPLIT SPOON

(BLS) = BELOW LAND SURFACE
(EOB) = END OF BORING
(NR) = NOT RECORDED
(NA) = NOT APPLICABLE

This instrument prepared by:
THOMAS S. RUTHERFORD, ESQUIRE
13153 N. Dale Mabry Hwy, Suite 115
Tampa, FL 33618-2410

QUITCLAIM DEED

THIS INDENTURE made this 9 day of September, 2020, by and between **HOWARD MARGOLIN, Trustee of the Howard Margolin Revocable Trust dated the 8th day of April, 2016,** of 31331 Makinaw Lane, Wesley Chapel, FL 33545, party of the first part, and **MARGOLIN & SONS, LLC.,** of 31331 Makinaw Lane, Wesley Chapel, FL 33545, party of the second part . . .

WITNESSETH that the said party of the first part, for and in consideration of the sum of ten dollars ($10.00) and other valuable considerations, lawful money of the United States of America to the party of the first part in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, has remised, released and quitclaimed to the said party of the second part; its assigns forever, all the right, title, interest and claim of the said party of the first part in and to the following described land in Pasco County, Florida, to wit:

PARCEL 13-A

Lot 13, PARK PLACE CENTER, a subdivision according to the plat thereof recorded in Plat Book 65, Page 77, of the Public Records of Pasco County, Florida,

LESS AND EXCEPT that portion of said Lot 13 being described as follows:

Begin at the Southwest corner of Lot 13, PARK PLACE CENTER, a subdivision according to the plat thereof recorded in Plat Book 65, Page 77, of the Public Records of Pasco County, Florida; thence North 01°09'00" East 338.31 feet, along the West boundary line of said Lot 13 to a point of curvature concave to the West said curve having a radius of 615.00 feet, a chord bearing of North 06°04'26" West, a chord distance of 154.67 feet, thence along said curve through a central angle of 14°26'53" an arc distance of 155.08 feet to the Northwest corner of said Lot 13; thence South 72°28'59" East 37.16 feet along the Northerly boundary line of said Lot 13; thence leaving said Northerly boundary line South 34°36'51" East 189.51 feet; thence South 39°29'57" East 191.40 feet to the Northerly right of way line of Correia Drive to a point of curvature concave to the Southeast, said curve having a a radius of 60.00 feet, a chord bearing of South 15°54'10" West, a chord distance of 76.72 feet, thence along said curve through a central angle of 79°28'45" an arc distance of 83.23 feet to the Southeast corner of said Lot 13; thence leaving said right of way South 66°10'33" West 256.05 feet along the Southerly boundary line of said Lot 13 to the Point of Beginning.

Above described parcel contains 2.000 acres.

A portion of Parcel Identification Number: 19-26-22-0010-00000-0130

This transaction contains no monetary consideration and Trustee is sole member of the LLC.

TO HAVE AND TO HOLD the above described premises, with the appurtenances, unto the said party of the second part, heirs and assigns forever.

IN WITNESS WHEREOF, the said party of the first part has executed this deed under seal on the date aforesaid.

Signed, sealed and delivered in the presence of:

Witness
Print: DAVE HOUTON

Witness
Print: John W Feyl

Howard Margolin
HOWARD MARGOLIN, Trustee of the Howard Margolin Revocable Trust dated the 8th day of April, 2016

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STATE OF FLORIDA
COUNTY OF PASCO

I HEREBY CERTIFY that on this 9 day of September, 2020, personally appeared before me, **HOWARD MARGOLIN, Trustee of the Howard Margolin Revocable Trust dated the 8th day of April, 2016,** who is personally known to me or who has produced AOL M624320421660 as identification and who did/did not take an oath.

WITNESS my hand and seal on this 9 day of September, 2020.

Javier Mercado Jr
NOTARY PUBLIC

JAVIER MERCADO JR
Notary Public - State of Florida
Commission # GG 071423
My Comm. Expires Feb 9, 2021

My Commission Expires: 02/09/2021

This instrument has been prepared based on information given by the parties to this transaction. The preparer does not guarantee the marketability of title nor the accuracy of the legal description as he has not examined the title.