

# JOHNSON MEMORIAL HEALTH ATHLETIC ANNEX

**JULY 27, 2021**

Owner:

**Franklin College**

101 Branigin Blvd.

Franklin, IN. 46131

Prepared by:

**JONES PETRIE RAFINSKI**

325 South Lafayette Blvd.

South Bend, Indiana 46601



## SITE PLAN APPLICATION TABLE OF CONTENTS

### 1.0 INTRODUCTION

- 1.1 Summary statement
- 1.2 Site description
- 1.3 Vicinity Map

### 2.0 DRAINAGE CALCULATIONS

### 3.0 EXHIBIT A – SITE PLANS

- 3.1 **PROPERTY SURVEY** - REFER TO SHEET C100
- 3.2 **SITE PLAN** – REFER TO SHEET C201
- 3.3 **DRAINAGE PLAN** – REFER TO SHEET C301
- 3.4 **CONSTRUCTION PLAN** – REFER TO SHEET C501
- 3.5 **LANDSCAPE PLAN** – REFER TO SHEET C601
- 3.6 **LIGHTING PLAN** – REFER TO SHEET E101 & E102 (BUILDING MOUNTED ONLY)

# JOHNSON MEMORIAL HEALTH ATHLETIC ANNEX

---

## 1.1 SUMMARY STATEMENT

The Johnson Memorial Health Athletic Annex is planned to be a training facility for students of Franklin College. It will be approximately 11,280 total square feet. The space will be subdivided into the uses of restrooms, storage weight/ exercise room and a turf practice space that can be utilized openly for field sports or further divided into six batting tunnels.

As part of the site development an existing alley is to be vacated. As part of this effort, all impacted utility companies have been contacted and coordinated with.

## 1.2 SITE DESCRIPTION

**Name of Development:** Johnson Memorial Health Athletic Annex

**Address:** 915 Park Avenue Franklin, IN 46131

**Owner:** Franklin College

**Engineering and Design Consultant:** Jones Petrie Rafinski Corp:

325 South Lafayette Blvd. South Bend, IN. 46601

(574) 232-4388

Primary Contact – Andrew Cunningham

### Legal Description:

DR 1998-034562

Lot numbered Sixteen (16) in Drake's Addition to East Franklin, now a part of the City of Franklin, as per plat thereof recorded in Plat Book 1, pg. 24 in the Office of the Recorder of Johnson County, Indiana.

DR 94016985

Lot Numbered 15 in Gideon Drake Addition No. 3, to the City of Franklin, as recorded in Plat Book 1, page 24, in the Office of the Recorder of Johnson County, Indiana.

DR 2000-018668

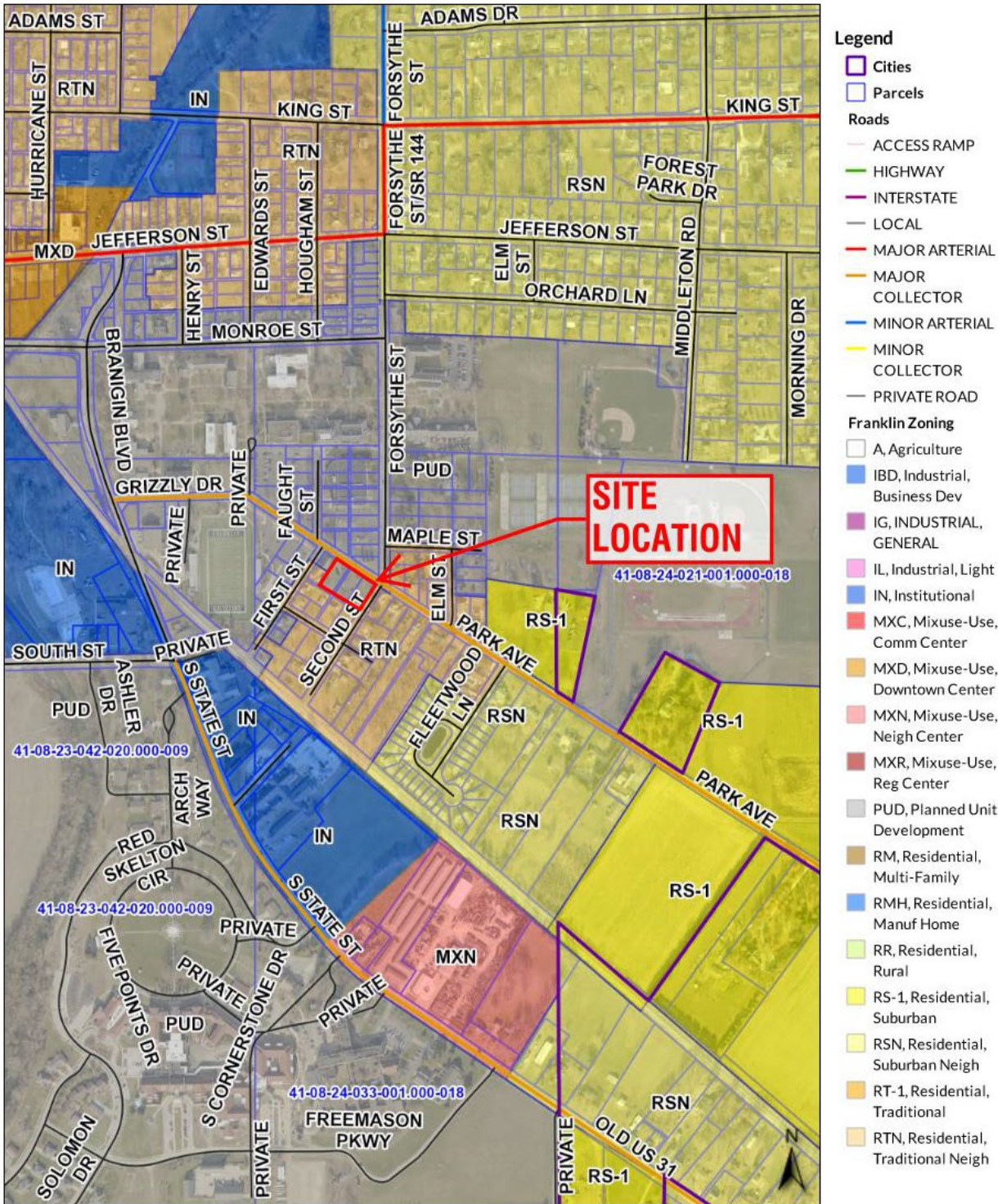
Lot Numbered 8 in Gideon Drake's Addition to the City of Franklin, as per plat thereof recorded in Plat Book 1, page 24 in the Office of the Recorder of Johnson County, Indiana.



# JOHNSON MEMORIAL HEALTH ATHLETIC ANNEX

## 1.3 VICINITY MAP

### JOHNSON MEMORIAL HEATH ATHLETIC ANNEX VICINITY MAP



# JOHNSON MEMORIAL HEALTH ATHLETIC ANNEX

## 2.0 DRAINAGE CALCULATIONS

The drainage approach for the project is to direct all stormwater on-site into detention basins 1 & 2. Detention basin 1 will slope towards an open 8" storm sewer outlet connecting to catch basin 3. Detention basin 2 will slope directly towards catch basin 3.

A restrictor plate will be installed at the discharge storm sewer of catch basin 3 restricting the discharge of stormwater to the 10 year predeveloped rate. Detention basins 1 and 2 are sized to detain a 100 year storm event with a release at the 10 year predeveloped rate.

Once the stormwater has passed through the restrictor plate it will flow from catch basin 3 onto catch basin 2, from there onto catch basin 4 and finally into the saddle structure number 5 connecting into the City of Franklin 15" storm sewer.

In the event of overflow, detention basin 1 will overflow to catch basin 1 and detention basin 2 will overflow to catch basin 2. Upon overflow the stormwater will bypass the restrictor plate installed in catch basin 3 and flow directly to catch basin 4 and finally onto saddle structure number 5.

### 10 YEAR PREDEVELOPED RUNOFF RATE

**Franklin College**  
**Predeveloped 10-year Runoff Rate**

$$t_c = \frac{0.007(L^{0.8} n^{0.8})}{P_2^{0.5} s^{0.4}}$$

where,

Variable	Description	Value
L =	Length of overland flow	270
n =	Manning's roughness (sheet flow)	0.24
P <sub>2</sub> =	2 year - 24 hour storm	2.92
s =	Slope of overland flow path	0.005

0.96 hr

or

60 minutes

Q = ciA

c =	100% pervious	0.3
i =	Intensity for 10 year - 60 min time of c	2 in/hr
A =	Area	0.66 acres

0.40 cfs

# JOHNSON MEMORIAL HEALTH ATHLETIC ANNEX

## STORAGE VOLUME REQUIRED

<u>Franklin College</u>						
<u>Proposed Stormwater Storage Calculation</u>						
A (ac)		0.62				
<u>Proposed Site Land Use</u>						
<u>Land Use Type</u>		"c" Factor	Area (SFT)			
Building		0.90	10,618			
Asphalt/Concrete		0.90	206			
Open Space		0.30	16,374			
Total			27,198			
CN		0.54				
			ciA			
Maximum Allowable Release Rate			0.40	cfs		
10 year predeveloped rate						
Release Rate Utilized			0.40	cfs		
Release Rate =			0.40	cfs		
<u>Storage Requirements</u>						
Storm Duration		100 -Year Intensity (in/hr)	100 - Year Inflow Rate (cfs)	Release Rate (cfs)	Storage Rate (cfs)	Storage Volume (cft)
15	min	6.22	2.09	0.40	1.69	1,521
30	min	4.49	1.51	0.40	1.11	1,998
1	HR	3	1.01	0.40	0.61	2,196
2	HR	1.82	0.61	0.40	0.21	1,512
3	HR	1.31	0.44	0.40	0.04	432
6	HR	0.80	0.27	0.40	0.00	0
12	HR	0.45	0.15	0.40	0.00	0
24	HR	0.25	0.08	0.40	0.00	0
Maximum storage volume required						2,196
Additional 6% siltation factor						2,328

## DETENTION BASIN VOLUMES

Detention Basin Stage Volume Calculations PROPOSED DETENTION BASIN #1				
Elevation	Distance	Area (Sq.Ft.)	Volume	Cumulative
727		970	485	485
728	1	1885	1185	1,670
729	1	3100	2143	3,813
Total Volume CFT				3,813

Detention Basin Stage Volume Calculations PROPOSED DETENTION BASIN #2				
Elevation	Distance	Area (Sq.Ft.)	Volume	Cumulative
728.5		0	0	0
729	0.5	857	429	429
Total Volume CFT				429

# JOHNSON MEMORIAL HEALTH ATHLETIC ANNEX

## RESTRICTOR PLATE SIZE AND DETAILS

### ORIFICE SIZING CALCULATIONS

ALLOWABLE SITE DISCHARGE RATE = 0.40 CFS

$$Q = C \cdot A \cdot \sqrt{2GH}$$

ASSUMPTIONS .....

Q = DISCHARGE RATE (CFS)  
A = DISCHARGE ORIFICE AREA (SFT)  
C = ORIFICE DISCHARGE COEFFICIENT (0.62)  
G = GRAVITY CONSTANT (32.2 FT/SEC)  
H = HEIGHT FROM ORIFICE TO TOP OF BASIN

$$0.40 \text{ CFS} = 0.62 \cdot A \cdot \sqrt{(2 \cdot 32.2 \cdot 3.70)}$$

$$A = \frac{0.40}{0.62 \cdot \sqrt{(2 \cdot 32.2 \cdot 3.70)}}$$

$$A = 0.042 \text{ SFT}$$

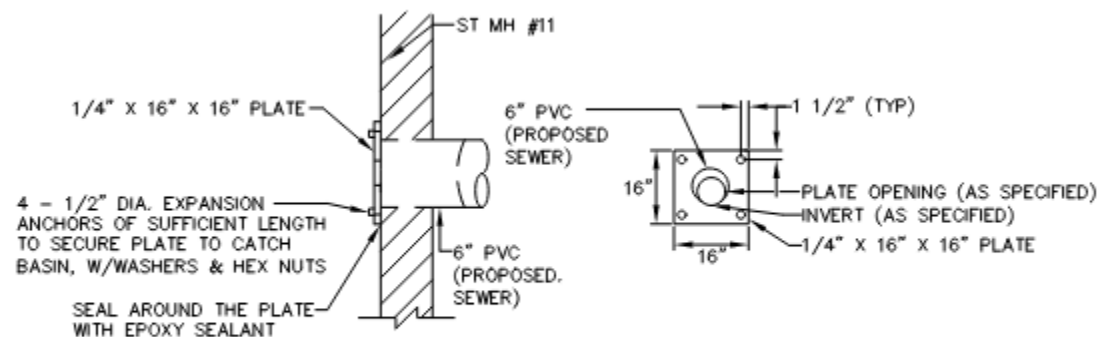
DETERMINE ORIFICE PLATE SIZING

$$A = \pi \cdot R^2$$

$$0.042 = \pi \cdot R^2$$

$$R = 0.125 \text{ FT} = 1.5 \text{ IN.}$$

ORIFICE SIZE - 3 IN. Ø



**RESTRICTOR PLATE DETAILS**  
N.T.S. 1  
C301



# EXHIBIT A – SITE PLANS

**PROPERTY SURVEY** - REFER TO SHEET C100

**SITE PLAN** – REFER TO SHEET C201

**DRAINAGE PLAN** – REFER TO SHEET C301

**CONSTRUCTION PLAN** – REFER TO SHEET C501

**LANDSCAPE PLAN** – REFER TO SHEET C601

**LIGHTING PLAN** – REFER TO SHEET E101 & E102 (BUILDING MOUNTED ONLY)

h:\2021 projects\2021-0106\submittals\city of franklin site plan review\2021-07-27-site plan submittal narrative\_johnson memorial health athletic annex.docx