

FLOOD PLAIN DEVELOPMENT PERMIT APPLICATION

Application # ZBACU11

Date 8-29-18

TO THE ZONING ADMINISTRATOR: The undersigned hereby makes application for a Permit to develop in a flood plain. The work to be performed, including flood protection works, is as described below and in attachments hereto. The undersigned agrees that all such work shall be done in accordance with the requirements of the Flood Plain Management Ordinance and with all other applicable county/city ordinances and the laws and regulations of the State of Iowa.

City of Muscatine 8-29-18
Owner or Agent Date

Needham Excavating 8-29-18
Builder Date

215 Sycamore St
Address
Telephone 563 226-4141

17470 70th Ave
Address
Walcott, IA 52773
Telephone 563-529-5840

1. Location: 1/4 Section 4, Range 2W, Township 76N
Street Address E 1/2

2. Type of Development:

Filling Grading Excavation X Routine Maintenance
Minor Improvement Substantial Improvement New Construction

3. Description of Development:

See attached Report

4. Premises: Size of site 1,500 ft. x 460 ft. Area of site 17.62 Acre
Estimated cost \$647,576.71 Principal use Parking and Athletic field
Accessory uses (storage, parking, etc.) Parking and Athletic field

5. Addition or modification to nonconforming use? Yes No X
Assessed value of structure \$ NO Structures. Are part of this project

6. Property located in a designated Floodway (FW District)? Yes No

IF ANSWERED YES, CERTIFICATION MUST BE PROVIDED PRIOR TO THE ISSUANCE OF A PERMIT TO DEVELOP, THAT THE PROPOSED DEVELOPMENT WILL RESULT IN NO INCREASE IN THE BASE FLOOD (100-year) ELEVATION.

7. Property located in a designated Floodway Fringe (FF, FP, or SF District)?
Yes No

a. Elevation of the Base (100-year) Flood 539 Ft, NGVD

b. Elevation/floodproofing requirement Not applicable for a drainage swale Ft, NGVD

c. Elevation of the proposed development See attached Hydrologic and Hydraulic analysis Ft, NGVD

THIS PERMIT IS ISSUED WITH THE CONDITION THAT THE LOWEST FLOOR (INCLUDING BASEMENT FLOOR) OF ANY NEW OR SUBSTANTIALLY IMPROVED RESIDENTIAL BUILDING WILL BE ELEVATED 1.0 FT. ABOVE THE BASE FLOOD ELEVATION. IF THE PROPOSED DEVELOPMENT IS A NON-RESIDENTIAL BUILDING, THIS PERMIT IS ISSUED WITH THE CONDITION THAT THE LOWEST FLOOR (INCLUDING BASEMENT) OF A NEW OR SUBSTANTIALLY IMPROVED NON-RESIDENTIAL BUILDING WILL BE ELEVATED OR FLOODPROOFED 1.0 FT. ABOVE THE BASE FLOOD ELEVATION.

3. Source of Base Flood Elevation Data if not available on FIRM. _____

Panel number of FIRM _____

19139C01870

9. Other permits required?

Corps of Engineers 404 Permit:

Yes _____ No ☒

Iowa Department of Natural Resources:

Yes _____ No ☒

Other _____

All provisions of the City of Muscatine
Ordinance (Ordinance Number Section 10-4 of City ^{code} _____), Flood Plain Management shall be complied with.

THIS PERMIT IS ISSUED WITH THE CONDITION THAT THE DEVELOPER/OWNER WILL PROVIDE CERTIFICATION BY A REGISTERED ENGINEER, ARCHITECT, OR LAND SURVEYOR OF THE "AS-BUILT" LOWEST FLOOR (INCLUDING BASEMENT) ELEVATION OF ANY NEW OR SUBSTANTIALLY IMPROVED BUILDING COVERED BY THIS PERMIT.

Plans and Specifications Approved this 29 Day of August

[Signature]
Signature of Developer/Owner

City Planner
City of Muscatine

Authorizing Official



www.iiwengr.com

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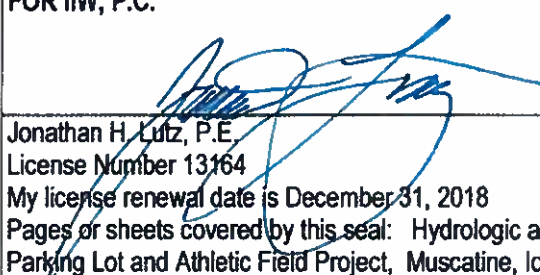
Hydrologic and Hydraulic Analysis for Houser Parking Lot and Athletic Field Project Muscatine, Iowa

IIW Project No.: 18055.01

Authored August 2018

I hereby certify that this engineering report was prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Iowa.

I hereby certify that the proposed project will cause "no-rise" in the regulatory Base Flood Elevation (BFE) of the Flood Insurance Study (FIS), effective July 18, 2011 and revised April 16, 2014 and November 4, 2016, as adopted by Muscatine County, Iowa.

	FOR IIW, P.C.
	 August 29, 2018 Date Jonathan H. Lutz, P.E. License Number 13164 My license renewal date is December 31, 2018 Pages or sheets covered by this seal: Hydrologic and Hydraulic Analysis for Houser Parking Lot and Athletic Field Project, Muscatine, Iowa

Basin Description

The site of the proposed project is on 18 acres along Houser Street across from the existing Muscatine Soccer Complex. The project is located in E 1/2 of Sec. 4, T76N, R2W. The unnamed drainage ditch along the westerly edge of the project has a watershed area of 176 acres characterized by primarily wooded bluffs of the Mississippi River and some developed urban areas. Drainage area was determined by analysis of 1 foot contours in AutoCAD format from year 2000. The northern boundary of the watershed reaches just beyond Lucas Street. The ditch flows approximately 1900 feet along the west and south of the project before discharging into the Muscatine Slough which then flows to the Mississippi River.

Hydrologic Model

The discharge for the 100 year frequency event was determined using the Iowa Peak Rate of Runoff Chart for less than 2 miles. Drainage area is 176 acres with very hilly terrain and mixed use cover. A land use factor of 1.0 was determined.

Table 1 – Summary of Discharges

Frequency	Discharge through Ditch (cfs)
100-year (1%)	411

Hydraulic Model

A HEC-RAS hydraulic model for the project site was prepared and processed. Cross sections used for input were developed at key locations utilizing a combination of field topographic survey in May 2018 and historical 1 foot contours. Survey shots were collected in the ditch bottom for the entire length of ditch along the west edge. Water surface elevation corresponding to the 100 year discharge was determined for each section shown on the EX 2 and EX 3. Results are identified on the cross sections. Results and conclusions are applicable to the ditch with bottom profile as surveyed in May 2018.

Site Analysis and Conclusion

Proposed finish grading is shown as a bold line on the left side of the sections which is a berm that separates the ditch from the athletic fields. The 100 year water surface profile was found to be below the fill placed on the berm at all sections. Therefore it follows that the grading work to be performed as shown on the plans will have no effect on the 100 year flood profile in the ditch (results in a no rise condition). No fill will be placed in the 100 year floodplain as defined in this analysis, which is a more accurate determination of the floodplain limits within the designated Zone A SFHA on the FEMA FIS maps. All fill for the remaining site is placed above the 539.0 BFE elevation which applies to the Muscatine Slough areas.

Attachments:

National Flood Hazard Layer Firmette
EX 1 - Project Site and Cross Section Locations
EX 2 - Channel Cross Sections
EX 3 - Channel Cross Sections

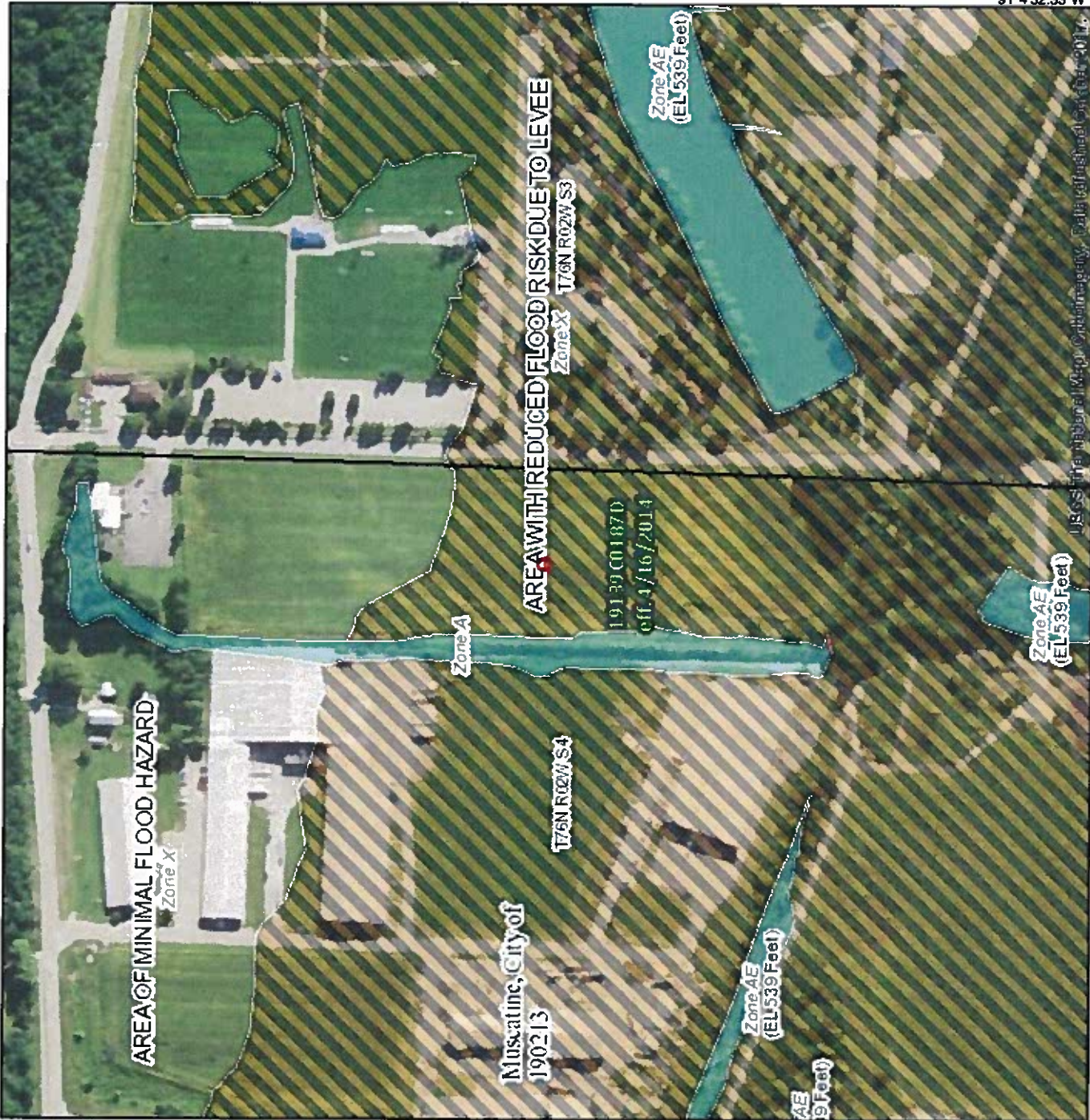
P:\18055\Calculations\Civil - Trans\Hydraulics\No Rise Report.docx

National Flood Hazard Layer FIRMette



41°25'1.37"N

M.82°6.9.16



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, AE
With BFE or Depth Zone AE, AO, AH, VE, AR
Regulatory Floodway

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
Future Conditions 1% Annual Chance Flood Hazard
Area with Reduced Flood Risk due to Levees. See Notes, Zone X
Area with Flood Risk due to Levees Zone D

OTHER AREAS

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

Cross Sections with 1% Annual Chance Water Surface Elevation
Coastal Transect
Base Flood Elevation Line (BFE)
Limit of Study
Jurisdiction Boundary
Coastal Transect Baseline
Profile Baseline
Hydrographic Feature

MAP PANELS

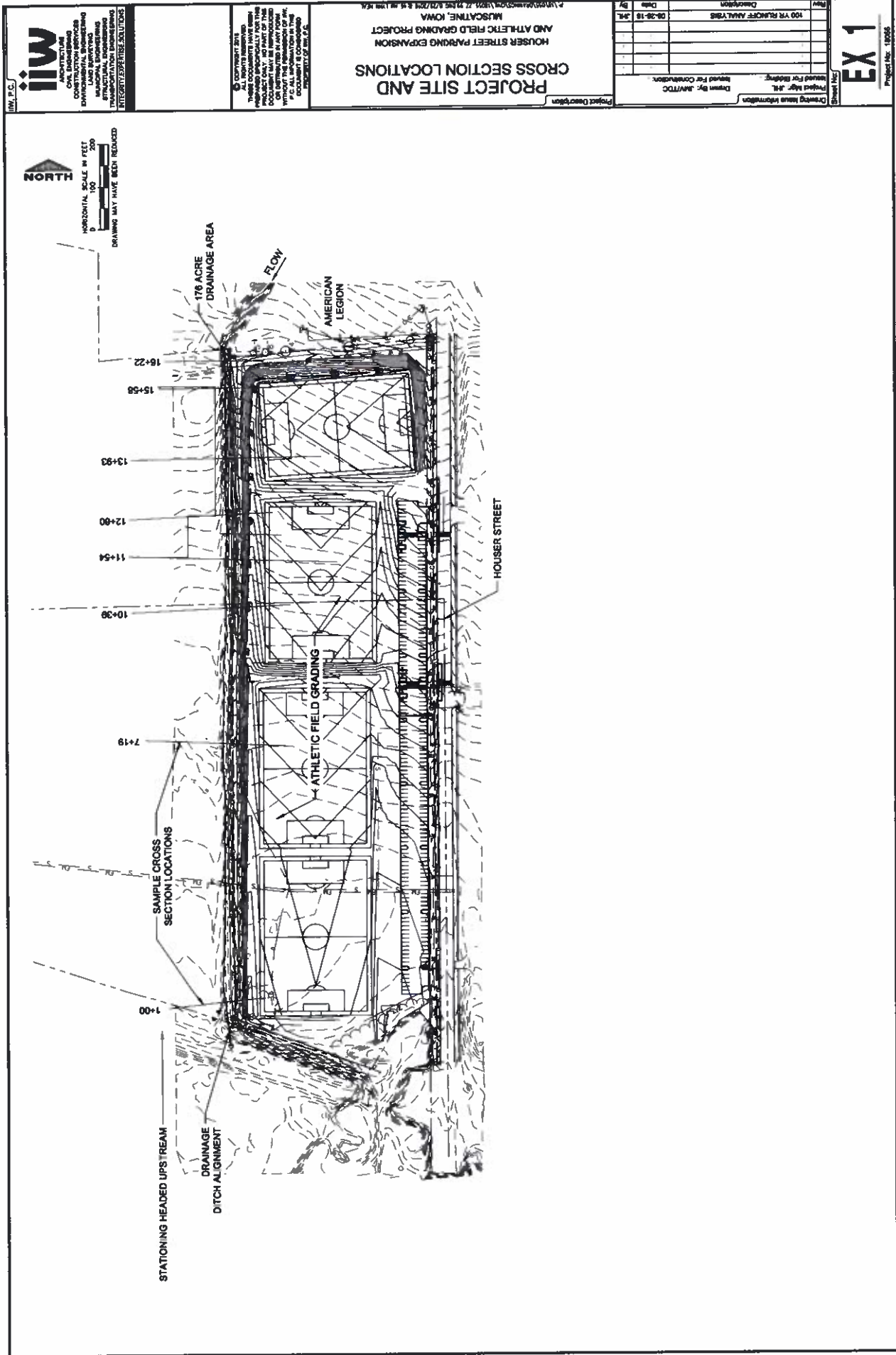
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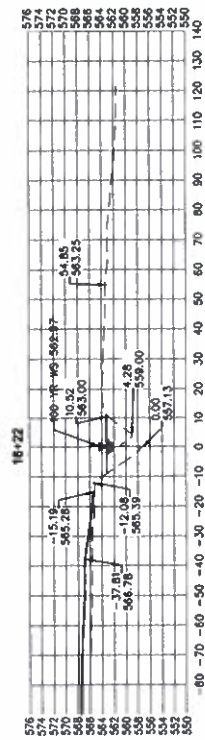
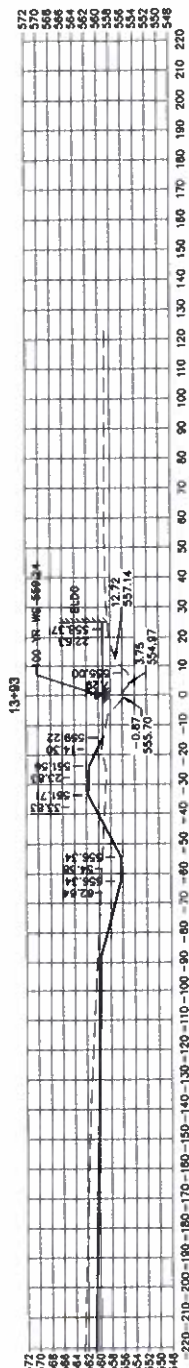
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps. It is not valid 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 8/29/2018 at 4:39:33 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 valid 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.





HOOVER STREET PARKING EXPANSION
AND ATHLETIC FIELD GRADING PROJECT
MUSCATINE, IOWA
03/03/2015 09:00 AM 03/03/2015 09:00 AM 03/03/2015 09:00 AM

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 TRANSPORTATION ENGINEERING
 INTEGRITY EXPERTISE SOLUTIONS

Page	Description	Date
100 YR RUNOFF ANALYSIS	08-26-19	JAL

Drawing Issue Information
 Issued For Bidding: _____
 Project Mgr.: JAL
 Drawn By: JAL/TDC
 Issued For Construction: _____

EX 2

Project No: 10055

