POST-DEVLEOPMENT DRAINAGE AREAS

SCALE: 1" = 10'

North

0 5' 10' 20'

FL Out (SE)=992.20'

Sub-Area ①

10' U/E

10.00' of 15" Nyoplast Slot Drain Top 1000.50' FL 996.50'

SUB-AREA 4B (DASHED)
AREA: 2807 SF OR 0.06 AC.
C = 0.75, T(C) = 5 MIN
I(100) = 10.32, K = 1.25
Q(100) = 0.58 CFS
Qcap(15") = 6.69 CFS

⚠ ADDED STORM CALCULATIONS

O.H.Door

Install 171.98' of 15" HDPE Storm Pipe 0.64% Slope

Building #293
7,8000 sf
Lot Area 0.79 AC
14 Parking Spaces
FF = 1004.15'

15' U/E

Sub-Area ②

Sub-Area ③

Sub-Area ④

⚠ ADDED STORM CALCULATIONS

SUB-AREA 4A TO FLUME (DASHED)
AREA: 5780 SF OR 0.13 AC.
C = 0.75, T(C) = 5 MIN
I(100) = 10.32, K = 1.25
Q(100) = 1.26 CFS

WEIR EQUATION:
H = (Q / CD / L) ^ 2/3
H = (1.26/3.33/5) ^ 2/3 = 0.18'
V = 1.26 / (5*0.18) = 1.4 FPS
V <= 5.93 FPS
USE CLASS 1 RIPRAP

50' x 50' D/E

Top=1005.25
FL In (W)=1000.97'
FL Out (E)=998.86'

10' U/E

15' U/E

20' B/L

Install 15" End Section
FL 995.40'
Rip Rap Blanket Non-Grouted w/ Geo Fabric
8'W x 5'L x 18" Thick
D50 = 5"
Typ. (2) Rip Rap Blankets

20' B/L & U/E

Install 15" Nyloplast Drain Basin
FL 995.00'
See Detail This Set

Install 50.35' of 15" HDPE Storm
1.11% Slope

Top=997.20'
FL In (NW)=992.50' 3.5" HDPE
FL Out (NE)=992.19' 3.5" HDPE

Field End Section #	1-1	
Q =	0.58	cfs
D =	1.25	ft
Tw =	0.5	ft
g =	32.2	ft/s^2
D_{50} =	0.17	inches
Use D_{50} =	5	inches

D_{50} = riprap size, m(ft)
Q = design discharg, m^3/s (ft^3/s)
D = culvert diameter (circular), m(ft)
Tw = tailwater depth, m(ft)
g = acceleration due to gravity, 9.81 m/s^2 (32.2 ft/s^2)

*Taken From Publication No. FHWA-NHI-06-086
Hydraulic Engineering Circular No. 14, 3rd Edition

Class 1

Apron Length =	4*D	5.00 ft	use	5.00 ft
Apron Depth =	3.5*D_{50}	17.50 inches	use	18.00 inches
Apron Width =	3*D+(2/3)L	7.08 ft	use	8.00 ft

⚠ ADDED RIPRAP CALCULATIONS

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Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

Newberry Landings First Plat
Lee's Summit, Jackson County, Missouri

Project: NEWBERRY LANDING, LSMO
Issue Date: March 12, 2018

POST-DEVELOPMENT DRAINAGE AREAS
Construction Plans for:
Lot 293, Newberry Landings First Plat
Lee's Summit, Jackson County, Missouri

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REVISIONS

REV 10-04-18
REV 10-25-18
⚠ REV 11-09-18