



LEE'S SUMMIT
MISSOURI

DESIGN & CONSTRUCTION MANUAL
DESIGN CRITERIA MODIFICATION REQUEST

PROJECT NAME: 705 SE High Street Duplexes

ADDRESS: 705 SE High Street

PERMIT NUMBER: _____

OWNER'S NAME: Dustin Baxter

TO: Deputy Director of Public Works / City Engineer

In accordance with the City of Lee's Summit's Design and Construction Manual (DCM), I wish to apply for a modification to one or more provisions of the code as I feel that the spirit and intent of the DCM is observed and the public health, welfare and safety are assured. The following articulates my request for your review and action. (NOTE: Cite specific code sections, justification and all appropriate supporting documents.)
Section 5608.4C(1)- Comprehensive Control Strategy- Waiver of the detention requirements for the project are justified because:

- It is a redevelopment project in an area where the housing densities and storm drainage patterns are well established

-The site physically can't detain within the property boundary

-This is a remedial situation where the storm improvements off-site will improve drainage for the adjacent commercial property as well as convey the storm drainage from the proposed project.

-The site improvements closely meet the exception for the impervious/pervious increase in peak flow percentage

SUBMITTED BY:

NAME: Kevin Sterrett () OWNER (X) OWNER'S AGENT

ADDRESS: 1411 NE Todd George Road PHONE #: 816-703-7098

CITY, STATE, ZIP: Lee's Summit, MO 64086

Email: Ksterrett@hgcons.com

SIGNATURE: 

KENT MONTER, P.E.

DEVELOPMENT ENGINEERING MANAGER

() APPROVAL

() DENIAL

SIGNATURE: _____ DATE: _____

JEFF THORN, P.E.

WATER UTILITIES ASSISTANT DIRECTOR OF ENGINEERING SERVICES

() APPROVED

() DENIAL

SIGNATURE: _____ DATE: _____

GEORGE M. BINGER III, P.E.
DEPUTY DIRECTOR OF PUBLIC WORKS/CITY ENGINEER () APPROVED () DENIAL
SIGNATURE: _____ DATE: _____

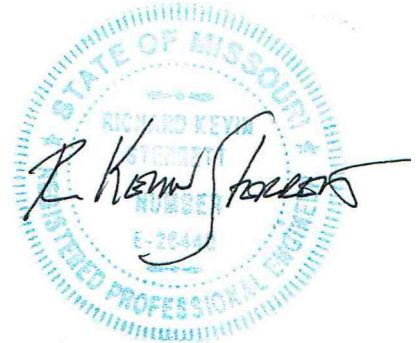
COMMENTS: _____

A COPY MUST BE ATTACHED TO THE APPROVED PLANS ON THE JOB SITE

July 17, 2022

Waiver of Stormwater Detention Requirements Summary

A waiver to the stormwater detention requirements of the Design and Construction Manual are requested for the following reasons:



12/20/22

1. The existing drainage in the vacated alley area is poor with several ponding areas. With the underground storm improvements proposed and improved grading above it, less flow will be surface routed, and slopes can be improved to handle the flow that will still flow in that area. The downspouts from the roof of the commercial building to the south will be tied into the underground system, further reducing the surface flow of the swale.
2. The installation of a detention pond on site is not physically possible due to the small area of the site at the low end of the site, grade, lack of suitable outfall based on gravity flow and required freeboard (2' at the 100-year WSE) constraints.
3. The minimum 20-foot setback requirement from property lines cannot be met.
4. Required rear landscaping required for screening encroaches the area that would be needed for detention.

Pre-Development Peak Runoff Rate

Sub-Area Name	10-Year (cfs)	100-Year (cfs)
E-1A	0.63	1.11
E-1B	0.29	0.51
POI (E-1A + E-1B)	0.92	1.62
E-2A	0.34	0.60
E-2B	0.34	0.60
E-3	0.39	0.68
E-4	1.07	1.87

Post-Development Peak Runoff Rate

Sub-Area Name	10-Year (cfs)	100-Year (cfs)
P-1A	1.11	1.95
P-1B	0.87	1.53
P-1C	0.34	0.60
POI (E-1A + E-1B + P-1C)	2.32	4.08
P-2	1.31	2.30
P-3	0.19	0.34

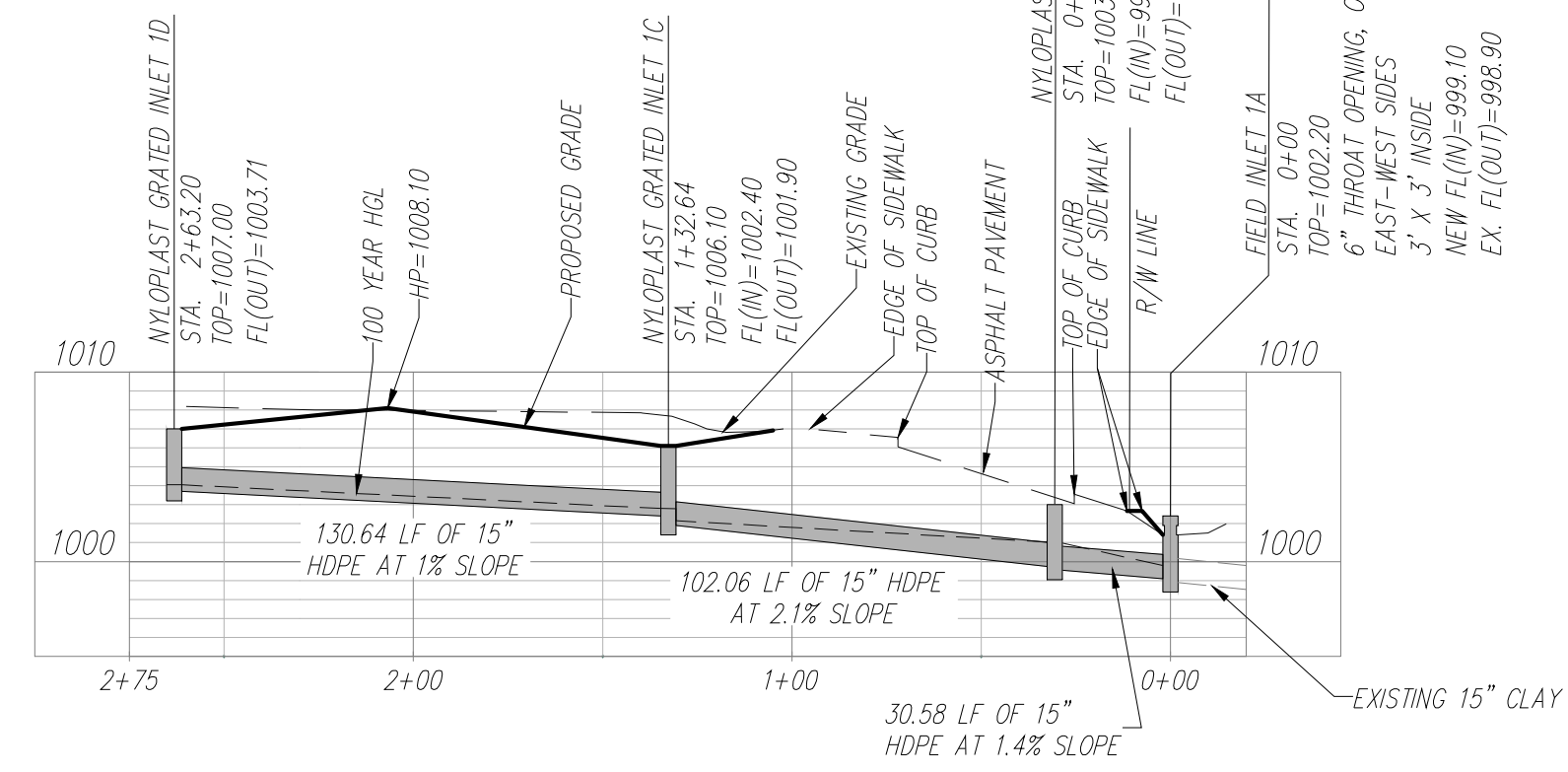
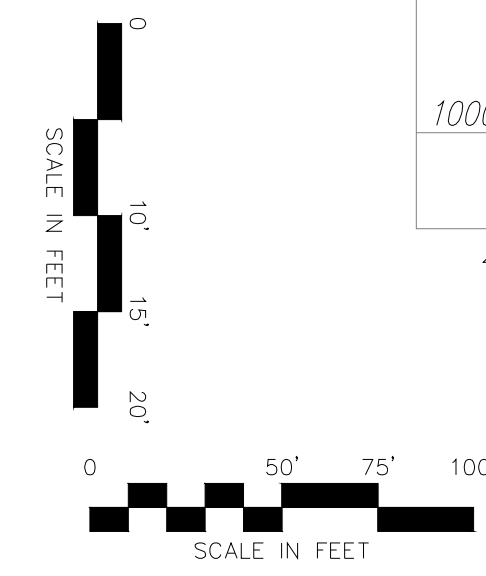
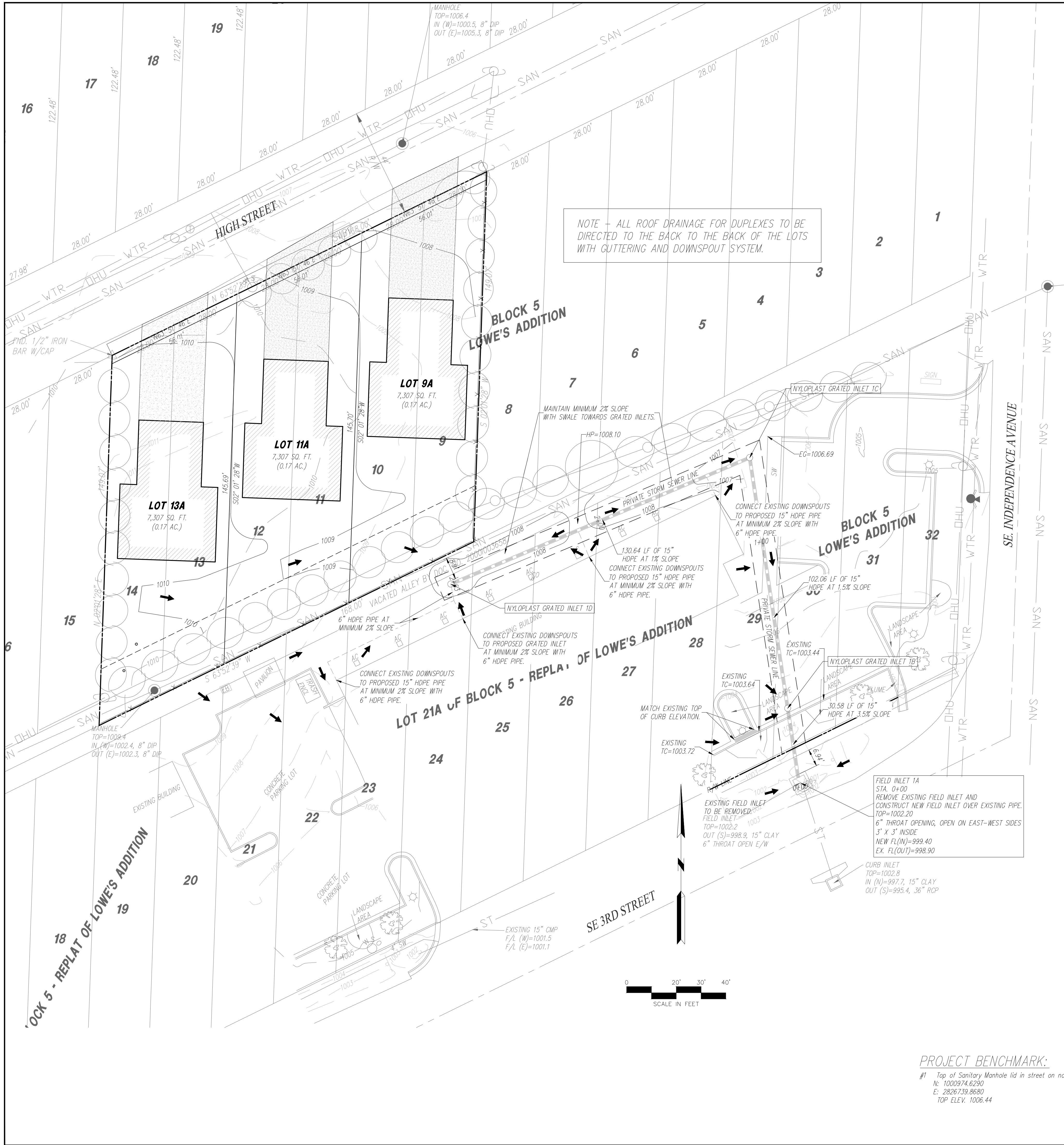
"Allowable Release Rates" When Applied to Post-Development On-Site Areas

Sub-Area Name	10-Year (cfs)	100-Year (cfs)
P-1A	*0.46	*0.69
P-1B	0.87	1.53
P-1C	0.34	0.60
POI (E-1A + E-1B + P-1C)	1.67	2.82
P-2	*0.54	*0.81
P-3	0.19	0.34

**Comprehensive values utilizing 2 cfs (10-YR), and 3 cfs (100-YR) per site acre*

As shown in the tables above, the pre-development peak flow at the point of interest is 0.92 cfs (10-year) and 1.62 cfs (100-year). The post-development peak flow rate at the same point of interest, as proposed, is 2.32 cfs (10-year) and 4.08 cfs (100-year). The main reason for the larger peak flows between pre-development and post-development is due to the proposed grading of the site. In the pre-developed scenario, the existing grade doesn't localize the runoff to the point of interest whereas in the post-developed scenario, grading along the back of the property will allow the runoff to channelize to the point of interest (proposed grated inlet).

If Comprehensive Control Strategy were used on this development, the allowable release rates at the point of interest would have been 1.67 cfs (10-year) and 2.82 cfs (100-year), as shown in the tables above.



STORM SEWER LINE 1
(PRIVATE STORM SEWER LINE)
STA. 0+00 - STA. 2+63.20



- TC Top of Curb
 - FG Finish Grade
 - G Gutter Elevation
 - HP High Point
 - LP Low Point
 - FFE Finish Floor Elevation
 - TG Top of Grade (Retaining Wall)
 - BG Bottom of Grade (Retaining Wall)
- xxx--- 1' FINISH GRADE CONTOURS
- - - - - 6" HDPE PIPE AT MINIMUM 2% SLOPE
- DIRECTION OF STORM WATER

GRADING AND DRAINAGE NOTES:

Information pertaining to under ground utilities was obtained from available records and field locations 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 in advance of machine trenching. If clearances are less than specified on these plans or 24", which ever is less, contact the Engineer and the Owner/Developer prior to proceeding with construction. All structures located within Right Of Way or otherwise noted on these plans shall be constructed per City Standards. If structure(s) are not prototypical or construction cannot be achieved contractor shall submit shop drawing to HC Consult, for review and approval. Contractor shall be responsible for relocation or removal of existing underground utilities shown or not shown at no additional cost to the owner.

Contractor shall coordinate with utility companies on adjusting existing utility line as required by cut and fill at no additional cost to the owner.

Contractor shall be held responsible for the design and implementation of sheeting, shoring, bracing and special excavation measures required to meet OSHA, Federal, State and Local regulations pursuant to the installation of the work indicated on these drawings.

All disturbed areas and slopes shall be graded smooth and (4") of top soil applied. The area shall be seeded and watered until hardy grass growth has been established.

Storm drain pipe bedding shall be installed per APWA, section 2100.

See Erosion Control Plan for rip rap pad sizes.

Elevations are called out to top of curbs, top of pavement, or top of structure, unless otherwise noted.

Parking lot grading shall be performed to route storm water as directed to the storm collection system.

All curbs shall be CG-1.

Clear and grub areas to be filled, remove trees, vegetation, roots, or other debris, and other materials that would affect the stability of the fill.

Ensure that fill material is free of brush, rubbish, rocks, logs, stumps, building debris, and other materials inappropriate for constructing stable fills.

Do not incorporate frozen material or soft, muck, or highly compressible materials into fill slopes.

Permanently stabilize all graded areas after final grading is completed on each area of the grading plan, apply temporary stabilization measures on all graded areas when work is to be interrupted or delayed (see Erosion Control Plan).

Contractor shall match top of proposed drainage structures with proposed grades. If a discrepancy occurs between proposed grades and proposed structure tops, the grading shall govern. If the discrepancy is more than 4 inches the contractor shall contact the Engineer of Record.

All utilities, including storm sewer, shown within public easements or right of ways shall be constructed to the governing agency's specifications. All other utilities shall be constructed to the client's or the governing agency's specifications, whichever is more stringent, if there is a question as to which specifications should apply the contractor shall contact the Engineer of Record.

All existing structures, unless otherwise noted to remain. All fencing, trees, etc., within construction area shall be removed & disposed of off site, unless otherwise noted. Any burning on site shall be subject to local ordinances and/or the owner/developers standards and specifications.

All drainage structures shall be pre-cast.

All drainage structures and storm sewer pipes shall meet heavy duty traffic (H20) loading and be installed accordingly.

Contractor shall notify all utility companies having underground utilities on site or in Right-Of-Way prior to excavation. Contractor shall contact utility locating company (STATE ONE CALL system) and locate all utilities prior to grading start.

Site grading shall not proceed until Erosion Control measures have been installed.

After permits have been obtained and Erosion Control measures installed, the contractor shall grade building pad & aprons to 0" to - 1/2" of subgrade.

PROJECT BENCHMARK:

#1 Top of Sanitary Manhole lid in street on north side of project.
N: 1000974.6290
E: 2826739.8680
TOP ELEV. 1006.44

NO. 1
BY EDH
RKS

REVISION
DATE

11/19/21 Staff Comments from 7/29/21
5/26/22 MOVED STORM PIPE AWAY FROM INDEPENDENCE
12/01/22 CHANGED PIPE SIZE TO 15" AND REFERENCE COMMENTS FROM GENE WILLIAMS
12/01/22 COMMENT LETTER 11-10-22

DATE

OF MISSOURI
Professional Engineer
12/01/22

Consult Inc
engineers
Inc planners

811

GRADING AND STORM SEWER PLAN

705 SE HIGH STREET DUPLEXES
LEE'S SUMMIT - JACKSON COUNTY - MISSOURI

X-REF NO.
211185

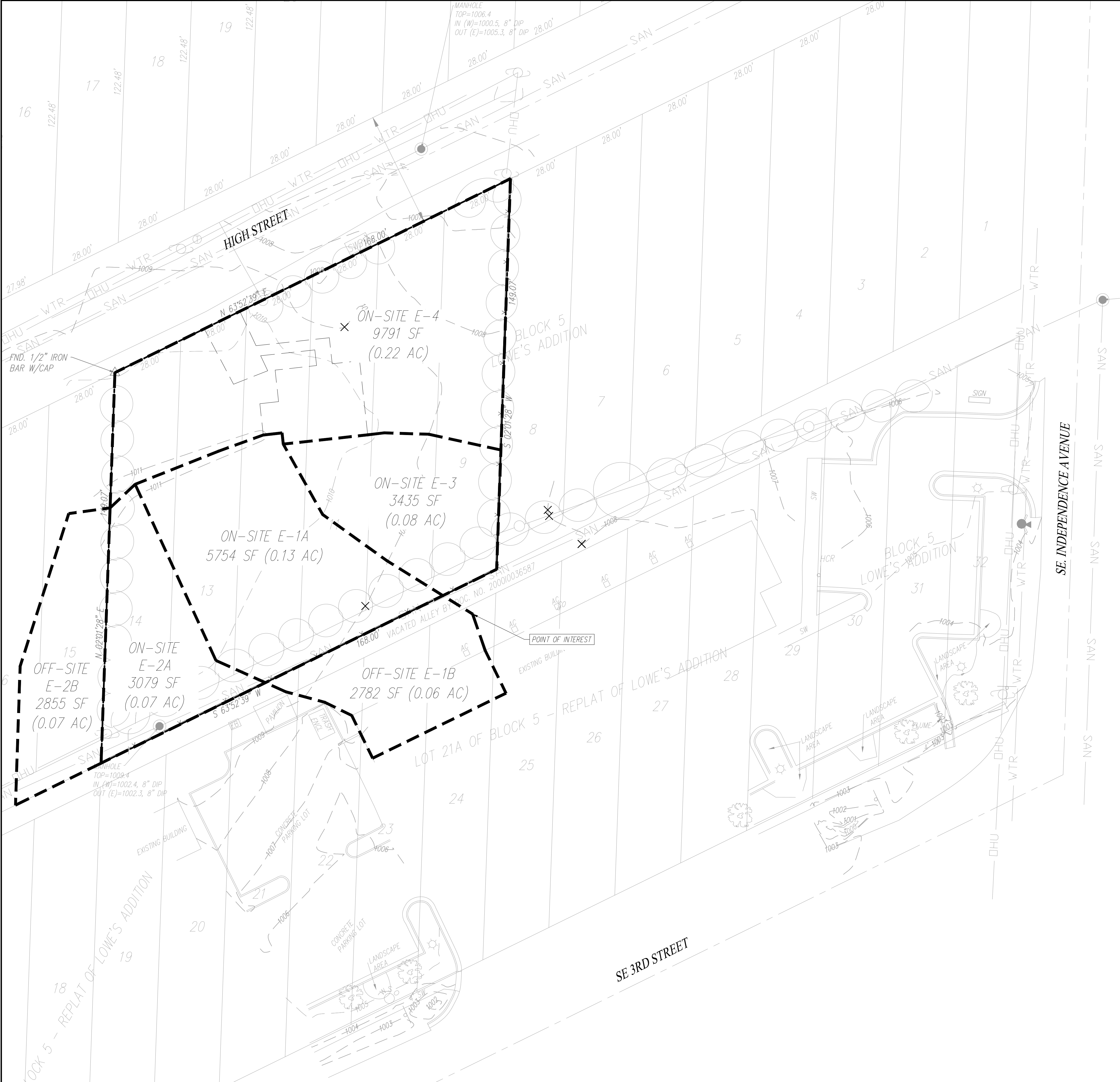
DRAWING NO.
21085

DATE
OCTOBER 7, 2021

SHEET
21085

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PEAK FLOWS AT POINT OF INTEREST

Rational method of calculating storm water flow:
 $Q = kCIA$ $C = 0.66$
 $Q_{10} = (1.00) (0.66) (7.35) (0.19) = 0.92 \text{ cfs}$
 $Q_{100} = (1.25) (0.66) (10.32) (0.19) = 1.62 \text{ cfs}$

PROPOSED	KEY	EXISTING
— 979 —	Grades	— 960 —
— — — — —	Drainage Area	

PRE-DEVELOPMENT DRAINAGE AREA MAP

705 SE HIGH STREET DUPLEXES

LEE'S SUMMIT - JACKSON COUNTY - MISSOURI

1

SHEET OF

2

X-REF NO.
211185

DRAWING NO.
21085

DATE
OCTOBER 7, 2021

JOB NO.
21085

Consult Inc engineers planners

12/20/22

STATE OF MISSOURI
RICHARD K. STERRETT
REGISTERED PROFESSIONAL ENGINEER
NO. E-26440

REVISION

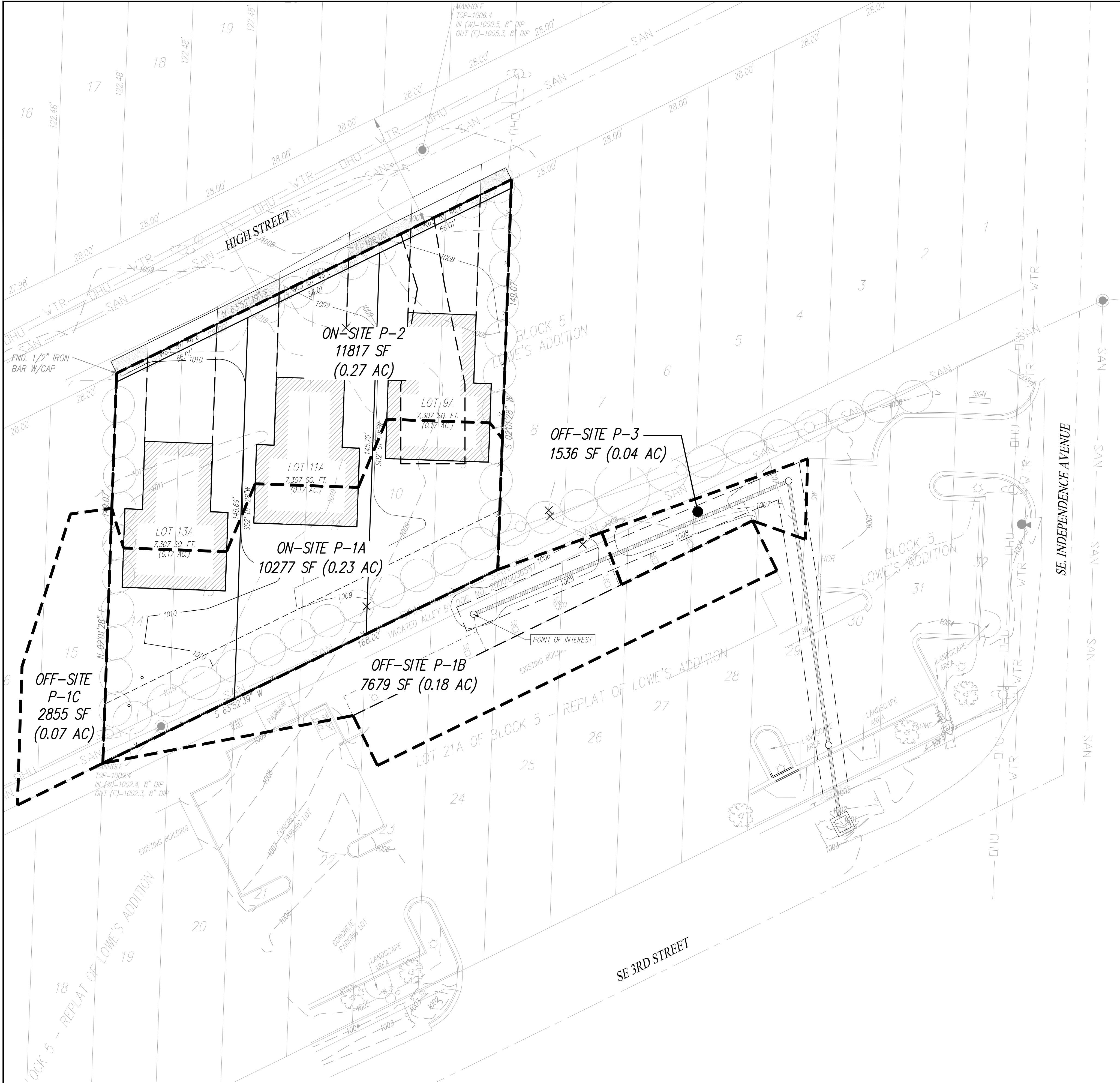
DATE

NO.

BY

CHK/APP

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PEAK FLOWS AT POINT OF INTEREST
Rational method of calculating storm water flow:
 $Q = kCIA$ $C = 0.66$
 $Q_{10} = (1.00) (0.66) (7.35) (0.48) = 2.32 \text{ cfs}$
 $Q_{100} = (1.25) (0.66) (10.32) (0.48) = 4.08 \text{ cfs}$

KEY	
PROPOSED	EXISTING
— 979 —	Grades — 960 —
— — — — —	Drainage Area

POST-DEVELOPMENT DRAINAGE AREA MAP

705 SE HIGH STREET DUPLEXES
LEE'S SUMMIT - JACKSON COUNTY - MISSOURI

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DATE
OCTOBER 7, 2021

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2 SHEET OF 2

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18

12/20/22

STATE OF MISSOURI
RICHARD K. STERRETT
PROFESSIONAL ENGINEER
NO. E-26440

REVISION

NO. BY / DATE

DATE

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R. KEVIN STERRETT, NO. E-26440