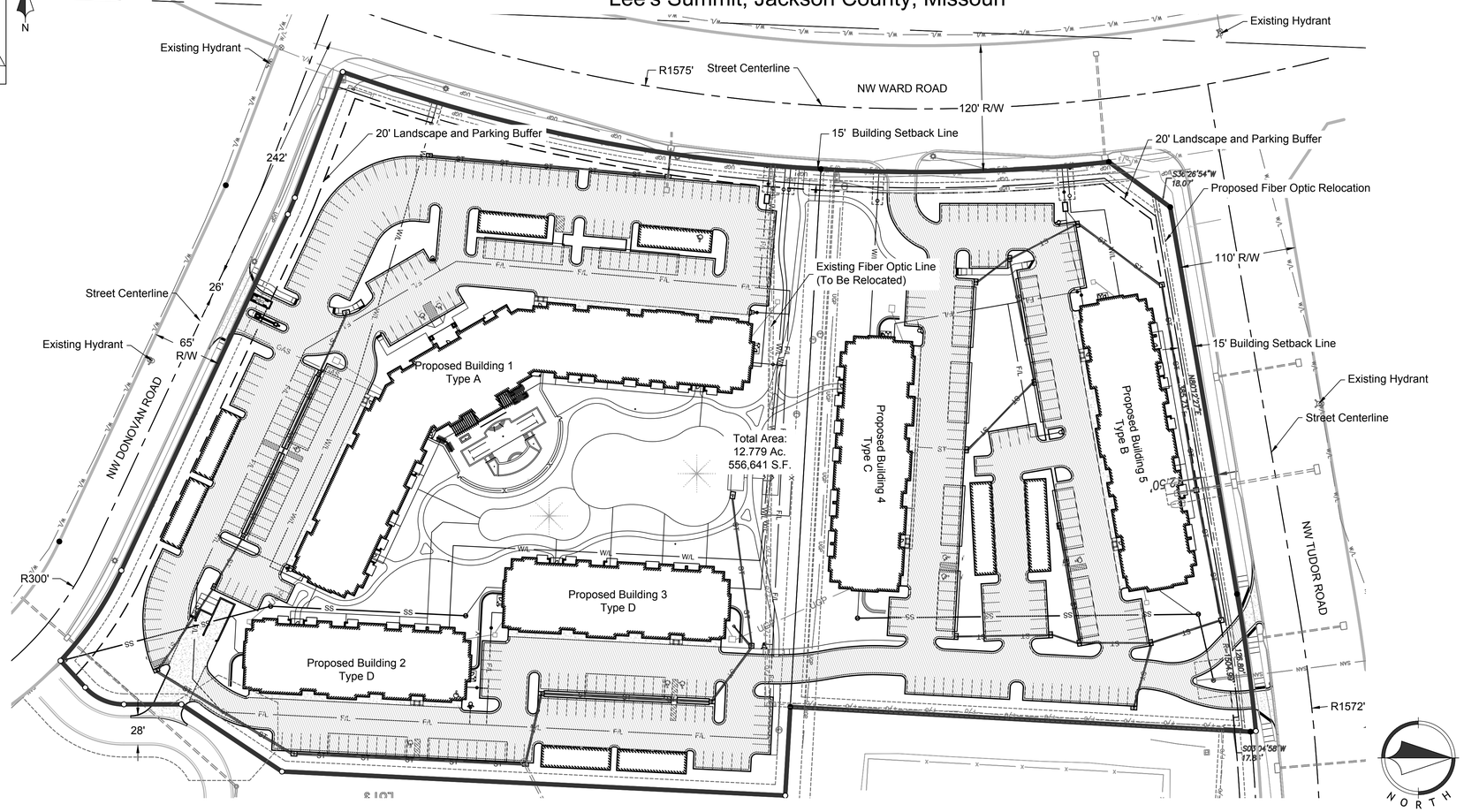
Final Development Plans For

# Summit Square II

Lee's Summit, Jackson County, Missouri


LOCATION MAP
Not To Scale

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### UTILITIES

WATER & SANITARY SEWER
City of Lee's Summit Water Utilities
220 SE Green St
Lee's Summit, MO
(816) 969-1900

ELECTRICITY
Kansas City Power and Light
Phone: 816.471.5275

GAS
Missouri Gas Energy
PO Box 219255
Kansas City, Missouri 64141
Phone: 816.756.5252

TELEPHONE
AT&T
Phone: 800.288.2020

Time Warner Cable
Phone: 816.222.5952

CABLE TV
Comcast
Phone: 816.795.1100

Time Warner Cable
Phone: 816.358.8833

### LEGAL DESCRIPTION

Lots 1 and 2, SUMMIT ORCHARD - FIRST PLAT, LOTS 1-4 & TRACT A, a subdivision in Lee's Summit, Jackson County, Missouri, according to the recorded plat thereof recorded August 26, 2016 as Document
No. 2016E0079184 in Plat Book 163, Page 87.

### BENCHMARK:

BM-A: □ cut on the top centerline of a concrete curb inlet at back of curb near the NE quadrant of the intersection of NW Ward Rd. and NW Donovan Rd.
Elev: 1006.76

BM-B: □ cut on the top centerline of a concrete curb inlet at back of curb near the SE quadrant of the intersection of NW Ward Rd. and NW Tudor Rd.
Elev: 984.97

Oil / Gas Well Note:
There is no visible evidence, this date, of abandoned oil or gas wells located within the property boundary, as identified in "Environmental Impact Study of Abandoned Oil and Gas Wells in Lee's Summit, Missouri.

Flood Plain Note
We have reviewed the F.E.M.A. Flood Insurance Rate Map Number 29095C0417G, revised January 20, 2017, this tract graphically lies in OTHER AREAS, ZONE X, defined as areas determined to be outside the 0.2% annual chance floodplain.

### GENERAL NOTES

1. All construction shall follow the City of Lee's Summit Design and Construction Manual as adopted by Ordinance 5813. Where discrepancies exist between the Final Development Plan and the Design and Construction Manual, the Design and Construction Manual shall govern.
2. The contractor will be responsible for securing all bonds, and insurance required by the contract documents, City of Lee's Summit, Mo., and all other governing agencies (including local, county, state, and federal authorities) having jurisdiction over the work proposed by these construction documents. The cost for all bonds, and insurance shall be the contractor's responsibility and shall be included in the bid for the work.
3. The Contractor Shall Refer To The Geotech Report Dated May 11, 2018 For All Pavement Construction. Pavement Sections Provided In These Plans Are For Information Only.
4. All existing utilities indicated on the drawings are according to the best information available to the engineer; however, all utilities actually existing may not be shown. The contractor shall be responsible for contacting all utility companies for an exact field location of each utility prior to any construction. All utilities, shown and un-shown, damaged through the negligence of the contractor shall be repaired or replaced by the contractor at his expense.
5. The contractor will be responsible for all damages to existing utilities, pavement, fences, structures, and other features not designated for removal. The contractor shall repair all damages at his expense.
6. The demolition of existing pavement, curbs, structures, and all other features necessary to construct the proposed improvements, shall be performed by the contractor. All waste material removed during construction shall be disposed off the project site. The contractor shall be responsible for all permits for hauling and disposing of waste material. The disposal of waste material shall be in accordance with all local, state, and federal regulations.
7. By use of these construction documents the contractor hereby agrees that he shall be solely responsible for the safety of the construction workers and the public. The contractor agrees to hold the engineer and owner harmless for any and all injuries, claims, losses, or damages related to the project.
8. The contractor will be responsible for providing all signage, barricades, lighting, etc., as required for temporary traffic control during the construction of this project. Maintenance of the temporary traffic control devices will be the contractor's responsibility. All traffic control in conduction with construction in the right-of-way shall be in conformance with the City Traffic Control Requirements.
9. Contractor shall furnish evidence that his/her insurance meets the requirements of the City of Lee's Summit, Missouri Municipal Code.
10. Prior to installing, constructing, or performing any work on the public storm sewer line (including connecting private drainage systems to the storm sewer), contact Inspections.
11. Connections to the public storm sewers between structures will not be permitted.
12. Contractor shall verify and accept existing topography shown herein. Contractor shall notify Engineer if any discrepancies are found prior to any earthwork activities.
13. Planning and Codes Administration will require a retaining wall design by a registered engineer in the State of Missouri.
14. Geogrid, footings, or other elements of the retaining wall(s) cannot encroach into the right of way or public easements.
15. A Knox Box shall be provided for Each Building.
16. All building and life safety issues shall comply with the 2012 International Fire Code and local amendments as adopted by the City of Lee's Summit.

Know what's **below.**
**Call** before you dig.

Aug 21, 2018-2:29pm
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Sheet
C01

Final Development Plans
18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Cover Sheet

| NO. | BY | CD | DATE | REVISION |
|---|---|---|---|---|
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1815 McGee Street, Suite 200
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STATE OF MISSOURI
MITCHELL E. SLUTTER
NUMBER
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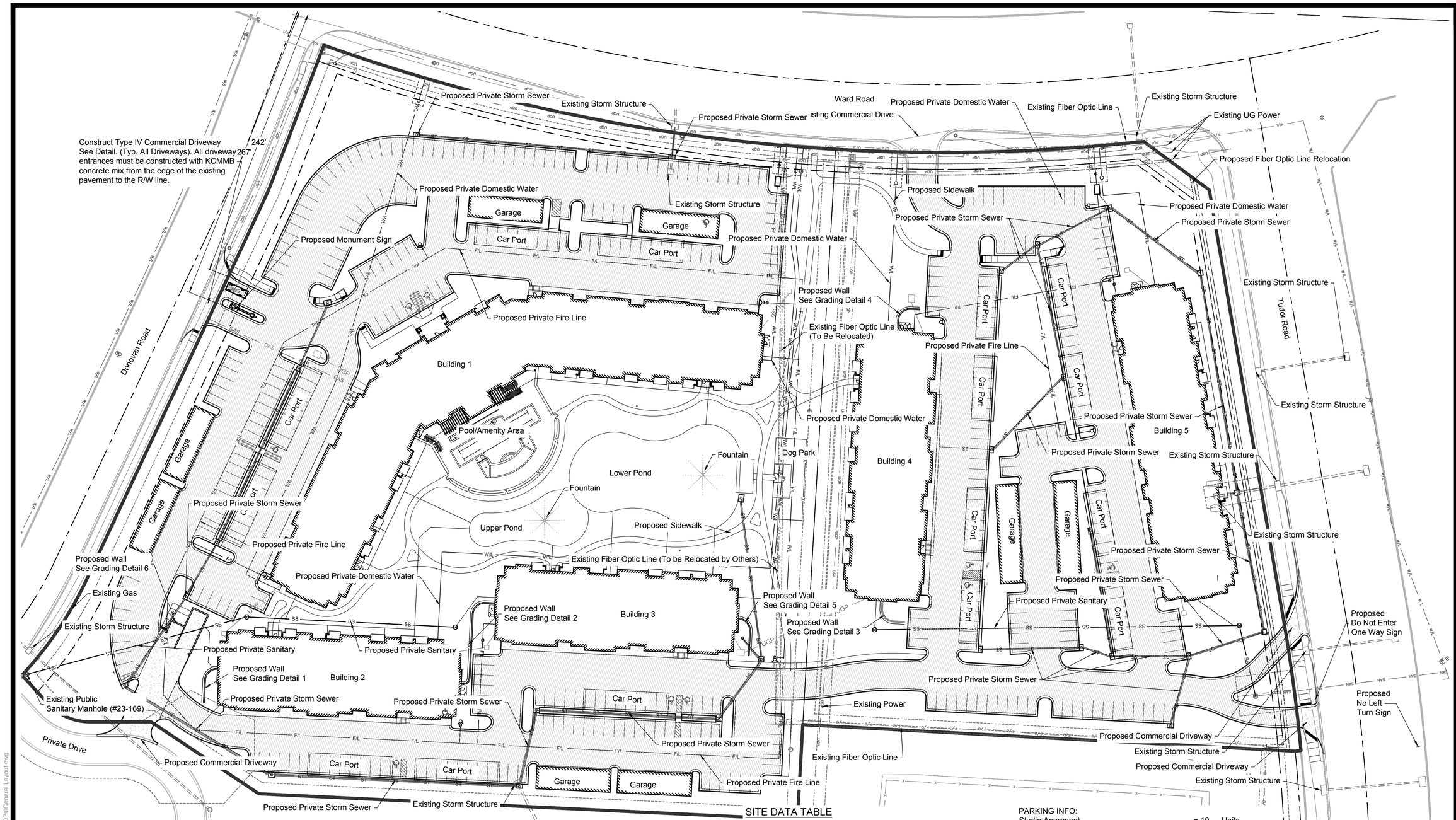
PROFESSIONAL ENGINEER
8/21/18
MITCHELL E. SLUTTER PE-2002003418




FOR NON-PUBLIC WORK

A. Screened items indicate a pre-construction topographic survey
B. Contraction joints shall conform to APWA Section 2200.
C. All concrete to be 4000 psi with 5% (+/- 1%) air entrainment. Cement mixtures with water/cement ratios at 0.5 or below are recommended
D. Construction of reinforced concrete pavements shall be in accordance with ACI 330 standard specifications.
E. Curing compound to be applied to all concrete surfaces immediately after broom finish.
F. Contractor shall reject concrete if it cannot be placed within 90 minutes of batch time expiration time shall be reduced to 60 minutes on high summer temperatures.

PAVEMENT MARKING AND SIGNAGE NOTES

1. Parking stall marking stripes shall be four inch (4") wide white stripes. Handicap stall marking shall be furnished at locations shown on plans.
2. Traffic control devices and pavement markings shall conform to the requirements of the "Manual of Uniform Traffic Control Devices." and to the City of Lee's Summit.
3. Traffic control and pavement markings shall be painted with a white Sherwin Williams S-W traffic marking series b-29y2 or approved equal. The pavement marking shall be applied in accordance with manufacturers recommendations. Apply on a clean, dry surface and at a surface temperature of not less than 70°f and the ambient air temperature shall not be less than 60°f and rising. Two coats shall be applied.
4. All pavement markings for handicap stalls and aisles shall be blue.

LAYOUT & PAVING NOTES

1. All construction shall conform to the City of Lee's Summit's minimum design standards.
2. The contractor shall check existing grades, dimensions, and inverts in the field and report any discrepancies to the architect/engineer prior to beginning work.
3. The contractor shall verify the exact location of all existing utilities, take care to protect utilities that are to remain, and repair contractor caused damage according to current local standards and at the contractor's expense. coordinate all construction with the appropriate utility company.
4. The contractor shall comply with all local codes, obtain all permits, and pay all fees prior to beginning work.
5. Prior to installing, constructing, or performing any work in the public right of way or on the public storm sewer line (including concrete pavement or connecting private drainage systems to the storm sewer), contact City of Lee's Summit public works at 816.969.1800 for inspection of the work. Contact must be made at least 24 hours prior to start of the work.
6. Provide a smooth transition between existing pavement and new pavement. Field adjustment of final grades may be necessary. Adjust all utilities prior to installation of pavement.
7. The contractor shall protect all trees to remain, in accordance with the specifications. Do not operate or store heavy equipment, nor handle, nor store materials within the driplines of trees or outside the limit of grading.
8. Concrete walks and pads shall have a broom finish. All concrete shall be 4,000 p.s.i. unless otherwise noted. Curb ramps, sidewalk slopes, and driveway ramps shall be constructed in accordance with all current local requirements. If applicable, the contractor shall request inspection of sidewalk and ramp forms prior to placement of concrete.
9. All damage to existing asphalt pavement to remain which results from new construction shall be replaced with like materials at contractor's expense.
10. Dimensions are to the back of curb, or edge of concrete, unless otherwise noted.
11. Excess material shall be disposed of by the contractor off the owner's property at no additional cost in a legal manner.
12. Maintain one set of as-built drawings on the job site for distribution to the engineer upon completion.
13. Concrete curb at all all concrete paving and both side of drive-in ramps shall be integral.
14. Contractor shall be responsible for mud and debris on public ROW which shall be removed in a timely manner daily.
15. Pavement sections shown within plans are from the geotechnical report prepared by Terracon, dated June 13, 2018.

SITE DATA TABLE

PROPERTY INFO:

| | |
|---|---|
| Existing Zoning: | PMIX |
| Total Land Area: | 12.779 Acres, 556,641 sqft |
| Proposed Street Right-of-Way: | 0.00 Acres |
| Net Land Area: | 12.779 Acres, 556,641 sqft |
| Proposed Use: | Multifamily Residential |

BUILDING INFO:

| | |
|---|---|
| Building 1: | Type A - N (4/4 - 105 Units) |
| Buildings 2 & 3: | Type D (4/5 - (2) 51 Units) |
| Building 4: | Type C (4/5 - 59 Units) |
| Building 5: | Type B (4/4 - 60 Units) |

PARKING INFO:

| | | |
|---|---|---|
| Studio Apartment | = 19 | Units |
| 1 Bedroom Apartment | = 200 | Units |
| 2 Bedroom Apartment | = 107 | Units |
| Total Studio, 1 & 2 Bdroom Apartments | = 326 | Units |
| 1.5 Stalls / 1-2 BR Unit | = 489 | Spaces |
| 0.5 Stalls / Unit (Visitor) | = 163 | Spaces |
| Total Parking Required | = 652 | Spaces |
| Surface Stalls Provided | = 312 | Spaces |
| Carport Stalls Provided | = 103 | Spaces |
| Detatched Garage Stalls Provided | = 52 | Spaces |
| Attached Garage Stalls Provided | = 94 | Spaces |
| Total Parking Provided | = 561 | Spaces |
| ADA Parking Required | = 11 | Spaces |
| ADA Parking Provided | = 11 | Spaces |

See NSPJ Letter dated 04/13/18 to Mike Weisenborn.

| | | |
|---|---|---|
| Total Floor Area | = 99,114 SF | |
| Total Impervious Area | = 7.726 Ac. | |
| Floor Area Ratio (FAR) | = 0.178 | |
| Dwellings (Units) Per Acre | = 25.51 | |

PAVING LEGEND

Asphalt Pavement

Concrete Pavement

NORTH

1"=40'

0 20' 40'

Sheet
C02

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

General Layout

| NO. | BY | CD | DATE | REVISION |
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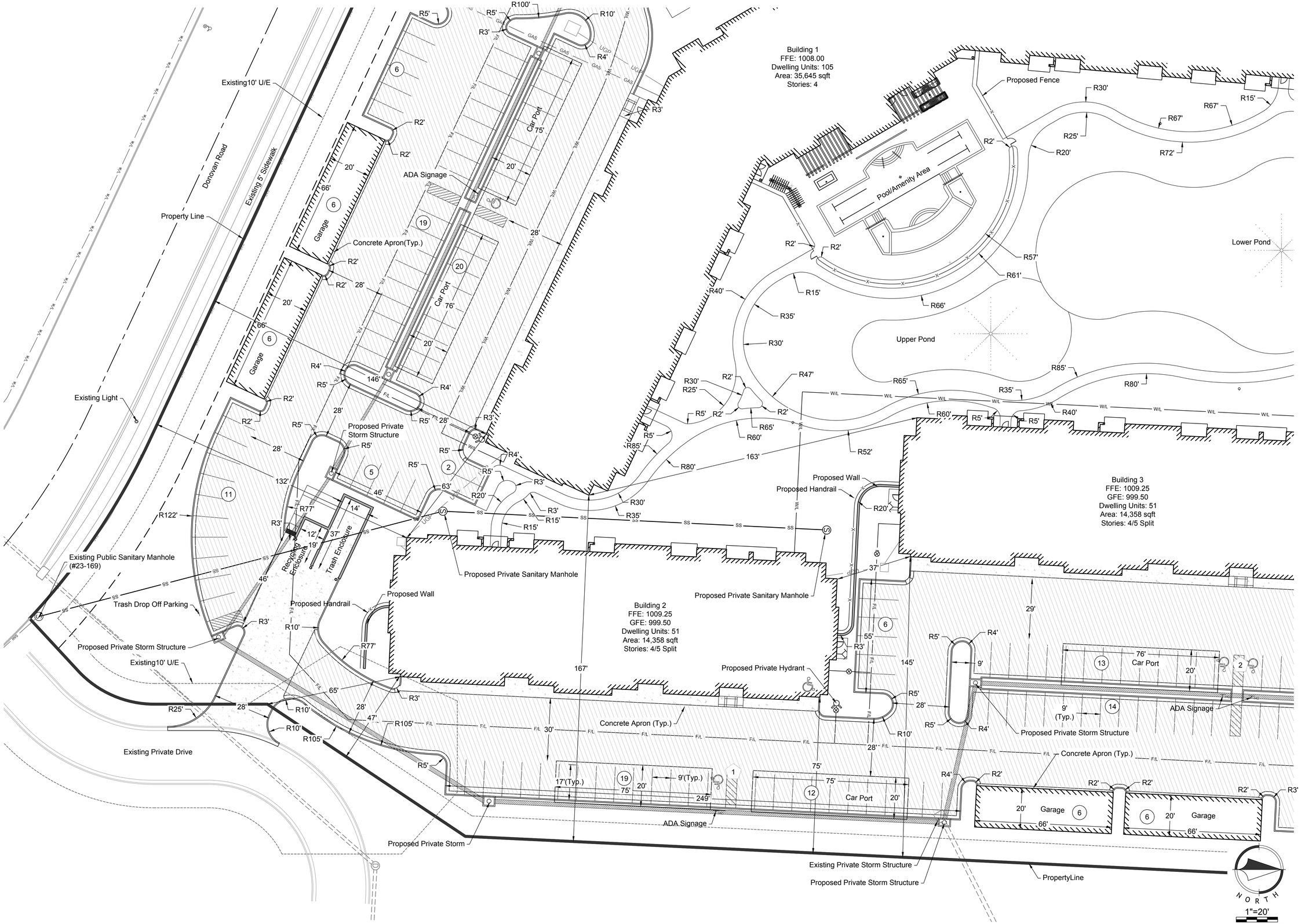


Sheet
C03

Final Development Plans

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Summit Square II
Lee's Summit, Jackson County, Missouri

Site Dimension Plan 1

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Existing Gas
Existing Underground Power
Existing Water Line
Donovan Road
Existing 5' Sidewalk
Existing 10' Sidewalk
Existing 15' B/L
Existing Public Storm
Existing Underground Power
Ward Road
Existing Underground Power
Proposed Private Storm Structure
R100'
Proposed Private Storm Structure
Existing 10' U/E
Existing Underground Power
R55'
R50'
R5'
9' (Typ.)
17'
36
17
28'
R4'
R5'
Concrete Apron (Typ.)
Existing Private Storm (To Be Removed)
Concrete Apron (Typ.)
R2'
R3'
R4'
R5'
13
R38'
28'
6 Garage
Proposed ADA Signage
1
5
4 Garage
1
R2'
R10'
Proposed Private Storm Structure
28'
87'
20'
76'
7 Car Port
1
30'
13 Car Port
76'
10
20' Landscape and Parking Buffer
R3'
Proposed Private Hydrant
28'
R5'
R4'
R3'
R10'
9' (Typ.)
R25'
R5'
R5'
R10'
R5'
7
R3'
28'
74'
R5'
2
R3'
20'
30'
R40'
R5'
R200'
Existing Fiber Optic Line
Proposed Monument Sign
20'
R3'
R3'
4
Proposed Private Hydrant
R205'
R25'
R20'
R40'
R5'
R100'
R5'
R10'
GAS
UGP
R4'
Building 1
FFE: 1008.00
Dwelling Units: 105
Area: 35,645 sqft
Stories: 4
6
Proposed Private Storm Structure
Existing 10' U/E
28'
R3'
R2'
R2'
Car Port
Garage
19
19
R2'
R2'
Car Port
Garage
Proposed Private Storm Structure
R4'
R5'
R4'
R5'
Pool/Amenity Area
R30'
R25'
R20'
R67'
R72'
R15'
R5'
R30'
R25'
R15'
R40'
R35'
R40'
R2'
R2'
R2'
R2'
R30'
R35'
R25'
R30'
R2'
Dog Park
R150'
4' Telecom Esmt.
R66'
R57'
R61'
Lower Pond
R155'
R40'
R15'
R35'
Upper Pond
R50'
R40'
R150'
R155'
R30'
R115'
R85'
R20'
R15'
R2'
R25'
R2'
R52'
R30'
R47'
R65'
R35'
R80'
R120'
R65'
R60'
R60'
R5'
R5'
R40'
NORTH
1"=20'
0 10' 20'

| Sheet |
|---|
| C04 |

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Site Dimension Plan 2

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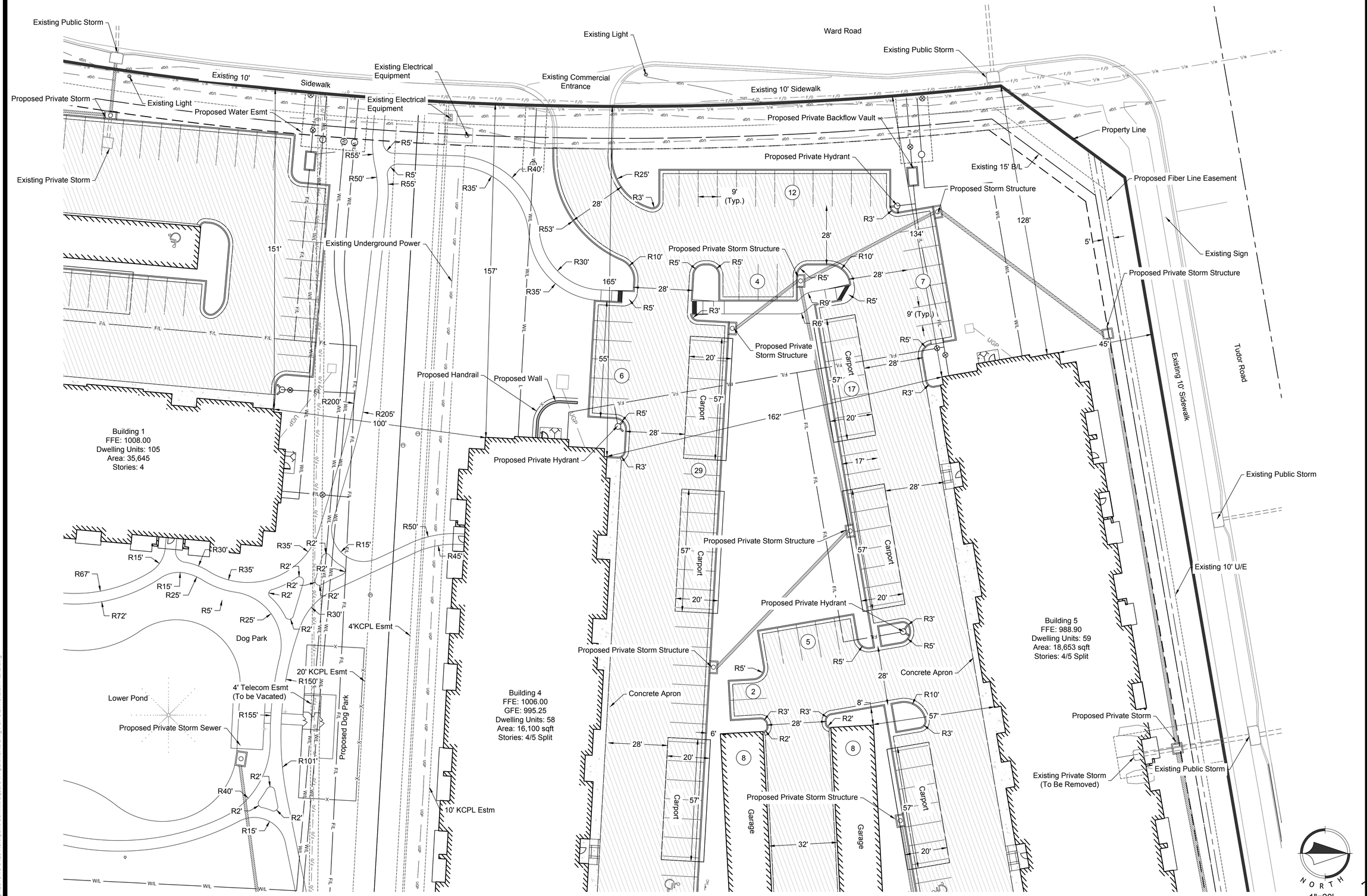


Sheet
C05

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Site Dimension Plan 3

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Sheet
C06

Final Development Plans

18-0129
Summit Square II
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Site Dimension Plan 4

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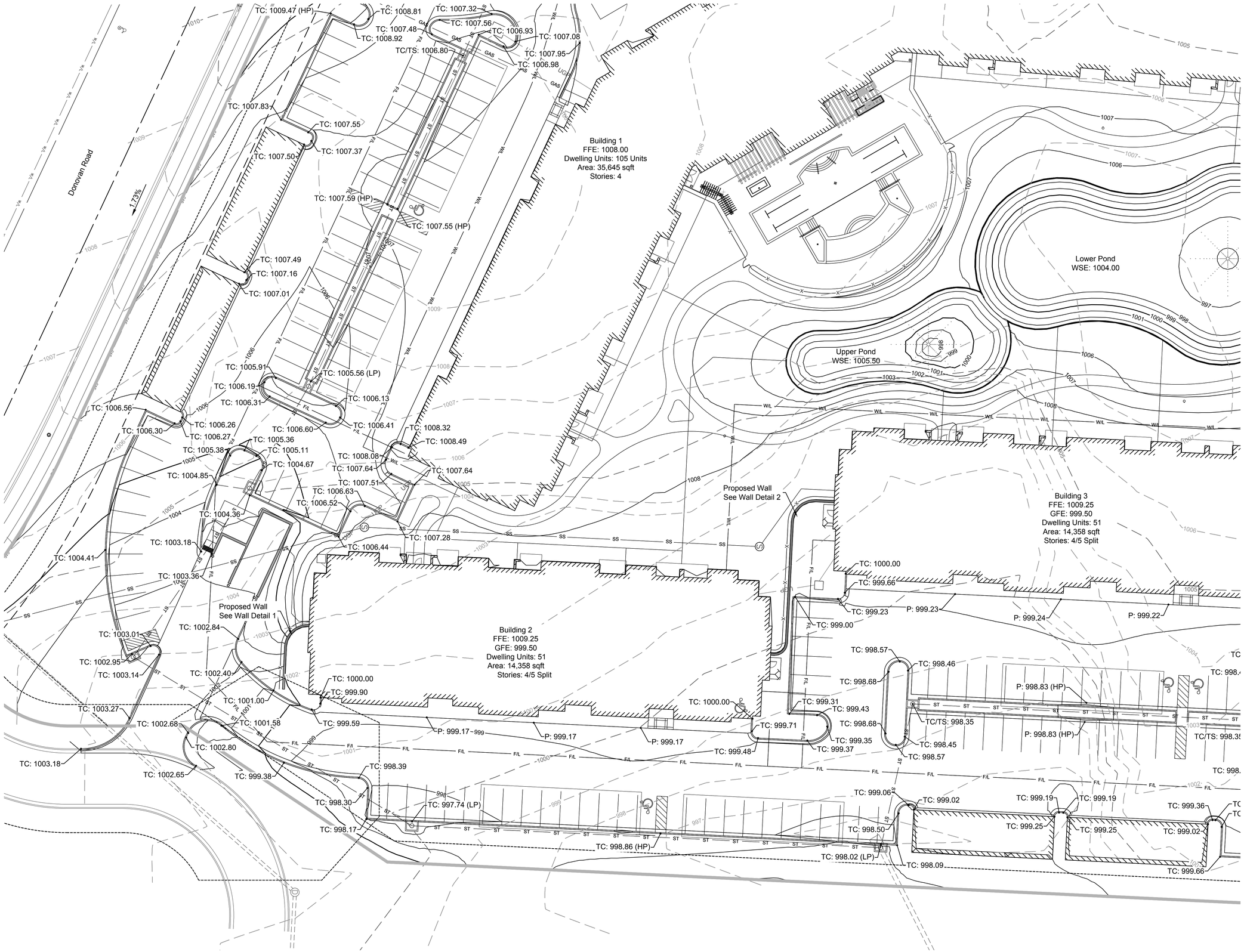


Sheet
C07

Final Development Plans

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Grading Plan

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Sheet
C08

Final Development Plans

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Grading Plan

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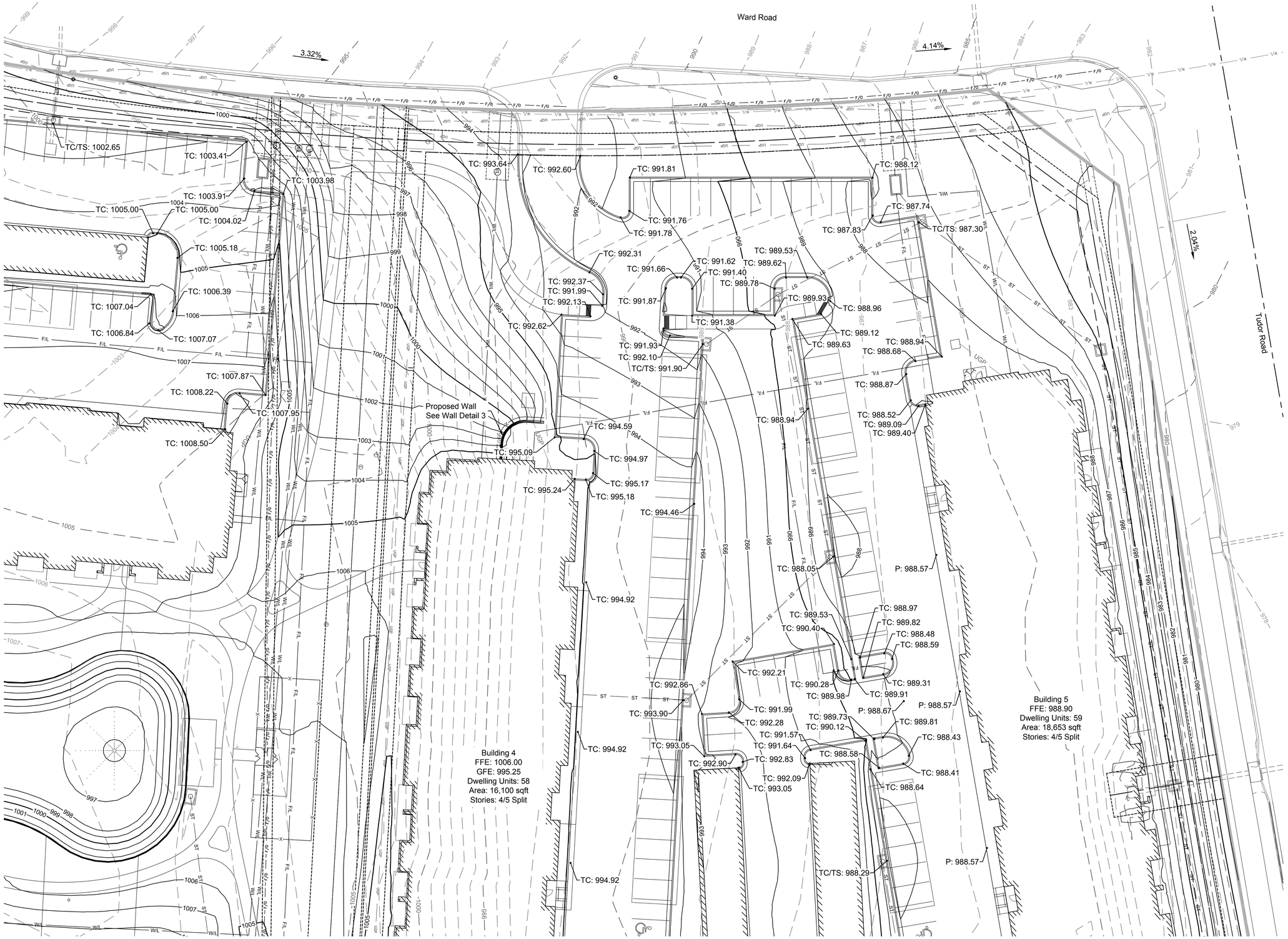


NORTH

1"=20'

0 10' 20'

Sheet
C09

Final Development Plans

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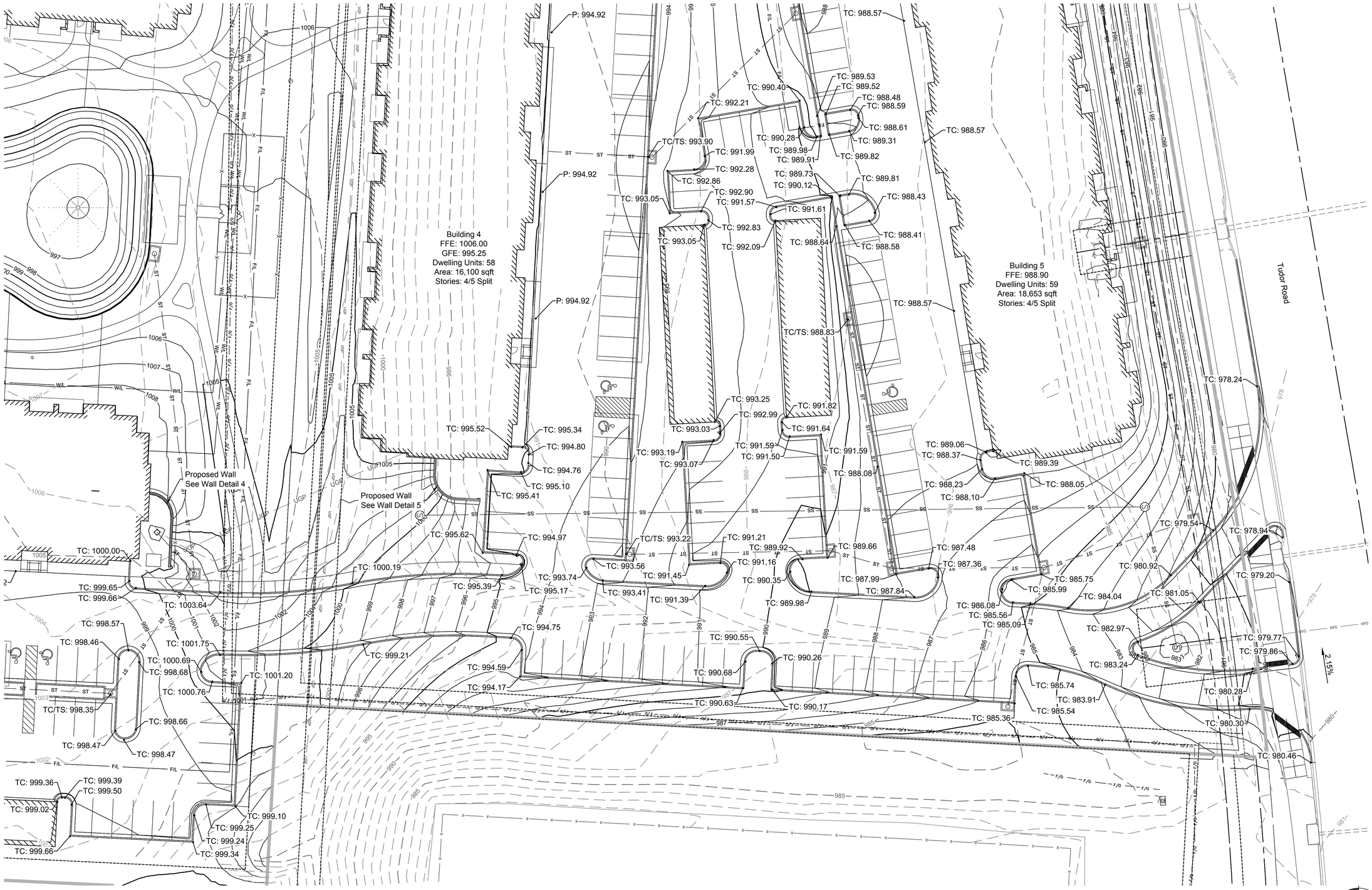
Aug 21, 2018-2:31pm
ZRIC Design\2018\18-0129 Northpoint Summit Square II Apartments\Dwg\FDP\grading plan.dwg




Sheet
C10

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Grading Plan

| NO. | BY | CKD | DATE | REVISION |
|---|---|---|---|---|
| 6 | TCD | MES | 08/21/18 | Per City Comments |
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| 4 | TCD | MES | 07/13/18 | 80% Set |
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| 2 | APT | MES | 05/14/13 | PER CITY COMMENTS |
| 1 | APT | MES | 04/13/18 | ORIGINAL SUBMITTAL |

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816.800.0950
www.ric-consult.com
Missouri Certificate of Authority No. 2010036630

STATE OF MISSOURI
MITCHELL SLUTTER
NUMBER
PE-2002003418
PROFESSIONAL ENGINEER
8-21-18
MITCHELL E. SLUTTER PE-2002003418

Aug 21, 2018-2:31pm
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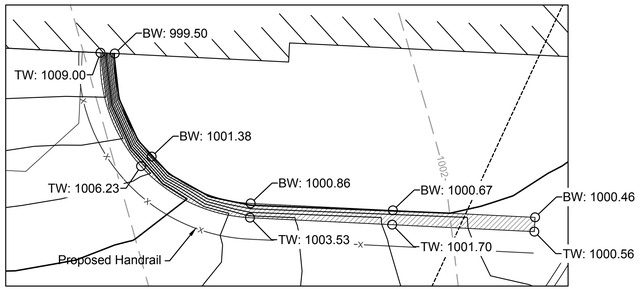
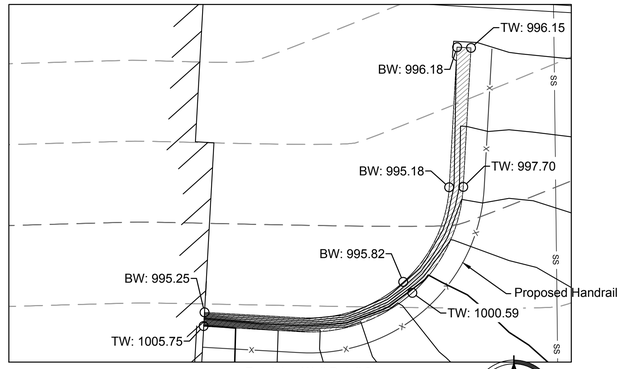



Retaining Wall Detail 1
Scale: 1" = 5'




Retaining Wall Detail 3
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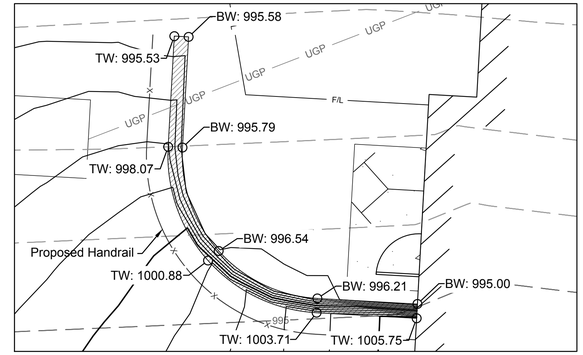


Retaining Wall Detail 4
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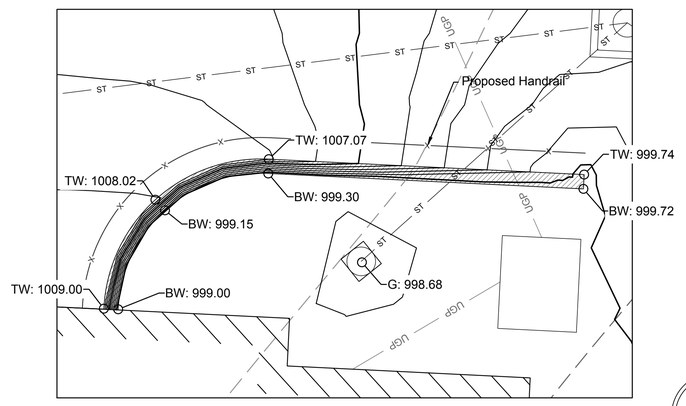
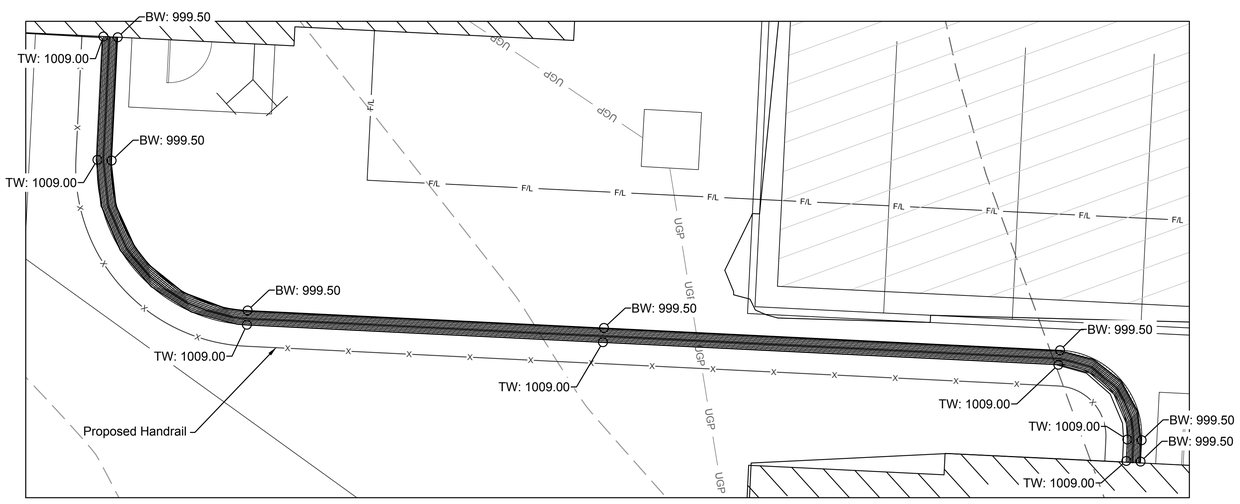
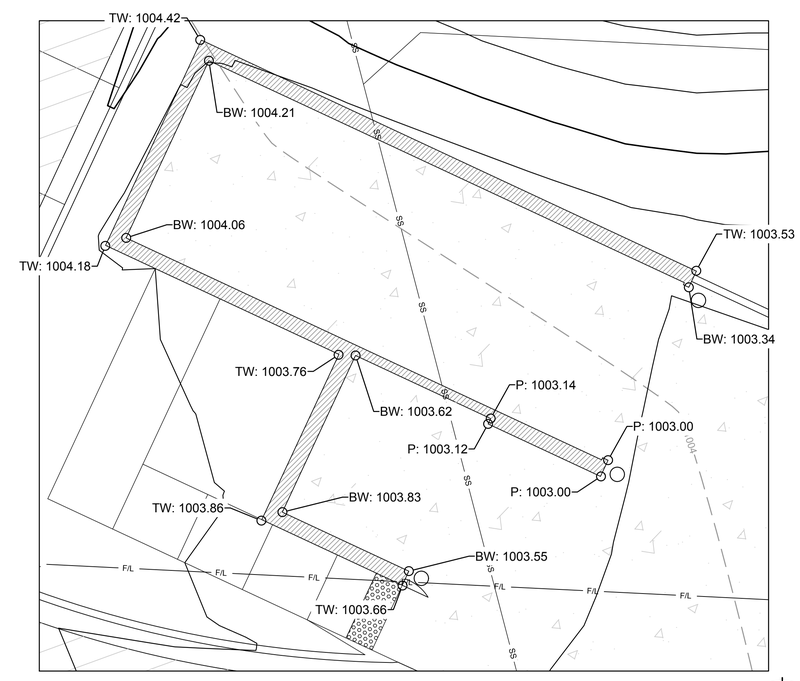



Retaining Wall Detail 5
Scale: 1" = 5'




Retaining Wall Detail 2
Scale: 1" = 5'




Retaining Wall Detail 6
Scale: 1" = 5'

Note:

All retaining walls shown shall be 8" modular block walls, buff color.
Modular Block Walls shall be designed by a design professional licensed in the State of Missouri, and approved by the City of Lee's Summit.

Sheet
C11

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Retaining Wall Details

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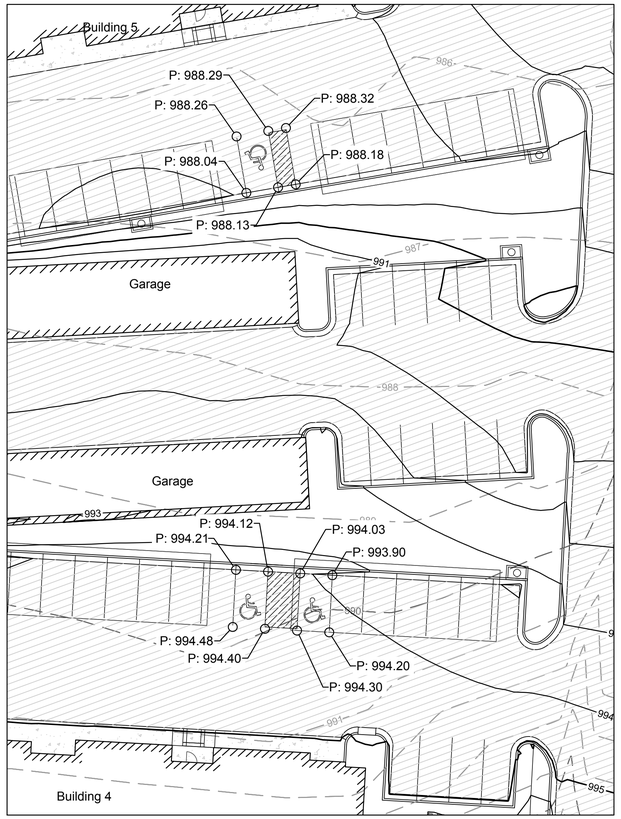
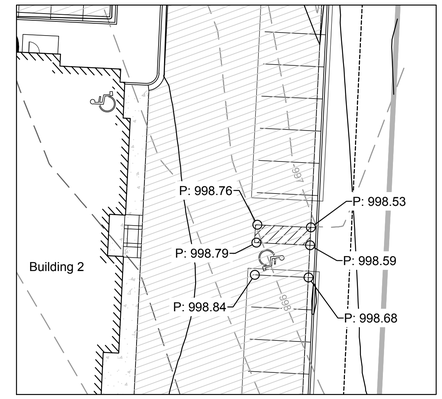
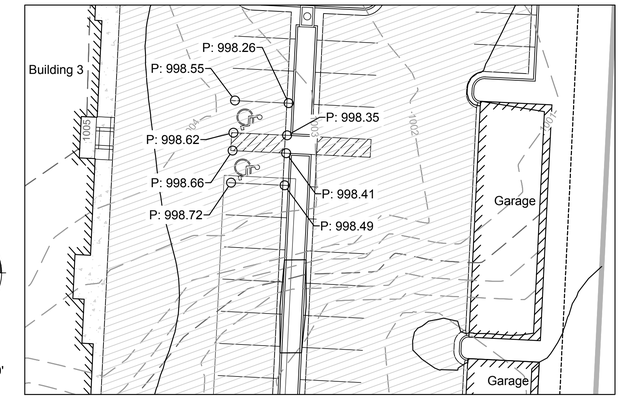
8-21-18
MITCHELL E. SLUTTER PE-2002003418

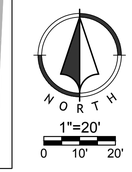


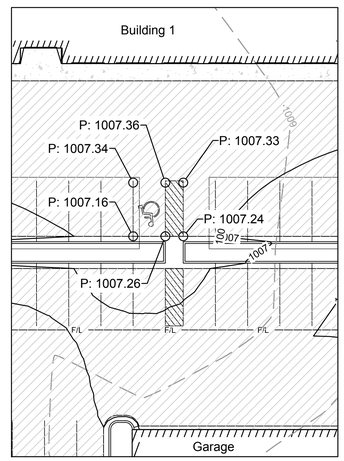


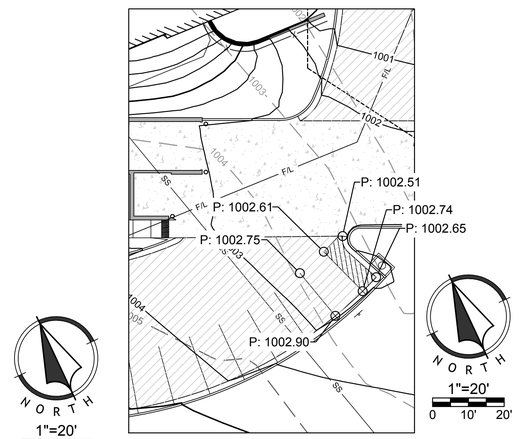




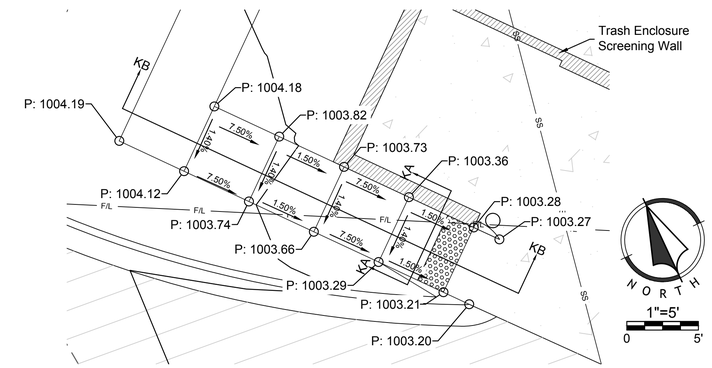


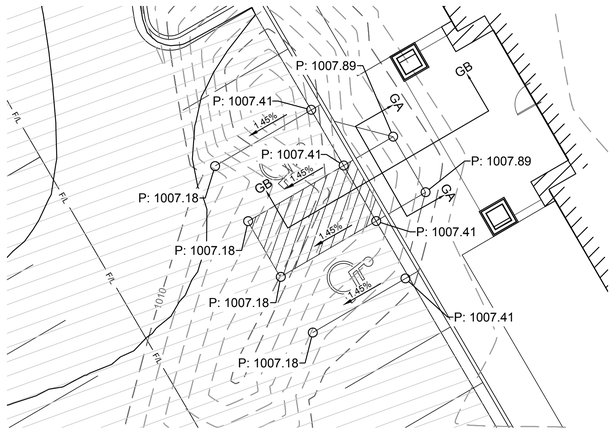



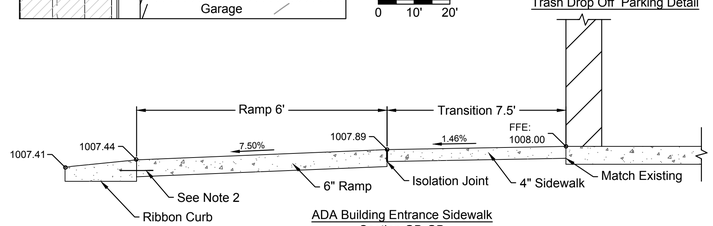




Trash Drop Off Parking Detail

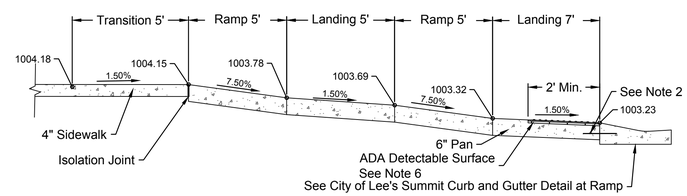


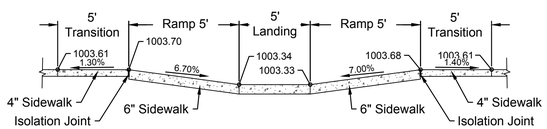

ADA Building Entrance Sidewalk
Scale: 1" =10'




ADA Building Entrance Sidewalk
Section GB-GB
NTS




Trash Enclosure Ramp Detail
Section KB-KB
NTS




Trash Enclosure Ramp Detail
Section LA-LA
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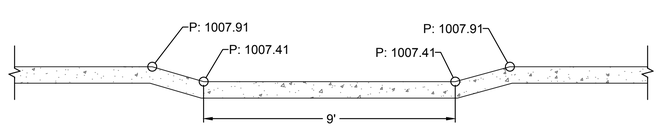
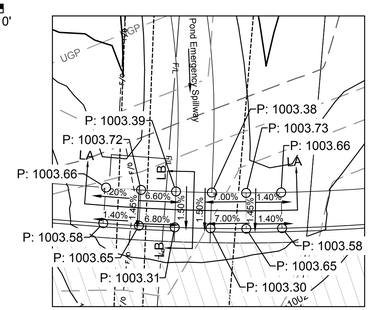
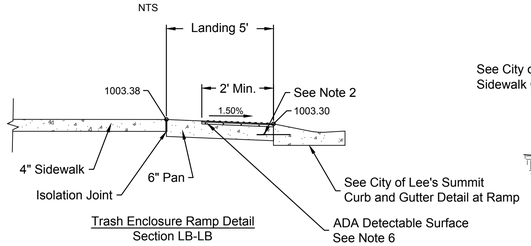


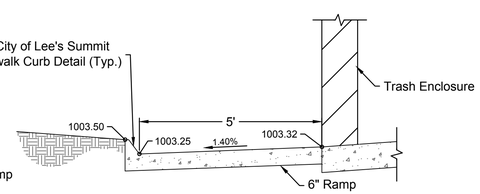

ADA Building Entrance Sidewalk
Section GA-GA
NTS








Trash Enclosure Ramp Detail
Section LB-LB
NTS




ADA Sidewalk South Detail
Section EA-EA
NTS

Sheet
C12

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

ADA Details

| NO. | BY | CD | DATE | REVISION |
|---|---|---|---|---|
| 6 | TCD | MES | 08/21/18 | Per City Comments |
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STATE OF MISSOURI
MITCHELL E. SLUTTER
NUMBER
PE-2002003418
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8-21-18
MITCHELL E. SLUTTER PE-2002003418

Aug 21, 2018-3:23pm
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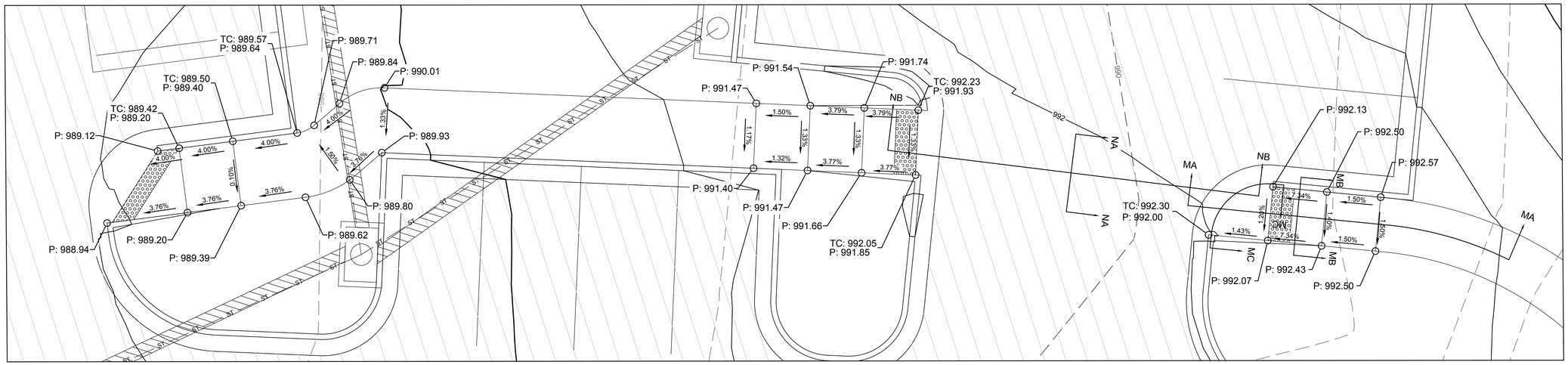
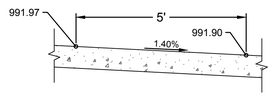
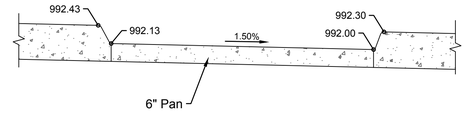


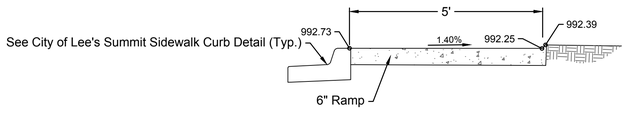




Note: Contractor to maintain 1.50% or less cross slope throughout 5' wide ADA accessible route along driveway

ADA Sidewalk South Detail
Section NA-NA
NTS




ADA Sidewalk South Detail
Section MC-MC
NTS




ADA Sidewalk South Detail
Section MB-MB
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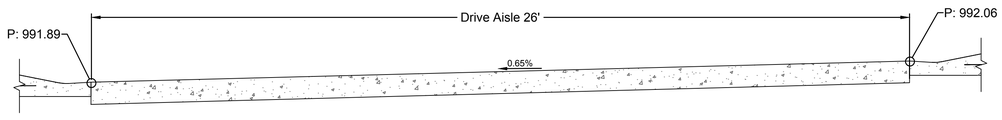
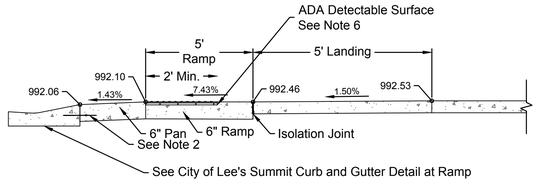



ADA Sidewalk South Detail
Section NB-NB
NTS




ADA Sidewalk North Detail
Section MA-MA
NTS

Sheet
C13

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Sheet Title

| NO. | BY | CD. | DATE | REVISION |
|---|---|---|---|---|
| 6 | TCD | MES | 08/21/18 | Per City Comments |
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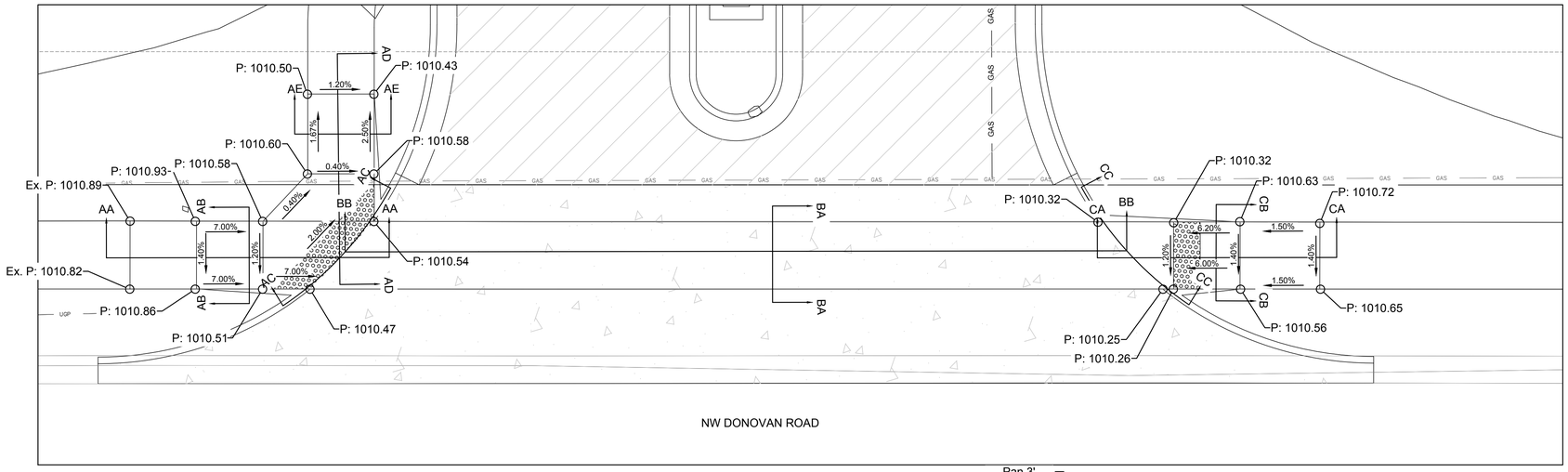
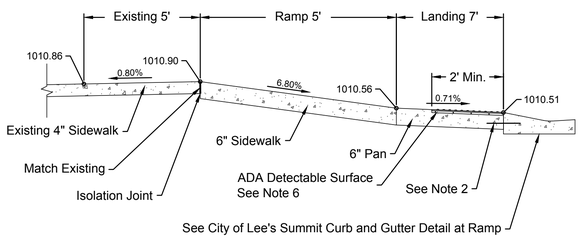
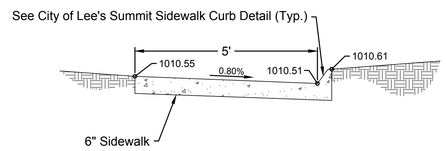


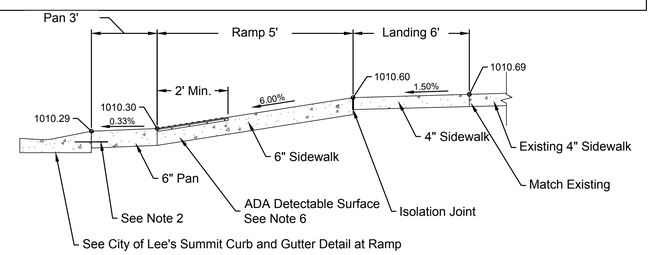





ADA Sidewalk South Detail
Section AA-AA
NTS




ADA Sidewalk South Detail
Section AE-AE
NTS




ADA Sidewalk South Detail
Section CA-CA
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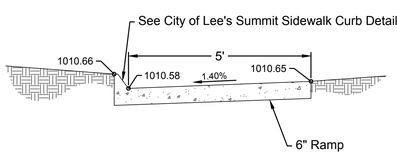
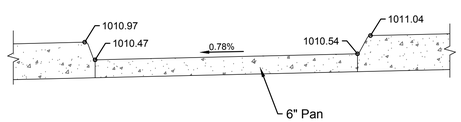



ADA Sidewalk South Detail
Section AB-AB
NTS




ADA Sidewalk South Detail
Section AC-AC
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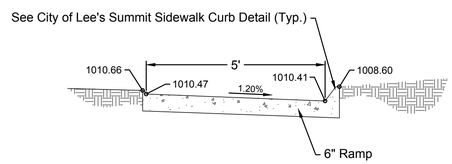


ADA Sidewalk South Detail
Section CB-CB
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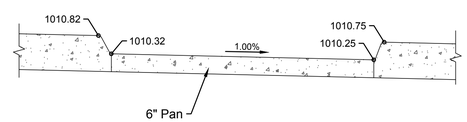
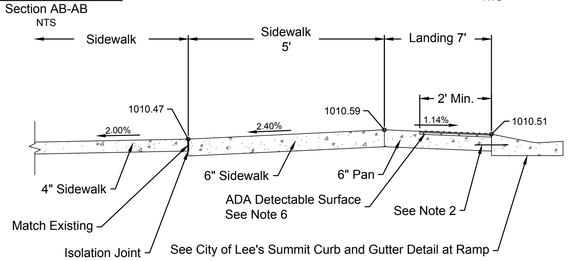



ADA Sidewalk South Detail
Section CC-CC
NTS




ADA Sidewalk South Detail
Section AD-AD
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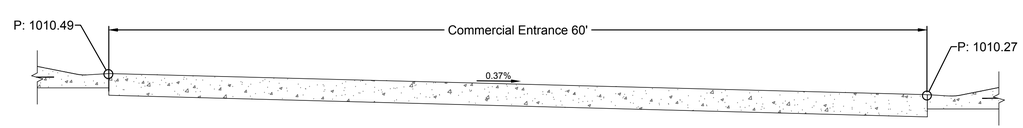
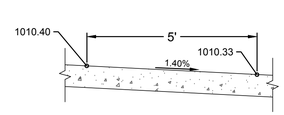



ADA Sidewalk South Detail
Section BB-BB
NTS




Note: Contractor to maintain 1.50% or less cross slope throughout 5' wide ADA accessible route along driveway

ADA Sidewalk South Detail
Section BA-BA
NTS

Sheet
C14

Final Development Plans
18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

ADA Details 2

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|---|---|---|---|
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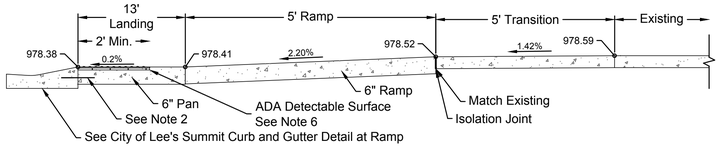
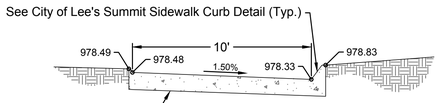



ADA Sidewalk North Detail
Section HA-HA
NTS




ADA Sidewalk North Detail
Section HB-HB
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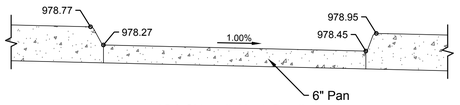
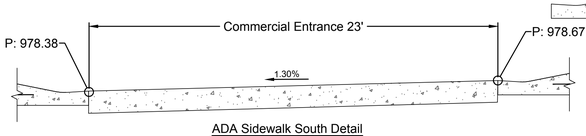
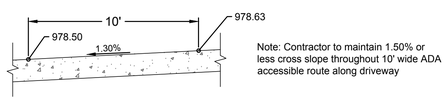



ADA Sidewalk North Detail
Section HC-HC
NTS

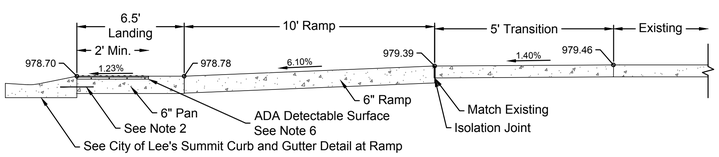



ADA Sidewalk South Detail
Section IB-IB
NTS

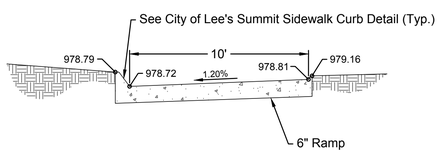



Note: Contractor to maintain 1.50% or less cross slope throughout 10' wide ADA accessible route along driveway

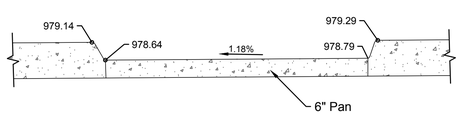
ADA Sidewalk South Detail
Section IA-IA
NTS



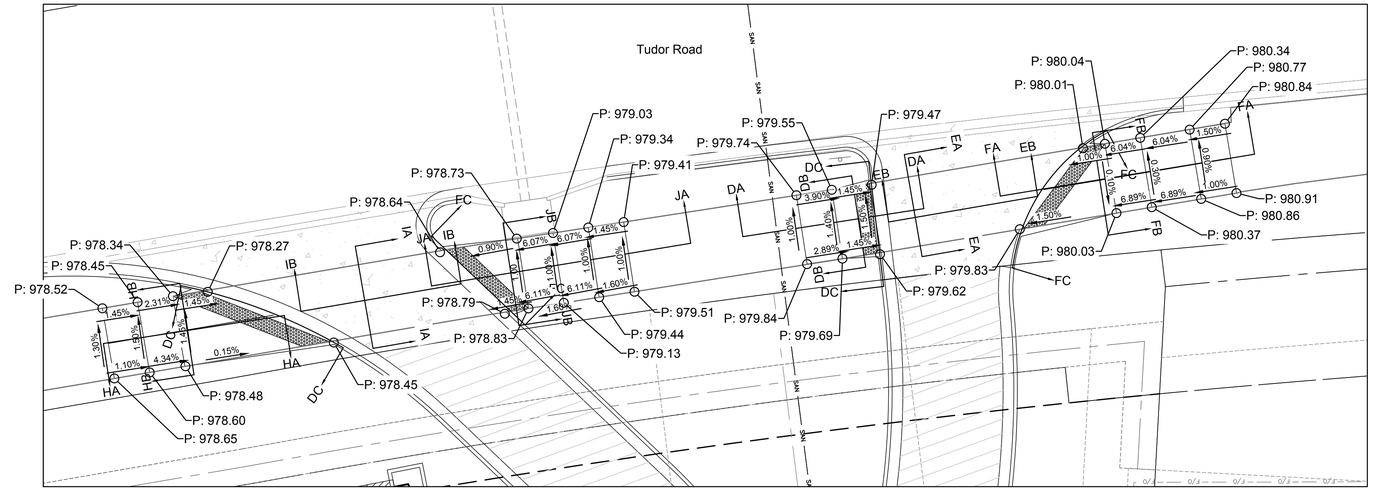

ADA Sidewalk North Detail
Section JA-JA
NTS



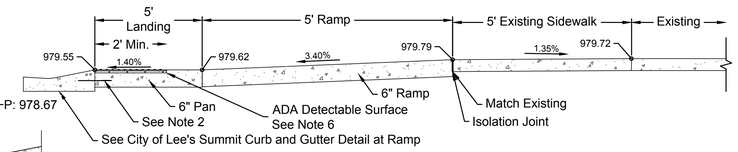

ADA Sidewalk North Detail
Section JB-JB
NTS



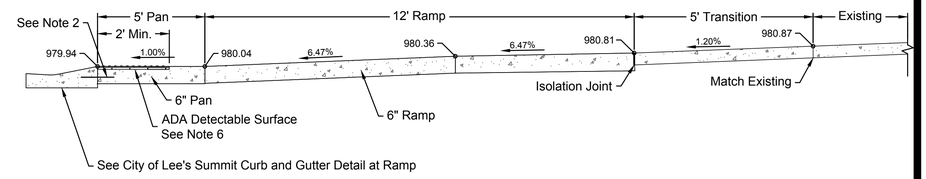

ADA Sidewalk North Detail
Section HC-HC
NTS



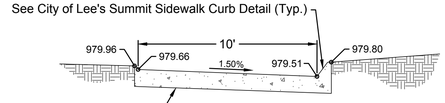

ADA Sidewalk North Detail
Scale: 1" =10'



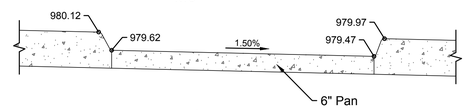

ADA Sidewalk North Detail
Section DA-DA
NTS



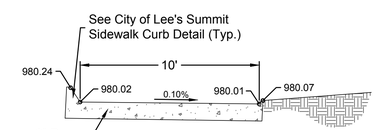

ADA Sidewalk North Detail
Section FA-FA
NTS



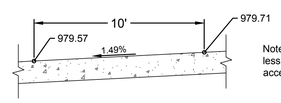

ADA Sidewalk North Detail
Section DB-DB
NTS




ADA Sidewalk North Detail
Section DC-DC
NTS

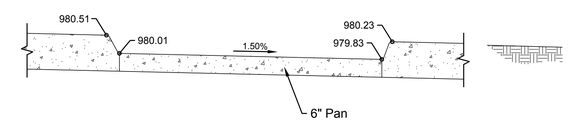



ADA Sidewalk North Detail
Section FB-FB
NTS

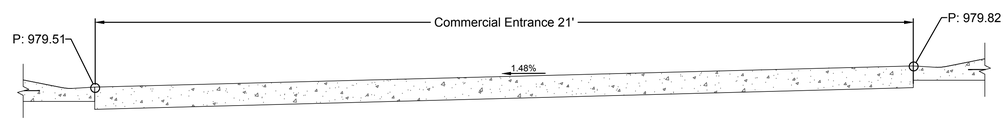



Note: Contractor to maintain 1.50% or less cross slope throughout 10' wide ADA accessible route along driveway

ADA Sidewalk South Detail
Section EA-EA
NTS




ADA Sidewalk North Detail
Section FC-FC
NTS




ADA Sidewalk South Detail
Section EB-EB
NTS

Sheet
C15

Final Development Plans
18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

ADA Details 3

| NO. | BY | DATE | REVISION |
|---|---|---|---|
| 6 | TCD | MES | 08/21/18 | Per City Comments |
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Missouri Certificate of Authority No. 2010033630

STATE OF MISSOURI
MITCHELL E. SLUTTER
NUMBER
PE-2002003418
PROFESSIONAL ENGINEER
8/21/18
MITCHELL E. SLUTTER No. 2002003418

Aug 21, 2018-2:32pm
ZRIC Design\2018\18-0129 Northpoint Summit Square II Apartments\Dwg\FDP\Grading Details.dwg

Install 10 LF 4" HDPE To Daylight
Maintain 1% Minimum Slope to
Drain

Backflow Vault Drain Pipe Detail

NORTH
1"=5'
0 5'

Note:

All Connections Made To Existing Lines Must Limit Shut Down Time To 8 Hours Maximum, and All Work Is To Be Performed At Night To Make These Connections.

Cut In 8"x8" Tee To Existing Water Line w/ 8" Gate Valve South of Tee
Install 18.75 LF 8" C900 To Backflow Vault
Install 8" Gate Valve Prior To Vault

Existing 8" Water Main

Existing Storm Structure

Existing Underground Power

Existing Storm Structure

Ward Road

Contractor Shall Coordinate With The City For Tapping Main.
City Shall Tap The Main and Install Corporation Stop.
City Will Provide Meter and Meter Well. Pipe Material From Main
To 10' Downstream Of Meter Shall Be K Copper Then Transition To Poly-pipe.
Install 20 LF 2" K Copper Pipe To Meter.

Install 2" Meter (w/ Well Provided By The City)
Install 10 LF 2" K Copper Pipe

Install 2" Meter (w/ Well Provided By The City)
Install 10 LF 2" K Copper Pipe
Install Copper To Poly-pipe Coupler
Install 458.55 LF 2" Poly-pipe Domestic Water Line (E)

Contractor Shall Coordinate With The City For Tapping Main.
City Shall Tap The Main and Install Corporation Stop.
City Will Provide Meter and Meter Well. Pipe Material From Main
To 10' Downstream Of Meter Shall Be K Copper Then Transition To Poly-pipe.
Install 20 LF 2" K Copper Pipe To Meter.

Proposed Water Easment

Existing Fiber Optic

Existing 8" Water Main

Install Hydrant Assembly

Install 2" K Copper To 2" Poly-pipe Coupler
Install 155.50 LF 2" Poly-pipe Domestic Water Line (E)

Install 2" K Copper To 2" Poly-pipe Coupler
Install 371 LF 2" Poly-pipe Domestic Water Line (E)

Install 8" Gate Valve Prior To Vault
Install Concrete Vault W/ USC Approved 8" DCVA In Vault
Install 82.73 LF 8" C900 Fire Line After Vault

Install 2" K Copper To 2" Poly-pipe Coupler
Install 344 LF 2" Poly-pipe Domestic Water Line (E)

Install 8"x90° Bend
Install 24.70 LF 8" C900 Fire Line (E)

Install 152.12 LF Gas Service Line
Coordinate w/ MGE For Sizing

Instal 8"x6" Tee
Install 14.25 LF 6" C900 Fire Line (W)
Install 17.75 LF 8" C900 Fire Line (N)

Install 8"x6" Tee
Install 29.50 LF 6" C900 Fire Line (S)
Install 32.86 LF 8" C900 Fire Line (E)

Install 8"x45° Bend
Install 288.44 LF 8" C900 Fire Line

Install 8"x8" Tee
Install 29.50 LF 8" Fire Line (N)

Install Hydrant Assembly

Install 8"x6" Tee
Install 29.50 LF 6" C900 Fire Line (S)
Install 370.77 LF 8" C900 Fire Line (E)

Install 2"x90° Bend
Install 10 LF 2" Poly-pipe Domestic Water Line (S)

Donovan Road

Building 1

Install Isolation Valve

Instal 8"x45° Bend
Install 148.15 LF 8" C900 Fire Line

Building 4

Install 2"x2" Tee
Install 47.50 LF 2" Poly-pipe Domestic Water Line (N)
Install 46.83 LF 2" Poly-Pipe Domestic Water Line (E)

Install 2"x90° Vend
Install 33 LF 2" Poly-pipe Domestic Water Line (N)

Install 2"x90° Bend
Install 33.00 LF 2" Poly-pipe Domestic Water Line (E)

Install 2"x90° Bend
Install 291.60 LF 2" Poly-pipe Domestic Water Line (S)

Existing Fiber Optic
(To Be Relocated)

Install 2"x90° Vend
Install 5 LF 2" Poly-pipe Domestic Water Line (W)

Install 8"x6" Tee
Install 75.68 LF 6" C900 Fire Line (N)
Install 195.50 LF 8" C900 Fire Line (W)

Proposed Sanitary Sewer

Install 6"x90° Bend
Install 10.46 LF 6" C900 Fire Line (N)

Install 8"x157.5° Bend
Install 46.50 LF 8" C900 Fire Line (W)

Building 3

Install Hydrant Assembly

Install 2"x90° Bend
Install 29.30 LF 2" Poly-pipe Domestic Water Line (S)

Existing Storm Structure

Install Isolation Valve

Install 8"x6" Tee
Install 8"x6" Reducer (W)
Install 20.43 LF 6" C900 Fire Line (S)
Install 72 LF 6" C900 Fire Line (W)

Install Hydrant Assembly

Building 2

Existing Public Sanitary Manhole
(#23-169)

Proposed Storm Sewer

Install 8"x6" Tee
Install 234.69 LF 8" C900 Fire Line (S)
Install 19.43 LF 6" C900 Fire Line (W)

Install 8"x6" Tee
Install 3.00 LF 6" C900 Fire Line (S)

Install 8"x135° Bend
Install 93.66 LF 8" C900 Fire Line (SW)

Install Isolation Valve

Install 8"x90° Bend
Install 267.50 LF 8" C900 Fire Line (S)

Install 8"x135° Bend
Install 42.43 LF 8" C900 Fire Line (SW)

Install 8"x8" Tee
Install 16 LF 8" C900 Fire Line (S)
Install 35 LF 8" C900 Fire Line (W)

NORTH
1"=30'
0 15' 30'

Sheet
C16

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Utility Plan 1

| NO. | BY | CD | DATE | REVISION |
|---|---|---|---|---|
| 6 | TCD | MES | 08/21/18 | Per City Comments |
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MITCHELL E. SLUTTER
NUMBER
PE-2002003418
PROFESSIONAL ENGINEER
8-21-18
MITCHELL E. SLUTTER PE-2002003418

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Note:

All Connections Made To Existing Lines Must Limit Shut Down Time To 8 Hours Maximum, and All Work Is To Be Performed At Night To Make These Connections.

Existing Fiber Optic

Cut In 8"x6" Tee to Existing Water Line
Install 32.25 LF 6" C900 Domestic Water Line To Concrete Vault
Install 6" Gate Valve Prior To Vault

Existing Underground Power

Contractor Shall Coordinate With The City For Tapping Main.
City Shall Tap The Main and Install Corporation Stop.
City Will Provide Meter and Meter Well. Pipe Material From Main To 10' Downstream Of Meter Shall Be K Copper Then Transition To Poly-pipe.
Install 26.25 LF 2" K Copper Pipe To Meter.

Ward Road

Existing 8" Water Main

Install 2" Meter (w/ Well Provided By The City)
Install 10 LF 2" K Copper Pipe
Install Copper To Poly-pipe Coupler
Install 6 LF 2" Poly-pipe To 90° Bend (E)

Contractor Shall Coordinate With The City For Tapping Main.
City Shall Tap The Main and Install Corporation Stop. City Will Provide Meter and Meter Well.
Pipe Material From Main To 10' Downstream Of Meter Shall Be K Copper Then Transition To Poly-pipe.
Install 26.25 LF 2" K Copper Pipe To Meter.

Install 2"x90° Bend
Install 32.00 LF 2" Poly-pipe Domestic Water Line (N)
Install 185.78 LF 2" Poly-pipe Domestic Water Line (S)

Install Concrete Vault w/ USC Approved 6" DCVA In Vault
Install 84.48 LF 6" C900 Fire Line (E)

Install 2"x90° Bend
Install 78.00 LF 2" Poly-pipe Domestic Water Line (E)

Install 2" Meter (w/ Well Provided By The City)
Install 10 LF 2" K Copper Pipe
Install Copper To Poly-pipe Coupler
Install 118.25 LF 2" Poly-pipe To Building (E)

Install 23 LF 4" HDPE To Drain Vault
Connect To Curb Inlet

Install Hydrant Assembly

Proposed Storm Sewer

Proposed Fiber Optic Relocation

Install 6" x 6"Tee
Install 8.58 LF 6" C900 Fire Line (E)

Install Isolation Valve

Install 6" x 135° Bend
Install 10 LF 6" C900 Fire Line

Building 1

Install 6" x 6"Tee
Install 8.59 LF 6" C900 Fire Line (E)
Install 70.17 LF 6" C900 Fire Line (S)

Install 6" x 6"Tee
Install 126.69 LF 6" C900 Fire Line (E)
Install 108.79 LF 6" C900 Fire Line (S)

Install Hydrant Assembly

Install 6" x 6"Tee
Install 10.55 LF 6" C900 Fire Line (E)

Existing Fiber Optic
(To Be Relocated)

Install Hydrant Assembly

Building 5

Building 4

Install 6" x 90° Bend
Install 28.50 LF 6" C900 Fire Line (N)

Tudor Road

Proposed Fiber Optic Relocation

Proposed Curb Inlet

Install 23 LF 4" HDPE To Drain Vault
Connect To Curb Inlet

Backflow Vault Drain Pipe Detail

Proposed Private Sanitary Sewer

Existing Public
Sanitary Manhole (#23-163)

Existing Public Sanitary Sewer

NORTH
1"=5'
0 5'

NORTH
1"=20'
0 10' 20'

Sheet
C17

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Utility Plan 2

| NO. | BY | CD. | DATE | REVISION |
|---|---|---|---|---|
| 6 | TCD | MES | 08/21/18 | Per City Comments |
| 5 | TCD | MES | 08/03/18 | 95% Set |
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| 3 | APT | MES | 06/15/18 | 50% Set |
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STATE OF MISSOURI
MITCHELL S. SLUTTER
NUMBER PE-2002003418
PROFESSIONAL ENGINEER
8/21/18
MITCHELL E. SLUTTER PE-2002003418

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LEGEND

Stenciled Curb

Existing Hydrant

Ward Road

Donovan Road

NW TUDOR ROAD

Tudor Road

Building 1

Building 2

Building 3

Building 4

Building 5

Existing Private Drive

Proposed Hydrant
See Lee's Summit Standard Hydrant Detail

Backflow Preventor Vault

Proposed FDC with Knox Box (Typ.)

Proposed 6" C900 Fire Line

Stencil "Fire Lane - No Parking" as Shown in detail (Typ.)

Hydrant Coverage Distance

130'

148'

180'

300'

210'

77'

75'

188'

94'

107'

202'

79'

220'

Surveyed Property Contains:
556,641 S.F.
12.779 Ac.

LOT 2
356,413 S.F.
8.182 Ac.

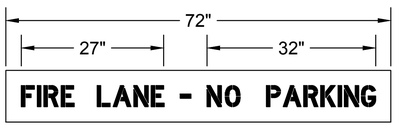
LOT 1
200,230 S.F.
4.597 Ac.

NOTE:

1) See the Water Impact Statement, dated April 13, 2018, included in the original submittal for fire flow calculations and test results.
2) All FDC Shall Be A 4" Storz Type Fitting.

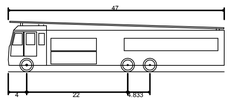
FIRE LANE DESIGNATION

1. Paint curb "Red".
2. Provide "NO PARKING FIRE LANE" stenciled on face of curb with "White" paint every 20'.




FIRE LANE - NO PARKING STENCIL DETAIL

NOT TO SCALE




| | |
|---|---|
| Lee's Summit Design Fire Truck | |
| Overall Length | 47.000ft |
| Overall Width | 8.333ft |
| Overall Body Height | 11.000ft |
| Min Body Ground Clearance | 1.393ft |
| Track Width | 8.333ft |
| Lock-to-lock time | 6.00s |
| Max Wheel Angle | 45.00° |

NORTH

1"=40'

0 20' 40'

| NO. | BY | QD | DATE | REVISION |
|---|---|---|---|---|
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PROFESSIONAL ENGINEER

09-21-18

MITCHELL E. SLUTTER PE-2002003418

Sheet
C18

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Fire Protection Plan

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Sheet
C19

Install 4' Dia. Concrete Manhole, Structure 1B
Sta. 12+01.38, Line 1
N: 1,005,448.92
E: 2,819,759.48
Top: 1007.08
FlIn: 997.48 (N) 8" PVC @ 2.66%
FlOut: 996.15 (S) 8" PVC @ 1.55%
(PRIVATE)

Install 4' Dia. Concrete Manhole, Structure 1C
Sta. 13+86.71, Line 1
N: 1,005,634.03
E: 2,819,768.55
Top: 1008.68
FlIn: 1002.91 (NW)
FlOut: 1002.41 (S) 8" PVC @ 2.66%
(PRIVATE)

Existing Public Concrete Manhole (#23-169), Structure 1A
Sta. 10+00.00, Line 1
N: 1,005,254.06
E: 2,819,810.30
Top: 1004.73
FlIn: 993.09 (NE) 8" PVC @ 1.55%
FlOut: 992.89 (SE) 8" PVC @ 1.12%

Existing Public Concrete Manhole (#23-169)
Top: 1003.29
FlIn: 991.94 (NW) 8" PVC @ 1.18%
FlOut: 991.79 (SE) 8" PVC

Donovan Road

Proposed Waterline

Sta. 11+63.57, Line 1
Install 8" x 6" Wye
FL @ Wye: 995.62

Sanitary Line 1

PRIVATE SEWER

PUBLIC SEWER

10+00

11+00

12+00

13+00

13+

9+15

162°34'44"

152°48'33"

Ditch Check

6" x 45° Sch 40 PVC Bend
FL @ Bend: 996.65

Sta. 12+35.68, Line 1
Install 8" x 8" Wye
FL @ Wye: 998.39

Ditch Check

Ditch Check

8" Sch. 40 PVC
Fl @ Building: 1000.00

Install Directional Cleanout (E)

Building 1
Sanitary FL Exiting Building: 1000.00

Building 2
Sanitary FL Exiting Building: 1003.75

Building 3
Sanitary FL Exiting Building: 1003.75

Install 6" x 45° Sch. 40 PVC Bend
FL @ Bend: 1003.41

6" Sch. 40 PVC
FL @ Building: 1003.75

Install Directional Cleanout (S)

Ditch Check

6" x 45° Sch. 40 PVC Bend
FL @ Bend: 1001.82

6" x 45° Sch. 40 PVC Bend
FL @ Bend: 1002.78

6" Sch. 40 PVC
FL @ Building: 1003.75

Install Directional Cleanout (S)

1A

1B

1C

NORTH

1"=30'

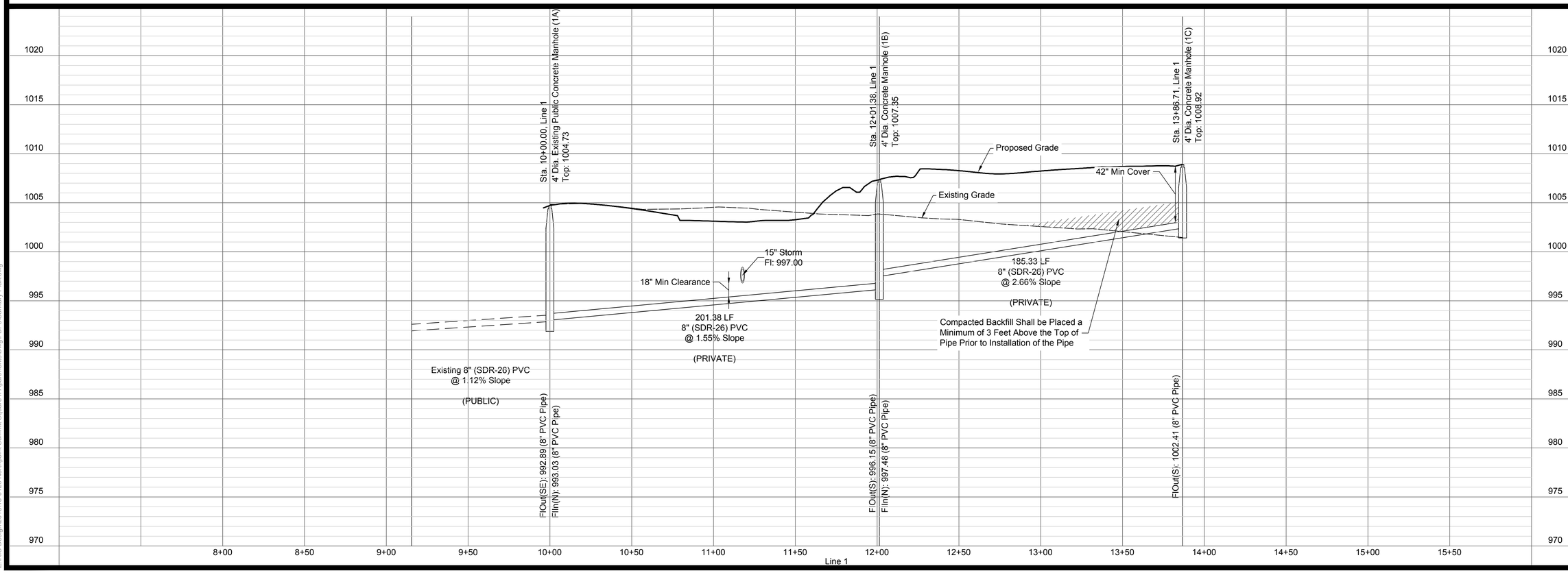
0 15' 30'

5'

0

1"=5'

Note: Sanitary Flowline elevations as they exit the building is provided for information only. Contractor to verify the shown Sanitary Flowlines match MEP plans prior to construction.




Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Sanitary Plan and Profile

Line 1

| NO. | BY | DATE | REVISION |
|---|---|---|---|
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| 1 | APT | MES | 04/13/18 | ORIGINAL SUBMITTAL |


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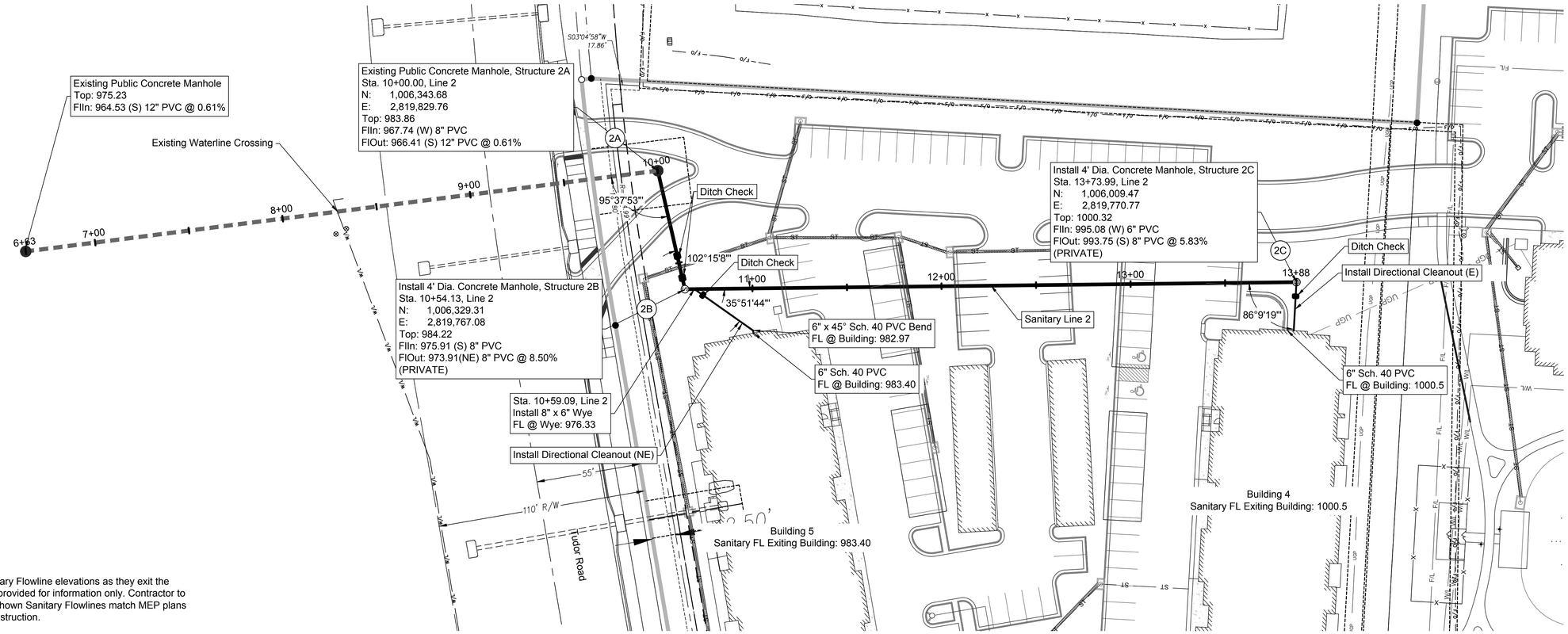


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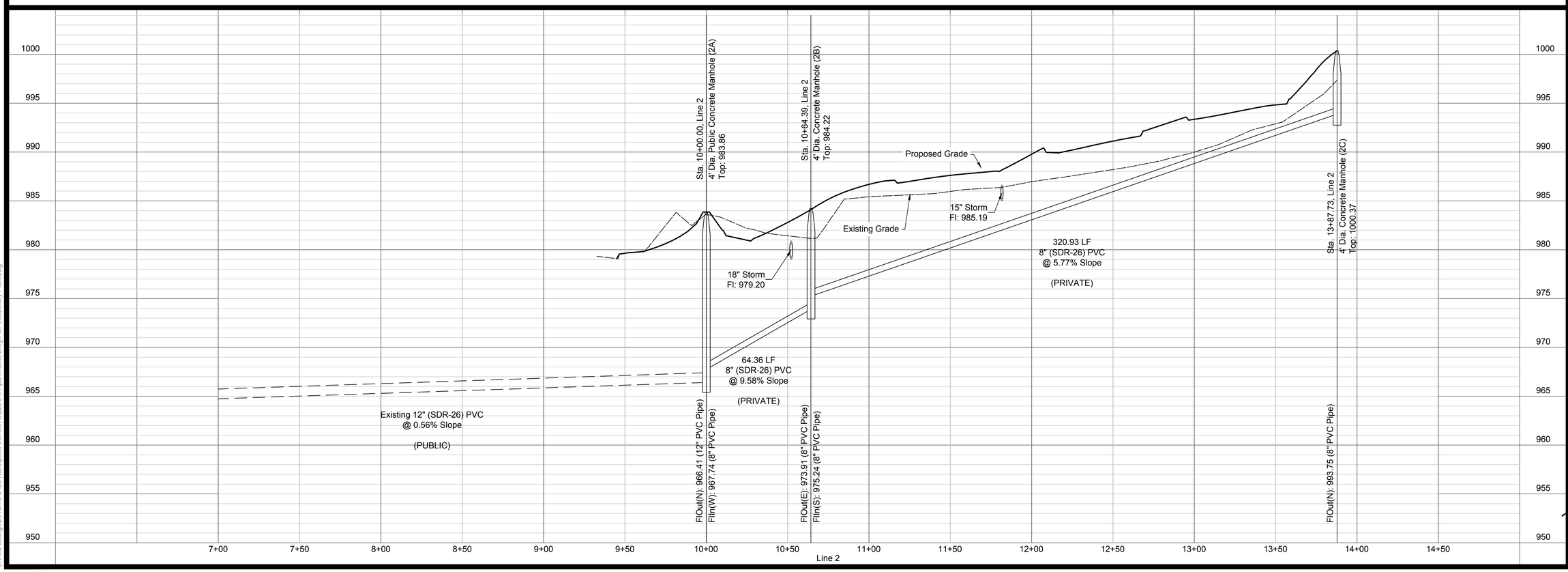


Sheet
C20

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Sanitary Plan and Profile

Line 2

| NO. | BY | DATE | REVISION |
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8/21/18
MITCHELL E. SLUTTER PE-2002003418

Aug 21, 2018-2:33pm
ZRIC Design\2018\18-0129 Northpoint Summit Square II Apartments\Dwg\FDP\Sanitary Plan.dwg


Sheet
C21

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Drainage Area Map

| NO. | BY | CD | DATE | REVISION |
|---|---|---|---|---|
| 6 | TCD | MES | 08/21/18 | Per City Comments |
| 5 | TCD | MES | 08/03/18 | 95% Set |
| 4 | TCD | MES | 07/13/18 | 80% Set |
| 3 | APT | MES | 06/15/18 | 50% Set |
| 2 | APT | MES | 05/14/13 | PER CITY COMMENTS |
| 1 | APT | MES | 04/13/18 | ORIGINAL SUBMITTAL |

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816.800.0950
www.ric-consult.com
Missouri Certificate of Authority No. 2010033630

STATE OF MISSOURI
MITCHELL E. SLUTTER
NUMBER
PE-2002003418
PROFESSIONAL ENGINEER
8/21/18
MITCHELL E. SLUTTER PE-2002003418

Aug 21, 2018-2:34pm
Z:\RIC Design\2018\18-0129 Northpoint Summit Square II Apartments\Dwg\FDP\Drainage Calculations.dwg

| | | Overland Flow | | | | | | | | | System Flow | | | | | Pipe Design | | | | | | | | | | | | | Structure Design | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Line | Point | Trib. Area (Ac.) | "C" Value | Design Storm | "K" Value | Time of Conc. (min.) | Intensity i (in./hr.) | Trib Runoff (cfs) | Bypass flow (cfs) | Total Runoff (cfs) | Total Area (Ac.) | Total (K*A*C) | Time of Conc. (min.) | Intensity i (in./hr.) | System Discharge (cfs) | U/S Node | D/S Node | Pipe Type | Pipe Shape | Pipe Diameter (in.) | Pipe Length (ft.) | Mannings "n" value | Pipe Slope (%) | Design Flow (cfs) | Pipe Capacity (cfs) | Full Flow Velocity (fps) | Design Flow Velocity (fps) | Depth of Flow (in.) | Flow Time (min.) | U/S Invert El. | U/S Crown El. | D/S Invert El. | D/S Crown El. | U/S Depth of Cover (ft.) | D/S Depth of Cover (ft.) | Headwater Inlet Elev. (EGL) | Headwater Outlet Elev. (EGL) | Inlet/Outlet Control | Top Elevation |
| | A3 | 1.007 | 0.70 | 10 | 1 | 5.00 | 7.35 | 5.15 | 0.00 | 5.15 | 1.007 | 0.70 | 5.00 | 7.35 | 5.15 | A3 | A2 | HDPE | Round | 15 | 160.80 | 0.012 | 1.00 | 5.15 | 6.98 | 5.68 | 6.19 | 9.5 | 0.43 | 999.51 | 1000.76 | 997.90 | 999.15 | 1.50 | 7.15 | 1000.44 | 999.28 | I | 1002.26 |
| | | | | 100 | 1.25 | | 10.32 | 9.04 | 0.00 | 9.04 | | 0.88 | | 10.32 | 9.04 | | | | | | | | | 9.04 | | | 5.68 | 15.0 | 0.47 | | | | | | | | | | |
| A | A2 | 0.518 | 0.86 | 10 | 1 | 5.00 | 7.35 | 3.27 | 0.00 | 3.27 | 1.525 | 1.14 | 5.47 | 7.21 | 8.26 | A2 | XA1 | HDPE | Round | 15 | 29.86 | 0.012 | 7.37 | 8.26 | 18.92 | 15.42 | 14.86 | 6.9 | 0.03 | 995.00 | 996.25 | 992.80 | 994.05 | 10.05 | 4.65 | 995.80 | 996.81 | O | 1006.30 |
| | | | | 100 | 1.25 | | 10.32 | 5.34 | 0.00 | 5.34 | | 1.39 | | 10.13 | 14.11 | | | | | | | | | 14.11 | | | 16.87 | 9.6 | 0.03 | | | | | | | | | | |
| Existing Inlet | XA1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 998.70 |
| | B8 | 0.169 | 0.70 | 10 | 1 | 5.00 | 7.35 | 0.87 | 0.00 | 0.87 | 0.169 | 0.12 | 5.00 | 7.35 | 0.87 | B8 | B7 | HDPE | Round | 15 | 63.04 | 0.012 | 0.34 | 0.87 | 4.04 | 3.29 | 2.60 | 4.7 | 0.40 | 1003.62 | 1004.87 | 1003.41 | 1004.66 | 1.93 | 1.64 | 1004.03 | 1003.90 | I | 1006.80 |
| | | | | 100 | 1.25 | | 10.32 | 1.52 | 0.00 | 1.52 | | 0.15 | | 10.32 | 1.52 | | | | | | | | | 1.52 | | | 3.04 | 6.3 | 0.35 | | | | | | | | | | |
| | B7 | 0.332 | 0.84 | 10 | 1 | 5.00 | 7.35 | 2.05 | 0.00 | 2.05 | 0.501 | 0.40 | 5.40 | 7.23 | 2.87 | B7 | B6 | HDPE | Round | 15 | 171.00 | 0.012 | 0.82 | 2.87 | 6.33 | 5.15 | 5.02 | 7.1 | 0.57 | 1002.91 | 1004.16 | 1001.50 | 1002.75 | 2.14 | 2.88 | 1003.57 | 1002.48 | I | 1006.30 |
| | | | | 100 | 1.25 | | 10.32 | 3.42 | 0.00 | 3.42 | | 0.48 | | 10.16 | 4.87 | | | | | | | | | 4.87 | | | 5.67 | 9.8 | 0.50 | | | | | | | | | | |
| | B6 | 0.595 | 0.86 | 10 | 1 | 5.00 | 7.35 | 3.77 | 0.00 | 3.77 | 1.096 | 0.91 | 5.97 | 7.06 | 6.43 | B6 | B5 | HDPE | Round | 15 | 55.22 | 0.012 | 2.72 | 6.43 | 11.49 | 9.36 | 9.59 | 8.0 | 0.10 | 1001.00 | 1002.25 | 999.50 | 1000.75 | 3.38 | 3.65 | 1001.83 | 1001.59 | I | 1005.63 |
| | | | | 100 | 1.25 | | 10.32 | 6.14 | 0.00 | 6.14 | | 1.07 | | 9.93 | 10.67 | | | | | | | | | 10.67 | | | 10.63 | 11.4 | 0.09 | | | | | | | | | | |
| | B5 | 0.091 | 0.746 | 10 | 1 | 5.00 | 7.35 | 0.50 | 0.00 | 0.50 | 1.187 | 0.98 | 6.07 | 7.04 | 6.88 | B5 | B4 | HDPE | Round | 15 | 96.27 | 0.012 | 4.18 | 6.88 | 14.25 | 11.61 | 11.40 | 7.2 | 0.14 | 999.00 | 1000.25 | 994.98 | 996.23 | 4.15 | 6.31 | 999.78 | 997.60 | I | 1004.40 |
| | | | | 100 | 1.25 | | 10.32 | 0.88 | 0.00 | 0.88 | | 1.16 | | 9.90 | 11.47 | | | | | | | | | 11.47 | | | 12.86 | 10.1 | 0.12 | | | | | | | | | | |
| | B4 | 0.000 | 0.90 | 10 | 1 | 5.00 | 7.35 | 0.00 | 0.00 | 0.00 | 1.187 | 0.98 | 6.21 | 7.00 | 6.84 | B4 | B3 | HDPE | Round | 24 | 151.91 | 0.012 | 0.72 | 6.84 | 20.71 | 6.59 | 5.87 | 9.4 | 0.43 | 994.25 | 996.25 | 993.16 | 995.16 | 6.29 | 2.84 | 995.06 | 994.48 | I | 1002.54 |
| | | | | 100 | 1.25 | | 10.32 | 0.00 | 0.00 | 0.00 | | 1.16 | | 9.84 | 11.41 | | | | | | | | | 11.41 | | | 6.70 | 12.5 | 0.38 | | | | | | | | | | |
| | B3 | 0.777 | 0.62 | 10 | 1 | 5.00 | 7.35 | 3.57 | 0.00 | 3.57 | 1.964 | 1.46 | 6.64 | 6.88 | 10.07 | B3 | B2 | RCP | Round | 24 | 219.89 | 0.013 | 0.78 | 10.07 | 19.90 | 6.34 | 6.34 | 12.0 | 0.58 | 992.66 | 994.66 | 990.95 | 992.95 | 3.34 | 5.09 | 993.70 | 992.57 | I | 998.00 |
| | | | | 100 | 1.25 | | 10.32 | 6.27 | 0.00 | 6.27 | | 1.77 | | 9.68 | 17.10 | | | | | | | | | 17.10 | | | 7.12 | 17.0 | 0.52 | | | | | | | | | | |
| Add Line C | B2 | 0.277 | 0.79 | 10 | 1 | 5.00 | 7.35 | 1.61 | 0.00 | 1.61 | 2.872 | 2.23 | 7.22 | 6.73 | 14.98 | B2 | XB1 | HDPE | Round | 24 | 49.12 | 0.012 | 3.81 | 14.98 | 47.73 | 15.19 | 13.36 | 9.1 | 0.06 | 990.45 | 992.45 | 988.58 | 990.58 | 5.59 | -0.43 | 991.27 | 992.11 | O | 998.04 |
| | | | | 100 | 1.25 | | 10.32 | 2.83 | 0.00 | 2.83 | | 2.67 | | 9.48 | 25.31 | | | | | | | | | 25.31 | | | 15.32 | 12.2 | 0.05 | | | | | | | | | | |
| Existing Inlet | XB1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 990.15 |
| | C4 | SEE POND PLAN CALCULATIONS | | | | | | | | | | | | | 11.52 | C4 | C3 | HDPE | Round | 15 | 143.21 | 0.012 | 5.08 | 11.52 | 15.71 | 12.80 | 13.94 | 9.5 | 0.17 | 1002.50 | 1003.75 | 995.23 | 996.48 | 1.25 | 5.51 | 1003.56 | 999.04 | I | 1005.00 |
| | | | | | | | | | | | | | | | 16.87 | | | | | | | | | 16.87 | | | 14.27 | 13.8 | 0.17 | | | | | | | | | | |
| | C3 | 0.000 | 0.00 | 10 | 1 | 5.00 | 7.35 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 | 5.17 | 7.30 | 11.52 | C3 | C2 | HDPE | Round | 21 | 62.97 | 0.012 | 0.97 | 11.52 | 16.87 | 7.01 | 7.52 | 12.6 | 0.14 | 994.73 | 996.48 | 994.12 | 995.87 | 5.51 | 2.48 | 995.85 | 996.05 | O | 1001.99 |
| | | | | 100 | 1.25 | | 10.32 | 0.00 | 0.00 | 0.00 | | 0.00 | | 10.25 | 16.87 | | | | | | | | | 16.87 | | | 8.00 | 17.0 | 0.13 | | | | | | | | | | |
| | C2 | 0.388 | 0.86 | 10 | 1 | 5.00 | 7.35 | 2.46 | 0.00 | 2.46 | 0.388 | 0.33 | 5.31 | 7.26 | 13.94 | C2 | C1 | HDPE | Round | 24 | 162.00 | 0.012 | 0.85 | 13.94 | 22.50 | 7.16 | 7.49 | 13.4 | 0.36 | 993.62 | 995.62 | 992.25 | 994.25 | 2.73 | 4.10 | 994.79 | 994.24 | I | 998.35 |
| | | | | 100 | 1.25 | | 10.32 | 4.01 | 0.00 | 4.01 | | 0.39 | | 10.19 | 20.83 | | | | | | | | | 20.83 | | | 8.12 | 18.0 | 0.33 | | | | | | | | | | |
| | C1 | 0.242 | 0.87 | 10 | 1 | 5.00 | 7.35 | 1.55 | 0.00 | 1.55 | 0.631 | 0.54 | 5.67 | 7.15 | 15.41 | C1 | B2 | RCP | Round | 24 | 70.53 | 0.013 | 1.13 | 15.41 | 24.00 | 7.64 | 8.10 | 13.9 | 0.15 | 991.75 | 993.75 | 990.95 | 992.95 | 4.60 | 5.09 | 992.96 | 993.13 | O | 998.35 |
| | | | | 100 | 1.25 | | 10.32 | 2.50 | 0.00 | 2.50 | | 0.63 | | 10.05 | 23.21 | | | | | | | | | 23.21 | | | 8.70 | 19.0 | 0.14 | | | | | | | | | | |
| Line B | B2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 998.04
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 995.12 | | 993.75 | | | | | | | |
| | D7 | 0.238 | 0.81 | 10 | 1 | 5.00 | 7.35 | 1.42 | 0.00 | 1.42 | 0.238 | 0.19 | 5.00 | 7.35 | 1.42 | D7 | D6 | HDPE | Round | 15 | 90.43 | 0.012 | 3.32 | 1.42 | 12.70 | 10.35 | 6.73 | 3.3 | 0.22 | 989.50 | 990.75 | 986.50 | 987.75 | 2.35 | 1.79 | 989.81 | 987.48 | I | 993.10 |
| | | | | 100 | 1.25 | | 10.32 | 2.45 | 0.00 | 2.45 | | 0.24 | | 10.32 | 2.45 | | | | | | | | | 2.45 | | | 7.88 | 4.4 | 0.19 | | | | | | | | | | |
| | D6 | 0.216 | 0.76 | 10 | 1 | 5.00 | 7.35 | 1.20 | 0.00 | 1.20 | 0.454 | 0.36 | 5.22 | 7.28 | 2.60 | D6 | D5 | HDPE | Round | 15 | 27.89 | 0.012 | 4.30 | 2.60 | 14.46 | 11.78 | 8.80 | 4.2 | 0.05 | 986.30 | 987.55 | 985.10 | 986.35 | 1.99 | 1.88 | 986.72 | 986.65 | I | 989.54 |
| | | | | 100 | 1.25 | | 10.32 | 2.11 | 0.00 | 2.11 | | 0.44 | | 10.23 | 4.52 | | | | | | | | | 4.52 | | | 10.36 | 5.7 | 0.04 | | | | | | | | | | |
| Add Line E | D5 | 0.000 | 0.00 | 10 | 1 | 5.00 | 7.35 | 0.00 | 0.00 | 0.00 | 0.820 | 0.65 | 5.56 | 7.19 | 4.69 | D5 | D4 | HDPE | Round | 15 | 64.90 | 0.012 | 4.08 | 4.69 | 14.09 | 11.48 | 10.23 | 5.9 | 0.11 | 984.90 | 986.15 | 982.25 | 983.50 | 2.08 | 2.35 | 985.52 | 984.36 | I | 988.23 |
| | | | | 100 | 1.25 | | 10.32 | 0.00 | 0.00 | 0.00 | | 0.81 | | 10.10 | 8.16 | | | | | | | | | 8.16 | | | 11.85 | 8.1 | 0.09 | | | | | | | | | | |
| Add Line F | D4 | 0.166 | 0.73 | 10 | 1 | 5.00 | 7.35 | 0.89 | 0.00 | 0.89 | 5.133 | 4.38 | 5.66 | 7.15 | 31.36 | D4 | D3 | HDPE | Round | 18 | 73.22 | 0.012 | 4.03 | 31.36 | 22.77 | 12.88 | 12.88 | 18.0 | 0.09 | 981.30 | 982.80 | 978.35 | 979.85 | 3.05 | 1.84 | 983.20 | 982.43 | I | 985.85 |
| | | | | 100 | 1.25 | | 10.32 | 1.57 | 0.00 | 1.57 | | 5.11 | | 10.05 | 51.36 | | | | | | | | | 51.36 | | | 12.88 | 18.0 | 0.09 | | | | | | | | | | |
| | D3 | 0.000 | 0.00 | 10 | 1 | 5.00 | 7.35 | 0.00 | 0.00 | 0.00 | 5.133 | 4.38 | 5.76 | 7.13 | 31.24 | D3 | D2 | HDPE | Round | 24 | 125.85 | 0.012 | 2.46 | 31.24 | 38.38 | 12.22 | 13.59 | 16.3 | 0.15 | 978.10 | 980.10 | 975.00 | 977.00 | 1.59 | 8.04 | 979.59 | 979.23 | I | 981.69 |
| | | | | 100 | 1.25 | | 10.32 | 0.00 | 0.00 | 0.00 | | 5.11 | | 10.02 | 51.17 | | | | | | | | | 51.17 | | | 12.22 | 24.0 | 0.17 | | | | | | | | | | |
| Add Line G | D2 | 0.000 | 0.00 | 10 | 1 | 5.00 | 7.35 | 0.00 | 0.00 | 0.00 | 6.862 | 5.61 | 6.99 | 6.79 | 38.10 | D2 | XD1 | RCP | Round | 24 | 36.52 | 0.013 | 3.09 | 38.10 | 39.70 | 12.64 | 14.38 | 18.7 | 0.04 | 974.50 | 976.50 | 973.37 | 975.37 | 8.54 | 2.60 | 976.21 | 978.14 | O | 985.04 |
| | | | | 100 | 1.25 | | 10.32 | 0.00 | 0.00 | 0.00 | | 6.58 | | 9.56 | 62.87 | | | | | | | | | 62.87 | | | 12.64 | 24.0 | 0.05 | | | | | | | | | | |
| Existing Inlet | XD1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 977.97
| | E1 | 0.366 | 0.81 | 10 | 1 | 5.00 | 7.35 | 2.17 | 0.00 | 2.17 | 0.366 | 0.30 | 5.00 | 7.35 | 2.17 | E1 | D5 | HDPE | Round | 15 | 113.38 | 0.012 | 0.35 | 2.17 | 4.14 | 3.37 | 3.40 | 7.7 | 0.56 | 985.50 | 986.75 | 985.10 | 986.35 | 1.76 | 1.88 | 986.20 | 985.92 | I | 988.51 |
| | | | | 100 | 1.25 | | 10.32 | 3.78 | 0.00 | 3.78 | | 0.37 | | 10.32 | 3.78 | | | | | | | | | 3.78 | | | 3.82 | 11.3 | 0.49 | | | | | | | | | | |
| | D5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 988.23
| | F1 | 4.148 | 0.87 | 10 | 1 | 5.00 | 7.35 | 26.54 | 0.00 | 26.54 | 4.148 | 3.61 | 5.00 | 7.35 | 26.54 | F1 | D4 | HDPE | Round | 18 | 61.06 | 0.012 | 1.64 | 26.54 | 14.52 | 8.21 | 8.21 | 18.0 | 0.12 | 982.50 | 984.00 | 981.50 | 983.00 | 1.29 | 2.85 | 984.33 | 984.05 | I | 985.29 |
| | | | | 100 | 1.25 | | 10.32 | 42.82 | 0.00 | 42.82 | | 4.15 | | 10.32 | 42.82 | | | | | | | | | 42.82 | | | 8.21 | 18.0 | 0.12 | | | | | | | | | | |
| | D4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 985.85
| | G5 | 0.485 | 0.90 | 10 | 1 | 5.00 | 7.35 | 3.21 | 0.00 | 3.21 | 0.485 | 0.44 | 5.12 | 7.31 | 3.19 | G5 | G4 | HDPE | Round | 15 | 90.73 | 0.012 | 6.89 | 3.19 | 18.30 | 14.91 | 11.14 | 4.2 | 0.14 | 991.25 | 992.50 | 985.00 | 986.25 | 1.25 | 1.96 | 991.68 | 987.28 | I | 993.75 |
| | | | | 100 | 1.25 | | 10.32 | 5.01 | 0.00 | 5.01 | | 0.48 | | 10.27 | 4.98 | | | | | | | | | 4.98 | | | 12.57 | 5.3 | 0.12 | | | | | | | | | | |
| | G4 | 0.502 | 0.70 | 10 | 1 | 5.00 | 7.35 | 2.58 | 0.00 | 2.58 | 0.986 | 0.79 | 5.26 | 7.27 | 5.72 | G4 | G3 | HDPE | Round | 15 | 120.32 | 0.012 | 0.66 | 5.72 | 5.68 | 4.63 | 5.28 | 12.3 | 0.38 | 984.80 | 986.05 | 984.00 | 985.25 | 2.16 | 4.48 | 985.98 | 985.46 | I | 988.21 |
| | | | | 100 | 1.25 | | 10.32 | 4.52 | 0.00 | 4.52 | | 0.92 | | 10.22 | 9.43 | | | | | | | | | 9.43 | | | 4.63 | 15.0 | 0.43 | | | | | | | | | | |
| Add Line H | G3 | 0.000 | 0.00 | 10 | 1 | 5.00 | 7.35 | 0.00 | 0.00 | 0.00 | 1.061 | 0.85 | 5.69 | 7.15 | 6.09 | G3 | G2 | HDPE | Round | 15 | 69.95 | 0.012 | 0.93 | 6.09 | 6.72 | 5.48 | 6.19 | 11.1 | 0.19 | 983.80 | 985.05 | 983.15 | 984.40 | 4.68 | 2.85 | 984.89 | 984.67 | I | 989.73 |
| | | | | 100 | 1.25 | | 10.32 | 0.00 | 0.00 | 0.00 | | 1.00 | | 10.04 | 10.02 | | | | | | | | | 10.02 | | | 5.48 | 15.0 | 0.21 | | | | | | | | | | |
| | G2 | 0.667 | 0.57 | 10 | 1 | 5.00 | 7.35 | 2.78 | 0.00 | 2.78 | 1.728 | 1.23 | 5.91 | 7.08 | 8.72 | G2 | G1 | HDPE | Round | 18 | 100.44 | 0.012 | 0.90 | 8.72 | 10.74 | 6.08 | 6.76 | 12.2 | 0.25 | 982.90 | 984.40 | 982.00 | 983.50 | 2.85 | 1.81 | 984.03 | 983.73 | I | 987.25 |
| | | | | 100 | 1.25 | | 10.32 | 4.88 | 0.00 | 4.88 | | 1.47 | | 9.96 | 14.65 | | | | | | | | | 14.65 | | | 6.08 | 18.0 | 0.28 | | | | | | | | | | |
| | G1 | 0.000 | 0.00 | 10 | 1 | 5.00 | 7.35 | 0.00 | 0.00 | 0.00 | 1.728 | 1.23 | 6.18 | 7.01 | 8.63 | G1 | D2 | HDPE | Round | 18 | 197.61 | 0.012 | 0.40 | 8.63 | 7.22 | 4.08 | 4.08 | 18.0 | 0.81 | 981.80 | 983.30 | 981.00 | 982.50 | 2.01 | 2.54 | 983.41 | 982.76 | I | 985.31 |
| | | | | 100 | 1.25 | | 10.32 | 0.00 | 0.00 | 0.00 | | 1.47 | | 9.85 | 14.50 | | | | | | | | | 14.50 | | | 4.08 | 18.0 | 0.81 | | | | | | | | | | |
| | D2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 985.04
| | H1 | 0.075 | 0.88 | 10 | 1 | 5.00 | 7.35 | 0.48 | 0.00 | 0.48 | 0.075 | 0.07 | 5.00 | 7.35 | 0.48 | H1 | G3 | HDPE | Round | 15 | 41.97 | 0.012 | 4.77 | 0.48 | 15.22 | 12.40 | 5.58 | 1.8 | 0.13 | 986.00 | 987.25 | 984.00 | 985.25 | 4.55 | 4.48 | 986.16 | 984.63 | I | 991.80 |
| | | | | 100 | 1.25 | | 10.32 | 0.77 | 0.00 | 0.77 | | 0.07 | | 10.32 | 0.77 | | | | | | | | | 0.77 | | | 6.41 | 2.3 | 0.11 | | | | | | | | | | |
| | G3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 989.73

Sheet
C21

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Drainage Calculations

| NO. | BY | DATE | REVISION |
|---|---|---|---|
| 6 | TCD | MES | 08/21/18 | Per City Comments |
| 5 | TCD | MES | 08/03/18 | 95% Set |
| 4 | TCD | MES | 07/13/18 | 80% Set |
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MITCHELL
SLUTTER
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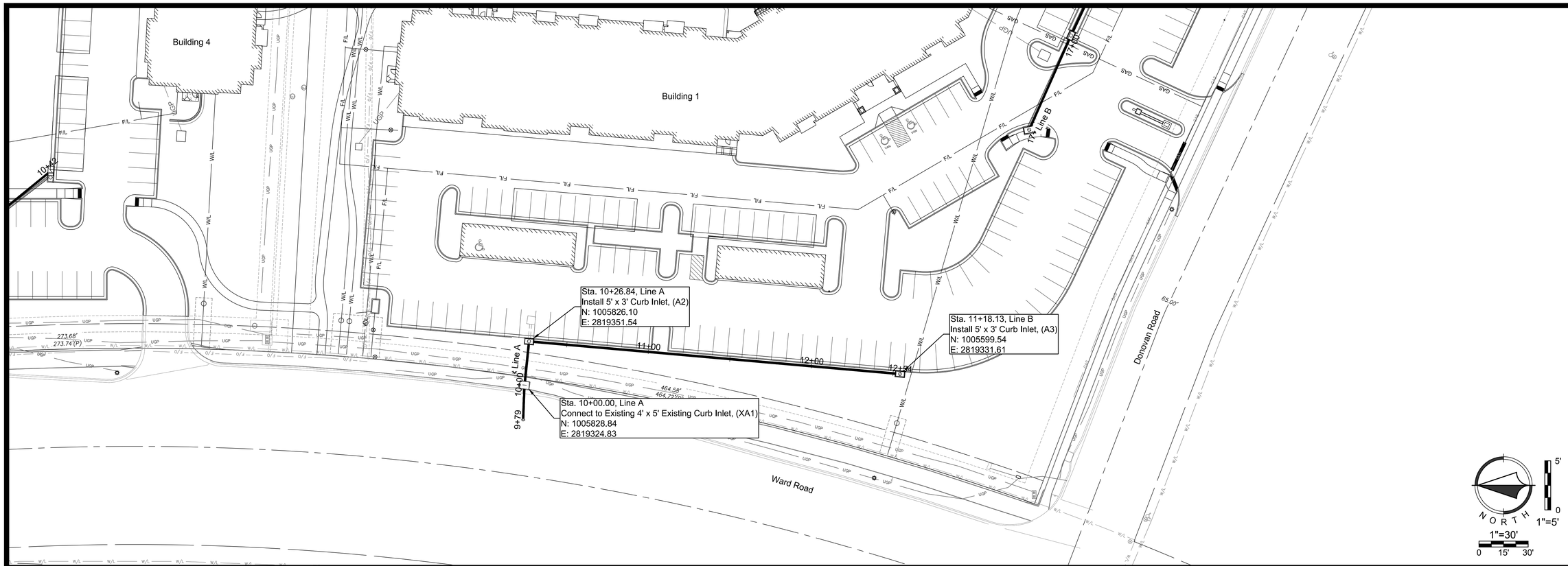
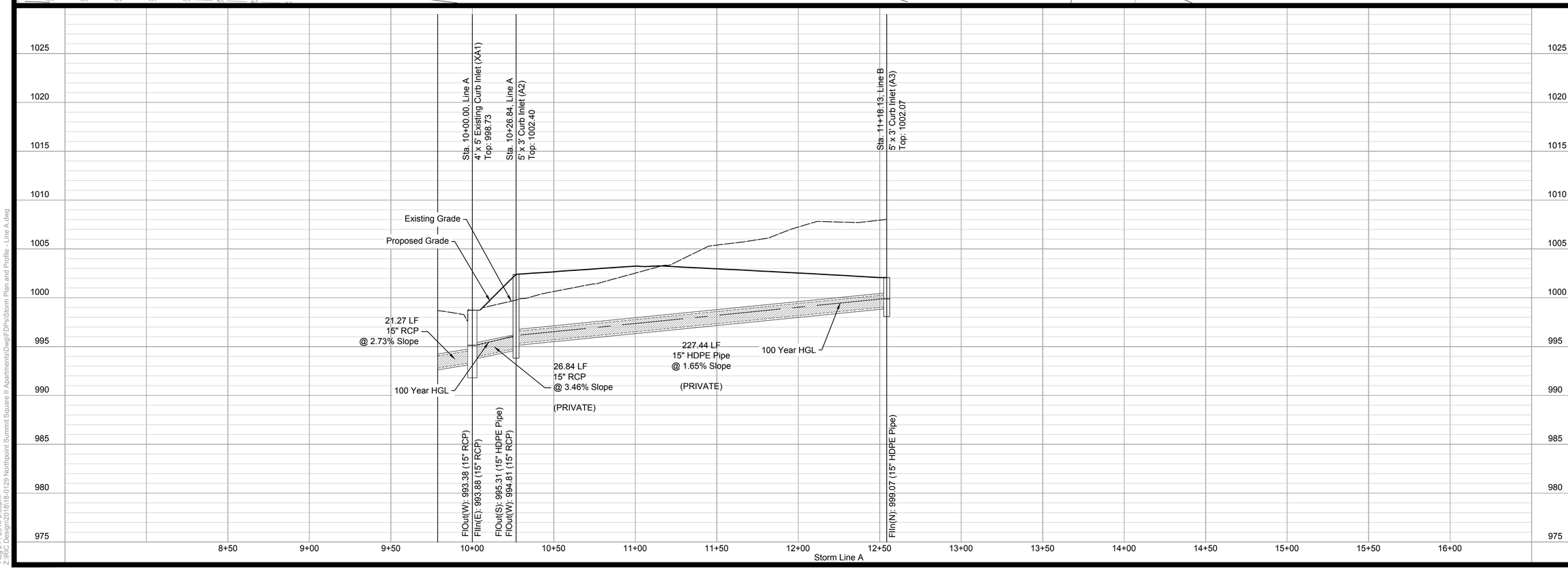
PROFESSIONAL ENGINEER
8/21/18
MITCHELL E. SLUTTER PE-2002003418




Sheet
C23

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Storm Plan and Profile

Line A

| NO. | BY | CKD | DATE | REVISION |
|---|---|---|---|---|
| 6 | TCD | MES | 08/21/18 | Per City Comments |
| 5 | TCD | MES | 08/03/18 | 95% Set |
| 4 | TCD | MES | 07/13/18 | 80% Set |
| 3 | APT | MES | 06/15/18 | 50% Set |
| 2 | APT | MES | 05/14/13 | PER CITY COMMENTS |
| 1 | APT | MES | 04/13/18 | ORIGINAL SUBMITTAL |

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SLUTTER
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PROFESSIONAL ENGINEER
8-21-18
MITCHELL E. SLUTTER PE-2002003418

Aug 21, 2018-2:35pm
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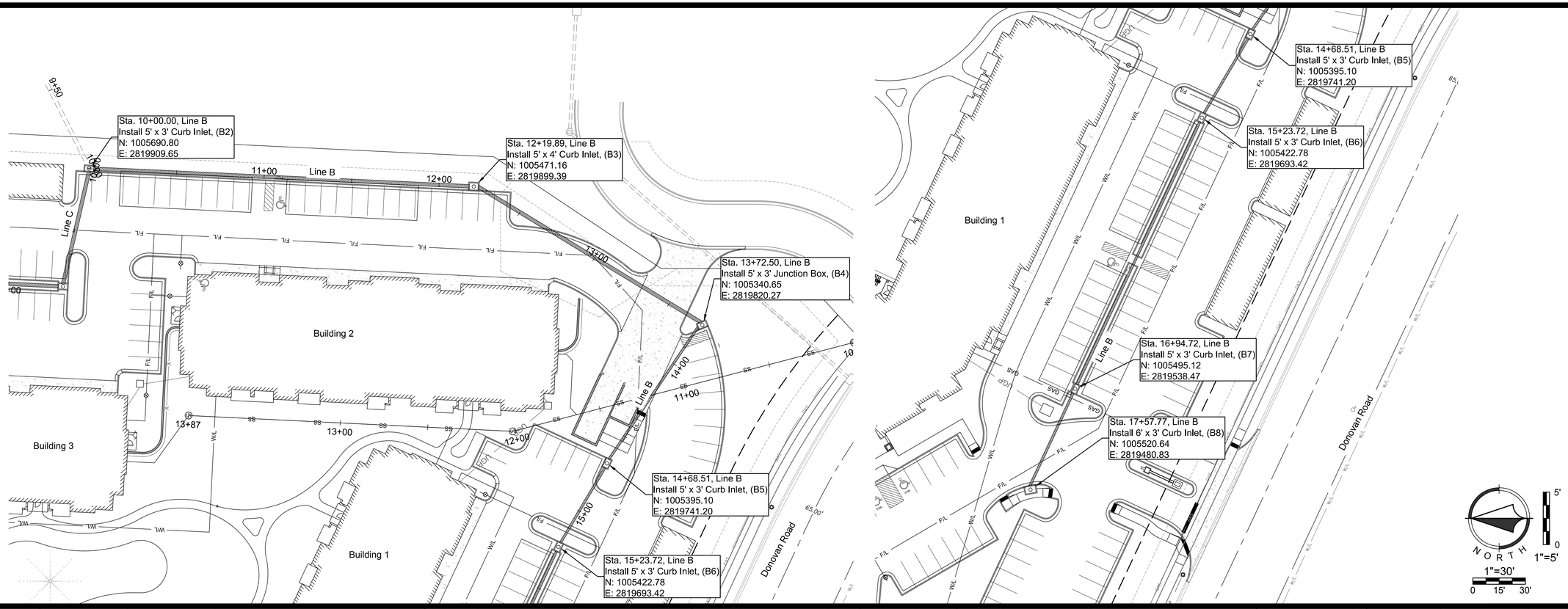


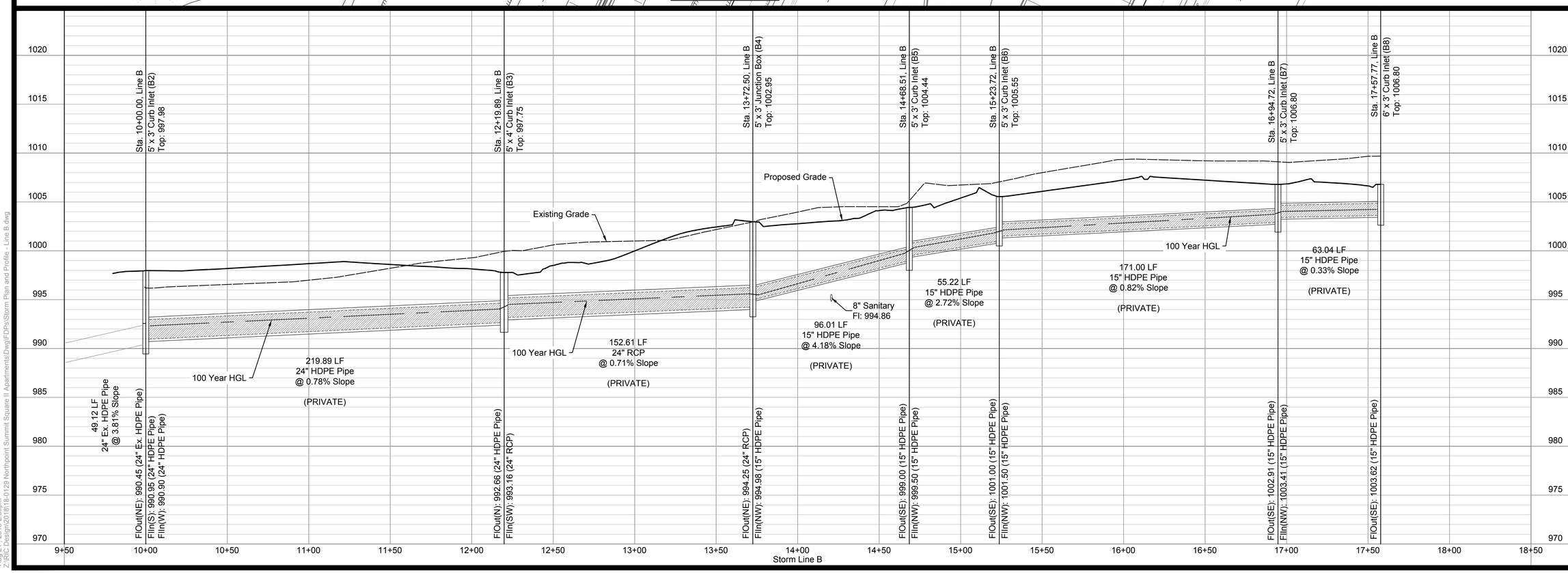


Sheet
C24

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Storm Plan and Profile

Line B

| NO | BY | DATE | REVISION |
|---|---|---|---|
| 6 | TCD | MES | 08/21/18 | Per City Comments |
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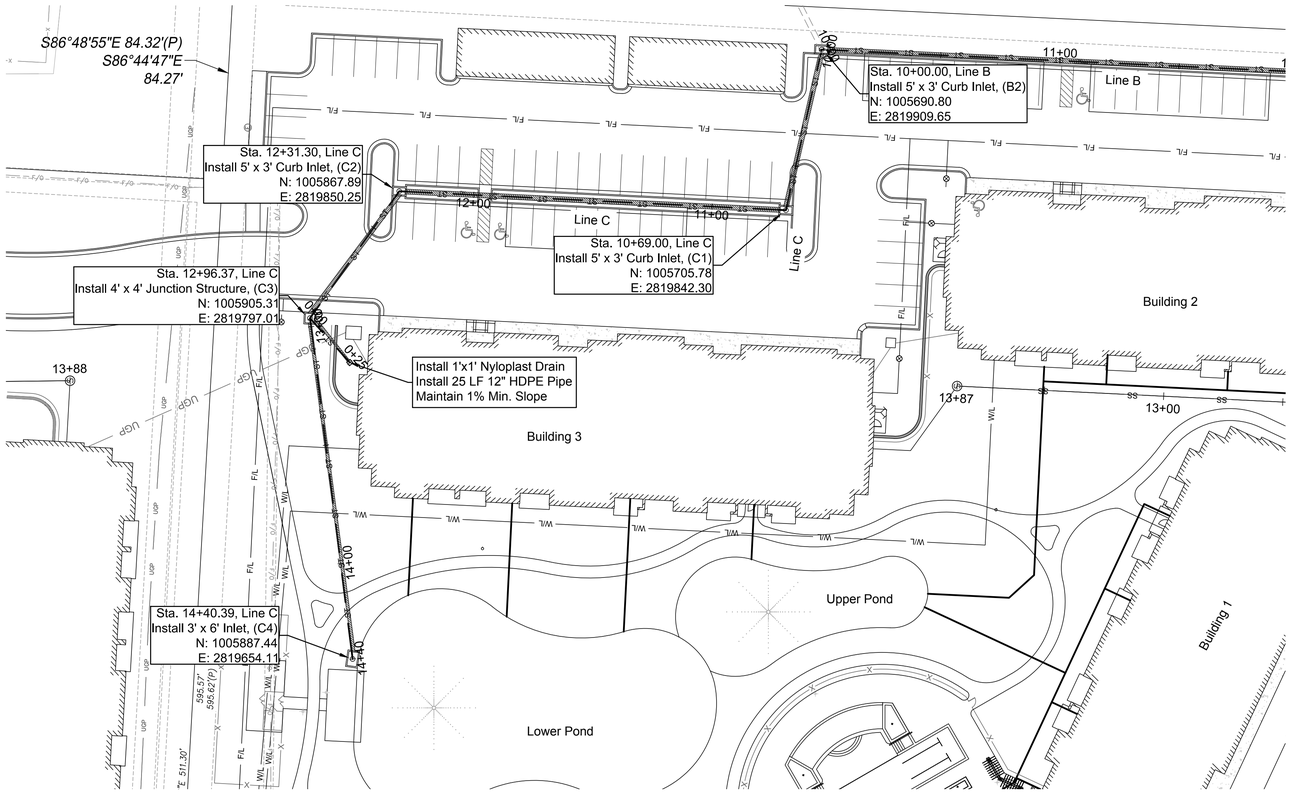


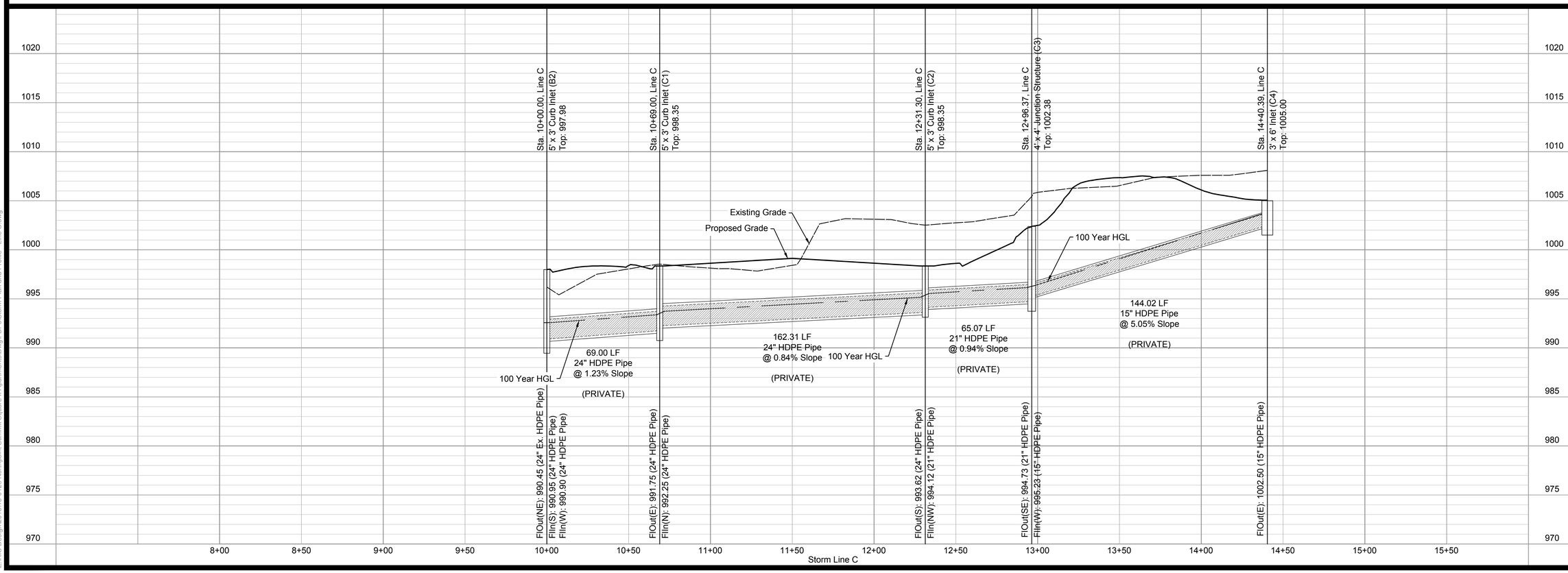


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C25

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Storm Plan and Profile

Line C

| NO | BY | DATE | REVISION |
|---|---|---|---|
| 6 | TCD | MES | 08/21/18 | Per City Comments |
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| 4 | TCD | MES | 07/13/18 | 80% Set |
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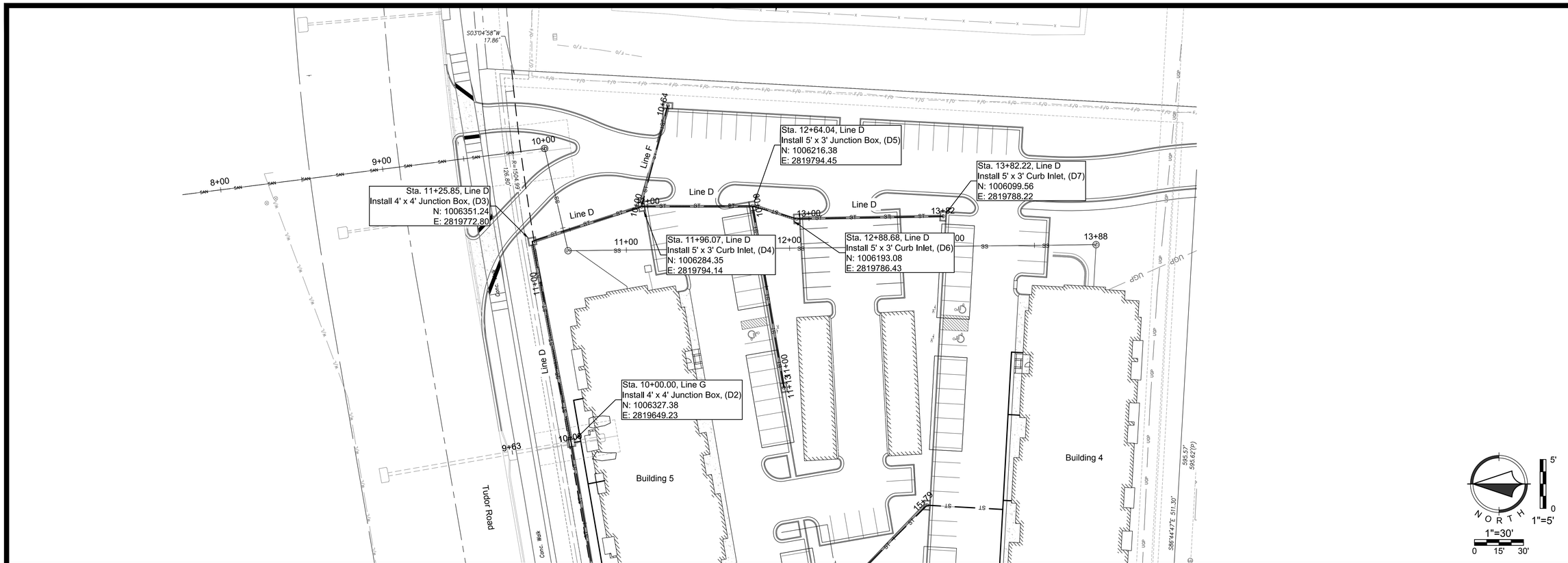


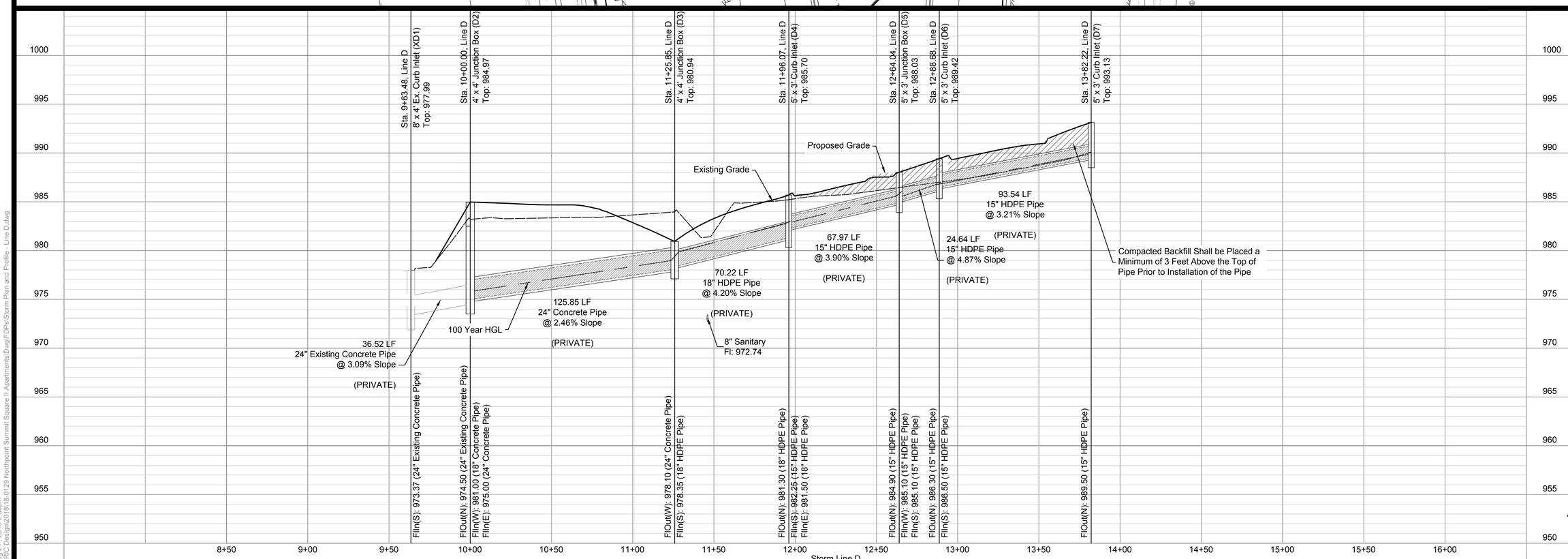


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C26

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Storm Plan and Profile

Line D

| NO. | BY | CD | DATE | REVISION |
|---|---|---|---|---|
| 6 | TCD | MES | 08/21/18 | Per City Comments |
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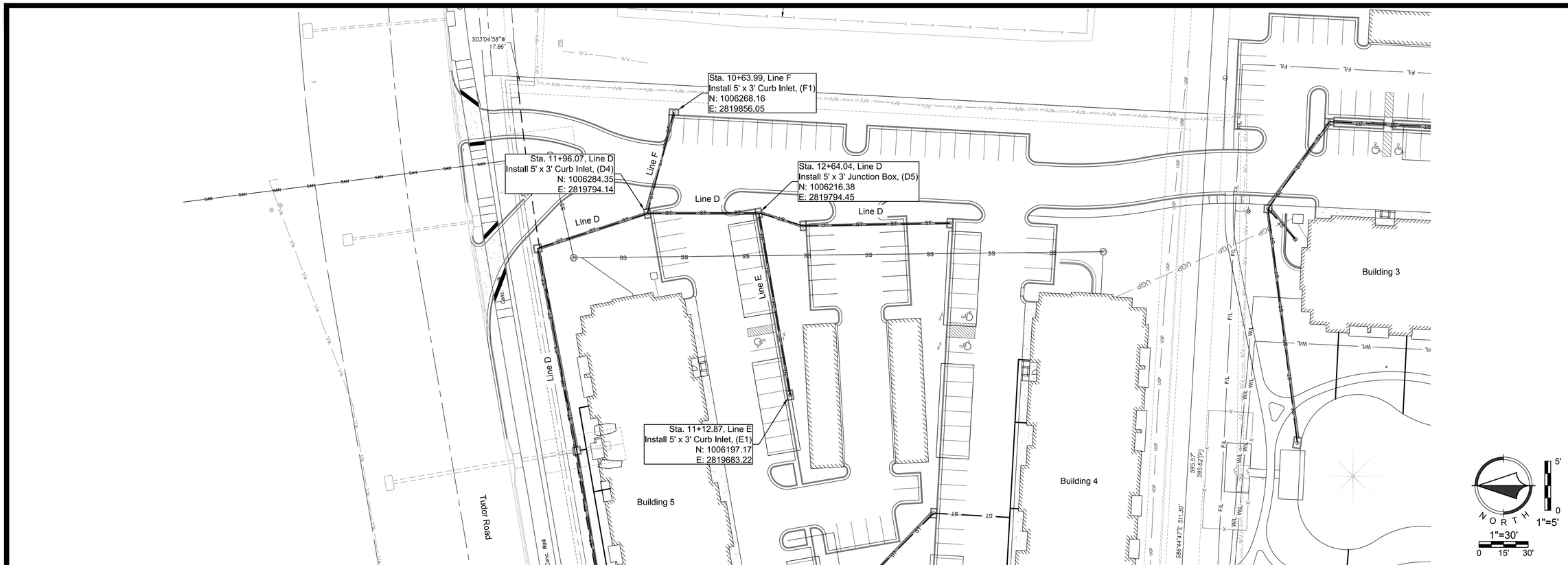



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C27

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Storm Plan and Profile

Lines E & F

| NO. | BY | DATE | REVISION |
|---|---|---|---|
| 6 | TCD | MES | 08/21/18 | Per City Comments |
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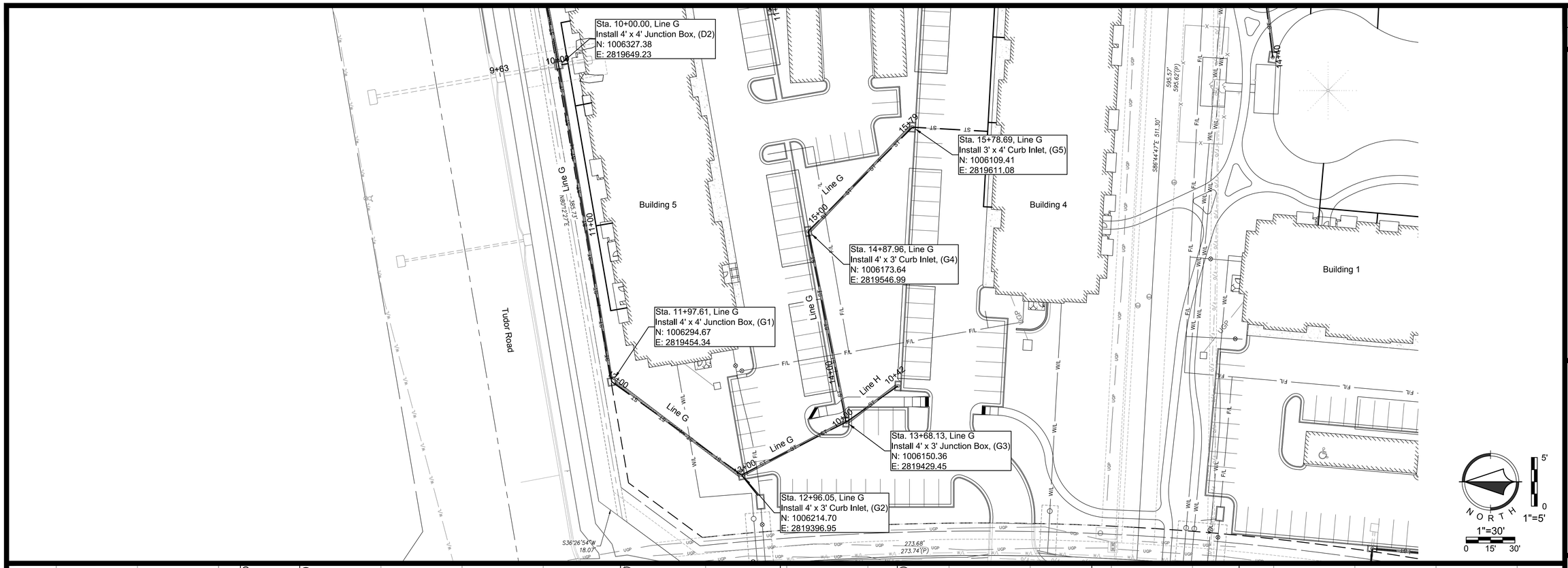


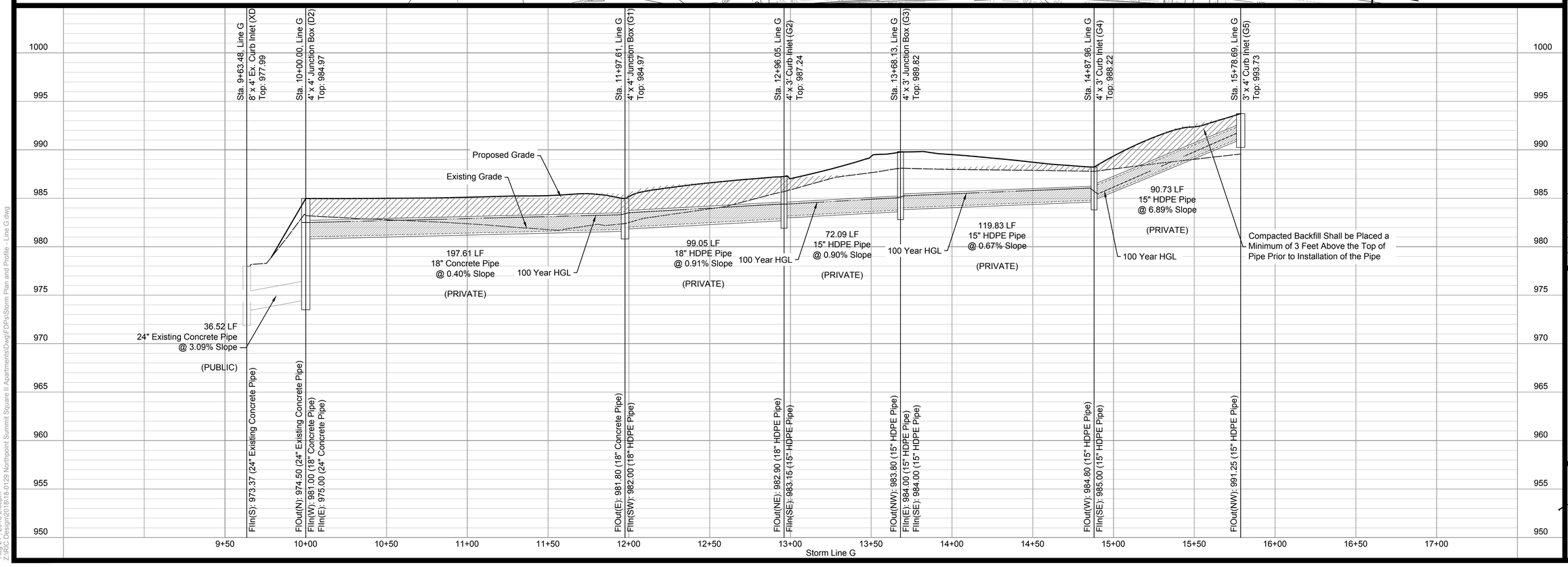


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C28

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Storm Plan and Profile

Line G

| NO. | BY | CD | DATE | REVISION |
|---|---|---|---|---|
| 6 | TCD | MES | 08/21/18 | Per City Comments |
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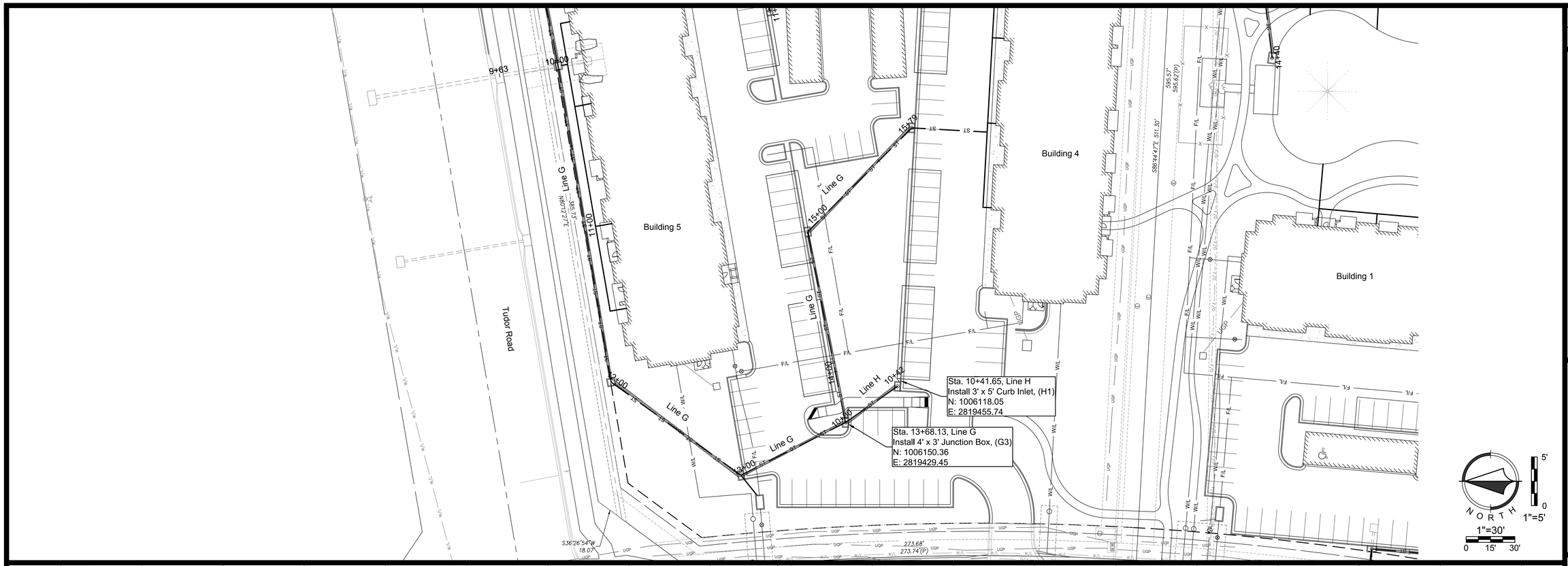


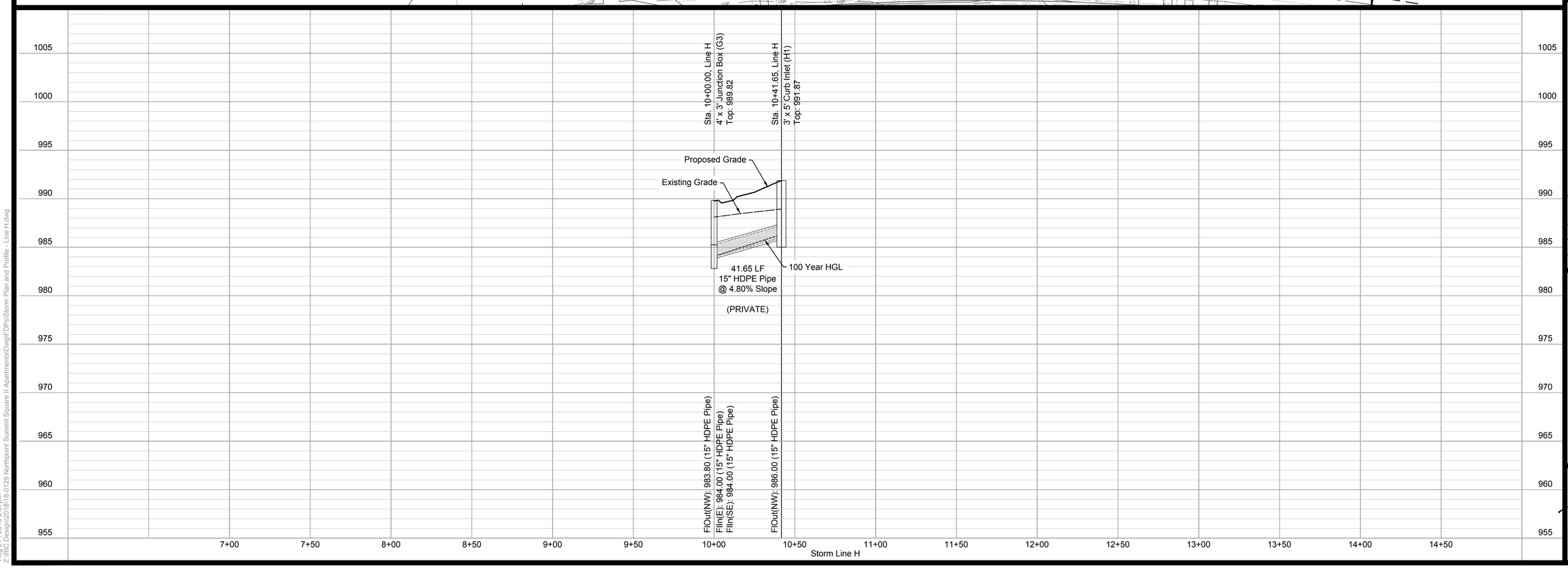


Sheet
C29

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Storm Plan and Profile

Line H

| NO | BY | QD | DATE | REVISION |
|---|---|---|---|---|
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| 5 | TCD | MES | 08/03/18 | 95% Set |
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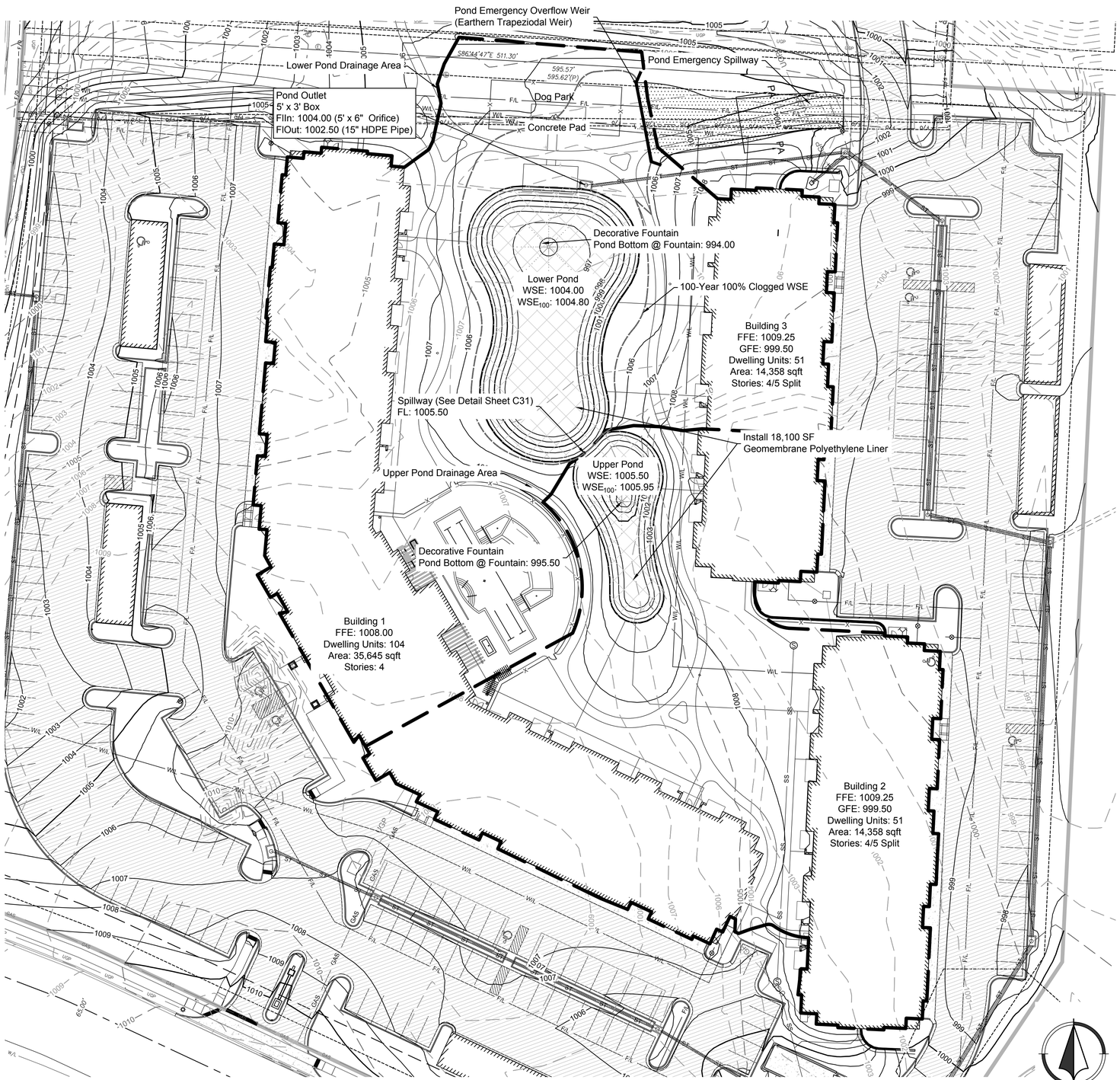
Note: 5' x 3' Box Structure shall be typical APWA inlet with steel insert.




Note: Ponds To Include Recirculation Pump (Design By Others)

Pond Design Calculations:

Note: As outlined in the Storm Water Report, the following development is part of a regional detention system. The proposed ponds are not required for detention and are for aesthetics only.

Runoff Calculations:

Area: 1.93 Ac (98 CN) + 1.15 Ac (74 CN) = 3.08 Ac
Tc: 10 Minutes
CN: 89.04

$Q_{100}$ = 25.08 cfs
$Q_{10}$ = 19.15 cfs

Stage Storage:

100 Year WSE: 1,004.80

Emergency Spillway Design:

Weir Length: 35'
Weir Elevation: 1005.50
Side Slopes: 4:1
Flow Depth: 0.42'

Spillway Erosion Protection:

Flow Area: 20.58 sqft
Flow WP: 44.12 ft
R = 0.466 ft
S = 0.005 ft/ft
$\gamma$ = 62.4 x 0.466 x 0.005 = 0.145 psf
Spillway to be lined with well maintained turf grass. No additional erosion protection required.

Outlet Release Rates:

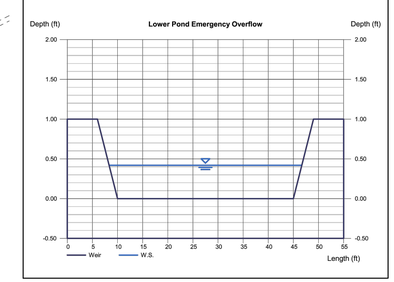
$Q_{100}$ = 9.35 cfs

**Weir Report**

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Tuesday, Jun 19 2018

**Lower Pond Emergency Overflow**

| Trapezoidal Weir | | Highlighted | |
|---|---|---|---|
| Crest | = Sharp | Depth (ft) | = 0.42 |
| Bottom Length (ft) | = 35.00 | Q (cfs) | = 25.08 |
| Total Depth (ft) | = 1.00 | Area (sqft) | = 15.41 |
| Side Slope (z:1) | = 4.00 | Velocity (ft/s) | = 1.63 |
| | | Top Width (ft) | = 38.36 |
| **Calculations** | | | |
| Weir Coeff. Cw | = 2.63 | | |
| Compute by: | Known Q | | |
| Known Q (cfs) | = 25.08 | | |

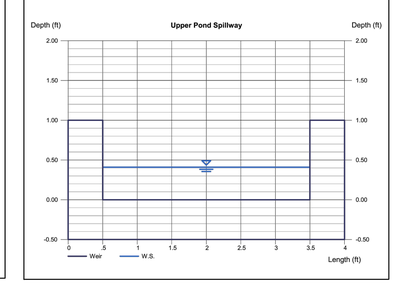



**Weir Report**

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Tuesday, Jun 19 2018

**Upper Pond Spillway**

| Rectangular Weir | | Highlighted | |
|---|---|---|---|
| Crest | = Sharp | Depth (ft) | = 0.41 |
| Bottom Length (ft) | = 3.00 | Q (cfs) | = 2.620 |
| Total Depth (ft) | = 1.00 | Area (sqft) | = 1.23 |
| | | Velocity (ft/s) | = 2.13 |
| | | Top Width (ft) | = 3.00 |
| **Calculations** | | | |
| Weir Coeff. Cw | = 3.33 | | |
| Compute by: | Known Q | | |
| Known Q (cfs) | = 2.62 | | |

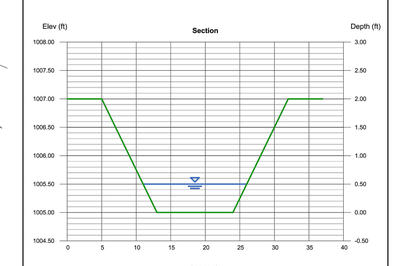



**Channel Report**

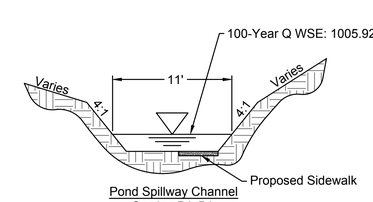
Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Tuesday, Jun 19 2018

**Overflow Channel**

| Trapezoidal | | Highlighted | |
|---|---|---|---|
| Bottom Width (ft) | = 11.00 | Depth (ft) | = 0.50 |
| Side Slopes (z:1) | = 4.00, 4.00 | Q (cfs) | = 25.08 |
| Total Depth (ft) | = 2.00 | Area (sqft) | = 6.50 |
| Invert Elev (ft) | = 1005.00 | Velocity (ft/s) | = 3.86 |
| Slope (%) | = 2.00 | Wetted Perim (ft) | = 15.12 |
| N-Value | = 0.030 | Crit Depth, Yc (ft) | = 0.52 |
| | | Top Width (ft) | = 15.00 |
| **Calculations** | | EGL (ft) | = 0.73 |
| Compute by: | Known Q | | |
| Known Q (cfs) | = 25.08 | | |




Geomembrane Polyethylene Liner




Pond Spillway Channel
Section PA-PA
NTS

Sheet
C30

Final Development Plans
18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Pond Plan

| NO. | BY | DATE | REVISION |
|---|---|---|---|
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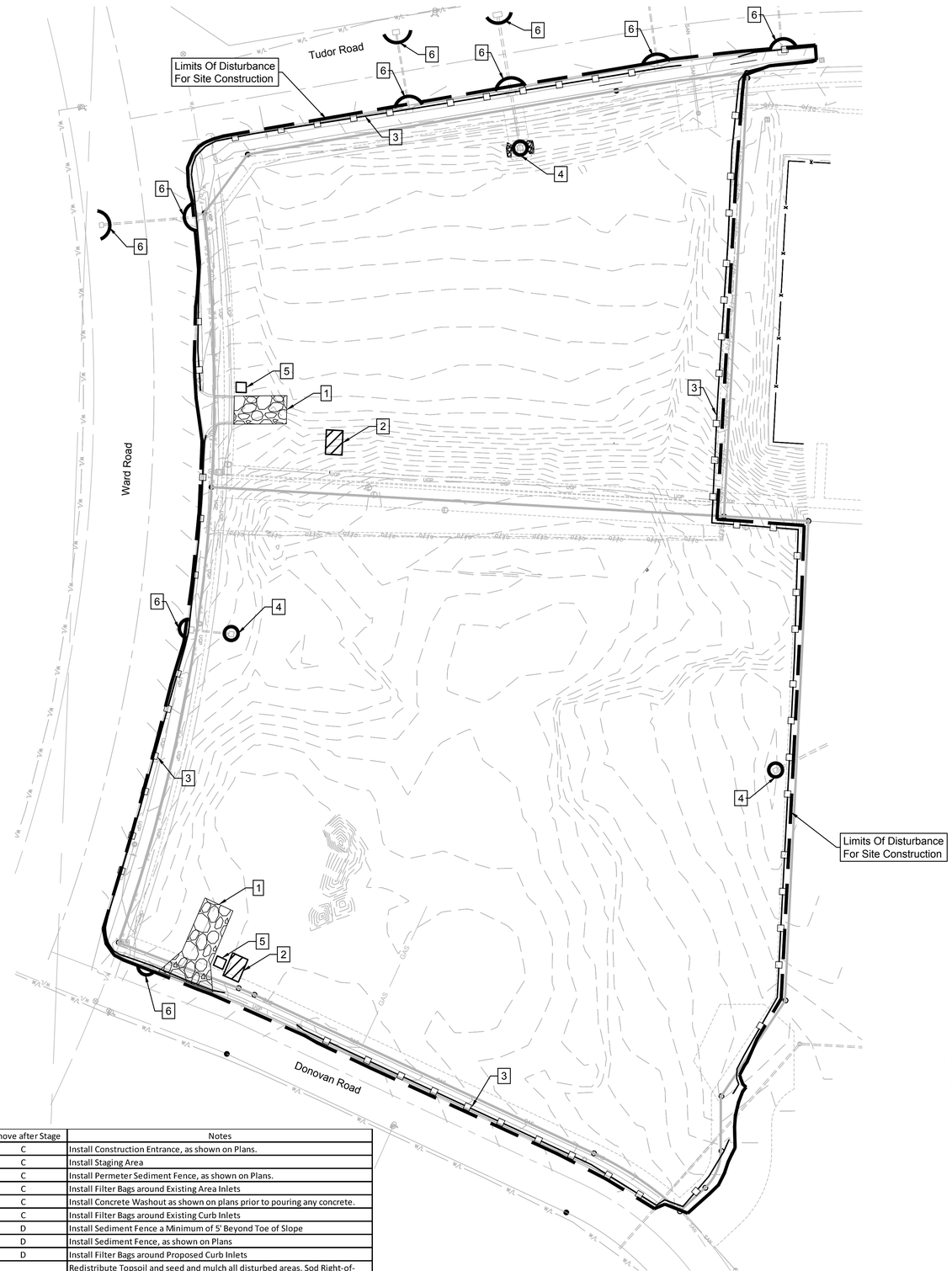


WRITTEN SEQUENCING

1. Implement Pre-Clearing Plan:
   All temporary structural BMP's shown on the pre-clearing plan must be in place before the general clearing operations. Clearing necessary to place temporary structural BMP's is the minimum required for installation. Coordinate clearing necessary to place temporary structural BMP's with local weather forecast so that clearing and placement may be completed within a forecast dry period. Stabilize all erosion control measures after installation. Temporary Barrier Fence shall be in Place, around areas not to be disturbed, prior to any construction activities. This area includes Stream Corridor.
2. Clear and Stabilize Work Areas:
   Grade contractor areas and place all-weather surface on contractor areas.
3. Clearing and Grubbing:
   After Phase I BMP's are installed, contractor may clear, grub, and demo required areas as necessary.

EROSION CONTROL NOTES

1. Erosion control plan modifications shall be required if the plan fails to substantially control erosion and offsite sedimentation.
2. The retention of access controls and sediment controls shall be required for areas where seed has not established 70% cover.
3. The contractor shall temporarily seed and mulch all disturbed areas if there has been no construction activity on them for a period of fourteen (14) calendar days.
4. Install "J' Hooks on silt fence every 100 LF

| EROSION CONTROL LEGEND | |
|---|---|
| | Stabilized Construction Entrance |
| | Staging Area |
| | Stockpile Area |
| | Concrete Washout |
| | Limits of Disturbance |
| | Perimeter Silt Fence |
| | Inlet Protection |

Disturbed Area for Site Improvements : 13.55 Acres

ESTIMATED EARTHWORK

Cut: 15,882 CY
Fill: 30,674 CY

Earthwork calculations are informational only. Contractor shall be responsible for their own earthwork calculations and perform all necessary earthwork shown herein without additional cost to the owner if quantities differ than above. Earthwork numbers are unadjusted.

| | Project Stages | BMP Plan Ref. No. | BMP Desription | Remove after Stage | Notes |
|---|---|---|---|---|---|
| Phase I | A-Prior to Land Disturbance | 1 | Construction Entrance | C | Install Construction Entrance, as shown on Plans. |
| | | 2 | Staging Area | C | Install Staging Area |
| | | 3 | Perimeter Sediment Fence | C | Install Permeter Sediment Fence, as shown on Plans. |
| | | 4 | Area Inlet Protection | C | Install Filter Bags around Existing Area Inlets |
| | | 5 | Concrete Washout | C | Install Concrete Washout as shown on plans prior to pouring any concrete. |
| | | 6 | Curb Inlet Protection | C | Install Filter Bags around Existing Curb Inlets |
| Phase II | B-Site Grading | 7 | Stockpile Topsoil | D | Install Sediment Fence a Minimum of 5' Beyond Toe of Slope |
| | C-Site Construction | 8 | Sediment Fence | D | Install Sediment Fence, as shown on Plans |
| | | 9 | Curb Inlet Protection | D | Install Filter Bags around Proposed Curb Inlets |
| Phase III | D-Final Stabilization | 10 | Establish Perennial Vegetation | N/A | Redistribute Topsoil and seed and mulch all disturbed areas. Sod Right-of-Way. Stabilization complete when 100% disturbed area is established with perennial vegetation with a density of 70% |

NORTH
1"=60'
0 30' 60'

Sheet
C31

Final Development Plans
18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Erosion Control Phase 1

| NO. | BY | CKD | DATE | REVISION |
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2. Clear and Stabilize Work Areas:
   Grade contractor areas and place all-weather surface on contractor areas.
3. Clearing and Grubbing:
   After Phase I BMP's are installed, contractor may clear, grub, and demo required areas as necessary.

EROSION CONTROL NOTES

1. Erosion control plan modifications shall be required if the plan fails to substantially control erosion and offsite sedimentation.
2. The retention of access controls and sediment controls shall be required for areas where seed has not established 70% cover.
3. The contractor shall temporarily seed and mulch all disturbed areas if there has been no construction activity on them for a period of fourteen (14) calendar days.
4. Install "J' Hooks on silt fence every 100 LF

| EROSION CONTROL LEGEND | |
|---|---|
| | Stabilized Construction Entrance |
| | Staging Area |
| | Stockpile Area |
| | Concrete Washout |
| | Limits of Disturbance |
| | Perimeter Silt Fence |
| | Inlet Protection |

Disturbed Area for Site Improvements : 13.55 Acres

ESTIMATED EARTHWORK

Cut: 15,882 CY
Fill: 30,674 CY

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| | | 4 | Area Inlet Protection | C | Install Filter Bags around Existing Area Inlets |
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| | C-Site Construction | 8 | Sediment Fence | D | Install Sediment Fence, as shown on Plans |
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NORTH
1"=60'
0 30' 60'

Sheet
C32

Final Development Plans
18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

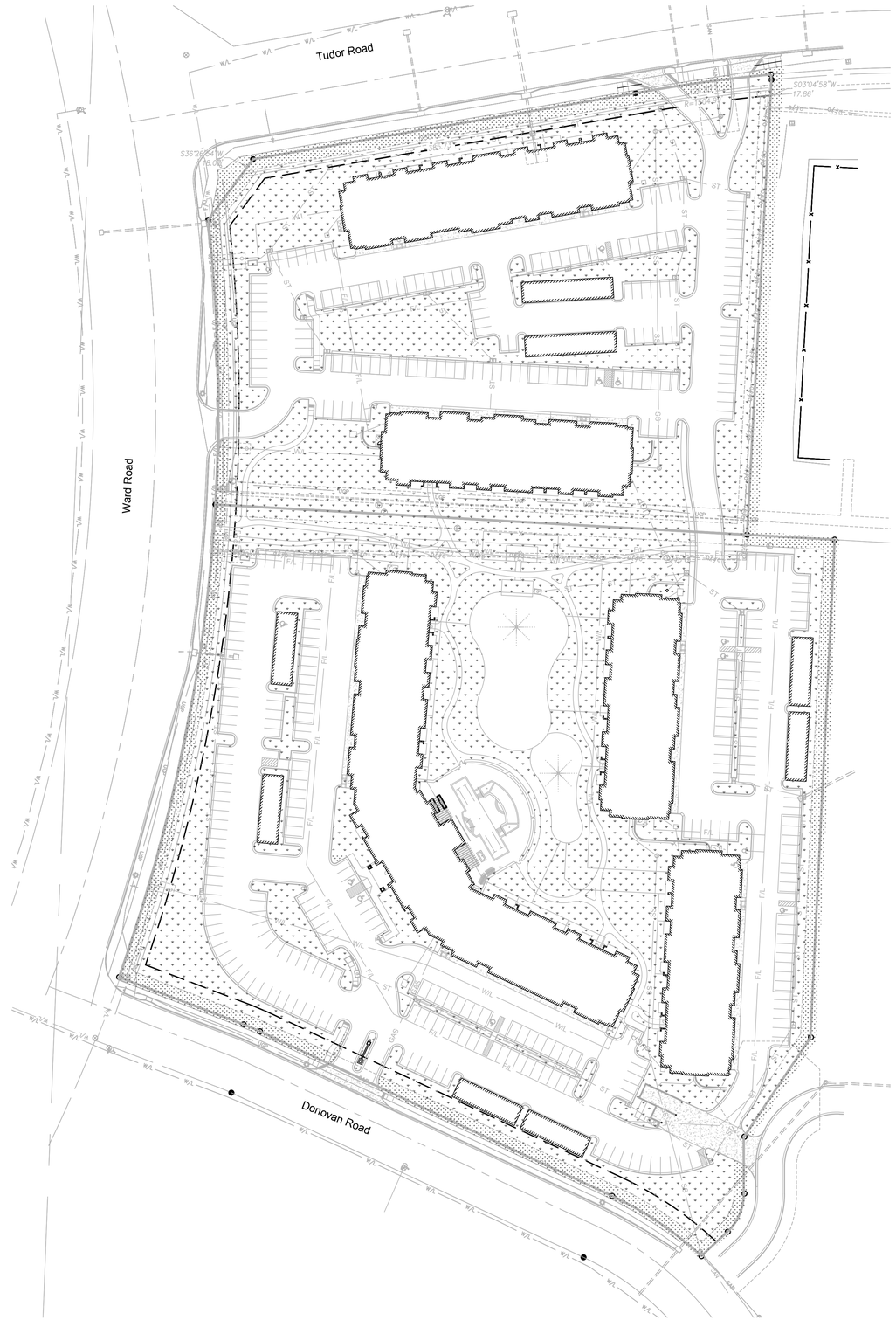
Erosion Control Phase 2

| NO. | BY | CD | DATE | REVISION |
|---|---|---|---|---|
| 6 | TCD | MES | 08/21/18 | Per City Comments |
| 5 | TCD | MES | 08/03/18 | 95% Set |
| 4 | TCD | MES | 07/10/18 | 80% Set |
| 3 | APT | MES | 06/15/18 | 50% Set |
| 2 | APT | MES | 05/14/13 | PER CITY COMMENTS |
| 1 | APT | MES | 04/13/18 | ORIGINAL SUBMITTAL |

Renaissance Infrastructure Consulting
1815 McGee Street, Suite 200
Kansas City, Missouri 64108
816.800.0950
www.ric-consult.com
Missouri Certificate of Authority No. 2010033630

STATE OF MISSOURI
MITCHELL E. SLUTTER
NUMBER PE-2002003418
PROFESSIONAL ENGINEER
8/21/18
MITCHELL E. SLUTTER PE-2002003418

Aug 21, 2018-2:38pm
Z:\RIC Design\2018\18-0129 Northpoint Summit Square II Apartments\Dwg\FDP\EErosion Control.dwg




WRITTEN SEQUENCING

1. Implement Pre-Clearing Plan:
   All temporary structural BMP's shown on the pre-clearing plan must be in place before the general clearing operations. Clearing necessary to place temporary structural BMP's is the minimum required for installation. Coordinate clearing necessary to place temporary structural BMP's with local weather forecast so that clearing and placement may be completed within a forecast dry period. Stabilize all erosion control measures after installation. Temporary Barrier Fence shall be in Place, around areas not to be disturbed, prior to any construction activities. This area includes Stream Corridor.
2. Clear and Stabilize Work Areas:
   Grade contractor areas and place all-weather surface on contractor areas.
3. Clearing and Grubbing:
   After Phase I BMP's are installed, contractor may clear, grub, and demo required areas as necessary.

EROSION CONTROL NOTES

1. Erosion control plan modifications shall be required if the plan fails to substantially control erosion and offsite sedimentation.
2. The retention of access controls and sediment controls shall be required for areas where seed has not established 70% cover.
3. The contractor shall temporarily seed and mulch all disturbed areas if there has been no construction activity on them for a period of fourteen (14) calendar days.
4. Install "J' Hooks on silt fence every 100 LF

LEGEND

Sodded Areas

Seeded Areas

Disturbed Area for Site Improvements : 13.55 Acres

ESTIMATED EARTHWORK

Cut: 14,051 CY
Fill: 32,804 CY

Earthwork calculations are informational only. Contractor shall be responsible for their own earthwork calculations and perform all necessary earthwork shown herein without additional cost to the owner if quantities differ than above. Earthwork numbers are unadjusted.

NORTH
1"=60'
0 30' 60'

Sheet
C33

Final Development Plans
18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Erosion Control Phase 3

| NO. | BY | DATE | REVISION |
|---|---|---|---|
| 6 | TCD | MES | 08/21/18 | Per City Comments |
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| 4 | TCD | MES | 07/13/18 | 80% Set |
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| 1 | APT | MES | 04/13/18 | ORIGINAL SUBMITTAL |

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PROFESSIONAL ENGINEER
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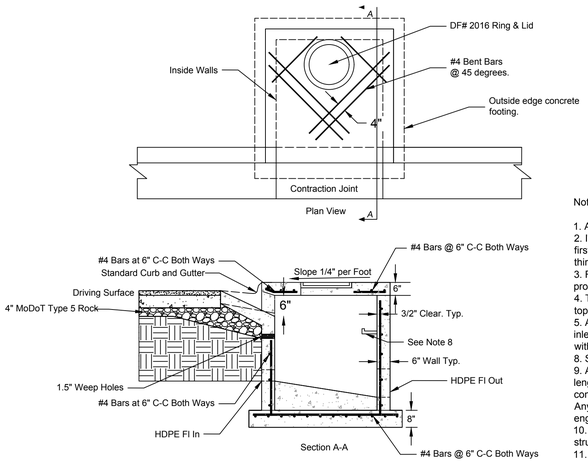
MITCHELL E. SLUTTER PE-2002003418

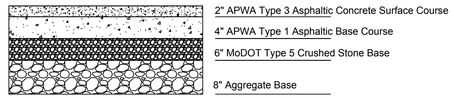



Standard Non-Setback Inlet Detail

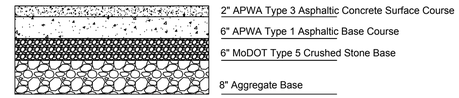
NTS

Notes:

1. All Concrete shall be KCMMB-4k.
2. Inlet Construction notes shall list the "L" Dimension first, the "W" dimension second, and the "H" dimension third.
3. Floor of inlets shall have a shaped concrete invert to provide for smooth flow.
4. The minimum dimension between top of pipe and top of box shall be 2' 6" (Typical all walls.)
5. All ingrade inlets shall conform to street grade. All inlets in sump shall be level. Bevel all exposed edges with 3/4" triangular molding.
8. Steps shall be spaced 1'-4" O.C. Vertically.
9. Any inlet, yard inlet, or junction box over 10 ft in length, 8 ft in width, or 12 ft in depth shall be considered non-standard, and a detail shall be shown. Any such detail shall be sealed by a structural engineer.
10. The throat and transition are subsidiary to the structure.
11. Lid shall be set true to line and grade along curb profile.



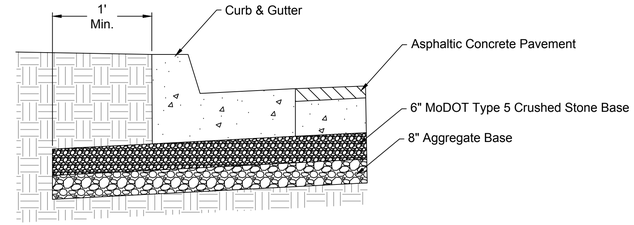

Light Duty Asphalt Pavement Section



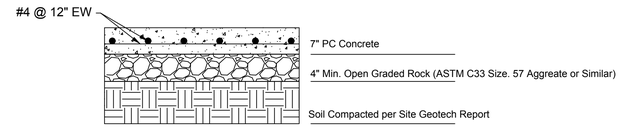

Heavy Duty Asphalt Pavement Section

Asphalt Pavement Section

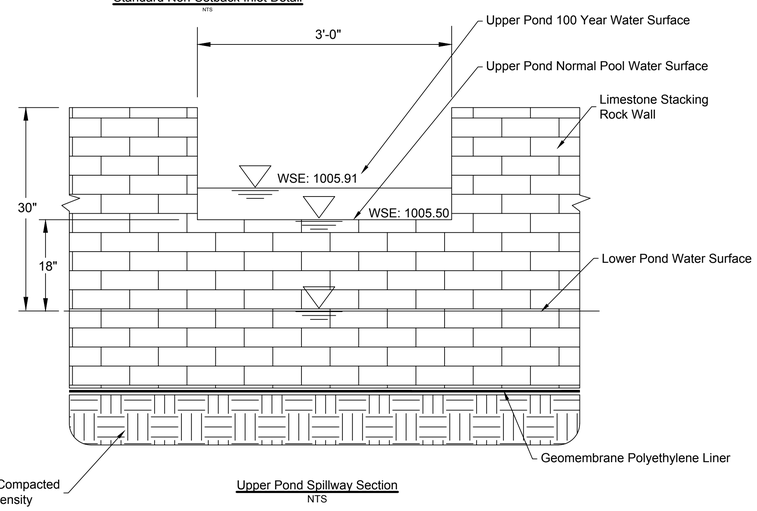
Note:
30% Max Recycled Content In Base, 0% Recycled Content In Surface



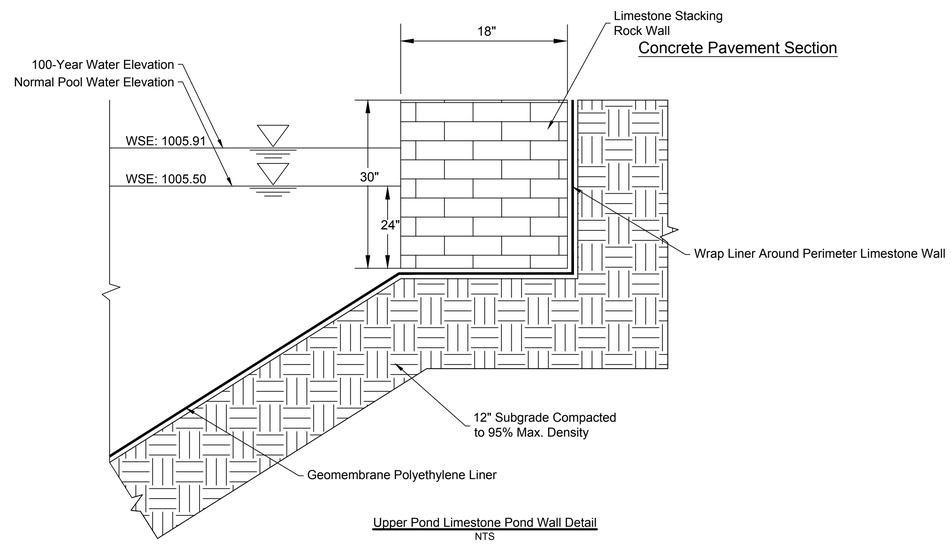

Std Curb &
Curb Subgrade Detail
n.t.s.



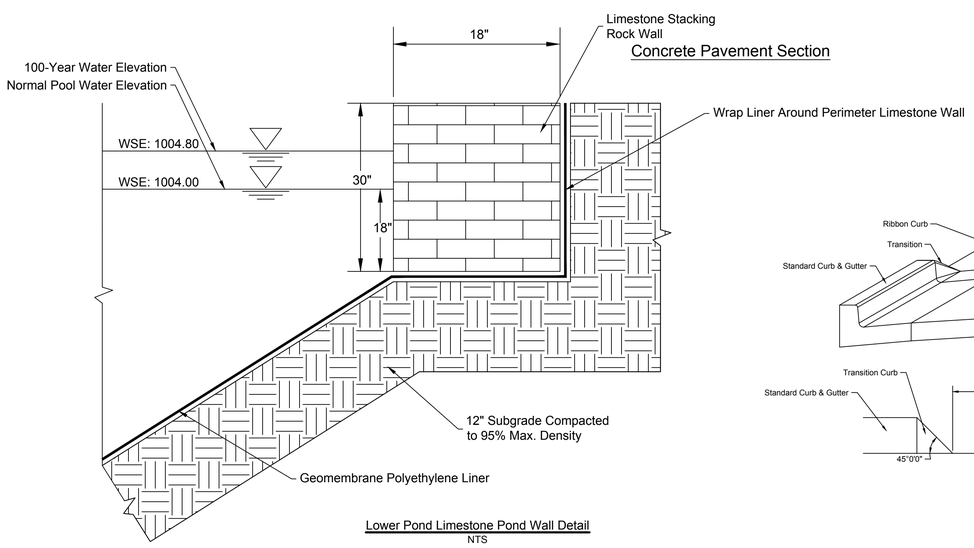

Heavy-Duty PC Pavement Section



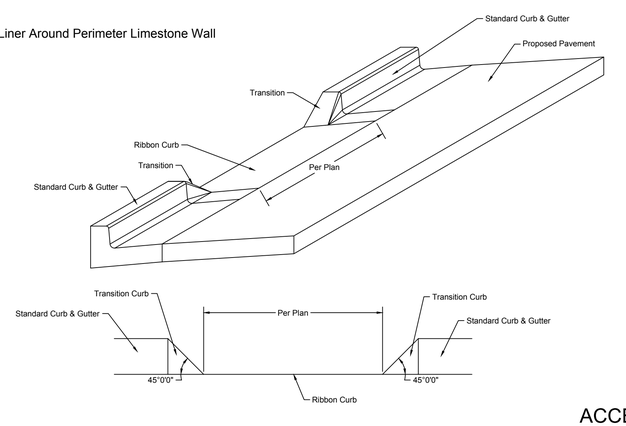

Upper Pond Spillway Section
NTS



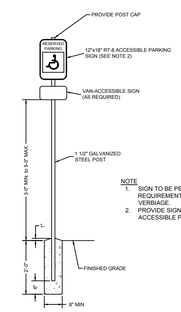

Upper Pond Limestone Pond Wall Detail
NTS




Lower Pond Limestone Pond Wall Detail
NTS

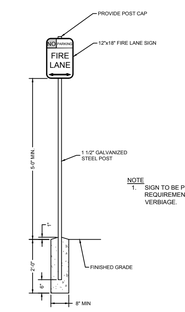



CURB CUT DETAIL
Not to Scale



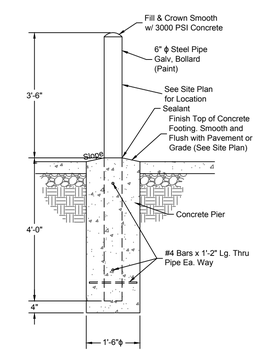

NOTE
1. SIGN TO BE PER LOCAL JURISDICTION REQUIREMENTS. VERIFY SIZE, SHAPE & VERIBAGE.
2. PROVIDE SIGN AT EACH HANDICAPPED ACCESSIBLE PARKING STALL.

ACCESSIBLE PARKING
SPACE SIGNAGE
NOT TO SCALE




NOTE
1. SIGN TO BE PER LOCAL JURISDICTION REQUIREMENTS. VERIFY SIZE, SHAPE & VERIBAGE.

FIRE LANE SIGNAGE
NOT TO SCALE




BOLLARD DETAIL
Not to Scale

Sheet
C34

Final Development Plans

18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Standard Details

| NO. | BY | QD | DATE | REVISION |
|---|---|---|---|---|
| 6 | TCD | MES | 08/21/18 | Per City Comments |
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STATE OF MISSOURI
MITCHELL E. SLUTTER
NUMBER
PE-2002003418
PROFESSIONAL ENGINEER
8-21-18
MITCHELL E. SLUTTER PE-2002003418

Aug 21, 2018-2:38pm
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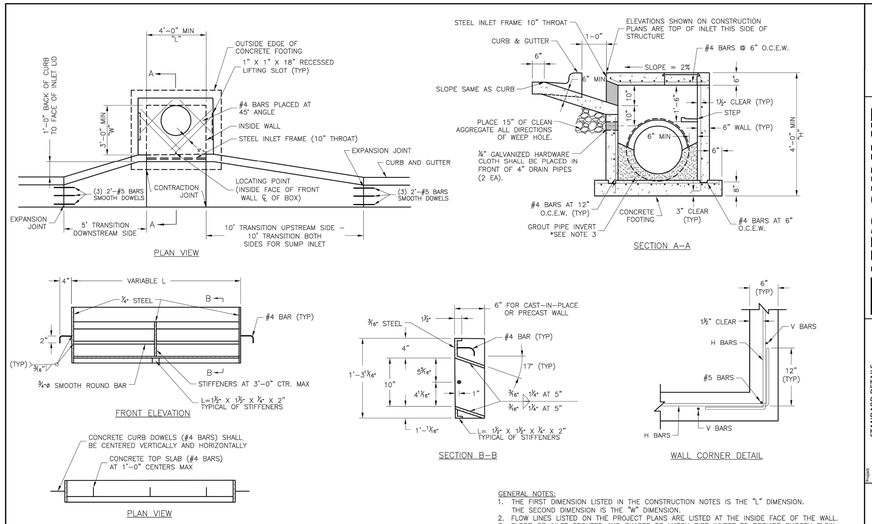



STEEL FRAME NOTES:
1. ALL WELDS SHALL BE PERFORMED IN ACCORDANCE WITH APPROPRIATE AWS SPECIFICATIONS AND PROCEDURES.
2. ALL WELDS ON EXPOSED SURFACES SHALL BE DRESSED SO AS TO PROVIDE A PLEASING FINISHED APPEARANCE.
3. THE ENTIRE FRAME SHALL BE PAINTED A SINGLE COAT OF CHEM–PRIME #37H–78 PRIMER (GRAY) OR EQUAL.

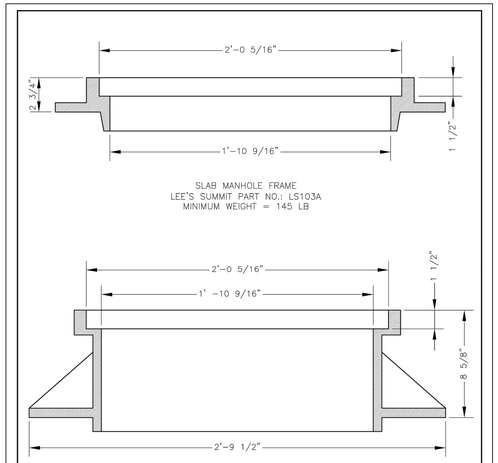
GENERAL NOTES:
1. THE FIRST DIMENSION LISTED IN THE CONSTRUCTION NOTES IS THE "L" DIMENSION. THE SECOND DIMENSION IS THE "W" DIMENSION.
2. FLOW LINES LISTED ON THE PROJECT PLANS ARE LISTED AT THE INSIDE FACE OF THE WALL.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
4. LOCATE MH RING AND COVER ON BLANK WALL IF POSSIBLE.
5. STEPS SHALL BE SPACED AT 1'–4" O.C. VERTICALLY ON BLANK WALL IF POSSIBLE.
6. BEVEL ALL EXPOSED EDGES WITH ¾"CHAMFER OR ¾" TOOLED EDGE.
7. ON–GRADE INLETS SHALL CONFORM TO THE STREET GRADE AND SUMP INLETS SHALL BE LEVEL.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON–SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. LIFTING RINGS SHALL BE REMOVED AND SEALED WITH NON–SHRINKABLE GROUT
10. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
CURB INLET DETAIL

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #

STM-1



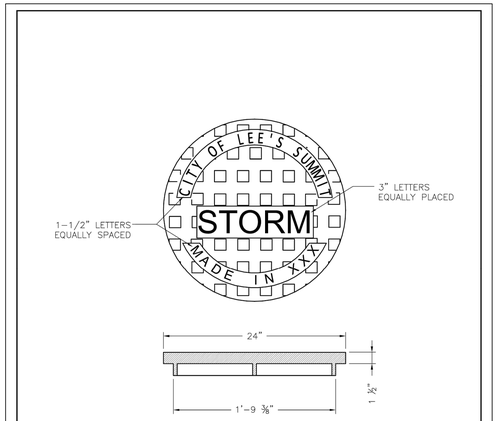

*COVER AND FRAME MODEL INFORMATION REFER TO THE STORMWATER APPROVED PRODUCTS LIST.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STORM MANHOLE FRAME DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

STM-7




STANDARD 24" MANHOLE COVER
MINIMUM WEIGHT = 160 LB
NOTE: PICK HOLES NOT SHOWN

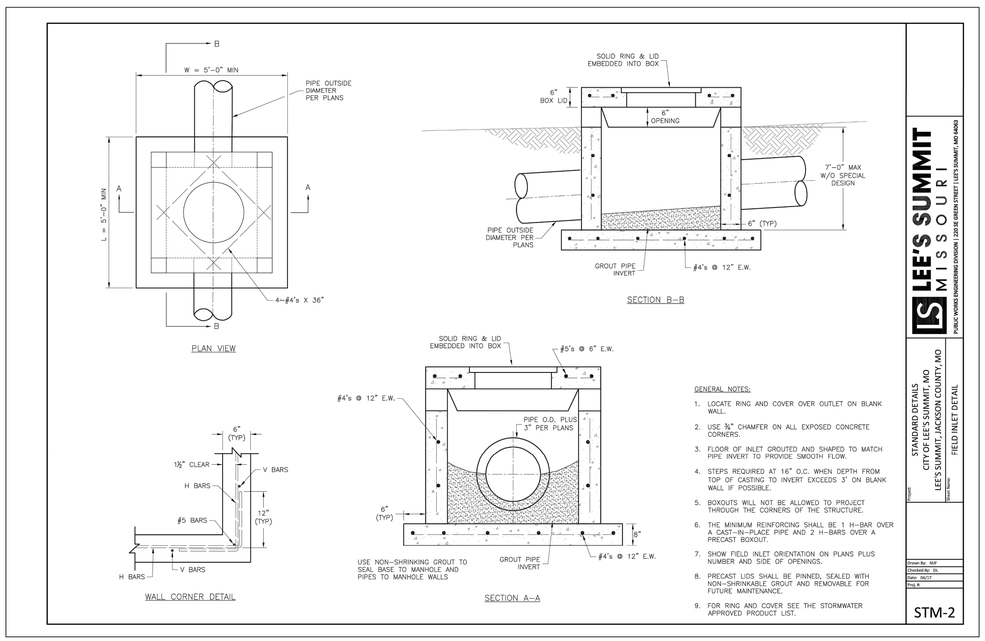
*COVER AND FRAME MODEL INFORMATION REFER TO THE STORMWATER APPROVED PRODUCT LIST.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STORM MANHOLE COVER DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

STM-6



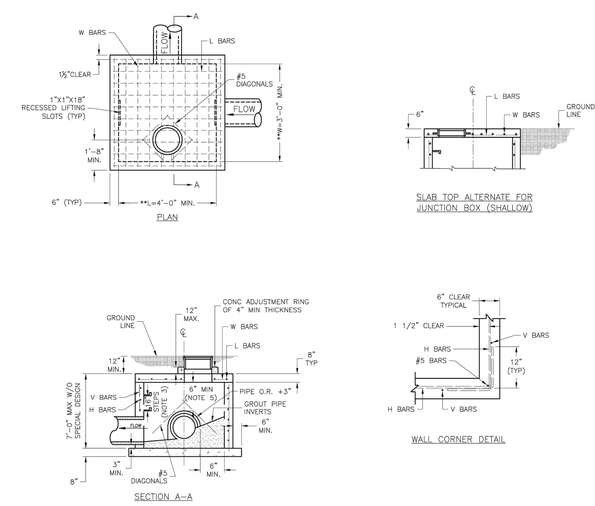

GENERAL NOTES:
1. LOCATE RING AND COVER OVER OUTLET ON BLANK WALL.
2. USE ¾" CHAMFER ON ALL EXPOSED CONCRETE CORNERS.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
4. STEPS REQUIRED AT 16" O.C. WHEN DEPTH FROM TOP OF CASTING TO INVERT EXCEEDS 3' ON BLANK WALL IF POSSIBLE.
5. BOXOUTS WILL NOT BE ALLOWED TO PROJECT THROUGH THE CORNERS OF THE STRUCTURE.
6. THE MINIMUM REINFORCING SHALL BE 1 H–BAR OVER A CAST–IN–PLACE PIPE AND 2 H–BARS OVER A PRECAST BOXOUT.
7. SHOW FIELD INLET ORIENTATION ON PLANS PLUS NUMBER AND SIDE OF OPENINGS.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON–SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
FIELD INLET DETAIL

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #

STM-2




| BARS | BAR SIZE | SPACING (IN.) |
|---|---|---|
| H | 4 | 12 |
| V | 4 | 12 |
| L | 5 | 6 |
| W | 5 | 6 |

GENERAL NOTES:
1. LOCATE RING AND COVER ON BLANK WALL.
2. USE ¾" CHAMFER STRIP OR ¾" R EDGER TOOL ON ALL EXPOSED CONCRETE CORNERS.
3. STEPS REQUIRED AT 16" O.C. WHEN DEPTH FROM TOP OF CASTING TO INVERT EXCEEDS 4" ON BLANK WALL IF POSSIBLE.
4. BOXOUTS WILL NOT BE ALLOWED TO PROJECT THROUGH THE CORNERS OF THE STRUCTURE AND THE MINIMUM DISTANCE BETWEEN BOXOUTS IS 6".
5. THE MINIMUM REINFORCING SHALL BE 1 H–BAR OVER A CAST–IN–PLACE PIPE AND 2 H–BARS OVER A PRECAST BOXOUT.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON–SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. REINFORCING OF COVERS IN STREETS REQUIRE SPECIAL DESIGN.
10. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
JUNCTION BOX DETAIL

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #

STM-3

Sheet
C35

Final Development Plans
18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Standard Details

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STATE OF MISSOURI
MITCHELL SLUTTER
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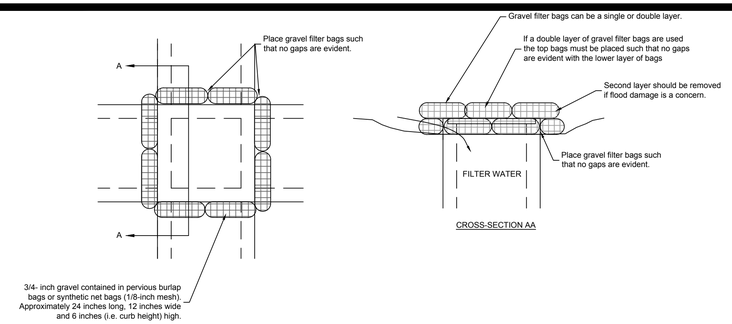
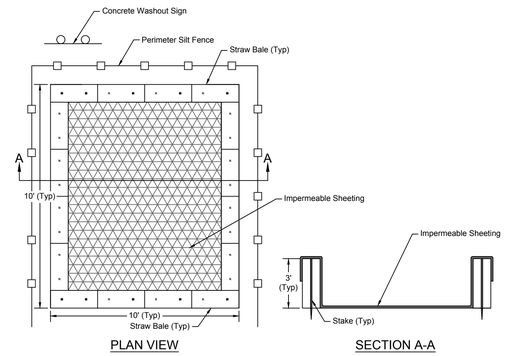
Aug 21, 2018-2:38pm
Z:\RIC Design\2018\18-0129 Northpoint Summit Square II Apartments\Dwg\FDPs\Standard Details.dwg



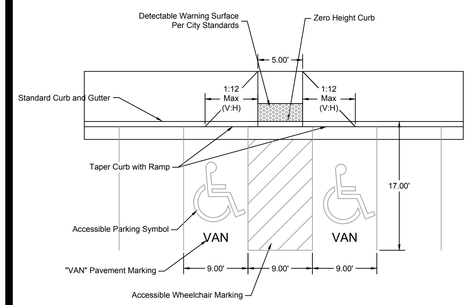

GRAVEL FILTER BAGS DETAIL
Not to Scale




PLAN VIEW

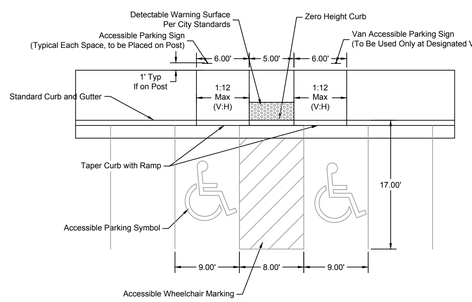
SECTION A-A

CONCRETE WASHOUT AREA
Not to Scale



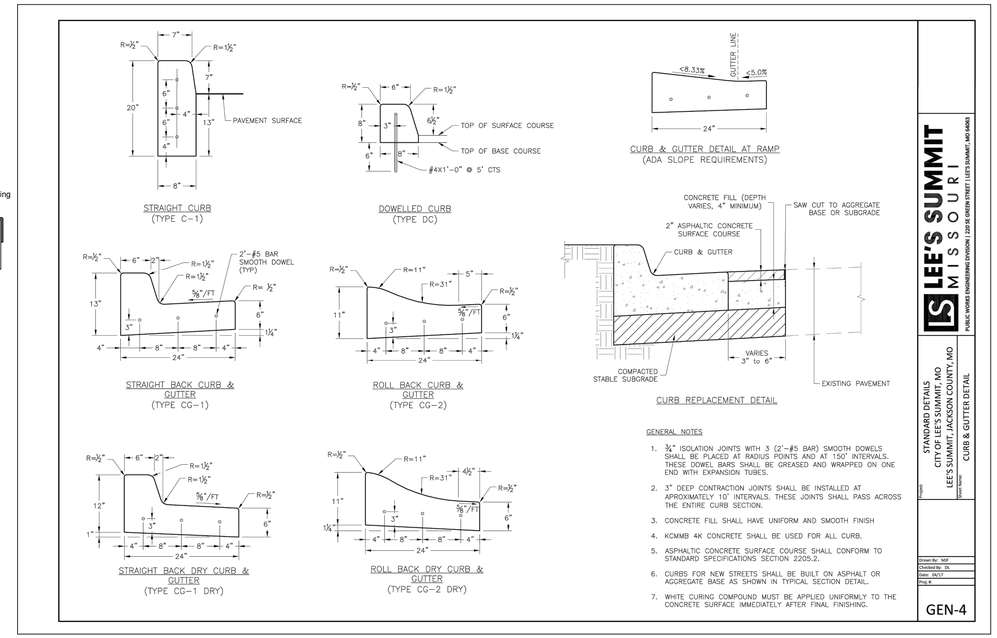

Note:
Accessible Parking Symbol and Signage Shall Comply with the Applicable Recommendations of the Manual of Uniform Traffic Control Devices (MUTCD)

ACCESSIBLE PARKING DETAIL (90°)
Not to Scale




Note:
Accessible Parking Symbol and Signage Shall Comply with the Applicable Recommendations of the Manual of Uniform Traffic Control Devices (MUTCD)

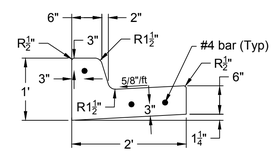
ACCESSIBLE PARKING DETAIL (90°)
Not to Scale



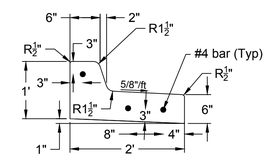

GENERAL NOTES

1. ¾" ISOLATION JOINTS WITH 3 (2'-#5 BAR) SMOOTH DOWELS SHALL BE PLACED AT RADIUS POINTS AND AT 150' INTERVALS. THESE DOWEL BARS SHALL BE GREASED AND WRAPPED ON ONE END WITH EXPANSION TUBES.
2. 3" DEEP CONTRACTION JOINTS SHALL BE INSTALLED AT APROXIMATELY 10' INTERVALS. THESE JOINTS SHALL PASS ACROSS THE ENTIRE CURB SECTION.
3. CONCRETE FILL SHALL HAVE UNIFORM AND SMOOTH FINISH
4. KCMMB 4K CONCRETE SHALL BE USED FOR ALL CURB.
5. ASPHALTIC CONCRETE SURFACE COURSE SHALL CONFORM TO STANDARD SPECIFICATIONS SECTION 2205.2.
6. CURBS FOR NEW STREETS SHALL BE BUILT ON ASPHALT OR AGGREGATE BASE AS SHOWN IN TYPICAL SECTION DETAIL.
7. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.

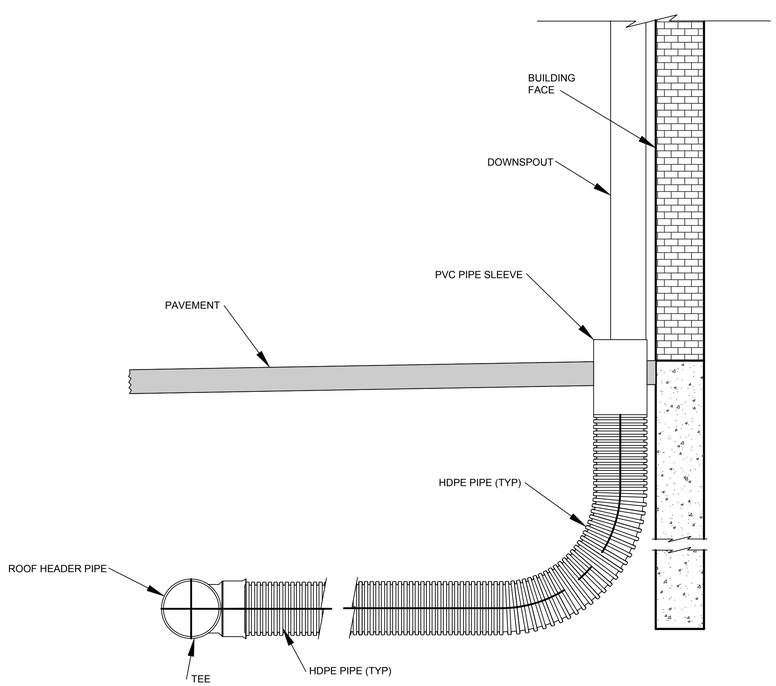
LEE'S SUMMIT MISSOURI
PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
CURB & GUTTER DETAIL
Drawn By: MJF
Checked By: DL
Date: 06/17
Dwg #
GEN-4



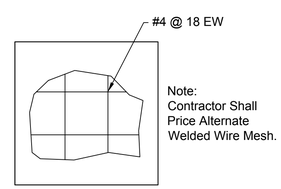

Private Wet Curb Detail
n.t.s




Private Dry Curb Detail
n.t.s

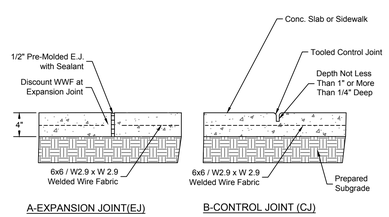



Downspout Detail
NTS




Note:
Contractor Shall Price Alternate Welded Wire Mesh.

Sidewalk Concrete Reinforcement Detail
n.t.s



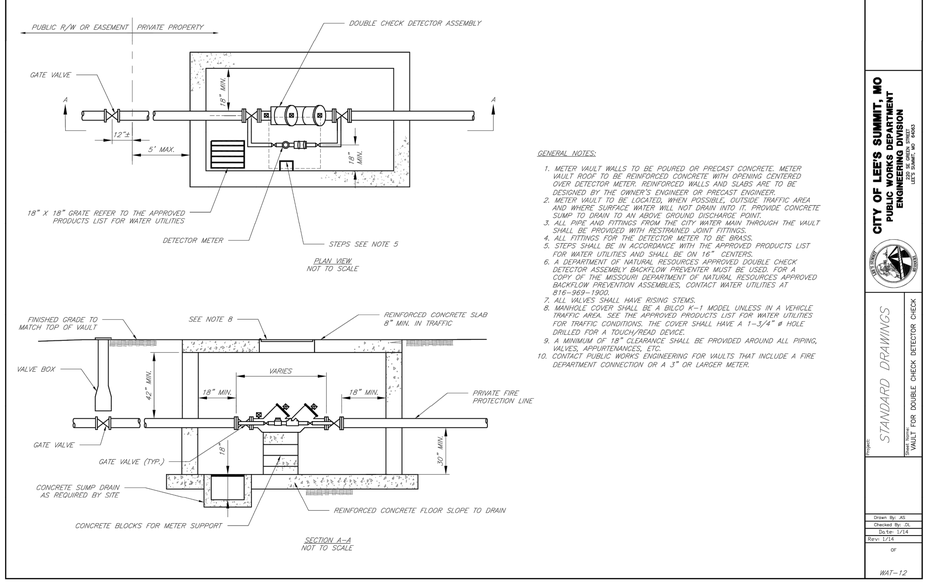

A-EXPANSION JOINT(EJ)

B-CONTROL JOINT (CJ)

SIDEWALK NOTES

1. 1/2" Pre-Milded Expansion Joints shall be Placed as Shown or not to Exceed 20' or When Abutting Existing Concrete.
2. 1/2" Control Joints Shall be Placed as Shown on the Drawings or at 5' Max.
3. Key All Construction Joints.
4. Prepared Subgrade Shall be Compacted and (2" in Cut Areas, 20" in Fill Areas Minimum. Any Project Geotech. Report shall Supersede these Minimums.

SIDEWALK DETAIL
Not to Scale




GENERAL NOTES:

1. METER VAULT WALLS TO BE POURED OR PRECAST CONCRETE. METER VAULT ROOF TO BE REINFORCED CONCRETE WITH OPENING CENTERED OVER DETECTOR METER. REINFORCED WALLS AND SLABS ARE TO BE DESIGNED BY THE OWNER'S ENGINEER OR PRECAST ENGINEER.
2. METER VAULT TO BE LOCATED, WHEN POSSIBLE, OUTSIDE TRAFFIC AREA AND WHERE SURFACE WATER WILL NOT DRAIN INTO IT. PROVIDE CONCRETE SUMP TO DRAIN TO AN ABOVE GROUND DISCHARGE POINT.
3. ALL PIPE AND FITTINGS FROM THE CITY WATER MAIN THROUGH THE VAULT SHALL BE PROVIDED WITH RESTRAINED JOINT FITTINGS.
4. ALL FITTINGS FOR THE DETECTOR METER TO BE BRASS.
5. STEPS SHALL BE IN ACCORDANCE WITH THE APPROVED PRODUCTS LIST FOR WATER UTILITIES AND SHALL BE ON 16" CENTERS.
6. A DEPARTMENT OF NATURAL RESOURCES APPROVED DOUBLE CHECK DETECTOR ASSEMBLY BACKFLOW PREVENTER MUST BE USED. FOR A COPY OF THE MISSOURI DEPARTMENT OF NATURAL RESOURCES APPROVED BACKFLOW PREVENTION ASSEMBLIES, CONTACT WATER UTILITIES AT 816-969-1900.
7. ALL VALVES SHALL HAVE RISING STEMS.
8. MANHOLE COVER SHALL BE A BILCO K-1 MODEL UNLESS IN A VEHICLE TRAFFIC AREA. SEE THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR TRAFFIC CONDITIONS. THE COVER SHALL HAVE A 1-3/4" ø HOLE DRILLED FOR A TOUCH/READ DEVICE.
9. A MINIMUM OF 18" CLEARANCE SHALL BE PROVIDED AROUND ALL PIPING, VALVES, APPURTENANCES, ETC.
10. CONTACT PUBLIC WORKS ENGINEERING FOR VAULTS THAT INCLUDE A FIRE DEPARTMENT CONNECTION OR A 3" OR LARGER METER.

CITY OF LEE'S SUMMIT, MO
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
LEE'S SUMMIT, MO

STANDARD DRAWINGS

VAULT FOR DOUBLE CHECK DETECTOR CHECK

Drawn By: AG
Checked By: DL
Date: 1/14
Rev: 1/14
or
WAT-12

| NO. | BY | CD | DATE | REVISION |
|---|---|---|---|---|
| 6 | TCD | MES | 08/21/18 | Per City Comments |
| 5 | TCD | MES | 08/03/18 | 95% Set |
| 4 | TCD | MES | 07/13/18 | 80% Set |
| 3 | APT | MES | 06/15/18 | 50% Set |
| 2 | APT | MES | 05/14/13 | PER CITY COMMENTS |
| 1 | APT | MES | 04/13/18 | ORIGINAL SUBMITTAL |

Sheet
C36

Final Development Plans
18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Standard Details


Renaissance Infrastructure Consulting
1815 McGee Street, Suite 200
Kansas City, Missouri 64108
816.800.0950
www.ric-consult.com
Missouri Certificate of Authority No. 2010035630

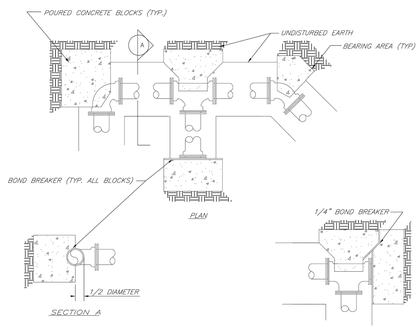

STATE OF MISSOURI
MITCHELL SLUTTER
NUMBER PE-2002003418
PROFESSIONAL ENGINEER
8/21/18
MITCHELL E. SLUTTER PE-2002003418

Aug 21, 2018-2:38pm
Z:\RIC Design\2018\18-0129 Northpoint Summit Square II Apartments\Dwg\FDPs\Standard Details.dwg

REQUIRED CONCRETE BEARING AREA (SQUARE FEET – SF)

| NOM. DIA. (INCHES) | 180 TEE, PLUG | 90 BEND | 45 BEND | 22.5 BEND | 11.25 BEND |
|---|---|---|---|---|---|
| 6 | 4.7 | 6.7 | 4.0 | 4.0 | 4.0 |
| 8 | 8.4 | 11.8 | 6.4 | 4.0 | 4.0 |
| 10 | 13.1 | 18.5 | 10.0 | 5.1 | 4.0 |
| 12 | 18.9 | 26.7 | 14.4 | 7.4 | 4.0 |
| 14 | 25.7 | 36.3 | 19.6 | 10.0 | 5.0 |
| 16 | 33.5 | 47.4 | 25.6 | 13.1 | 6.6 |
| 18 | 42.4 | REST. JT. | 32.5 | 16.5 | 8.3 |
| 20 | REST. JT. | REST. JT. | 40.1 | 20.4 | 10.3 |
| 24 | REST. JT. | REST. JT. | REST. JT. | 29.4 | 14.8 |

NOTES:
1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
3. BEARING AREA MUST BE AGAINST UNDISTURBED SOIL.
4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.



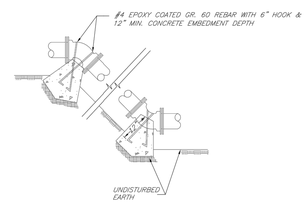

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
HORIZONTAL THRUST BLOCKS

Date: 02/13 | Drawn By: JN | Checked By: DL | FILE: WAT-1 | Rev: 1/14 | Rev:

REQUIRED CONCRETE VOLUME (CUBIC FEET – CF)

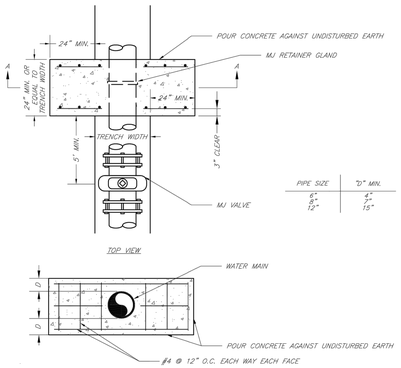
| NOM. DIA. (INCHES) | 180 TEE, PLUG | 90 BEND | 45 BEND | 22.5 BEND | 11.25 BEND |
|---|---|---|---|---|---|
| 6 | 50.5 | 71.4 | 38.6 | 19.7 | 9.9 |
| 8 | 89.8 | 126.9 | 68.7 | 35.0 | 17.6 |
| 10 | 140.2 | 198.3 | 107.3 | 54.7 | 27.5 |
| 12 | 202.0 | REST. JT. | 154.6 | 78.8 | 39.6 |
| 14 | REST. JT. | REST. JT. | 210.4 | 107.3 | 53.9 |
| 16 | REST. JT. | REST. JT. | REST. JT. | 140.1 | 70.4 |
| 18 | REST. JT. | REST. JT. | REST. JT. | 177.3 | 89.1 |
| 20 | REST. JT. | REST. JT. | REST. JT. | REST. JT. | 110.0 |
| 24 | REST. JT. | REST. JT. | REST. JT. | REST. JT. | 158.4 |

NOTES:
1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
3. BEARING MUST BE AGAINST UNDISTURBED SOIL.
4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.




LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
VERTICAL THRUST BLOCKS

Date: 02/13 | Drawn By: JN | Checked By: DL | FILE: WAT-2 | Rev: 1/14 | Rev:

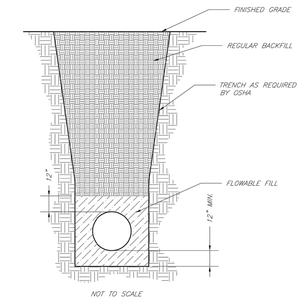



| PIPE SIZE | "D" MIN. |
|---|---|
| 6" | 4" |
| 8" | 7" |
| 12" | 15" |

NOTE:
THIS DETAIL NOT TO BE USED FOR PIPE GREATER THAN 12"

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
STRADDLE BLOCK

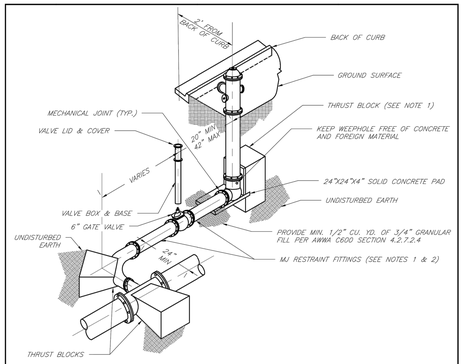
Date: 02/13 | Drawn By: JN | Checked By: DL | FILE: WAT-3 | Rev: 1/14 | Rev:




NOTES:
1. FLOWABLE FILL SHALL MEET THE REQUIREMENTS OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.
2. REGULAR BACKFILL ABOVE THE TRENCH CHECK SHALL BE FREE OF DEBRIS, ORGANIC MATTER, AND STONES > 6" IN ANY DIMENSION.
3. TOP OF FLOWABLE BACKFILL SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE.
4. LENGTH OF TRENCH CHECK SHALL BE A MINIMUM OF 12".

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
TRENCH CHECK

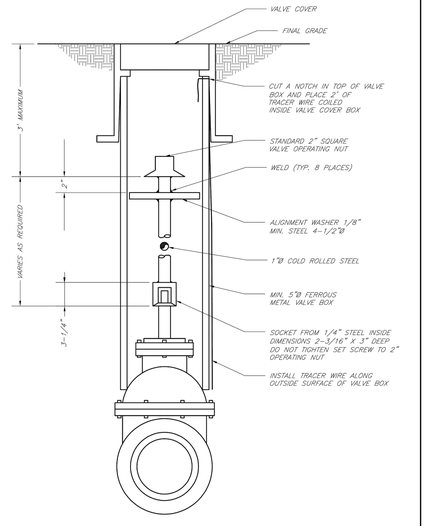
Date: 02/13 | Drawn By: JN | Checked By: DL | FILE: WAT-4 | Rev: 1/14 | Rev:




NOTES:
1. WHEN RETAINER GLANDS ARE USED IN LIEU OF MECHANICAL JOINT (MJ) RESTRAINT FITTINGS, HORIZONTAL THRUST BLOCKS ARE REQUIRED.
2. GATE VALVE MAY BE BOLTED DIRECTLY TO MJ RESTRAINT TEE.
3. SEE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR FIRE HYDRANT, VALVES, VALVE BOX LID, AND COVER.
4. BOTTOM HYDRANT FLANGE SHALL BE 2" TO 6" ABOVE FINISHED GRADE.
5. FOR STREETS WITHOUT CURBS FIRE HYDRANTS SHALL BE PLACED WITHIN 1 FOOT OF THE R/W LINE, BUT NOT MORE THAN 10' FROM EDGE OF PAVEMENT. FIRE HYDRANT SHALL NOT BE PLACED IN BOTTOM OF DITCH.
6. HYDRANT SHALL BE ROTATED AS DIRECTED BY INSPECTOR.

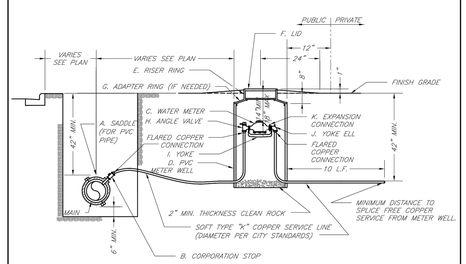
LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
HYDRANT WITH 90 DEGREE BEND

Date: 02/13 | Drawn By: JN | Checked By: DL | FILE: WAT-8 | Rev: 1/14 | Rev:




LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
VALVE STEM EXTENSION AND VALVE BOX

Date: 02/13 | Drawn By: JN | Checked By: DL | FILE: WAT-9 | Rev: 1/14 | Rev:

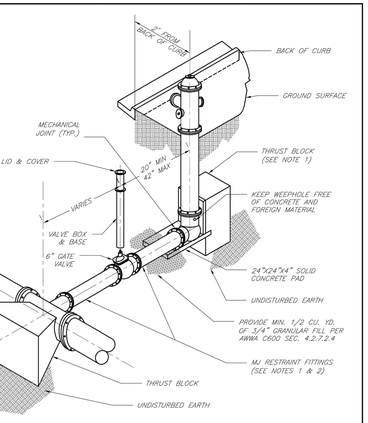



TYPICAL METER INSTALLATION – 2" AND SMALLER
NOT TO SCALE

NOTES:
1. METER INSTALLATION SHALL NOT BE LOCATED IN AREAS SUBJECT TO VEHICULAR TRAFFIC OR IN CONCRETE PAVEMENT WITHOUT CITY APPROVAL.
2. IF METER IS TO BE LOCATED OTHER THAN IN FRONT OF PROPERTY LINE, CITY APPROVAL SHALL BE OBTAINED.
3. CITY TO FURNISH ITEMS A–K.
4. NO OTHER EQUIPMENT SHALL BE INSTALLED IN THIS PIT.
5. 42" MINIMUM BURY DEPTH FOR ALL SERVICE LINES.
6. EXCAVATION FOR TAP TO EXPOSE 4 LINEAR FEET OF MAIN.
7. NO SPLICES ALLOWED BETWEEN METER AND MAIN.
8. SERVICE CONNECTION TAP AT APPROXIMATELY 45 DEGREES.
9. LID AND RISER RING SHALL BE SET SO THAT GROUND WATER WILL DRAIN AWAY FROM THE WELL.
10. CONTACT WATER UTILITIES, 816–969–1900, FOR REQUIREMENTS OF A METER LARGER THAN 2"

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
SERVICE CONNECTION/METER WELL

Date: 02/13 | Drawn By: JN | Checked By: DL | FILE: WAT-11 | Rev: 1/14 | Rev:




NOTES:
1. WHEN RETAINER GLANDS ARE USED IN LIEU OF MECHANICAL JOINT (MJ) RESTRAINT FITTINGS, HORIZONTAL THRUST BLOCKS ARE REQUIRED.
2. GATE VALVE MAY BE BOLTED DIRECTLY TO MJ RESTRAINT TEE.
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4. BOTTOM HYDRANT FLANGE SHALL BE 2" TO 6" ABOVE FINISHED GRADE.
5. FOR STREETS WITHOUT CURBS FIRE HYDRANTS SHALL BE PLACED WITHIN 1 FOOT OF THE R/W LINE, BUT NOT MORE THAN 10' FROM EDGE OF PAVEMENT. FIRE HYDRANT SHALL NOT BE PLACED IN BOTTOM OF DITCH.
6. HYDRANT SHALL BE ROTATED AS DIRECTED BY INSPECTOR.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
HYDRANT INSTALLATION – STRAIGHT SET

Date: 02/13 | Drawn By: JN | Checked By: DL | FILE: WAT-7 | Rev: 1/14 | Rev:

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C37

Final Development Plans
18-0129
Summit Square II
Lee's Summit, Jackson County, Missouri

Standard Details

| NO. | BY | CD | DATE | REVISION |
|---|---|---|---|---|
| 6 | TCD | MES | 08/21/18 | Per City Comments |
| 5 | TCD | MES | 08/03/18 | 95% Set |
| 4 | TCD | MES | 07/13/18 | 80% Set |
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| 2 | APT | MES | 05/14/13 | PER CITY COMMENTS |
| 1 | APT | MES | 04/13/18 | ORIGINAL SUBMITTAL |


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Missouri Certificate of Authority No. 2010033630


STATE OF MISSOURI
MITCHELL SLUTTER
NUMBER PE-2002003418
PROFESSIONAL ENGINEER
8-21-18
MITCHELL E. SLUTTER PE-2002003418