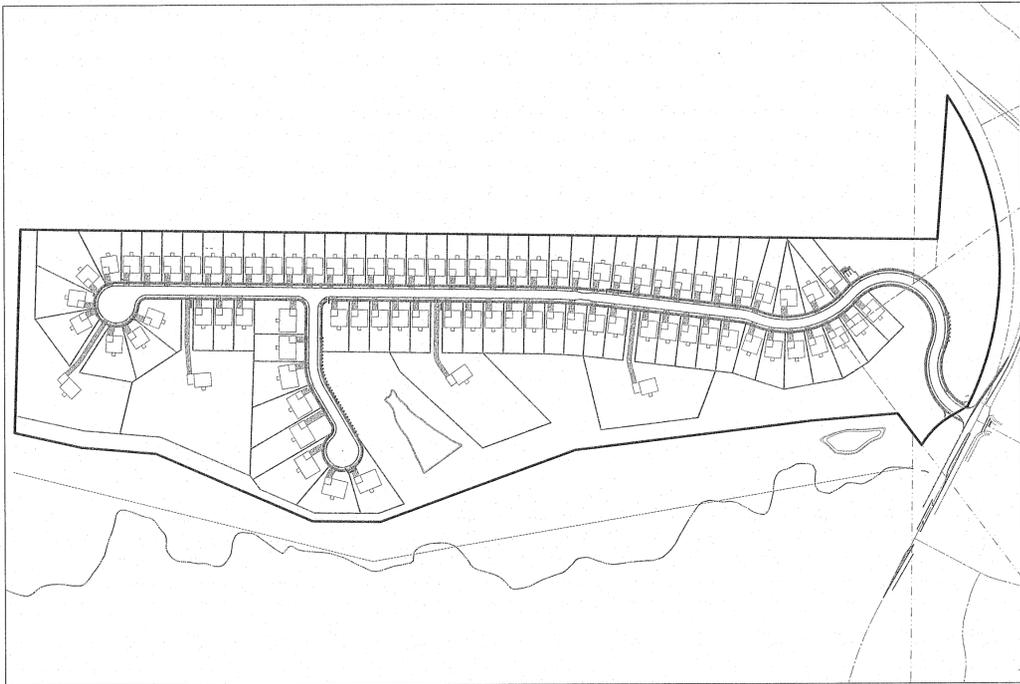
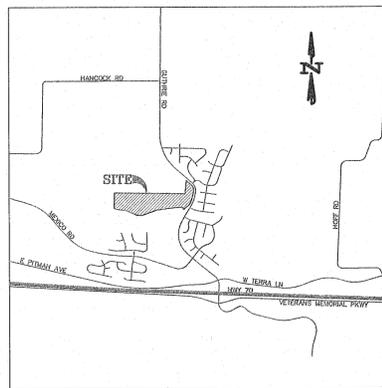


A SET OF AS-BUILT PLANS FOR KEYSTONE RIDGE

A TRACT OF LAND BEING PART OF U.S. SURVEY 54 AND IN SECTIONS 22 AND 23 TOWNSHIP 47 NORTH, RANGE 2 EAST OF THE FIFTH PRINCIPAL MERIDIAN CITY OF O'FALLON ST. CHARLES COUNTY, MISSOURI



Plan View



Locator Map

Development Notes:

- EXISTING ZONING: R-1, PUD SINGLE FAMILY RESIDENTIAL (CITY OF O'FALLON)
- PROPERTY OWNERS: L K PROPERTIES II, L.L.C. P.O. BOX 340 ST. PETERS, MO 63376; L K INVESTMENTS I, L.L.C. P.O. BOX 340 ST. PETERS, MO 63376
- PER FLOOD INSURANCE RATE MAP PANEL NUMBERS 29183C0210G & 29183C0220G DATED JANUARY 20, 2016. THIS SITE IS ZONED X, DESCRIBED AS AREAS OUTSIDE THE 500-YEAR FLOODPLAIN.
- ALL STREETS ARE TO BE PUBLIC AND CONSTRUCTED PER ST. CHARLES COUNTY SPECIFICATIONS EXCEPT AS MODIFIED BY CITY OF O'FALLON.
- TOPOGRAPHIC INFORMATION IS PER AERIAL TOPOGRAPHY BY SURDEX CORPORATION ON U.S.G.S. DATUM.
- ONE TREE SHALL BE PLANTED FOR EVERY LOT. TWO TREES FOR CORNER LOTS. TREE PLACEMENT SHALL BE PER SECTION 402 OF THE CITY CODE.
- ALL HOMES SHALL HAVE A MINIMUM OF 2 OFF-STREET PARKING PLACES WITH 2-CAR GARAGES.
- THE DEVELOPER SHALL COMPLY WITH CURRENT TREE PRESERVATION ORDINANCE NUMBER 1689 AND PROVIDE LANDSCAPING AS SET FORTH IN ARTICLE 23 OF THE CITY OF O'FALLON ZONING ORDINANCES.
- ADDITIONAL LIGHTING MAY BE REQUIRED BY THE CITY OF O'FALLON.
- DETENTION FOR THIS DEVELOPMENT TO BE PROVIDED BY THE BASIN WITHIN THE COMMON GROUND AREA. DETENTION REQUIREMENTS SHALL BE FOR THE 100YEAR/20 MINUTE STORM AND SHALL BE PROVIDED WITH THE INITIAL PHASE OF THE DEVELOPMENT.
- ALL EXISTING CREEKS, STREAMS, AND DRAINAGE SWALES WILL HAVE AN ASSOCIATED STORM WATER EASEMENT THAT WILL BE PROVIDED ON THE RECORD PLAT.
- ALL NEW UTILITIES WILL BE LOCATED UNDERGROUND.
- A TEN (10) FOOT WIDE GENERAL UTILITY EASEMENT IS REQUIRED ALONG ALL PUBLIC RIGHT-OF-WAYS.
- DENSITY CALCULATIONS: TOTAL SITE = 44.413 ACRES; RIGHT-OF-WAY = 4.302 ACRES; COMMON GROUND = 12.315 ACRES; LOTS = 27.796 ACRES; MINIMUM LOT SIZE OF 9,000 SQ.FT. WITH AN AVERAGE LOT SIZE OF 14,588 SQ.FT. TEN SMALLEST LOT SIZES WILL BE 9,000 SQ.FT.
- PUD DENSITY CALCULATIONS: AREA OF LOTS = 27.796 ACRES X 43,560 SQ.FT. = 1,210,793.76; 1,210,793.76 / 10,000 = 121 LOTS = 2.72 LOTS PER ACRE
- SANITARY SEWERS CLOSER THAN 10 FEET TO THE PAVEMENT EDGE OR THE PAVEMENT IS WITHIN THE 1:1 SHEAR PLANE OF THE TRENCH WILL REQUIRE GRANULAR BACKFILL WITHIN THE TRENCH.
- LOTS 49-55 ARE TO BE SERVED BY A PROPOSED LOW PRESSURE SANITARY SYSTEM PER MSD SPECIFICATIONS.
- SANITARY SEWER ON LOTS 40, 44, 61 & 71 WILL REQUIRE GRINDER PUMPS.
- ALL REAR YARDS TO SHEET FLOW TO BUFFER.
- CLEARING LIMITS SHALL BE VISIBLY MARKED IN THE FIELD PRIOR TO REMOVAL OF TREES.
- ANY CONNECTION TO AN EXISTING SANITARY SEWER STRUCTURE MAY REQUIRE REHABILITATION OR RECONSTRUCTION OF THE SANITARY SEWER STRUCTURE BEING USED.
- MAXIMUM LOT COVERAGE IS 35%

Utility Contacts

Sanitary Sewer
City of O'Fallon
100 N. Main St.
O'Fallon, MO 63366
Contact: 636-281-2858

Water
City of O'Fallon
100 N. Main St.
O'Fallon, MO 63366
Contact: 636-281-2858

Storm Sewer
City of O'Fallon
100 N. Main St.
O'Fallon, MO 63366
636-281-2858

Gas
Laclede Gas Company
6400 Graham Road
St. Louis, MO 63134
314-522-2297

Telephone
Century Link
1151 Century Tel Dr.
Wentzville, MO 63385
636-332-7261

Charter Communications
941 Charter Commons
Town & Country, MO 63017
1-888-438-2427

Wentzville Fire District
209 West Pearce Blvd.
Wentzville, MO 63385
636-332-9869

Drawing Index

- 1 COVER SHEET
- 2 NOTES
- 3-4 SITE PLAN
- 5-6 GRADING PLAN
- 7-8 WATER PLAN
- 9-10 SEDIMENT & EROSION CONTROL PLAN
- 11-13 STREET PROFILES
- 14-16 SANITARY SEWER PROFILES
- 17-19 STORM SEWER PROFILES
- 20 LANDSCAPE PLAN
- 21 SIGNAGE, STRIPING & JOINTING PLAN
- 22 PRE-DEVELOPED DRAINAGE AREA MAP
- 23-24 POST-DEVELOPED DRAINAGE AREA MAP
- 24A-24B ELECTRIC LAYOUT (APPROXIMATE)
- 25-29 DETAILS
- 30 DETAILS
- 31-33 DETAILS

Benchmarks Project

BENCHMARK:
C-149 - ELEVATION 545.45 (DATUM NAVD88) ESTABLISHED BY COAST AND GEODETIC SURVEY 1935, 1.8 MILES EAST FROM GILMORE. 1.8 MILES EAST ALONG THE WABASH RAILROAD FROM THE STATION AT GILMORE, ST. CHARLES COUNTY, 80 FEET WEST OF A TOWNSHIP ROAD CROSSING, 48 FEET NORTH OF THE CENTERLINE OF THE TRACK, 12 FEET WEST OF THE RIGHT-OF-WAY FENCE CORNER, AND 2 FEET SOUTH OF THE RIGHT-OF-WAY FENCE. A STANDARD DISK, STAMPED C 149 1935 AND SET IN THE TOP OF A CONCRETE POST PROJECTING 6 INCHES ABOVE GROUND.

Site

BENCHMARK:
ELEV. 486.82' - FOUND IRON PIPE AT THE SOUTHEAST CORNER OF THE SUBJECT PROPERTY.

VEGETATION ESTABLISHMENT For Urban Development Sites APPENDIX A

SEEDING RATES:
PERMANENT:
Tall Fescue - 150 lbs./ac.
Smooth Brome - 100 lbs./ac.
Combined - Fescue 65 lbs./ac. AND Brome 50 lbs./ac.

TEMPORARY:
Wheat or Rye - 150 lbs./ac. (3.5 lbs. per 1,000 s.f.)
Oats - 120 lbs./ac. (2.75 lbs. per 1,000 s.f.)

SEEDING PERIODS:
Fescue or Brome - March 1 to June 1
Wheat or Rye - March 15 to November 1
Oats - March 15 to September 15

MULCH RATES:
100 lbs. per 1000 sq. ft. (4,356 lbs. per ac.)

FERTILIZER RATES:
Nitrogen 30 lbs./ac.
Phosphate 30 lbs./ac.
Potassium 30 lbs./ac.
Lime 600 lbs./ac. ENM*

* ENM = effective neutralizing material as per State evaluation of quarried rock.

Legend

600.00	EXISTING LABELS	EXIST. SINGLE CURB INLET
600.00	PROPOSED LABELS	EXIST. AREA INLET
CI	SINGLE CURB INLET	PROPOSED SINGLE CURB INLET
DCI	DOUBLE CURB INLET	PROPOSED AREA INLET
AI	AREA INLET	PROPOSED GRATE INLET
DAI	DOUBLE AREA INLET	EXIST. SANITARY MANHOLE
GI	GRATE INLET	EXIST. STORM MANHOLE
DGI	DOUBLE GRATE INLET	PROPOSED MANHOLE
MH	MANHOLE	POWER POLE
FE	FLARED END SECTION	GUY WIRE
EP	END PIPE	LIGHT STANDARD
CP	CONCRETE PIPE	FIRE HYDRANT
RCP	REINFORCED CONCRETE PIPE	WATER METER
CMP	CORRUGATED METAL PIPE	WATER VALVE
CPP	CORRUGATED PLASTIC PIPE	GAS VALVE
PVC	POLY VINYL CHLORIDE (PLASTIC)	TELEPHONE PEDESTAL
CO	CLEAN OUT	SIGN
---	SLOPE LIMITS	TREE
---	DRAINAGE SWALE	
---	EXISTING STORM SEWER	
---	EXISTING SANITARY SEWER	
---	EXISTING WATER LINE	
---	EXISTING FIBER OPTIC LINE	
---	EXISTING GAS LINE	
---	EXISTING UNDERGROUND ELECTRIC	
---	EXISTING OVERHEAD ELECTRIC	
---	EXISTING CABLE TV LINE	
---	EXISTING TELEPHONE LINE	
---	PROPOSED STORM SEWER	
---	PROPOSED SANITARY SEWER	
---	FENCE LINE	
---	SAWCUT LINE	

Conditions of Approval From Planning and Zoning

- PROVIDE HOW ADDRESSES WILL BE DISPLAYED NEAR THE ENTRANCES OF THE FOUR (4) FLAG LOTS.
 - THE USPS SHALL BE CONTACTED TO FINALIZE THEIR PREFERRED METHOD OF DELIVERY. A MAIL KIOSK MAY BE REQUIRED IN LIEU OF INDIVIDUAL MAIL BOXES FOR EACH LOT. IF A KIOSK IS REQUIRED, THE LOCATION SHALL BE PROVIDED ON THE CONSTRUCTION PLANS. PROVIDE WRITTEN CONFIRMATION FROM THE USPS PRIOR TO CONSTRUCTION PLAN APPROVAL THAT STATES THEIR PREFERRED METHOD AND LOCATION OF MAIL DELIVERY.
 - THE OFFSITE ROADWAY EASEMENT THAT CROSSES THE DETENTION BASIN SHALL BE VACATED.
 - PROVIDE A SIGHT DISTANCE STUDY FOR THE INTERSECTION OF GUTHRIE ROAD AND KEYSTONE RIDGE.
 - THE APPLICANT SHALL ABIDE BY THE MUNICIPAL CODE REQUIREMENTS.
 - PROVIDE VERIFICATION FROM THE FIRE DEPARTMENT THAT THEY HAVE APPROVED THE MOST CURRENT PLAN.
- MUNICIPAL CODE REQUIREMENTS:**
- PROVIDE COVENANTS AND RESTRICTIONS PRIOR TO THE RECORD PLAT SUBMITTAL.
 - PROVIDE PROPOSED LOT COVERAGE PERCENTAGE. THIS SHALL BE PRESENTED AT THE PLANNING AND ZONING COMMISSION MEETING AND SHOWN ON THE CONSTRUCTION PLANS.
 - PROVIDE HOW STORM WATER QUALITY WILL BE ADDRESSED ON THE CONSTRUCTION PLANS.

AS-BUILT PUBLIC UTILITY FINAL MEASUREMENTS

THE FOLLOWING UTILITIES HAVE BEEN LOCATED AND MEASURED AND THE RESULTS OF THOSE MEASUREMENTS ARE SHOWN ON THIS SET OF FINAL MEASUREMENT PLANS:

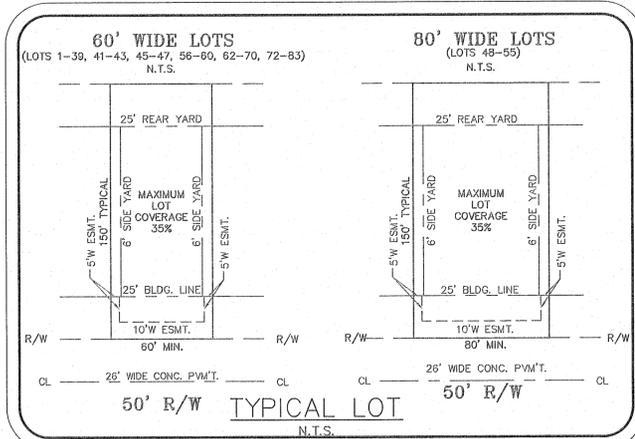
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- FIRE HYDRANTS
- WATER VALVES
- LIGHT STANDARDS

ALL PUBLIC UTILITIES, EXCEPT AS-BUILT ARE LOCATED WITHIN DESIGNATED EXISTING OR PROPOSED EASEMENTS. ONLY THE UTILITIES IDENTIFIED TO BE AS-BUILT ON THESE PLANS TO BE APPLICABLE TO THIS CERTIFICATION.

SIGNED: [Signature]
P.E./L.S. [Signature]
MARK E. COLLINS
NUMBER 14-19
PLS-2008000173
DATE

AS-BUILT LEGEND

- AS-BUILT STORM MANHOLE
- AS-BUILT CURB INLET
- ▣ AS-BUILT STORM FLARED END
- AS-BUILT SANITARY MANHOLE
- ⊙ AS-BUILT FIRE HYDRANT
- ⊕ AS-BUILT WATER VALVE
- ⊖ AS-BUILT FIRE HOSE CONNECTION
- ⊗ AS-BUILT LIGHT STANDARD
- ⊘ AS-BUILT CLEANOUT



* City of O'Fallon Construction work hours per City Ordinance 3429 as shown in section 500.420 of the Municipal Code of the City of O'Fallon are as follows:

October 1 through May 31
7:00 A.M. To 7:00 P.M. Monday Through Sunday
June 1 Through September 30
6:00 A.M. To 8:00 P.M. Monday Through Friday
7:00 A.M. to 8:00 P.M. Saturday and Sunday

* The area of this phase of development is 44.413 Acres
The area of land disturbance is 25.20 Acres

Number of proposed lots is 83
Building setback information. Front 25'
Side 6'
Rear 25'

* The estimated sanitary flow in gallons per day is 30,710 GPD

* Street trees & Tree Preservation requirements:
Existing Trees = 43.34 Acres
Trees Removed = 23.96 Acres
Trees Saved = 19.38 Acres
Tree Preservation trees to be retained:
43.34 Acres x 20% = 8.66 Acres
8.66 Acres - 19.38 Acres (Saved) = 10.72 Acres
19.38 Acres > 8.66 Acres (No new trees required)

Street Trees Required:
1 Tree per lot, 2 Trees per corner lot
83 Lots = 83 Trees (-4 flag lots) = 79 Trees
2 Corner Lots = 2 Trees
Total Trees Required = 81
Total Trees Provided = 81

City approval of any construction site plans does not mean that any building can be constructed on the lots without meeting the building setbacks as required by the zoning codes.

All installations and construction shall conform to the approved engineering drawings. However, if the developer chooses to make minor modifications in design and/or specifications during construction, they shall make such changes at their own risk, without any assurance that the City Engineer will approve the completed installation or construction. It shall be the responsibility of the developer to notify the City Engineer of any changes from the approved drawings. The developer may be required to correct the installed improvement so as to conform to the approved engineering drawings. The developer may request a letter from the Construction Inspection Division regarding any field changes approved by the City Inspector.

Lighting values will be reviewed on site prior to the final occupancy inspection.

PROJECT TITLE:
AS-BUILT PLANS FOR KEYSTONE RIDGE

ENGINEERING
PLANNING
SURVEYING

221 Point West Blvd.
St. Charles, MO 63301
636-926-9552
FAX 636-926-1718

DISCLAIMER OF RESPONSIBILITY
I hereby certify that the documents intended to be authorized by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other drawings, specifications, estimates, reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.

Box Engineering Company, Inc.
Missouri State Certificate of Authority
Engineering #000555
Missouri State Certificate of Authority
Surveying #000144

REVISIONS

04/25/18	CITY COMMENT REVS.
05/14/18	CITY COMMENT REVS.

Developer / Owner:
KEYSTONE RIDGE LAND, LLC
10328 LAKE BLUFF DRIVE
ST. LOUIS, MO 63123
314-892-3030 EXT. 121

COVER SHEET

P+Z No. #32-16
12/01/16 & 04/27/17
City No. #

Page No.
1 of 33

AS-BUILTS APPROVED
MAY 18, 2018

AS-BUILT PUBLIC UTILITY FINAL MEASUREMENTS

THE FOLLOWING UTILITIES HAVE BEEN LOCATED AND MEASURED AND THE RESULTS OF THOSE MEASUREMENTS ARE SHOWN ON THIS SET OF FINAL MEASUREMENT PLANS:

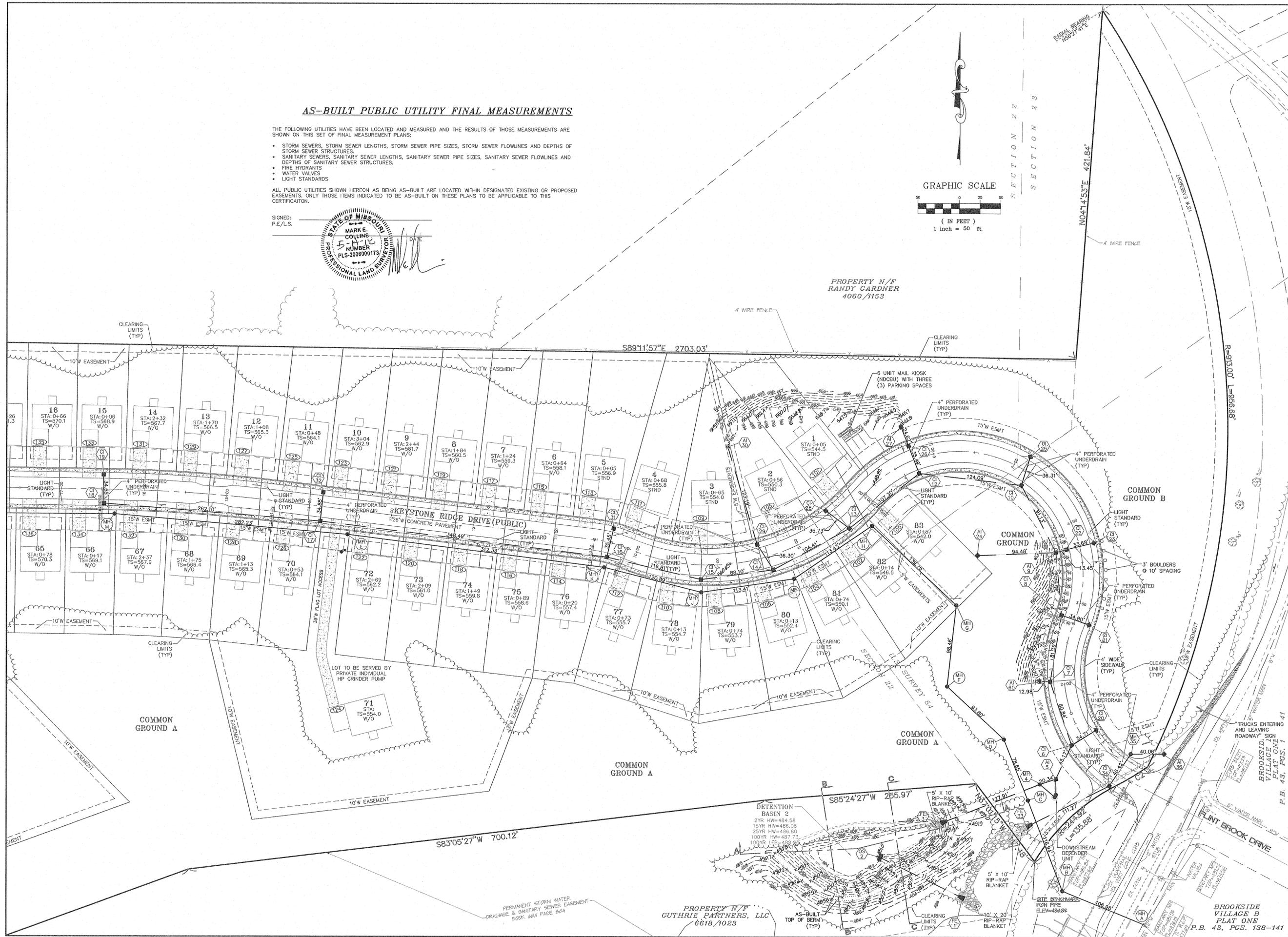
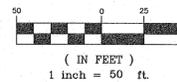
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- SANITARY SEWERS, SANITARY SEWER LENGTHS, SANITARY SEWER PIPE SIZES, SANITARY SEWER FLOWLINES AND DEPTHS OF SANITARY SEWER STRUCTURES.
- FIRE HYDRANTS
- WATER VALVES
- LIGHT STANDARDS

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SIGNED: _____
P.E./L.S.



GRAPHIC SCALE



PROJECT TITLE:
AS-BUILT PLANS FOR KEYSTONE RIDGE

ENGINEERING PLANNING SURVEYING
221 Point West Blvd.
St. Charles, MO 63501
636-939-5562
FAX 636-939-1718

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Box Engineering Company, Inc.
Missouri State Certificate of Authority
Engineering #000655
Missouri State Certificate of Authority
Surveying #000144

DATE	REVISIONS
04/25/18	CITY COMMENT REVS.
05/14/18	CITY COMMENT REVS.

Developer / Owner:
KEYSTONE RIDGE LAND, LLC
10328 LAKE BLUFF DRIVE
ST. LOUIS, MO 63123
314-892-3030 EXT. 121

P+Z No. #32-16
12/01/16 & 04/27/17
City No. #

Page No.
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SITE PLAN

Issue Date: 11/08/2017
Box Project # 16-16657

PROPERTY N/F
THADDEUS AND KAREN THEIS
5912/2396

PROPERTY N/F
JESSE T. WIGGINS
6216/361

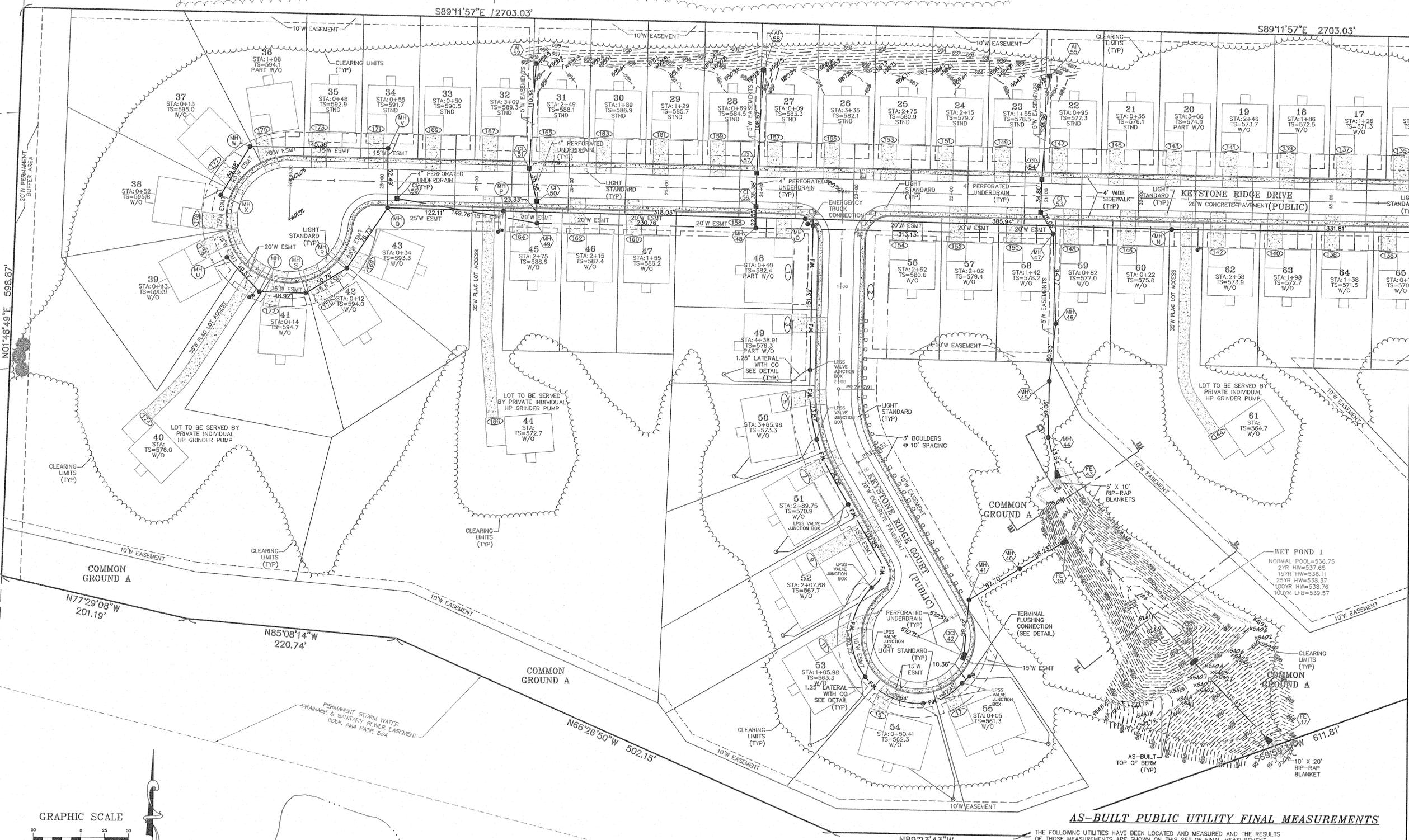
LOT 16
PROPERTY N/F
JOHN C. AND
CAROLYN A. MATLICK
1922/1221

LOT 17
PROPERTY N/F
JAMES R. SMITH AND
CATHY MANIS-SMITH
1922/1221

WALNUT FOREST
PROPERTY N/F
F.B. 34, P.C. 36
JOHN G. AND
ANGIE GERHAGEN
1988/1616

LOT 18
PROPERTY N/F
JOHN G. AND
ANGIE GERHAGEN
1988/1616

LOT 19
PROPERTY N/F
TIMOTHY M. AND
KIMBERLY TOWERS
2370/1490



PROJECT TITLE:
**AS-BUILT PLANS
FOR
KEYSTONE RIDGE**

ENGINEERING
PLANNING
SURVEYING
Bax Engineering Company, Inc.
221 Point West Blvd.
St. Charles, MO 63301
636-929-6562
FAX 636-929-1710



DISCLAIMER OF RESPONSIBILITY
I hereby specify that the documents intended to be
authentic and true copies of the original documents,
and I hereby disclaim any responsibility for all other
Drawings, Specifications, Estimates, Reports or other
documents or instruments related to or intended to
be used for any part or parts of the architectural or
engineering project or survey.

Bax Engineering Company, Inc.
Missouri State Certificate of Authority
Engineering #000655
Missouri State Certificate of Authority
Surveying #000144

REVISIONS

04/25/18	CITY COMMENT REVRS.
05/14/18	CITY COMMENT REVRS.

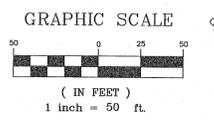
WET POND 1

NORMAL POOL=536.75
2YR HW=537.65
15YR HW=538.11
25YR HW=538.37
100YR HW=538.76
100YR LFB=539.57

Developer / Owner:
KEYSTONE RIDGE LAND, LLC
10328 LAKE BLUFF DRIVE
ST. LOUIS, MO 63123
314-892-3030 EXT. 121

P+Z No. #32-16
12/01/16 & 04/27/17
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Page No.
4 of 33



AS-BUILT PUBLIC UTILITY FINAL MEASUREMENTS

THE FOLLOWING UTILITIES HAVE BEEN LOCATED AND MEASURED AND THE RESULTS OF THOSE MEASUREMENTS ARE SHOWN ON THIS SET OF FINAL MEASUREMENT PLANS:

- STORM SEWERS, STORM SEWER LENGTHS, STORM SEWER PIPE SIZES, STORM SEWER FLOWLINES AND DEPTHS OF STORM SEWER STRUCTURES.
- SANITARY SEWERS, SANITARY SEWER LENGTHS, SANITARY SEWER PIPE SIZES, SANITARY SEWER FLOWLINES AND DEPTHS OF SANITARY SEWER STRUCTURES.
- FIRE HYDRANTS
- WATER VALVES
- LIGHT STANDARDS

ALL PUBLIC UTILITIES SHOWN HEREON AS BEING AS-BUILT ARE LOCATED WITHIN DESIGNATED EXISTING OR PROPOSED RIGHT-OF-WAY LIMITS. ONLY THOSE ITEMS INDICATED TO BE AS-BUILT ON THESE PLANS ARE SUBJECT TO THIS CERTIFICATION.

SIGNED:
P.E./L.S. **MARK E. COLLINS**
NUMBER **171-19**
PLS-2006000173
DATE



Bax Project #16-16857 Issue Date: 11/08/2017

SITE PLAN

PROPERTY N/F
CUTHRIE PARTNERS, LLC
6618/1023

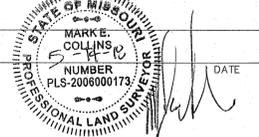
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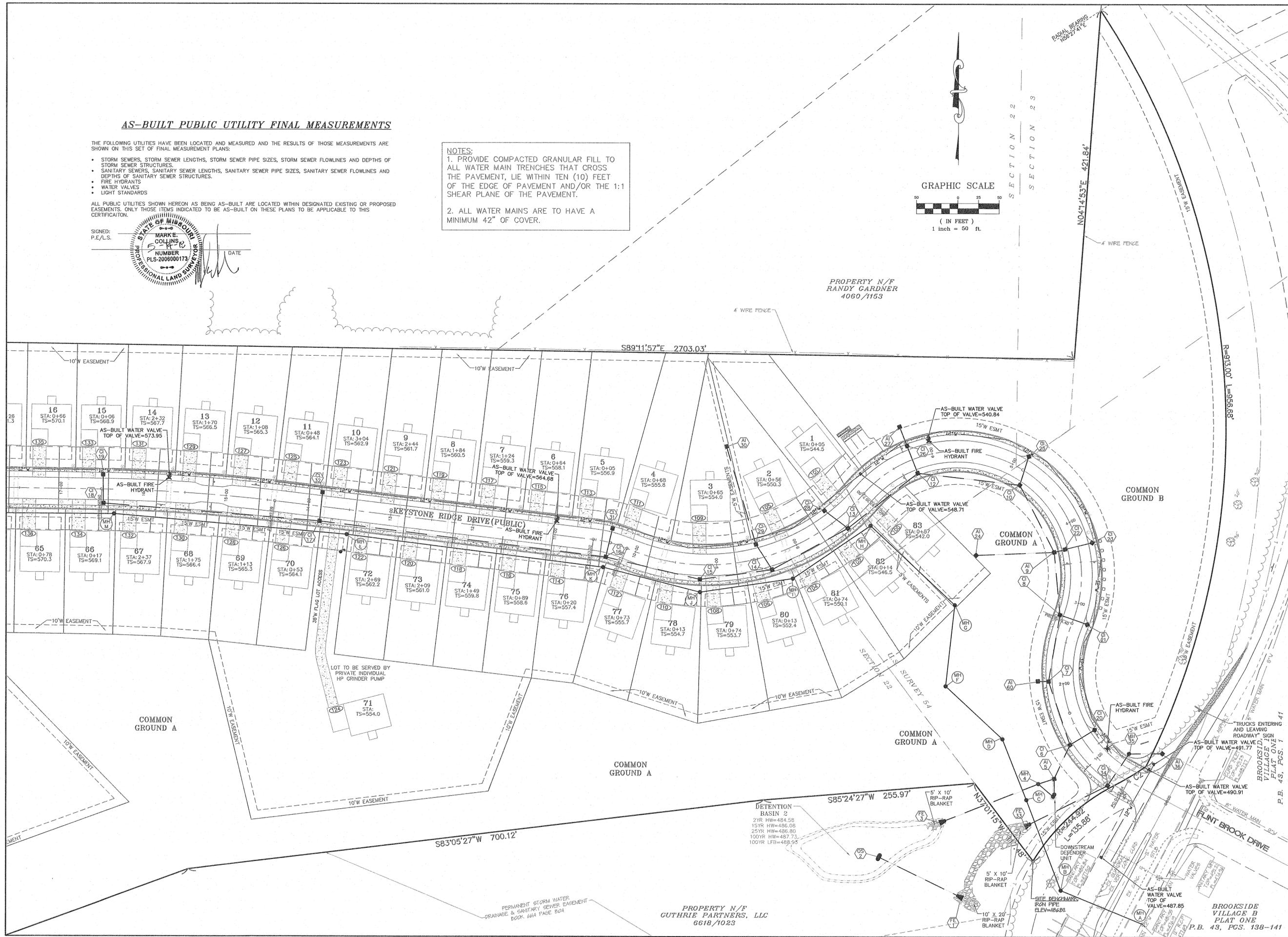
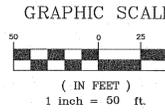
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SIGNED: P.E./L.S.



NOTES:
 1. PROVIDE COMPACTED GRANULAR FILL TO ALL WATER MAIN TRENCHES THAT CROSS THE PAVEMENT, LIE WITHIN TEN (10) FEET OF THE EDGE OF PAVEMENT AND/OR THE 1:1 SHEAR PLANE OF THE PAVEMENT.
 2. ALL WATER MAINS ARE TO HAVE A MINIMUM 42" OF COVER.



PROJECT TITLE:
AS-BUILT PLANS FOR KEYSTONE RIDGE

ENGINEERING FIRM:
 MARK COLLINS
 PROFESSIONAL LAND SURVEYOR
 224 Pinhook West Blvd.
 St. Charles, MO 65001
 636-928-5602
 FAX 928-1718

DISCLAIMER OF RESPONSIBILITY:
 I hereby specify that the documents intended to be authorized by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other drawings, specifications, estimates, reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.

Box Engineering Company, Inc.
 Missouri State Certificate of Authority
 Engineering #000655
 Missouri State Certificate of Authority
 Surveying #000144

REVISIONS:

DATE	REVISION
04/25/18	CITY COMMENT REVIS.
05/14/18	CITY COMMENT REVIS.

Developer / Owner:
 KEYSTONE RIDGE LAND, LLC
 10328 LAKE BLUFF DRIVE
 ST. LOUIS, MO 63123
 314-892-3030 EXT. 121

P+Z No. #32-16
 12/01/16 & 04/27/17
City No. #

Page No.
 7 of 33

WATER PLAN

Issue Date: 11/08/2017
 Box Project # 16-16857

PROPERTY N/F
THADDEUS AND KAREN THEIS
5912/2396

PROPERTY N/F
JESSE T. WIGGINS
6218/361

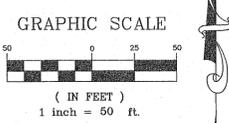
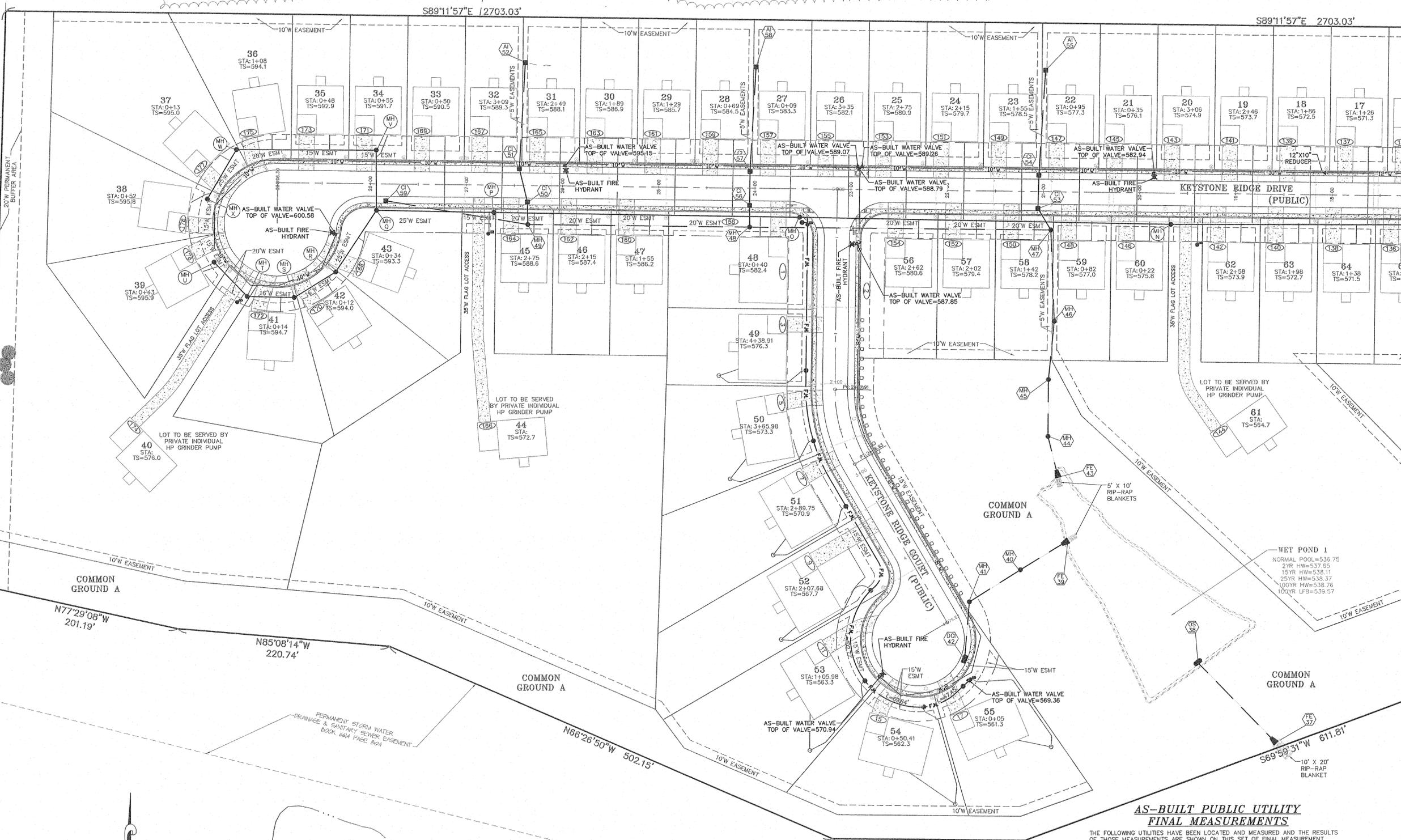
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JOHN C. MATLICK
CAROLYN A. MATLICK
1922/1221

LOT 17
PROPERTY N/F
JAMES R. SMITH AND
CATHY MANIS-SMITH
1922/1221

WALNUT FOREST
PROPERTY N/F
P.B. 34, P.C. 36

LOT 18
PROPERTY N/F
JOHN C. AND
ANGIE C. REHAGEN
1933/816

LOT 19
PROPERTY N/F
TIMOTHY M. AND
KIMBERLY TOWERS
2370/490



NOTES:
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2. ALL WATER MAINS ARE TO HAVE A MINIMUM 42" OF COVER.

PROPERTY N/F
CUTHRIE PARTNERS, LLC
6618/1023

AS-BUILT PUBLIC UTILITY FINAL MEASUREMENTS
THE FOLLOWING UTILITIES HAVE BEEN LOCATED AND MEASURED AND THE RESULTS OF THOSE MEASUREMENTS ARE SHOWN ON THIS SET OF FINAL MEASUREMENT PLANS:
• STORM SEWERS, STORM SEWER LENGTHS, STORM SEWER PIPE SIZES, STORM SEWER FLOWLINES AND DEPTHS OF STORM SEWER STRUCTURES.
• SANITARY SEWERS, SANITARY SEWER LENGTHS, SANITARY SEWER PIPE SIZES, SANITARY SEWER FLOWLINES AND DEPTHS OF SANITARY SEWER STRUCTURES.
• FIRE HYDRANTS
• WATER VALVES
• LIGHT STANDARDS
ALL PUBLIC UTILITIES SHOWN AS BEING AS-BUILT ARE LOCATED WITHIN DESIGNATED EXISTING OR PROPOSED EASEMENTS. ONLY THOSE ITEMS INDICATED TO BE AS-BUILT UTILITIES ARE APPLICABLE TO THIS CERTIFICATION.
SIGNED: [Signature]
P.E./L.S.
DATE

PROJECT TITLE:
AS-BUILT PLANS FOR KEYSTONE RIDGE

ENGINEERING
PLANNING
SURVEYING



DISCLAIMER OF RESPONSIBILITY
I hereby specify that the documents intended to be authenticated by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other drawings, specifications, estimates, reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.

Box Engineering Company, Inc.
Missouri State Certificate of Authority
Engineering #000655
Missouri State Certificate of Authority
Surveying #000144

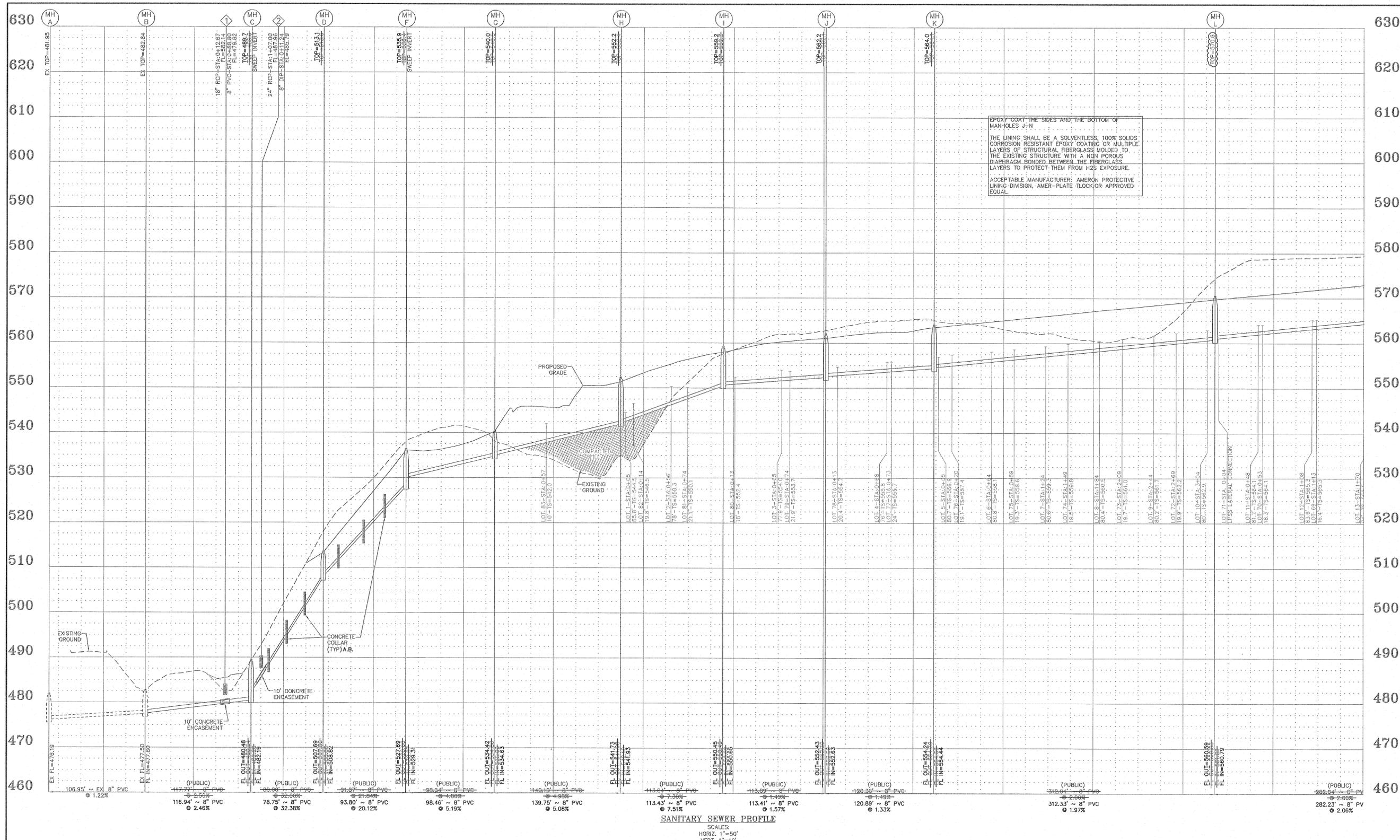
REVISIONS

DATE	REVISION
04/25/18	CITY COMMENT REVS.
05/14/18	CITY COMMENT REVS.

Developer / Owner:
KEYSTONE RIDGE LAND, LLC
10328 LAKE BLUFF DRIVE
ST. LOUIS, MO 63123
314-892-3030 EXT. 121

WATER PLAN
P+Z No. #32-16
12/01/16 & 04/27/17
City No. #
Page No. 8 of 33

Issue Date: 11/08/2017
Box Project # 16-16857



EPOXY COAT THE SIDES AND THE BOTTOM OF MANHOLES J-N
 THE LINING SHALL BE A SOLVENTLESS, 100% SOLIDS CORROSION RESISTANT EPOXY COATING OR MULTIPLE LAYERS OF STRUCTURAL FIBERGLASS MOULDED TO THE EXISTING STRUCTURE WITH A NON POROUS DIAPHRAGM BONDED BETWEEN THE FIBERGLASS LAYERS TO PROTECT THEM FROM H2S EXPOSURE.
 ACCEPTABLE MANUFACTURER: AMERON PROTECTIVE LINING DIVISION, AMER-PLATE "LOCK"OR APPROVED EQUAL.

SANITARY SEWER PROFILE
 SCALES:
 HORIZ. 1"=50'
 VERT. 1"=10'

- CITY OF O'FALLON NOTES:**
- ALL SANITARY LATERALS AND SANITARY SEWER MAINS THAT CROSS THE PAVEMENT, LIE WITHIN (10) TEN FEET OF THE EDGE OF PAVEMENT AND/OR THE 1:1 SHEAR PLANE OF THE PAVEMENT MUST HAVE PROPER GRANULAR ROCK BACKFILL AND REQUIRED COMPACTION.
 - ALL SANITARY SEWER LATERALS SHALL BE A MINIMUM SCHEDULE 40 PIPE MATERIAL, FROM THE SEWER MAIN TO THE BUILDING.
 - ANY CONNECTION TO AN EXISTING SANITARY SEWER STRUCTURE MAY REQUIRE REHABILITATION OR RECONSTRUCTION OF THE SANITARY SEWER STRUCTURE BEING USED.
 - WHEN PIPE SLOPES EXCEED 20%, A CONCRETE COLLAR WILL BE REQUIRED AT EACH PIPE JOINT.

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- FIRE HYDRANTS
- WATER VALVES
- LIGHT STANDARDS

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SIGNED: **MARK E. COLLINS**
 P.E./L.S.
 PROFESSIONAL LAND SURVEYOR
 NUMBER: PLS-2008000173
 DATE: _____

PROJECT TITLE:
AS-BUILT PLANS FOR KEYSTONE RIDGE

ENGINEERING
PLANNING
SURVEYING

224 Point West Blvd.
 St. Charles, MO 63301
 636-928-5502
 FAX 636-928-1718

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 Engineering #000655
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 Surveying #000144

REVISIONS

DATE	REVISION
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05/14/18	CITY COMMENT REVES.

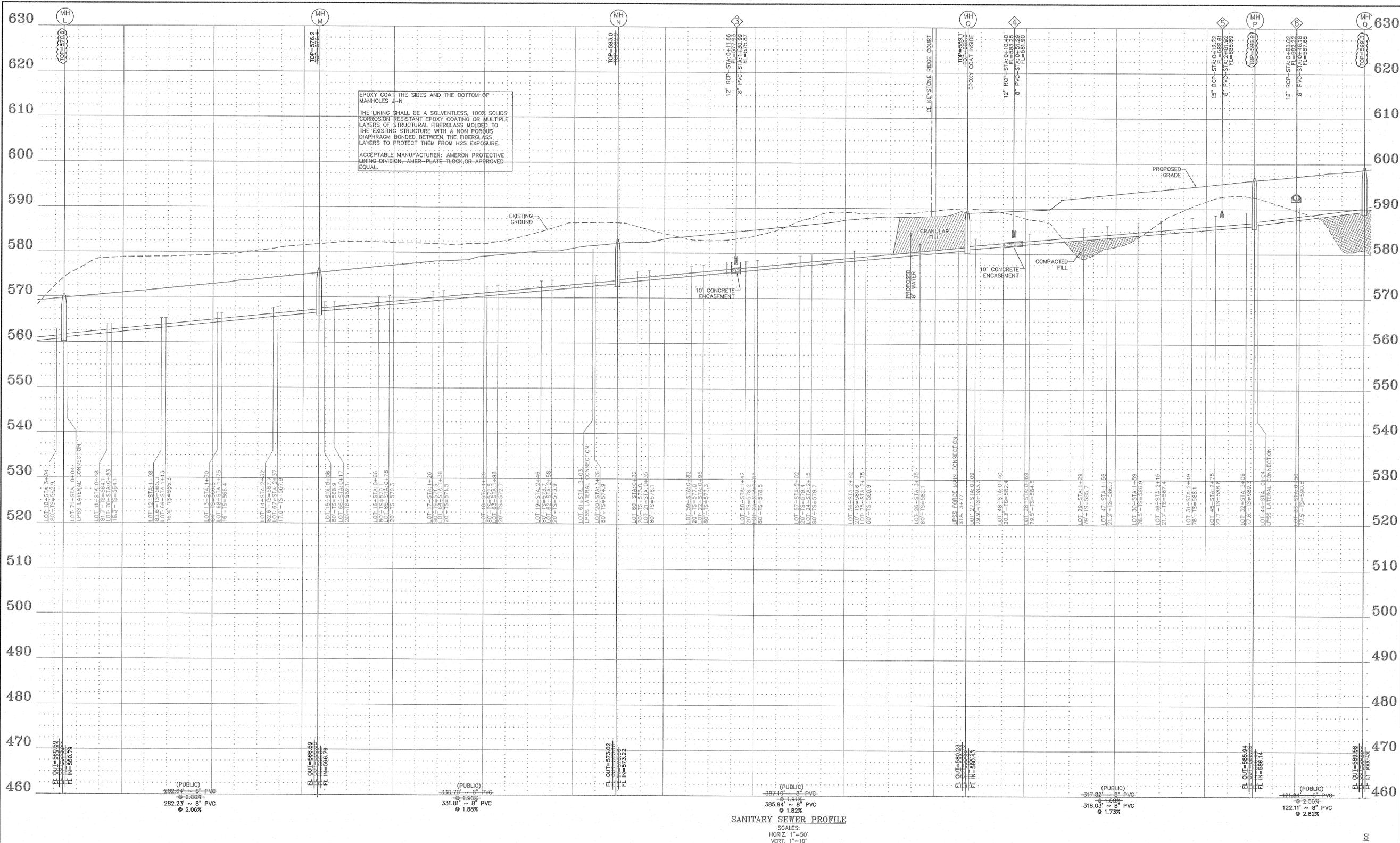
Developer / Owner:
 KEYSTONE RIDGE LAND, LLC
 10328 LAKE BLUFF DRIVE
 ST. LOUIS, MO 63123
 314-892-3030 EXT. 121

SANITARY SEWER PROFILES

P+Z No. #32-16
 12/01/16 & 04/27/17

City No. #

Page No. 14 of 33



EPOXY COAT THE SIDES AND THE BOTTOM OF MANHOLES J-N
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- LIGHT STANDARDS

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SIGNED: _____
 P.E./L.S. _____
 DATE _____



PROJECT TITLE:
AS-BUILT PLANS FOR KEYSTONE RIDGE



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Box Engineering Company, Inc.
 Missouri State Certificate of Authority
 Engineering #000655
 Missouri State Certificate of Authority
 Surveying #030144

REVISIONS

DATE	CITY COMMENT REVS.
04/25/18	CITY COMMENT REVS.
05/14/18	CITY COMMENT REVS.

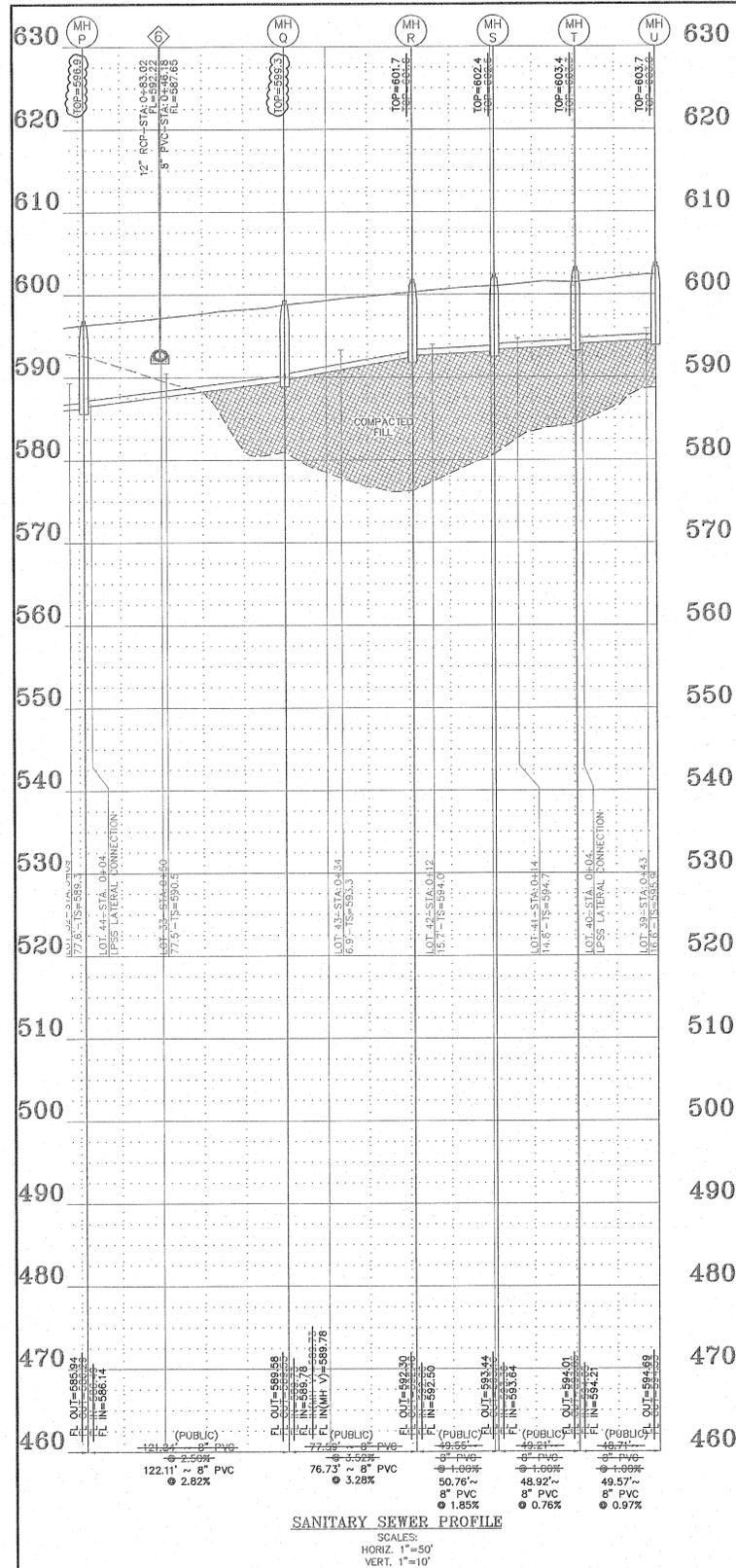
Developer / Owner:
 KEYSTONE RIDGE LAND, LLC
 10328 LAKE BLUFF DRIVE
 ST. LOUIS, MO 63123
 314-892-3030 EXT. 121

SANITARY SEWER PROFILES

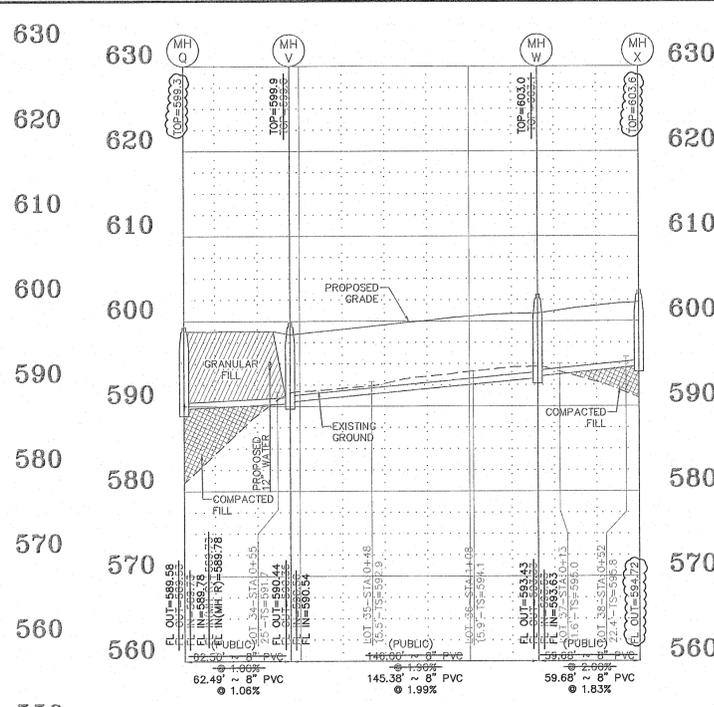
P+Z No. #32-16
 12/01/16 & 04/27/17

City No. #

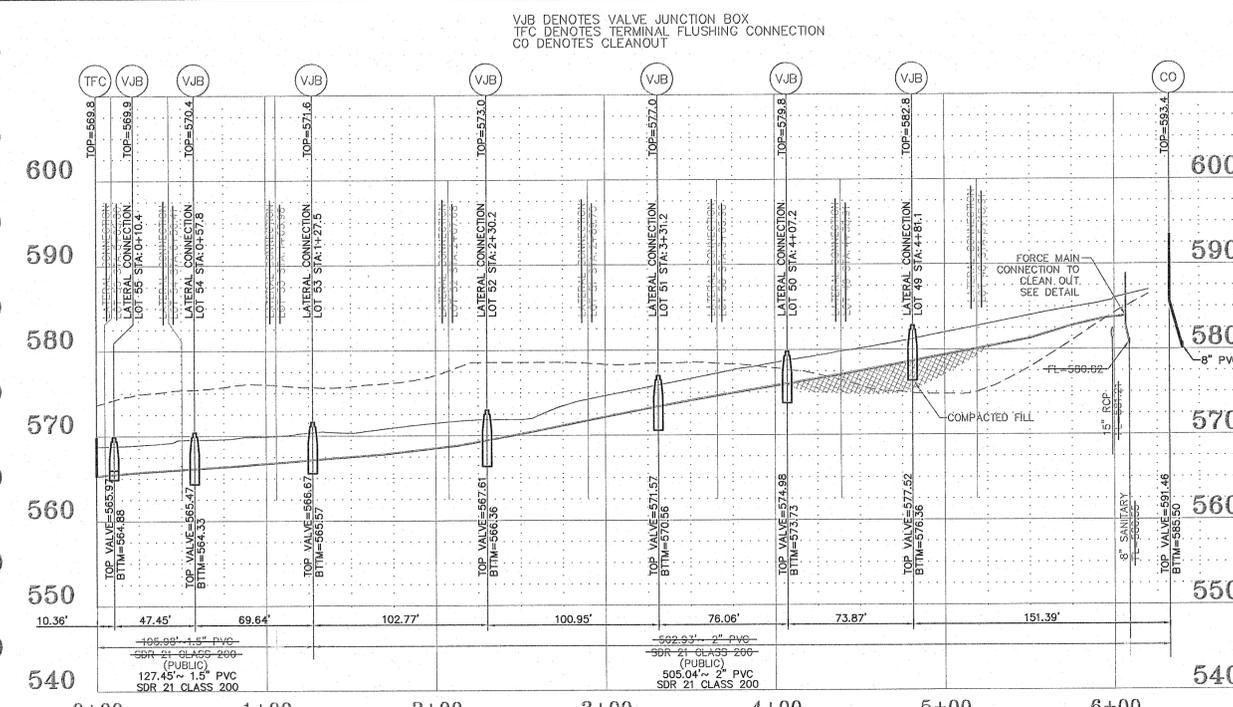
Page No.
 15 of 33



SANITARY SEWER PROFILE
 SCALES:
 HORIZ. 1"=50'
 VERT. 1"=10'



SANITARY SEWER PROFILE
 SCALES:
 HORIZ. 1"=50'
 VERT. 1"=10'



SANITARY FORCEMAIN PROFILE
 SCALES:
 HORIZ. 1"=50'
 VERT. 1"=10'

VJB DENOTES VALVE JUNCTION BOX
 TFC DENOTES TERMINAL FLUSHING CONNECTION
 CO DENOTES CLEANOUT

CITY OF O'FALLON NOTES:

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- WATER VALVES
- LIGHT STANDARDS

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SIGNED:
 P.E./L.S.



DATE

PROJECT TITLE:
AS-BUILT PLANS FOR KEYSTONE RIDGE

ENGINEERING PLANNING SURVEYING
 221 Point West Blvd.
 St. Charles, MO 63301
 630-925-6552
 FAX 630-925-1716



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Bax Engineering Company, Inc.
 Missouri State Certificate of Authority
 Engineering #000655
 Missouri State Certificate of Authority
 Surveying #000144

REVISIONS

DATE	BY	REVISION
04/25/18	CITY COMMENT	REVISED
05/14/18	CITY COMMENT	REVISED

Developer / Owner:
 KEYSTONE RIDGE LAND, LLC
 10328 LAKE BLUFF DRIVE
 ST. LOUIS, MO 63123
 314-892-3030 EXT. 121

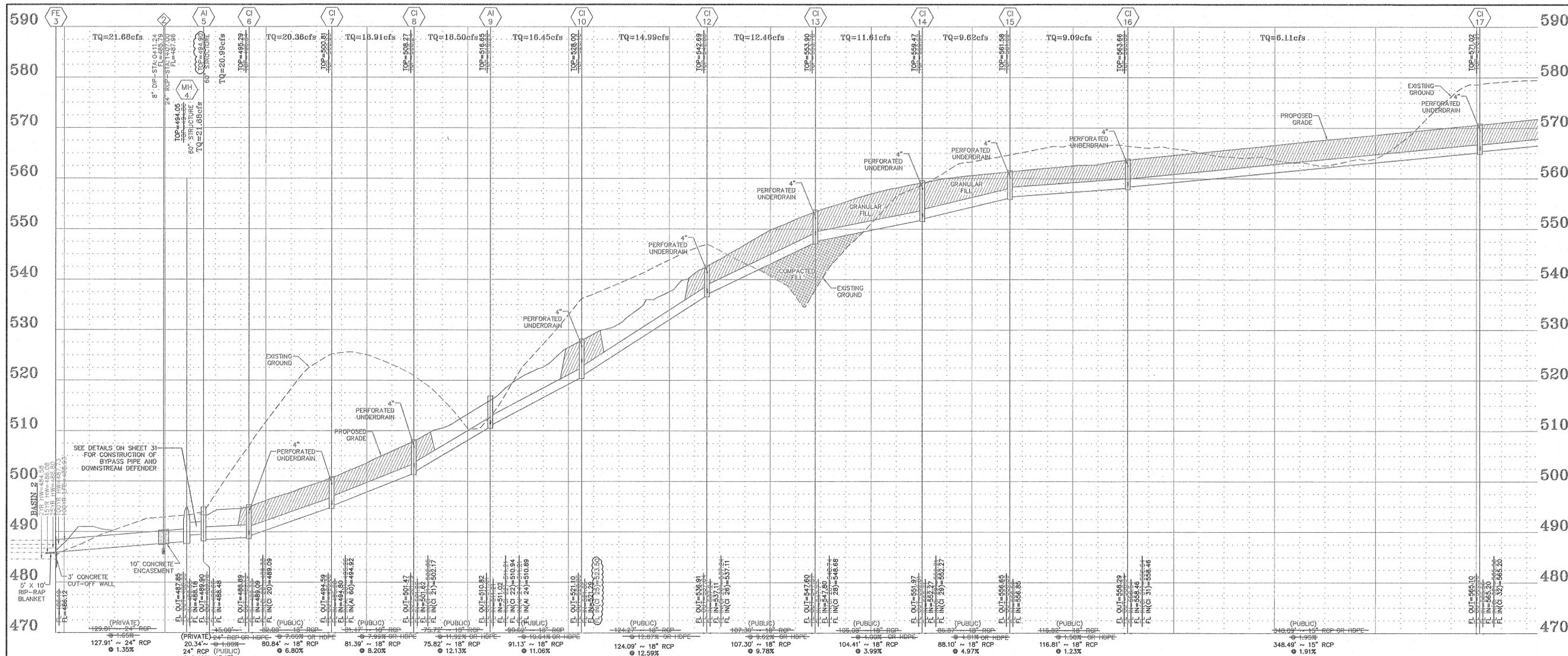
SANITARY SEWER PROFILES

P+Z No. #32-16
 12/01/16 & 04/27/17

City No. #

Page No.
 16 of 33

Bax Project # 16-16857 Issue Date: 11/09/2017



STORM SEWER PROFILE
 SCALES:
 HORIZ. 1"=50'
 VERT. 1"=10'

CITY OF O'FALLON NOTES:

1. ALL STORM SEWER STRUCTURES AND PIPE RUNS WILL BE PUBLIC UNLESS OTHERWISE NOTED.
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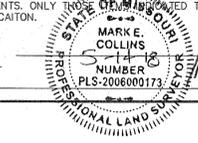
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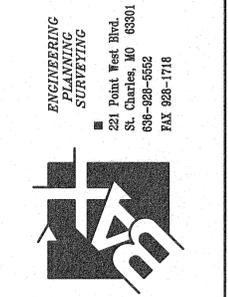
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- WATER VALVES
- LIGHT STANDARDS

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SIGNED: MARK COLLINS
 P.E./L.S. NUMBER 51418
 DATE 12/11/16



PROJECT TITLE:
AS-BUILT PLANS FOR KEYSTONE RIDGE



ENGINEERING PLANNING SURVEYING
 221 Point View Blvd.
 St. Charles, MO 63301
 636-928-5562 FAX 928-1718

Box Engineering Company, Inc.
 Missouri State Certificate of Authority
 Engineering #000655
 Missouri State Certificate of Authority
 Surveying #000144

REVISIONS

DATE	REVISION
04/25/18	CITY COMMENT REVS.
05/14/18	CITY COMMENT REVS.

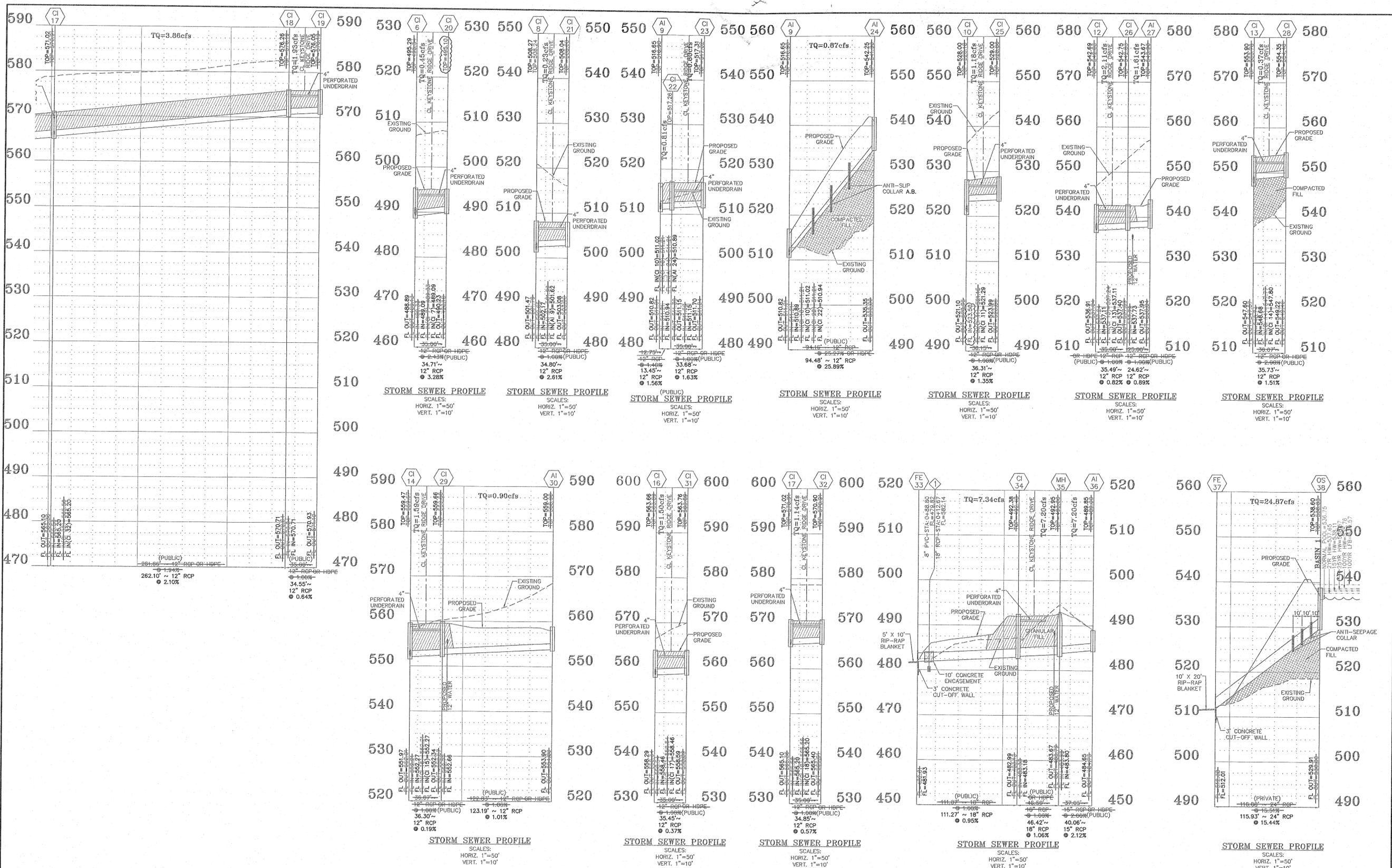
Developer / Owner:
 KEYSTONE RIDGE LAND, LLC
 10328 LAKE BLUFF DRIVE
 ST. LOUIS, MO 63123
 314-892-3030 EXT. 121

STORM SEWER PROFILES

P+Z No. #32-16
 12/01/16 & 04/27/17
City No. #

Page No. 17 of 33

Issue Date: 11/08/2017
 Box Project # 16-16657



- CITY OF O'FALLON NOTES:**
- ALL STORM SEWER STRUCTURES AND PIPE RUNS WILL BE PUBLIC UNLESS OTHERWISE NOTED.
 - PROVIDE COMPACTED GRANULAR BACKFILL TO ALL STORM SEWER TRENCHES THAT CROSS THE PAVEMENT, LIE WITHIN TEN (10) FEET OF THE EDGE OF PAVEMENT AND/OR THE 1:1 SHEAR PLANE OF THE PAVEMENT.
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SIGNED: DATE: _____
 P.E./L.S. NUMBER: PLS-2009000173

PROJECT TITLE:
AS-BUILT PLANS FOR KEYSTONE RIDGE

ENGINEERING SURVEYING
 221 Park West Blvd.
 St. Charles, MO 63301
 636-628-6582
 FAX 636-998-1718

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Box Engineering Company, Inc.
 Missouri State Certificate of Authority
 Engineering #000655
 Missouri State Certificate of Authority
 Surveying #000144

REVISIONS

DATE	REVISION
04/25/18	CITY COMMENT REVES.
05/14/18	CITY COMMENT REVES.

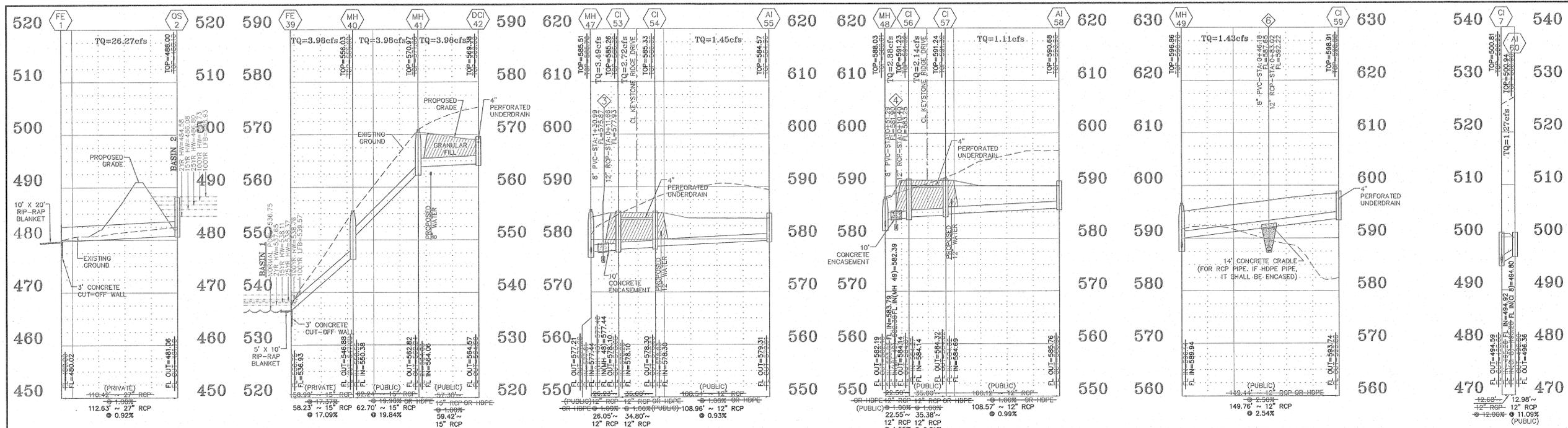
Developer / Owner:
 KEYSTONE RIDGE LAND, LLC
 10328 LAKE BLUFF DRIVE
 ST. LOUIS, MO 63123
 314-892-3030 EXT. 121

STORM SEWER PROFILES

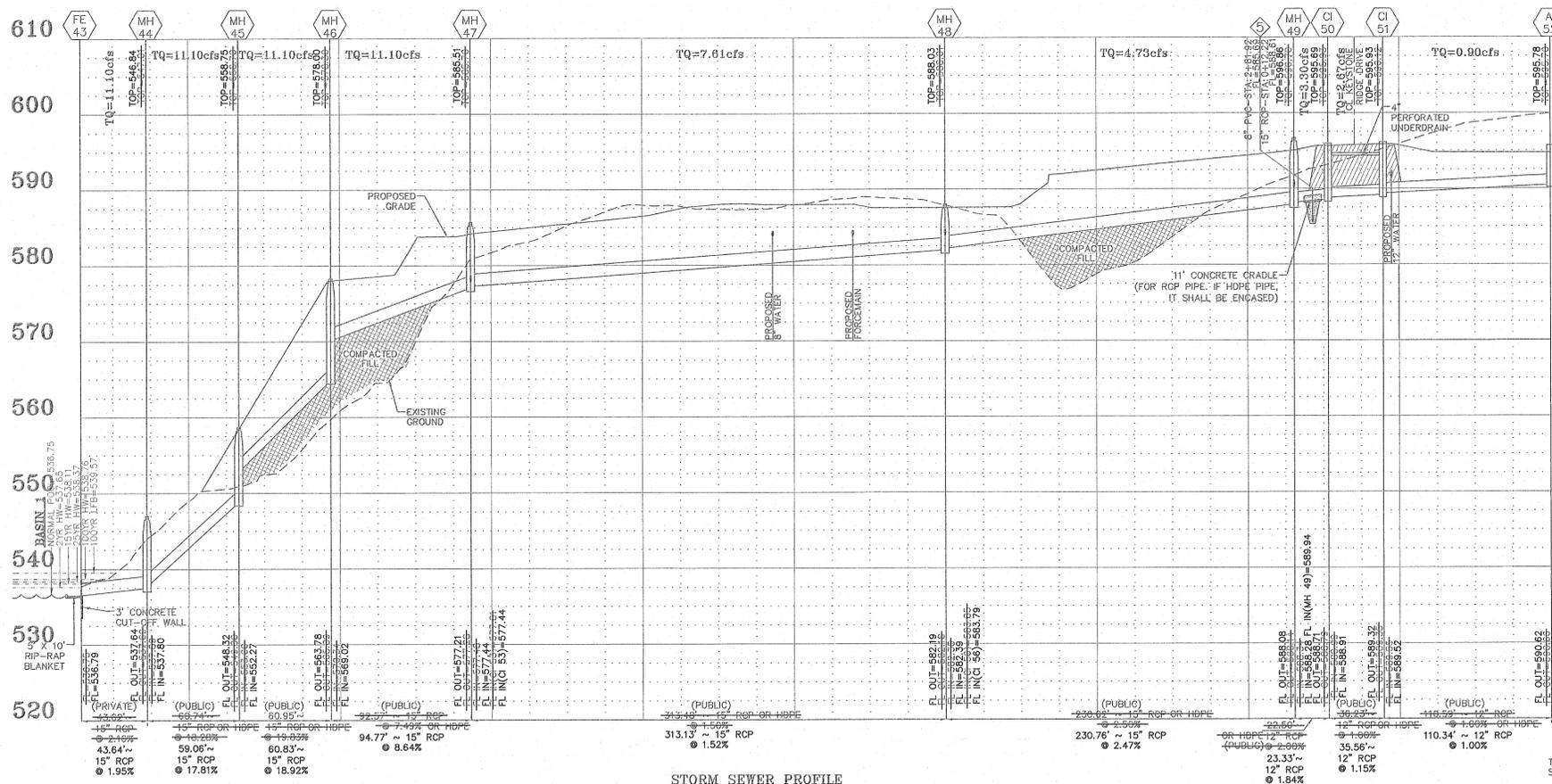
P+Z No. #32-16
 12/01/16 & 04/27/17
City No. #

Page No.
 18 of 33

Issue Date: 11/08/2017



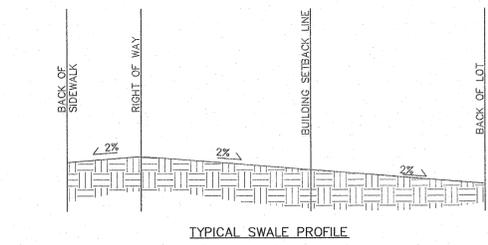
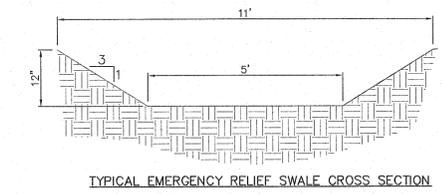
STORM SEWER PROFILE
 SCALES:
 HORIZ. 1"=50'
 VERT. 1"=10'



STORM SEWER PROFILE
 SCALES:
 HORIZ. 1"=50'
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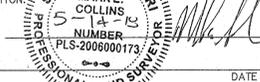


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SIGNED:  DATE: _____

PROJECT TITLE:
AS-BUILT PLANS
FOR
KEYSTONE RIDGE



ENGINEERING
PLANNING
SURVEYING
 221 Point West Blvd.
 St. Charles, MO 63301
 630-626-5662
 FAX 630-626-1718

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 Missouri State Certificate of Authority
 Engineering #000855
 Missouri State Certificate of Authority
 Surveying #000144

REVISIONS

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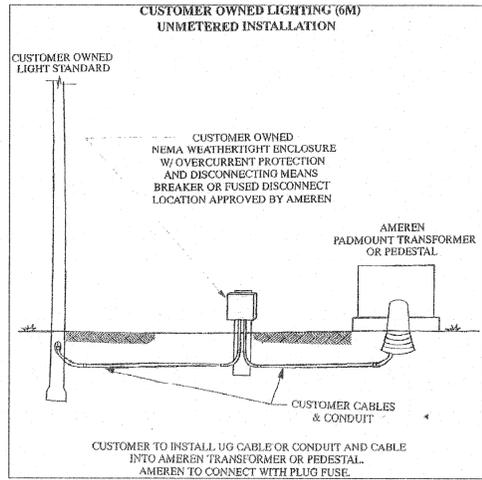
Developer / Owner:
 KEYSTONE RIDGE LAND, LLC
 10328 LAKE BLUFF DRIVE
 ST. LOUIS, MO 63123
 314-892-3030 EXT. 121

P+Z No. #32-16
 12/01/16 & 04/27/17
City No. #

Page No.
 19 of 33

STORM SEWER PROFILES

Issue Date: 11/08/2017
 Box Project #16-16957



NOTE:
FINAL LIGHTING LAYOUT AND DESIGN TO BE PROVIDED BY AMEREN UE PRIOR TO CONSTRUCTION.

AS-BUILT PUBLIC UTILITY FINAL MEASUREMENTS

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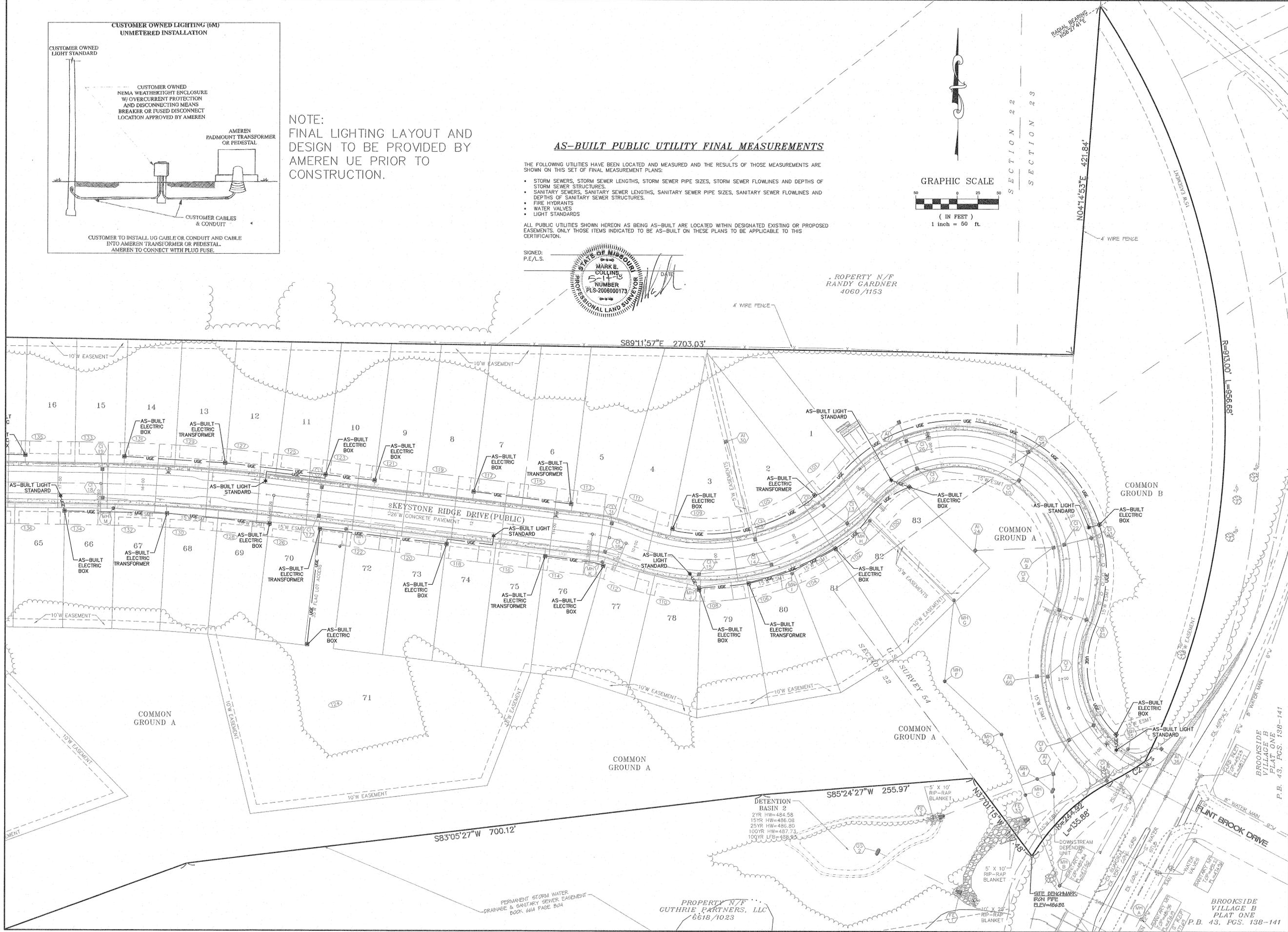
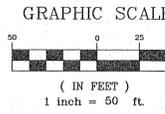
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SIGNED:
P.E./L.S.



PROPERTY N/F
RANDY GARDNER
4060/1153



PROJECT TITLE:
AS-BUILT PLANS FOR KEYSTONE RIDGE

ENGINEERING SURVEYING
221 Point West Blvd.
St. Charles, MO 63301
636-938-6562
FAX 636-938-1718

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Missouri State Certificate of Authority
Engineering #000655
Missouri State Certificate of Authority
Surveying #000144

REVISIONS

DATE	REVISION
04/25/18	CITY COMMENT REVS.
05/14/18	CITY COMMENT REVS.

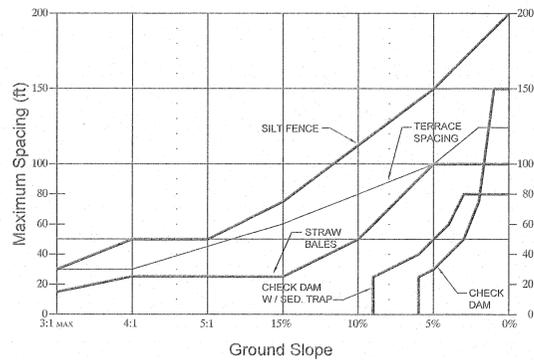
Developer / Owner:
KEYSTONE RIDGE LAND, LLC
10328 LAKE BLUFF DRIVE
ST. LOUIS, MO 63123
314-892-3030 EXT. 121

Lighting Plan

P+Z No. #32-16
12/01/16 & 04/27/17
City No. #

Page No.
24A of 33

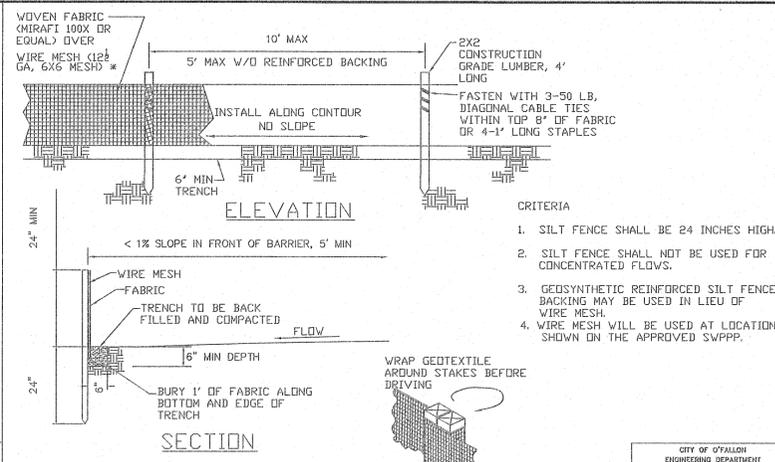
Box Project # 16-16657 Issue Date: 11/08/2017



- DESIGN CRITERIA**
1. SILT FENCE FOR SHEET FLOW SHALL HAVE A MAXIMUM DRAINAGE AREA OF 1/4 ACRE PER 100 LF.
 2. STRAW BALE BARRIERS FOR SHEET FLOW SHALL HAVE A MAXIMUM DRAINAGE AREA OF 1/4 ACRE PER 100 LF.
 3. REFER TO INDIVIDUAL ESC FIGURE FOR INSTALLATION.
 4. TERRACING INCLUDES LOGS, WATTLES & FILTER SOCKS.

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O'FALLON, MISSOURI

**SPACING CHART
FOR ESC DEVICES**



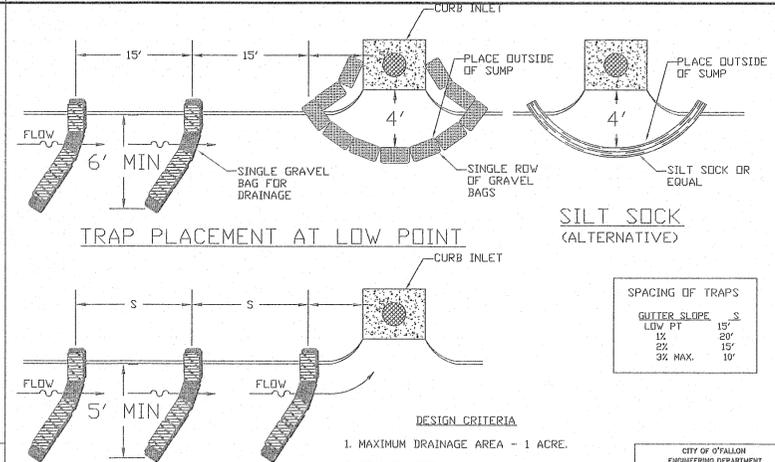
- CRITERIA**
1. SILT FENCE SHALL BE 24 INCHES HIGH.
 2. SILT FENCE SHALL NOT BE USED FOR CONCENTRATED FLOWS.
 3. GEOSYNTHETIC REINFORCED SILT FENCE BACKING MAY BE USED IN LIEU OF WIRE MESH.
 4. WIRE MESH WILL BE USED AT LOCATIONS SHOWN ON THE APPROVED SWPPP.

NOTE: IF FABRIC IS INSTALLED BY EQUIPMENT DESIGNED TO SLICE INTO THE GROUND, THE TRENCH IS NOT REQ'D.

JOINING SECTIONS OF SILT FENCE

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ENGINEERING DEPARTMENT
O'FALLON, MISSOURI

**SILT FENCE INSTALLATION
SHEET FLOW (ONLY)**



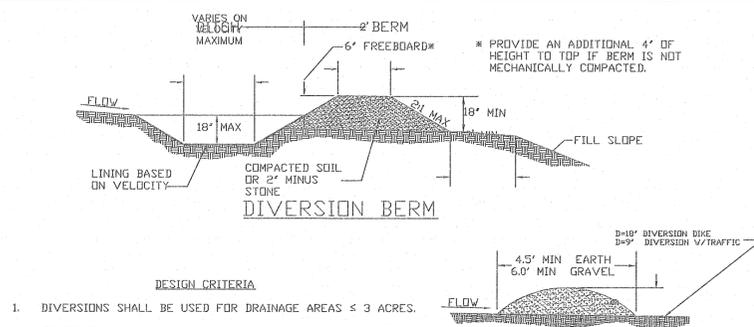
- DESIGN CRITERIA**
1. MAXIMUM DRAINAGE AREA - 1 ACRE.
 2. PEAK RUNOFF SHALL BE 32 CFS BASED ON THE 6-MONTH STORM.
 3. STACK GRAVEL BAGS DOUBLE HIGH. PROVIDE GAP FOR DRAINAGE.

SPACING OF TRAPS

GRITER SLOPE	S
LOW FT	15'
1X	20'
2X	15'
3X MAX.	10'

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O'FALLON, MISSOURI

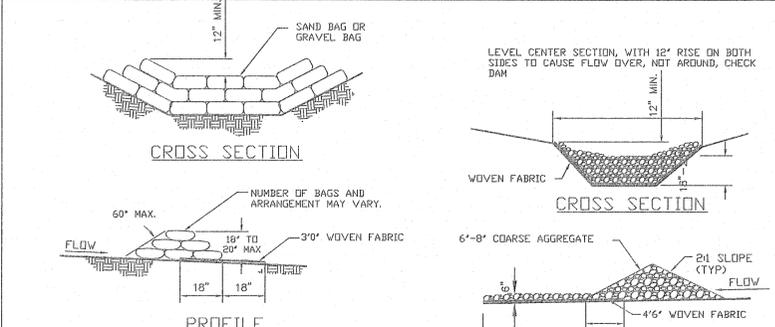
**CURB INLET
PROTECTION**



- DESIGN CRITERIA**
1. DIVERSIONS SHALL BE USED FOR DRAINAGE AREAS ≤ 3 ACRES.
 2. DIVERSION CHANNELS SHALL BE DESIGNED TO CONVEY THE 6-MO STORM AT NON-EROSIVE VELOCITIES.
 3. CRITICAL LOCATIONS SHALL BE DESIGNED FOR THE 15YR / 20min. STORM.
 4. MAXIMUM CHANNEL SLOPE OF 3% WITHOUT CHECK DAMS.
 5. SWALE SEDIMENT TRAPS ARE TO BE USED IN HIGHLY ERODIBLE AREAS.
 6. CHANNELS SHALL BE PROTECTED USING APPROPRIATE CHANNEL LINERS.
 7. CHANNEL OUTLETS MUST BE STABILIZED.
 8. STORM SEWERS MAY BE USED IN LIEU OF OPEN CHANNELS.

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O'FALLON, MISSOURI

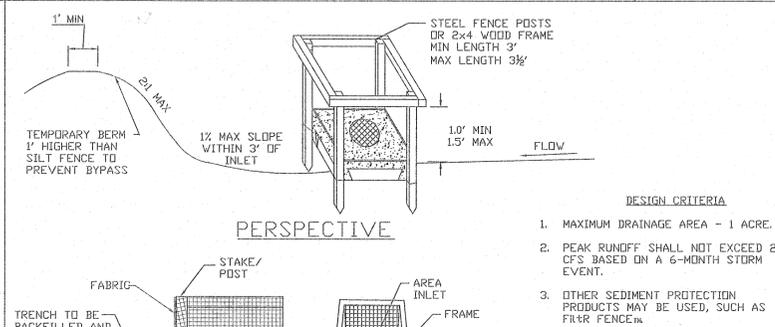
**DIVERSION BERMS
+ DIKES**



- DESIGN CRITERIA**
1. CHECK DAMS MAY BE CONSTRUCTED OF SEVERAL ESC CHECK DAM PRODUCTS.
 2. SEE TABLE 60-12 AND ESC 1 FOR CHECK DAM SPACING.

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O'FALLON, MISSOURI

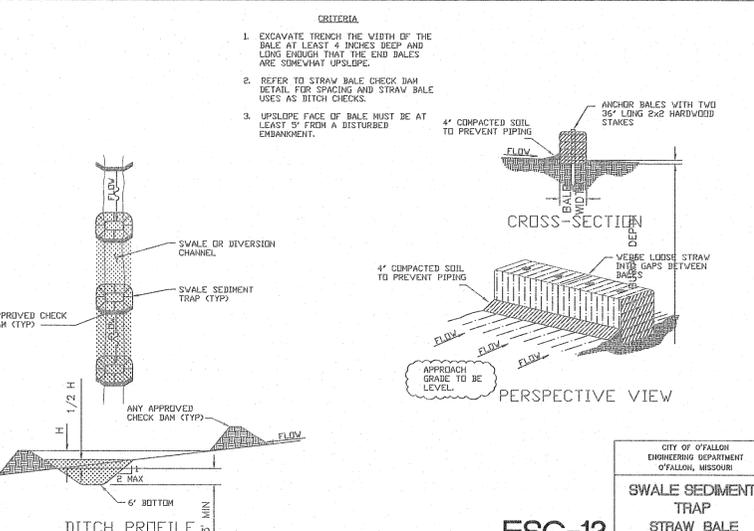
CHECK DAMS



- DESIGN CRITERIA**
1. MAXIMUM DRAINAGE AREA - 1 ACRE.
 2. PEAK RUNOFF SHALL NOT EXCEED 2 CFS BASED ON A 6-MONTH STORM EVENT.
 3. OTHER SEDIMENT PROTECTION PRODUCTS MAY BE USED, SUCH AS FILTER FENCE™.

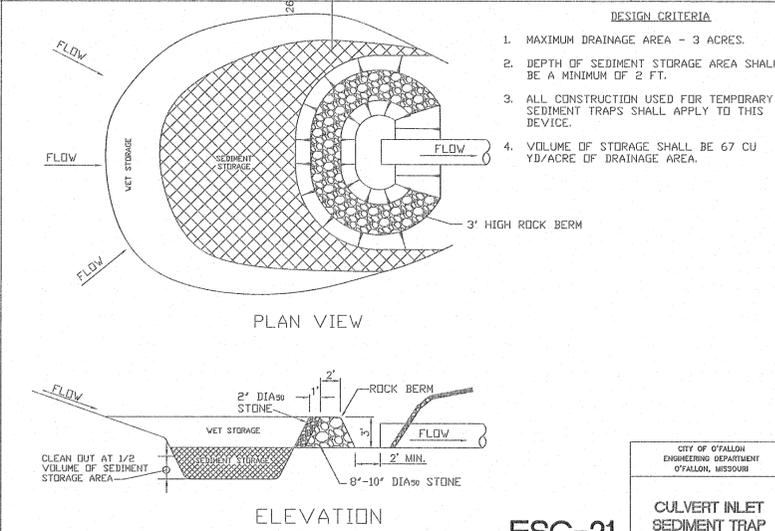
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ENGINEERING DEPARTMENT
O'FALLON, MISSOURI

**AREA INLET
PROTECTION
FABRIC DROP**



CITY OF O'FALLON
ENGINEERING DEPARTMENT
O'FALLON, MISSOURI

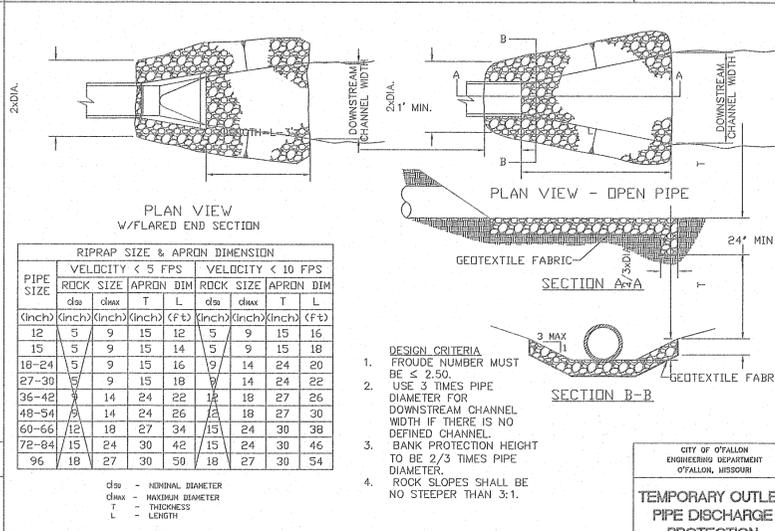
**SWALE SEDIMENT
TRAP
STRAW BALE
BARRIER INSTALLATION**



- DESIGN CRITERIA**
1. MAXIMUM DRAINAGE AREA - 3 ACRES.
 2. DEPTH OF SEDIMENT STORAGE AREA SHALL BE A MINIMUM OF 2 FT.
 3. ALL CONSTRUCTION USED FOR TEMPORARY SEDIMENT TRAPS SHALL APPLY TO THIS DEVICE.
 4. VOLUME OF STORAGE SHALL BE 67 CU YD/ACRE OF DRAINAGE AREA.

CITY OF O'FALLON
ENGINEERING DEPARTMENT
O'FALLON, MISSOURI

**CULVERT INLET
SEDIMENT TRAP**



PLAN VIEW W/ FLARED END SECTION

PIPE SIZE	RIPRAP SIZE & APRON DIMENSION				VELOCITY < 5 FPS				VELOCITY < 10 FPS				
	d ₅₀	d ₁₅₀	T	L	d ₅₀	d ₁₅₀	T	L	d ₅₀	d ₁₅₀	T	L	
12	5	9	15	12	5	9	15	16	12	5	9	15	16
15	5	9	15	14	5	9	15	18	12	5	9	15	18
18-24	5	9	15	16	9	14	24	20	12	5	9	15	22
27-30	5	9	15	18	9	14	24	22	12	5	9	15	26
36-42	5	9	15	16	9	14	24	27	12	5	9	15	30
48-54	5	9	15	18	9	14	24	30	12	5	9	15	33
60-66	12	18	27	34	15	24	30	38	12	5	9	15	46
72-84	15	24	30	42	15	24	30	46	12	5	9	15	54
96	18	27	30	50	18	27	30	54					

- DESIGN CRITERIA**
1. FROUDE NUMBER MUST BE ≤ 2.50.
 2. USE 3 TIMES PIPE DIAMETER FOR DOWNSTREAM CHANNEL WIDTH IF THERE IS NO DEFINED CHANNEL.
 3. BANK PROTECTION HEIGHT TO BE 2/3 TIMES PIPE DIAMETER.
 4. ROCK SLOPES SHALL BE NO STEEPER THAN 3:1.

CITY OF O'FALLON
ENGINEERING DEPARTMENT
O'FALLON, MISSOURI

**TEMPORARY OUTLET
PIPE DISCHARGE
PROTECTION**

ENGINEERS SEAL DOES NOT APPLY TO CITY OF O'FALLON DETAILS ON THIS SHEET.

AS-BUILT PUBLIC UTILITY FINAL MEASUREMENTS

- THE FOLLOWING UTILITIES HAVE BEEN LOCATED AND MEASURED AND THE RESULTS OF THOSE MEASUREMENTS ARE SHOWN ON THIS SET OF FINAL MEASUREMENT PLANS:
- STORM SEWERS, STORM SEWER LENGTHS, STORM SEWER PIPE SIZES, STORM SEWER FLOWLINES AND DEPTHS OF STORM SEWER STRUCTURES.
 - SANITARY SEWERS, SANITARY SEWER LENGTHS, SANITARY SEWER PIPE SIZES, SANITARY SEWER FLOWLINES AND DEPTHS OF SANITARY SEWER STRUCTURES.
 - FIRE HYDRANTS
 - WATER VALVES
 - LIGHT STANDARDS

ALL PUBLIC UTILITIES SHOWN HEREON BEING AS-BUILT ARE LOCATED WITHIN DESIGNATED EXISTING OR PROPOSED EASEMENTS. ONLY THOSE ITEMS INDICATED TO BE AS-BUILT ARE TO BE APPLICABLE TO THIS CERTIFICATION.

SIGNED: *[Signature]*
P.E./L.S.
DATE: 5-14-18

PROJECT TITLE:
AS-BUILT PLANS FOR KEYSTONE RIDGE

ENGINEERING PLANNING SURVEYING
Bax Engineering Company, Inc.
221 Pohn, West Blvd.
St. Charles, MO 63301
636-938-5562
FAX 636-938-1718

DISCLAIMER OF RESPONSIBILITY
I hereby certify that the documents intended to be authenticated by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other Drawings, Specifications, Estimates, Reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.

REVISIONS

04/25/18	CITY COMMENT REVIEWS
05/14/18	CITY COMMENT REVIEWS

Bax Engineering Company, Inc.
Missouri State Certificate of Authority
Engineering #000655
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P+Z No. #32-16
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Issue Date: 11/08/2017
Bax Project # 16-16657

REFERENCE DETAILS

BENDS	"B"	"C"	"D"	"E"	"F"
6"-11 1/4"	8"	10"	12"	24"	10"
6"-22 1/2"	8"	10"	12"	24"	13"
6"-45"	8"	10"	12"	24"	21"
6"-90"	8"	10"	12"	24"	28"
8"-11 1/4"	8"	20"	12"	24"	10"
8"-22 1/2"	8"	20"	12"	24"	13"
8"-45"	8"	20"	12"	24"	21"
8"-90"	8"	20"	12"	24"	28"
12"-11 1/4"	8"	30"	12"	24"	10"
12"-22 1/2"	8"	30"	12"	24"	13"
12"-45"	8"	30"	12"	24"	21"
12"-90"	8"	30"	12"	24"	28"
18"-11 1/4"	TL	28"	20"	24"	28"
18"-22 1/2"	TL	39"	20"	24"	39"
18"-45"	TL	50"	20"	24"	50"
18"-90"	TL	51"	20"	24"	60"
20"-11 1/4"	TL	34"	24"	28"	28"
20"-22 1/2"	TL	45"	24"	28"	39"
20"-45"	TL	74"	24"	28"	55"
20"-90"	TL	136"	24"	28"	60"
24"-11 1/4"	TL	40"	28"	28"	40"
24"-22 1/2"	TL	55"	28"	28"	55"
24"-45"	TL	101"	28"	28"	60"
24"-90"	TL	189"	28"	28"	60"
30"-11 1/4"	TL	49"	34"	30"	49"
30"-22 1/2"	TL	74"	34"	30"	60"
30"-45"	TL	154"	34"	30"	60"
30"-90"	TL	285"	34"	30"	60"

TEES	"C"	"D"	"E"	"F"	"G"
6"x6"x6"	12"	24"	24"	18"	18"
8"x8"x8"	12"	24"	24"	18"	18"
12"x12"x12"	12"	24"	24"	18"	18"
12"x12"x24"	12"	24"	24"	18"	18"
12"x12"x36"	12"	24"	24"	18"	18"
24"x24"x24"	12"	24"	24"	18"	18"
24"x24"x36"	12"	24"	24"	18"	18"

- NOTES:
 1. 2"x4" FITTINGS EQUIVALENT TO 6" FITTINGS.
 2. TAPPING SLEEVES TO HAVE BACKING BLOCKS SAME SIZE AS REQUIRED FOR FITTINGS.
 3. "L" = TOTAL LENGTH OF FITTING MINUS CLEARANCE FOR BELLS.

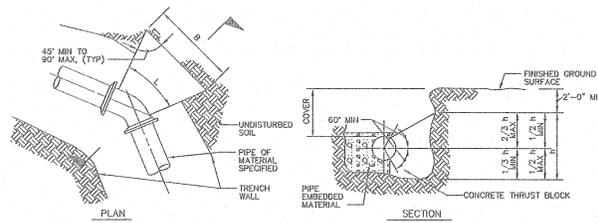
INTERNAL WATER PRESSURE 6" through 12"=200 psi
 INTERNAL WATER PRESSURE 16" through 30"=210 psi
 BEARING PRESSURE OF SOIL=2000 psi

BACKING BLOCKS

NOT TO SCALE

CITY OF O'FALLON
 ENGINEERING DEPARTMENT
 O'FALLON, MISSOURI

BACKING BLOCK DETAILS AND LOCATIONS



- NOTES:
 1. AREA OF BLOCK, A = BxH. BLOCK AREAS ARE SHOWN ON GENERAL LAYOUT OR TABLE.
 2. B = H = \sqrt{A} , EXCEPT WHERE TOP OF BLOCK IS WITHIN 2 FEET FROM GROUND SURFACE, THEN B = A/4.
 3. MINIMUM BLOCK DIMENSION (B & H) SHALL BE AT LEAST 60 OF PIPE OR 1 FOOT FOR PIPE 60 1/2" OR LESS.
 4. THE BOTTOM OF THE BLOCK SHALL EXTEND AT LEAST TO THE BOTTOM OF THE TRENCH IN ALL CASES.
 5. FITTING LENGTH MINUS CLEARANCE FOR BELLS. DETAIL IS SHOWN FOR CAST IRON PIPE. DETAIL IS SIMILAR FOR OTHER TYPES OF PIPE.
 6. DIMENSIONS FOR THRUST BLOCKS FOR FIRE HYDRANT ASSEMBLY ARE SHOWN FIRE HYDRANT ASSEMBLY DETAIL.

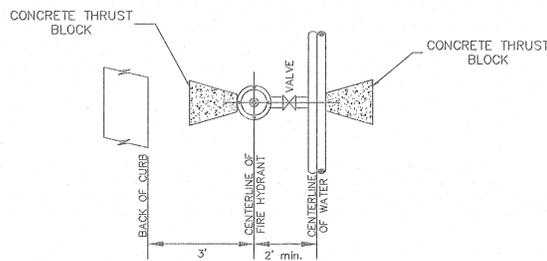
SIZE	BEND	THRUST AREA	B	H
18"	11 1/2"	4 SF	2'	2'
18"	45"	8 SF	2.8'	2.8'

CONCRETE THRUST BLOCKING

NOT TO SCALE

CITY OF O'FALLON
 ENGINEERING DEPARTMENT
 O'FALLON, MISSOURI

CONCRETE THRUST BLOCKING DETAILS



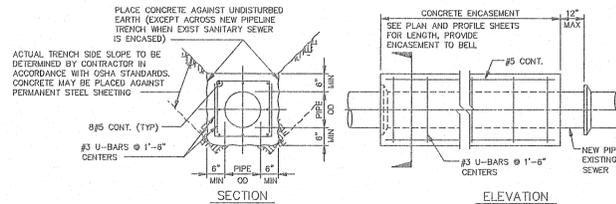
CONFIGURATION
 ALL FIRE HYDRANTS SHALL BE 3' OFF BACK OF CURB
 ALL WATER MAINS SHALL BE A MIN. OF 5' OFF BACK OF CURB

TYPICAL WATER MAIN AND FIRE HYDRANT LOCATIONS

NOT TO SCALE

CITY OF O'FALLON
 ENGINEERING DEPARTMENT
 O'FALLON, MISSOURI

WATER MAIN FIRE HYDRANT DETAIL



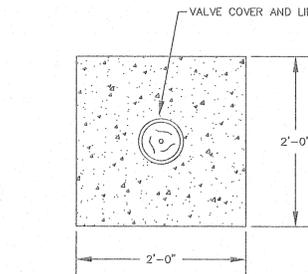
- NOTES:
 1. AT LOCATIONS WHERE THE TRANSMISSION MAIN CROSSES AN EXIST SANITARY SEWER, SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
 2. WHEN THE PIPELINE IS PROTECTED WITH POLYETHYLENE TUBE ENCASUREMENT, THE CONCRETE ENCASUREMENT IS TO COVER THE POLYETHYLENE ENCASUREMENT.

CONCRETE ENCASUREMENT

NO SCALE

CITY OF O'FALLON
 ENGINEERING DEPARTMENT
 O'FALLON, MISSOURI

CONCRETE ENCASUREMENT DETAILS



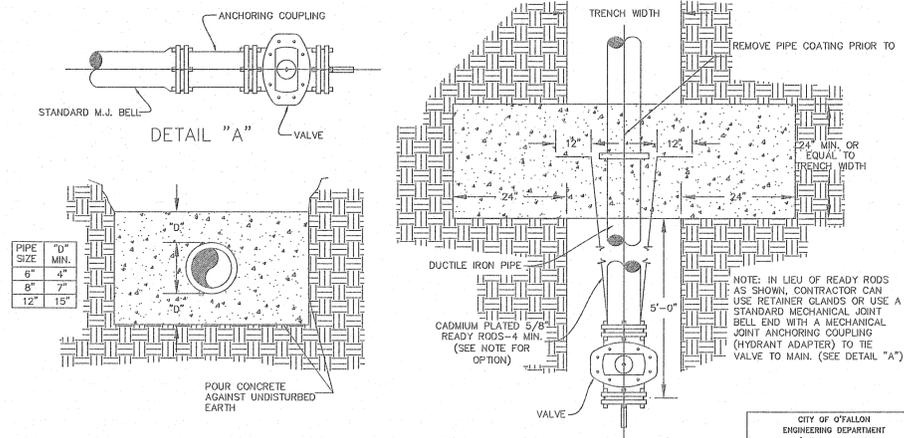
TOP VIEW CONCRETE COLLAR

NOT TO SCALE

- Note 1. Concrete collar joint pattern is required in paved areas such as roadways, driveways, sidewalks or other areas of paved surfaces.
 2. Concrete collars are optional in other non-paved areas.

CITY OF O'FALLON
 ENGINEERING DEPARTMENT
 O'FALLON, MISSOURI

CONCRETE COLLAR DETAIL



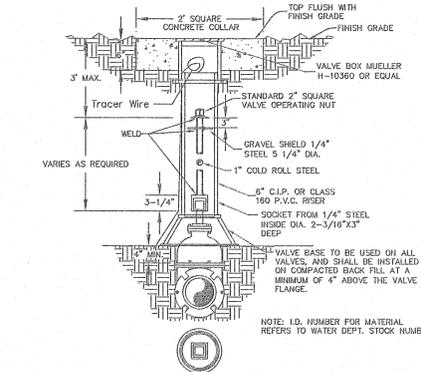
STRADDLE BLOCK DETAIL

NOT TO SCALE

CITY OF O'FALLON
 ENGINEERING DEPARTMENT
 O'FALLON, MISSOURI

STRADDLE BLOCK DETAILS

Concrete collar will be in accordance with the Concrete collar detail.



WATER VALVE DETAIL

NOT TO SCALE

CITY OF O'FALLON
 ENGINEERING DEPARTMENT
 O'FALLON, MISSOURI

WATER VALVE DETAIL

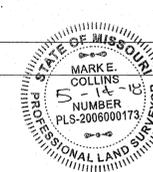
AS-BUILT PUBLIC UTILITY FINAL MEASUREMENTS

THE FOLLOWING UTILITIES HAVE BEEN LOCATED AND MEASURED AND THE RESULTS OF THOSE MEASUREMENTS ARE SHOWN ON THIS SET OF FINAL MEASUREMENT PLANS:

- STORM SEWERS, STORM SEWER LENGTHS, STORM SEWER PIPE SIZES, STORM SEWER FLOWLINES AND DEPTHS OF STORM SEWER STRUCTURES.
- SANITARY SEWERS, SANITARY SEWER LENGTHS, SANITARY SEWER PIPE SIZES, SANITARY SEWER FLOWLINES AND DEPTHS OF SANITARY SEWER STRUCTURES.
- FIRE HYDRANTS
- WATER VALVES
- LIGHT STANDARDS

ALL PUBLIC UTILITIES SHOWN HEREON AS BEING AS-BUILT ARE LOCATED WITHIN DESIGNATED EXISTING OR PROPOSED EASEMENTS. ONLY THOSE ITEMS INDICATED TO BE AS-BUILT ON THESE PLANS TO BE APPLICABLE TO THIS CERTIFICATION.

SIGNED: P.E./L.S.



DATE

ENGINEERS SEAL DOES NOT APPLY TO CITY OF O'FALLON DETAILS ON THIS SHEET.

PROJECT TITLE:
AS-BUILT PLANS FOR KEYSTONE RIDGE

ENGINEERING SURVEYING
 PA Paul A. Webb, Inc.
 St. Charles, MO 65001
 636-928-5582
 FAX 928-1718



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 I hereby specify that the documents intended to be authenticated by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other drawings, specifications, estimates, reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.

Box Engineering Company, Inc.
 Missouri State Certificate of Authority
 Engineering #000655
 Missouri State Certificate of Authority
 Surveying #000144

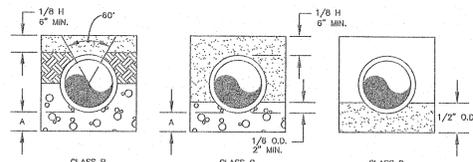
REVISIONS
04/25/18 CITY COMMENT REVIS.
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 ST. LOUIS, MO 63123
 314-892-3030 EXT. 121

P+Z No. #32-16
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 City No. #

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REFERENCE DETAILS



LEGEND

O.D. - NOMINAL PIPE SIZE
 H - COVER ABOVE TOP OF PIPE
 A - EMBEDDED BELOW PIPE (SEE TABLE)

CLASS B
 CLASS C
 CLASS D
 FLAT BOTTOM TRENCH WITH BELL HOLES AND HAND PLACED EMBEDDED

TABLE OF EMBEDDED TRENCHES BELOW PIPE		
O.D.	A MIN. SOIL	A MIN. ROCK
27" & SMALLER	3"	6"

GRANULAR BEDDING SHALL BE CRUSHED ROCK OR PEA GRAVEL WITH NOT LESS THAN 95% PASSING 1/2" (95% PASSING 3/4" FOR 30" AND LARGER PIPE) AND NOT LESS THAN 95% RETAINED ON A #4, TO BE PLACED IN NOT MORE THAN 6" LAYERS AND COMPACTED BY SLOTTED WITH A SHOVEL OR VIBRATING.

COMPACTED BACK FILL SHALL BE FINELY DIVIDED JOB EXCAVATED MATERIAL FREE FROM DEBRIS, ORGANIC MATERIAL AND STONES, PLACED IN UNIFORM LAYERS NOT MORE THAN 6" THICK, COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY A.S.T.M. D998, OR GRADED AGGREGATE. GRANULAR BACK FILL MATERIAL MAY BE SUBSTITUTED FOR ALL OR PART OF COMPACTED BACK FILL.

TAMPED BACK FILL SHALL BE FINELY DIVIDED JOB EXCAVATED MATERIAL FREE FROM DEBRIS, ORGANIC MATERIAL AND STONES, HAND PLACED IN UNIFORM LAYERS NOT MORE THAN 6" THICK AND TAMPED AROUND CONDUIT PIPE. GRANULAR BACK FILL MATERIAL MAY BE SUBSTITUTED FOR ALL OR PART OF TAMPED BACK FILL.

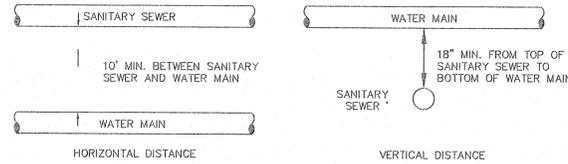
TRENCH BACK FILL SHALL BE AS REQUIRED IN THE "LAWING AND BACK FILL" SECTION OF THE DETAILED SPECIFICATIONS.

EMBEDDED THE TYPE OF EMBEDDED TO BE USED SHALL BE AS SPECIFIED IN THE PLANS AND SPECIFICATIONS.

TRACER WIRE REQUIRED ON ALL WATER MAINS

WATER MAIN EMBEDDED
NOT TO SCALE

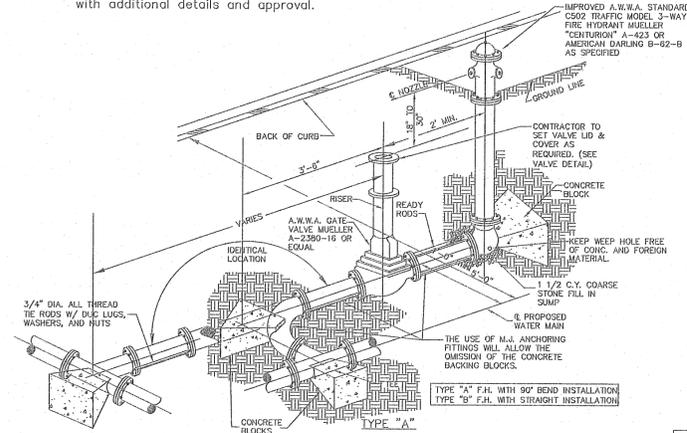
CITY OF O'FALLON
 ENGINEERING DEPARTMENT
 O'FALLON, MISSOURI
WATER MAIN EMBEDDED



TYPICAL WATER AND SEWER SEPARATION
NOT TO SCALE

CITY OF O'FALLON
 ENGINEERING DEPARTMENT
 O'FALLON, MISSOURI
WATER AND SEWER SEPARATION DETAIL

Note: Other connections such as anchor coupling are allowable with additional details and approval.



FIRE HYDRANT DETAIL
NOT TO SCALE

CITY OF O'FALLON
 ENGINEERING DEPARTMENT
 O'FALLON, MISSOURI
FIRE HYDRANT DETAILS

PROJECT TITLE:
AS-BUILT PLANS FOR KEYSTONE RIDGE

ENGINEERING PLANNING SURVEYING
 221 Point West Blvd.
 St. Charles, MO 63301
 636-928-6552
 FAX 636-928-1718

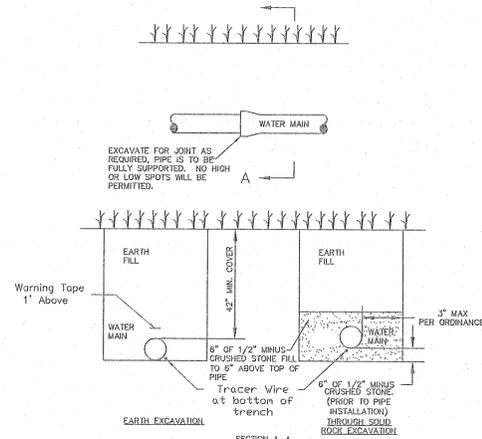


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TYPICAL WATER MAIN INSTALLATION DETAILS
NOT TO SCALE

CITY OF O'FALLON
 ENGINEERING DEPARTMENT
 O'FALLON, MISSOURI
WATER MAIN INSTALLATION DETAIL

Ductile Iron Pipe installation shall follow the Ductile Iron Research Association (DIPRA) guide line.
 The installation of PVC Pipe shall follow the Uni-Bell PVC Pipe Association Handbook of PVC Design and Construction.

NOTE:
 ALL HYDRANTS TO BE INSTALLED PER TYPE 'B' ON THE HYDRANT DETAIL.

ENGINEERS SEAL DOES NOT APPLY TO CITY OF O'FALLON DETAILS ON THIS SHEET.

AS-BUILT PUBLIC UTILITY FINAL MEASUREMENTS

THE FOLLOWING UTILITIES HAVE BEEN LOCATED AND MEASURED AND THE RESULTS OF THOSE MEASUREMENTS ARE SHOWN ON THIS SET OF FINAL MEASUREMENT PLANS:

- STORM SEWERS, STORM SEWER LENGTHS, STORM SEWER PIPE SIZES, STORM SEWER FLOWLINES AND DEPTHS OF STORM SEWER STRUCTURES.
- SANITARY SEWERS, SANITARY SEWER LENGTHS, SANITARY SEWER PIPE SIZES, SANITARY SEWER FLOWLINES AND DEPTHS OF SANITARY SEWER STRUCTURES.
- FIRE HYDRANTS
- WATER VALVES
- LIGHT STANDARDS

ALL PUBLIC UTILITIES SHOWN ON THESE PLANS AS BEING AS-BUILT ARE LOCATED WITHIN DESIGNATED EXISTING OR PROPOSED EASEMENTS. ONLY THOSE UTILITIES NOTED TO BE AS-BUILT ON THESE PLANS TO BE APPLICABLE TO THIS CERTIFICATION.

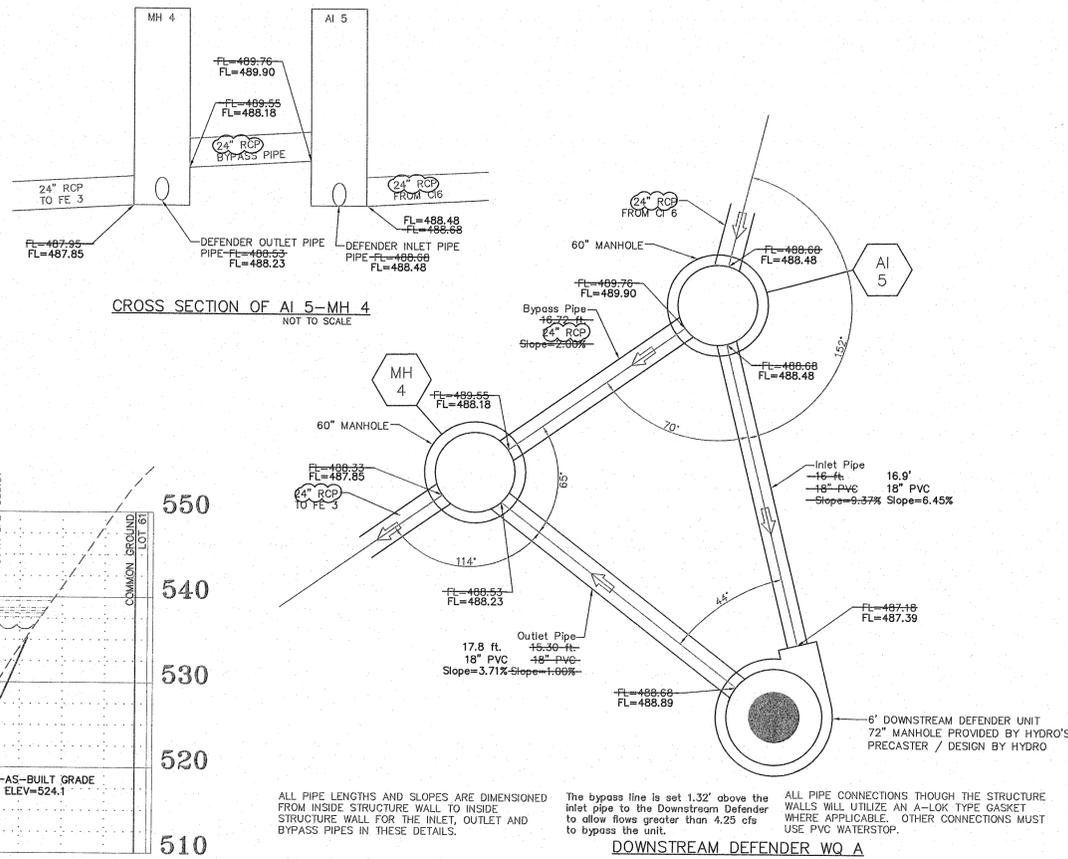
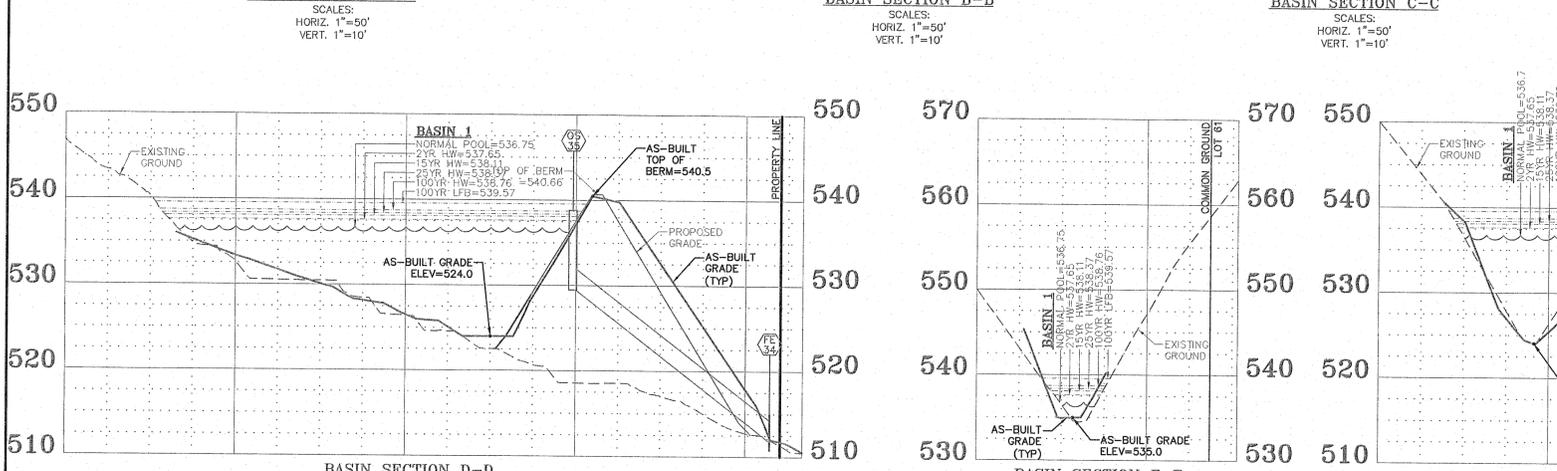
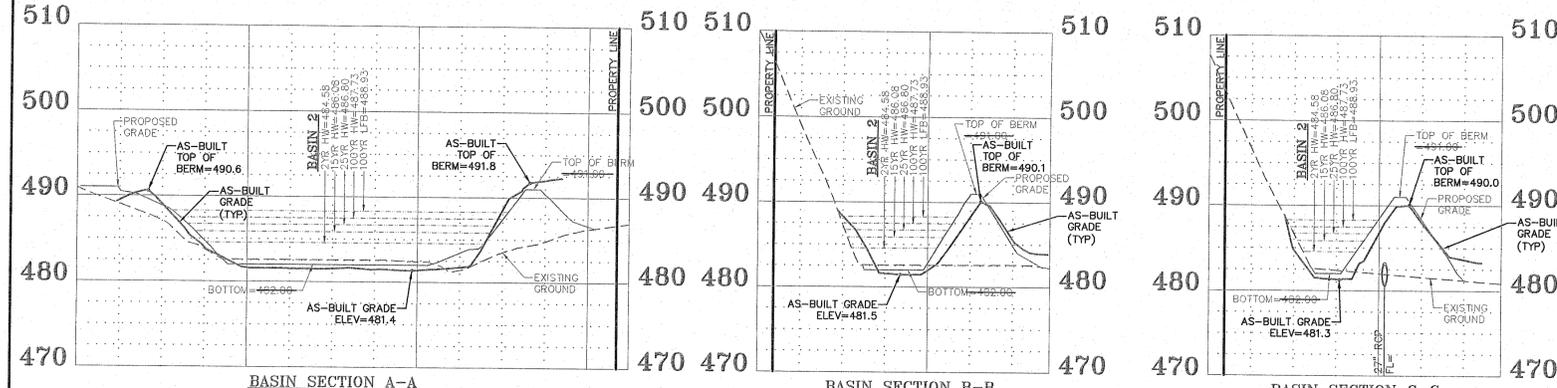
SIGNED: MARK E. COLLINS
 P.E./L.S. NUMBER PLS-200600173
 DATE 11/08/2017

Developer / Owner:
 KEYSTONE RIDGE LAND, LLC
 10328 LAKE BLUFF DRIVE
 ST. LOUIS, MO 63123
 314-892-3030 EXT. 121

REFERENCE DETAILS

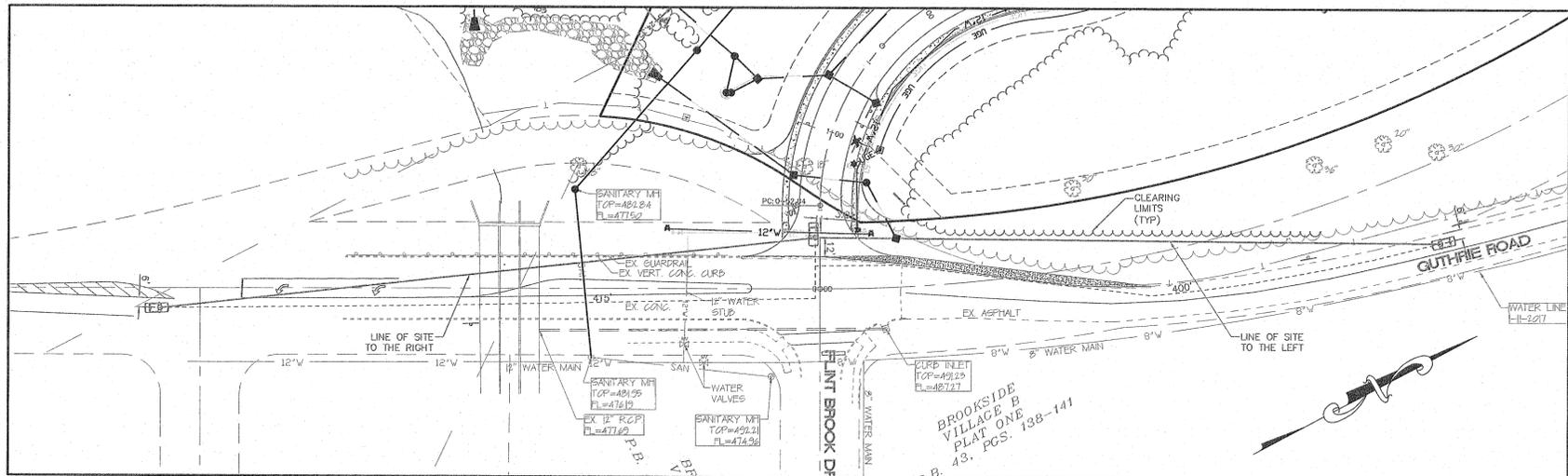
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 12/01/16 & 04/27/17
City No. #

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 29 of 33

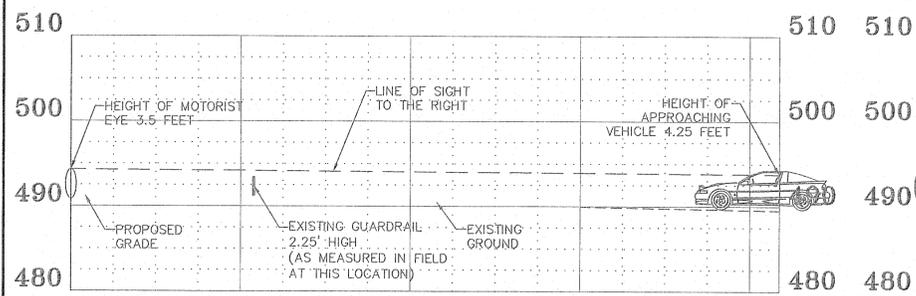


BAX PROJECT NAME : KEYSTONE RIDGE ASB
 BAX PROJECT NO. : 16-16857
 DESIGN DATE : 05/17/2018

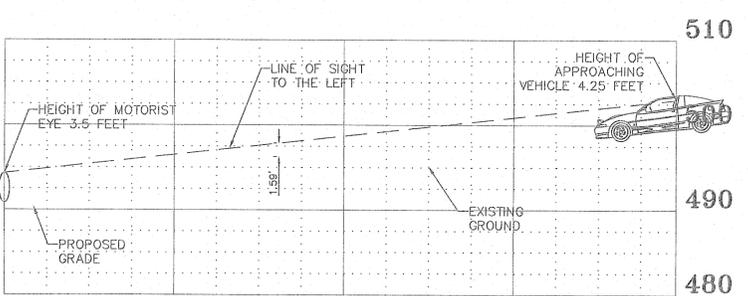
UPP STR	LOW STR	L	DIA	UPPER FL LN	LOWER FL LN	PS	UPPER ST EL	DEPTH HY GR	UPPER HY EL	LOWER HY EL	HYDR GRADE	FR HEAD	VEL	JUNC LOSS	TURN LOSS	CURVE LOSS	STR GRADE	INL CAP	DR AREA	PI	Q	TQ	PIPE CAP	LINE NUMBER	REMARKS	
CI59	MH49	150	12	593.74	589.94	2.54	598.91	4.83	594.08*	590.94	.00160	0.24	1.82	0.05	0.05	0.00	0.00	2%	1.93	0.54	2.64	1.43	1.43	5.68	1	
CI57	CI57	109	12	585.76	584.69	0.99	590.68	4.53	586.15*	585.69	.00100	0.11	1.41	0.03	0.03	0.00	0.00	4%	11.00	0.42	2.64	1.11	1.11	3.54	2	
CI56	CI56	35	12	584.32	584.14	0.51	591.24	5.87	585.37	585.14	.00360	0.13	2.72	0.12	0.10	0.00	0.00	2%	1.93	0.28	2.64	1.03	2.14	2.54	3	
CI57	MH48	23	12	584.14	583.79	1.55	591.23	6.17	585.06	584.79	.00650	0.15	3.67	0.21	0.12	0.00	0.00	2%	1.93	0.28	2.64	0.74	2.88	4.44	4	
CI55	CI54	109	12	579.31	578.30	0.93	584.57	4.80	579.77*	579.46	.00170	0.18	1.85	0.05	0.05	0.00	0.00	4%	11.00	0.55	2.64	1.45	1.45	3.43	5	
CI54	CI53	35	12	578.30	578.10	0.57	585.33	5.87	579.46	579.10	.00580	0.20	3.46	0.19	0.16	0.00	0.00	2%	1.93	0.48	2.64	1.27	2.72	2.70	6	
CI53	MH47	26	12	578.10	577.44	2.53	585.26	6.36	578.90	578.44	.00960	0.25	4.44	0.31	0.21	0.07	0.00	2%	1.93	0.29	2.64	0.77	3.49	5.67	7	
CI52	CI51	110	12	590.62	589.52	1.00	595.78	4.82	590.96*	590.52	.00960	0.07	1.15	0.02	0.02	0.00	0.00	4%	11.00	0.34	2.64	0.90	0.90	3.56	8	
CI51	CI50	36	12	589.32	588.91	1.15	595.93	5.65	590.28	589.91	.00560	0.20	3.40	0.18	0.17	0.00	0.00	2%	1.93	0.67	2.64	1.77	2.67	3.83	9	
CI50	MH49	23	12	588.71	588.28	1.84	596.69	7.06	589.63	589.28	.00860	0.20	4.20	0.27	0.15	0.03	0.00	2%	1.93	0.24	2.64	0.63	3.30	4.94	10	
MH49	MH48	231	15	588.08	582.39	2.47	596.86	8.17	588.69*	583.64	.00540	1.24	3.85	0.23	0.16	0.19	0.00	MH	0.00	0.00	0.00	0.00	4.73	10.14	11	
MH48	MH47	313	15	582.19	577.44	1.52	588.03	4.56	583.47	578.69	.01390	4.35	6.20	0.60	0.43	0.15	0.00	MH	0.00	0.00	0.00	0.00	7.61	7.96	12	
MH47	MH46	95	15	577.21	569.02	8.64	585.51	7.63	577.89*	570.27	.02950	2.80	9.05	1.27	1.08	0.53	0.00	MH	0.00	0.00	0.00	0.00	11.10	18.99	13	
MH46	MH45	61	15	563.78	552.27	18.92	578.00	13.67	564.33*	553.52	.02950	1.80	9.05	1.27	1.08	0.53	0.00	MH	0.00	0.00	0.00	0.00	11.10	28.10	14	
MH45	MH44	59	15	548.32	537.80	17.81	558.75	9.88	548.87*	539.61	.02950	1.74	9.05	1.27	1.08	0.53	0.00	MH	0.00	0.00	0.00	0.00	11.10	27.26	15	
MH44	FE43	44	15	537.64	536.79	1.95	546.84	7.23	539.61*	538.11	.02950	1.29	9.05	1.27	1.21	0.21	0.00	MH	0.00	0.00	0.00	0.00	11.10	9.02	16	Hw=538.11
DC142	MH41	60	15	564.57	564.06	0.85	569.38	3.71	565.67	565.31	.00350	0.21	3.12	0.15	0.15	0.00	0.00	LOW	6.80	1.45	2.64	3.83	3.83	5.97	17	
MH41	MH40	63	15	562.82	550.38	19.84	570.97	7.85	563.12*	551.63	.00350	0.22	3.12	0.15	0.08	0.08	0.00	MH	0.00	0.00	0.00	0.00	3.83	28.77	18	
MH40	FE39	58	15	546.88	536.93	17.09	556.03	8.83	547.21*	538.18	.00350	0.20	3.12	0.15	0.00	0.00	0.00	MH	0.00	0.00	0.00	0.00	3.83	26.70	19	
OS38	FE37	116	24	529.91	512.01	15.44	538.60	7.97	530.63*	514.01	.01190	1.38	7.87	0.96	0.96	0.00	0.00	OS	0.00	3.71	2.64	9.79	24.72	88.89	20	ITP=514.01
AI36	MH35	40	15	484.65	483.80	2.12	489.85	3.77	486.08	485.05	.01240	5.00	5.87	0.53	0.53	0.00	0.00	4%	11.00	3.50	2.71	7.20	7.20	9.41	21	
MH35	CI34	46	18	483.67	483.18	1.06	492.95	8.04	484.91	484.68	.00470	0.22	4.07	0.26	0.21	0.00	0.00	MH	0.00	0.00	0.00	0.00	7.20	10.79	22	
CI34	FE33	111	18	482.99	481.93	0.95	492.38	8.31	484.07	483.43	.00490	0.54	4.15	0.27	0.10	0.09	0.00	4%	1.21	0.04	3.54	0.14	7.34	10.25	23	ITP=483.43
CI32	CI17	35	12	565.40	565.20	0.57	570.90	4.63	566.20	566.00	.00100	0.04	1.45	0.03	0.03	0.00	0.00	2%	1.93	0.42	2.64	1.14	1.14	2.70	24	
CI31	CI16	35	12	558.59	558.46	0.37	563.76	4.18	559.58	559.46	.00180	0.06	1.91	0.06	0.06	0.00	0.00	2%	1.93	0.54	2.64	1.50	1.50	2.16	25	
AI30	CI29	123	12	553.90	552.66	1.01	559.00	4.76	554.24*	553.66	.00060	0.08	1.15	0.02	0.02	0.00	0.00	4%	11.00	0.34	2.64	0.90	0.90	3.57	26	
CI29	CI14	36	12	552.34	552.27	0.19	559.66	6.27	553.39	553.27	.00200	0.07	2.02	0.06	0.05	0.00	0.00	3.7%	1.32	0.26	2.64	0.69	1.59	1.56	27	
CI28	CI13	34	12	549.22	548.68	1.60	554.35	4.67	549.68	549.68	.00010	0.00	0.47	0.00	0.00	0.00	0.00	7.7%	0.50	0.14	2.64	0.37	0.37	4.51	28	
AI27	CI26	25	12	537.95	537.73	0.89	543.67	4.82	538.85	538.73	.00200	0.05	2.05	0.07	0.07	0.00	0.00	4%	11.00	0.61	2.64	1.61	1.61	3.37	29	
CI26	CI12	35	12	537.40	537.11	0.82	542.75	4.46	538.29	538.11	.00350	0.12	2.69	0.11	0.06	0.00	0.00	10%	0.50	0.19	2.64	0.50	2.11	3.22	30	
CI25	CI10	36	12	523.99	523.50	1.35	529.00	4.44	524.56	524.50	.00100	0.03	1.40	0.03	0.03	0.00	0.00	10%	0.50	0.56	2.62	1.10	1.10	4.14	31	
AI24	AI9	94	12	535.35	510.89	25.89	542.25	6.76	535.49*	511.89	.00060	0.16	1.11	0.02	0.02	0.00	0.00	4%	11.00	0.33	2.64	0.87	0.87	18.13	32	
CI23	CI22	34	12	511.70	511.15	1.63	517.31	5.14	512.17	512.00	.00390	0.01	0.76	0.01	0.01	0.00	0.00	10%	0.50	0.25	2.71	0.60	0.60	4.55	33	
CI22	AI9	13	12	511.15	510.94	1.56	516.98	5.02	511.96	511.94	.00050	0.01	1.03	0.02	0.01	0.00	0.00	10%	0.50	0.06	3.54	0.21	0.81	4.45	34	
CI21	CI8	35	12	503.08	502.17	2.61	508.04	4.82	503.22*	503.17	.00000	0.00	0.29	0.00	0.00	0.00	0.00	10%	0.50	0.07	2.71	0.23	0.23	5.76	35	
AI60	CI7	13	12	496.36	494.92	11.09	500.94	4.36	496.58*	495.92	.00130	0.02	1.62	0.04	0.04	0.00	0.00	4%	11.00	0.48	2.64	1.27	1.27	11.87	36	
CI20	CI6	35	12	490.23	489.09	3.28	495.10	3.95	491.15	491.13	.00020	0.01	0.57	0.01	0.01	0.00	0.00	6%	0.50	0.17	2.71	0.45	0.45	6.46	37	
CI19	CI18	35	12	570.93	570.71	0.64	576.05	4.15	571.90	571.70	.00190	0.10	2.46	0.09	0.09	0.00	0.00	2%	1.93	0.73	2.64	1.93	1.93	2.84	38	
CI18	CI17	262	12	570.71	565.20	2.10	576.26	4.91	571.35*	566.20	.01170	3.08	4.91	0.38	0.38	0.09	0.00	2%	1.93	0.73	2.64	1.93	3.86	5.17	39	
CI17	CI16	348	15	565.10	558.46	1.91	571.02	5.18	565.84*	559.71	.00890	3.12	4.98	0.38	0.14	0.03	0.00	2%	1.93	0.42	2.64	1.11	6.11	8.92	40	
CI16	CI15	117	18	558.29	556.85	1.23	563.66	4.27	559.39	558.35	.00750	0.87	5.14	0.41	0.17	0.07	0.00	2%	1.93	0.56	2.64	1.48	9.09	11.66	41	
CI15	CI14	88	18	556.65	552.27	4.97	561.58	4.27	557.31*	553.77	.00840	0.74	5.44	0.46	0.17	0.10	0.00	2%	1.93	0.20	2.64	0.53	9.62	23.42	42	
CI14	CI13	104	18	551.97	547.80	3.99	559.47	6.71	552.76*	549.30	.01220	1.28	6.57	0.67	0.38	0.15	0.00	3								



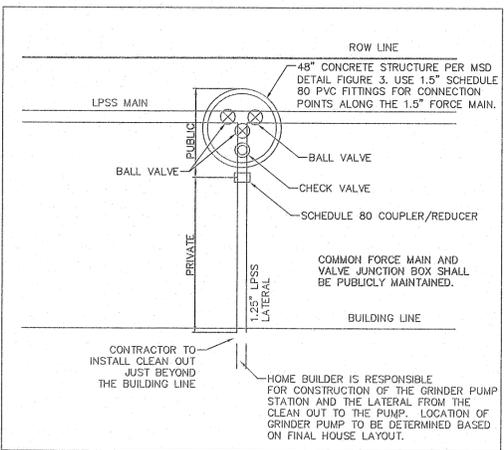
SIGHT DISTANCE DETAIL
SCALE: 1" = 50'



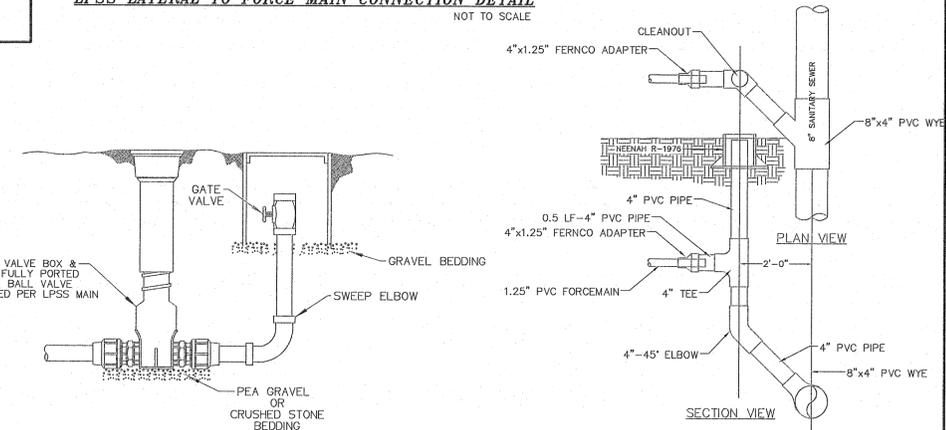
SIGHT DISTANCE - LOOKING RIGHT
DESIGN SPEED-40 MPH
SCALES:
HORIZ. 1"=50'
VERT. 1"=10'



SIGHT DISTANCE - LOOKING LEFT
DESIGN SPEED-40 MPH
SCALES:
HORIZ. 1"=50'
VERT. 1"=10'



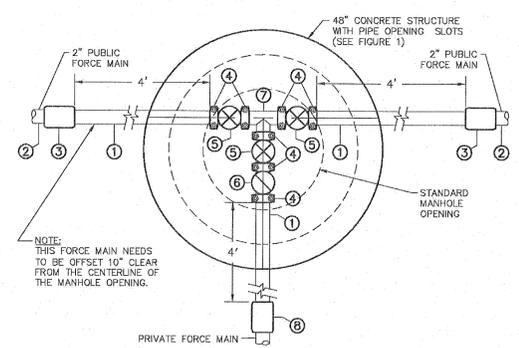
LPSS LATERAL TO FORCE MAIN CONNECTION DETAIL
NOT TO SCALE



TYPICAL TERMINAL FLUSHING CONNECTION
NOT TO SCALE

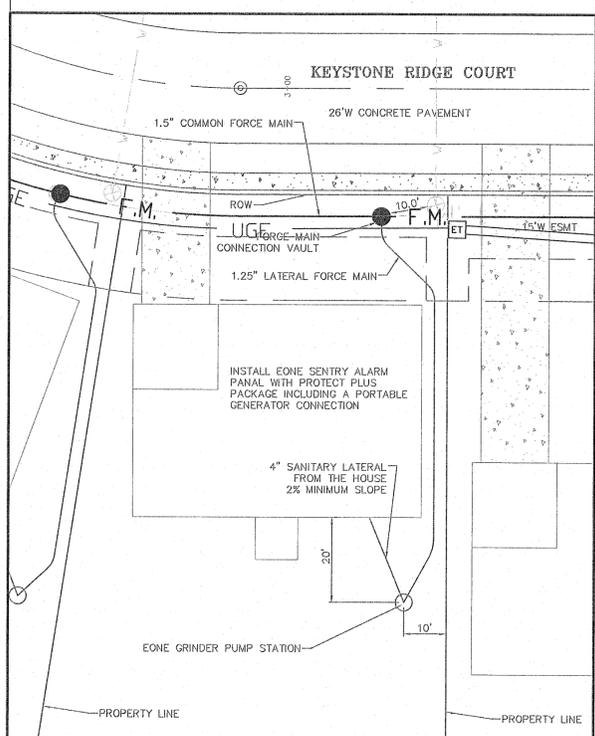
LPSS FORCE MAIN/LATERAL CONNECTION TO GRAVITY SEWER
NOT TO SCALE

- ① 2" PVC PIPE SCHEDULE 80 GRV X PE
- ② 2" SDR 21 PVC
- ③ 2" SCHEDULE 80 PVC COUPLING
- ④ 2" VICTAULIC NO. 75 FLEXIBLE COUPLING
- ⑤ 2" VICTAULIC NO. 726 BALL VALVE
- ⑥ 2" VICTAULIC NO. 712 CHECK VALVE
- ⑦ 2 X 2 TEE IPS VICTAULIC NO. 20 TMM 140
- ⑧ 2" SCHEDULE 80 SOLVENT WELD COUPLING WITH REDUCER BUSHING TO LATERAL SIZE



PLAN VIEW VALVE JUNCTION BOX 2" FORCE MAIN	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
Dr. D.H.R. Ch. S.D.K.	2009 FIGURE 3

*DETAIL FOR REFERENCE. USE FORCE MAIN SIZE AND CORRESPONDING FITTINGS SIZE SHOWN ON THE FORCE MAIN PROFILE.



TYPICAL GRINDER PUMP/LATERAL FORCE MAIN LAYOUT
SCALE: 1" = 20'

E/ONE EXTREME

DH071/DR071

General Features
The model DH071 or DR071 grinder pump station is a complete unit that includes the grinder pump, check valve, HDPE (high density polyethylene) tank, controls, and alarm panel. A single DH071 or DR071 is a popular choice for one, average single-family homes and can also be used for up to two average single-family homes whose codes allow and with consent of the factory.

- Rated for flows of 700 gpd (2650 lpd)
- 70 gallons (265 liters) of capacity
- Indoor or outdoor installation
- Standard outdoor heights range from 61 inches to 100 inches

The DH071 is the "hardwired," or "wired," model where a cable connects the motor controls to the level controls through watertight penetrations.

The DR071 is the "radio frequency identification" (RFID), or "wireless," model that uses wireless technology to communicate between the level controls and the motor controls.

Operational Information
Motor
1 hp, 1725 rpm, high torque, capacitor start, thermally protected, 120/240V, 60 Hz, 1 phase

Inter Connections
4-inch inlet government standard for DWV pipe. Other inlet configurations available from the factory.

Discharge Connections
Pump discharge terminates in 1.25-inch NPT female thread. Can easily be adapted to 1.25-inch PVC pipe or any other material required by local codes.

Discharge
15 gpm at 0 psig (0.95 lps at 0 m)
11 gpm at 40 psig (0.69 lps at 28 m)
7.8 gpm at 80 psig (0.49 lps at 56 m)

Accessories
E/One requires that the Uni-Lateral, E/One's own stainless steel check valve, be installed between the grinder pump station and the street main for added protection against backflow.

Alarm panels are available with a variety of options, from basic monitoring to advanced notice of service requirements.

The Remote Sentry is ideal for installations where the alarm panel may be hidden from view.

Patent Numbers: 5,752,315
5,682,294; 5,439,199

NA0059P01 Rev C

E/ONE EXTREME

E/One Sentry™

Alarm Panel - Protect Plus Package

Description
The E/One Sentry panels are custom designed for use with Environment One grinder pump stations. They can be configured to meet the needs of your application, from basic alarm indication to advanced warning of pending service requirements.

E/One Sentry panels are equipped with audible and visual high level alarms. They are easily installed in accordance with relevant national and local codes. Standard panels are approved by UL, CSA, CE and NSF to ensure high quality and safety.

The panel features a corrosion-proof, NEMA 4X-rated, thermoplastic enclosure. A padlock is provided to prevent unauthorized entry (safety front).

Standard Features
Includes all features of the basic configuration of the E/One Sentry panel, including circuit breakers, 240 or 120 VAC service, terminal blocks and ground lugs, audible alarm with manual silence, manual run feature and run indicator, redundant "Start" function with high level alarm, safety front, conformal-coated board and overload protection.

Includes all of the features of the E/One Sentry Protect package, including a Trouble Indication that shuts down the pump temporarily in the event of an unacceptable operating condition (brownout, system overpressure, run dry), as well as:
Predictive status display module
Pre-alarm indication for major operating parameters
Alarm indications for major operating parameters
Hour-meter, cycle counter and alarm delay
LCD display and user-friendly interface
Inner cover (dead front)
Contact group - dry and Remote Sentry

Optional Features
Generator receptacle with auto transfer
GFCI
Main service disconnect
Please consult factory for special applications.

PROVIDE PORTABLE GENERATOR CONNECTION

NA0079P01 Rev B

AS-BUILT PUBLIC UTILITY FINAL MEASUREMENTS

THE FOLLOWING UTILITIES HAVE BEEN LOCATED AND MEASURED AND THE RESULTS OF THOSE MEASUREMENTS ARE SHOWN ON THIS SET OF FINAL MEASUREMENT PLANS:

- STORM SEWERS, STORM SEWER LENGTHS, STORM SEWER PIPE SIZES, STORM SEWER FLOWLINES AND DEPTHS OF STORM SEWER STRUCTURES.
- SANITARY SEWERS, SANITARY SEWER PIPE SIZES, SANITARY SEWER FLOWLINES AND DEPTHS OF SANITARY SEWER STRUCTURES.
- FIRE HYDRANTS
- WATER VALVES
- LIGHT STANDARDS

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SIGNED: [Signature]
P.E./L.S.

DATE: [Signature]

PROFESSIONAL LAND SURVEYOR
STATE OF MISSOURI
COLLINS
5-14-18
NUMBER
PLS-2008000173

PROJECT TITLE:
AS-BUILT PLANS FOR KEYSTONE RIDGE

ENGINEERING PLANNING SURVEYING
221 Point West Blvd.
St. Charles, MO 63301
636-828-6552
FAX 636-828-1718



DISCLAIMER OF RESPONSIBILITY
I hereby certify that the documents intended to be authorized by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other Drawings, Specifications, Estimates, Reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.

Box Engineering Company, Inc.
Missouri State Certificate of Authority
Engineering #000655
Missouri State Certificate of Authority
Surveying #000144

REVISIONS	
04/25/18	CITY COMMENT REVS.
05/14/18	CITY COMMENT REVS.

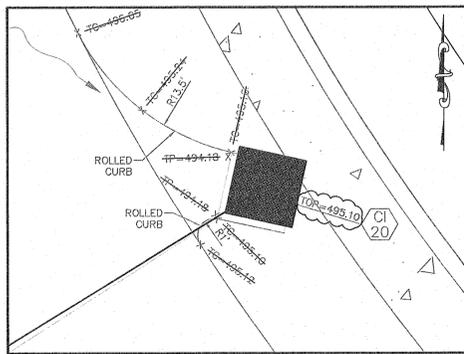
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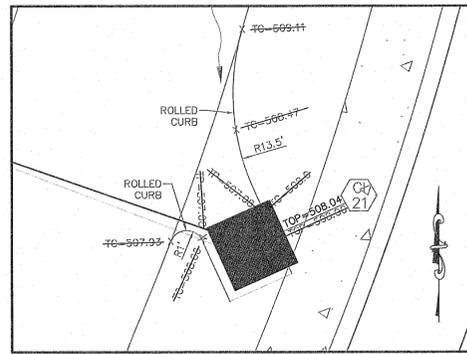
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SIGHT DISTANCE/LPSS DETAILS

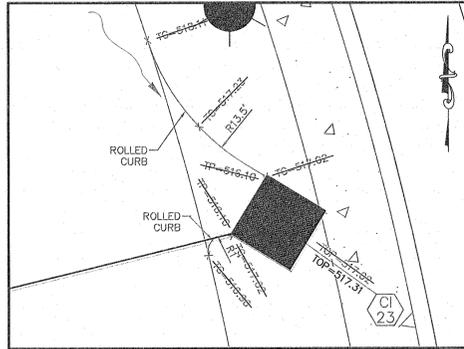
Issue Date: 11/09/2017



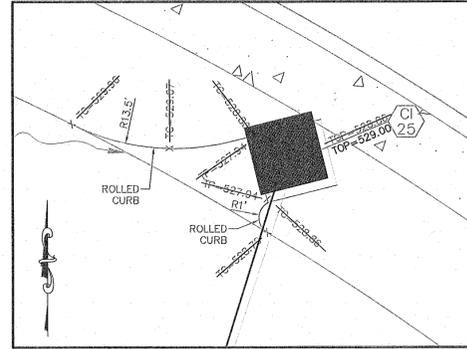
STRUCTURE DETAIL (CI 20)
STA:1+30.05 / TOP=495.10
SCALE: 1" = 5'



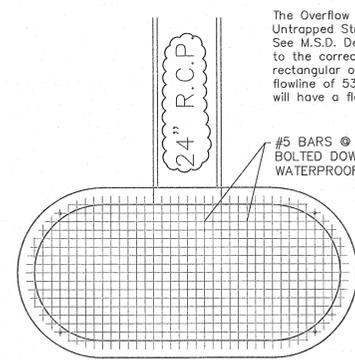
STRUCTURE DETAIL (CI 21)
STA:2+78.93 / TOP=508.00-508.04
SCALE: 1" = 5'



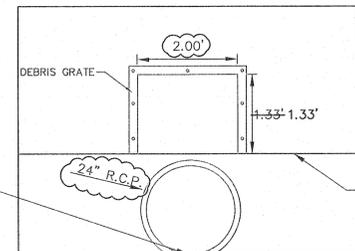
STRUCTURE DETAIL (CI 23)
STA:3+69.16 / TOP=517.02-517.31
SCALE: 1" = 5'



STRUCTURE DETAIL (CI 25)
STA:4+87.50 / TOP=528.86-529.00
SCALE: 1" = 5'

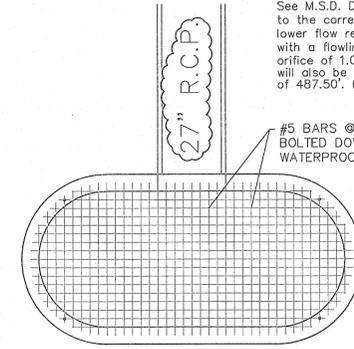


TOP VIEW
N.T.S.

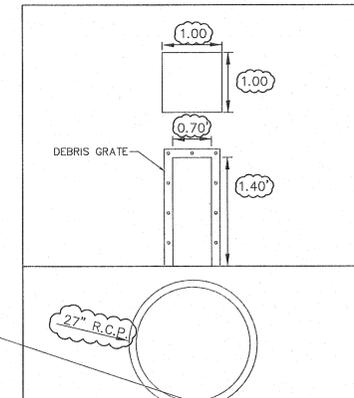


2 YR, HW = 537.65'
15 YR, HW = 538.11'
25 YR, HW = 538.37'
100 YR, HW = 538.76'
100 YR, LFB HW = 539.57'

BASIN #1 OUTFALL STRUCTURE 38
N.T.S.

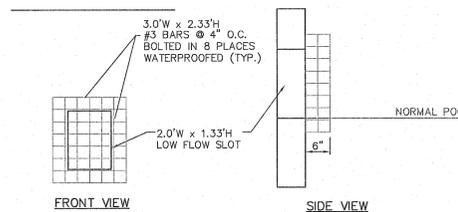


TOP VIEW
N.T.S.

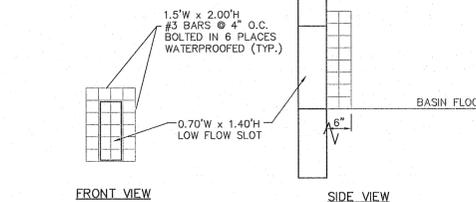


2 YR, HW = 484.58'
15 YR, HW = 486.08'
25 YR, HW = 486.80'
100 YR, HW = 487.73'
100 YR, LFB HW = 488.93'

BASIN #2 OUTFALL STRUCTURE 2
N.T.S.



LOW FLOW SLOT DEBRIS GRATE OS 38



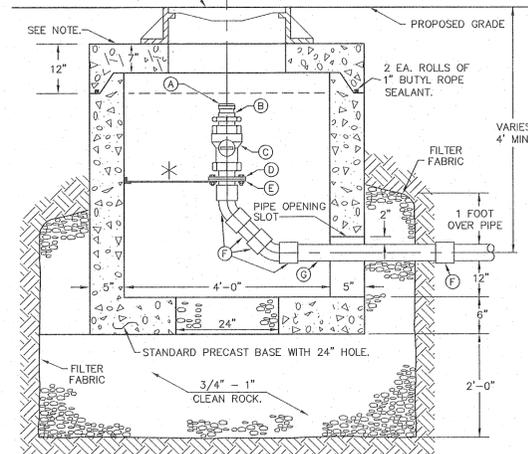
LOW FLOW SLOT DEBRIS GRATE OS 2

- A. 2" LOCKDOWN QUICK COUPLING CAP
- B. 2" QUICK COUPLING
- C. 2" CURB STOP BALL VALVE
- D. 2" BRASS FULL FACED FLANGE
- E. 2" SOCKET FLANGE SCHEDULE 80 P.V.C.
- F. 2" SCHEDULE 80 P.V.C. FITTINGS
- G. 2" SCHEDULE 80 P.V.C. PIPE

* 1 1/2" x 1 1/2" x 3/8" S.S. ANGLE BRACE.

NOTE: ALL TOPS MUST BE REINFORCED (SUBMIT DESIGN FOR ALL STRUCTURE TOPS SUBJECT TO VEHICLE LOADING).

STANDARD MANHOLE OPENING



EMERGENCY TRUCK CONNECTION DETAIL

METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. D.H.R.
Ch. S.D.K. 2009 FIGURE 6

AS-BUILT PUBLIC UTILITY FINAL MEASUREMENTS

THE FOLLOWING UTILITIES HAVE BEEN LOCATED AND MEASURED AND THE RESULTS OF THOSE MEASUREMENTS ARE SHOWN ON THIS SET OF FINAL MEASUREMENT PLANS:

- STORM SEWERS, STORM SEWER LENGTHS, STORM SEWER PIPE SIZES, STORM SEWER FLOWLINES AND DEPTHS OF STORM SEWER STRUCTURES.
- SANITARY SEWERS, SANITARY SEWER LENGTHS, SANITARY SEWER PIPE SIZES, SANITARY SEWER FLOWLINES AND DEPTHS OF SANITARY SEWER STRUCTURES.
- FIRE HYDRANTS
- WATER VALVES
- LIGHT STANDARDS

ALL PUBLIC UTILITIES SHOWN ON AS-BUILT ARE LOCATED WITHIN DESIGNATED EXISTING OR PROPOSED EASEMENTS. ONLY THOSE UTILITIES IDENTIFIED TO BE AS-BUILT ON THESE PLANS TO BE APPLICABLE TO THIS CERTIFICATION.

SIGNED: P.E./L.S.



DATE

PROJECT TITLE:
AS-BUILT PLANS FOR KEYSTONE RIDGE

ENGINEERING PLANNING SURVEYING
221 Point West Blvd.
St. Charles, MO 63301
636-928-5652
FAX 636-928-1718



DISCLAIMER OF RESPONSIBILITY
I hereby specify that the documents intended to be authorized by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other drawings, specifications, estimates, reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.

Box Engineering Company, Inc.
Missouri State Certificate of Authority
Engineering #000655
Missouri State Certificate of Authority
Surveying #000144

REVISIONS

DATE	REVISION
04/25/18	CITY COMMENT REVS.
05/14/18	CITY COMMENT REVS.

Developer / Owner:
KEYSTONE RIDGE LAND, LLC
10328 LAKE BLUFF DRIVE
ST. LOUIS, MO 63123
314-892-3030 EXT. 121

P+Z No. #32-16
12/01/16 & 04/27/17
City No. #

Page No.
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Issue Date: 11/08/2017
Box Project # 16-16857

SANITARY/STORM SEWER DETAILS