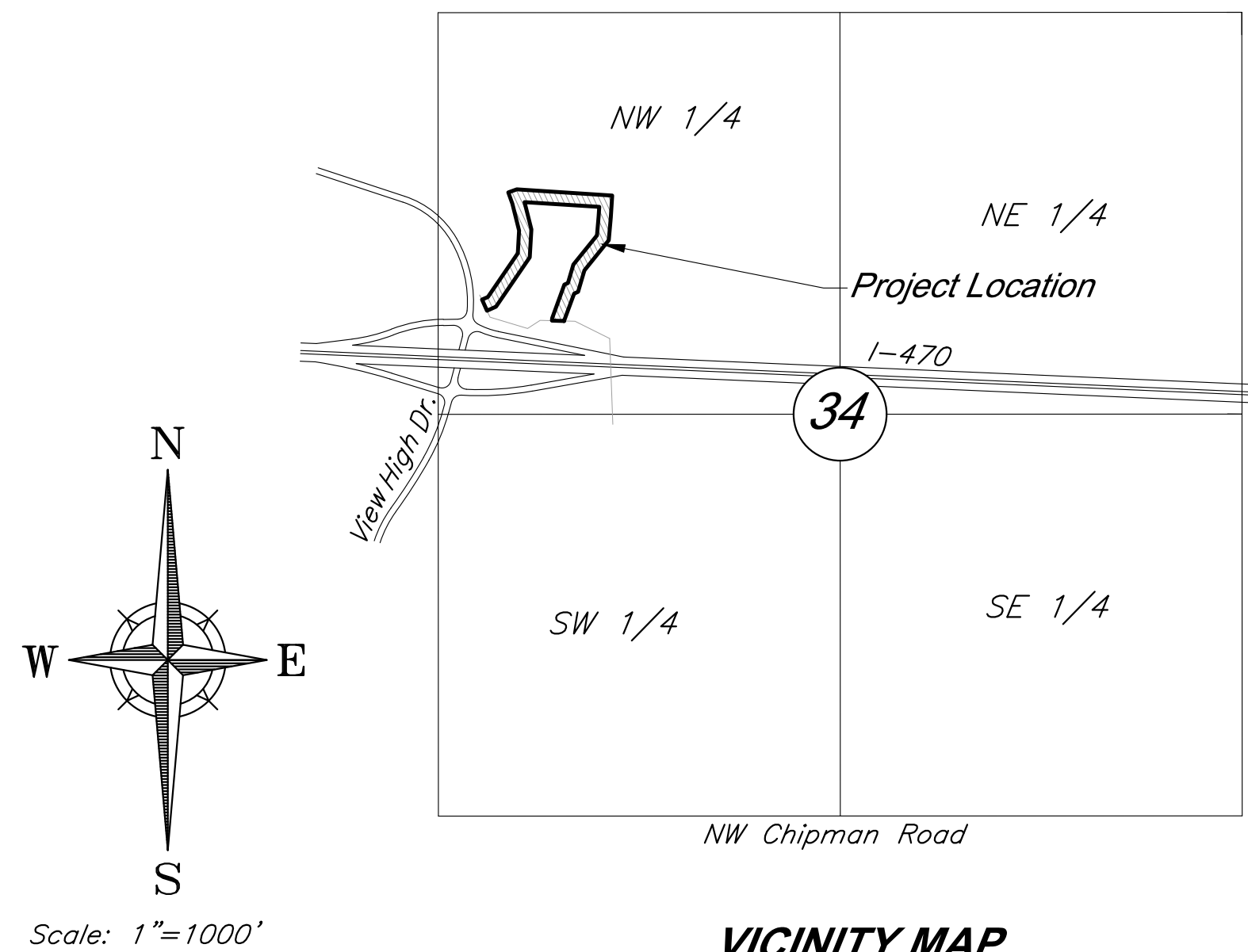


PRIVATE WATER MAIN EXTENSION PLANS
FOR
PARAGON STAR – THE VILLAGE
NW 1/4 Section 34–Township 48–Range 32
City of Lee’s Summit
Jackson County, Missouri

SUMMARY OF QUANTITIES

Item No.	Description	Unit	Approx. Unit Quantity
1	12" C900, Class 305 PVC	LF	2,320
2	8" C900, Class 305 PVC	LF	120
3	Fire Hydrant Assembly	EA	7
4	12" Butterfly Valve	EA	2
5	8" Gate Valve	EA	1
6	Horizontal Bends w/Thrust Blocks	EA	13
7	Tees w/Thrust Blocks	EA	5
8	Plugs	EA	4
9	Connections to Existing Waterlines	EA	2
10	Erosion Control	LS	1



VICINITY MAP
Section 34-T48N-R32W

UTILITY CONTACTS

Sanitary Sewers	Mr. Jeff Thorn, PE City of Lee's Summit Water Utilities 1200 SE Hamblen Road Lee's Summit, MO 64063 (816) 969-1922 email: jeff.thorn@cityofLS.net	Gas	Mr. Donnie Richards Missouri Gas Energy 7500 E. 35th Terrace Kansas City, MO 64129 (816) 472-9464 Fax (816) 472-3488 email: donnie.richards@sug.com
	Mr. Jeff Shook Little Blue Valley Sewer District 21101 East 78 Highway Independence, MO 64057 (816) 285-1522 email: jshook@lbvsd.net	Cable Television	Mr. Greg Thomas Time Warner Cable 8221 W. 119th Street Overland Park, KS 66213 (913) 643-1950 email: greg.thomas@twcable.com
Water	Mr. Jeff Thorn, PE City of Lee's Summit Water Utilities 1200 SE Hamblen Road Lee's Summit, MO 64063 (816) 969-1922 email: jeff.thorn@cityofLS.net	Telephone	Ms. Glenda Charles AT&T 1425 Oak Street Kansas City, MO 64106 (816) 365-1669 Fax (816) 275-1109 email: gc6954@att.com
Electric Service	Mr. Nathan Michael Evergy P.O. Box 418679 Kansas City, MO 64141 (816) 220-5210 Fax (816) 245-3623 email: nathan.michael@evergy.com		

PROJECT BENCHMARK:

BM #11 – Chiseled "L" on top
Northeast corner of concrete guardrail
at the Northeast corner of I470 bridge
spanning View High Drive.
EL=833.80

INDEX OF SHEETS

Sht. No.	Description
1	Title Sheet
2	General Layout
3-4	Water Main Plan & Profile - Line D
5	Water Main Plan & Profile - Line E
6	Water Main Details



ENGINEER: Clint Loumaster P.E.

9/15/20

DATE:

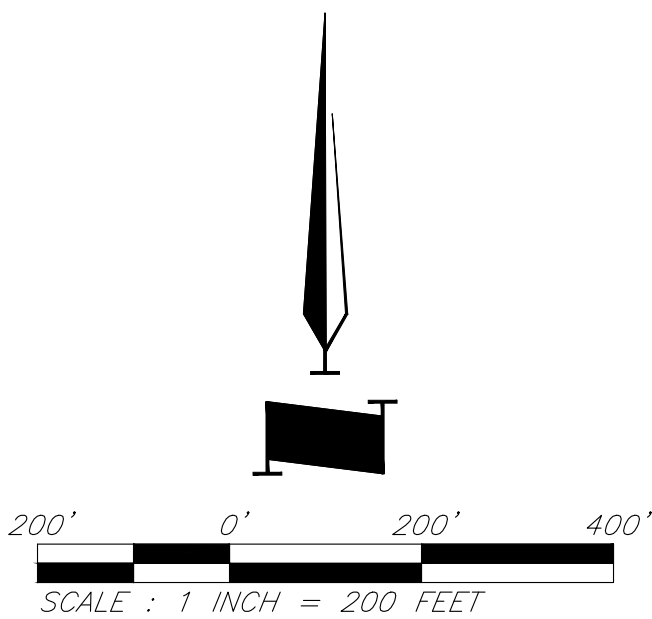
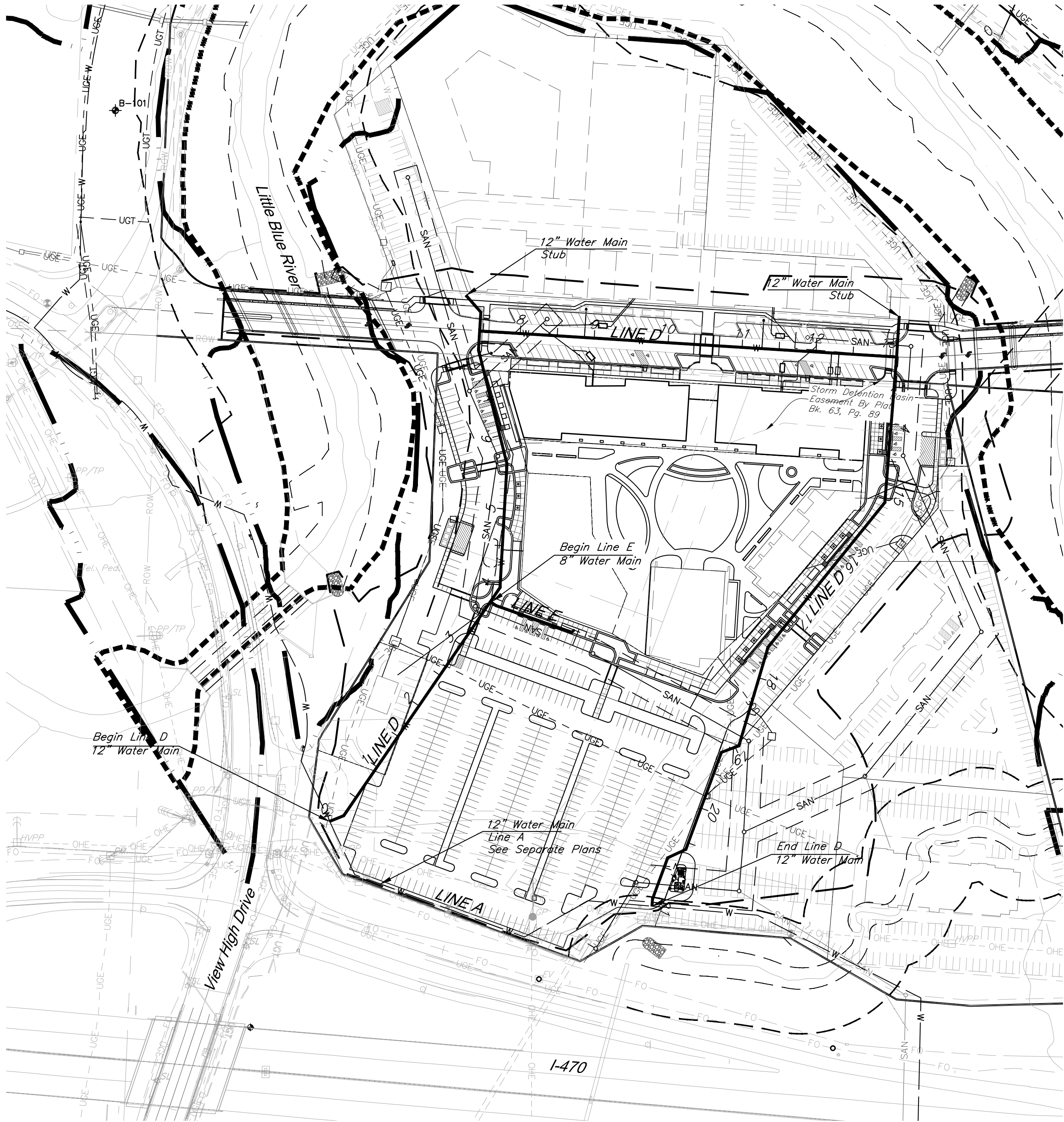
DEVELOPED AND OWNED BY:
PARAGON STAR LLC
801 NORTHWEST COMMERCE CENTER
LEE'S SUMMIT, MISSOURI 64086
PHONE: (816) 802-6801
CONTACT: Mr. Flip Short
EMAIL: fshort@legacytouch.com

PREPARED & SUBMITTED BY:
GEORGE BUTLER ASSOCIATES, INC.
9801 RENNER BOULEVARD
LENEXA, KANSAS 66219
PHONE: 913-492-0400
FAX: 913-577-8312
CONTACT: CLINT LOUMASTER P.E.
EMAIL: CLOUMASTER@GBATEAM.COM

GBA
architects
engineers

9801 Renner Boulevard
Lenexa, Kansas 66219
913.492.0400
www.gbateam.com

G:\12720\Civil 3D\Production Drawings\Water Main Plans\Paragon Village Water Line 12720C00200.dwg Layout: 2 General Layout -- Tuesday, September 15, 2020, 10:53am -- Copyright 2020, George Butler&Associates, Professional Engineer, 0002025, Landscape Architect 000025, Professional Land Surveyor 0000259



CAUTION!

Numerous Utilities on Site.
Contractor to verify location
and elevation of all utilities
prior to commencing
construction.



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engineers

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913.492.0400
www.gbateam.com

DATE: 6-19-2020
DESIGN BY: CEL
DRAWN BY: JMS/JWM
PROJECT NO.: 12720
SHEET NO. TOTAL SHEETS

2

6

Clint Loumaster
Professional Engineer
License No. 2011009651

Private Water Main Extension Plans
Paragon Star - Village Water
Lee's Summit, Missouri

NO.	DATE	REVISIONS
1	9/15/20	Comments per Lee's Summit dated 9/11/20

GENERAL NOTES:

- All work shall be done in accordance with the Standards of the Lee's Summit, Missouri Water Department.
- The Contractor shall furnish and install all fittings required to provide proper horizontal and vertical alignment for new water mains, connections to existing water mains, and installation of fire hydrants at the proper location and elevation, whether or not the proper fittings, location or elevations are called out on these drawings, including modification of existing infrastructure required to make all of the work conform to current WSD Standards.
- The Contractor shall furnish and install all temporary blow-off assemblies, fittings, thrust blocking, and restraining devices required for temporary connections for flushing, pressure testing, chlorination, and de-chlorination of the new water mains. Prior to placing new mains in service the Contractor shall remove and corporation cocks used for testing or chlorination and replace them with tapered brass plugs.
- The Contractor shall install polyethylene encasement on all water mains, valves, fittings, and other appurtenances for the full length of the project in accordance with the Standards of the Lee's Summit, Missouri Water Department.
- Scheduling of water main shuts and connections to existing mains shall be at the discretion of the Water Department.
- All fire hydrant branches shall be restrained using approved restraining devices. Hydrants shall be installed so that the centerline of the outlet nozzle is between eighteen and twenty-one inches (18"-21") above grade, and so that there is a minimum clear area of 5' in each direction to allow operation of the hydrant.
- Sections of water main requiring multiple bends, such as cul-de-sacs, shall be restrained with approved joint restraining devices and straddle blocks in lieu of backing blocks.
- The locations of existing utilities, as shown, are approximate. It shall be the responsibility of the Contractor to verify the locations and elevations of all existing utilities.
- The Contractor shall comply with state law requiring any person or firm doing excavation on the public right-of-way to do so only after giving notice to and obtaining information from utility companies.
- Streets and parking areas are to be to grade and curbs in place prior to construction of water mains. Water mains shall be installed with a minimum ground cover of 42 inches below finished grade. Sixteen (16)-inch and larger water mains shall be installed with a minimum ground cover of 60 inches below finished grade.
- Water mains shall be laid at least 10 feet, horizontally from any sewer. When local considerations prevent a horizontal separation of 10 feet, a water main may be laid closer than 10 feet to a sewer, provided that the water main is laid in a separate trench, or on an undisturbed earth shelf located on one side of the sewer, at such an elevation that the bottom of the water main is at least 18 inches above the top of the sewer. Water mains shall be laid such that there is a minimum of 18 inches clearance between the pipe wall and the exterior of any manhole and/or inlet on the sewer line.

Whenever a water main must cross above a sewer, a vertical separation of 18 inches between the bottom of the water main and the top of the sewer shall be maintained. Whenever a water main must cross under a sewer, a vertical separation of 18 inches between the bottom of the sewer and the top of the water main shall be maintained. A full length of water main pipe shall be centered on the sewer to be crossed so that the joints will be equally distant from the sewer and as far away as possible. The 18 inch vertical separation shall be maintained for that portion of the water main located within 10 feet horizontally, of any sewer it crosses.

When it is impossible to obtain proper horizontal separation as stipulated above, or when a water main must cross under a sewer, the sewer must be reconstructed of ductile iron pipe meeting the requirements of Section 02618 of the **Standards and Specifications for Water Main Extensions and Relocations**; Pre-stressed concrete cylinder pipe meeting the requirements of Section 02619; of PVC pressure pipe conforming to AWWA C-900 or C905, and shall be pressure tested to assure water tightness before backfilling, the required length of sewer to be replaced or constructed of pressure pipe will be the length necessary to achieve 10 feet horizontal separation.

Where these conditions cannot be met, the Water Department shall be consulted as to the precautions to be taken to protect the public water supply.

- An excavation permit must be obtained from the City Engineer prior to commencing construction within the public right-of-way. Contact the Public Works Department permit counter at City Hall.
- A street closure permit may be required for this work. Contact the Street and Traffic Division at City Hall.
- All construction shall follow the city of Lee's Summit Design and Construction manual as adopted by Ordinance 5813. Where discrepancies exist between these plans and the Design and Construction Manual, the Design and Construction Manual shall prevail.
- Proposed fire hydrants shall be installed at the station and offset locations as shown on the plans. Fire hydrant connection to the main shall be constructed per construction detail on sheet 6.
- Refer to "Geotechnical Engineering Report: Paragon Star Village" dated 8/2/2019 (Terracon Project #02195181) and "Geotechnical Engineering Report: Sanitary Junction Structure" dated 7/22/2019 (Terracon Project #02195076) for boring logs. All earthwork shall conform to the recommendations of the Report. A copy of the final site soils report and all boring logs will be available for review prior to the commencement of construction. The soils information shown in this set of plans has been provided by Terracon. George Butler Associates, Inc. is not responsible for the adequacy or accuracy of the soils information shown or provided. It is provided for informational purposes only. The content of these plans may change based on recommendations found in the final geo-technical report.
- There are no active oil or gas wells within 1000 feet of this construction per Missouri Department of Natural Resources, Missouri Geological Survey.

FLOODPLAIN:

A portion of the site lies within Zone AE defined as Floodway of the Channel, and as Zone X, defined as areas of 0.2% chance flood; areas of 1% chance flood with average depths less than 1' or with drainage area less than 1 square mile; and areas protected by levees from 1% annual chance flood. Per FEMA Map Number 20091C0053G and 20091C0068G dated August 3, 2009.

Floodplain shown on these plans per CLOMR number CFDP-2020-00013, dated 5/19/2020.

Legend

- Floodway
- Floodplain
- Stream Corridor

General Layout

Owner
Happy Valley Properties, LLC
a Missouri Limited
Liability Company,
Missouri Warranty Deed
Document #200510091391

Line D, Sta. 07+19.28
Install 22-1/2" Bend W/ Thrust Block
N-1009504.6126 E-2804171.8851

Line D, Sta. 07+11.04
Install 12"x8" Tee W/ Thrust Block &
16 LF± of 8" Class 305 PVC Water
line and Fire Hydrant Assembly,
Restrained throughout.
N-1009496.6126 E-2804173.8838

Line D, Sta. 07+45.11
Install 12" Tee W/ Thrust Block & Butterfly
Valves to the East, South and North
N-1009530.3903 E-2804173.5193

Install Plug @ End of 12" Water
Line W/ Thrust Block
N-1009577.9750 E-2804155.1358

Install 12" Water Main
Install 45" 12" Bend
W/ Thrust Block
N-1009555.3402 E-2804175.1010

Line D, Sta. 08+86.76
Install 12"x8" Tee W/ Thrust Block &
34 LF± of 8" Class 305 PVC Water
line and Fire Hydrant Assembly,
Restrained throughout.
N-1009521.4679 E-2804314.8895

Line D, Sta. 05+60.29
Install 11-1/4" 12" Bend
W/ Thrust Block
N-1009350.3573 E-2804210.4243

Line D, Sta. 03+93.24
Install 22-1/2" and 11-1/4" 12"
Bends W/ Thrust Blocks
N-1009183.5833 E-2804200.9140

Line D, Sta. 03+97.31
Install 12"x8" Tee W/ Thrust Block &
18 LF± of 8" Class 305 PVC Water
line and Fire Hydrant Assembly,
Restrained throughout.
N-1009187.6396 E-2804201.1453

Line D, Sta. 03+70.34,
Sta. 00+00, Line E
Install 12"x12"x8" Tee W/ Thrust Block
& 8" Gate Valve
N-1009164.6927 E-2804187.9632

Line A, Sta. 45+04.70
See "Water Main Extension Plans for
Paragon Star Development".
Remove 12" Plug and Connect to 12"
Butterfly Valve. Begin Construction 12"
Water Line, Line D, Sta. 0+00.00
N-1008868.3878 E-2803971.2342

Line D, Sta. 00+20.17
Install 22-1/2" and 11-1/4" 12"
Bends W/ Thrust Blocks
N-1008875.8778 E-2803989.9598

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9801 Renner Boulevard
Lenexa, Kansas 66219
913.492.0400
www.gbateam.com



Clint Loumaster
Professional Engineer
License No. 2011009651

Private Water Main Extension Plans
Paragon Star - Village Water
Lee's Summit, Missouri

NO.	DATE
1	9/15/20

REVISIONS
Comments per Lee's Summit dated 9/11/20

CAUTION!

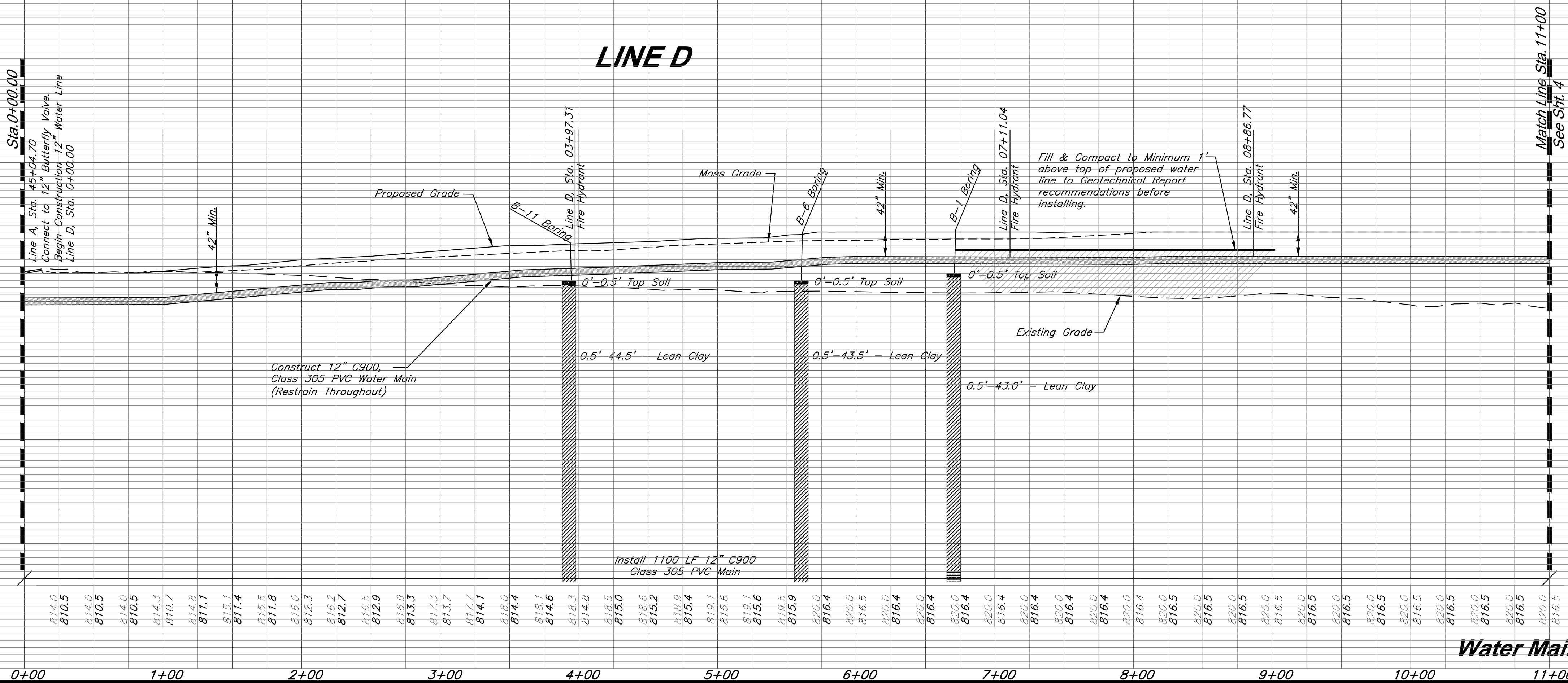
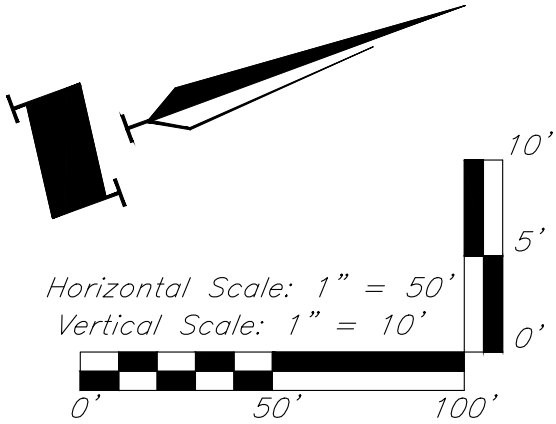
Numerous Utilities on Site.
Contractor to verify location
and elevation of all utilities
prior to commencing
construction.

NOTES:

- D.E. = Drainage Easement
- U.E. = Utility Easement
- PL = Property Line
- R/W = Right-of-Way
- FG = Finished Grade
- TP = Top of Pipe
- W/E = Water Main Easement

BENCHMARK:

BM #11 - Chiseled "L" on top
Northeast corner of concrete guardrail
at the Northeast corner of 1470 bridge
spanning View High Drive.
EL=833.80

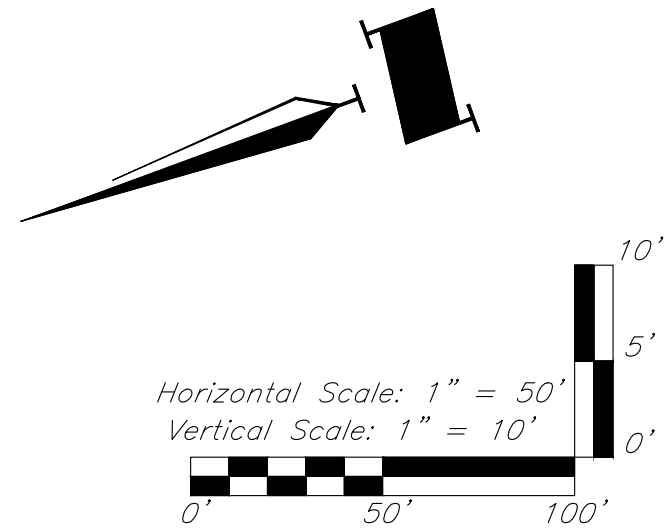


Water Main Plan & Profile - Line D

NOTES:

- D.E. = Drainage Easement
- U.E. = Utility Easement
- $\mathcal{R}$ = Property Line
- R/W = Right-of-Way
- FG = Finished Grade
- TP = Top of Pipe
- W/E = Water Main Easement

BENCHMARK:
BM #11 - Chiseled "L" on top
Northeast corner of concrete guardrail
at the Northeast corner of I470 bridge
spanning View High Drive.
EL=833.80

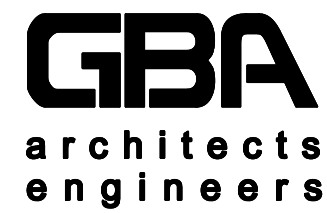


Water Main Plan & Profile - Line D

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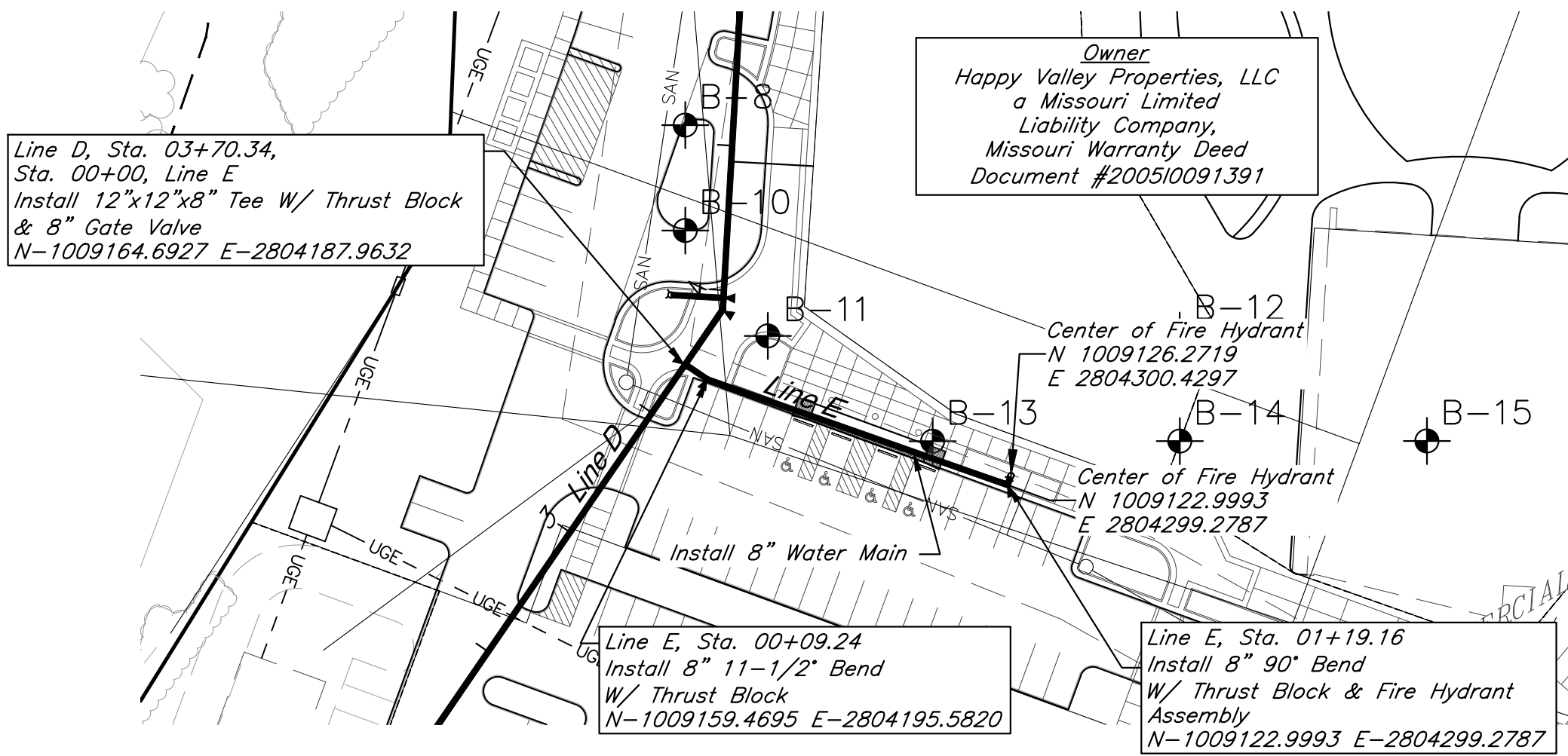
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DATE: 6-19-2020
DESIGN BY: CEL
DRAWN BY: JMS/JWM
PROJECT NO.: 12720

SHEET NO. 5
TOTAL SHEETS 6

Private Water Main Extension Plans
Paragon Star - Village Water
Lee's Summit, Missouri

NO.	DATE	REVISIONS
1	9/15/20	Comments per Lee's Summit dated 9/11/20



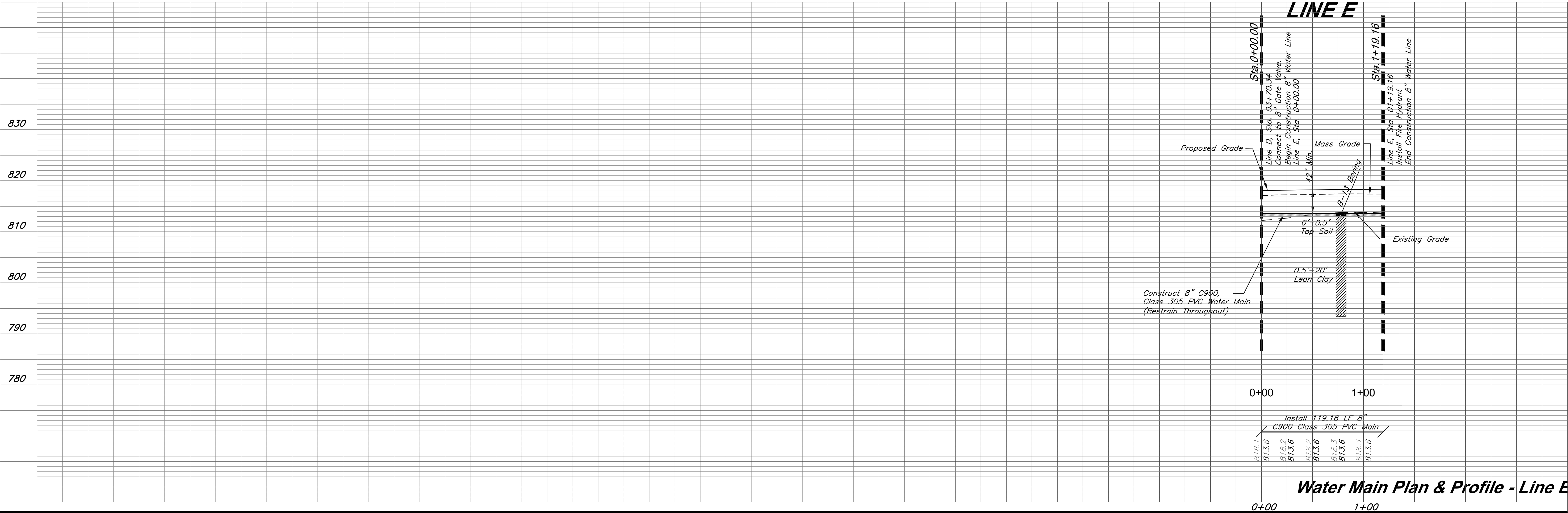
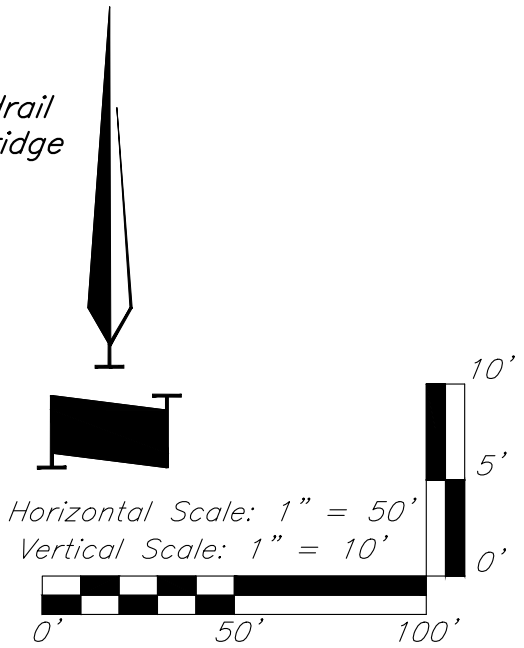
CAUTION!

Numerous Utilities on Site.
Contractor to verify location and elevation of all utilities prior to commencing construction.

- NOTES:**
- D.E. = Drainage Easement
 - U.E. = Utility Easement
 - P = Property Line
 - R/W = Right-of-Way
 - FG = Finished Grade
 - TP = Top of Pipe
 - W/E = Water Main Easement

BENCHMARK:

BM #11 - Chiseled "L" on top Northeast corner of concrete guardrail at the Northeast corner of 1470 bridge spanning View High Drive.
EL=833.80



G:\12720\Civil 3D\Production Drawings\Water Main Plans\Paragon Star\Water Main Plans\Paragon Star.dwg Layout: 6 Water Main Details --- Tuesday September 15, 2020, 10:55am --- Copyright 2020, George Bateam, Professional Engineer 000133, Landscape Architect 000025, Professional Land Surveyor 000039

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.

LS

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:

NOM. DIA. (INCHES)	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	18.8	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	8.1
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.

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HORIZONTAL THRUST BLOCKS

Date: 02/13
Drawn By: JN
Checked By: DL
FILE: WAT-1
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.
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6. HYDRANT SHALL BE ROTATED AS DIRECTED BY INSPECTOR.

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HYDRANT INSTALLATION - STRAIGHT SET

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

NOM. DIA. (INCHES)	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.

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VERTICAL THRUST BLOCKS

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

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VALVE STEM EXTENSION AND VALVE BOX

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

LS

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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:

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architects
engineers
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Lenexa, Kansas 66219
913.492.0400
www.gbateam.com

DATE: 6-19-2020
DESIGN BY: CEL
DRAWN BY: JMS/JWM
PROJECT NO.: 12720
SHEET NO. 6
TOTAL SHEETS 6

Clint Loumaster
Professional Engineer
License No. 2011009651

Private Water Main Extension Plans
Paragon Star - Village Water
Lee's Summit, Missouri

NO. 1
DATE 9/15/20
REVISIONS
Comments per Lee's Summit dated 9/11/20

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".

LS

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: