

WHATABURGER

204 SW M150 HWY

LEE'S SUMMIT, MO 64801

JACKSON COUNTY

PROTOTYPE 20-M

PUBLIC IMPROVEMENT PLAN



VICINITY MAP

N.T.S.

OWNER

WHATABURGER
300 CONCORD PLAZA DR.
SAN ANTONIO, TX 78216
PHONE: (210) 476-6842
CONTACT: ALYSSIA LESTER
EMAIL: alester@wbhq.com

ENGINEER

ms consultants, inc.
2221 SCHROCK ROAD
COLUMBUS, OHIO 43229
PHONE: (614) 898-7100
CONTACT: IAN AULTMAN
EMAIL: iaaultman@msconsultants.com

BENCHMARK

TBM 1:
1/2 IRON
NORTHING: 2822704.4825
EASTING: 978325.3390
ELEVATION = 1022.68

TBM 2:
1/2 IRON
NORTHING: 2822484.7625
EASTING: 978065.2866
ELEVATION = 1019.71

BASIS OF BEARINGS:
MO (C) STATE PLANE COORDINATE SYSTEM SPC (2402 MO C)

SURVEYOR

YOUNG - HOBBS AND ASSOCIATES
1202 CROSSLAND AVE.
CLARKSVILLE, TN 37040
PHONE: (931) 645-2524
CONTACT: DAVE R. HOBBS

GEOTECHNICAL ENGINEER

TERRACON CONSULTANTS, INC.
4765 WEST JUNCTION STREET
SPRINGFIELD, MISSOURI 65802
PHONE: (417) 864-5100
CONTACT: TY G. ALEXANDER, P.E.

FLOOD INFORMATION

THIS PROPERTY IS LOCATED WITHIN AN AREA HAVING ZONE DESIGNATIONS OF "X" BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, ON FLOOD INSURANCE RATE MAP NO. 29095C0532G, WITH A MAP EFFECTIVE DATE OF JANUARY 20TH, 2017, IN JACKSON COUNTY, STATE OF MISSOURI, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PROPERTY IS SITUATED.

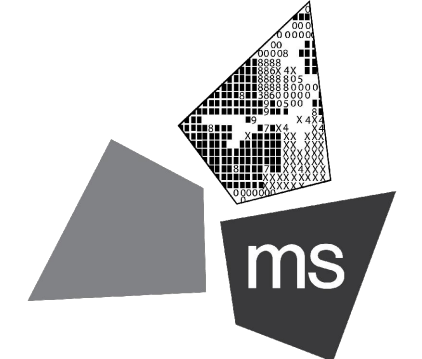
SHEET INDEX	
COVER SHEET	C-1.0
SURVEY	1 OF 1
WATER MAIN LINE EXTENSION PLAN	C-2.0
WATER MAIN LINE EXTENSION DETAILS	C-3.0

REVISION/DATE/DESCRIPTION

PUBLIC IMPROVEMENT	06/29/22
PLAN SET	
RESPONSE TO COMMENTS	08/16/22
RESPONSE TO COMMENTS II	09/29/22
RESPONSE TO COMMENTS III	10/24/22

NOTICE

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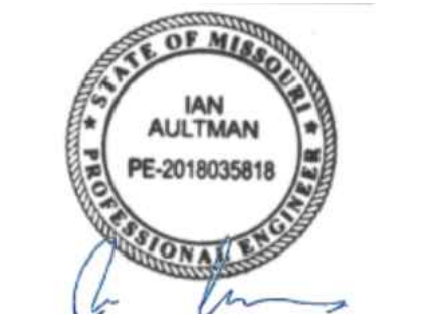
PROJECT

PROPOSED PT20M
BUILDING

204 SW M150 HWY
LEE'S SUMMIT, MO 64081

SHEET TITLE

COVER SHEET



DRAWN BY: TDB

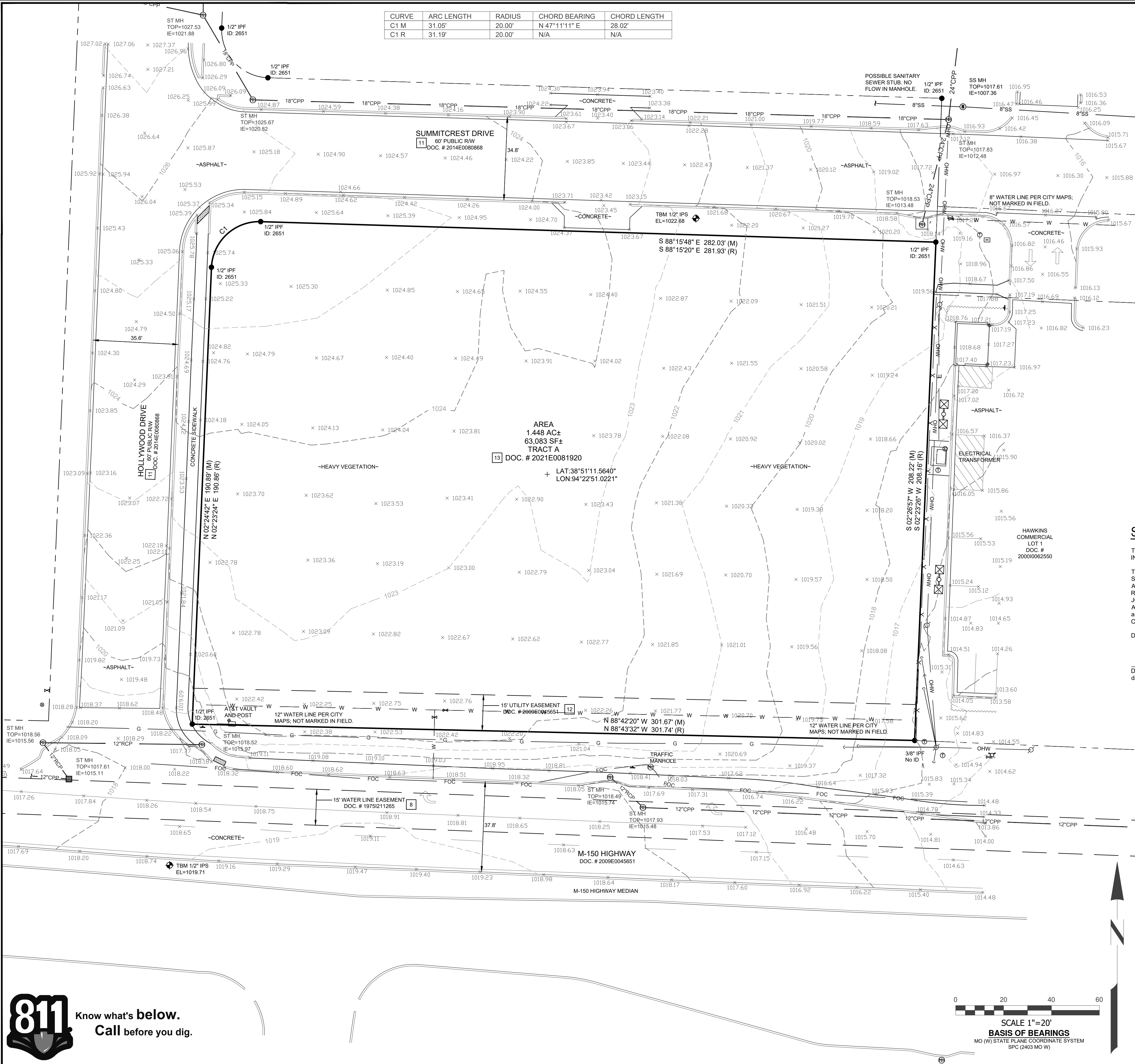
CHECKED BY: PGD

PROJECT NO: 40497-21

DRAWING

C-1.0





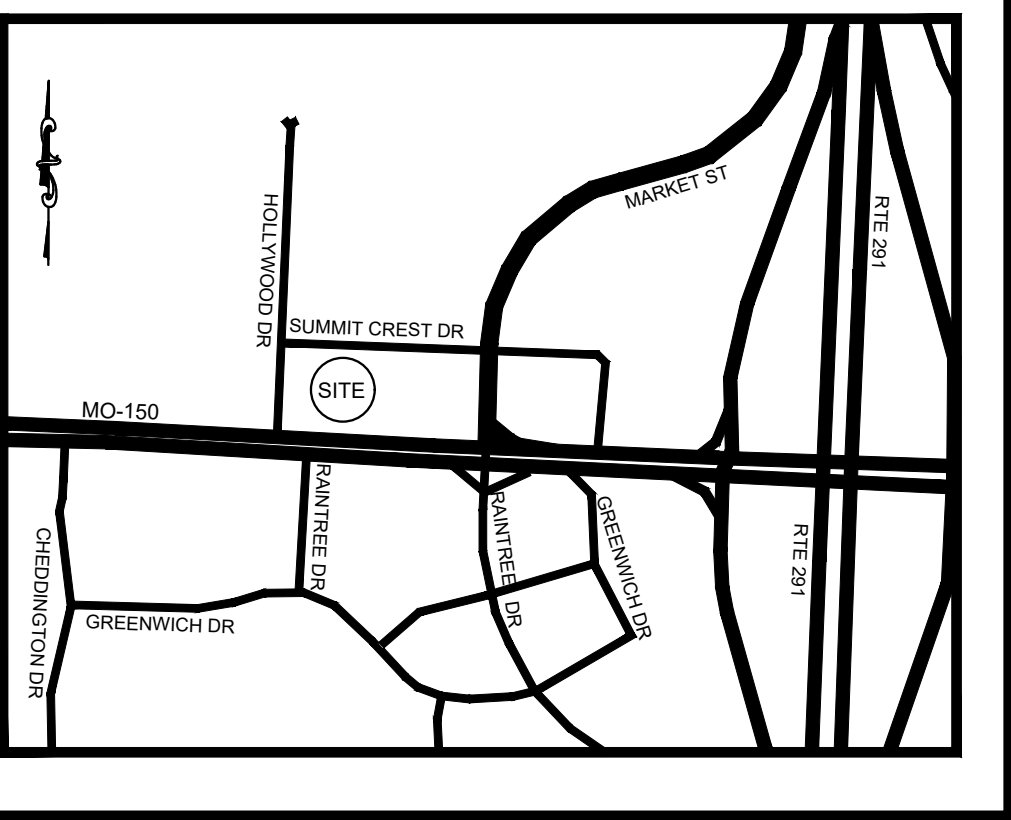
SITE ADDRESS:

204 SW MISSOURI 150 HIGHWAY,
LEES SUMMIT, MO 64081

PARKING:

REGULAR: 0
HANDICAPPED: 0
TOTAL: 0

SITE MAP



**NOTES
CORRESPONDING TO
SCHEDULE B-II:**

CHICAGO TITLE INSURANCE COMPANY
EFFECTIVE DATE: NOVEMBER 17, 2021 AT 8:00 A.M.
FILE NO.: KCC213072

ITEMS 1-7 AND 14-15, ARE STANDARD EXCEPTIONS
AND/OR NOT SURVEYING RELATED AND ARE SUBJECT
TO THESE EXCEPTIONS.

8. Water Line Easement by the instrument recorded as
Document No. 1975121265 in Book 1596 at Page 173. DOES
NOT AFFECT.

9. Sewer Line Easement by the instrument recorded as
Document No. 19881875029 in Book 11850 at Page 1774.
AFFECTS, NOT POTTABLE.

10. Temporary Easement for Highway Purposes by the
instrument recorded as Document No. 19881015602 in Book
13155 at Page 270. DOES NOT AFFECT.

11. Right of way granted to the City of Lee's Summit by the
instrument recorded as Document No. 2014E008068. DOES
NOT AFFECT.

12. Easements set forth in Warranty Deed recorded as
Document No. 2009E0045651. AFFECTS, AS SHOWN
HEREON.

13. Matters shown and set forth on Certificate of Survey
recorded July 27, 2021 as Document No. 2014E0081920.
AFFECTS, NO EASEMENT SHOWN.

SURVEYOR'S CERTIFICATION:

TO: WHATABURGER RESTAURANTS LLC AND CHICAGO TITLE
INSURANCE COMPANY

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE
SURVEY ON WHICH IT IS BASED WERE MADE IN
ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL
REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS.
JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS,
AND INCLUDES ITEMS 1, 2, 3, 4, 5, 6(a), 6(b), 7(a-c), 8, 9, 13, 16,
and 17 OF TABLE A THEREOF. THE FIELD WORK WAS
COMPLETED ON NOVEMBER 22, 2021.

DATE OF PLAT OR MAP: DECEMBER 16, 2021.

DAVE R. HOBBS, PLS 2014020711
dave@younghobbs.com

DATE

LEGEND

- IRON PIN FOUND, AS NOTED
- BENCHMARK, AS NOTED
- SEWER MANHOLE
- FIRE HYDRANT
- WATER VALVE
- UTILITY POLE
- ELECTRIC METER
- GUY WIRE
- GAS VALVE
- FOC PULL BOX
- TELEPHONE BOX
- GRATE INLET
- STORM MANHOLE
- GATE POST
- PROPERTY LINE
- EASEMENT LINE
- SETBACK LINES
- OVERHEAD WIRE
- UNDERGROUND ELECTRIC
- FENCE LINE
- GAS LINE, AS NOTED
- SANITARY SEWER, AS NOTED
- UNDERGROUND FIBER OPTIC
- STORM SEWER PIPE, AS NOTED
- WATER LINE
- LIGHT POLE(2-WAY)

0 20 40 60

SCALE 1"=20'

BASIS OF BEARINGS
MO (W) STATE PLANE COORDINATE SYSTEM
SPC (2403 MO W)

TABLE A NOTES:

ITEM 2: ADDRESS SHOWN IS PER TITLE COMMITMENT NO.
KCC213072.

ITEM 3: THIS PROPERTY IS LOCATED WITHIN AN AREA
HAVING ZONE DESIGNATIONS OF "X" BY THE
FEDERAL EMERGENCY MANAGEMENT AGENCY, ON
FLOOD INSURANCE RATE MAP NO. 2209505023, WITH
A MAP REVISED DATE OF JANUARY 20, 2017, IN
JACKSON, COUNTY, STATE OF MISSOURI, WHICH IS
THE CURRENT FLOOD INSURANCE RATE MAP FOR
THE COMMUNITY IN WHICH SAID PROPERTY IS
SITUATED.

ITEM 5: CONTOURS WERE DERIVED FROM RANDOM SHOTS
AND CROSS SECTIONS AND ARE SHOWN AT ONE
FOOT INTERVALS. ELEVATIONS SHOWN HEREON
ARE, BASED ON GPS OBSERVATIONS TOGETHER
WITH AN OPUS SOLUTION, DATED 11/22/2021
(NAVDS8, GEOID18).

ITEM 6A: NO ZONING REPORT PROVIDED TO THIS SURVEYOR.

ITEM 16: THERE WAS NO EVIDENCE OF RECENT EARTH
MOVING, BUILDING CONSTRUCTION, OR BUILDING
ADDITIONS OBSERVED IN THE PROCESS OF
CONDUCTING THE FIELDWORK.

ITEM 17: THERE WAS NO EVIDENCE OF RECENT CHANGES IN
STREET RIGHT OF WAY LINES. THERE WAS NO
EVIDENCE OF RECENT OR STREET SIDEWALK
CONSTRUCTION OR REPAIRS OBSERVED IN THE
PROCESS OF CONDUCTING THE FIELDWORK.

**LAND DESCRIPTION:
AS SURVEYED**

PART OF THE SOUTHEAST QUARTER OF THE SOUTHEAST
QUARTER OF SECTION 30, TOWNSHIP 47 NORTH, RANGE 31
WEST, OF THE FIFTH PRINCIPAL MERIDIAN, LEE'S SUMMIT,
JACKSON COUNTY, MISSOURI, DESCRIBED AS FOLLOWS:

BEING ALL OF TRACT "A", ON THE CERTIFICATE OF
SURVEY, RECORDED JULY 27, 2021 AS DOCUMENT NO.
2021E0081920 IN THE CITY OF LEE'S SUMMIT, JACKSON
COUNTY, MISSOURI, ALSO DESCRIBED AS FOLLOWS:

BEGINNING AT A 1/2" IRON PIN FOUND (ID: 2651) AT THE
RIGHT OF WAY LINE INTERSECTION OF 150 HIGHWAY AND
HOLLYWOOD DRIVE; THENCE WITH THE EAST RIGHT OF WAY
LINE OF SAID HOLLYWOOD DRIVE N 02°24'42" E A DISTANCE OF
150.88 FEET TO A 1/2" IRON PIN FOUND (ID: 2651); THENCE WITH
THE RIGHT OF WAY LINE INTERSECTION OF SAID HOLLYWOOD
DRIVE AND SUMMITCREST DRIVE WITH A CURVE TURNING TO
THE RIGHT WITH AN ARC LENGTH OF 31.05 FEET WITH A
RADIUS OF 20.00 FEET WITH A CHORD BEARING OF N 47°11'11"
E, WITH A CHORD LENGTH OF 28.02 FEET TO A 1/2" IRON PIN
FOUND (ID: 2651); THENCE WITH THE SOUTH RIGHT OF WAY
LINE OF SAID SUMMITCREST DRIVE S 88°15'48" E A DISTANCE OF
282.03 FEET TO A 1/2" IRON PIN FOUND (ID: 2651); THENCE
LEAVING SAID RIGHT OF WAY LINE WITH THE WEST LINE OF
HAWKINS COMMERCIAL LOT 1, RECORDED IN DOCUMENT NO.
200010062550 S 02°26'57" W A DISTANCE OF 208.22 FEET TO A
3/8" IRON PIN FOUND IN THE NORTH RIGHT OF WAY LINE OF
SAID 150 HIGHWAY; THENCE WITH SAID NORTH RIGHT OF WAY
LINE N 88°42'20" W A DISTANCE OF 301.67 FEET TO THE POINT
OF BEGINNING, HAVING AN AREA OF 63,083 SQUARE FEET,
1.448 ACRES, MORE OR LESS.

SURVEY NOTES:

INFORMATION REGARDING THE PRESENCE, SIZE AND LOCATION
OF UNDERGROUND UTILITIES IS SHOWN HEREON. THIS
INFORMATION HAS BEEN SHOWN BASED ON THE LOCATION
ABOVE GROUND APPURTENANCES, AVAILABLE DESIGN PLANS,
AND FLAGS AND PAINT PLACED BY THE UNDERGROUND
PROTECTION SERVICE. NO CERTIFICATION IS MADE AS TO THE
ACCURACY OF THOROUGHNESS OF THE INFORMATION
CONCERNING UNDERGROUND UTILITIES AND STRUCTURES
SHOWN HEREON. (MISSOURI ONE CALL 1-800-DIG-RITE). THIS
SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A PRIVATE
UTILITY LOCATE.

CONTACT PROPER AUTHORITIES BEFORE BUILDING NEAR
UTILITY LINES. FOR EASEMENT WIDTH AND RESTRICTIONS,
UTILITIES ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR
TO ANY CONSTRUCTION.

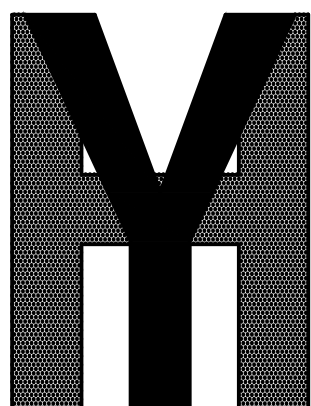
UNLESS STATED OTHERWISE, ANY MONUMENT REFERRED TO
HEREIN AS AN "IRON PIN SET" IS A SET 5/8" DIAMETER REBAR,
WITH AN YELLOW PLASTIC CAP STAMPED "YOUNG-HOBBS"

THIS SURVEY HAS BEEN PREPARED FOR THE EXCLUSIVE USE OF
THE PERSON OR ENTITIES NAMED HEREON. NO EXPRESS OR
IMPLIED WARRANTIES WITH RESPECT TO THE INFORMATION
SHOWN HEREON IS TO BE EXTENDED TO ANY PERSONS OR
ENTITIES OTHER THAN THOSE SHOWN HEREON.

THERE WERE NO BUILDINGS ON THE SUBJECT PROPERTY AT THE
TIME OF THE SURVEY.

LIST OF ENCROACHMENTS: NONE. THE OWNERSHIP OF CURB,
UTILITIES, FENCES, AND/OR PERIMETER WALLS SHOWN HEREON
ARE NOT KNOWN AND THIS ARE NOT LISTED AS
ENCROACHMENTS. CURB, UTILITIES, FENCES, AND/OR
PERIMETER WALLS ARE SHOWN IN THEIR RELATIVE POSITION TO
THE BOUNDARY.

I DO HEREBY STATE THAT THIS IS A TRUE, COMPLETE AND
CORRECT SURVEY OF THE DESCRIBED REAL PROPERTY
SITUATED IN THE COUNTY OF GREENE, MISSOURI AND THAT THIS
SURVEY WAS EXECUTED IN ACCORDANCE WITH THE CURRENT
MISSOURI MINIMUM STANDARDS FOR PROPERTY SURVEYS
(URBAN SURVEY 1.20.000)



**YOUNG - HOBBS
AND
ASSOCIATES**

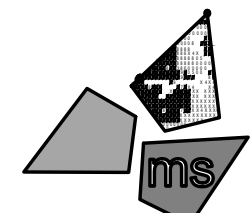
1202 CROSSLAND AVE.
CLARKSVILLE, TN 37040
PHONE 931-645-2524
FAX 931-645-2768

PRELIMINARY - NOT
FOR RECORDING OR
LAND TRANSFER

DAVE R. HOBBS, PLS 2014020711

No.	Date	Revision
1		

CLIENT



ms consultants, inc.
engineers, architects, planners
2221 Schrock Road
Columbus, Ohio 43229-1547
phone 614.898.7100
fax 614.898.7570

**ALTA/NSPS
LAND TITLE
SURVEY**

**OWNER
INFORMATION**

SHUN PING YEH
TAX ID:
70-400-04-03-02-3-00-000
DOC. # 2021E0043600
DOC. # 2021E0043599

ALSO BEING TRACT "A"
DOC. # 2021E0081920

**CITY OF LEES SUMMIT
COUNTY OF JACKSON
STATE OF MISSOURI**

DRAWN BY: CLH,KAB

APPROVED BY: DRH

DATE: (FIELD) 11/22/2021

DATE: (OFFICE) 12/16/2021

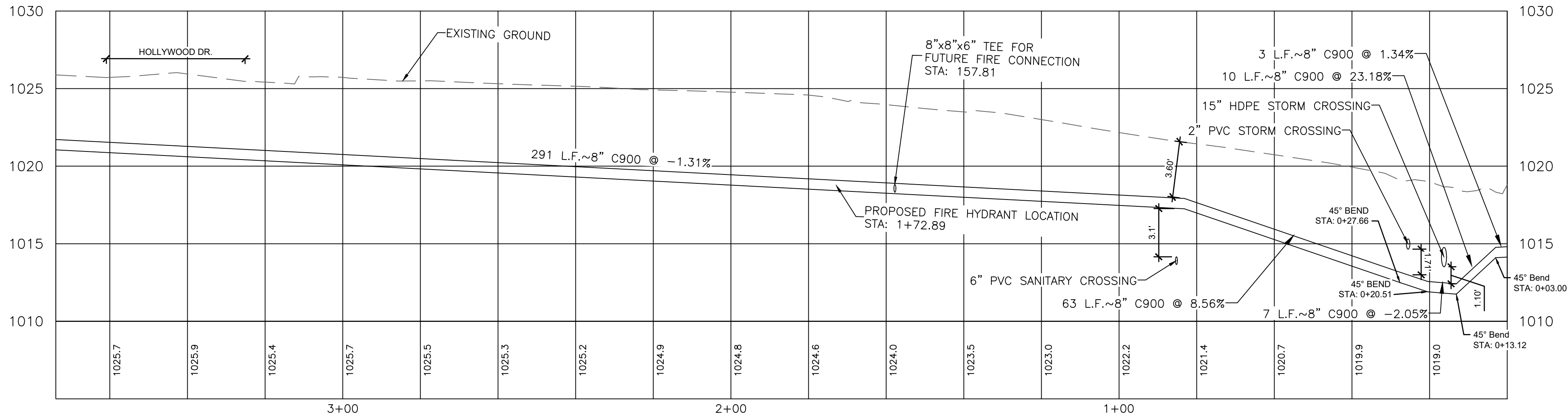
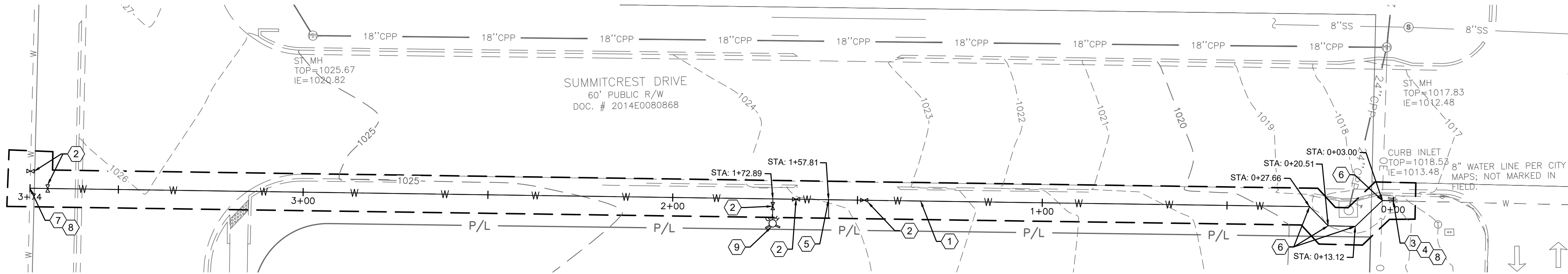
YHA PRO. # 242-21

SHEET 1 OF 1



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

N:\0316240497\21-Lee's Summit, MO MarketDocs\CAD\CIVIL\Public Improvement Plans\Dwg-Set\C-2.0 Water Line Extension Plan.dwg, 10/24/2022 11:41 AM, boley, jason



HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'

GENERAL NOTES:

- ALL EXISTING CONDITIONS, TOPOGRAPHY, UTILITIES AND PROPERTY INFORMATION ARE TAKEN FROM A SURVEY OF LAND SITUATED IN THE CITY OF LEE'S SUMMIT, COUNTY OF JACKSON AND STATE OF MISSOURI, BY SURVEYOR: YOUNG-HOBBS AND ASSOCIATES, 1202 CROSSLAND AVENUE CLARKSVILLE, TN 37040.
- ALL EXISTING UTILITIES, ARE TAKEN FROM SURVEY AND DO NOT NECESSARILY REPRESENT ALL UNDERGROUND UTILITIES ADJACENT TO OR UPON PREMISES SHOWN ON PLAN.
- CONTRACTOR RESPONSIBLE FOR MAINTAINING A MIN. COVER OF 42" OVER PROPOSED WATER SERVICE.
- CONTRACTOR IS RESPONSIBLE FOR LOCATING AND VERIFYING ALL EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION, AND IS RESPONSIBLE FOR ANY DAMAGE TO THEM DURING CONSTRUCTION.
- CONTRACTOR SHALL INSTALL AND BACKFILL ALL TRENCHES AND STRUCTURES PER DETAIL ON SHEET C-3.0.
- THERE SHALL BE A MINIMUM 10 FOOT HORIZONTAL SEPARATION BETWEEN WATER TAPS, WATER SERVICES, PRIVATE WATER SYSTEMS, AND ANY SANITARY AND/OR STORM SEWER SYSTEMS. WHERE 10 FEET HORIZONTAL SEPARATION CANNOT BE OBTAINED, THE BOTTOM OF THE WATER LINE SHALL BE AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.
- THE EXCAVATING CONTRACTOR MUST TAKE PARTICULAR CARE WHEN EXCAVATING IN AND AROUND EXISTING UTILITY LINES AND EQUIPMENT. VERIFY COVER REQUIREMENTS BY UTILITY CONTRACTORS AND/OR UTILITY COMPANIES SO AS TO NOT CAUSE DAMAGE.
- CAUTION: OVERHEAD LINES ARE PRESENT ON SITE. CONTRACTOR TO TAKE SPECIAL CARE TO PREVENT DAMAGE TO THE LINES AND COORDINATE WITH UTILITY OWNER.
- APPROPRIATE WATER SERVICE DEMAND DATA (INCLUDING, BUT NOT LIMITED TO, PLANNED LAND USAGE, DENSITIES OF PROPOSED DEVELOPMENT, PIPE SIZES, CONTOURS AND FIRE HYDRANT LAYOUT) TO ALLOW FOR THE PRELIMINARY ANALYSIS OF THE DEMAND FOR WATER SERVICE IF REQUIRED BY THE CITY ENGINEER.

KEYED NOTES:

- PROPOSED 8" C900 WATER MAIN. INSTALL PER LEE'S SUMMIT SPECIFICATIONS 3902 CONSTRUCTION AND INSTALLATION, SECTION B WATER MAIN INSTALLATION.
- PROPOSED 8" WATER GATE VALVE PER LEE'S SUMMIT STANDARD SPECIFICATIONS SECTION 3901 MATERIALS. SECTION M VALVES. SEE SHEET C-3.0 FOR CITY OF LEE'S SUMMIT STANDARD VALVE DETAIL AND CITY APPROVED LIST OF MANUFACTURERS AND MODELS.
- WATER MAIN EXTENSION CONNECTION TO EXISTING WATER LINE. PROPOSED 8" WATER MAIN EXTENSION INSTALLED PER CITY OF LEE'S SUMMIT WATER STANDARD SPECIFICATIONS (SECTION 3902.11 WATER MAIN CONNECTIONS TO EXISTING MAIN). THRUST BLOCKS SHALL BE PROVIDED AT THE NEW CONNECTION TO PROVIDE THRUST RESTRAINT AS SHOWN IN THE CITY OF LEE'S SUMMIT STANDARD DRAWINGS. REFER TO THE THRUST BLOCK DETAIL ON SHEET C3.0.
- BLOWOFF ASSEMBLY TO BE REMOVED BEFORE EXTENDING WATER MAIN.
- PROPOSED 8"x8"x6" TEE FOR FUTURE FIRE CONNECTION TO BE INSTALLED WITH PUBLIC WATER MAIN EXTENSION. TEES SHALL BE PROVIDED WITH THRUST BLOCKS AS SHOWN IN THE CITY OF LEE'S SUMMIT STANDARD DRAWINGS. REFER TO THE THRUST BLOCK DETAIL ON SHEET C3.0.
- PROPOSED MJ 45° BEND.
- PROPOSED 8"x8"x8" TEE TO EXISTING WATER MAIN.
- CONNECTION OF DISSIMILAR WATER PIPE MATERIALS.
- PROPOSED FIRE HYDRANT INSTALLED PER LEE'S SUMMIT STANDARD SPECIFICATIONS SECTION 3900 WATER MAINS. REFER TO THE FIRE HYDRANT DETAIL ON SHEET C3.0.

NOTE:

- ALL CONSTRUCTION SHALL FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813 AND THE CITY OF LEE'S SUMMIT STANDARD SPECIFICATIONS SECTION 3900 WATER MAINS. WHERE DISCREPANCIES EXIST BETWEEN THESE PLANS AND THE DESIGN AND CONSTRUCTION MANUAL, THE DESIGN AND CONSTRUCTION MANUAL SHALL PREVAIL.
- THE CONTRACTOR SHALL CONTACT THE CITY'S DEVELOPMENT SERVICES ENGINEERING INSPECTION TO SCHEDULE A PRE-CONSTRUCTION MEETING WITH A FIELD ENGINEERING INSPECTOR PRIOR TO ANY LAND DISTURBANCE WORK AT (816) 969-1200.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
---	---	CONSTRUCTION LIMITS
---	---	STORM LINE
---	---	SANITARY LINE
---	---	SANITARY CLEANOUT
---	---	SANITARY MANHOLE
---	---	WATER LINE
---	---	FIRE HYDRANT
---	---	WATER METER
---	---	WATER VALVE
---	---	UNDERGROUND ELECTRIC LINE
---	---	UNDERGROUND TELEPHONE LINE
---	---	LIGHT POLE

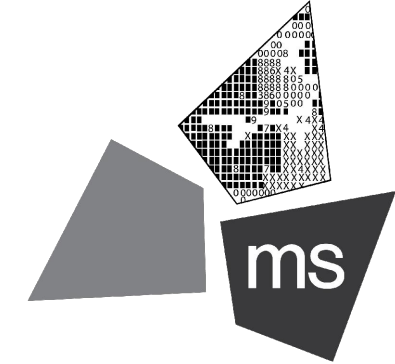


REVISION/DATE/DESCRIPTION

PUBLIC IMPROVEMENT PLAN SET	06/29/22
RESPONSE TO COMMENTS I	08/16/22
RESPONSE TO COMMENTS II	09/29/22
RESPONSE TO COMMENTS III	10/24/22

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engineers, architects, planners
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Columbus, Ohio 43229-1547
phone 614.898.7100
fax 614.898.7570

PROJECT

PROPOSED PT20M BUILDING

204 SW M150 HWY
LEE'S SUMMIT, MO 64081

SHEET TITLE

PUBLIC IMPROVEMENT PLANS - WATER EXTENSION



DRAWN BY: TDB

CHECKED BY: PGD

PROJECT NO: 40497-21

DRAWING

C-2.0

N:\03162-40497\21-Lee's Summit, MO MarketDocs\CAD\Civil\Public Improvement Plans\Dwg-Set\C-3.0 Water Line Extension Notes and Details.dwg, 10/24/2022 11:42 AM, boley, jason

REQUIRED CONCRETE BEARING AREA (SQUARE FEET - SF)

NOM. DIA. (INCHES)	180 TEE, PLUG	90° BEND	45° BEND	22.5° BEND	11.25° BEND
6	4.7	6.7	4.0	4.0	4.0
8	8.4	11.8	6.4	4.0	4.0
10	13.1	18.5	10.0	5.1	4.0
12	18.8	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	8.3
20	REST. JT.	REST. JT.	40.1	20.4	10.3
24	REST. JT.	REST. JT.	REST. JT.	29.4	14.8

POURED CONCRETE BLOCKS (TYP.)

UNDISTURBED EARTH

BEARING AREA (TYP.)

BOND BREAKER (TYP. ALL BLOCKS)

PLAN

1/4" BOND BREAKER

SECTION A

1/2" DIAMETER

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.

LS

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

HORIZONTAL THRUST BLOCK

Date: 01/2016
Drawn By: JN
Checked By: DL

WAT-1

A

HORIZONTAL THRUST BLOCK

C3.0 / N.T.S.

REQUIRED CONCRETE VOLUME (CUBIC FEET - CF)

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

#4 EPOXY COATED GR. 60 REBAR WITH 6" HOOK & MIN. CONCRETE EMBEDMENT DEPTH

UNDISTURBED EARTH

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.

LS

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

VERTICAL THRUST BLOCK

Date: WAT-2
Drawn By: JN
Checked By: DL

WAT-2

B

VERTICAL THRUST BLOCK

C3.0 / N.T.S.

VALVE STEM EXTENSION AND VALVE BOX

VALVE COVER

FINAL GRADE

CUT A NOTCH IN TOP OF VALVE BOX AND PLACE 2' OF TRACER WIRE COILED INSIDE VALVE COVER BOX

STANDARD 2" SQUARE VALVE OPERATING NUT

WELD (TYP. 8 PLACES)

ALIGNMENT WASHER 1/8" MIN. STEEL 4-1/2"Ø

1"Ø COLD ROLLED STEEL

MIN. 5"Ø FERROUS METAL VALVE BOX

SOCKET FROM 1/4" STEEL INSIDE DIMENSIONS 2-3/16" X 3" DEEP DO NOT TIGHTEN SET SCREW TO 2" OPERATING NUT

INSTALL TRACER WIRE ALONG OUTSIDE SURFACE OF VALVE BOX

VARIES AS REQUIRED

3" MAXIMUM

2"

3-1/4"

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.

LS

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

VALVE STEM EXTENSION AND VALVE BOX

Date: 01/2016
Drawn By: JN
Checked By: DL

WAT-9

C

VALVE STEM EXTENSION AND VALVE BOX

C3.1 / N.T.S.

WATER TRENCH CHECK DETAIL

FINISHED GRADE

REGULAR BACKFILL

TRENCH AS REQUIRED BY OSHA

FLOWABLE FILL

12"

12" MIN.

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

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WATER TRENCH CHECK DETAIL

Date: 01/2016
Drawn By: JN
Checked By: DL

WAT-6

D

WATER TRENCH CHECK DETAIL

C3.0 / N.T.S.

HYDRANT - STRAIGHT SET

BACK OF CURB

GROUND SURFACE

THRUST BLOCK (SEE NOTE 1)

KEEP WEEP HOLE FREE OF CONCRETE AND FOREIGN MATERIAL

24"X24"X4" SOLID CONCRETE PAD

UNDISTURBED EARTH

PROVIDE MIN. 1/2 CU. YD. OF 3/4" GRANULAR FILL PER AWWA C600 SEC. 4.2.7.2.4

MJ RESTRAINT FITTINGS (SEE NOTES 1 & 2)

THRUST BLOCK

UNDISTURBED EARTH

2' FROM BACK OF CURB

MECHANICAL JOINT (TYP.)

VALVE LID & COVER

20" MIN 42" MAX

VARIES

VALVE BOX & BASE

6" GATE VALVE

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.

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HYDRANT - STRAIGHT SET

Date: 01/2016
Drawn By: JN
Checked By: DL

WAT-7

E

FIRE HYDRANT DETAIL

C3.0 / N.T.S.

CITY APPROVED MANUFACTURERS AND MODELS

GATE (Section 3901.L.3)	MODEL
American Flow Control	Gate Valve Series 2500
Clow	Resilient Wedge Gate Valve
EJ	Resilient Wedge Gate Valve
Kennedy	KS-FW
M&H	Style 4067, NRS
Mueller	2360 Series
U.S. Pipe	A-USPO Resilient Wedge

VALVE BOXES

CAST IRON COVERS (Section 3901.N.)	MODEL
Clay & Bailey	2194
Clay & Bailey	2195

CAST IRON VALVE BOXES (Section 3901.N.)	MODEL
Clay & Bailey	5 1/4" (Screw Type) P1108

REVISION/DATE/DESCRIPTION

PUBLIC IMPROVEMENT	06/29/22
PLAN SET	
RESPONSE TO COMMENTS	08/16/22
RESPONSE TO COMMENTS II	09/29/22
RESPONSE TO COMMENTS III	10/24/22

NOTICE

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PROJECT

PROPOSED PT20M BUILDING

204 SW M150 HWY
LEE'S SUMMIT, MO 64081

SHEET TITLE

PUBLIC IMPROVEMENT PLANS - WATER EXTENSION DETAILS & NOTES

DRAWN BY: TDB

CHECKED BY: PGD

PROJECT NO: 40497-21

DRAWING

C-3.0