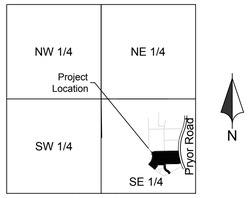
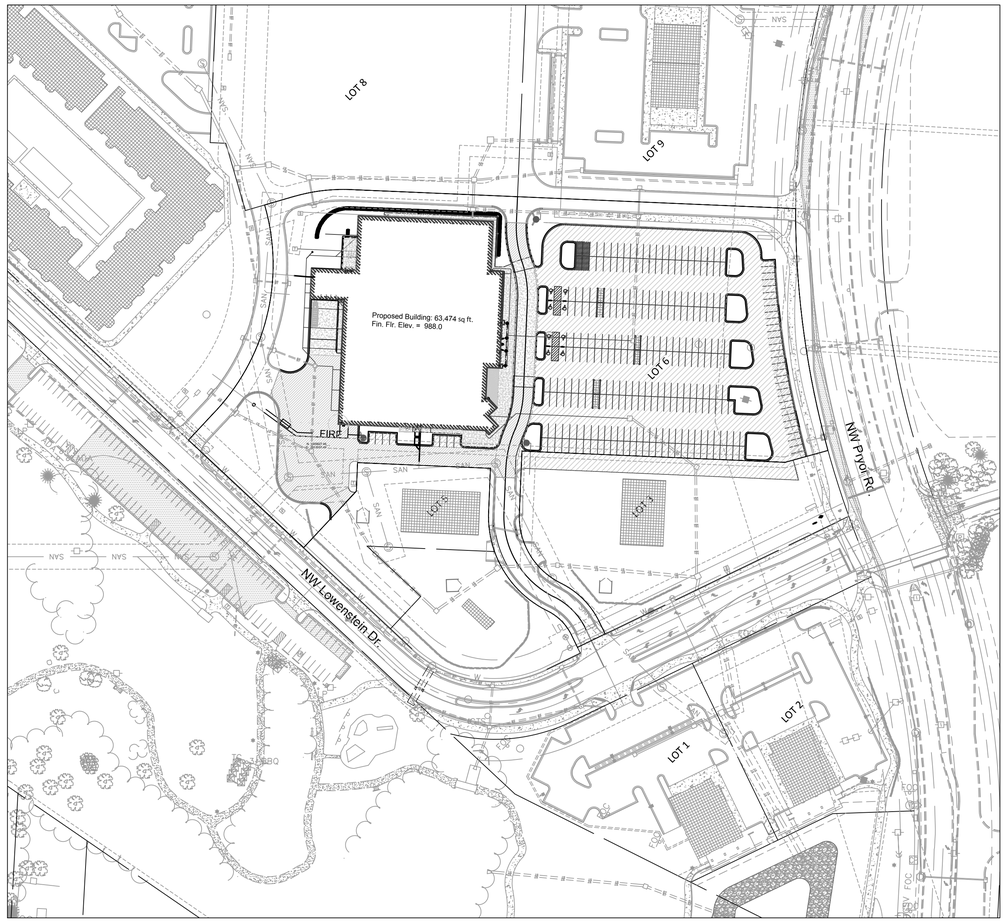
Final Development Plans For
McKeever's Market & Eatery #950
840 NW Pryor Road
Lee's Summit, Jackson County, Missouri



LOCATION MAP

SECTION 35-48-32
Scale 1" = 2000'



DEVELOPER/APPLICANT

Super Market Developers, Inc.
Attn: Joel Riggs
5000 Kansas Avenue
Kansas City, Kansas 66106

CONSULTANT

Renaissance Infrastructure Consulting
Dustin Burton, P.E.
1815 McGee Street, Suite 200
Kansas City, MO 64108

INDEX OF SHEETS

UTILITIES

WATER & SANITARY SEWER
City of Lee's Summit Water Utilities
1200 SE Hamblen Road
Lee's Summit, MO
Phone:816.969.1900

ELECTRICITY
Kansas City Power and Light
Phone: 816.471.5275

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

TELEPHONE
AT&T
Phone: 800.288.2020

Time Warner Cable
Phone: 816.222.5952

CABLE TV
Comcast
Phone: 816.795.1100

Time Warner Cable
Phone: 816.358.8833

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

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

GENERAL NOTES

All construction shall be in accordance with the current City of Lee's Summit "Design and Construction Manual" as adopted by Ordinance 5813. Where discrepancies exist between the Final Development Plan and the Design and Construction Manual, the Design and Construction Manual shall govern.

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

LEGEND

Existing Section Line	Proposed Right-of-Way
Existing Right-of-Way Line	Proposed Property Line
Existing Lot Line	Proposed Lot Line
Existing Easement Line	Proposed Easement
Existing Curb & Gutter	Proposed Curb & Gutter
Existing Sidewalk	Proposed Sidewalk
Existing Storm Sewer	Proposed Storm Sewer
Existing Storm Structure	Proposed Storm Structure
Existing Waterline	Proposed Fire Hydrant
Existing Gas Main	Proposed Waterline
Existing Sanitary Sewer	Proposed Sanitary Sewer
Existing Sanitary Manhole	Proposed Sanitary Manhole
Existing Contour Major	Proposed Contour Major
Existing Contour Minor	Proposed Contour Minor
	Future Curb and Gutter

Know what's below. Call before you dig.

NORTH
1"=100'
0 50' 100'

Sheet
C01

Final Developement Plans
18-0281
McKeever's Market & Eatery #950
Lee's Summit, Jackson, Missouri

Title Sheet

NO.	BY	DATE	REVISION
3	C.R.	07/23/19	Resubmittal To City
2	C.R.	07/11/19	Check Set
1	C.R.	05/24/19	Submittal To City

Renaissance Infrastructure Consulting
32 ABBIE AVENUE
KANSAS CITY, KANSAS 66103
913.317.9500
WWW.RIC-CONSULT.COM
MO Certificate of Authority: E-2010033630

STATE OF MISSOURI
DUSTIN J. BURTON
NUMBER PE-2011015709
PROFESSIONAL ENGINEER
7/25/19

LOT 6 of
STREETS OF WEST PRYOR
LOTS 1 THRU 14,
TRACTS "A", "B", "C", & "D"

LOT DESCRIPTION:

COMMENCING AT THE NORTHWEST CORNER OF THE SOUTHEAST QUARTER OF SAID SECTION 35; THENCE ON THE WEST LINE OF SAID SOUTHEAST QUARTER, ON AN ASSUMED BEARING OF S 02°27'18" W 332.72 FEET; THENCE N 31°23'08" E 362.27 FEET TO THE SOUTHERLY RIGHT-OF-WAY LINE OF INTERSTATE 470; THENCE ON SAID SOUTHERLY RIGHT-OF-WAY LINE, S 85°14'51" E 359.55 FEET TO THE NORTHWEST CORNER OF GERBER HEIGHTS RECORDED IN BOOK I51, PAGE 74; THENCE ON THE WESTERLY LINE OF SAID GERBER HEIGHTS, S 24°49'45" E 579.75 FEET TO THE SOUTHWEST CORNER OF SAID GERBER HEIGHTS; THENCE ON THE SOUTH LINE OF SAID GERBER HEIGHTS, S 85°07'20" E 511.36 FEET TO THE SOUTHEAST CORNER OF SAID GERBER HEIGHTS; THENCE S 02°27'18" W 866.84 FEET; THENCE S 87°32'44" E 21.89 FEET; THENCE S 16°12'11" E 97.91 FEET; THENCE N 73°47'49" E 28.02 FEET TO THE POINT OF BEGINNING; THENCE N 73°47'49" E 42.44 FEET TO THE BEGINNING OF A TANGENT CURVE THE RIGHT; THENCE NORTHEASTERLY AND EASTERLY ON THE ARC OF SAID CURVE HAVING A RADIUS OF 250.00 FEET, AN ARC LENGTH OF 81.41 FEET, AND WHOSE CHORD BEARS N 83°07'33" E 81.05 FEET; THENCE S 87°32'44" E 621.35 FEET TO THE BEGINNING OF A NON-TANGENT CURVE TO THE LEFT, ALSO BEING ON THE WESTERLY RIGHT-OF-WAY LINE OF NW PRYOR ROAD; THENCE SOUTHEASTERLY ON THE ARC OF SAID CURVE AND SAID WESTERLY RIGHT-OF-WAY LINE, HAVING A RADIUS OF 1260.00 FEET, AN ARC LENGTH OF 342.18 FEET, AND WHOSE CHORD BEARS S 07°37'10" E 341.13 FEET; THENCE S 74°36'02" W 62.33 FEET; THENCE N 87°32'44" W 367.81 FEET; THENCE S 02°27'16" W 86.95 FEET TO THE BEGINNING OF A TANGENT CURVE TO THE LEFT; THENCE SOUTHERLY AND SOUTHEASTERLY ON THE ARC OF SAID CURVE HAVING A RADIUS OF 104.00 FEET, AN ARC LENGTH OF 120.48 FEET, AND WHOSE CHORD BEARS S 30°43'59" E 113.86 FEET TO THE BEGINNING OF A REVERSE CURVE TO THE RIGHT; THENCE SOUTHEASTERLY ON THE ARC OF SAID CURVE HAVING A RADIUS OF 116.00 FEET, AN ARC LENGTH OF 77.19 FEET, AND WHOSE CHORD BEARS S 44°51'25" E 75.78 FEET; THENCE S 25°47'35" E 19.08 FEET; THENCE S 64°12'25" W 43.00 FEET; THENCE N 25°47'35" W 19.08 FEET TO THE BEGINNING OF A TANGENT CURVE TO THE LEFT; THENCE NORTHWESTERLY ON THE ARC OF SAID CURVE HAVING A RADIUS OF 73.00 FEET, AN ARC LENGTH OF 48.58 FEET, AND WHOSE CHORD BEARING N 44°51'25" W 47.69 FEET TO THE BEGINNING OF A REVERSE CURVE TO THE RIGHT; THENCE NORTHWESTERLY AND NORTHERLY ON THE ARC OF SAID CURVE HAVING A RADIUS OF 147.00 FEET, AN ARC LENGTH OF 170.29 FEET, AND WHOSE CHORD BEARS, N 30°43'59" W 160.93 FEET; THENCE N 02°27'16" E 60.96 FEET; THENCE N 87°32'44" W 185.86 FEET; THENCE S 02°27'16" W 40.00 FEET; THENCE S 43°03'52" W 107.89 FEET; THENCE N 46°56'08" W 220.22 FEET; THENCE N 43°03'52" E 49.28 FEET TO THE BEGINNING OF A TANGENT CURVE TO THE LEFT; THENCE NORTHEASTERLY AND NORTHERLY ON THE ARC OF SAID CURVE HAVING A RADIUS OF 300.00 FEET, AN ARC LENGTH OF 315.86 FEET, AND WHOSE CHORD BEARS N 13°57'34" E 301.47 FEET TO THE POINT OF BEGINNING.

CONTAINS 311,668 SQUARE FEET, 7.15 ACRES MORE OR LESS.

Sheet
C02

Final Developement Plans

18-0281
McKeever's Market & Eatery #950
Lee's Summit, Jackson, Missouri

General Layout

NO	BY	DATE	REVISION
1	C.R.	05/24/19	Submittal To City
2	C.R.	07/11/19	Check Set
3	C.R.	07/23/19	Resubmittal To City

Renaissance Infrastructure Consulting
132 Abbie Avenue
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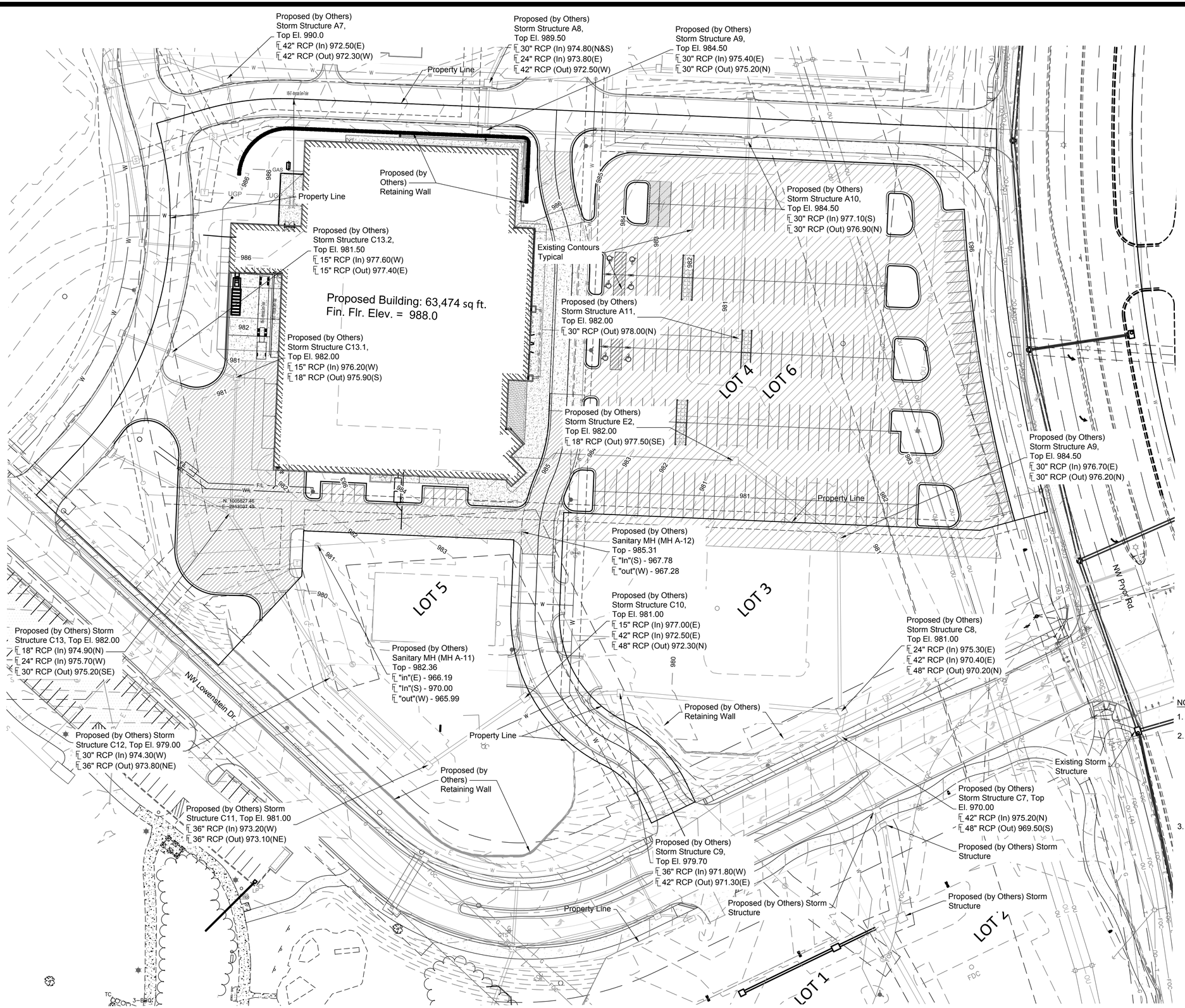
MO Certificate of Authority: E-2010033630

STATE OF MISSOURI
DUSTIN J. BURTON
NUMBER PE-2011015709
PROFESSIONAL ENGINEER
7/25/19

NORTH
1"=40'
0 20' 40'



NOTES

1. See "Title Sheet" C01 for General Notes.
2. Storm Structure Information shown is taken from the "Streets of West Pryor Final Dainage Study" Prepared by Kaw Valley Engineering, Inc., 2319 N. Jackson, Junction City, Kansas, 66441, (785)762-5040 . Renaissance Infrastucture Consulting is not responsible for the accuracy of the information shown hereon and the accompaning tables shown on sheet C09.
3. The Contractor shall verify existing structures locations, sizes and descriptive type information prior to beginning construction activities.

NO.	BY	DATE	REVISION
3	C.R.	DJB	07/23/19	Resubmittal To City
2	C.R.	DJB	07/11/19	Check Set
1	C.R.	DJB	06/24/19	Submittal To City

Sheet
C03

Final Developement Plans

18-0281
McKeever's Market & Eatery #950
Lee's Summit, Jackson, Missouri

Existing Conditions

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STATE OF MISSOURI
DUSTIN J. BURTON
NUMBER PE-2010015709
PROFESSIONAL ENGINEER
07/23/19

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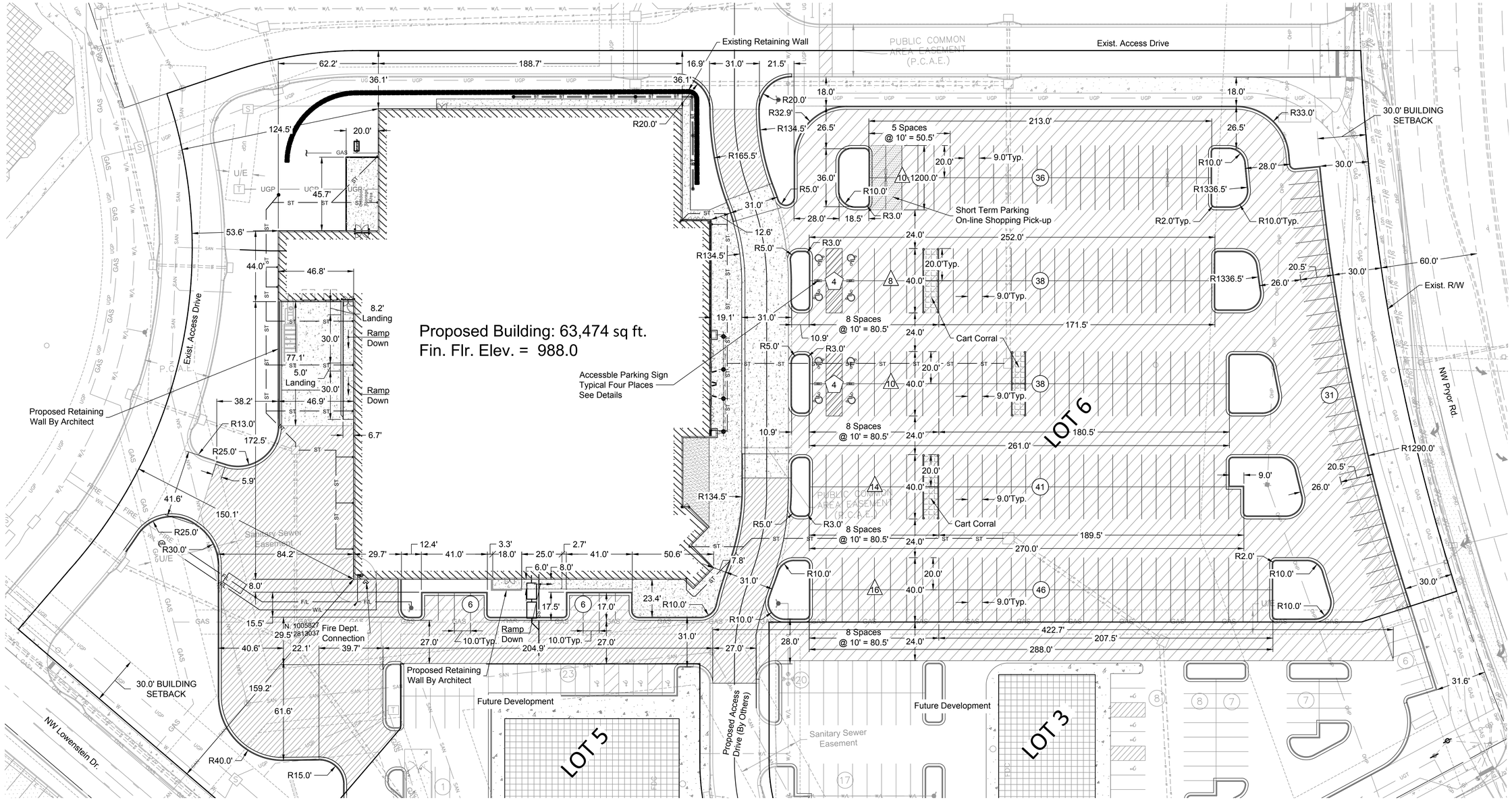

Pavement Section Details

PC Concrete Pavement

- 7" PC Concrete Pavement (4000 PSI, Air Entrained) KCMMB 4K
- 4" Compacted Agg. MODOT TYPE 5
- 8" Compacted Subgrade (95% Std. Proctor Treated with Lime or Class "C" Flyash)

Light Duty Asphalt Pavement

- 1 1/2" AC Surface Course (APWA 3-01)
- 4" AC Base Course (APWA 1-01)
- 6" Compacted Agg. MODOT TYPE 5
- 6" Compacted Subgrade (95% Std. Proctor Treated with Lime or Class "C" Flyash)

Heavy Duty Asphalt Pavement

- 1 1/2" AC Surface Course (APWA 3-01)
- 5" AC Base Course (APWA 1-01)
- 6" Compacted Agg. MODOT TYPE 5
- 6" Compacted Subgrade (95% Std. Proctor Treated with Lime or Class "C" Flyash)

Pavement Sections are based on information from a Geotechnical Report, Dated 06/15/2018 Prepared By Cook, Flatt & Strobel Egineers, P.A.

Pavement Legend

- Concrete Pavement
- Heavy Duty Asphalt Pavement
- Light Duty Asphalt Pavement

Curb Legend

- Dry Curb
- Ribbon Curb
- Wet Curb

Parking Count Legend:

- 10' x 20' Parking Stall Count
- 9' x 20' Parking Stall Count
- ADA Parking Stall Count

Parking Required

253 Stalls

Parking Provided

58	10' Stalls
242	9' Stalls
8	10' ADA Stalls
308	Total Stalls Provided

SITE DATA TABLE

FAR :	(63474 / 311668) = 20.4%
Lot Area (sf):	311,668 sf
Lot Area (ac):	7.15 ac
Building Area:	63,474 sf
Paved Area:	186,285 sf
Impervious Area:	249,454 sf (80%)
Pervious Area:	62,214 sf (20%)

NORTH
1"=30'
0 15' 30'

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Sheet
C04

Final Developement Plans

18-0281
McKeever's Market & Eatery #950
Lee's Summit, Jackson, Missouri

Site Plan

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STATE OF MISSOURI
DUSTIN J. BURTON
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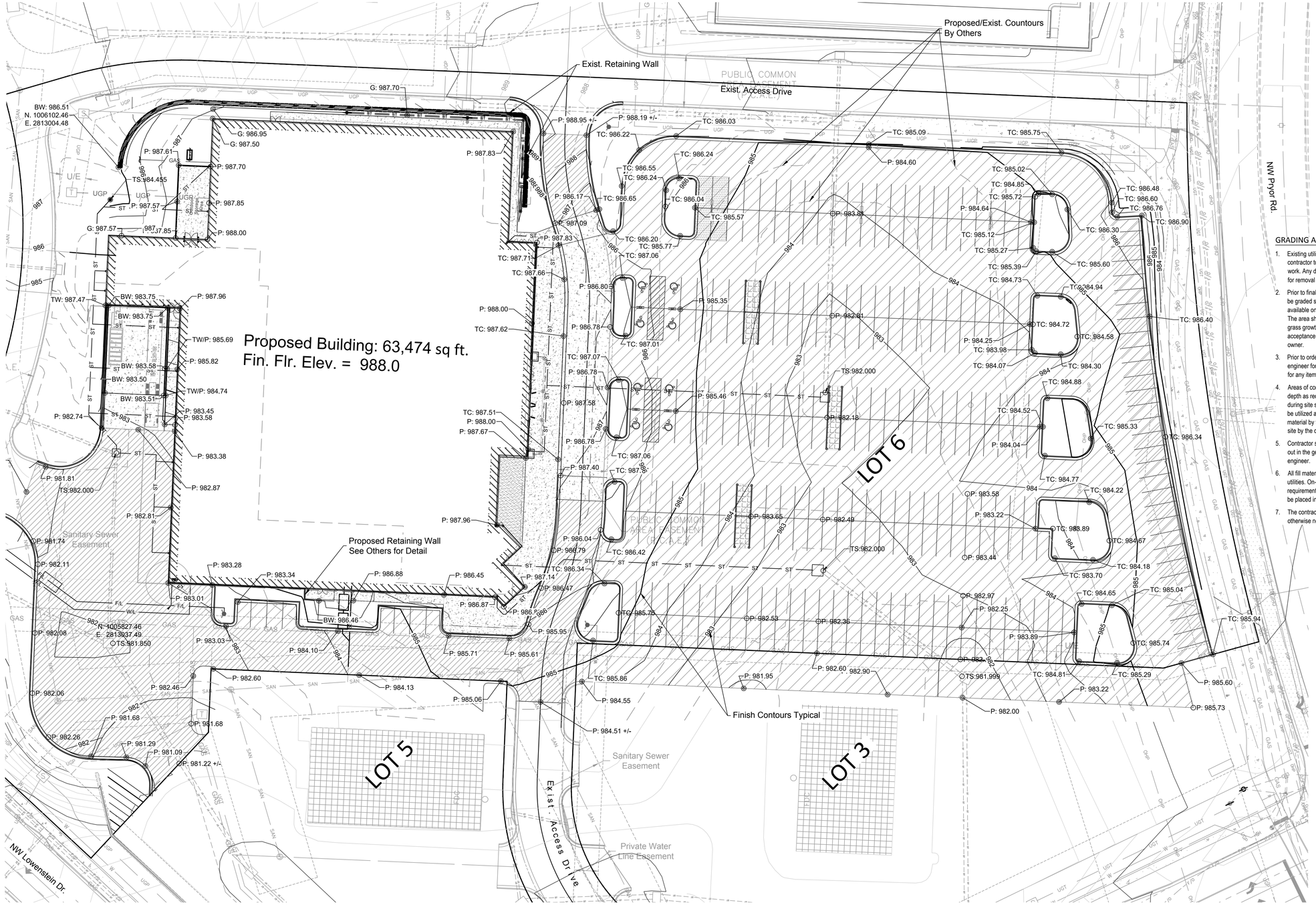
5/24/19



Overall Grading Plan
Scale:1" = 30'

LEGEND

TC:	Top of Curb
P:	Pavement
TS:	Top of Structure
FL:	Flowline of Pipe
G:	Ground
(HP)	High Point
(LP)	Low Point
TW:	Top of Wall
BW:	Bottom of Wall

GRADING AND CLEARING NOTES:

1. Existing utilities as shown are approximate locations only, it shall be the responsibility of the contractor to verify the locations of all existing utilities prior to the start of any construction work. Any damage to existing structures utilities, fences and/or incidentals not designated for removal shall be repaired at the contractors expense.
2. Prior to final acceptance of the project, all slopes and areas disturbed by construction shall be graded smooth and a minimum of four inches of topsoil applied. If adequate topsoil is not available on site, the contractor shall provide topsoil, approved by the owner, as needed. The area shall then be seeded, fertilized, mulched, watered and maintained until hardy grass growth is established in all areas. Any areas disturbed for any reason prior to final acceptance of the project shall be corrected by the contractor at no additional cost to the owner.
3. Prior to ordering precast structures, shop drawings shall be submitted to the design engineer for approval. The contractor is responsible obtaining, city, state, or utility approval for any items under their jurisdiction.
4. Areas of construction shall be stripped of all vegetation, organic matter and topsoil to a depth as recommended by geotechnical engineer and/or testing agency. Soils removed during site stripping should be evaluated to determine if portions of the topsoil stratum may be utilized as structural fill within pavement areas. any material not deemed as suitable fill material by the geotechnical engineer and/or testing agency shall be removed from the job site by the contractor at his expense.
5. Contractor shall adhere to the site preparation and structural fill recommendations as called out in the geotechnical report and engineering evaluation as provided by the geotechnical engineer.
6. All fill material is to be in place, compacted, and consolidated before installation of proposed utilities. On-site geotechnical engineer shall provide written confirmation that this requirement has been met and that utilities may proceed in the fill areas. All utilities are to be placed in trench conditions.
7. The contractor shall sod all disturbed areas within the public street right-of-way unless otherwise noted on the plans or if specific written approval is granted by the city.

N O R T H
1"=30'
0 15' 30'

Sheet
C05

Final Developement Plans

18-0281
McKeever's Market & Eatery #950
Lee's Summit, Jackson, Missouri

Grading Plan

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PROFESSIONAL ENGINEER
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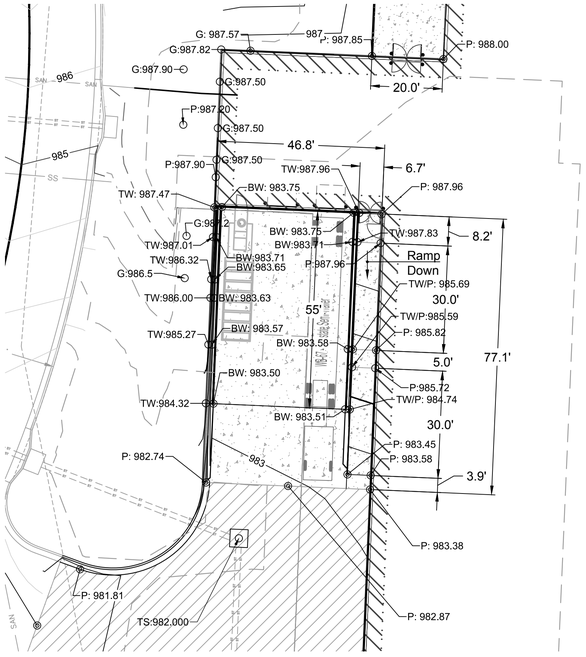
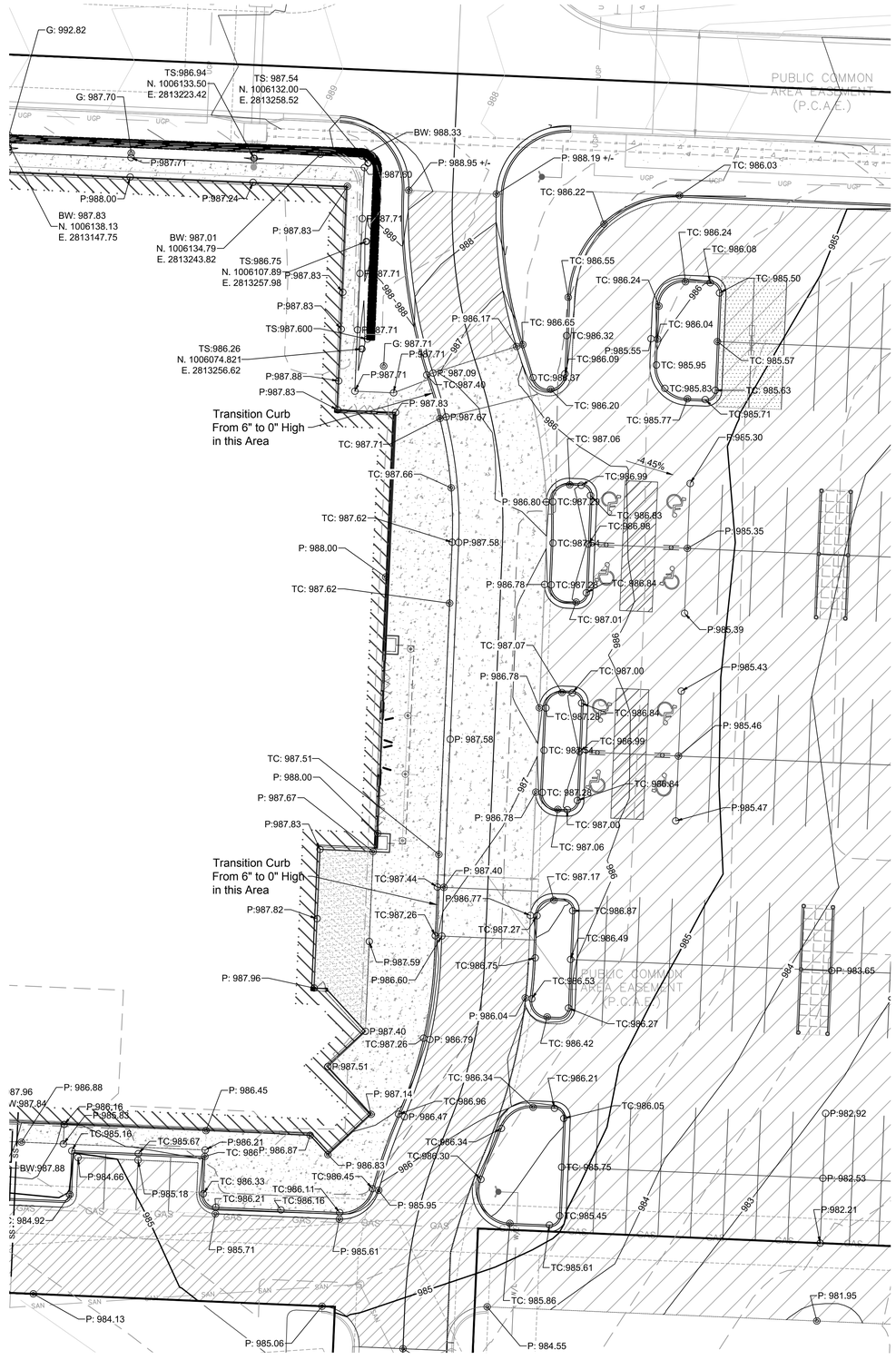


Partial Grading Detail Plan (Receiving Area)
Scale:1" = 20'



ADA Parking Grading Detail Plan
Scale:1" = 20'

NOTES

1. See "Title Sheet" C01 for General Notes. See "Grading Plan" C05 for Grading Notes.
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3. The Contractor shall verify existing structures locations, sizes and descriptive type information prior to beginning construction activities.

LEGEND

TC:	Top of Curb
P:	Pavement
TS:	Top of Structure
FL:	Flowline of Pipe
G:	Ground
(HP)	High Point
(LP)	Low Point
TW:	Top of Wall
BW:	Bottom of Wall

Sheet
C06

Final Developement Plans

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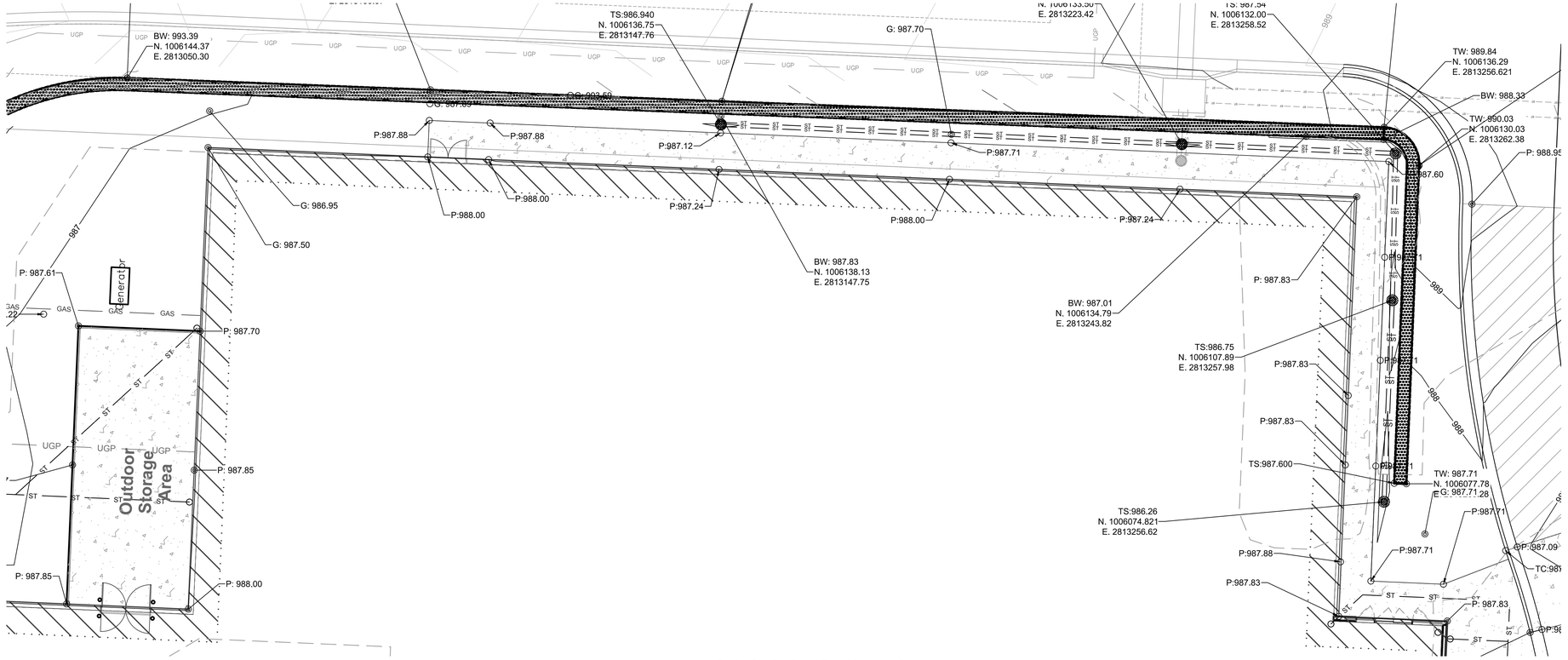
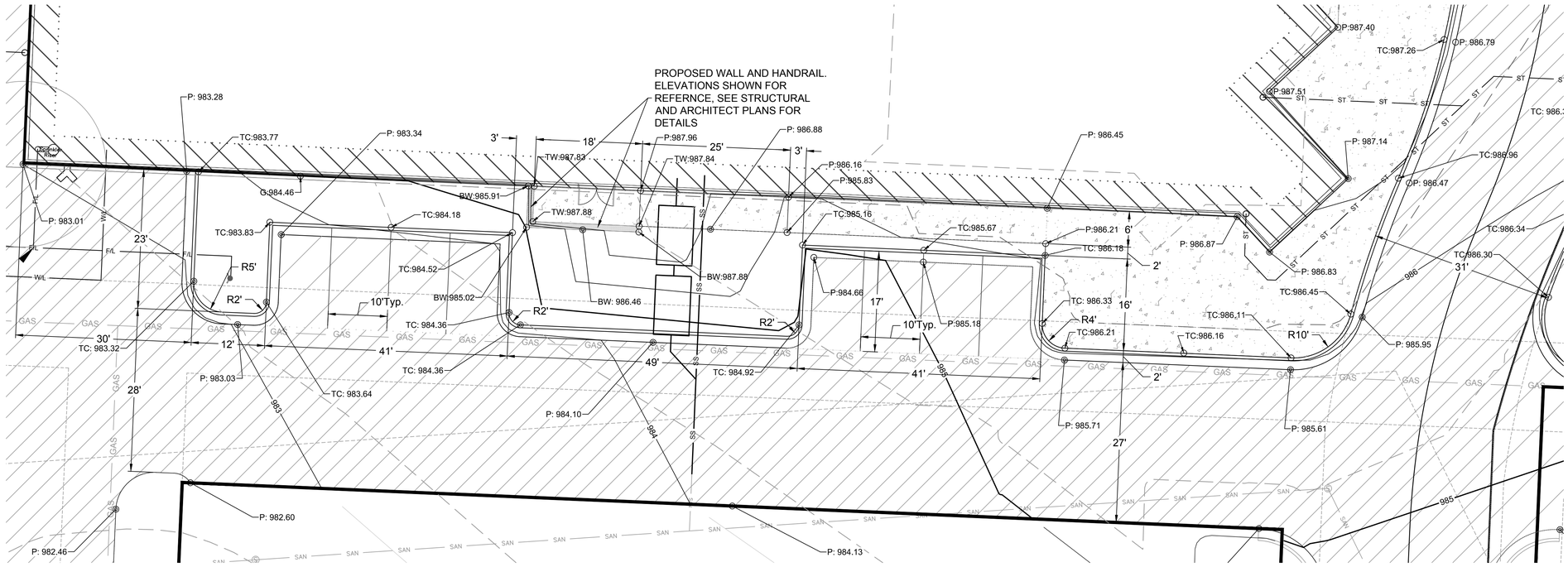


Partial Grading Detail Plan (Northeast Corner)
Scale:1" = 10'



Partial Grading Detail Plan (South Wall)
Scale:1" = 10'

LEGEND

TC:	Top of Curb
P:	Pavement
TS:	Top of Structure
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G:	Ground
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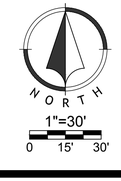

Sheet
C07

Final Developement Plans

18-0281
McKeever's Market & Eatery #950
Lee's Summit, Jackson, Missouri

Grading Details

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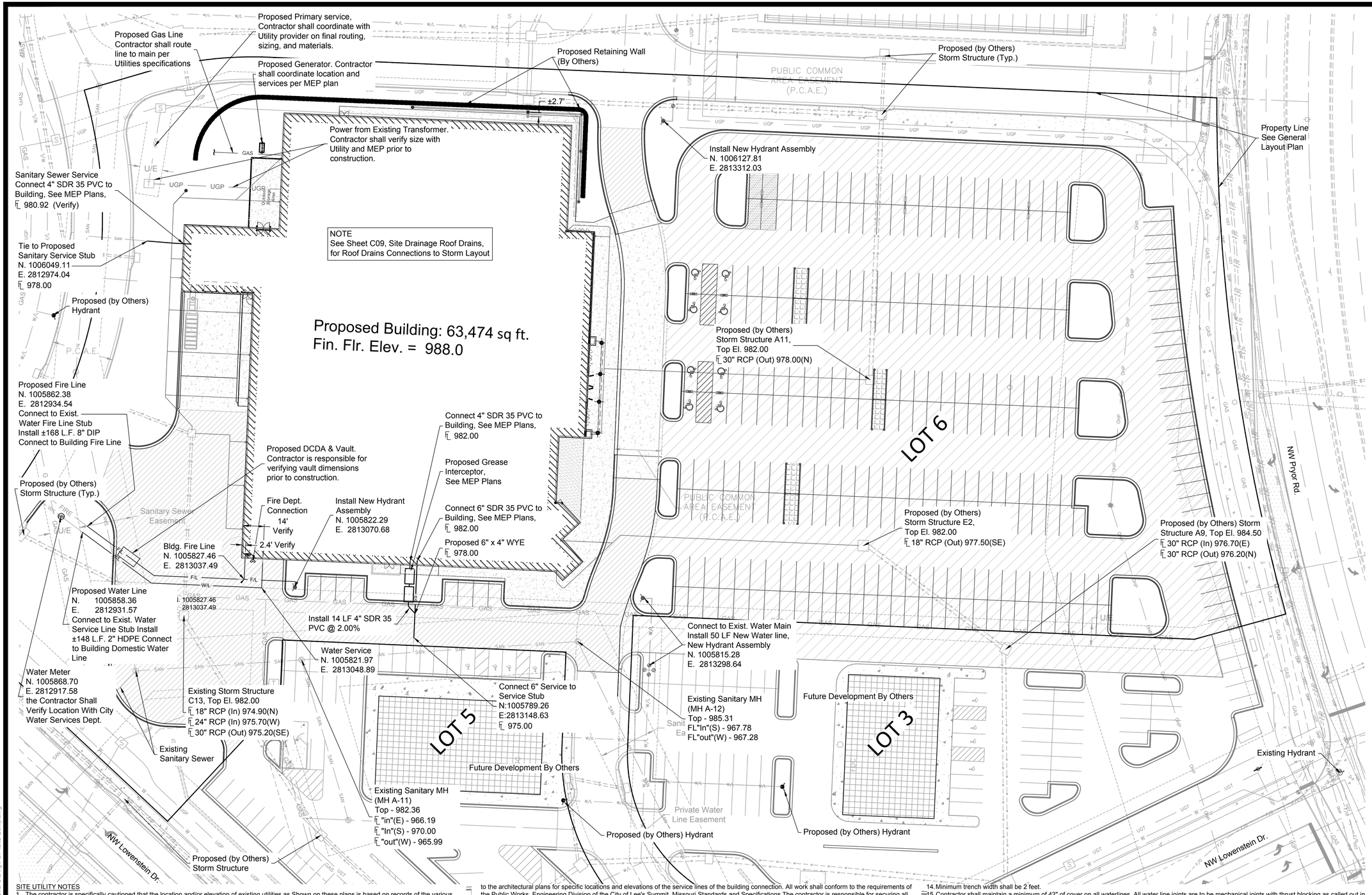

SITE UTILITY NOTES

1. The contractor is specifically cautioned that the location and/or elevation of existing utilities as Shown on these plans is based on records of the various utility Companies, and where possible, measurements taken in the field. The information is not to be relied on as being exact or complete. The contractor must call the appropriate utility companies at least 48 hours before any excavation to request exact field location of utilities. It shall be the responsibility of the contractor to coordinate with and relocate and/or remove all existing utilities which conflict with the proposed improvements shown on the plans.
2. The construction of storm sewers on this project shall conform to the requirements of the Technical Specifications for this Project.
3. The contractor shall field verify the exact location and elevation of the existing storm sewer locations and the existing elevations at locations where the proposed storm sewer collects or releases to existing ground. If discrepancies are encountered from the information shown on the plans. The contractor shall contact the design engineer. No pipes shall be laid until direction is received from the design engineer.
4. It is the contractors responsibility to field adjust the top of all manholes and boxes as necessary to match the finish grade of the adjacent area. Tops of existing manholes shall be raised as necessary to be flush with proposed pavement elevations, and to be 6-inches above finished ground elevations in non-paved areas. No separate or additional compensation will be made to the contractor for making final adjustments to the manholes and boxes.
5. Inlet locations, horizontal pipe information and vertical pipe information is shown to the center of the structure. Deflection angles shown for storm sewer pipes are measured from the center of the curb inlets and manholes. The contractor shall adjust the horizontal location of the pipes to go to the face of the boxes. All roof drains shall be connected to storm sewer structures. Provide cleanouts on roof drain lines at 100' max. spacing and at all bend points. Do not connect roof drains directly to storm sewer pipes.
6. The contractor shall be responsible for furnishing and installing all fire and domestic water lines, meters, back flow devices, pits, valves and all other incidentals required for a complete operable fire protection and domestic water system, if not furnished or installed by the Water Utility. The Contractor shall Coordinate with the Water Utility. All costs associated with the complete water system for the building shall be the responsibility of the contractor. All work shall conform to the requirements of the Public Works, Engineering Division of the City of Lee's Summit, Missouri Standards and Specifications .
7. The contractor shall be responsible for furnishing and installing all sanitary sewer service lines from the building to the public line. The contractor shall refer to the architectural plans for specific locations and elevations of the service lines of the building connection. All work shall conform to the requirements of the Public Works, Engineering Division of the City of Lee's Summit, Missouri Standards and Specifications The contractor is responsible for securing all permits, bonds and insurance required by the contract documents, City of Lee's Summit, Missouri, and all other governing agencies (including local, county, state and federal authorities) having jurisdiction over the work proposed by the construction documents. The cost for all permit bonds and insurance shall be the contractors responsibility and shall be included in the bid for the work.
8. By the use of these construction documents the contractor hereby agrees that he/she shall be solely responsible for the safety of the construction workers and the public. The contractor agrees to hold the engineer and owner harmless for any and all injuries, claims, losses or damages related to the project.
9. The contractor shall be responsible for furnishing all materials, tools and equipment and installation of electrical power, telephone and gas service from a point of connection from the public utility lines to the building structure. This will include all conduits, service lines, meters, concrete pads and all other incidentals required for a complete and operational system as required by the owner and the public utilities. Refer to building plans for exact tie-in locations of all utilities. Contractor shall verify connection points prior to installation of utility line.
10. All fill material is to be in place, compacted, and consolidated before installation of proposed utilities. On-site geotechnical engineer shall provide written confirmation that this requirement has been met and that utilities may proceed in the fill areas. All utilities are to be placed in trench conditions.
11. Contractor shall notify the utility authorities inspectors 49 hours before connecting to any existing line.
12. Storm sewer roof drains(st) shall be as follows (unless otherwise shown on plans).
    -PVC SDR 35 per ASTM D3034, for pipes less than 12' deep.
    -PVC SDR 26 per ASTM D3034, for pipes 12' to 20' deep.
13. Waterlines shall be as follows (unless otherwise shown on plans):
    -for 8" and larger: ductile iron pipe per AWWA C150
    -between 3" and 6": DR14 PVC per AWWA C900
    -For smaller than 2":copper tube Type "K" per ANSI 816.22
14. Minimum trench width shall be 2 feet.
15. Contractor shall maintain a minimum of 42" of cover on all waterlines. All water line joints are to be mechanical joints with thrust blocking as called out in specifications and construction plans. Water mains and service lines shall be constructed in accordance to the Public Works, Engineering Division of the City of Lee's Summit, Missouri Standards and Specifications for commercial services.
16. All waterlines shall be kept ten feet (10') apart (parallel) from sanitary sewer lines or manholes. Or when crossing, an 18" vertical clearance (outside edge of pipe to outside edge of pipe) of the waterline above the sewer line is required.
17. Water meter provided by City of Lee's Summit, Dept. of Public Works, Water Services and Installed by The Contractor in Accordance with the Direction, Standards and Specifications of the City Water services Department.
18. Trench Drain shall be ACO S200K or approved equal.
19. Trench Drain shall be installed in accordance with the manufacturer's installation instructions and recommendations.
20. In the event of a vertical conflict between waterlines, sanitary lines, storm lines and gas lines (existing and proposed), the sanitary line shall be ductile iron pipe with mechanical joints at least 10 feet on both sides of the crossing (or encased in concrete the same distance), the waterline shall have mechanical joints with appropriate thrust blocking as required to provide a minimum of 18" clearance. Meeting requirements ANSI A21.10 or ANSI 21.11 (AWWA C151)(Class 50).
21. All underground storm, sanitary, water and other utility lines shall be installed, inspected and approved before backfilling. Failure to have inspection approval prior to backfill will constitute rejection of work.
22. All necessary inspections and/or certifications required by codes and/or utility service companies shall be performed prior to announced building possession and the final connection of service. Contractor shall coordinate with all utility companies for installation requirements and specifications.
23. Refer to building plans for site lighting electrical plan, irrigation, parking lot security system and associated conduit requirements. Coordinate with Owner that all required conduits are in place and tested prior to paving.
24. When a building utility Connection from site utilities leading up to the building cannot be made immediately, temporarily mark all such utility terminations.

NORTH
1"=30'
0 15' 30'

Sheet
C08

Final Developement Plans

18-0281
McKeever's Market & Eatery #950
Lee's Summit, Jackson, Missouri

Site Utility Plan

NO	BY	DATE	REVISION
1	C.R.	05/24/19	Submittal To City
2	C.R.	07/11/19	Check Set
3	C.R.	07/23/19	Resubmittal To City

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MO Certificate of Authority: E-2010033630

STATE OF MISSOURI
DUSTIN J. BURTON
NUMBER PE-2010015709
7/25/19

Jul 25, 2019-11:12am
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Nyloplast 12" Area Drain
w/ "Beehive" Type Grate, Top of Drain El.987.94
Out 985.1 Install 76 L.F. 8" PVC Drain Pipe (E)
to Existing Area Drain

Nyloplast 12" Area Drain
N. 1006132.00
E. 2813258.52
w/ "Beehive" Type Grate, Top of Drain El. 987.54
Out 983.9 Install 35 L.F. 8" PVC Drain Pipe (W)
to Relocated Existing Area Drain (A9.1)

Proposed Retaining Wall
(By Others)

Proposed (by Others)
Storm Structure (Typ.)

Nyloplast 24" Area Drain
w/ "Beehive" Type Grate, Top
of Drain El.984.46
Out 980.14

Roof Drain
Collector Pipe

PUBLIC COMMON
AREA EASEMENT
(P.C.A.E.)

±2.7'

Property Line
See General
Layout Plan

Building Roof Drain Downspouts,
Typical See Architects Plans And
Details, Sheet A5.1 Roof Plan

Install New Hydrant Assembly
N. 1006127.81
E. 2813312.03

Install 18"x8" HDPE Tee
980.78

Proposed (by Others) Storm Structure A9.1,
Top El. 987.00 , 18" HDPE (Out) 982.96(N)
Relocate to Between Proposed Sidewalk and
Retaining Wall, Adjust Top To El. 986.94,
Install "Beehive" Type Grate, Connect New
8" Drain Pipe from the West In 983.6

Nyloplast 12" Area Drain
N. 1006107.89
E. 2813257.98
w/ "Beehive" Type Grate, Top of Drain El. 986.75
Out 984.1 Install 25 L.F. 8" PVC Drain Pipe (N)
to New Area Drain

Install 167 LF HDPE
@ 2% Slope

Install 18"x8" HDPE Tee
979.75

Install 18"x8" HDPE Tee
979.49

Connect Roof Drain Collector Pipes to
Area Drain Pipe Typ. Extend 8" HDPE
to Building Roof Drains (Typ)

Building Roof Drains
See Architects Plans And Details,
Sheet A5.1 Roof Plan

Nyloplast 12" Area Drain
N. 1006074.82
E. 2813256.62
w/ "Beehive" Type Grate, Top of Drain El. 986.86
Out 984.4 Install 33 L.F. 8" PVC Drain Pipe (N)
to New Area Drain

Install 18"x8" HDPE Tee
979.07

Install 18"x8" HDPE Tee
978.53

Install 8"x8" Tee w/ 12"x8"
Reducer, 984.16

Existing Storm Structure
C13.2, Top El. 981.50
15" RCP (In) 977.60(W)
15" RCP (Out) 977.40(E)

Existing Storm Structure
C13.1, Top El. 982.00
15" RCP (In) 976.20(W)
18" RCP (Out) 975.90(S)
Connect New 8" Drain Pipe
In 976.8 (N & E)

Extend 8" HDPE to Building
Roof Drains (Typ)

Proposed (by Others)
Storm Structure A11,
Top El. 982.00
30" RCP (Out) 978.00(N)
New (In) 979.00 (W)

Install 258 LF 12" HDPE
@ 2% Slope

Install 18"x8" HDPE Tee
977.39

Connect all Roof Drains to
Roof Drain Collector Pipe (Typ.),
Connect to Exist. Storm
Structure, Connection 979.0

LOT 6

Install 84 LF 15" HDPE Roof Drain
Collector Pipe @ 2%,
Connect to Exist. Storm Structure,
Connection 976.5

Building Roof Drain Downspouts, Typical
See Architects Plans And Details,
Sheet A5.1 Roof Plan

Install 15"x8" HDPE Tee
977.34

Install 12"x8" Tee
982.43

Proposed (by Others)
Storm Structure (Typ.)

Sanitary Sewer
Easement

Building Roof Drains
See Architects Plans And Details,
Sheet A5.1 Roof Plan

Install 170 LF 12" HDPE
@ 2% Slope

Proposed (by Others)
Storm Structure E2,
Top El. 982.00
18" RCP (Out) 977.50(SE)
New (In) 979.00 (W)

Install 15"x8" HDPE Tee
977.91

Extend 8" HDPE to Building
Roof Drains (Typ)

Install 12"x8" Tee
982.40

Proposed (by Others) Storm
Structure A9, Top El. 984.50
30" RCP (In) 976.70(E)
30" RCP (Out) 976.20(N)

Connect All Roof Drains to
Roof Drain Collector Pipe (Typ.),
Connect to Exist. Storm
Structure, Connection 979.0

Install 15"Elbow w/
8" Reducer
978.48

N. 1005827.46
E. 2813037.49

Existing Storm Structure
C13, Top El. 982.00
18" RCP (In) 974.90(N)
24" RCP (In) 975.70(W)
30" RCP (Out) 975.20(SE)

Existing Sanitary MH
(MH A-12)
Top - 985.31
FL"In"(S) - 967.78
FL"out"(W) - 967.28

Future Development By Others

LOT 5

LOT 3

Future Development By Others

Existing Hydrant

Private Water
Line Easement

Proposed (by Others)
Storm Structure

NW Lowenstein Dr.

NW Lowenstein Dr.

NW Pryor Rd.

NOTES

1. See Architectural and Structural Building Plans for Roof Drains. The Contractor Shall Verify/Coordinate Size and Location of Roof Drains As Required Prior to Beginning Construction and Report Any Descrepancies In the Plans to the Engineer for Resolution.
2. Contractor is Responsible for providing all necessary fittings, bends, and structures to connect roof drains to the stormwater system.
3. All Connections to Existing Storm Drainage Structures Shall Be Cored and Grouted in Accordance With City of Lee's Summit, Public Works Dept. Standards and Specifications.

NORTH
1"=30'
0 15' 30'

Sheet
C09

Final Developement Plans

18-0281
McKeever's Market & Eatery #950
Lee's Summit, Jackson, Missouri

Site Drainage - Roof Drains

NO.	BY	DATE	REVISION
3	C.R.	DJB	07/23/19	Resubmittal To City
2	C.R.	DJB	07/11/19	Check Set
1	C.R.	DJB	05/24/19	Submittal To City

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STATE OF MISSOURI
DUSTIN J. BURTON
NUMBER PE-2010015709
PROFESSIONAL ENGINEER
7/25/19

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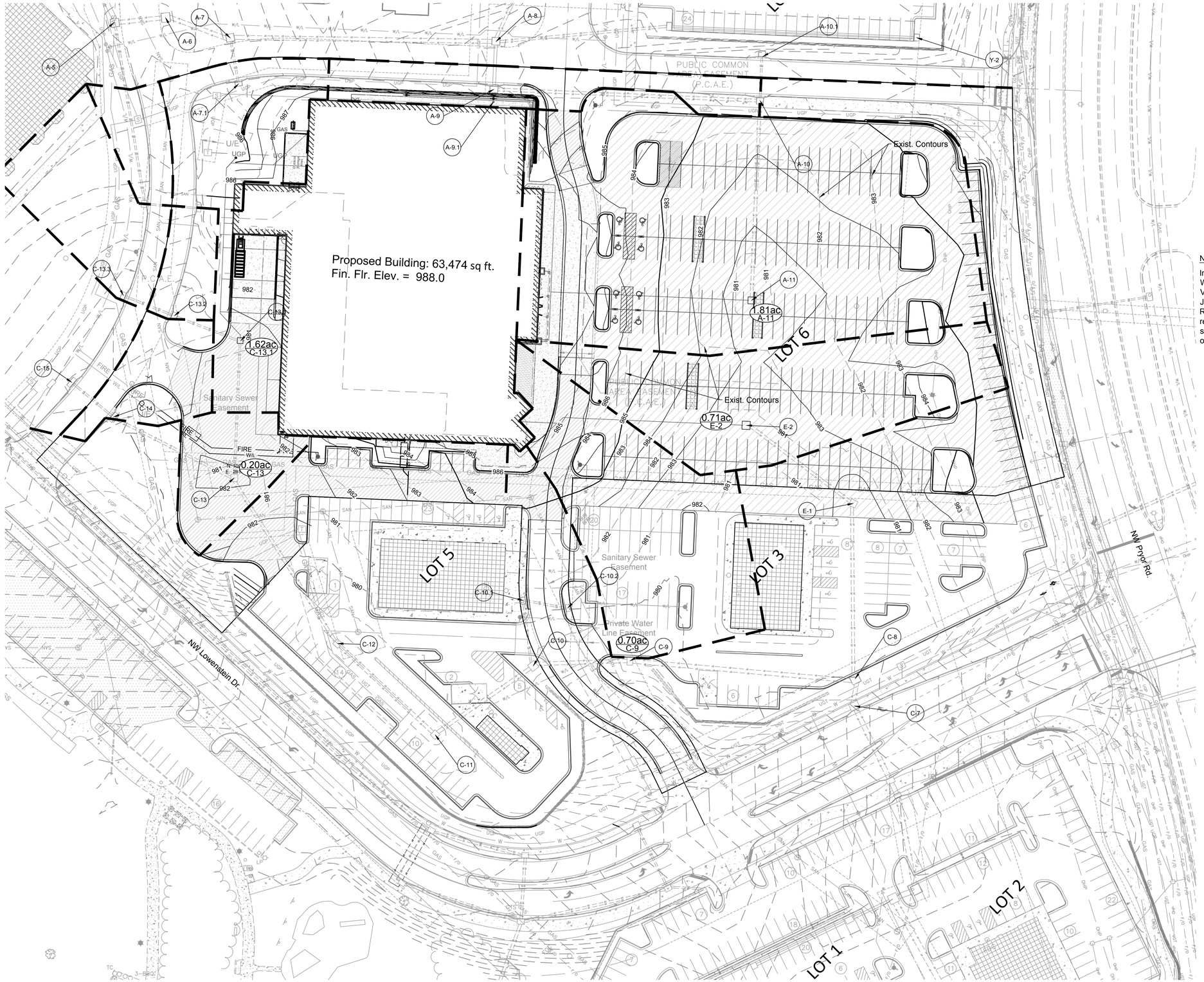

LEGEND:

XX
X — Drainage Area (Acres) / Discharge Point

XX — Proposed Drainage Structure (By Others)

NOTE

Information shown is taken from the "Streets of West Pryor Final Dainage Study" Prepared by Kaw Valley Engineering, Inc., 2319 N. Jackson, Junction City, Kansas, 66441, (785)762-5040 . Renaissance Infrastucture Consulting is not responsible for the accuracy of the information shown hereon and the accompaning tables shown on sheet C09.

Sheet
C10

Final Developement Plans

18-0281
McKeever's Market & Eatery #950
Lee's Summit, Jackson, Missouri

Drainage Area Map

NO.	BY	DATE	REVISION
3	C.R.	DJB	07/23/19	Resubmittal To City
2	C.R.	DJB	07/11/19	Check Set
1	C.R.	DJB	05/24/19	Submittal To City

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DUSTIN J BURTON
NUMBER PE-2011015709
PROFESSIONAL ENGINEER
7/25/19

MO Certificate of Authority: E-2010033630

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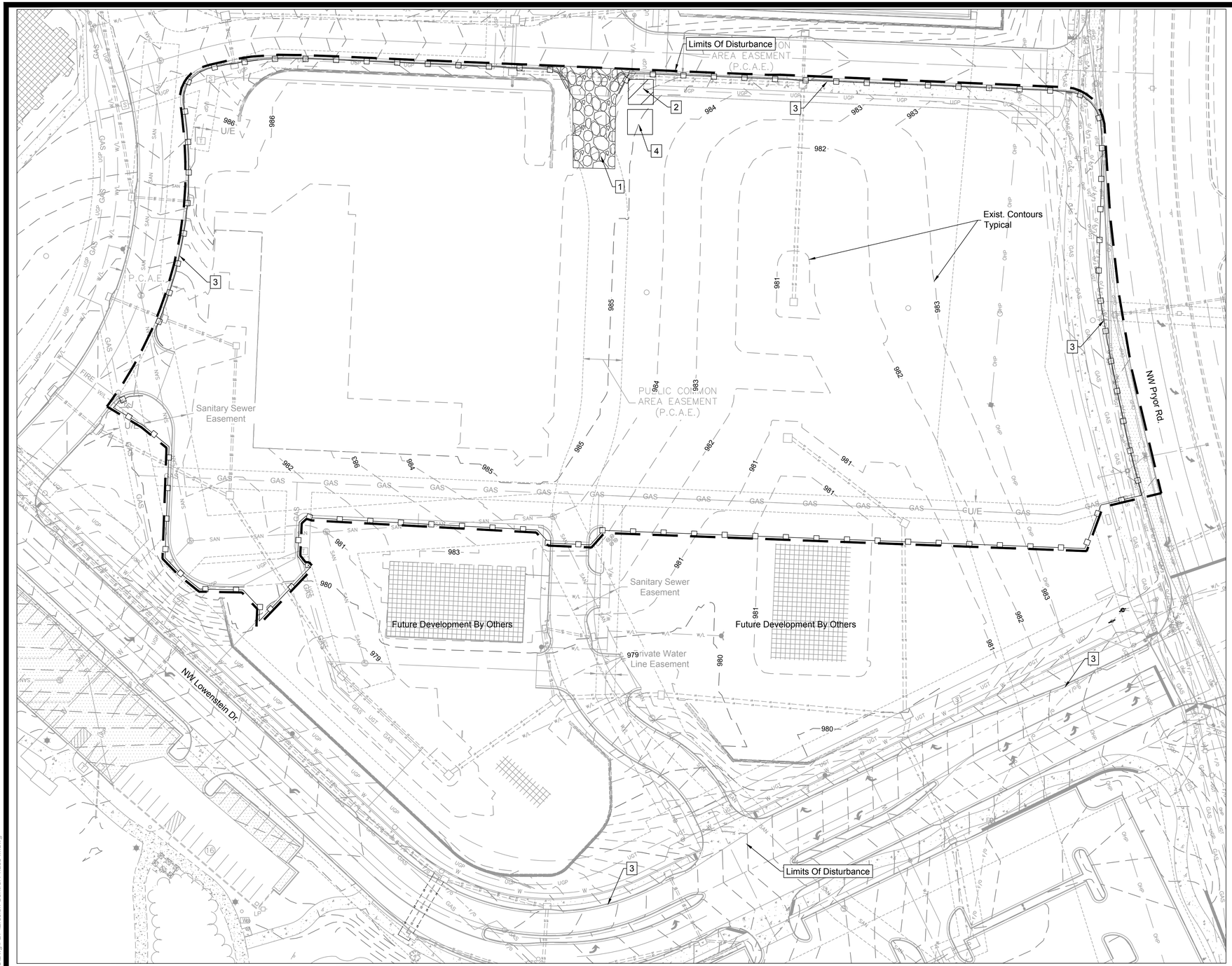

EROSION CONTROL LEGEND

- Stabilized Construction Entrance
- Staging Area
- Concrete Washout
- Limits of Disturbance
- Perimeter Silt Fence
- Inlet Protection

EROSION CONTROL NOTES

1. All work in public easements and right-of-way and all erosion control work must comply with the latest specifications set forth by the City of Lee's Summit, MO, the Kansas City Chapter of American Public Works Association (APWA), and MoDOT plans and specifications. If any of the specification and/or general notes conflict with the requirements provided by the City of Lee's Summit, the City of Lee's Summit's standards shall override.
2. The contractor shall provide all materials, tools, equipment, and labor as necessary to install and maintain adequate erosion control, keep the streets clean of mud and debris, and prevent soil from leaving the project site. The contractor's erosion control measures shall conform to the requirements of the City of Lee's Summit, MO, the Kansas City Chapter of American Public Works Association (APWA), and MoDOT plans and specifications.
3. Erosion control plan modifications shall be required if the plan fails to substantially control erosion and offsite sedimentation.
4. The contractor shall be responsible for maintaining erosion control devices and removing sediment until a minimum of 70% of permanent vegetation has become stabilized and established. Erosion control devices shall remain in place until the 70% established vegetation is met, or the duration of the project, whichever is the later date.
5. The contractor shall temporarily seed and mulch all disturbed areas if there is to be no construction activity on them for a period of fourteen (14) calendar days.
6. Install "J' Hooks on silt fence every 100 LF
7. Contractor to install all Phase I erosion control devices prior to construction.
8. Contractor shall replace disturbed area with seed or sod, as indicated on the plans, and shall be installed within 14 days after paving completion and final topsoil grading.
9. Topsoil replacement shall be 6" thick.
10. Silt fence to be installed in accordance with the City of Lee's Summit, MO.
11. Contractor shall remove mud and debris from City Streets and Outer Roadway within 4 hours of notification by City staff that it is a nuisance.

WRITTEN SEQUENCING

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

	PROJECT STAGE	PLAN REFERENCE NUMBER	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES
Phase I	A-Prior to Construction	1	Construction Entrance	B	Install Construction Entrance in accordance with APWA Standard Detail ESC-01
		2	Staging Area	B	Install Staging Area
		3	Perimeter Silt Fence	C	Install Silt Fence in accordance with APWA Standard Detail ESC-03
		4	Concrete Washout	B	Install Concrete Washout as Shown on Plans Prior to Pouring Any Concrete in accordance with APWA Standard Detail ESC-01
Phase II	B-During Land Disturbance and Storm Infrastructure Installation	.	.	.	.
		6	Inlet Protection	C	Install Filter Bags Prior to Construction
Phase III	C-Final Stabilization	7	Establish Perennial Vegetation	N/A	Redistribute Topsoil and Seed and Mulch all Disturbed Area. Stabilization Complete when 100% of Disturbed Area is Established with Perennial Vegetation with a Density of 70%

Disturbed Area for Site Improvements : 2.30 Acres

NORTH
1"=40'
0 20' 40'

Sheet
C11

Final Developement Plans

18-0281
McKeever's Market & Eatery #950
Lee's Summit, Jackson, Missouri

Erosion Control
Stage A

NO.	BY	DATE	REVISION
3	C.R.	07/22/19	Resubmittal To City
2	C.R.	07/11/19	Check Set
1	C.R.	05/24/19	Submittal To City

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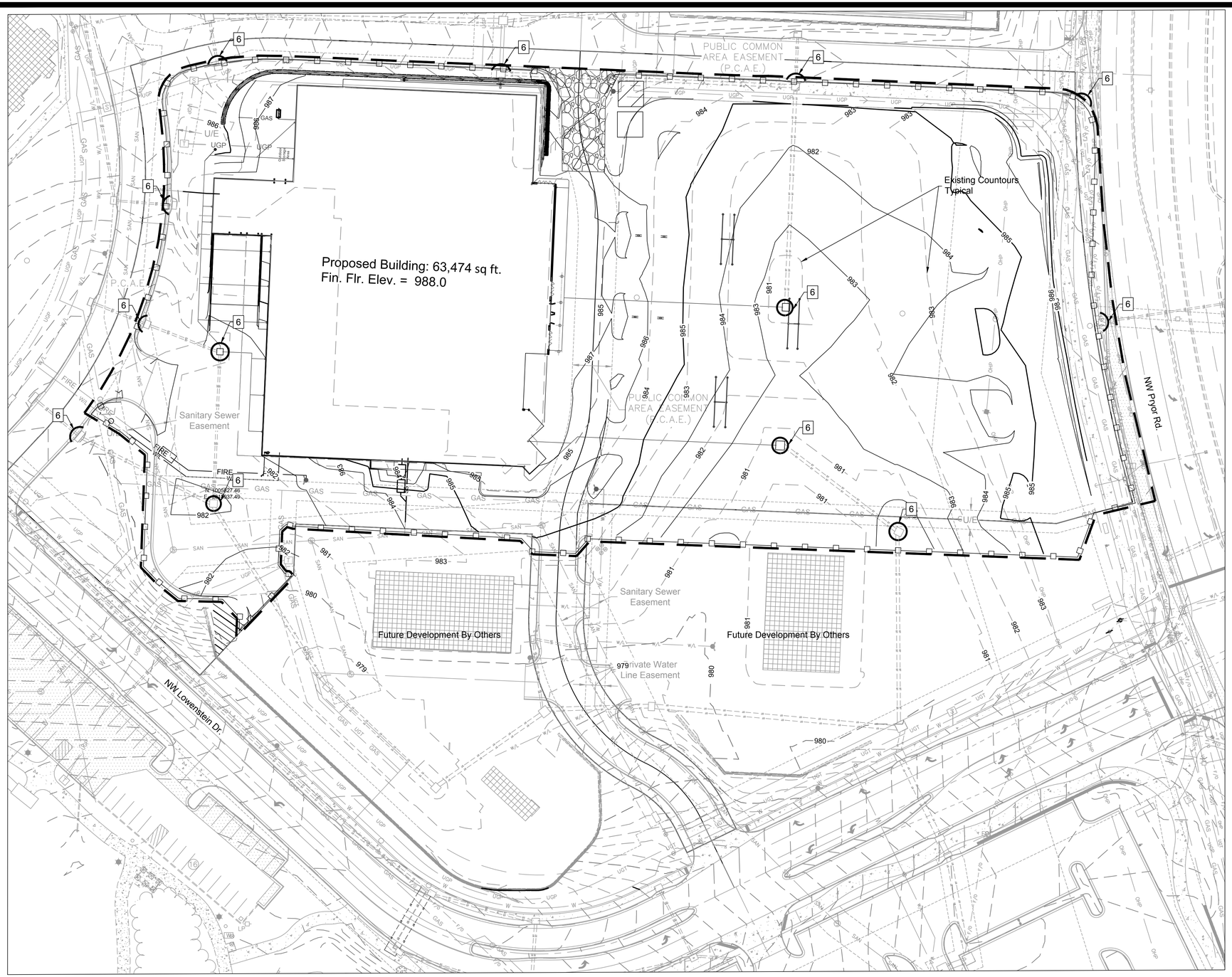
MO Certificate of Authority: E-2010033630

STATE OF MISSOURI
DUSTIN J. BURTON
NUMBER PE-2011015709
PROFESSIONAL ENGINEER
7/25/19



EROSION CONTROL LEGEND

- Stabilized Construction Entrance
- Staging Area
- Concrete Washout
- Limits of Disturbance
- Perimeter Silt Fence
- Inlet Protection

EROSION CONTROL NOTES

1. All work in public easements and right-of-way and all erosion control work must comply with the latest specifications set forth by the City of Lee's Summit, MO, the Kansas City Chapter of American Public Works Association (APWA), and MoDOT plans and specifications. If any of the specification and/or general notes conflict with the requirements provided by the City of Lee's Summit, the City of Lee's Summit standards shall override.
2. The contractor shall provide all materials, tools, equipment, and labor as necessary to install and maintain adequate erosion control, keep the streets clean of mud and debris, and prevent soil from leaving the project site. The contractor's erosion control measures shall conform to the City of Lee's Summit, MO, the Kansas City Chapter of American Public Works Association (APWA), and MoDOT plans and specifications.
3. Erosion control plan modifications shall be required if the plan fails to substantially control erosion and offsite sedimentation.
4. The contractor shall be responsible for maintaining erosion control devices and removing sediment until a minimum of 70% of permanent vegetation has become stabilized and established. Erosion control devices shall remain in place until the 70% established vegetation is met, or the duration of the project, whichever is the later date.
5. The contractor shall temporarily seed and mulch all disturbed areas if there is to be no construction activity on them for a period of fourteen (14) calendar days.
6. Install "J' Hooks on silt fence every 100 LF
7. Contractor to install all Phase I erosion control devices prior to beginning construction activities.
8. Contractor shall replace disturbed area with seed or sod, as indicated on the plans, and shall be installed within 14 days after paving completion and final topsoil grading.
9. Topsoil replacement shall be 6" thick.
10. Silt fence to be installed in accordance with the City of Lee's Summit, MO. standards and specifications.
11. Contractor shall remove mud and debris from City Streets and Outer Roadway within 4 hours of notification by City staff that it is a nuisance.

	PROJECT STAGE	PLAN REFERENCE NUMBER	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES
Phase I	A-Prior to Construction	1	Construction Entrance	B	Install Construction Entrance in accordance with APWA Standard Detail ESC-01
		2	Staging Area	B	Install Staging Area
		3	Perimeter Silt Fence	C	Install Silt Fence in accordance with APWA Standard Detail ESC-03
		4	Concrete Washout	B	Install Concrete Washout as Shown on Plans Prior to Pouring Any Concrete in accordance with APWA Standard Detail ESC-01
Phase II	B-During Land Disturbance and Storm Infrastructure Installation	.	.	.	.
		6	Inlet Protection	C	Install Filter Bags Prior to Construction
Phase III	C-Final Stabilization	7	Establish Perennial Vegetation	N/A	Redistribute Topsoil and Seed and Mulch all Disturbed Area. Stabilization Complete when 100% of Disturbed Area is Established with Perennial Vegetation with a Density of 70%

Disturbed Area for Site Improvements : 2.30 Acres

NORTH
1"=40'
0 20' 40'

Sheet
C12

Final Developement Plans

18-0281
McKeever's Market & Eatery #950
Lee's Summit, Jackson, Missouri

Erosion Control
Stage B

NO.	BY	DATE	REVISION
3	C.R.	DJB 07/23/19	Resubmittal To City
2	C.R.	DJB 07/11/19	Check Set
1	C.R.	DJB 05/24/19	Submittal To City

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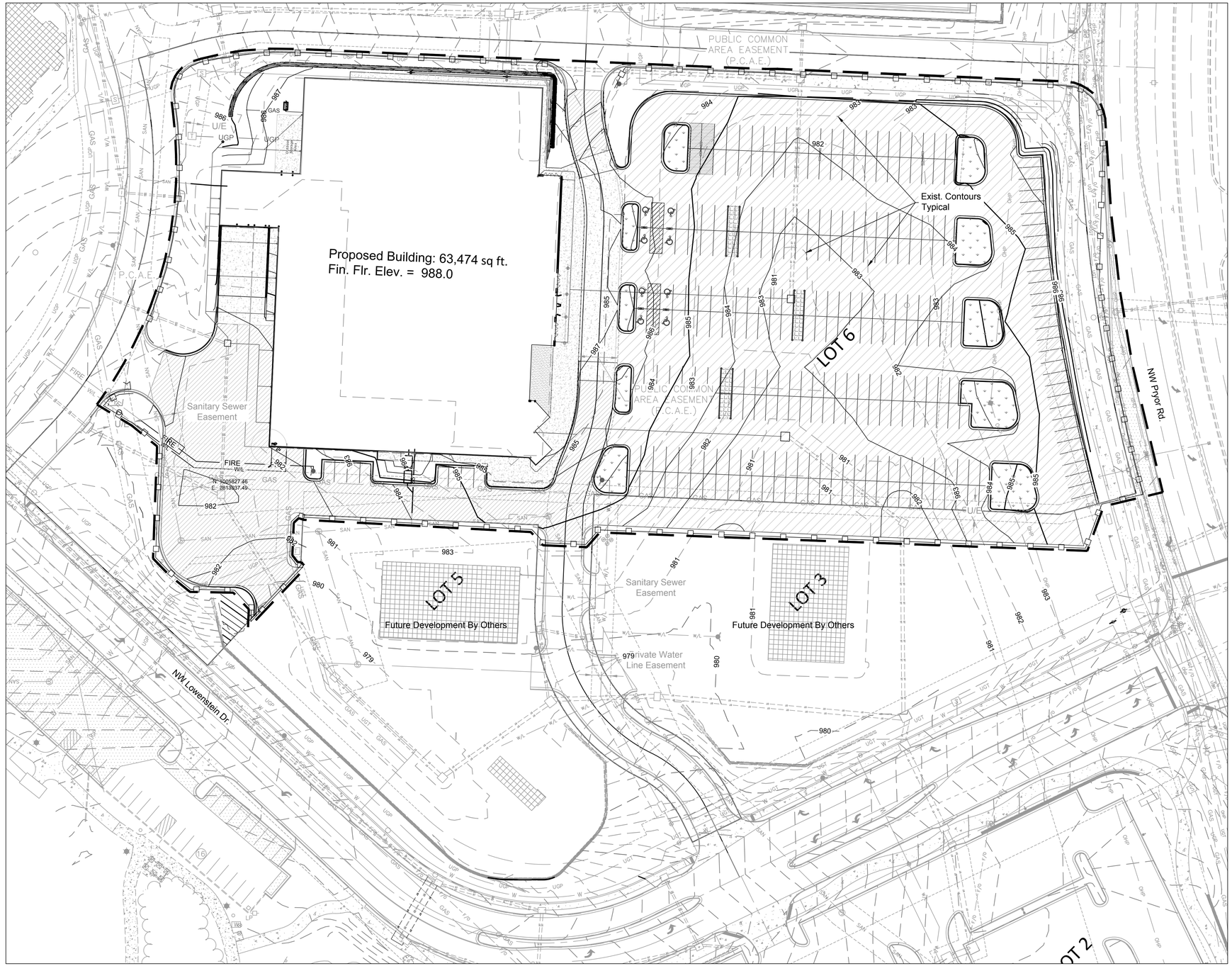

EROSION CONTROL LEGEND

- Stabilized Construction Entrance
- Staging Area
- Concrete Washout
- Limits of Disturbance
- Perimeter Silt Fence
- Inlet Protection

LEGEND

- Sod/Seed Areas

	PROJECT STAGE	PLAN REFERENCE NUMBER	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES
Phase I	A -Prior to Construction	1	Construction Entrance	B	Install Construction Entrance in accordance with APWA Standard Detail ESC-01
		2	Staging Area	B	Install Staging Area
		3	Perimeter Silt Fence	C	Install Silt Fence in accordance with APWA Standard Detail ESC-03
		4	Concrete Washout	B	Install Concrete Washout as Shown on Plans Prior to Pouring Any Concrete in accordance with APWA Standard Detail ESC-01
Phase II	B -During Land Disturbance and Storm Infrastructure Installation	5	Sediment Trap	C	Install Sediment Trap as Shown in Details and in accordance with Standard Detail ESC-08
		6	Inlet Protection	C	Install Filter Bags Prior to Construction
Phase III	C -Final Stabilization	7	Establish Perennial Vegetation	N/A	Redistribute Topsoil and Seed and Mulch all Disturbed Area. Stabilization Complete when 100% of Disturbed Area is Established with Perennial Vegetation with a Density of 70%

Disturbed Area for Site Improvements : **** Acres

NORTH
1"=40'
0 20' 40'

Sheet
C13

Final Developement Plans

18-0281
McKeever's Market & Eatery #950
Lee's Summit, Jackson, Missouri

Erosion Control
Stage C

NO.	BY	DATE	REVISION
1	C.R.	05/24/19	Submittal To City
2	C.R.	07/11/19	Check Set
3	C.R.	07/23/19	Resubmittal To City

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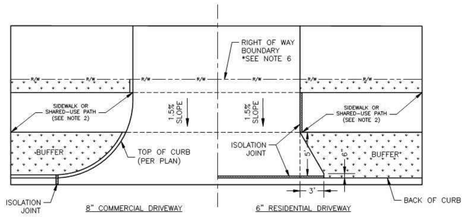
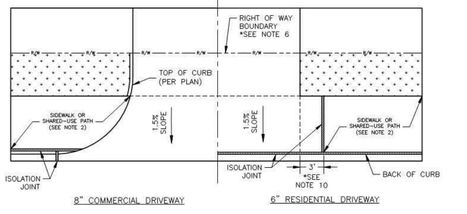
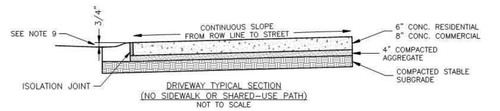
7/25/19



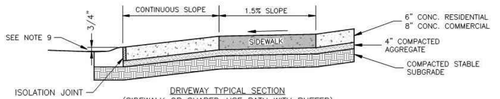
DRIVEWAY WITH BUFFER
NOT TO SCALE



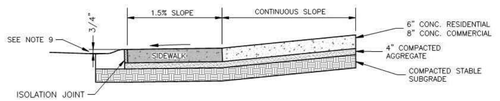
DRIVEWAY WITHOUT BUFFER
NOT TO SCALE



DRIVEWAY TYPICAL SECTION
(NO SIDEWALK OR SHARED-USE PATH)
NOT TO SCALE



DRIVEWAY TYPICAL SECTION
(SIDEWALK OR SHARED-USE PATH WITH BUFFER)
NOT TO SCALE



DRIVEWAY TYPICAL SECTION
(SIDEWALK OR SHARED-USE PATH WITHOUT BUFFER)
NOT TO SCALE

GENERAL NOTES
1. SUBGRADE SHALL BE STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
2. ALL DRIVE APPROACHES SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG) FOR SLOPE REQUIREMENTS WHEN SIDEWALK IS REQUIRED (SEE ADA RAMP RETROFIT DETAIL GEN-3B, SIDEWALK/SHARED USE PATH RAMP AT DRIVEWAY DETAIL).
3. JOINT AT BACK OF CURB LINE SHALL BE AN ISOLATION JOINT FOR RESIDENTIAL DRIVEWAYS.
4. KCMMB 4K CONCRETE MIX IS REQUIRED FOR ALL CURBS.
5. COMMERCIAL DRIVEWAYS, IN THE PUBLIC RIGHT OF WAY, SHALL BE KCMMB 4K CONCRETE MIX.
6. RESIDENTIAL DRIVEWAYS, IN THE PUBLIC RIGHT OF WAY, KCMMB 4K CONCRETE MIX IS RECOMMENDED. OTHER CONCRETE MIXES NEEDS TO BE APPROVED BY CITY INSPECTOR.
7. A JOINT MUST BE INSTALLED AT THE RIGHT OF WAY BOUNDARY FOR PROPERTY DELINEATION.
8. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.
9. ¾" FROM TOP OF CURB TO FLOWLINE AT DRIVEWAY (TYPE CC-1 CURB ONLY). MUST MAINTAIN ORIGINAL FLOWLINE OF CURB.
10. SIDEWALK ADJOINING CURB SHALL BE 6" THICK, EXTENDING 3' FROM THE DRIVEWAY.
11. THE MAXIMUM WIDTH OF A RESIDENTIAL DRIVEWAY IS 36 FEET WITHIN THE RIGHT OF WAY.

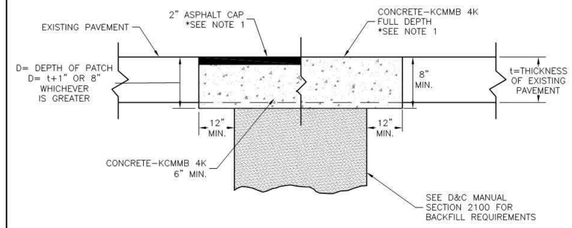
LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

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

Project:
Sheet Name:

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

GEN-1



TRENCHING/PATCHING DETAIL
NOT TO SCALE

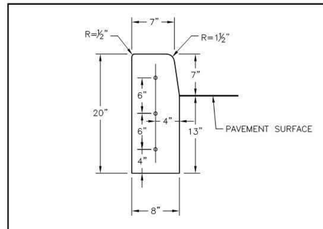
NOTE:
1. ASPHALT CAP OR FULL DEPTH CONCRETE SHALL BE DETERMINED BY CITY INSPECTOR.

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

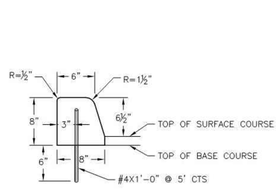
TRENCHING/PATCHING ROADWAYS DETAIL

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

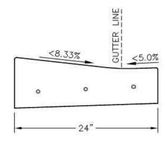
GEN-5



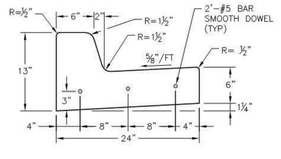
STRAIGHT CURB
(TYPE C-1)



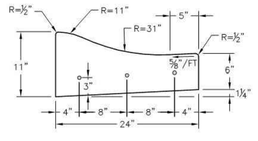
DOWELLED CURB
(TYPE DC)



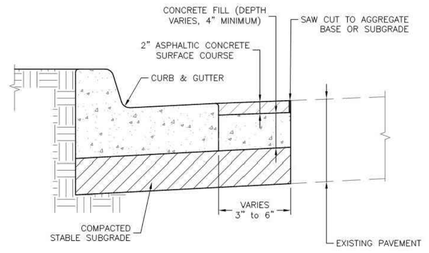
CURB & GUTTER DETAIL AT RAMP
(ADA SLOPE REQUIREMENTS)



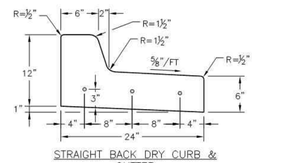
STRAIGHT BACK CURB & GUTTER
(TYPE CG-1)



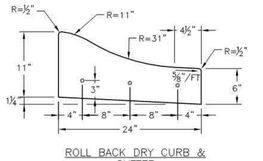
ROLL BACK CURB & GUTTER
(TYPE CG-2)



CURB REPLACEMENT DETAIL



STRAIGHT BACK DRY CURB & GUTTER
(TYPE CG-1 DRY)



ROLL BACK DRY CURB & GUTTER
(TYPE CG-2 DRY)

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

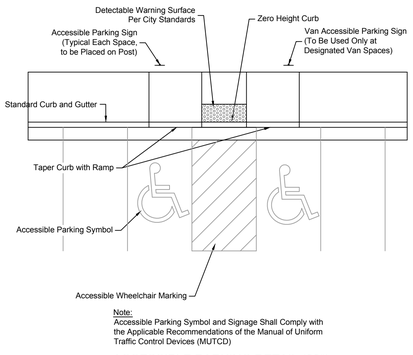
LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

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

Project:
Sheet Name:

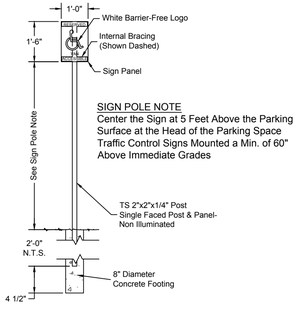
Drawn By: MJF
Checked By: DL
Date: 04/17
Proj #:

GEN-4



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

ACCESSIBLE PARKING DETAIL (90°)
Not to Scale



SIGN POLE NOTE
Center the Sign at 5 Feet Above the Parking Surface at the Head of the Parking Space
Traffic Control Signs Mounted a Min. of 60" Above Immediate Grades

HANDICAP SIGNAGE
Not to Scale

Sheet
C14

Final Developement Plans

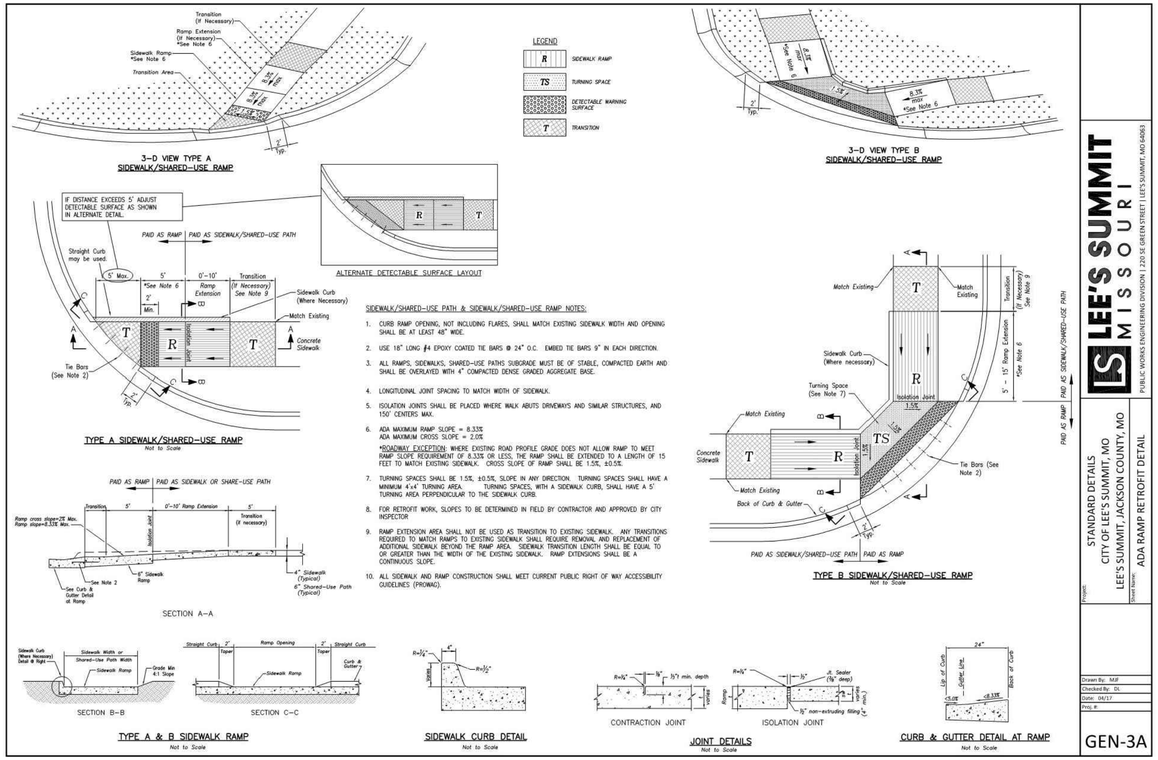
18-0281
McKeever's Market & Eatery #950
Lee's Summit, Jackson, Missouri

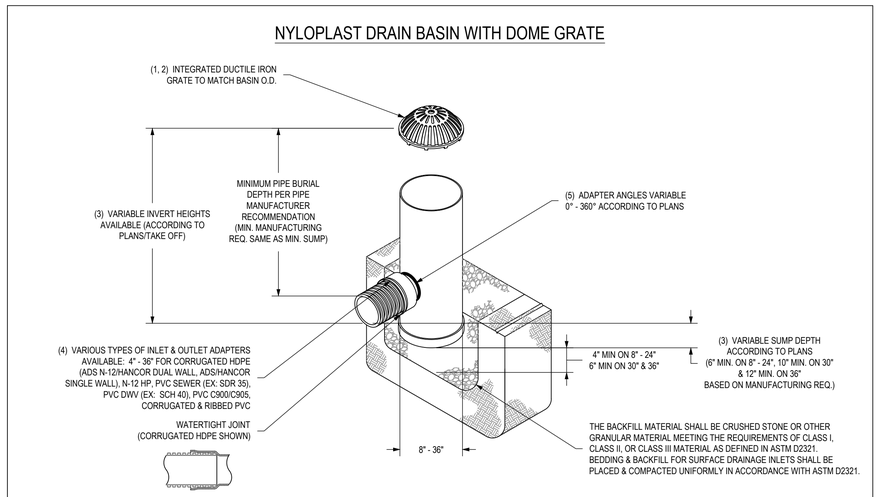
TYPICAL DETAILS-GENERAL

NO.	BY	DATE	REVISION
1	C.R.	05/24/19	Submittal To City
2	C.R.	07/11/19	Check Set
3	C.R.	07/23/19	Resubmittal To City

Renaissance Infrastructure Consulting
913.317.9500
www.RIC-CONSULT.COM
32 ABBIE AVENUE
KANSAS CITY, KANSAS 66103
MO Certificate of Authority: E-2010033630

STATE OF MISSOURI
DUSTIN J. BURTON
NUMBER PE-2011015709
PROFESSIONAL ENGINEER
7/25/19





1 - 8" - 30" DOME GRATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2 - 8" & 10" DOME GRATES FIT ONTO THE DRAIN BASINS WITH THE USE OF A PVC BODY TOP. SEE DRAWING NO. 7001-110-045.
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER (4" - 36").
5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.
6 - 8" - 30" DOME GRATES HAVE NO LOAD RATING.

DRAWN BY EBC	MATERIAL	Nyloplast	3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2490 www.nyloplast-us.com
DATE 03-25-10		TITLE	DRAIN BASIN WITH DOME GRATE QUICK SPEC INSTALLATION DETAIL
REVISED BY NMH	PROJECT NO./NAME		
DATE 06-12-18			
DWG SIZE A	SCALE 1:40 SHEET 1 OF 1	DWG NO. 7001-110-397	REV E

Section 2721

Engineered Surface Drainage Products

GENERAL
PVC surface drainage inlets shall include the drain basin type as indicated on the contract drawing and referenced within the contract specifications. The ductile iron grates for each of these fittings are to be considered an integral part of the surface drainage inlet and shall be furnished by the same manufacturer. The surface drainage inlets shall be as manufactured by Nyloplast a division of Advanced Drainage Systems, Inc., or prior approved equal.

MATERIALS
The drain basins required for this contract shall be manufactured from PVC pipe stock, utilizing a thermoforming process to reform the pipe stock to the specified configuration. The drainage pipe connection stubs shall be manufactured from PVC pipe stock and formed to provide a watertight connection with the specified pipe system. This joint tightness shall conform to ASTM D3212 for joints for drain and sewer plastic pipe using flexible elastomeric seals. The flexible elastomeric seals shall conform to ASTM F477. The pipe bell spigot shall be joined to the main body of the drain basin or catch basin. The raw material used to manufacture the pipe stock that is used to manufacture the main body and pipe stubs of the surface drainage inlets shall conform to ASTM D1784 cell class 12454.

The grates and frames furnished for all surface drainage inlets shall be ductile iron for structure sizes 8", 10", 12", 15", 18", 24", 30" and 36" and shall be made specifically for each basin so as to provide a round bottom flange that closely matches the diameter of the surface drainage inlet. Grates for drain basins shall be capable of supporting various wheel loads as specified by Nyloplast. 12" and 15" square grates will be hinged to the frame using pins. Ductile iron used in the manufacture of the castings shall conform to ASTM A536 grade 70-50-05. Grates and covers shall be provided painted black.

INSTALLATION
The specified PVC surface drainage inlet shall be installed using conventional flexible pipe backfill materials and procedures. The backfill material shall be crushed stone or other granular material meeting the requirements of class 1, class 2, or class 3 material as defined in ASTM D2321. Bedding and backfill for surface drainage inlets shall be well placed and compacted uniformly in accordance with ASTM D2321. The drain basin body will be cut at the time of the final grade. No brick, stone or concrete block will be required to set the grate to the final grade height. For load rated installations, a concrete slab shall be poured under and around the grate and frame. The concrete slab must be designed taking into consideration local soil conditions, traffic loading, and other applicable design factors. For other installation considerations such as migration of fines, ground water, and soft foundations refer to ASTM D2321 guidelines.

DRAWN BY CJA	MATERIAL	Nyloplast	3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2490 www.nyloplast-us.com
DATE 3-10-00		TITLE	8 IN - 36 IN DRAIN BASIN SPECIFICATIONS
REVISED BY NMH	PROJECT NO./NAME		
DATE 02-21-18			
DWG SIZE A	SCALE 1:1 SHEET 1 OF 1	DWG NO. 7001-110-011	REV J

Sheet
C15

Final Developement Plans

18-0281
McKeever's Market & Eatery #950
Lee's Summit, Jackson, Missouri

TYPICAL
DETAILS-GENERAL

NO.	BY	DATE
3	C.R.	DJB 07/23/19
2	C.R.	DJB 07/11/19
1	C.R.	DJB 05/24/19
		Submittal To City
		Check Set
		Resubmittal To City
		REVISION

Renaissance Infrastructure Consulting
132 ABBIE AVENUE
KANSAS CITY, KANSAS 66103
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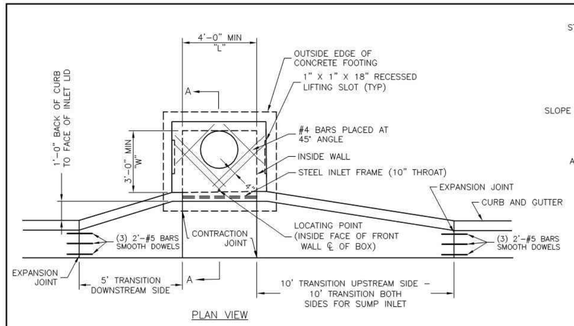
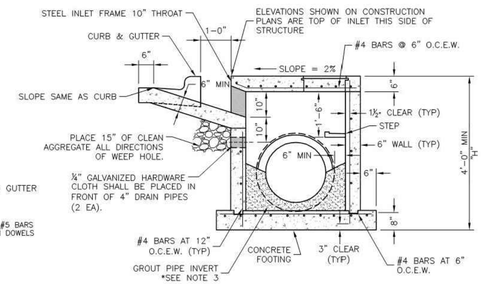
www.RIC-CONSULT.COM
MO Certificate of Authority: E-2010033630

STATE OF MISSOURI
DUSTIN J. BURTON
NUMBER PE-2010015709
PROFESSIONAL ENGINEER
7/25/19

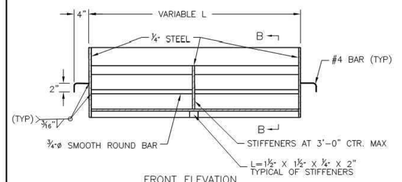
Jul 25, 2019-11:12am
Z:\RIC Design\2018\18-0281 AWG Lee's Summit McKeever's\Dwg\FDP\18-0281 TYPICAL DETAILS.dwg



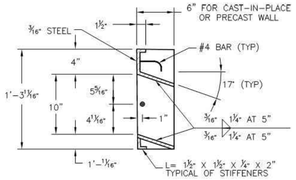
PLAN VIEW



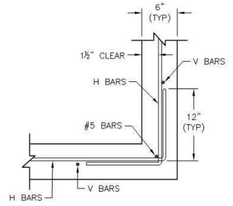
SECTION A–A



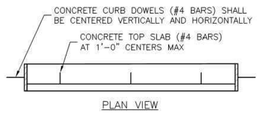
FRONT ELEVATION



SECTION B–B



WALL CORNER DETAIL



PLAN VIEW

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

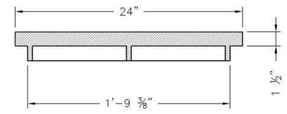
GENERAL NOTES:
1. THE FIRST DIMENSION LISTED IN THE CONSTRUCTION NOTES IS THE "L" DIMENSION. THE SECOND DIMENSION IS THE "W" DIMENSION.
2. FLOW LINES LISTED ON THE PROJECT PLANS ARE LISTED AT THE INSIDE FACE OF THE WALL.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.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

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

Project: STANDARD DETAILS CITY OF LEE'S SUMMIT, MO LEE'S SUMMIT, JACKSON COUNTY, MO
Sheet Name: CURB INLET DETAIL

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

STM-1



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

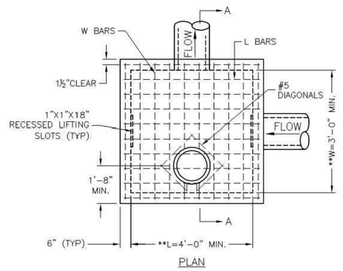
*COVER AND FRAME MODEL INFORMATION REFER TO THE STORMWATER APPROVED PRODUCT LIST.

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

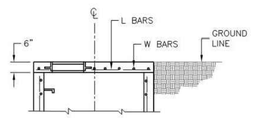
STORM MANHOLE COVER DETAIL

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

STM-6



PLAN

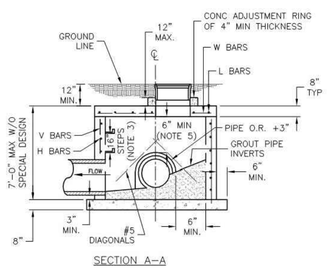


SLAB TOP ALTERNATE FOR JUNCTION BOX (SHALLOW)

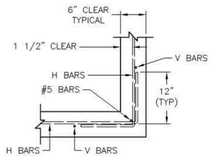
** INCREASE IN MULTIPLES OF 6" (7'–0") MAX. WITHOUT SPECIAL DESIGN. (SEE PROJECT PLANS FOR DETAILS)

REINFORCING

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



SECTION A–A



WALL CORNER DETAIL

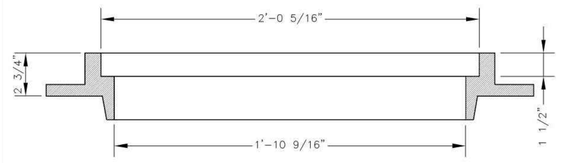
GENERAL NOTES:
1. LOCATE RING AND COVER ON BLANK WALL.
2. USE ¾" CHAMFER STRIP OR ½" R EDGER TOOL ON ALL EXPOSED CONCRETE CORNERS.
3. STEPS REQUIRED AT 16" O.C. WHEN DEPTH FROM TOP OF CASTING TO INVERT EXCEEDS 4' ON BLANK WALL IF POSSIBLE.
4. BOXOUTS WILL NOT BE ALLOWED TO PROJECT THROUGH THE CORNERS OF THE STRUCTURE AND THE MINIMUM DISTANCE BETWEEN BOXOUTS IS 6".
5. THE MINIMUM REINFORCING SHALL BE 1 H–BAR OVER A CAST–IN–PLACE PIPE AND 2 H–BARS OVER A PRECAST BOXOUT.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON–SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. REINFORCING OF COVERS IN STREETS REQUIRE SPECIAL DESIGN.
10. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

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

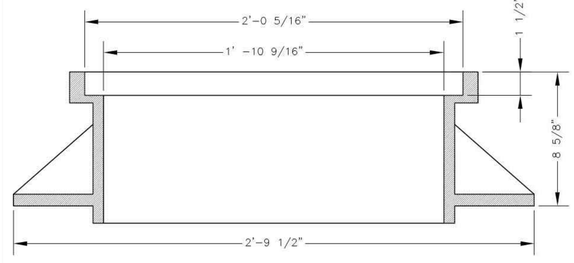
Project: STANDARD DETAILS CITY OF LEE'S SUMMIT, MO LEE'S SUMMIT, JACKSON COUNTY, MO
Sheet Name: JUNCTION BOX DETAIL

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

STM-3



SLAB MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS103A
MINIMUM WEIGHT = 145 LB



STANDARD 24" MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS101A
MINIMUM WEIGHT = 250 LB

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

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

STORM MANHOLE FRAME DETAIL

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

STM-7

Sheet
C16

Final Developement Plans

18-0281
McKeever's Market & Eatery #950
Lee's Summit, Jackson, Missouri

TYPICAL
DETAILS-STORM

NO.	BY	DATE	REVISION
3	C.R.	07/23/19	Resubmittal To City
2	C.R.	07/11/19	Check Set
1	C.R.	05/24/19	Submittal To City

Renaissance Infrastructure Consulting
132 ABBIE AVENUE
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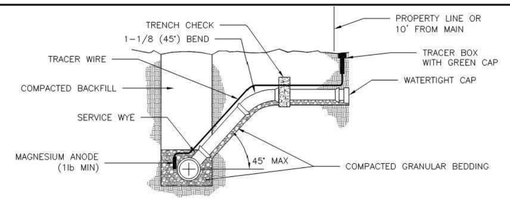
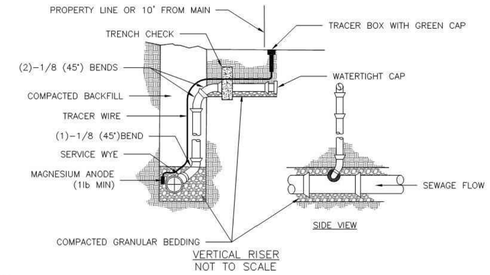
MO Certificate of Authority: E-2010033630

STATE OF MISSOURI
DUSTIN J. BURTON
NUMBER PE-2010015709
PROFESSIONAL ENGINEER
7/25/19

Jul 25, 2019-1113am
Z:\RIC Design\2018\18-0281 AWG Lee's Summit McKeever's\Dwg\FDP\18-0281 TYPICAL DETAILS.dwg



STANDARD INSTALLATION
NOT TO SCALE



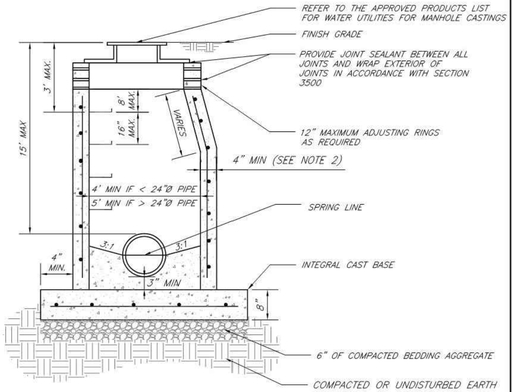
VERTICAL RISER
NOT TO SCALE

NOTES:
1. ALL SEWER STUBS SHALL BE CONSTRUCTED TO PROPERTY LINE OR 10' MINIMUM FROM THE MAIN. WHERE SIDEWALKS ARE PRESENT, CONTRACTOR SHALL EXTEND SERVICE LINE UNDER EXISTING SIDEWALK TO TWO FEET BEYOND.
2. ALL NEW CONSTRUCTION OFF SEWER STUBS SHALL BE TEMPORARILY MARKED WITH A MARKING STAKE, 36" ABOVE GROUND AND PAINTED GREEN.
3. IMPERVIOUS TRENCH CHECKS SHALL BE PLACED ON BUILDING SEWER STUBS (AT LEAST 5' AWAY FROM THE SANITARY SEWER MAIN).
4. TRENCH CHECKS ON THE BUILDING SEWER STUBS SHALL EXTEND 6" BELOW THE BOTTOM OF THE PIPE. LENGTH SHALL BE A MINIMUM OF 12". THE HEIGHT OF THE TRENCH CHECK SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE. THE WIDTH OF THE TRENCH CHECK SHALL BE THE WIDTH OF THE TRENCH.
5. SEE SPECIFICATION SECTION 2100 FOR SEWER MAIN BEDDING AND BACKFILL.
6. #12 GAUGE GREEN INSULATED COPPER TRACER WIRE SHALL BE INSTALLED. TRACER WIRE TERMINAL BOXES SHALL BE INSTALLED DIRECTLY ABOVE THE SEWER SERVICE OR AS DETERMINED BY THE ENGINEER.
7. FOR SERVICES, TRACER WIRE SHALL RUN FROM THE WYE AND TERMINATE IN A FLUSH MOUNTED TRACER BOX WITH A GREEN CAST IRON LOCKABLE TOP. WIRE SHALL BE TAPED OR TIED TO THE PIPE AT 5' INTERVALS.
8. TRACER WIRE BOX SHALL BE INSTALLED WITHIN 1.0' OF PROPERTY LINE.
9. THE TRACER WIRE SHALL REMAIN CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. SPLICES IN THE TRACER WIRE SHOULD BE MADE WITH SPLIT BOLT CONNECTORS. WIRE NUTS SHALL NOT BE USED. A WATER-PROOF CONNECTION IS NECESSARY TO PREVENT CORROSION.

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

BUILDING SEWER STUB AND RISER

Date: 04/17
Drawn By: MJF
Checked By: DL
SAN-1



NOTES:
1. PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C478 EXCEPT AS MODIFIED BY THE SPECIFICATIONS.
2. A WALL THICKNESS NOT LESS THAN ONE-TWELFTH ($1/_{12}$) OF THE INSIDE DIAMETER OR 4", WHICHEVER IS GREATER, SHALL BE USED WHEN THE MANHOLE DEPTH IS LESS THEN 15'.
3. WATERPROOFING SHALL BE REQUIRED ON THE OUTSIDE OF MANHOLES. THE WATERPROOFING SHALL CONSIST OF A TOTAL DRY FILM THICKNESS OF NOT LESS THAN 14 MILS OF BITUMINOUS COATING.
4. ONLY ECCENTRIC MANHOLE CONES WILL BE ALLOWED UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
5. THE FILL CONCRETE FLOW CHANNEL FOR SIDE BRANCHES SHALL BE PLACED TO PROVIDE A SMOOTH TRANSITION INTO THE FLOW LINE.
6. REFER TO THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR APPROVED MANHOLE GASKET MODELS.
7. REFER TO THE APPROVED PRODUCTS LIST FOR APPROVED STEPS.

LEE'S SUMMIT
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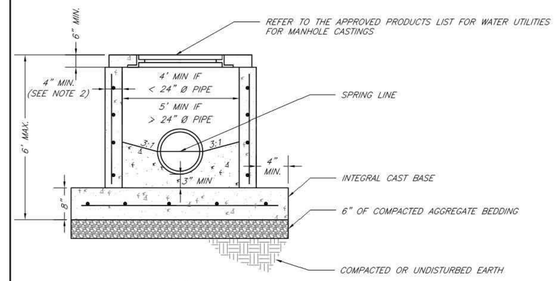
STANDARD PRECAST MANHOLE – SANITARY SEWER

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



ELEVATION

NOTES:
1. PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C478 EXCEPT AS MODIFIED BY THE SPECIFICATIONS.
2. A WALL THICKNESS NOT LESS THAN ONE-TWELFTH (1/12) OF THE INSIDE DIAMETER OR 4", WHICHEVER IS GREATER SHALL BE USED.
3. WATERPROOFING SHALL BE REQUIRED ON THE OUTSIDE OF MANHOLES. THE WATERPROOFING SHALL CONSIST OF A TOTAL DRY FILM THICKNESS OF NOT LESS THEN 14 MILS OF BITUMINOUS COATING.
4. THE FILL CONCRETE FLOW CHANNEL FOR SIDE BRANCHES SHALL BE PLACED TO PROVIDE A SMOOTH TRANSITION INTO THE FLOW LINE.
5. REFER TO THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR MANHOLE GASKET MODELS.
6. PROVIDE STEPS AS SHOWN ON THE APPROVED PRODUCTS LIST FOR MANHOLE DEPTHS GREATER THAN 4'.

LEE'S SUMMIT
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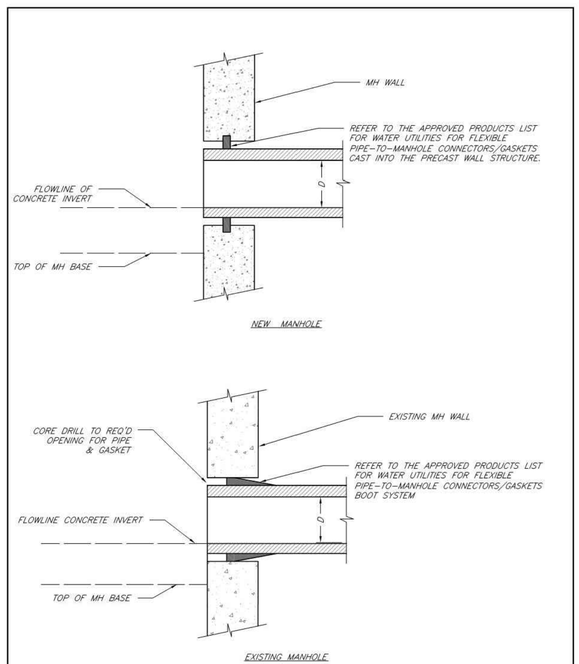
SHALLOW PRECAST MANHOLE – SANITARY SEWER

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



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

MANHOLE WALL CONNECTIONS

Date: 02/13
Drawn By: JN
Checked By: DL
FILE: SAN-5
Rev: 1/14
Rev:

Sheet
C17

Final Developement Plans

18-0281
McKeever's Market & Eatery #950
Lee's Summit, Jackson, Missouri

TYPICAL
DETAILS-SANITARY

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STATE OF MISSOURI
DUSTIN J. BURTON
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PROFESSIONAL ENGINEER
7/25/19

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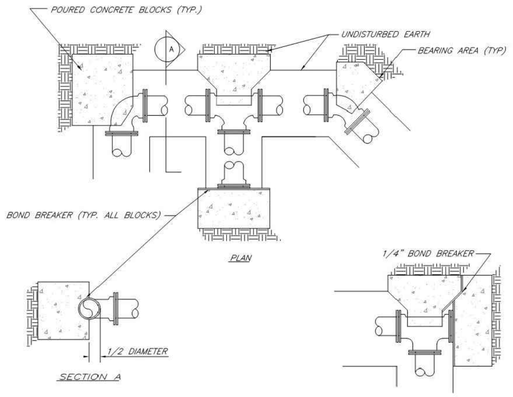
REQUIRED CONCRETE BEARING AREA (SQUARE FEET – SF)

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

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



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

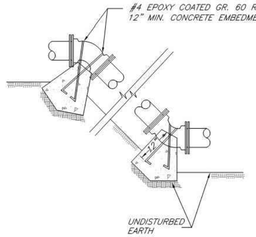
HORIZONTAL THRUST BLOCKS

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

REQUIRED CONCRETE VOLUME (CUBIC FEET – CF)

NOM. DIA. (INCHES)	180 TEE, PLUG	90 BEND	45 BEND	22.5 BEND	11.25 BEND
6	50.5	71.4	38.6	19.7	9.9
8	89.8	126.9	68.7	35.0	17.6
10	140.2	198.1	107.3	54.7	27.5
12	202.0	REST. JT.	154.6	78.8	39.6
14	REST. JT.	REST. JT.	210.4	107.3	53.9
16	REST. JT.	REST. JT.	REST. JT.	140.1	70.4
18	REST. JT.	REST. JT.	REST. JT.	177.3	89.1
20	REST. JT.	REST. JT.	REST. JT.	REST. JT.	110.0
24	REST. JT.	REST. JT.	REST. JT.	REST. JT.	158.4

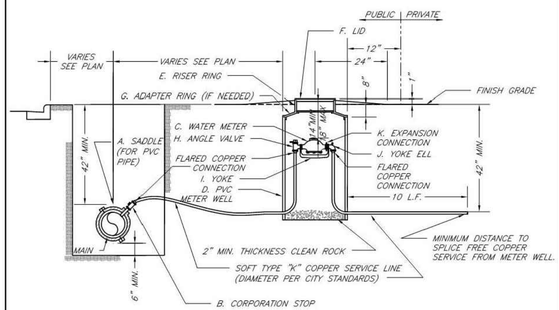
NOTES:
1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
3. BEARING MUST BE AGAINST UNDISTURBED SOIL.
4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.



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

VERTICAL THRUST BLOCKS

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



TYPICAL METER INSTALLATION – 2" AND SMALLER
NOT TO SCALE

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

LEE'S SUMMIT MISSOURI
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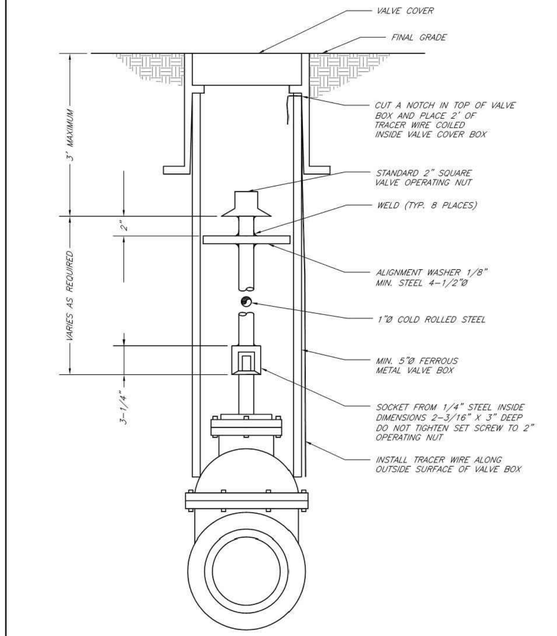
SERVICE CONNECTION/METER WELL

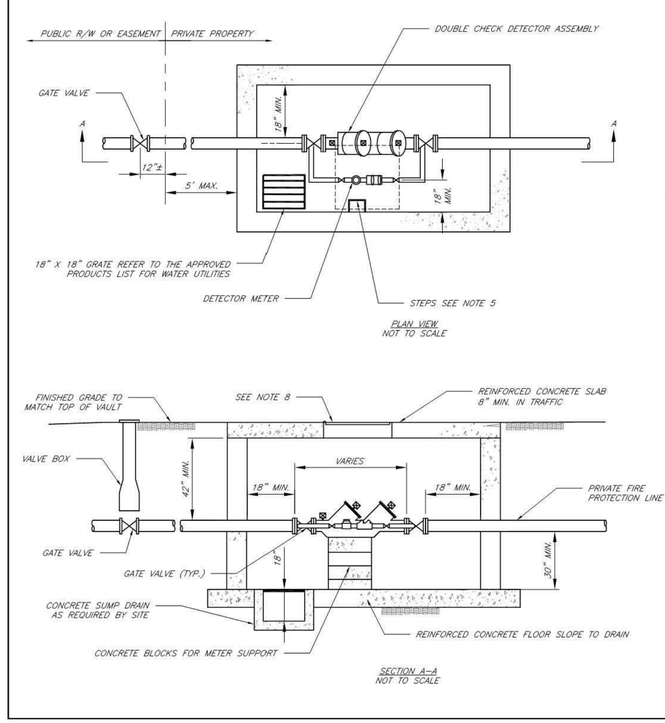
Date: 02/13 | Drawn By: JN | Checked By: DL | FILE: WAT-11 | Rev: 1/14 | Rev:



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

VALVE STEM EXTENSION AND VALVE BOX

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



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

CITY OF LEE'S SUMMIT, MO
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
220 SE GREEN STREET
LEE'S SUMMIT, MO 64063

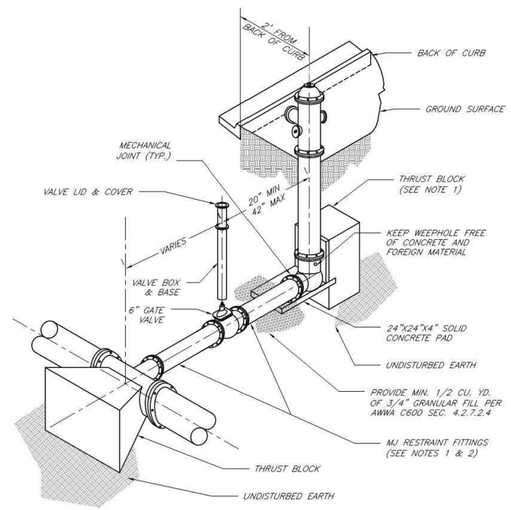
Project: STANDARD DRAWINGS

Sheet Name: VAULT FOR DOUBLE CHECK DETECTOR CHECK

Drawn By: AS | Checked By: DL | Date: 1/14 | Rev: 1/14

or

WAT–12



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

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

HYDRANT INSTALLATION – STRAIGHT SET

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

NO.	BY	DATE	REVISION
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STATE OF MISSOURI
DUSTIN J. BURTON
NUMBER PE-2010015709
PROFESSIONAL ENGINEER
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Sheet
C18

Final Developement Plans
18-0281
McKeever's Market & Eatery #950
Lee's Summit, Jackson, Missouri

TYPICAL DETAILS-WATER