FINAL DEVELOPMENT PLAN
FOR
LEE'S SUMMIT FLEX SPACE
60 SE THOMPSON DR.

CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI
NW $\frac{1}{4}$, SECTION S17, TOWNSHIP 47N, RANGE 31W

RELEASED FOR CONSTRUCTION
As Noted on Plan Review

Development Services Department
Lee's Summit, Missouri

05/08/2024

Scott Ready
Digitally signed by Scott Ready
DN: E=Scott Ready, OU=Development, OU=LS Users, DC=COLS, DC=LOC
Date: 2024.05.08 09:12:13-05'00'

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

PROJECT TEAM

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UTILITY AND GOVERNING AGENCY CONTACTS

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STREETS:
CITY OF LEE'S SUMMIT
MICHAEL PARK
220 SE GREEN ST.
LEE'S SUMMIT, MO 64063
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AT&T:
RONALD GIPFERT
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MISSOURI GAS ENERGY:
RICHARD FROCK
3025 SW CLOVER DR.
LEE'S SUMMIT, MO 64082
TEL: (816) 472-3489

GENERAL NOTES:

1. THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO ALL APPLICABLE STANDARDS AND SPECIFICATIONS OF THE PUBLIC WORKS DEPARTMENT OF THE CITY OF LEE'S SUMMIT, MISSOURI, IN ALL USAGE AND ALL SUPPLEMENTS THERE TO.
2. CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS, BONDS, AND INSURANCE REQUIRED BY THE CITY.
3. THE IMPROVEMENTS SHOWN ON THIS PLAN ARE PRIVATE IMPROVEMENTS. COORDINATE WITH CITY FOR REQUIRED PERMITS, BONDS AND INSURANCE.
4. ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE ENGINEERING DEPARTMENT OF THE CITY OF LEE'S SUMMIT, MISSOURI.
5. THE UTILITY LOCATIONS SHOWN ON THESE PLANS ARE TAKEN FROM UTILITY COMPANY RECORDS AND ARE APPROXIMATE ONLY. THEY DO NOT CONSTITUTE ACTUAL FIELD LOCATIONS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
6. THE DEVELOPER/OWNER SHALL CONTROL EROSION AND SILTATION DURING ALL PHASES OF CONSTRUCTION, AND SHALL KEEP THE STREETS CLEAN OF MUD AND DEBRIS.
7. ALL EXCESS MATERIAL SHALL BE REMOVED LEGALLY FROM SITE AND DISPOSED OF OFF SITE.
8. TRAFFIC CONTROL AND MAINTENANCE OF TRAFFIC DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE PUBLIC WORKS DEPARTMENT AND MUTCD.
9. EROSION CONTROL MEASURES SHALL BE PROVIDED AT ALL LOCATIONS WHERE DRAINAGE IS LEAVING THE PROJECT SITE. THE EROSION CONTROL PLAN SHOWS MINIMUM EROSION CONTROL MEASURES TO BE PROVIDED. ADDITIONAL SITE SPECIFIC MEASURES MAY BE NECESSARY AND SHALL BE PROVIDED BY THE DEVELOPER/OWNER, AT THE CONTRACTOR'S EXPENSE.
10. ANY EXISTING OR NEW STORM SEWER INLETS IN USE DURING DEMOLITION, GRADING OR CONSTRUCTION SHALL HAVE INLET PROTECTION AS SPECIFIED.

HISTORIC INFORMATION

THIS STRUCTURE IS NOT LISTED IN THE NATIONAL REGISTER OF HISTORIC PLACES.

THIS SITE IS NOT LOCATED IN A LOCAL HISTORIC DISTRICT PER THE MISSOURI DEPARTMENT OF NATURAL RESOURCES HISTORIC DISTRICTS AND SITES DATABASE, ACCESSED JUNE 27, 2023.

FEMA INFORMATION

THIS SITE IS LOCATED WITHIN ZONE X PER FEMA FIRM MAPS 29095C0438G: EFFECTIVE DATE JANUARY 20, 2017. NO LETTERS OF MAP AMENDMENT OR REVISION ARE BEING PROPOSED.

LEGAL DESCRIPTION

LOT 3A, DECKER STREET MINOR PLAT, LOTS 2A AND 3A, A SUBDIVISION IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, ACCORDING TO THE PLAT RECORDED AUGUST 6, 2021.

PROJECT SPECIFICATIONS

THE SPECIFICATIONS FOR THIS PROJECT SHALL BE THE FOLLOWING:
1. THE CITY OF LEE'S SUMMIT, MISSOURI
2. KANSAS CITY METRO APWA

THE STANDARD SPECIFICATIONS THROUGH AND INCLUDING THE LATEST AMENDMENTS SHALL BE PART OF THESE PROJECT DRAWINGS AND SPECIFICATION AND ARE INCORPORATED HEREIN BY REFERENCE. THE MORE STRINGENT OF THESE STANDARD SPECIFICATIONS AND THOSE PREPARED BY THE ENGINEERING PREPARING THESE PLANS SHALL GOVERN.

OIL AND GAS WELL NOTES

NO ABANDONED OIL OR GAS WELLS HAVE BEEN IDENTIFIED WITHIN THE PROPERTY LIMITS OF THE PROPOSED CONSTRUCITON ACTIVITIES, PER THE MISSOURI DEPARTMENT OF NATURAL RESOURCES (MDNR) PERMITTED OIL AND GAS DATABASE, ACCESSED JUNE 27, 2023.

FIRE CODE

ALL ISSUES OERTAINING TO LIFE, SAFETY, AND PROPERTY PROTECTION FROM THE HAZARDS OF FIRE, EXPLOSION OR DANGEROUS CONDITIONS IN NEW AND EXISTING BUILDINGS, STRUCTURES AND PREMISES, AND TO THE SAFETY TO FIRE FIGHTERS AND EMERGENCY RESPONDERS DURING EMERGENCY OPERATIONS, SHALL BE IN ACCORDANCE WITH THE 2018 INTERNATIONAL FIRE CODE.

APPROXIMATE TOTAL ACREAGE: 2.13 AC
LIMITS OF DISTURBANCE: 1.81 AC

WATERSHED: BIG CREEK

LOCATION MAP
1" = 100'

NORTH

TYPICAL LEGEND

- PROPOSED STANDARD DUTY ASPHALT PAVEMENT
- PROPOSED HEAVY DUTY CONCRETE PAVEMENT
- PROPOSED BUILDING
- EXISTING PUBLIC ROADWAY
- EXISTING 60' STREAM BUFFER
- PROPERTY LINE
- PROPOSED BUILDING OUTLINE
- EASEMENT LINE
- SETBACK LINE
- STANDARD CURB & GUTTER
- SAN — EXISTING SANITARY SEWER
- W — EXISTING WATER LINE
- FO — EXISTING FIBER OPTIC
- G — EXISTING GAS
- P — EXISTING POWER
- T — EXISTING TELECOMMUNICATIONS
- W — PROPOSED WATER LINE
- UE — PROPOSED UNDERGROUND ELECTRIC
- SS — PROPOSED SANITARY SEWER

Sheet List Table

Sheet Number	Sheet Title
C001	COVER SHEET
C002	EXISTING CONDITIONS
C003	SITE PLAN
C004	GRADING PLAN
C005	ADA RAMPS
C006	UTILITY & STORMWATER PLAN
C007	STORMWATER PLAN & PROFILE
C008	STORMWATER PLAN & PROFILE
C009A	STORMWATER BMP
C009B	DETAILS
C009C	ADS DETAILS
C010	DETAILS
C011	DETAILS
C012	DETAILS
L001	LANDSCAPE PLAN
L002	LANDSCAPE DETAILS
A101	FLOOR PLANS
A201	ELEVATIONS - BUILDING A
A202	ELEVATIONS - BUILDING B
A203	RENDERINGS
A204	TRASH ENCLOSURE PLAN & DETAILS
M101	MECHANICAL FLOOR PLANS
E001	SITE PHOTOMETRICS
F001	FIRE SUPPRESSION
F101	FIRE SUPPRESSION FLOOR PLANS
F500	FIRE SUPPRESSION DETAILS

No.	REVISIONS	DATE	BY

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CHECKED BY: PJJ

STATE OF MISSOURI
PATRICK J. JOYCE
NUMBER PE-2009018021
PROFESSIONAL ENGINEER
4/29/2024

CAPITAL BUILDERS

COVER SHEET

LEE'S SUMMIT FLEX SPACE
60 SE THOMPSON DR
LEE'S SUMMIT, MISSOURI 64081

ORIGINAL ISSUE: 4/29/2024
KHA PROJECT NO. 268442000
SHEET NUMBER C001

REVISIONS

No.	REVISIONS	DATE	BY

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STATE OF MISSOURI
PATRICK J. JOYCE
NUMBER PE-2009038032
4/29/2024
PROFESSIONAL ENGINEER

CAPITAL BUILDERS

EXISTING CONDITIONS

LEE'S SUMMIT FLEX SPACE
60 SE THOMPSON DR
LEE'S SUMMIT, MISSOURI 64081

ORIGINAL ISSUE: 4/29/2024
KHA PROJECT NO. 268442000
SHEET NUMBER
C002

Drawing name: K:\KNC_LDEV\268442000_Capital Builders Lee's Summit\2023 Lees Summit Flex Space\2 Design\CAD\PlanSheets\FDP\C002 - EXISTING CONDITIONS.dwg C002 - EXISTING CONDITIONS Apr 29, 2024 2:58pm by: logan.green

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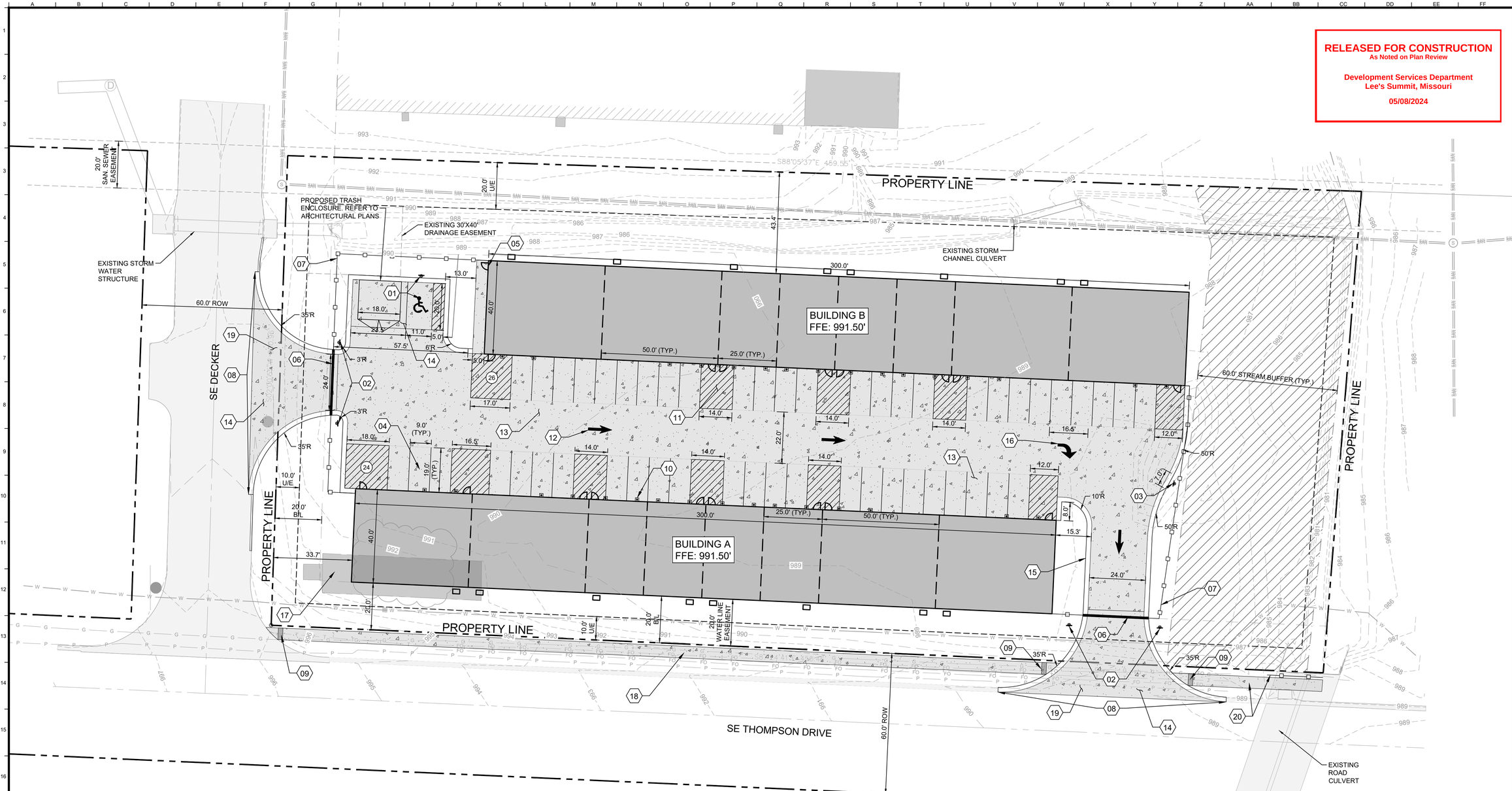
Lee's Summit, Missouri

05/08/2024



SITE PLAN KEY NOTES

01 INSTALL 1 VAN ACCESSIBLE ADA PARKING STALL WITH SIGN MOUNTED A MINIMUM OF 6 FEET ABOVE FINISHED GRADE. REFER TO DETAIL 17, SHEET C012
02 INSTALL "DO NOT ENTER" SIGNS ACCORDING TO MUTCD R5-1, REFER TO DETAIL 17, SHEET C012
03 INSTALL "ONE WAY" SIGN ACCORDING TO MUTCD R6-2. REFER TO DETAIL 17, SHEET C012
04 INSTALL PARKING STALLS (TYP.). PAINT 4" PARKING STRIPING, PAINT TO BE LEAD-FREE, WATER-BORNE, EMULSION-BASED TRAFFIC PAINT, WHITE IN COLOR
05 INSTALL SECURED RESTROOM WITH SIDE DOOR
06 INSTALL AMERISTAR MONTAGE PLUS 3-RAIL SYSTEM GATE WITH KNOX KEY SWITCH (TYP.). REFER TO DETAIL 19, SHEET C012
07 INSTALL AMERISTAR MONTAGE PLUS 3-RAIL SYSTEM FENCE (TYP.). REFER TO DETAIL 18, SHEET C012
08 REMOVE EXISTING CURB WITHIN BOUNDS OF KEY NOTE ARROWS
09 INSTALL ADA RAMP WITH WARNING PAD. REFER TO DETAIL 14, SHEET C011
10 INSTALL STEEL-ENCASED CONCRETE BOLLARD (TYP.). REFER TO ARCHITECTURAL PLANS. REFER TO DETAIL 21, SHEET C012
11 PAINT 4" PARKING STRIPING AT 45°, PAINT TO BE LEAD-FREE, WATER-BORNE, EMULSION-BASED TRAFFIC PAINT, WHITE IN COLOR, AT 2-FT ON-CENTER SPACING (TYP.)
12 PAINT THRU TRAFFIC ARROW, PAINT TO BE LEAD-FREE, WATER-BORNE, EMULSION-BASED TRAFFIC PAINT, WHITE IN COLOR (TYP.). REFER TO DETAIL 16, SHEET C012
13 INSTALL STANDARD-DUTY CONCRETE PAVEMENT (PAVEMENT SECTION 1). REFER TO DETAIL 20, SHEET C012
14 INSTALL HEAVY-DUTY CONCRETE PAVEMENT (PAVEMENT SECTION 2). REFER TO DETAIL 20, SHEET C012
15 INSTALL STRAIGHT BACK CURB AND GUTTER (TYP.). REFER TO DETAIL 15, SHEET C011
16 PAINT RIGHT-TURN TRAFFIC ARROW, PAINT TO BE LEAD-FREE, WATER-BORNE, EMULSION-BASED TRAFFIC PAINT, WHITE IN COLOR. REFER TO DETAIL 16, SHEET C012
17 REMOVE EXISTING CONCRETE PAD
18 INSTALL SIDEWALK WITH BUFFER. REFER TO DETAIL 12, SHEET C011
19 INSTALL PRIVATE DRIVEWAY. REFER TO DETAIL 13, SHEET C011
20 INSTALL SIDEWALK WITH RAIL. REFER TO DETAIL 18, SHEET C012

SITE PLAN LEGEND

- PROPOSED HEAVY DUTY CONCRETE PAVEMENT
- PROPOSED BUILDING
- EXISTING PUBLIC ROADWAY
- EXISTING 60' STREAM BUFFER
- PROPOSED BUILDING OUTLINE
- PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- STANDARD CURB & GUTTER

SUMMARY TABLE

A	**Zoning**		
	Existing	Industrial	
	Proposed	Industrial	
B	**Approximate Total Land Area***		
	Existing	2.13	Acres
C	**Right-of-way**		
	Existing	0.00	Acres
	Proposed	0.00	Acres
D	**Approximate Net Land Area***		
	Existing	2.13	Acres
	Proposed	2.13	Acres
E	**Impervious Area**		
	Existing	0.03 Acres	1.4% Area
	Proposed	1.19 Acres	55.9% Area
F	**Proposed Uses**		
	Flex Storage		
G	**Building Information**		
	Gross Floor Area (SF)		+/- 24,000
	Floor Area Ratio		0.27
H	**Off-Street Vehicle Parking**		
	Stalls Required		25
	Stalls Provided		50
	ADA Stalls Required		1
	ADA Stalls Provided		1

ZONING

PI (PLANNED INDUSTRIAL)

CURRENT USE

VACANT

GENERAL NOTES

1. ALL DIMENSIONS REFER TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
2. BUILDING DIMENSIONS ARE TO THE OUTSIDE FACE OF BUILDING UNLESS OTHERWISE NOTED.
3. B/L REFERS TO THE BUILDING SETBACK LINE.
4. U/E REFERS TO THE UTILITY EASEMENT LINE.
5. RADII ADJACENT TO PARKING STALL AND NOT DIMENSIONED ON THIS PLAN SHALL BE 3-FEET, TYPICAL.
6. ALL PROPOSED ON-SITE STRIPING SHALL BE PAINTED UNLESS OTHERWISE NOTED.

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

No.	REVISIONS	DATE	BY

Kimley»Horn

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SCALE: AS NOTED
DESIGNED BY: LLG
DRAWN BY: LLG
CHECKED BY: PJJ

STATE OF MISSOURI
PATRICK J. JOYCE
NUMBER PE-2009018825
4/29/2024
PROFESSIONAL ENGINEER

CAPITAL BUILDERS

SITE PLAN

LEE'S SUMMIT FLEX SPACE
60 SE THOMPSON DR
LEE'S SUMMIT, MISSOURI 64081

ORIGINAL ISSUE: 4/29/2024
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SHEET NUMBER C003

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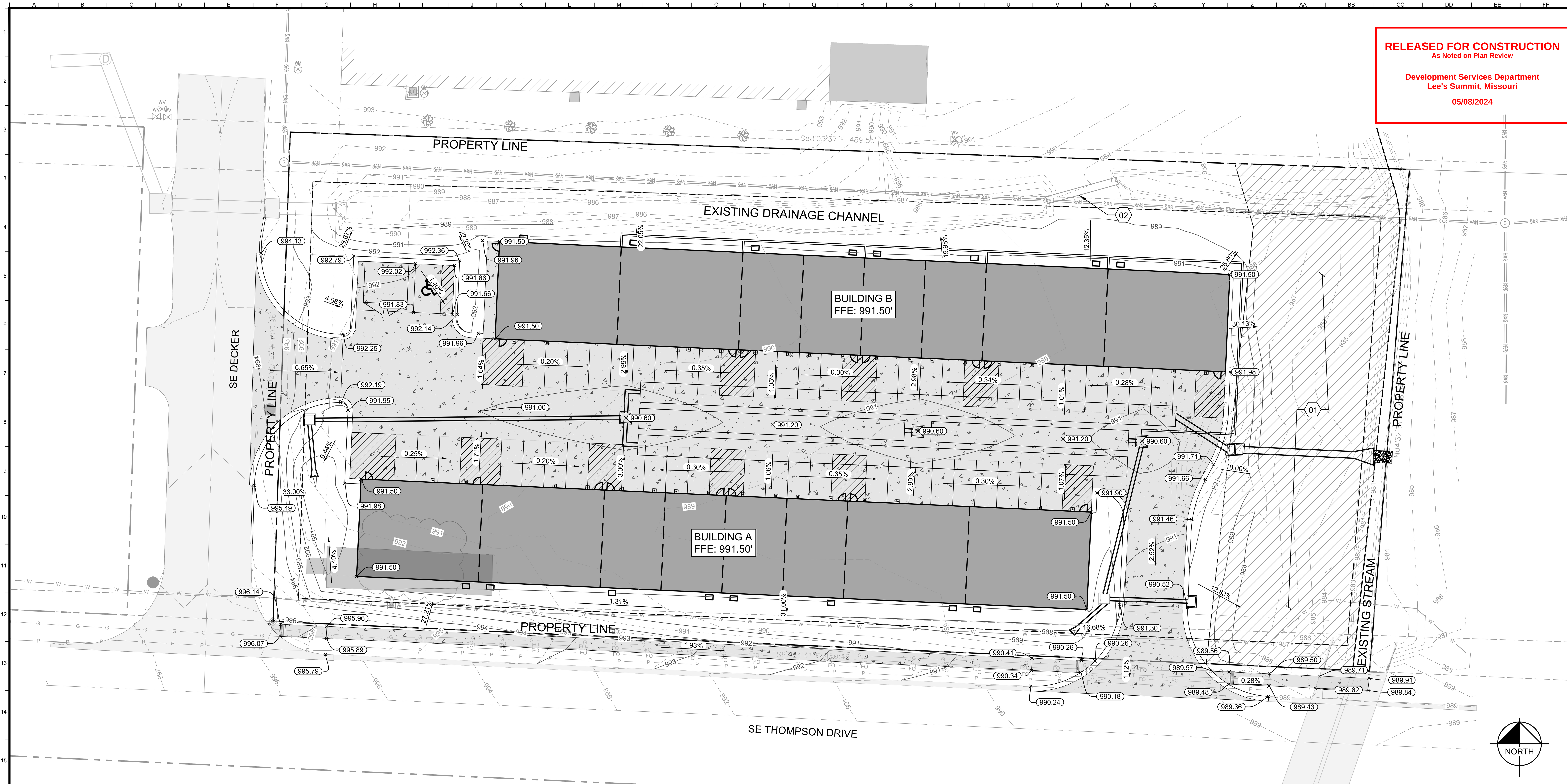
As Noted on Plan Review

Development Services Department
Lee's Summit, Missouri

05/08/2024



GRAPHIC SCALE IN FEET
0 10' 20' 40'

PAVING, GRADING AND DRAINAGE NOTES

1. ALL PAVING, CONSTRUCTION, MATERIALS, AND WORKMANSHIP WITHIN COUNTY'S RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH LOCAL OR COUNTY SPECIFICATIONS AND STANDARDS (LATEST EDITION) OR MODOT SPECIFICATIONS AND STANDARDS (LATEST EDITION) IF NOT COVERED BY LOCAL OR COUNTY REGULATIONS.
2. ALL UNPAVED AREAS IN EXISTING RIGHTS-OF-WAY DISTURBED BY CONSTRUCTION SHALL BE REGRADED AND SODDED.
3. TRAFFIC CONTROL ON ALL MODOT, LOCAL AND COUNTY RIGHTS-OF-WAY SHALL MEET THE REQUIREMENTS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (U.S. DOT/FHA) AND THE REQUIREMENTS OF THE STATE AND ANY LOCAL AGENCY HAVING JURISDICTION. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.
4. THE CONTRACTOR SHALL GRADE THE SITE TO THE ELEVATIONS INDICATED AND SHALL REGRADE WASHOUTS WHERE THEY OCCUR AFTER EVERY RAINFALL UNTIL A GRASS STAND IS WELL ESTABLISHED OR ADEQUATE STABILIZATION OCCURS.
5. ALL OPEN AREAS WITHIN THE PROJECT SITE SHALL BE SODDED UNLESS INDICATED OTHERWISE ON THE LANDSCAPE PLAN.
6. ALL AREAS INDICATED AS PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TYPICAL PAVEMENT SECTIONS AS INDICATED ON THE DRAWINGS.
7. WHERE EXISTING PAVEMENT IS INDICATED TO BE REMOVED AND REPLACED, THE CONTRACTOR SHALL SAW CUT A MINIMUM 2" DEEP FOR A SMOOTH AND STRAIGHT JOINT AND REPLACE THE PAVEMENT WITH THE SAME TYPE AND DEPTH OF MATERIAL AS EXISTING OR AS INDICATED.
8. WHERE NEW PAVEMENT MEETS THE EXISTING PAVEMENT, THE CONTRACTOR SHALL SAW CUT THE EXISTING PAVEMENT A MINIMUM 2" DEEP FOR A SMOOTH AND STRAIGHT JOINT AND MATCH THE EXISTING PAVEMENT ELEVATION WITH THE PROPOSED PAVEMENT UNLESS OTHERWISE INDICATED.
9. THE CONTRACTOR SHALL INSTALL FILTER FABRIC OVER ALL DRAINAGE STRUCTURES FOR THE DURATION OF CONSTRUCTION AND UNTIL ACCEPTANCE OF THE PROJECT BY THE OWNER. ALL DRAINAGE STRUCTURES SHALL BE CLEANED OF DEBRIS AS REQUIRED DURING AND AT THE END OF CONSTRUCTION TO PROVIDE POSITIVE DRAINAGE FLOWS.
10. IF DEWATERING IS REQUIRED, THE CONTRACTOR SHALL OBTAIN ANY APPLICABLE REQUIRED PERMITS. THE CONTRACTOR IS TO COORDINATE WITH THE OWNER AND THE DESIGN ENGINEER PRIOR TO ANY EXCAVATION.
11. STRIP TOPSOIL AND ORGANIC MATTER FROM ALL AREAS OF THE SITE AS REQUIRED. IN SOME CASES TOPSOIL MAY BE STOCKPILED ON SITE FOR PLACEMENT WITHIN LANDSCAPED AREAS BUT ONLY AS DIRECTED BY THE OWNER.
12. FIELD DENSITY TESTS SHALL BE TAKEN AT INTERVALS IN ACCORDANCE WITH THE LOCAL JURISDICTIONAL AGENCY OR TO KDOT STANDARDS. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.
13. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED AS PER PLANS. THE AREAS SHALL THEN BE SODDED OR SEEDED AS SPECIFIED IN THE PLANS, 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 JOB SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. ALL EARTHEN AREAS WILL BE SODDED OR SEEDED AND MULCHED AS SHOWN ON THE LANDSCAPING PLAN.
14. ALL CUT OR FILL SLOPES SHALL BE 4 (HORIZONTAL) :1 (VERTICAL) OR FLATTER UNLESS OTHERWISE SHOWN.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF DUST AND DIRT RISING AND SCATTERING IN THE AIR DURING CONSTRUCTION AND SHALL PROVIDE WATER SPRINKLING OR OTHER SUITABLE METHODS OF CONTROL. THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.
16. THE CONTRACTOR SHALL TAKE ALL REQUIRED MEASURES TO CONTROL TURBIDITY, INCLUDING BUT NOT LIMITED TO THE INSTALLATION OF TURBIDITY BARRIERS AT ALL LOCATIONS WHERE THE POSSIBILITY OF TRANSFERRING SUSPENDED SOLIDS INTO THE RECEIVING WATER BODY EXISTS DUE TO THE PROPOSED WORK. TURBIDITY BARRIERS MUST BE MAINTAINED IN EFFECTIVE CONDITION AT ALL LOCATIONS UNTIL CONSTRUCTION IS COMPLETED AND DISTURBED SOIL AREAS ARE STABILIZED. THEREAFTER, THE CONTRACTOR MUST REMOVE THE BARRIERS. AT NO TIME SHALL THERE BE ANY OFF-SITE DISCHARGE WHICH VIOLATES THE WATER QUALITY STANDARDS PER MISSOURI DEPARTMENT OF NATURAL RESOURCES.
17. SOD, WHERE CALLED FOR, MUST BE INSTALLED AND MAINTAINED ON EXPOSED SLOPES WITHIN 48 HOURS OF COMPLETING FINAL GRADING, AND AT ANY OTHER TIME AS NECESSARY, TO PREVENT EROSION, SEDIMENTATION OR TURBID DISCHARGES.
18. THE CONTRACTOR MUST REVIEW AND MAINTAIN A COPY OF THE ENVIRONMENTAL RESOURCE PERMIT COMPLETE WITH ALL CONDITIONS, ATTACHMENTS, EXHIBITS, AND PERMIT MODIFICATIONS IN GOOD CONDITION AT THE CONSTRUCTION SITE. THE COMPLETE PERMIT MUST BE AVAILABLE FOR REVIEW UPON REQUEST BY WATER MANAGEMENT DISTRICT REPRESENTATIVES.
19. THE CONTRACTOR SHALL ENSURE THAT ISLAND PLANTING AREAS AND OTHER PLANTING AREAS ARE NOT COMPACTED AND DO NOT CONTAIN ROAD BASE MATERIALS. THE CONTRACTOR SHALL ALSO EXCAVATE AND REMOVE ALL UNDESIRABLE MATERIAL FROM ALL AREAS ON THE SITE TO BE PLANTED AND PROPERLY DISPOSED OF IN A LEGAL MANNER.
20. THE CONTRACTOR SHALL INSTALL ALL UNDERGROUND STORM WATER PIPING PER MANUFACTURER'S RECOMMENDATIONS.

GRADING LEGEND

— — 1015 — —	EXISTING CONTOUR
—— 1015 ——	PROPOSED CONTOUR
(XXX.XX)	SPOT ELEVATION
X.XX% →	SLOPE ARROW

GRADING PLAN KEY NOTES

01 EXISTING RUBBLE SHALL BE HAULED AND DISPOSED OF PROPERLY OFFSITE

02 EXISTING CULVERT SHALL BE REMOVED. CONTRACTOR SHALL REGRADE TO MAINTAIN EXISTING DRAINAGE PATTERNS

LIMITS OF DISTURBANCE: 1.81 AC

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DRAWN BY:	LLG
CHECKED BY:	PJJ

STATE OF MISSOURI
PATRICK J. JOYCE
NUMBER PE-2009030032
4/29/2024
PROFESSIONAL ENGINEER

CAPITAL BUILDERS

GRADING PLAN

LEE'S SUMMIT FLEX SPACE

60 SE THOMPSON DR
LEE'S SUMMIT, MISSOURI 64081

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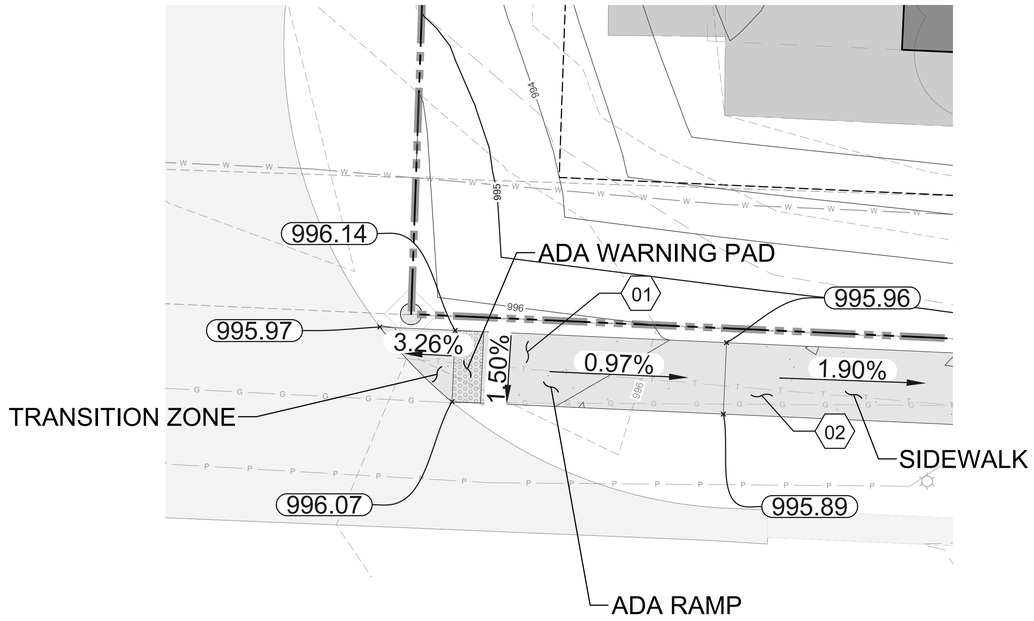
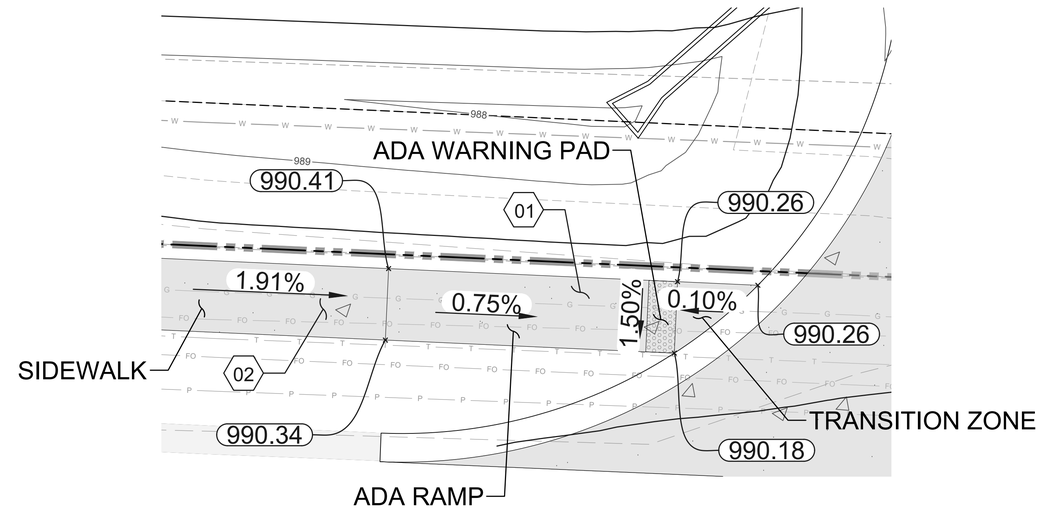
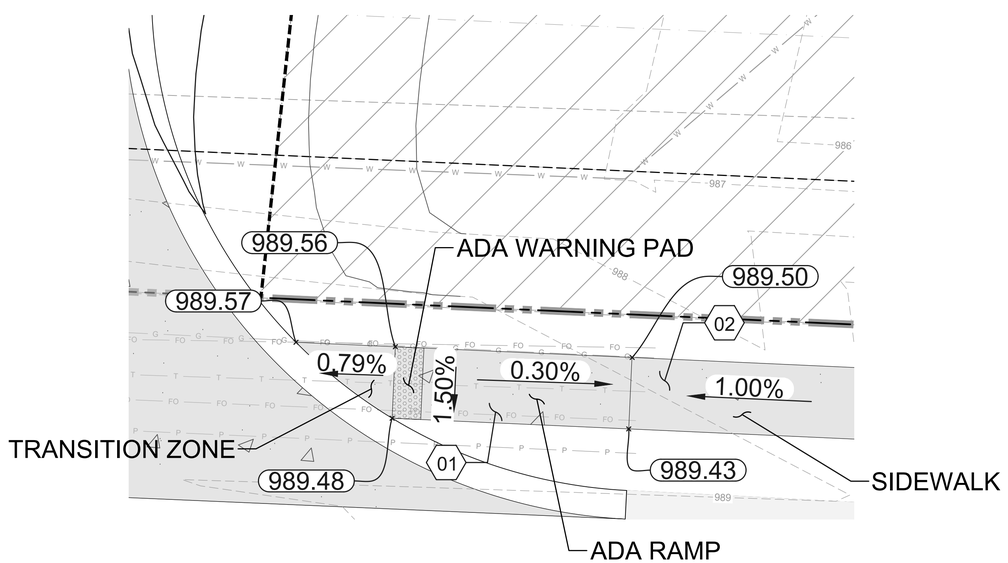
ADA RAMP 1



ADA RAMP 2



ADA RAMP 3



GRADING LEGEND

1015	EXISTING CONTOUR
1015	PROPOSED CONTOUR
XXX.XX	SPOT ELEVATION
X.XX%	SLOPE ARROW

(#) GRADING PLAN KEY NOTES

01 INSTALL ADA SIDEWALK RAMP WITH WARNING PAD. REFER TO DETAIL 14, SHEET C011
02 INSTALL SIDEWALK WITH BUFFER. REFER TO DETAIL 12, SHEET C011

No.	REVISIONS	DATE	BY

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STATE OF MISSOURI
PATRICK JOYCE
NUMBER
PE-2009018023
4/29/2024
PROFESSIONAL ENGINEER

CAPITAL BUILDERS

ADA RAMPS

LEE'S SUMMIT
FLEX SPACE
60 SE THOMPSON DR
LEE'S SUMMIT, MISSOURI 64081

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EXISTING SANITARY MANHOLE
RIM EL = 993.16'
FL IN N 8" PVC = 984.56'
FL OUT E 8" PVC = 984.41'

EXISTING WATER LINE TO BE ABANDONED IN PLACE

EXISTING SANITARY MANHOLE
RIM EL = 988.78'
FL IN N 8" PVC = 978.48'
FL IN E 8" PVC = 978.78'
FL IN W 8" PVC = 978.38'
FL OUT S 8" PVC = 977.98'

PROPERTY LINE

PROPOSED SANITARY CONNECTION
FL = 983.07

PROPOSED SANITARY LINE
FL = 983.8'

PROPOSED DOWNSPOUT STORM LINE
FL = 988.98'

PROPOSED DOWNSPOUT STORM LINE
FL = 988.79'

PROPOSED DOWNSPOUT STORM LINE
FL = 988.48'

PROPOSED DOWNSPOUT STORM LINE
FL = 988.23'

PROPOSED DOWNSPOUT STORM LINE
FL = 987.98'

EXISTING SANITARY SEWER

PROPOSED DOWNSPOUT STORM LINE
FL = 987.70'

PROPOSED DOWNSPOUT STORM LINE
FL = 989.0'

PROPOSED DOWNSPOUT STORM LINE
FL = 988.76'

PROPOSED DOWNSPOUT STORM LINE
FL = 988.50'

PROPOSED DOWNSPOUT STORM LINE
FL = 989.26'

PROPOSED DOWNSPOUT STORM LINE
FL = 988.0'

BUILDING B
FFE: 991.50'

PROPOSED SANITARY LINE
FL = 984.6'

PROPOSED SANITARY LINE
FL = 987.0'

PROPOSED DOWNSPOUT STORM LINE
FL = 987.35'

PROPOSED SANITARY LINE
FL = 985.2'

BUILDING A
FFE: 991.50'

ADS STORMTECH MC-4500 UNDERGROUND DETENTION CHAMBERS (TYP.)

SE DECKER

PROPERTY LINE

PROPERTY LINE

PROPERTY LINE

SE THOMPSON DRIVE

EXISTING 16" TRI-COUNTY WATER LINE

EXISTING 12" WATER LINE

15" HDPE

24" HDPE

30" HDPE

220.0'

201.0'

30.0'

UTILITY LEGEND

W	EXISTING SANITARY SEWER
W	EXISTING WATER LINE
FO	EXISTING FIBER OPTIC LINE
G	EXISTING GAS LINE
P	EXISTING POWER LINE
T	EXISTING TELECOMMUNICATIONS LINE
W	PROPOSED WATER LINE
UE	PROPOSED UNDERGROUND ELECTRIC LINE
SS	PROPOSED SANITARY SEWER LINE
T	PROPOSED TRANSFORMER

UTILITY PLAN KEY NOTES

01 INSTALL CONCRETE PLUG AND ABANDON EXISTING WATER LINE IN PLACE
02 REMOVE EXISTING FIRE HYDRANT AND INSTALL CONCRETE PLUG, ABANDON EXISTING WATER LINE IN PLACE
03 PUBLIC WATER MAIN EXTENSION TO BE DESIGNED UNDER SEPARATE COVER
04 INSTALL 1.5" WATER METER WITH METER PIT. REFER TO DETAIL 9, SHEET C010
05 INSTALL 2" TYPE K COPPER SERVICE LINE. REFER TO DETAILS 5 AND 11, SHEET C010
06 INSTALL VAULT FOR DOUBLE DETECTOR CHECK VALVE. BACKFLOW VAULT SUMP SHALL BE DRAINED BY DAYLIGHT VIA A 3" SDR-26 PVC PIPE. FIRE LINE SHALL BE 6" SCHEDULE 40 BLACK STEEL TO BACKFLOW PREVENTER. REFER TO DETAIL 10, SHEET C010
07 INSTALL FIRE HYDRANT, ALL YELLOW, PER CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL SECTION 3901.Q. REFER TO DETAIL 8, SHEET C010
08 INSTALL TRANSFORMER WITH CONCRETE PAD FOOTING
09 INSTALL 8" SDR-26 PVC DOWNSPOUT COLLECTOR STORM LINE AS SHOWN. REFER TO DETAILS 5 AND 11, SHEET C010
10 INSTALL ADS STORMTECH MC-4500 UNDERGROUND DETENTION CHAMBERS WITH ISOLATOR ROW AND END CAPS IN LAYOUT AS SHOWN, OR APPROVED EQUAL. REFER TO ADS STORMTECH MC-4500 DETAIL, SHEET C009C
11 INSTALL 6" SDR-26 PVC SANITARY SEWER LINE AND TIE IN TO EXISTING SANITARY SEWER LINE AT LOCATION SHOWN
12 INSTALL UNDERGROUND ELECTRICAL CONDUIT LINE AS SHOWN
13 INSTALL CUT-IN WYE SANITARY SEWER CONNECTION WITH STUB. REFER TO DETAIL 12, SHEET C010
14 INSTALL 3.75' X 2.5' PERMANENT MODOT TYPE 3 ROCK DITCH LINER PAD
15 INSTALL FIRE HYDRANT, YELLOW BARREL WITH SILVER BONNET, PER CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL SECTION 3901.Q. REFER TO DETAIL 8, SHEET C010
16 INSTALL 2" TYPE K COPPER WATER LINE. REFER TO DETAILS 5 AND 11, SHEET C010
17 INSTALL 1.5" TYPE K COPPER WATER SERVICE LINE. REFER TO DETAILS 5 AND 11, SHEET C010
18 INSTALL FDC AT PROPOSED LOCATION WITH A KNOX BOX 6' AFF OVER THE FDC

Rip-Rap Pad Sizing Calculations	
Max. Shear Stress: $\tau_d = Y * d * S$	
Flared-End Section 100:	
τ_d: (lb/ft^2)	1.889082
Y: (lb/ft^3)	62.4
d: (ft)	0.8625
S: (ft/ft)	0.0351
Max. Permissible Shear Strength for MODOT Type 3 Rock Ditch Liner: 4 lb/ft^2	

NORTH

GRAPHIC SCALE IN FEET
0 10' 20' 40'

No	REVISIONS	DATE	BY

Kimley»Horn

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DESIGNED BY: LLG
DRAWN BY: LLG
CHECKED BY: PJJ

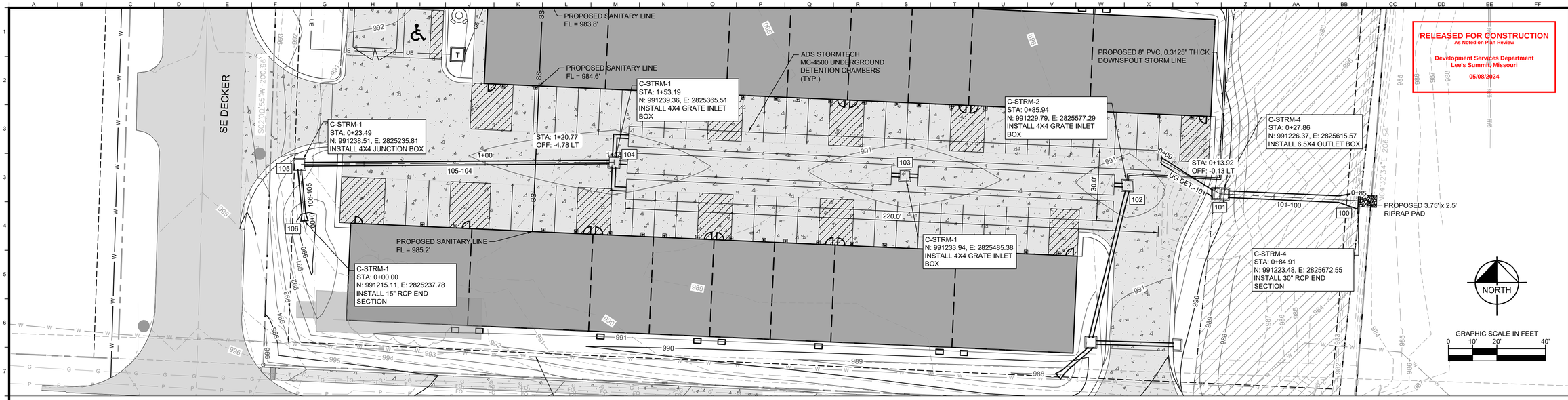
STATE OF MISSOURI
PATRICK J. JOYCE
NUMBER PE-2009020825
4/29/2024
PROFESSIONAL ENGINEER

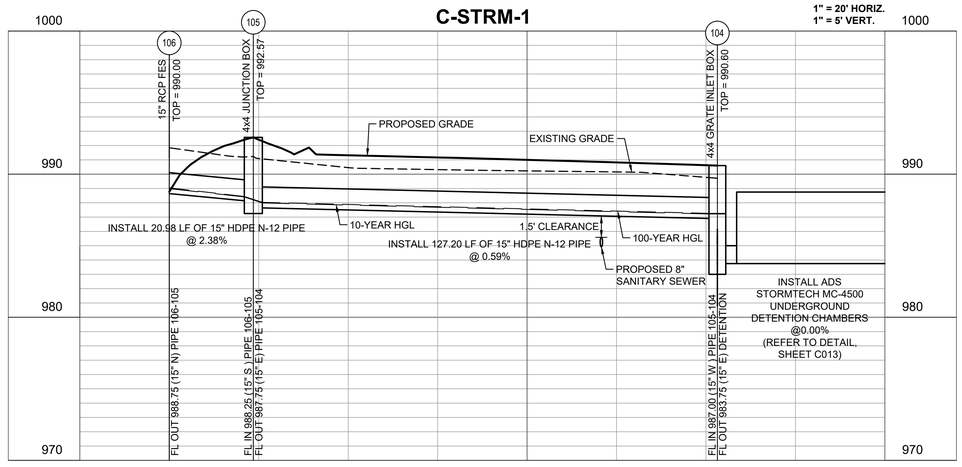
CAPITAL BUILDERS

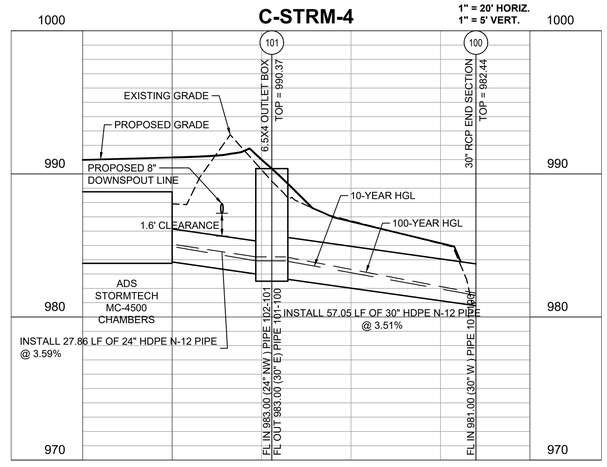
UTILITY & STORMWATER PLAN

LEE'S SUMMIT FLEX SPACE
60 SE THOMPSON DR
LEE'S SUMMIT, MISSOURI 64081

ORIGINAL ISSUE: 4/29/2024
KHA PROJECT NO. 268442000
SHEET NUMBER C006







PIPE SIZING CALCULATIONS - 10-YEAR EVENT

LineNo.	InletID	RunoffCoeff	DrainageArea	IncrCxA	InletTime	TotalArea	TotalCxA	Tc	iInlet	iSys	IncrQ	FlowRate	LineID	InvertUp	InvertDn	LineLength	LineSlope	LineSize	n-valuePipe	User StaDn	CapacityFull	VelAve	HGLUp	HGLDn
		(C)	(ac)		(min)	(ac)		(min)	(in/hr)	(in/hr)	(cfs)	(cfs)		(ft)	(ft)	(ft)	(%)	(in)		(ft)	(cfs)	(ft/s)	(ft)	(ft)
1	105	0.00	0.00	0	0.0	0.07	0.05	6.1	0.00	7.03	0.00	0.37	PIPE 105-104	987.75	987.00	127.201	0.59	15	0.012	25.99	5.37	2.40	987.99	987.22
2	106	0.75	0.07	0.05	5.0	0.07	0.05	5.0	7.34	7.34	0.39	0.39	PIPE 106-105	988.75	988.25	20.981	2.38	15	0.012	0.00	10.80	3.23	988.99	988.41
3	201	0.00	0.00	0	0.0	0.30	0.27	7.4	0.00	6.69	0.00	1.82	PIPE 201-102	984.94	983.67	63.923	1.99	15	0.012	22.02	9.88	4.88	985.48	984.03
4	202	0.90	0.26	0.23	5.0	0.26	0.23	5.0	7.34	7.34	1.72	1.72	PIPE 202-201	986.62	986.43	19.454	0.98	15	0.012	0.00	6.91	4.11	987.14	986.86
5	301	0.95	0.04	0.04	5.0	0.04	0.04	5.0	7.34	7.34	0.28	0.28	PIPE 301-201	987.00	986.34	33.104	1.99	15	0.012	0.00	9.88	2.83	987.20	986.48
6	101	0.00	0.00	0	0.0	0.82	0.78	5.2	0.00	7.27	1.62	7.66	PIPE 101-100	983.00	981.00	57.051	3.51	30	0.012	0.00	83.19	7.62	983.92	981.51
7	UG DET.	0.95	0.82	0.78	5.0	0.82	0.78	5.0	7.34	7.34	6.09	6.09	PIPE 102-101	984.00	983.00	27.863	3.59	24	0.012	0.00	46.42	4.48	984.87 j	983.92

PIPE SIZING CALCULATIONS - 100-YEAR EVENT

LineNo.	InletID	RunoffCoeff	DrainageArea	IncrCxA	InletTime	TotalArea	TotalCxA	Tc	iInlet	iSys	IncrQ	FlowRate	LineID	InvertUp	InvertDn	LineLength	LineSlope	LineSize	n-valuePipe	User StaDn	CapacityFull	VelAve	HGLUp	HGLDn
		(C)	(ac)		(min)	(ac)		(min)	(in/hr)	(in/hr)	(cfs)	(cfs)		(ft)	(ft)	(ft)	(%)	(in)		(ft)	(cfs)	(ft/s)	(ft)	(ft)
1	105	0.00	0.00	0	0.0	0.07	0.05	5.8	0.00	10.02	0.00	0.53	PIPE 105-104	987.75	987.00	127.201	0.59	15	0.012	25.99	5.37	2.66	988.03	987.26
2	106	0.75	0.07	0.05	5.0	0.07	0.05	5.0	10.32	10.32	0.54	0.54	PIPE 106-105	988.75	988.25	20.981	2.38	15	0.012	0.00	10.80	3.57	989.04	988.44
3	201	0.00	0.00	0	0.0	0.30	0.27	6.7	0.00	9.69	0.00	2.64	PIPE 201-102	984.94	983.67	63.923	1.99	15	0.012	22.02	9.88	5.45	985.59	984.11
4	202	0.90	0.26	0.23	5.0	0.26	0.23	5.0	10.32	10.32	2.41	2.41	PIPE 202-201	986.62	986.43	19.454	0.98	15	0.012	0.00	6.91	4.55	987.24	986.94
5	301	0.95	0.04	0.04	5.0	0.04	0.04	5.0	10.32	10.32	0.39	0.39	PIPE 301-201	987.00	986.34	33.104	1.99	15	0.012	0.00	9.88	3.13	987.24	986.51
6	101	0.00	0.00	0	0.0	0.82	0.78	5.2	0.00	10.25	4.28	12.77	PIPE 101-100	983.00	981.00	57.051	3.51	30	0.012	0.00	83.19	8.87	984.20	981.66
7	UG DET.	0.95	0.82	0.78	5.0	0.82	0.78	5.0	10.32	10.32	8.54	8.54	PIPE 102-101	984.00	983.00	27.863	3.59	24	0.012	0.00	46.42	4.75	985.04 j	984.20

STORM SEWER CONSTRUCTION NOTES

1. PIPE LENGTHS SHOWN ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE OR TO THE END OF END SECTION. ALL PIPES SHALL BE FIELD STAKED TO THE INSIDE WALL FACE OF THE STRUCTURE.
2. ALL PIPE SHALL BE PLACED IN TRENCH CONDITIONS. PLACE A MINIMUM OF 2 FEET OF FILL OVER PROPOSED PIPE BEFORE TRENCHING AND PIPE INSTALLATION. PROPOSED FILL SHALL BE PLACED IN ACCORDANCE WITH PROJECT REQUIREMENTS.
3. UTILITY LINES AND STRUCTURES IN FILL AREAS BELOW PIPE GRADE SHALL NOT BE CONSTRUCTED UNTIL ALL CONSOLIDATION OF THE FILL IS COMPLETE AND SO APPROVED BUY THE ON-SITE GEOTECHNICAL ENGINEER.
4. THE DIMENSIONS FOR ALL STRUCTURES ARE FROM INSIDE FACE OF STRUCTURE TO INSIDE FACE OF STRUCTURE.
5. STORM SEWER PIPE SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:
   A) REINFORCED CONCRETE PIPE (RCP), CLASS III PER ASTM C-76, WITH "O-RING" OR SINGLE OFFSET RUBBER GASKETED JOINT (TYLOX SUPERSEAL OR AN APPROVED EQUAL).
6. ALL REINFORCING STEEL SHALL COMPLY WITH ASTM-615 GRADE 60.
7. ALL CURB INLETS AND OTHER STRUCTURES SET AT LOW POINTS ARE TO BE SET LEVEL. ALL OTHER CURB INLETS ARE TO BE SET WITH THE GRADE OF THE TOP OF CURB OR PAVEMENT.
8. ALL HYDRAULIC GRADE LINES (HGL) SHOWN ARE FOR THE 10 AND 100-YEAR STORM.
9. PRECAST STRUCTURES MAY BE USED AT CONTRACTOR'S OPTION. ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED CONCRETE INVERT FROM INVERT IN TO INVERT OUT.
10. THE LIDS OF ALL PRECAST STRUCTURES SHALL BE GROUTED TO THE TOP OF THE WALLS.
11. NORTHING AND EASTINGS SHOWN ARE TO CENTER OF STRUCTURE, OR END OF END SECTION.
12. THE FIRST DIMENSION SHOWN IS THE "L" DIMENSION AND THE SECOND IS THE "W" DIMENSION, SEE DETAILS.
13. ALL HDPE PIPE SHALL BE IN ADS N-12, OR APPROVED EQUAL, MEETING AASHTO M294, TYPE S OR ASTM F2306. THE PIPE SHALL HAVE A SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS. PIPE JOINTS SHALL BE JOINED USING A BELL & SPIGOT JOINT MEETING AASHTO M252, AASHTO M294, OR ASTM F2306. THE JOINT SHALL BE WATERTIGHT, ACCORDING TO THE REQUIREMENTS OF ASTM D 3212, AND GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F477. GASKETS SHALL BE INSTALLED BY THE PIPE MANUFACTURER AND COVERED WITH A REMOVABLE WRAP TO ENSURE THE GASKET IS FREE FROM DEBRIS. A JOINT LUBRICANT SUPPLIED BUY THE MANUFACTURER SHALL BE USED ON THE GASKET AND BELL DURING ASSEMBLY.
14. FITTINGS FOR PLASTIC PIPE SHALL CONFORM TO AASHTO M252, AASHTO M294, OR ASTM F2306. ALL TEES SHALL BE DUAL WALL REDUCING TEES CONSISTENT WITH THE ADS N-12 PIPE WATERTIGHT CONNECTIONS.

No.	REVISIONS	DATE	BY

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SCALE: AS NOTED | DESIGNED BY: LLG | DRAWN BY: LLG | CHECKED BY: PJJ

STATE OF MISSOURI
PATRICK JOYCE
NUMBER PE-2009018925
4/29/2024
PROFESSIONAL ENGINEER

CAPITAL BUILDERS

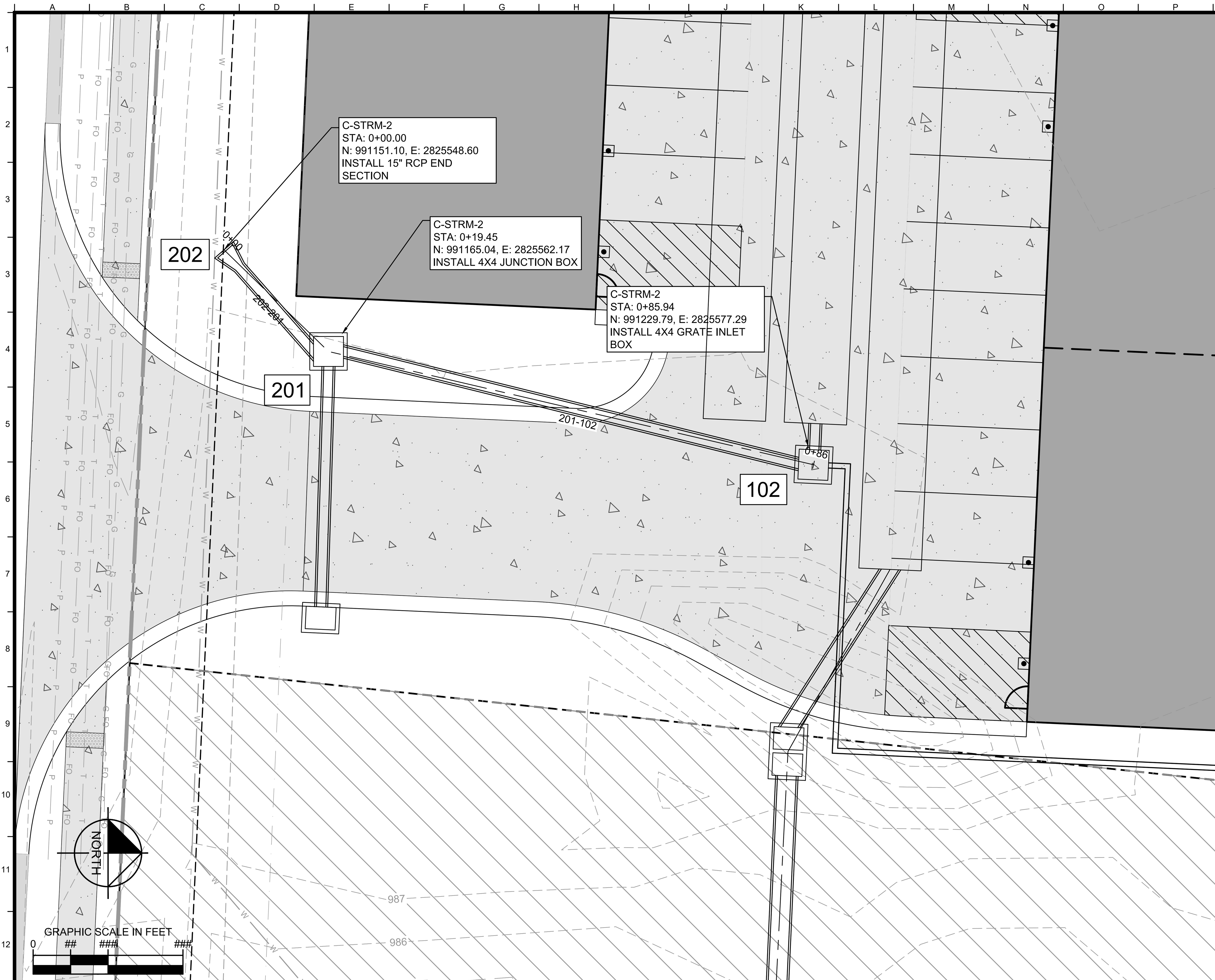
STORMWATER PLAN & PROFILE

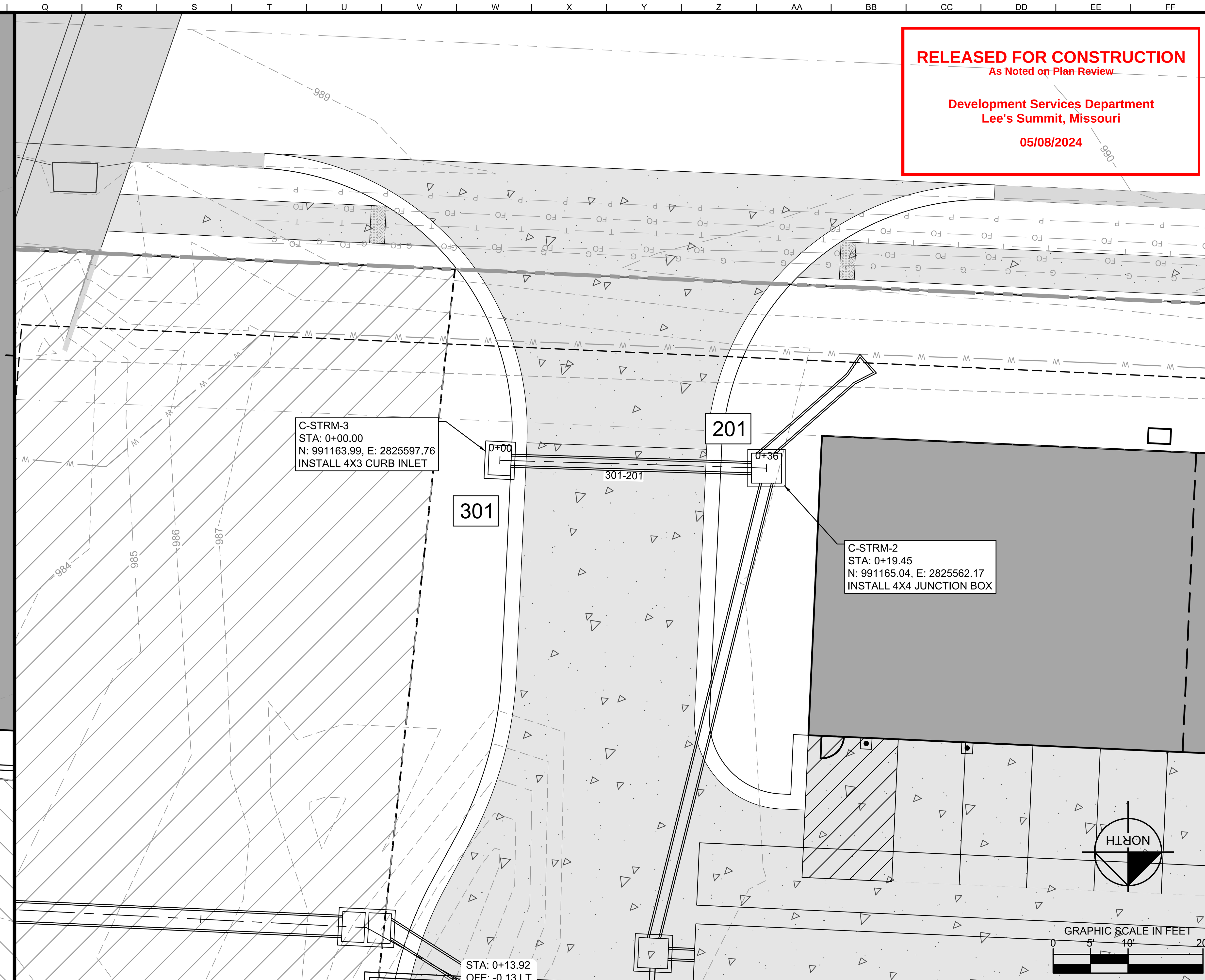
LEE'S SUMMIT FLEX SPACE
60 SE THOMPSON DR
LEE'S SUMMIT, MISSOURI 64081

ORIGINAL ISSUE: 4/29/2024

KHA PROJECT NO. 268442000

SHEET NUMBER
C007



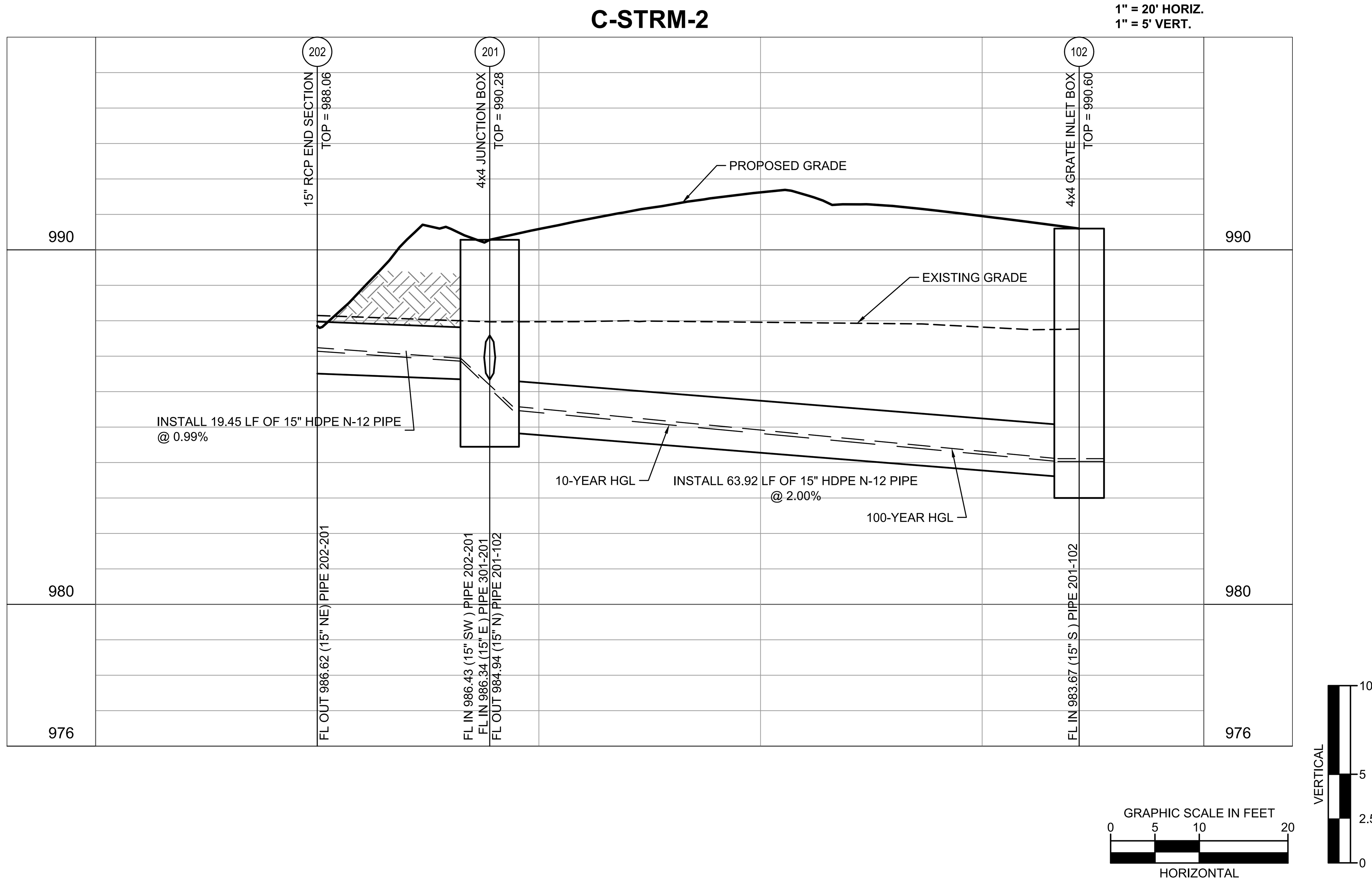


RELEASED FOR CONSTRUCTION
As Noted on Plan Review

Development Services Department
Lee's Summit, Missouri
05/08/2024

C-STRM-2

1" = 20' HORIZ.
1" = 5' VERT.

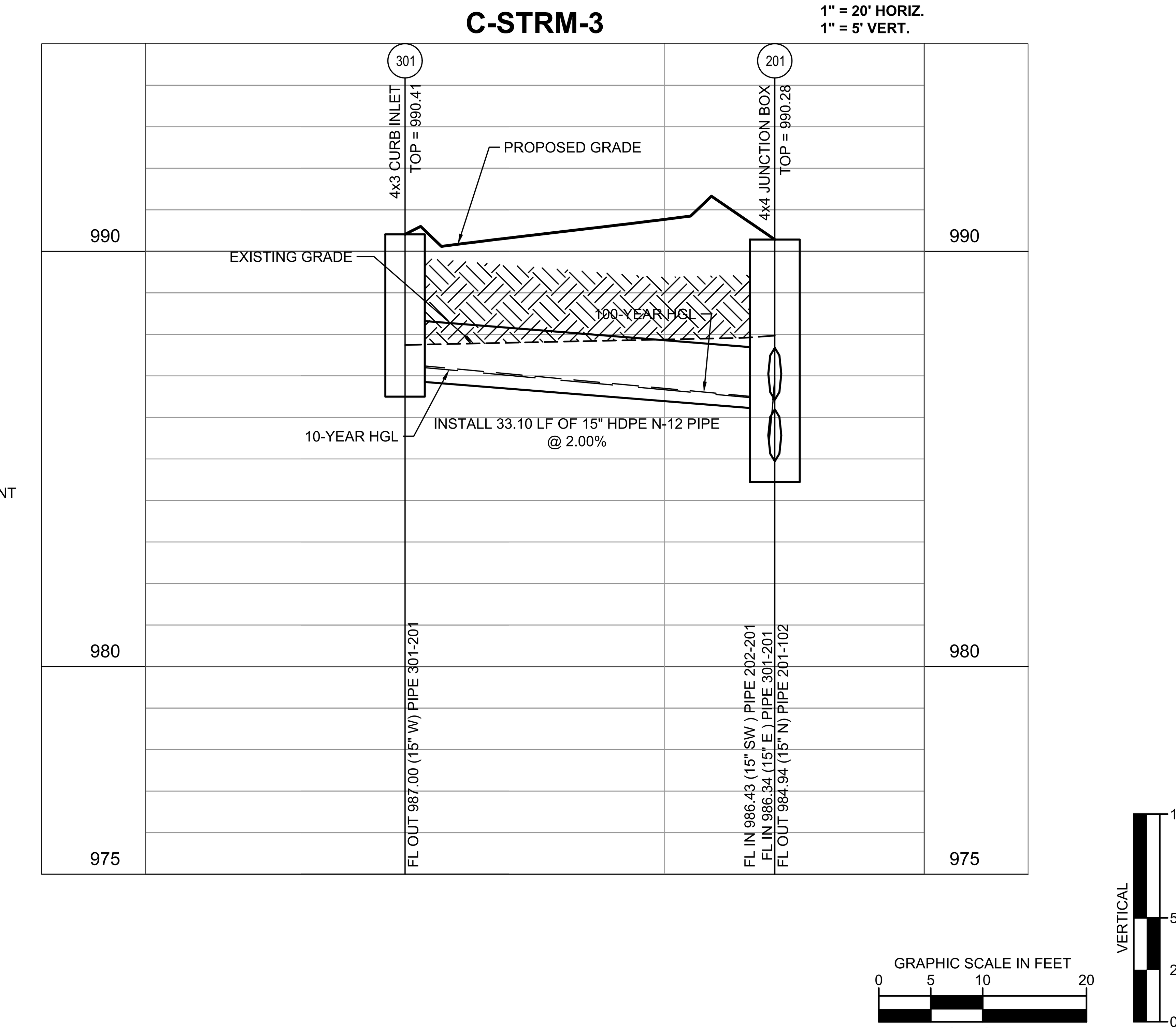


C-STRM-3

1" = 20' HORIZ.
1" = 5' VERT.

NOTE: COMPACTED FILL SHALL BE PLACED TO A MINIMUM OF 18" ABOVE THE TOP OF THE PIPE PRIOR TO INSTALLATION."

MINIMUM FILL PLACEMENT



No.	REVISIONS	DATE	BY

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SCALE: AS NOTED
DESIGNED BY: LLG
DRAWN BY: LLG
CHECKED BY: PJJ

STATE OF MISSOURI
PATRICK J. JOYCE
NUMBER PE-2009030032
4/29/2024
PROFESSIONAL ENGINEER

CAPITAL BUILDERS

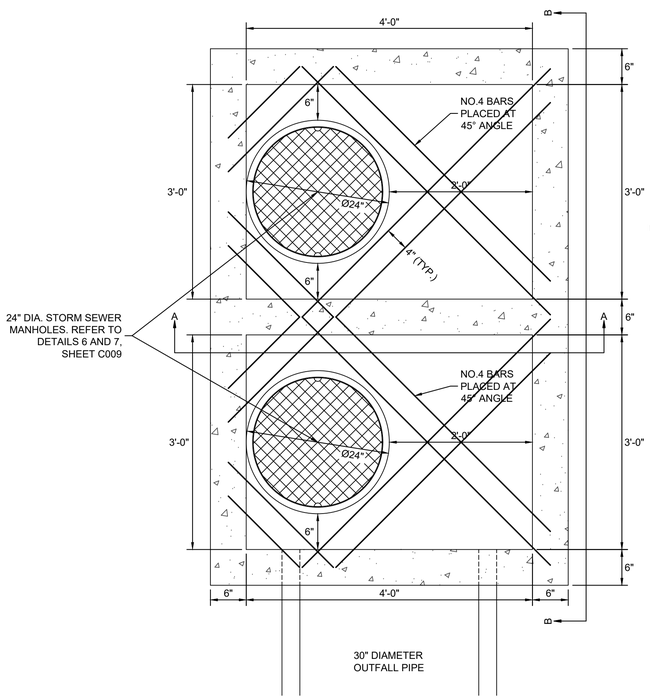
STORMWATER PLAN & PROFILE

LEE'S SUMMIT FLEX SPACE

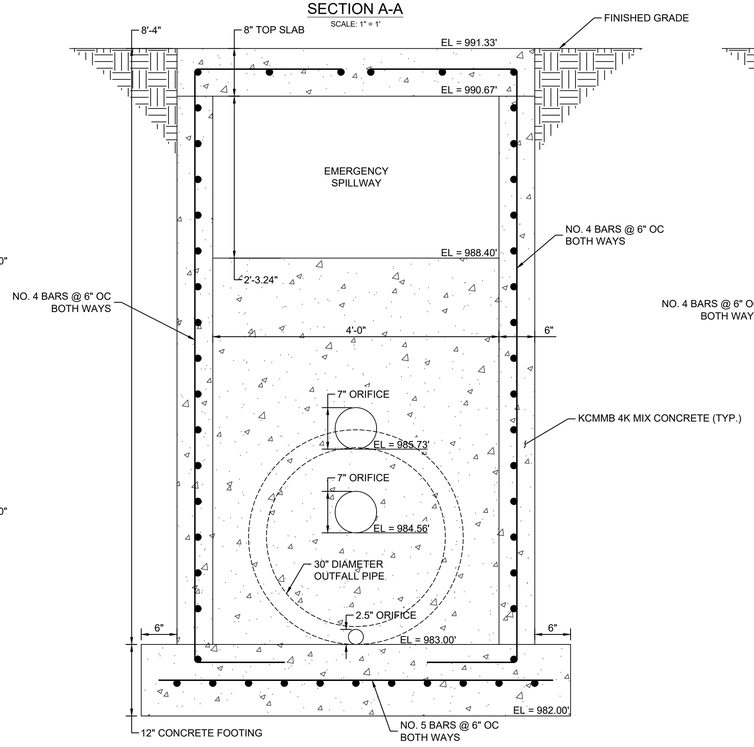
60 SE THOMPSON DR
LEE'S SUMMIT, MISSOURI 64081

ORIGINAL ISSUE: 4/29/2024
KHA PROJECT NO. 268442000
SHEET NUMBER
C008

TOP VIEW
SCALE: 1" = 1'



SECTION A-A
SCALE: 1" = 1'



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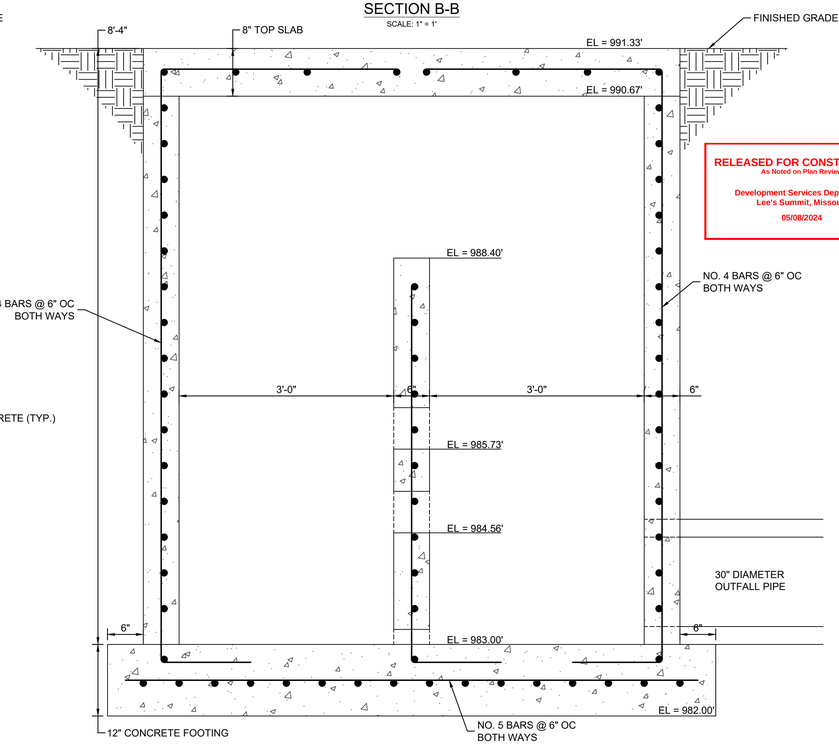
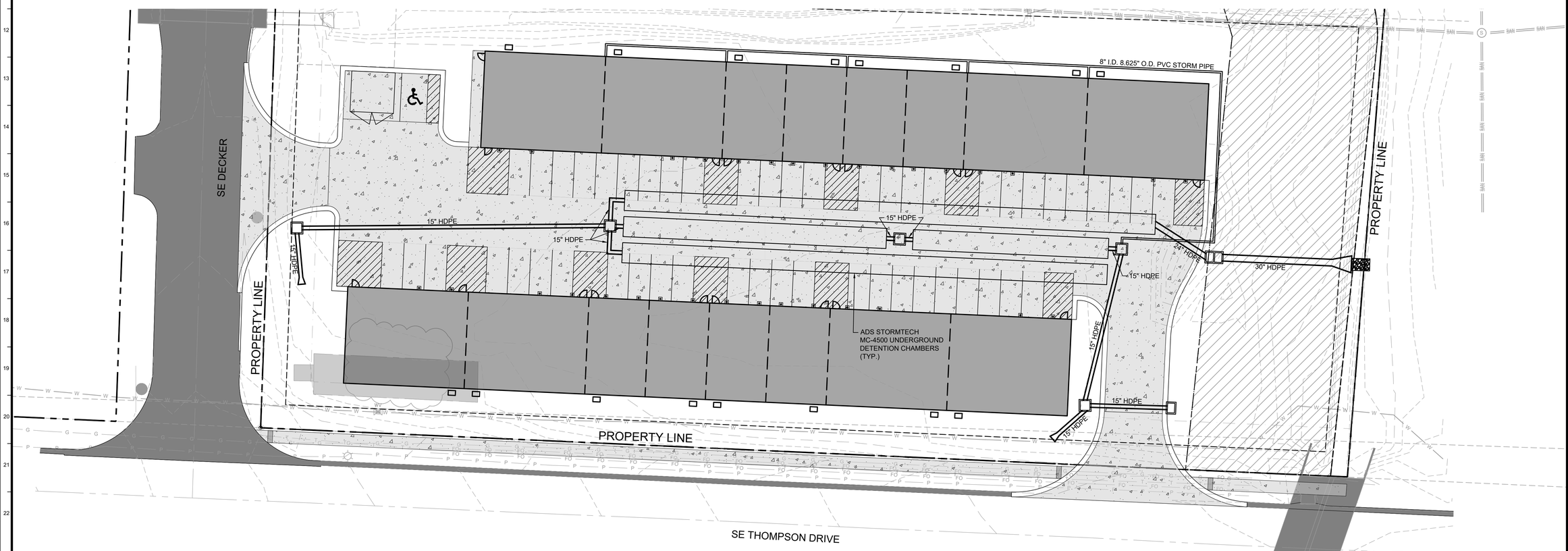


RELEASED FOR CONSTRUCTION
As Noted on Plan Review

Development Services Department
Lee's Summit, Missouri
05/08/2024

1 STRUCTURE 101 - DETENTION OUTLET CONTROL STRUCTURE DETAIL
SCALE: 1" = 1'



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STATE OF MISSOURI
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NUMBER PE-2009018213
4/29/2024
PROFESSIONAL ENGINEER

CAPITAL BUILDERS

STORMWATER BMP

LEE'S SUMMIT FLEX SPACE
60 SE THOMPSON DR
LEE'S SUMMIT, MISSOURI 64081

ORIGINAL ISSUE: 4/29/2024
KHA PROJECT NO. 268442000
SHEET NUMBER
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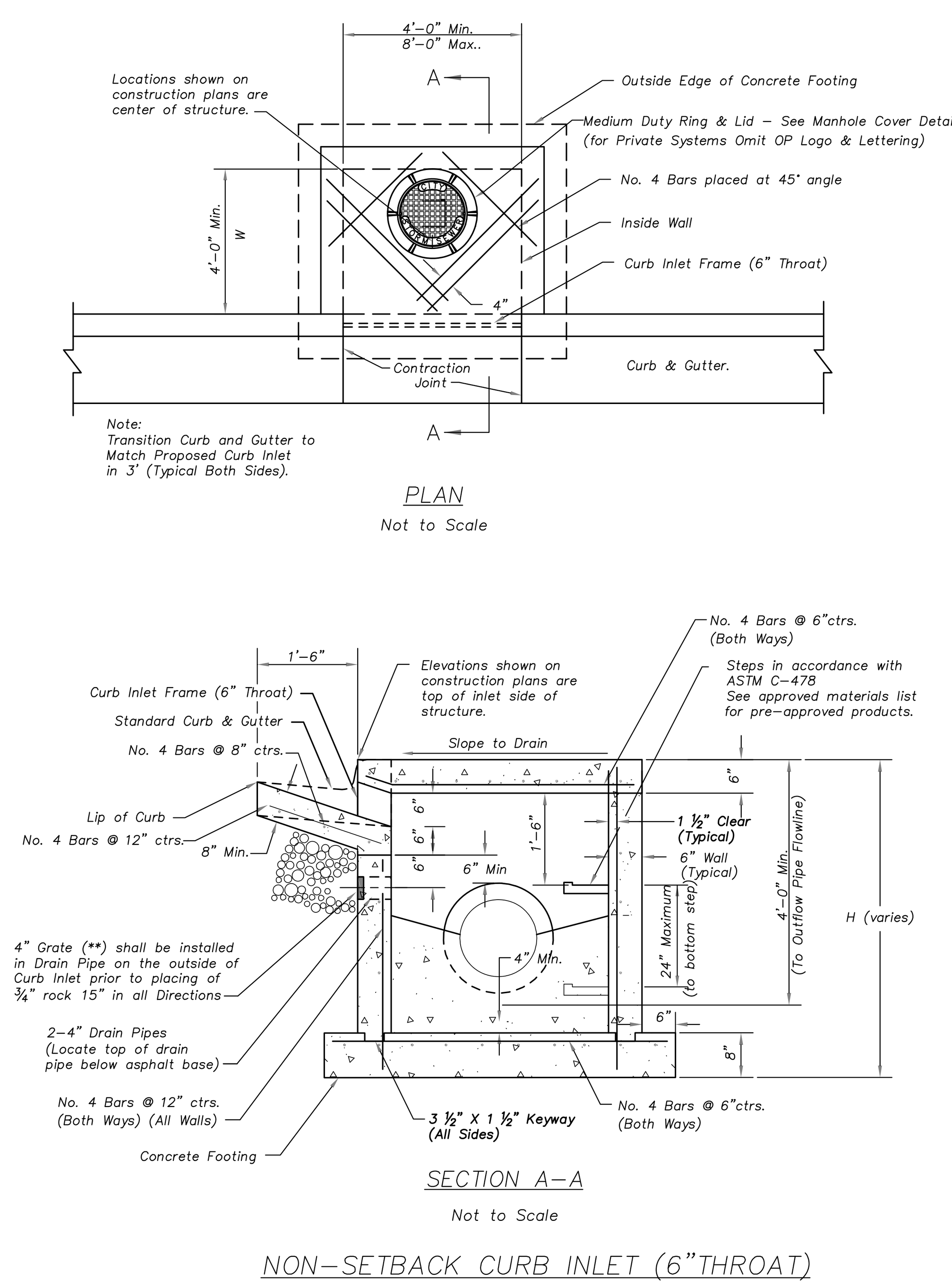


Non–Setback Curb Inlet Notes

General

1. All storm sewer structures shall be pre–cast or poured in place. If pre–cast structures are used for publicly financed, maintained or administered construction, the tops shall be poured in place and the wall steel shall be left exposed to a height 2" below the finish top elevation, or as directed by the City Engineer.
2. Pre–cast shop drawings are to be approved by the City Engineer for publicly financed or administered projects. Pre–cast shop drawings for privately financed projects are to be submitted to the Engineering Services Division of the Planning and Development Services Department upon request.
3. Do not scale these drawings for dimensions or clearances. Any questions regarding dimensions shall be brought to the attention of the City Engineer prior to construction.
4. On–grade inlets shall conform to the street grade. Sump inlets shall be level.
5. The first dimension listed in the construction notes is the "L" dimension. The second dimension is the "W" dimension. The concrete thickness and reinforcement shown is for boxes with ("L"+"H") and ("W"+"H") less than or equal to 20. For boxes with either of these calculations greater than 20, a special design is required.

Concrete

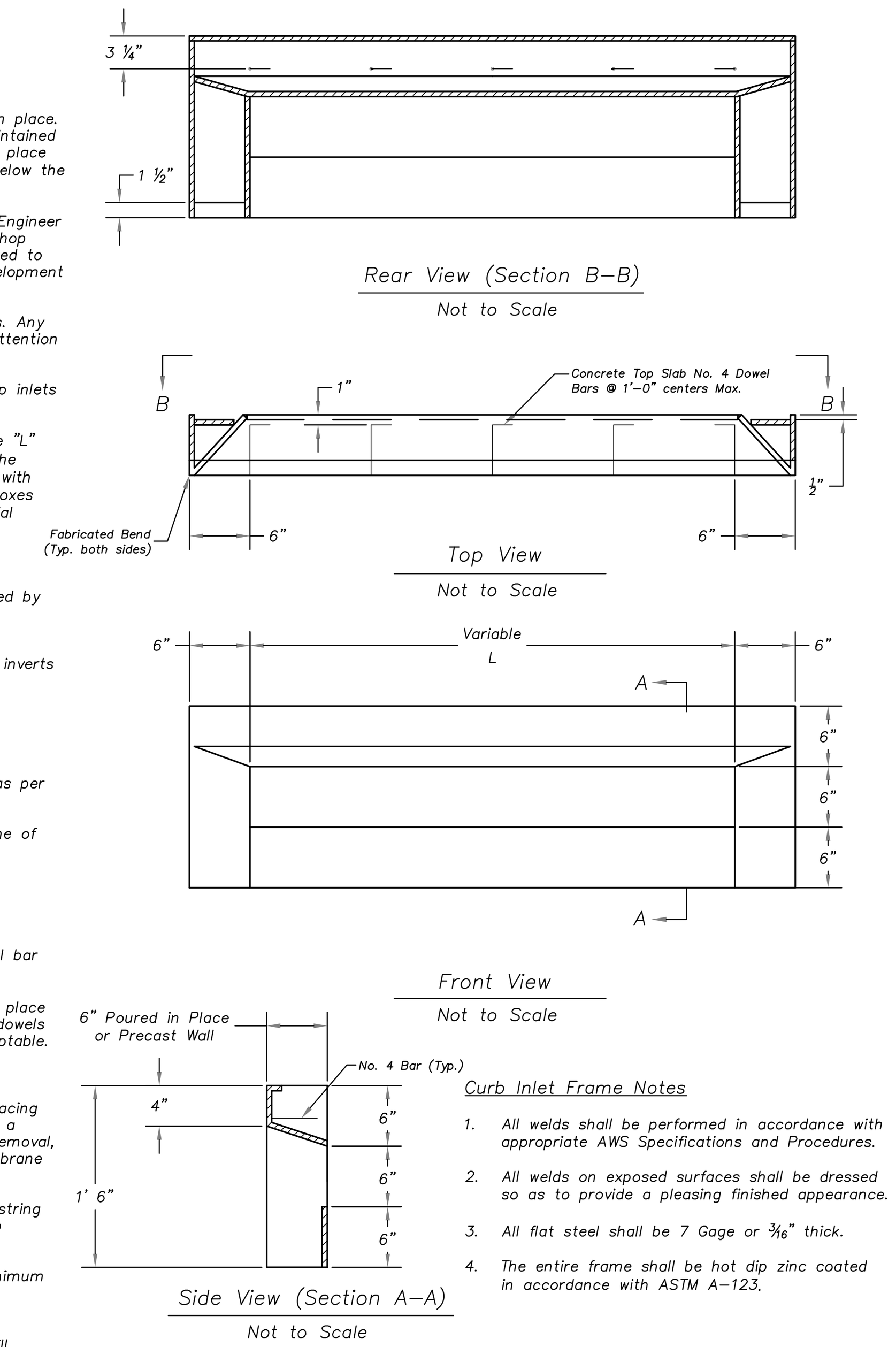
6. Concrete used in this work shall be KCMMB4K, as approved by the Kansas City Metropolitan Materials Board
7. Inlet floors shall be shaped with non–reinforced concrete inverts to provide smooth flow.
8. Bevel all exposed edges with ¾" triangular molding.

Reinforcing Steel

9. Reinforcing steel shall be new billet, minimum Grade 60 as per ASTM A615, and shall be bent cold.
10. All dimensions relative to reinforcing steel are to centerline of bars. 2" clearance shall be provided throughout unless noted otherwise. Tolerance of +/– ⅛" shall be permitted.
11. All lap splices not shown shall be a minimum of 40 bar diameters in length.
12. All reinforcing steel shall be supported on fabricated steel bar supports @ 3'–0" maximum spacing.
13. All dowels shall be accurately placed and securely tied in place prior to placement of bottom slab concrete. Sticking of dowels into fresh or partially hardened concrete will not be acceptable.

Construction

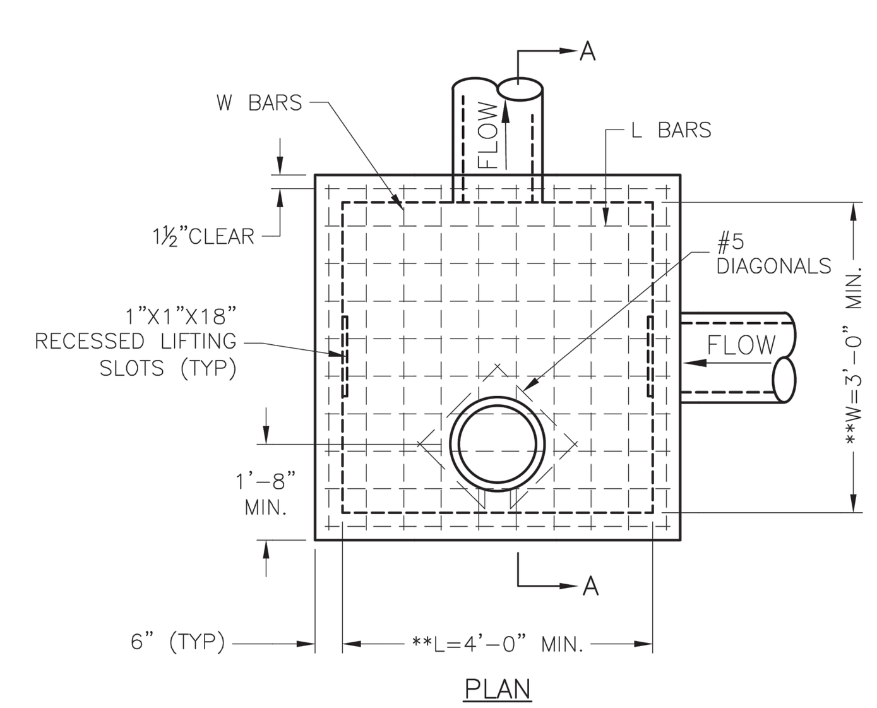
14. The bottom slab shall be at least 24 hours old before placing sidewall concrete. All sidewall forms shall remain in place a minimum of 24 hours after sidewalls are poured before removal, and after removal shall be immediately treated with membrane curing compound.
15. All curb inlet tops are to be contructed after final curb string line has been approved by the engineer and prior to curb construction or as directed by the city engineer.
16. Pipe connections to pre–cast structures shall have a minimum of 6" of concrete around the entire pipe within 2' of the structure.
17. Material selection and compaction requirements for backfill around structures shall be as specified in the Manual of Infrastructure Standards for Right of Way Restoration, as promulgated by the City Engineer.

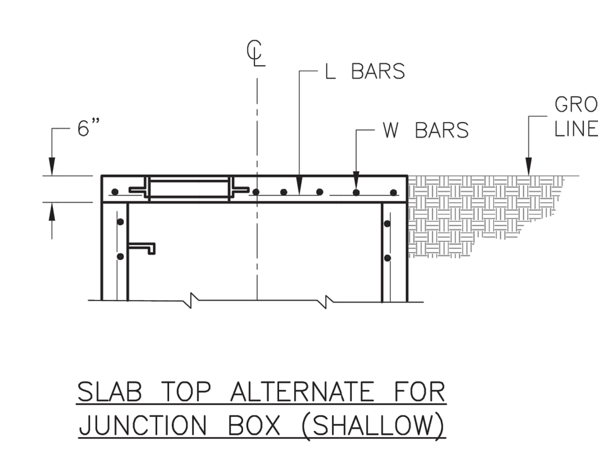


Curb Inlet Frame Notes

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. All flat steel shall be 7 Gage or $\frac{3}{16}$" thick.
4. The entire frame shall be hot dip zinc coated in accordance with ASTM A–123.

2 NON-SETBACK CURB INLET DETAIL
SCALE: NOT TO SCALE

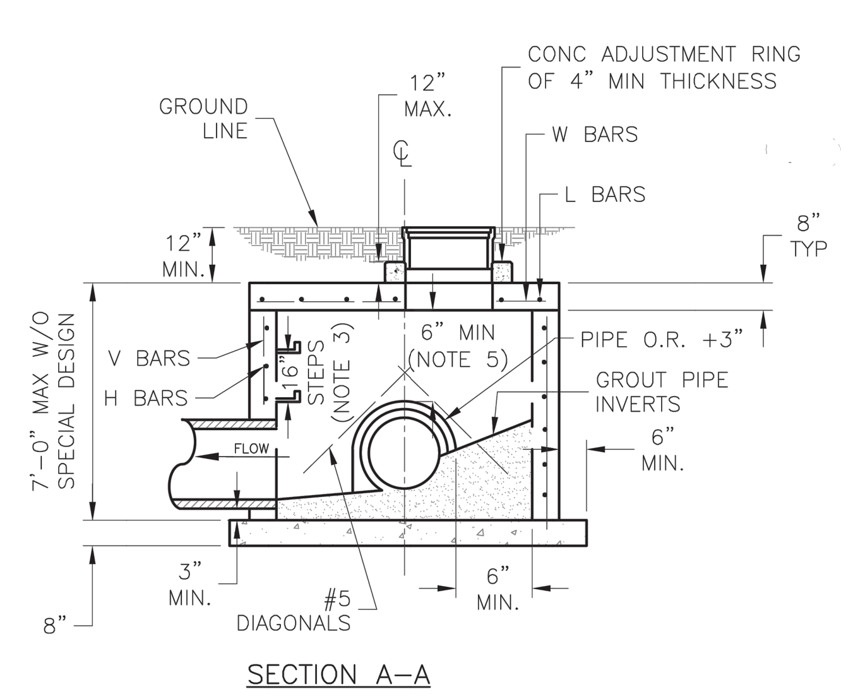


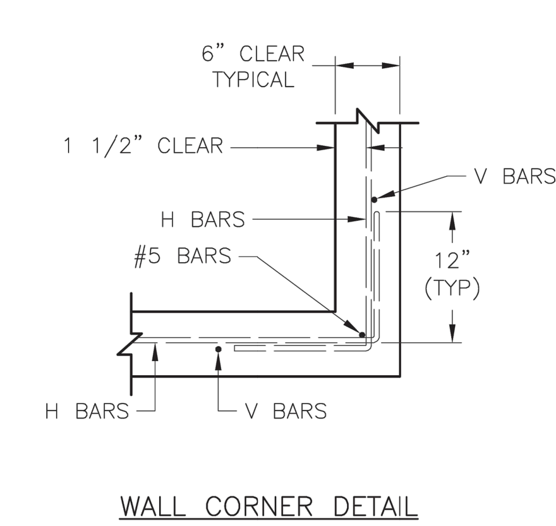


** INCREASE IN MULTIPLES OF 6" (7'–0") MAX WITHOUT SPECIAL DESIGN. (SEE PROJECT PLANS FOR DETAILS)

REINFORCING

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





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: 05/2021
Proj. #:
STM-3

3 JUNCTION BOX DETAIL
SCALE: NOT TO SCALE

No.	REVISIONS	DATE	BY

Kimley»Horn
© 2023 KIMLEY-HORN AND ASSOCIATES, INC.
805 PENNSYLVANIA AVENUE, SUITE 150
KANSAS CITY, MO 64105
PHONE: 816-652-0350
WWW.KIMLEY-HORN.COM

SCALE: AS NOTED
DESIGNED BY: LLG
DRAWN BY: LLG
CHECKED BY: PJJ

STATE OF MISSOURI PATRICK J. JOYCE NUMBER PE-2009030032 PROFESSIONAL ENGINEER 4/29/2024

CAPITAL BUILDERS

DETAILS

LEE'S SUMMIT FLEX SPACE
60 SE THOMPSON DR
LEE'S SUMMIT, MISSOURI 64081

ORIGINAL ISSUE: 4/29/2024
KHA PROJECT NO. 268442000
SHEET NUMBER
C009B

Advanced Drainage Systems, Inc.

SiteAssist®
FOR STORMTECH INSTALLATION INSTRUCTIONS VISIT OUR APP

MC-4500 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-4500.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101.
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-4500 CHAMBER SYSTEM

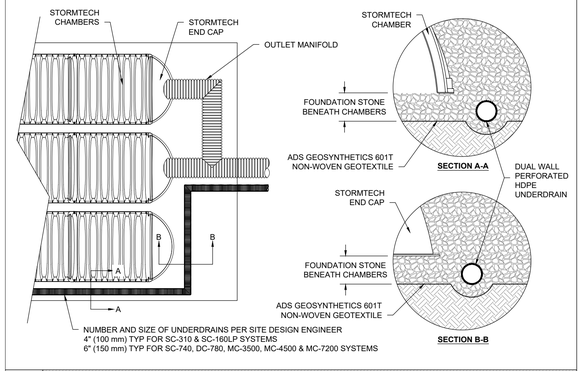
1. STORMTECH MC-4500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
10. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
11. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
12. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

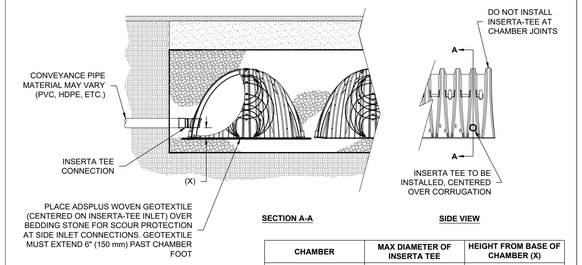
1. STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-4500 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



5 UNDERDRAIN DETAIL

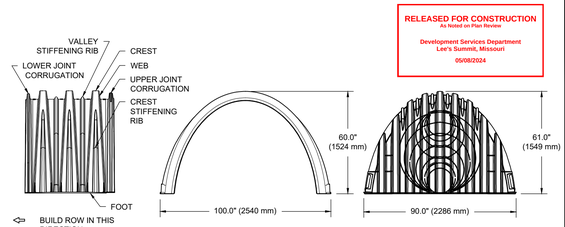


NOTES:
- PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.
- CONTACT ADS ENGINEERING SERVICES IF INSERTA TEE INLET MUST BE RAISED AS NOT ALL INVERTS ARE POSSIBLE.

CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)
MC-7200	12" (300 mm)	8" (200 mm)

INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON

6 INSERTA-TEE SIDE INLET DETAIL



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	100.0" X 60.0" X 48.3"	(2540 mm X 1524 mm X 1227 mm)
CHAMBER STORAGE	106.5 CUBIC FEET	(3.01 m³)
MINIMUM INSTALLED STORAGE*	162.6 CUBIC FEET	(4.60 m³)
WEIGHT (NOMINAL)	125.0 lbs.	(56.7 kg)

NOMINAL END CAP SPECIFICATIONS

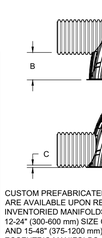
SIZE (W X H X INSTALLED LENGTH)	90.0" X 61.0" X 32.8"	(2286 mm X 1549 mm X 833 mm)
END CAP STORAGE	39.5 CUBIC FEET	(1.12 m³)
MINIMUM INSTALLED STORAGE*	115.3 CUBIC FEET	(3.26 m³)
WEIGHT (NOMINAL)	90 lbs.	(40.8 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

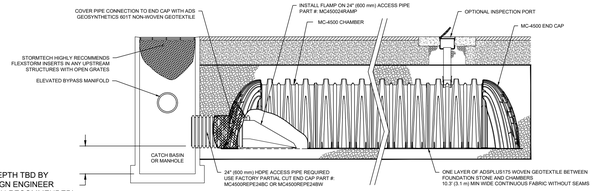
PART #	STUB	B	C
MC4500IEPP06T	6" (150 mm)	42.54" (1081 mm)	---
MC4500IEPP06B		---	0.86" (22 mm)
MC4500IEPP08T	8" (200 mm)	40.50" (1029 mm)	---
MC4500IEPP08B		---	1.01" (26 mm)
MC4500IEPP10T	10" (250 mm)	38.37" (975 mm)	---
MC4500IEPP10B		---	1.33" (34 mm)
MC4500IEPP12T	12" (300 mm)	35.69" (907 mm)	---
MC4500IEPP12B		---	1.55" (39 mm)
MC4500IEPP15T	15" (375 mm)	32.72" (831 mm)	---
MC4500IEPP15B		---	1.70" (43 mm)
MC4500IEPP18T	18" (450 mm)	29.36" (746 mm)	---
MC4500IEPP18TW			
MC4500IEPP18B		---	1.97" (50 mm)
MC4500IEPP18BW			
MC4500IEPP24T	24" (600 mm)	23.05" (585 mm)	---
MC4500IEPP24TW			
MC4500IEPP24B		---	2.26" (57 mm)
MC4500IEPP24BW			
MC4500IEPP30BW	30" (750 mm)	---	2.95" (75 mm)
MC4500IEPP36BW	36" (900 mm)	---	3.25" (83 mm)
MC4500IEPP42BW	42" (1050 mm)	---	3.55" (90 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PREFABRICATED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-4500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

2 MC-4500 TECHNICAL SPECIFICATIONS



INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

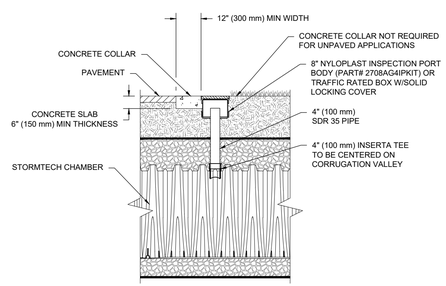
STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

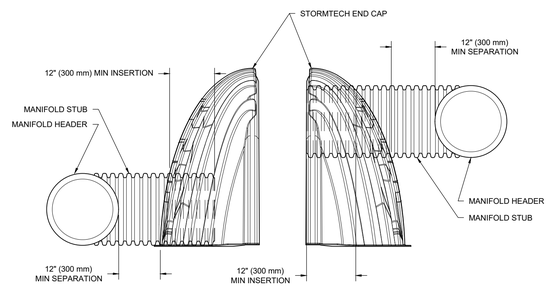
1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

3 MC-4500 ISOLATOR ROW PLUS DETAIL



NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.

4 4" PVC INSPECTION PORT DETAIL (MC SERIES CHAMBER)



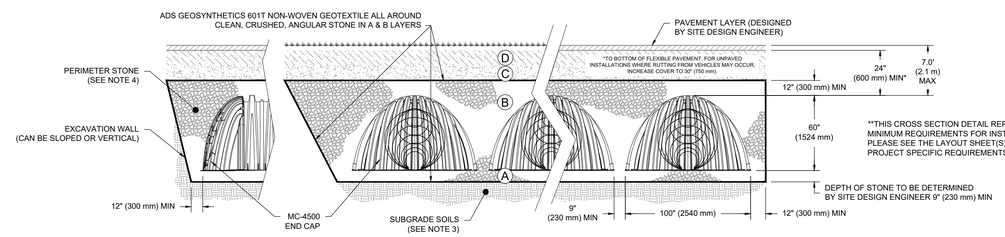
NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

7 MC-SERIES END CAP INSERTION DETAIL

ACCEPTABLE FILL MATERIALS: STORMTECH MC-4500 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101
2. MC-4500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

1 MC-4500 CROSS SECTION DETAIL

RELEASED FOR CONSTRUCTION
As Noted on Plan Review
Development Services Department
Lee's Summit, Missouri
05/08/2024

DRAWN: DATE:
REVIEWED: PROJECT NO:
REV: NOT TO SCALE

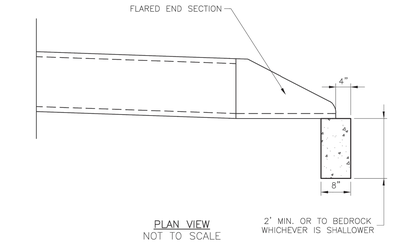
MC-4500 STANDARD DETAILS

StormTech® Chamber System
888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD
HILLIARD, OH 43026

Advanced Drainage Systems, Inc.

SHEET
C009C

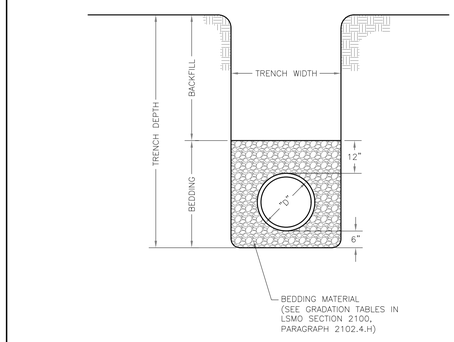


LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

FLARED END SECTION SUPPORT DETAIL

Date: 05/2021 | Drawn By: MJF | Checked By: DL | STM-5

4 FLARED END SECTION WITH TOE WALL DETAIL
SCALE: NOT TO SCALE



NOTES:

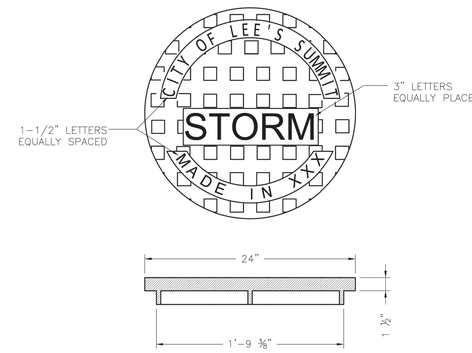
1. FOR TRENCHING AND PAVEMENT PATCHING REPAIRS WITHIN EXISTING OR FUTURE STREETS SEE STANDARD DETAIL GEN-5.
2. EXCAVATION DEPTH, SLOPES, SHORING, AND STOCKPILE LOCATIONS SHALL COMPLY WITH OSHA REGULATIONS.

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

PIPE BEDDING DETAIL

Date: 08/2023 | Drawn By: MJF | Checked By: GMB | GEN-6

5 PIPE BEDDING DETAIL
SCALE: NOT TO SCALE



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

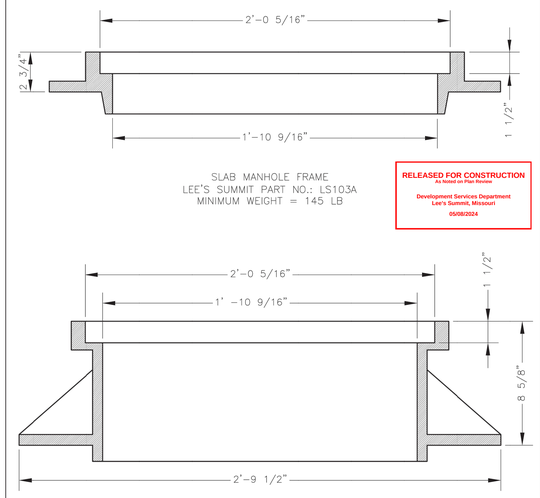
*COVER AND FRAME MODEL INFORMATION REFER TO THE STORMWATER APPROVED PRODUCT LIST.

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

STORM MANHOLE COVER DETAIL

Date: 05/2021 | Drawn By: MJF | Checked By: DL | STM-6

6 STORM MANHOLE COVER DETAIL
SCALE: NOT TO SCALE



RELEASED FOR CONSTRUCTION
As Noted on Plan Review
Development Services Department
Lee's Summit, Missouri
05/08/2024

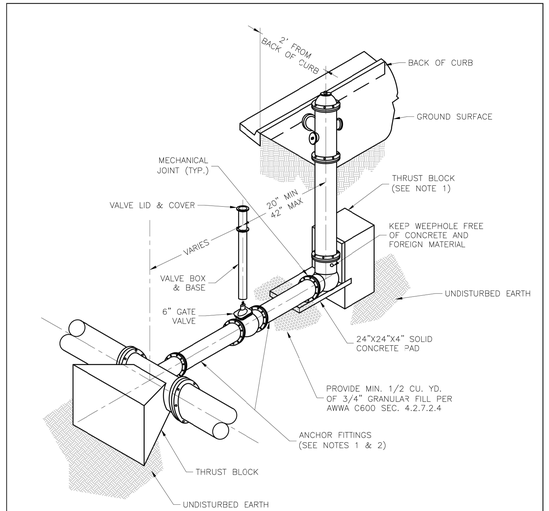
*COVER AND FRAME MODEL INFORMATION REFER TO THE STORMWATER APPROVED PRODUCTS LIST.

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

STORM MANHOLE FRAME DETAIL

Date: 05/2021 | Drawn By: MJF | Checked By: DL | DWG-7

7 STORM MANHOLE FRAME DETAIL
SCALE: NOT TO SCALE



NOTES:

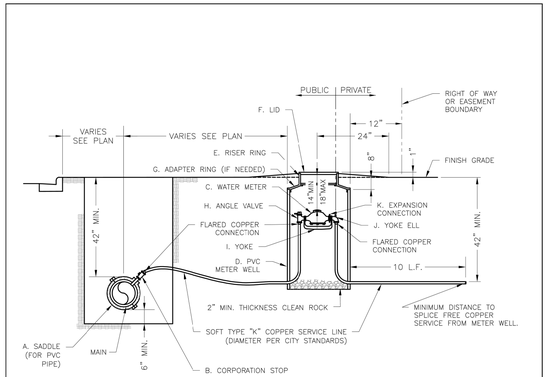
1. WHEN RETAINER GLANDS ARE USED IN LIEU OF ANCHOR FITTINGS, HORIZONTAL THRUST BLOCKS ARE REQUIRED.
2. GATE VALVE MAY BE BOLTED DIRECTLY TO ANCHOR TEE.
3. SEE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR FIRE HYDRANT, VALVES, VALVE BOX LID, AND COVER.
4. BOTTOM HYDRANT FLANGE SHALL BE 2" TO 6" ABOVE 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 - STRAIGHT SET

Date: 08/2023 | Drawn By: MJF | Checked By: KLY | WAT-7

8 HYDRANT - STRAIGHT SET DETAIL
SCALE: 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
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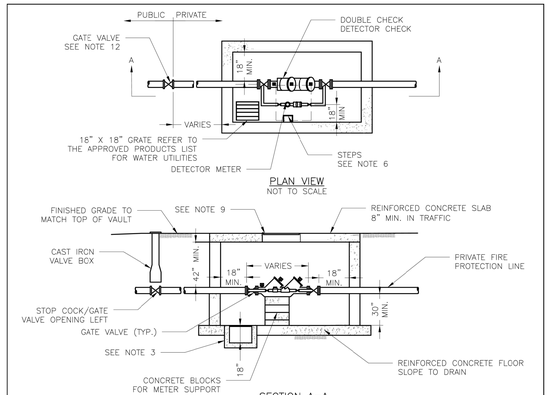
SERVICE CONNECTION WITH METER WELL

Date: 08/2023 | Drawn By: MJF | Checked By: KLY | WAT-11

9 SERVICE CONNECTION WITH METER WELL DETAIL
SCALE: NOT TO SCALE



GENERAL NOTES:

1. METER VAULT WALLS TO BE POURED OR PRECAST CONCRETE.
2. METER VAULT ROOF TO BE REINFORCED CONCRETE OPENING CENTERED OVER DETECTOR METER.
3. METER VAULT TO BE LOCATED, WHEN POSSIBLE, OUTSIDE TRAFFIC AREA WHERE SURFACE WATER WILL NOT DRAIN INTO IT. VAULT MUST BE KEPT FREE OF WATER. PROVIDE CONCRETE SUMP AS A MINIMUM. WHERE PRACTICAL, PROVIDE A 2" PIPE DRAIN WITH AN ABOVE-GROUND DISCHARGE POINT. PROJECT OWNER MAY DESIRE A PERMANENTLY INSTALLED SUMP PUMP.
4. ALL PIPE SHALL BE DUCTILE IRON CLASS 50. ALL PIPE FITTINGS FROM THE CITY WATER MAIN THROUGH THE VAULT SHALL BE PROVIDED WITH RESTRAINED JOINT FITTINGS.
5. ALL FITTINGS TO BE BRASS.
6. STEPS SHALL BE IN ACCORDANCE WITH THE APPROVED PRODUCTS LIST FOR WATER UTILITIES AND SHALL BE ON 16" CENTERS.
7. A DEPARTMENT OF NATURAL RESOURCES APPROVED DOUBLE CHECK DETECTOR CHECK BACKFLOW PREVENTER MUST BE USED. FOR A COPY OF THE MISSOURI DEPARTMENT OF NATURAL RESOURCES APPROVED BACKFLOW PREVENTION ASSEMBLIES, CONTACT THE WATER UTILITIES OPERATIONS DIVISION AT 816-969-1940. AS OF JANUARY 1, 1987, THE DNR REQUIRES FIRE SPRINKLER SYSTEMS USING CHEMICALS TO HAVE A DNR APPROVED PRESSURE BACKFLOW PREVENTER INSTALLED, PRIOR TO THE MIXING POINT.
8. ALL VALVES SHALL HAVE RISING STEMS.
9. FOR MANHOLE COVERS, SELECT A MANHOLE FOUND ON THE APPROVED PRODUCTS LIST FOR WATER UTILITIES SUITABLE FOR EITHER TRAFFIC OR NON-TRAFFIC CONDITIONS.
10. A MINIMUM OF 18" CLEARANCE SHALL BE PROVIDED AROUND ALL PIPING, VALVES, APPURTENANCES, ETC.
11. METER SHALL BE OWNED AND MAINTAINED BY THE WATER UTILITIES DEPARTMENT.
12. IF PUBLIC WATER IS LOCATED ON THE OPPOSITE SIDE OF THE STREET, THEN THE PUBLIC WATER MAIN RESPONSIBILITY OF THE WATER UTILITIES DEPARTMENT ENDS AT THE GATE VALVE NEAREST THE VAULT.

LEE'S SUMMIT
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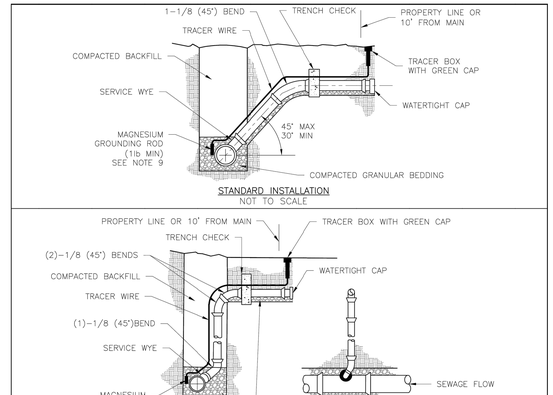
VAULT FOR DOUBLE CHECK DETECTOR CHECK

Date: 08/2023 | Drawn By: MJF | Checked By: KLY | WAT-12

10 VAULT FOR DOUBLE CHECK DETECTOR CHECK DETAIL
SCALE: NOT TO SCALE



NOTES:

1. ALL SEWER STUBS SHALL BE CONSTRUCTED TO PROPERTY LINE OR 10' MINIMUM FROM THE MAIN, WHICHEVER IS GREATER. WHERE SIDEWALKS ARE PRESENT, CONTRACTOR SHALL EXTEND SERVICE LINE UNDER EXISTING SIDEWALK TO TWO FEET BEYOND.
2. IMPERVIOUS TRENCH CHECKS SHALL BE PLACED ON BUILDING SEWER STUBS (AT LEAST 5' AWAY FROM THE SANITARY SEWER MAIN).
3. 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.
4. SEE SPECIFICATION SECTION 2100 FOR SEWER MAIN BEDDING AND BACKFILL.
5. TRACER WIRE SHALL BE INSTALLED PER SPECIFICATION SECTION 3500. TRACER WIRE TERMINAL BOXES SHALL BE INSTALLED DIRECTLY ABOVE THE SEWER SERVICE OR AS DETERMINED BY THE ENGINEER.
6. 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.
7. TRACER WIRE BOX SHALL BE INSTALLED WITHIN 1.0' OF PROPERTY LINE.
8. THE TRACER WIRE SHALL REMAIN CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. SPLICES IN THE TRACER WIRE SHOULD BE MADE WITH LOCKING SPLICE CONNECTOR MANUFACTURED WITH A WATERPROOF DIELECTRIC SEALANT.

LEE'S SUMMIT
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SANITARY SEWER STUB DETAIL

Date: 08/2023 | Drawn By: MJF | Checked By: AB | SAN-1

11 SANITARY SEWER STUB DETAIL
SCALE: NOT TO SCALE

No.	REVISIONS	DATE	BY

Kimley»Horn

805 PENNSYLVANIA AVENUE, SUITE 150
KANSAS CITY, MO 64105
PHONE: 816-200-0200
WWW.KIMLEY-HORN.COM

SCALE: AS NOTED | DESIGNED BY: LLG | DRAWN BY: LLG | CHECKED BY: PJJ

STATE OF MISSOURI
PATRICK J. JOYCE
NUMBER PE-2009018923
4/29/2024
PROFESSIONAL ENGINEER

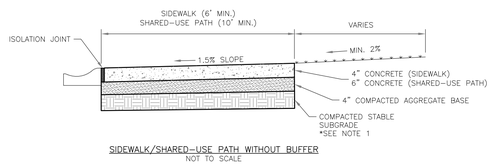
CAPITAL BUILDERS

DETAILS

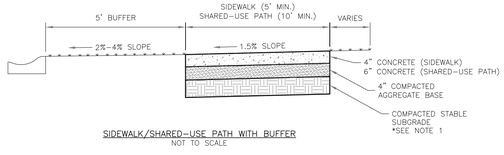
LEE'S SUMMIT FLEX SPACE

60 SE THOMPSON DR
LEE'S SUMMIT, MISSOURI 64081

ORIGINAL ISSUE: 4/29/2024
KHA PROJECT NO. 268442000
SHEET NUMBER C010



SIDEWALK/SHARED-USE PATH WITHOUT BUFFER
NOT TO SCALE



SIDEWALK/SHARED-USE PATH WITH BUFFER
NOT TO SCALE

GENERAL NOTES:

1. SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
2. 1.5% CROSS SLOPE MUST BE MAINTAINED THROUGH DRIVEWAYS.
3. KCMMB 4K CONCRETE MIX SHALL BE REQUIRED FOR ALL SIDEWALKS/SHARED-USE PATHS.
4. ALL SIDEWALK/SHARED-USE PATHS SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).
5. AN ISOLATION JOINT SHALL BE PLACED AT A MAXIMUM OF 100 FT. CONSTRUCTION JOINTS SHALL BE PLACED THE SAME WIDTH OF SIDEWALK/SHARED-USE PATHS, BUT NO GREATER THAN 10 FT.
6. AN ISOLATION JOINT SHALL BE PLACED WHERE THE SIDEWALK/SHARED-USE PATHS MEETS A RESIDENTIAL DRIVEWAY.
7. SHARED-USE PATHS WIDTH SHALL BE 10 FT. WIDE.
8. SIDEWALK/SHARED-USE PATHS FINISHING SHALL BE FULL BROOM FINISH OR AS DIRECTED BY CITY INSPECTOR.
9. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.

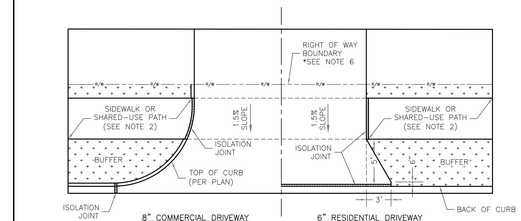
LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

SIDEWALK/SHARED-USE PATH DETAIL

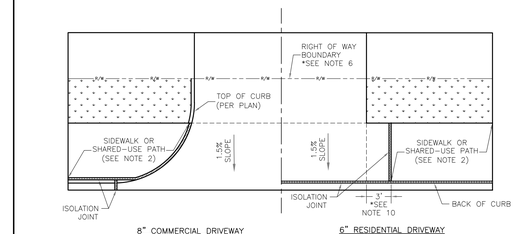
Date: 08/2023
Drawn By: MJF
Checked By: DL

GEN-2

12 SIDEWALK WITH BUFFER DETAIL
SCALE: NOT TO SCALE



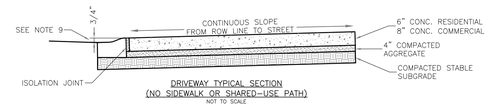
DRIVEWAY WITH BUFFER
NOT TO SCALE



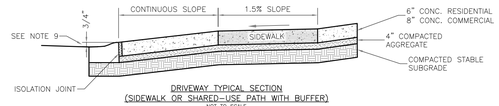
DRIVEWAY WITHOUT BUFFER
NOT TO SCALE

GENERAL NOTES

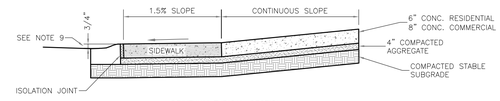
1. SUBGRADE SHALL BE STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
2. ALL DRIVE APPROACHES SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG) FOR SLOPE REQUIREMENTS WHEN SIDEWALK IS REQUIRED (SEE ADA RAMP RETROFIT DETAIL GEN-3B, SIDEWALK/SHARED 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 NEED 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 CG-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.



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

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

Drawn By: MJF
Checked By: DL
Date: 08/2023
Proj. #:

GEN-1

13 DRIVEWAY DETAIL
SCALE: NOT TO SCALE

RELEASED FOR CONSTRUCTION
As Noted on Plan Review

Development Services Department
Lee's Summit, Missouri
05/08/2024

No	REVISIONS	DATE	BY

Kimley»Horn

805 PENNSYLVANIA AVENUE, SUITE 150
KANSAS CITY, MO 64105
PHONE: 816-600-5599
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SCALE: AS NOTED
DESIGNED BY: LLG
DRAWN BY: LLG
CHECKED BY: PJJ

STATE OF MISSOURI
PATRICK J. JOYCE
NUMBER PE-2009018013
4/29/2024
PROFESSIONAL ENGINEER

CAPITAL BUILDERS

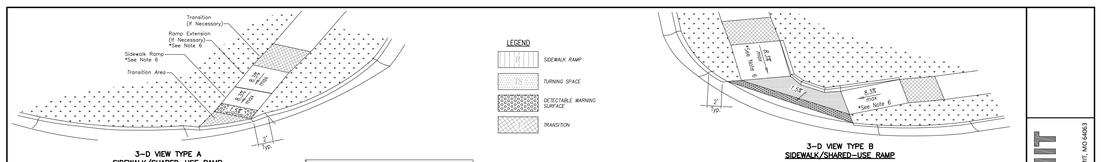
DETAILS

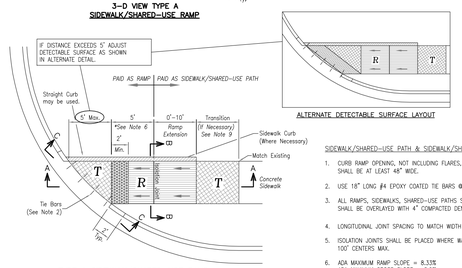
LEE'S SUMMIT
FLEX SPACE
60 SE THOMPSON DR
LEE'S SUMMIT, MISSOURI 64081

ORIGINAL ISSUE:
4/29/2024

KHA PROJECT NO.
268442000

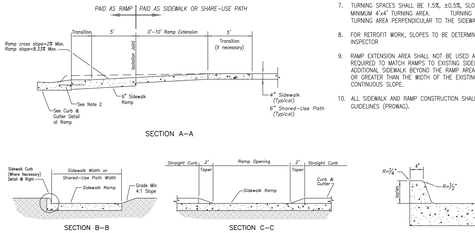
SHEET NUMBER
C011





SIDEWALK/SHARED-USE PATH & SIDEWALK/SHARED-USE RAMP NOTES:

1. CURB RAMP OPENING, NOT INCLUDING FLARES, SHALL MATCH EXISTING SIDEWALK WIDTH AND OPENING SHALL BE AT LEAST 48" WIDE.
2. USE 18" LONG #4 EPOXY COATED TIE BARS @ 24" O.C. EMBED TIE BARS 9" IN EACH DIRECTION.
3. ALL RAMPS, SIDEWALKS, SHARED-USE PATHS SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
4. LONGITUDINAL JOINT SPACING TO MATCH WIDTH OF SIDEWALK.
5. ISOLATION JOINTS SHALL BE PLACED WHERE WALK ABUTS DRIVEWAYS AND SIMILAR STRUCTURES, AND 100' CENTERS MAX.
6. ADA MAXIMUM RAMP SLOPE = 8.33%
   ADA MAXIMUM CROSS SLOPE = 2.0%
   ROADWAY EXCEPTION WHERE EXISTING ROAD PROFILE GRADE DOES NOT ALLOW RAMP TO MEET RAMP SLOPE REQUIREMENT OF 8.33% OR LESS, THE RAMP SHALL BE EXTENDED TO A LENGTH OF 15 FEET TO MATCH EXISTING SIDEWALK. CROSS SLOPE OF RAMP SHALL BE 1.5%, ±0.5%.
7. TURNING SPACES SHALL BE 1.5%, ±0.5%, SLOPE IN ANY DIRECTION. TURNING SPACES SHALL HAVE A MINIMUM 4'x4' TURNING AREA. TURNING SPACES, WITH A SIDEWALK CURB, SHALL HAVE A 5' TURNING AREA PERPENDICULAR TO THE SIDEWALK CURB.
8. FOR RETROFIT WORK, SLOPES TO BE DETERMINED IN FIELD BY CONTRACTOR AND APPROVED BY CITY INSPECTOR
9. RAMP EXTENSION AREA SHALL NOT BE USED AS TRANSITION TO EXISTING SIDEWALK. ANY TRANSITIONS REQUIRED TO MATCH RAMPS TO EXISTING SIDEWALK SHALL REQUIRE REMOVAL AND REPLACEMENT OF ADDITIONAL SIDEWALK BEYOND THE RAMP AREA. SIDEWALK TRANSITION LENGTH SHALL BE EQUAL TO OR GREATER THAN THE WIDTH OF THE EXISTING SIDEWALK. RAMP EXTENSIONS SHALL BE A CONTINUOUS SLOPE.
10. ALL SIDEWALK AND RAMP CONSTRUCTION SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).

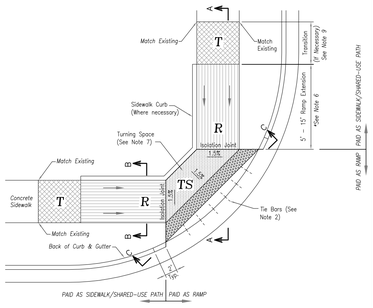


TYPE A & B SIDEWALK RAMP
Not to Scale

SIDEWALK CURB DETAIL
Not to Scale

JOINT DETAILS
Not to Scale

CURB & GUTTER DETAIL AT RAMP
Not to Scale



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

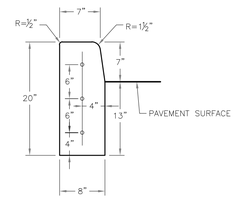
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

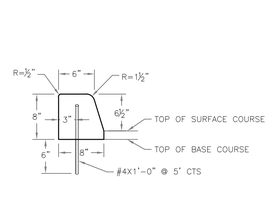
ADA RAMP RETROFIT DETAIL

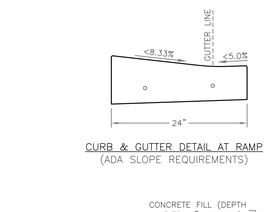
Drawn By: MJF
Checked By: DL
Date: 08/2023
Proj. #:

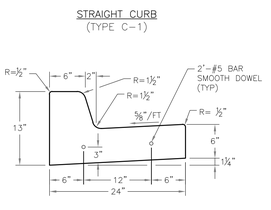
GEN-3A

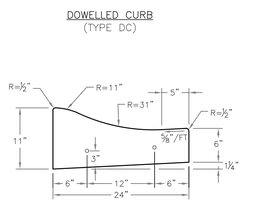
14 TYPE A SIDEWALK ADA RAMP RETROFIT DETAIL
SCALE: NOT TO SCALE

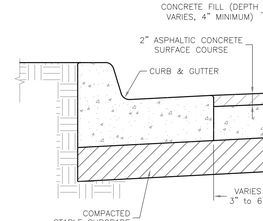






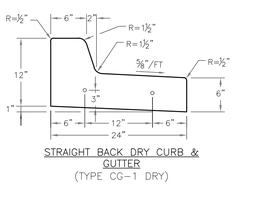


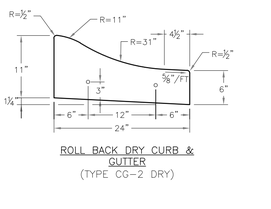




GENERAL NOTES

1. ¾" ISOLATION JOINTS WITH 2 (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 APPROXIMATELY 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.
8. ALL DOWELS & TIE BARS SHALL BE EPOXY COATED.





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

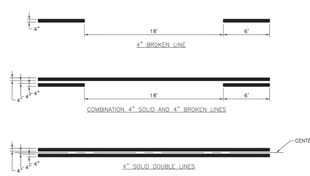
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

CURB & GUTTER DETAIL

Drawn By: MJF
Checked By: DL
Date: 08/2023
Proj. #:

GEN-4

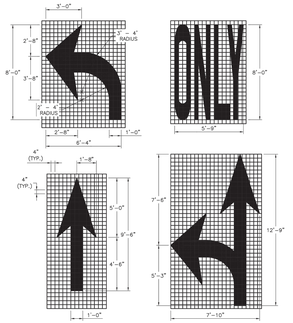
15 STRAIGHT BACK CURB AND GUTTER DETAIL
SCALE: NOT TO SCALE



TYPICAL LINE DETAILS

NOTES:

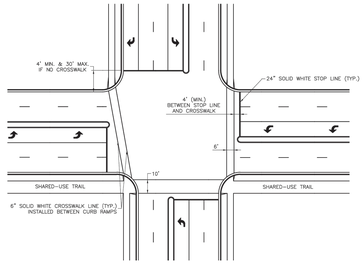
1. ALL EDGE LINE, CENTER LINE, AND LANE LINE PAVEMENT MARKINGS SHALL BE 4" WIDE UNLESS OTHERWISE NOTED.
2. EDGE LINES SHALL BE CONTINUOUS SOLID WHITE OR YELLOW LINES. RIGHT SIDE EDGE LINES SHALL BE SOLID WHITE. MEDIAN OR LEFT SIDE EDGE LINES ON DIVIDED ROADWAYS ARE TO BE SOLID YELLOW. EDGE LINES AND CENTER LINES SHALL BE CONTINUOUS ACROSS DRIVEWAYS.



ARROW AND SYMBOL DETAILS

NOTES:

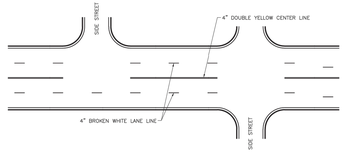
1. ALL ARROW AND SYMBOL MARKINGS SHALL BE WHITE, AND SHALL BE CENTERED IN THEIR RESPECTIVE TRAFFIC LANES.
2. RIGHT-TURN AND COMBINATION RIGHT-TURN/STRAIGHT ARROWS ARE REVERSE OF ARROWS SHOWN.



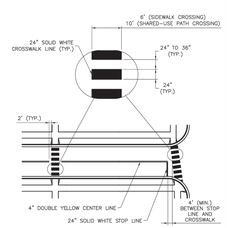
TYPICAL INTERSECTION MARKINGS

NOTES:

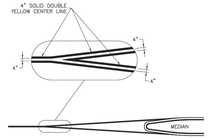
1. TRANSVERSE CROSSWALK LINES SHALL BE INSTALLED SUCH THAT THE DISTANCE BETWEEN LINES IS AT LEAST 6 FEET OR 10 FEET.
2. STOP LINES ARE REQUIRED AT SIGNALIZED INTERSECTIONS, ON MULTI-LANE STOP CONTROLLED APPROACHES, OR ADVANCE OF CROSSWALKS AT CONTROLLED INTERSECTIONS.



TYPICAL MARKINGS FOR FOUR-LANE UNDIVIDED ROADWAY



TYPICAL MID-BLOCK OR SCHOOL CROSS WALK



TYPICAL MEDIAN NOSE CENTER LINE DETAIL

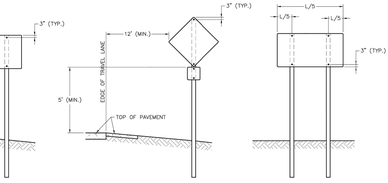
PAVEMENT MARKING GENERAL NOTES:

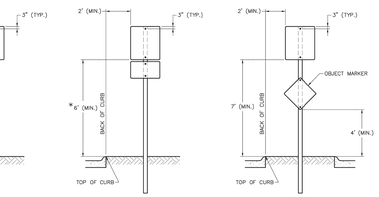
1. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. ALL WORDS AND SYMBOLS SHALL CONFORM TO THE LATEST EDITION OF STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS PRINTED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.
3. PAVEMENT MARKINGS, EITHER TEMPORARY OR PERMANENT ARE REQUIRED AT ALL TIMES IF THE ROADWAY IS OPEN TO TRAFFIC.
4. ALL PAVEMENT MARKINGS THAT CONFLICT WITH THE DESIRED MARKINGS SHALL BE COMPLETELY REMOVED. REMOVALS SHALL NOT LEAVE THE ROAD SURFACE SCARRED WITH AN IMAGE THAT MISLEADS TRAFFIC. ANY EXCESS DAMAGE OR SCARRING OF PAVEMENT SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
5. THE PROPOSED PERMANENT MARKINGS SHALL BE LAID OUT BY THE CONTRACTOR IN ADVANCE OF THE MARKING INSTALLATION. MARKINGS SHALL NOT BE APPLIED UNTIL THE LAYOUT HAS BEEN APPROVED BY THE CITY TRAFFIC ENGINEER.
6. CENTER LINES SHALL BE MARKED ON ALL UNDIVIDED ARTERIAL STREETS, AND ANY OTHER UNDIVIDED STREET WITH MORE THAN TWO LANES AND/OR A SPEED LIMIT OF 30 MPH OR MORE.
7. EDGE LINES SHALL BE MARKED ON ALL NON-CURBED STREETS.

Drawn By:	BWC
Checked By:	MP
Date:	01/2020
Proj. #	

PM-1

16 PAVEMENT MARKING ARROW AND SYMBOL DETAILS
SCALE: NOT TO SCALE



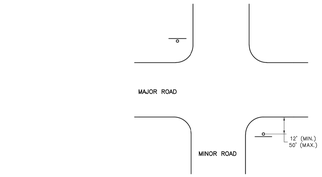


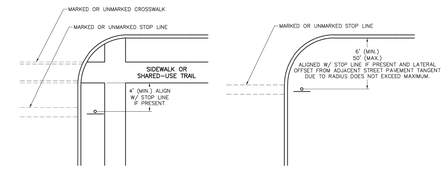
SIGN MOUNTING DETAILS

NOTES:

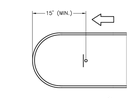
1. GENERALLY, THE SIGN MOUNTING HEIGHT SHOULD NOT BE MORE THAN 1' GREATER THAN THE MINIMUM MOUNTING HEIGHT.
2. *THE HEIGHT TO THE BOTTOM OF A SIGN WHEN IT IS LOCATED IN A PEDESTRIAN WALKWAY OR EXTENDS INTO A WALKWAY SHALL BE A MINIMUM OF 80 INCHES ABOVE THE WALKWAY.

17 SIGN MOUNTING DETAILS
SCALE: NOT TO SCALE





CONTROL SIGN LOCATION



MEDIAN SIGN LOCATION

NOTES:

1. A 4" P.V.C. SLEEVE SHALL BE INSTALLED IN NEW CONCRETE MEDIANS AT EACH LOCATION WHERE A SIGN IS TO BE INSTALLED.
2. FOR EXISTING CONCRETE MEDIANS, A 4" HOLE SHALL BE CORED INTO THE CONCRETE.

Drawn By:	BWC
Checked By:	MP
Date:	01/2020
Proj. #	

SN-1

RELEASED FOR CONSTRUCTION
As Noted on Plan Review
Development Services Department
Lee's Summit, Missouri
05/08/2024

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
Project:
ROADWAY MARKING DETAILS
SIGN MOUNTING DETAILS
Sheet Name:

No.	REVISIONS	DATE	BY

Kimley»Horn

805 PENNSYLVANIA AVENUE, SUITE 150
KANSAS CITY, MO 64105
PHONE: 816-604-2000
WWW.KIMLEY-HORN.COM

SCALE: AS NOTED | DESIGNED BY: LLG | DRAWN BY: LLG | CHECKED BY: PJJ

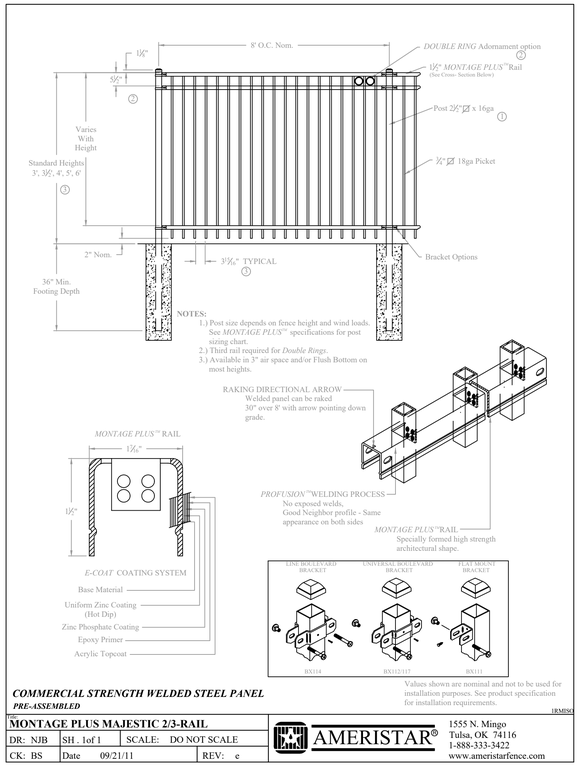
STATE OF MISSOURI
PATRICK J. JOYCE
NUMBER PE-2009018921
4/29/2024
PROFESSIONAL ENGINEER

CAPITAL BUILDERS

DETAILS

LEE'S SUMMIT FLEX SPACE
60 SE THOMPSON DR
LEE'S SUMMIT, MISSOURI 64081

ORIGINAL ISSUE: 4/29/2024
KHA PROJECT NO. 268442000
SHEET NUMBER
C012



COMMERCIAL STRENGTH WELDED STEEL PANEL
PRE-ASSEMBLED

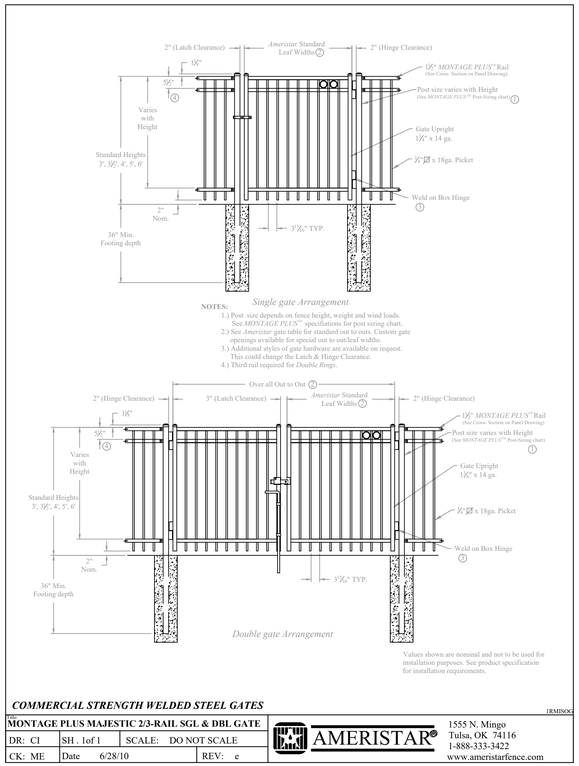
Values shown are nominal and not to be used for installation purposes. See product specification for installation requirements.

1RMISC

MONTAGE PLUS MAJESTIC 2/3-RAIL			
DR: NJB	SH . 1of 1	SCALE: DO NOT SCALE	
CK: BS	Date 09/21/11		REV: e

AMERISTAR®
1555 N. Mingo
Tulsa, OK 74116
1-888-333-3422
www.ameristarfence.com

18 AMERISTAR FENCE DETAIL
SCALE: NOT TO SCALE



COMMERCIAL STRENGTH WELDED STEEL GATES

1RMISC

MONTAGE PLUS MAJESTIC 2/3-RAIL SGL & DBL GATE			
DR: CI	SH . 1of 1	SCALE: DO NOT SCALE	
CK: ME	Date 6/28/10		REV: e

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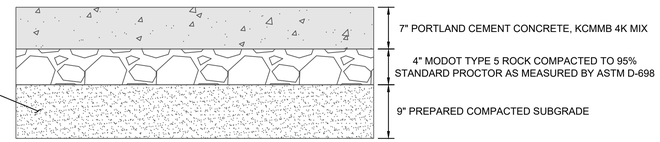
19 AMERISTAR GATE DETAIL
SCALE: NOT TO SCALE

PAVEMENT SECTION 1 - STANDARD DUTY CONCRETE

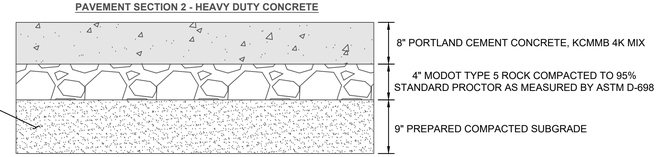
CONTRACTOR SHALL SCARIFY AND RECOMPACT UPPER 9" OF EXISTING MATERIAL. COMPACTION SHOULD BE 95% STANDARD PROCTOR MAXIMUM DRY DENSITY, AS MEASURED BY ASTM D-698, AT A MOISTURE CONTENT 0-4% ABOVE OPTIMUM.



NOT TO SCALE

PAVEMENT SECTION 2 - HEAVY DUTY CONCRETE

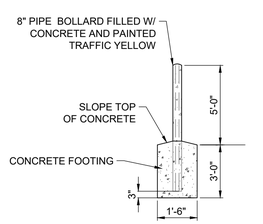
CONTRACTOR SHALL SCARIFY AND RECOMPACT UPPER 9" OF EXISTING MATERIAL. COMPACTION SHOULD BE 95% STANDARD PROCTOR MAXIMUM DRY DENSITY, AS MEASURED BY ASTM D-698, AT A MOISTURE CONTENT 0-4% ABOVE OPTIMUM.



NOT TO SCALE

20 PAVEMENT SECTIONS DETAIL
SCALE: NOT TO SCALE

*FOR ALL PAVEMENT SECTIONS: AGGREGATE BASE AND COMPACTION OF NATIVE SUBGRADE SHALL EXTEND A MINIMUM OF ONE (1) FOOT BEYOND THE BACK OF CURB



NOTES:

1. POLE TO BE PROVIDED AND INSTALLED BY GENERAL CONTRACTOR.
2. COORDINATE ALL MEGASLAB PENETRATIONS WITH THE MEGASLAB CONTRACTOR

21 STEEL-ENCASED CONCRETE BOLLARD DETAIL
SCALE: NOT TO SCALE

LANDSCAPE SUMMARY

STREET FRONTAGE

REQUIRED: 1 TREE PER 30 FEET OF FRONTAGE AND 1 SHRUB PER 20 FEET OF FRONTAGE.

THOMPSON DRIVE	452 FEET / 30 = 15 TREES AND 23 SHRUBS
DECKER STREET	200 FEET / 30 = 7 TREES AND 10 SHRUBS

PROVIDED:

THOMPSON DRIVE	15 TREES AND 23 SHRUBS
DECKER STREET	7 TREES AND 10 SHRUBS

OPEN YARD AREAS

REQUIRED: 1 TREE AND 2 SHRUBS PER 5,000 SQUARE FEET OF TOTAL LOT AREA EXCLUDING BUILDING FOOTPRINT AREA

92,667 SF - 24,000 SF = 68,667 SF / 5,000 = 14 TREES AND 27 SHRUBS

PROVIDED: 14 TREES AND 27 SHRUBS

LANDSCAPE SCREENING NOTE

1. GROUND MOUNTED EQUIPMENT SHALL BE TOTALLY SCREENED FROM VIEW BY EVERGREENS AS SHOWIN ON PLAN BELOW.

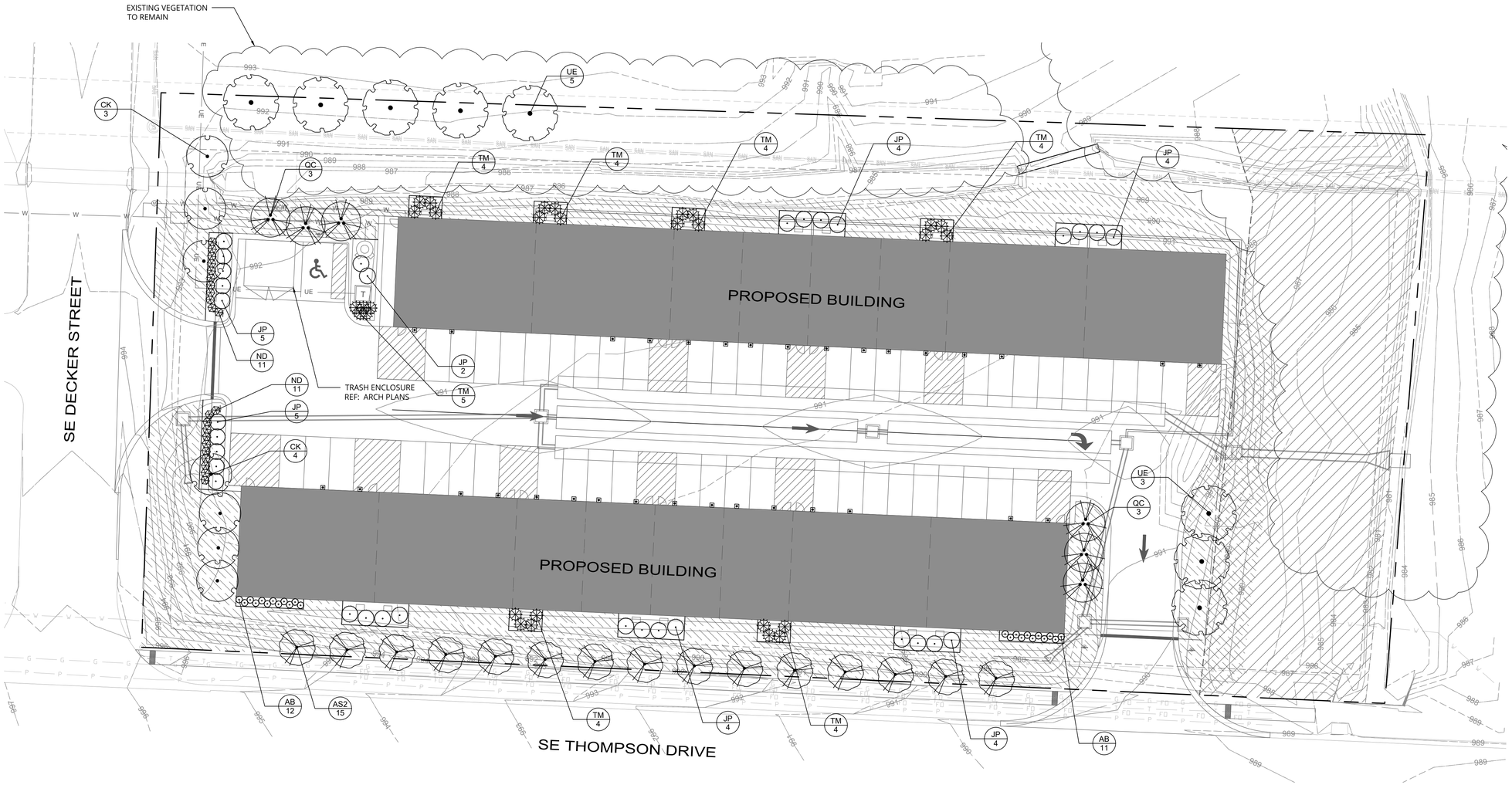
PLANT SCHEDULE

SYMBOL	CODE	QTY	COMMON / BOTANICAL NAME	CONT	CAL
DECIDUOUS TREES					
	AS2	15	SUGAR CONE SUGAR MAPLE / ACER SACCHARUM 'SUGAR CONE'	B & B	3"CAL
	QC	6	CRIMSON SPIRE™ OAK / QUERCUS ROBUR X ALBA 'CRIMSCHMIDT'	B & B	3"CAL
	UE	8	ALLEE LACEBARK ELM / ULMUS PARVIFOLIA `EMER II` TM	B & B	3"CAL
ORNAMENTAL TREE					
	CK	7	KOUSA DOGWOOD / CORNUS KOUSA	B & B	3"CAL
SHRUBS					
	AB	23	LOW SCAPE HEDGER BLACK CHOKEBERRY / ARONIA MELANOCARPA `UCONNAM166` TM	2 GAL	
	JP	32	SEA GREEN JUNIPER / JUNIPERUS X PFITZERIANA `SEA GREEN`	5 GAL	
	ND	22	FIREPOWER DWARF NANDINA / NANDINA DOMESTICA 'FIREPOWER'	2 GAL	
	TM	29	DENSIFORMIS YEW / TAXUS X MEDIA 'DENSIFORMUS'	5 GAL	
GROUND COVERS					
	TTF	16,900 SF	TURF TYPE TALL FSCUE / DROUGHT TOLERANT FESCUE BLEND	SOD	

RELEASED FOR CONSTRUCTION
As Noted on Plan Review

Development Services Department
Lee's Summit, Missouri

05/08/2024



1 LANDSCAPE PLAN
SCALE = 1" = 1'-20"

0 20' 40'
GRAPHIC SCALE 20'

No.	REVISIONS	DATE	BY

Kimley»Horn
© 2023 KIMLEY-HORN AND ASSOCIATES, INC.
805 PENNSYLVANIA AVENUE, SUITE 150
KANSAS CITY, MO 64105
PHONE: 816-842-0393
WWW.KIMLEY-HORN.COM

SCALE: AS NOTED
DESIGNED BY: EMF
DRAWN BY: EMF
CHECKED BY: LWS

ERICA MAE PLAD
NOTARY PUBLIC
STATE OF MISSOURI
NOTARY SEAL
NUMBER
LA-2010000198
LANDSCAPE ARCHITECT

landworks STUDIO
102 S. Cherry St.
Olathe, KS 66061
Phone: 913.780.6707
www.landworksstudio.com

LANDSCAPE PLAN

LEE'S SUMMIT FLEX SPACE

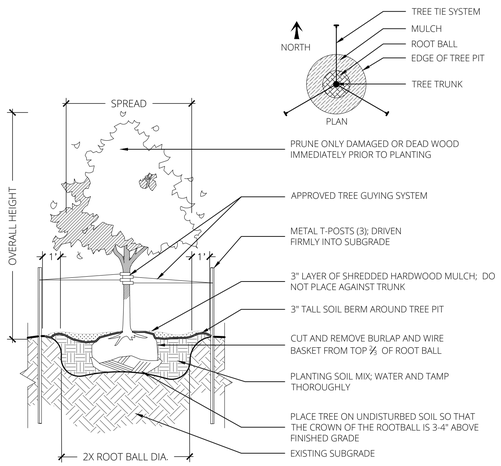
60 SE THOMPSON DR
LEE'S SUMMIT, MISSOURI 64081

ORIGINAL ISSUE: 2/22/2024

KHA PROJECT NO. 268442000

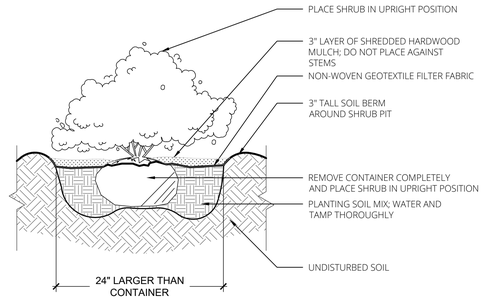
SHEET NUMBER

L001



1 DECIDOUS TREE PLANTING

SCALE = 1/4" = 1'-0"



2 SHRUB PLANTING

SCALE = 1/2" = 1'-0"

3 PERENNIAL PLANTING

SCALE = 1/2" = 1'-0"

4 CULTIVATED EDGE

SCALE = 1" = 1'-0"

PLANTING NOTES

GENERAL

1. CONTRACTOR SHALL LOCATE ALL UTILITIES BEFORE COMMENCING WORK. NOTIFY THE KANSAS ONE CALL SYSTEM AT 800-344-7233, OR 811. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE TO UTILITIES RESULTING FROM LANDSCAPE OPERATIONS. ANY UTILITIES SHOWN ON PLAN ARE FOR REFERENCE ONLY AND MAY OR MAY NOT DEPICT THE ACTUAL LOCATION OF SERVICES.

2. NO MATERIAL SUBSTITUTIONS SHALL BE MADE WITHOUT LANDSCAPE ARCHITECT'S APPROVAL. ALTERNATE MATERIALS OF SIMILAR SIZE AND CHARACTER MAY BE CONSIDERED IF SPECIFIED PLANT MATERIALS CANNOT BE OBTAINED. LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REVISE PLANT LIST AS DEEMED NECESSARY.

3. QUANTITIES OF MATERIALS SHOWN ON THE PLANTING PLAN TAKE PRECEDENCE OVER QUANTITIES SHOWN ON THE PLANT MATERIAL SCHEDULE. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES ON THE PLANTING PLAN PRIOR TO BIDDING.

4. REPORT ANY DISCREPANCIES IN THE PLANTING PLAN TO THE LANDSCAPE ARCHITECT, PRIOR TO PURCHASING MATERIALS OR STARTING CONSTRUCTION.

5. ALL DISTURBED AREAS NOT COVERED BY BUILDING, PAVEMENT, OR PLANTING BED SHALL BE BROUGHT TO FINISH GRADE AND PLANTED IN TURF-TYPE TALL FESCUE OR OTHER .

PLANTING PREPARATION

6. CONTRACTOR SHALL PROVIDE OWNER'S REPRESENTATIVE WITH SOIL TEST ANALYSIS REPORTS FOR EACH SAMPLE OF EXISTING SOIL, TOPSOIL, COMPOST, AND PLANTING SOIL MIX PRIOR TO PLANTING PREPARATION. ANALYSES SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING PARAMETERS: PARTICLE SIZE ANALYSIS (% DRY WEIGHT), USDA SOIL TEXTURE, pH AND BUFFER pH, ORGANIC CONTENT (% DRY WEIGHT), MOISTURE CONTENT (% WET WEIGHT), PHYSICAL CONTAMINANTS (% DRY WEIGHT), AND NUTRIENT LEVELS (NITROGEN, PHOSPHORUS, POTASSIUM).

7. ALL PLANTING BEDS SHALL BE AMENDED WITH A PLANTING SOIL MIX CONSISTING OF EXISTING SOIL, TOPSOIL, AND COMPOST TO MAKE A NEW SOIL THAT MEETS THE PROJECT GOALS FOR THE INDICATED PLANTING AREAS. REFER TO SPECIFICATION SECTION 32 91 13 - SOIL PREPARATION.

8. PLANT PIT BACKFILL FOR TREES AND SHRUBS SHALL BE PLANTING SOIL MIX, AS DESCRIBED IN ABOVE NOTE.

9. MOUND ALL PLANTING BEDS NOT ADJACENT TO BUILDINGS. PROVIDE POSITIVE DRAINAGE AROUND ALL PLANTING BEDS.

PLANTING MATERIALS

10. ALL PLANT MATERIAL SHALL BE WELL-FORMED AND DEVELOPED IN GOOD CONDITION, HEALTHY AND DISEASE-FREE, AND BE TYPICAL OF THE SPECIES. PLANTS SHALL COMPLY WITH ACCEPTABLE STANDARDS AS SET FORTH IN THE AMERICAN HORT "AMERICAN STANDARD OF NURSERY STOCK."

11. ALL PLANT MATERIALS SHALL BE PROTECTED FROM THE DRYING ACTION OF THE SUN AND WIND AFTER BEING DUG, WHILE BEING TRANSPORTED, AND WHILE AWAITING PLANTING. BALLS OF PLANTS WHICH CANNOT BE PLANTED IMMEDIATELY SHALL BE PROTECTED FROM DRYING ACTION BY COVERING THEM WITH MOIST MULCH. PERIODICALLY, APPLY WATER TO MULCH-COVERED BALLS TO KEEP MOIST. IF PLANTING SHOULD OCCUR DURING GROWING SEASON, APPLY ANTI-DESSICANT TO LEAVES BEFORE TRANSPORT TO REDUCE LIKELIHOOD OF WINDBURN. REAPPLY ANTI-DESSICANT AFTER PLANTING TO REDUCE TRANSPIRATION.

12. PLANTS DESIGNATED AS CONTAINER GROWN SHALL HAVE BEEN GROWN IN POTS, CANS OR BOXES FOR A MINIMUM OF SIX MONTHS AND A MAXIMUM OF TWO YEARS. THESE PLANTS SHALL BE REMOVED FROM CONTAINERS BEFORE PLANTING. PLANTS THAT APPEAR ROOT-BOUND SHALL BE REJECTED.

13. ALL PLANT LOCATIONS ARE APPROXIMATE, ADJUST AS NECESSARY TO AVOID CONFLICTS. THE FOLLOWING APPLIES FOR GENERAL PLANT LOCATIONS:

a. CREEPING GROUNDCOVER SHALL BE LOCATED A MINIMUM OF 6 INCHES FROM EDGE OF PAVEMENT.

b. ALL SHRUBS SHALL BE LOCATED A MINIMUM OF 2 FEET FROM EDGE OF PAVEMENT AND 4 FEET FROM BUILDINGS.

c. ALL TREES SHALL BE LOCATED A MINIMUM OF 2.5 FEET FROM EDGE OF PAVEMENT.

d. EQUALLY SPACE ALL PLANTS OF THE SAME SPECIES FOR BEST VIEWING.

PLANTING SOIL MIX

15. A MIX OF EXISTING SOIL, TOPSOIL, AND COMPOST TO MAKE A NEW SOIL THAT MEETS THE PROJECT GOALS FOR THE INDICATED PLANTING AREAS. THESE WILL BE MIXED ON-SITE, AND WILL CONSIST OF THE MIX COMPONENTS AND IN THE PROPORTIONS AS INDICATED:

A MIX OF EXISTING SOIL, TOPSOIL, AND COMPOST IN THE FOLLOWING RATIO:

MIX COMPONENT	% BY MOIST VOLUME
EXISTING SOIL	65-70%
TOPSOIL (UNSCREENED)	25-30%
COMPOST	5%

a. FINAL TESTED ORGANIC MATTER BETWEEN 2.75 AND 4% (BY DRY WEIGHT).

b. MIX THE TOPSOIL AND COMPOST TOGETHER FIRST AND THEN ADD TO THE EXISTING SOIL. MIX WITH A LOADER BUCKET TO LOOSELY INCORPORATE THE TOPSOIL/COMPOST MIX INTO THE EXISTING SOIL.

c. AT THE TIME OF FINAL GRADING, ADD LIME OR OTHER INORGANIC AMENDMENTS, ONLY IF REQUIRED, AT RATES RECOMMENDED BY THE TESTING RESULTS FOR THE PLANTS TO BE GROWN.

d. PROVIDE A TWO-GALLON SAMPLE WITH TESTING DATA THAT INCLUDES RECOMMENDATIONS FOR CHEMICAL ADDITIVES FOR THE TYPES OF PLANTS TO BE GROWN. SAMPLES AND TESTING DATA SHALL BE SUBMITTED AT THE SAME TIME.

16. COMPOST: BLENDED AND GROUND LEAF, WOOD AND OTHER PLANT-BASED MATERIAL, COMPOSTED FOR A MINIMUM OF 9 MONTHS AND AT TEMPERATURES ENOUGH TO BREAK DOWN ALL WOODY FIBERS, SEEDS AND LEAF STRUCTURES, FREE OF TOXIC MATERIAL AT LEVELS THAT ARE HARMFUL TO PLANTS OR HUMANS. SOURCE MATERIAL SHALL BE YARD WASTE TRIMMINGS BLENDED WITH OTHER PLANT OR MANURE-BASED MATERIAL DESIGNED TO PRODUCE COMPOST HIGH IN FUNGAL MATERIAL. COMPOST SHALL BE COMMERCIALLY PREPARED COMPOST AND MEET US COMPOST COUNCIL STA/TMECC CRITERIA OR AS MODIFIED IN THIS SECTION FOR "COMPOST AS A LANDSCAPE BACKFILL MIX COMPONENT".

a. COMPOST SHALL COMPLY WITH THE FOLLOWING PARAMETERS:

a.a. PH: 5.5 - 8.0.

a.b. SOIL SALT (ELECTRICAL CONDUCTIVITY): MAXIMUM 5 DS/M (MMHOS/CM).

a.c. MOISTURE CONTENT %, WET WEIGHT BASIS: 30 - 60.

a.d. PARTICLE SIZE, DRY WEIGHT BASIS: 98% PASS THROUGH 3/4 INCH SCREEN OR SMEAR.

a.e. STABILITY CARBON DIOXIDE EVOLUTION RATE: MG CO_2-C/ G OM/ DAY < 2.

a.f. SOLVITA MATURITY TEST: >6.

a.g. PHYSICAL CONTAMINANTS (INERTS), %, DRY WEIGHT BASIS: <1%.

a.h. CHEMICAL CONTAMINANTS, MG/KG (PPM): MEET OR EXCEED US EPA CLASS A STANDARD, 40CFR § 503.13, TABLES 1 AND 3 LEVELS.

a.i. BIOLOGICAL CONTAMINANTS SELECT PATHOGENS FECAL COLIFORM BACTERIA, OR SALMONELLA, MEET OR EXCEED US EPA CLASS A STANDARD, 40 CFR § 503.32(A) LEVEL REQUIREMENTS.

17. PROVIDE A ONE QUART SAMPLE WITH MANUFACTURER'S LITERATURE AND MATERIAL CERTIFICATION THAT THE PRODUCT MEETS THE REQUIREMENTS.

18. INORGANIC SOIL AMENDMENTS

a. LIME: ASTM C 602, AGRICULTURAL LIMING MATERIAL CONTAINING A MINIMUM OF 80 PERCENT CALCIUM CARBONATE EQUIVALENT AND AS FOLLOWS:

a.a. CLASS: T, WITH A MINIMUM OF 99 PERCENT PASSING THROUGH A NO. 8 SIEVE AND A MINIMUM OF 75 PERCENT PASING THROUGH A NO. 60 SIEVE.

a.b. FORM: PROVIDE LIME IN FORM OF GROUND DOLOMITIC LIMESTONE.

19. SOIL TESTING FOR TOPSOIL, EXISTING SOIL, COMPOST, PLANTING MIXES

a. SUBMIT SOIL TEST ANALYSIS REPORT FOR EACH SAMPLE OF TOPSOIL, EXISTING SOIL, COMPOST AND PLANTING SOIL FROM AN APPROVED SOIL-TESTING LABORATORY, AS FOLLOWS: SUBMIT TOPSOIL, EXISTING SOIL, AND COMPOST FOR TESTING AT LEAST 8 WEEKS BEFORE SCHEDULED INSTALLATION OF PLANTING SOIL MIXES. SUBMIT PLANTING SOIL MIX TEST NO MORE THAN 2 WEEKS AFTER THE APPROVAL OF THE TOPSOIL, EXISTING SOIL, AND COMPOST. DO NOT SUBMIT PLANTING SOIL MIXES TO THE TESTING LABORATORY FOR TESTING UNTIL ALL TOPSOIL, EXISTING SOIL, AND COMPOST RESULTS HAVE BEEN APPROVED. IF TESTS FAIL TO MEET THE SPECIFICATIONS, OBTAIN OTHER SOURCES OF MATERIAL, RETEST AND RESUBMIT UNTIL ACCEPTED BY THE OWNER'S REPRESENTATIVE. ALL SOIL TESTING WILL BE AT THE EXPENSE OF THE CONTRACTOR.

20. FOR EACH TOPSOIL, EXISTING SOIL, AND PLANTING SOIL MIX SAMPLE, SUBMIT THE FOLLOWING ANALYSES:

a. PARTICLE SIZE ANALYSIS (% DRY WEIGHT)

b. USDA SOIL TEXTURE

c. PH AND BUFFER PH.

d. PERCENT ORGANIC CONTENT BY OVEN DRIED WEIGHT.

e. NUTRIENT LEVELS BY PARTS PER MILLION INCLUDING: PHOSPHORUS, POTASSIUM, MAGNESIUM, MANGANESE, IRON, ZINC AND CALCIUM. NUTRIENT TEST SHALL INCLUDE THE TESTING LABORATORY RECOMMENDATIONS FOR SUPPLEMENTAL ADDITIONS TO THE SOIL FOR OPTIMUM GROWTH OF THE PLANTINGS SPECIFIED.

f. SOLUBLE SALT BY ELECTRICAL CONDUCTIVITY OF A 1:2 SOIL WATER SAMPLE MEASURED IN MILLIOHM PER CM.

g. CATION EXCHANGE CAPACITY (CEC).

21. FOR EACH COMPOST PRODUCT, SUBMIT THE FOLLOWING ANALYSES:

a. PH

b. SALT CONCENTRATION (ELECTRICAL CONDUCTIVITY)

c. MOISTURE CONTENT %, WET WEIGHT BASIS

d. PARTICLE SIZE % PASSING A SELECTED MESH SIZE, DRY WEIGHT BASIS

e. STABILITY CARBON DIOXIDE EVOLUTION RATE MG CO2-C PER G OM PER DAY

f. PHYSICAL CONTAMINANTS (INERTS) %, DRY WEIGHT BASIS

g. US EPA CLASS A STANDARD, 40CFR § 503.13, TABLES 1 AND 3 LEVELS CHEMICAL CONTAMINANTS MG/KG (PPM)

22. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE AWARE OF ALL SURFACE AND SUBSURFACE CONDITIONS, AND TO NOTIFY THE OWNER'S REPRESENTATIVE, IN WRITING, OF ANY CIRCUMSTANCES THAT WOULD NEGATIVELY IMPACT THE HEALTH OF PLANTINGS. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

23. SHOULD SUBSURFACE DRAINAGE OR SOIL CONDITIONS BE ENCOUNTERED WHICH WOULD BE DETRIMENTAL TO GROWTH OR SURVIVAL OF PLANT MATERIAL, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING, STATING THE CONDITIONS AND SUBMIT A PROPOSAL COVERING COST OF CORRECTIONS. IF THE CONTRACTOR FAILS TO NOTIFY THE OWNER'S REPRESENTATIVE OF SUCH CONDITIONS, THEY SHALL REMAIN RESPONSIBLE FOR PLANT MATERIAL UNDER THE WARRANTEE CLAUSE OF THE SPECIFICATIONS.

24. DELIVERY, STORAGE, AND HANDLING

a. WEATHER: DO NOT MIX, DELIVER, PLACE OR GRADE SOILS WHEN FROZEN OR WITH MOISTURE ABOVE FIELD CAPACITY.

b. PROTECT SOIL AND SOIL STOCKPILES, INCLUDING THE STOCKPILES AT THE SOIL BLENDER'S YARD, FROM WIND, RAIN AND WASHING THAT CAN ERODE SOIL OR SEPARATE FINES AND COARSE MATERIAL, AND CONTAMINATION BY CHEMICALS, DUST AND DEBRIS THAT MAY BE DETRIMENTAL TO PLANTS OR SOIL DRAINAGE. COVER STOCKPILES WITH PLASTIC SHEETING OR FABRIC AT THE END OF EACH WORKDAY.

c. ALL MANUFACTURED PACKAGED PRODUCTS AND MATERIAL SHALL BE DELIVERED TO THE SITE IN UNOPENED CONTAINERS AND STORED IN A DRY ENCLOSED SPACE SUITABLE FOR THE MATERIAL AND MEETING ALL ENVIRONMENTAL REGULATIONS. BIOLOGICAL ADDITIVES SHALL BE PROTECTED FROM EXTREME COLD AND HEAT. ALL PRODUCTS SHALL BE FRESHLY MANUFACTURED AND DATED FOR THE YEAR IN WHICH THE PRODUCTS ARE TO BE USED.

d. DELIVER ALL CHEMICAL AMENDMENTS IN ORIGINAL, UNOPENED CONTAINERS WITH ORIGINAL LABELS INTACT AND LEGIBLE, WHICH STATE THE GUARANTEED CHEMICAL ANALYSIS. STORE ALL CHEMICALS IN A WEATHER PROTECTED ENCLOSURE.

RELATED ITEMS

25. EDGING: ALL PLANT BEDS AND TURF AREAS MUST BE SEPARATED WITH A CULTIVATED EDGE, AS SHOWN IN THE DETAIL ON THIS SHEET.

26. MULCH: APPLY A 3" LAYER OF SHREDDED HARDWOOD BARK MULCH IN PLANTING BEDS AND AROUND TREES. MULCH SHALL CONSIST OF PURE WOOD, BROWN IN COLOR AND BE FREE OF ALL FOREIGN SUBSTANCES. PROVIDE AND INSTALL PRE-EMERGENT HERBICIDE PRIOR TO MULCH INSTALLATION PER MANUFACTURERS INSTRUCTIONS.

27. TREE TIES: CONTRACTOR SHALL USE AN APPROVED TREE TIE SYSTEM. TREE GUYING TO BE FLAT WOVEN POLYPROPYLENE MATERIAL, 3/4-INCH-WIDE, WITH A TENSILE STRENGTH OF 900 LBS. HOSE AND WIRE WILL NOT BE ACCEPTED. SUBJECT TO COMPLIANCE WITH THESE REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING PRODUCTS, OR APPROVED EQUAL:

"ARBORTIE GREEN" MANUFACTURED BY DEEP ROOT PARTNERS, LP

"LEONARD TREE TIE WEBBING GREEN" MANUFACTURED BY A.M. LEONARD, INC.

MAINTENANCE AND CLEAN-UP

28. THE CONTRACTOR SHALL PROVIDE ALL WATER, WATERING DEVICES AND LABOR NEEDED TO IRRIGATE PLANT MATERIALS UNTIL PROVISIONAL ACCEPTANCE OF THE PROJECT. THE CONTRACTOR SHALL SUPPLY ENOUGH WATER TO MAINTAIN THE PLANT'S HEALTHY CONDITION.

29. REMOVE ALL RUBBISH, EQUIPMENT, AND MATERIAL AND LEAVE THE AREA IN A NEAT, CLEAN CONDITION EACH DAY. MAINTAIN PAVED AREAS UTILIZED FOR HAULING EQUIPMENT AND MATERIALS BY OTHER TRADES IN A CLEAN AND UNOBSTRUCTED CONDITION AT ALL TIMES. REMOVE SOIL OR DIRT THAT ACCUMULATES DUE TO PLANTING OPERATIONS EACH DAY.

INSPECTION, WARRANTIES AND GUARANTEE

30. AT THE COMPLETION OF PLANTING OPERATIONS, ALL PLANTS SHALL BE INSPECTED BY A LICENSED LANDSCAPE ARCHITECT TO VERIFY THAT ALL LANDSCAPING HAS BEEN INSTALLED IN ACCORDANCE WITH THE APPROVED PLANTING PLAN AND IS IN A HEALTHY CONDITION. CONTRACTOR SHALL REPLACE IMMEDIATELY ANY PLANTS NOT IN HEALTHY AND VIGOROUS CONDITION AT THAT TIME AT NO EXPENSE TO THE OWNER. ONCE IT CAN BE VERIFIED THAT ALL PLANTINGS CONFORM TO THE APPROVED PLAN AND ARE FOUND TO BE HEALTHY, THE LANDSCAPE ARCHITECT SHALL PREPARE AN AFFIDAVIT TESTIFYING TO THESE FACTS AND THE OWNER SHALL SUBMIT IT TO CITY STAFF.

31. OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO REJECT AT ANY TIME OR PLACE PRIOR TO FINAL ACCEPTANCE OF WORK, ANY AND ALL PLANTS WHICH, IN THEIR OPINION, FAIL TO MEET THESE SPECIFICATION REQUIREMENTS.

32. CONTRACTOR SHALL GUARANTEE TREES, SHRUBS, PERENNIALS AND TURF FOR ONE CALENDAR YEAR FOLLOWING PROVISIONAL ACCEPTANCE OF THE OVERALL PROJECT. DURING THE GUARANTEE PERIOD, PLANTS THAT DIE DUE TO NATURAL CAUSES OR THAT ARE UNHEALTHY OR UNSIGHTLY IN CONDITION, SHALL BE REPLACED BY THE CONTRACTOR. PLANTS USED FOR THE REPLACEMENT SHALL BE OF THE SAME VARIETY AND SIZE AS ORIGINALLY SPECIFIED IN THE PLANT SCHEDULE. REPLACEMENTS SHALL BE MADE WITHIN ONE WEEK OF REQUEST PENDING FAVORABLE SEASONAL PLANTING CONDITIONS. GUARANTEE WILL NOT BE ENFORCED SHOULD THE PLANT MATERIAL DIE DUE TO VANDALISM, OVER OR UNDER WATERING BY THE OWNER, IMPROPER MAINTENANCE PROCEDURES CARRIED OUT BY THE OWNER INVOLVING LAWN MOWER DAMAGE, OVER FERTILIZATION, ACTS NOT RELATED TO CONTRACTUAL RESPONSIBILITIES OF CONTRACTOR OR SIMILAR CIRCUMSTANCES BEYOND THE CONTROL OF THE CONTRACTOR.

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As Noted on Plan Review
Development Services Department
Lee's Summit, Missouri
05/08/2024

NO.	REVISIONS	DATE	BY

Kimley»Horn
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KANSAS CITY, MO 64105
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WWW.KIMLEY-HORN.COM

SCALE: AS NOTED
DESIGNED BY: EMF
DRAWN BY: EMF
CHECKED BY: LWS

ERICA MAE PLAD NUMBER LA-2016000198 LANDSCAPE ARCHITECT STATE OF MISSOURI

landworks STUDIO
102 S. Cherry St.
Olathe, KS 66061
Phone: 913-780-6707
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LANDSCAPE DETAILS AND NOTES

LEE'S SUMMIT FLEX SPACE
60 SE THOMPSON DR
LEE'S SUMMIT, MISSOURI 64081

ORIGINAL ISSUE: 2/22/2024
KHA PROJECT NO. 268442000
SHEET NUMBER
L002

NOTE: BUILDING ENCLOSURE INCLUDING STRUCTURAL FRAME, EXTERIOR WALLS, ROOF, INSULATION, GUTTERS, DOWNSPOUTS, WALL/ROOF TRIM, AND FLASHING ARE BY PRE-ENGINEERED BUILDING MANUFACTURER. ARCHITECTURAL FLOOR PLANS AND ELEVATIONS ARE FOR DESIGN INTENT ONLY.

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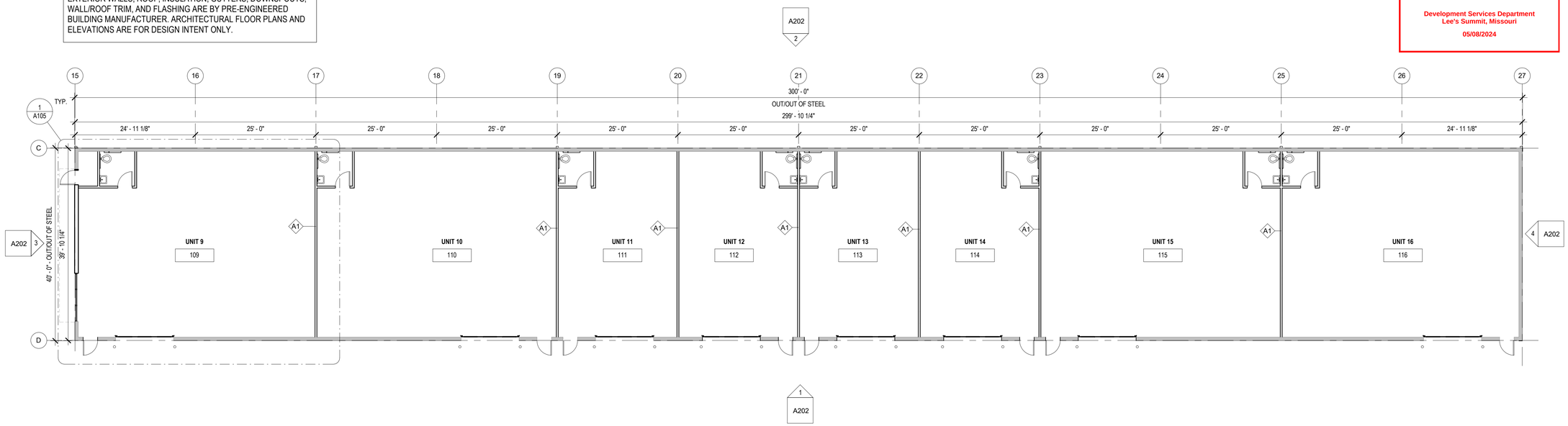
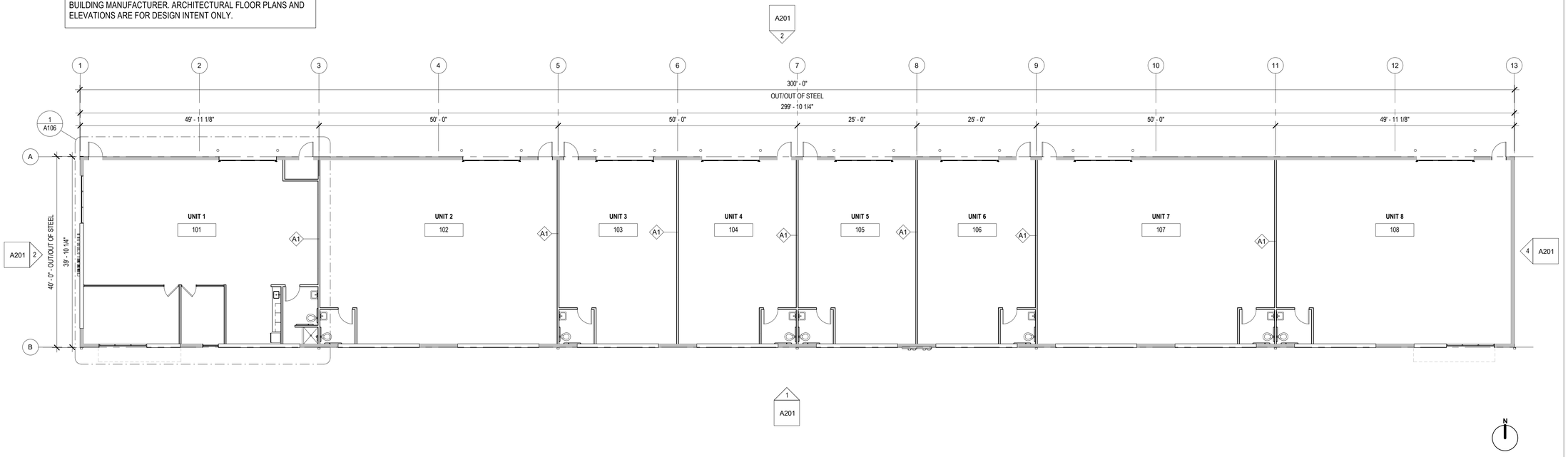
05/08/2024



2 **FLOOR PLAN - BUILDING B**
3/32" = 1'-0"

NOTE: BUILDING ENCLOSURE INCLUDING STRUCTURAL FRAME, EXTERIOR WALLS, ROOF, INSULATION, GUTTERS, DOWNSPOUTS, WALL/ROOF TRIM, AND FLASHING ARE BY PRE-ENGINEERED BUILDING MANUFACTURER. ARCHITECTURAL FLOOR PLANS AND ELEVATIONS ARE FOR DESIGN INTENT ONLY.



1 **FLOOR PLAN - BUILDING A**
3/32" = 1'-0"

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LEE'S SUMMIT FLEX SPACES

60 SE Thompson Dr.
Lee's Summit, MO 64082

PROJECT NUMBER: 23092

CLIENT:
Capital Builders

FINAL DEVELOPMENT PLAN

02.22.2024

Architect
License: _

REV.	DATE	ISSUE

ARCHITECT:

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FLOOR PLANS

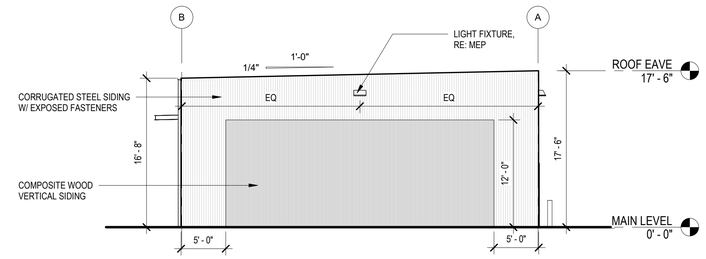
Sheet
A101

Revision no.

CORRUGATED STEEL SIDING: MBCI, PBC METAL WALL PANEL, MIDNIGHT BRONZE

COMPOSITE WOOD SIDING: NEWTECH WOOD, EUROPEAN SIDING, NORWEGIAN BOARD, PERUVIAN TEAK

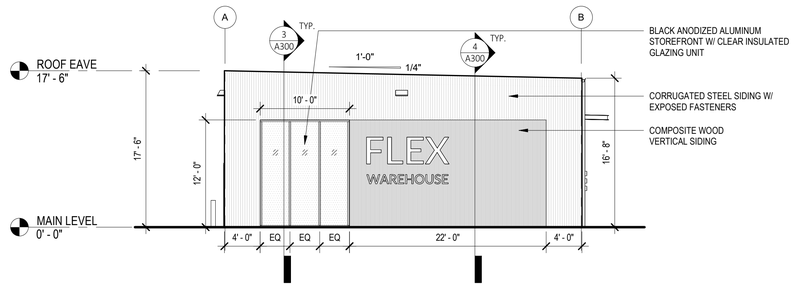
STEEL TRIM



4 **ELEVATION - BUILDING A (EAST)**
1/8" = 1'-0"

TOTAL WALL AREA: 683 SF

CORRUGATED STEEL SIDING	299 SF	(44%)
COMPOSITE WOOD SIDING	264 SF	(39%)
STOREFRONT GLASS	120 SF	(17%)



3 **ELEVATION - BUILDING A (WEST)**
1/8" = 1'-0"

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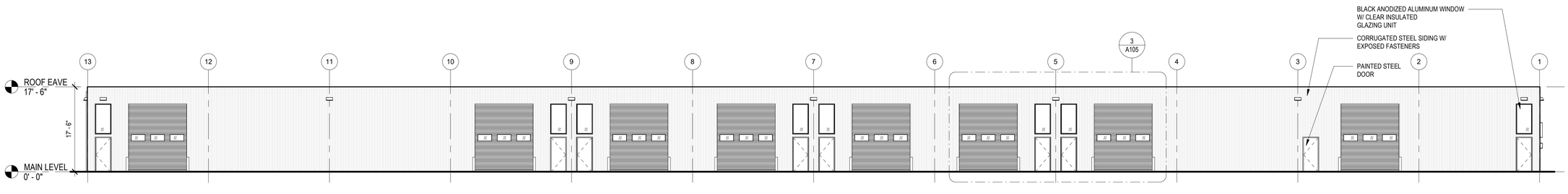
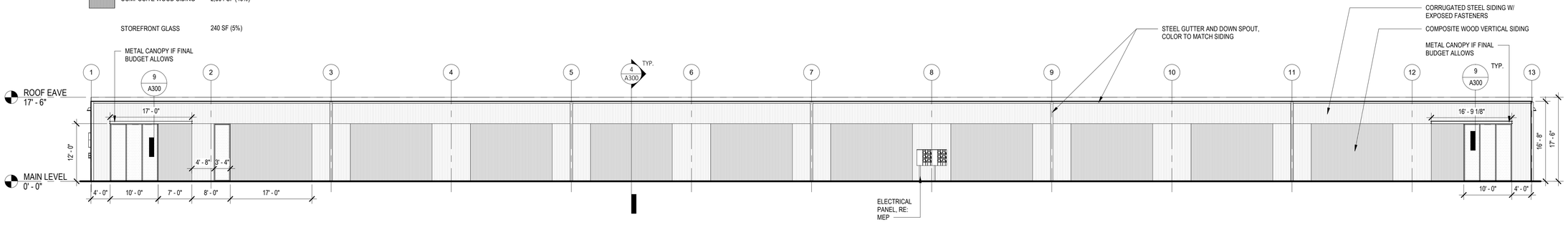
05/08/2024



2 **ELEVATION - BUILDING A (NORTH)**
3/32" = 1'-0"

TOTAL WALL AREA: 5,044 SF

CORRUGATED STEEL SIDING	2,500 SF	(49%)
COMPOSITE WOOD SIDING	2,304 SF	(46%)
STOREFRONT GLASS	240 SF	(5%)



1 **ELEVATION - BUILDING A (SOUTH)**
3/32" = 1'-0"

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LEE'S SUMMIT FLEX SPACES

60 SE Thompson Dr.
Lee's Summit, MO 64082

PROJECT NUMBER: 23092

client: Capital Builders

FINAL DEVELOPMENT PLAN

02.22.2024

Architect: _____
License: _____

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ELEVATIONS - BUILDING A

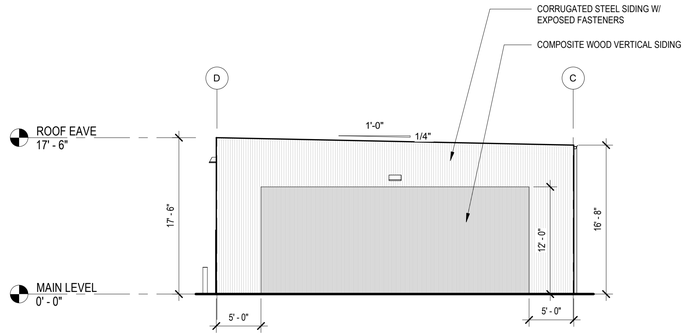
Sheet
A201

Revision no.

CORRUGATED STEEL SIDING: MBCI, PBC METAL WALL PANEL, MIDNIGHT BRONZE

COMPOSITE WOOD SIDING: NEWTECH WOOD, EUROPEAN SIDING, NORWEGIAN BOARD, PERUVIAN TEAK

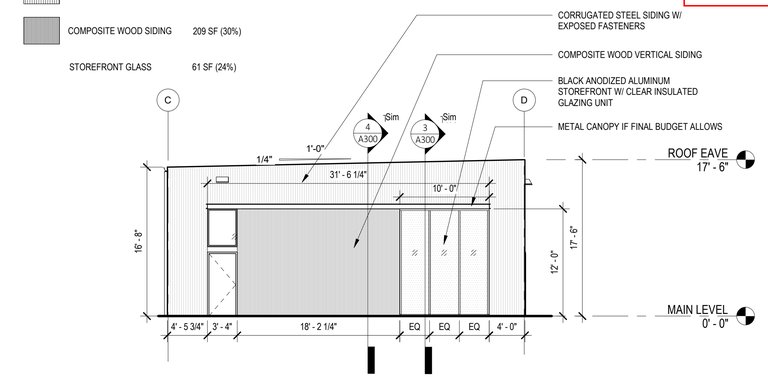
STEEL TRIM



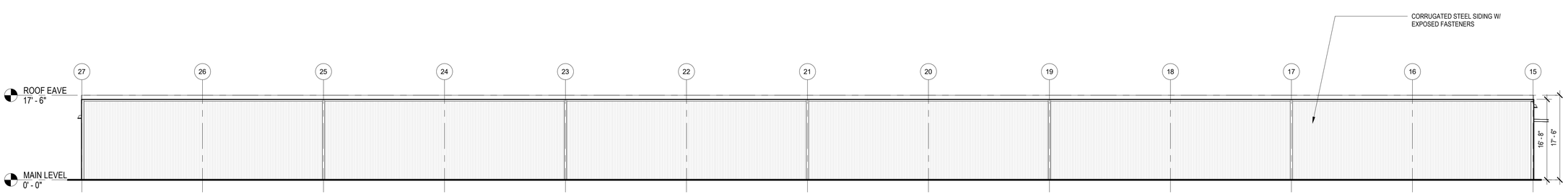
4 **ELEVATION - BUILDING B (EAST)**
1/8" = 1'-0"

TOTAL WALL AREA: 683 SF

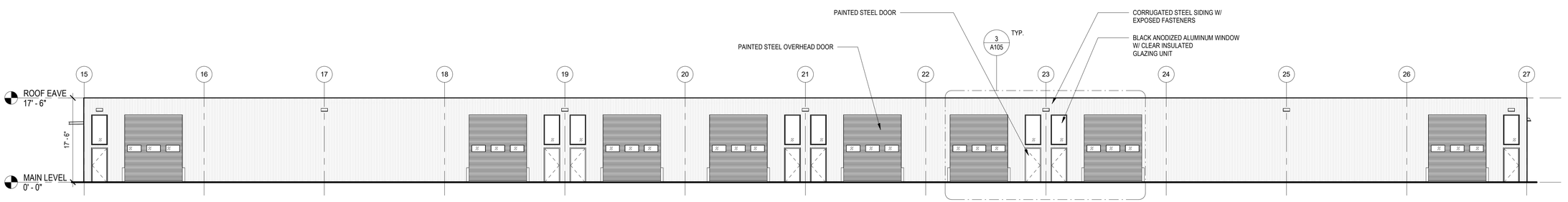
CORRUGATED STEEL SIDING	314 SF	(46%)
COMPOSITE WOOD SIDING	209 SF	(30%)
STOREFRONT GLASS	61 SF	(24%)



3 **ELEVATION - BUILDING B (WEST)**
1/8" = 1'-0"



2 **ELEVATION - BUILDING B (NORTH)**
3/32" = 1'-0"



1 **ELEVATION - BUILDING B (SOUTH)**
3/32" = 1'-0"

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LEE'S SUMMIT FLEX SPACES

60 SE Thompson Dr.
Lee's Summit, MO 64082

PROJECT NUMBER: 23092

CLIENT: Capital Builders

FINAL DEVELOPMENT PLAN

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ELEVATIONS - BUILDING B

Sheet: A202

Revision no.

BUILDING A - WEST AND SOUTH ELEVATIONS

BUILDING A - EAST AND NORTH ELEVATIONS

BUILDING B - WEST AND SOUTH ELEVATIONS

BUILDING B - SOUTH AND EAST ELEVATIONS

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RENDERINGS

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A203

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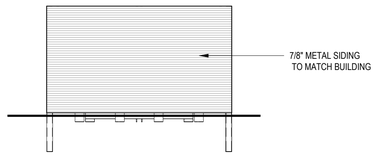
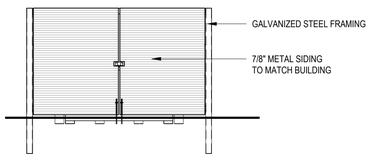
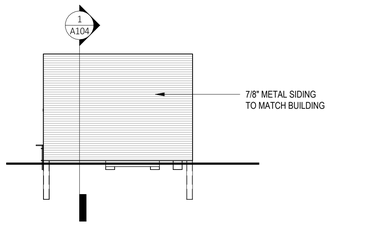


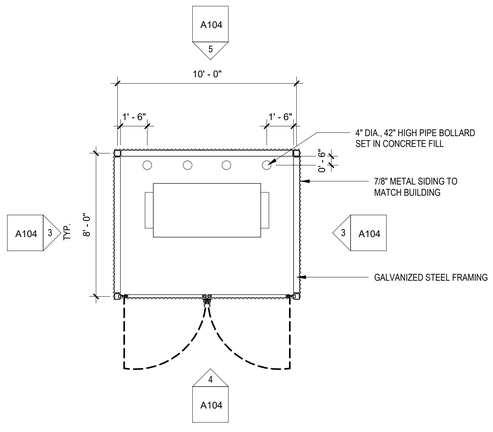
5 **ELEVATION - TRASH ENCLOSURE - NORTH**
1/4" = 1'-0"



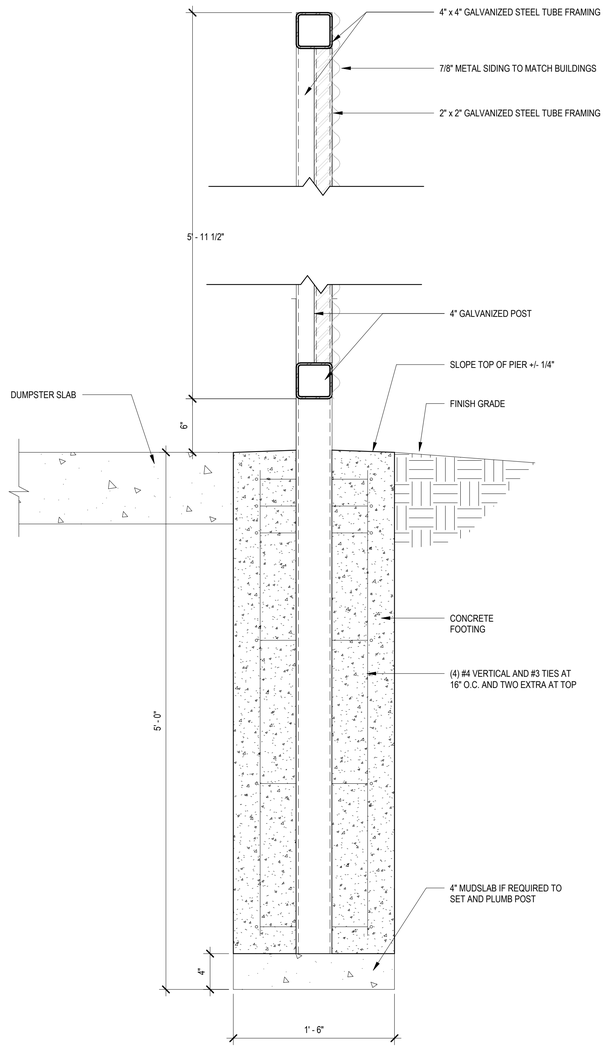
4 **ELEVATION - TRASH ENCLOSURE - SOUTH**
1/4" = 1'-0"



3 **ELEVATION - TRASH ENCLOSURE - EAST/WEST**
1/4" = 1'-0"



2 **FLOOR PLAN - TRASH ENCLOSURE**
1/4" = 1'-0"



1 **SECTION DETAIL - DUMPSTER ENCLOSURE**
1 1/2" = 1'-0"

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Development Services Department
Lee's Summit, Missouri

05/08/2024

LEE'S SUMMIT FLEX SPACES

60 SE Thompson Dr.
Lee's Summit, MO 64082

PROJECT NUMBER: 23092

CLIENT:
Capital Builders

FINAL DEVELOPMENT PLAN

02.22.2024

Architect:
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TRASH ENCLOSURE PLAN & DETAILS

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A204

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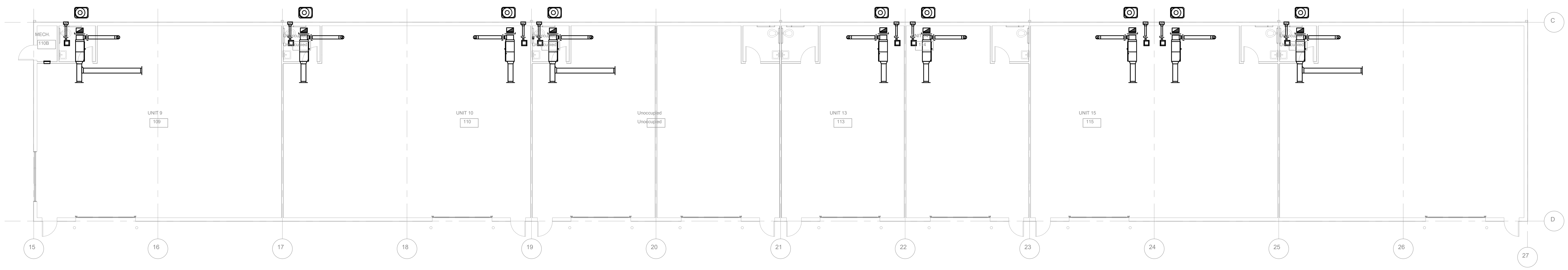


2 MECHANICAL FLOOR PLAN - BUILDING B

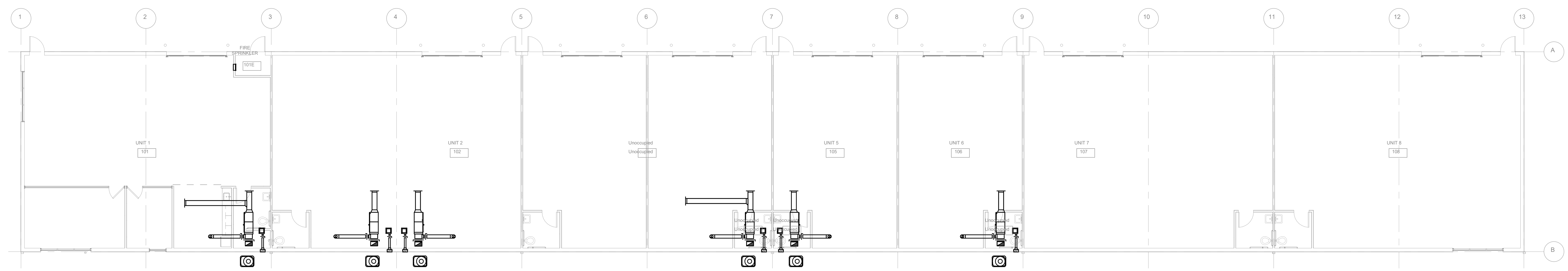
SCALE: 3/32" = 1'-0"

N

GENERAL NOTES

1. REPLACE THIS NOTE WITH YOUR SHEET SPECIFIC GENERAL NOTES KEEPING THE SAME FORMAT, WIDTH AND POSITION. DELETE THIS NOTE AND TITLE IF YOU DO NOT HAVE ANY NOTES.

KEYED NOTES



1 MECHANICAL FLOOR PLAN - BUILDING A

SCALE: 3/32" = 1'-0"

N

2/22/2024 1:52:06 PM

FLEX SPACES

60 SE Thompson Dr.
Lee's Summit, MO 64082

PROJECT NUMBER: 23092

CLIENT: Capital Builders

CONSTRUCTION / PERMIT DRAWINGS

08.28.2023

Architect: _
License: _

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MECHANICAL FLOOR PLANS

Sheet: **M101**

Revision no.:

GENERAL NOTES

1. THIS PHOTOMETRIC LAYOUT WAS PRODUCED IN ACCORDANCE WITH THE CITY OF LEE'S SUMMIT, MO UNIFIED DEVELOPMENT ORDINANCE ARTICLE 8, DIVISION I, SUBDIVISION 5 - "LIGHTING STANDARDS". ALL INSTALLATIONS RESULTING FROM THIS DEVELOPMENT PLAN SHALL BE COMPLETED ACCORDING TO THE REQUIREMENTS IN THE LEE'S SUMMIT, MO UNIFIED DEVELOPMENT ORDINANCE AND ANY APPLICABLE SUPPLEMENTS.

RELEASED FOR CONSTRUCTION
As Noted on Plan Review

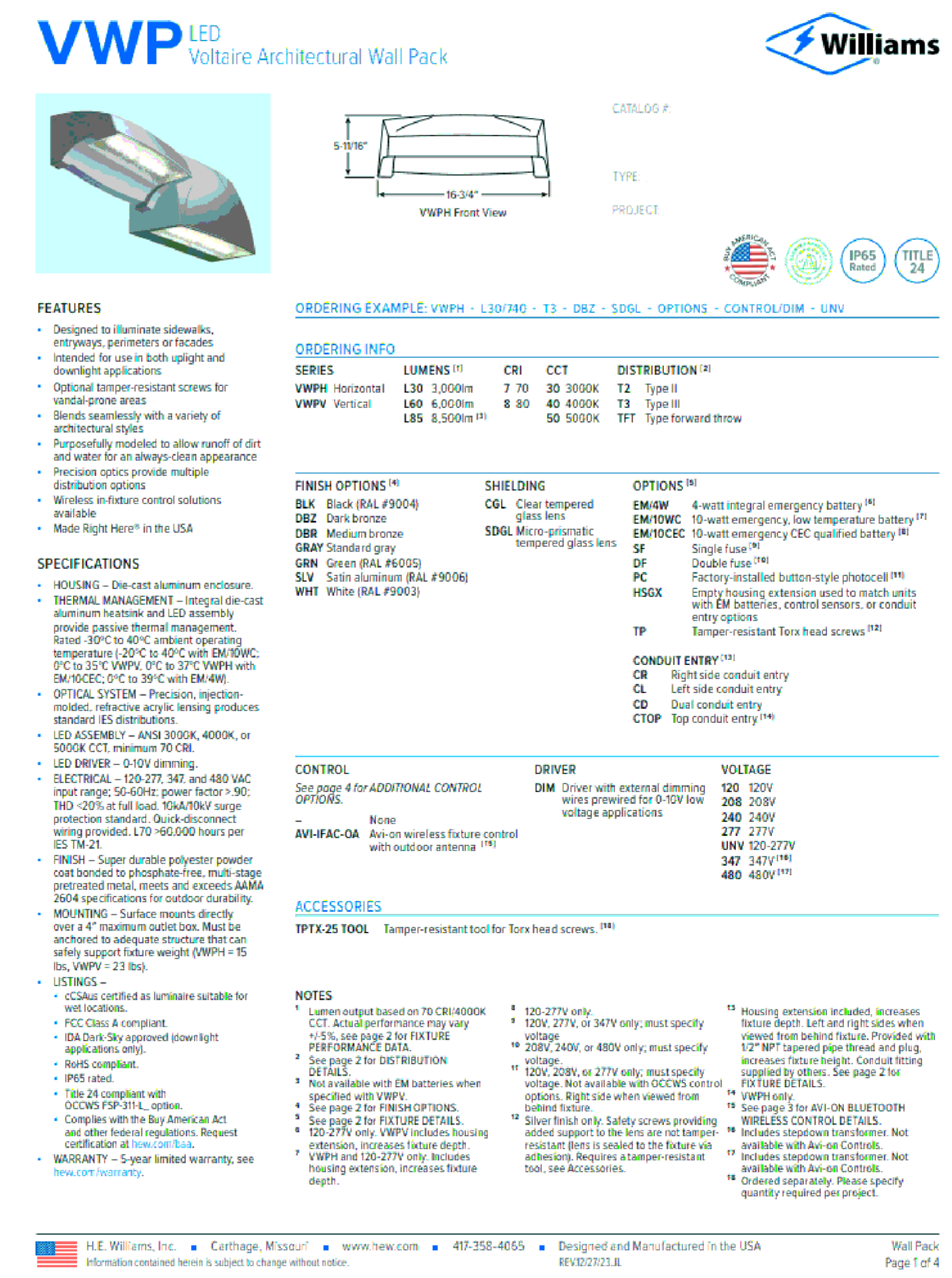
Development Services Department
Lee's Summit, Missouri
05/08/2024

Luminaire Schedule				
Tag	Description	LLF	Luminaire Lumens	Luminaire Watts
S1	VA1-L83-730-T3-F-S-xxx-DIM-UNV_	0.900	7870	67
D	VWPx-L60-730-T3-xxx-CGL-DIM-UNV	0.900	6147	49

Calculation Summary						
Label	Units	Avg	Max	Min	Avg/Min	Max/Min
Parking_Lot	Fc	2.67	8.75	0.30	8.90	29.17
Property_Line	Fc	0.02	0.48	0.00	N.A.	N.A.

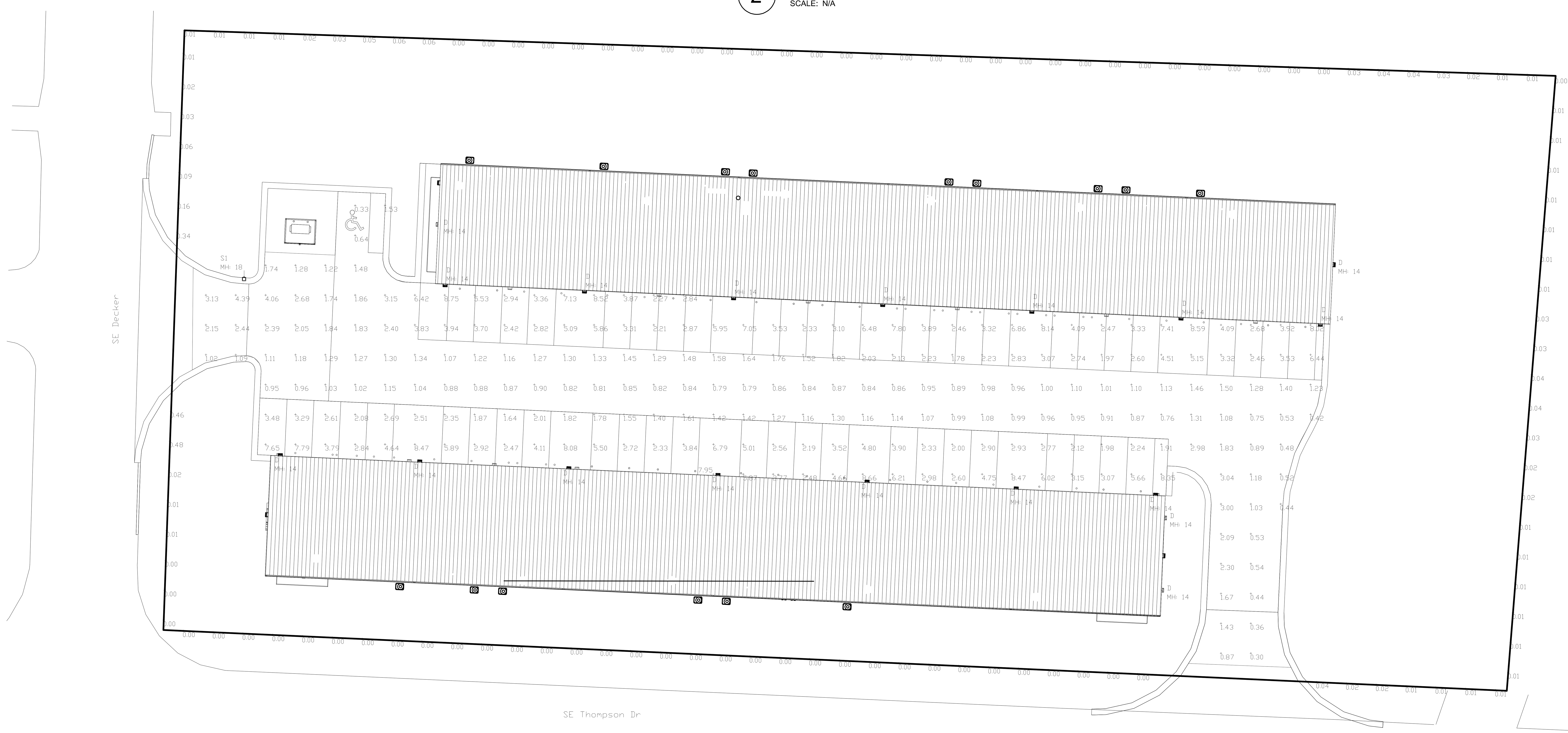
3 CALCULATION SUMMARY & LUMINAIRE SCHEDULE

SCALE: N/A



2 LIGHTING FIXTURE SPECIFICATIONS

SCALE: N/A



1 SITE PHOTOMETRIC PLAN

SCALE: 1" = 20'-0"

N

No.	REVISIONS	DATE	BY

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SCALE: AS NOTED
DESIGNED BY: WPM
DRAWN BY: WPM
CHECKED BY: WPM

STATE OF MISSOURI
WESLEY P. MORRIS
NUMBER PE-2019041526
PROFESSIONAL ENGINEER
02.22.2024

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SITE PHOTOMETRIC CALCULATIONS

LEE'S SUMMIT FLEX SPACE

60 SE THOMPSON DR
LEE'S SUMMIT, MISSOURI 64081

ORIGINAL ISSUE: 2/22/2024

KHA PROJECT NO. 268442000

SHEET NUMBER

E001

Drawing name: L:\2023\23B00070 - Flex Spaces\Design\Photometrics\E001.dwg Layout1 Feb 22, 2024 1:33pm by: WPMorris

HAZARD CLASSIFICATION LEGEND - NFPA 13

LIGHT HAZARD
DESIGN DENSITY: 0.10 GPM/S.F
DESIGN AREA: 1,500 S.F.
HYDRANT FLOW: 250 GPM

CHARACTERISTICS:
SPACES WITH LOW QUANTITY AND LOW COMBUSTIBILITY OF CONTENTS

ORDINARY HAZARD 1:
DESIGN DENSITY: 0.15 GPM/S.F
DESIGN AREA: 1,500 S.F.
HYDRANT FLOW: 250 GPM

CHARACTERISTICS:
SPACES WITH MODERATE QUANTITY AND LOW COMBUSTIBILITY OF CONTENTS. STOCKPILES OF CONTENTS WITH LOW COMBUSTIBILITY DO NOT EXCEED 8 FT.

ORDINARY HAZARD 2
DESIGN DENSITY: 0.2 GPM/S.F
DESIGN AREA: 1,500 S.F.
HYDRANT FLOW: 250 GPM

CHARACTERISTICS:
SPACES WITH MODERATE TO HIGH QUANTITY AND MODERATE TO HIGH COMBUSTIBILITY OF CONTENTS. STOCKPILES OF CONTENTS WITH MODERATE TO HIGH COMBUSTIBILITY DO NOT EXCEED 12 FT.

EXTRA HAZARD 1
DESIGN DENSITY: 0.3 GPM/S.F
DESIGN AREA: 2,500 S.F.
HYDRANT FLOW: 500 GPM

CHARACTERISTICS:
SPACES WITH VERY HIGH QUANTITY AND VERY HIGH COMBUSTIBILITY OF CONTENTS. SPACES WHERE DUST, LINT, OR OTHER MATERIAL ARE PRESENT, INTRODUCING THE PROBABILITY OF RAPIDLY DEVELOPING FIRES.

EXTRA HAZARD 2
DESIGN DENSITY: 0.4 GPM/S.F
DESIGN AREA: 2,500 S.F.
HYDRANT FLOW: 500 GPM

CHARACTERISTICS:
SPACES WITH VERY HIGH QUANTITY AND VERY HIGH COMBUSTIBILITY OF CONTENTS. SPACES WITH SUBSTANTIAL AMOUNTS OF COMBUSTIBLE OR FLAMMABLE LIQUIDS. SPACES WHERE SHIELDING OF COMBUSTIBLES IS EXTENSIVE.

NOT IN SCOPE

SEISMIC GENERAL NOTES

A. SEISMIC-RESTRAINT LOADING BASED 0N ASCE 7-10:

1. SITE CLASS
2. OCCUPANCY CATEGORY OF BUILDING OR STRUCTURE
3. SEISMIC DESIGN CATEGORY C.
4. DESIGN SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS (0.2 SECOND): (Sds) = XG (WHERE G IS THE FORCE OF GRAVITY).
5. DESIGN SPECTRAL RESPONSE ACCELERATION AT 1-SECOND PERIOD: (Sd1) = XG (WHERE G IS THE FORCE OF GRAVITY).
6. COMPONENT IMPORTANCE FACTOR: (Ip) = 1.5.
7. Fpw = Y X WEIGHT OF WATER FILLED PIPE (THIS IS THE HORIZONTAL FORCE ACTION ON THE BRACE, AS DEFINED BY NFPA 13 (2016), 9.3.5.9.3.

B. INSTALL SEISMIC RESTRAINTS IN ACCORDANCE WITH NFPA 13:

1. INSTALL LATERAL BRACES ON ALL FEED AND CROSS MAIN LINES, REGARDLESS OF PIPE DIAMETER.
2. INSTALL LATERAL BRACES ON BRANCH LINES LARGER THAN 2-INCH DIAMETER. (EXCEPT THAT IF THE BRANCH LINE DOES NOT EXCEED 12 FT IN LENGTH, BRACING MAY BE OMITTED.)
3. LATERAL BRACES ARE TO BE INSTALLED WITHIN 6 FT FROM THE ENDS OF PIPES
4. LATERAL BRACES ARE TO BE INSTALLED AT 40 FT MAXIMUM INTERVALS.
5. WHERE HANGER RODS DO NOT EXCEED 6 INCHES LONG, LATERAL BRACING MAY BE OMITTED.
6. A LONGITUDINAL BRACE MAY SERVE AS A LATERAL BRACE IF IT IS WITHIN 24 INCHES OF THE CENTERLINE OF THE PIPE BRACED LONGITUDINALLY.
7. INSTALL LONGITUDINAL BRACES ON ALL FEED AND CROSS MAIN LINES, REGARDLESS OF PIPE DIAMETER.
8. LONGITUDINAL BRACES ARE TO BE INSTALLED WITHIN 40 FT FROM THE ENDS OF PIPES.
9. LONGITUDINAL BRACES ARE TO BE INSTALLED AT 80 FT MAXIMUM INTERVALS
10. A LATERAL BRACE MAY SERVE AS A LONGITUDINAL BRACE IF IT IS WITHIN 24 INCHES OF THE CENTERLINE OF THE PIPE BRACED LATERALLY.

C. INSTALL SEISMIC-RESTRAINT DEVICES USING METHODS APPROVED BY OSHPD PROVIDING REQUIRED SUBMITTALS FOR COMPONENT

D. ATTACHMENT TO STRUCTURE: IF SPECIFIC ATTACHMENT IS NOT INDICATED, ANCHOR BRACING TO STRUCTURE AT FLANGES OF BEAMS, AT UPPER TRUSS CHORDS OF BAR JOISTS, OR AT CONCRETE MEMBERS

E. DRILLED-IN ANCHORS:

1. IDENTIFY POSITION OF REINFORCING STEEL AND OTHER EMBEDDED ITEMS PRIOR TO DRILLING HOLES FOR ANCHORS. DO NOT DAMAGE EXISTING REINFORCING OR EMBEDDED ITEMS DURING CORING OR DRILLING. NOTIFY THE STRUCTURAL ENGINEER IF REINFORCING STEEL OR OTHER EMBEDDED ITEMS ARE ENCOUNTERED DURING DRILLING. LOCATE AND AVOID PRESTRESSED TENDONS, ELECTRICAL AND ENCOUNTERED DURING DRILLING. LOCATE AND AVOID PRESTRESSED TENDONS, ELECTRICAL AND TELECOMMUNICATIONS CONDUIT, AND GAS LINES.
2. DO NOT DRILL HOLES IN CONCRETE OR MASONRY UNTIL CONCRETE, MORTAR, OR GROUT HAS ACHIEVED FULL DESIGN STRENGTH.
3. WEDGE ANCHORS: PROTECT THREADS FORM DAMAGE DURING ANCHOR INSTALLATION. HEAVY-DUTY SLEEVE SHALL BE INSTALLED WITH SLEEVE FULLY ENGAGED IN THE STRUCTURAL ELEMENT TO WHICH ANCHOR IS TO BE FASTENED.
4. SET ANCHORS TO MANUFACTURER'S RECOMMENDED TORQUE, USING A TORQUE WRENCH.
5. INSTALL ZINC-COATED STEEL ANCHORS FOR INTERIOR AND STAINLESS-STEEL ANCHORS FOR EXTERIOR APPLICATIONS.

F. ACCOMMODATION OF DIFFERENTIAL SEISMIC MOTION: INSTALL FLEXIBLE CONNECTIONS IN ACCORDANCE WITH NFPA 13 IN PIPING WHERE:

1. PIPING 2-1/2 INCH OR LARGER CROSSES SEISMIC JOINTS, WHERE ADJACENT SECTIONS OR BRANCHES ARE SUPPORTED BY DIFFERENT STRUCTURAL ELEMENTS, AND WHERE THE CONNECTIONS TERMINATE WITH CONNECTION TO EQUIPMENT THAT IS ANCHORED TO A DIFFERENT STRUCTURAL ELEMENT FROM ONE SUPPORTING THE CONNECTIONS AS THEY APPROACH EQUIPMENT.
2. WITHIN 24 INCHES OF THE TOP AND BOTTOM OF ALL RISERS 2-1/2 INCH OR LARGER (IN RISERS LESS THAN 3 FT IN LENGTH, FLEXIBLE COUPLINGS MAY BE OMITTED; IN RISERS 3 FT TO 7 FT, ONE FLEXIBLE COUPLING IS ADEQUATE).
3. WITHIN 12 IN ABOVE AND WITHIN 24 IN BELOW THE FLOOR IN MULTI FLOOR BUILDINGS FOR PIPING 2-1/2 INCH OR LARGER.
4. ON BOTH SIDES OF CONCRETE OR MASONRY WALLS WITHIN 1 FT OF FACE OF WALL FOR PIPING 2-1/2 INCH OR LARGER, UNLESS CLEARANCE IS PROVIDED PER NFPA 13.
5. WITHIN 24 INCHES OF BUILDING EXPANSION JOINTS FOR PIPING 2-1/2 INCH OR LARGER.
6. WITHIN 24 INCHES OF THE TOP OF DROPS EXCEEDING 15 FEET IN LENGTH TO PORTIONS OF SYSTEMS SUPPLYING MORE THAN ONE SPRINKLER, REGARDLESS OF PIPE SIZE.
7. WITHIN 24 INCHES ABOVE AND 24 INCHES BELOW ANY INTERMEDIATE POINTS OF SUPPORT FOR A RISER OR OTHER VERTICAL PIPE FOR PIPING 2-1/2 INCH OR LARGER.
8. WHEN THE FLEXIBLE COUPLING BELOW THE FLOOR IS ABOVE THE TIE-IN TO THE MAIN SUPPLYING THAT FLOOR, A FLEXIBLE COUPLING SHALL BE INSTALLED EITHER ON THE HORIZONTAL PORTION WITHIN 24 INCHES OF THE TIE-IN WHERE THE TIE-IN IS HORIZONTAL OR ON THE VERTICAL PORTION OF THE TIE-IN WHERE THE TIE-IN INCORPORATES A RISER FOR PIPING 2-1/2 INCH OR LARGER.
9. FOR DROPS TO HOSE LINES, RACK SPRINKLERS, MEZZANINES AND FREE STANDING STRUCTURES, INSTALL FLEXIBLE COUPLINGS REGARDLESS OF PIPE SIZE WITHIN 24 INCHES OF THE TOP OF THE DROP, WITHIN 24 INCHES ABOVE THE UPPERMOST DROP SUPPORT ATTACHMENT, WHERE DROP SUPPORTS ARE PROVIDED TO THE STRUCTURE, RACK, OR MEZZANINE, AND WITHIN 24 INCHES ABOVE THE BOTTOM OF THE DROP WHERE NO ADDITIONAL DROP SUPPORT IS PROVIDED.

G. ADJUSTING:

1. ADJUST RESTRAINTS TO PERMIT FREE MOVEMENT OF EQUIPMENT WITHIN NORMAL MODE OF OPERATION.

WET SPRINKLER GENERAL NOTES

ALL PIPE, DEVICES, AND INSTALLATION SHALL FULLY COMPLY WITH NFPA 13, AND ALL REQUIRED AUTHORITIES HAVING JURISDICTION.

REFER TO NOTES ON DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. REFER TO STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR BUILDING DETAILS.

PROVIDE A COMPLETE, HYDRAULICALLY CALCULATED, FULLY AUTOMATIC WET PIPE SPRINKLER SYSTEM THROUGHOUT THE BUILDING. FIRE PROTECTION CONTRACTOR SHALL INSTALL THE FIRE PROTECTION SYSTEM IN ACCORDANCE WITH ALL APPLICABLE NFPA STANDARDS, JOB SPECIFICATIONS, AND LOCAL CODE.

FIRE PROTECTION SYSTEM(S), PIPING, VALVES AND APPURTENANCES INDICATED ON THE DRAWING ARE DIAGRAMMATIC ONLY IN THAT ALL FITTINGS AND OFFSETS MAY NOT BE SHOWN. FIRE PROTECTION CONTRACTOR SHALL VERIFY EQUIPMENT SELECTIONS, PIPE ROUTING, ETC. FOR CODE COMPLIANCE, COMPLIANCE, AND ARCHITECTURAL AND STRUCTURAL CONFORMITY. FIRE PROTECTION CONTRACTOR SHOULD THOROUGHLY SURVEY THE PROPERTY AND REVIEW ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING (M.E.P.) CONSTRUCTION DOCUMENTS PRIOR TO BID.

FIRE PROTECTION SHOP DRAWINGS SHALL HAVE COMPLETE REFLECTED CEILING PLANS INDICATING LOCATION OF EACH SPRINKLER HEAD, AS WELL AS PIPING LAYOUTS. PROVIDE ADDITIONAL SPRINKLER HEADS (OVER CODE MINIMUM), IF REQUESTED BY THE ARCHITECT, TO OBTAIN SYMMETRICAL CEILING LAYOUTS.

FIRE PROTECTION SYSTEM SHALL BE COMPLETE WITH BACKFLOW PREVENTER, FIRE DEPARTMENT CONNECTION, STANDPIPES, CONTROL VALVES, SPRINKLER PIPING AND HEADS, ELECTRONIC SUPERVISION AND APPURTENANCES AS REQUIRED BY NFPA AND AUTHORITIES HAVING JURISDICTION.

GENERAL CONTRACTOR SHALL CONDUCT A COORDINATION MEETING WITH THE SUBCONTRACTORS TO ESTABLISH CLEARANCE REQUIREMENTS NEEDED FOR M.E.P. WORK PRIOR TO FABRICATION OF THE SPRINKLER SYSTEM. ANY RELOCATION OF FIRE SPRINKLER SYSTEM REQUIRED FOR PROPER INSTALLATION OF M.E.P. SYSTEMS SHALL BE AT THE FIRE PROTECTION CONTRACTOR'S EXPENSE.

FIRE PROTECTION CONTRACTOR SHALL BASE BID ON CAREFUL COORDINATION OF MECHANICAL DUCT, MECHANICAL AND PLUMBING PIPING, ELECTRICAL, AND STRUCTURAL SYSTEMS IN THE BUILDING.

HYDRAULIC CALCULATIONS SHALL BE BASED ON A WATER FLOW TEST OBTAINED FROM THE CITY OF **LEE'S SUMMIT** BY THE FIRE PROTECTION CONTRACTOR. CONTRACTOR SHALL VERIFY FLOW TEST DATA WITH LOCAL AUTHORITIES. IF A CURRENT TEST IS NOT AVAILABLE, CONTRACTOR SHALL CONDUCT A PROPER FLOW TEST PRIOR TO PREPARATION OF SHOP DRAWINGS. PROVIDE A MINIMUM OF 10 PSI SAFETY FACTOR FOR ALL HYDRAULIC CALCULATIONS. PIPE SIZING INDICATED ON THE DRAWINGS IS FOR INFORMATIONAL PURPOSES ONLY. PIPE SIZING SHALL BE ESTABLISHED BY THE FIRE PROTECTION CONTRACTOR. EXCEPTION: STANDPIPES SHALL BE SIZED AS INDICATED ON THE DRAWINGS OR LARGER. NOTE: AVOID SYSTEM PRESSURES EXCEEDING 175 PSI.

PROVIDE A REDUCED PRESSURE ZONE (R.P.Z.) BACKFLOW PREVENTER TO ISOLATE THE SPRINKLER SYSTEM FROM THE MAIN SUPPLY. COORDINATE REQUIREMENTS WITH THE CITY OF **LEE'S SUMMIT** AND THE STATE OF **MISSOURI**.

FIRE PROTECTION SYSTEM SHALL INTERFACE WITH THE BUILDING FIRE ALARM SYSTEM. REFER TO ELECTRICAL.

ALL CONTROL VALVES SHALL HAVE ELECTRONIC SUPERVISION.

SPECIAL CONSIDERATION SHALL BE GIVEN TO AREAS THROUGHOUT THE BUILDING SUCH AS DROPPED SOFFITS, RAISED CEILINGS AND LIGHTING SOFFITS THAT NECESSITATE ADDITIONAL SPRINKLER HEADS. REFER TO ARCHITECTURAL DRAWINGS FOR REFLECTED CEILING PLANS AND BUILDING DETAILS.

ALL SPRINKLER HEADS FOR LIGHT HAZARD AND ALL STANDARD SPRAY SPRINKLER HEADS FOR ORDINARY HAZARD SHALL BE QUICK RESPONSE.

ALL CEILING MOUNTED SPRINKLER HEADS SHALL BE CHROME WITH CHROME RECESSED ESCUTCHEONS, UNLESS NOTED OTHERWISE ON FIRE PROTECTION PLANS OR SPECIFICATIONS.

ALL SPRINKLER HEADS INSTALLED IN EXPOSED STRUCTURE SHALL BE BRASS UPRIGHT, UNLESS NOTED OTHERWISE ON FIRE PROTECTION PLANS OR SPECIFICATIONS.

ALL CEILING MOUNTED SPRINKLER HEADS SHALL BE LOCATED IN THE CENTER OF CEILING TILES IN ALL PUBLIC AREAS. BRAIDED FLEXIBLE SPRINKLER DROP CONNECTIONS MAY BE USED FOR EASE OF INSTALLATION, SPECIFIC SPRINKLER HEAD LOCATION OR SPECIFIC OWNER REQUIREMENTS. EXCEPTION: CLOSETS, STORAGE ROOMS, EQUIPMENT ROOMS AND OTHER SIMILAR NON-PUBLIC AREAS ARE NOT REQUIRED TO BE CENTER OF TILE BUT SHALL BE NO CLOSER THAN 6" TO CEILING GRID.

ROOMS AND OTHER SIMILAR NON-PUBLIC AREAS ARE NOT REQUIRED TO BE CENTER OF TILE BUT SHALL BE NO CLOSER THAN 6" TO CEILING GRID.

PROVIDE SPRINKLER SYSTEM MAIN DRAIN IN ACCORDANCE WITH NFPA 13.

PROVIDE AUXILIARY DRAINS FOR ALL TRAPPED PIPING SECTIONS IN ACCORDANCE WITH NFPA 13.

ALL DRAIN PIPING SHALL TERMINATE AT THE EXTERIOR WITH 45 DEGREE ELBOW DOWN. INSTALL THE DRAIN IN A MANNER TO PREVENT FLOODING OR DAMAGE TO LANDSCAPING, AND TO PREVENT WETTING OF WALKWAYS. EXCEPTION: DRAIN PIPING MAY TERMINATE AT INTERIOR FLOOR DRAINS IF THE DRAIN HAS BEEN SIZED APPROPRIATELY. COORDINATE WITH PLUMBING CONTRACTOR FOR LOCATION OF FLOOR DRAIN.

INSTALL PIPING HORIZONTALLY AND AT RIGHT ANGLES TO WALLS AND CEILINGS.

ALL SPRINKLER MAIN PIPING SHALL BE SCHEDULE 10 WITH ROLL GROOVED AND WELDED OUTLETS, UNLESS NOTED OTHERWISE. FITTINGS AND COUPLINGS SHALL BE STANDARD GROOVED, UNLESS NOTED OTHERWISE.

ALL SPRINKLER BRANCH LINE PIPING SHALL BE BLACK SCHEDULE 40, UNLESS NOTED OTHERWISE. FITTINGS SHALL BE STANDARD "BLACK" GRADE CAST IRON, DUCTILE IRON OR MALLEABLE IRON, UNLESS NOTED OTHERWISE.

ALTERNATIVE STEEL PIPE SCHEDULES ALLOWED BY NFPA 13 ARE NOT ACCEPTABLE ON THIS PROJECT.

ALL FIRE PROTECTION PIPING, FITTINGS, SUPPORTS AND ACCESSORIES IN EXPOSED AREAS SHALL BE PREPARED FOR FINISH PAINTING. PIPING, FITTINGS, SUPPORTS AND ACCESSORIES IN MECHANICAL ROOMS SHALL BE PAINTED OSHA RED. ALL PAINTING SHALL BE PERFORMED BY OTHERS.

FIRE PROTECTION CONTRACTOR SHALL PROVIDE PROTECTION FOR SPRINKLER HEADS IN AREAS WHERE THE CEILING AND SURROUNDING AREAS ARE TO BE PAINTED. FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF SPRINKLER PROTECTION AFTER PAINTING WORK IS COMPLETE. ANY SPRINKLER HEAD WITH PAINT OR TEXTURE OVERSPRAY SHALL BE REPLACED BY THE FIRE PROTECTION CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.

PROVIDE HEAD GUARDS ON ALL SPRINKLER HEADS AT OR BELOW AN ELEVATION OF 7'-0" AFF, OR THAT OTHERWISE MAY BE SUBJECT TO MECHANICAL DAMAGE, SUCH AS IN THE MECHANICAL ROOMS.

SEISMIC BRACING/ RESTRAINT IS NOT REQUIRED FOR THIS PROJECT.

FIRE PROTECTION PLANS SHALL BE SUBMITTED TO ALL REQUIRED LOCAL AND STATE AUTHORITIES.

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As Noted on Plan Review

Development Services Department
Lee's Summit, Missouri

05/08/2024

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FLEX SPACES

60 SE Thompson Dr.
Lee's Summit, MO 64082

PROJECT NUMBER: 23092

CLIENT: Capital Builders

CONSTRUCTION / PERMIT DRAWINGS

03.27.2024

Architect License: _____

REV.	DATE	ISSUE

ARCHITECT:

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STATE OF MISSOURI
ZACHARY BUCKMILLER
NUMBER PE-2023006188
PROFESSIONAL ENGINEER
04.19.2024

GARVER COA# 2008013090

FIRE SUPPRESSION NOTES, LEGENDS AND SPECIFICATIONS

Sheet: F001

Revision no.

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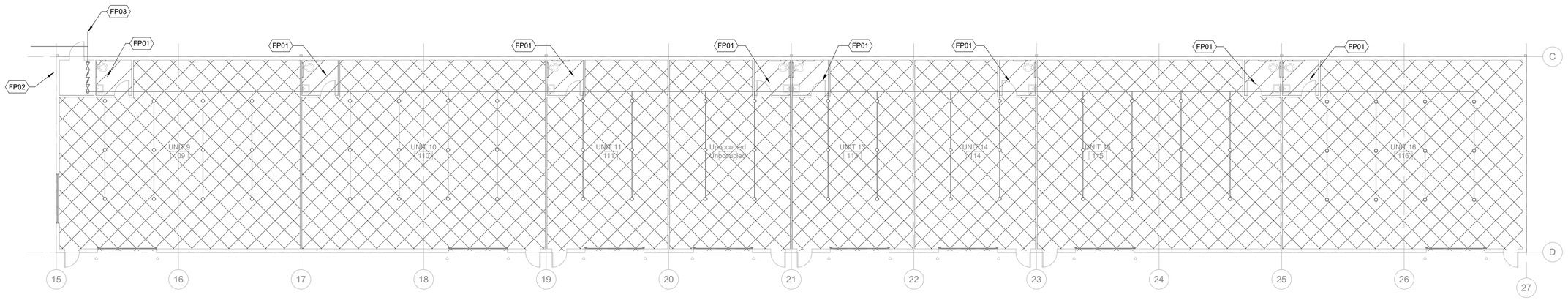
As Noted on Plan Review

Development Services Department
Lee's Summit, Missouri

05/08/2024



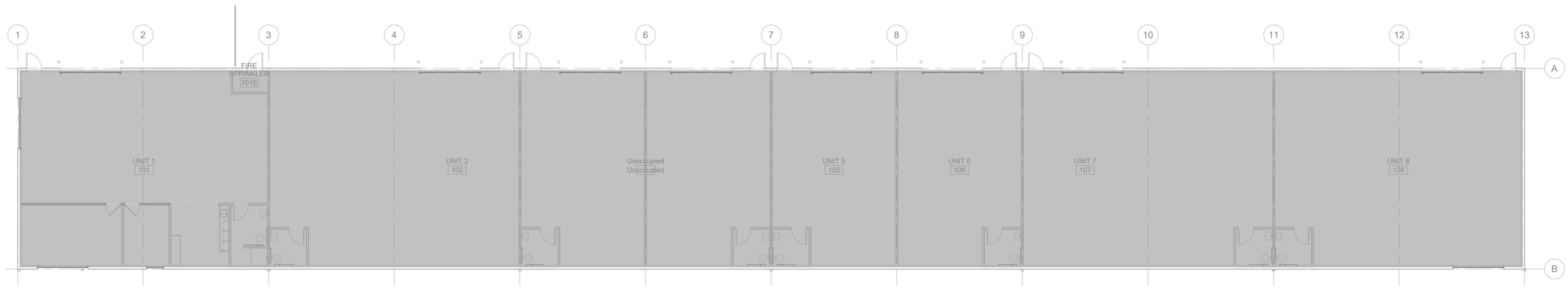
2 FIRE SUPPRESSION FLOOR PLAN - BUILDING B

SCALE: 3/32" = 1'-0"

N

KEYED NOTES

FP01	PROVIDE FIRE PROTECTION HEADS ABOVE CEILING SPACED BASED ON ORDINARY HAZARD 1
FP02	SIAMESE FIRE DEPARTMENT CONNECTION. PROVIDE HORN AND STROBE ABOVE.
FP03	REFER TO CIVIL PLANS FOR FIRE SERVICE CONNECTION AND CONTINUATION.



1 FIRE SUPPRESSION FLOOR PLAN - BUILDING A

SCALE: 3/32" = 1'-0"

N

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FLEX SPACES

60 SE Thompson Dr.
Lee's Summit, MO 64082

PROJECT NUMBER: 23092

CLIENT: Capital Builders

CONSTRUCTION / PERMIT DRAWINGS

03.27.2024

Architect License: _____

REV.	DATE	ISSUE

ARCHITECT:

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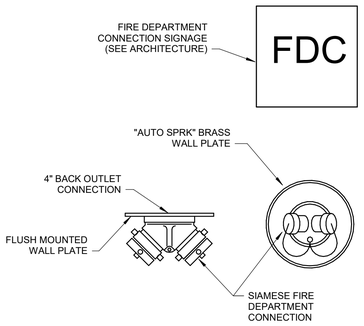
STATE OF MISSOURI
ZACHARY BUCKMILLER
NUMBER PE-2023006188
PROFESSIONAL ENGINEER
04.19.2024

GARVER COA# 2008013090

FIRE SUPPRESSION FLOOR PLANS

Sheet: F101

Revision no.



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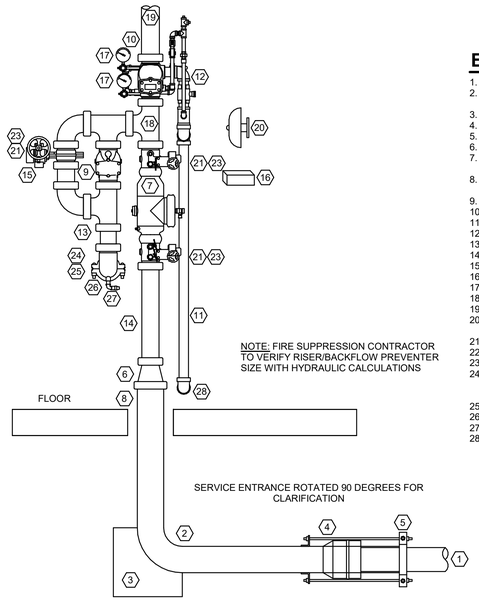
1 FDC DETAIL

SCALE: NONE



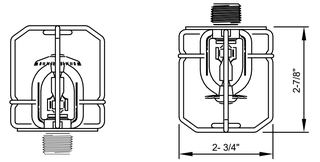
EQUIPMENT NOTES

1. 6" UTILITY FIRE MAIN
2. 6" STAINLESS STEEL ONE PIECE RISER (SHOWN MFxGROOVE CONFIGURATION)
3. CONCRETE THRUST BLOCK (PER NFPA-24)
4. CORROSION RESISTANT THREADED ROD THRUST RESTRAINT
5. 6" GALVANIZED PIPE CLAMP
6. 6" X 4" G X G REDUCER
7. AMES C200 (OR EQUAL) 4" (GxG) DOUBLE CHECK ASSEMBLY WITH INDICATING BFG VALVES
8. SLEEVE WITH NOMINAL 4-INCH ANNULAR CLEARANCE AND FILL WITH FLEXIBLE MATERIAL
9. 4" GROOVED SWING CHECK VALVE
10. 4" ALARM CHECK VALVE WITH TRIM
11. 2" SCH. 40 THREADED DRAIN PIPE
12. MAIN DRAIN VALVE
13. 4" SCH. 40 GROOVED PIPE TO FIRE DEPARTMENT CONNECTION
14. 4" SPOOL PIECE.
15. 4" GROOVED BUTTERFLY TEST VALVE
16. SPARE HEAD BOX (STOCKED WITH HEADS & WRENCH)
17. 3" WATER PRESSURE GAUGE
18. HYDRAULIC DATA PLATE
19. 4" SCH. 40 PIPE (SYSTEM FEED)
20. WEATHERPROOF EXTERIOR BELL (BY FIRE ALARM CONTRACTOR)
21. SUPERVISORY CIRCUIT (BY OTHERS)
22. NOT USED
23. VALVE SUPERVISORY "TAMPER" SWITCH
24. 4" SCH. 40 GxG SPOOL (2.5" x2.5" SIAMESE FIRE DEPARTMENT CONNECTION). COORDINATE FINAL FDC LOCATION WITH FIRE DEPARTMENT.
25. "FDC" SIGNAGE. 18"x18" MINIMUM SIZE
26. 4" GROOVED DRAIN ELBOW
27. AUTOMATIC BALL DRIP VALVE
28. EXTEND 1.25" DRAIN PIPE TO EXTERIOR DRAIN (INSTALL 1.25" GALVANIZED 45 ELBOW WITH WALL PLATE)

N

2 FIRE SUPPRESSION RISER DETAIL

SCALE: NOT TO SCALE



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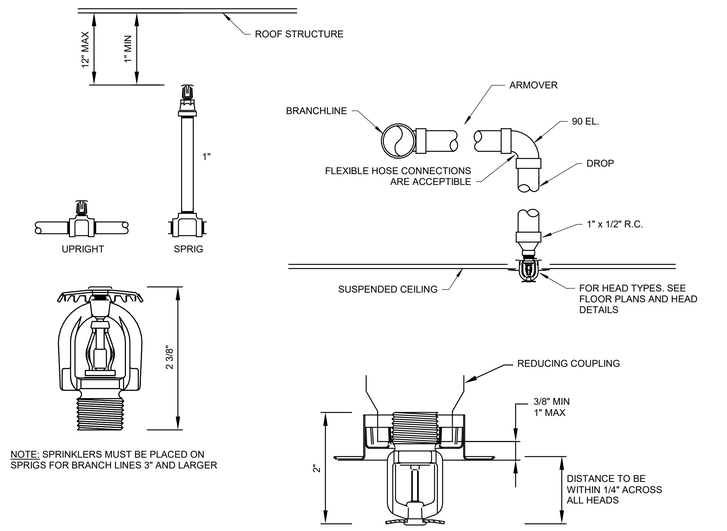
3 SPRINKLER GUARD DETAIL

SCALE: SCALE: NONE



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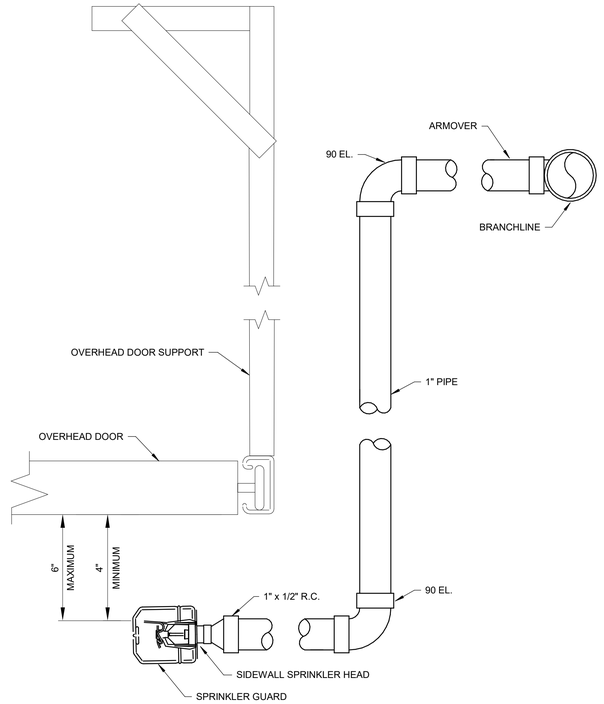
4 TYPICAL SPRINKLER DETAILS

SCALE: SCALE: NONE



N

5 OVERHEAD DOOR SPRINKLER DETAIL

SCALE: NONE

RELEASED FOR CONSTRUCTION
As Noted on Plan Review

Development Services Department
Lee's Summit, Missouri

05/08/2024

FLEX SPACES

60 SE Thompson Dr.
Lee's Summit, MO 64082

PROJECT NUMBER: 23092

CLIENT: Capital Builders

CONSTRUCTION / PERMIT DRAWINGS

03.27.2024

Architect License: _____

REV.	DATE	ISSUE

ARCHITECT:

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STATE OF MISSOURI
ZACHARY BUCKMILLER
NUMBER PE-2023100188
PROFESSIONAL ENGINEER
04.19.2024

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FIRE SUPPRESSION DETAILS

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