CONSTRUCTION PLANS
FOR
LOWENSTEIN PARK IMPROVEMENTS
STREETS OF WEST PRYOR
LEE'S SUMMIT, MISSOURI

⚠1 JULY 2019

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CALL BEFORE YOU
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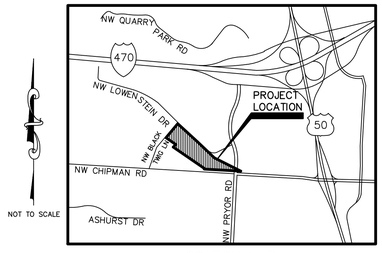
(TOLL FREE)

MISSOURI ONE CALL SYSTEM, INC.



LOCATION MAP
CITY OF LEE'S SUMMIT, MISSOURI

UTILITY STATEMENT:
THE UNDERGROUND UTILITIES SHOWN HEREON ARE FROM FIELD SURVEY INFORMATION OF ONE–CALL LOCATED UTILITIES, FIELD SURVEY INFORMATION OF ABOVE GROUND OBSERVABLE EVIDENCE, AND/OR THE SCALING AND PLOTTING OF EXISTING UTILITY MAPS AND DRAWINGS AVAILABLE TO THE SURVEYOR AT THE TIME OF SURVEY. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. FURTHERMORE, THE SURVEYOR DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES BY EXCAVATION UNLESS OTHERWISE NOTED ON THIS SURVEY.

CAUTION – NOTICE TO CONTRACTOR
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT LOCATIONS OF POSSIBLE CONFLICTS PRIOR TO ANY CONSTRUCTION.

SAFETY NOTICE TO CONTRACTOR
IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

WARRANTY / DISCLAIMER
THE DESIGNS REPRESENTED IN THESE PLANS ARE IN ACCORDANCE WITH ESTABLISHED PRACTICES OF CIVIL ENGINEERING FOR THE DESIGN FUNCTIONS AND USES INTENDED BY THE OWNER AT THIS TIME. HOWEVER, NEITHER KAW VALLEY ENGINEERING, INC NOR ITS PERSONNEL CAN OR DO WARRANTY THESE DESIGNS OR PLANS AS CONSTRUCTED, EXCEPT IN THE SPECIFIC CASES WHERE KAW VALLEY ENGINEERING PERSONNEL INSPECT AND CONTROL THE PHYSICAL CONSTRUCTION ON A CONTEMPORARY BASIS AT THE SITE.

INDEX TO SHEETS

APPROVED THIS _____ DAY OF _____, _____

_____
OWNER: MATT PENNINGTON

APPROVED THIS _____ DAY OF _____, _____

_____
CITY APPROVAL

OWNER:
STREETS OF WEST PRYOR, LLC
7200 WEST 132ND STREET
OVERLAND PARK, KS 66213
CONTACT: MATT PENNINGTON
email: matt@drakekc.com

DEVELOPER:
STREETS OF WEST PRYOR, LLC
7200 WEST 132ND STREET
OVERLAND PARK, KS 66213
AGENT: DAVID N. OLSON
email: daveolson@monarchprojectllc.com

PREPARED BY:
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2319 N. JACKSON
JUNCTION CITY, KS 66441
785–762–5040
CONTACT: LEON D OSBOURN
EMAIL: ldo@kveng.com

DATUM BENCHMARK:
VERTICAL DATUM IS NAVD 88 ESTABLISHED USING OPUS PROJECTS ON PROJECT CONTROL.

BENCHMARKS:
BM #1: CHISELED "SQUARE" ON TOP OF CURB POINT OF INTERSECTION OF WEST PARK PARKING LOT AT EAST DRIVE ENTRANCE. ELEV=984.97

BM #2: CHISELED "SQUARE" ON NORTHWEST CORNER AREA INLET, 25'± EAST OF CURB LINE AND ON–LINE WITH SOUTH CURB OF LOWENSTEIN DRIVE AT 90° BEND IN ROAD. ELEV=970.98

REV.	DATE	DESCRIPTION	DSN	DWN	CHK
1	7–16–19	REVISED PER CITY COMMENT	LDO	JT	LDO
0	6–18–19	INITIAL ISSUE	LDO	BKR	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER

LEON D. OSBOURN
ENGINEER
MO # 021726

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KAW VALLEY ENGINEERING

KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

LOWENSTEIN PARK IMPROVEMENTS
TITLE SHEET

PROJ. NO. A14_7067–1
DESIGNER LDO | DRAWN BY BKR
CFN 7067–1P_TS
SHEET C–1 | REV. 1

CONSTRUCTION NOTES:

1. EXCESS EXCAVATION SHALL BE DEPOSITED IN AREAS AS DIRECTED BY THE OWNER.

2. THE CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE EXISTING SURFACING ON STREETS NEEDED TO BE TRAVELED UPON BY EQUIPMENT DURING CONSTRUCTION, AND IF DAMAGED, HE SHALL REPLACE THE SURFACING AND REPAIR THE STREET TO THE ORIGINAL CONDITION. NO TYPE OF EARTH MOVING EQUIPMENT WILL BE PERMITTED TO HAUL ON OR OVER ANY EXISTING STREET.

3. THE CONTRACTOR SHALL TAKE CARE IN PROTECTING EXISTING TREES AND SHRUBS OUTSIDE OF THE PROPOSED CONSTRUCTION. CARE SHALL BE TAKEN NOT TO DISTURB LAWNS OR EXISTING STRUCTURES OUTSIDE OF THE CONSTRUCTION LIMITS.

4. CONTRACTOR SHALL SEED ALL DISTURBED AREAS IN ACCORDANCE TO REQUIREMENTS OF TECHNICAL SPECIFICATIONS. BUILDING LOTS WILL NOT REQUIRE SEEDING BUT ALL SLOPES AND BACKFILL BEHIND CURBS SHALL BE SEEDED WITHIN RIGHT-OF-WAY LIMITS, AND ON SLOPES OF EMBANKMENTS. AREAS SHALL BE SEEDED WITHIN 28 DAYS OF FINISH GRADING OR AS DIRECTED BY OWNER.

5. JOINT SPACING FOR CONCRETE PAVEMENT SHALL BE MODIFIED TO MEET THE CONTRACTOR'S CONSTRUCTION EQUIPMENT AND METHODS OF POURING. CONTRACTOR TO DRILL AND INSERT EPOXY-COATED DOWEL BARS INTO CONSTRUCTION JOINTS AND HEADERS. CONTRACTOR TO SAW-CUT CLEAN VERTICAL EDGE AT JOINT LOCATION. SAWED CONTRACTION JOINTS SHALL BE REQUIRED ON MAXIMUM 12'-0" CENTERS.

6. CONTRACTOR SHALL SUBMIT A JOINTING PLAN AND RECEIVE APPROVAL FROM THE ENGINEER AND CITY PRIOR TO CONCRETE PAVING OPERATIONS.

7. CONTRACTOR SHALL INSTALL SILT FENCE TO PREVENT SEDIMENT FROM LEAVING CONSTRUCTION LIMITS. SILT FENCE IS REQUIRED AT BOTTOM OF SLOPE ON ALL EMBANKMENTS AND AT DISCHARGE POINTS OF STREETS, STORM SEWER INLETS AND PIPE END SECTIONS.

8. THE CONSTRUCTION AREA SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL AND ORGANIC MATTER FROM ALL AREAS TO BE OCCUPIED BY PAVING. TOPSOIL FOR REPLACEMENT ON SLOPES MAY BE STOCKPILED ON-SITE. EXCESS TOPSOIL MAY BE WASTED IN FILL SLOPES PROVIDED THAT NO TOPSOIL WILL BE WASTED WITHIN 10 FEET OF THE EDGE OF THE BUILDING OR PARKING AREA. BURNING OF TIMBER WILL NOT BE PERMITTED UNLESS APPROVAL IS OBTAINED FROM GOVERNING OFFICIALS. STRIPPING EXISTING TOPSOIL AND ORGANIC MATTER SHALL BE TO A MINIMUM DEPTH OF 6 INCHES.

9. CONTRACTOR SHALL COMPLETE ROUGH SITE AND STREET GRADING PRIOR TO INSTALLATION OF UTILITIES.

LEGEND

	SECTION CORNER, ORIGIN UNKNOWN UNLESS OTHERWISE NOTED		STORM SEWER MANHOLE
	MONUMENT FOUND, ORIGIN UNCERTAIN UNLESS OTHERWISE NOTED		TELEPHONE SIGN
(D)	DESCRIBED		TELEPHONE MANHOLE
(M)	MEASURED		TELEPHONE PEDESTAL
(C)	CALCULATED	T	UNDERGROUND TELEPHONE LINE
(P)	PLATTED		SPLICE BOX
	STREET SIGN	FOC	FIBER OPTIC CABLE SIGN
	UTILITY POLE	FOC	UNDERGROUND FIBER OPTIC CABLE
LP	UTILITY POLE W/ LIGHT		TRAFFIC CONTROL POLE
	UTILITY POLE W/TRANSFORMER	P	PULL BOX
	LIGHT POLE	FP	FLAG POLE
	DEADMAN ANCHOR	MB	MAILBOX
(5) OU	OVERHEAD UTILITY - # LINES	ADA	HANDICAP SIGN
AC	AIR CONDITIONING UNIT		HANDICAP PAINTED SYMBOL
	ELECTRIC PEDESTAL		LEFT TURN ARROW
E	ELECTRIC METER		STRAIGHT ARROW
E	UNDERGROUND ELECTRIC LINE		RIGHT TURN ARROW
	UTILITY MANHOLE	GP	GATE POST
CTV	CABLE TV SIGN		FENCE POST
	CABLE TV PEDESTAL		WOOD FENCE
	GAS SIGN		CHAIN LINK FENCE
G	GAS METER		BARBED WIRE FENCE
G	UNDERGROUND GAS LINE	18"	DECIDUOUS TREE W/SIZE & DRIP LINE
GTS	GAS CATHODIC PROTECTION STATION	22"	EVERGREEN TREE W/SIZE & DRIP LINE
W	WATER LINE	SAP	SAPPLING TREE
	WATER LINE GATE VALVE		SHRUB
WS	WATER SPIGOT		STUMP
W	WATER METER		TREE LINE
W	WELL		SHRUB LINE
	FIRE HYDRANT	10	PARKING STALL COUNT
S	SANITARY SEWER MANHOLE	970	1' CONTOUR INTERVAL
S	SANITARY SEWER LINE		RESTRICTED ACCESS
		B/B	BACK OF CURB TO BACK OF CURB
		E/E	EDGE TO EDGE

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0	6-18-19	INITIAL ISSUE	LDO	BKR	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER
7-6-19
E-21726
REGISTERED PROFESSIONAL ENGINEER

LEON D. OSBOURN
ENGINEER
MO # 021726

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KAW VALLEY ENGINEERING

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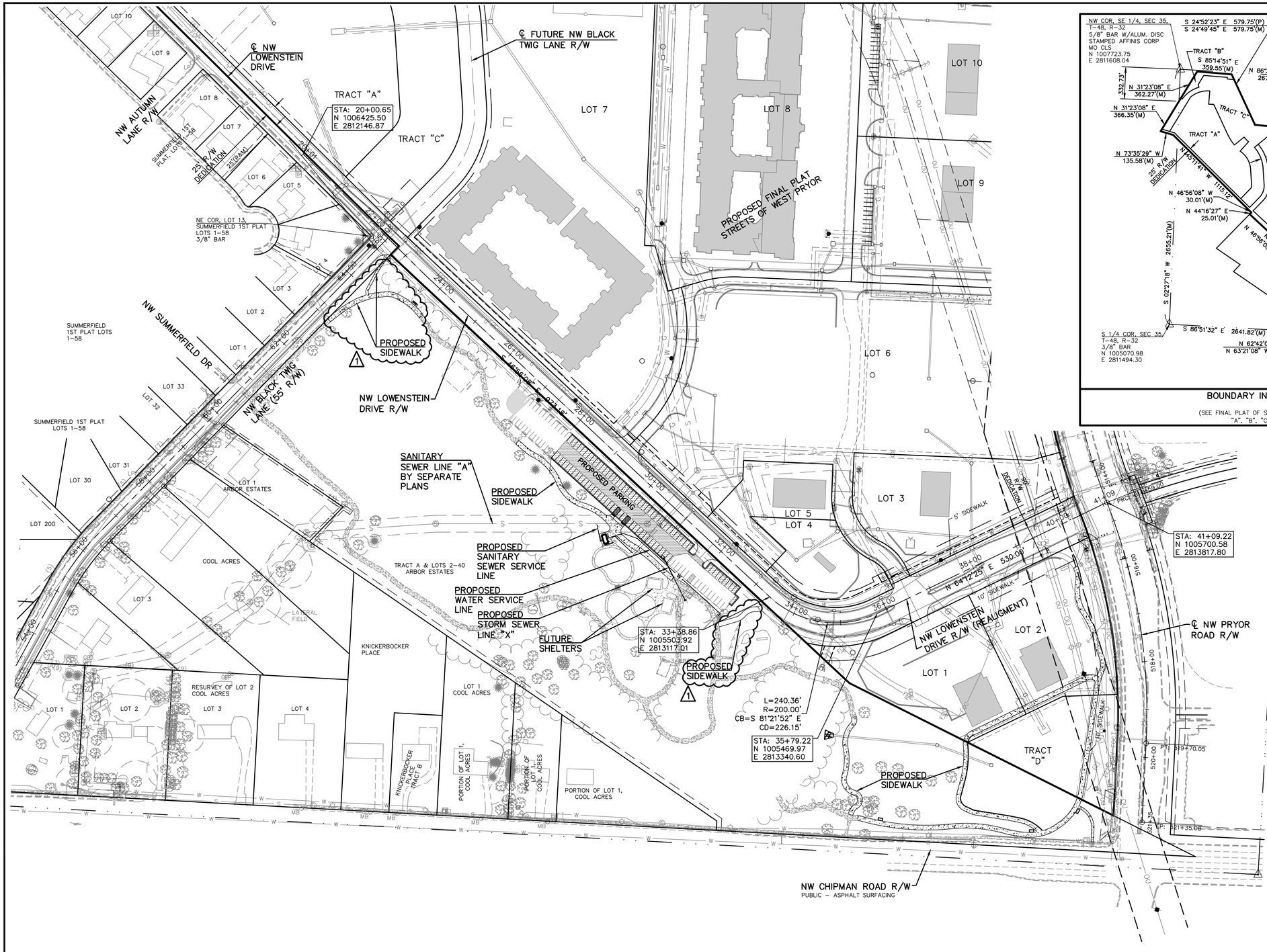
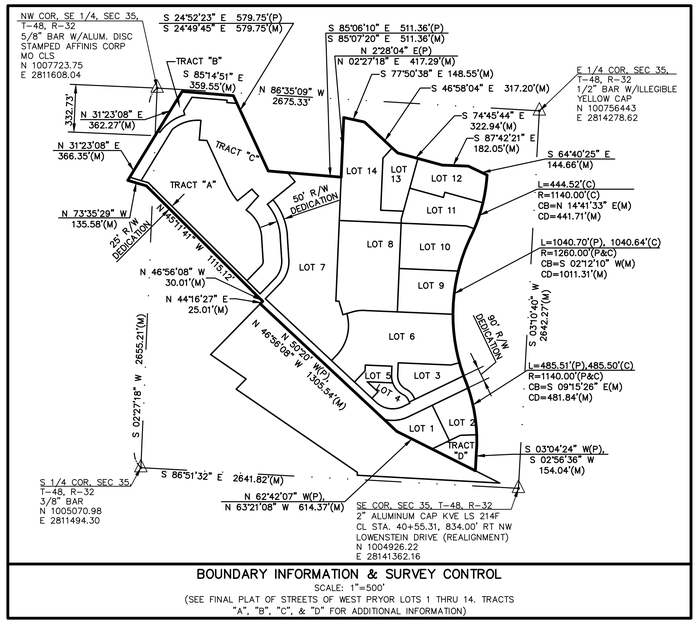
STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

LOWENSTEIN PARK IMPROVEMENTS
GENERAL NOTES

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	BKR
CFN	7067-1P_GEN
SHEET	C-2
REV	0





BOUNDARY INFORMATION & SURVEY CONTROL
SCALE: 1"=500'
(SEE FINAL PLAT OF STREETS OF WEST PRYOR LOTS 1 THRU 14, TRACTS "A", "B", "C", & "D" FOR ADDITIONAL INFORMATION)

PUBLIC STREET, STORM, WATER AND SANITARY SEWER ARE BY SEPARATE PLANS

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STATE OF MISSOURI
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7-16-19

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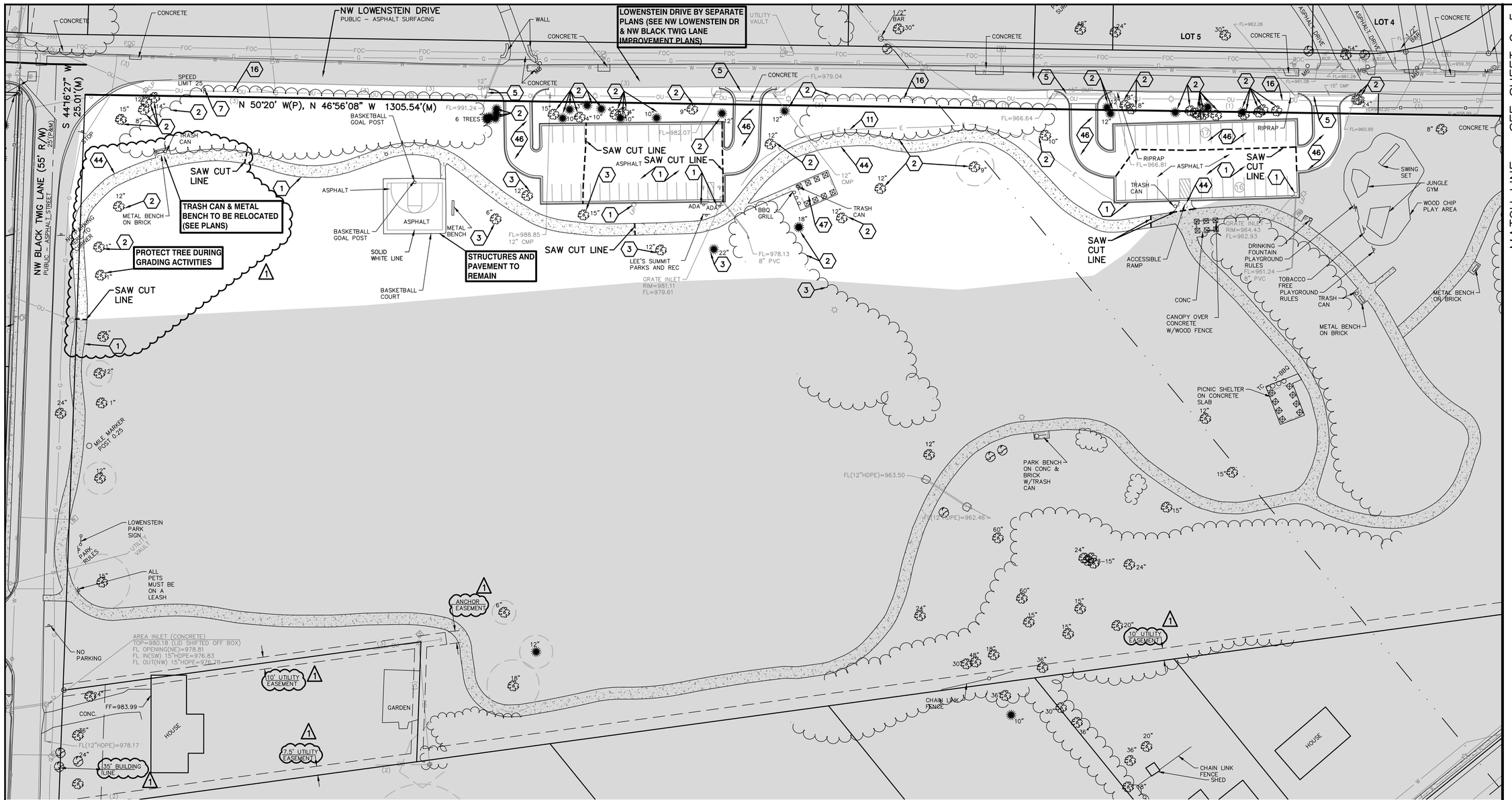
STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

LOWENSTEIN PARK IMPROVEMENTS
GENERAL LAYOUT SHEET

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	BKR
CFN	
7067-1P_GLS	
SHEET	REV
C-3	1



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GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY SITE CONDITIONS PRIOR TO BIDDING. CONTRACTOR SHALL REMOVE ALL BUILDINGS, UTILITIES, PAVEMENT, FOUNDATIONS, FENCES, CURBS AND ALL OTHER STRUCTURES FROM WITHIN PROPERTY LINES EXCEPT AS DESIGNATED "TO REMAIN" OR "TO BE REMOVED BY OTHERS", IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CITY OF LEE'S SUMMIT AND STATE REGULATIONS. SITE CONDITIONS SHOWN WERE AS OF MARCH 30, 2018.

2. ALL UTILITY PIPE LINES TO BE ABANDONED SHALL BE PLUGGED PER CITY AND STATE REGULATIONS.

3. DRIVES, PAVING AND OTHER STRUCTURES ON STREET OR HIGHWAY RIGHT–OF–WAY SHALL BE REMOVED AS NECESSARY TO CONSTRUCT IMPROVEMENTS SHOWN ON THESE PLANS. REMOVAL AND DISPOSAL SHALL BE IN CONFORMANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

4. ALL PAVING WITHIN PROPERTY TO BE REMOVED AND DISPOSED OF IN CONFORMANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

5. ALL EXISTING UTILITIES ETC. LOCATED WITHIN THE BOUNDARIES OF THE PROPOSED BUILDING SHALL BE COMPLETELY REMOVED TO 10 FEET OUTSIDE OF BUILDING LINE.

6. ALL HAZARDOUS ASBESTOS AND OTHER HAZARDOUS MATERIALS MUST BE IDENTIFIED AND REMOVED PRIOR TO ANY BUILDING DEMOLITION, IN STRICT CONFORMANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

7. CONTRACTOR SHALL VERIFY THAT ALL UTILITIES TO EXISTING STRUCTURES HAVE BEEN DISCONNECTED PRIOR TO COMMENCING DEMOLITION.

8. EXISTING POWER LINES AND APPURTENANCES TO BE RELOCATED BY KANSAS CITY POWER & LIGHT.

9. TREE LINES AND INDIVIDUAL TREES SHOWN ARE BASED ON ORIGINAL SURVEY. INITIAL CLEARING AND GRUBBING HAS BEEN COMPLETED. CONTRACTOR SHALL REMOVE ANY ADDITIONAL TREES AND SHRUB IN AREAS INDICATED FOR GRADING AND DEMOLITION.

10. COORDINATE WITH KAW VALLEY ENGINEERING PRIOR TO REMOVAL OF SECTION MONUMENTS AND PROPERTY PINS. KAW VALLEY ENGINEERING WILL RESET NECESSARY MONUMENTS WITHIN THE DISTURBED AREAS FOLLOWING DEMOLITION. CARE SHALL BE TAKEN TO PRESERVE PROPERTY PINS ALONG THE OUTSIDE PERIMETER OF THE SITE.

11. CONTRACTOR SHALL OBTAIN DEMOLITION PERMITS FOR EACH INDIVIDUAL HOUSE WITHIN THE AREA SHOWN. ALL SERVICE LINE SHUT–OFFS, WELL PLUGGING, SEPTIC TANK REMOVALS AND OTHER UTILITY REMOVALS SHALL BE HANDLED IN ACCORDANCE WITH STATE AND CITY CODES.

12. KCPL TRANSMISSION MAIN SHALL REMAIN IN PLACE DURING DEMOLITION. FOLLOW ALL KCPL REQUIREMENTS CONCERNING WORK IN THEIR EASEMENT AND IN PROXIMITY TO THEIR LINES, INCLUDING PROTECTION OF POLES AND SAFE WORKING DISTANCES FROM LINES.

DEMOLITION NOTES:

1. TO REMAIN
2. REMOVE TREES
3. TREES TO REMAIN
5. REMOVE PIPE AND RIPRAP
7. SIGN TO BE RELOCATED
11. TO BE REMOVED BY ELECTRIC COMPANY
16. TO BE RELOCATED BY ELECTRIC COMPANY
44. CONTRACTOR TO REMOVE (SIDEWALK)
46. CONTRACTOR TO REMOVE PAVING AND CURBS TO EXISTING LOWENSTEIN PAVEMENT
47. CONTRACTOR TO REMOVE STRUCTURE, APPURTENANCES AND PAVING, COORDINATE WITH PARKS DEPARTMENT

LEGEND

NOT A PART OF DEMOLITION ACTIVITIES

SCALE: 1" = 40'

DATUM BENCHMARK:
VERTICAL DATUM IS NAVD 88 ESTABLISHED USING OPUS PROJECTS ON PROJECT CONTROL.

BENCHMARKS:
BM #1: CHISELED "SQUARE" ON TOP OF CURB POINT OF INTERSECTION OF WEST PARK PARKING LOT AT EAST DRIVE ENTRANCE. ELEV=984.97

BM #2: CHISELED "SQUARE" ON NORTHWEST CORNER AREA INLET, 25'± EAST OF CURB LINE AND ON–LINE WITH SOUTH CURB OF LOWENSTEIN DRIVE AT 90° BEND IN ROAD. ELEV=970.98

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STREETS OF WEST PRYOR
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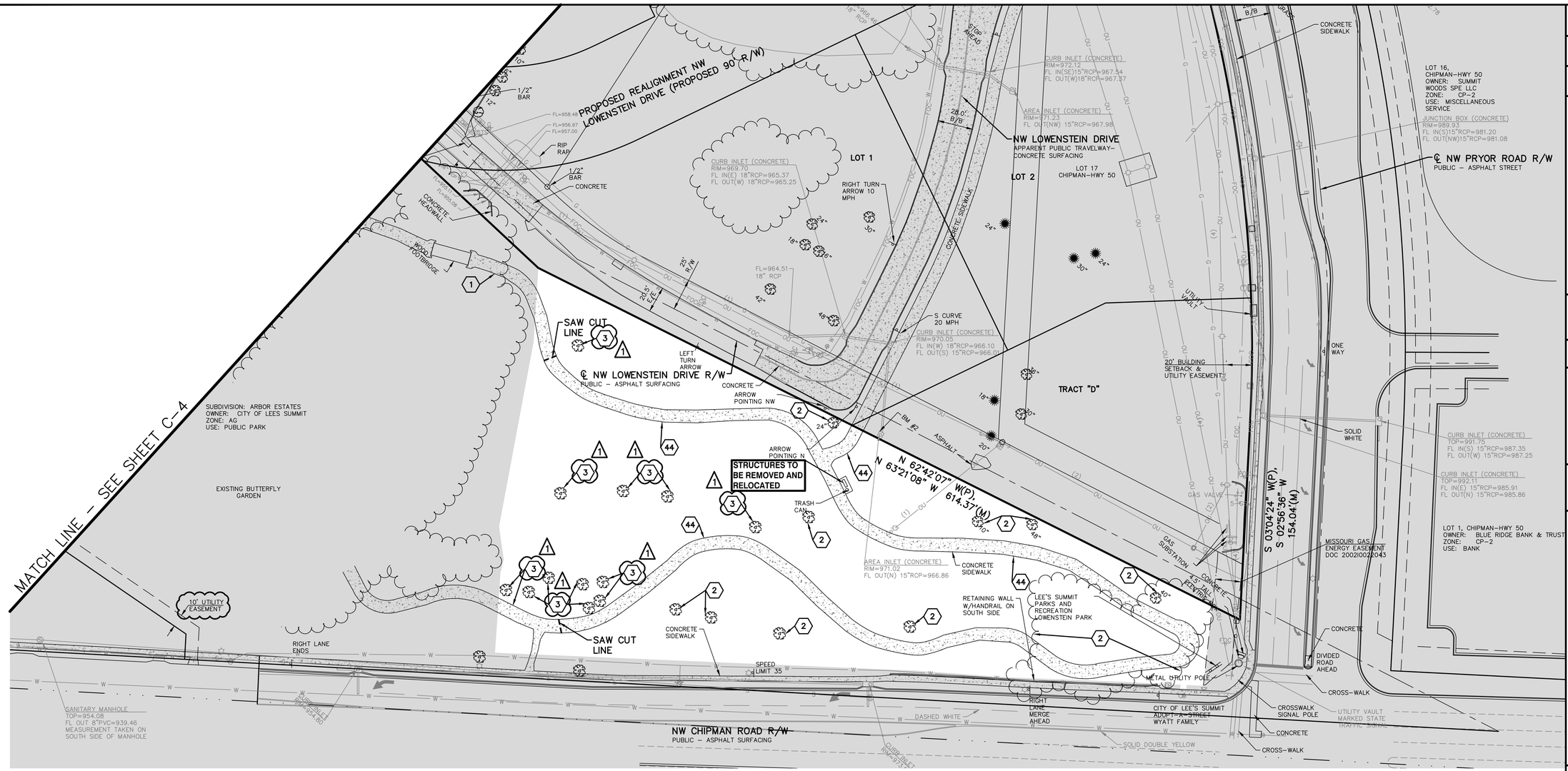
LEE'S SUMMIT, MISSOURI

LOWENSTEIN PARK IMPROVEMENTS
DEMOLITION PLAN

PROJ. NO. A14_7067–1
DESIGNER LDO | DRAWN BY BKR
CFN 7067–1P_DEMO
SHEET C–4 | REV 1



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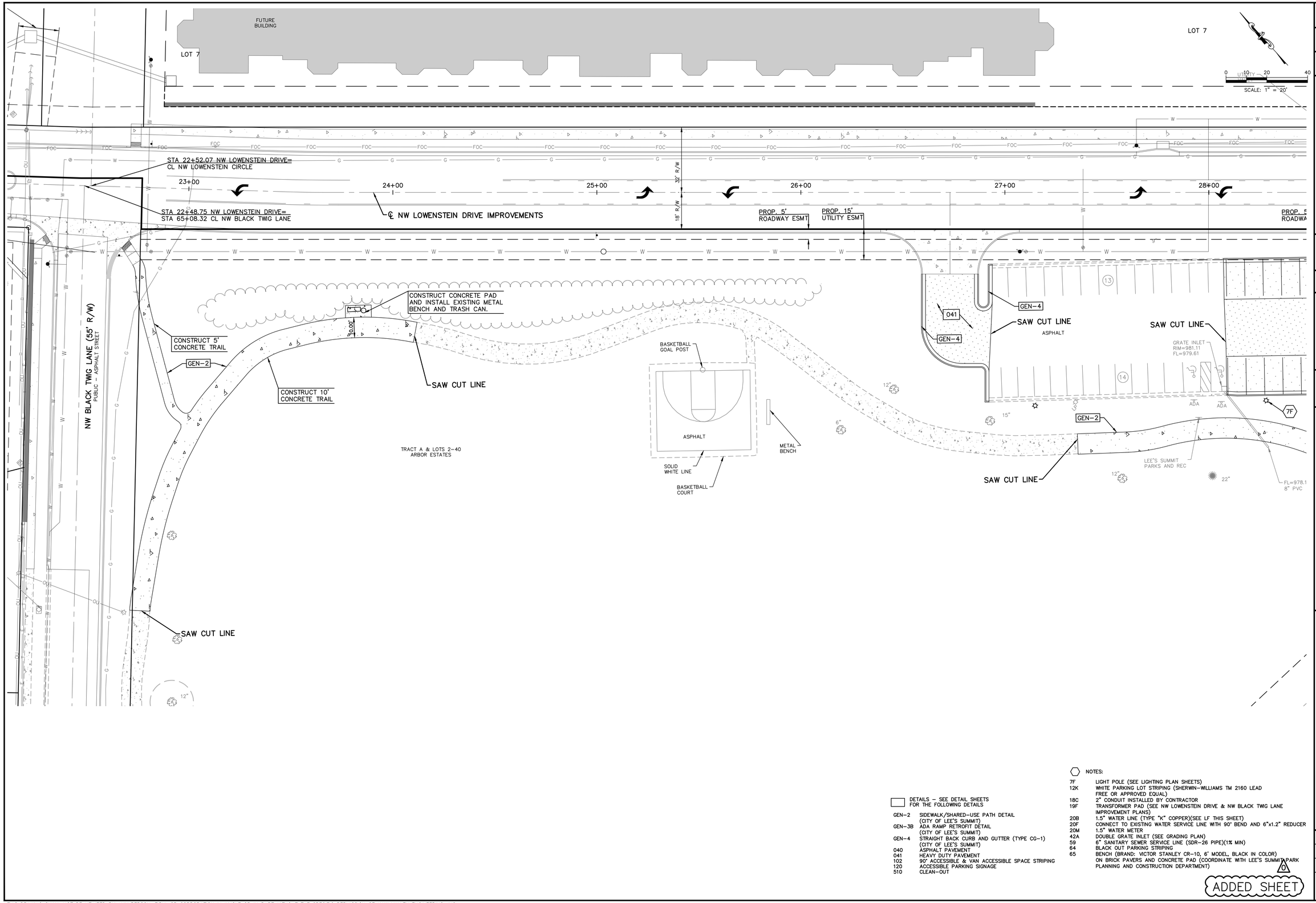
DEMOLITION PLAN

PROJ. NO. A14_7067–1
DESIGNER LDO | DRAWN BY BKR
CFN 7067–1P_DEMO
SHEET C–5 | REV 1



DETAILS - SEE DETAIL SHEETS FOR THE FOLLOWING DETAILS

GEN-2	SIDEWALK/SHARED-USE PATH DETAIL (CITY OF LEE'S SUMMIT)
GEN-3B	ADA RAMP RETROFIT DETAIL (CITY OF LEE'S SUMMIT)
GEN-4	STRAIGHT BACK CURB AND GUTTER (TYPE CG-1) (CITY OF LEE'S SUMMIT)
040	ASPHALT PAVEMENT
041	HEAVY DUTY PAVEMENT
102	90° ACCESSIBLE & VAN ACCESSIBLE SPACE STRIPING
120	ACCESSIBLE PARKING SIGNAGE
510	CLEAN-OUT

NOTES:

7F	LIGHT POLE (SEE LIGHTING PLAN SHEETS)
12K	WHITE PARKING LOT STRIPING (SHERWIN-WILLIAMS TM 2160 LEAD FREE OR APPROVED EQUAL)
18C	2" CONDUIT INSTALLED BY CONTRACTOR
19F	TRANSFORMER PAD (SEE NW LOWENSTEIN DRIVE & NW BLACK TWIG LANE IMPROVEMENT PLANS)
20B	1.5" WATER LINE (TYPE "K" COPPER)(SEE LF THIS SHEET)
20F	CONNECT TO EXISTING WATER SERVICE LINE WITH 90° BEND AND 6"x1.2" REDUCER
20M	1.5" WATER METER
42A	DOUBLE GRATE INLET (SEE GRADING PLAN)
59	6" SANITARY SEWER SERVICE LINE (SDR-26 PIPE)(1% MIN)
64	BLACK OUT PARKING STRIPING
65	BENCH (BRAND: VICTOR STANLEY CR-10, 6' MODEL, BLACK IN COLOR) ON BRICK PAVERS AND CONCRETE PAD (COORDINATE WITH LEE'S SUMMIT PARK PLANNING AND CONSTRUCTION DEPARTMENT)

0 ADDED SHEET

REV.	DATE	DESCRIPTION	DSN	DWN	CHK
0	7-16-19	INITIAL ISSUE	LDO	BKR	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
7-16-19
REGISTERED PROFESSIONAL ENGINEER

LEON D. OSBOURN
ENGINEER
MO # 021726

KAW VALLEY ENGINEERING
2319 N. JACKSON | P.O. BOX 1304
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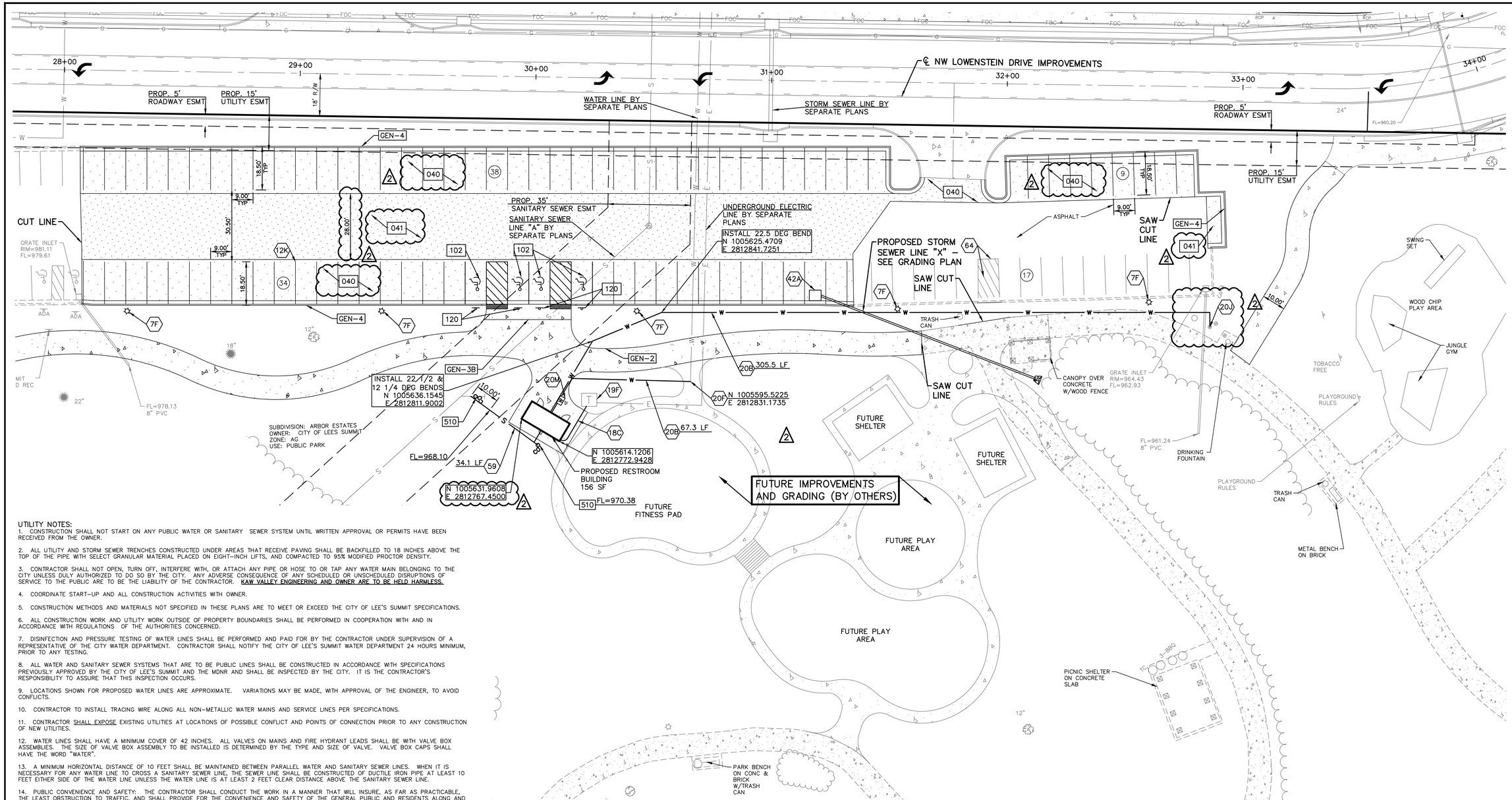
KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

LOWENSTEIN PARK IMPROVEMENTS
SITE AND UTILITY PLAN

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	BKR
CFN	
7067-1P_SP	
SHEET	REV.
C-5A	0



UTILITY NOTES:

1. CONSTRUCTION SHALL NOT START ON ANY PUBLIC WATER OR SANITARY SEWER SYSTEM UNTIL WRITTEN APPROVAL OR PERMITS HAVE BEEN RECEIVED FROM THE OWNER.

2. ALL UTILITY AND STORM SEWER TRENCHES CONSTRUCTED UNDER AREAS THAT RECEIVE PAVING SHALL BE BACKFILLED TO 18 INCHES ABOVE THE TOP OF THE PIPE WITH SELECT GRANULAR MATERIAL PLACED ON EIGHT–INCH LIFTS, AND COMPACTED TO 95% MODIFIED PROCTOR DENSITY.

3. CONTRACTOR SHALL NOT OPEN, TURN OFF, INTERFERE WITH, OR ATTACH ANY PIPE OR HOSE TO OR TAP ANY WATER MAIN BELONGING TO THE CITY UNLESS DULY AUTHORIZED TO DO SO BY THE CITY. ANY ADVERSE CONSEQUENCE OF ANY SCHEDULED OR UNSCHEDULED DISRUPTIONS OF SERVICE TO THE PUBLIC ARE TO BE THE LIABILITY OF THE CONTRACTOR. KAW VALLEY ENGINEERING AND OWNER ARE TO BE HELD HARMLESS.

4. COORDINATE START–UP AND ALL CONSTRUCTION ACTIVITIES WITH OWNER.

5. CONSTRUCTION METHODS AND MATERIALS NOT SPECIFIED IN THESE PLANS ARE TO MEET OR EXCEED THE CITY OF LEE'S SUMMIT SPECIFICATIONS.

6. ALL CONSTRUCTION WORK AND UTILITY WORK OUTSIDE OF PROPERTY BOUNDARIES SHALL BE PERFORMED IN COOPERATION WITH AND IN ACCORDANCE WITH REGULATIONS OF THE AUTHORITIES CONCERNED.

7. DISINFECTION AND PRESSURE TESTING OF WATER LINES SHALL BE PERFORMED AND PAID FOR BY THE CONTRACTOR UNDER SUPERVISION OF A REPRESENTATIVE OF THE CITY WATER DEPARTMENT. CONTRACTOR SHALL NOTIFY THE CITY OF LEE'S SUMMIT WATER DEPARTMENT 24 HOURS MINIMUM, PRIOR TO ANY TESTING.

8. ALL WATER AND SANITARY SEWER SYSTEMS THAT ARE TO BE PUBLIC LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH SPECIFICATIONS PREVIOUSLY APPROVED BY THE CITY OF LEE'S SUMMIT AND THE MDNR AND SHALL BE INSPECTED BY THE CITY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASSURE THAT THIS INSPECTION OCCURS.

9. LOCATIONS SHOWN FOR PROPOSED WATER LINES ARE APPROXIMATE. VARIATIONS MAY BE MADE, WITH APPROVAL OF THE ENGINEER, TO AVOID CONFLICTS.

10. CONTRACTOR TO INSTALL TRACING WIRE ALONG ALL NON–METALLIC WATER MAINS AND SERVICE LINES PER SPECIFICATIONS.

11. CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT LOCATIONS OF POSSIBLE CONFLICT AND POINTS OF CONNECTION PRIOR TO ANY CONSTRUCTION OF NEW UTILITIES.

12. WATER LINES SHALL HAVE A MINIMUM COVER OF 42 INCHES. ALL VALVES ON MAINS AND FIRE HYDRANT LEADS SHALL BE WITH VALVE BOX ASSEMBLIES. THE SIZE OF VALVE BOX ASSEMBLY TO BE INSTALLED IS DETERMINED BY THE TYPE AND SIZE OF VALVE. VALVE BOX CAPS SHALL HAVE THE WORD "WATER".

13. A MINIMUM HORIZONTAL DISTANCE OF 10 FEET SHALL BE MAINTAINED BETWEEN PARALLEL WATER AND SANITARY SEWER LINES. WHEN IT IS NECESSARY FOR ANY WATER LINE TO CROSS A SANITARY SEWER LINE, THE SEWER LINE SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE AT LEAST 10 FEET EITHER SIDE OF THE WATER LINE UNLESS THE WATER LINE IS AT LEAST 2 FEET CLEAR DISTANCE ABOVE THE SANITARY SEWER LINE.

14. PUBLIC CONVENIENCE AND SAFETY: THE CONTRACTOR SHALL CONDUCT THE WORK IN A MANNER THAT WILL INSURE, AS FAR AS PRACTICABLE, THE LEAST OBSTRUCTION TO TRAFFIC, AND SHALL PROVIDE FOR THE CONVENIENCE AND SAFETY OF THE GENERAL PUBLIC AND RESIDENTS ALONG AND ADJACENT TO HIGHWAYS IN THE CONSTRUCTION AREA.

15. ACCESSIBLE STALLS SHOWN WITH A "V" SHALL BE 16'–0" MIN. AND SHALL HAVE A SIGN DESIGNATING "VAN–ACCESSIBLE". SEE DETAIL 102 AND 120.

16. ALL TRAFFIC CONTROL DEVICES, INSTALLATION AND OPERATIONS SHALL CONFORM WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

17. PAINT FOR STRIPING ON PUBLIC STREETS, HIGHWAYS AND ENTRANCES SHALL BE REFLECTORIZED PAINT CONFORMING TO THE SPECIFICATIONS OR REQUIREMENTS OF THE AUTHORITY GOVERNING THE STREET OR HIGHWAY.

SAFETY NOTICE TO CONTRACTOR

IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

WARRANTY/DISCLAIMER:

THE DESIGNS REPRESENTED IN THESE PLANS ARE IN ACCORDANCE WITH ESTABLISHED PRACTICES OF CIVIL ENGINEERING FOR THE DESIGN FUNCTIONS AND USES INTENDED BY THE OWNER AT THIS TIME. HOWEVER, NEITHER KAW VALLEY ENGINEERING, INC NOR ITS PERSONNEL CAN OR DO WARRANTY THESE DESIGNS OR PLANS AS CONSTRUCTED, EXCEPT IN THE SPECIFIC CASES WHERE KAW VALLEY ENGINEERING PERSONNEL INSPECT AND CONTROL THE PHYSICAL CONSTRUCTION ON A CONTEMPORARY BASIS AT THE SITE.

CAUTION – NOTICE TO CONTRACTOR

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT LOCATIONS OF POSSIBLE CONFLICTS PRIOR TO ANY CONSTRUCTION.

NOTE:
1. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF ENTRANCE, SLOPED PAVING, EXIT PORCHES, RAMPS, TRUCK DOCKS, PRECISE BUILDING DIMENSIONS AND EXACT BUILDING UTILITY ENTRANCE LOCATIONS.

2. THESE PLANS HAVE NOT BEEN VERIFIED WITH FINAL ARCHITECTURAL CONTRACT DRAWINGS. CONTRACTOR SHALL VERIFY AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES. CONTRACTOR IS FULLY RESPONSIBLE FOR REVIEW AND COORDINATION OF ALL DRAWINGS AND CONTRACTOR DOCUMENTS.

3. ALL DIMENSIONS ARE TO BACK OF CURB UNLESS NOTED OTHERWISE.

4. ALL DIMENSIONS ARE PERPENDICULAR TO PROPERTY LINE.

5. ACTUAL SIGN LOCATIONS TO BE COORDINATED WITH CONSTRUCTION MANAGER.

SCALE: 1" = 20'

DETAILS – SEE DETAIL SHEETS FOR THE FOLLOWING DETAILS

GEN–2	SIDEWALK/SHARED–USE PATH DETAIL (CITY OF LEE'S SUMMIT)
GEN–3B	ADA RAMP RETROFIT DETAIL (CITY OF LEE'S SUMMIT)
GEN–4	STRAIGHT BACK CURB AND GUTTER (TYPE CG–1) (CITY OF LEE'S SUMMIT)
040	ASPHALT PAVEMENT
041	HEAVY DUTY PAVEMENT
102	90° ACCESSIBLE & VAN ACCESSIBLE SPACE STRIPING
120	ACCESSIBLE PARKING SIGNAGE
510	CLEAN–OUT

PUBLIC STREET, STORM, WATER AND SANITARY SEWER ARE BY SEPARATE PLANS

NOTES:

7F	LIGHT POLE (SEE LIGHTING PLAN SHEETS)
12K	WHITE PARKING LOT STRIPING (SHERWIN–WILLIAMS TM 2160 LEAD FREE OR APPROVED EQUAL)
18C	2" CONDUIT INSTALLED BY CONTRACTOR
19F	TRANSFORMER PAD (SEE NW LOWENSTEIN DRIVE & NW BLACK TWIG LANE IMPROVEMENT PLANS)
20B	1.5" WATER LINE (TYPE "K" COPPER)(SEE LF THIS SHEET)
20F	CONNECT TO EXISTING WATER SERVICE LINE WITH 90° BEND AND 6"x1.2" REDUCER
20M	1.5" WATER METER
42A	DOUBLE GRATE INLET (SEE GRADING PLAN)
59	6" SANITARY SEWER SERVICE LINE (SDR–26 PIPE) (1% MIN)
64	BLACK OUT PARKING STRIPING
65	BENCH (BRAND: VICTOR STANLEY CR–10, 6' MODEL, BLACK IN COLOR) ON BRICK PAVERS AND CONCRETE PAD (COORDINATE WITH LEE'S SUMMIT PARK PLANNING AND CONSTRUCTION DEPARTMENT)

REV	DATE	DESCRIPTION	DSN	DWN	CHK
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1	7-16-19	REVISED PER CITY COMMENT	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
7-16-19

LEON D. OSBOURN
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MO # 021726

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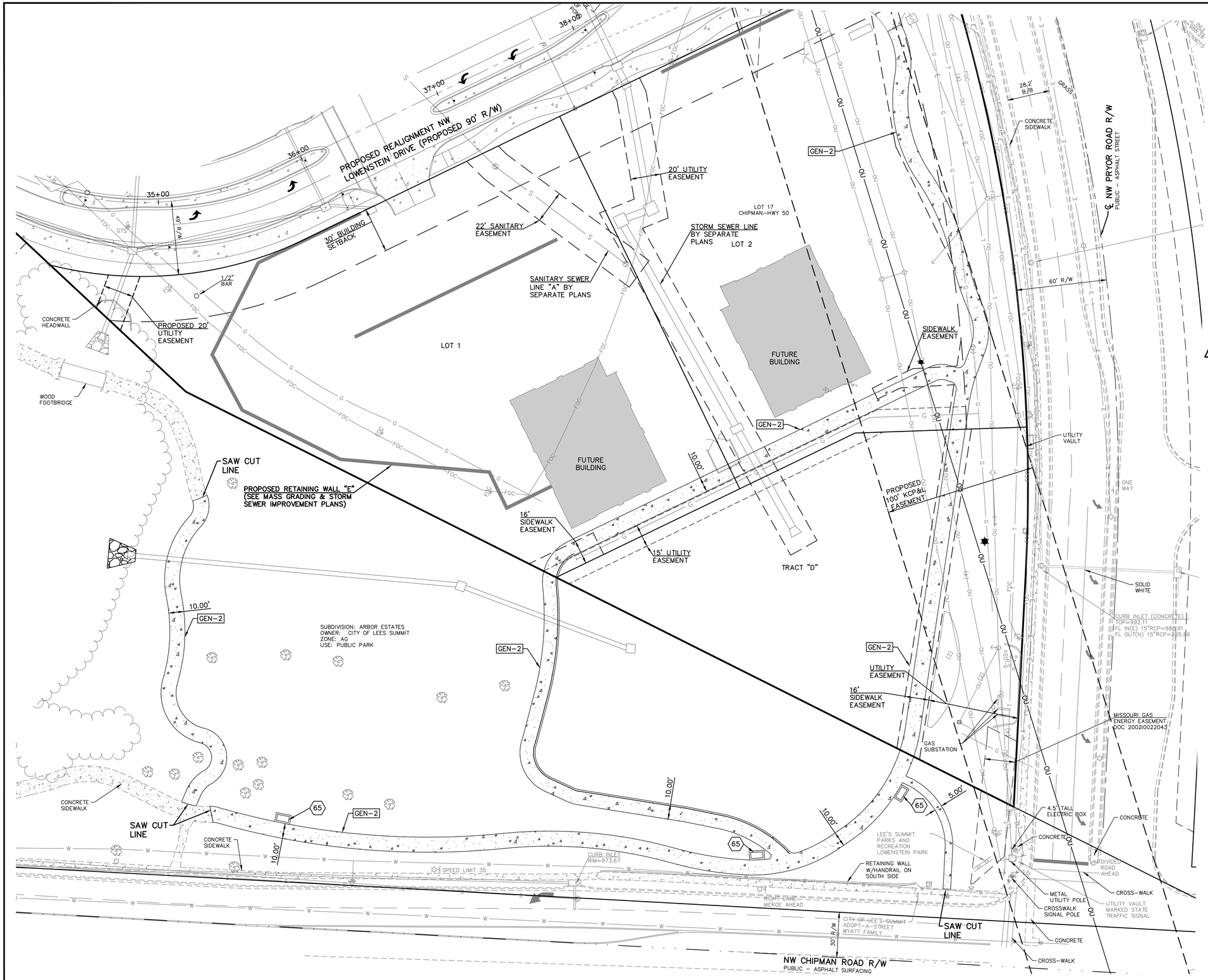
KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

LOWENSTEIN PARK IMPROVEMENTS
SITE AND UTILITY PLAN

PROJ. NO.	A14_7067–1
DESIGNER	LDO
DRAWN BY	BKR
CFN	7067–1P_SP
SHEET	C–6
REV	1



DETAILS – SEE DETAIL SHEETS FOR THE FOLLOWING DETAILS

- GEN-2 SIDEWALK/SHARED-USE PATH DETAIL (CITY OF LEE'S SUMMIT)
- GEN-3B ADA RAMP RETROFIT DETAIL (CITY OF LEE'S SUMMIT)
- GEN-4 STRAIGHT BACK CURB AND GUTTER (TYPE CG-1) (CITY OF LEE'S SUMMIT)
- 040 ASPHALT PAVEMENT
- 041 HEAVY DUTY PAVEMENT
- 102 90° ACCESSIBLE & VAN ACCESSIBLE SPACE STRIPING
- 120 ACCESSIBLE PARKING SIGNAGE
- 510 CLEAN-OUT

NOTES:

- 7F LIGHT POLE (SEE LIGHTING PLAN SHEETS)
- 12K WHITE PARKING LOT STRIPING (SHERWIN-WILLIAMS TM 2160 LEAD FREE OR APPROVED EQUAL)
- 18C 2" CONDUIT INSTALLED BY CONTRACTOR
- 19F TRANSFORMER PAD (SEE NW LOWENSTEIN DRIVE & NW BLACK TWIG LANE IMPROVEMENT PLANS)
- 20B 1.5" WATER LINE (TYPE "K" COPPER)(SEE LF THIS SHEET)
- 20F CONNECT TO EXISTING WATER SERVICE LINE WITH 90° BEND AND 6"x1.2" REDUCER
- 20M 1.5" WATER METER
- 42A DOUBLE GRATE INLET (SEE GRADING PLAN)
- 59 6" SANITARY SEWER SERVICE LINE (SDR-26 PIPE X 1% MIN)
- 64 BLACK OUT PARKING STRIPING
- 65 BENCH (BRAND: VICTOR STANLEY CR-10, 6' MODEL, BLACK IN COLOR) ON BRICK PAVERS AND CONCRETE PAD (COORDINATE WITH LEE'S SUMMIT PARK PLANNING AND CONSTRUCTION DEPARTMENT)

PUBLIC STREET, STORM, WATER AND SANITARY SEWER ARE BY SEPARATE PLANS

REV.	DATE	DESCRIPTION	DSN	DWN	CHK
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STATE OF MISSOURI
LEON D. OSBOURN
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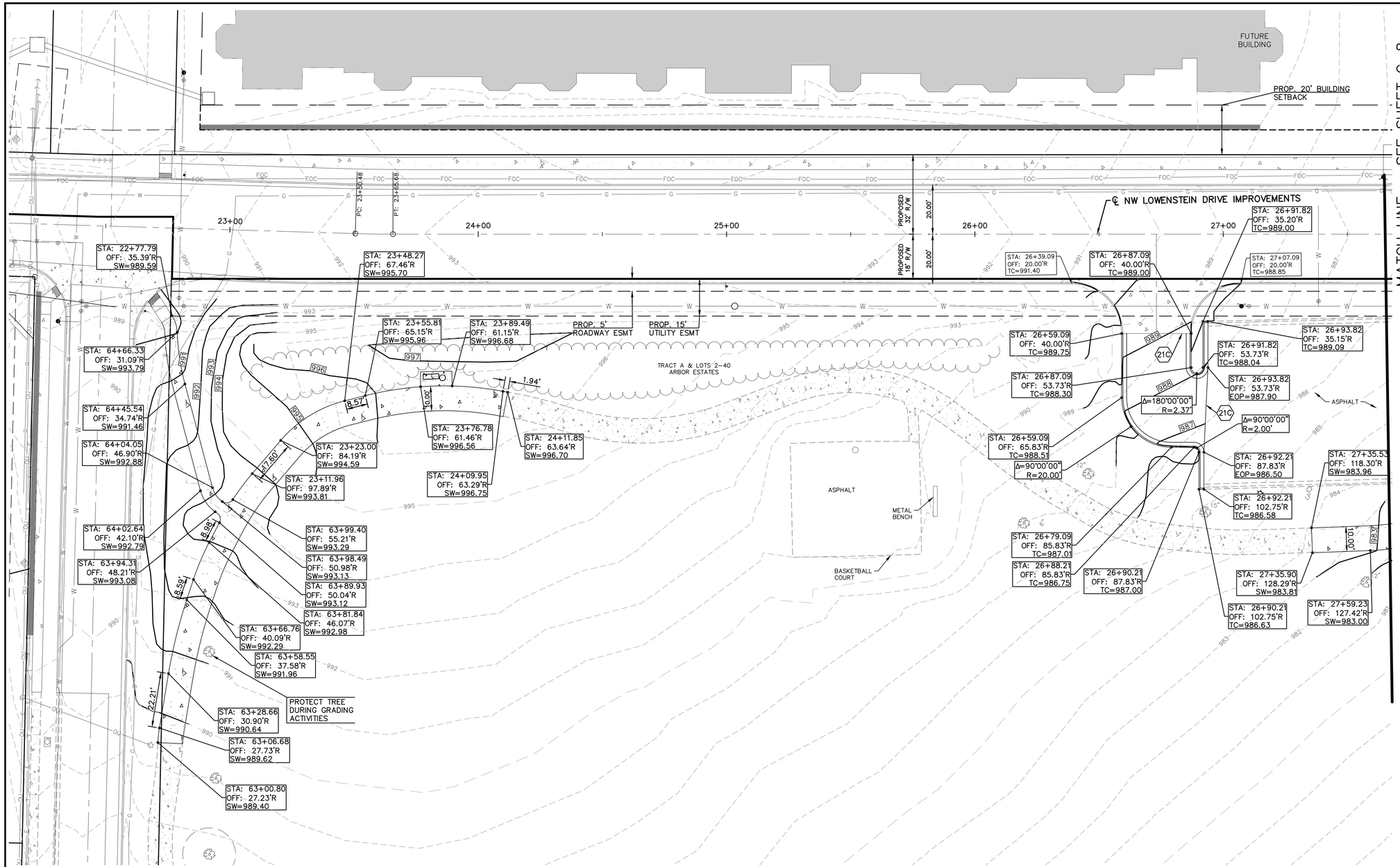
KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

STREETS OF WEST PRYOR

NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

LOWENSTEIN PARK IMPROVEMENTS SITE AND UTILITY PLAN

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	BKR
CFN	7067-1P_SP
SHEET	C-7
REV	1



ADDED SHEET

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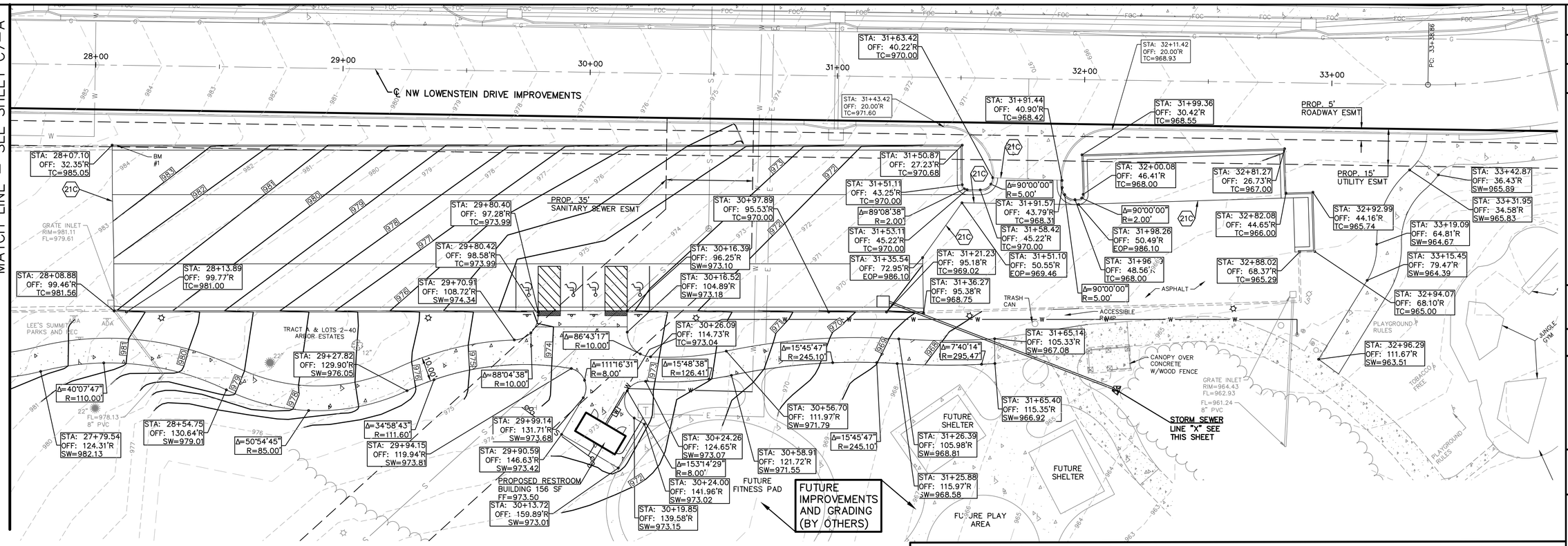
STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

LOWENSTEIN PARK IMPROVEMENTS
GRADING PLAN

PROJ. NO.	A14_7067-1	
DESIGNER	LDO	DRAWN BY BKR
CFN	7067-1P_GP	
SHEET	C-7A	REV 0

MATCH LINE – SEE SHEET C7–A



0 10 20 40
SCALE: 1" = 20'

LEGEND (PROPOSED)

- TC TOP OF CURB
- SW SIDEWALK
- EOP EDGE OF PAVEMENT
- 974 FINISHED 1' CONTOUR INTERVALS, TOP OF PAVEMENT

DETAILS – SEE DETAIL SHEETS NO. C–13 FOR THE FOLLOWING DETAILS

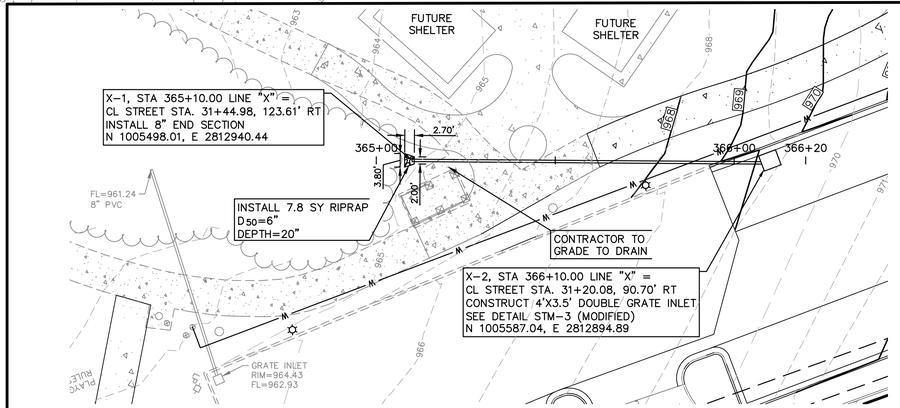
STM–3 JUNCTION BOX DETAIL

NOTES:

21C MATCH EXISTING PAVEMENT ELEVATIONS

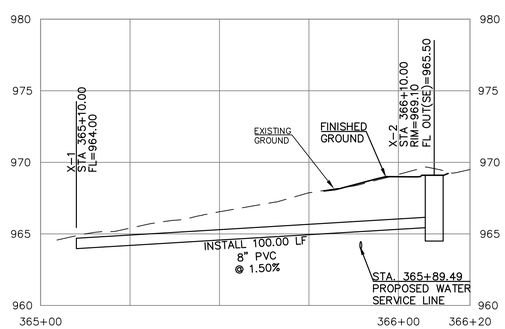
PUBLIC STREET, STORM, WATER AND SANITARY SEWER ARE BY SEPARATE PLANS

THE COORDINATES PROVIDED IN THESE PLANS ARE FOR INFORMATION AND CHECKING PURPOSES ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CALCULATE CONSTRUCTION STAKING COORDINATES ACCORDING TO THE DIMENSIONS SHOWN ON THESE PLANS. CONTRACTOR SHALL VERIFY THE ACCURACY OF THE COORDINATES SHOWN IN THE TABLE HEREON BEFORE CONSTRUCTION.



0 10 20 40
SCALE: 1" = 20'

SCALE: 1" = 5'



STORM SEWER LINE "X"

1 EXTENSIVE REVISIONS

REV.	DATE	DESCRIPTION	DSN	DWN	CHK
			LDO	LDO	LDO
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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

LOWENSTEIN PARK IMPROVEMENTS
GRADING PLAN & STORM SEWER LINE X - PLAN & PROFILE

PROJ. NO. A14_7067–1
DESIGNER LDO | DRAWN BY BKR
CFN 7067–1P_GP
SHEET C–8 | REV 1

SAFETY NOTICE TO CONTRACTOR

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WARRANTY / DISCLAIMER

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CAUTION – NOTICE TO CONTRACTOR

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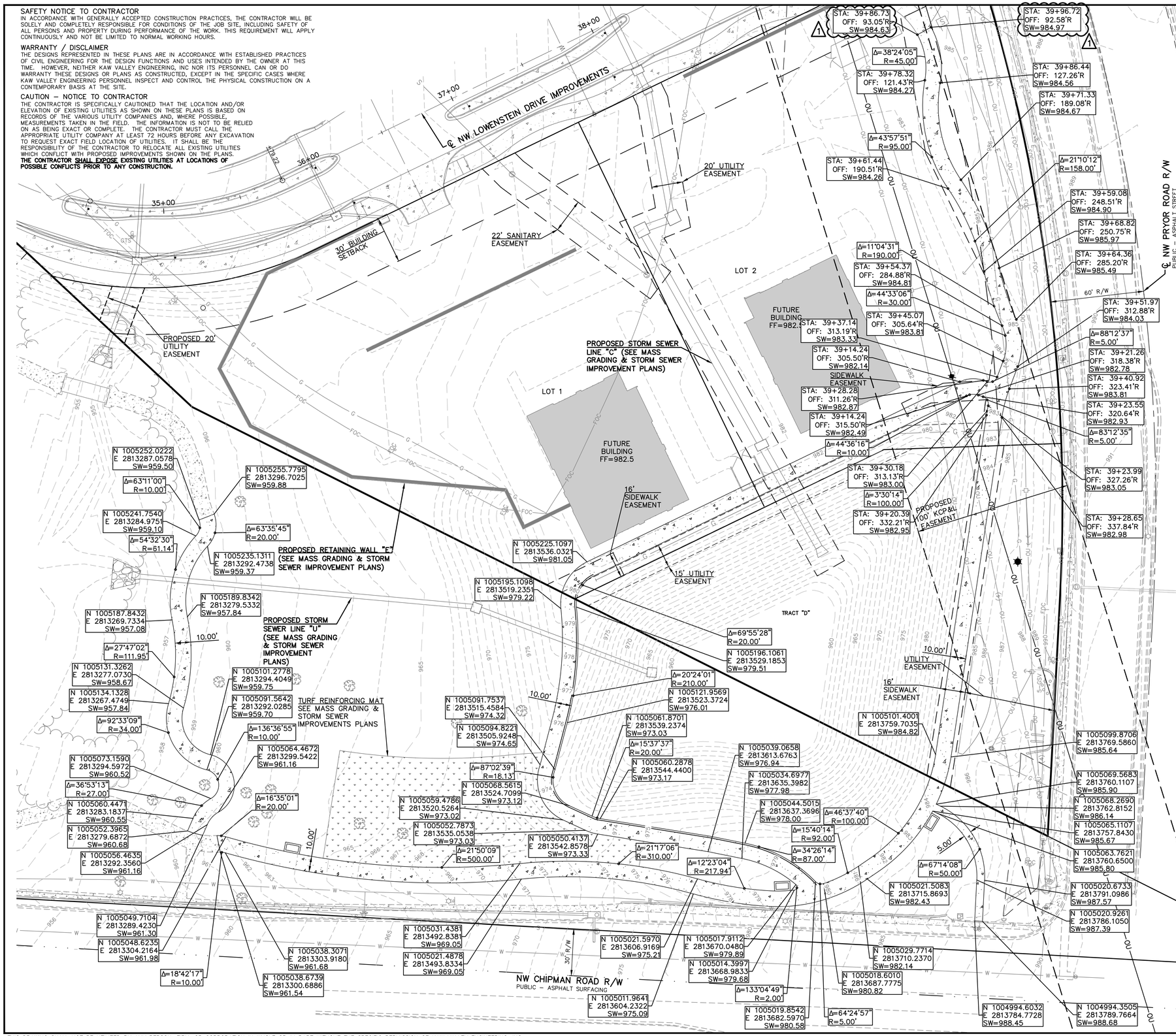


LEGEND (PROPOSED)

TC	TOP OF CURB
SW	SIDEWALK
EOP	EDGE OF PAVEMENT
974	FINISHED 1' CONTOUR INTERVALS, TOP OF PAVEMENT

0 15 30 60
SCALE: 1" = 30'

NOTES:
21C MATCH EXISTING PAVEMENT ELEVATIONS

GRADING NOTES:

1. THE CONSTRUCTION AREA SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL AND ORGANIC MATTER FROM ALL AREAS TO BE OCCUPIED BY BUILDING AND PAVING. TOPSOIL FOR REPLACEMENT ON SLOPES MAY BE STOCKPILED ON SITE. EXCESS TOPSOIL MAY BE WASTED IN FILL SLOPES PROVIDED THAT NO TOPSOIL WILL BE WASTED WITHIN 10 FEET OF THE EDGE OF THE BUILDING OR PARKING AREA. BURNING OF TIMBER WILL NOT BE PERMITTED UNLESS APPROVAL IS OBTAINED FROM GOVERNING OFFICIALS. STRIPPING EXISTING TOPSOIL AND ORGANIC MATTER SHALL BE TO A MINIMUM DEPTH OF 6 INCHES.

2. AREAS TO RECEIVE FILL SHALL BE SCARIFIED AND THE TOP 8-INCH DEPTH COMPACTED TO 95% STANDARD PROCTOR DENSITY. ANY UNSUITABLE AREAS SHALL BE UNDERCUT AND REPLACED WITH SUITABLE MATERIAL BEFORE ANY FILL MATERIAL CAN BE APPLIED.

3. OFF-SITE FILL MATERIAL SHALL HAVE A PLASTICITY INDEX OF 25 OR LESS, A LIQUID LIMIT OF 45 OR LESS AND CONTAIN NO ROCK LARGER THAN FOUR INCHES. OFF-SITE FILL MATERIAL SHALL BE APPROVED BY THE OWNER PRIOR TO BRINGING ON SITE.

4. EARTHWORK UNDER THE BUILDING SHALL COMPLY WITH THE PROJECT ARCHITECTURAL PLANS. OTHER FILL MATERIAL SHALL BE MADE IN LIFTS NOT TO EXCEED EIGHT INCHES DEPTH COMPACTED TO 95% STANDARD PROCTOR DENSITY. FILL MATERIAL MAY INCLUDE ROCK FROM ON-SITE EXCAVATION IF CAREFULLY PLACED SO THAT LARGE STONES ARE WELL DISTRIBUTED AND VOIDS ARE COMPLETELY FILLED WITH SMALLER STONES, EARTH, SAND OR GRAVEL TO FURNISH A SOLID EMBANKMENT. NO ROCK LARGER THAN THREE INCHES IN ANY DIMENSION NOR ANY SHALE SHALL BE PLACED IN THE TOP 12 INCHES OF EMBANKMENT.

5. AREAS THAT ARE TO BE CUT TO SUBGRADE LEVELS SHALL BE PROOF ROLLED WITH A MODERATELY HEAVY LOADED DUMP TRUCK OR SIMILAR APPROVED CONSTRUCTION EQUIPMENT TO DETECT UNSUITABLE SOIL CONDITIONS.

6. IN ALL AREAS OF EXCAVATION, IF UNSUITABLE SOIL CONDITIONS ARE ENCOUNTERED, A QUALIFIED GEOTECHNICAL ENGINEER SHALL RECOMMEND TO THE OWNER THE METHODS OF UNDERCUTTING AND REPLACEMENT OF PROPERLY COMPACTED, APPROVED FILL MATERIAL. ALL PROOFROLLING AND UNDERCUTTING SHOULD BE PERFORMED DURING A PERIOD OF DRY WEATHER.

7. 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.

8. ALL SLOPES ARE TO BE 3:1 OR FLATTER UNLESS OTHERWISE INDICATED.

9. ALL SLOPES EXCEEDING 3:1 SHALL BE PROTECTED BY RIP RAP, CONCRETE PAVING, OR OTHER METHODS INDICATED ON THESE PLANS, THAT WILL PREVENT EROSION AND PLACED SUCH THAT THE SURFACE IS FLUSH WITH SURROUNDING GROUND AND SHAPED TO CHANNEL WATER IN DIRECTIONS INDICATED.

10. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED SMOOTH AND FOUR INCHES OF TOPSOIL APPLIED. IF ADEQUATE TOPSOIL IS NOT AVAILABLE ON-SITE, THE CONTRACTOR SHALL PROVIDE TOPSOIL, APPROVED BY THE OWNER, AS NEEDED. THE AREA SHALL THEN BE SEEDED, FERTILIZED, MULCHED, WATERED AND MAINTAINED UNTIL HARDY GRASS GROWTH IS ESTABLISHED IN ALL AREAS. ANY AREAS DISTURBED FOR ANY REASON SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.

11. CONTRACTOR SHALL USE SILT FENCE OR OTHER MEANS OF CONTROLLING EROSION ALONG THE EDGE OF THE PROPERTY OR OTHER BOTTOM OF SLOPE LOCATIONS.

12. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION OPERATIONS.

13. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGES TO THE ADJACENT PROPERTIES OCCURRING DURING THE CONSTRUCTION PHASES OF THIS PROJECT.

14. IT IS NOT THE DUTY OF THE ENGINEER OR THE OWNER TO REVIEW THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN, ON OR NEAR THE CONSTRUCTION SITE AT ANY TIME DURING CONSTRUCTION.

15. PIPE LENGTHS ARE CENTER TO CENTER OF STRUCTURE OR TO END OF END SECTIONS.

16. HANDICAP STALLS SHALL MEET ADA REQUIREMENTS AND SHALL NOT EXCEED 2% SLOPE IN ANY DIRECTION AT THE BUILDING ENTRY AND ACCESSIBLE PARKING STALLS. SLOPES EXCEEDING 2.0% WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

NOTE:
1. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF ENTRANCE, SLOPED PAVING, EXIT PORCHES, RAMPS, TRUCK DOCKS, PRECISE BUILDING DIMENSIONS AND EXACT BUILDING UTILITY ENTRANCE LOCATIONS.

2. THESE PLANS HAVE NOT BEEN VERIFIED WITH FINAL ARCHITECTURAL CONTRACT DRAWINGS. CONTRACTOR SHALL VERIFY AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES. CONTRACTOR IS FULLY RESPONSIBLE FOR REVIEW AND COORDINATION OF ALL DRAWINGS AND CONTRACT DOCUMENTS.

THE COORDINATES PROVIDED ON THIS PLAN ARE FOR INFORMATION AND CHECKING PURPOSES ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CALCULATE CONSTRUCTION STAKING COORDINATES ACCORDING TO THE DIMENSIONS SHOWN ON THESE PLANS. CONTRACTOR SHALL VERIFY THE ACCURACY OF THE COORDINATES SHOWN HEREON BEFORE CONSTRUCTION.

PUBLIC STREET, STORM, WATER AND SANITARY SEWER ARE BY SEPARATE PLANS

REV.	DATE	DESCRIPTION	DSN	DWN	CHK
			LDO	LDO	LDO
				JT	BKR
			LDO		
1	7-16-19	REVISED PER CITY COMMENT			
0	6-18-19	INITIAL ISSUE			

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
7-16-19

LEON D. OSBOURN
ENGINEER
MO # 021726

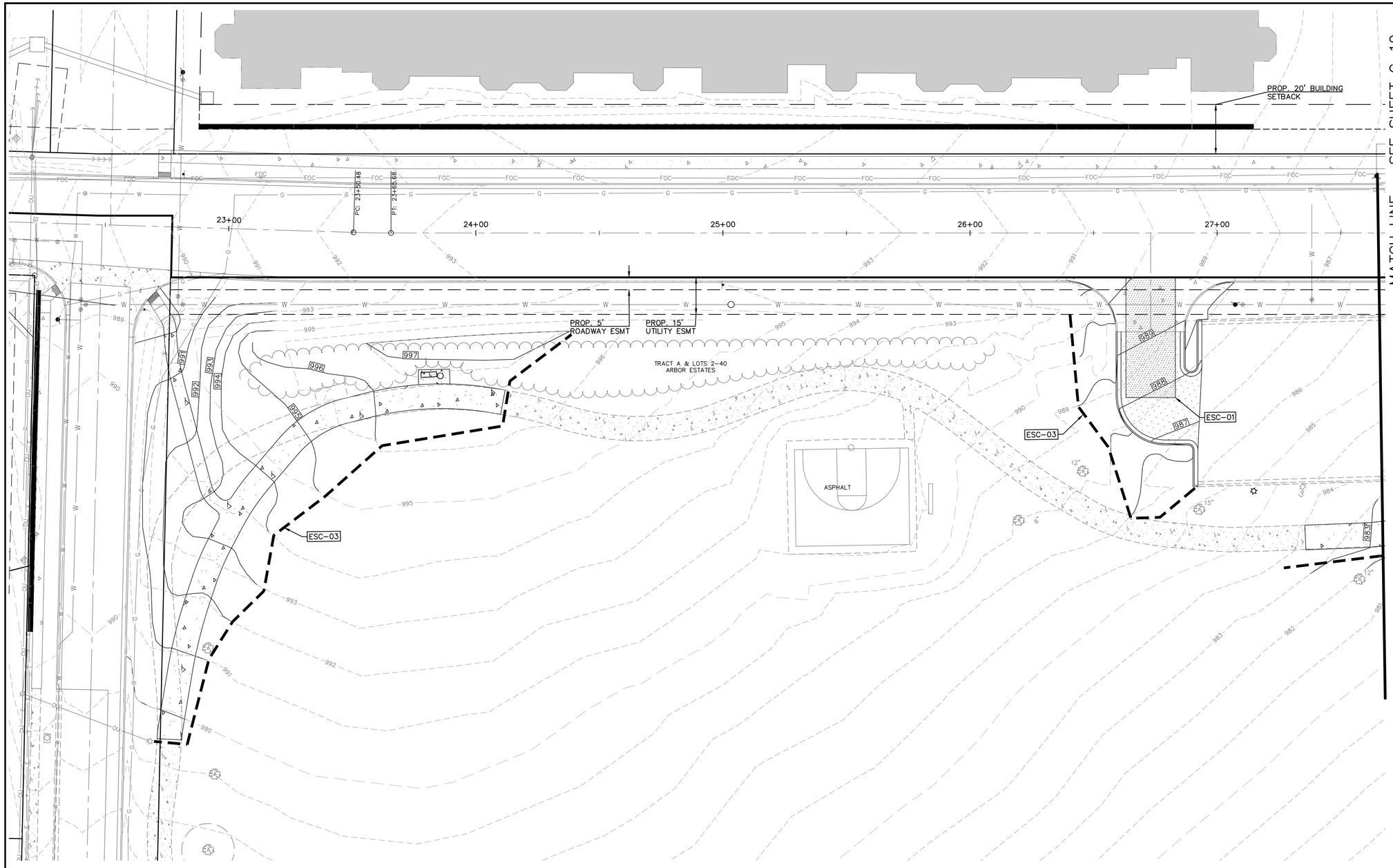
KAW VALLEY ENGINEERING
2319 N. JACKSON | P.O. BOX 1304
JUNCTION CITY, KANSAS 66441-1304
PH. (785) 762-5040 | FAX (785) 238-7744
js@kveng.com | www.kveng.com

KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

LOWENSTEIN PARK IMPROVEMENTS
GRADING PLAN

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	BKR
CFN	7067-1P_GP
SHEET	C-9
REV	1



DETAILS – SEE EROSION CONTROL DETAIL SHEETS FOR THE FOLLOWING DETAILS

ESC-01 CONSTRUCTION ENTRANCE DETAIL
ESC-03 SILT FENCE
ESC-06 CURB INLET PROTECTION
ESC-14 OUTLET PROTECTION

EROSION & PROPOSED IMPROVEMENTS LEGEND:

970 EXISTING GROUND CONTOUR (1' INTERVALS)

970 PROPOSED FINISHED GROUND CONTOUR (1' INTERVALS)

SILT FENCE

INLET PROTECTION

PUBLIC STREET, STORM, WATER AND SANITARY SEWER ARE BY SEPARATE PLANS

0 ADDED SHEET

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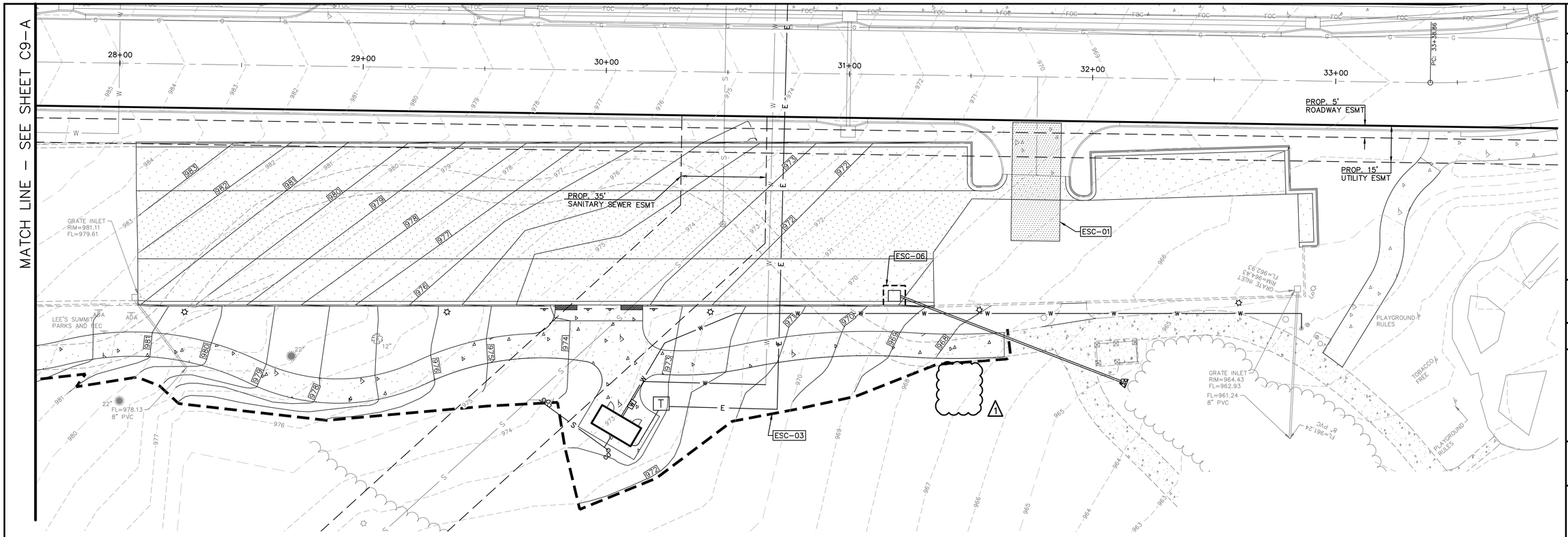
STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

LOWENSTEIN PARK IMPROVEMENTS
EROSION CONTROL PLAN

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	BKR
CFN	7067-1P_ECP
SHEET	C-9A
REV	0



GENERAL NOTES:

1. PROPERTY LINE IS LIMITS OF CONSTRUCTION EXCEPT AS SHOWN.
2. THE CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE DRAWINGS PRIOR TO BEGINNING EARTHWORK OPERATIONS.
3. THE CONTRACTOR SHALL MAINTAIN ALL SILT CONTROL MEASURES DURING CONSTRUCTION.
4. ALL SILT SHALL REMAIN ON SITE AND SURROUNDING STREETS SHALL BE KEPT CLEAR OF ALL MUD AND DEBRIS.
5. A SEDIMENTATION BARRIER IS TO BE INSTALLED AS SHOWN.
6. ACCUMULATED SEDIMENT SHALL BE REMOVED AND THE SEDIMENTATION BARRIERS MAINTAINED AS NEEDED TO PREVENT SEDIMENTATION BYPASS OF THE BARRIER.
7. SLOPES ARE TO BE LEFT IN A ROUGH CONDITION DURING GRADING.
8. CURB INLET SEDIMENTATION BARRIERS ARE TO BE INSTALLED AROUND INLETS AND WEIRS WHERE SEDIMENTATION IS A CONCERN. INLET BARRIERS SHALL BE EITHER BLOCK AND GRAVEL, OR SECURED STRAW BALES, OR SILT FENCE.
9. SEDIMENT IS TO BE REMOVED FROM STORM WATER DRAINAGE SYSTEMS.
10. RIPRAP IS TO BE INSTALLED AT AREAS OF CONCENTRATED FLOW (I.E. CULVERT OUTLETS).
11. CONTRACTOR IS RESPONSIBLE FOR INSTALLING ANY ADDITIONAL EROSION CONTROL AS HE/SHE DEEMS NECESSARY.
12. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, TOOLS, EQUIPMENT AND LABOR AS NECESSARY TO INSTALL AND MAINTAIN ADEQUATE EROSION AND SILTATION CONTROLS REQUIRED TO PREVENT SOIL EROSION FROM LEAVING THE PROJECT SITE. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO ENSURE THAT METHODS UTILIZED ARE ADEQUATE AND COMPLY WITH REQUIREMENTS OF THE SPECIFICATIONS AND GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE WORK.
13. TEMPORARY SEDIMENT FENCE TO REMAIN UNTIL ADEQUATE VEGETATION IS ESTABLISHED.
14. MUD AND DEBRIS SHALL BE CLEANED UP AT THE CONCLUSION OF EACH WORKING DAY, OR AFTER EACH RAINFALL IF SILT IS PRESENT.
15. INSPECTION, MAINTENANCE AND REPAIR OF EROSION CONTROL DEVICES SHALL BE ON GOING THROUGHOUT THE LIFE OF BUILDING CONSTRUCTION TO KEEP THE DEVICES IN OPERABLE CONDITION AT ALL TIMES. ADDITIONAL MEASURES SHALL BE INSTALLED AS REQUIRED BY ACTUAL FIELD CONDITIONS AND/OR GOVERNING INSPECTION AGENCIES.
16. INSTALL CONSTRUCTION ENTRANCE AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING THE SITE AND AS SHOWN ON PLANS.
17. AT COMPLETION OF SITE GRADING AND OTHER RELATED CONSTRUCTION ACTIVITIES, ALL DISTURBED AREAS WITHIN THE PROJECT SITE SHALL BE SEEDED, SODDED, OR LANDSCAPED AS SHOWN ON THE LANDSCAPE PLAN WITHIN 14 DAYS.
18. TOPSOIL IS TO BE PLACED IN AREAS UNSUITABLE FOR VEGETATIVE GROWTH.
19. STRIP TOPSOIL PRIOR TO EXCAVATION, STOCKPILE AND SPREAD ONTO DISKED SUBGRADE (4" MIN) A THICKNESS OF 4 INCHES.
20. ROCK LINING (RIPRAP) SHALL BE DURABLE STONE CONTAINING A COMBINED TOTAL OF NOT MORE THAN 10 PERCENT OF EARTH, SAND, SHALE AND NON–DURABLE ROCK. AT LEAST 60 PERCENT OF THE MASS SHALL BE OF PIECES HAVING A MINIMUM WEIGHT OF 150 POUNDS OR MORE PER CUBIC FOOT.
21. THE CONTRACTOR SHALL HAVE THE RESPONSIBILITY FOR RESOLVING COMPLAINTS IN THE EVENT THAT COMPLAINTS OR DAMAGE CLAIMS ARE FILED DUE TO DAMAGES OCCURRING ADJACENT TO OR DOWNSTREAM FROM PROPERTY BY SEDIMENT RESULTING FROM EROSION ON THE PROJECT SITE.
22. GOOD HOUSEKEEPING PRACTICES SHALL BE MAINTAINED ON SITE TO KEEP SOLID WASTE FROM ENTRY INTO WATERS.
23. ALL FUELING FACILITIES PRESENT ON SITE SHALL ADHERE TO APPLICABLE FEDERAL AND STATE REQUIREMENTS CONCERNING UNDERGROUND STORAGE, ABOVE GROUND STORAGE AND DISPENSERS, INCLUDING SPILL PREVENTION, CONTROL AND COUNTER MEASURES.
24. RIGHT OF WAY TO BE STABILIZED AS REQUIRED BY APWA SECTION 2400.
25. EROSION CONTROL IS TO BE PLACED IN PHASING AS CONSTRUCTION PROGRESSES.
26. MINIMAL WASHING OF CONCRETE EQUIPMENT ALLOWED, CHUTE ETC. CONCRETE WASHOUT OF THE DRUM IS NOT ALLOWED. ANY PIT/WASHOUT AREA NEEDS TO BE MAINTAINED IN A NON–DISCHARGING MANNER AND ANY WASTE RESIDUE WILL NEED TO BE CLEANED OUT AND REMOVED AT THE END OF PROJECT.
27. EROSION CONTROL SEDIMENT FENCE TO BE INSTALLED 1'–0" BEHIND CURB & GUTTER UPON COMPLETION OF BACKFILL OF CURB IN ALL AREAS WHERE SLOPES FROM LOT DRAIN TOWARDS CURB. UPON COMPLETION OF FINAL GRADING THE TOES OF ALL EMBANKMENTS IN EXCESS OF TWO FEET IN HEIGHT WILL HAVE EROSION CONTROL SEDIMENT FENCE INSTALLED.

DETAILS – SEE EROSION CONTROL DETAIL SHEETS FOR THE FOLLOWING DETAILS

ESC–01 CONSTRUCTION ENTRANCE DETAIL
ESC–03 SILT FENCE
ESC–06 CURB INLET PROTECTION
ESC–14 OUTLET PROTECTION

EROSION & PROPOSED IMPROVEMENTS LEGEND:

970 EXISTING GROUND CONTOUR (1' INTERVALS)
970 PROPOSED FINISHED GROUND CONTOUR (1' INTERVALS)
SILT FENCE
INLET PROTECTION

0 15 30 60
SCALE: 1" = 30'

CONTRACTOR TO COORDINATE EROSION CONTROL WITH MASS GRADING CONSTRUCTION IN PHASES

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STREETS OF WEST PRYOR
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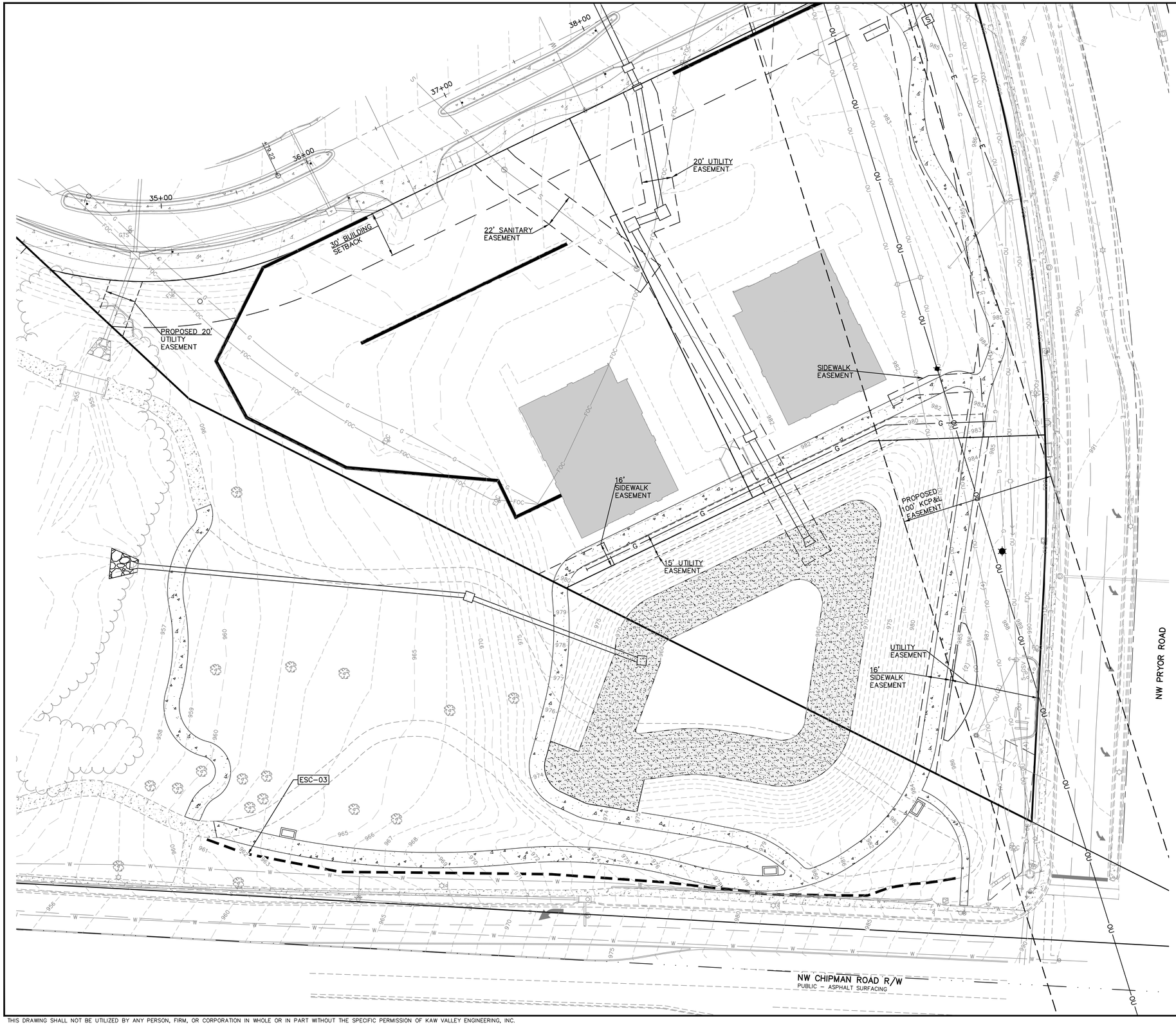
LEE'S SUMMIT, MISSOURI

LOWENSTEIN PARK IMPROVEMENTS
EROSION CONTROL PLAN

PROJ. NO. A14_7067–1
DESIGNER LDO | DRAWN BY BKR
CFN 7067–1P_ECP
SHEET C–10 | REV 1



0 20 40 80

SCALE: 1" = 40'

DETAILS – SEE EROSION CONTROL DETAIL SHEETS FOR THE FOLLOWING DETAILS

ESC-01 CONSTRUCTION ENTRANCE DETAIL
ESC-03 SILT FENCE
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970 EXISTING GROUND CONTOUR (1' INTERVALS)

970 PROPOSED FINISHED GROUND CONTOUR (1' INTERVALS)

SILT FENCE

INLET PROTECTION

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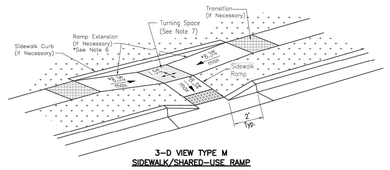
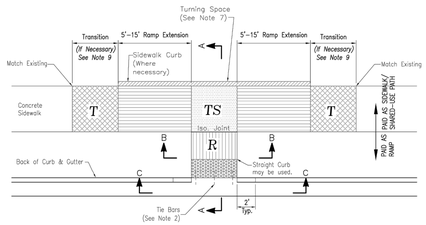
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

LOWENSTEIN PARK IMPROVEMENTS
EROSION CONTROL PLAN

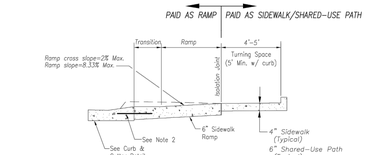
PROJ. NO. A14_7067-1
DESIGNER LDO
DRAWN BY BKR
CFN 7067-1P_ECP
SHEET C-11
REV 0



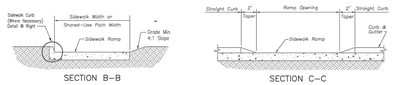
3-D VIEW TYPE M
SIDEWALK/SHARED-USE RAMP



TYPE M SIDEWALK/SHARED-USE RAMP
Not to Scale



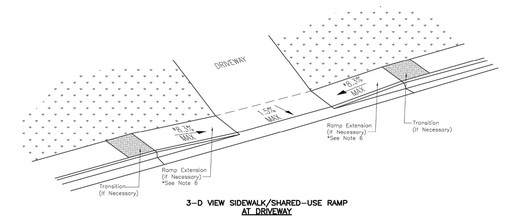
SECTION A-A



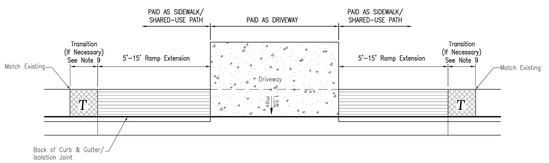
SECTION B-B

SECTION C-C

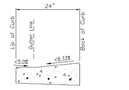
TYPE M SIDEWALK RAMP
Not to Scale



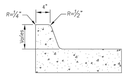
3-D VIEW SIDEWALK/SHARED-USE RAMP
AT DRIVEWAY



SIDEWALK/SHARED USE RAMP
AT DRIVEWAY WITH ADJOINING CURB



CURB & GUTTER DETAIL AT RAMP
Not to Scale



SIDEWALK CURB DETAIL
Not to Scale

LEGEND

- R — SIDEWALK RAMP
- TS — TURNING SPACE
- DETECTABLE WARNING SURFACE
- T — TRANSITION

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

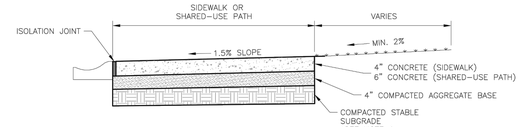
1. CURB RAMP OPENING, NOT INCLUDING FLARES, SHALL MATCH EXISTING SIDEWALK WIDTH AND OPENING SHALL BE AT LEAST 48" WIDE.
2. USE 18" LONG #4 EPOXY COATED TIE BARS @ 24" O.C. EMBED TIE BARS 9" IN EACH DIRECTION.
3. ALL RAMPS, SIDEWALKS, SHARED-USE PATHS SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL 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 150' 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).

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

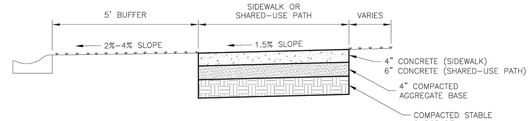
Project: STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
Sheet Name: ADA RAMP RETROFIT DETAIL

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

GEN-3B



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 OR AS APPROVED BY THE CITY INSPECTOR.
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 150 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: 04/17
Drawn By: MJF
Checked By: DL

GEN-2

REV.	DATE	DESCRIPTION	DSN	DWN	CHK
			LDO	LDO	LDO
			LDO	BKR	JT
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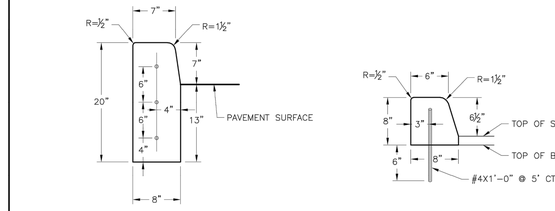
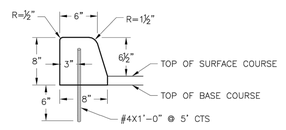
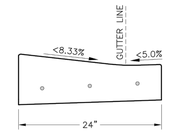


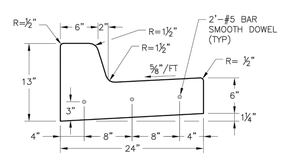
STRAIGHT CURB
(TYPE C-1)



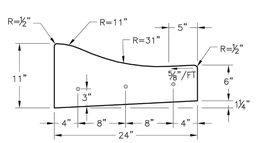
DOWELLED CURB
(TYPE DC)



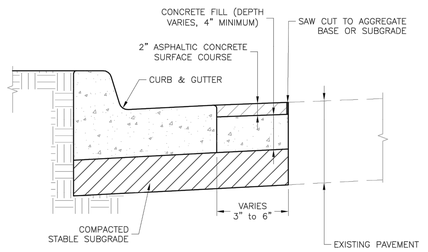
CURB & GUTTER DETAIL AT RAMP
(ADA SLOPE REQUIREMENTS)



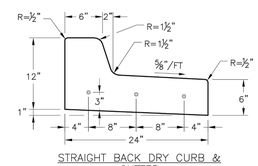
STRAIGHT BACK CURB & GUTTER
(TYPE CG-1)



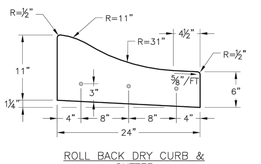
ROLL BACK CURB & GUTTER
(TYPE CG-2)



CURB REPLACEMENT DETAIL



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



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

GENERAL NOTES

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

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

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

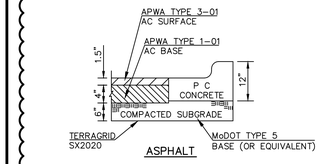
Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #:

GEN-4

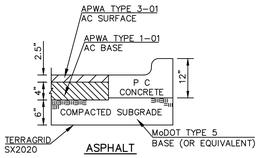
STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

LOWENSTEIN PARK IMPROVEMENTS
PAVEMENT DETAILS

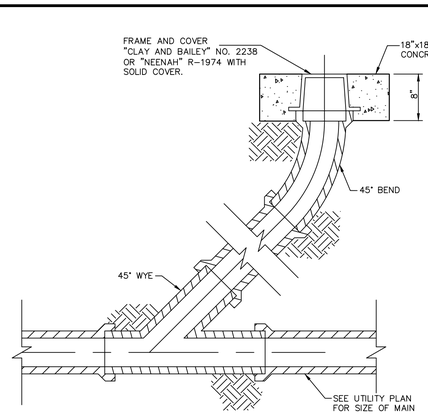
PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY BKR
CFN 7067-1P_DET
SHEET C-12 | REV 1



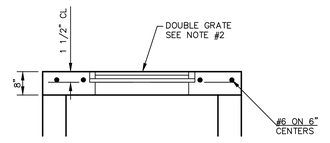
REGULAR DUTY PAVING 040



HEAVY DUTY PAVING 041



CLEAN-OUT 510



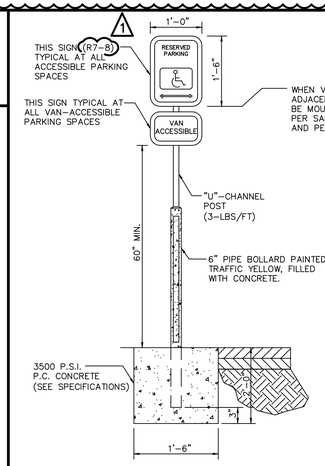
L OR W	S BARS
≤4'	#4@6"
4-6'	#5@6"
6-8'	#6@6"
H	**W BARS**
≤5'	#4@12"
5-8'	#5@8"
8-12'	#6@6"

MIN. BOX SIZE:
3.5' X 4.0' FOR SINGLE GRATE &
4.0' X 5.5' FOR DOUBLE GRATE

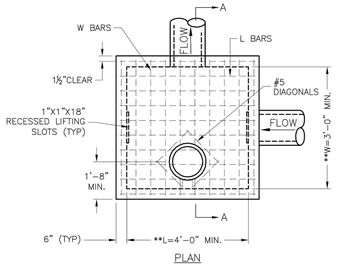
ALL CONCRETE: F'C = 3500 P.S.I.

NOTE:
1. L AND W BARS SHALL BE #6@6" CENTER
2. GRATE - R-6673-J, USE R-6673-0 WHERE DOUBLE GRATE IS SPECIFIED UNLESS OTHERWISE NOTED ON SITE GRADING PLAN.

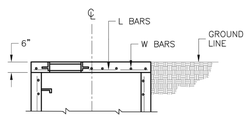
ALTERNATE TOP TO STM-3
FOR DOUBLE GRATE INLET



ACCESSIBLE PARKING SIGN 120



PLAN

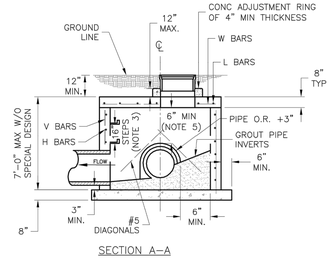


SLAB TOP ALTERNATE FOR
JUNCTION BOX (SHALLOW)

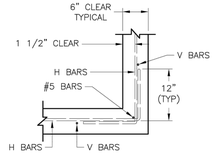
** INCREASE IN MULTIPLES OF 6"
(7'-0") MAX WITHOUT SPECIAL DESIGN.
(SEE PROJECT PLANS FOR DETAILS)

REINFORCING

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



SECTION A-A



WALL CORNER DETAIL

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

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

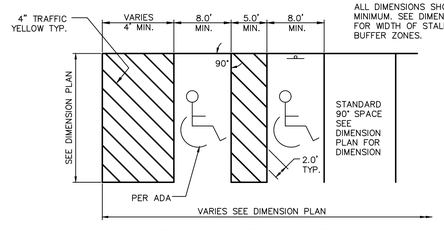
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

Project

Detail Name: JUNCTION BOX DETAIL

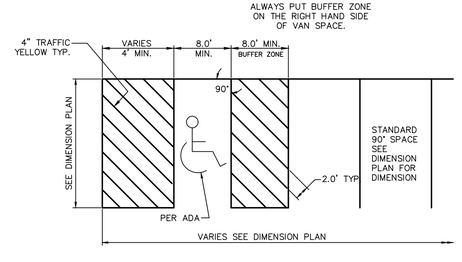
Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #:

STM-3



90° ACCESSIBLE
SPACE STRIPING 102

NOTE: PARKING SPACES AND ACCESS ISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 1:50 IN ALL DIRECTIONS



90° ACCESSIBLE &
VAN ACCESSIBLE SPACE STRIPING 102

REV.	DATE	DESCRIPTION	DSN	DWN	CHK
1	7-16-19	REVISED PER CITY COMMENT	LDO	JT	LDO
0	6-18-19	INITIAL ISSUE	LDO	BKR	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER
E-21726
REGISTERED PROFESSIONAL ENGINEER
7-16-19

LEON D. OSBOURN
ENGINEER
MO # 021726

2319 N. JACKSON | P.O. BOX 1304
HOLTON, KANSAS 66436
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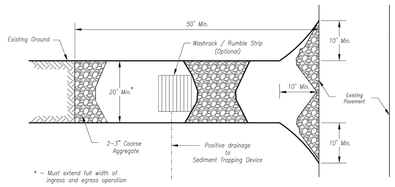
KAW VALLEY ENGINEERING

KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

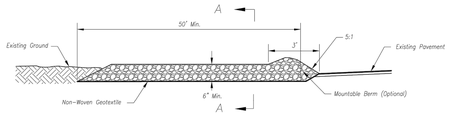
STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

LOWENSTEIN PARK IMPROVEMENTS
DETAIL SHEET

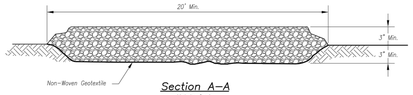
PROJ. NO. A14_7067-1
DESIGNER LDO
DRAWN BY BKR
CFN 7067-1P_DET
SHEET C-13
REV 1



Plan View
Not to Scale



Side Elevation
Not to Scale



Section A–A
Not to Scale

Notes for Construction Entrance:

1. Avoid locating on steep slopes, at curves on public roads, or downhill of disturbed area.
2. Remove all vegetation and other unsuitable material from the foundation area, grade, and crown for positive drainage.
3. If slope towards the public road exceeds 2%, construct a 6- to 8-inch high ridge with 3H:1V side slopes across the foundation approximately 15 feet from the edge of the public road to divert runoff from it.
4. Install pipe under the entrance if needed to maintain drainage ditches along public roads.
5. Place stone to dimensions and grade as shown on plans. Leave surface sloped for drainage.
6. Divert all surface runoff and drainage from the entrance to a sediment control device.
7. If conditions warrant, place geotextile fabric on the graded foundation to improve stability.

Maintenance for Construction Entrance:

1. Reshape entrance as needed to maintain function and integrity of installation. Top dress with clean aggregate as needed.

CONSTRUCTION ENTRANCE

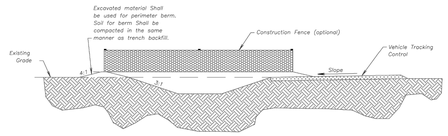
Construction Entrance modified from 2015 Overland Park Standard Details for Erosion and Sediment Control; Concrete Washout modified from 2009 City of Great Bend Standard Drawings.

Notes for Concrete Washout:

1. Concrete washout areas shall be installed prior to any concrete placement on site.
2. Concrete washout area shall include a flat subsurface pit sized relative to the amount of concrete to be placed on site. The slopes leading out of the subsurface pit shall be 3:1. The vehicle tracking pad shall be sloped towards the concrete washout area.
3. Vehicle tracking control is required at the access point to all concrete washout areas.
4. Signs shall be placed at the construction site entrance, washout area and elsewhere as necessary to clearly indicate the location(s) of the concrete washout area(s) to operators of concrete truck and pump rigs.
5. A one-piece impervious liner may be required along the bottom and sides of the subsurface pit in sandy or gravelly soils.

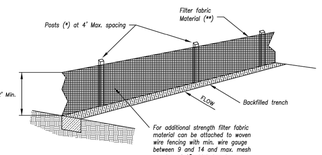
Maintenance for Concrete Washout:

1. Concrete washout materials shall be removed once the materials have filled the washout to approximately 75% full.
2. Concrete washout areas shall be enlarged as necessary to maintain capacity for wasted concrete.
3. Concrete washout water, wasted pieces of concrete and all other debris in the subsurface pit shall be transported from the job site in a water-tight container and disposed of properly.
4. Concrete washout areas shall remain in place until all concrete for the project is placed.
5. When concrete washout areas are removed, excavations shall be filled with suitable compacted backfill and topsoil, any disturbed areas compacted with the backfilling, maintenance, and/or removal of the concrete washout areas shall be stabilized.



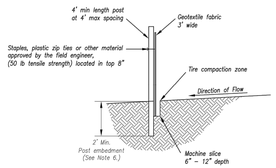
CONCRETE WASHOUT

AMERICAN PUBLIC WORKS ASSOCIATION
Kansas City Metro Chapter
KANSAS CITY METRO CHAPTER
CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT
STANDARD DRAWING NUMBER ESC-01
ADOPTED: 10/24/2016



(*) POSTS
- MIN. LENGTH 4'
- HARDWOOD 1 ⅜" x 1 ⅜"
- NO.2 SOUTHERN PINE 2 ⅛" x 2 ⅛"
- STEEL 1.33 LB/FT

(**) – Geotextile Fabric shall meet the requirements of AASHTO M288



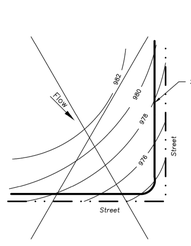
SILT FENCE DETAILS
Not to Scale

Notes:

1. In order to contain water, the ends of the silt fence must be turned uphill (Figure A).
2. Long perimeter runs of silt fence must be limited to 100'. Runs should be broken up into several smaller segments to minimize water concentrations (Figure A).
3. Long slopes should be broken up with intermediate rows of silt fence to slow runoff velocities.
4. Attach fabric to upstream side of post.
5. Install posts a minimum of 2' into the ground.
6. Trenching will only be allowed for small or difficult installation, where slicing machine cannot be reasonably used.

Maintenance:

1. Remove and dispose of sediment deposits when the deposit approaches ½ the height of silt fence.
2. Repair as necessary to maintain function and structure.



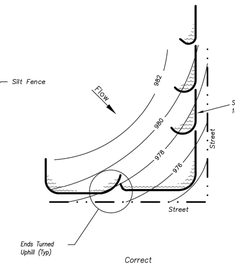
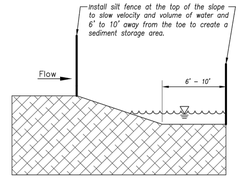
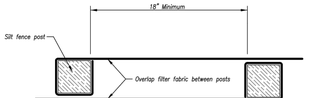


Figure A



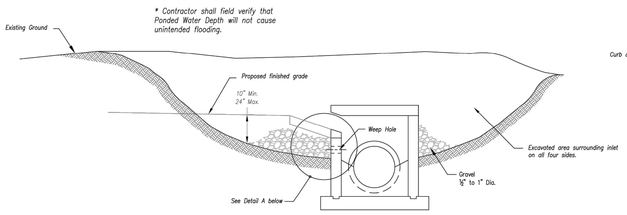
SILT FENCE LAYOUT
Not to Scale

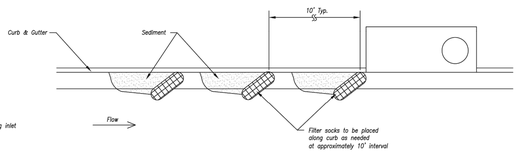


JOINING FENCE SECTIONS
Not to Scale

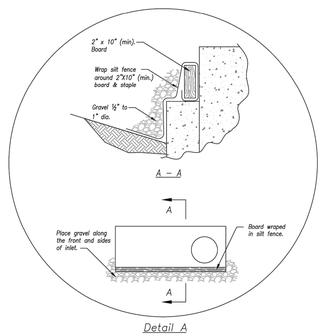
AMERICAN PUBLIC WORKS ASSOCIATION
Kansas City Metro Chapter
KANSAS CITY METRO CHAPTER
SILT FENCE
STANDARD DRAWING NUMBER ESC-03
ADOPTED: 10/24/2016

Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.





On Grade Curb Inlet Protection



Detail A

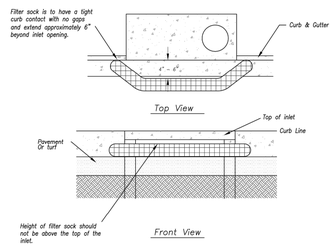
EARLY STAGE CURB INLET
(Open Box and Prior to Pouring Curb and Inlet Throat)

Notes:

1. Immediately following inlet construction and prior to construction of curb and inlet throat, protect inlet opening by installing 2" X 10" (min.) board wrapped in silt fence. Structures shall have excavated storage area on all four sides to allow settling of sediment (Early Stage Curb Inlet).
2. When inlet is completed and curb poured, filter socks or approved equal should be used (Late Stage Curb Inlet). Straw wattles are not approved for curb inlet use.
3. Contractor to field verify ponding water shall not create a traffic hazard.

Maintenance:

1. Remove deposited sediment from excavated storage areas when available storage has been reduced by 20%.
2. Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible.
3. Repair or replace as necessary to maintain function and integrity of installation.

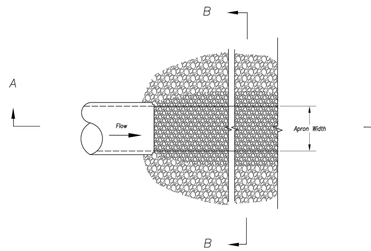


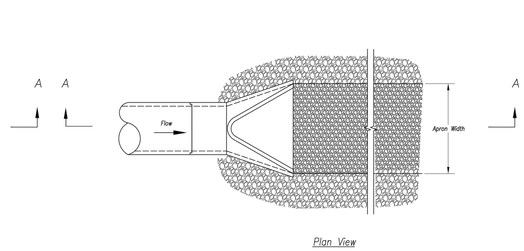
Sump Inlet Sediment Filter

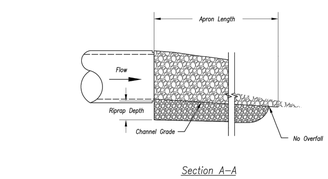
LATE STAGE CURB INLET
(After Pouring Curb and Inlet Throat)

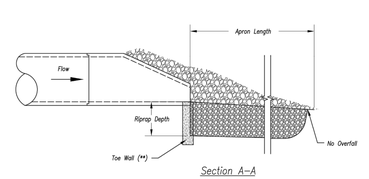
Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

AMERICAN PUBLIC WORKS ASSOCIATION
Kansas City Metro Chapter
KANSAS CITY METRO CHAPTER
CURB INLET PROTECTION
STANDARD DRAWING NUMBER ESC-06
ADOPTED: 10/24/2016

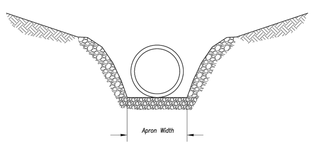








OUTLET PROTECTION WITH END SECTION



OUTLET PROTECTION W/O END SECTION

Notes:

1. Rock all sides steeper than 3:1.
2. Stabilize all disturbed areas downstream of outlet to the limits of disturbance.
3. Alternative outlet protection and slope stabilization measures may be used with approval by the Engineer.
4. Install riprap apron so that it is no higher than flowline of pipe.
5. Reference APWA Specification 2650 for rock type, size, and placement.

Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

AMERICAN PUBLIC WORKS ASSOCIATION
Kansas City Metro Chapter
KANSAS CITY METRO CHAPTER
OUTLET PROTECTION
STANDARD DRAWING NUMBER ESC-14
ADOPTED: 10/24/2016

REV.	DATE	DESCRIPTION	DSN	DWN	CHK
			LDO	JT	LDO
			LDO	BKR	LDO
1	7-16-19	REVISED PER CITY COMMENT			
0	6-18-19	INITIAL ISSUE			

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER

LEON D. OSBOURN
ENGINEER
MO # 021726

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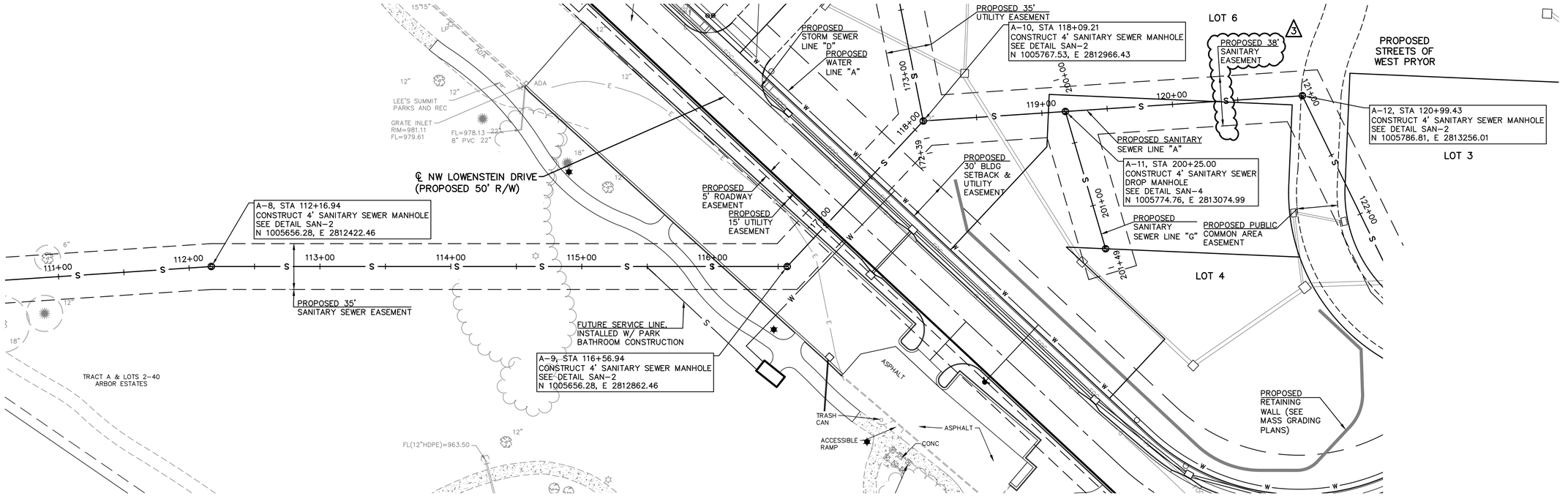
STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

LOWENSTEIN PARK IMPROVEMENTS
EROSION CONTROL DETAIL

PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY BKR
CFN 7067-1P_DET
SHEET C–14 | REV 1

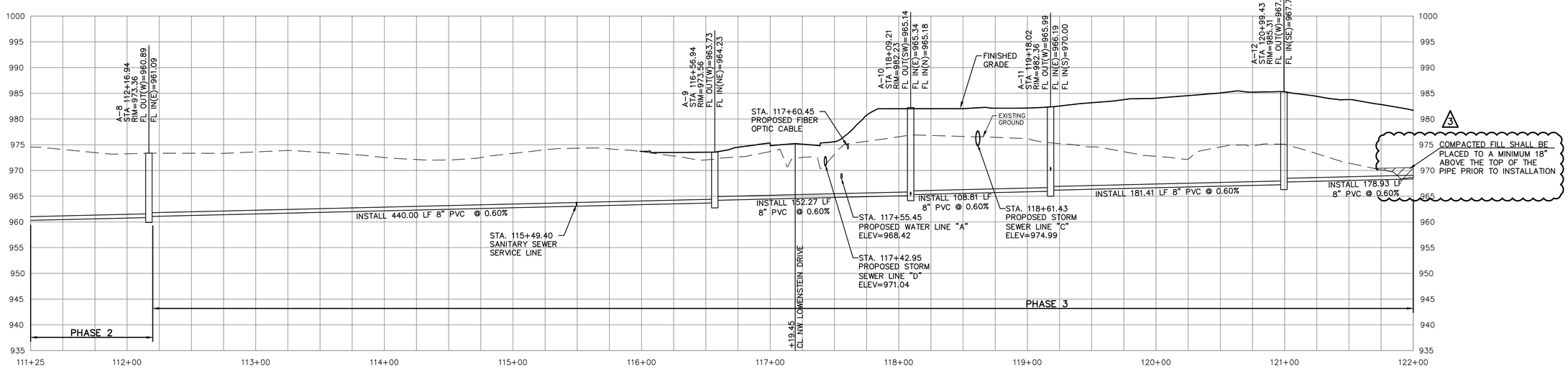


NOTE:
AT EACH WATER LINE CROSSING, THE SANITARY SEWER SHALL BE INSTALLED WITH A MINIMUM VERTICAL CLEAR DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER. A FULL LENGTH OF SEWER PIPE SHALL BE LOCATED WITH THE CENTER OF PIPE AT THE CROSSINGS SO THAT BOTH JOINTS ARE AS FAR FROM THE WATERLINE AS POSSIBLE.

SCALE: 1" = 10'

SCALE: 1" = 40'

FOR REFERENCE ONLY



PROPOSED SANITARY SEWER LINE "A"

PUBLIC STREET, STORM & WATER
ARE BY SEPARATE PLANS

REV	DATE	DESCRIPTION	DSN	DWN	CHK
3	4–15–19	REVISED PER CITY COMMENT	LDO	JT	LDO
2	2–26–19	REVISED PER CITY COMMENT	LDO	JT	LDO
1	1–23–19	REVISED PER CITY COMMENT	LDO	JT	LDO
0	1–8–19	INITIAL ISSUE	LDO	JT/BKR	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER
E-21726
REGISTERED PROFESSIONAL ENGINEER
4-17-19

LEON D. OSBOURN
ENGINEER
MO # 021726

KAW VALLEY ENGINEERING
2318 N. JACKSON | P.O. BOX 1304
JUNCTION CITY, KANSAS 66441
PH. (785) 762–5040 | FAX (785) 762–7744
jo@kveng.com | www.kveng.com

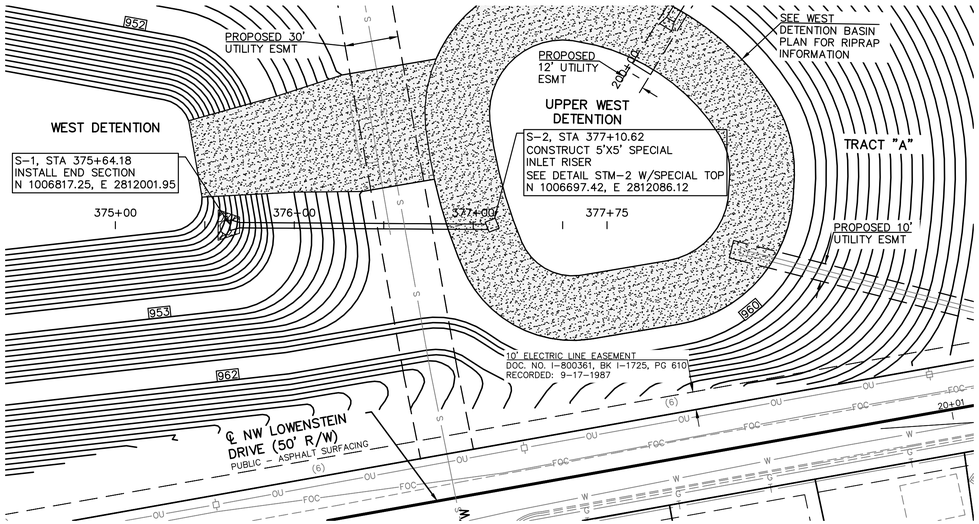
KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

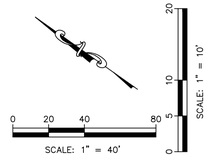
STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

SANITARY SEWER PLANS
SANITARY SEWER LINE A

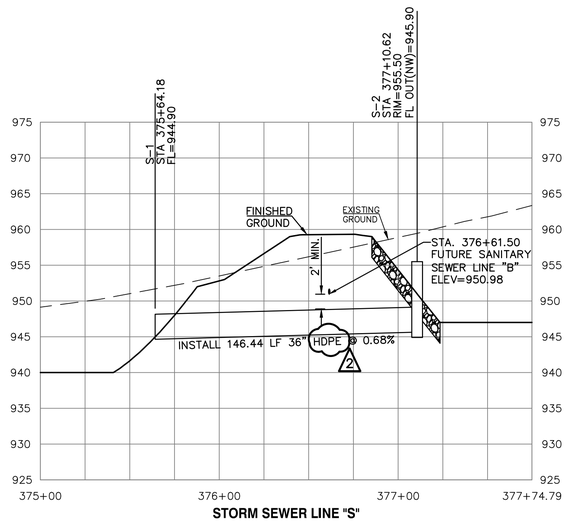
PROJ. NO.	A14_7067–1	
DESIGNER	LDO	DRAWN BY JT/BKR
CFN	7067–1S_SPP	
SHEET	C–5	REV 3

FOR REFERENCE ONLY



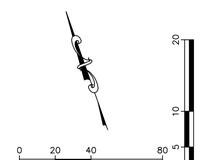


STRUCTURE S-2
RISER CONTROL ELEMENTS:
TRASH RACK AND GRATE INLET, IN RISER TOP, 5'X5' OPENING,
WEIR EL 955.50, TRASH RACK EL=956.17

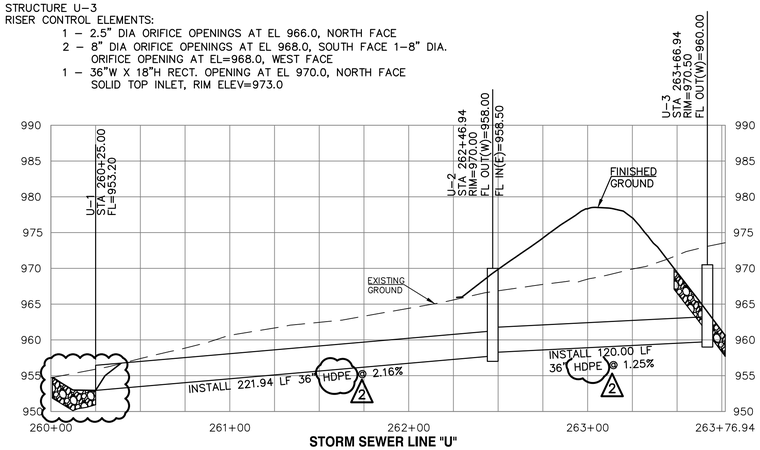


STORM SEWER LINE "S"

FOR REFERENCE ONLY



STRUCTURE U-3
RISER CONTROL ELEMENTS:
1 - 2.5" DIA ORIFICE OPENINGS AT EL 966.0, NORTH FACE
2 - 8" DIA ORIFICE OPENINGS AT EL 968.0, SOUTH FACE 1-8" DIA. ORIFICE OPENING AT EL=968.0, WEST FACE
1 - 36"W X 18"H RECT. OPENING AT EL 970.0, NORTH FACE
SOLID TOP INLET, RIM ELEV=973.0



STORM SEWER LINE "U"

ALL RCP SHALL BE CLASS 3 EXCEPT WHERE INDICATED OTHERWISE.

PUBLIC STREET, STORM AND WATER ARE BY SEPARATE PLANS

ALL PROPOSED STORM LINES ARE PRIVATE UNLESS NOTED OTHERWISE

REV.	DATE	DESCRIPTION	DSN	DWN	CHK
2	7-3-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
7-3-19

LEON D. OSBOURN
ENGINEER
MO # 021726

2319 N. JACKSON | P.O. BOX 1304
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KAW VALLEY ENGINEERING

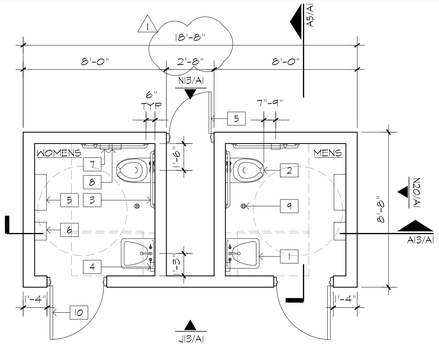
KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

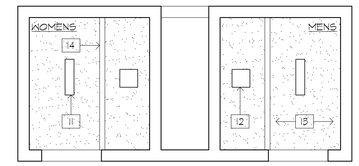
MASS GRADING & STORM SEWER IMPROVEMENTS
STORM SEWER LINE S & U - PLAN AND PROFILE

PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY JT
CFN 7067-1G_DPP
SHEET C-30 | REV 2

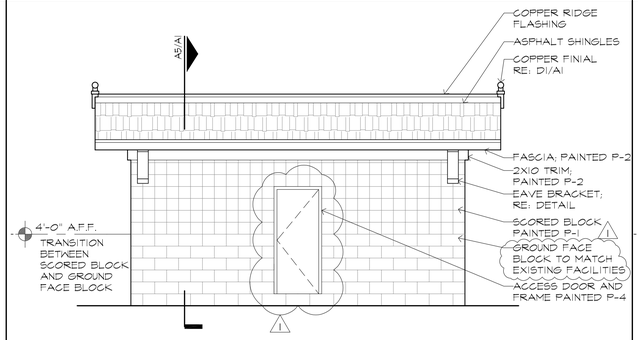
FOR REFERENCE ONLY



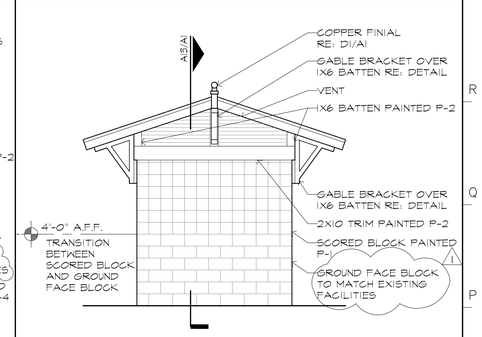
N1 FLOOR PLAN — A1 — SCALE: 1/4"=1'-0"



N7 REFLECTED CEILING PLAN — A1 — SCALE: 1/4"=1'-0"



N13 NORTH EXTERIOR ELEVATION — A1 — SCALE: 1/4"=1'-0"



N20 EAST / WEST EXTERIOR ELEVATION — A1 — SCALE: 1/4"=1'-0"

P-1	PAINT TO MATCH EXISTING FACILITIES	
P-2	PAINT TO MATCH EXISTING FACILITIES	
P-3	PAINT TO MATCH EXISTING FACILITIES	
P-4	PAINT TO MATCH EXISTING FACILITIES	
P-5	PAINT TO MATCH EXISTING FACILITIES	
P-6	PAINT TO MATCH EXISTING FACILITIES	

NOTE: ALL FINISHES TO MATCH EXISTING FACILITIES

L1 FINISHES — A1 — SCALE: NOT TO SCALE

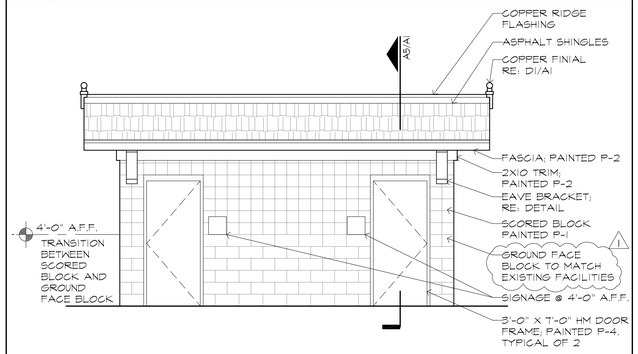
1. WALL HUNG LAVATORY (TYP. OF 2)
2. WALL HUNG WATER CLOSET (TYP. OF 2)
3. ADAAG COMPLIANT GRAB BARS (TYP. OF 2 SETS)
4. WALL HUNG SOAP DISPENSER (TYP. OF 2)
5. WALL HUNG BABY CHANGING STATION (TYP. OF 2)
6. HAND DRYER (TYP. OF 2)
7. TISSUE PAPER DISPENSER (TYP. OF 2)
8. SANITARY NAPKIN DISPOSAL
9. FLOOR DRAIN (TYP. OF 2)
10. 3'-0" X 7'-0" HM DOOR AND FRAME PAINTED P-4, WITH HARDWARE SET NO. 1 (TYP. OF 2)
11. SURFACE MOUNTED LIGHT FIXTURE (TYP. OF 2)
12. VENTILATION FAN (TYP. OF 2)
13. MDO PLYWOOD CEILING PAINTED P-6
14. 1 X 4 BATTEN TO CONCEAL PLYWOOD JOINT
15. 1'-8" X 5'-10" HM DOOR AND FRAME, PAINTED P-4, WITH HARDWARE SET NO. 2

J5 PLAN / RCP NOTES — A1 — SCALE: NOT TO SCALE

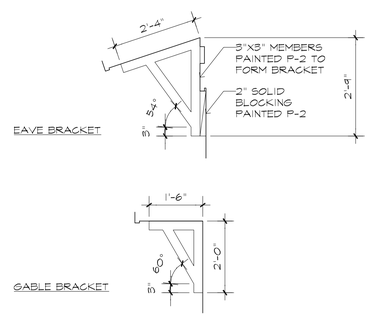
HARDWARE SET NO 1 (TOILETS):
1.5 PAIR HINGES
1 PUSH / PULL PLATES
1 DEADBOLT WITH OCCUPANCY INDICATOR
1 LATCH GUARD
1 CLOSER
1 DOOR BOTTOM

HARDWARE SET NO 2 (UTILITY):
1.5 PAIR HINGES
1 STORAGE FUNCTION LOCKSET
1 OVERHEAD STOP WITH HOLD OPEN
1 DOOR BOTTOM

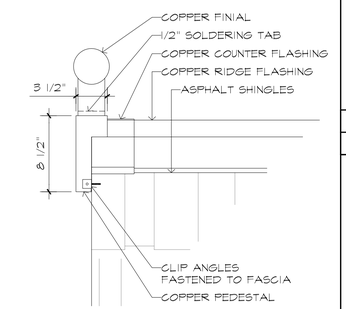
J9 HARDWARE SCHEDULE — A1 — SCALE: NOT TO SCALE

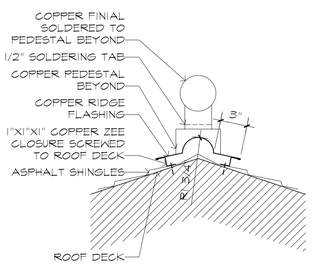


J13 SOUTH EXTERIOR ELEVATION — A1 — SCALE: 1/4"=1'-0"

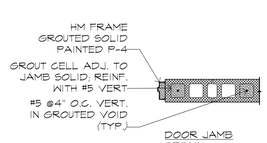


J20 BRACKET DETAILS — A1 — SCALE: 1/2"=1'-0"

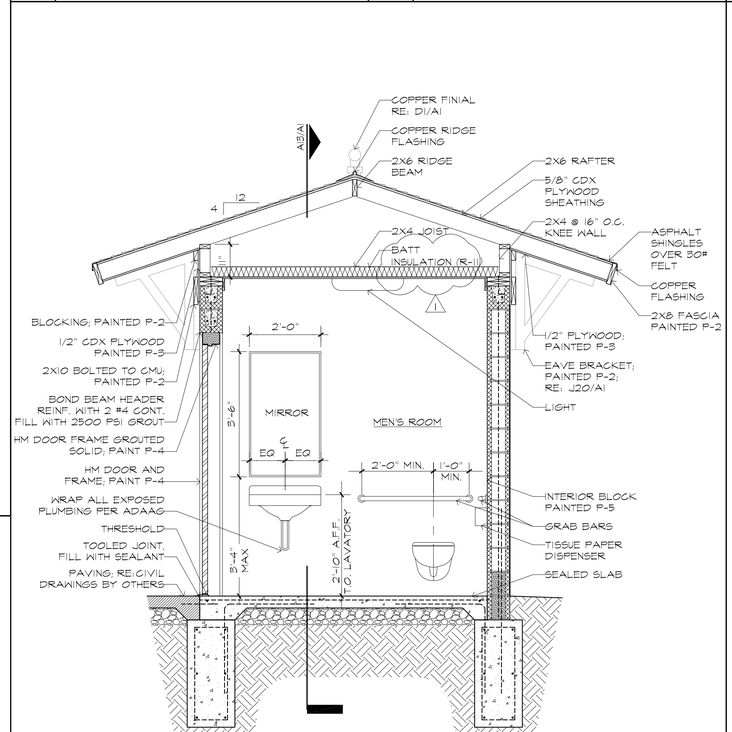




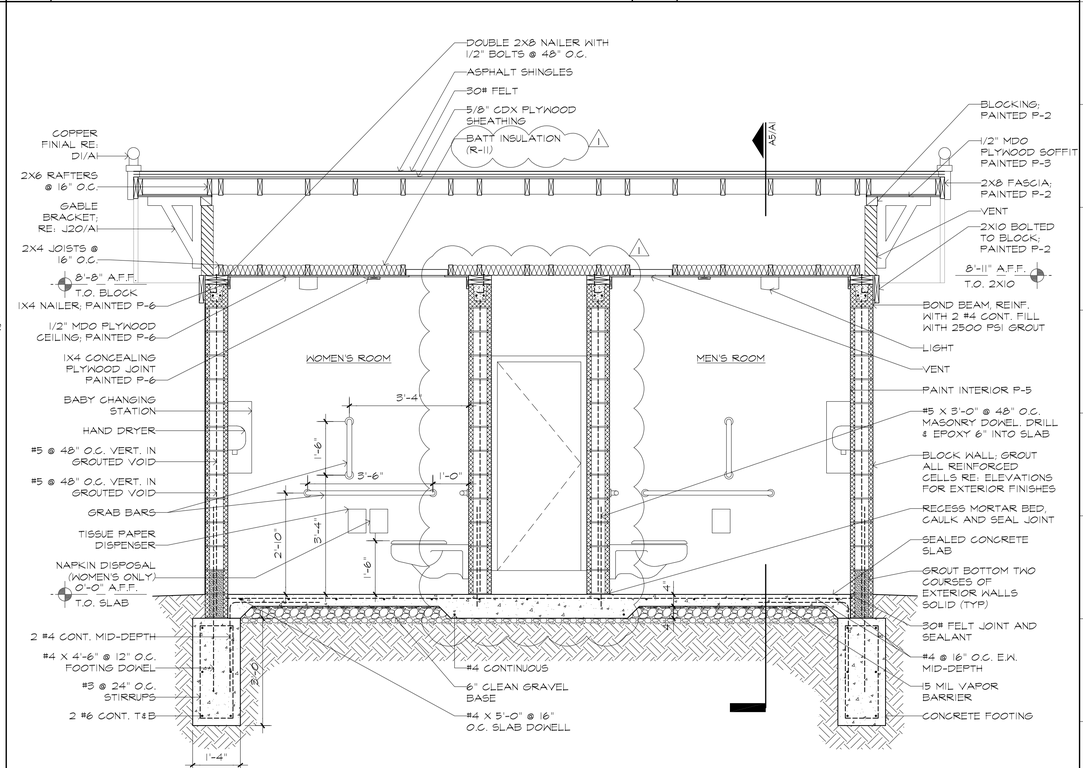
D1 FINIAL AND FLASHING DETAIL — A1 — SCALE: 1/2"=1'-0"



A1 DOOR JAMB — A1 — SCALE: 1/2"=1'-0"



A5 CROSS SECTION — A1 — SCALE: 1/2"=1'-0"



A13 LONGITUDINAL SECTION — A1 — SCALE: 1/2"=1'-0"

AMAI ARCHITECTURE
1510 Walnut Suite 200
Kansas City, MO 64108
P 816.994.5900 / 5901 F

STATE OF MISSOURI
Michael D. MacAdam
NUMBER A-2004006795
ARCHITECT
07 / 16 / 2019

LOWENSTEIN PARK

2050 NW Lowenstein Dr.
Lee's Summit, MO 64081
Project No. 2019-075

MEP CONSULTANT:
LANKFORD FENDLER & ASSOCIATES
1730 WALNUT ST, KANSAS CITY, MO, 64108
816.221.1411

ISSUED FOR:	
BUILDING PERMIT	19 JUNE 2019
1 REVISED PER CITY COMMENT	16 JULY 2019

PLANS, SECTIONS, ELEVATIONS AND DETAILS

A1

SECTION 22, 23 AND 26 - GENERAL PROVISIONS

1.0 DESCRIPTION:

A. Divisions 22, 23 and 26 shall be governed by all applicable provisions of the Contract Document.

B. The Contractor shall furnish, install and connect all materials, equipment, apparatuses, and incidentals required for a complete and working installation. For all systems shown and required, the Contractor shall supply all necessary labor, equipment, tools, insurance, and tax services, and shall assume full responsibility for all obligations associated with completion of work as provided by the Contract Documents.

2.0 STANDARDS, REGULATIONS AND CODES:

A. Work shall comply with the edition of the applicable standards, regulations and codes currently in force of all Federal, State and local authorities having jurisdiction. Where quantities, sizes, or other requirements indicated on the drawings or herein specified are in excess of the standard or code requirements, the specifications and/or drawings shall govern. In the absence of other applicable local codes, acceptable to the Architect/Engineer, the International Set of Codes and the National Electrical Code shall apply to this work.

B. The Contractor shall comply with rules and regulations of public utilities and municipal departments affected by connections of services. The Contractor shall pay all fees associated there with.

C. The Contractor shall be licensed to perform associated work in the municipality in which the project is located.

D. All products and types of construction shall meet or exceed the latest edition of applicable standards of manufacturer, testing, performance and installation.

E. Where indicated or required, comply with all provisions of the ADA and/or the ABA Accessibility Guidelines.

F. Where indicated or required, comply with all applicable provisions of energy and ventilation codes in force at the local jurisdiction.

3.0 LOCAL CONDITIONS:

A. The Contractor shall carefully examine the local conditions and existing installations and shall become thoroughly familiar with all existing conditions which may affect associated work. The Contractor shall locate all existing utilities and protect them during the execution of the work

B. The Contractor shall examine all project drawings and specifications to become familiar with the type of construction, materials, and equipment, to be used for all work and how it will affect the installation of this contract.

C. By the act of submitting a bid, the Contractor will be deemed to have made such examination, to have accepted such conditions, to have made allowance therefore, and included all costs in his proposal. Failure to determine existing conditions will not be considered a basis for the granting of additional compensation.

4.0 WORKMANSHIP:

A. All work performed under this Contract shall provide a neat and "workmanlike" appearance when completed, to the satisfaction of the Owner's Representative. The complete installation shall function as designed and intended with respect to efficiency, capacity, and noise level, etc.

5.0 CUTTING AND PATCHING:

A. All necessary cutting, drilling and patching shall be provided by this Contractor. Structural members shall not be disturbed without prior approval of the Owner's Representative. All areas disturbed by work performed under this Contract shall be neatly repaired and refinished to the condition of adjoining surfaces in a manner suitable to the Owner's Representative.

6.0 OPERATION DURING CONSTRUCTION:

A. The Contractor is responsible for the installation and operation, service and maintenance of all new equipment during construction and prior to acceptance by the Owner of the completed project. Warranty periods shall not commence until final acceptance by the Owner or Owner Representative.

B. The Contractor shall provide, at his own expense, all temporary utilities required to provide for and protect the work and as necessary to maintain an adequate work force unless use of existing facilities is specifically permitted.

7.0 SAFETY REGULATIONS:

A. All work shall be performed in compliance with all applicable governing safety regulations, including OSHA regulations. Provide safety lights, guards and signs required.

8.0 HOUSEKEEPING:

A. The Contractor shall be responsible for keeping stocks of material and equipment stored on the premises in a neat and orderly manner.

B. The Contactor shall clean and maintain their specific portions of the work as specified in the General Conditions.

C. The Contractor shall remove from the premises all waste material present as a result of his work.

9.0 GRAPHIC REPRESENTATION AND JOB CONDITIONS:

A. The Drawings shall serve as working drawings for the general layout of the various items of equipment; are diagrammatic unless specifically dimensioned, and do not necessarily indicate every required item.

B. Architectural and Structural drawings take precedence over all other drawings in the representation of the general construction work; any conflicts shall be resolved prior to commencing work. Failure to do so shall not be considered a basis for the granting of additional compensation.

C. Arrange work in a neat, well organized manner. Coordinate work with other trades involved, prior to commencing work.

10.0 GUARANTEES/WARRANTY:

A. The Contractor shall guarantee/warranty all work performed, including labor, materials and equipment furnished under this contract, against defects in materials and workmanship for a period of one year from the date of the Owner's Representative Final Acceptance of the work, or as noted in each section.

11.0 SUBSTITUTIONS:

A. Materials, products and equipment described in the Bidding Documents established a standard of quality to be met by any proposed substitution.

B. Contractor's bids shall be based on the material mentioned or specified, and any proposals for substitution shall be made in wiring to the Architect/Engineer allowing adequate time for appropriate action. The products of other manufacturers may be accepted, if in the opinion of the Architect/Engineer, the substitute material is of quality as good or better than the material specified, and will serve with equal efficiency and dependability, the purpose for which the items specified were intended. The burden of proof of equality is upon the proposer.

C. Refer to Division 1 requirements for additional substitution procedures.

D. Wherever substitutions alter the design or space requirements, the Contractor shall be responsible for and include all associated cost items of the revised design and or construction work required by his or other trades affected by the proposed substitution.

12.0 SHOP DRAWINGS AND PRODUCT DATA:

A. The checking of shop drawings is a gratuitous assistance and in no way relieves the Contractor of responsibility for deviations from the Contract Documents.

B. Shop drawings and catalog data on all major items of equipment and apparatus, and such other illustrative materials as may be considered necessary by the Owner's Representative shall be submitted by the Contractor in adequate time to prevent delay and changes during construction.

C. Refer to Architectural Documents for additional shop drawing submission procedures.

13.0 OPERATING AND MAINTENANCE BROCHURE:

A. On completion of the project, the Contractor shall provide manuals electronically (PDF format unless otherwise instructed) containing operating, service and lubrication instructions, and parts lists for all major equipment and manufacturer's guaranties or warranties.

14.0 RECORD DRAWINGS:

A. On completion of the project, the Contractor shall submit two (2) new sets of blueline prints (unless otherwise instructed) with all field changes neatly noted. The original routing and layout shall be clearly marked out.

B. Refer to Architectural Documents for additional record drawing submission procedures.

15.0 FOUNDATIONS AND SUPPORTS:

A. The Contractor shall provide concrete bases, hangers and foundations for all machinery and equipment specified or shown in this contract, including fans, air conditioning units, pumps, motors, electrical gear, etc., unless specifically noted otherwise.

B. All hangers, brackets, clamps, etc., shall be of standard weight steel. Perforated strap hangers shall not be used in any work. When two (2) or more pipes or conduits are run parallel, or where ducts interfere with the proper location of hangers, they may be supported on trapeze hangers. Other hangers shall be hinged ring malleable iron, by Grinnell or Fee and Mason or approved equal with rods and hanger adjusters for adequate size to carry the loads imposed. All piping, ductwork and conduit systems shall each be independently supported from other systems and from equipment so that no weight is born by equipment.

C. The Contractor shall take all precautions against excessive noise or vibration by isolating the various items of equipment from the building structure. Provide flexible connectors where indicated and at all rotating equipment and for equipment mounted on vibration isolators.

16.0 MOTORS AND CONTROLS:

A. All motors furnished under this specification shall be recognized manufacturer and of adequate capacity for the loads involved. All motors shall conform to the standards of manufacturer and performance of the National Electrical Manufacturers Association as shown in their latest publications.

B. Disconnects and motor starters for equipment shall be by the Electrical Contractor unless furnished integral with the equipment or as otherwise indicated. Installation shall be by the Electrical Contractor except for devices factory installed and shipped with equipment. Provide manual or magnetic starters with necessary auxiliary contacts for the specified or required sequence of operation.

17.0 EXCAVATION AND BACKFILLING:

A. The Contractor shall do all necessary excavating and backfilling for the installation of associated work. After the pipe has been installed, tested and approved, the trenches shall be backfilled to grade with compacted sand, gravel or AB-3 material or other material as required by local authorities. Compact to 85% density for unpaved areas, 95% density for paved area or under slabs.

B. All water bearing piping shall be 48" minimum below grade, all gas piping shall be 24" minimum below grade, unless instructed otherwise.

C. Roads, alleys, street, sidewalks and utilities damaged during this work shall be restored to the satisfaction of Owner's Representative and authorities having jurisdiction.

D. Where subsidence is measurable or observable at excavation during general project warranty period, remove surface, add backfill material, compact, and replace surface treatment. Restore appearance of surface to match adjacent work.

18.0 SLEEVES AND ESCUTCHEONS:

A. Penetrations thru walls and floors shall be as detailed.

B. Where not otherwise shown, penetrations shall conform to the following:

1. Where pipes or conduits pass through walls, steel pipe or galvanized sheet iron sleeves shall be used.

2. Where pipes or conduits pass thru floors, beams, outside walls, or structural members, cast iron or steel pipe sleeves shall be used.

C. Sleeves through interior non-rated walls, including walls indicated as sound partitions, shall be packed with fiberglass or mineral wool and caulked.

D. Provide steel (dry locations) or brass (damp locations) escutcheons to completely cover pipe penetration holes in floors, walls, or ceilings. Provide pipe escutcheons with nickel or chrome finish for occupied areas, prime paint finish for unoccupied areas, brass for exterior.

19.0 PIPING IN ELECTRICAL ROOMS:

A. No piping except specifically noted otherwise will be permitted in electrical rooms. In rooms, where piping is indicated over electrical equipment, a suitable galvanized sheet metal pan or gutter piped to the drainage system shall be provided.

END OF SECTION 22, 23 AND 26

SECTION 230100 - HEATING, VENTILATION AND AIR CONDITIONING

1.0 SCOPE:

A. The work included under this contract consists of providing all labor, materials, tools, transportation, services, etc., necessary to complete the installation of the heating, ventilating, and air conditioning systems and other items herein listed and as described in these specifications, as illustrated in the accompanying drawings or as directed by the Architect/Engineer.

2.0 SHEET METAL:

A. Provide ductwork shown with necessary dampers and other duct accessories. Ducts shall be new prime grade galvanized steel sheets constructed per ASHRAE and SMACNA Standards. Duct system(s) installation shall be in accordance with SMACNA Duct Construction Standards Manual and industry standards. Provide round or rectangular duct as indicated.

B. Fabricate for the pressure and SMACNA seal class required by the application.

Leakage class minimum requirements are:

1. Up thru 2" WG pressure - rectangular - Class 24,

Seal class minimum requirements are:

1. Up thru 2" WG pressure - class A for all duct joints.

3.0 GRILLES, REGISTERS, INLETS AND OUTLETS:

A. All exhaust grilles shall be as scheduled on the drawings. Commercial quality - E.H. Price or acceptable equal by Titus, Carnes, Krueger or Nailor.

B. Louvers shall be Greenheck, 4" deep AMCA certified extruded aluminum drainable blade with bird screen, finish as noted on drawings or acceptable equal by Ruskin, Carnes, American Warming and Ventilating, Louvers and Dampers, Nailor.

4.0 FANS:

A. Fans shall be as scheduled with all required accessories including vibration isolators, hangers, rate of rise thermostats, etc. Commercial quality fans shall be AMCA rated by Greenheck or acceptable equal by Cook, Acme, Carnes, Penn Barry.

5.0 EQUIPMENT AND PIPE LABELS:

A. Equipment labels shall be provided for all mechanical equipment and shall be self adhesive engraved plastic, blue with white lettering, sized, minimum 1-1/2" high, and located for viewing from ground or floor level. Label shall indicate drawing designation or unique equipment number.

C. Warning labels shall be self-adhesive engraved plastic or preprinted plastic as required by application with white lettering on red background provided at locations as required by code or where hazards to personnel exist.

6.0 TESTING AND ADJUSTING:

A. Contractor shall operate and test the air conditioning and ventilation systems and instruct the Owner in its operation. Perform a series of general capacity and operating tests. The tests shall demonstrate the specified capacities of various pieces of equipment.

END OF SECTION 230100

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Kansas City, MO 64108
P 816.994.5900 / 5901 F

STATE OF MISSOURI
GREGORY J. FENDLER
NUMBER PE-2009037230
PROFESSIONAL ENGINEER
7.16.19
SEAL

LOWENSTEIN PARK

2050 NW Lowenstein Dr.
Lee's Summit, MO 64081
Project No. 2019-075

Lankford Fendler + associates
1730 Walnut Street Kansas City, Missouri 64108
1915 Frederick Avenue, St. Joseph, Missouri 64501
Phone: 816.221.1411 | Fax: 816.221.1429
LANKFORD | FENDLER • ASSOCIATES, CONSULTING ENGINEERS, INC.

ISSUED FOR:	
INITIAL ISSUE	7-16-19
REVISED PER CITY COMMENT	6-18-19

SPECIFICATIONS

MEP1

1.0 SCOPE:

A. The work included under this contract consists of providing all labor, materials, tools, transportation, services, etc., necessary to complete the installation and to provide complete working systems of the Plumbing Systems, including hot and cold water, waste and vent, storm drainage, fixtures, equipment and other items described in these Specifications, as illustrated in the accompanying drawings, or as directed by the Architect/Engineer.

B. Extend piping systems as indicated on contract documents or to point of connection as follows:
1. 5'-0" from exterior building wall lines unless otherwise indicated on drawings.

2.0 PIPING, FITTINGS AND VALVES:

A. Domestic cold water underground --
1. Pipes, copper -- type "K", soft temper, wrought copper fittings, silver solder joints, 1/2" through 3".
2. Water piping installed interior/exterior to the building shall be a minimum of 48" below grade.

B. Domestic water, interior, above ground -
1. Pipe, copper tube -
a. 2" and Smaller -Type "L" hard temper, wrought or cast copper fittings, Lead free 95/5 or Eagle Hard Silvabrite or "CB" solder or roll grooved mechanical joints, pressure seal joint fittings with EPDM O-ring seals.
2. Water piping 2" and smaller may be cross-linked high density 100% virgin polyethylene, PEX-a, flexible tubing. Piping shall be tested and certified by UL and NSF for potable water use. PEX-a piping shall be rated at 180F at 100 PSIG.
a. Minimum bend radius shall be 6 times the pipe outside diameter.
b. Necessary joints shall be made with compression, expansion or crimp fittings approved for use with flexible tubing.
c. Manifolds for branch piping shall be permitted and shall be copper tube.
d. Upsize PEX-a piping 1 pipe size to minimize fitting pressure drop where restrictive fittings are using in lieu of full flow fittings.
e. Support all PEX-a piping systems in accordance with manufacturer recommendations. Support spacing shall not exceed 32".
f. Stubouts to fixtures or equipment shall be rigid copper, anchored to substrate.
g. Piping within 5' of water heaters shall be copper.
h. PEX-a systems shall be insulated throughout as specified for copper systems.
i. PEX-a piping systems may be installed in return air plenums only when installed in accordance with the mechanical code and manufacturer's listing requirements. In addition to other insulation requirements, PEX-a piping installed in plenums shall be fully enclosed uninterrupted with hanger and shields exterior to insulation throughout its length with insulation material listed and labeled for installation within a plenum. Insulation shall be noncombustible meeting flame rating not more than 25 and smoke rating not more than 50 when tested in accordance with ASTM E-84.
j. PEX-a piping shall be Uponor AquaPEX or acceptable equivalent by Viega or Rehau.
3. Valves -
a. 1/4 turn Service -
1/2" thru 2" - Nibco 585-66-LF lead free, 600 PSIG, full port, stainless steel ball and stem.
4. Securely anchor, with adequate provisions for expansion and contraction. Grade lines, free of traps, to low point at cut-off and drain valve. Provide valves where indicated on the drawings, where required by code or required for service.
5. Hot and cold supply lines to have manufactured pre-charged piston type water hammer arrestors at each and every fixture or group or battery of fixtures to prevent water hammer, sized as shown or per manufacturers recommendation. An arrestor shall be required at each solenoid actuated quick closing valve. Sioux Chief, JR Smith or equal. Provide access panel where required.
6. At contractor option, flexible stainless steel braided hose, 125 PSIG rated, with non-toxic liner and compression fittings may be used in lieu of chrome plated brass riser tube.

C. Sanitary sewer, vent, interior --
1. Pipe -- Cast iron hubless with no-hub mechanical joint; solid wall schedule 40 PVC, ABS with solvent cement joints; vents may be galvanized malleable iron.
2. All drainage shall be graded per code, with piping 3" and 4" not less than 1/4" per foot unless noted otherwise. Larger piping may be sloped at 1/8" per foot.

D. Sanitary sewer, vent, below grade --
1. Pipe -- Cast iron hubless with no-hub mechanical joint; solid wall schedule 40 PVC, ABS with solvent cement joints.
2. All drainage shall be graded per code but not less than 1/8" per foot unless noted otherwise. 3" and 4" piping shall be sloped at 1/4" per foot where possible and where required by local codes.

3.0 CLEANOUTS AND TRAP SEALS:

A. Provide cleanout at the base of each stack or riser, at ends of runs greater than 10', each 135 degree aggregate change of direction in horizontal piping, where indicated on the drawings or as required by code. Plugs, extra heavy cast brass, screwed. Scoriated tops in unfinished areas, carpet markets in carpet floors, tile top in tile floors, stainless steel cover in finished walls. Cleanouts same size as pipe up to 4" diameter, 4" cleanouts for larger pipe unless otherwise noted. Cleanouts outside the building extend to grade and terminate with X.H. soil pipe cleanout set in 12" square 6" thick concrete pad.

B. Where trap primers are not specified provide all floor and hub drains with trap seal with EPDM diaphragm, Rectorseal SS series, Provent Proset or acceptable equal.

4.0 FLASHINGS, ESCUTCHEONS AND UV PROTECTION:

A. Flash all pipes and vents extending through roof. Flashing details shall be in accordance with roof manufacturer's requirements.

B. Provide escutcheons at all penetrations of exposed walls and ceilings. Escutcheons shall be chrome plated metal in occupied areas, prime paint finish for unoccupied areas unless otherwise noted. Escutcheons for exterior or moist areas shall be brass.

C. Plastic piping without UV inhibiters which is exposed to UV radiation from sunlight shall be protected by coating with a UV resistant paint.

5.0 UNIONS:

A. Provide between each item of equipment and its service valve. Copper to ferrous pipe connections shall have isolation coupling or union.

6.0 CROSS- CONNECTIONS AND INTERCONNECTIONS:

A. No plumbing device or piping shall be installed which will provide cross-connection or interconnection between a distributing supply or waste so as to make possible the backflow or back-siphonage of polluted water into the potable water supply system. Where the possibility of back-siphonage exists, water supply to the fixture shall be introduced through a suitable vacuum breaker in non-pressurized systems and a reduced pressure type back-flow preventer in pressurized systems or as otherwise required by the authority having jurisdiction. Installed backflow preventers must be approved through the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.

7.0 PLUMBING EQUIPMENT:

A. Water heaters shall be as scheduled or by acceptable equivalent by one of the following:
Water Heaters,Tankless Electric: Eemax, Stiebel, Chronomite, Hubbell,

8.0 INSULATION:

A. Insulate all cold water piping above the ground, Owens Corning or acceptable equal.

B. Cold water piping insulation: 1" fiber glass sectional pipe covering with universal vapor barrier jacket.

C. Seal all joints on cold water insulation to maintain vapor barrier.

D. Insulation shall run continuously thru hangers and supports without interruption.

E. Pipe insulation shall conform to the International Energy Conservation Code.

9.0 PIPE SUPPORTS AND ROUTING:

A. Provide adjustable hangers, inserts, brackets, rolls, clamps, guides, flexible connectors, supplementary steel, etc., as required for proper support of all pipe lines. Unistrut may be used for support of multiple pipes. Hangers shall be designed to allow for expansion and contraction of pipe lines and shall be of adequate size to permit covering when required. Provide protective saddles and blocking where supporting insulated piping to prevent crushing insulation. Install building attachment at required locations for proper piping support. Space attachment within maximum piping span length indicated in MSS SP-69.

B. Each piping system shall be independently supported with no piping bearing on another and installed such that no weight of piping is borne by the equipment.

C. Pipe Slopes: Install hangers and supports to provide indicated pipe slopes, and so that maximum pipe deflections allowed by ANSI B31 are not exceeded.

D. Piping shall be routed parallel to building lines, coordinated with building structure and other trades. Adjust pipe routing and drop locations with necessary pipe offsets to accommodate beams and other obstructions.

10.0 EQUIPMENT AND PIPE LABELS:

A. Equipment labels shall be provided for all plumbing equipment and shall be self adhesive engraved plastic, blue with white lettering, sized, minimum 1-1/2" high, and located for viewing from ground or floor level. Label shall indicate drawing designation or unique equipment number.

B. Pipe labels for domestic water, waste, and vent piping shall be preprinted, color-coded, with 1-1/2" lettering indicating service, and showing flow direction, locate pipe labels where piping is exposed or above accessible ceilings in finished spaces; machine rooms; accessible maintenance spaces such as shafts, tunnels, and plenums; and locations as follows:
1. Near each valve and control device.
2. Near penetrations through walls, floors, ceilings, and inaccessible enclosures.
3. At access doors, and similar access points that permit view of concealed piping.
4. Near major equipment items and other points of origination and termination.

11.0 PROTECTION OF WORK

A. Protection
1. Protect and cover piping and fixture waste and water openings to prevent entry of dirt and debris.
2. Cover and protect fixtures and plumbing equipment to prevent damage.

12.0 TEST, ADJUSTMENTS AND CLEANING:

A. Soil, waste and vent piping testing:
1. Fill with water to the top of the highest vent line extending through roof, but not less than 10 feet water column, and allow to remain for a period of two hours.

B. Water line testing:
1. Water piping shall be purged and tested with compressed air or water at 50 PSIG above the operating pressure but not to exceed the pressure rating of piping system materials for a period of 2 hours with no measurable pressure drop.

C. After successful testing, sterilize water system with an approved solution in accordance with local health officials.

D. Contractor to submit all test data and other documentation for record.

13.0 MANUFACTURERS:

A. Fixtures, equipment and accessories are specified by manufacturer's numbers as to the type and quality required. Specified manufacturers and approved equal manufacturers are as follows:

FIXTURE, ITEM OR EQUIPMENT	SPECIFIED MANUFACTURER	APPROVED EQUAL MANUFACTURER
Vitreous China Fixtures	American Standard	Kohler
	Toto	Zurn
Supply Faucets & Trim	Chicago Faucets	T & S Brass
		Elkay
		Sloan
		Kohler
		Watts
		Zurn
Flush Valves	Sloan	Zurn
		Toto
Water Closet Seats	Church	Bemis
		Beneke
		Olsonite
		Toto
Carriers	J R Smith	Josam
		Wade
		Watts
		Zurn
Waste Fittings	McGuire	Dearborn Brass
		ProFlo
		Jones Stephens
		Watts
Stops & Supplies	BrassCraft	McGuire
		ProFlo
		Watts
		Jones Stephens
Hydrants	Woodford	J R Smith
		Josam
		Zurn
Under Sink Pipe Covers	Trubro	ProFlo
		Plumberex
Drains and Drainage Products	J R Smith	Josam
		Wade
		Watts
		Zurn

14.0 FIXTURE BRANCHES:

A. Size as shown on drawings and diagrams, but not less than the following:

	WASTE	VENT	COLD	HOT
1. Water Closet (Flush Valve)	4"	2"	1"	---
2. Lavatory	1-1/2"	1-1/2"	1/2"	1/2"
3. Hose Bibb	----	----	3/4"	3/4"
4. Floor or Equipment Drain	2"	1-1/2"	----	----

Minimum waste or vent size below slab on grade shall be 2".

15.0 PLUMBING FIXTURES:

A. "WC-1" Water Closet, Wall Mounted Flush Valve (ADA compliant)
American-Standard 2257.001 "Afwall" white vitreous china, high efficiency, direct fed siphon jet action, elongated bowl, wall hung, 1-1/2" top spud.
Flush Valve:
Sloan "Ecos" 111-1.28 (1.28 gpf) hardwired operated electronic sensor diaphram flush valve with manual release, vacuum breaker and angle stop.
Accessories: Church 9500ssc white open front seat less cover with self sustaining check hinges, and J. R. Smith water closet support. Provide Sloan EL-154 120/24V transformer for up to 8 flush valves.
Note: Mount fixture rim 17" above finished floor and flush valve to wide side of fixture.

B. "L-1" Lavatory, Wall Hung (ADA Complaint)
American-Standard 0355.012 (4" centers) Lucerne" Vitreous china, 20" x 18", front overflow, integral back.
Faucet:
Chicago Faucets model E-tronic 116.707.AB.1 deck mounted, single hole ceramic disc mixing faucet with 6-5/8" spout with electronic sensor and vandal resistant non-aerating outlet (0.35 gpm).
Accessories: Provide Leonard 170-LF lead free bronze thermostatic mixing valve with 0.25 gpm minimum flow rate, integral check valves, discharge set at 105 F, mounted downstream of fixture stops, with hot and cold water piped to valve, tempered water to lavatory. Chicago Faucets model 327-XCP grid drain, 1-1/4" x 1-1/2" 17 GA. semi-cast brass p-trap with cleanout, chrome-plated risers with loose key angle stops and J.R. Smith concealed arm lavatory support. Provide with fully molded flexible vinyl insulation kit cover trap, supplies and stops, Trubro E-Z LAV GUARD. Provide with 12 volt AC transformer.
Note: Mount fixture rim 34" above finished floor.

C. "FD-1" Floor Drain, General Purpose
J.R. Smith 2005YA-NB, round top or 2005YB-NB, square top (in ceramic tile floors), DUCO cast iron body with flashing collar, adjustable strainer head, outlet size per plans, nickel bronze strainer, seepage openings and trap primer connection.

D. "HB-1" Hose Bibb, Interior
Woodford 26 faucet, chrome plated brass, 3/4" inlet and hose connection, mounting flange, integral ASSE double check backflow preventer, metal wheel handle.

E. "WH-1" Wall Hydrant, Exposed
Woodford 67 freezeless wall hydrant, chrome plated brass, 3/4" inlet and hose connection, integral ASSE double check backflow preventer, loose key, stem length as required.

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END OF SECTION 220100

1.0 SCOPE:

A. The work included under this contract consists of the furnishing of all labor, materials, tools, transportation, services, etc., necessary to complete the installation of the electrical systems and other items herein listed, all as directed by the Architect or Engineer, which work is comprised of, but not limited to the following principal items:

1. Electrical system for light and power:

a. Electrical service and distribution system revisions.
b. Switches and panel boards.
c. Systems of conduit, conductors, and boxes.
d. Receptacles and wiring devices.
e. Lighting fixtures and lamps.
f. Power service to the various motors.
g. Complete lighting and power systems.
h. All systems, wiring and conduit as required.

2. Control wiring and electrical installation and connections for items in other contracts as may be listed in the drawings.
3. Empty conduit and boxes for future installation of telephone wiring and miscellaneous systems.
4. Rough-in and final connection to equipment furnished by others.

B. Raceway wiring systems shall be concealed in all finished parts of the building, where possible. Where the raceways are exposed, they shall be run parallel with the building walls in a neat and workmanlike manner. Should it appear necessary to expose any conduit or wiring in finished spaces, it shall be brought to the Architect's attention immediately and this Contractor shall rearrange associated work as directed to facilitate an approved installation. Contractor to coordinate with mechanical trades to avoid ductwork and piping.

C. Contractor is responsible to provide liaison with electrical and communication companies. The Contractor shall provide and install all required equipment and connect as required to complete an operating service to the building.

2.0 RACEWAYS:

A. All electrical conductors are to be installed in metal raceways, unless specifically specified or noted otherwise. Galvanized steel or intermediate steel conduit as permitted by code. No conduit smaller than 3/4" to be used. Use set screw or compression type fittings. Provide flexible conduit connection for final connection to each motor not to exceed 3' in length and recessed lighting fixtures not to exceed 6' in length. Provide pull wires in all empty conduit systems. Identify terminus of each pull wire. All exposed raceways shall be installed with runs parallel and/or perpendicular with building walls. Fasten all rigid/non-flexible conduit every 8' and 2' from each box. Conduit shall be EMT where not subject to mechanical damage as permitted by National Electric Code (N.E.C.). EMT connectors and couplings 4" and smaller shall be compression type. Type MC Cable is not permitted.

B. Conduit bushings shall be provided and installed inside all disconnects, pull boxes, panelboards, switchboard or similar type equipment and where permitted by National Electric Code (N.E.C.).

C. Schedule 40 conduit can be used for underground installation and where permitted by National Electric Code (N.E.C.).

3.0 WIRES AND CABLES:

A. Electrical conductors, soft annealed copper with conductivity 98% of that of pure, stranded copper, 90 degree - 600V insulation and equal to General Cable Company. Wire and cable for all feeders, subfeeders, motor circuits and high ambient location type shall be THHN. All other branch circuit wiring shall be type XHHN or THHN. Minimum wire size shall be #12 gauge AWG. Control wiring may be #14 gauge.

B. For conductors #4 or small use the following color-code:

- 120/240V, 1-phase: black, red, white.
- Green shall be used for ground wire conductor.
- Contractor shall use the following color designations and be consistent throughout the project. Color designation for switch legs and or travelers: Violet, Pink or Purple may be used.

C. For conductors larger than #4, Field-Applied, Color-Coding Conductor Tape can be applied in half-lapped turns for a minimum distance of 6 inches from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings. When using black insulated conductors, contractor shall color-code conductor inside all pullbox or similar type enclosures.

D. Conductor Material Applications:
a. Feeders: Copper; solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
b. Branch Circuits: Copper. Solid for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.

E. Conductor insulation and multi-conductor cable application and wiring methods:
a. Service Entrance: Type THWN-2, single conductors in raceway.
b. Exposed Feeders: Type THHN, single conductors in raceway.
c. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspaces: Type THHN, single conductors in raceway.
d. Feeders Concealed below Slabs-on-Grade, and Underground: Type THWN-2, single conductors in raceway.
e. Exposed Branch Circuits, Including in Crawlspaces: Type THHN, single conductors in raceway.
f. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN, single conductors in raceway.
g. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THWN-2, single conductors in raceway.

4.0 GROUNDING:

A. Ground all electrical apparatus in accordance with N.E.C, and as specified herein. Provide a separate grounding conductor for all lighting, receptacle and equipment circuits. All cabinets, switchboards, equipment cases, motor frames, interior metal cold water piping systems, and system neutral conductors shall be effectively grounded. Use solderless pressure type connectors, no perforated strap connectors will be allowed. Ensure continuous bond where flexible conduit is used. Provide bonding jumper inside all flexible conduit. Grounding per N.E.C. 250, and any local requirements.

5.0 SPLICE AND TAPS:

A. Make splices at junction boxes, pull boxes, or outlet boxes only.

6.0 CABINETS, JUNCTION AND PULL BOXES:

A. Flush or surface mounted as indicated on drawings. Provide where shown on drawings and where required by code. Construct of cold gauge steel for flush surface mounting.

7.0 OUTLET BOXES:

A. General Electric, Appleton, Steel City or Raco hot dipped galvanized steel boxes, or equal. Install at terminal of each conduit run, each outlet, or device. Provide size, type and design to suit structural conditions. Adequate to accommodate size and number of raceways, conductors, device or fixture served. Provide plaster rings or covers on boxes where required on exposed work, use approved cast ferrous alloy outlet, junction boxes and fittings. Fixture or device cover shall completely conceal the size outlet box used. Install 3/8" fixture stud for lighting fixtures where required. Locate ceiling outlets to work with architectural features as directed. Switches installed 48" above floor on strike side of door as finally hung. Receptacles and telephone outlets, 18" above finished floor unless otherwise noted. Verify all outlet locations on job with Architect.

8.0 PANELBOARDS:

A. Panel boards are as indicated on the drawings. Main lugs only unless noted or specified otherwise. Provide typewritten schedule of circuits in index cardholder. Provide with hinged door and hinged cover. All circuit breakers shall be bolt-on molded case and have positive "trip" indication. Breakers used on existing panels shall match existing units and shall be labeled to have positive "trip" indication. Breakers shall be labeled to indicate suite number and use. Panelboards shall be General Electric, Square D, Siemens or Eaton/Cutler Hammer. All single pole circuit breakers shall be 'switch duty rated'. Panelboards shall be fully rated. Series rated panels are not permitted.

9.0 DISCONNECT SWITCHES:

A. Heavy duty NEMA type 'HD' - same manufacturer as panelboards. Plastic nameplate properly engraved with name of equipment served, secured to switch cover. Fuses shall be Bussmann of sizes and types scheduled.

10.0 MOTOR AND CONTROL WIRING AND CONNECTIONS:

A. This Contractor to provide all necessary conduit, boxes and supports to equipment furnished by Owner and as indicated on drawings. Provide a disconnect switch and starter if required.

11.0 LABELING:

A. Contractor shall label each and every j-box above ceiling with a permanent marker with panel and circuit number.

B. Outlets, adhesive film label, machine printed clear background with black letters, by thermal transfer or equivalent process. Minimum letter height shall be ¼ inch. Face plate shall be labeled with panel and circuit number.

C. Interior equipment self-adhesive, engraved, laminated acrylic or melamine label: adhesive backed, with white letters on a dark-gray background. Minimum letter height shall be 3/8 inch (10 mm).

D. Exterior equipment: Stenciled or engraved, laminated acrylic or melamine label: punched or drilled for screw mounting. White letters on a black background. Minimum letter height shall be 1 inch (25 mm).

12.0 WIRING DEVICES:

A. Duplex receptacles shall be Hubbell #5352-X grounding type, 20A., 125V.; G.F.C.I. shall be Hubbell GF-5352-X, 20A., 125V.; duplex, G.F.C.I. TYPE. Isolated ground receptacles shall be orange in color, Hubbell IG-5352, 20A, 125V, duplex. Isolated ground receptacles shall be equipped with a Hubbell IGP-8 plate, orange in color inscribed "Isolated Ground". Wall toggle switches shall be Hubbell Number 1221-X and Number 1223-X for single pole and three way types respectively. Other switch, receptacle, and outlet device variations shall be by Hubbell of "Spec. Grade" quality. Equivalent devices of P & S or Leviton will be acceptable in lieu of the above listed devices. Contractor to verify color of devices with Architect before purchase. Provide stainless steel cover plates to mate and match device for each outlet.

B. All wiring devices shall be gray in color.

C. Motion sensor: contactor shall verify with owner for proper time delay settings.

13.0 LIGHTING FIXTURES:

A. This Contractor shall furnish and install complete, unless otherwise specified, a lighting fixture on each and every lighting outlet shown on the drawings of each type scheduled by letter and description. All fixtures shall be equipped with lamps as scheduled or specified herein. All fixtures installed in suspended ceilings must be securely fastened to framing members per NEC 410-36b and local earthquake code requirements.

END OF SECTION 260100

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STATE OF MISSOURI
GREGORY J. FENDLER
NUMBER PE-2009037230
PROFESSIONAL ENGINEER
7.16.19
SEAL

LOWENSTEIN PARK

2050 NW Lowenstein Dr.
Lee's Summit, MO 64081
Project No. 2019-075

Lankford Fendler + associates
1730 Walnut Street Kansas City, Missouri 64108
1915 Frederick Avenue, St. Joseph, Missouri 64501
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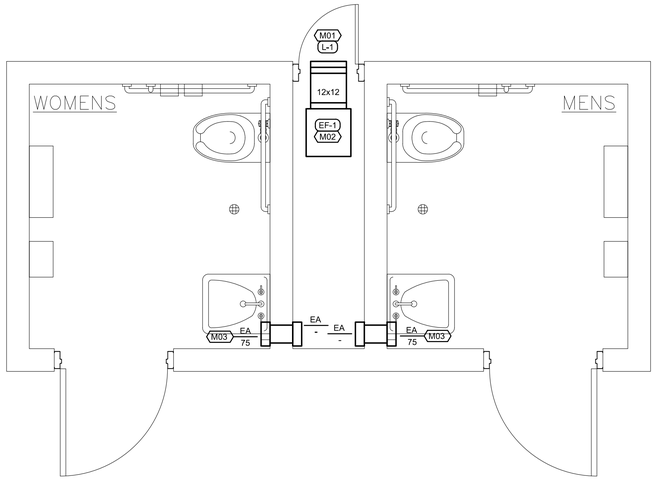
ISSUED FOR:	
INITIAL ISSUE	7-16-19
REVISED PER CITY COMMENT	6-18-19

SPECIFICATIONS

MEP2



FLOOR PLAN-MECHANICAL

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

N

M## FLOOR PLAN NOTES

1. PROVIDE 12"x12" DUCT TO 12"x12" LOUVER.
2. PROVIDE INLINE EXHAUST FAN SUSPENDED FROM STRUCTURE UTILIZING ALL THREAD RODS. INTERLOCK EXHAUST FAN WITH RESTROOM LIGHTS. ADJUST SPEED CONTROLLER TO PROVIDE 75 CFM EXHAUST FROM EACH RESTROOM.
3. INSTALL EXHAUST GRILLE IN WALL BELOW SINK. COORDINATE EXACT LOCATION WITH ARCHITECT.

GENERAL NOTES (TYPICAL ALL SHEETS)

- MECHANICAL CONTRACTOR IS RESPONSIBLE TO SEE THAT WORK MEETS AND IS IN ACCORDANCE WITH ALL REQUIREMENTS OF FEDERAL, STATE, AND LOCAL LAWS AND CODES AND/OR REQUIREMENTS, INCLUDING HEALTH CODES AND BUILDING OWNER.
- COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION TO AVOID ROUTING CONFLICTS.
- INSTALL ELASTOMERIC JOINT SEALER AROUND ALL DUCTS, PIPES, ETC. PASSING THRU INTERIOR NON-RATED CONCRETE AND MASONRY WALLS, GYPSUM-BOARD PARTITIONS, AND CONCRETE FLOOR/ROOF SLABS. INSTALL SEALER ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
- UPON REQUEST FOR ELECTRONIC FILES, CONTRACTOR SHALL FILL OUT, SIGN AND RETURN ELECTRONIC MEDIA RELEASE FORM FROM ENGINEER AND PROVIDE PAYMENT FOR FEES STIPULATED ON ELECTRONIC MEDIA RELEASE FORM. UPON RECEIPT OF COMPLETED RELEASE FORM AND PAYMENT, ELECTRONIC FILES WILL BE RELEASED.

MECHANICAL SYMBOLS

- OR — NEW DUCTWORK
- WALL MOUNTED DIFFUSER/GRILLE
- EF-1 — EQUIPMENT TYPE AND DESIGNATION
- SA / 200 — MARK NO, SUPPLY (S_), RETURN (R_), EXHAUST (E_) CFM

FAN SCHEDULE

MARK NO.	MANUFACTURER	MODEL	TYPE	AIRFLOW (CFM)	RPM	DRIVE	ELECTRICAL VOLT	ø	HZ	HP/ WATTS	NOTES
EF-1	GREENHECK	SQ-70-G	INLINE	150	1300	DIRECT	120	1	60	1/30	1

NOTES: 1. PROVIDE WITH DISCONNECT SWITCH, SPEED CONTROLLER, COUNTER-BALANCED BACKDRAFT DAMPER, HANGING RUBBER VIBRATION ISOLATORS AND INLET SCREEN.

DIFFUSER SCHEDULE

MARK	MANUFACTURER	MODEL	FACE SIZE (IN.)	NECK SIZE (IN.)	FRAME TYPE	FINISH	NOTES
EA	PRICE	60	8x8	6x6	SURFACE	WHITE	

NOTES:

LOUVER SCHEDULE

MARK NO.	MANUFACTURER	MODEL	AIRFLOW (CFM)	WIDTH (IN.)	HEIGHT (IN.)	FREE AREA (FT.)	MAXIMUM S.P. DROP	NOTES
L-1	GREENHECK	EDK-402	150	12	12	0.3	0.054	1,2,3

NOTES: 1. PROVIDE WITH BIRDSCREEN.
2 COORDINATE LOUVER SIZE AND JAMB WITH ARCHITECT. CONTRACTOR TO VERIFY
3 COLOR AND FINISH TO BE SELECTED BY ARCHITECT.

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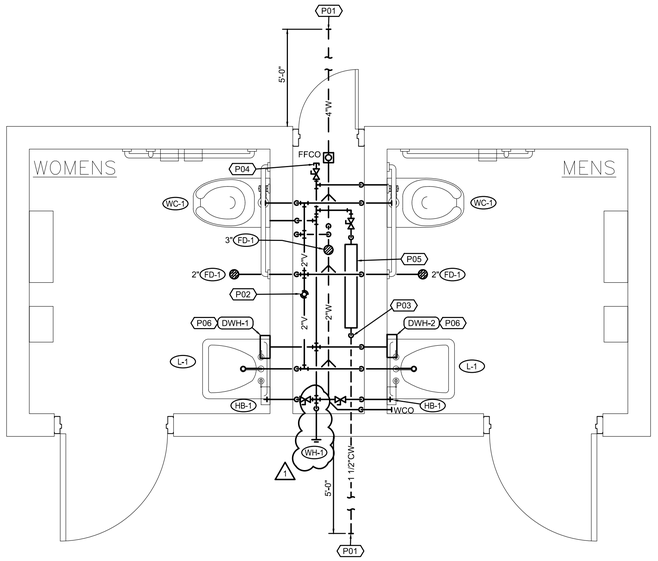
MECHANICAL
PLAN / DETAILS / NOTES /
SCHEDULES / SYMBOLS

M1



FLOOR PLAN-PLUMBING

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

N

P## FLOOR PLAN NOTES

1. SEE CIVIL DRAWINGS FOR CONTINUATION.
2. 2" VENT UP TO 3" VENT THRU ROOF.
3. PROVIDE DRAIN DOWN VALVE FOR WINTERIZATION OF BATHROOM AT LOW POINT.
4. PROVIDE WITH AIR CHARGE FITTING FOR WINTERIZATION OF BATHROOM.
5. 1" REDUCED PRESSURE BACKFLOW PREVENTER. WATTS 919 OR EQUAL. RE: DETAIL.
6. INSTALL TANKLESS ELECTRIC WATER HEATER BELOW LAVATORY. CONNECT 1/2" COLD WATER PIPING TO WATER HEATER AND CONNECT TEMPERED WATER TO FAUCET. RE: DETAIL.

GENERAL NOTES (TYPICAL ALL SHEETS)

- PLUMBING CONTRACTOR IS RESPONSIBLE TO SEE THAT WORK MEETS AND IS IN ACCORDANCE WITH ALL REQUIREMENTS OF FEDERAL, STATE, AND LOCAL LAWS AND CODES AND/OR REQUIREMENTS, INCLUDING HEALTH CODES AND BUILDING OWNER.
- COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION TO AVOID ROUTING CONFLICTS.
- INSTALL ELASTOMERIC JOINT SEALER AROUND ALL PIPES PASSING THRU INTERIOR NON-RATED CONCRETE AND MASONRY WALLS, GYPSUM-BOARD PARTITIONS, AND CONCRETE FLOOR/ROOF SLABS, INSTALL SEALER ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
- PLUMBING CONTRACTOR SHALL MAKE FINAL CONNECTION TO ALL EQUIPMENT BY OTHERS. VERIFY CONNECTIONS SIZES AND REQUIREMENTS.
- PLUMBING CONTRACTOR SHALL PROVIDE PRO-SET SYSTEMS 'TRAP GUARD' IN ALL FLOOR DRAIN TRAPS WITHIN PROJECT SCOPE OF WORK.
- UPON REQUEST FOR ELECTRONIC FILES, CONTRACTOR SHALL FILL OUT, SIGN AND RETURN ELECTRONIC MEDIA RELEASE FORM FROM ENGINEER AND PROVIDE PAYMENT FOR FEES STIPULATED ON ELECTRONIC MEDIA RELEASE FORM. UPON RECEIPT OF COMPLETED RELEASE FORM AND PAYMENT, ELECTRONIC FILES WILL BE RELEASED.

PLUMBING SYMBOLS

———	NEW PIPING
——CW——	COLD WATER
——V——	SANITARY VENT ABOVE GROUND/FLOOR
– – –V– – –	SANITARY VENT BELOW GROUND/FLOOR
——W——	SANITARY WASTE ABOVE GROUND/FLOOR
– – –W– – –	SANITARY WASTE BELOW GROUND/FLOOR
——⋈——	SHUT OFF VALVE
■ OR ◎	FLOOR DRAIN OR EQMT FLOOR DRAIN
—o o—	PIPE DROP/PIPE RISE
—o—	BOTTOM OUTLET TEE
—o—	TOP OUTLET TEE
WCO⊢	WALL CLEAN OUT
o⟶ HB	HOSE BIBB
⊠ FFCO	FINISHED FLOOR CLEANOUT
VTR	SANITARY VENT THROUGH ROOF
DWH-1	EQUIPMENT TYPE AND DESIGNATION
⬭	PLUMBING FIXTURE DESIGNATION

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STATE OF MISSOURI
GREGORY J. FENDLER
NUMBER PE-2009037230
PROFESSIONAL ENGINEER
7.16.19
SEAL

LOWENSTEIN PARK

2050 NW Lowenstein Dr.
Lee's Summit, MO 64081
Project No. 2019-075

Lankford Fendler + associates
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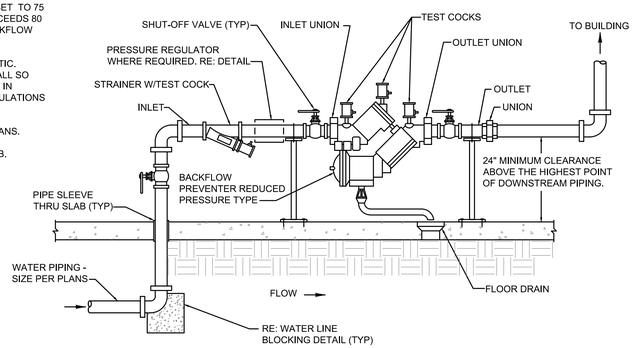
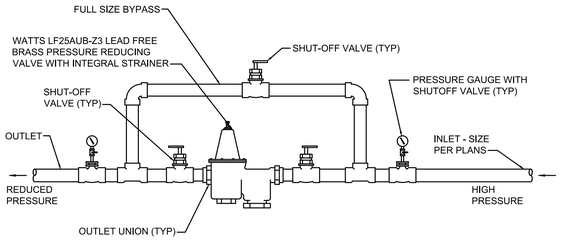
PLUMBING
PLAN / NOTES /
SYMBOLS

P1

NOTES:
1. PROVIDE PRESSURE REGULATOR. SET TO 75 PSI WHERE SOURCE PRESSURE EXCEEDS 80 PSI. INSTALL DOWNSTREAM OF BACKFLOW PREVENTER OUTLET. RE: DETAIL
2. ARRANGEMENT SHOWN IS SCHEMATIC. MODIFY TO SUIT CONDITIONS. INSTALL SO BFP CAN BE SERVICED AND TESTED IN ACCORDANCE W/ ALL RULES & REGULATIONS OF LOCAL AUTHORITIES.
3. ROUTE DRAIN AS INDICATED ON PLANS.
4. SUPPORT AS REQUIRED FROM SLAB.

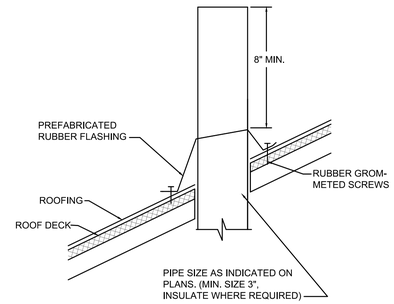


INTERIOR BACKFLOW PREVENTER DETAIL
NO SCALE (FOR PIPE SIZES 2" OR LESS)

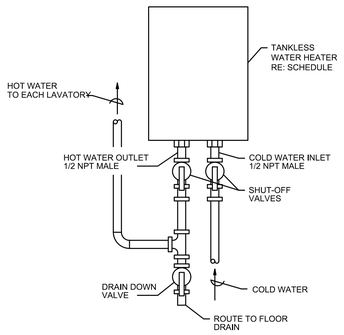


PRESSURE REDUCING VALVE DETAIL
NO SCALE

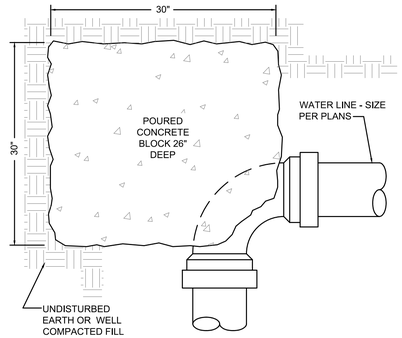
NOTE:
LOCATE VTR A MINIMUM OF 10' FROM ANY BUILDING OPENINGS, MECHANICAL UNIT INTAKES, RELIEF OR INTAKE HOODS



VENT THRU ROOF DETAIL
NO SCALE



TANKLESS WATER HEATER DETAIL
NO SCALE



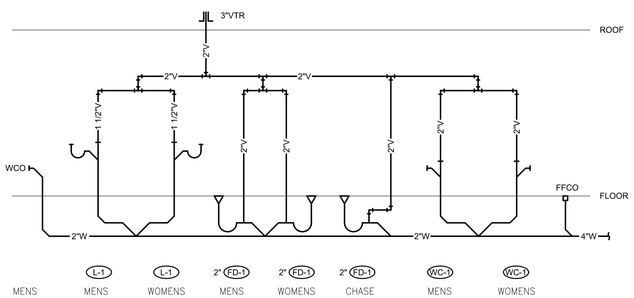
WATER LINE BLOCKING DETAIL
NO SCALE

WATER HEATER SCHEDULE (TANKLESS)

MARK NO.	MANUFACTURER	MODEL NO.	MINIMUM FLOW, GPM	RECOVERY (GPM @ 80 F)	INPUT (KW)	ELECTRICAL VOLT	ELECTRICAL ø	ELECTRICAL HZ	NOTES
DWH-1	EEMAX	SP48	0.5	0.05	4.8	240	1	60	1
DWH-2	EEMAX	SP48	0.5	0.05	4.8	240	1	60	1

NOTES: 1. PROVIDE WITH NICHROME ELEMENT, HIGH LIMIT SHUTOFF WITH AUTOMATIC RESET, AND MOUNTING HARDWARE.

*HEATING KW IS NET CAPACITY AT VOLTAGE AND PHASE INDICATED.



WASTE AND VENT RISER
SCALE: NTS

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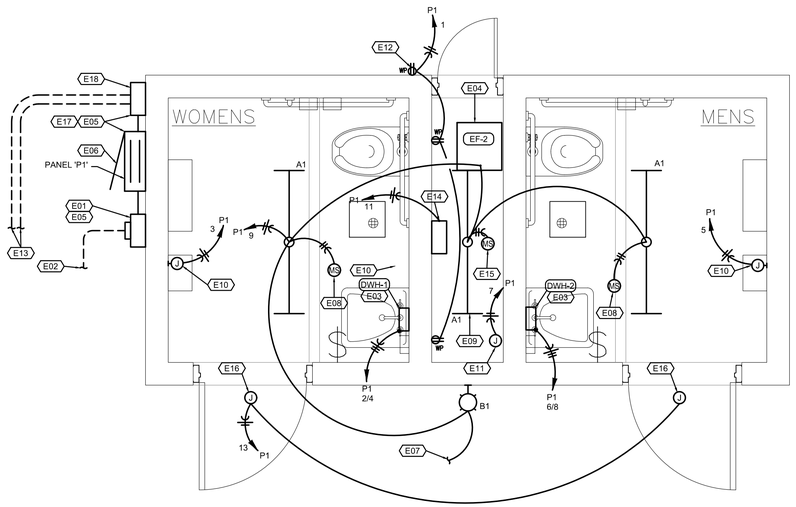
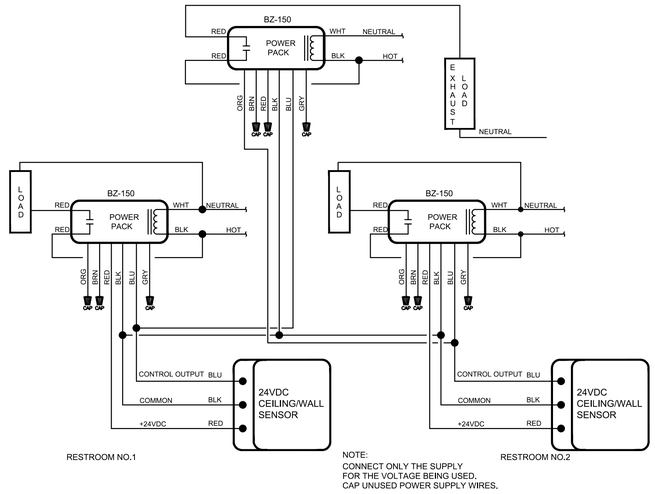
PLUMBING DETAILS / SCHEDULES / RISER

P2



FLOOR PLAN-ELECTRICAL

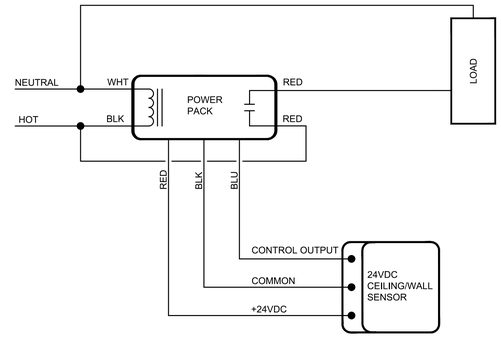
SCALE: 1/2"=1'-0"



NOTE:
CONNECT ONLY THE SUPPLY FOR THE VOLTAGE BEING USED. CAP UNUSED POWER SUPPLY WIRES.

RESTROOM OCCUPANCY SENSOR CONTROL - COMMON EXHAUST FAN

NO SCALE

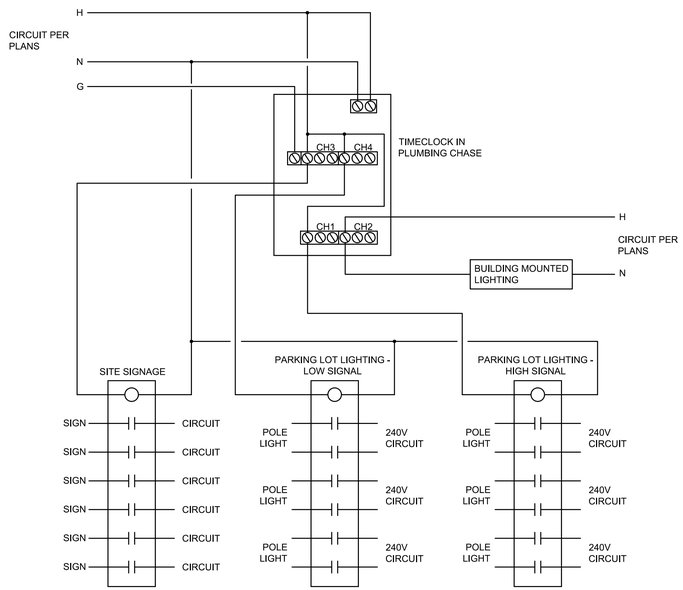


STANDALONE OCCUPANCY SENSOR DETAIL

NO SCALE

E## FLOOR PLAN NOTES

1. UTILITY METER. RE: RISER DIAGRAM FOR ADDITIONAL INFORMATION.
2. RE: CIVIL PLAN FOR CONTINUATION OF SECONDARY CONDUCTORS FROM UTILITY TRANSFORMER.
3. MAKE POWER CONNECTION TO WATER HEATER. PROVIDE BREAKER IN PANEL WITH LOCKABLE PROVISIONS IN THE 'OFF' POSITION FOR USE AS EQUIPMENT DISCONNECT.
4. MAKE REQUIRED CONNECTION TO EXHAUST FAN WITH INTEGRAL DISCONNECT SWITCH. EXHAUST FAN TO TURN ON WITH BATHROOM LIGHTING.
5. MOUNT ELECTRICAL GEAR TO MASONRY WALL USING UNISTRUT BACKING.
6. PROVIDE (2) 2" SPARE CONDUITS OUT OF PANEL P1 TO UNDERGROUND, CAP AT TERMINUS AND WEATHERPROOF INCOMING CONDUIT AT PANEL. ADDITIONALLY, PROVIDE (1) 2" SPARE CONDUIT INTO PLUMBING CHASE.
7. WIRE THROUGH (1) CHANNEL OF 4-CHANNEL TIMECLOCK.
8. RE: COMMON EXHAUST FAN OCCUPANCY SENSOR CONTROL DETAIL FOR OCCUPANCY SENSORS IN RESTROOMS AND EXHAUST FAN CONTROL.
9. FIELD COORDINATE EXACT MOUNTING OF WALL MOUNTED LIGHT FIXTURE IN PLUMBING CHASE.
10. MAKE POWER CONNECTION TO ELECTRIC HAND DRYER. COORDINATE ROUGH-IN HEIGHT WITH ARCHITECTURAL ELEVATION.
11. MAKE POWER CONNECTION TO LOW VOLTAGE TRANSFORMERS FOR HARD WIRED PLUMBING FIXTURE SENSORS. PROVIDE LOW VOLTAGE WIRING FROM TRANSFORMERS TO EACH SENSOR. COORDINATE WITH PLUMBING CONTRACTOR.
12. EXTERIOR WP RECEPTACLE TO BE PROVIDED WITH LOCKABLE COVER.
13. RE: CIVIL DRAWINGS FOR CIRCUITS TO PARKING LOT LIGHTING AND SITE SIGNAGE. RE: PANEL SCHEDULE FOR QUANTITY AND CONFIGURATION OF BRANCH CIRCUITS. EXACT CONDUIT AND CIRCUIT ROUTING PER CIVIL DRAWINGS.
14. NEW 4-CHANNEL TIMER SWITCH TO BE TORK DZS400BP. COORDINATE TIME SCHEDULING WITH OWNER. PROVIDE LINE VOLTAGE POWER AS REQUIRED BY MANUFACTURER. INTERCONNECT WITH CONTACTORS MOUNTED TO EXTERIOR OF BUILDING; RE: DETAIL.
15. RE: STANDALONE OCCUPANCY SENSOR DETAIL FOR LIGHT IN PLUMBING CHASE.
16. POWER TO POWERED DOOR LOCK SYSTEM. CONFIRM POWER REQUIREMENTS AND ROUGH-IN REQUIREMENTS WITH OWNER.
17. MOUNT EQUIPMENT WITHIN VANDAL RESISTANT, LOCKABLE, NEMA 3R HOFFMAN ENCLOSURE.
18. PROVIDE CONTACTORS WITHIN ENCLOSURE FOR SWITCHING PARKING LOT LIGHTS AND SIGN LIGHTS. SIGNAL TO BE FROM TIMECLOCK MOUNTED IN PLUMBING CHAISE. RE: DETAIL.

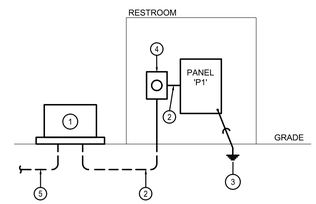


CONTACTORS:

- COIL TO BE 120V RATED.
- RELAYS TO BE MECHANICALLY HELD, 250V, 20A.
- TYPICAL ALL CONTACTORS.

EXTERIOR LIGHTING CONTROL DIAGRAM

NO SCALE



ELECTRICAL RISER DIAGRAM

NOT TO SCALE

X RISER PLAN NOTES

1. NEW UTILITY TRANSFORMER. ELECTRICAL CONTRACTOR TO PROVIDE CONCRETE PAD PER UTILITY REQUIREMENTS. RE: CIVIL PLANS FOR EXACT LOCATION.
2. 200A SERVICE CONDUCTORS, INCREASED SIZE FOR VOLTAGE DROP: (3) #250 (Cu) IN 2" CONDUIT. RE: CIVIL PLANS FOR ROUTING.
3. PROVIDE GROUNDING ELECTRODE IN ACCORDANCE WITH NEC. GROUNDING ELECTRODE CONDUCTOR TO BE (1) #6. RE: GROUNDING DETAIL FOR ADDITIONAL REQUIREMENTS.
4. CONTRACTOR TO PROVIDE UTILITY APPROVED METER SOCKET.
5. PRIMARY CONDUIT PER CIVIL DRAWINGS.

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ELECTRICAL
PLAN / DETAILS

E1

NEW PANELBOARD P1 SCHEDULE

SERVICE: 240/120 VOLT , 1 - PHASE , 3 - WIRE
AMP: 200 AMP
MAINS: MCB / 200 AMP MAIN BREAKER
MOUNTING: SURFACE
RATING: VERIFY A.I.C.
LOCATION: RESTROOM SERVICE RATED NEMA 3R

REV NO.	NOTE NO.	CRT#	LOAD DESCRIPTION	BRKR P	BRKR AMP	LOAD KVA A	LOAD KVA B	CRT#	LOAD DESCRIPTION	BRKR P	BRKR AMP	LOAD KVA A	LOAD KVA B	NOTE NO.	REV NO.
		1	REC; CONVENIENCE OUTLETS	1	20	0,54		2	WATER HEATER	2	30	2,4		2	
		3	HAND DRYER	1	20		1,5	4					2,4		
		5	HAND DRYER	1	20	1,5		6	WATER HEATER	2	30	2,4		2	
		7	PLUMBING FIXTURE SENSORS	1	20		0,1	8					2,4		
		9	LIGHTING AND EXHAUST FAN	1	20	0,29		10	PARKING LOT LIGHTING #1 - HIGH	2	20	1		1,3	
		11	TIMECLOCK	1	20		0,5	12					1	1,3	
		13	DOOR LOCK POWER	1	20	0,5		14	PARKING LOT LIGHTING #1 - LOW	2	20			1,3	
	3	15	SITE SIGNAGE - NORTH	1	20		1	16						1,3	
	3	17	SITE SIGNAGE - NORTH	1	20	1		18	PARKING LOT LIGHTING #2 - HIGH	2	20	1		1,3	
	3	19	SITE SIGNAGE - NORTH	1	20		1	20					1	1,3	
	3	21	SITE SIGNAGE - MIDDLE	1	20	1		22	PARKING LOT LIGHTING #2 - LOW	2	20			1,3	
	3	23	SITE SIGNAGE - SOUTH	1	20		1	24						1,3	
	3	25	SITE SIGNAGE - SOUTH	1	20	1		26	PARKING LOT LIGHTING #3 - HIGH	2	20	1		1,3	
		27	SPARE	1	20			28					1	1,3	
		29	SPARE	1	20			30	PARKING LOT LIGHTING #3 - LOW	2	20			1,3	
		31	SPARE	1	20			32						1,3	
		33	SPARE	1	20			34	SPARE	1	20				
		35	PROVISION					36	PROVISION						
		37	PROVISION					38	PROVISION						
		39	PROVISION					40	PROVISION						
		41	PROVISION					42	PROVISION						
			TOTAL:			5,83	5,1		TOTAL:			7,8	7,8		
												5,83	5,1		
									KVA / PHASE TOTAL:			13,63	12,9		
									AMP / PHASE TOTAL:			114	108		

NOTES:
1. LOADS ARE NON-COINCIDENTAL AND CANNOT RUN AT THE SAME TIME. THE LARGER LOAD HAS BEEN INCLUDED.
2. BREAKER TO BE LOCKABLE IN THE 'OFF' POSITION.
3. ROUTE CIRCUIT THROUGH CONTACTOR.

REV:

GENERAL NOTE:
CONDUCTOR & CONDUIT SIZING CHART FOR SIZING OF BRANCH CIRCUITS AND OR FEEDERS AT OR BELOW 100 AMPS

TOTAL CONNECTED LOAD:	26,53	KVA
TOTAL CONNECTED CURRENT:	110,54	AMPS
LIGHTS @ 125%:	15,36	KVA
RECEPTACLES @ 100%:	0,54	KVA
RECEPTACLES @ 50%	0,00	KVA
LARGEST MOTOR LOAD @ 125%:	0,00	KVA
CONTINUOUS LOAD @ 125%:	0,75	KVA
OTHER AND NON-CONTINUOUS LOADS @ 100%:	15,50	KVA
TOTAL DEMAND LOAD:	32,15	KVA
POWER FACTOR:	0,95	% PF
TOTAL DEMAND CURRENT:	141,02	AMPS

LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER	LAMPS	WATTS / VOLTS	DESCRIPTION	NOTES
A1	BEGHELLI BS100LED-4-HT-LO-WT35-120-277V OR APPROVED EQUAL	LED 3500K, 83+ CRI 5,730 LUMENS	50W 120V	NOMINAL 6" X 50" VAPORTIGHT FIXTURE, INTEGRAL DRIVER, SURFACE MOUNT KIT.	
B1	LUMINIS LIGHTING SY602-L2W18R1-120V-xxx-2K3-LSL2 OR APPROVED EQUAL	LED 3000K, 80 CRI 2,997 LUMENS	40W 120V	NOMINAL 6" DIAMETER WALL-MOUNTED UP/DOWN LIGHT, EXTRUDED ALUMINUM BODY, TEMPERED GLASS LENS, INTEGRAL DRIVER, ADJUSTABLE LIGHT MODULE, LINEAR SPREAD LENS. VERIFY FINISH WITH ARCHITECT.	

SUBSTITUTION NOTES:
THE LIGHTING DESIGN FOR THIS PROJECT IS BASED UPON THE MANUFACTURERS SPECIFIED. IF AN ADDITIONAL SUBSTITUTION IS DESIRED BY THE CONTRACTOR, A SUBSTITUTION REQUEST SUBMITTAL MUST BE PROVIDED AS FOLLOWS:

S1. SUBSTITUTION REQUEST MUST BE RECEIVED BY THE ENGINEER IN WRITING 10 DAYS PRIOR TO BID. FAILURE TO SUBMIT CONSTITUTES A GUARANTEE TO SUPPLY THE SPECIFIED FIXTURES.
S2. INFORMATION IS TO BE SUPPLIED COMPARING PHOTOMETRY, (WITH FLOOR PLANS INDICATING POINT BY POINT CALCULATIONS) DIMENSIONS, MATERIAL COMPOSITION, FINISH, VISUAL APPEARANCE AS WELL AS THE "CONTRACTOR NET" PRICING. SAMPLES ARE TO BE PROVIDED UPON REQUEST.
S3. GREAT CARE, TIME AND EXPENSE HAVE BEEN USED TO PROVIDE OUR CLIENT WITH THE LIGHTING AND CONTROLS SYSTEM. THEREFORE, FOR EACH AND EVERY TYPE OF FIXTURE OFFERED AS AN UNSOLICITED ALTERNATE, A $500.00 FEE WILL BE CHARGED TO THE CONTRACTOR FOR REVIEW OF THE ALTERNATE FIXTURE, THIS CHARGE IS IN NO WAY A GUARANTEE OF APPROVAL, BUT IS SOLELY TO COMPENSATE THE ENGINEER FOR TIME SPENT VALIDATING EQUALITY AND COMPATIBILITY WITH THE PROJECT REQUIREMENTS. THIS REIMBURSEMENT MUST BE RECEIVED BY THE ENGINEER PRIOR TO ANY REVIEW COMMENCING.
S4. PACKAGING OF LIGHT FIXTURES WILL NOT BE CONSIDERED OR APPROVED.
S5. MANUFACTURER'S REPRESENTATIVE AGENTS SHALL BE ALLOWED TO OFFER MINI-LOT PRICING FOR SPECIFIED LIGHTING FIXTURES.
S6. LIGHTING CONTROLS PRICING SHALL BE COMPLETELY SEPARATE OF ANY LIGHT FIXTURE PRICING, ANY LIGHTING CONTROLS PRICING THAT IS SUBMITTED WITH LIGHT FIXTURE PRICING (UNIT OR MINI-LOT) WILL BE IMMEDIATELY REJECTED IN ITS ENTIRETY.

GENERAL NOTE:
G1. ELECTRICAL CONTRACTOR SHALL VERIFY CEILING TYPE PRIOR TO ORDERING ANY LIGHT FIXTURES.
G2. ELECTRICAL CONTRACTOR SHALL COORDINATE DIMMING DRIVERS/BALLASTS WITH DIMMING SWITCHES/SYSTEMS AND SHALL INCLUDE ALL REQUIRED CONTROL WIRING.
G3. UNLESS OTHERWISE INDICATED, ALL POLE BASES, POLES, AND SITE LUMINAIRES ARE TO BE FURNISHED AND INSTALLED BY E.C.

BRANCH CIRCUIT COPPER CONDUCTOR AND CONDUIT SIZING CHART*

OVERCURRENT PROTECTION DEVICE RATING (AMPS)	REQUIRED CONDUCTOR SIZE	EQUIPMENT GROUNDING CONDUCTOR SIZE	SINGLE PHASE 2 WIRE + GND. CONDUIT SIZE	SINGLE PHASE 3 WIRE + GND. CONDUIT SIZE	THREE PHASE 3 WIRE + GND. CONDUIT SIZE	THREE PHASE 4 WIRE + GND. CONDUIT SIZE
15	12 AWG	12 AWG	3/4"	3/4"	3/4"	3/4"
20	12 AWG	12 AWG	3/4"	3/4"	3/4"	3/4"
25	10 AWG	10 AWG	3/4"	3/4"	3/4"	3/4"
30	10 AWG	10 AWG	3/4"	3/4"	3/4"	3/4"
35	8 AWG	10 AWG	3/4"	3/4"	3/4"	3/4"
40	8 AWG	10 AWG	3/4"	3/4"	3/4"	3/4"
45	6 AWG	10 AWG	3/4"	3/4"	3/4"	1"
50	6 AWG	10 AWG	3/4"	3/4"	3/4"	1"
60	4 AWG	10 AWG	1"	1"	1"	1-1/4"
70	4 AWG	8 AWG	1"	1"	1"	1-1/4"
80	3 AWG	8 AWG	1"	1-1/4"	1-1/4"	1-1/4"
90	2 AWG	8 AWG	1"	1-1/4"	1-1/4"	1-1/4"
100	1 AWG	8 AWG	1-1/4"	1-1/2"	1-1/2"	1-1/2"

* = UNLESS OTHERWISE NOTED ON THE DRAWINGS.
* = UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL BRANCH CIRCUITS AND FEEDERS TO BE PROVIDED WITH A NEUTRAL WIRE.
* = ALL CONDUCTORS SIZED ON THE POWER RISER DIAGRAM OR IN BRANCH CIRCUIT CONDUCTOR TABLE ARE BASED ON 3 CURRENT CARRYING CONDUCTORS IN A RACEWAY OR CABLE. CONDUCTORS SHALL BE DERATED IN ACCORDANCE WITH THE NEC IF 4 OR MORE CONDUCTORS ARE PLACED IN A RACEWAY OR CABLE.

GENERAL NOTES (TYPICAL ALL SHEETS)

A) REFER TO ARCHITECTS REFLECTED CEILING PLANS FOR EXACT PLACEMENT OF LIGHT FIXTURES, SPEAKER AND F.A. DEVICES IN THE CEILING SYSTEM.

B) REFER TO ARCHITECTURAL DETAILS AND ELEVATIONS FOR COORDINATION OF LOCATION OF ALL WIRING DEVICES BEFORE ROUGH-IN OF J-BOXES.

C) REFER TO ARCHITECTURAL PLANS FOR DETAIL OF ALL CONDUIT THRU ROOF PENETRATIONS.

D) ANY MATERIAL REMOVED THAT OWNER DOES NOT WISH TO RETAIN SHALL BE REMOVED FROM PROJECT SITE AND DISPOSED OF BY THE CONTRACTOR.

E) PROVIDE UPDATED, TYPEWRITTEN PANELBOARD DIRECTORY FOR EACH PANELBOARD WHICH CIRCUITS HAVE BEEN ADDED TO OR MODIFIED.

F) CONTRACTOR TO REFERENCE BRANCH CIRCUIT COPPER CONDUCTOR AND CONDUIT SIZING CHART FOR SIZING OF BRANCH CIRCUITS AND OR FEEDERS AT OR BELOW 100AMPS.

G) SUPPORT ALL LIGHT FIXTURES WITH A MINIMUM OF (4) 12 GA. HANGER WIRES TO STRUCTURE ABOVE.

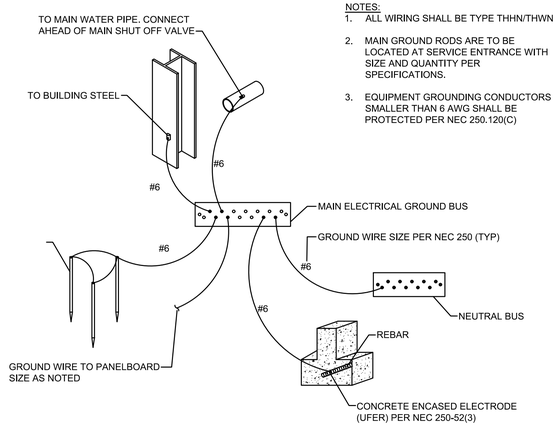
H) CONDUIT SHALL BE USED FOR CONDUCTORS WHERE REQUIRED BY N.E.C.

I) CONTRACTOR SHALL CALCULATE VOLTAGE DROP AND SIZE WIRE ACCORDINGLY, PER N.E.C.

J) UPON REQUEST FOR ELECTRONIC FILES, CONTRACTOR SHALL FILL OUT, SIGN AND RETURN ELECTRONIC MEDIA RELEASE FORM FROM ENGINEER AND PROVIDE PAYMENT FOR FEES STIPULATED ON ELECTRONIC MEDIA RELEASE FORM. UPON RECEIPT OF COMPLETED RELEASE FORM AND PAYMENT, ELECTRONIC FILES WILL BE RELEASED.

ELECTRICAL SYMBOLS

- BRANCH CIRCUIT CONCEALED IN CEILING OR WALL. ARROWS INDICATE HOMERUNS TO PANEL. ALL CONDUCTORS ARE MINIMUM NO.12 UNLESS NOTED OTHERWISE.
  - PHASE CONDUCTORS
  - NEUTRAL CONDUCTOR
  - SWITCH-LEG AND OR TRAVELER
  - GROUND CONDUCTOR
- LP1-10 — PANEL - BREAKER NUMBER (IDENTIFICATION)
- 1/3, 1/3/5 — INDICATES X/X= 2-POLE C.B., X/X/X = 3-POLE C.B.
- HOMERUN INDICATED LIKE THIS INDICATED THREE SEPARATE CIRCUITS (3 / 5 / 1)
- CONDUIT CONCEALED IN CEILING OR WALL WITH THREE CONDUCTORS: 1-PHASE; 1-NEUTRAL; 1-GROUND WIRE, MINIMUM NO.12 WIRE UNLESS OTHERWISE SPECIFIED ON DRAWINGS.
- GROUNDING CONDUCTOR NO.12 WIRE EXCEPT AS NOTED
- STRIP FIXTURE, LETTER DENOTES FIXTURE TYPE, REFER TO SCHEDULE
- WALL WASH OR RECESSED CEILING LIGHT FIXTURE (OR)
- 208Y/120V OR 120/240V PANELBOARD (SURFACE) TOP MOUNTED 6'-0" AFF
- SURFACE MOUNTED EQUIPMENT, TYPE AS INDICATED ON DRAWINGS
- GROUND
- POWER CONNECTION POINT
- S — SINGLE POLE SWITCH, TOP OF DEVICE BOX AT +4'-0" AFF
- WP — GFI DUPLEX RECEPTACLE WITH WEATHERPROOF PLATE. HEIGHT AS NOTED.
- GFI — DUPLEX RECEPTACLE W/GROUND FAULT PROTECTION. +1'-6" AFF OR AS NOTED
- MS — CEILING MOUNTED MOTION DETECTOR TYPE AS INDICATED
- J (OR) J — WALL MOUNTED OR CEILING MOUNTED JUNCTION BOX.
- X — MECHANICAL EQUIPMENT CALL OUT BUBBLE
- AFF — ABOVE FINISH FLOOR



NOTES:
1. ALL WIRING SHALL BE TYPE THHN/THWN
2. MAIN GROUND RODS ARE TO BE LOCATED AT SERVICE ENTRANCE WITH SIZE AND QUANTITY PER SPECIFICATIONS.
3. EQUIPMENT GROUNDING CONDUCTORS SMALLER THAN 6 AWG SHALL BE PROTECTED PER NEC 250.120(C)

MAIN SERVICE ENTRANCE GROUNDING DETAIL

NO SCALE

AMAI ARCHITECTURE
1510 Walnut Suite 200
Kansas City, MO 64108
P 816.994.5900 / 5901 F

STATE OF MISSOURI
GREGORY J. FENDLER
NUMBER PE-2009037230
PROFESSIONAL ENGINEER
7.16.19
SEAL

LOWENSTEIN PARK

2050 NW Lowenstein Dr.
Lee's Summit, MO 64081
Project No. 2019-075

Lankford + Fendler + associates
1730 Walnut Street Kansas City, Missouri 64108
1915 Frederick Avenue, St. Joseph, Missouri 64501
Phone: 816.221.1411 | Fax: 816.221.1429
LANKFORD | FENDLER + ASSOCIATES, CONSULTING ENGINEERS, INC.

ISSUED FOR:	
INITIAL ISSUE	7-16-19
REVISED PER CITY COMMENT	6-18-19

ELECTRICAL
DETAILS / NOTES
SCHEDULES / SYMBOLS

E2

1 PHOTOMETRIC PLAN
SCALE: 1:30

NORTH

PLAN NOTES:

1. NEW POLE MOUNTED LIGHT FIXTURE SHALL BE INSTALLED IN APPROXIMATE LOCATION SHOWN. RE: LIGHTING FIXTURE SCHEDULE ON SHEET SL-2.
2. ROUTE EACH LIGHT FIXTURE HOMERUN (TWO TOTAL) TO 240V, 20A CIRCUIT BREAKER IN RESTROOM ELECTRICAL PANEL. CIRCUIT SHALL BE RAN THROUGH LIGHTING CONTROL PANEL. RE: RESTROOM BUILDING PLANS FOR ADDITIONAL INFORMATION.
3. POLE MOUNTED LIGHT FIXTURE HAS DUAL CIRCUITS TO ALLOW FOR DIMMING CONTROL. CONNECT BOTH CIRCUITS TO DESIGNATED DRIVER.

FEEDER SCHEDULE:

1. (2) SETS: (2) #10 AWG, (1) #10 AWG GROUND IN 1-1/2" CONDUIT

CALCULATION SUMMARY

AREA	AVE	MAX	MIN	MAX/MIN	AVE/MIN
PARKING LOT	1.88	6.6	0.5	13.20	3.76

NOTES:
1) N/A

REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	6-14-19	CONSTRUCTION DOCUMENTS	AWN	AWN	CLB

STATE OF MISSOURI
CURTIS L. BRUNGARDT
NUMBER PE-2003016693
PROFESSIONAL ENGINEER
6/14/19

CURTIS L. BRUNGARDT
ENGINEER
MO # 2003016693

2319 N. JACKSON | P.O. BOX 1304
JUNCTION CITY, KANSAS 66441-7744
PH. (785) 762-5040 | FAX (785) 762-7744
jb@kveng.com | www.kveng.com
KAW VALLEY ENGINEERING

STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

LOWENSTEIN PARK IMPROVEMENTS
SITE LIGHTING

InSite Group
DEDICATION. DESIRE. INTEGRITY.
3540 NE Ralph Powell Rd., Ste. A, Lee's Summit, MO 64064
(816) 228-3377 | www.InSiteGroup.net

ISG PROJECT NUMBER
16-5419-3

PROJ. NO.
A14_7067-1

DESIGNER	DRAWN BY
AWN	AWN

CFN
5419-3 SL1

SHEET	REV
SL-1	A

McGraw-Edison

Catalog #	Type
Project	
Comments	Date
Prepared by	

DESCRIPTION

The Galleon™ LED luminaire delivers exceptional performance in a highly scalable, low-profile design. Patented, high-efficiency AccuLED Optics™ system provides uniform and energy conscious illumination to walkways, parking lots, roadways, building areas and security lighting applications. IP66 rated and UL/cUL Listed for wet locations.

SPECIFICATION FEATURES

Construction
Extruded aluminum driver enclosure thermally isolated from Light Squares for optimal thermal performance. Heavy-wall, die-cast aluminum end case encloses housing and die-cast aluminum heat sinks. A unique, patent pending interlocking housing and heat sink provides scalability with superior structural rigidity. 3G vibration tested and rated. Optional tool-less hardware available for ease of entry into electrical chamber. Housing is IP66 rated.

Optics
Patented, high-efficiency injection-molded AccuLED Optics technology. Optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED Optics create consistent distributions with the scalability to meet customized application requirements. Offered standard in 4000K (+/- 275K) CCT 70 CRI. Optional 3000K, 5000K and 6000K CCT.

Electrical
LED drivers are mounted to removable tray assembly for ease of maintenance. 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation. 480V is compatible for use with 480Y Wye systems only. Standard with 0-10V dimming. Shipped standard with Eaton proprietary circuit module designed to withstand 10kV of transient line surges. The Galleon LED luminaire is suitable for operation in -40°C to 40°C ambient environments. For applications with ambient temperatures exceeding 40°C, specify the HA (High Ambient) option. Light Squares are IP66 rated. Greater than 90% lumen maintenance exceeded at 60,000 hours. Available in standard 1A drive current and optional 600mA, 800mA and 1200mA drive currents (nominal).

Mounting
STANDARD ARM MOUNT: Extruded aluminum arm includes internal bolt guides allowing for easy positioning of fixture during mounting. When mounting two or more luminaires at 90° and 120° apart, the EA extended arm may be required. Refer to the arm mounting requirement table. Round pole adapter included. For wall mounting, specify wall mount bracket option. QUICK MOUNT ARM: Adapter is bolted directly to the pole. Quick mount arm slide into place on the adapter and is secured via two screws, facilitating quick and easy installation. The versatile, patent pending, quick mount arm accommodates multiple drill patterns ranging from 1-1/2" to 4-7/8". Removal of the door on the quick mount arm enables wiring of the fixture without having to access the driver compartment. A knock-out enables round pole mounting.

Finish
Housing finished in super durable TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Heat sink is powder coated black. Standard housing colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available.

Warranty
Five-year warranty.

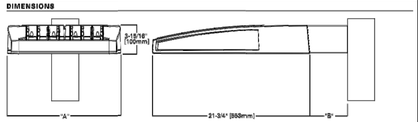
GLEON
GALLEON LED

1-10 Light Squares
Solid State LED

AREA/SITE LUMINAIRE

LumenSafe Technology

DIMENSIONS

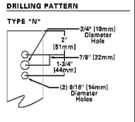


DIMENSION DATA

Number of Light Squares	'A' Width	'B' Standard Arm Length	'B' Optional Arm Length [1]	Weight with Arm (lbs.)	EPA with Arm [2] (Sq. Ft.)
1-4	15-1/2" (394mm)	7" (178mm)	10" (254mm)	33 (15.0 kgs.)	0.86
5-6	21-5/8" (549mm)	7" (178mm)	10" (254mm)	44 (20.0 kgs.)	1.00
7-8	27-5/8" (702mm)	7" (178mm)	13" (330mm)	54 (24.5 kgs.)	1.07
9-10	33-3/4" (857mm)	7" (178mm)	16" (406mm)	63 (28.6 kgs.)	1.12

NOTES: 1. Optional arm length to be used when mounting two fixtures at 90° on a single pole. 2. EPA calculated with optional arm length.

DRILLING PATTERN



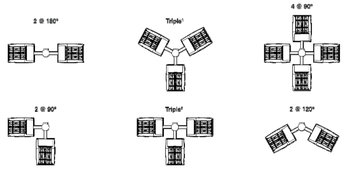
CERTIFICATION DATA
3G Vibration Rated
DesignLights Consortium® Qualified*
IP66 Rated
ISO 9001
LM79 / LM80 Compliant
UL/cUL Wet Location Listed

ENERGY DATA
Eaconnic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120V-277V 50/60Hz
347V, 480V 60Hz
-40°C Min. Temperature
40°C Max. Temperature
50°C Max. Temperature (HA Option)

*www.designlights.org

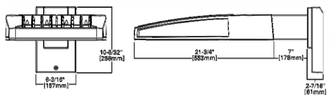
ARM MOUNTING REQUIREMENTS

Configuration	90° Apart	120° Apart
GLEON-AF-01	7" Arm (Standard)	7" Arm (Standard)
GLEON-AF-02	7" Arm (Standard)	7" Arm (Standard)
GLEON-AF-03	7" Arm (Standard)	7" Arm (Standard)
GLEON-AF-04	7" Arm (Standard)	7" Arm (Standard)
GLEON-AF-05	10" Extended Arm (Required)	7" Arm (Standard)
GLEON-AF-06	10" Extended Arm (Required)	7" Arm (Standard)
GLEON-AF-07	13" Extended Arm (Required)	13" Extended Arm (Required)
GLEON-AF-08	13" Extended Arm (Required)	13" Extended Arm (Required)
GLEON-AF-09	16" Extended Arm (Required)	16" Extended Arm (Required)
GLEON-AF-10	16" Extended Arm (Required)	16" Extended Arm (Required)

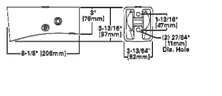


NOTES: 1. Round poles are 3 @ 120°. Square poles are 3 @ 90°. 2. Round poles are 3 @ 90°.

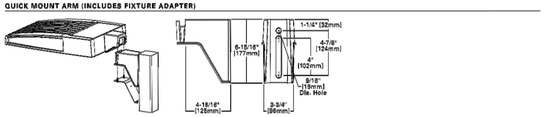
STANDARD WALL MOUNT



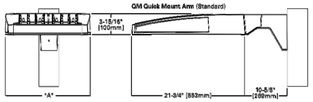
MAST ARM MOUNT



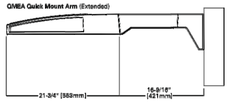
QUICK MOUNT ARM (INCLUDES FIXTURE ADAPTER)



QM Quick Mount Arm (Standard)



QMEA Quick Mount Arm (Extended)



QUICK MOUNT ARM DATA

Number of Light Squares [1,2]	'A' Width	Weight with QM Arm (lbs.)	Weight with QMEA Arm (lbs.)	EPA (Sq. Ft.)
1-4	15-1/2" (394mm)	26 (11.91 kgs.)	38 (17.27 kgs.)	1.31
5-6 [3]	21-5/8" (549mm)	46 (20.91 kgs.)	49 (22.27 kgs.)	
7-8	27-5/8" (702mm)	56 (25.45 kgs.)	59 (26.82 kgs.)	

NOTES: 1 QM option available with 1-8 light square configurations. 2 QMEA option available with 1-8 light square configurations. 3 QMEA arm to be used when mounting two fixtures at 90° on a single pole.

ORDERING INFORMATION

Sample Number: GLEON-AF-04-LED-E1-T3-GM-QM

Product Family [1,2]	Light Engine	Number of Light Squares [3]	Lamp Type	Voltage	Distribution	Color	Mounting
GLEON=Galleon	AF=1A Drive Current	01=1 02=2 03=3 04=4 05=5 [4] 06=6 07=7 08=8 [4] 09=9 [4] 10=10 [4]	LED=Solid State Light Emitting Diodes	E1=120-277V 347=347V [4] 480=480V [4,5]	T2=Type II T2R=Type II Roadway T3=Type III T3R=Type III Roadway T4FT=Type IV Forward Throw T4W=Type IV Wide 5NQ=Type V Narrow 5MQ=Type V Square Medium 5WQ=Type V Square Wide 5LE=Type V w/Spill Control 5LE=Type III w/Spill Control 5LA=Type IV w/Spill Control 5LL=60° Spill Light Eliminator Left 5LR=60° Spill Light Eliminator Right RW=Rectangular Wide Type I AFL=Automotive Frontline	AP=Grey BZ=Bronze BL=Black DP=Dark Platinum GM=Graphite Metallic WH=White	[Blank]=Arm for Round or Square Pole EA=Extended Arm [7] MA=Mast Arm Adapter [8] WM=Wall Mount QM=Quick Mount Arm (Standard Length) [9] QMEA=Quick Mount Arm (Extended Length) [10]

Options (Add as Suffix)

7057=70 CRI 2700K [6]
7058=70 CRI 3000K [6]
8030=80 CRI 3000K [6]
7060=70 CRI 6000K [6]
7064=70 CRI 6000K [6]
600=Drive Current Factory Set to Nominal 600mA [6]
800=Drive Current Factory Set to Nominal 800mA [6]
1200=Drive Current Factory Set to Nominal 1200mA [6,10]
FeSingle Fuse (120, 277 or 347V. Must Specify Voltage)
FP=Double Fuse (208, 240 or 480V. Must Specify Voltage)
2L=Two Circuits [11,12]
DM=External 0-10V Dimming Leads [13,14]
PE=Button Type Photocontrol (120, 208, 240 or 277V. Must Specify Voltage) [6]
PER7=NEMA 7-PIN Twistlock Photocontrol Receptacle [6]
RA=NEMA Twistlock Photocontrol Receptacle [6]
AHD145=After Hours Dim, 5 Hours [6]
AHD245=After Hours Dim, 6 Hours [6]
AHD255=After Hours Dim, 7 Hours [6]
AHD265=After Hours Dim, 8 Hours [6]
HA=50°C High Ambient [6]
MS/DIM-L08=Motion Sensor for Dimming Operation, Maximum 8' Mounting Height [15,16]
MS/DIM-L20=Motion Sensor for Dimming Operation, 8' - 20' Mounting Height [15,16]
MS/DIM-L40=Motion Sensor for Dimming Operation, 21' - 40' Mounting Height [15,16]
MS/DIM-L40WM=Motion Sensor for Dimming Operation, 21' - 40' Mounting Height (Wide Range) [15,16]
MS/X-L40=Bi-Level Motion Sensor, Maximum 8' Mounting Height [15,16,17]
MS/X-L20=Bi-Level Motion Sensor, 8' - 20' Mounting Height [15,16,18]
MS/X-L40=Bi-Level Motion Sensor, 21' - 40' Mounting Height [15,16,17]
MS/X-L40WM=Bi-Level Motion Sensor, 21' - 40' Mounting Height (Wide Range) [15,16,17]
MS-L08=Motion Sensor for ON/OFF Operation, Maximum 8' Mounting Height [15,16]
MS-L20=Motion Sensor for ON/OFF Operation, 8' - 20' Mounting Height [15,16]
MS-L40=Motion Sensor for ON/OFF Operation, 21' - 40' Mounting Height [15,16]
MS-L40WM=Motion Sensor for ON/OFF Operation, 21' - 40' Mounting Height (Wide Range) [15,16]
LWR-LN=LumaWatt Pro Wireless Sensor, Wide Lens for 8' - 16' Mounting Height [19]
LWR-LN=LumaWatt Pro Wireless Sensor, Narrow Lens for 16' - 40' Mounting Height [19]
L90=Optics Rotated 90° Left
R90=Optics Rotated 90° Right
MT=Factory Installed Mesh Top
TH=Tool-less Door Hardware
LCP=Light Square Trim Plate Painted to Match Housing [20]
HSB=Factory Installed House Side Shield [21]
CE=CE Marking [22]

Accessories (Order Separately)

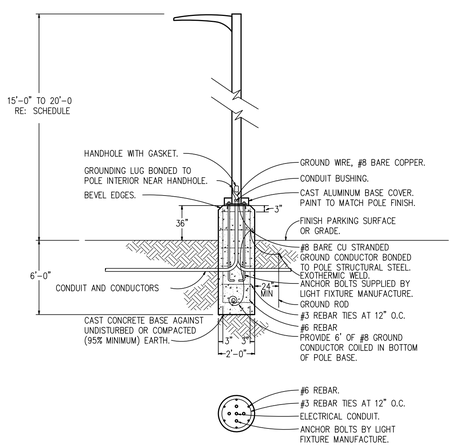
OA/RA1016=NEMA Photocontrol Multi-Tap - 105-285V
OA/RA1027=NEMA Photocontrol - 480V
OA/RA1031=NEMA Photocontrol - 347V
OA/RA1018=Photocontrol Shorting Cap
OA/RA1014=120V Photocontrol
MA1252=105V Surge Module Replacement
MA1036-XX=Single Tenon Adapter for 2-3/8" O.D. Tenon
MA1027-XX=2@180° Tenon Adapter for 2-3/8" O.D. Tenon
MA1187-XX=3@120° Tenon Adapter for 2-3/8" O.D. Tenon
MA1188-XX=4@90° Tenon Adapter for 2-3/8" O.D. Tenon
MA1188-XX=2@90° Tenon Adapter for 2-3/8" O.D. Tenon
MA1189-XX=3@90° Tenon Adapter for 2-3/8" O.D. Tenon
MA1189-XX=2@120° Tenon Adapter for 2-3/8" O.D. Tenon
MA1036-XX=Single Tenon Adapter for 2-1/2" O.D. Tenon
MA1028-XX=2@180° Tenon Adapter for 2-1/2" O.D. Tenon
MA1188-XX=4@90° Tenon Adapter for 2-1/2" O.D. Tenon
MA1188-XX=2@90° Tenon Adapter for 2-1/2" O.D. Tenon
MA1189-XX=3@90° Tenon Adapter for 2-1/2" O.D. Tenon
MA1189-XX=2@120° Tenon Adapter for 2-1/2" O.D. Tenon
MA1194-XX=4@90° Tenon Adapter for 2-1/2" O.D. Tenon
MA1194-XX=2@90° Tenon Adapter for 2-1/2" O.D. Tenon
MA1189-XX=3@90° Tenon Adapter for 2-1/2" O.D. Tenon
FBIR-100=Wireless Configuration Tool for Occupancy Sensor [24]
GLEON-MT1=Field Installed Mesh Top for 1-4 Light Squares
GLEON-MT2=Field Installed Mesh Top for 5-6 Light Squares
GLEON-MT3=Field Installed Mesh Top for 7-8 Light Squares
GLEON-MT4=Field Installed Mesh Top for 9-10 Light Squares
GLEON-QM=Quick Mount Arm Kit [9]
GLEON-QMEA=Quick Mount Extended Arm Kit [10]
L9/RBS=Field Installed House Side Shield [25,26]
WDLC-7P-10A=WaveLinx Outdoor Control Module (7-pin) [27]

NOTES:
1 Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP512001EN for additional support information. 2 DesignLights Consortium® Qualified. Refer to www.designlights.org for Qualified Products List under Family Models for details. 3 Standard 4000K CCT and minimum 70 CRI, 4 Not compatible with MS/DIM-L, MS/X-L, MS-L sensors, 5 Not compatible with extended quick mount arm (QMEA). 6 Not compatible with standard quick mount arm (QM) or extended quick mount arm (QMEA). 7 Requires the use of an interest step down transformer when combined with sensor options. Not available in 480V. Not available in luminaires with 5 or more light squares. Not available with 2L option. Not available with 480V. Not available with 5 light square configuration. 8 Extended arm required when mounting two or more luminaires per pole at 90° or 120°. Refer to arm mounting requirement table. 9 Mast arm adapter is required when ordering 4 light square configurations. 10 Factory installed. 11 Maximum 8 light squares. 12 Maximum 6 light squares. 13 Extended lead times apply. Use dedicated IES files for 2700K, 3000K, 5000K and 6000K when performing layouts. These files are published on the Galleon luminaire product page on the website. 14 Extended lead times apply. Use dedicated IES files for 2700K, 3000K, 5000K and 6000K when performing layouts. These files are published on the Galleon luminaire product page on the website. 15 1 Amp standard. Use dedicated IES files for 600mA, 800mA and 1200mA when performing layouts. These files are published on the Galleon luminaire product page on the website. 16 Not available with HA option. 17 2L is not available with MS, MS/X or MS/DIM at 347V or 480V. 2L in AF-02 through AF-04 requires a larger housing, normally used for AF-05 or AF-06. Extended arm option may be required when mounting two or more fixtures per pole at 90° or 120°. Refer to arm mounting requirement table. 18 Not available with 347V or 480V. 19 Not available with HA option. Not available with 2L option. Not available with 480V. Not available with 5 light square configuration. Not available with any "DM" option. If antenna is external, Motion sensor has an integral photocell. 20 Requires the use of a photocontrol or the PER7 or RA photocontrol receptacle with photocontrol accessory. Refer to our white paper WP512001EN for additional information. 21 50°C lumen maintenance data applies to 600mA, 800mA and 1A drive currents. 22 The FBIR-100 configuration tool is required to adjust parameters including high and low modes, sensitivity, time delay, and test mode. Consult your lighting representative at Eaton for more information. 23 Approximately 32° detection diameter at 8' mounting height. 24 Approximately 40° detection diameter at 9' mounting height. 25 Approximately 60° detection diameter at 20' mounting height. 26 Approximately 90° detection diameter at 40' mounting height. 27 Approximately 100° detection diameter at 40' mounting height. 28 Replace X with number of Light Squares operating in low output mode. 29 Luminaire Pro wireless sensors are factory installed only requiring sensors components AFL-RS-1, LVP-DH-1 and LVP-RJ45 in appropriate quantities. See www.eaton.com/lighting for LumaWatt Pro application information. 31 Not available with house side shield (HSB). 32 Only for use with SL2, SL3, SL4 and AFL distribution. The Light Square trim plate is painted black when the HSB option is selected. 33 CE is not available with the LVR, SE, MB/X, MB/DIM, R or PER7 options. Available in 120-277V only. 34 One required for each Light Square. 35 Requires 7-pin MEGA receptacle photocontrol receptacle. The WDLC-7P carrier be used in conjunction with additional sensors or controls.

LumenSafe Integrated Network Security Camera Technology Options (Add as Suffix)

Product Family	Camera Type	Data Backhaul
L=LumenSafe Technology®	D=Dome Camera, Standard H=Dome Camera, Hi-Res Z=Dome Camera, Remote PTZ	C=Cellular, Customer Installed SIM Card A=Cellular, Factory Installed AT&T SIM Card V=Cellular, Factory Installed Verizon SIM Card B=Cellular, Factory Installed Sprint SIM Card W=Wi-Fi Networking w/ Omni-Directional Antenna E=Ethernet Networking

*Consult LumenSafe system pages for additional details and compatibilities.



1 LIGHT POLE BASE DETAIL
NO SCALE

LIGHTING FIXTURE SCHEDULE

MARK	MANUFACTURER *	FIXTURE DESCRIPTION	MODEL NUMBER	MOUNTING	COLOR	LAMP QTY	LAMP TYPE	LAMP CODE	DRIVE CURRENT (QUANTITY/TYPE)	VOLTS	WATTS (PER/POLE)	NOTES
LP1	McGRAW-EDISON	DARK SKY COMPLIANT AREA LIGHT FIXTURE WITH DIRECT ARM MOUNT AT 90 DEGREES, 20FT ABOVE FINISHED GRADE. 17FT ALUMINUM POLE WITH VIBRATION DAMPER	FIXTURE: GLEON-AF-03-LED-E1-T4FT-BZ-2L POLE: SSA4M15WCN1GV	POLE	4000K	1 PER POLE	LED	–	(1) 1000mA	240	166	1-2

NOTES
1) CONTRACTOR SHALL COORDINATE FINAL FIXTURE/POLE COLORS WITH OWNER.
2) CONTRACTOR SHALL PROVIDE SQUARE POLE PER INFORMATION PROVIDED IN SCHEDULE.

* OR PRIOR APPROVED EQUAL

REV	DATE	DESCRIPTION	DSN	DWN	CHK
					CLB
				AWN	
			AWN		
0	6-14-19	CONSTRUCTION DOCUMENTS			

STATE OF MISSOURI
CURTIS L. BRUNGARDT
NUMBER PE-2003016693
PROFESSIONAL ENGINEER
6/14/19

CURTIS L. BRUNGARDT
ENGINEER
MO # 2003016693

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KAW VALLEY ENGINEERING

STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

LOWENSTEIN PARK IMPROVEMENTS
SITE LIGHTING

InSite Group
DEDICATION. DESIRE. INTEGRITY.
3540 NE Ralph Powell Rd., Ste. B, Lee's Summit, MO 64064
(816) 228-3377 | www.InSiteGroup.net

ISG PROJECT NUMBER
16-5419-3

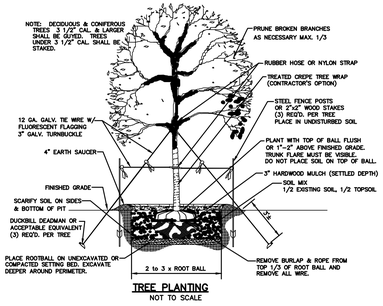
PROJ. NO.	A14_7067-1
DESIGNER	DRAWN BY
AWN	AWN
CFN	5419-3 SL2
SHEET	REV
SL-2	A

LANDSCAPING NOTES:

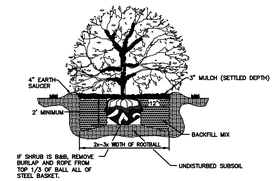
1. LOCATE ALL UTILITIES BEFORE LANDSCAPE CONSTRUCTION BEGINS.
2. NOTIFY OWNER REPRESENTATIVE OF ANY LAYOUT DISCREPANCIES.
3. ALL EXTERIOR GROUND WITHIN THE LIMITS OF THE CONTRACT, EXCEPT FOR SURFACES OCCUPIED BY BUILDINGS, STRUCTURES,PAVING, AND AS DIRECTED ON THE DRAWINGS AS UNDISTURBED, SHALL BE FILLED WITH SIX INCHES (6") OF TOPSOIL.
4. ALL DISTURBED AREAS NOT DESIGNATED FOR OTHER PLANTING SHALL BE SODDED. SOD SHALL CONSIST OF 90% TURF TYPE TALL FESCUE 10% BLUEGRASS.
5. QUANTITIES INDICATED IN PLANT LIST ARE FOR CONVENIENCE ONLY. CONTRACTOR IS RESPONSIBLE FOR PLANT QUANTITIES AS ILLUSTRATED ON THE PLAN.
6. SHREDDED HARDWOOD MULCH SHALL BE USED AS THREE INCH (3") TOP DRESSING IN ALL PLANT BEDS AND AROUND ALL TREES. SINGLE TREES OR SHRUBS SHALL BE MULCHED TO THE OUTSIDE EDGE OF SAUCER OR LANDSCAPE ISLAND (SEE PLANTING DETAILS).
7. FERTILIZE ALL PLANTS AT THE TIME OF PLANTING WITH TIME-RELEASE FERTILIZER(3-4 SLOW-RELEASE TABLETS/PELLETS).
8. IF LEANING OCCURS WITHIN ONE YEAR, TREES SHALL BE RE-STAKED (SEE PLANTING DETAILS).
9. CONTRACTOR SHALL STAKE ALL PLANT MATERIALS PRIOR TO INSTALLATION FOR THE PURPOSE OF DETERMINING CONFLICTS WITH ROCK, UTILITIES, ETC. NO PLANTS CAN BE PLANTED DIRECTLY ON ROCK OR UTILITIES. NOTIFY ARCHITECT/ENGINEER/OWNER AT ONCE IF ANY CONFLICTS OCCUR. CONTRACTOR WILL BE REQUIRED TO ADJUST PLANT LOCATIONS AT NO ADDITIONAL COST.
10. CONTRACTOR IS RESPONSIBLE FOR WATERING ALL SOD UNTIL ROOTS HAVE KNITTED INTO SOIL AND OWNER HAS OCCUPIED THE BUILDING.
11. PROVIDE "GATOR" BAGS ON ALL TREES. REFILL AS NECESSARY UNTIL OWNER ACCEPTS THE INSTALLATION.
12. ALL TREES SHALL BE 3" CALIPER, EVERGREEN TREES SHALL BE 8' TALL AND SHRUBS SHALL BE 18" HEIGHT AT TIME OF PLANTING

PLANT SCHEDULE

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE/REMARKS
TREES				
CSM	7	ACER SACHARUM 'AUTUMN SPLENDOR'	CADDO SUGAR MAPLE	3" CAL. B&B
LP	4	PLATANUS x ACERIFOLIA	LONDON PLANETREE	3" CAL. B&B
RO	7	QUERCUS RUBRA	RED OAK	3" CAL. B&B
RB	1	CERCIS CANADENSIS 'OKLAHOMA'	OKLAHOMA REDBUD	1.5" CAL. B&B
NS	9	PICEA ABIES	NORWAY SPRUCE	8' HT. B&B



TREE PLANTING
NOT TO SCALE



SHRUB PLANTING
NOT TO SCALE

North

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

REV	DATE	DESCRIPTION	DSN	DWN	CHK
4	7/12/19	CITY COMMENTS			
3	6/17/19	LOWENSTEIN PARK REVISIONS			
2	10/19/18	CITY RESUBMITTAL			
1	9/18/18	CITY RESUBMITTAL			

STATE OF MISSOURI
VANCE S SZEPKA
NUMBER LA-000144
LANDSCAPE ARCHITECT
7/12/19

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KAW VALLEY ENGINEERING

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STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

LOWENSTEIN PARK IMPROVEMENTS
LANDSCAPE PLAN

PROJ. NO.

DESIGNER	DRAWN BY
VSR	KLS

CFN

SHEET	REV
L 2.01	