

LAKEWOOD BUSINESS PARK - LOT 46

Final Development Plan

Part of Section 20, Township 48 North, Range 31 West
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

PL2023214
PRCOM20234376

ALL PAVING ON THE PARKING LOT WILL COMPLY WITH THE
UNIFIED DEVELOPMENT ORDINANCE ARTICLE 8 IN TERMS
OF PAVING THICKNESS AND BASE

OIL - GAS WELLS
ACCORDING TO EDWARD ALTON MAY JR'S ENVIRONMENTAL IMPACT STUDY OF
ABANDONED OIL AND GAS WELLS IN LEE'S SUMMIT, MISSOURI IN 1995, THERE ARE
NOT OIL AND GAS WELLS WITHIN 185 FEET OF THE PROPERTY AS SURVEYED
HEREON.

SURVEY AND PLAT NOTES:
THE SUBJECT PROPERTY SURVEYED LIES WITHIN A FLOOD ZONE DESIGNATED
ZONE (X), AREAS LOCATED OUTSIDE THE 100 YEAR FLOOD PLAIN, PER F.E.M.A. MAP,
COMMUNITY PANEL NO. 29095C0430G EFFECTIVE DATE: JANUARY 20, 2017.

UTILITY COMPANIES:

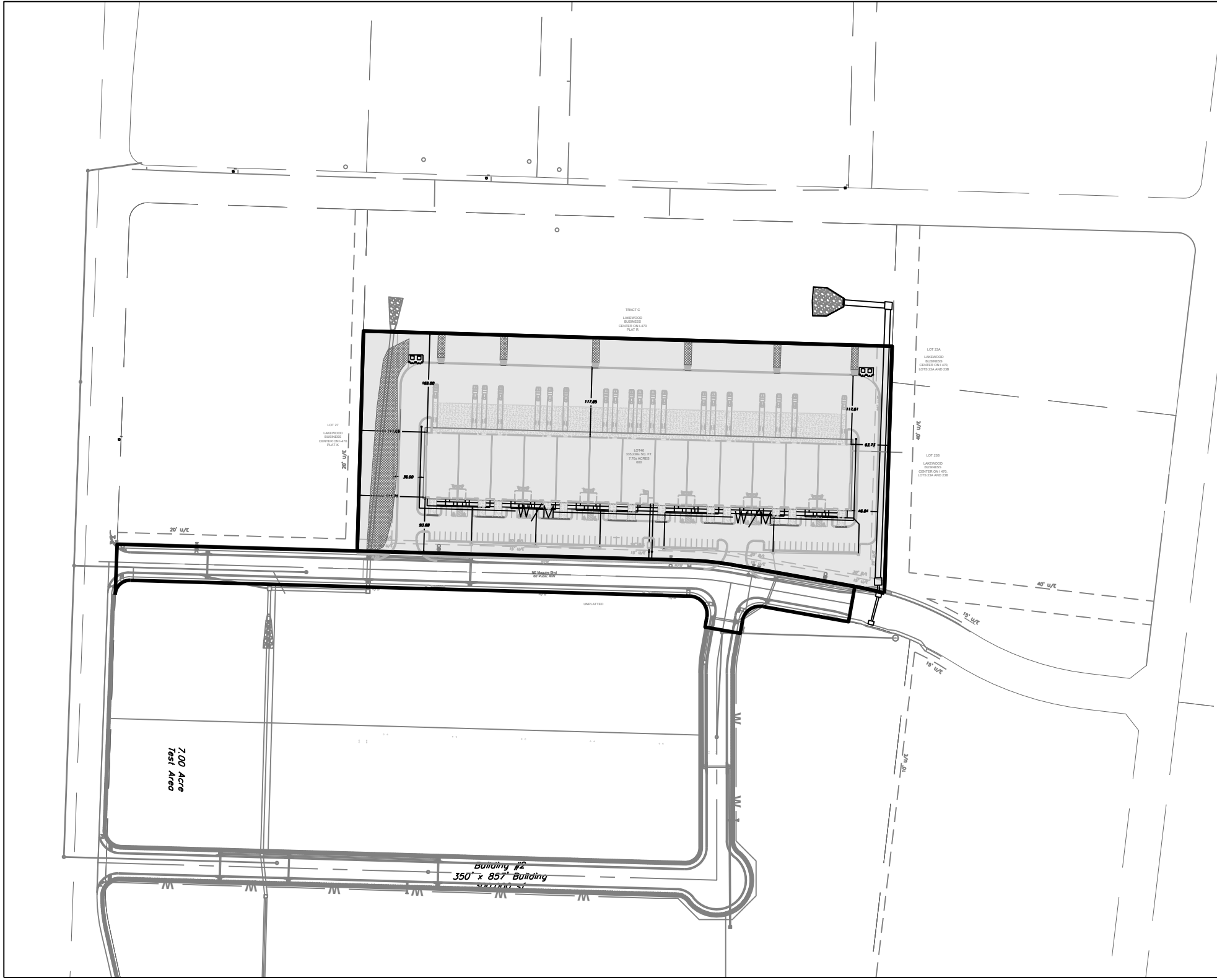
THE FOLLOWING LIST OF UTILITY COMPANIES IS PROVIDED FOR INFORMATION ONLY. WE DO NOT OFFER ANY
GUARANTEE OR WARRANTY THAT THIS LIST IS COMPLETE OR ACCURATE. THE CONTRACTOR SHALL BE
RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES THAT MAY BE AFFECTED BY THE PROPOSED
CONSTRUCTION AND VERIFYING THE ACTUAL LOCATION OF EACH UTILITY LINE. THE CONTRACTOR SHALL NOTIFY
ENGINEERING SOLUTIONS AT 816.623.9888 OF ANY CONFLICT WITH PROPOSED IMPROVEMENTS.
EVERGY ~ 298-1196
MISSOURI GAS ENERGY ~ 756-5261
SOUTHWESTERN BELL TELEPHONE ~ 761-5011
COMCAST CABLE ~ 795-1100
WILLIAMS PIPELINE ~ 422-6300
CITY OF LEE'S SUMMIT PUBLIC WORKS ~ 969-1800
CITY OF LEE'S SUMMIT DEVELOPMENT ENGINEERING INSPECTION AT 816.969.1200
CITY OF LEE'S SUMMIT WATER UTILITIES ~ 969-1900
MISSOURI ONE CALL (DIG RITE) ~ 1-800-344-7483

GENERAL NOTES:

- 1~ ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
- 2~ ALL REQUIRED EASEMENTS WITHIN THE BOUNDARY OF THIS PROJECT SHALL BE PROVIDED FOR ON THE FINAL PLAT.
- 3~ ANY REQUIRED EASEMENT LOCATED OUTSIDE OF THE BOUNDARY OF THIS PROJECT SHALL BE PROVIDED FOR BY SEPARATE INSTRUMENT PRIOR TO ISSUANCE OF CONSTRUCTION PERMITS.
- 4~ THE CONTRACTOR SHALL CONTACT THE CITY'S DEVELOPMENT SERVICES ENGINEERING INSPECTION TO SCHEDULE A PRE-CONSTRUCTION MEETING WITH A FIELD ENGINEERING INSPECTOR PRIOR TO ANY LAND DISTURBANCE WORK AT (816) 969-1200.
- 5~ THE CONTRACTOR SHALL NOTIFY ENGINEERING SOLUTIONS AT 816.623.9888 OF ANY CONFLICT WITH THE IMPROVEMENTS PROPOSED BY THESE PLANS AND SITE CONDITIONS.
- 6~ THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AND OBTAIN THE APPROPRIATE BLASTING PERMITS FOR A REQUIRED BLASTING. IF BLASTING IS ALLOWED, ALL BLASTING SHALL CONFORM TO STATE REGULATIONS AND LOCAL ORDINANCES.

NOTE :

ALL CONSTRUCTION SHALL FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND
CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813. WHERE DISCREPANCIES
EXIST BETWEEN THESE PLANS AND THE DESIGN AND CONSTRUCTION MANUAL, THE
DESIGN AND CONSTRUCTION MANUAL SHALL PREVAIL.



SITE LOCATION MAP

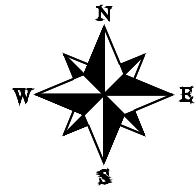
SCALE" 1"=200'

REVISD SUMMARY OF
QUANTITIES.

Summary of Quantities:

ITEM AND DESCRIPTION	UNIT	ESTIMATED QUANTITY
ASPHALT PAVING	S.Y.	17,018.00
CONCRETE PAVING	S.Y.	4,386.00
PUBLIC SIDEWALK	S.F.	3,920.00
GEOGRID	S.Y.	20,421.00
MoDOT Type 5 Base	S.Y.	20,421.00
KCMMB ENTRANCE	UNIT	2
CURBING	FT	4,370.00
ADA SIDEWALK RAMP	UNIT	4
SANITARY 8" PVC SDR 26 Service Line	FT	34.00
TRACER WIRE AND EQUIPMENT	FT	825.00
CLEARING, GRADING & GRUBBING	LS	1
SILT FENCE	FT	4,350.00
INLET PROTECTION	UNIT	10.00
SEEDING / MULCHING/ FERTILIZING	AC	7.70
CONST. ENTRANCE	UNIT	2
RIP RAP W/ FABRIC	S.Y.	53.33
TURF REINFORCEMENT MAT	SF	15,709.00
STORM		
15" HDPE	FT	611.89
5' x 4' STORM CURB INLET	EA	6.00
WATER		
2" Type K Soft Copper Water Service Line	FT	89.00
6" C900 PVC CLASS 200	FT	79.00

DEVELOPER:
NAME
NORTH OAK SAFETY STORAGE LLC
1120 NW EAGLE RIDGE BLVD
GRAIN VALLEY, MO 64029
Phone:



Vicinity Map

INDEX OF SHEETS:
C.001 ~ COVER SHEET
C.050 ~ ESC PHASE 1 - PRE CLEARING PLAN
C.051 ~ ESC PHASE 2 - INACTIVE AREA STABILIZATION PLAN
C.052 ~ ESC PHASE 3 - FINAL RESTORATION PLAN
C.053 ~ ESC - STANDARD DETAILS
C.100 ~ SITE PLAN
C.101 ~ DIMENSION PLAN
C.200 ~ GRADING PLAN
C.201 ~ SPOT ELEVATIONS
C.202 ~ ADA RAMP DETAILS
C.300 ~ STORM SEWER GENERAL LAYOUT
C.301 ~ STORM SEWER PLAN AND PROFILE
C.400 ~ SANITARY SERVICE PLAN
C.500 ~ WATER LINE PLAN
C.600 ~ STANDARD DETAILS
C.601 ~ STANDARD DETAILS
C.602 ~ STANDARD DETAILS
L.100 ~ LANDSCAPE PLAN
L.101 ~ LANDSCAPE PLAN DETAILS

Current Zoning: PI
Proposed Zoning: PI

Site Impervious Area

Total Area	7.70 acres (3,352,381.11 sq. ft.)
Site	
Site Area	7.70 Acres
Building	78,038 sq. ft.
Parking	153,162 sq. ft.
Impervious Area	231,200 sq. ft. (68.97% of Site)
Floor-Area-Ratio	23.28%

Parking:
Provided
120 Total Spaces
88 Standard (12 ADA Accessible) (20 Semi-Tractor Trailer)

Parking:
118 Required
13,000 sf Office (Assume 1,000 sf per unit) 52 Required
65,038 sf Warehouse 66 Required

Site Improvement Notes

Sanitary Sewer Improvements
-The site will connect to the existing sanitary sewer on the east side of the property on Lot 235.

Water Main Improvements
-The site will utilize the existing water on the north side of NE Maguire Boulevard.

Storm Sewer
-Enclosed pipe systems and inlets will collect and convey the onsite storm water runoff and direct it toward the existing public storm sewer system.

Storm Water Detention
-Existing Storm Detention is on north side of property.

LEGEND:

Existing Underground Power	UGP
Existing Conc. Curb & Gutter	
Existing Wood Fence	X
Existing Gas Main	GAS
Existing Water Main	X-W/M
Existing Storm Sewer	X-STM
Existing Sanitary Sewer	X-SAN
Existing Underground Telephone	UGT
Existing Overhead Power	OHE
Proposed Storm Sewer	ST
Proposed Sanitary Sewer	SS
Proposed Underground Power	UGT
Proposed Gas Service	GAS
Proposed 8" D.I.P. Water	W
Proposed Electrical Service	UGP

ENGINEER'S CERTIFICATION:

I HEREBY CERTIFY THAT THIS PROJECT HAS BEEN DESIGNED AND
THESE PLANS PREPARED IN ACCORDANCE WITH THE CURRENT DESIGN
CRITERIA OF THE CITY OF LEE'S SUMMIT, MISSOURI AND THE STATE OF
MISSOURI. I FURTHER CERTIFY THAT THESE PLANS WERE DESIGNED IN
ACCORDANCE TO AASHTO STANDARDS.

RELEASED FOR CONSTRUCTION
As noted on Plan Review
Development Services Department
Lee's Summit, Missouri
03/18/2024

Digitally signed by
Mike Weisenborn
Date: 2024.03.18
12:30:52-0500

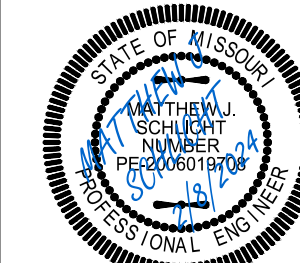
ENGINEERING
ENGINEERING & SURVEYING
SOLUTIONS
50 SE 30TH STREET
LEES SUMMIT, MO 64082
P:(816) 623-9888 F:(816) 623-9849

Professional Registration
Missouri
Engineering 2005002188-D
Surveying 2005006189-D
Kansas
Engineering E-16895
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

Lakewood Business Park - Lot 46
Lee's Summit, Jackson County, Missouri

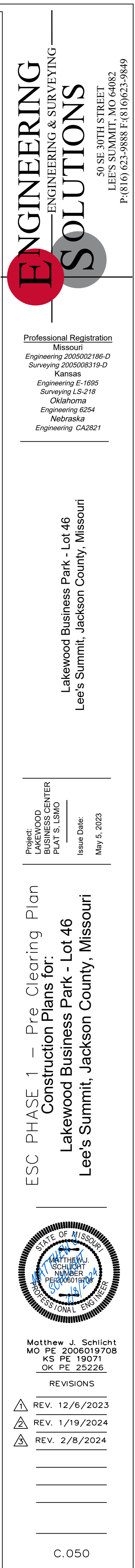
Lakewood Business Center
Plat 5, L&MO
Issue Date
May 5, 2023

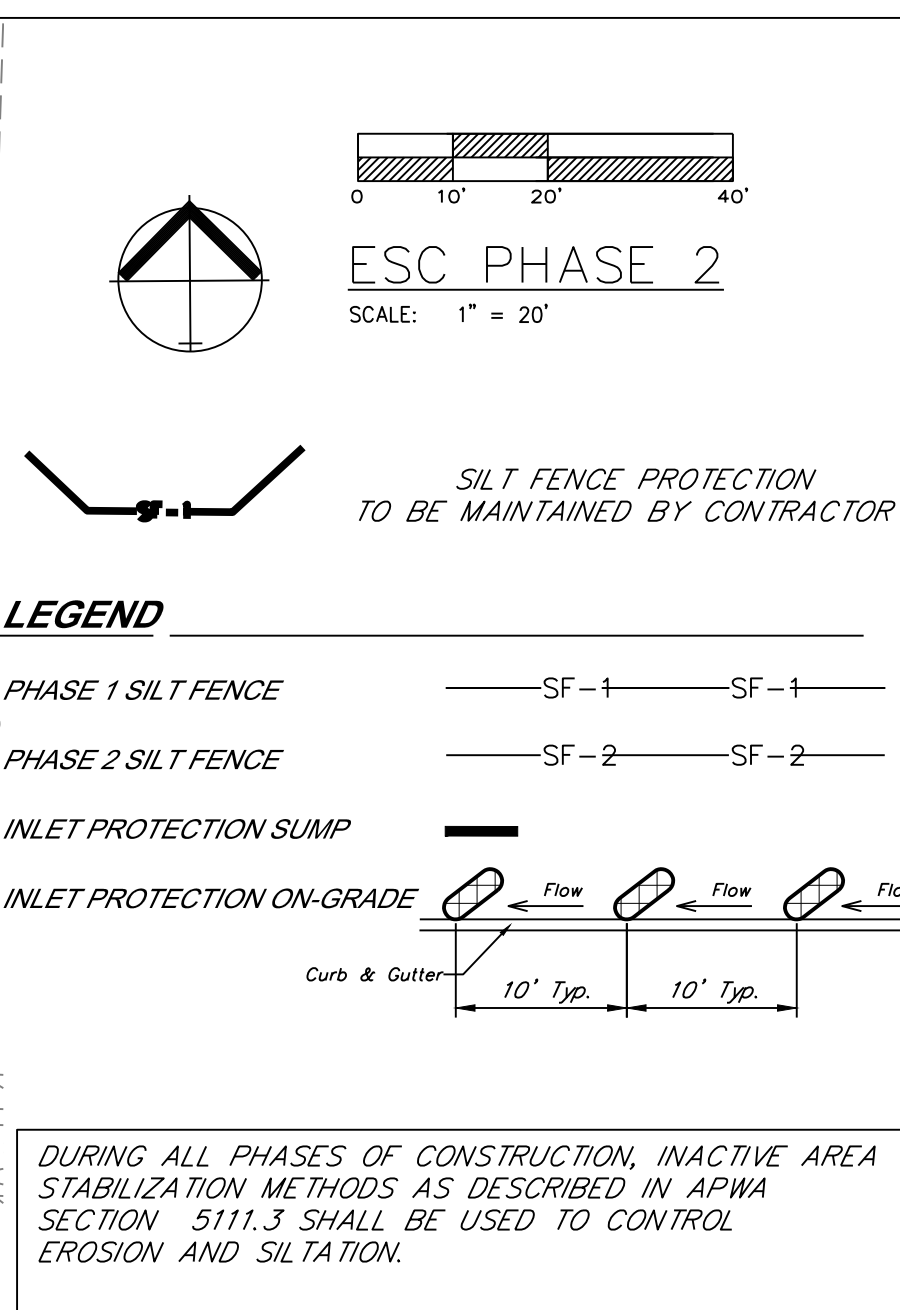
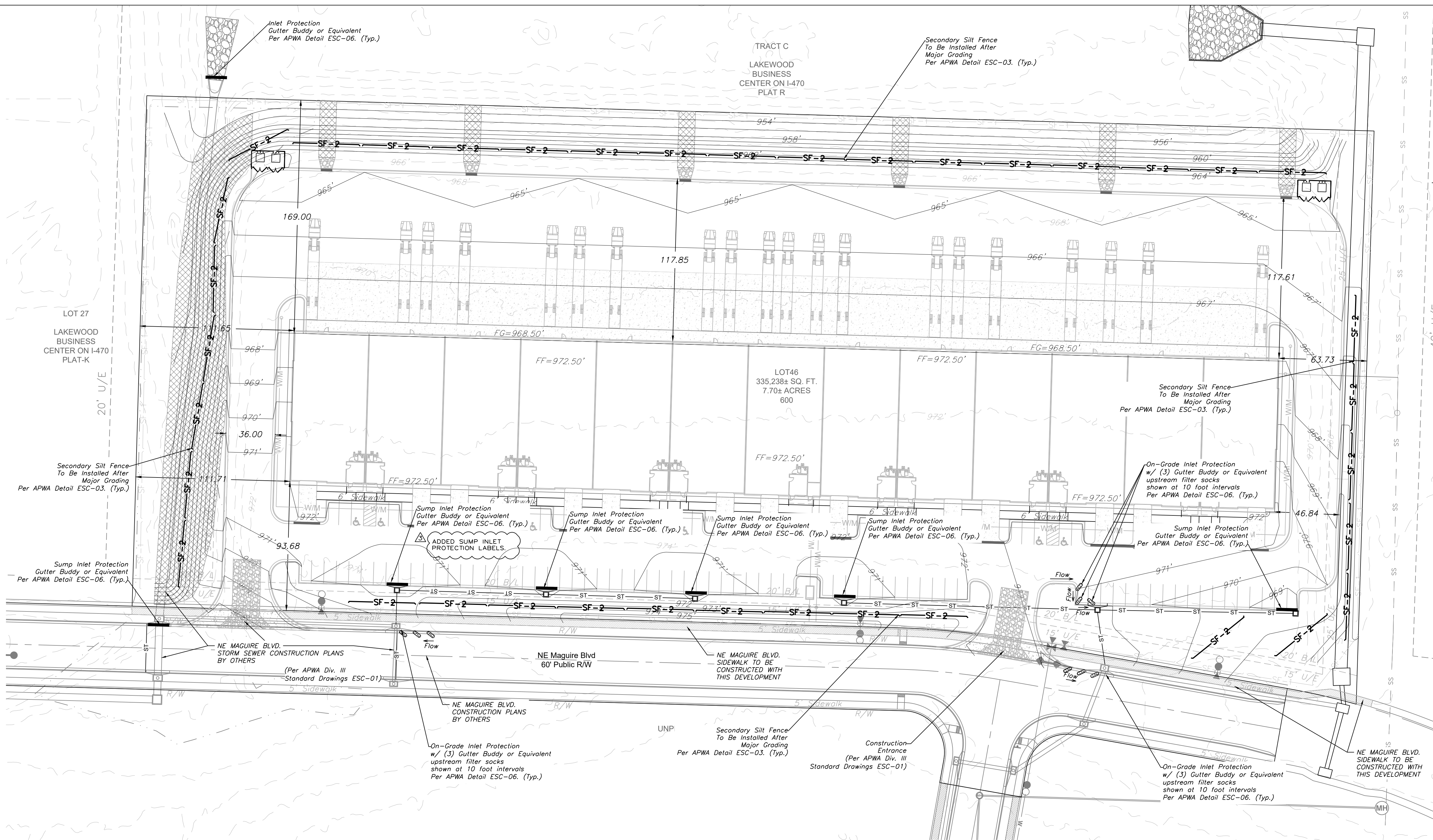
FINAL DEVELOPMENT PLAN
Construction Plans for:
Lakewood Business Park - Lot 46
Lee's Summit, Jackson County, Missouri



Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 255226

REVISIONS
REV. 12/6/2023
REV. 1/19/2024
REV. 2/8/2024





EROSION CONTROL DESCRIPTION:

- 1.) SILT FENCE SHALL BE PLACED AT THE PERIMETER OF THE GRADING AND AT INTERMEDIATE AREAS THROUGHOUT THE SITE AS SHOWN ON THE PLAN. INLET SEDIMENT TRAPS SHALL BE PLACED SURROUNDING ALL STORM INLETS
- 2.) INSTALL TEMPORARY CONSTRUCTION ENTRANCE AS SHOWN ON PLAN

EROSION CONTROL PROCEDURE:

- 1.) SILT FENCE AND TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED AT THE PERIMETER OF THE GRADED AREAS PRIOR TO BEGINNING OF CLEARING OR DEMOLITION OPERATIONS. THE CONTRACTOR SHALL INSTALL SILT FENCE AS SHOWN ON PLANS AS GRADING PROGRESSES.

TEMPORARY CONSTRUCTION ENTRANCE NOTES:

- A.) INSTALLATION
 - 1.) AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC STREETS. IF POSSIBLE, LOCATE WHERE PERMANENT ROADS WILL EVENTUALLY BE CONSTRUCTED
 - 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 EXCEED 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 AWAY FROM IT.
 - 4.) INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES ALONG PUBLIC ROADS
 - 5.) PLACE STONE TO DIMENSIONS AND GRADES AS SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPED FOR DRAINAGE
 - 6.) DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE
 - 7.) IF WET CONDITIONS ARE ANTICIPATED PLACE GEOTEXTILE FABRIC ON THE GRADED FOUNDATION TO IMPROVE STABILITY
- B.) TROUBLESHOOTING
 - 1.) CONSULT WITH A QUALIFIED DESIGN PROFESSIONAL IF ANY OF THE FOLLOWING OCCUR:
 - INADEQUATE RUNOFF CONTROLS TO THE EXTENT THAT SEDIMENT WASHES ONTO PUBLIC ROADS
 - INSTALL DIVERSIONS OR OTHER RUNOFF CONTROL MEASURES
 - SMALL STONE, THIN PAD, OR ABSENCE OF GEOTEXTILE FABRIC RESULTS IN RUTS AND MUDDY CONDITIONS AS STONE IS PRESSED INTO SOIL - INCREASE STONE SIZE OR PAD THICKNESS OR ADD GEOTEXTILE FABRIC
 - PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC - EXTEND PAD BEYOND THE MINIMUM 50 FOOT LENGTH AS NECESSARY
- C.) INSPECTION AND MAINTENANCE
 - 1.) INSPECT STONE PAD AND SEDIMENT DISPOSAL AREA WEEKLY AND AFTER ANY RAIN EVENT
 - 2.) RESHAPE PAD AS NEEDED FOR PROPER DRAINAGE AND RUNOFF CONTROL
 - 3.) TOP DRESS WITH CLEAN 2 AND 3 INCH STONE AS NEEDED
 - 4.) IMMEDIATELY REMOVE MUD OR SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADWAY. REPAIR ANY BROKEN ROAD PAVEMENT IMMEDIATELY
 - 5.) REMOVE ALL TEMPORARY ROAD MATERIALS FROM AREAS WHERE PERMANENT VEGETATION WILL BE ESTABLISHED

MAINTENANCE:

TO MAINTAIN THE EROSION AND SEDIMENT CONTROLS, THE FOLLOWING PROCEDURES WILL BE PERFORMED:
SEDIMENT CAPTURE DEVICES: SEDIMENT WILL BE REMOVED FROM THE UPSTREAM OR UPSLOPE SIDE OF THE FILTER FABRIC FENCES, WHEN THE DEPTH OF ACCUMULATED SEDIMENT REACHES ABOUT ONE-THIRD THE HEIGHT OF THE STRUCTURE.
STORM SEWER INLETS: ANY SEDIMENT IN THE STORM SEWER INLETS WILL BE REMOVED AND DISPOSED OF PROPERLY.
TEMPORARY CONTROLS: ALL TEMPORARY CONTROLS WILL BE REMOVED AFTER THE DISTURBED AREAS HAVE BEEN STABILIZED.

INSPECTION PROCEDURES:

STABILIZATION MEASURES: DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION WILL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM. AFTER A PORTION OF THE SITE IS FINALLY STABILIZED, INSPECTIONS WILL BE CONDUCTED AT LEAST ONCE EVERY MONTH THROUGHOUT THE LIFE OF THE PROJECT. CONTRACTOR CAN CONTACT ENGINEERING SOLUTIONS FOR COPIES OF THE INSPECTION FORM TO BE USED FOR STABILIZATION MEASURES.
STRUCTURAL CONTROLS: FILTER FABRIC FENCES AND ALL OTHER EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN WILL BE INSPECTED REGULARLY FOR PROPER POSITIONING, ANCHORING, AND EFFECTIVENESS IN TRAPPING SEDIMENTS. SEDIMENT WILL BE REMOVED FROM THE UPSTREAM OR UPSLOPE SIDE OF THE FILTER FABRIC. CONTRACTOR CAN CONTACT ENGINEERING SOLUTIONS FOR COPIES OF THE INSPECTION FORM TO BE USED FOR STABILIZATION MEASURES.
DISCHARGE POINTS: DISCHARGE POINTS OR LOCATIONS WILL BE INSPECTED TO DETERMINE WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT AMOUNTS OF POLLUTANTS FROM ENTERING RECEIVING WATERS.
CONSTRUCTION ENTRANCE: LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE WILL BE INSPECTED FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING.

IF THE EXISTING GROUND COVER IS NATURAL GRASS, DISTURBED AREAS SHALL BE TEMPORARILY SEEDED WITH WHEAT/RYE AT A RATE OF 1.5 POUNDS PER 1000 SQUARE FEET. PERMANENT SEEDED SHALL CONSIST OF 80% IN THREE EQUAL PARTS OF THIN BLADE, TURF-TYPE, TALL FESCUE AND 10% BLUEGRASS SEED AT A RATE OF 10 POUNDS PER 1000 SQUARE FEET. BOTH TEMPORARY AND PERMANENT SEEDED AREAS SHALL BE MULCHED AND WATERED TO MAINTAIN THE PROPER MOISTURE LEVEL OF THE SOIL TO ESTABLISH GRASS. NEW GRASS SHALL BE WATERED AND MAINTAINED UNTIL IT REACHES A HEIGHT OF 3 INCHES. ANY BARE AREAS SHALL BE RESEED.

ALL EROSION CONTROL DEVICES SHALL BE REMOVED BY GENERAL CONTRACTOR AFTER SITE STABILIZATION IS COMPLETE AND APPROVED BY ENGINEER.

THE DEVELOPER WILL DESIGNATE A QUALIFIED PERSON OR PERSONS TO PERFORM THE FOLLOWING INSPECTIONS:
STABILIZATION MEASURES: DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION WILL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM. AFTER A PORTION OF THE SITE IS FINALLY STABILIZED, INSPECTIONS WILL BE CONDUCTED AT LEAST ONCE EVERY MONTH THROUGHOUT THE LIFE OF THE PROJECT. CONTRACTOR CAN CONTACT ENGINEERING SOLUTIONS FOR COPIES OF THE INSPECTION FORM TO BE USED FOR STABILIZATION MEASURES.
STRUCTURAL CONTROLS: FILTER FABRIC FENCES AND ALL OTHER EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN WILL BE INSPECTED REGULARLY FOR PROPER POSITIONING, ANCHORING, AND EFFECTIVENESS IN TRAPPING SEDIMENTS. SEDIMENT WILL BE REMOVED FROM THE UPSTREAM OR UPSLOPE SIDE OF THE FILTER FABRIC. CONTRACTOR CAN CONTACT ENGINEERING SOLUTIONS FOR COPIES OF THE INSPECTION FORM TO BE USED FOR STABILIZATION MEASURES.
DISCHARGE POINTS: DISCHARGE POINTS OR LOCATIONS WILL BE INSPECTED TO DETERMINE WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT AMOUNTS OF POLLUTANTS FROM ENTERING RECEIVING WATERS.
CONSTRUCTION ENTRANCE: LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE WILL BE INSPECTED FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING.

A LOG OF EACH INSPECTION SHALL BE KEPT. THE INSPECTION REPORT IS TO INCLUDE THE FOLLOWING MINIMUM INFORMATION: INSPECTOR'S NAME, DATE OF INSPECTION, OBSERVATIONS RELATIVE TO THE EFFECTIVENESS OF THE POLLUTION CONTROL DEVICES, ACTIONS TAKEN OR NECESSARY TO CORRECT DEFICIENCIES, AND LISTING OF AREAS WHERE LAND DISTURBANCE OPERATIONS HAVE PERMANENTLY OR TEMPORARILY STOPPED. THE INSPECTION REPORT SHALL BE SIGNED BY THE PERMITTEE OR BY THE PERSON PERFORMING THE INSPECTION IF DULY AUTHORIZED TO DO SO.

ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING
50 SE 30TH STREET
LEES SUMMIT, MO 64082
P: (816) 623-9888 F: (816) 623-9849

Professional Registration
Missouri
Engineering 2005002188-D
Surveying 200500519-D
Kansas
Engineering E-1895
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

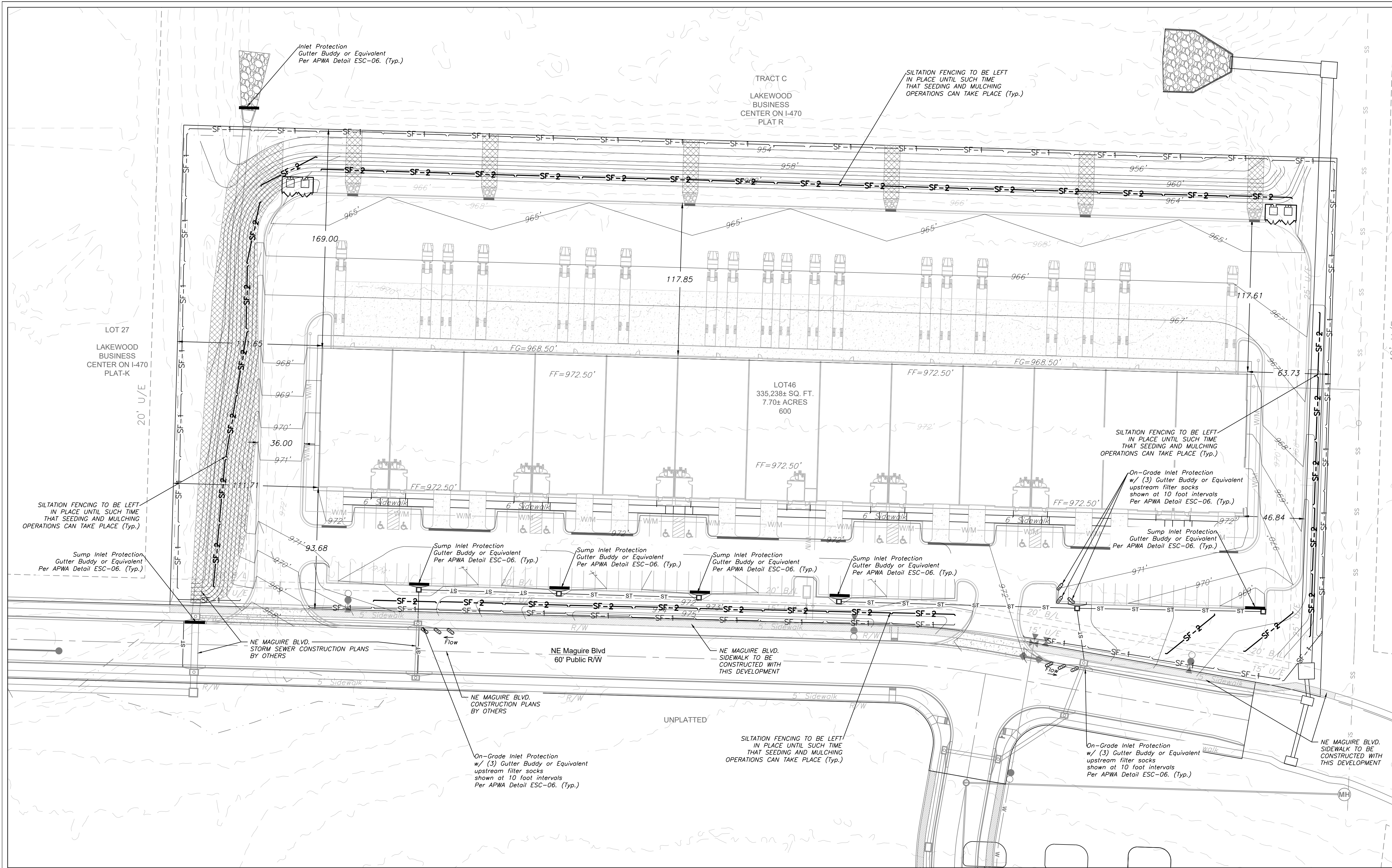
Project
LAKWOOD BUSINESS CENTER
PLAT 5, LEMO
Issue Date
May 5, 2023

ESC PHASE 2
Inactive Area Stabilization Plan
Construction Plans for:
Lakewood Business Park - Lot 46
Lee's Summit, Jackson County, Missouri

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25526

REVISIONS
REV. 12/6/2023
REV. 1/19/2024
REV. 2/8/2024

C.051



ESC PHASE FINAL

SCALE: 1" = 20'

SILT FENCE PROTECTION
TO BE MAINTAINED BY CONTRACTOR

LEGEND

PHASE 1 SILT FENCE

SF-1

SF-1

PHASE 2 SILT FENCE

SF-2

SF-2

INLET PROTECTION SUMP

INLET PROTECTION ON-GRADE

Curb & Gutter

10' Typ.

10' Typ.

DURING ALL PHASES OF CONSTRUCTION, INACTIVE AREA STABILIZATION METHODS AS DESCRIBED IN APWA SECTION 5111.3 SHALL BE USED TO CONTROL EROSION AND SILTATION.

NOTES: The Land Disturbance Plans indicates the final placement of erosion control devices. The contractor(s) may proceed with construction prior to the final placement of these devices by providing additional devices to control erosion on their items of work. These devices shall be maintained until the final devices are in place.

SEED AND MULCH NOTES:
All areas disturbed by construction activities shall be seeded and mulched. Seeding shall be done before the proposed seedbed becomes eroded, crusted over, or dried out and shall not be done when the ground is frozen, or covered with snow. The seed shall comply with the requirements of the Missouri Seed Law and the Federal Seed Act. Also, it shall contain no seed of any plant on the Federal Noxious Weed List. Other weed seeds shall not exceed one percent by weight of mix.

Seed and Fertilizer Rate:	
Mix I - Rye Grass / Blue Grass	-----
100 lbs. per Acre	-----
Mix II - Tall Fescue / Blue Grass	-----
195 lbs. per Acre	-----
Lime	-----
2000 lbs per Acre (50 lbs. per 1000 sq. ft.)	-----
Fertilizer	-----
800 to 1200 lbs per Acre (25 lbs per 1000 sq. ft.)	-----

During the dates December 15th through May 31 ALL lime fertilizer, seed and mulch shall be applied to finished slopes of disturbed areas. During the months of June, July, October and November 1st through December 15th, lime fertilizer, seed and mulch shall be applied at the following rates:
Lime - 100% of specified quantity
Fertilizer - 75% of the specified quantity
Seed - 50% of the specified quantity
Mulch - 100% of the specified quantity

Mulch shall be Vegetative type, cereal straw from stalks of oats, rye, or barley, or approved equal. The straw shall be free of prohibited weed seed and relatively free of all other noxious and undesirable seed. Mulch shall be applied at the rate of 2 tons per acre, (70 to 90 lbs per 1000 sq. ft.). Mulch shall be embedded by a mulch anchoring tool or disk type roller having flat serrated disks spaced not more than 10 inches apart and cleaning scrapers shall be provided

ONCE SITE IS 90% VEGETATED ALL ESC DEVICES SHALL BE REMOVED AND ANY DISTURBED AREAS SHALL BE RESTORED

ENGINEERING & SURVEYING SOLUTIONS

Professional Registration

Missouri
Engineering 2005002188-D
Surveying 2005000519-D

Kansas
Engineering E-1695
Surveying LS-218

Oklahoma
Engineering 6254

Nebraska
Engineering CA2821

Project: LAKEWOOD BUSINESS CENTER PLAT 6, L&MO

Issue Date: May 5, 2023

ESC PHASE 3 - Final Restoration Plan

Construction Plans for:

Lakewood Business Park - Lot 46

Lee's Summit, Jackson County, Missouri

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226

REVISIONS

REV. 12/6/2023

REV. 1/19/2024

REV. 2/8/2024

RELEASED FOR CONSTRUCTION

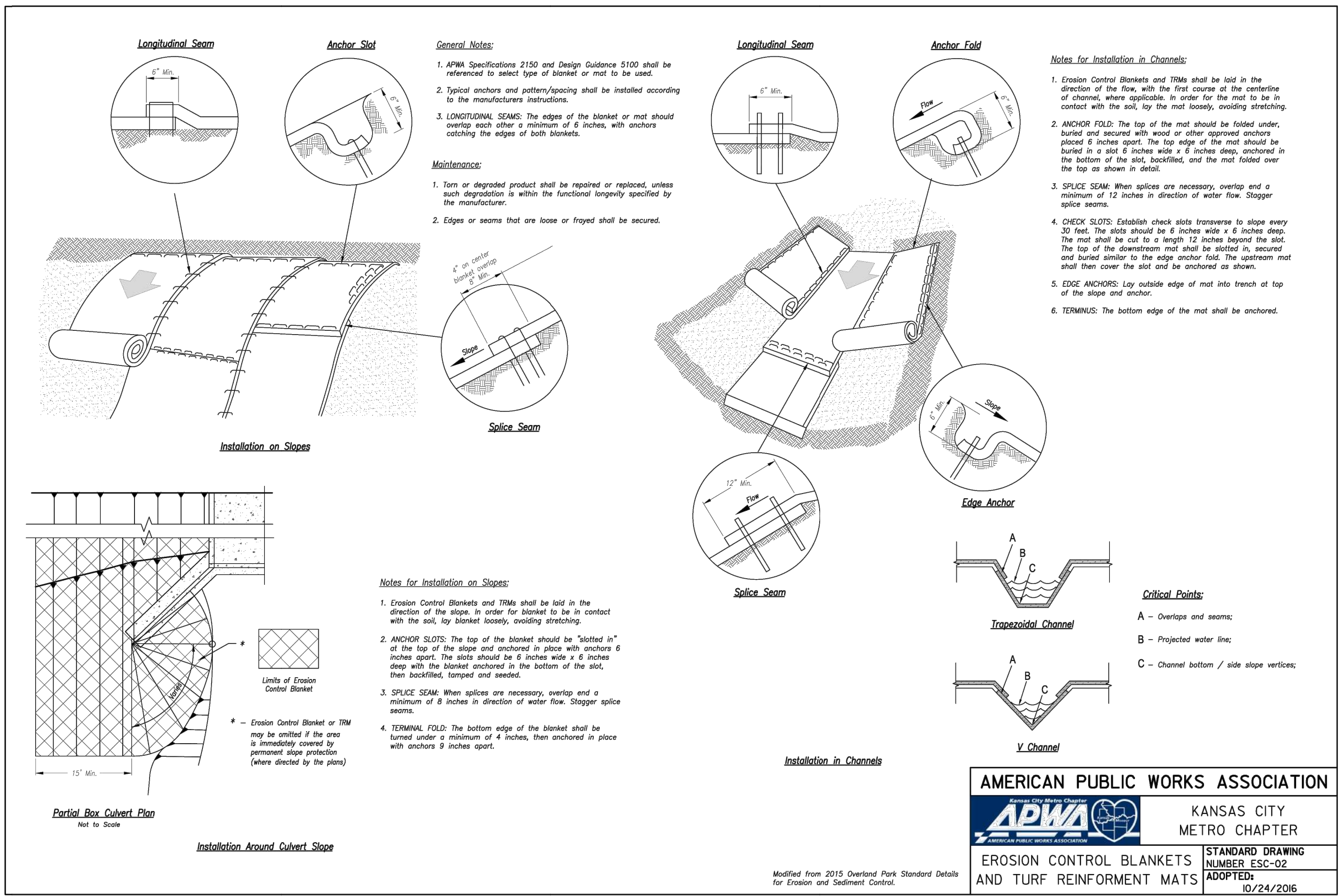
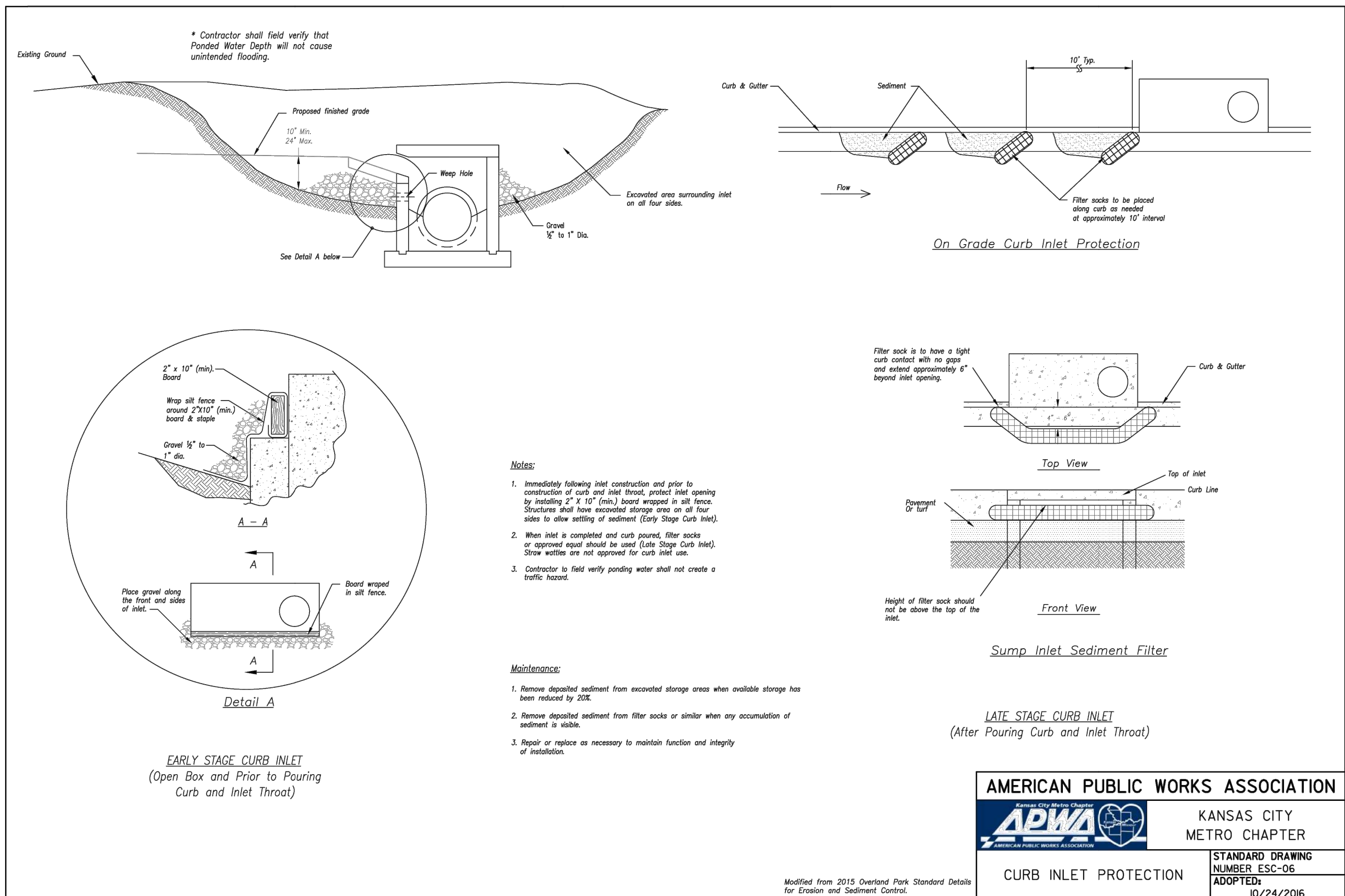
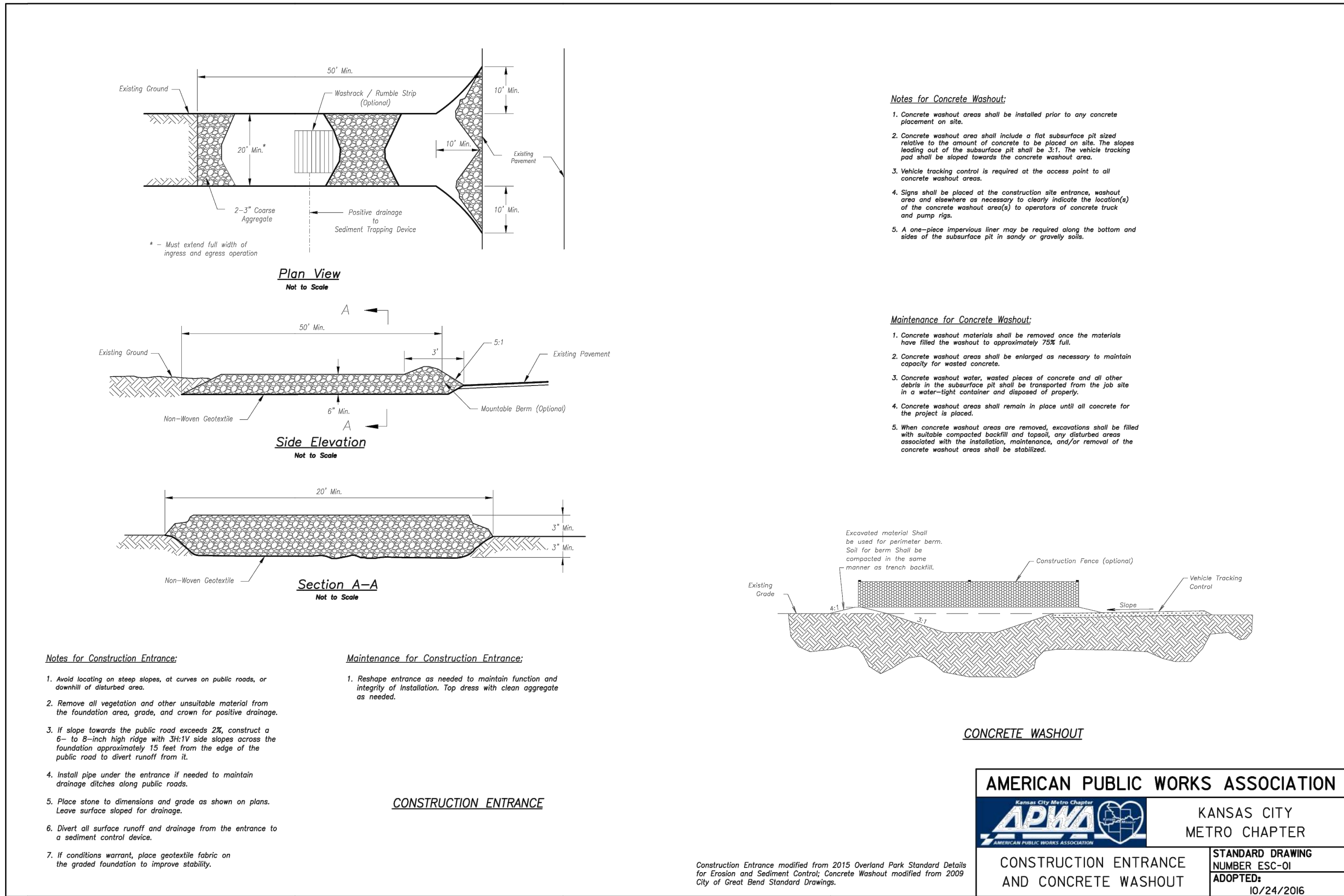
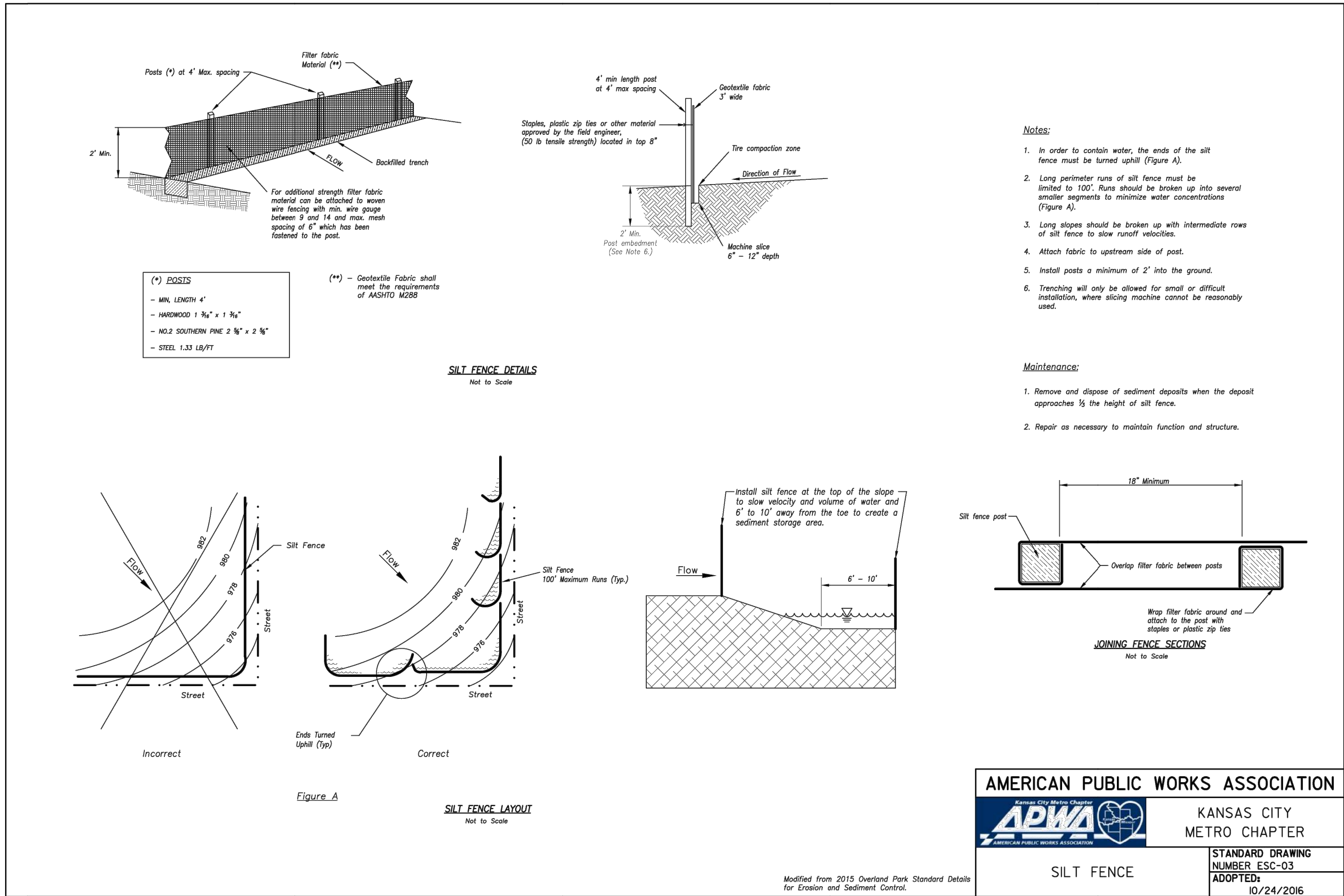
As Noted on Plans Review

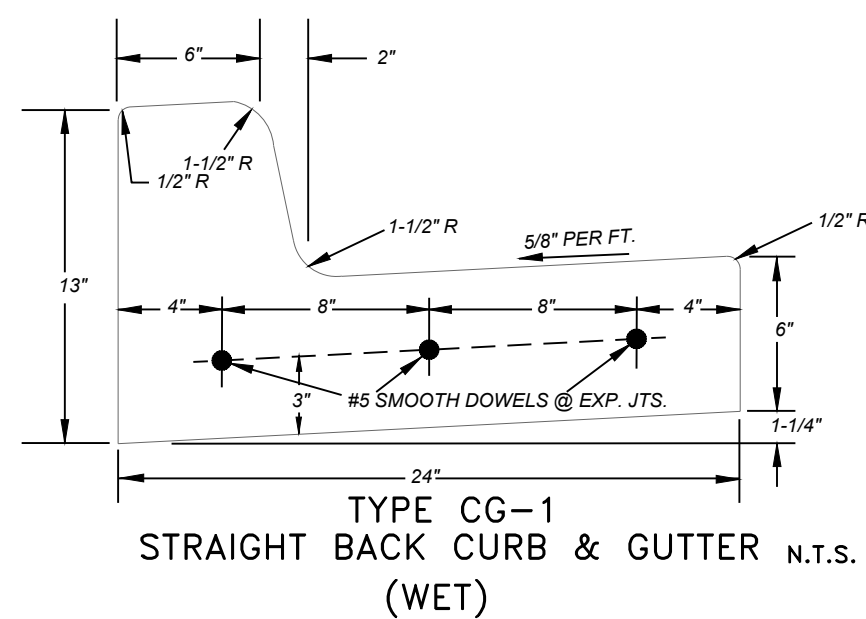
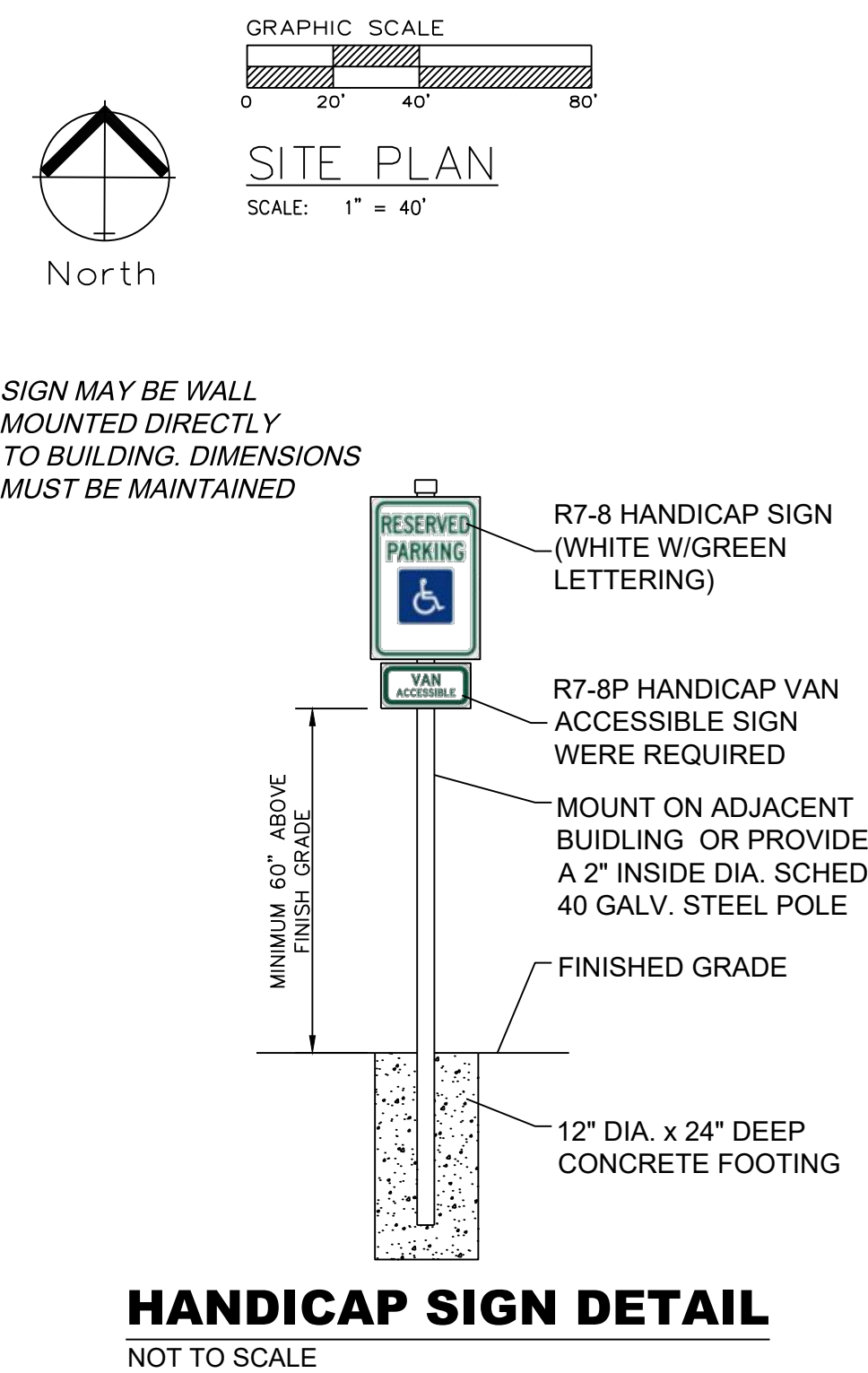
Development Services Department

Lee's Summit, Missouri

03/18/2024

C.052A

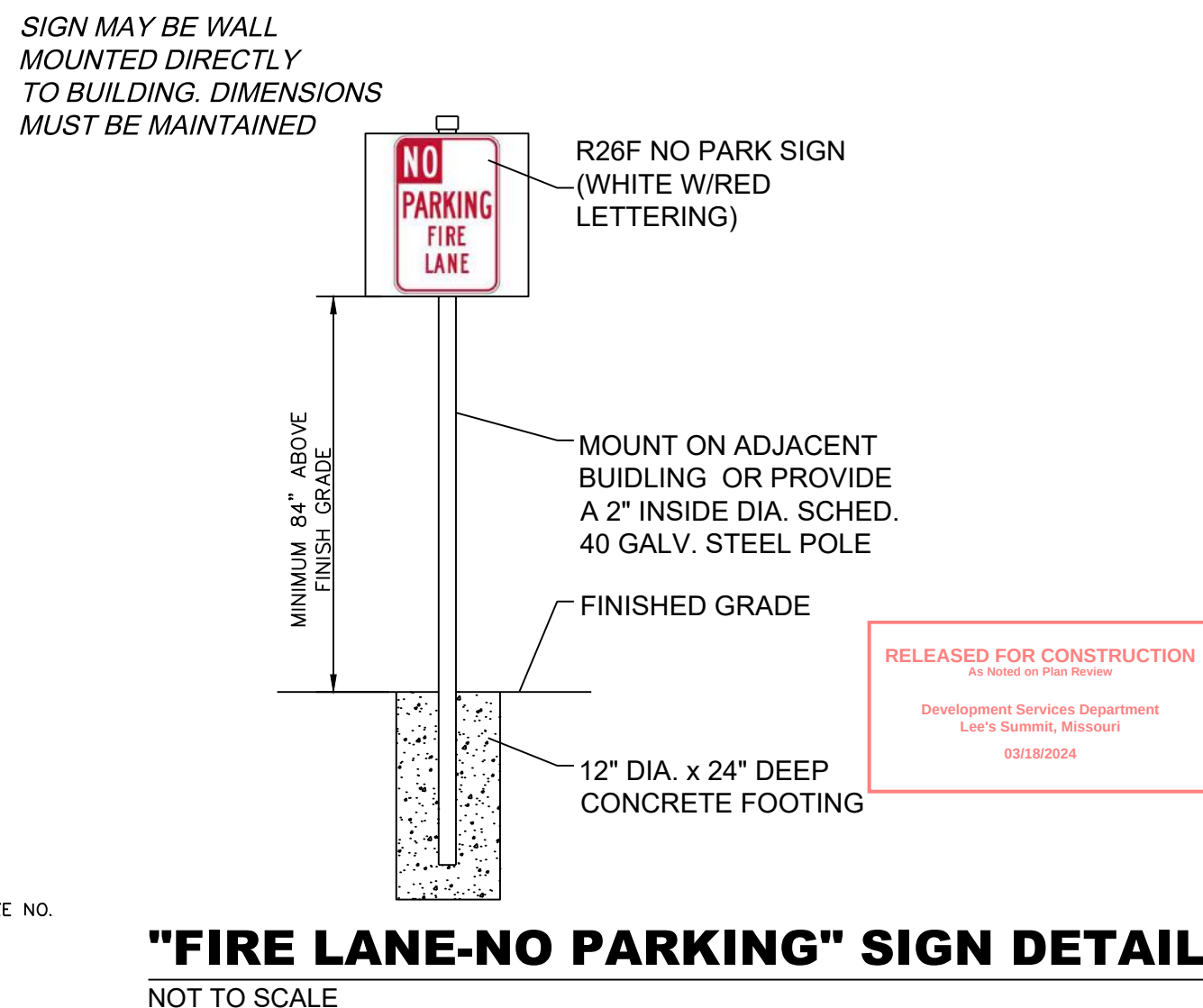
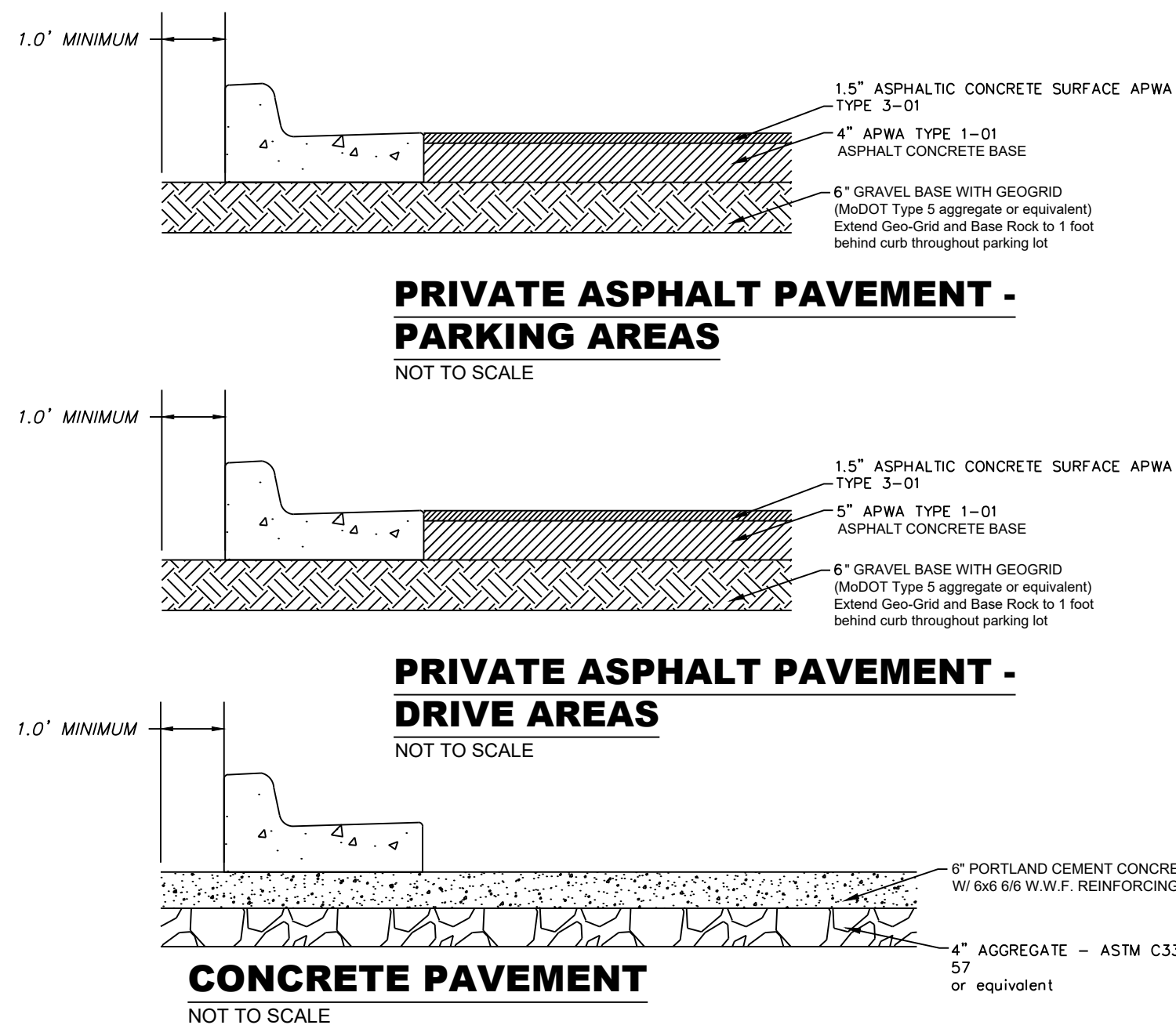




Notes:

Trough enclosures shall be constructed of masonry walls or steel architecturally designed walls with either a solid steel opaque gate painted to be compatible with the color of the masonry or steel walls and building it is to serve or a steel framed semi-opaque gate with a screen mesh material approved by the Director that provides an appropriate visual barrier.

Trough enclosure areas shall be improved with a Portland cement concrete base and a Portland cement concrete approach 3 feet in length, measured from the enclosure opening. The pad and approach shall be improved with a minimum six inches of full depth unreinforced Portland cement concrete constructed on a sub-grade of four inches of granular base course.



1.1 JOINTS

Coordinate joint types, descriptions, and locations with Drawings. Three types of joints and tool edges have been consolidated in this Article for consistency rather than for strict sequence of installation.

- A. General: Form construction, isolation, and contraction joints and tool edges true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.
 - 1. When joining existing pavement, place transverse joints at line with previously placed joints, unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than one-half hour unless pavement terminates at isolation joints.
 - 1. Continue steel reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of pavement strips, unless otherwise indicated.

Retain subparagraph below for load-transfer doweled joints. Revise if precasted dowels are required.

- 2. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt-coat one-half of dowel length to prevent concrete bonding to one side of joint.

- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.

Expansion joints are types of isolation joints. Revise spacing in first subparagraph below to suit Project or delete if not required.

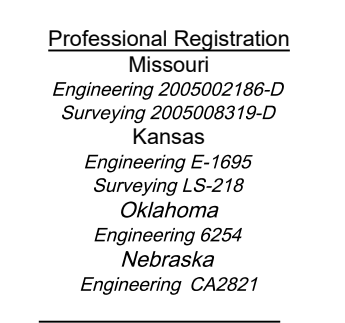
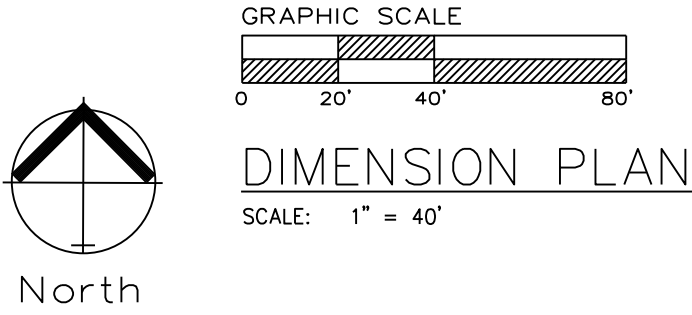
- 1. Locate expansion joints at intervals of **50 feet**, unless otherwise indicated.
- 2. Extend joint fillers full width and depth of joint.
- 3. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
- 4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
- 5. Finish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
- 6. Protect top edges of joint filler during concrete placement with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

Edging is included in this Article for its similarity to jointing. Timing of edging after initial floating is critical.

- D. Edging: Tool edges of pavement, gutters, curbs, and joints in concrete after initial floating with an edging tool to a **1/4-inch** radius. Repeat tooling of edges after applying surface finishes. Eliminate tool marks on concrete surfaces.



5 EXTERIOR ELEVATION
TRASH ENCLOSURE - FRONT ELEVATION

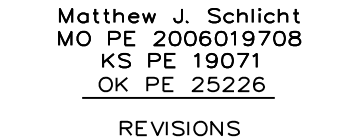


Lakewood Business Park - Lot 46
Lee's Summit, Jackson County, Missouri

Project: LAKEWOOD
BUSINESS CENTER
PLAT S, LSMO

Issue Date: May 5, 2023

Dimension Plan
Construction Plans for:
Lakewood Business Park - Lot 46
Lee's Summit, Jackson County, Missouri

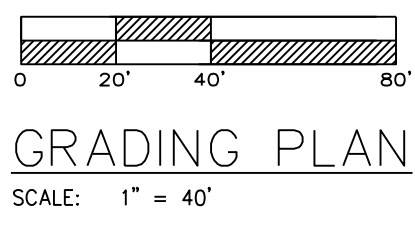
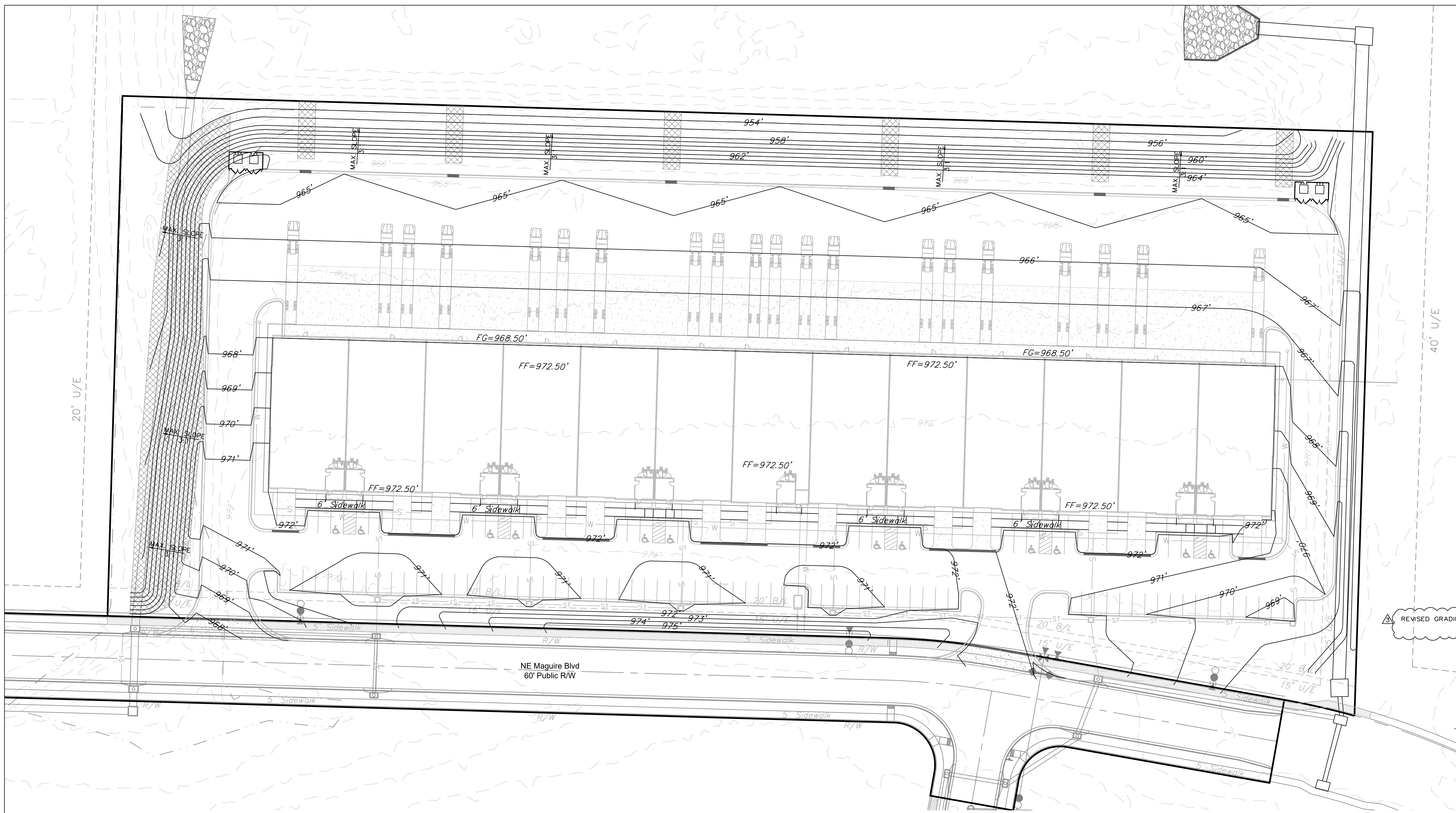


REVISIONS	
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2	REV. 1/19/2024
3	REV. 2/8/2024

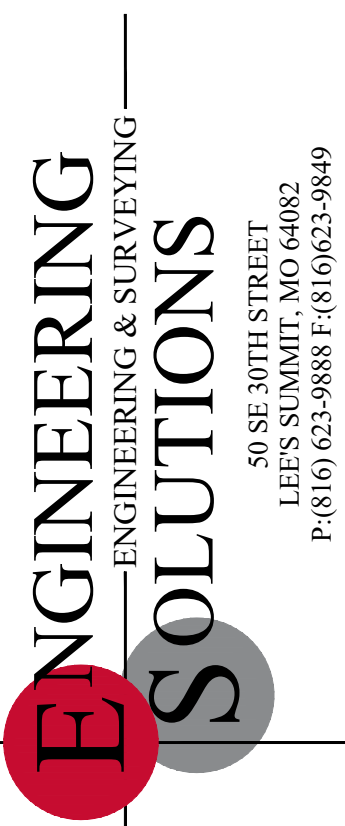
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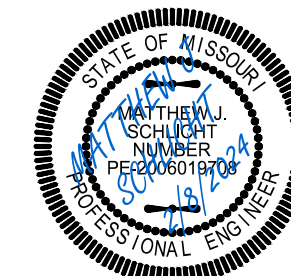
- Notes**
1. Contractor is responsible for verifying all existing utility locations prior to excavation
 2. There are no known natural or artificial water storage detention areas, or wetlands in the area designated for construction
 3. No part of the project lies within the 100 year flood plain
 4. All erosion and sediment control measures need to be implemented prior to construction
 5. Additional erosion control may be required by the City Engineer, Design Engineer or Owner at any time problematic areas are noted in the field or existing measures are found to be ineffective
 6. Soil Stabilization of disturbed areas shall be completed within 14 days of construction inactivity
 7. Contractor responsible for all density testing of roadway subgrade and granular base.



Professional Registration
Missouri
Engineering 2005002188-D
Surveying 2005006519-D
Kansas
Engineering E-1695
Surveying LS-216
Oklahoma
Engineering 6254
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Project: LAKELAND BUSINESS CENTER
PLAT 5, LEMO
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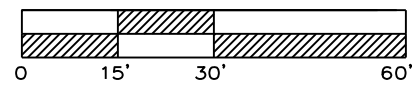
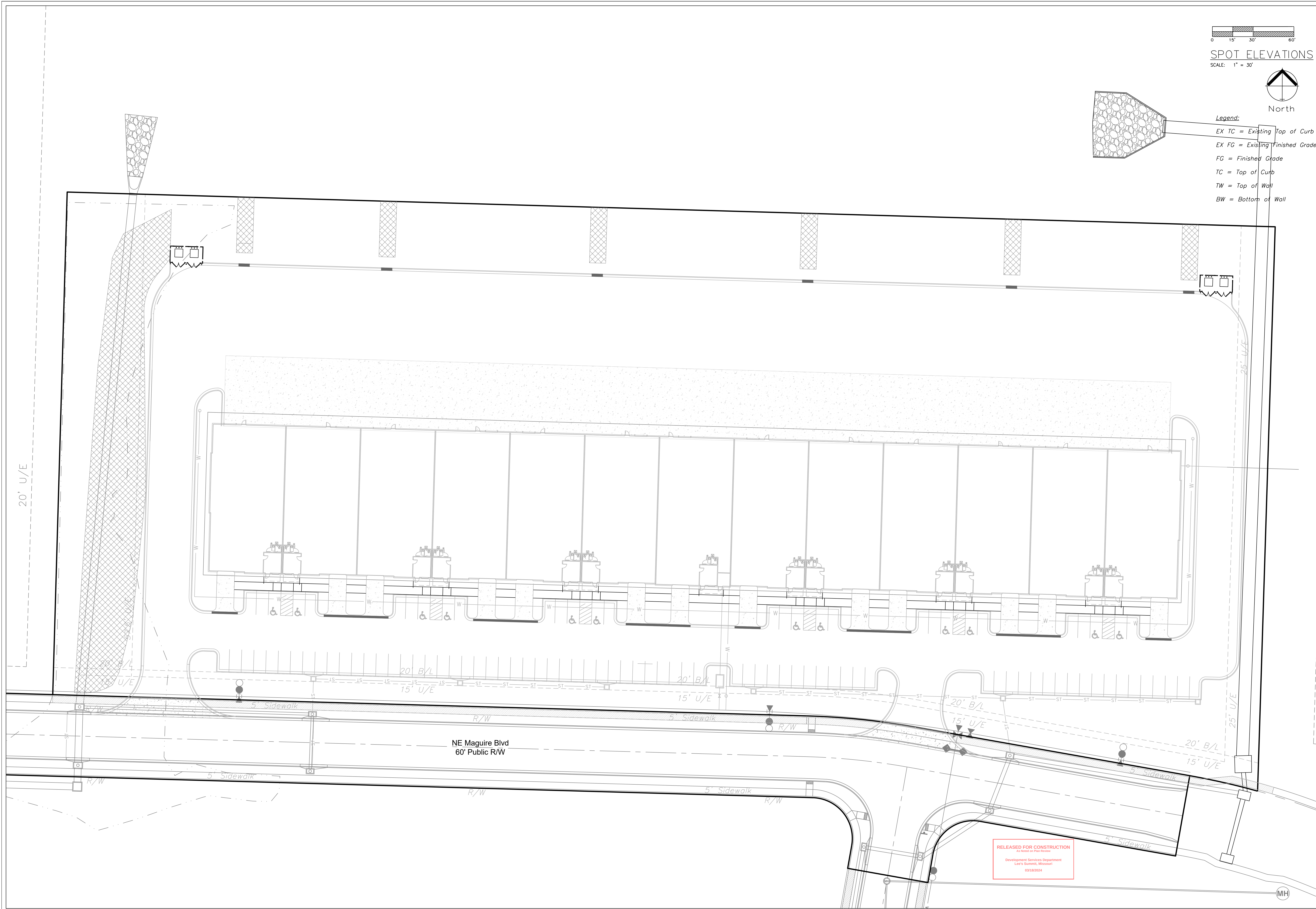
Grading Plan
Construction Plans for:
Lakewood Business Park - Lot 46
Lee's Summit, Jackson County, Missouri



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OK PE 25526

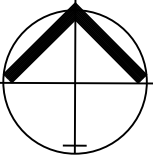
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SPOT ELEVATIONS

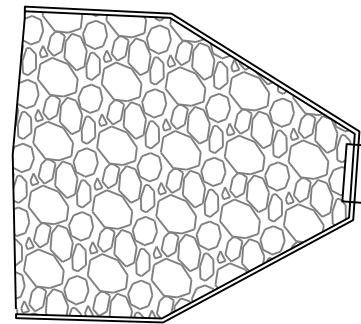
SCALE: 1" = 30'



North

Legend:

- EX TC = Existing Top of Curb
- EX FG = Existing Finished Grade
- FG = Finished Grade
- TC = Top of Curb
- TW = Top of Wall
- BW = Bottom of Wall



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Kansas
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Project: LAKELAND BUSINESS CENTER
PLAT 5, L&MO
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Spot Elevations
Construction Plans for:
Lakewood Business Park - Lot 46
Lee's Summit, Jackson County, Missouri

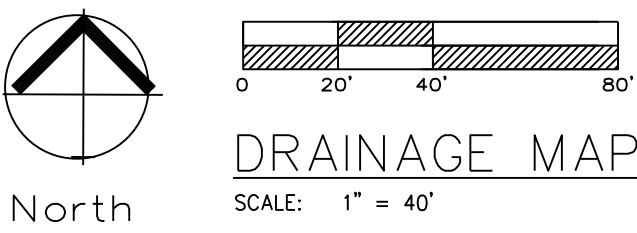
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MO PE 2006019708
KS PE 19071
OK PE 25226

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Oklahoma
Engineering 6254
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LAKEWOOD
BUSINESS CENTER
PLAT S, LSMO

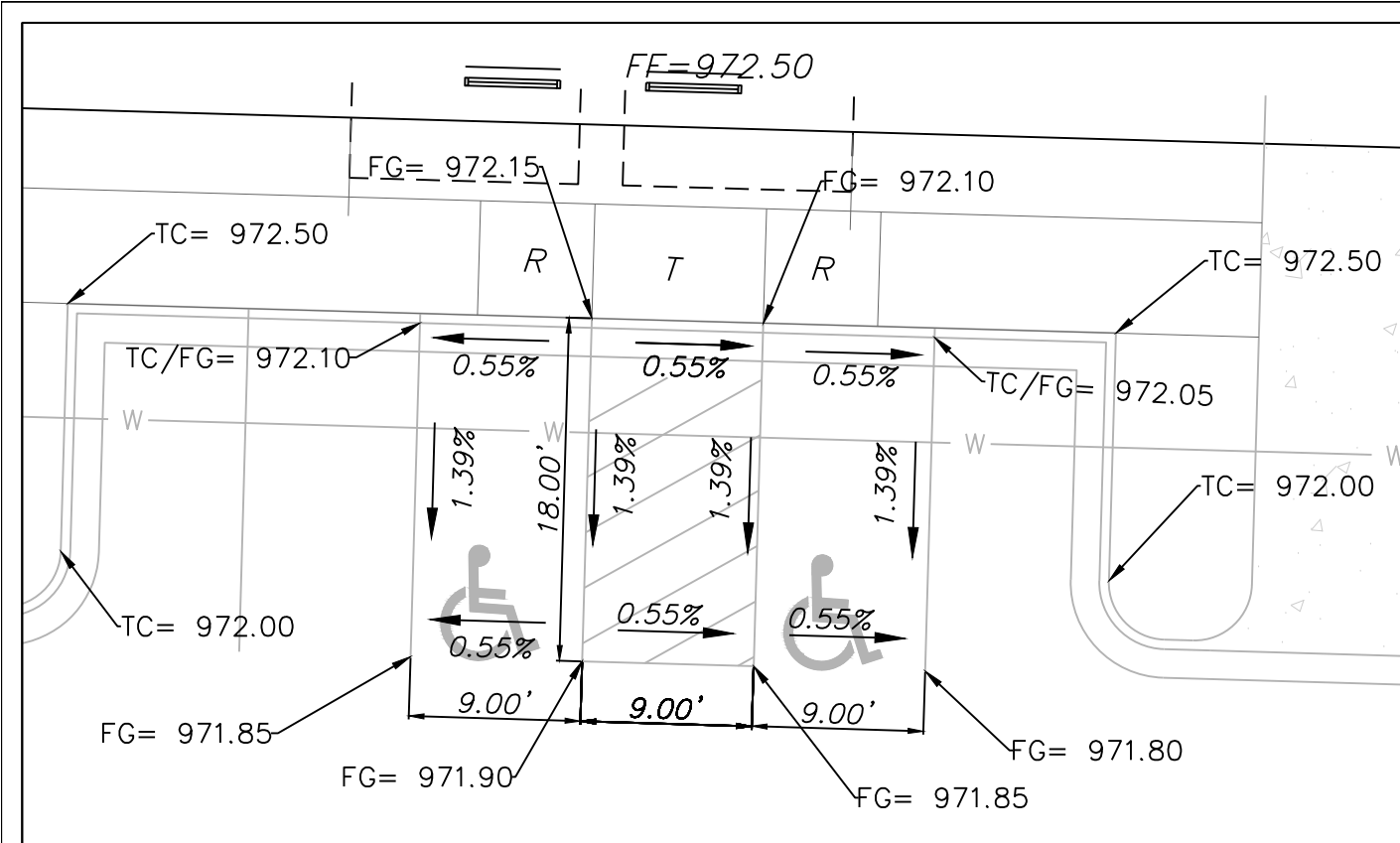
Issue Date:
May 5, 2023



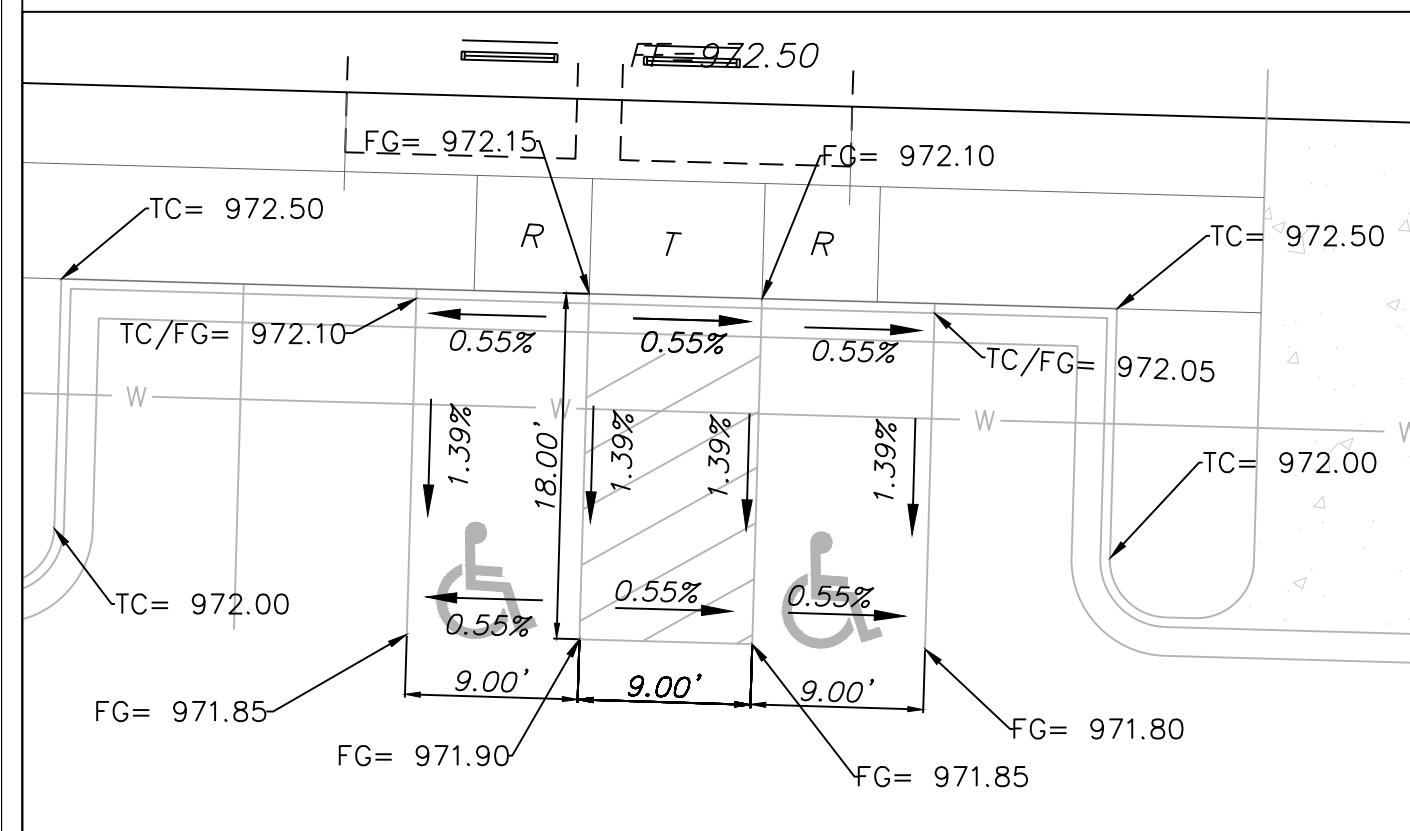
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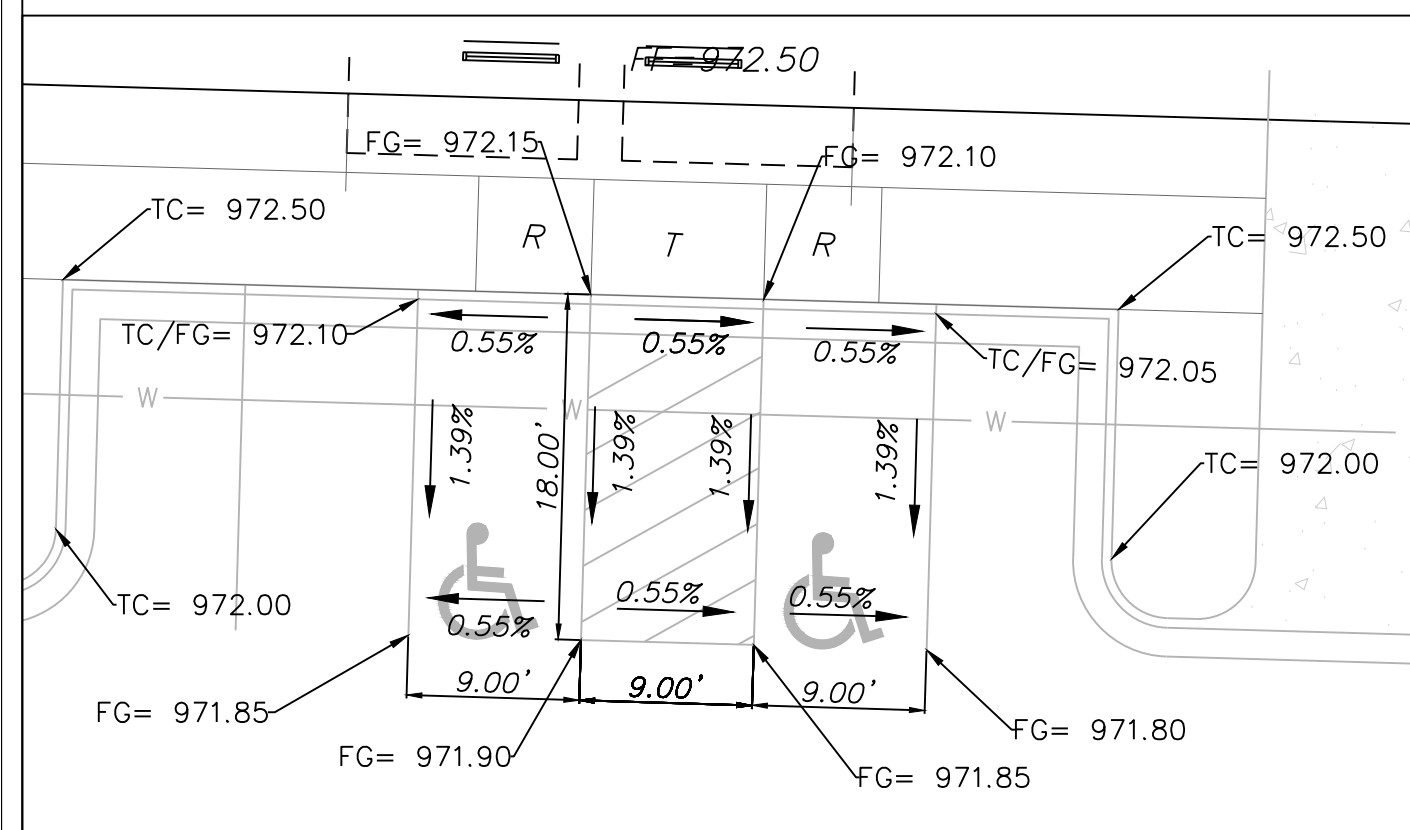
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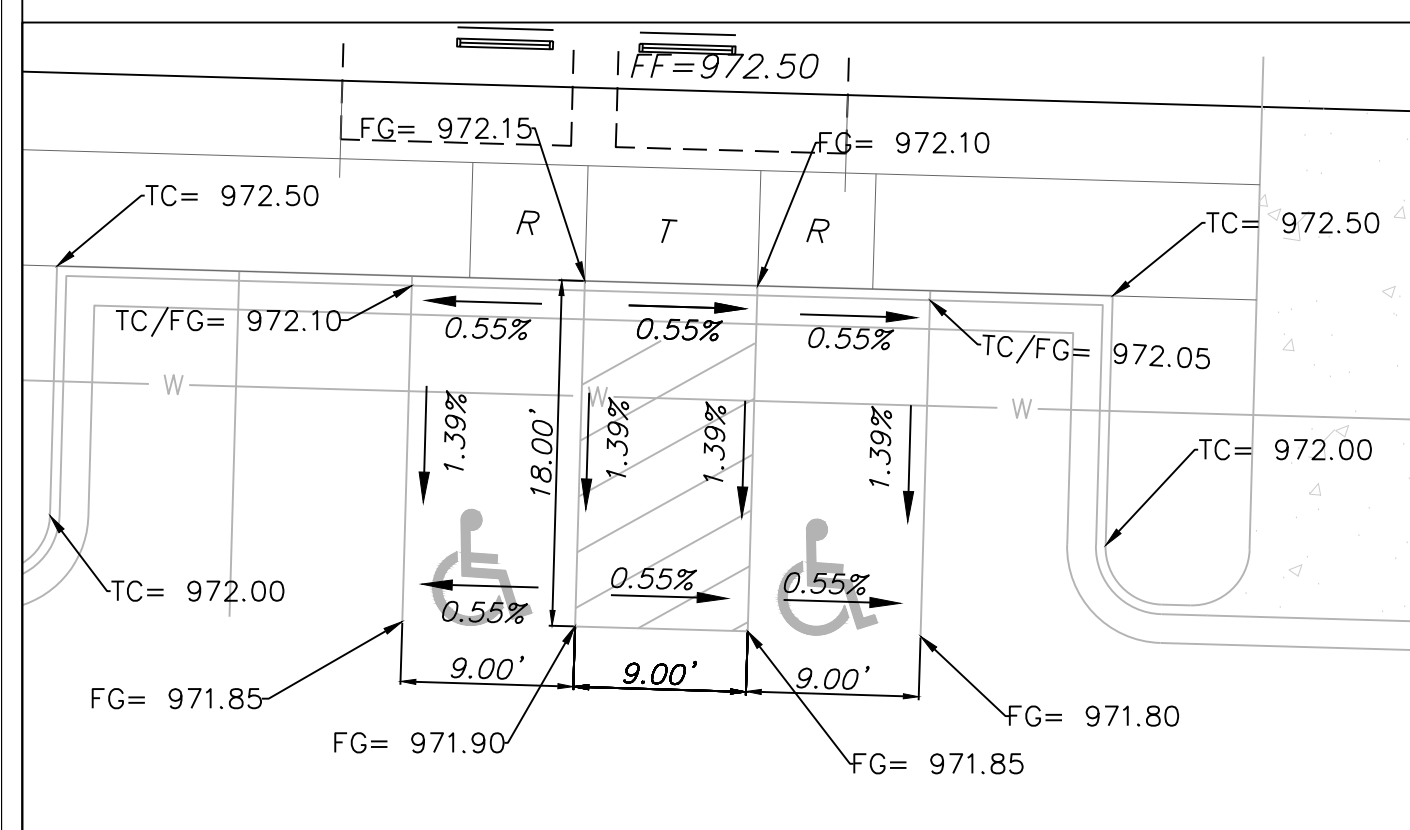
ADA RAMP DETAIL 1
SCALE: 1"=10'



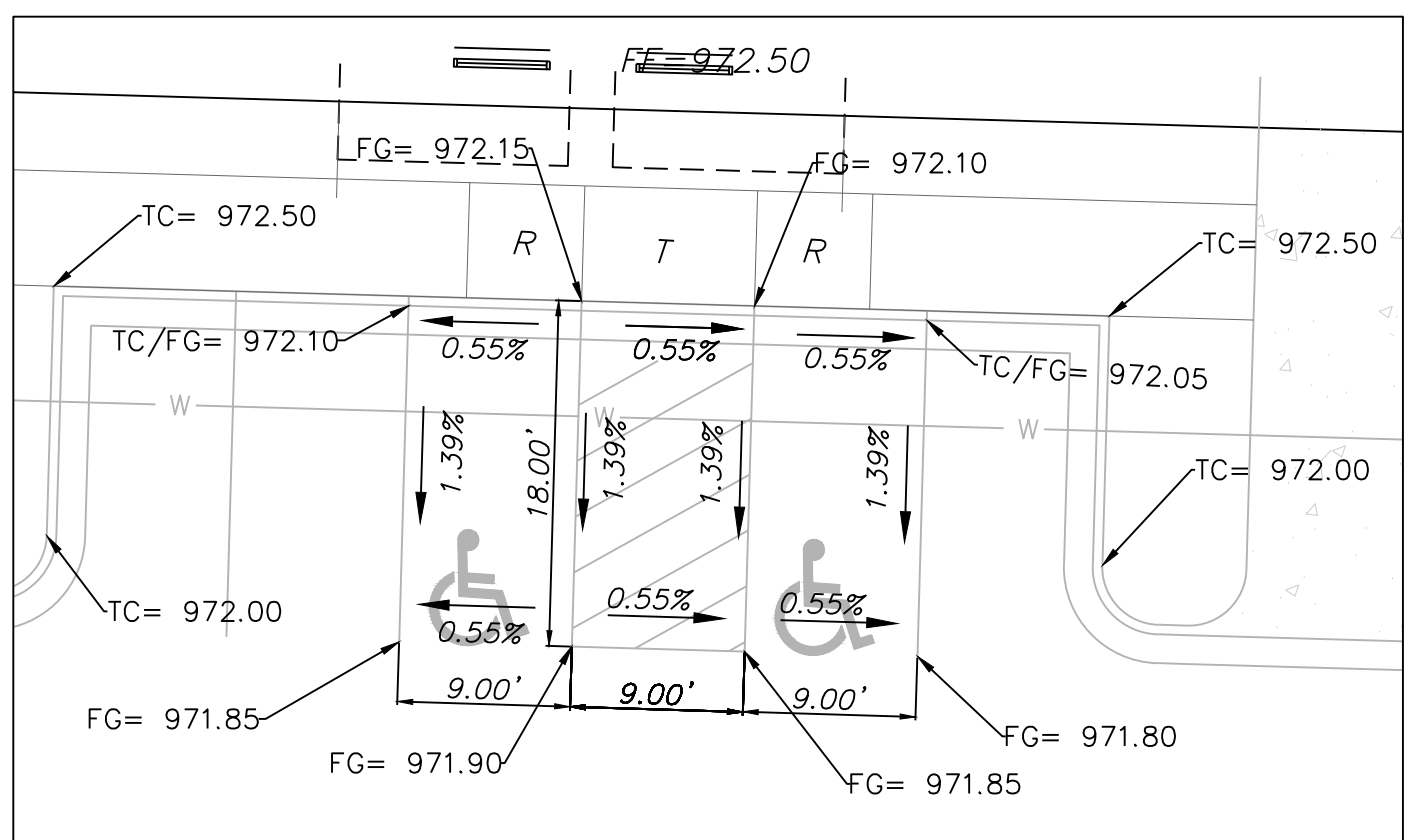
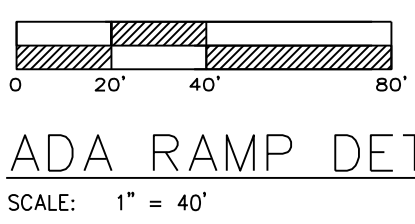
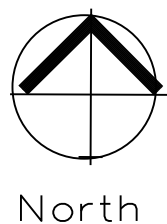
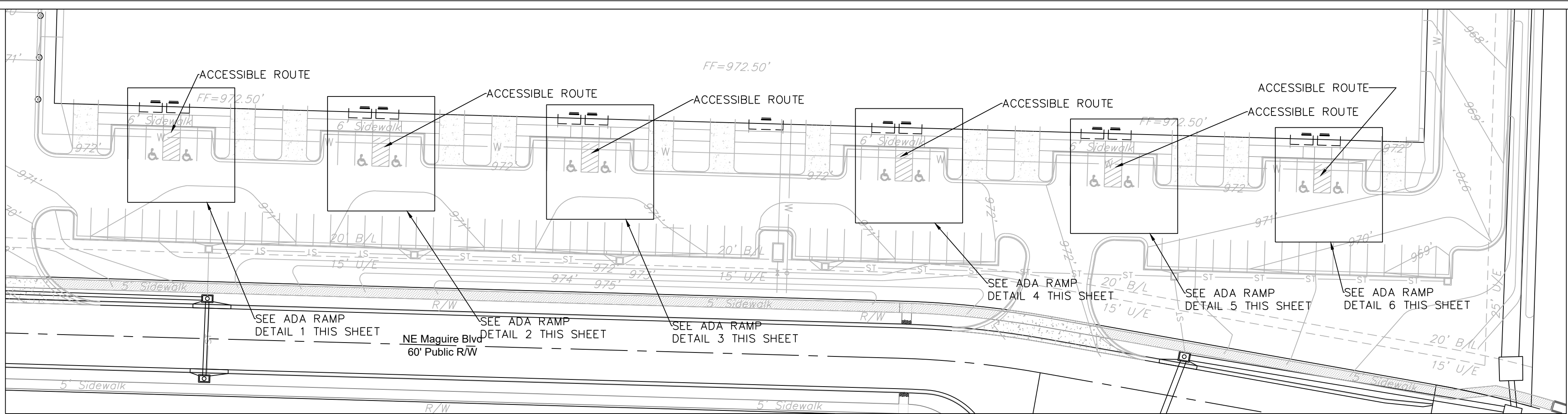
ADA RAMP DETAIL 2
SCALE: 1"=10'



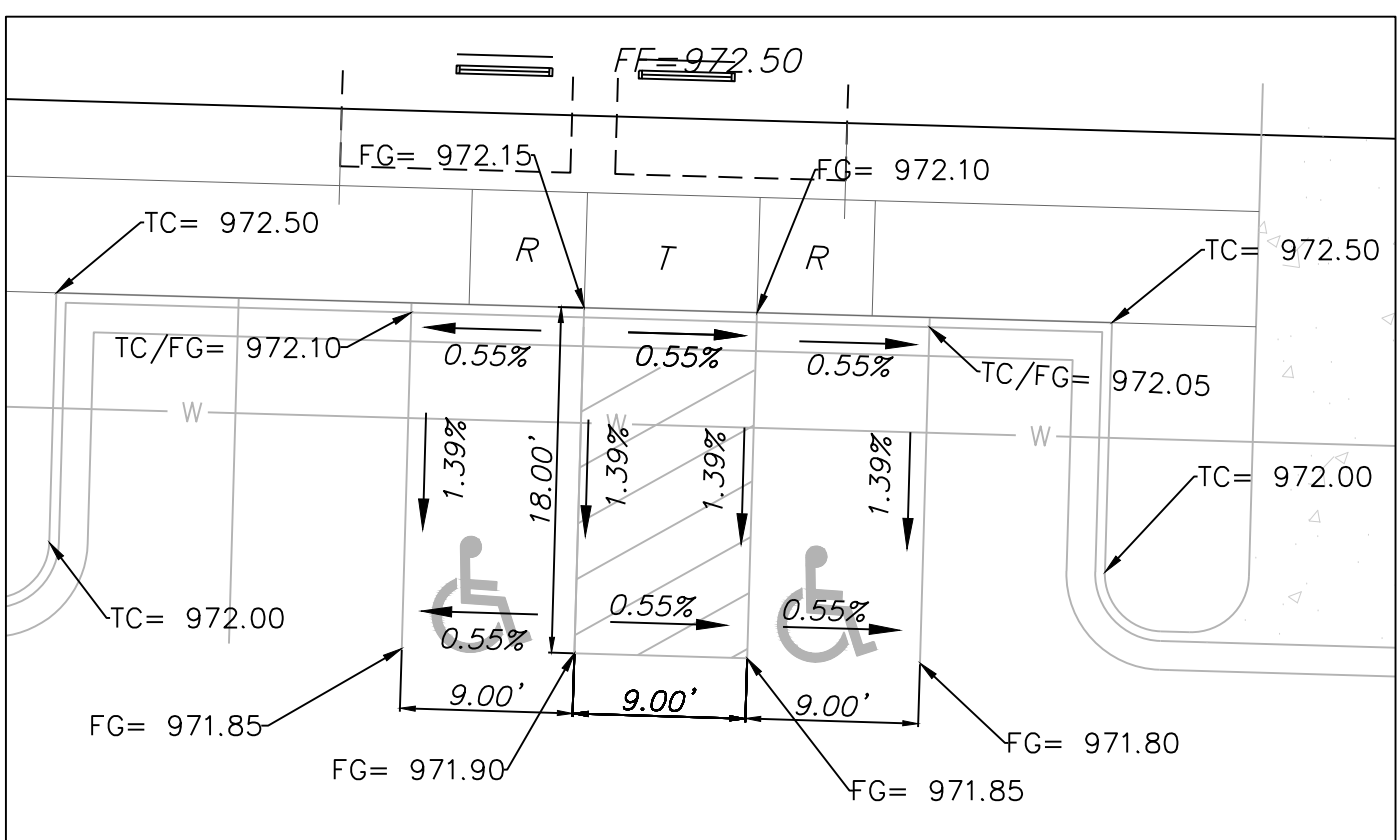
ADA RAMP DETAIL 3
SCALE: 1"=10'



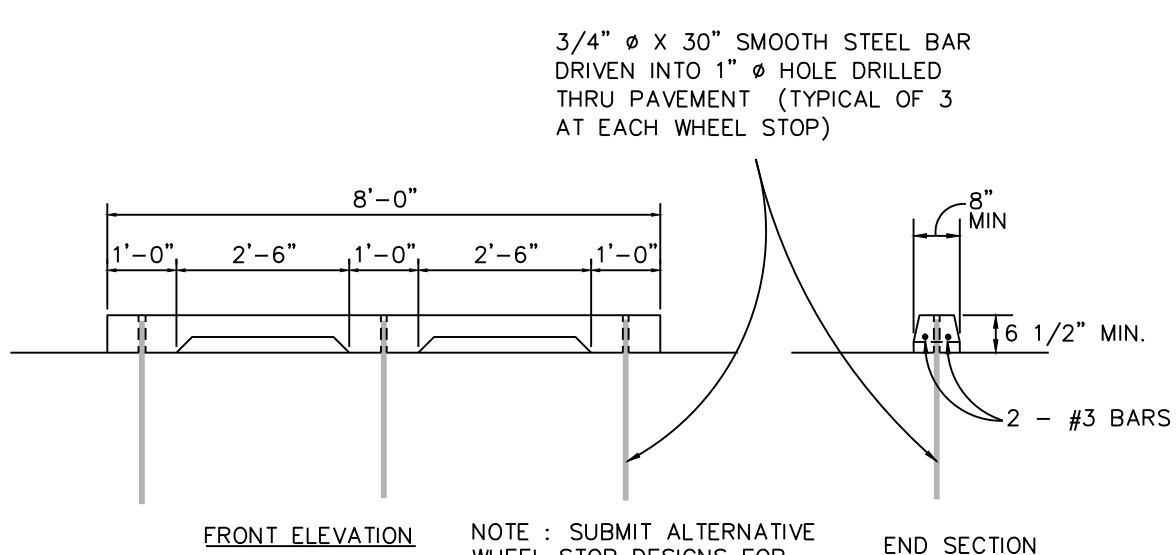
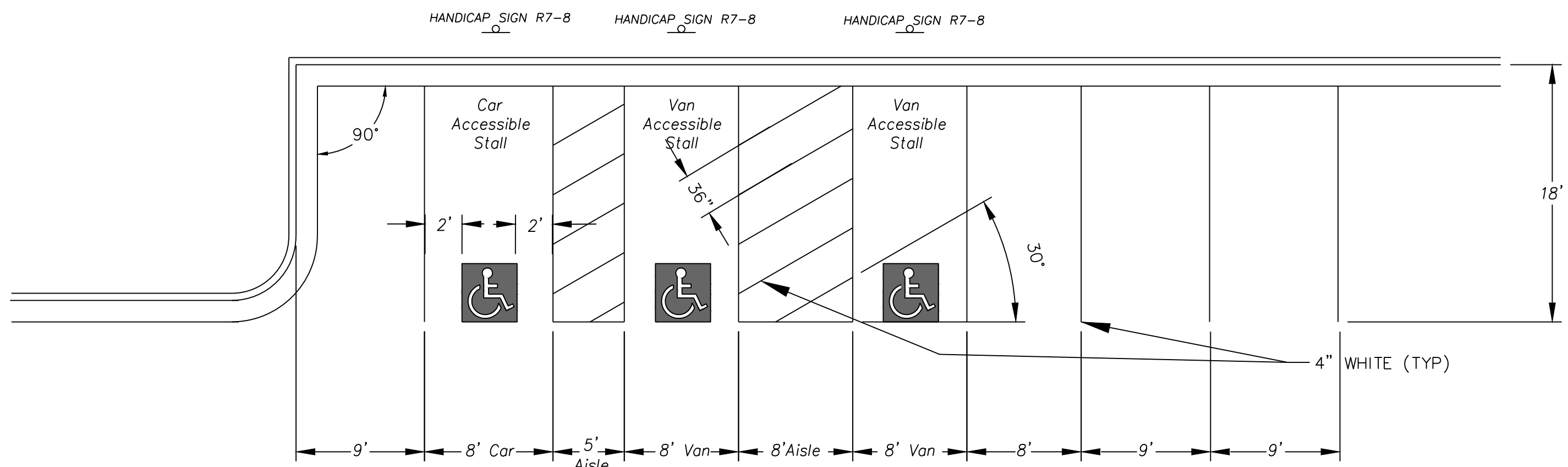
ADA RAMP DETAIL 4
SCALE: 1"=10'



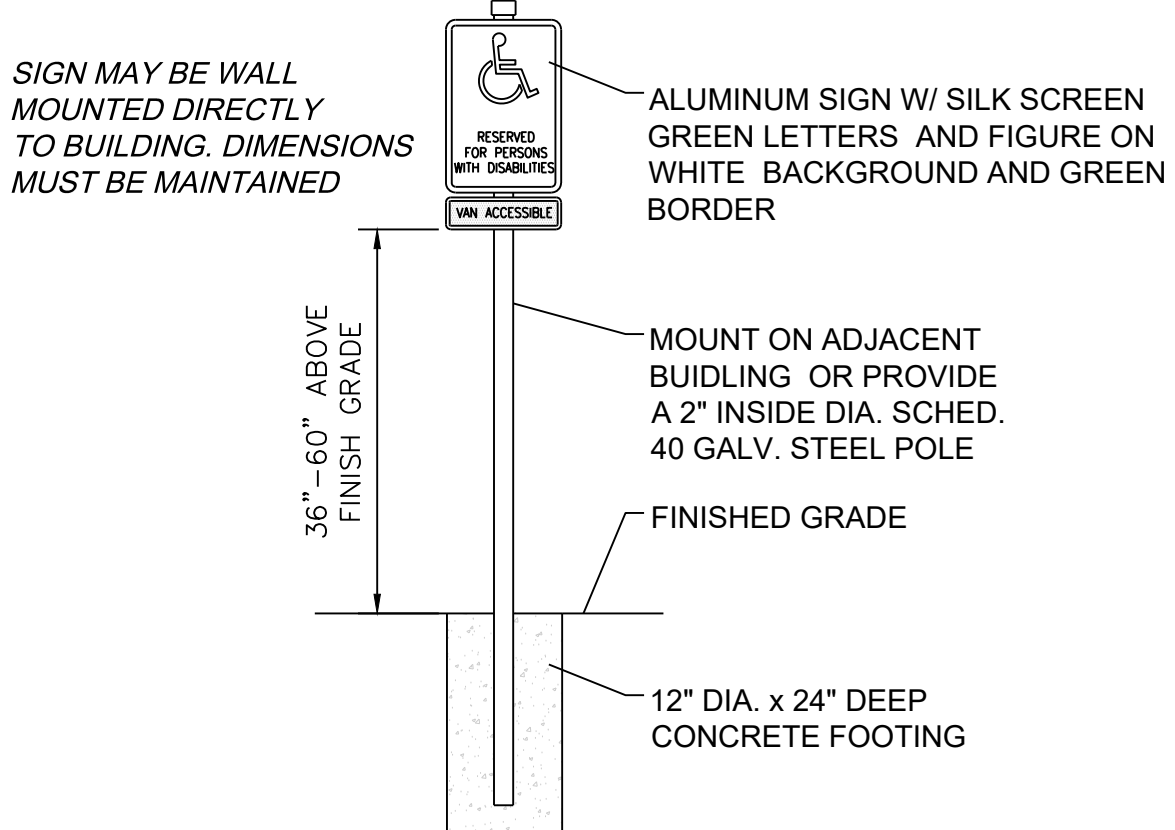
ADA RAMP DETAIL 5
SCALE: 1"=10'



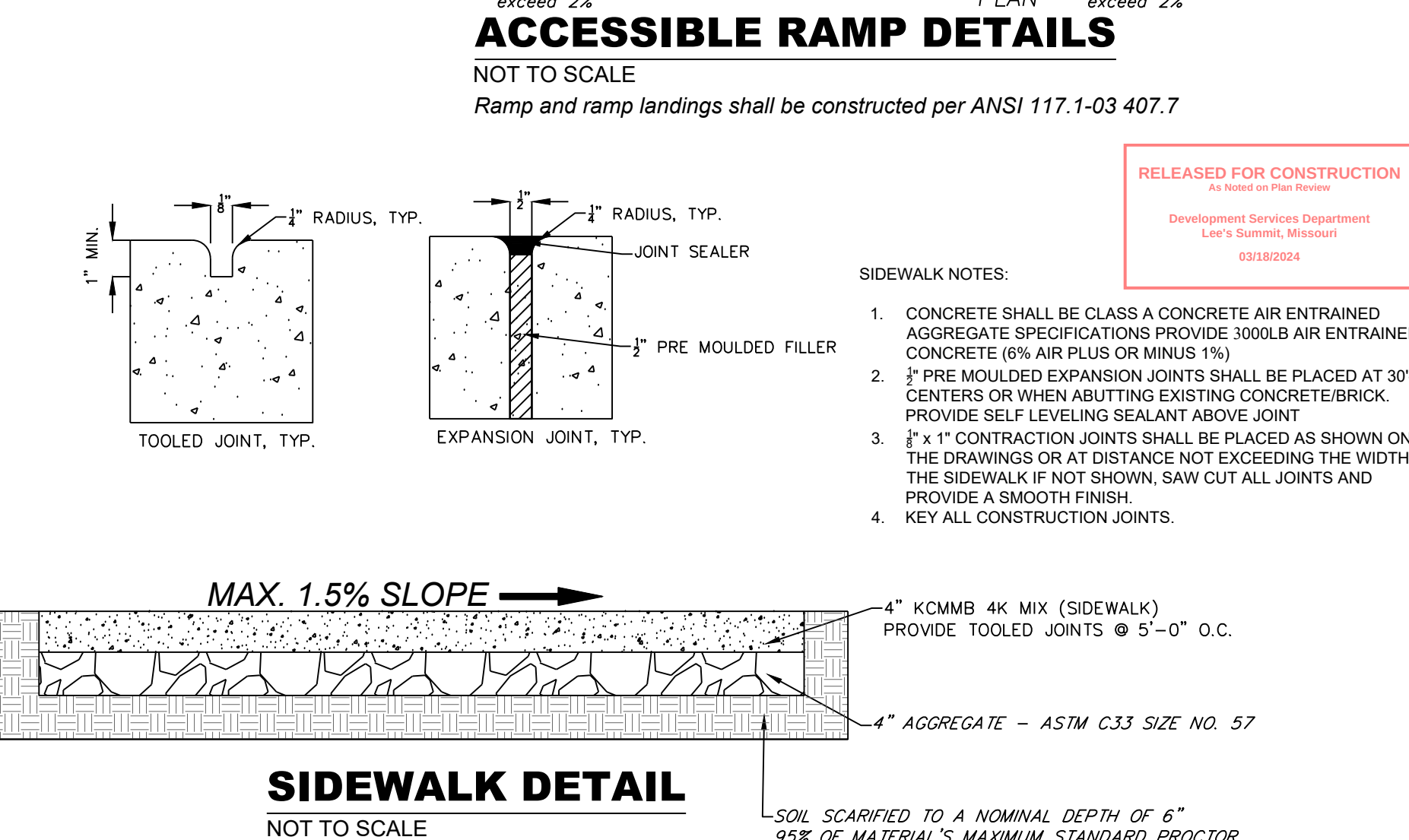
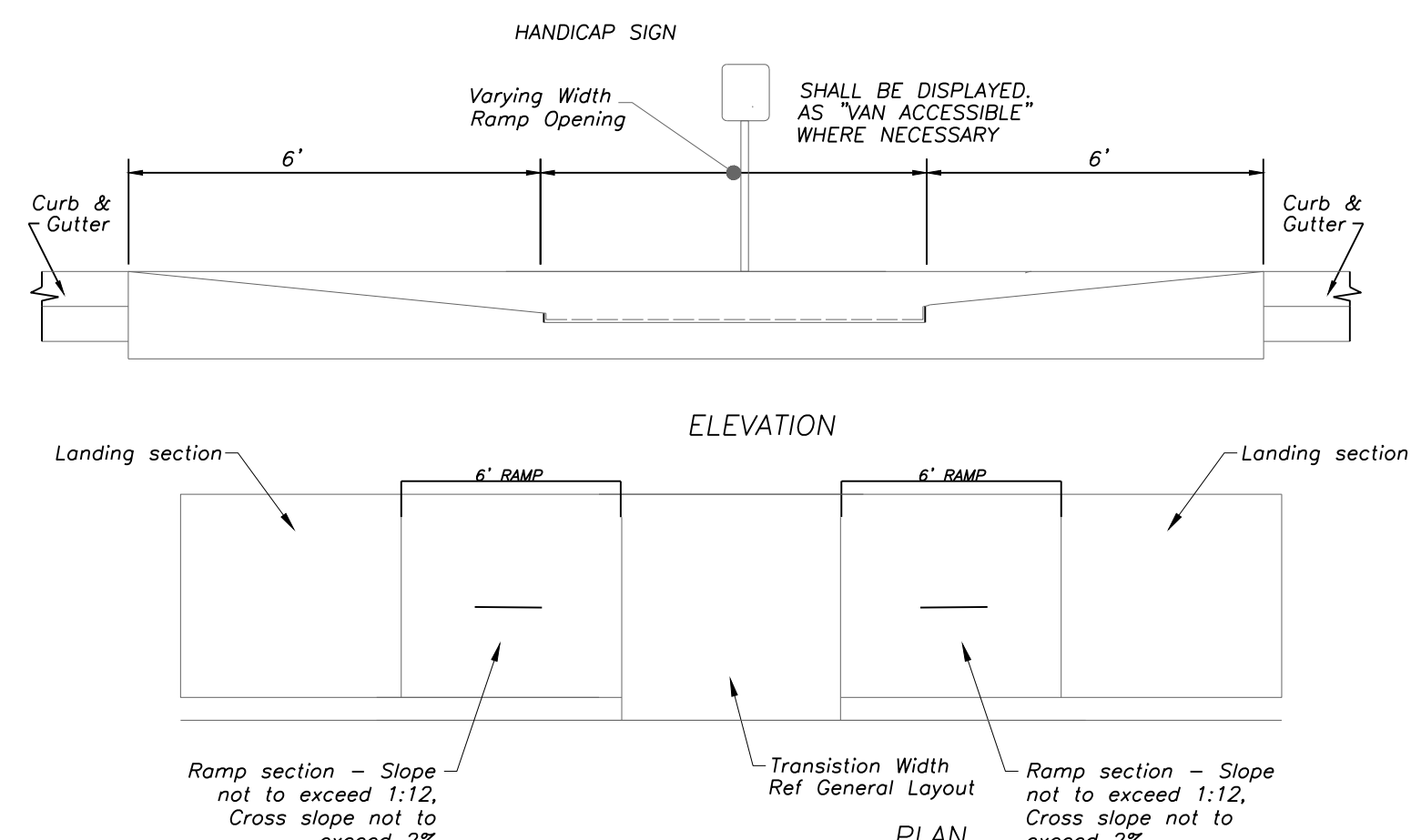
ADA RAMP DETAIL 6
SCALE: 1"=10'



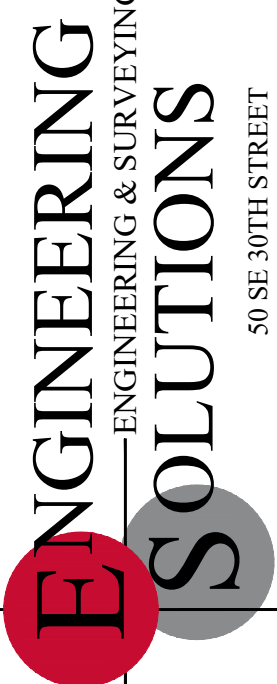
CONCRETE WHEEL STOP
N.T.S.



HANDICAP SIGN DETAIL
NOT TO SCALE



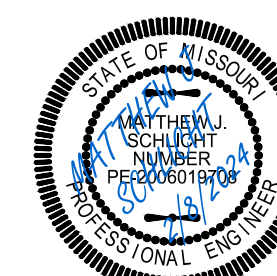
SIDEWALK DETAIL
NOT TO SCALE



Professional Registration
Missouri
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Kansas
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Surveying LS-218
Oklahoma
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Project: LAKWOOD BUSINESS CENTER
BUSINESS CENTER
PLAT 5, LEMO
Issue Date: May 5, 2023
Lakewood Business Park - Lot 46
Lee's Summit, Jackson County, Missouri

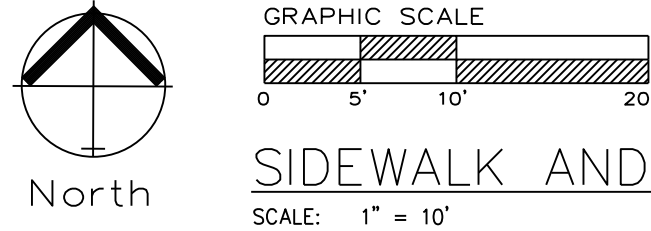
ADA RAMP DETAILS
Construction Plans for:
Lakewood Business Park - Lot 46
Lee's Summit, Jackson County, Missouri



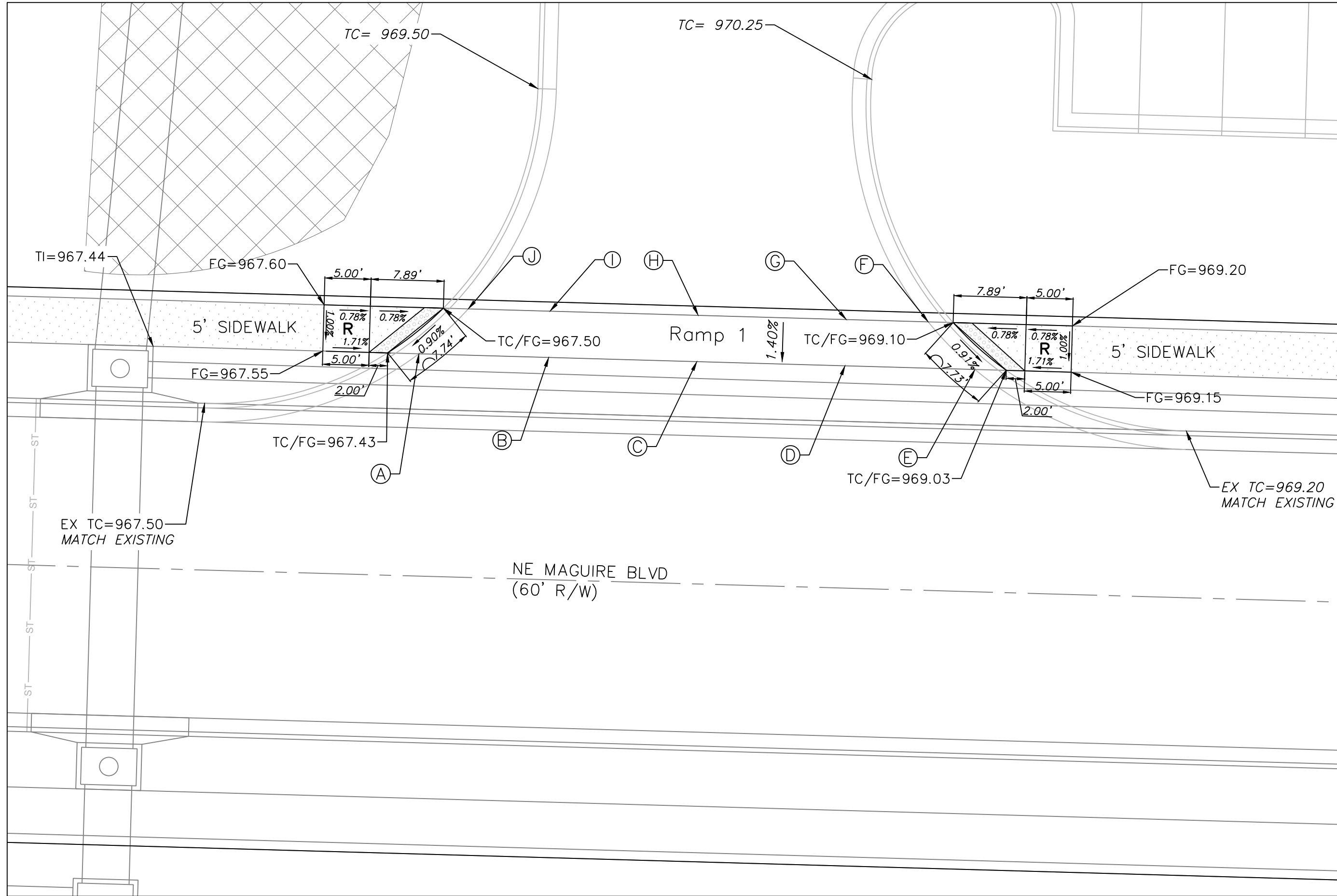
Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25526

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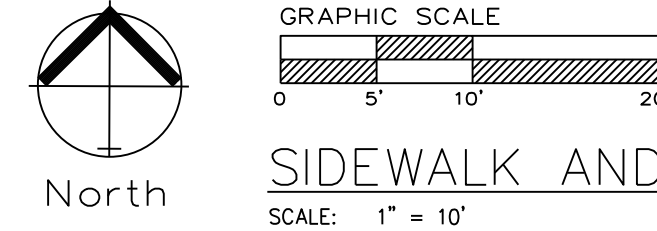
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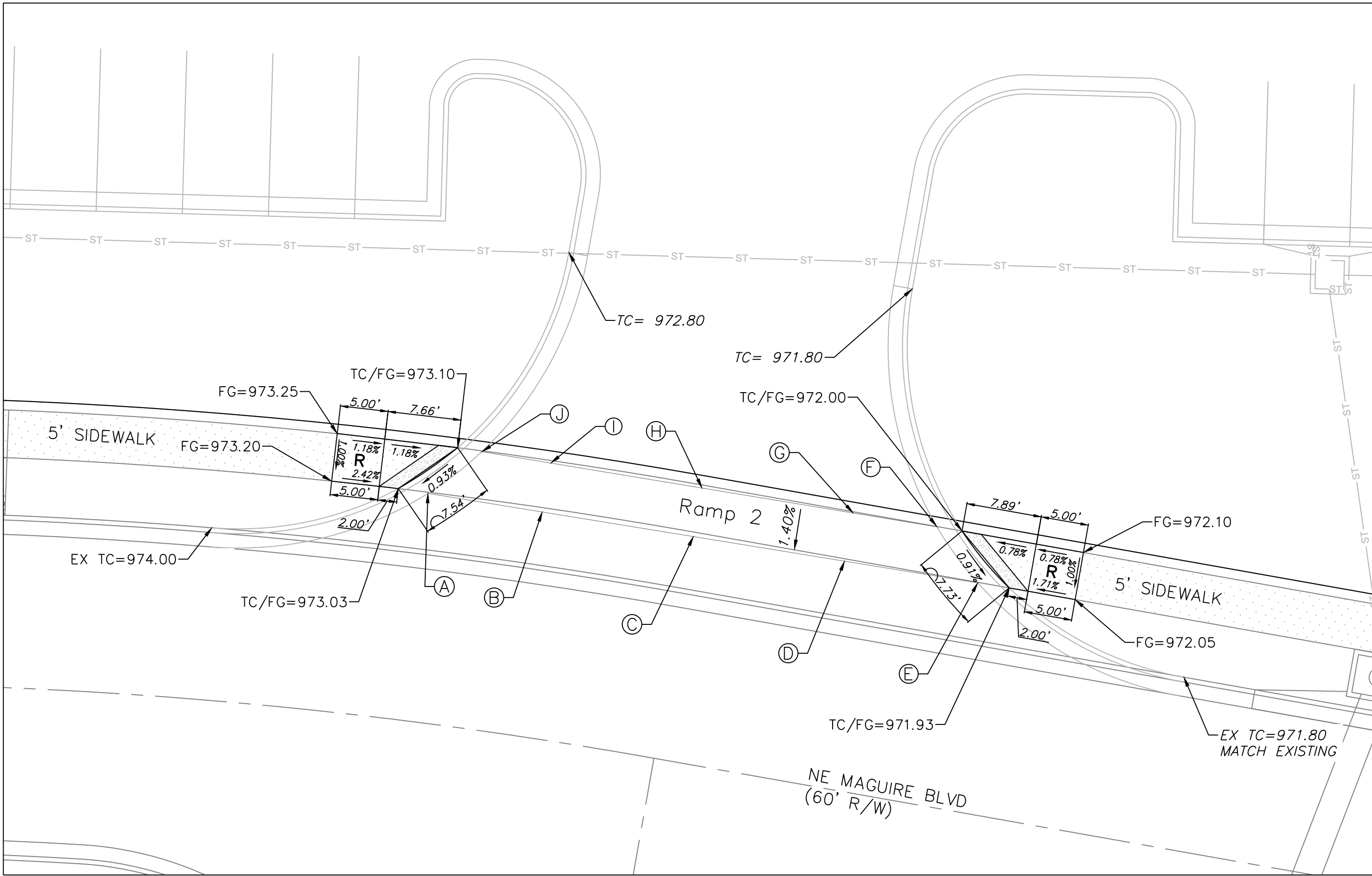
SIDEWALK AND INTERSECTION PLAN
SCALE: 1" = 10'



DETAIL 1



SIDEWALK AND INTERSECTION PLAN
SCALE: 1" = 10'



DETAIL 2

SPOT ELEVATION TABLE				
Spot	Ramp 1 Elevation	Ramp 2 Elevation		
A	967.43	973.03		
B	967.83	972.76		
C	968.23	972.48		
D	968.63	972.21		
E	969.03	971.93		
F	969.10	972.00		
G	968.70	972.28		
H	968.30	972.55		
I	967.90	972.83		
J	967.50	973.10		

Legend:

EX TC = Existing Top of Curb

EX FG = Existing Finished Grade

FG = Finished Grade

TC = Top of Curb

TC/FG = Top of Curb/Finished Grade

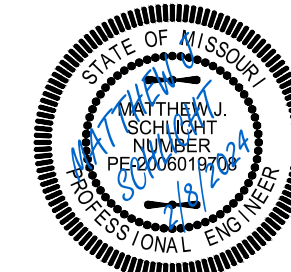
 Detectable Warning

Professional Registration
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Surveying 2005005119-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
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Nebraska
Engineering CA2821

Lakewood Business Park - Lot 46
Lee's Summit, Jackson County, Missouri

Project
Lakewood Business Center
Plat 5, LEMO
Issue Date
May 5, 2023

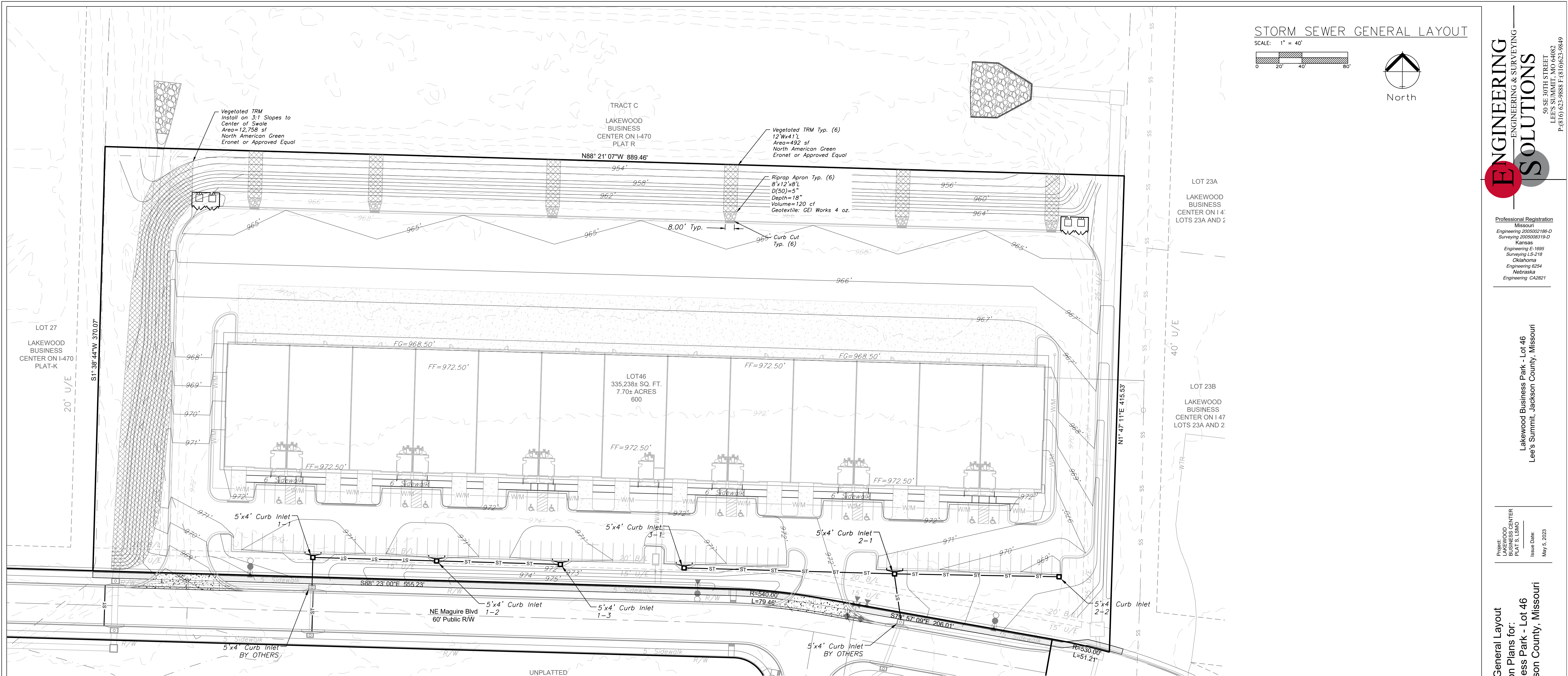
Sidewalk and Intersection Plan
Construction Plans for:
Lakewood Business Park - Lot 46
Lee's Summit, Jackson County, Missouri



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03/18/2024



EXAMPLE RIPRAP APRON CALCULATIONS

Field End Section #	CC TYP.
---------------------	---------

Q = 9.12 cfs
D = 2 ft
Tw = 0.8 ft
g = 32.2 ft/s²

D₅₀ = 2.24 inches

S = 0.33 ft/ft
n = 0.01
Qcap = 168.47 ft³/s
Q/Qcap = 0.05
d/D = 0.15
d = 0.30 ft
Vcap = 53.65 ft²/s
V/Vcap = 0.5168
V = 27.73 ft/s
Fr = 8.92
Flow = Supercritical

D' = 1.15 ft
yn = 0.30 ft
D₅₀ = 4.69 inches
Classify = 4.69 inches

Class 1
Apron Length = 4 * D
Apron Depth = 3.5 * D₅₀
Apron Width = 3 * D + (2/3) L

D₅₀ = riprap size, m(ft)
Q = design discharge, m³/s (ft³/s)
D = culvert diameter (circular), m(ft)
Tw = tailwater depth, m(ft), if unknown use 0.4 * D
g = acceleration due to gravity, 9.81 m/s² (32.2 ft/s²)
Subcritical Flow

S = pipe slope, m/(ft/ft)
n = manning's roughness coefficient, unitless
Qcap = full pipe capacity, m³/s (ft³/s)
Q/Qcap = design discharge/full pipe capacity, unitless
d/D = water depth/pipe diameter, unitless
d = depth of flow, m(ft)
Velocity Full m²/s (ft²/s)
V/Vcap = design velocity/full pipe velocity, unitless
V = velocity of flow segment, m²/s (ft²/s)
Fr > 1 Supercritical, Fr = 1 Critical, Fr < 1 Subcritical
If flow is Supercritical adjust culvert diameter

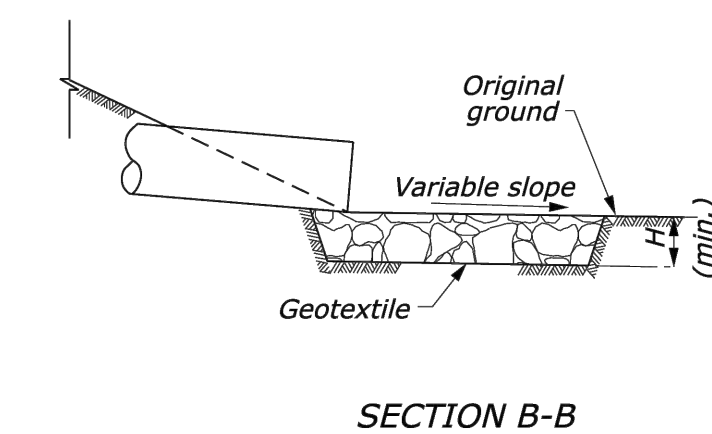
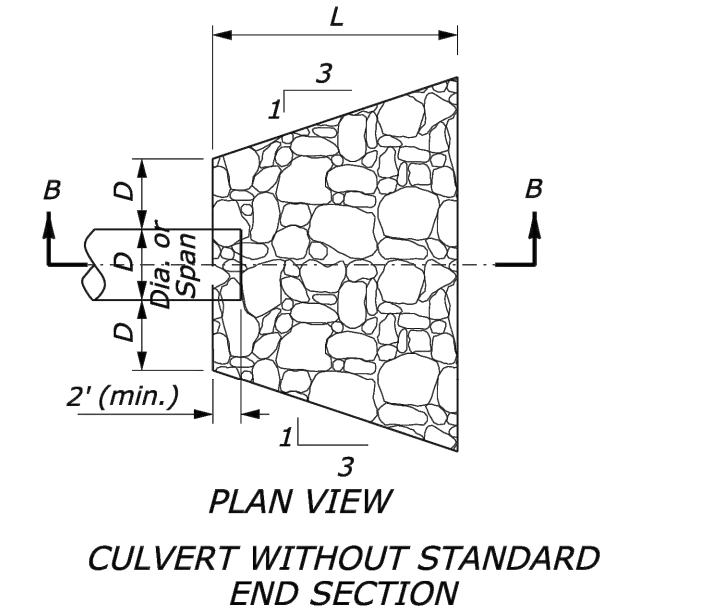
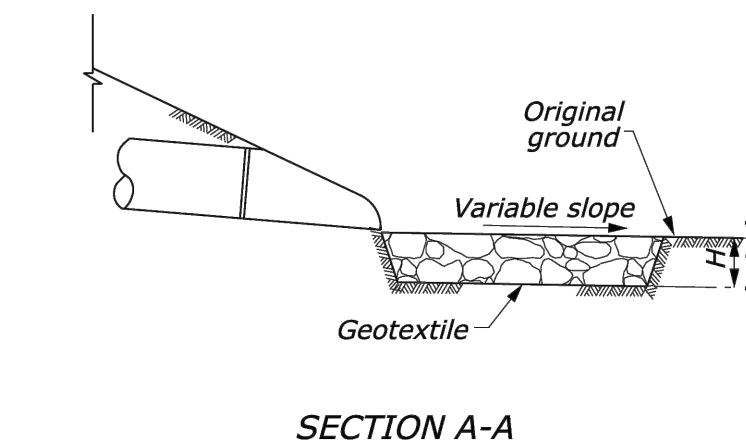
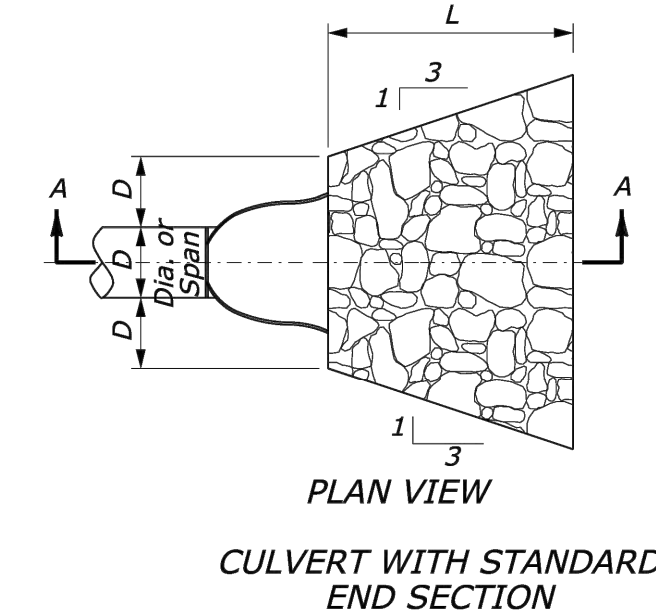
D' = culvert diameter adjustment, m(ft)
yn = normal (supercritical) depth in culvert, m(ft)

RipRap Apron Area (ac.)	Q100 (cfs)	Dia. (ft)	RipRap Apron					
			Class	D ₅₀ (in)	Length (ft)	Depth (in)	Width (ft)	
Typ.	0.82	9.12	2	1	5	8	18	12

- NOTES:
1. ALL RIPRAP APRONS SHALL CONFORM TO THE STANDARD CONFIGURATION SHOWN IN THE STANDARD DETAIL ABOVE UNLESS OTHERWISE NOTED. PLAN VIEW DIMENSIONS SHOWN SHALL BE MET OR EXCEEDED INCLUDING AREAS OF LONGITUDINAL AND/OR TRANSVERSE SLOPE.
 2. DIMENSIONS FOR EACH RIPRAP APRON AND ASSOCIATED RIPRAP ARE DETAILED IN THE PLAN SET.
 3. GEOTEXTILE SHALL BE "GEI WORKS 4 OUNCE" NON-WOVEN FILTER FABRIC DESIGNED FOR FILTRATION, STABILIZATION AND SEPARATION WRAPPED CONTINUOUSLY ALONG THE SIDEWALLS AND BOTTOM OF THE PREPARED AREA OR SLOPE, UNLESS NOTED OTHERWISE IN THE PLAN SET.

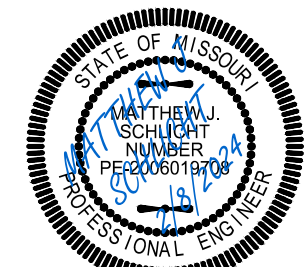
- WATER FLOW = 120 GPM/SF
- GRAB STRENGTH (MIN) = 400 N
- PUNCTURE STRENGTH (MIN) = 178 N
- TRAPEZOIDAL TEAR (MIN) = 133 N
- ELONGATION (MIN) = 15%

STANDARD RIPRAP APRON DETAIL



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Storm Sewer General Layout
Construction Plans for:
Lakewood Business Park - Lot 46
Lee's Summit, Jackson County, Missouri



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MO PE 2006019708
KS PE 19071
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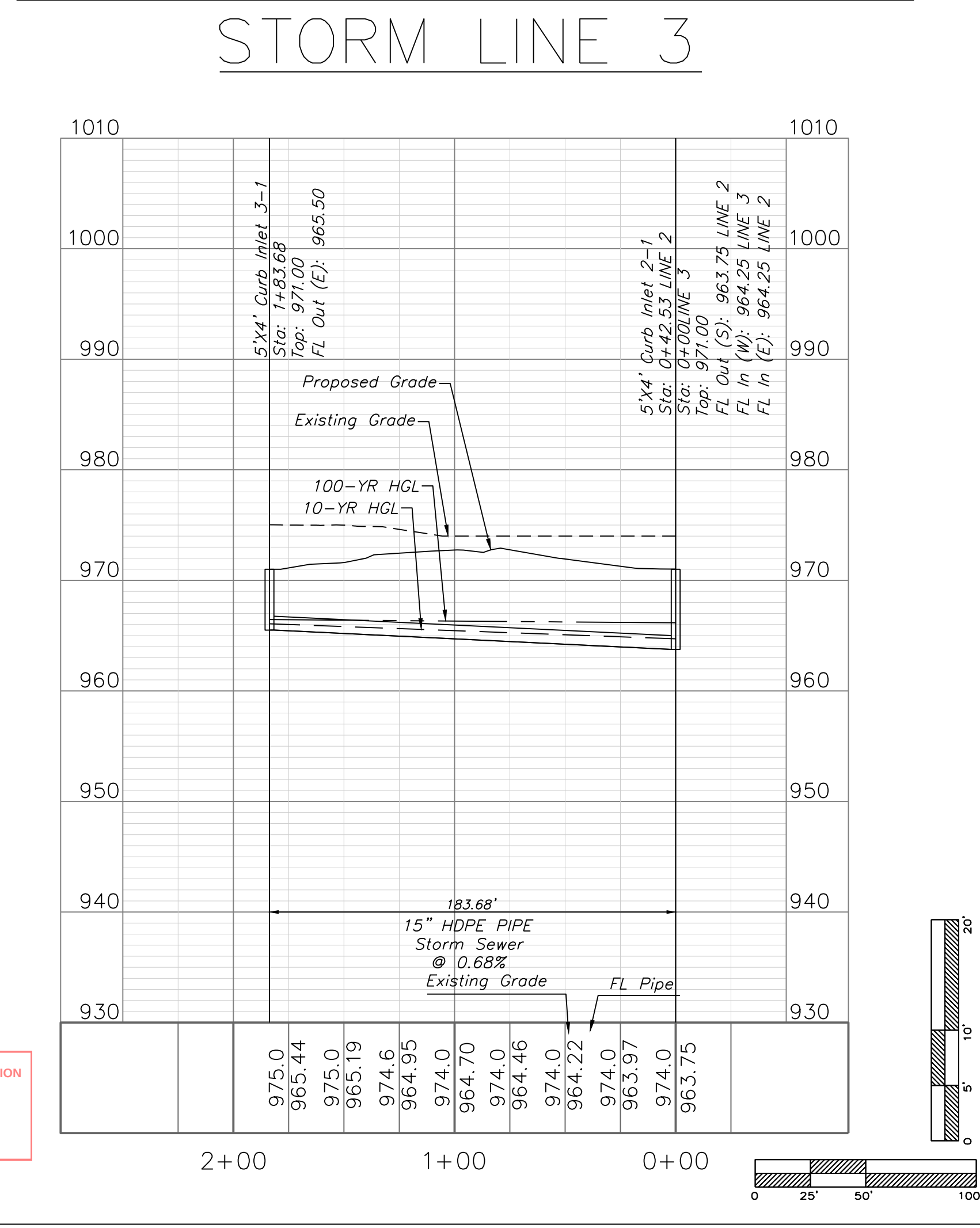
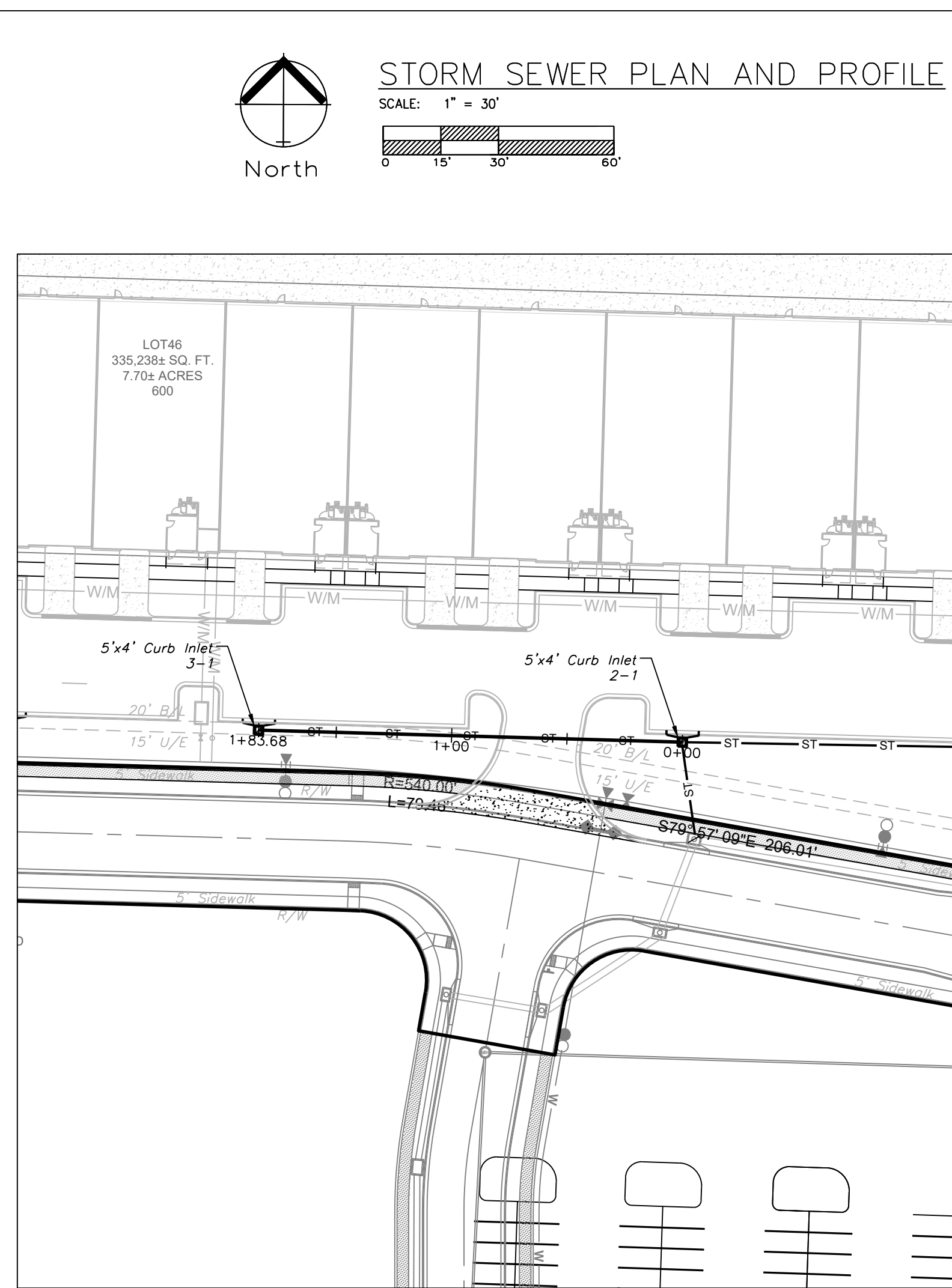
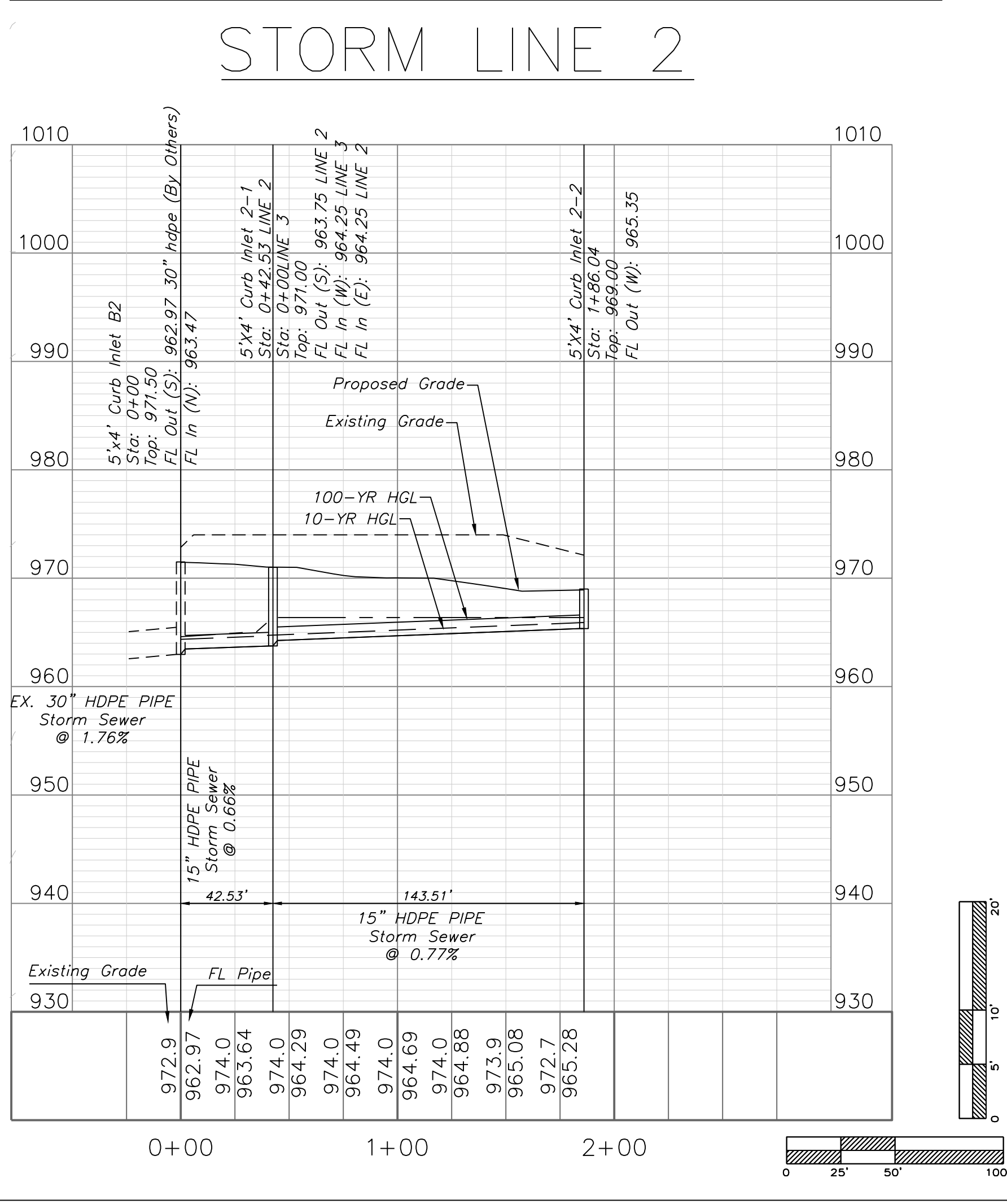
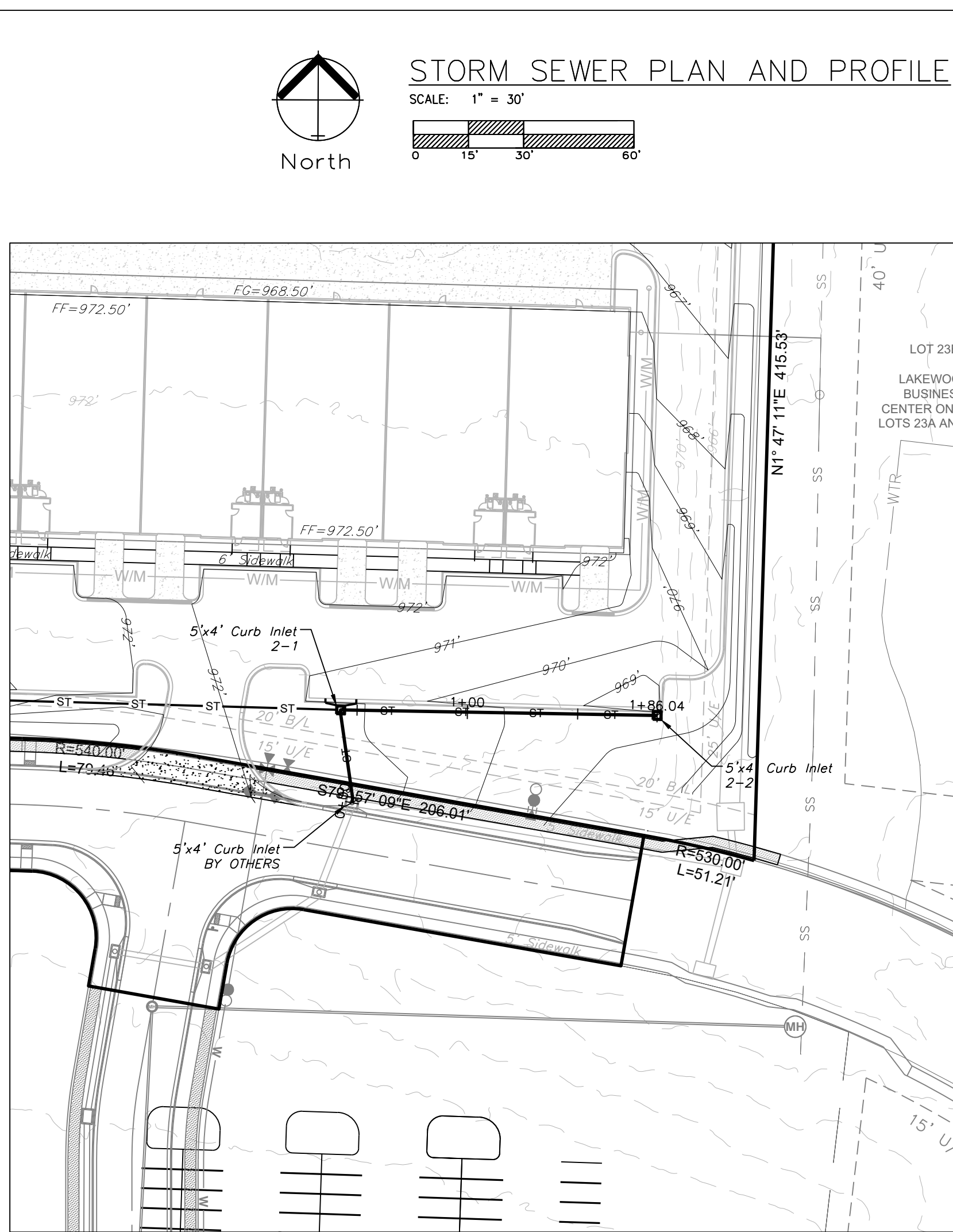
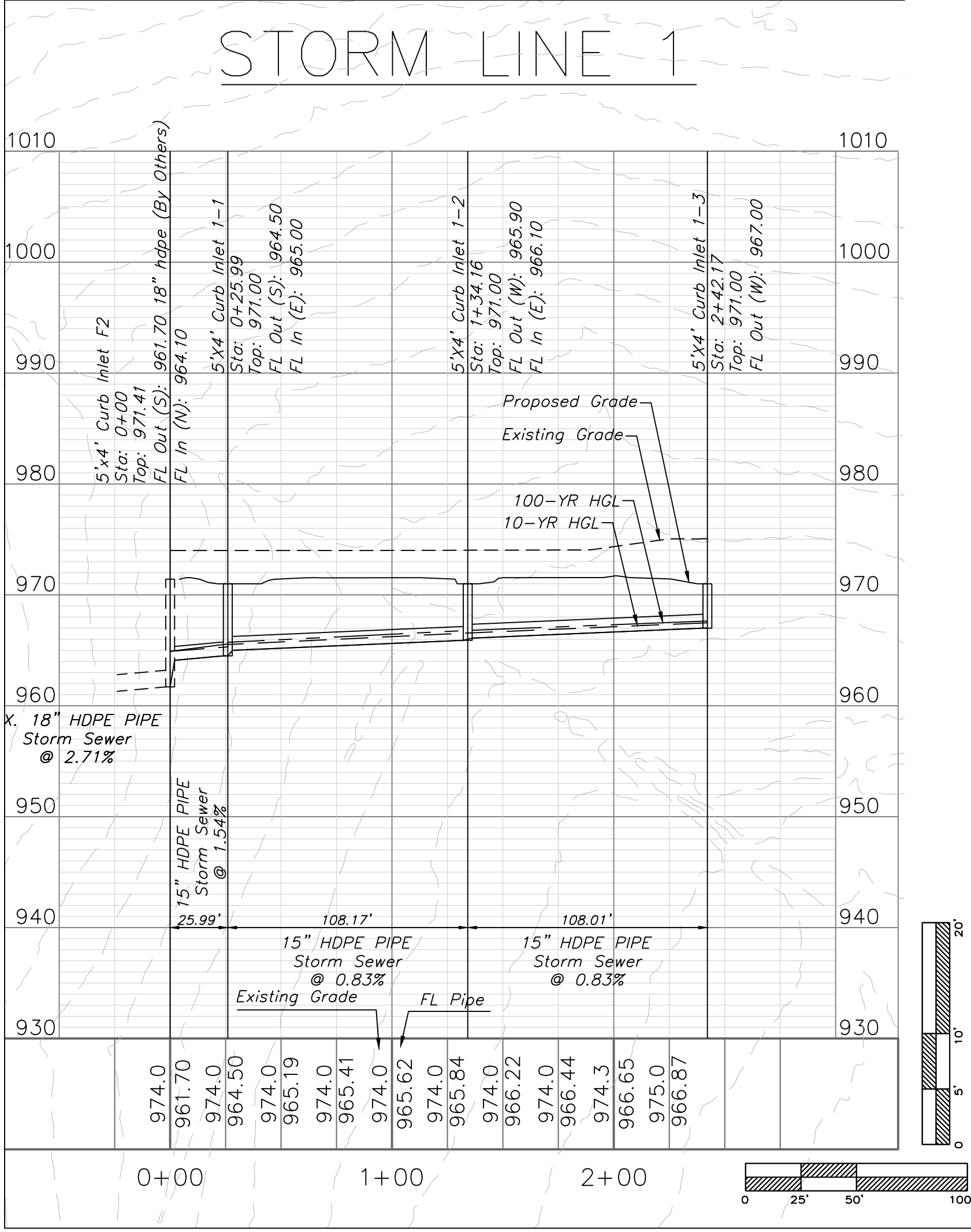
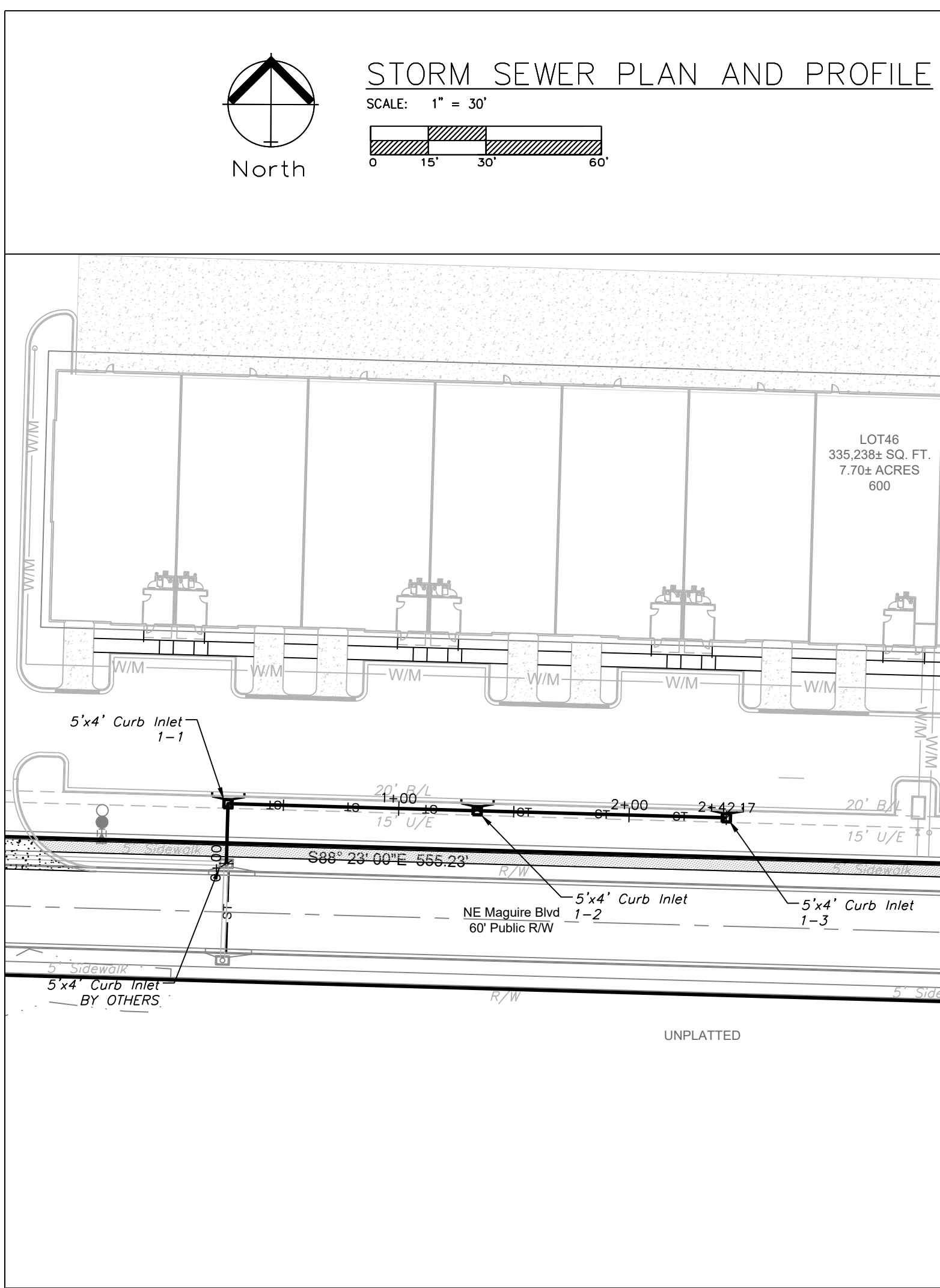
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Lakewood Business Park - Lot 46
Lee's Summit, Jackson County, Missouri

Project: LAKEWOOD
BUSINESS CENTER
PLAT 5, L&MO
Issue Date:
May 5, 2023

Professional Registration
Missouri
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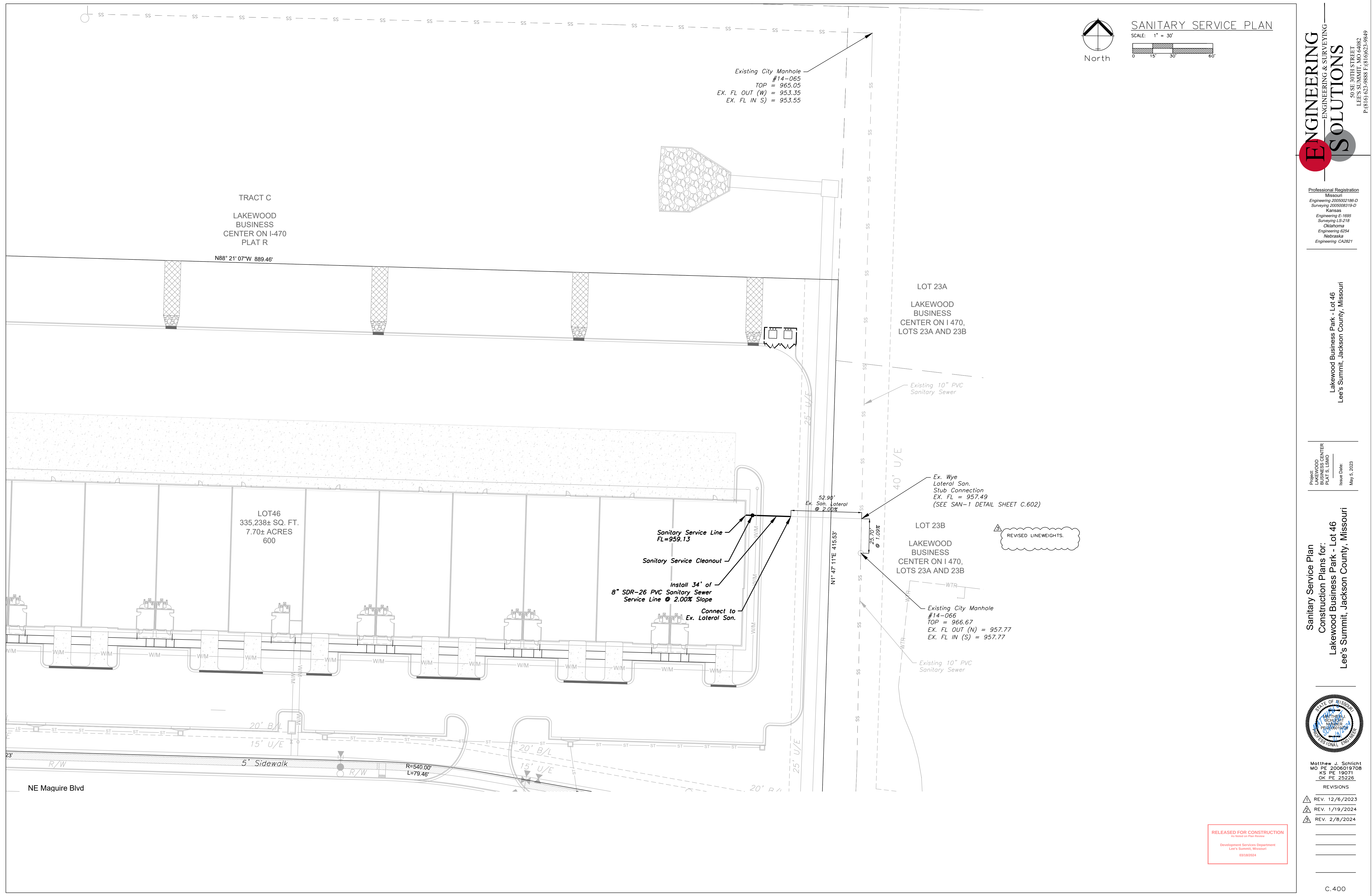
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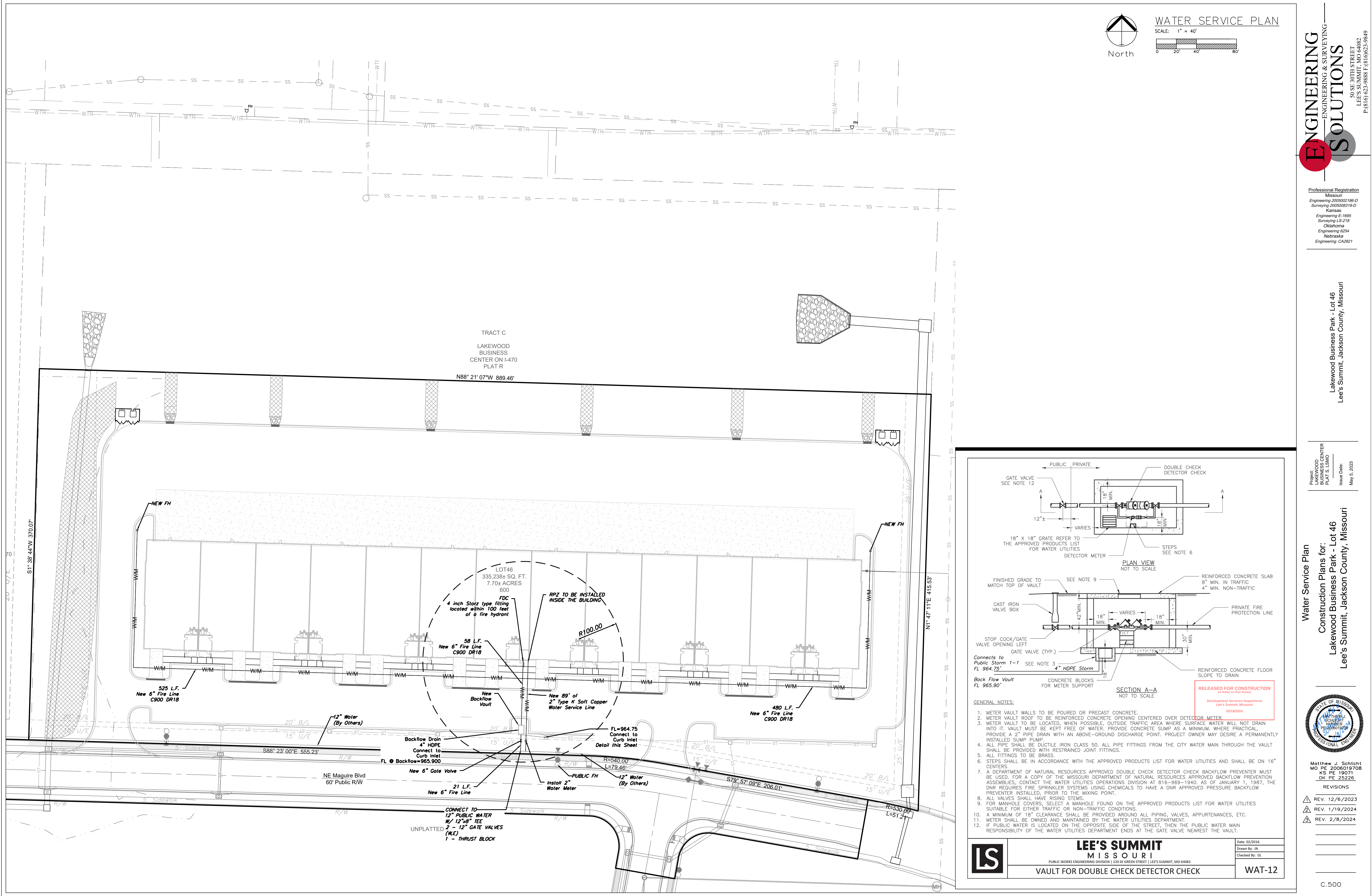
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Development Services Department

Lee's Summit, Missouri

03/18/2024





WATER SERVICE PLAN
SCALE: 1" = 40'
0 20' 40' 80'

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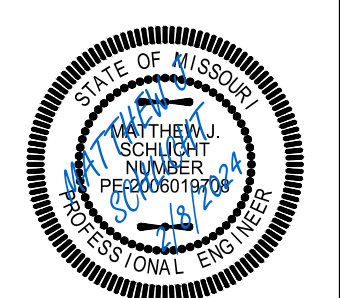
Professional Registration
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Surveying 2005005189-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
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Engineering CA2821

Project: LAKEWOOD BUSINESS CENTER
PLAT 5, L&MO
Issue Date: May 5, 2023

Water Service Plan
Construction Plans for:
Lakewood Business Park - Lot 46
Lee's Summit, Jackson County, Missouri

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 252526

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PLAN VIEW
NOT TO SCALE

18" X 18" CRATE REFER TO THE APPROVED PRODUCTS LIST FOR WATER UTILITIES
DETECTOR METER
STEPS SEE NOTE 6
DOUBLE CHECK DETECTOR CHECK
GATE VALVE SEE NOTE 12
12"±
VARIES
18" MIN.
10" MIN.
FINISHED GRADE TO MATCH TOP OF VAULT
CAST IRON VALVE BOX
STOP COCK/GATE VALVE OPENING LEFT
GATE VALVE (TYP.)
CONNECTS TO PUBLIC STORM 1-1 SEE NOTE 3
FL 964.75'
4" HDPE Storm
REINFORCED CONCRETE SLAB 8" MIN. IN TRAFFIC 4" MIN. NON-TRAFFIC
PRIVATE FIRE PROTECTION LINE
REINFORCED CONCRETE FLOOR SLOPE TO DRAIN
CONCRETE BLOCKS FOR METER SUPPORT
SECTION A-A NOT TO SCALE

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02/28/2024

GENERAL NOTES:

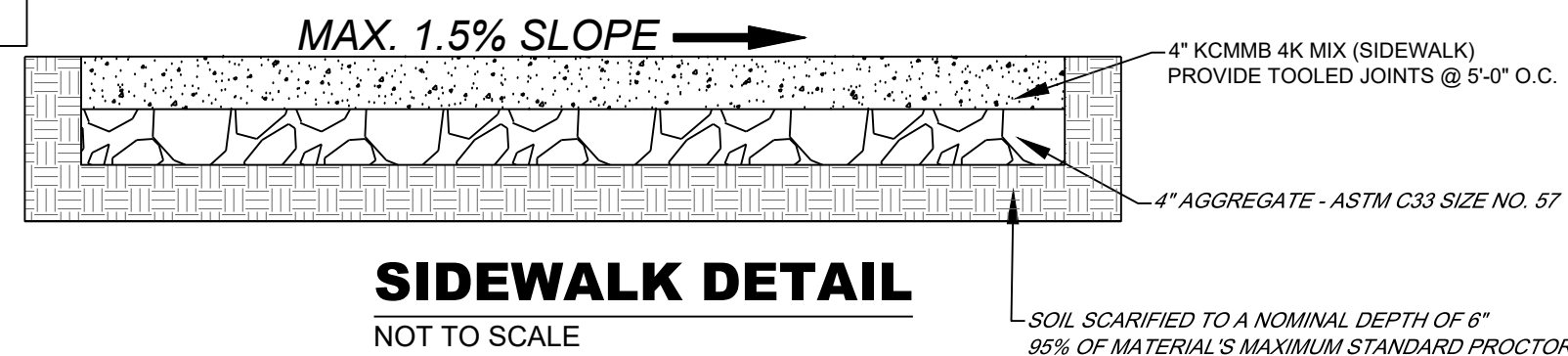
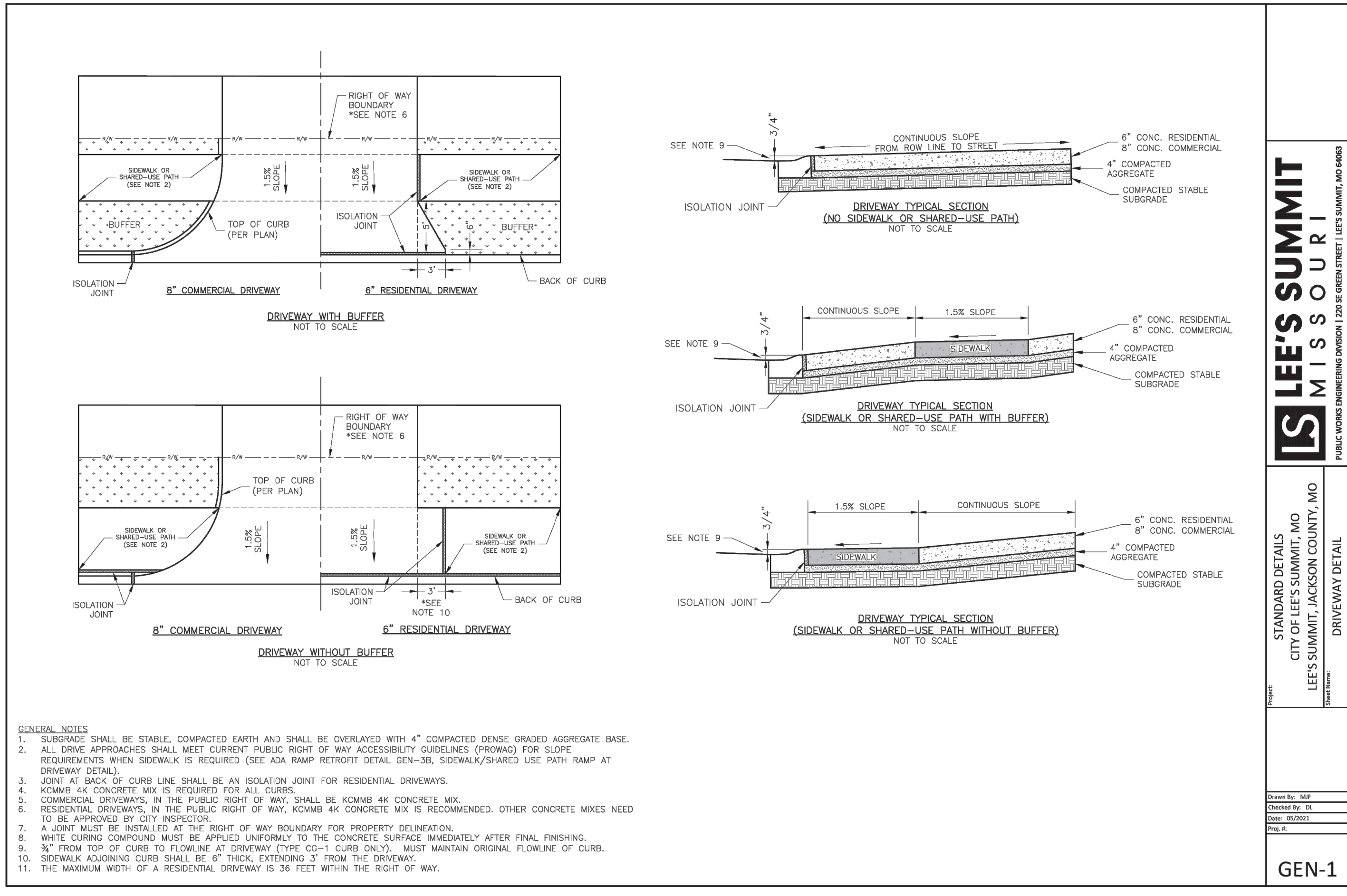
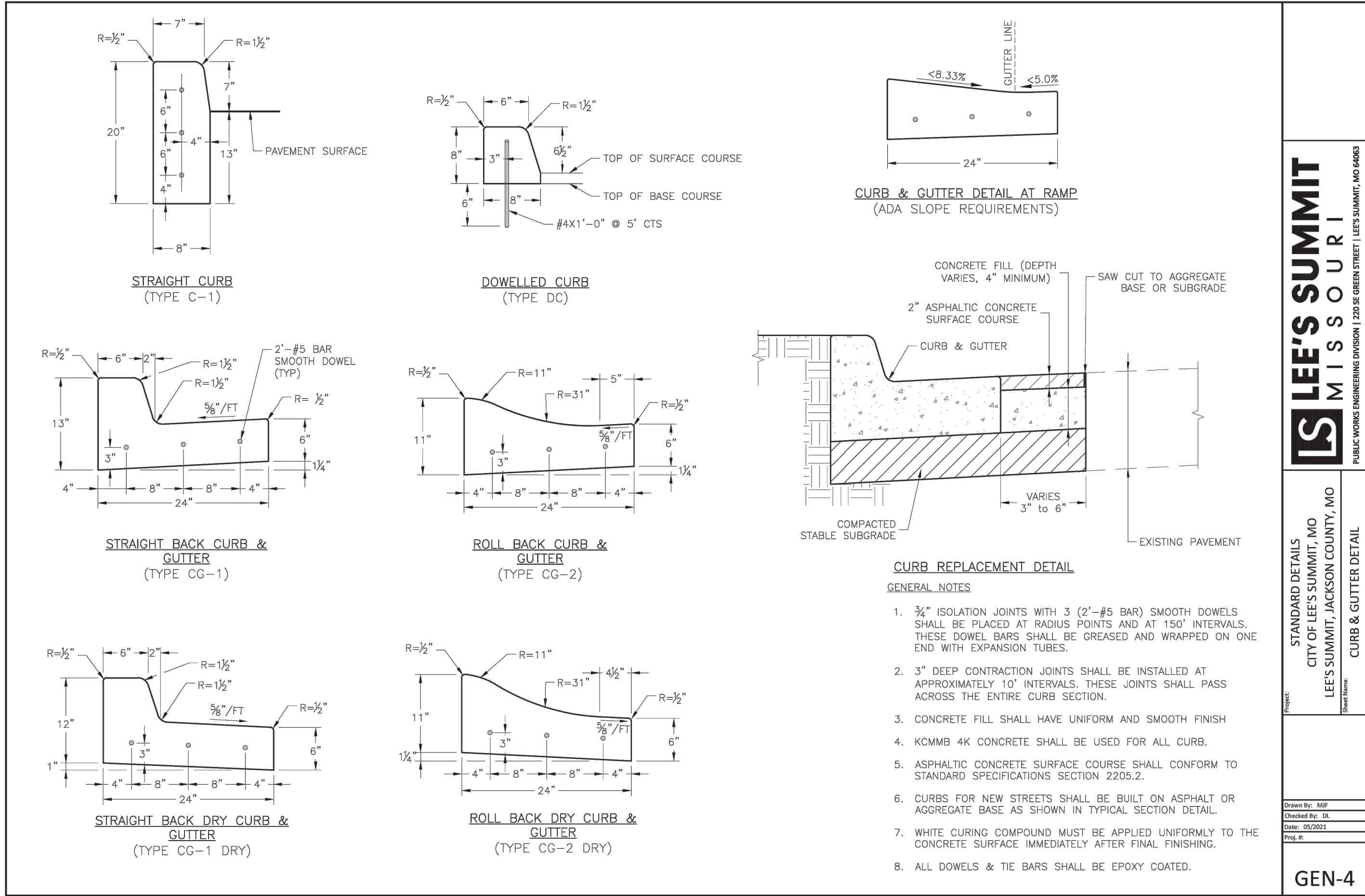
- METER VAULT WALLS TO BE POURED OR PRECAST CONCRETE.
- METER VAULT ROOF TO BE REINFORCED CONCRETE OPENING CENTERED OVER DETECTOR METER.
- METER VAULT TO BE LOCATED, WHEN POSSIBLE, OUTSIDE TRAFFIC AREA WHERE SURFACE WATER WILL NOT DRAIN INTO IT. VAULT MUST BE KEPT FREE OF WATER. PROVIDE CONCRETE SUMP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

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 1202 SE GREEN STREET | LEE'S SUMMIT, MO 64083

VAULT FOR DOUBLE CHECK DETECTOR CHECK

Date: 02/20/16
Drawn By: JN
Checked By: DL

WAT-12



GENERAL NOTE:

1 - ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.

RELEASED FOR CONSTRUCTION

As Noted on Plan Review

Development Services Department
Lee's Summit, Missouri
03/18/2024

REVISIONS

REV. 12/6/2023

REV. 1/19/2024

REV. 2/8/2024

C. 600

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Surveying 2005005189-D

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Nebraska
Engineering CA2821

Standard Details

Construction Plans for:

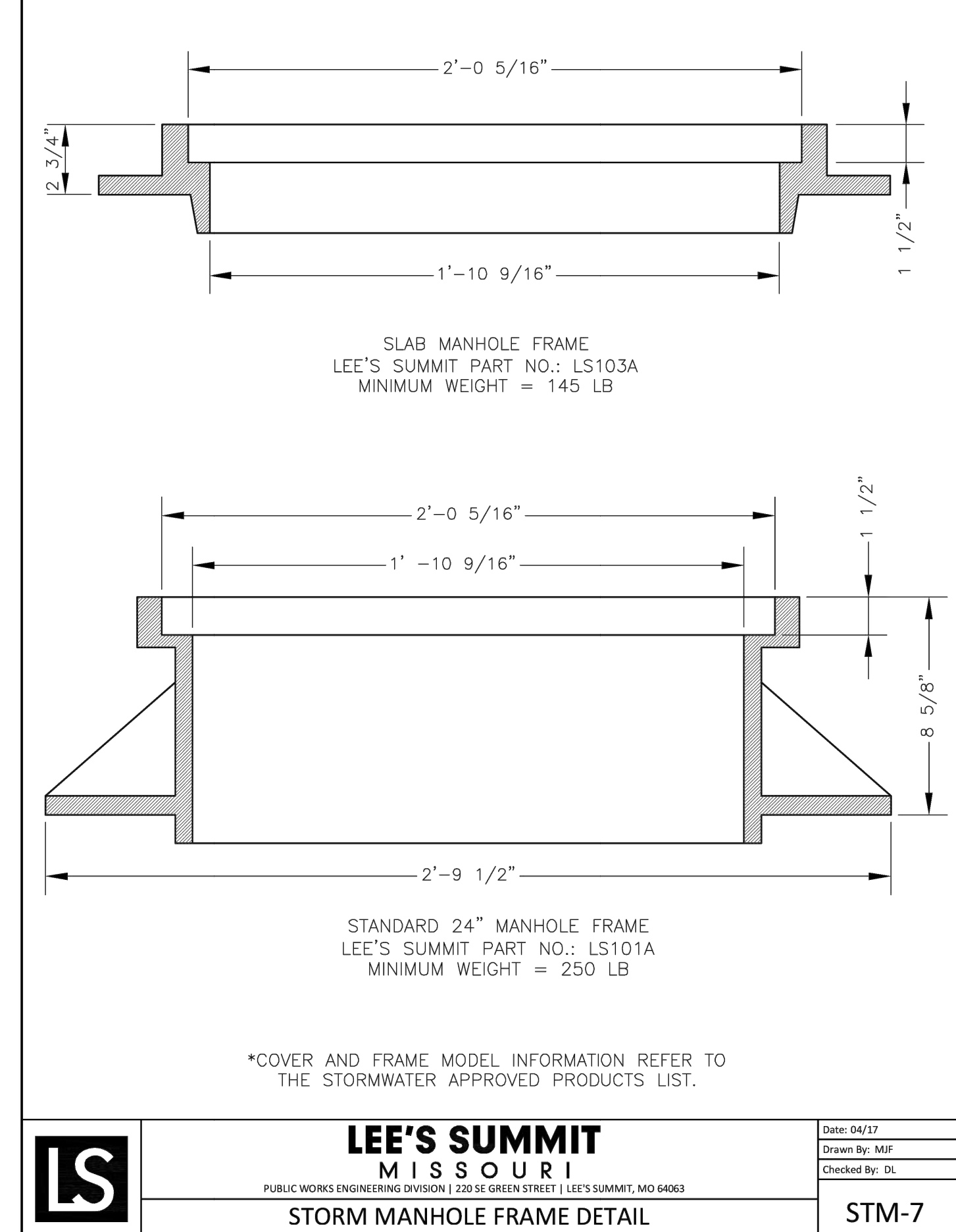
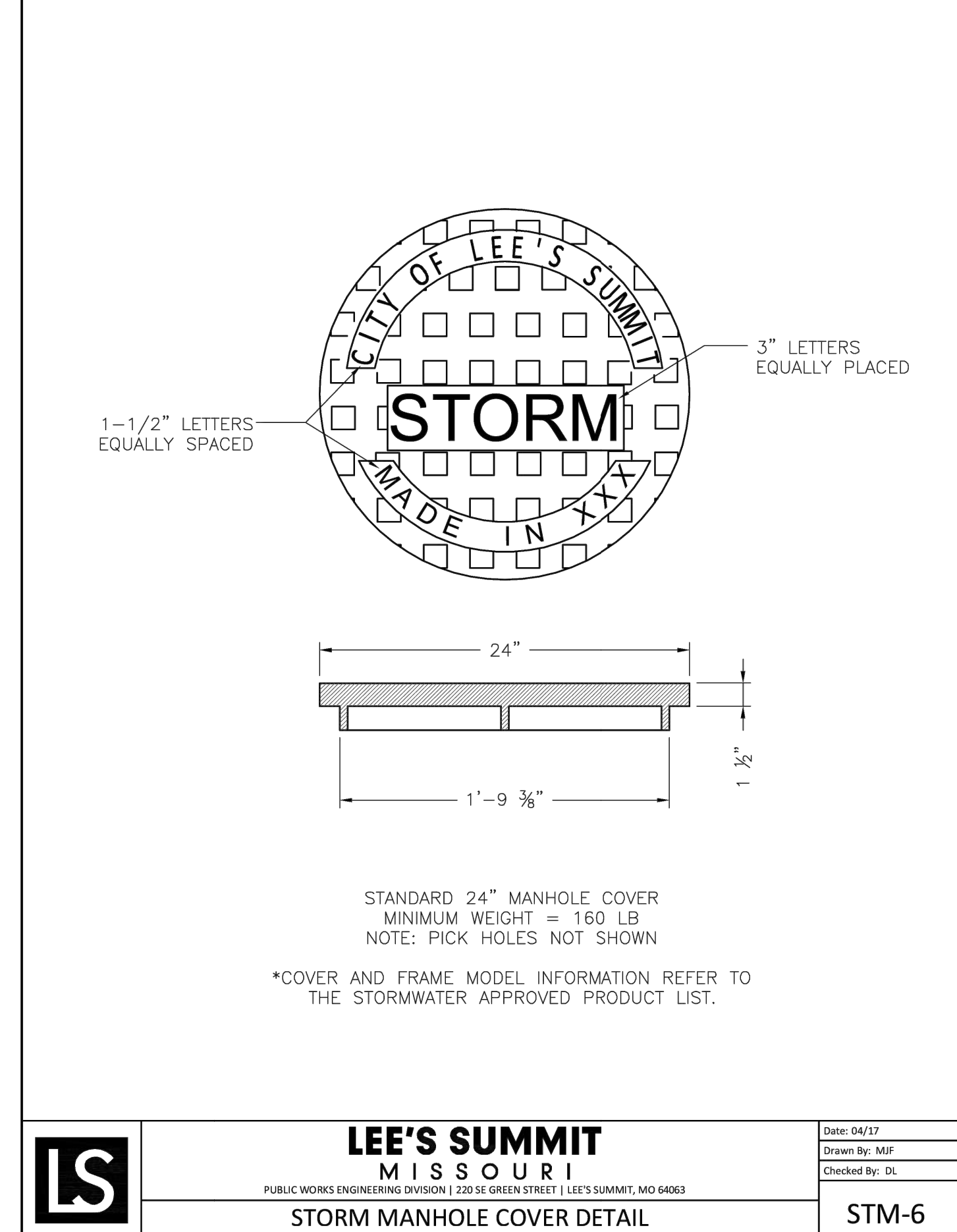
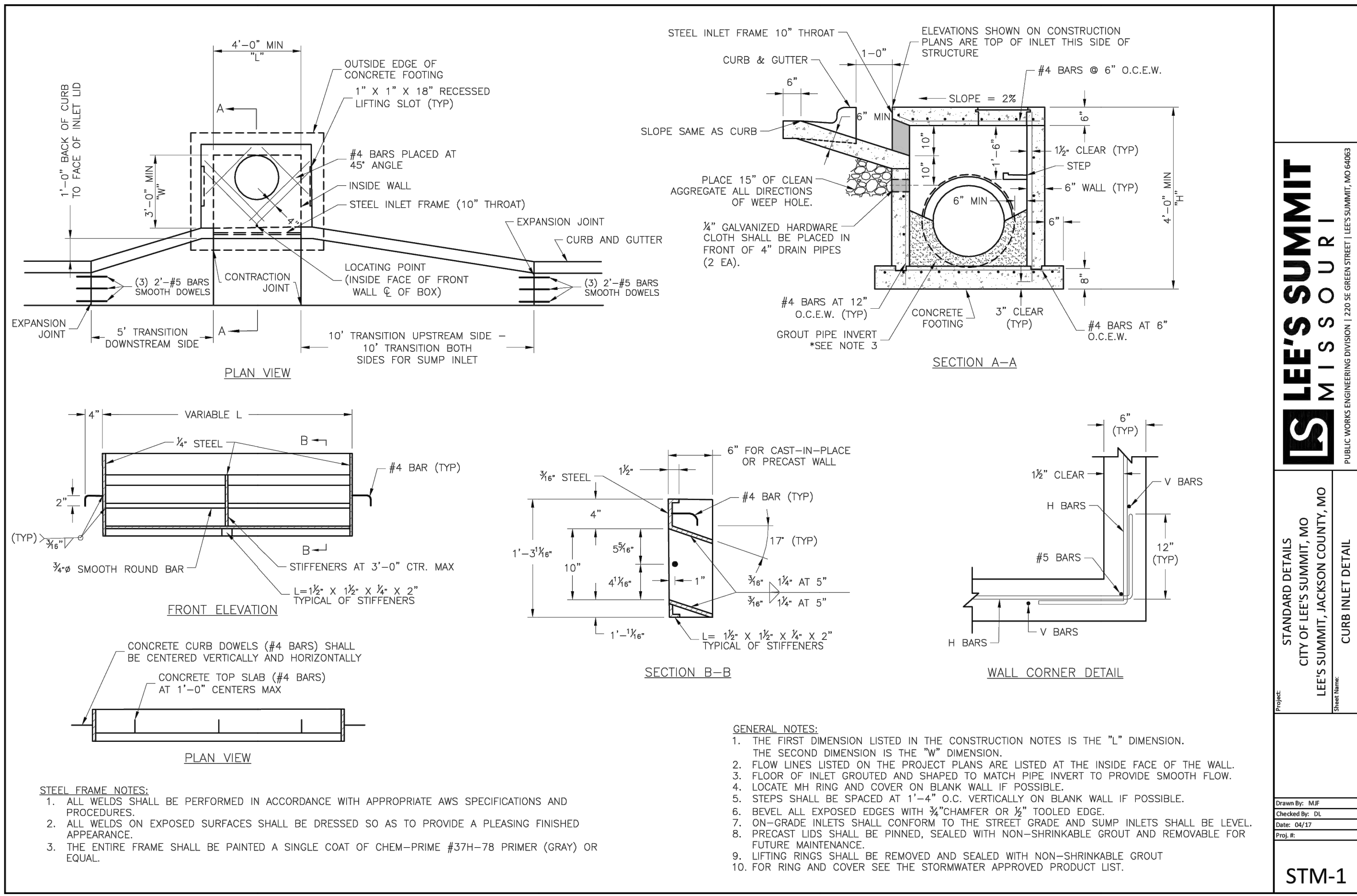
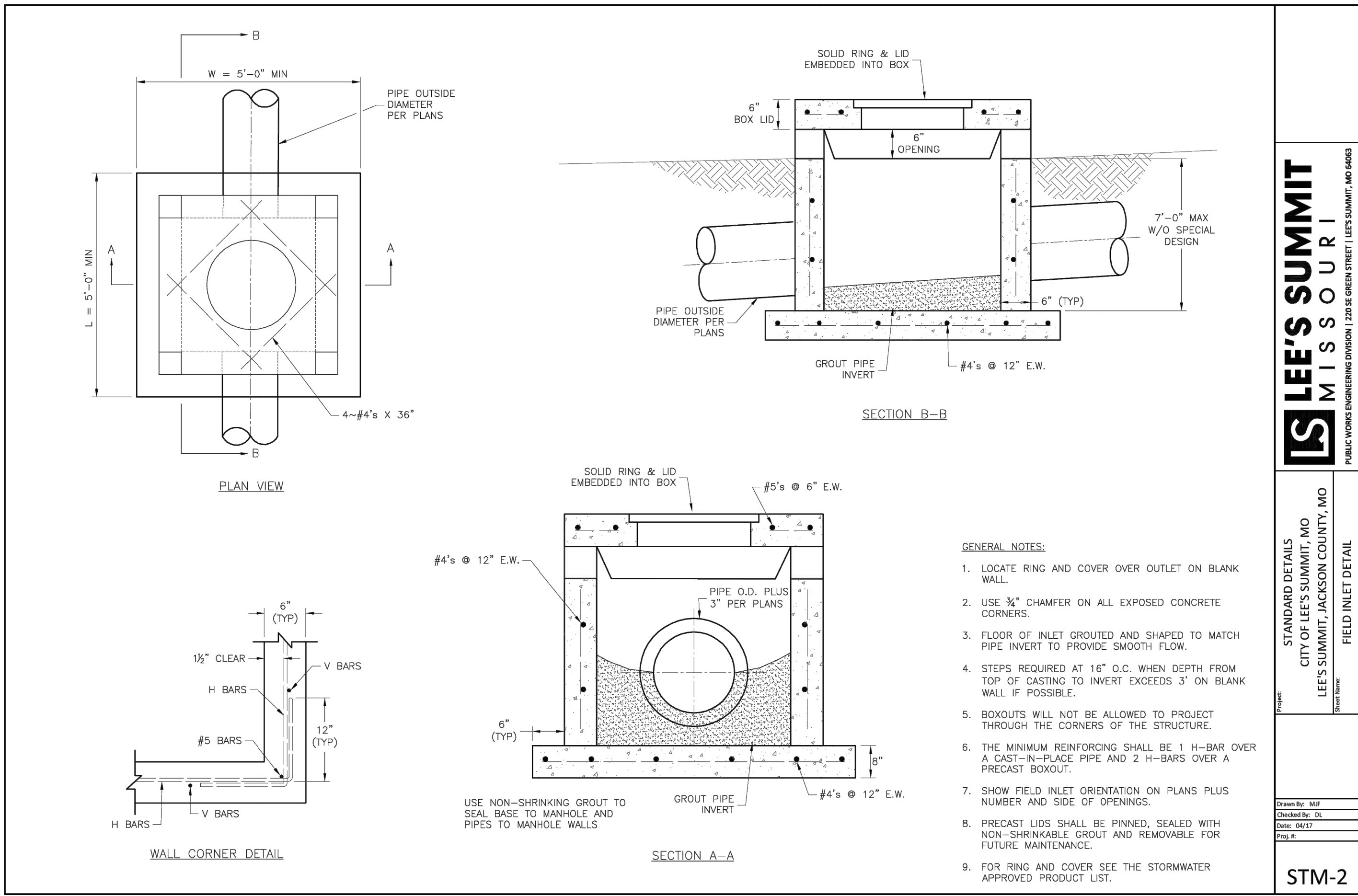
Lakewood Business Park - Lot 46

Lee's Summit, Jackson County, Missouri

Project: LAKWOOD BUSINESS CENTER PLAT 5, LEMO

Issue Date: May 5, 2023

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 255226

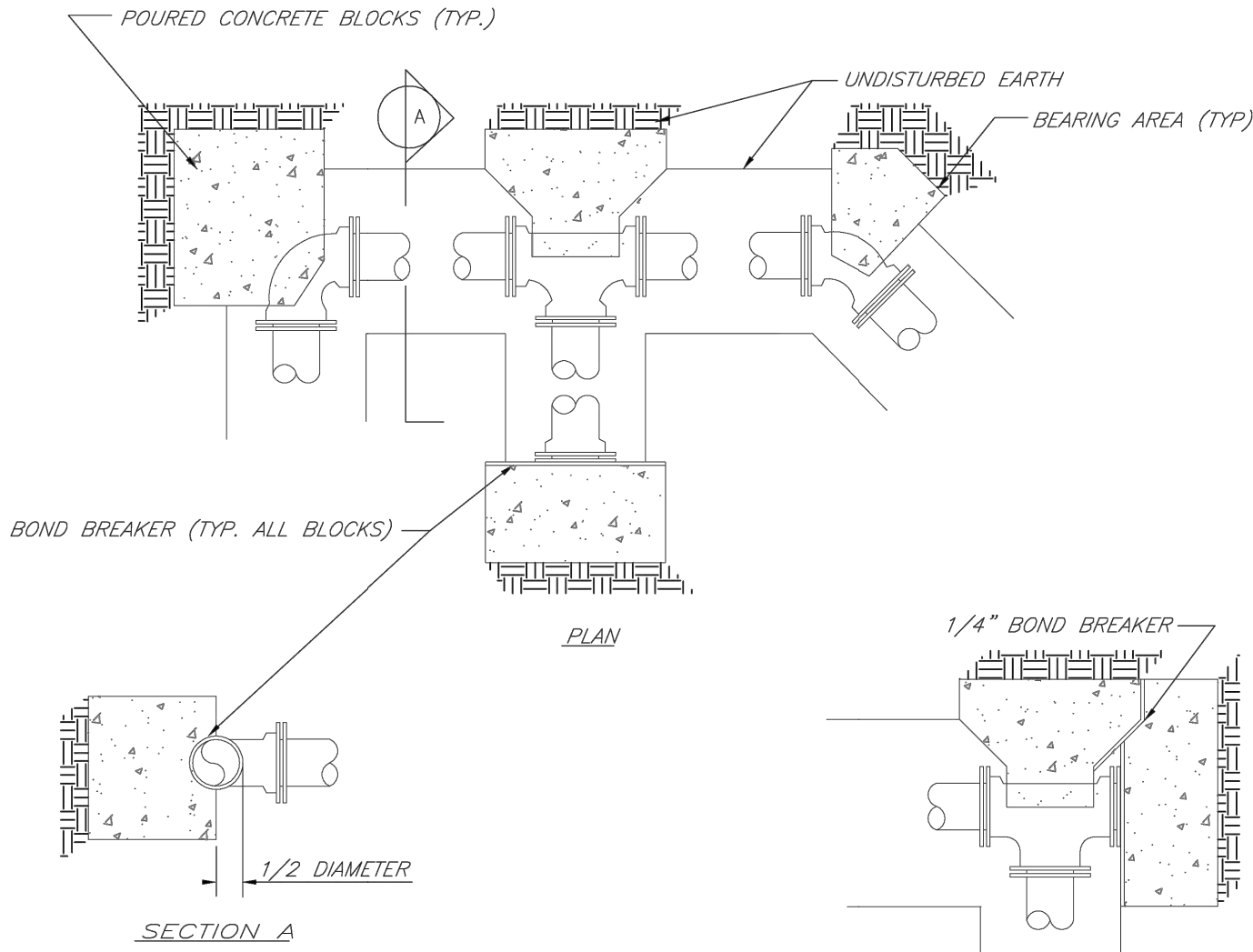


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Lee's Summit, Missouri
03/18/2024

REQUIRED CONCRETE BEARING AREA (SQUARE FEET - SF)					
NOM. DIA. (INCHES)	TEE, PLUG	90° BEND	45° BEND	22.5° BEND	11.25° BEND
6	4.7	6.7	4.0	4.0	4.0
8	8.4	11.8	6.4	4.0	4.0
10	13.1	18.5	10.0	5.1	4.0
12	18.8	26.7	14.4	7.4	4.0
14	25.7	36.3	19.6	10.0	5.0
16	33.5	47.4	25.6	13.1	6.6
18	42.4	REST. JT.	32.5	16.5	8.3
20	REST. JT.	REST. JT.	40.1	20.4	10.3
24	REST. JT.	REST. JT.	REST. JT.	29.4	14.8

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



**LEE'S SUMMIT
MISSOURI**

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

HORIZONTAL THRUST BLOCKS

Date: 02/13

Drawn By: JN

Checked By: DL

FILE: WAT-1

Rev: 1/14

Rev:



**LEE'S SUMMIT
MISSOURI**

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

SERVICE CONNECTION WITH METER WELL

Date: 06/2015

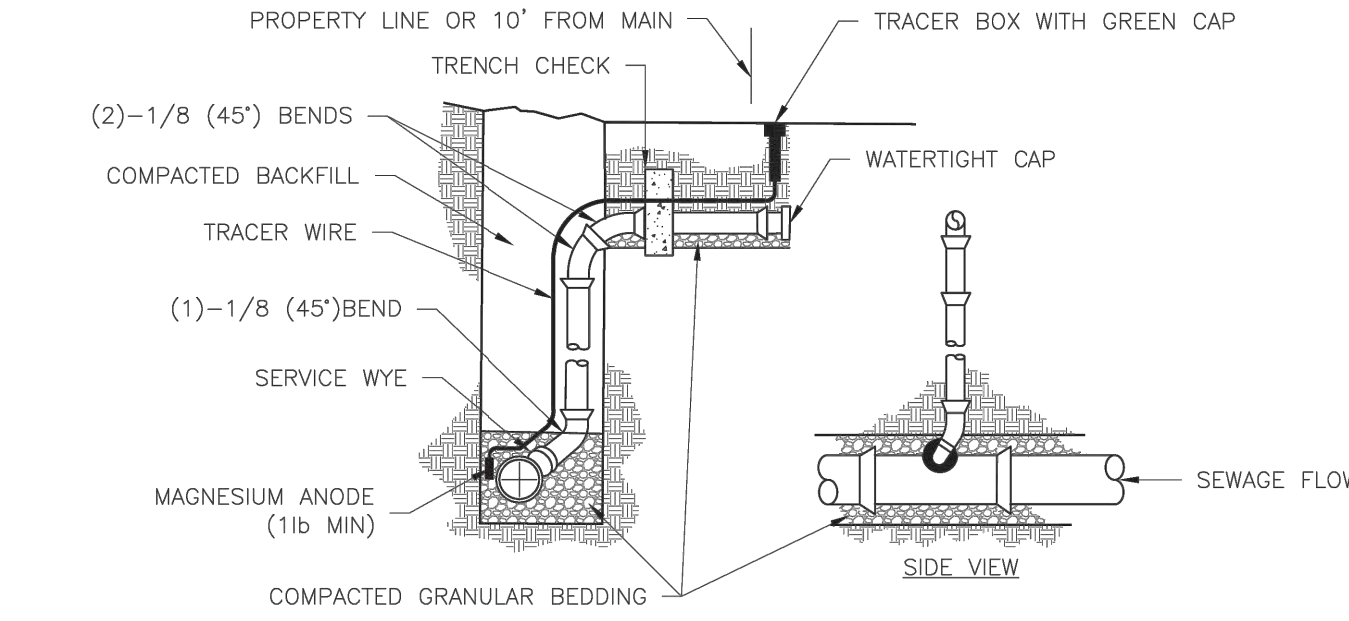
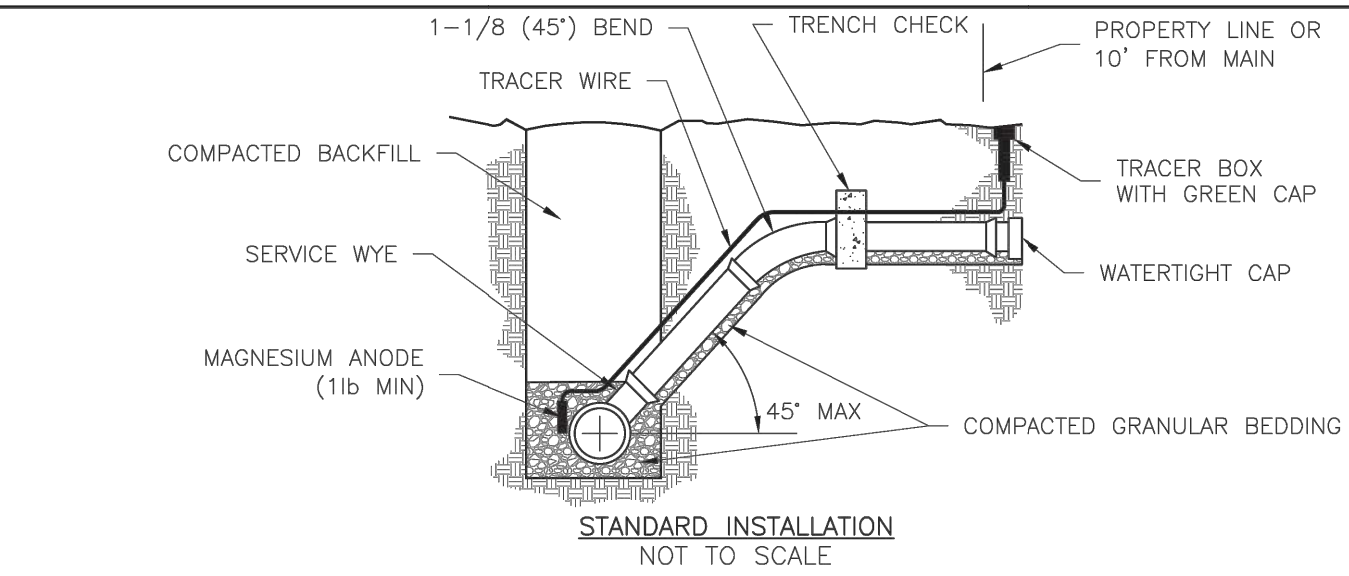
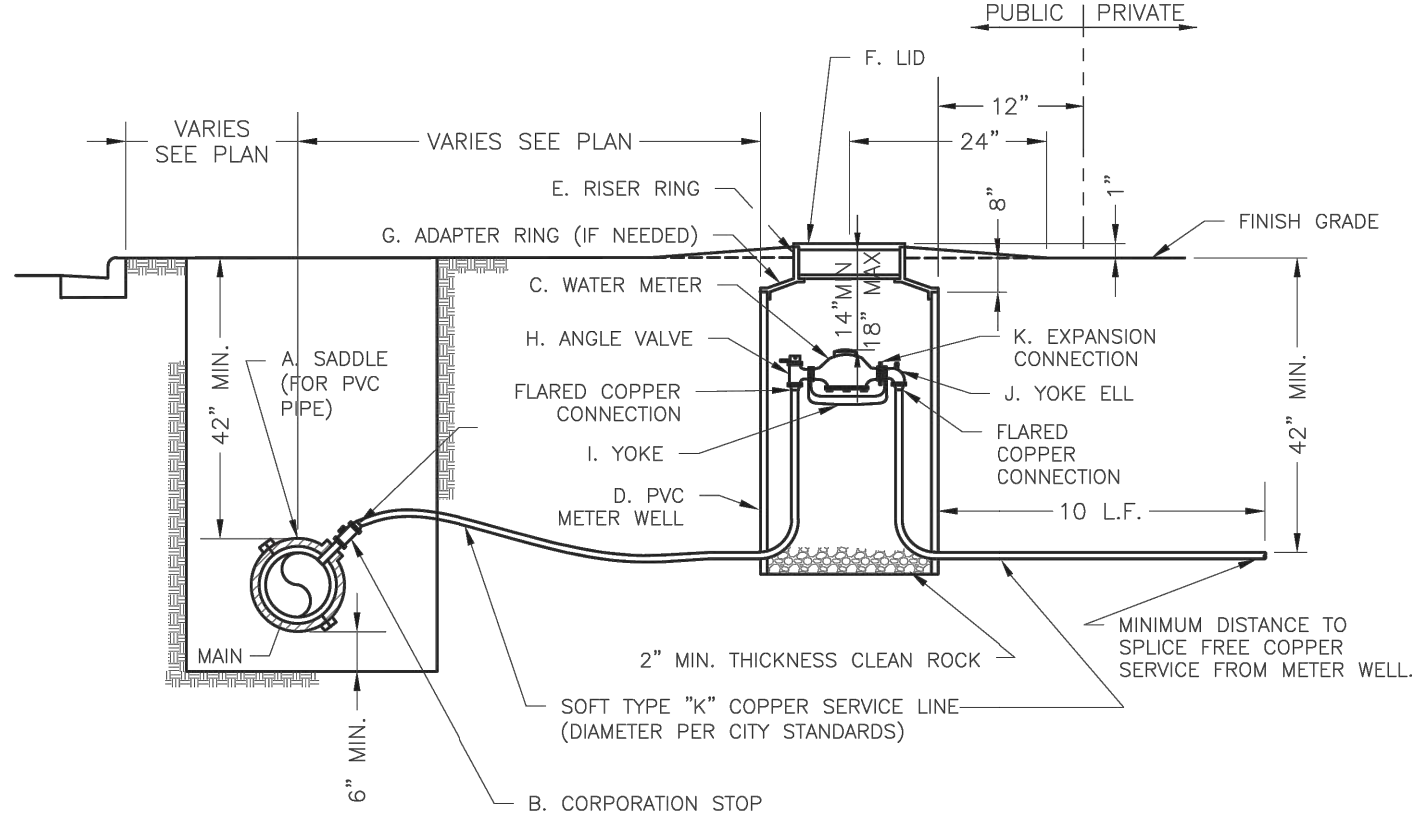
Drawn By: JN

Checked By: DL

WAT-11

NOTES:

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



NOTES:

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



**LEE'S SUMMIT
MISSOURI**

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

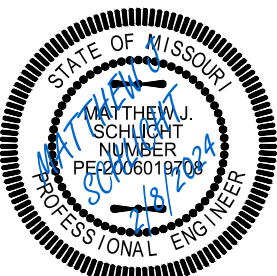
SANITARY SEWER STUB DETAIL

Date: 12/2015

Drawn By: JN

Checked By: DL

SAN-1



Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25526

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| REV. 2/8/2024 | |

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Lee's Summit, Missouri
03/18/2024

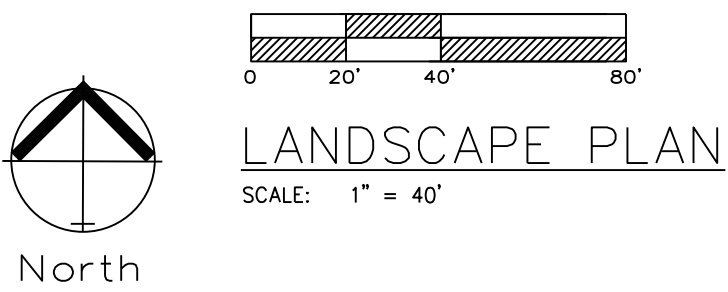
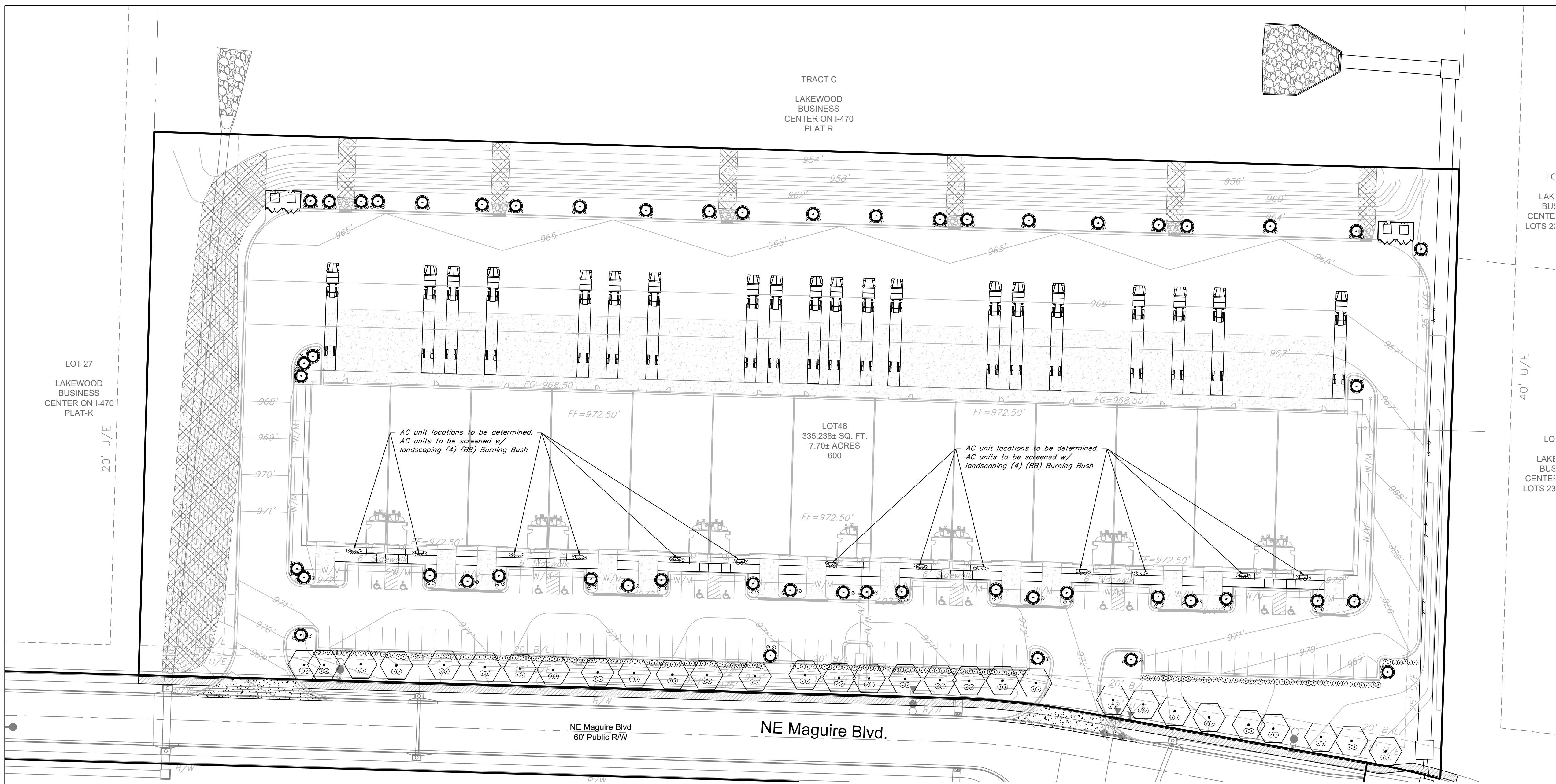
Standard Details
Construction Plans for:
Lakewood Business Park - Lot 46
Lee's Summit, Jackson County, Missouri

Project:
Lakewood Business Center
Plat 5, L&MO
Issue Date:
May 5, 2023

Lakewood Business Park - Lot 46
Lee's Summit, Jackson County, Missouri

Professional Registration
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Surveying 2005005119-D
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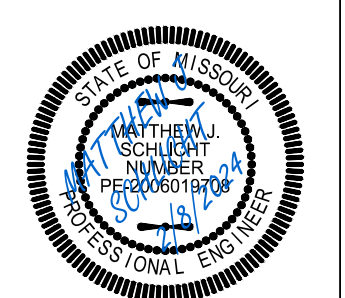
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Lakewood Business Park - Lot 46
Lee's Summit, Jackson County, Missouri

Project: LAKEWOOD BUSINESS CENTER
PLAT 5, LEMO
Issue Date: May 5, 2023

LANDSCAPE PLAN
Construction Plans for:
Lakewood Business Park - Lot 46
Lee's Summit, Jackson County, Missouri



Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25526

REVISIONS

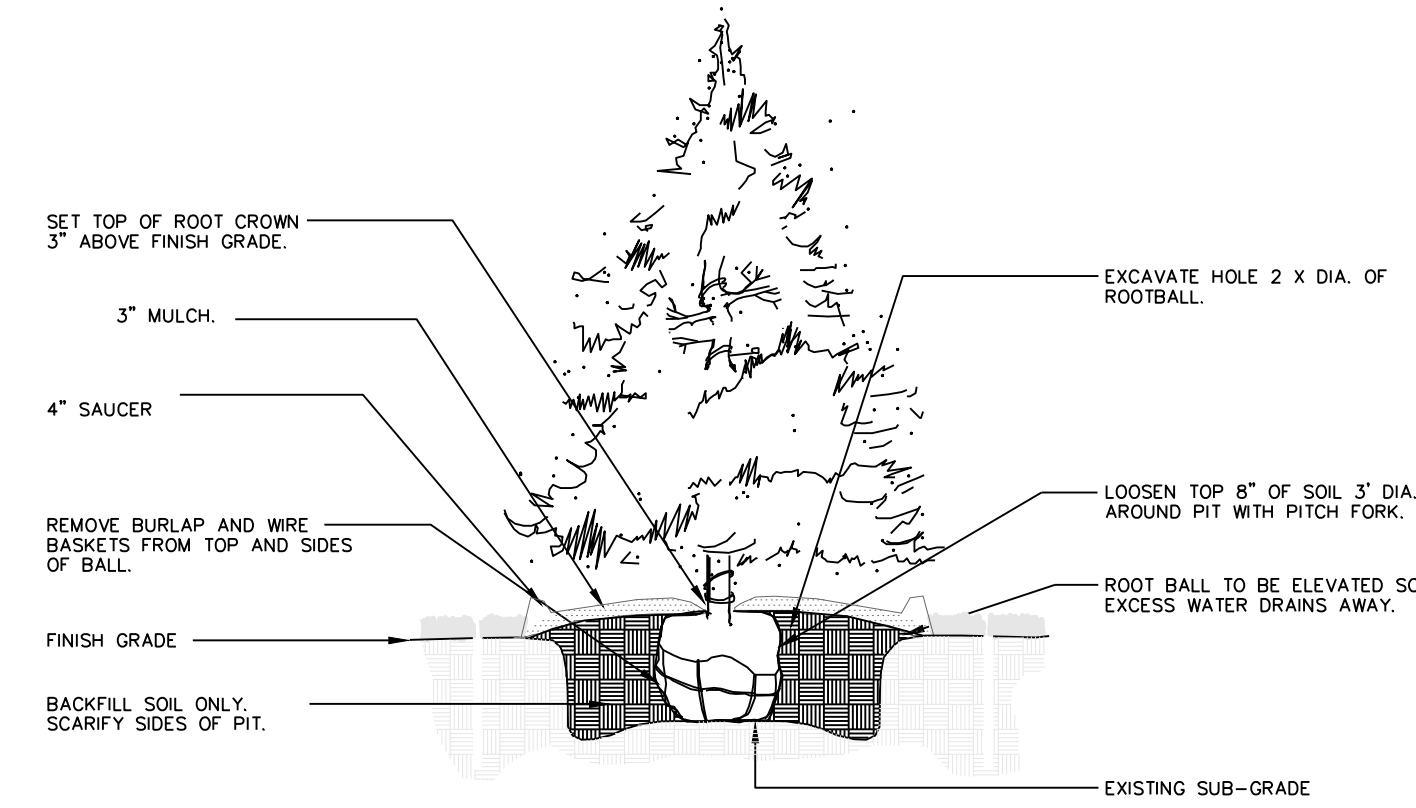
REV. 12/6/2023
REV. 1/19/2024
REV. 2/8/2024

LANDSCAPE WORKSHEET			
	ORDINANCE REQUIREMENT	REQUIRED FOR THIS SITE	PROPOSED LANDSCAPE
8.790.A.1 Street Frontage Trees (NE Maguire Blvd.)	1 tree per 30 feet of street frontage	890 ft. of street frontage /30= 30 trees required	30 Trees Provided
8.790.A.3 Street Frontage Shrubs (NE Maguire Blvd.)	1 shrub per 20 feet of street frontage	890 ft. of street frontage /20= 45 shrubs required	60 shrubs provided
8.790.B.1 Open Yard Shrubs	2 shrubs per 5000 sq. ft. of total lot area, excludes single family and duplex developments, excluding building.	335,238 sq. ft. of total lot area minus 78,038 sq.ft. of bldg. = 257,200 sq. ft. /5,000 x 2 = 103 shrubs	112 shrubs
8.790.B.3 Open Yard Trees	1 tree per 5000 sq. ft. of total lot area excluding building.	335,238 sq. ft. of total lot area minus 78,038 sq. ft. of bldg. = 257,200 sq. ft. /5,000 = 52 trees	52 Provided
8.810. Parking Lot Landscape	5% of entire parking area (spaces, aisles & drives); 1 island at end of every parking bay, min. 9' wide	153,162 sq. ft. of parking area x .05 = 7,658 sq. ft. of landscape parking lot islands required	7,700 sq. ft.
8.820. Screening of Parking Lot, Road	12 shrubs per 40 linear feet (must be 2.5 feet tall; berms may be combined with shrubs)	632 linear feet/40 x 12 190 shrubs required.	190 shrubs provided
•STREET SHRUBS ARE SATISFIED WITH PARKING LOT SCREENING REQUIREMENTS.			

PLANTING SCHEDULE:
IS FOR PHASE 1 ONLY; AT FULL BUILD THE UNIFIED DEVELOPMENT ORDINANCE REQUIREMENTS SHALL BE MET.

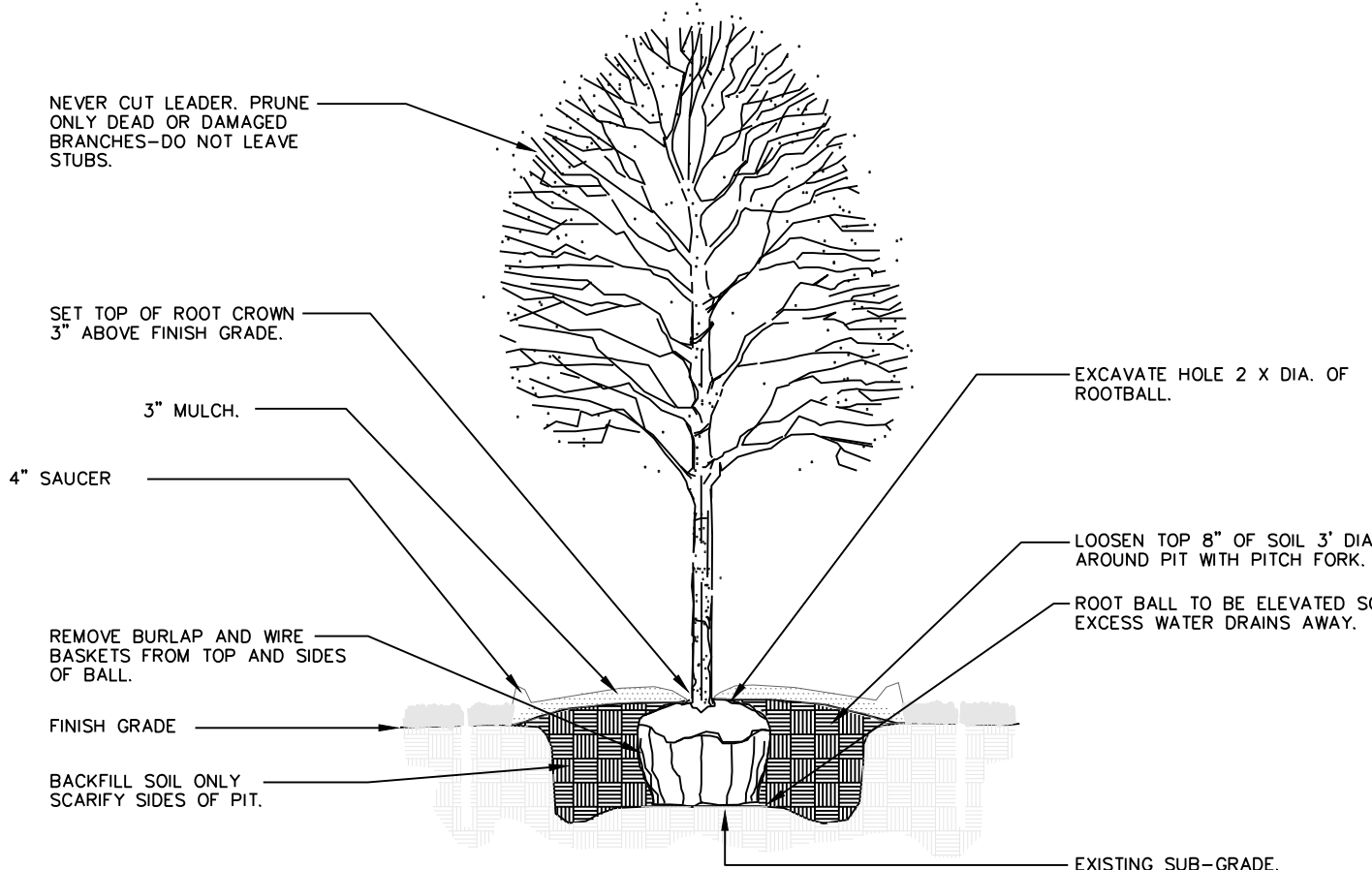
SYMBOL	QUANT.	KEY	NAME	SIZE
tree	30	TA	AMERICAN BASSWOOD LINDEN TILIA AMERICANA	3.0" CAL
evergreen	--	SR	SKYROCKET JUNIPER JUNIPERUS SCOPULORUM "SKYROCKET"	8' HL
tree	52	RB	OKLAHOMA REDBUD CERCIS RENIFORMIS "OKLAHOMA"	3.0" CAL
shrub	350	BB	BURNING BUSH EUONYMUS ALATA "COMPACTUS"	2 Gallon Pot

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03/18/2024



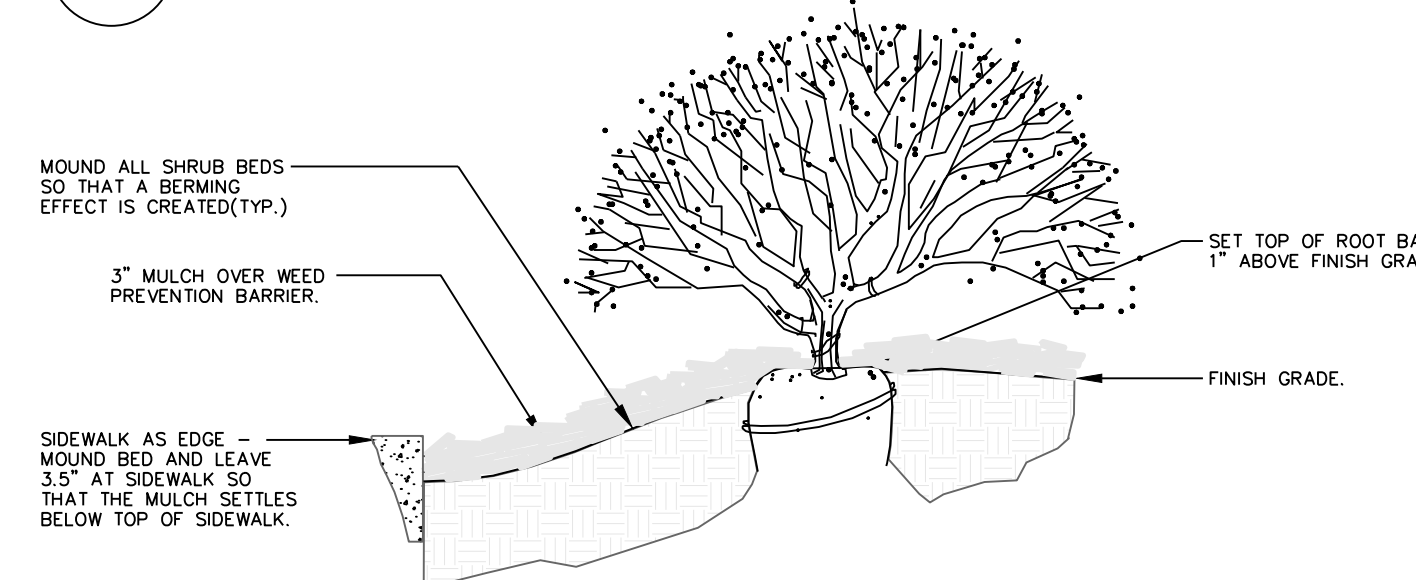
1 EVERGREEN TREE PLANTING

NTS



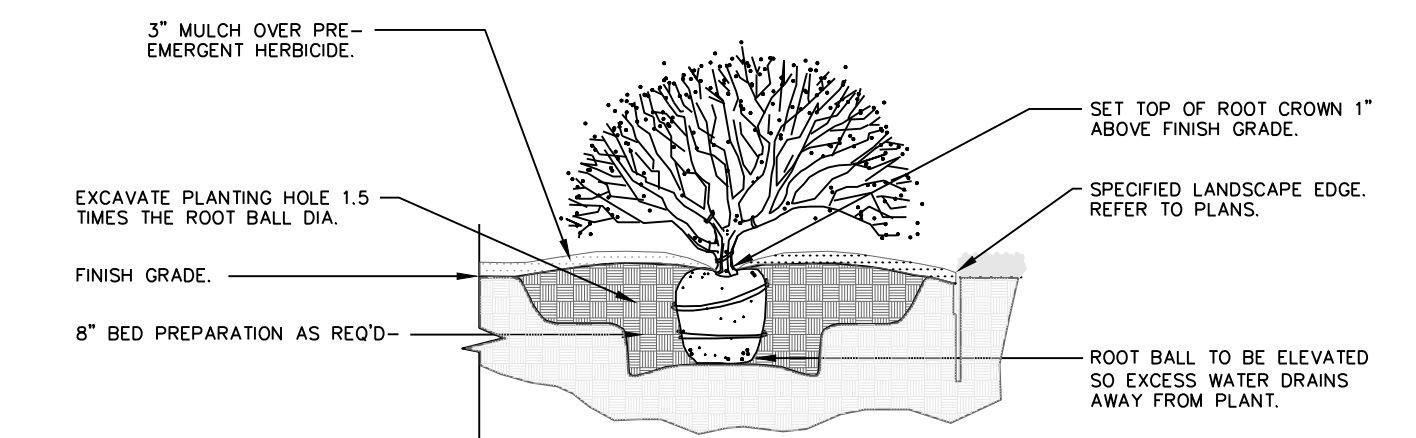
2 DECIDUOUS TREE PLANTING

NTS



3 SIDEWALK EDGE AT PLANT BED

NTS



4 SHRUB PLANTING

NTS

GENERAL LANDSCAPE NOTES: PLANT MATERIAL

- ALL PLANT MATERIAL SHALL BE FIRST CLASS REPRESENTATIVES OF SPECIFIED SPECIES, VARIETY OR CULTIVAR, IN HEALTHY CONDITION WITH NORMAL WELL DEVELOPED BRANCHES AND ROOT PATTERNS. PLANT MATERIAL MUST BE FREE OF OBJECTIONABLE FEATURES. PLANTS SHALL COMPLY IN ALL APPLICABLE RESPECTS WITH PROPER STANDARDS AS SET FORTH IN THE AMERICAN ASSOCIATION OF NURSERYMEN'S "AMERICAN STANDARD OF NURSERY STOCK", ANSI Z601-2004.
- SHRUBS SHALL BE CONTAINER GROWN AND WILL BE FREE OF DISEASE AND PESTS. NO BARE ROOT, ALL PLANT BEDS TO BE MULCHED TO A DEPTH OF 3" WITH DARK BROWN, HARDWOOD MULCH. PLANTING BEDS ARE TO BE FREE OF WEEDS AND GRASS. TREAT BEDS WITH A PRE-EMERGENT HERBICIDE PRIOR TO PLANTING AND MULCH PLACEMENT. APPLY IN ACCORDANCE WITH STANDARD TRADE PRACTICE.
- HOLE AREA FOR TREE TO BE TWICE (2x) THE DIAMETER OF THE ROOT BALL AND ROOT BALL SHALL BE SLIGHTLY MOUNDED FOR WATER RUN-OFF.
- ALL PLANT MATERIALS SHALL BE PROTECTED FROM THE DRYING ACTION OF THE SUN AND WIND AFTER BEING DUG, WHILE BEING TRANSPORTED, AND WHILE AWAITING PLANTING. BALLS OF PLANTS WHICH CANNOT BE PLANTED IMMEDIATELY SHALL BE PROTECTED FROM DRYING ACTION BY COVERING THEM WITH MOST MULCH. PERIODICALLY, APPLY WATER TO MULCH-COVERED BALLS TO KEEP MOIST. IF PLANTING SHOULD OCCUR DURING GROWING SEASON, APPLY ANTI-DESICCANT TO LEAVES BEFORE TRANSPORT TO REDUCE THE LIKELIHOOD OF WINDBURN. REAPPLY ANTI-DESICCANT AFTER PLANTING TO REDUCE TRANSPIRATION. REMOVE TWINE AND BURLAP FROM ROOT BALLS. SOIL ON TOP OF CONTAINERIZED OR BALLED PLANTS IS TO BE REMOVED UNTIL ALL PLANTS' ROOT FLARES ARE EXPOSED. THIS IS THE NATIVE SOIL LINE AT WHICH PLANTING DEPTHS SHOULD BE MEASURED.
- AFTER PLANTING IS COMPLETED, PRUNE MINIMALLY TO REMOVE DEAD OR INJURED TWIGS AND BRANCHES. PRUNE IN SUCH A MANNER AS NOT TO CHANGE THE NATURAL HABIT OR SHAPE OF THE PLANT. MAKE CUTS BACK TO BRANCH COLLAR, NOT FLUSH. DO NOT PAINT ANY CUTS WITH TREE PAINT. CENTRAL LEADERS SHALL NOT BE REMOVED.
- GUARANTEE TREES, SHRUBS, GROUND COVER PLANTS FOR ONE CALENDAR YEAR FOLLOWING PROVISIONAL ACCEPTANCE OF THE OVERALL PROJECT. DURING THE GUARANTEE PERIOD, PLANTS THAT DIE DUE TO NATURAL CAUSES OR THAT ARE UNHEALTHY OR UNSIGHTLY IN CONDITION, SHALL BE REPLACED BY THE CONTRACTOR.

LAWN AND TURF AREAS

- ALL LAWN AREAS TO BE SODDED AS SHOWN ON PLANS. SOD SHALL COMPLY WITH US DEPT. OF AGRICULTURE RULES AND REGULATIONS UNDER THE FEDERAL SEED ACT AND EQUAL IN QUALITY TO STANDARDS FOR CERTIFIED SEED. SOD SHALL BE HEALTHY, THICK TURF HAVING UNDERGONE A PROGRAM OF REGULAR FERTILIZING, MOWING AND WEED CONTROL. SEED AND SOD SHALL BE A TURF-TYPE TALL FESCUE (3 WAY) BLEND. SEED BLEND SHALL CONSIST OF THE FOLLOWING:

TURF-TYPE TALL FESCUE	90%
KENTUCKY BLUEGRASS	10%

- ALL SODDED AREAS ARE TO BE MULCHED WITH STRAW OR HYDROMULCH AT TIME OF INSTALLATION UNTIL SOD HAS ESTABLISHED.

INSTALLATION

- THE INSTALLATION OF ALL PLANT MATERIALS SHALL BE IN COMPLIANCE WITH THE REQUIREMENTS OF THE CITY OF LEE'S SUMMIT, MO. AND LANDSCAPE INDUSTRY STANDARDS.
- ALL LANDSCAPE AREAS TO BE FREE OF ALL BUILDING DEBRIS AND TRASH, BACK FILLED WITH CLEAN FILL SOIL AND TOP DRESSED WITH 4" OF TOPSOIL. TOPSOIL SHALL HAVE A pH RANGE OF 5.5 TO 7 AND A 4% ORGANIC MATERIAL MINIMUM, ASTM D5085.
- PLANT BEDS TO BE "MOUNDED". ALL PLANT MATERIAL, PLANT BEDS, MULCH AND DUG EDGE ARE TO BE INSTALLED PER LANDSCAPE PLANS, DETAILS, AND MANUFACTURER'S RECOMMENDATIONS.
- REESTABLISH FINISH GRADES TO WITHIN ALLOWABLE TOLERANCES ALLOWING 3/4" FOR SOD AND 3" FOR MULCH IN PLANT BEDS. HAND RAKE ALL AREAS TO SMOOTH EVEN SURFACES FREE OF DEBRIS, CLODS, ROCKS, AND VEGETATIVE MATTER GREATER THAN 1".
- ALL PLANT BEDS, SHRUBS AND TREES SHALL BE MULCHED WITH 3" OF DARK BROWN, HARDWOOD MULCH, EXCEPT IF NOTED AS ROCK. DARK BROWN, HARDWOOD MULCH SHALL BE INSTALLED OVER DEWITT PRO 5 WEED CONTROL FABRIC IN PLANT BEDS ONLY.
- CONTRACTOR IS RESPONSIBLE FOR INITIAL WATERING UPON INSTALLATION.
- DUG EDGES ARE TO BE DUG WHERE MULCH BEDS ARE ADJACENT TO TURF AREAS. NO EDGING IS REQUIRED ADJACENT TO PAVEMENT OR CURB.
- THE EXACT LOCATION OF ALL UTILITIES, STRUCTURES, AND UNDERGROUND UTILITIES SHALL BE DETERMINED AND VERIFIED ON SITE BY THE LANDSCAPE CONTRACTOR PRIOR TO INSTALLATION OF THE MATERIALS. DAMAGE TO EXISTING UTILITIES AND OR STRUCTURES SHALL BE REPLACED TO THEIR ORIGINAL CONDITION BY THE LANDSCAPE CONTRACTOR AT NO COST TO THE OWNER.
- LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND APPROVALS AND RECD INSPECTIONS BY LEGAL AUTHORITIES.
- PROVISIONS SHALL BE MADE FOR READILY ACCESSIBLE IRRIGATION WITHIN 100' MAX. OF ALL LANDSCAPED AREAS INCLUDING ALL PLANT BEDS, INDIVIDUAL TREES, AND TURF AREAS. ALL LAWN AREAS (AS SHOWN ON PLANS) WILL BE IRRIGATED BY AN AUTOMATIC SPRINKLER SYSTEM. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL IRRIGATION COMPONENTS, SLEEVING, PIPE, AND CONTROL. DESIGN DRAWINGS OF IRRIGATION SYSTEM SHALL BE SUBMITTED TO THE LANDSCAPE ARCHITECT AND OWNER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
- ANY SUBSTITUTIONS OR DEVIATIONS SHALL BE REQUESTED IN WRITING BY THE CONTRACTOR FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF PLANT MATERIALS. ALL PLANTS ARE TO BE LOCATED AS SPECIFIED ON DRAWINGS.

MAINTENANCE BY OWNER

- ALL SHRUBS ARE TO BE MAINTAINED IN THEIR NATURAL SHAPE TO ALLOW EVENTUAL GROWTH INTO A HEDGE.
- MAINTAIN NATURAL HABIT OF ALL SPECIFIED PLANT MATERIAL.
- NEW SOD TO BE THOROUGHLY WATERED UNTIL ROOTS "TAKE HOLD" OF SOD BED. CONTINUE WATERING AS REQUIRED, UNTIL COMPLETELY ESTABLISHED.

IRRIGATION PERFORMANCE SPECIFICATION:

THE FOLLOWING CRITERIA SHALL BE CONSIDERED MINIMUM STANDARDS FOR DESIGN AND INSTALLATION OF LANDSCAPE IRRIGATION SYSTEM:

- GENERAL - IRRIGATION SYSTEM TO INCLUDE DRIP IRRIGATION OF SHRUB BEDS ADJACENT TO BUILDINGS, SPRAY HEADS IN THE PARKING ISLANDS, AND ROTORS AROUND THE PERIMETER OF THE PARKING LOTS. HEADS SHALL THROW AWAY FROM BUILDING AND ACID SPRAYING OVER SIDEWALKS.
- IRRIGATION SYSTEM SHALL CONFORM TO ALL INDUSTRY STANDARDS AND ALL FEDERAL, STATE AND LOCAL LAWS GOVERNING DESIGN AND INSTALLATION.
- WATERLINE TYPW, SIZE LOCATION, PRESSURE AND FLOW SHALL BE FIELD VERIFIED PRIOR TO SYSTEM DESIGN AND INSTALLATION.
- ALL MATERIALS SHALL BE FROM NEW STOCK FREE OF DEFECTS AND CARRY A MINIMUM ONE YEAR WARRANTY FROM THE DATE OF SUBSTANTIAL COMPLETION.
- THE IRRIGATION SYSTEM SHALL BE DESIGNED AND INSTALLED IN SUCH A WAY THAT ALL SYSTEM COMPONENTS OPERATE WITHIN THE GUIDELINES ESTABLISHED BY THE MANUFACTURER.
- LAWN AREA AND SHRUB BEDS SHALL BE ON SEPARATE CIRCUITS.
- PROVIDE WATER TAP, METER SET, METER VAULT AND ALL OTHER OPERATIONS NECESSARY TO PROVIDE WATER FOR IRRIGATION SHALL CONFORM TO LOCAL WATER GOVERNING AUTHORITY GUIDELINES AND STANDARDS.
- BACKFLOW PREVENTION SHALL BE PROVIDED IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS.
- IRRIGATION CONTROLLER TO BE LOCATED IN UTILITY ROOM INSIDE BUILDING, AS IDENTIFIED BY OWNER.
- IRRIGATION CONTROLLER STATIONS SHALL BE LABELED TO CORRESPOND WITH THE CIRCUIT IT CONTROLS.
- CONTRACTOR SHALL PROVIDE TO THE OWNER WRITTEN OPERATION INFORMATION FOR ALL SYSTEM COMPONENTS.
- CONTRACTOR SHALL PROVIDE TO THE OWNER ALL KEYS, ACCESS TOOLS, WRENCHES AND ADJUSTING TOOLS NECESSARY TO GAIN ACCESS, ADJUST AND CONTROL THE SYSTEM.
- CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO THE OWNER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
- AN AUTOMATIC RAIN SHUT-OFF OR MOISTURE DEVICE SHALL BE INSTALLED.
- INSTALL SCHEDULE 40 PVC SLEEVES UNDER ALL CURBS, PAVING AND SIDEWALKS. SLEEVES TO BE TWICE THE SIZE OF THE LINE IT HOUSES.
- INSTALL MANUAL DRAIN VALVES AT LOWEST POSSIBLE ELEVATION ON IRRIGATION MAIN TO ALLOW GRAVITY DRAINING OF MAIN DURING WINTER MONTHS. PROVIDE QUICK COUPLERS AT MULTIPLE LOCATIONS TO ALLOW FOR EASY "BLOWING OUT" OF LATERAL AND MAIN LINES.
- ZONES OR NOZZLES SHALL BE DESIGNED WITH MATCHED PRECIPITATION RATES.
- MINIMUM LATERAL DEPTH IS 15" AND MAIN DEPTH IS 18".
- SUBMIT DESIGN DRAWING WITH BID TO ALLOW OWNER TO EVALUATE SYSTEM. INCLUDE CUT SHEETS OF ALL COMPONENTS AND ZONE TABLE ILLUSTRATING FLOWS AND ANTICIPATED PRESSURE AT FURTHEST HEAD.
- AN "AS-BUILT" SCALED DRAWING SHALL BE PROVIDED TO THE OWNER BY THE CONTRACTOR AND SHALL INCLUDE UT NOT BE LIMITED TO THE FOLLOWING:
 - AS CONSTRUCTED LOCATION OF ALL COMPONENTS
 - COMPONENT NAME, MANUFACTURER, MODEL INFORMATION, SIZE AND QUANTITY
 - PIPE SIZE AND QUANTITY
 - INDICATION OF SPRINKLER HEAD SPRAY PATTERN
 - CIRCUIT IDENTIFICATION SYSTEM
 - DETAILED METHOD OF WINTERIZED SYSTEM

SUBMIT AS-BUILT DRAWING IN FULL SIZE DRAWING FORM AS WELL AS PDF ELECTRONIC FORMAT. (SCANNING FULL SIZE COPY OF PLAN IS ACCEPTABLE IF IT CAN BE PRINTED TO SCALE.