# LAKEWOOD BUSINESS CENTER **ON I-470 - PLAT S**

# STREET & STORM SEWER CONSTRUCTION PLANS

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

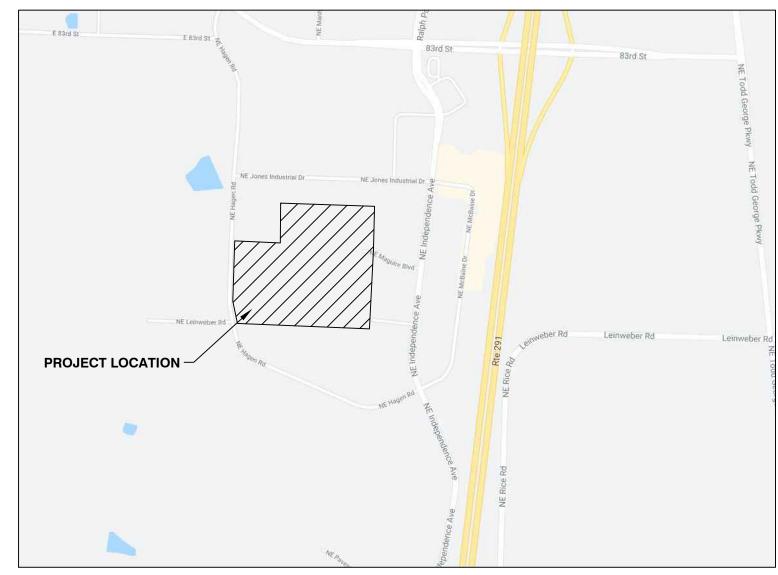
## **CONSTRUCTION AND DESIGN NOTES:**

- 1. STREET PAVEMENT SHALL CONSIST OF TYPE CG-1 CURB & GUTTER WITH PAVEMENT PER TABLE LS-2 OF THE LEE-S SUMMIT
- DESIGN AND CONSTRUCTION MANUAL. SEE SHEET C-112 FOR TYPICAL SECTION AND PAVEMENT OPTIONS.
- 2. INDUSTRIAL LOCAL STREETS SHALL BE PER APWA STANDARD FOR 60' R/W SECTION 5200 TABLE LS-1.
- 3. STORM SEWER PIPE SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) AS APPROVED BY THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL 4. CURB INLETS SHALL BE PER CITY OF LEE'S SUMMIT STANDARD DRAWING NO. STM-1. JUNCTION BOXES SHALL BE PER CITY OF LEE'S SUMMIT STANDARD DRAWING NO. STM-3. FLARED END SECTIONS SHALL BE PER CITY OF LEE'S SUMMIT STANDARD DRAWING NO. STM-5

### **GENERAL NOTES:**

- ACCORDANCE WITH ALL STATE AND LOCAL CODES.

- PLAN SHOWS MINIMUM EROSION CONTROL MEASURES TO BE PROVIDED. ADDITIONAL SITE SPECIFIC MEASURES MAY BE NECESSARY AND SHALL BE PROVIDED BY THE DEVELOPER / OWNER, AT THE CONTRACTOR'S EXPENSE.
- 15. ANY EXISTING OR NEW STORM SEWER INLETS IN USE DURING DEMOLITION, GRADING OR CONSTRUCTION SHALL HAVE INLET PROTECTION. 16. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND QUANTITIES SHOWN ON THESE PLANS AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCING ANY RELATED WORK.
- 17. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR DETERMINING THE LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND INSTALLATIONS, INCLUDING SERVICE CONNECTIONS, IN ADVANCE OF EXCAVATION OR TRENCHING, AND PROTECT THE SAME AS REQUIRED TO MAINTAIN
- 18. THE CONTRACTOR SHALL USE HIS OWN INFORMATION AND NOT RELY UPON ANY INFORMATION SHOWN ON THE DRAWINGS CONCERNING EXISTING UNDERGROUND INSTALLATIONS.
- 19. ANY DELAY. ADDITIONAL WORK, OR EXTRA COST TO THE CONTRACTOR CAUSED BY OR RESULTING FROM DAMAGE TO EXISTING UNDERGROUND INSTALLATIONS SHALL NOT CONSTITUTE A CLAIM FOR EXTRA WORK, ADDITIONAL PAYMENT, OR DAMAGES. ALL DAMAGE TO EXISTING UTILITIES
- INCLUDING SERVICE CONNECTIONS SHALL RE REPAIRED BY AND AT THE EXPENSE OF THE CONTRACTOR. 20. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES AND OBTAIN ALL NECESSARY INSPECTIONS THROUGHOUT THE CONSTRUCTION ACTIVITIES.
- 21. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS, INCLUDING BUT NOT LIMITED TO ALL UTILITIES, STORM DRAINAGE, AND SIGNS AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH THE GOVERNING AUTHORITIES' SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COST SHALL BE INCLUDED IN THE CONTRACTOR'S CONTRACT WITH THE OWNER.
- 22. REMOVAL OF EXISTING PAVING AND/OR BORING AT THE CONTRACTOR'S DISCRETION SHALL BE INCLUDED AS A PART OF ALL UTILITY INSTALLATIONS WHERE APPLICABLE AT THE CONTRACTOR'S EXPENSE AS WELL AS REPLACEMENT/REPAIR OF ALL DISTURBED MATERIALS IN ACCORDANCE WITH LOCAL
- 23. THE CONTRACTOR SHALL COORDINATE ALL UTILITY WORK, INCLUDING DEMOLITION AND REMOVAL, WITH THE APPROPRIATE UTILITY COMPANIES AND SERVICE PROVIDERS PRIOR TO DISCONTINUATION OF SERVICE. UTILITIES NOT NOTED FOR DEMOLITION SHALL REMAIN IN SERVICE AT ALL TIMES. 24. THE CONTRACTOR SHALL MAINTAIN EXISTING UTILITY SERVICE TO ALL ADJOINING PROPERTIES UNTIL THE RELOCATED UTILITIES ARE INSPECTED AND APPROVED.
- 25. ALL EXISTING UTILITIES SHALL BE REMOVED BACK TO THE CLOSEST STRUCTURE AND CAPPED AT THAT LOCATION.
- 26. REMOVE ALL TREES, GRASS, WEEDS, ROOTS, AND OTHER DEBRIS FROM THE AREA TO BE EXCAVATED, FILLED OR GRADED. 27. IF EXCAVATED MATERIAL IS UNSUITABLE FOR COMPACTION, AS DETERMINED BY THE GEOTECHNICAL ENGINEER, THE CONTRACTOR SHALL FURNISH **SUITABLE BORROW.**
- 28. ALL SLOPES, CUT OR FILL, SHALL BE GRADED TO MAXIMUM FINISH SLOPE OF THREE (3) FEET HORIZONTAL TO ONE (1) FOOT VERTICAL. NO GRADED
- SLOPE SHALL EXCEED 3:1 WITHOUT SPECIFIC SLOPE PLANTING OR REINFORCEMENT.
- 29. SITE SHALL BE GRADED TO ASSURE DRAINAGE OF WATER FROM ALL SURFACES.
- 30. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL SURFACE AND GROUNDWATER CONTROL MEASURES.
- 31. GRADES NOT OTHERWISE INDICATED ON THE PLANS SHALL BE UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE ELEVATIONS ARE GIVEN. ABRUPT CHANGES IN SLOPES SHALL BE WELL ROUNDED.
- 32. STORM DRAINAGE SYSTEMS WITHIN THE PROJECT AREA ARE TO BE COMPLETELY CLEANED AT THE COMPLETION OF THE PROJECT. 33. EXISTING TREES WHERE INDICATED SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITIES. ALL TREE PROTECTION FENCING TO BE INSPECTED
- DAILY AND ALL GRADING ACTIVITIES TO REMAIN OUTSIDE THE DRIP LINES. 34. ALL TREE PROTECTION MEASURES SHALL BE INSTALLED PRIOR TO GRADING.
- 35. ALL SOILS UNDERCUTTING, OVER EXCAVATION, UNDER DRAIN INSTALLATION, AND ROCK FILLS SHALL BE DETERMINED AND DIRECTED BY THE SOILS ENGINEER.
- 36. FILL AREAS TO BE COMPACTED TO 95% STANDARD PROCTOR MINIMUM UNLESS OTHERWISE INDICATED BY GEOTECHNICAL ENGINEER. 37. UNLESS OTHERWISE INDICATED, ALL DISTURBED SOIL AREAS TO RECEIVE 6 INCHES OF TOPSOIL AND TO BE SEEDED AND MULCHED.



**VICINITY MAP** 



# CALL BEFORE YOU DIG 1-800-DIG-RITE

# **UTILITY CONTACTS:**

EVERGY	816-471-527
SPIRE	800-582-123
COMCAST	816-795-110
AT&T	816-325-561
SPECTRUM	816-358-536
CITY OF LEE'S SUMMIT PUBLIC WORKS	816-969-180
CITY OF LEE'S SUMMIT PUBLIC WORKS INSPECTIONS	816-969-180
CITY OF LEE'S SUMMIT WATER UTILITIES	816-969-190

# UTILITY NOTE:

THE UTILITIES AS SHOWN IN THESE DRAWINGS WERE DEVELOPED FROM THE INFORMATION AVAILABLE. IT IS NOT IMPLIED NOR INTENDED TO BE THE COMPLETE INVENTORY OF UTILITIES IN THIS AREA. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATIONS OF ALL UTILITIES (WHETHER SHOWN OR NOT) AND PROTECT SAID UTILITIES FROM ANY DAMAGE.

# **SHEET INDEX:**

C-451-C-455

**OVERALL SITE PLAN** STREET PLAN & PROFILE SIGNAGE PLAN **INTERSECTION DETAILS ADA RAMP PLAN** DRAINAGE AREA MAP **OVERALL STORM SEWER LAYOUT PLAN OVERALL STORM CALCULATIONS** C-212 C-221 PHASE 1 STORM LAYOUT PLAN C-222-C-223 PHASE 1 STORM PLAN & PROFILE PHASE 1 GRADING PLAN

### LEGAL DESCRIPTIONS

A TRACT OF LAND BEING PART OF THE TRACT DESCRIBED BY THE WARRANTY DEED RECORDED LINDER DOCUMENT NUMBER 2015E0090550. OF THE JACKSON COUNTY MISSOURI RECORDS AND BEING LOCATED THENCE NORTH 10°02'51" FAST, 17.07 FEET: THENCE ALONG A CURVE TO THE LEFT, HAVING A RADIUS O 30.00 FEET, A CURVE LENGTH OF 51.14 FEET, A CHORD BEARING OF NORTH 38°47'01" WEST, AND A CHORD LENGTH OF 45.17 FEET; THENCE ALONG A COMPOUND CURVE TO THE LEFT, HAVING A RADIUS OF 480.00 FEET, A CURVE LENGTH OF 6.44 FEET, A CHORD BEARING OF NORTH 87°59'57" WEST, AND A CHORD LENGTH OF 6.44 FEET; THENCE NORTH 88°23'00" WEST, 934.92 FEET; THENCE ALONG A CURVE TO THE LEFT HAVING A RADIUS OF 25.00 FEET, A CURVE LENGTH OF 39.07 FEET, A CHORD BEARING OF SOUTH 46°50'51' WEST, AND A CHORD LENGTH OF 35.21 FEET. TO A POINT ON THE EAST RIGHT-OF-WAY LINE OF NE HAGEN ROAD, AS NOW ESTABLISHED: THENCE ALONG SAID EAST RIGHT-OF-WAY LINE, NORTH 02°04'42" EAST, 84.80 FEET. TO THE SOUTHWEST CORNER OF LOT 27, LAKEWOOD BUSINESS CENTER ON I-470 PLAT K, A SUBDIVISION IN SAID CITY OF LEE'S SUMMIT; THENCE ALONG THE SOUTH LINE OF SAID LOT 27, SOUTH 88°23'00" EAST, 404.01 FEET, TO THE SOUTHEAST CORNER THEREOF; THENCE ALONG THE EAST LINE OF SAID LOT 27, NORTH 01°38'44" EAST, 370.07 FEET, TO THE SOUTHWEST CORNER OF TRACT C, LAKEWOOD BUSINESS CENTER ON I-470 - PLAT R. A SUBDIVISION IN SAID CITY OF LEE'S SUMMIT: THENCE ALONG THE SOUTH LINE OF SAID TRACT C. SOUTH 88°21'07" FAST, 889.46 FEET, TO THE SOUTHEAST CORNER THEREOF AND BEING A POINT ON THE WEST LINE OF SAID LAKEWOOD BUSINESS CENTER ON 1-470. LOTS 23A AND 23B; THENCE ALONG SAID WEST LINE, SOUTH 01°47'11" WEST, 415.53 FEET, TO THE POINT OF BEGINNING AND CONTAINS 9.49 ACRES, MORE OR LESS.

# **BENCHMARK:**

SE CORNER OF AREA INLET LOCATED IN THE SE CORNER OF LOT 1 NORTH OF NE MAGUIRE BLVD.

ELEVATION=967.99

# **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 IN** ACCORDANCE TO AASHTO STANDARDS.

SIGNATURE	DATE

# CITY OF LEE'S SUMMIT, MISSOURI

APPROVED	DATE:
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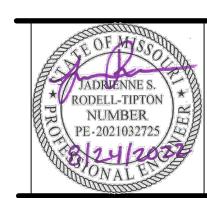
BY:		
_	CITY ENGINEER	

Engineering: MO 4 / KS 241

ORTH OAK SAFETY STORAGE

RAIN VALLEY, MO 64029

316) 229-8115



JADRIENNE S RODELL-TIPTON, PE

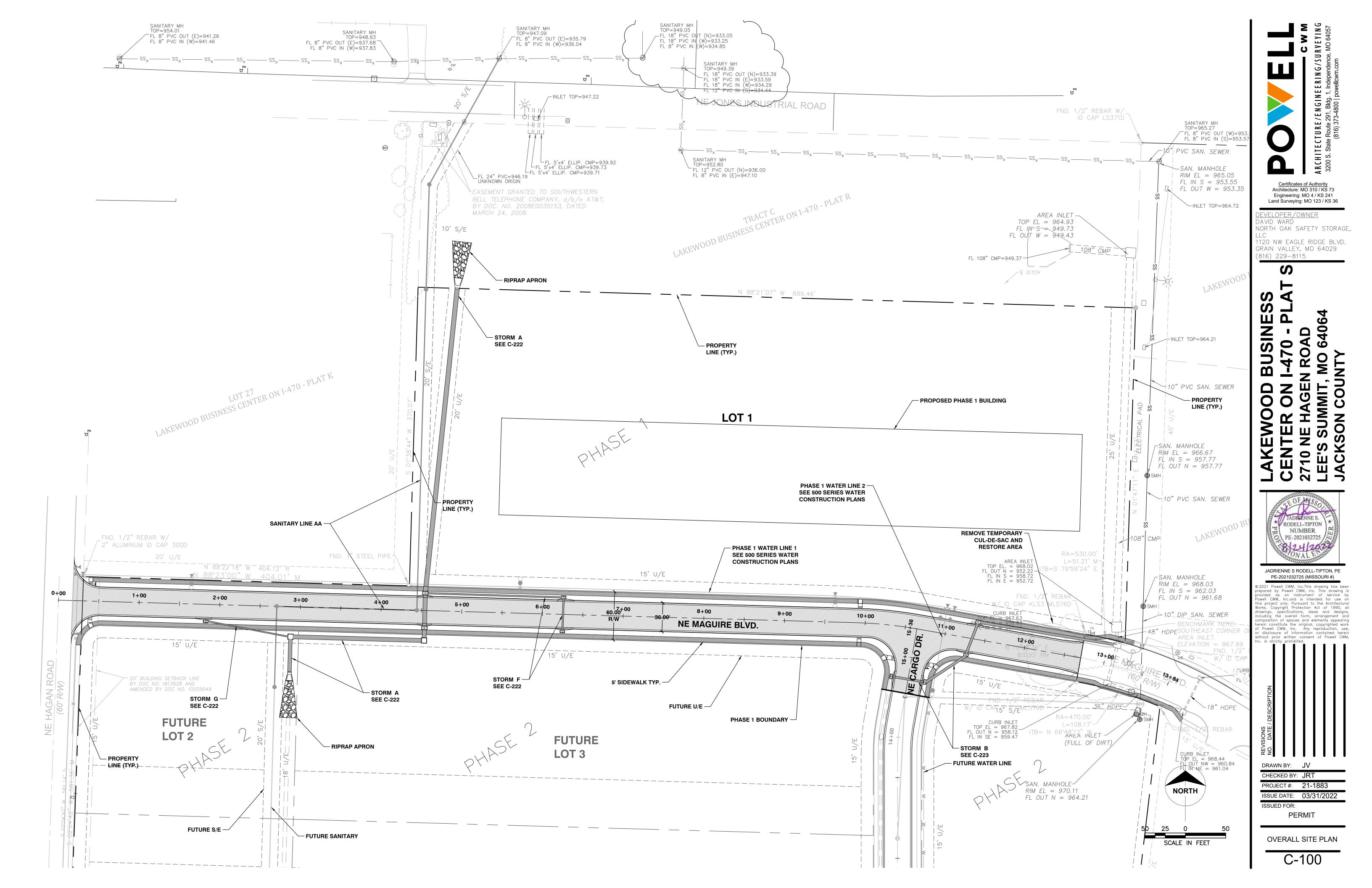
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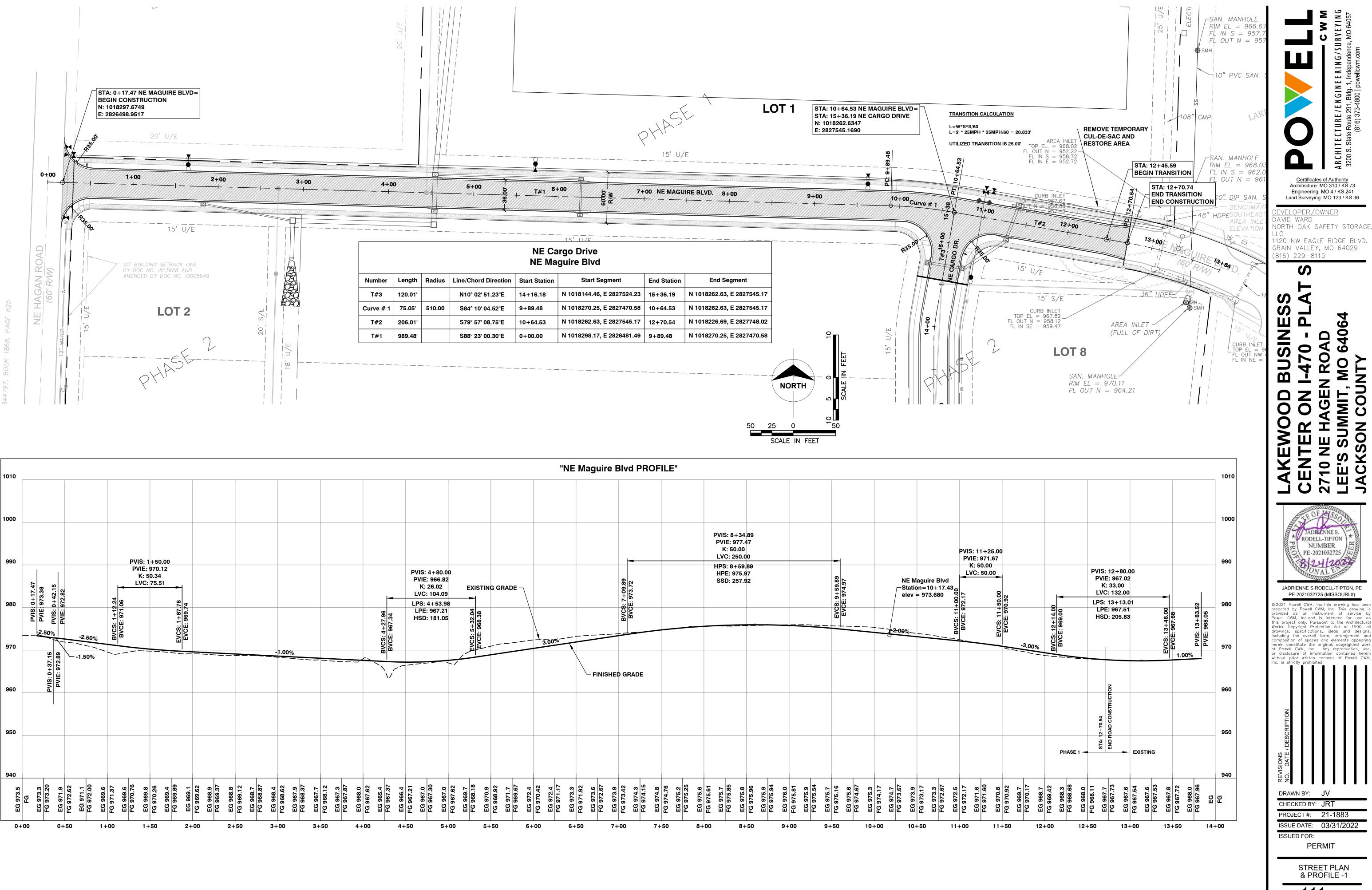
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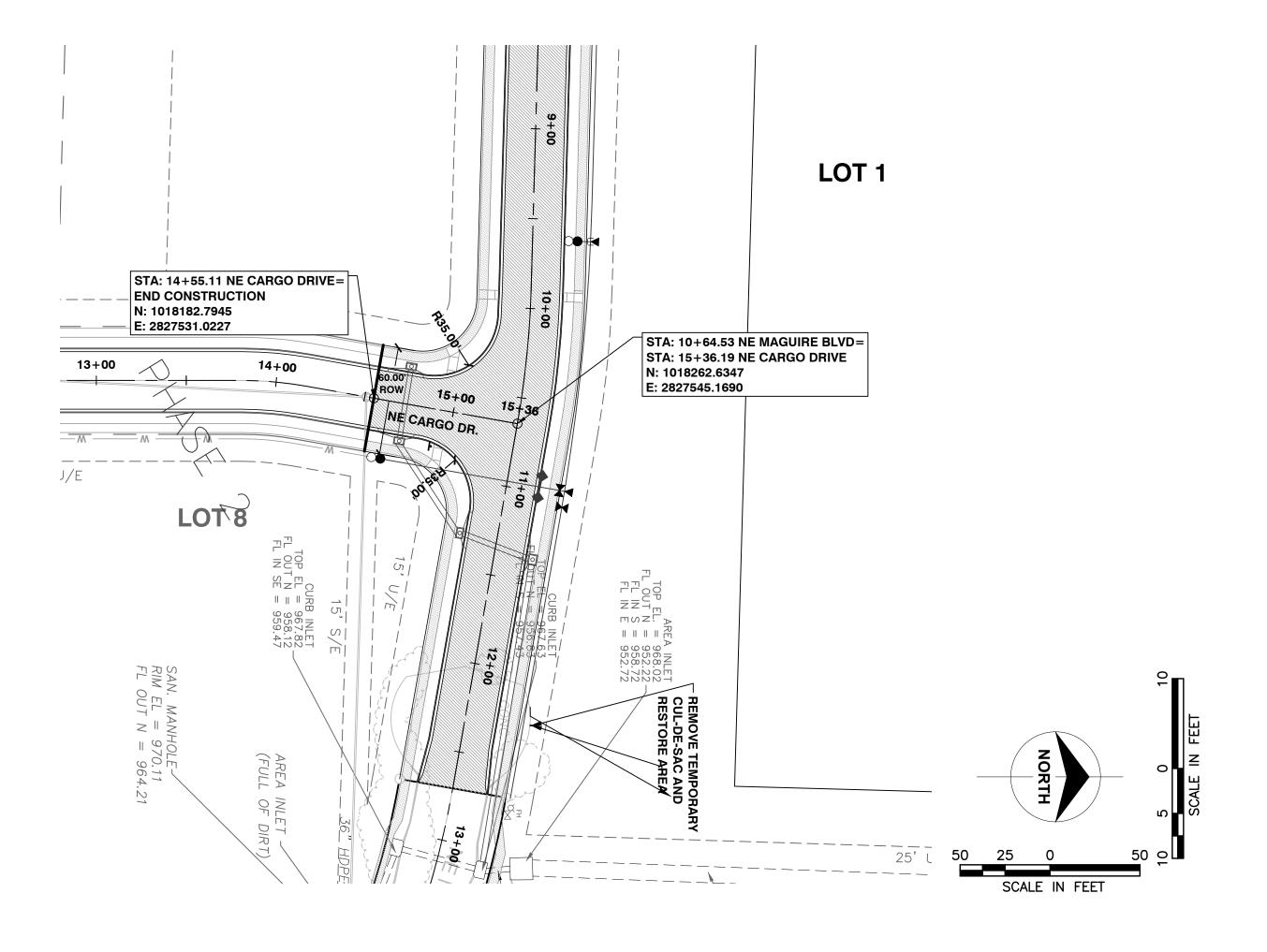


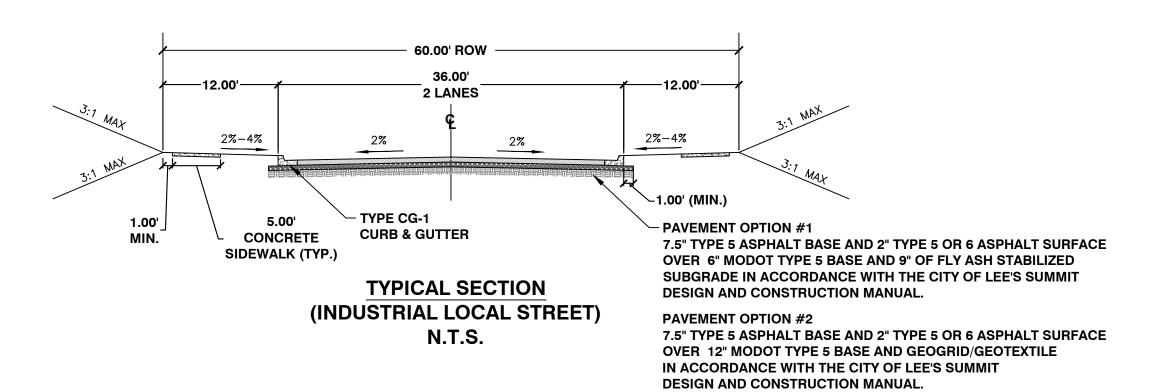


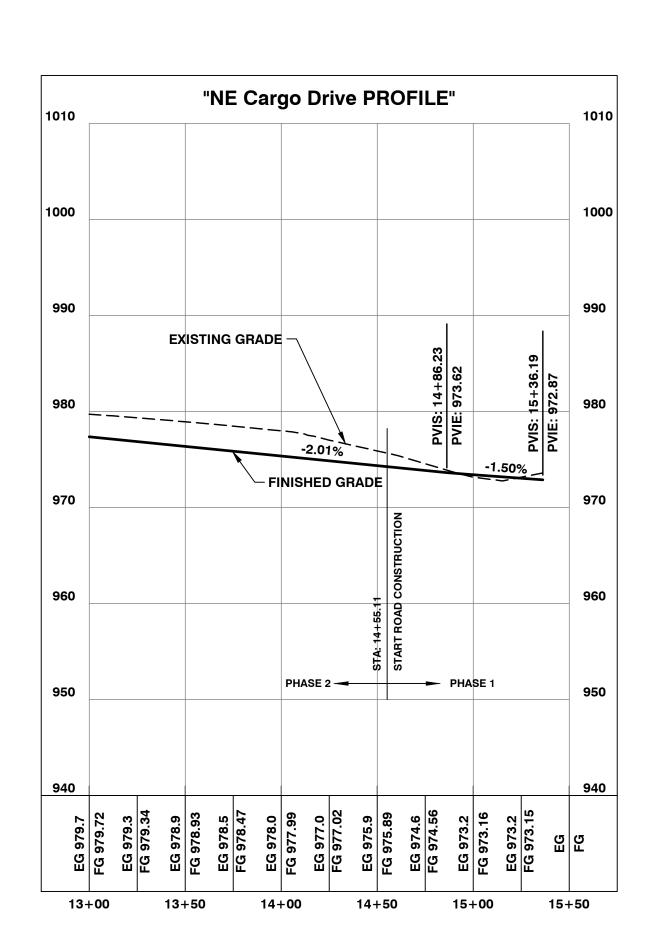
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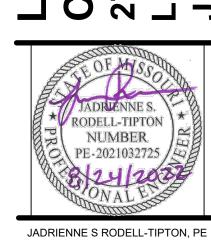








Certificates of Authority
Architecture: MO 310 / KS 73
Engineering: MO 4 / KS 241
Land Surveying: MO 123 / KS 36



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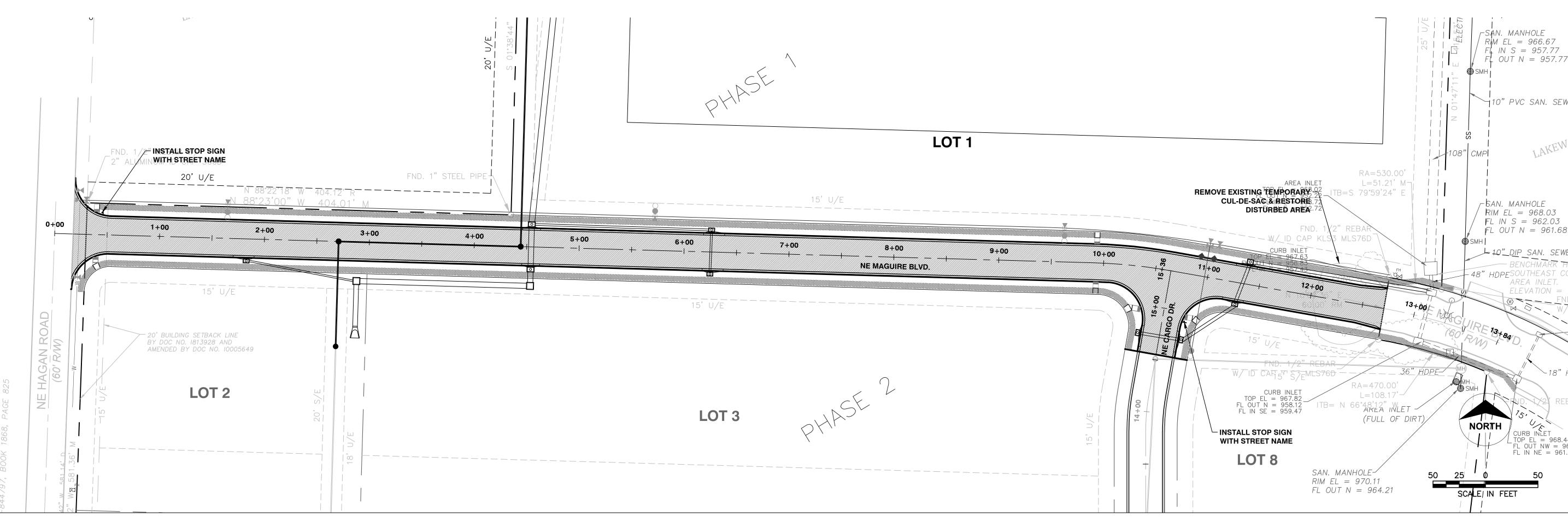
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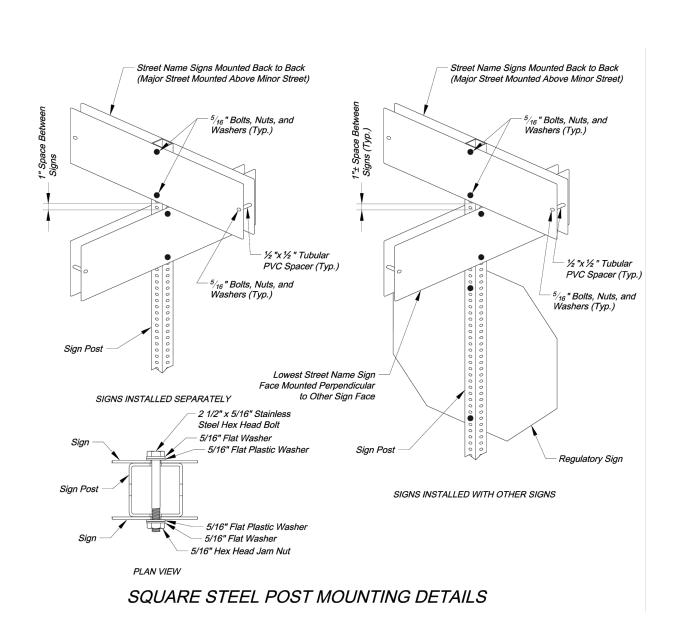
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PROJECT #: 21-1883 ISSUE DATE: 03/31/2022

STREET PLAN & PROFILE - 2

PERMIT





# SQUARE STEEL POST DETAILS

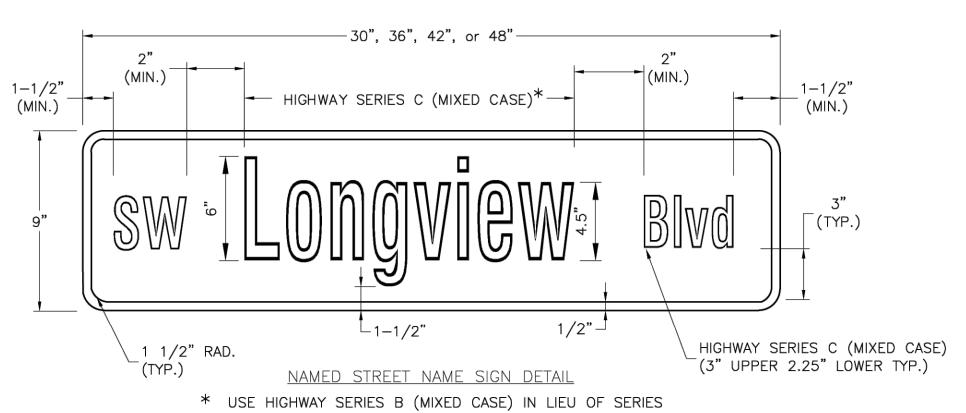
SQUARE STEEL POST NOTES: Square steel sign posts and break-away anchor shall consist of the following materials:
 Sign Post - 14 Ga. 2" x 2" Square Steel Post

Post Anchor - 12 Ga. 2 1/4" x 2 1/4" x 36" Square Steel Post

Anchor Sleeve - 12 Ga. 2 ½ " x 2 ½ " x 18" Square Steel Post 14 Gauge posts must meet a certified minimum yield strength of 60,000 psi.
 In all installations the first hole above the finished grade line on the sign post, anchor,

and anchor sleeve must be in line for the insertion of the corner bolt. 4. The maximum area for one sign post is 9.0 square feet. A sign or combination of signs

with an area greater than 9.0 square feet will require two posts. Also, signs with a width greater than 36" (not including 36" x 36" diamond shaped signs) will require two posts.

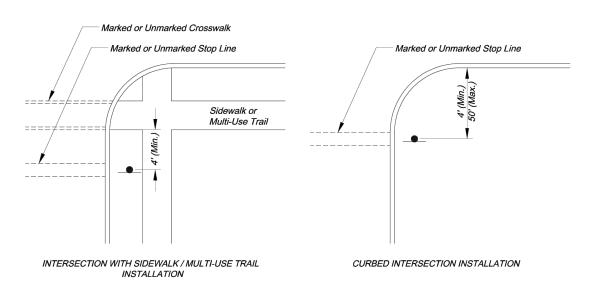


C IF NECESSARY TO FIT TEXT ON A 36" SIGN BLANK.

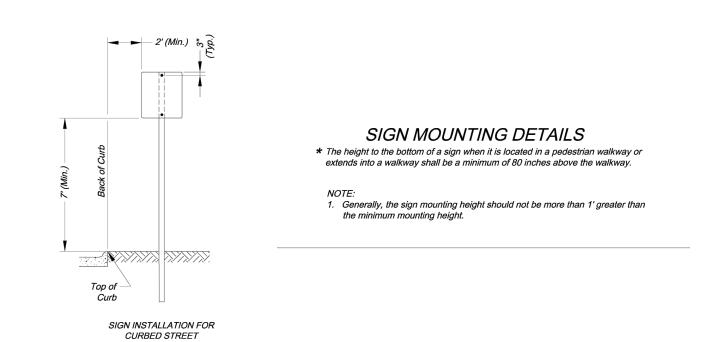
# STREET NAME SIGN FACE DETAILS

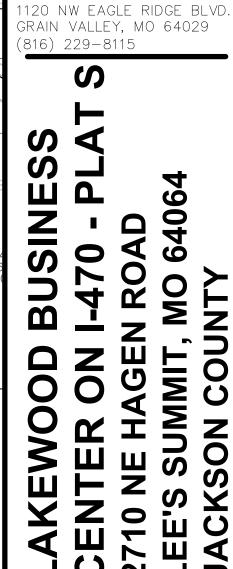
# 1. For all street name signs, the legend shall be white and the background shall

2. Arrows shall be added to street name signs where the name of a street changes at an intersection. Street name signs with arrows are to be installed on each side of the intersection to indicate the change in names. Arrows shall be white. 3. The "PRIVATE STREET" tag should be added to the end of street name signs to indicate where a street that is outside the right-of-way intersects a public street. The background for the "PRIVATE STREET" tag shall be yellow.



# CONTROL SIGN LOCATION





COUNTY

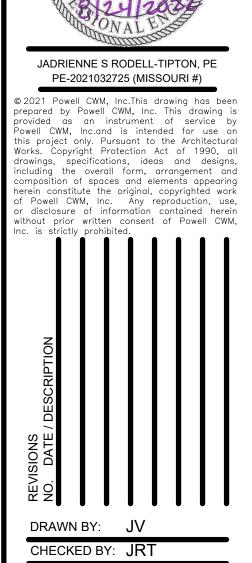
Certificates of Authority
Architecture: MO 310 / KS 73

Engineering: MO 4 / KS 241 Land Surveying: MO 123 / KS 36

ORTH OAK SAFETY STORAGE,

EVELOPER/OWNER

AVID WARD



**★** RODELL-TIPTON

NUMBER ∑\ PE-2021032725

PLAN

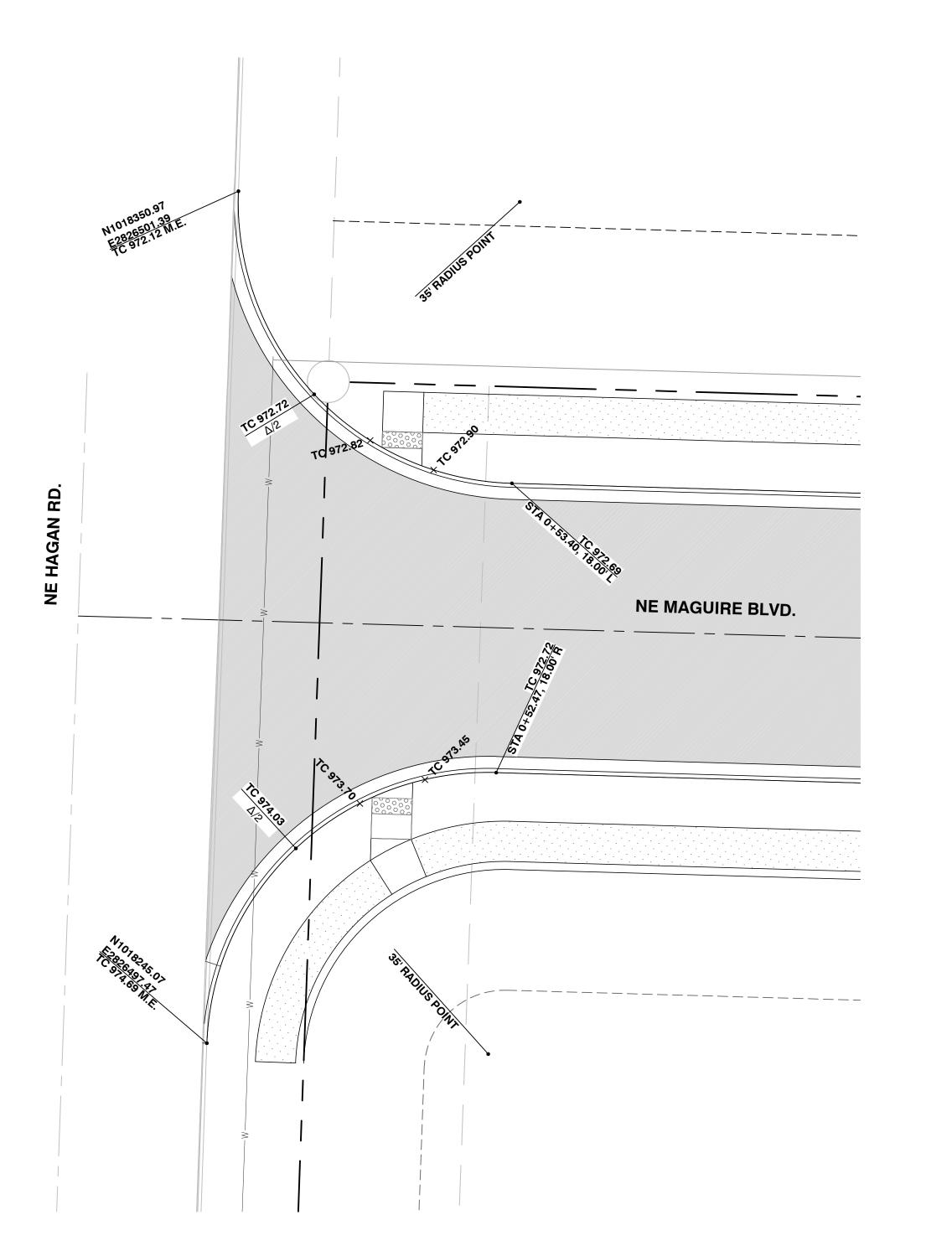
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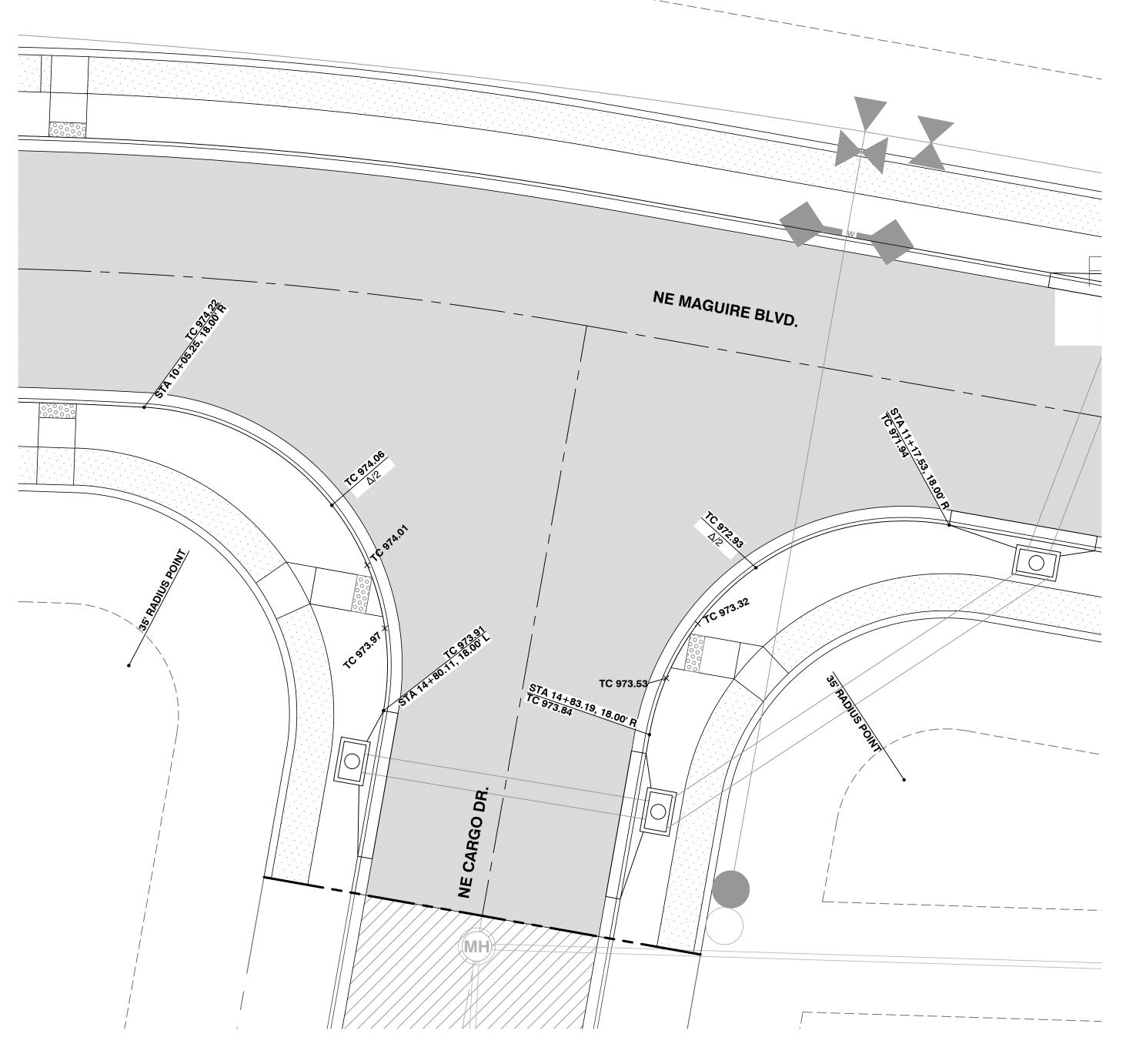
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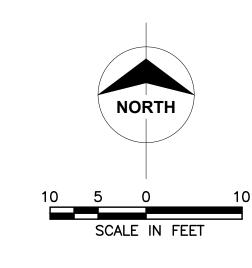
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PERMIT

STREET SIGNAGE









DEVELOPER/OWNER
DAVID WARD
NORTH OAK SAFETY STORAGE,
LLC
1120 NW EAGLE RIDGE BLVD.
GRAIN VALLEY, MO 64029
(816) 229-8115

BUSINESS
I-470 - PLAT S
N ROAD
MO 64064

CENTE CENTE

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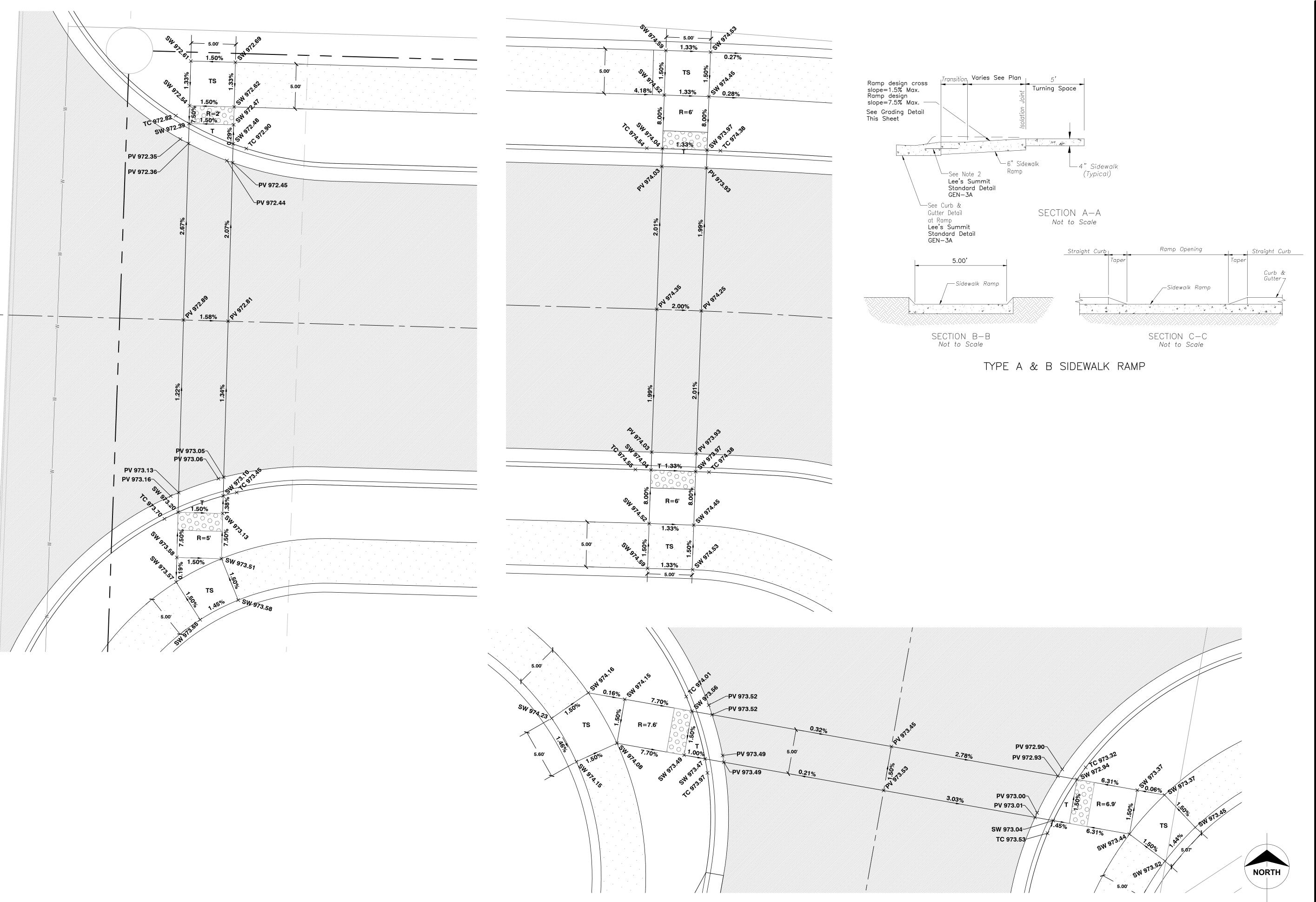
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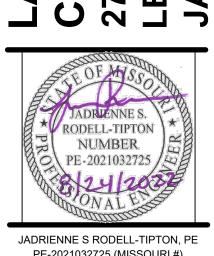
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INTERSECTION DETAILS



Certificates of Authority
Architecture: MO 310 / KS 73
Engineering: MO 4 / KS 241
Land Surveying: MO 123 / KS 36 <u>DEVELOPER/OWNER</u> DAVID WARD IORTH OAK SAFETY STORAGE, 1120 NW EAGLE RIDGE BLVD. GRAIN VALLEY, MO 64029 (816) 229-8115

> ES. **BUSINE** 1-470 - PI JACKSON COUNTY



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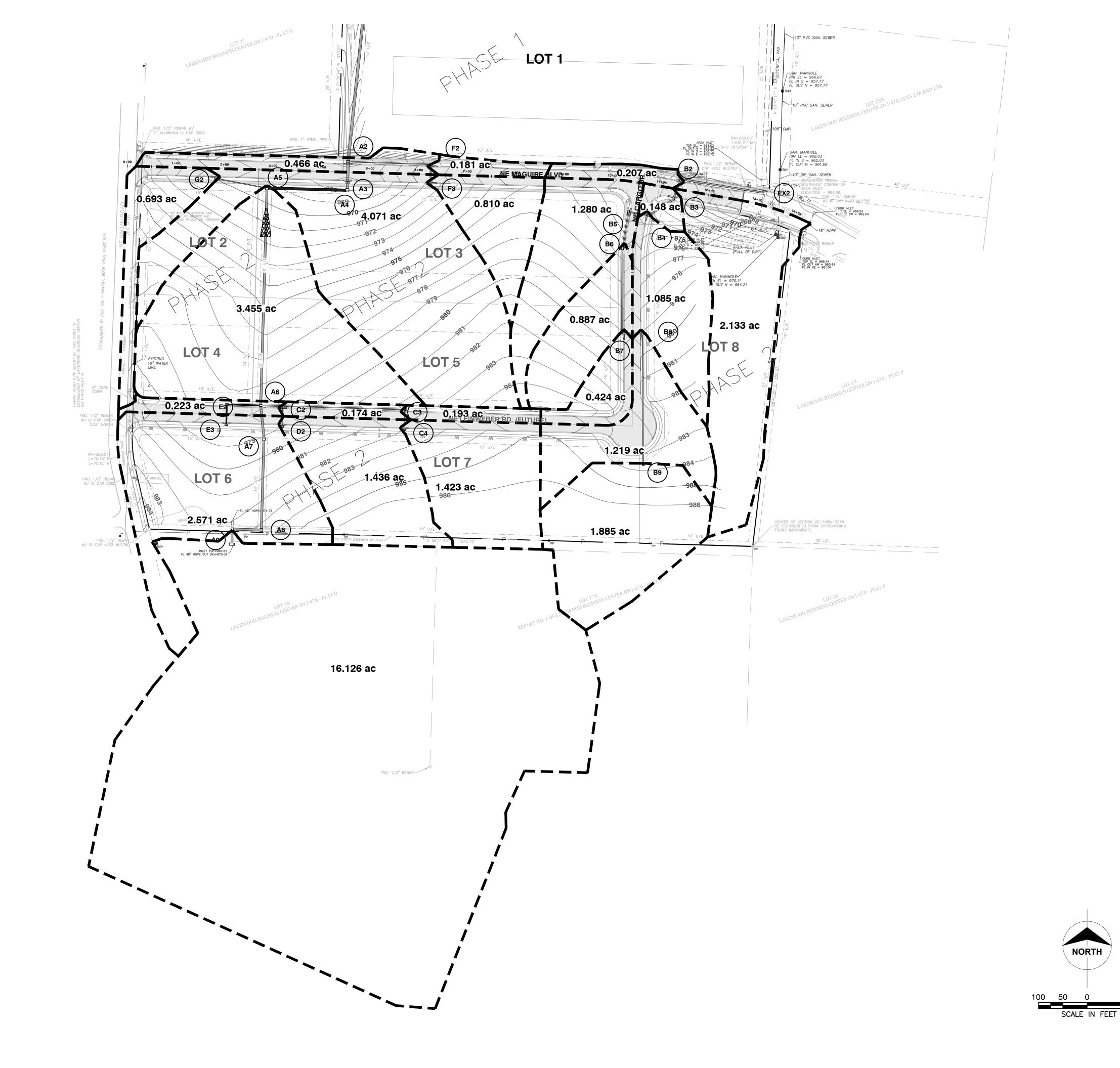
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**CURB RAMP DETAILS** 

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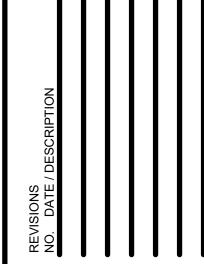
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Land Surveying: MO 123 / KS 36

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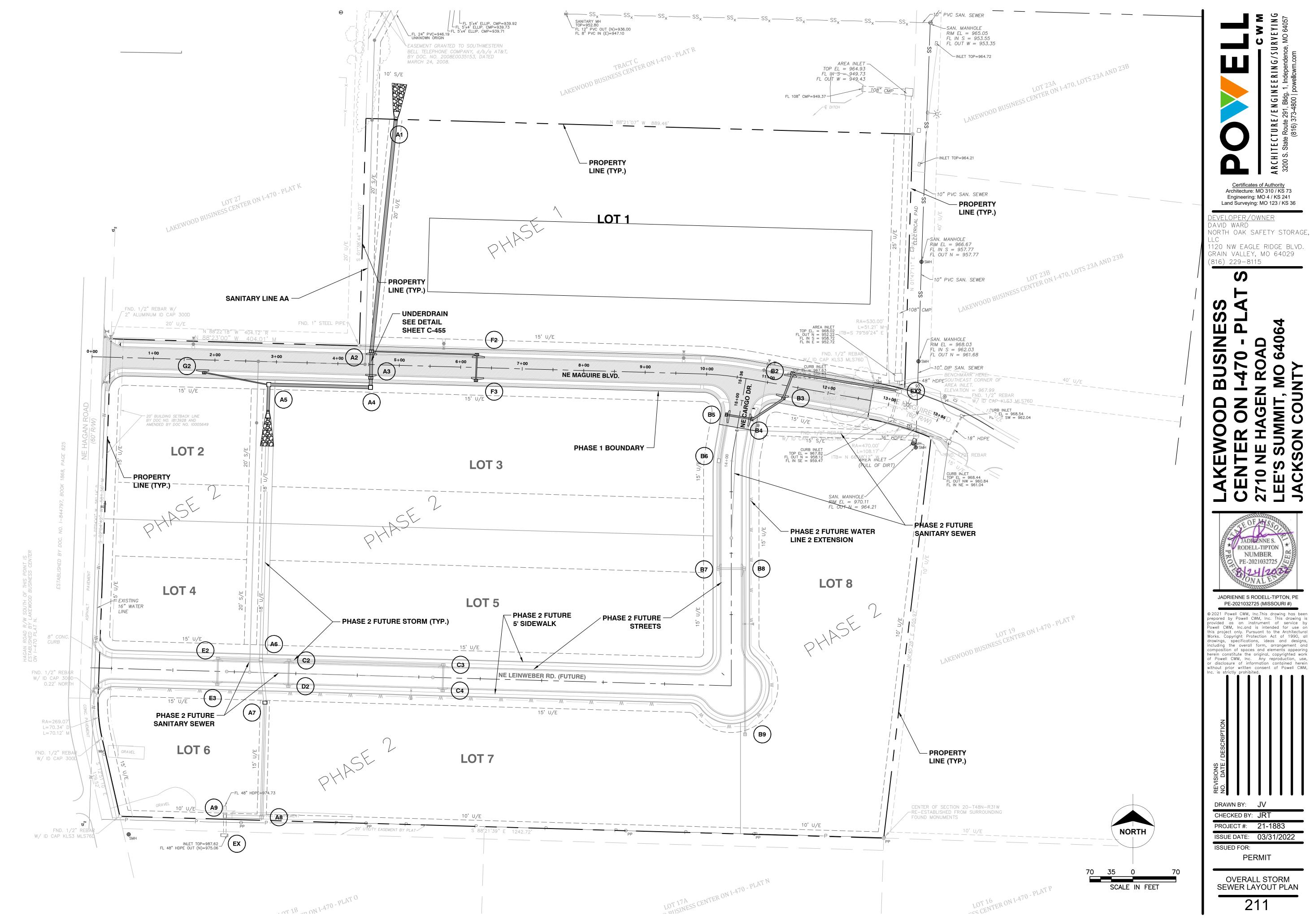
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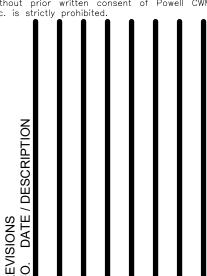
PROJECT #: 21-1

PROJECT #: 21-1883
ISSUE DATE: 03/31/2022
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OVERALL DRAINAGE AREA MAP





LineNo.	LineID	 DrainageArea	IncrCxA	Тс	PipeTravel	iSys	IncrQ	LineLength	LineSize	LineSlope	CapacityFull	VelHd Up	VelDn	Hw	Rim-Hw	InvertUp	InvertDn	SfAve	J-LossCoeff	EnergyLoss	HGLUp	HGLDn	TotalRunoff
		(ac)		(min)	(min)	(in/hr)	(cfs)	(ft)	(in)	(%)	(cfs)	(ft)	(ft/s)	(ft)	(ft)	(ft)	(ft)	(%)		(ft)	(ft)	(ft)	(cfs)
1	A2-A1	0.47	0.31	0.0	0.00	0.00	0.00	378.000	60	1.22	0.00	0.00	7.90	2.34	13.50	951.60	947.00	0.000	1	0.000	953.94	951.19	0.00
2	A3-A2	4.07	2.69	0.0	0.00	0.00	0.00	39.000	54	2.13	0.00	0.00	18.77	2.05	10.14	955.25	954.42	0.000	0.25	0.000	957.30	956.47	0.00
3	A4-A3	0.00	0	0.0	0.00	0.00	0.00	10.678	54	2.90	0.00	0.00	20.25	1.74	10.13	956.10	955.79	0.000	0.4	0.000	957.84	957.53	0.00
4	A5-A4	3.46	2.28	0.0	0.00	0.00	0.00	160.079	54	0.94	0.00	0.00	13.37	2.43	9.25	957.60	956.10	0.000	0.8	0.000	960.03	958.53	0.00
5	A6A-A5	0.00	0	0.0	0.00	0.00	0.00	443.303	48	1.00	0.00	0.00	13.23	2.36	13.06	963.05	958.60	0.000	0.8	0.000	965.41	960.96	0.00
6	A6-A6A	0.00	0	0.0	0.00	0.00	0.00	65.255	48	1.00	0.00	0.00	12.29	1.98	12.88	964.30	963.65	0.000	0.3	0.000	966.28	965.63	0.00
7	A7-A6	0.00	0	0.0	0.00	0.00	0.00	180.523	48	1.58	0.00	0.00	14.67	1.75	8.66	972.86	970.00	0.000	0.4	0.000	974.61	971.75	0.00
8	A8-A7	0.00	0	0.0	0.00	0.00	0.00	53.845	48	1.00	0.00	0.00	12.40	2.00	6.51	973.90	973.36	0.000	0.4	0.000	975.90	975.36	0.00
9	A9-A8	16.13	10.65	0.0	0.00	0.00	0.00	28.014	48	0.57	0.00	0.00	9.40	2.52	10.54	974.56	974.40	0.000	1	0.000	977.08	976.92	0.00
10	C2-A6	0.17	0.11	0.0	0.00	0.00	0.00	40.644	24	5.68	0.00	0.00	15.55	0.69	4.93	973.40	971.09	0.000	1	0.000	974.09	971.78	0.00
11	C3-C2	0.19	0.13	0.0	0.00	0.00	0.00	246.228	18	1.28	0.00	0.00	7.62	0.84	4.14	977.05	973.90	0.000	0.6	0.000	977.89	974.74	0.00
12	C4-C3	1.42	0.94	0.0	0.00	0.00	0.00	39.000	18	1.26	0.00	0.00	7.35	0.79	3.18	978.06	977.57	0.000	1	0.000	978.85	978.36	0.00
13	D2-C2	1.44	0.95	0.0	0.00	0.00	0.00	39.000	18	0.95	0.00	0.00	6.63	0.86	3.14	975.02	974.65	0.000	1	0.000	975.88	975.51	0.00
14	E2-A6	0.22	0.15	0.0	0.00	0.00	0.00	64.856	24	1.46	0.00	0.00	9.20	0.95	4.08	973.02	972.07	0.000	0.4	0.000	973.97	973.02	0.00
15	E3-E2	2.57	1.7	0.0	0.00	0.00	0.00	39.000	24	1.36	0.00	0.00	8.54	0.92	3.58	973.55	973.02	0.000	1	0.000	974.47	973.97	0.00
16	F2-A3	0.18	0.12	0.0	0.00	0.00	0.00	165.974	18	2.71	0.00	0.00	8.83	0.52	9.19	961.70	957.21	0.000	0.4	0.000	962.22	957.73	0.00
17	F3-F2	0.81	0.53	0.0	0.00	0.00	0.00	39.003	18	2.54	0.00	0.00	8.19	0.47	5.84	965.09	964.10	0.000	1	0.000	965.56	964.57	0.00
18	G2-A3	0.69	0.46	0.0	0.00	0.00	0.00	101.851	15	1.00	0.00	0.00	5.64	0.61	7.00	962.40	961.38	0.000	1	0.000	963.01	961.99	0.00
19	B2-B1	0.21	0.14	0.0	0.00	0.00	0.00	168.429	30	1.76	0.00	0.00	6.94	1.31	7.22	962.97	960.00	0.000	1	0.000	964.28	962.21	0.00
20	B3-B2	0.15	0.1	0.0	0.00	0.00	0.00	39.734	30	1.89	0.00	0.00	12.48	1.26	6.21	964.22	963.47	0.000	0.4	0.000	965.48	964.73	0.00
21	B4-B3	1.09	0.72	0.0	0.00	0.00	0.00	59.132	30	1.67	0.00	0.00	11.89	1.30	7.10	965.71	964.72	0.000	0.3	0.000	967.01	966.02	0.00
22	B5-B4	1.28	0.84	0.0	0.00	0.00	0.00	38.997	24	3.33	0.00	0.00	14.74	1.09	5.38	967.65	966.35	0.000	0.6	0.000	968.74	967.44	0.00
23	B6-B5	0.89	0.59	0.0	0.00	0.00	0.00	70.796	24	2.33	0.00	0.00	12.12	1.05	4.75	969.80	968.15	0.000	0.3	0.000	970.85	969.20	0.00
24	B7-B6	0.42	0.28	0.0	0.00	0.00	0.00	170.680	24	1.76	0.00	0.00	10.37	1.01	4.78	973.30	970.30	0.000	0.4	0.000	974.31	971.31	0.00
25	B8-B7	1.22	0.81	0.0	0.00	0.00	0.00	39.012	24	1.28	0.00	0.00	8.93	1.03	3.76	974.30	973.80	0.000	0.6	0.000	975.33	974.83	0.00
26	B9-B8	1.89	1.25	0.0	0.00	0.00	0.00	265.064	18	1.77	0.00	0.00	8.97	0.84	3.30	979.50	974.80	0.000	1	0.000	980.34	975.64	0.00

10-YR CALCS.

LineNo.	LinolD	DysinogoAyoo	IncrCxA	To	DinoTroval	iCvo.	IncrQ	linel ength	LineSize	LineSlope	CanacityFull	Valld IIa	VolDn	Um	Rim-Hw	lovo et lo	InvertDa	CtAvo	L L coo Cooff	Engrand and	HCI II»	HCI Do	TotalRunoff
Lineno.	LineID	DrainageArea	Increxa	(min)	PipeTravel	iSys (in/hr)		LineLength			CapacityFull	VelHd Up	VelDn (ft/s)	HW (ft)		InvertUp (ft)	InvertDn (ft)	SfAve (%)	J-LossCoeff	EnergyLoss	HGLUp	HGLDn (#)	
1	A2-A1	(ac) 0.47	0.39	(min) 6.5	(min) 0.55	9.73	(cfs) 4.03	(ft) 378.105	(in) 60	(%) 1.22	(cfs) 311.24	(ft) 4.87	(ft/s) 13.36	(ft) 3.46	(ft) 12.38	951.60	(ft) 947.00	0.000	1.00 z	(ft) 0.000	(ft) 955.06	(ft) 951.73	(cfs) 256.92
2	A3-A2	4.07	3.38	6.5	0.05	9.75	34.87	39.000	54	2.13	310.81	7.29	21.66	3.02	9.17	955.25	954.42	0.000	0.25 z	0.000	958.27	957.44	245.58
3	A4-A3	0.00	0	6.5	0.02	9.75	0.00	10.678	54	2.90	363.01	8.74	23.71	2.48	9.39	956.10	955.79	0.000	0.40 z	0.000	958.58	958.27	212.78
4	A5-A4	3.46	2.87	6.2	0.22	9.83	29.64	160.079	54	0.94	206.23	3.37	14.72	3.88	7.80	957.60	956.10	0.000	0.80 z	0.000	961.48	959.98	214.58
5	A6A-A5	0.00	0	5.7	0.53	10.04	0.00	443.303	48	1.00	155.92	3.35	14.68	8.46	6.96	963.05	958.60	1.405	0.80	6.228	968.83	962.60	184.43
6	A6-A6A	0.00	0	5.4	0.10	10.16	0.00	65.255	48	1.00	155.31	1.82	10.82	8.25	6.61	964.30	963.65	0.764	0.30	0.498	972.01	971.51	135.99
7	A7-A6	0.00	0	5.1	0.28	10.27	0.00	180.523	48	1.58	195.87	4.43	16.23	2.47	7.94	972.86	970.00	0.000	0.40 z	0.000	975.33	972.55	137.51
8	A8-A7	0.00	0	5.0	0.08	10.30	0.00	53.845	48	1.00	155.85	3.05	14.00	2.93	5.58	973.90	973.36	0.000	0.40 z	0.000	976.83	976.29	137.96
9	A9-A8	16.13	13.39	5.0	0.04	10.32	138.20	28.014	48	0.57	108.55	1.88	11.00	5.98	7.08	974.56	974.40	0.926	1.00	0.259	978.66	978.40	138.20
10	C2-A7	0.17	0.14	5.6	0.08	10.07	1.46	40.644	24	5.68	58.41	5.15	18.21	0.95	4.67	973.40	971.09	0.000	1.00 z	0.000	974.35	972.04	26.91
11	C3-C2	0.19	0.16	5.1	0.53	10.28	1.63	246.228	18	1.28	12.87	1.04	8.17	1.36	3.62	977.05	973.90	0.000	0.60 z	0.000	978.41	975.26	13.74
12	C4-C3	1.42	1.18	5.0	0.09	10.32	12.17	39.000	18	1.26	12.75	1.05	8.21	1.17	2.80	978.06	977.57	0.000	1.00 z	0.000	979.23	978.74	12.17
13	D2-C2	1.44	1.2	5.0	0.09	10.32	12.34	39.000	18	0.95	11.08	0.76	6.98	2.35	1.65	975.02	974.65	1.176	1.00	0.459	976.61	976.15	12.34
14	E2-A7	0.22	0.18	5.1	0.14	10.28	1.88	64.856	24	1.46	29.66	1.71	10.49	1.36	3.67	973.02	972.07	0.000	0.40 z	0.000	974.38	973.43	23.81
15	E3-E2	2.57	2.13	5.0	0.09	10.32	22.02	39.000	24	1.36	28.56	1.56	9.70	1.32	3.18	973.55	973.02	0.000	1.00 z	0.000	974.87	974.38	22.02
16	F2-A3	0.18	0.15	5.2	0.58	10.25	1.54	165.974	18	2.71	18.71	1.65	10.31	0.71	9.00	961.70	957.21	0.000	0.40 z	0.000	962.41	957.92	8.43
17	F3-F2	0.81	0.67	5.0	0.17	10.32	6.94	39.003	18	2.54	18.13	1.42	9.57	0.64	5.67	965.09	964.10	0.000	1.00 z	0.000	965.73	964.74	6.94
18	G2-A3	0.69	0.57	5.0	0.35	10.32	5.91	101.851	15	1.00	7.00	0.64	6.40	0.88	6.73	962.40	961.38	0.000	1.00 z	0.000	963.28	962.26	5.91
19	B2-B1	0.21	0.17	6.2	0.26	9.85	1.80	168.429	30	1.76	59.00	2.28	11.91	2.38	6.15	962.97	960.00	1.616	1.00 z	2.722	965.35	962.50	58.45
20	B3-B2	0.15	0.12	6.1	0.06	9.87	1.29	39.734	30	1.89	61.04	3.10	14.13	1.91	5.56	964.22	963.47	0.000	0.40 z	0.000	966.13	965.38	56.87
21	B4-B3	1.09	0.9	6.0	0.09	9.91	9.34	59.132	30	1.67	57.49	2.77	13.34	1.99	6.41	965.71	964.72	0.000	0.30 z	0.000	967.70	966.71	55.85
22	B5-B4	1.28	1.06	6.0	0.05	9.93	10.97	38.997	24	3.33	44.74	4.05	16.13	1.75	4.72	967.65	966.35	0.000	0.60 z	0.000	969.40	968.10	46.97
23	B6-B5	0.89	0.74	5.9	0.11	9.97	7.63	70.796	24	2.33	37.41	2.86	13.57	1.60	4.20	969.80	968.15	0.000	0.30 z	0.000	971.40	969.75	36.57
24	B7-B6	0.42	0.35	5.6	0.32	10.09	3.60	170.680	24	1.76	32.48	2.13	11.72	1.50	4.29	973.30	970.30	0.000	0.40 z	0.000	974.80	971.80	29.57
25	B8-B7	1.22	1.01	5.5	0.08	10.13	10.45	39.012	24	1.28	27.74	1.57	10.04	1.54	3.25	974.30	973.80	0.000	0.60 z	0.000	975.84	975.34	26.14
26	B9-B8	1.89	1.57	5.0	0.48	10.32	16.19	265.064	18	1.77	15.15	1.44	9.61	1.36	2.78	979.50	974.80	0.000	1.00 z	0.000	980.86	976.16	16.19

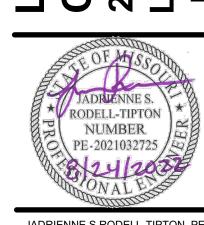
100-YR CALCS.



DEVELOPER/OWNER
DAVID WARD
NORTH OAK SAFETY STORAGE,

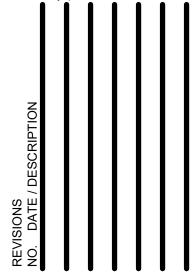
1120 NW EAGLE RIDGE BLVD. GRAIN VALLEY, MO 64029 (816) 229-8115

LAKEWOOD BUSINESS
CENTER ON I-470 - PLAT S
2710 NE HAGEN ROAD
LEE'S SUMMIT, MO 64064
JACKSON COUNTY



JADRIENNE S RODELL-TIPTON, PE PE-2021032725 (MISSOURI #)

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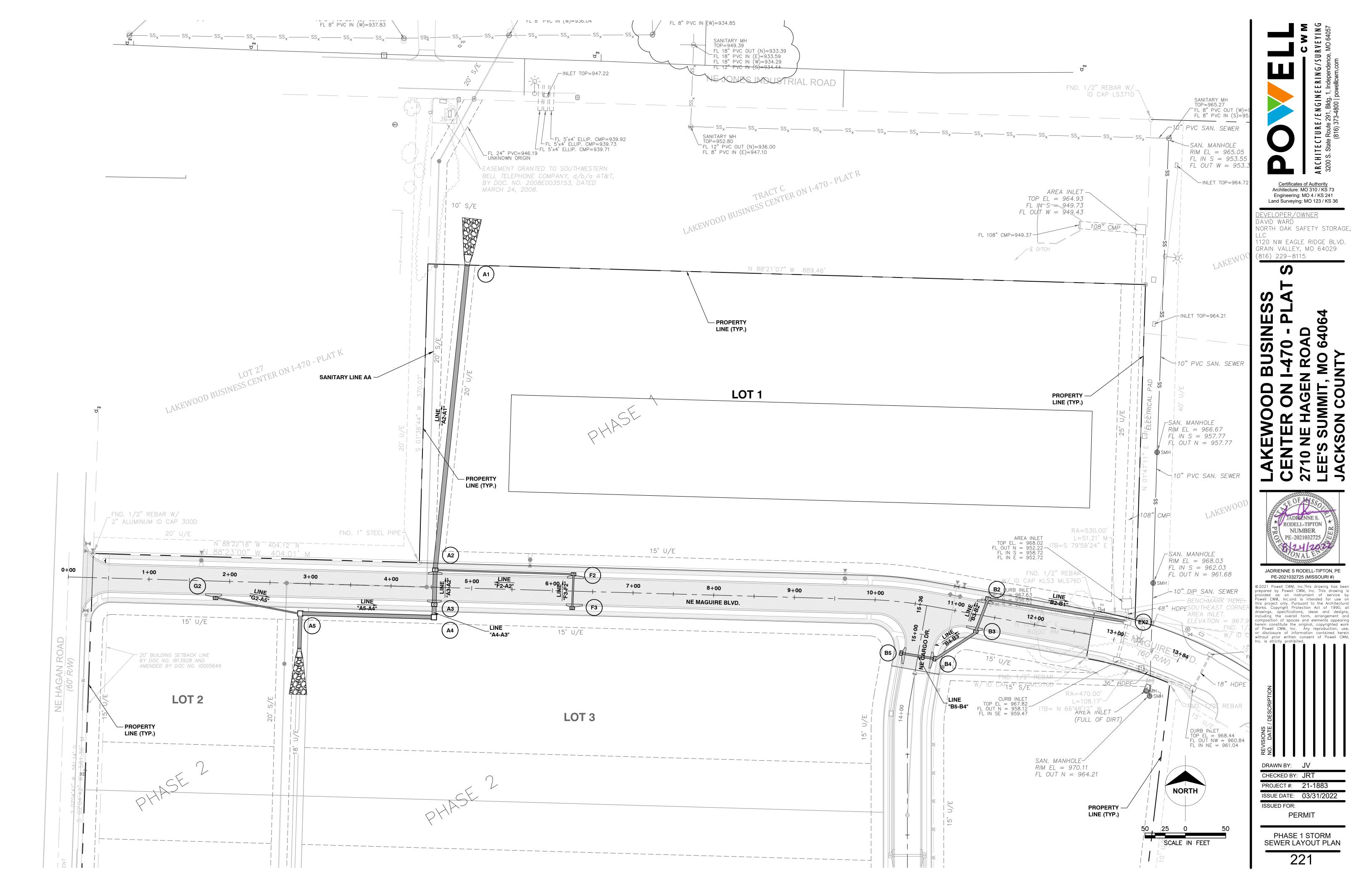
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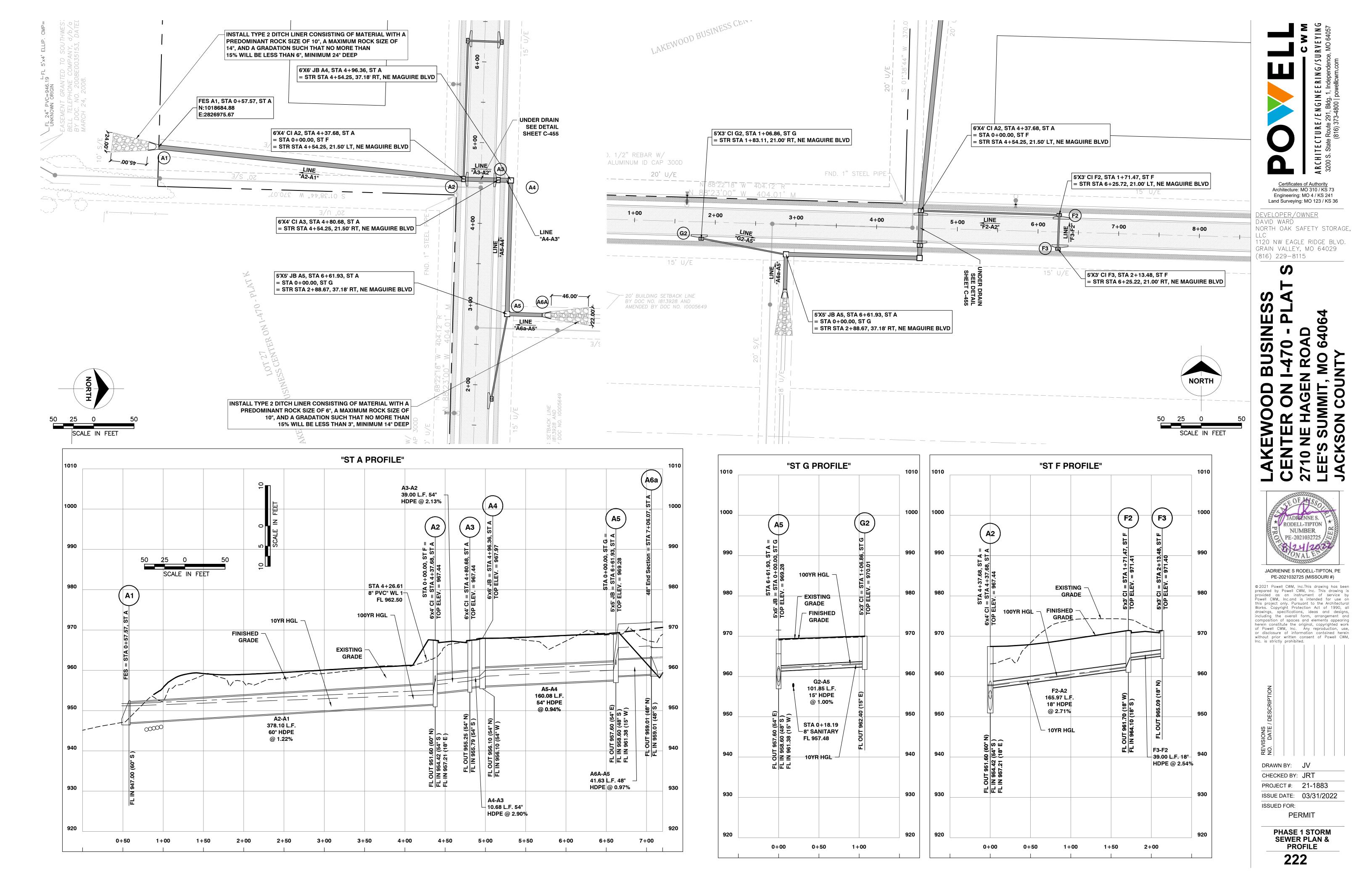
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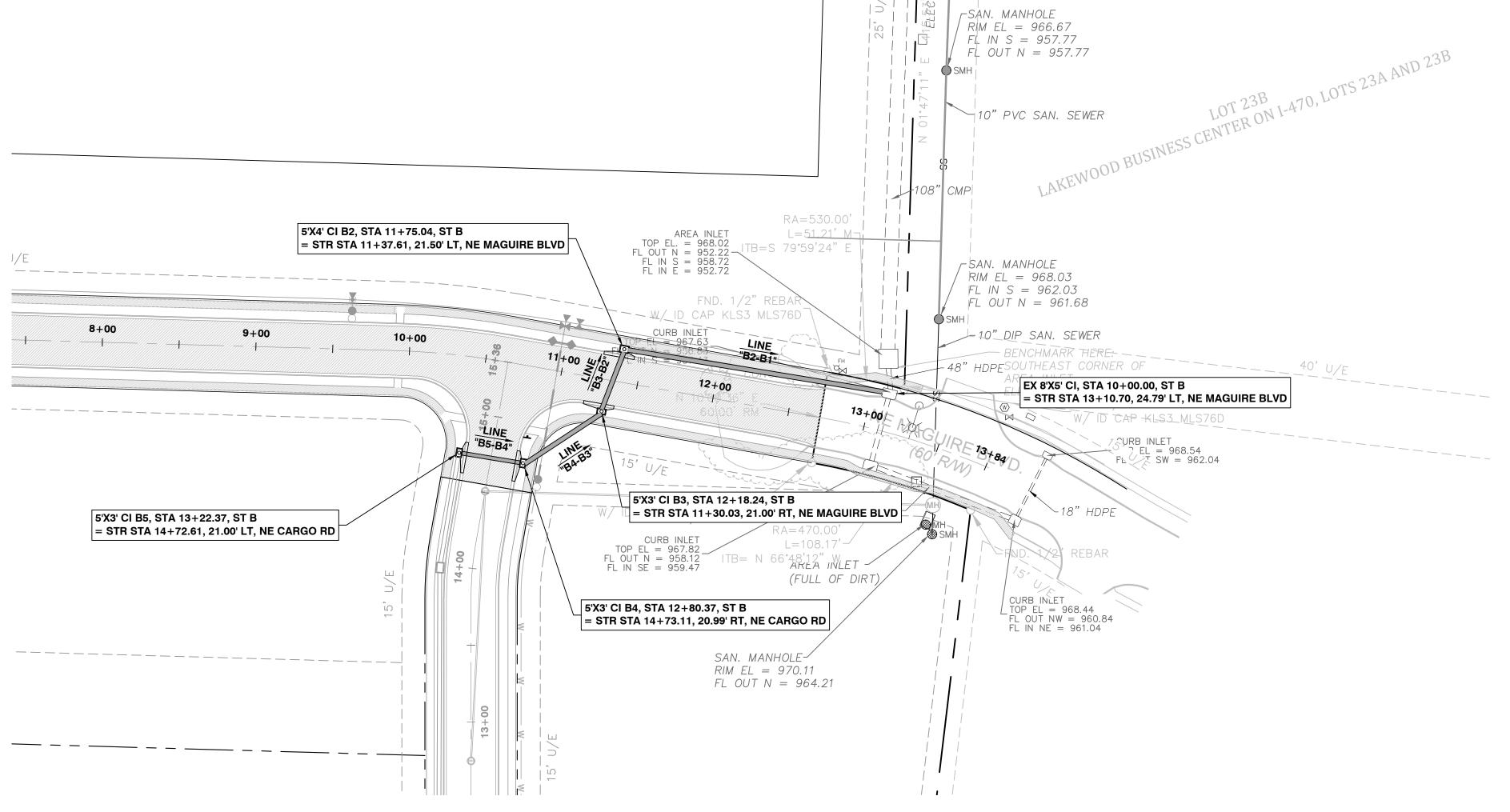
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OVERALL STORM CALCULATIONS

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SCALE IN FEET

Certificates of Authority
Architecture: MO 310 / KS 73

Engineering: MO 4 / KS 241 Land Surveying: MO 123 / KS 36

NORTH OAK SAFETY STORAGE,

1120 NW EAGLE RIDGE BLVD. GRAIN VALLEY, MO 64029

DEVELOPER/OWNER DAVID WARD

\* RODELL-TIPTON NUMBER Ø PE-2021032725 /€ JADRIENNE S RODELL-TIPTON, PE

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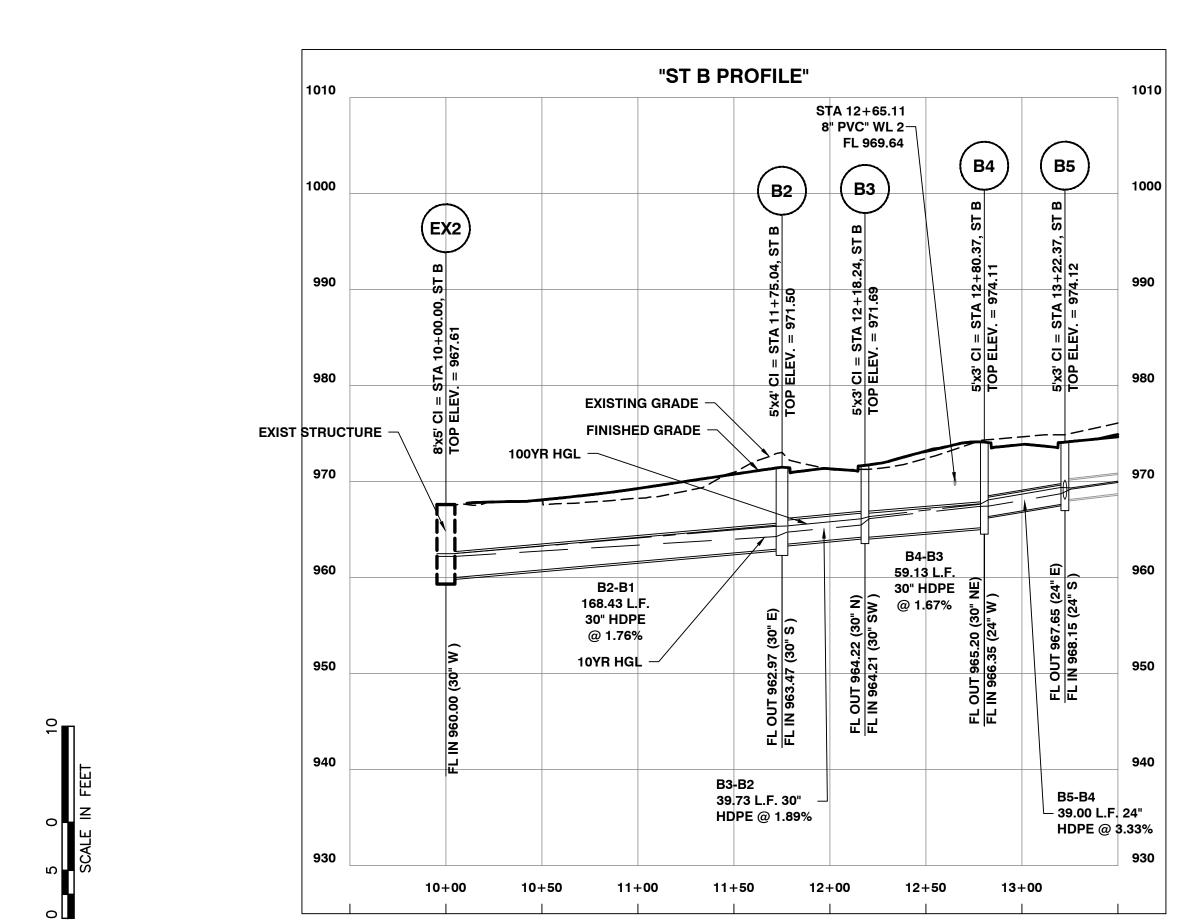
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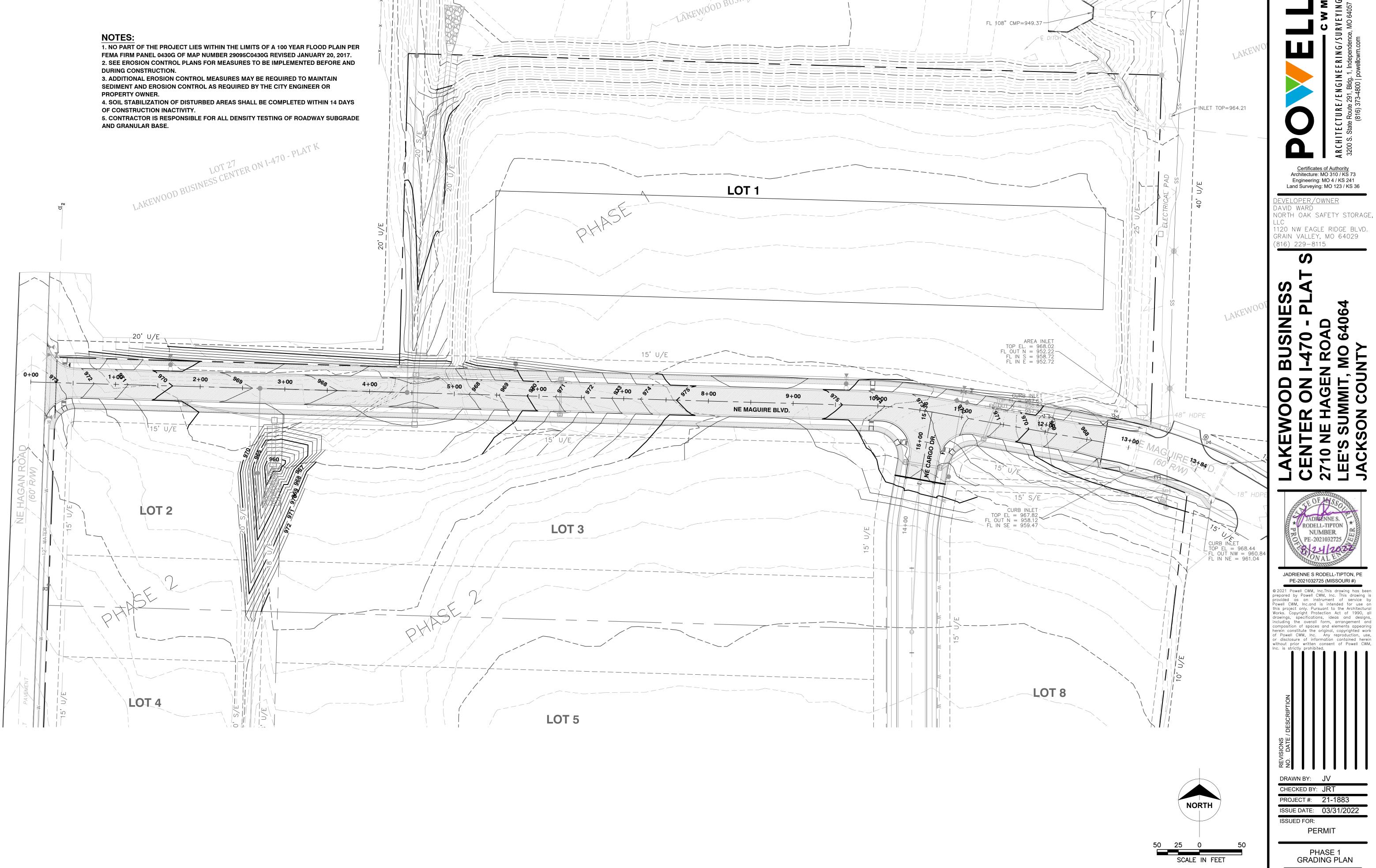
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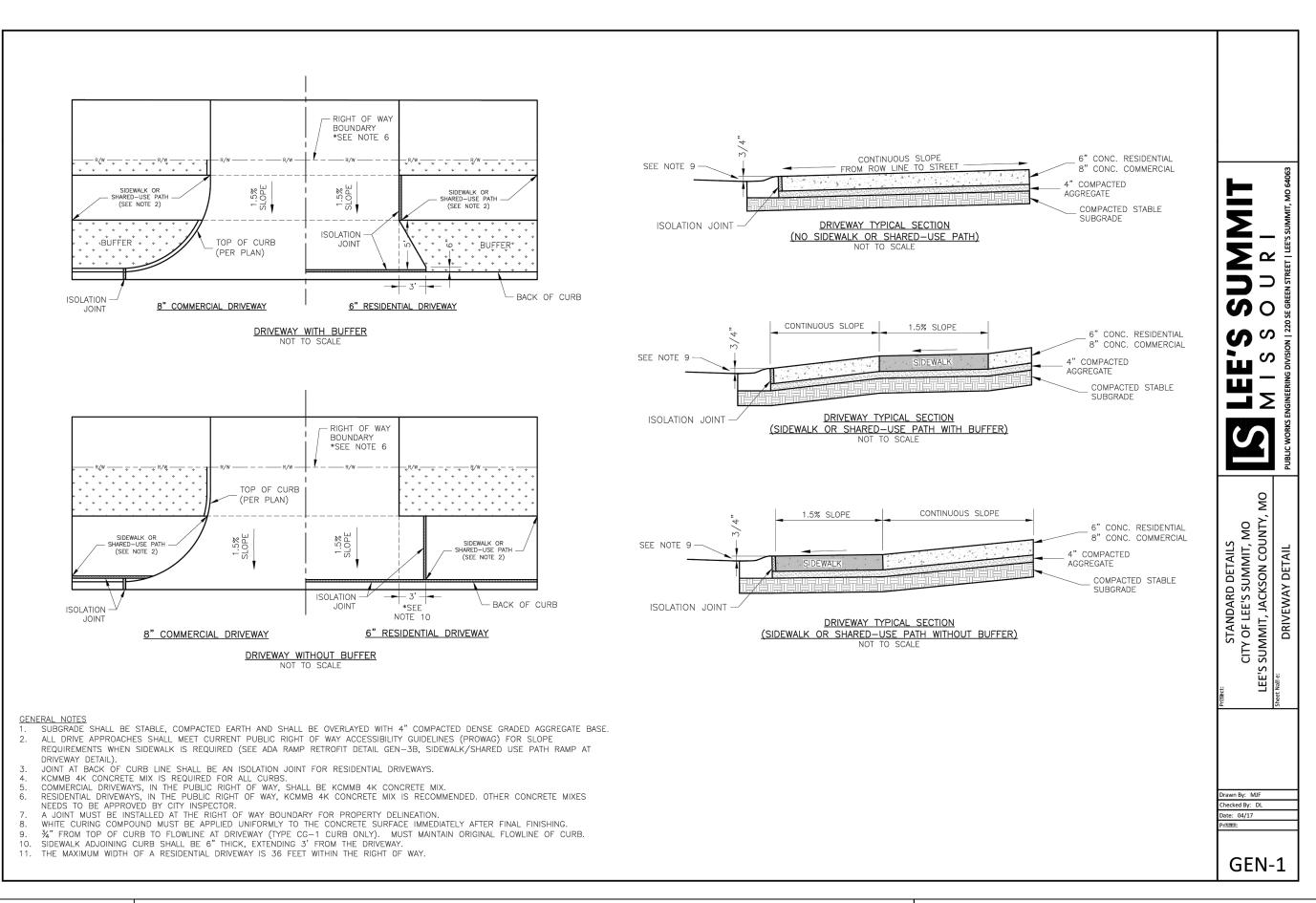
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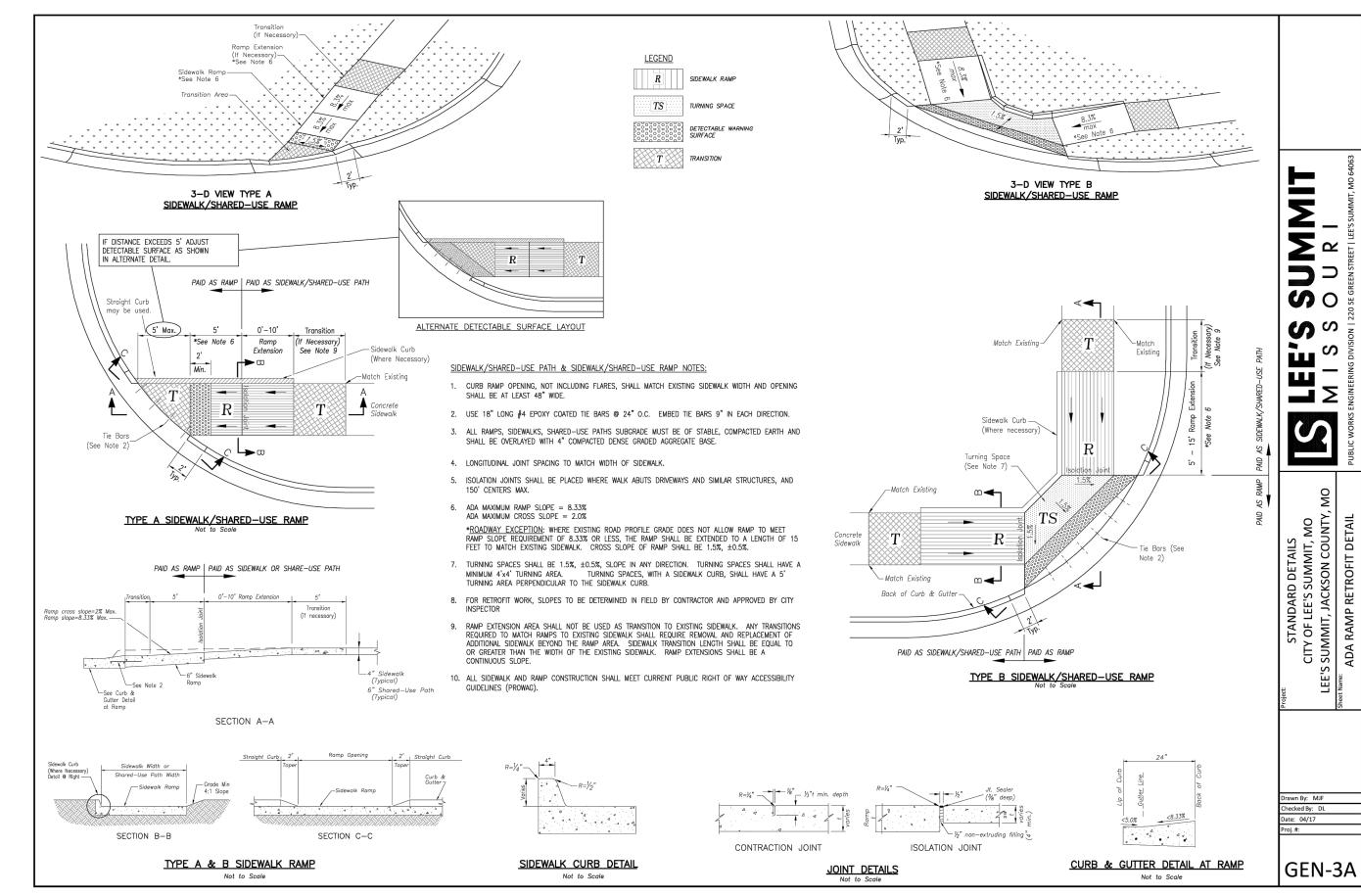
PHASE 1 STORM **SEWER PLAN &** PROFILE CONT'D

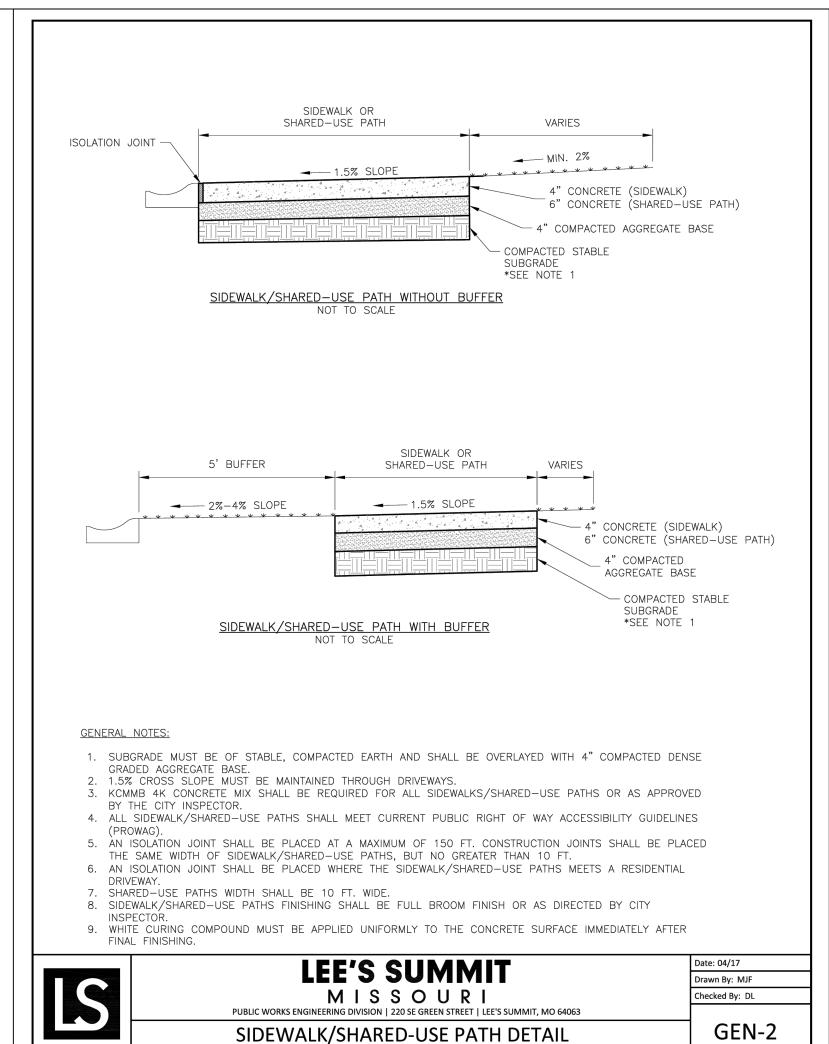


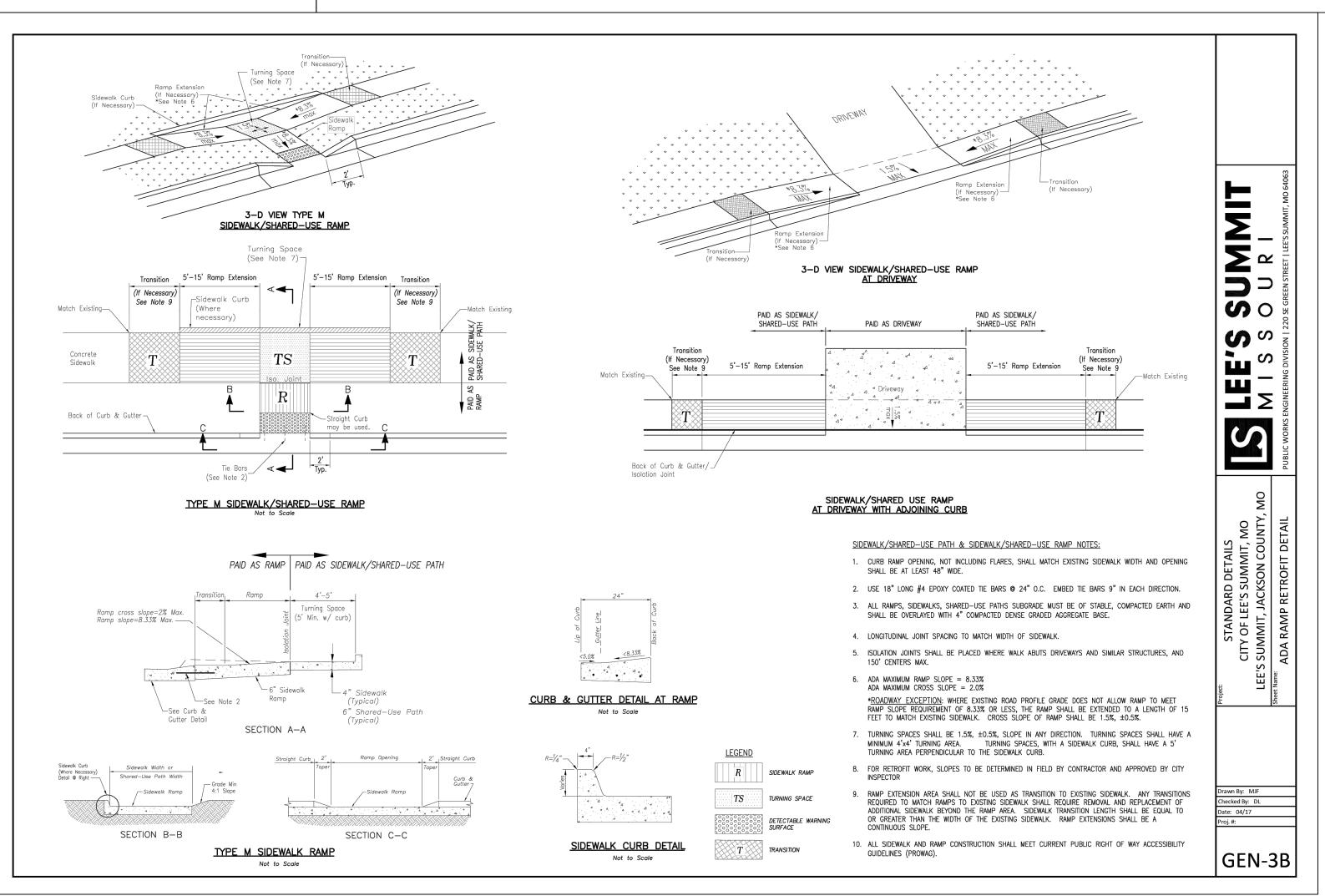
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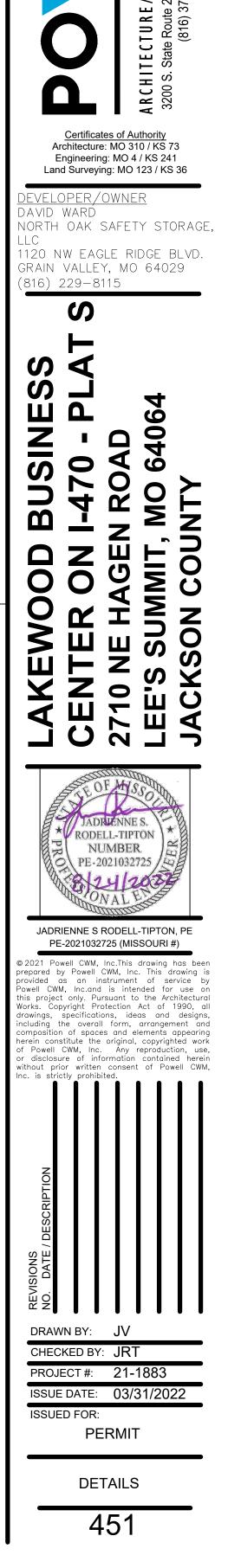


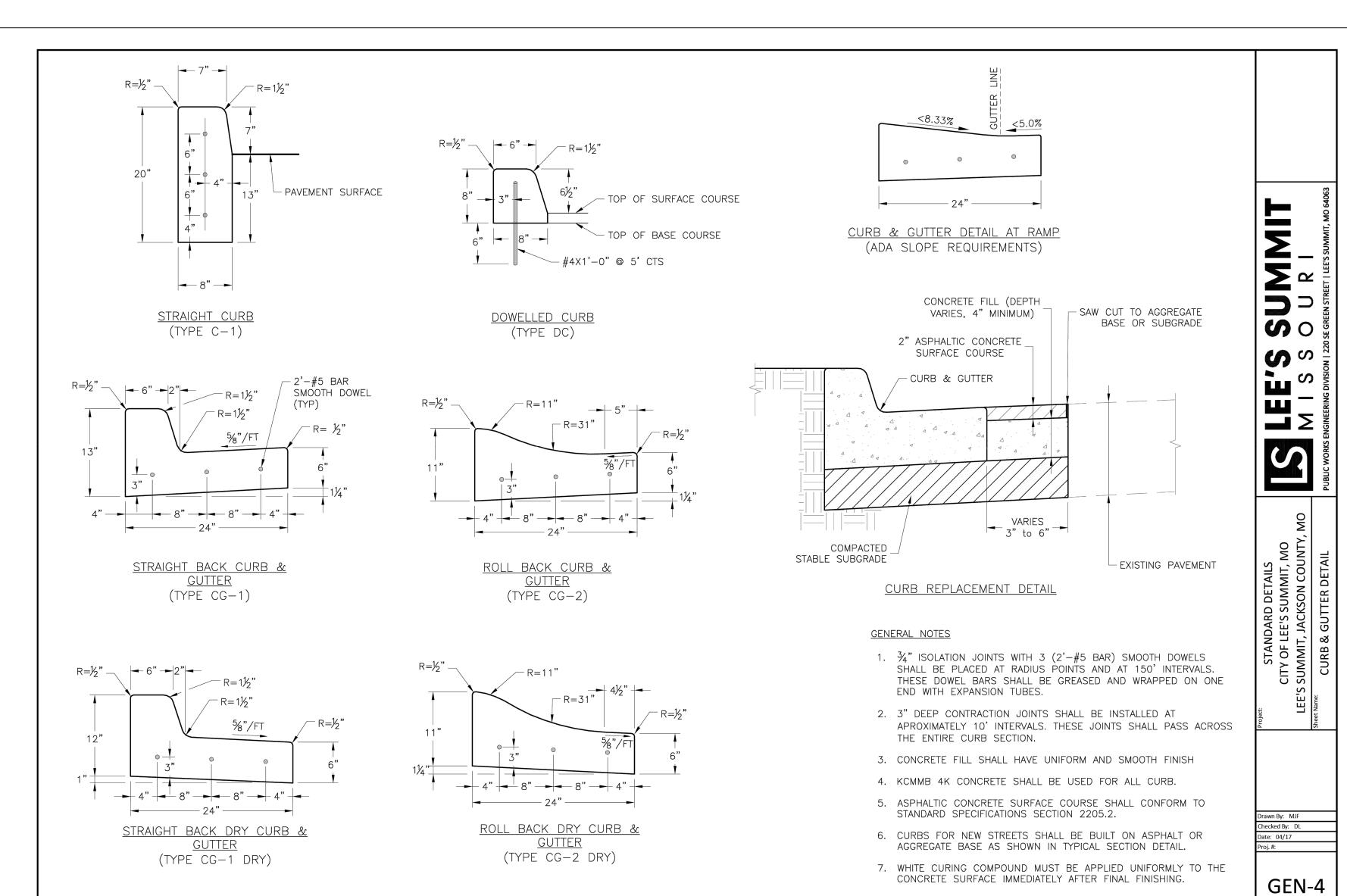


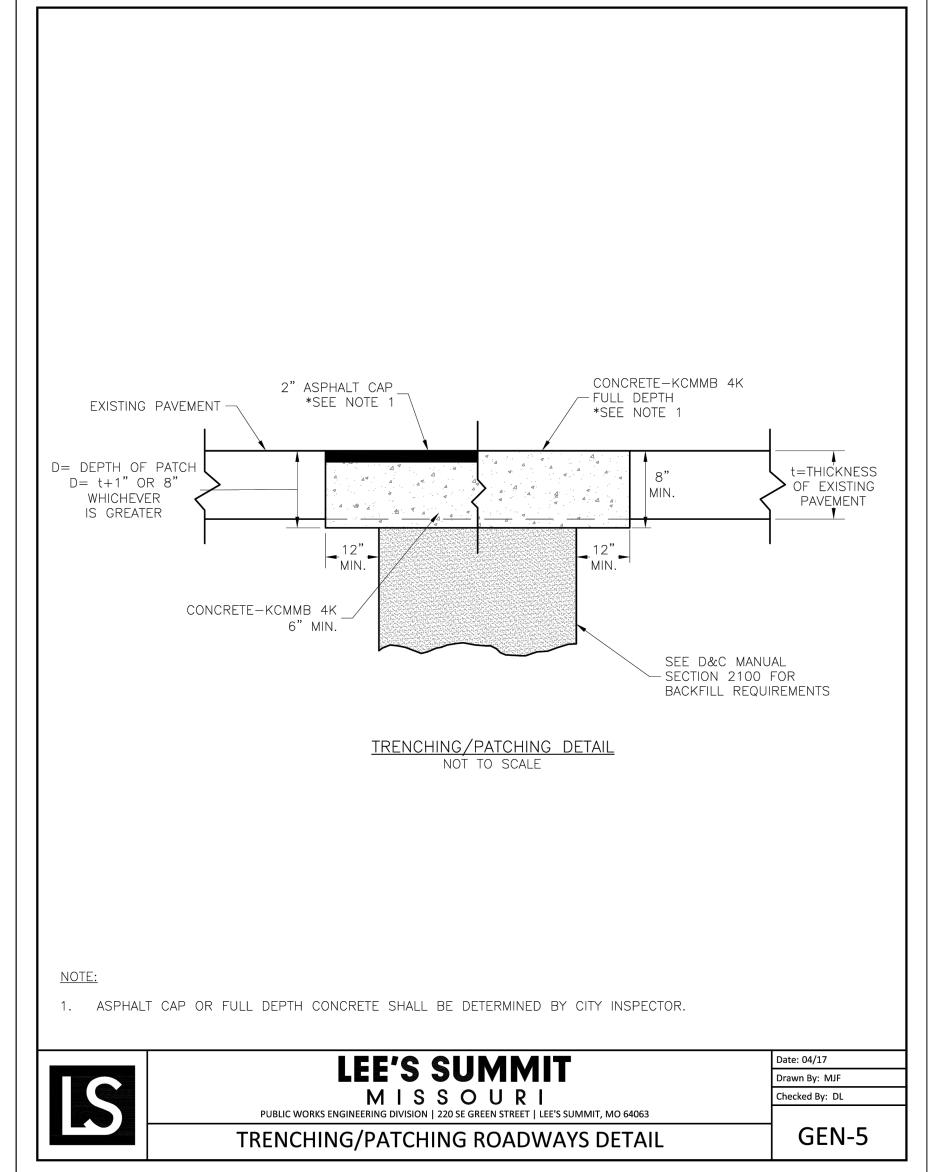














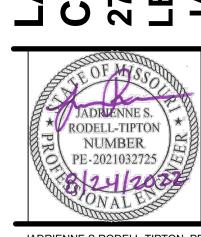
<u>DEVELOPER/OWNER</u> DAVID WARD

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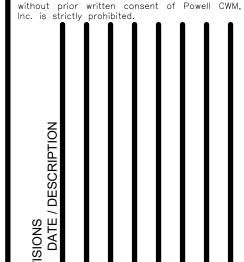
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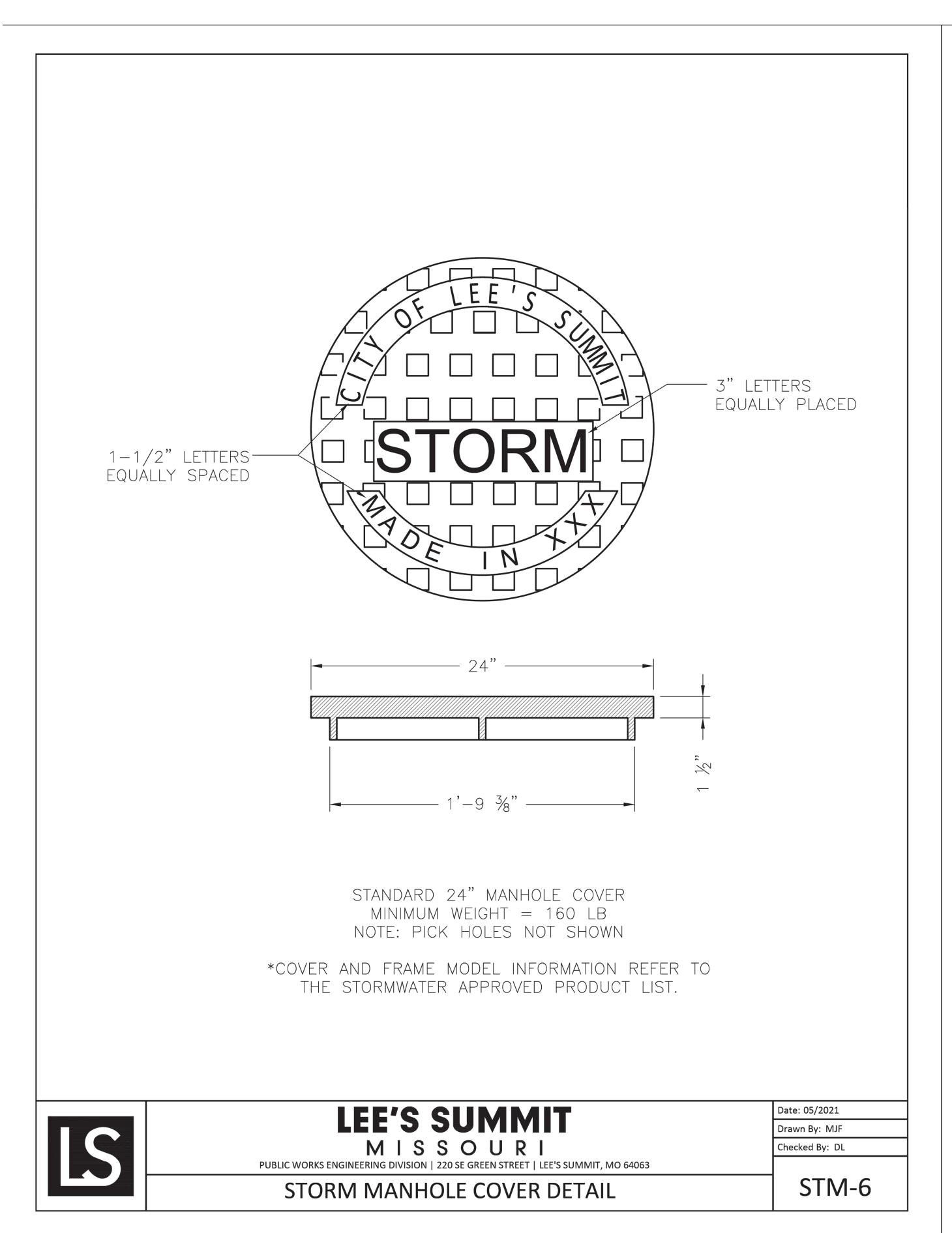
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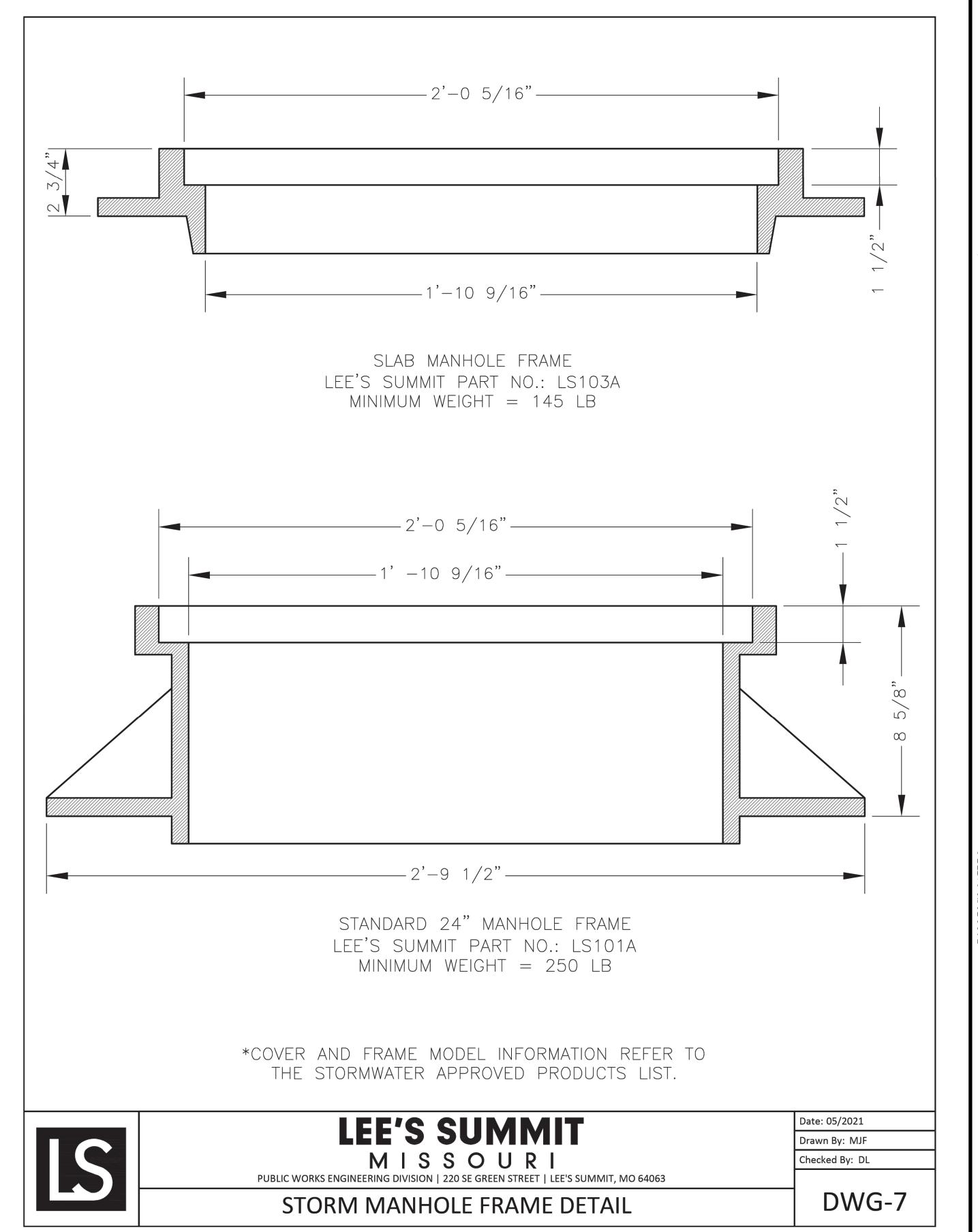
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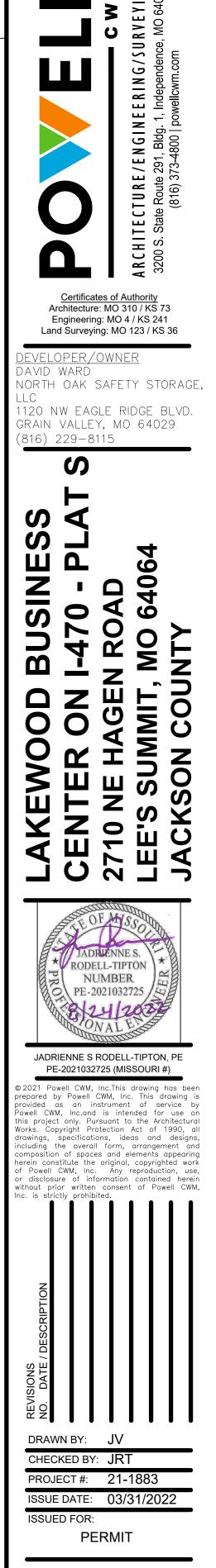
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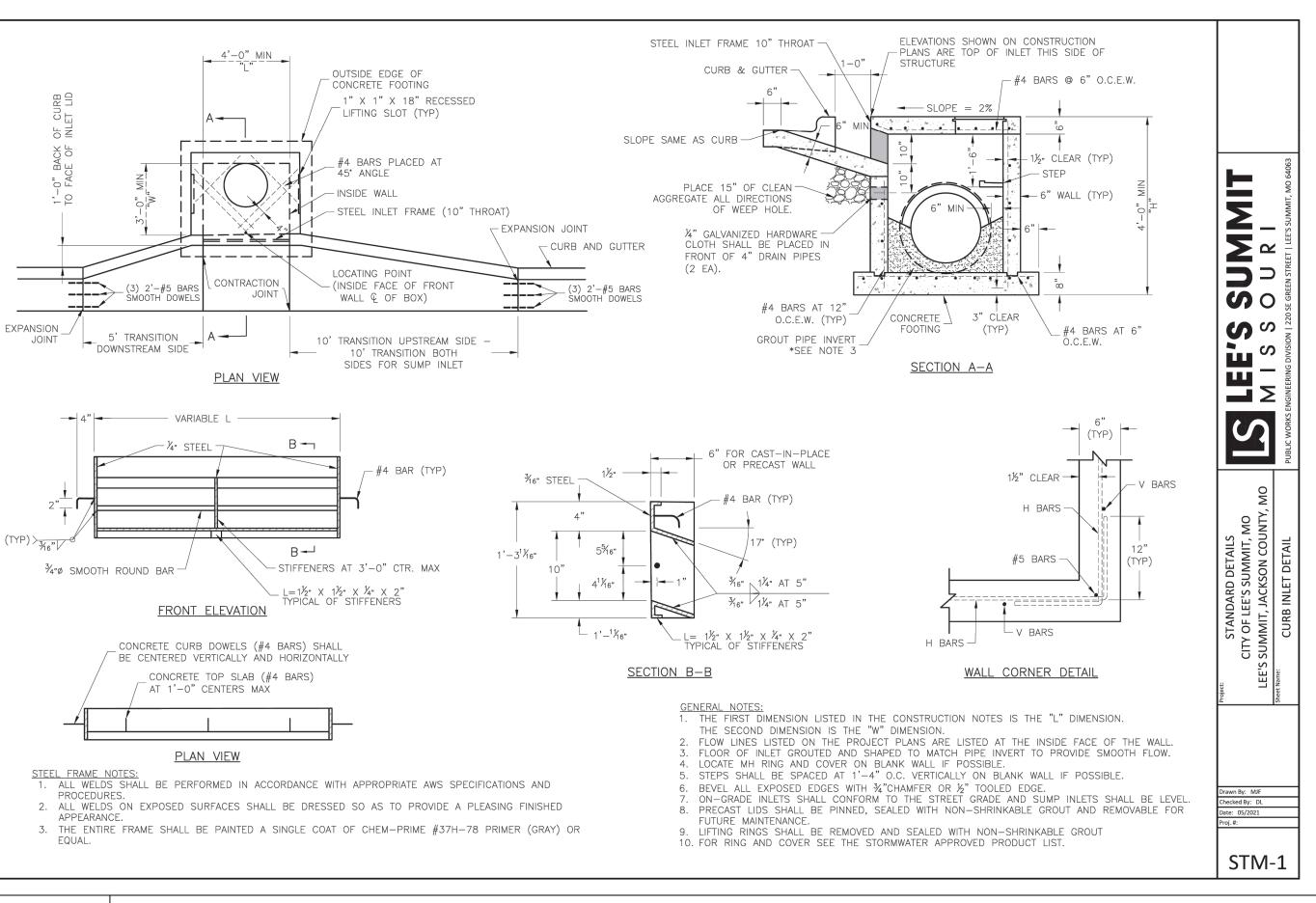
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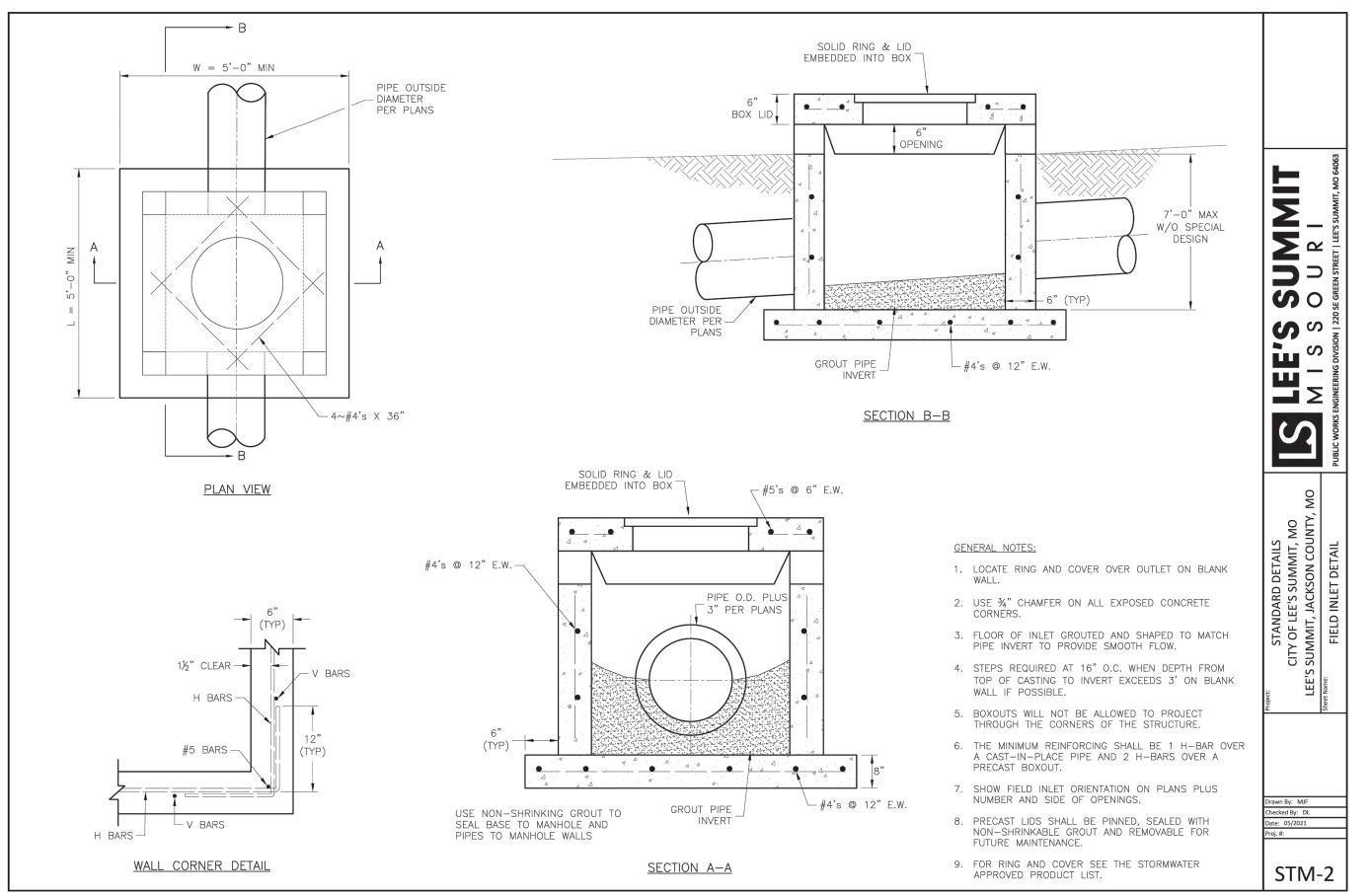


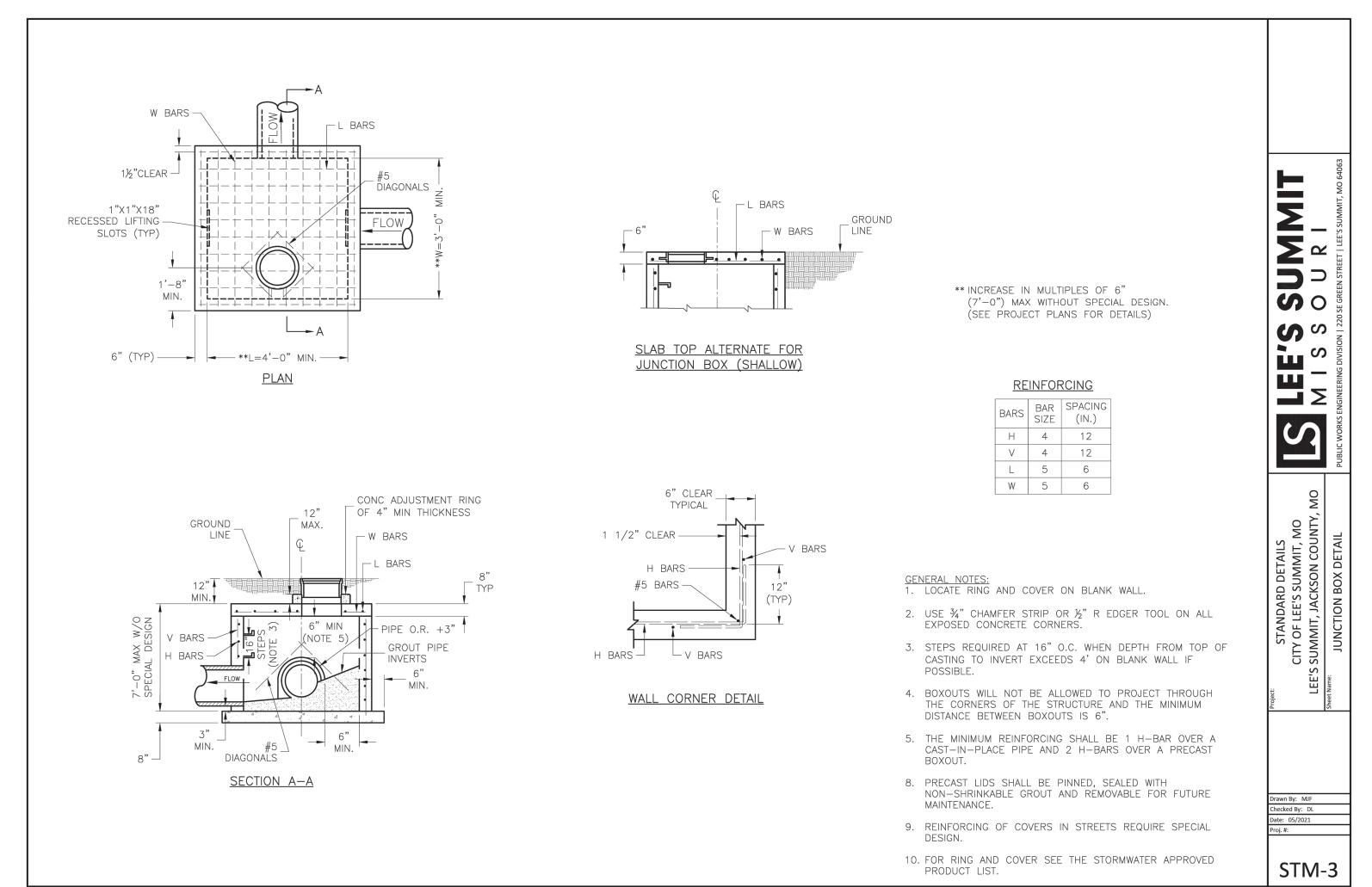


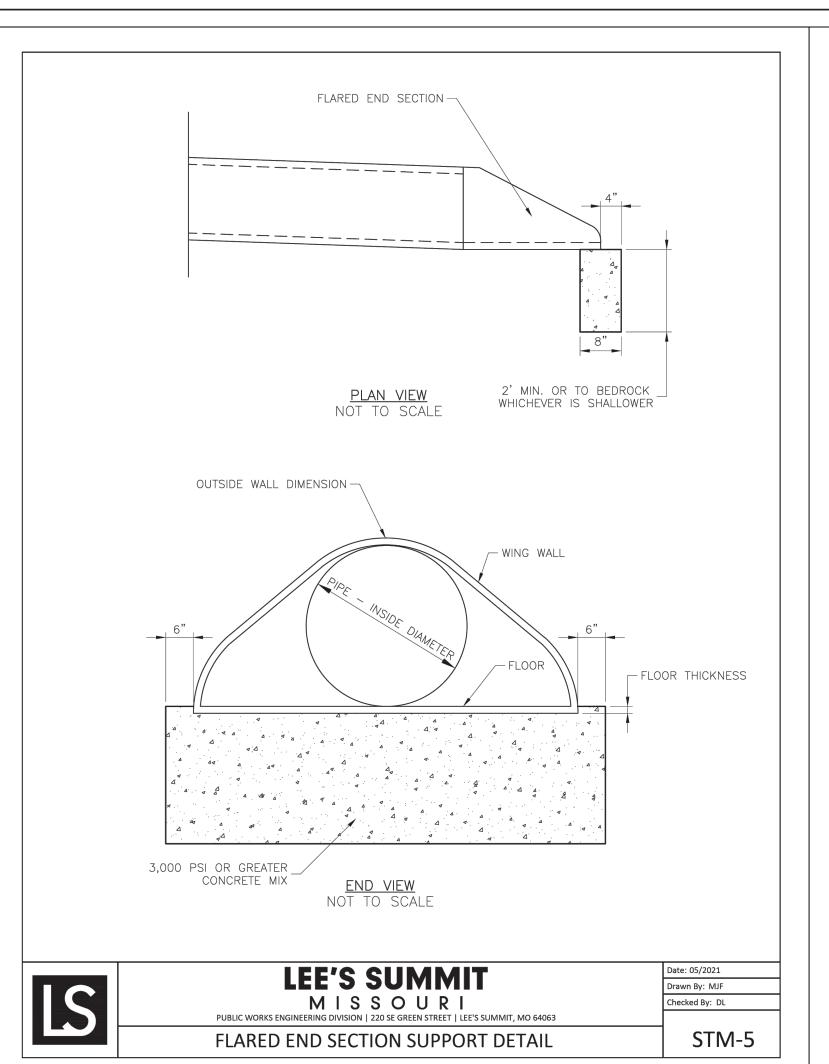


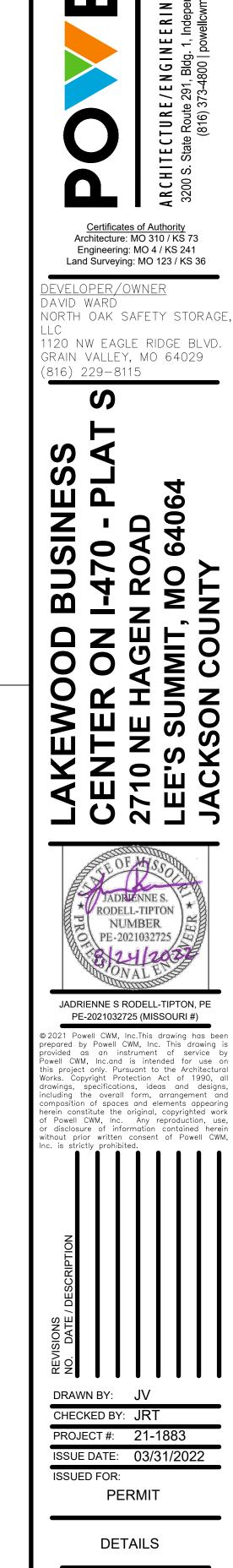
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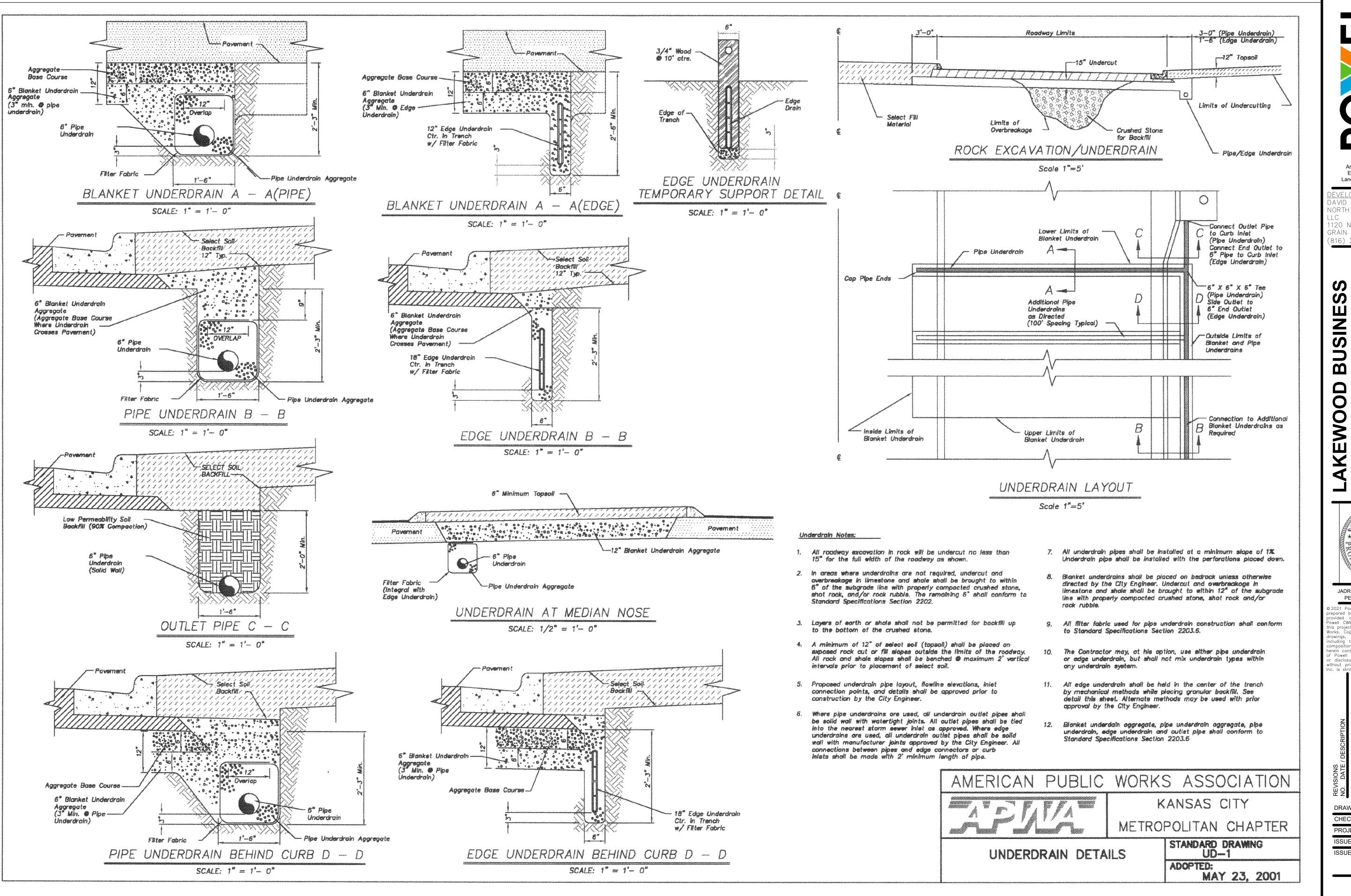












Engineering: MO 4 / KS 241 Land Surveying: MO 123 / KS 36 EVELOPER/OWNER AVID WARD ORTH OAK SAFETY STORAGE, 120 NW EAGLE RIDGE BLVD. GRAIN VALLEY, MO 64029 B16) 229-8115

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\*VRODELL-TIPTON NUMBER \ PE-2021032725

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