

ON I-470 - PLAT S

Lot 1

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:

1. ALL REQUESTED TO CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 8513.
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 THE BOUNDARY OF THIS PROJECT SHALL BE PROVIDED FOR BY SEPARATE DOCUMENT PRIOR TO ISSUANCE OF CONSTRUCTION PERMITS.
4. THE CONTRACTOR SHALL NOTIFY THE CITY OF LEE'S SUMMIT PUBLIC WORKS INSPECTION AT 816-969-1800 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.
5. THE CONTRACTOR SHALL NOTIFY POWELL CWM AT 816-373-4800 OF ANY CONFLICTS WITH THE IMPROVEMENTS PROPOSED BY THESE PLANS AND EXISTING SITE CONDITIONS.
6. THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AND OBTAIN THE APPROPRIATE BLASTING PERMITS FOR ANY REQUIRED BLASTING. IF BLASTING IS ALLOWED, ALL BLASTING SHALL CONFORM TO STATE AND LOCAL ORDINANCES.
7. DO NOT SCALE THESE DRAWINGS.
8. CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS, BONDS, AND INSURANCE REQUIRED BY THE CITY.
9. THE UTILITY LOCATIONS SHOWN ON THESE PLANS ARE TAKEN FROM UTILITY COMPANY RECORDS AND ARE APPROXIMATE ONLY. THEY DO NOT CONSTITUTE ACTUAL FIELD LOCATIONS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
10. CLEARING AND GRUBBING OPERATIONS AND DISPOSAL OF ALL DEBRIS THEREFROM SHALL BE PERFORMED BY THE CONTRACTOR IN STRICT ACCORDANCE WITH ALL STATE AND LOCAL CODES.
11. THE DEVELOPER / OWNER SHALL CONTROL EROSION AND SILTATION DURING ALL PHASES OF CONSTRUCTION, AND SHALL KEEP THE STREETS CLEAN OF MUD AND DEBRIS.
12. ALL EXCESS MATERIAL SHALL BE REMOVED LEGALLY FROM SITE AND DISPOSED OF OFF SITE.
13. TRAFFIC CONTROL AND MAINTENANCE OF TRAFFIC DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE PUBLIC WORKS DEPARTMENT. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF MUTCD.
14. EROSION CONTROL MEASURES SHALL BE PROVIDED AT ALL LOCATIONS WHERE DRAINAGE IS LEAVING THE PROJECT SITE. THE EROSION CONTROL PLAN SHOWS MINIMUM EROSION CONTROL MEASURES TO BE PROVIDED. ADDITIONAL SITE SPECIFIC MEASURES MAY BE NECESSARY AND SHALL BE PROVIDED BY THE DEVELOPER / OWNER, AT THE CONTRACTOR'S EXPENSE.
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 GOOD OPERATING CONDITION.
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 PAIRED 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 SPECIFICATIONS AND CODES.
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 INSTALLED 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
NOT TO SCALE



CALL BEFORE YOU DIG 1-800-DIG-RITE

UTILITY CONTACTS:

EVERGY	816-471-5275
SPIRE	800-582-1234
COMCAST	816-795-1100
AT&T	816-325-5610
SPECTRUM	816-358-5360
CITY OF LEE'S SUMMIT PUBLIC WORKS	816-969-1800
CITY OF LEE'S SUMMIT PUBLIC WORKS INSPECTIONS	816-969-1800
CITY OF LEE'S SUMMIT WATER UTILITIES	816-969-1900

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-010	COVER SHEET
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C-201	DRAINAGE AREA MAP
C-210	OVERALL STORM SEWER LAYOUT PLAN
C-212	OVERALL STORM CALCULATIONS
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C-222-C-223	PHASE 1 STORM PLAN & PROFILE
C-311	PHASE 1 GRADING PLAN
C-451-C-455	DETAILS

LEGAL DESCRIPTIONS

[illegible]

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:

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: _____

BY: _____
CITY ENGINEER



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

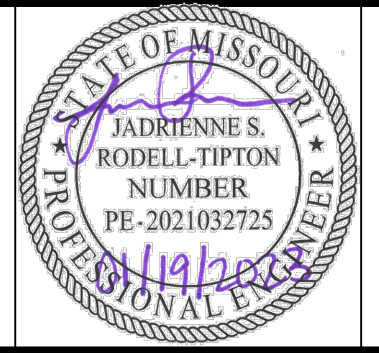
DEVELOPER/OWNER

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

60

STATS

**LAKELWOOD BUSINESS
CENTER ON I-470 - PHASE 2
27110 NE HAGEN ROAD
LEE'S SUMMIT, MO 64064
JACKSON COUNTY**



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

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PROJECT #: 21-1883

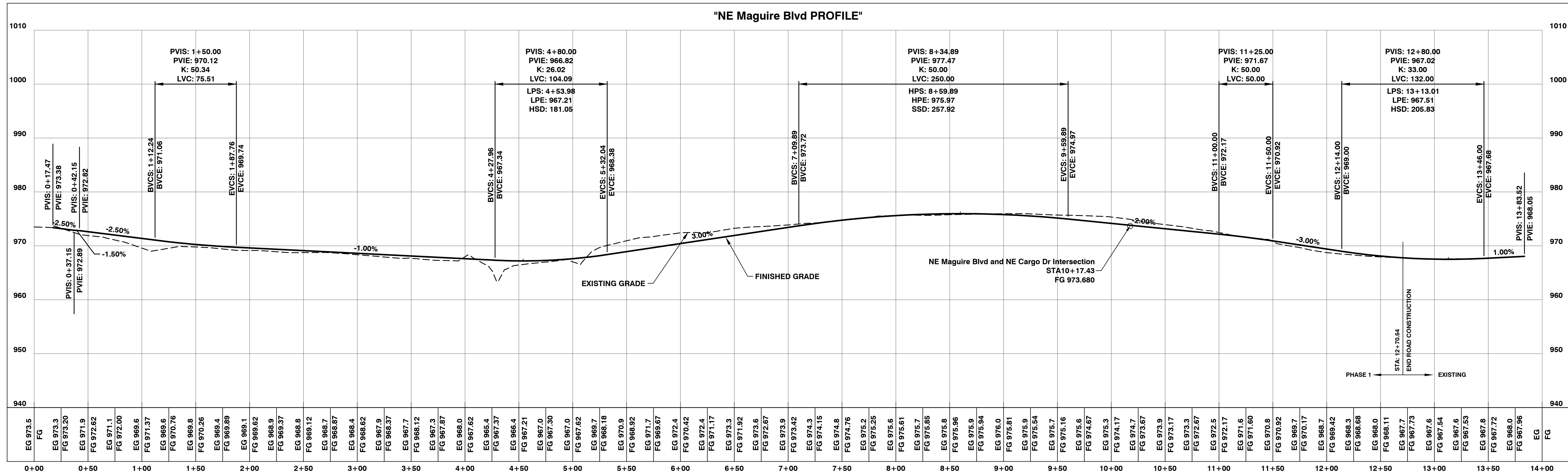
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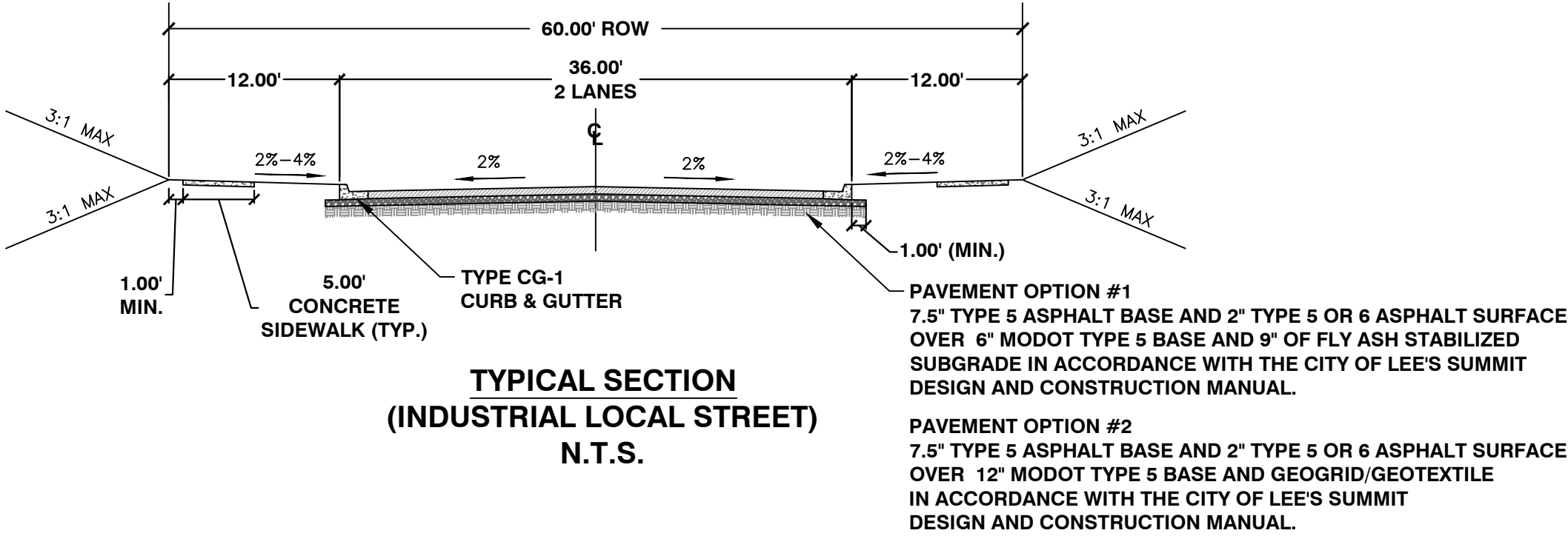
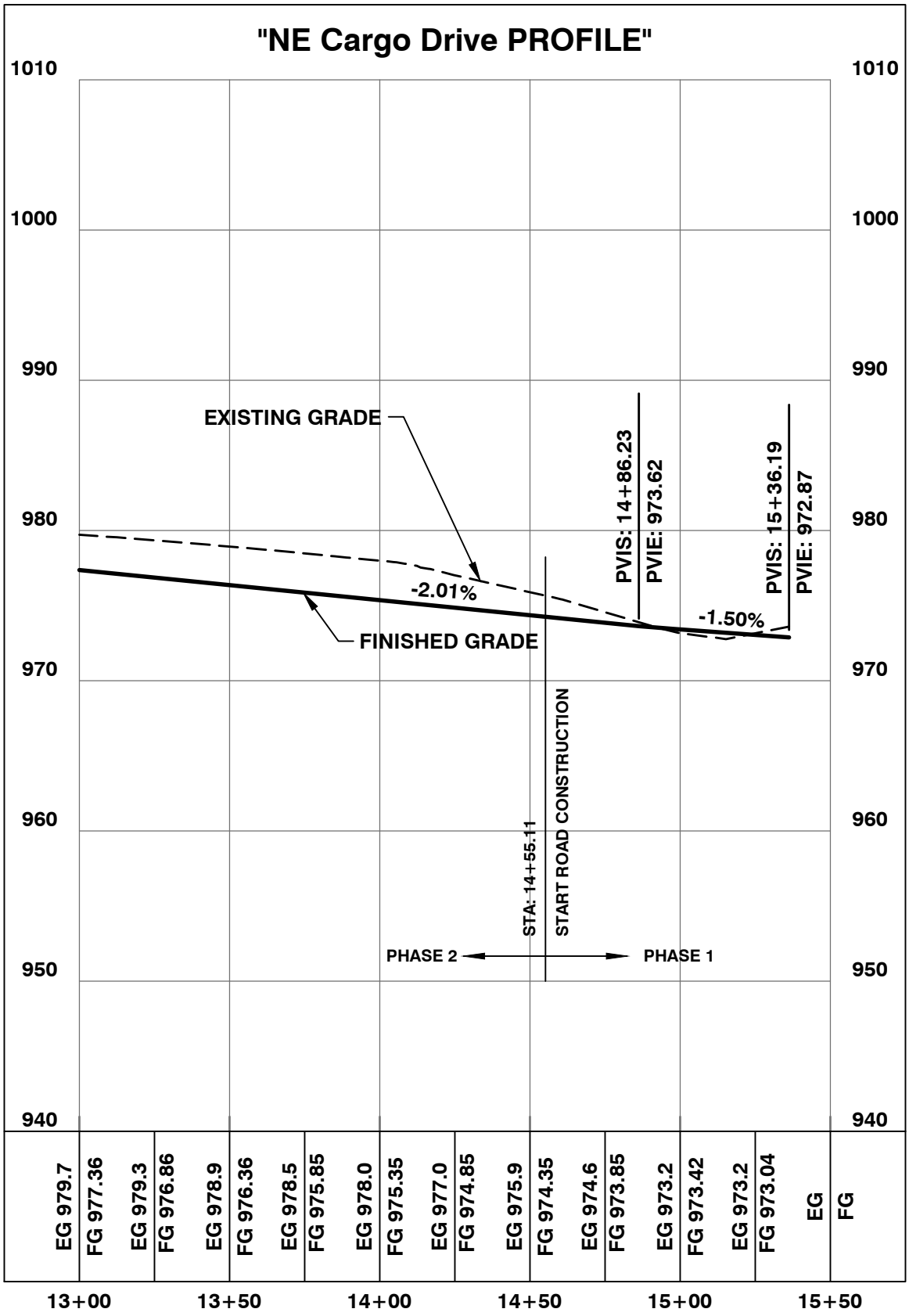
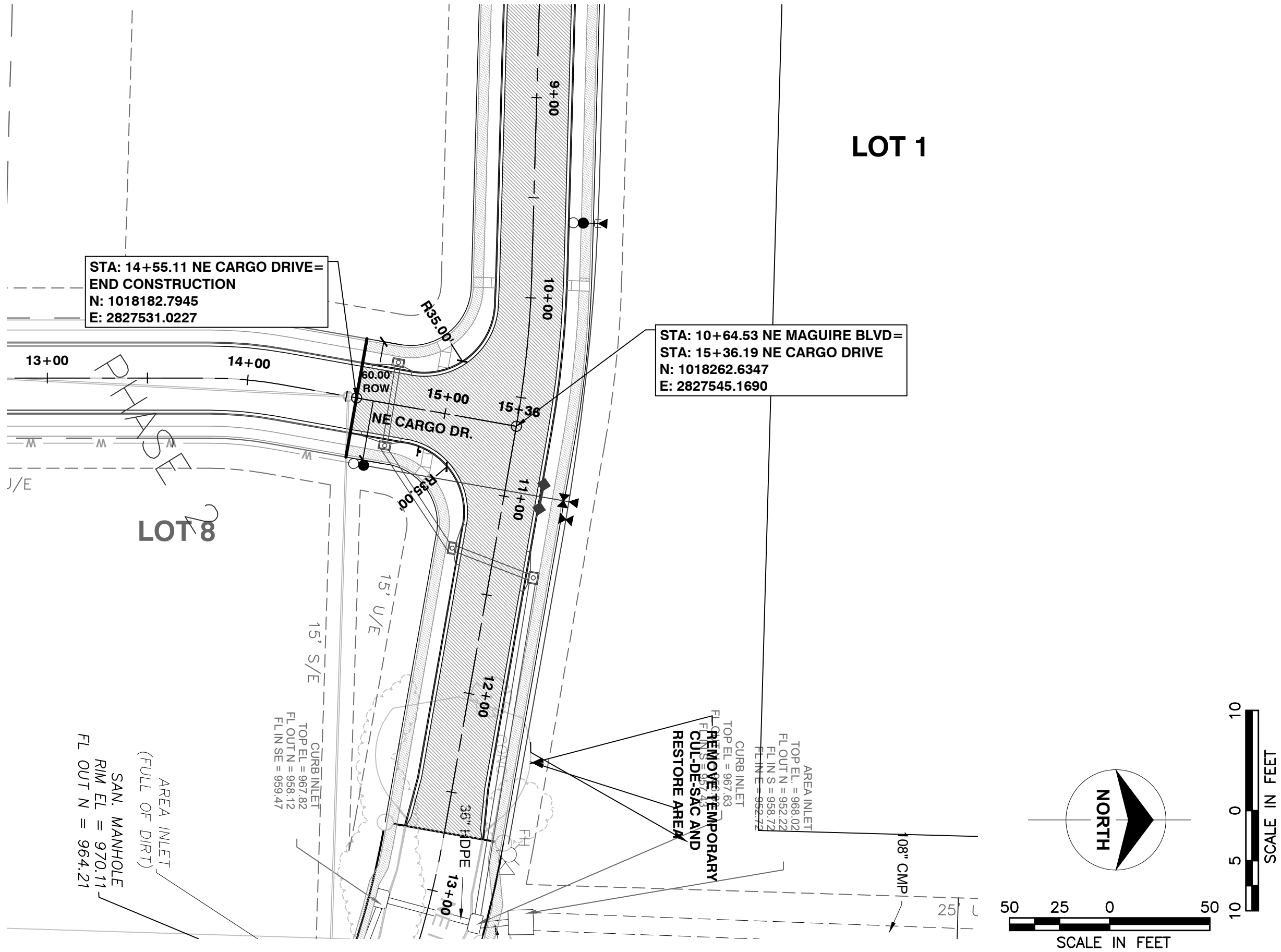
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COVER SHEET

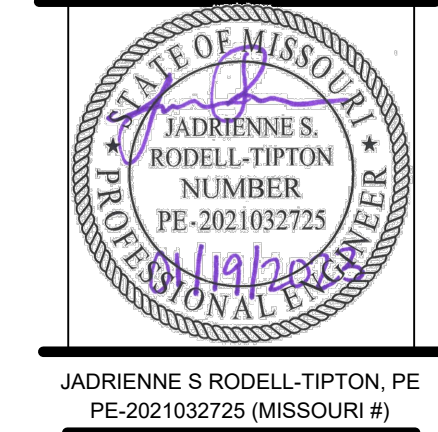
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**LAKESWOOD BUSINESS
CENTER ON I-470 - PLAT S
2710 NE HAGEN ROAD
LEE'S SUMMIT, MO 64064
JACKSON COUNTY**

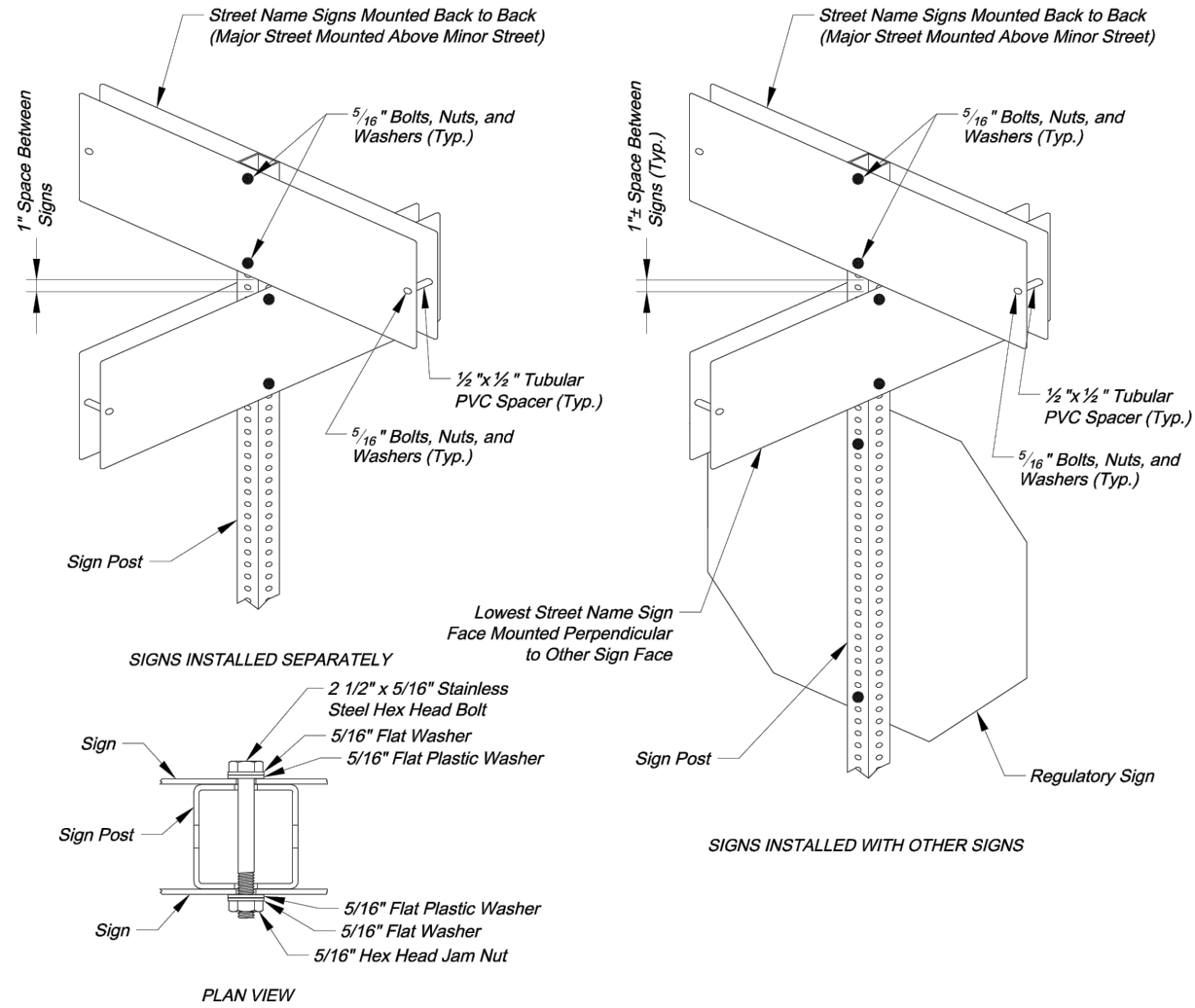
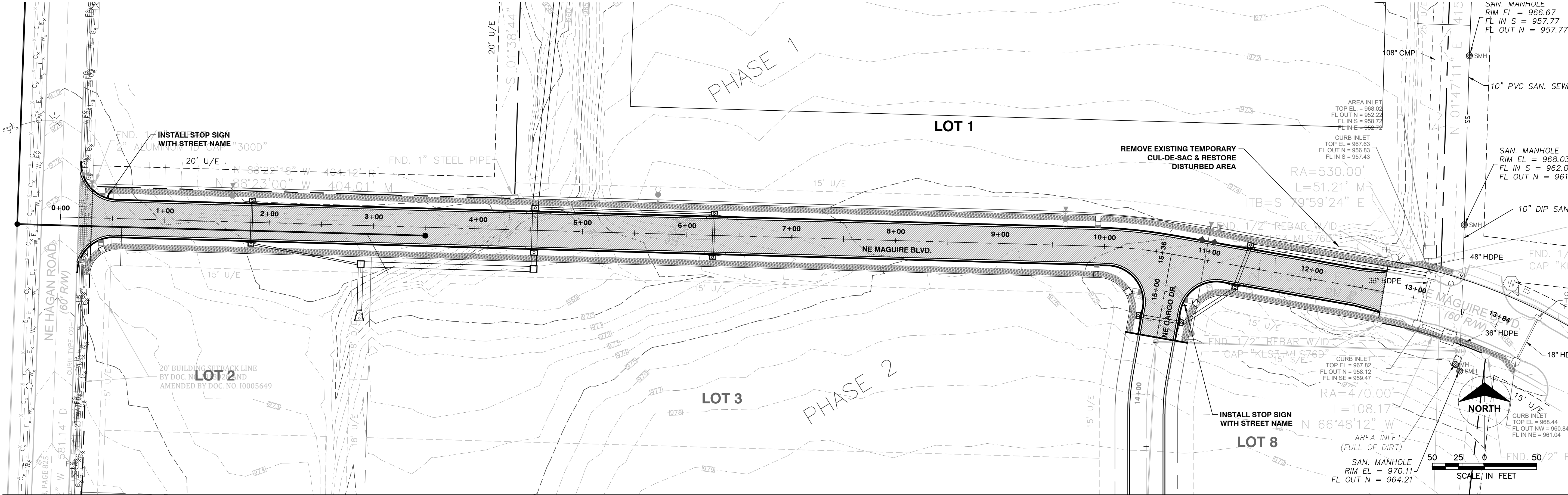


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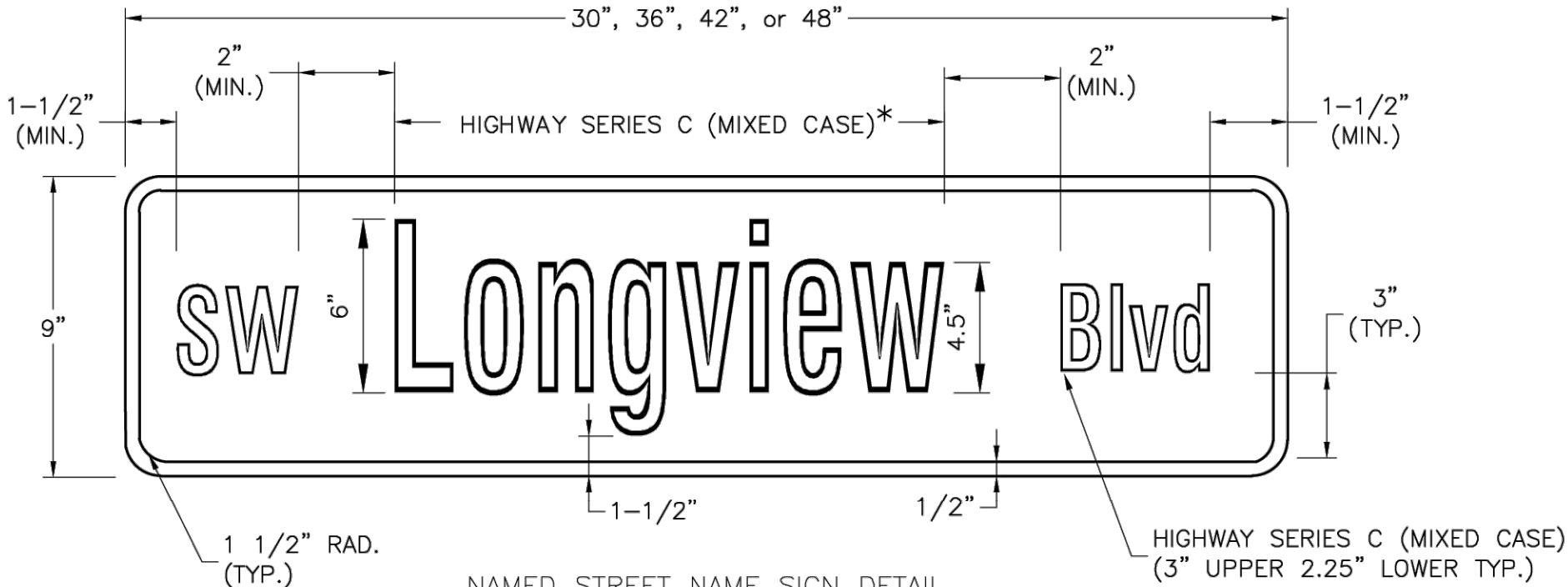
PERMIT
STREET PLAN
& PROFILE - 2
112



SQUARE STEEL POST MOUNTING DETAILS

SQUARE STEEL POST DETAILS

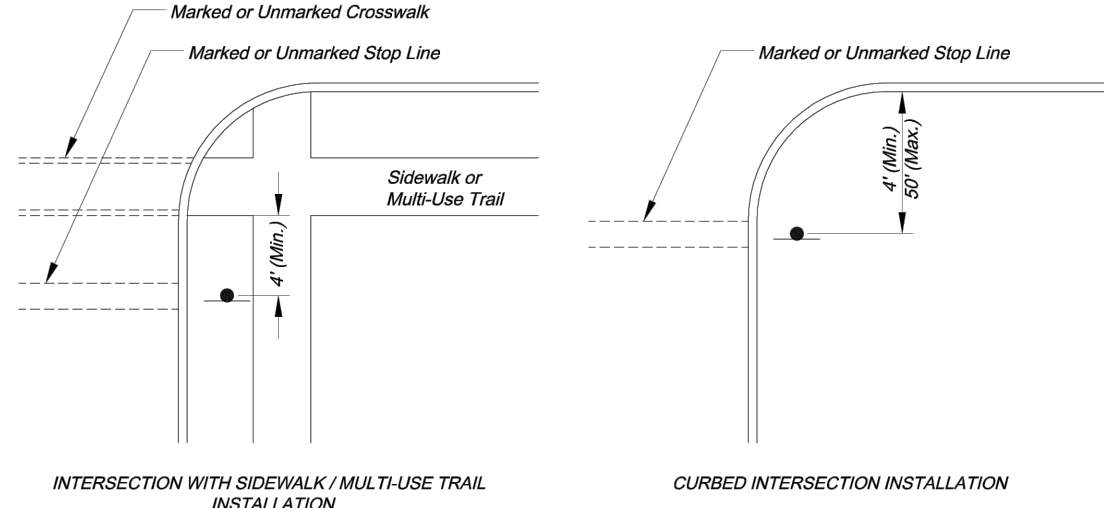
- SQUARE STEEL POST NOTES:
- Square steel sign posts and break-away anchor shall consist of the following materials:
Sign Post - 14 Ga. 2" x 2" Square Steel Post
Post Anchor - 12 Ga. 2 1/2" x 2 1/2" x 36" Square Steel Post
Anchor Sleeve - 12 Ga. 2 1/2" x 2 1/2" x 18" Square Steel Post
 - 14 Gauge posts 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.
 - The maximum area for one sign post is 0.0 square feet. A sign or combination of signs with an area greater than 0.0 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.



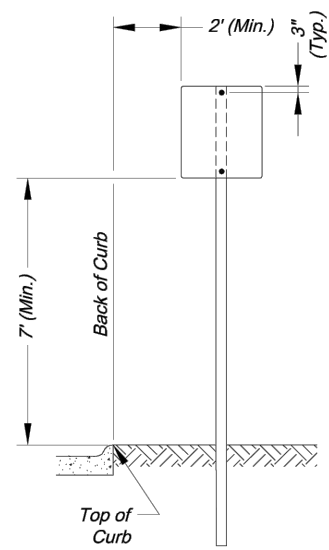
- * USE HIGHWAY SERIES B (MIXED CASE) IN LIEU OF SERIES C IF NECESSARY TO FIT TEXT ON A 36" SIGN BLANK.

STREET NAME SIGN FACE DETAILS

- NOTES:
- For all street name signs, the legend shall be white and the background shall be green.
 - 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.
 - 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



SIGN MOUNTING DETAILS

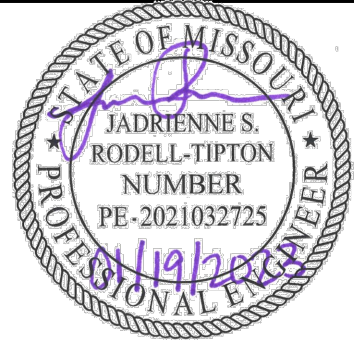
- * The height to the bottom of a sign when it is located in a pedestrian walkway or extends into a walkway shall be a minimum of 80 inches above the walkway.

- NOTE:
- Generally, the sign mounting height should not be more than 1" greater than the minimum mounting height.

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

DEVELOPER/OWNER
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STREET SIGNAGE
PLAN

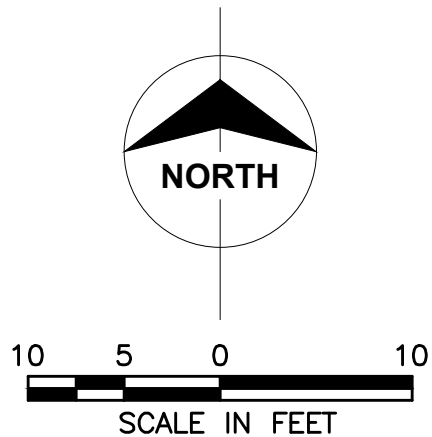
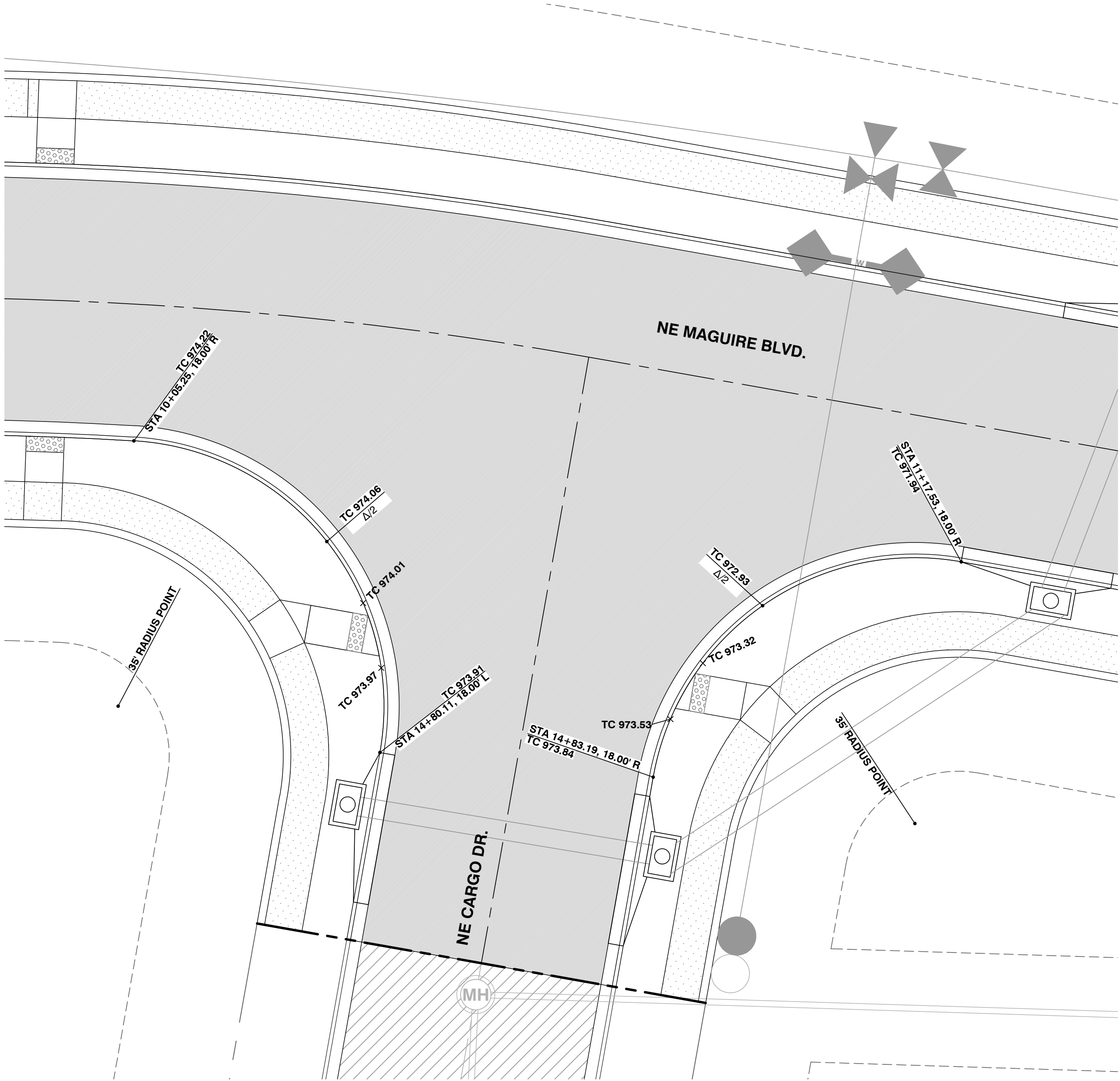
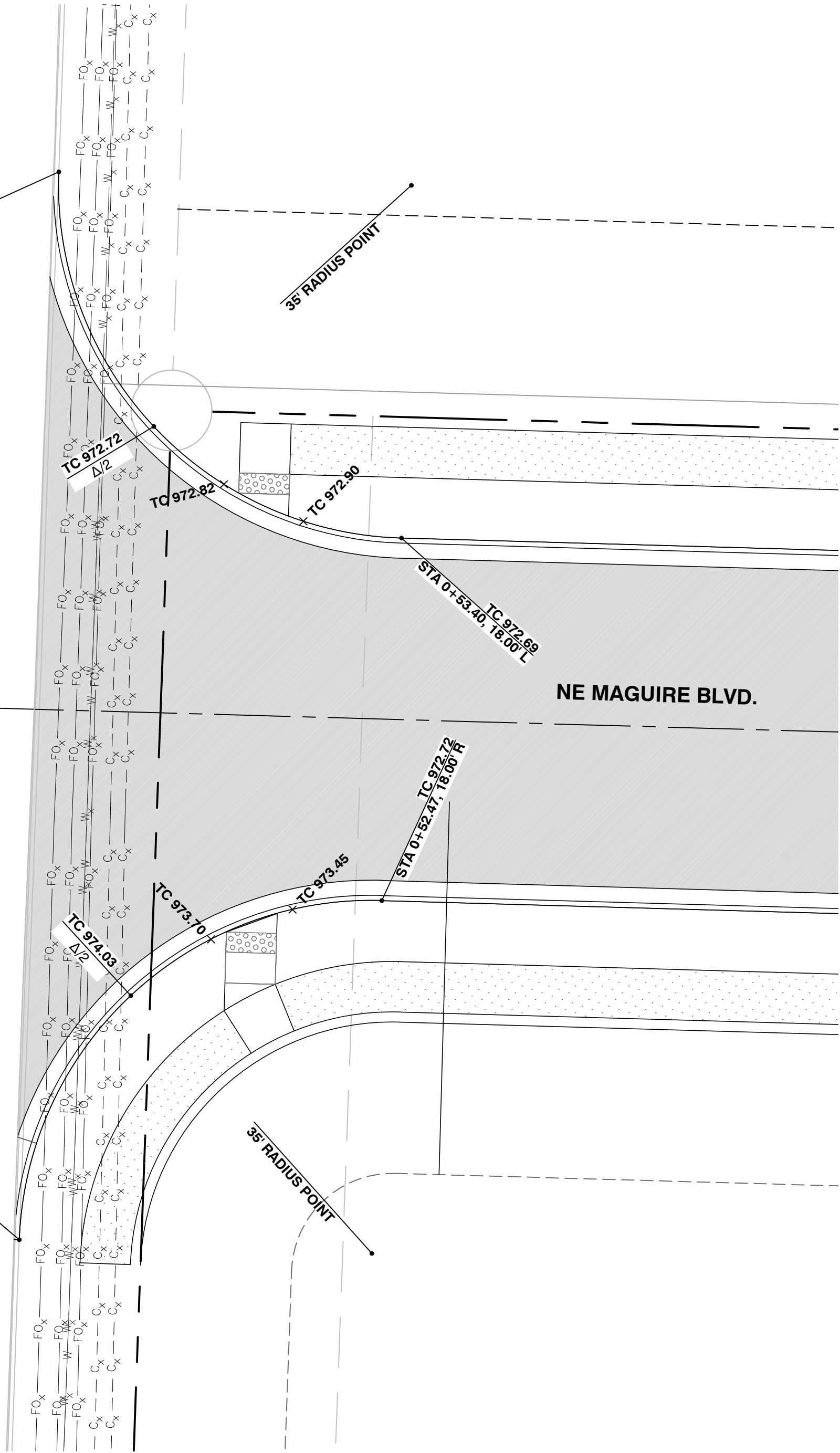
4th ROAD

R/W

NE HAGAN RD.

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TC 974.66 M.E.

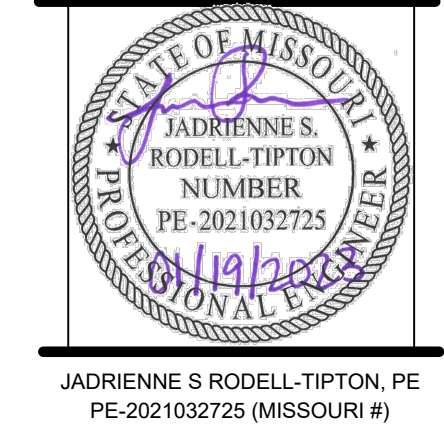
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INTERSECTION DETAILS
130



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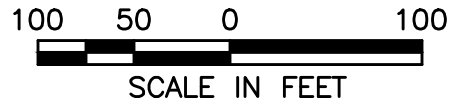
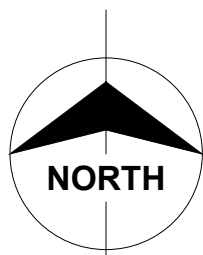
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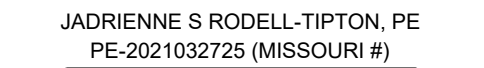
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POWELL CWM
ARCHITECTURE/ENGINEERING/SURVEYING
3200 S. State Route 291, Bldg. 1, Independence, MO 64057
(816) 373-4800 | powellcwm.com

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



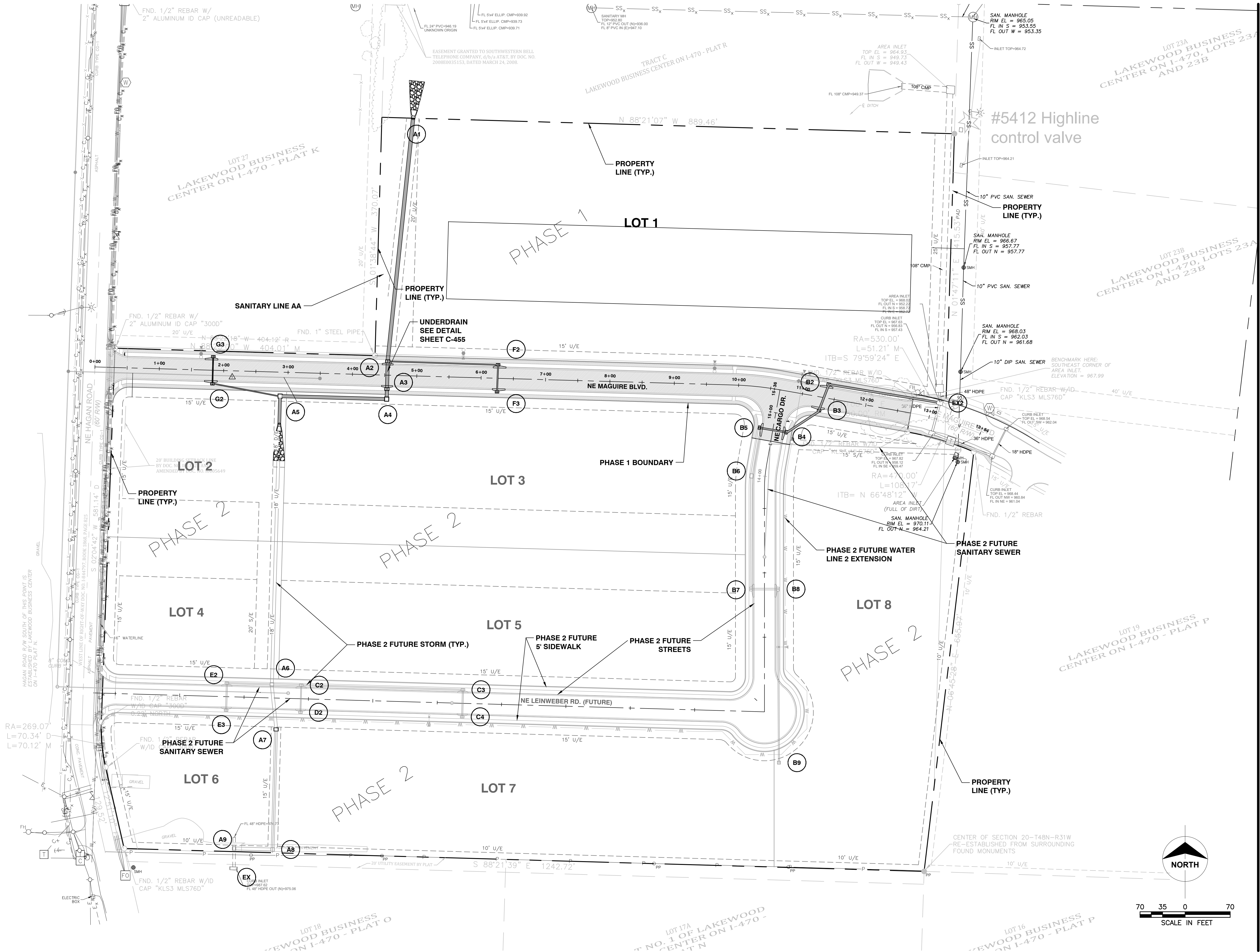
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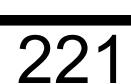


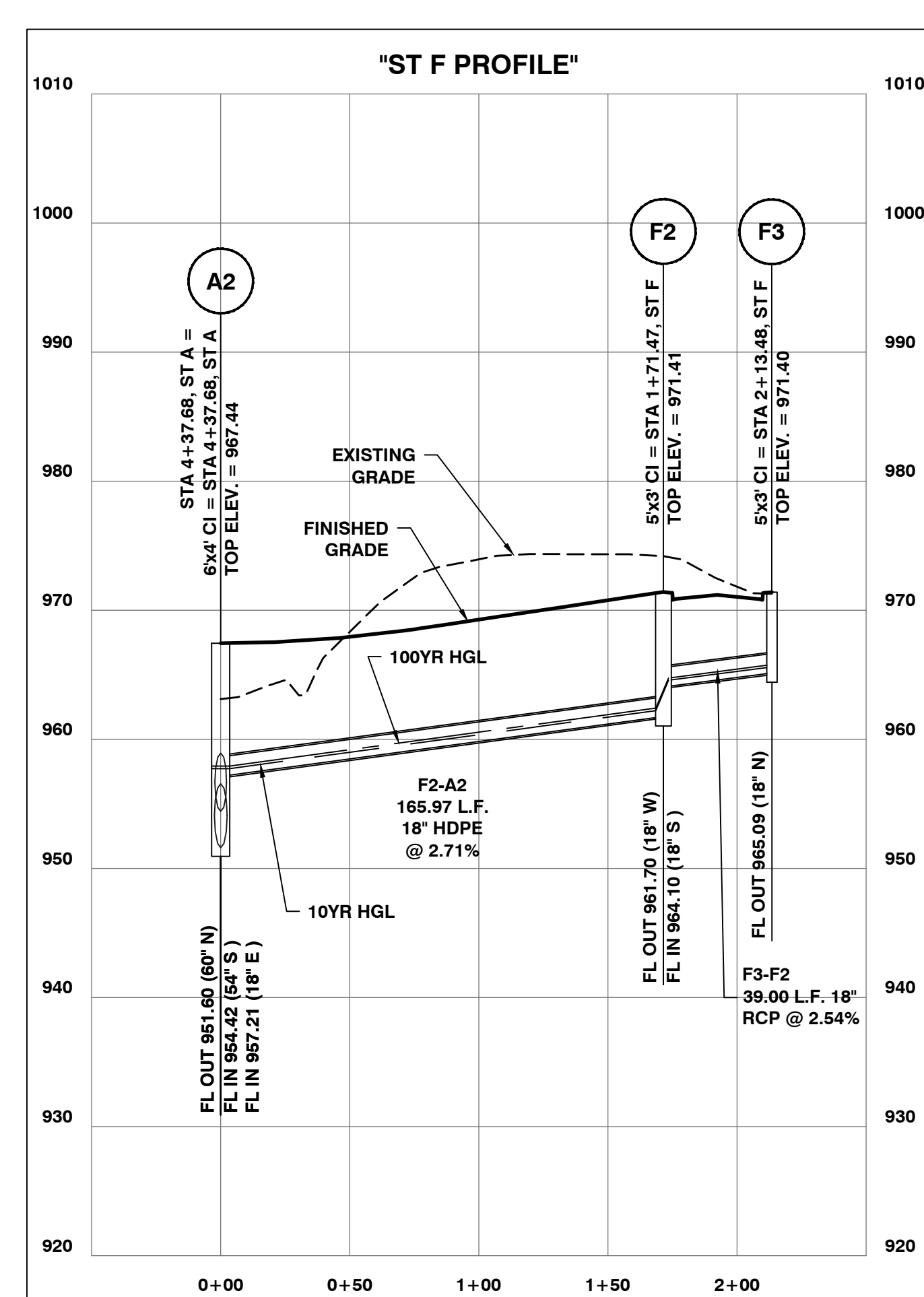
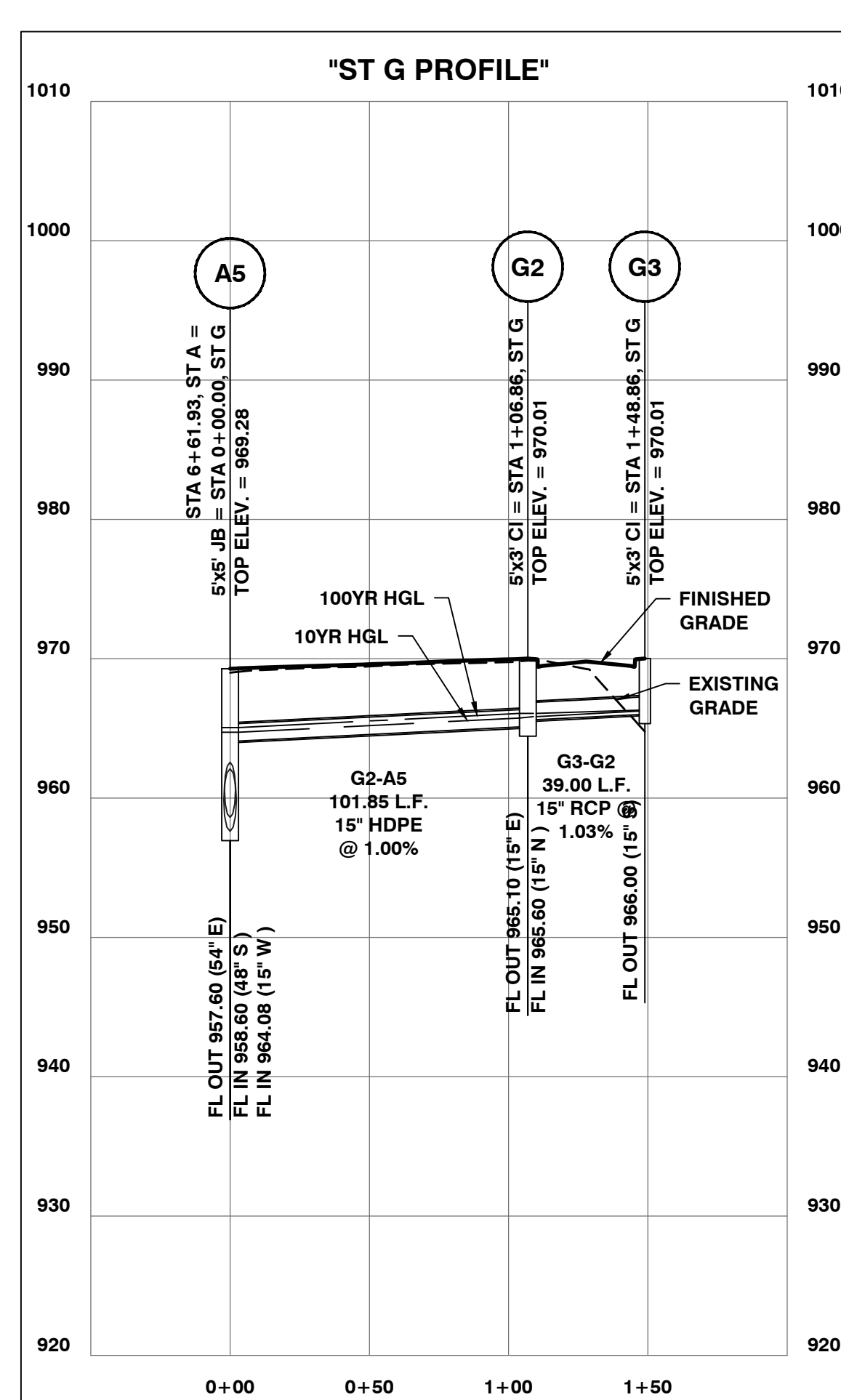
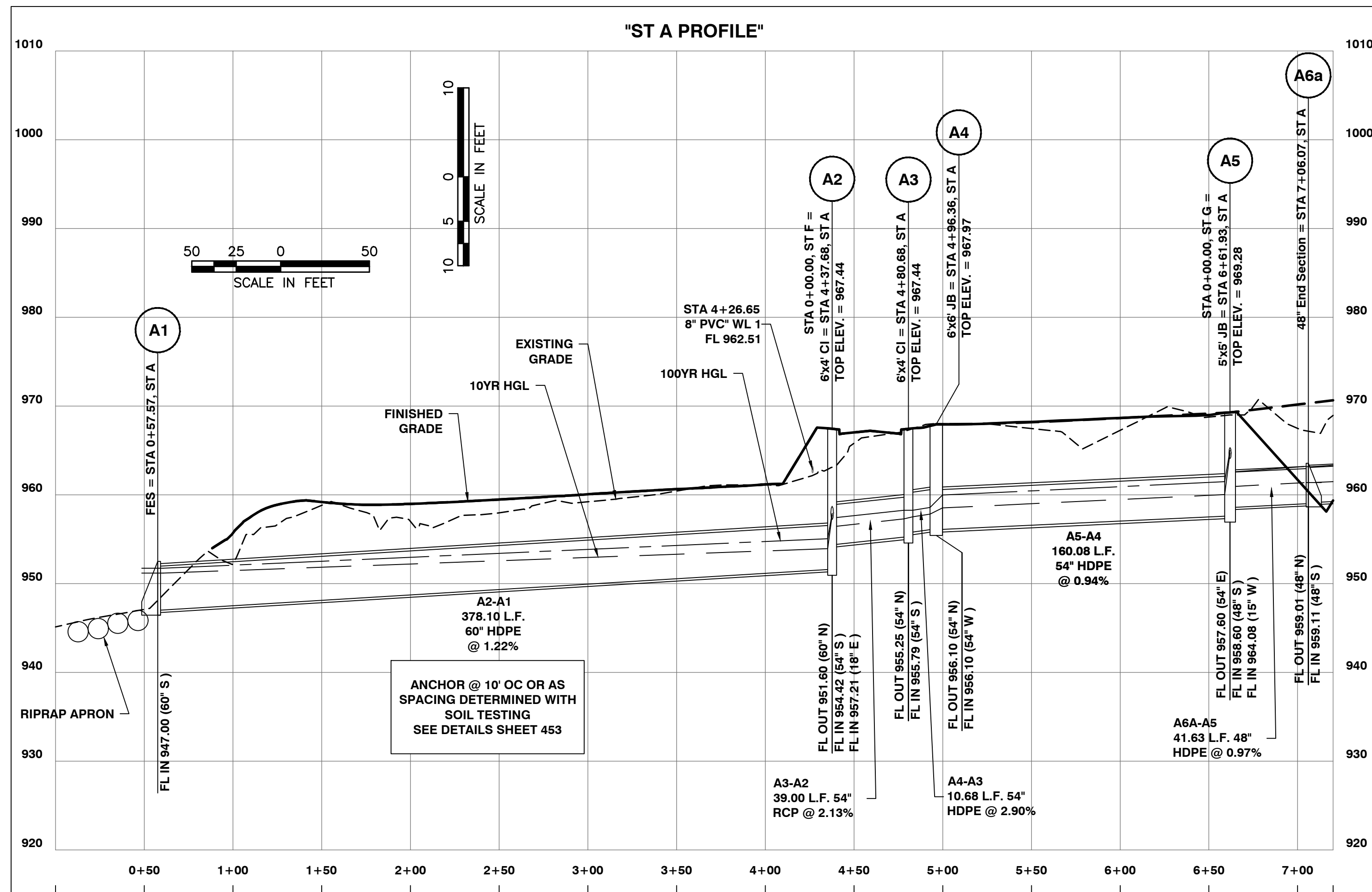
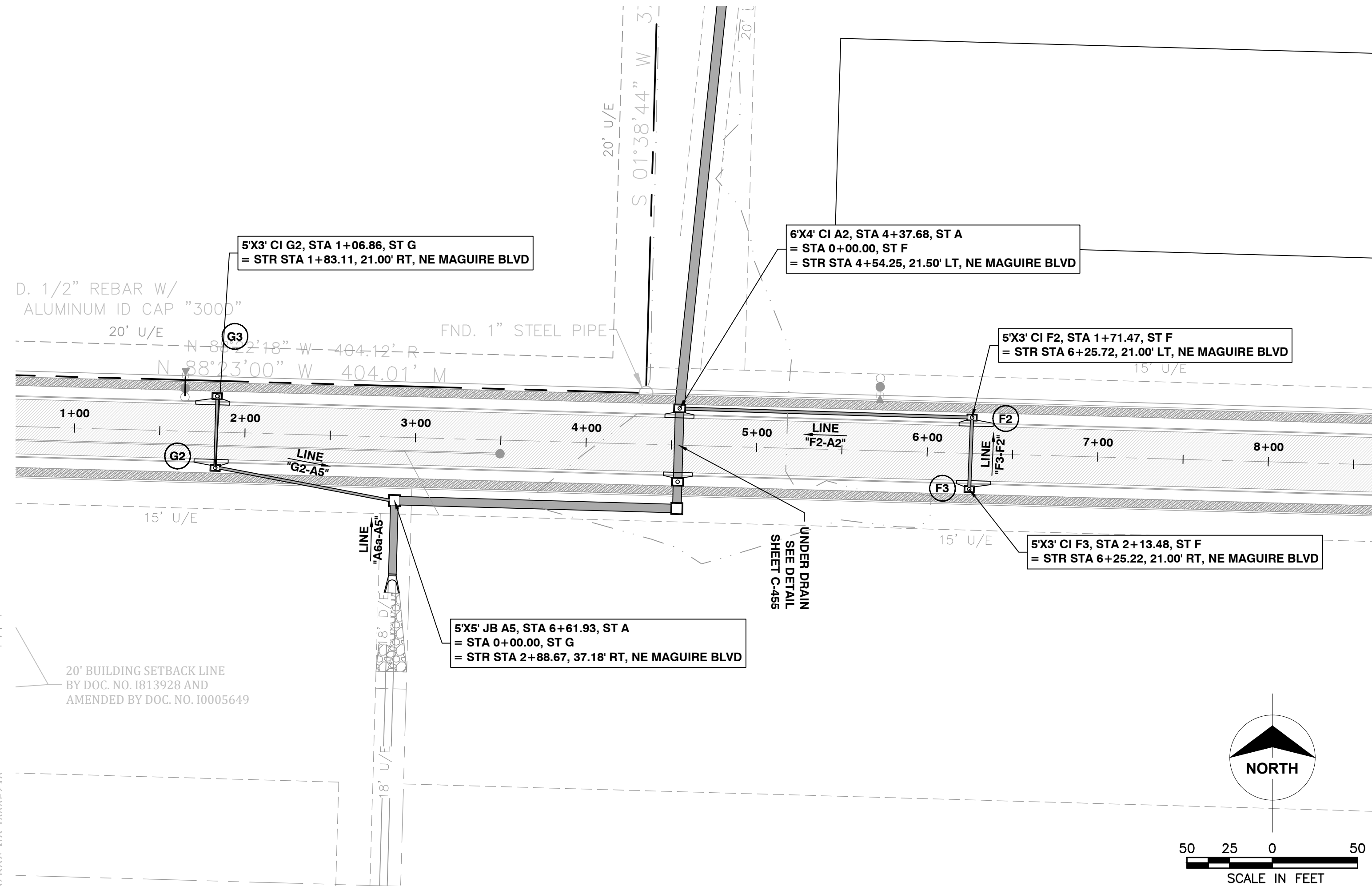
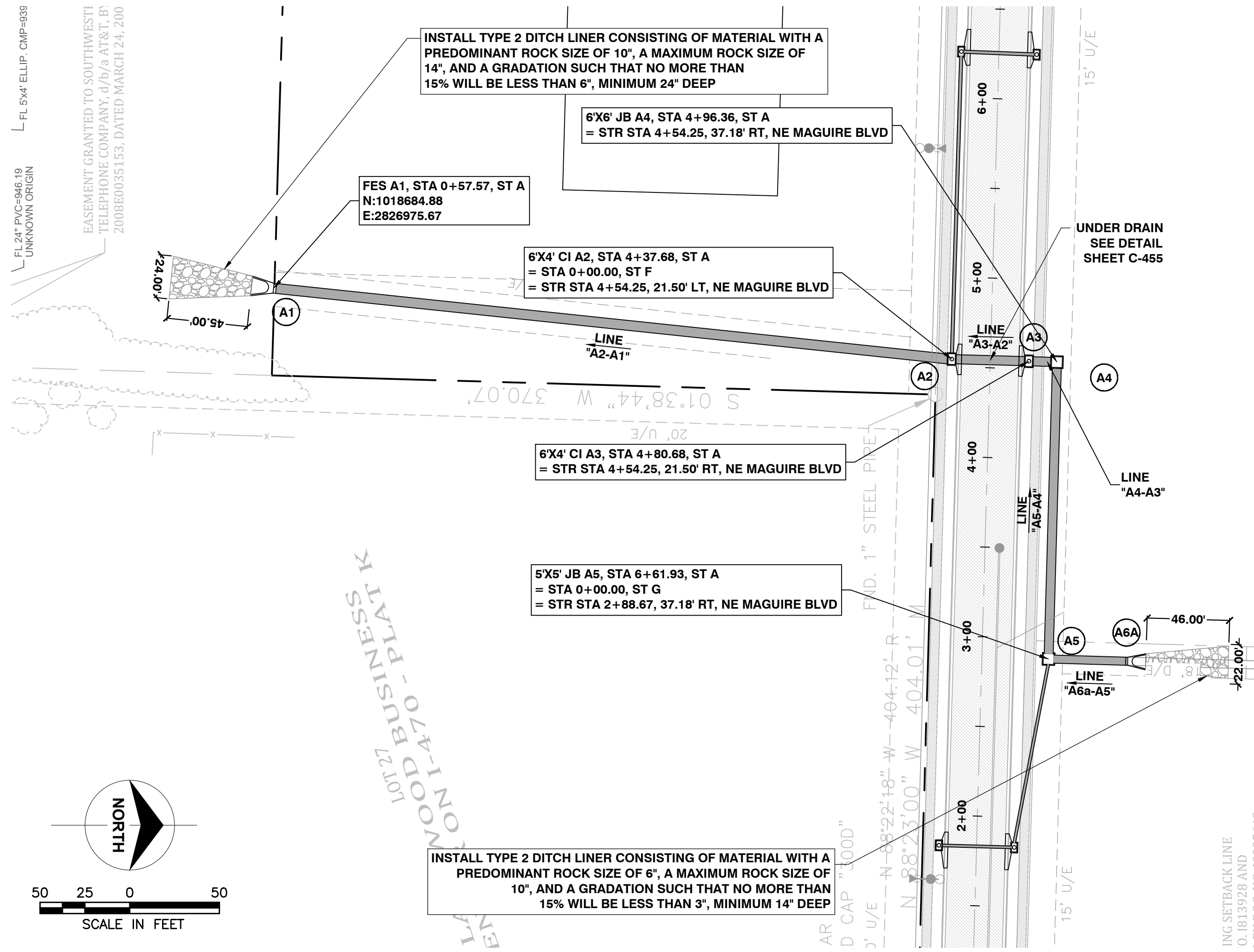
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LineNo.	LineID	DrainageArea (ac)	IncrCxX	Tc (min)	PipeTravel (min)	iSys (in/hr)	IncrQ (cfs)	LineLength (ft)	LineSize (in)	LineSlope (%)	CapacityFull (cfs)	VelHd Up (ft)	VelDn (ft/s)	Hw (ft)	Rim-Hw (ft)	InvertUp (ft)	InvertDn (ft)	SfAve (%)	J-LossCoeff	EnergyLoss (ft)	HGLUp (ft)	HGLDn (ft)	TotalRunoff (cfs)
1	A2-A1	0.47	0.31	7.7	0.98	6.61	2.28	378	60	1.22	311.28	3.69	7.93	2.34	13.5	951.6	947	0	1.00 z	0	953.94	951.19	139.26
2	A3-A2	4.07	2.69	7.6	0.09	6.63	19.75	39	54	2.13	310.81	5.49	18.79	2.06	10.13	955.25	954.42	0	0.25 z	0	957.31	956.48	133.32
3	A4-A3	0	0	7.6	0.03	6.64	0	10.678	54	2.9	363.01	6.39	20.27	1.75	10.12	956.1	955.79	0	0.40 z	0	957.85	957.54	115.63
4	A5-A4	3.46	2.28	7.2	0.39	6.74	16.79	160.079	54	0.94	206.23	2.78	13.38	2.43	9.25	957.6	956.1	0	0.80 z	0	960.03	958.53	117.37
5	A6A-A5	0	0	6.2	0.93	6.99	0	443.303	48	1	155.92	2.72	13.23	2.36	13.06	963.05	958.6	0	0.80 z	0	965.41	960.96	102.09
6	A6-A6A	0	0	5.7	0.19	7.14	0	65.255	48	1	155.31	2.35	12.29	1.98	12.88	964.3	963.65	0	0.30 z	0	966.28	965.63	76
7	A7-A6	0	0	5.2	0.49	7.29	0	180.523	48	1.58	195.87	3.35	14.67	1.75	8.66	972.86	970	0	0.40 z	0	974.61	971.75	77.56
8	A8-A7	0	0	5.1	0.15	7.33	0	53.845	48	1	155.85	2.39	12.4	2	6.51	973.9	973.36	0	0.40 z	0	975.9	975.36	78.03
9	A9-A8	16.13	10.65	5	0.07	7.35	78.28	28.014	48	0.57	108.55	1.37	9.4	2.52	10.54	974.56	974.4	0	1.00 z	0	977.08	976.92	78.28
10	C2-A6	0.17	0.11	6.1	0.15	7.03	0.83	40.644	24	5.68	58.41	3.76	15.55	0.69	4.93	973.4	971.09	0	1.00 z	0	974.09	971.78	14.93
11	C3-C2	0.19	0.13	5.2	0.94	7.3	0.92	246.228	18	1.28	12.87	0.9	7.62	0.84	4.14	977.05	973.9	0	0.60 z	0	977.89	974.74	7.76
12	C4-C3	1.42	0.94	5	0.17	7.35	6.89	39	18	1.26	12.75	0.84	7.35	0.79	3.18	978.06	977.57	0	1.00 z	0	978.85	978.36	6.89
13	D2-C2	1.44	0.95	5	0.16	7.35	6.99	39	18	0.95	11.08	0.68	6.63	0.86	3.14	975.02	974.65	0	1.00 z	0	975.88	975.51	6.99
14	E2-A6	0.22	0.15	5.2	0.25	7.3	1.07	64.856	24	1.46	29.66	1.32	9.2	0.95	4.08	973.02	972.07	0	0.40 z	0	973.97	973.02	13.45
15	E3-E2	2.57	1.7	5	0.16	7.35	12.47	39	24	1.36	28.56	1.2	8.54	0.92	3.58	973.55	973.02	0	1.00 z	0	974.47	973.97	12.47
16	F2-A3	0.18	0.12	5.3	1.03	7.26	0.87	165.974	18	2.71	18.71	1.21	8.83	0.52	9.19	961.7	957.21	0	0.40 z	0	962.22	957.73	4.75
17	F3-F2	0.81	0.53	5	0.29	7.35	3.93	39.003	18	2.54	18.13	1.04	8.19	0.47	5.84	965.09	964.1	0	1.00 z	0	965.56	964.57	3.93
18	G2-A3	0.69	0.46	6.6	0.54	6.89	3.35	101.851	15	1	7	0.52	5.76	0.64	6.97	962.4	961.38	0	1.00 z	0	963.04	962.02	3.64
19	G3-G2	0.11	0.07	5	1.61	7.35	0.53	42	15	1	7	0.18	3.25	0.23	6.56	963.22	962.8	0	0.00 z	0	963.45	963.04	0.53
20	B2-B1	0.21	0.14	7.1	0.46	6.76	1.02	168.429	30	1.76	59	0.66	6.5	3.28	5.25	962.97	960	0.515	1	0.867	965.6	964.73	31.88
21	B3-B2	0.15	0.1	7	0.11	6.78	0.73	39.734	30	1.89	61.04	0.83	6.33	2.36	5.11	964.22	963.47	0.494	0.4	0.196	966.25	966.25	31.07
22	B4-B3	1.09	0.72	6.8	0.17	6.83	5.29	59.132	30	1.67	57.49	2.2	7.83	1.3	7.1	965.71	964.72	0	0.30 z	0	967.01	966.58	30.6
23	B5-B4	1.28	0.84	6.7	0.08	6.85	6.21	38.997	24	3.33	44.74	3.38	14.74	1.09	5.38	967.65	966.35	0	0.60 z	0	968.74	967.44	25.77
24	B6-B5	0.89	0.59	6.6	0.19	6.9	4.32	70.796	24	2.33	37.41	2.28	12.12	1.05	4.75	969.8	968.15	0	0.30 z	0	970.85	969.2	20.14
25	B7-B6	0.42	0.28	6	0.56	7.06	2.04	170.68	24	1.76	32.48	1.67	10.37	1.01	4.78	973.3	970.3	0	0.40 z	0	974.31	971.31	16.44
26	B8-B7	1.22	0.81	5.9	0.14	7.1	5.92	39.012	24	1.28	27.74	1.24	8.93	1.03	3.76	974.3	973.8	0	0.60 z	0	975.33	974.83	14.57
27	B9-B8	1.89	1.25	5	0.85	7.35	9.17	265.064	18	1.77	15.15	1.25	8.97	0.84	3.3	979.5	974.8	0	1.00 z	0	980.34	975.64	9.17

10-YR CALCS.

LineNo.	LineID	DrainageArea (ac)	IncrCxA	Tc (min)	PipeTravel (min)	iSys (in/hr)	IncrQ (cfs)	LineLength (ft)	LineSize (in)	LineSlope (%)	CapacityFull (cfs)	VelHd Up (ft)	VelDn (ft/s)	Hw (ft)	Rim-Hw (ft)	InvertUp (ft)	InvertDn (ft)	SfAve (%)	J-LossCoeff	EnergyLoss (ft)	HGLUp (ft)	HGLDn (ft)	TotalRunoff (cfs)
1	A2-A1	0.47	0.39	6.5	1.41	9.73	4.03	378.105	96	1.22	1090.13	4.9	8.33	2.65	13.19	951.6	947	0	1.00 z	0	954.25	951.73	257.82
2	A3-A2	4.07	3.38	6.5	0.05	9.75	34.87	39	54	2.13	310.81	7.3	21.67	3.03	9.16	955.25	954.42	0	0.25 z	0	958.28	957.45	246.48
3	A4-A3	0	0	6.5	0.02	9.75	0	10.678	54	2.9	363.01	8.77	23.71	2.48	9.39	956.1	955.79	0	0.40 z	0	958.58	958.28	213.68
4	A5-A4	3.46	2.87	6.2	0.22	9.83	29.64	160.079	54	0.94	206.23	3.36	14.71	3.9	7.78	957.6	956.1	0	0.80 z	0	961.5	960	215.48
5	A6A-A5	0	0	5.7	0.53	10.04	0	443.303	48	1	155.92	3.35	14.68	8.46	6.96	963.05	958.6	1.405	0.8	6.228	968.83	962.6	184.43
6	A6-A6A	0	0	5.4	0.1	10.16	0	65.255	48	1	155.31	1.82	10.82	8.25	6.61	964.3	963.65	0.764	0.3	0.498	972.01	971.51	135.99
7	A7-A6	0	0	5.1	0.28	10.27	0	180.523	48	1.58	195.87	4.43	16.23	2.47	7.94	972.86	970	0	0.40 z	0	975.33	972.55	137.51
8	A8-A7	0	0	5	0.08	10.3	0	53.845	48	1	155.85	3.05	14	2.93	5.58	973.9	973.36	0	0.40 z	0	976.83	976.29	137.96
9	A9-A8	16.13	13.39	5	0.04	10.32	138.2	28.014	48	0.57	108.55	1.88	11	5.98	7.08	974.56	974.4	0.926	1	0.259	978.66	978.4	138.2
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	973.4	971.09	0	1.00 z	0	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	973.9	0	0.60 z	0	978.41	975.26	13.74
12	C4-C3	1.42	1.18	5	0.09	10.32	12.17	39	18	1.26	12.75	1.05	8.21	1.17	2.8	978.06	977.57	0	1.00 z	0	979.23	978.74	12.17
13	D2-C2	1.44	1.2	5	0.09	10.32	12.34	39	18	0.95	11.08	0.76	6.98	2.35	1.65	975.02	974.65	1.176	1	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	0.40 z	0	974.38	973.43	23.81
15	E3-E2	2.57	2.13	5	0.09	10.32	22.02	39	24	1.36	28.56	1.56	9.7	1.32	3.18	973.55	973.02	0	1.00 z	0	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	961.7	957.21	0	0.40 z	0	962.41	957.92	8.43
17	F3-F2	0.81	0.67	5	0.17	10.32	6.94	39.003	18	2.54	18.13	1.42	9.57	0.64	5.67	965.09	964.1	0	1.00 z	0	965.73	964.74	6.94
18	G2-A3	0.69	0.57	5.9	0.31	9.96	5.91	101.851	15	1	7	0.65	6.49	0.97	6.64	962.4	961.38	0	1.00 z	0	963.37	962.35	6.61
19	G3-G2	0.11	0.09	5	0.91	10.32	0.94	42	15	1	7	0.25	1.74	0.31	6.48	963.22	962.8	0	0.00 z	0	963.53 j	963.37	0.94
20	B2-B1	0.21	0.17	6.2	0.26	9.85	1.8	168.429	30	1.76	59	2.2	11.91	7.53	1	962.97	960	1.731	1	2.916	968.3	965.38	58.45
21	B3-B2	0.15	0.12	6.1	0.06	9.87	1.29	39.734	30	1.89	61.04	2.09	11.59	7.77	-0.3	964.22	963.47	1.639	0.4	0.651	971.15	970.5	56.87
22	B4-B3	1.09	0.9	6	0.09	9.91	9.34	59.132	30	1.67	57.49	2.01	11.38	7.82	0.58	965.71	964.72	1.58	0.3	0.934	972.92	971.99	55.85
23	B5-B4	1.28	1.06	6	0.05	9.93	10.97	38.997	24	3.33	44.74	3.47	14.95	9.4	-2.93	967.65	966.35	3.675	0.6	1.433	974.96	973.53	46.97
24	B6-B5	0.89	0.74	5.9	0.11	9.97	7.63	70.796	24	2.33	37.41	2.11	11.64	9.46	-3.66	969.8	968.15	2.228	0.3	1.578	978.63	977.05	36.57
25	B7-B6	0.42	0.35	5.6	0.32	10.09	3.6	170.68	24	1.76	32.48	1.38	9.41	9	-3.21	973.3	970.3	1.457	0.4	2.487	981.74	979.26	29.57
26	B8-B7	1.22	1.01	5.5	0.08	10.13	10.45	39.012	24	1.28	27.74	1.08	8.32	9.09	-4.3	974.3	973.8	1.138	0.6	0.444	982.74	982.3	26.14
27	B9-B8	1.89	1.57	5	0.48	10.32	16.19	265.064	18	1.77	15.15	1.31	9.17	10.56	-6.42	979.5	974.8	2.027	1	5.372	988.76	983.39	16.19



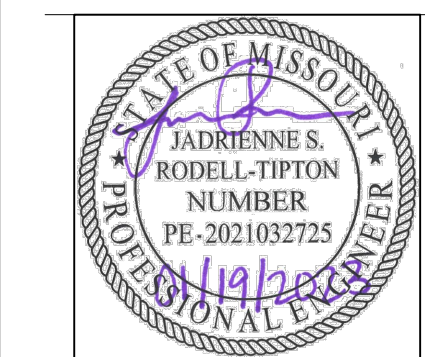


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 Engineering: MO 4 / KS 241
 Land Surveying: MO 123 / KS 36

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**LAKWOOD 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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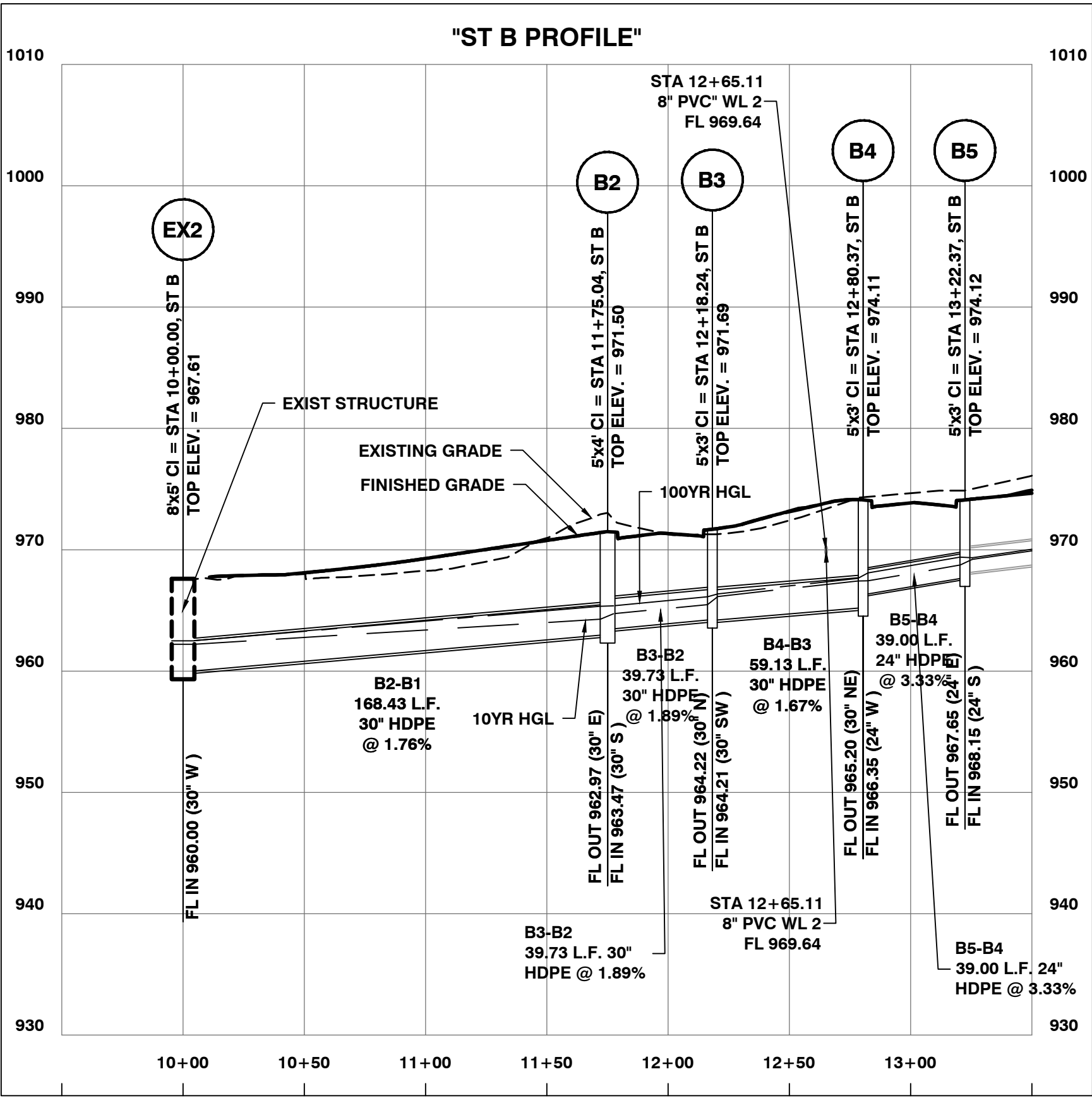
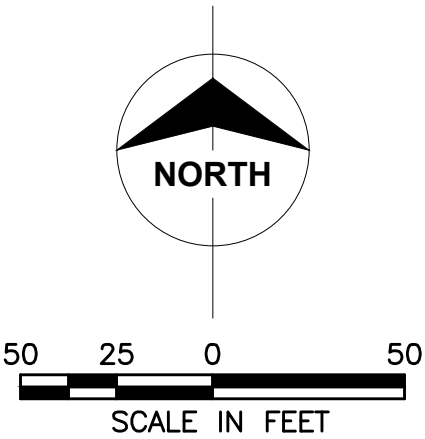
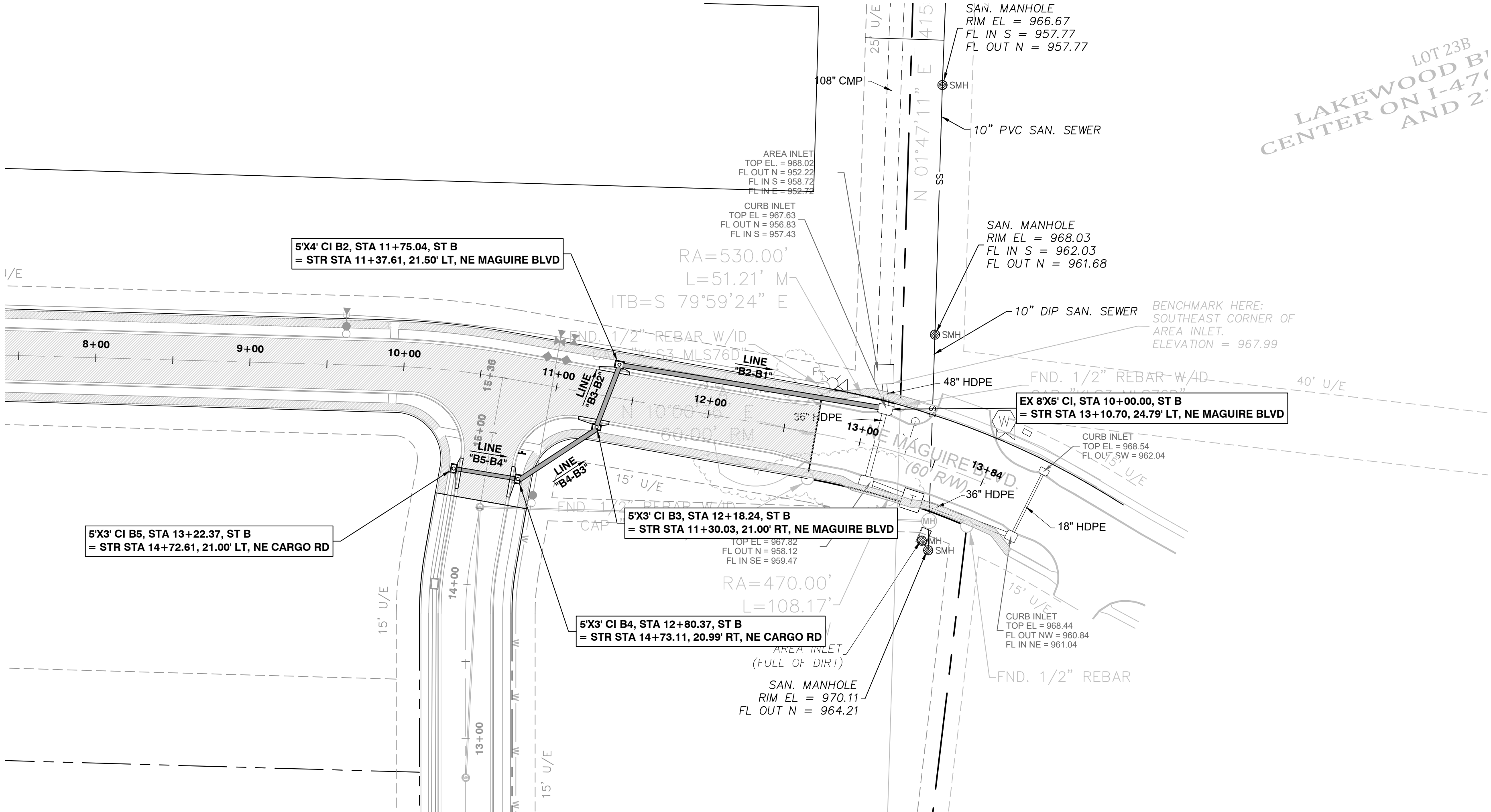
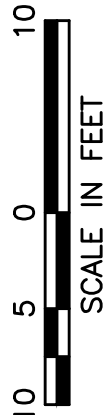
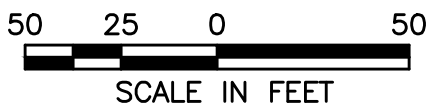
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DRAWN BY: JV
CHECKED BY: JRT
PROJECT #: 21-1883
ISSUE DATE: 03/31/2022
ISSUED FOR:

PERMIT

**PHASE 1 STORM
SEWER PLAN &
PROFILE**

P:\Ward Development\21-1883 Lakewood Business Park\Civil\XXXX-XX-XX 100% CD\Street and Storm\C-222 Phase 1 Storm Plan and Profile.dwg, 2, 1/20/2023 1:07:30 PM, DWG To PDF.pc3, ANSI full bleed D (34.00 x 22.00 inches)



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Land Surveying: MO 123 / KS 36

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JACKSON COUNTY

STATE OF MISSOURI

JADRIENNE S. RODELL-TIPTON

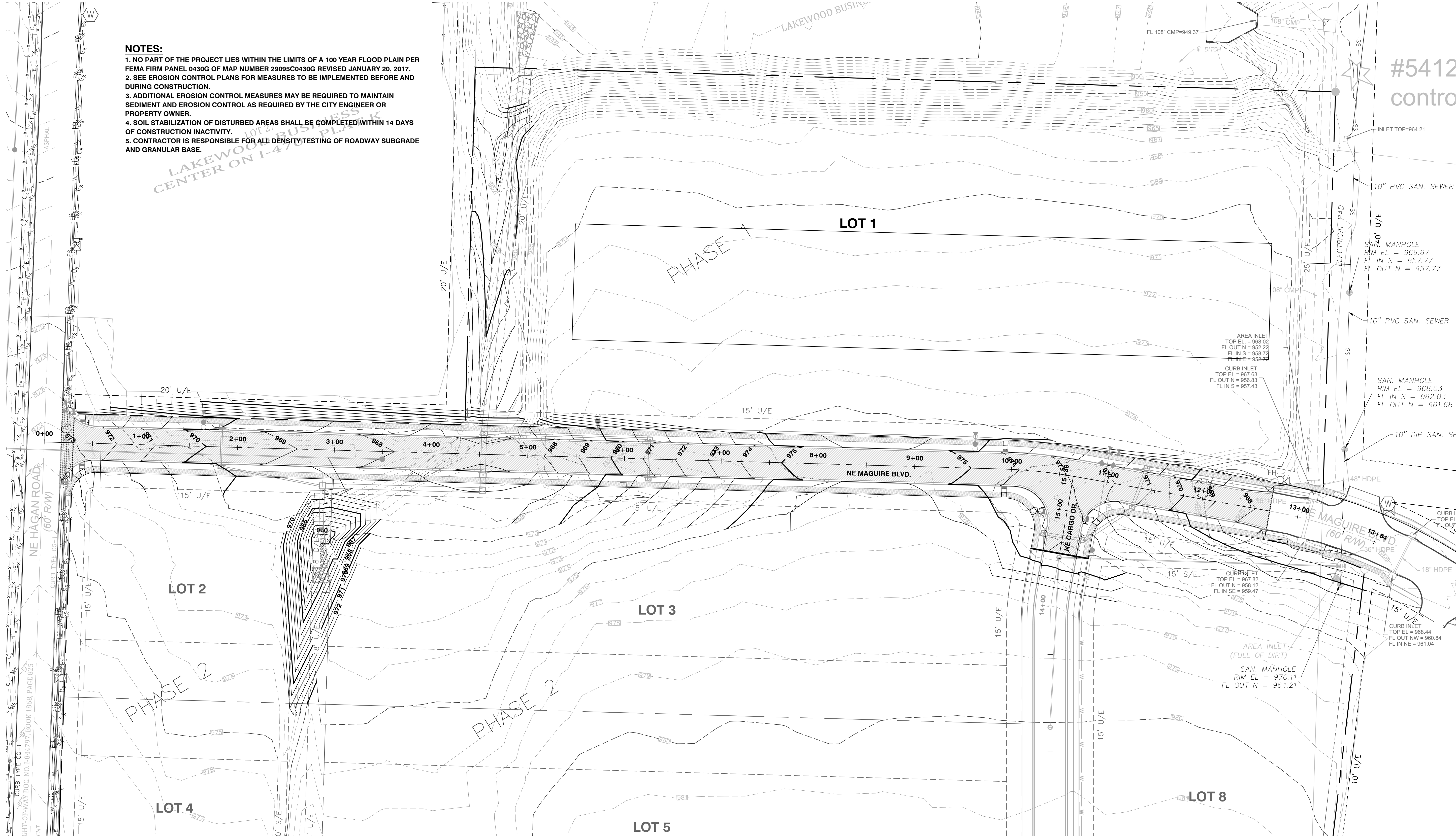
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PE-2021032725

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

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NO.	DATE / DESCRIPTION	CHECKED BY: JRT	PROJECT #: 21-1883
		ISSUE DATE: 03/31/2022	ISSUED FOR: PERMIT
		PHASE 1 STORM SEWER PLAN & PROFILE CONT'D	
		223	



NOTES:

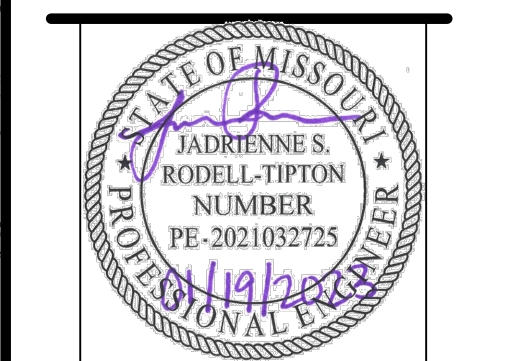
1. NO PART OF THE PROJECT LIES WITHIN THE LIMITS OF A 100 YEAR FLOOD PLAIN PER FEMA FIRM PANEL 0430G OF MAP NUMBER 2909SC0430G REVISED JANUARY 20, 2017.
2. SEE EROSION CONTROL PLANS FOR MEASURES TO BE IMPLEMENTED BEFORE AND DURING CONSTRUCTION.
3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED TO MAINTAIN SEDIMENT AND EROSION CONTROL AS REQUIRED BY THE CITY ENGINEER OR PROPERTY OWNER.
4. SOIL STABILIZATION OF DISTURBED AREAS SHALL BE COMPLETED WITHIN 14 DAYS OF CONSTRUCTION INACTIVITY.
5. CONTRACTOR IS RESPONSIBLE FOR ALL DENSITY TESTING OF ROADWAY SUBGRADE AND GRANULAR BASE.

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PE-2021032725 (MISSOURI #)

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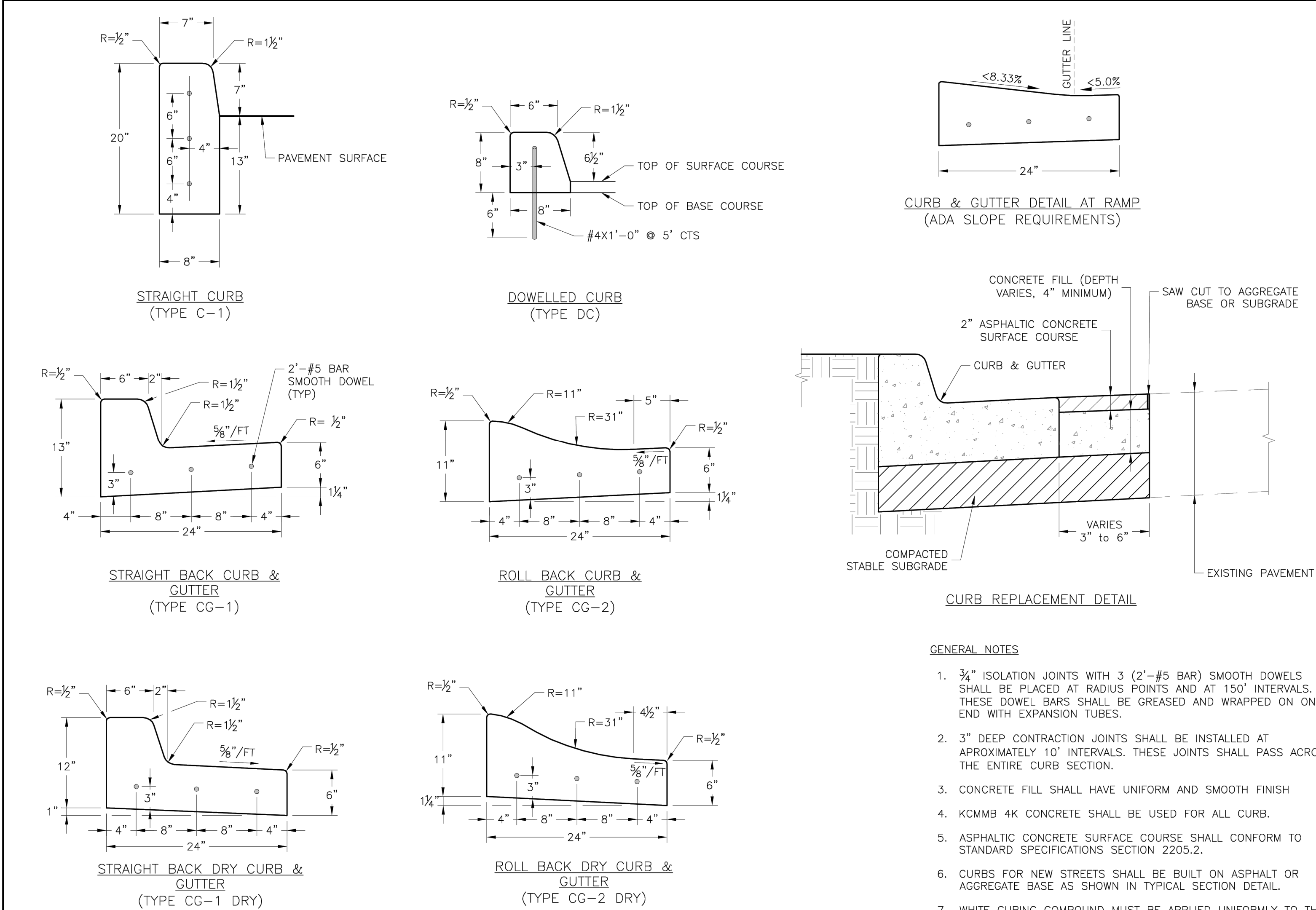
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PROJECT #: 21-1883
ISSUE DATE: 03/31/2022

ISSUED FOR:
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PHASE 1 GRADING PLAN

311

P:\Ward Development\21-1883 Lakewood Business Park\Civil\XXXX-XX-XX 100% CD\Street and Storm\C-451 DETAILS.dwg, 2, 1/20/2023 1:08:02 PM, DWG To PDF.pc3, ANSI full bleed D (34.00 x 22.00 inches)



LS

LEE'S SUMMIT
MISSOURI

STANDARD DETAILS

CITY OF LEE'S SUMMIT, MO

LEE'S SUMMIT, JACKSON COUNTY, MO

CURB & GUTTER DETAIL

Project:

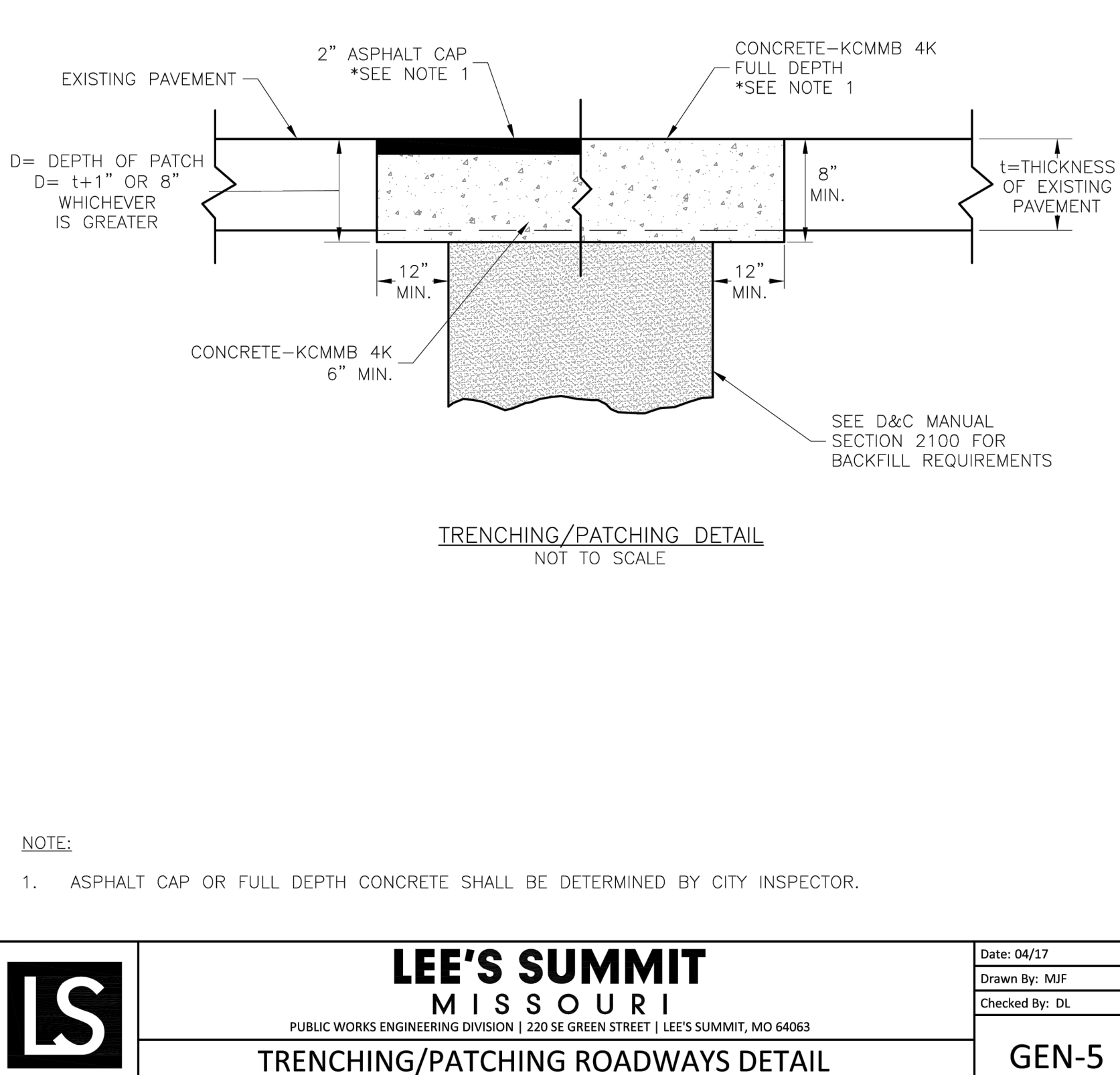
Drawn By: MJF

Checked By: DL

Date: 04/17

Proj. #

GEN-4



LS

LEE'S SUMMIT
MISSOURI

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

TRENCHING/PATCHING ROADWAYS DETAIL

Date: 04/17

Drawn By: MJF

Checked By: DL

GEN-5

POWELL

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LAKWOOD BUSINESS

CENTER ON I-470 - PLAT S

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LEE'S SUMMIT, MO 64064

JACKSON COUNTY

STATE OF MISSOURI

JADRIENNE S. RODELL-TIPTON

NUMBER

PE-2021032725

JADRIENNE S. RODELL-TIPTON, PE

PE-2021032725 (MISSOURI #)

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ISSUE DATE: 03/31/2022

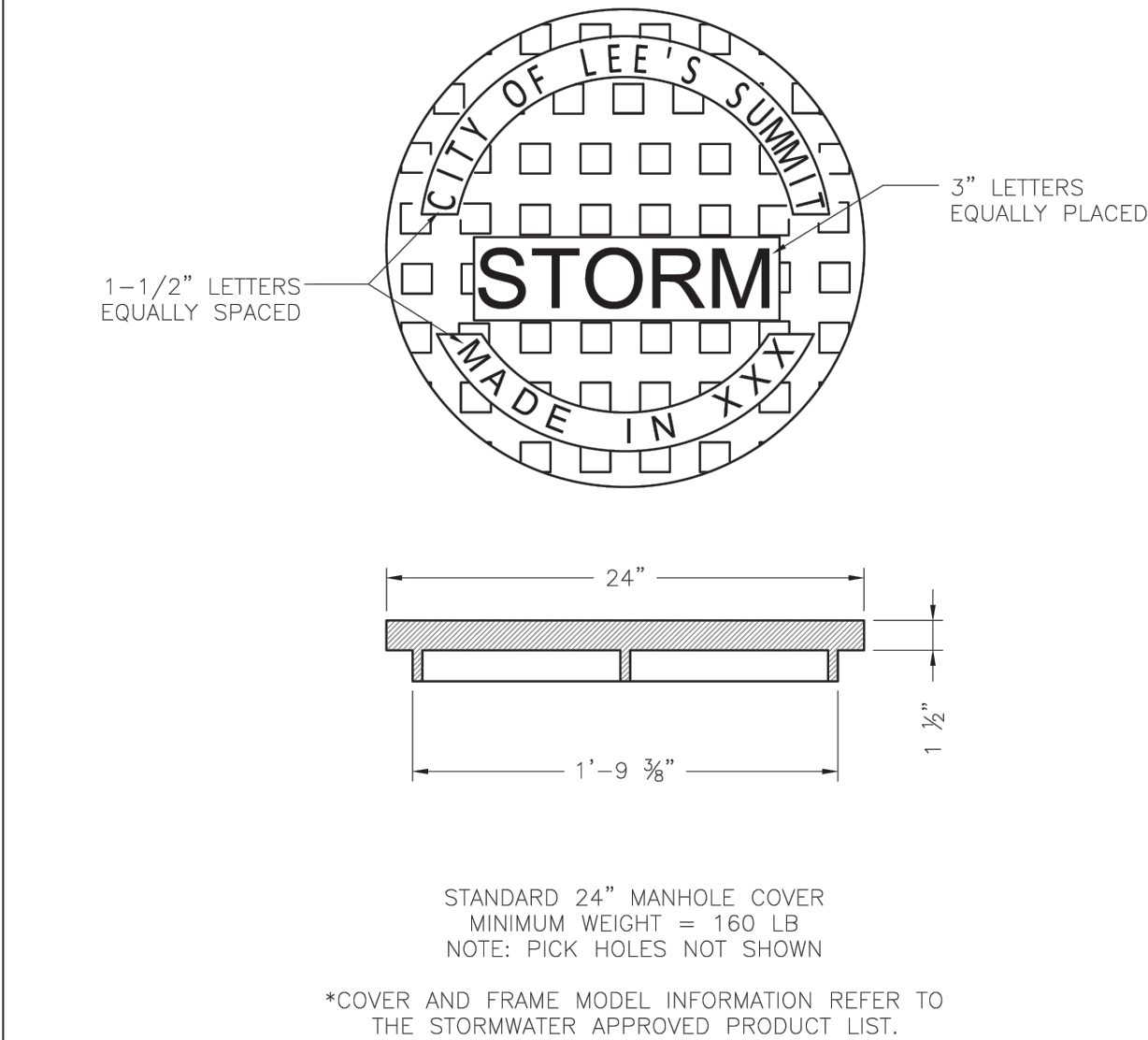
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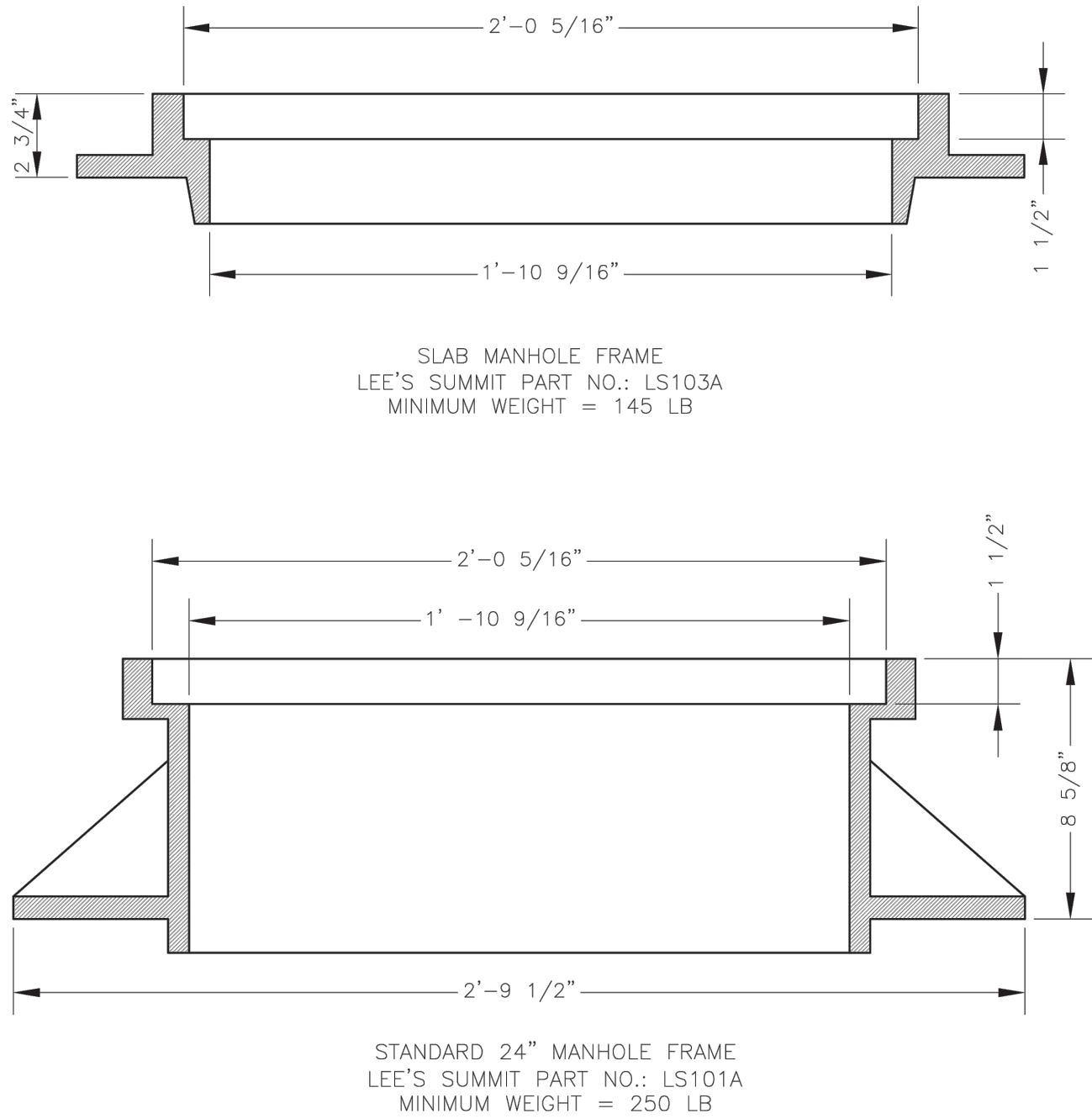
DETAILS

452

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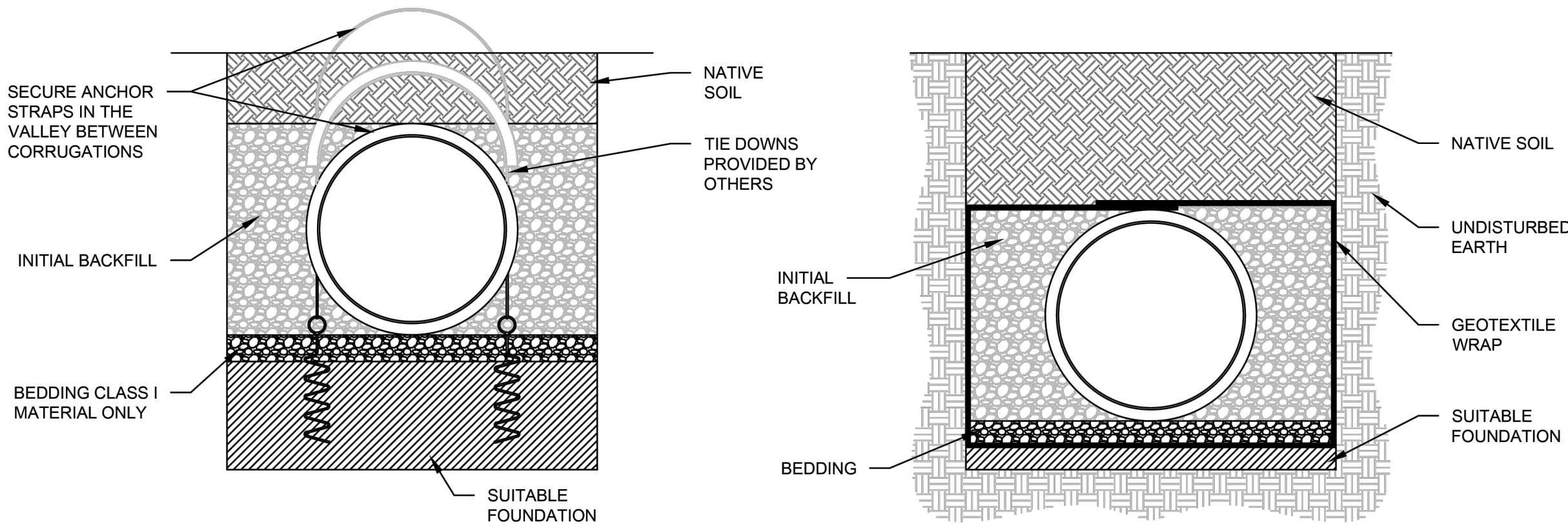
	<div>LEE'S SUMMIT MISSOURI</div> <div>PUBLIC WORKS ENGINEERING DIVISION 220 SE GREEN STREET LEE'S SUMMIT, MO 64063</div>	Date: 05/2021
		Drawn By: MIF
		Checked By: DL
		STORM MANHOLE COVER DETAIL
		STM-6



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

	<div><div>LEE'S SUMMIT</div><div>MISSOURI</div><div><small>PUBLIC WORKS ENGINEERING DIVISION 220 SE GREEN STREET LEE'S SUMMIT, MO 64063</small></div></div>	Date: 05/2021
		Drawn By: Mif
		Checked By: DL
	STORM MANHOLE FRAME DETAIL	DWG-7

- NOTES:**
- ANCHORING METHOD, DESIGN AND PLACEMENT TO BE DETERMINED BY THE PROJECT DESIGN ENGINEER
 - SEE STANDARD DETAIL 101 FOR PIPE INSTALLATION RECOMMENDATIONS



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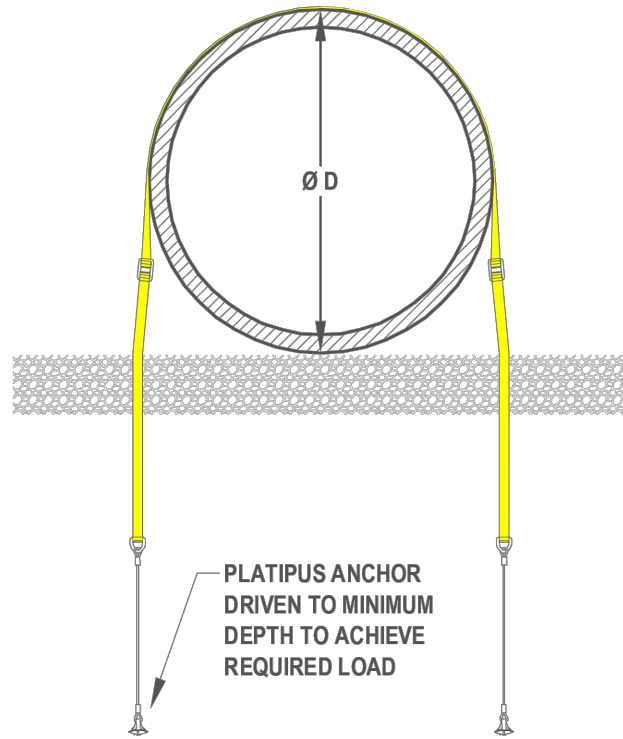
ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS DETAIL BASED ON INFORMATION PROVIDED TO ADS. THIS DRAWING IS INTENDED TO DEPICT THE COMPONENTS AS REQUESTED. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

2	INITIAL BACKFILL	ALI	05/01/20		
REV.	DESCRIPTION	BY	MM/DD/YY	CHKD	
PIPE ANCHORING DETAIL			ADS ADVANCED DRAINAGE SYSTEMS, INC. 4640 TRUEMAN BLVD HILLIARD, OHIO 43026		
DRAWING NUMBER: STD-104			DATE: 10/18/06 DWN BY: NTS SCALE: 1 OF 1		

CONCEPT ONLY. NOT TO SCALE.

NOTES:

- ANCHOR SPACING AND HOLDING CAPACITY TO BE DETERMINED BY PROJECT DESIGN ENGINEER.
- ENGINEER SHOULD CALCULATE THE LOAD PER LINEAR FOOT OF PIPE REQUIRED TO HOLD DOWN PIPE.
- A LOAD TEST SHOULD BE PERFORMED TO INSURE ANCHOR MEETS THE NECESSARY HOLDING CAPACITY IN THE GIVEN SOILS.

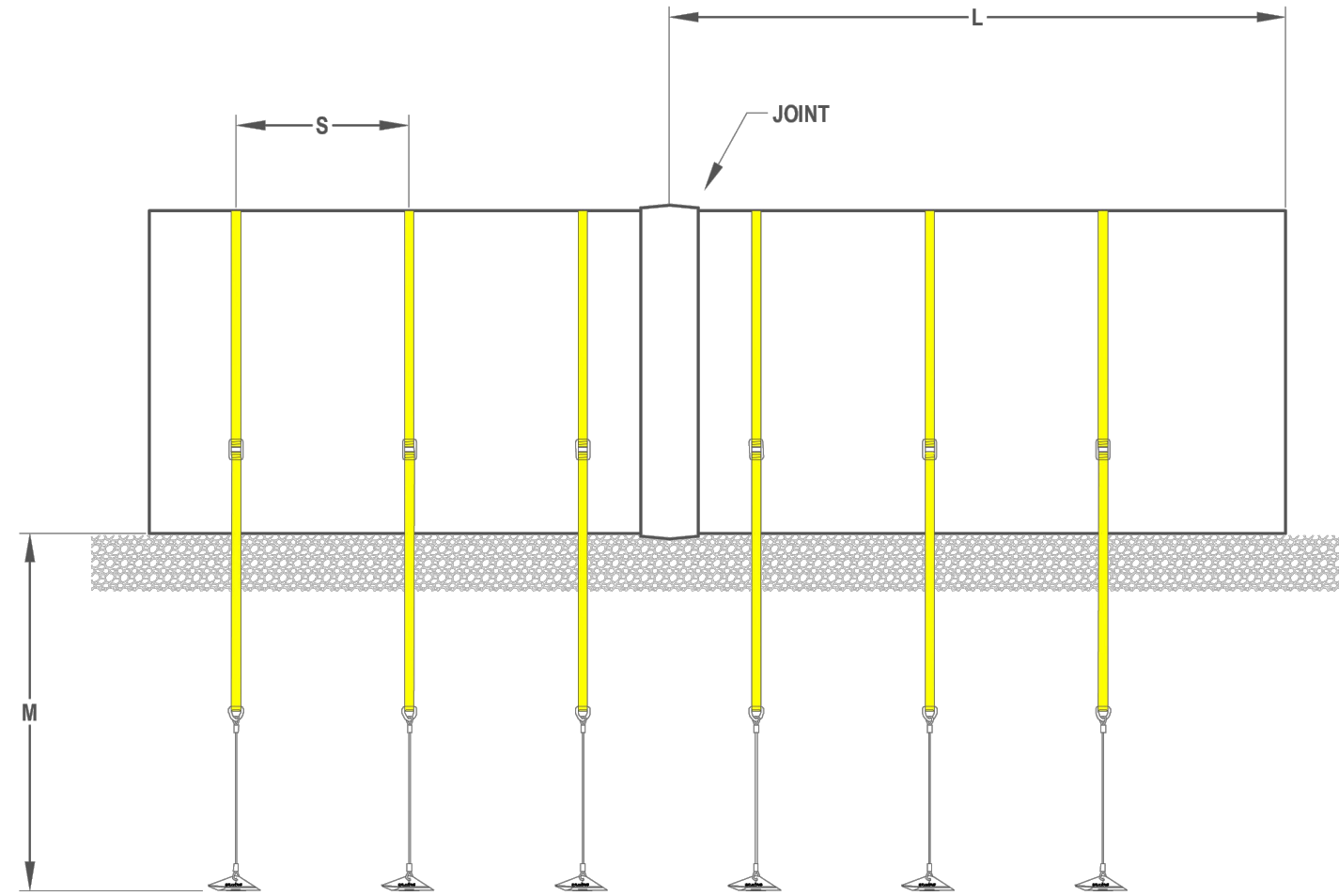


ANCHOR BUOYANCY OPTIONS:

- 2 TON ULTIMATE CAPACITY
- 10 TON ULTIMATE CAPACITY
- SPECIAL SOLUTIONS AVAILABLE UPON REQUEST

LEGEND:

- L - PIPE LENGTH
- S - ANCHOR SPACING
- M - ANCHOR DEPTH



PLATIPUS PERCUSSIVE DRIVEN EARTH ANCHOR (PDEA) PIPE BUOYANCY SOLUTION

DRAWN/DATE
RKNUTSEN 27-AUG-13

CHECKED/DATE

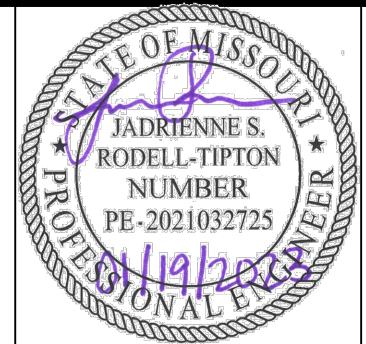
APPROVED/DATE

This guidance is based on our understanding of your requirements and no reliance should be placed on any specifications, sketches, plans, or drawings provided by us or our representatives. You should seek appropriate advice from your own professional advisers since we shall not be liable for any loss or damage, consequential or otherwise, for any claims made by any third party for design guidance given by us or our representatives.



DRAWING NUMBER:
STD - 200-1

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REVISIONS
NO. DATE / DESCRIPTION

DRAWN BY: JV
CHECKED BY: JRT
PROJECT #: 21-1883
ISSUE DATE: 03/31/2022

ISSUED FOR: PERMIT

DETAILS

453

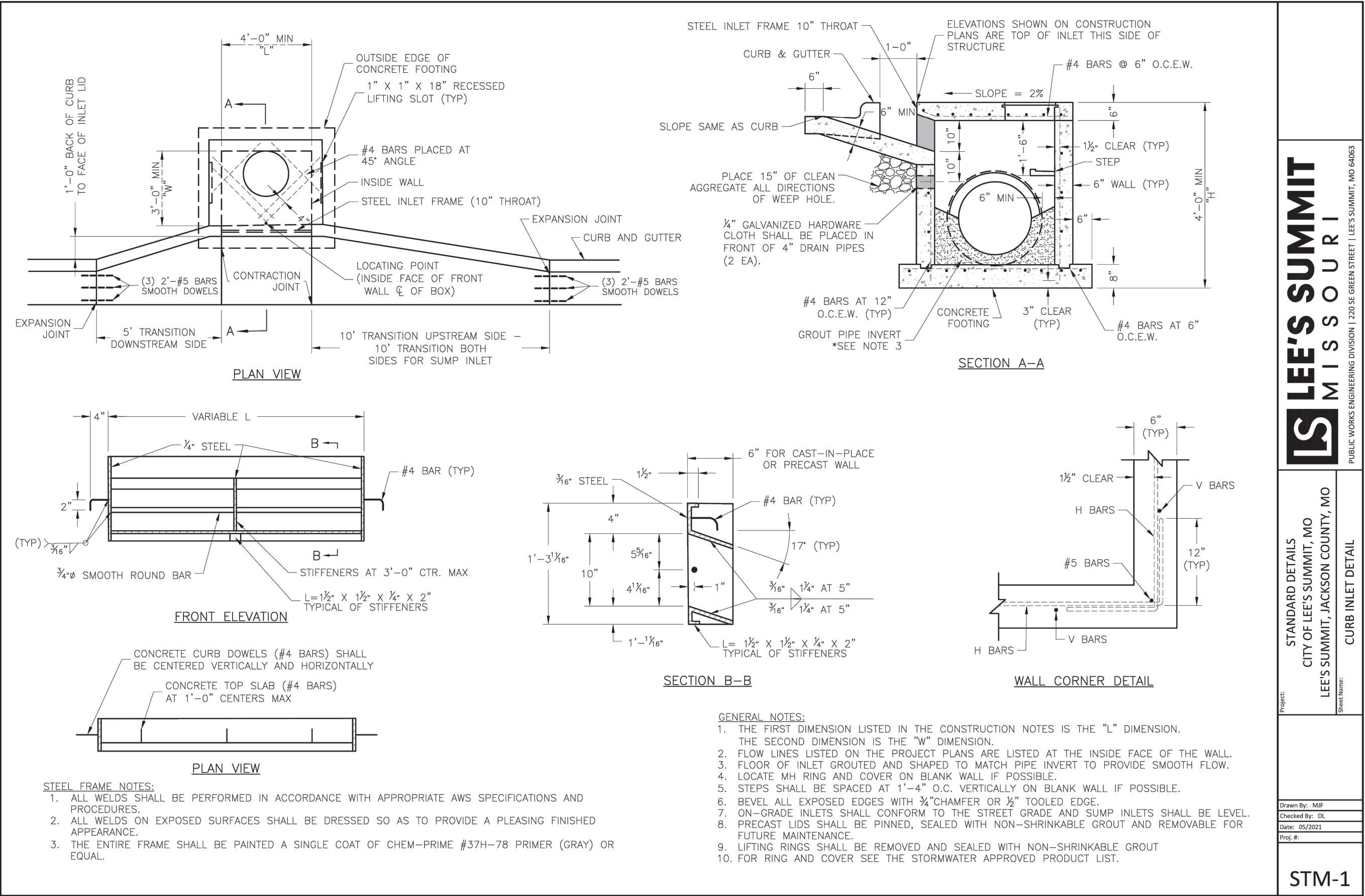
POWELL
ARCHITECTURE/ENGINEERING/SURVEYING
3200 S. State Route 291, Bldg. 1, Independence, MO 64057
(816) 373-4800 | powellcwm.com

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

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(816) 229-8115

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

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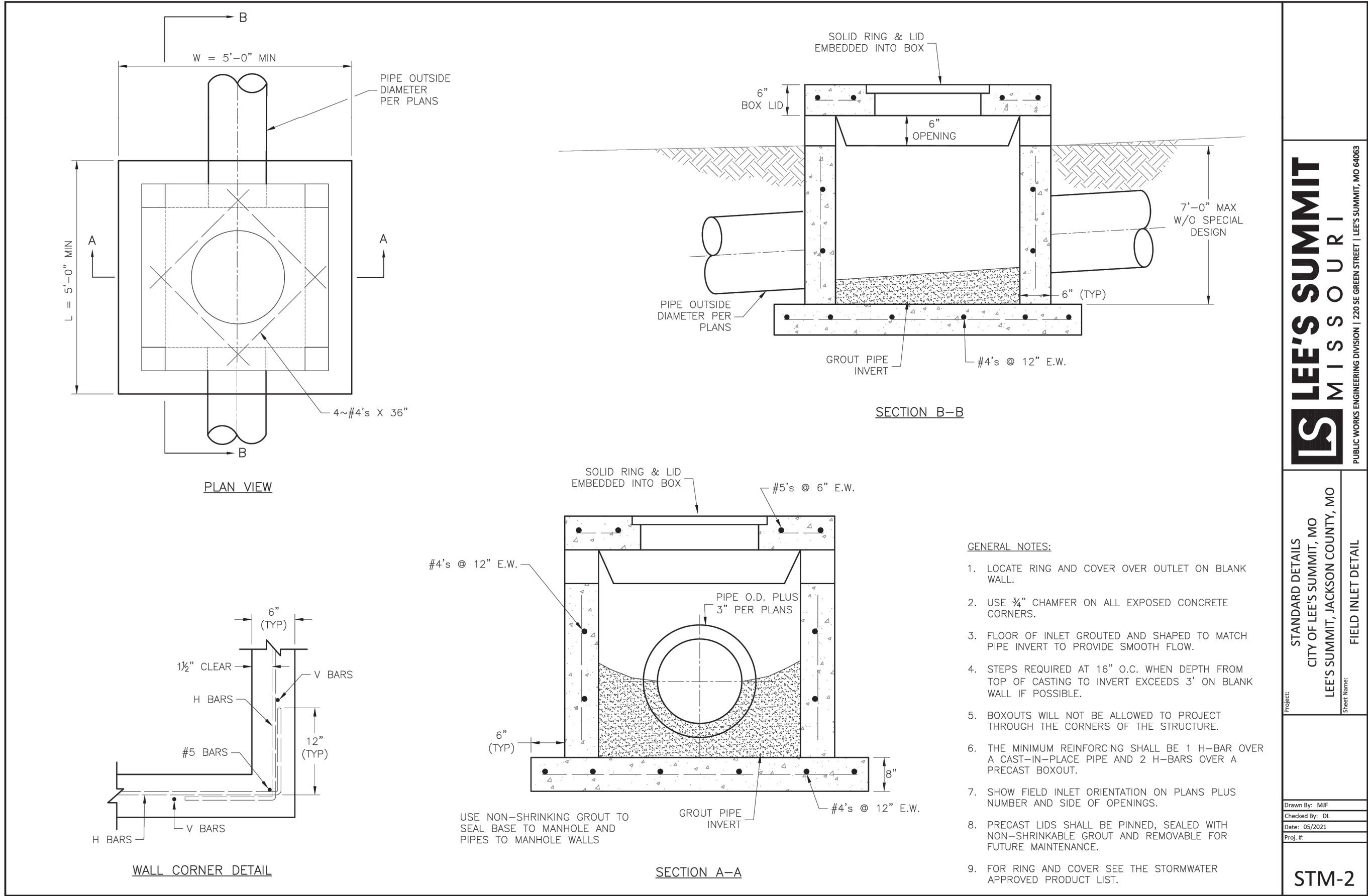


LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64053

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

Drawn By: MJF
Checked By: DL
Date: 05/2021
Proj. #: STM-1

STM-1

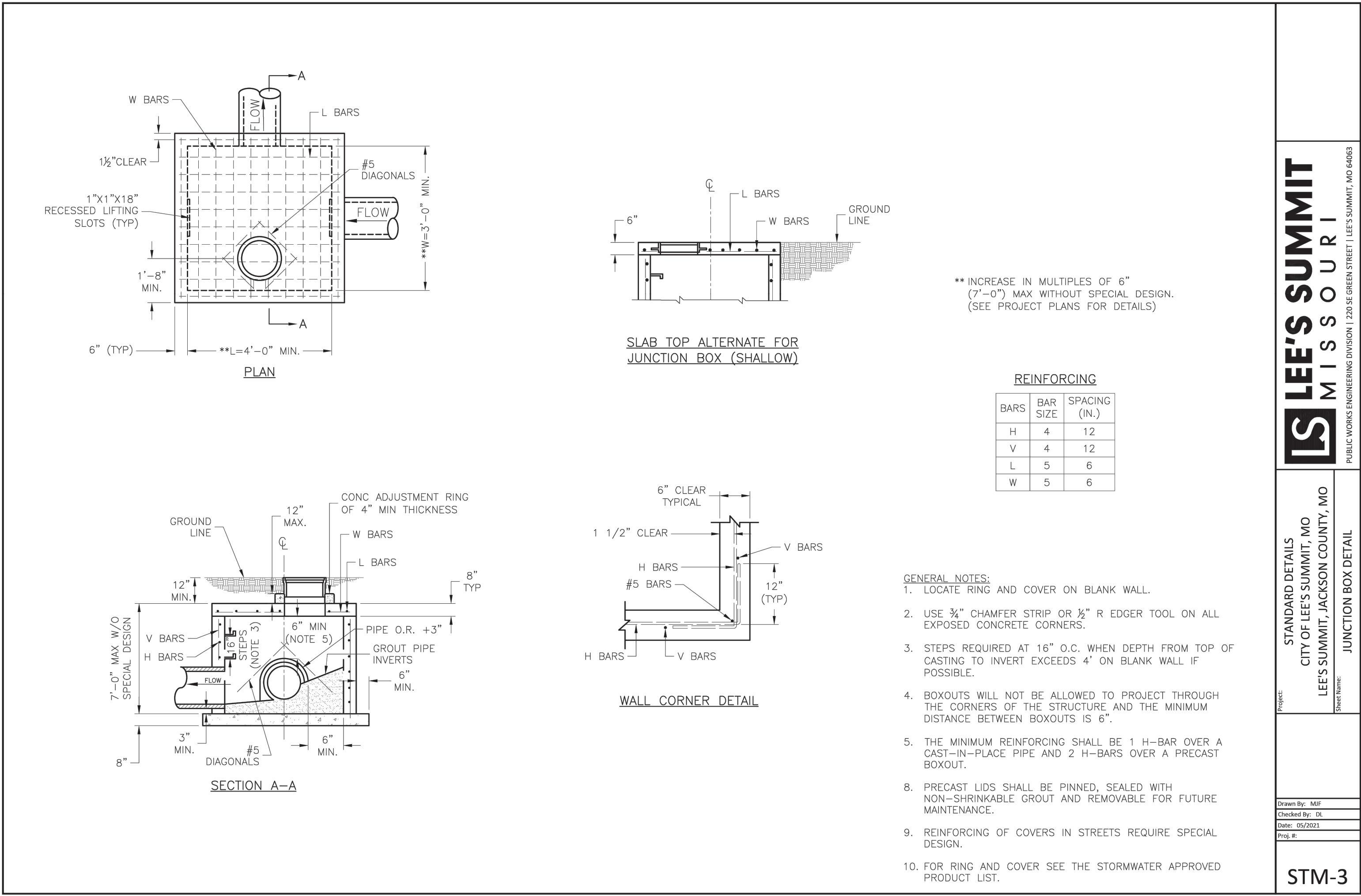


LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64053

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

Drawn By: MJF
Checked By: DL
Date: 05/2021
Proj. #: STM-2

STM-2

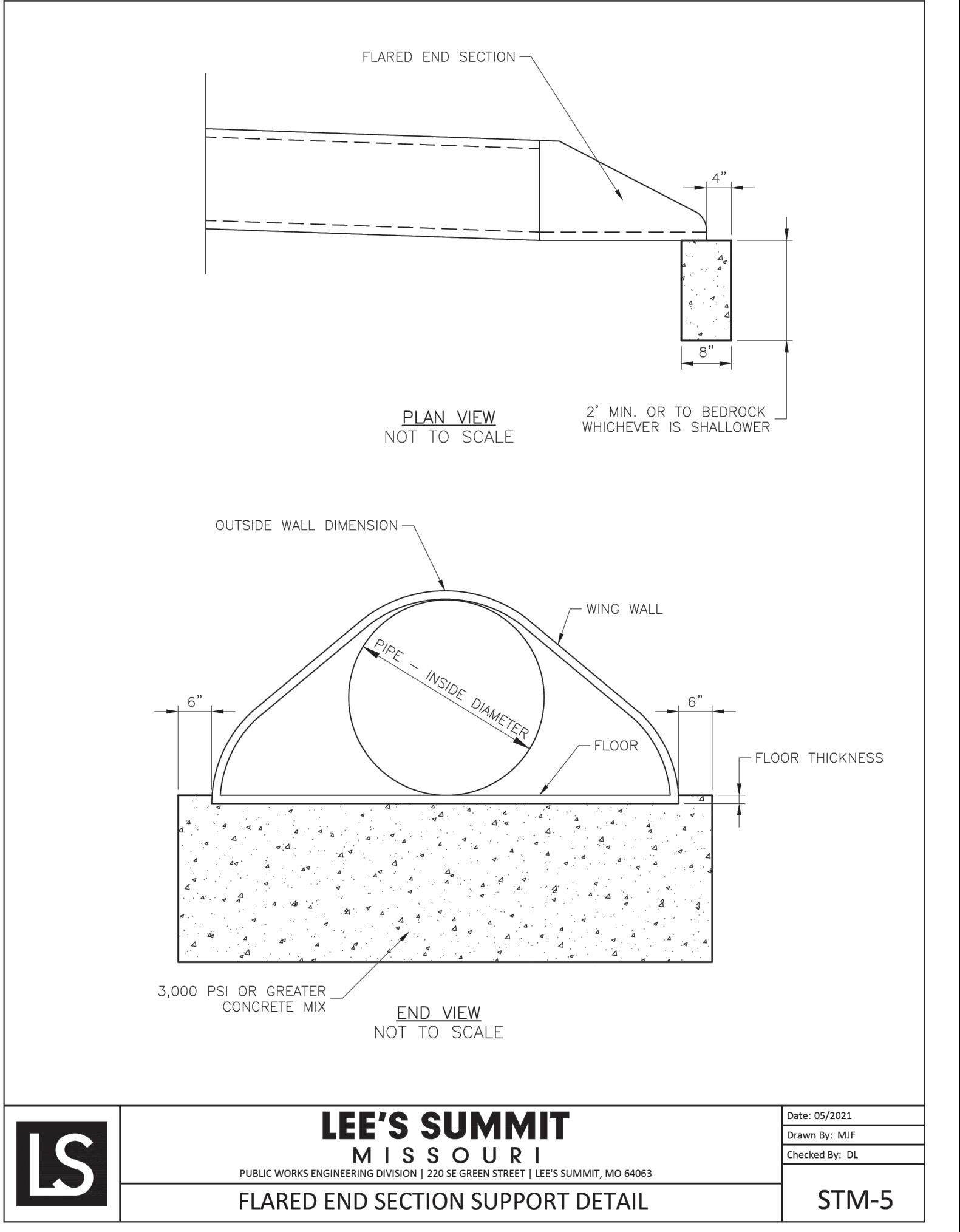


LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64053

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

Drawn By: MJF
Checked By: DL
Date: 05/2021
Proj. #: STM-3

STM-3



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JACKSON COUNTY



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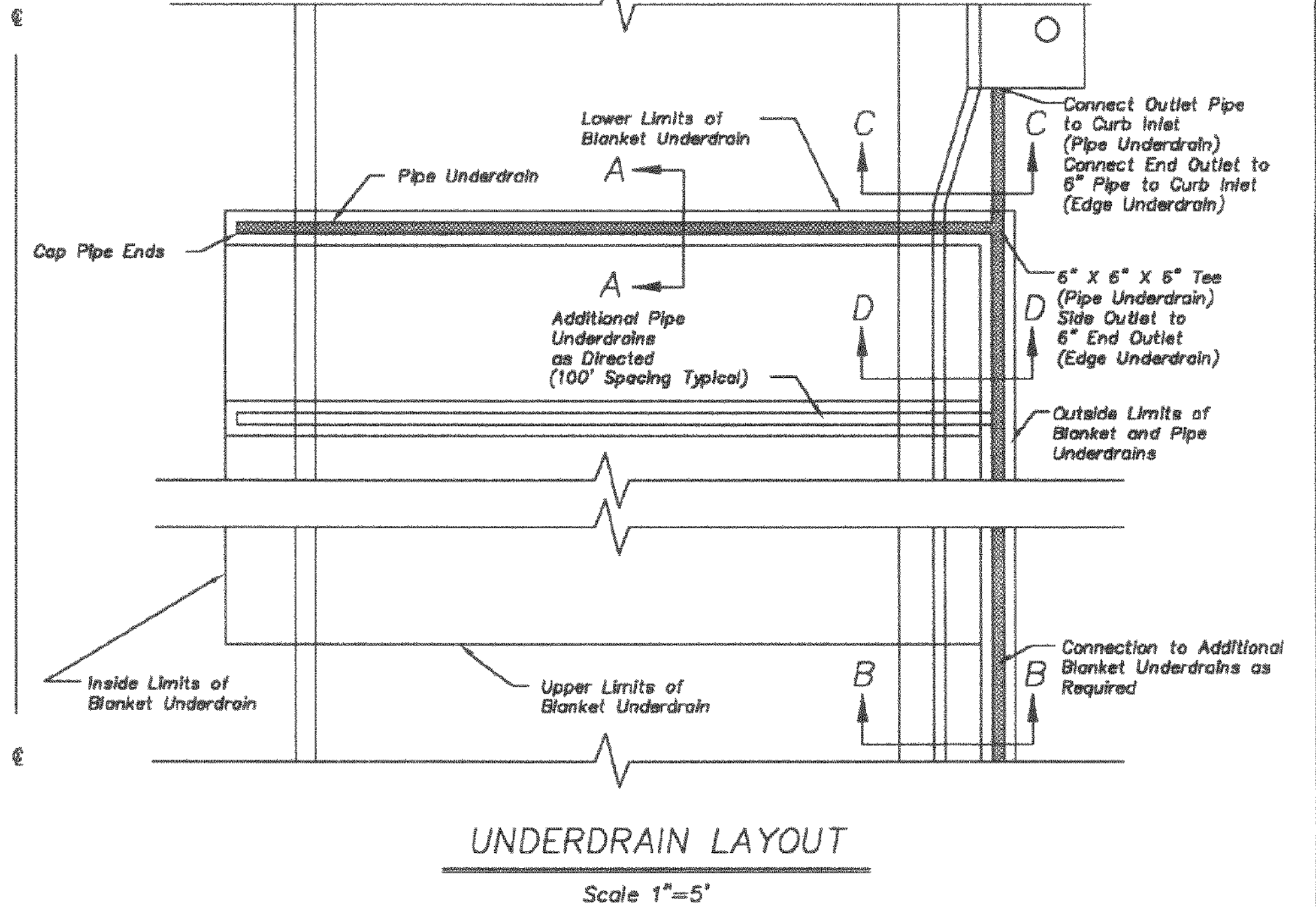
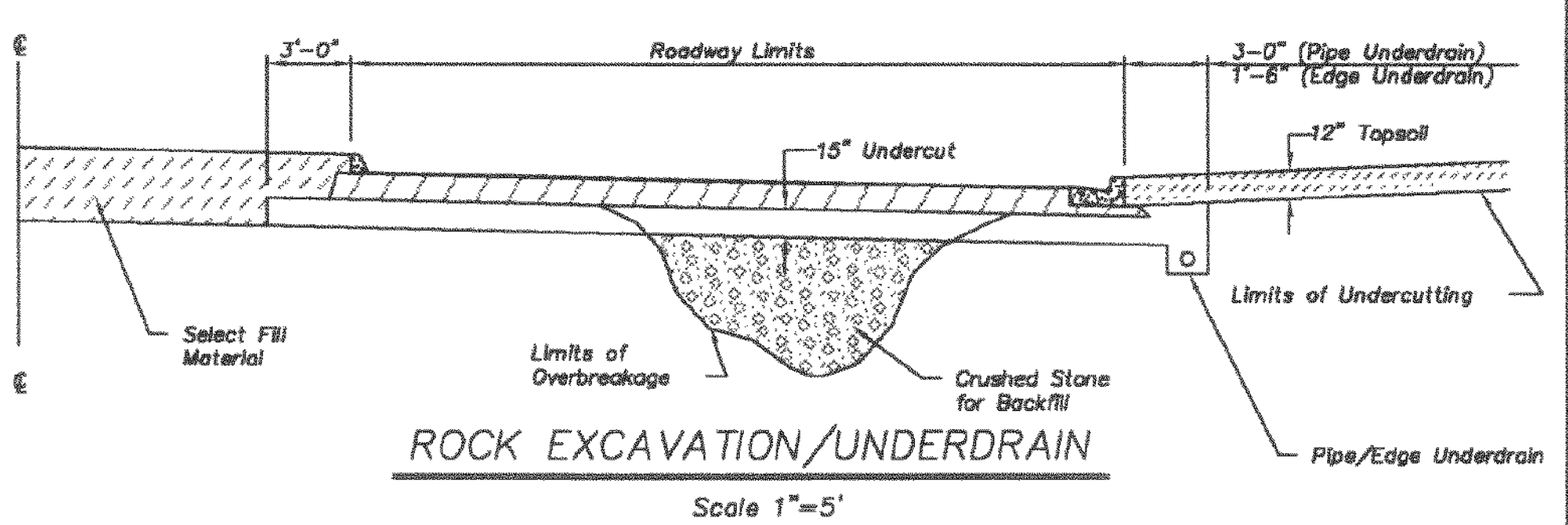
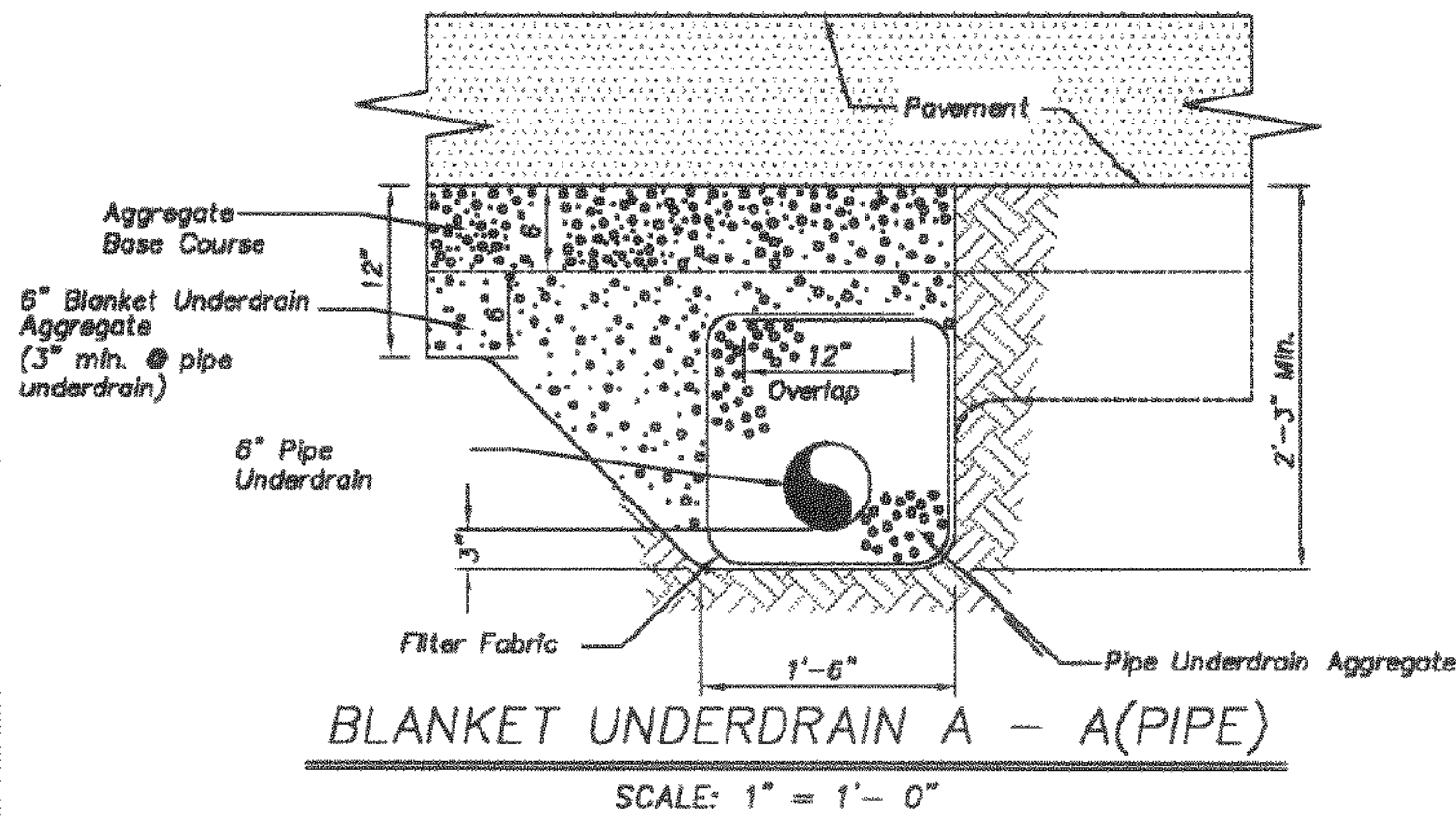
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CHECKED BY: JRT
PROJECT #: 21-1883
ISSUE DATE: 03/31/2022
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DETAILS

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Underdrain Notes:

- All roadway excavation in rock will be undercut no less than 15" for the full width of the roadway as shown.
- In areas where underdrains are not required, undercut and overbreakage in limestone and shale shall be brought to within 6" of the subgrade line with properly compacted crushed stone, shot rock, and/or rock rubble. The remaining 6" shall conform to Standard Specifications Section 2202.
- Layers of earth or shale shall not be permitted for backfill up to the bottom of the crushed stone.
- A minimum of 12" of select soil (topsoil) shall be placed on exposed rock cut or fill slopes outside the limits of the roadway. All rock and shale slopes shall be benched @ maximum 2' vertical intervals prior to placement of select soil.
- Proposed underdrain pipe layout, flowline elevations, inlet connection points, and details shall be approved prior to construction by the City Engineer.
- Where pipe underdrains are used, all underdrain outlet pipes shall be solid wall with watertight joints. All outlet pipes shall be tied into the nearest storm sewer inlet as approved. Where edge underdrains are used, all underdrain outlet pipes shall be solid wall with manufacturer joints approved by the City Engineer. All connections between pipes and edge connectors or curb inlets shall be made with 2' minimum length of pipe.
- All underdrain pipes shall be installed at a minimum slope of 1%. Underdrain pipes shall be installed with the perforations placed down.
- Blanket underdrains shall be placed on bedrock unless otherwise directed by the City Engineer. Undercut and overbreakage in limestone and shale shall be brought to within 12" of the subgrade line with properly compacted crushed stone, shot rock and/or rock rubble.
- All filter fabric used for pipe underdrain construction shall conform to Standard Specifications Section 2203.6.
- The Contractor may, at his option, use either pipe underdrain or edge underdrain, but shall not mix underdrain types within any underdrain system.
- All edge underdrain shall be held in the center of the trench by mechanical methods while placing granular backfill. See detail this sheet. Alternate methods may be used with prior approval by the City Engineer.
- Blanket underdrain aggregate, pipe underdrain aggregate, pipe underdrain, edge underdrain and outlet pipe shall conform to Standard Specifications Section 2203.6

AMERICAN PUBLIC WORKS ASSOCIATION

KANSAS CITY
METROPOLITAN CHAPTER

UNDERDRAIN DETAILS

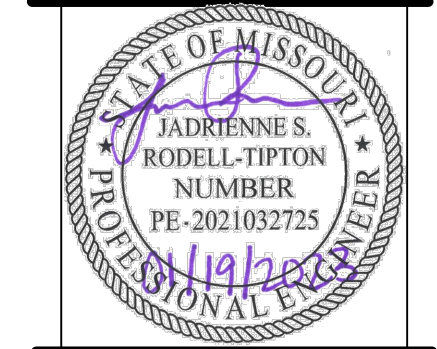
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UD-1
ADOPTED:
MAY 23, 2001

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