THE VILLAS OF CHAPEL RIDGE-2ND PLAT

LOTS 43-74 and Tracts C-1 & D-1

STREET AND STORM CONSTRUCTION PLANS

Section 8, Township 48 North, Range 31 West

LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

CONSTRUCTION AND DESIGN NOTES:

1 REVISED CONSTRUCTION AND DESIGN NOTES.

STREET & STORM SEWERS:

1 ~ STREET PAVEMENT SHALL CONSIST OF TYPE CG-1 AND CG-2 CURBS WITH PAVEMENT PER TABLE LS-2 OF THE LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL

RESIDENTIAL LOCAL STREET SEE BELOW FOR TYPICAL SECTION.
OPTION 1) 4" TYPE 5-01 ASPHALT BASE AND 2" TYPE 5-01 ASPHALT SURFACE OVER A 6" MoDOT TYPE 5 BASE AND A SUBGRADE MIXTURE OF 6" FLY ASH STABILIZED SUBGRADE IN ACCORDANCE WITH THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.
OPTION 2) 4" TYPE 5-01 ASPHALT BASE AND 2" TYPE 5-01 ASPHALT SURFACE OVER 10" MoDOT TYPE 5 BASE OVERTOP A BIAXIAL GEOGRID PER THE CITY'S APPROVED PRODUCT LIST.

RESIDENTIAL COLLECTOR STREET FOR SW ARBORWALK BLVD SEE BELOW FOR TYPICAL SECTION.
OPTION 1) 5.5" TYPE 5-01 ASPHALT BASE AND 2" TYPE 5-01 or 6-01 ASPHALT SURFACE OVER A 6" MoDOT TYPE 5 BASE AND A SUBGRADE MIXTURE OF 9" FLY ASH STABILIZED SUBGRADE IN ACCORDANCE WITH THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.
OPTION 2) 5.5" TYPE 5-01 ASPHALT BASE AND 2" TYPE 5-01 or 6-01 ASPHALT SURFACE OVER 12" MoDOT TYPE 5 BASE OVERTOP A BIAXIAL GEOGRID MEETING THE CITY'S APPROVED PRODUCT LIST.

2 ~ STORM SEWER PIPE SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) AS APPROVED BY CITY OF LEES SUMMIT DESIGN AND CONSTRUCTION MANUAL.

3 ~ JUNCTION BOXES SHALL BE PER CITY OF LEES SUMMIT STANDARD DRAWING NO. STM-3. FIELD INLETS SHALL BE PER CITY OF LEES SUMMIT STANDARD DRAWING STM-2. TOEWALLS SHALL BE PER CITY OF LEES SUMMIT DRAWING NO. STM-5. JUNCTION BOXES SHALL BE PER CITY OF LEES SUMMIT STM-3. ROCK LINING AND RIP RAP SHALL BE PER CITY OF LEES SUMMIT.

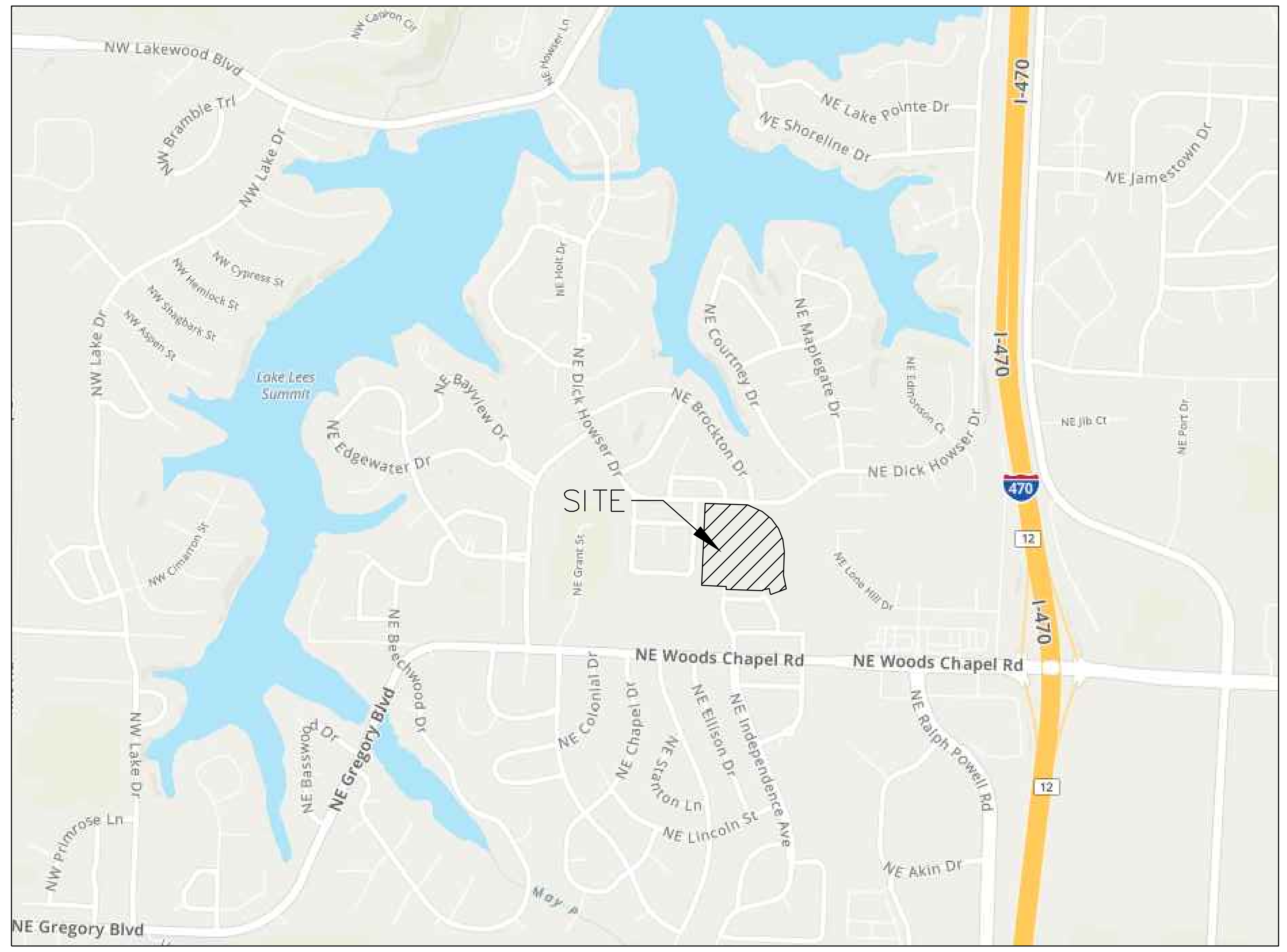
GENERAL NOTES:

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.

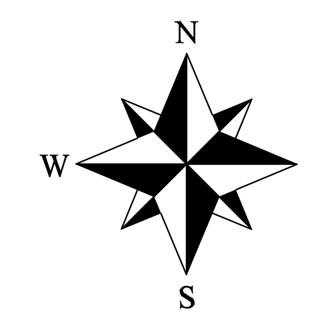
UTILITY COMPANIES:

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 PUBLIC WORKS INSPECTIONS ~ 969-1800
CITY OF LEE'S SUMMIT WATER UTILITIES ~ 969-1900
MISSOURI ONE CALL (DIG RITE) ~ 1-800-344-7483

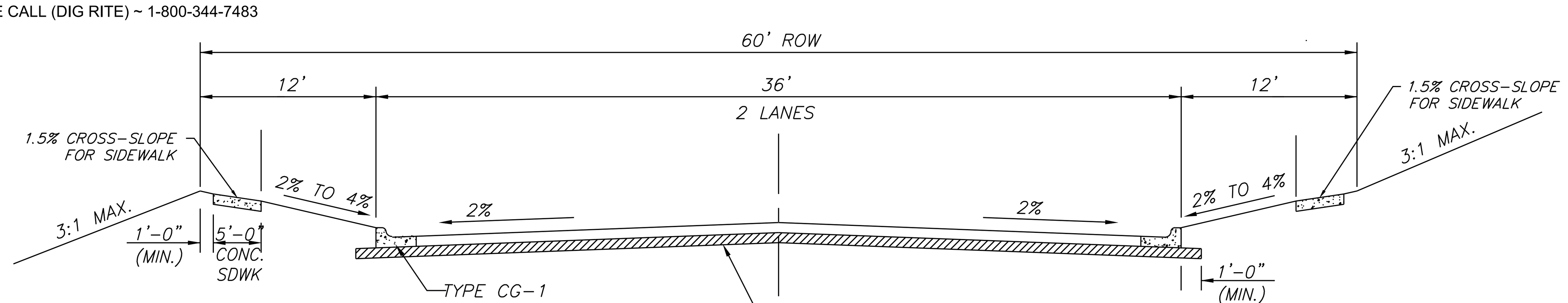


SITE LOCATION MAP



INDEX OF SHEETS:

1 Revised the Index of Sheets.

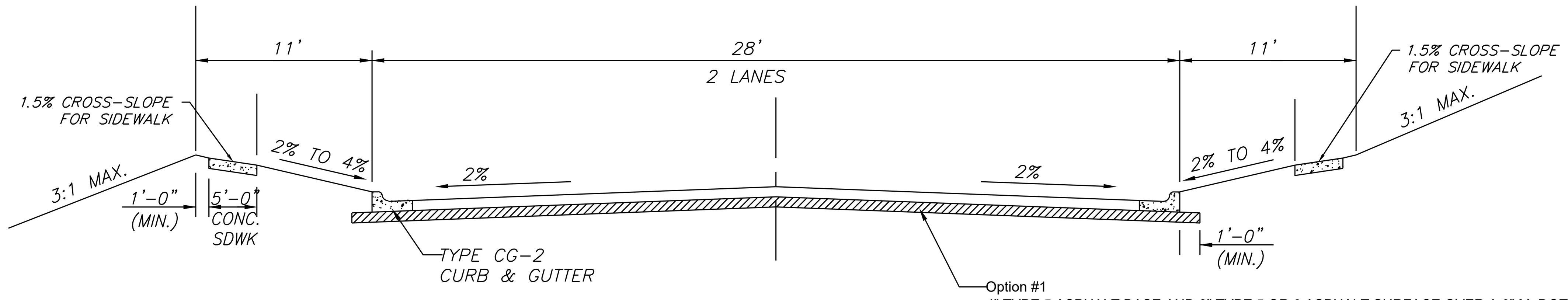


TYPICAL SECTION FOR (COLLECTOR)
N.T.S.

Option #1
5.5" TYPE 5 ASPHALT BASE AND 2" TYPE 5 OR 6 ASPHALT SURFACE OVER A 6" MoDOT TYPE 5 BASE AND A SUBGRADE MIXTURE OF 9" FLY ASH STABILIZED SUBGRADE IN ACCORDANCE WITH THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.

Option #2
5.5" TYPE 5 ASPHALT BASE AND 2" TYPE 5 OR 6 ASPHALT SURFACE OVER 12" MoDOT TYPE 5 BASE OVERTOP A BIAXIAL GEOGRID PER THE CITY'S APPROVED PRODUCT LIST.

1 REVISED NOTE 1. REMOVED WATER NOTES.



TYPICAL SECTION (RESIDENTIAL STREET)

Option #1
4" TYPE 5 ASPHALT BASE AND 2" TYPE 5 OR 6 ASPHALT SURFACE OVER A 6" MoDOT TYPE 5 BASE AND A SUBGRADE MIXTURE OF 6" FLY ASH STABILIZED SUBGRADE IN ACCORDANCE WITH THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.

Option #2
4" TYPE 5 ASPHALT BASE AND 2" TYPE 5 OR 6 ASPHALT SURFACE OVER 10" MoDOT TYPE 5 BASE OVERTOP A BIAXIAL GEOGRID MEETING THE REQUIREMENTS OF TABLE 2201.6-1

1 REVISED SUMMARY OF QUANTITIIES.

Summary of Quantities:

ITEM AND DESCRIPTION	UNIT	ESTIMATED QUANTITY
ASPHALT PAVING	S.Y.	4,246.00
CURBING	FT	2,683.00
5' SIDEWALK	S.F.	9,510.00
MoDOT Type 5 Base	S.Y.	5,108.00
GEOGRID	S.Y.	5,108.00
ADA SIDEWALK RAMP	UNIT	4
CLEARING, GRADING & GRUBBING	LS	1
SILT FENCE	FT	8,400.00
INLET PROTECTION	UNIT	30.00
SEEDING / MULCHING/ FERTILIZING	AC	8.27
CONST. ENTRANCE	UNIT	2.00
RIP RAP W/ FABRIC	S.Y.	54.00
STORM		
15" RCP	FT	244.52
18" RCP	FT	43.26
30" RCP	FT	68.55
36" HDPE	FT	102.81
30" HDPE	FT	216.50
24" HDPE	FT	72.19
18" HDPE	FT	133.44
15" HDPE	FT	282.91
4' x 4' STORM FIELD INLET	EA	4.00
5' x 4' STORM CURB INLET	EA	11.00

LEGEND:
B/L - BUILDING SET-BACK
C/A - COMMON AREA
D/E - DRAINAGE EASEMENT
FND. - FOUND
L/E - LANDSCAPE EASEMENT
L.N.A. - LIMITS OF NO ACCESS
R/W - RIGHT OF WAY
SAN - SANITARY SEWER LINE
S/W - SIDEWALK
U/E - UTILITY EASEMENT
W - WATER LINE
ST - STORM SEWER LINE

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.

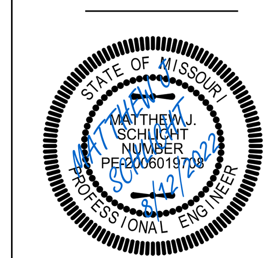
ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING
50 SE 30TH STREET
LEE'S SUMMIT, MO 64082
P:(816) 623-9888 F:(816)623-9849

Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

Project: VILLAS OF CHAPEL RIDGE, LSMO
Issue Date: June 24, 2022

Street & Storm Cover Sheet
Construction Plans for:
THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri



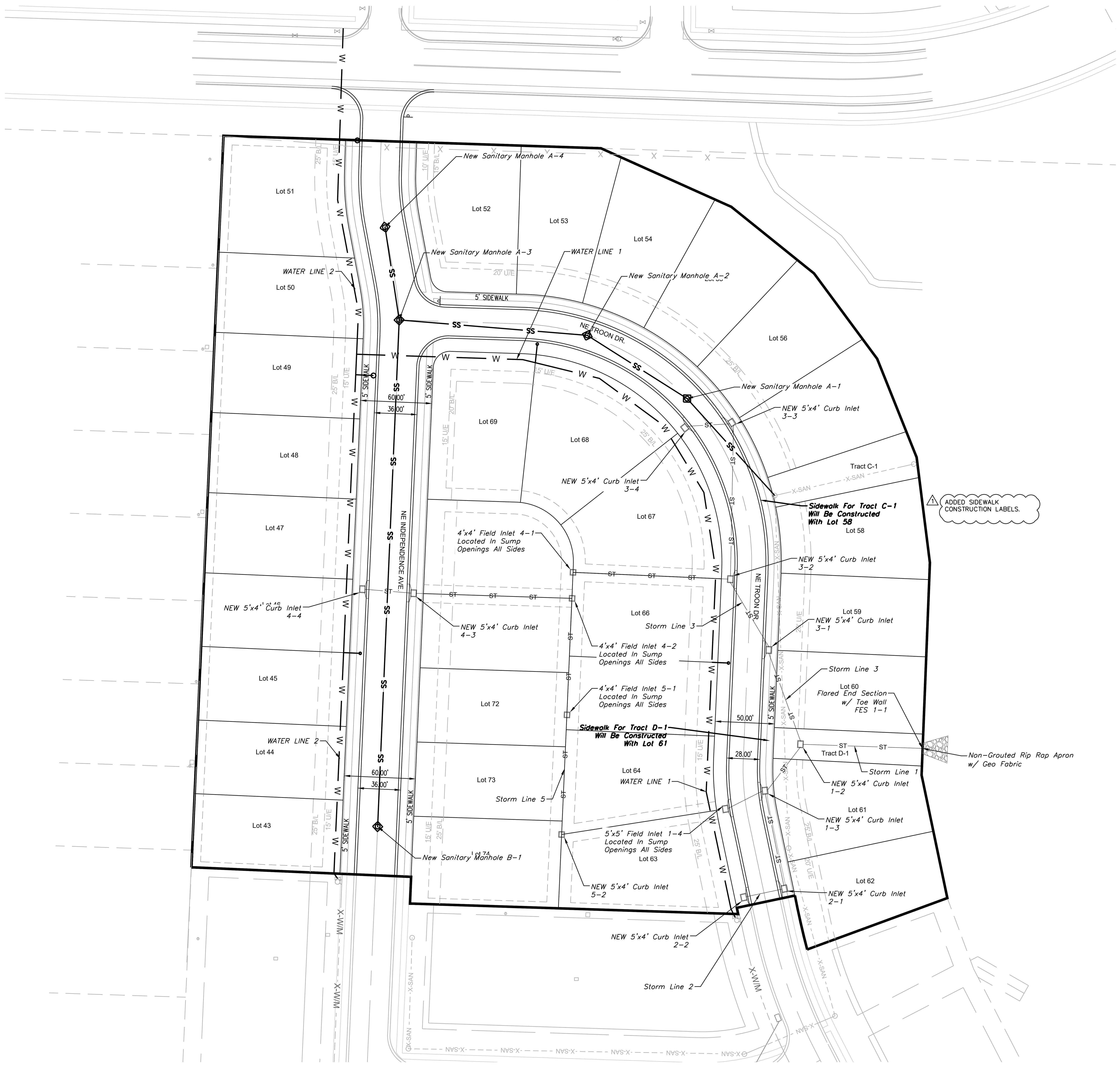
Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

REVISIONS

1 REV. 8/12/2022

SITE PLAN
SCALE: 1" = 50'
North
0 25' 50' 100'

Contractor is Responsible to Remove All Existing Onsite Fence and Structures and properly dispose of these items offsite



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THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

Project: VILLAS OF CHAPEL RIDGE, LSMO
Issue Date: June 24, 2022

Site Plan
Construction Plans for:
THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
NUMBER PE2006019708
PROFESSIONAL ENGINEER

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

REVISIONS
REV. 8/12/2022

C.100

STREET SIGNAGE

SCALE: 1" = 50'

△1 ADDED STREET SIGNAGE PLAN.

ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING
50 SE 30TH STREET
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Nebraska
Engineering CA2821

THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

Project: VILLAS OF CHAPEL RIDGE, LSMO
Issue Date: June 24, 2022

Street Signage

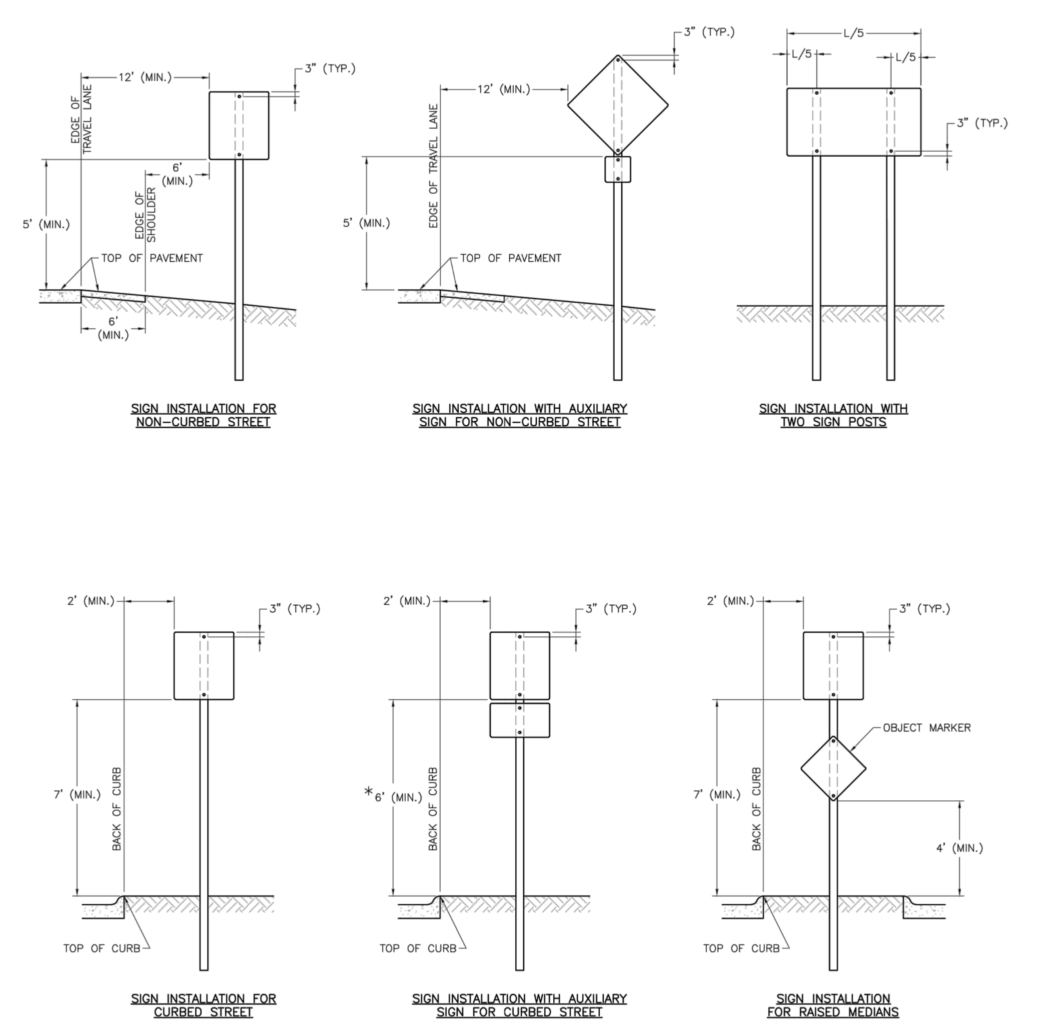
Construction Plans for:
THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
NUMBER
PE-2006019708
PROFESSIONAL ENGINEER
Matthew J. Schlicht 8/12/2022

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

REVISIONS

△1 REV. 8/12/2022

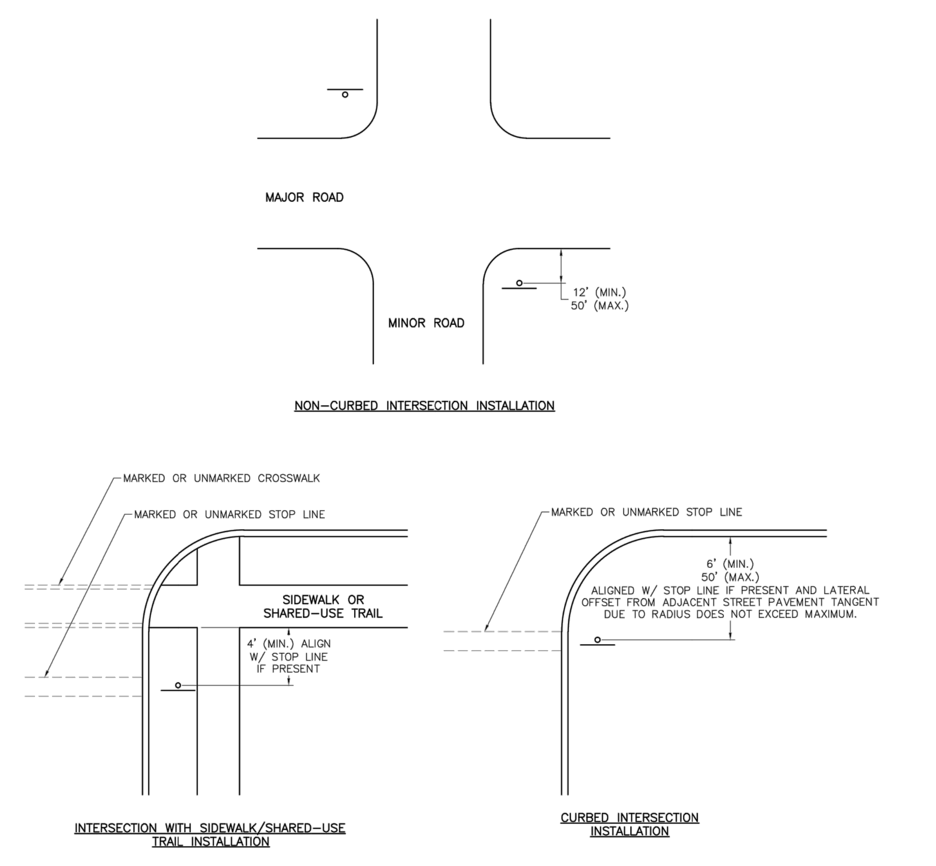


SIGN INSTALLATION FOR NON-CURBED STREET — SIGN INSTALLATION WITH AUXILIARY SIGN FOR NON-CURBED STREET — SIGN INSTALLATION WITH TWO SIGN POSTS — SIGN INSTALLATION FOR CURBED STREET — SIGN INSTALLATION WITH AUXILIARY SIGN FOR CURBED STREET — SIGN INSTALLATION FOR RAISED MEDIANS

SIGN MOUNTING DETAILS

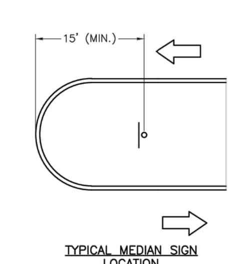
NOTES:

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



NON-CURBED INTERSECTION INSTALLATION — INTERSECTION WITH SIDEWALK/SHARED-USE TRAIL INSTALLATION — CURBED INTERSECTION INSTALLATION

CONTROL SIGN LOCATION



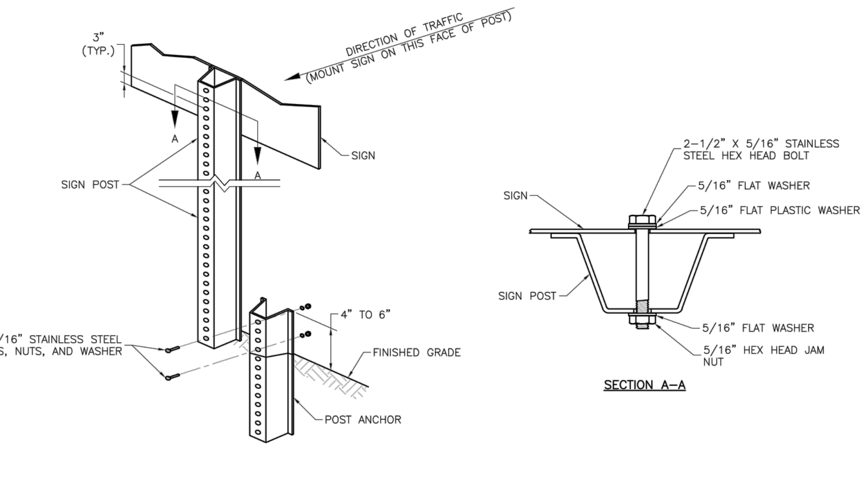
TYPICAL MEDIAN SIGN LOCATION

MEDIAN SIGN LOCATION

NOTES:

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

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
SIGN MOUNTING DETAILS
Drawn By: BWC
Checked By: MP
Date: 01/2020
SN-1



SECTION A–A

U–STEEL POST DETAILS

NOTES:

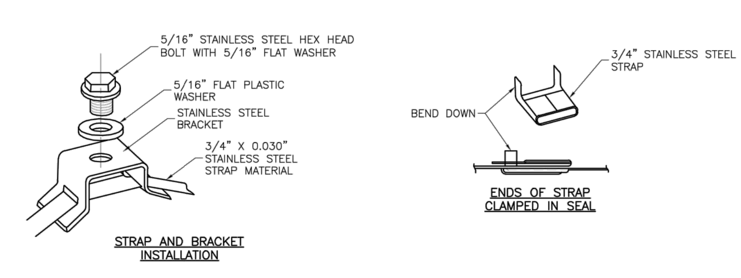
1. SPLICE SHALL BE POSITIONED ENTIRELY BETWEEN FINISHED GRADE LINE AND 18" ABOVE FINISHED GRADE LINE. ONLY ONE SPLICE WILL BE ALLOWED PER POST.
2. U–STEEL POST SHALL BE 3 LB./FT., GALVANIZED ACCORDING TO ASTM A123.
3. U–STEEL POST CAN BE USED FOR INSTALLATION OF SIGNS WITH AN AREA OF LESS THAN 2.5 SQUARE FEET.
4. ALL POSTS SHALL BE EMBEDDED A MINIMUM OF 3 FEET.

PERMANENT SIGNING GENERAL NOTES:

1. ALL SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. THE CONTRACTOR IS RESPONSIBLE FOR AVOIDING ANY AND ALL UTILITIES WHEN INSTALLING SIGN POSTS, WHETHER THE UTILITY IS INDICATED ON THE PLANS OR NOT.
3. ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE PUBLIC WORKS DEPARTMENT OF THE CITY OF LEE'S SUMMIT.
4. THE CONTRACTOR SHALL STAKE THE LOCATION OF ALL SIGN POSTS TO BE INSTALLED. THE CITY INSPECTOR SHALL INSPECT THE STAKING PRIOR TO INSTALLATION. MINOR RELOCATION TO AVOID CONFLICTS MAY BE ALLOWED WITH THE APPROVAL OF THE CITY TRAFFIC ENGINEER.
5. SIGNS SHOWN TO BE INSTALLED ON THE SIDE OF METAL POLES SHALL BE MOUNTED WITH STAINLESS STEEL STRAPS OR WING BRACKETS AS DETAILED. NO SIGNS ARE TO BE INSTALLED ON WOOD POLES. SEE TRAFFIC SIGNAL STANDARD DRAWINGS FOR THE INSTALLATION OF SIGNS ON MAST ARMS.
6. ALL POST MOUNTED SIGNS SHALL BE INSTALLED WITH BREAKAWAY ANCHORS ACCORDING TO THE STANDARD DRAWINGS.
7. ALL EXISTING SIGNS WILL BE USED IN PLACE DURING CONSTRUCTION AND PROTECTED FROM DAMAGE UNLESS OTHERWISE INDICATED IN THE PLANS. IF THE CONTRACTOR DAMAGES ANY EXISTING SIGN OR POSTS DURING CONSTRUCTION, THE CONTRACTOR WILL BE REQUIRED TO REPLACE THE DAMAGED MATERIALS WITH NEW SIGNS OR POSTS AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND STORING ANY SIGNS THAT ARE TO BE REINSTALLED ON THE PROJECT. ALL EQUIPMENT SHALL BE REINSTALLED IN GOOD CONDITION.
8. EXISTING PERMANENT SIGNS AND POSTS REMOVED BY THE CONTRACTOR FOR CONSTRUCTION PURPOSES WHICH ARE NOT TO BE REINSTALLED SHALL BE DELIVERED TO THE CITY'S PUBLIC WORKS MAINTENANCE FACILITY (1971 SE HAMBLEN ROAD). THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND STORING EQUIPMENT IN GOOD CONDITION AND IS FULLY RESPONSIBLE FOR THE EQUIPMENT UNTIL IT IS DELIVERED.
9. ALL STOP, YIELD, OR STREET NAME SIGNS SHALL BE MAINTAINED IN A CONSPICUOUS LOCATION FOR THE DRIVING PUBLIC. ALL STOP AND YIELD SIGNS REMOVED FOR CONSTRUCTION PURPOSES CAN BE TEMPORARILY ERECTED IN REFLECTORIZED DRUMS (NO LESS THAN 7 FEET ABOVE THE PAVEMENT SURFACE) UNTIL THEY CAN BE REINSTALLED. ANY TEMPORARY STOP OR YIELD SIGN INSTALLATION TO BE LEFT IN PLACE OVERNIGHT WILL REQUIRE PRIOR APPROVAL FROM THE CITY INSPECTOR.

SQUARE STEEL POST INSTALLATION SEQUENCE:

1. SIGN POST ANCHOR DRIVEN PARTIALLY INTO THE GROUND USING A DRIVE CAP WITH A SLEDGE OR POWER EQUIPMENT.
2. ANCHOR SLEEVE SLIPPED OVER ANCHOR AND DRIVE INTO THE GROUND TOGETHER WITH THE SIGN POST ANCHOR.
3. INSERT SIGN POST INTO THE POST ANCHOR AND BOLT IN PLACE.

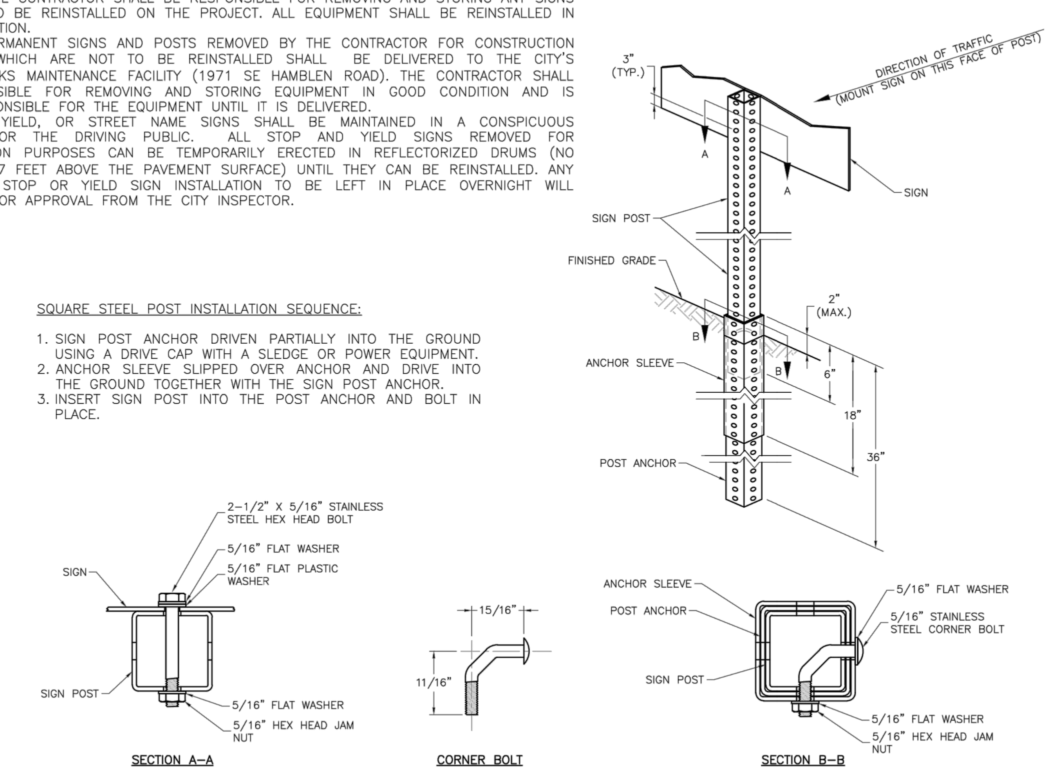


STRAP AND BRACKET INSTALLATION — ENDS OF STRAP CLAMPED IN SEAL

STRAP TYPE SIGN SUPPORT DETAILS

NOTES:

1. SIGNS ON METAL POLES SHALL BE ATTACHED WITH TWO BRACKETS AND STAINLESS STEEL BANDS.
2. HOLES IN SIGN FOR ATTACHMENT TO THE MOUNTING BRACKETS SHALL BE OFFSET A MINIMUM OF 2 INCHES FROM THE EDGE OF THE SIGN.
3. HOLES IN SIGN SHALL BE LOCATED SUCH THAT THE SIGN IS LEVEL.
4. ALL STRAP, BRACKET, AND SEAL MATERIALS SHOULD BE TYPE 201 STAINLESS STEEL.



SECTION A–A — CORNER BOLT — SECTION B–B

SQUARE STEEL POST DETAILS

NOTES:

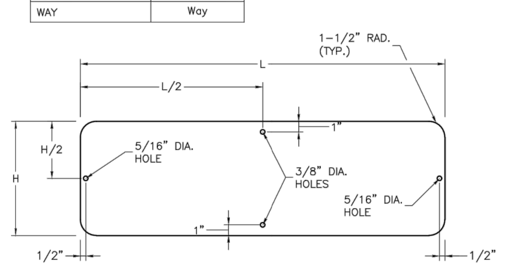
1. SQUARE STEEL SIGN POSTS AND BREAK–AWAY ANCHOR SHALL CONSIST OF THE FOLLOWING MATERIALS:
   SIGN POST – 14 GA. 2" X 2" SQUARE STEEL POST
   POST ANCHOR – 12 GA. 2 ¼" X 2 ¼" X 36" SQUARE STEEL POST
   ANCHOR SLEEVE – 12 GA. 2 ½" X 2 ½" X 18" SQUARE STEEL POST
2. 14 GA. POSTS MUST MEET A CERTIFIED MINIMUM YIELD STRENGTH OF 60,000 PSI.
3. 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 OR EQUAL TO 48" (NOT INCLUDING 36" X 36" DIAMOND SHAPED SIGNS) WILL REQUIRE TWO POSTS.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
POST DETAILS
Drawn By: BWC
Checked By: MP
Date: 01/2020
SN-2

STANDARD ABBREVIATION LISTS

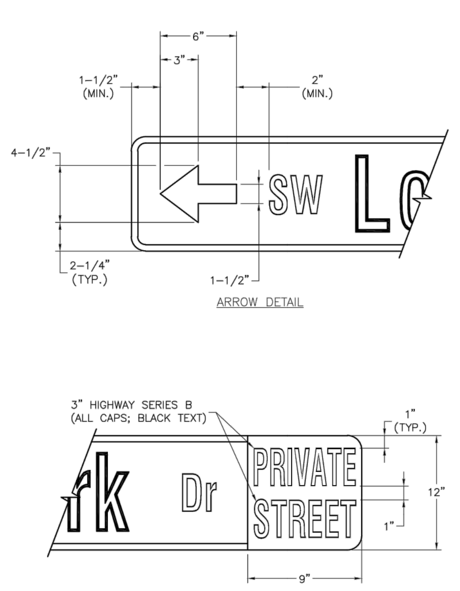
NAMED STREETS	
AVENUE	Ave
BOULEVARD	Blvd
CIRCLE	Cir
CREEK	Cr
COURT	Ct
CROSSING	Xing
DRIVE	Dr
HIGHWAY	Hwy
LANE	Ln
PARKWAY	Pkwy
PLACE	Pl
ROAD	Rd
STREET	St
TERRACE	Ter
TRAIL	Trl
WAY	Way

NUMBERED STREETS	
FIRST	ST
SECOND	ND
THIRD	RD
FOURTH TO TENTH	TH

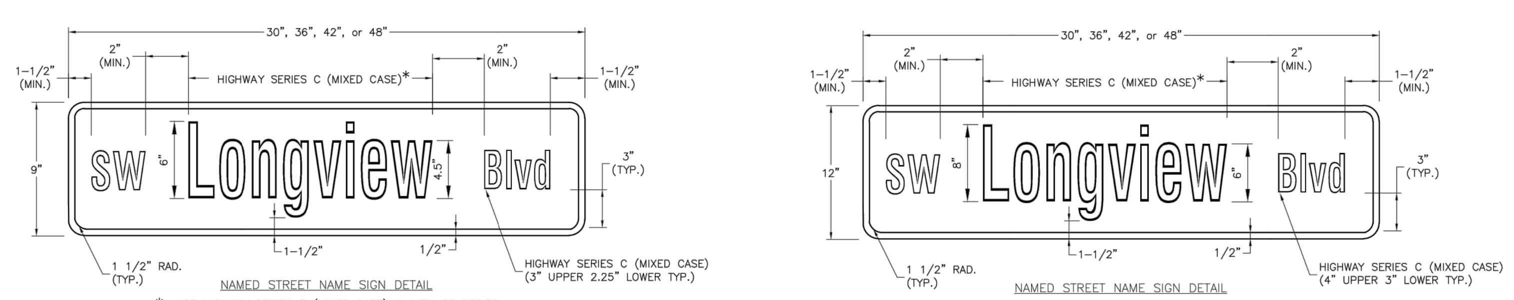


STREET NAME SIGN BLANK DETAILS

FOR MOUNTING ON SQUARE SIGN POSTS



ARROW DETAIL — PRIVATE STREET TAG DETAIL



NAMED STREET NAME SIGN DETAIL

* 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

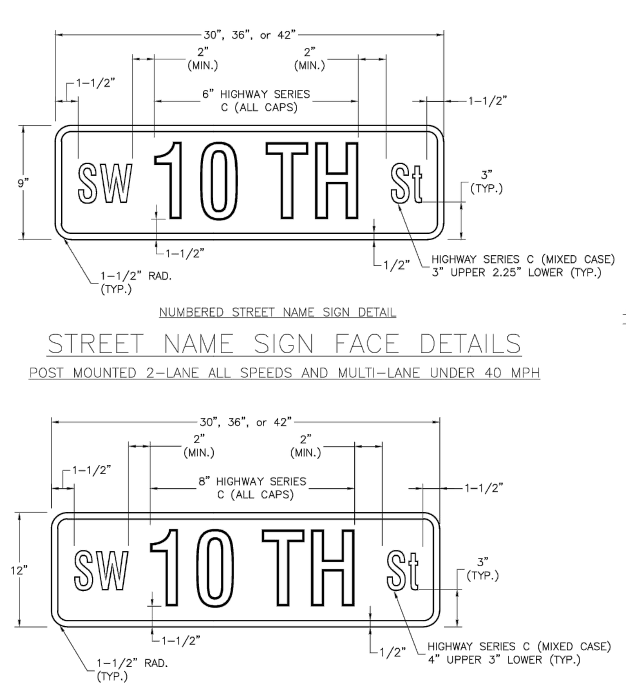
POST MOUNTED 2–LANE ALL SPEEDS AND MULTI–LANE UNDER 40 MPH

NAMED STREET NAME SIGN DETAIL

* 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

POST MOUNTED MULTI–LANE GREATER THAN 40 MPH



NUMBERED STREET NAME SIGN DETAIL

STREET NAME SIGN FACE DETAILS

POST MOUNTED 2–LANE ALL SPEEDS AND MULTI–LANE UNDER 40 MPH

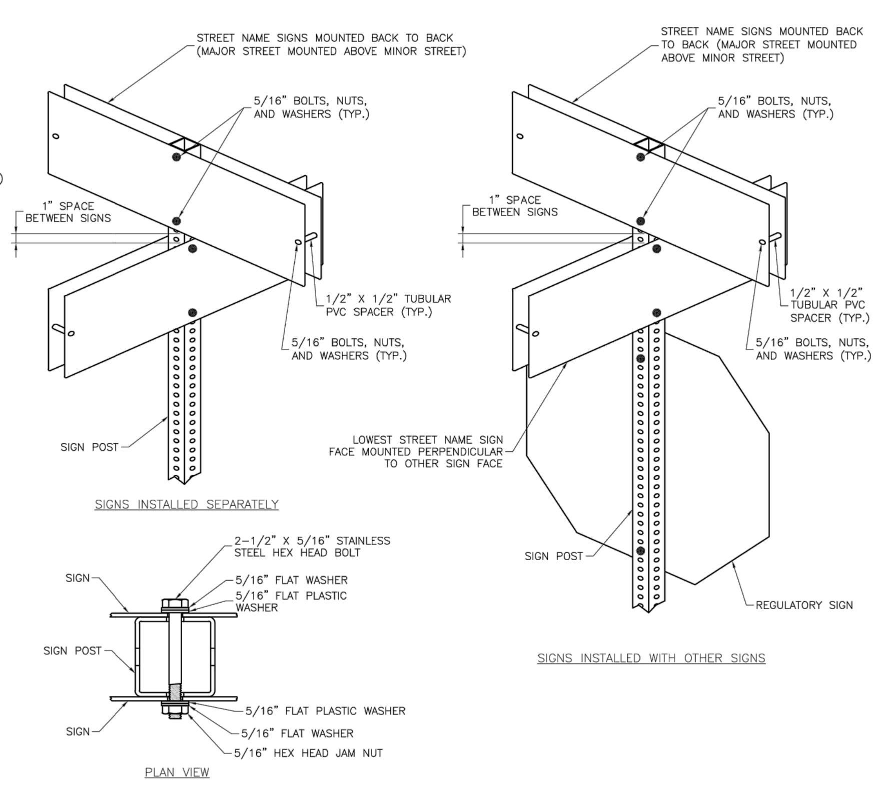
NUMBERED STREET NAME SIGN DETAIL

STREET NAME SIGN FACE DETAILS

POST MOUNTED MULTI–LANE GREATER THAN 40 MPH

NOTES:

1. FOR ALL STREET NAME SIGNS, THE LEGEND SHALL BE WHITE AND THE BACKGROUND SHALL BE GREEN.
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.
4. MULTI–LANE IS DEFINED AS HAVING 2 LANES OR MORE IN EACH DIRECTION, EXCLUDING TURN LANES.
5. OVERHEAD SIGN DETAILS MAY BE FOUND ON THE SIGNAL HEAD MOUNTING DETAIL.



SIGNS INSTALLED SEPARATELY — SIGNS INSTALLED WITH OTHER SIGNS — PLAN VIEW

SQUARE STEEL POST MOUNTING DETAILS

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
STREET NAME SIGN DETAILS
Drawn By: BWC
Checked By: MP
Date: 01/2020
SN-3

ADDED STREET SIGNAGE DETAILS.

ENGINEERING SOLUTIONS
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50 SE 30TH STREET
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Engineering 2005002186-D
Surveying 2005008319-D
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Engineering E-1695
Surveying LS-218
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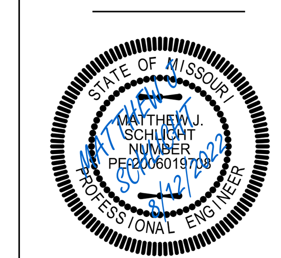
Engineering 6254
Nebraska
Engineering CA2821

THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

Project: VILLAS OF CHAPEL RIDGE, LSMO
Issue Date: June 24, 2022

Street Signage Details
Construction Plans for:
THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri



Matthew J. Schlicht
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NE PE E-14335

REVISIONS

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C.102

Estimated Cut / FIll Quantities

Site Area	7.32 Acres
Cut Volume (Unadjusted)	29,628 c.y.
Fill Volume (Unadjusted)	30,922 c.y.
Street & Sidewalk Cut Volume	1,820 c.y.
Net Excess	3,114 c.y. (Unadjusted)(Cut)

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.

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LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

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Master Drainage Plan 1 of 3: Grading Plan

Construction Plans for:
THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
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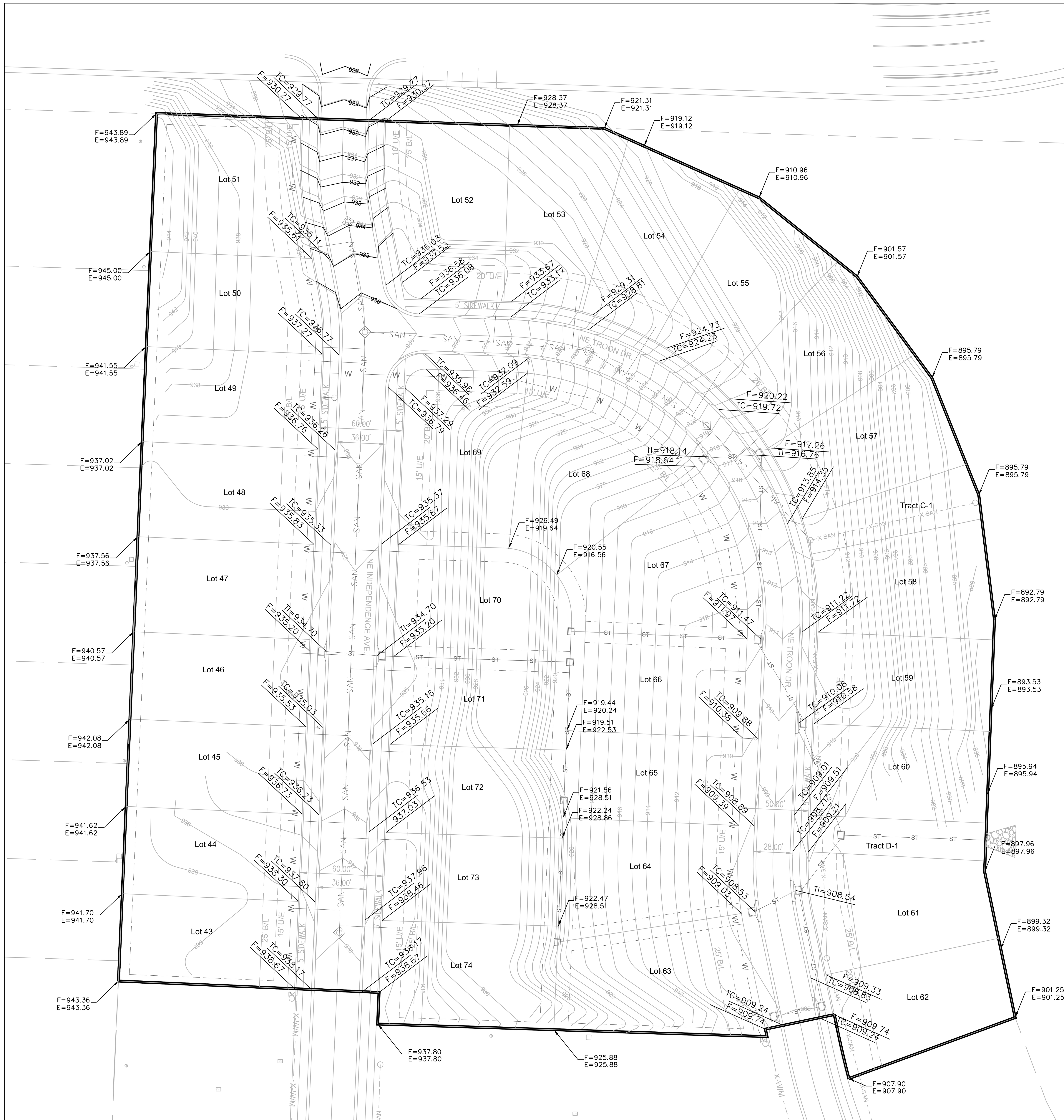
C.200



Note:

AS GRADED PLOT PLAN REQUIRED FOR EACH LOT.

Lot Number	Basement Type	MBOE
43	Full	942.00
44	Full	941.00
45	Full	940.00
46	Full	939.00
47	Full	939.00
48	Full	940.00
49	Full	941.00
50	Full	942.00
51	Full	N/A
52	Daylight	N/A
53	Walkout	N/A
54	Walkout	N/A
55	Walkout	N/A
56	Walkout	N/A
57	Walkout	N/A
58	Walkout	N/A
59	Walkout	N/A
60	Walkout	N/A
61	Walkout	N/A
62	Walkout	N/A
63	Full	913.00
64	Full	913.00
65	Full	913.00
66	Full	914.00
67	Full	920.00
68	Full	N/A
69	Walkout	N/A
70	Walkout	N/A
71	Walkout	N/A
72	Walkout	N/A
73	Walkout	N/A
74	Walkout	N/A

North

GRAPHIC SCALE

0 20' 40' 80'

SPOT ELEVATIONS

SCALE: 1" = 40'

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THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

Project: VILLAS OF CHAPEL RIDGE, LSMO

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Master Drainage Plan 2 of 3: Spot Elevations

Construction Plans for:
THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

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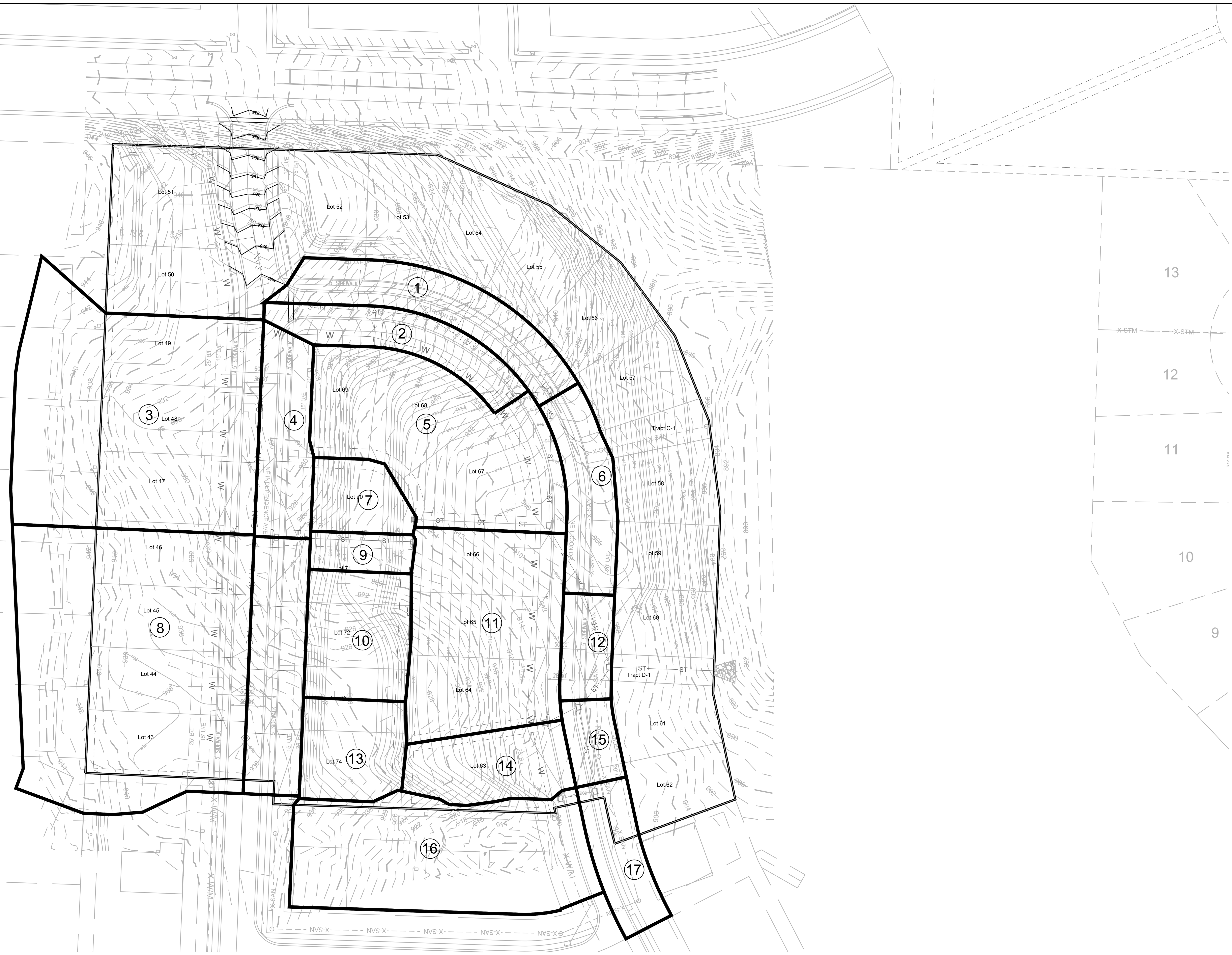
C.201



DRAINAGE AREA MAP

SCALE: 1" = 60'

APWA STORM DRAINAGE "TC" COMPUTATIONS FOR: VILLAS OF CHAPEL RIDGE 2ND PLAT

yellow areas are self computing overwrite if necessary

Surface types:	Asph/Conc	Bus/Com	Dirt	Grass/Park	Lake	MultFam	SnglFam	Undev	Other
SURFACE CODES	A	B	D	G	L	M	S	U	Z
"C" Values	0.90	0.87	0.60	0.30	0.90	0.66	0.51	0.3	

OVERLAND FLOW - 100' MAX: Overwrite Length - DnElev or Slope if necessary

SURFACE CODE P or U: P=Paved, U=Unpaved

CHANNEL FLOW - FIRST REACH: Overwrite Slope or Elevations if necessary

TOTAL WATERSHED

TC COMPUTATION

AREA ID	TOTAL SQ.FT.	TOTAL ACRES	WTRSHD LENGTH	UP ELEV	DN ELEV	SURFACE CODE	"C" VALUE	OVRLND LENGTH	UP ELEV	DN ELEV	SLOPE %	SURFACE CODE P or U	CHANNEL LENGTH	UP ELEV	DN ELEV	SLOPE %	VELOCITY F/S	Cal Overland Flow T(I)	Used Min 5 Max 15 T(I)	Cal Channel One T(T)	Cal Channel Two T(T)	Total T© 10	Intensity 10 I	Intensity 100 I	CFS 10 Q	K 1.25 CFS 100 Q	AREA ID
PROP.																											PROP.
1	13710	0.31	278.00	936.00	918.00	M	0.66	88.0	936.0	932.00	4.5	P	190.0	932.0	918.0	7.37	5.5	4.5	5.0	0.6	0.0	5.6	7.2	10.1	1.49	2.62	1
2	10065	0.23	216.00	936.00	918.00	M	0.66	100.0	936.0	929.00	7.0	P	116.0	929.0	918.0	9.48	6.3	4.1	5.0	0.3	0.0	5.3	7.3	10.2	1.11	1.94	2
3	52250	1.20	415.00	946.00	934.00	M	0.66	100.0	946.0	940.00	6.0	P	315.0	940.0	934.0	1.90	2.8	4.4	5.0	1.9	0.0	6.9	6.8	9.6	5.40	9.50	3
4	24340	0.56	208.00	936.00	934.00	M	0.66	36.0	936.0	935.25	2.1	P	172.0	935.3	934.0	0.73	1.7	3.7	5.0	1.7	0.0	6.7	6.9	9.7	2.54	4.46	4
5	31497	0.72	290.00	936.00	911.00	M	0.66	100.0	936.0	924.00	12.0	U	190.0	924.0	911.0	6.84	4.2	3.5	5.0	0.8	0.0	5.8	7.1	10.0	3.40	5.98	5
6	9686	0.22	200.00	916.00	910.00	M	0.66	55.0	916.0	914.00	3.6	P	145.0	914.0	910.0	2.76	3.4	3.8	5.0	0.7	0.0	5.7	7.1	10.0	1.05	1.84	6
7	6391	0.15	112.00	936.00	919.00	M	0.66	100.0	936.0	920.00	16.0	U	12.0	920.0	919.0	8.33	4.7	3.1	5.0	0.0	0.0	5.0	7.3	10.3	0.71	1.25	7
8	60289	1.38	453.00	947.00	934.00	M	0.66	100.0	947.0	941.00	6.0	P	353.0	941.0	934.0	1.98	2.9	4.4	5.0	2.1	0.0	7.1	6.8	9.5	6.18	10.88	8
9	3848	0.09	125.00	934.00	919.00	M	0.66	100.0	934.0	920.00	14.0	U	25.0	920.0	919.0	4.00	3.2	3.3	5.0	0.1	0.0	5.1	7.3	10.3	0.43	0.75	9
10	12701	0.29	152.00	936.00	921.00	M	0.66	100.0	936.0	923.00	13.0	U	52.0	923.0	921.0	3.85	3.2	3.4	5.0	0.3	0.0	5.3	7.3	10.2	1.40	2.46	10
11	29486	0.68	312.00	919.00	908.00	M	0.66	100.0	919.0	910.50	8.5	P	212.0	910.5	908.0	1.18	2.2	3.9	5.0	1.6	0.0	6.6	6.9	9.7	3.08	5.42	11
12	5185	0.12	145.00	910.00	908.00	M	0.66	43.0	910.0	909.00	2.3	P	102.0	909.0	908.0	0.98	2.0	3.9	5.0	0.8	0.0	5.8	7.1	10.0	0.56	0.98	12
13	9844	0.23	118.00	935.50	922.00	M	0.66	100.0	935.5	924.00	11.5	U	18.0	924.0	922.0	11.11	5.4	3.5	5.0	0.1	0.0	5.1	7.3	10.3	1.09	1.92	13
14	10644	0.24	170.00	927.00	908.00	M	0.66	100.0	927.0	912.00	15.0	P	70.0	912.0	908.0	5.71	4.9	3.2	5.0	0.2	0.0	5.2	7.3	10.2	1.17	2.06	14
15	4112	0.09	113.00	910.00	908.00	M	0.66	36.0	910.0	909.00	2.8	P	77.0	909.0	908.0	1.30	2.3	3.4	5.0	0.6	0.0	5.6	7.2	10.1	0.45	0.79	15
16	31892	0.73	347.00	934.00	909.00	M	0.66	100.0	934.0	924.00	10.0	P	247.0	924.0	909.0	6.07	5.0	3.7	5.0	0.8	0.0	5.8	7.1	10.0	3.43	6.04	16
17	7514	0.17	181.00	911.00	909.00	M	0.66	36.0	911.0	910.00	2.8	P	145.0	910.0	909.0	0.69	1.7	3.4	5.0	1.4	0.0	6.4	6.9	9.8	0.79	1.39	17

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LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

Project: VILLAS OF CHAPEL RIDGE, LSMO
Issue Date: June 24, 2022

Master Drainage Map 3 of 3:
Drainage Area Map
Construction Plans for:
THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
NUMBER
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PROFESSIONAL ENGINEER
MATTHEW J. SCHLICHT 8/12/2022

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NE PE E-14335

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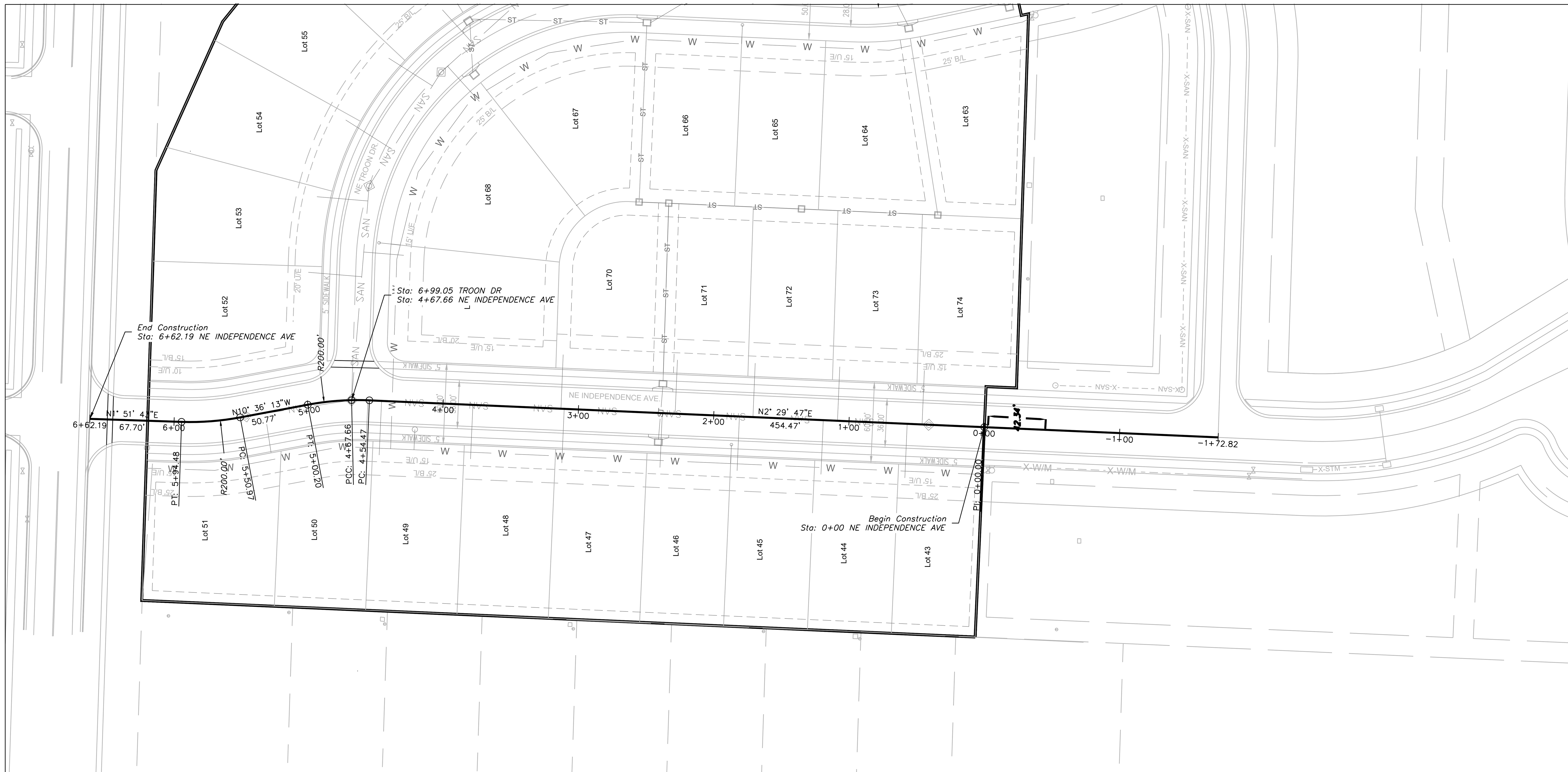
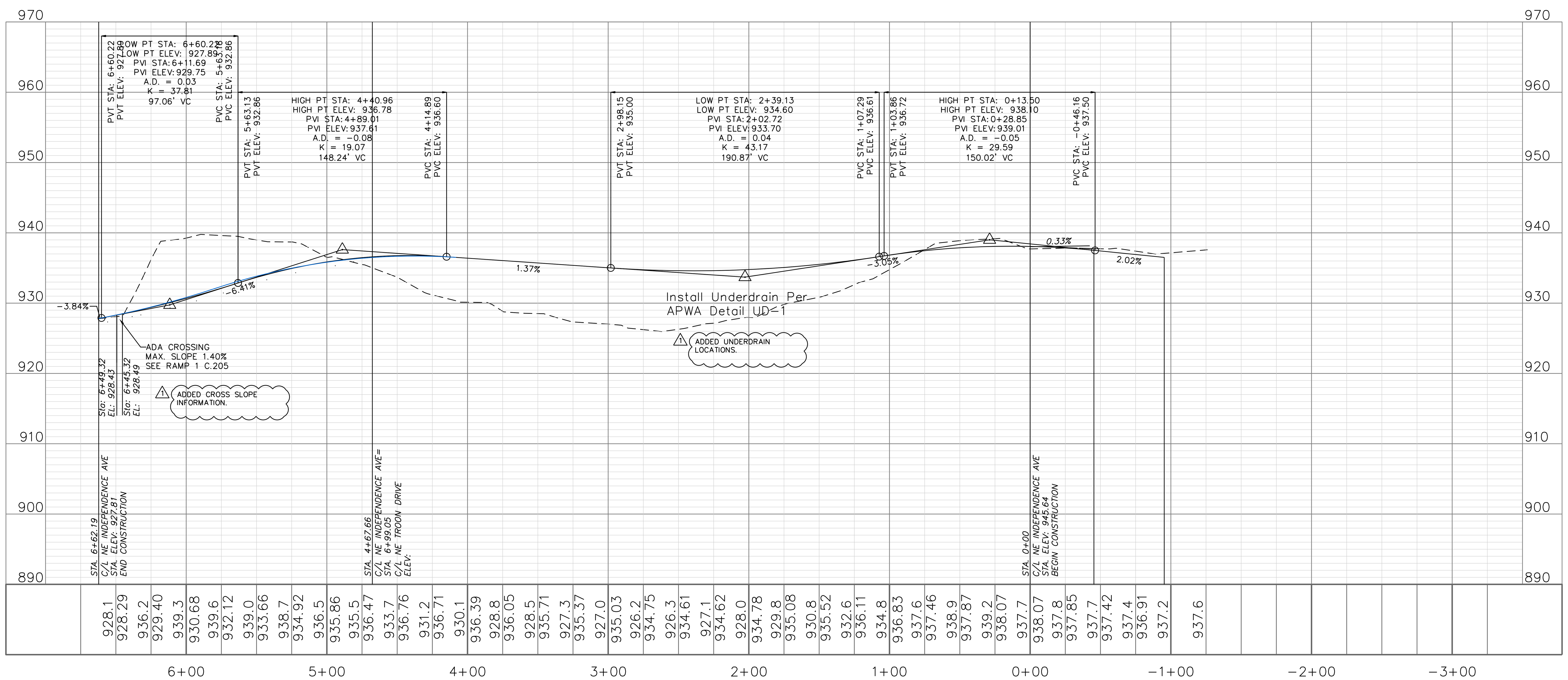
GRAPHIC SCALE
0 25' 50' 100'

North

STREET PLAN & PROFILE
SCALE: 1" = 50'



NE INDEPENDENCE AVE



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LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

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Street Plan and Profile
Construction Plans for:
THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
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1 REV. 8/12/2022

C.203

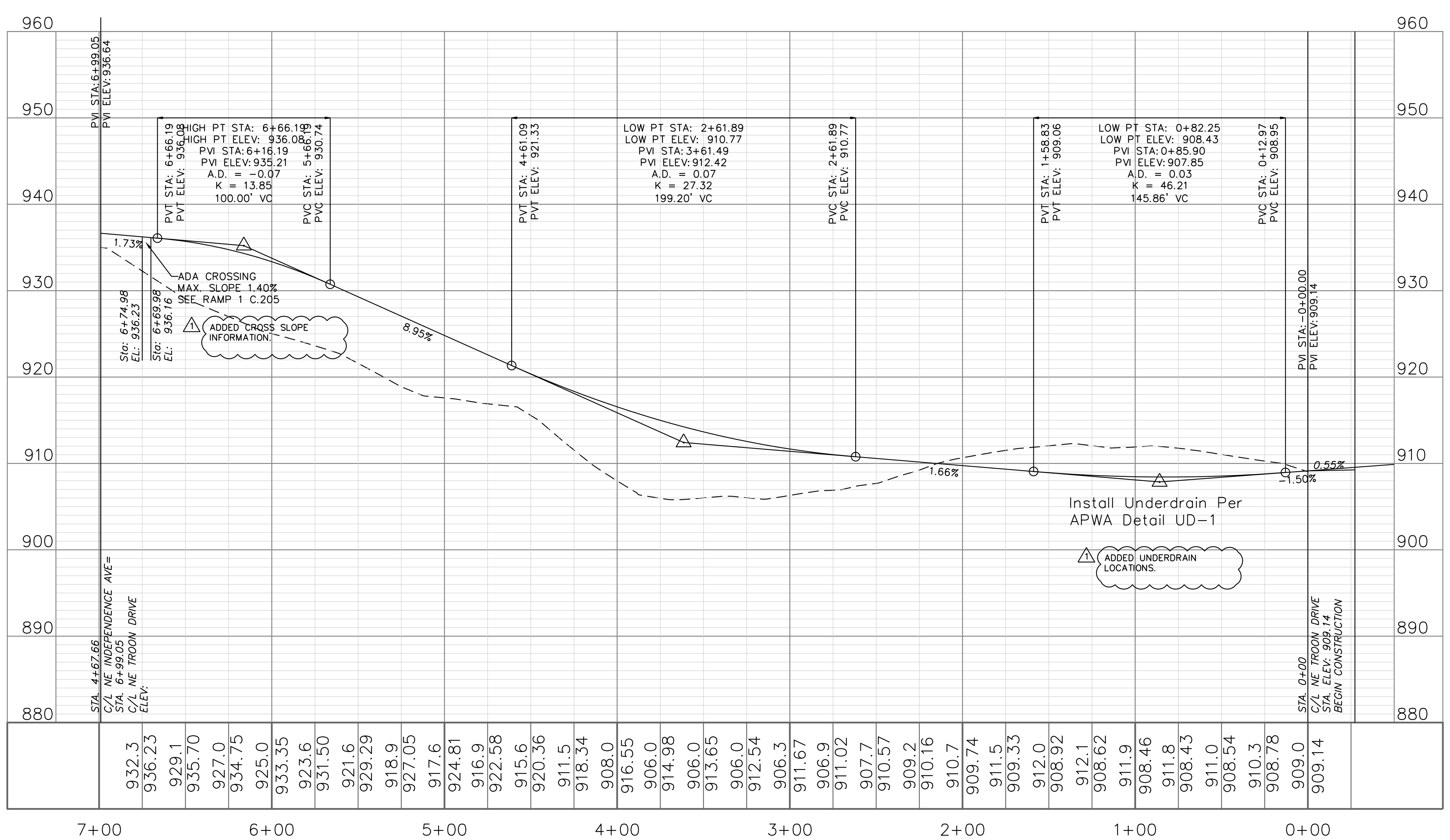
STREET PLAN & PROFILE

SCALE: 1" = 50'

GRAPHIC SCALE 0 25' 50' 100'

North

NE TROON DRIVE



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Street Plan and Profile

Construction Plans for:
THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
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STATE OF MISSOURI
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REVISIONS

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C.204

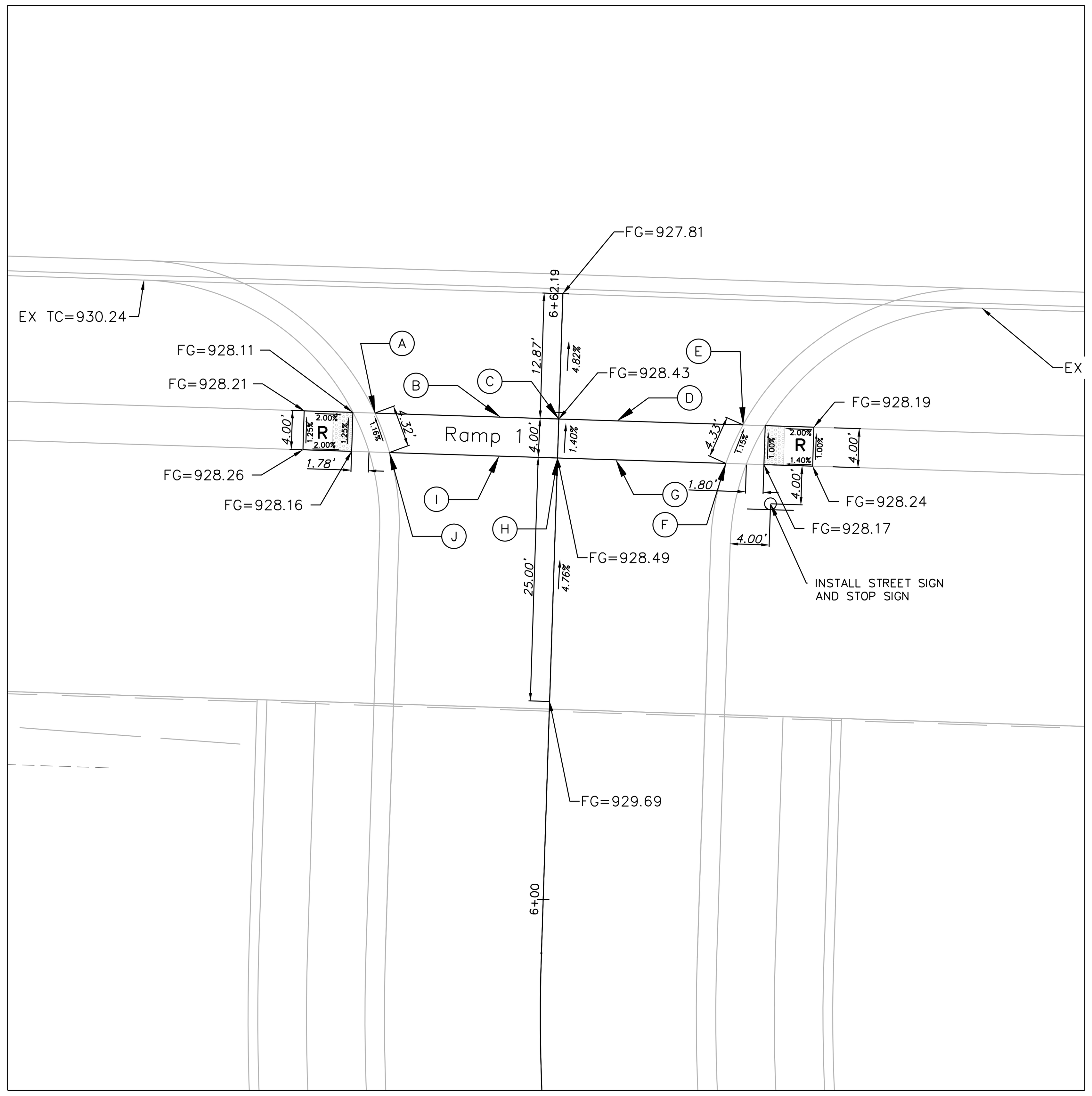
North

GRAPHIC SCALE

0 10' 20' 40'

SIDEWALK AND INTERSECTION PLAN

SCALE: 1" = 20'



DETAIL 1

SPOT ELEVATION TABLE				
	Ramp 1	Ramp 2		
Spot	Elevation	Elevation		
A	928.11	935.57		
B	928.31	936.04		
C	928.43	936.16		
D	928.31	936.04		
E	928.09	935.84		
F	928.14	935.61		
G	928.38	936.11		
H	928.49	936.23		
I	928.38	936.11		
J	928.16	935.91		

NOTE:
ALL ADA ACCESSIBLE RAMPS TO BE CONSTRUCTED WITH STREET IMPROVEMENTS.

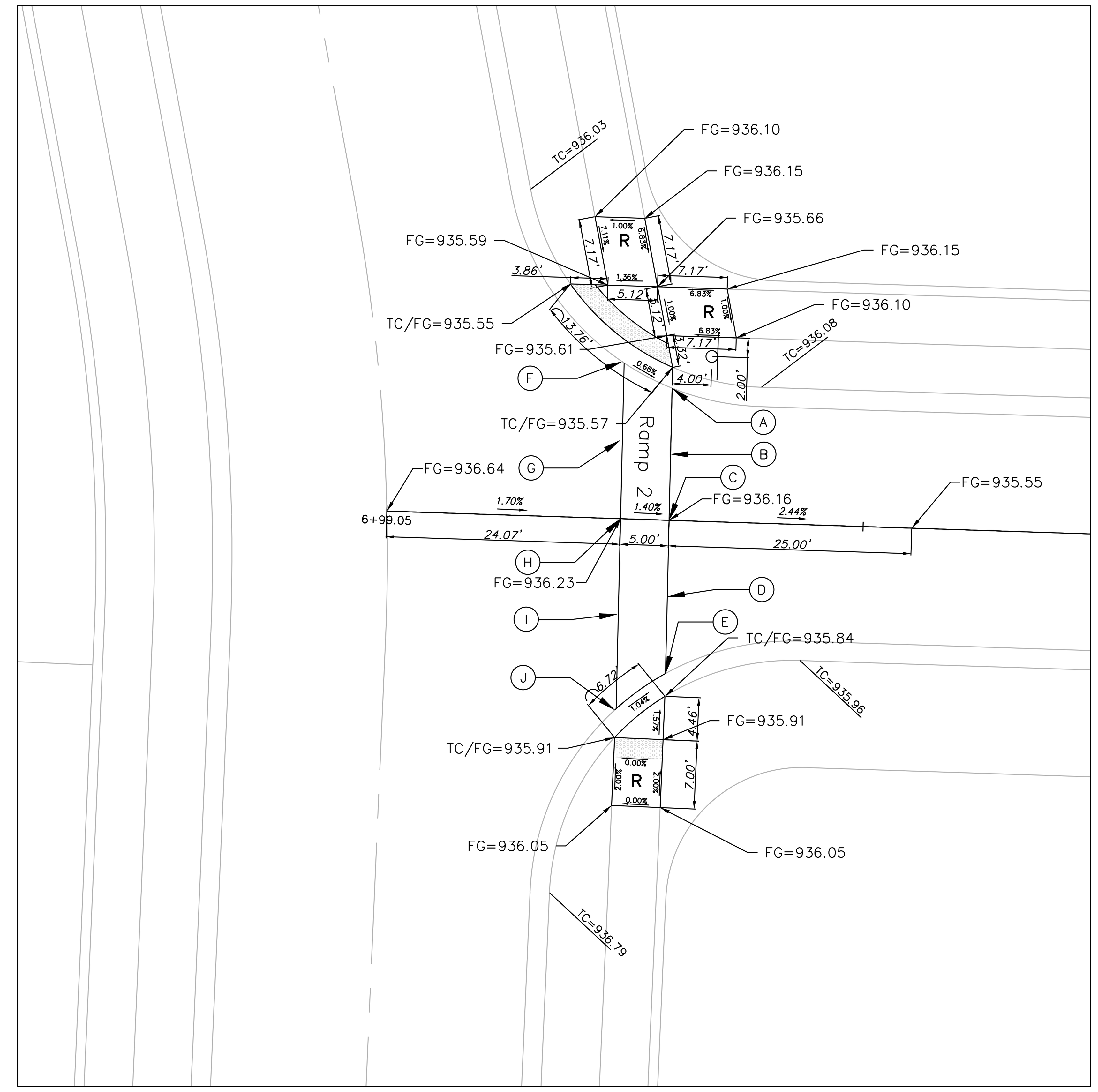
North

GRAPHIC SCALE

0 10' 20' 40'

SIDEWALK AND INTERSECTION PLAN

SCALE: 1" = 20'



DETAIL 2

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LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

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Sidewalk and Intersection Plan
Construction Plans for:
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C.206

North

0 30' 60' 120'

STORM SEWER GENERAL LAYOUT

SCALE: 1" = 60'

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Storm Sewer General Layout
Construction Plans for:
THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

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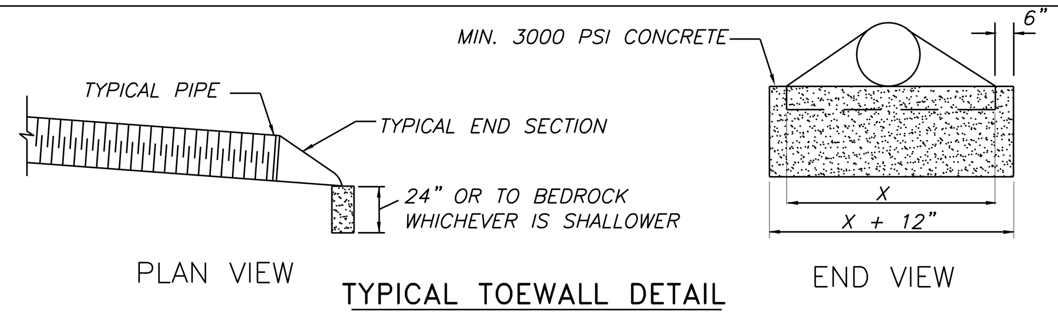
C.300

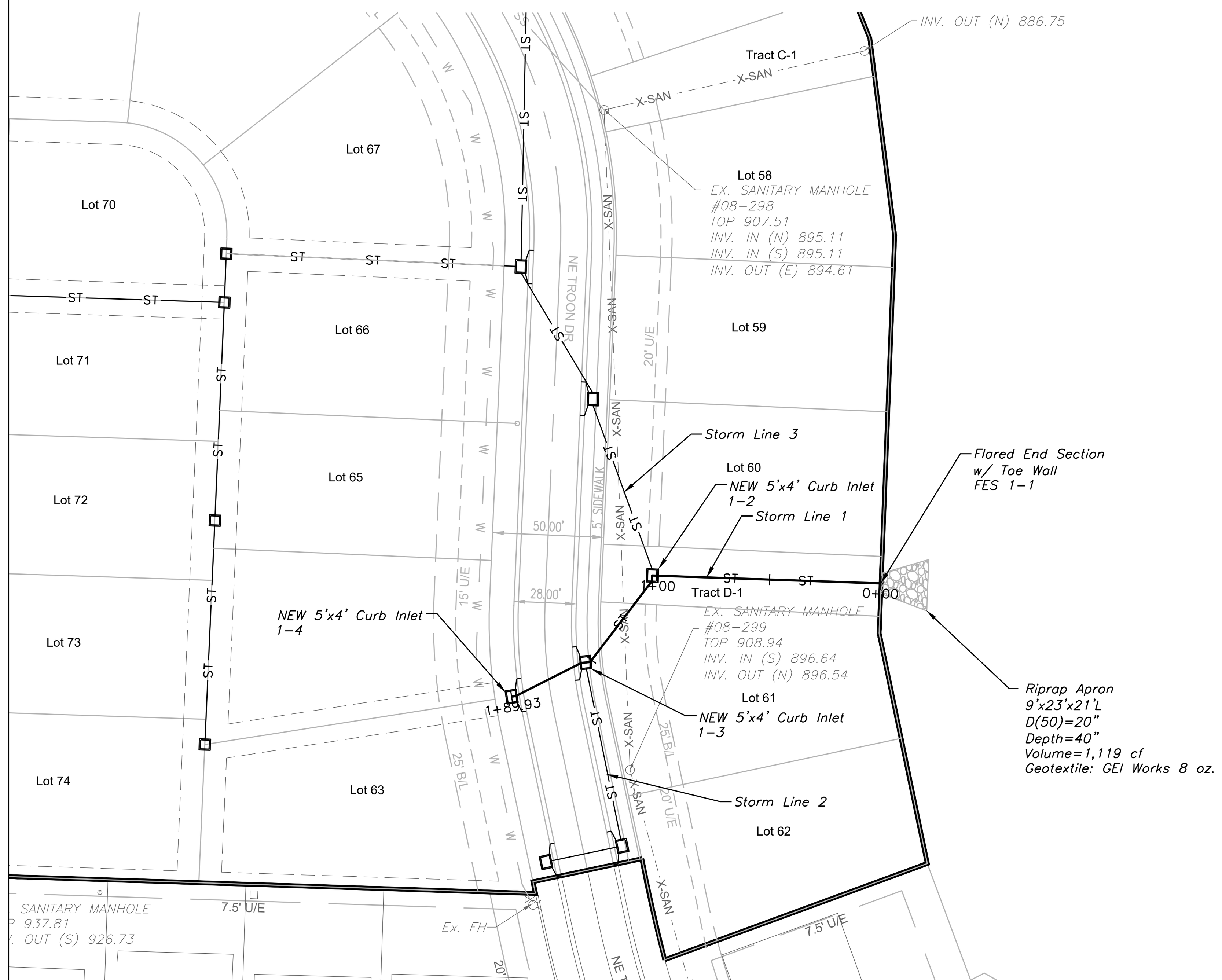


TYPICAL TOEWALL DETAIL
N.T.S.

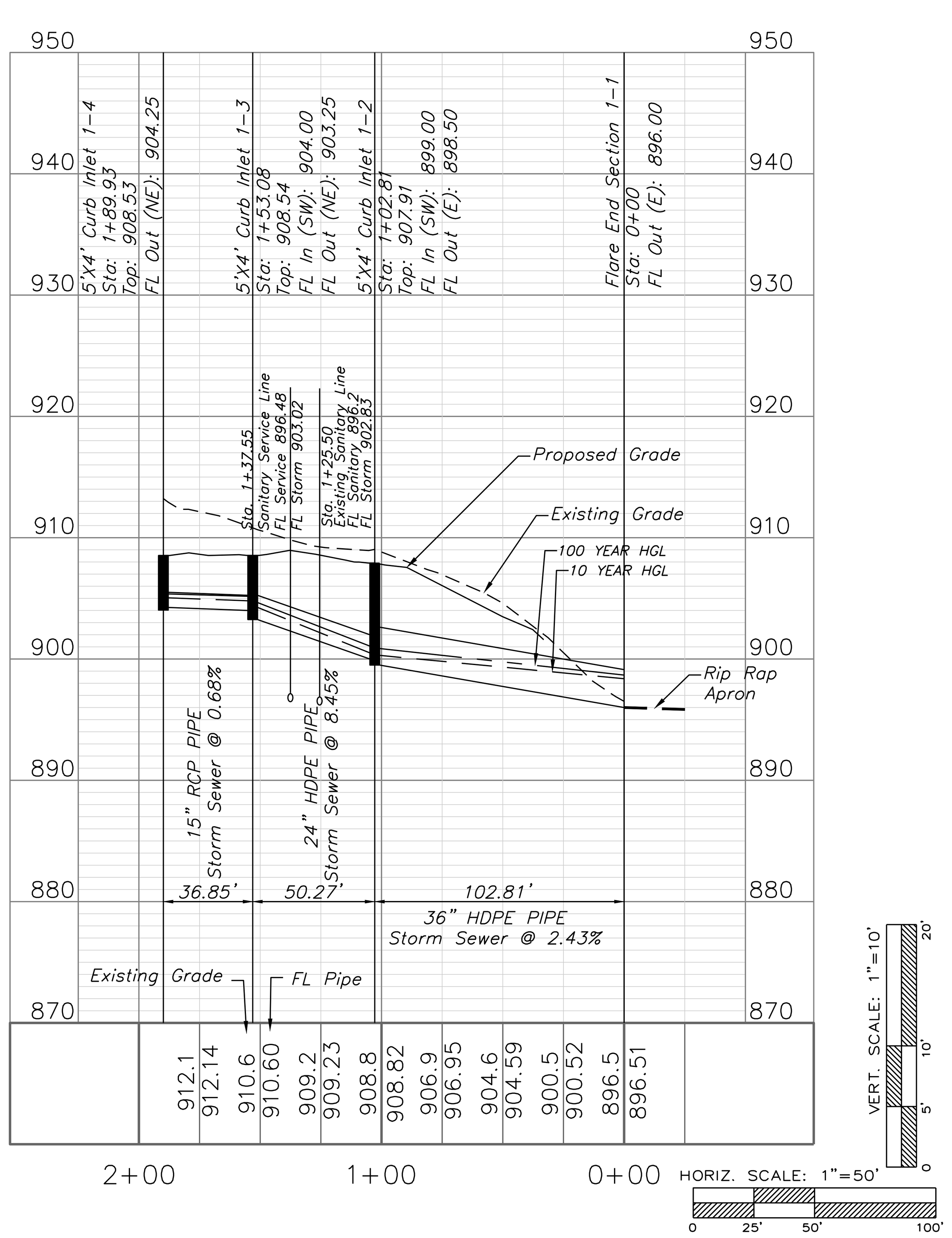
North

GRAPHIC SCALE 0 25' 50' 100'

STORM SEWER PLAN & PROFILE
SCALE: 1" = 50'



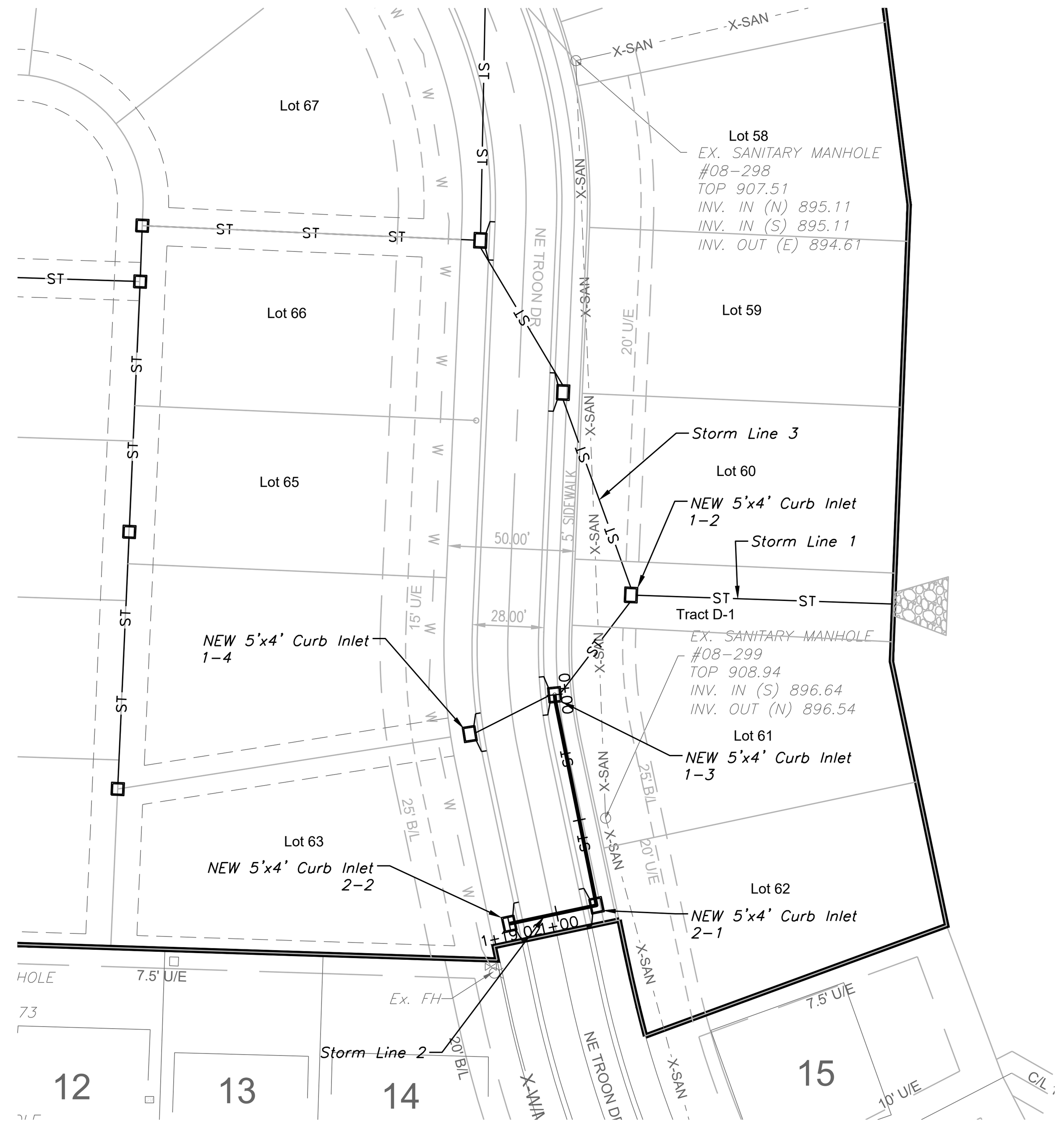
STORM LINE 1



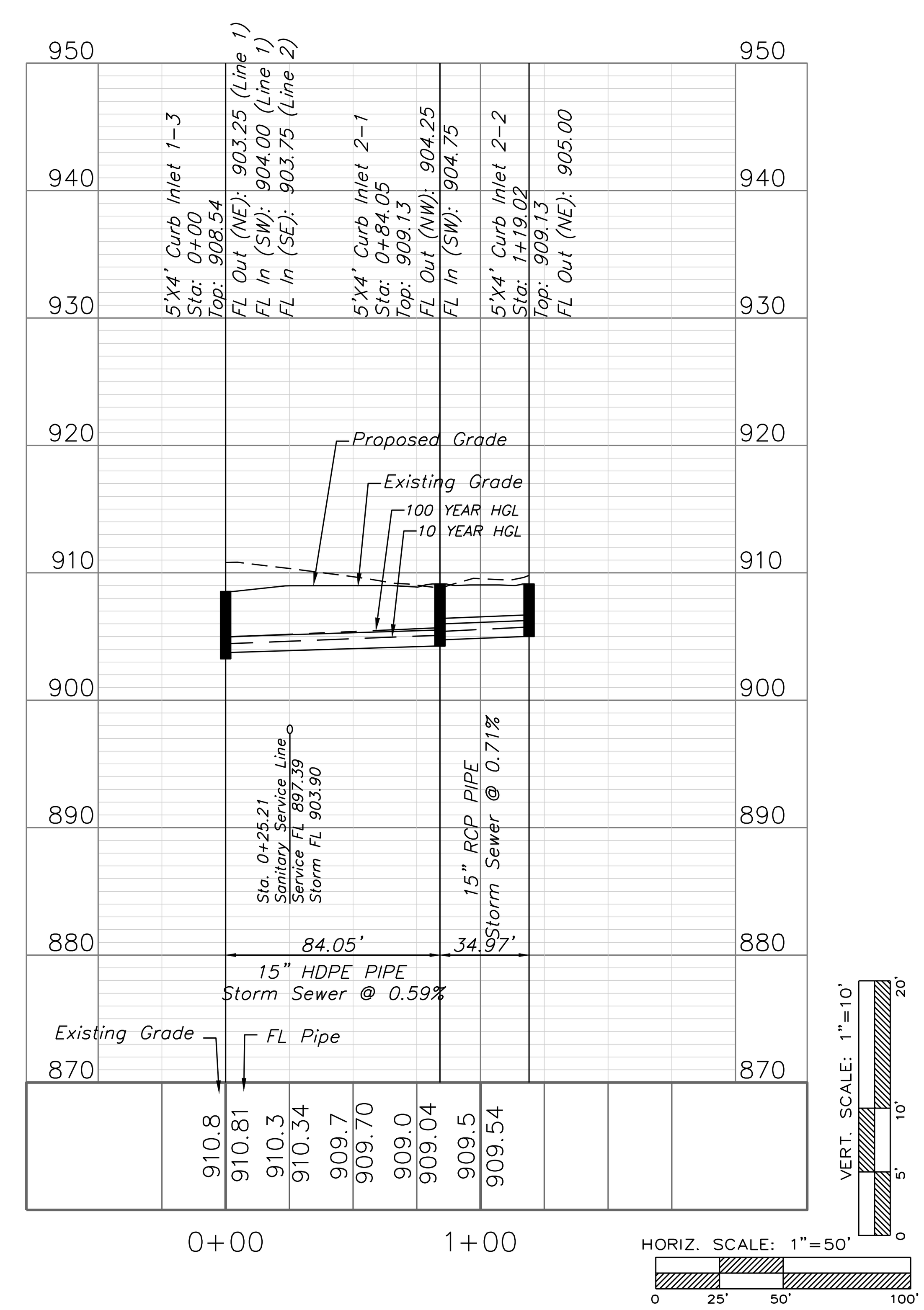
North

GRAPHIC SCALE 0 25' 50' 100'

STORM SEWER PLAN & PROFILE
SCALE: 1" = 50'



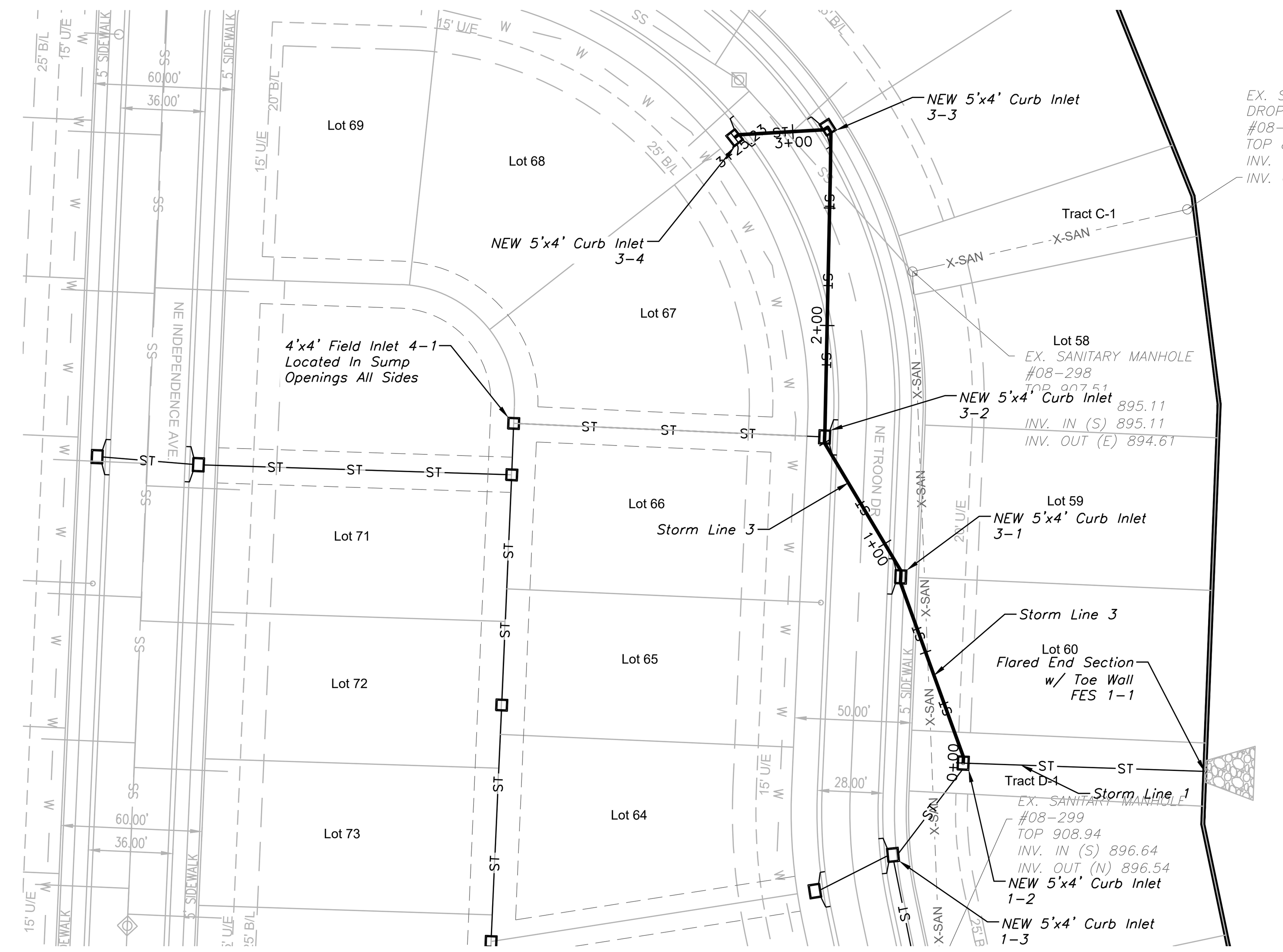
STORM LINE 2



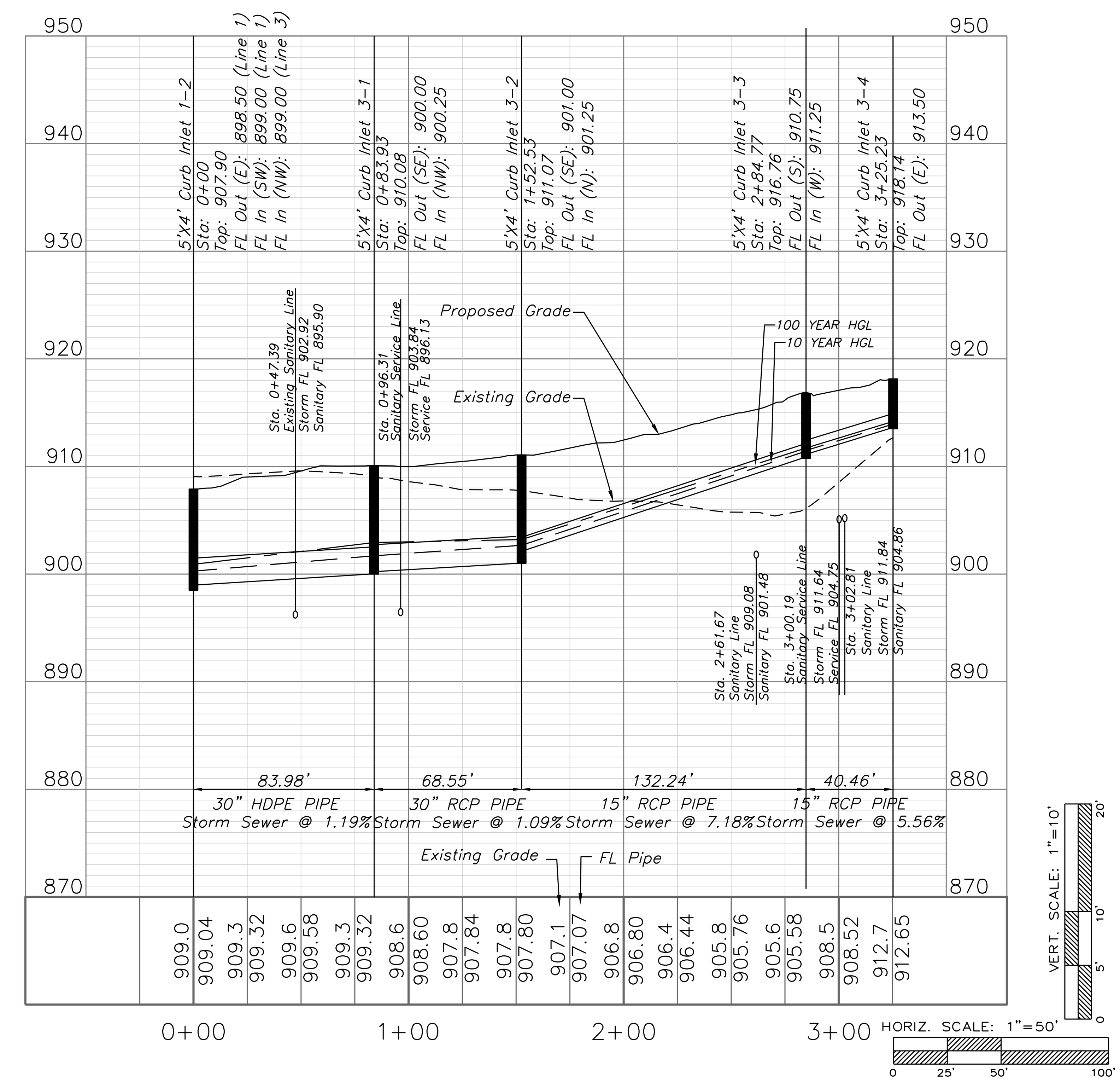
North

GRAPHIC SCALE 0 25' 50' 100'

STORM SEWER PLAN & PROFILE
SCALE: 1" = 50'



STORM LINE 3



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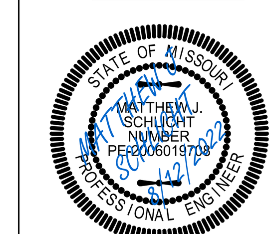
Storm Sewer Plan and Profile
Construction Plans for:
THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri



Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

REVISIONS
REV. 8/12/2022

C.301

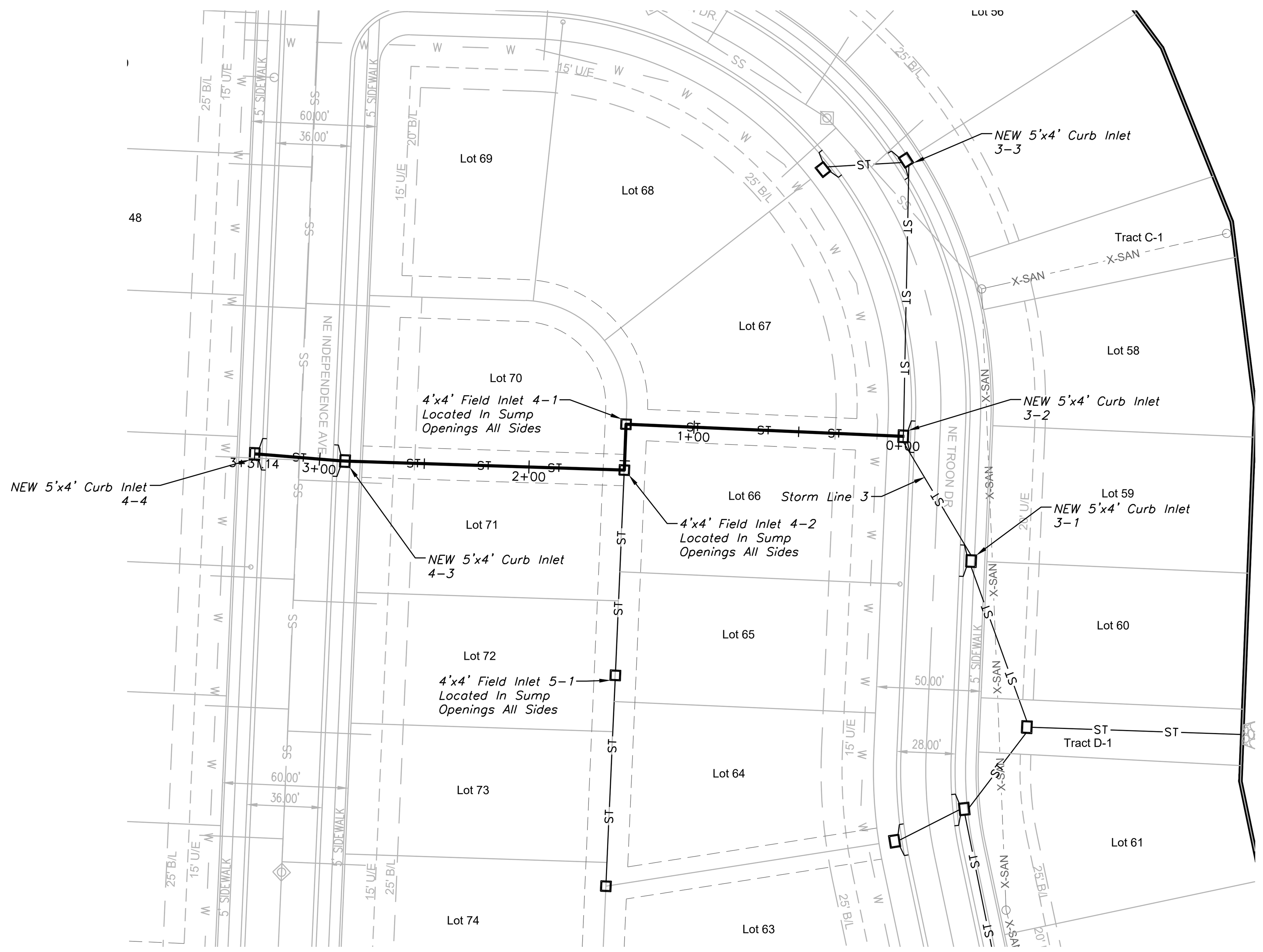
North

GRAPHIC SCALE

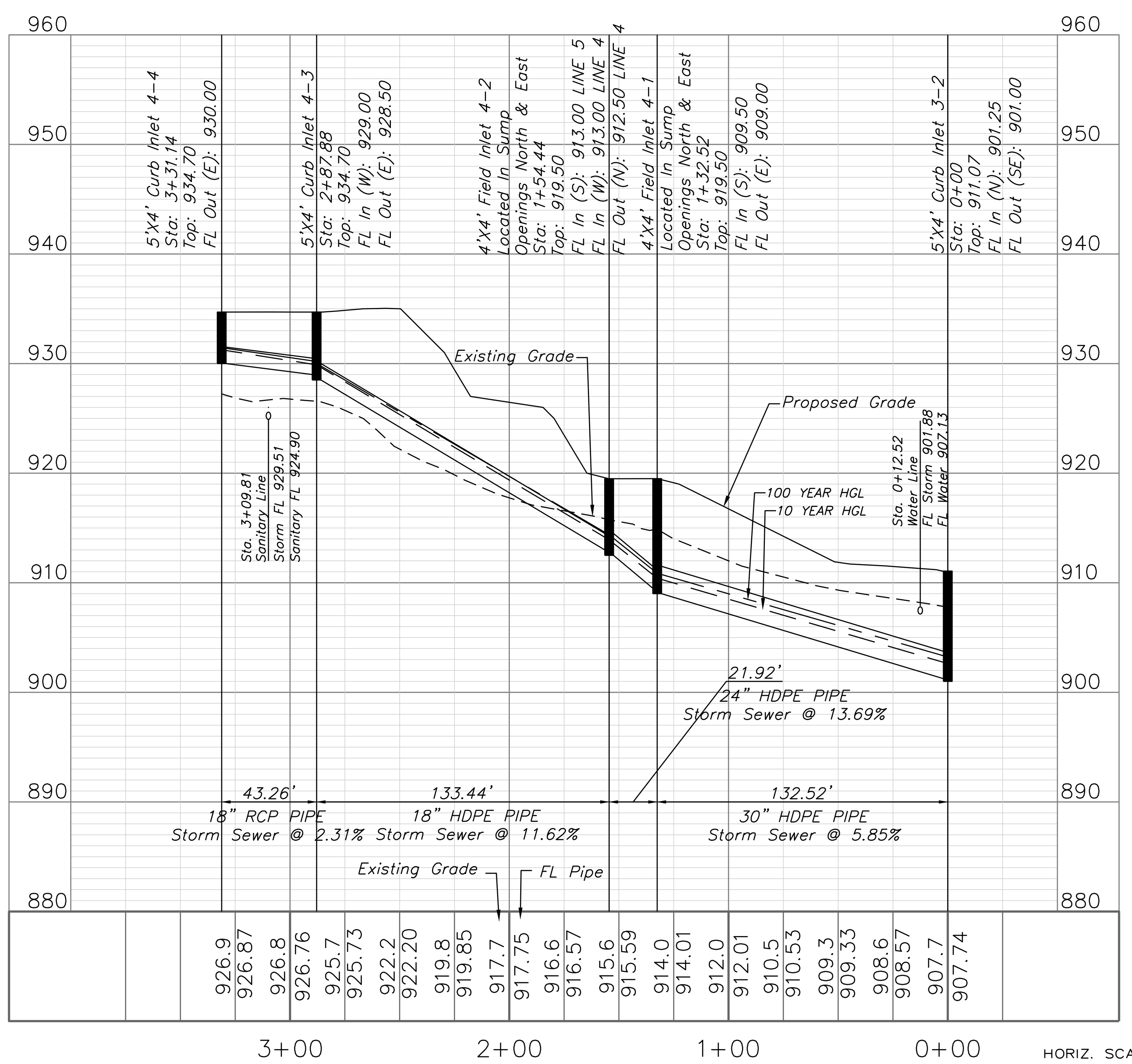
0 25' 50' 100'

STORM SEWER PLAN & PROFILE

SCALE: 1" = 50'



STORM LINE 4



VERT. SCALE: 1"=10'

HORIZ. SCALE: 1"=50'

0 25' 50' 100'

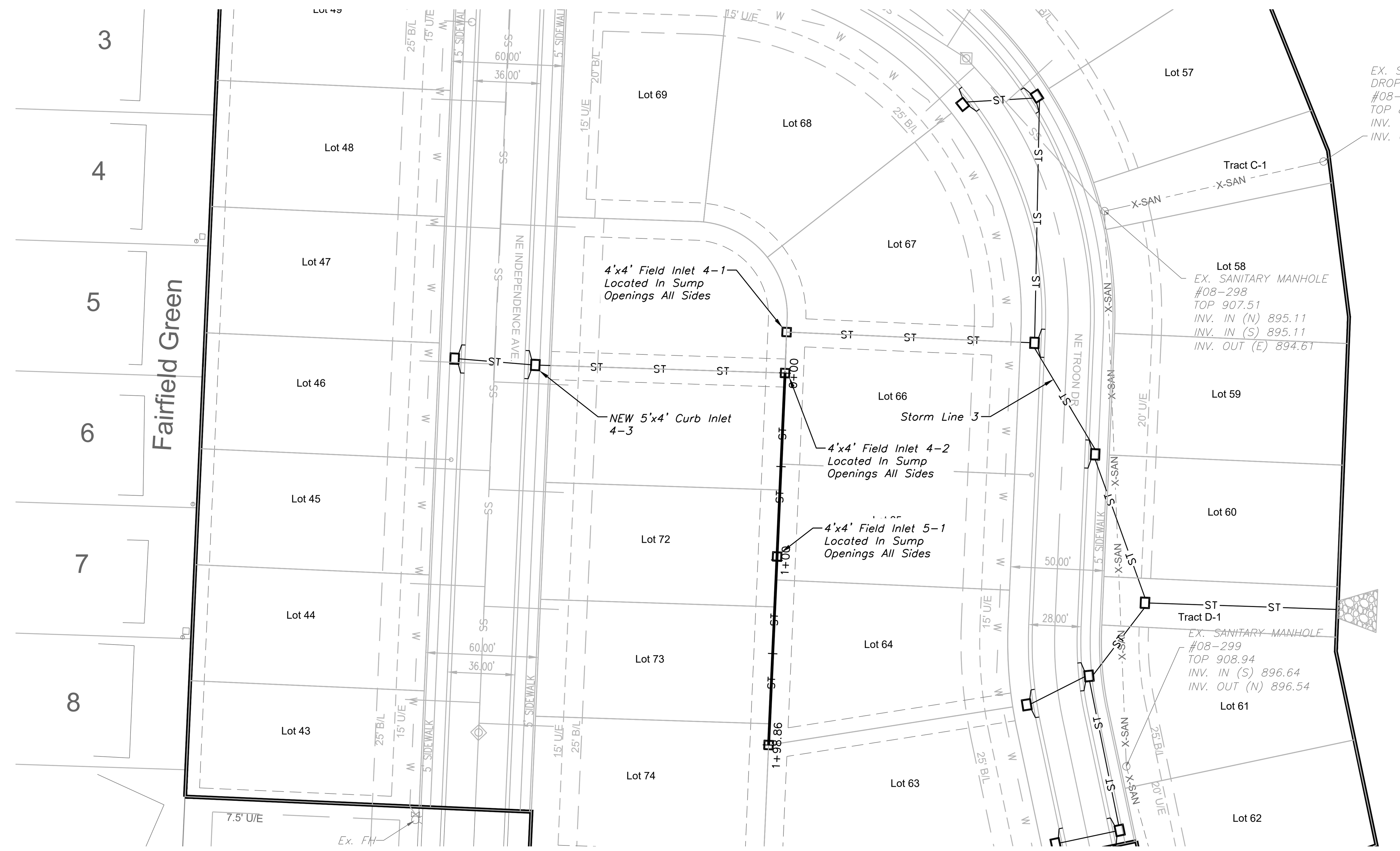
North

GRAPHIC SCALE

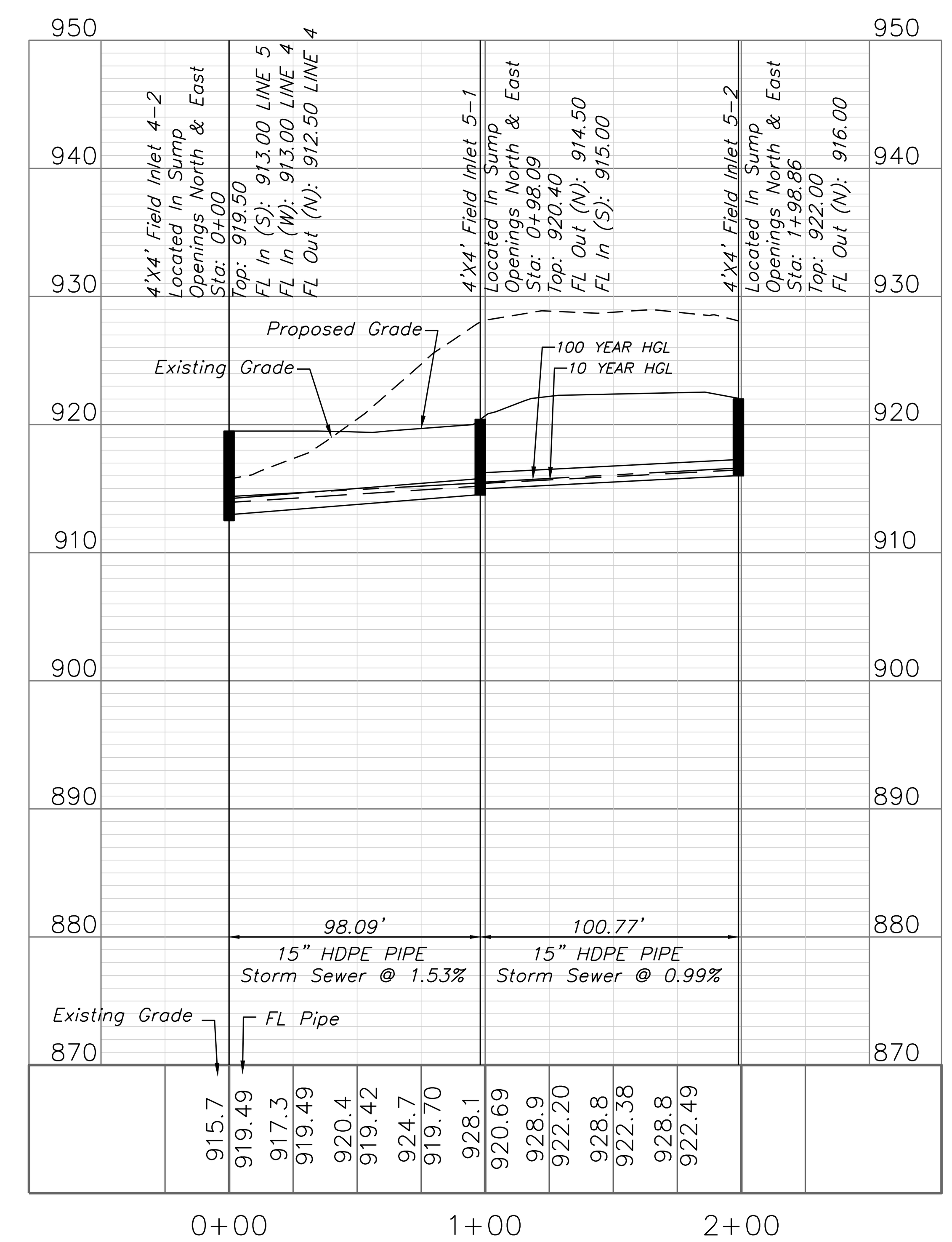
0 25' 50' 100'

STORM SEWER PLAN & PROFILE

SCALE: 1" = 50'



STORM LINE 5



VERT. SCALE: 1"=10'

HORIZ. SCALE: 1"=50'

0 25' 50' 100'

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THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

Project: THE VILLAS OF CHAPEL RIDGE, LSMO
Issue Date: June 24, 2022

Storm Sewer Plan and Profile
Construction Plans for:
THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
NUMBER PE-2006019708
PROFESSIONAL ENGINEER

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

REVISIONS

REV. 8/12/2022

C.302

D.S. Str.	Str. No.	Area	InletTime	Int.	RunoffCoeff.	Q =CIA	Q Carry-over	QCaptured	QBypassed	JunctType	CurbHeight	CurbLength	GutterSlope	GutterWidth	CrossSlope, Sw	CrossSlope, Sx	LocalDepr.	InletDepth	BypassDepth	BypassSpread	GutterDepth	GutterSpread	Bypass Str.
		(ac)	(min)	(in/hr)	(C)	(cfs)	(cfs)	(cfs)	(cfs)		(in)	(ft)	(ft/ft)	(ft)	(ft/ft)	(ft/ft)	(in)	(ft)	(ft)	(ft)	(ft)	(ft)	
1-1	1-2	0	0	0	0	0	....	....	....	MH	....	....	....	....	....	....	....	....	....	....	....	....	....
1-2	1-3	0.21	5.8	7.11	0.66	0.99	0	0.99	0	Curb	3.8	5	Sag	2	0.05	0.02	9	0.95	n/a	n/a	0.2	6.77	Sag
1-3	1-4R	0.68	6.6	6.9	0.66	3.09	0.83	3.92	0	Curb	3.8	5	Sag	2	0.05	0.02	9	1.15	n/a	n/a	0.4	16.99	Sag
1-4R	1-4L	0.24	5.4	7.23	0.66	1.14	0.81	1.95	0	Curb	3.8	5	Sag	2	0.05	0.02	9	1.02	n/a	n/a	0.27	10.67	Sag
1-3	2-1	0.17	6.4	6.95	0.66	0.78	0	0.78	0	Curb	3.8	5	0.015	2	0.05	0.02	9	0.9	0	0	0.15	4.69	1-3
2-1	2-2	0.73	5.8	7.11	0.66	3.43	0	2.62	0.81	Curb	3.8	5	0.015	2	0.05	0.02	9	1	0.16	4.78	0.25	9.29	1-4L
1-2	3-1	0.22	5.7	7.14	0.66	1.04	0.24	1.28	0	Curb	3.8	5	0.017	2	0.05	0.02	9	0.93	0.02	0.34	0.18	5.83	1-3
3-1	3-2	0.72	5.8	7.11	0.66	3.38	0	2.55	0.83	Curb	3.8	5	0.017	2	0.05	0.02	9	0.99	0.15	4.68	0.24	8.99	1-4R
3-2	3-3	0.31	5.6	7.17	0.66	1.47	0.1	1.33	0.24	Curb	3.8	5	0.062	2	0.05	0.02	9	0.9	0.08	1.57	0.15	4.66	3-1
3-3	3-4	0.23	5.3	7.26	0.66	1.1	0	1	0.1	Curb	3.8	5	0.08	2	0.05	0.02	9	0.88	0.05	1.08	0.13	3.53	3-3
3-2	4-1	0.15	5.0	7.34	0.66	0.73	0	0.73	0	Dp-Curb	6	16	Sag	....	0.02	0.02	....	0.06	n/a	n/a	0.06	3.06	Sag
4-1	4-2	0.09	5.1	7.31	0.66	0.43	0	0.43	0	Dp-Curb	6	16	Sag	....	0.02	0.02	....	0.04	n/a	n/a	0.04	2.17	Sag
4-2	4-3	0.56	6.7	6.87	0.66	2.54	0	2.54	0	Curb	3.8	5	Sag	2	0.05	0.02	9	1.06	n/a	n/a	0.31	12.72	Sag
4-3	4-4R	1.2	6.9	6.82	0.66	5.4	0	5.4	0	Curb	3.8	5	Sag	2	0.05	0.02	9	1.23	n/a	n/a	0.48	21.03	Sag
4-4R	4-4L	1.38	7.1	6.77	0.66	6.16	0	6.16	0	Curb	3.8	5	Sag	2	0.02	0.02	9	1.21	n/a	n/a	0.46	22.97	Sag
4-4R	5-1	0.29	5.3	7.26	0.66	1.39	0	1.39	0	Dp-Curb	6	16	Sag	....	0.02	0.02	....	0.09	n/a	n/a	0.09	4.71	Sag
5-1	5-2	0.23	5.1	7.31	0.66	1.11	0	1.11	0	Dp-Curb	6	16	Sag	....	0.02	0.02	....	0.08	n/a	n/a	0.08	4.05	Sag

10-YR PIPE																						
D.S. Str.	U.S. Str.	LineLength	Incr.Area	TotalArea	RunoffCoeff.	IncrC x A	TotalC x A	InletTime	TimeConc	RnfallInt	TotalRunoff	TotalFlow	CapacFull	Veloc	PipeSize	PipeSlope	Inv ElevDn	Inv ElevUp	HGLDn	HGLUp	Grnd/RimDn	Grnd/RimUp
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
1-1	1-2	102.81	0	7.41	0	0	4.89	0	8.1	6.5	31.88	31.88	135.2	6.14	36	2.43	896.00	898.50	898.41	900.33	0.00	910.00
1-2	1-3	50.27	0.21	2.03	0.66	0.14	1.34	5.8	6.7	6.9	9.2	9.2	85.49	4.73	24	8.45	899.00	903.25	900.33	904.33	910.00	908.54
1-3	1-4R	36.85	0.68	0.92	0.66	0.45	0.61	6.6	6.6	6.9	4.19	4.19	6.91	5.38	15	0.68	904.00	904.25	904.70	905.08	908.54	908.53
1-4R	1-4L	1	0.24	0.24	0.66	0.16	0.16	5.4	5.4	7.2	1.14	1.14	59.36	2.24	15	50.00	904.25	904.75	905.08	905.17	908.53	908.53
1-3	2-1	84.05	0.17	0.9	0.66	0.11	0.59	6.4	6.4	6.9	4.13	4.13	6.47	5.21	15	0.59	903.75	904.25	904.48	905.07	908.54	909.13
2-1	2-2	34.97	0.73	0.73	0.66	0.48	0.48	5.8	5.8	7.1	3.43	3.43	7.1	5.11	15	0.71	904.75	905.00	905.36	905.75	909.13	909.13
1-2	3-1	83.98	0.22	5.38	0.66	0.15	3.55	5.7	8	6.6	23.29	23.29	58.18	7.8	30	1.19	899.00	900.00	900.33	901.64	910.00	910.08
3-1	3-2	68.55	0.72	5.16	0.66	0.48	3.41	5.8	7.8	6.6	22.47	22.47	55.77	7.36	30	1.09	900.25	901.00	901.64	902.61	910.08	911.07
3-2	3-3	132.24	0.31	0.54	0.66	0.2	0.36	5.6	5.6	7.2	2.55	2.55	22.5	3.06	15	7.18	901.25	910.75	902.61	911.39	911.07	916.76
3-3	3-4	40.46	0.23	0.23	0.66	0.15	0.15	5.3	5.3	7.3	1.1	1.1	19.8	5.89	15	5.56	911.25	913.50	911.45	913.91	916.76	918.14
3-2	4-1	132.52	0.15	3.9	0.66	0.1	2.57	5	7.4	6.7	17.2	17.2	128.93	6.18	30	5.85	901.25	909.00	902.61	910.40	911.07	923.00
4-1	4-2	21.92	0.09	3.75	0.66	0.06	2.48	5.1	7.4	6.7	16.56	16.56	108.78	9.38	24	13.69	909.50	912.50	910.40	913.97	923.00	923.00
4-2	4-3	133.44	0.56	3.14	0.66	0.37	2.07	6.7	7.2	6.7	13.98	13.98	46.53	9.92	18	11.62	913.00	928.50	913.97	929.88	923.00	934.70
4-3	4-4R	43.26	1.2	2.58	0.66	0.79	1.7	6.9	7.1	6.8	11.52	11.52	20.76	8.9	18	2.31	929.00	930.00	929.88	931.29	934.70	934.70
4-4R	4-4L	1	1.38	1.38	0.66	0.91	0.91	7.1	7.1	6.8	6.16	6.16	96.53	5.84	18	50.00	930.50	931.00	931.29	931.96	934.70	934.70
4-4R	5-1	98.09	0.29	0.52	0.66	0.19	0.34	5.3	5.5	7.2	2.47	2.47	10.38	3.21	15	1.53	913.00	914.50	913.97	915.13	923.00	920.40
5-1	5-2	100.77	0.23	0.23	0.66	0.15	0.15	5.1	5.1	7.3	1.11	1.11	8.36	3.92	15	0.99	915.00	916.00	915.31	916.41	920.40	922.00

100-YR STRUCTURE																							
D.S. Str.	Str. No.	Area	InletTime	Int.	RunoffCoeff.	Q =CIA	Q Carry-over	QCaptured	QBypassed	JunctType	CurbHeight	CurbLength	GutterSlope	GutterWidth	CrossSlope, Sw	CrossSlope, Sx	LocalDepr.	InletDepth	BypassDepth	BypassSpread	GutterDepth	GutterSpread	Bypass Str.
		(ac)	(min)	(in/hr)	(C)	(cfs)	(cfs)	(cfs)	(cfs)		(in)	(ft)	(ft/ft)	(ft)	(ft/ft)	(ft/ft)	(in)	(ft)	(ft)	(ft)	(ft)	(ft)	
1-1	1-2	0	0	0	0	0	....	....	....	MH	....	....	....	....	....	....	....	....	....	....	....	....	....
1-2	1-3	0.21	5.8	12.52	0.66	1.74	0.57	2.31	0	Curb	3.8	5	Sag	2	0.05	0.02	9	1.05	n/a	n/a	0.3	11.93	Sag
1-3	1-4R	0.68	6.6	12.17	0.66	5.46	2.49	7.95	0	Curb	3.8	5	Sag	2	0.05	0.02	9	1.35	n/a	n/a	0.6	27.23	Sag
1-4R	1-4L	0.24	5.4	12.71	0.66	2.01	2.48	4.49	0	Curb	3.8	5	Sag	2	0.05	0.02	9	1.18	n/a	n/a	0.43	18.6	Sag
1-3	2-1	0.17	6.4	12.26	0.66	1.38	0	1.37	0	Curb	3.8	5	0.015	2	0.05	0.02	9	0.93	0.02	0.47	0.18	6.22	1-3
2-1	2-2	0.73	5.8	12.52	0.66	6.03	0	3.55	2.48	Curb	3.8	5	0.015	2	0.05	0.02	9	1.04	0.22	8.09	0.29	11.7	1-4L
1-2	3-1	0.22	5.7	12.57	0.66	1.82	1.08	2.33	0.57	Curb	3.8	5	0.017	2	0.05	0.02	9	0.98	0.14	3.78	0.23	8.43	1-3
3-1	3-2	0.72	5.8	12.52	0.66	5.95	0	3.46	2.49	Curb	3.8	5	0.017	2	0.05	0.02	9	1.04	0.22	7.89	0.29	11.35	1-4R
3-2	3-3	0.31	5.6	12.61	0.66	2.58	0.47	1.98	1.08	Curb	3.8	5	0.062	2	0.05	0.02	9	0.94	0.14	3.76	0.19	6.48	3-1
3-3	3-4	0.23	5.3	12.75	0.66	1.94	0	1.46	0.47	Curb	3.8	5	0.08	2	0.05	0.02	9	0.91	0.1	1.93	0.16	4.87	3-3
3-2	4-1	0.15	5.0	12.9	0.66	1.28	0	1.28	0	Dp-Curb	6	16	Sag	....	0.02	0.02	....	0.09	n/a	n/a	0.09	4.45	Sag
4-1	4-2	0.09	5.1	12.85	0.66	0.76	0	0.76	0	Dp-Curb	6	16	Sag	....	0.02	0.02	....	0.06	n/a	n/a	0.06	3.16	Sag
4-2	4-3	0.56	6.7	12.13	0.66	4.48	0	4.48	0	Curb	3.8	5	Sag	2	0.05	0.02	9	1.18	n/a	n/a	0.43	18.57	Sag
4-3	4-4R	1.2	6.9	12.04	0.66	9.54	0	9.54	0	Curb	3.8	5	Sag	2	0.05	0.02	9	1.42	n/a	n/a	0.67	30.74	Sag
4-4R	4-4L	1.38	7.1	11.96	0.66	10.89	0	10.89	0	Curb	3.8	5	Sag	2	0.02	0.02	9	1.42	n/a	n/a	0.67	33.59	Sag
4-4R	5-1	0.29	5.3	12.75	0.66	2.44	0	2.44	0	Dp-Curb	6	16	Sag	....	0.02	0.02	....	0.14	n/a	n/a	0.14	6.86	Sag
5-1	5-2	0.23	5.1	12.85	0.66	1.95	0	1.95	0	Dp-Curb	6	16	Sag	....	0.02	0.02	....	0.12	n/a	n/a	0.12	5.9	Sag

100-YR PIPE																						
D.S. Str.	U.S. Str.	LineLength	Incr.Area	TotalArea	RunoffCoeff.	IncrC x A	TotalC x A	InletTime	TimeConc	RnfallInt	TotalRunoff	TotalFlow	CapacFull	Veloc	PipeSize	PipeSlope	Inv ElevDn	Inv ElevUp	HGLDn	HGLUp	Grnd/RimDn	Grnd/RimUp
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
1-1	1-2	102.81	0	7.41	0	0	4.89	0	7.9	11.6	56.94	56.94	135.2	8.84	36	2.43	896.00	898.50	898.72	900.94	0.00	910.00
1-2	1-3	50.27	0.21	2.03	0.66	0.14	1.34	5.8	6.7	12.1	16.25	16.25	85.49	5.93	24	8.45	899.00	903.25	900.94	904.70	910.00	908.54
1-3	1-4R	36.85	0.68	0.92	0.66	0.45	0.61	6.6	6.6	12.2	7.39	7.39	6.91	6.32	15	0.68	904.00	904.25	905.13	905.38	908.54	908.53
1-4R	1-4L	1	0.24	0.24	0.66	0.16	0.16	5.4	5.4	12.7	2.01	2.01	59.36	1.86	15	50.00	904.25	904.75	905.69	905.67	908.53	908.53
1-3	2-1	84.05	0.17	0.9	0.66	0.11	0.59	6.4	6.4	12.3	7.28	7.28	6.47	5.93	15	0.59	903.75	904.25	905.00	905.63	908.54	909.13
2-1	2-2	34.97	0.73	0.73	0.66	0.48	0.48	5.8	5.8	12.5	6.03	6.03	7.1	4.92	15	0.71	904.75	905.00	906.45	906.63	909.13	909.13
1-2	3-1	83.98	0.22	5.38	0.66	0.15	3.55	5.7	7.8	11.7	41.54	41.54	58.18	9.68	30	1.19	899.00	900.00	900.94	902.16	910.00	910.08
3-1	3-2	68.55	0.72	5.16	0.66	0.48	3.41	5.8	7.6	11.7	40	40	55.77	9.46	30	1.09	900.25	901.00	902.16	903.13	910.08	911.07
3-2	3-3	132.24	0.31	0.54	0.66	0.2	0.36	5.6	5.6	12.6	4.5	4.5	22.5	4.33	15	7.18	901.25	910.75	903.13	911.61	911.07	916.76
3-3	3-4	40.46	0.23	0.23	0.66	0.15	0.15	5.3	5.3	12.8	1.94	1.94	19.8	5.18	15	5.56	911.25	913.50	911.61	914.05	916.76	918.14
3-2	4-1	132.52	0.15	3.9	0.66	0.1	2.57	5	7.3	11.9	30.53	30.53	128.93	7.71	30	5.85	901.25	909.00	903.13	910.88	911.07	923.00
4-1	4-2	21.92	0.09	3.75	0.66	0.06	2.48	5.1	7.3	11.9	29.39	29.39	108.78	11.19	24	13.69	909.50	912.50	910.88	914.35	923.00	923.00
4-2	4-3	133.44	0.56	3.14	0.66	0.37	2.07	6.7	7.2	11.9	24.74	24.74	46.53	14.39	18	11.62	913.00	928.50	914.35	929.99	923.00	934.70
4-3	4-4R	43.26	1.2	2.58	0.66	0.79	1.7	6.9	7.1	12	20.37	20.37	20.76	12.48	18	2.31	929.00	930.00	930.20	931.47	934.70	934.70
4-4R	4-4L	1	1.38	1.38	0.66	0.91	0.91	7.1	7.1	12	10.89	10.89	96.53	7.94	18	50.00	930.50	931.00	931.47	932.26	934.70	934.70
4-4R	5-1	98.09	0.29	0.52	0.66	0.19	0.34	5.3	5.5	12.7	4.35	4.35	10.38	4.24	15	1.53	913.00	914.50	914.35	915.34	923.00	920.40
5-1	5-2	100.77	0.23	0.23	0.66	0.15	0.15	5.1	5.1	12.8	1.95	1.95	8.36	4.63	15	0.99	915.00	916.00	915.41	916.56	920.40	922.00

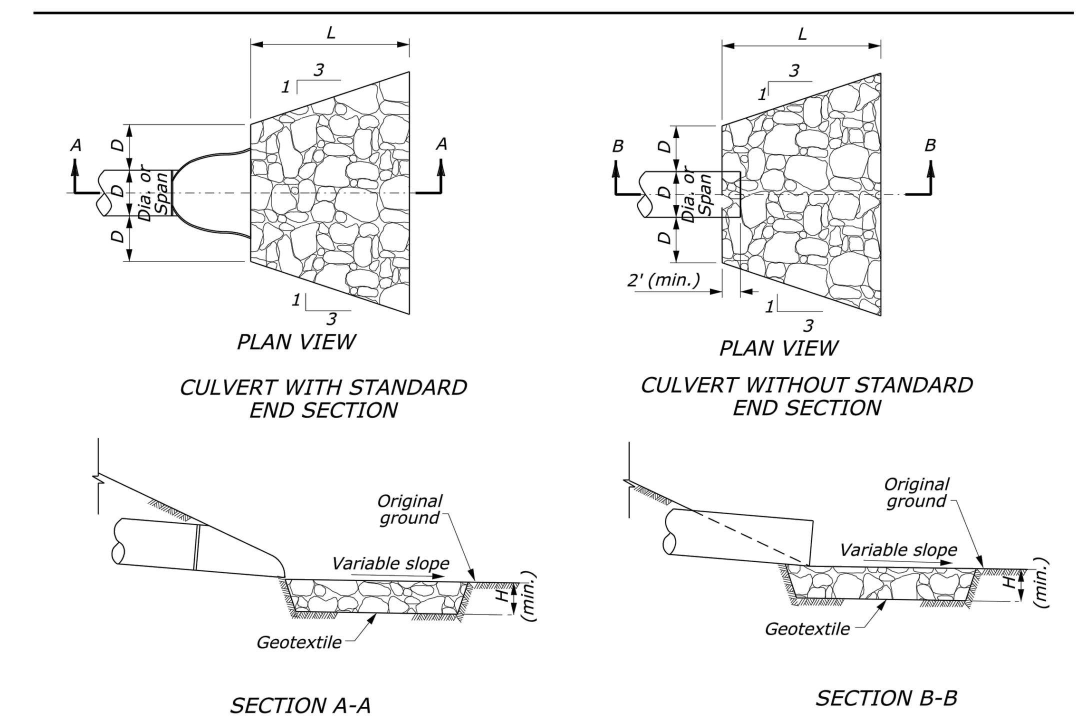
EXAMPLE RIPRAP APRON CALCULATIONS

Field End Section #	1-1		
Q =	56.94	cfs	D_{50} = riprap size, m(ft)
D =	3	ft	Q = design discharge, m^3/s (ft^3/s)
Tw =	1.2	ft	D = culvert diameter (circular), m(ft)
g =	32.2	ft/s^2	Tw = tailwater depth, m(ft), if unknown use 0.4*D
			g = acceleration due to gravity, 9.81 m/s^2 (32.2 ft/s^2)
D_{50} =	10.00	inches	Subcritical Flow
S =	0.0243	ft/ft	S = pipe slope, m/m(ft/ft)
n =	0.01		n = manning's roughness coefficient, unitless
Qcap =	134.97	ft^3/s	Qcap = full pipe capacity, m^3/s(ft^3/s)
Q/Qcap =	0.42		Q/Qcap = design discharge/full pipe capacity, unitless
d/D =	0.45		d/D = water depth/pipe diameter, unitless
d =	1.35	ft	d = depth of flow, m(ft)
Vcap =	19.10	ft^2/s	Velocity Full m^2/s(ft^2/s)
V/Vcap	0.9544		V/Vcap = design velocity/full pipe velocity, unitless
V =	18.23	ft/s	V = velocity of flow segment, m^2/s(ft^2/s)
Fr =	2.77		Fr > 1 Supercritical, Fr = 1 Critical, Fr < 1 Subcritical
Flow =	Supercritical		If flow is Supercritical adjust culvert diameter
D' =	2.18	ft	D' = culvert diameter adjustment, m(ft)
yn =	1.35	ft	yn = normal (supercritcal) depth in culvert, m(ft)
D_{50} =	15.36	inches	
Classify	15.36	inches	

Class 5	Use D_{50} = 20			
Apron Length =	7 * D	21.00 ft	Use	21.00 ft
Apron Depth =	2 * D_{50}	40.00 inches	Use	40.00 inches
Apron Width =	3*D+(2/3)L	23.00 ft	Use	23.00 ft

				RipRap Apron				
RipRap Apron	Area (ac.)	Q100 (cfs)	Dia. (ft)	Class	D_{50} (in)	Length (ft)	Depth (in)	Width (ft)
1-1	7.41	56.94	3	5	20	21	40	23

STANDARD RIPRAP APRON DETAIL



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 TABLE ABOVE.
3. WIDTH REFERS TO DIMENSION OPPOSITE PIPE AND DEPTH IS DIMENSION H.
4. 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.
   - WATER FLOW = 120 GPM/SF
   - GRAB STRENGTH (MIN) = 400 N
   - PUNCTURE STRENGTH (MIN) = 178 N
   - TRAPEZOIDAL TEAR (MIN) = 133 N
   - ELONGATION (MIN) = 15%

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Engineering 6254
Nebraska
Engineering CA2821

THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

Project: VILLAS OF CHAPEL RIDGE, LSMO
Issue Date: June 24, 2022

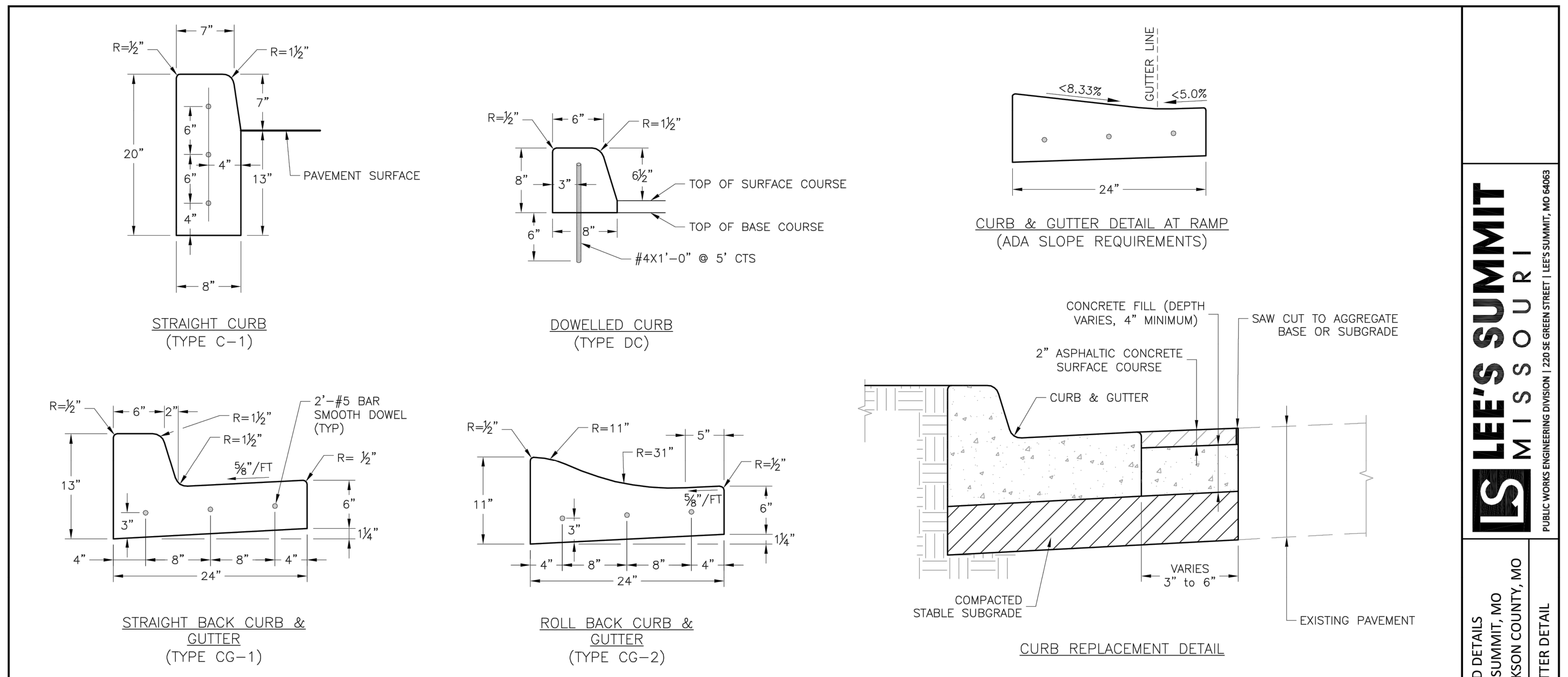
Storm Sewer Tables 10 and 100 Year
Construction Plans for:
THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

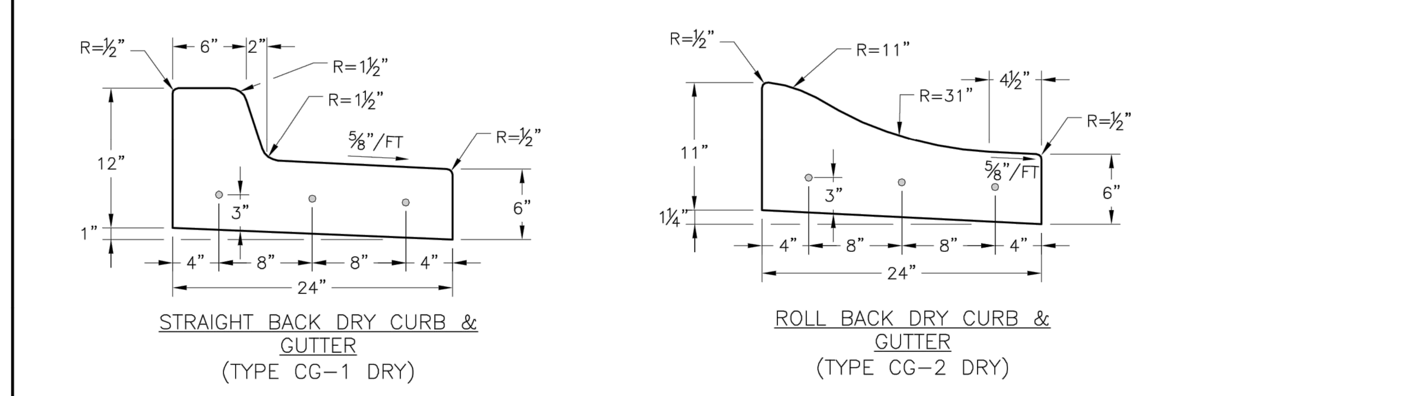
STATE OF MISSOURI
MATTHEW J. SCHLICHT
NUMBER PE-2006019708
PROFESSIONAL ENGINEER

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

REVISIONS

1 REV. 8/12/2022



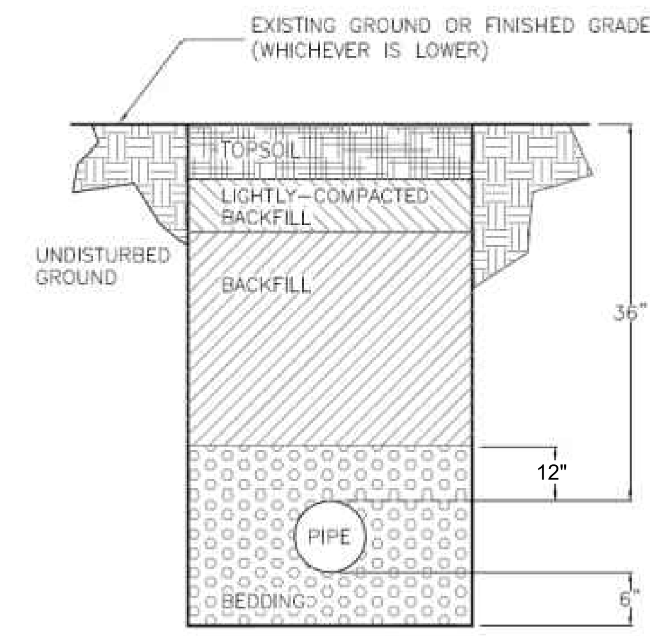


GENERAL NOTES

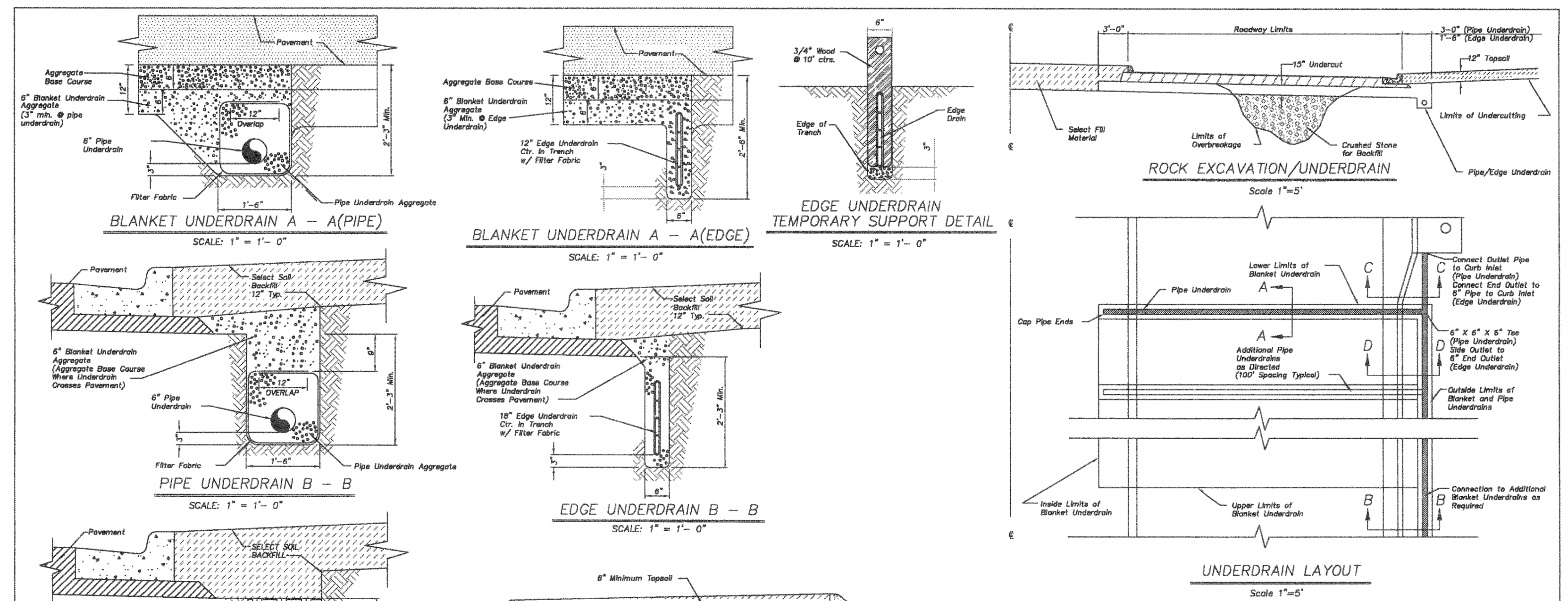
1. ¾" ISOLATION JOINTS WITH 3 (2'-#5 BAR) SMOOTH DOWELS SHALL BE PLACED AT RADIUS POINTS AND AT 150' INTERVALS. THESE DOWEL BARS SHALL BE GREASED AND WRAPPED ON ONE END WITH EXPANSION TUBES.
2. 3" DEEP CONTRACTION JOINTS SHALL BE INSTALLED AT APROXIMATELY 10' INTERVALS. THESE JOINTS SHALL PASS ACROSS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

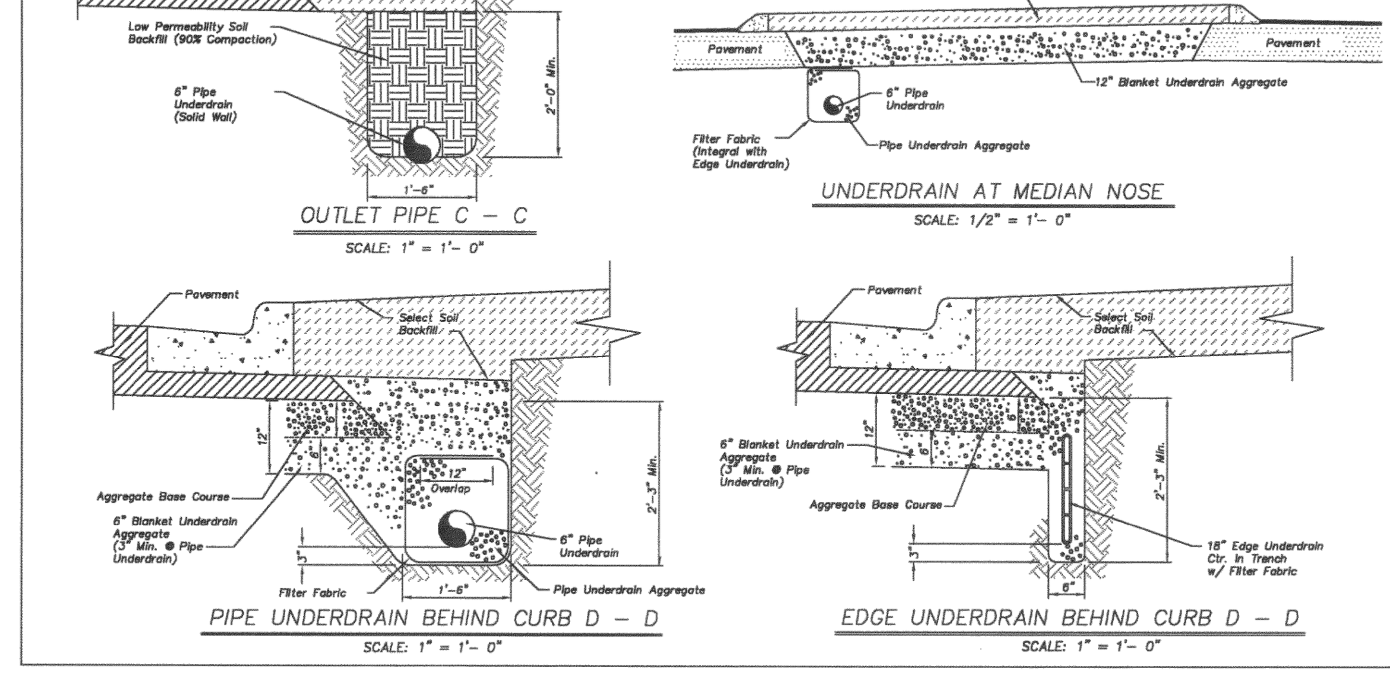
Drawn By: MJF
Checked By:
Date: 04/17
Proj. #:

GEN-4



TRENCH AND BACKFILL DETAIL
N.T.S.





Underdrain Notes:

1. All roadway excavation in rock will be undercut no less than 15" for the full width of the roadway as shown.
2. 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.
3. Layers of earth or shale shall not be permitted for backfill up to the bottom of the crushed stone.
4. 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.
5. Proposed underdrain pipe layout, flowline elevations, inlet connection points, and details shall be approved prior to construction by the City Engineer.
6. 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.
7. All underdrain pipes shall be installed at a minimum slope of 1%. Underdrain pipe shall be installed with the perforations placed down.
8. 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.
9. All filter fabric used for pipe underdrain construction shall conform to Standard Specifications Section 2203.6.
10. The Contractor may, at his option, use either pipe underdrain or edge underdrain, but shall not mix underdrain types within any underdrain system.
11. 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.
12. Blanket underdain aggregate, pipe underdrain aggregate, pipe underdrain, edge underdrain and outlet pipe shall conform to Standard Specifications Section 2203.6

AMERICAN PUBLIC WORKS ASSOCIATION
APWA
KANSAS CITY METROPOLITAN CHAPTER
UNDERDRAIN DETAILS
STANDARD DRAWING UD-1
ADOPTED: MAY 23, 2001

GENERAL NOTE:

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

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THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

Project: VILLAS OF CHAPEL RIDGE, LSMO
Issue Date: June 24, 2022

Construction Details

Construction Plans for:
THE VILLAS OF CHAPEL RIDGE-2ND PLAT
LOTS 43-74 and Tracts C-1 & D-1
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
NUMBER PE-2006019708
PROFESSIONAL ENGINEER

Matthew J. Schlicht
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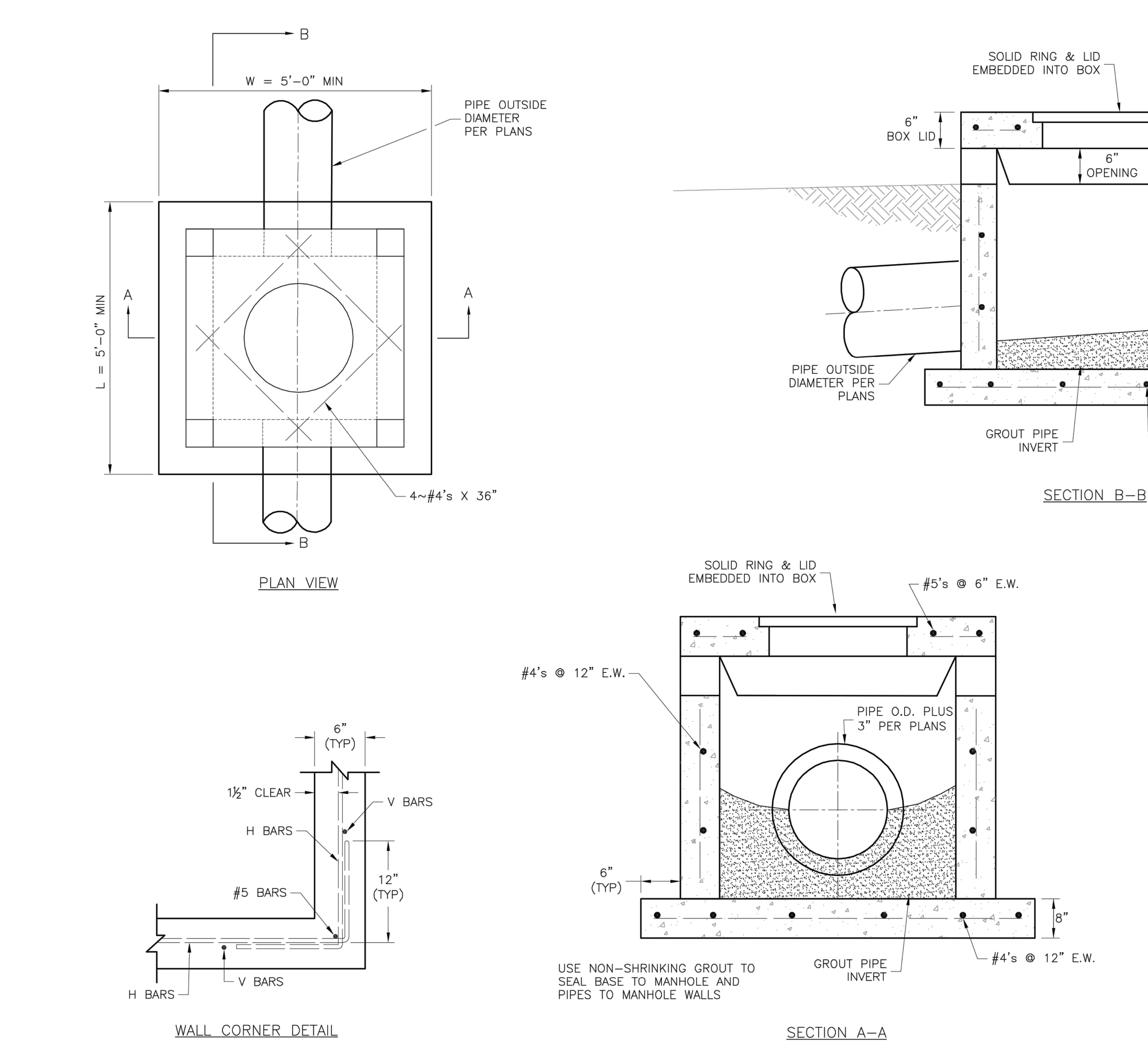
KS PE 19071
OK PE 25226
NE PE E-14335

REVISIONS
REV. 8/12/2022



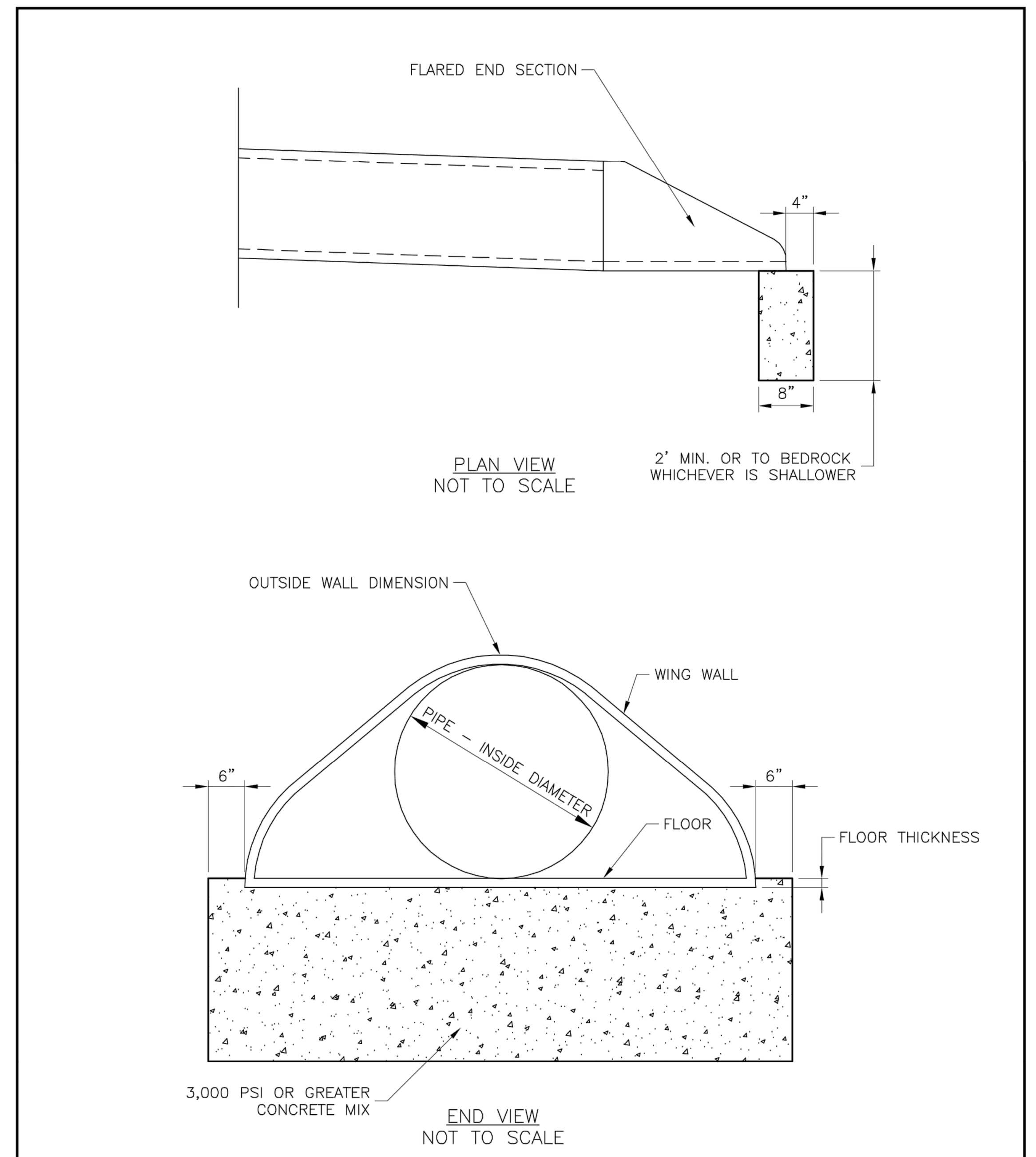
GENERAL NOTES:

1. LOCATE RING AND COVER OVER OUTLET ON BLANK WALL.
2. USE ¾" CHAMFER ON ALL EXPOSED CONCRETE CORNERS.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
4. STEPS REQUIRED AT 16" O.C. WHEN DEPTH FROM TOP OF CASTING TO INVERT EXCEEDS 3' ON BLANK WALL IF POSSIBLE.
5. BOXOUTS WILL NOT BE ALLOWED TO PROJECT THROUGH THE CORNERS OF THE STRUCTURE.
6. THE MINIMUM REINFORCING SHALL BE 1 H-BAR OVER A CAST-IN-PLACE PIPE AND 2 H-BARS OVER A PRECAST BOXOUT.
7. SHOW FIELD INLET ORIENTATION ON PLANS PLUS NUMBER AND SIDE OF OPENINGS.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON-SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

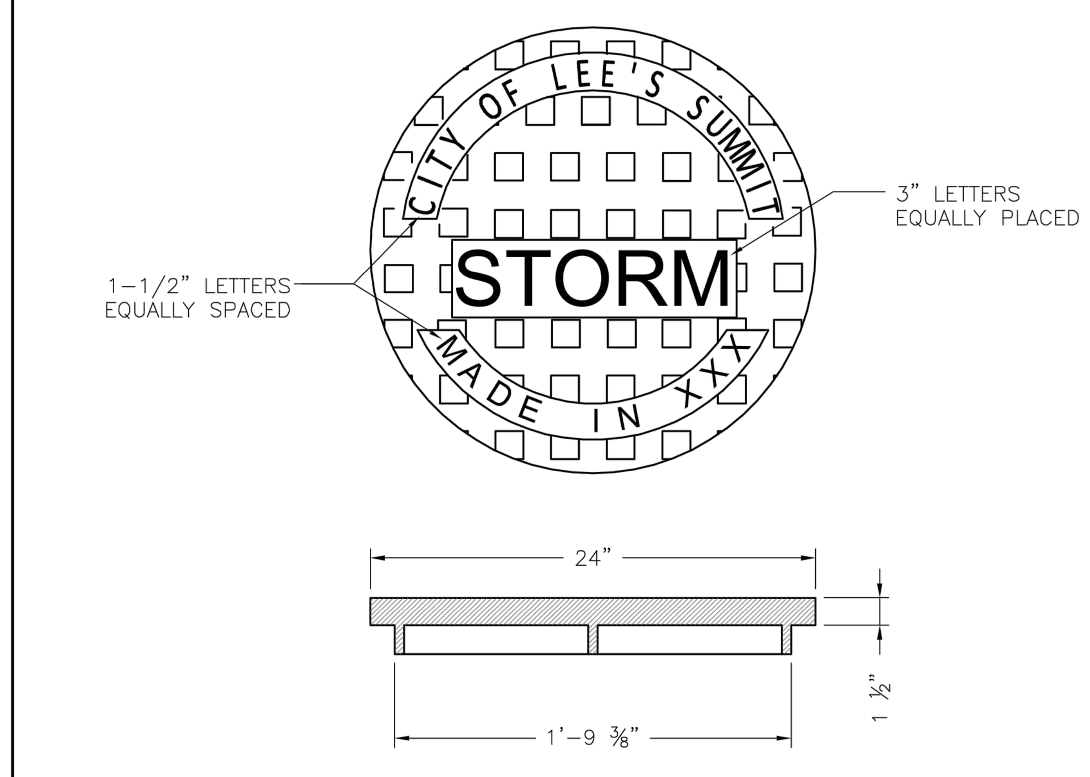
LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

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

STM-2



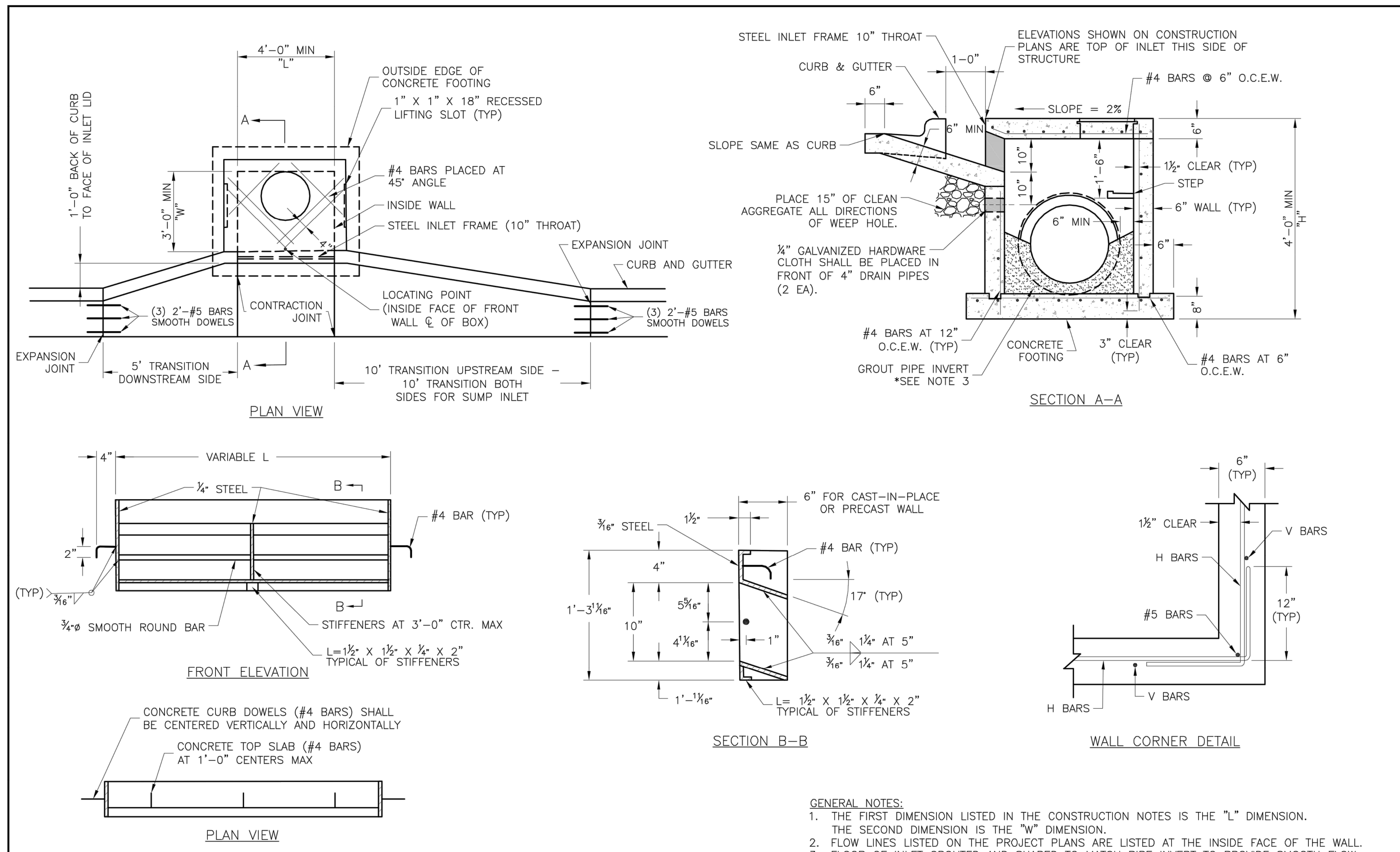
LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
FLARED END SECTION SUPPORT DETAIL
Date: 04/17
Drawn By: MJF
Checked By: DL
STM-5



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

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

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
STORM MANHOLE COVER DETAIL
Date: 04/17
Drawn By: MJF
Checked By: DL
STM-6



STEEL FRAME NOTES:
1. ALL WELDS SHALL BE PERFORMED IN ACCORDANCE WITH APPROPRIATE AWS SPECIFICATIONS AND PROCEDURES.
2. ALL WELDS ON EXPOSED SURFACES SHALL BE DRESSED SO AS TO PROVIDE A PLEASING FINISHED APPEARANCE.
3. THE ENTIRE FRAME SHALL BE PAINTED A SINGLE COAT OF CHEM-PRIME #37H-78 PRIMER (GRAY) OR EQUAL.

GENERAL NOTES:
1. THE FIRST DIMENSION LISTED IN THE CONSTRUCTION NOTES IS THE "L" DIMENSION. THE SECOND DIMENSION IS THE "W" DIMENSION.
2. FLOW LINES LISTED ON THE PROJECT PLANS ARE LISTED AT THE INSIDE FACE OF THE WALL.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
4. LOCATE MH RING AND COVER ON BLANK WALL IF POSSIBLE.
5. STEPS SHALL BE SPACED AT 1'-4" O.C. VERTICALLY ON BLANK WALL IF POSSIBLE.
6. BEVEL ALL EXPOSED EDGES WITH ¾"CHAMFER OR ½" TOOLED EDGE.
7. ON-GRADE INLETS SHALL CONFORM TO THE STREET GRADE AND SUMP INLETS SHALL BE LEVEL.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON-SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. LIFTING RINGS SHALL BE REMOVED AND SEALED WITH NON-SHRINKABLE GROUT
10. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

LEE'S SUMMIT MISSOURI
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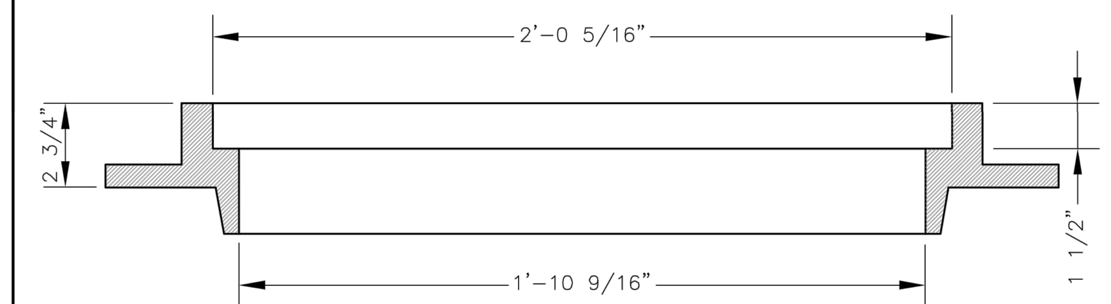
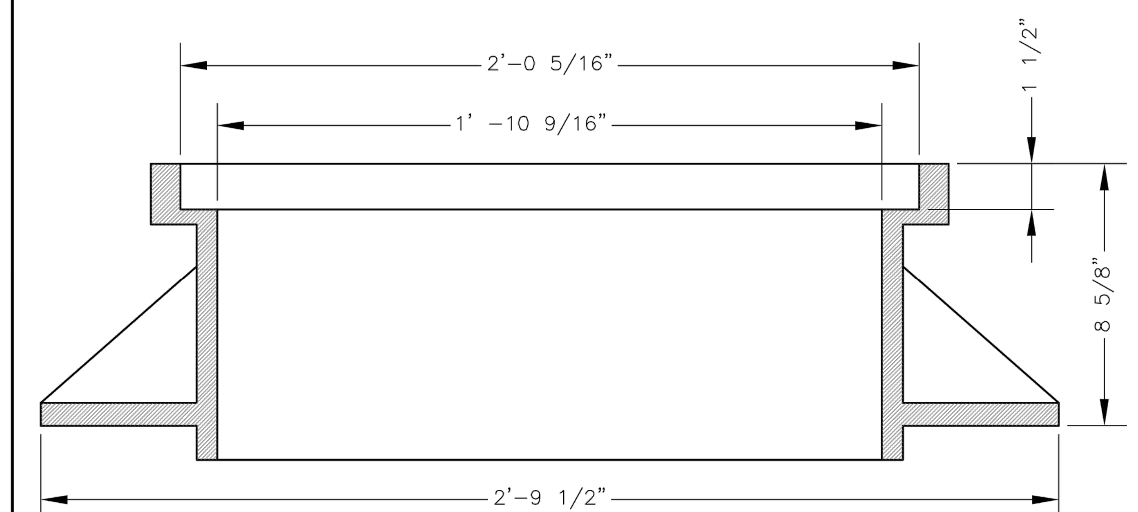
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
CURB INLET DETAIL

STM-1



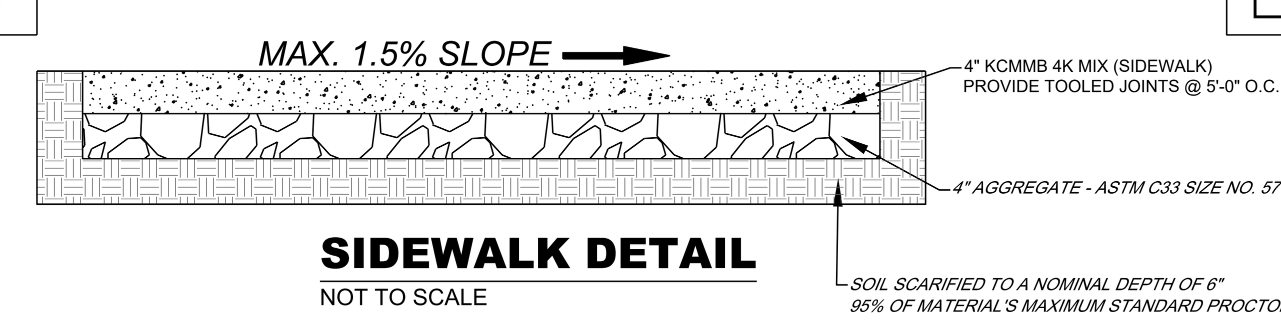
SLAB MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS103A
MINIMUM WEIGHT = 145 LB



STANDARD 24" MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS101A
MINIMUM WEIGHT = 250 LB

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

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
STORM MANHOLE FRAME DETAIL
Date: 04/17
Drawn By: MJF
Checked By: DL
STM-7



SIDEWALK DETAIL
NOT TO SCALE

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REVISIONS
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C.601