

STREET, STORM, DRAINAGE
FOR
WHISPERING WOODS 3RD PLAT
CITY OF LEE'S SUMMIT
JACKSON COUNTY, MISSOURI

LEGAL DESCRIPTION

ALL THAT PART OF THE SOUTHWEST QUARTER OF SECTION 24, TOWNSHIP 47 NORTH, RANGE 32 WEST OF THE FIFTH PRINCIPAL MERIDIAN IN THE CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHWEST CORNER OF SAID SOUTHWEST QUARTER; THENCE SOUTH 87 DEGREES 40 MINUTES 43 SECONDS EAST, ALONG THE NORTH LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 50.00 FEET TO THE EAST RIGHT OF WAY LINE OF SOUTHWEST PRYOR ROAD ALSO BEING THE POINT OF BEGINNING OF THE TRACT OF LAND HEREIN TO BE DESCRIBED; THENCE CONTINUING SOUTH 87 DEGREES 40 MINUTES 43 SECONDS EAST, ALONG THE NORTH LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 784.91 FEET; THENCE SOUTH 04 DEGREES 23 MINUTES 24 SECONDS EAST, A DISTANCE OF 474.64 FEET TO THE NORTHWEST CORNER OF LOT 18, WHISPERING WOODS FIRST PLAT, A SUBDIVISION OF LAND IN THE CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI; THENCE SOUTH 22 DEGREES 10 MINUTES 28 SECONDS WEST ALONG THE WEST LINE OF SAID LOT 18 AND ITS SOUTHWESTERLY PROLONGATION, A DISTANCE OF 149.00 FEET TO THE NORTH LINE OF TRACT A, OF SAID WHISPERING WOODS FIRST PLAT; THENCE NORTH 67 DEGREES 49 MINUTES 32 SECONDS WEST ALONG THE NORTH LINE OF SAID TRACT A, A DISTANCE OF 89.36 FEET; THENCE NORTHWESTERLY ALONG A CURVE TO THE LEFT BEING TANGENT TO THE LAST DESCRIBED COURSE, HAVING A RADIUS OF 370.00 FEET, AN ARC LENGTH OF 75.53 FEET TO THE NORTHWEST CORNER OF SAID TRACT A; THENCE SOUTH 27 DEGREES 01 MINUTES 10 SECONDS WEST, ALONG THE WEST LINE OF SAID TRACT A, A DISTANCE OF 121.71 FEET; THENCE CONTINUING ALONG SAID WEST LINE SOUTH 03 DEGREES 00 MINUTES 53 SECONDS WEST, A DISTANCE OF 246.06 FEET; THENCE CONTINUING ALONG SAID WEST LINE SOUTH 09 DEGREES 24 MINUTES 42 SECONDS WEST, A DISTANCE OF 177.20 FEET; THENCE CONTINUING ALONG SAID WEST LINE SOUTH 50 DEGREES 12 MINUTES 48 SECONDS WEST, A DISTANCE OF 178.11 FEET; THENCE CONTINUING ALONG SAID WEST LINE SOUTH 11 DEGREES 36 MINUTES 15 SECONDS WEST, A DISTANCE OF 224.87 FEET; THENCE NORTH 90 DEGREES 00 MINUTES 00 SECONDS WEST, ALONG THE NORTH LINE OF SAID TRACT A, A DISTANCE OF 399.87 FEET TO THE EAST RIGHT OF WAY LINE OF SOUTHWEST PRYOR ROAD; THENCE NORTH 02 DEGREES 45 MINUTES 31 SECONDS EAST, ALONG SAID EAST RIGHT OF WAY LINE, A DISTANCE OF 596.60 FEET; THENCE CONTINUING ALONG SAID RIGHT OF WAY NORTH 07 DEGREES 19 MINUTES 57 SECONDS EAST, A DISTANCE OF 69.01 FEET; THENCE CONTINUING ALONG SAID RIGHT OF WAY NORTH 02 DEGREES 45 MINUTES 31 SECONDS EAST, A DISTANCE OF 187.45 FEET; THENCE CONTINUING ALONG SAID RIGHT OF WAY NORTH 57 DEGREES 50 MINUTES 40 SECONDS EAST, A DISTANCE OF 54.00 FEET; THENCE CONTINUING ALONG SAID RIGHT OF WAY NORTH 03 DEGREES 01 MINUTES 16 SECONDS EAST, A DISTANCE OF 80.00 FEET; THENCE CONTINUING ALONG SAID RIGHT OF WAY NORTH 57 DEGREES 06 MINUTES 44 SECONDS WEST, A DISTANCE OF 57.98 FEET; THENCE CONTINUING ALONG SAID RIGHT OF WAY NORTH 02 DEGREES 45 MINUTES 31 SECONDS EAST, A DISTANCE OF 460.17 FEET TO THE POINT OF BEGINNING.

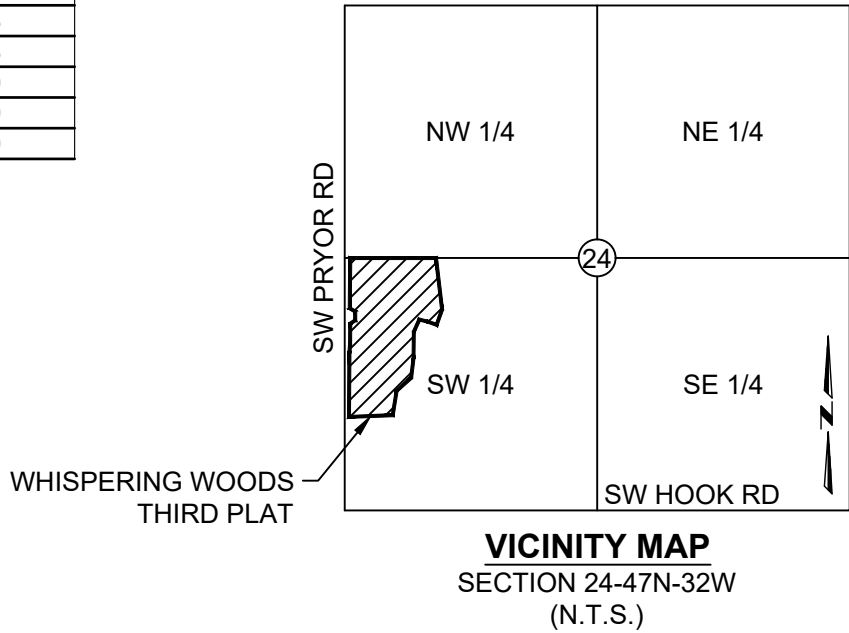
SAID TRACT CONTAINS 925,197.36 SQUARE FEET OR 21.24 ACRES MORE OR LESS.

PROJECT BENCHMARK

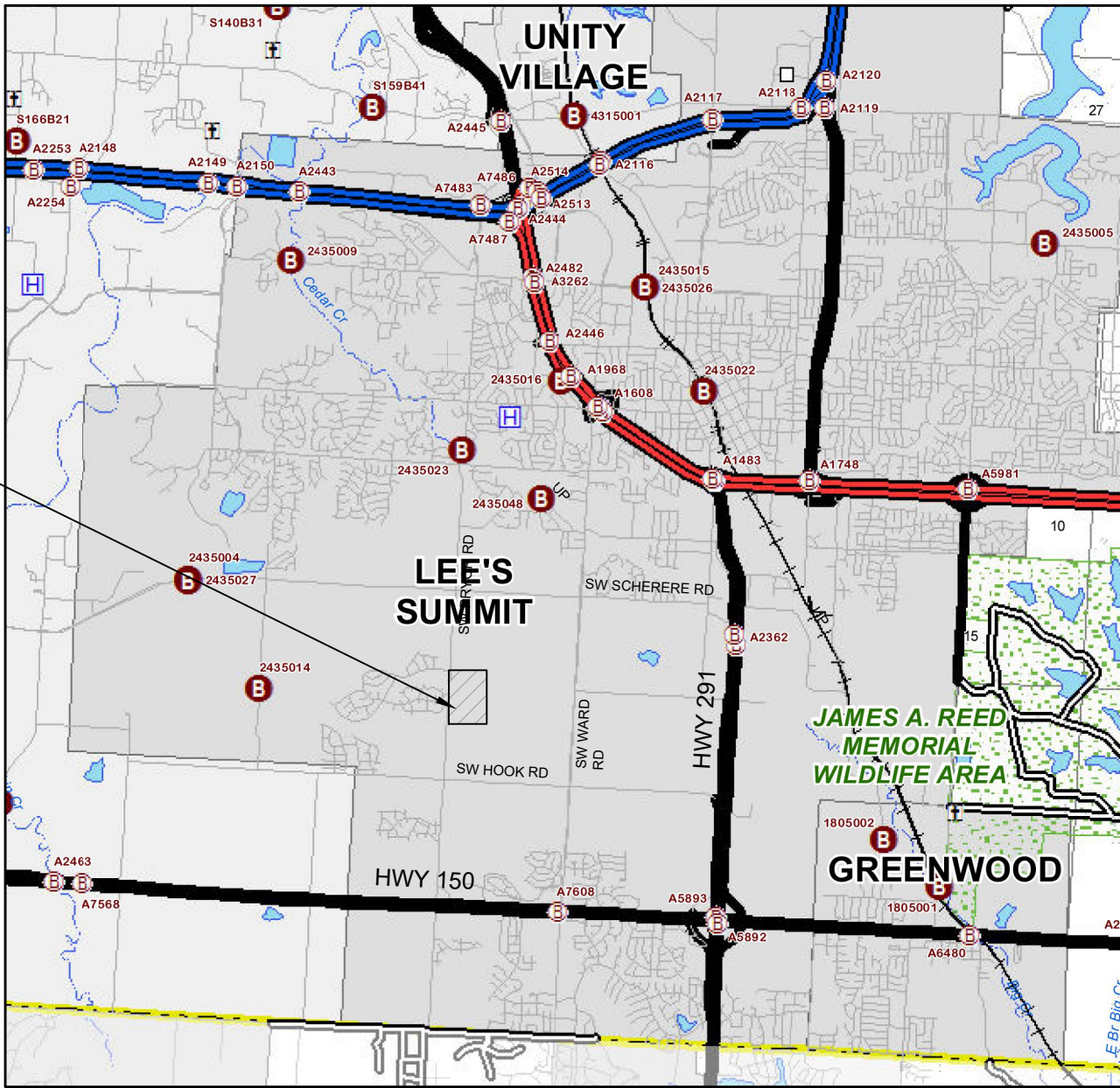
ELEV. 950.79 FT (NAVD 1988 DATUM)

MISSOURI DEPARTMENT OF NATURAL RESOURCES GRS ALUMINUM DISK STAMPED "JA-50" LOCATED NEAR THE INTERSECTION OF SW SCHERER PKWY & SW SAMPSON RD.

UTILITY SERVICE NUMBERS	
SPECTRUM	886-874-2389
EVERGY	816-220-5213
SPIRE GAS	816-399-9633
LEE'S SUMMIT PUBLIC WORKS	816-969-1800
CITY PLANNING & DEVELOPMENT	816-969-1600
FIRE DEPARTMENT	816-969-1300



PROJECT LOCATION



LOCATION MAP
N.T.S.

SUMMARY OF QUANTITIES

ITEM	UNIT	PLAN	AS-BUILT
Public Earthwork (CUT 180 CY / FILL 29,039 CY)	CY	28,859	
2" Asphaltic Concrete Surface	SY	8074	
4" Type 5 Asphaltic Concrete Base	SY	6088	
5.5" Type 5 Asphaltic Concrete Base	SY	3550	
CG-2 Curb & Gutter	LF	3230	
CG-1 Curb & Gutter	LF	1460	
5' Wide Concrete Sidewalk	SY	686	
10' Wide Asphalt Trail	SY	610	
5'x3' Curb Inlet	EA	12	
4'x4' Field Inlet	EA	5	
4'x4' Junction Box	EA	1	
4'x4' Basin Outfall Structure	EA	1	
30" HDPE	LF	244	
30" RCP	LF	356	
24" HDPE	LF	934	
18" HDPE	LF	622	
18" RCP	LF	35	
15" HDPE	LF	124	
15" RCP	LF	167	
30" F.E.S	EA	2	
24" F.E.S	EA	2	
18" F.E.S	EA	1	
Rip-Rap	SY	60	
ADA Curb Ramps	EA	11	
R1-1 Stop Signs	EA	3	
Street Name Signs	EA	3	

Summary of Quantities as indicated above and any quantities as shown within the plans have been provided for permitting purposes only and are not intended for use in preparation of contract documents. Quantities intended for, but not limited to, the preparation of proposals and bid documents shall be independently evaluated by the estimating party based upon the contents of these plans.

INDEX TO SHEETS

- 1 TITLE SHEET
- 2 GENERAL NOTES
- 3 SITE LAYOUT
- 4 MASTER DRAINAGE PLAN
- 5-7 STREET PLAN AND PROFILE
- 8 ROADWAY SIGNAGE PLAN
- 9-12 INTERSECTION DETAILS
- 13-22 STORM SEWER PLAN AND PROFILES
- 23 DRAINAGE AREAS
- 24 DRAINAGE TABLES
- 25-28 DETAILS

APPROVED:

City Engineer

Date

DEVELOPER:

WHISPERING WOODS LAND, L.L.C.
803 P.C.A. ROAD
WARRENSBURG, MO 64093
AGENT: RICK FRYE
PHONE: 816.564.2230
FAX: 660.429.1801

REVISION PER CITY COMMENTS	DATE	BY
1	1/21/25	MT
MARK	REVISION	DATE
Engineer: SD	Checked By: SD	Scale: 1"= N/A
Technician: JS	Date: 3-18-20	Field Bk: Pg.
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Sheet 1		



SHAWN DUKE - ENGINEER
MO PE#2013006489

WHISPERING WOODS 3RD PLAT
STREET & STORM SEWER PLANS

TITLE SHEET

LEE'S SUMMIT, MO

802 FRANCIS STREET
ST. JOSEPH, MO 64501
816-364-5222

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Project No: 1200485.11

Sheet 1

EROSION CONTROL NOTES:

A MISSOURI STATE OPERATING PERMIT FOR STORM WATER DISCHARGE IS REQUIRED IF CONSTRUCTION ACTIVITY DISTURBS ONE ACRE OR MORE IN ACCORDANCE WITH THE MISSOURI DEPARTMENT OF NATURAL RESOURCES' REGULATION (10 CSR 20-6.200). COMPLIANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN IS REQUIRED IN THIS INSTANCE. A CONSTRUCTION PERMIT FOR LAND DISTURBANCE WILL BE SECURED FROM THE MISSOURI DEPARTMENT OF NATURAL RESOURCES AND PROVIDED TO THE CONTRACTOR.

SLOPES ARE TO BE LEFT IN A ROUGHENED CONDITION DURING GRADING.

CURB INLET SEDIMENTATION FILTERS ARE TO BE INSTALLED AROUND CURB INLETS WHERE SEDIMENTATION IS A CONCERN. (SEE SWPP FOR DETAILS)

INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY FOLLOWING INSTALLATION OF STORM INLETS & REMAIN IN PLACE UNTIL GROUND COVER HAS BEEN ESTABLISHED.

EROSION CONTROL MEASURES SHALL BE CONSTRUCTED PRIOR TO BEGINNING GRADING OPERATIONS WHERE POSSIBLE. ALL REMAINING EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IMMEDIATELY FOLLOWING GRADING OPERATIONS.

THE SITE IS TO BE SEEDED AND MULCHED AND TEMPORARY EROSION CONTROL MEASURES ARE TO REMAIN IN PLACE UNTIL GROUND COVER HAS BEEN ESTABLISHED.

SEDIMENT IS TO BE REMOVED FROM STORM WATER DRAINAGE SYSTEMS INCLUDING THE DETENTION BASIN.

ROCK LINING IS TO BE INSTALLED AT AREAS OF CONCENTRATED FLOW (I.E. CULVERT OUTLETS).

ROCK LINING SHALL BE TYPE 2 ROCK DITCH LINER ACCORDING TO MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION SEC. 609.60. ALL NECESSARY STEPS SHALL BE TAKEN TO PREVENT SEDIMENT AND SOIL EROSION FROM BEING TRANSPORTED ONTO ADJACENT PROPERTY AND INTO STREAMS, LAKES, PONDS, OR OTHER AREAS.

CONTRACTOR SHALL INSPECT EROSION CONTROL MEASURES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. ANY REQUIRED REPAIRS SHOULD BE MADE IMMEDIATELY.

ADDITIONAL EROSION CONTROL MEASURES MAY BE NEEDED IF UNFORESEEN EROSION PROBLEMS ARISE OR IF THE SUBMITTED PLAN DOES NOT FUNCTION AS INTENDED.

A.
EROSION PROTECTION

1. CODE COMPLIANCE: THE CONTRACTOR SHALL COMPLY WITH SOIL EROSION CONTROL REQUIREMENTS OF THE MISSOURI CODE, THE MISSOURI DEPARTMENT OF NATURAL RESOURCES NPDES PERMIT, AND LOCAL ORDINANCE. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASUREMENTS TO PROTECT AGAINST EROSION AND DUST POLLUTION ON THIS PROJECT SITE AND ALL OFF-SITE BORROW OR DEPOSIT AREAS DURING PERFORMANCE OR AS A RESULT OF PERFORMANCE.

2. DAMAGE CLAIMS: THE CONTRACTOR WILL HOLD THE OWNER, ARCHITECT AND ENGINEER HARMLESS FROM ANY AND ALL CLAIMS OF ANY TYPE WHATSOEVER RESULTING FROM DAMAGES TO ADJOINING PUBLIC OR PRIVATE PROPERTY, INCLUDING REASONABLE ATTORNEY FEES INCURRED TO OWNER. FURTHER, IF THE CONTRACTOR FAILS TO TAKE NECESSARY STEPS TO PROMPTLY REMOVE EARTH SEDIMENTATION OR DEBRIS WHICH COMES ONTO ADJOINING PUBLIC OR PRIVATE PROPERTY, THE OWNER MAY, BUT NEED NOT, REMOVE SUCH ITEMS AND DEDUCT THE COST THEREOF FROM AMOUNTS DUE TO THE CONTRACTOR.

3. ALL AREAS DISTURBED BY CONSTRUCTION ON THIS PROJECT WILL BE SUBJECT TO CURRENT REGULATORY REQUIREMENTS AND THESE STANDARDS.

B.
STORM WATER DISCHARGE PERMIT:

1. THIS PROJECT REQUIRES A LAND DISTURBANCE PERMIT FROM THE MISSOURI DEPARTMENT OF NATURAL RESOURCES, AS REQUIRED BY THE ENVIRONMENTAL PROTECTION COMMISSION (EPC). THE OWNER SHALL OBTAIN THE PERMIT. THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE AND FULFILLING ALL REQUIREMENTS OF THE PERMIT INCLUDING THE STORM WATER POLLUTION PREVENTION PLAN.

2. ALL DOCUMENTS RELATED TO THE STORM WATER DISCHARGE PERMIT SHALL BE KEPT ON SITE AT ALL TIMES AND MUST BE PRESENTED TO THE MISSOURI DNR UPON REQUEST WHICH INCLUDE THE NOTICE OF INTENT, PROOF OF PUBLICATION, POLLUTION PREVENTION PLAN, PROJECT INSPECTION DIARY, AND OTHER ITEMS. FAILURE TO COMPLY WITH THE DISCHARGE REQUIREMENTS IS IN VIOLATION OF THE CLEAN WATER ACT AND THE CODE OF MISSOURI.

3. UPON FINAL STABILIZATION OF THE DISTURBED AREA, A"NOTICE OF DISCONTINUATION" MUST BE FILED BY THE OWNER WITH THE MISSOURI DNR. ALL PLANS, INSPECTION REPORTS, AND OTHER DOCUMENTS MUST BE RETAINED FOR A PERIOD OF THREE YEARS AFTER PROJECT COMPLETION. THE CONTRACTOR SHALL RETAIN RECORD COPY AND PROVIDE ORIGINAL DOCUMENTS TO THE OWNER UPON ISSUANCE OF THE NOTICE OF DISCONTINUATION.

POLLUTION PREVENTION PLAN:

1. SITE DESCRIPTION: THIS PROJECT IS FOR THE CONSTRUCTION OF ROUGH GRADING FOR COMMERCIAL DEVELOPMENT. THE ENTIRE PROJECT COVERS APPROXIMATELY 1.70 ACRES. THE ESTIMATED AVERAGE RUNOFF COEFFICIENT WILL BE 0.80 RUNOFF FROM THIS PROJECT SITE AND WILL BE ROUTED THROUGH THE EXISTING CITY STORM SEWER.

2. POTENTIAL SOURCES OF POLLUTION FOR THIS PROJECT RELATE TO SILTS, SEDIMENT, AND OTHER MATERIALS WHICH MAY BE TRANSPORTED FROM THE CONSTRUCTION SITE AS THE RESULT OF A STORM EVENT .

3. RESPONSIBILITY: THIS POLLUTION PREVENTION PLAN ILLUSTRATES GENERAL MEASURES TO BE TAKEN FOR COMPLIANCE WITH THE PERMIT. ALL MITIGATION MEASURES REQUIRED, AS A RESULT OF ACTIVITIES, ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE ALL ACTIONS NECESSARY FOR INSTALLATION OF CONTROL MEASURES FOR COMPLIANCE WITH PERMIT REQUIREMENTS.

4. CONTROLS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE AND FULFILLING ALL THE REQUIREMENTS OF THE GENERAL PERMIT INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

a. THE CONTRACTOR SHALL PROTECT ADJOINING PROPERTY INCLUDING PUBLIC UTILITIES, SANITARY AND STORM DRAINAGE SYSTEMS, AND STREETS FROM ANY DAMAGE RESULTING FROM MOVEMENT OF EARTH OR OTHER DEBRIS FROM PROJECT SITE. REPAIR ANY DAMAGE IMMEDIATELY AT NO ADDITIONAL COST.

b. THE CONTRACTOR SHALL PREVENT ACCUMULATION OF EARTH, SILTATION, OR DEBRIS ON ADJOINING PUBLIC OR PRIVATE PROPERTY FROM PROJECT SITE. REMOVE ANY ACCUMULATION OF EARTH OR DEBRIS IMMEDIATELY AND TAKE REMEDIAL ACTIONS FOR PREVENTION.

c. PRIOR TO SITE CLEARING AND GRADING OPERATIONS, CONTRACTOR SHALL INSTALL SILT FENCE ALONG THE PERIMETER OF THE PROJECT DOWNSTREAM OF DISTURBING ACTIVITIES AS REQUIRED AND AS SHOWN ON THE PLANS.

d. THE CONTRACTOR SHALL PRESERVE EXISTING VEGETATION IN AREAS NOT NEEDED FOR CONSTRUCTION.

GENERAL NOTES:

1. REFER TO THE CURRENT VERSION OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION (D&C) MANUAL FOR CONSTRUCTION OF THESE PLANS.

2. ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE ENGINEERING DEPARTMENT OF THE CITY OF LEE'S SUMMIT, MISSOURI.

3. LINEAL FOOT MEASUREMENTS SHOWN ON THESE PLANS ARE HORIZONTAL MEASUREMENTS, NOT SLOPE MEASUREMENTS. ALL PAYMENTS SHALL BE MADE ON HORIZONTAL MEASUREMENTS.

4. NO GEOLOGICAL INVESTIGATION WAS PERFORMED ON THIS PROJECT.

5. 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.

6. 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 AND ORDINANCES.

7. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT A LOCATION TO BE SELECTED BY THE OWNER OR HIS AUTHORIZED REPRESENTATIVE, SUCH LOCATION TO BE ON THE SITE.

8. THE CONTRACTOR SHALL CONTROL THE EROSION AND SILTATION DURING ALL PHASES OF CONSTRUCTION, HE SHALL KEEP THE STREETS CLEAN OF MUD AND DEBRIS AND FOLLOW THE EROSION CONTROL PLAN PREPARED BY THE DESIGN ENGINEER.

9. ALL EXISTING MANHOLES, CATCH BASINS, UTILITY VALVES AND METER PITS TO BE ADJUSTED OR REBUILT TO GRADE AS REQUIRED.

10. SUBGRADE SOIL FOR ALL CONCRETE STRUCTURES, REGARDLESS OF THE TYPE OR LOCATION, SHALL BE FIRM, DENSE AND THOROUGHLY COMPACTED AND CONSOLIDATED; SHALL BE FROM MUCH AND MUD; AND SHALL BE SUFFICIENTLY STABLE TO REMAIN FIRM AND INTACT UNDER THE FEET OF THE WORKMAN OR MACHINERY ENGAGED IN SUBGRADE, LAYING REINFORCING STEEL, AND DEPOSITING CONCRETE THEREON. IN ALL CASES WHERE SUBSOIL IS MUCKY OR WORKS INTO MUD OR MUCK DURING SUCH OPERATION, A SEAL COURSE OF EITHER CONCRETE OR ROCK SHALL BE PLACED BELOW SUBGRADE TO PROVIDE A FIRM BASE FOR WORKING AND FOR PLACING THE FLOOR SLAB.

11. A MINIMUM HORIZONTAL DISTANCE OF TEN (10') SHALL BE MAINTAINED BETWEEN PARALLEL WATER AND SANITARY SEWER LINES. AT ANY POINT WHERE SANITARY SEWER LINES CROSS WATER MAIN, THE SANITARY SEWER SHALL BE CONSTRUCTED OF CAST IRON PIPE OR PIPE ENCASED IN CONCRETE FOR A DISTANCE OF TEN FEET (10') IN EACH DIRECTION FROM THE CROSSING UNLESS THE WATER IS A MINIMUM OF EIGHTEEN INCHES (18") ABOVE THE TOP OF THE SANITARY SEWER LINE.

12. CONTRACTOR SHALL PROVIDE TESTING AND INSPECTION PER SECTION 2200 - PAVING MAINS CITY OF LEE'S SUMMIT, MISSOURI STANDARD SPECIFICATIONS.

13. DEVELOPMENT PLANS ARE APPROVED INITIALLY FOR ONE (1) YEAR, AFTER WHICH THEY AUTOMATICALLY BECOME VOID AND MUST BE UPDATED AND APPROVED BY THE CITY ENGINEER BEFORE ANY CONSTRUCTION WILL BE PERMITTED.

14. ALL SANITARY SEWER STUBS SHALL BE SURVEYED AND STAKED ON SITE BEFORE THE CONSTRUCTION OF SANITARY SERVICE STUBS.

15. THE CITY OF LEE'S SUMMIT PLAN REVIEW IS ONLY FOR GENERAL CONFORMANCE WITH THE CITY OF LEE'S SUMMIT DESIGN CRITERIA AND THE CITY CODE. THE CITY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, OR DIMENSIONS AND ELEVATIONS WHICH SHALL BE CONFINED AND CORRELATED AT THE JOB SITE. THE CITY OF LEE'S SUMMIT THROUGH APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY OTHER THAN AS STATED ABOVE FOR THE COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

16. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE PLANS (APPROVED BY THE CITY OF LEE'S SUMMIT) AND ONE (1) COPY OF THE APPROPRIATE CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES.

17. CONSTRUCTION OF THE IMPROVEMENTS SHOWN OR IMPLIED BY THIS SET OF DRAWINGS SHALL NOT BE INITIATED OR ANY PART THEREOF UNDERTAKEN UNTIL THE CITY ENGINEER IS NOTIFIED OF SUCH INTENT AND ALL REQUIRED AND PROPERLY EXECUTED BONDS AND PERMIT FEES ARE RECEIVED AND APPROVED BY THE CITY ENGINEER.

18. ALL STUB LINES SHALL BE LAID ON 2.00% MINIMUM GRADE UNLESS APPROVED OTHERWISE.

19. CONTRACTOR SHALL NOT BE ALLOWED TO WORK ON SATURDAYS, SUNDAYS, OR HOLIDAYS WITHOUT PRIOR APPROVAL OF THE CITY ENGINEER.

20. RELOCATION OF ANY WATER LINE, SEWER LINE OR SERVICE LINE THEREOF REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE AT HIS EXPENSE.

21. THE CONTRACTOR SHALL INSTALL AND PROPERLY MAINTAIN A MECHANICAL PLUG AT ALL CONNECTION POINTS WITH EXISTING LINES UNTIL SUCH TIME THAT THE NEW LINE IS TESTED AND APPROVED.

22. THE CONTRACTOR SHALL CONSTRUCT MANHOLES PLACING ECCENTRIC CONE SECTION IN SUCH A MANNER THAT MANHOLE COVERS ARE ADJACENT TO THE PROPOSED SIDEWALKS. IN LOCATIONS WHERE MANHOLES ARE NOT NEAR PROPOSED SIDEWALKS THE MANHOLE COVERS SHALL GENERALLY BE PLACED ON THE UPSTREAM SIDE OF THE MANHOLES WHENEVER POSSIBLE.

23. STUB LINES, LOCATIONS, AND MINIMUM BASEMENT FLOOR ELEVATIONS ARE LOCATED IN THE TABLE LABELED "TABLE OF SERVICE LOCATIONS".

24. CONSTRUCTION PERMITS WILL NOT BE ISSUED UNTIL THE CITY OF LEE'S SUMMIT RECEIVES A SEWER EXENTION PERMIT FROM MDNR.

25. ALL AREAS WHERE UTILITIES ARE TO BE INSTALLED IN FILL SHALL BE COMPACTED TO 95% TO 18 INCHES ABOVE THE LINE THEN EXCAVATED FOR CONSTRUCTION OF THE LINE.

26. THE CONTRACTOR WILL BE RESPONSIBLE FOR TESTING OF MANHOLES AND PIPES TO THE CITY OF LEE'S SUMMIT DESIGN & CONSTRUCTION MANUAL REQUIREMENTS.

27. THE DEVELOPER WILL BE RESPONSIBLE FOR PERFORMING PRESSURE TESTING ON EVERY SECTION OF THE SANITARY LINES, PRESSURE TESTING ON EVERY MANHOLE, AND RUNNING A MANDREL THROUGH EVERY SECTION OF SANITARY SEWER LINE TO TEST FOR ALIGNMENT. TESTING CRITERIA WILL BE IN ACCORDANCE WITH CITY OF LEE'S SUMMIT DESIGN & CONSTRUCTION MANUAL SPECIFICATIONS.

28. ALL UTILITY STREET CROSSINGS SHALL BE BACKFILLED WITH FLOWABLE FILL, OR AB-3. IF CONTRACTOR CHOOSES TO USE OTHER SUITABLE MATERIALS, EXTENSIVE SOIL TESTING REQUIREMENTS WILL BE REQUIRED.

29. THE SPECIAL FLOW HAZARD AREA (SFHA) AND REGULATORY FLOOD WAY DEPICTED IN THESE PLANS ARE PER FEMA'S NATURAL FLOOD HAZARD LAYER (NFHL) OBTAINED FROM WWW.FEMA.GOV. NFIP INFORMATION SHOWN ARE REPRESENTATIVE OF FEMA'S FLOOD INSURANCE RATE MAP (FIRM) MAP NUMBER 29095C0531G; EFFECTIVE DATE JANUARY 20, 2017.

30. NO FILL MATERIAL SHALL BE PLACED WITHIN THE FEMA IDENTIFIED FLOODWAY. NO CONSTRUCTION SHALL BE PERFORMED WITHIN THE FLOODWAY UNLESS DEPICTED ON THESE PLANS OR OTHER PLANS APPROVED BY THE CITY OF LEE'S SUMMIT, MO.

PROJECT NOTES:

1. GRADING CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF EROSION AND SILTATION DURING ALL PHASES OF CONSTRUCTION.

2. PRIOR TO ORDERING PRECAST STRUCTURES: SHOP DRAWINGS SHALL BE SUBMITTED TO THE DESIGN ENGINEER FOR APPROVAL. UPON APPROVAL THESE SHALL BE SUBMITTED TO THE CITY OF LEE'S SUMMIT FOR REVIEW.

3. MANHOLE TOP ELEVATIONS DESIGNATED AS "FIELD VERIFY" (F.V.) ARE LOCATED OUTSIDE THE STREET RIGHT-OF-WAY OR IN AREAS OF UNDETERMINED GRADING. CONTRACTORS ORDERING PRECAST MANHOLES SHALL BE RESPONSIBLE FOR ADJUSTMENT REQUIRED IN THE FIELD AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL FIELD VERIFY THE TOP ELEVATIONS PRIOR TO ORDERING PRECAST MANHOLES.

4. ALL WATER LINES, SANITARY SEWER LINES, AND STORM WATER DRAINAGE CROSSINGS SHALL BE IN PLACE OR A CASING PIPE PROVIDED FOR FUTURE INSTALLATION PRIOR TO BASE AND SURFACE ASPHALT COURSES.

5. SIDEWALKS ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY UNLESS OTHERWISE NOTES. HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR HANDICAP RAMP CONSTRUCTION IN CURBS.

6. SITE TOPOGRAPHY TAKEN FROM SURVEY COMPLETED BY R.L.BUFORD & ASSOCIATES. CONTRACTOR TO VERIFY EXISTING CONDITIONS OF THE SITE THAT MAY NOT BE REPRESENTATIVE OF CONSTRUCTION PLANS.



SHAWN DUKE - ENGINEER
MO PE#2013006489

WHISPERING WOODS 3RD PLAT
STREET & STORM SEWER PLANS

GENERAL NOTES

LEE'S SUMMIT, MO

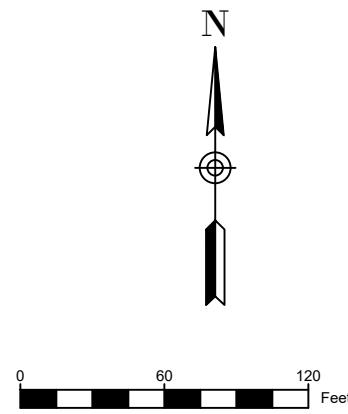
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Sheet 2



WHISPERING WOODS 3RD PLAT
STREET & STORM SEWER PLANS

SITE LAYOUT
LEE'S SUMMIT, MO

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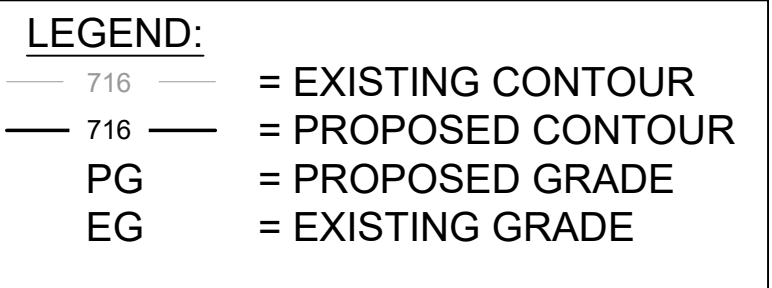
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Sheet 3



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MO PE#2013006489

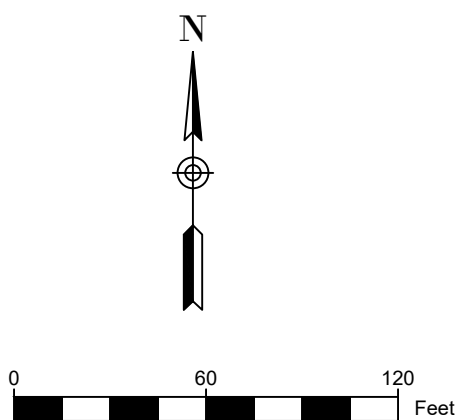
MARK	REVISION	DATE	BY
1	REVISION PER CITY COMMENTS	1/21/25	MT
Engineer:	SD	Checked By: SD	Scale: 1"= 60'
Technician:	JS	Date: 3-18-21	Field Bk: Pg:
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3. THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEY FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED.
3. NOTIFY UTILITY OWNERS PRIOR TO BEGINNING ANY CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXISTENCE, EXACT LOCATION AND DEPTH OF ALL UTILITIES, AVOID DAMAGE TO UTILITIES AND SERVICES DURING CONSTRUCTION, ANY DAMAGE DUE TO THE CONTRACTOR'S CARELESSNESS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. COORDINATE AND COOPERATE WITH UTILITY COMPANIES DURING CONSTRUCTION.
- C. ALL PROPOSED CONTOURS AND SPOT ELEVATIONS SHOWN ARE FINISHED GRADES AND/OR TOP OF PAVING SLAB (GUTTER), UNLESS OTHERWISE NOTED.
- D. ALL STORM SEWER PIPE LENGTHS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE AND INCLUDE FLARED END SECTION.
- E. CONTRACTOR TO STRIP AND STOCKPILE TOPSOIL FROM ALL AREAS TO BE CUT OR FILLED. RE-SPREAD TO MINIMUM 8" DEPTH TO FINISH GRADES.
- F. THE CONTRACTOR IS RESPONSIBLE FOR CLEANING DIRT AND DEBRIS FROM STREETS, DRIVEWAYS, AND SIDEWALKS CAUSED BY CONSTRUCTION ACTIVITIES.
- G. CONTRACTOR TO VERIFY ALL UTILITY LOCATIONS AND DEPTH PRIOR TO WALL CONSTRUCTION TO DETERMINE ALL POSSIBLE CONFLICTS.

LOT	MBOE (REAR)
51	960.75
52	959.79
53	959.46
54	959.14
55	958.59
56	958.21
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58	956.69
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73	963.34
74	962.67
75	962.00
76	961.55

LOT	LOT TYPE
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52	WO
53	WO
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56	WO
57	WO
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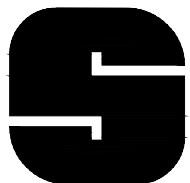
SHAWN DUKE - ENGINEER
MO PE#2013006489

LEE'S SUMMIT, MO

**WHISPERING WOODS 3RD PLAT
STREET & STORM SEWER PLANS**

MASTER DRAINAGE PLAN

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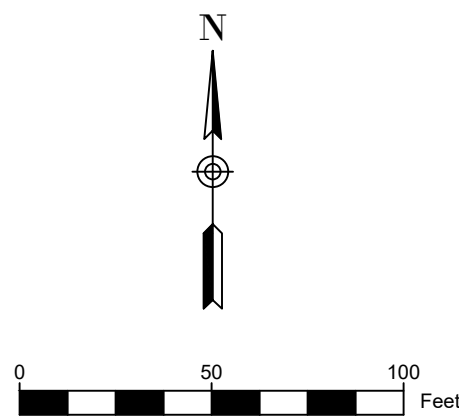


SNYDER
& ASSOCIATES

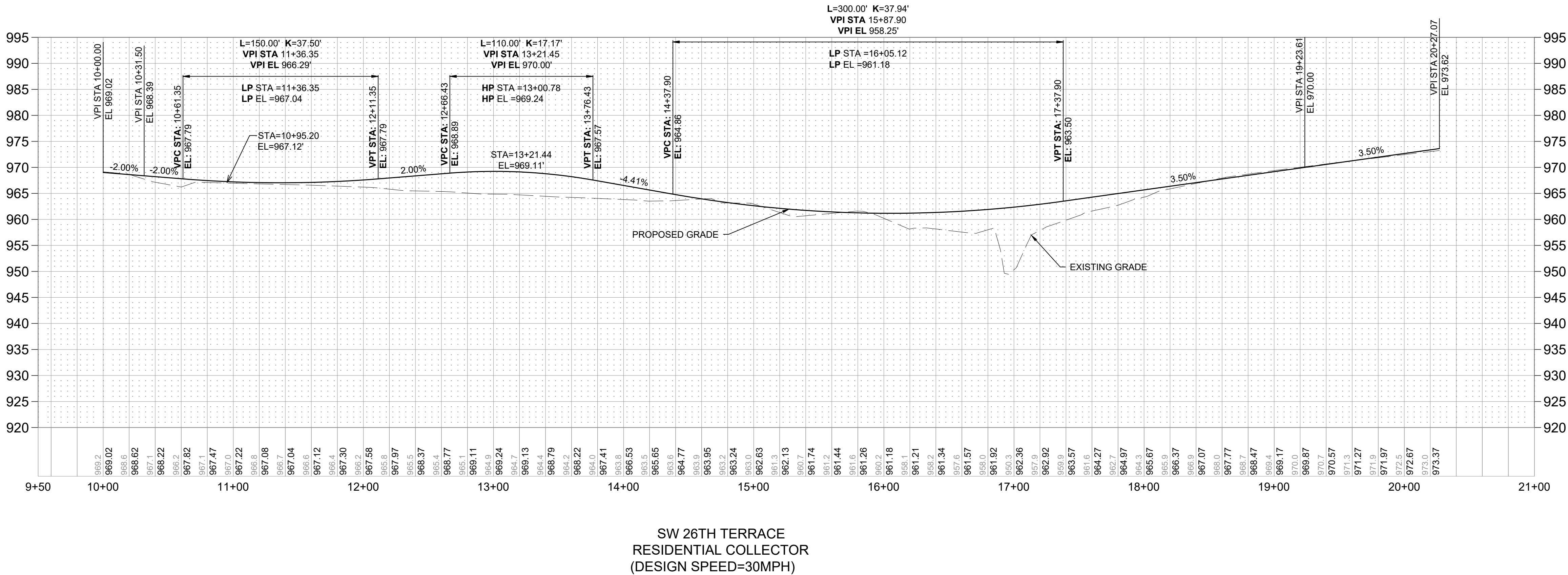
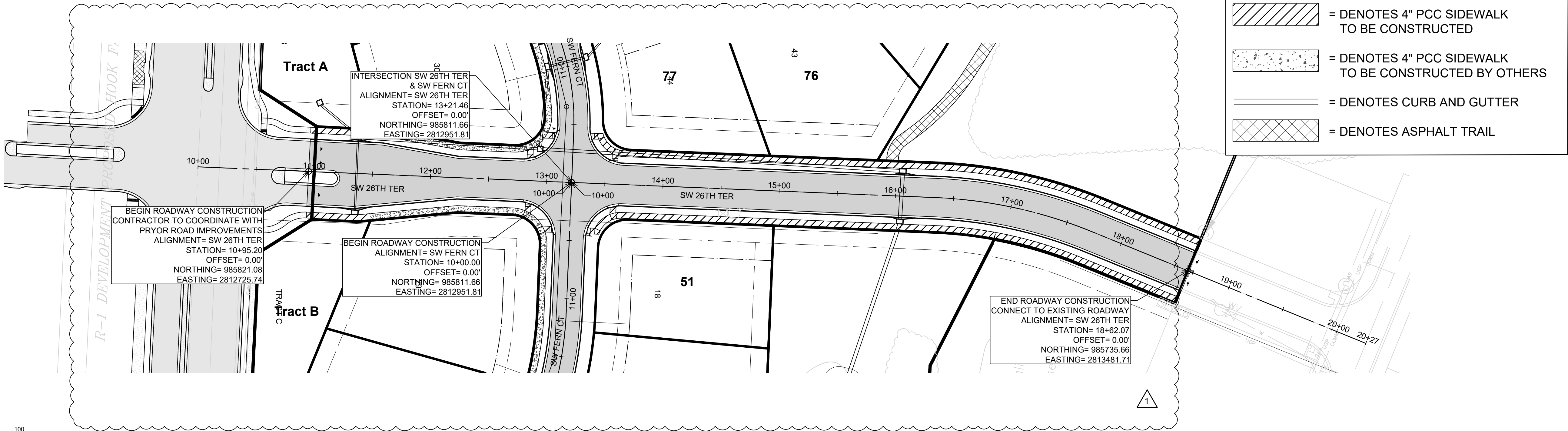
Project No: 1200485.11

Sheet

4



NOTE:
ONLY SIDEWALK RAMPS TO BE CONSTRUCTED WITH ROAD CONSTRUCTION.
REMAINING SIDEWALK TO BE CONSTRUCTED WITH HOUSE CONSTRUCTION.



WHISPERING WOODS 3RD PLAT
STREET & STORM SEWER PLANS

STREET PLAN & PROFILE

SNYDER & ASSOCIATES
ENGINEERS & PLANNERS, INC.

LEE'S SUMMIT, MO
802 FRANCIS STREET
ST. JOSEPH, MO 64501
816-364-5222



Project No: 1200485.11

Sheet 5



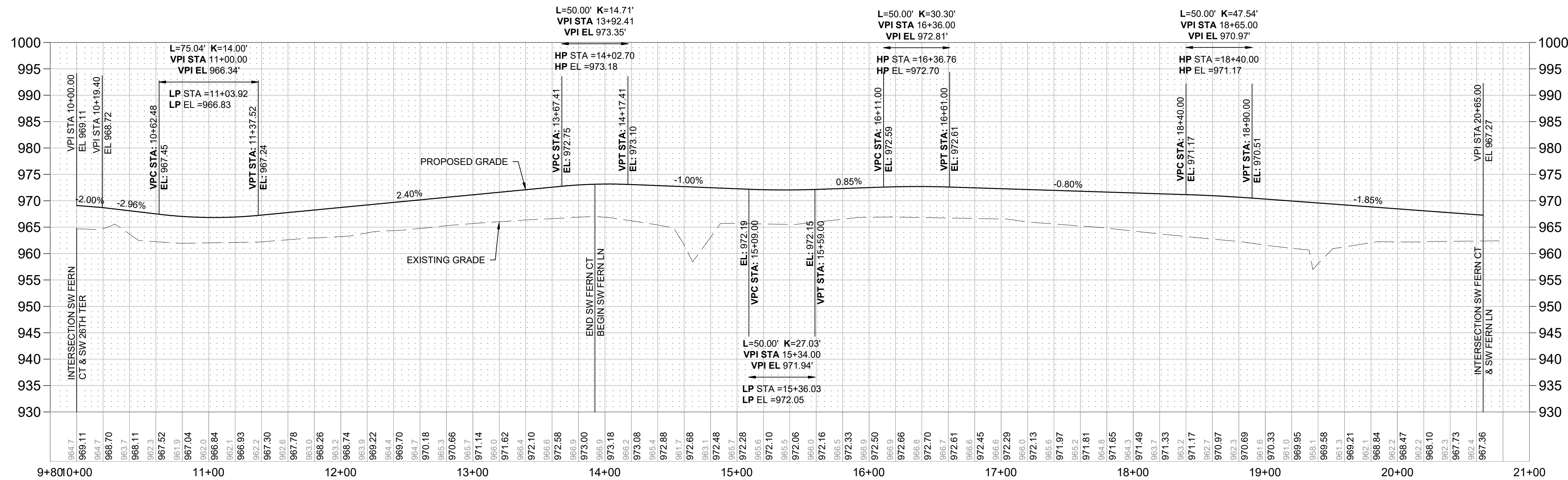
SHAWN DUKE - ENGINEER
MO PE#2013006489

MARK	REVISION	DATE	BY
1	REVISION PER CITY COMMENTS	1/21/25	MT

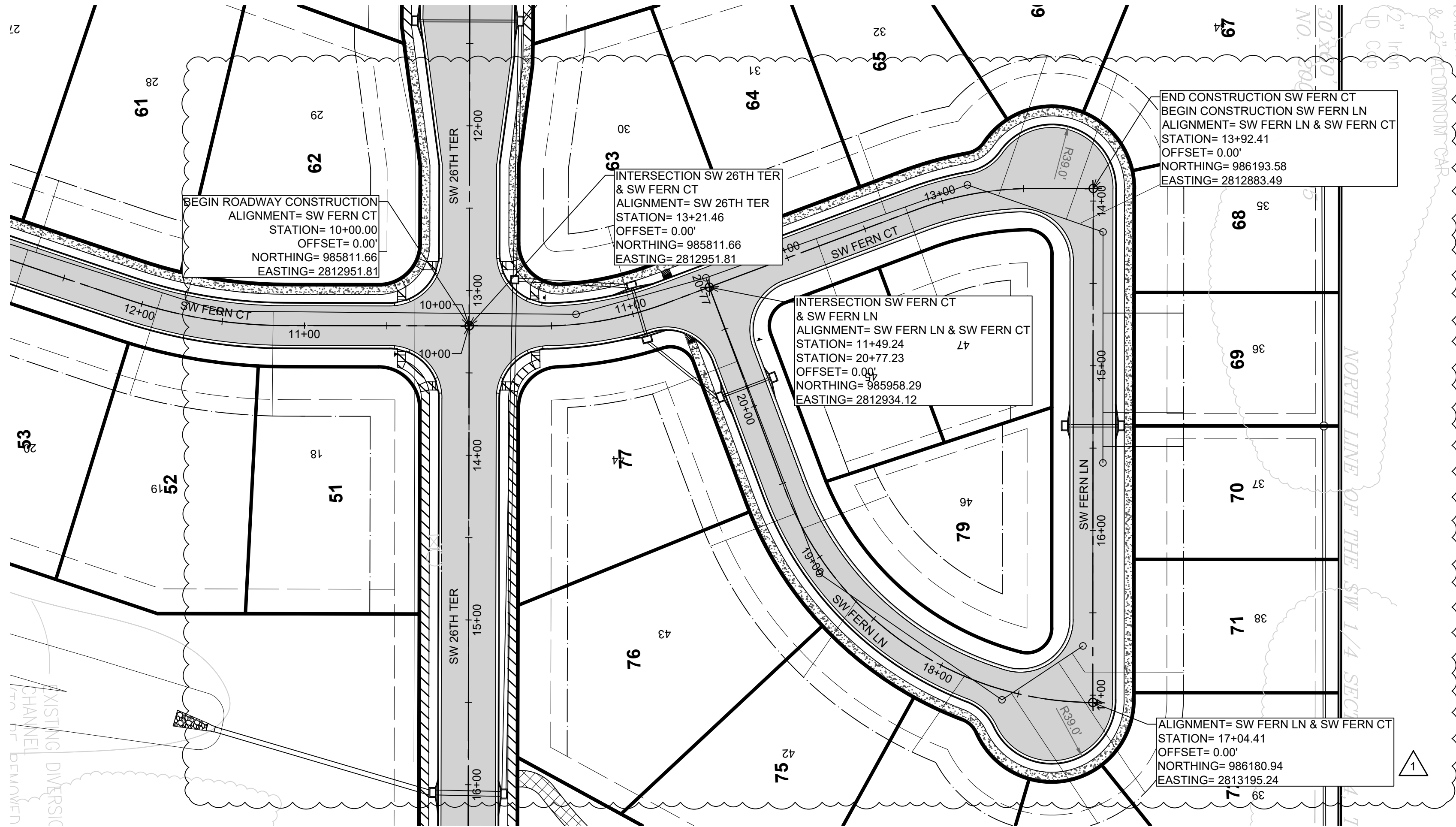
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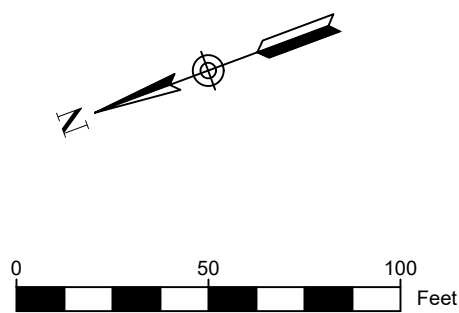
Snyder & Associates Engineers & Planners, Inc.
Missouri State Certificate of Authority #20000854

Sheet 5

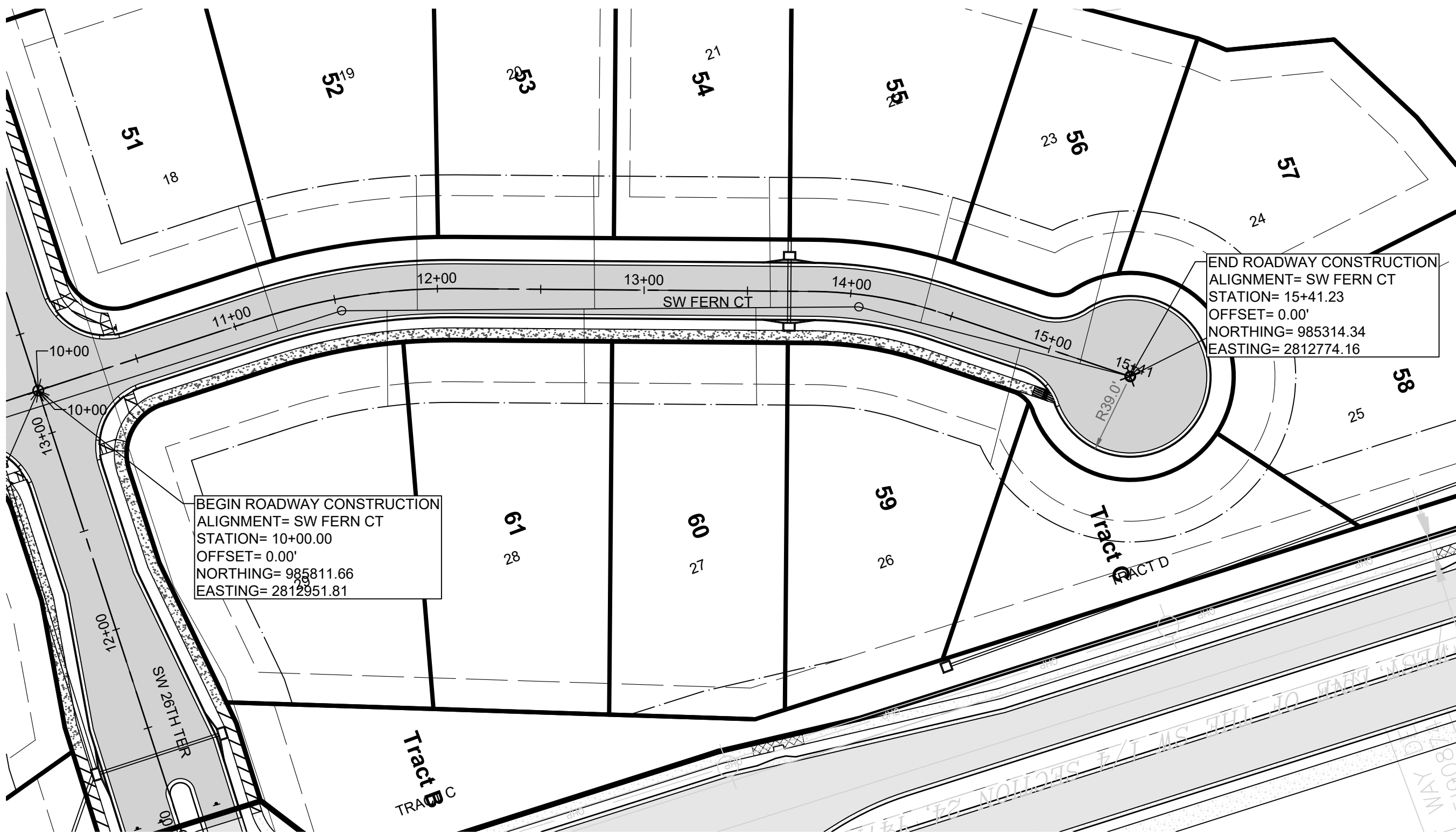


SW FERN CT & SW FERN LN
RESIDENTIAL LOCAL
(DESIGN SPEED=25MPH)

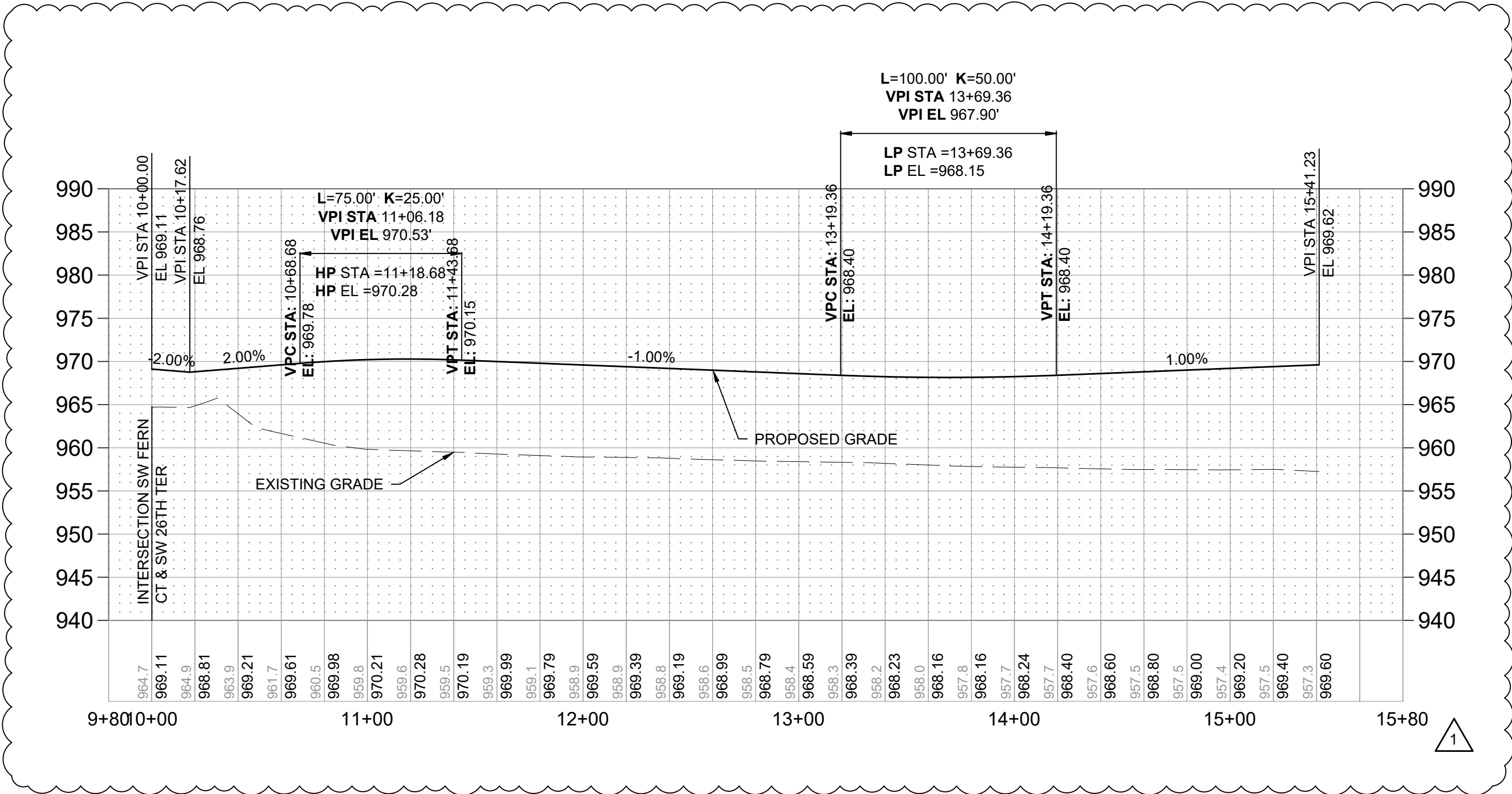




NOTE:
ONLY SIDEWALK RAMPS TO BE CONSTRUCTED WITH ROAD CONSTRUCTION.
REMAINING SIDEWALK TO BE CONSTRUCTED WITH HOUSE CONSTRUCTION.



LEGEND:				
	=	DENOTES ASPHALT PAVEMENT		
	=	DENOTES 4" PCC SIDEWALK TO BE CONSTRUCTED		
	=	DENOTES 4" PCC SIDEWALK TO BE CONSTRUCTED BY OTHERS		
	=	DENOTES CURB AND GUTTER		
	=	DENOTES ASPHALT TRAIL		



SW FERN COURT
RESIDENTIAL LOCAL
(DESIGN SPEED=25MPH)

MARK	REVISION PER CITY COMMENTS	DATE	BY	MT
1		1/21/25		
Engineer:	SD	Checked By:	SD	Scale:
Technician:	JS	Date:	3-18-21	Field Bk:
Snyder & Associates Engineers & Planners, Inc. Missouri State Certificate of Authority #20000854				Sheet 7



SHAWN DUKE - ENGINEER
MO PE#2013006489

WHISPERING WOODS 3RD PLAT
STREET & STORM SEWER PLANS

STREET PLAN & PROFILE

LEE'S SUMMIT, MO

802 FRANCIS STREET
ST. JOSEPH, MO 64501
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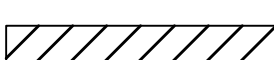
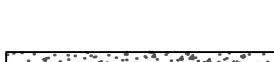


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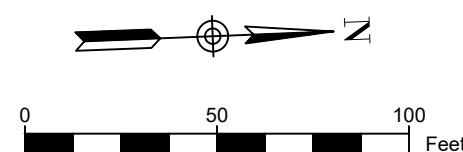
Sheet 7



LEGEND:

- | | |
|--|--|
|  | = DENOTES ASPHALT PAVEMENT |
|  | = DENOTES 4" PCC SIDEWALK
TO BE CONSTRUCTED |
|  | = DENOTES 4" PCC SIDEWALK
TO BE CONSTRUCTED BY OTHERS |
|  | = DENOTES CURB AND GUTTER |
|  | = DENOTES ASPHALT TRAIL |

NOTE:
ONLY SIDEWALK RAMPS TO BE CONSTRUCTED WITH ROAD CONSTRUCTION
REMAINING SIDEWALK TO BE CONSTRUCTED WITH HOUSE CONSTRUCTION.

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SHAWN DUKE - ENGINEER
MO PE#2013006489

LEE'S SUMMIT, MO

802 FRANCIS STREET
ST. JOSEPH, MO 64501
816-364-5222

**WHISPERING WOODS 3RD PLAT
STREET & STORM SEWER PLANS**

ROADWAY SIGNAGE PLAN

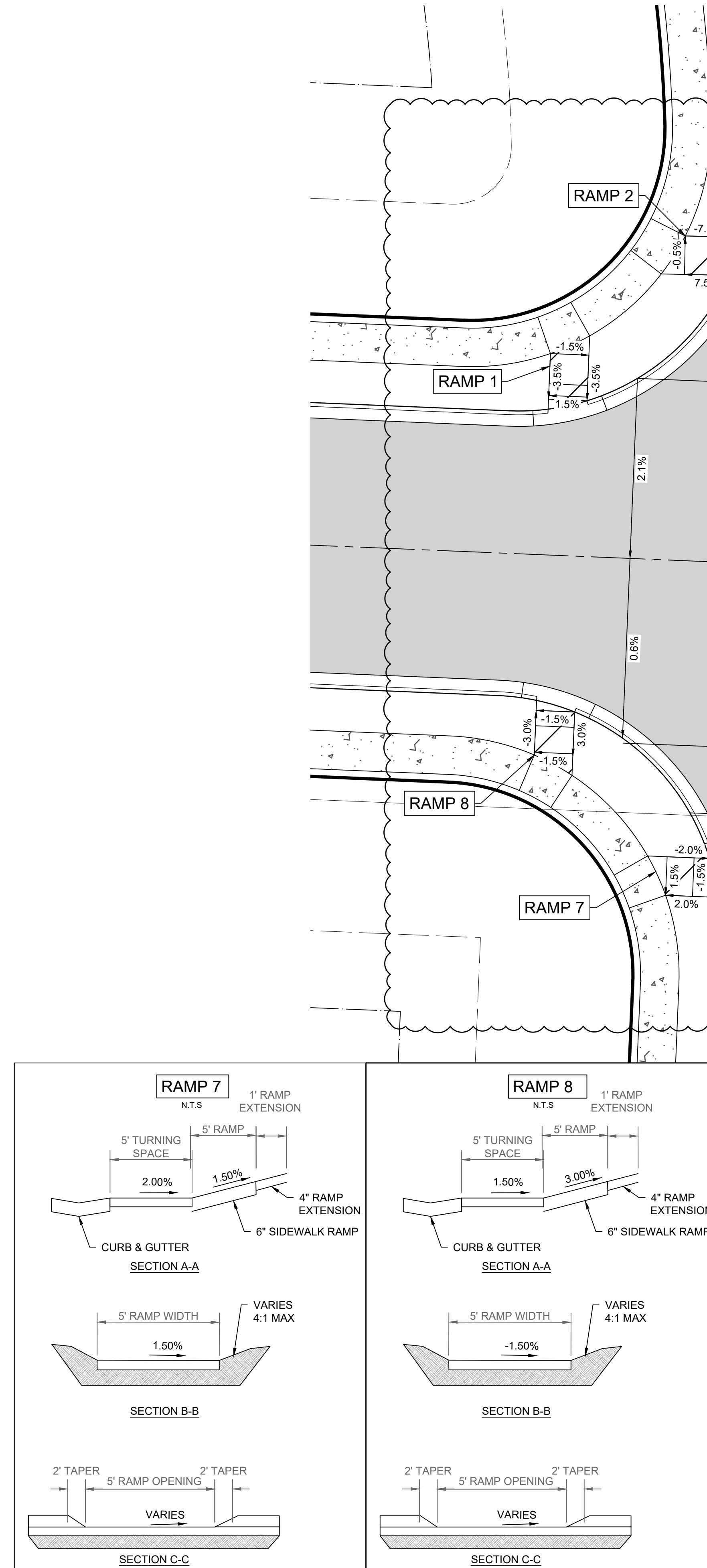
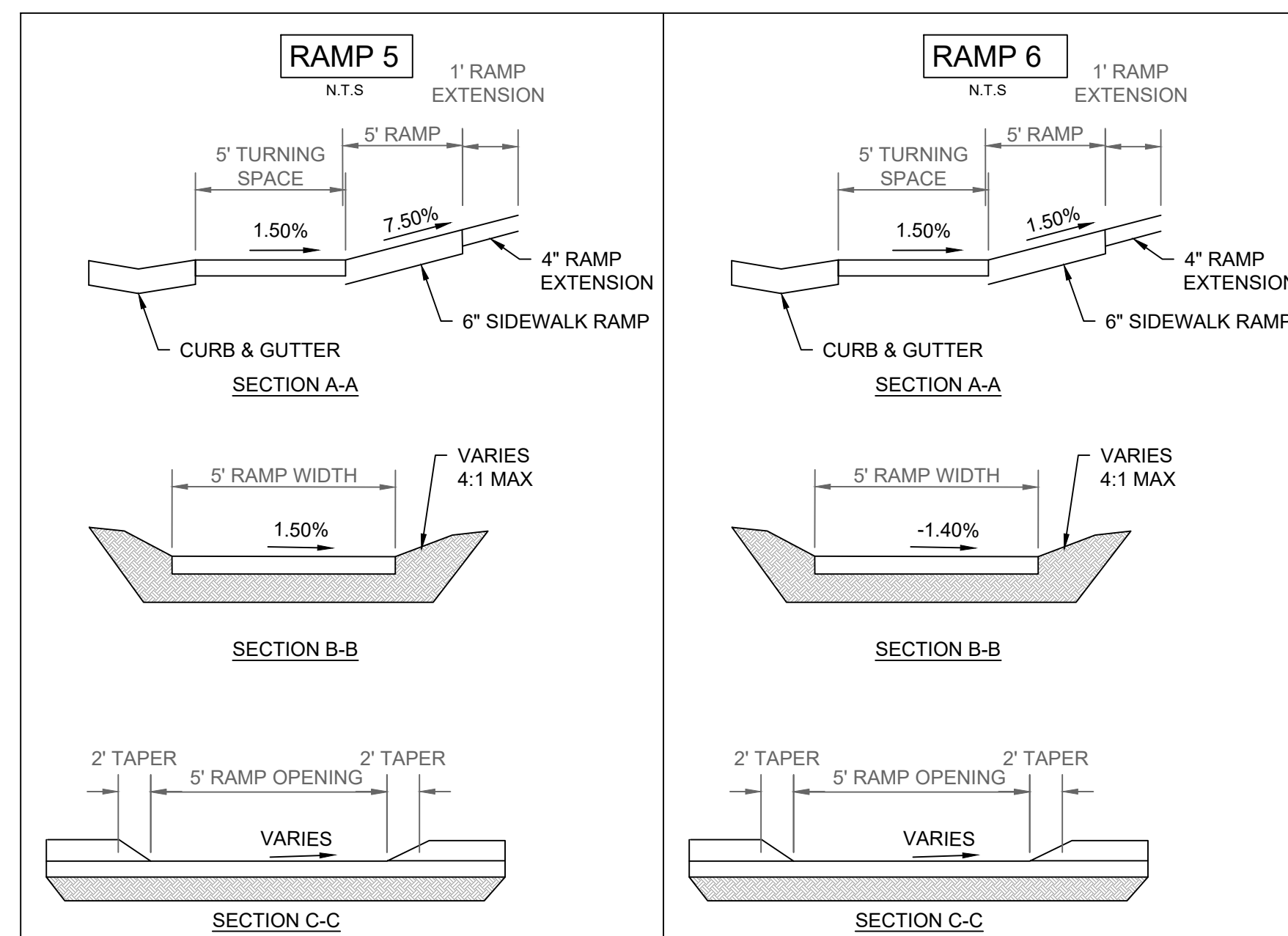
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ENGINEERS & PLANNERS, INC.
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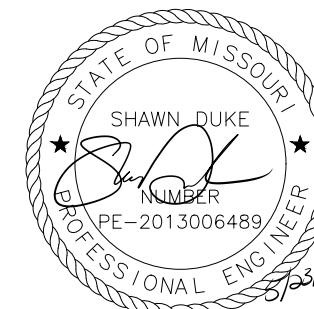
Project No: 1200485.11

Sheet 8

Sheet 9



1	REVISION PER CITY COMMENTS	1/21/25	MT
MARK	REVISION	DATE	BY
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Technician: JS	Date: 3-18-21	Field Bk:	
Snyder & Associates Engineers & Planners, Inc. Missouri State Certificate of Authority #00000554			Sheet 10



SHAWN DUKE - ENGINEER
MO PE#2013006489

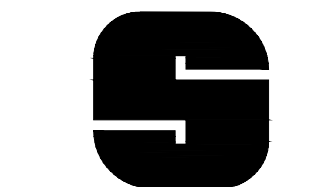
WHISPERING WOODS 3RD PLAT
STREET & STORM SEWER PLANS

INTERSECTION DETAILS

SNYDER & ASSOCIATES
ENGINEERS & PLANNERS, INC.
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LEE'S SUMMIT, MO

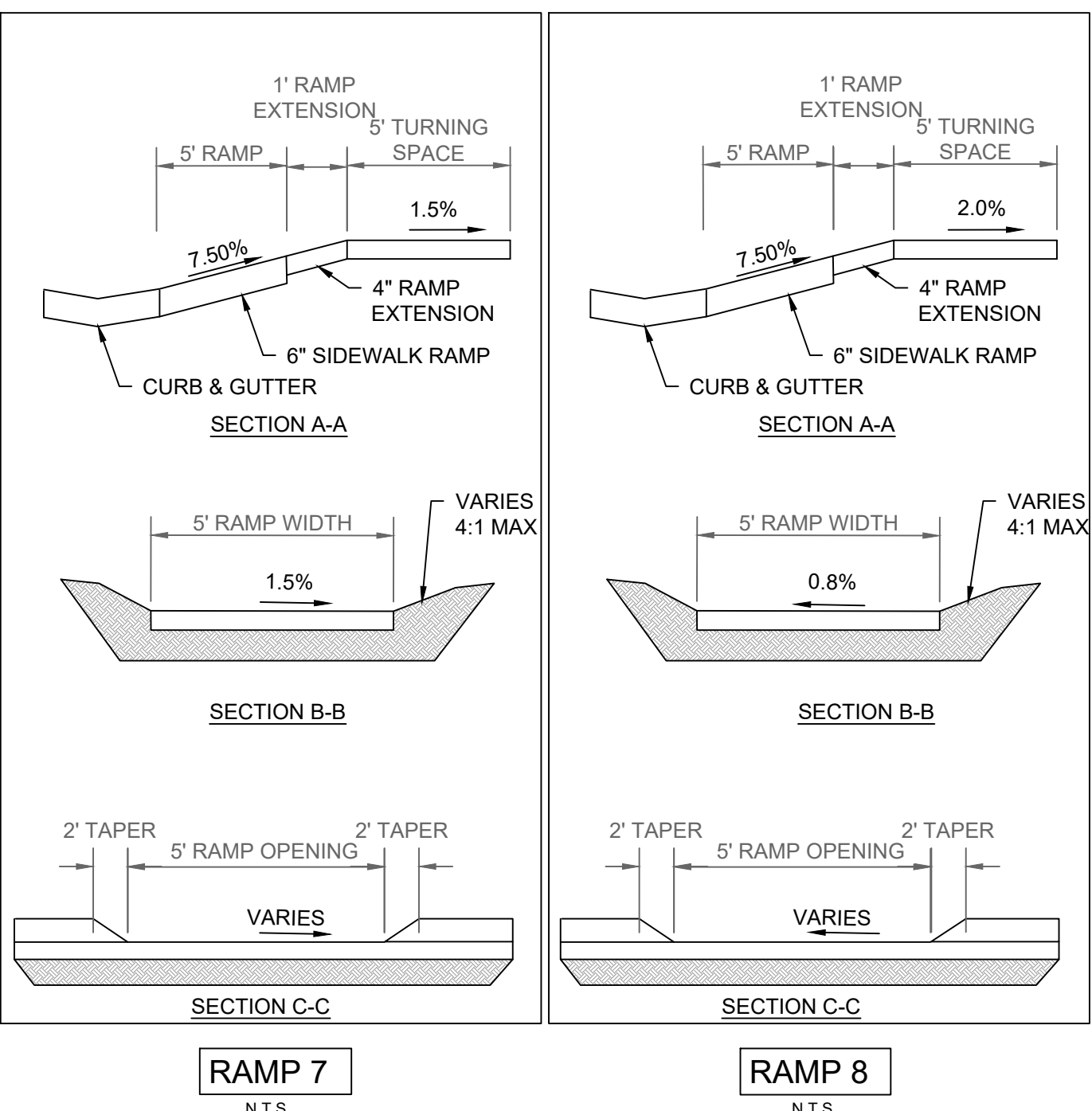
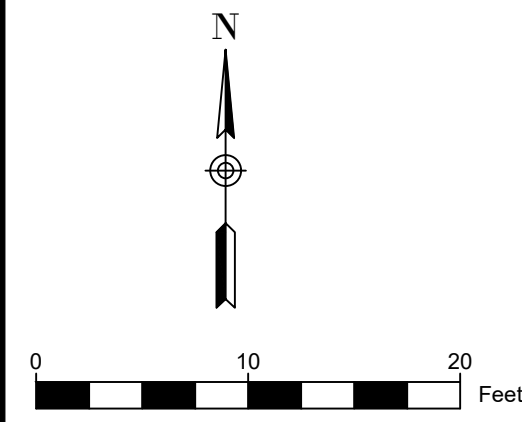
802 FRANCIS STREET
ST. JOSEPH, MO 64501
916-364-5222



SNYDER
& ASSOCIATES

Project No: 1200485.11

Sheet 10



MARK	REVISION	DATE	BY
Engineer: SD	Checked By:	Scale: 1"= 10'	
Technician: JS	Date: 3-18-21	Field Bk: Pg:	
Snyder & Associates Engineers & Planners, Inc. Missouri State Certificate of Authority #20600354			11 Sheet



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MO PE#2013006489

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ST. JOSEPH, MO 64501
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**WHISPERING WOODS 3RD PLAT
STREET & STORM SEWER PLANS**

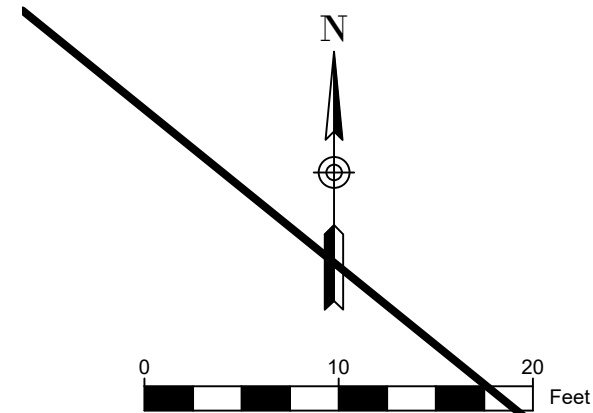
INTERSECTION DETAILS

SNYDER & ASSOCIATES
ENGINEERS & PLANNERS, INC.
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Project No:	1200485.11
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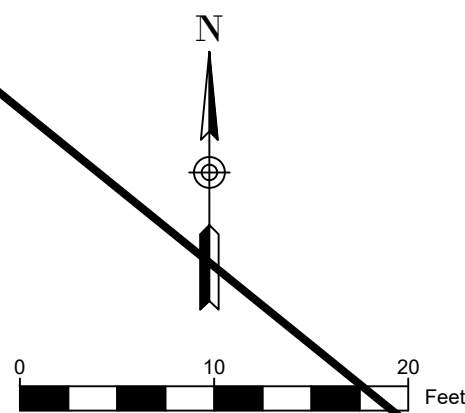
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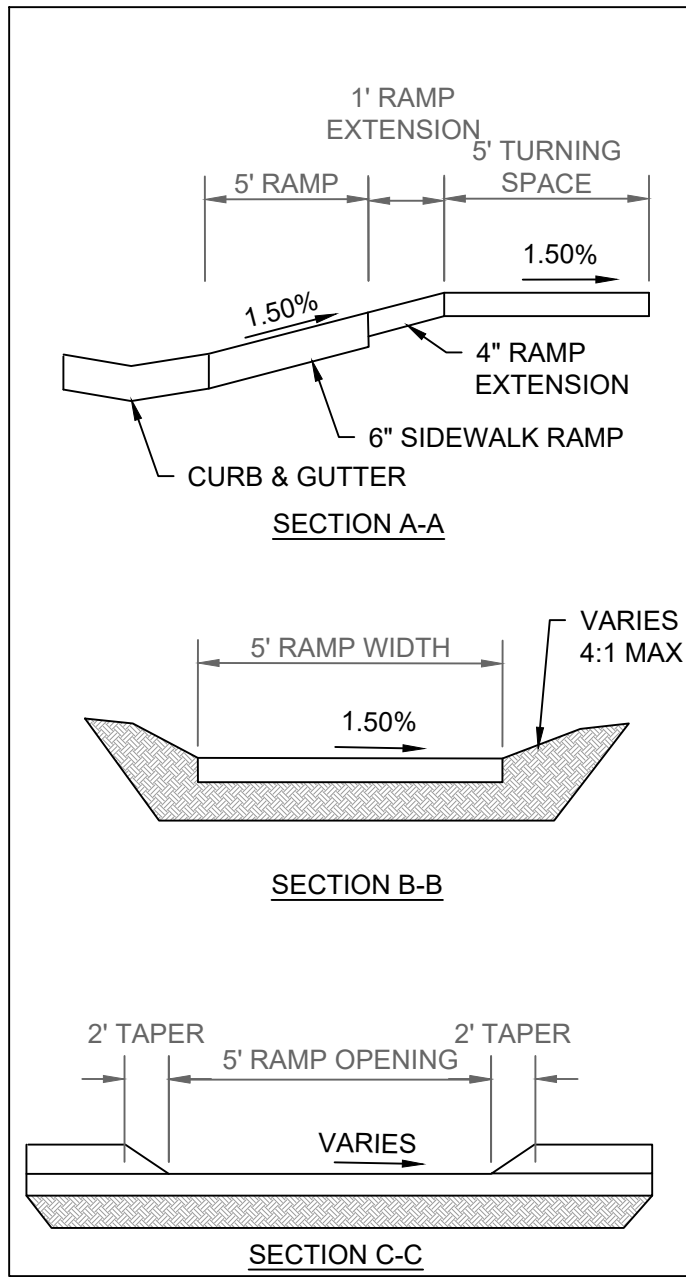
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969.10SW
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SW FERN COURT



RAMP 11

SW FERN COURT



RAMP 11

N.T.S.

MARK	REVISION	DATE	BY
Engineer: SD	Checked By: SD	Scale: 1"= 10'	
Technician: JS	Date: 3-18-21	Field Bk:	Pg:
Snyder & Associates Engineers & Planners, Inc.			Sheet 12
Missouri State Certificate of Authority #200008544			



SHAWN DUKE - ENGINEER
MO PE#2013006489

WHISPERING WOODS 3RD PLAT
STREET & STORM SEWER PLANS

INTERSECTION DETAILS

LEE'S SUMMIT, MO

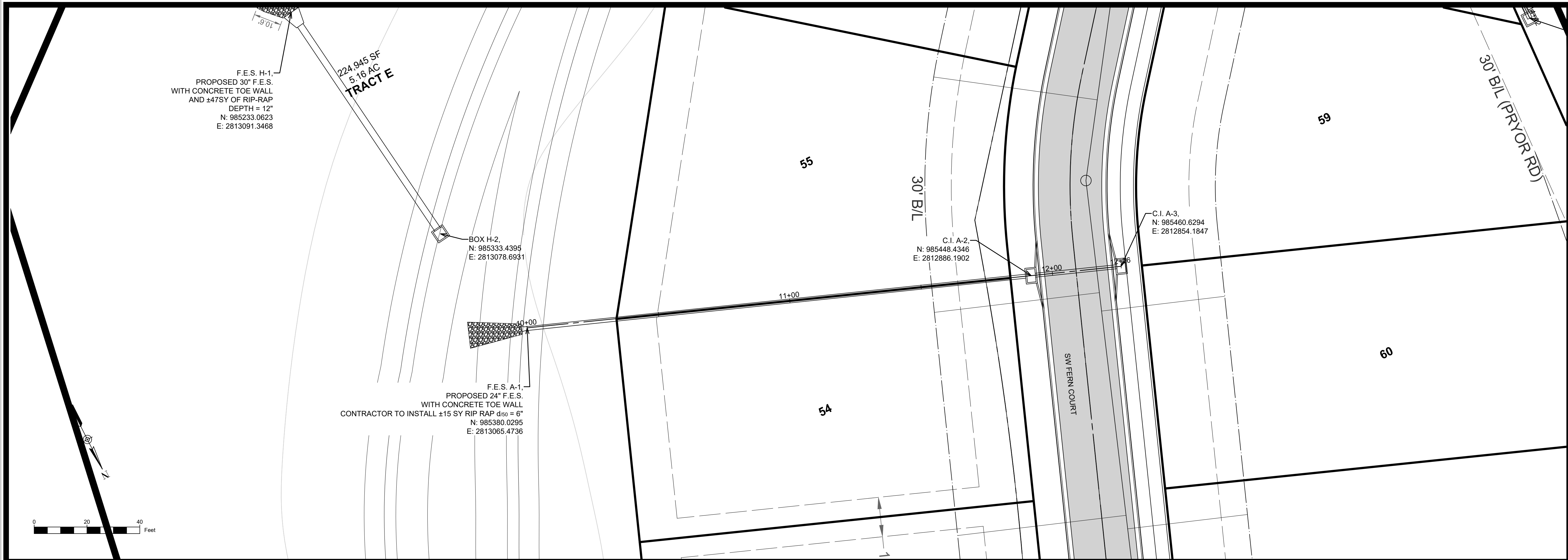
SNYDER & ASSOCIATES
ENGINEERS & PLANNERS, INC.
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802 FRANCIS STREET
ST. JOSEPH, MO 64501
816-364-5222



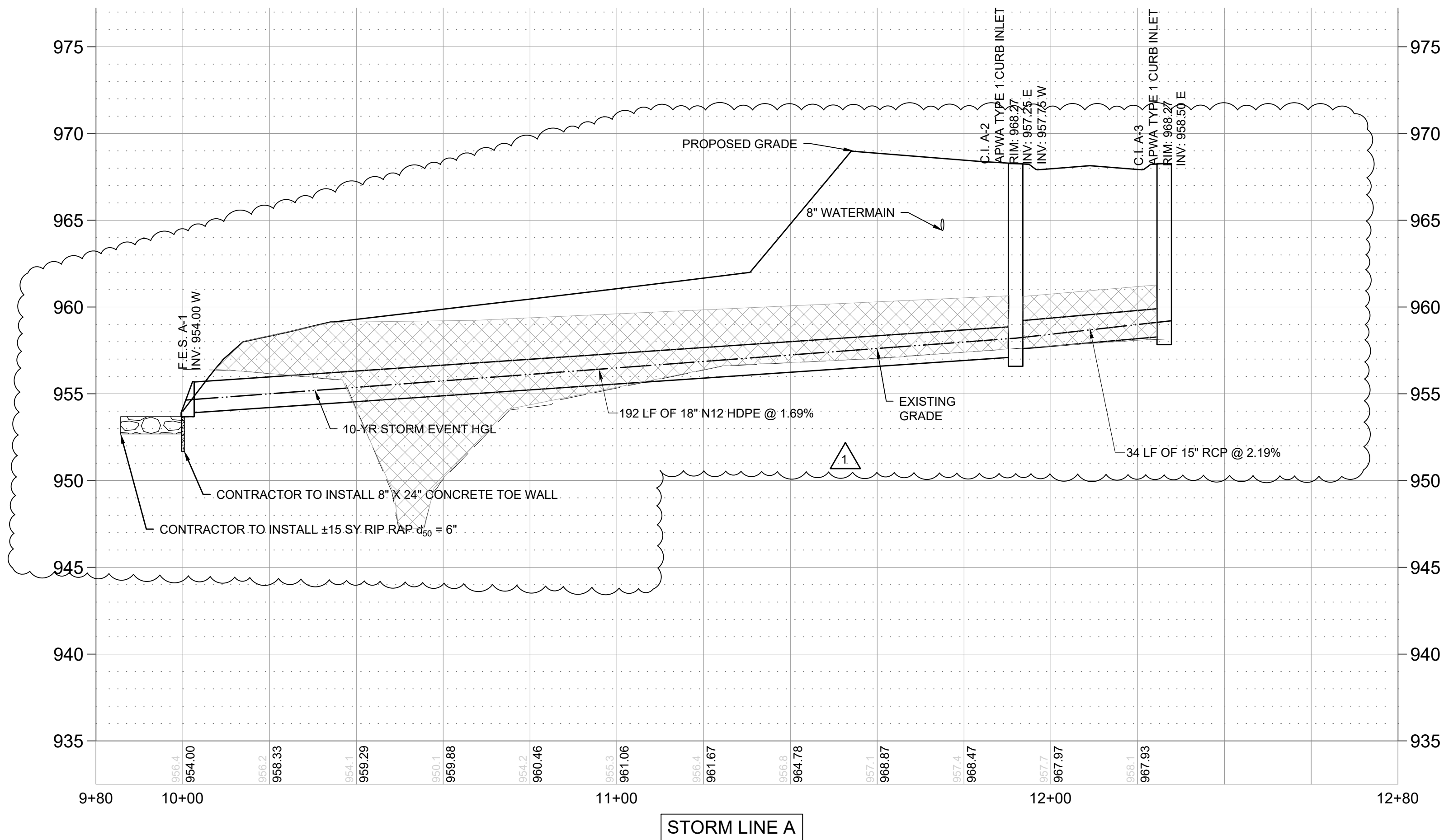
Project No: 1200485.11

Sheet 12



NOTE:
CONTRACTOR SHALL FILL
& COMPACT TO 95%
STANDARD DENSITY TO A
POINT 18" MINIMUM
ABOVE TOP OF PIPE
PRIOR TO EXCAVATION
FOR THE PIPE.

FILL MATERIAL = 



MARK	REVISION	DATE	BY
1	REVISION PER CITY COMMENTS	1/21/25	MT
Engineer:	SD	Checked By:	SD
Technician:	JS	Date:	3-18-21
Scale:	1"= 20'	Field Bk:	
Pg:			
Snyder & Associates Engineers & Planners, Inc.			Sheet
Missouri State Certificate of Authority #20000854			13



SHAWN DUKE - ENGINEER
MO PE#2013006489

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ST. JOSEPH, MO 64501
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WHISPERING WOODS 3RD PLAT
STREET & STORM SEWER PLANS

STORM PLAN & PROFILE

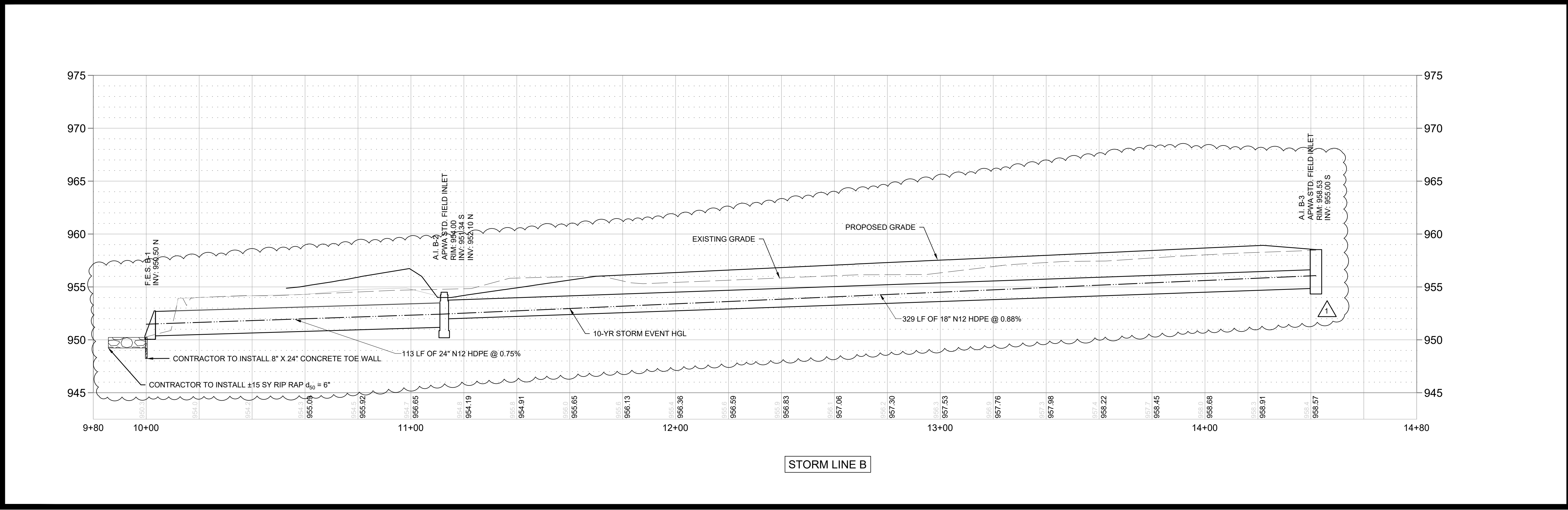
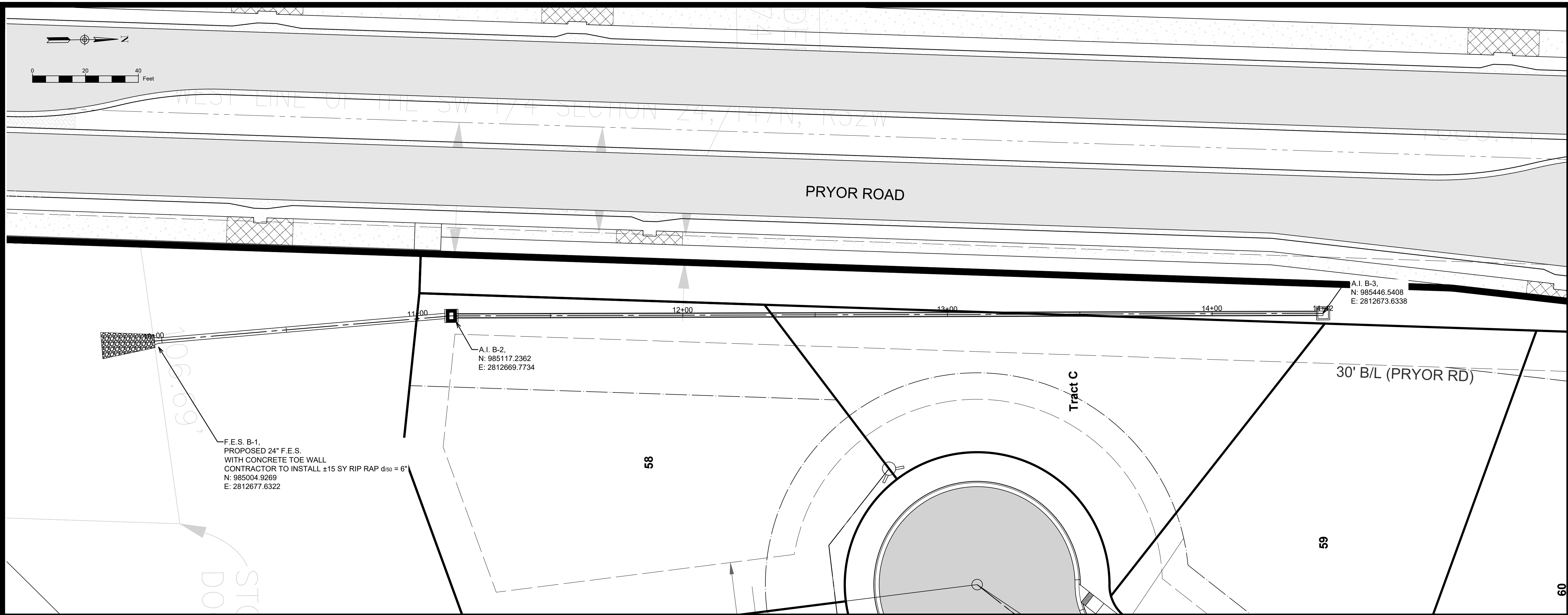
SNYDER & ASSOCIATES
ENGINEERS & PLANNERS, INC.

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Project No: 1200485.11

Sheet 13



1

REVISION PER CITY COMMENTS

1/21/25

MT

MARK

REVISION

DATE

BY

Engineer: SD

Checked By: SD

Date: 3-18-21

Scale: 1"= 20'

Technician: JS

Field Bk:

Pg:

SHAWN DUKE

PROFESSIONAL ENGINEER

MO PE#2013006489

SHAWN DUKE - ENGINEER

MO PE#2013006489

LEE'S SUMMIT, MO

802 FRANCIS STREET

ST. JOSEPH, MO 64501

816-364-5222

WHISPERING WOODS 3RD PLAT

STREET & STORM SEWER PLANS

STORM PLAN & PROFILE

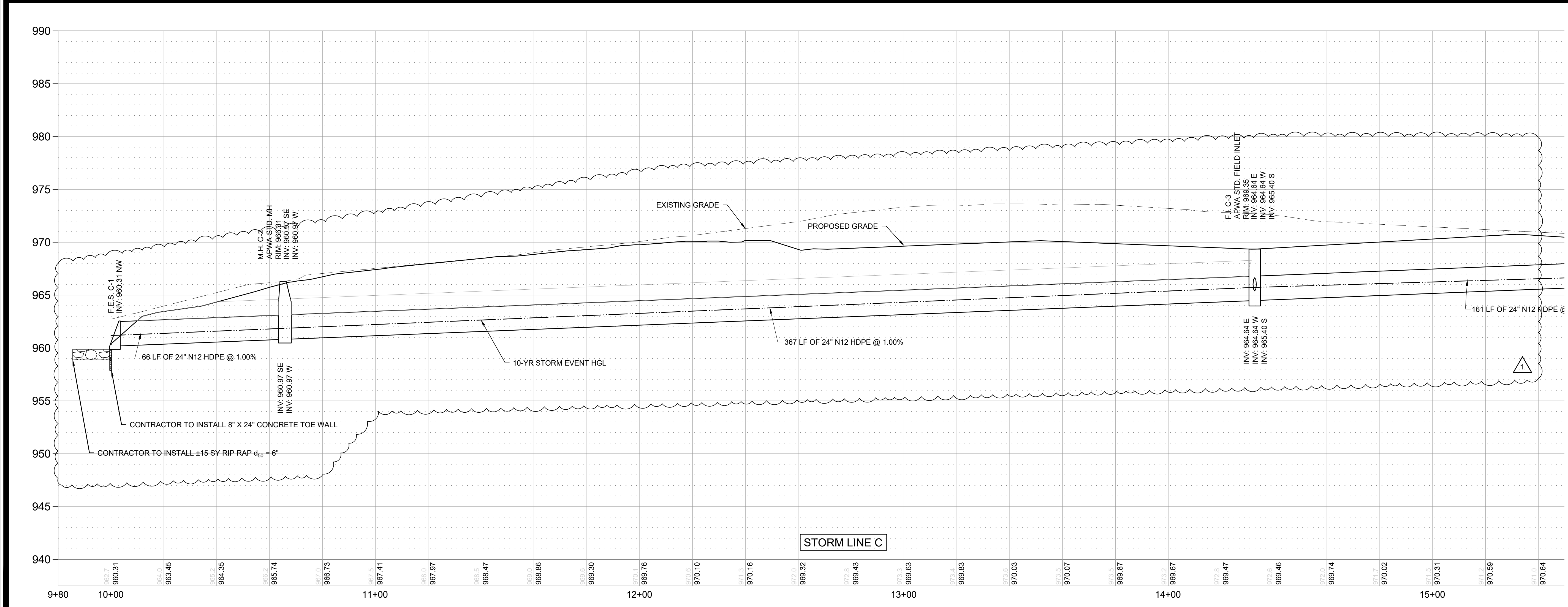
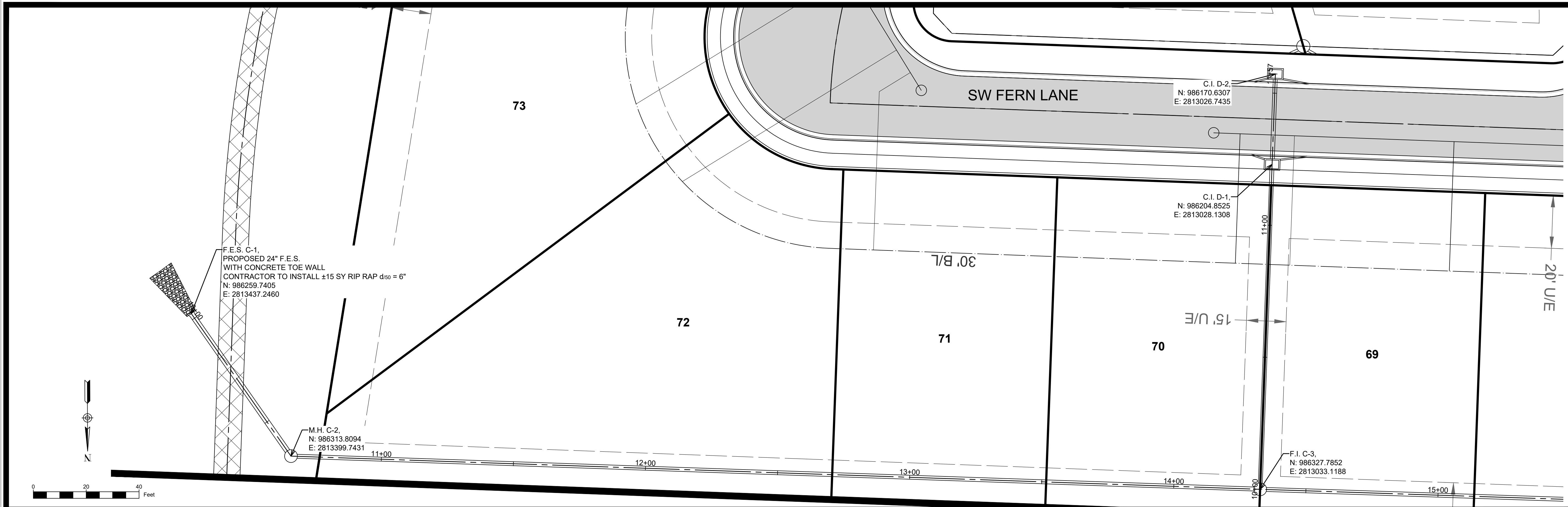
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Project No: 1200485.11

Sheet 14



REVISION PER CITY COMMENTS		DATE	BY
1		1/21/25	MT

MARK	REVISION	DATE	BY
1		1/21/25	MT

Engineer	Checked By	Scale	Field Bk.	Pg.
JS	SD	1"= 20'		

Technician	Date	Field Bk.	Pg.
JS	3-18-21		

SHAWN DUKE - ENGINEER
MO PE#2013006489

SHAWN DUKE
PE-2013006489
PROFESSIONAL ENGINEER

SHAWNS DUKES
ENGINEERS & PLANNERS, INC.
MISSOURI STATE CERTIFICATE OF AUTHORITY #2000008544

Sheet 15

Project No: 1200485.11

Sheet 15

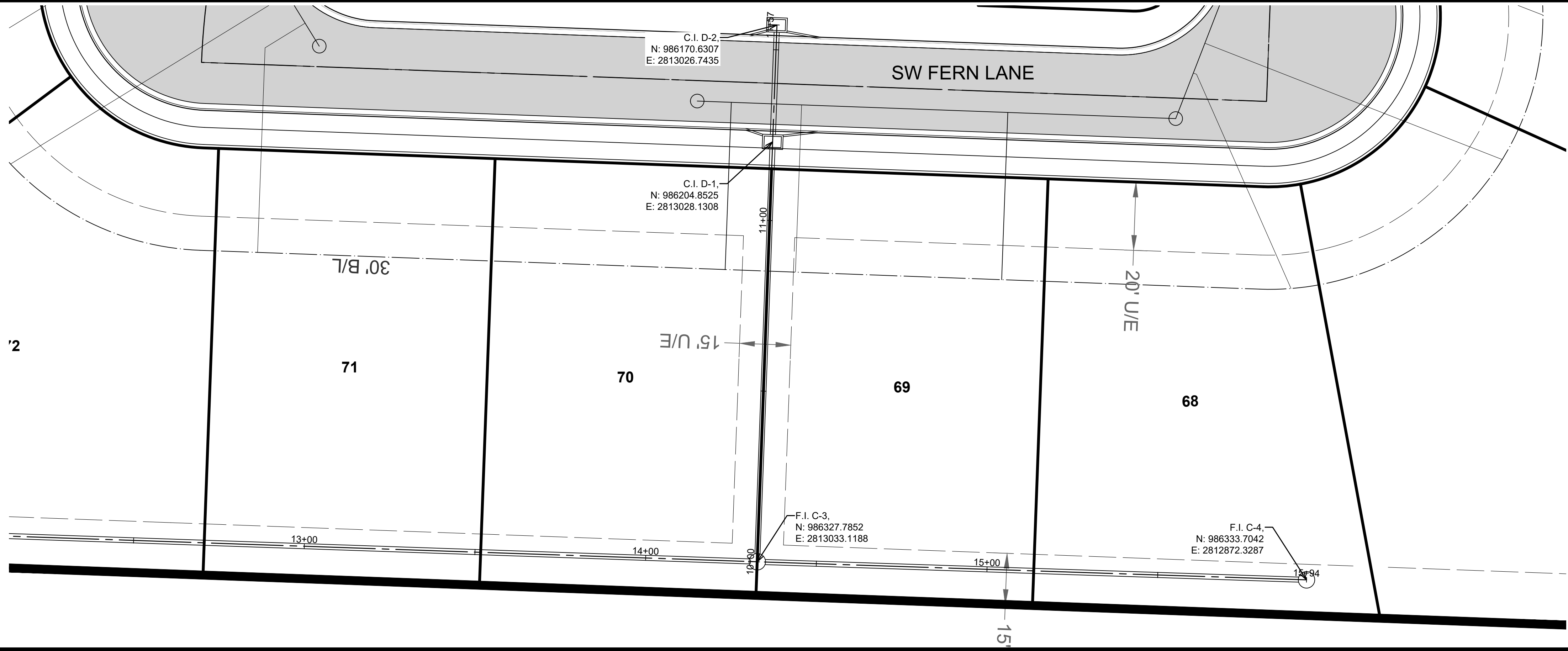
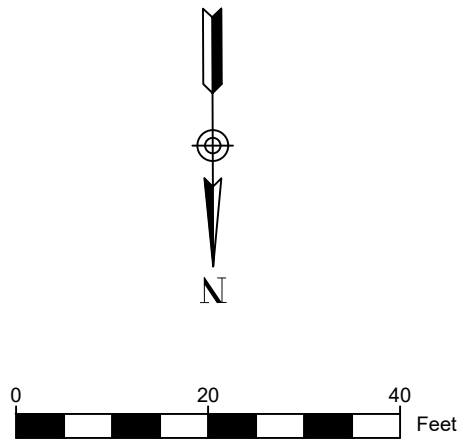
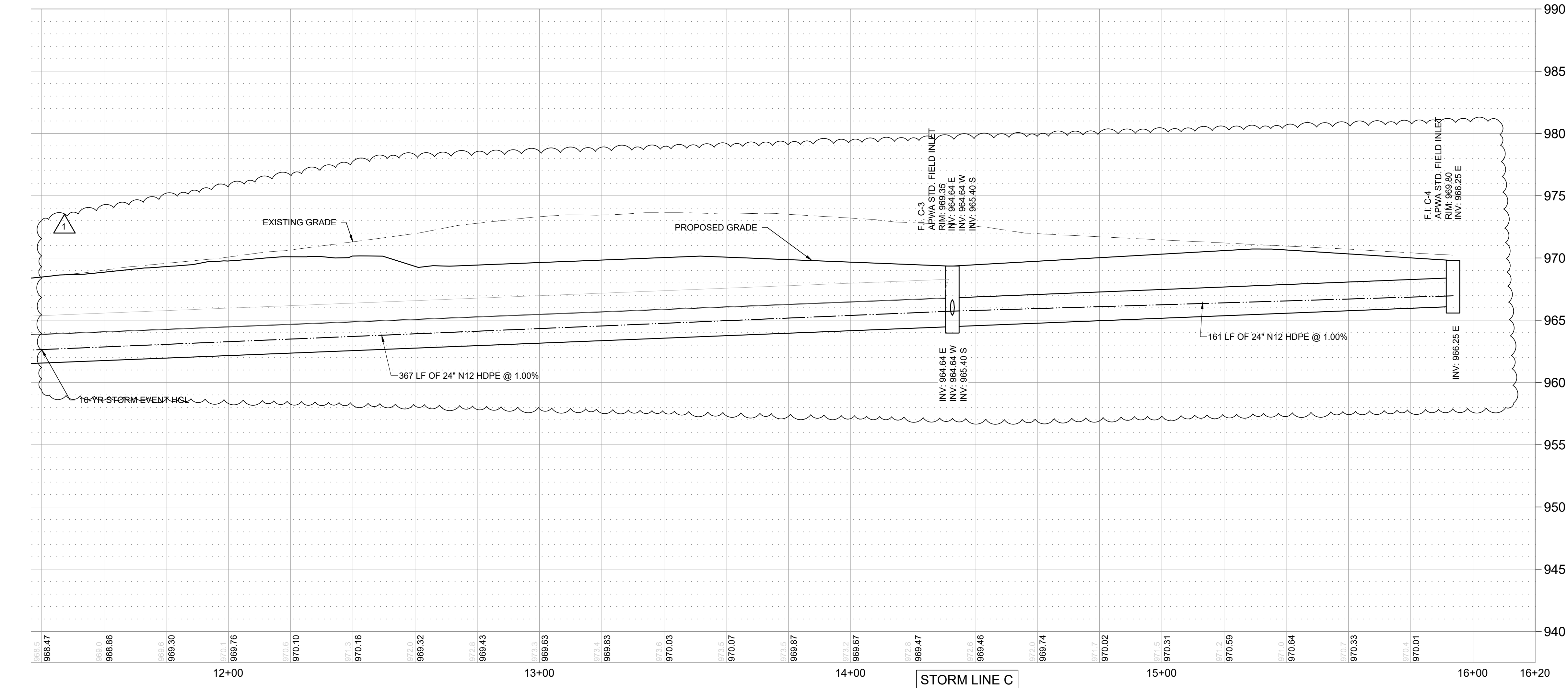
STORM PLAN & PROFILE

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WHISPERING WOODS 3RD PLAT
STREET & STORM SEWER PLANS

STORM PLAN & PROFILE

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Project No: 1200485.11

Sheet 16

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SHAWN DUKE - ENGINEER
MO PE#2013006489



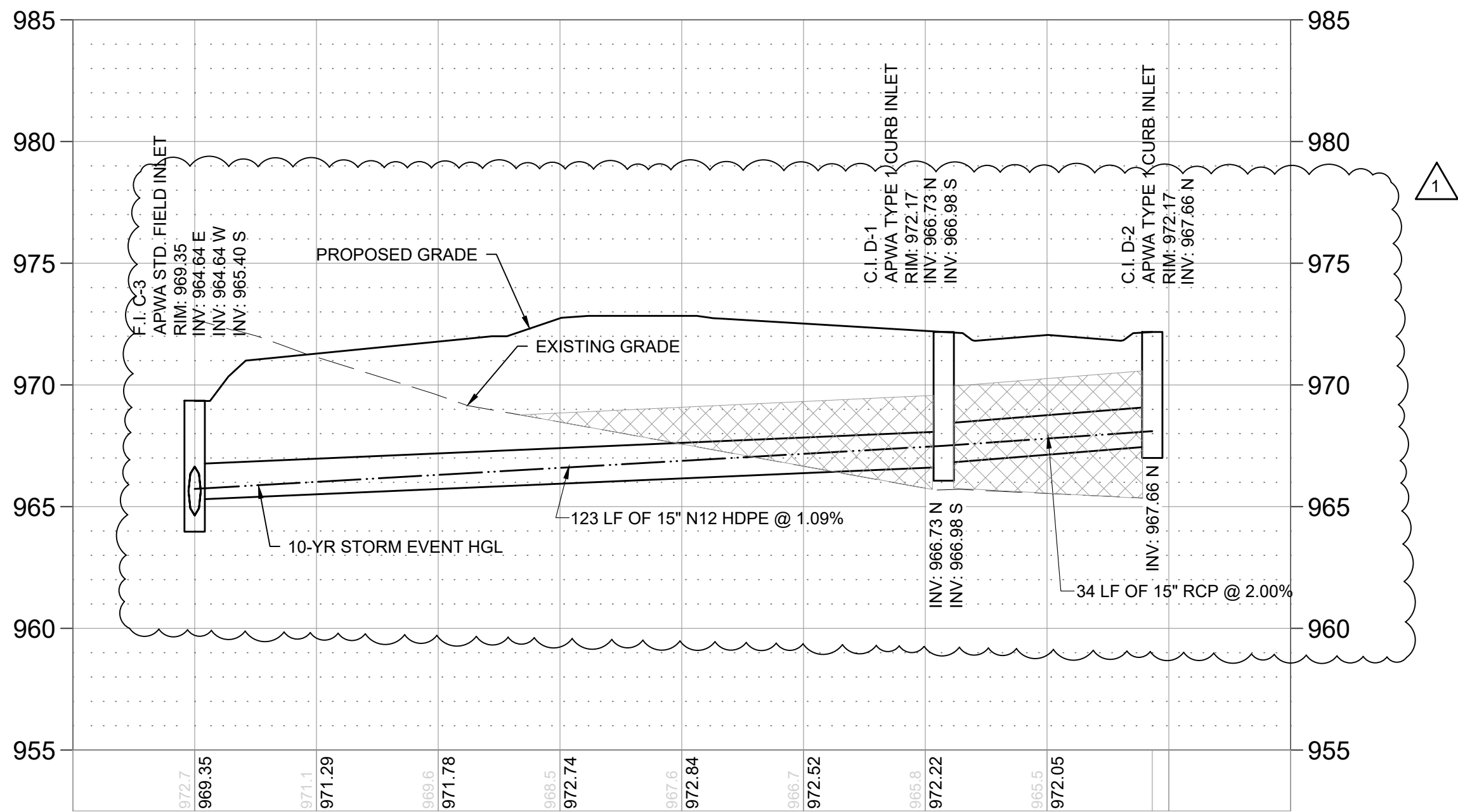
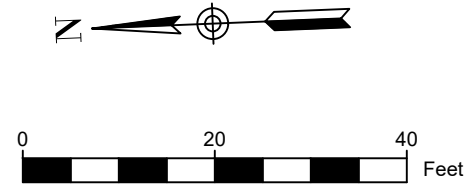
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Engineer: SD	Checked By: SD	Scale: 1"= 20'	
Technician: JS	Date: 3-18-21	Field Bk:	Pg:

Snyder & Associates Engineers & Planners, Inc.
Missouri State Certificate of Authority #200008544

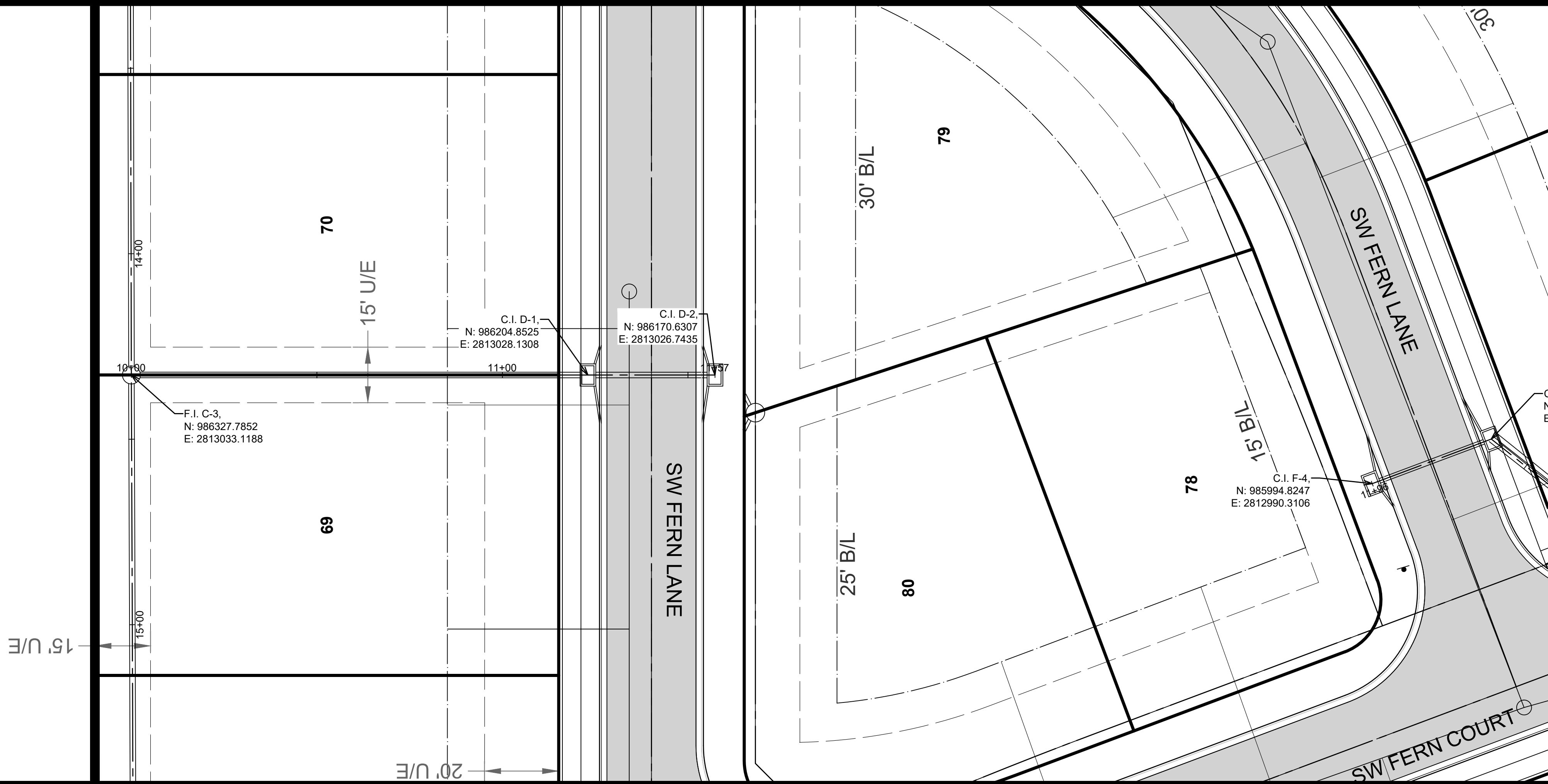
Sheet 16

NOTE:
CONTRACTOR SHALL FILL
& COMPACT TO 95%
STANDARD DENSITY TO A
POINT 18" MINIMUM
ABOVE TOP OF PIPE
PRIOR TO EXCAVATION
FOR THE PIPE.

FILL MATERIAL = 



STORM LINE D



Project No: 1200485.11

Sheet 17

WHISPERING WOODS 3RD PLAT
STREET & STORM SEWER PLANS

STORM PLAN & PROFILE

LEE'S SUMMIT, MO

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ENGINEERS & PLANNERS, INC.
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ST. JOSEPH, MO 64501
816-364-5222

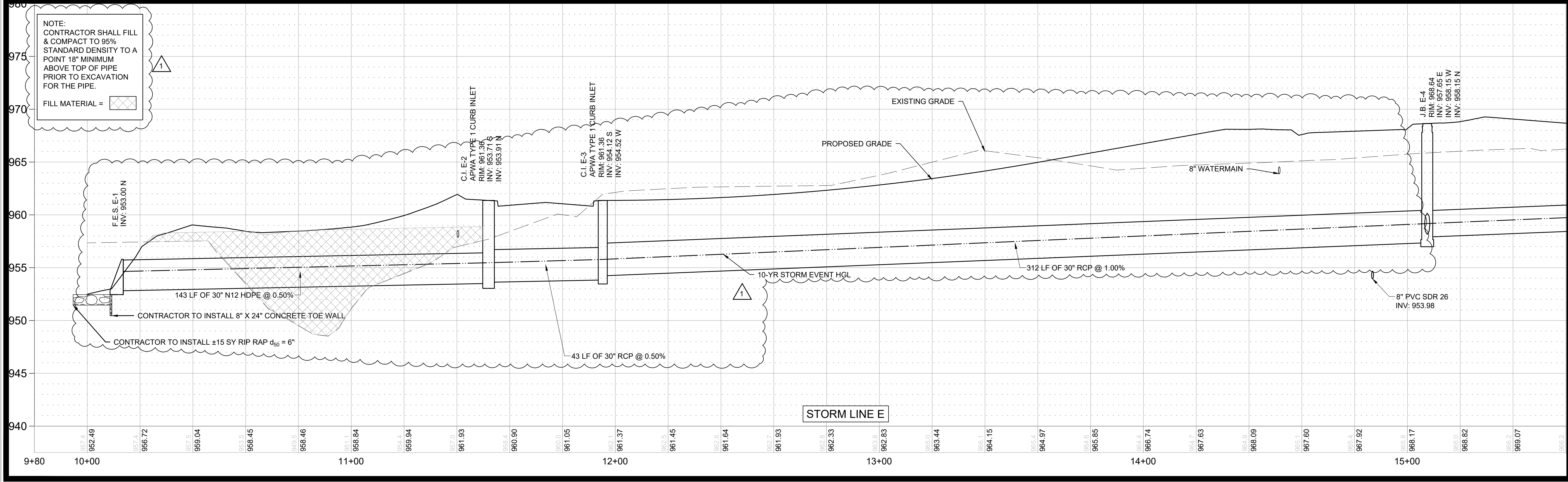
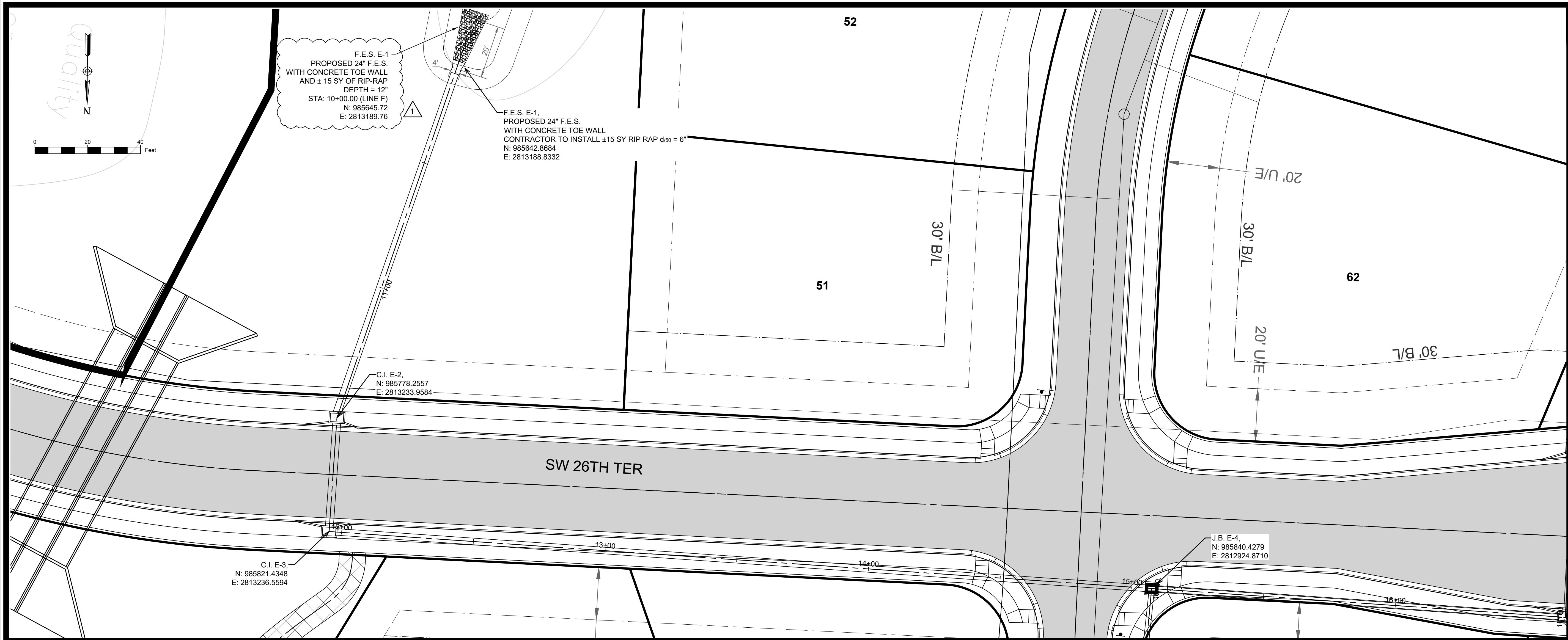


SHAWN DUKE - ENGINEER
MO PE#2013006489

MARK	REVISION	DATE	BY
1	REVISION PER CITY COMMENTS	1/21/25	MT
Engineer:	SD	Checked By: SD	Scale: 1"= 20'
Technician:	JS	Date: 3-18-21	Field Bk: Pg:

Snyder & Associates Engineers & Planners, Inc.
Missouri State Certificate of Authority #200008544

Sheet 17



MARK	REVISION PER CITY COMMENTS	DATE	BY
1		1/21/25	MT

Engineer:	Checked By:	Scale:	Field Bk:	Pg:
JS	SD	1"= 20'	3-18-21	18

Shawm Duke
Professional Engineer
Missouri State Certificate of Authority #200006489

SHAWN DUKE - ENGINEER
MO PE#2013006489

LEE'S SUMMIT, MO

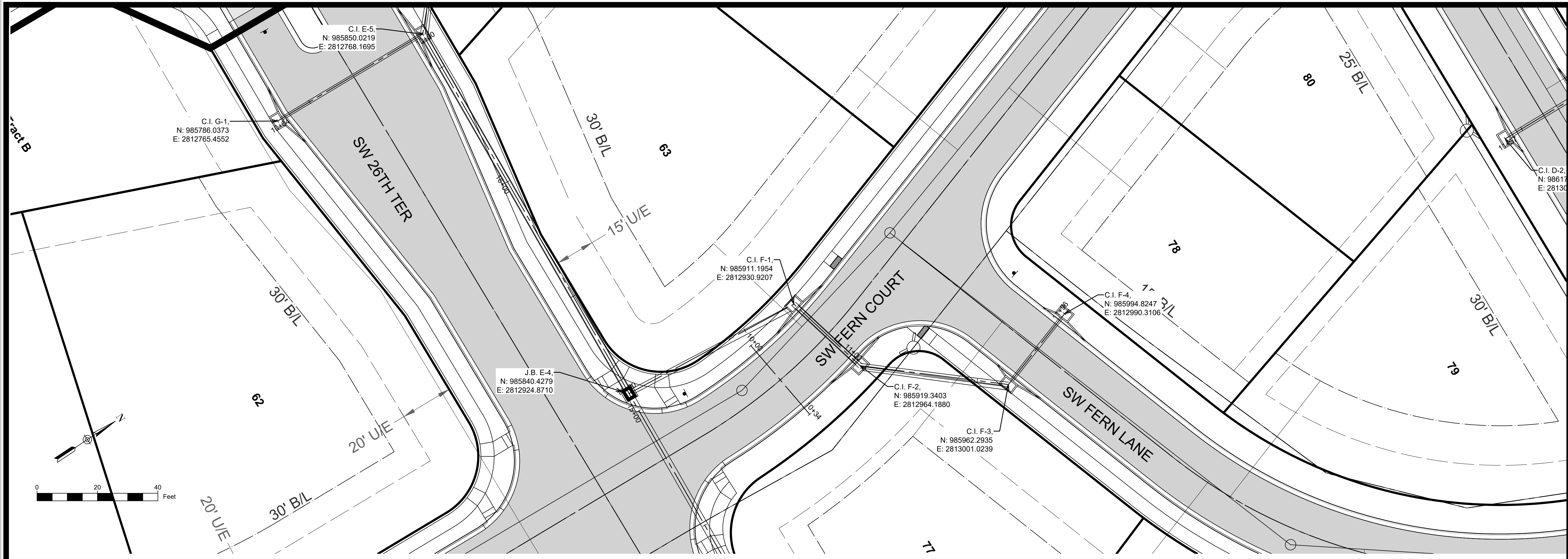
802 FRANCIS STREET
ST. JOSEPH, MO 64501
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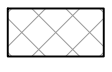
SNYDER & ASSOCIATES
ENGINEERS & PLANNERS, INC.

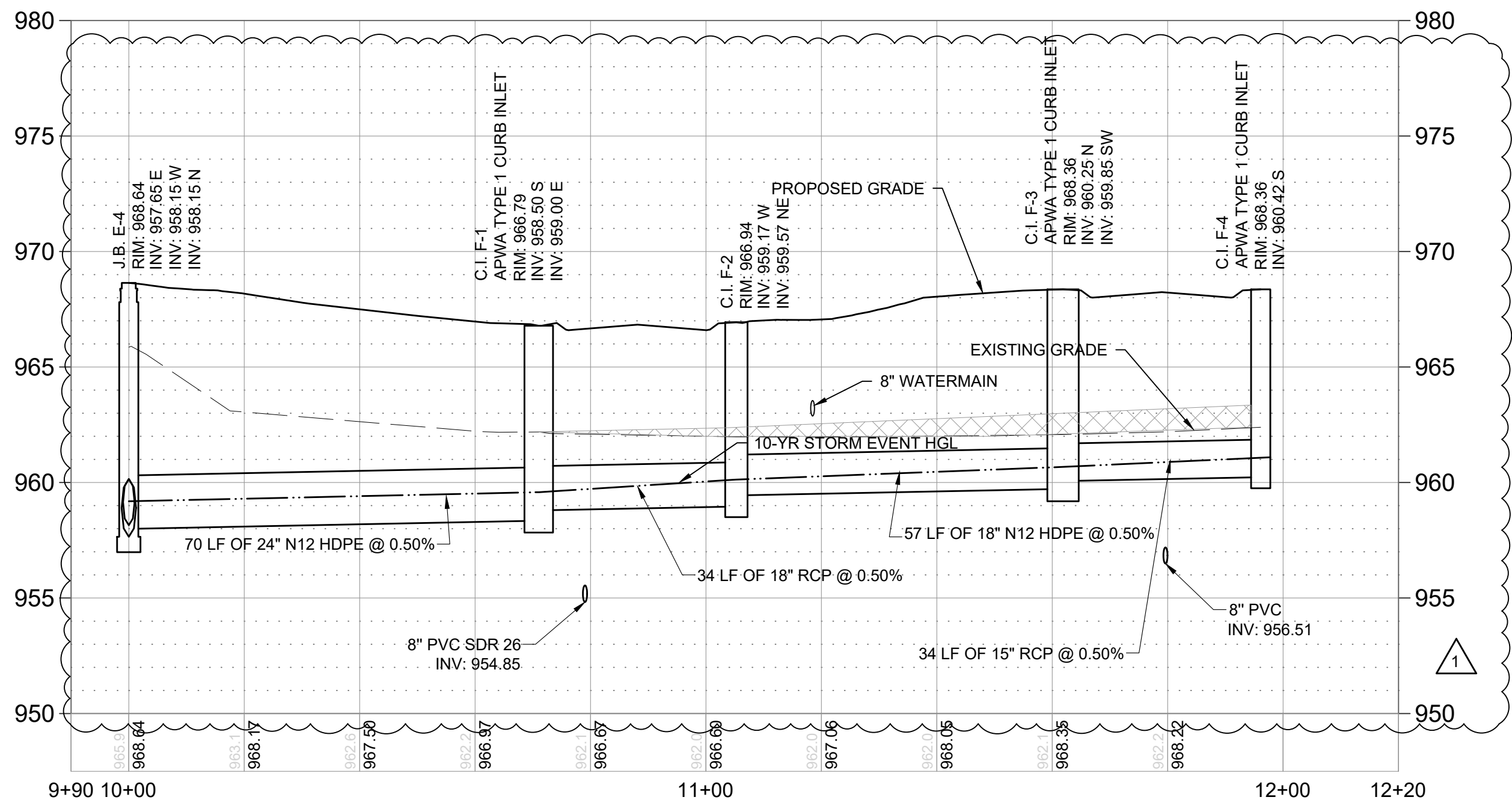
Project No: 1200485.11

Sheet 18



NOTE:
CONTRACTOR SHALL FILL
& COMPACT TO 95%
STANDARD DENSITY TO A
POINT 18" MINIMUM
ABOVE TOP OF PIPE
PRIOR TO EXCAVATION
FOR THE PIPE.

FILL MATERIAL = 



STORM LINE E

MT	REVISION PER CITY COMMENTS	1/21/25	MT
MARK	REVISION	DATE	BY
Engineer:	SD	Checked By:	SD
Technician:	JS	Date:	3-18-21
		Field Bk:	Pg:
			20

SHAWN DUKE - ENGINEER
MO PE#2013006489

SHAWN DUKE
NUNGER
PE-2013006489
PROFESSIONAL ENGINEER

WHISPERING WOODS 3RD PLAT
STREET & STORM SEWER PLANS

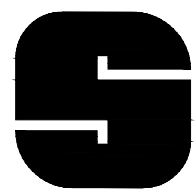
STORM PLAN & PROFILE

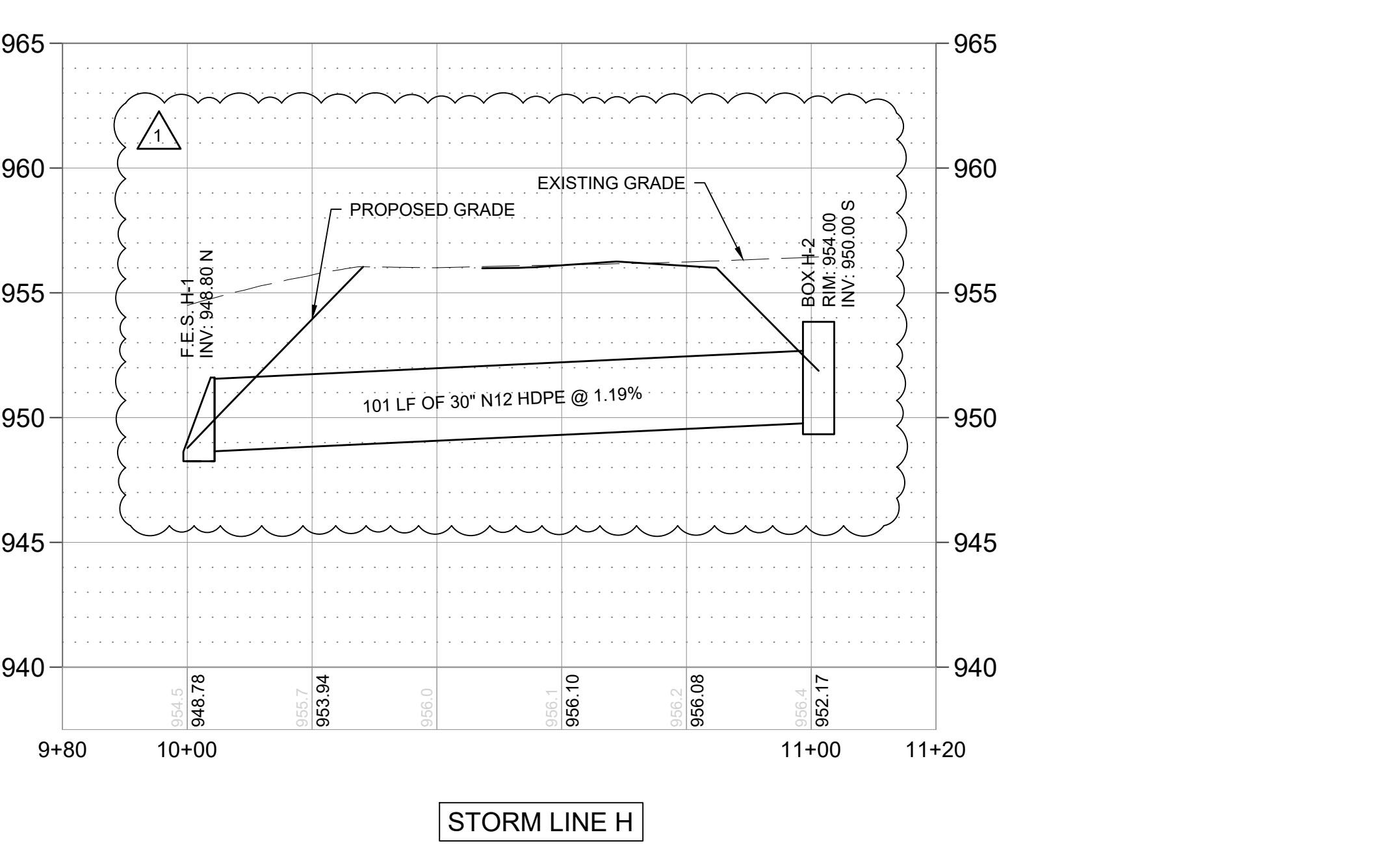
LEE'S SUMMIT, MO

802 FRANCIS STREET
ST. JOSEPH, MO 64501
816-364-5222

SNYDER & ASSOCIATES
ENGINEERS & PLANNERS, INC.

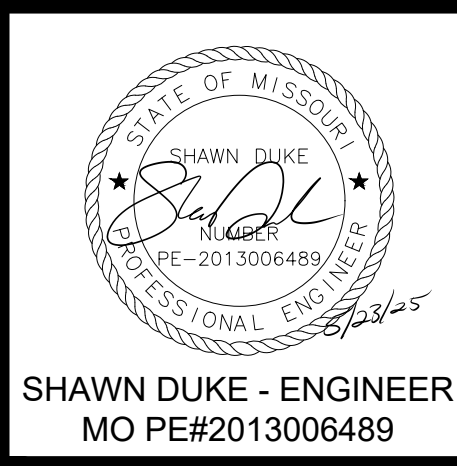
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& ASSOCIATES



NOTE:
CONTRACTOR SHALL FILL
& COMPACT TO 95%
STANDARD DENSITY TO A
POINT 18" MINIMUM
ABOVE TOP OF PIPE
PRIOR TO EXCAVATION
FOR THE PIPE.

FILL MATERIAL = 

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802 FRANCIS STREET
ST. JOSEPH, MO 64501
816-364-5222

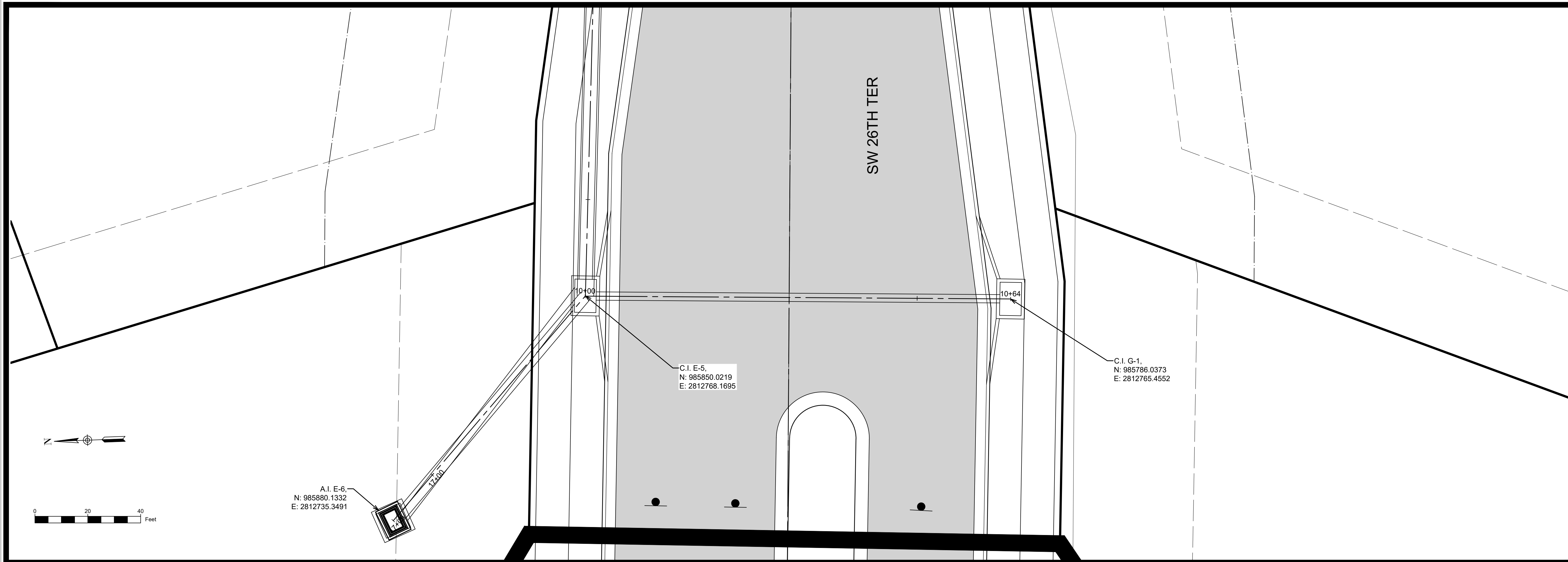
WHISPERING WOODS 3RD PLAT
STREET & STORM SEWER PLANS

STORM PLAN & PROFILE

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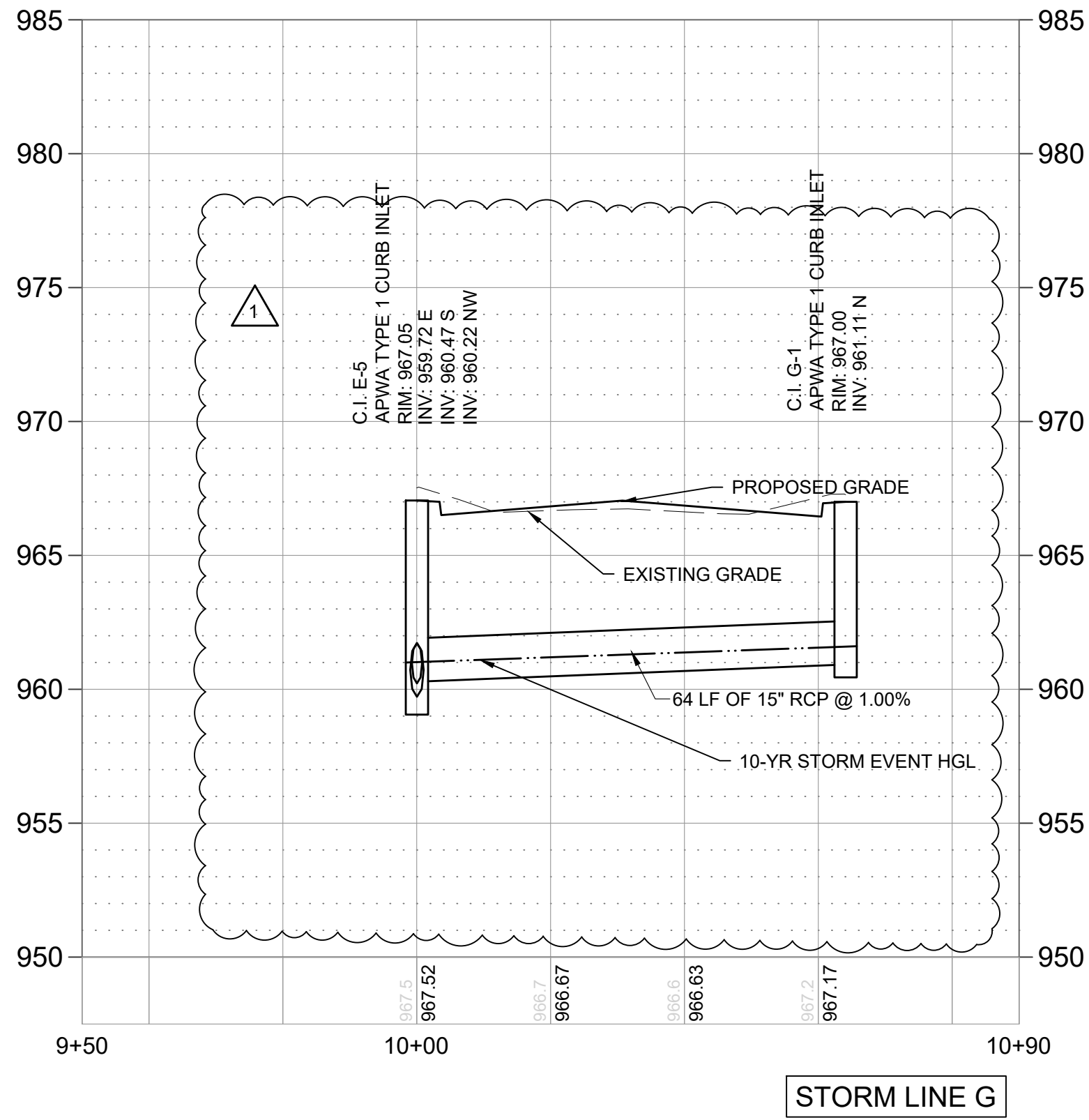


Project No:	1200485.11
Sheet	21



NOTE:
CONTRACTOR SHALL FILL
& COMPACT TO 95%
STANDARD DENSITY TO A
POINT 18" MINIMUM
ABOVE TOP OF PIPE
PRIOR TO EXCAVATION
FOR THE PIPE.

FILL MATERIAL =



REVISION PER CITY COMMENTS		DATE	BY
1	MARK	1/21/25	MT
REVISION		DATE	BY
Engineer:	SD	Checked By: SD	Scale: 1"= 20'
Technician:	JS	Date: 3-18-21	Field Bk: Pg:
Snyder & Associates Engineers & Planners, Inc. Missouri State Certificate of Authority #200008544			Sheet 22

SHAWN DUKE - ENGINEER
MO PE#2013006489

WHISPERING WOODS 3RD PLAT
STREET & STORM SEWER PLANS

STORM PLAN & PROFILE

LEE'S SUMMIT, MO

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MARK	REVISION	DATE	BY
Engineer: SD	Checked By: SD	11-6-20	
Technician: JS	Date: 3-18-20	Field Bk:	Pg:
Snyder & Associates Engineers & Planners, Inc.			Sheet 23
Missouri State Certificate of Authority #200008544			



SHAWN DUKE - ENGINEER
MO PE#2013006489

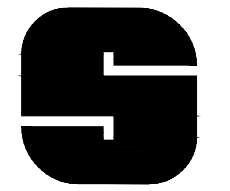
WHISPERING WOODS 3RD PLAT
STREET & STORM SEWER PLANS

DRAINAGE AREAS

LEE'S SUMMIT, MO

802 FRANCIS STREET
ST. JOSEPH, MO 64501
816-364-5222
www.snyder-associates.com

SNYDER & ASSOCIATES
ENGINEERS & PLANNERS, INC.



SNYDER & ASSOCIATES

10 YEAR STORM

Start Node	Stop Node	Length (User Defined) (ft)	Slope (Calculated) (ft/ft)	System Intensity (in/h)	System Drainage Area (acres)	Invert (Start) (ft)	Invert (Stop) (ft)	Hydraulic Grade Line (In)(ft)	Hydraulic Grade Line (Out)(ft)	Section Type	Diameter (in)	Manning's n	Flow (cfs)	Velocity (ft/s)	Capacity (Full Flow) (cfs)	Flow / Capacity (Design) (%)
Q A-3	Q A-2	34	0.022	7.392	0.62	958.5	957.75	959.17	958.22	Circle	15	0.013	2.82	6.8	9.59	29.4
Q A-2	FESA-1	192	0.017	9.32	1.3	957.25	954	958.18	954.66	Circle	18	0.012	5.86	7.89	14.8	39.6
AI B-3	MHB-2	329	0.009	7.4	1.91	955	952.1	956.07	953.1	Circle	18	0.013	7.69	6.17	9.86	77.9
MHB-2	FESB-1	113	0.007	7.052	2.46	951.34	950.5	952.44	951.48	Circle	24	0.013	9.44	6.16	19.5	48.4
FI C-4	FI C-3	161	0.01	7.4	1.08	966.25	964.64	966.96	965.73	Circle	24	0.013	4.1	5.47	22.62	18.1
FI C-3	MHC-2	367	0.01	7.208	2.35	964.64	960.97	965.73	961.86	Circle	24	0.013	9.29	6.85	22.62	41.1
MHC-2	FESC-1	66	0.01	6.911	2.35	960.97	960.31	962.04	961.18	Circle	24	0.013	8.91	6.77	22.62	39.4
Q D-2	Q D-1	34	0.02	7.4	0.25	967.66	966.98	968.1	967.5	Circle	15	0.013	1.25	5.21	9.14	13.7
Q D-1	FI C-3	123	0.011	7.357	0.8	966.73	965.4	967.5	966.05	Circle	15	0.013	3.61	5.57	6.72	53.7
AI E-6	Q E-5	44	0.006	7.4	1.87	960.5	960.22	961.56	961.26	Circle	18	0.012	7.52	5.74	9.08	82.9
JB E-4	Q E-5	157	-0.01	7.313	2.59	958.15	959.72	960.92	959.14	Circle	24	0.013	11.15	7.17	22.62	49.3
JB E-4	Q E-3	312	0.01	7.119	4.45	957.65	954.52	959.13	955.71	Circle	30	0.013	18.92	8.2	41.08	46.1
Q E-3	Q E-2	43	0.005	6.919	5.29	954.12	953.91	955.77	955.51	Circle	30	0.013	22.14	6.44	28.66	77.2
Q E-2	FESE-1	143	0.005	6.892	5.86	953.71	953	955.41	954.68	Circle	30	0.012	24.9	7.08	31.31	79.5
Q F-3	Q F-4	34	-0.005	7.4	0.5	960.25	960.42	961.01	960.82	Circle	15	0.013	2.05	3.62	4.57	44.9
Q F-2	Q F-3	57	-0.005	7.339	0.95	959.57	959.85	960.65	960.34	Circle	18	0.013	4.06	4.27	7.36	55.2
Q F-2	Q F-1	34	0.005	7.251	1.31	959.17	959	960.16	959.93	Circle	18	0.013	5.77	4.64	7.43	77.6
JB E-4	Q F-1	70	-0.005	7.204	1.86	958.15	958.5	959.52	959.12	Circle	24	0.012	8.16	5.43	17.33	47.1
Q G-1	Q E-5	64	0.01	7.4	0.42	961.11	960.47	961.72	960.99	Circle	15	0.013	2.32	4.83	6.46	35.9

100 YEAR STORM

Start Node	Stop Node	Length (User Defined) (ft)	Slope (Calculated) (ft/ft)	System Intensity (in/h)	System Drainage Area (acres)	Invert (Start) (ft)	Invert (Stop) (ft)	Hydraulic Grade Line (In)(ft)	Hydraulic Grade Line (Out)(ft)	Section Type	Diameter (in)	Manning's n	Flow (cfs)	Velocity (ft/s)	Capacity (Full Flow) (cfs)	Flow / Capacity (Design) (%)
Q A-3	Q A-2	34.0	0.022	10.200	0.62	958.50	957.75	959.30	958.32	Circle	15.0	0.013	3.89	7.41	9.59	40.5
Q A-2	FESA-1	192	.017	11.182	1.30	957.25	954.00	958.35	954.79	Circle	18.0	0.012	8.08	8.56	14.80	54.6
AI B-3	MHB-2	329.0	0.009	10.204	1.91	955.00	952.10	956.39	953.35	Circle	18.0	0.013	10.60	6.19	9.86	107.5
MHB-2	FESB-1	113.0	0.007	10.027	2.46	951.34	950.50	952.66	951.72	Circle	24.0	0.013	13.43	6.69	19.50	68.8
FI C-4	FI C-3	161.0	0.010	10.204	1.08	966.25	964.64	967.09	965.94	Circle	24.0	0.013	5.66	5.99	22.62	25.0
FI C-3	MHC-2	367.0	0.010	10.114	2.35	964.64	960.97	965.94	962.06	Circle	24.0	0.013	13.03	7.46	22.62	57.6
MHC-2	FESC-1	66.0	0.010	9.903	2.35	960.97	960.31	962.26	961.39	Circle	24.0	0.013	12.76	7.42	22.62	56.4
Q D-2	Q D-1	34.0	0.020	10.204	0.25	967.66	966.98	968.18	967.64	Circle	15.0	0.013	1.72	5.72	9.14	18.9
Q D-1	FI C-3	123.0	0.011	10.184	0.80	966.73	965.40	967.64	966.20	Circle	15.0	0.013	4.99	5.99	6.72	74.4
AI E-6	Q E-5	44.0	0.006	10.204	1.87	960.50	960.22	961.90	961.46	Circle	18.0	0.012	10.38	5.87	9.08	114.4
JB E-4	Q E-5	157.0	-0.010	10.163	2.59	958.15	959.72	961.14	959.37	Circle	24.0	0.013	15.50	7.75	22.62	68.5
JB E-4	Q E-3	312.0	0.010	10.069	4.45	957.65	954.52	959.41	956.33	Circle	30.0	0.013	26.76	8.91	41.08	65.2
Q E-3	Q E-2	43.0	0.005	9.907	5.29	954.12	953.91	956.33	956.07	Circle	30.0	0.013	31.70	6.46	28.66	110.6
Q E-2	FESE-1	143.0	0.005	9.863	5.86	953.71	953.00	956.07	955.03	Circle	30.0	0.012	35.64	7.26	31.31	113.8
Q F-3	Q F-4	34.0	-0.005	10.204	0.50	960.25	960.42	961.13	960.93	Circle	15.0	0.013	2.83	3.92	4.57	61.9
Q F-2	Q F-3	57.0	-0.005	10.175	0.95	959.57	959.85	960.83	960.49	Circle	18.0	0.013	5.64	4.59	7.36	76.6
Q F-2	Q F-1	34.0	0.005	10.133	1.31	959.17	959.00	960.43	960.10	Circle	18.0	0.013	8.06	4.56	7.43	108.5
JB E-4	Q F-1	70.0	-0.005	10.109	1.86	958.15	958.50	959.72	959.41	Circle	24.0	0.012	11.46	5.89	17.33	66.1
Q G-1	Q E-5	64.0	0.010	10.204	0.42	961.11	960.47	961.83	961.09	Circle	15.0	0.013	3.20	5.25	6.46	49.5

INLET SPREAD TABLE

Inlet	Drainage Area Ac	Inlet C	Intensity in/h	Q cfs	Ku	n	SX %	SL %	T- Spread ft
A-2L	0.36	0.51	7.35	1.3	0.56	0.012	2	1	7.28
A-2R	0.32	0.51	7.35	1.2	0.56	0.012	2	1	6.96
A-3L	0.33	0.51	7.35	1.2	0.56	0.012	2	1	7.04
A-3R	0.29	0.51	7.35	1.1	0.56	0.012	2	1	6.71
D-1L	0.29	0.51	7.35	1.1	0.56	0.012	2	1	6.71
D-1R	0.26	0.51	7.35	1.0	0.56	0.012	2	1	6.44
D-2L	0.12	0.51	7.35	0.4	0.56	0.012	2	1	4.82
D-2R	0.13	0.51	7.35	0.5	0.56	0.012	2	1	4.97
E-2L	0.29	0.51	7.35	1.1	0.56	0.012	2	1.25	6.43
E-2R	0.28	0.51	7.35	1.0	0.56	0.012	2	1.25	6.35
E-3L	0.28	0.51	7.35	1.0	0.56	0.012	2	1.25	6.35
E-3R	0.56	0.51	7.35	2.1	0.56	0.012	2	1.25	8.24
E-5L	0.19	0.51	7.35	0.7	0.56	0.012	2	1	5.73
E-5R	0.11	0.51	7.35	0.4	0.56	0.012	2	1	4.66
F-1L	0.42	0.51	7.35	1.6	0.56	0.012	2	2.5	6.49
F-1R	0.13	0.51	7.35	0.5	0.56	0.012	2	2	4.36
F-2L	0.11	0.51	7.35	0.4	0.56	0.012	2	2	4.10
F-2R	0.53	0.51	7.35	2.0	0.56	0.012	2	2.5	7.08
F-3	0.45	0.51	7.35	1.7	0.56	0.012	2	2	6.95
F-4	0.50	0.51	7.35	1.9	0.56	0.012	2	2	7.23
G-1L	0.12	0.51	7.35	0.4	0.56	0.012	2	1	4.82
G-1R	0.30	0.51	7.35	1.1	0.56	0.012	2	1	6.80



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WHISPERING WOODS 3RD PLAT
STREET & STORM SEWER PLANS

DRAINAGE TABLES

LEE'S SUMMIT, MO

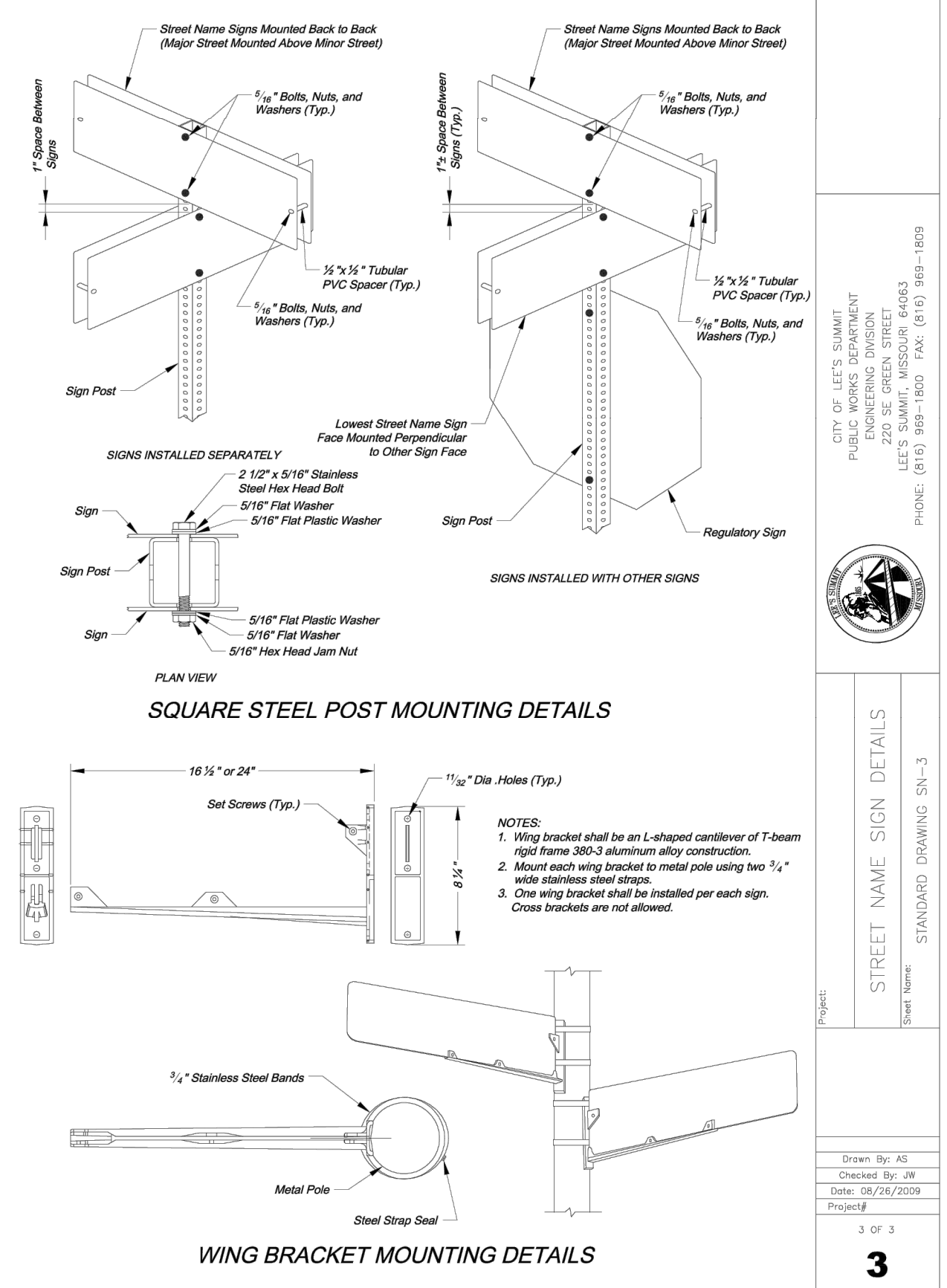
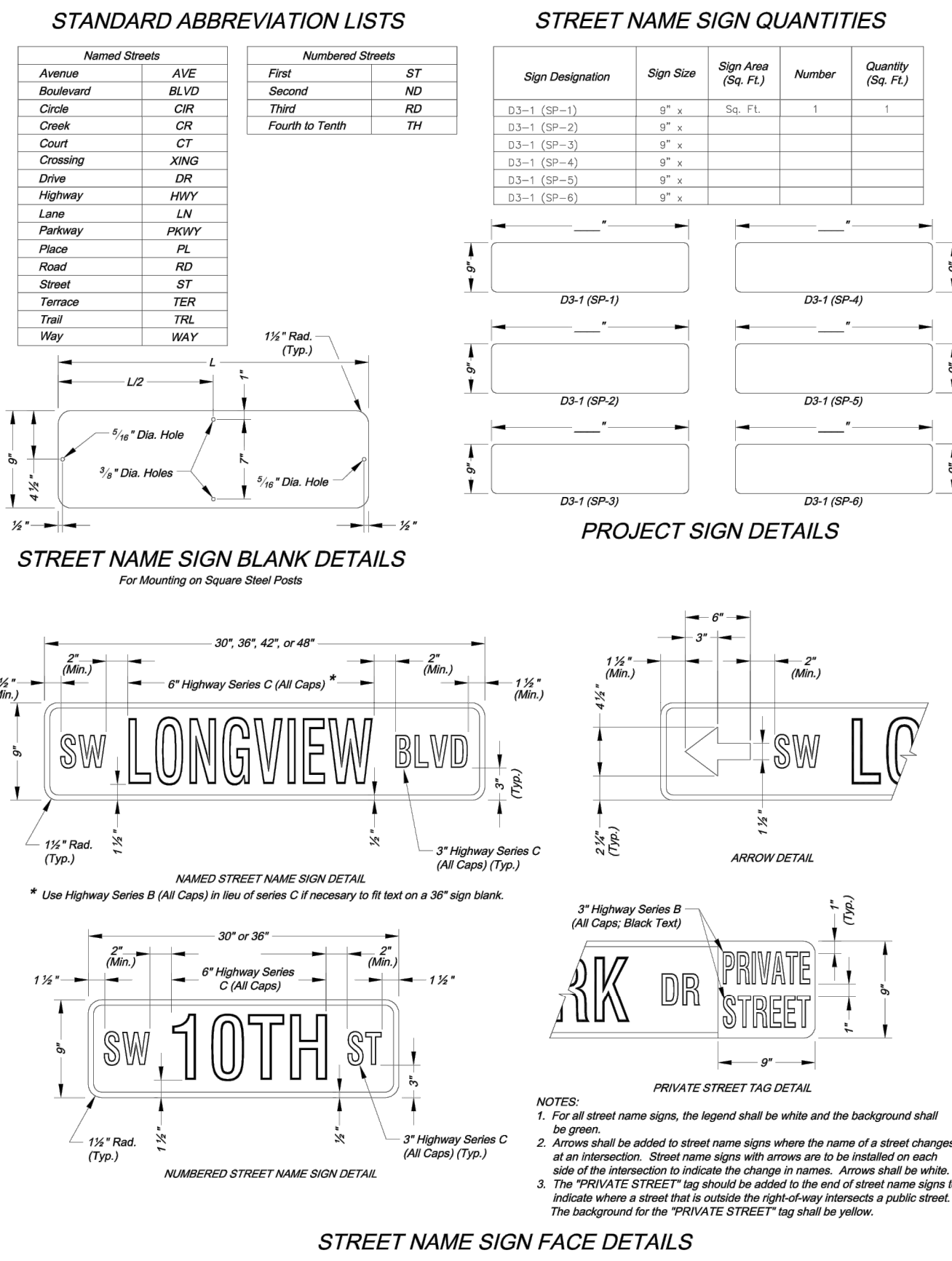
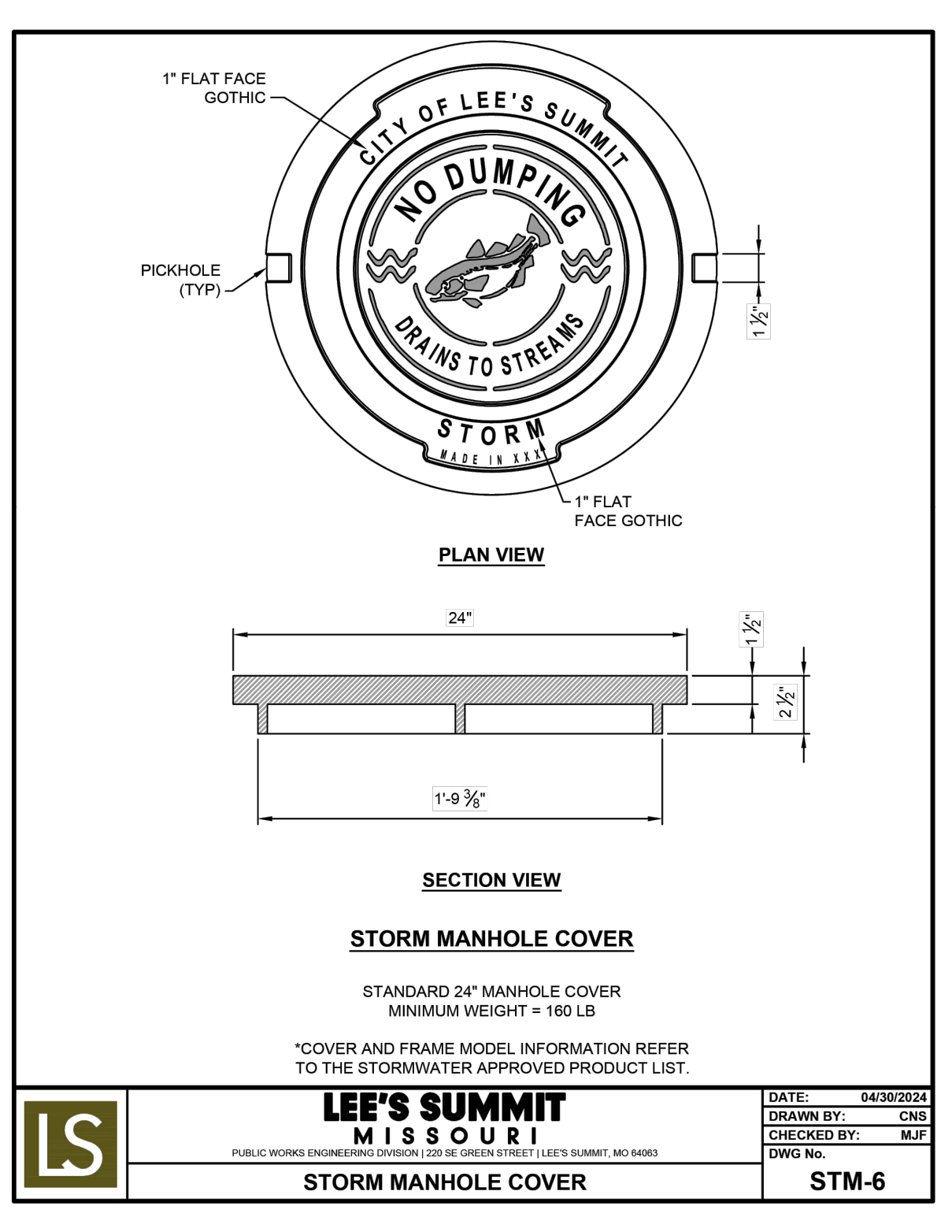
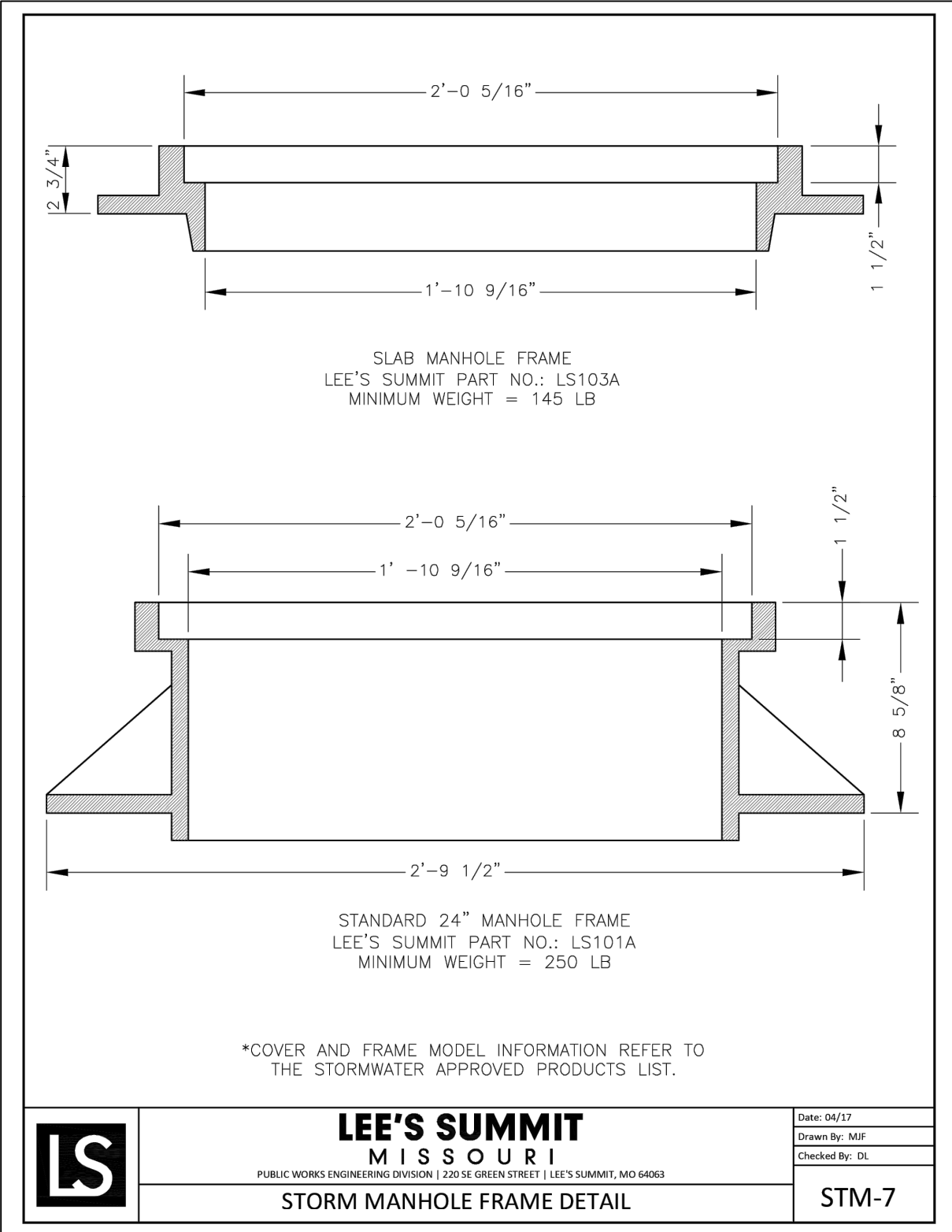
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Project No: 1200485.11



REVISION PER CITY COMMENTS

1 1/2/25

DATE

BY

1"= N/A

Scale

7-28-20

Field Bk

Sheet 26

Shawm Duke - Engineer

MO PE#2013006489

LEE'S SUMMIT, MO

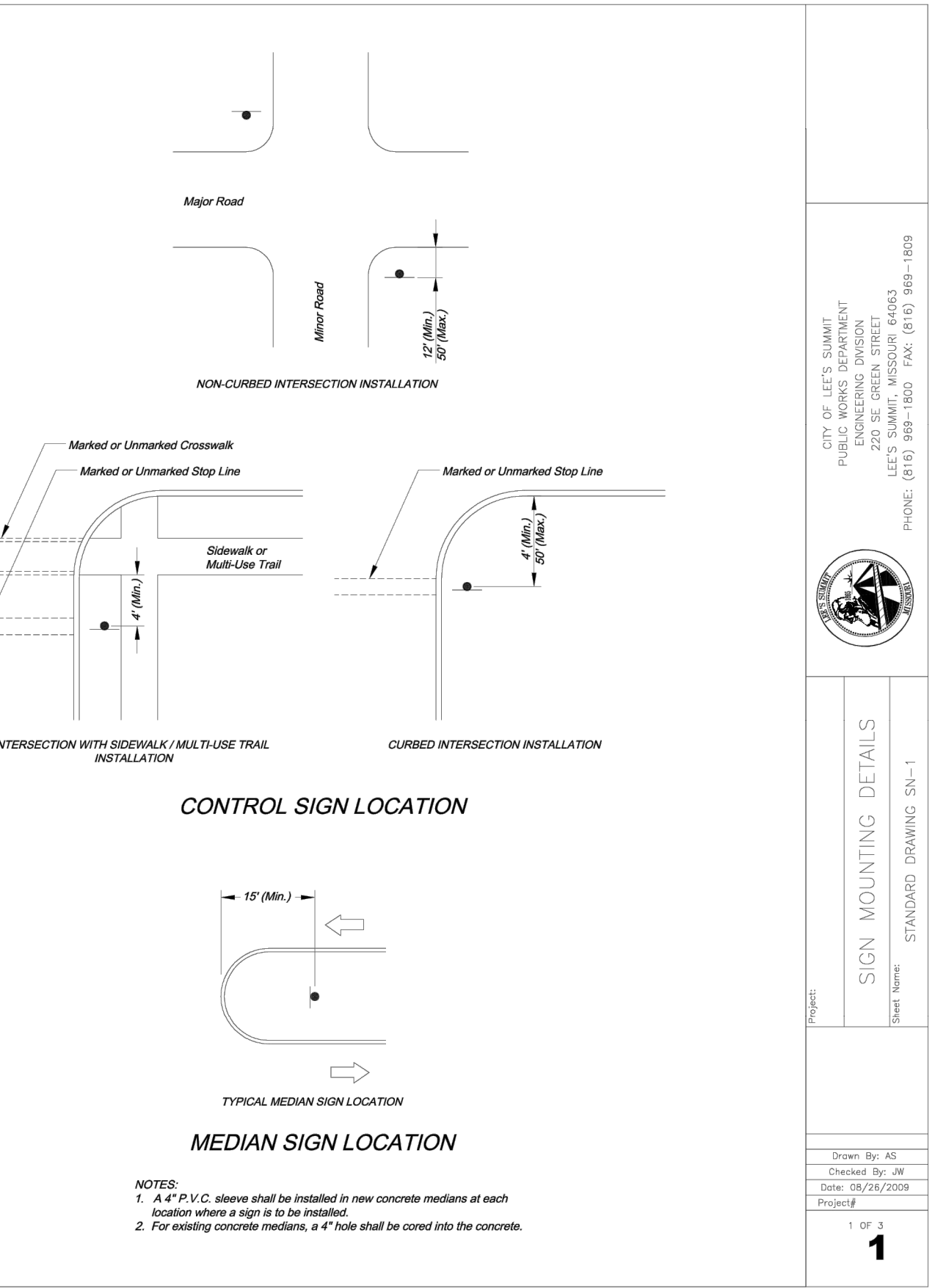
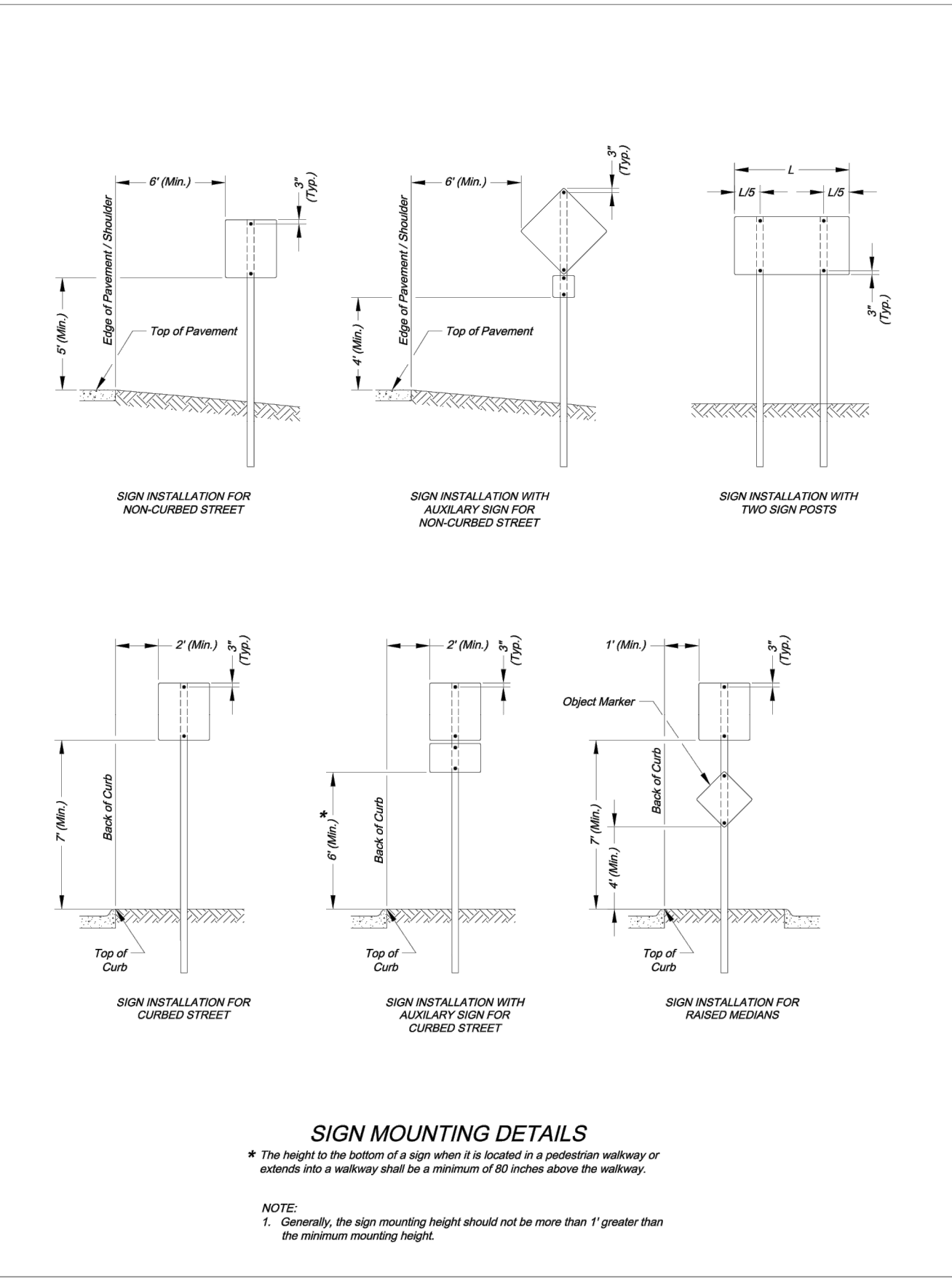
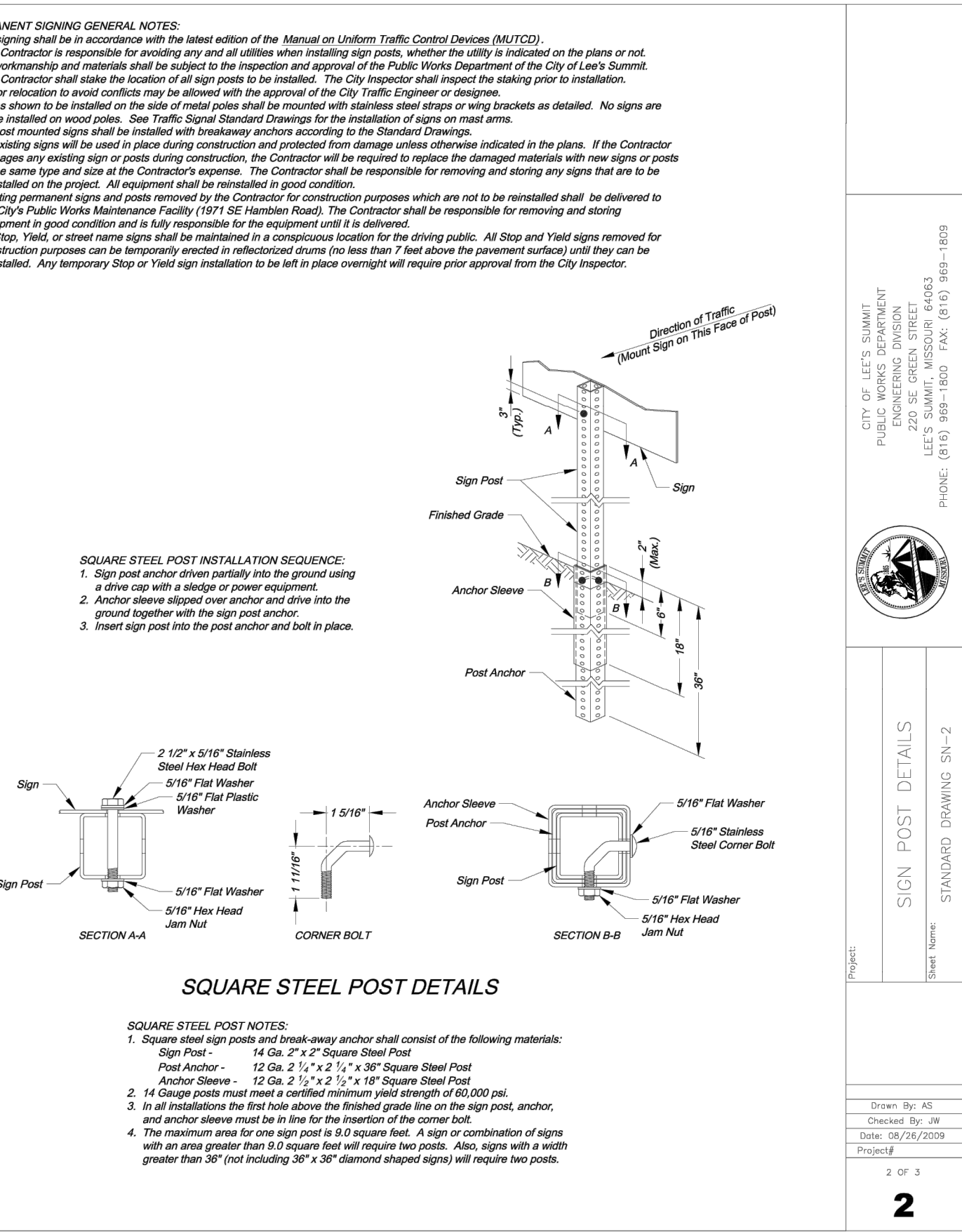
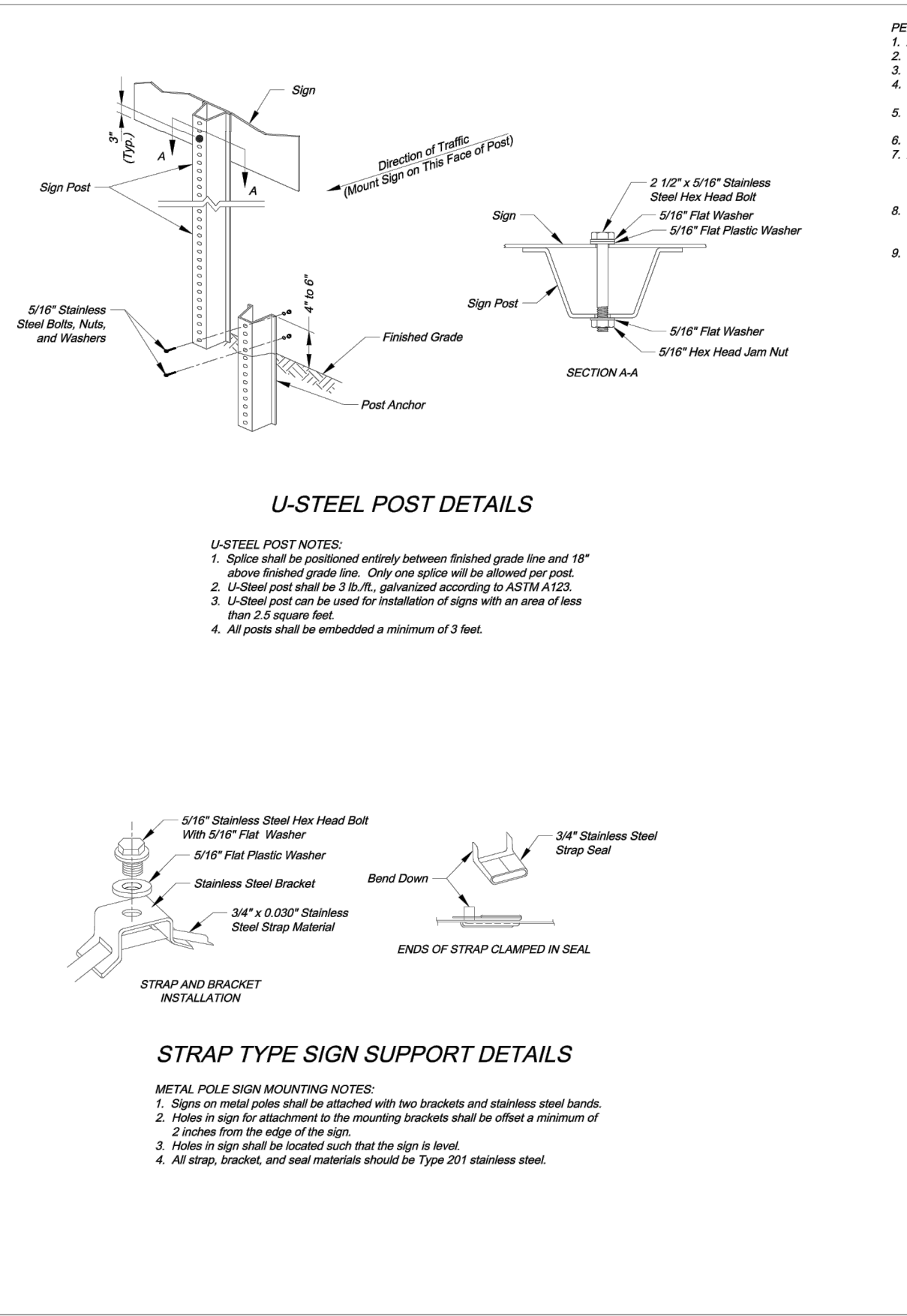
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WHISPERING WOODS 3RD PLAT

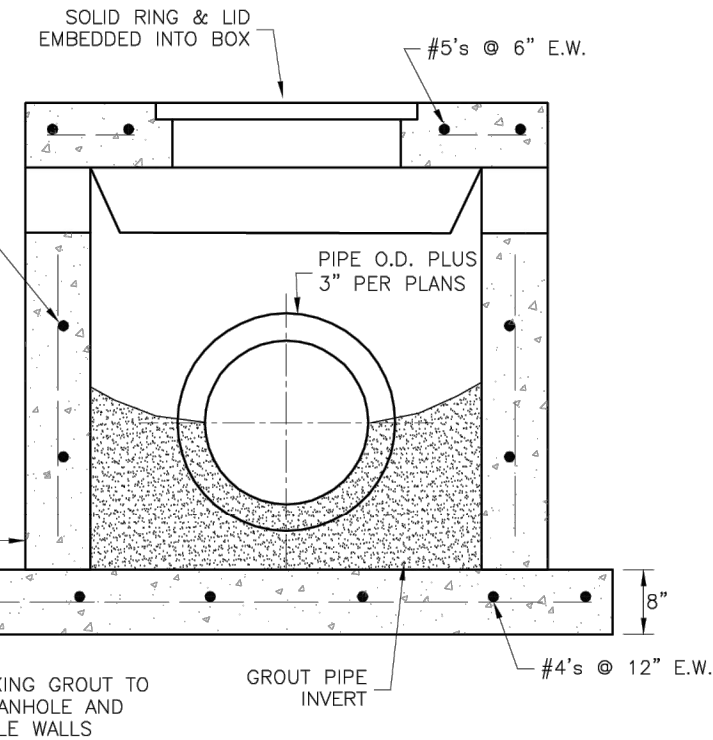
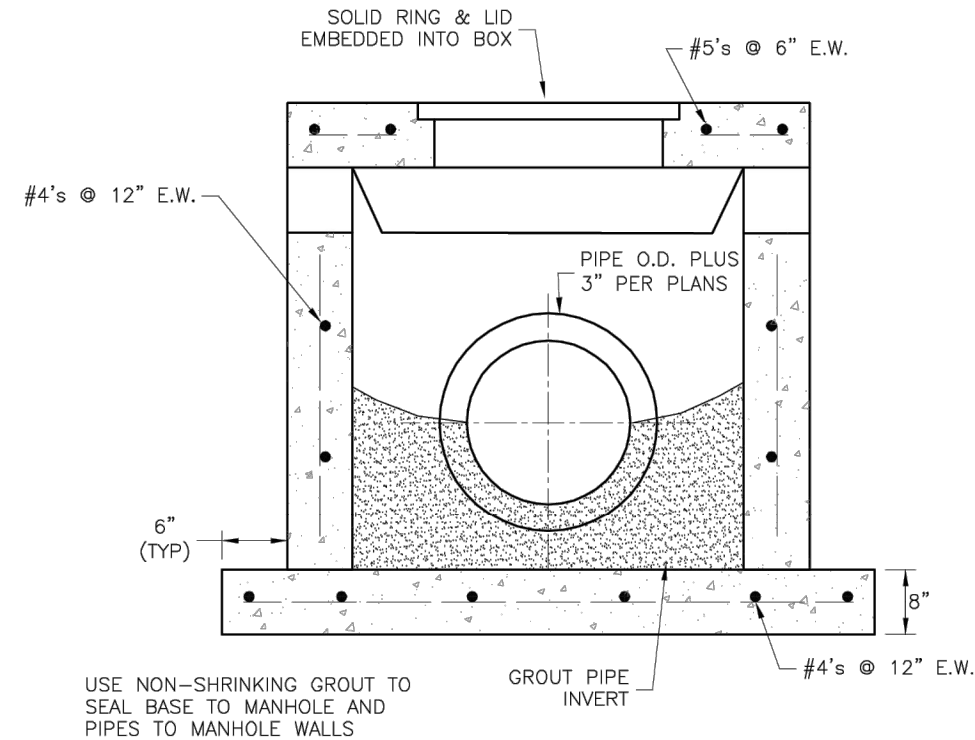
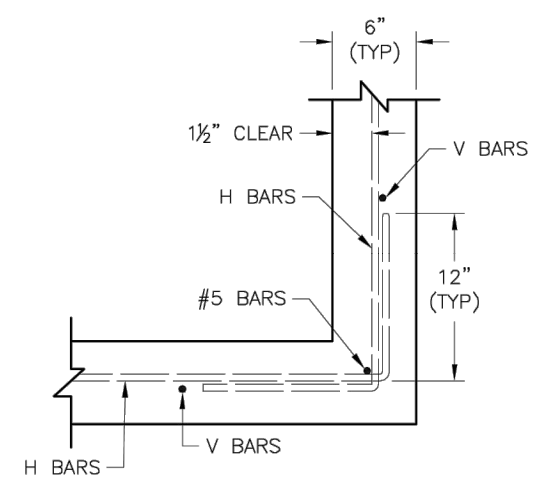
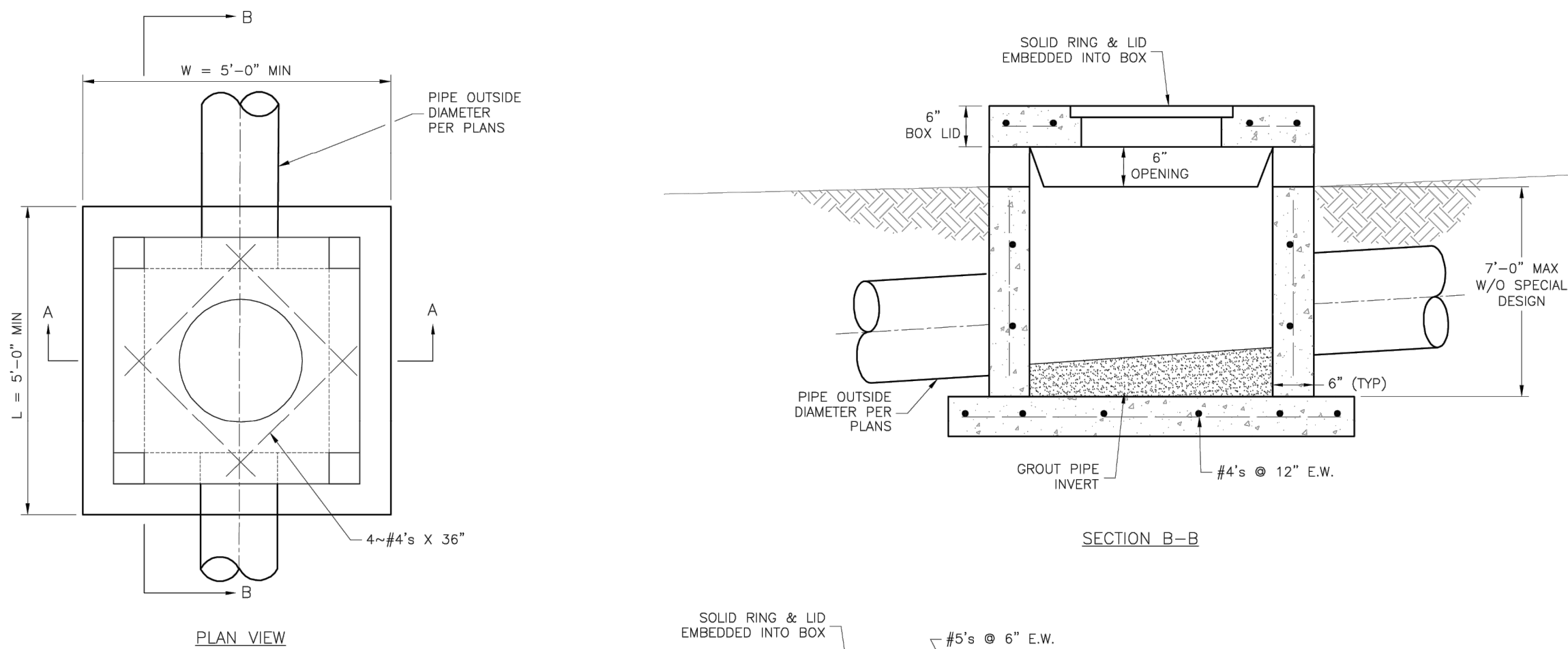
STREET & STORM SEWER PLANS

STREET & STORM DETAILS

1200485.11

Sheet 26

SNYDER & ASSOCIATES
ENGINEERS & PLANNERS, INC.



- GENERAL NOTES:

1. LOCATE RING AND COVER OVER OUTLET ON BLANK WALL.
2. USE $\frac{3}{4}$ " 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.



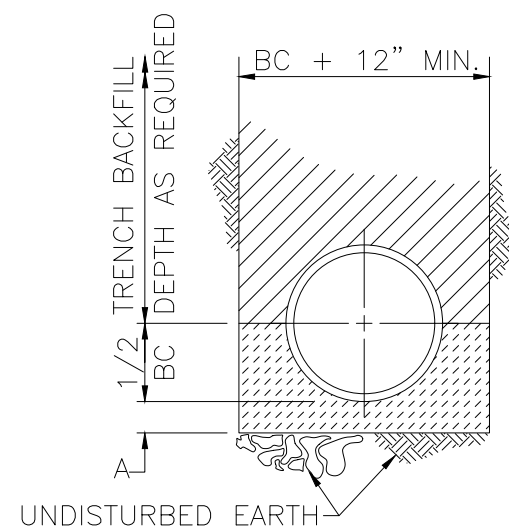
LEE'S SUMMIT
MISSOURI

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

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

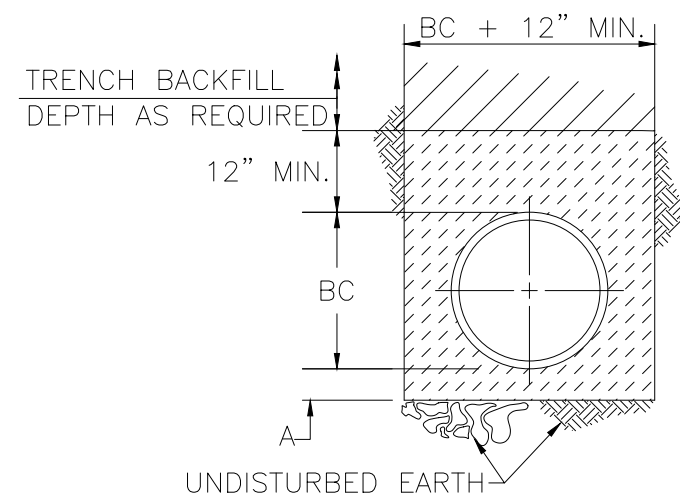
STM-2

				ALLOWABLE DEPTH OF FILL ABOVE TOP OF PIPE				
	TYPE OF PIPE	MATERIAL	USE	TYPE C EMBED.	TYPE B EMBED.	CSE EMBED.	TYPE A-1 EMBEDMENT	
RIGID	PIPE STIFFNESS >651 PSI	RCP; ASTM C 76 CLASS III; 12"—24"	STORM, GRAVITY	UP TO 8'	UP TO 10'	UP TO 10'	UP TO 10'	
		RCP; ASTM C 76 CLASS III; 27"—84"	STORM, GRAVITY	UP TO 10'	UP TO 13'	UP TO 13'	UP TO 13'	
		RCP; ASTM C 76 CLASS IV; 12"—24"	STORM, GRAVITY	UP TO 12'	UP TO 16'	UP TO 16'	UP TO 16'	
		RCP; ASTM C 76 CLASS IV; 24"—27"	STORM, GRAVITY	UP TO 16'	UP TO 23'	UP TO 23'	UP TO 23'	
		RCP; ASTM C 76 CLASS V; 12"—21"	STORM, GRAVITY	UP TO 19'	UP TO 25'	UP TO 25'	UP TO 25'	
		RCP; ASTM C 76 CLASS V; 24"—84"	STORM, GRAVITY	UP TO 30'	UP TO 40'	UP TO 40'	UP TO 40'	
		DUCTILE IRON; AWWA C151 (CLASS 52); 8"—54"	SANITARY, GRAVITY	UP TO 50', NO BEDDING REQUIRED				
		DUCTILE IRON; AWWA C151 (CLASS 52); 4"—64"	SANITARY, FORCE MAIN	UP TO 50', NO BEDDING REQUIRED				
		EXTRA STRENGTH, VCP; ASTM C 700 8"—10"	SANITARY, GRAVITY	UP TO 16'	UP TO 20'	UP TO 24'	UP TO 24'	
		EXTRA STRENGTH, VCP; ASTM C 700 12"—21"	SANITARY, GRAVITY	UP TO 12'	UP TO 15'	UP TO 18'	UP TO 18'	
SEMI-RIGID	PIPE STIFFNESS 151 PSI TO 650 PSI	EXTRA STRENGTH, VCP; ASTM C 700 24"—42"	SANITARY, GRAVITY	UP TO 13'	UP TO 18'	UP TO 23'	UP TO 23'	
		PVC; ASTM D 3034 (SDR 23.5); 8"—15"	SANITARY, GRAVITY			UP TO 30'	UP TO 30'	
		PVC; ASTM D 2680 (TRUSS); 8"—15"	SANITARY, GRAVITY			UP TO 30'	UP TO 30'	
		PVC; AWWA C900 (DR18); 4"—12"	SANITARY, FORCE MAIN,	WATER UP TO 30', NO BEDDING REQUIRED				
		PVC; AWWA C905 (DR18); 14"—24"	SANITARY, FORCE MAIN	UP TO 30', NO BEDDING REQUIRED				
FLEXIBLE	PIPE STIFFNESS 46 PSI TO 150 PSI	PVC; ASTM D 3034 (SDR 35 & 26); 8"—15"	SANITARY, GRAVITY				UP TO 30'	
		PVC; ASTM F 679 (T-1 WALL); 18"—27"	SANITARY, GRAVITY				UP TO 30'	
		PVC; ASTM F 949 ; 8"—36"	SANITARY, GRAVITY				UP TO 30'	
		PVC; ASTM F 1803 (CLOSED PROFILE); 21"—36"	SANITARY, GRAVITY				UP TO 30'	
		PVC; ASTM F 949 ; 12"—36"	STORM, GRAVITY			UP TO 30'	UP TO 30'	
		HDPE; AASHTO M 294	STORM, GRAVITY				UP TO 11'	
		HPSTORM: POLYPROPYLENE AASHTO M330	STORM, GRAVITY				UP TO 11'	



OR ROCK RCP PIPE EMBEDMENT
(REQUIRED UNDER ROADWAY PAVED AREAS)

LEGEND	
BC	OUTSIDE DIA. OF PIPE
D	NOMINAL PIPE SIZE
A	EMBEDMENT BELOW PIPE
	TRENCH BACKFILL (TYPE 1)
	TAMPED GRANULAR BACKFILL (TYPE 3)
	GRANULAR BEDDING
	CONCRETE
	CLEAN CRUSHED STONE



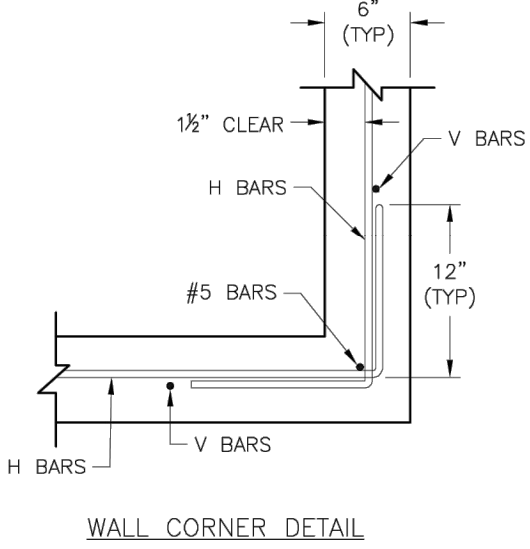
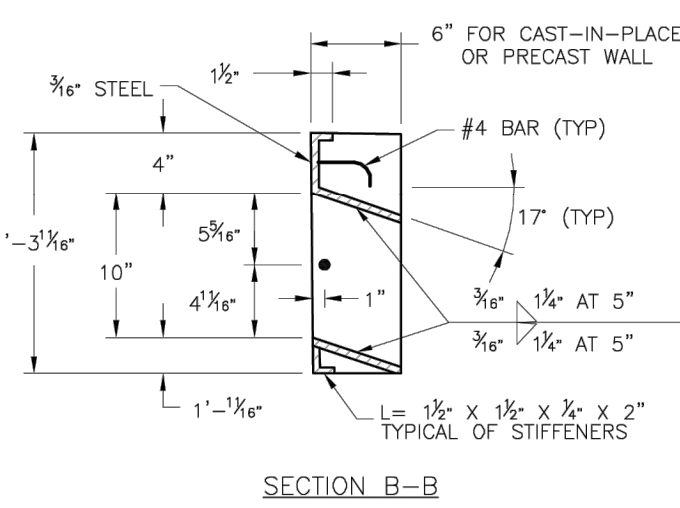
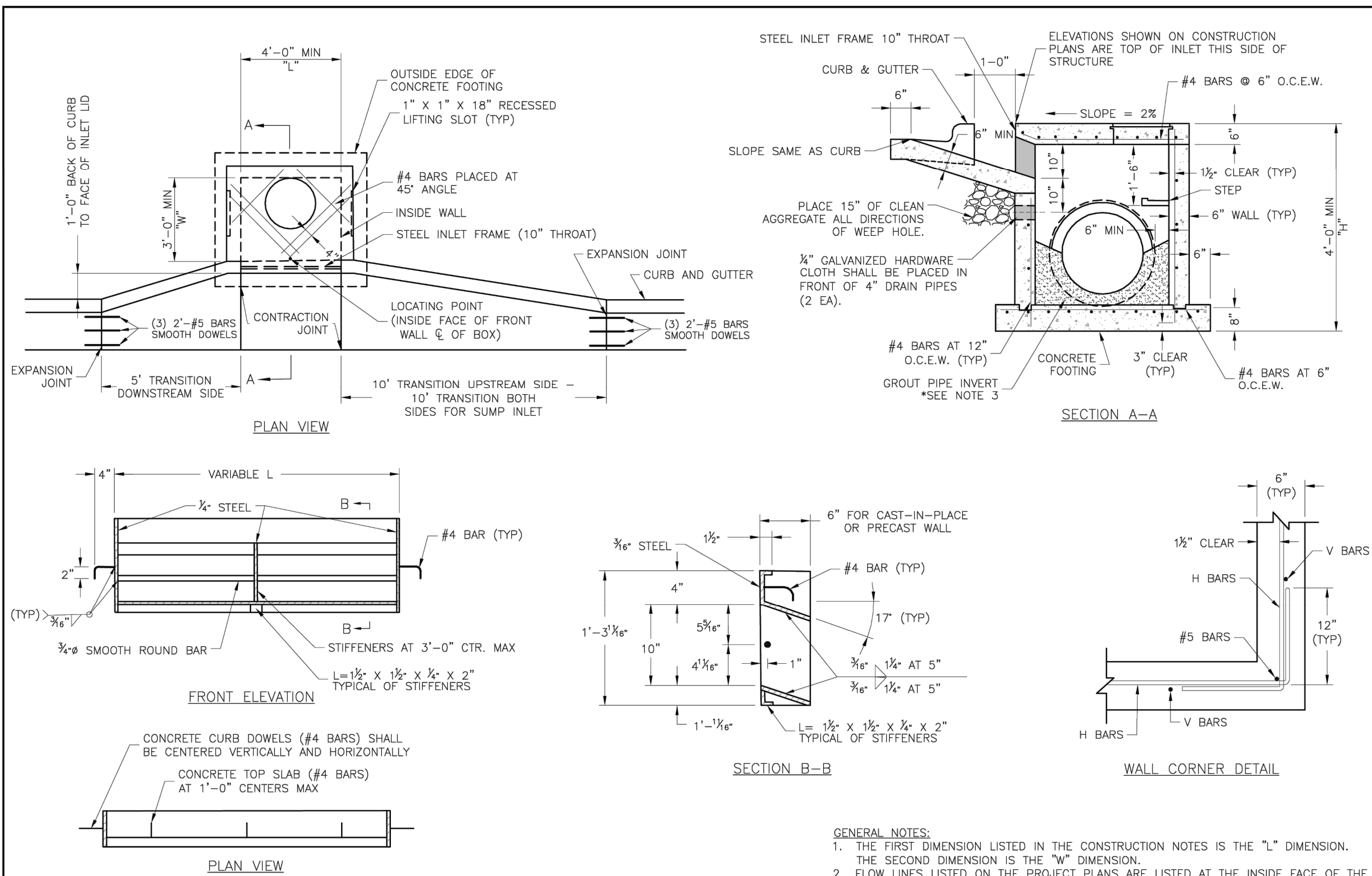
HDPE PIPE EMBEDMENT

TABLE OF EMBEDMENT DEPTHS BELOW PIPE		
D	A MIN SOIL	A MIN ROCK
0"—27"	4"	6"
30"—60"	6"	9"
66"—UP	8"	12"

PIPE EMBEDMENT NOTES:

1. GRANULAR BEDDING SHALL BE CRUSHED ROCK OR PEA GRAVEL WITH NOT LESS THAN 95% PASSING 3/4" (95% PASSING 1" FOR 30" AND LARGER PIPE) AND NOT LESS THAN 95% RETAINED ON A 3/8"; TO BE PLACED IN NOT MORE THAN 6" LAYERS AND COMPACTED BY SLICING WITH A SHOVEL OR VIBRATING.
2. TAMPED GRANULAR BACKFILL (TYPE 3) SHALL BE GRANULAR MATERIAL CONFORMING TO THE REQUIREMENTS OF SECTION 1007.3.1 OF THE LATEST ISSUE OF THE MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
3. TRENCH BACKFILL (TYPE 1) SHALL BE FINELY DIVIDED MATERIAL FREE FROM DEBRIS AND STONES, COMPACTED TO 95% MAXIMUM DENSITY.
4. CLEAN CRUSHED STONE SHALL BE GRANULAR MATERIAL CONFORMING TO THE GRADATION REQUIREMENTS OF SECTION 1005.1.4.1 OF THE LATEST ISSUE OF THE MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
5. WHEN PROPOSED MAIN IS UNDER PAVEMENT CONTRACTOR TO BACKFILL WITH COMPACTED AGGREGATE TO PAVEMENT SUBGRADE.

STORM PIPE EMBEDMENT DETAILS



- GENERAL NOTES:

1. THE FIRST DIMENSION LISTED IN THE CONSTRUCTION NOTES IS THE "L" DIMENSION.
2. THE SECOND DIMENSION IS THE "W" DIMENSION.
3. THE THIRD DIMENSION IS THE "H" DIMENSION. THE "H" IS LISTED AT THE INSIDE FACE OF THE WALL.
4. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INLET TO PROVIDE SMOOTH FLOW.
5. LOCATE MH RING AND COVER ON BLANK WALL IF POSSIBLE.
6. LOCATE INLET ON 1'-4" BLANK WALL IF POSSIBLE.
7. BEVEL ALL EXPOSED EDGES WITH 3/4" CHAMFER OR 3/4" TOOLED EDGE.
8. ON-GRADE INLETS SHALL CONFORM TO THE STREET GRADE AND SUMP INLETS SHALL BE LEVEL WITH THE STREET GRADE.
9. ALL EXPOSED EDGES SHALL BE FINISHED TO MATCH SURROUNDING REMOVABLE FOR FUTURE MAINTENANCE.
10. ALL EXPOSED EDGES SHALL BE REMOVED AND SEALED WITH NON-SHRINKABLE GROUT.
11. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

LS LEE'S SUMMIT
MISSOURI

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

Drawn By: MUF
Checked By: DL
Date: 04/17

STM.

WHISPERING WOODS 3RD PLAT STREET & STORM SEWER PLANS

STREET & STORM DETAILS

SNYDER & ASSOCIATES
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Project No: 1200485.11

Sheet 27

