

STREET, STORM, DRAINAGE  
FOR  
WHISPERING WOOD 2ND PLAT  
CITY OF LEE'S SUMMIT  
JACKSON COUNTY, MISSOURI

LEGAL DESCRIPTION

PROPERTY DESCRIPTION  
CONTAINING 234,887 SQUARE FEET OR 5.39 ACRES

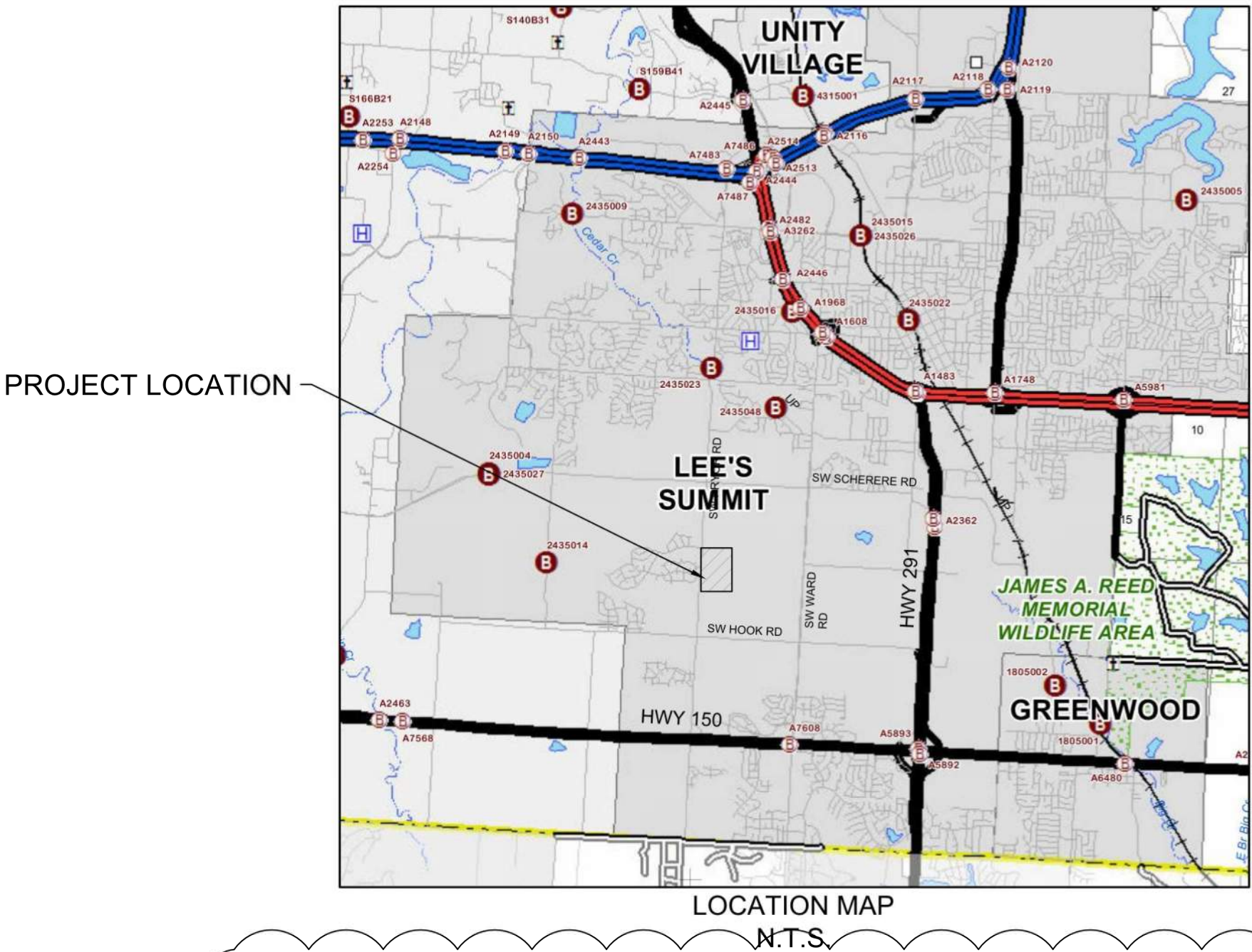
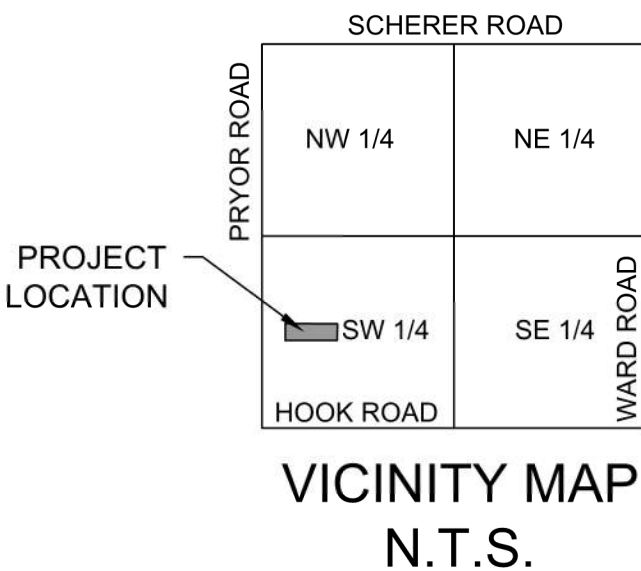
PART OF THE SOUTHWEST QUARTER OF SECTION 24, TOWNSHIP 47 NORTH, RANGE 32 WEST, LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, BEING DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHEAST CORNER OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 24; THENCE N87°38'05"W, ALONG THE SOUTH LINE OF THE NORTH HALF OF SAID SOUTHWEST QUARTER, A DISTANCE OF 572.29 FEET TO THE POINT OF BEGINNING OF THE TRACT OF LAND TO BE HEREIN DESCRIBED; THENCE N87°38'05"W, CONTINUING ALONG SAID LINE, A DISTANCE OF 819.48 FEET TO THE SOUTHEAST CORNER OF TRACT D, WHISPERING WOODS FIRST PLAT, A SUBDIVISION IN SAID LEE'S SUMMIT, JACKSON COUNTY, MISSOURI; THENCE N02°21'55"E, ALONG THE EASTERLY LINE OF SAID PLAT OF WHISPERING WOODS FIRST PLAT, A DISTANCE OF 180.00 FEET; THENCE N87°38'05"W, CONTINUING ALONG SAID LINE, A DISTANCE OF 11.45 FEET; THENCE N02°21'55"E, CONTINUING ALONG SAID LINE, A DISTANCE OF 120.00 FEET TO THE NORTHEAST CORNER OF LOT 28, SAID PLAT OF WHISPERING WOODS FIRST PLAT; THENCE S87°38'05"E, A DISTANCE OF 677.89 FEET; THENCE S02°31'15"W, A DISTANCE OF 21.63 FEET; THENCE S87°40'43"E, A DISTANCE OF 60.00 FEET; THENCE S02°31'15"W, A DISTANCE OF 73.30 FEET; THENCE SOUTHEASTERLY, ALONG A CURVE TO THE LEFT BEING TANGENT TO THE LAST DESCRIBED COURSE, HAVING A RADIUS OF 25.00 FEET, AN ARC DISTANCE OF 39.36 FEET; THENCE S87°40'43"E, A DISTANCE OF 68.28 FEET; THENCE S02°21'55"W, A DISTANCE OF 180.09 FEET TO THE POINT OF BEGINNING.

PROJECT BENCH MARK

ELEV. 1006.89 (NAVD 1988 DATUM)

MISSOURI DEPARTMENT OF NATURAL RESOURCES GRS  
ALUMINUM DISK STAMPED "JA-47" LOCATED NEAR THE  
INTERSECTION OF HWY 150 WITH REGGATA DRIVE AND HWY 291

| 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 |



| SUMMARY OF QUANTITIES                            |      |        |          |
|--|------|--------|----------|
| ITEM   | UNIT | PLAN   | AS-BUILT |
| Public Earthwork (CUT 10,115 CY / FILL 6,500 CY) | CY   | 10,115 |          |
| 2" Asphaltic Concrete Surface                    | SY   | 3,323  |          |
| 4" Type 5 Asphaltic Concrete Base                | SY   | 2,300  |          |
| 5.5" Type 5 Asphaltic Concrete Base              | SY   | 1,023  |          |
| CG-2 Curb & Gutter                               | LF   | 1,515  |          |
| CG-1 Curb & Gutter                               | LF   | 570    |          |
| 5'x3' Curb Inlet                                 | EA   | 9      |          |
| 4'x4' Field Inlet                                | EA   | 1      |          |
| 24" HDPE   | LF   | 334    |          |
| 18" HDPE   | LF   | 307    |          |
| 15" HDPE   | LF   | 366    |          |
| 15" RCP  | LF   | 250    |          |
| 15" F.E.S  | EA   | 1      |          |
| Rip-Rap  | SY   | 136    |          |
| ADA Curb Ramps                                   | EA   | 8      |          |
| Type IV Object Markers                           | EA   | 12     |          |
| R1-1 Stop Signs                                  | EA   | 2      |          |
| Street Name Signs                                | EA   | 2      |          |

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.

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APPROVED:

City Engineer

Date

RELEASE FOR  
CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
12/08/2020

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

| MARK  | REVISION                      | DATE        | BY        |
|---|-------------------------------|-------------|-----------|
| 2   | REVISED SUMMARY OF QUANTITIES | 10/14/20    | BY        |
| 1   | REVISED SUMMARY OF QUANTITIES | 9/4/20      | BY        |
| Engineer:   | SD                            | Checked By: | SD        |
| Technician:   | JS                            | Date:       | 7-28-20   |
| Scale:  |                               |             | Field Bk. |
| 1"= N/A   |                               |             | Pg:       |
| Snyder & Associates Engineers & Planners, Inc.      |                               |             | Sheet     |
| Missouri State Certificate of Authority #2000006544 |                               |             | 1         |

SHAWN DUKE - ENGINEER  
MO PE#2013006489

WHISPERING WOODS 2ND PLAT  
STREET & STORM SEWER PLANS

TITLE SHEET

LEE'S SUMMIT, MO

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

**SNYDER & ASSOCIATES**  
ENGINEERS & PLANNERS, INC.  
www.snyder-associates.com

**SNYDER & ASSOCIATES**

Project No: 1200484.11

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:

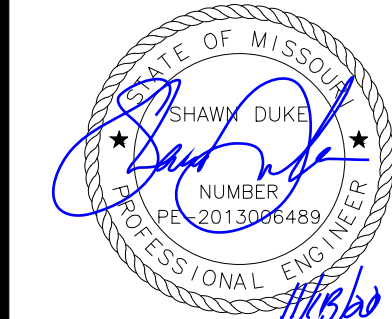
- REFER TO THE CURRENT VERSION OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION (D&C) MANUAL FOR CONSTRUCTION OF THESE PLANS.
- ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE ENGINEERING DEPARTMENT OF THE CITY OF LEE'S SUMMIT, MISSOURI.
- LINEAL FOOT MEASUREMENTS SHOWN ON THESE PLANS ARE HORIZONTAL MEASUREMENTS, NOT SLOPE MEASUREMENTS. ALL PAYMENTS SHALL BE MADE ON HORIZONTAL MEASUREMENTS.
- NO GEOLOGICAL INVESTIGATION WAS PERFORMED ON THIS PROJECT.
- 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.
- 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.
- 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.
- 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.
- ALL EXISTING MANHOLES, CATCH BASINS, UTILITY VALVES AND METER PITS TO BE ADJUSTED OR REBUILT TO GRADE AS REQUIRED.
- 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.

- 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.
- CONTRACTOR SHALL PROVIDE TESTING AND INSPECTION PER SECTION 2200 - PAVING MAINS CITY OF LEE'S SUMMIT, MISSOURI STANDARD SPECIFICATIONS.
- 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.
- ALL SANITARY SEWER STUBS SHALL BE SURVEYED AND STAKED ON SITE BEFORE THE CONSTRUCTION OF SANITARY SERVICE STUBS.
- 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.
- 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.
- 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.
- ALL STUB LINES SHALL BE LAID ON 2.00% MINIMUM GRADE UNLESS APPROVED OTHERWISE.
- CONTRACTOR SHALL NOT BE ALLOWED TO WORK ON SATURDAYS, SUNDAYS, OR HOLIDAYS WITHOUT PRIOR APPROVAL OF THE CITY ENGINEER.
- 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.
- 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.
- 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.
- STUB LINES, LOCATIONS, AND MINIMUM BASEMENT FLOOR ELEVATIONS ARE LOCATED IN THE TABLE LABELED "TABLE OF SERVICE LOCATIONS".
- CONSTRUCTION PERMITS WILL NOT BE ISSUED UNTIL THE CITY OF LEE'S SUMMIT RECEIVES A SEWER EXENTION PERMIT FROM MDNR.
- 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.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR TESTING OF MANHOLES AND PIPES TO THE CITY OF LEE'S SUMMIT DESIGN & CONSTRUCTION MANUAL REQUIREMENTS.
- 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.
- 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.

- 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.
- 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:

- GRADING CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF EROSION AND SILTATION DURING ALL PHASES OF CONSTRUCTION.
- 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.
- 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.
- 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.
- SIDEWALKS ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY UNLESS OTHERWISE NOTES. HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR HANDICAP RAMP CONSTRUCTION IN CURBS.
- 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 2ND PLAT  
STREET & STORM SEWER PLANS

GENERAL NOTES

**SNYDER & ASSOCIATES**  
ENGINEERS & PLANNERS, INC.  
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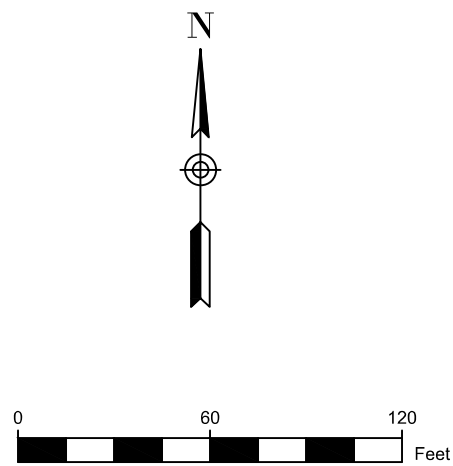
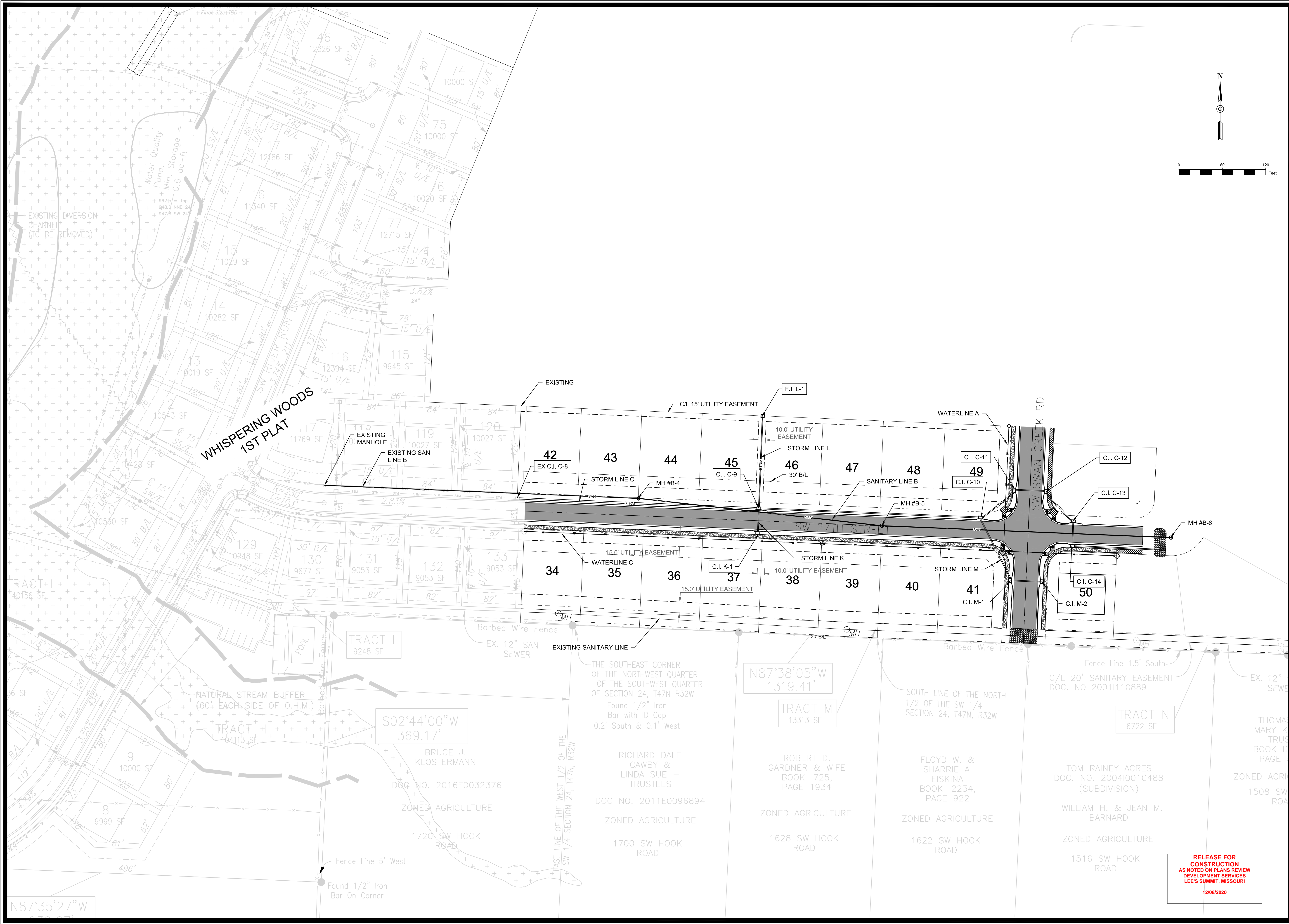
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Sheet 2

RELEASE FOR  
CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI

12/08/2020





|  |    |             |         |           |
|--|----|-------------|---------|-----------|
| MARK   |    | REVISION    | DATE    | BY        |
| Engineer:  | SD | Checked By: | SD      | 1"= 60'   |
| Technician:  | JS | Date:       | 7-28-20 | Field Bk: |
| Snyder & Associates Engineers & Planners, Inc.     |    |             |         | Sheet     |
| Missouri State Certificate of Authority #200006544 |    |             |         | 3         |

SHAWN DUKE - ENGINEER  
MO PE#2013006489

WHISPERING WOODS 2ND PLAT  
STREET & STORM SEWER PLANS

SITE LAYOUT

LEE'S SUMMIT, MO

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

**SNYDER & ASSOCIATES**  
ENGINEERS & PLANNERS, INC.

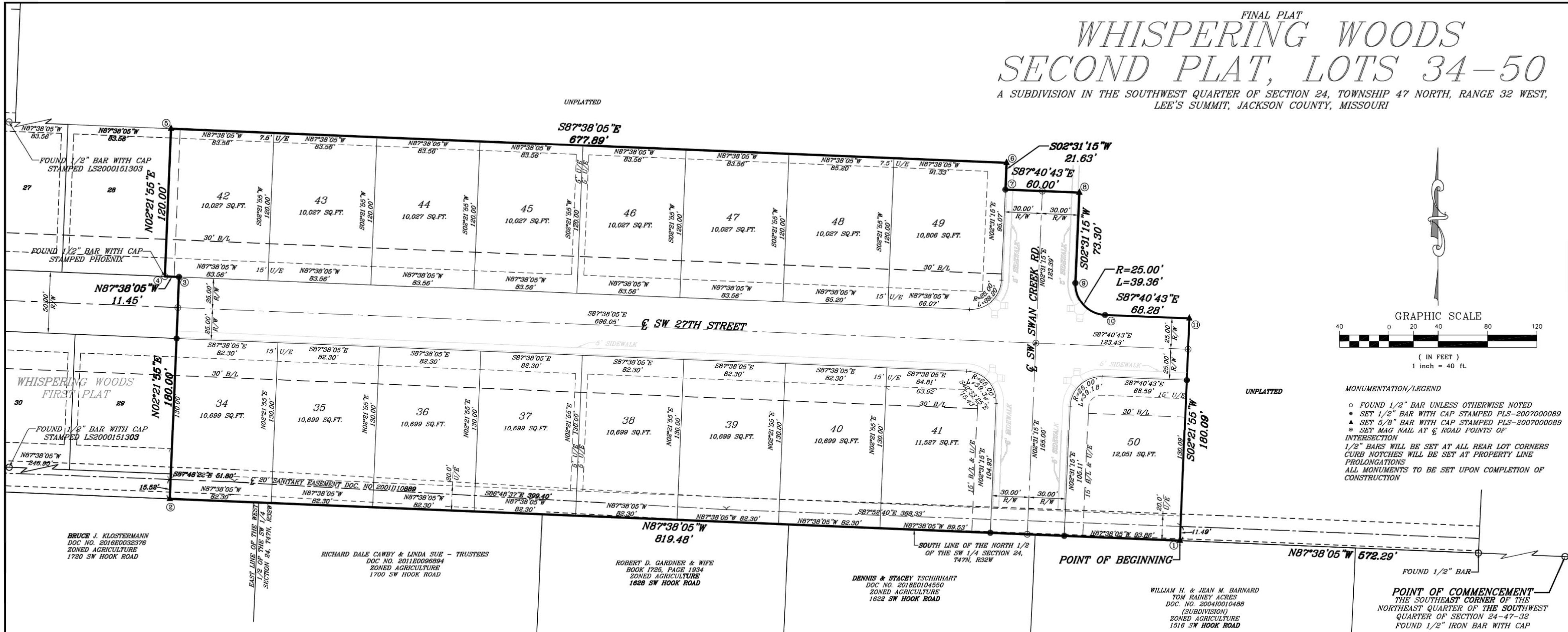
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Sheet 3

RELEASE FOR  
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AS NOTED ON PLANS REVIEW  
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LEE'S SUMMIT, MISSOURI  
12/08/2020





PLAT DEDICATION: THE UNDERSIGNED PROPRIETORS OF THE ABOVE DESCRIBED TRACT OF LAND HAVE CAUSED THE SAME TO BE SUBDIVIDED IN THE MANNER SHOWN ON THE ACCOMPANYING PLAT, WHICH SUBDIVISION SHALL BE HEREAFTER KNOWN AS WHISPERING WOODS SECOND PLAT, LOTS 34-50.

STREET DEDICATION: STREETS SHOWN HEREON AND NOT HERETOFORE DEDICATED FOR PUBLIC USE AS STREET RIGHT-OF-WAY ARE HEREBY DEDICATED.

EASEMENTS: AN EASEMENT OR LICENSE IS HEREBY GRANTED TO THE CITY OF LEE'S SUMMIT, MISSOURI, TO LOCATE, CONSTRUCT, AND MAINTAIN OR TO AUTHORIZE THE LOCATION, CONSTRUCTION, AND MAINTENANCE AND USE OF POLES, WIRES, ANCHORS, CONDUITS, AND/OR STRUCTURES FOR WATER, GAS, SANITARY SEWER, STORM SEWER, SURFACE DRAINAGE CHANNEL, ELECTRICITY, TELEPHONE, CABLE TELEVISION, OR ANY OTHER NECESSARY PUBLIC UTILITY OR SERVICE, ANY OR ALL OF THEM, UPON, OVER, OR UNDER THOSE AREAS OUTLINED OR DESIGNATED ON THIS PLAT AS "UTILITY EASEMENT" (LABELED "U/E") OR WITHIN ANY STREET OR THOROUGHFARE DEDICATED TO PUBLIC USE ON THIS PLAT. GRANTOR, ON BEHALF OF THEMSELVES, THEIR HEIRS, ASSIGNS AND SUCCESSORS IN INTEREST, HEREBY WAIVE, TO THE FULLEST EXTENT ALLOWED BY LAW, INCLUDING, WITHOUT LIMITATION, SECTION 527.168BRS MO (2006) ANY RIGHT TO REQUEST RESTORATION OF RIGHTS PREVIOUSLY TRANSFERRED AND VACATION OF THE EASEMENT HEREIN GRANTED.

BUILDING LINES: BUILDING LINES OR SETBACK LINES (LABELED "B/L") ARE HEREBY ESTABLISHED, AS SHOWN ON THE ACCOMPANYING PLAT, AND NO BUILDING OR PORTION THEREOF SHALL BE BUILT BETWEEN THIS LINE AND THE LOT LINE NEAREST THERETO. ALL LOTS SHALL HAVE A 20 FOOT REAR YARD SETBACK.

FLOODPLAIN: ACCORDING TO THE "FLOOD INSURANCE RATE MAP" COMMUNITY PANEL NO. 29095C0066G, PANEL 66 OF 625, MAP REVISED JANUARY 20, 2017, AND COMMUNITY PANEL NO. 29095C0068G, PANEL 66 OF 625, MAP REVISED JANUARY 20, 2017, AS PUBLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, THIS PROPERTY LIES WITHIN ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

DRAINAGE: INDIVIDUAL LOT OWNER(S) SHALL NOT CHANGE OR OBSTRUCT THE DRAINAGE FLOW LINES OR PATHS ON THE LOTS, AS SHOWN ON THE MASTER DRAINAGE PLAN, UNLESS SPECIFIC APPLICATION IS MADE AND APPROVED BY THE CITY ENGINEER.

ACCESS: LOTS 41, 49, AND 50 SHALL NOT HAVE DIRECT ACCESS TO SW SWAN CREEK ROAD.

IN TESTIMONY WHEREOF, RICHARD FRYE, MEMBER OF WHISPERING WOODS LAND, LLC, HAS CAUSED THESE PRESENTS TO BE EXECUTED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2020.

RICHARD FRYE, MEMBER

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

ON THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2020, BEFORE ME A NOTARY PUBLIC WITHIN AND FOR SAID COUNTY AND STATE, PERSONALLY APPEARED RICHARD FRYE, TO ME PERSONALLY KNOWN, WHO, BEING BY ME DULY SWORN, DID SAY THAT HE IS MEMBER OF WHISPERING WOODS LAND, LLC AND THAT SAID INSTRUMENT WAS SIGNED ON BEHALF OF SAID COMPANY AND THAT RICHARD FRYE ACKNOWLEDGES SAID INSTRUMENT TO BE THE FREE ACT AND DEED OF SAID COMPANY.

PRINT NAME: \_\_\_\_\_  
MY COMMISSION EXPIRES: \_\_\_\_\_

- BOUNDARY SURVEY NOTES:
1. THE POSITION OF EXISTING MONUMENTATION AS INDICATED, IF NOT THE TRUE CORNER, IS BY DIFFERENCES IN COORDINATES OR AT RIGHT ANGLES TO THE PROPERTY LINE AT THE NOTED DISTANCE FROM THE NEAREST BOUNDARY CORNER.
  2. THIS SURVEY IS BASED UPON RECORD DOCUMENTS, LEGAL DESCRIPTIONS, AND OTHER INFORMATION FURNISHED BY THE CLIENT PLUS OTHER INFORMATION KNOWN TO THIS SURVEYOR. THIS SURVEYOR HAS NO KNOWLEDGE OF ANY OTHER RECORD DOCUMENTS WHICH AFFECT THE SUBJECT REAL ESTATE.
  3. THIS SURVEY MEETS OR EXCEEDS THE ACCURACY STANDARDS OF AN URBAN PROPERTY SURVEY AS DEFINED BY THE "MISSOURI MINIMUM STANDARDS FOR PROPERTY BOUNDARY SURVEYS".
  4. ACCORDING TO THE FLOOD INSURANCE RATE MAP OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY, PANEL NUMBER 531 OF 625, MAP NUMBER 29095C0531G, MAP REVISED JANUARY 20, 2017, THE SUBJECT PROPERTY IS IN ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
  5. THERE WERE NO OIL OR GAS WELLS VISIBLE DURING THE TIME OF THE ORIGINAL SURVEY ON THE PROPERTY. THERE WAS NO EVIDENCE FOUND OF WELLS ON THE MISSOURI DEPARTMENT OF NATURAL RESOURCES OIL AND GAS WELL DATABASE.

APPROVALS:

THIS IS TO CERTIFY THAT THE WITHIN PLAT OF "WHISPERING WOODS SECOND PLAT, LOTS 34-50" WAS SUBMITTED TO AND DULY APPROVED BY THE MAYOR AND CITY COUNCIL OF THE CITY OF LEE'S SUMMIT, MISSOURI ON THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2020 BY ORDINANCE NO. \_\_\_\_\_

GEORGE M. BINGER III, P.E.  
CITY ENGINEER

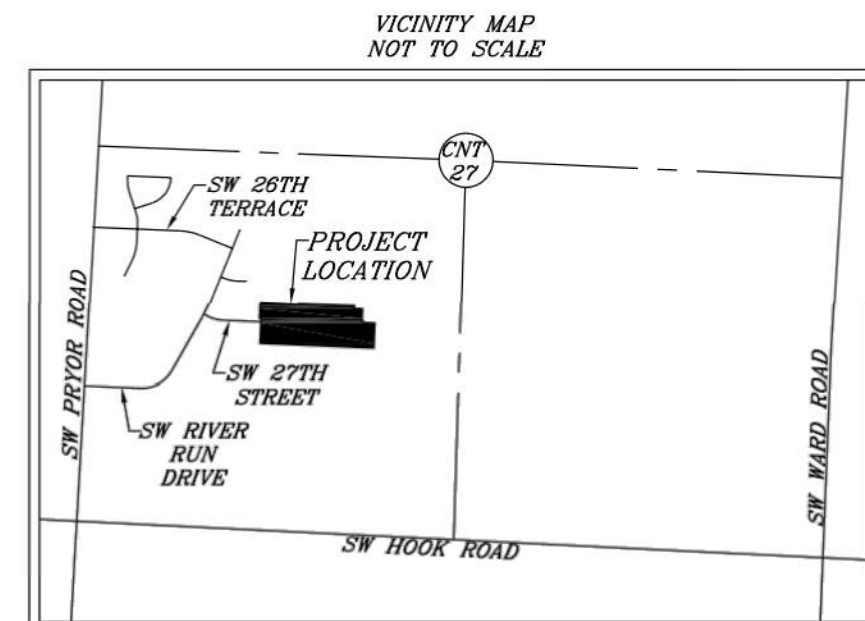
RYAN A. ELAM, P.E.  
DEVELOPMENT SERVICES

WILLIAM A. BAIRD, MAYOR

TRISHA FOWLER ARCURI, CITY CLERK

JOHN LOVELL  
PLANNING COMMISSION SECRETARY

APPROVED BY THE JACKSON COUNTY, MISSOURI GIS DEPARTMENT \_\_\_\_\_ DATE \_\_\_\_\_



COORDINATE TABLE  
BASED ON THE MISSOURI COORDINATE SYSTEM 1983, WESTERN ZONE, AT KANSAS CITY METRO CONTROL MONUMENT JA-50, GRID FACTOR=0.9999011, COORDINATES IN METERS. COORDINATES OBTAINED BY GPS.

- |                                  |                                  |
|----------------------------------|----------------------------------|
| ① N 300214.0163<br>E 579009.0391 | ⑦ N 300300.7080<br>E 578665.9210 |
| ② N 300224.3239<br>E 578659.4985 | ⑧ N 300299.9674<br>E 578884.1905 |
| ③ N 300279.1358<br>E 578661.7628 | ⑨ N 300277.6481<br>E 578883.2079 |
| ④ N 300279.2799<br>E 578658.2768 | ⑩ N 300289.9000<br>E 578890.5112 |
| ⑤ N 300315.8211<br>E 578659.7860 | ⑪ N 300268.8571<br>E 578911.3044 |
| ⑥ N 300307.2945<br>E 578666.2109 |                                  |

OWNER/DEVELOPER:  
WHISPERING WOODS LAND LLC  
803 PCA ROAD  
WARRENSBURG, MO 64083

REVISIONS  
09/27/2020  
PER CITY COMMENTS



SHAWN DUKE - ENGINEER  
MO PE#2013006489

WHISPERING WOODS 2ND PLAT  
STREET & STORM SEWER PLANS  
PLAT (FOR REFERENCE ONLY)  
LEE'S SUMMIT, MO  
802 FRANCIS STREET  
ST. JOSEPH, MO 64501  
816-364-5222  
www.snyder-associates.com

WHISPERING WOODS 2ND PLAT  
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SNYDER & ASSOCIATES  
ENGINEERS & PLANNERS, INC.

RELEASE FOR  
CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
12/08/2020

Project No: 1200484.11

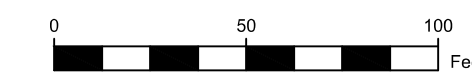
Sheet 4



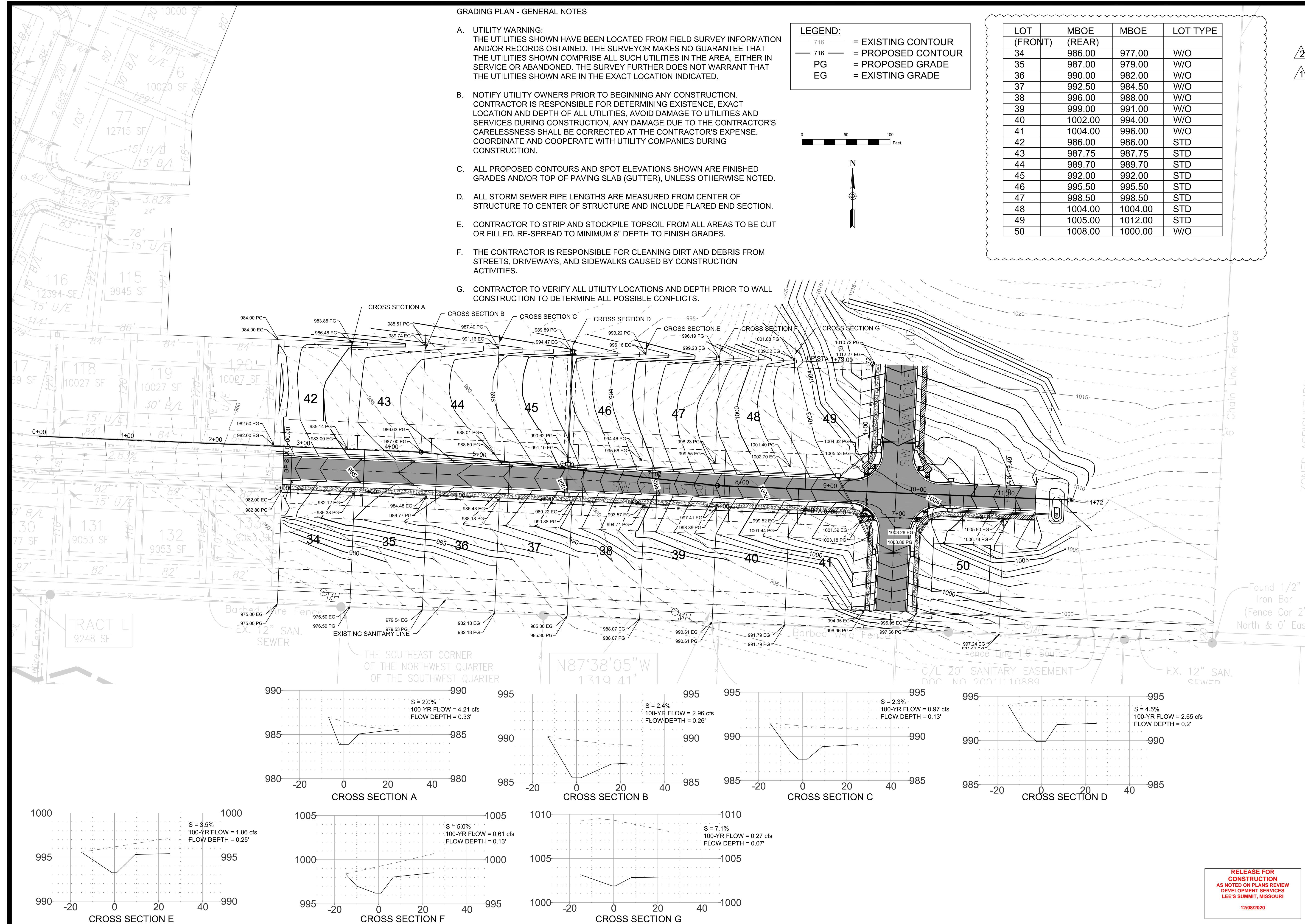
- A. UTILITY WARNING:  
THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEY FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED.
- B. 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.

**LEGEND:**

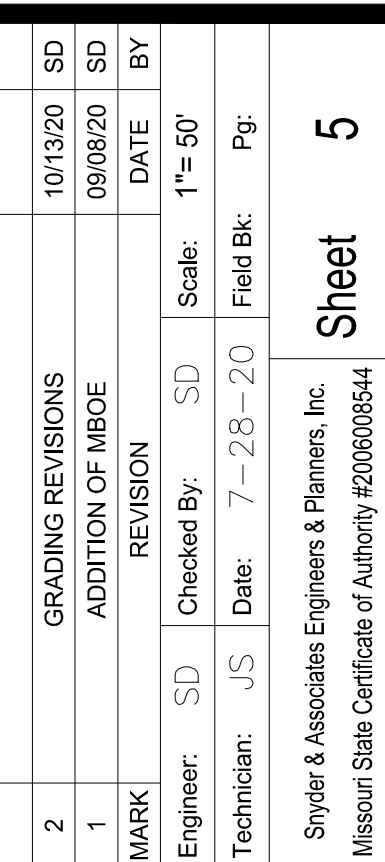
|         |                    |
|---------|--------------------|
| — 716 — | = EXISTING CONTOUR |
| — 716 — | = PROPOSED CONTOUR |
| PG      | = PROPOSED GRADE   |
| EG      | = EXISTING GRADE   |



| LOT<br>(FRONT) | MBOE<br>(REAR) | MBOE    | LOT TYPE |
|----------------|----------------|---------|----------|
| 34             | 986.00         | 977.00  | W/O      |
| 35             | 987.00         | 979.00  | W/O      |
| 36             | 990.00         | 982.00  | W/O      |
| 37             | 992.50         | 984.50  | W/O      |
| 38             | 996.00         | 988.00  | W/O      |
| 39             | 999.00         | 991.00  | W/O      |
| 40             | 1002.00        | 994.00  | W/O      |
| 41             | 1004.00        | 996.00  | W/O      |
| 42             | 986.00         | 986.00  | STD      |
| 43             | 987.75         | 987.75  | STD      |
| 44             | 989.70         | 989.70  | STD      |
| 45             | 992.00         | 992.00  | STD      |
| 46             | 995.50         | 995.50  | STD      |
| 47             | 998.50         | 998.50  | STD      |
| 48             | 1004.00        | 1004.00 | STD      |
| 49             | 1005.00        | 1012.00 | STD      |
| 50             | 1008.00        | 1000.00 | W/O      |



**RELEASE FOR  
CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
12/08/2020**



STATE OF MISSOURI  
SHAWN DUKE  
NUMBER  
PE-2013006489  
PROFESSIONAL ENGINEER  
11/2/20

SHAWN DUKE - ENGINEER  
MO PE#2013006489

LEE'S SUMMIT, MO

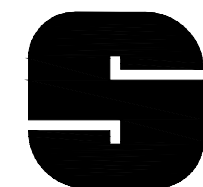
802 FRANCIS STREET  
ST. JOSEPH, MO 64501  
816-364-5222

**WHISPERING WOODS 2ND PLAT  
STREET & STORM SEWER PLANS**

# MASTER DRAINAGE PLAN

**SNYDER & ASSOCIATES**  
**ENGINEERS & PLANNERS, INC.**  
www.snyder-associates.com

www.snyder-associates.com

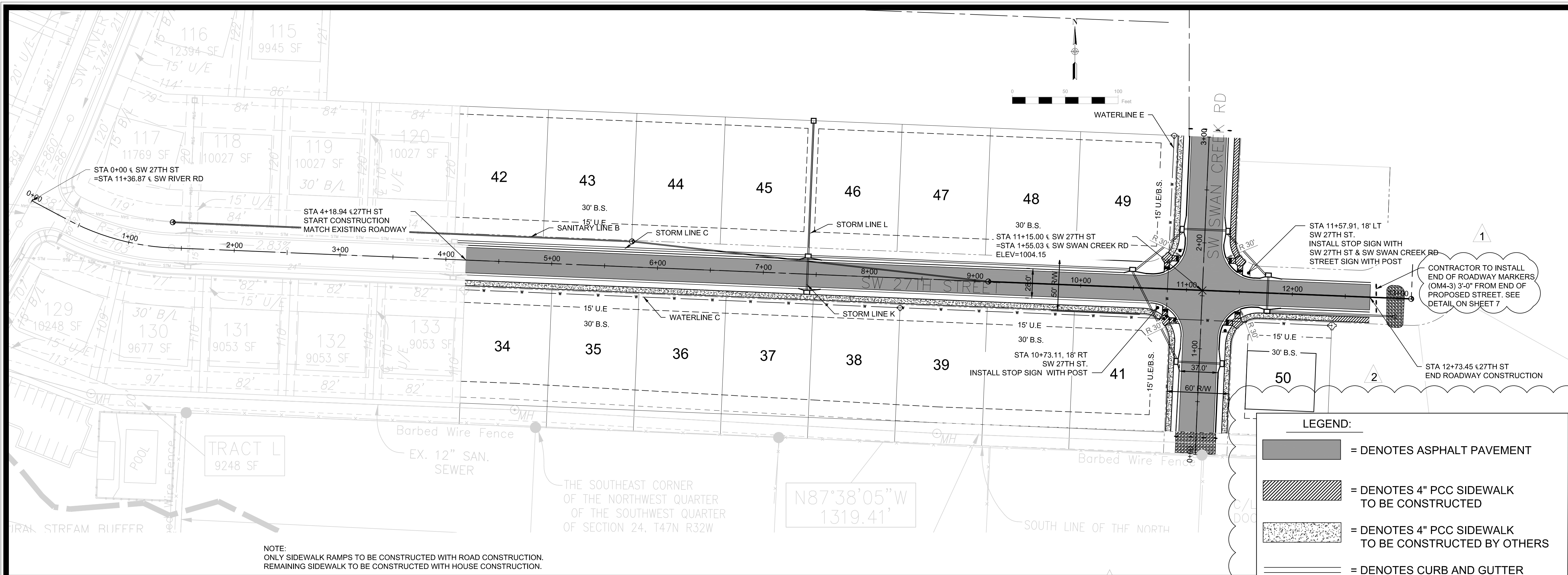


**SNYDER**  
**& ASSOCIATES**

Project No: 1200484.11

Sheet 5

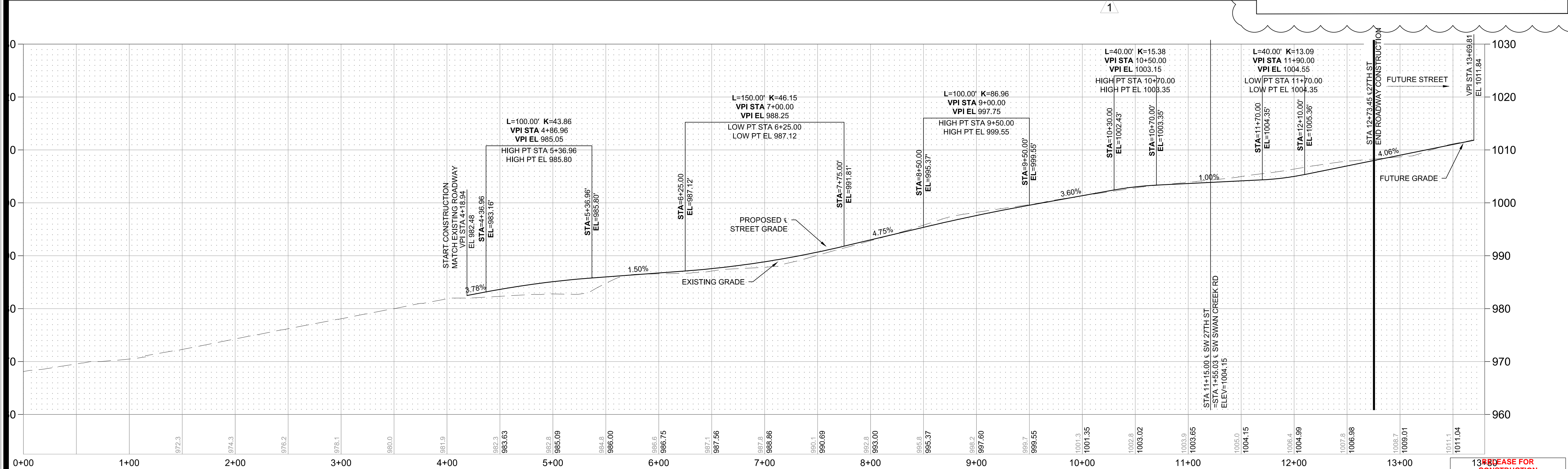




NOTE:  
ONLY SIDEWALK RAMPS TO BE CONSTRUCTED WITH ROAD CONSTRUCTION.  
REMAINING SIDEWALK TO BE CONSTRUCTED WITH HOUSE CONSTRUCTION.

LEGEND:

- [Solid Grey] = DENOTES ASPHALT PAVEMENT
- [Hatched] = DENOTES 4" PCC SIDEWALK TO BE CONSTRUCTED
- [Dotted] = DENOTES 4" PCC SIDEWALK TO BE CONSTRUCTED BY OTHERS
- [Line] = DENOTES CURB AND GUTTER



SW 27TH ST PROFILE  
(DESIGN SPEED=25MPH)

13+00  
REUSE FOR CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
12/08/2020

|                             |          |                 |
|-----------------------------|----------|-----------------|
| REVISIONS TO SIDEWALK       | SD       | 10/08/20        |
| REVISIONS PER CITY COMMENTS | SD       | 09/08/20        |
| MARK                        | REVISION | DATE            |
| Engineer:                   | SD       | Checked By: SD  |
| Technician:                 | JS       | Date: 7-28-20   |
| Scale: 1"= 50'              |          | Field Bk: Pg: 6 |

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

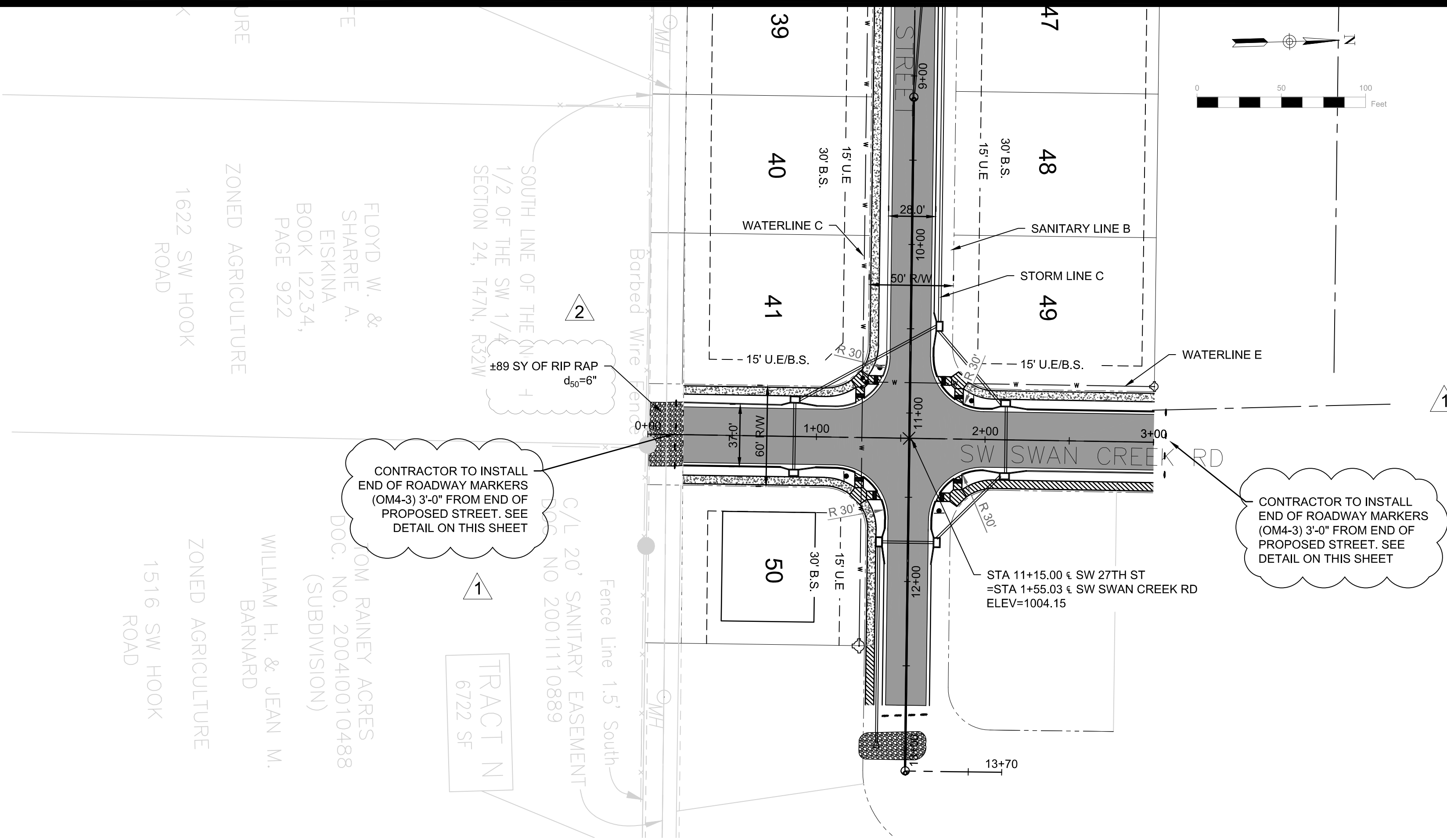
SHAWN DUKE - ENGINEER  
MO PE#2013006489

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

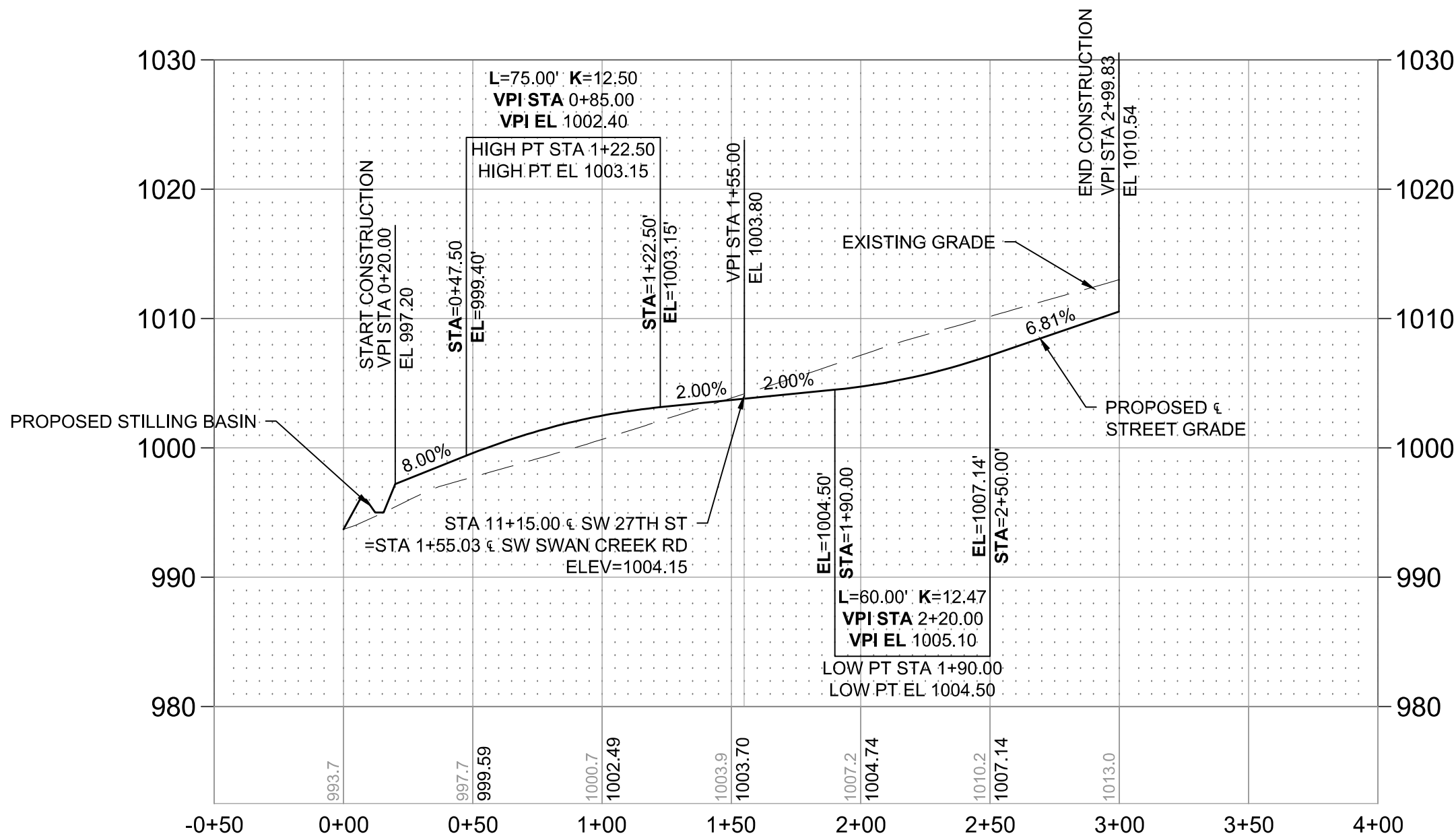
**SNYDER & ASSOCIATES**  
ENGINEERS & PLANNERS, INC.

Project No: 1200484.11  
Sheet 6

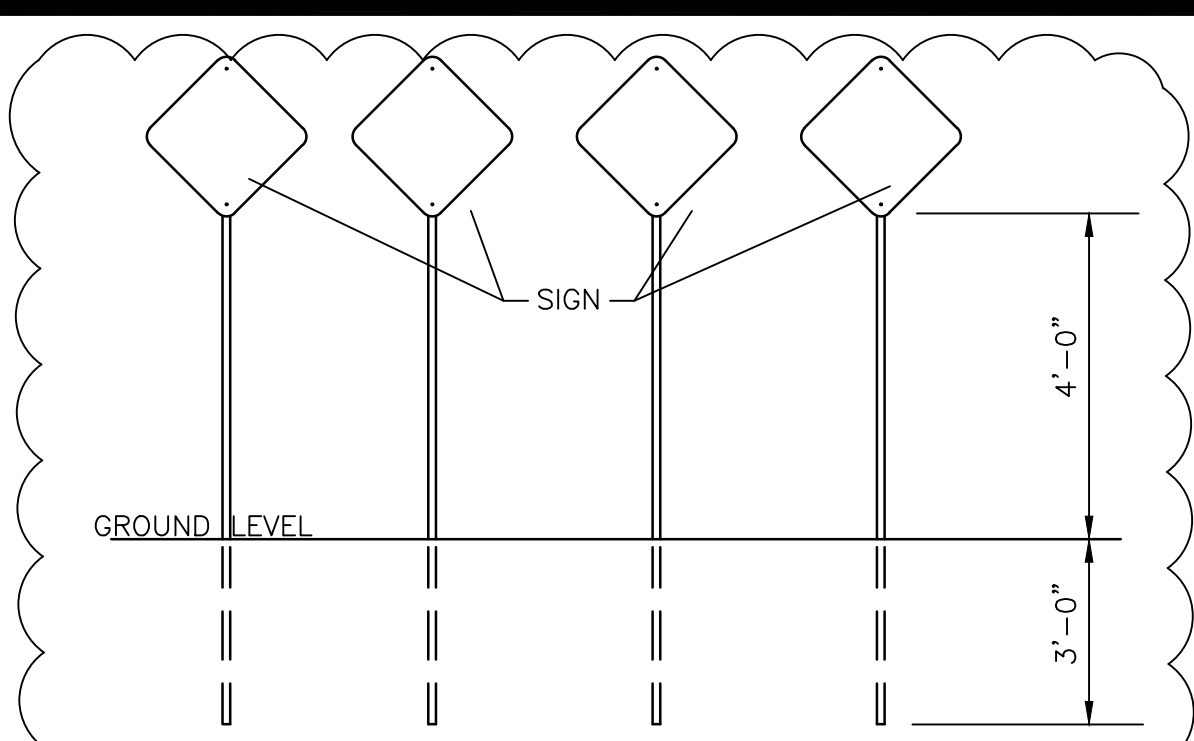




NOTE:  
ONLY SIDEWALK RAMPS TO BE CONSTRUCTED WITH ROAD CONSTRUCTION.  
REMAINING SIDEWALK TO BE CONSTRUCTED WITH HOUSE CONSTRUCTION.



SW SWAN CREEK ROAD PROFILE



NOTES:  
THICKNESS OF FLAT SHEET FOR TYPE IV OBJECT MARKERS  
SHALL BE 0.063" ON RED BACKGROUND.  
4 REQUIRED AT 8' SPACING.

END OF ROAD SIGNAGE  
N.T.S.

2

LEGEND:

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

WHISPERING WOODS 2ND PLAT  
STREET & STORM SEWER PLAN

STREET PLAN & PROFILE



Project No: 1200484.11

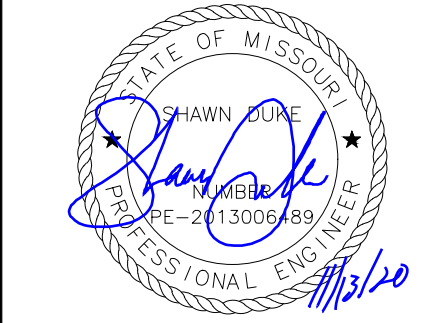
Sheet 7

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www.snyder-associates.com

LEE'S SUMMIT, MO

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816-364-5222

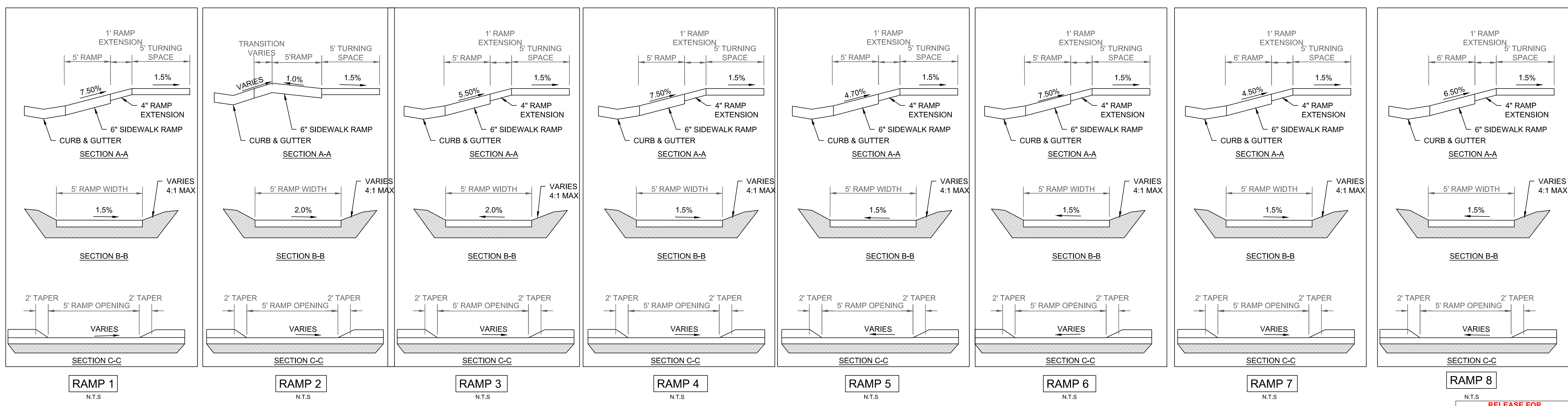
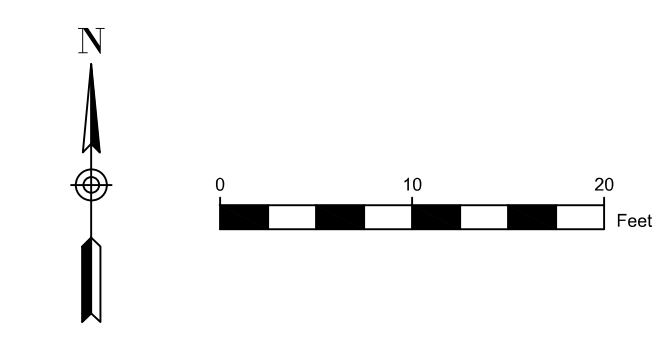
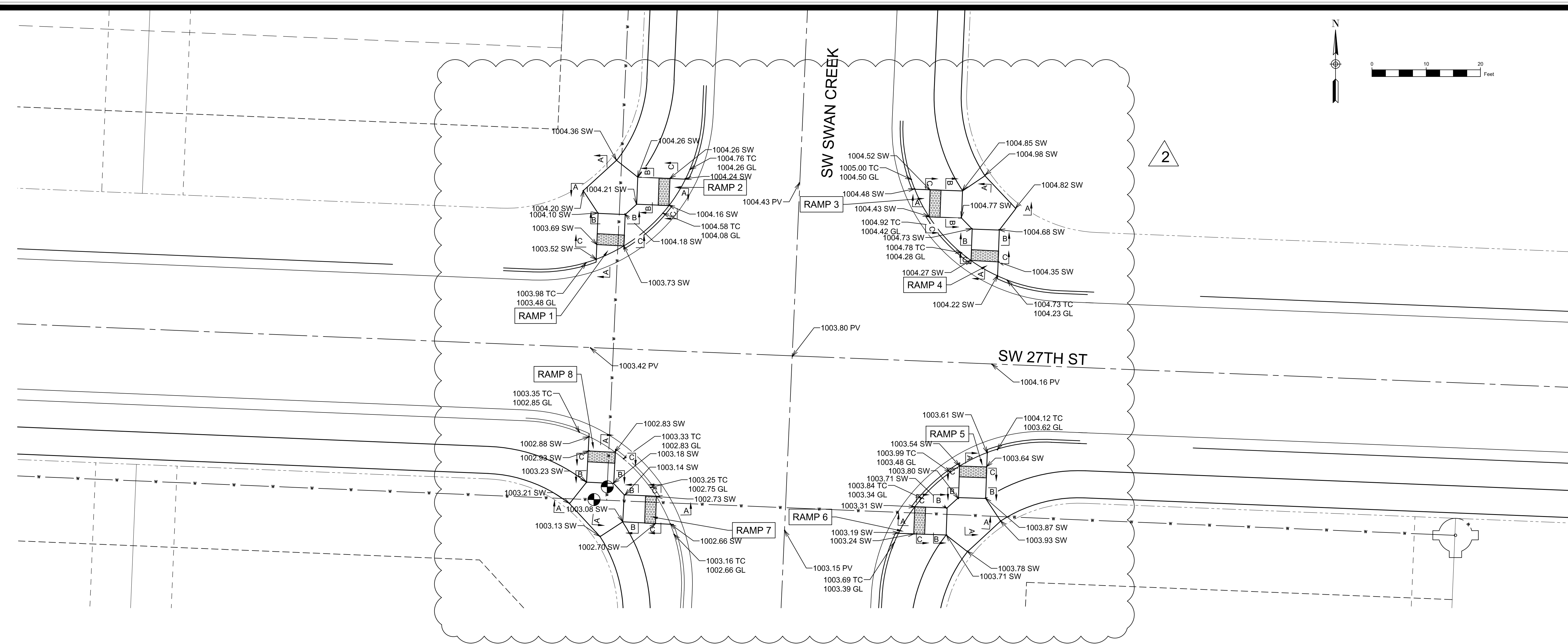
SHAWN DUKE - ENGINEER  
MO PE#2013006489



| REVISIONS TO SIDEWALK       | SD       | 10/08/20       |
|-----------------------------|----------|----------------|
| REVISIONS PER CITY COMMENTS | SD       | 09/08/20       |
| MARK                        | REVISION | DATE           |
| 2                           | 1        | 1              |
| Engineer:                   | SD       | Checked By: SD |
| Technician:                 | JS       | Date: 7-28-20  |
| Scale:                      | 1"= 50'  | Field Bk:      |
| Pg:                         | 7        | Sheet          |

RELEASE FOR  
CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
12/08/2020





RELEASE FOR  
CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
12/08/2020

|  |                |                |
|--|----------------|----------------|
| REVISION TO CURB WINGS   | SD             | BY             |
| 2  | 10/14/20       | DATE           |
| MARK   | REVISION       | DATE           |
| Engineer: SD   | Checked By: SD | Scale: 1"= 10' |
| Technician: JS   | Date: 7-28-20  | Field Bk:      |
| Sheet 8  |                |                |
| Snyder & Associates Engineers & Planners, Inc.<br>Missouri State Certificate of Authority #200006544 |                |                |

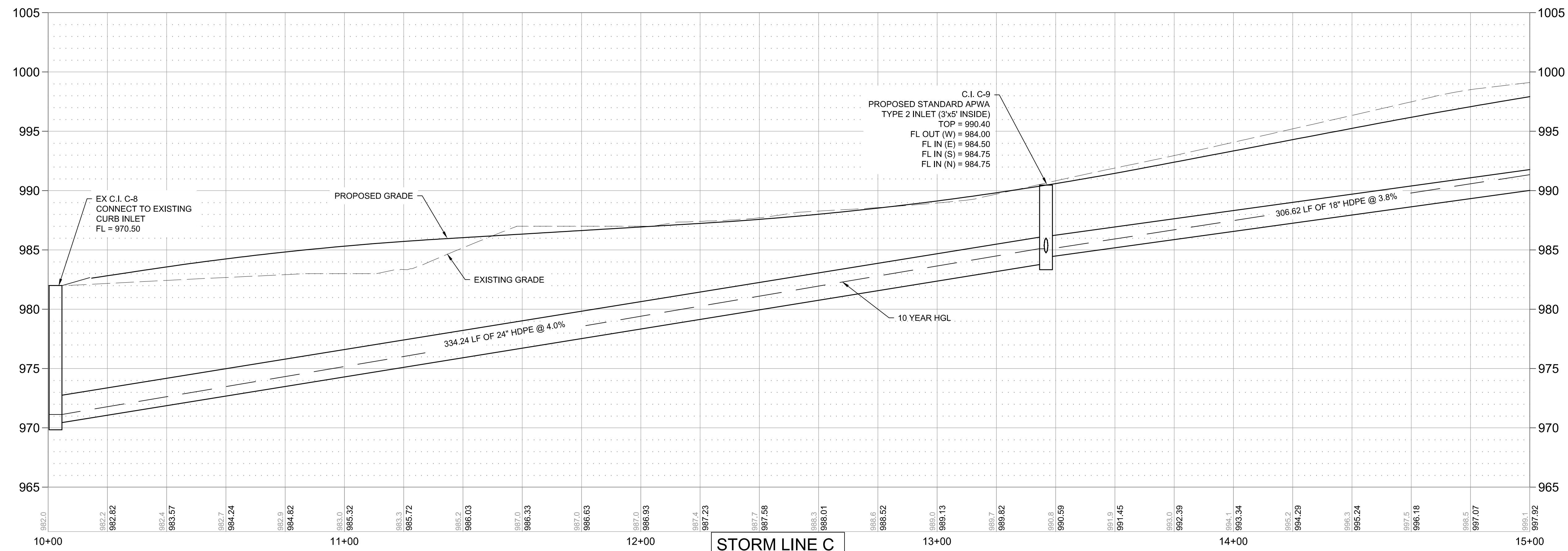
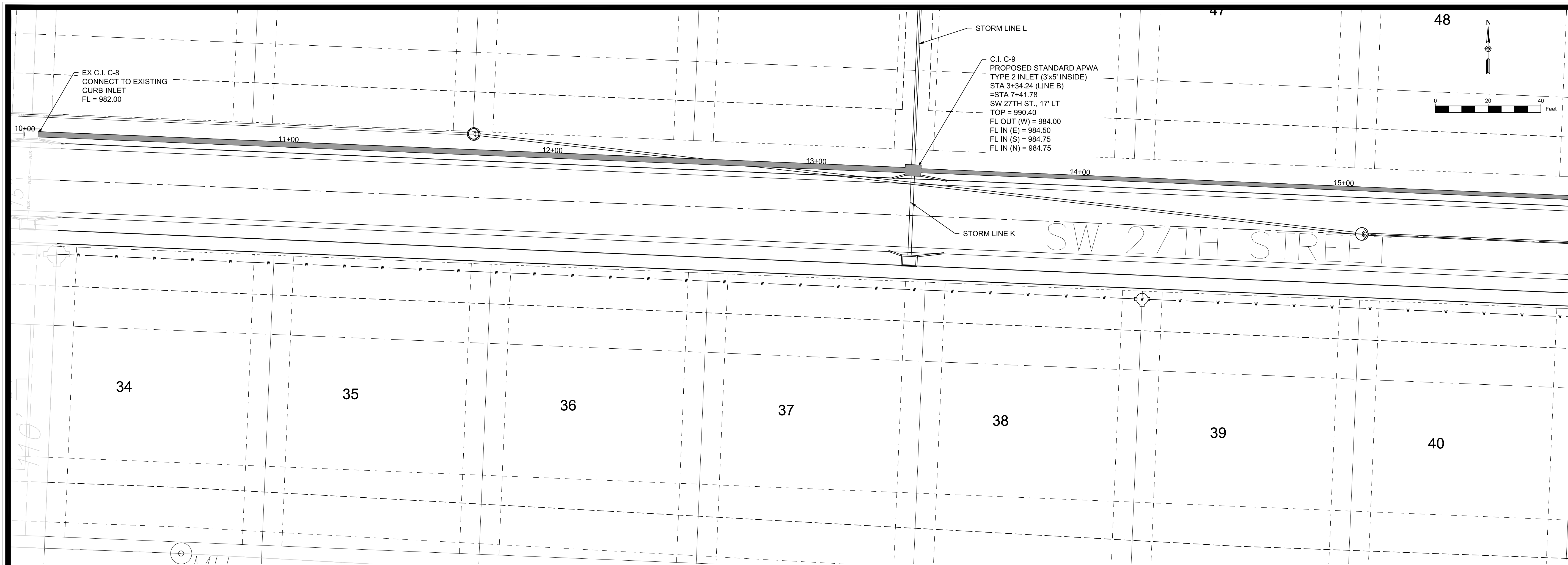
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MO PE#2013006489

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WHISPERING WOODS 2ND PLAT  
STREET & STORM SEWER PLANS  
INTERSECTION DETAILS  
**SNYDER & ASSOCIATES**  
ENGINEERS & PLANNERS, INC.







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LEE'S SUMMIT, MISSOURI  
12/08/2020

|                |                |                |     |
|----------------|----------------|----------------|-----|
| MARK           | REVISION       | DATE           | BY  |
| Engineer: SD   | Checked By: SD | Scale: 1"= 20' | Pg: |
| Technician: JS | Date: 7-28-20  | Field Bk:      | Pg: |

Sheet 9

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

SHAWN DUKE - ENGINEER  
MO PE#2013006489

WHISPERING WOODS 2ND PLAT  
STREET & STORM SEWER PLANS

STORM PLAN & PROFILE

LEE'S SUMMIT, MO

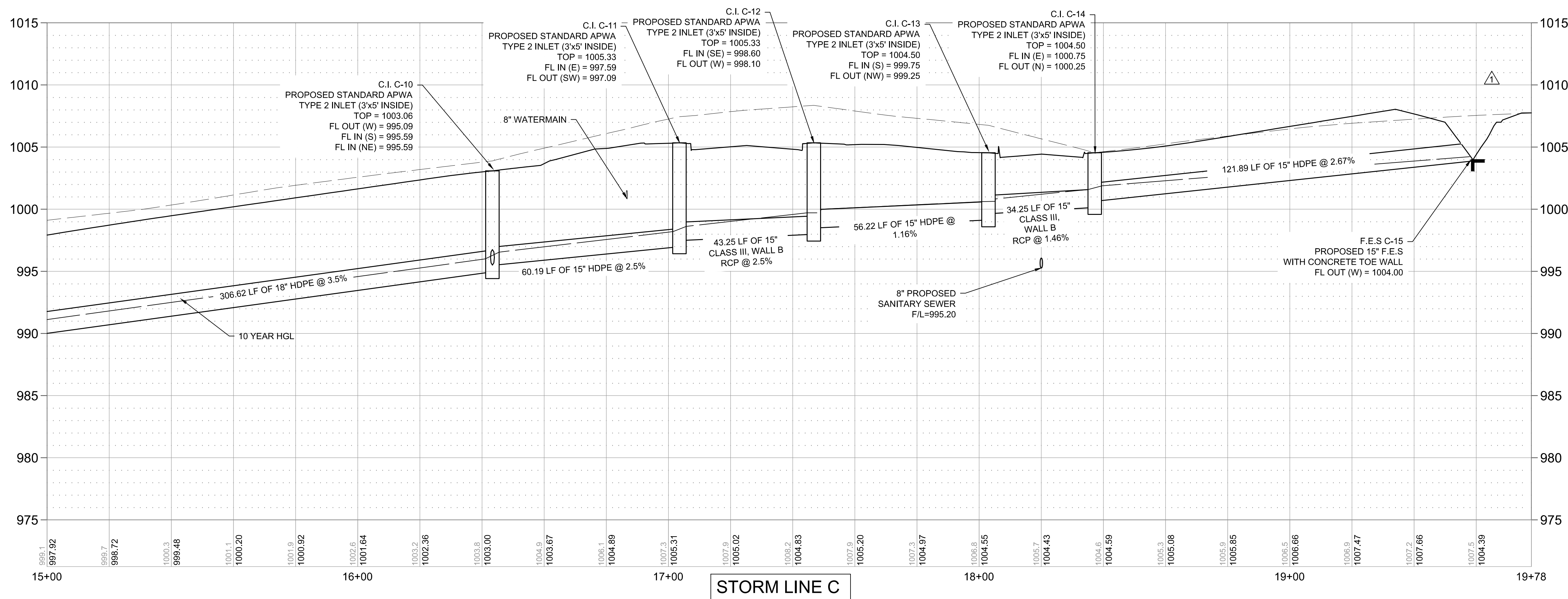
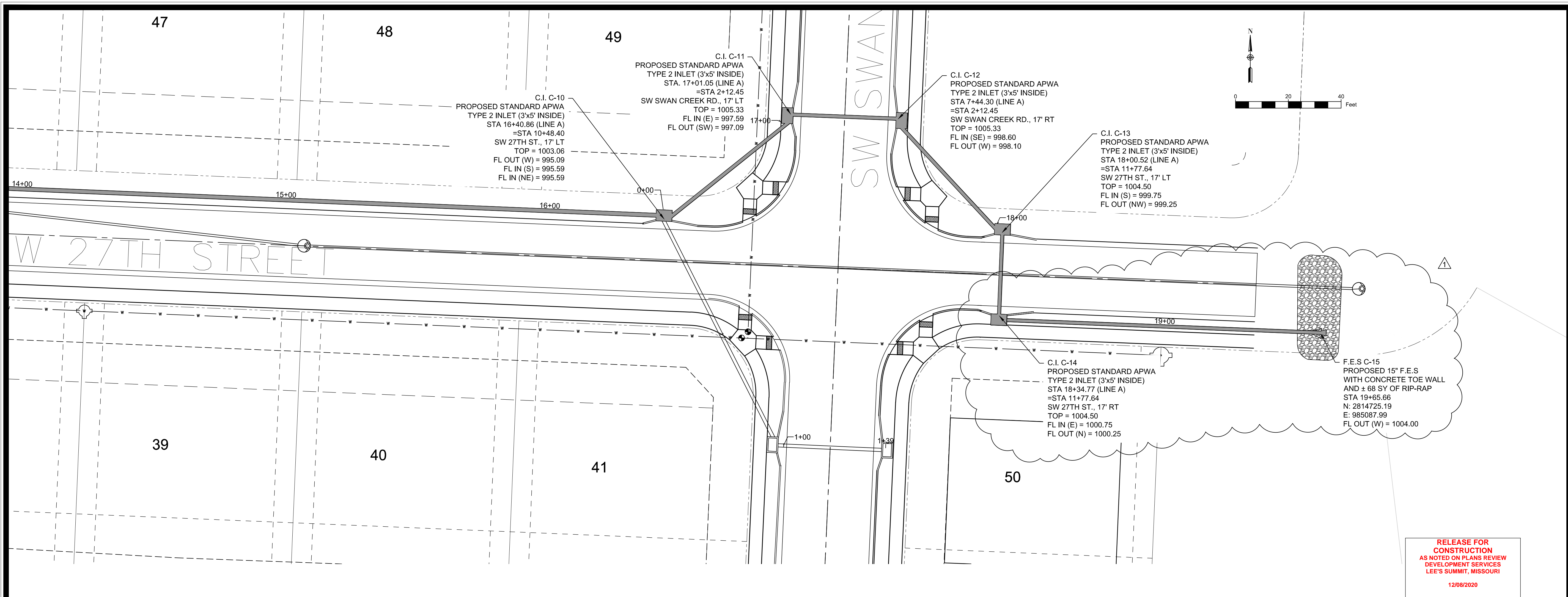
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**SNYDER & ASSOCIATES**  
ENGINEERS & PLANNERS, INC.

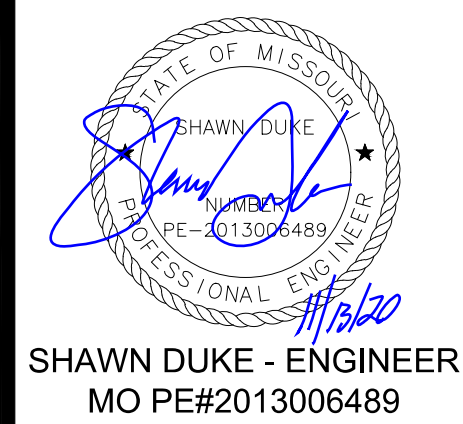
Project No: 1200484.11

Sheet 9





| MARK | REVISION                   | DATE           | BY             |
|------|----------------------------|----------------|----------------|
| 1    | REVISED STORM PIPE NETWORK | DATE           | BY             |
| 2    | Engineer: SD               | Checked By: SD | Scale: 1"= 20' |
| 3    | Technician: JS             | Date: 7-28-20  | Field Bk: Pg:  |



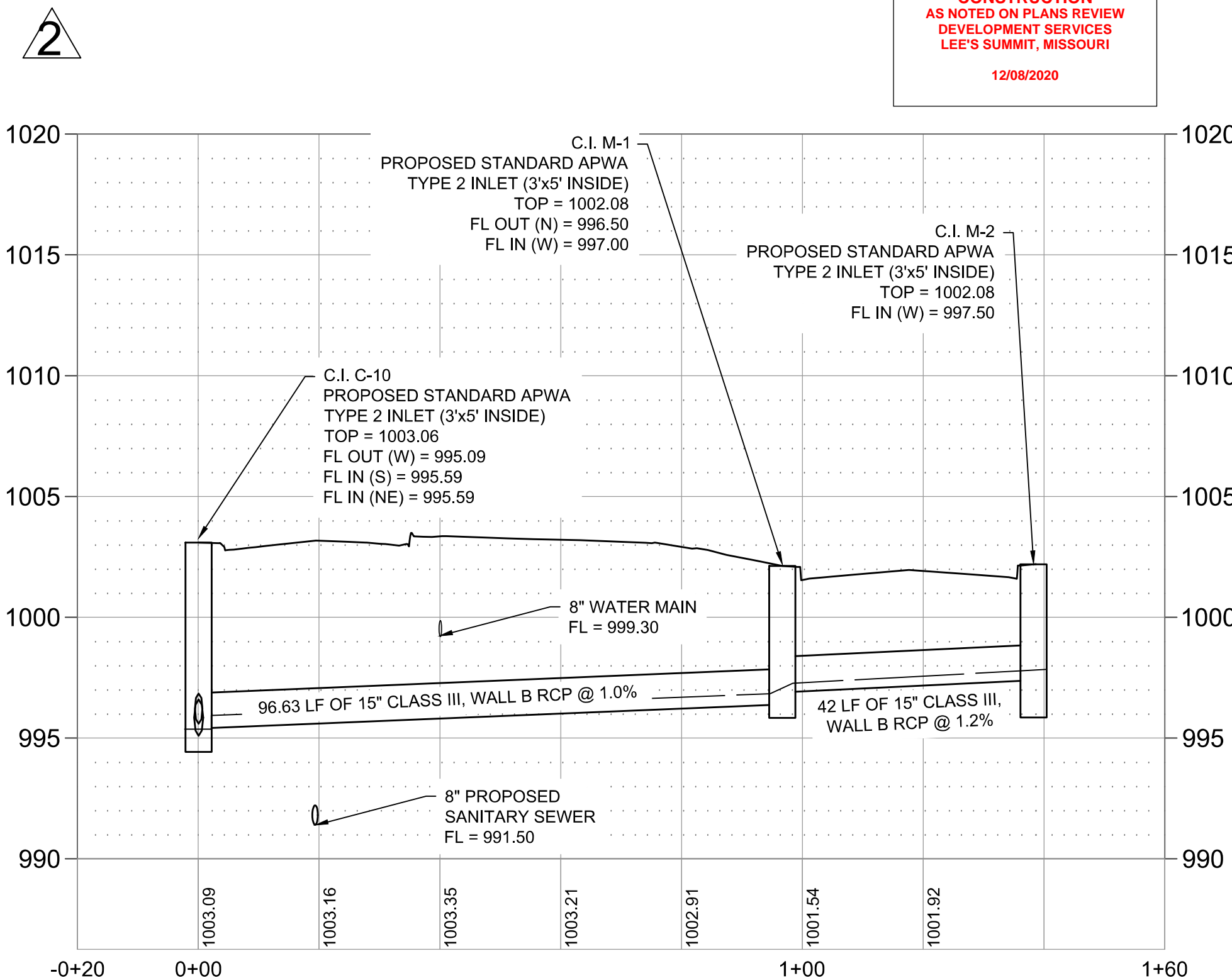
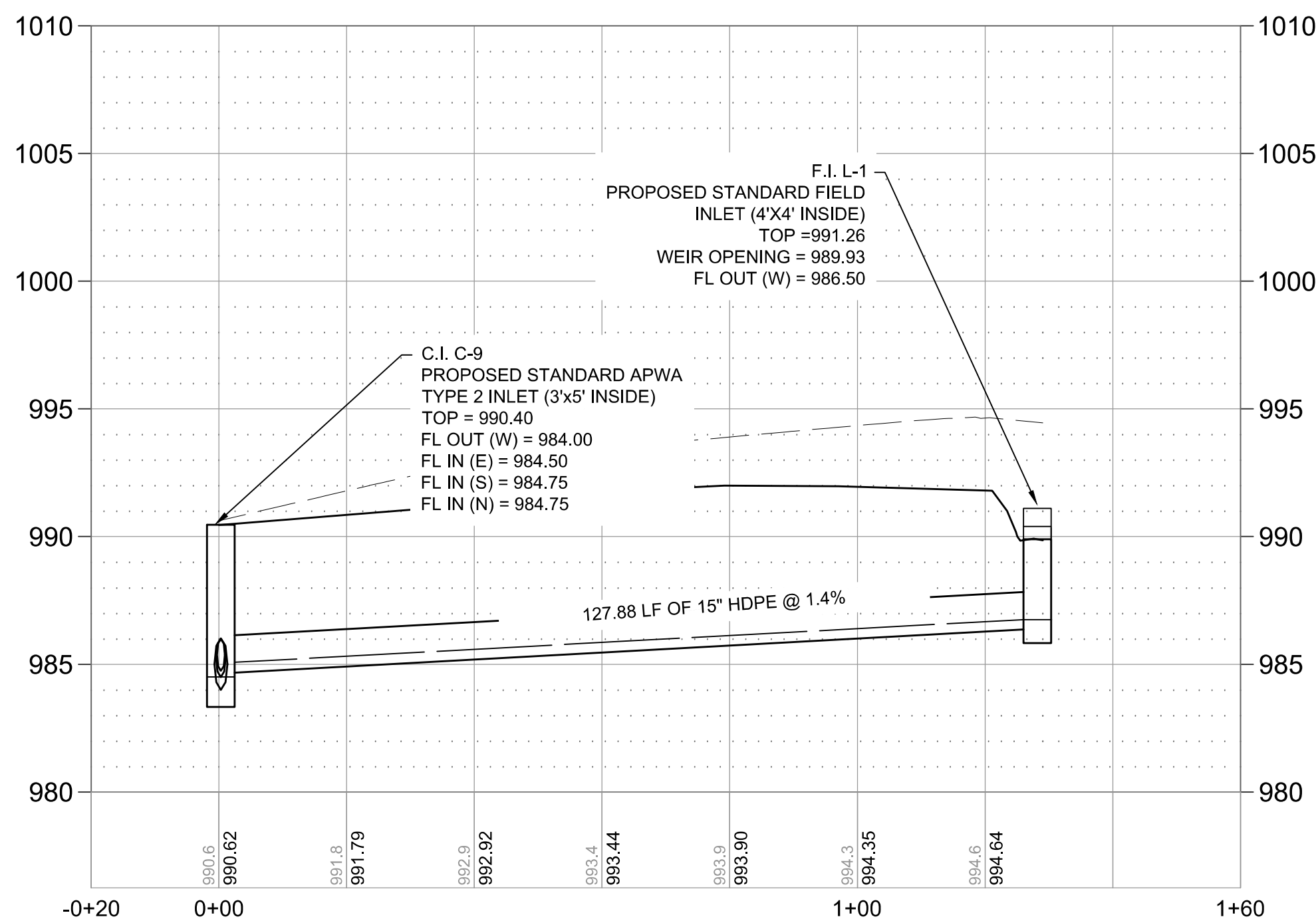
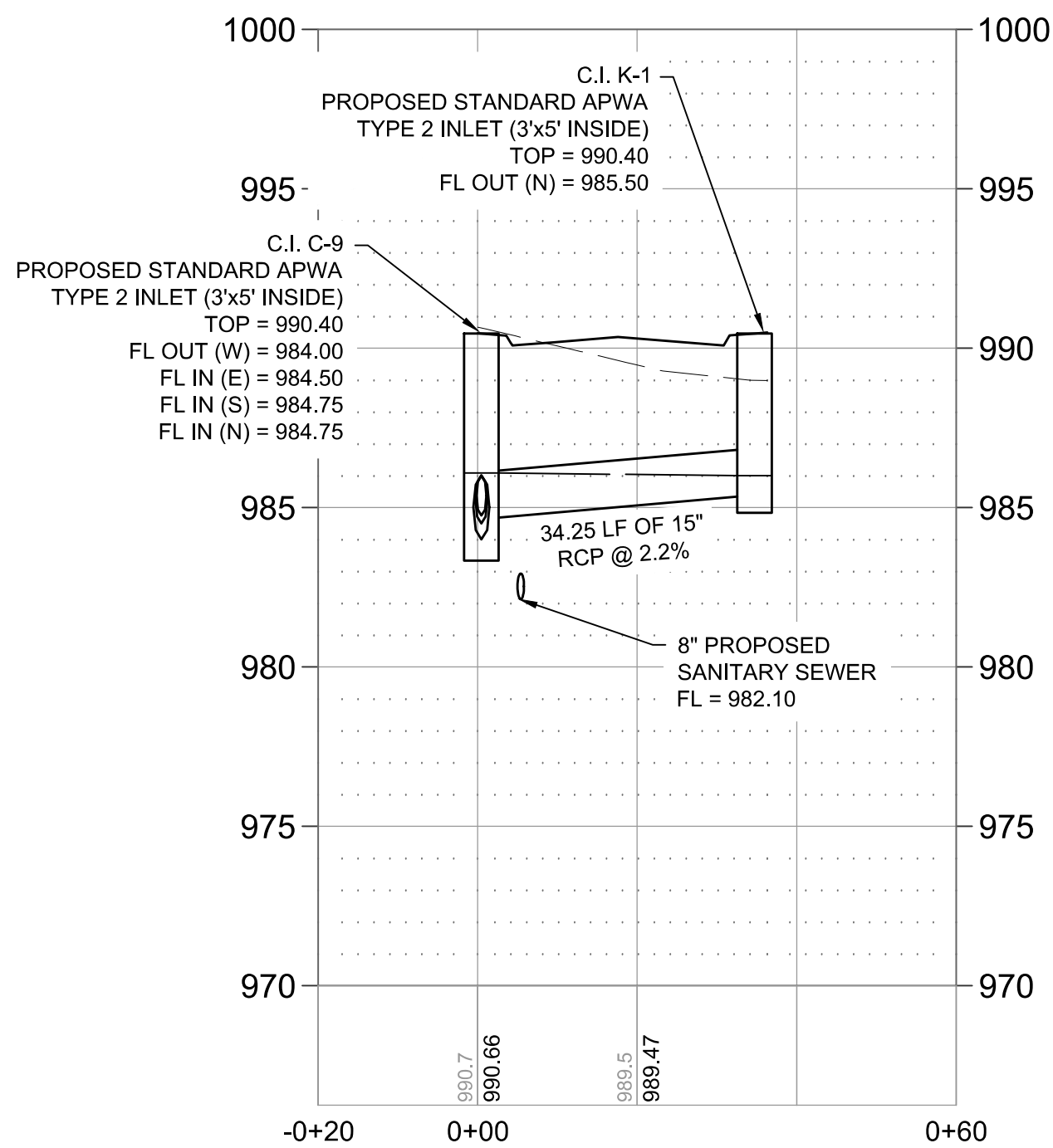
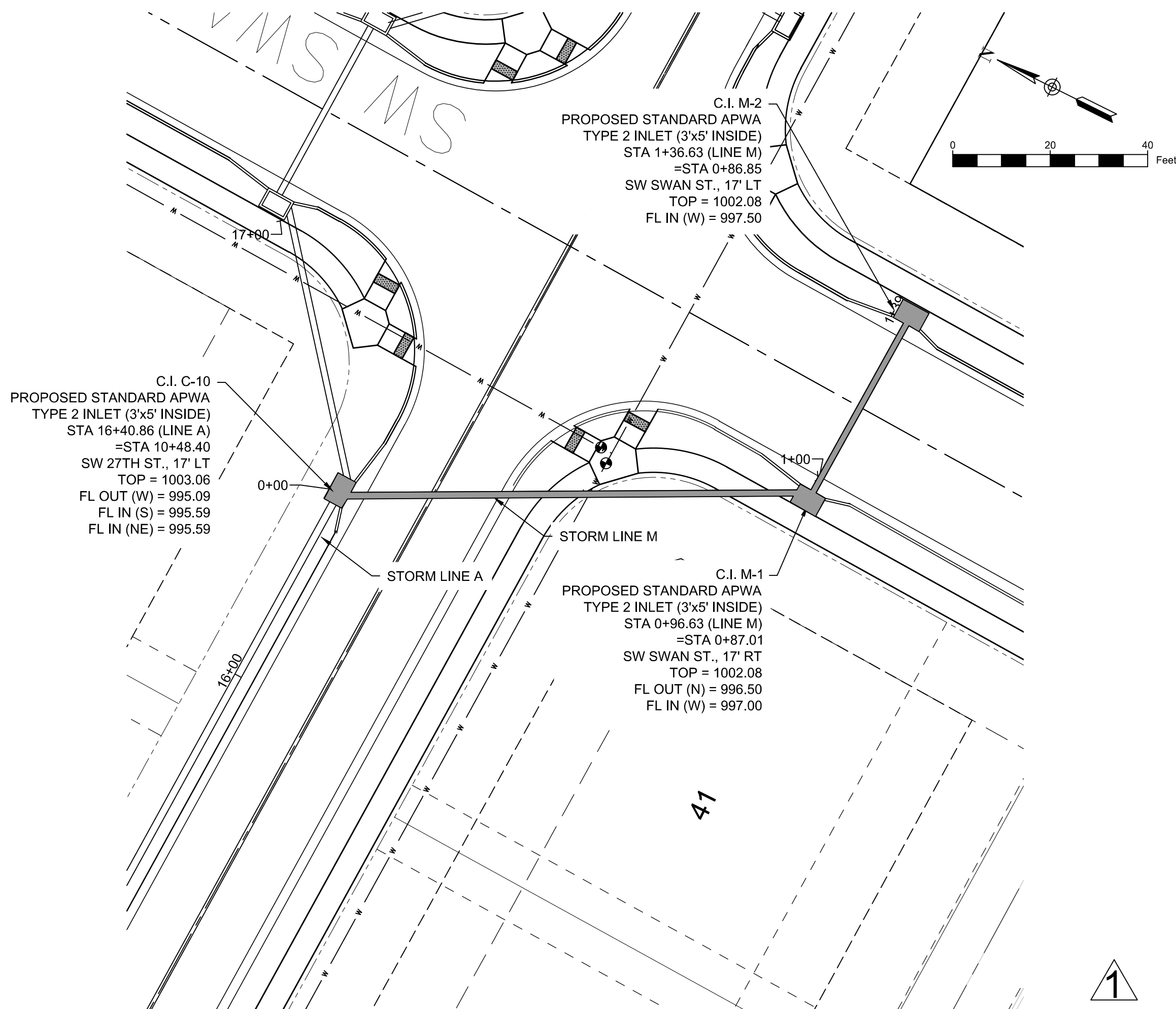
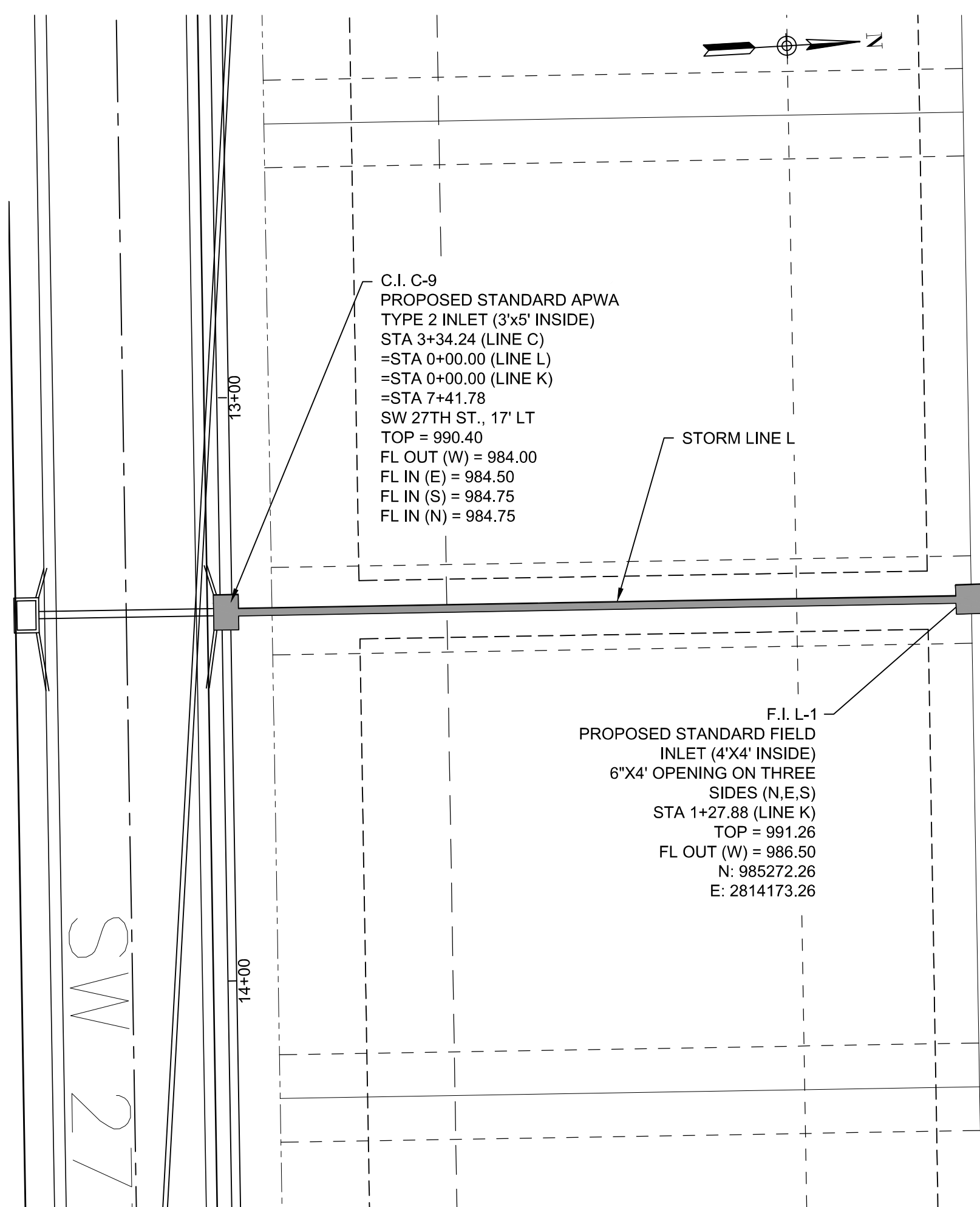
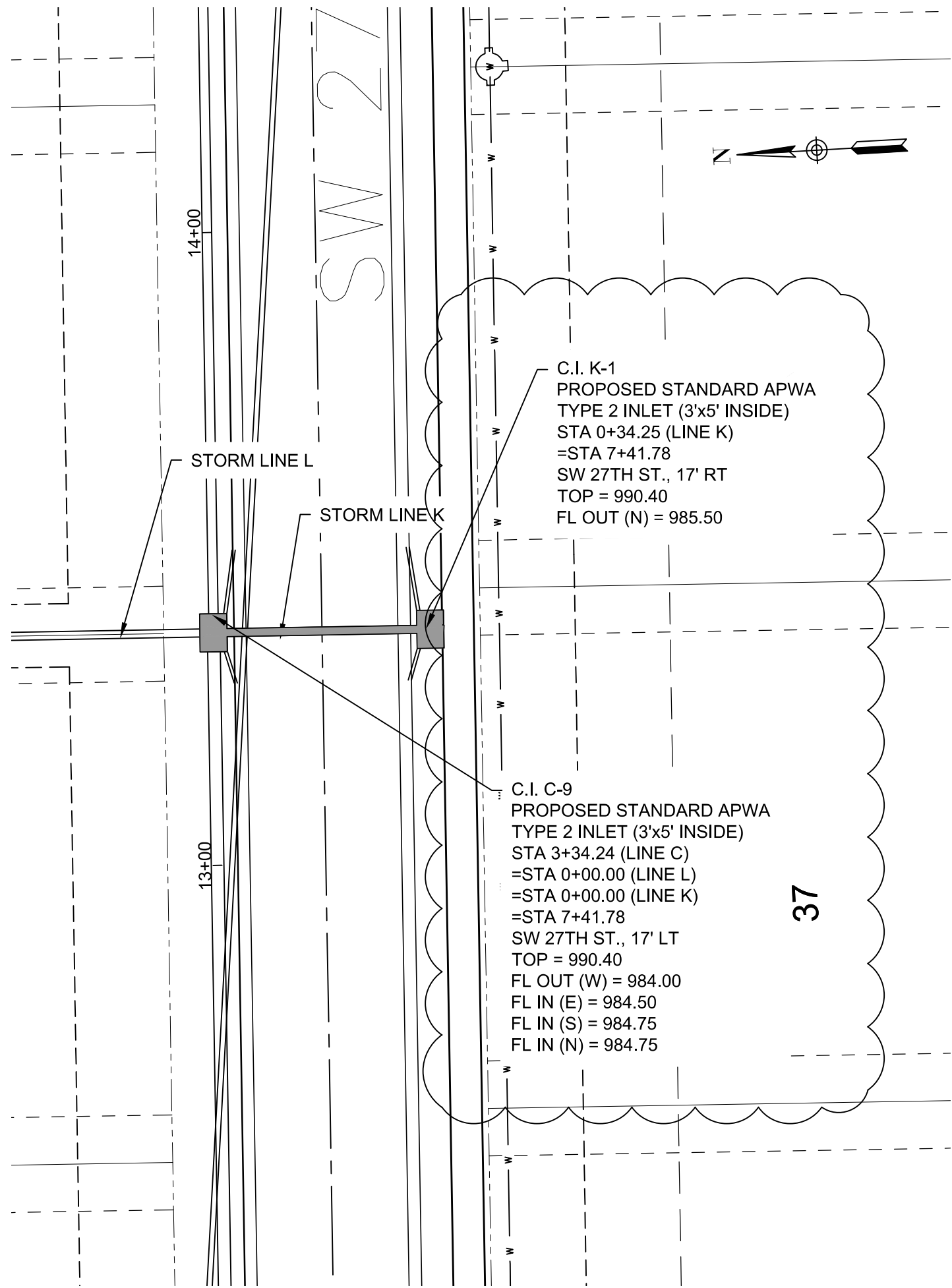
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ST. JOSEPH, MO 64501  
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WHISPERING WOODS 2ND PLAT  
STREET & STORM SEWER PLANS  
STORM PLAN & PROFILE  
**SNYDER & ASSOCIATES**  
ENGINEERS & PLANNERS, INC.  
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Project No: 1200484.11  
Sheet 10





RELEASE FOR  
CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
12/08/2020

WHISPERING WOODS 2ND PLAT  
STREET & STORM SEWER PLANS

STORM PLAN & PROFILE

**SNYDER & ASSOCIATES**  
ENGINEERS & PLANNERS, INC.



Project No: 1200484.11

Sheet 11

LEE'S SUMMIT, MO

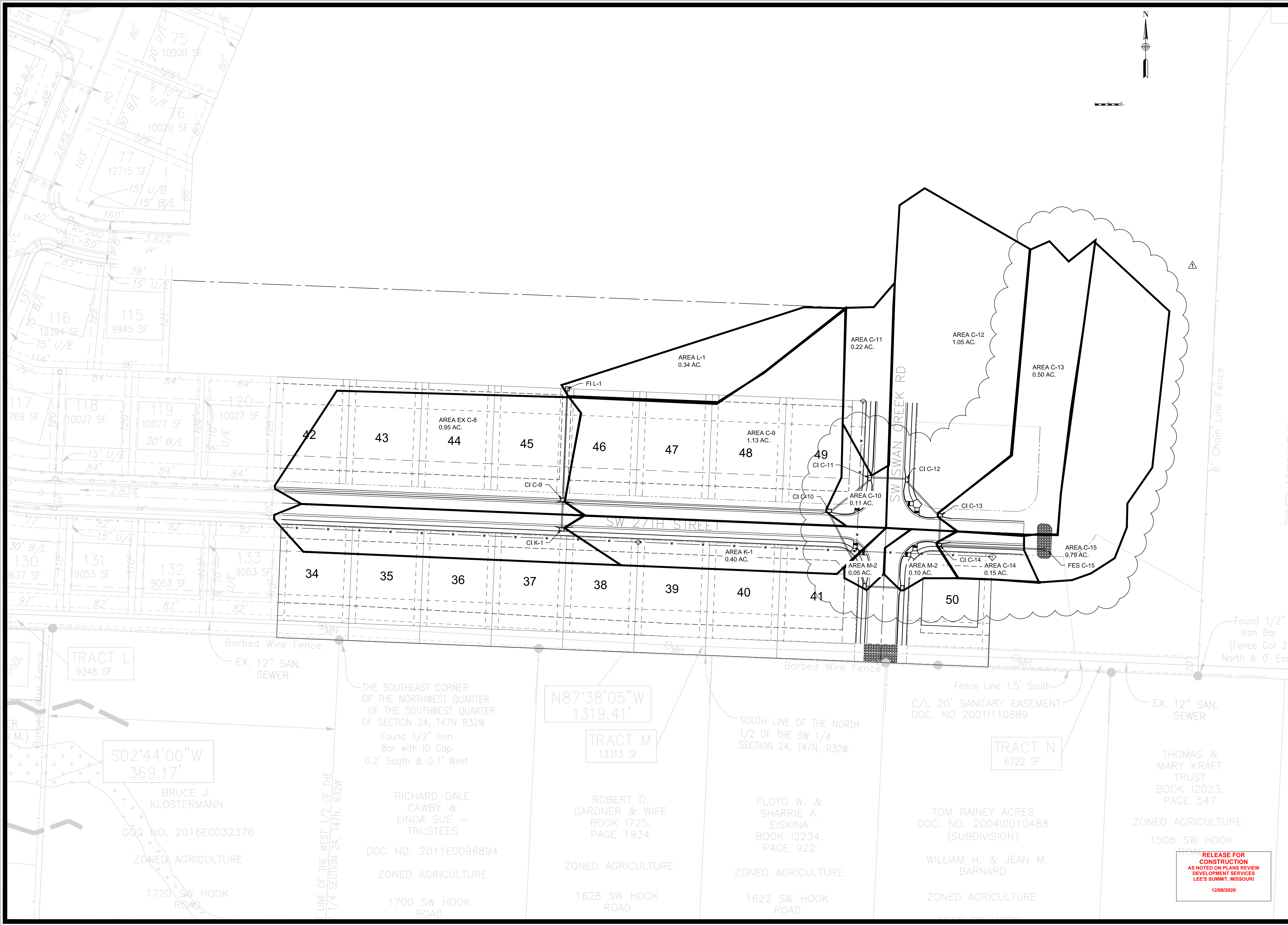
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SHAWN DUKE - ENGINEER  
MO PE#2013006489



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| MARK   |                | REVISION       | DATE     |
| Engineer: SD   | Checked By: SD | Scale: 1"= 50' | Pg:      |
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RELEASE FOR  
CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
12/08/2020



| Label   | Start Node | Stop Node | Length (Unified) (ft) | System Intensity (in/h) | Upstream Inlet Area (acres) | Upstream Structure Flow (Total Surface) (cfs) | System CA (acres) | System Intensity (in/h) | System Rational Flow (cfs) | Flow (cfs) | Capacity (Full Flow) (cfs) | Velocity (ft/s) | Invert (Start) (ft) | Invert (Stop) (ft) | Slope (Calculated) (ft/ft) | Hydraulic Grade Line (In) (ft) |
|---------|------------|-----------|-----------------------|-------------------------|-----------------------------|---|-------------------|-------------------------|----------------------------|------------|----------------------------|-----------------|---------------------|--------------------|----------------------------|--------------------------------|
| C9-EXC8 | CI C-9     | CI C8     | 334.2                 | 6.957                   | 1.13                        | 4.29  | 2.018             | 6.957                   | 14.15                      | 14.15      | 49.25                      | 13.54           | 984                 | 970.5              | 0.04                       | 985.36                         |
| C10-C9  | CI C-10    | CI C-9    | 306.6                 | 7.111                   | 0.11                        | 0.42  | 1.112             | 7.111                   | 7.97                       | 7.97       | 21.15                      | 11.13           | 995.09              | 984.5              | 0.035                      | 996.18                         |
| C11-C10 | CI C-11    | CI C-10   | 60.2                  | 7.228                   | 0.22                        | 0.84  | 0.899             | 7.228                   | 6.55                       | 6.55       | 11.05                      | 9.38            | 997.09              | 995.59             | 0.025                      | 998.12                         |
| C12-C11 | CI C-12    | CI C-11   | 43.3                  | 7.273                   | 1.05                        | 3.99  | 0.787             | 7.273                   | 5.77                       | 5.77       | 7.01                       | 6.38            | 998.1               | 997.59             | 0.012                      | 999.07                         |
| C13-C12 | CI C-13    | CI C-12   | 56.2                  | 7.34                    | 0.5                         | 1.9   | 0.331             | 7.34                    | 2.45                       | 2.45       | 7.52                       | 5.48            | 999.25              | 998.6              | 0.012                      | 999.88                         |
| C14-C13 | CI C-14    | CI C-13   | 34.3                  | 7.392                   | 0.15                        | 0.57  | 0.076             | 7.392                   | 0.57                       | 0.57       | 7.8                        | 3.71            | 1000.25             | 999.75             | 0.015                      | 1000.54                        |
| C15-C14 | CI C-15    | CI C-14   | 119                   | 7.392                   | 0.79                        | 0   | 0                 | 7.392                   | 0                          | 0          | 11.56                      | 0               | 1004                | 1000.75            | 0.027                      | 1004                           |
| K1-C9   | CI K-1     | CI C-9    | 34.3                  | 7.392                   | 0.4                         | 1.52  | 0.204             | 7.392                   | 1.52                       | 1.52       | 9.56                       | 5.7             | 985.5               | 984.75             | 0.022                      | 985.99                         |
| L1-C9   | L-1        | CI C-9    | 127.9                 | 7.392                   | 0.34                        | 1.29  | 0.173             | 7.392                   | 1.29                       | 1.29       | 11.16                      | 6.07            | 988                 | 984.75             | 0.025                      | 988.45                         |
| M1-C10  | CI M-1     | CI C-10   | 96.6                  | 7.31                    | 0.05                        | 0.19  | 0.076             | 7.31                    | 0.56                       | 0.56       | 6.27                       | 3.17            | 996.5               | 995.59             | 0.009                      | 996.79                         |
| M2-M1   | CI M-2     | CI M-1    | 42                    | 7.392                   | 0.1                         | 0.38  | 0.051             | 7.392                   | 0.38                       | 0.38       | 7.05                       | 3.06            | 997.5               | 997                | 0.012                      | 997.74                         |

| Label   | Start Node | Stop Node | Length (Unified) (ft) | System Intensity (in/h) | Upstream Inlet Area (acres) | Upstream Structure Flow (Total Surface) (cfs) | System CA (acres) | System Intensity (in/h) | System Rational Flow (cfs) | Flow (cfs) | Capacity (Full Flow) (cfs) | Velocity (ft/s) | Invert (Start) (ft) | Invert (Stop) (ft) | Slope (Calculated) (ft/ft) | Hydraulic Grade Line (In) (ft) |
|---------|------------|-----------|-----------------------|-------------------------|-----------------------------|---|-------------------|-------------------------|----------------------------|------------|----------------------------|-----------------|---------------------|--------------------|----------------------------|--------------------------------|
| C9-EXC8 | CI C-9     | CI C8     | 334.2                 | 9.972                   | 1.13                        | 5.93  | 1.98              | 9.972                   | 19.91                      | 19.91      | 49.25                      | 14.84           | 984                 | 970.5              | 0.04                       | 985.6                          |
| C10-C9  | CI C-10    | CI C-9    | 306.6                 | 10.07                   | 0.11                        | 0.58  | 1.112             | 10.07                   | 11.29                      | 11.29      | 21.15                      | 12.16           | 995.09              | 984.5              | 0.035                      | 996.37                         |
| C11-C10 | CI C-11    | CI C-10   | 60.2                  | 10.121                  | 0.22                        | 1.15  | 0.861             | 10.121                  | 8.79                       | 8.79       | 11.05                      | 9.99            | 997.09              | 995.59             | 0.025                      | 998.24                         |
| C12-C11 | CI C-12    | CI C-11   | 43.3                  | 10.144                  | 1.05                        | 5.51  | 0.749             | 10.144                  | 7.66                       | 7.66       | 7.01                       | 6.24            | 998.1               | 997.59             | 0.012                      | 999.29                         |
| C13-C12 | CI C-13    | CI C-12   | 56.2                  | 10.176                  | 0.5                         | 2.62  | 0.331             | 10.176                  | 3.4                        | 3.4        | 7.52                       | 5.98            | 999.25              | 998.6              | 0.012                      | 999.99                         |
| C14-C13 | CI C-14    | CI C-13   | 34.3                  | 10.2                    | 0.15                        | 0.79  | 0.076             | 10.2                    | 0.79                       | 0.79       | 7.8                        | 4.08            | 1000.25             | 999.75             | 0.015                      | 1000.6                         |
| C15-C14 | CI C-15    | CI C-14   | 119                   | 10.2                    | 0.79                        | 0   | 0                 | 10.2                    | 0                          | 0          | 11.56                      | 0               | 1004                | 1000.75            | 0.027                      | 1004                           |
| K1-C9   | CI K-1     | CI C-9    | 34.3                  | 10.2                    | 0.4                         | 2.1   | 0.204             | 10.2                    | 2.1                        | 2.1        | 9.56                       | 6.24            | 985.5               | 984.75             | 0.022                      | 986.08                         |
| L1-C9   | L-1        | CI C-9    | 127.9                 | 10.2                    | 0.34                        | 1.78  | 0.173             | 10.2                    | 1.78                       | 1.78       | 11.16                      | 6.66            | 988                 | 984.75             | 0.025                      | 988.53                         |
| M1-C10  | CI M-1     | CI C-10   | 96.6                  | 10.162                  | 0.05                        | 0.26  | 0.076             | 10.162                  | 0.78                       | 0.78       | 6.27                       | 3.48            | 996.5               | 995.59             | 0.009                      | 996.85                         |
| M2-M1   | CI M-2     | CI M-1    | 42                    | 10.2                    | 0.1                         | 0.52  | 0.051             | 10.2                    | 0.52                       | 0.52       | 7.05                       | 3.37            | 997.5               | 997                | 0.012                      | 997.78                         |

| Inlet  | Drainage Area | Inlet C | Intensity | Q   | Ku   | n     | SX    | SL    | T= Spread |
|--------|---------------|---------|-----------|-----|------|-------|-------|-------|-----------|
|        | Ac            |         | in/h      | cfs |      |       | ft/ft | ft/ft | ft        |
| EX C-8 | 0.95          | 0.51    | 7.35      | 3.6 | 0.56 | 0.012 | 2     | 1.5   | 9.70      |
| C-9    | 1.13          | 0.51    | 7.35      | 4.2 | 0.56 | 0.012 | 2     | 3.9   | 8.66      |
| C-10   | 0.11          | 0.51    | 7.35      | 0.4 | 0.56 | 0.012 | 2     | 2     | 4.10      |
| C-11   | 0.22          | 0.51    | 7.35      | 0.8 | 0.56 | 0.012 | 2     | 5.3   | 4.42      |
| C-12   | 1.05          | 0.51    | 7.35      | 3.9 | 0.56 | 0.012 | 2     | 5.3   | 7.95      |
| C-13   | 0.50          | 0.51    | 7.35      | 1.9 | 0.56 | 0.012 | 2     | 1     | 8.23      |
| C-14   | 0.15          | 0.51    | 7.35      | 0.6 | 0.56 | 0.012 | 2     | 1     | 5.24      |
| K-1    | 0.40          | 0.51    | 7.35      | 1.5 | 0.56 | 0.012 | 2     | 5     | 5.60      |
| M-1    | 0.05          | 0.51    | 7.35      | 0.2 | 0.56 | 0.012 | 2     | 5     | 2.57      |
| M-2    | 0.10          | 0.51    | 7.35      | 0.4 | 0.56 | 0.012 | 2     | 5     | 3.33      |



**SNYDER**  
**& ASSOCIATES**

Sheet 13

**SNYDER & ASSOCIATES**  
ENGINEERS & PLANNERS, INC.

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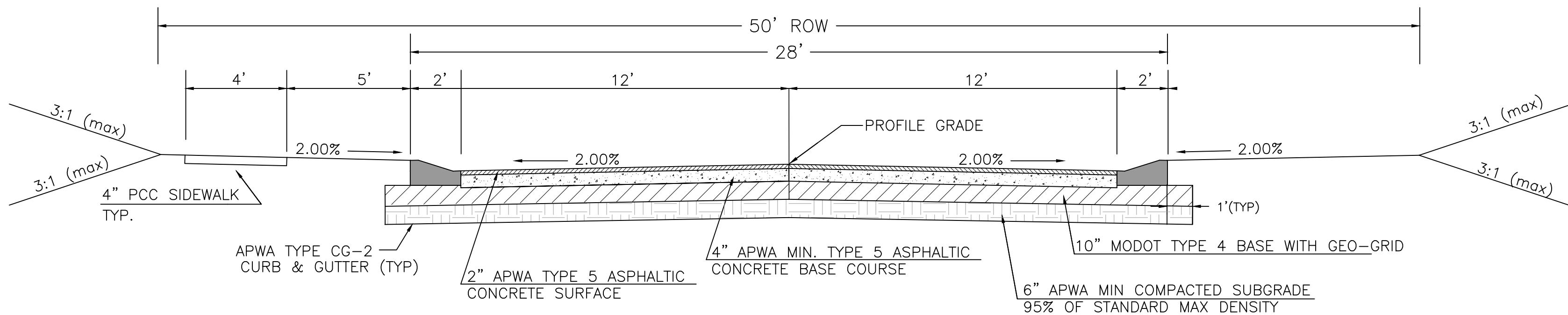
802 FRANCIS STREET  
ST. JOSEPH, MO 64501  
816-364-5222

|                |                          |                |
|----------------|--------------------------|----------------|
| 1              | REVISIONS TO STORM SEWER | 09/08/20       |
| MARK           | REVISION                 | DATE           |
| Engineer: SD   | Checked By: SD           | Scale: 1"= N/A |
| Technician: JS | Date: 7-28-20            | Field Bk: Pg:  |

Snyder & Associates Engineers & Planners, Inc.  
 Missouri State Certificate of Authority #000000554

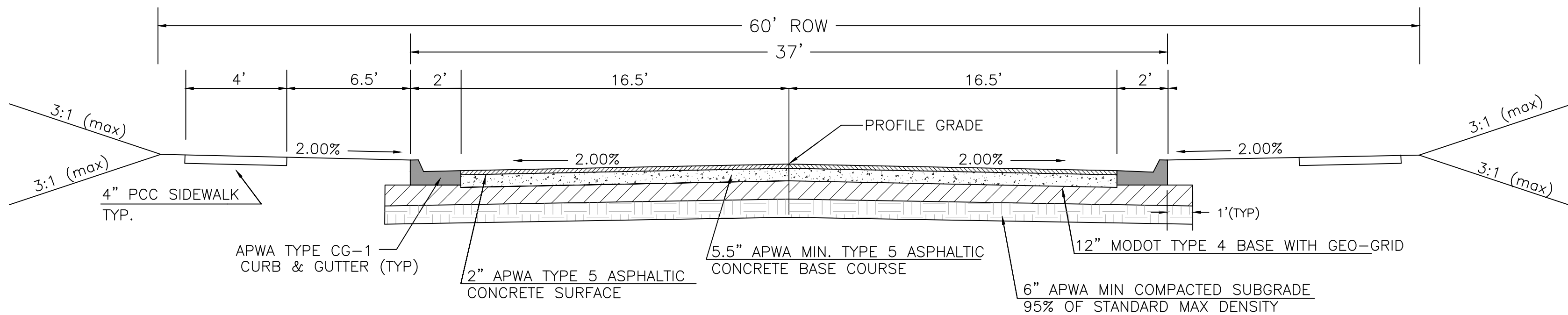
Sheet  
 13





### TYPICAL SECTION RESIDENTIAL LOCAL ACCESS

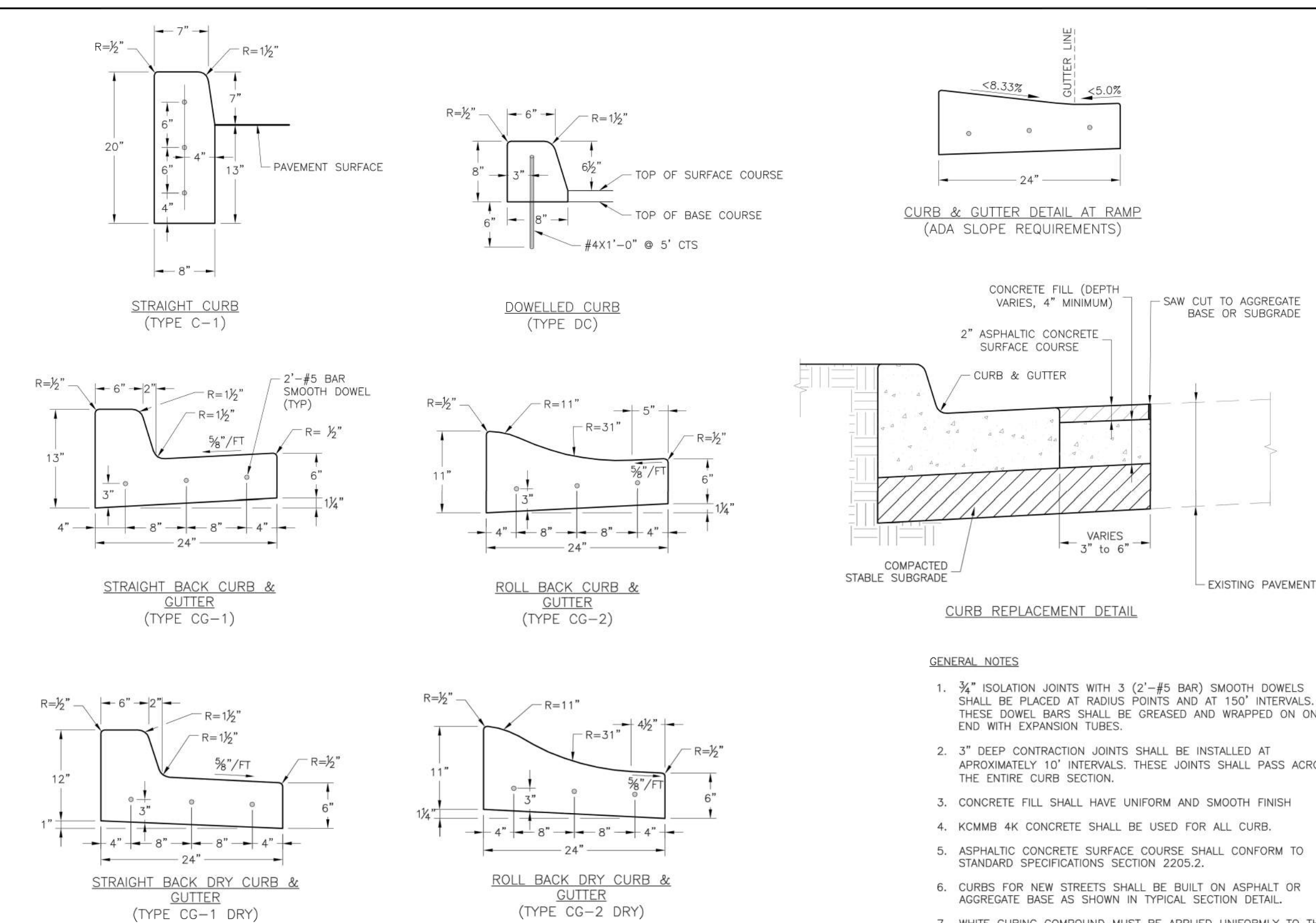
NOT TO SCALE  
SW 27TH STREET



### TYPICAL SECTION RESIDENTIAL COLLECTOR

NOT TO SCALE  
SW SWAN CREEK RD

RELEASE FOR  
CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
12/08/2020



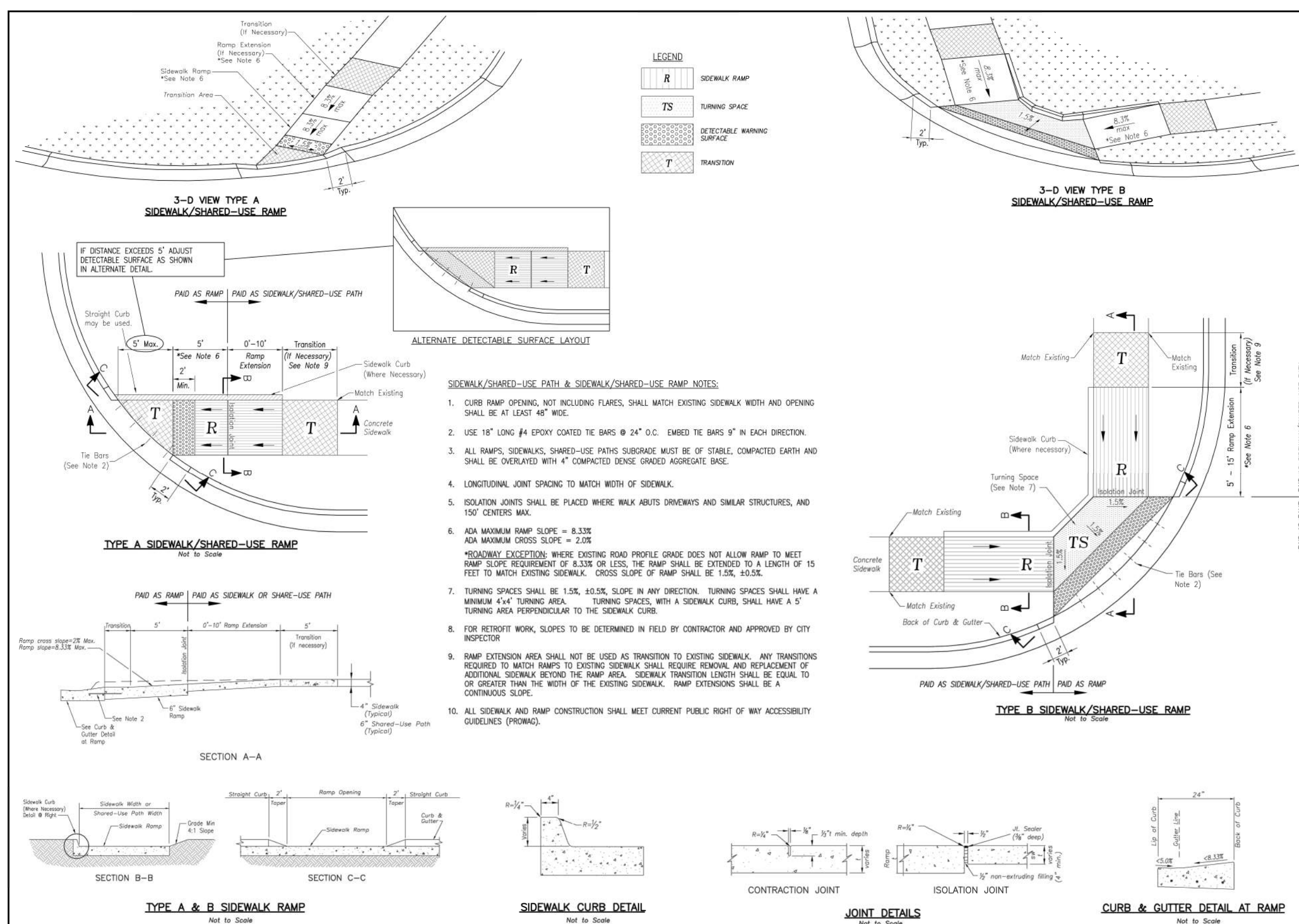
#### GENERAL NOTES

1.  $\frac{3}{4}$ " 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 APPROXIMATELY 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.

**LEE'S SUMMIT**  
MISSOURI  
PUBLIC WORKS ENGINEERING DIVISION 1220 S. GREEN STREET, LEE'S SUMMIT, MO 64086

STANDARD DETAILS  
CITY OF LEE'S SUMMIT, MO  
LEE'S SUMMIT, JACKSON COUNTY, MO  
CURB & GUTTER DETAIL

GEN-4



- #### SIDEWALK/SHARED-USE PATH & SIDEWALK/SHARED-USE RAMP NOTES:
1. CURB RAMP OPENING, NOT INCLUDING FLARES, SHALL MATCH EXISTING SIDEWALK WIDTH AND OPENING SHALL BE AT LEAST 48" WIDE.
  2. USE 18" LONG #4 EPOXY COATED BARS @ 24" O.C. EMBED THE BARS 9" IN EACH DIRECTION.
  3. ALL RAMP, SIDEWALKS, SHARED-USE PATHS SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAIN WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
  4. LONGITUDINAL JOINT SPACING TO MATCH WIDTH OF SIDEWALK.
  5. ISOLATION JOINTS SHALL BE PLACED WHERE WALK ABUTS DRIVEWAYS AND SIMILAR STRUCTURES, AND 150' CENTER MAX.
  6. ADA MAXIMUM RAMP SLOPE = 8.33%  
ADA MAXIMUM CROSS SLOPE = 2.0%
  7. \*ROADWAY EXCEPTION: WHERE EXISTING ROAD PROFILE GRADE DOES NOT ALLOW RAMP TO MEET RAMP SLOPE REQUIREMENT OF 8.33% OR LESS, THE RAMP SHALL BE EXTENDED TO A LENGTH OF 15 FEET TO MATCH EXISTING SIDEWALK. CROSS SLOPE OF RAMP SHALL BE 1.5%,  $\pm 0.5\%$ .
  8. FOR RETROFIT WORK, SLOPES TO BE DETERMINED IN FIELD BY CONTRACTOR AND APPROVED BY CITY INSPECTOR
  9. RAMP EXTENSION AREA SHALL NOT BE USED AS TRANSITION TO EXISTING SIDEWALK. ANY TRANSITIONS REQUIRED TO MATCH RAMP TO EXISTING SIDEWALK SHALL REQUIRE REMOVAL AND REPLACEMENT OF ADDITIONAL SIDEWALK BEYOND THE RAMP AREA. SIDEWALK TRANSITION LENGTH SHALL BE EQUAL TO OR GREATER THAN THE WIDTH OF THE EXISTING SIDEWALK. RAMP EXTENSIONS SHALL BE A CONTINUOUS SLOPE.
  10. ALL SIDEWALK AND RAMP CONSTRUCTION SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (FPMWG).

**LEE'S SUMMIT**  
MISSOURI  
PUBLIC WORKS ENGINEERING DIVISION 1220 S. GREEN STREET, LEE'S SUMMIT, MO 64086

STANDARD DETAILS  
CITY OF LEE'S SUMMIT, MO  
LEE'S SUMMIT, JACKSON COUNTY, MO  
ADA RAMP RETROFIT DETAIL

GEN-3A

WHISPERING WOODS 2ND PLAT  
STREET & STORM SEWER PLANS

STREET & STORM DETAILS

LEE'S SUMMIT, MO

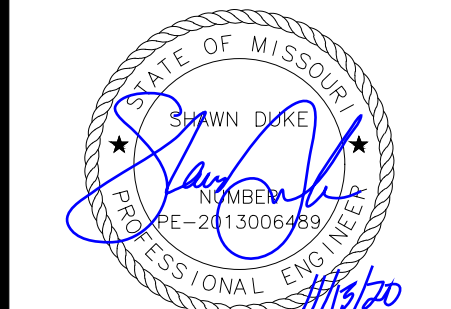
802 FRANCIS STREET  
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816-364-5222

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**SNYDER & ASSOCIATES**

Project No: 1200484.11

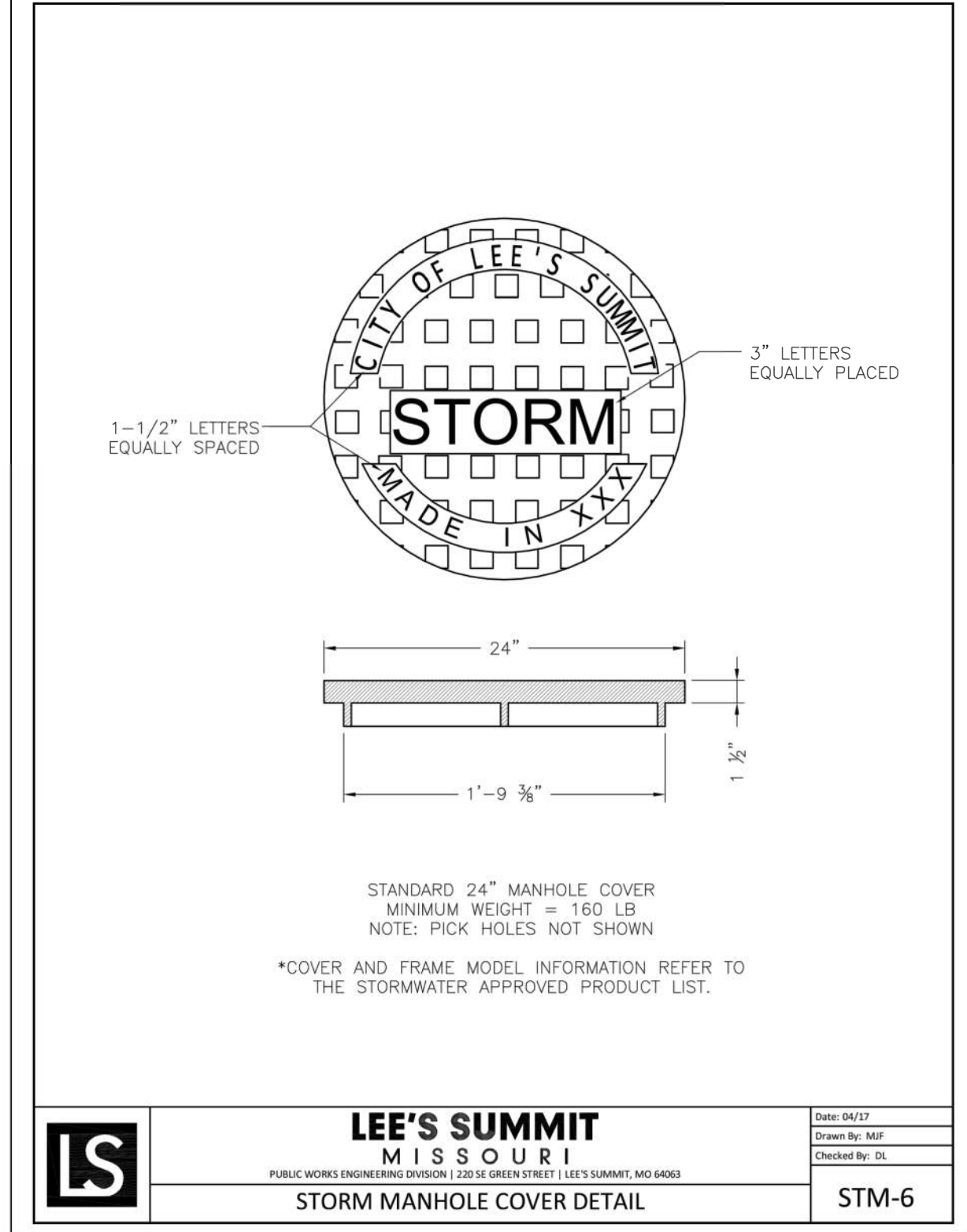
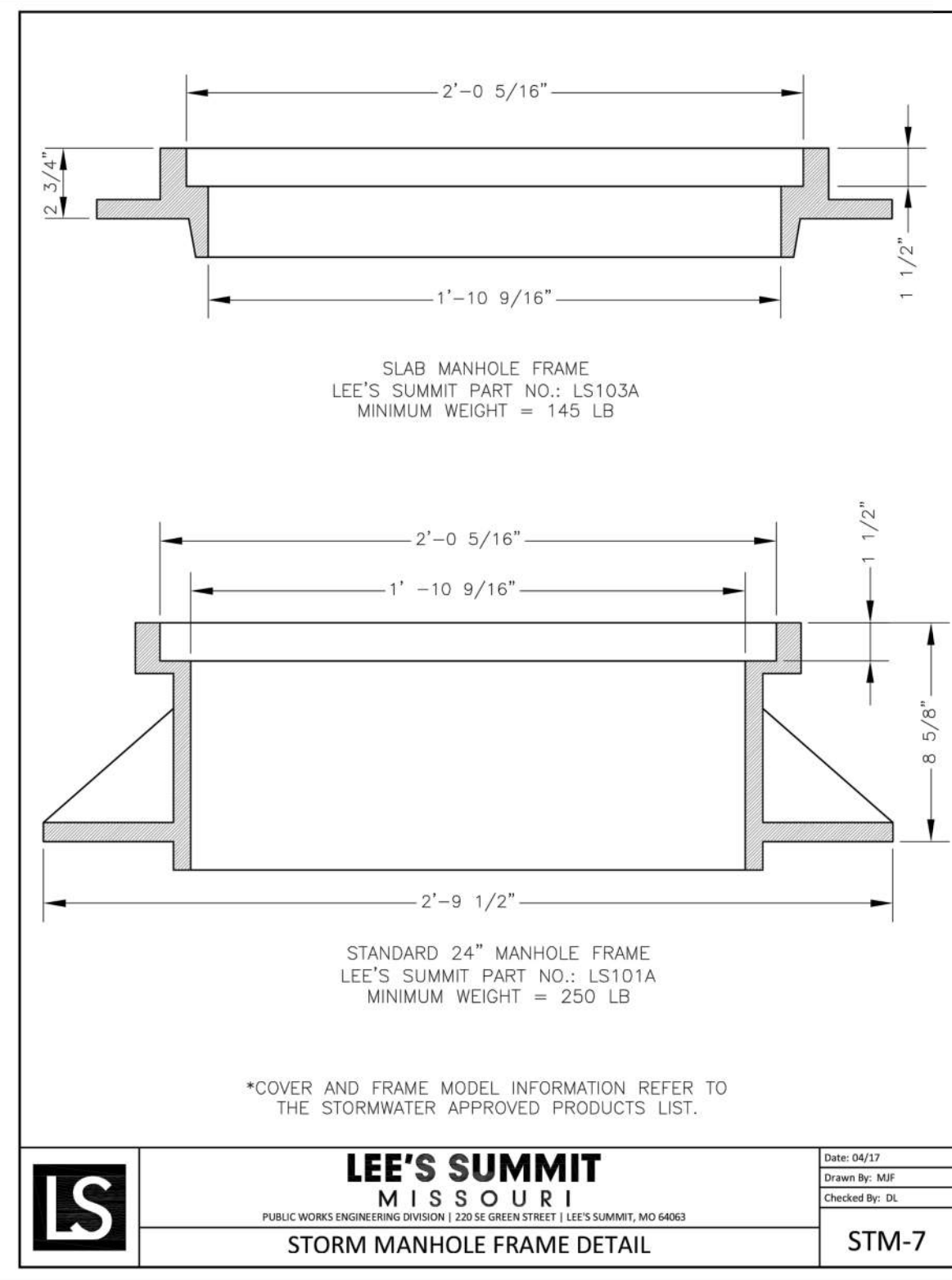
Sheet 14



SHAWN DUKE - ENGINEER  
MO PE#2013006489

| REVISION TO TYPICAL SECTIONS   | SD        |
|--|-----------|
| 1  | 09/08/20  |
| MARK   | DATE      |
| 1  | 09/08/20  |
| REVISION   | DATE      |
| 1  | 09/08/20  |
| Checked By   | Scale     |
| JS   | 1"= N/A   |
| Date   | Field Bk. |
| 7-28-20  |           |
| Engineer   | Pg.       |
| JS   | 14        |
| Snyder & Associates Engineers & Planners, Inc.<br>Missouri State Certificate of Authority #200008544 |           |





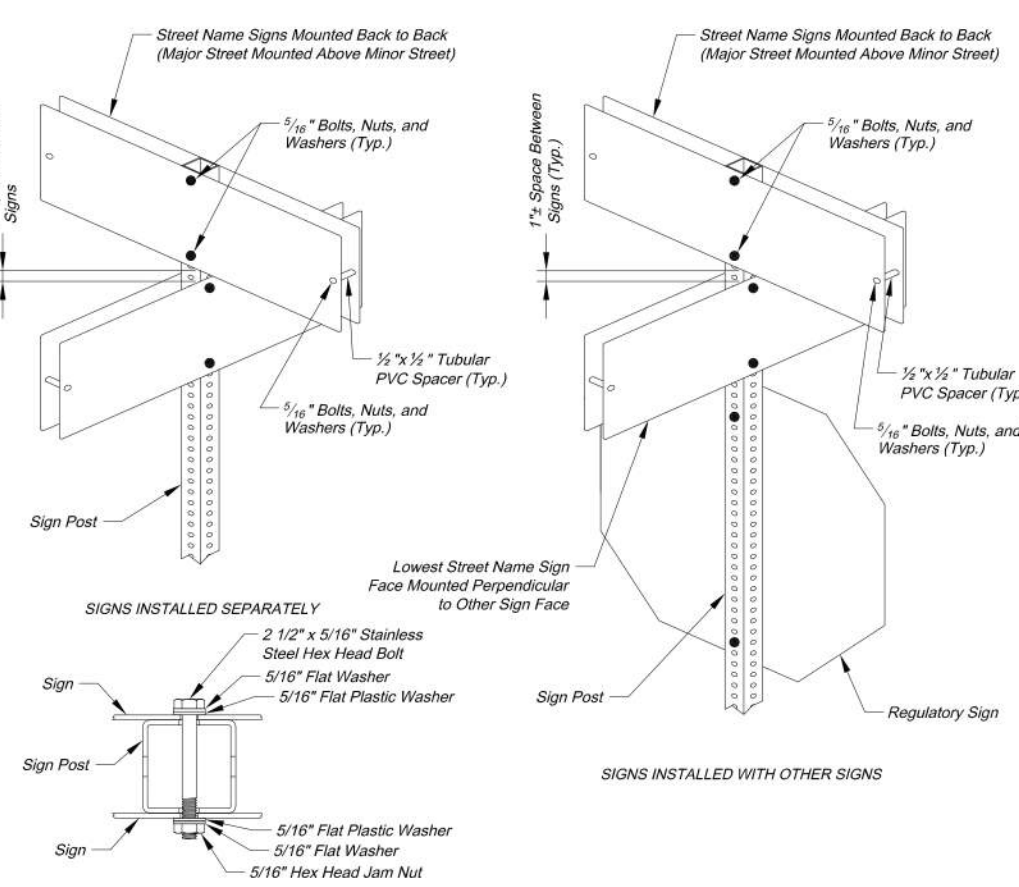
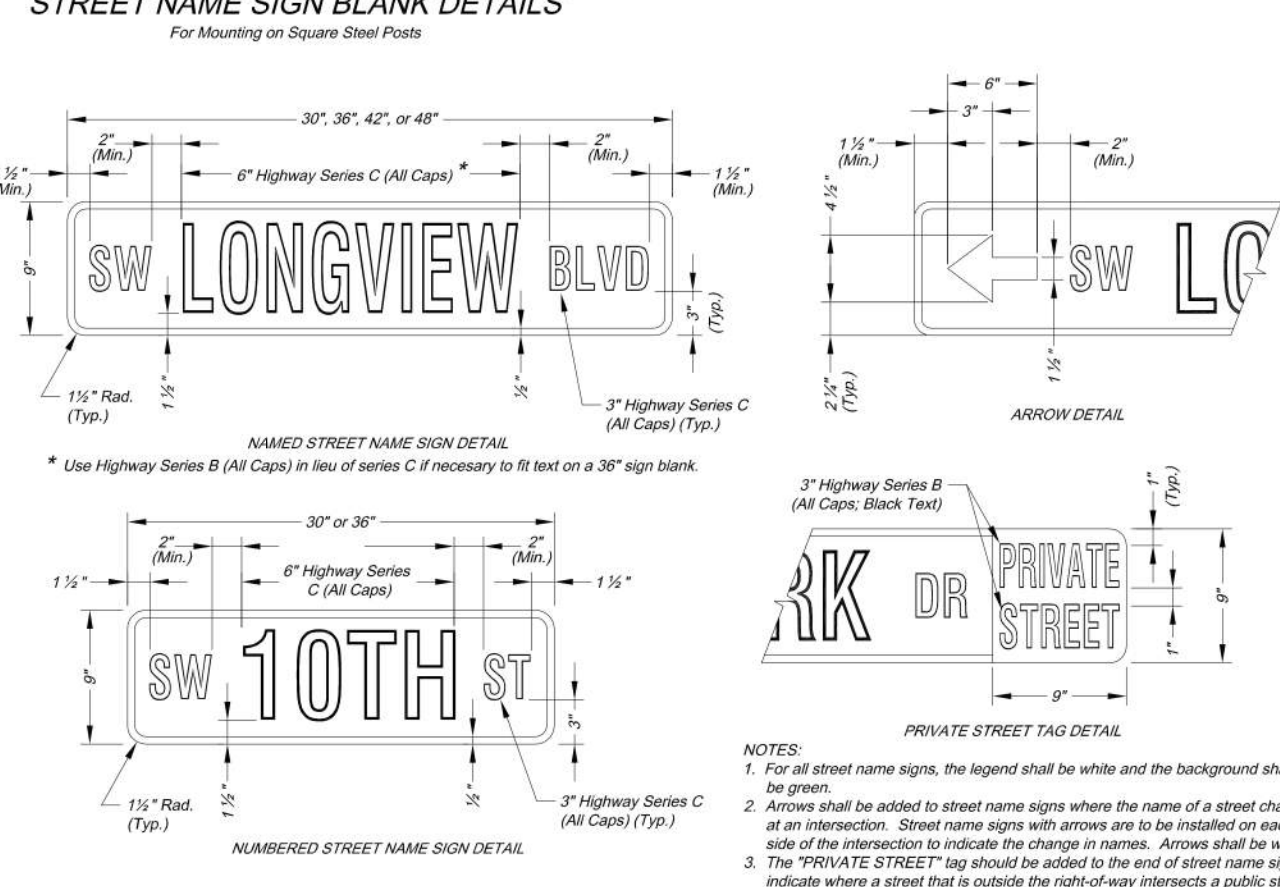
# STANDARD ABBREVIATION LISTS

| Named Streets |      | Numbered Streets |    |
|---------------|------|------------------|----|
| Avenue        | AVE  | First            | ST |
| Boulevard     | BLVD | Second           | ND |
| Circle        | CR   | Third            | RD |
| Creek         | CR   | Fourth to Tenth  | TH |
| Court         | CT   |                  |    |
| Crossing      | WING |                  |    |
| Drive         | DR   |                  |    |
| Highway       | HWY  |                  |    |
| Lane          | LN   |                  |    |
| Parkway       | PKWY |                  |    |
| Place         | PL   |                  |    |
| Road          | RD   |                  |    |
| Street        | ST   |                  |    |
| Terrace       | TER  |                  |    |
| Trail         | TRL  |                  |    |
| Way           | WAY  |                  |    |

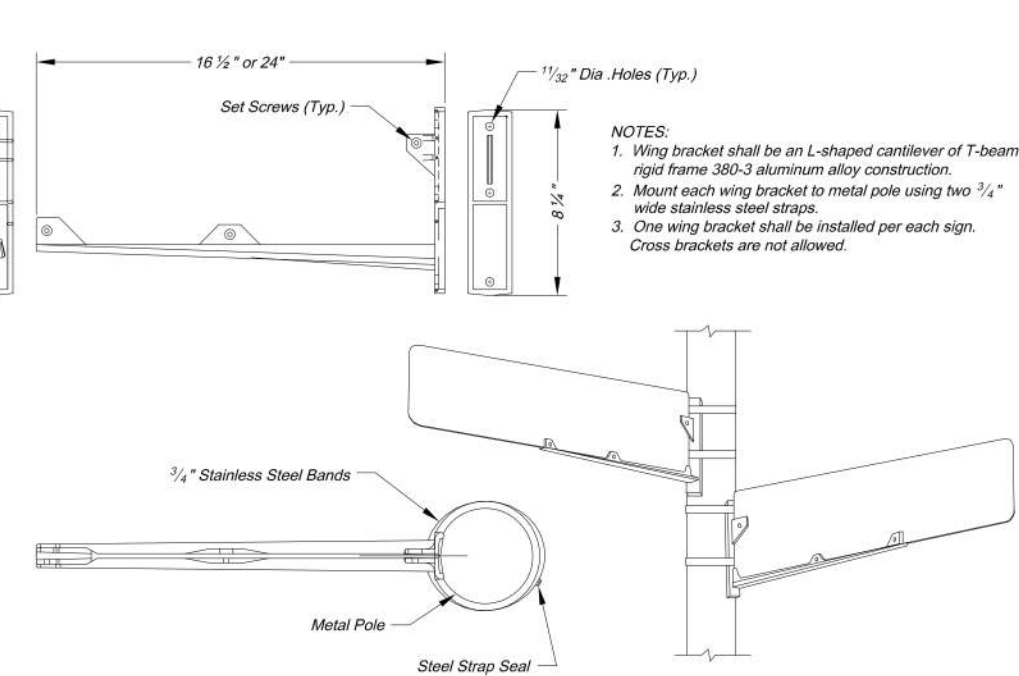
# STREET NAME SIGN QUANTITIES

| Sign Designation | Sign Size | Sign Area (Sq. Ft.) | Number | Quantity (Sq. Ft.) |
|------------------|-----------|---------------------|--------|--------------------|
| D3-1 (SP-1)      | 9" x 9"   | 81                  | 1      | 1                  |
| D3-1 (SP-2)      | 9" x 9"   | 81                  | 1      | 1                  |
| D3-1 (SP-3)      | 9" x 9"   | 81                  | 1      | 1                  |
| D3-1 (SP-4)      | 9" x 9"   | 81                  | 1      | 1                  |
| D3-1 (SP-5)      | 9" x 9"   | 81                  | 1      | 1                  |
| D3-1 (SP-6)      | 9" x 9"   | 81                  | 1      | 1                  |

# STREET NAME SIGN BLANK DETAILS



# SQUARE STEEL POST MOUNTING DETAILS



# WING BRACKET MOUNTING DETAILS

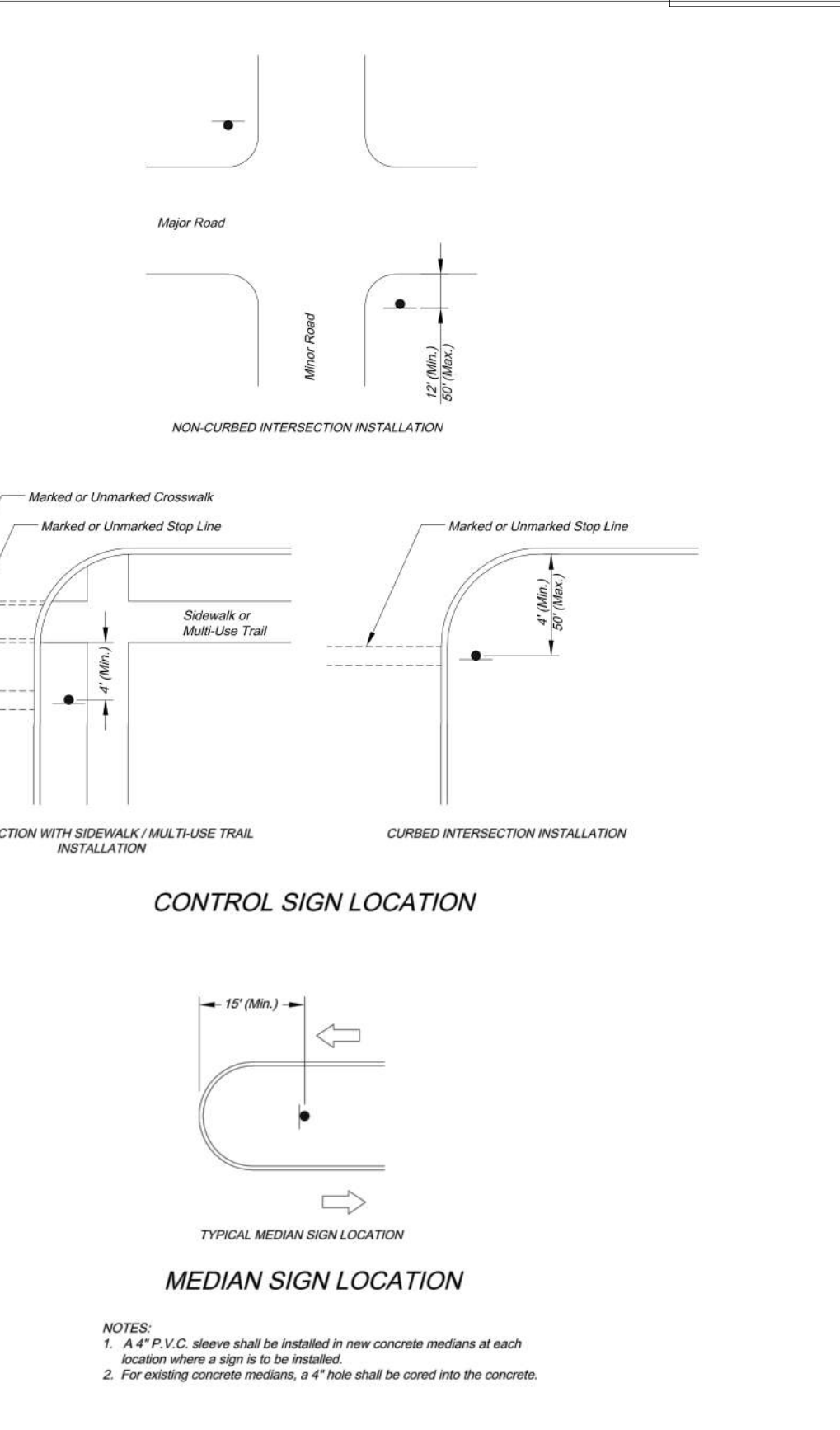
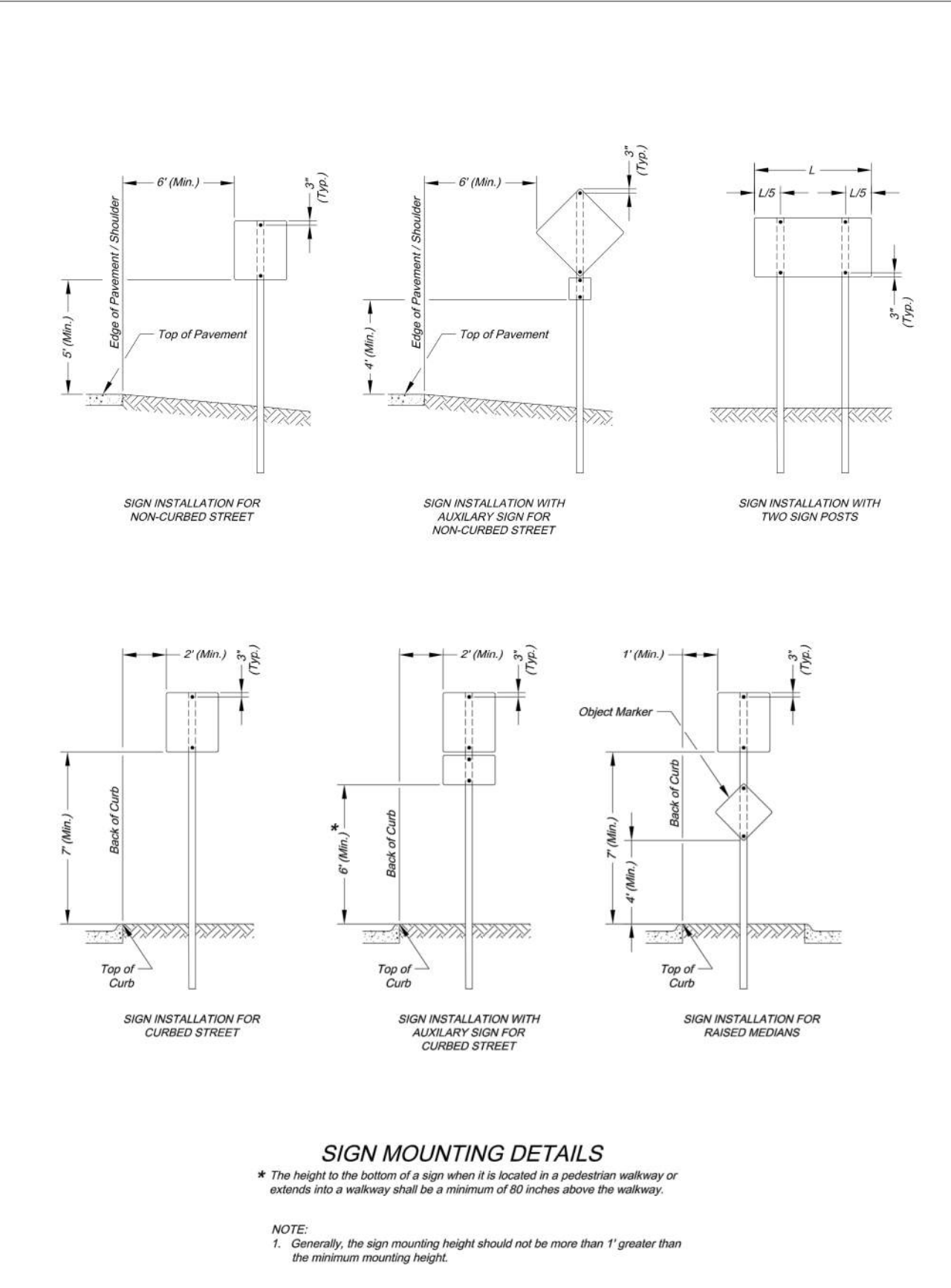
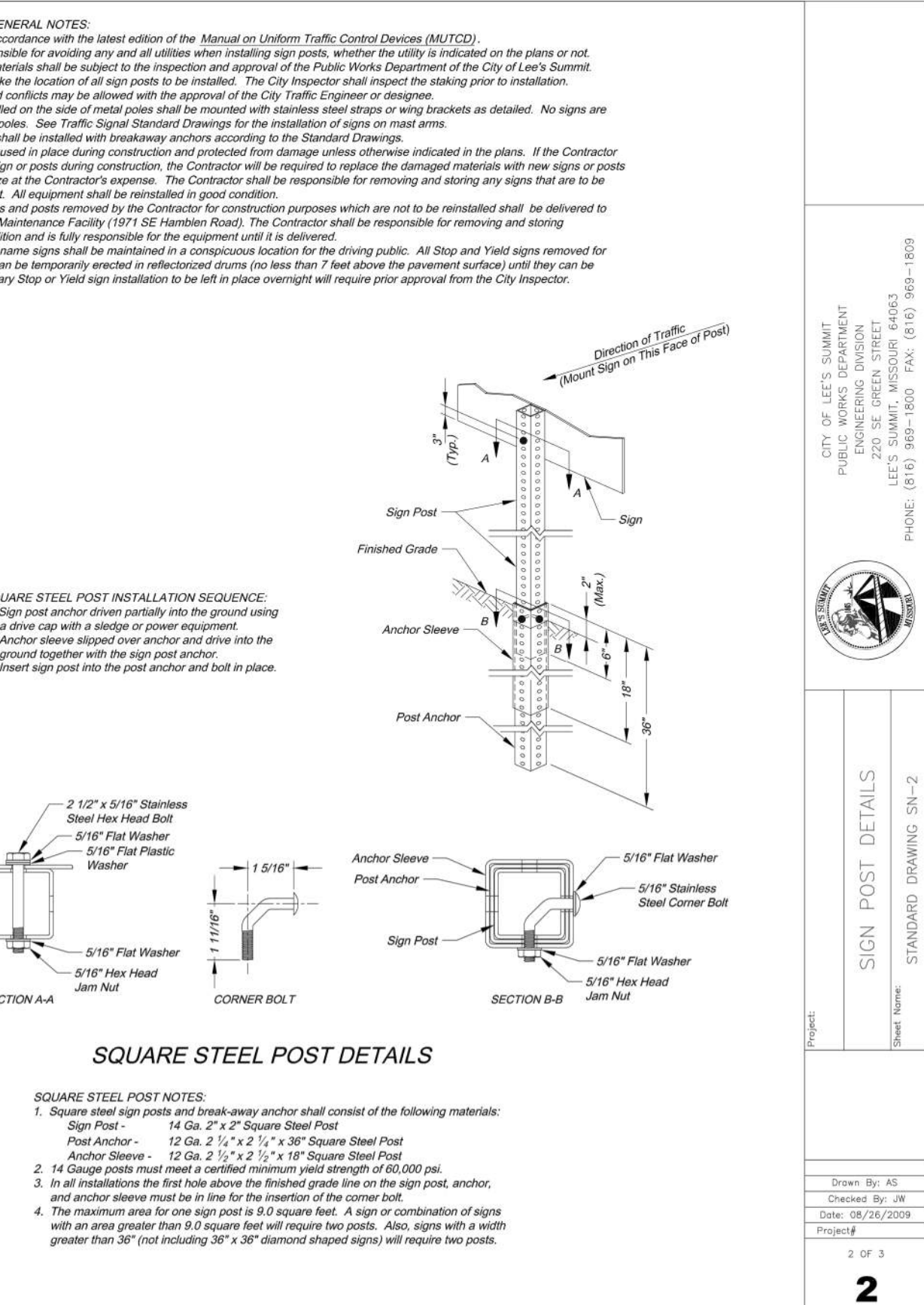
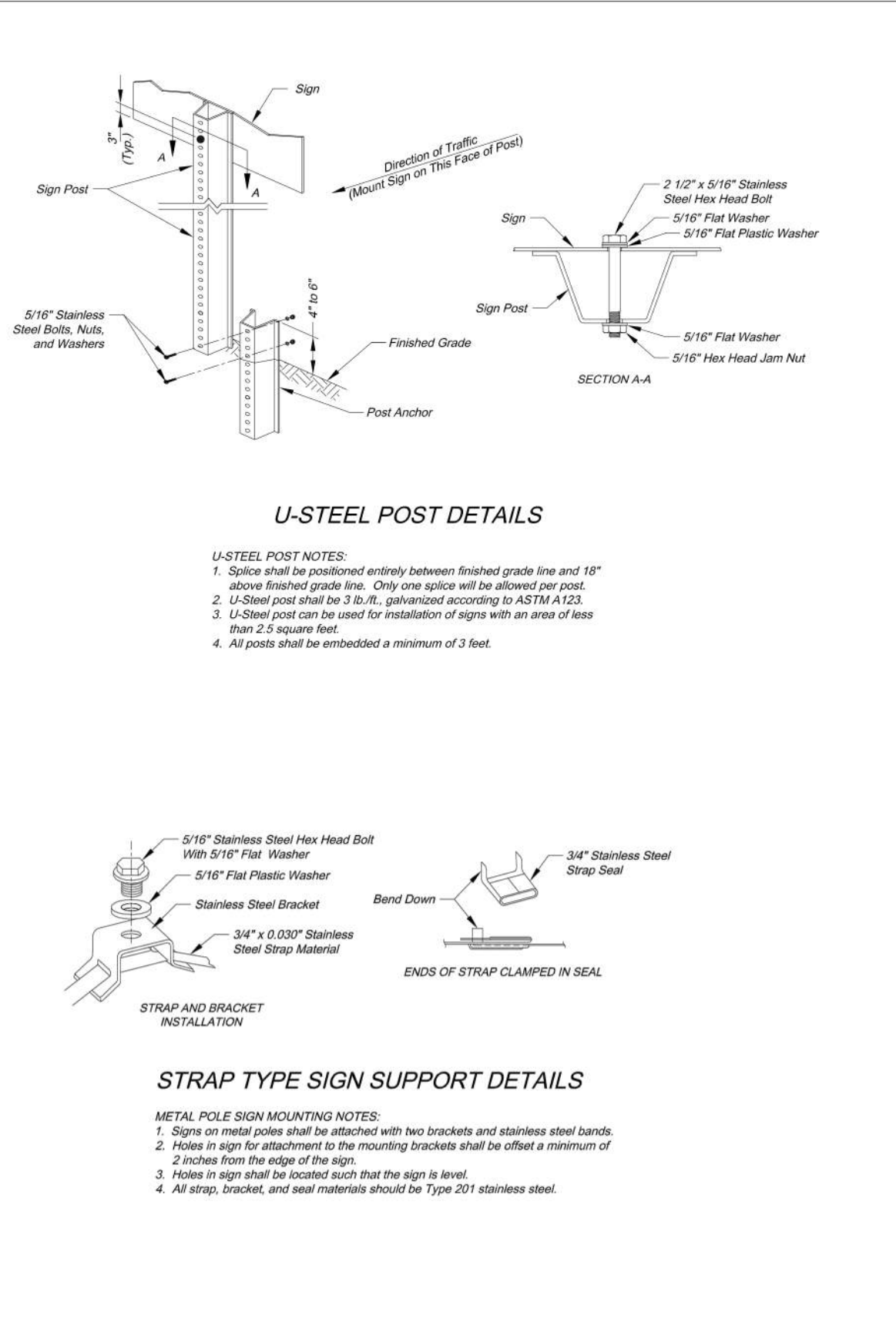
CITY OF LEE'S SUMMIT  
 PUBLIC WORKS ENGINEERING DIVISION  
 220 SE GREEN STREET  
 LEE'S SUMMIT, MISSOURI 64063  
 PHONE: (816) 969-1800 FAX: (816) 969-1809

PROJECT: STREET NAME SIGN DETAILS  
 STANDARD DRAWING SN-3

Drawn By: AS  
 Checked By: JM  
 Date: 08/26/2009  
 Project#

3 OF 3  
**3**

RELEASE FOR  
 CONSTRUCTION  
 AS NOTED ON PLANS REVIEW  
 DEVELOPMENT SERVICES  
 LEE'S SUMMIT, MISSOURI  
 12/08/2020



CITY OF LEE'S SUMMIT  
 PUBLIC WORKS ENGINEERING DIVISION  
 220 SE GREEN STREET  
 LEE'S SUMMIT, MISSOURI 64063  
 PHONE: (816) 969-1800 FAX: (816) 969-1809

PROJECT: SIGN MOUNTING DETAILS  
 STANDARD DRAWING SN-1

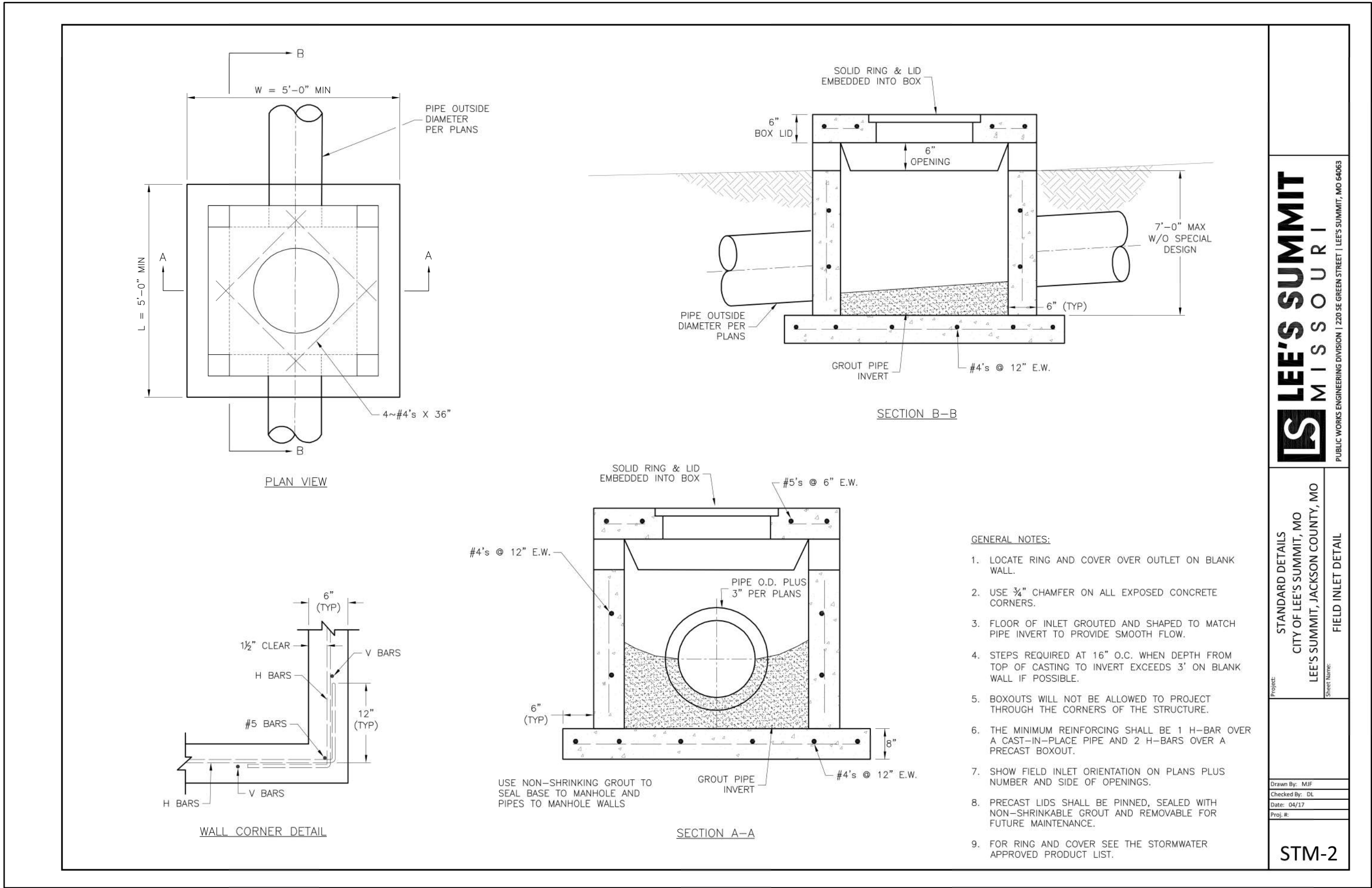
Drawn By: AS  
 Checked By: JM  
 Date: 08/26/2009  
 Project#

1 OF 3  
**1**

WHISPERING WOODS 2ND PLAT  
 STREET & STORM SEWER PLANS  
 STREET & STORM DETAILS  
**SNYDER & ASSOCIATES**  
 ENGINEERS & PLANNERS, INC.  
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Project No: 1200484.11  
 Sheet 15

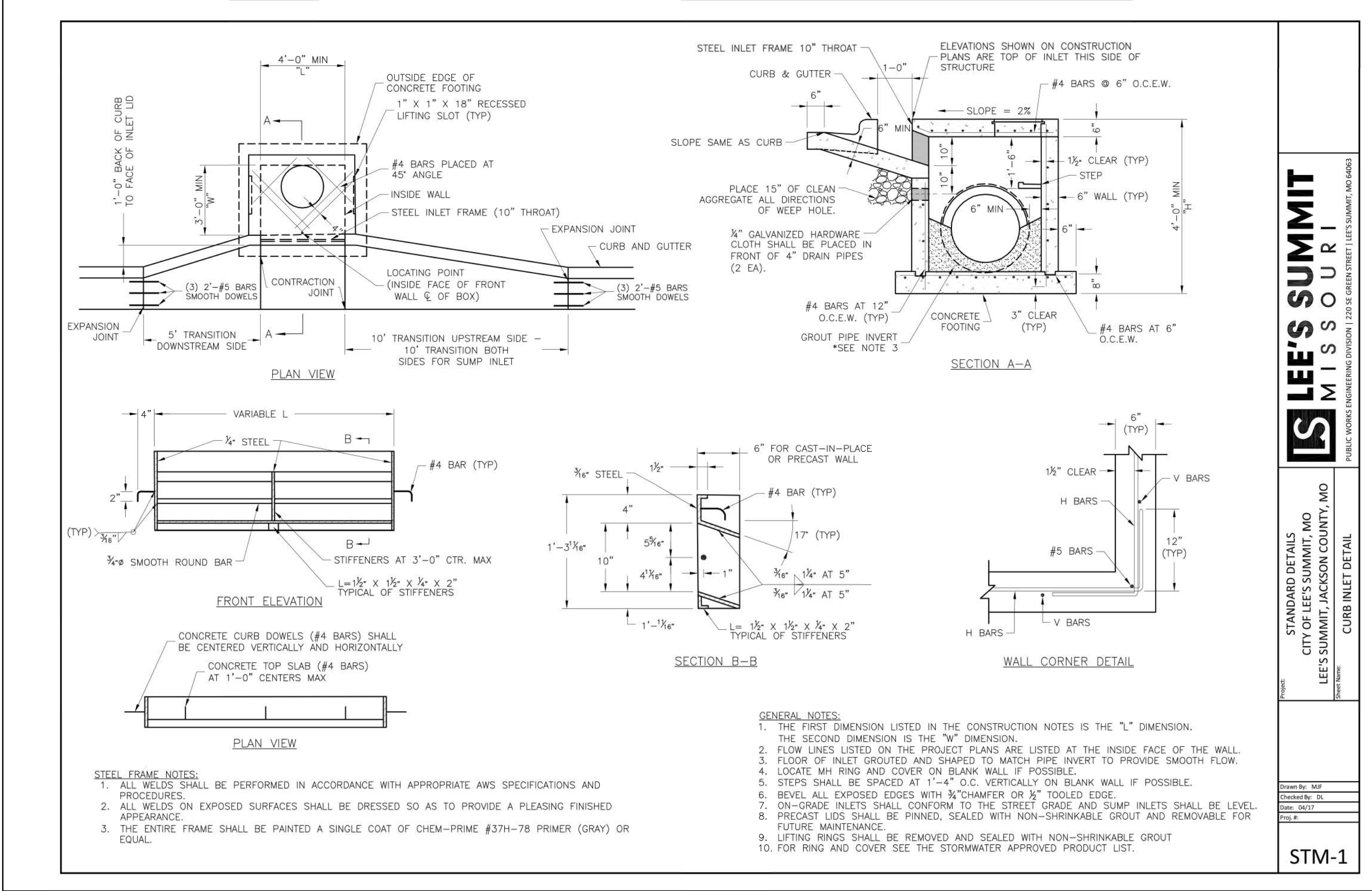




**LEE'S SUMMIT MISSOURI**  
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

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

Drawn By: MJP  
Checked By: GL  
Date: 06/17  
Proj. #: STM-2

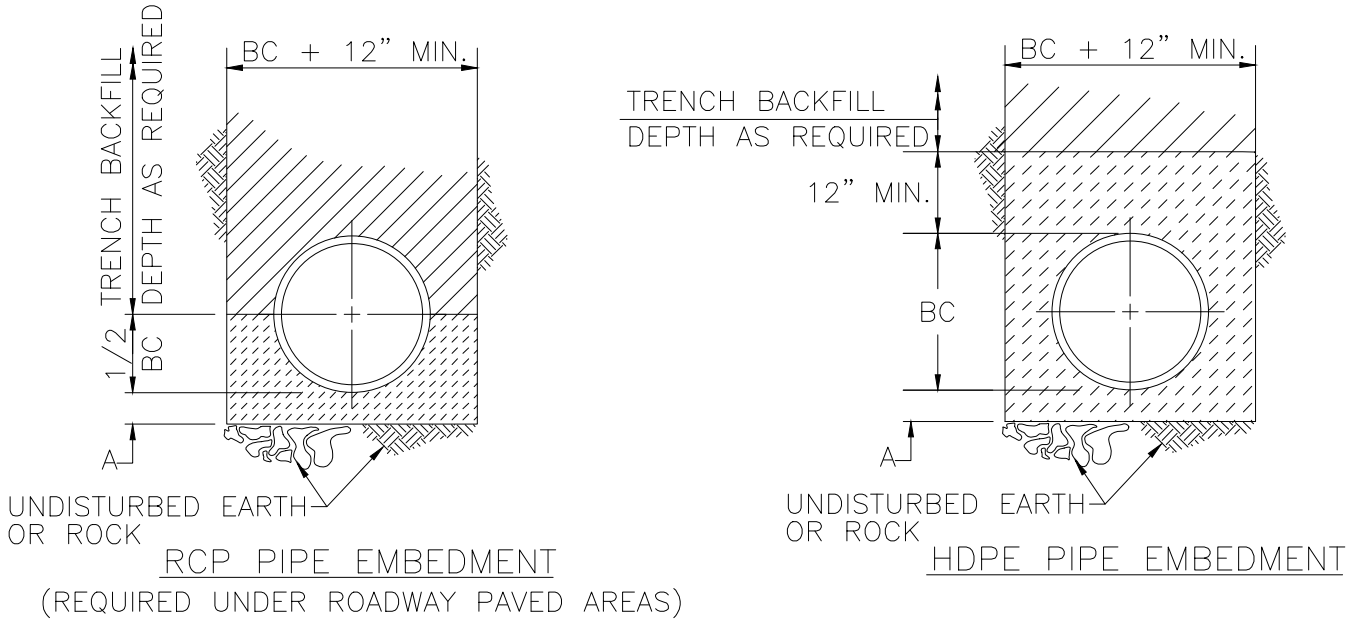


**LEE'S SUMMIT MISSOURI**  
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STANDARD DETAILS  
CITY OF LEE'S SUMMIT, MO  
LEE'S SUMMIT, JACKSON COUNTY, MO  
Project Name: CURB INLET DETAIL

Drawn By: MJP  
Checked By: DL  
Date: 06/17  
Proj. #: STM-1

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



| 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               |

| 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  $\frac{3}{4}$ " (95% PASSING 1" FOR 30" AND LARGER PIPE) AND NOT LESS THAN 95% RETAINED ON A  $\frac{3}{8}$ "; 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**

**RELEASE FOR CONSTRUCTION**  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
12/08/2020

| BY   | DATE | REVISION    | Scale   | Field Bk. | Sheet   |
|--|------|-------------|---------|-----------|---------|
|  |      |             | 1"= N/A |           | 16      |
| Engineer:  | SD   | Checked By: | SD      | Date:     | 7-28-20 |
| Technician:  | JS   |             |         |           |         |
| Snyder & Associates Engineers & Planners, Inc.<br>Missouri State Certificate of Authority #200006544 |      |             |         |           |         |

**SHAWN DUKE - ENGINEER**  
MO PE#2013006489

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

**WHISPERING WOODS 2ND PLAT STREET & STORM SEWER PLANS**  
**STREET & STORM DETAILS**  
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