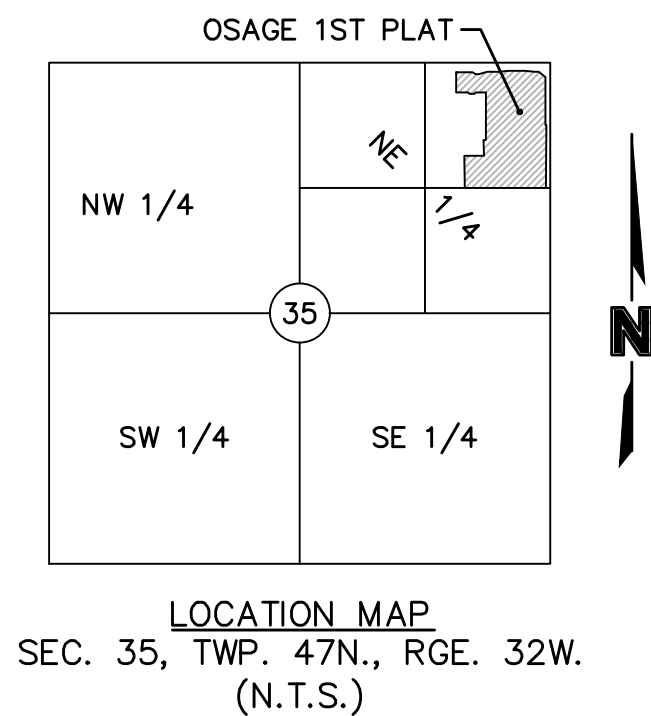
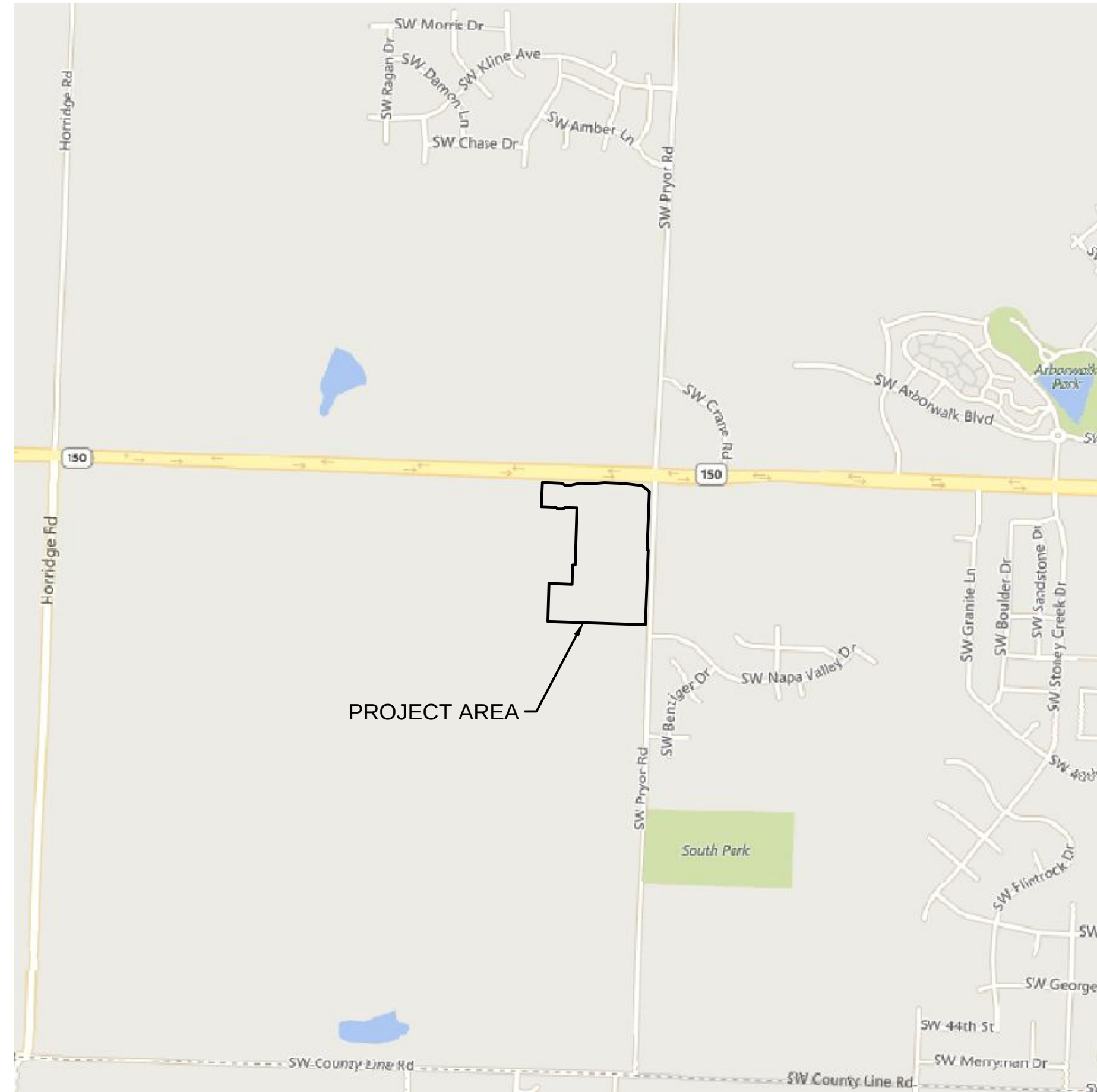


NE 1/4 SECTION 35, TOWNSHIP 47 N, RANGE 32 W.  
IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI



| PROJECT TEAM & UTILITY CONTACT LIST                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><u>OWNER / DEVELOPER</u><br/>           CLAYTON PROPERTIES GROUP, INC.<br/>           D.B.A. SUMMIT HOMES<br/>           120 SE 30TH STREET<br/>           CONTACT: VINCENT WALKER<br/>           LEE'S SUMMIT, MO 64082<br/>           PHONE: 816.246.6700<br/>           EMAIL: VINCENT@SUMMITHOMESKC.COM</p> | <p><u>UTILITY SERVICE NUMBERS</u><br/>           NAME: LEE'S SUMMIT PUBLIC WORKS<br/>           PHONE: 816-969-1800<br/> <br/>           NAME: LEE'S SUMMIT WATER &amp; SERVICES<br/>           DEPARTMENT<br/>           PHONE: 816-969-1940</p> |
| <p><u>ENGINEER</u><br/>           OLSSON<br/>           1301 BURLINGTON ST. SUITE 100<br/>           NORTH KANSAS CITY, MO 64116<br/>           CONTACT: BROCK WORTHLEY<br/>           PHONE: 816.361.1177<br/>           EMAIL: BWORTHLEY@OLSSON.COM</p>                                                          | <p>NAME: SPIRE (MGE)<br/>           PHONE: 314-342-0500<br/> <br/>           NAME: AT&amp;T<br/>           PHONE: 800-286-8313<br/> <br/>           NAME: KCP&amp;L<br/>           PHONE: 816-471-5275</p>                                        |
| <p><u>SURVEYOR</u><br/>           OLSSON<br/>           1301 BURLINGTON ST. SUITE 100<br/>           NORTH KANSAS CITY, MO 64116<br/>           CONTACT: JASON ROUDEBUSH<br/>           PHONE: 816.361.1177<br/>           EMAIL: JROUDEBUSH@OLSSON.COM</p>                                                        | <p>NAME: SPECTRUM (TWC)<br/>           PHONE: 877-772-2253<br/> <br/>           NAME: GOOGLE FIBER<br/>           PHONE: 877-454-6959</p>                                                                                                         |



## PROPERTY DESCRIPTION:

A tract of land in the Northeast Quarter of the Northeast Quarter of Section 35, Township 47 North, Range 32 West of the 5th Principal Meridian, and including part of Lots 1, 2 and 3 SALVAGGIO'S RANCH, a subdivision of land, recorded as Instrument Number 11201418 in Book 153 of Page 73 in Jackson County Recorder of Deeds Office, all in Lee's Summit, Jackson County, Missouri being bounded and described by Jason S. Roudsbush, P.L.S. 202001492 as follows: Commencing at the Northeast corner of said Northeast Quarter; thence South 02°08'00" West, on the East line of said Northeast Quarter, 658.76 feet to the Southeast corner of said Northeast Quarter; thence South 88°10'07" East, along said East line of said Northeast Quarter, 170.21 feet to the East line of said Northeast Quarter, 50.00 feet to the Southeast corner of said Lot 3, said point also being on the existing Westerly right-of-way line of SW Pryor Road, as now established, and also being the Point of Beginning of the tract of land to be herein described; thence South 88°09'29" East, on said North line and now existing Westerly right-of-way line, 10.00 feet to the existing Westerly right-of-way line of said SW Pryor Road as established by Document 1963814460 in Jackson County Recorder of Deeds Office, all in Lee's Summit, Jackson County, Missouri being bounded and described by Jason S. Roudsbush, P.L.S. 202001492 as follows: Commencing at the Northeast corner of said Northeast Quarter; thence South 02°08'00" West, on the East line of said Northeast Quarter, 658.76 feet to the Southeast corner of said Northeast Quarter; thence South 88°09'45" West, on said South line, 85.708 feet; thence leaving said South line, North 01°48'53" East, 335.30 feet; thence South 88°11'07" East, 202.50 feet; thence North 01°48'53" East, 170.00 feet; thence South 88°11'07" East, 21.62 feet; thence North 01°48'53" East, 500.00 feet; thence North 88°11'07" West, 106.00 feet; thence South 46°48'53" West, 19.80 feet; thence North 88°11'07" West, 50.00 feet to the Southeast corner of said Northeast Quarter; thence North 88°11'07" East, along said East line of said Northeast Quarter, 170.21 feet to the East line of said Northeast Quarter of said Northeast Quarter; thence North 02°09'46" East, on said West line, 212.32 feet to a point on the existing Southerly right-of-way line of Missouri State Highway No. 150, as established by Document Number 2009C0064610, being 80.00 feet right of centerline Station 316+29.79 (Station 316+29.51 Deed); thence leaving said West line, South 88°11'07" East, along said existing Southerly right-of-way line, 170.21 feet to a point that is 80+00.00 right of centerline Station 318+00.00 thence South 58°26'25" East, along said Southerly right of way line, 40.31 feet to a point that is 100.00 feet right of centerline Station 318+00.00; thence South 35°18'51" East, along said Southerly right of way line, 170.21 feet to a point that is 120.00 feet right of centerline Station 318+65.00; thence North 76°55'17" East, along said Southerly right of way line, 97.27 feet to a point on the Southerly right of way line of Missouri State Highway No. 150 as established by Document 2009E0006361, being 75.00 feet right of centerline Station 319+59.00; thence South 88°11'07" East, along said Southerly right of way line, 126.00 feet to a point that is 75.00 feet right of centerline Station 320+85.00; thence North 85°28'29" East, along said Southerly right of way line, 90.55 feet to a point that is 65.00 feet right of centerline Station 321+75.00; thence South 85°28'29" East, along said Southerly right of way line, 105.48 feet to a point that is 75.00 feet right of centerline Station 322+55.00; thence South 88°11'07" East, along said Southerly right of way line, 105.48 feet to a point that is 75.00 feet right of centerline Station 324+55.00; thence South 88°11'07" East, along said Southerly right of way line, 45.48 feet to a point that is 75.00 feet right of centerline Station 325+00.00; thence South 49°40'27" East, along said Southerly right of way line, 88.33 feet to a point that is 130.00 feet right of centerline Station 325+69.12 (Station 325+69.30 Deed), said point also being on the existing Southerly right-of-way line of said Missouri State Highway No. 150, as established by Document Number 2009E0006361, being 75.00 feet right of centerline Station 325+69.12; thence South 88°11'07" East, along said East lot line and said West right of way line, 509.17 feet to the Point of Beginning. Containing 917,234 square feet or 21.06 acres, more or less.

## BENCHMARK

BENCHMARK NO. 1  
CHISELED PLUS ON THE EAST FLANGED BOLT OF THE FIRE HYDRANT ON THE WEST SIDE OF SW PRYOR ROAD ON ADJOINING PROPERTY SOUTH OF THE  
SOUTHWEST CORNER OF SUBJECT PROPERTY.  
ELEVATION = 1014.830

BENCHMARK NO. 2  
RAILROAD SPIKE IN THE NORTH FACE OF POWER POLE LOCATED ON THE SOUTH SIDE MISSOURI STATE HIGHWAY 150 AT THE WEST SIDE OF THE DRIVEWAY TO  
2025 MISSOURI STATE HIGHWAY 150, LEE'S SUMMIT, MO.  
ELEVATION = 1031.313

| Sheet List Table |                                                               |
|------------------|---------------------------------------------------------------|
| Sheet Number     | Sheet Title                                                   |
| C101             | TITLE SHEET                                                   |
| C102             | GENERAL NOTES                                                 |
| C103             | GENERAL LAYOUT                                                |
| C104             | TYPICAL SECTIONS                                              |
| C105             | GRADING PLAN (FOR REFERENCE ONLY)                             |
| C106             | SWALE 1 PLAN & PROFILE                                        |
| C107             | SWALE 2 PLAN & PROFILE                                        |
| C108             | DETENTION BASIN PLAN                                          |
| C109             | ROADWAY PLAN & PROFILE (SW HOLDBROOKS DRIVE)                  |
| C110             | ROADWAY PLAN & PROFILE (SW HOLDBROOKS DRIVE & SW WALSH DRIVE) |
| C111             | ROADWAY PLAN & PROFILE (SW WALSH DRIVE)                       |
| C112             | ROADWAY PLAN & PROFILE (SW OSAGE DRIVE)                       |
| C113             | ROADWAY PLAN & PROFILE (SW RUTHERFORD DRIVE)                  |
| C114             | ROADWAY PLAN & PROFILE (SW OSAGE DRIVE - ENTRANCE)            |
| C115             | ROADWAY PLAN & PROFILE (SW CLAYTON PLACE)                     |
| C116             | ROADWAY PLAN & PROFILE (SW MARYVILLE PLACE)                   |
| C117             | ROADWAY PLAN & PROFILE (SW MARYVILLE PLACE)                   |
| C118             | ROADWAY PLAN & PROFILE (SW MARYVILLE PLACE)                   |
| C119             | TRAFFIC CONTROL PLAN                                          |
| C120             | SW HOLDBROOKS DRIVE & SW CLAYTON PLACE INTERSECTION           |
| C121             | SW HOLDBROOKS DRIVE & SW MARYVILLE PLACE INTERSECTION         |
| C122             | SW WALSH DRIVE & SW OSAGE DRIVE INTERSECTION                  |
| C123             | SW RUTHERFORD DRIVE & SW MARYVILLE PLACE INTERSECTION         |
| C124             | SW OSAGE DRIVE & SW MARYVILLE PLACE INTERSECTION              |
| C125             | SW WALSH DRIVE & SW OSAGE DRIVE INTERSECTION                  |
| C126             | SW RUTHERFORD DRIVE TEMPORARY CUL-DE-SAC DETAILS              |
| C127             | STORM SEWER PLAN & PROFILE                                    |
| C128             | STORM SEWER PLAN & PROFILE                                    |
| C129             | STORM SEWER PLAN & PROFILE                                    |
| C130             | STORM SEWER PLAN & PROFILE                                    |
| C131             | STORM SEWER PLAN & PROFILE                                    |
| C132             | STORM SEWER PLAN & PROFILE                                    |
| C133             | STORM SEWER PLAN & PROFILE                                    |
| C134             | STORM SEWER PLAN & PROFILE                                    |
| C135             | STORM SEWER PLAN & PROFILE                                    |
| C136             | STORM SEWER PLAN & PROFILE                                    |
| C137             | STORM SEWER PLAN & PROFILE                                    |
| C138             | STORM SEWER PLAN & PROFILE                                    |
| C139             | STORM SEWER PLAN & PROFILE                                    |
| C140             | MASTER DRAINAGE PLAN                                          |
| C141             | DRAINAGE PLAN                                                 |
| C142             | DRAINAGE TABLES                                               |
| C143             | DRAINAGE TABLES                                               |
| C144             | SIGN DETAILS                                                  |
| C145             | STORM SEWER DETAILS                                           |
| C146             | STORM SEWER DETAILS (2)                                       |
| C147             | ROAD DETAILS                                                  |

OLSSON HAS BEEN RETAINED TO PROVIDE AS-BUILT DRAWINGS FOR THIS PROJECT.

*Brock M. Worthley*  
BROCK M. WORTHLEY, P.E.  
CIVIL ENGINEER  
MO# PE-2019000237

4/14/2021  
DATE



# AS-BUILT

4/14/2021

|                                                                                                                                                           |  |                            |  |           |           |                           |                                 |    |                                                                                     |                                                                                                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------|--|-----------|-----------|---------------------------|---------------------------------|----|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| drawn by: _____<br>checked by: _____<br>designed by: _____<br>QA/QC by: _____<br>project no.: A19-2339<br>drawing no.: C TOL01 A192339<br>date: 3/17/2020 |  | TITLE SHEET                |  | REV. NO.  |           | DATE                      | REVISIONS DESCRIPTION           | BY |  | Olsson - Civil Engineering<br>Missouri Certificate of Authority #: 001592<br>1301 Burlington Street<br>North Kansas City, MO 64116<br>TEL 916-361-1177<br>www.olson.com |
|                                                                                                                                                           |  | STREET & STORM SEWER PLANS |  | 1         | 6/15/2020 | REVISED PER CITY COMMENTS |                                 |    |                                                                                     |                                                                                                                                                                         |
| OSAGE<br>FIRST PLAT                                                                                                                                       |  |                            |  | 2         | 7/24/2020 |                           | REVISED PER CONTRACTOR COMMENTS |    |                                                                                     |                                                                                                                                                                         |
|                                                                                                                                                           |  |                            |  |           |           |                           |                                 |    |                                                                                     |                                                                                                                                                                         |
| LEE'S SUMMIT, MISSOURI                                                                                                                                    |  |                            |  |           |           |                           |                                 |    |                                                                                     |                                                                                                                                                                         |
|                                                                                                                                                           |  | 2020                       |  | REVISIONS |           |                           |                                 |    |                                                                                     |                                                                                                                                                                         |
| SHEET<br>C101                                                                                                                                             |  |                            |  |           |           |                           |                                 |    |                                                                                     |                                                                                                                                                                         |



GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE PLANS IN THEIR POSSESSION ARE THE MOST CURRENT VERSION ISSUED, ARE FULLY COORDINATED WITH ALL SUBCONTRACTORS, AND PRESENT ON SITE AT ALL TIMES. CURRENT PLANS PREPARED BY OLSSON MAY BE OBTAINED AT THE DIRECTION OF OLSSON'S CLIENT. DIRECT REQUESTS TO OLSSON MAY REQUIRE ADDITIONAL AUTHORIZATIONS, AGREEMENTS, AND/OR FEES. PLEASE CONTACT THE ENGINEER FOR INFORMATION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEVIATIONS FROM THESE PLANS UNLESS WRITTEN APPROVAL FROM ENGINEER, OWNER, AND DEVELOPER.
3. ALL WORK AND MATERIALS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE OWNER OR THE OWNER'S REPRESENTATIVE.
4. ALL ESTIMATES OF QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING QUANTITIES AND ITEMS OF WORK.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO COMPLETE THE WORK SHOWN IN THE PLANS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS, PAYING ALL FEES, AND FOR OTHERWISE COMPLYING WITH ALL APPLICABLE REGULATIONS GOVERNING THE WORK.
7. THE CONTRACTOR SHALL NOT ENGAGE IN ACTIVITIES THAT MAY ENROACH ON WATERS OF THE U.S., INCLUDING WETLANDS, UNTIL ANY NECESSARY PERMITS MAY BE OBTAINED. THE CONTRACTOR SHALL REVIEW AND COMPLY WITH ALL CONDITIONS DESCRIBED IN THE PERMIT.
8. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, THE SAFETY OF ALL PERSONS INCLUDING VISITORS AND THE GENERAL PUBLIC, AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY THROUGHOUT THE PROJECT AND NOT BE LIMITED BY WORKING HOURS. ANY CONSTRUCTION OBSERVATION BY THE ENGINEER OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES.
9. PRIOR TO COMMENCEMENT OF WORK THE CONTRACTOR SHALL NOTIFY AND COORDINATE WITH ALL UTILITY COMPANIES AND OBTAIN ANY RELEVANT INFORMATION. NOTIFY ENGINEER OF ANY DISCREPANCIES.
10. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL BOUNDARY CORNERS AND SECTION CORNERS. ANY BOUNDARY CORNER AND/OR SECTION CORNER DISTURBED OR DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE RESET BY A LAND SURVEYOR LICENSED IN THE STATE OF MISSOURI, AT THE CONTRACTOR'S EXPENSE.
11. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ADJACENT PROPERTIES AND SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE DURING CONSTRUCTION. THE CONTRACTOR IS ALSO RESPONSIBLE FOR REPAIRING ANY DAMAGE RESULTING FROM CONSTRUCTION ACTIVITIES.
12. PRIOR TO MOVING OFF THE JOB THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER TO PERFORM A FINAL WALK-THROUGH OF THE CONSTRUCTION SITE.

REFERENCES

1. UNLESS EXPLICITLY DESCRIBED OTHERWISE WITHIN THESE PLANS THE FOLLOWING SHALL APPLY:

A. ALL CONSTRUCTION, INCLUDING THOSE LISTED BELOW, SHALL CONFORM TO THE LATEST CODES AND ORDINANCES OF LEE'S SUMMIT, MISSOURI.

B. ALL CONSTRUCTION IN MODOT RIGHT-OF-WAY SHALL CONFORM TO THE LATEST SPECIFICATIONS ADOPTED BY U.S. DEPARTMENT OF TRANSPORTATION AND MODOT.

C. ALL TRAFFIC CONTROL SIGNAGE SHALL CONFORM WITH THE CURRENT EDITION OF THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

D. ALL UTILITY EXTENSIONS AND CONSTRUCTION SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE UTILITY COMPANIES..

E. ALL EXTERIOR PAVEMENT (PCC, ASPHALT, ETC.) SHALL BE IN CONFORMANCE WITH THE SPECIFICATIONS OF LEE'S SUMMIT, MISSOURI AND THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.
4. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE DELIVERY MANAGER AND COORDINATING ANY MAILBOXES THAT MAY BE DISTURBED. FAILURE TO DO SO MAY SUBJECT THE CONTRACTOR TO PROSECUTION BY THE FEDERAL GOVERNMENT.

EXISTING CONDITIONS

1. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS OF THE PROJECT AREA.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING THEIR OWN INVESTIGATIONS AND MAKING THEIR OWN ASSUMPTIONS REGARDING SITE SURFACE AND SUBSURFACE CONDITIONS. THIS INCLUDES THE LOCATION AND CONSISTENCY OF ANY EXISTING ROCK LAYERS UNDERLYING THE PROJECT SITE. CONTACT THE ENGINEER REGARDING ANY DISCREPANCIES THAT MAY AFFECT THE ABILITY TO CONSTRUCT FROM THESE PLANS AS DESIGNED.
3. EXISTING CONDITIONS WERE DETERMINED THROUGH A VARIETY OF METHODS THAT MAY INCLUDE SURVEY, AERIAL IMAGERY, AVAILABLE RECORDS, GIS DATA, ETC. SUBSURFACE CONDITIONS ARE APPROXIMATE AND MAY NOT INCLUDE ALL UTILITIES AND OTHER SITE IMPROVEMENTS PRESENT ON SITE. THE CONTRACTOR SHALL MAKE EXPLORATION EXCAVATIONS AND LOCATE EXISTING UNDERGROUND UTILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS WHEN CONFLICTS AND DISCREPANCIES ARE FOUND.

CONSTRUCTION

1. THE CONTRACTOR SHALL INSTALL TRAFFIC CONTROL WHILE WORKING IN THE PUBLIC RIGHT-OF-WAY AS SHOWN IN THESE PLANS. IF PLANS ARE NOT PROVIDED, CONTRACTOR SHALL COORDINATE AND PROVIDE CONTROLS TO THE SATISFACTION OF THE RIGHT-OF-WAY OWNER.
2. THE CONTRACTOR SHALL PROTECT ALL TREES OVER 3" CALIPER FROM DAMAGE. NO TREE SHALL BE REMOVED WITHOUT PERMISSION OF THE OWNER, UNLESS SHOWN OTHERWISE ON THESE PLANS.
3. THE CONTRACTOR SHALL DISPOSE ALL WASTE MATERIAL RESULTING FROM THE PROJECT OFF-SITE AND IN STRICT CONFORMANCE WITH ALL LOCAL CODES AND ORDINANCES.
4. ALL MANHOLES, CATCH BASINS, UTILITY VALVES AND METER PITS ARE TO BE ADJUSTED OR REBUILT TO GRADE AS REQUIRED. NOT ALL ADJUSTMENTS ARE INDICATED IN THE PLANS.
5. THE CONTRACTOR SHALL STREET SWEEP OR OTHERWISE CLEAN ALL ACCESS ROUTES TO THE SITE AT CONCLUSION OF THE PROJECT.

SHOP DRAWINGS

1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS A MINIMUM OF 7 DAYS PRIOR TO THE REQUESTED DATE OF APPROVAL. ENGINEER SHALL REVIEW SHOP DRAWINGS OR SAMPLES IN CONFORMANCE WITH THE DESIGN FOR THIS PROJECT AS DESCRIBED IN THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ERRORS OR OMISSIONS IN SHOP DRAWINGS. THE ENGINEER'S REVIEW SHALL NOT EXTEND TO MEANS OR METHODS OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY VARIATION FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS UNLESS CONTRACTOR HAS NOTIFIED ENGINEER OF EACH SUCH VARIATION AT THE TIME OF SUBMISSION, AND OBTAINED ENGINEER'S WRITTEN APPROVAL OF EACH SUCH VARIATION. PRIOR TO SUBMITTING EACH SHOP DRAWING OR SAMPLE, CONTRACTOR SHALL HAVE REVIEWED AND VERIFIED:

A. ALL FIELD MEASUREMENTS, QUANTITIES, DIMENSIONS, SPECIFIED PERFORMANCE CRITERIA, INSTALLATION REQUIREMENTS, MATERIALS, CATALOG NUMBERS AND SIMILAR INFORMATION WITH RESPECT THERETO;

B. ALL MATERIALS WITH RESPECT TO INTENDED USE, FABRICATION, SHIPPING, HANDLING, STORAGE, ASSEMBLY AND INSTALLATION PERTAINING TO THE PERFORMANCE OF THE WORK;

C. ALL INFORMATION RELATIVE TO MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION AND SAFETY PRECAUTIONS AND PROGRAMS INCIDENT THERETO;

D. CONTRACTOR SHALL ALSO HAVE REVIEWED AND COORDINATED EACH SHOP DRAWING OR SAMPLE WITH OTHER SHOP DRAWINGS AND SAMPLES, AND WITH THE REQUIREMENTS OF THE WORK AND THE CONTRACT DOCUMENTS.

E. ALL SUBMITTED SHOP DRAWINGS SHALL BEAR A STAMP OR SPECIFIC WRITTEN INDICATION AND SIGNATURE THAT CONTRACTOR HAS FULLY COMPLETED THE ABOVE TASKS.
2. SHOP DRAWINGS AS DESCRIBED ABOVE ARE REQUIRED FOR, BUT NOT LIMITED TO, THE FOLLOWING:

A. ALL STORM SEWER STRUCTURES TO BE INSTALLED WITH THIS PROJECT.

B. ANY ITEMS IN THESE PLANS THAT ALLOW FOR AN "APPROVED EQUAL" ALTERNATIVE.

STORM SEWER GENERAL NOTES:

1. STORM STRUCTURES SHALL BE PER CURRENT CITY DETAILS. IF CITY DOES NOT HAVE PUBLISHED DETAILS STRUCTURES SHALL BE PER CURRENT APWA SPECIFICATIONS.
2. PRIOR TO COMMENCEMENT OF WORK THE CONTRACTOR SHALL NOTIFY AND COORDINATE CONSTRUCTION WITH CITY OF LEE'S SUMMIT, MISSOURI.
3. ALL PIPE LENGTHS AND ELEVATIONS ARE CALCULATED LINEARLY FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
4. ALL STRUCTURE DIMENSIONS ARE TO INSIDE FACE OF STRUCTURE.
5. COORDINATES ARE PROVIDED AT THE CENTER OF STRUCTURE. ADDITIONAL COORDINATES PROVIDED ARE PER LOCAL CODES AND ORDINANCES OR AS AN AID WHEN ORIENTING THE BOX DURING INSTALLATION.
6. THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT LOCATIONS OF POSSIBLE CONFLICT AND POINTS OF CONNECTION PRIOR TO ANY CONSTRUCTION OF STORM SEWER.
7. STORM SEWER TRENCHES SHALL BE CONSTRUCTED SUCH THAT UNDISTURBED EXISTING SOIL OR FILL COMPACTED TO 95% PROCTOR DENSITY IS AT A DEPTH THAT IS 18" ABOVE TOP OF PROPOSED PIPE.
8. STRUCTURE INVERT CHANNELS SHALL BE SMOOTH, CIRCULAR, AND CONFORMING TO ½ THE ADJACENT PIPE SECTION (INVERT TO CENTER). CHANGES IN DIRECTION OF FLOW SHALL BE MADE WITH A SMOOTH CURVE AND MAINTAIN SHAPE THROUGHOUT. CHANGES IN GRADE OF ADJACENT PIPES SHALL BE TRANSITIONED SMOOTHLY AND EVENLY THROUGH THE STRUCTURE.
9. PIPE PENETRATIONS SHALL BE GROUTED TO ENSURE WATERTIGHT SEALS.
10. MAINTAIN MINIMUM DEPTH OF COVER PER APWA 5606.06

| CONTROL POINT TABLE |            |             |                 |                                                                                                                                                                                                                                                               |
|---------------------|------------|-------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| POINT NUMBER        | NORTHING   | EASTING     | POINT ELEVATION | DESCRIPTION                                                                                                                                                                                                                                                   |
| 11                  | 978424.224 | 2811650.442 | 1030.85         | 3" IB/CAP SET IN THE CENTER MEDIAN OF ROUTE 150. IT IS DUE NORTH OF THE CENTER LINE OF THE DRIVEWAY TO PROPERTY ADDRESS 2025 ROUTE 150. IT IS 12.15 FT WEST OF A LIGHT POLE, 8.5 FT SOUTH OF THE BACK OF CURB, AND 8.1 FT NORTH OF THE BACK OF CURB.          |
| 12                  | 978340.573 | 2812332.280 | 1036.11         | 3" IB/CAP SET ON THE EAST SIDE OF SW PRYOR RD AT THE SOUTHEAST CORNER OF THE INTERSECTION OF ROUTE 150 AND SW PRYOR RD. IT IS 2.15 FT EAST OF THE BACK OF CURB, 19 FT WEST OF THE TRAFFIC SIGNAL POLE, AND 9.6 FT WEST OF A VAULT.                            |
| 13                  | 977064.448 | 2812265.992 | 1012.10         | 3" IB/CAP SET ON THE NORTHEAST CORNER OF THE INTERSECTION OF SW PRYOR RD AND SW NAPA VALLEY DR. IT IS 6 FT EAST OF THE BACK OF CURB, 10.2 FT NORTH OF THE CORNER OF THE SIDEWALK, AND 7.25 FT WEST OF ROCK LANDSCAPE BORDER.                                  |
| 14                  | 977092.478 | 2810924.856 | 1040.93         | 3" IB/CAP SET IN THE NORTHWEST CORNER OF THE SOUTH ADJOINING PROPERTY. IT IS 7.5 FT EAST OF THE FENCE LINE, AND 45 FT SOUTH OF OF THE TREE LINE.                                                                                                              |
| 18                  | 978446.811 | 2810956.695 | 1050.47         | 3" IB/CAP SET IN THE CENTER MEDIAN OF ROUTE 150. THE POINT IS DIRECTLY SOUTH OF A WHITE MAILBOX ON AN ORANGE POST FOR HOUSE ADDRESS 2144 ROUTE 150. IT IS 6.6 FT SOUTH OF THE BACK OF CURB, 5.8 FT NORTH OF THE BACK OF CURB, AND 31 FT EAST OF A LIGHT POLE. |
| BENCHMARK           |            |             |                 |                                                                                                                                                                                                                                                               |
| BMK1                | 977045.350 | 2812211.924 | 1014.83         | CHISELED PLUS ON THE EAST FLANGED BOLT OF THE FIRE HYDRANT ON THE WEST SIDE OF SW PRYOR ROAD ON ADJOINING PROPERTY SOUTH OF THE SOUTHWEST CORNER OF SUBJECT PROPERTY.                                                                                         |
| BMK2                | 978357.416 | 2811627.737 | 1031.31         | RAILROAD SPIKE IN THE NORTH FACE OF POWER POLE LOCATED ON THE SOUTH SIDE MISSOURI STATE HIGHWAY 150 AT THE WEST SIDE OF THE DRIVEWAY TO 2025 MISSOURI STATE HIGHWAY 150, LEE'S SUMMIT, MO.                                                                    |

| ESTIMATE OF QUANTITIES |                                                 |      |                    |          |
|------------------------|-------------------------------------------------|------|--------------------|----------|
| ITEM NO.               | DESCRIPTION                                     | UNIT | QUANTITY           | AS-BUILT |
| STREET                 |                                                 |      |                    |          |
| 1                      | 6" ASPHALT PAVEMENT                             | S.Y. | 10747              |          |
| 2                      | SUBGRADE STABILIZATION (6" FLYASH TREATMENT)    | S.Y. | 13095              |          |
| 3                      | CONCRETE CURB & GUTTER (CG-2)                   | L.F. | 6840               |          |
| 4                      | CONCRETE CURB & GUTTER (CG-2 DRY)               | L.F. | 232                |          |
| 5                      | 5' CONCRETE SIDEWALK                            | L.F. | 161                |          |
| 6                      | ADA RAMP                                        | EA.  | 20                 |          |
| 7                      | STOP SIGNS                                      | EA.  | 9                  |          |
| 8                      | STREET NAME SIGNS                               | EA.  | 14                 |          |
| 9                      | TYPE IV OBJECT MARKERS                          | EA.  | 16                 |          |
| STORM                  |                                                 |      |                    |          |
| 10                     | STD. CURB INLET (5'x3' INSIDE)                  | EA.  | <del>29</del>      | 29       |
| 11                     | STD. CURB INLET (5'x4' INSIDE)                  | EA.  | <del>4</del>       | 4        |
| 12                     | STD. CURB INLET (5'x5' INSIDE)                  | EA.  | <del>1</del>       | 1        |
| 13                     | STD. CURB INLET (7'x3' INSIDE)                  | EA.  | <del>1</del>       | 1        |
| 14                     | STD. FIELD INLET (4'x4' INSIDE)                 | EA.  | <del>6</del>       | 6        |
| 15                     | STD. FIELD INLET (5'x5' INSIDE)                 | EA.  | <del>1</del>       | 1        |
| 16                     | STD. FIELD INLET (6'x6' INSIDE)                 | EA.  | <del>1</del>       | 1        |
| 17                     | STD. MANHOLE (4' DIA. INSIDE)                   | EA.  | <del>1</del>       | 1        |
| 18                     | STD. MANHOLE (5' DIA. INSIDE)                   | EA.  | <del>5</del>       | 5        |
| 19                     | DETENTION BASIN OUTLET STRUCTURE (6'x6' INSIDE) | EA.  | <del>1</del>       | 1        |
| 20                     | 6" UNDERDRAIN PIPE                              | L.F. | <del>171.50</del>  | 172.51   |
| 21                     | 15" HDPE                                        | L.F. | <del>1539.36</del> | 1506.81  |
| 22                     | 18" HDPE                                        | L.F. | <del>360.09</del>  | 360.98   |
| 23                     | 24" HDPE                                        | L.F. | <del>1277.68</del> | 1283.96  |
| 24                     | 24" RCP                                         | L.F. | <del>34.00</del>   | 34.39    |
| 25                     | 30" HDPE                                        | L.F. | <del>598.48</del>  | 597.49   |
| 26                     | 36" HDPE                                        | L.F. | <del>240.35</del>  | 241.88   |
| 27                     | 42" HDPE                                        | L.F. | <del>281.17</del>  | 281.46   |
| 28                     | 48" HDPE                                        | L.F. | <del>9.46</del>    | 9.75     |
| 29                     | 48" RCP                                         | L.F. | <del>56.36</del>   | 56.91    |
| 30                     | 30" HDPE END SECTION                            | EA.  | <del>2</del>       | 2        |
| 31                     | 42" HDPE END SECTION                            | EA.  | <del>1</del>       | 1        |
| 32                     | 48" RCP END SECTION                             | EA.  | <del>1</del>       | 1        |
| 33                     | 15" HDPE PLUG                                   | EA.  | <del>4</del>       | 4        |
| 34                     | 24" HDPE PLUG                                   | EA.  | <del>1</del>       | 1        |
| 35                     | RIPRAP                                          | S.Y. | <del>127.45</del>  | 127.45*  |
| 36                     | SWALE TURF REINFORCEMENT MAT                    | S.Y. | <del>343</del>     | 343*     |
| 37                     | CONNECTION TO EXISTING                          | EA.  | <del>1</del>       | 1        |

AS PROVIDED BY CONTRACTOR\*

AS-BUILT

4/14/2021

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STATE OF MISSOURI  
BROCK M. WORTHLEY  
LICENSED PROFESSIONAL ENGINEER  
NUMBER  
PE-2019080237  
4/14/2021

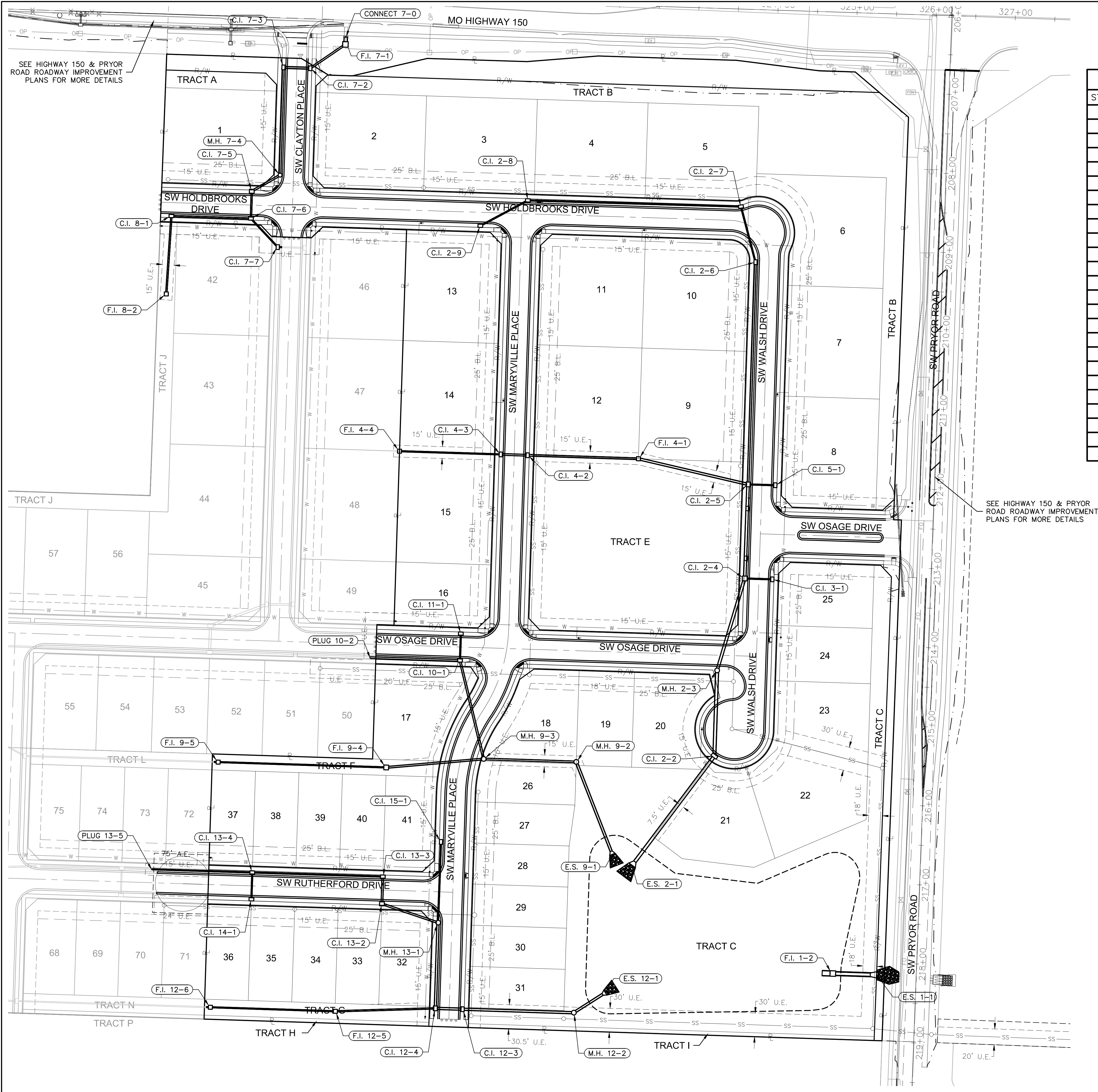
BY  
REVISIONS DESCRIPTION  
ESTIMATE OF QUANTITIES UPDATED  
ESTIMATE OF QUANTITIES UPDATED  
DATE  
6/15/2020  
7/24/2020  
REV. NO.  
1  
2  
GENERAL NOTES  
STREET & STORM SEWER PLANS  
OSAGE  
FIRST PLAT  
LEE'S SUMMIT, MISSOURI  
2020

drawn by: AA  
checked by: SS  
designed by: AA  
QA/QC by: JES  
project no.: A19-2339  
drawing no.: C\_TTL01\_A192339  
date: 3/17/2020

SHEET  
C102



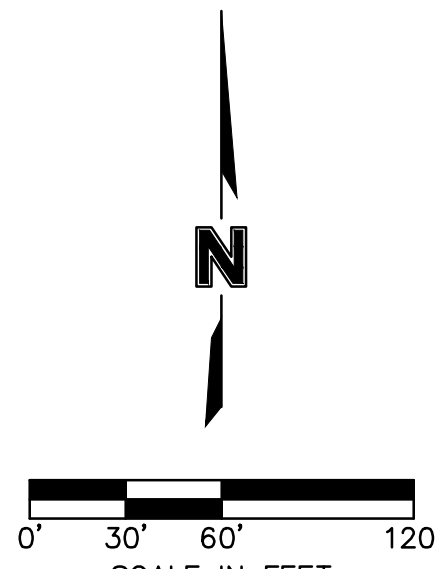
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DATE: Mar 10, 2021 5:19pm XREFS: C\_XBASE\_A192339 C\_PBASE\_A192339 C\_PENDY\_A192339 C\_PSTRM\_A192339 C\_PBLK\_A192339



| STRUCTURES   |             |              |
|--------------|-------------|--------------|
| STRUCTURE ID | NORTHING    | EASTING      |
| C.I. 2-2     | 977467.8986 | 2811988.0157 |
| C.I. 2-4     | 977692.4187 | 2812026.3213 |
| C.I. 2-5     | 977811.3432 | 2812030.5897 |
| C.I. 2-6     | 978092.1864 | 2812039.9885 |
| C.I. 2-7     | 978162.5469 | 2812021.6235 |
| C.I. 2-8     | 978170.3359 | 2811752.3191 |
| C.I. 2-9     | 978138.2214 | 2811692.2720 |
| C.I. 3-1     | 977691.3103 | 2812061.3037 |
| C.I. 4-2     | 977848.1807 | 2811752.1166 |
| C.I. 4-3     | 977849.2574 | 2811718.1337 |
| C.I. 5-1     | 977810.2506 | 2812065.0724 |
| C.I. 7-2     | 978337.3681 | 2811477.4711 |
| C.I. 7-3     | 978338.4239 | 2811443.4875 |
| C.I. 7-5     | 978181.8882 | 2811403.5100 |
| C.I. 7-6     | 978147.4055 | 2811402.4174 |
| C.I. 7-7     | 978111.3146 | 2811436.2915 |
| C.I. 8-1     | 978150.5883 | 2811301.9679 |
| C.I. 10-1    | 977588.7590 | 2811666.5942 |
| C.I. 11-1    | 977622.7420 | 2811667.6676 |
| C.I. 12-3    | 977147.9332 | 2811669.8990 |
| C.I. 12-4    | 977149.0136 | 2811635.4159 |
| C.I. 13-2    | 977281.0969 | 2811567.9474 |
| C.I. 13-3    | 977315.5796 | 2811569.0400 |
| C.I. 13-4    | 977320.8051 | 2811404.1227 |
| C.I. 14-1    | 977286.8221 | 2811403.0460 |

| STRUCTURES   |             |              |
|--------------|-------------|--------------|
| STRUCTURE ID | NORTHING    | EASTING      |
| C.I. 15-1    | 977359.4044 | 2811642.5825 |
| CONNECT 7-0  | 978376.9050 | 2811522.3190 |
| E.S. 1-1     | 977191.3061 | 2812193.0089 |
| E.S. 2-1     | 977329.8018 | 2811884.1121 |
| E.S. 9-1     | 977343.7014 | 2811859.1483 |
| E.S. 12-1    | 977168.9630 | 2811850.2767 |
| F.I. 1-2     | 977193.0635 | 2812137.6738 |
| F.I. 4-1     | 977843.7470 | 2811892.0464 |
| F.I. 4-4     | 977853.3111 | 2811590.1979 |
| F.I. 7-1     | 978367.4601 | 2811521.8275 |
| F.I. 8-2     | 978052.0411 | 2811295.4838 |
| F.I. 9-4     | 977453.5763 | 2811573.4124 |
| F.I. 9-5     | 977460.3060 | 2811361.0190 |
| F.I. 12-5    | 977145.2863 | 2811509.1437 |
| F.I. 12-6    | 977150.3910 | 2811351.1993 |
| M.H. 2-3     | 977576.1928 | 2811991.4471 |
| M.H. 7-4     | 978202.2690 | 2811439.1734 |
| M.H. 9-2     | 977460.5422 | 2811813.5020 |
| M.H. 9-3     | 977464.2507 | 2811696.4606 |
| M.H. 12-2    | 977143.4837 | 2811810.3285 |
| M.H. 13-1    | 977257.3396 | 2811638.8487 |
| PLUG 10-2    | 977592.3647 | 2811552.7975 |
| PLUG 13-5    | 977324.8415 | 2811276.7301 |

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BROCK M. WORTHLEY  
Professional Engineer  
PE-2019000237  
4/14/2021

BY  
REVISIONS DESCRIPTION  
DATE  
REV. NO.  
1  
EAST-WEST WALSH STREET NAME CHANGED, 2.7, 2.8, 7.1 & 13.5 MOVED  
WALSH CUL-DE-SAC REVISED, MARYVILLE DEAD END SHORTENED  
RUTHERFORD TEMPORARY CUL-DE-SAC ADDED

GENERAL LAYOUT  
STREET & STORM SEWER PLANS  
OSAGE  
FIRST PLAT

LEE'S SUMMIT, MISSOURI

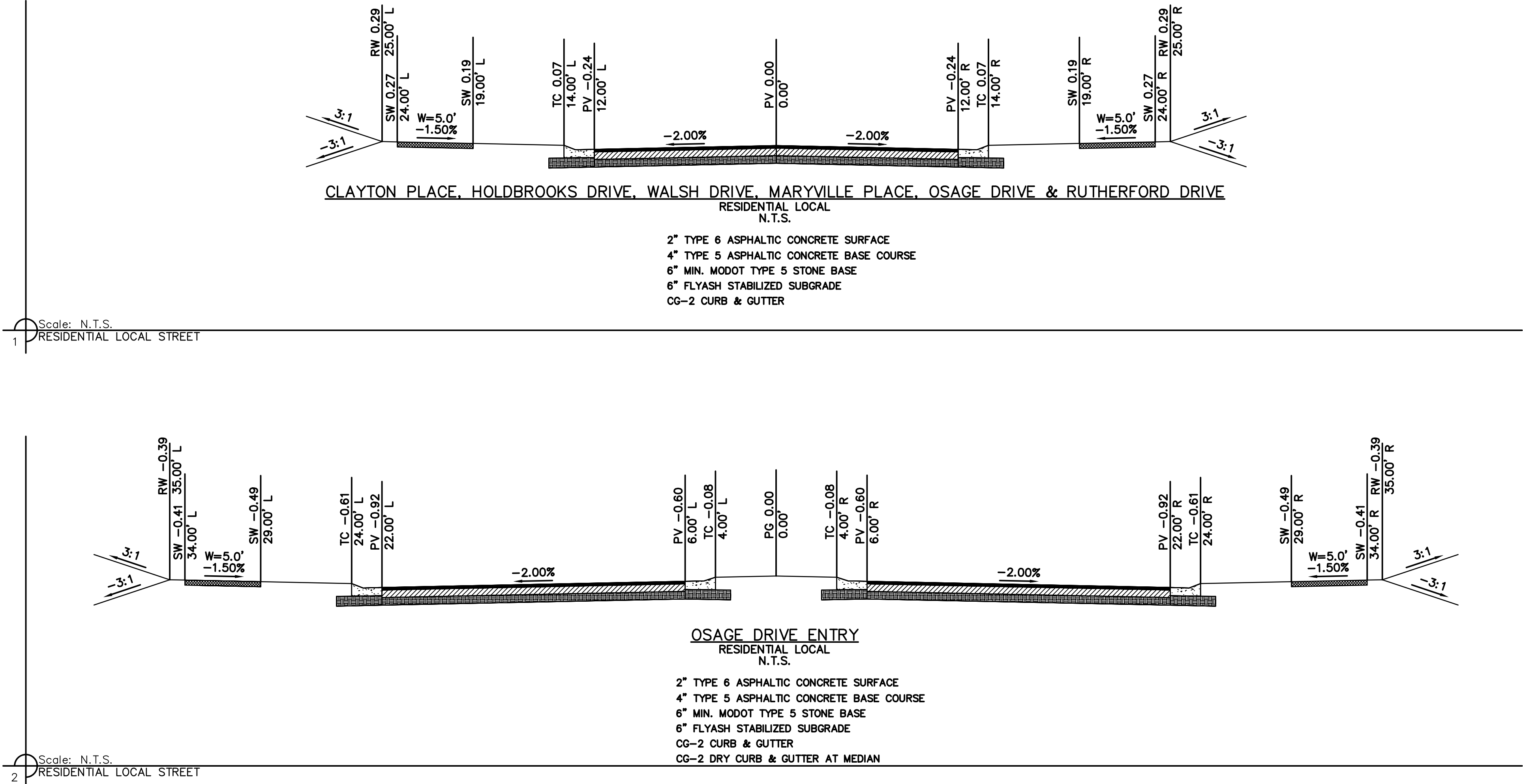
2020

drawn by: AA  
checked by: SS  
designed by: AA  
QA/QC by: JES  
project no.: A19-2339  
drawing no.: C\_GEN01\_A192339  
date: 3/17/2020

SHEET  
C103



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NOT AS-BUILT



| REV. NO. | DATE      | REVISIONS DESCRIPTION | BY |
|----------|-----------|-----------------------|----|
| 1        | 6/15/2020 | STREET NAME CHANGED   |    |
|          |           |                       |    |
|          |           |                       |    |
|          |           |                       |    |
|          |           |                       |    |
|          |           |                       |    |
|          |           |                       |    |
|          |           |                       |    |
|          |           |                       |    |
|          |           |                       |    |

| TYPICAL SECTIONS<br>STREET & STORM SEWER PLANS | 2020 |
|------------------------------------------------|------|
| OSAGE<br>FIRST PLAT                            |      |
| LEE'S SUMMIT, MISSOURI                         |      |

drawn by: AA  
checked by: SS  
designed by: AA  
QA/QC by: JES  
project no.: A19-2339  
drawing no.: C\_TYP01\_A192339  
date: 3/17/2020

SHEET  
C104

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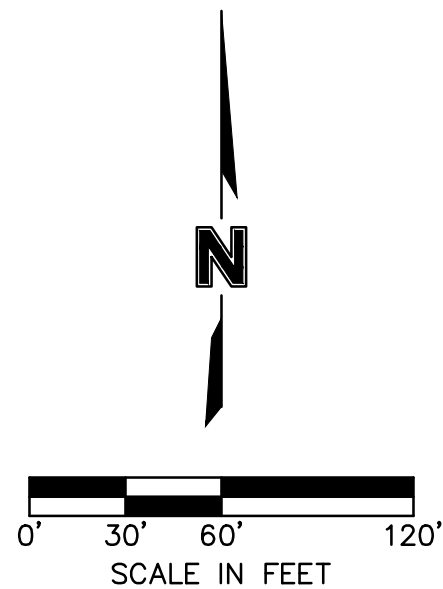


GENERAL NOTES:

1. CONTRACTOR SHALL ADHERE TO THE "DESIGN AND CONSTRUCTION MANUAL" SECTION 2100 AS ADOPTED BY THE CITY OF LEE'S SUMMIT (LATEST EDITION), FOR EXCAVATION AND EMBANKMENT WORK WITHIN THE PROPOSED RIGHT-OF-WAY.
2. AREAS OF CONSTRUCTION SHALL BE STRIPPED OF ALL VEGETATION, ORGANIC MATTER AND TOPSOIL TO A DEPTH AS RECOMMENDED BY GEOTECHNICAL ENGINEER AND OR TESTING AGENCY. SOILS REMOVED DURING SITE STRIPPING SHOULD BE EVALUATED TO DETERMINE IF PORTIONS OF THE TOPSOIL STRATUM MAY BE UTILIZED AS STRUCTURAL FILL WITHIN PAVEMENT AREAS. ANY MATERIAL NOT DEEMED AS SUITABLE FILL MATERIAL BY THE GEOTECHNICAL ENGINEER AND OR TESTING AGENCY SHALL BE REMOVED FROM THE JOB SITE BY THE CONTRACTOR AT HIS EXPENSE.
3. ALL EMBANKMENT OUTSIDE OF RIGHT-OF-WAY SHOULD BE PLACED IN CONTROLLED LIFTS HAVING A MAXIMUM LOOSE LIFT THICKNESS OF 8". EMBANKMENT SHOULD BE COMPACTED TO A MINIMUM OF 95% OF THE MATERIALS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 (STANDARD PROCTOR COMPACTION). MOISTURE CONTENT OF THE FILL AT THE TIME OF COMPACTION SHALL BE WITHIN A RANGE OF -0 TO +4 PERCENT OF OPTIMUM MOISTURE CONTENT.

NOT AS-BUILT

REFER TO MASTER DRAINAGE PLAN FOR UPDATED GRADING



| LEGEND        |                                |
|---------------|--------------------------------|
| - - - 100 - - | EXISTING INDEX CONTOURS        |
| - - - 100 - - | EXISTING INTERMEDIATE CONTOURS |
| - - - 100 - - | PROPOSED INDEX CONTOURS        |
| - - - 100 - - | PROPOSED INTERMEDIATE CONTOURS |

| EARTHWORK QUANTITIES |            |             |
|----------------------|------------|-------------|
| LOCATION             | CUT (C.Y.) | FILL (C.Y.) |
| STREET               | 5,625      | 9,615       |
| SITE                 | 27,711     | 33,974      |
| TOTAL                | 33,336     | 43,589      |

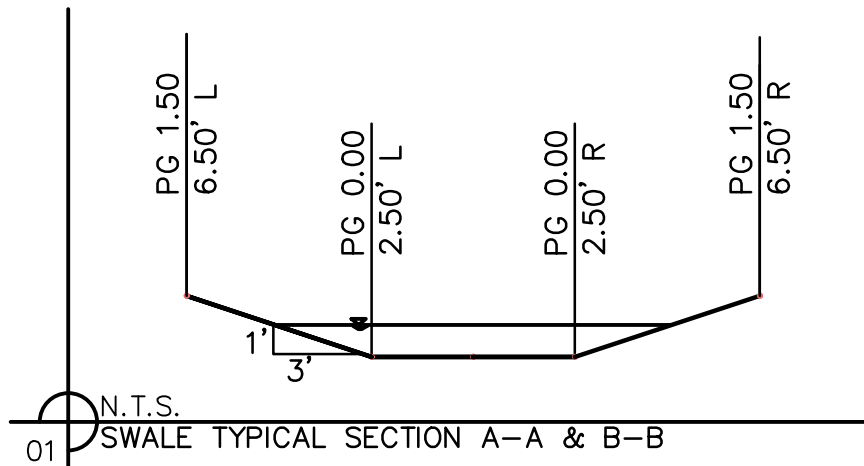
EARTHWORK QUANTITIES NOTES:

1. EARTHWORK QUANTITIES BASED ON FINISHED GRADE SURFACE AND DO NOT INCLUDE ADJUSTMENTS FOR TOPSOIL AND SHRINKAGE.
2. EARTHWORK QUANTITIES DO NOT TAKE INTO CONSIDERATION EXCAVATION, REMOVAL AND DISPOSAL OF MATERIAL DEEMED UNSUITABLE BY A GEOTECHNICAL ENGINEER. THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR EXCAVATION, REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL AND FOR REPLACING IT WITH SUITABLE MATERIAL.



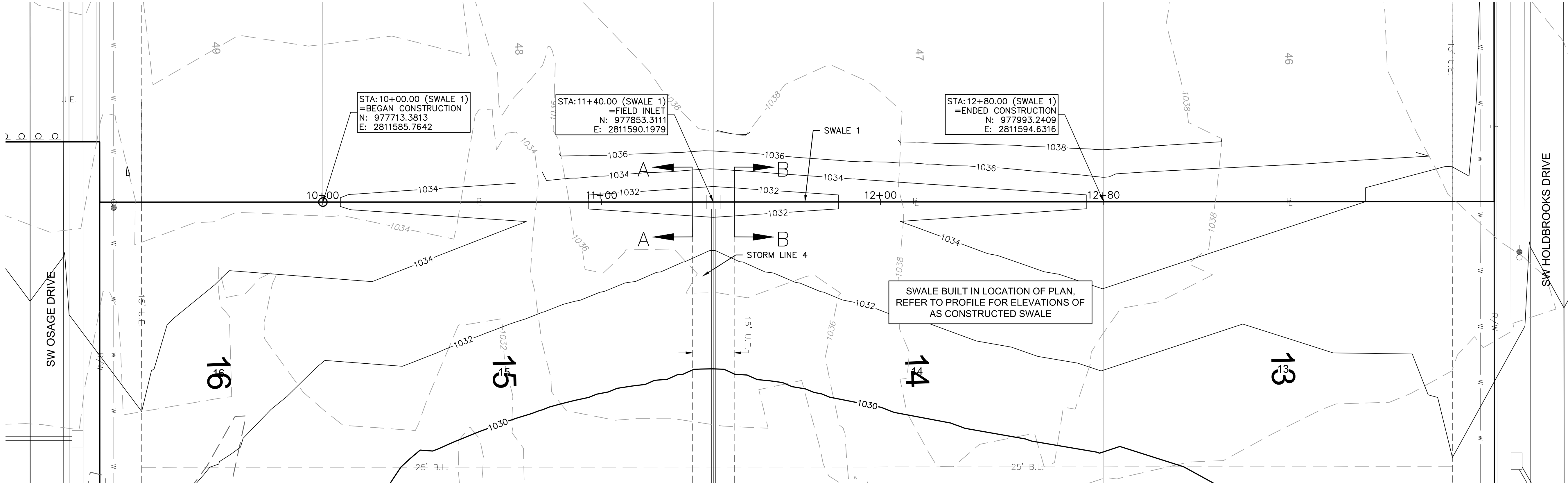


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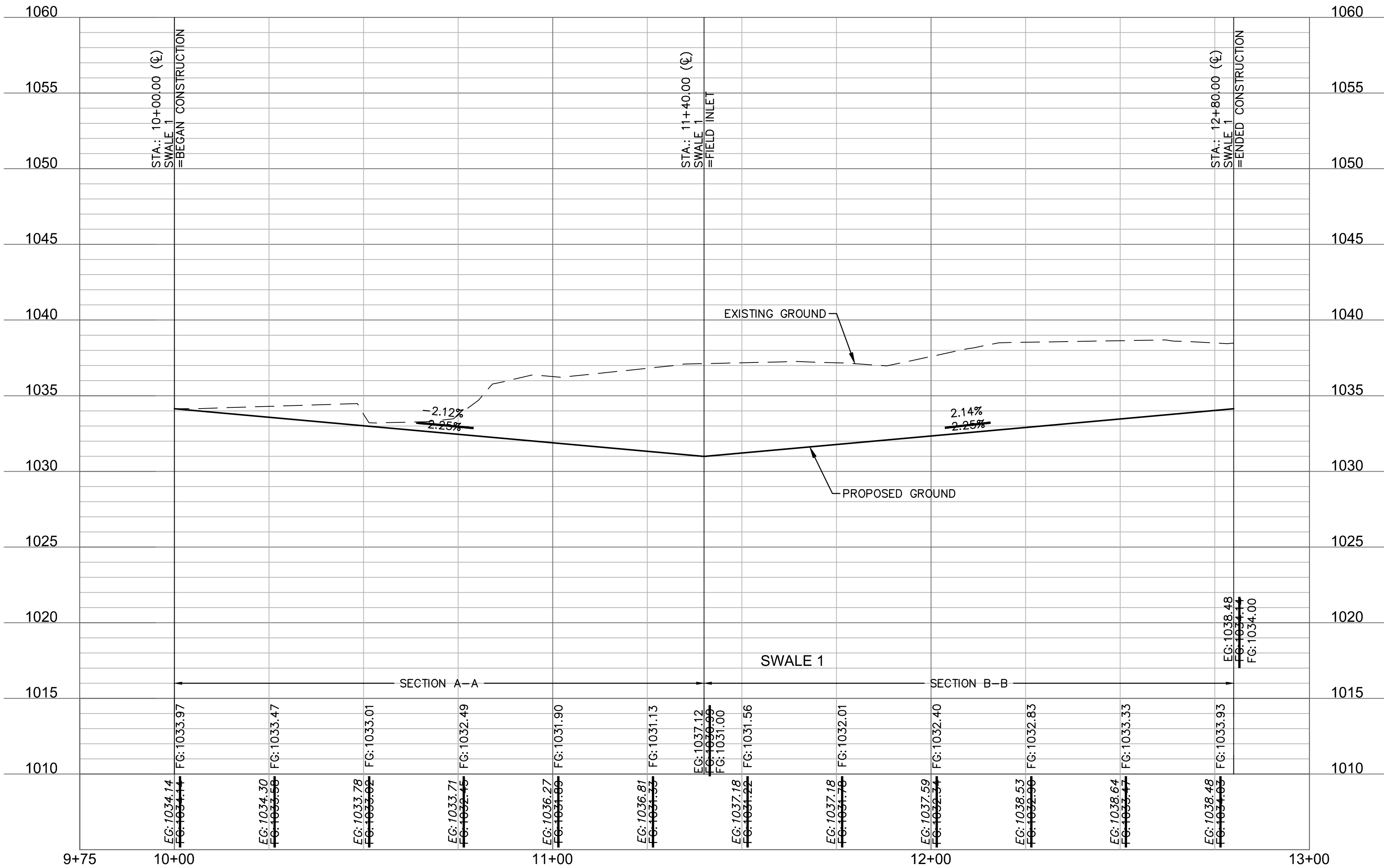
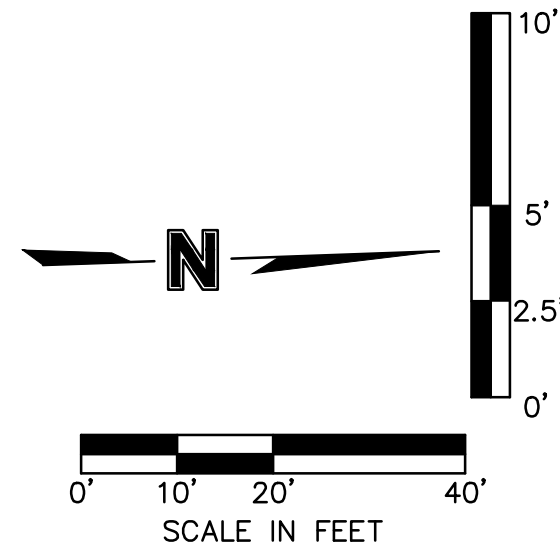
**SWALE GRADING NOTES:**

1. CONTRACTOR SHALL CONSTRUCT SWALES WITH MINIMUM SLOPE, WIDTH AND DEPTH AS SHOWN IN THE SWALE DESIGN TABLES.
2. AS-BUILT SURVEY IS REQUIRED/APPROVED BY CITY FOR ALL SWALES AND PRIOR TO APPROVAL FOR ANY BUILDING FOUNDATION PERMIT, CONTRACTOR SHALL BE REQUIRED TO REGRADE SWALES AT CONTRACTOR'S EXPENSE IF ABOVE REQUIREMENTS ARE NOT MET.



| Swale Design Table (100 Year Return Frequency) |                      |                   |                  |                       |                        |                   |                 |                  |                 |                   |                       |                |                      |
|------------------------------------------------|----------------------|-------------------|------------------|-----------------------|------------------------|-------------------|-----------------|------------------|-----------------|-------------------|-----------------------|----------------|----------------------|
| Section Data                                   |                      |                   |                  |                       |                        |                   | Flow Data       |                  |                 |                   |                       |                |                      |
| SECTION                                        | Mannings Coefficient | Channel Slope (%) | Swale Depth (ft) | Left Side Slope (H:V) | Right Side Slope (H:V) | Bottom Width (ft) | Discharge (cfs) | Water Depth (ft) | Flow Area (ft²) | Velocity (ft/sec) | Wetted Perimeter (ft) | Top Width (ft) | Specific Energy (ft) |
| A-A                                            | 0.03                 | 2.25%             | 1.50             | 3:1                   | 3:1                    | 5.00              | 10.14           | 0.44             | 2.78            | 3.65              | 7.78                  | 7.64           | 0.65                 |
| B-B                                            | 0.03                 | 2.25%             | 1.50             | 3:1                   | 3:1                    | 5.00              | 2.17            | 0.18             | 1.00            | 2.18              | 6.14                  | 6.08           | 0.25                 |
| A-A Future                                     | 0.03                 | 2.25%             | 1.50             | 3:1                   | 3:1                    | 5.00              | 2.04            | 0.18             | 1.00            | 2.05              | 6.14                  | 6.08           | 0.25                 |
| B-B Future                                     | 0.03                 | 2.25%             | 1.50             | 3:1                   | 3:1                    | 5.00              | 1.91            | 0.17             | 0.94            | 2.04              | 6.08                  | 6.02           | 0.23                 |

| Swale Drainage Area Table (100 year Return Frequency) |                     |      |          |           |      |                 |
|-------------------------------------------------------|---------------------|------|----------|-----------|------|-----------------|
| Section                                               | Drainage Area (ac.) | C    | Tc (min) | i (in/hr) | K    | Peak Flow (cfs) |
| A-A                                                   | 2.14                | 0.47 | 11       | 8.06      | 1.25 | 10.14           |
| B-B                                                   | 0.33                | 0.51 | 4        | 10.32     | 1.25 | 2.17            |
| A-A Future                                            | 0.31                | 0.51 | 5        | 5.73      | 2.25 | 2.04            |
| B-B Future                                            | 0.29                | 0.51 | 5        | 10.32     | 1.25 | 1.91            |



**AS-BUILT**

4/14/2021

REFER TO MASTER DRAINAGE PLAN FOR UPDATED GRADING

SWALE 1 PLAN & PROFILE  
STREET & STORM SEWER PLANS

OSAGE  
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

REVISIONS

drawn by: AA  
checked by: SS  
designed by: AA  
QA/QC by: JES  
project no.: A19-2339  
drawing no.: C\_SWL01\_A192339  
date: 3/17/2020

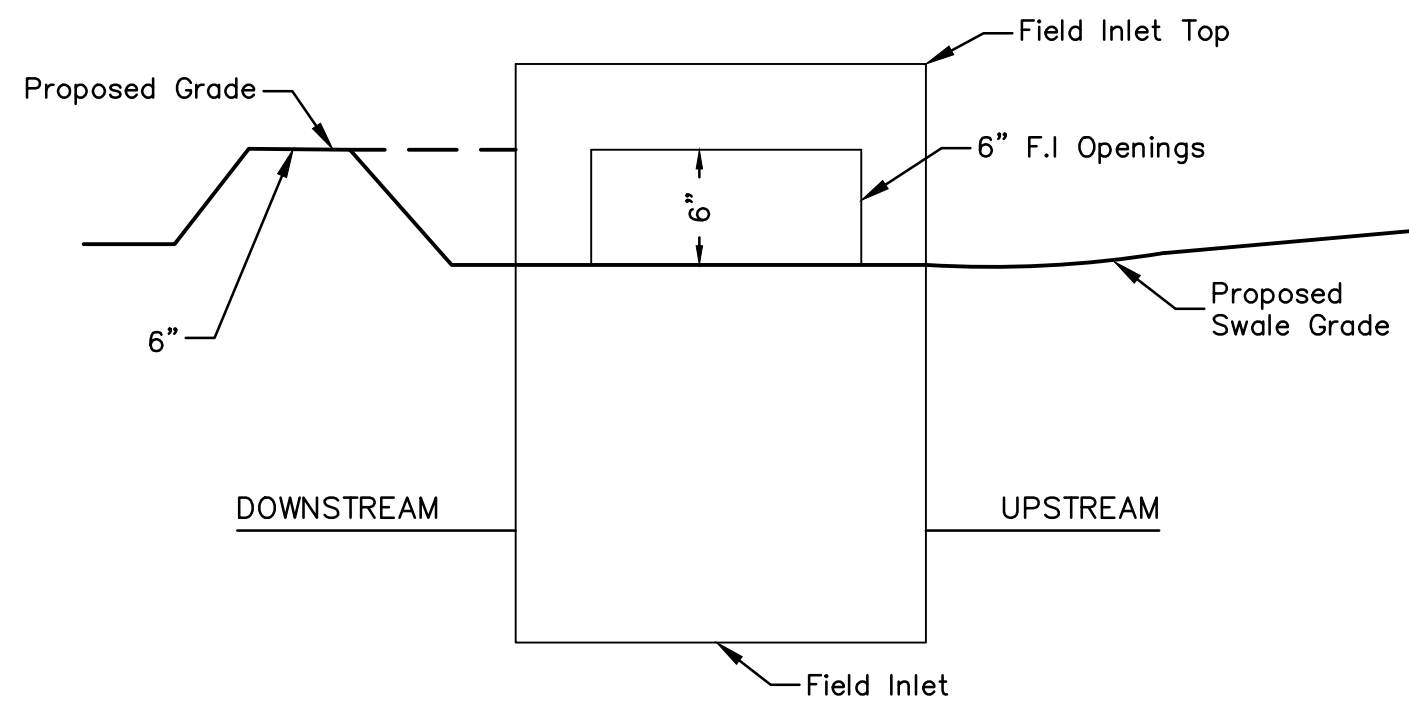
SHEET  
C106



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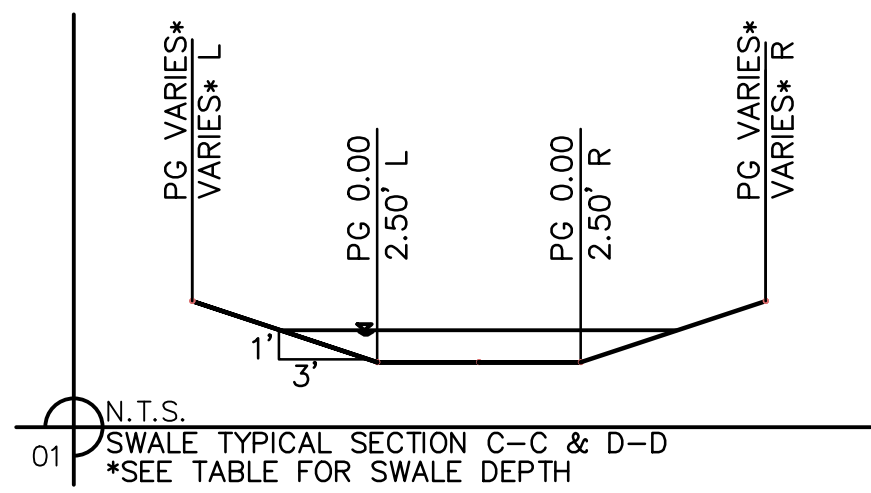
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1301 Burlington Street  
North Kansas City, MO 64116  
TEL 816.361.1177  
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NOTE: INCLUDE SUMP PER ABOVE DETAIL WHERE FIELD INLETS ARE LOCATED WITHIN SWALES.

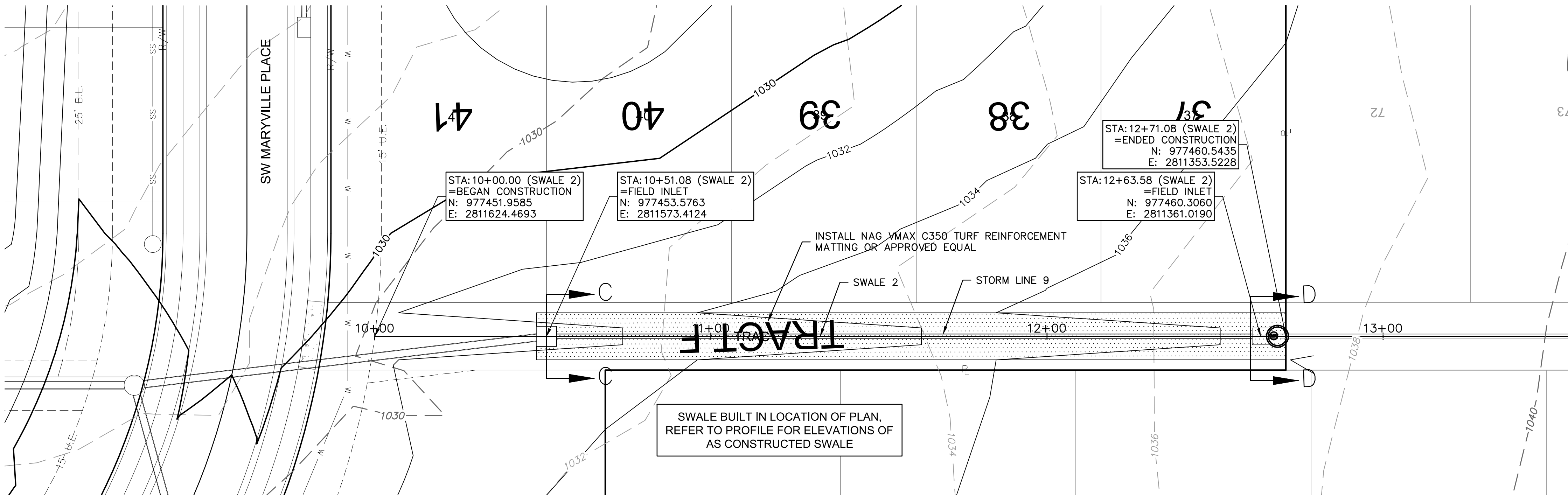
SUMP DETAIL  
N.T.S.



| LEGEND |                                                        |
|--------|--------------------------------------------------------|
|        | NAG VMAX C350 TURF REINFORCEMENT MAT OR APPROVED EQUAL |

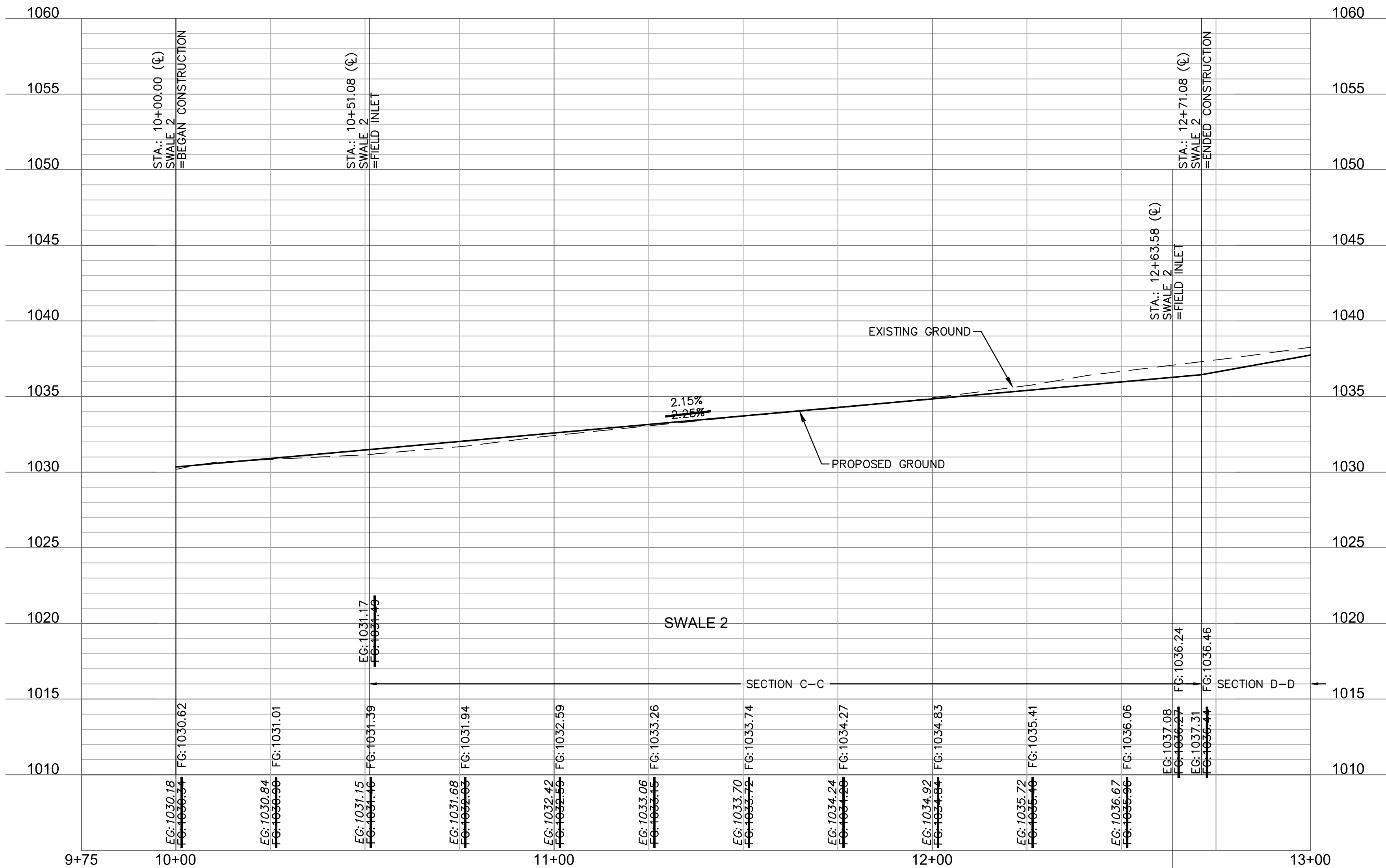
SWALE GRADING NOTES:

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2. AS-BUILT SURVEY IS REQUIRED/APPROVED BY CITY FOR ALL SWALES AND PRIOR TO APPROVAL FOR ANY BUILDING FOUNDATION PERMIT. CONTRACTOR SHALL BE REQUIRED TO REGRADE SWALES AT CONTRACTOR'S EXPENSE IF ABOVE REQUIREMENTS ARE NOT MET.



| Swale Design Table (100 Year Return Frequency) |                      |                   |                  |                       |                        |                   |                 |                  |                 |                   |                       |                |
|------------------------------------------------|----------------------|-------------------|------------------|-----------------------|------------------------|-------------------|-----------------|------------------|-----------------|-------------------|-----------------------|----------------|
| Section Data                                   |                      |                   |                  |                       |                        |                   | Flow Data       |                  |                 |                   |                       |                |
| SECTION                                        | Mannings Coefficient | Channel Slope (%) | Swale Depth (ft) | Left Side Slope (H:V) | Right Side Slope (H:V) | Bottom Width (ft) | Discharge (cfs) | Water Depth (ft) | Flow Area (ft²) | Velocity (ft/sec) | Wetted Perimeter (ft) | Top Width (ft) |
| C-C                                            | 0.03                 | 2.25%             | 1.64             | 3:1                   | 3:1                    | 5.00              | 20.20           | 0.64             | 4.43            | 4.56              | 9.05                  | 8.84           |
| D-D                                            | 0.03                 | 2.25%             | 1.50             | 3:1                   | 3:1                    | 5.00              | 3.22            | 0.23             | 1.31            | 2.46              | 6.45                  | 6.38           |
| C-C Future                                     | 0.03                 | 2.25%             | 1.64             | 3:1                   | 3:1                    | 5.00              | 5.00            | 0.29             | 1.70            | 2.94              | 6.83                  | 6.74           |
| D-D Future                                     | 0.03                 | 2.25%             | 1.50             | 3:1                   | 3:1                    | 5.00              | 1.78            | 0.16             | 0.88            | 2.03              | 6.01                  | 5.96           |

| Swale Drainage Area Table (100 year Return Frequency) |                     |      |          |           |      |                 |
|-------------------------------------------------------|---------------------|------|----------|-----------|------|-----------------|
| Section                                               | Drainage Area (ac.) | C    | Tc (min) | i (in/hr) | K    | Peak Flow (cfs) |
| C-C                                                   | 3.83                | 0.51 | 12       | 8.27      | 1.25 | 20.20           |
| D-D                                                   | 0.49                | 0.51 | 4        | 10.32     | 1.25 | 3.22            |
| C-C Future                                            | 0.76                | 0.51 | 5        | 5.73      | 2.25 | 5.00            |
| D-D Future                                            | 0.27                | 0.51 | 5        | 10.32     | 1.25 | 1.78            |



AS-BUILT

4/14/2021

REFER TO MASTER DRAINAGE PLAN FOR UPDATED GRADING

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STATE OF MISSOURI  
BROCK M. WORTHLEY  
Professional Engineer  
PE-2019000237  
4/14/2021

BY

REVISIONS DESCRIPTION

DATE

REV. NO.

2020

SWALE 2 PLAN & PROFILE  
STREET & STORM SEWER PLANS

OSAGE  
FIRST PLAT

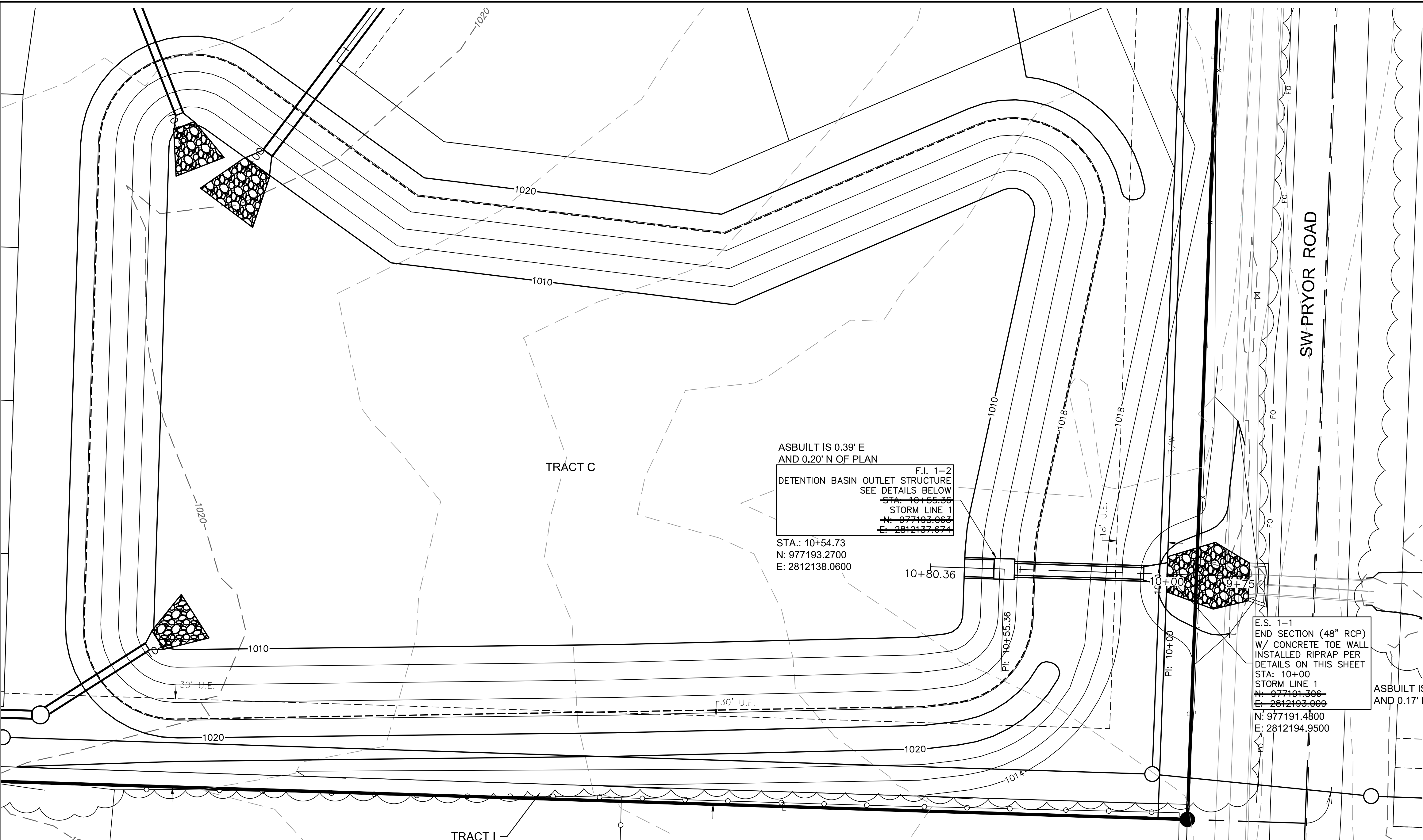
LEE'S SUMMIT, MISSOURI

drawn by: AA  
checked by: SS  
designed by: AA  
QA/QC by: JES  
project no.: A19-2339  
drawing no.: C\_SWL01\_A192339  
date: 3/17/2020

SHEET  
C107



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ASBUILT IS 0.39' E  
AND 0.20' N OF PLAN

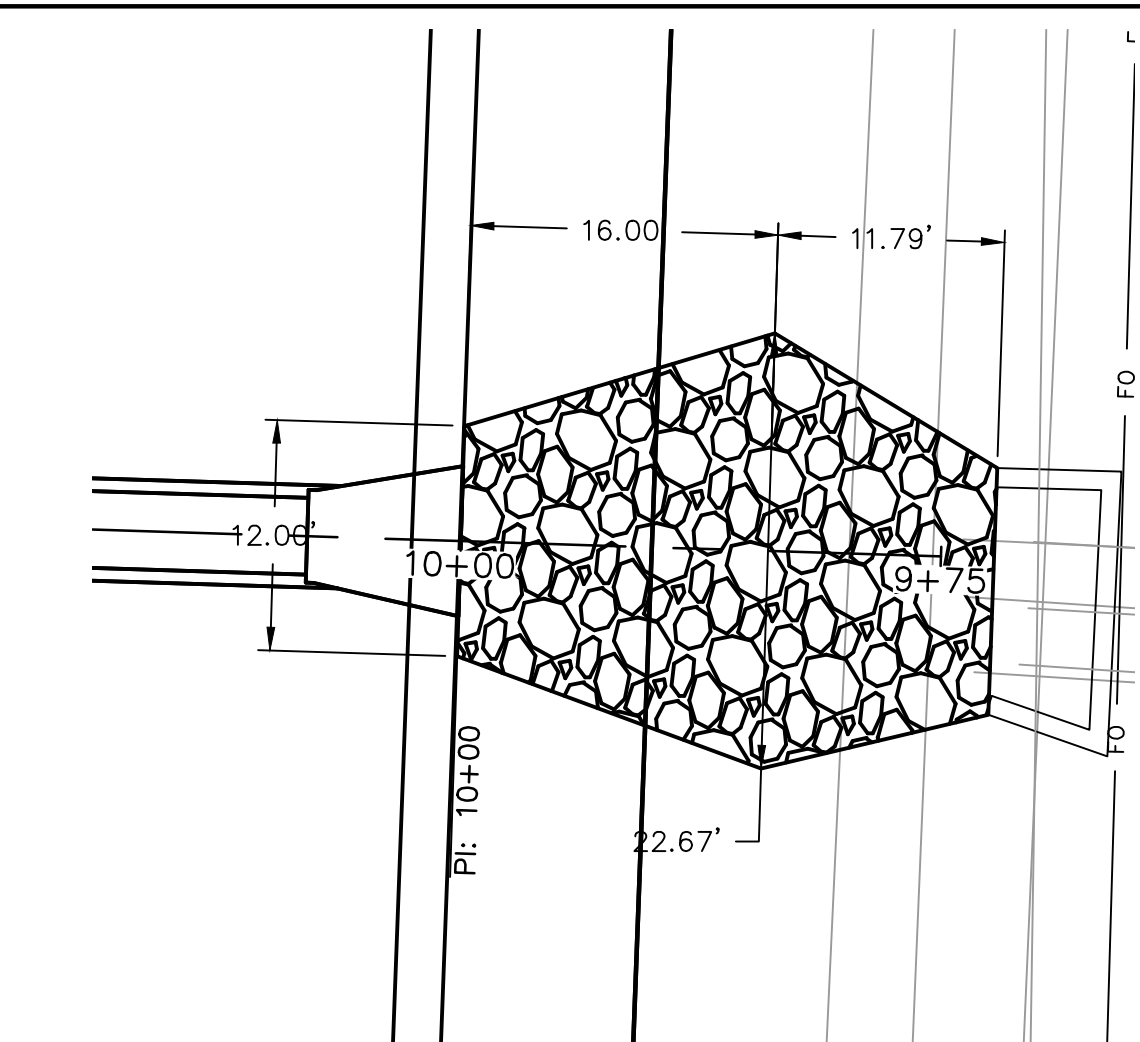
F.I. 1-2  
DETENTION BASIN OUTLET STRUCTURE  
SEE DETAILS BELOW  
STA: 10+55.36  
STORM LINE 1  
N: 977193.063  
E: 2812137.674

STA.: 10+54.73  
N: 977193.2700  
E: 2812138.0600

E.S. 1-1  
END SECTION (48" RCP)  
W/ CONCRETE TOE WALL  
INSTALLED RIPRAP PER  
DETAILS ON THIS SHEET  
STA: 10+00  
STORM LINE 1  
N: 977191.366  
E: 2812193.666

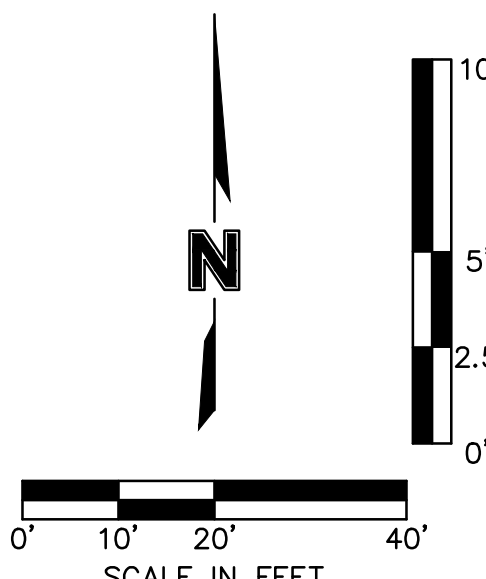
N: 977191.4800  
E: 2812194.9500

ASBUILT IS 1.94' E  
AND 0.17' N OF PLAN



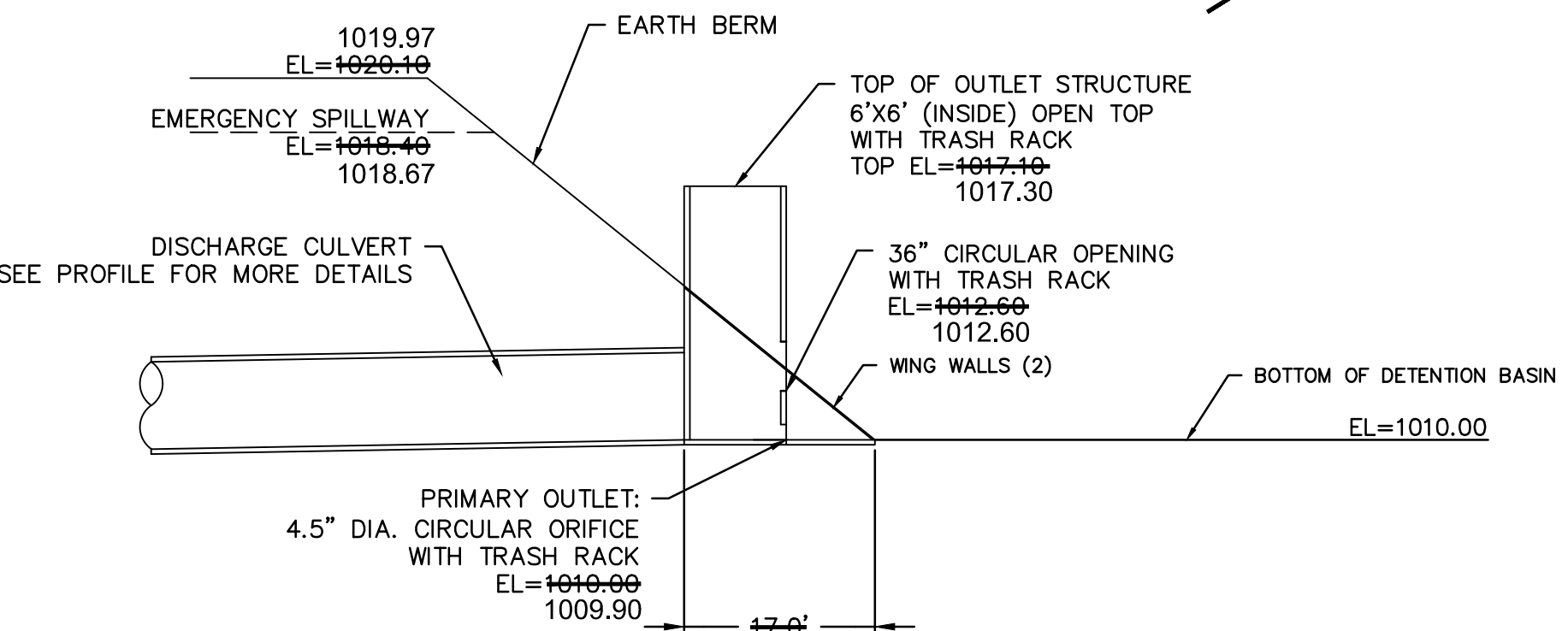
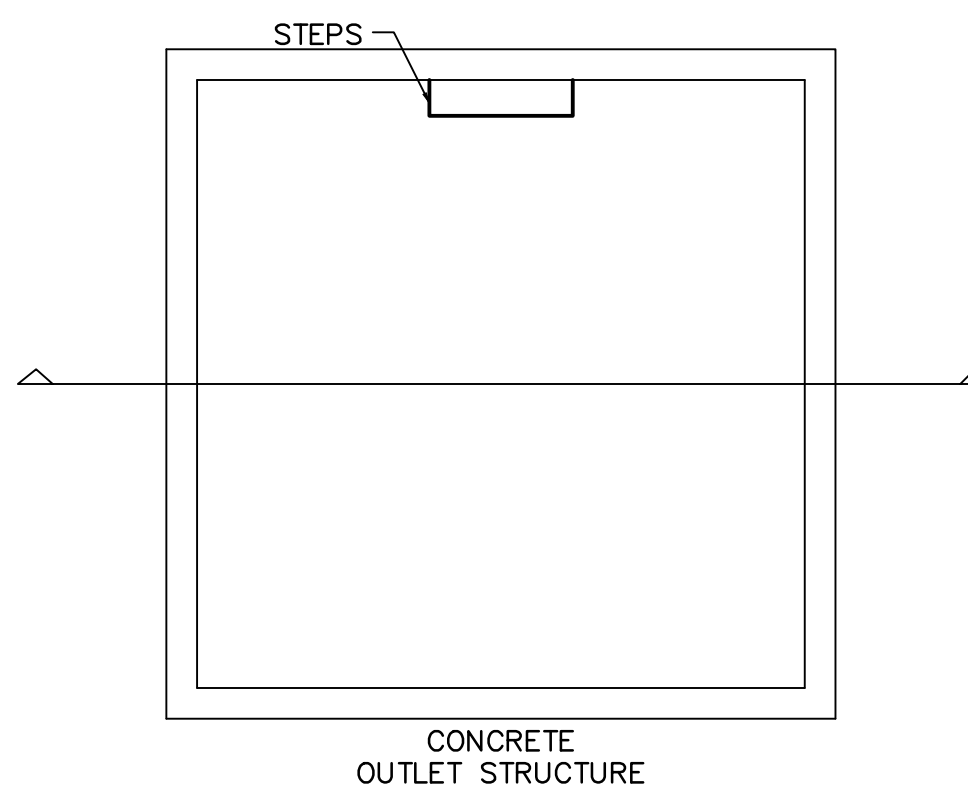
RIP RAP DETAIL  
1"=10'

| Riprap Calculations                                      |                           |                          |        |              |                         |                        |
|----------------------------------------------------------|---------------------------|--------------------------|--------|--------------|-------------------------|------------------------|
| End Section                                              | Q <sub>100</sub><br>(cfs) | Pipe<br>Diameter<br>(ft) | Class* | D50*<br>(in) | Apron<br>Length<br>(ft) | Apron<br>Depth<br>(ft) |
| E.S. 1-1                                                 | 56.3                      | 4                        | 2      | 6            | 16                      | 1.65                   |
| *Per Table 10.1 HEC 14-FHWA-Energy Dissipators Pg. 10-18 |                           |                          |        |              | Minimum<br>Area<br>(SY) | 30.8                   |



| BASIN SPILLWAY DETAILS               |                                   |
|--------------------------------------|-----------------------------------|
| TYPE                                 | RECTANGULAR<br>BROAD CRESTED WEIR |
| LENGTH                               | 160 FT                            |
| SPILLWAY ELEVATION                   | 1018.40 FT                        |
| SPILLWAY DEPTH                       | 1.70 FT                           |
| TOP ELEVATION                        | 1020.10 FT                        |
| 100-YR FLOW (AT<br>0.68' FLOW DEPTH) | 233.27 CFS                        |

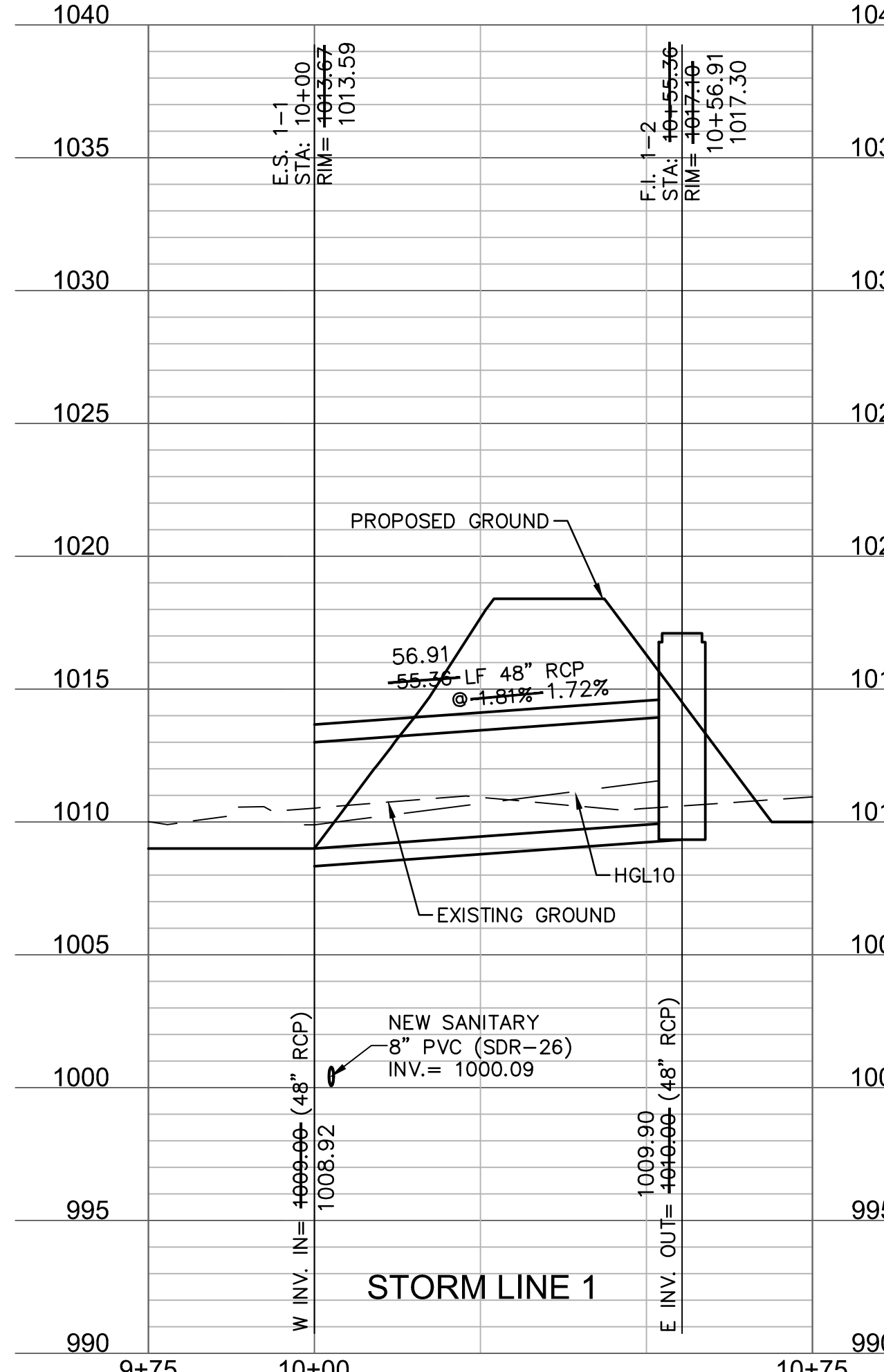
| AS-BUILT BASIN DETAILS                     |                                   |
|--------------------------------------------|-----------------------------------|
| SPILLWAY TYPE                              | RECTANGULAR<br>BROAD CRESTED WEIR |
| SPILLWAY LENGTH                            | 200 FT                            |
| LOW POINT ON<br>SPILLWAY ELEVATION         | 1018.60 FT                        |
| SPILLWAY DEPTH                             | 1.40 FT                           |
| LOW POINT ON<br>DAM ELEVATION              | 1020.00 FT                        |
| 100-YR DESIGN<br>WATER SURFACE ELEVATION   | 1017.16 FT                        |
| 100-YR AS-BUILT<br>WATER SURFACE ELEVATION | 1017.15 FT                        |
| DESIGN STORAGE                             | 528,652 CF                        |
| AS-BUILT STORAGE                           | 513,200 CF                        |



BASIN OUTLET STRUCTURE DETAIL  
N.T.S.

AS-BUILT

4/14/2021  
REFER TO MASTER  
DRAINAGE PLAN  
FOR UPDATED GRADING



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| BY | REVISIONS DESCRIPTION                        | DATE      | REV. NO. |
|----|----------------------------------------------|-----------|----------|
|    | TRASH RACKS ADDED TO OUTLET STRUCTURE DETAIL | 6/15/2020 | 1        |

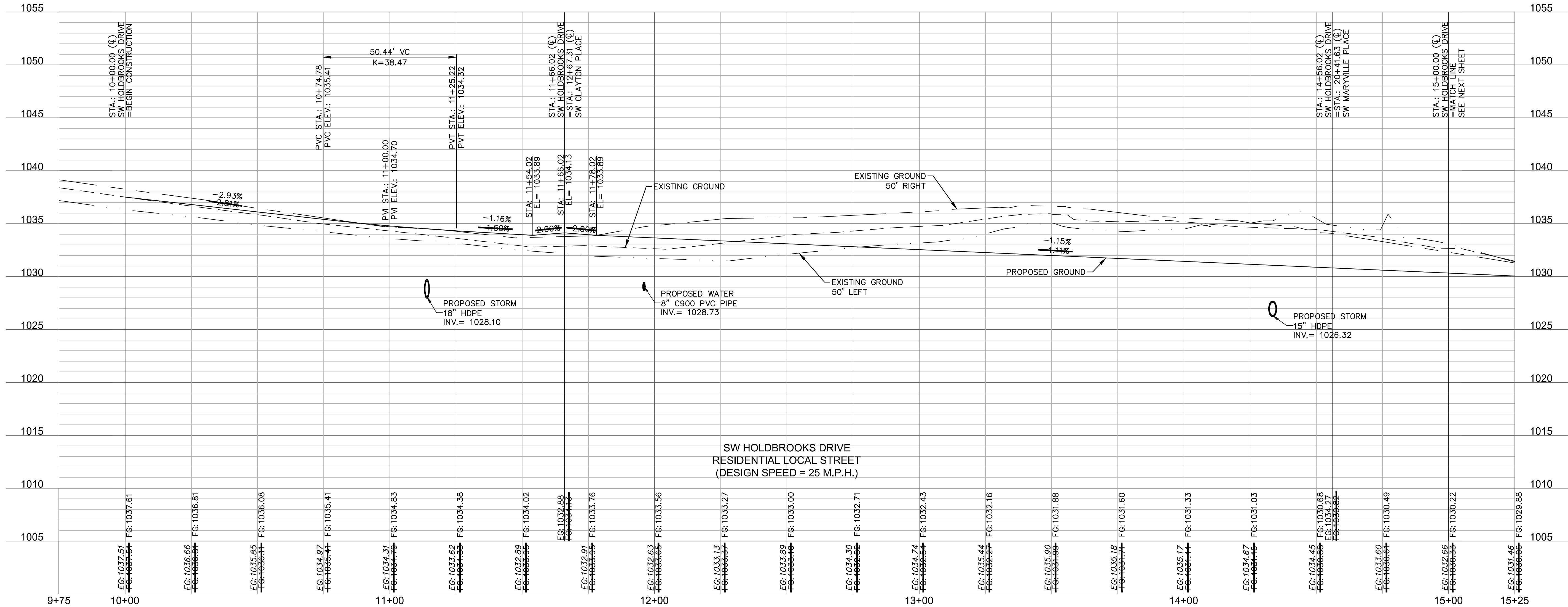
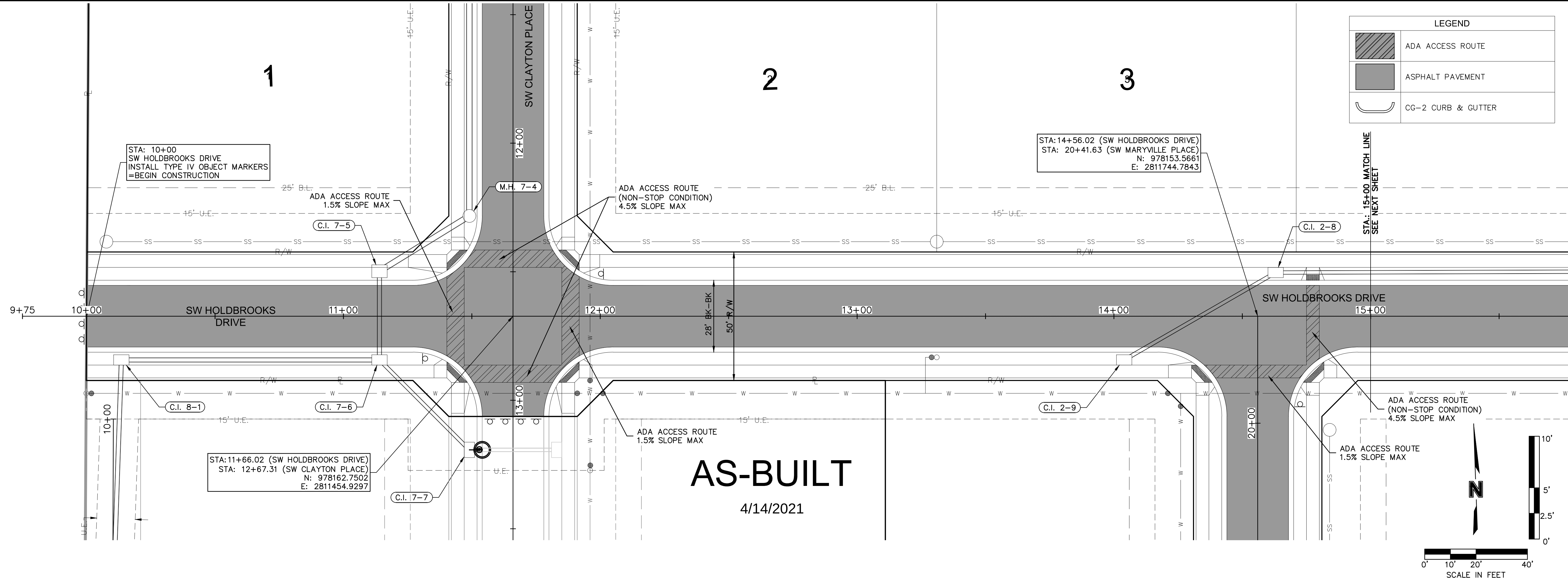
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|----------------------------------------------------|---------------------|------|
| DETENTION BASIN PLAN<br>STREET & STORM SEWER PLANS | OSAGE<br>FIRST PLAT | 2020 |
|----------------------------------------------------|---------------------|------|

drawn by: AA  
checked by: SS  
designed by: AA  
QA/QC by: JES  
project no.: A19-2339  
drawing no.: C\_DEP01\_A192339  
date: 3/17/2020

SHEET  
C108



DWG: F:\2019\2001-2500\019-2339-A\40-Design\AutoCAD\Final Plans - Asbuilts\Sheets\GNCV\STREET & STORM\C\_RPP01\_A192339.dwg USER: bworthley C\_PSTRM\_A192339  
DATE: Mar 10, 2021 5:11pm XREFS: C\_XBASE\_A192339 C\_PBASE\_A192339 C\_PENDY\_A192339 C\_PATTI\_A192339 C\_PSURE\_A192339



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| BY | REVISIONS DESCRIPTION | DATE      | REV. NO. | 1 |
|----|-----------------------|-----------|----------|---|
|    | STREET NAME CHANGED   | 6/15/2020 | 1        |   |

ROADWAY PLAN & PROFILE (SW HOLDBROOKS DRIVE)  
STREET & STORM SEWER PLANS

OSAGE  
FIRST PLAT

LEE'S SUMMIT, MISSOURI

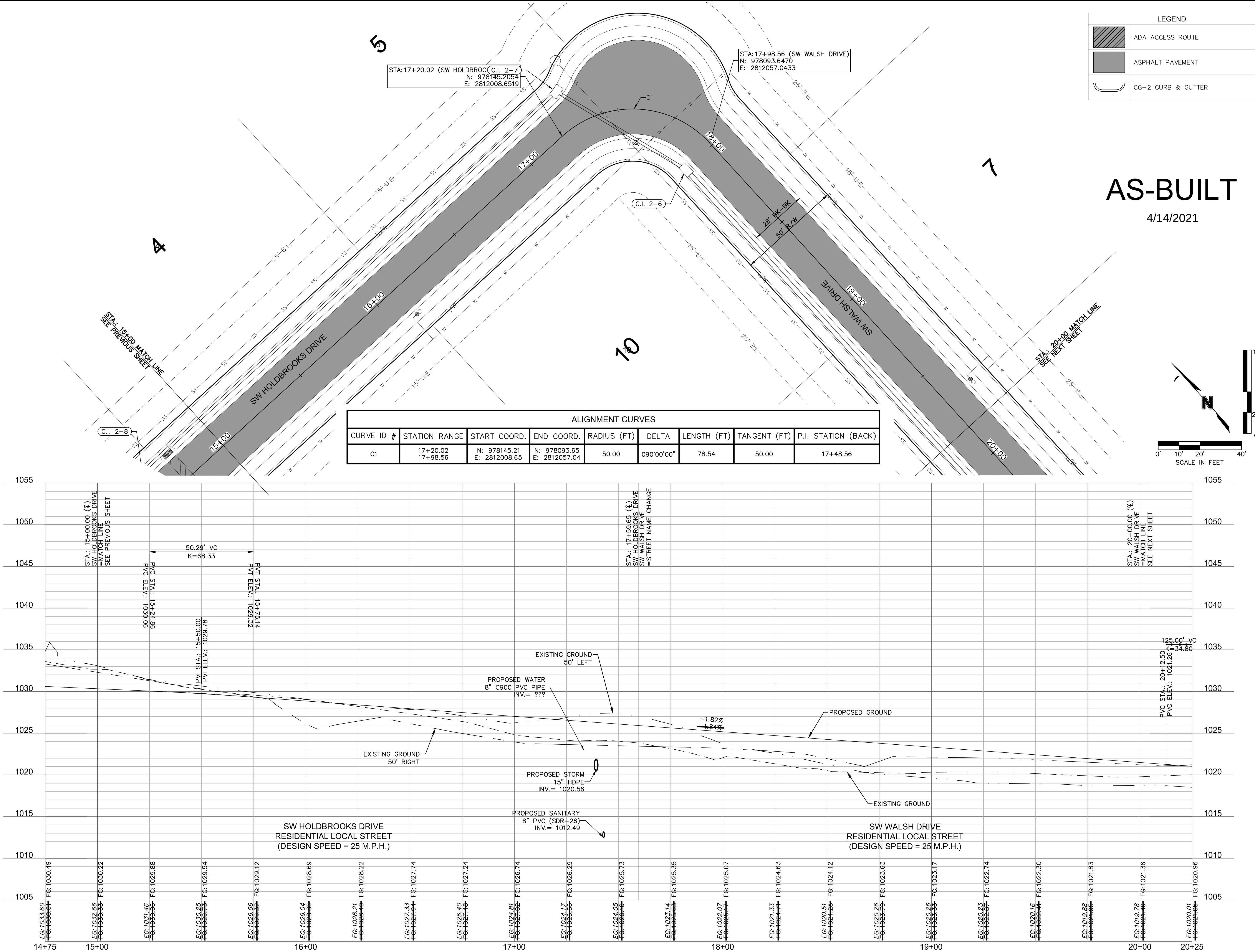
| 2020 |
|------|
|      |

drawn by: AA  
checked by: SS  
designed by: AA  
QA/QC by: JES  
project no.: A19-2339  
drawing no.: C\_RPP01\_A192339  
date: 3/17/2020

SHEET  
C109



DWG: F:\2019\2001-2500\019-2339-A140-Design\AutoCAD\Final Plans - Asbuilts\Sheets\CONV\STREET & STORM\C\_RPP01\_A192339.dwg  
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Professional Engineer  
PE-2019080237  
4/14/2021

**REVISIONS**

| REV. NO. | DATE      | REVISIONS DESCRIPTION                       |
|----------|-----------|---------------------------------------------|
| 1        | 6/15/2020 | STREET NAME CHANGED AND CURB & GUTTER ADDED |

**ROADWAY PLAN & PROFILE (SW HOLDBROOKS DRIVE & SW WALSH DRIVE)**  
**STREET & STORM SEWER PLANS**  
**OSAGE FIRST PLAT**  
**LEE'S SUMMIT, MISSOURI**  
**2020**

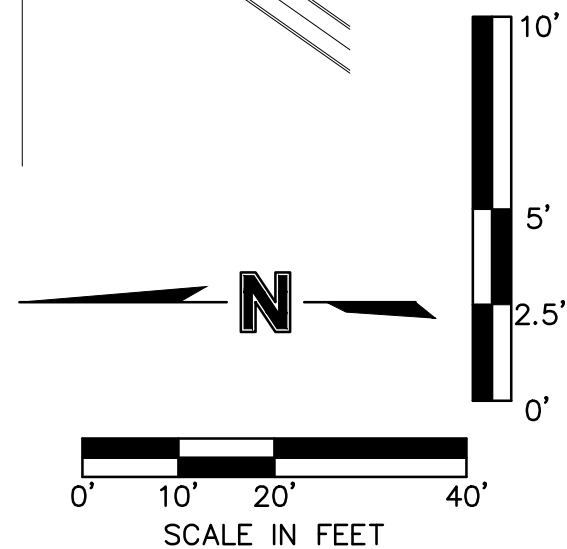
**SHEET C110**

drawn by: AA  
checked by: SS  
designed by: AA  
QA/QC by: JES  
project no.: A19-2339  
drawing no.: C\_RPP01\_A192339  
date: 3/17/2020



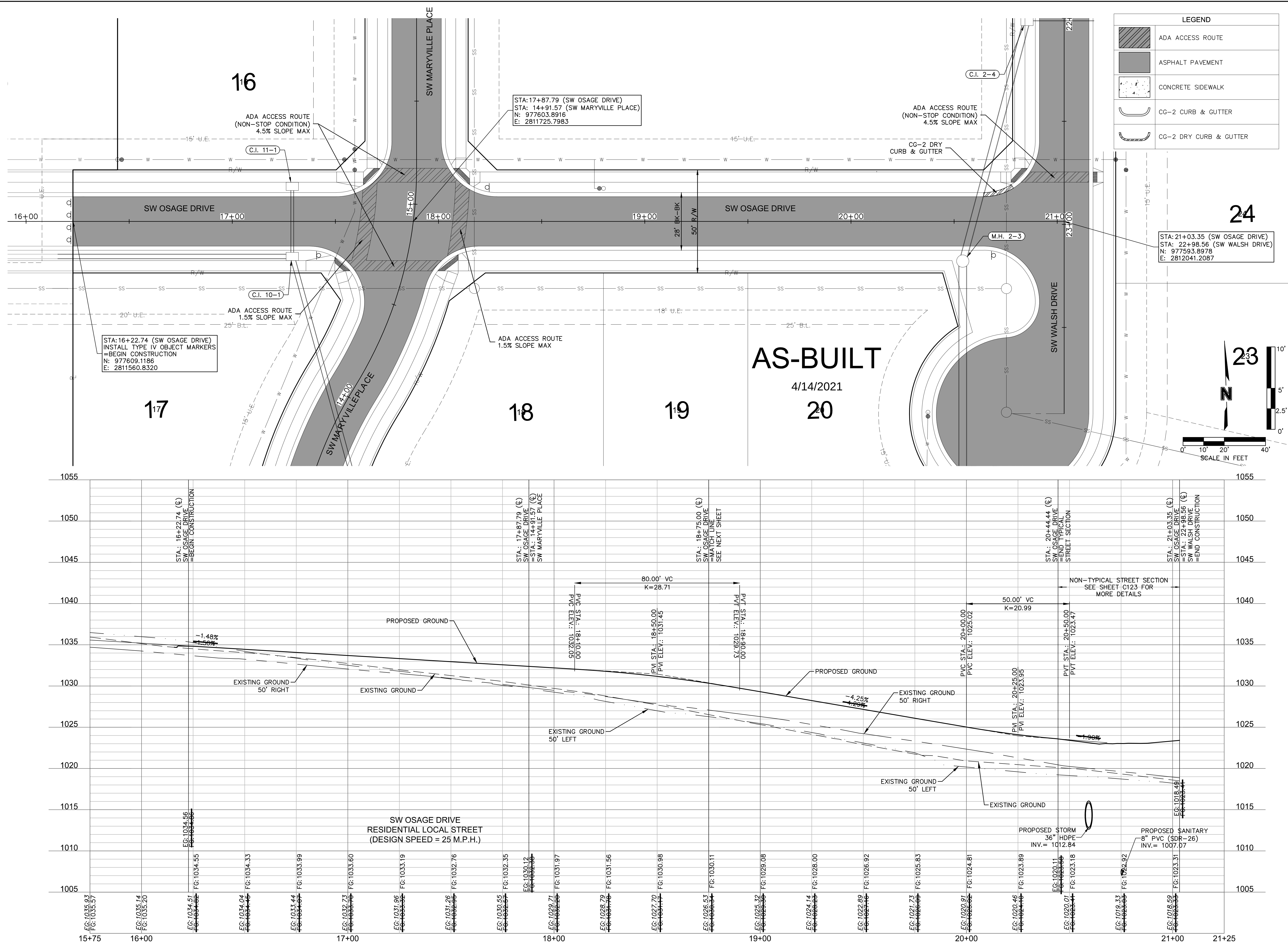


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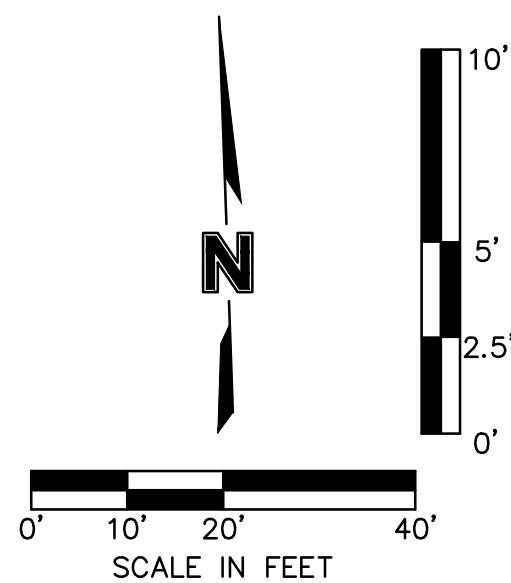
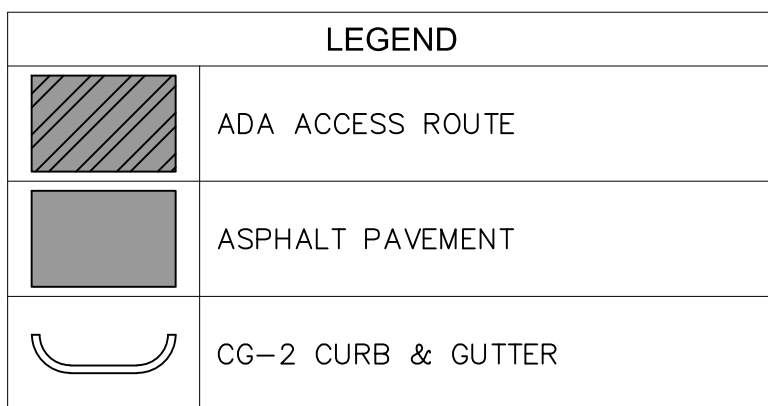
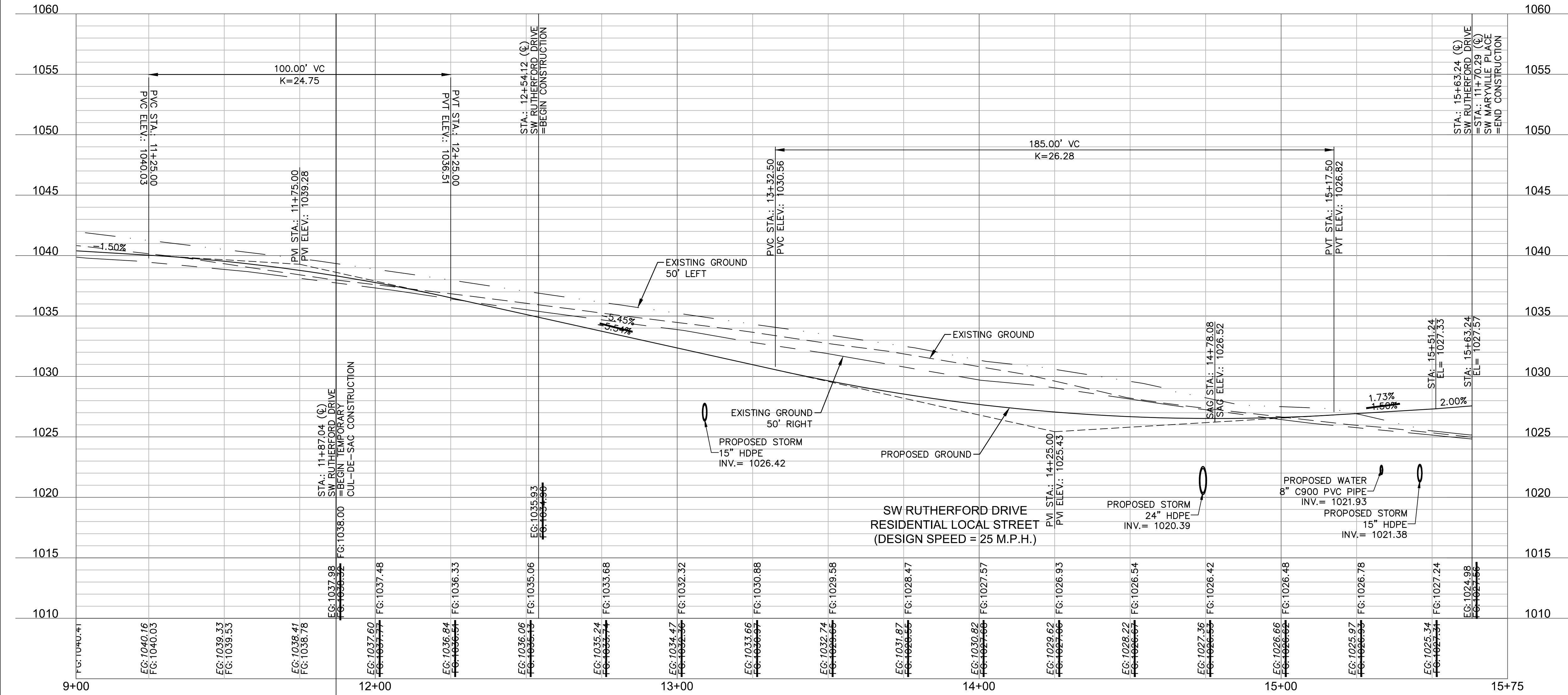


| LEGEND                                                                              |                        |
|-------------------------------------------------------------------------------------|------------------------|
|  | ADA ACCESS ROUTE       |
|  | ASPHALT PAVEMENT       |
|  | CONCRETE SIDEWALK      |
|  | CG-2 CURB & GUTTER     |
|  | CG-2 DRY CURB & GUTTER |



[illegible]





## AS-BUILT

4/14/2021

|                                                                                                                                     |          |           |                            |           |
|-------------------------------------------------------------------------------------------------------------------------------------|----------|-----------|----------------------------|-----------|
| ROADWAY PLAN & PROFILE (SW RUTHERFORD DRIVE)<br>STREET & STORM SEWER PLANS<br><br>OSAGE<br>FIRST PLAT<br><br>LEE'S SUMMIT, MISSOURI | REV. NO. | DATE      | REVISIONS DESCRIPTION      | BY        |
|                                                                                                                                     | 1        | 6/15/2020 | TEMPORARY CUL-DE-SAC ADDED |           |
|                                                                                                                                     |          |           |                            |           |
|                                                                                                                                     |          |           |                            |           |
|                                                                                                                                     |          |           |                            |           |
|                                                                                                                                     |          |           |                            |           |
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|                                                                                                                                     |          |           |                            |           |
|                                                                                                                                     |          |           |                            |           |
|                                                                                                                                     |          |           |                            | REVISIONS |

drawn by: \_\_\_\_\_ AA  
checked by: \_\_\_\_\_ SS  
designed by: \_\_\_\_\_ AA  
QA/QC by: \_\_\_\_\_ JES  
project no.: A19-2339  
drawing no.: C RPP02 A192339  
date: 3/17/2020

SHEET  
C113

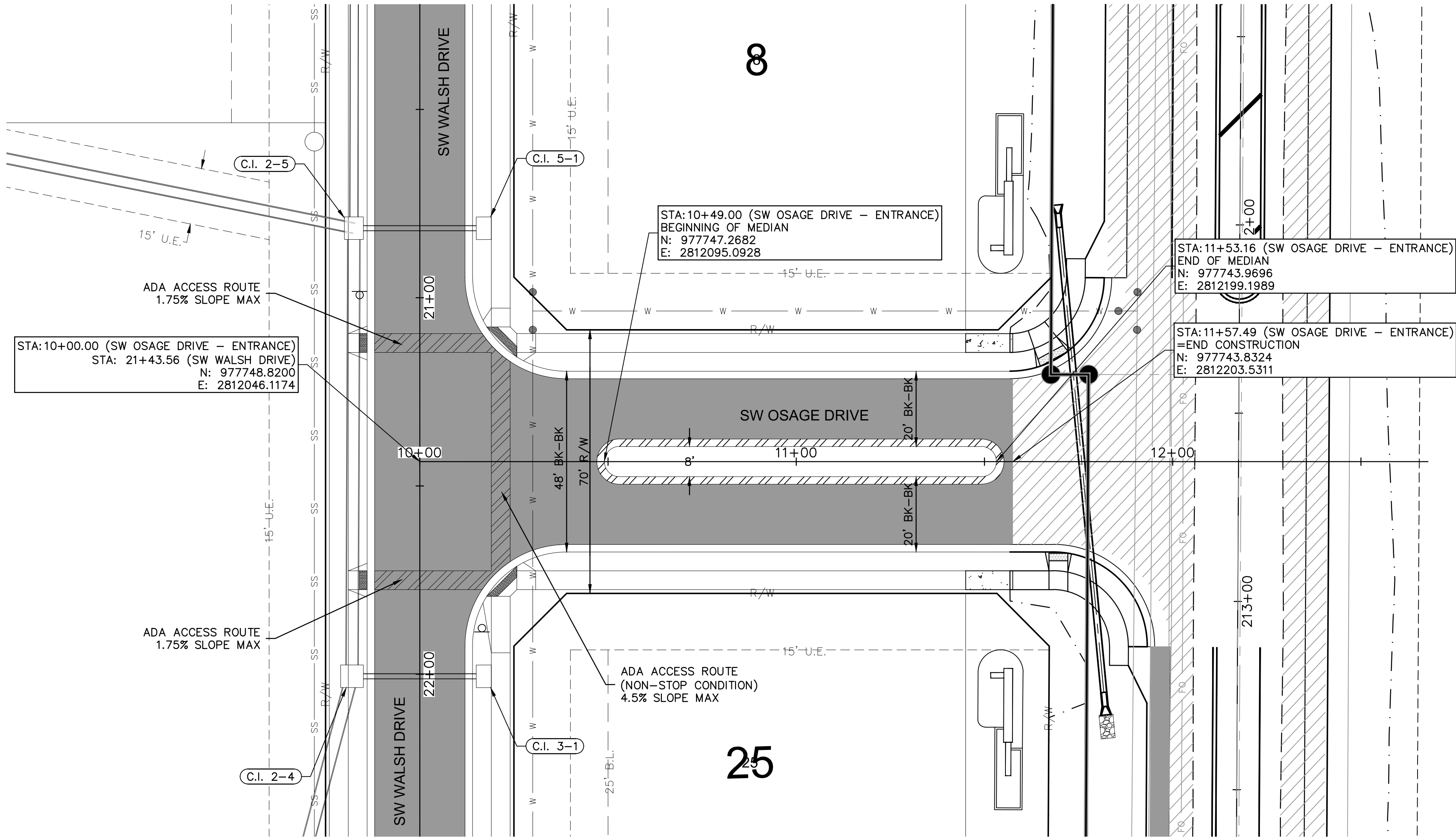


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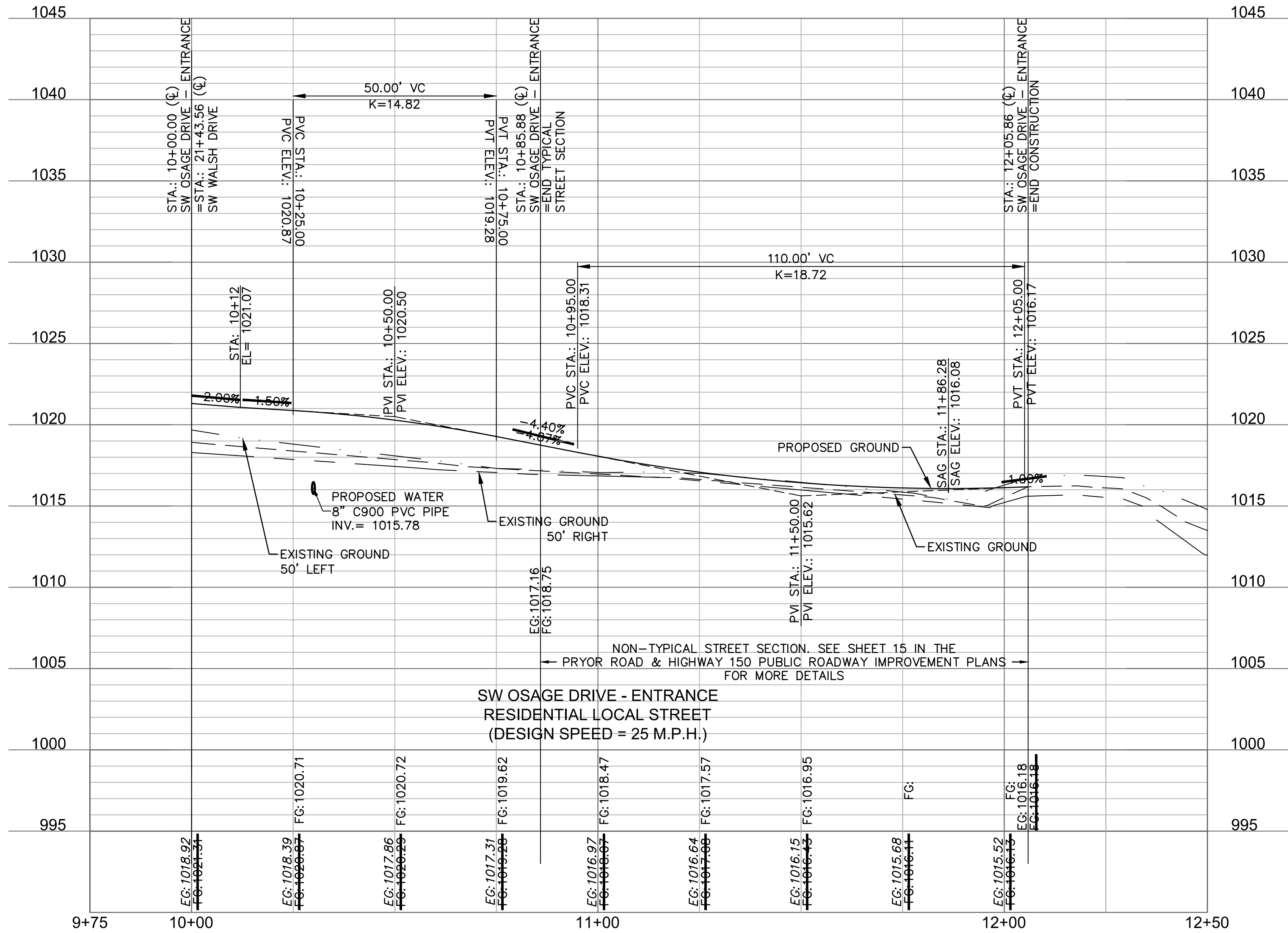
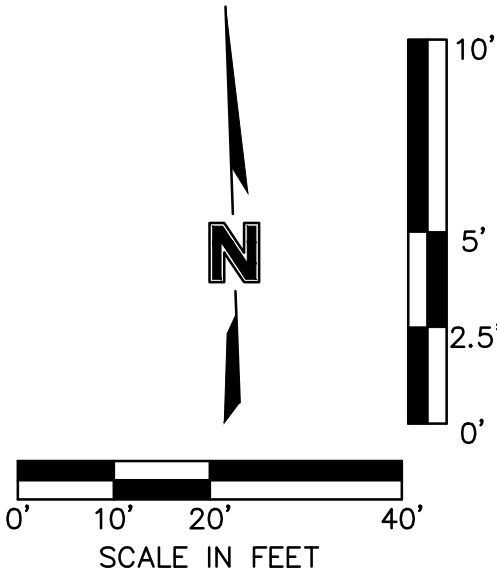
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| LEGEND |                                                        |
|--------|--------------------------------------------------------|
|        | ADA ACCESS ROUTE                                       |
|        | ASPHALT PAVEMENT                                       |
|        | CONCRETE SIDEWALK                                      |
|        | CG-2 CURB & GUTTER                                     |
|        | CG-2 DRY CURB & GUTTER                                 |
|        | SEE HIGHWAY 150 & PRYOR ROAD ROADWAY IMPROVEMENT PLANS |



AS-BUILT  
4/14/2021

ROADWAY PLAN & PROFILE (SW OSAGE DRIVE - ENTRANCE)  
STREET & STORM SEWER PLANS

OSAGE  
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

REVISIONS

| REV. NO. | DATE      | REVISIONS DESCRIPTION             | BY |
|----------|-----------|-----------------------------------|----|
| 1        | 6/15/2020 | ADA ACCESS ROUTE SLOPES UPDATED   |    |
| 2        | 7/24/2020 | TYPICAL STREET SECTION NOTE ADDED |    |
|          |           |                                   |    |
|          |           |                                   |    |
|          |           |                                   |    |
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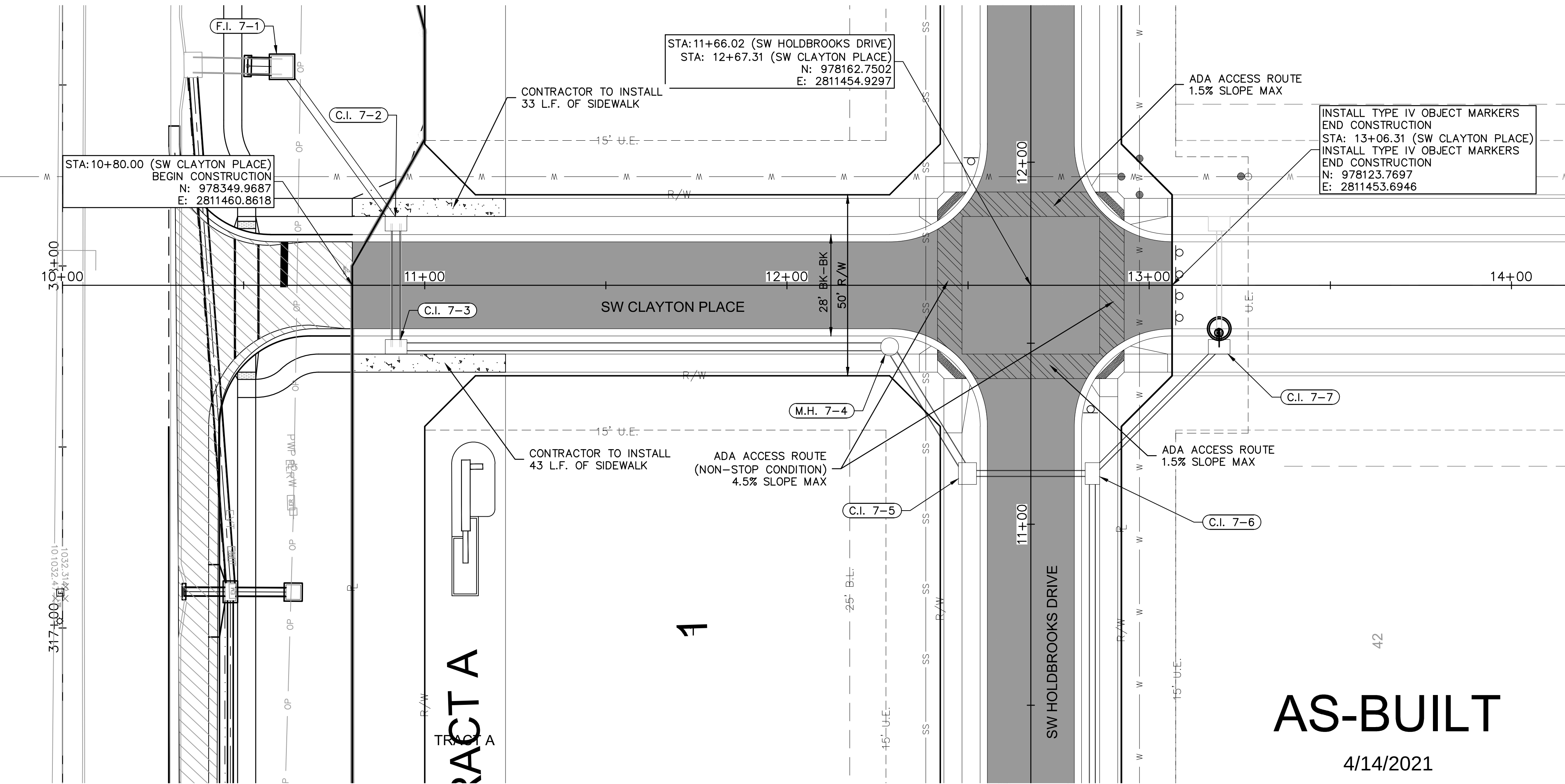
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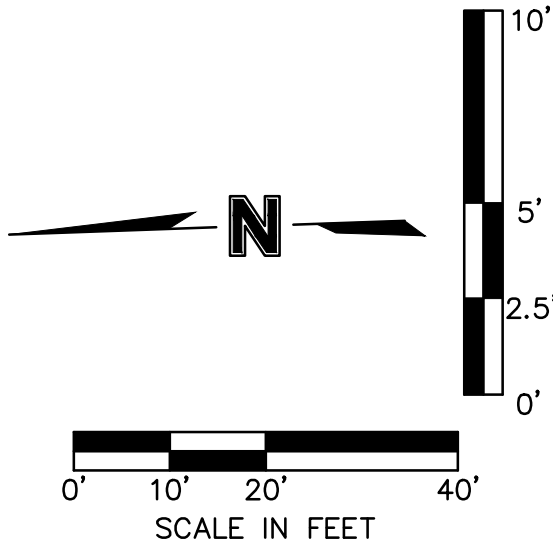
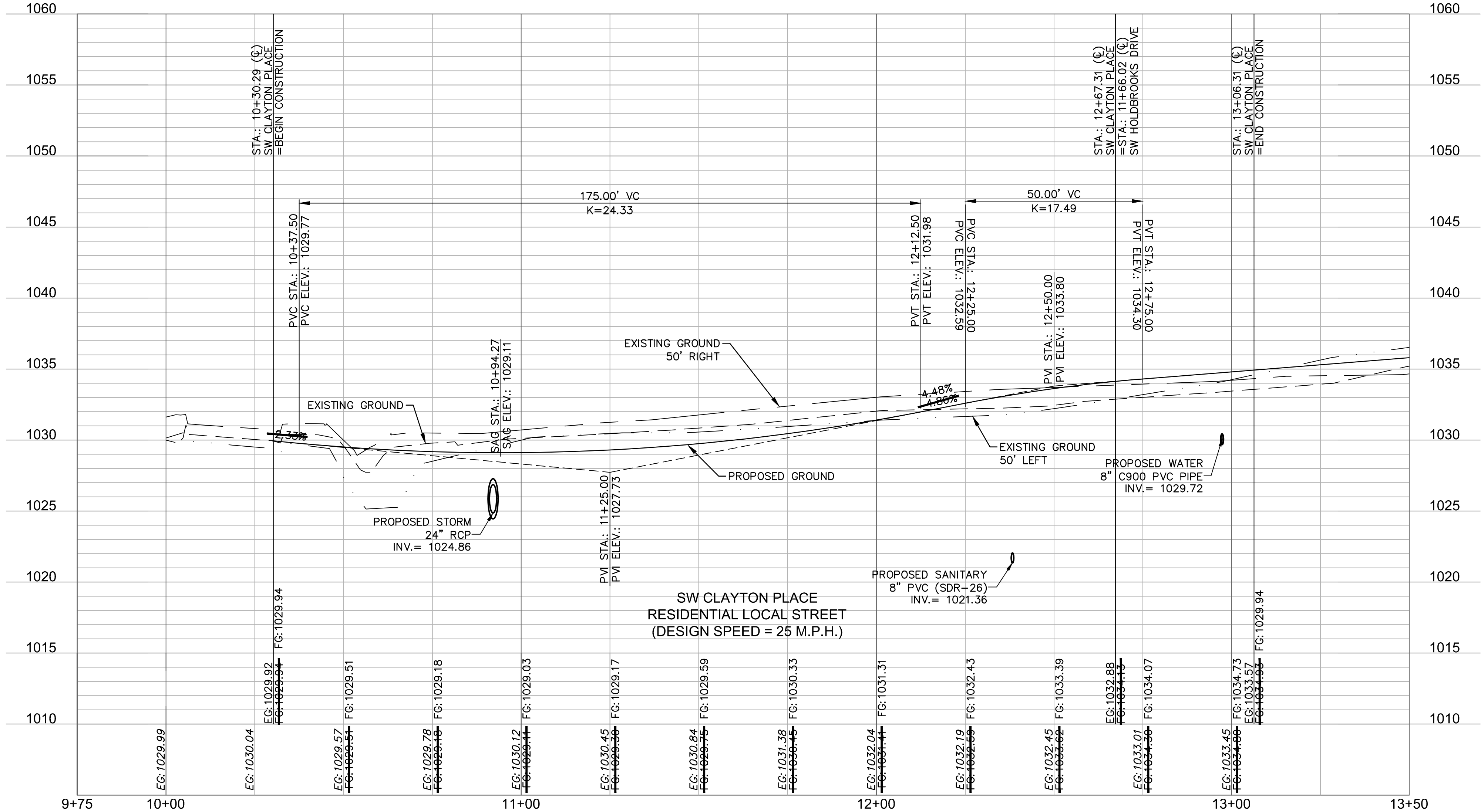
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|--------------|-----------------|
| drawn by:    | AA              |
| checked by:  | SS              |
| designed by: | AA              |
| QA/QC by:    | JES             |
| project no.: | A19-2339        |
| drawing no.: | C_RPP02_A192339 |
| date:        | 3/17/2020       |

SHEET  
C114





| LEGEND |                                                        |
|--------|--------------------------------------------------------|
|        | ADA ACCESS ROUTE                                       |
|        | ASPHALT PAVEMENT                                       |
|        | CONCRETE SIDEWALK                                      |
|        | CG-2 CURB & GUTTER                                     |
|        | SEE HIGHWAY 150 & PRYOR ROAD ROADWAY IMPROVEMENT PLANS |



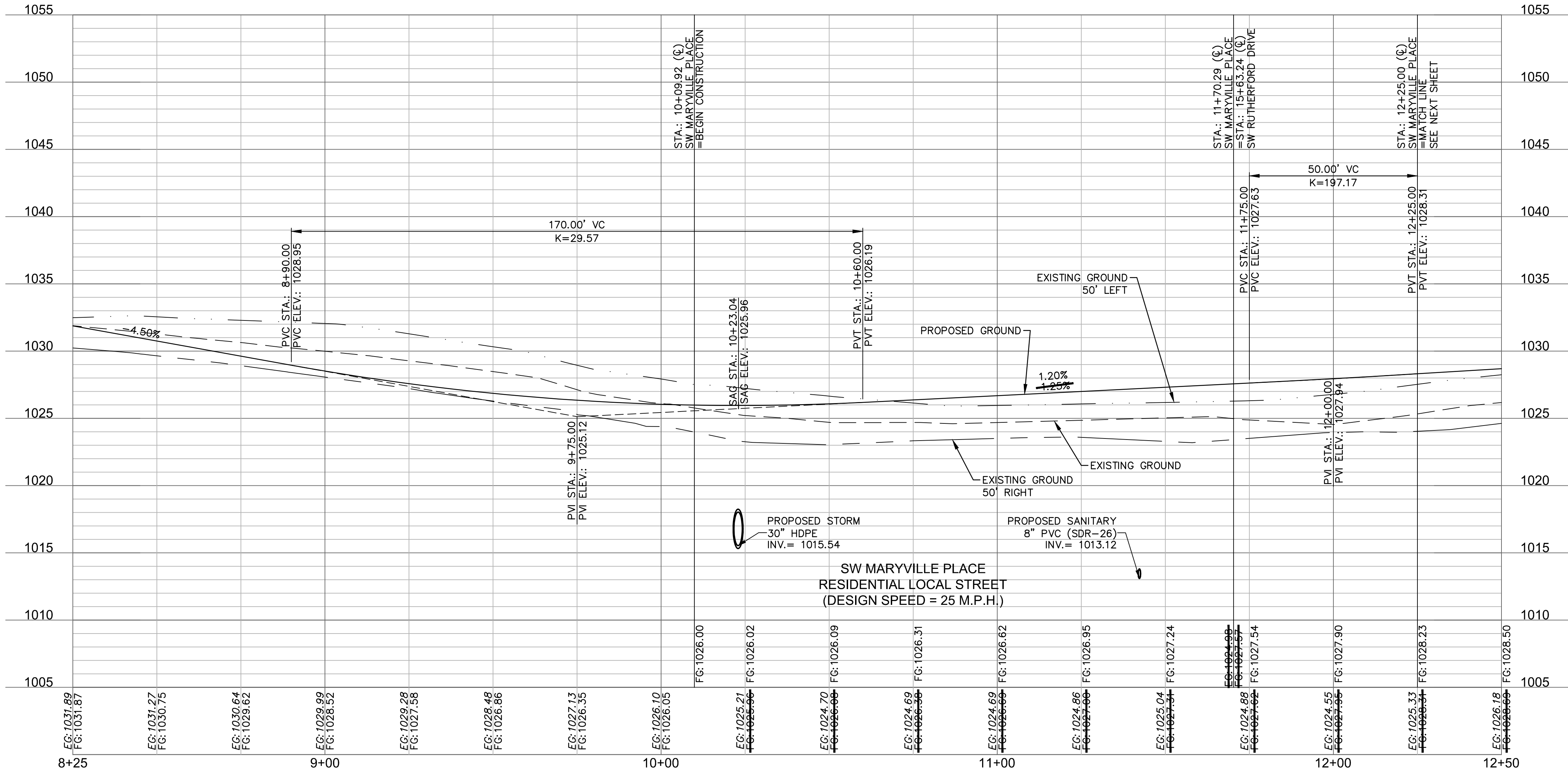
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|-------------------------------------------------------------------------|--|----------|------|-----------------------|--|
| ROADWAY PLAN & PROFILE (SW CLAYTON PLACE)<br>STREET & STORM SEWER PLANS |  | BY       |      | REVISIONS             |  |
|                                                                         |  |          |      |                       |  |
| OSAGE<br>FIRST PLAT                                                     |  | REV. NO. | DATE | REVISIONS DESCRIPTION |  |
| LEE'S SUMMIT, MISSOURI                                                  |  |          |      |                       |  |
|                                                                         |  |          |      |                       |  |
| SHEET<br>C115                                                           |  | 2020     |      |                       |  |

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checked by: SS  
designed by: AA  
QA/QC by: JES  
project no.: A19-2339  
drawing no.: C\_RPP02\_A192339  
date: 3/17/2020

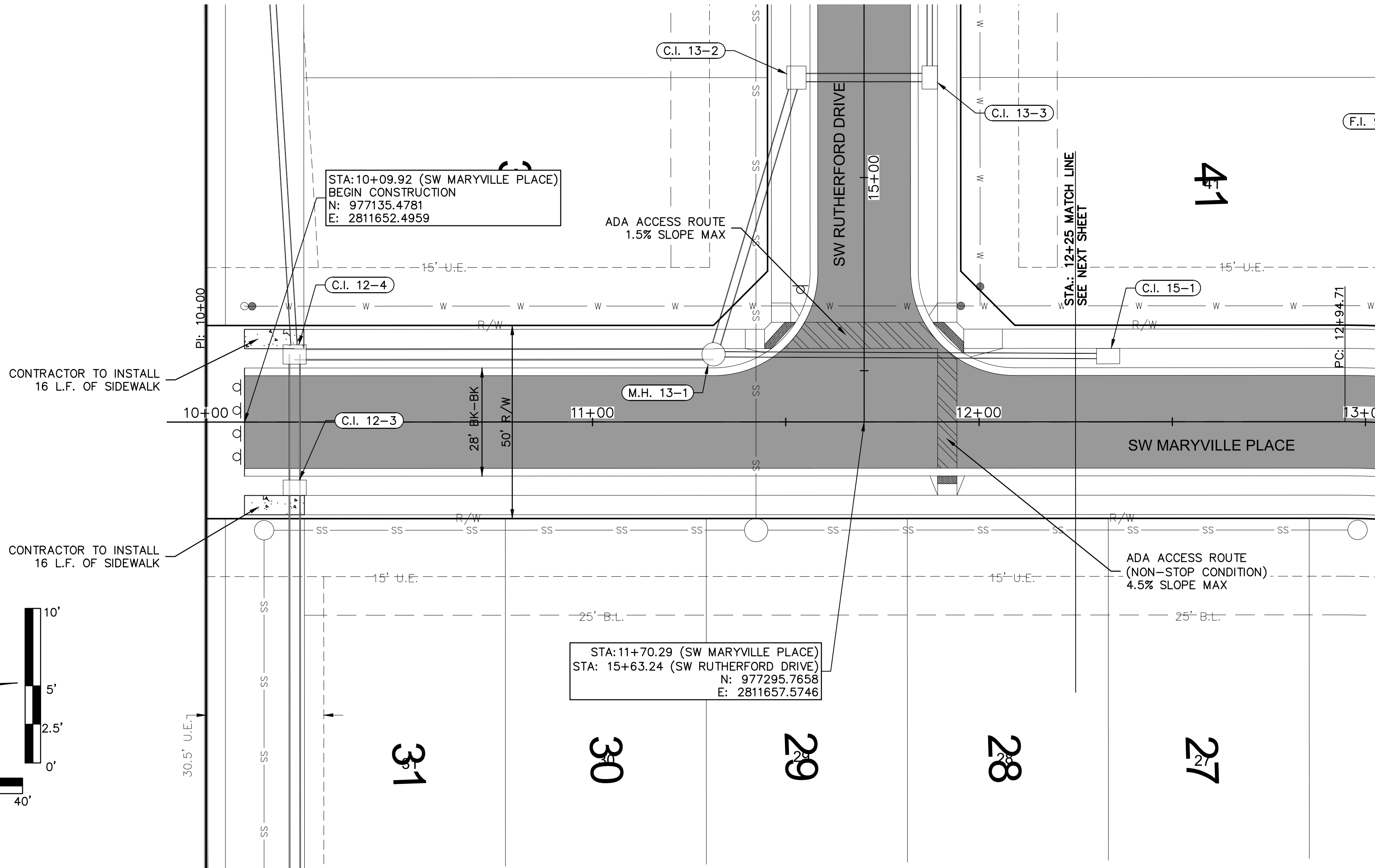
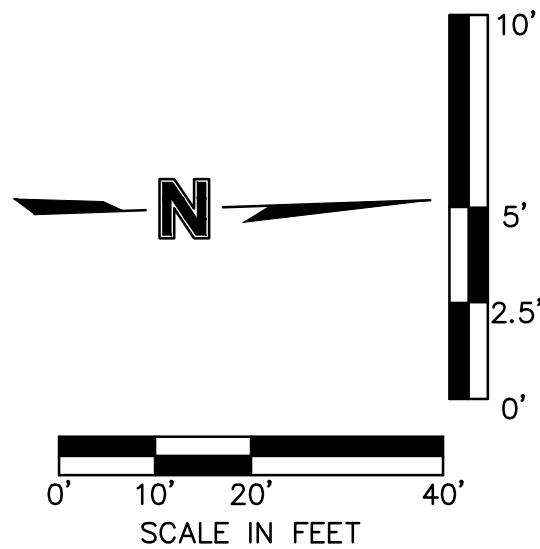
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DATE: Mar 10, 2021 5:16pm XREFS: C\_XBASE\_A192339 C\_FBASE\_A192339 C\_PENDY\_A192339 C\_PATTI\_A192339 C\_PSURE\_A192339 C\_PSTRM\_A192339



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4/14/2021



| LEGEND |                    |
|--------|--------------------|
|        | ADA ACCESS ROUTE   |
|        | ASPHALT PAVEMENT   |
|        | CONCRETE SIDEWALK  |
|        | CG-2 CURB & GUTTER |

ROADWAY PLAN & PROFILE (SW MARYVILLE PLACE)  
STREET & STORM SEWER PLANS

OSAGE  
FIRST PLAT

LEE'S SUMMIT, MISSOURI

BY

REV. NO.

DATE

REVISIONS DESCRIPTION

|   |                                       |  |  |
|---|---------------------------------------|--|--|
| 1 | BEGINNING OF CONSTRUCTION POINT MOVED |  |  |
|   |                                       |  |  |
|   |                                       |  |  |
|   |                                       |  |  |
|   |                                       |  |  |
|   |                                       |  |  |
|   |                                       |  |  |
|   |                                       |  |  |
|   |                                       |  |  |
|   |                                       |  |  |

2020

REVISIONS

drawn by: AA

checked by: SS

designed by: AA

QA/QC by: JES

project no.: C\_RPP03\_A192339

drawing no.: 3/17/2020

SHEET

C116

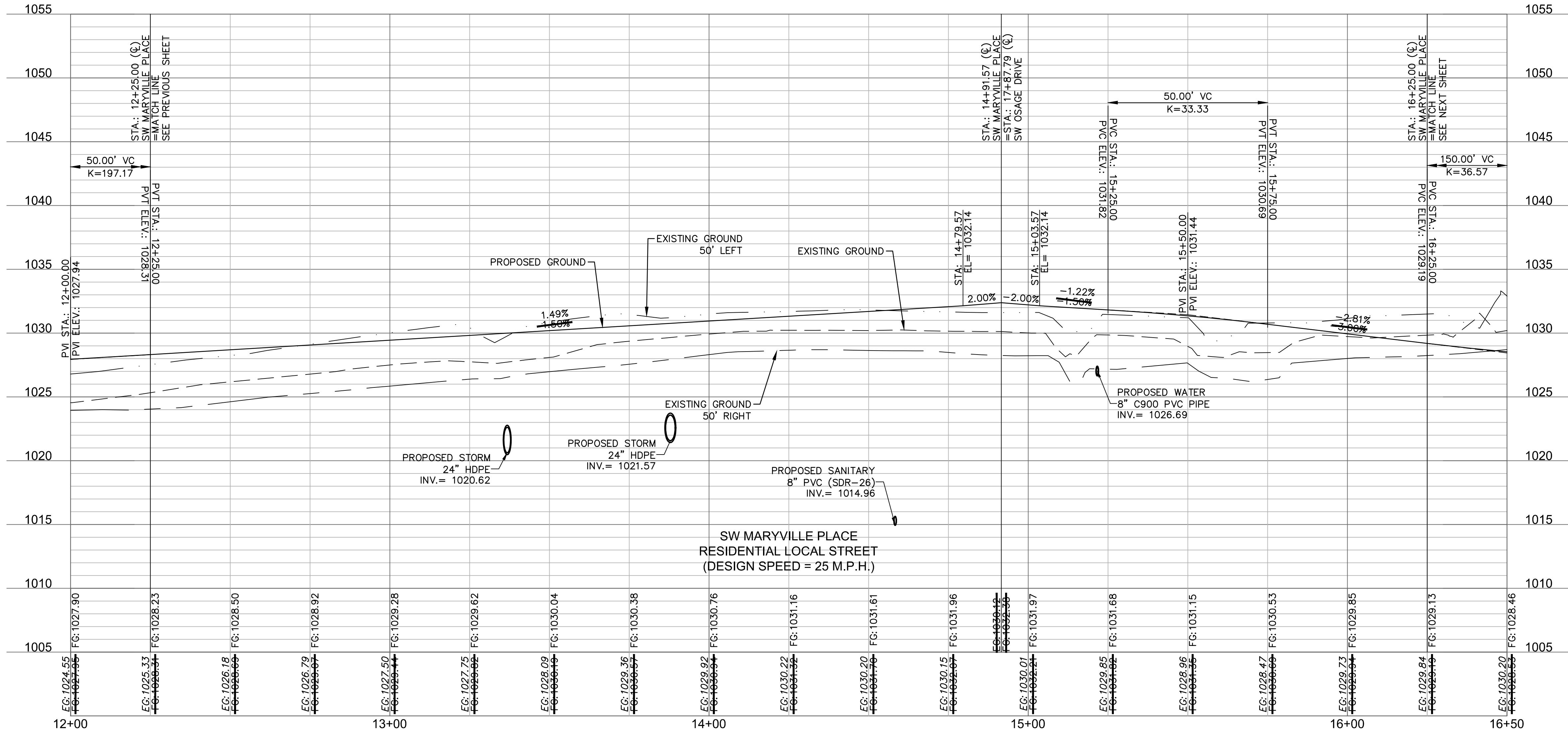
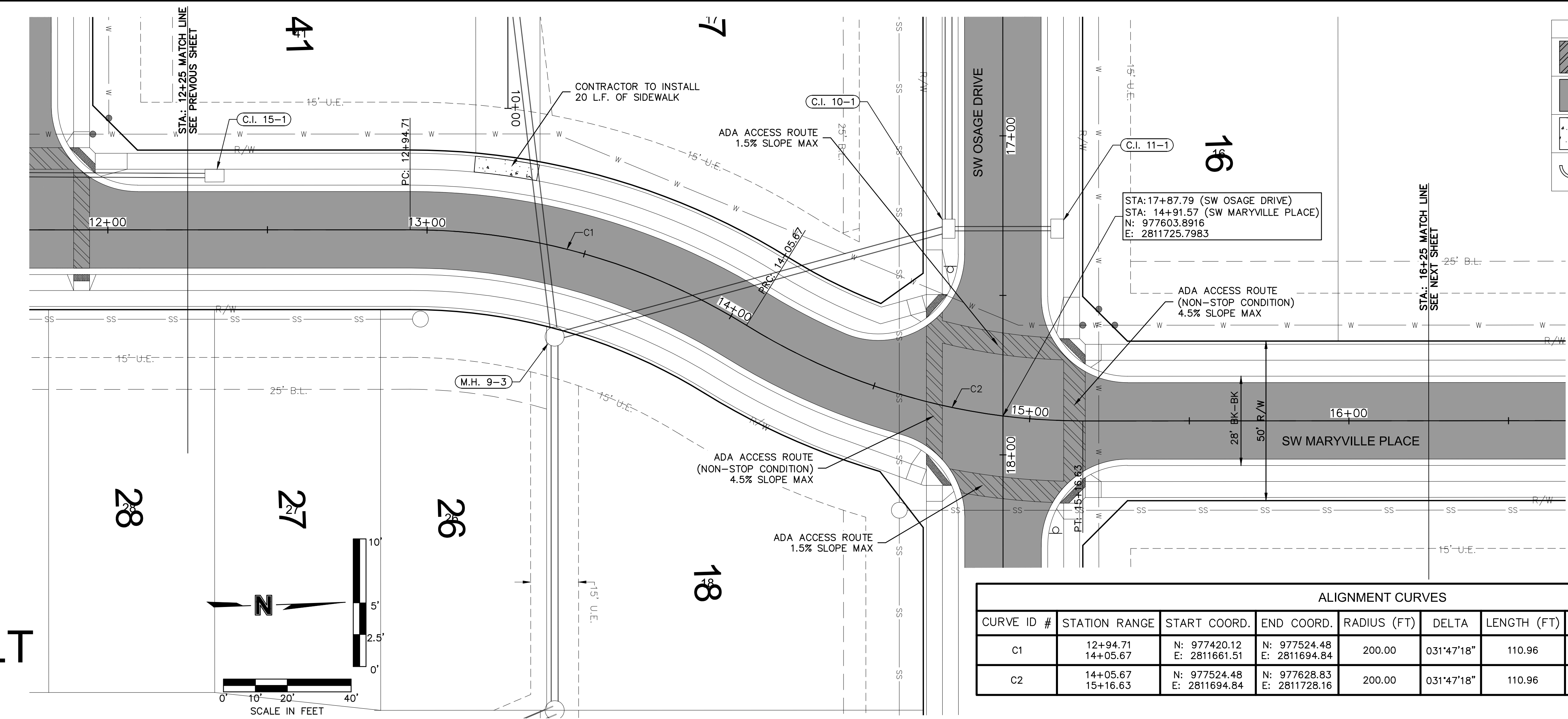
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DATE: Mar 10, 2021 5:16pm XREFS: C\_XBASE\_A192339 C\_PBASE\_A192339 C\_PENDY\_A192339 C\_PATT\_A192339 C\_PSURF\_A192339 C\_PTBLK\_A192339

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BY

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1

6/15/2020

CURVE DATA ADDED

REVISIONS

2020

ROADWAY PLAN & PROFILE (SW MARYVILLE PLACE)  
STREET & STORM SEWER PLANS

OSAGE  
FIRST PLAT

LEE'S SUMMIT, MISSOURI

drawn by: AA

checked by: SS

designed by: AA

QA/QC by: JES

project no.: A19-2339

drawing no.: C\_RPP03\_A192339

date: 3/17/2020

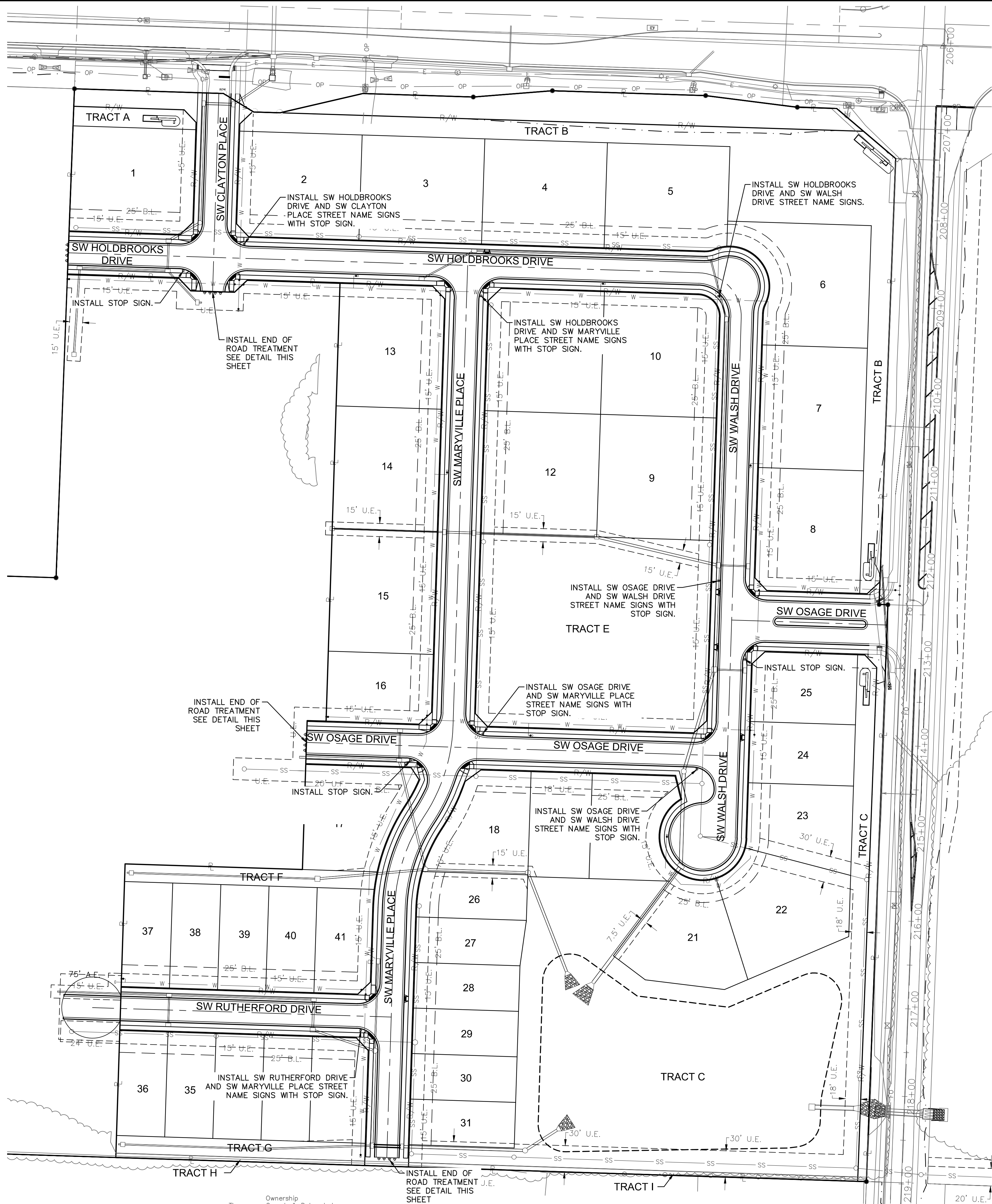
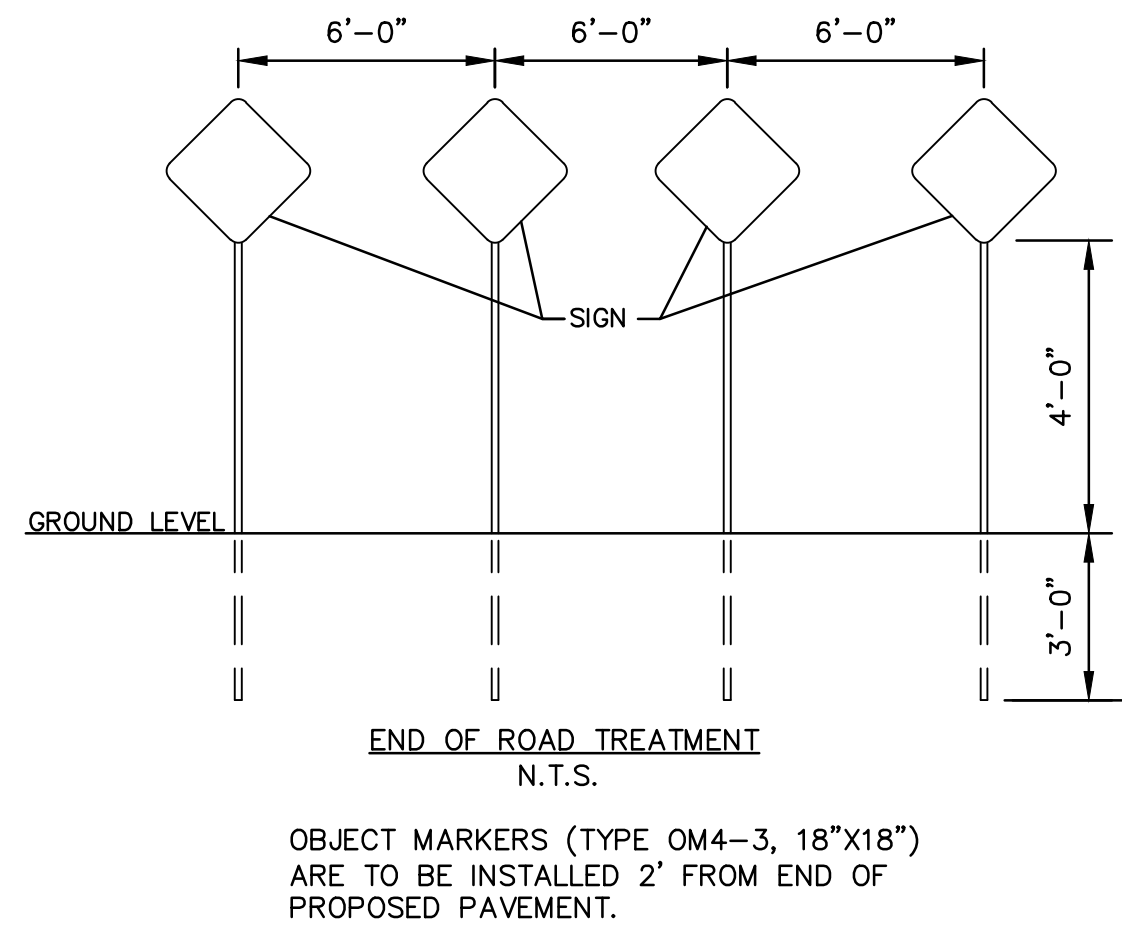
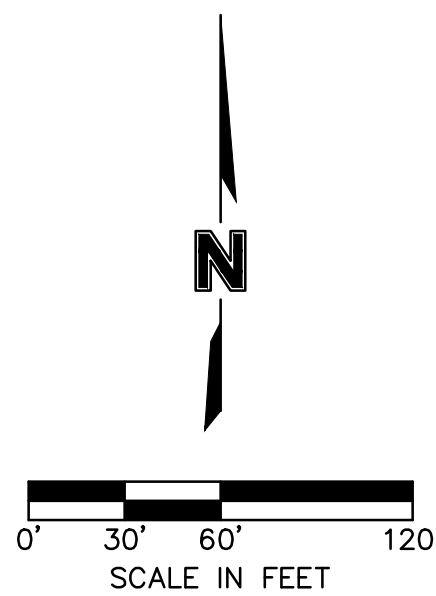
SHEET  
C117







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NOT AS-BUILT

|                                                    |  |                             |  |      |
|----------------------------------------------------|--|-----------------------------|--|------|
| TRAFFIC CONTROL PLAN<br>STREET & STORM SEWER PLANS |  | OSAGE<br>FIRST PLAT         |  | 2020 |
|                                                    |  | LEE'S SUMMIT, MISSOURI      |  |      |
| drawn by: AA                                       |  | checked by: SS              |  |      |
| designed by: AA                                    |  | QA/QC by: JES               |  |      |
| project no.: A19-2339                              |  | drawing no.: TCPO01_A192339 |  |      |
| date: 3/17/2020                                    |  |                             |  |      |
| SHEET<br>C119                                      |  |                             |  |      |

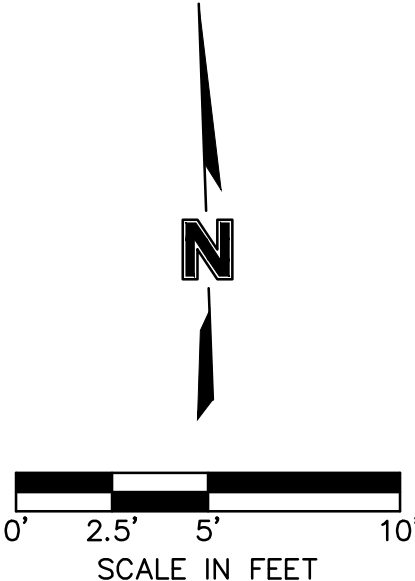
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|-----------|------|-----------------------|----|
| 1         |      | STREET SIGNS ADDED    |    |
| REVISIONS |      |                       |    |



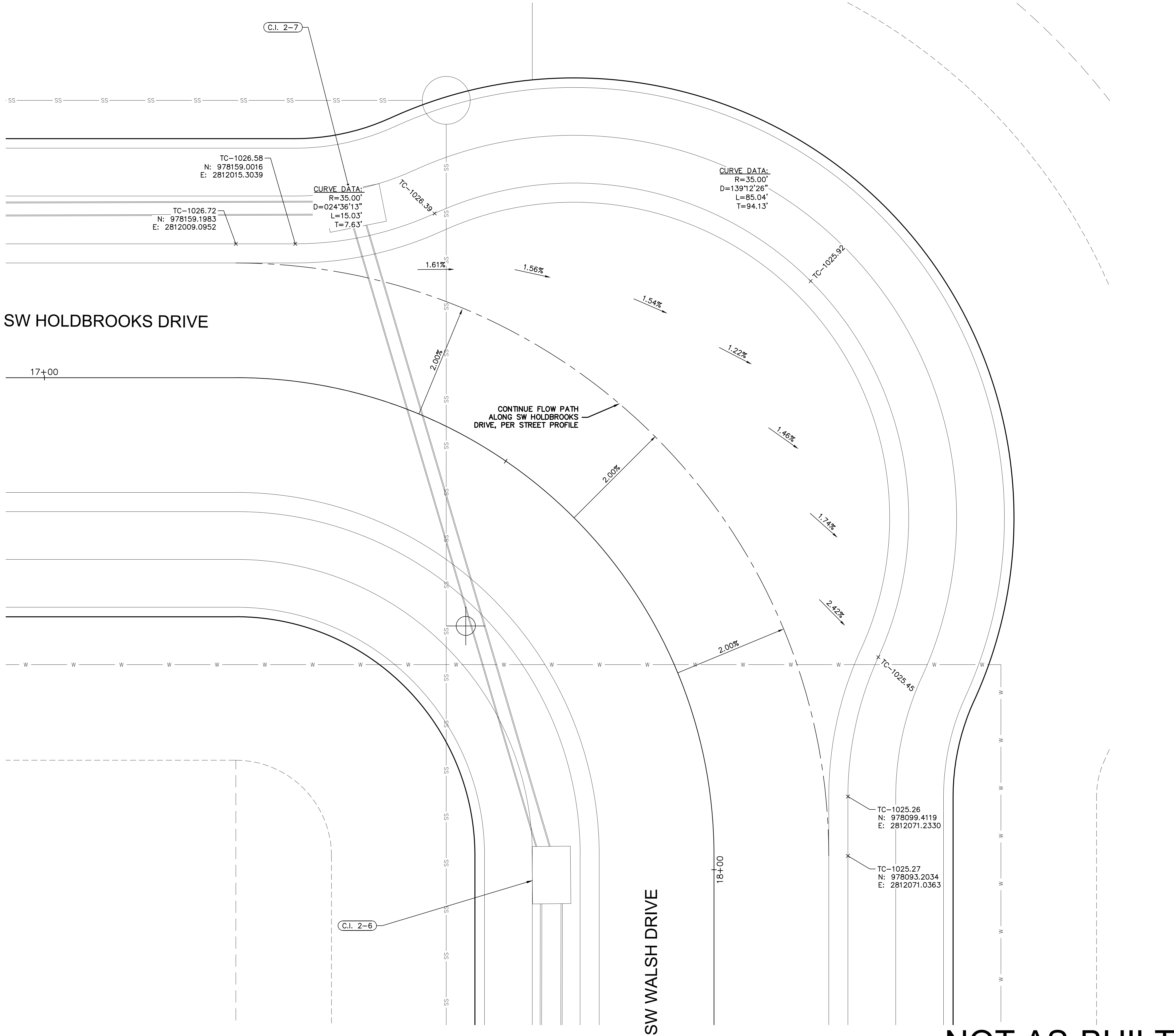








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DATE: Mar 10, 2021 5:22pm XREFS: C\_XBASE\_A192339 C\_FBASE\_A192339 C\_PENDY\_A192339 C\_PSURE\_A192339 C\_PPATT\_A192339 C\_PSTRM\_A192339



SW HOLDBROOKS DRIVE & SW WALSH DRIVE INTERSECTION  
STREET & STORM SEWER PLANS

OSAGE  
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

REVISIONS

| REV. NO. | DATE      | REVISIONS DESCRIPTION    | BY |
|----------|-----------|--------------------------|----|
| 1        | 6/15/2020 | CUL-DESIGN DETAILS ADDED |    |
|          |           |                          |    |
|          |           |                          |    |
|          |           |                          |    |
|          |           |                          |    |
|          |           |                          |    |
|          |           |                          |    |
|          |           |                          |    |
|          |           |                          |    |
|          |           |                          |    |

drawn by: AA

checked by: SS

designed by: AA

QA/QC by: JES

project no.: A19-2339

drawing no.: C-INT01\_A192339

date: 3/17/2020

SHEET  
C122

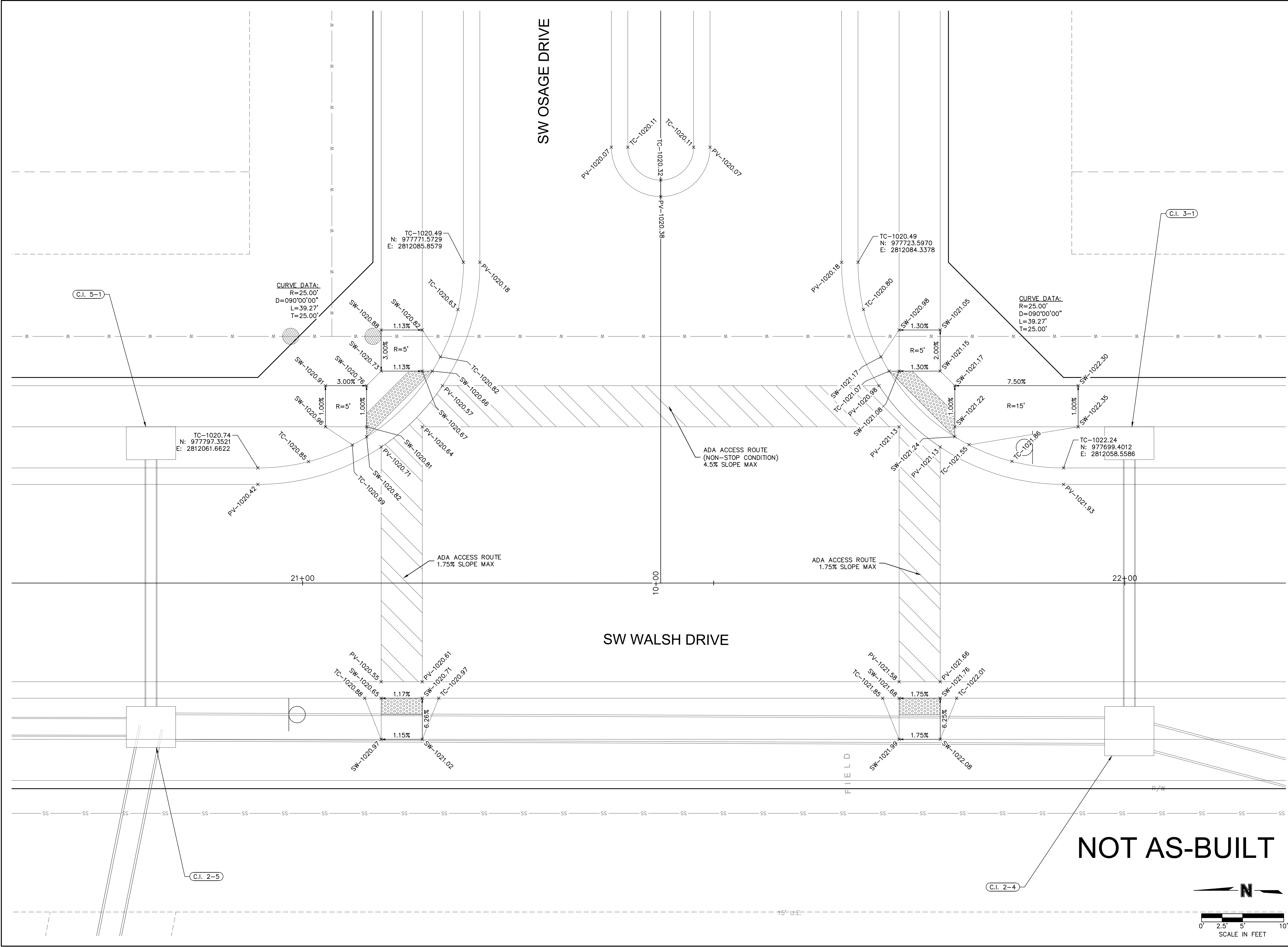
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DWG: F:\2019\2001-2500\019-2339-A140-Design\AutoCAD\Final Plans - Asbuilts\Sheets\CONV\STREET & STORM\C\_INT01\_A192339.dwg  
DATE: Mar 10, 2021 5:22pm  
USER: bworthley  
C\_PAT1\_A192339  
C\_PSURF\_A192339  
C\_PENDY\_A192339  
C\_PBASE\_A192339  
C\_PBLK\_A192339



SW WALSH DRIVE & SW OSAGE DRIVE INTERSECTION  
STREET & STORM SEWER PLANS

OSAGE  
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

REVISIONS

| REV. NO. | DATE | REVISIONS DESCRIPTION | BY |
|----------|------|-----------------------|----|
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|          |      |                       |    |
|          |      |                       |    |

drawn by: AA  
checked by: SS  
designed by: AA  
QA/QC by: JES  
project no.: A19-2339  
drawing no.: C\_INT01\_A192339  
date: 3/17/2020

SHEET  
C123

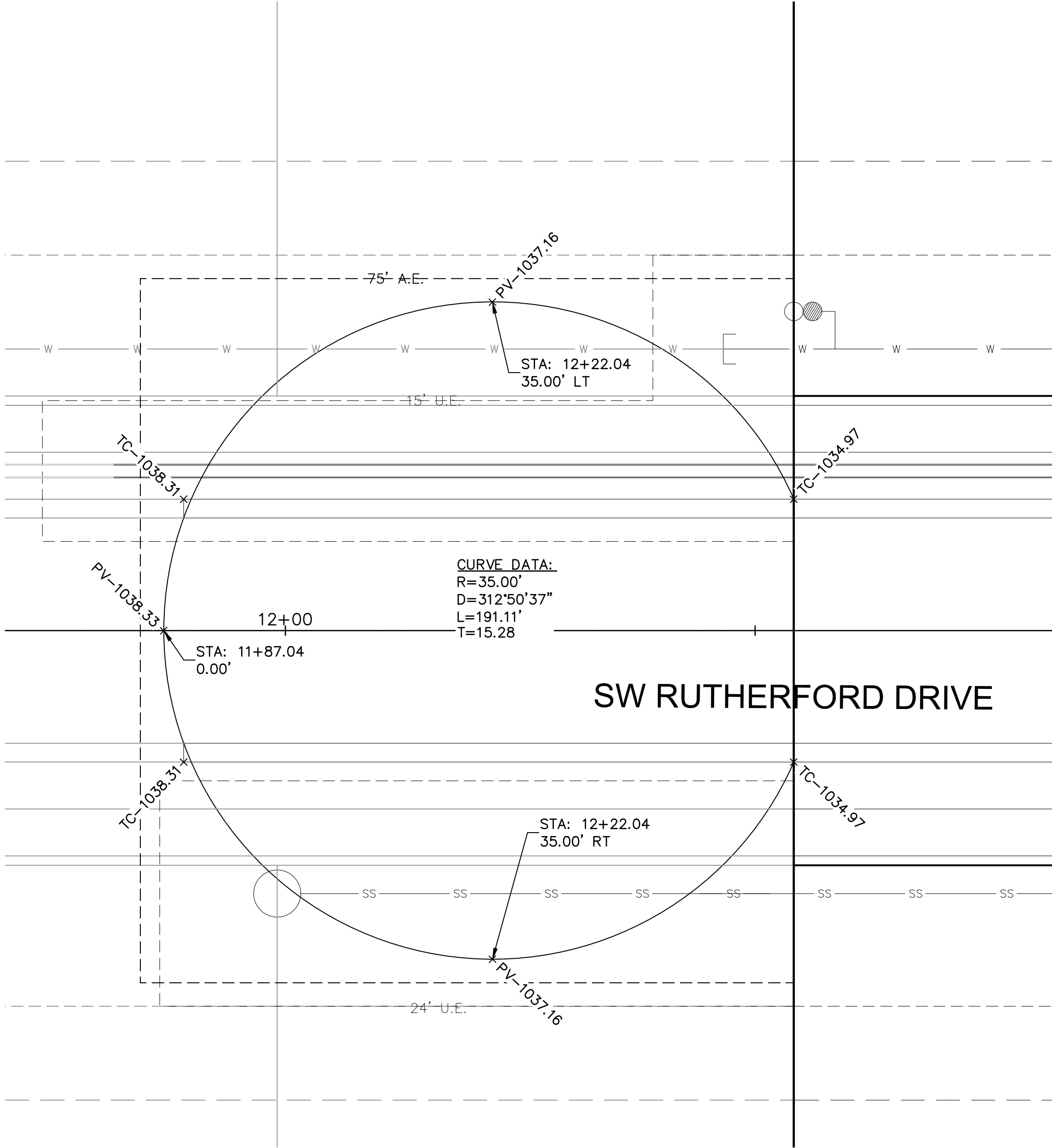
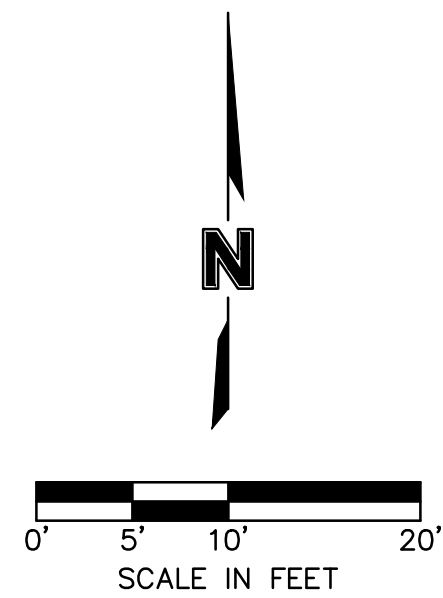
SCALE IN FEET  
0' 2.5' 5' 10'

NOT AS-BUILT

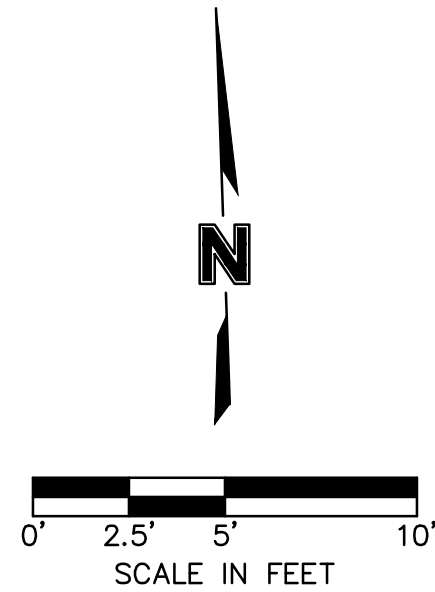
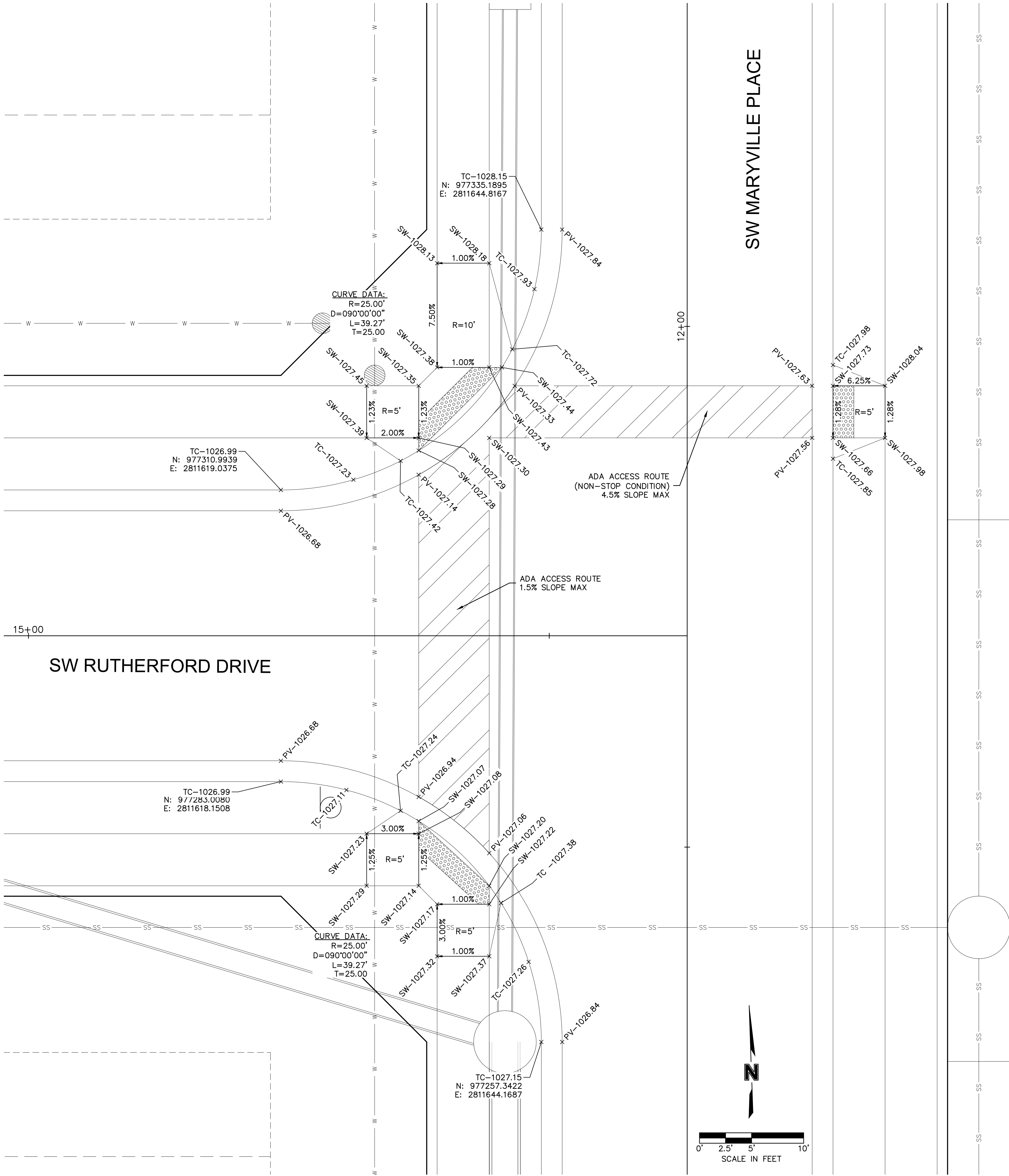
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NOT AS-BUILT

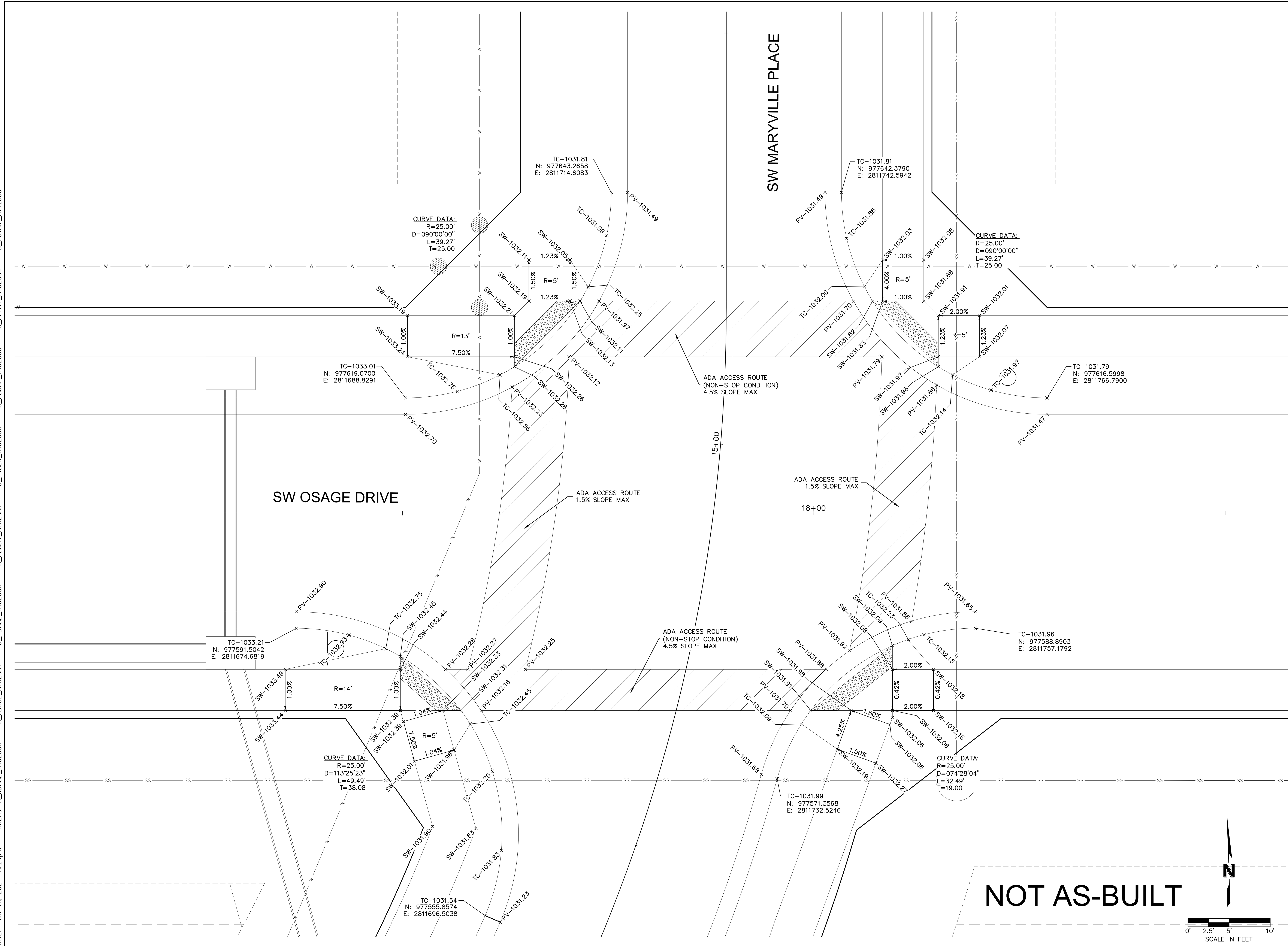


|                                                                                     |           |                                    |  |      |  |
|-------------------------------------------------------------------------------------|-----------|------------------------------------|--|------|--|
| SW RUTHERFORD DRIVE & SW MARYVILLE PLACE INTERSECTION<br>STREET & STORM SEWER PLANS |           | OSAGE<br>FIRST PLAT                |  | 2020 |  |
| LEE'S SUMMIT, MISSOURI                                                              |           | REVISIONS                          |  | BY   |  |
| REV. NO.                                                                            | DATE      | REVISIONS DESCRIPTION              |  |      |  |
| 1                                                                                   | 6/15/2020 | TEMPORARY CUL-DE-SAC DETAILS ADDED |  |      |  |
| drawn by: AA                                                                        |           | checked by: SS                     |  |      |  |
| designed by: AA                                                                     |           | QA/QC by: JES                      |  |      |  |
| project no.: A19-2339                                                               |           | drawing no.: C-INT02_A192339       |  |      |  |
| date: 3/17/2020                                                                     |           |                                    |  |      |  |
| SHEET<br>C124                                                                       |           |                                    |  |      |  |

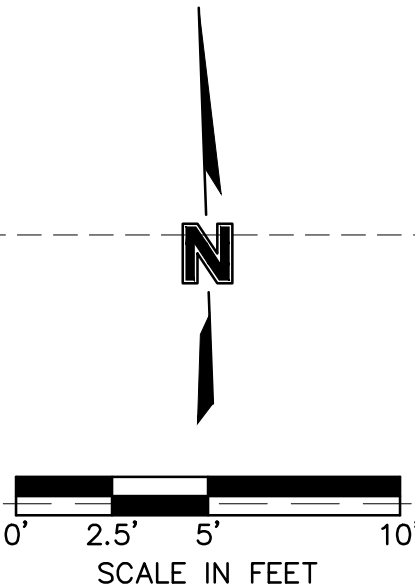
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DWG: F:\2019\2001-2339-A\40-Design\AutoCAD\Final Plans - Asbuilt\Sheets\GNV\STREET & STORM\C\_INT02\_A192339.dwg USER: bworthley  
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DATE: Mar 10, 2021 5:24pm



# NOT AS-BUILT



# SW OSAGE DRIVE & SW MARYVILLE PLACE INTERSECTION STREET & STORM SEWER PLANS

OSAGE  
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

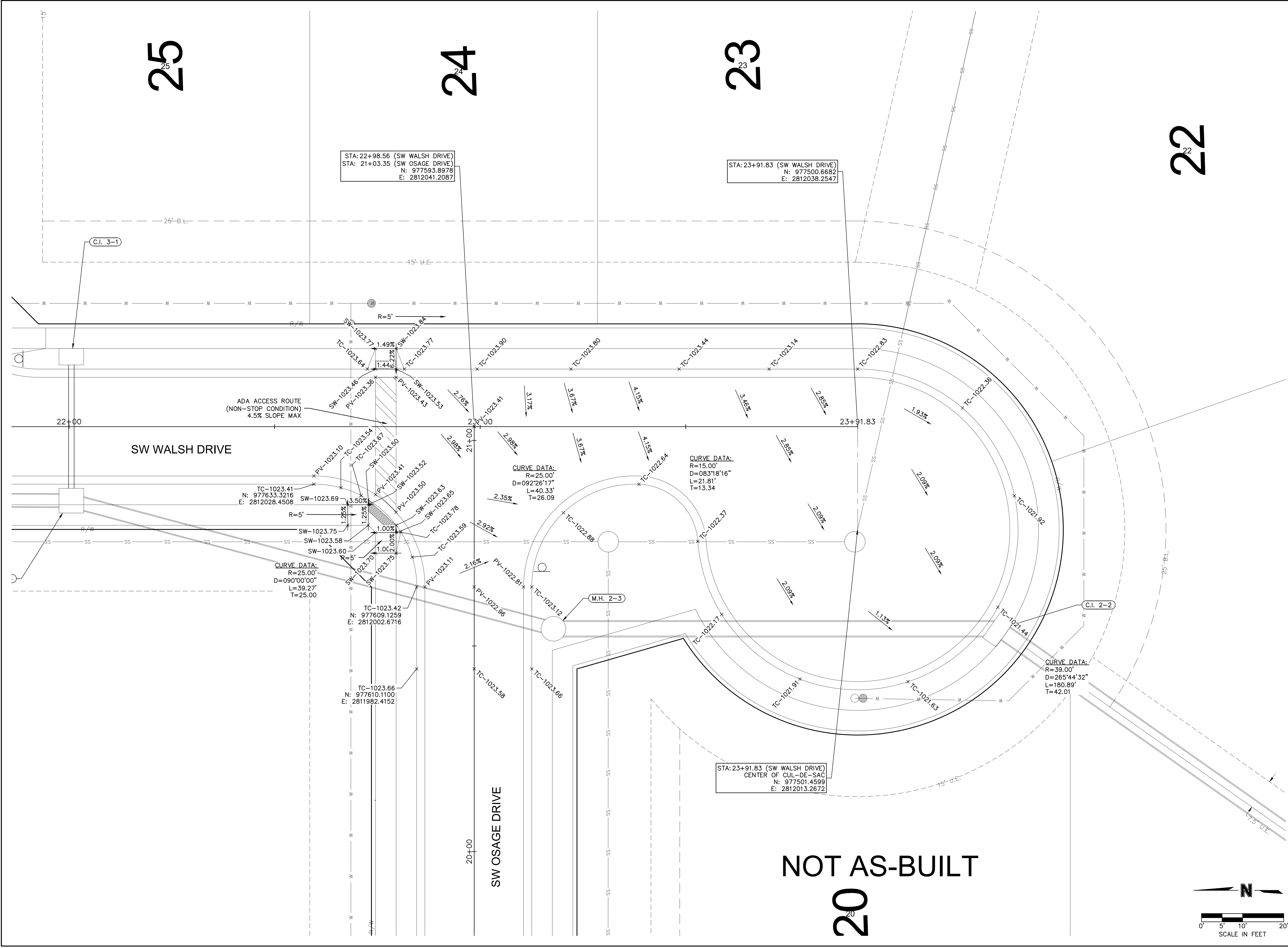
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USER: buerthley



SW WALSH DRIVE & SW OSAGE DRIVE INTERSECTION  
STREET & STORM SEWER PLANS

OSAGE  
FIRST PLAT

LEE'S SUMMIT, MISSOURI

| REV. NO. | DATE      | REVISIONS DESCRIPTION                 | BY |
|----------|-----------|---------------------------------------|----|
| 1        | 6/15/2020 | CUL-DE-SAC LAYOUT AND GRADING CHANGED |    |

2020

REVISIONS

drawn by: AA

checked by: SS

designed by: AA

QA/QC by: JES

project no.: A19-2339

drawing no.: C\_INT02\_A192339

date: 3/17/2020

SHEET

C126

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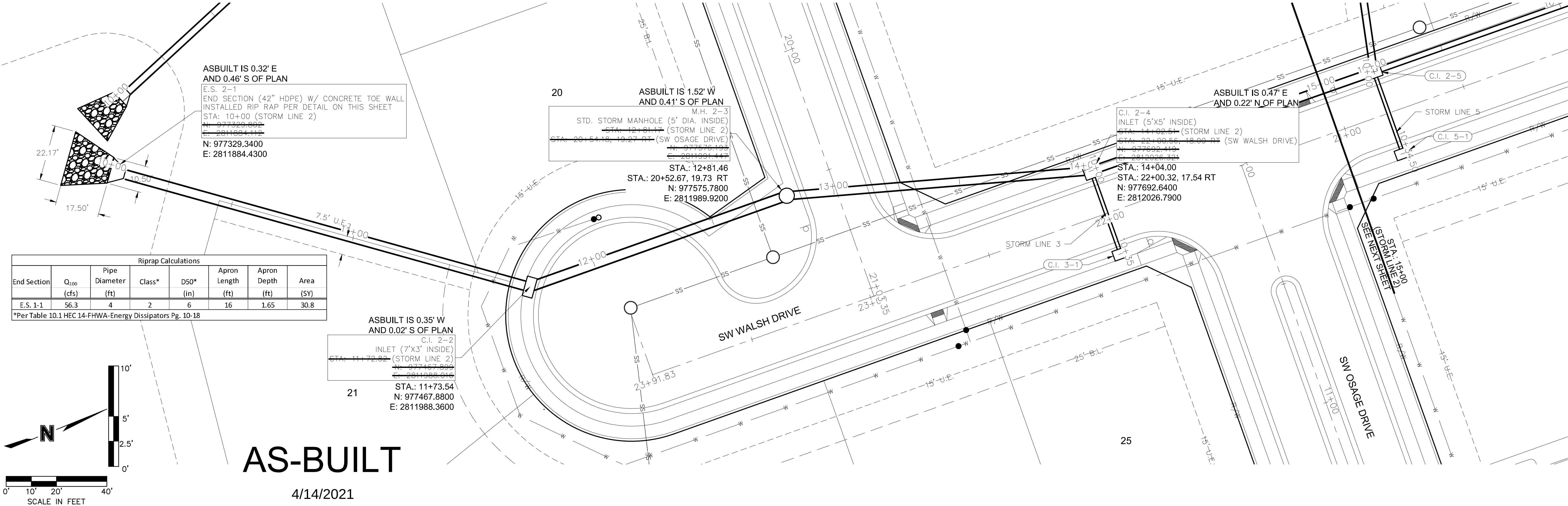
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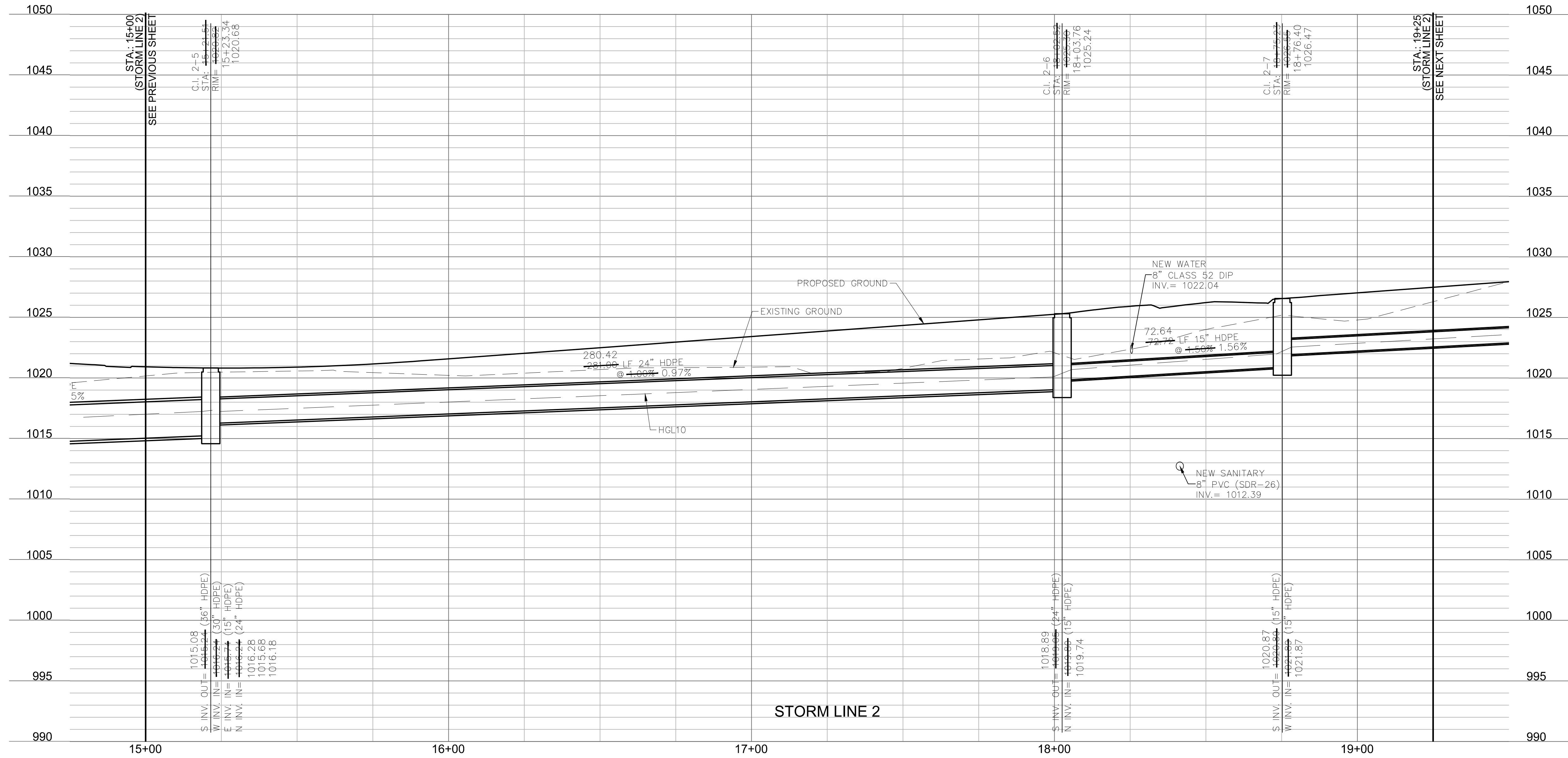
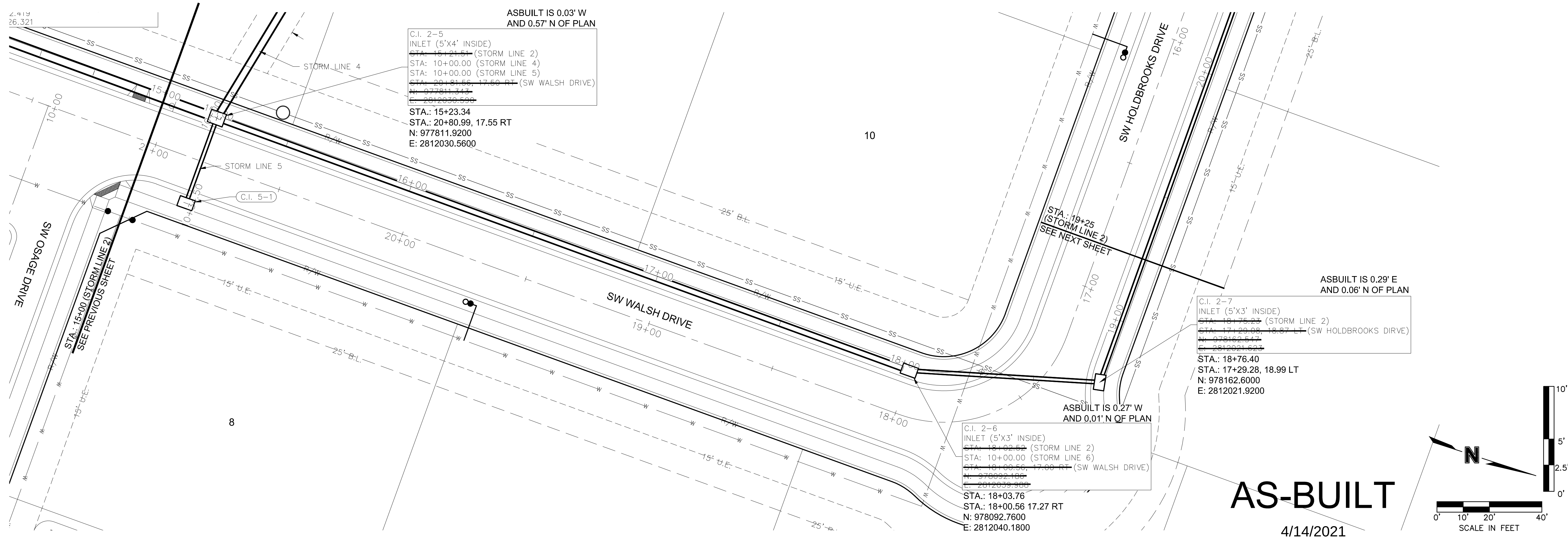
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Professional Engineer  
PE-2019000237  
4/17/2021



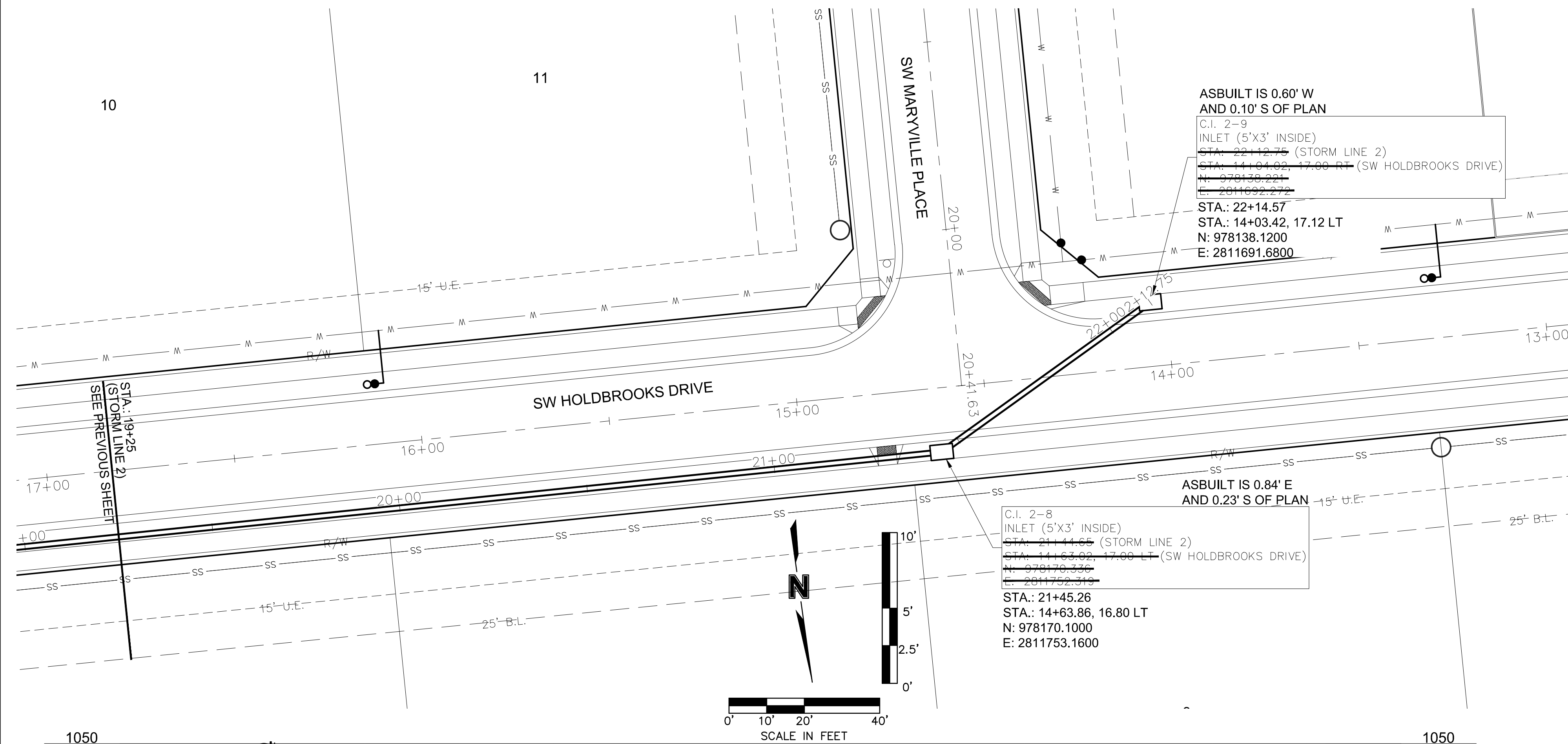
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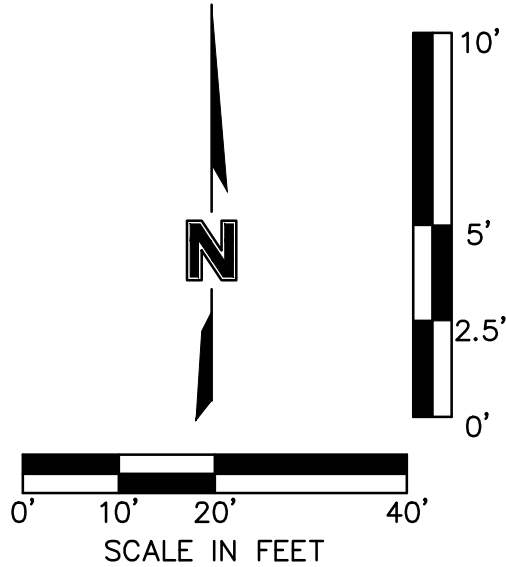
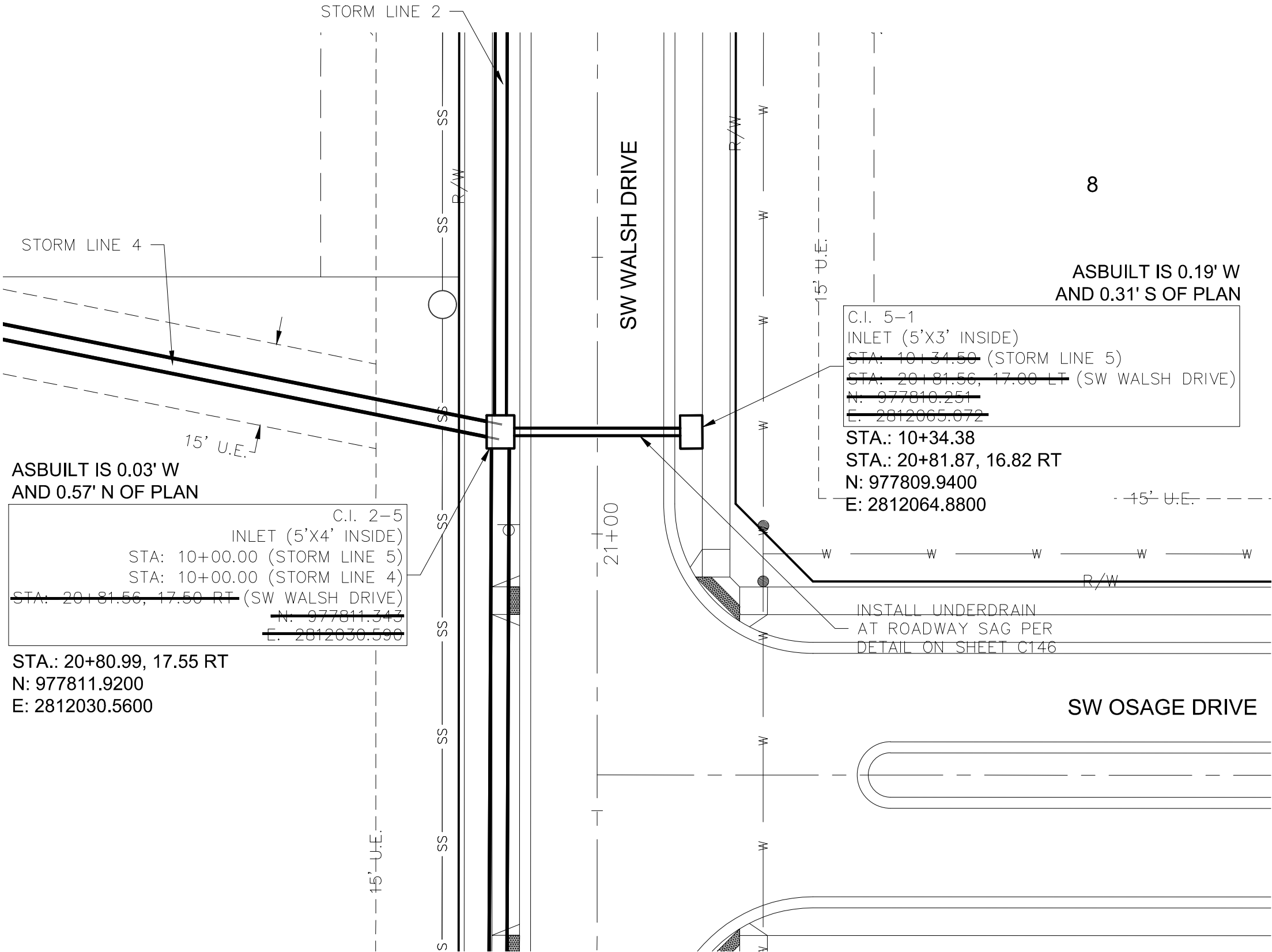
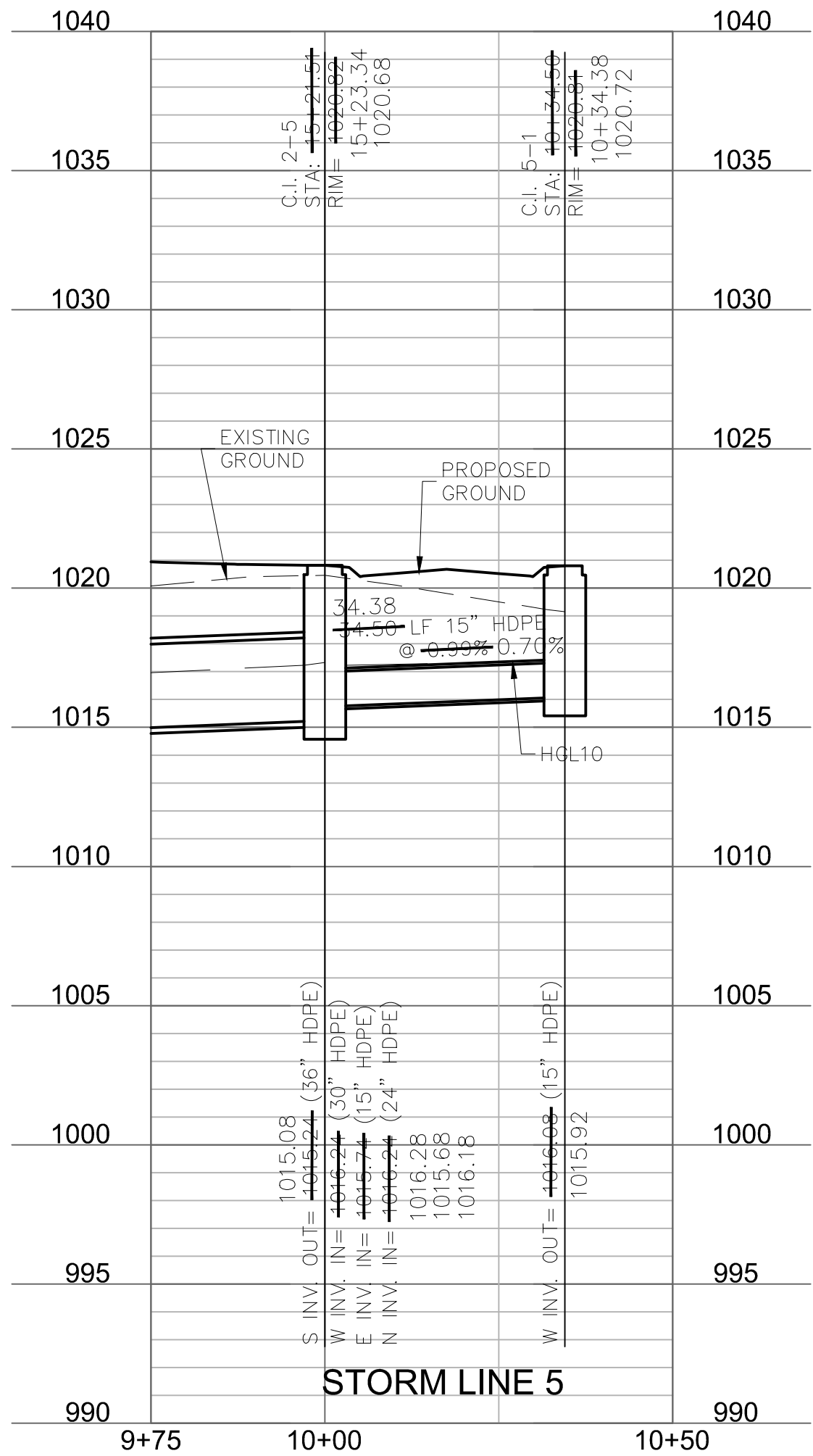












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STORM SEWER PLAN & PROFILE  
STREET & STORM SEWER PLANS

OSAGE  
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

drawn by: AA

checked by: SS

designed by: AA

QA/QC by: JES

project no.: A19-2339

drawing no.: C\_STM02\_A12339

date: 3/17/2020

STORM SEWER PLAN & PROFILE  
STREET & STORM SEWER PLANS

OSAGE  
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

1

UNDERDRAIN NOTE ADDED, STORM LINE 6 REMOVED

6/15/2020

BY

REVISIONS

1

UNDERDRAIN NOTE ADDED, STORM LINE 6 REMOVED

6/15/2020

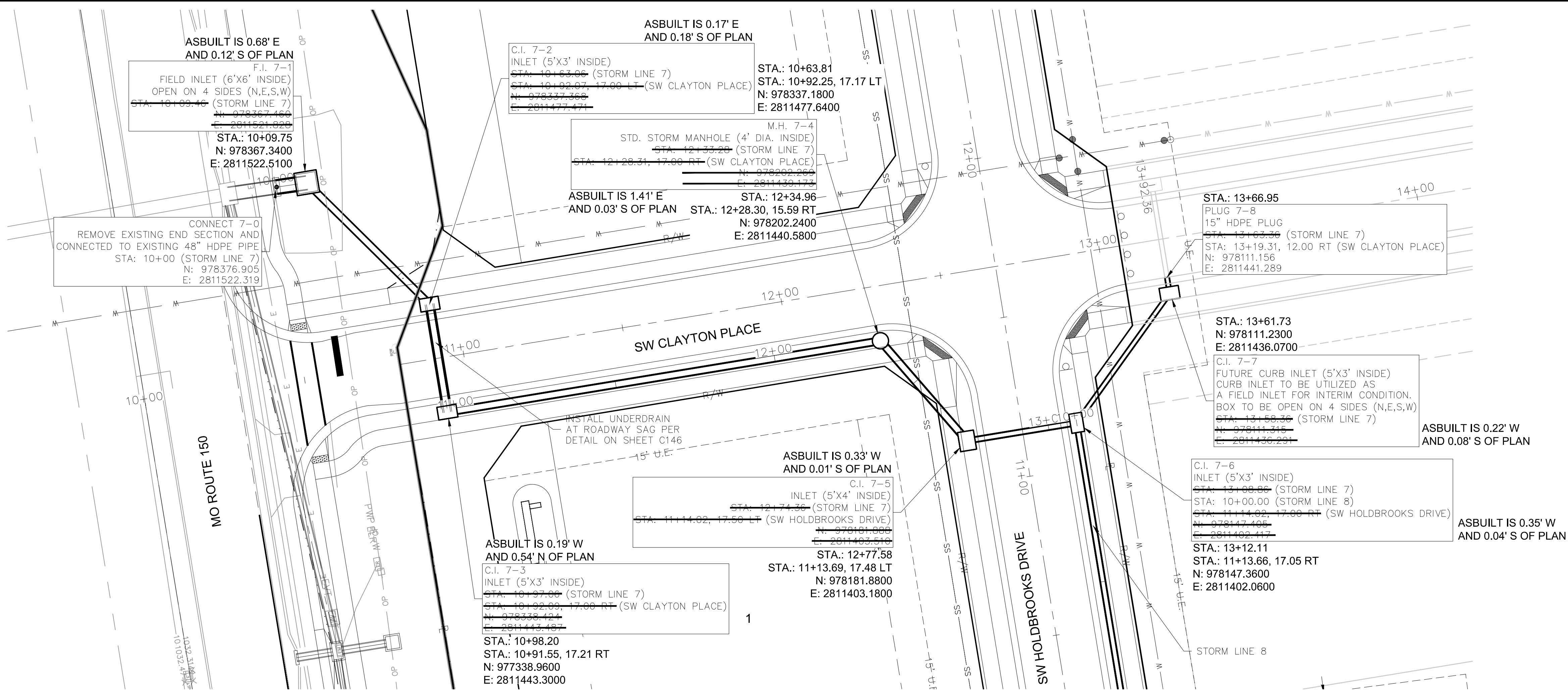
BY

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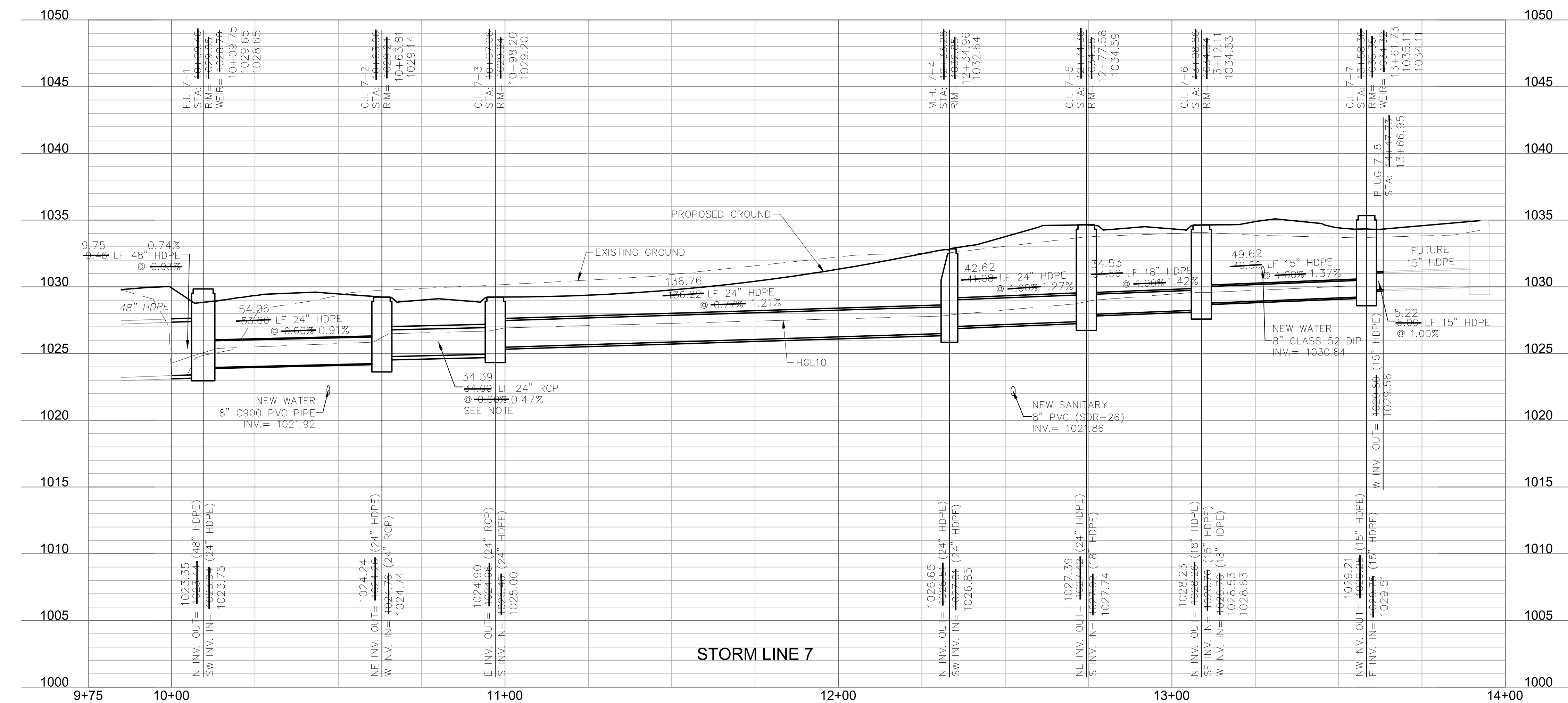
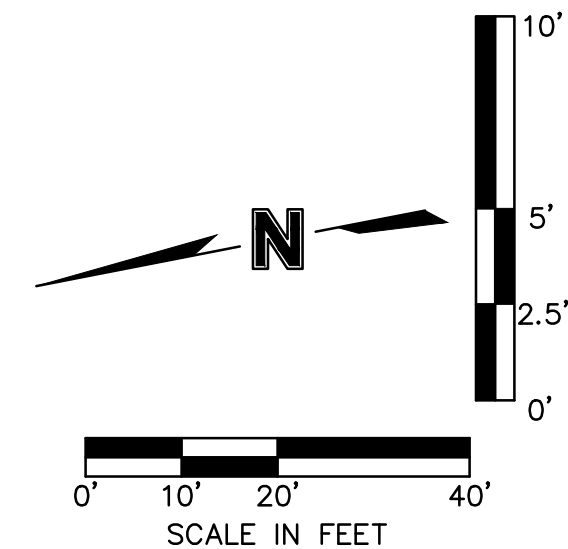




NOTE:  
ADS POLYPROPYLENE PIPE MAY BE USED  
INSTEAD OF REINFORCED CONCRETE PIPE

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| REV. | NO. | DATE      | REVISIONS DESCRIPTION                             | BY |
|------|-----|-----------|---------------------------------------------------|----|
| 1    |     | 6/15/2020 | UNDERDRAIN & ALTERNATE PIPE MATERIAL NOTE ADDED   |    |
|      |     | 7/24/2020 | FLOWLINES BETWEEN CONNECT 7-0 AND MHT 7-4 REVISED |    |
|      |     |           | 15" HDPE STUB ADDED                               |    |

STORM SEWER PLAN & PROFILE  
STREET & STORM SEWER PLANS

OSAGE  
FIRST PLAT

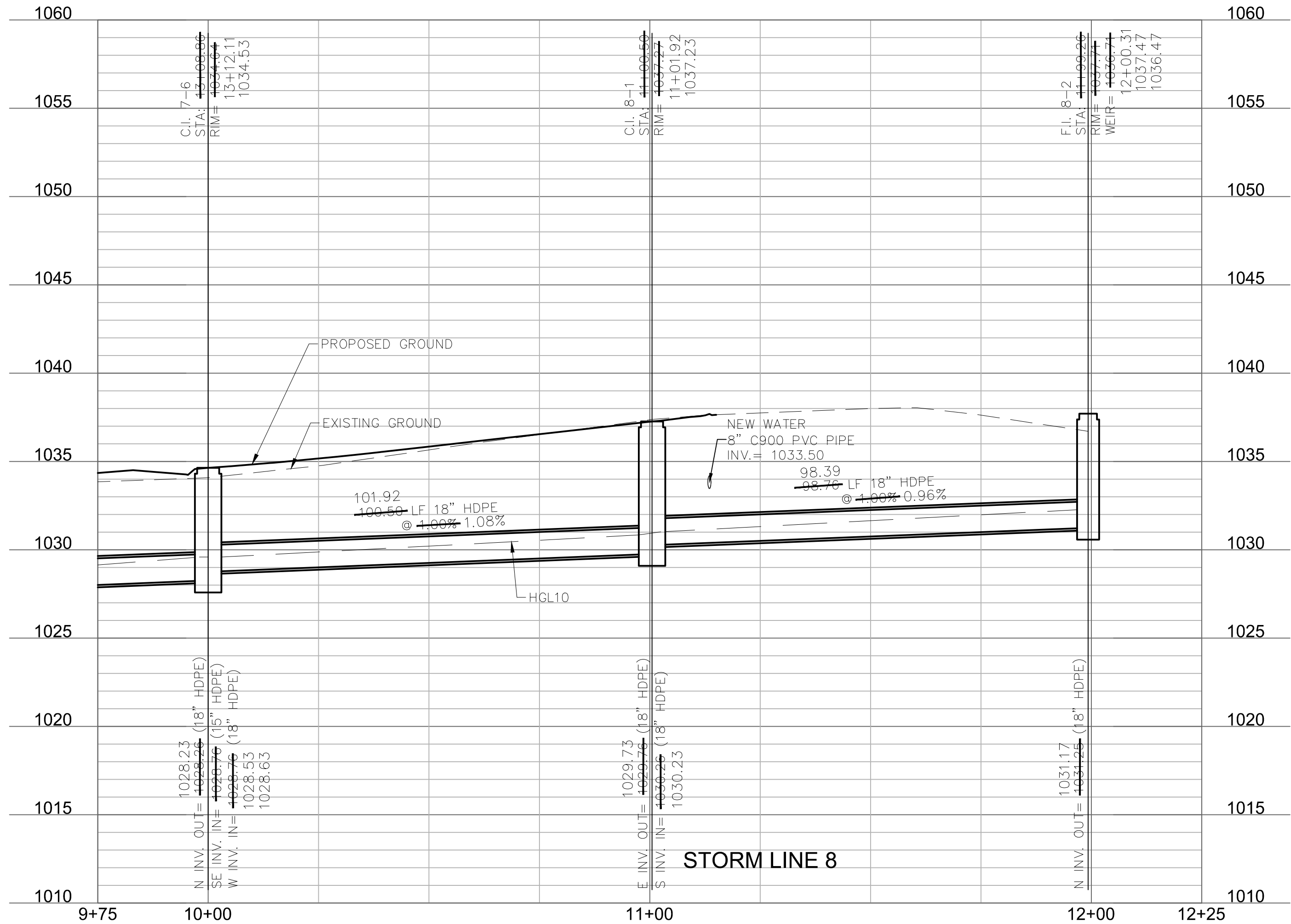
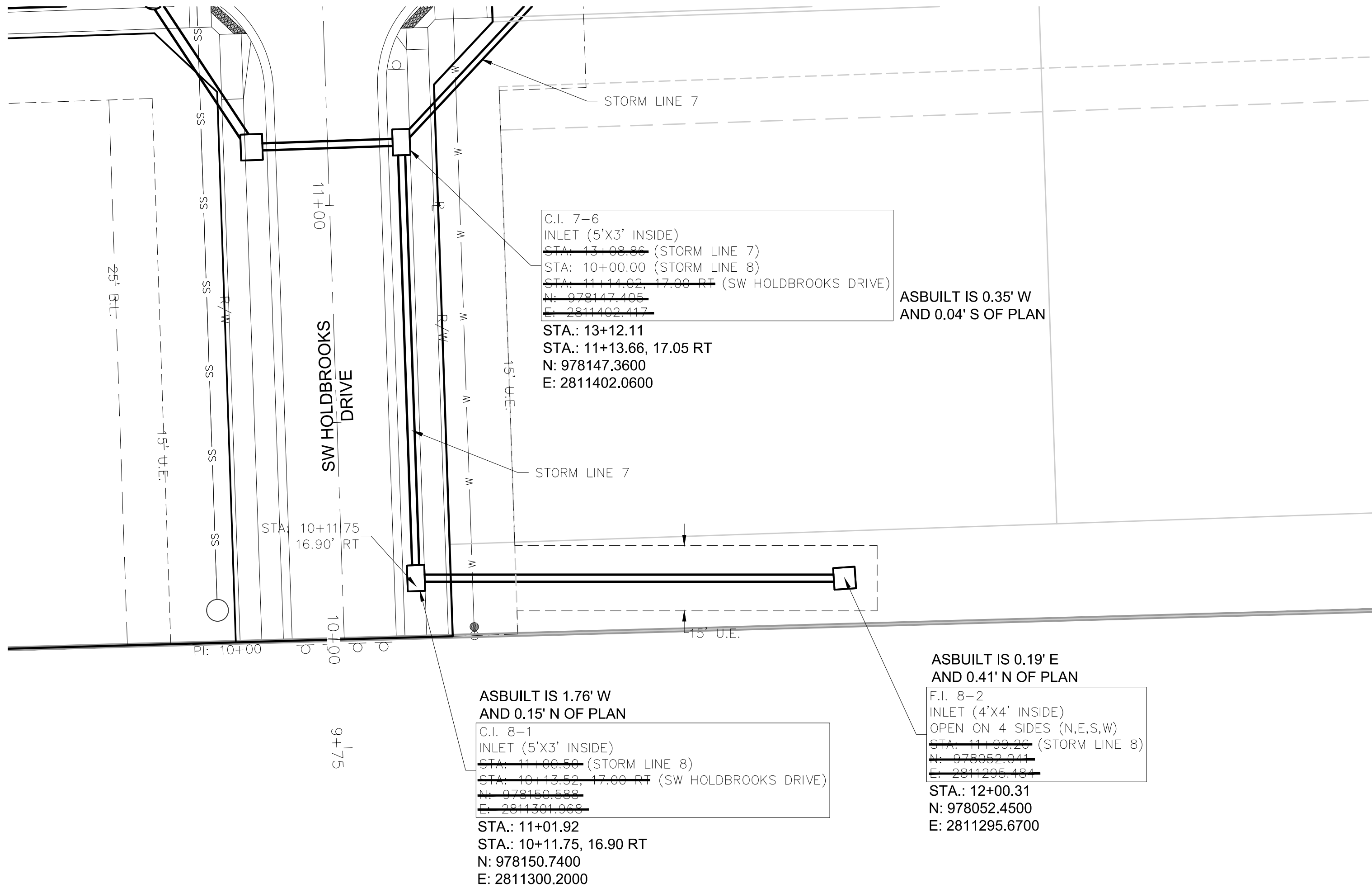
LEE'S SUMMIT, MISSOURI

2020

SHEET  
C132

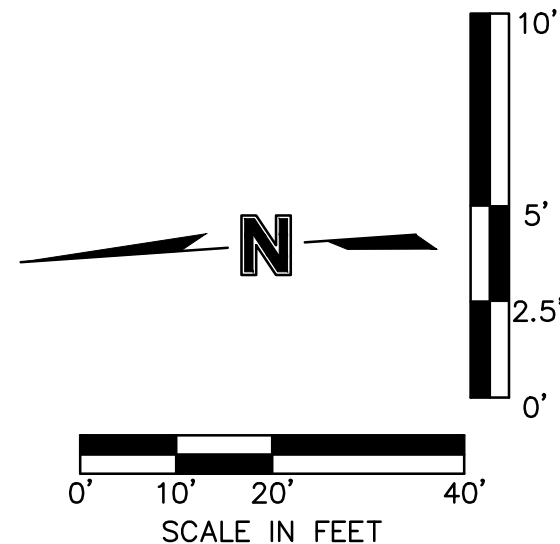
drawn by: AA  
checked by: SS  
designed by: AA  
QA/QC by: JES  
project no.: A19-2339  
drawing no.: C\_STM02\_A12339  
date: 3/17/2020





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REVISIONS DESCRIPTION

DATE

REV. NO.

REVISIONS

STORM SEWER PLAN & PROFILE  
STREET & STORM SEWER PLANS

OSAGE  
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

drawn by: AA  
checked by: SS  
designed by: AA  
QA/QC by: JES  
project no.: A19-2339  
drawing no.: C\_STM02\_A12339  
date: 3/17/2020

SHEET  
C133



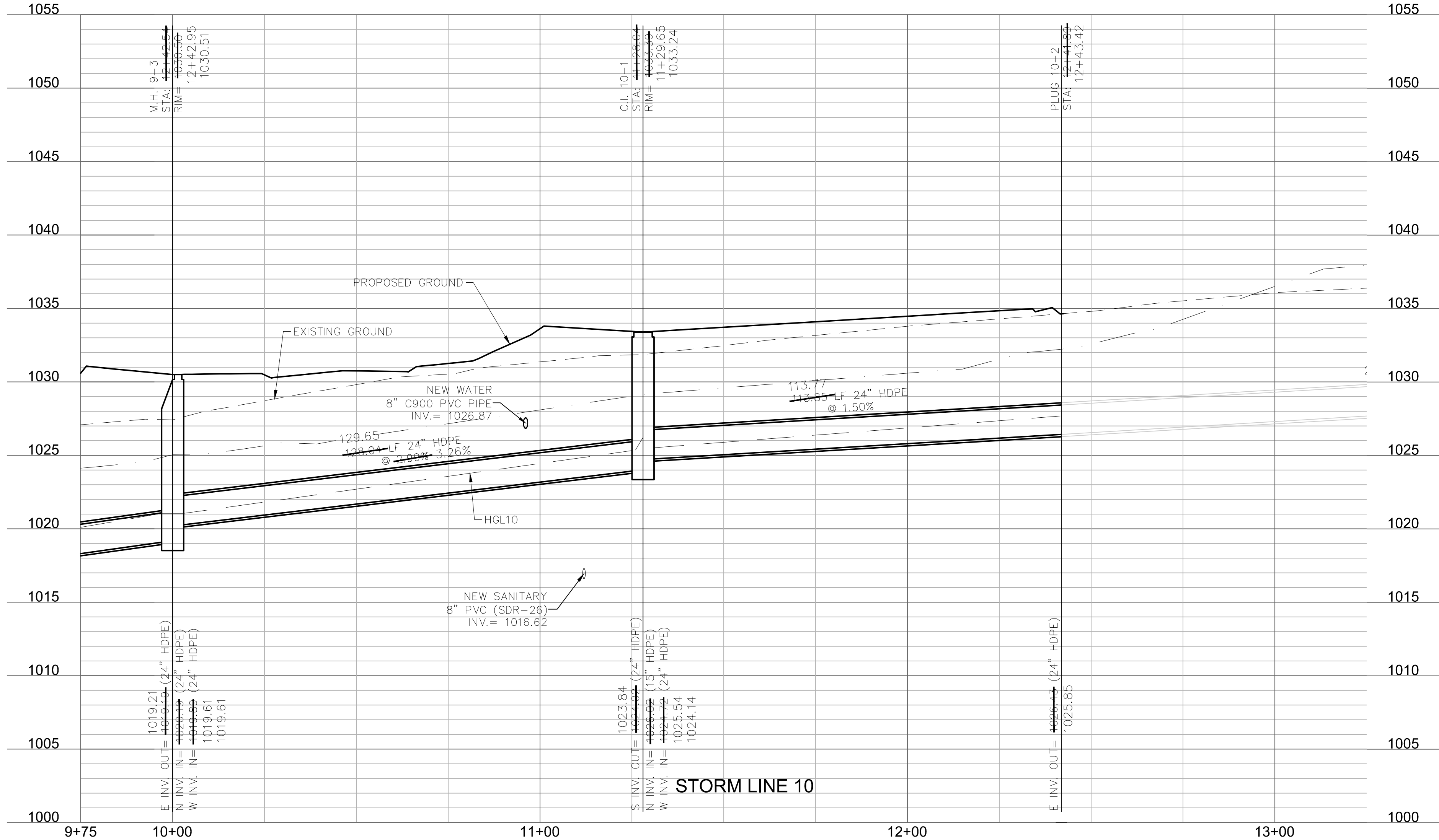
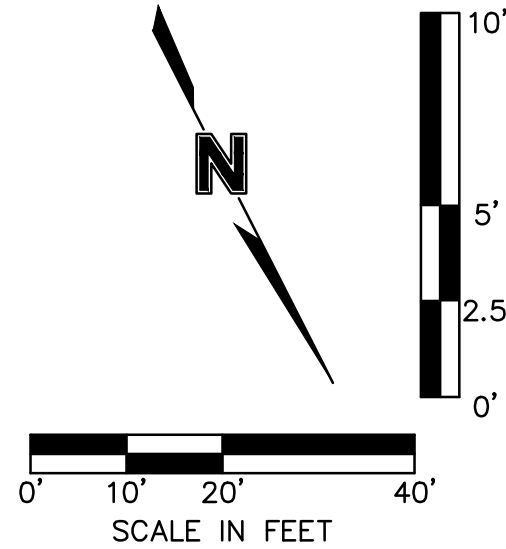
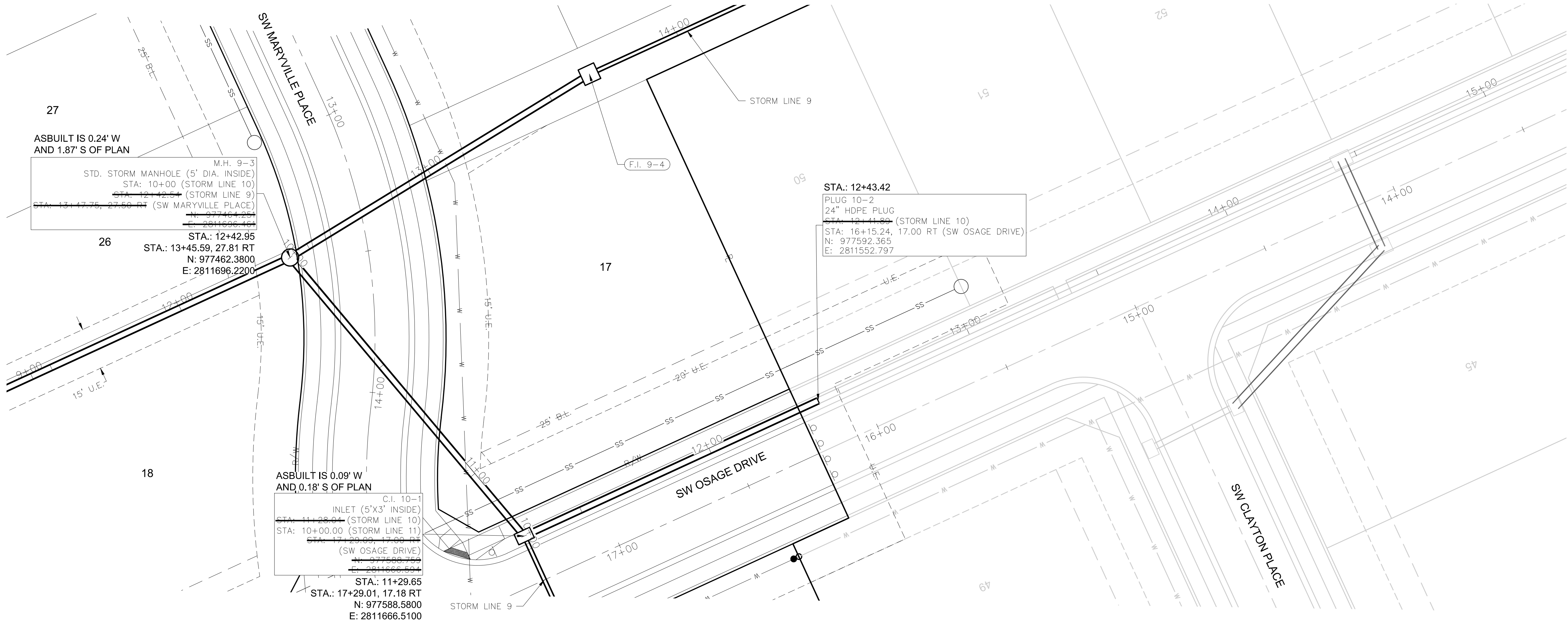








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|----------|------|-----------------------|----|
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| STORM SEWER PLAN & PROFILE<br>STREET & STORM SEWER PLANS |  | OSAGE<br>FIRST PLAT | 2020 |
|----------------------------------------------------------|--|---------------------|------|
| LEE'S SUMMIT, MISSOURI                                   |  |                     |      |

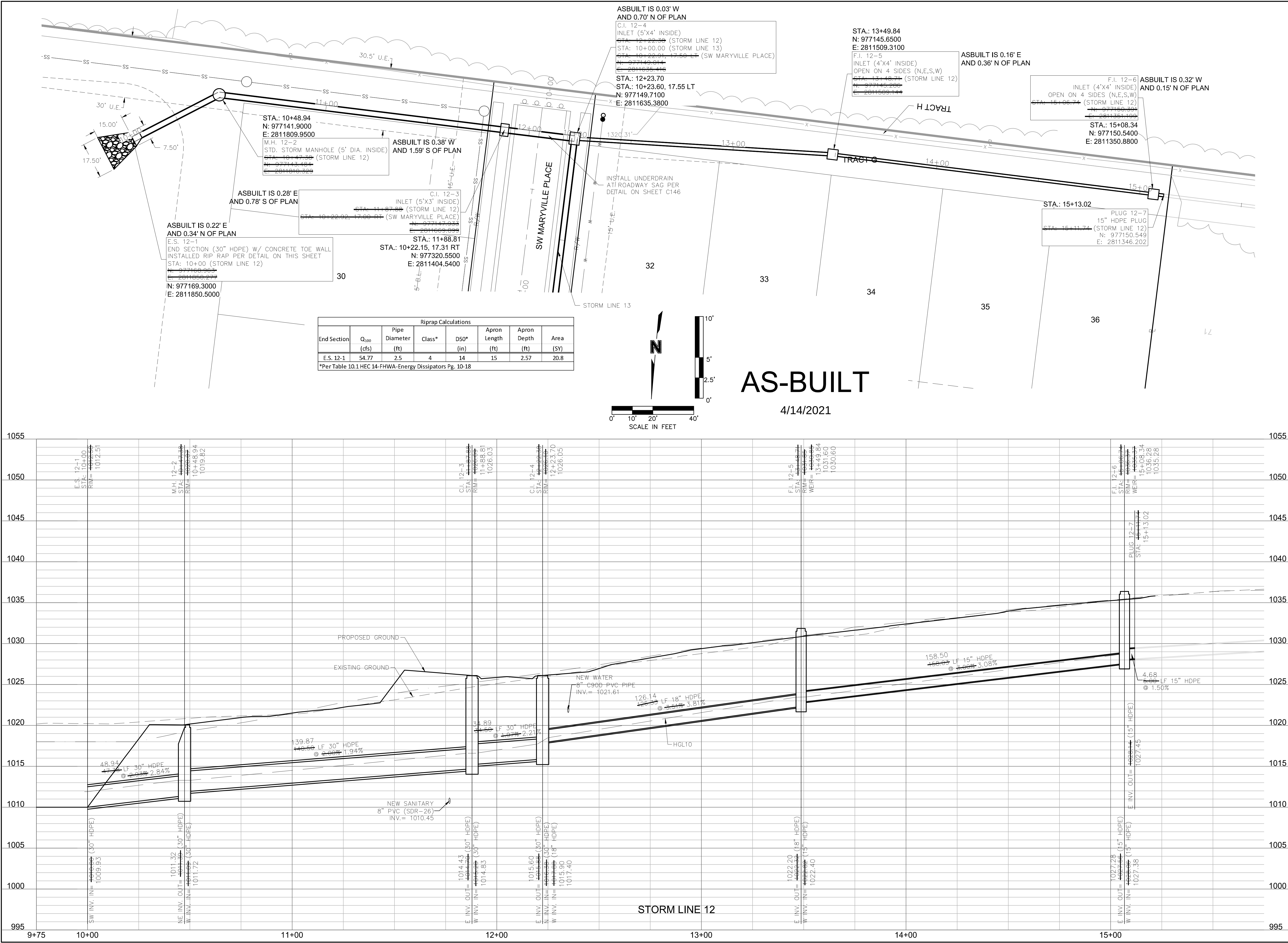
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project no.: A19-2339  
drawing no.: C\_STM03\_A12339  
date: 3/17/2020

SHEET  
C136



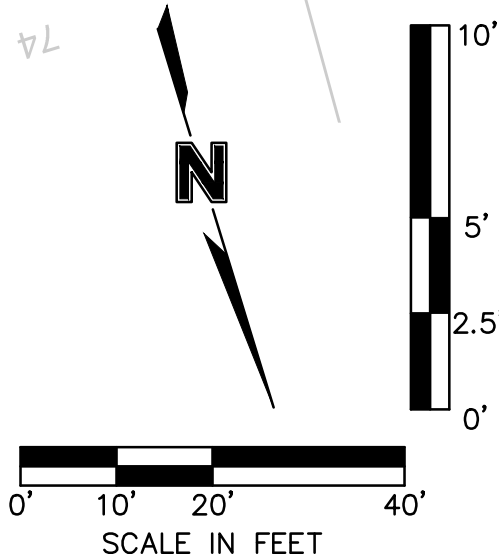








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## REVISIONS

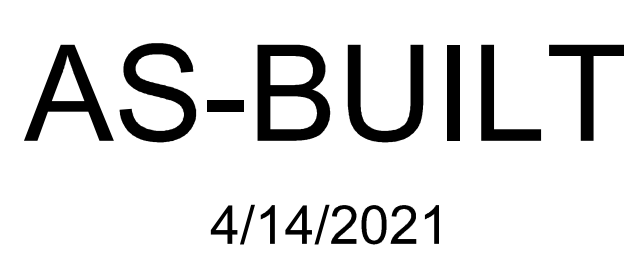
OSAGE  
FIRST PLAT

2020

LEE'S SUMMIT, MISSOURI

SHEET  
C139





**NOTES:**

**MBOE – MINIMUM BUILDING OPENING ELEVATION**

**NOTES:**

1. INDIVIDUAL LOT OWNERS 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.
2. PLAT IS LOCATION IN ZONE X, "AREAS OUTSIDE THE 1-PERCENT ANNUAL CHANCE FLOODPLAINS, AREAS OF 1-PERCENT ANNUAL CHANCE SHEET FLOW FLOODING WHERE THE AVERAGE DEPTHS ARE LESS THAN 1 FOOT, AREAS OF 1-PERCENT ANNUAL CHANCE STREAM FLOODING WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 1 SQUARE MILE, OR AREAS PROTECTED FROM THE 1-PERCENT ANNUAL CHANCE FLOOD BY LEVEES. NO BASE FLOOD ELEVATIONS OR DEPTHS ARE SHOWN WITHIN THIS ZONE"
3. PLAT IS LOCATED OUTSIDE OF ANY REQUIRED BUFFER ZONES FOR NATURAL STREAMS.
4. MBOE ELEVATIONS HAVE BEEN PROVIDED AT EACH LOT CORNER. INTERPOLATION WILL BE ALLOWED BETWEEN THE RIGHT AND LEFT SIDE MBOE'S SHOWN ON THE MASTER DRAINAGE PLAN, DEPENDING ON THE LOCATION OF THE LOWEST OPENING ON THE PROPOSED STRUCTURE.
5. REFER TO SHEET C106-C107 FOR SWALE GRADING DETAILS.
6. DRAINAGE PATHS TO BE CONSTRUCTED BETWEEN EACH OF THE LOTS LABELED AS STANDARD LOTS TO DRAIN WEST.
7. NO BUILDING PERMITS WILL BE ISSUED UNTIL AN AS-GRADED MASTER DRAINAGE PLAN HAS BEEN SUBMITTED TO THE CITY AND APPROVED BY THE CITY.

(S) STANDARD  
 (W) WALKOUT  
 (D) DAYLIGHT

X indicates condition applies to the lot.

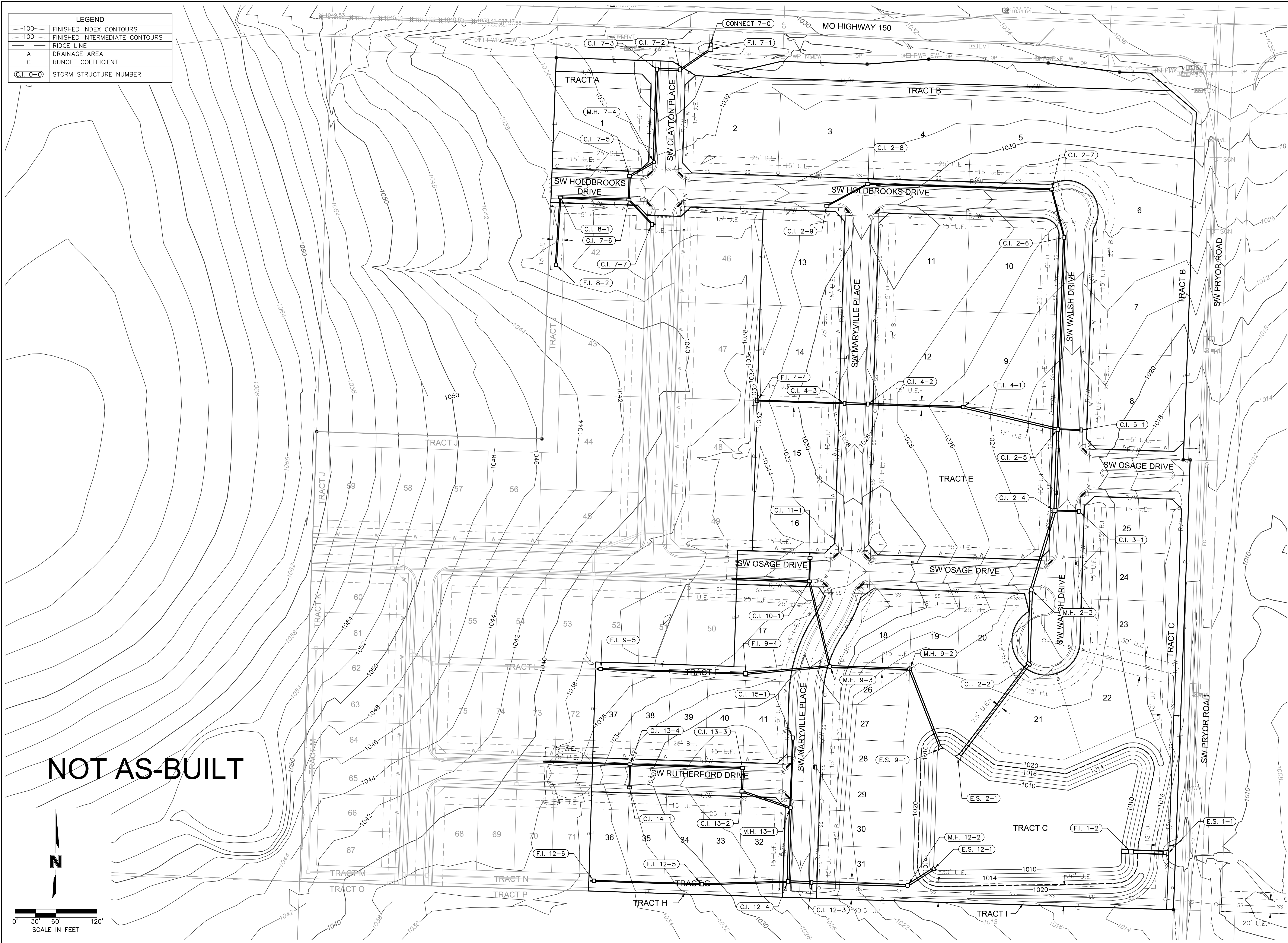
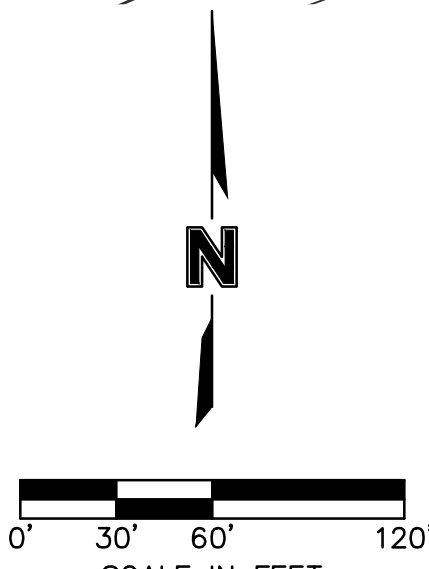
MBOE's have been provided per lot lines, facing the lot from the street. Interpolation will be allowed between the right and left side MBOE's provided, depending on the location of the lowest opening on the proposed structure.



DWG: F:\2019\2001-2500\019-2339-A\10-Design\AutoCAD\Final Plans - Asbuilts\Sheets\CONVA\STREET & STORM\C\_DRN01\_A192339.dwg USER: bwerthley  
DATE: Mar 10, 2021 4:45pm XREFS: C\_XBASE\_A192339 C\_PBASE\_A192339 C\_PSTRM\_A192339 C\_PTBLK\_A192339

| LEGEND |                                |
|--------|--------------------------------|
|        | FINISHED INDEX CONTOURS        |
|        | FINISHED INTERMEDIATE CONTOURS |
|        | RIDGE LINE                     |
|        | DRAINAGE AREA                  |
|        | RUNOFF COEFFICIENT             |
|        | STORM STRUCTURE NUMBER         |

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BROCK M. WORTHLEY

Professional Engineer

PE-2019000237

4/17/2021

| REV. NO. | DATE      | REVISIONS DESCRIPTION                                  | BY |
|----------|-----------|--------------------------------------------------------|----|
| 1        | 6/15/2020 | C.I. 2-7, C.I. 2-5 AND C.I. 5-1 DRAINAGE AREAS CHANGED |    |

|                        |                            |      |
|------------------------|----------------------------|------|
| DRAINAGE PLAN          | STREET & STORM SEWER PLANS | 2020 |
| OSAGE                  | FIRST PLAT                 |      |
| LEE'S SUMMIT, MISSOURI |                            |      |

drawn by: AA

checked by: SS

designed by: AA

QA/QC by: JES

project no.: A19-2339

drawing no.: C\_DRN01\_A192339

date: 3/17/2020

SHEET

C141



DWG: F:\2019\2001-2500\019-2339-AA\0-Design\AutoCAD\Final Plans - Asbuilt\Sheets\CONV\STREET & STORM\C\_DRN01\_A192339.dwg USER: bwerthley  
DATE: Mar 10, 2021 4:45pm XREFS: C\_XBASE\_A192339 C\_PBASE\_A192339 C\_PBLK\_A192339 C\_PSTRM\_A192339

| Inlet Design Table       |                |           |                 |            |                 |                |                             |               |             |                           |              |               |               |
|--------------------------|----------------|-----------|-----------------|------------|-----------------|----------------|-----------------------------|---------------|-------------|---------------------------|--------------|---------------|---------------|
| 10 Year Return Frequency |                |           |                 |            |                 |                |                             |               |             |                           |              |               |               |
| Inlet ID                 | Inlet Location | Peak Flow | Upstream Bypass | Total Flow | Clogging Factor | Inlet Capacity | Sag Inlet Capacity (Note 1) | Captured Flow | Bypass Flow | Inlet Efficiency (Note 2) | Gutter Depth | Gutter Spread | Ponding Depth |
|                          |                | (cfs)     | (cfs)           | (cfs)      |                 | (cfs)          |                             | (cfs)         | (cfs)       | (%)                       | (ft)         | (ft)          | (ft)          |
| C.I. 2-2(L)              | SAG            | 0.34      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.08         | 3.97          | ...           |
| C.I. 2-2(R)              | SAG            | 2.21      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.17         | 8.64          | ...           |
| C.I. 2-2                 | SAG            | 3.64      | 0.00            | 3.64       | 0.80            | 27.16          | 21.73                       | 3.64          | 0.00        | 100.00%                   | ...          | ...           | ...           |
| C.I. 2-4                 | GRADE          | 0.45      | 0.00            | 0.45       | 1.00            | 0.44           | 0.44                        | 0.44          | 0.01        | 96.83%                    | 0.09         | 4.45          | ...           |
| C.I. 2-5(L)              | SAG            | 1.31      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.14         | 6.76          | ...           |
| C.I. 2-5(R)              | SAG            | 3.75      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.21         | 10.42         | ...           |
| C.I. 2-5                 | SAG            | 7.81      | 0.11            | 7.93       | 0.80            | 19.40          | 15.52                       | 7.93          | 0.00        | 100.00%                   | ...          | ...           | ...           |
| C.I. 2-6                 | GRADE          | 1.05      | 0.00            | 1.05       | 1.00            | 0.95           | 0.95                        | 0.95          | 0.10        | 90.63%                    | 0.12         | 5.99          | ...           |
| C.I. 2-7                 | GRADE          | 3.41      | 0.37            | 3.78       | 1.00            | 2.87           | 2.87                        | 2.87          | 0.91        | 75.84%                    | 0.21         | 10.47         | ...           |
| C.I. 2-8                 | GRADE          | 2.48      | 0.00            | 2.48       | 1.00            | 2.11           | 2.11                        | 2.11          | 0.37        | 85.10%                    | 0.18         | 9.18          | ...           |
| C.I. 2-9                 | GRADE          | 2.85      | 0.00            | 2.85       | 1.00            | 2.36           | 2.36                        | 2.36          | 0.49        | 82.96%                    | 0.19         | 9.68          | ...           |
| C.I. 3-1                 | GRADE          | 0.41      | 0.00            | 0.41       | 1.00            | 0.40           | 0.40                        | 0.40          | 0.01        | 97.18%                    | 0.09         | 4.31          | ...           |
| F.I. 4-1                 | SAG            | 0.90      | 0.00            | 0.90       | 0.80            | 18.67          | 14.93                       | 0.90          | 0.00        | 100.00%                   | ...          | ...           | 0.07          |
| C.I. 4-2(L)              | SAG            | 0.94      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.13         | 6.40          | ...           |
| C.I. 4-2(R)              | SAG            | 0.56      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.10         | 5.04          | ...           |
| C.I. 4-2                 | SAG            | 1.99      | 0.00            | 1.99       | 0.80            | 19.40          | 15.52                       | 1.99          | 0.00        | 100.00%                   | ...          | ...           | ...           |
| C.I. 4-3(L)              | SAG            | 2.03      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.17         | 8.30          | ...           |
| C.I. 4-3(R)              | SAG            | 2.63      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.20         | 9.99          | ...           |
| C.I. 4-3                 | SAG            | 6.53      | 0.57            | 7.10       | 0.80            | 19.40          | 15.52                       | 7.10          | 0.00        | 100.00%                   | ...          | ...           | ...           |
| F.I. 4-4                 | SAG            | 6.60      | 0.00            | 6.60       | 0.80            | 18.67          | 14.93                       | 6.60          | 0.00        | 100.00%                   | ...          | ...           | 0.25          |
| C.I. 5-1(L)              | SAG            | 3.30      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.22         | 10.78         | ...           |
| C.I. 5-1(R)              | SAG            | 0.00      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | ...          | ...           | ...           |
| C.I. 5-1                 | SAG            | 3.75      | 0.91            | 4.66       | 0.80            | 19.40          | 15.52                       | 4.66          | 0.00        | 100.00%                   | ...          | ...           | ...           |
| F.I. 7-1                 | SAG            | 1.50      | 0.00            | 1.50       | 0.80            | 23.33          | 18.67                       | 1.50          | 0.00        | 100.00%                   | ...          | ...           | 0.08          |
| C.I. 7-2(L)              | SAG            | 0.08      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.05         | 2.37          | ...           |
| C.I. 7-2(R)              | SAG            | 0.56      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.09         | 4.69          | ...           |
| C.I. 7-2                 | SAG            | 1.84      | 0.00            | 1.84       | 0.80            | 19.40          | 15.52                       | 1.84          | 0.00        | 100.00%                   | ...          | ...           | ...           |
| C.I. 7-3(L)              | SAG            | 0.54      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.10         | 5.01          | ...           |
| C.I. 7-3(R)              | SAG            | 0.29      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.08         | 3.80          | ...           |
| C.I. 7-3                 | SAG            | 4.85      | 0.13            | 4.97       | 0.80            | 19.40          | 15.52                       | 4.97          | 0.00        | 100.00%                   | ...          | ...           | ...           |
| C.I. 7-5                 | GRADE          | 1.19      | 0.00            | 1.19       | 1.00            | 1.07           | 1.07                        | 1.07          | 0.12        | 89.95%                    | 0.13         | 6.38          | ...           |
| C.I. 7-6                 | GRADE          | 0.26      | 0.05            | 0.31       | 1.00            | 0.30           | 0.30                        | 0.30          | 0.01        | 98.09%                    | 0.08         | 3.84          | ...           |
| C.I. 7-7                 | SAG            | 4.17      | 0.00            | 4.17       | 0.80            | 18.67          | 14.93                       | 4.17          | 0.00        | 100.00%                   | ...          | ...           | 0.18          |
| C.I. 8-1                 | GRADE          | 0.64      | 0.00            | 0.64       | 1.00            | 0.59           | 0.59                        | 0.59          | 0.05        | 92.81%                    | 0.09         | 4.65          | ...           |
| F.I. 8-2                 | SAG            | 6.60      | 0.00            | 6.60       | 0.80            | 18.67          | 14.93                       | 6.60          | 0.00        | 100.00%                   | ...          | ...           | 0.25          |
| F.I. 8-2 FTR             | SAG            | 6.99      | 0.00            | 6.99       | 0.80            | 18.67          | 14.93                       | 6.99          | 0.00        | 100.00%                   | ...          | ...           | 0.26          |
| F.I. 9-4                 | SAG            | 14.29     | 0.00            | 14.29      | 0.80            | 36.20          | 28.96                       | 14.29         | 0.00        | 100.00%                   | ...          | ...           | 0.36          |
| F.I. 9-5                 | SAG            | 1.91      | 0.00            | 1.91       | 0.80            | 18.67          | 14.93                       | 1.91          | 0.00        | 100.00%                   | ...          | ...           | 0.11          |
| F.I. 9-5 FTR             | SAG            | 1.82      | 0.00            | 1.82       | 0.80            | 18.67          | 14.93                       | 1.82          | 0.00        | 100.00%                   | ...          | ...           | 0.11          |
| C.I. 10-1                | GRADE          | 0.71      | 0.00            | 0.71       | 1.00            | 0.68           | 0.68                        | 0.68          | 0.04        | 95.08%                    | 0.11         | 5.44          | ...           |
| PLUG 10-2                | GRADE          | 12.21     | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | ...          | ...           | ...           |
| C.I. 11-1                | GRADE          | 1.09      | 0.00            | 1.09       | 1.00            | 1.00           | 1.00                        | 1.00          | 0.09        | 92.03%                    | 0.13         | 6.38          | ...           |
| C.I. 12-3(L)             | SAG            | 1.54      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.15         | 7.51          | ...           |
| C.I. 12-3(R)             | SAG            | 0.00      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.00         | 0.00          | ...           |
| C.I. 12-3                | SAG            | 2.21      | 0.00            | 2.21       | 0.80            | 19.40          | 15.52                       | 2.21          | 0.00        | 100.00%                   | ...          | ...           | ...           |
| C.I. 12-4(L)             | SAG            | 0.00      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.00         | 0.00          | ...           |
| C.I. 12-4(R)             | SAG            | 0.79      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.12         | 5.85          | ...           |
| C.I. 12-4                | SAG            | 3.00      | 0.00            | 3.00       | 0.80            | 19.40          | 15.52                       | 3.00          | 0.00        | 100.00%                   | ...          | ...           | ...           |
| F.I. 12-5                | SAG            | 0.79      | 0.00            | 0.79       | 0.80            | 18.67          | 14.93                       | 0.79          | 0.00        | 100.00%                   | ...          | ...           | 0.06          |
| F.I. 12-6                | SAG            | 0.38      | 0.00            | 0.38       | 0.80            | 18.67          | 14.93                       | 0.38          | 0.00        | 100.00%                   | ...          | ...           | 0.04          |
| F.I. 12-6 FTR            | SAG            | 7.75      | 0.00            | 7.75       | 0.80            | 18.67          | 14.93                       | 7.75          | 0.00        | 100.00%                   | ...          | ...           | 0.28          |
| C.I. 13-2(L)             | SAG            | 0.04      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.03         | 1.72          | ...           |
| C.I. 13-2(R)             | SAG            | 2.51      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.18         | 9.22          | ...           |
| C.I. 13-2                | SAG            | 4.43      | 1.01            | 5.43       | 0.80            | 19.40          | 15.52                       | 5.43          | 0.00        | 100.00%                   | ...          | ...           | ...           |
| C.I. 13-3(L)             | SAG            | 3.00      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.16         | 8.03          | ...           |
| C.I. 13-3(R)             | SAG            | 0.19      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.08         | 4.15          | ...           |
| C.I. 13-3                | SAG            | 5.29      | 0.24            | 5.53       | 0.80            | 19.40          | 15.52                       | 5.53          | 0.00        | 100.00%                   | ...          | ...           | ...           |
| C.I. 13-4                | GRADE          | 0.23      | 0.00            | 0.23       | 1.00            | 0.22           | 0.22                        | 0.22          | 0.01        | 96.33%                    | 0.06         | 2.76          | ...           |
| PLUG 13-5                | GRADE          | 3.13      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | ...          | ...           | ...           |
| C.I. 14-1                | GRADE          | 2.55      | 0.00            | 2.55       | 1.00            | 1.54           | 1.54                        | 1.54          | 1.01        | 60.41%                    | 0.14         | 6.87          | ...           |
| C.I. 15-1                | GRADE          | 1.73      | 0.04            | 1.76       | 1.00            | 1.53           | 1.53                        | 1.53          | 0.23        | 86.88%                    | 0.15         | 7.64          | ...           |

Notes:  
1. Inlet capacity at sag location has been reduced by a clogging factor of 0.80, reducing theoretical capacity to 80% capacity, as required per APWA Section 5600.  
Both theoretical capacity and reduced capacity are shown.  
2. Inlet efficiency shown in the tables is Captured Flow/Total Flow, denoting the actual percentage of flow captured after the capacity has been reduced to 80% of theoretical capacity.

| Drainage Area Design Table |               |      |       |         |      |           |
|----------------------------|---------------|------|-------|---------|------|-----------|
| 10 Year Return Frequency   |               |      |       |         |      |           |
| Inlet ID                   | Drainage Area | C    | Tc    | i       | K    | Peak Flow |
|                            | (ac)          |      | (min) | (in/hr) |      | (cfs)     |
| C.I. 2-2(L)                | 0.09          | 0.51 | 5.00  | 7.35    | 1.00 | 0.34      |
| C.I. 2-2(R)                | 0.59          | 0.51 | 5.00  | 7.35    | 1.00 | 2.21      |
| C.I. 2-2(B)                | 0.29          | 0.51 | 5.00  | 7.35    | 1.00 | 1.09      |
| C.I. 2-2                   | 0.97          | 0.51 | 5.00  | 7.35    | 1.00 | 3.64      |
| C.I. 2-4                   | 0.12          | 0.51 | 5.00  | 7.35    | 1.00 | 0.45      |
| C.I. 2-5(L)                | 0.35          | 0.51 | 5.00  | 7.35    | 1.00 | 1.31      |
| C.I. 2-5(R)                | 1.00          | 0.51 | 5.00  | 7.35    | 1.00 | 3.75      |
| C.I. 2-5(B)                | 1.18          | 0.51 | 10.10 | 6.06    | 1.00 | 3.64      |
| C.I. 2-5                   | 2.53          | 0.51 | 10.10 | 6.06    | 1.00 | 7.81      |
| C.I. 2-6                   | 0.28          | 0.51 | 5.00  | 7.35    | 1.00 | 1.05      |
| C.I. 2-7                   | 0.91          | 0.51 | 5.00  | 7.35    | 1.00 | 3.41      |
| C.I. 2-8                   | 0.66          | 0.51 | 5.00  | 7.35    | 1.00 | 2.48      |
| C.I. 2-9                   | 0.76          | 0.51 | 5.00  | 7.35    | 1.00 | 2.85      |
| C.I. 3-1                   | 0.11          | 0.51 | 5.00  | 7.35    | 1.00 | 0.41      |
| F.I. 4-1                   | 0.24          | 0.51 | 5.00  | 7.35    | 1.00 | 0.90      |
| C.I. 4-2(L)                | 0.25          | 0.51 | 5.00  | 7.35    | 1.00 | 0.94      |
| C.I. 4-2(R)                | 0.15          | 0.51 | 5.00  | 7.35    | 1.00 | 0.56      |
| C.I. 4-2(B)                | 0.13          | 0.51 | 5.00  | 7.35    | 1.00 | 0.49      |
| C.I. 4-2                   | 0.53          | 0.51 | 5.00  | 7.35    | 1.00 | 1.99      |
| C.I. 4-3(L)                | 0.54          | 0.51 | 5.00  | 7.35    | 1.00 | 2.03      |
| C.I. 4-3(R)                | 0.70          | 0.51 | 5.00  | 7.35    | 1.00 | 2.63      |
| C.I. 4-3(B)                | 0.50          | 0.51 | 5.00  | 7.35    | 1.00 | 1.88      |
| C.I. 4-3                   | 1.74          | 0.51 | 5.00  | 7.35    | 1.00 | 6.53      |
| F.I. 4-4                   | 2.47          | 0.47 | 11.96 | 5.69    | 1.00 | 6.60      |
| C.I. 5-1(L)                | 0.88          | 0.51 | 5.00  | 7.35    | 1.00 | 3.30      |
| C.I. 5-1(R)                | 0.00          | 0.51 | 5.00  | 7.35    | 1.00 | 0.00      |
| C.I. 5-1(B)                | 0.12          | 0.51 | 5.00  | 7.35    | 1.00 | 0.45      |
| C.I. 5-1                   | 1.00          | 0.51 | 5.00  | 7.35    | 1.00 | 3.75      |
| F.I. 7-1                   | 0.40          | 0.51 | 5.00  | 7.35    | 1.00 | 1.50      |
| C.I. 7-2(L)                | 0.02          | 0.51 | 5.00  | 7.35    | 1.00 | 0.08      |
| C.I. 7-2(R)                | 0.15          | 0.51 | 5.00  | 7.35    | 1.00 | 0.56      |
| C.I. 7-2(B)                | 0.32          | 0.51 | 5.00  | 7.35    | 1.00 | 1.20      |
| C.I. 7-2                   | 0.49          | 0.51 | 5.00  | 7.35    | 1.00 | 1.84      |
| C.I. 7-3(L)                | 0.19          | 0.39 | 5.00  | 7.35    | 1.00 | 0.54      |
| C.I. 7-3(R)                | 0.10          | 0.39 | 5.00  | 7.35    | 1.00 | 0.29      |
| C.I. 7-3(B)                | 1.40          | 0.39 | 5.00  | 7.35    | 1.00 | 4.01      |
| C.I. 7-3                   | 1.69          | 0.39 | 5.00  | 7.35    | 1.00 | 4.85      |
| C.I. 7-5                   | 0.45          | 0.36 | 5.00  | 7.35    | 1.00 | 1.19      |
| C.I. 7-6                   | 0.07          | 0.51 | 5.00  | 7.35    | 1.00 | 0.26      |
| C.I. 7-7                   | 1.73          | 0.42 | 11.70 | 5.74    | 1.00 | 4.17      |
| C.I. 8-1                   | 0.29          | 0.30 | 5.00  | 7.35    | 1.00 | 0.64      |
| F.I. 8-2                   | 2.99          | 0.30 | 5.00  | 7.35    | 1.00 | 6.60      |
| F.I. 8-2 FTR               | 3.99          | 0.30 | 11.16 | 5.84    | 1.00 | 6.99      |
| F.I. 9-4                   | 3.81          | 0.51 | 5.00  | 7.35    | 1.00 | 14.29     |
| F.I. 9-5                   | 0.51          | 0.51 | 5.00  | 7.35    | 1.00 | 1.91      |
| F.I. 9-5 FTR               | 0.48          | 0.51 | 5.00  | 7.35    | 1.00 | 1.82      |
| C.I. 10-1                  | 0.19          | 0.51 | 5.00  | 7.35    | 1.00 | 0.71      |
| PLUG 10-2                  | 4.71          | 0.45 | 11.57 | 5.76    | 1.00 | 12.21     |
| C.I. 11-1                  | 0.29          | 0.51 | 5.00  | 7.35    | 1.00 | 1.09      |
| C.I. 12-3(L)               | 0.41          | 0.51 | 5.00  | 7.35    | 1.00 | 1.54      |
| C.I. 12-3(R)               | 0.00          | 0.51 | 5.00  | 7.35    | 1.00 | 0.00      |
| C.I. 12-3(B)               | 0.18          | 0.51 | 5.00  | 7.35    | 1.00 | 0.68      |
| C.I. 12-3                  | 0.59          | 0.51 | 5.00  | 7.35    | 1.00 | 2.21      |
| C.I. 12-4(L)               | 0.00          | 0.51 | 5.00  | 7.35    | 1.00 | 0.00      |
| C.I. 12-4(R)               | 0.21          | 0.51 | 5.00  | 7.35    | 1.00 | 0.79      |
| C.I. 12-4(B)               | 0.59          | 0.51 | 5.00  | 7.35    | 1.00 | 2.21      |
| C.I. 12-4                  | 0.80          | 0.51 | 5.00  | 7.35    | 1.00 | 3.00      |
| F.I. 12-5                  | 0.21          | 0.51 | 5.00  | 7.35    | 1.00 | 0.79      |
| F.I. 12-6                  | 0.10          | 0.51 | 5.00  | 7.35    | 1.00 | 0.38      |
| F.I. 12-6 FTR              | 3.29          | 0.41 | 11.67 | 5.74    | 1.00 | 7.75      |
| C.I. 13-2(L)               | 0.01          | 0.51 | 5.00  | 7.35    | 1.00 | 0.04      |
| C.I. 13-2(R)               | 0.67          | 0.51 | 5.00  | 7.35    | 1.00 | 2.51      |
| C.I. 13-2(B)               | 0.50          | 0.51 | 5.00  | 7.35    | 1.00 | 1.88      |
| C.I. 13-2                  | 1.18          | 0.51 | 5.00  | 7.35    | 1.00 | 4.43      |
| C.I. 13-3(L)               | 0.80          | 0.51 | 5.00  | 7.35    | 1.00 | 3.00      |
| C.I. 13-3(R)               | 0.05          | 0.51 | 5.00  | 7.35    | 1.00 | 0.19      |
| C.I. 13-3(B)               | 0.56          | 0.51 | 5.00  | 7.35    | 1.00 | 2.10      |
| C.I. 13-3                  | 1.41          | 0.51 | 5.00  | 7.35    | 1.00 | 5.29      |
| C.I. 13-4                  | 0.06          | 0.51 | 5.00  | 7.35    | 1.00 | 0.23      |
| PLUG 13-5                  | 0.83          | 0.51 | 5.00  | 7.35    | 1.00 | 3.13      |
| C.I. 14-1                  | 0.68          | 0.51 | 5.00  | 7.35    | 1.00 | 2.55      |
| C.I. 15-1                  | 0.46          | 0.51 | 5.00  | 7.35    | 1.00 | 1.73      |

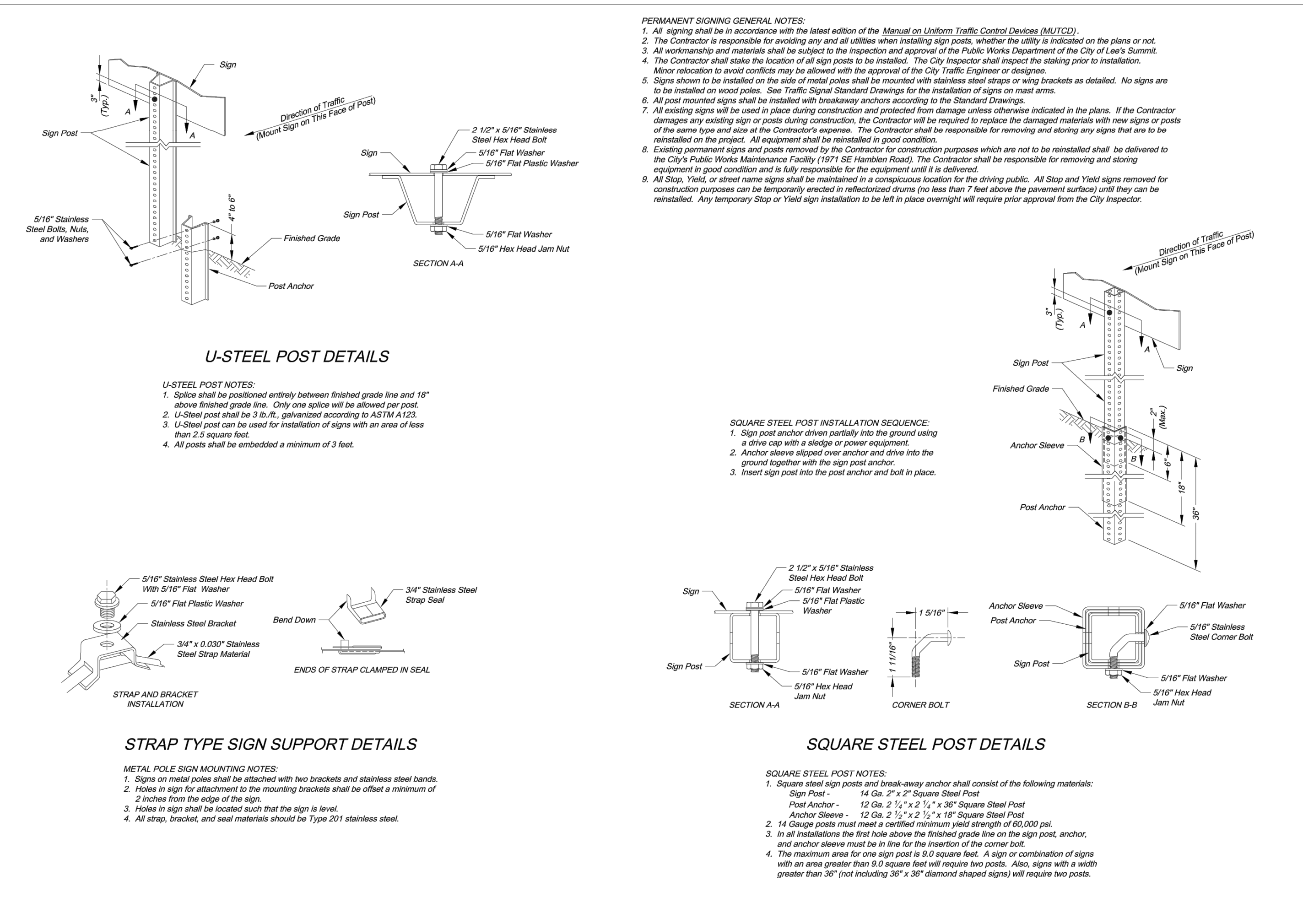
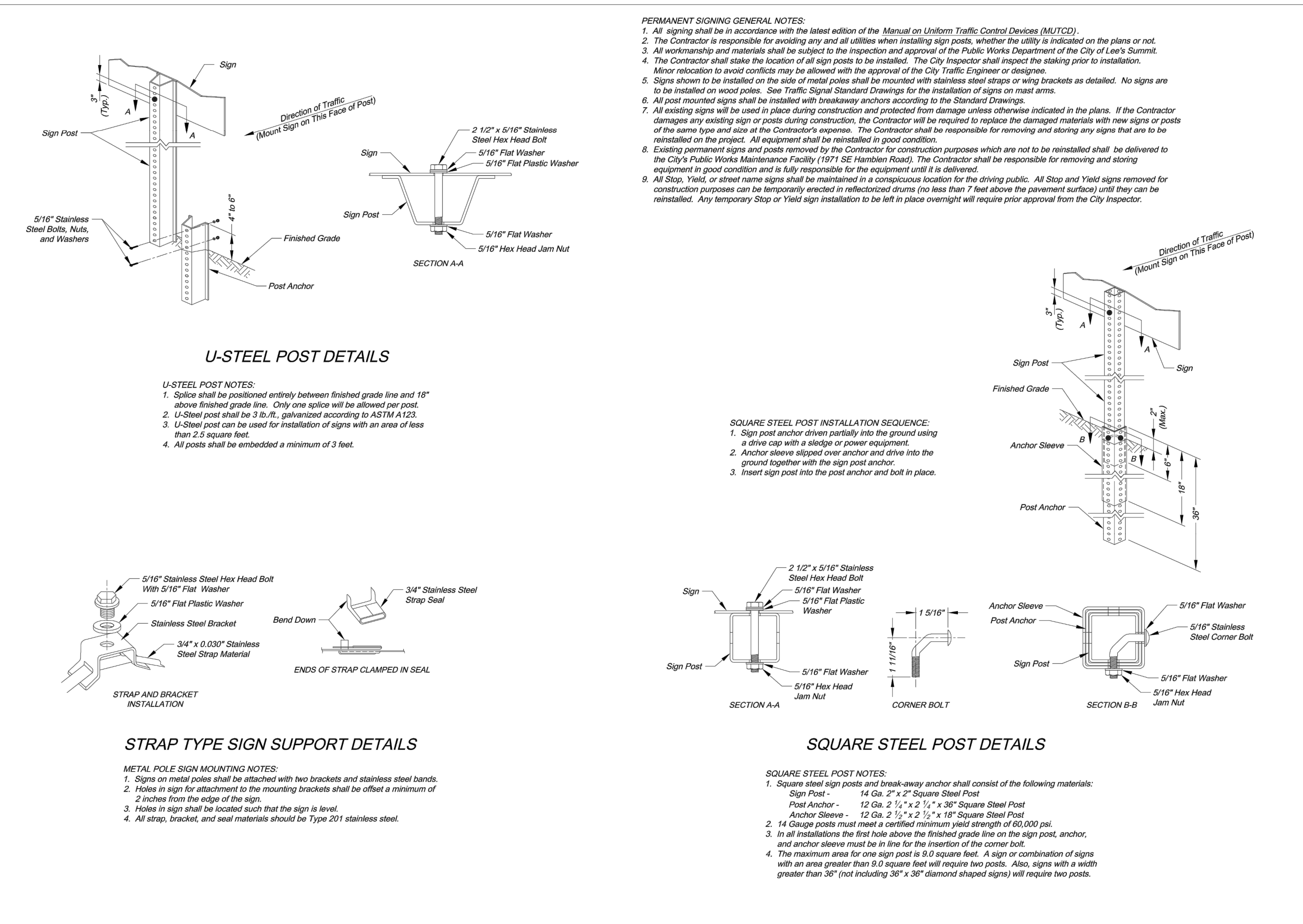
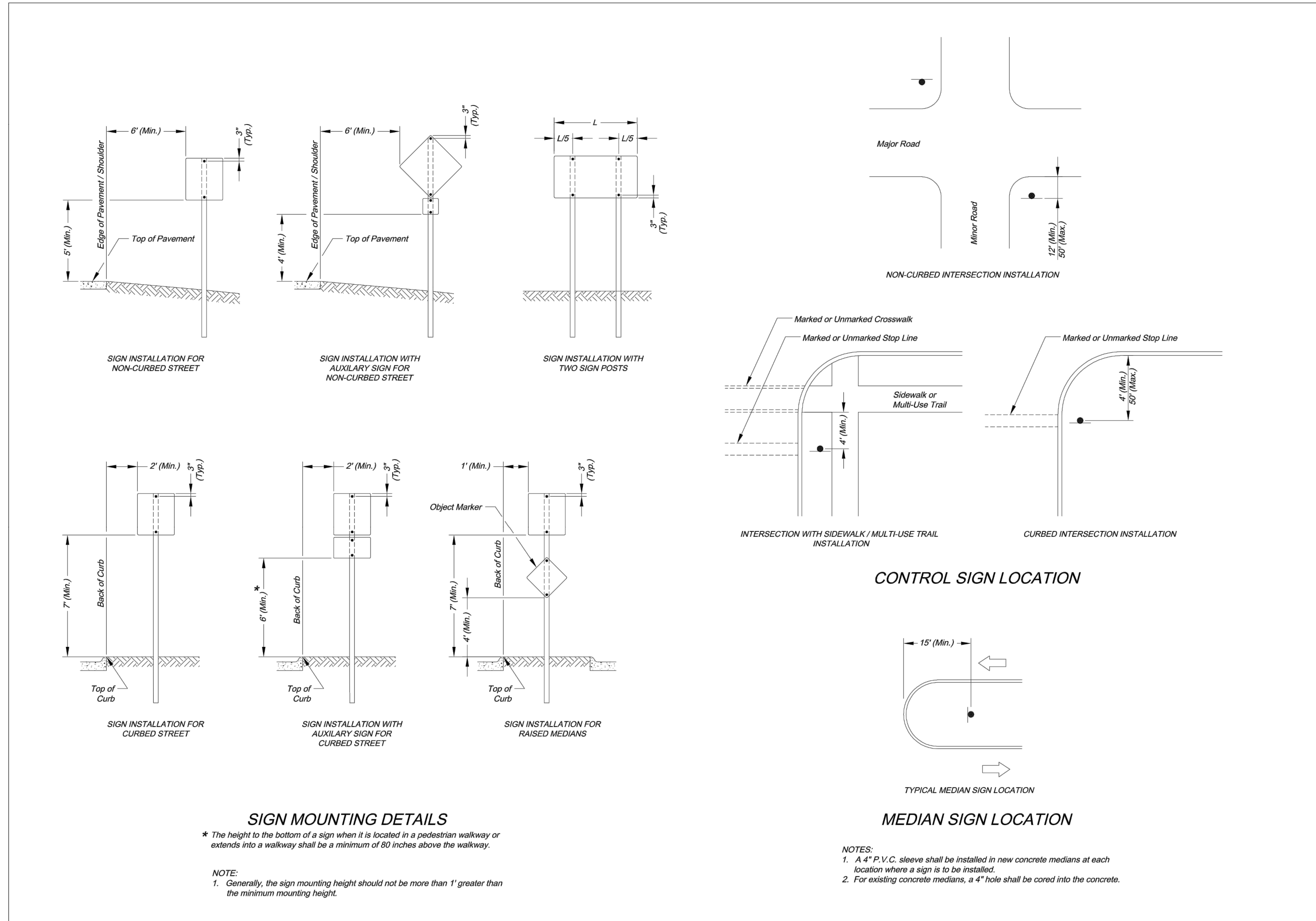
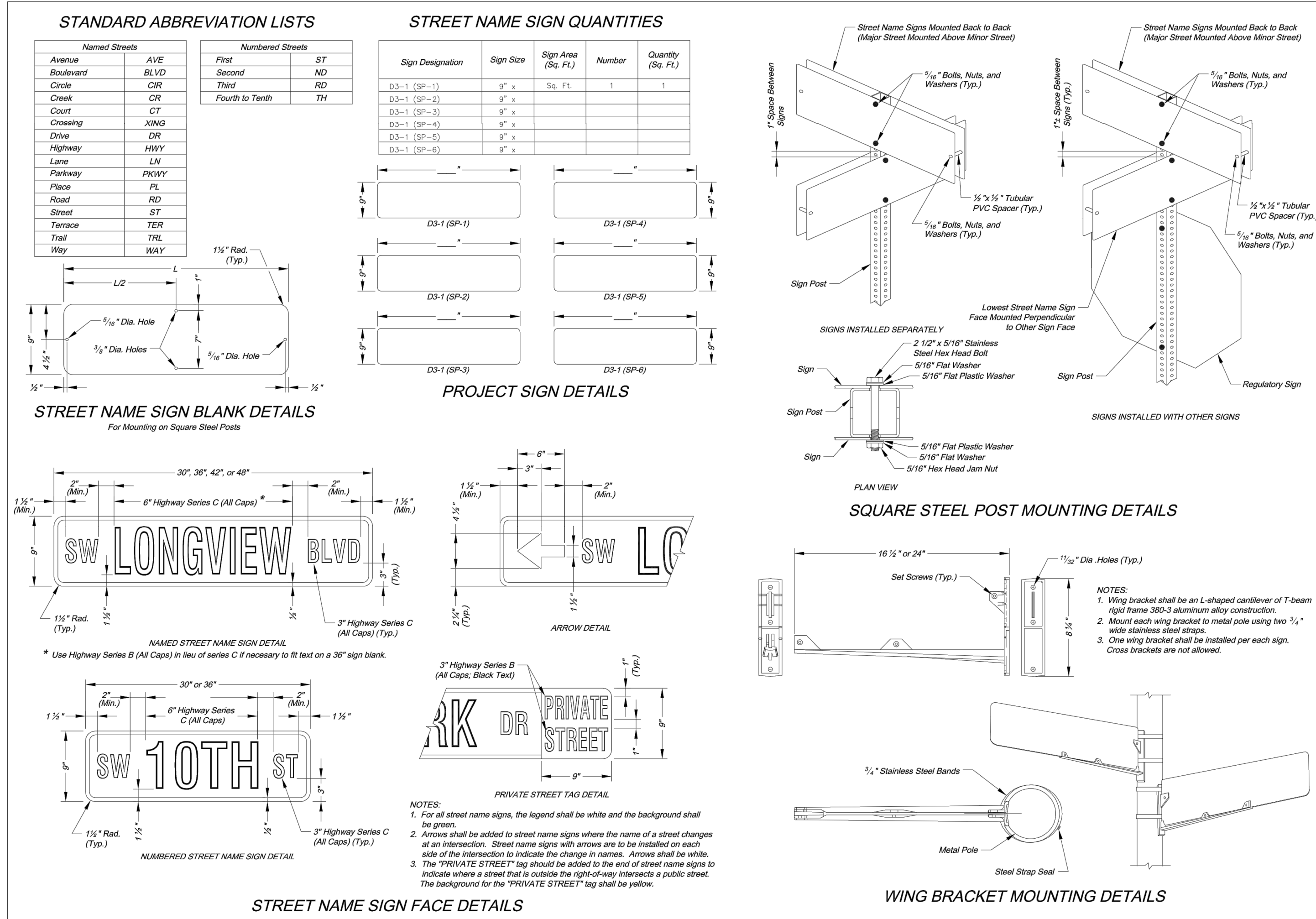


| Inlet Design Table        |                |           |                 |            |                 |                |                             |               |             |                           |              |               |               |
|---------------------------|----------------|-----------|-----------------|------------|-----------------|----------------|-----------------------------|---------------|-------------|---------------------------|--------------|---------------|---------------|
| 100 Year Return Frequency |                |           |                 |            |                 |                |                             |               |             |                           |              |               |               |
| Inlet ID                  | Inlet Location | Peak Flow | Upstream Bypass | Total Flow | Clogging Factor | Inlet Capacity | Sag Inlet Capacity (Note 1) | Captured Flow | Bypass Flow | Inlet Efficiency (Note 2) | Gutter Depth | Gutter Spread | Ponding Depth |
|                           |                | (cfs)     | (cfs)           | (cfs)      |                 | (cfs)          | (cfs)                       | (cfs)         | (cfs)       | (%)                       | (ft)         | (ft)          | (ft)          |
| C.I. 2-2(L)               | SAG            | 0.59      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.10         | 4.91          | ...           |
| C.I. 2-2(R)               | SAG            | 3.88      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.21         | 10.67         | ...           |
| C.I. 2-2                  | SAG            | 6.38      | 0.00            | 6.38       | 0.80            | 27.16          | 21.73                       | 6.38          | 0.00        | 100.00%                   | ...          | ...           | ...           |
| C.I. 2-4                  | GRADE          | 0.79      | 0.00            | 0.79       | 1.00            | 0.74           | 0.74                        | 0.74          | 0.05        | 93.71%                    | 0.11         | 5.49          | ...           |
| C.I. 2-5(L)               | SAG            | 2.30      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.17         | 8.38          | ...           |
| C.I. 2-5(R)               | SAG            | 6.58      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.26         | 12.96         | ...           |
| C.I. 2-5                  | SAG            | 13.81     | 0.35            | 14.16      | 0.80            | 19.40          | 15.52                       | 14.16         | 0.00        | 100.00%                   | ...          | ...           | ...           |
| C.I. 2-6                  | GRADE          | 1.84      | 0.00            | 1.84       | 1.00            | 1.54           | 1.54                        | 1.54          | 0.30        | 83.56%                    | 0.15         | 7.39          | ...           |
| C.I. 2-7                  | GRADE          | 5.99      | 1.08            | 7.07       | 1.00            | 4.27           | 4.27                        | 4.27          | 2.80        | 60.43%                    | 0.26         | 13.23         | ...           |
| C.I. 2-8                  | GRADE          | 4.34      | 0.00            | 4.34       | 1.00            | 3.26           | 3.26                        | 3.26          | 1.08        | 75.14%                    | 0.23         | 11.34         | ...           |
| C.I. 2-9                  | GRADE          | 5.00      | 0.00            | 5.00       | 1.00            | 3.60           | 3.60                        | 3.60          | 1.40        | 72.02%                    | 0.24         | 11.96         | ...           |
| C.I. 3-1                  | GRADE          | 0.72      | 0.00            | 0.72       | 1.00            | 0.68           | 0.68                        | 0.68          | 0.04        | 94.30%                    | 0.11         | 5.32          | ...           |
| F.I. 4-1                  | SAG            | 1.58      | 0.00            | 1.58       | 0.80            | 18.67          | 14.93                       | 1.58          | 0.00        | 100.00%                   | ...          | ...           | 0.10          |
| C.I. 4-2(L)               | SAG            | 1.65      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.16         | 7.91          | ...           |
| C.I. 4-2(R)               | SAG            | 0.99      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.12         | 6.22          | ...           |
| C.I. 4-2                  | SAG            | 3.49      | 0.00            | 3.49       | 0.80            | 19.40          | 15.52                       | 3.49          | 0.00        | 100.00%                   | ...          | ...           | ...           |
| C.I. 4-3(L)               | SAG            | 3.55      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.21         | 10.37         | ...           |
| C.I. 4-3(R)               | SAG            | 4.61      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.26         | 12.78         | ...           |
| C.I. 4-3                  | SAG            | 11.45     | 1.67            | 13.12      | 0.80            | 19.40          | 15.52                       | 13.12         | 0.00        | 100.00%                   | ...          | ...           | ...           |
| F.I. 4-4                  | SAG            | 11.70     | 0.00            | 11.70      | 0.80            | 18.67          | 14.93                       | 11.70         | 0.00        | 100.00%                   | ...          | ...           | 0.37          |
| C.I. 5-1(L)               | SAG            | 5.79      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.28         | 14.08         | ...           |
| C.I. 5-1(R)               | SAG            | 0.00      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | ...          | ...           | ...           |
| C.I. 5-1                  | SAG            | 6.58      | 2.80            | 9.38       | 0.80            | 19.40          | 15.52                       | 9.38          | 0.00        | 100.00%                   | ...          | ...           | ...           |
| F.I. 7-1                  | SAG            | 2.63      | 0.00            | 2.63       | 0.80            | 23.33          | 18.67                       | 2.63          | 0.00        | 100.00%                   | ...          | ...           | 0.12          |
| C.I. 7-2(L)               | SAG            | 0.13      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.06         | 2.93          | ...           |
| C.I. 7-2(R)               | SAG            | 0.99      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.12         | 5.79          | ...           |
| C.I. 7-2                  | SAG            | 3.22      | 0.00            | 3.22       | 0.80            | 19.40          | 15.52                       | 3.22          | 0.00        | 100.00%                   | ...          | ...           | ...           |
| C.I. 7-3(L)               | SAG            | 0.96      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.13         | 6.51          | ...           |
| C.I. 7-3(R)               | SAG            | 0.50      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.09         | 4.69          | ...           |
| C.I. 7-3                  | SAG            | 8.50      | 0.39            | 8.90       | 0.80            | 19.40          | 15.52                       | 8.90          | 0.00        | 100.00%                   | ...          | ...           | ...           |
| C.I. 7-5                  | GRADE          | 2.09      | 0.00            | 2.09       | 1.00            | 1.72           | 1.72                        | 1.72          | 0.37        | 82.50%                    | 0.16         | 7.87          | ...           |
| C.I. 7-6                  | GRADE          | 0.46      | 0.15            | 0.61       | 1.00            | 0.58           | 0.58                        | 0.58          | 0.03        | 95.27%                    | 0.10         | 4.95          | ...           |
| C.I. 7-7                  | SAG            | 7.38      | 0.00            | 7.38       | 0.80            | 18.67          | 14.93                       | 7.38          | 0.00        | 100.00%                   | ...          | ...           | 0.27          |
| C.I. 8-1                  | GRADE          | 1.12      | 0.00            | 1.12       | 1.00            | 0.98           | 0.98                        | 0.98          | 0.15        | 87.05%                    | 0.11         | 5.74          | ...           |
| F.I. 8-2                  | SAG            | 11.57     | 0.00            | 11.57      | 0.80            | 18.67          | 14.93                       | 11.57         | 0.00        | 100.00%                   | ...          | ...           | 0.36          |
| F.I. 8-2 FTR              | SAG            | 12.36     | 0.00            | 12.36      | 0.80            | 18.67          | 14.93                       | 12.36         | 0.00        | 100.00%                   | ...          | ...           | 0.38          |
| F.I. 9-4                  | SAG            | 25.07     | 0.00            | 25.07      | 0.80            | 36.20          | 28.96                       | 25.07         | 0.00        | 100.00%                   | ...          | ...           | 0.27          |
| F.I. 9-5                  | SAG            | 3.36      | 0.00            | 3.36       | 0.80            | 18.67          | 14.93                       | 3.36          | 0.00        | 100.00%                   | ...          | ...           | 0.16          |
| F.I. 9-5 FTR              | SAG            | 3.19      | 0.00            | 3.19       | 0.80            | 18.67          | 14.93                       | 3.19          | 0.00        | 100.00%                   | ...          | ...           | 0.15          |
| C.I. 10-1                 | GRADE          | 1.25      | 0.00            | 1.25       | 1.00            | 1.13           | 1.13                        | 1.13          | 0.12        | 90.75%                    | 0.13         | 6.72          | ...           |
| PLUG 10-2                 | GRADE          | 21.62     | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | ...          | ...           | ...           |
| C.I. 11-1                 | GRADE          | 1.91      | 0.00            | 1.91       | 1.00            | 1.64           | 1.64                        | 1.64          | 0.27        | 85.80%                    | 0.16         | 7.87          | ...           |
| C.I. 12-3(L)              | SAG            | 2.70      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.19         | 9.28          | ...           |
| C.I. 12-3(R)              | SAG            | 0.00      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.00         | 0.00          | ...           |
| C.I. 12-3                 | SAG            | 3.88      | 0.00            | 3.88       | 0.80            | 19.40          | 15.52                       | 3.88          | 0.00        | 100.00%                   | ...          | ...           | ...           |
| C.I. 12-4(L)              | SAG            | 0.00      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.00         | 0.00          | ...           |
| C.I. 12-4(R)              | SAG            | 1.38      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.14         | 7.22          | ...           |
| C.I. 12-4                 | SAG            | 5.26      | 0.00            | 5.26       | 0.80            | 19.40          | 15.52                       | 5.26          | 0.00        | 100.00%                   | ...          | ...           | ...           |
| F.I. 12-5                 | SAG            | 1.38      | 0.00            | 1.38       | 0.80            | 18.67          | 14.93                       | 1.38          | 0.00        | 100.00%                   | ...          | ...           | 0.09          |
| F.I. 12-6                 | SAG            | 0.66      | 0.00            | 0.66       | 0.80            | 18.67          | 14.93                       | 0.66          | 0.00        | 100.00%                   | ...          | ...           | 0.05          |
| F.I. 12-6 FTR             | SAG            | 13.72     | 0.00            | 13.72      | 0.80            | 18.67          | 14.93                       | 13.72         | 0.00        | 100.00%                   | ...          | ...           | 0.41          |
| C.I. 13-2(L)              | SAG            | 0.07      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.04         | 2.12          | ...           |
| C.I. 13-2(R)              | SAG            | 4.41      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.24         | 11.88         | ...           |
| C.I. 13-2                 | SAG            | 7.77      | 2.52            | 10.28      | 0.80            | 19.40          | 15.52                       | 10.28         | 0.00        | 100.00%                   | ...          | ...           | ...           |
| C.I. 13-3(L)              | SAG            | 5.26      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.20         | 9.93          | ...           |
| C.I. 13-3(R)              | SAG            | 0.33      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | 0.12         | 5.83          | ...           |
| C.I. 13-3                 | SAG            | 9.28      | 0.74            | 10.02      | 0.80            | 19.40          | 15.52                       | 10.02         | 0.00        | 100.00%                   | ...          | ...           | ...           |
| C.I. 13-4                 | GRADE          | 0.39      | 0.00            | 0.39       | 1.00            | 0.37           | 0.37                        | 0.37          | 0.03        | 92.85%                    | 0.07         | 3.41          | ...           |
| PLUG 13-5                 | GRADE          | 5.48      | ...             | ...        | ...             | ...            | ...                         | ...           | ...         | ...                       | ...          | ...           | ...           |
| C.I. 14-1                 | GRADE          | 4.47      | 0.00            | 4.47       | 1.00            | 1.96           | 1.96                        | 1.96          | 2.52        | 43.75%                    | 0.17         | 8.48          | ...           |
| C.I. 15-1                 | GRADE          | 3.03      | 0.12            | 3.14       | 1.00            | 2.43           | 2.43                        | 2.43          | 0.71        | 77.45%                    | 0.19         | 9.49          | ...           |

Notes:  
1. Inlet capacity at sag location has been reduced by a clogging factor of 0.80, reducing theoretical capacity to 80% capacity, as required per APWA Section 5600. Both theoretical capacity and reduced capacity are shown.  
2. Inlet efficiency shown in the tables is Captured Flow/Total Flow, denoting the actual percentage of flow captured after the capacity has been reduced to 80% of theoretical capacity.

| Drainage Area Design Table |               |      |       |         |      |           |
|----------------------------|---------------|------|-------|---------|------|-----------|
| 100 Year Return Frequency  |               |      |       |         |      |           |
| Inlet ID                   | Drainage Area | C    | Tc    | i       | K    | Peak Flow |
|                            | (ac)          |      | (min) | (in/hr) |      | (cfs)     |
| C.I. 2-2(L)                | 0.09          | 0.51 | 5.00  | 10.32   | 1.25 | 0.59      |
| C.I. 2-2(R)                | 0.59          | 0.51 | 5.00  | 10.32   | 1.25 | 3.88      |
| C.I. 2-2(B)                | 0.29          | 0.51 | 5.00  | 10.32   | 1.25 | 1.91      |
| C.I. 2-2                   | 0.97          | 0.51 | 5.00  | 10.32   | 1.25 | 6.38      |
| C.I. 2-4                   | 0.12          | 0.51 | 5.00  | 10.32   | 1.25 | 0.79      |
| C.I. 2-5(L)                | 0.35          | 0.51 | 5.00  | 10.32   | 1.25 | 2.30      |
| C.I. 2-5(R)                | 1.00          | 0.51 | 5.00  | 10.32   | 1.25 | 6.58      |
| C.I. 2-5(B)                | 1.18          | 0.51 | 10.10 | 8.56    | 1.25 | 6.44      |
| C.I. 2-5                   | 2.53          | 0.51 | 10.10 | 8.56    | 1.25 | 13.81     |
| C.I. 2-6                   | 0.28          | 0.51 | 5.00  | 10.32   | 1.25 | 1.84      |
| C.I. 2-7                   | 0.91          | 0.51 | 5.00  | 10.32   | 1.25 | 5.99      |
| C.I. 2-8                   | 0.66          | 0.51 | 5.00  | 10.32   | 1.25 | 4.34      |
| C.I. 2-9                   | 0.76          | 0.51 | 5.00  | 10.32   | 1.25 | 5.00      |
| C.I. 3-1                   | 0.11          | 0.51 | 5.00  | 10.32   | 1.25 | 0.72      |
| F.I. 4-1                   | 0.24          | 0.51 | 5.00  | 10.32   | 1.25 | 1.58      |
| C.I. 4-2(L)                | 0.25          | 0.51 | 5.00  | 10.32   | 1.25 | 1.65      |
| C.I. 4-2(R)                | 0.15          | 0.51 | 5.00  | 10.32   | 1.25 | 0.99      |
| C.I. 4-2(B)                | 0.13          | 0.51 | 5.00  | 10.32   | 1.25 | 0.86      |
| C.I. 4-2                   | 0.53          | 0.51 | 5.00  | 10.32   | 1.25 | 3.49      |
| C.I. 4-3(L)                | 0.54          | 0.51 | 5.00  | 10.32   | 1.25 | 3.55      |
| C.I. 4-3(R)                | 0.70          | 0.51 | 5.00  | 10.32   | 1.25 | 4.61      |
| C.I. 4-3(B)                | 0.50          | 0.51 | 5.00  | 10.32   | 1.25 | 3.29      |
| C.I. 4-3                   | 1.74          | 0.51 | 5.00  | 10.32   | 1.25 | 11.45     |
| F.I. 4-4                   | 2.47          | 0.47 | 11.96 | 8.06    | 1.25 | 11.70     |
| C.I. 5-1(L)                | 0.88          | 0.51 | 5.00  | 10.32   | 1.25 | 5.79      |
| C.I. 5-1(R)                | 0.00          | 0.51 | 5.00  | 10.32   | 1.25 | 0.00      |
| C.I. 5-1(B)                | 0.12          | 0.51 | 5.00  | 10.32   | 1.25 | 0.79      |
| C.I. 5-1                   | 1.00          | 0.51 | 5.00  | 10.32   | 1.25 | 6.58      |
| F.I. 7-1                   | 0.40          | 0.51 | 5.00  | 10.32   | 1.25 | 2.63      |
| C.I. 7-2(L)                | 0.02          | 0.51 | 5.00  | 10.32   | 1.25 | 0.13      |
| C.I. 7-2(R)                | 0.15          | 0.51 | 5.00  | 10.32   | 1.25 | 0.99      |
| C.I. 7-2(B)                | 0.32          | 0.51 | 5.00  | 10.32   | 1.25 | 2.11      |
| C.I. 7-2                   | 0.49          | 0.51 | 5.00  | 10.32   | 1.25 | 3.22      |
| C.I. 7-3(L)                | 0.19          | 0.39 | 5.00  | 10.32   | 1.25 | 0.96      |
| C.I. 7-3(R)                | 0.10          | 0.39 | 5.00  | 10.32   | 1.25 | 0.50      |
| C.I. 7-3(B)                | 1.40          | 0.39 | 5.00  | 10.32   | 1.25 | 7.05      |
| C.I. 7-3                   | 1.69          | 0.39 | 5.00  | 10.32   | 1.25 | 8.50      |
| C.I. 7-5                   | 0.45          | 0.36 | 5.00  | 10.32   | 1.25 | 2.09      |
| C.I. 7-6                   | 0.07          | 0.51 | 5.00  | 10.32   | 1.25 | 0.46      |
| C.I. 7-7                   | 1.73          | 0.42 | 11.70 | 8.13    | 1.25 | 7.38      |
| C.I. 8-1                   | 0.29          | 0.30 | 5.00  | 10.32   | 1.25 | 1.12      |
| F.I. 8-2                   | 2.99          | 0.30 | 5.00  | 10.32   | 1.25 | 11.57     |
| F.I. 8-2 FTR               | 3.99          | 0.30 | 11.16 | 8.27    | 1.25 | 12.36     |
| F.I. 9-4                   | 3.81          | 0.51 | 5.00  | 10.32   | 1.25 | 25.07     |
| F.I. 9-5                   | 0.51          | 0.51 | 5.00  | 10.32   | 1.25 | 3.36      |
| F.I. 9-5 FTR               | 0.48          | 0.51 | 5.00  | 10.32   | 1.25 | 3.19      |
| C.I. 10-1                  | 0.19          | 0.51 | 5.00  | 10.32   | 1.25 | 1.25      |
| PLUG 10-2                  | 4.71          | 0.45 | 11.57 | 8.16    | 1.25 | 21.62     |
| C.I. 11-1                  | 0.29          | 0.51 | 5.00  | 10.32   | 1.25 | 1.91      |
| C.I. 12-3(L)               | 0.41          | 0.51 | 5.00  | 10.32   | 1.25 | 2.70      |
| C.I. 12-3(R)               | 0.00          | 0.51 | 5.00  | 10.32   | 1.25 | 0.00      |
| C.I. 12-3(B)               | 0.18          | 0.51 | 5.00  | 10.32   | 1.25 | 1.18      |
| C.I. 12-3                  | 0.59          | 0.51 | 5.00  | 10.32   | 1.25 | 3.88      |
| C.I. 12-4(L)               | 0.00          | 0.51 | 5.00  | 10.32   | 1.25 | 0.00      |
| C.I. 12-4(R)               | 0.21          | 0.51 | 5.00  | 10.32   | 1.25 | 1.38      |
| C.I. 12-4(B)               | 0.59          | 0.51 | 5.00  | 10.32   | 1.25 | 3.88      |
| C.I. 12-4                  | 0.80          | 0.51 | 5.00  | 10.32   | 1.25 | 5.26      |
| F.I. 12-5                  | 0.21          | 0.51 | 5.00  | 10.32   | 1.25 | 1.38      |
| F.I. 12-6                  | 0.10          | 0.51 | 5.00  | 10.32   | 1.25 | 0.66      |
| F.I. 12-6 FTR              | 3.29          | 0.41 | 11.67 | 8.14    | 1.25 | 13.72     |
| C.I. 13-2(L)               | 0.01          | 0.51 | 5.00  | 10.32   | 1.25 | 0.07      |
| C.I. 13-2(R)               | 0.67          | 0.51 | 5.00  | 10.32   | 1.25 | 4.41      |
| C.I. 13-2(B)               | 0.50          | 0.51 | 5.00  | 10.32   | 1.25 | 3.29      |
| C.I. 13-2                  | 1.18          | 0.51 | 5.00  | 10.32   | 1.25 | 7.77      |
| C.I. 13-3(L)               | 0.80          | 0.51 | 5.00  | 10.32   | 1.25 | 5.26      |
| C.I. 13-3(R)               | 0.05          | 0.51 | 5.00  | 10.32   | 1.25 | 0.33      |
| C.I. 13-3(B)               | 0.56          | 0.51 | 5.00  | 10.32   | 1.25 | 3.69      |
| C.I. 13-3                  | 1.41          | 0.51 | 5.00  | 10.32   | 1.25 | 9.28      |
| C.I. 13-4                  | 0.06          | 0.51 | 5.00  | 10.32   | 1.25 | 0.39      |
| PLUG 13-5                  | 0.83          | 0.51 | 5.00  | 10.32   | 1.25 | 5.48      |
| C.I. 14-1                  | 0.68          | 0.51 | 5.00  | 10.32   | 1.25 | 4.47      |
| C.I. 15-1                  | 0.46          | 0.51 | 5.00  | 10.32   | 1.25 | 3.03      |





|                                                                                                                                                                                           |                     |                        |      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------------|------|
| SIGN DETAILS<br>STREET & STORM SEWER PLANS                                                                                                                                                | OSAGE<br>FIRST PLAT | LEE'S SUMMIT, MISSOURI | 2020 |
|                                                                                                                                                                                           |                     |                        |      |
| drawn by: _____ AA<br>checked by: _____ SS<br>designed by: _____ SS<br>QA/QC by: _____ JES<br>project no.: _____ A19-2339<br>drawing no.: <u>C DTL01 A192339</u><br>date: _____ 3/17/2020 |                     |                        |      |
| SHEET<br>C144                                                                                                                                                                             |                     |                        |      |

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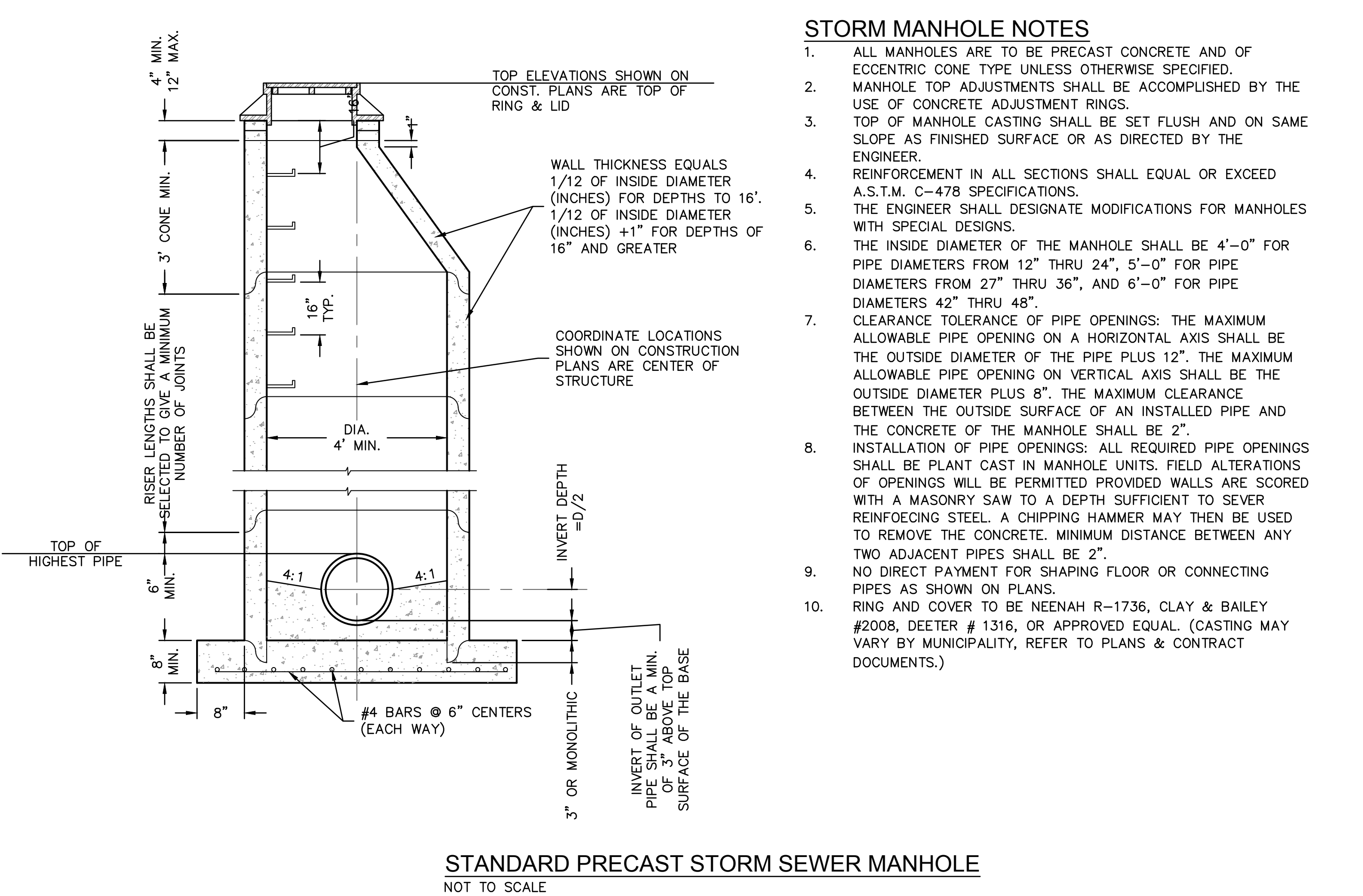
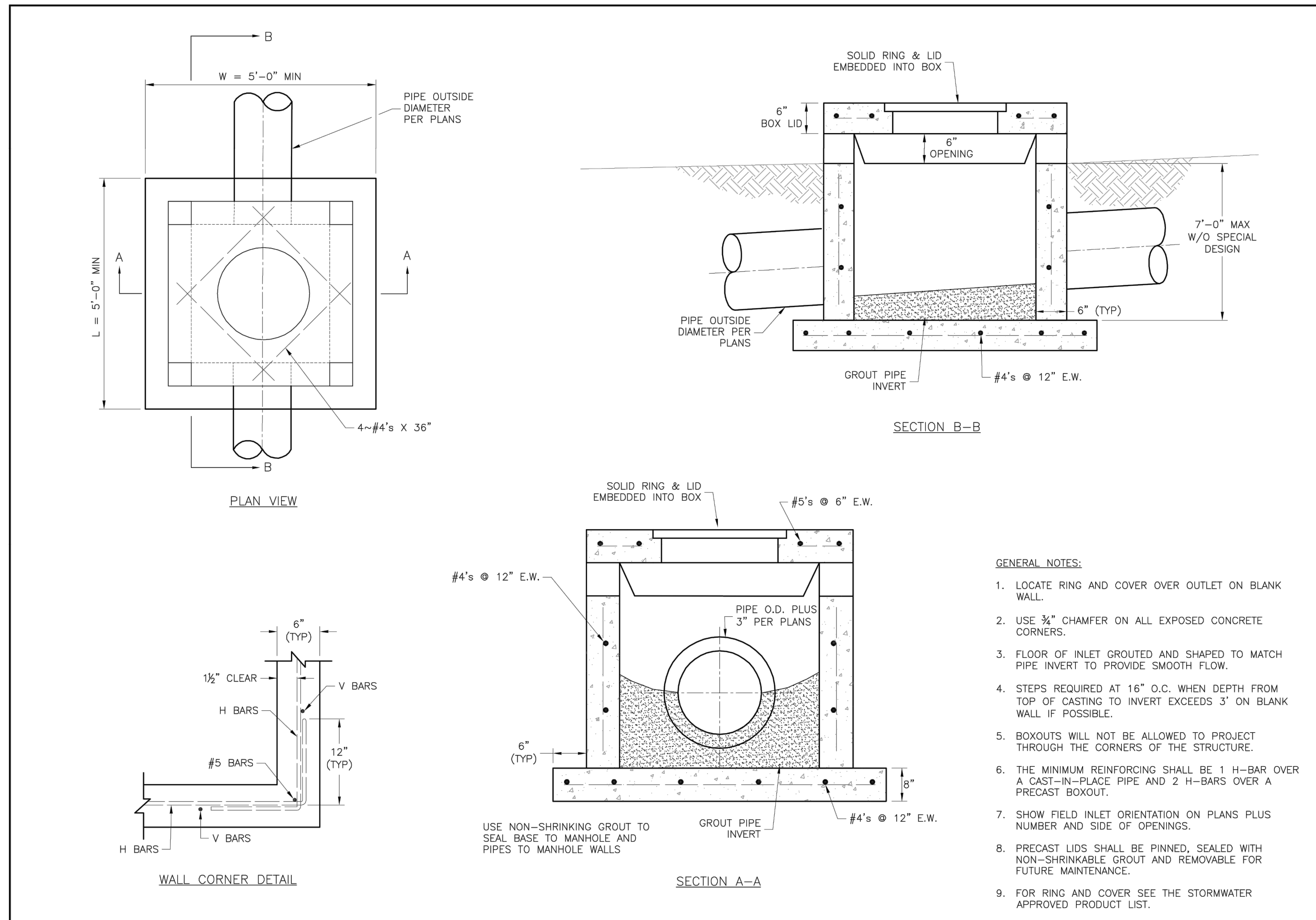
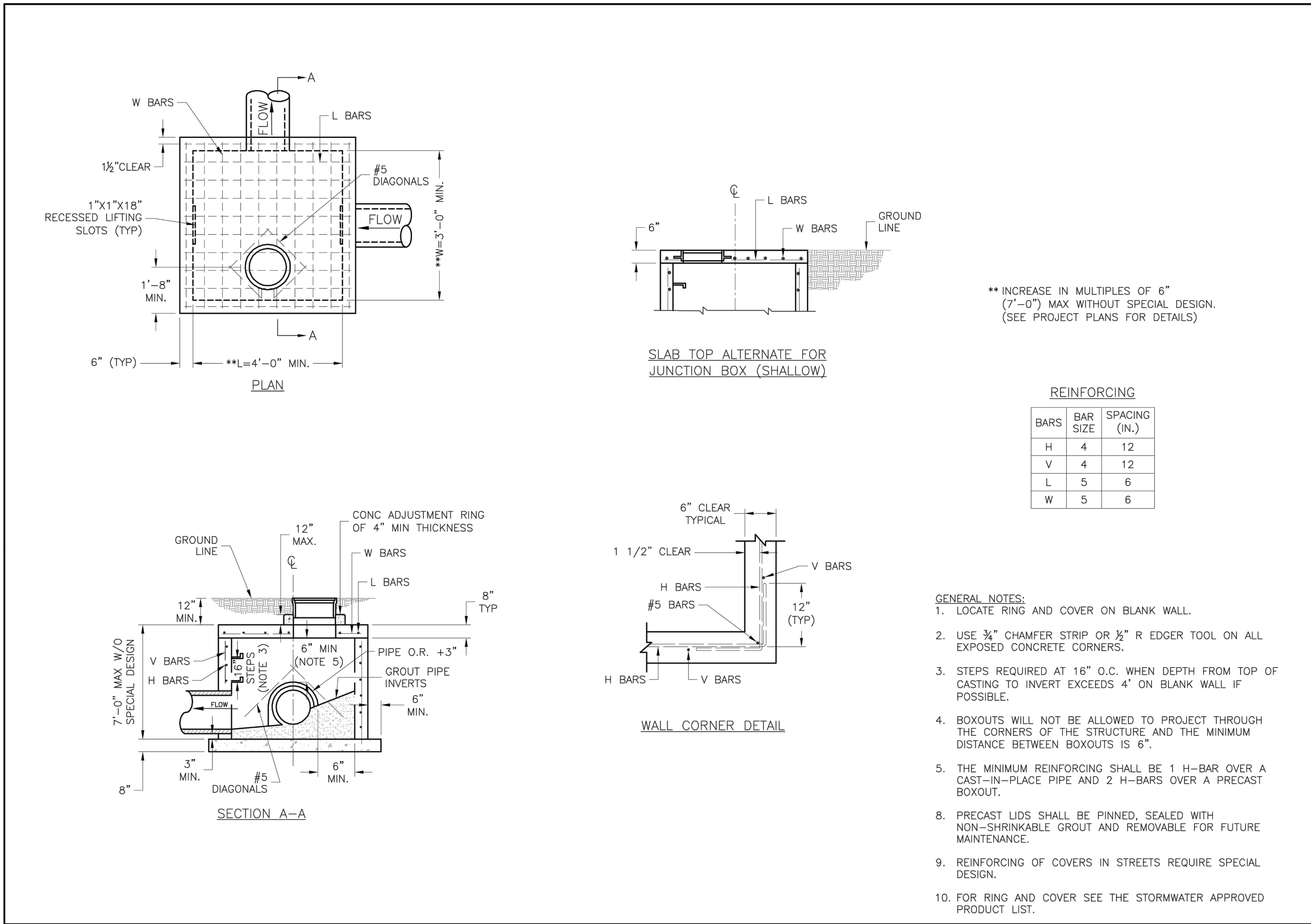
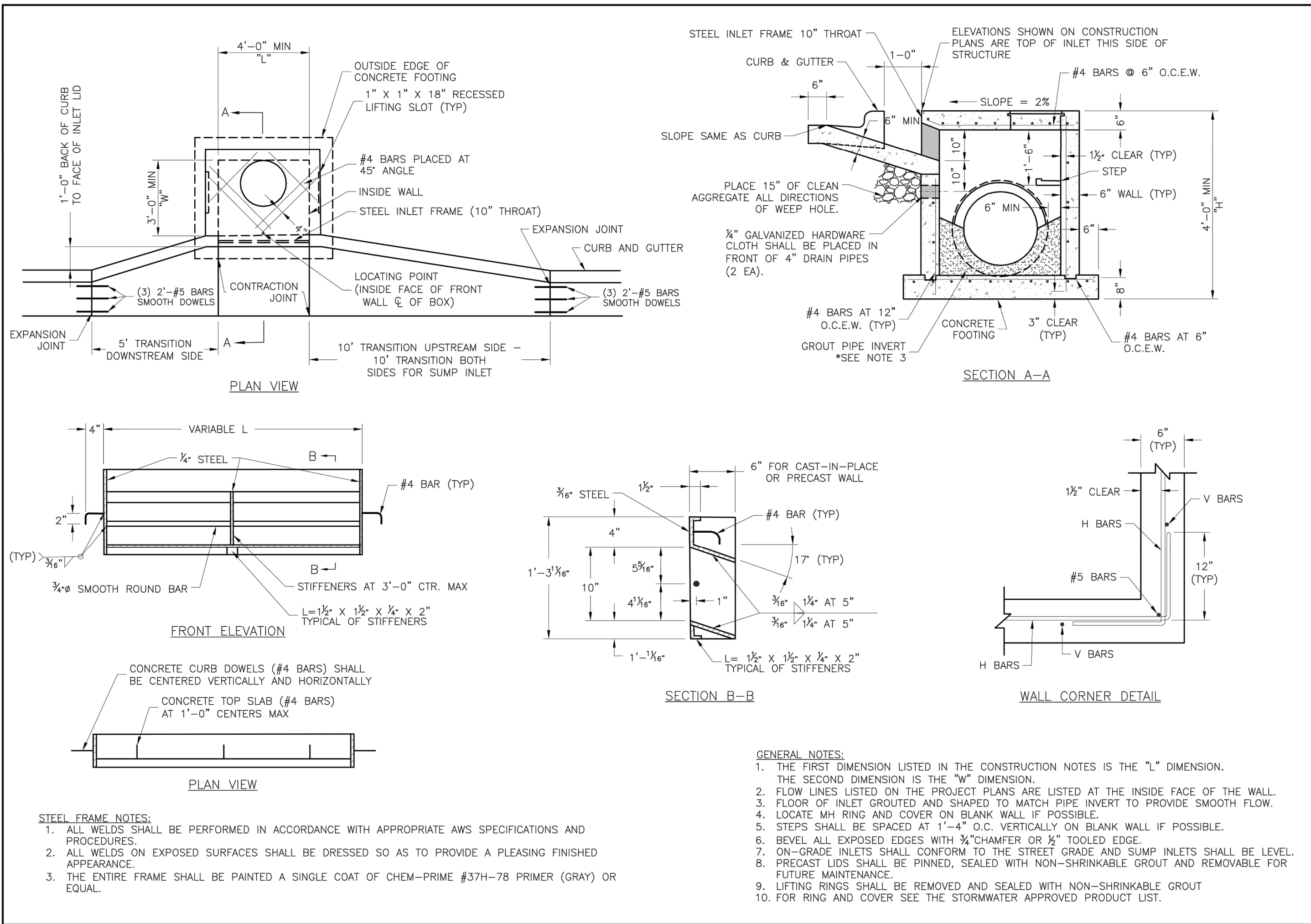
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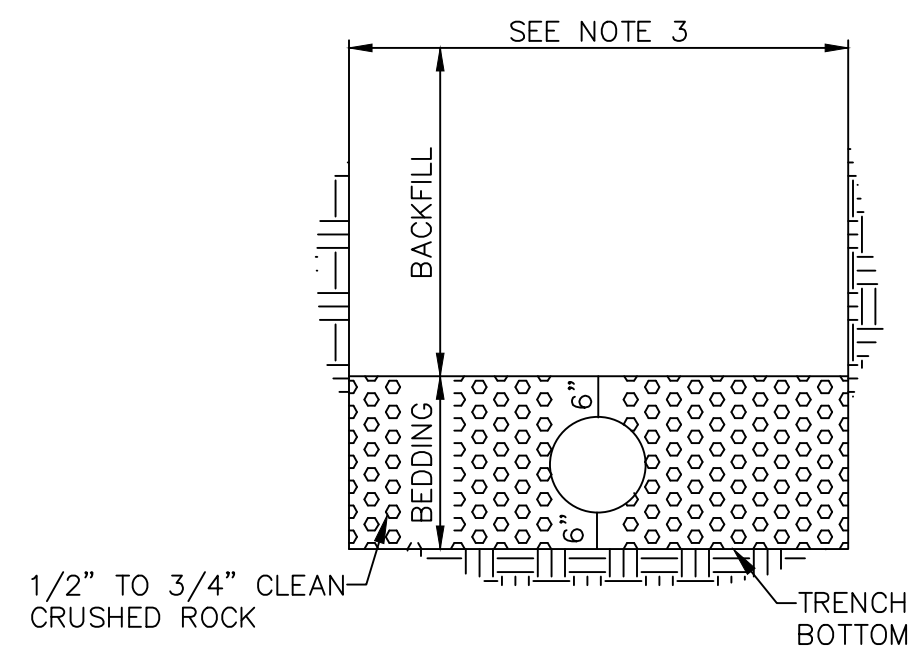
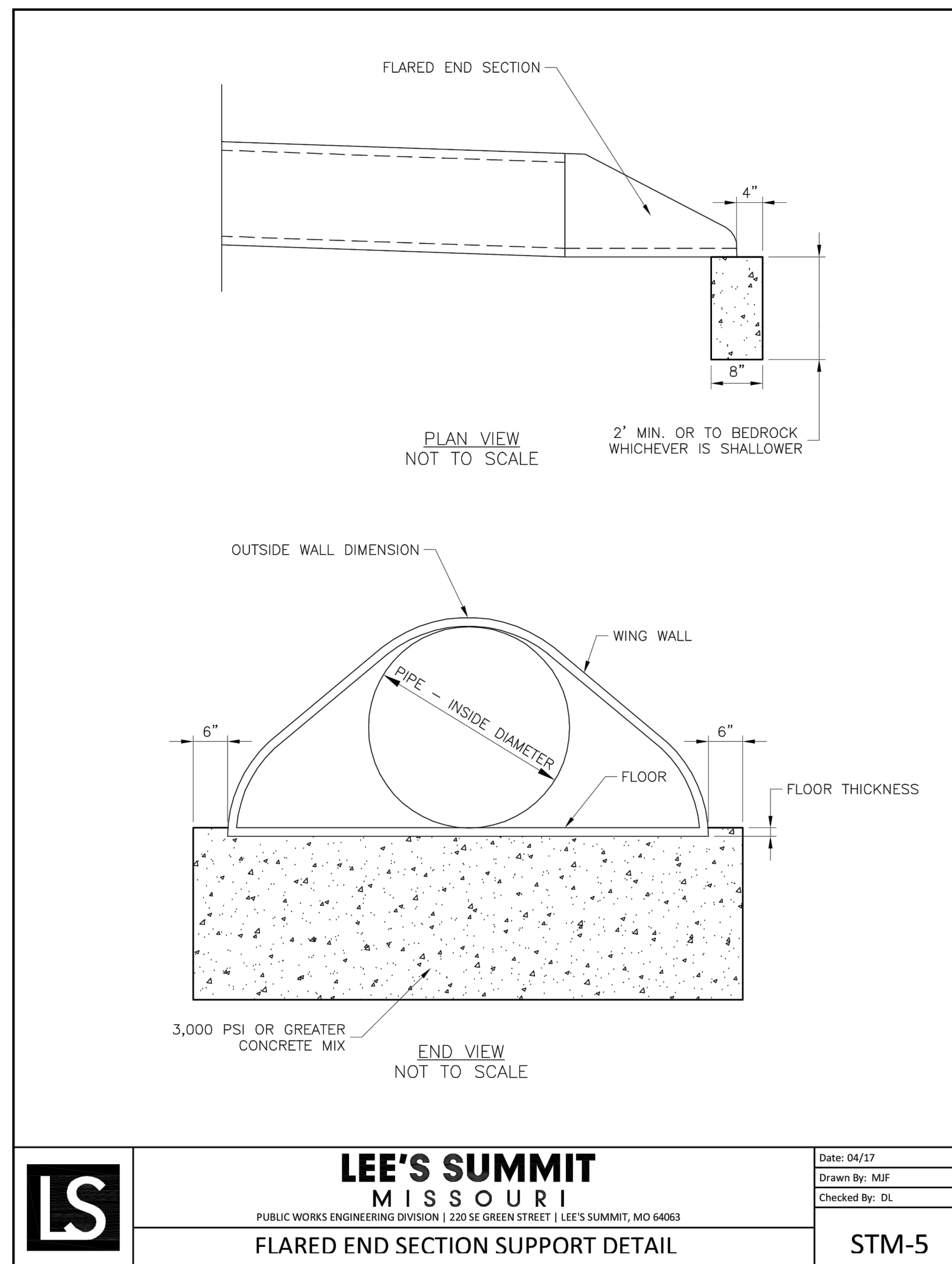




STANDARD PRECAST STORM SEWER MANHOLE  
NOT TO SCALE

NOT AS-BUILT



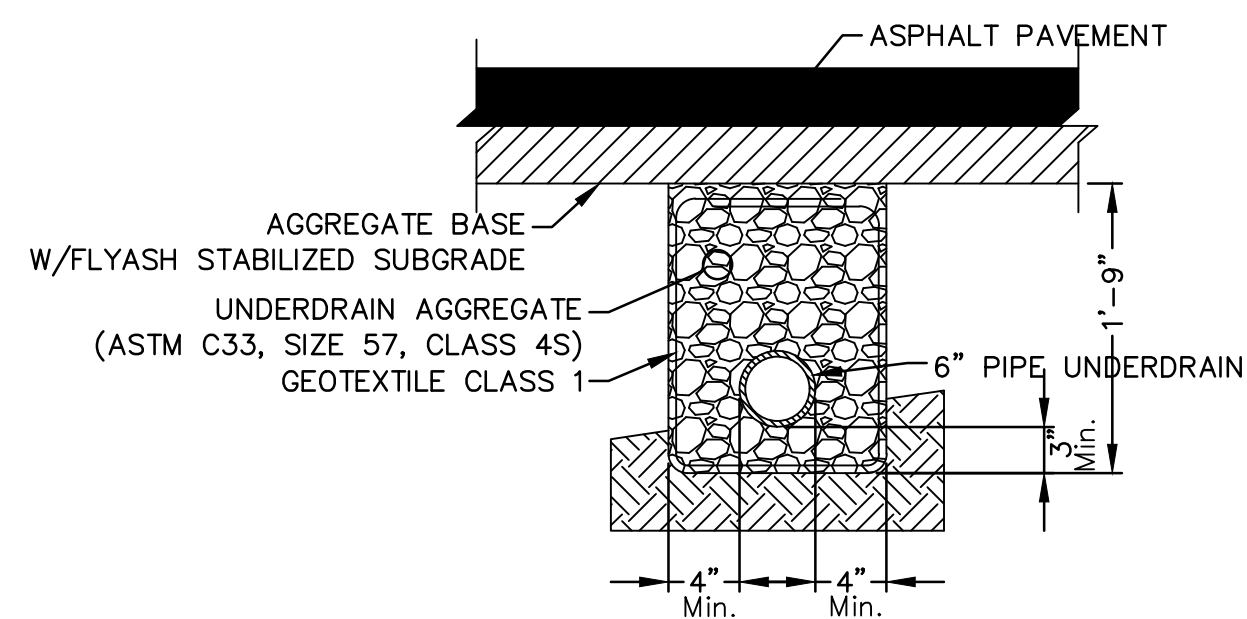
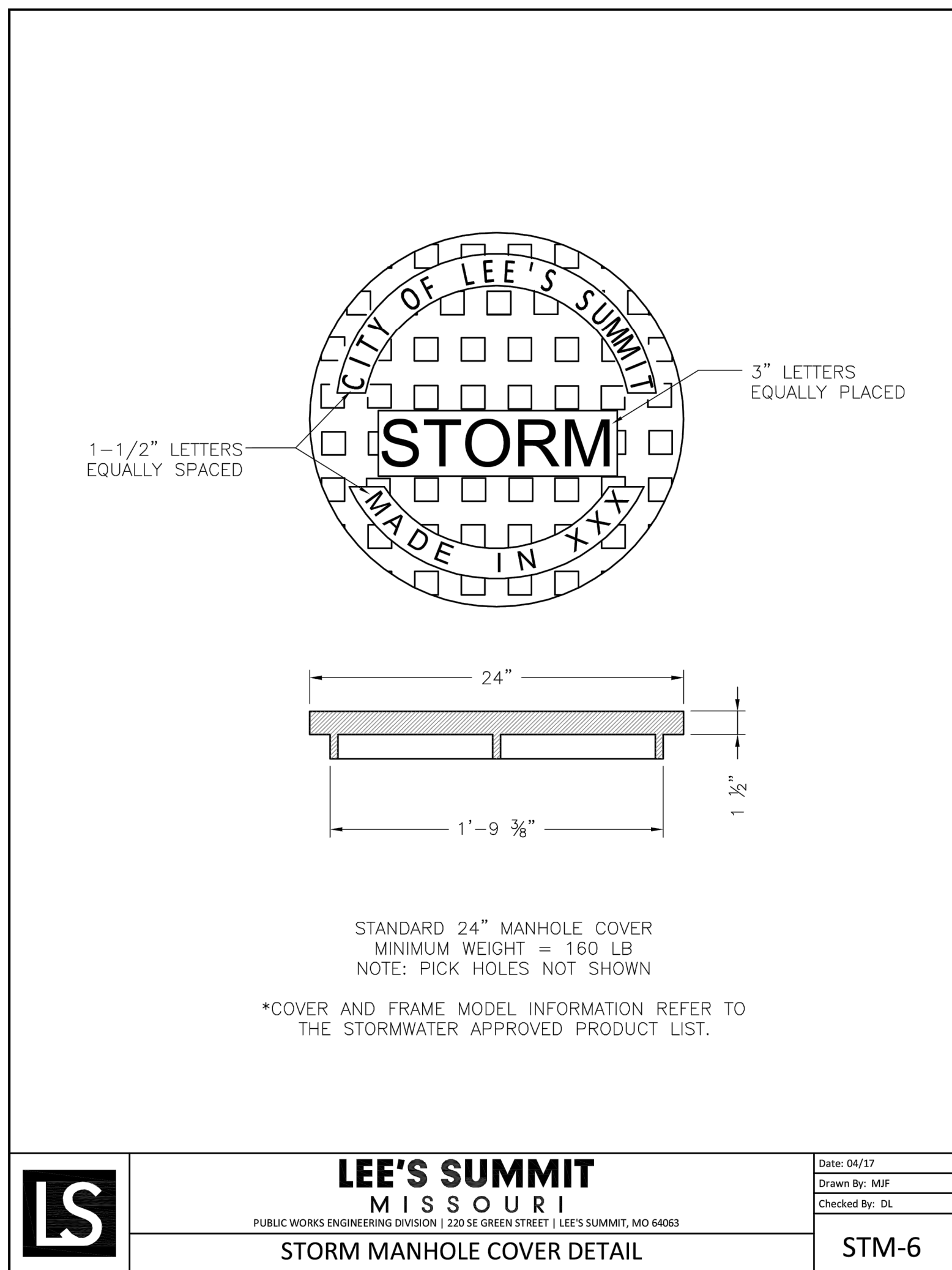


TYPICAL SECTION FOR PLASTIC PIPE  
(IN ROCK OR SOIL)

## UNDERGROUND PIPE INSTALLATION FOR STORM SEWER LINES

N.T.S.

1. BACKFILL SHALL BE JOE EXCAVATED MATERIAL FREE FROM DEBRIS AND STONES COMPACTED TO 90% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698. BACKFILL UNDER PAVEMENT (EXISTING OR PROPOSED), SHALL BE FLOWABLE FILL.
2. TRENCH BANKS MAY BE CUT BACK ON SLOPES IN ACCORDANCE WITH CURRENT OSHA REGULATIONS, BUT ONLY IN AREAS WHERE THE INCREASED TRENCH WIDTH WILL NOT INTERFERE WITH SURFACE FEATURES. SLOPES MUST NOT EXTEND BELOW TOP OF BEDDING.
3. MINIMUM AND MAXIMUM WIDTHS SHALL BE IN ACCORDANCE WITH PIPE MANUFACTURER'S RECOMMENDATION AS APPROVED ON ENGINEERING PLANS.

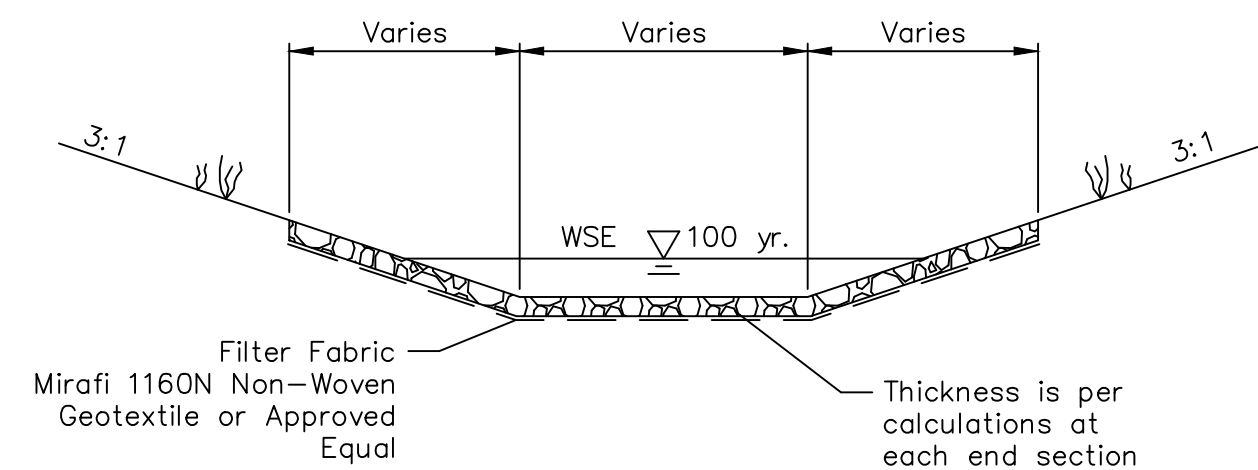
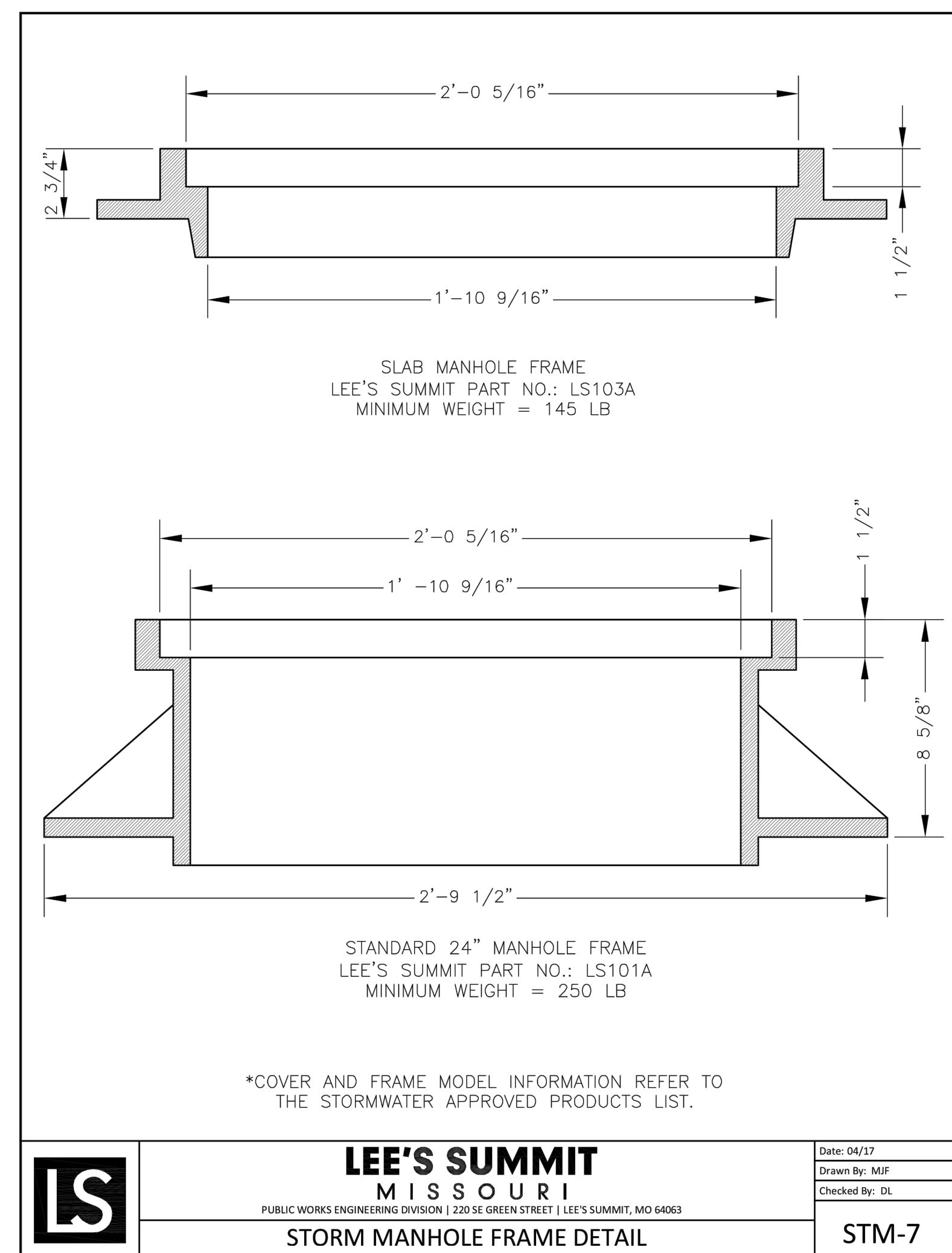


## PIPE UNDERDRAIN LATERAL

N.T.S.

NOTES:

1. Where Pipe Underdrains are used, all Underdrain Outlet Pipes shall be solid wall with watertight joints. All Outlets Pipes shall be tied into the nearest storm sewer inlets at roadway sag locations as indicated on the Street Layout.
2. All Underdrain Pipes shall be installed at a minimum slope of 1%.
3. Underdrain Pipe shall be installed with the perforations placed down.
4. Blanket Underdrain Aggregate, Pipe Underdrain Aggregate, Pipe Underdrain Aggregate, Edge Underdrain and Outlet Pipe shall conform to City of Lee's Summit Specifications.
5. Overlap geotextile at top of trench a minimum of 12".

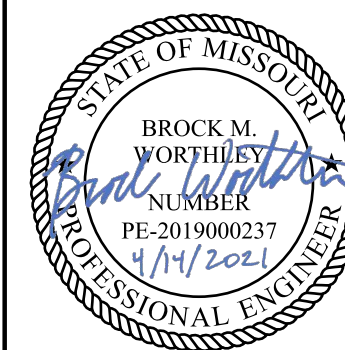


NOTE: DIMENSIONS ARE PER  
CALCULATIONS AT EACH END SECTION

### RIPRAP DETAIL

N.T.S.

**olsson**

[illegible]

STORM SEWER DETAILS (2)  
STREET & STORM SEWER PLANS

OSAGE  
FIRST PLAT

LEE'S SUMMIT, MISSOURI

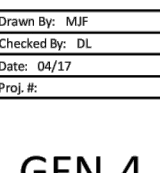
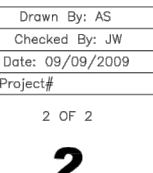
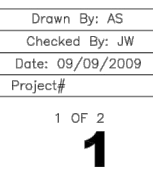
2020

drawn by: AA  
checked by: SS  
designed by: AA  
QA/QC by: JES  
project no.: A19-2339  
drawing no.: C DTL01 A192339  
date: 3/17/2020

SHEET  
C146

NOT AS-BUILT





drawn by: \_\_\_\_\_ AA  
checked by: \_\_\_\_\_ SS  
designed by: \_\_\_\_\_ AA  
QA/QC by: \_\_\_\_\_ JES  
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