





USER: mossion

DWG: F:\2019\4001-4500\019-4059\40-Design\AutoCAD\Final Plans\_As-Built\Sheets\GNC\c\_GEN&TABL\_0194059.dwg  
DATE: Sep 20, 2021 8:54am  
XREFS: c\_PTBK\_0194059\_34x22 c\_PBASE\_0194059

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 ENCROACH 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. ARCHITECTURAL AND STRUCTURAL ELEMENTS SHOWN IN THESE PLANS ARE FOR REFERENCE ONLY. CONTRACTORS AND SURVEYORS SHALL REFERENCE THEIR RESPECTIVE PLANS FOR DESIGN INFORMATION.
2. THE CONTRACTOR SHALL ADHERE TO THE SITE PREPARATION AND STRUCTURAL FILL RECOMMENDATIONS IN THE GEOTECHNICAL REPORT AS PROVIDED BY THE GEOTECHNICAL ENGINEER INCLUDING ALL CURRENT ADDENDUMS. THE STANDARDS AND SPECIFICATIONS OF LEE'S SUMMIT, MISSOURI SHALL ALSO APPLY AND TAKE PRECEDENCE WHEN STRICTER THAN THE GEOTECHNICAL REPORT OR WHEN NO GEOTECHNICAL REPORT IS GIVEN.
3. 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 MISSOURI DEPARTMENT OF TRANSPORTATION RIGHT-OF-WAY SHALL CONFORM TO THE LATEST SPECIFICATIONS ADOPTED BY U.S. DEPARTMENT OF TRANSPORTATION AND MISSOURI DEPARTMENT OF TRANSPORTATION.
  - 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. IN ADDITION TO THE CONDITIONS OF THE GEOTECHNICAL REPORT AND AS A MINIMUM THE CONTRACTOR SHALL PERFORM THE GRADING AS FOLLOWS;
  - A. THE CONSTRUCTION AREA SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL AND ORGANIC MATTER FROM ALL AREAS TO BE OCCUPIED BY BUILDING AND PAVING. STRIPPING EXISTING TOPSOIL AND ORGANIC MATTER SHALL BE TO A MINIMUM DEPTH OF 6 INCHES. TOPSOIL FOR REPLACEMENT ON SLOPES MAY BE STOCKPILED ON SITE IN AREAS DESIGNATED BY THE OWNER. CONTRACTOR SHALL REMOVE EXCESS STRIPPINGS AND EXCESS EXCAVATION WITHIN 30 DAYS OF COMPLETION OF GRADING OPERATIONS.
  - B. AREAS TO RECEIVE FILL AND AREAS CUT TO SUBGRADE LEVEL SHALL BE SCARIFIED AND THE TOP 8-INCH DEPTH COMPACTED TO 95% STANDARD PROCTOR DENSITY. THE SUBGRADE SHALL BE PROOF ROLLED WITH A MODERATELY HEAVY LOADED DUMP TRUCK OR SIMILAR APPROVED CONSTRUCTION EQUIPMENT TO DETECT UNSUITABLE SOIL CONDITIONS. ANY UNSUITABLE AREAS SHALL BE UNDERCUT AND REPLACED WITH SUITABLE MATERIAL BEFORE ANY FILL MATERIAL CAN BE APPLIED.
  - C. FILL SHALL BE PLACED IN MAXIMUM OF 8 INCH LIFTS.
  - D. TOPSOIL SHALL BE PLACED TO A MINIMUM DEPTH OF 6 INCHES OVER ALL AREAS DISTURBED BY THE WORK. LARGE STONES, STICKS AND LUMPS SHALL BE REMOVED OR BROKEN UP, AND THE TOPSOIL SHALL BE LEVELED AND RAKED. ALL DISTURBED AREAS SHALL BE LANDSCAPED PER LANDSCAPE PLANS OR SHALL BE SEEDED, FERTILIZED, MULCHED, WATERED AND MAINTAINED UNTIL HARDY GRASS GROWTH IS ESTABLISHED.
  - E. CONTRACTOR SHALL PROVIDE COMPACTION TEST RESULTS AS REQUIRED.
4. THE CONTRACTOR SHALL DISPOSE ALL WASTE MATERIAL RESULTING FROM THE PROJECT OFF-SITE AND IN STRICT CONFORMANCE WITH ALL LOCAL CODES AND ORDINANCES.
5. 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.
6. 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 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. ALL SANITARY SEWER STRUCTURES TO BE INSTALLED WITH THIS PROJECT.
  - C. ALL SITE FENCING AND RAILING INCLUDING ANY GATES.
  - D. ALL LANDSCAPE AND RETAINING WALLS.
  - E. ANY ITEMS IN THESE PLANS THAT ALLOW FOR AN "APPROVED EQUAL" ALTERNATIVE.

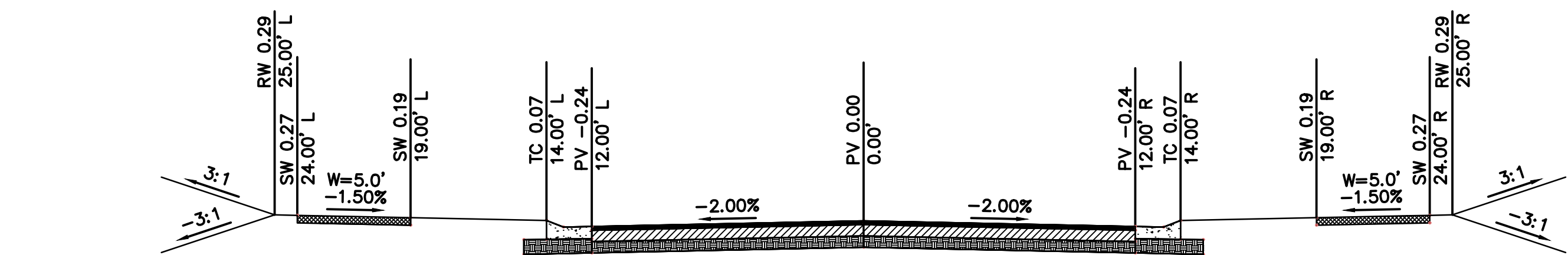
ESTIMATE OF QUANTITIES

| ITEM NO. | DESCRIPTION                                  | UNIT | QUANTITY         | AS-BUILT |
|----------|----------------------------------------------|------|------------------|----------|
| STREET   |                                              |      |                  |          |
| 1        | EXCAVATION                                   | C.Y. | <del>19470</del> | 19470    |
| 2        | EMBANKMENT                                   | C.Y. | <del>8709</del>  | 8709     |
| 3        | SUBGRADE STABILIZATION (6" FLYASH TREATMENT) | S.Y. | <del>9150</del>  | 9150     |
| 4        | 6" ASPHALT PAVEMENT                          | S.Y. | <del>9150</del>  | 9150     |
| 5        | CONCRETE CURB & GUTTER (CG-2)                | L.F. | <del>6340</del>  | 6340     |
| 6        | 5' CONCRETE SIDEWALK                         | L.F. | <del>380</del>   | 380      |
| 7        | ADA RAMP                                     | EA.  | <del>12</del>    | 12       |
| 8        | STREET NAME SIGNS WITH STOP SIGNS            | EA.  | <del>5</del>     | 5        |
| 9        | STREET NAME SIGNS                            | EA.  | <del>1</del>     | 1        |
| STORM    |                                              |      |                  |          |
| 10       | STD. CURB INLET (5'x3' INSIDE)               | EA.  | <del>15</del>    | 15       |
| 11       | STD. FIELD INLET (3'x3' INSIDE)              | EA.  | <del>5</del>     | 5        |
| 12       | STD. MANHOLE (4' DIA. INSIDE)                | EA.  | <del>3</del>     | 3        |
| 13       | STD. MANHOLE (5' DIA. INSIDE)                | EA.  | <del>1</del>     | 1        |
| 14       | WATER QUALITY BASIN OUTLET STRUCTURE         | EA.  | <del>1</del>     | 1        |
| 15       | 6" PVC                                       | L.F. | <del>315</del>   | 312.60   |
| 16       | 15" HDPE                                     | L.F. | <del>18</del>    | 28.21    |
| 17       | 18" HDPE                                     | L.F. | <del>2002</del>  | 2004.01  |
| 18       | 24" HDPE                                     | L.F. | <del>810</del>   | 810.12   |
| 19       | 30" HDPE                                     | L.F. | <del>34</del>    | 34       |
| 20       | 36" HDPE                                     | L.F. | <del>221</del>   | 224.45   |
| 21       | 6" FLARED END SECTION                        | EA.  | <del>1</del>     | 1        |
| 22       | 15" FLARED END SECTION                       | EA.  | <del>2</del>     | 2        |
| 23       | 18" FLARED END SECTION                       | EA.  | <del>1</del>     | 1        |
| 24       | 30" FLARED END SECTION                       | EA.  | <del>1</del>     | 1        |
| 25       | RIPRAP                                       | S.Y. | <del>62</del>    | 62       |

SUMMARY OF QUANTITIES AS INDICATED ABOVE AND ANY QUANTITIES AS SHOWN WITHIN THE PLANS HAVE BEEN PROVIDED FOR PERMITTING PURPOSES ONLY AND ARE NOT INTENDED FOR USE IN PREPARATION OF CONTRACT DOCUMENTS. QUANTITIES INTENDED FOR, BUT NOT LIMITED TO, THE PREPARATION OF PROPOSALS AND BID DOCUMENTS SHALL BE INDEPENDENTLY EVALUATED BY THE ESTIMATING PARTY BASED UPON THE CONTENTS OF THESE PLANS.

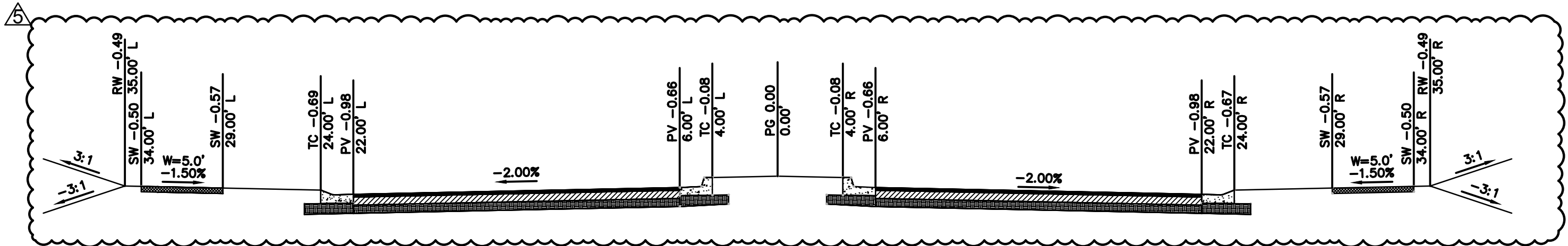
Scale: N.T.S.  
1 PRESIDENTIAL LOCAL STREET

Scale: N.T.S.  
2 PRESIDENTIAL LOCAL STREET



SW HEARTHSTONE PLACE, SW RED BARN ROAD, SW HARVEST MOON LANE, SW HARVEST MOON PLACE  
RESIDENTIAL LOCAL  
N.T.S.

2" TYPE 6 ASPHALTIC CONCRETE SURFACE  
4" TYPE 5 ASPHALTIC CONCRETE BASE COURSE  
6" MIN. MODOT TYPE 5 STONE BASE  
6" FLYASH STABILIZED SUBGRADE  
CG-2 CURB & GUTTER



SW HEARTHSTONE PLACE ENTRY  
RESIDENTIAL LOCAL  
N.T.S.

2" TYPE 6 ASPHALTIC CONCRETE SURFACE  
4" TYPE 5 ASPHALTIC CONCRETE BASE COURSE  
6" MIN. MODOT TYPE 5 STONE BASE  
6" FLYASH STABILIZED SUBGRADE  
CG-2 CURB & GUTTER  
CG-2 DRY CURB & GUTTER AT MEDIAN

ALL NOTES REFERENCED ON THIS PLAN SHEET MAY HAVE APPLICATIONS TO EVERY FACET OF THE CONSTRUCTION PLANS. THE NOTE HEADINGS OR TITLES ARE TO BE USED AS A GENERAL GUIDE TO APPLICABLE SITUATIONS.

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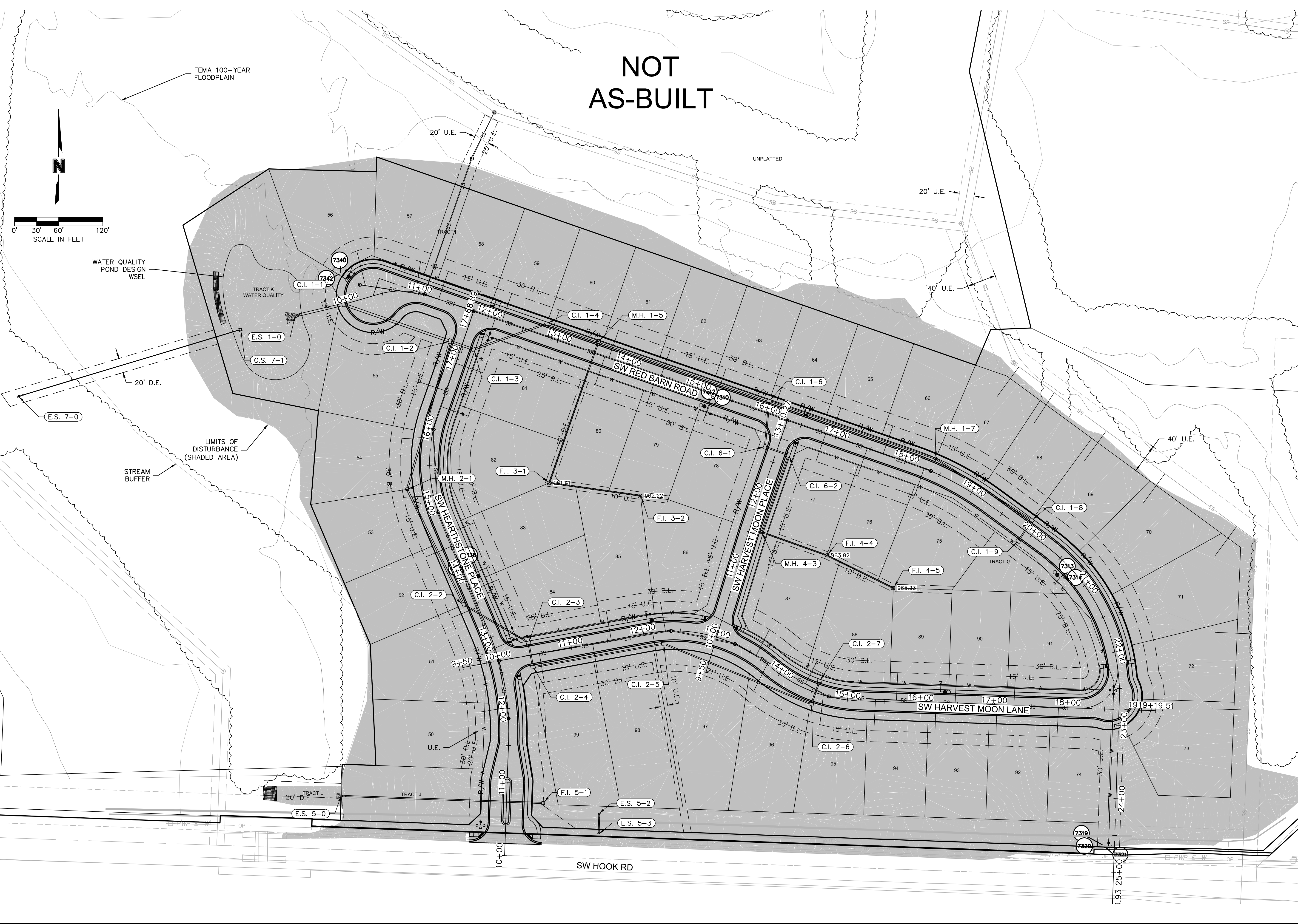
| BY | REVISIONS DESCRIPTION               | DATE       | REV. NO. |
|----|-------------------------------------|------------|----------|
|    | CITY COMMENTS                       | 06-24-2020 | 1        |
|    | ADDED HOOK ROAD SWALE               | 02-01-2021 | 2        |
|    | SWALE AND ADA RAMP REVISIONS        | 04-06-2021 | 3        |
|    | ADA RAMP REVISIONS                  | 05-04-2021 | 4        |
|    | HEARTHSTONE PLACE ENTRANCE REVISION | 06-11-2021 | 5        |

| GENERAL NOTES | STREET AND STORM SEWER PLANS | THE RETREAT AT HOOK FARMS<br>CONSTRUCTION DOCUMENTS | 2020             |
|---------------|------------------------------|-----------------------------------------------------|------------------|
|               |                              |                                                     | LEE'S SUMMIT, MO |

drawn by: \_\_\_\_\_ EM  
checked by: \_\_\_\_\_ EM  
designed by: \_\_\_\_\_ RB  
QA/QC by: \_\_\_\_\_ NH  
project no.: 019-4059  
drawing n6\_GEN&TABL\_0194059  
date: 4/20/2020



DWG: F:\2019\4001-4500\019-4059\40-Design\AutoCAD\Final Plans\_As-Built\Sheets\GEN\GEN02\_0194059.dwg  
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USER: rneiser



GENERAL LAYOUT  
STREET AND STORM SEWER PLANS  
THE RETREAT AT HOOK FARMS  
CONSTRUCTION DOCUMENTS

2020

LEE'S SUMMIT, MO

| REV. NO. | DATE       | REVISIONS DESCRIPTION               | BY |
|----------|------------|-------------------------------------|----|
| 1        | 05-24-2020 | CITY COMMENTS                       |    |
| 2        | 02-01-2021 | ADDED HOOK ROAD SWALE               |    |
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| 4        | 05-04-2021 | ADA RAMP REVISIONS                  |    |
| 5        | 05-11-2021 | HEARTHSTONE PLACE ENTRANCE REVISION |    |

drawn by: EM  
checked by: EM  
designed by: RB  
QA/QC by: NH  
project no.: 019-4059  
drawing no.: C\_GEN02\_0194059  
date: 4/20/2020

SHEET C102  
3 OF 54

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10/01/2021  
MEGAN J. WALTER  
NUMBER  
PE-2012028697  
Professional Engineer

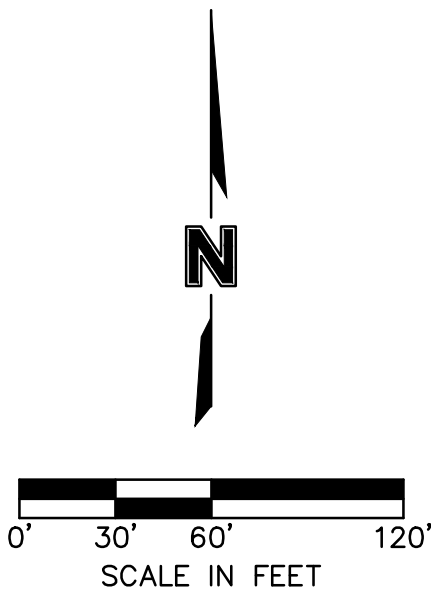
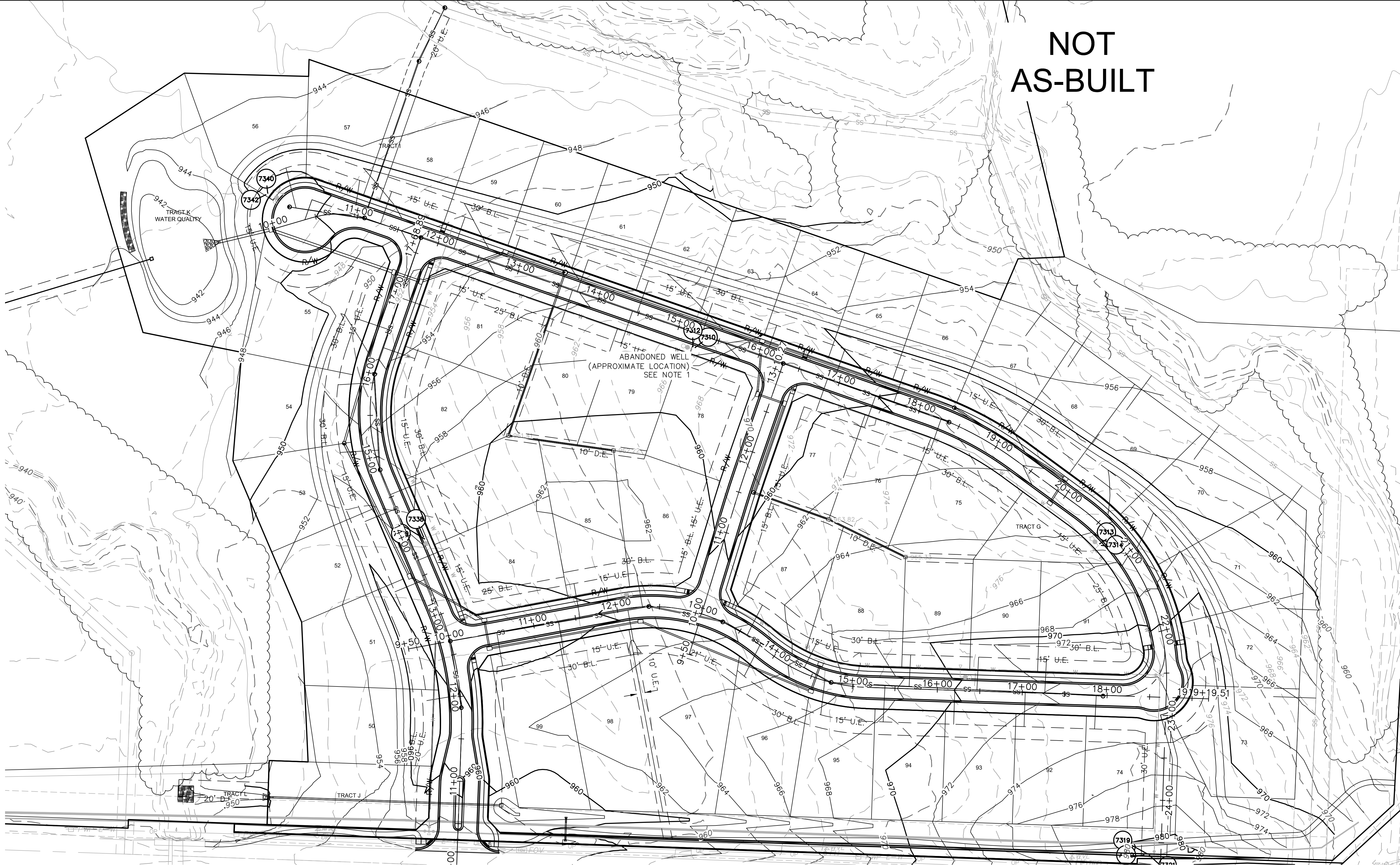
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USER: nheiser

| LOT FILL TABLE |           |
|----------------|-----------|
| LOT #          | FILL > 8' |
| 50             |           |
| 51             |           |
| 52             |           |
| 53             | 9         |
| 54             | 9         |
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GENERAL NOTES:

- 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.
- 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.
- 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.

| 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               | 19470      | 8709        |
| SITE                 | 64236      | 41874       |
| TOTAL                | 83706      | 50583       |

NOTES:

- ONE OIL OR GAS WELL IS LOCATED ON THE PROPERTY (DRY HOLE, ABANDONED AS OF 5/11/1928).  
COORDINATES: 38.87019N, -94.41911W  
INFORMATION VERIFIED VIA MISSOURI DNR:  
<https://dnr.mo.gov/geology/geoserv/oilandgas.htm>  
(UPDATED AUGUST 2018)

EARTHWORK QUANTITIES NOTES:

- EARTHWORK QUANTITIES BASED ON FINISHED GRADE SURFACE AND DO NOT INCLUDE ADJUSTMENTS FOR TOPSOIL AND SHRINKAGE.
- 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.

THIRD PARTY TESTING REQUIRED FOR WATER QUALITY BASIN:

- REMOVE TOPSOIL AND ORGANIC MATERIAL FROM THE AREA
- PROOF ROLL TO CHECK THE SUBGRADE
- REMOVE OR REPAIR ANY UNSTABLE AREA IN ACCORDANCE WITH THIRD-PARTY TESTER
- PLACE 9" LOOSE LIFTS OF 9" MATERIAL WITH LL=50 AND PI=25 OR GREATER. 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.

| GRADING PLAN                 |            | REVISIONS                           |    |
|------------------------------|------------|-------------------------------------|----|
| STREET AND STORM SEWER PLANS |            | 2020                                |    |
| THE RETREAT AT HOOK FARMS    |            | LEE'S SUMMIT, MO                    |    |
| CONSTRUCTION DOCUMENTS       |            |                                     |    |
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SHEET C103  
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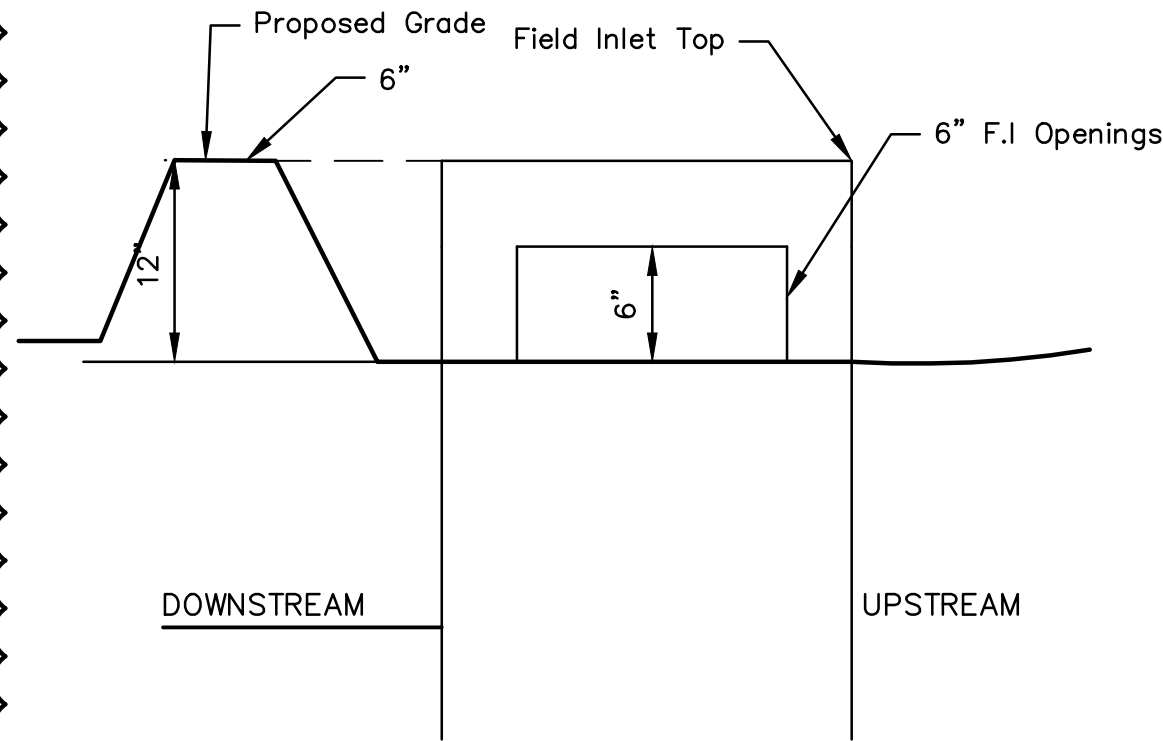


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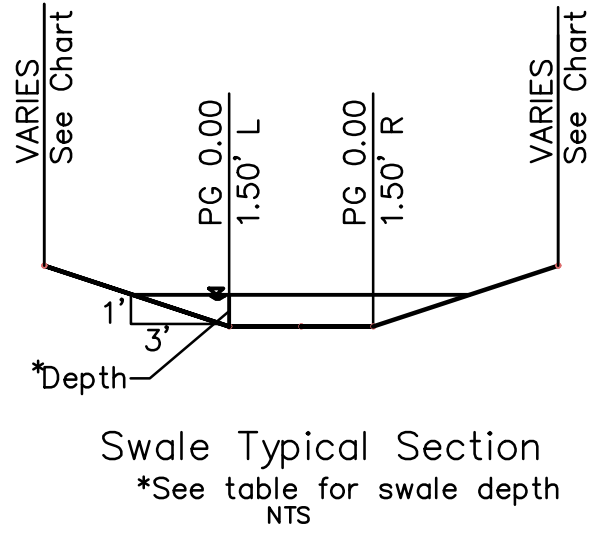
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FAX 816.361.1888  
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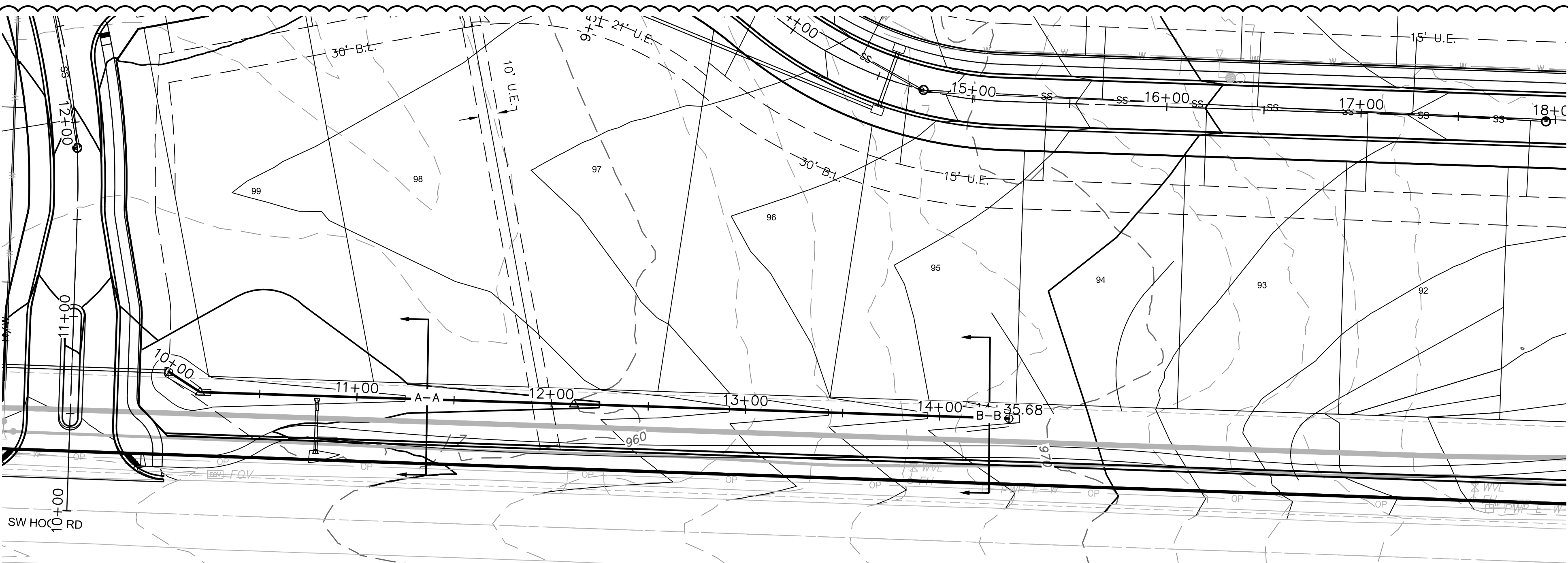
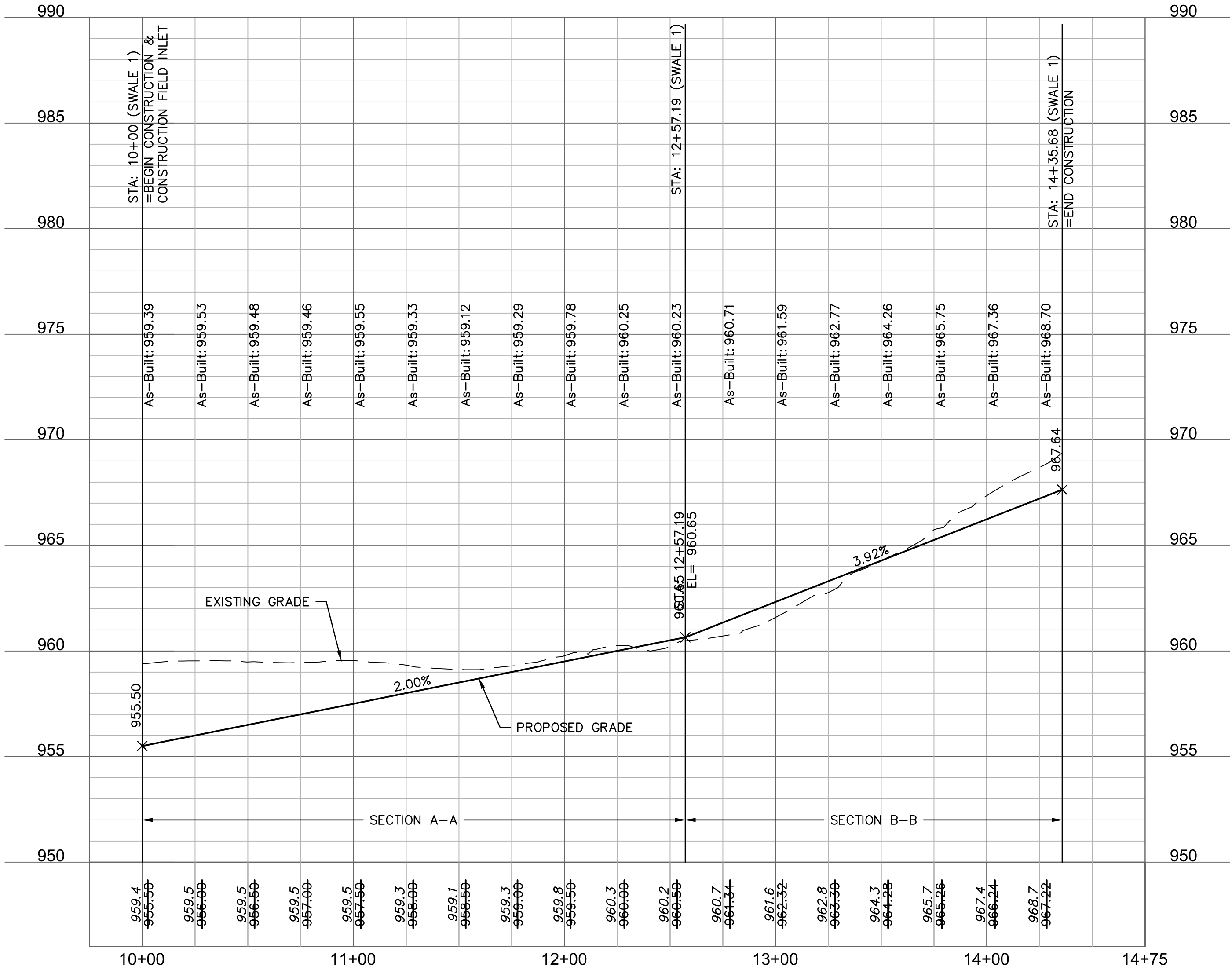
AS-BUILT  
2021.09.01



F.I. SUMP DETAIL  
NOT TO SCALE  
NOTE: INCLUDE SUMP PER ABOVE DETAIL WHERE  
FIELD INLETS ARE LOCATED WITHIN SWALES.

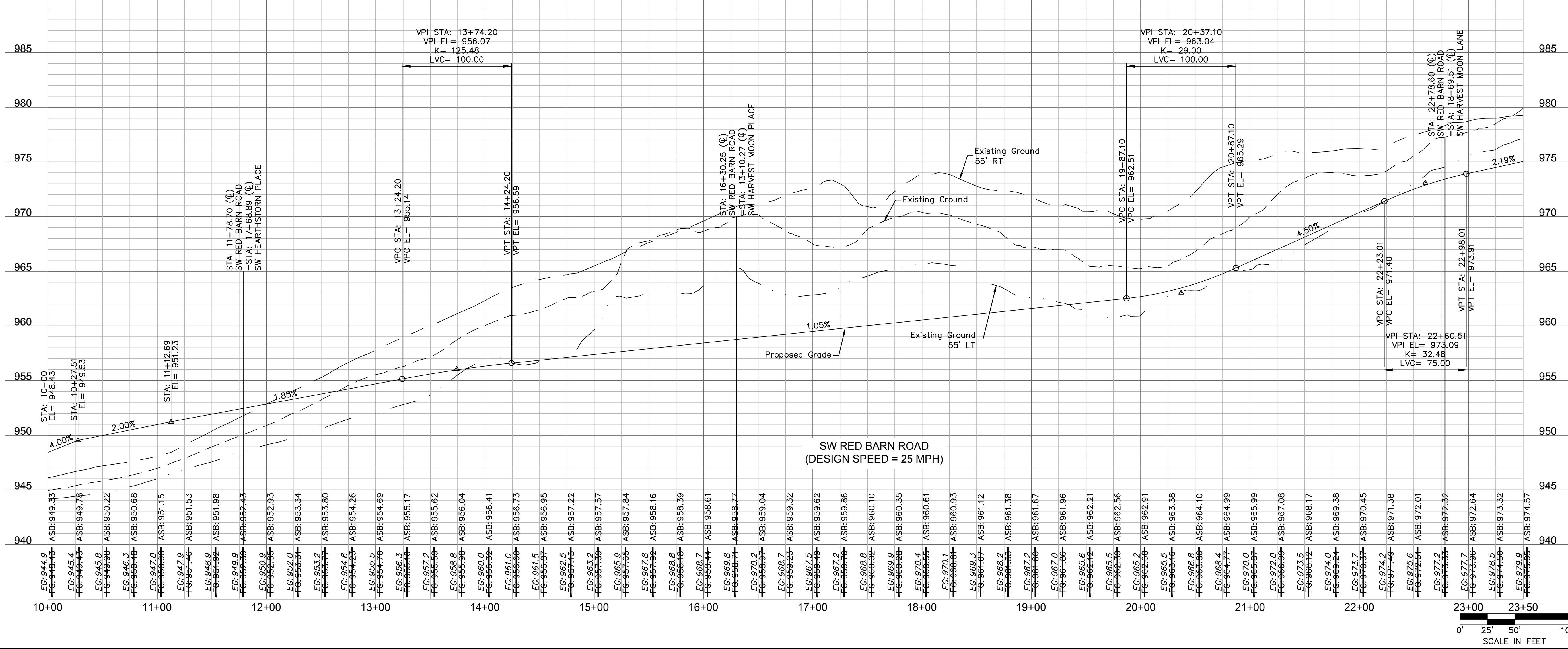
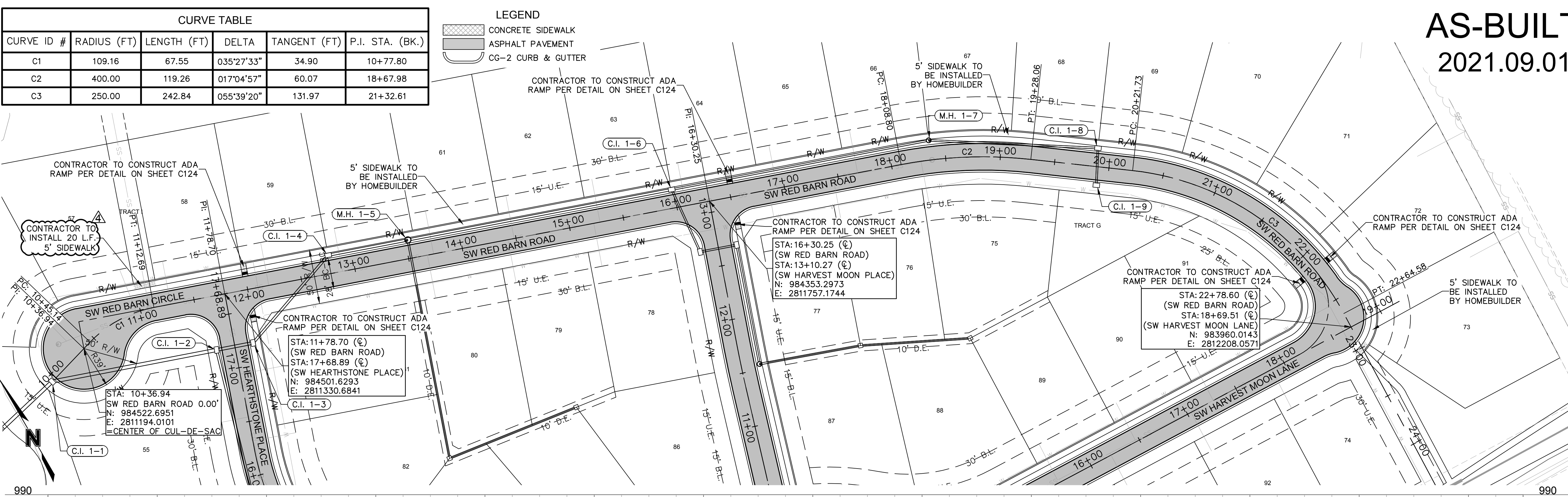


| Swale Design Table (100 Year Return Frequency) |                      |                   |                  |                       |                        |                   |                 |                  |                 |                   |                       |                |                      |                        |
|------------------------------------------------|----------------------|-------------------|------------------|-----------------------|------------------------|-------------------|-----------------|------------------|-----------------|-------------------|-----------------------|----------------|----------------------|------------------------|
| 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) | Shear Stress (lbs/ft³) |
| A-A                                            | 0.03                 | 2.00%             | 1.50             | 3:1                   | 3:1                    | 3.00              | 8.36            | 0.51             | 2.34            | 3.58              | 6.32                  | 6.16           | 0.71                 | 0.46                   |
| B-B                                            | 0.03                 | 3.92%             | 1.50             | 3:1                   | 3:1                    | 3.00              | 4.28            | 0.30             | 1.18            | 3.63              | 4.95                  | 4.86           | 0.50                 | 0.58                   |





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10/01/2021  
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SW RED BARN ROAD PLAN & PROFILE  
STREET AND STORM SEWER PLANS  
THE RETREAT AT HOOK FARMS  
CONSTRUCTION DOCUMENTS

2020

LEE'S SUMMIT, MO

drawn by: EHL  
checked by: EHL  
designed by: RBH  
QA/QC by: NH  
project no.: 019-4059  
drawing no.: C\_RRP02\_0194059  
date: 4/20/2020

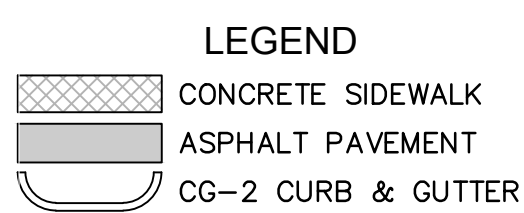
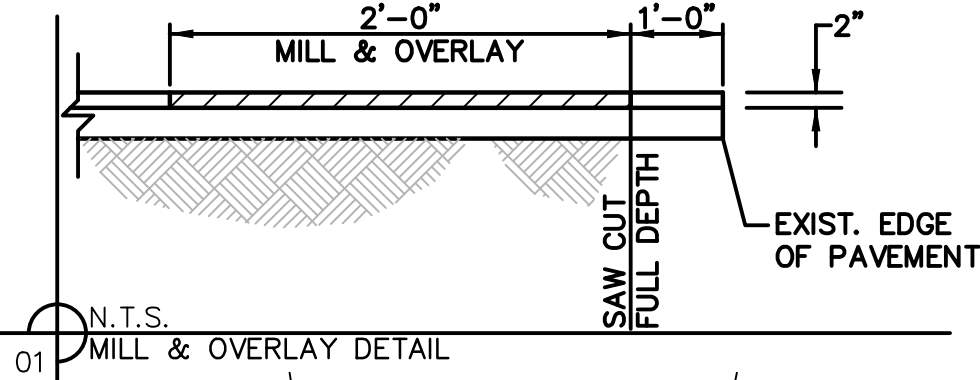
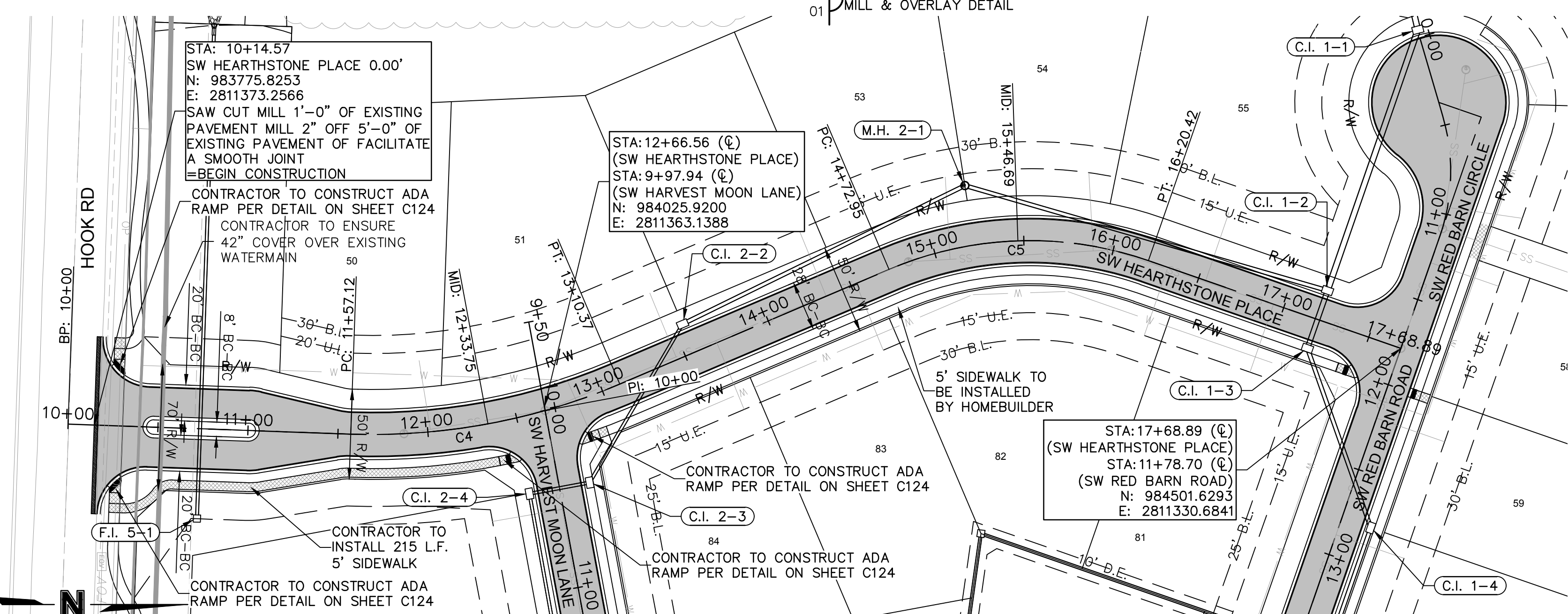
SHEET C104  
5 OF 54

REVISIONS

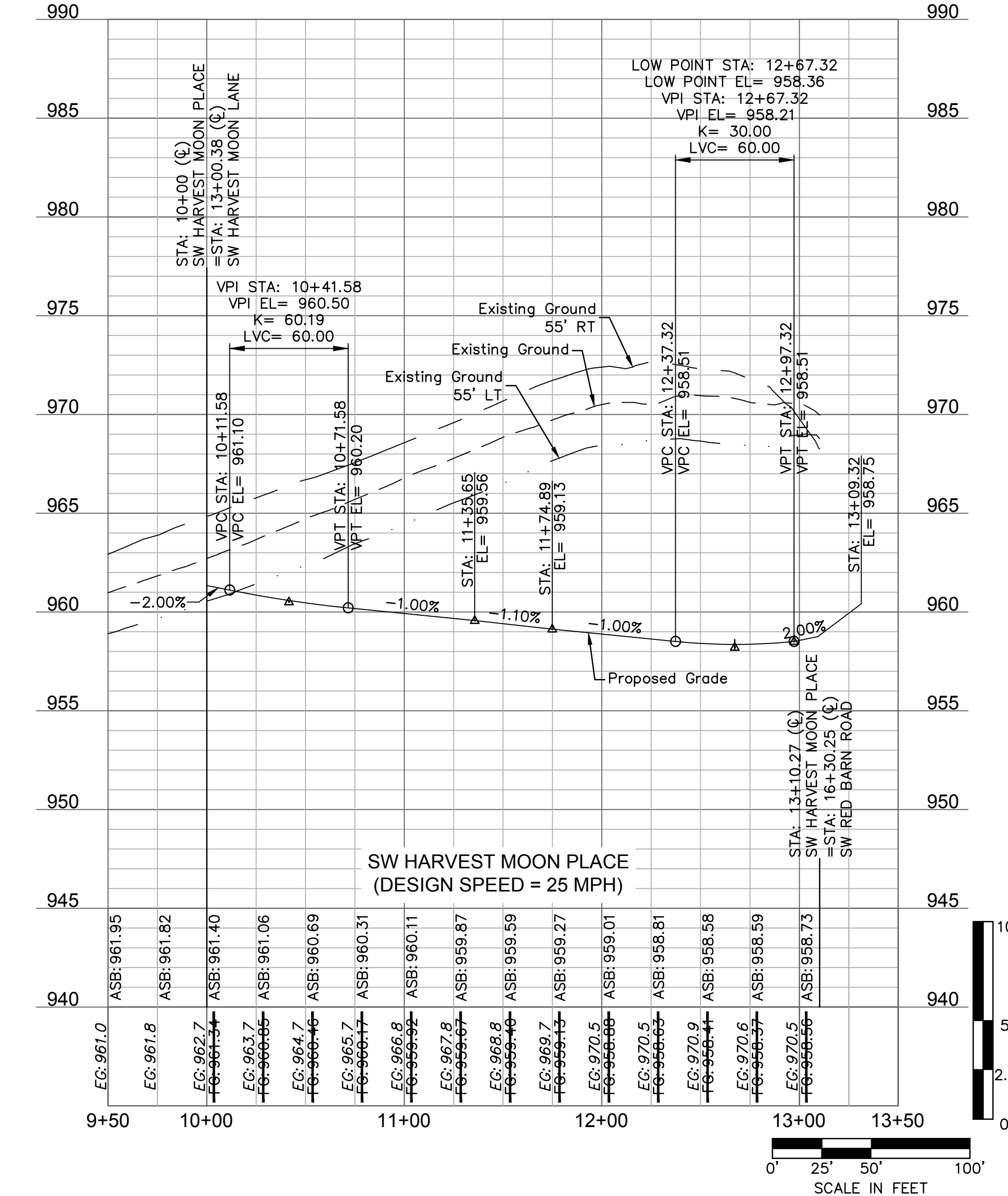
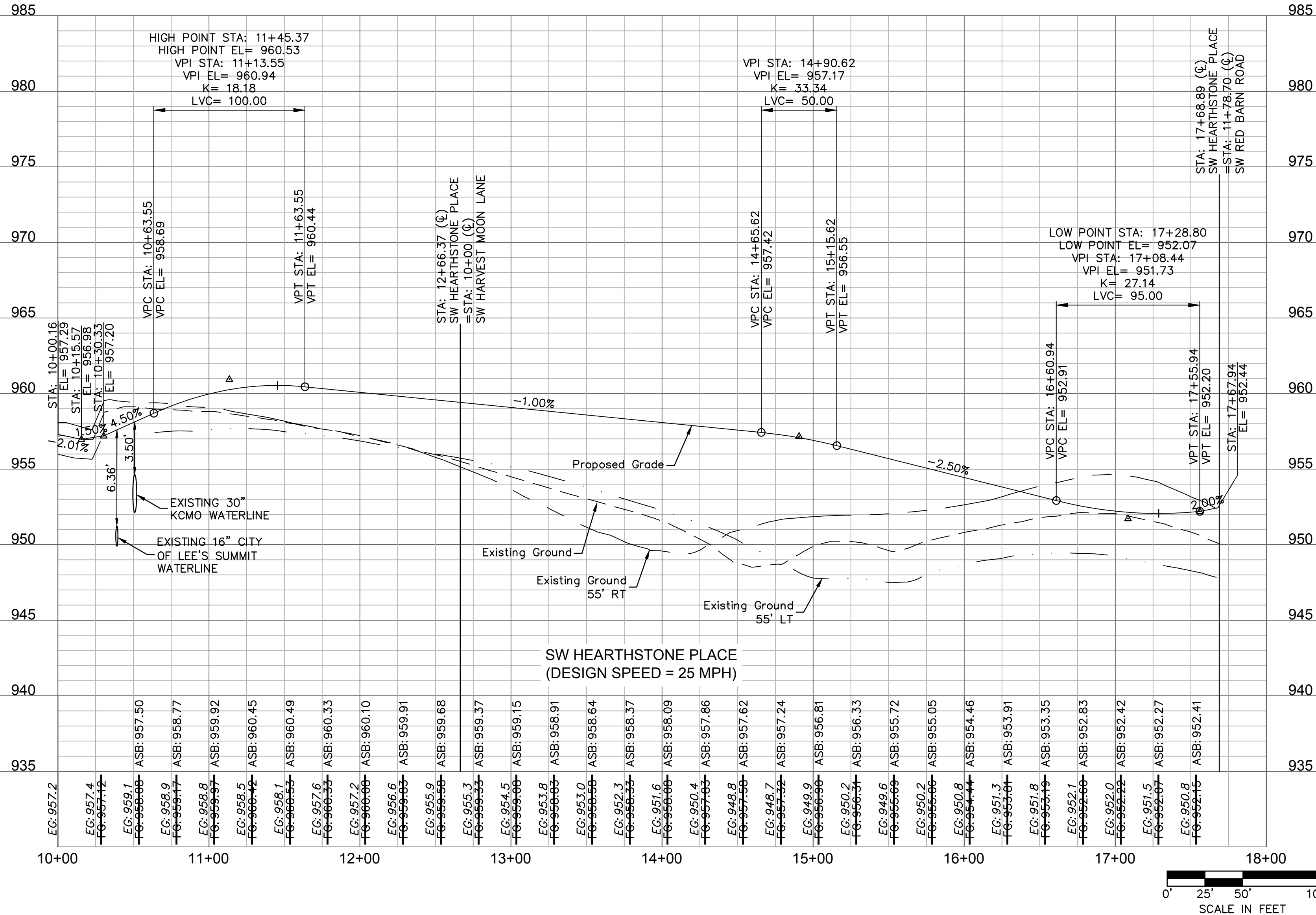
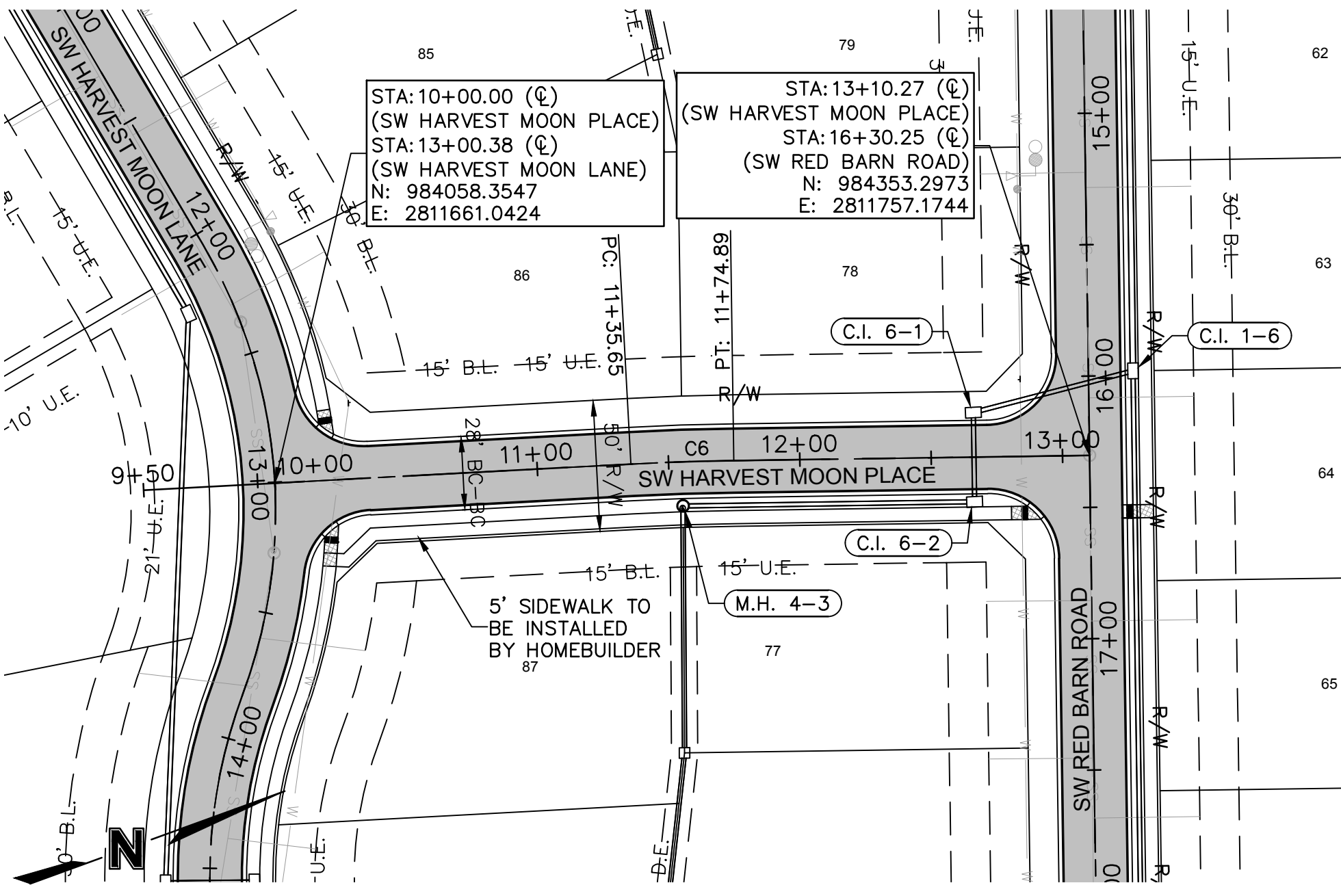


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USER: mession

| CURVE TABLE |             |             |            |              |                 |
|-------------|-------------|-------------|------------|--------------|-----------------|
| CURVE ID #  | RADIUS (FT) | LENGTH (FT) | DELTA      | TANGENT (FT) | P.I. STA. (BK.) |
| C4          | 349.99      | 153.25      | 025°05'16" | 77.87        | 12+32.50        |
| C5          | 200.00      | 147.47      | 042°14'45" | 77.27        | 15+43.15        |



| CURVE TABLE |             |             |            |              |                 |
|-------------|-------------|-------------|------------|--------------|-----------------|
| CURVE ID #  | RADIUS (FT) | LENGTH (FT) | DELTA      | TANGENT (FT) | P.I. STA. (BK.) |
| C6          | 1000.00     | 39.23       | 002°14'52" | 19.62        | 11+55.27        |



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SW HEARTHSTONE PLACE, SW HARVEST MOON LANE PLAN & PROFILE  
STREET AND STORM SEWER PLANS  
THE RETREAT AT HOOK FARMS  
CONSTRUCTION DOCUMENTS

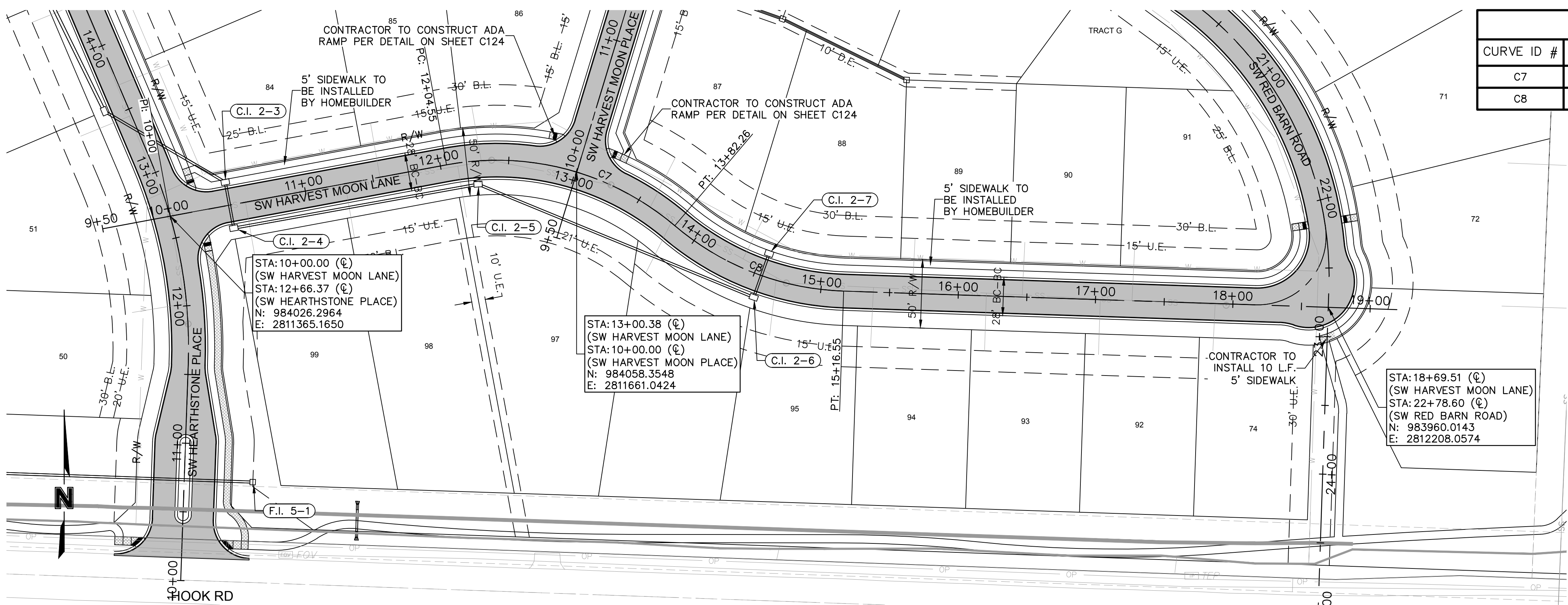
2020

drawn by: EML  
checked by: EML  
designed by: RB  
QA/QC by: NH  
project no.: 019-4059  
drawing no.: C\_RRP02\_0194059  
date: 4/20/2020

SHEET C105  
6 OF 54



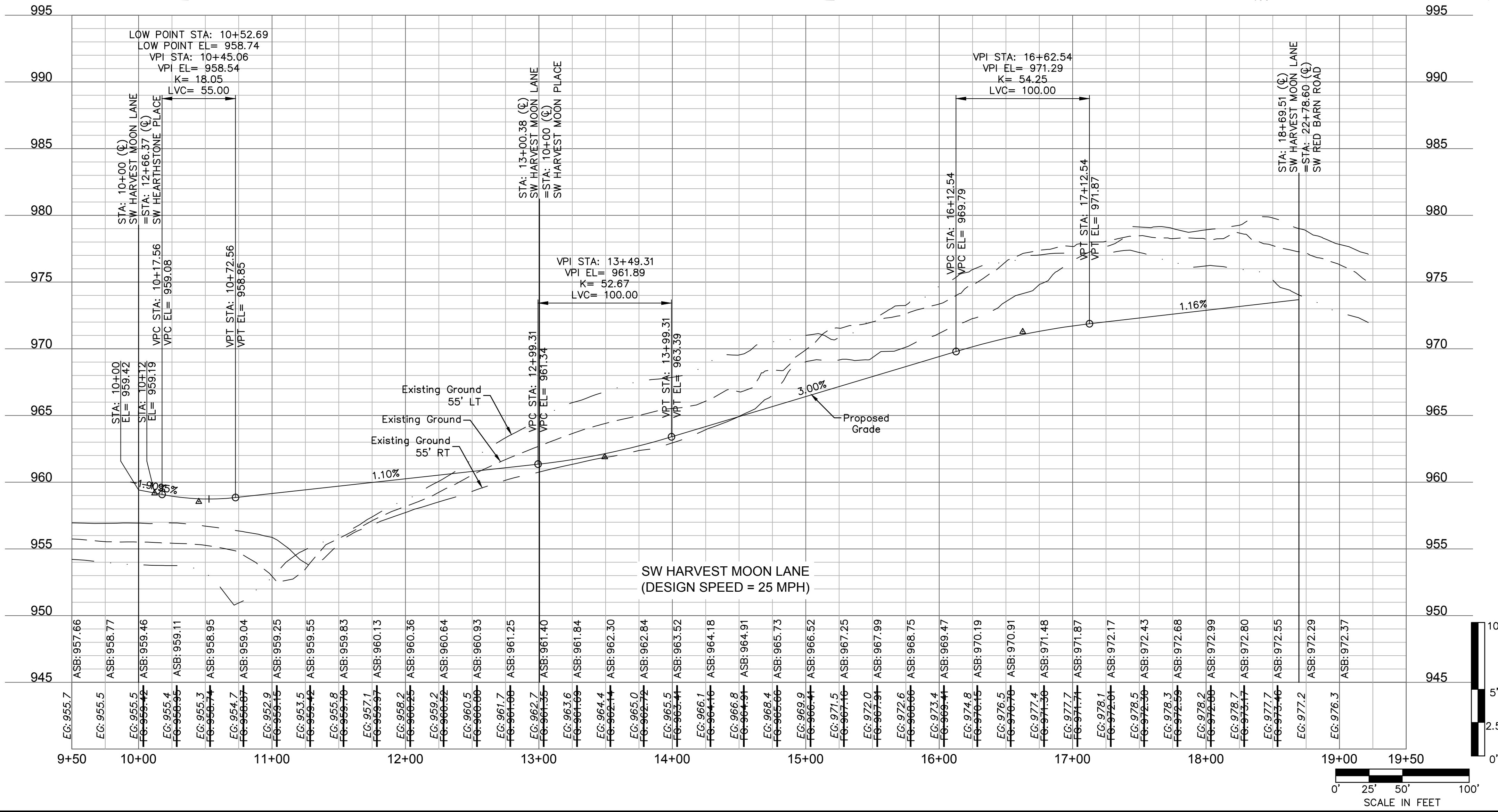
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| CURVE TABLE |             |             |            |              |                 |
|-------------|-------------|-------------|------------|--------------|-----------------|
| CURVE ID #  | RADIUS (FT) | LENGTH (FT) | DELTA      | TANGENT (FT) | P.I. STA. (BK.) |
| C7          | 200.00      | 177.71      | 050°54'36" | 95.20        | 12+87.06        |
| C8          | 200.00      | 134.29      | 038°28'13" | 69.78        | 14+46.76        |

LEGEND

- CONCRETE SIDEWALK
- ASPHALT PAVEMENT
- CG-2 CURB & GUTTER



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2021.09.01

SW HARVEST MOON LANE PLAN & PROFILE  
STREET AND STORM SEWER PLANS  
THE RETREAT AT HOOK FARMS  
CONSTRUCTION DOCUMENTS

2020

LEE'S SUMMIT, MO

drawn by: \_\_\_\_\_ EM  
checked by: \_\_\_\_\_ EM  
designed by: \_\_\_\_\_ RB  
QA/QC by: \_\_\_\_\_ NH  
project no.: 019-4059  
drawing no.: C\_RRP02\_0194059  
date: 4/20/2020

SHEET C106  
7 OF 54

10/01/2021  
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BY

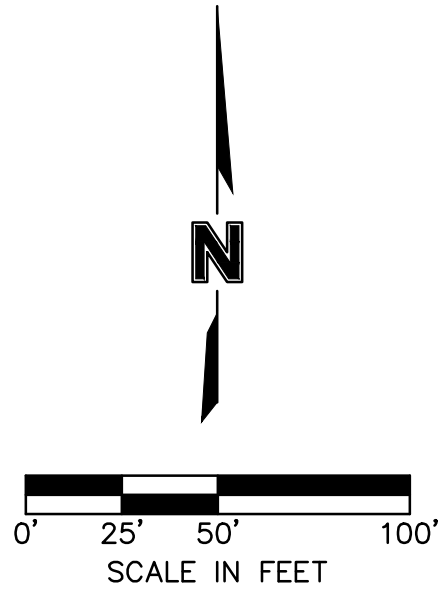
REVISIONS

| REV. NO. | DATE       | REVISIONS DESCRIPTION               |
|----------|------------|-------------------------------------|
| 1        | 06-24-2020 | CITY COMMENTS                       |
| 2        | 02-01-2021 | ADDED HOOK ROAD SWALE               |
| 3        | 04-06-2021 | SWALE AND ADA RAMP REVISIONS        |
| 4        | 05-04-2021 | ADA RAMP REVISIONS                  |
| 5        | 06-11-2021 | HEARTHSTONE PLACE ENTRANCE REVISION |



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NOTE:  
THE CROSSWALK AND STOP LINES SHALL  
BE PERFORMED THERMOPLASTIC MATERIAL  
AND LOCATED IN CONFORMANCE WITH  
STANDARD DETAILS AND MUTCD WITH 4'  
OF SEPERATION AND CONSISTENT  
PARALLEL WIDTH. CROSSWALK LINES SHALL  
BE 10' APART MATCHING THE WIDTH OF  
THE SHARED-USE PATH.



TRAFFIC CONTROL PLAN  
STREET AND STORM SEWER PLANS  
THE RETREAT AT HOOK FARMS  
CONSTRUCTION DOCUMENTS

2020

LEE'S SUMMIT, MO

drawn by: \_\_\_\_\_ EM  
checked by: \_\_\_\_\_ EM  
designed by: \_\_\_\_\_ RB  
QA/QC by: \_\_\_\_\_ NH  
project no.: 019-4059  
drawing no.: C\_TRF01\_0194059  
date: 4/20/2020

| REV. NO.  | DATE       | REVISIONS DESCRIPTION              | BY |
|-----------|------------|------------------------------------|----|
| 1         | 06-24-2020 | CITY COMMENTS                      |    |
| 2         | 02-01-2021 | ADDED HOOK ROAD SWALE              |    |
| 3         | 04-06-2021 | SWALE AND ADA RAMP REVISIONS       |    |
| 4         | 05-04-2021 | ADA RAMP REVISIONS                 |    |
| 5         | 06-11-2021 | HEARTSTONE PLACE ENTRANCE REVISION |    |
| REVISIONS |            |                                    |    |



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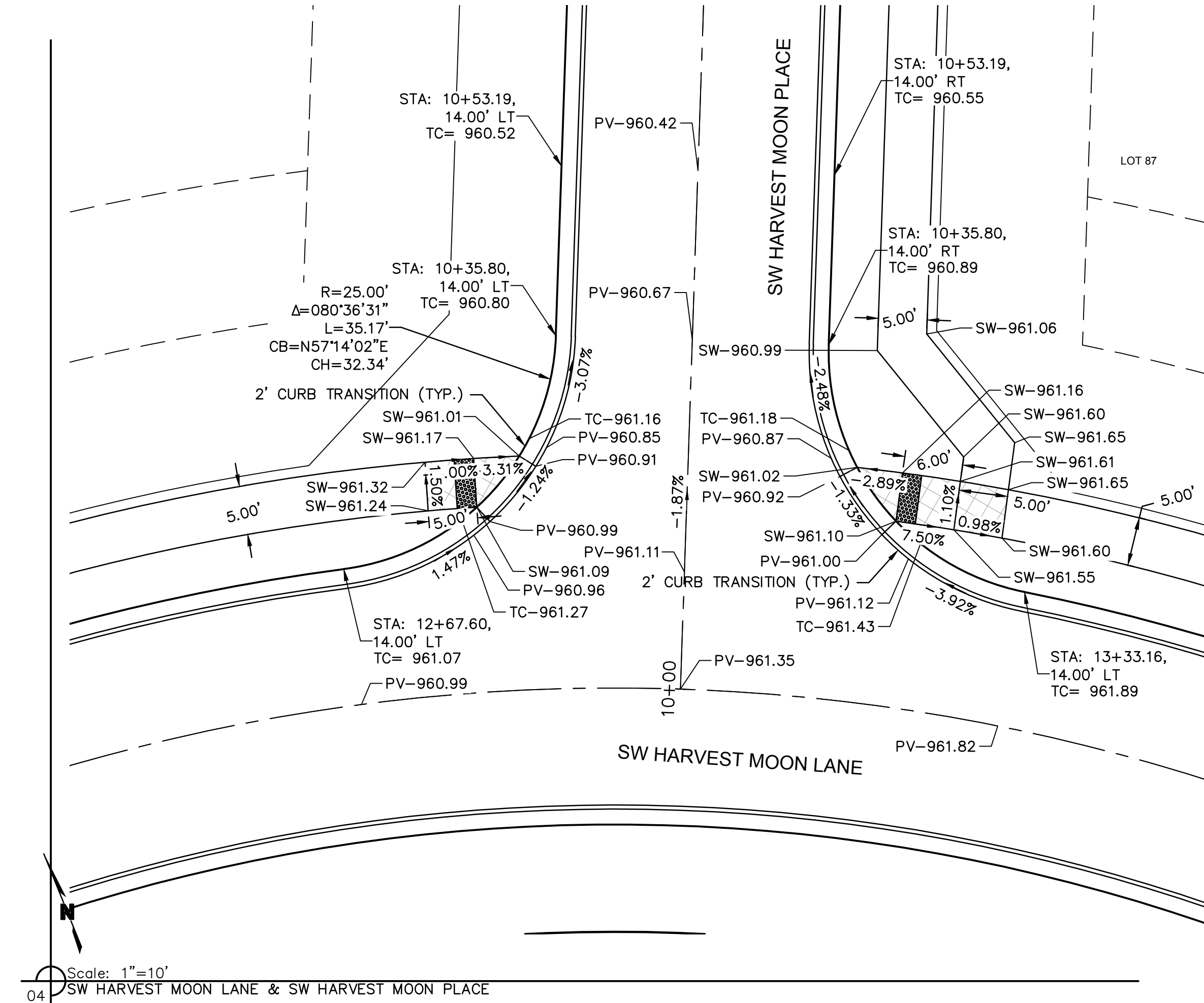
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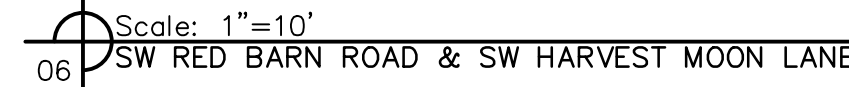




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NOT  
AS-BUILT



INTERSECTION DETAILS

STREET AND STORM SEWER PLANS

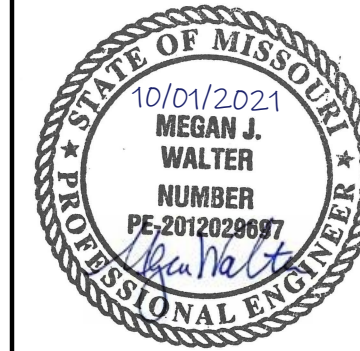
THE RETREAT AT HOOK FARMS

CONSTRUCTION DOCUMENTS

drawn by: \_\_\_\_\_ EN  
checked by: \_\_\_\_\_ EN  
designed by: \_\_\_\_\_ RE  
QA/QC by: \_\_\_\_\_ NH  
project no.: \_\_\_\_\_ 019-4055  
drawing no.: C\_SPT01\_019405  
date: \_\_\_\_\_ 4/20/2020

SHEET C109  
10 OF 54

| REV. NO. | DATE       | REVISIONS DESCRIPTION               | BY |
|----------|------------|-------------------------------------|----|
| 1        | 06-24-2020 | CITY COMMENTS                       |    |
| 2        | 02-01-2021 | ADDED HOOK ROAD SWALE               |    |
| 3        | 05-04-2021 | ADDED 10' SIDEWALK REVISIONS        |    |
| 4        | 05-04-2021 | XDA RAMP REVISIONS                  |    |
| 5        | 06-11-2021 | HEARTHSTONE PLACE ENTRANCE REVISION |    |
|          |            |                                     |    |
|          |            |                                     |    |
|          |            |                                     |    |



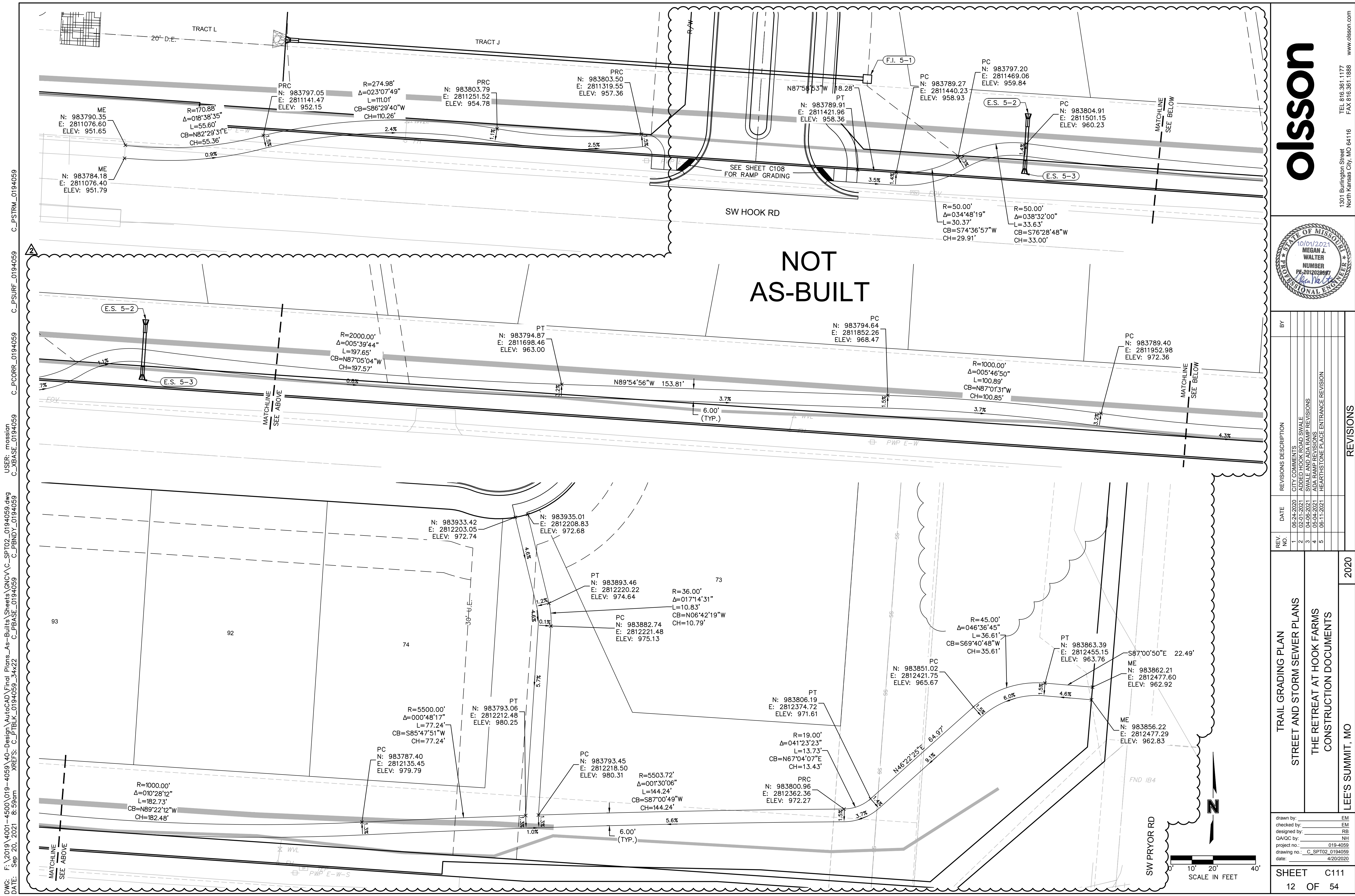
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STATE OF MISSOURI  
10/01/2021  
MEGAN J. WALTER  
NUMBER  
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TRAIL GRADING PLAN  
STREET AND STORM SEWER PLANS  
THE RETREAT AT HOOK FARMS  
CONSTRUCTION DOCUMENTS

2020

drawn by: \_\_\_\_\_ EM  
checked by: \_\_\_\_\_ EM  
designed by: \_\_\_\_\_ RB  
QA/QC by: \_\_\_\_\_ NH  
project no.: 019-4059  
drawing no.: C\_SPT02\_0194059  
date: 4/20/2020

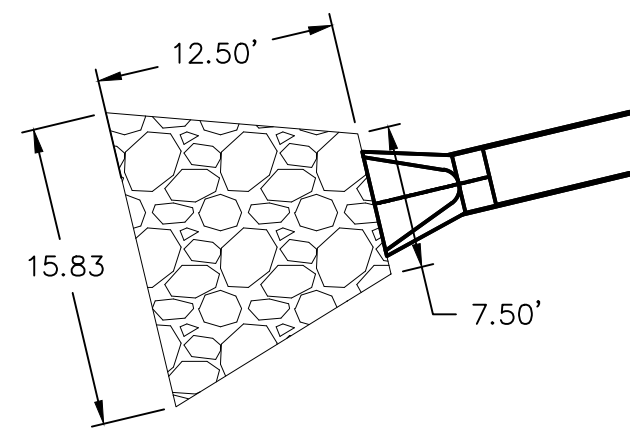
SHEET C111  
12 OF 54

| REV. NO. | DATE       | REVISIONS DESCRIPTION               | BY |
|----------|------------|-------------------------------------|----|
| 1        | 06-24-2020 | CITY COMMENTS                       |    |
| 2        | 02-01-2021 | ADDED HOOK ROAD SWALE               |    |
| 3        | 04-06-2021 | SWALE AND ADA RAMP REVISIONS        |    |
| 4        | 05-04-2021 | ADA RAMP REVISIONS                  |    |
| 5        | 06-11-2021 | HEARTHSTONE PLACE ENTRANCE REVISION |    |

REVISIONS



DWG: F:\2019\4001-4500\019-4059\40-Design\AutoCAD\Final Plans\As-Built\Sheets\GNCV\C\_STM02\_0194059.dwg  
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USER: nheiser



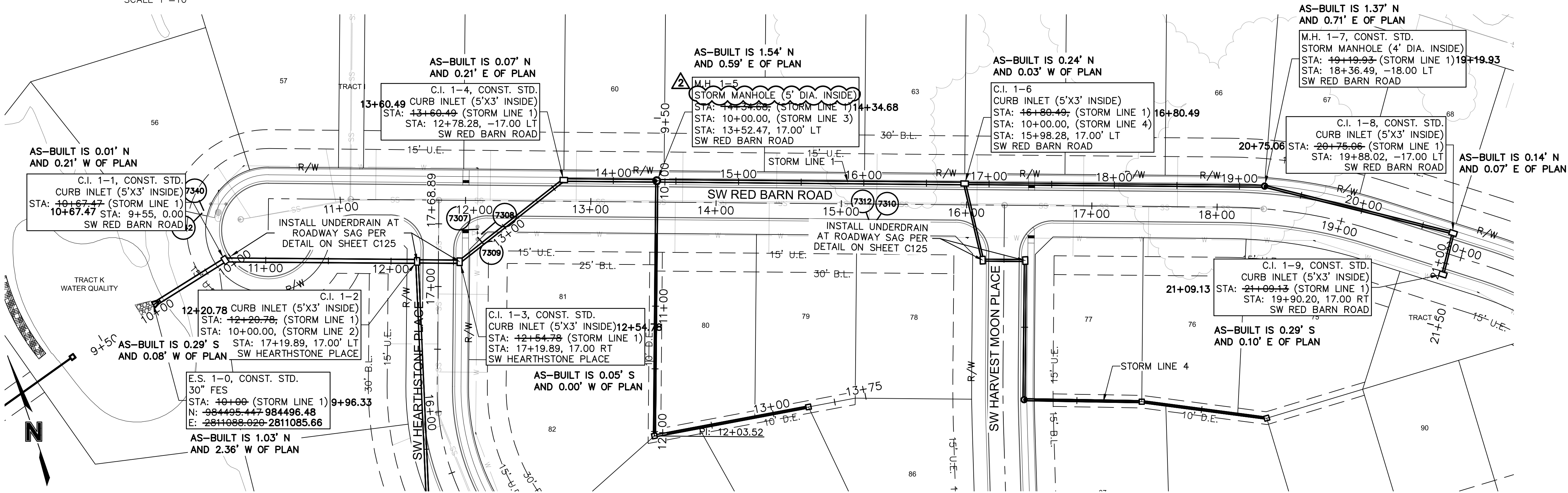
| Riprap Calculations |                           |                          |        |              |                         |                        |
|---------------------|---------------------------|--------------------------|--------|--------------|-------------------------|------------------------|
| 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. 1-0            | 37.93                     | 2.5                      | 3      | 10           | 12.5                    | 2.00                   |
| E.S. 5-0            | 9.09                      | 1.5                      | 2      | 6            | 6                       | 1.65                   |
| E.S. 7-0            | 0.61                      | 0.5                      | 1      | 5            | 2                       | 1.46                   |

\*Per Table 10.1 HEC 14-FHWA-Energy Dissipators Pg. 10-18

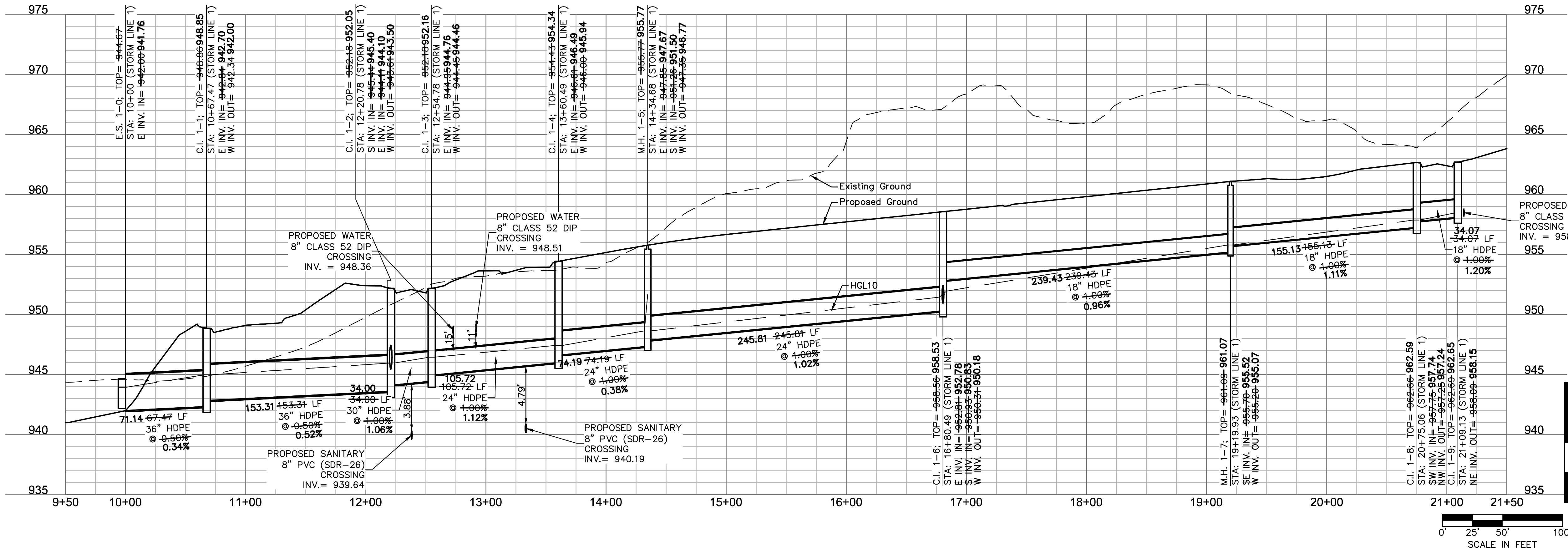
# AS-BUILT

## 2021.09.01

- NOTES:
- CONTRACTOR TO VERIFY EXISTING CONDITIONS AND COMMUNICATE WITH ENGINEER IF DIFFERENT THAN PLANS.
  - CONTRACTOR SHALL FILL AND COMPACT TO 95% STANDARD DENSITY TO A POINT 4' MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE.



STORM LINE 1 (9+50 - 21+50)



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10/01/2021  
MEGAN J. WALTER  
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PE-2012028697  
Professional Engineer

BY

| REV. | NO. | DATE       | REVISIONS DESCRIPTION               |
|------|-----|------------|-------------------------------------|
| 1    | 1   | 05-24-2020 | CITY COMMENTS                       |
| 2    | 2   | 02-01-2021 | ADDED HOOK ROAD SWALE               |
| 3    | 3   | 04-02-2021 | SWALE AND ADA RAMP REVISIONS        |
| 4    | 4   | 05-04-2021 | ADA RAMP REVISIONS                  |
| 5    | 5   | 05-11-2021 | HEARTHSTONE PLACE ENTRANCE REVISION |

STORM PLAN & PROFILES  
STREET AND STORM SEWER PLANS  
THE RETREAT AT HOOK FARMS  
CONSTRUCTION DOCUMENTS

2020

LEE'S SUMMIT, MO

drawn by: EM  
checked by: EM  
designed by: RB  
QA/QC by: NH  
project no.: 019-4059  
drawing no.: C\_STM02\_0194059  
date: 4/20/2020

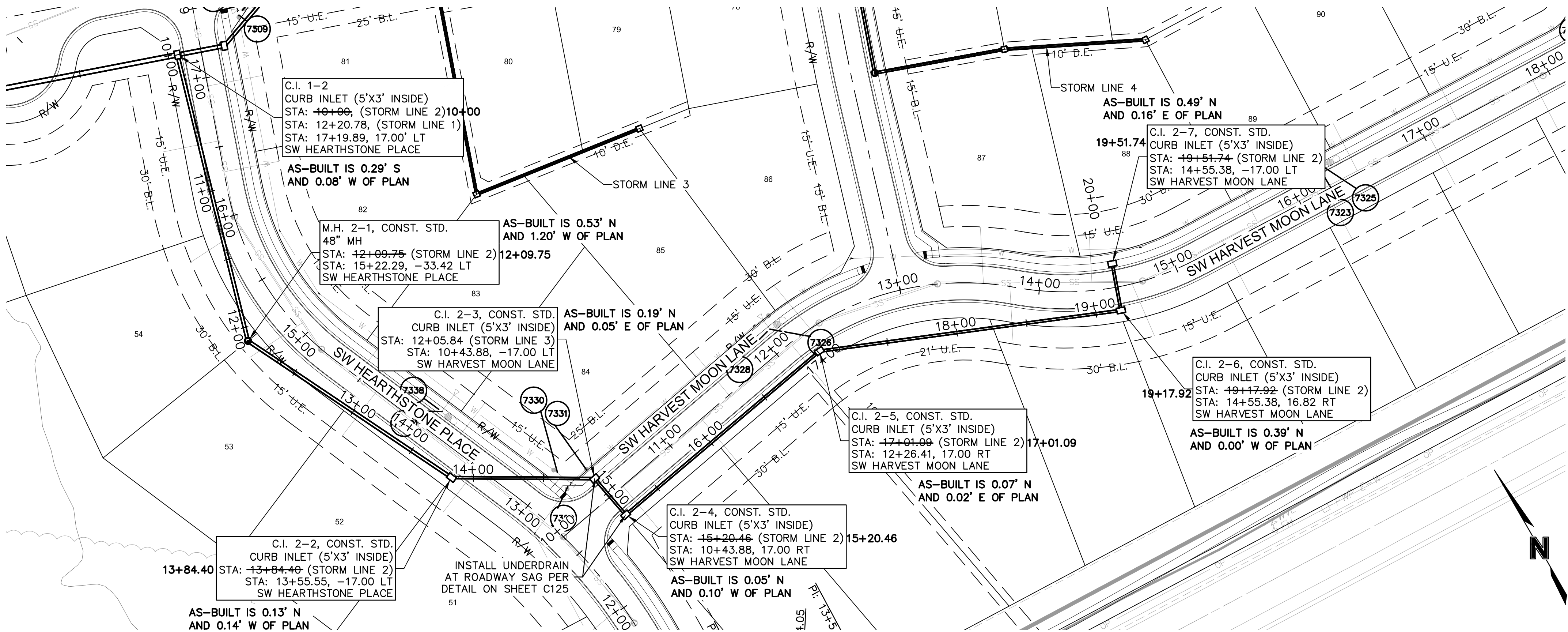
SHEET C112  
13 OF 54



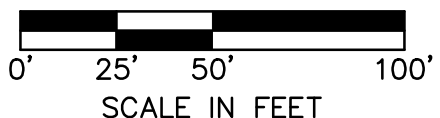
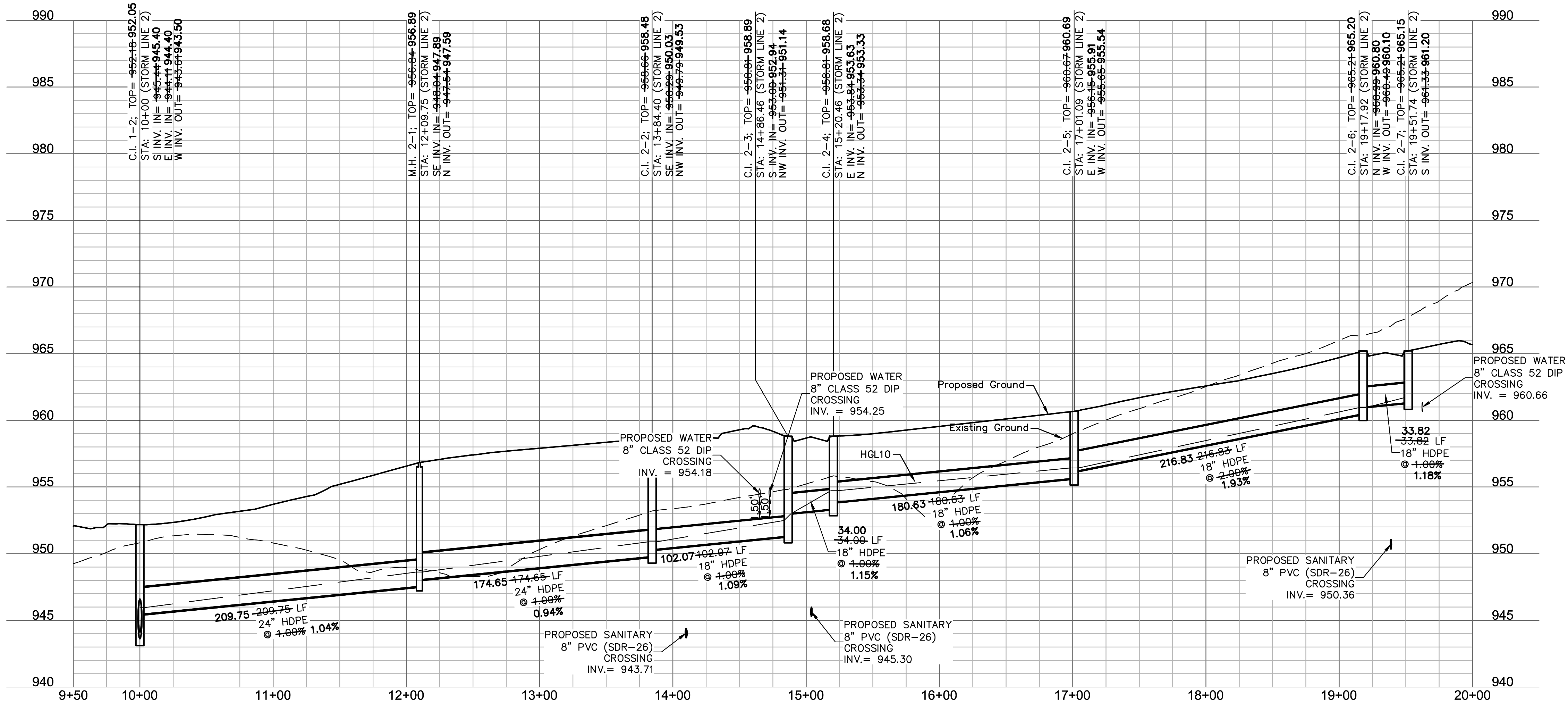
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DATE: Oct 01, 2021 1:31pm XREFS: C\_PSSWR\_0194059 C\_PBASE\_0194059 C\_PBLK\_0194059\_34x22 C\_PENDY\_0194059 C\_PWATR\_0194059 C\_PSTRM\_0194059

NOTES:  
1. CONTRACTOR TO VERIFY EXISTING CONDITIONS AND COMMUNICATE WITH ENGINEER IF DIFFERENT THAN PLANS.  
2. CONTRACTOR SHALL FILL AND COMPACT TO 95% STANDARD DENSITY TO A POINT 4" MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE.

# AS-BUILT 2021.09.01



## STORM LINE 2 (9+50 - 20+00)



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10/01/2021  
MEGAN J. WALTER  
NUMBER  
PE-2012022697  
Professional Engineer

| REV. | NO.        | DATE                                | REVISIONS DESCRIPTION |
|------|------------|-------------------------------------|-----------------------|
| 1    | 05-24-2020 | CITY COMMENTS                       |                       |
| 2    | 02-01-2021 | ADDED HOOK ROAD SWALE               |                       |
| 3    | 04-06-2021 | SWALE AND ADA RAMP REVISIONS        |                       |
| 4    | 05-04-2021 | ADA RAMP REVISIONS                  |                       |
| 5    | 05-11-2021 | HEARTHSTONE PLACE ENTRANCE REVISION |                       |

STORM PLAN & PROFILES  
STREET AND STORM SEWER PLANS  
THE RETREAT AT HOOK FARMS  
CONSTRUCTION DOCUMENTS

2020

LEE'S SUMMIT, MO

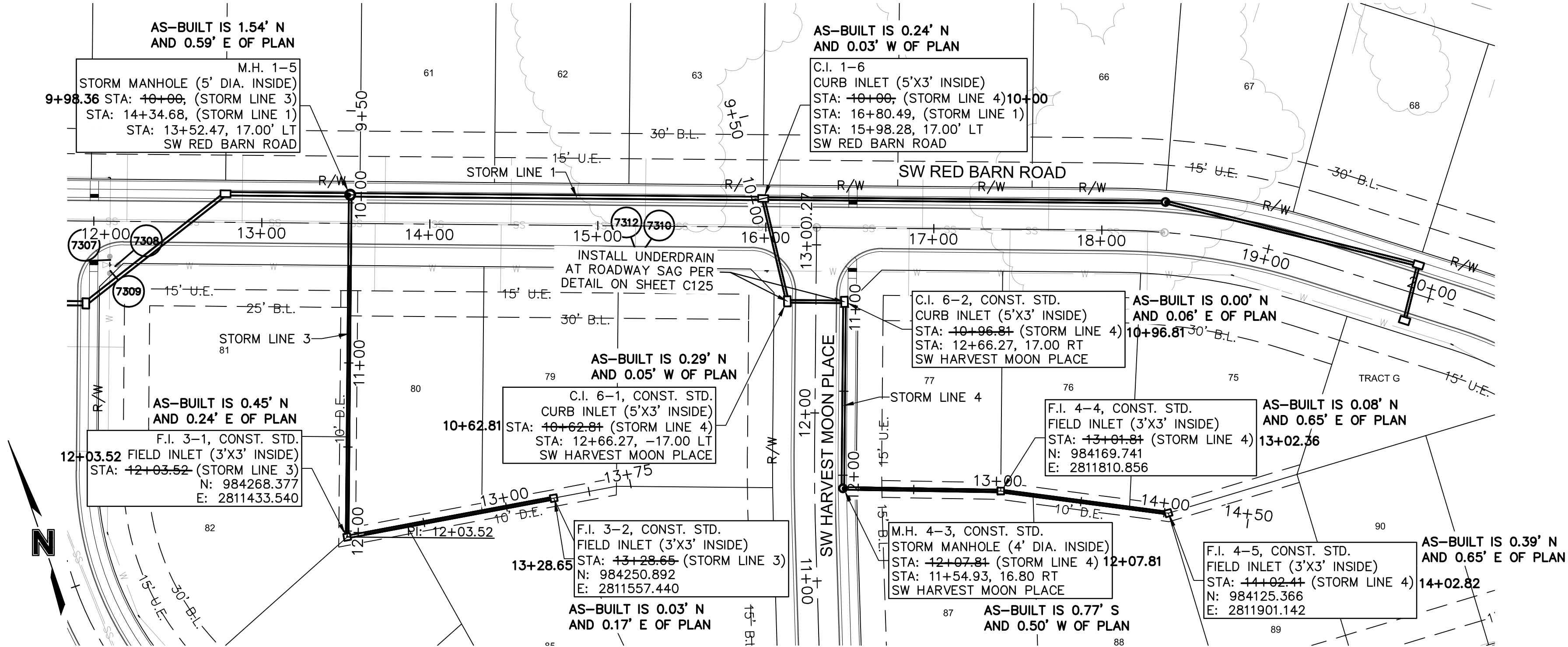
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checked by: EM  
designed by: RB  
QA/QC by: NH  
project no.: 019-4059  
drawing no.: C\_STM02\_0194059  
date: 4/20/2020

SHEET C113  
14 OF 54



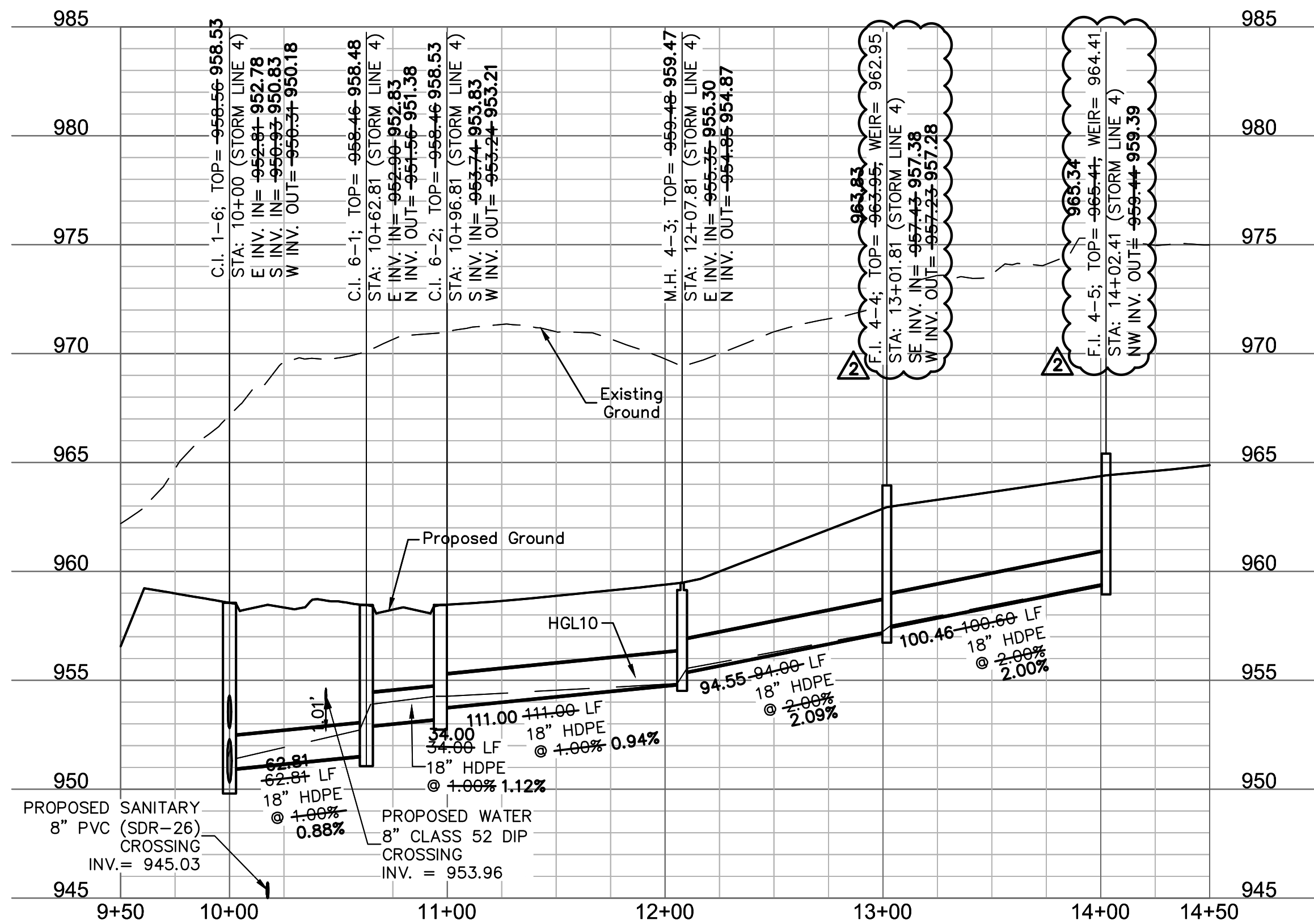
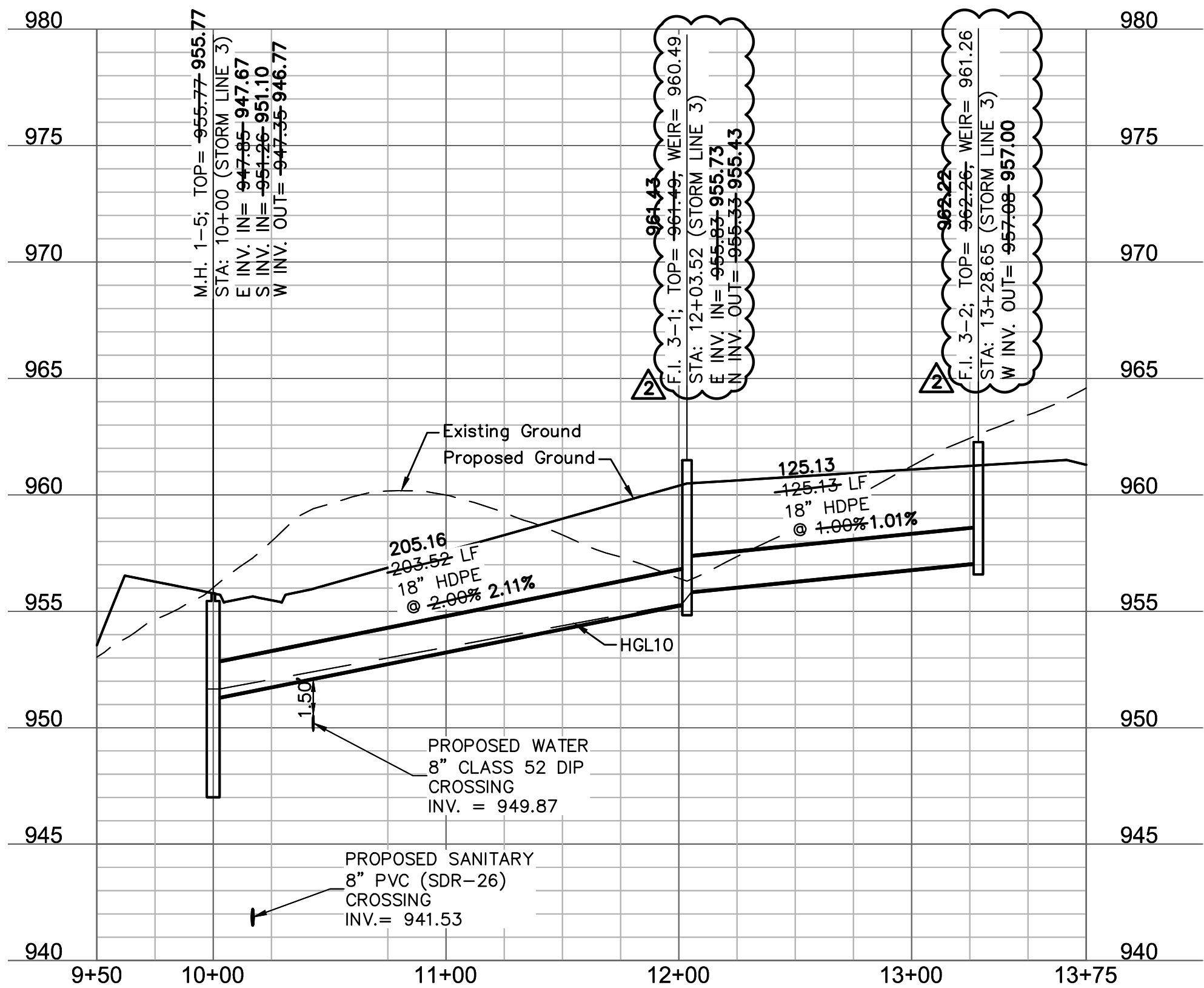
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- NOTES:
1. CONTRACTOR TO VERIFY EXISTING CONDITIONS AND COMMUNICATE WITH ENGINEER IF DIFFERENT THAN PLANS.
  2. CONTRACTOR SHALL FILL AND COMPACT TO 95% STANDARD DENSITY TO A POINT 4" MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE.



STORM LINE 3 (9+50 - 13+75)

STORM LINE 4 (9+50 - 14+50)



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PROFESSIONAL ENGINEER  
10/01/2021  
MEGAN J. WALTER  
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BY

REV. NO. DATE REVISIONS DESCRIPTION

1 05-24-2020 CITY COMMENTS

2 02-01-2021 ADDED HOOK ROAD SWALE

3 04-06-2021 SWALE AND ADA RAMP REVISIONS

4 05-04-2021 ADA RAMP REVISIONS

5 05-11-2021 HEARTHSTONE PLACE ENTRANCE REVISION

2020

STORM PLAN & PROFILES  
STREET AND STORM SEWER PLANS  
THE RETREAT AT HOOK FARMS  
CONSTRUCTION DOCUMENTS

LEE'S SUMMIT, MO

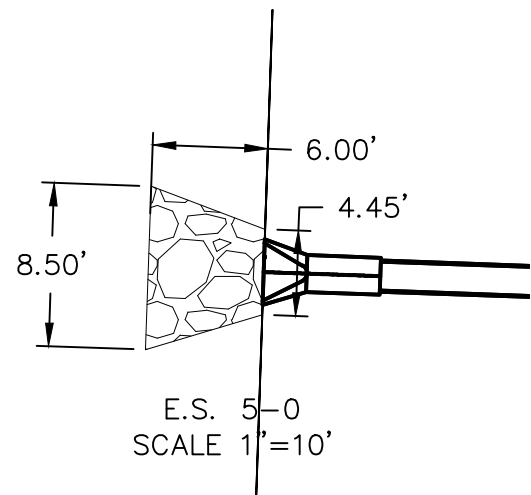
drawn by: EM  
checked by: EM  
designed by: RB  
QA/QC by: NH  
project no.: 019-4059  
drawing no.: C\_STM02\_0194059  
date: 4/20/2020

SHEET C114  
15 OF 54



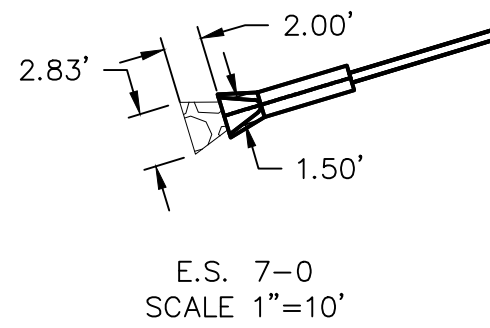
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XREFS: C\_PSSWR\_0194059 C\_PBASE\_0194059 C\_PTRBLK\_0194059\_34x22 C\_PENDY\_0194059 C\_PWATR\_0194059 C\_PSTRM\_0194059  
USER: rneiser

NOTES:  
1. CONTRACTOR TO VERIFY EXISTING CONDITIONS AND COMMUNICATE WITH ENGINEER IF DIFFERENT THAN PLANS.  
2. CONTRACTOR SHALL FILL AND COMPACT TO 95% STANDARD DENSITY TO A POINT 4' MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE.

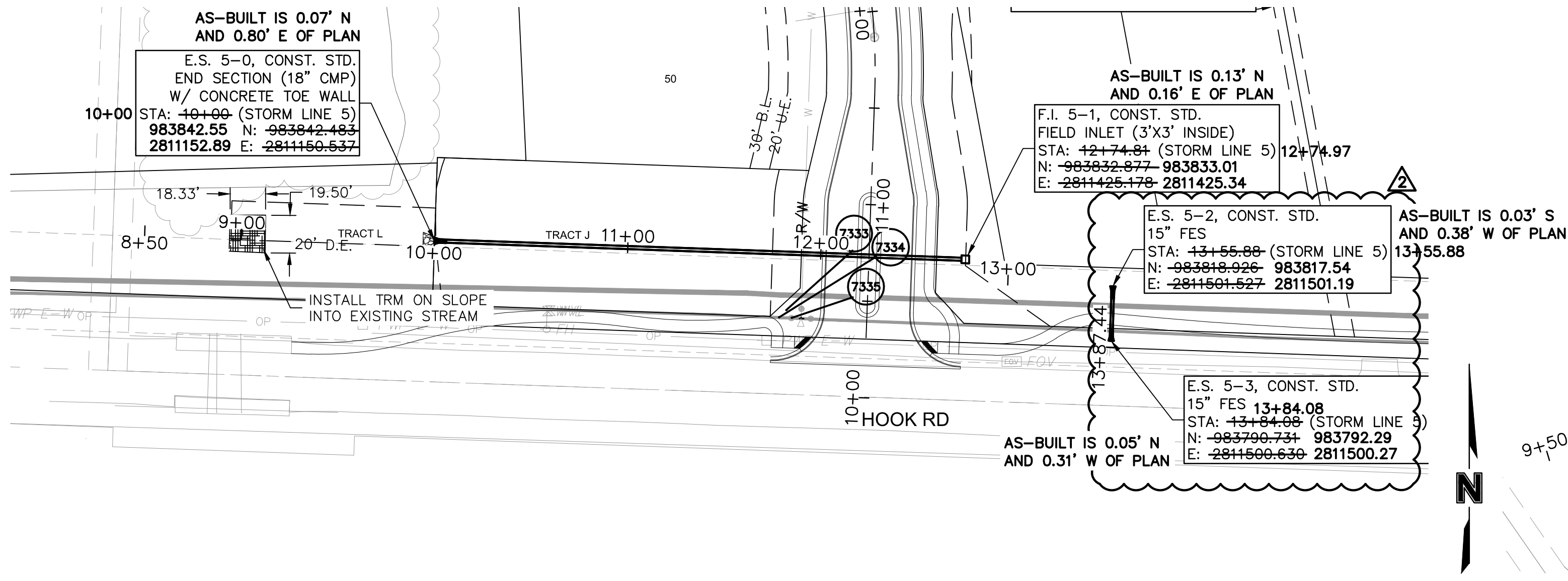


| Riprap Calculations |                           |                          |        |              |                         |                             |
|---------------------|---------------------------|--------------------------|--------|--------------|-------------------------|-----------------------------|
| 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) (SV) |
| E.S. 1-0            | 37.93                     | 2.5                      | 3      | 10           | 12.5                    | 2.00                        |
| E.S. 5-0            | 9.09                      | 1.5                      | 2      | 6            | 6                       | 1.65                        |
| E.S. 7-0            | 0.61                      | 0.5                      | 1      | 5            | 2                       | 1.46                        |

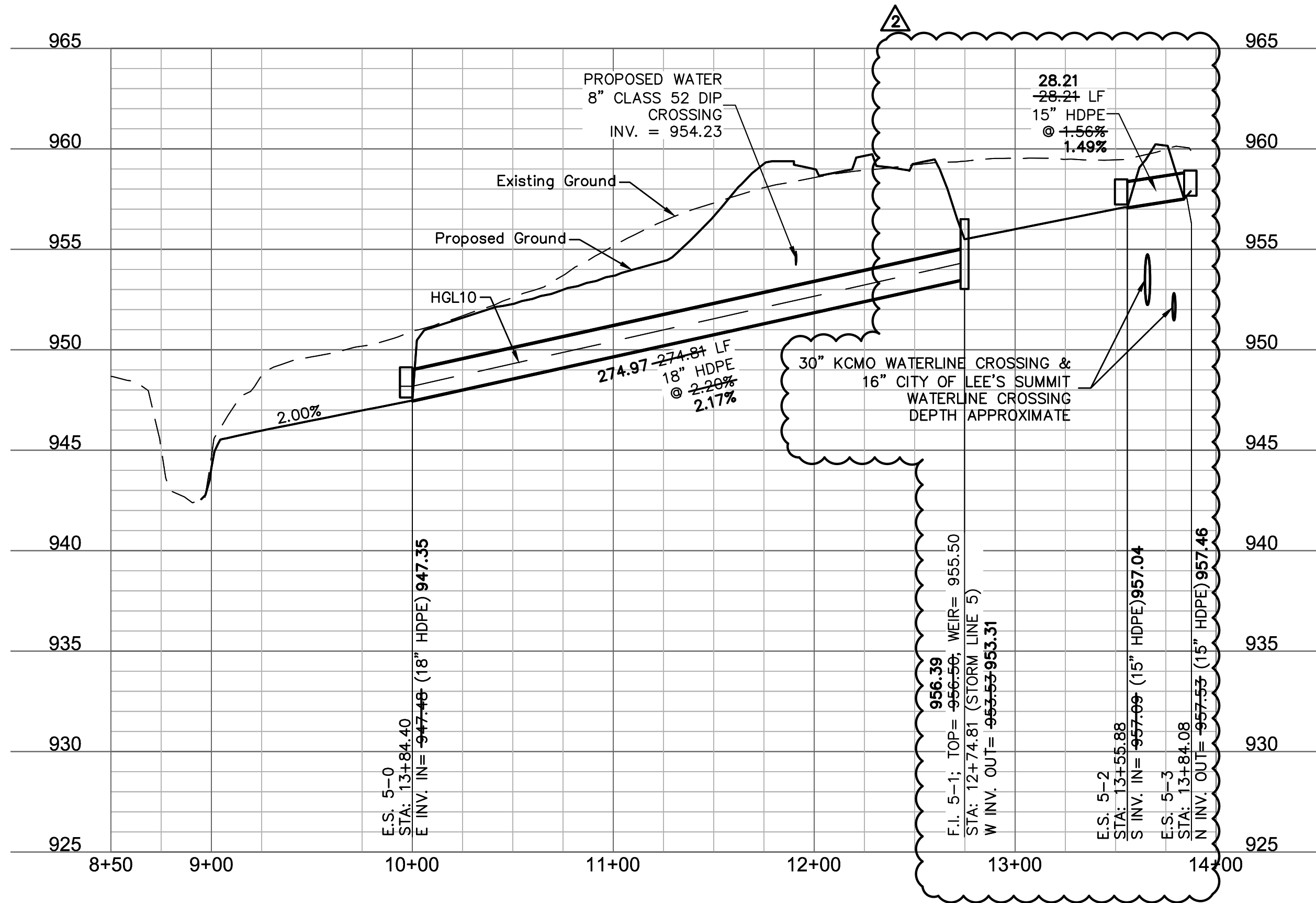
\*Per Table 10.1 HEC 14-FHWA-Energy Dissipators Pg. 10-18



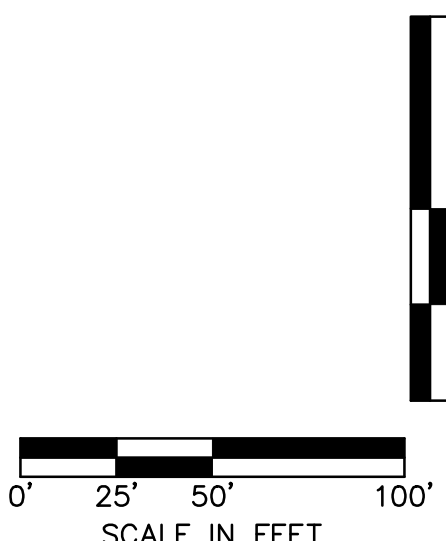
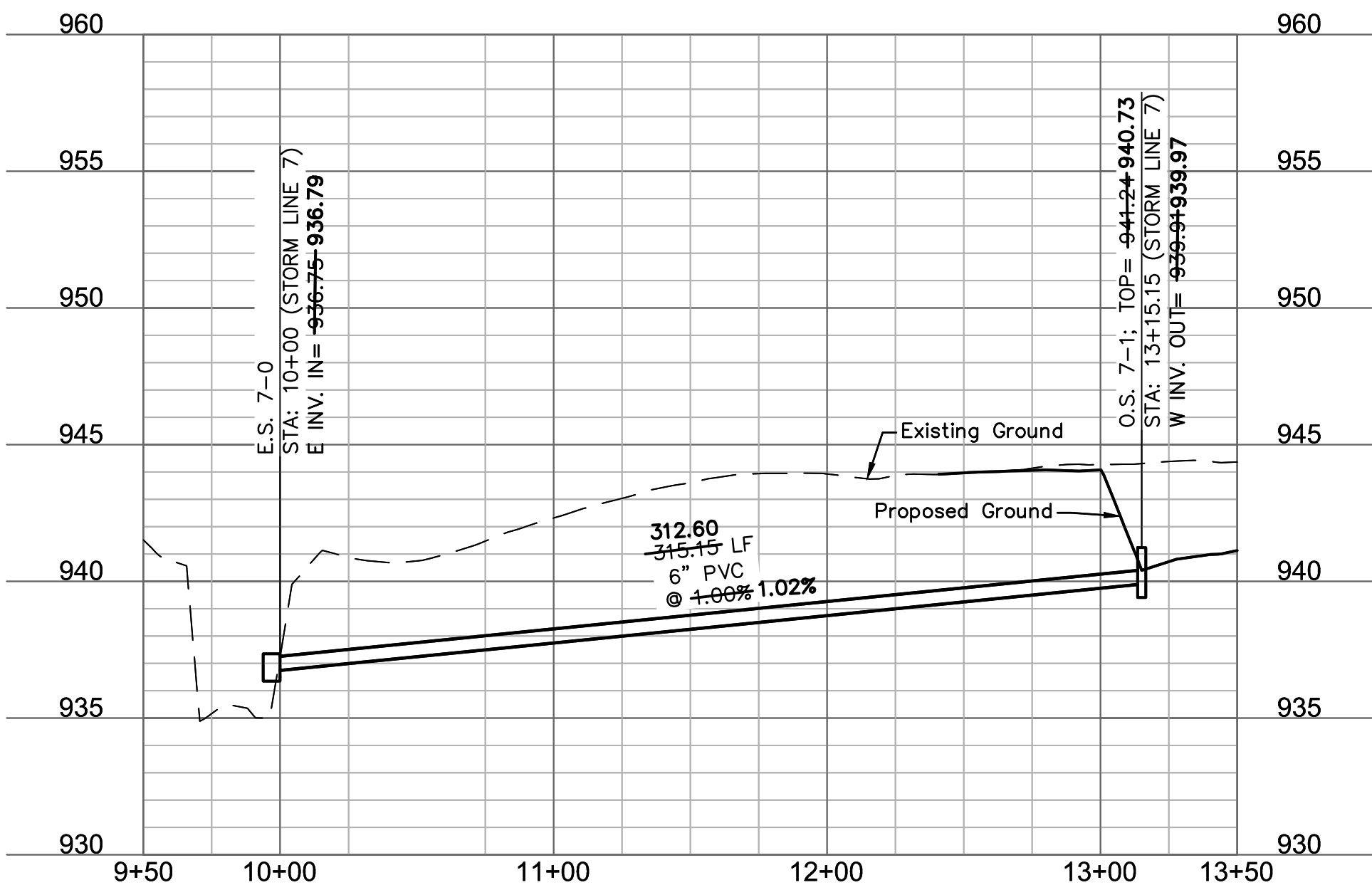
## AS-BUILT 2021.09.01



STORM LINE 5 (8+50 - 14+00)



STORM LINE 7 (9+50 - 13+50)



1301 Burlington Street  
North Kansas City MO 64116  
TEL 816.361.1177  
FAX 816.361.1888  
www.olsson.com

10/01/2021  
MEGAN J. WALTER  
NUMBER  
PE-2012028697

| REV. | NO. | DATE       | REVISIONS DESCRIPTION               | BY |
|------|-----|------------|-------------------------------------|----|
| 1    |     | 05-24-2020 | CITY COMMENTS                       |    |
| 2    |     | 02-01-2021 | ADDED HOOK ROAD SWALE               |    |
| 3    |     | 04-06-2021 | SWALE AND ADA RAMP REVISIONS        |    |
| 4    |     | 05-04-2021 | ADA RAMP REVISIONS                  |    |
| 5    |     | 05-11-2021 | HEARTHSTONE PLACE ENTRANCE REVISION |    |

STORM PLAN & PROFILES  
STREET AND STORM SEWER PLANS  
THE RETREAT AT HOOK FARMS  
CONSTRUCTION DOCUMENTS

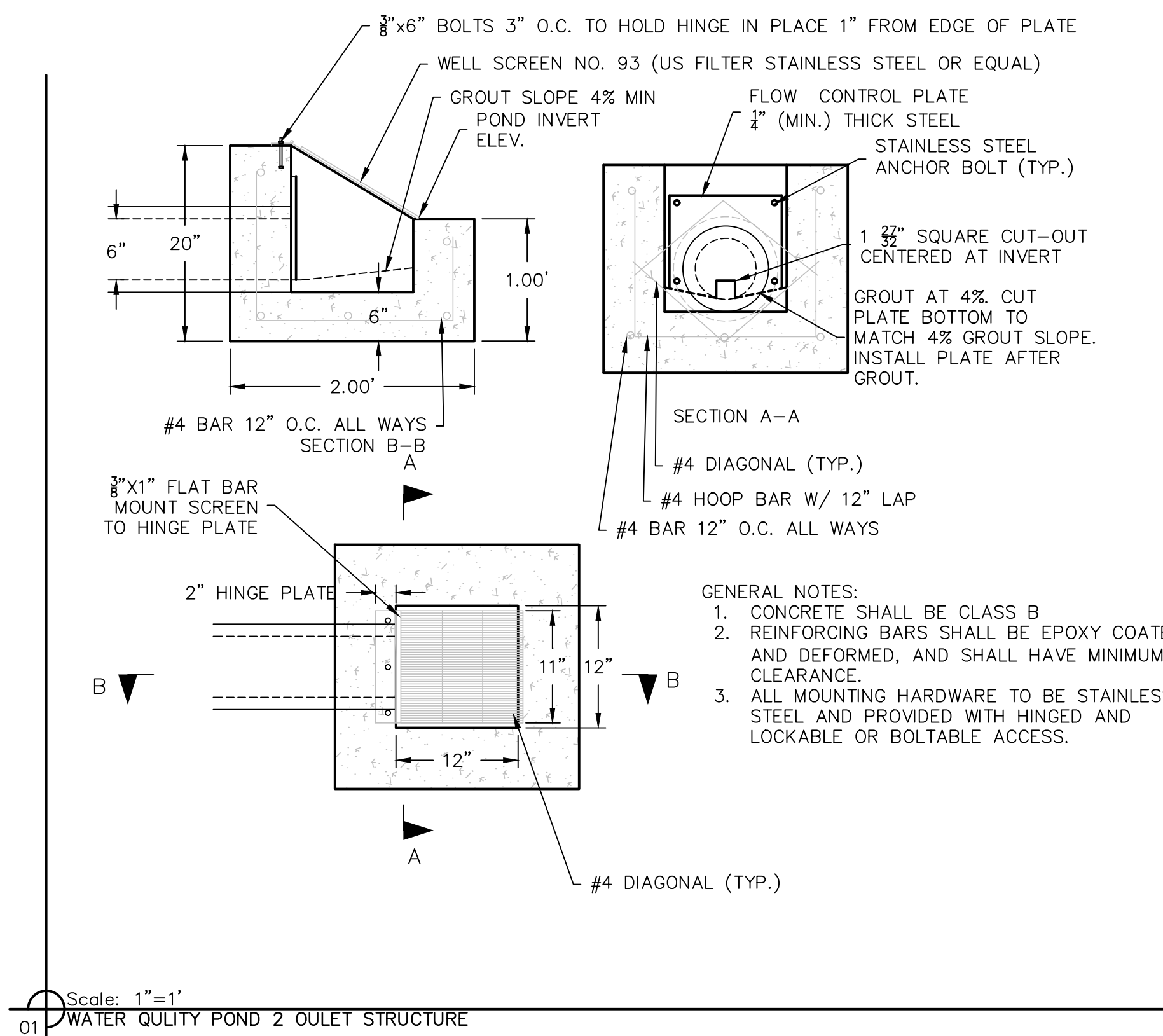
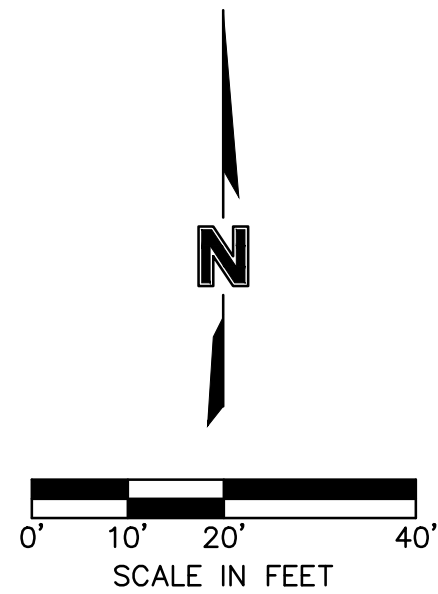
2020  
LEE'S SUMMIT, MO

drawn by: EM  
checked by: EM  
designed by: RB  
QA/QC by: NH  
project no.: 019-4059  
drawing no.: C\_STM02\_0194059  
date: 4/20/2020

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16 OF 54

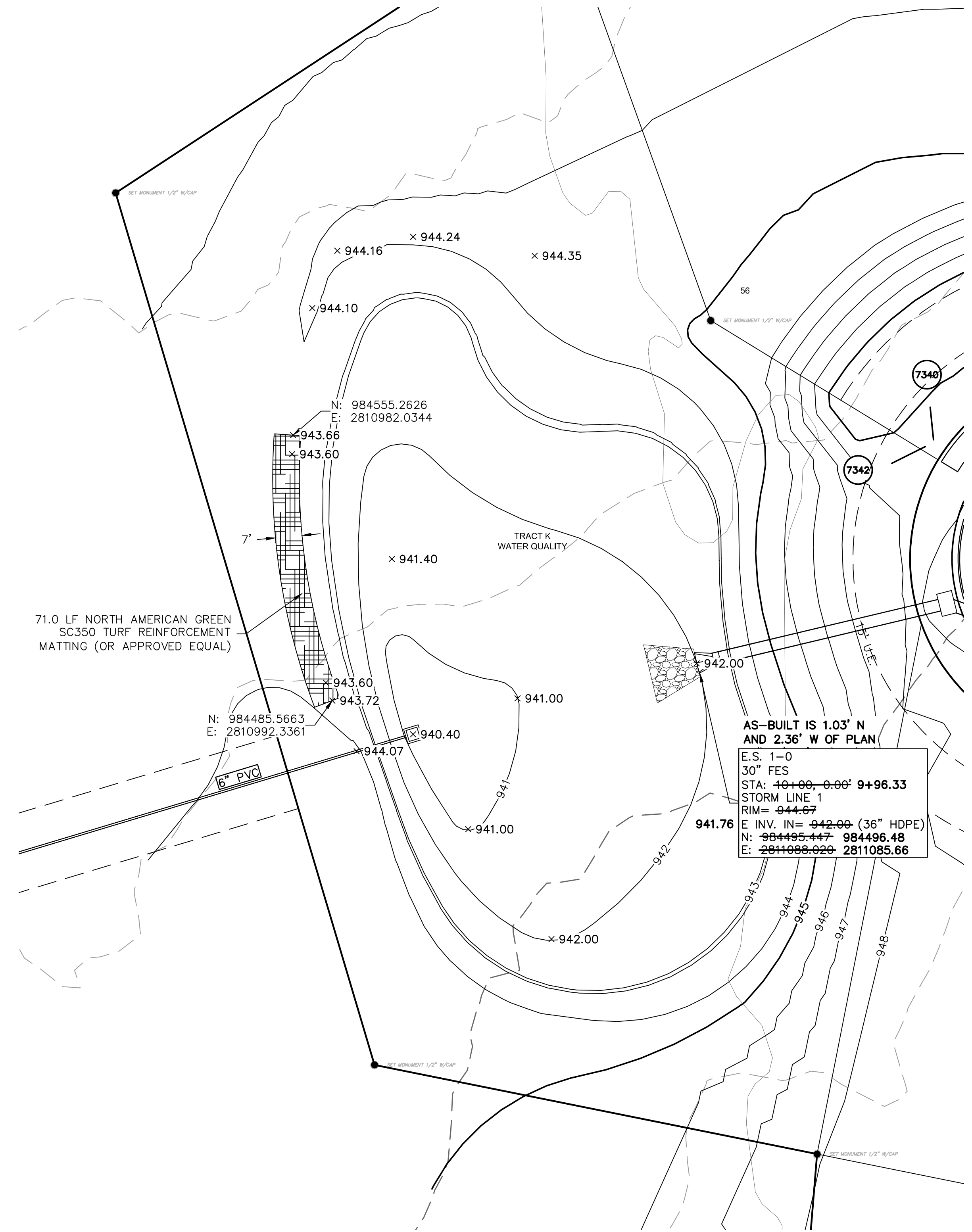


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USER: rneiser



- GENERAL NOTES:
1. CONCRETE SHALL BE CLASS B
  2. REINFORCING BARS SHALL BE EPOXY COATED AND DEFORMED, AND SHALL HAVE MINIMUM 2" CLEARANCE.
  3. ALL MOUNTING HARDWARE TO BE STAINLESS STEEL AND PROVIDED WITH HINGED AND LOCKABLE OR BOLTABLE ACCESS.

AS-BUILT  
2021.09.01



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STATE OF MISSOURI  
10/01/2021  
MEGAN J. WALTER  
NUMBER  
PE-2012022697  
Professional Engineer

| REV. | NO. | DATE       | REVISIONS DESCRIPTION               | BY |
|------|-----|------------|-------------------------------------|----|
| 1    |     | 05-24-2020 | CITY COMMENTS                       |    |
| 2    |     | 02-01-2021 | ADDED HOOK ROAD SWALE               |    |
| 3    |     | 04-06-2021 | SWALE AND ADA RAMP REVISIONS        |    |
| 4    |     | 05-04-2021 | ADA RAMP REVISIONS                  |    |
| 5    |     | 05-11-2021 | HEARTHSTONE PLACE ENTRANCE REVISION |    |

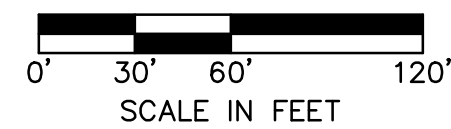
| DETENTION BASIN PLAN<br>STREET AND STORM SEWER PLANS<br>THE RETREAT AT HOOK FARMS<br>CONSTRUCTION DOCUMENTS | 2020 | REVISIONS |
|-------------------------------------------------------------------------------------------------------------|------|-----------|
| LEE'S SUMMIT, MO                                                                                            |      |           |

drawn by: \_\_\_\_\_ EM  
checked by: \_\_\_\_\_ EM  
designed by: \_\_\_\_\_ RB  
QA/QC by: \_\_\_\_\_ NH  
project no.: 019-4059  
drawing no.: C\_GRD02\_0194059  
date: 4/20/2020

SHEET C116  
17 OF 54



C\_PBASN\_0194059



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 LOCATED IN ZONE X, "AREAS OUTSIDE THE 1-PERCENT ANNUAL CHANCE FLOODPLAINS, AREAS OF 1-PERCENT ANNUAL CHANCE SHEET FLOOD 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"

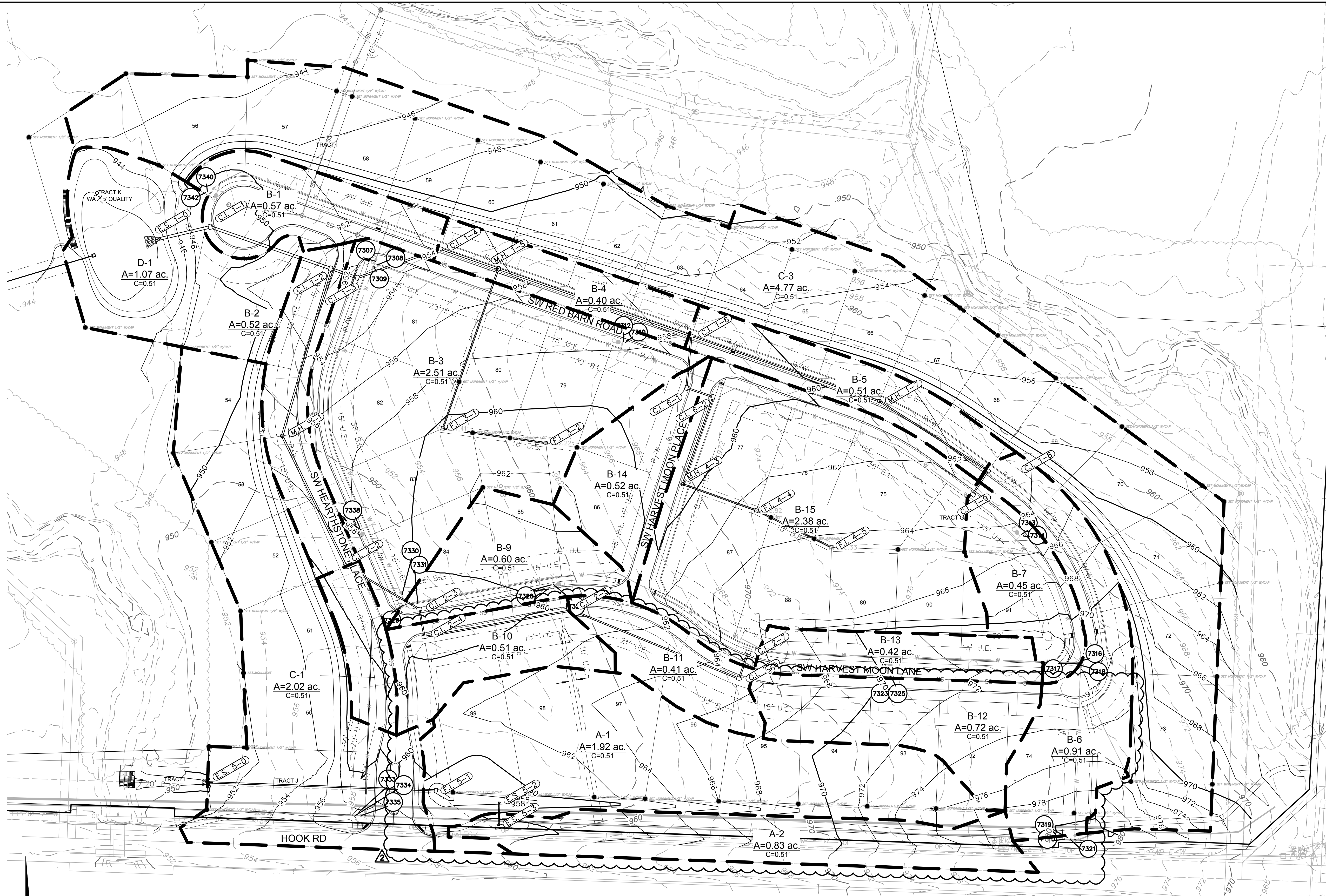
3. BUFFER ZONE FOR NATURAL STREAMS IS LOCATED WITHIN  
PLAT.

4. MLO ELEVATIONS HAVE BEEN PROVIDED AT EACH LOT  
CORNER. INTERPOLATION WILL BE ALLOWED BETWEEN CORNER  
MBOES SHOWN ON THE MASTER DRAINAGE PLAN, DEPENDING  
ON THE LOCATION OF THE LOWEST OPENING ON THE  
PROPOSED STRUCTURE.

5. NO BUILDING PERMITS WILL BE ISSUED UNTIL AN  
AS-GRADED MASTER DRAINAGE PLAN HAS BEEN SUBMITTED  
TO THE CITY AND APPROVED BY THE CITY.

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

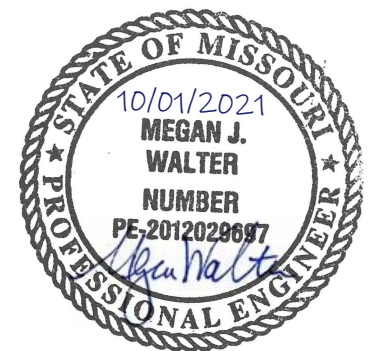
NOT  
AS-BUILT



DRAINAGE PLAN
STREET AND STORM SEWER PLANS
THE RETREAT AT HOOK FARMS
CONSTRUCTION DOCUMENTS

SHEET C117  
18 OF 54

| REV NO.   | DATE       | REVISIONS DESCRIPTION               | BY |
|-----------|------------|-------------------------------------|----|
| 1         | 06-24-2020 | CITY COMMENTS                       |    |
| 2         | 02-01-2021 | ADDED HOOK ROAD SWALE               |    |
| 3         | 04-06-2021 | SWALE AND ADA RAMP REVISIONS        |    |
| 4         | 05-04-2021 | ADA RAMP REVISIONS                  |    |
| 5         | 06-11-2021 | HEARTHSTONE PLACE ENTRANCE REVISION |    |
| REVISIONS |            |                                     |    |



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DWG: F:\2019\4001-4500\019-4059\40-Design\AutoCAD\Final Plans\_As-Builts\Sheets\GNC\C\_GEN&TABL\_0194059.dwg  
DATE: Sep 20, 2021 9:03am XREFS: C\_PTBK\_0194059\_34x22 C\_PBASE\_0194059 USER: mossion

| 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. 1-1                   | 0.57          | 0.51 | 8.01  | 6.53    | 1.00 | 1.90      |
| C.I. 1-2                   | 0.52          | 0.51 | 7.61  | 6.63    | 1.00 | 1.76      |
| C.I. 1-3                   | 2.50          | 0.51 | 19.85 | 4.60    | 1.00 | 5.86      |
| C.I. 1-4                   | 0.40          | 0.51 | 7.06  | 6.77    | 1.00 | 1.38      |
| C.I. 1-6                   | 0.51          | 0.51 | 7.74  | 6.59    | 1.00 | 1.71      |
| C.I. 1-8                   | 0.91          | 0.51 | 7.94  | 6.54    | 1.00 | 3.04      |
| C.I. 1-9                   | 0.45          | 0.51 | 13.89 | 5.35    | 1.00 | 1.23      |
| C.I. 2-2                   | 0.25          | 0.51 | 5.89  | 7.09    | 1.00 | 0.90      |
| C.I. 2-3                   | 0.60          | 0.51 | 10.88 | 5.90    | 1.00 | 1.80      |
| C.I. 2-4                   | 0.51          | 0.51 | 13.50 | 5.42    | 1.00 | 1.41      |
| C.I. 2-5                   | 0.41          | 0.51 | 12.15 | 5.65    | 1.00 | 1.18      |
| C.I. 2-6                   | 0.72          | 0.51 | 19.54 | 4.63    | 1.00 | 1.70      |
| C.I. 2-7                   | 0.42          | 0.51 | 7.14  | 6.75    | 1.00 | 1.45      |
| C.I. 4-1                   | 0.52          | 0.51 | 11.84 | 5.71    | 1.00 | 1.51      |
| C.I. 4-2                   | 2.38          | 0.51 | 18.47 | 4.74    | 1.00 | 5.75      |

| 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 | Downstream Bypass Inlet | Inlet Efficiency (Note 2) | Gutter Depth | Gutter Spread | Ponding Depth |
|                                                                                                                                                                                          |                | (cfs)     | (cfs)           | (cfs)      |                 | (cfs)          | (cfs)                       | (cfs)         | (cfs)       |                         | (%)                       | (ft)         | (ft)          | (ft)          |
| C.I. 1-1                                                                                                                                                                                 | SAG            | 1.90      | 1.30            | 3.20       | 0.80            | 19.40          | 15.52                       | 3.20          | 0.00        |                         | 100.00%                   | 0.21         | 7.03          | ...           |
| C.I. 1-2                                                                                                                                                                                 | SAG            | 1.76      | 0.09            | 1.84       | 0.80            | 19.40          | 15.52                       | 1.84          | 0.00        |                         | 100.00%                   | 0.21         | 5.78          | ...           |
| C.I. 1-3                                                                                                                                                                                 | SAG            | 5.86      | 0.00            | 5.86       | 0.80            | 19.40          | 15.52                       | 5.86          | 0.00        |                         | 100.00%                   | 0.32         | 8.91          | ...           |
| C.I. 1-4                                                                                                                                                                                 | GRADE          | 1.38      | 0.88            | 2.26       | 1.00            | 1.84           | 1.84                        | 1.84          | 0.42        | C.I. 1-1                | 81.51%                    | 0.16         | 8.15          | ...           |
| C.I. 1-6                                                                                                                                                                                 | GRADE          | 1.71      | 0.58            | 2.29       | 1.00            | 1.99           | 1.99                        | 1.99          | 0.30        | C.I. 1-4                | 86.69%                    | 0.18         | 9.02          | ...           |
| C.I. 1-8                                                                                                                                                                                 | GRADE          | 3.04      | 0.00            | 3.04       | 1.00            | 2.46           | 2.46                        | 2.46          | 0.58        | C.I. 1-6                | 80.99%                    | 0.20         | 9.77          | ...           |
| C.I. 1-9                                                                                                                                                                                 | GRADE          | 1.23      | 0.00            | 1.23       | 1.00            | 1.13           | 1.13                        | 1.13          | 0.09        | C.I. 4-2                | 92.33%                    | 0.14         | 6.96          | ...           |
| C.I. 2-2                                                                                                                                                                                 | GRADE          | 0.90      | 0.00            | 0.90       | 1.00            | 0.82           | 0.82                        | 0.82          | 0.09        | C.I. 1-2                | 90.43%                    | 0.11         | 5.41          | ...           |
| C.I. 2-3                                                                                                                                                                                 | SAG            | 1.80      | 0.00            | 1.80       | 0.80            | 19.40          | 15.52                       | 1.80          | 0.00        |                         | 100.00%                   | 0.19         | 6.62          | ...           |
| C.I. 2-4                                                                                                                                                                                 | SAG            | 1.41      | 0.49            | 1.90       | 0.80            | 19.40          | 15.52                       | 1.90          | 0.00        |                         | 100.00%                   | 0.19         | 6.75          | ...           |
| C.I. 2-5                                                                                                                                                                                 | GRADE          | 1.18      | 0.33            | 1.51       | 1.00            | 1.35           | 1.35                        | 1.35          | 0.16        | C.I. 2-4                | 89.30%                    | 0.15         | 7.30          | ...           |
| C.I. 2-6                                                                                                                                                                                 | GRADE          | 1.70      | 0.00            | 1.70       | 1.00            | 1.37           | 1.37                        | 1.37          | 0.33        | C.I. 2-5                | 80.77%                    | 0.13         | 6.71          | ...           |
| C.I. 2-7                                                                                                                                                                                 | GRADE          | 1.45      | 0.00            | 1.45       | 1.00            | 1.21           | 1.21                        | 1.21          | 0.24        | C.I. 4-2                | 83.46%                    | 0.13         | 6.31          | ...           |
| C.I. 4-1                                                                                                                                                                                 | SAG            | 1.51      | 0.00            | 1.51       | 0.80            | 19.40          | 15.52                       | 1.51          | 0.00        |                         | 100.00%                   | 0.15         | 7.42          | ...           |
| C.I. 4-2                                                                                                                                                                                 | SAG            | 5.75      | 0.33            | 6.08       | 0.80            | 19.40          | 15.52                       | 6.08          | 0.00        |                         | 100.00%                   | 0.25         | 12.49         | ...           |
| F.I. 5-1                                                                                                                                                                                 | SAG            | 6.57      | 0.00            | 6.57       | 0.50            | 18.19          | 9.09                        | 6.57          | 0.00        |                         | 100.00%                   | ...          | ...           | 0.82          |
| 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. |                |           |                 |            |                 |                |                             |               |             |                         |                           |              |               |               |

| From (Inlet) Node | To (Outlet) Node | Length | Inlet Invert Elevation | Outlet Invert Elevation | Average Slope | Pipe Diameter | Manning's Roughness | Entrance Losses | Exit/Bend Losses | Additional Losses | Initial Flow | Peak Flow | Max Flow Velocity | Travel Time | Design Flow Capacity | Max Flow / Design Flow Ratio | Max Flow Depth / Total Depth Ratio | Max Flow Depth |
|-------------------|------------------|--------|------------------------|-------------------------|---------------|---------------|---------------------|-----------------|------------------|-------------------|--------------|-----------|-------------------|-------------|----------------------|------------------------------|------------------------------------|----------------|
|                   |                  | (ft)   | (ft)                   | (ft)                    | (%)           | (inches)      |                     |                 |                  |                   | (cfs)        | (cfs)     | (ft/sec)          | (min)       | (cfs)                |                              |                                    | (ft)           |
| C.I. 1-9          | C.I. 1-8         | 34.07  | 958.09                 | 957.75                  | 1.0000        | 18.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 1.27      | 3.78              | 0.15        | 11.38                | 0.11                         | 0.25                               | 0.36           |
| C.I. 1-8          | M.H. 1-7         | 155.13 | 957.25                 | 955.70                  | 1.0000        | 18.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 4.31      | 5.60              | 0.46        | 11.38                | 0.38                         | 0.45                               | 0.67           |
| M.H. 1-7          | C.I. 1-6         | 239.43 | 955.20                 | 952.81                  | 1.0000        | 18.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 4.27      | 5.71              | 0.70        | 11.38                | 0.38                         | 0.44                               | 0.66           |
| C.I. 1-6          | M.H. 1-5         | 245.81 | 950.31                 | 947.85                  | 1.0000        | 24.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 13.54     | 7.40              | 0.55        | 24.51                | 0.55                         | 0.56                               | 1.13           |
| M.H. 1-5          | C.I. 1-4         | 74.19  | 947.35                 | 946.61                  | 1.0000        | 24.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 13.54     | 6.80              | 0.18        | 24.51                | 0.55                         | 0.61                               | 1.21           |
| C.I. 1-4          | C.I. 1-3         | 105.72 | 946.00                 | 944.95                  | 1.0000        | 24.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 15.00     | 6.61              | 0.27        | 24.48                | 0.61                         | 0.74                               | 1.48           |
| C.I. 1-3          | C.I. 1-2         | 34.00  | 944.45                 | 944.11                  | 1.0000        | 30.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 20.86     | 6.47              | 0.09        | 44.44                | 0.47                         | 0.74                               | 1.84           |
| C.I. 1-2          | C.I. 1-1         | 153.31 | 943.61                 | 942.84                  | 0.5000        | 36.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 31.14     | 5.90              | 0.43        | 51.21                | 0.61                         | 0.71                               | 2.12           |
| C.I. 1-1          | E.S. 1-0         | 67.47  | 942.34                 | 942.00                  | 0.5000        | 36.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 36.51     | 6.57              | 0.17        | 51.15                | 0.71                         | 0.73                               | 2.20           |
| C.I. 2-7          | C.I. 2-6         | 33.82  | 961.33                 | 960.99                  | 1.0000        | 18.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 1.50      | 3.94              | 0.14        | 11.38                | 0.13                         | 0.27                               | 0.40           |
| C.I. 2-6          | C.I. 2-5         | 216.83 | 960.49                 | 956.15                  | 2.0000        | 18.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 3.15      | 6.81              | 0.53        | 16.09                | 0.20                         | 0.31                               | 0.46           |
| C.I. 2-5          | C.I. 2-4         | 180.63 | 955.65                 | 953.84                  | 1.0000        | 18.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 4.33      | 5.65              | 0.53        | 11.38                | 0.38                         | 0.45                               | 0.67           |
| C.I. 2-4          | C.I. 2-3         | 34.00  | 953.34                 | 953.00                  | 1.0000        | 18.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 5.74      | 5.40              | 0.10        | 11.38                | 0.50                         | 0.58                               | 0.87           |
| C.I. 2-3          | C.I. 2-2         | 102.07 | 951.31                 | 950.29                  | 1.0000        | 18.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 7.54      | 6.14              | 0.28        | 11.38                | 0.66                         | 0.66                               | 0.98           |
| C.I. 2-2          | M.H. 2-1         | 174.65 | 949.79                 | 948.04                  | 1.0000        | 24.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 8.46      | 6.53              | 0.45        | 24.51                | 0.35                         | 0.43                               | 0.86           |
| M.H. 2-1          | C.I. 1-2         | 209.75 | 947.54                 | 945.44                  | 1.0000        | 24.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 8.47      | 6.60              | 0.53        | 24.51                | 0.35                         | 0.43                               | 0.85           |
| F.I. 3-2          | F.I. 3-1         | 125.13 | 957.08                 | 955.83                  | 1.0000        | 18.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 0.00      | 0.00              |             | 11.38                | 0.00                         | 0.00                               | 0.00           |
| F.I. 3-1          | M.H. 1-5         | 203.52 | 955.33                 | 951.26                  | 2.0000        | 18.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 0.00      | 0.00              |             | 16.09                | 0.00                         | 0.00                               | 0.00           |
| F.I. 4-5          | F.I. 4-4         | 100.60 | 959.44                 | 957.43                  | 2.0000        | 18.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 0.00      | 0.00              |             | 16.09                | 0.00                         | 0.00                               | 0.00           |
| F.I. 4-4          | M.H. 4-3         | 94.00  | 957.23                 | 955.35                  | 2.0000        | 18.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 0.00      | 0.00              |             | 16.09                | 0.00                         | 0.00                               | 0.00           |
| M.H. 4-3          | C.I. 4-2         | 111.00 | 954.85                 | 953.74                  | 1.0000        | 18.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 0.00      | 0.00              |             | 11.38                | 0.00                         | 0.18                               | 0.26           |
| C.I. 4-2          | C.I. 4-1         | 34.00  | 953.24                 | 952.90                  | 1.0000        | 18.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 6.10      | 5.48              | 0.10        | 11.38                | 0.54                         | 0.60                               | 0.90           |
| C.I. 4-1          | C.I. 1-6         | 62.81  | 951.56                 | 950.93                  | 1.0000        | 18.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 7.74      | 5.99              | 0.17        | 11.38                | 0.68                         | 0.69                               | 1.02           |
| E.S. 5-3          | E.S. 5-2         | 18.19  | 958.07                 | 957.89                  | 1.0000        | 12.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 0.00      | 0.00              |             | 3.86                 | 0.00                         | 0.00                               | 0.00           |
| F.I. 5-1          | E.S. 5-0         | 274.81 | 953.53                 | 947.48                  | 2.2000        | 18.00         | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 6.84      | 8.68              | 0.53        | 16.88                | 0.41                         | 0.46                               | 0.67           |
| O.S. 7-1          | E.S. 7-0         | 315.15 | 939.91                 | 936.75                  | 1.0000        | 6.00          | 0.0120              | 0.5000          | 0.5000           | 0.0000            | 0.00         | 0.00      | 0.00              |             | 0.61                 | 0.00                         | 0.00                               | 0.00           |

\*C.I. 1-1 IS SIZED FOR 10-YR

NOT  
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| 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. 1-1                   | 0.57          | 0.51 | 8.01  | 9.20    | 1.25 | 3.34      |
| C.I. 1-2                   | 0.52          | 0.51 | 7.61  | 9.34    | 1.25 | 3.10      |
| C.I. 1-3                   | 2.50          | 0.51 | 19.85 | 6.64    | 1.25 | 10.58     |
| C.I. 1-4                   | 0.40          | 0.51 | 7.06  | 9.53    | 1.25 | 2.43      |
| C.I. 1-6                   | 0.51          | 0.51 | 7.74  | 9.29    | 1.25 | 3.02      |
| C.I. 1-8                   | 0.91          | 0.51 | 7.94  | 9.23    | 1.25 | 5.35      |
| C.I. 1-9                   | 0.45          | 0.51 | 13.89 | 7.60    | 1.25 | 2.18      |
| C.I. 2-2                   | 0.25          | 0.51 | 5.89  | 9.96    | 1.25 | 1.59      |
| C.I. 2-3                   | 0.60          | 0.51 | 10.88 | 8.34    | 1.25 | 3.19      |
| C.I. 2-4                   | 0.51          | 0.51 | 13.50 | 7.69    | 1.25 | 2.50      |
| C.I. 2-5                   | 0.41          | 0.51 | 12.15 | 8.01    | 1.25 | 2.09      |
| C.I. 2-6                   | 0.72          | 0.51 | 19.54 | 6.68    | 1.25 | 3.07      |
| C.I. 2-7                   | 0.42          | 0.51 | 7.14  | 9.50    | 1.25 | 2.54      |
| C.I. 4-1                   | 0.52          | 0.51 | 11.84 | 8.09    | 1.25 | 2.68      |
| C.I. 4-2                   | 2.38          | 0.51 | 18.47 | 6.83    | 1.25 | 10.36     |

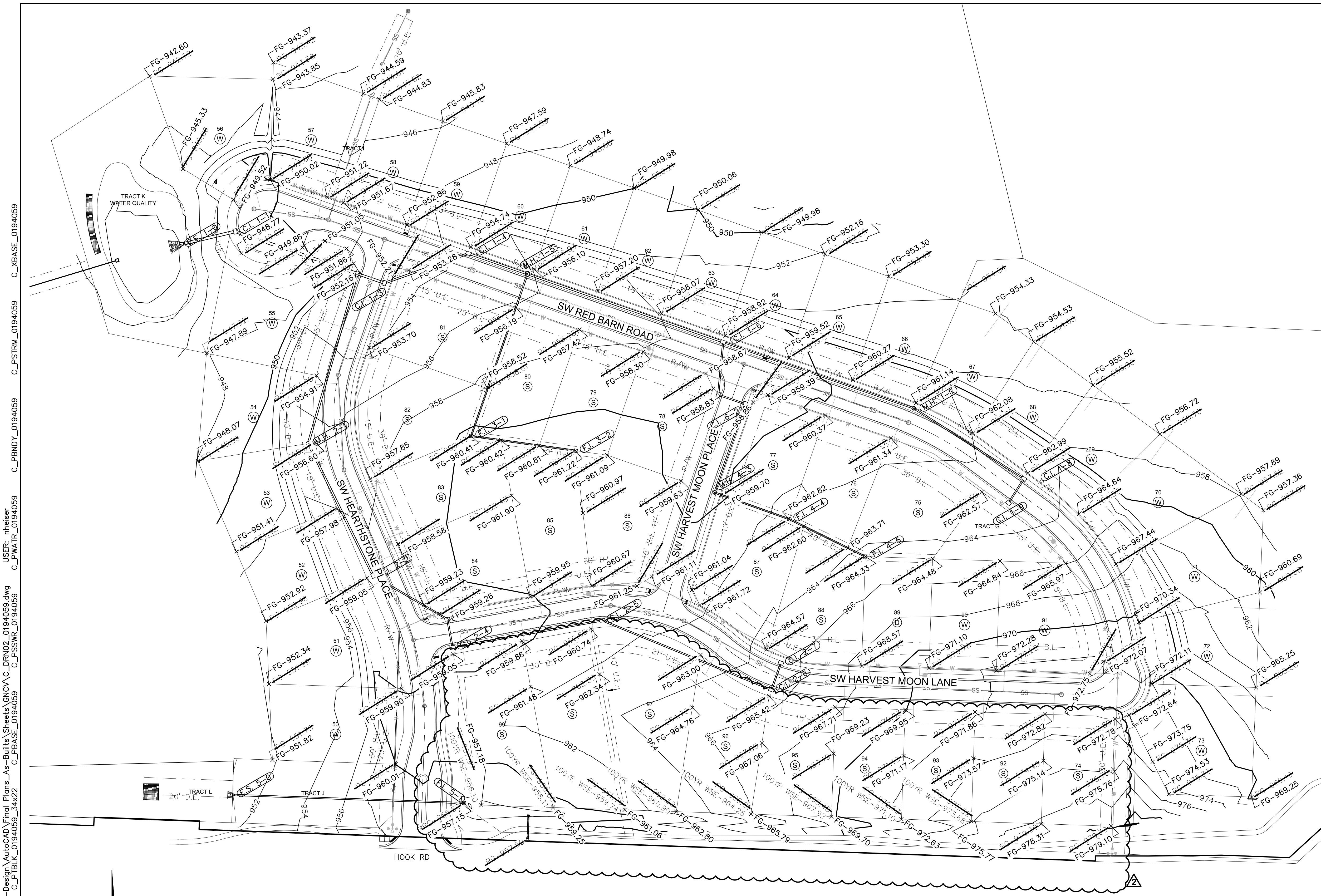
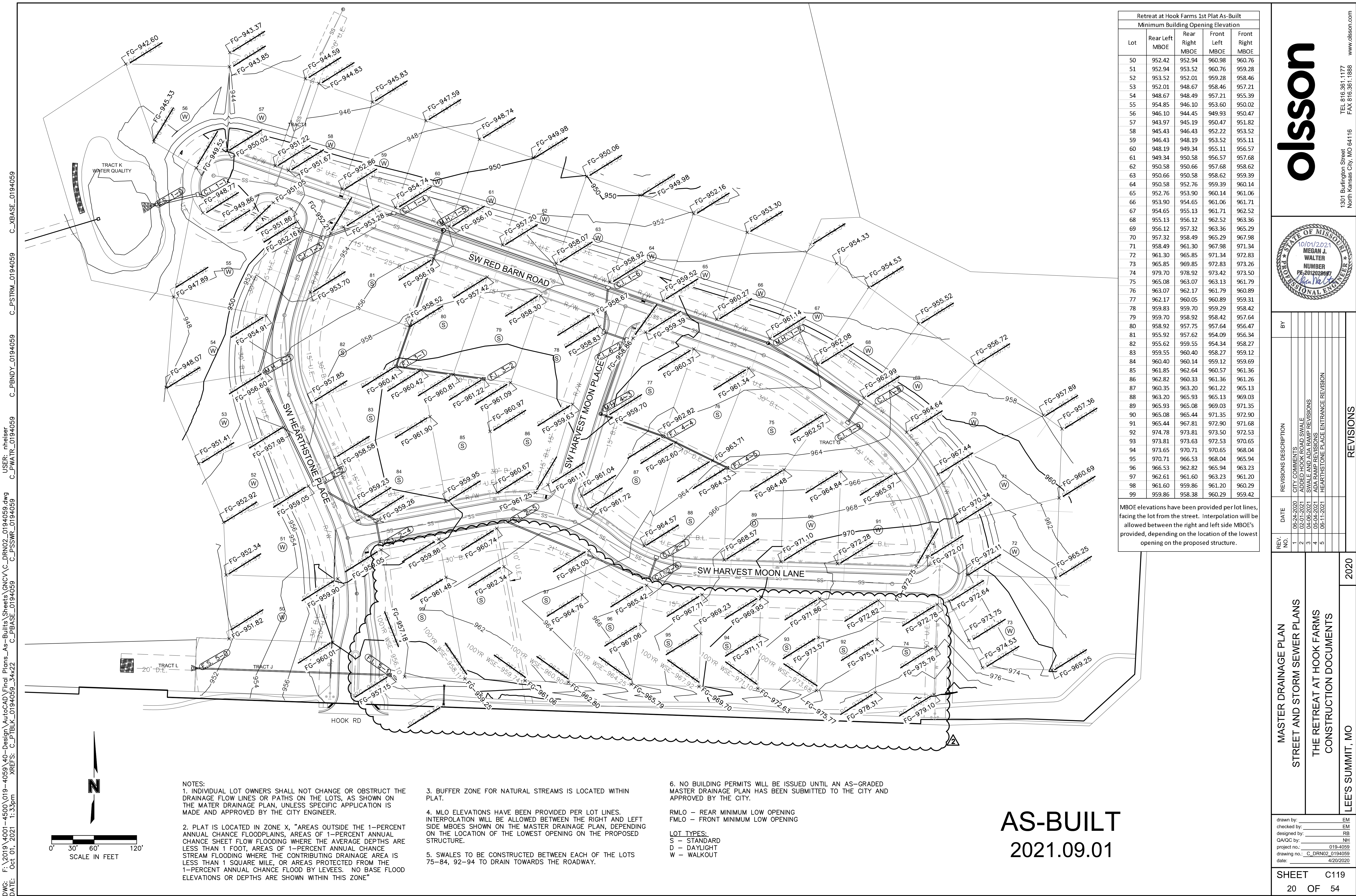
| Inlet Design Table        |                |           |                 |            |                 |                |                             |               |             |                         |                           |              |               |               |
|---------------------------|----------------|-----------|-----------------|------------|-----------------|----------------|-----------------------------|---------------|-------------|-------------------------|---------------------------|--------------|---------------|---------------|
| 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 | Downstream Bypass Inlet | Inlet Efficiency (Note 2) | Gutter Depth | Gutter Spread | Ponding Depth |
|                           |                | (cfs)     | (cfs)           | (cfs)      |                 | (cfs)          | (cfs)                       | (cfs)         | (cfs)       |                         | (%)                       | (ft)         | (ft)          | (ft)          |
| C.I. 1-1                  | SAG            | 3.34      | 4.83            | 8.17       | 0.80            | 19.40          | 15.52                       | 8.17          | 0.00        |                         | 100.00%                   | 0.30         | 9.99          | ...           |
| C.I. 1-2                  | SAG            | 3.10      | 0.27            | 3.36       | 0.80            | 19.40          | 15.52                       | 3.36          | 0.00        |                         | 100.00%                   | 0.26         | 7.23          | ...           |
| C.I. 1-3                  | SAG            | 10.58     | 0.00            | 10.58      | 0.80            | 19.40          | 15.52                       | 10.58         | 0.00        |                         | 100.00%                   | 0.40         | 11.12         | ...           |
| C.I. 1-4                  | GRADE          | 2.43      | 2.85            | 5.28       | 1.00            | 3.31           | 3.31                        | 3.31          | 1.98        | C.I. 1-1                | 62.59%                    | 0.22         | 11.20         | ...           |
| C.I. 1-6                  | GRADE          | 3.02      | 1.65            | 4.68       | 1.00            | 3.48           | 3.48                        | 3.48          | 1.20        | C.I. 1-4                | 74.39%                    | 0.24         | 11.78         | ...           |
| C.I. 1-8                  | GRADE          | 5.35      | 0.00            | 5.35       | 1.00            | 3.70           | 3.70                        | 3.70          | 1.65        | C.I. 1-6                | 69.10%                    | 0.24         | 12.09         | ...           |
| C.I. 1-9                  | GRADE          | 2.18      | 0.00            | 2.18       | 1.00            | 1.88           | 1.88                        | 1.88          | 0.30        | C.I. 4-2                | 86.11%                    | 0.17         | 8.63          | ...           |
| C.I. 2-2                  | GRADE          | 1.59      | 0.00            | 1.59       | 1.00            | 1.32           | 1.32                        | 1.32          | 0.27        | C.I. 1-2                | 83.22%                    | 0.13         | 6.68          | ...           |
| C.I. 2-3                  | SAG            | 3.19      | 0.00            | 3.19       | 0.80            | 19.40          | 15.52                       | 3.19          | 0.00        |                         | 100.00%                   | 0.24         | 8.20          | ...           |
| C.I. 2-4                  | SAG            | 2.50      | 1.62            | 4.12       | 0.80            | 19.40          | 15.52                       | 4.12          | 0.00        |                         | 100.00%                   | 0.26         | 9.03          | ...           |
| C.I. 2-5                  | GRADE          | 2.09      | 0.97            | 3.07       | 1.00            | 2.42           | 2.42                        | 2.42          | 0.65        | C.I. 2-4                | 78.84%                    | 0.19         | 9.53          | ...           |
| C.I. 2-6                  | GRADE          | 3.07      | 0.00            | 3.07       | 1.00            | 2.09           | 2.09                        | 2.09          | 0.97        | C.I. 2-5                | 68.21%                    | 0.17         | 8.37          | ...           |
| C.I. 2-7                  | GRADE          | 2.54      | 0.00            | 2.54       | 1.00            | 1.85           | 1.85                        | 1.85          | 0.70        | C.I. 4-2                | 72.66%                    | 0.16         | 7.80          | ...           |
| C.I. 4-1                  | SAG            | 2.68      | 0.00            | 2.68       | 0.80            | 19.40          | 15.52                       | 2.68          | 0.00        |                         | 100.00%                   | 0.18         | 9.19          | ...           |
| C.I. 4-2                  | SAG            | 10.36     | 1.00            | 11.36      | 0.80            | 19.40          | 15.52                       | 11.36         | 0.00        |                         | 100.00%                   | 0.32         | 15.79         | ...           |
| F.I. 5-1                  | SAG            | 11.56     | 0.00            | 11.56      | 0.50            | 18.19          | 9.09                        | 9.09          | 2.47        |                         | 78.64%                    | ...          | ...           | 1.50          |

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.



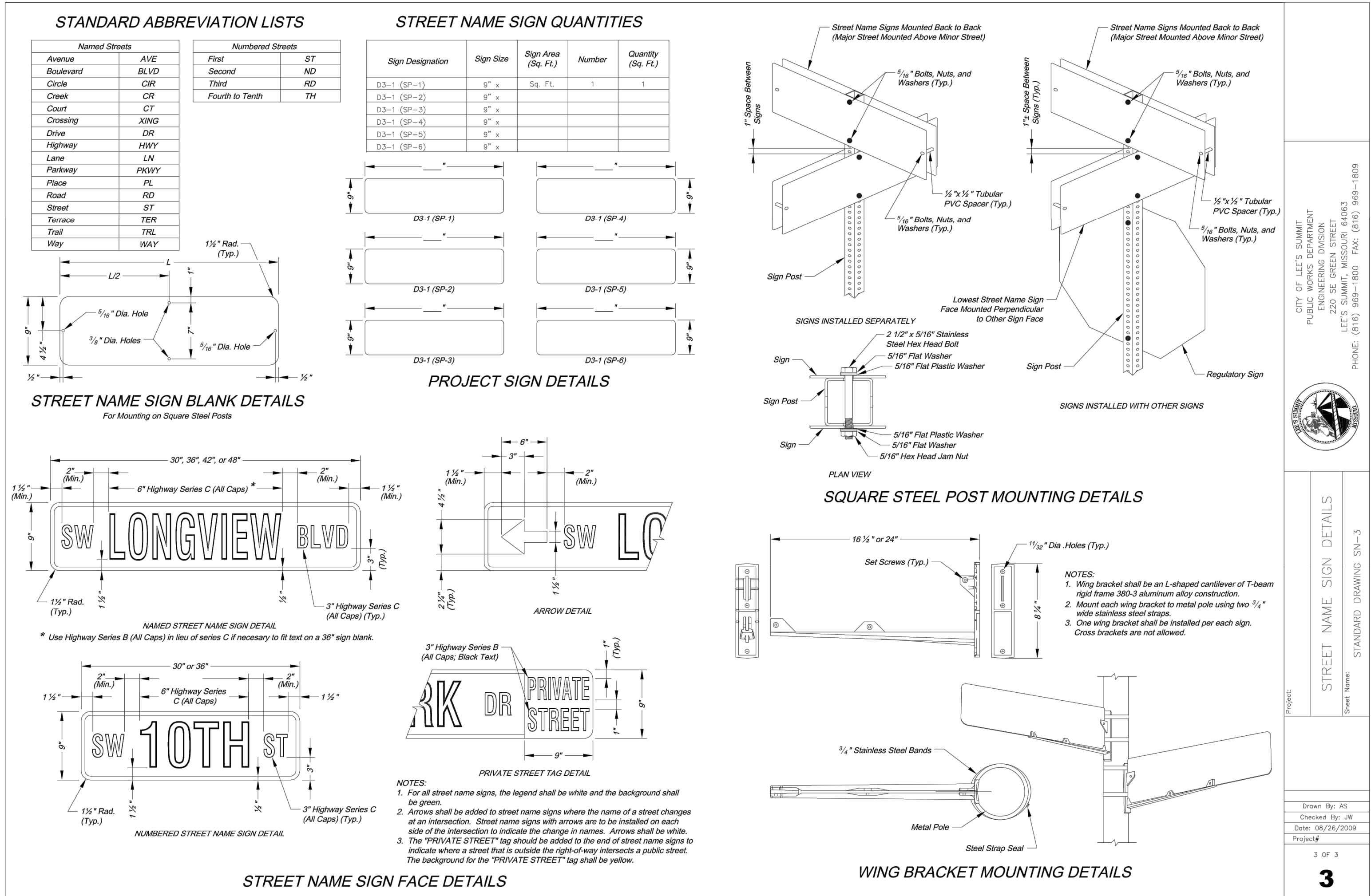


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USER: nheiser









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STATE OF MISSOURI  
10/01/2021  
MEGAN J. WALTER  
NUMBER  
PE-2012028697  
Professional Engineer

| REV. | NO. | DATE       | REVISIONS DESCRIPTION               | BY |
|------|-----|------------|-------------------------------------|----|
| 1    |     | 06-24-2020 | CITY COMMENTS                       |    |
| 2    |     | 02-01-2021 | ADDED HOOK ROAD SWALE               |    |
| 3    |     | 04-06-2021 | SWALE AND ADA RAMP REVISIONS        |    |
| 4    |     | 05-04-2021 | ADA RAMP REVISIONS                  |    |
| 5    |     | 06-11-2021 | HEARTHSTONE PLACE ENTRANCE REVISION |    |
|      |     |            |                                     |    |
|      |     |            |                                     |    |
|      |     |            |                                     |    |
|      |     |            |                                     |    |

SIGNAGE DETAILS  
STREET AND STORM SEWER PLANS  
THE RETREAT AT HOOK FARMS  
CONSTRUCTION DOCUMENTS

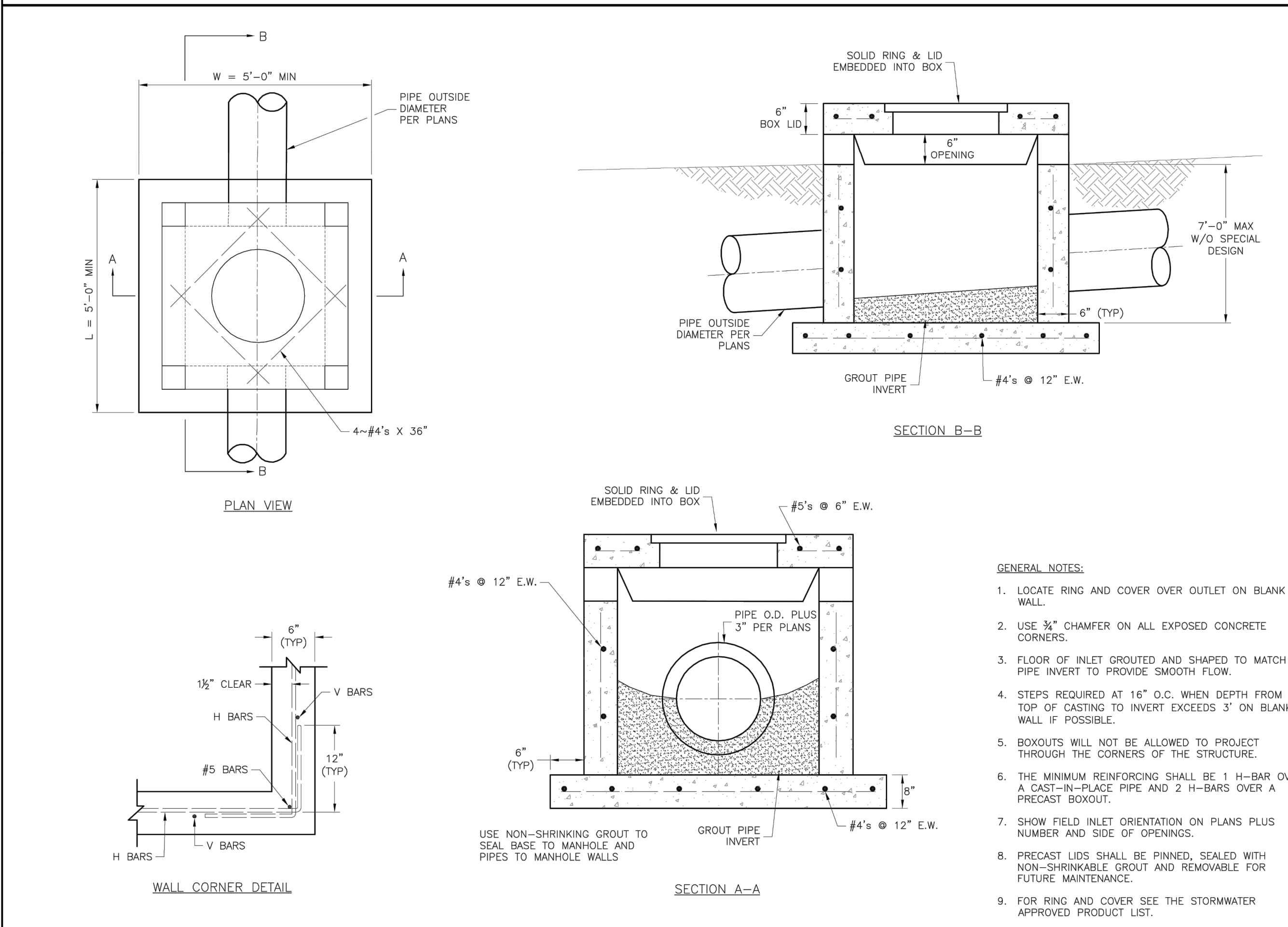
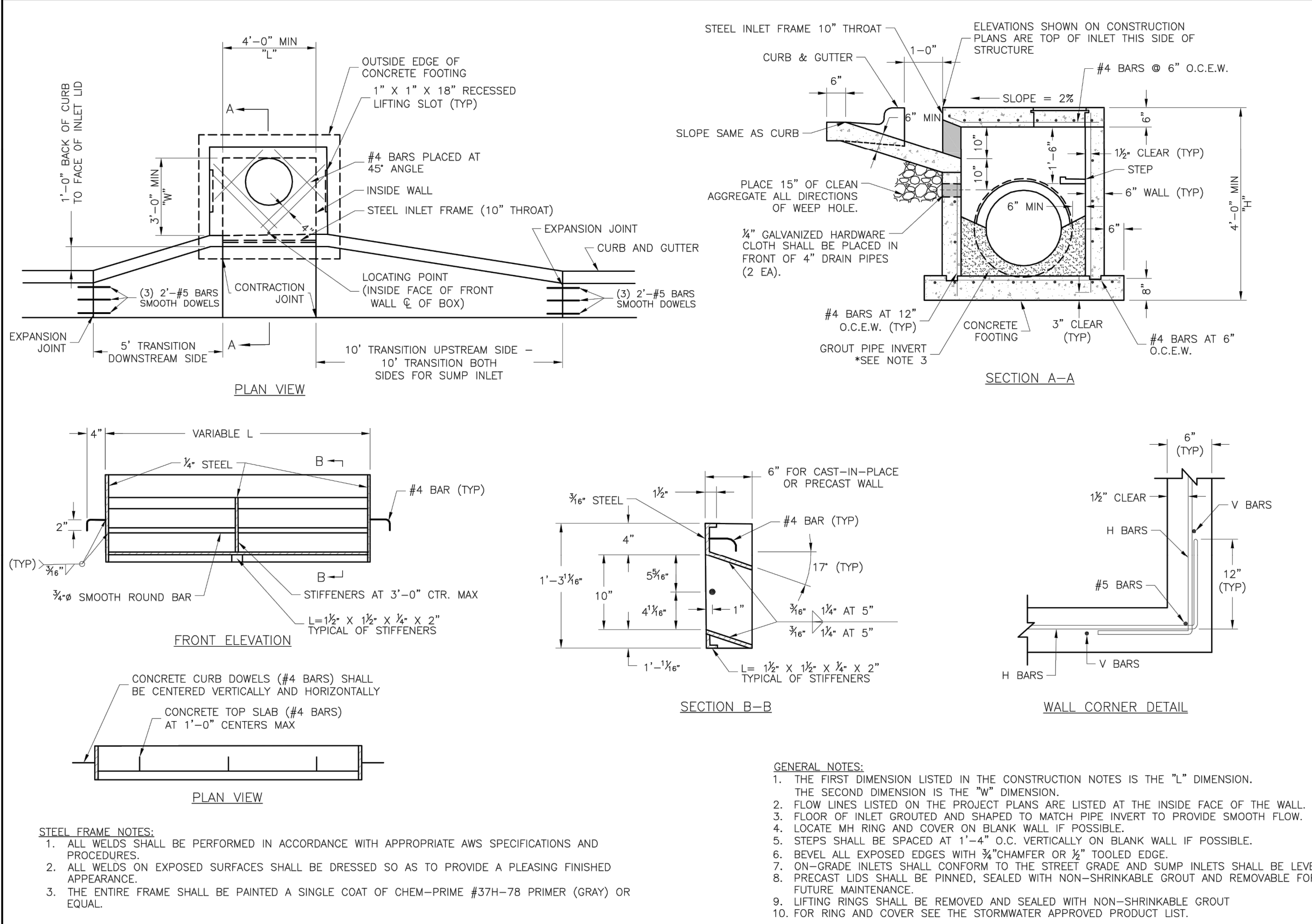
2020

LEE'S SUMMIT, MO

drawn by: \_\_\_\_\_ EM/  
checked by: \_\_\_\_\_ EM/  
designed by: \_\_\_\_\_ RB/  
QA/QC by: \_\_\_\_\_ NH/  
project no.: 019-4059  
drawing no.: C\_DTL00\_0194059  
date: 4/20/2020

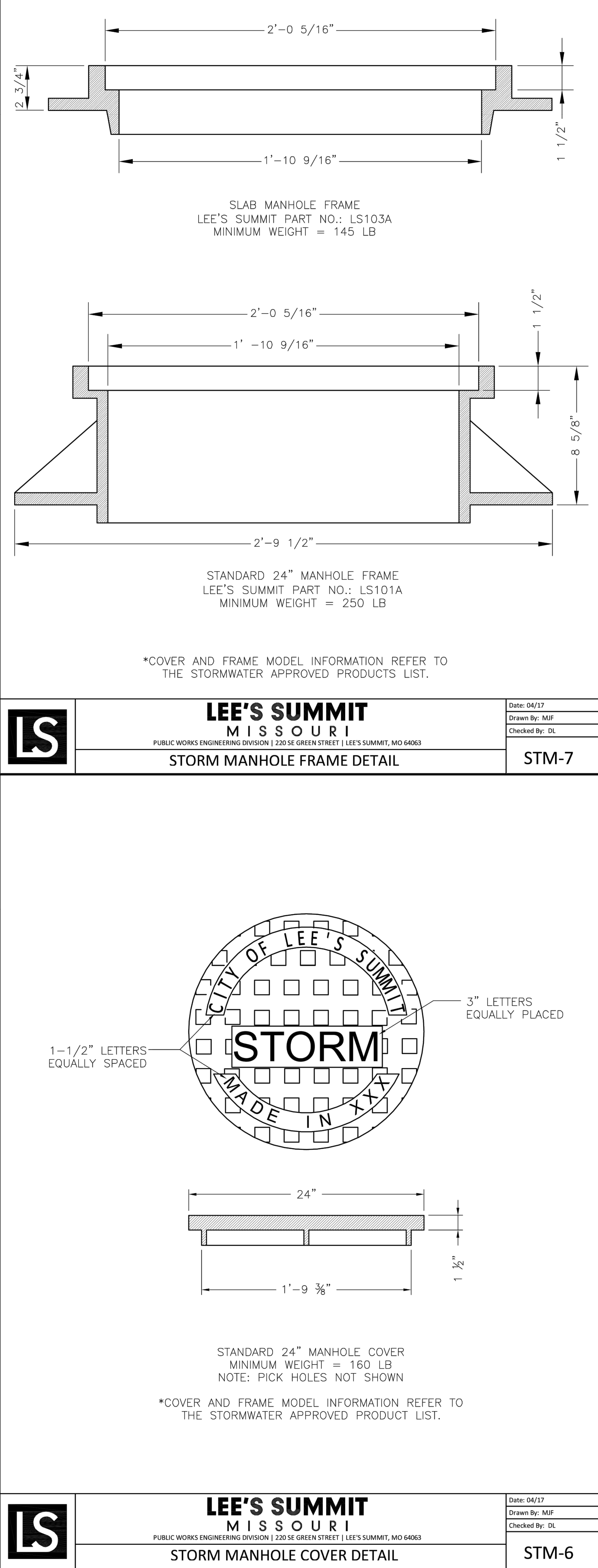
SHEET C121  
22 OF 54





|                                                                                                |                                                                            |                                                                                                              |       |
|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-------|
| STANDARD DETAILS<br>CITY OF LEE'S SUMMIT, MO<br>LEE'S SUMMIT, JACKSON COUNTY, MO<br>Sheet Name | CITY OF LEE'S SUMMIT, MO<br>LEE'S SUMMIT, JACKSON COUNTY, MO<br>Sheet Name | LEE'S SUMMIT<br>MISSOURI<br>PUBLIC WORKS ENGINEERING DIVISION   220 SE GREEN STREET   LEE'S SUMMIT, MO 64063 | STM-1 |
|                                                                                                |                                                                            |                                                                                                              |       |
|                                                                                                |                                                                            |                                                                                                              |       |
|                                                                                                |                                                                            |                                                                                                              |       |
| STANDARD DETAILS<br>CITY OF LEE'S SUMMIT, MO<br>LEE'S SUMMIT, JACKSON COUNTY, MO<br>Sheet Name | CITY OF LEE'S SUMMIT, MO<br>LEE'S SUMMIT, JACKSON COUNTY, MO<br>Sheet Name | LEE'S SUMMIT<br>MISSOURI<br>PUBLIC WORKS ENGINEERING DIVISION   220 SE GREEN STREET   LEE'S SUMMIT, MO 64063 | STM-2 |
|                                                                                                |                                                                            |                                                                                                              |       |
|                                                                                                |                                                                            |                                                                                                              |       |
|                                                                                                |                                                                            |                                                                                                              |       |

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www.olson.com

STATE OF MISSOURI  
10/01/2021  
MEGAN J. WALTER  
NUMBER  
PE-2012028697  
Professional Engineer

| REV. NO. | DATE       | REVISIONS DESCRIPTION               |
|----------|------------|-------------------------------------|
| 1        | 06-24-2020 | CITY COMMENTS                       |
| 2        | 02-01-2021 | ADDED HOOK ROAD SWALE               |
| 3        | 04-02-2021 | SWALE AND ADA RAMP REVISIONS        |
| 4        | 05-04-2021 | ADA RAMP REVISIONS                  |
| 5        | 06-11-2021 | HEARTHSTONE PLACE ENTRANCE REVISION |

STORM DETAILS  
STREET AND STORM SEWER PLANS  
THE RETREAT AT HOOK FARMS  
CONSTRUCTION DOCUMENTS

2020

LEE'S SUMMIT, MO

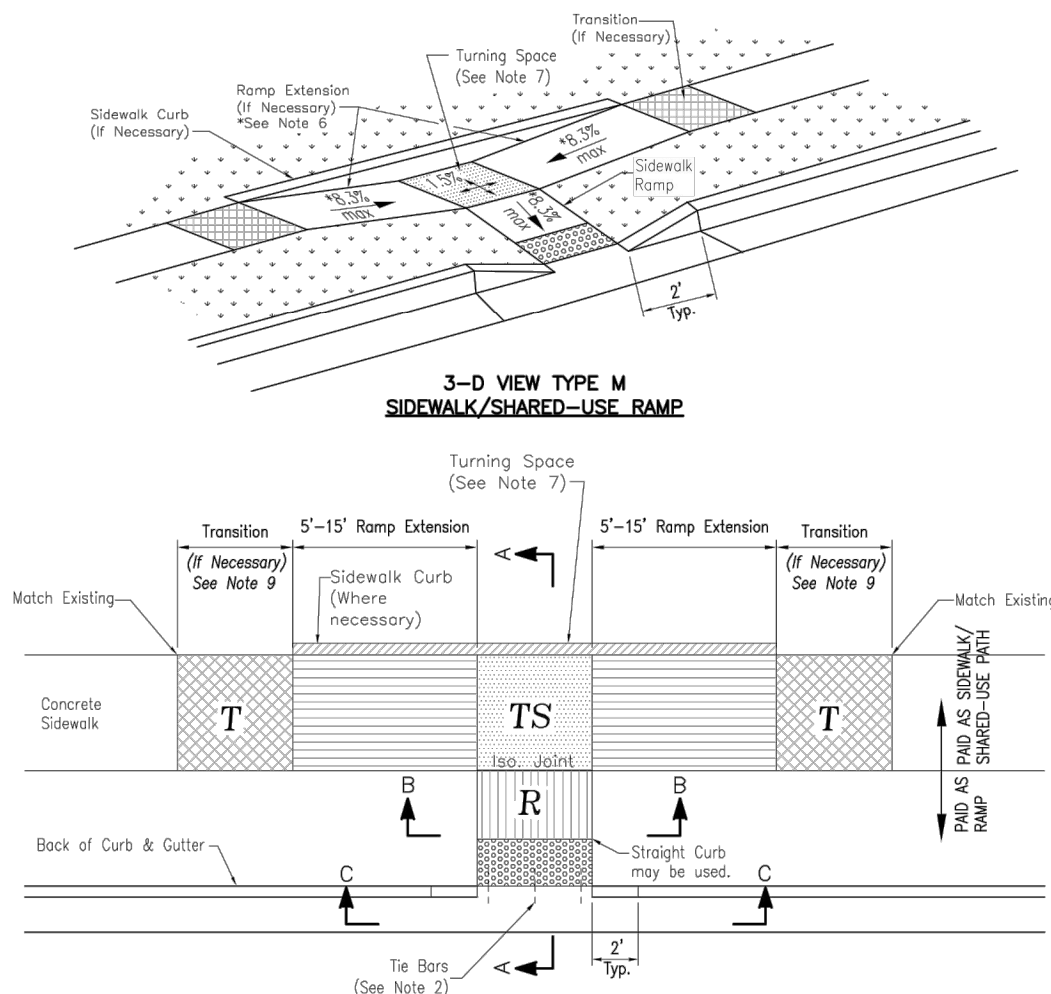
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checked by: \_\_\_\_\_ EM  
designed by: \_\_\_\_\_ RB  
QA/QC by: \_\_\_\_\_ NH  
project no.: 019-4059  
drawing no.: C\_DTL00\_0194059  
date: 4/20/2020

SHEET C122  
23 OF 54

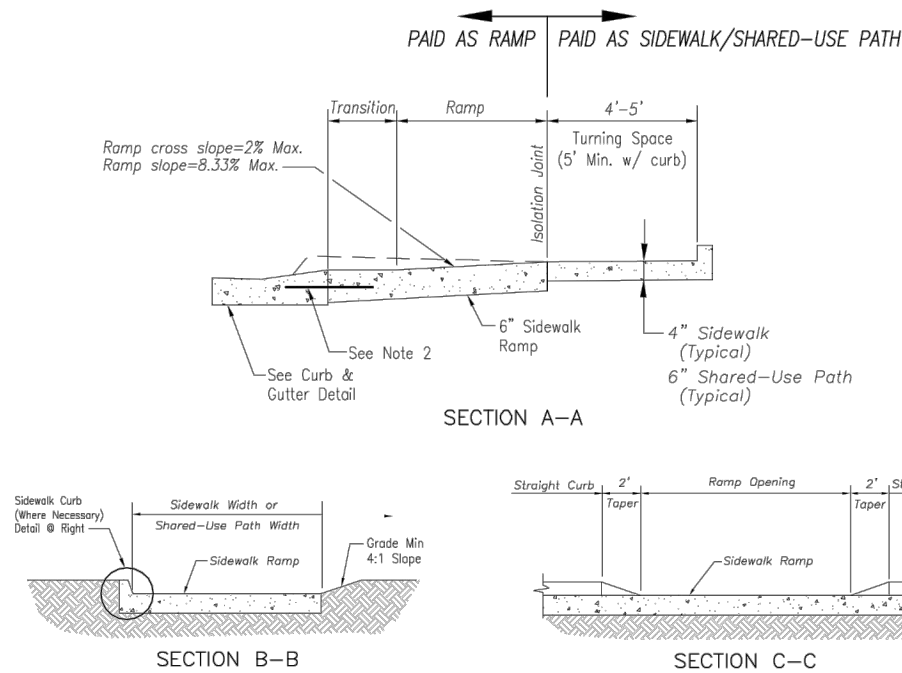




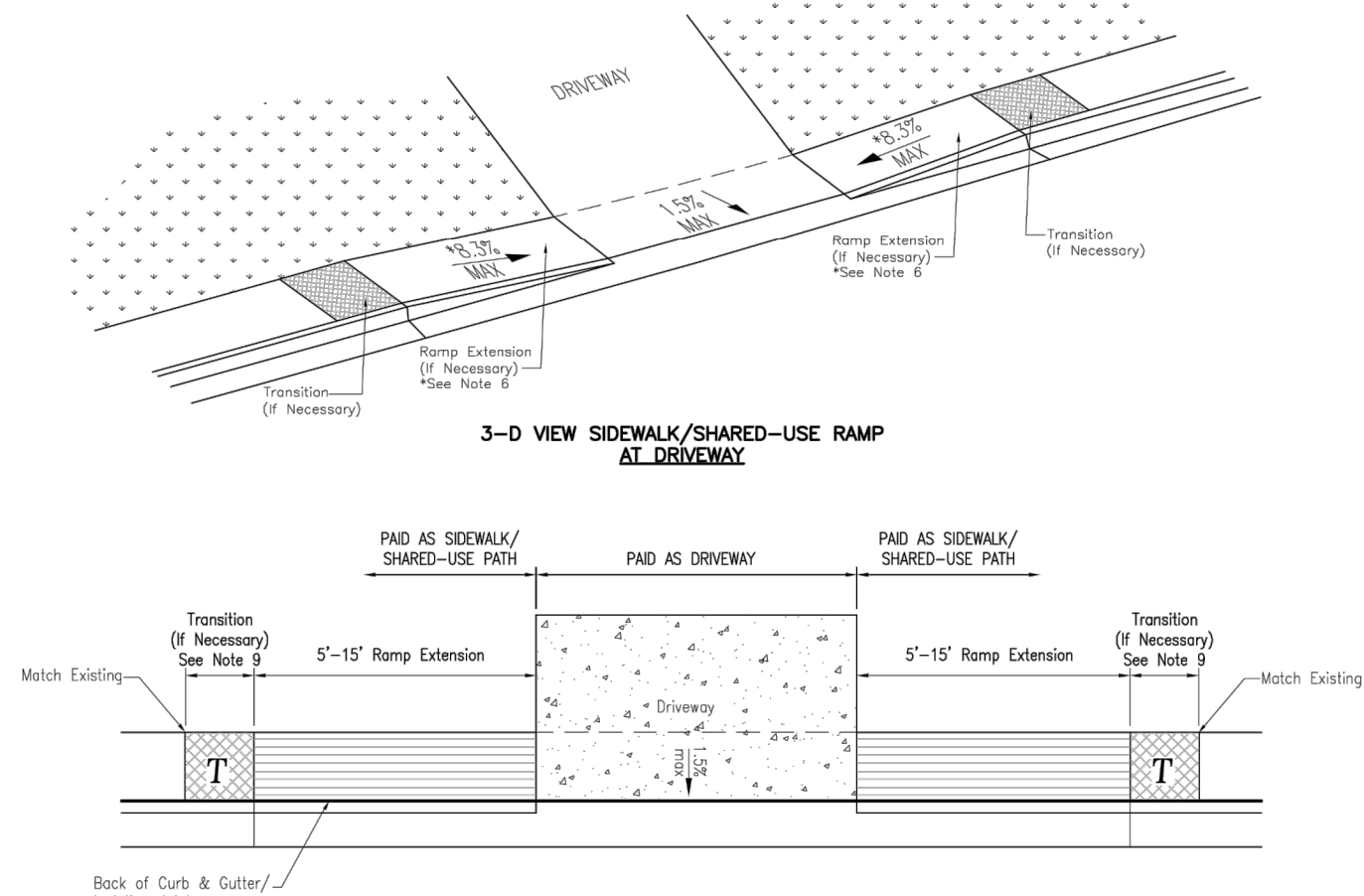




TYPE M SIDEWALK/SHARED-USE RAMP  
Not to Scale



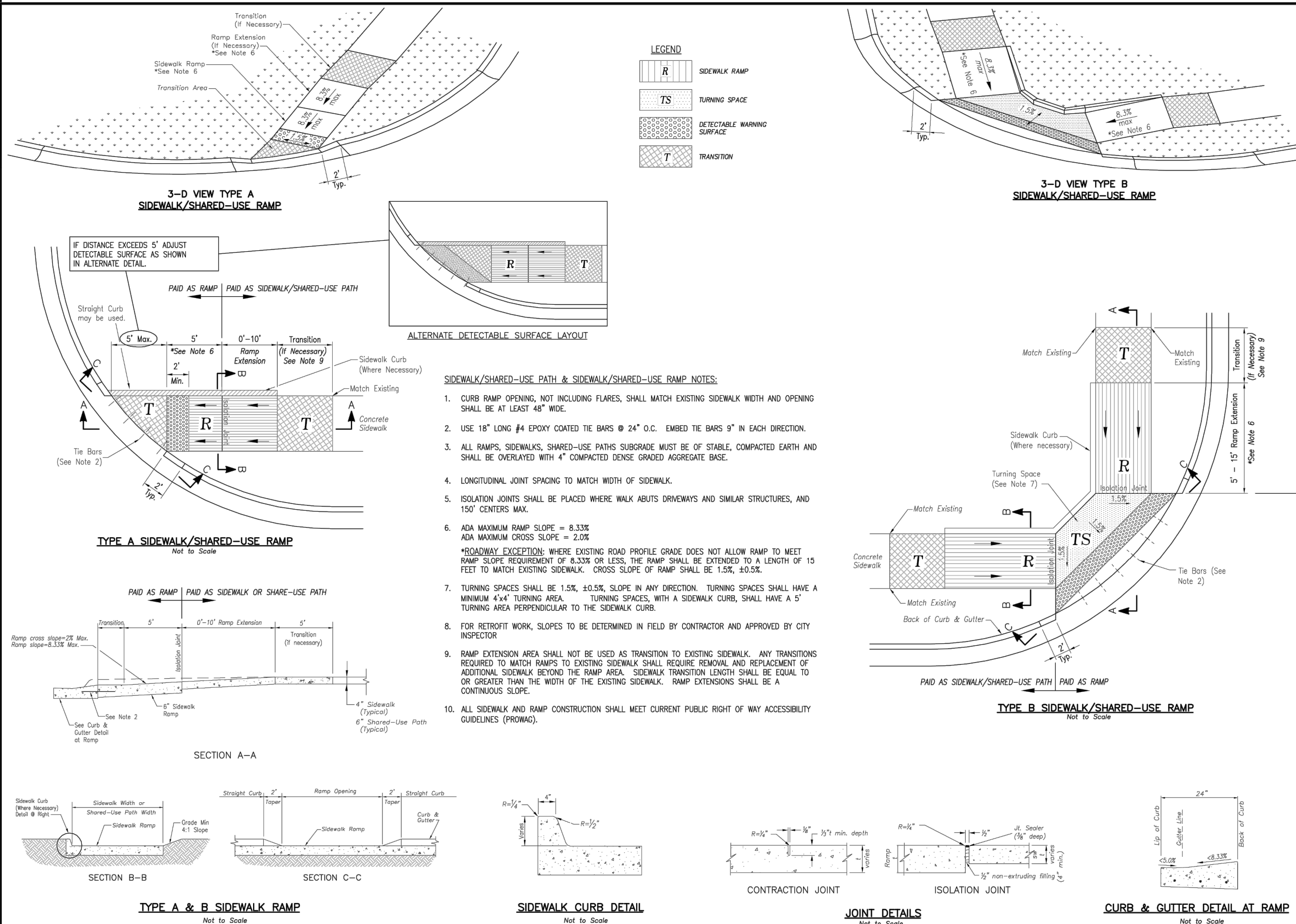
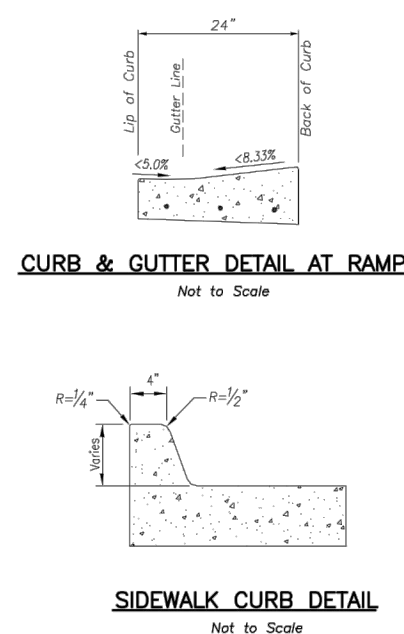
TYPE M SIDEWALK RAMP



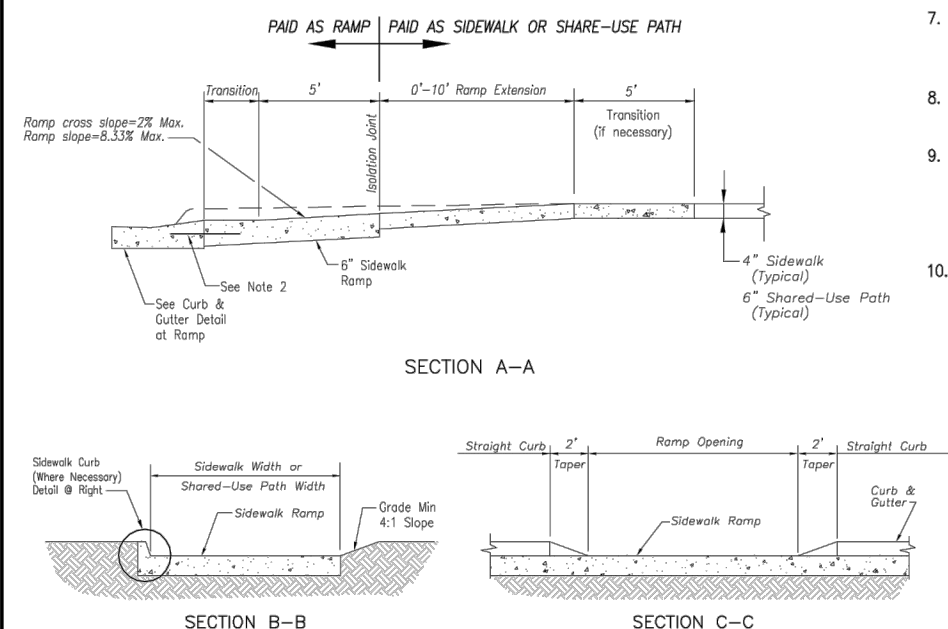
SIDEWALK/SHARED USE RAMP  
AT DRIVEWAY WITH ADJOINING CURB

- SIDEWALK/SHARED-USE PATH & SIDEWALK/SHARED-USE RAMP NOTES:

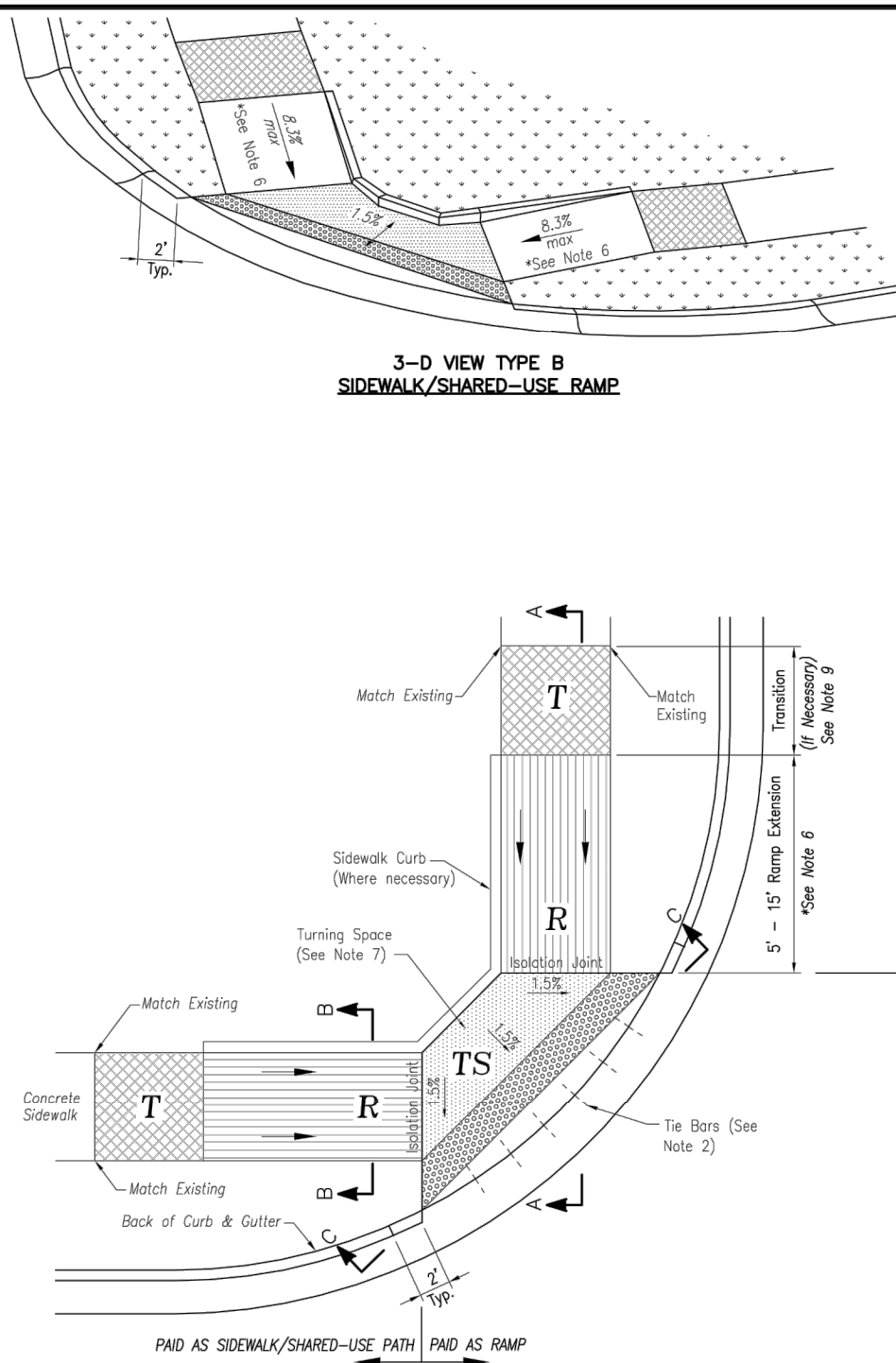
3. CURB RAMP SHALL NOT INCLUDE FLANGES, MATCH EXISTING SIDEWALK WIDTH AND OPENING SHALL BE AT LEAST 48" WIDE.
4. USE 18" LONG #4 EPOXY COATED THE BARS @ 24" O.C. EMBED THE BARS 9" IN EACH DIRECTION.
5. ALL RAMP, SIDEWALKS, SHARED-USE PATHS SUBGRADE MUST BE STABLE, COMPACTED EARTH AND SHALL BE OVERLAPPED WITH 4" COMPACTED DENSE GRADE AGGREGATE BASE.
6. LONGITUDINAL JOINT SPACING TO MATCH WIDTH OF SIDEWALK.
7. ISOLATION JOINTS SHALL BE PLACED WHERE WALK AHEAD DRIVEWAYS AND SIMILAR STRUCTURES, 150' CENTERS MAX.
8. ADA MAXIMUM RAMP SLOPE = 0.33%  
ADA MAXIMUM CROSS SLOPE = 2.08%  
"ROADWAY EXCEPTIONS" WHERE EXISTING ROAD PROFILE GRADE DOES NOT ALLOW RAMP TO MEET RAMP SLOPE REQUIREMENT OF 0.33% OR LESS, THE RAMP SHALL BE EXTENDED TO A LENGTH OF 15' TO MEET THE RAMP SLOPE REQUIREMENT OF 0.33% OR LESS. RAMP SHALL BE 1.5X, 40.0X, 80.0X.
9. TURNING SPACES SHALL BE 1.5X, 40.0X, 80.0X IN ANY DIRECTION. TURNING SPACES SHALL HAVE MINIMUM 4'X4' TURNING AREA. TURNING SPACES, WITH A SIDEWALK CURB, SHALL HAVE A 5' TURNING SPACE PERPENDICULAR TO THE SIDEWALK CURB.
10. FOR RETROFIT WORK, SLOPES TO BE DETERMINED IN FIELD BY CONTRACTOR AND APPROVED BY CITY INSPECTOR.
11. RAMP EXTENSION AREA SHALL NOT BE USED AS TRANSITION TO EXISTING SIDEWALK, ANY TRANSITION REQUIRED TO MATCH RAMP TO EXISTING SIDEWALK SHALL REQUIRE REMOVAL AND REPLACEMENT OF EXISTING SIDEWALK TO MEET THE RAMP SLOPE REQUIREMENT. RAMP EXTENSIONS SHALL BE EQUAL OR GREATER THAN THE WIDTH OF THE EXISTING SIDEWALK. RAMP EXTENSIONS SHALL BE:
12. ALL SIDEWALK AND RAMP CONSTRUCTION SHALL PROVIDE PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).



TYPE A SIDEWALK/SHARED-USE RAMP  
Not to Scale



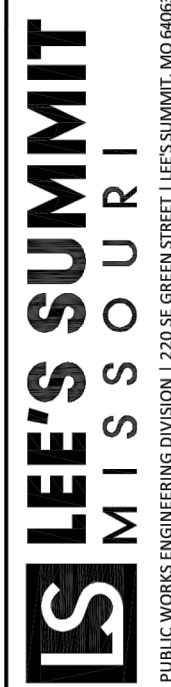
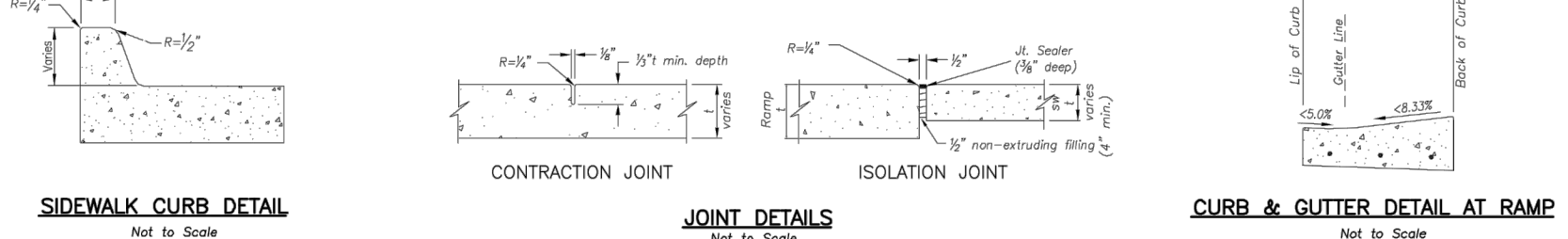
TYPE A & B SIDEWALK RAMP



### TYPE B SIDEWALK/SHARED-USE RAMP

- SIDEWALK/SHARED-USE PATH & SIDEWALK/SHARED-USE RAMP NOTES:

1. CURB RAMP SHALL NOT INCLUDE FLANGES, MATCH EXISTING SIDEWALK WITH OPENING SHALL BE AT LEAST 46" WIDE.
2. USE 1" LONG #4 EPOXY COATED THE BARS @ 24" O.C. EMBED THE BARS 9" IN EACH DIRECTION.
3. ALL RAMP, SIDEWALKS, SHARED-USE PATHS SUBGRADE MUST BE STABLE, COMPACTED EARTH SHALL BE OPERATED WITH 4" COMPACTED DENSE GRADE AGGREGATE BASE.
4. LONGITUDINAL JOINT SPACING TO MATCH WIDTH OF SIDEWALK.
5. ISOLATION JOINTS SHALL BE PLACED WHERE WALKS ABUTS DRUMWAYS AND SIMILAR STRUCTURES, AND 150' CENTERS MAX.
6. ADA MAXIMUM DRAIN SLOPE = 6.33%  
ADA MINIMUM DRAIN SLOPE = 2.08%  
\*ROADWAY EXEMPTION: WHERE EXISTING ROAD PROFILE GRADE DOES NOT ALLOW RAMP TO MEET RAMP SLOPE REQUIREMENT OF 6.33% OR LESS, THE RAMP SHALL BE EXTENDED TO A LENGTH OF 15' TO MEET THE 6.33% SLOPE REQUIREMENT.
7. TURNING SPACES SHALL BE 15.0', 40.0', SLOPE IN ANY DIRECTION. TURNING SPACE SHALL HAVE MINIMUM 4" TURNING AREA. TURNING SPACES, WITH A SIDEWALK CURBS, SHALL HAVE A 5" TURNING AREA PERPENDICULAR TO THE SIDEWALK CURB.
8. FOR REBUILT WORK, SLOPES TO BE DETERMINED IN FIELD BY CONTRACTOR AND APPROVED BY CITY INSPECTOR.
9. RAMP EXTENSION AREA SHALL NOT BE USED AS TRANSITION TO EXISTING SIDEWALK, ANY TRANSITION REQUIRED TO MATCH RAMP TO EXISTING SIDEWALK SHALL REQUIRE REMOVAL AND REPLACEMENT OF THE ENTIRE SECTION OF RAMP OR SIDEWALK. TRANSITION SHALL BE EQUAL TO OR GREATER THAN THE WIDTH OF THE EXISTING SIDEWALK. RAMP EXTENSIONS SHALL BE 5'.
10. ALL SIDEWALK AND RAMP CONSTRUCTION SHALL MEET CURRENT PUBLISHED BY WAY ACCESSIBILITY GUIDELINES (PROMO).



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

|             |                                                                                  |
|-------------|----------------------------------------------------------------------------------|
| Project:    | STANDARD DETAILS<br>CITY OF LEE'S SUMMIT, MO<br>LEE'S SUMMIT, JACKSON COUNTY, MO |
| Sheet Name: | ADA RAMP RETROFIT DETAIL                                                         |

GEN-3E



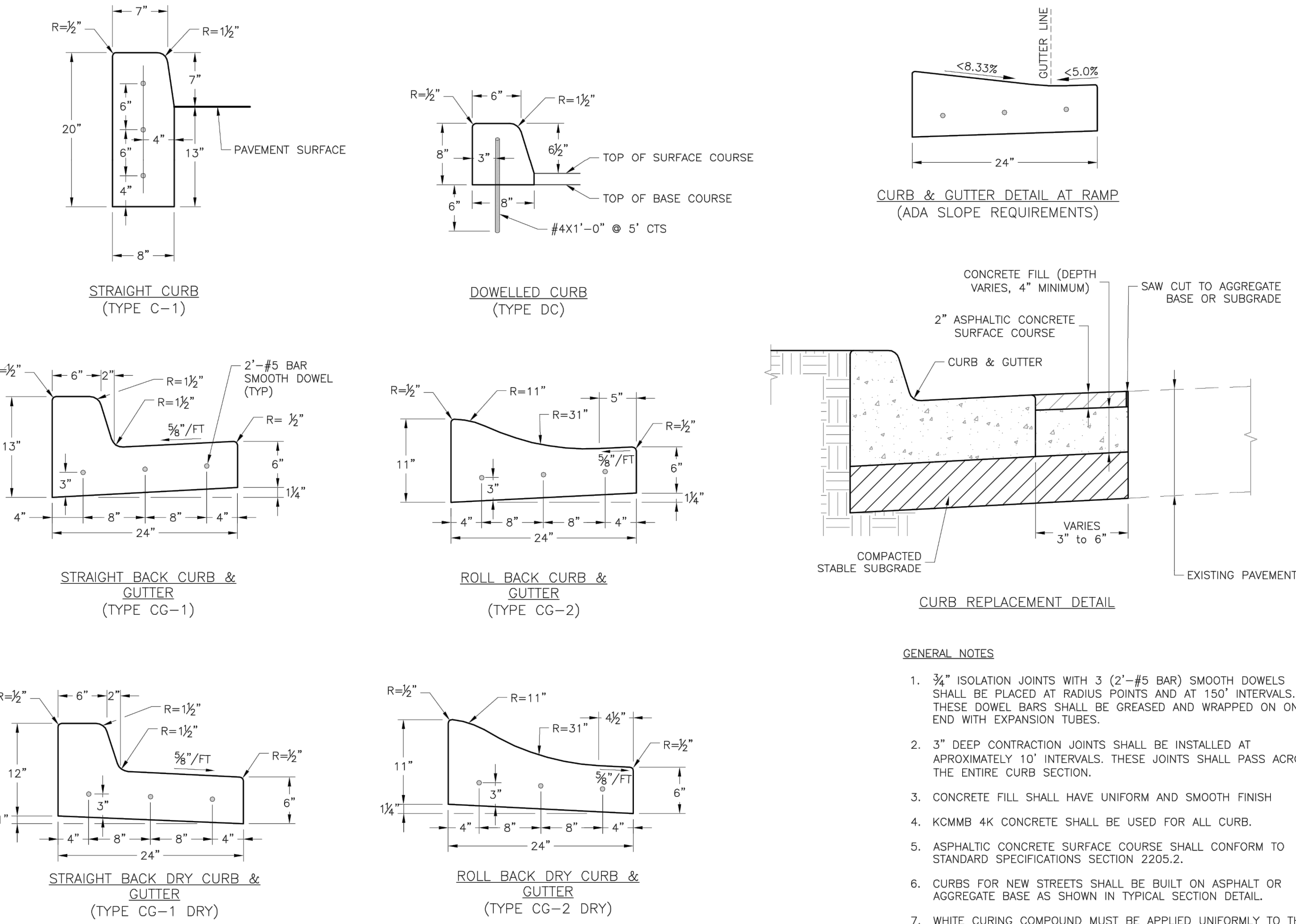
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | JEFF'S SUMMIT MO 64063

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

GEN-3A

NOT  
AS-BUILT



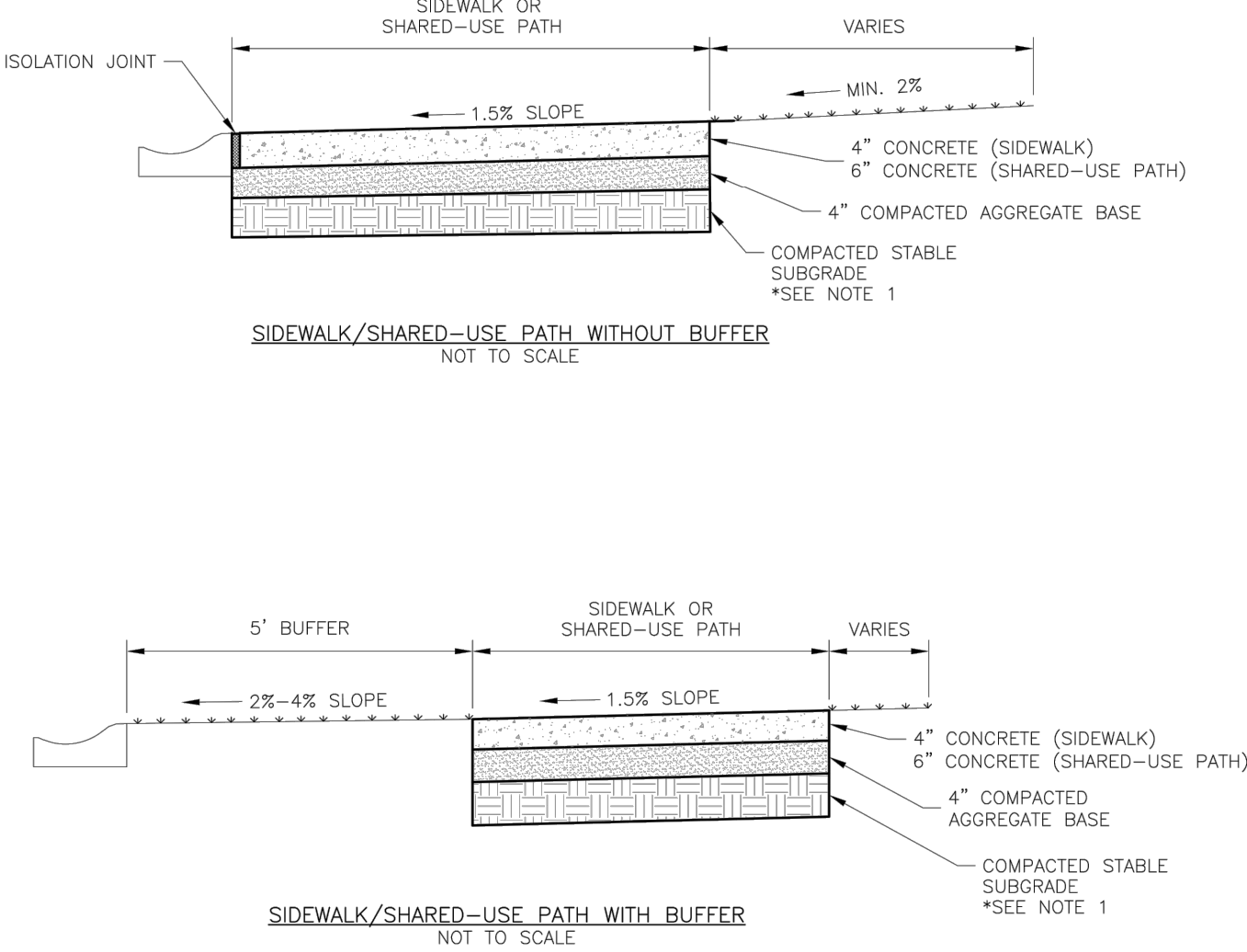


**LEE'S SUMMIT MISSOURI**

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

Project: LEE'S SUMMIT, JACKSON COUNTY, MO  
Sheet Name: CURB & GUTTER DETAIL  
Drawn By: MIF  
Checked By: DL  
Date: 04/17  
Proj. #: GEN-4

NOT  
AS-BUILT



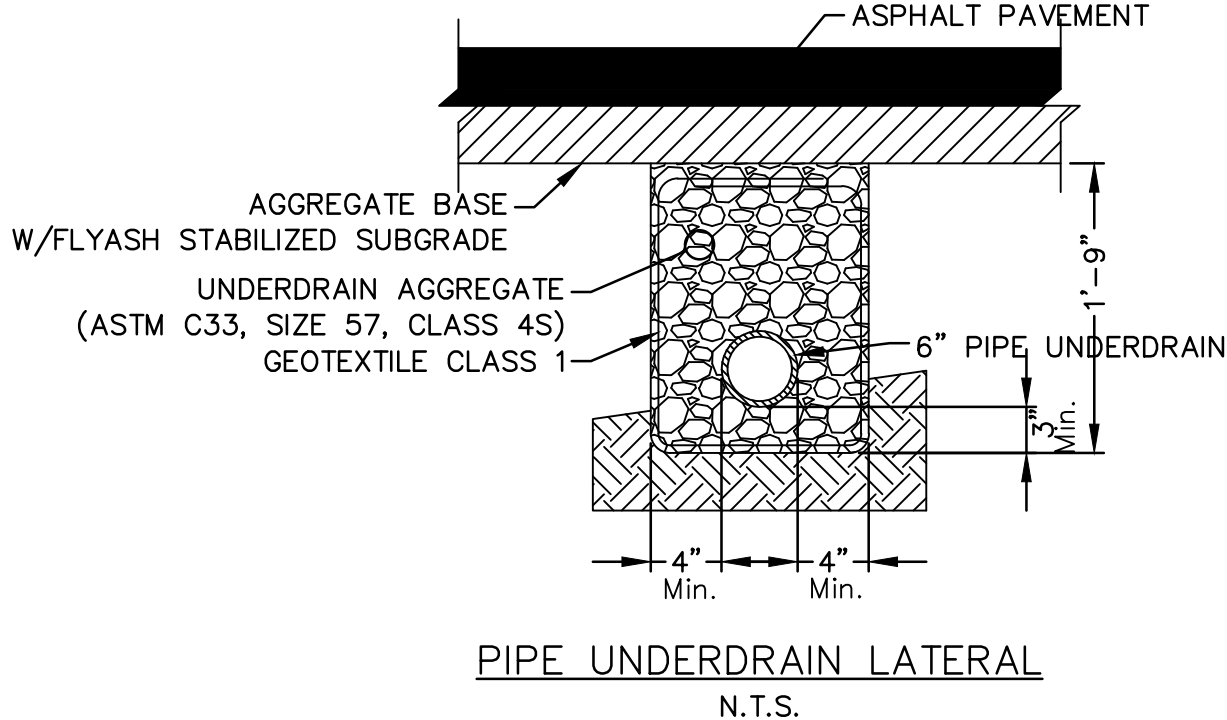
- GENERAL NOTES:**
- SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
  - 1.5% CROSS SLOPE MUST BE MAINTAINED THROUGH DRIVEWAYS.
  - KCMMB 4K CONCRETE MIX SHALL BE REQUIRED FOR ALL SIDEWALKS/SHARED-USE PATHS OR AS APPROVED BY THE CITY INSPECTOR.
  - ALL SIDEWALK/SHARED-USE PATHS SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).
  - AN ISOLATION JOINT SHALL BE PLACED AT A MAXIMUM OF 150 FT. CONSTRUCTION JOINTS SHALL BE PLACED THE SAME WIDTH OF SIDEWALK/SHARED-USE PATHS, BUT NO GREATER THAN 10 FT.
  - AN ISOLATION JOINT SHALL BE PLACED WHERE THE SIDEWALK/SHARED-USE PATHS MEETS A RESIDENTIAL DRIVEWAY.
  - SHARED-USE PATHS WIDTH SHALL BE 10 FT. WIDE.
  - SIDEWALK/SHARED-USE PATHS FINISHING SHALL BE FULL BROOM FINISH OR AS DIRECTED BY CITY INSPECTOR.
  - WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.



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

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

GEN-2



- NOTES:**
- 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 in the street profile.
  - All Underdrain Pipes shall be installed at a minimum slope of 1%.
  - Underdrain Pipe shall be installed with the perforations placed down.
  - Blanket Underdrain Aggregate, Pipe Underdrain Aggregate, Pipe Underdrain, Edge Underdrain and Outlet Pipe shall conform to City of Lee's Summit Specifications.
  - Overlap geotextile at top of trench a minimum of 12".

STREET DETAILS  
STREET AND STORM SEWER PLANS  
THE RETREAT AT HOOK FARMS  
CONSTRUCTION DOCUMENTS

LEE'S SUMMIT, MO

drawn by: \_\_\_\_\_ EM  
checked by: \_\_\_\_\_ EM  
designed by: \_\_\_\_\_ RB  
QA/QC by: \_\_\_\_\_ NH  
project no.: 019-4059  
drawing no.: C\_DTL00\_0194059  
date: 4/20/2020

SHEET C125  
26 OF 54



| REV. NO. | DATE       | REVISIONS DESCRIPTION               | BY |
|----------|------------|-------------------------------------|----|
| 1        | 06-24-2020 | CITY COMMENTS                       |    |
| 2        | 02-01-2021 | ADDED HOOK ROAD SWALE               |    |
| 3        | 04-06-2021 | SWALE AND ADA RAMP REVISIONS        |    |
| 4        | 05-04-2021 | ADA RAMP REVISIONS                  |    |
| 5        | 06-11-2021 | HEARTHSTONE PLACE ENTRANCE REVISION |    |
|          |            |                                     |    |
|          |            |                                     |    |
|          |            |                                     |    |
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REVISIONS

2020

GEN-2

GEN-4

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