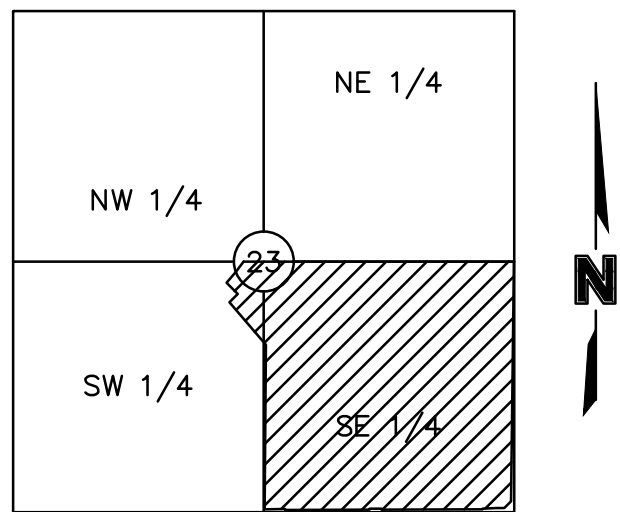


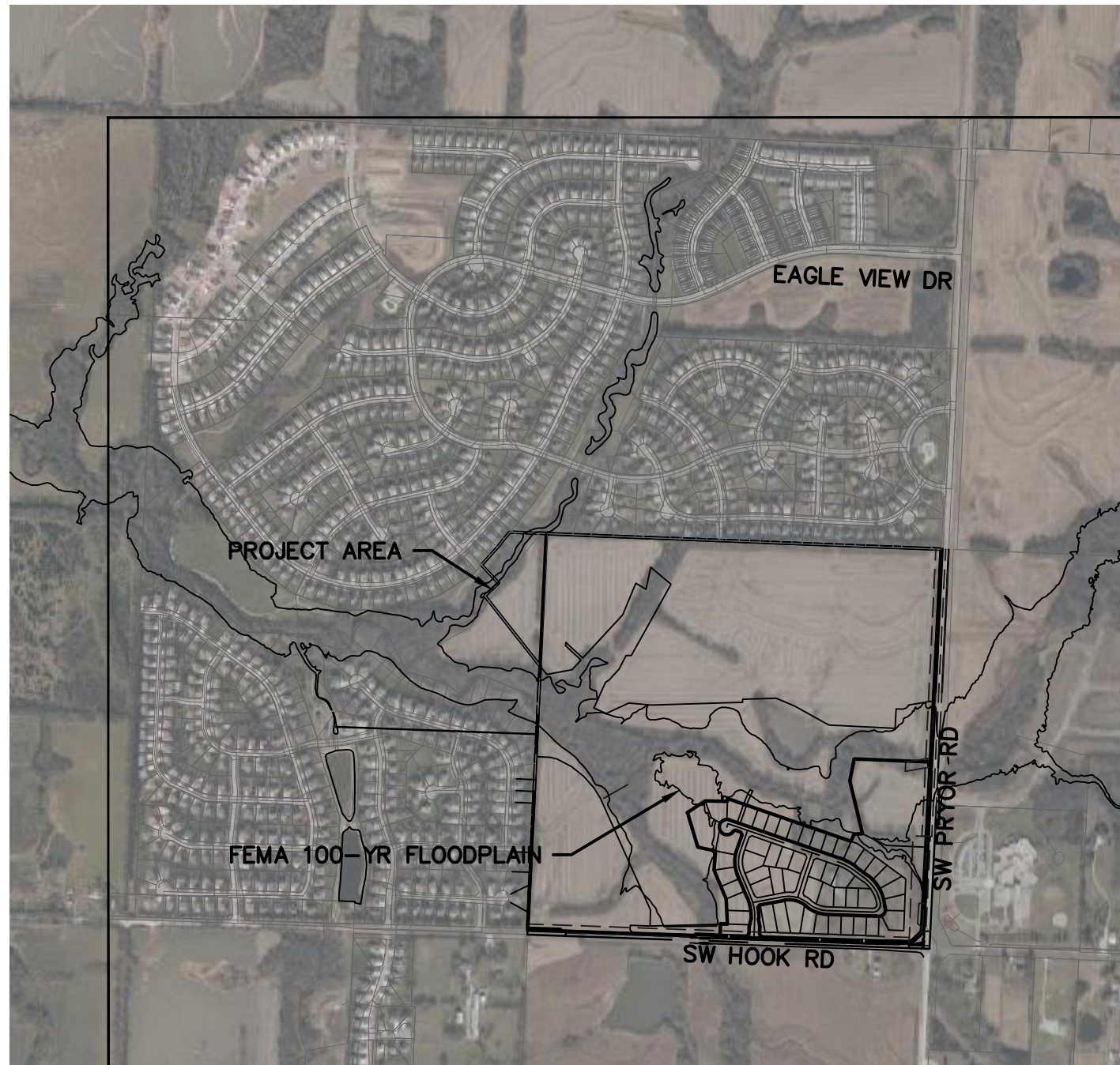


LOCATION MAP
Sec. 23, Twp. 47 N., Rge. 23 W.
(N.T.S.)

PROJECT TEAM & UTILITY CONTACT LIST	
<u>OWNER / DEVELOPER</u> HUNT MIDWEST REAL ESTATE DEVELOPMENT, INC. 8300 NE UNDERGROUND DRIVE KANSAS CITY, MO 64161 CONTACT: AARON SCHMIDT PHONE: 816.459.4285 FAX: 000.000.0000	<u>UTILITY SERVICE NUMBERS</u> NAME: DEVELOPMENT SERVICES PHONE: 816-969-1200 NAME: LEE'S SUMMIT WATER & SERVICES DEPARTMENT PHONE: 816-969-1940 NAME: SPIRE (MGE) PHONE: 314-342-0500 NAME: AT&T PHONE: 800-286-8313 NAME: EVERGY PHONE: 816-471-5275
<u>ENGINEER</u> OLSSON 1301 BURLINGTON, SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: NAME, P.E. PHONE: 816.299.4341	NAME: SPECTRUM (TWC) PHONE: 877-772-2253 NAME: GOOGLE FIBER PHONE: 877-454-6959
<u>SURVEYOR</u> OLSSON 1301 BURLINGTON, SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: JASON ROUDEBUSH, PLS PHONE: 816.361.1177	

THE RETREAT AT HOOK FARMS STREET AND STORM SEWER PLANS

SECTION 23, TOWNSHIP 47N, RANGE 23W
IN LEE'S SUMMIT, JACKSON COUNTY, MO



PROPERTY DESCRIPTION:

(AS PROVIDED BY CHICAGO TITLE INSURANCE COMPANY, NOVEMBER 1, 2018)

ALL THAT PART OF THE SOUTHEAST QUARTER OF SECTION 23, TOWNSHIP 47, RANGE 32, IN THE CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, BEING BOUNDED AND DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHWEST CORNER OF SAID SOUTHEAST QUARTER; THENCE SOUTH 89 DEGREES 45 MINUTES 34 SECONDS EAST, ALONG THE NORTH LINE OF SAID SOUTHEAST QUARTER, 2613.19 FEET TO ITS INTERSECTION WITH THE WEST RIGHT-OF-WAY LINE OF PRYOR ROAD AS NOW ESTABLISHED; THENCE SOUTH 02 DEGREES 45 MINUTES 31 SECONDS WEST, ALONG SAID WEST RIGHT-OF-WAY LINE, 2520.50 FEET; THENCE SOUTH 47 DEGREES 23 MINUTES 30 SECONDS WEST, ALONG SAID WEST RIGHT-OF-WAY LINE, 135.21 FEET TO ITS INTERSECTION WITH THE NORTH RIGHT-OF-WAY LINE OF HOOK ROAD, AS NOW ESTABLISHED; THENCE NORTH 87 DEGREES 58 MINUTES 31 SECONDS WEST, ALONG SAID NORTH RIGHT-OF-WAY LINE, 2264.70 FEET; THENCE NORTH 02 DEGREES 43 MINUTES 25 SECONDS EAST, ALONG SAID NORTH RIGHT-OF-WAY LINE, 10.00 FEET; THENCE NORTH 87 DEGREES 58 MINUTES 31 SECONDS WEST, ALONG SAID NORTH RIGHT-OF-WAY LINE, 252.00 FEET TO A POINT ON THE WEST LINE OF SAID SOUTHEAST QUARTER; THENCE NORTH 02 DEGREES 43 MINUTES 25 SECONDS EAST ALONG SAID WEST LINE, 2615.22 FEET TO THE POINT OF BEGINNING.

ALSO,

ALL THAT PART OF THE FOLLOWING DESCRIBED PROPERTY IN THE NORTHEAST $\frac{1}{4}$ OF THE SOUTHWEST $\frac{1}{4}$ OF SECTION 23, TOWNSHIP 47, RANGE 32, LYING NORTH OF EAGLE CREEK GREENWAY, A SUBDIVISION, ALL IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, TO-WIT:

THE SOUTH ONE HALF OF THE NORTHEAST QUARTER AND THE SOUTH ONE-HALF OF THE NORTHWEST QUARTER AND ALL THAT PART OF THE SOUTHWEST QUARTER OF SECTION 23, TOWNSHIP 47, RANGE 32, IN LEE'S SUMMIT, JACKSON COUNTY MISSOURI, BEING DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID NORTHWEST QUARTER, THENCE NORTH 2 DEGREES 36 MINUTES 10 SECONDS EAST, ALONG THE WEST LINE OF SAID NORTHWEST QUARTER 1330.50 FEET TO THE NORTHWEST CORNER OF THE SOUTH ONE-HALF OF SAID NORTHWEST QUARTER, THENCE SOUTH 87 DEGREES 40 MINUTES 35 SECONDS EAST, ALONG THE NORTH LINE OF SAID SOUTH ONE-HALF 2657.85 FEET TO THE NORTHEAST CORNER OF SAID SOUTH ONE-HALF, THENCE SOUTH 87 DEGREES 41 MINUTES 31 SECONDS EAST ALONG THE NORTH LINE OF THE SOUTH ONE-HALF OF SAID NORTHEAST QUARTER 2654.44 FEET TO THE NORTHEAST CORNER OF SAID SOUTH ONE-HALF; THENCE SOUTH 2 DEGREES 46 MINUTES 08 SECONDS WEST, ALONG THE EAST LINE OF SAID NORTHEAST QUARTER 1323.83 FEET TO THE SOUTHEAST CORNER OF SAID NORTHEAST QUARTER; THENCE NORTH 87 DEGREES 45 MINUTES 23 SECONDS WEST, ALONG THE SOUTH LINE OF SAID NORTHEAST QUARTER, 2653.42 FEET TO THE SOUTHWEST CORNER OF SAID NORTHEAST QUARTER; THENCE SOUTH 2 DEGREES 43 MINUTES 24 SECONDS WEST, (DEED-SOUTH 2 DEGREES 41 MINUTES 49 SECONDS WEST), ALONG THE EAST LINE OF SAID SOUTHWEST QUARTER, 1138.42 FEET TO THE CENTERLINE OF MOUSE CREEK, AS NOW ESTABLISHED; THENCE NORTH 25 DEGREES 51 MINUTES 18 WEST (DEED-NORTH 25 DEGREES 52 MINUTES 53 WEST), ALONG SAID CENTERLINE, 73.83 FEET; THENCE NORTH 67 DEGREES 53 MINUTES 09 SECONDS WEST (DEED-NORTH 67 DEGREES 54 MINUTES 44 SECONDS WEST), ALONG SAID CENTERLINE, 379.20 FEET; THENCE SOUTH 39 DEGREES 00 MINUTES 27 SECONDS WEST (DEED-SOUTH 38 DEGREES 58 MINUTES 52 SECONDS WEST), ALONG SAID CENTERLINE, 187.72 FEET; THENCE NORTH 48 DEGREES 37 MINUTES 07 SECONDS WEST (DEED-NORTH 48 DEGREES 38 MINUTES 42 SECONDS WEST), ALONG SAID CENTERLINE, 131.31 FEET; THENCE NORTH 73 DEGREES 28 MINUTES 23 SECONDS WEST (DEED-NORTH 73 DEGREES 29 MINUTES 58 SECONDS WEST), ALONG SAID CENTERLINE, 279.90 FEET THENCE NORTH 26 DEGREES 34 MINUTES 47 SECONDS WEST (DEED-NORTH 26 DEGREES 36 MINUTES 22 SECONDS WEST), ALONG SAID CENTERLINE, 312.25 FEET; THENCE NORTH 62 DEGREES 29 MINUTES 46 SECONDS WEST (DEED-NORTH 62 DEGREES 31 MINUTES 21 SECONDS WEST), ALONG SAID CENTERLINE, 134.47 FEET; THENCE SOUTH 52 DEGREES 10 MINUTES 15 SECONDS WEST (DEED-SOUTH 52 DEGREES 08 MINUTES 40 SECONDS WEST), ALONG SAID CENTERLINE, 85.16 FEET; THENCE SOUTH 19 DEGREES 37 MINUTES 09 SECONDS WEST (DEED-SOUTH 19 DEGREES 35 MINUTES 34 SECONDS WEST), ALONG SAID CENTERLINE, 142.83 FEET; THENCE SOUTH 79 DEGREES 21 MINUTES 39 SECONDS WEST (DEED-SOUTH 79 DEGREES 20 MINUTES 04 SECONDS WEST), ALONG SAID CENTERLINE, 68.92 FEET; THENCE NORTH 73 DEGREES 27 MINUTES 48 SECONDS WEST (DEED-NORTH 73 DEGREES 29 MINUTES 23 SECONDS WEST), ALONG SAID CENTERLINE, 114.02 FEET; THENCE NORTH 25 DEGREES 46 MINUTES 28 SECONDS WEST (DEED-NORTH 25 DEGREES 48 MINUTES 03 SECONDS WEST), ALONG SAID CENTERLINE, 73.12 FEET; THENCE NORTH 87 DEGREES 30 MINUTES 19 SECONDS WEST (DEED-NORTH 87 DEGREES 31 MINUTES 54 SECONDS WEST), ALONG SAID CENTERLINE, 473.33 FEET; THENCE NORTH 49 DEGREES 45 MINUTES 48 SECONDS WEST (DEED-NORTH 49 DEGREES 47 MINUTES 23 SECONDS WEST), ALONG SAID CENTERLINE, 343.23 FEET; THENCE NORTH 56 DEGREES 22 MINUTES 25 SECONDS WEST (DEED-NORTH 56 DEGREES 24 MINUTES 00 SECONDS WEST), ALONG SAID CENTERLINE, 277.94 FEET; THENCE NORTH 65 DEGREES 42 MINUTES 49 SECONDS WEST (DEED-NORTH 65 DEGREES 44 MINUTES 24 SECONDS WEST), ALONG SAID CENTERLINE, 182.37 FEET; THENCE NORTH 22 DEGREES 55 MINUTES 55 SECONDS WEST (DEED-NORTH 22 DEGREES 57 MINUTES 30 SECONDS WEST), ALONG SAID CENTERLINE, 65.99 FEET TO ITS INTERSECTION WITH THE WEST LINE OF SAID SOUTHWEST QUARTER; THENCE NORTH 22 DEGREES 36 MINUTES 17 SECONDS EAST (DEED-NORTH 22 DEGREES 34 MINUTES 42 SECONDS EAST), ALONG SAID WEST LINE, 239.42 FEET TO THE POINT OF BEGINNING.

(SHOWN FOR CONVENIENCE IN REPORTING.)

Page Number	Sheet Number	Sheet Title
1	C100	COVER SHEET
2	C101	GENERAL NOTES
3	C102	GENERAL LAYOUT
4	C103	GRADING PLAN
4A	C103A	SWALE PLAN & PROFILE (SWALE 1)
5	C104	SW RED BARN ROAD PLAN & PROFILE
6	C105	SW HEARTHSTONE PLACE, SW HARVEST MOON LANE PLAN & PROFILE
7	C106	SW HARVEST MOON LANE PLAN & PROFILE
8	C107	TRAFFIC CONTROL PLAN
9	C108	INTERSECTION DETAILS
10	C109	INTERSECTION DETAILS
11	C110	INTERSECTION DETAILS
12	C111	TRAIL GRADING PLAN
13	C112	STORM PLAN & PROFILES
14	C113	STORM PLAN & PROFILES
15	C114	STORM PLAN & PROFILES
16	C115	STORM PLAN & PROFILES
17	C116	DETENTION BASIN PLAN
18	C117	DRAINAGE PLAN
19	C118	DRAINAGE TABLES
20	C119	MASTER DRAINAGE PLAN
21	C120	SIGNAGE DETAILS
22	C121	SIGNAGE DETAILS
23	C122	STORM DETAILS
24	C123	STORM DETAILS
25	C124	STREET DETAILS
26	C125	STREET DETAILS

LEGEND

CTL	SURVEY CONTROL POINT	TS	TRAFFIC SIGNAL BOX	SPH	SPRINKLER HEAD
▲	SURVEY BENCHMARK	⊗	TRAFFIC SIGNAL MANHOLE	SCV	SPRINKLER CONTROL VALVE
TEMP	SURVEY TEMPORARY BENCHMARK	○-○-○-○	TRAFFIC SIGNAL POLE W/ ARM	⊗	WATER METER PIT
GM	GAS METER	⊗	TRAFFIC SIGNAL POLE	FM	FIRE HYDRANT
GAR	GAS RISER	⊗	TRAFFIC SIGNAL CONTROL BOX	WM	WATER METER
⊗	GAS MANHOLE	TS	TRAFFIC SIGNAL PEDESTAL	WV	WATER VALVE
GR	GAS REGULATOR	⊗	ELECTRIC MANHOLE	FP	FLAG POLE
TEP	TELEVISION PEDESTAL	EM	ELECTRIC METER	○	SIGN
F	FIBER BOX	ER	ELECTRIC RISER	⊗	BOLLARD
⊗	FIBER PEDESTAL	E	ELECTRIC BOX	WP	WOOD POST
C	CABLE BOX	⊗	ELECTRIC CABINET	STP	STEEL POST
CV	CABLE VAULT	⊗	ELECTRIC JUNCTION BOX	COL	COLUMN
TP	TELEPHONE PEDESTAL	YL	YARD LIGHT	⊗	BORE HOLE
⊗	STORM MANHOLE	LTP	LIGHT POLE	⊗	STUMP
SG	STORM GRATE	⊗	POWER POLE	BU	BUSH
⊗	SANITARY MANHOLE	PLPP	POWER POLE W/ LIGHT	⊗	EVERGREEN TREE
		←	GUY WIRE	⊗	DECIDUOUS TREE

	SECTION LINE		TEL		EXISTING TELEPHONE LINE
	PROPERTY LINE		SS		EXISTING SANITARY LINE
	CENTER LINE				EXISTING STORM LINE
	PROPOSED ROW LINE		G		EXISTING GAS LINE
	EXISTING ROW LINE		W		EXISTING WATER LINE
	UTILITY EASEMENT		x x x x		EXISTING CHAIN LINK FENCE
	EXISTING CONTOUR		OHE		EXISTING OVERHEAD ELECTRIC
	EXISTING CONTOUR		P		EXISTING PIPE LINE
	PROPOSED MINOR CONTOUR				GRADING LIMITS
	PROPOSED MAJOR CONTOUR				TEMP CONSTRUCTION EASEMENT
	EXISTING TREELINE		x x x x		PROPOSED CHAIN LINK FENCE
			o o o o		PROPOSED WOOD PRIVACY FENCE

M.G. P TC EP R/W TCE PROP.	MATCH GRADE PAVEMENT TOP OF CURB EDGE OF PAVEMENT RIGHT-OF-WAY TEMP CONSTRUCTION EASEMENT PROPOSED	EXIST. TYP. (R) CONST. TBM C.P. BC	EXISTING TYPICAL REMOVAL CONSTRUCT TEMPORARY BENCHMARK CONTROL POINT BACK OF CURB		ASPHALT
					2-INCH MILL & OVERLAY
					CONCRETE



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

IEEE'S SUMMIT MO

drawn by: _____ EM
checked by: _____ EM
designed by: _____ RB
QA/QC by: _____ NH
project no.: _____ 019-4059
drawing no.: _____ C_TTL00_0194059
date: _____ 4/20/2020

SHEET C100

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.

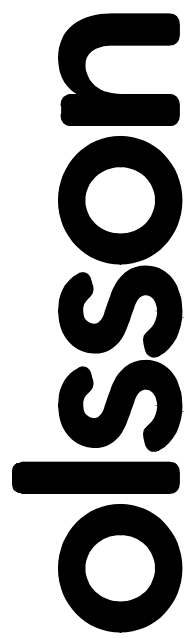
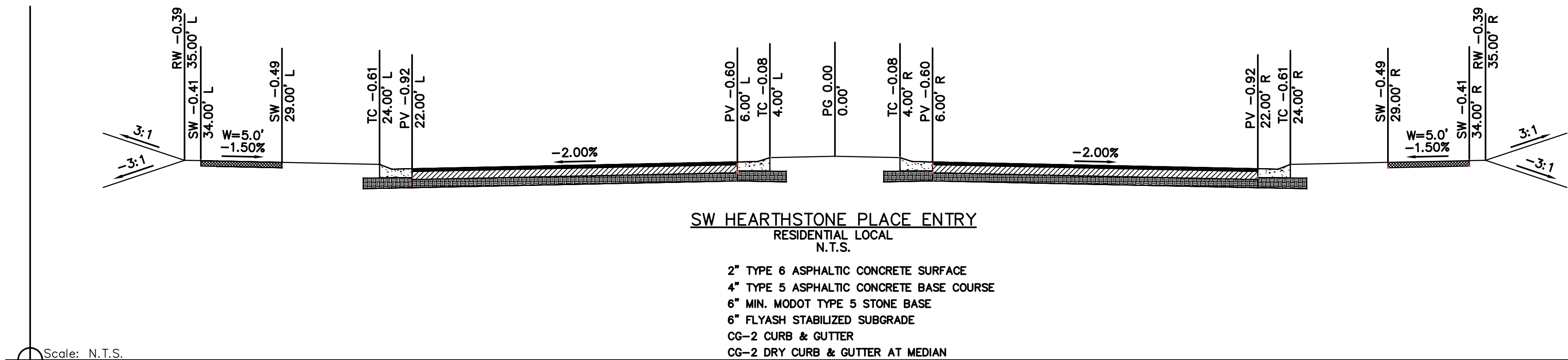
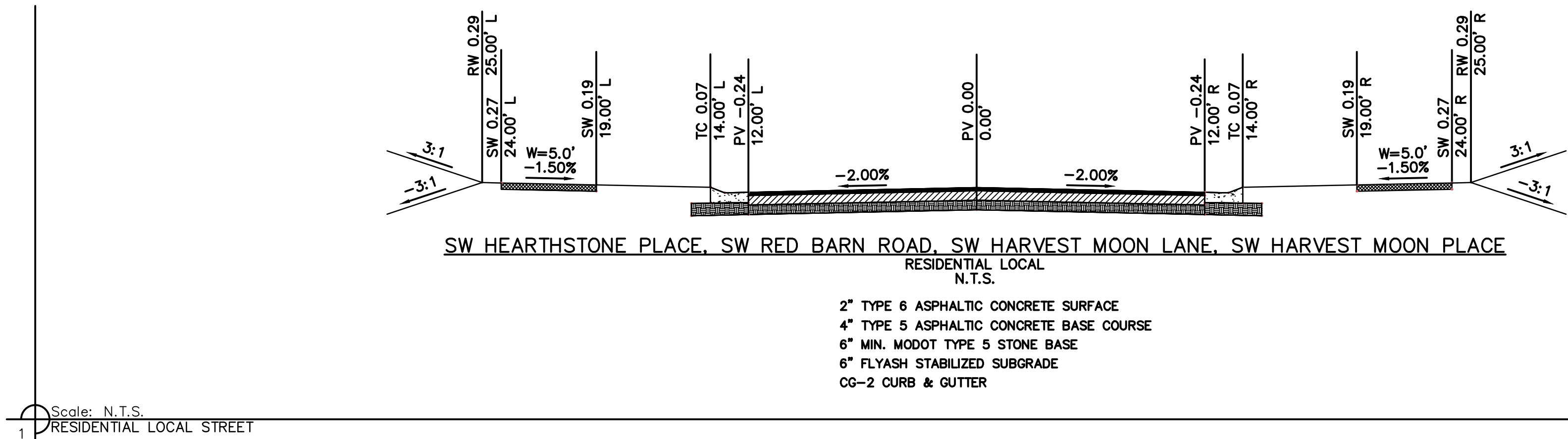
SHOP DRAWINGS

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.	19470	
2	EMBANKMENT	C.Y.	8709	
3	SUBGRADE STABILIZATION (6" FLYASH TREATMENT)	S.Y.	9150	
4	6" ASPHALT PAVEMENT	S.Y.	9150	
5	CONCRETE CURB & GUTTER (CG-2)	L.F.	6340	
6	5' CONCRETE SIDEWALK	L.F.	380	
7	ADA RAMP	EA.	12	
8	STREET NAME SIGNS WITH STOP SIGNS	EA.	5	
9	STREET NAME SIGNS	EA.	1	
STORM				
10	STD. CURB INLET (5'x3' INSIDE)	EA.	15	
11	STD. FIELD INLET (3'x3' INSIDE)	EA.	5	
12	STD. MANHOLE (4' DIA. INSIDE)	EA.	3	
13	STD. MANHOLE (5' DIA. INSIDE)	EA.	1	
14	WATER QUALITY BASIN OUTLET STRUCTURE	EA.	1	
15	6" PVC	L.F.	315	
16	15" HDPE	L.F.	18	
17	18" HDPE	L.F.	2002	
18	24" HDPE	L.F.	810	
19	30" HDPE	L.F.	34	
20	36" HDPE	L.F.	221	
21	6" FLARED END SECTION	EA.	1	
22	15" FLARED END SECTION	EA.	2	
23	18" FLARED END SECTION	EA.	1	
24	30" FLARED END SECTION	EA.	1	
25	RIPRAP	S.Y.	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.

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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REVISIONS

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

SHEET C101
2 OF 54

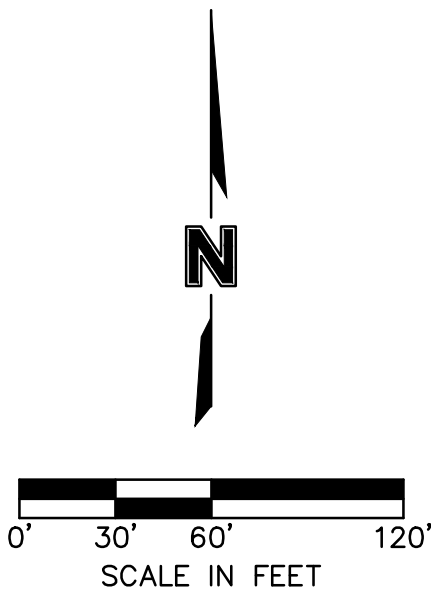
This detailed site plan illustrates the proposed road layout for SW Hook Rd, including SW Red Barn Road, SW Harvest Moon Place, and SW Harvest Moon Lane. The plan features numerous easements (e.g., 20' U.E., 30' B.L., 40' U.E.), utility lines (e.g., 15' U.E., 30' B.L.), and various structures (e.g., M.H. 1-5, F.I. 3-1). A shaded area indicates the limits of disturbance, and a stream buffer is shown along the western boundary. The plan also includes a FEMA 100-year floodplain and a water quality pond design WSEL. Stationing is provided along the main road segments, and a scale bar (0' to 120') and north arrow are included for reference.

DWG: \\oa.diaconsulting.com\lre-ns\projects\2019_4001-4500\019-4059_40-design\AutoCAD final plans\Sheets\GNCV\VC_GRD01_0194059.dwg USER: cmayc DATE: Feb 16, 2021 12:14pm XREFS: C_P\BTLK_0194059_34x22 C_P\BASE_0194059 C_P\SSWR_0194059 C_P\WATR_0194059 C_P\STRM_0194059 C_XBASE_0194059 C_PRPPS_0194059

LOT FILL TABLE	
LOT #	FILL > 8'
50	
51	
52	
53	9
54	9
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82	
83	9
84	9
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92	
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97	
98	
99	

The Retreat at Hook Farms				
Minimum Building Opening Elevations				
Lot	Rear Left MBOE	Rear Right MBOE	Front Left MBOE	Front Right MBOE
50	952.35	952.59	957.53	959.70
51	952.59	953.56	959.70	959.44
52	953.56	952.02	959.44	958.54
53	952.02	949.49	958.54	957.29
54	949.49	948.52	957.29	955.52
55	955.02	948.52	952.91	957.29
56	943.32	944.18	949.94	950.48
57	944.18	944.81	950.48	951.88
58	945.02	946.14	952.26	953.74
59	946.14	947.55	953.74	955.22
60	947.55	948.68	955.22	956.65
61	948.68	950.51	956.65	957.66
62	950.51	950.16	957.66	958.50
63	950.16	951.26	958.50	959.35
64	951.26	951.36	959.35	960.19
65	951.36	953.20	960.19	961.03
66	953.20	954.94	961.03	961.85
67	954.94	955.28	961.85	962.61
68	955.28	956.50	962.61	963.44
69	956.50	957.30	963.44	965.17
70	957.30	958.12	965.17	968.09
71	958.12	961.28	968.09	971.12
72	961.28	966.20	971.12	974.07
73	966.20	968.87	974.07	975.99
74	968.87	972.41	975.99	975.71
75	965.28	963.82	963.12	961.66
76	963.82	962.95	961.66	960.79
77	962.95	962.25	960.79	960.09
78	962.25	960.60	960.09	958.44
79	960.60	959.76	958.44	957.60
80	959.76	958.72	957.60	956.56
81	958.72	956.47	956.56	954.31
82	956.47	960.54	954.31	958.38
83	960.54	961.37	958.38	959.21
84	961.37	960.07	959.21	959.49
85	961.31	961.86	960.57	961.36
86	972.83	977.49	961.36	961.51
87	969.41	972.83	961.63	965.25
88	966.47	969.41	965.25	969.05
89	966.47	969.41	969.05	971.40
90	966.47	969.41	971.40	972.84
91	966.47	969.41	972.84	972.36
92	966.47	969.41	974.45	972.54
93	966.47	969.41	972.54	970.65
94	966.47	969.41	970.65	968.16
95	966.47	969.41	968.16	966.00
96	966.47	969.41	966.00	963.42
97	966.47	969.41	963.42	961.19
98	966.47	969.41	961.19	960.38
99	966.47	969.41	960.38	959.63

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



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.



BY		REVISIONS	
REV. NO.	DATE	REVISIONS DESCRIPTION	
1	6-24-2020	CITY COMMENTS	
2	2-01-2021	ADDED HOOK ROAD SWALE	

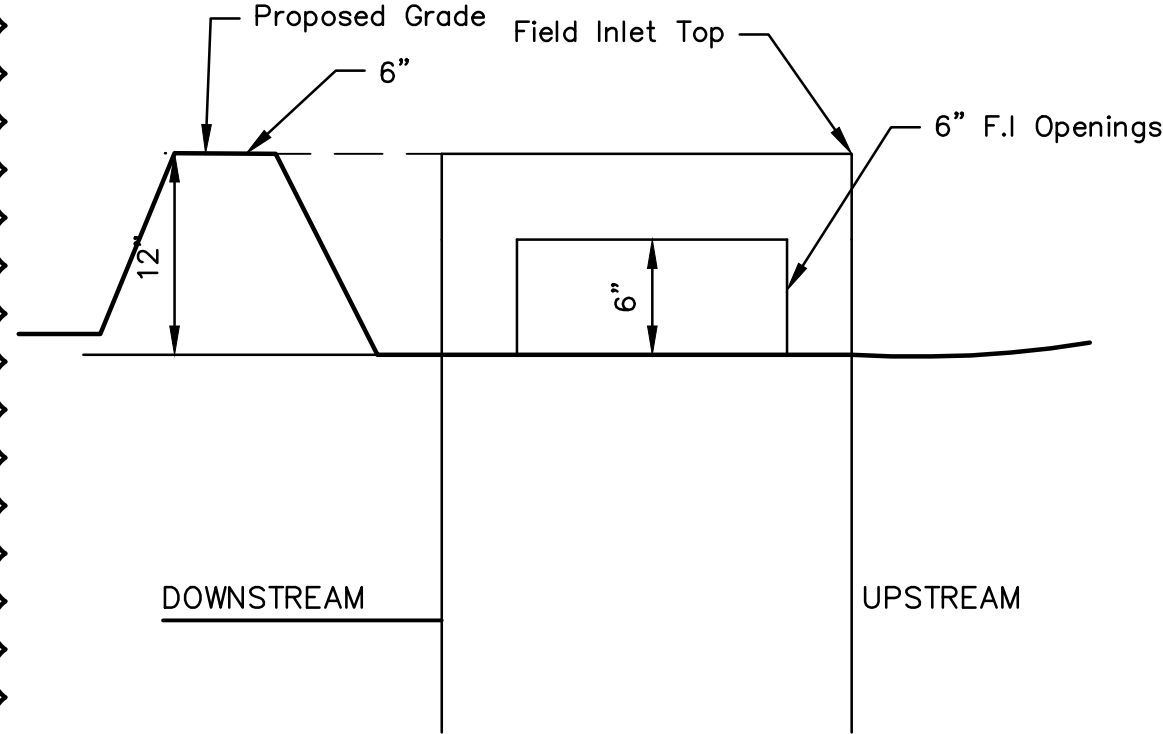
GRADING PLAN
STREET AND STORM SEWER PLANS
THE RETREAT AT HOOK FARMS
CONSTRUCTION DOCUMENTS

drawn by: EM
checked by: EM
designed by: RB
QA/QC by: NH
project no.: 019-4059
drawing no.: C_GRD01_0194059
date: 4/20/2020

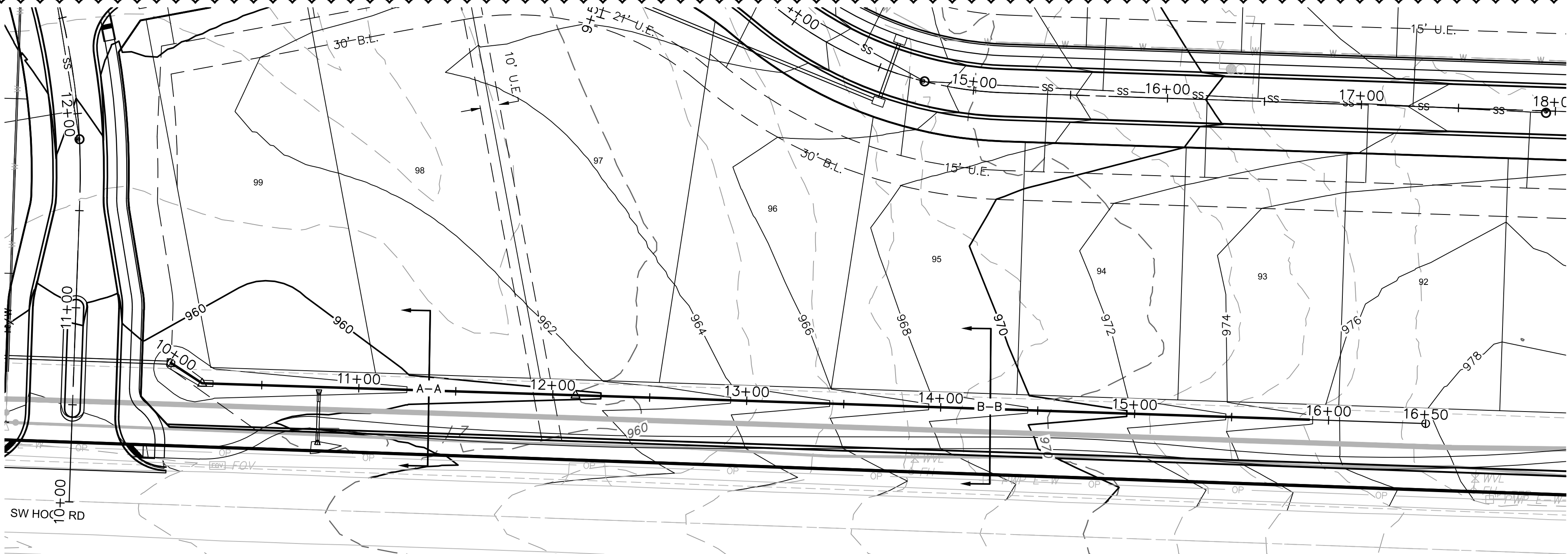
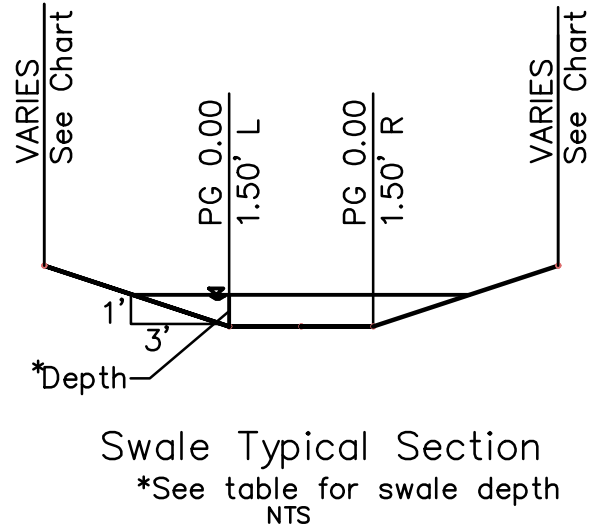
SHEET C103

LEE'S SUMMIT, MO

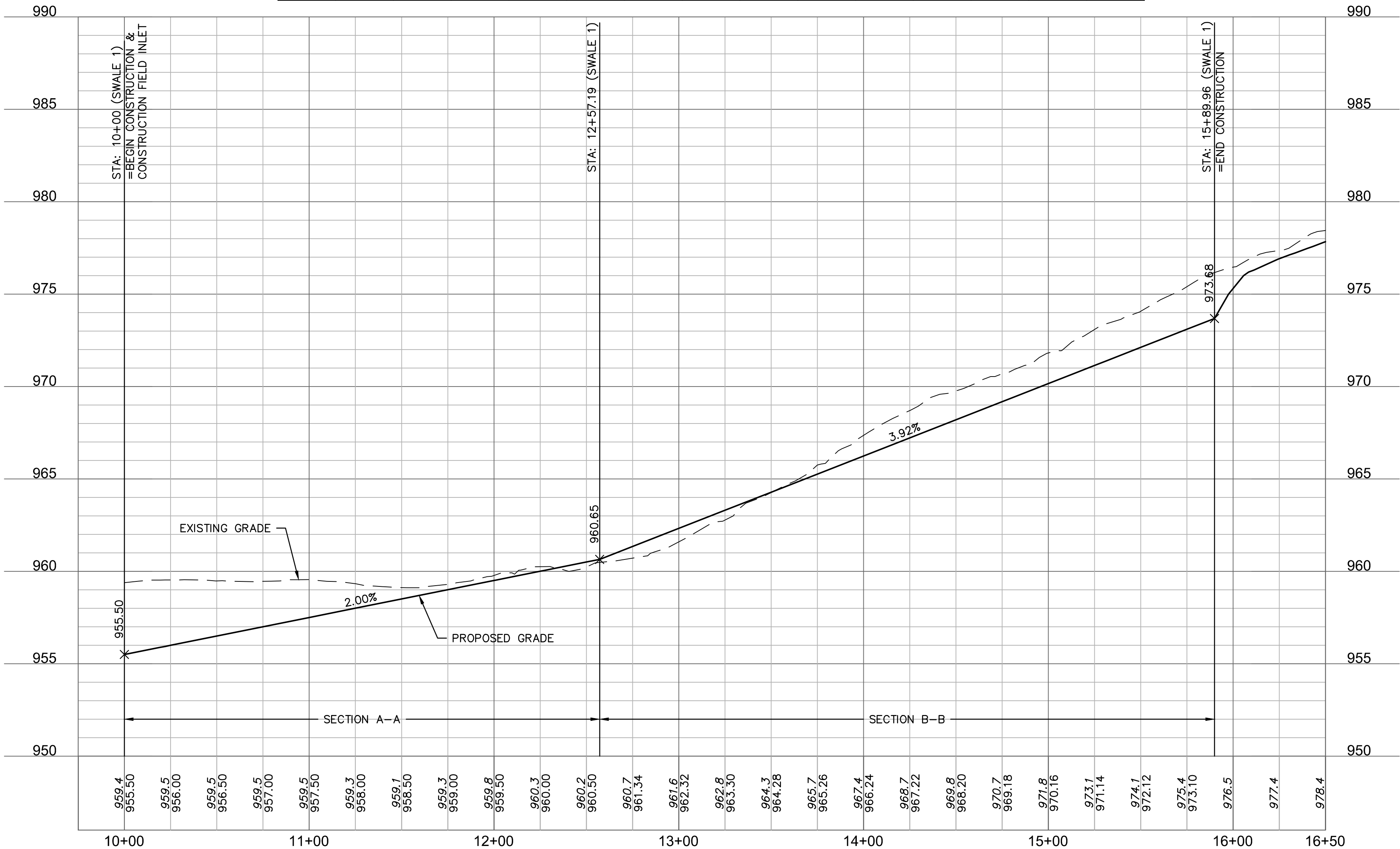
2020



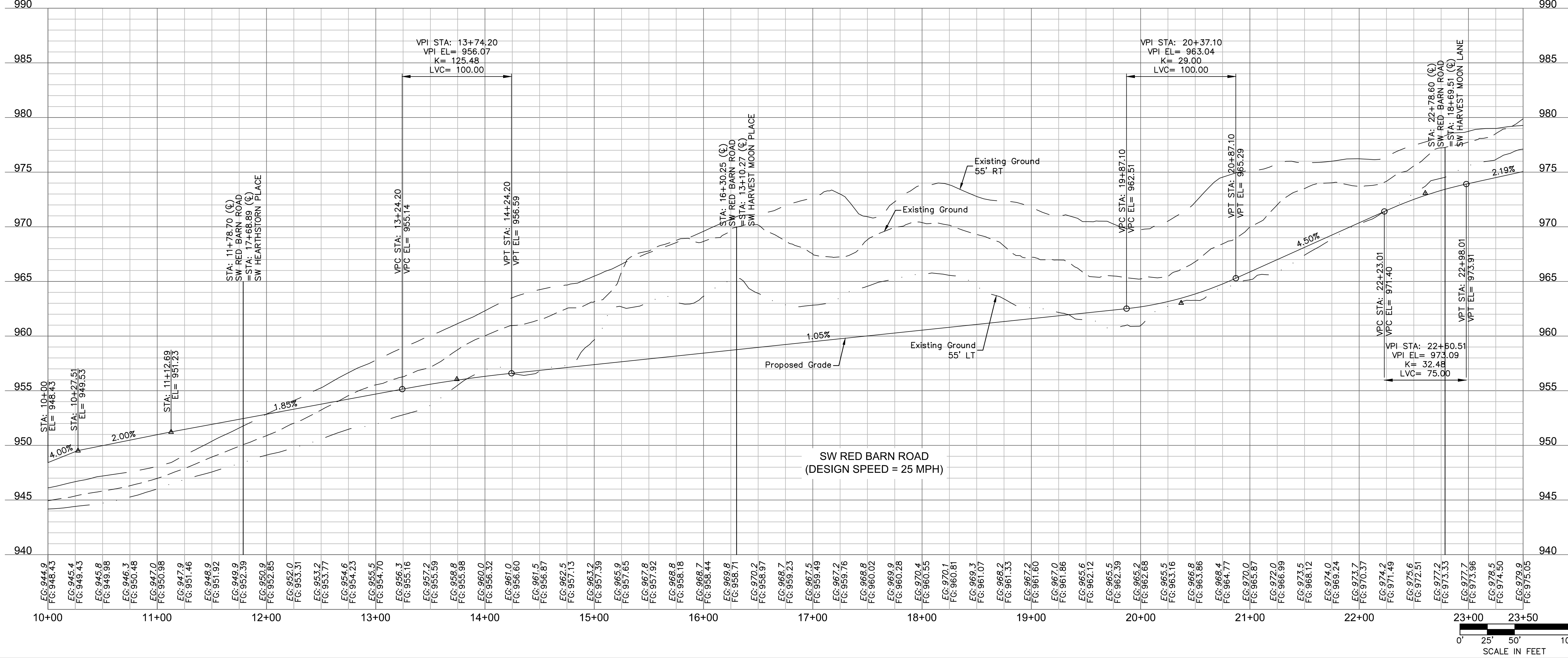
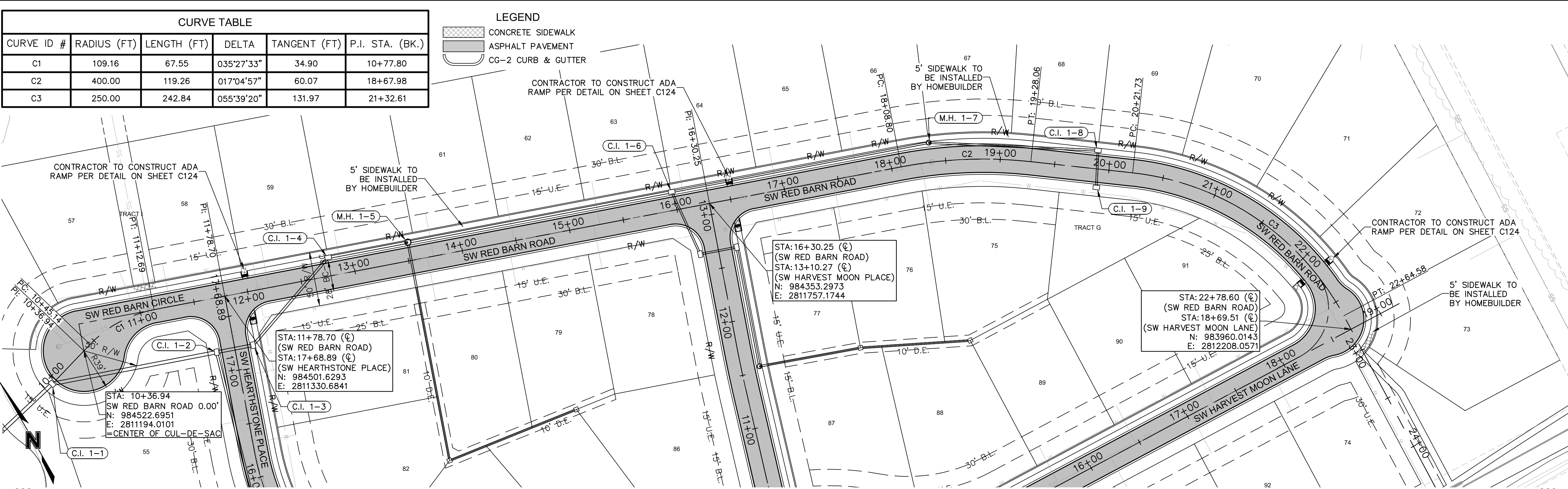
F.I. SUMP DETAIL
NOT TO SCALE
NOTE: INCLUDE SUMP PER ABOVE DETAIL WHERE
FIELD INLETS ARE LOCATED WITHIN SWALES.



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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USER: cmayor C_PBDY_0194059



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STATE OF MISSOURI
PROFESSIONAL ENGINEER
MEGAN J. WALTER
NUMBER
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02/17/2022

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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

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checked by: _____
designed by: _____
QA/QC by: _____
project no.: 019-4059
drawing no.: C_RRP02_0194059
date: 4/20/2020

REVISIONS

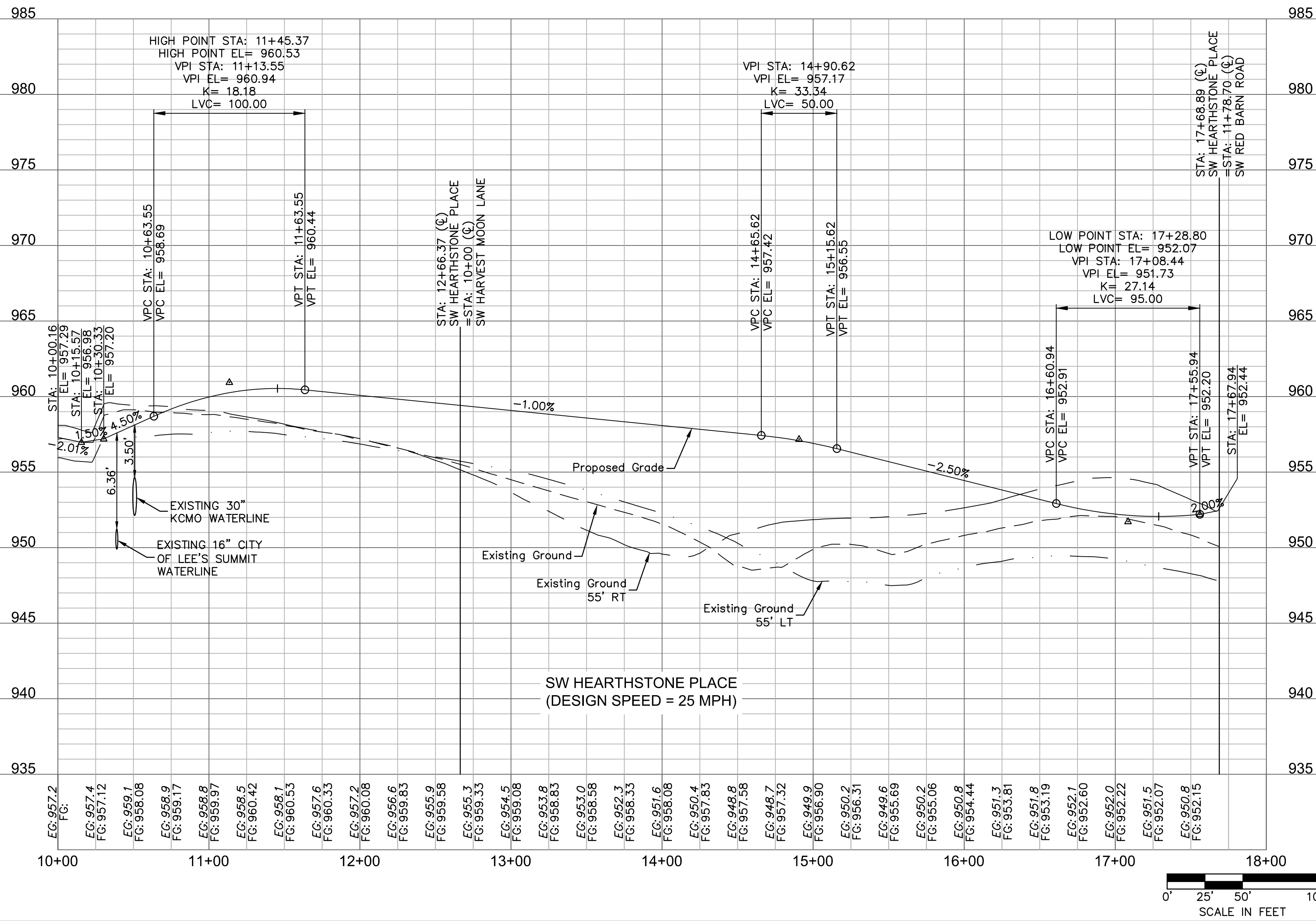
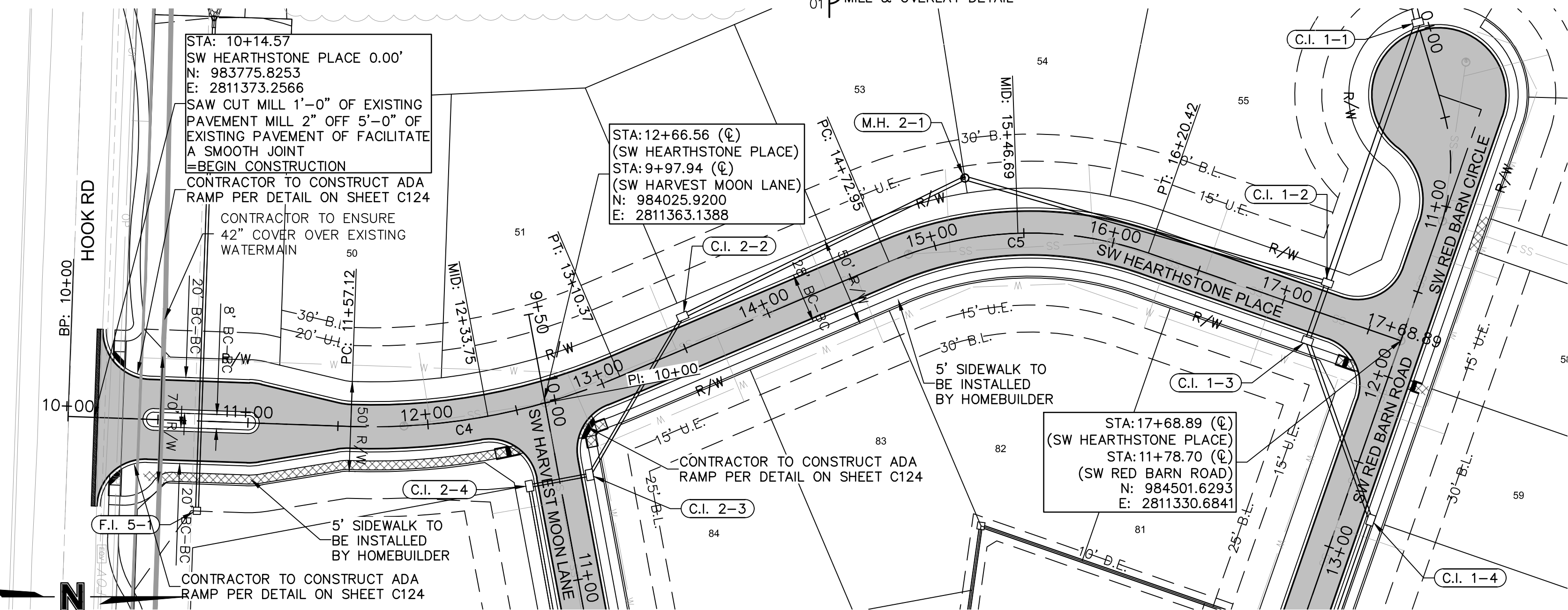
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2	2-01-2021	ADDED HOOK ROAD SWALE

SHEET C104

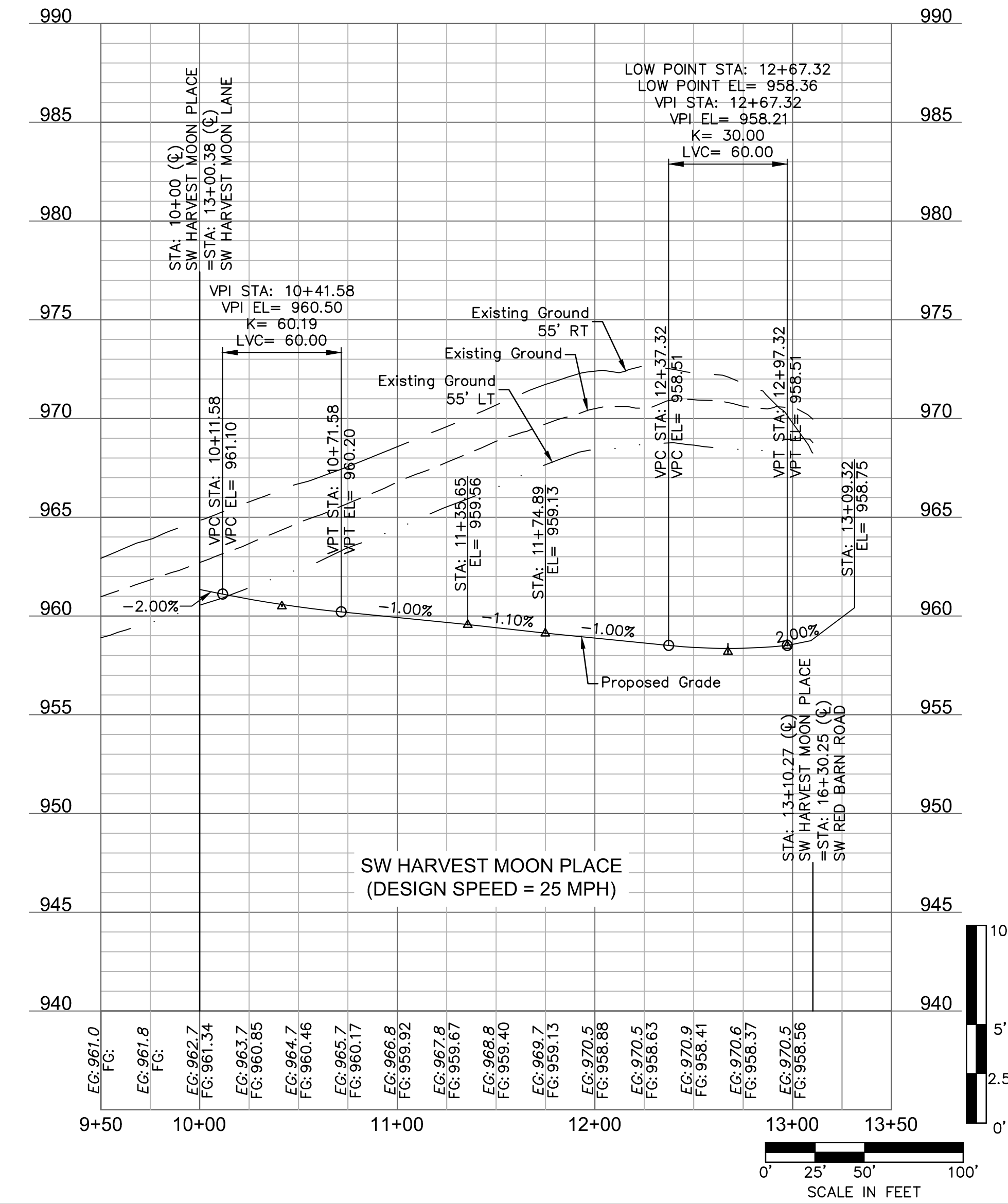
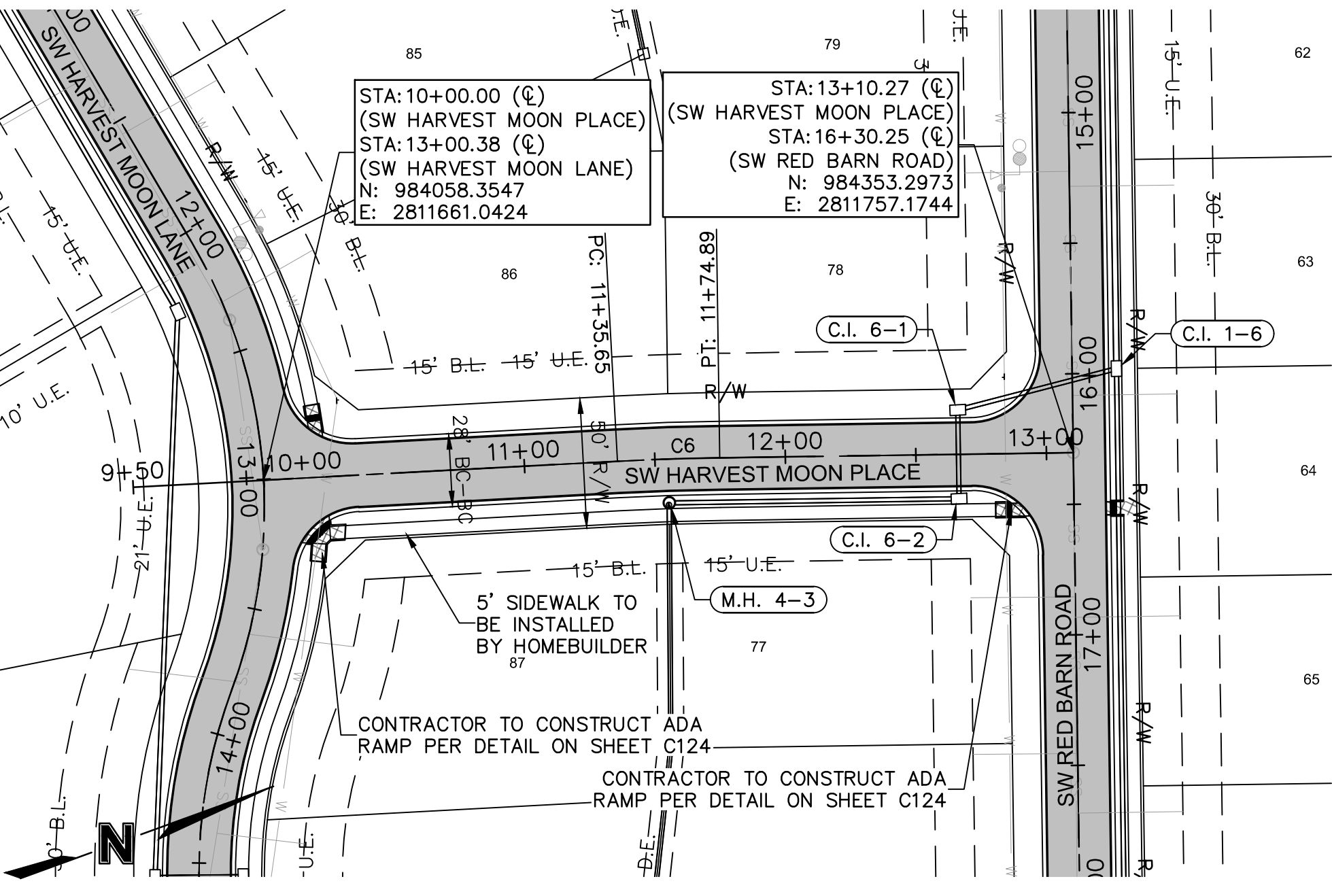
SCALE IN FEET
0' 25' 50' 100'

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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



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

2020

LEE'S SUMMIT, MO

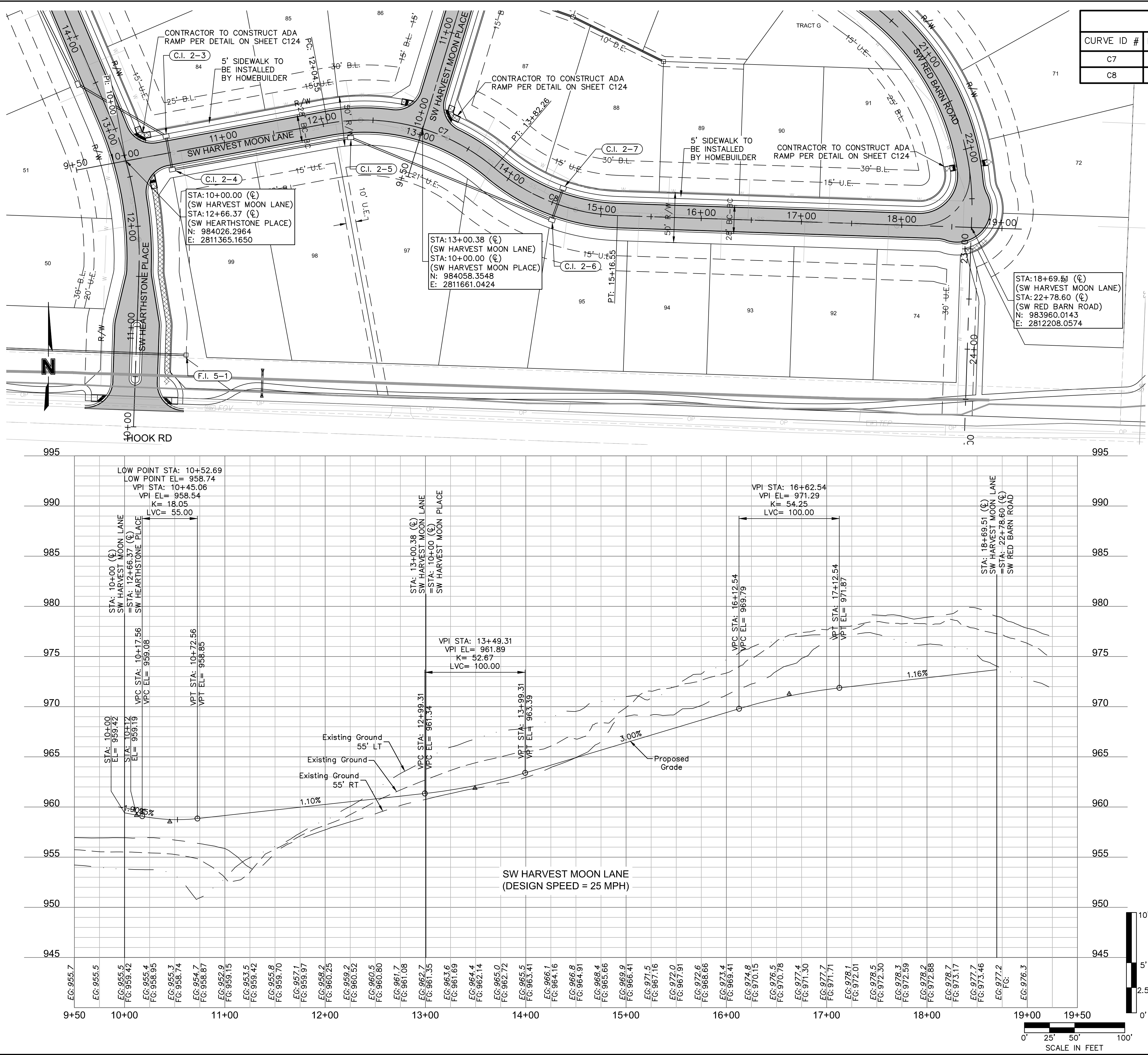
drawn by: EM
checked by: EM
designed by: RB
QA/QC by: NH
project no.: 019-4059
drawing no.: C_RRP02_0194059
date: 4/20/2020

SHEET C105

02/17/2022
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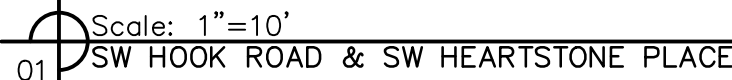
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CURVE TABLE					
CURVE ID #	RADIUS (FT)	LENGTH (FT)	DELTA	TANGENT (FT)	P.I. STA. (BK.)
C7	200.00	177.71	050°54'36"	95.20	12+87.06
C8	200.00	134.29	038°28'13"	69.78	14+46.76

LEGEND

	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER

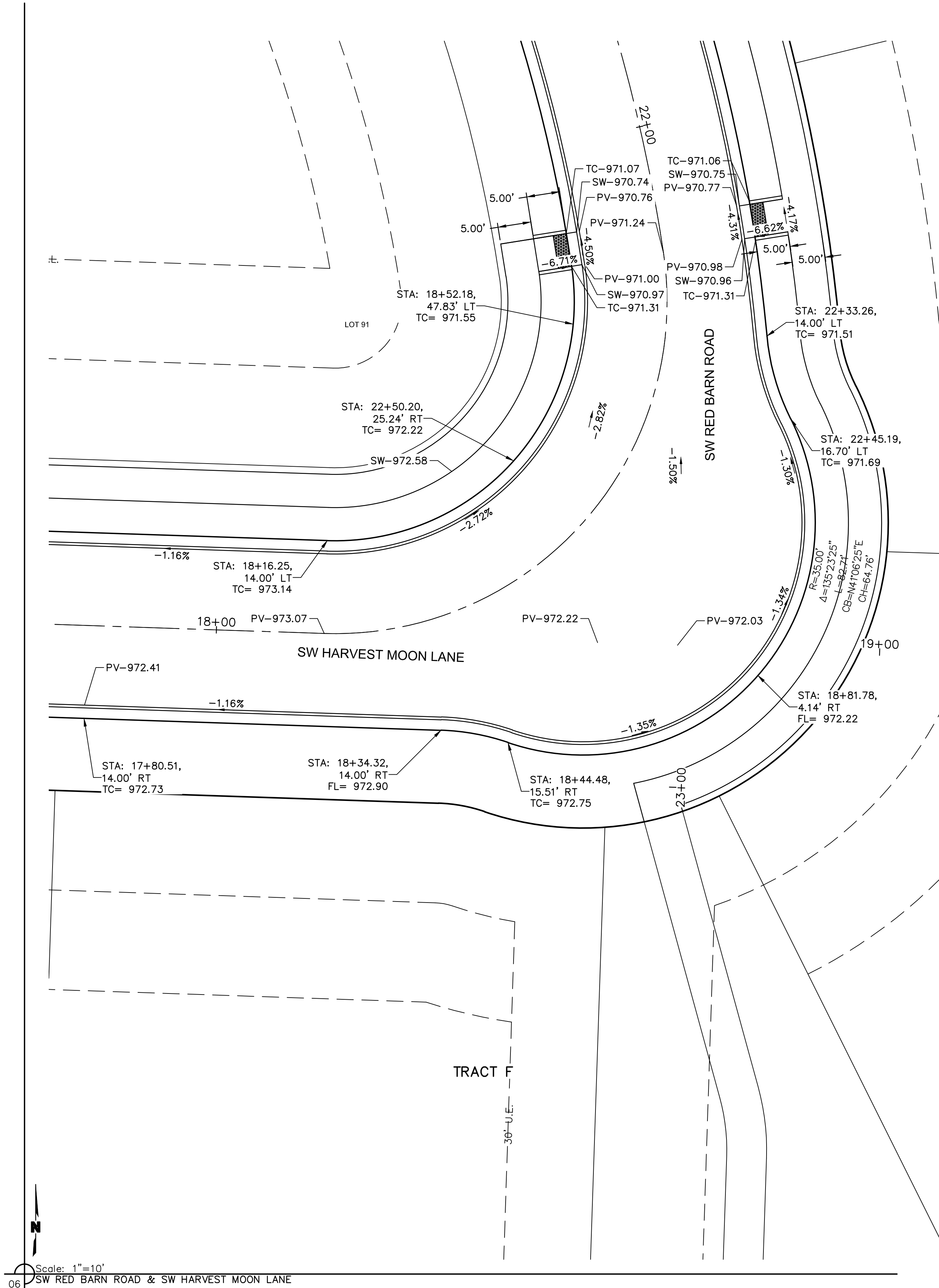
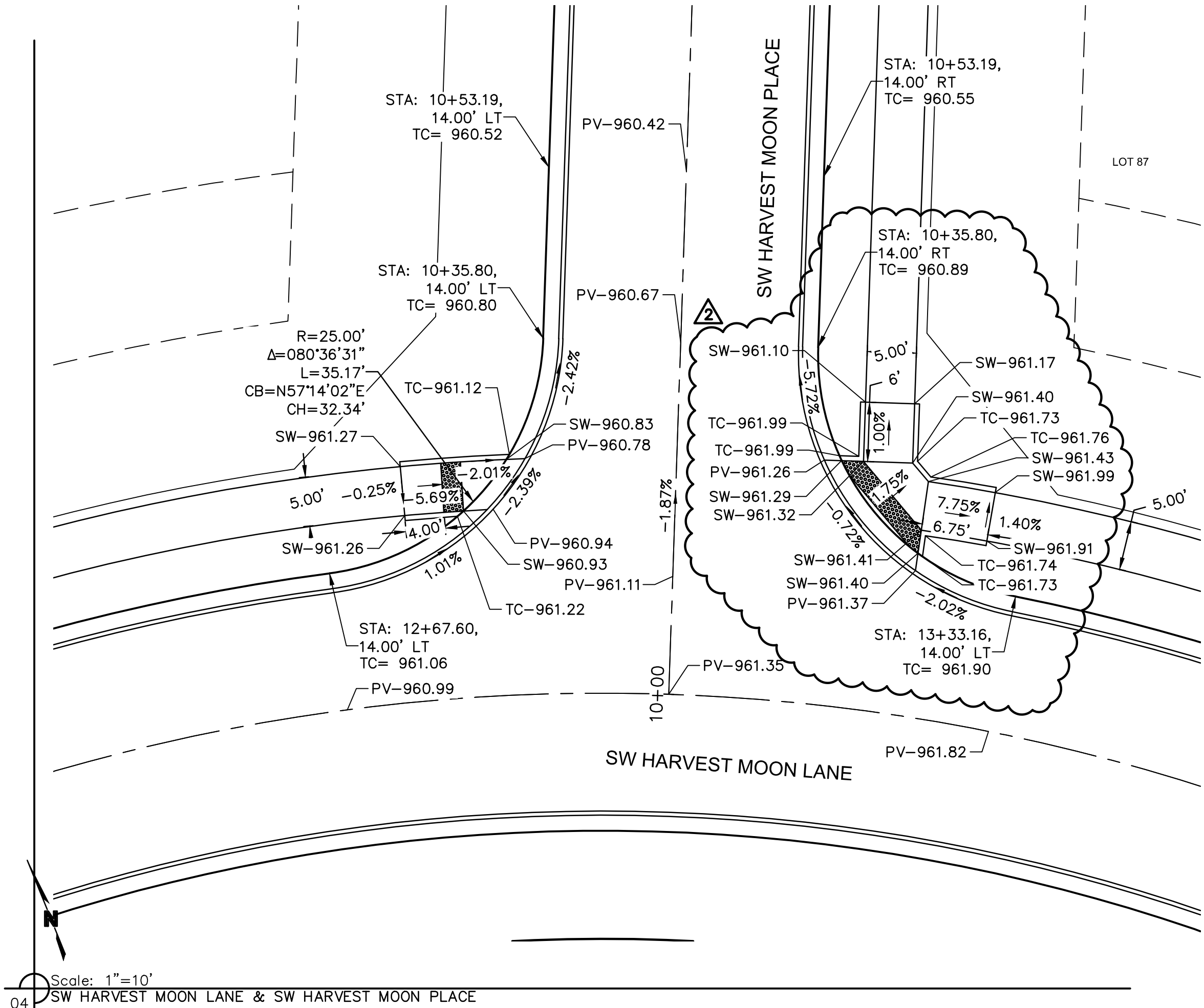
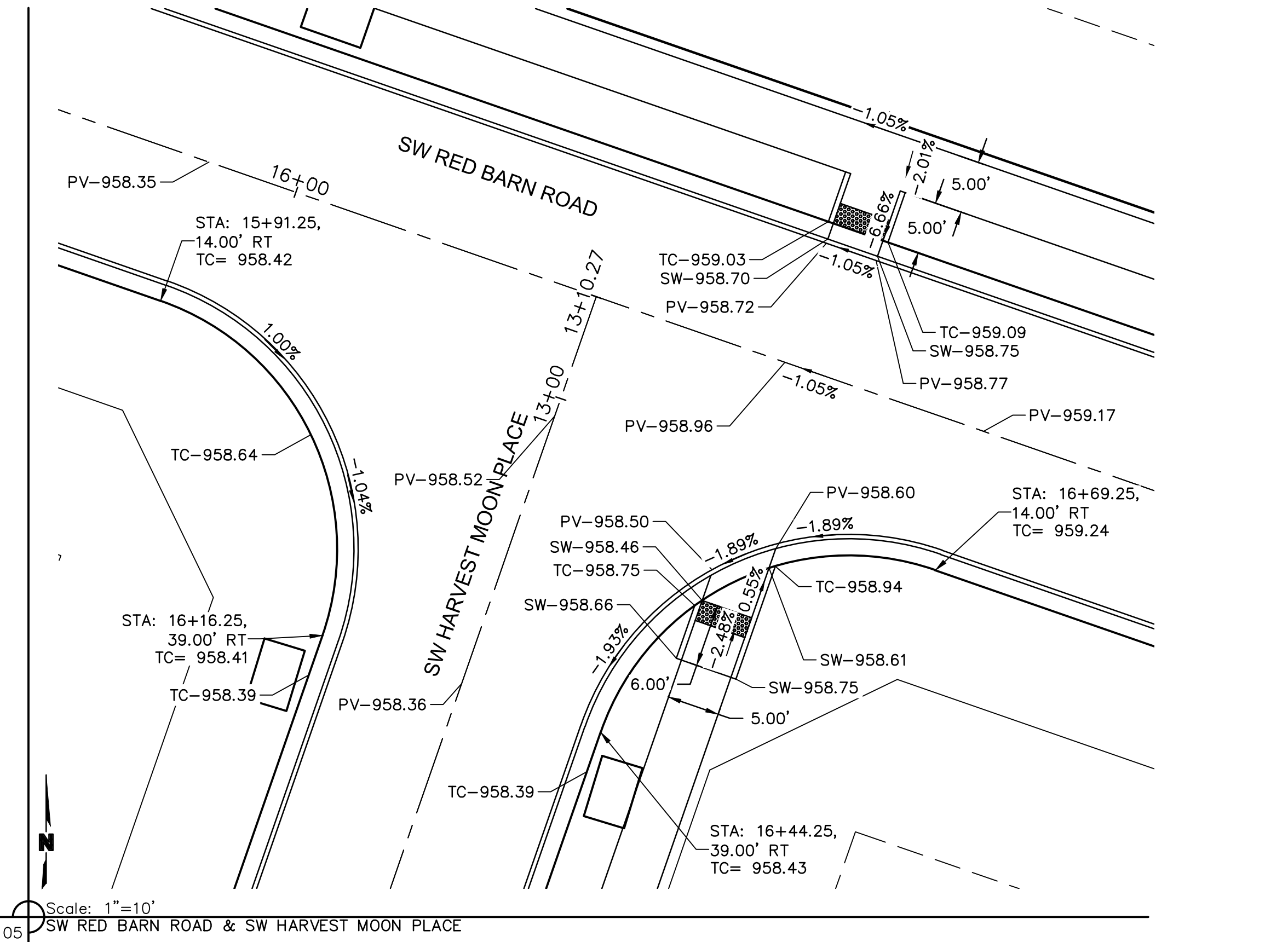


INTERSECTION DETAILS STREET AND STORM SEWER PLANS	2020
THE RETREAT AT HOOK FARMS CONSTRUCTION DOCUMENTS	
LEE'S SUMMIT, MO	

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

2020

LEE'S SUMMIT, MO

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	6-24-2020	CITY COMMENTS	
2	2-01-2021	ADDED HOOK ROAD SWALE	

02/17/2021
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checked by: EM
designed by: RB
QA/QC by: NH
project no.: 019-4059
drawing no.: C_SPT01_0194059
date: 4/20/2020

SHEET C109

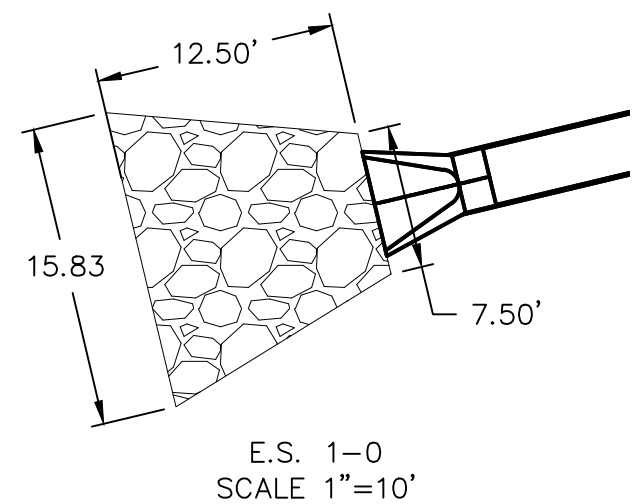
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SHEET C111

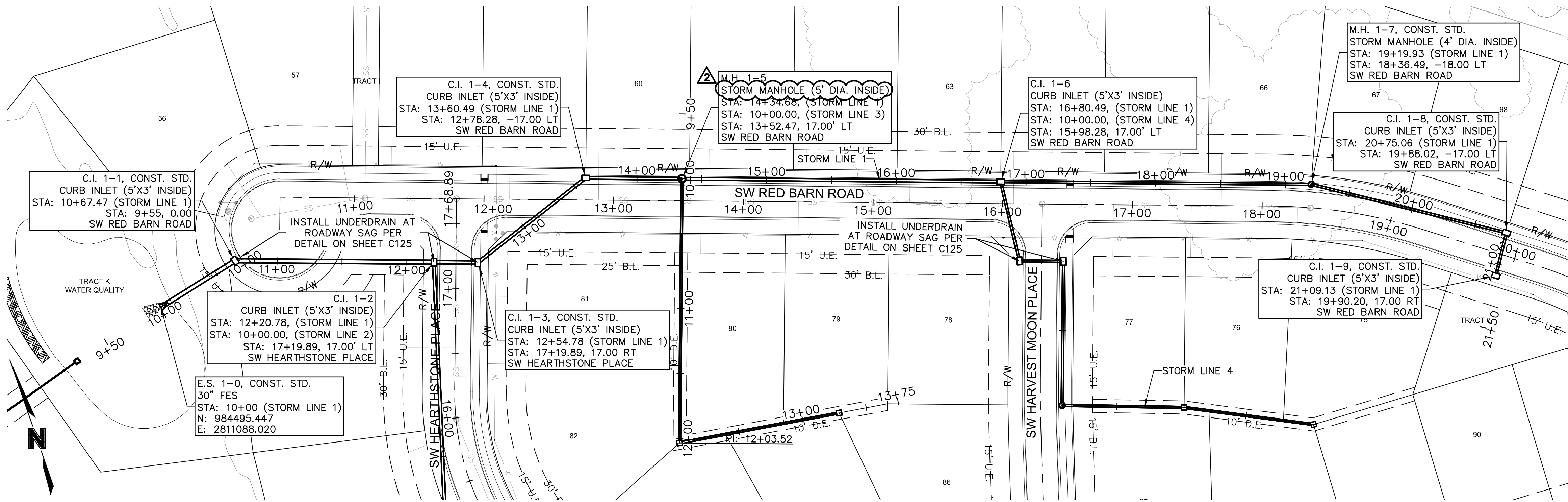
1301 Burlington Street
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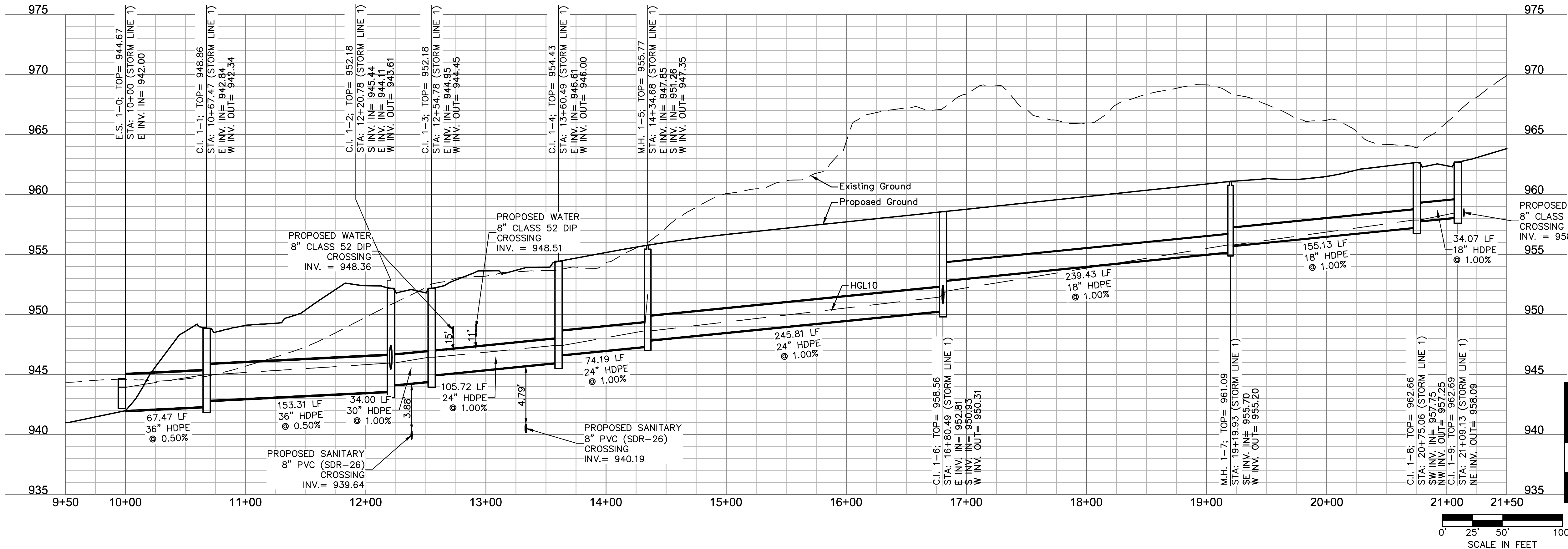
Riprap Calculations						
End Section	Q ₁₀₀ (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)
E.S. 1-0	37.93	2.5	3	10	12.5	2.00
E.S. 5-0	9.09	1.5	2	6	6	1.65
E.S. 7-0	0.61	0.5	1	5	2	1.46

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



- 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 1 (9+50 - 21+50)



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

LEE'S SUMMIT, MO

2020

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



REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	6-24-2020	CITY COMMENTS	
2	2-01-2021	ADDED HOOK ROAD SWALE	

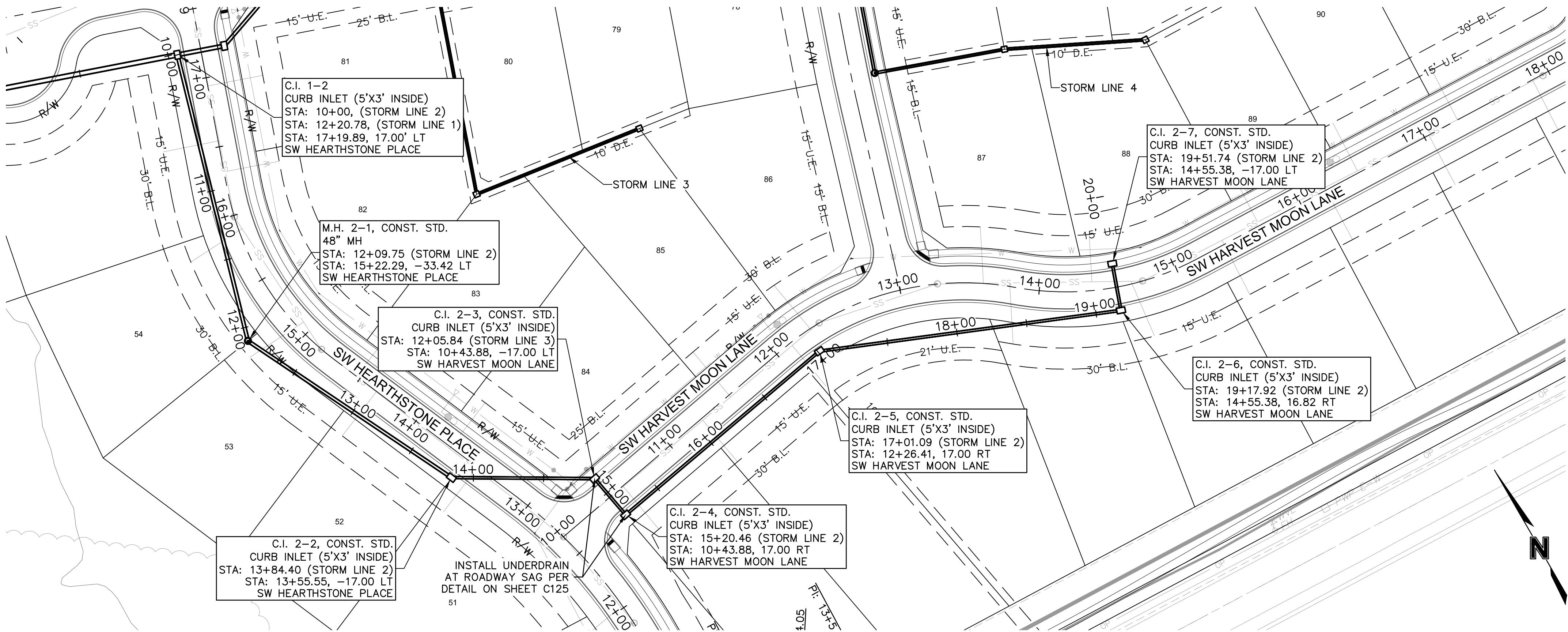
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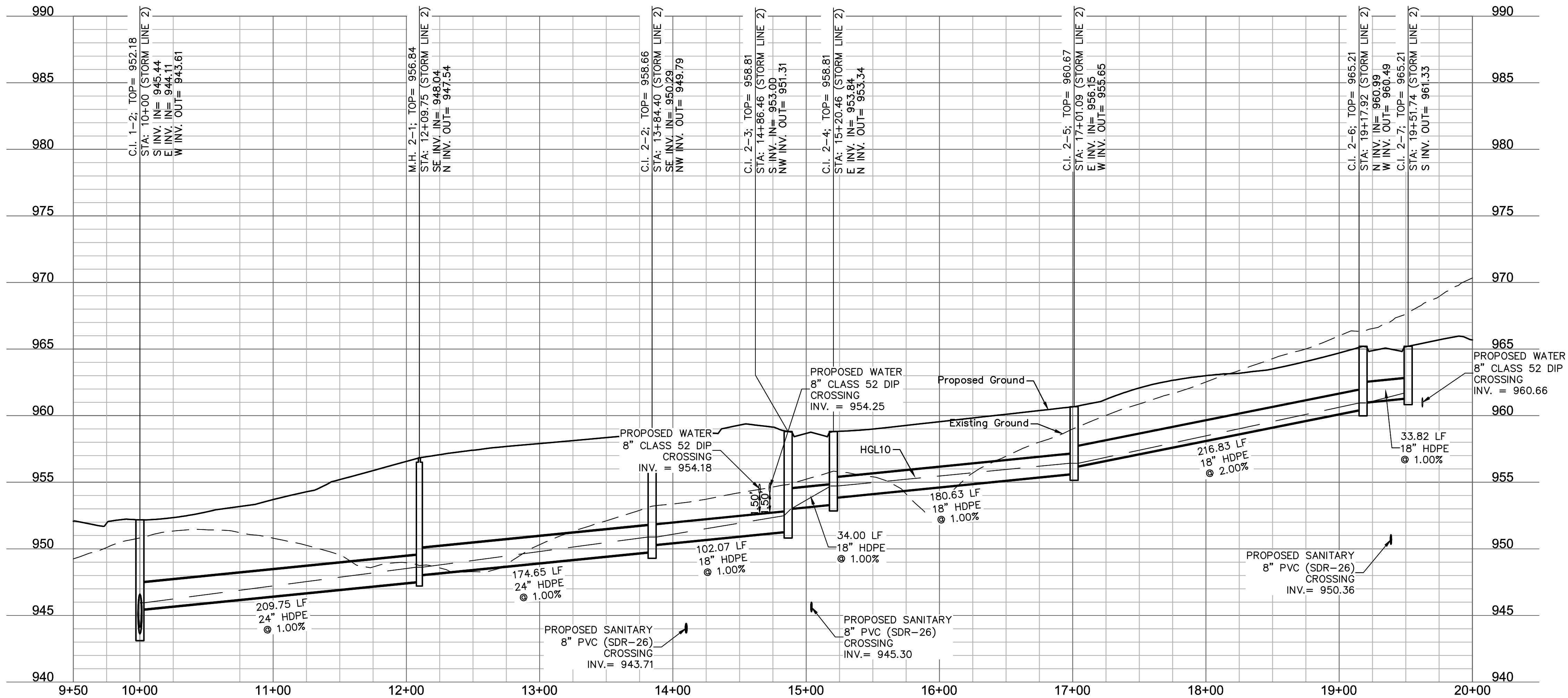
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NOTES:
1. CONTRACTOR TO VERIFY EXISTING CONDITIONS AND COMMUNICATE WITH ENGINEER IF DIFFERENT THAN PLANS.
2. CONTRACTOR SHALL FILL AND COMPACT TO 95% STANDARD DENSITY TO A POINT 4" MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE.



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



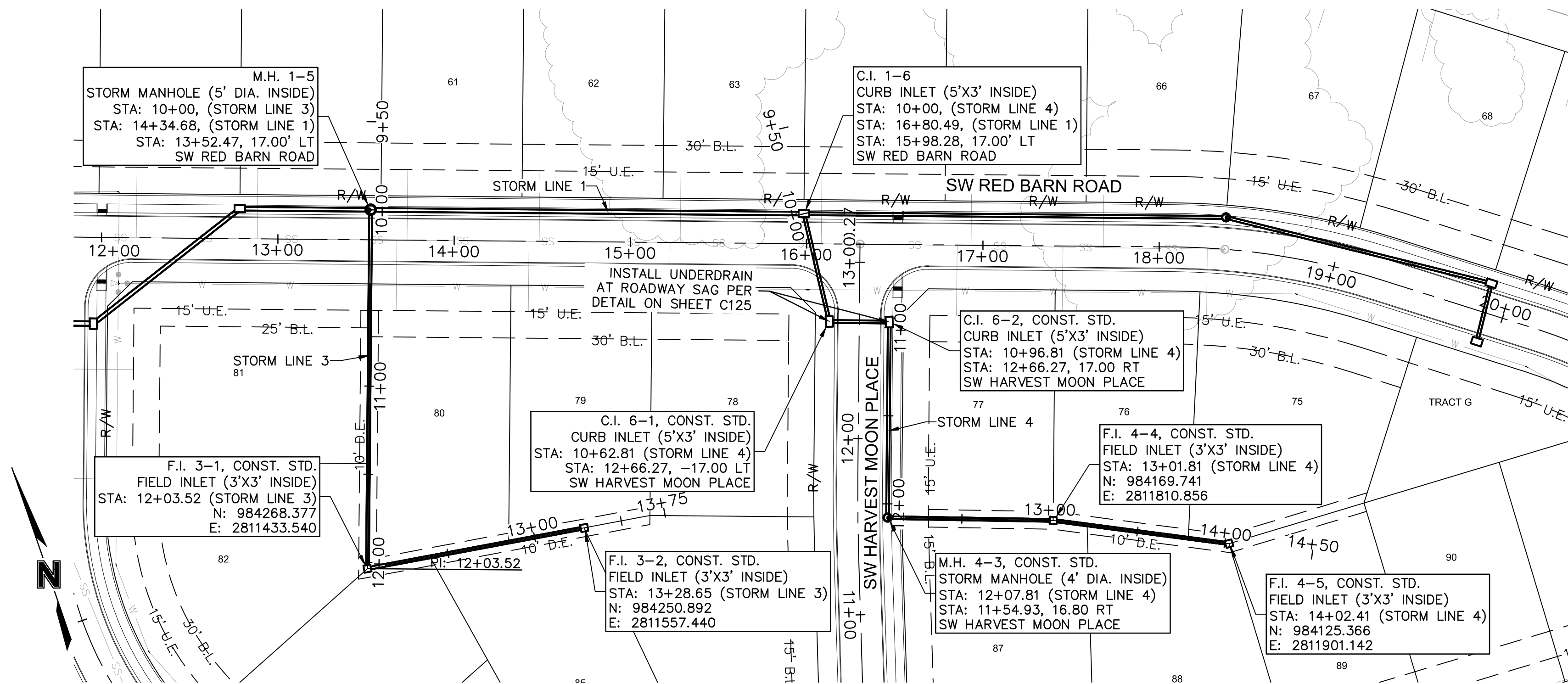
STORM PLAN & PROFILES				REVISIONS			
STREET AND STORM SEWER PLANS							
THE RETREAT AT HOOK FARMS							
CONSTRUCTION DOCUMENTS							
LEE'S SUMMIT, MO			2020				
drawn by:	checked by:	designed by:	QA/QC by:	DATE	REV. NO.	REVISIONS DESCRIPTION	BY
EM	EM	RB	NH	6-24-2020	1	CITY COMMENTS	
				2-01-2021	2	ADDED HOOK ROAD SWALE	

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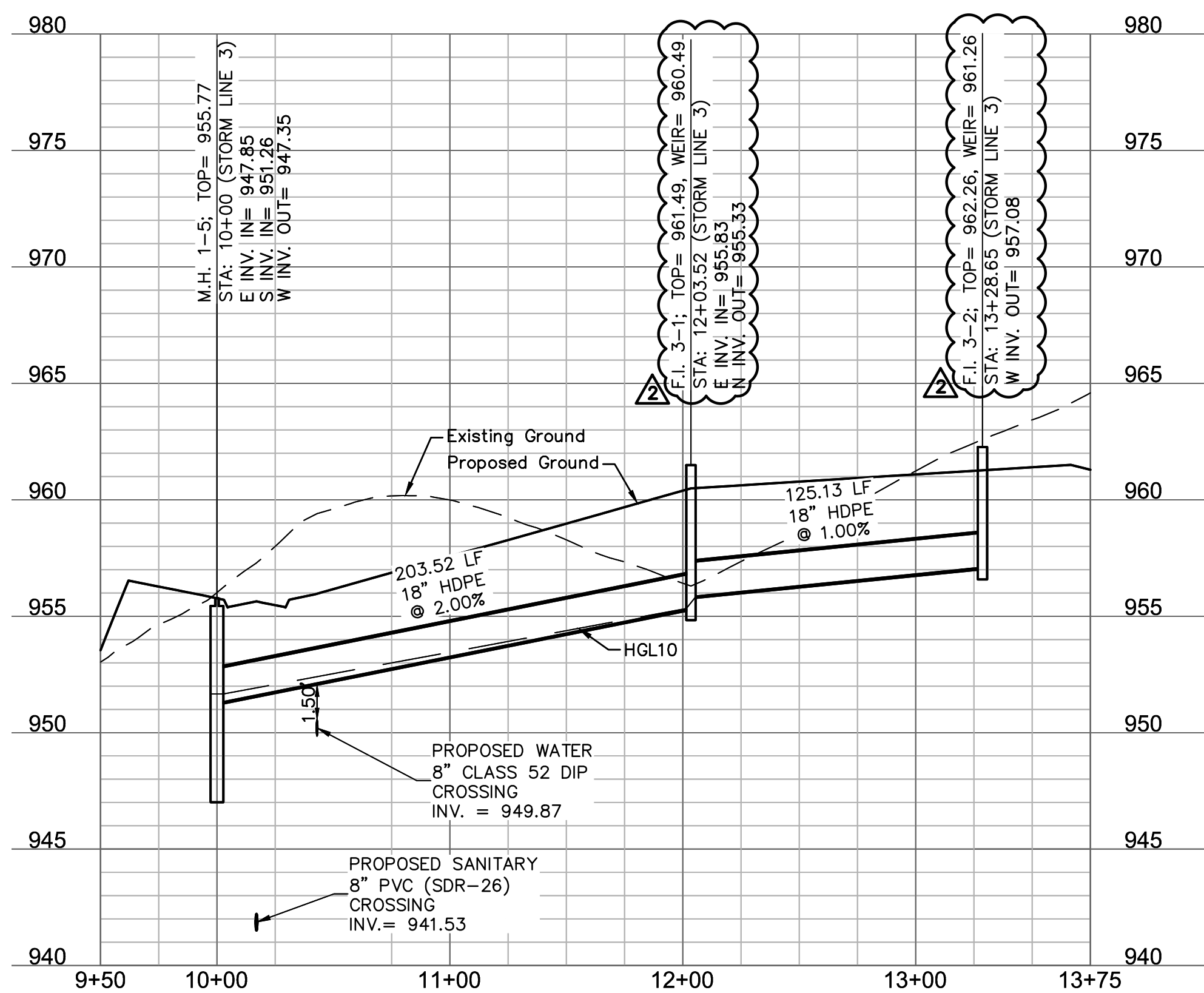
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Professional Engineer

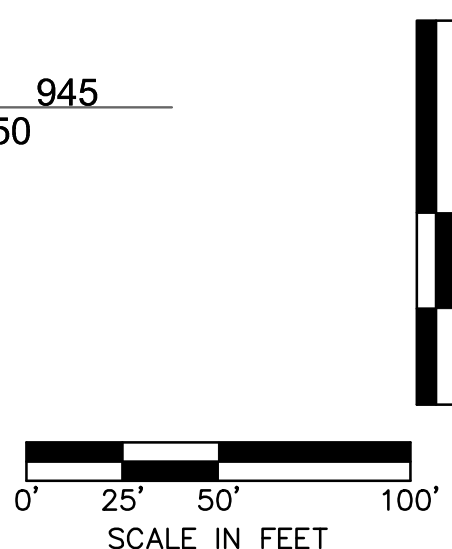
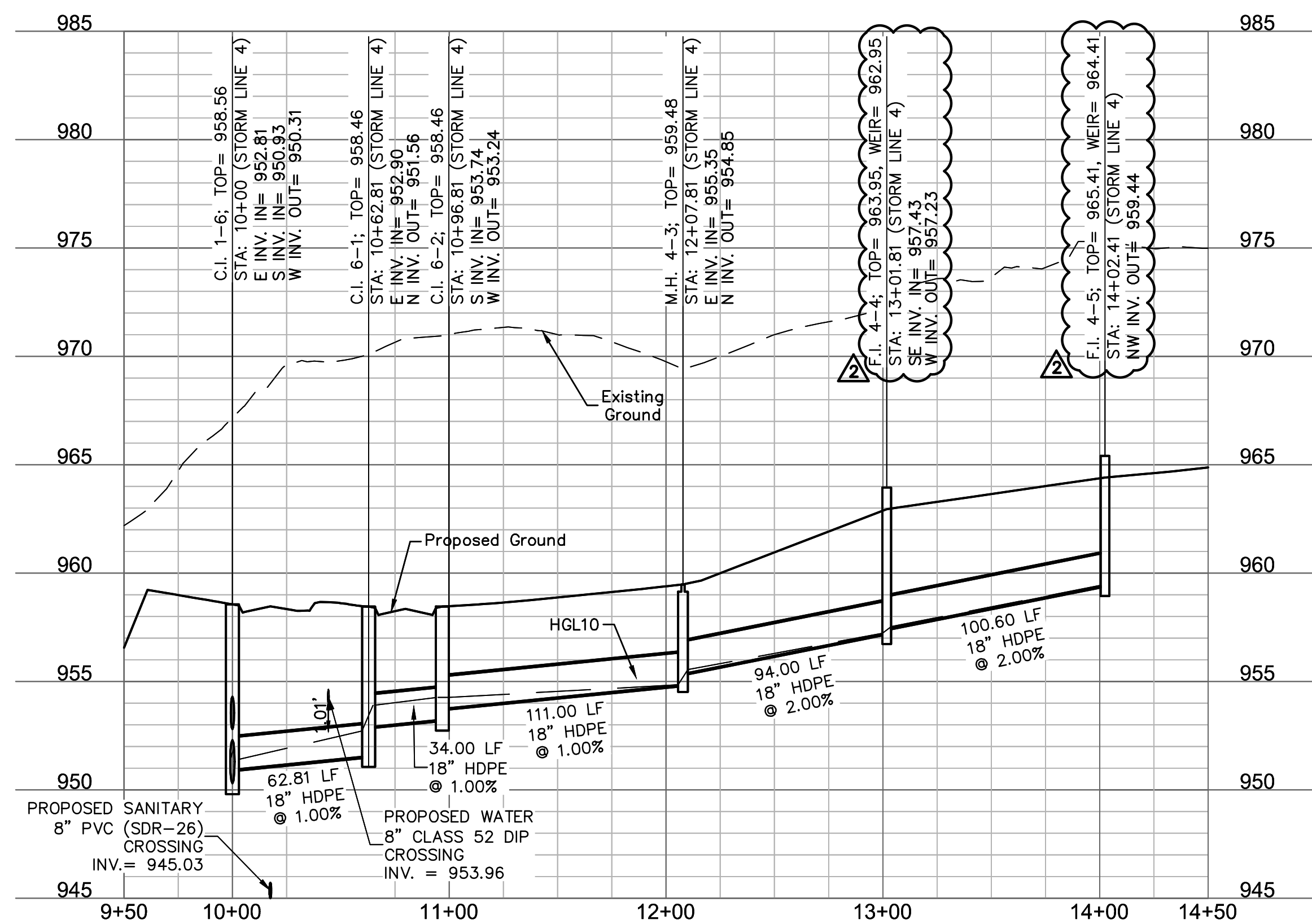
2. CONTRACTOR SHALL FILL AND COMPACT TO 95% STANDARD DENSITY TO A POINT 4' MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE.



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



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



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USER: cmayo

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

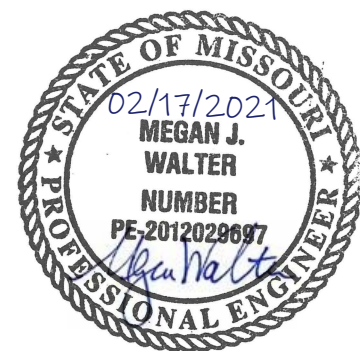
STOP
STREET A

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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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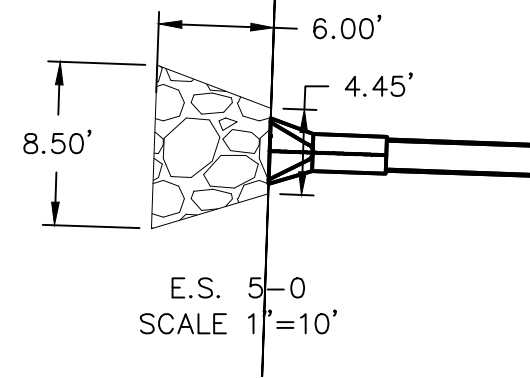
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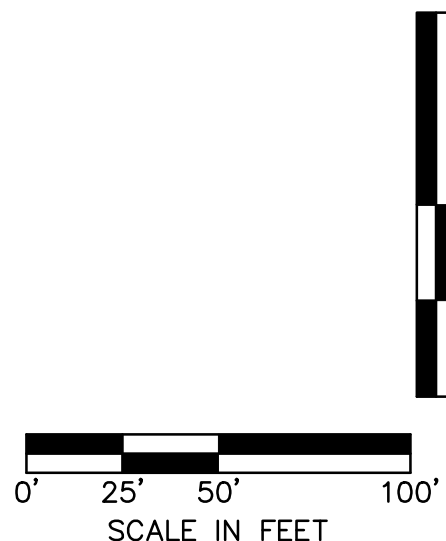
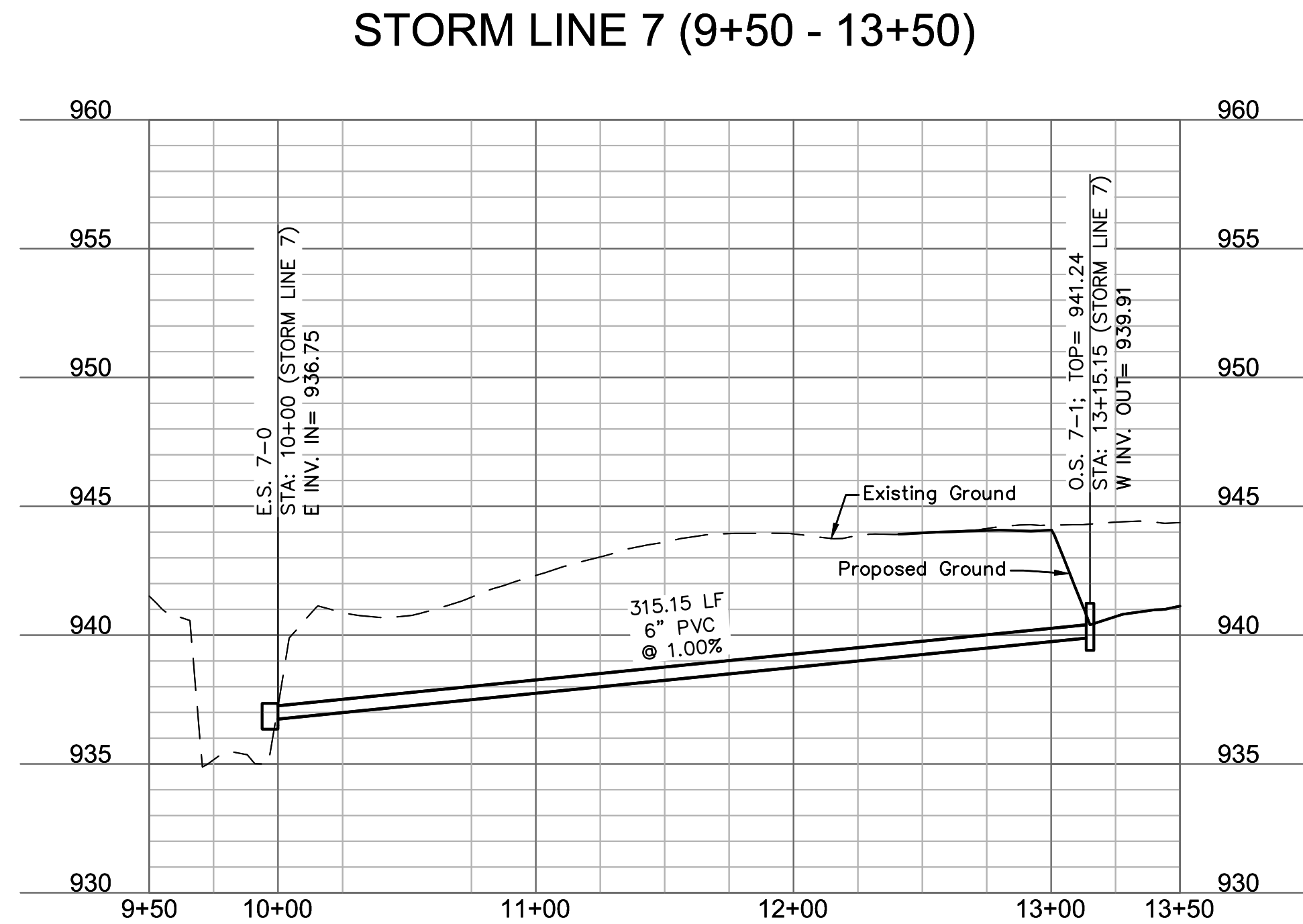
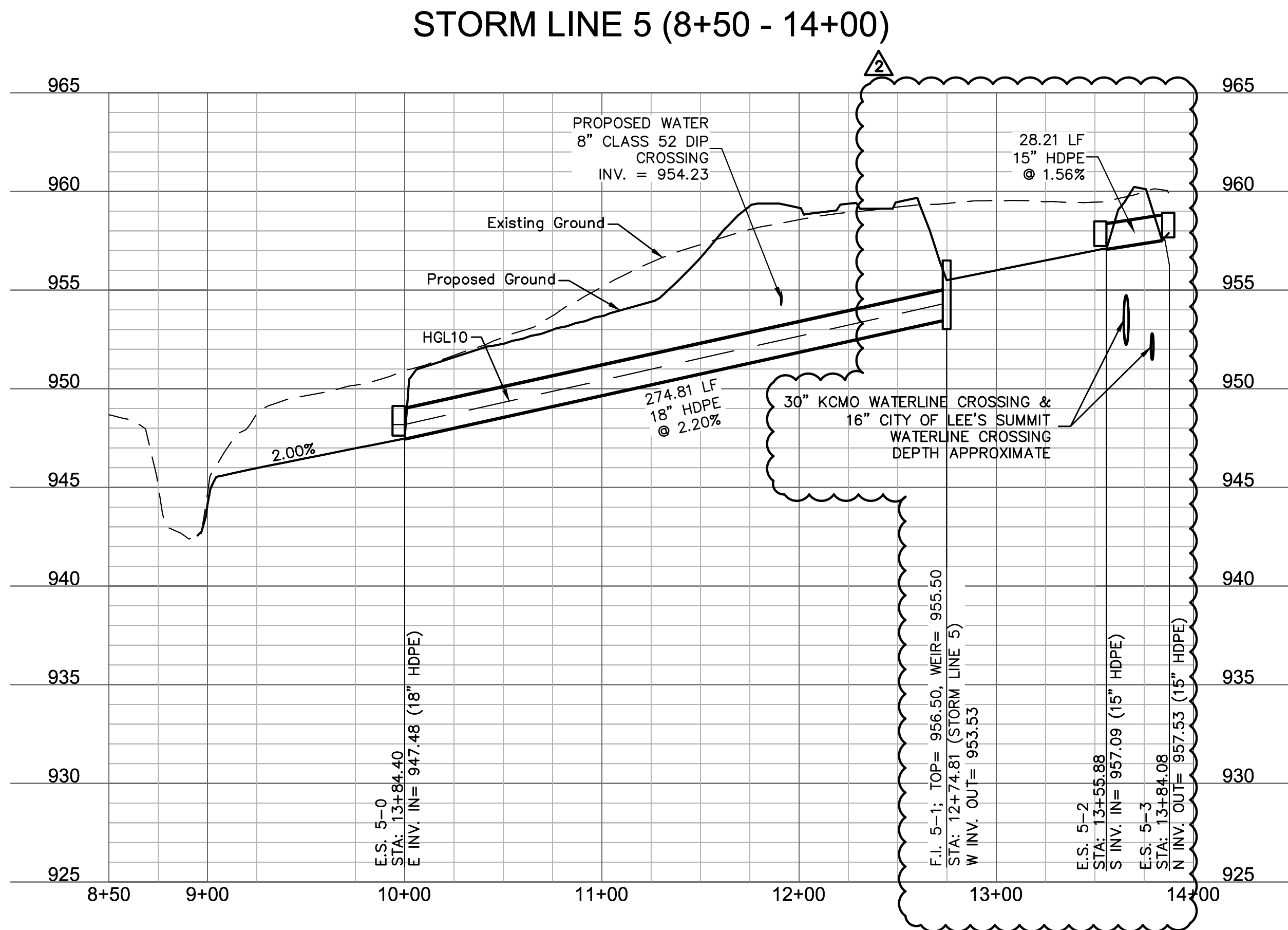
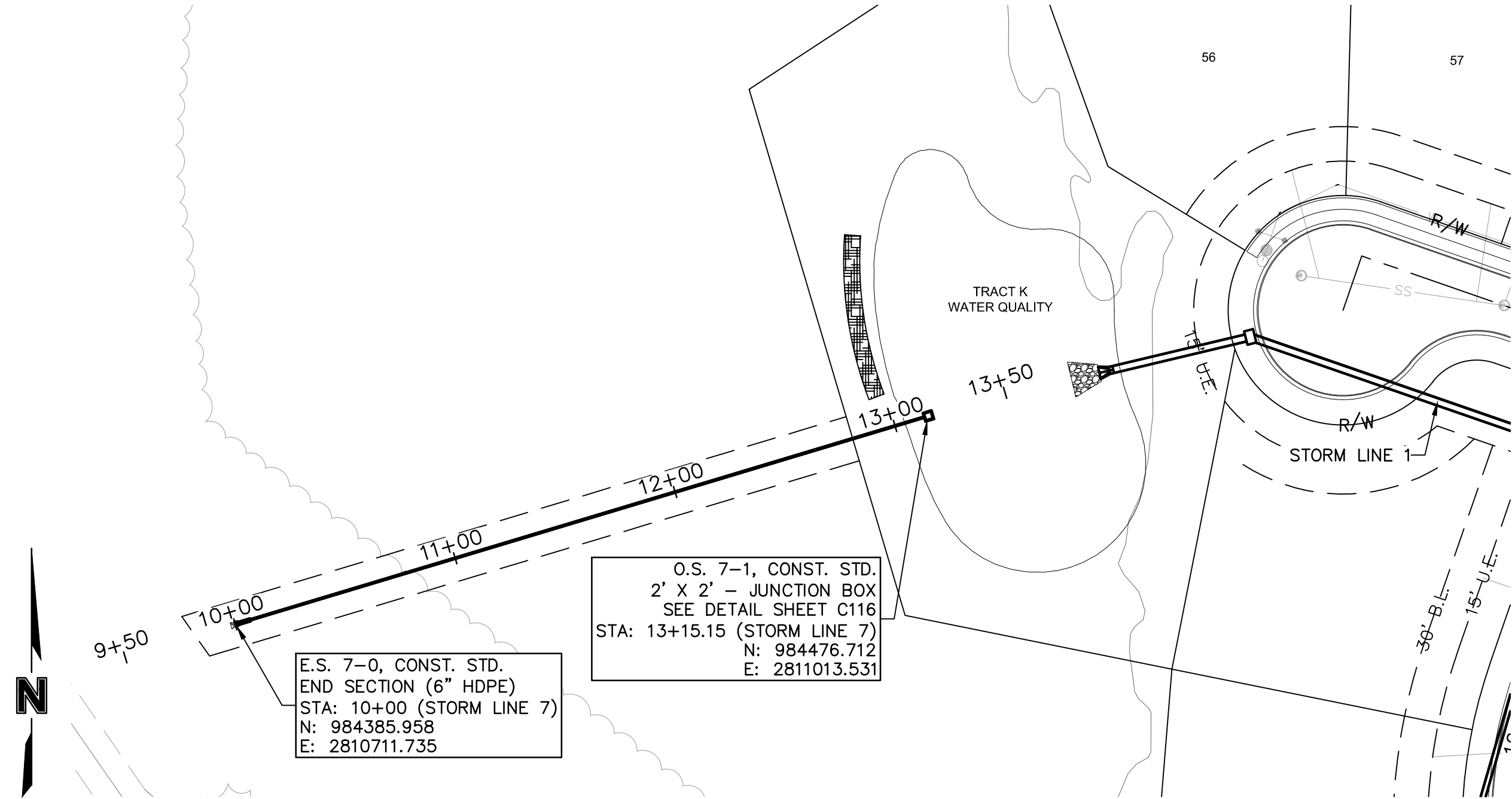
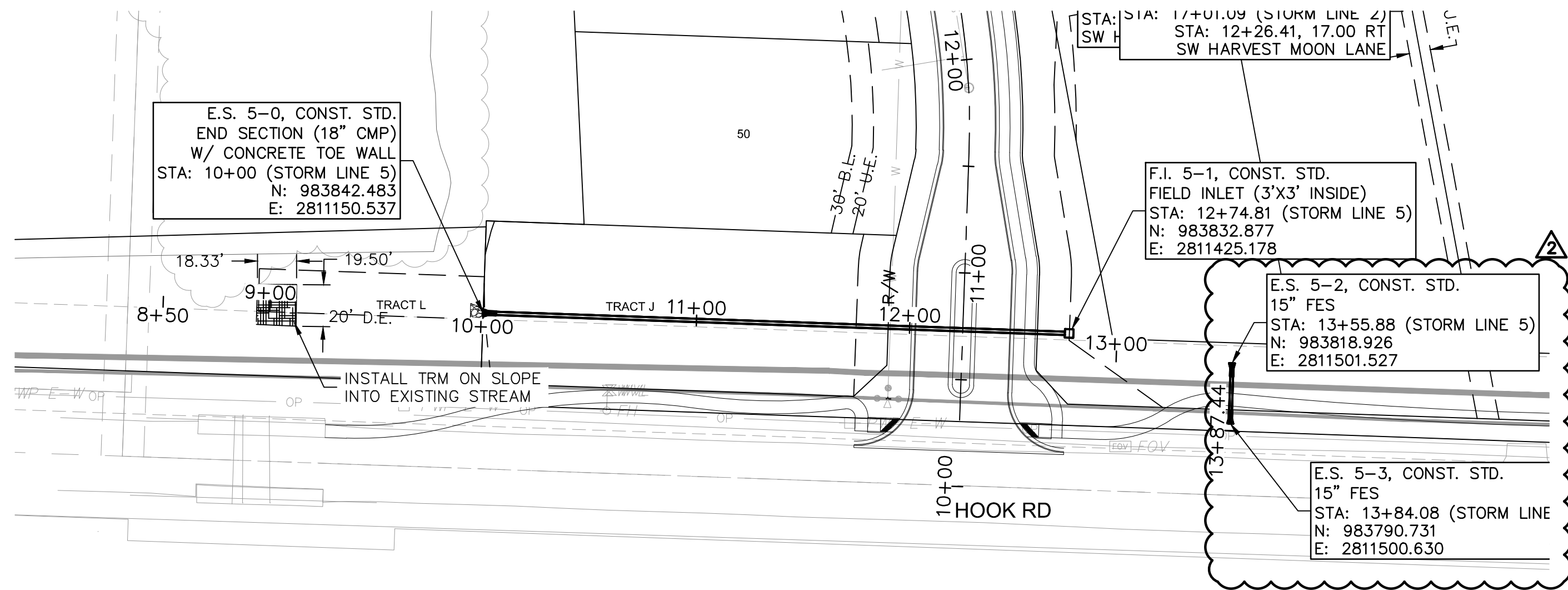
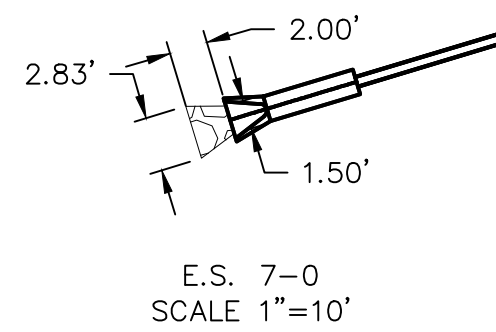
USER: cmayo
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2. CONTRACTOR SHALL FILL AND COMPACT TO 95% STANDARD DENSITY TO A POINT 4' MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE.



Riprap Calculations							
End Section	Q ₁₀₀ (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (SY)
E.S. 1-0	37.93	2.5	3	10	12.5	2.00	16.2
E.S. 5-0	9.09	1.5	2	6	6	1.65	4.3
E.S. 7-0	0.61	0.5	1	5	2	1.46	0.5

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



STORM PLAN & PROFILES
STREET AND STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
CONSTRUCTION DOCUMENTS

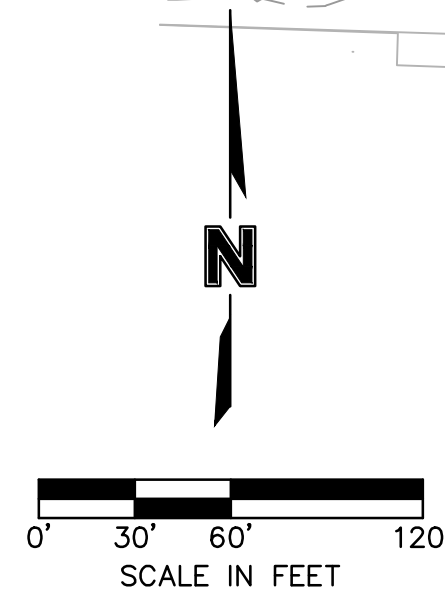
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DATE:



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"

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

DRAINAGE PLAN
STREET AND STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
CONSTRUCTION DOCUMENTS

drawn by: _____ EM
checked by: _____ EM
designed by: _____ RB
QA/QC by: _____ NH
project no.: _____ 019-4059
drawing no.: C_DRN01_0194059
date: _____ 4/20/2020

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DATE: Feb 16, 2021 1:02pm XREFS: C_PTBK_0194059_34x22 C_PBASE_0194059

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.

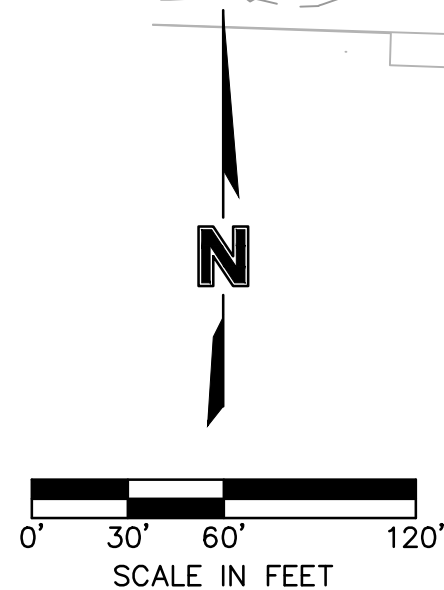
From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Pipe Diameter	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow	Peak Flow	Max Flow Velocity	Travel Time	Design Flow Capacity	Max Flow / Design Flow Ratio	Max Flow Depth / 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

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

DWG: \\oa.dcoconsulting.com\ite-ns\projects\2019\4001-4500\019-4059\40-design\AutoCAD\final plans\Sheets\GNCV\C_DRN02_0194059.dwg
DATE: Feb 17, 2021 1:15pm XREFS: C_PTBULK_0194059_34x22 C_PBASE_0194059 C_PSSWP_0194059 C_PWATR_0194059 C_PBNDY_0194059 C_PSTRM_0194059 C_XBASE_0194059
USER: cmayo



NOTES:

1. INDIVIDUAL LOT OWNERS SHALL NOT CHANGE OR OBSTRUCT THE DRAINAGE FLOW LINES OR PATHS ON THE LOTS, AS SHOWN ON THE WATER 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 FLOW FLOODING WHERE THE AVERAGE DEPTHS ARE LESS THAN 1 FOOT, AREAS OF 1-PERCENT ANNUAL CHANCE STREAM FLOODING WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 1 SQUARE MILE, OR AREAS PROTECTED FROM THE 1-PERCENT ANNUAL CHANCE FLOOD BY LEVEES. NO BASE FLOOD ELEVATIONS OR DEPTHS ARE SHOWN WITHIN THIS ZONE"

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

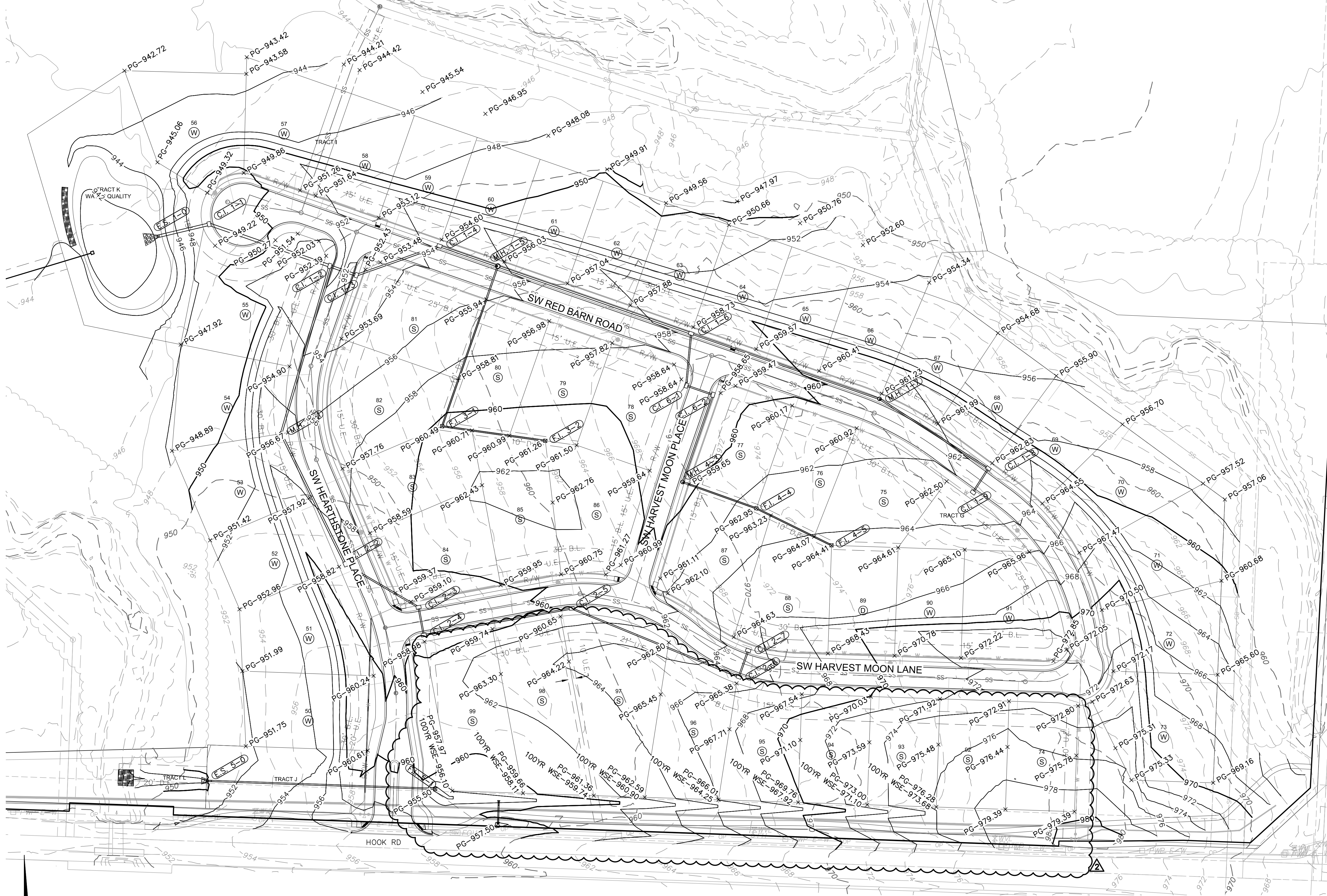
4. MLO ELEVATIONS HAVE BEEN PROVIDED PER LOT LINES. INTERPOLATION WILL BE ALLOWED BETWEEN THE RIGHT AND LEFT SIDE MBOES SHOWN ON THE MASTER DRAINAGE PLAN, DEPENDING ON THE LOCATION OF THE LOWEST OPENING ON THE PROPOSED STRUCTURE.

5. SWALES TO BE CONSTRUCTED BETWEEN EACH OF THE LOTS 75-84, 92-94 TO DRAIN TOWARDS THE ROADWAY.

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

RMLO – REAR MINIMUM LOW OPENING
FMLO – FRONT MINIMUM LOW OPENING

LOT TYPES:
S – STANDARD
D – DAYLIGHT
W – WALKOUT



MASTER DRAINAGE PLAN
STREET AND STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
CONSTRUCTION DOCUMENTS

LEE'S SUMMIT. MO

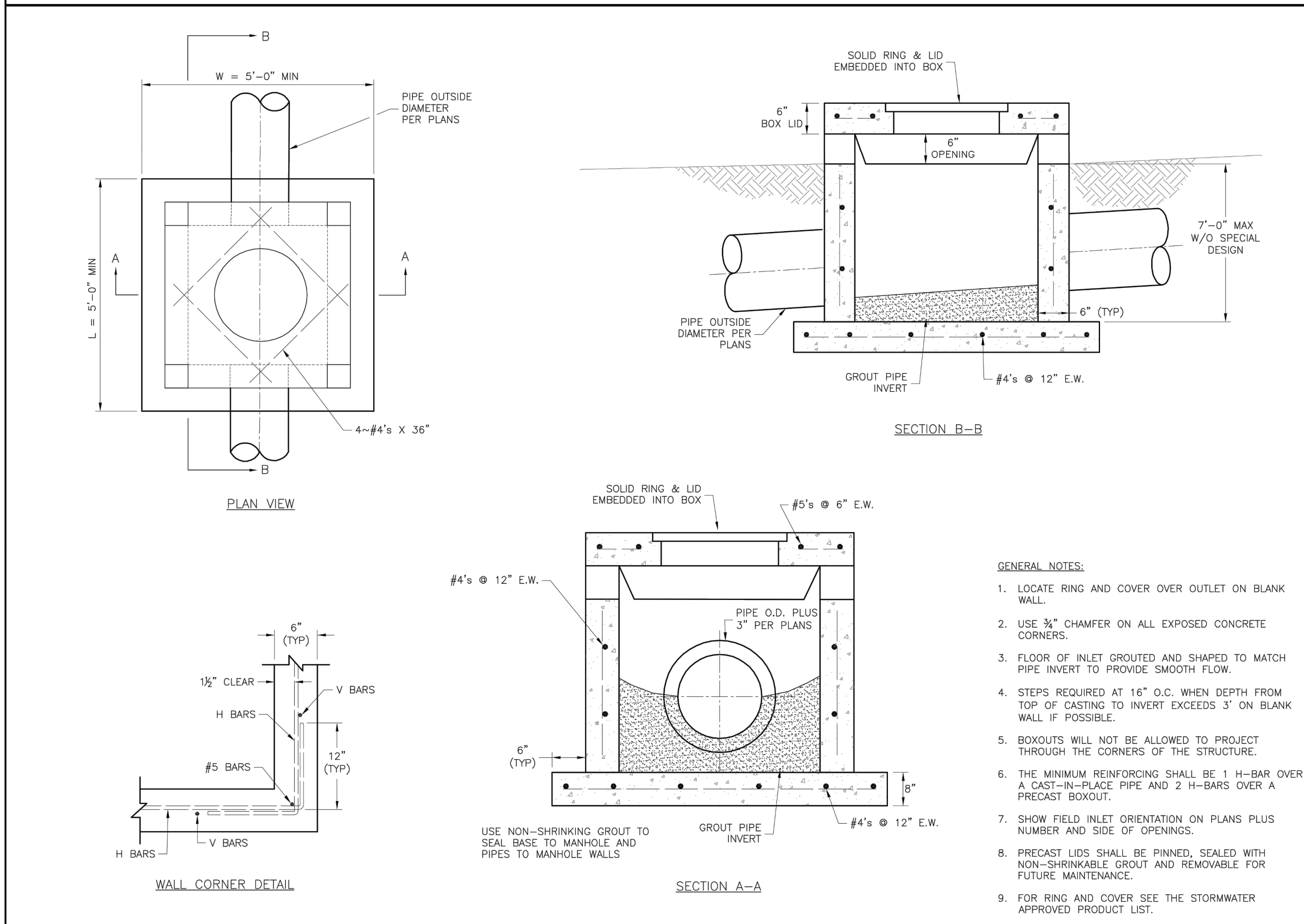
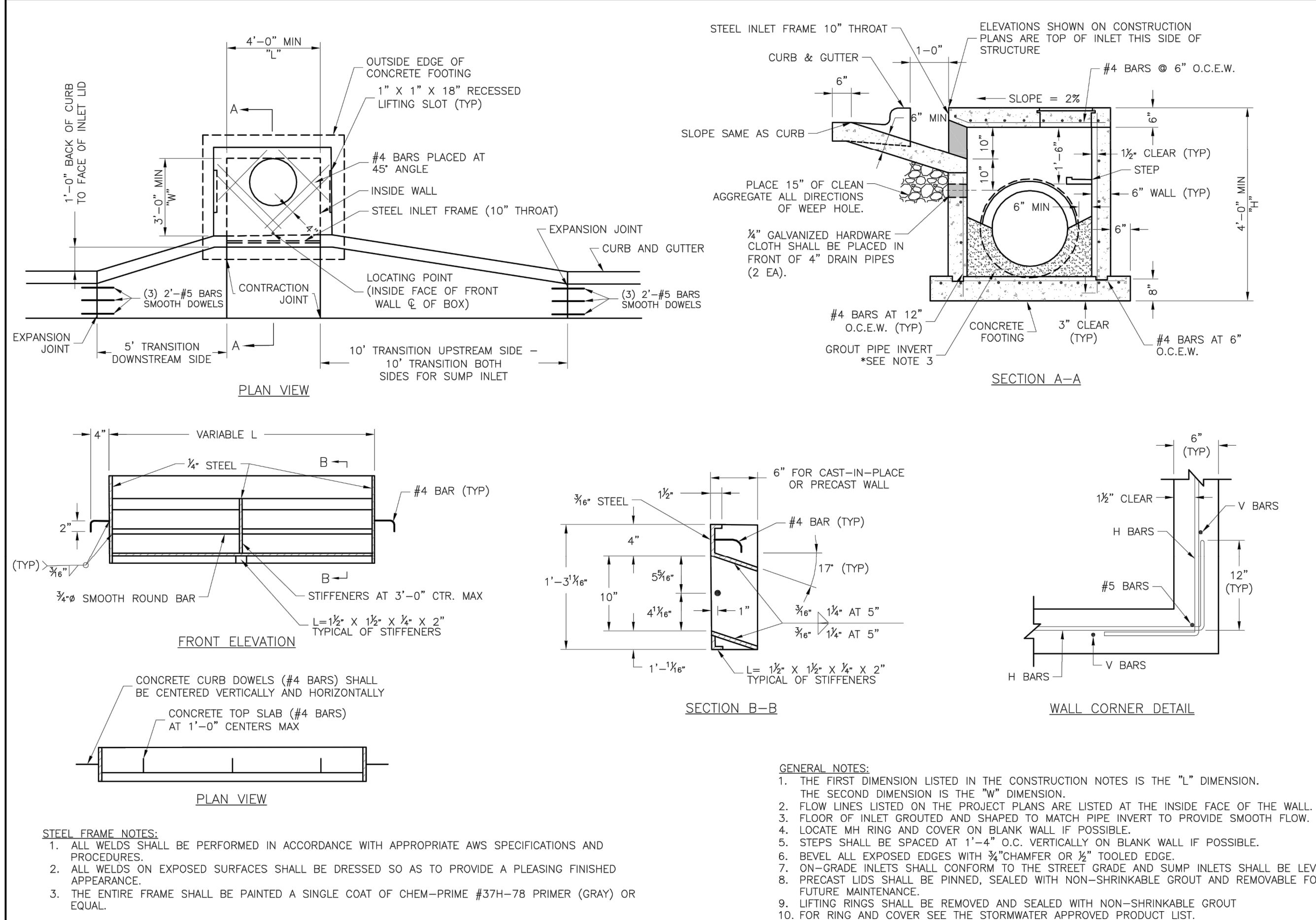
2020

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	6-24-2020	CITY COMMENTS	
2	2-01-2021	ADDED HOOR ROAD SWALE	



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