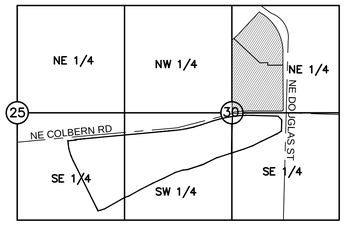
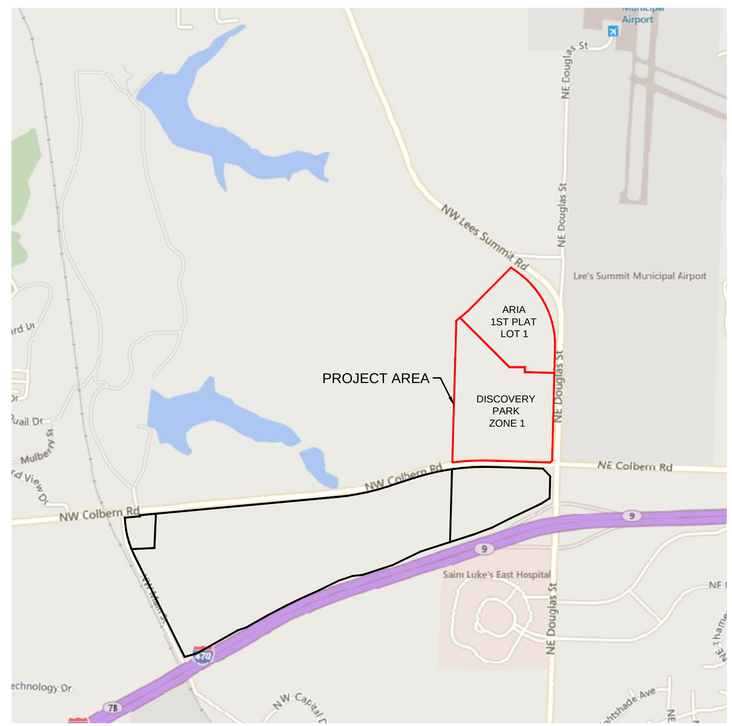
PUBLIC SANITARY SEWER PLANS
FOR
THE VILLAGE AT DISCOVERY PARK ZONE 1

SECTION 25, TOWNSHIP 48N, RANGE 32W
SECTION 30, TOWNSHIP 48N, RANGE 31W
IN LEE'S SUMMIT, JACKSON COUNTY, MO



S25, T48N, R32W
S30, T48N, R31W
N.T.S.
VICINITY MAP

PROJECT TEAM & UTILITY CONTACT LIST	
OWNER /DEVELOPER INTRINSIC DEVELOPMENT 3622 ENDEAVOR AVE. STE. 101 COLUMBIA, MO 65201 CONTACT: JON ODLE PHONE: 573.615.2252	UTILITY SERVICE NUMBERS NAME: LEE'S SUMMIT PUBLIC WORKS PHONE: 816-969-1800 NAME: LEE'S SUMMIT WATER UTILITIES PHONE: 816-969-1900 NAME: SPIRE PHONE: 314-342-0500
ENGINEER OLSSON 1301 BURLINGTON, SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: DAVID EICKMAN PHONE: 816.854.9315 EMAIL: DEICKMAN@OLSSON.COM	NAME: AT&T PHONE: 800-286-8313 NAME: EVERGY PHONE: 816-471-5275 NAME: SPECTRUM PHONE: 877-772-2253
SURVEYOR OLSSON 1301 BURLINGTON, SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: JASON ROUDEBUSH PHONE: 816.361.1177 EMAIL: JROUDEBUSH@OLSSON.COM	NAME: GOOGLE FIBER PHONE: 877-454-6959



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OIL/GAS WELLS:

NO OIL OR GAS WELLS ARE LOCATED WITHIN PROJECT LIMITS.
INFORMATION OBTAINED FROM THE MISSOURI DEPARTMENT OF NATURAL RESOURCES, GEOLOGICAL SURVEY GEOSCIENCES TECHNICAL RESOURCE ASSESSMENT TOOL (GEOSTRAT).

FLOOD CERTIFICATION:

THE ENTIRE SITE IS LOCATED WITHIN ZONE X, "AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM THE 1% ANNUAL CHANCE FLOOD" AS DEPICTED ON THE FEMA FLOOD INSURANCE RATE MAP (FIRM) MAP NUMBER 29095C0409G, REVISION DATE JANUARY 20, 2017.

PROPERTY DESCRIPTION

ARIA FIRST PLAT LOT 1:
AS PROVIDED BY STEWART TITLE GUARANTY COMPANY:
TRACT OF LAND IN THE NORTHEAST QUARTER OF SECTION 30 TOWNSHIP 48 NORTH, RANGE 31 WEST OF THE 5TH PRINCIPAL MERIDIAN IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI BEING BOUNDED AND DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHWEST CORNER OF SAID NORTHEAST QUARTER SECTION; THENCE SOUTH 01 DEGREES 37 MINUTES 50 SECONDS WEST, ON THE WEST LINE OF SAID QUARTER SECTION, 853.75 FEET TO A POINT ON THE SOUTHEAST LOT LINE OF LOT 1, LEE'S SUMMIT ROAD PUMP STATION, A SUBDIVISION RECORDED IN BOOK I 51 AT PAGE 90 IN THE JACKSON COUNTY RECORDER OF DEEDS OFFICE; THENCE NORTH 50 DEGREES 41 MINUTES 15 SECONDS EAST, ON SAID SOUTHEAST LOT LINE, 59.22 FEET; TO THE POINT OF BEGINNING OF THE TRACT OF LAND TO BE HEREIN DESCRIBED; THENCE CONTINUING NORTH 50 DEGREES 41 MINUTES 15 SECONDS EAST ALONG SAID LINE, 116.89 FEET; THENCE NORTH 44 DEGREES 49 MINUTES 51 SECONDS EAST, 792.38 FEET TO A POINT ON THE WESTERLY RIGHT-OF-WAY LINE OF NW LEE'S SUMMIT ROAD AS ESTABLISHED BY DOCUMENT NUMBER 2015E0017982 IN THE JACKSON COUNTY RECORDER OF DEEDS OFFICE; THENCE ON SAID WESTERLY RIGHT-OF-WAY LINE, SOUTH 54 DEGREES 34 MINUTES 12 SECONDS EAST, 95.69 FEET; THENCE SOUTHEASTERLY ALONG A CURVE TO THE RIGHT BEING TANGENT TO THE LAST DESCRIBED COURSE WITH A RADIUS OF 1,142.00 FEET, A CENTRAL ANGLE OF 56 DEGREES 01 MINUTES 43 SECONDS AND AN ARC DISTANCE OF 1,116.74 FEET; THENCE SOUTH 01 DEGREES 27 MINUTES 31 SECONDS WEST, 322.27 FEET; THENCE LEAVING SAID RIGHT-OF-WAY LINE, NORTH 88 DEGREES 32 MINUTES 29 SECONDS WEST, 375.74 FEET; THENCE NORTH 01 DEGREES 27 MINUTES 27 SECONDS EAST, 62.94 FEET; THENCE SOUTH 90 DEGREES 00 MINUTES 00 SECONDS WEST, 195.68 FEET; THENCE NORTH 45 DEGREES 00 MINUTES 00 SECONDS WEST, 889.18 FEET TO THE POINT OF BEGINNING, CONTAINING 979,968 SQUARE FEET OR 22.50 ACRES, MORE OR LESS

DISCOVERY PARK ZONE 1:
A TRACT OF LAND IN THE NORTHEAST QUARTER OF SECTION 30 TOWNSHIP 48 NORTH, RANGE 31 WEST OF THE 5TH PRINCIPAL MERIDIAN IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI BEING BOUNDED AND DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHWEST CORNER OF SAID NORTHEAST QUARTER SECTION; THENCE SOUTH 01°37'50" WEST, ON THE WEST LINE OF SAID QUARTER SECTION, 853.75 FEET TO A POINT ON THE SOUTHEAST LOT LINE OF LOT 1, LEE'S SUMMIT ROAD PUMP STATION, A SUBDIVISION RECORDED IN BOOK I 51 AT PAGE 90 IN THE JACKSON COUNTY RECORDER OF DEEDS OFFICE, AND THE POINT OF BEGINNING OF THE TRACT OF LAND TO BE HEREIN DESCRIBED; THENCE NORTH 50°41'15" EAST, ON SAID SOUTHEAST LOT LINE, 59.22 FEET; THENCE LEAVING SAID LOT LINE, SOUTH 45°00'00" EAST, 889.18 FEET; THENCE NORTH 90°00'00" EAST, 195.68 FEET; THENCE SOUTH 01°27'27" WEST, 62.94 FEET; THENCE SOUTH 88°32'29" EAST, 375.74 FEET TO A POINT ON THE WESTERLY RIGHT-OF-WAY LINE OF NE DOUGLAS STREET AS ESTABLISHED BY DOCUMENT NUMBER 2015E0017982 IN THE JACKSON COUNTY RECORDER OF DEEDS OFFICE; THENCE ON SAID WESTERLY RIGHT-OF-WAY LINE, SOUTH 01°27'31" WEST, 1,114.58 FEET; THENCE SOUTH 46°40'17" WEST, 35.22 FEET TO THE INTERSECTION OF THE NORTHERLY RIGHT-OF-WAY LINE OF NE COLBURN ROAD AS ESTABLISHED BY A SURVEY PROVIDED BY HAMILTON STERRETT AND DOOLEY, PROJECT NUMBER 99021; THENCE ON SAID NORTHERLY RIGHT-OF-WAY LINE NORTH 88°06'56" WEST, 730.85 FEET; THENCE WESTERLY ALONG A CURVE TO THE LEFT HAVING AN INITIAL TANGENT BEARING OF NORTH 87°33'04" WEST WITH A RADIUS OF 2,904.93 FEET, A CENTRAL ANGLE OF 10°06'02" AND AN ARC DISTANCE OF 512.10 FEET TO THE SOUTHWEST CORNER OF THE SAID NORTHEAST QUARTER; THENCE NORTH 01°37'22" EAST, ON THE WEST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 1,328.05 FEET TO THE NORTHWEST CORNER OF THE SOUTHWEST QUARTER OF THE SAID NORTHEAST QUARTER; THENCE CONTINUING ON THE SAID WEST LINE, NORTH 01°37'50" EAST, 473.96 FEET TO THE POINT OF BEGINNING. CONTAINING 1,717,197 SQUARE FEET OR 39.42 ACRES, MORE OR LESS.

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STATE OF MISSOURI
DAVID L. EICKMAN
NUMBER PE-2009015436
6/30/23
PROFESSIONAL ENGINEER
DAVID EICKMAN, P.E.
MO# 2009015436

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

TITLE SHEET
PUBLIC SANITARY SEWER PLANS

THE VILLAGE AT DISCOVERY PARK ZONE 1
NW COLBERN RD & NE DOUGLAS ST

LEE'S SUMMIT, MISSOURI

2023

drawn by: GS/OS/JN
checked by: AR/JN
approved by: DE
QA/QC by: JS/NH
project no.: D2104643
drawing no.: C_TTL01_D2104643
date: 06.30.2023

SHEET
C650

DWG: F:\2021\04501-05000\021-04643-d\40-design\AutoCAD\final plans\Sheets\GNCV\Public Sanitary Sewer Plans\C_TTL01_D2104643.dwg USER: aromanov
DATE: Jun 30, 2023 1:57pm XREFS: C_PTBLK_D2104643 C_XALTA_B2104643

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. UNLESS EXPLICITLY DESCRIBED OTHERWISE WITHIN THESE PLANS THE FOLLOWING SHALL APPLY;
   A. ALL CONSTRUCTION, INCLUDING THOSE LISTED BELOW, SHALL CONFORM TO THE LATEST CODES AND ORDINANCES OF LEE'S SUMMIT, MISSOURI.
   B. ALL CONSTRUCTION IN MODOT RIGHT-OF-WAY SHALL CONFORM TO THE LATEST SPECIFICATIONS ADOPTED BY U.S. DEPARTMENT OF TRANSPORTATION AND MODOT.
   C. ALL TRAFFIC CONTROL SIGNAGE SHALL CONFORM WITH THE CURRENT EDITION OF THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
   D. ALL UTILITY EXTENSIONS AND CONSTRUCTION SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE UTILITY COMPANIES.
   E. ALL EXTERIOR PAVEMENT (PCC, ASPHALT, ETC.) SHALL BE IN CONFORMANCE WITH THE SPECIFICATIONS OF LEE'S SUMMIT, MISSOURI

4. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE DELIVERY MANAGER AND COORDINATING ANY MAILBOXES THAT MAY BE DISTURBED. FAILURE TO DO SO MAY SUBJECT THE CONTRACTOR TO PROSECUTION BY THE FEDERAL GOVERNMENT.

EXISTING CONDITIONS

1. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS OF THE PROJECT AREA.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING THEIR OWN INVESTIGATIONS AND MAKING THEIR OWN ASSUMPTIONS REGARDING SITE SURFACE AND SUBSURFACE CONDITIONS. THIS INCLUDES THE LOCATION AND CONSISTENCY OF ANY EXISTING ROCK LAYERS UNDERLYING THE PROJECT SITE. CONTACT THE ENGINEER REGARDING ANY DISCREPANCIES THAT MAY AFFECT THE ABILITY TO CONSTRUCT FROM THESE PLANS AS DESIGNED.

3. EXISTING CONDITIONS WERE DETERMINED THROUGH A VARIETY OF METHODS THAT MAY INCLUDE SURVEY, AERIAL IMAGERY, AVAILABLE RECORDS, GIS DATA, ETC. SUBSURFACE CONDITIONS ARE APPROXIMATE AND MAY NOT INCLUDE ALL UTILITIES AND OTHER SITE IMPROVEMENTS PRESENT ON SITE. THE CONTRACTOR SHALL MAKE EXPLORATION EXCAVATIONS AND LOCATE EXISTING UNDERGROUND UTILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS WHEN CONFLICTS AND DISCREPANCIES ARE FOUND.

CONSTRUCTION

1. THE CONTRACTOR SHALL INSTALL TRAFFIC CONTROL WHILE WORKING IN THE PUBLIC RIGHT-OF-WAY AS SHOWN IN THESE PLANS. IF PLANS ARE NOT PROVIDED, CONTRACTOR SHALL COORDINATE AND PROVIDE CONTROLS TO THE SATISFACTION OF THE RIGHT-OF-WAY OWNER.

2. THE CONTRACTOR SHALL PROTECT ALL TREES OVER 3" CALIPER FROM DAMAGE. NO TREE SHALL BE REMOVED WITHOUT PERMISSION OF THE OWNER, UNLESS SHOWN OTHERWISE ON THESE PLANS.

3. THE CONTRACTOR SHALL DISPOSE ALL WASTE MATERIAL RESULTING FROM THE PROJECT OFF-SITE AND IN STRICT CONFORMANCE WITH ALL LOCAL CODES AND ORDINANCES.

4. ALL MANHOLES, CATCH BASINS, UTILITY VALVES AND METER PITS ARE TO BE ADJUSTED OR REBUILT TO GRADE AS REQUIRED. NOT ALL ADJUSTMENTS ARE INDICATED IN THE PLANS.

5. THE CONTRACTOR SHALL STREET SWEEP OR OTHERWISE CLEAN ALL ACCESS ROUTES TO THE SITE AT CONCLUSION OF THE PROJECT.

SHOP DRAWINGS

1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWING 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 SANITARY SEWER STRUCTURES TO BE INSTALLED WITH THIS PROJECT.
   B. ANY ITEMS IN THESE PLANS THAT ALLOW FOR AN "APPROVED EQUAL" ALTERNATIVE.

SANITARY SEWER GENERAL NOTES

1. PRIOR TO COMMENCEMENT OF WORK THE CONTRACTOR SHALL NOTIFY AND COORDINATE CONSTRUCTION WITH CITY OF LEE'S SUMMIT, MISSOURI.

2. ALL PIPE LENGTHS ARE CALCULATED LINEARLY FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
4. ALL STRUCTURE DIMENSIONS ARE TO INSIDE FACE OF STRUCTURE.

5. COORDINATES ARE PROVIDED AT THE CENTER OF STRUCTURE. ADDITIONAL COORDINATES PROVIDED ARE PER LOCAL CODES AND ORDINANCES OR AS AN AID WHEN ORIENTING THE LID DURING INSTALLATION.

6. THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT LOCATIONS OF POSSIBLE CONFLICT AND POINTS OF CONNECTION PRIOR TO ANY CONSTRUCTION OF SANITARY SEWER.

7. SANITARY SEWER TRENCHES SHALL BE CONSTRUCTED SUCH THAT UNDISTURBED EXISTING SOIL OR FILL COMPACTED TO 95% PROCTOR DENSITY IS AT A DEPTH THAT IS 18" ABOVE TOP OF PROPOSED PIPE.

8. MANHOLE INVERT CHANNELS SHALL BE SMOOTH, CIRCULAR, AND CONFORMING TO ½ THE ADJACENT PIPE SECTION (INVERT TO CENTER). CHANGES IN DIRECTION OF FLOW SHALL BE MADE WITH A SMOOTH CURVE AND MAINTAIN SHAPE THROUGHOUT. CHANGES IN GRADE OF ADJACENT PIPES SHALL BE TRANSITIONED SMOOTHLY AND EVENLY THROUGH THE MANHOLE.

9. PIPE PENETRATIONS SHALL USE GASKETS TO ENSURE WATERTIGHT SEALS.

10. TRACING TAPE SHALL BE INSTALLED ALONG ALL NON-METALLIC SURFACES OR AS DIRECTED BY LOCAL CODES AND ORDINANCES.

11. SEWER LINE INSPECTIONS AND TESTING MUST BE SCHEDULED A MINIMUM OF TWO FULL BUSINESS DAYS IN ADVANCE. CONTRACTOR SHALL FURNISH ALL TESTING EQUIPMENT. TESTING SHALL INCLUDE
    A. MANDREL TEST OF ALL GRAVITY SEWERS. IF THE MANDREL TEST FAILS ON ANY SECTION OF PIPE, THAT SECTION SHALL BE UNCOVERED AND REPLACED.
    B. AIR PRESSURE TEST OF ALL GRAVITY SEWERS.
    C. VACUUM TEST OF ALL MANHOLES.

12. REFER TO CURRENT CITY SPECIFICATIONS FOR MINIMUM PIPE SLOPES.

13. CONTRACTOR MAY BE REQUIRED TO RECONSTRUCT PIPE AND STRUCTURE IF MINIMUM INVERT DROP OR PIPE SLOPE REQUIREMENTS ARE NOT MET.

14. SANITARY STRUCTURES SHALL BE PER CURRENT CITY DETAILS. IF CITY DOES NOT HAVE PUBLISHED DETAILS STRUCTURES SHALL BE PER CURRENT APWA SPECIFICATIONS.

15. GRAVITY SANITARY SEWER AND WATER LINES SHALL BE SEPARATED BY A MINIMUM OF 10' HORIZONTALLY WHEN PARALLEL AND 2' VERTICALLY WHEN CROSSING. WATER LINES SHALL CROSS ABOVE SANITARY SEWERS.

16. RAIN WATER FROM ROOFS, STREETS, AND OTHER AREAS AND GROUNDWATER FROM FOUNDATION DRAINS SHALL BE EXCLUDED FROM ALL NEW SEWERS.

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	AS-BUILT
1	ABANDON EXISTING 12" SEWER	L.F.	660.88	
2	REMOVE EXISTING 12" FORCE MAIN	L.F.	1843.95	
3	REMOVE EXISTING SANITARY STRUCTURE	EA.	1.00	
4	6" SANITARY PVC (SDR-26)	L.F.	275.00	
5	8" SANITARY PVC (SDR-21)	L.F.	772.11	
6	8" SANITARY PVC (SDR-26)	L.F.	1913.72	
7	8" DIP	L.F.	119.03	
8	12" DR-11 HDPE	L.F.	1786.91	
9	24" STEEL CASING	L.F.	166.82	
10	MANHOLES, STD. 4' DIA.	EA.	14	
11	MANHOLES, STD. 5' DIA.	EA.	1	
12	CONNECTION TO EXISTING M.H.	EA.	2	
13	CONNECTION TO EXISTING FORCE MAIN	EA.	2	
14	MANHOLE DROP LENGTH	V.F.	12.23	
15	ADDITIONAL VERTICAL MANHOLE SECTIONS ADDED TO EXISTING STRUCTURES	V.F.	42.43	
16	LATERAL CAPS/MARKINGS	EA.	13	
17	SERVICE WYE	EA.	7	
18	AIR RELEASE ASSEMBLY	EA.	1	
19	12" BENDS W/ THRUST BLOCKS	EA.	7	

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

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North Kansas City, MO 64116

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STATE OF MISSOURI
DAVID L. EICKMAN
NUMBER
PE-2009015436
PROFESSIONAL ENGINEER
6/30/23

DAVID EICKMAN, P.E.
MO# 2009015436

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

GENERAL NOTES
PUBLIC SANITARY SEWER PLANS

THE VILLAGE AT DISCOVERY PARK ZONE 1
NW COLBERN RD & NE DOUGLAS ST

LEE'S SUMMIT, MISSOURI

2023

drawn by: GS/OS/JN
checked by: AR/JN
approved by: DE
QA/QC by: JS/NH
project no.: D21-04643
drawing no.: C_TTL01_D2104643
date: 06.30.2023

SHEET
C651

DWG: F:\2021\04501-05000\021-04643-d\40-design\AutoCAD\final plans\Sheets\GNCV\Public Sanitary Sewer Plans\C_TTL01_D2104643.dwg USER: aromanov
DATE: Jun 30, 2023 2:11pm XREFS: C_PTBLK_D2104643 C_XALTA_B2104643

PLAN LEGEND

*THIS LEGEND APPLIES TO ALL SHEETS UNLESS EXPLICITLY SHOWN OTHERWISE ON EACH SHEET.

- SS — EXISTING SANITARY SEWER
- SS — PROPOSED SANITARY SEWER
- PROPERTY LINE / R/W LINE
- PROPERTY LOT LINE
- PROPOSED SANITARY SEWER EASEMENT
- OTHER UTILITIES' EASEMENT
- PROPOSED STORM SEWER
- W — PROPOSED WATER PIPE
- P-UG — EXISTING POWER SERVICE
- G — EXISTING NATURAL GAS PIPE
- REMOVE EXISTING TREE
- EXISTING LIGHT POLE
- EXISTING SIGN
- EXISTING SPRINKLER BOX
- EXISTING SPRINKLER CONTROL VALVE
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- WM EXISTING WATER METER
- E EXISTING ELECTRIC BOX
- EV EXISTING ELECTRIC VAULT
- EM EXISTING ELECTRIC METER
- ER EXISTING ELECTRIC RISER
- EXISTING ELECTRIC MANHOLE

*SCALE MAY AFFECT THE SIZE OF SURVEY SYMBOLS IN PLAN, BUT SHAPE WILL BE RETAINED.

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Missouri Certificate of Authority #001592
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STATE OF MISSOURI
DAVID L. EICKMAN
NUMBER PE-2009015436
6/30/23
PROFESSIONAL ENGINEER

DAVID EICKMAN, P.E.
MO# 2009015436

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OVERALL SANITARY SEWER PLAN
PUBLIC SANITARY SEWER PLANS

THE VILLAGE AT DISCOVERY PARK ZONE 1
NW COLBERN RD & NE DOUGLAS ST

LEE'S SUMMIT, MISSOURI

2023

drawn by: GS/OS/JN
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SHEET
C652

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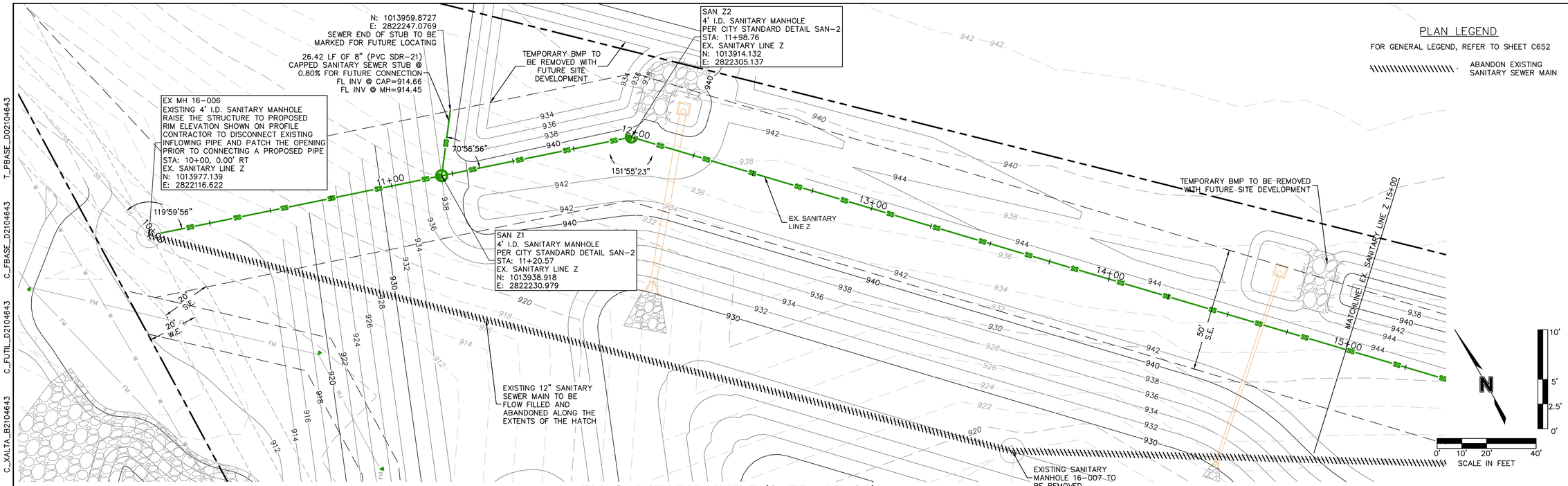
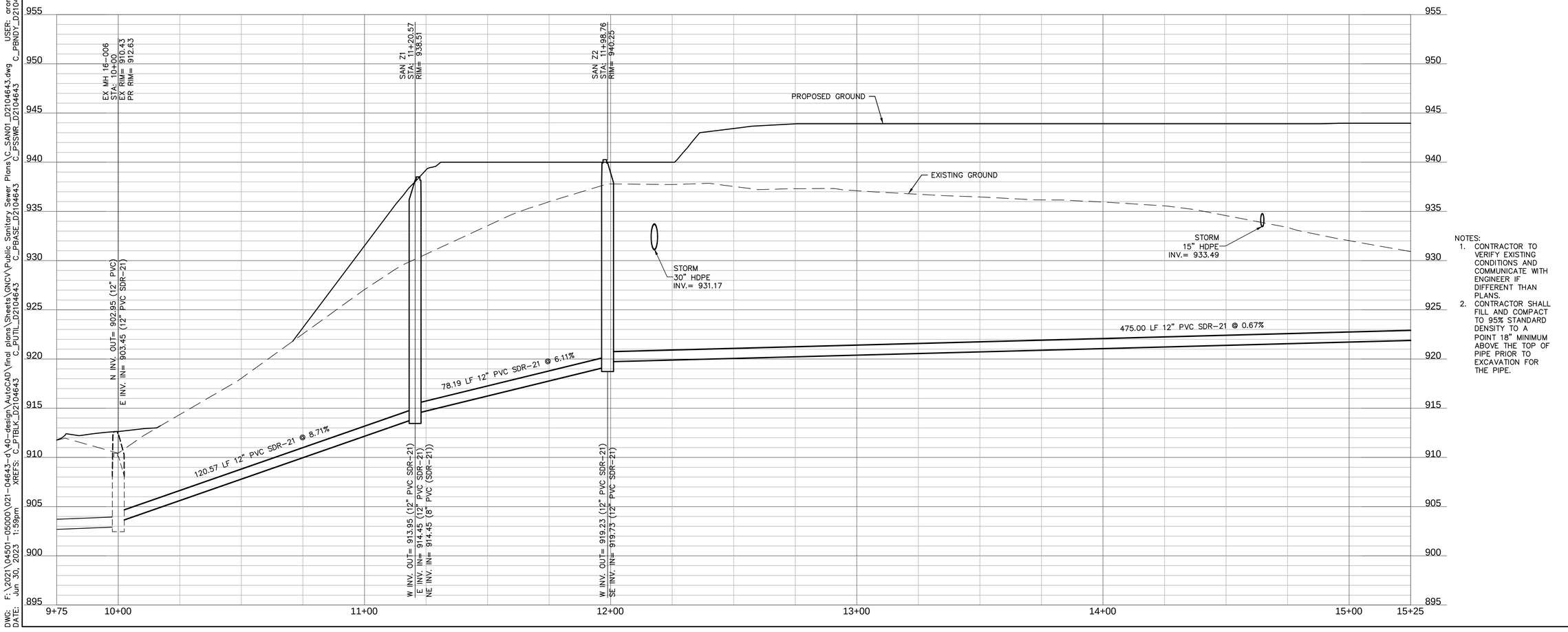


EX. SANITARY LINE Z (9+75 - 15+25)



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 18" MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE.

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1301 Burlington Street
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TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
DAVID L. EICKMAN
NUMBER PE-2009015436
6/30/23
PROFESSIONAL ENGINEER
DAVID EICKMAN, P.E.
MO# 2009015436

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SANITARY SEWER PLAN & PROFILE (EX. SANITARY LINE Z)
PUBLIC SANITARY SEWER PLANS

THE VILLAGE AT DISCOVERY PARK ZONE 1
NW COLBERN RD & NE DOUGLAS ST

LEE'S SUMMIT, MISSOURI

2023

drawn by: GS/OS/JN
checked by: AR/JN
approved by: DE
QA/QC by: JS/NH
project no.: D21-04643
drawing no.: C_SAN01_D2104643
date: 06.30.2023

SHEET
C653

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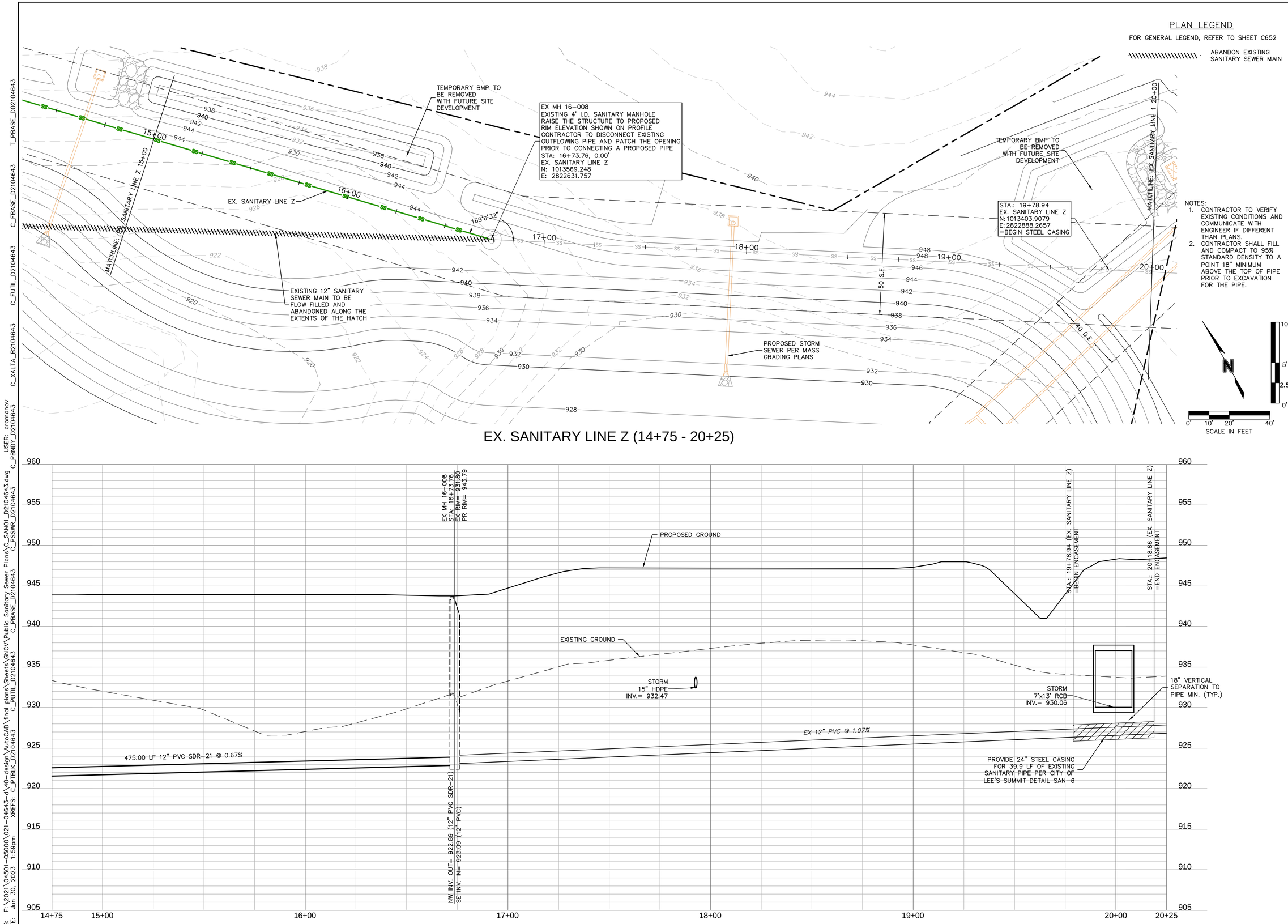

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STATE OF MISSOURI
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6/30/23
PROFESSIONAL ENGINEER
DAVID EICKMAN, P.E.
MO# 2009015436

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SANITARY SEWER PLAN & PROFILE (EX. SANITARY LINE Z CONT'D)
PUBLIC SANITARY SEWER PLANS

THE VILLAGE AT DISCOVERY PARK ZONE 1
NW COLBERN RD & NE DOUGLAS ST

LEE'S SUMMIT, MISSOURI

2023

drawn by: GS/OS/JN
checked by: AR/JN
approved by: DE
QA/QC by: JS/NH
project no.: D2104643
drawing no.: C_SAN01_D2104643
date: 06.30.2023

SHEET
C654

DWG: F:\2021\04501-05000\021-04643-d\40-design\AutoCAD\final plans\Sheets\GNCV\Public Sanitary Sewer Plans\C_SAN01_D2104643.dwg USER: aromanov
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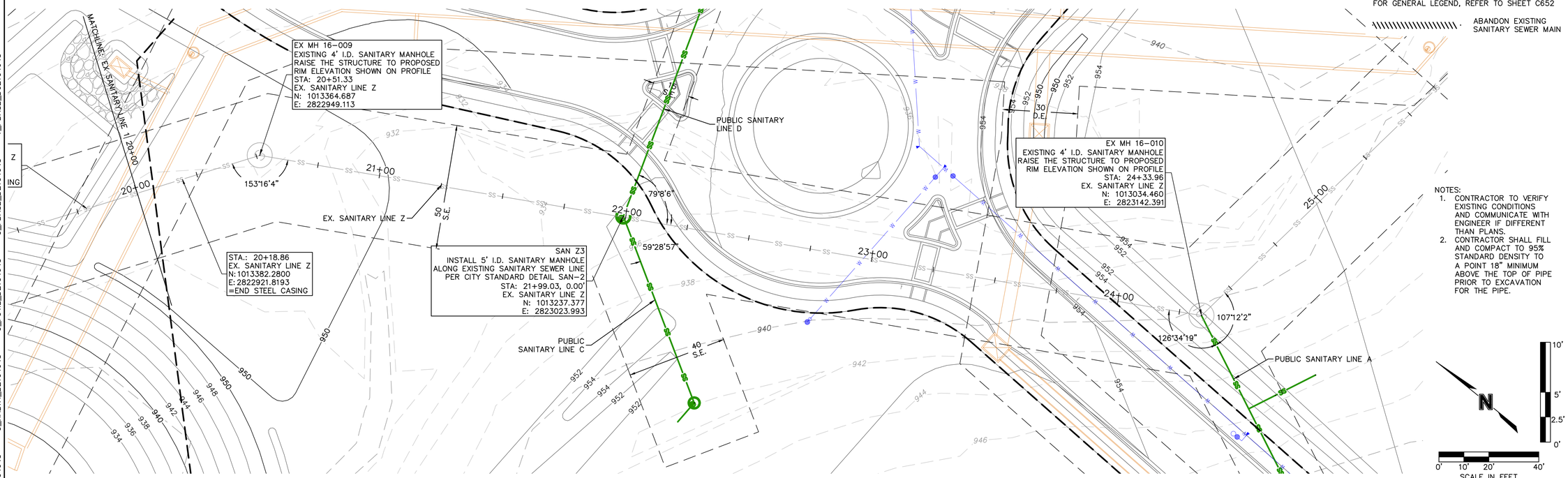
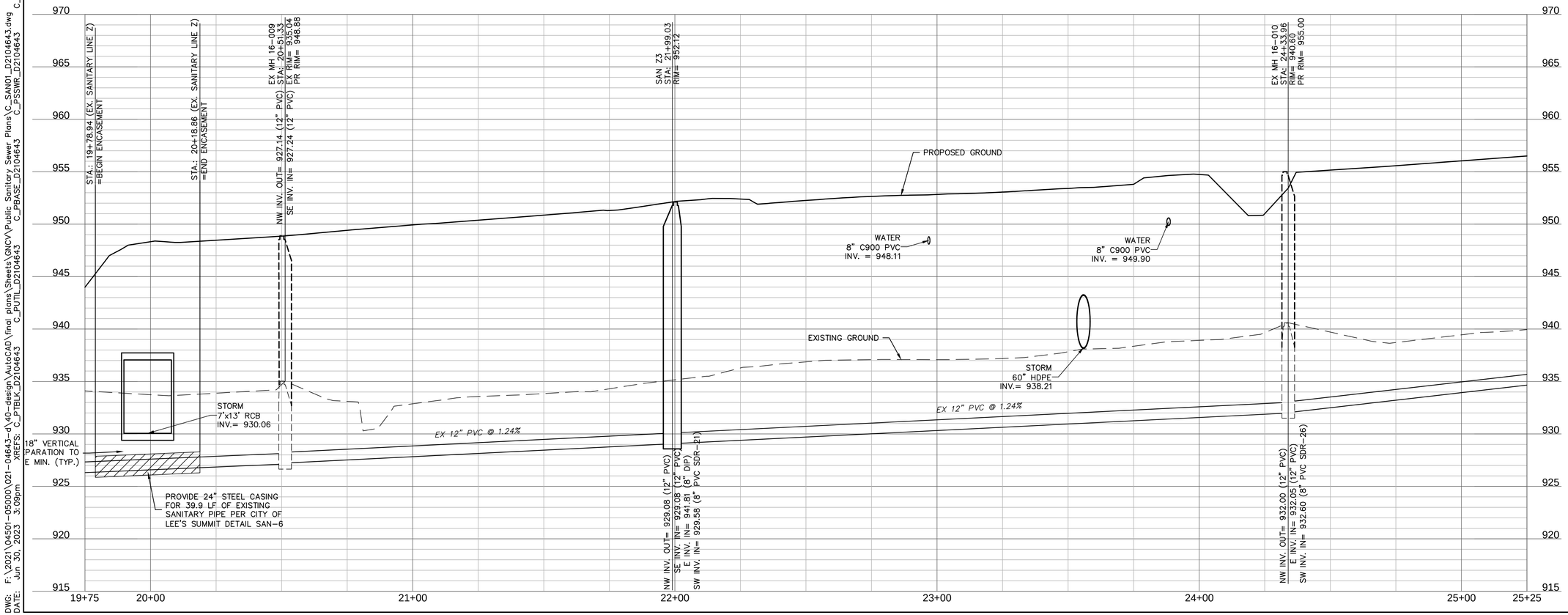


EX. SANITARY LINE Z (19+75 - 25+25)



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6/30/23

DAVID EICKMAN, P.E.
MO# 2009015436

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SANITARY SEWER PLAN & PROFILE (EX. SANITARY LINE Z CONT'D)
PUBLIC SANITARY SEWER PLANS

THE VILLAGE AT DISCOVERY PARK ZONE 1
NW COLBERN RD & NE DOUGLAS ST

LEE'S SUMMIT, MISSOURI

2023

drawn by: GS/OS/JN
checked by: AR/JN
approved by: DE
QA/QC by: JS/NH
project no.: D2104643
drawing no.: C_SAN01_D2104643
date: 06.30.2023

SHEET
C655

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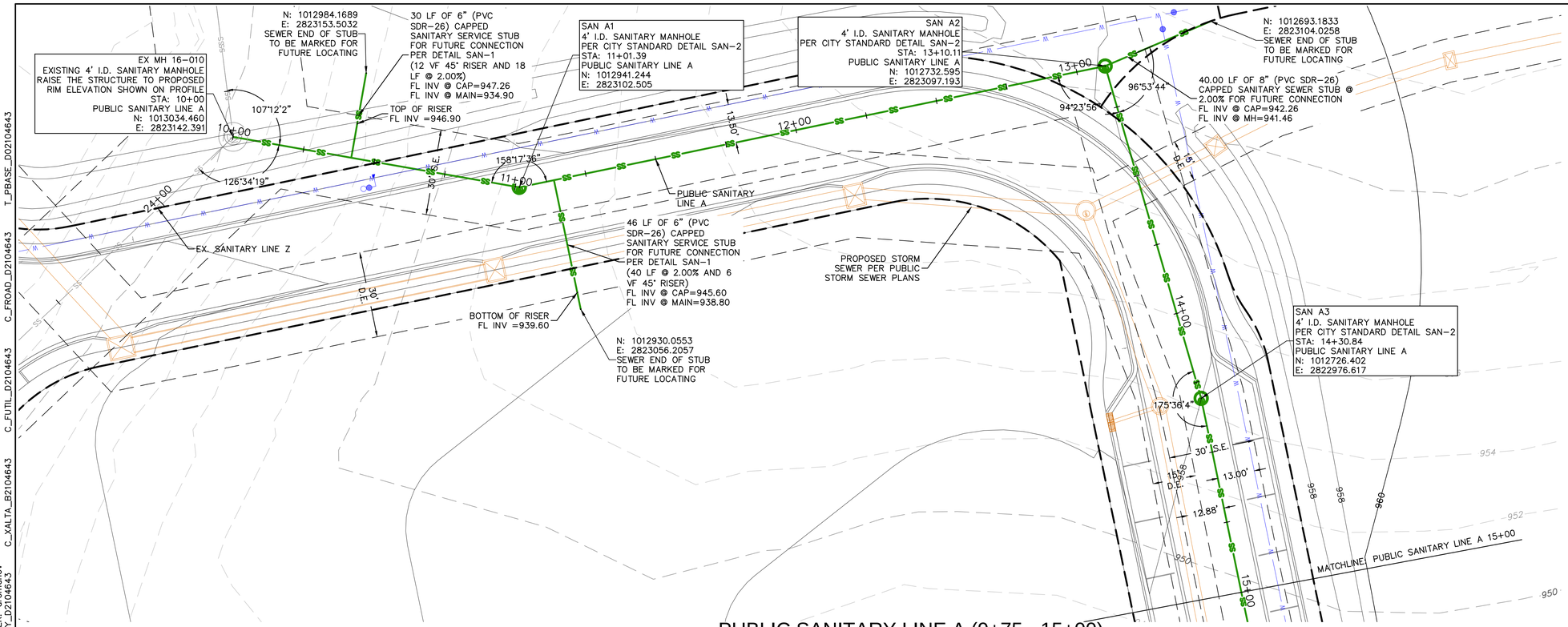


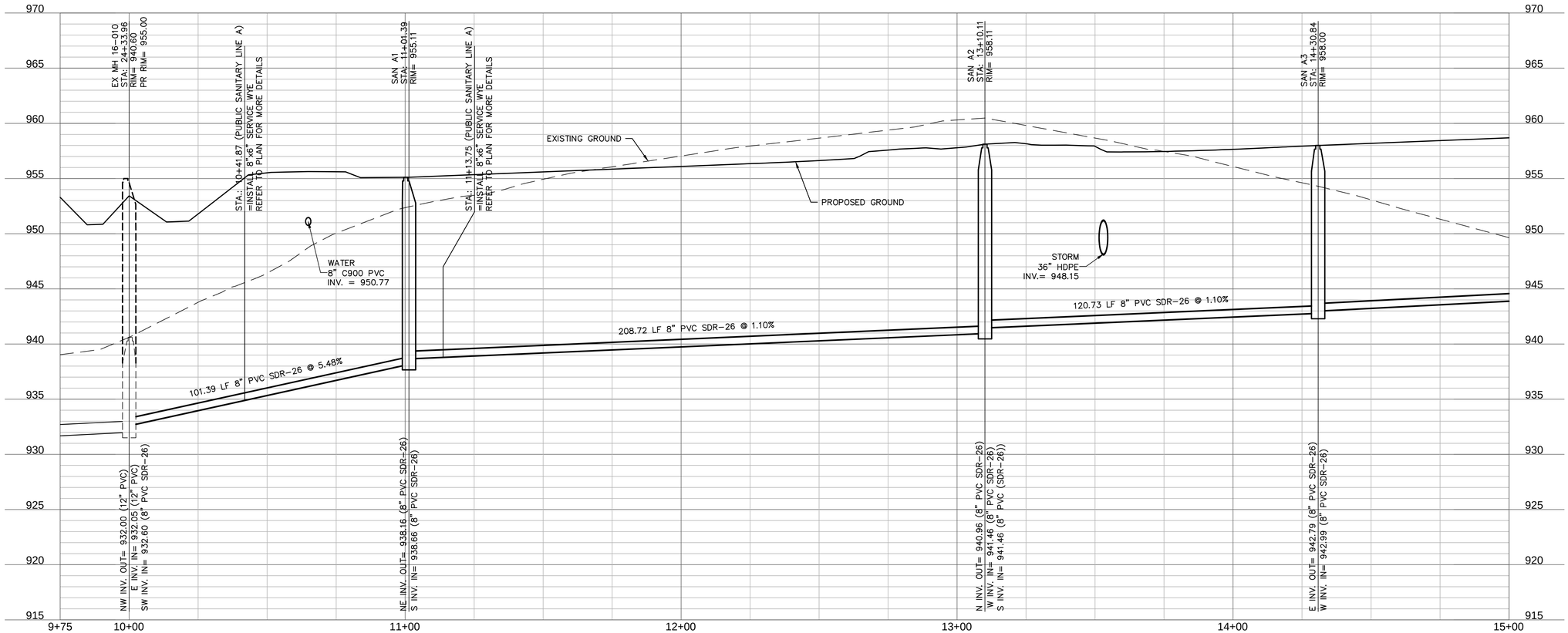
PLAN LEGEND

FOR GENERAL LEGEND, REFER TO SHEET C652

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 18" MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE.

PUBLIC SANITARY LINE A (9+75 - 15+00)



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DAVID EICKMAN, P.E.
MO# 2009015436

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SANITARY SEWER PLAN & PROFILE (SANITARY LINE A)
PUBLIC SANITARY SEWER PLANS

THE VILLAGE AT DISCOVERY PARK ZONE 1
NW COLBERN RD & NE DOUGLAS ST

LEE'S SUMMIT, MISSOURI

2023

drawn by: GS/OS/JN
checked by: AR/JN
approved by: DE
QA/QC by: JS/NH
project no.: D21-04643
drawing no.: C_SAN02_D2104643
date: 06.30.2023

SHEET
C656

DWG: F:\2021\04501-05000\021-04643-d\40-design\AutoCAD\final plans\Sheets\GNCV\Public Sanitary Sewer Plans\C_SAN02_D2104643.dwg USER: aromanov
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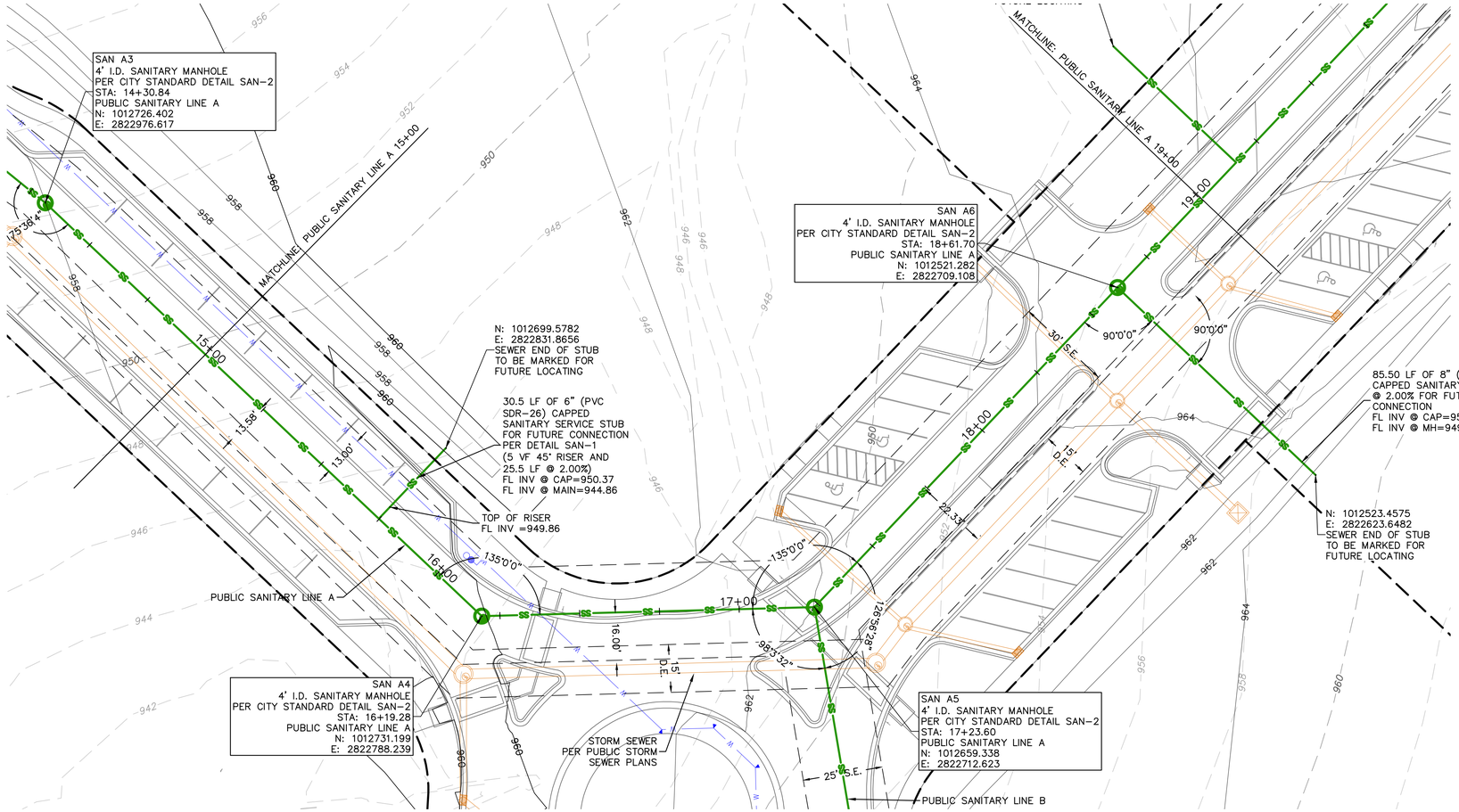
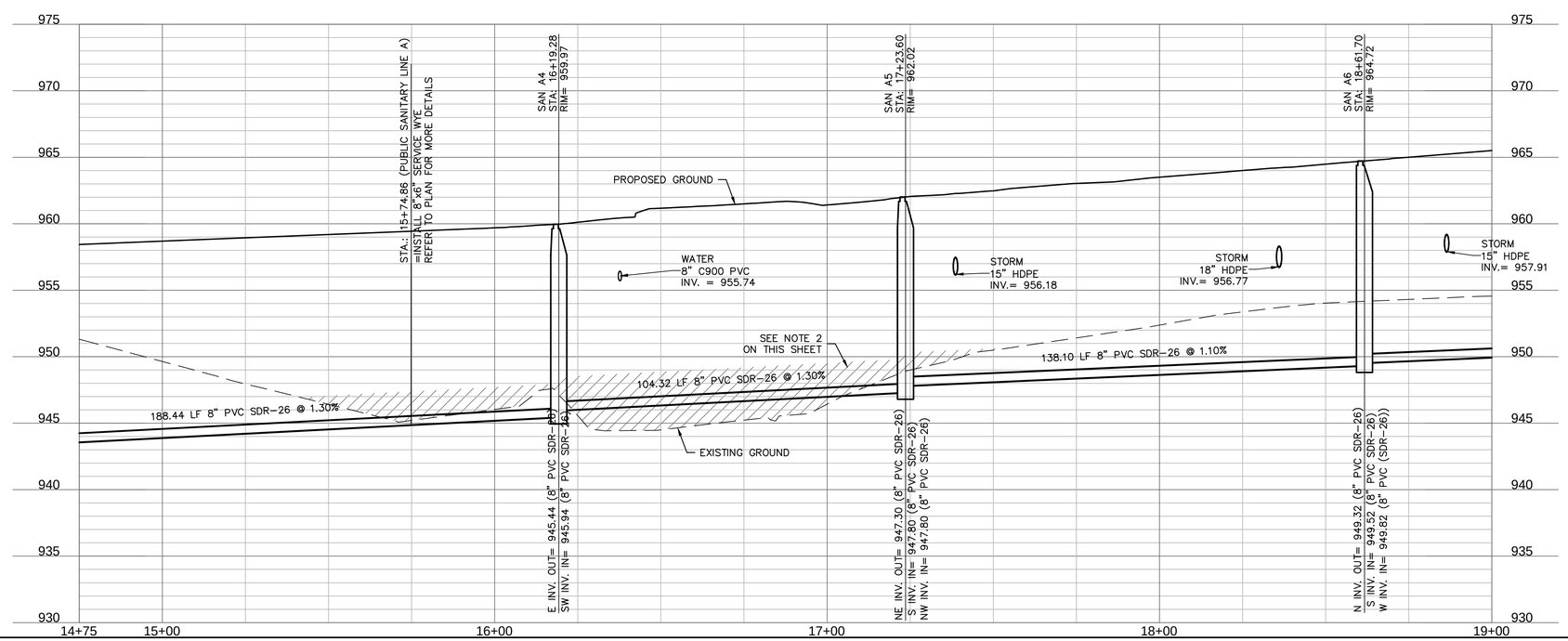


PLAN LEGEND

FOR GENERAL LEGEND, REFER TO SHEET C652

PUBLIC SANITARY LINE A (14+75 - 19+00)



NOTES:
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NUMBER PE-2009015436
6/30/23
PROFESSIONAL ENGINEER
DAVID EICKMAN, P.E.
MO# 2009015436

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SANITARY SEWER PLAN & PROFILE (SANITARY LINE A CONT'D)
PUBLIC SANITARY SEWER PLANS

THE VILLAGE AT DISCOVERY PARK ZONE 1
NW COLBERN RD & NE DOUGLAS ST

LEE'S SUMMIT, MISSOURI

2023

drawn by:	GS/OS/JN
checked by:	AR/JN
approved by:	DE
QA/QC by:	JS/NH
project no.:	D21-04643
drawing no.:	C_SAN02_D2104643
date:	06.30.2023

SHEET
C657

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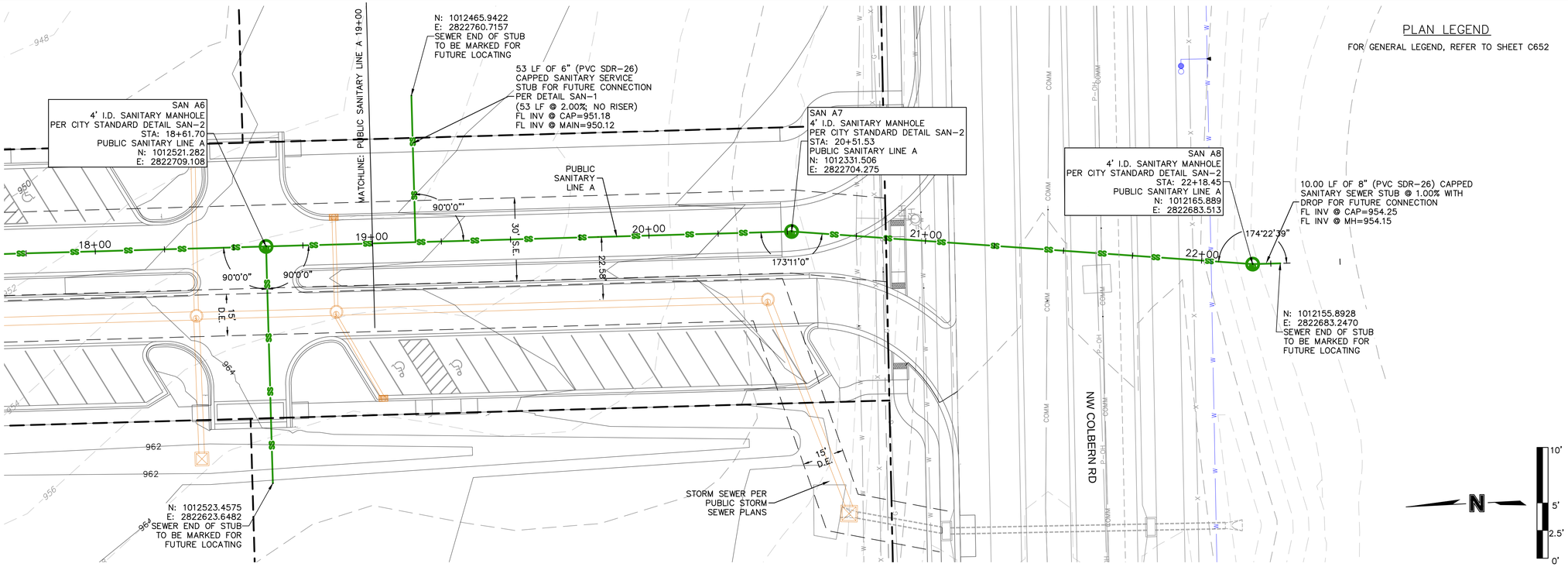
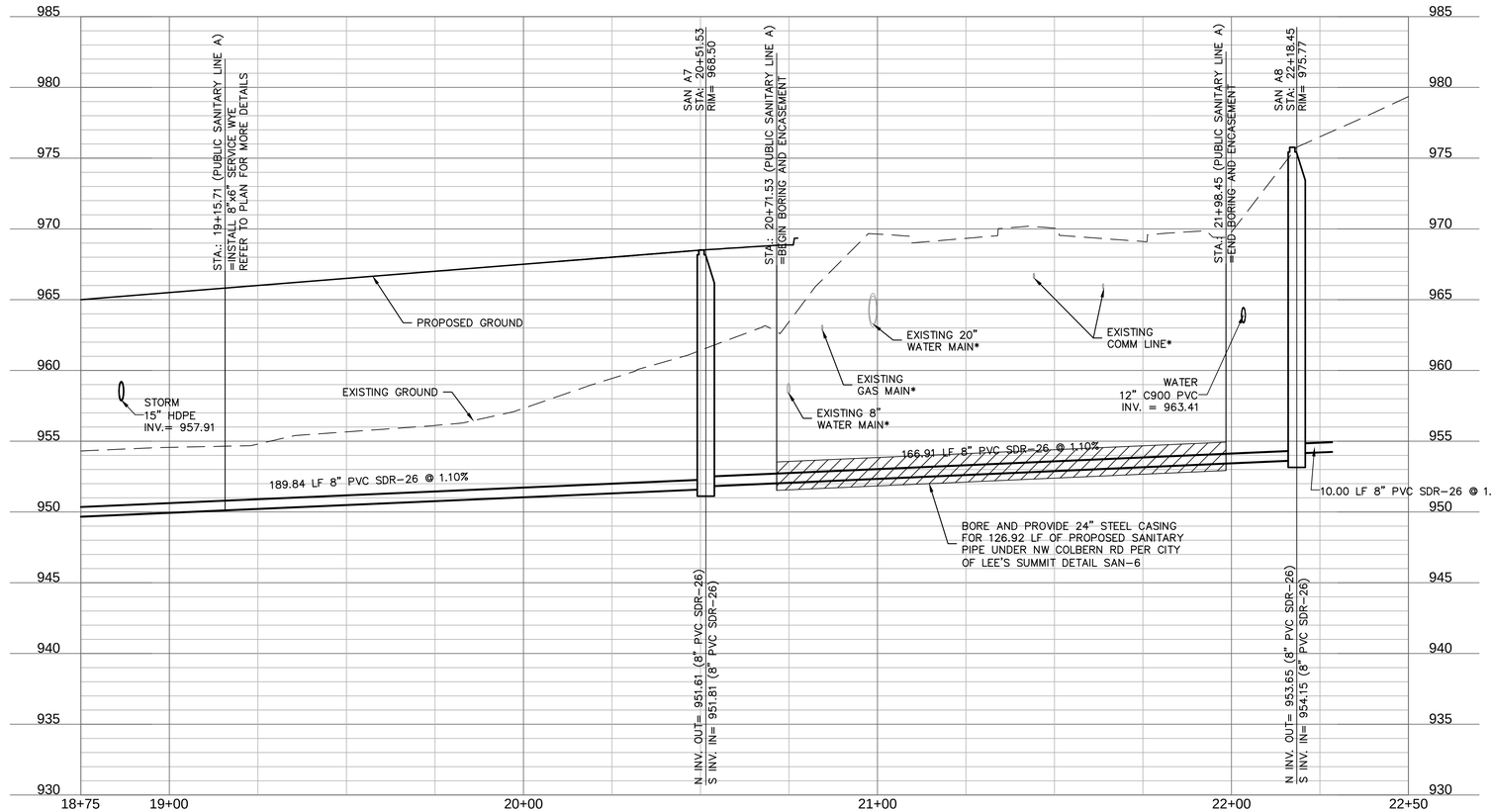
DATE: Jun 30, 2023 3:10pm XREFS: C_PTBLK_D2104643 C_PUTIL_D2104643 C_PBASE_D2104643 C_PSSWR_D2104643 C_PBNDY_D2104643 C_XALTA_B2104643 C_FUTIL_D2104643 C_FROAD_D2104643 T_PBASE_D2104643



PUBLIC SANITARY LINE A (18+75 - 22+50)



NOTES:

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*EXACT LOCATION AND DEPTH OF EXISTING UTILITY UNKNOWN. CONTRACTOR TO VERIFY LOCATION AND DEPTH ON SITE

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STATE OF MISSOURI
DAVID L. EICKMAN
NUMBER PE-2009015436
6/30/23
PROFESSIONAL ENGINEER

DAVID EICKMAN, P.E.
MO# 2009015436

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SANITARY SEWER PLAN & PROFILE (SANITARY LINE A CONT'D)
PUBLIC SANITARY SEWER PLANS

THE VILLAGE AT DISCOVERY PARK ZONE 1
NW COLBERN RD & NE DOUGLAS ST

LEE'S SUMMIT, MISSOURI

2023

drawn by: GS/OS/JN
checked by: AR/JN
approved by: DE
QA/QC by: JS/NH
project no.: D21-04643
drawing no.: C_SAN02_D2104643
date: 06.30.2023

SHEET
C658

DWG: F:\2021\04501-05000\021-04643-d\40-design\AutoCAD\final plans\Sheets\GNCV\Public Sanitary Sewer Plans\C_SAN02_D2104643.dwg USER: aromanov
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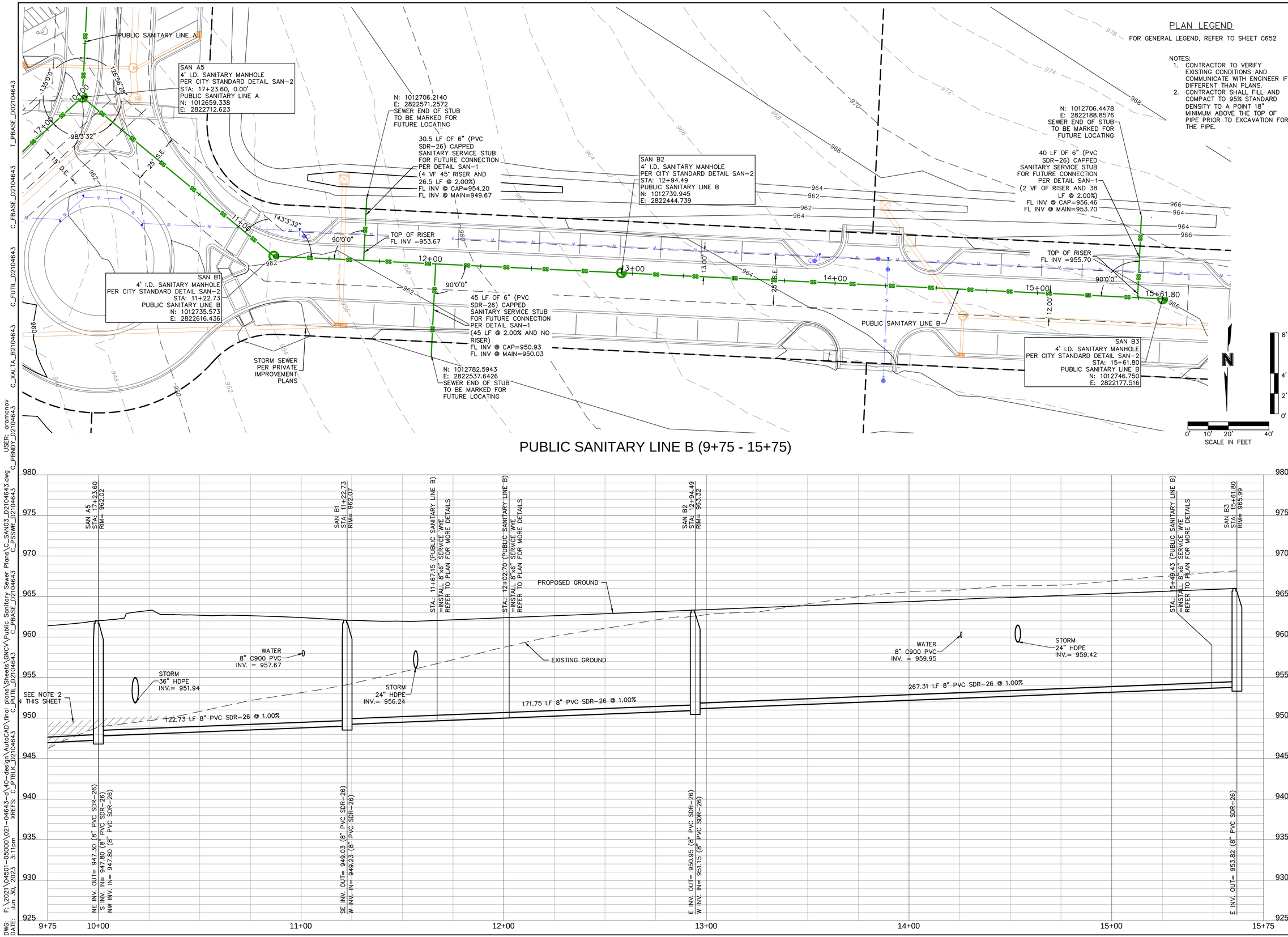

PUBLIC SANITARY LINE B (9+75 - 15+75)

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NUMBER PE-2009015436
6/30/23
PROFESSIONAL ENGINEER

DAVID EICKMAN, P.E.
MO# 2009015436

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SANITARY SEWER PLAN & PROFILE (SANITARY LINE B)
PUBLIC SANITARY SEWER PLANS

THE VILLAGE AT DISCOVERY PARK ZONE 1
NW COLBERN RD & NE DOUGLAS ST

LEE'S SUMMIT, MISSOURI

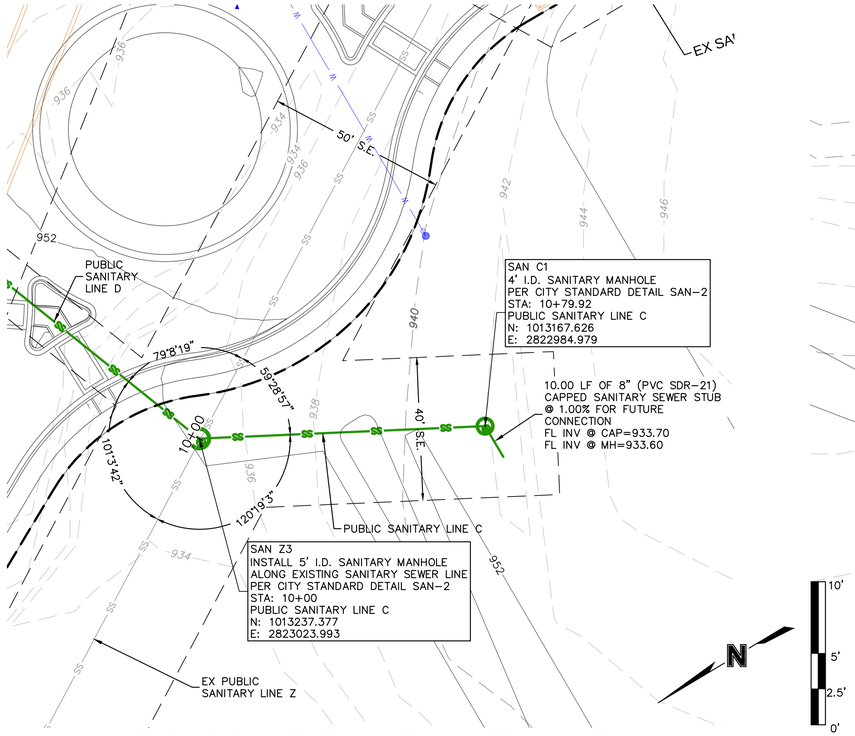
2023

drawn by: GS/OS/JN
checked by: AR/JN
approved by: DE
QA/QC by: JS/NH
project no.: D21-04643
drawing no.: C_SAN03_D2104643
date: 06.30.2023

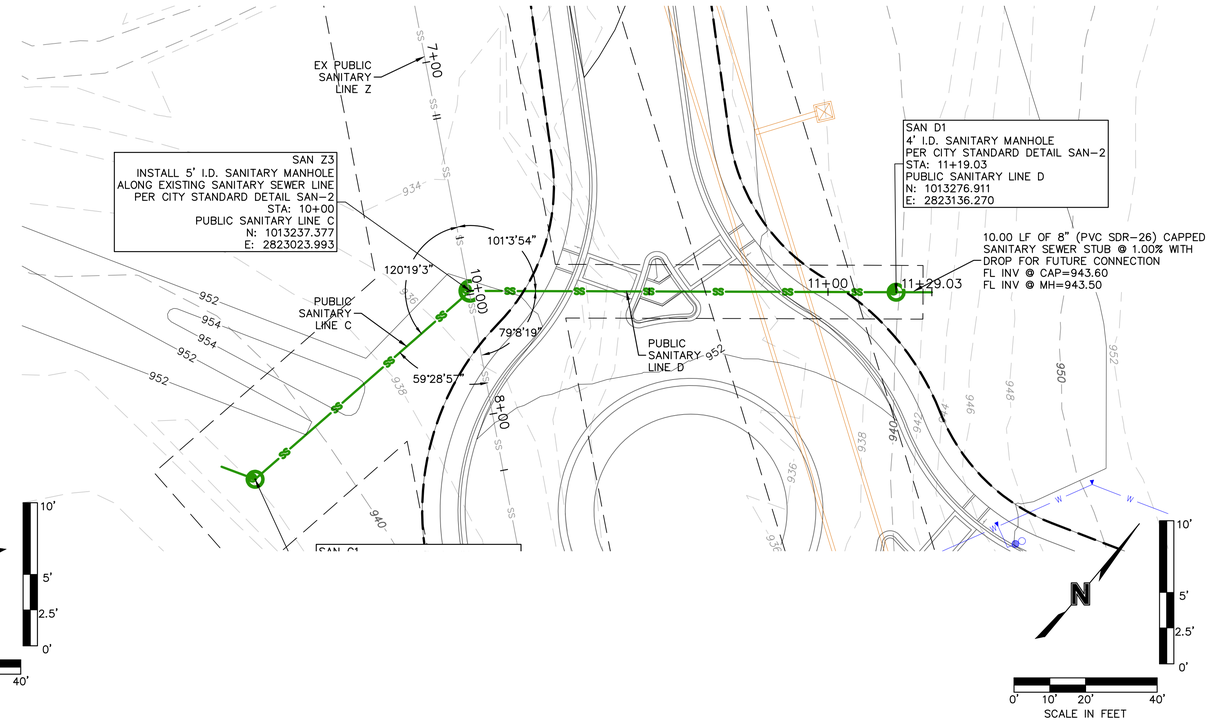
SHEET
C659

PLAN LEGEND

FOR GENERAL LEGEND, REFER TO SHEET C652



PUBLIC SANITARY LINE C (9+75 - 11+25)



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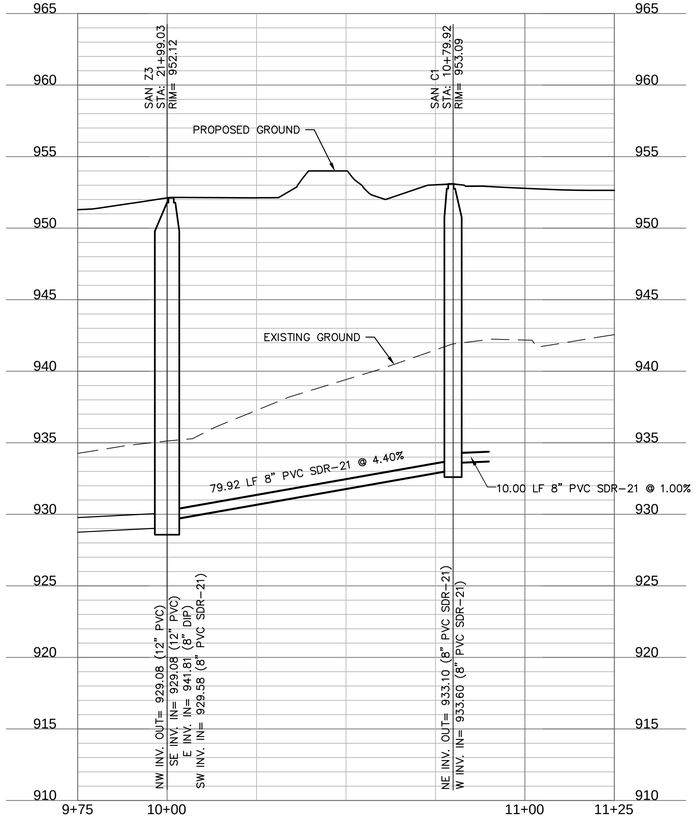

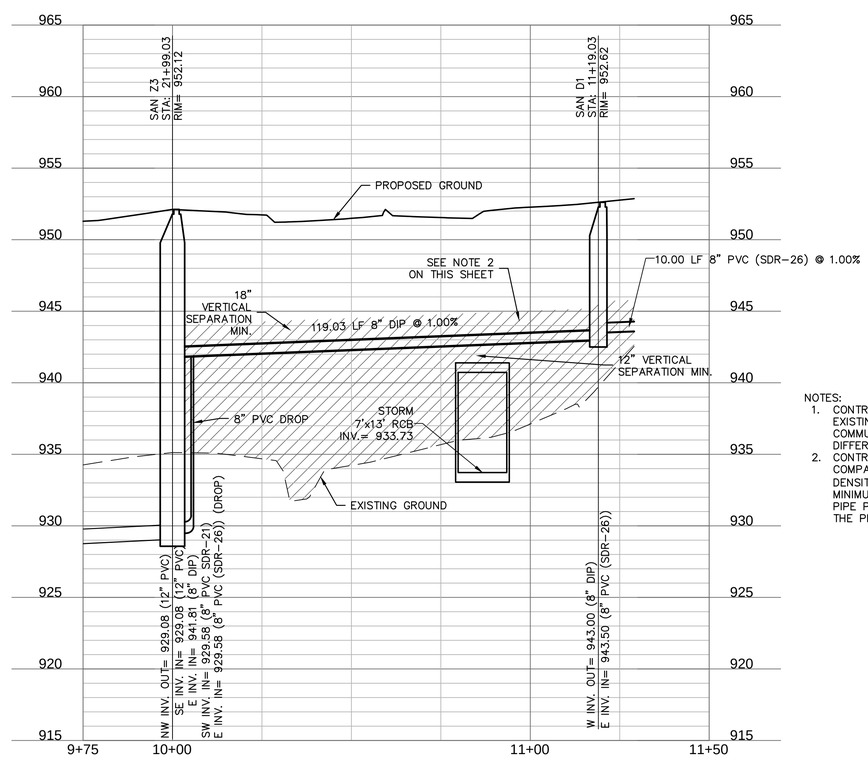

NOTES:
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STATE OF MISSOURI
DAVID L. EICKMAN
NUMBER PE-2009015436
6/30/23
PROFESSIONAL ENGINEER

DAVID EICKMAN, P.E.
MO# 2009015436

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SANITARY SEWER PLAN & PROFILE (SANITARY LINES C & D)
PUBLIC SANITARY SEWER PLANS

THE VILLAGE AT DISCOVERY PARK ZONE 1
NW COLBERN RD & NE DOUGLAS ST

LEE'S SUMMIT, MISSOURI

2023

drawn by: GS/OS/JN
checked by: AR/JN
approved by: DE
QA/QC by: JS/NH
project no.: D2104643
drawing no.: C_SAN04_D2104643
date: 06.30.2023

SHEET
C660

DWG: F:\2021\04501-05000\021-04643-d\40-design\AutoCAD\final plans\Sheets\GNCV\Public Sanitary Sewer Plans\C_SAN04_D2104643.dwg USER: aromanov
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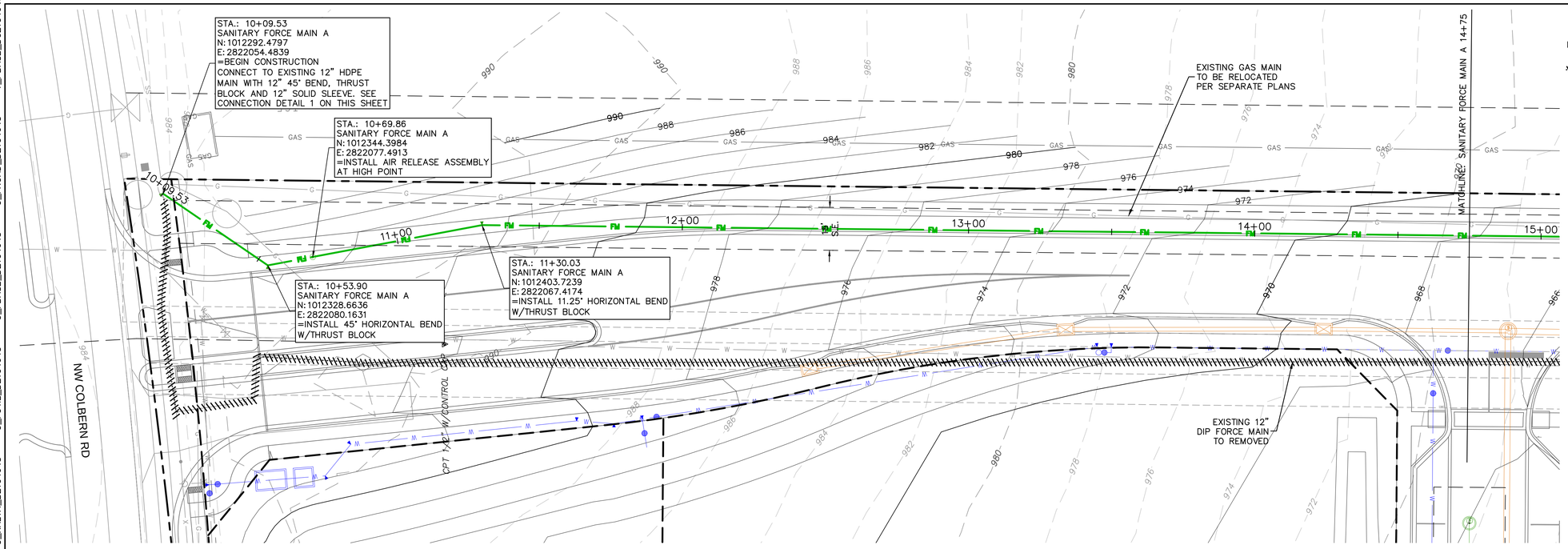
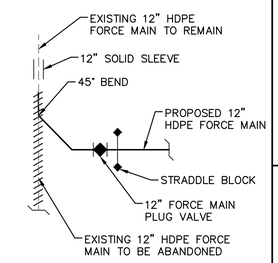


PLAN LEGEND

FOR GENERAL LEGEND, REFER TO SHEET C652

ABANDON EXISTING FORCE MAIN



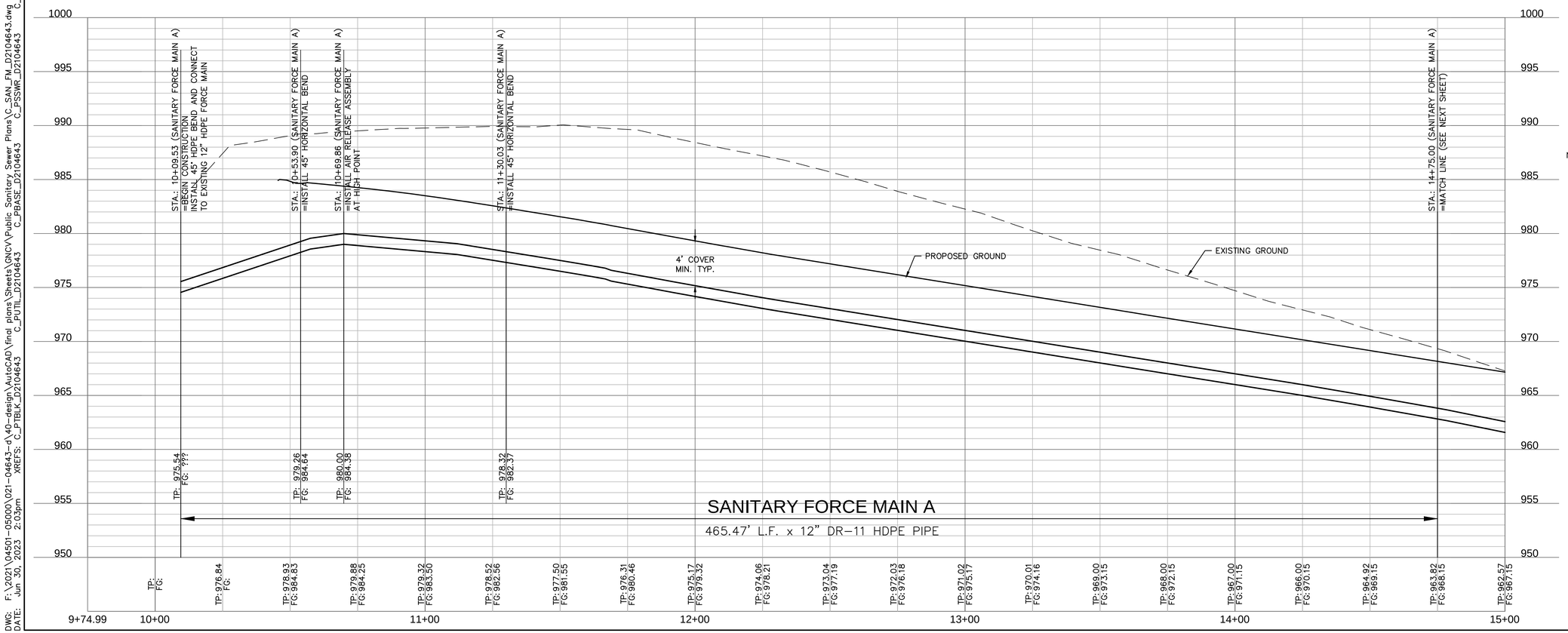
FORCE MAIN CONNECTION DETAIL 1
NOT TO SCALE

N

0' 10' 20' 40'
SCALE IN FEET

0' 2.5' 5' 10'

SANITARY FORCE MAIN A (9+74.99 - 15+00)



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STATE OF MISSOURI
DAVID L. EICKMAN
NUMBER PE-2009015436
6/30/23
PROFESSIONAL ENGINEER
DAVID EICKMAN, P.E.
MO# 2009015436

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SANITARY FORCE MAIN RELOCATION PLAN & PROFILE
PUBLIC SANITARY SEWER PLANS

THE VILLAGE AT DISCOVERY PARK ZONE 1
NW COLBERN RD & NE DOUGLAS ST

LEE'S SUMMIT, MISSOURI

2023

drawn by: GS/OS/JN
checked by: AR/JN
approved by: DE
QA/QC by: JS/NH
project no.: D2104643
drawing no.: SAN_FM_D2104643
date: 06.30.2023

SHEET
C661

DWG: F:\2021\04501-05000\021-04643-d\40-design\AutoCAD\final plans\Sheets\GNCV\Public Sanitary Sewer Plans\C_SAN_FM_D2104643.dwg USER: aromanov
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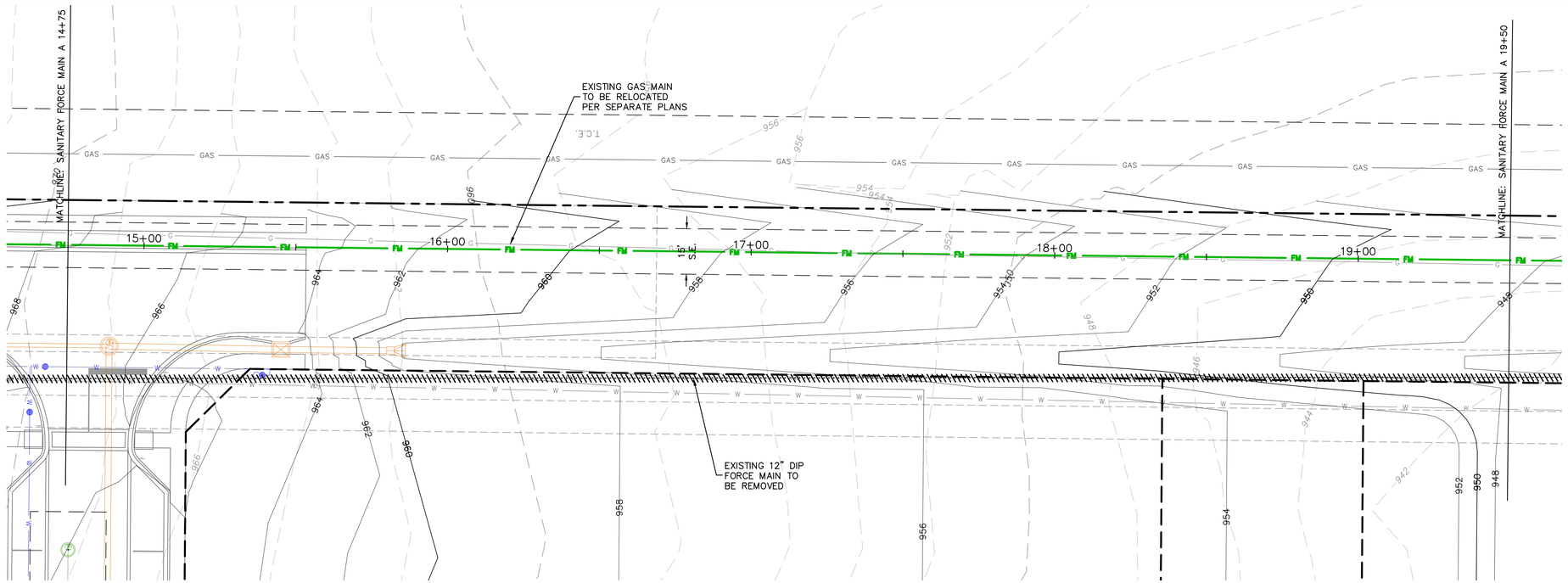


PLAN LEGEND

FOR GENERAL LEGEND, REFER TO SHEET C652

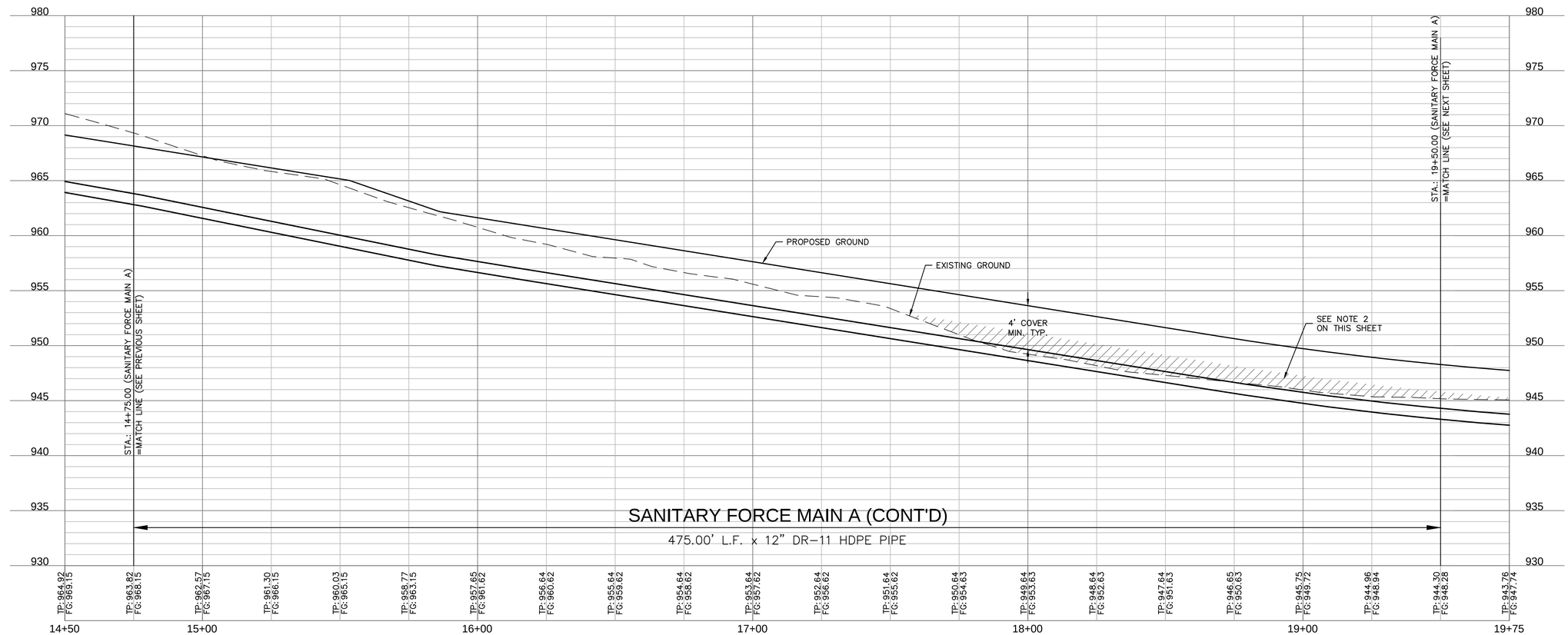
ABANDON EXISTING FORCE MAIN

N

0' 10' 20' 40'
SCALE IN FEET

10' 5' 2.5' 0'

SANITARY FORCE MAIN A (14+50 - 19+75)



SANITARY FORCE MAIN A (CONT'D)

475.00' L.F. x 12" DR-11 HDPE PIPE

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 18" MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE.

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TEL 816.361.1177
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STATE OF MISSOURI
DAVID L. EICKMAN
NUMBER PE-2009015436
6/30/23
PROFESSIONAL ENGINEER

DAVID EICKMAN, P.E.
MO# 2009015436

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SANITARY FORCE MAIN RELOCATION PLAN & PROFILE CONT'D
PUBLIC SANITARY SEWER PLANS

THE VILLAGE AT DISCOVERY PARK ZONE 1
NW COLBERN RD & NE DOUGLAS ST

LEE'S SUMMIT, MISSOURI

2023

drawn by: GS/OS/JN
checked by: AR/JN
approved by: DE
QA/QC by: JS/NH
project no.: D2104643
drawing no.: SAN_FM_D2104643
date: 06.30.2023

SHEET
C662

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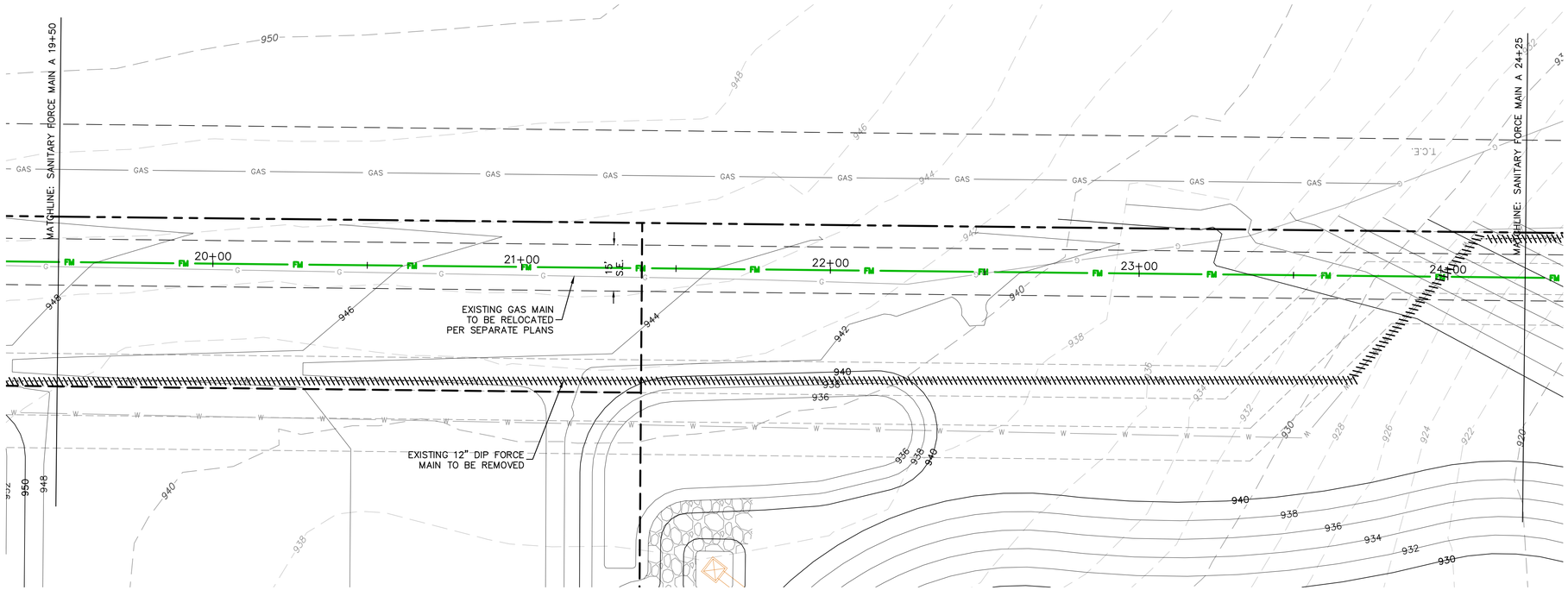


PLAN LEGEND

FOR GENERAL LEGEND, REFER TO SHEET C652

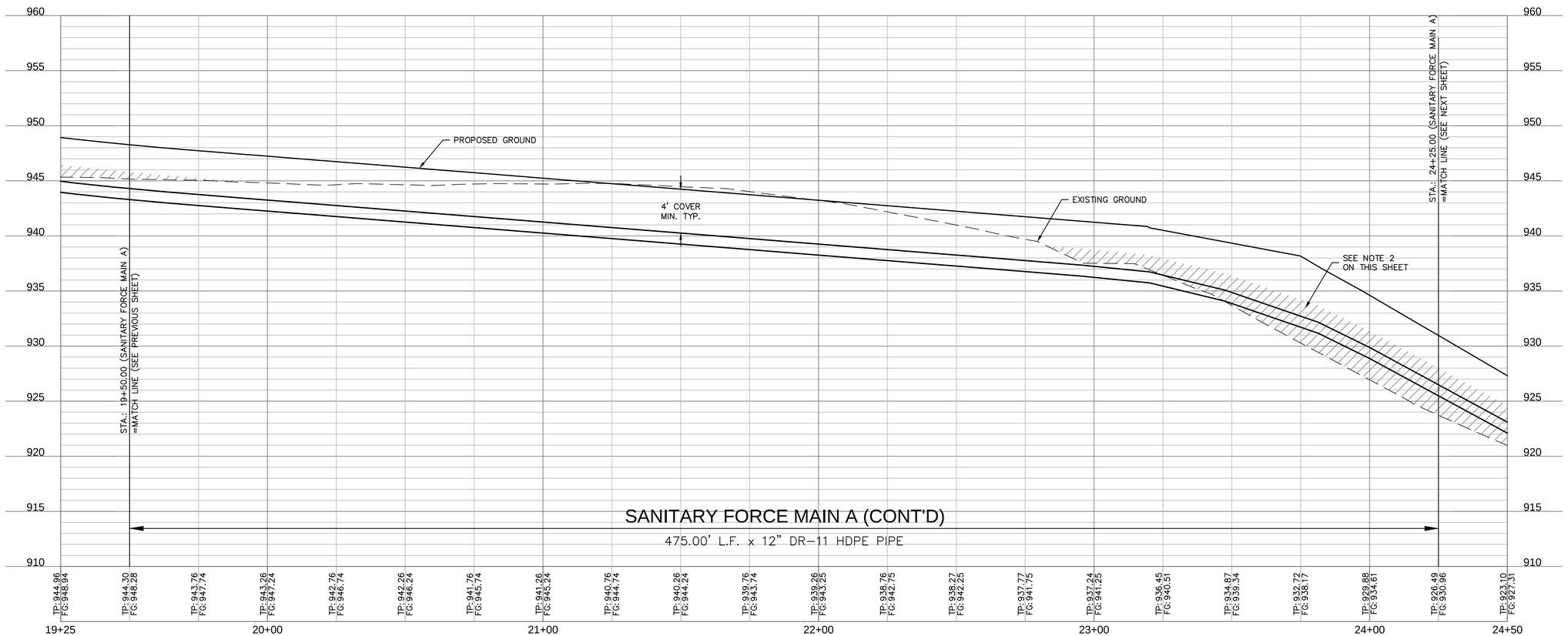
ABANDON EXISTING FORCE MAIN

N

0' 10' 20' 40'
SCALE IN FEET

10' 5' 2.5' 0'

SANITARY FORCE MAIN A (19+25 - 24+50)



NOTES:
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6/30/23
PROFESSIONAL ENGINEER
DAVID EICKMAN, P.E.
MO# 2009015436

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SANITARY FORCE MAIN RELOCATION PLAN & PROFILE CONT'D
PUBLIC SANITARY SEWER PLANS

THE VILLAGE AT DISCOVERY PARK ZONE 1
NW COLBERN RD & NE DOUGLAS ST

LEE'S SUMMIT, MISSOURI

2023

drawn by: GS/OS/JN
checked by: AR/JN
approved by: DE
QA/QC by: JS/NH
project no.: D21-04643
drawing no: C_SAN_FM_D2104643
date: 06.30.2023

SHEET
C663

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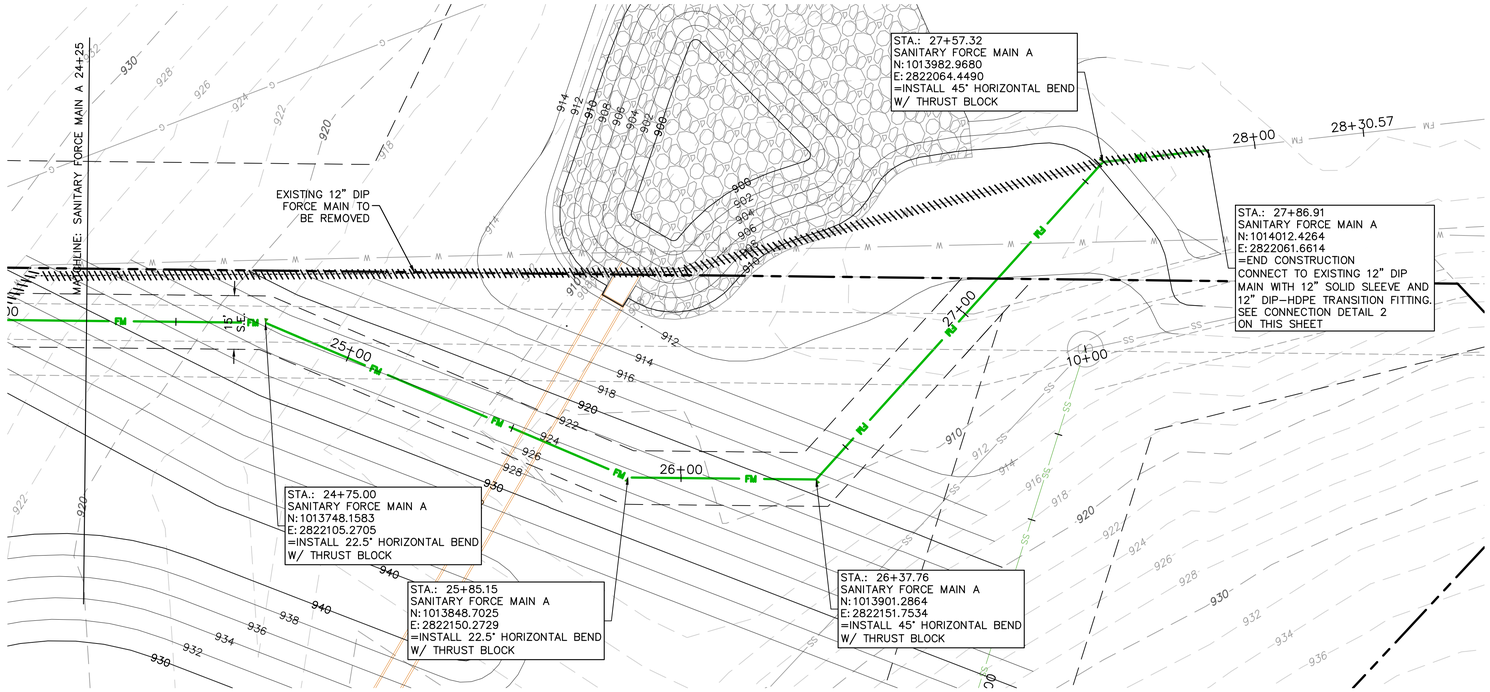
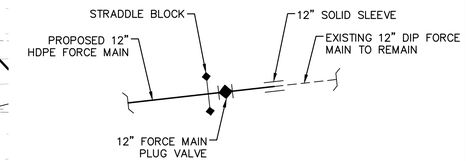


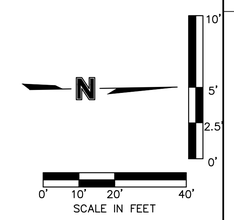
PLAN LEGEND

FOR GENERAL LEGEND, REFER TO SHEET C652

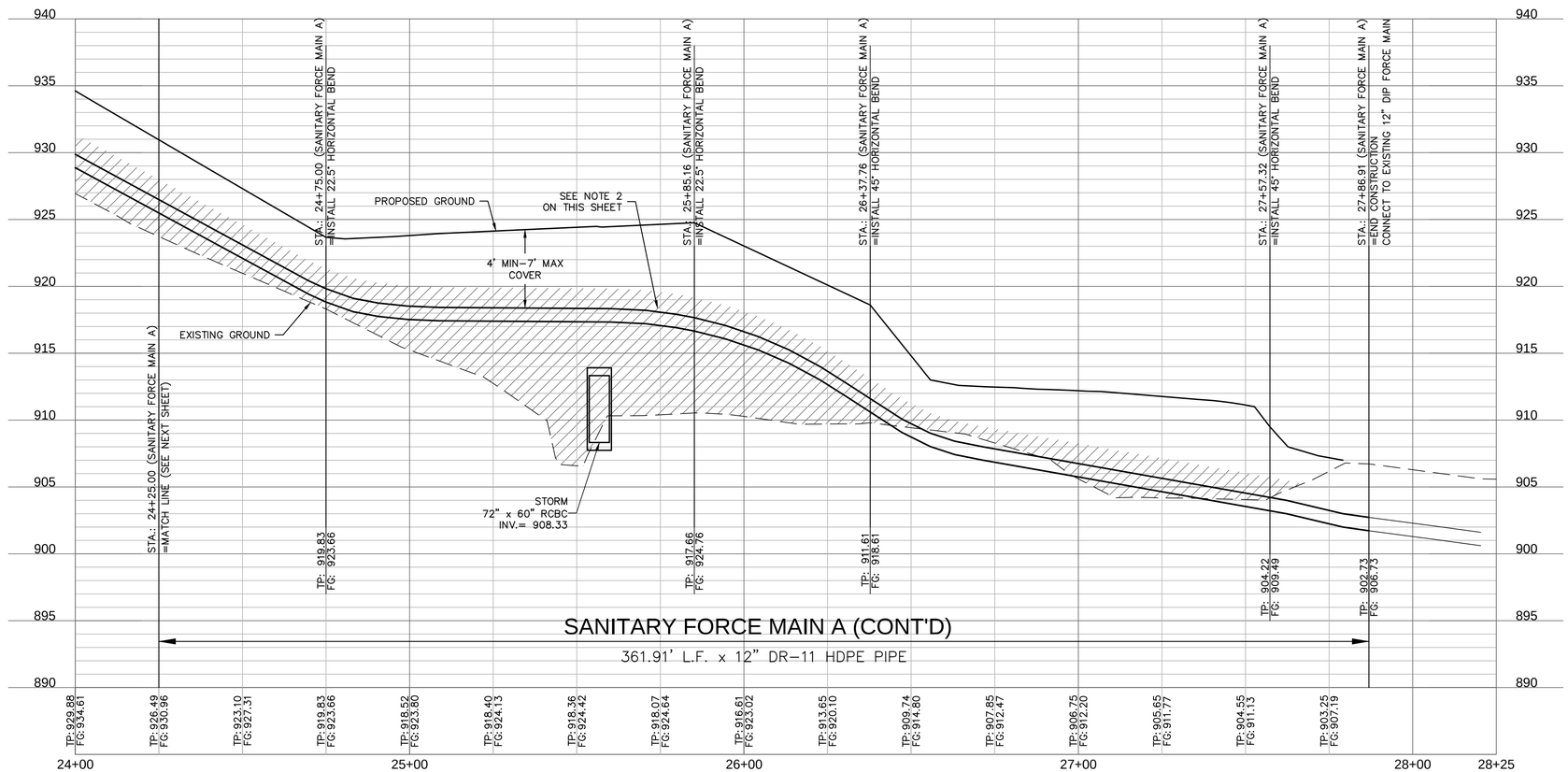
ABANDON EXISTING FORCE MAIN



FORCE MAIN CONNECTION DETAIL 2
NOT TO SCALE



SANITARY FORCE MAIN A (24+00 - 28+25)



SANITARY FORCE MAIN A (CONT'D)

361.91' L.F. x 12" DR-11 HDPE PIPE

NOTES:
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DAVID L. EICKMAN
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DAVID EICKMAN, P.E.
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SANITARY FORCE MAIN RELOCATION PLAN & PROFILE CONT'D
PUBLIC SANITARY SEWER PLANS

THE VILLAGE AT DISCOVERY PARK ZONE 1
NW COLBERN RD & NE DOUGLAS ST

LEE'S SUMMIT, MISSOURI

2023

drawn by: GS/OS/JN
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approved by: DE
QA/QC by: JS/NH
project no.: D21-04643
drawing no.: SAN_FM_D2104643
date: 06.30.2023

SHEET
C664

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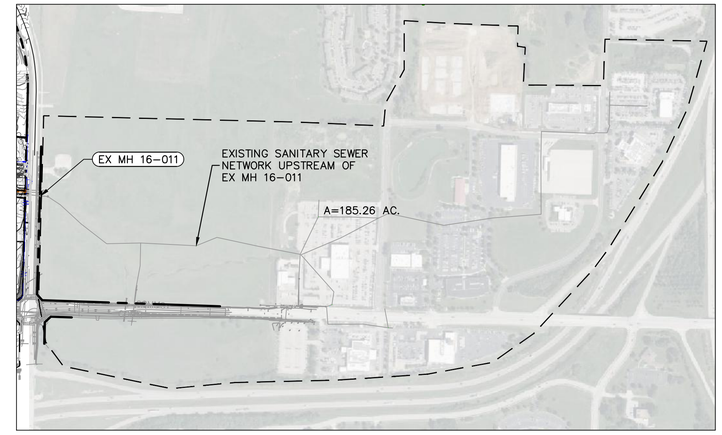

TRIBUTARY AREA TO EX MH 16-011
1"=500'

PLAN LEGEND

*THIS LEGEND APPLIES TO ALL SHEETS UNLESS EXPLICITLY SHOWN OTHERWISE ON EACH SHEET.

- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- TRIBUTARY AREA TO SANITARY STRUCTURE
- PROPERTY LINE / R/W LINE
- PROPERTY LOT LINE
- PROPOSED SANITARY SEWER EASEMENT
- OTHER UTILITIES' EASEMENT
- PROPOSED STORM SEWER
- PROPOSED WATER PIPE
- EXISTING POWER SERVICE
- EXISTING NATURAL GAS PIPE
- REMOVE EXISTING TREE
- EXISTING LIGHT POLE
- EXISTING SIGN
- EXISTING SPRINKLER BOX
- EXISTING SPRINKLER CONTROL VALVE
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING ELECTRIC BOX
- EXISTING ELECTRIC VAULT
- EXISTING ELECTRIC METER
- EXISTING ELECTRIC RISER
- EXISTING ELECTRIC MANHOLE

*SCALE MAY AFFECT THE SIZE OF SURVEY SYMBOLS IN PLAN, BUT SHAPE WILL BE RETAINED.

Sanitary Sewer Peak Base Flow Table

Lot Number	Description	EDU	Building Parameter	Stories	PBF Non-res (gpd)
1	Office/Retail	0.3 per 1000 sq ft	13196 sq ft	2.0	2375
2	Hotel	0.3 per room	107 rooms	n/a	9630
3	Hotel	0.3 per room	123 rooms	n/a	11070
4a	Retail (1st Floor)	0.2 per 1000 sq ft	10200 sq ft	1.0	612
4b	Apartments (2nd Floor)	1.00	10200 sq ft	1.0	3060
5a	Retail (1st Floor)	0.2 per 1000 sq ft	12800 sq ft	1.0	768
5b	Apartments (2nd Floor)	1.00	12800 sq ft	1.0	3840
6	Animal Hospital	1.0 per 1000 sq ft	8000 sq ft	1.0	2400
7	Pet Spa	1.0 per 1000 sq ft	14400 sq ft	1.0	4320
8a	Retail (1st Floor)	0.2 per 1000 sq ft	10200 sq ft	1.0	612
8b	Apartments (2nd Floor)	1.00	10200 sq ft	1.0	3060
9	Apartments	1.00	63500 sq ft	4.0	76200
10	Apartments	1.00	63500 sq ft	4.0	76200
11	Apartments	1.00	10800 sq ft	4.0	12960
12	Apartments	1.00	19000 sq ft	4.0	22800
13	Retail	0.2 per 1000 sq ft	3600 sq ft	1.0	216
14	Clubhouse	1.00	24900 sq ft	1.0	325

N

0' 50' 100' 200'
SCALE IN FEET

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PROFESSIONAL ENGINEER

DAVID EICKMAN, P.E.
MO# 2009015436

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SANITARY SEWER MASTER DRAINAGE PLAN
PUBLIC SANITARY SEWER PLANS

THE VILLAGE AT DISCOVERY PARK ZONE 1
NW COLBERN RD & NE DOUGLAS ST

LEE'S SUMMIT, MISSOURI

2023

drawn by: GS/OS/JN
checked by: AR/JN
approved by: DE
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project no.: D21-04643
drawing no.: C_SAN05_D2104643
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SHEET
C665

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Sanitary Sewer Design Information

Upstream Manhole	Downstream Pipe Slope	Downstream Pipe Diameter	Proposed Cumulative Area	Future Cumulative Area	Peak Base Flow	Peak Infiltration Flow	Peak Inflow	Total Peak Flow	Downstream Pipe Mannings N	Downstream Pipe Capacity	Downstream Pipe Full Flow Velocity
	(%)	(in)	(Ac.)	(Ac.)	(gpd)	(gpd)	(cfs)	(cfs)		(cfs)	(fps)
EX MH 16-006	0.99%	12	231.42	0.00	347130.00	57855.000	2.124	2.751	0.013	3.54	4.51
SAN Z1	8.71%	12	231.42	0.00	347130.00	57855.000	2.124	2.751	0.013	10.51	13.39
SAN Z2	6.11%	12	231.42	0.00	347130.00	57855.000	2.124	2.751	0.013	8.81	11.21
EX MH 16-008	0.67%	12	231.42	0.00	347130.00	57855.000	2.124	2.751	0.013	2.92	3.71
EX MH 16-009	1.07%	12	231.42	0.00	347130.00	57855.000	2.124	2.751	0.013	3.69	4.69
SAN Z3	1.24%	12	231.42	0.00	347455.00	57855.000	2.124	2.752	0.013	3.97	5.05
EX MH 16-010	1.24%	12	221.11	0.00	341295.00	55277.500	2.030	2.643	0.013	3.97	5.05
SAN A1	5.48%	8	33.62	0.00	76200.00	8405.000	0.309	0.440	0.013	2.83	8.10
SAN A2	1.10%	8	32.26	0.00	2375.00	8065.000	0.401	0.417	0.013	1.27	3.63
SAN A3	1.10%	8	30.16	0.00	45240.00	7540.000	0.379	0.460	0.013	1.27	3.63
SAN A4	1.30%	8	28.68	0.00	43020.00	7170.000	0.363	0.441	0.013	1.38	3.95
SAN A5	1.30%	8	24.21	0.00	36315.00	6052.500	0.314	0.379	0.013	1.38	3.95
SAN A6	1.10%	8	24.21	0.00	18078.00	6052.500	0.314	0.351	0.013	1.27	3.63
SAN A7	1.10%	8	19.97	0.00	29955.00	4992.500	0.266	0.320	0.013	1.27	3.63
SAN A8	1.10%	8	19.97	0.00	29955.00	4992.500	0.266	0.320	0.013	1.27	3.63
SAN B1	1.00%	8	4.47	0.00	83544.00	1117.500	0.041	0.172	0.013	1.21	3.46
SAN B2	1.00%	8	1.15	0.00	2400.00	287.500	0.019	0.023	0.013	1.21	3.46
SAN B3	1.00%	8	0.00	0.00	0.00	0.000	0.000	0.000	0.013	1.21	3.46
SAN C1	4.40%	8	9.19	0.00	89160.00	2297.500	0.084	0.226	0.013	2.53	7.26
SAN D1	1.00%	8	1.12	0.00	216.00	280.000	0.010	0.011	0.013	1.21	3.46

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6/30/23
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DAVID EICKMAN, P.E.
MO# 2009015436

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SANITARY SEWER CALCULATIONS
PUBLIC SANITARY SEWER PLANS

THE VILLAGE AT DISCOVERY PARK ZONE 1
NW COLBERN RD & NE DOUGLAS ST

LEE'S SUMMIT, MISSOURI

2023

drawn by: GS/OS/JN
checked by: AR/JN
approved by: DE
QA/QC by: JS/NH
project no.: D21-04643
drawing no.: C_SAN05_D2104643
date: 06.30.2023

SHEET
C666

DWG: F:\2021\04501-05000\021-04643-d\40-design\AutoCAD\final plans\Sheets\GNCV\Public Sanitary Sewer Plans\C_SAN05_D2104643.dwg USER: aromanov
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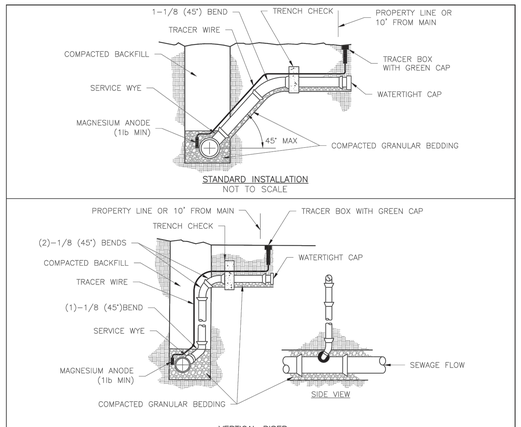


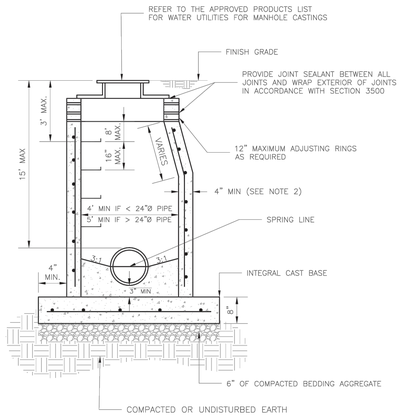
NOTES:

1. ALL SEWER STUBS SHALL BE CONSTRUCTED TO PROPERTY LINE OR 10' MINIMUM FROM THE MAIN, WHICHEVER IS GREATER. WHERE SIDEWALKS ARE PRESENT, CONTRACTOR SHALL EXTEND SERVICE LINE UNDER EXISTING SIDEWALK TO TWO FEET BEYOND.
2. IMPERVIOUS TRENCH CHECKS SHALL BE PLACED ON BUILDING SEWER STUBS (AT LEAST 5' AWAY FROM THE SANITARY SEWER MAIN).
3. TRENCH CHECKS ON THE BUILDING SEWER STUBS SHALL EXTEND 6" BELOW THE BOTTOM OF THE PIPE. LENGTH SHALL BE A MINIMUM OF 12". THE HEIGHT OF THE TRENCH CHECK SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE. THE WIDTH OF THE TRENCH CHECK SHALL BE THE WIDTH OF THE TRENCH.
4. SEE SPECIFICATION SECTION 2100 FOR SEWER MAIN BEDDING AND BACKFILL.
5. #12 GAUGE GREEN INSULATED COPPER TRACER WIRE SHALL BE INSTALLED. TRACER WIRE TERMINAL BOXES SHALL BE INSTALLED DIRECTLY ABOVE THE SEWER SERVICE OR AS DETERMINED BY THE ENGINEER.
6. FOR SERVICES, TRACER WIRE SHALL RUN FROM THE WYE AND TERMINATE IN A FLUSH MOUNTED TRACER BOX WITH A GREEN CAST IRON LOCKABLE TOP. WIRE SHALL BE TAPED OR TIED TO THE PIPE AT 5' INTERVALS.
7. TRACER WIRE BOX SHALL BE INSTALLED WITHIN 1.0' OF PROPERTY LINE.
8. THE TRACER WIRE SHALL REMAIN CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. SPLICES IN THE TRACER WIRE SHOULD BE MADE WITH SPLIT BOLT CONNECTORS. WIRE NUTS SHALL NOT BE USED. A WATER-PROOF CONNECTION IS NECESSARY TO PREVENT CORROSION.

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

Date: 12/2015
Drawn By: MJF
Checked By: DL

SANITARY SEWER STUB DETAIL — SAN-1



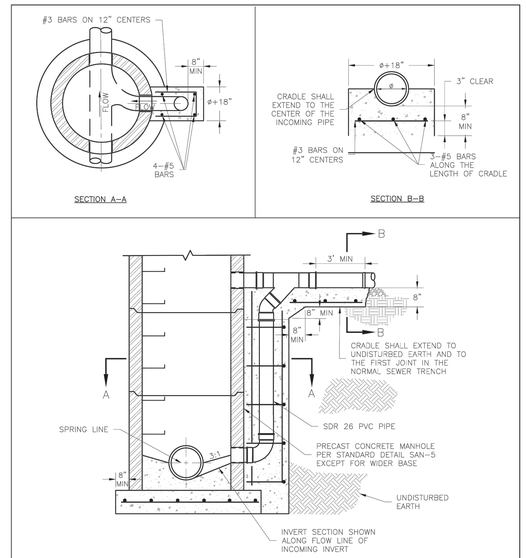
NOTES:

1. PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C478 EXCEPT AS MODIFIED BY THE SPECIFICATIONS.
2. A WALL THICKNESS NOT LESS THAN ONE-TWELFTH (X_2) OF THE INSIDE DIAMETER OR 4", WHICHEVER IS GREATER, SHALL BE USED WHEN THE MANHOLE DEPTH IS LESS THEN 15'.
3. WATERPROOFING SHALL BE REQUIRED ON THE OUTSIDE OF MANHOLES. THE WATERPROOFING SHALL CONSIST OF A TOTAL DRY FILM THICKNESS OF NOT LESS THAN 14 MILS OF BITUMINOUS COATING.
4. ONLY ECCENTRIC MANHOLE CONES WILL BE ALLOWED UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
5. THE FILL CONCRETE FLOW CHANNEL FOR SIDE BRANCHES SHALL BE PLACED TO PROVIDE A SMOOTH TRANSITION INTO THE FLOW LINE.
6. REFER TO THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR APPROVED MANHOLE GASKET MODELS.
7. REFER TO THE APPROVED PRODUCTS LIST FOR APPROVED STEPS.

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

Date: 12/2015
Drawn By: SC
Checked By: DL

STANDARD SANITARY PRECAST MANHOLE — SAN-2



NOTE:

REFER TO DRAWING SAN-2 FOR MANHOLE DETAILS NOT SHOWN.

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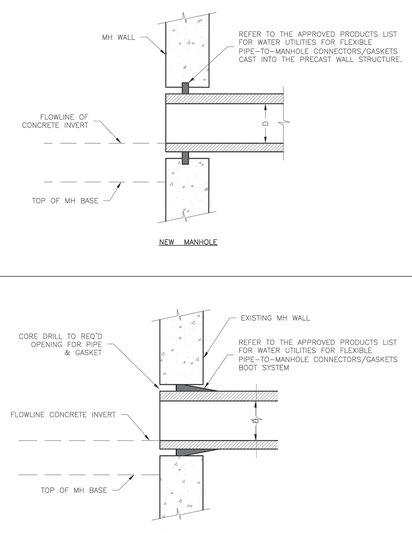
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Date: 02/2013
Drawn By: MJF
Checked By: DL

STANDARD OUTSIDE DROP MANHOLE — SAN-4



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Date: 02/2013
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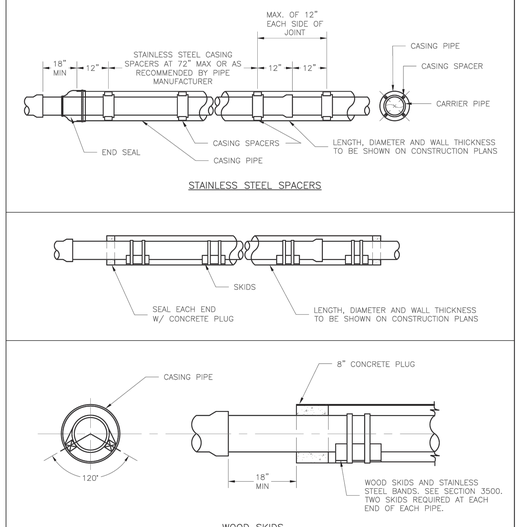
MANHOLE WALL CONNECTION — SAN-5



NOTE:

IF WOOD SKIDS ARE USED, ANNULAR SPACE BETWEEN CASING PIPE AND CARRIER PIPE SHALL BE FILLED WITH SAND.

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

Date: 02/2013
Drawn By: MJF
Checked By: DL

CASING PIPE DETAILS — SAN-6

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DAVID EICKMAN, P.E.
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REVISIONS

SANITARY SEWER DETAILS
PUBLIC SANITARY SEWER PLANS

THE VILLAGE AT DISCOVERY PARK ZONE 1
NW COLBERN RD & NE DOUGLAS ST

LEE'S SUMMIT, MISSOURI

2023

drawn by: GS/OS/JN
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