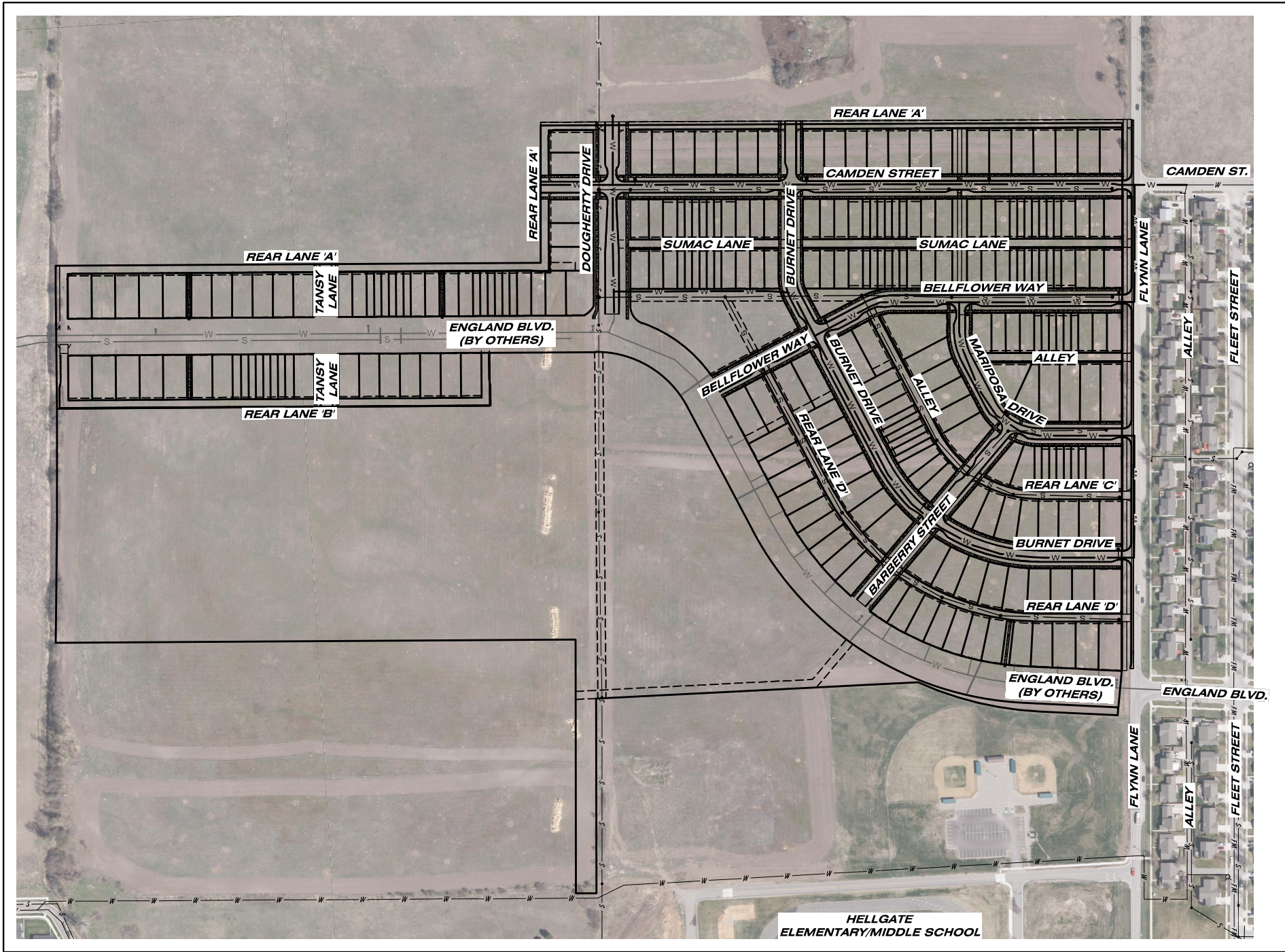


UTILITY CONSTRUCTION PLANS

LOCATED NEAR FLYNN LANE & ENGLAND BLVD.

LOCATED IN SEC. 7, T.13N., R.19W. & SEC. 12, T.13N., R.20W., P.M.M., MISSOULA COUNTY, MONTANA.



PRELIMINARY / STAGE 2 PLANS:

GENERAL NOTE: FINISHED GRADE AS SHOWN ON THESE PLANS IS PRELIMINARY (PRIMARYLY SHOWN IN PROFILES). FINAL GRADING AND GRADING AT INTERSECTIONS HAS NOT OCCURRED YET AND IS SUBJECT TO CHANGE.

SEWER NOTE: MINIMUM BURY OF 4' WILL BE MAINTAINED. IF SEWER MAIN BURY IS LESS THAN 5' TO TOP OF PIPE, BLUEBOARD INSULATION WILL BE REQUIRED, BUT IS NOT CURRENTLY SHOWN AT THIS TIME AS GRADING (FINISHED GRADE) IS STILL CONSIDERED PRELIMINARY. THE APPROXIMATE 5' BURY ELEVATION FROM THE PRELIMINARY FINISHED GRADE IS SHOWN ON THE SEWER MAIN PROFILES TO HELP VISUALIZE AND IS BASED ON PRELIMINARY FINISHED GRADING ONLY.



CALL UTILITY NOTIFICATION
CENTER OF MONTANA
1-800-424-5555

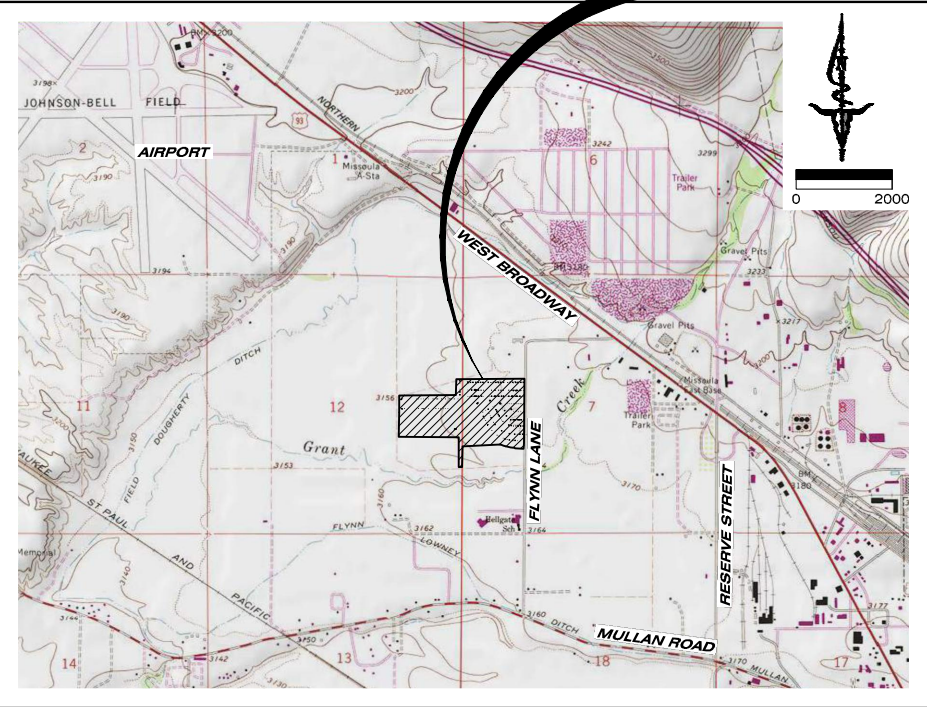
CALL FOR THE MARKING OF
UNDERGROUND UTILITIES
2 BUSINESS DAYS BEFORE
YOU DIG, GRADE, OR EXCAVATE



SHEET INDEX

DESCRIPTION	SHEET NO.
LEGENDS AND NOTES	SHEET 2 OF 25
INDEX SHEET - SEWER	SHEET 3 OF 25
INDEX SHEET - WATER	SHEET 4 OF 25
PLAN & PROFILE SHEETS - SEWER	SHEET 5-14 OF 25
PLAN & PROFILE SHEETS - WATER	SHEET 15-25 OF 25
DETAIL SHEETS	SHEET D1-D3 OF D3

VICINITY MAP



MISSOULA, MISSOULA COUNTY

PROJECT STATUS

THESE PLANS REQUIRE, AT A MINIMUM, APPROVAL FROM THE AGENCIES LISTED BELOW. THEREFORE, THE OWNER & CONTRACTOR ARE ADVISED THAT BIDS & CONTRACTS SHOULD NOT BE FINALIZED UNTIL INDICATED BELOW.

AGENCIES REVIEW STATUS:	REFERENCE #	APPROVAL DATE
MONTANA DEPT. OF ENV. QUALITY	EQ#: XX-XXXX	
CITY OF MISSOULA DEV. SERVICES	XXXX-XXX	

PLAN SET IS READY FOR CONSTRUCTION ☐ YES ☒ NO

AS-BUILT DATE:
PROJECT HAS BEEN CONSTRUCTED IN GENERAL CONFORMANCE WITH THE ABOVE APPROVALS, STATED SPECIFICATIONS, AND SHOWN HERE IN, UNLESS OTHERWISE SPECIFIED.

PROJECT NOTES:

CITY OF MISSOULA CHECKLIST DATA

LINEAR FOOTAGE OF SEWER GRAVITY MAINS ESTIMATED FOR CONSTRUCTION	
LINEAR FOOTAGE OF SEWER FORCE MAINS ESTIMATED FOR CONSTRUCTION	
NUMBER OF PROPOSED SEWER STUBS TO BE CONSTRUCTED	
LINEAR FOOTAGE OF WATER MAINS ESTIMATED FOR CONSTRUCTION	
NUMBER OF PROPOSED WATER STUBS TO BE CONSTRUCTED	

MISSOULA CITY PUBLIC WORKS STANDARDS & SPECIFICATIONS (MCPWSS) EDITION DEC. 2021



1917 SOUTH AVE. W. STE. A
MISSOULA, MT 59801
PH: 406.721.0142
FAX: 406.721.5224
WWW.IMEGCON.COM

DATE	07/01/2022
STAGE 2 REVISIONS	
STREET NAMES	
DESIGNED:	AM
DRAFTED:	AM
CHECKED:	JR
DATE:	MAR. 2022

LOCATION: TRACT D & E OF COS 6850 S 7, T13N., R19W., & S 12, T13N., R20W. SAXWTPQYEN NEIGHBORHOOD	PREPARED FOR: EVERGREEN HOUSING SOLUTIONS
---	---

PROJECT NAME
WEST END HOMES

PROJECT NO.
21000864

SHEET TITLE:
UTILITY CONSTRUCTION PLANS
COVER SHEET

SHEET:
1 OF 25

STAGE 2

LEGEND

NOTE: ALL FEATURES SHOWN IN LEGEND MIGHT NOT BE PRESENT ON PLANS
ALL FEATURES SHOWN ON PLANS MIGHT NOT BE PRESENT IN LEGEND

EXISTING

- (E) PROPERTY BOUNDARY
- (E) ADJACENT PROPERTY BOUNDARY
- (E) LOT LINE
- (E) EASEMENT
- (E) WATER LINE
- (E) WATER SERVICE
- (E) SEWER LINE
- (E) SEWER SERVICE
- (E) SEWER FORCE MAIN
- (E) SEWER FORCE MAIN SERVICE
- (E) STORM DRAIN PIPE
- (E) OVERHEAD UTILITY
- (E) BURIED POWER
- (E) GAS LINE
- (E) TELEPHONE LINE
- (E) TELEVISION LINE
- (E) FIBER OPTIC LINE
- (E) ROAD CENTERLINE
- (E) FENCE LINE
- (E) DITCH
- (E) SWALE
- (E) IRRIGATION DITCH
- (E) IRRIGATION FORCE MAIN
- (E) STREAM
- (E) MAJOR CONTOUR
- (E) MINOR CONTOUR

- (E) ASPHALT
- (E) GRAVEL
- (E) CONCRETE
- (E) SEWER MANHOLE
- (E) SEWER CLEANOUT
- (E) SOIL PROFILE
- (E) PERCOLATION TEST
- (E) GROUNDWATER MONITORING
- (E) SEPTIC TANK
- (E) DRAINFIELD
- (E) WELL
- (E) FIRE HYDRANT
- (E) WATER METER
- (E) WATER VALVE
- (E) WATER BLOW-OFF
- (E) STORM DRAIN MANHOLE
- (E) CULVERT
- (E) CURB INLET
- (E) CATCH BASIN
- (E) SUMP
- (E) UTILITY MANHOLE
- (E) TELEPHONE JUNCTION BOX
- (E) POWER VAULT
- (E) TELEVISION JUNCTION BOX
- (E) ELECTRICAL TRANSFORMER
- (E) POWER METER
- (E) GAS METER
- (E) POWER POLE
- (E) GUY WIRE
- (E) LIGHT POLE
- (E) SIGN
- (E) MAILBOX
- (E) DECIDUOUS TREE
- (E) CONIFEROUS TREE
- (E) BUSH/ SHRUB

PROPOSED

- (P) PROPERTY BOUNDARY
- (P) EASEMENT
- (P) WATER LINE
- (P) WATER SERVICE
- (P) SEWER LINE
- (P) SEWER SERVICE
- (P) SEWER FORCE MAIN
- (P) SEWER FORCE MAIN SERVICE
- (P) STORM DRAIN PIPE
- (P) OVERHEAD UTILITY
- (P) BURIED POWER
- (P) GAS LINE
- (P) TELEPHONE LINE
- (P) TELEVISION LINE
- (P) FIBER OPTIC LINE
- (P) ROAD CENTERLINE
- (P) FENCE LINE
- (P) DITCH
- (P) SWALE
- (P) IRRIGATION FORCE MAIN
- (P) MAJOR CONTOUR
- (P) MINOR CONTOUR
- (P) ASPHALT
- (P) GRAVEL
- (P) CONCRETE
- (P) SEWER MANHOLE
- (P) SEWER CLEANOUT
- (P) SEPTIC TANK
- (P) DRAINFIELD
- (P) WELL
- (P) FIRE HYDRANT
- (P) WATER METER
- (P) WATER VALVE
- (P) REDUCER
- (P) THRUST BLOCK
- (P) WATER BLOW-OFF
- (P) STORM DRAIN MANHOLE
- (P) CULVERT
- (P) CURB INLET
- (P) CATCH BASIN
- (P) SUMP
- (P) UTILITY MANHOLE
- (P) LIGHT POLE
- (P) SIGN
- (P) MAILBOX
- (P) DECIDUOUS TREE
- (P) CONIFEROUS TREE
- (P) BUSH/ SHRUB

SYMBOLS

- DETAIL DESIGNATOR
- SHEET DESIGNATOR
- DETAIL DESIGNATOR
- SHEET DESIGNATOR
- KEYED NOTE CALLOUT
- PROPOSED ELEVATION
- EXISTING ELEVATION
- SLOPE GRADE
- FLOW DIRECTION

ABBREVIATIONS

- (E) EXISTING
- ELEV ELEVATION
- EOA EDGE OF ASPHALT
- FG FINISHED GRADE
- FL FLOWLINE
- INV INVERT
- LF LINEAR FOOT
- MAX MAXIMUM
- MH MANHOLE
- MIN MINIMUM
- (P) PROPOSED
- PC POINT OF CURVATURE
- PT POINT OF TANGENT
- SIM SIMILAR
- STA STATION
- TBC TOP BACK OF CURB
- TOC TOP OF CONCRETE
- TYP TYPICAL

GENERAL CONDITIONS OF CONSTRUCTION:

- The Standard General Conditions of the Contract prepared by the Engineers Joint Contract Documents Committee (Copyright 2007), as included in Montana Public Works Standard Specifications, are herein referred to as the General Conditions within these Drawings. Copies of the General Conditions will be provided to Contractor upon written request to Engineer.
- Wherever used in these Drawings, the terms, whether printed with initial capital letters or not, as listed in the Standard General Conditions of the Construction Contract (General Conditions), Article 1 - Definitions and Terminology, prepared by the Engineers Joint Contract Documents Committee (Copyright 2007) will have the meanings indicated, which are applicable to both the singular and plural thereof, except as follows:
 - The Contract Documents shall mean the Drawings as shown in these plans and any applicable referenced standards, specifications, or laws.
 - The Contract Price shall mean the moneys payable by Owner to Contractor for completion of the Work in accordance with the Agreement.
 - The Contract Times shall mean the number of days or the dates stated in the Agreement to complete the Work so that it is ready for final payment. If no such dates are established, the Contract Time shall be 120 days to complete the Work.
 - Effective Date of the Agreement shall have the meaning as listed in the General Conditions, Article 1. If no such Agreement exists, the Effective Date of the Agreement shall be the day the Contractor proceeds with the Work.
- By proceeding with the Work as shown on these Drawings, the Contractor makes the following representations:
 - Contractor has examined and carefully studied the Drawings and other related data.
 - Contractor is familiar with and is satisfied as to all federal, state and local laws and Regulations that may affect cost, progress, performance and furnishing of the Work.
 - Contractor has visited the site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, performance or furnishing of the Work.
 - Contractor acknowledges that Owner and Engineer do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Drawings with respect to Underground Facilities at or contiguous to the site.
 - Contractor has obtained and carefully studied (or assumes responsibility for having done so) all such additional supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the site or otherwise, which may affect cost, progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor including applying the specific means, methods, techniques, sequences and procedures of construction, if any, expressly required by the Drawings to be employed by the Contractor, and safety precautions and programs incident thereto.
 - Contractor is aware of the general nature of work to be performed by Owner and others at the site that relates to the Work.
 - Contractor has given Engineer written notice of all conflicts, errors, ambiguities or discrepancies that Contractor has discovered in the Drawings and the written resolution thereof by Engineer is acceptable to Contractor.
 - The Drawings are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- In resolving disputes resulting from conflicts, errors or discrepancies, the order of precedence shall be as follows, as applicable to this project: Written agreement between owner and contractor, specifications, Drawings. Within the Specifications, the order of precedence is as follows, as applicable to this project: Addenda/Change Orders, Contractor's Bid, Special Provisions, Instructions to Bidders, Supplemental General Conditions, Notice Inviting Bids, General Conditions, Technical Specifications, Referenced Standard Specifications. With reference to the Drawings, the order of precedence is as follows, as applicable to this project: Figures govern over scaled dimensions, Detail drawings govern over general drawings, Addenda/Change Order drawings govern over contract drawings, contract drawings govern over standard drawings, contract drawings govern over shop drawings.
- If Contractor believes that any subsurface or physical condition at or contiguous to the Site that
 - is uncovered or revealed either is of such a nature as to require a change in the Drawings; or
 - differs materially from that shown or indicated in the Drawings; or
 - is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided in the drawings;then Contractor shall promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.
- Section 2.06 of the General Conditions is hereby incorporated into these Drawings.
- Section 3.03.A.2 of the General Conditions is hereby incorporated into these Drawings.
- Section 3.05 of the General Conditions is hereby incorporated into these Drawings.
- Section 3.06 of the General Conditions is hereby incorporated into these Drawings.
- Section 4.05 of the General Conditions is hereby incorporated into these Drawings.
- Section 6.01, 6.02.A, and 6.03 of the General Conditions are hereby incorporated into these Drawings.
- Substitutes and "Or-Equals" items are subject to the provisions of the General Conditions, Section 6.05.
- Section 6.13 of the General Conditions is hereby incorporated into these Drawings, except that Section 6.13.D shall be replaced with the following sentence:

Contractor's duties and responsibility for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer and Owner, as applicable to the Work, have accepted that the work is complete.
- Section 6.11, 6.14, 6.15, 6.16, 6.18, 6.19, 6.20, and 6.21 of the General Conditions are hereby incorporated into these Drawings, as follows:
 - Delete the last sentence of Section 9.05.A.
 - Delete Section 9.06, 9.07, 9.08.B, 9.08.C, and 9.09.D.
- Section 10.02 of the General Conditions is hereby incorporated into these Drawings.
- Article 13 - Tests and Inspections, Correction, Removal or Acceptance of Defective Work of the General Conditions is hereby incorporated into these Drawings.

STANDARD SPECIAL PROVISIONS:

- The Contractor shall be responsible for all permits, licenses and fees required for completion of this project unless specifically noted otherwise.
- The Contractor shall provide the Owner with a 24 hour phone number of a party responsible and capable of immediate local response to emergency maintenance for the duration of the Work. Contractor shall provide the name of the responsible party and phone number in writing prior to proceeding with the Work.
- Unless noted otherwise, the contractor shall be responsible for any necessary traffic control on and off-site including obtaining any applicable permits.
- Material stockpiled along the project route shall be done so in a manner that does not affect public safety and is in a neat and orderly fashion.
- The Contractor shall be responsible for disposing of all waste and excess materials such as, but not limited to: vegetation, trees, brush, asphalt, concrete, sub-grade soils, etc., offsite in accordance with local, state and federal laws. The Owner reserves the right to request certain waste materials to be stockpiled at a location on-site.
- The contractor will be responsible to adhere to the MDEQ or EPA approved Storm Water Pollution Prevention Plan (SWPPP), if applicable to the project. The contractor is responsible for repairing any damage made to BMPs identified in the SWPPP. The approved Storm Water Pollution Prevention Plan will be provided by Owner to Contractor upon written request. If a SWPPP has not been prepared for the project, but is required by regulation, the Contractor is responsible for preparing and submitting a Notice of Intent and SWPPP.
- The Contractor will be required to make every effort to immediately restore the construction area once the construction task is completed. All seeding shall be completed in accordance with MPWSS 02910. This includes such required activities as finish grading, spreading of topsoil, restoring irrigation, replacing traffic and street signs, etc. The contractor will have 48 hours to begin restoration once the construction task in the immediate area is complete. Once restoration is begun, it must be completed without interruption to the extent possible.
- After all work on this project is completed and before final acceptance of the project, the entire project shall be neatly finished to the lines, grades, and cross sections shown on the plans and as hereinafter specified.
 - Drainage facilities, such as inlets, catch basins, storm pipe, culverts, and curb and gutter shall be cleaned of all debris, gravel, silts or other foreign material.
 - The Contractor shall remove and dispose of all construction stakes.
 - All areas disturbed by the construction shall be shaped to present a uniform appearance blending into the contour of adjacent properties. All surface replacement and landscaping shall be completed.
 - Except as otherwise permitted, all excess excavated materials shall be disposed of away from the site of the work.
 - Broken concrete and other debris resulting from pavement or sidewalk removal, excavated rock in excess of the amount permitted, and other waste and debris encountered in excavated work, and other similar waste materials shall be disposed of away from the site.There will be no separate measurement or payment for cleanup, and all costs for such work shall be included in the Contract Price.
- No on-site burning of waste materials will be allowed.
- If a street has not been surfaced and cleaned, the Contractor shall be responsible for dust control and maintenance of the street. Also, if detours are made on a gravel road, the Contractor is responsible for dust control and maintenance on the detours. See "Air Quality" below also.
- Daily street sweeping shall be completed on both ends of each street during construction. Unpaved detours or any other fugitive dust emission sources from construction and demolition should be watered and/or chemically stabilized so emissions are less than 20% opacity.

UTILITY NOTES:

- The Contractor shall notify appropriate personnel for utility locations and notice of construction commencement at least two business days prior to proceeding with the Work. Before Contractor proceeds with the Work, a common locate service (One Call) is available at 1-800-424-5555. All Underground Facilities may not be located by the One Call service including but not limited to such Underground Facilities as irrigation systems, public and private water and sewer systems, etc.
- The Contractor shall support and protect all exposed utilities in conformance with the utility owner's standards.
- The information and data shown or indicated in the Drawings with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise noted:
 - Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or date; and
 - The cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - Reviewing and checking all such information and data,
 - Locating all Underground Facilities shown or indicated in the Drawings,
 - Coordination of the Work with the owners of such Underground Facilities, including Owner, during construction, and
 - The safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.
- At least 2 business days before beginning any excavation, the Contractor shall, according to MCA 69-4-501, notify all owners of underground facilities and coordinate the Work with the owners of such underground facilities. The information shown or indicated in the Drawings with respect to existing underground facilities is based on information and data obtained from the owners of the facilities without field exploration, and as such, Owner and Engineer are not responsible for the accuracy or completeness of such information or data.

SUBMITTALS, QUALITY CONTROL & ASSURANCE, INSPECTIONS, AND TESTING

- Contractor is responsible to comply with the Contractor Quality Control and Owner Quality Assurance, Section 01400 MPWSS.
- Contractor shall complete trench excavation and backfill in accordance with Section 02221 MPWSS.
- The Contractor shall coordinate with Engineer to obtain samples of trench backfill material to be used on-site.
- Contractor will be responsible for coordination with a material testing company of the Engineer's selection to complete compaction testing of trench backfill. Coordination includes updating appropriate personnel of the material testing company every day as to progress of work so adequate testing can be completed.
- As-Builts: The Contractor will be required to prepare a set of detailed as-built drawings to be presented to the Engineer at the completion of the project. The as-built drawings shall be updated daily and reviewed weekly by the Project Engineer. As-built drawings shall include, but not limited to location/depths of wet utility (water, sewer, storm, etc.) mains and services, all other utilities, culverts, drainage structures, etc.
- Service Ditch Cards: Contractor will be responsible for completing service ditch cards for all services (water, sewer, storm, etc.). Information on the ditch cards must be provided as directed by Engineer including lot number or building address served; as-built service connection location on the main relative to stationing on the Drawings; Contractor who made tap; date tap was made; distance from main to curb stop/fittings/appurtenances/etc.; size of tap on main; size and material of service; size and material of main that was connected to; depth of main at tap; location and type of bends along service line; location and depth of cleanouts; depth of service at curb stop. Engineer will provide Contractor with example ditch cards upon written request, but shall conform to public entity's template(s). One ditch card shall be completed for each service.
- Sewer Main Testing: Sanitary sewer testing shall be completed in the presence of the Engineer. The contractor is responsible for coordinating with the Engineer to be present for sewer testing. Sanitary sewer testing shall include:
 - leakage test using water or air test,
 - deflection test,
 - vacuum test of manholes,
 - television inspection, and
 - lamp test.
- Sewer TV Testing: Television inspection shall be performed in accordance with MPWSS Section 02730. A device of known dimensions shall be drug along the bottom of the sewer pipe in front of the camera to provide a continuous visual reference of the depth of water ponds in the sewer pipe. The device shall be drug no more than four feet in front of the camera
- Sewer Manholes Testing: Test manholes in accordance with ASTM C1244-93. Test method for concrete sewer manholes by the negative air pressure (vacuum) test. Vacuum test shall be completed by pulling a vacuum of 10" Hg (4.9 psi) and measuring the time it takes to drop to 9" Hg (4.4 psi). Test shall be completed on concrete surface and not on iron ring. The minimum acceptable time for an 8' or less deep manhole shall be 20 seconds. Five seconds shall be added to the minimum acceptable time for every two feet in depth beyond 8'.
- Water Main Testing: Water testing shall be completed in the presence of the Engineer. The Contractor is responsible for coordinating with the Engineer to be present for water testing. Testing, cleaning, and disinfection of water mains, valves, and fittings shall be completed in accordance with MPWSS Section 02660, Part 3.4. Water testing procedure shall be as follows:
 - Chlorination
 - Flushing to reduce Chlorine residual to 0.5 ppm or less, or as otherwise approved by the engineer
 - Bacteriological Test
 - Hydrostatic and leakage testing
- All infrastructure specifications and testing requirements shall be per Missoula City Public Works Standards & Specifications.

SEWER CONSTRUCTION NOTES:

- All Work shall be in accordance with the Montana Public Works Standard Specifications (MPWSS) (Sixth Edition, dated April 2010) and Missoula City Public Works Standards & Specifications (MCPWSS) (edition labeled on cover sheet of plans). Sanitary Sewer Work shall conform to Section 02730 and any referenced specifications.
- Invert elevations are provided from center of manhole, unless noted otherwise.
- Manhole stations are provided from center of manhole, unless noted otherwise.
- Sewer services shall be constructed and inspected per International Plumbing Code, City of Missoula, Missoula City-County Environmental Health Department, and Montana Department of Environmental Quality (MDEQ) regulations and standards.

WATER CONSTRUCTION NOTES

- All Work shall be in accordance with the Montana Public Works Standard Specifications (MPWSS) (Sixth Edition, dated April 2010) and Missoula City Public Works Standards & Specifications (MCPWSS) (edition labeled on cover sheet of plans). Water Work shall conform to Section 02600 and any referenced specifications.
- Stations are provided from center of bend, tee, or connection, unless noted otherwise.
- Water services shall be constructed and inspected per Uniform Plumbing Code, City of Missoula Public Works, and Missoula Water.
- Water services (new or swaps/replacements) shall only be completed after water main has been installed, completed, tested and certified by Missoula Water, City of Missoula, and the Engineer of Record.

CONSTRUCTION STAKING

- The owner will provide construction staking one time. Additional staking will be the responsibility of the contractor for scheduling and payment.
- Contractor is responsible to coordinate and request staking at least two days in advance, unless otherwise agreed upon in writing by Engineer.
- Staking will be provided as follows:
 - Bends, Tees/Connections, and Hydrants: Center of structure and two offset stakes.
 - Water Main: Hub offset set at 25' stations. Offset distance and side of trench as requested by Contractor in writing to engineer.
- Cut sheets will be provided to the contractor with elevation from hub to top of pipe elevation.
- Engineer does not consider staking to be complete and ready for use until cut sheets have been delivered to Contractor.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

- SWPPP Administrator shall turn in SWPPP reports generated from the beginning of construction to date that As-Builts are turned into Engineer. Engineer in turn submits SWPPP reports to City Engineering as part of As-Built documentation.
- SWPPP Administrator is required to renew City SWPPP permit annually unless the site has been stabilized. SWPPP Administrator will submit any remaining SWPPP reports to City Engineering when filing for Notice of Termination.



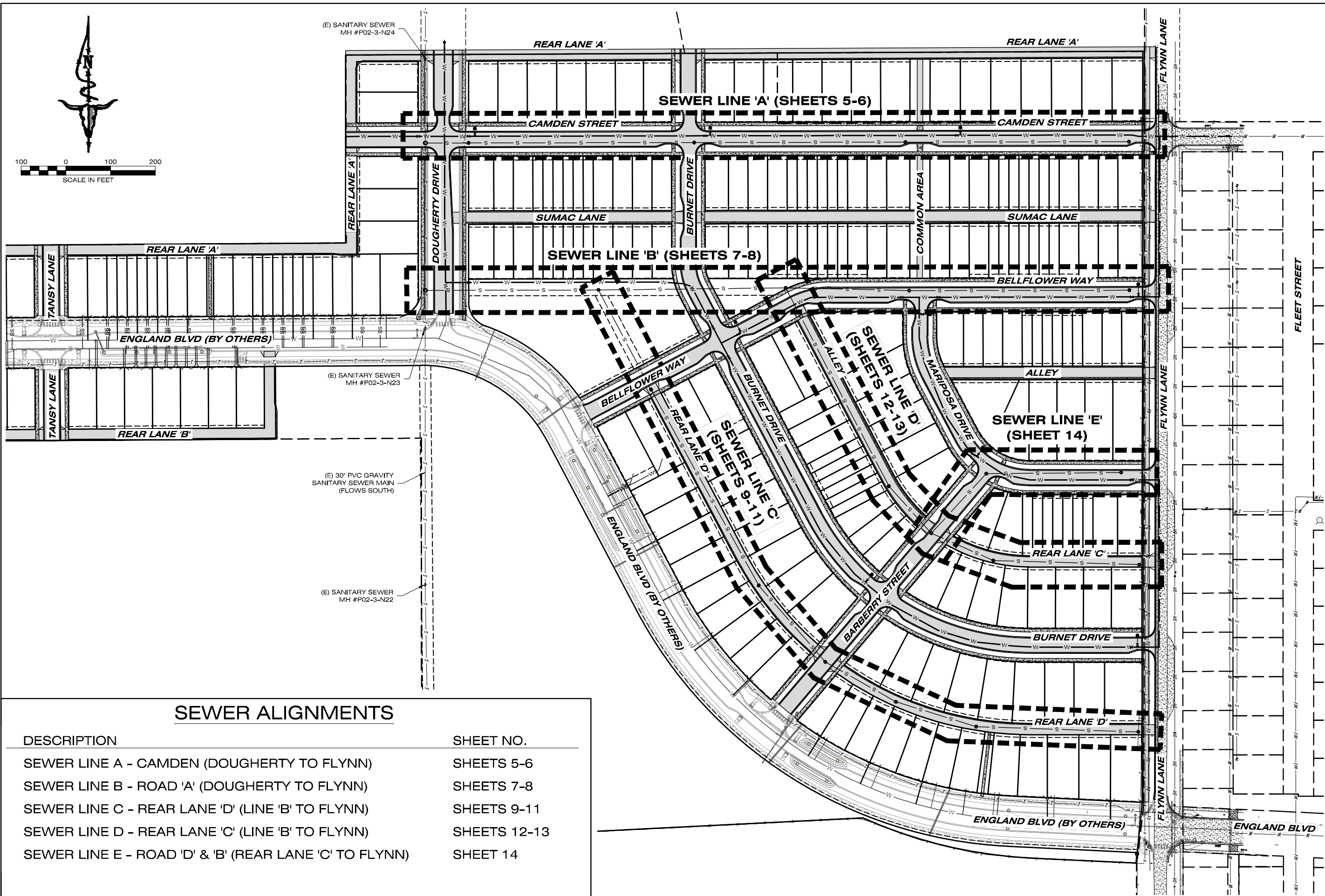
DATE	07/01/2022
STAGE 2 REVISIONS	07/14/2022
STREET NAMES	
DESIGNED:	AM
DRAFTED:	AM
CHECKED:	JR
DATE:	MAR. 2022

LOCATION:	TRACT D & E OF COS 6850 S 7, T13N., R19W., & S 12, T13N., R20W. SxWTPQYEN NEIGHBORHOOD
PREPARED FOR:	EVERGREEN HOUSING SOLUTIONS

PROJECT NAME	WEST END HOMES
PROJECT NO	21000864
SHEET:	2 OF 25

UTILITY CONSTRUCTION PLANS
LEGEND AND NOTES SHEET

STAGE 2



SEWER ALIGNMENTS

DESCRIPTION	SHEET NO.
SEWER LINE A - CAMDEN (DOUGHERTY TO FLYNN)	SHEETS 5-6
SEWER LINE B - ROAD 'A' (DOUGHERTY TO FLYNN)	SHEETS 7-8
SEWER LINE C - REAR LANE 'D' (LINE 'B' TO FLYNN)	SHEETS 9-11
SEWER LINE D - REAR LANE 'C' (LINE 'B' TO FLYNN)	SHEETS 12-13
SEWER LINE E - ROAD 'D' & 'B' (REAR LANE 'C' TO FLYNN)	SHEET 14



1817 SOUTH AVE. W. STE. A
MISSOULA, MT 59801
PH: 406.721.0142
FAX: 406.721.5224
www.imegcorp.com

DATE: 07/01/2022

REVISIONS: STAGE 2 REVISIONS 07/14/2022

DESIGNED: AM

DRAFTED: AM

CHECKED: JR

DATE: MAR. 2022

LOCATION: TRACT D & E OF COS 6850 S 7, T13N., R19W., & S 12, T13N., R20W. SWTPQYEN NEIGHBORHOOD MISSOULA COUNTY, MONTANA

PREPARED FOR: EVERGREEN HOUSING SOLUTIONS

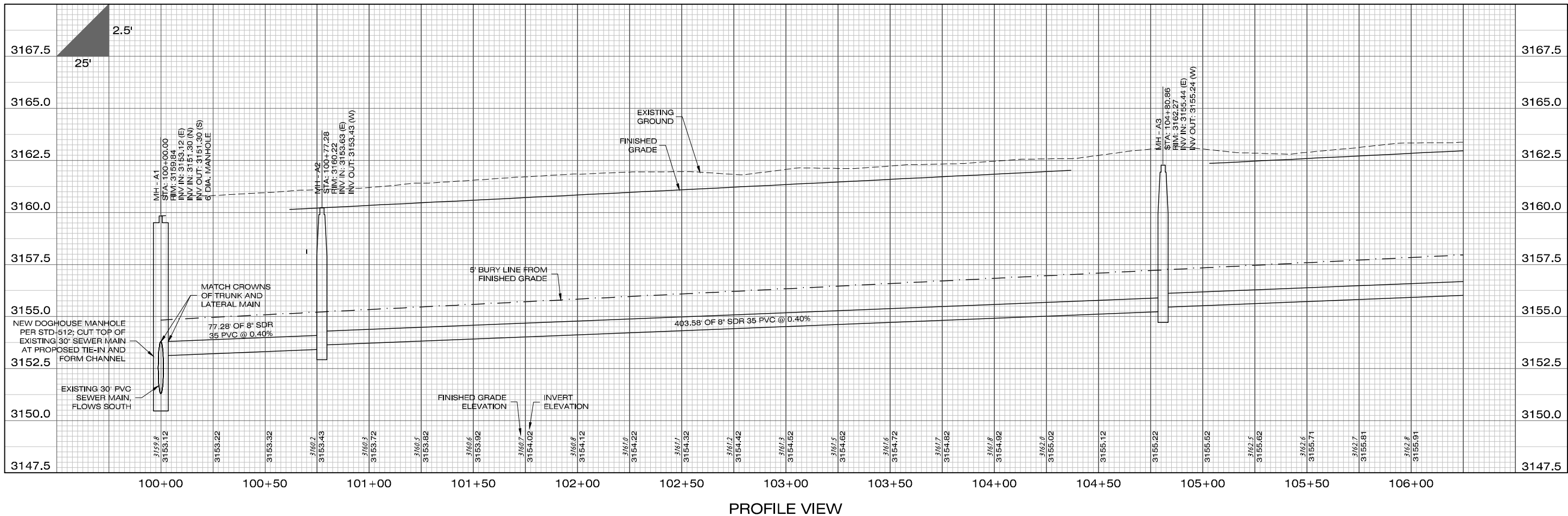
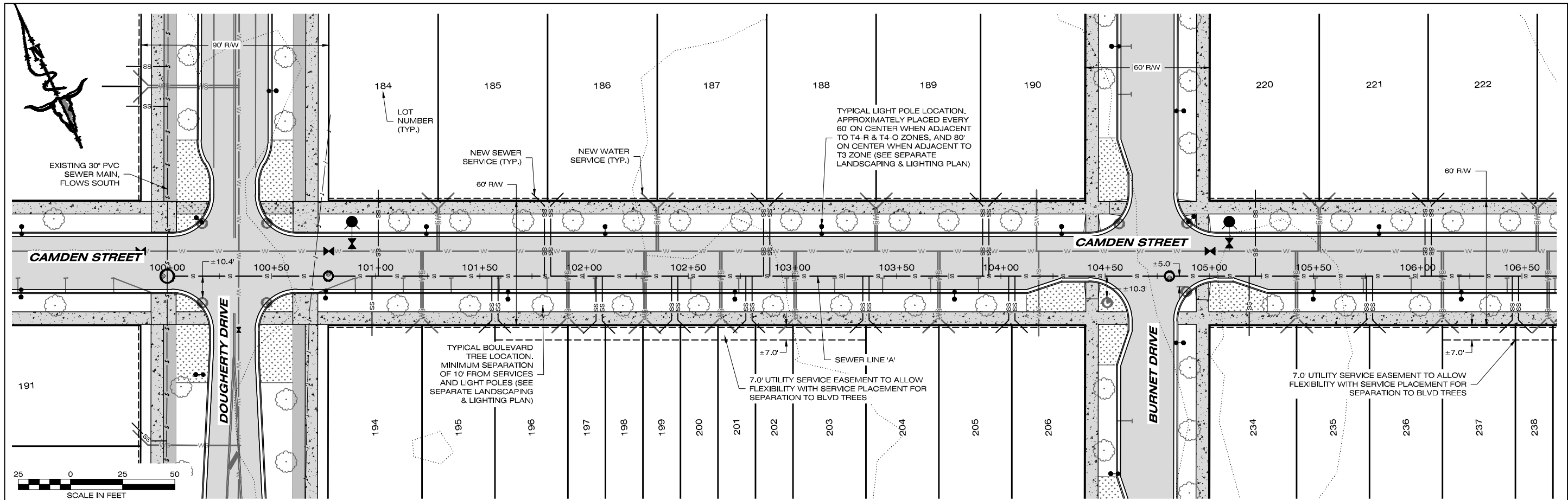
PROJECT NAME: WEST END HOMES

PROJECT NO: 21000864

SHEET TITLE: UTILITY CONSTRUCTION PLANS INDEX SHEET - SEWER

SHEET: 3 OF 25

STAGE 2



1917 SOUTH AVE. W. STE. A
MISSOULA, MT 59801
PH: 406.721.0142
FAX: 406.721.5224
www.imegcorp.com

DATE: 07/01/2022

REVISIONS: STAGE 2 REVISIONS

DESIGNED: AM

DRAFTED: AM

CHECKED: JR

DATE: MAR. 2022

LOCATION: TRACT D & E OF COS 6850 S 7, T13N., R19W., & S 12, T13N., R20W. SXXWTPQYEN NEIGHBORHOOD

PREPARED FOR: EVERGREEN HOUSING SOLUTIONS

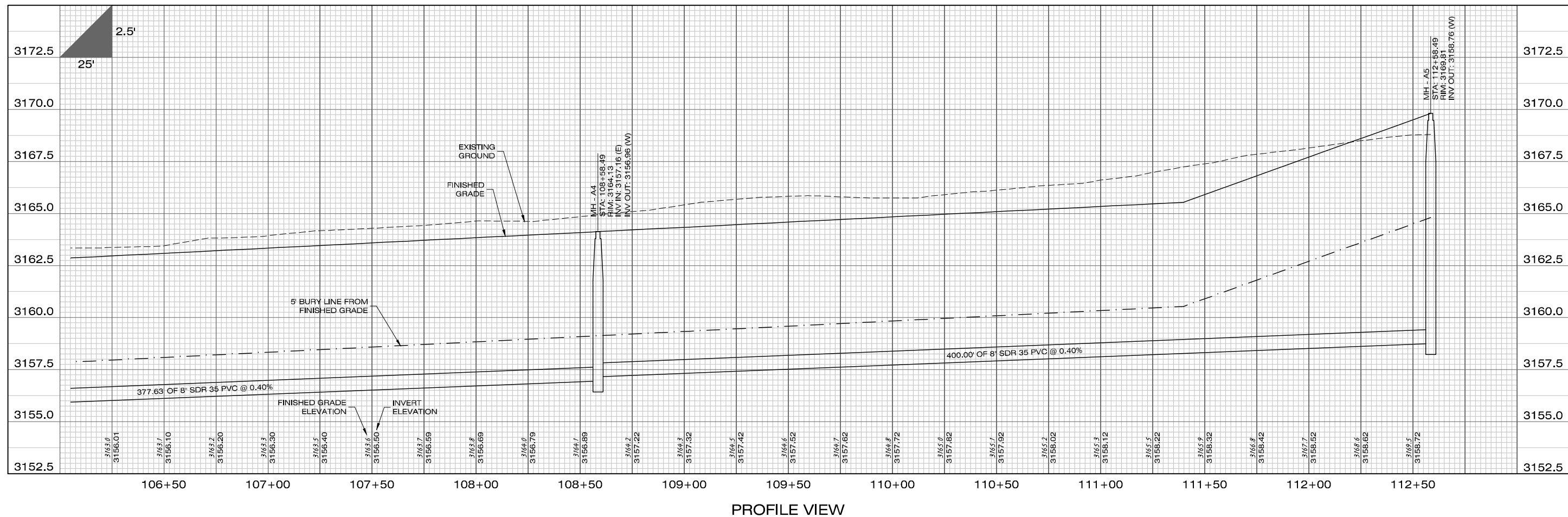
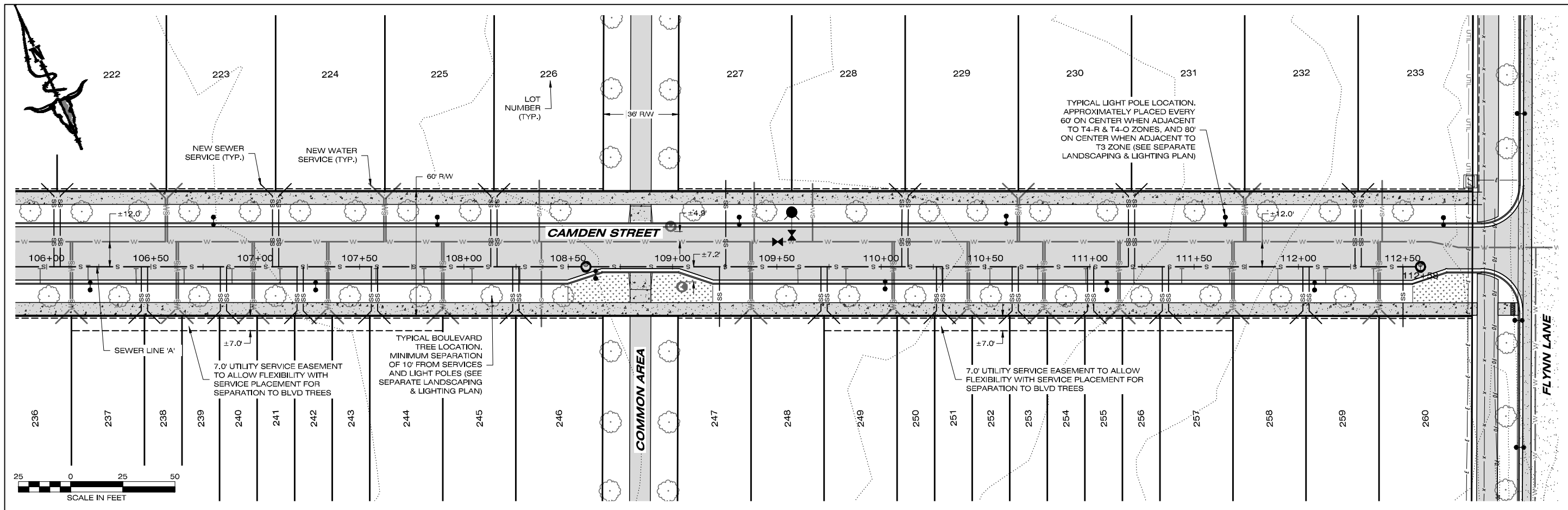
PROJECT NAME: WEST END HOMES

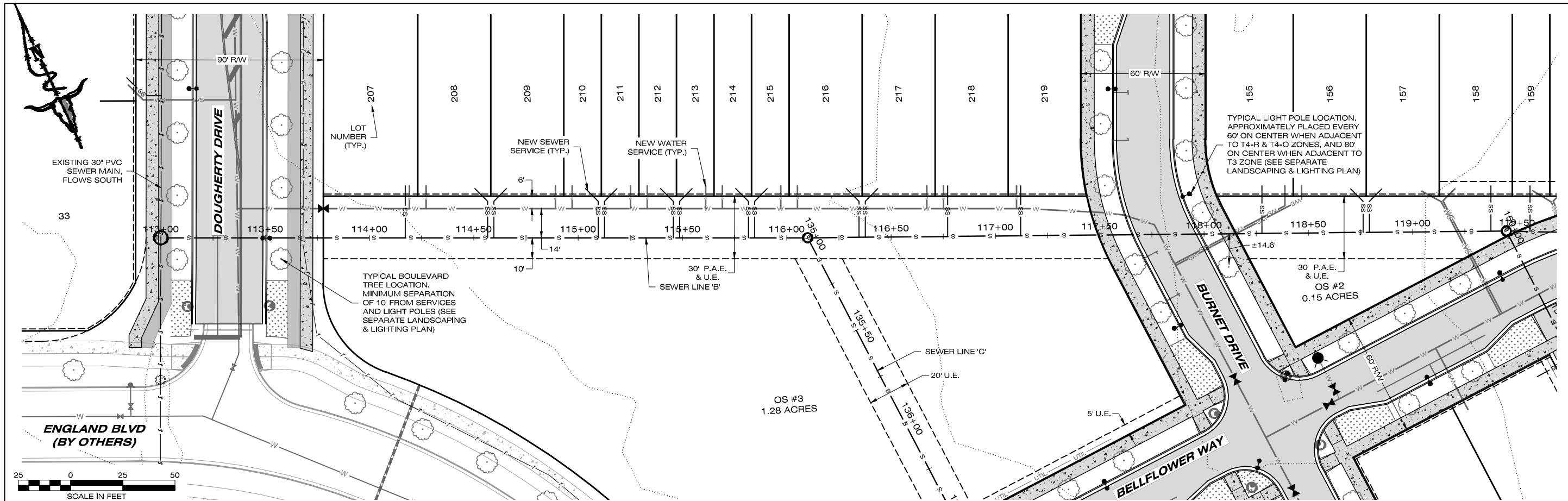
PROJECT NO: 210000864

SHEET: 5 OF 25

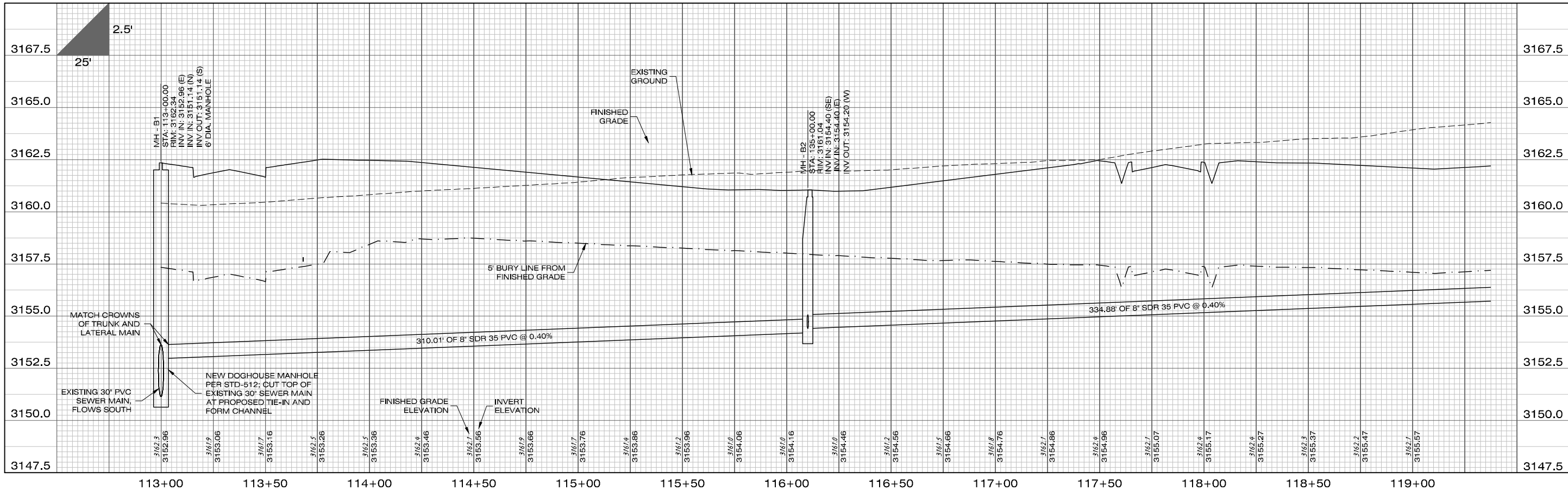
SHEET TITLE: UTILITY CONSTRUCTION PLANS SEWER PLAN AND PROFILE SHEET

STAGE 2





PLAN VIEW



PROFILE VIEW

1817 SOUTH AVE. W. STE. A
MISSOULA, MT 59801
PH: 406.721.0142
FAX: 406.721.5224
www.imegcorp.com

DATE: 07/01/2022

REVISIONS: STAGE 2 REVISIONS

DESIGNED: AM

DRAFTED: AM

CHECKED: JR

DATE: MAR. 2022

LOCATION: TRACT D & E OF COS 6850
S 7, T13N., R19W., & S 12, T13N., R20W.
SXTWPQYEN NEIGHBORHOOD

PREPARED FOR: EVERGREEN HOUSING SOLUTIONS

PROJECT NO: 21000864

PROJECT NAME: WEST END HOMES

SHEET: 7 OF 25

SHEET TITLE: UTILITY CONSTRUCTION PLANS
SEWER PLAN AND PROFILE SHEET

STAGE 2

DATE: 07/01/2022

REVISIONS: STAGE 2 REVISIONS

DESIGNED: AM

DRAFTED: AM

CHECKED: JR

DATE: MAR. 2022

LOCATION: TRACT D & E OF COS 6850
S 7, T13N., R19W., & S 12, T13N., R20W.
SXTWPQYEN NEIGHBORHOOD

PREPARED FOR: EVERGREEN HOUSING SOLUTIONS

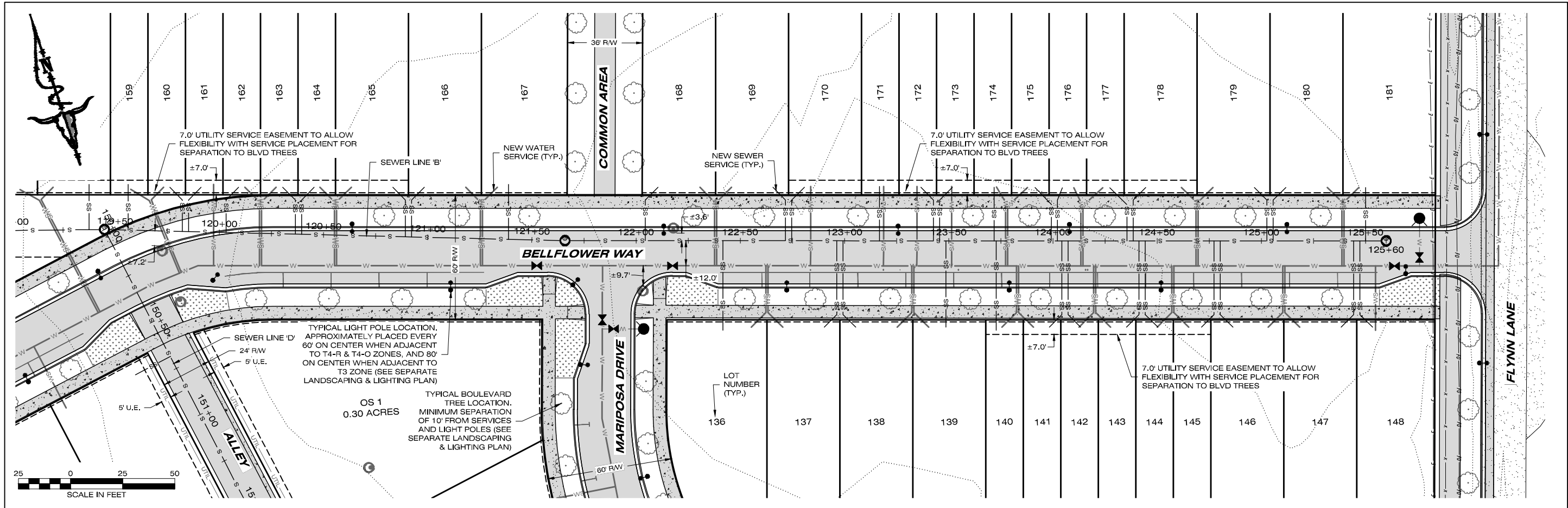
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PROJECT NAME: WEST END HOMES

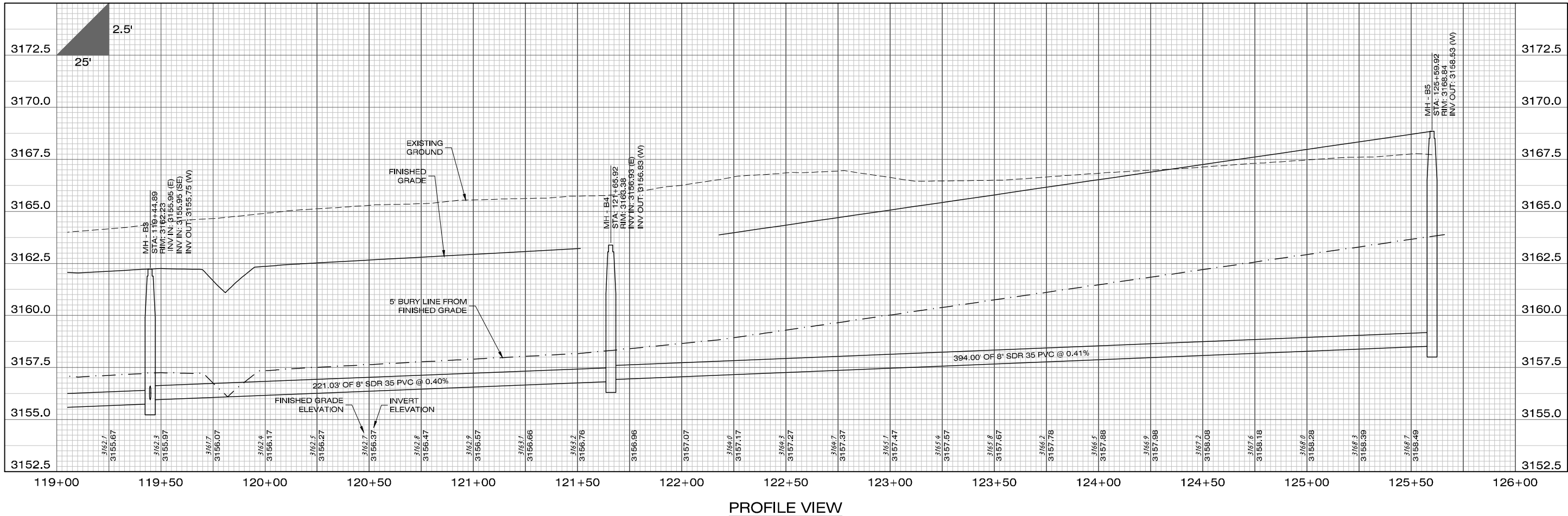
SHEET: 7 OF 25

SHEET TITLE: UTILITY CONSTRUCTION PLANS
SEWER PLAN AND PROFILE SHEET

STAGE 2



PLAN VIEW



PROFILE VIEW

1817 SOUTH AVE. W. STE. A
MISSOULA, MT 59801
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DATE	07/01/2022
REVISIONS	STAGE 2 REVISIONS
STREET NAMES	STREET NAMES
DESIGNED:	AM
DRAFTED:	AM
CHECKED:	JR
DATE:	MAR. 2022

LOCATION: TRACT D & E OF COS 6850
S 7, T13N., R19W., & S 12, T13N., R20W.
S 7, T13N., R19W., & S 12, T13N., R20W.

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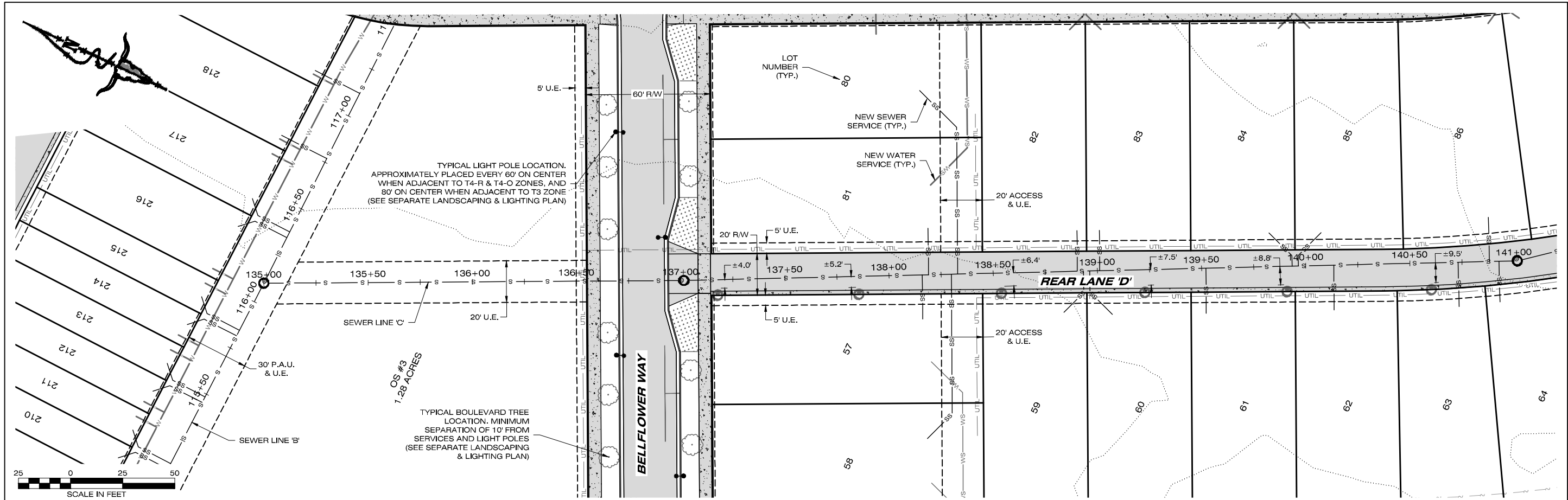
PROJECT NO: 21000864

SHEET: 8 OF 25

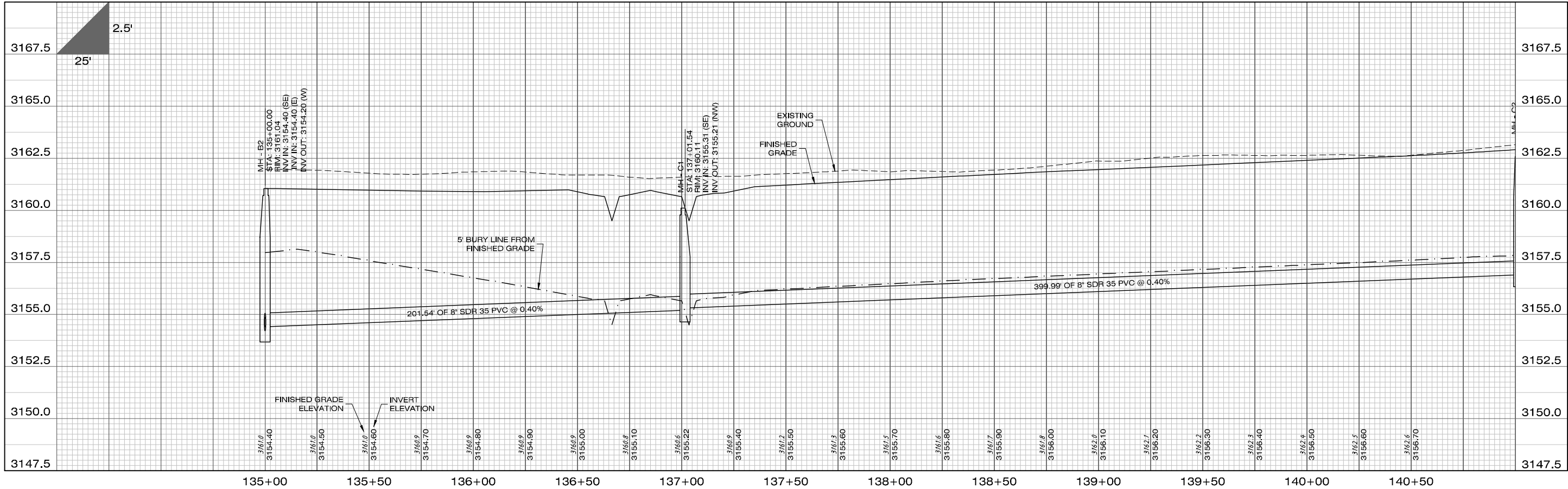
PROJECT NAME: WEST END HOMES

SHEET TITLE: UTILITY CONSTRUCTION PLANS
SEWER PLAN AND PROFILE SHEET

STAGE 2



PLAN VIEW



PROFILE VIEW

PROJECT NO.
21000864

PROJECT NAME
WEST END HOMES

DATE
07/01/2022

DESIGNED: *AM*

STAGE 2 REVISIONS
STREET NAMES

DRAFTED: *AM*

REVISIONS

CHECKED: *JR*

DATE
MAR. 2022

LOCATION:
TRACT D & E OF COS 6850
S 7, T13N., R19W., & S 12, T13N., R20W.
SXXTPQYEN NEIGHBORHOOD

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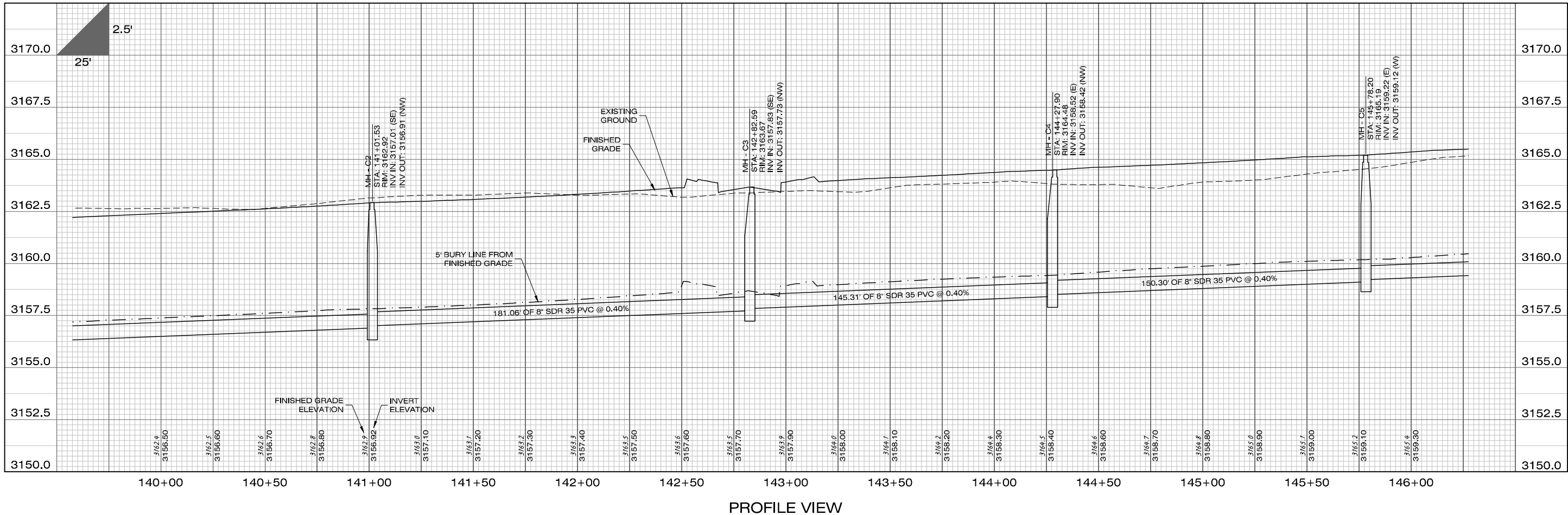
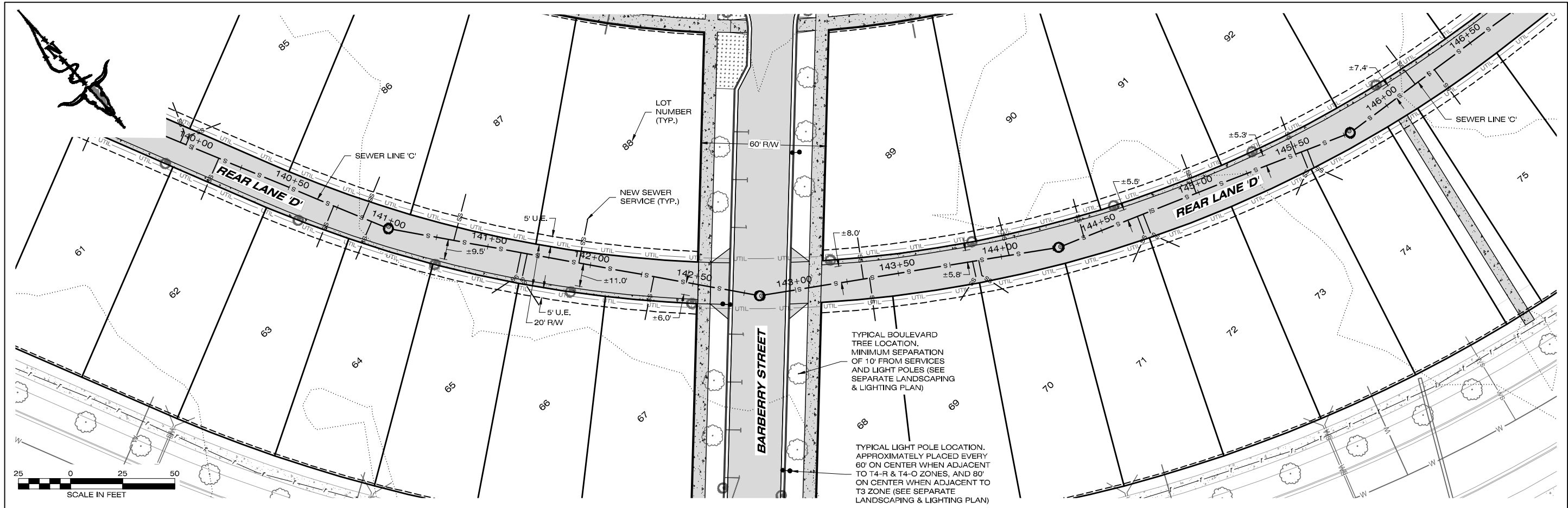
UTILITY CONSTRUCTION PLANS
SEWER PLAN AND PROFILE SHEET

STAGE 2

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REVISIONS
STAGE 2 REVISIONS
STREET NAMES
07/14/2022

DESIGNED: AM
DRAFTED: AM
CHECKED: JR
DATE: MAR. 2022

LOCATION: TRACT D & E OF COS 6850
S 7, T13N., R19W., & S 12, T13N., R20W.
SXBTPQYEN NEIGHBORHOOD

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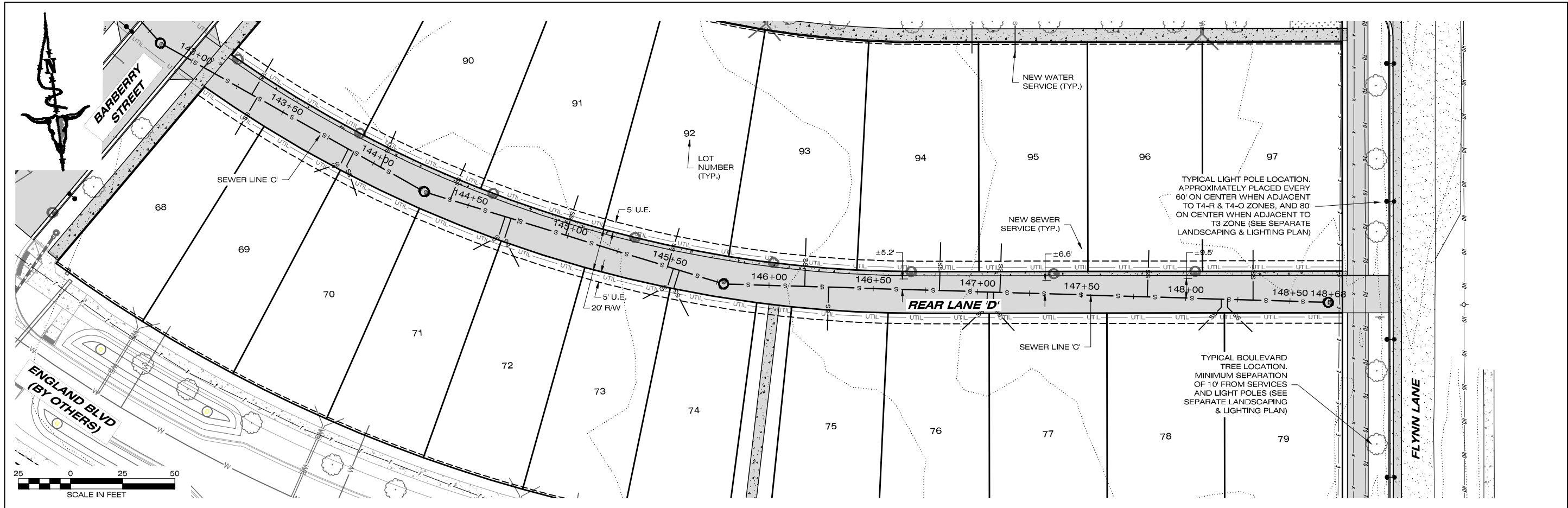
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PROJECT NAME: WEST END HOMES

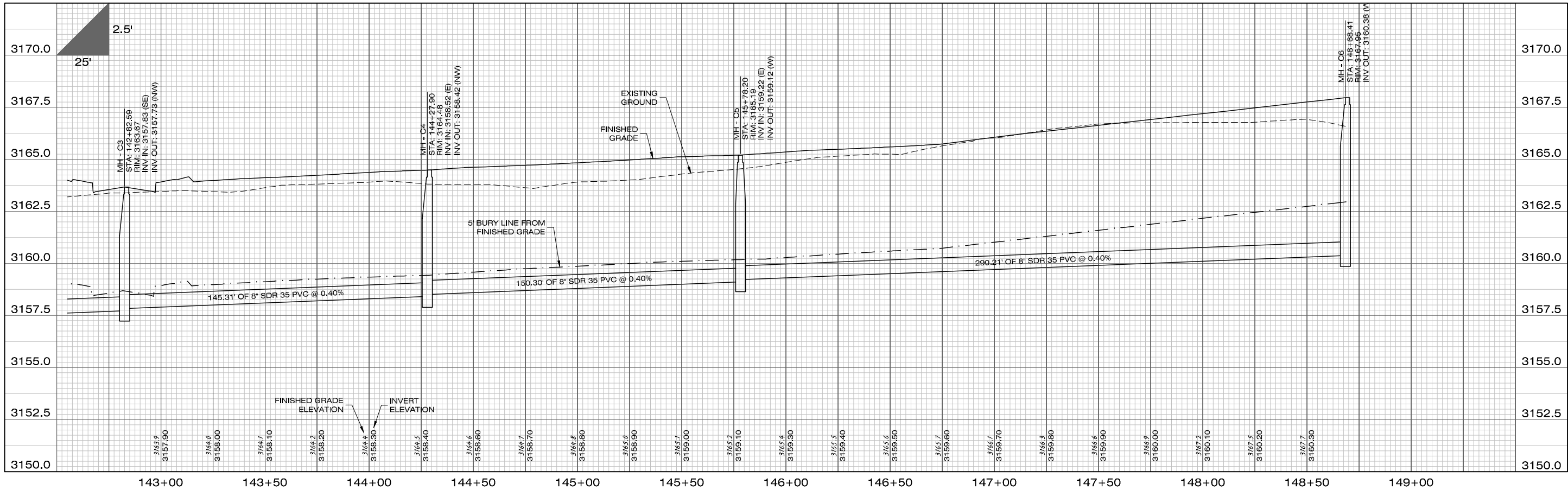
SHEET: 10 OF 25

SHEET TITLE: UTILITY CONSTRUCTION PLANS
SEWER PLAN AND PROFILE SHEET

STAGE 2



PLAN VIEW



PROFILE VIEW

1917 SOUTH AVE. W. STE. A
MISSOULA, MT 59801
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REVISIONS
STAGE 2 REVISIONS
STREET NAMES

DESIGNED: AM
DRAFTED: AM
CHECKED: JR
DATE: MAR. 2022

LOCATION:
TRACT D & E OF COS 6850
S 7, T13N., R19W., & S 12, T13N., R20W.
SXBTPQYEN NEIGHBORHOOD

PREPARED FOR:
EVERGREEN HOUSING
SOLUTIONS

PROJECT NO:
210000864

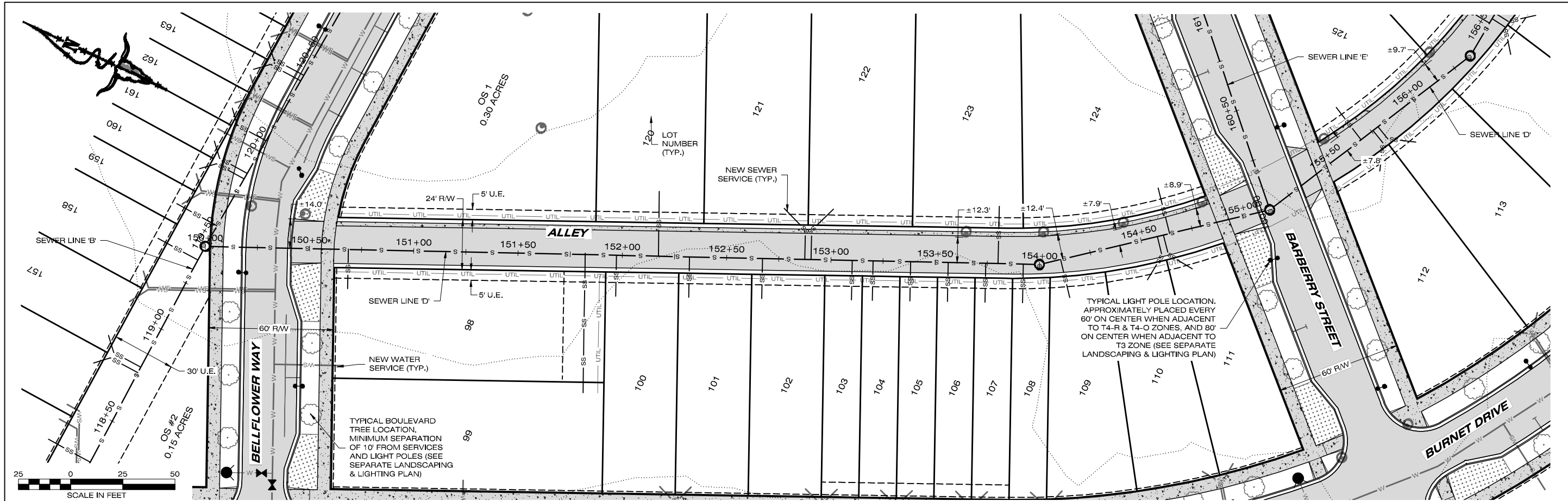
PROJECT NAME:
WEST END HOMES

SHEET:
11 OF 25

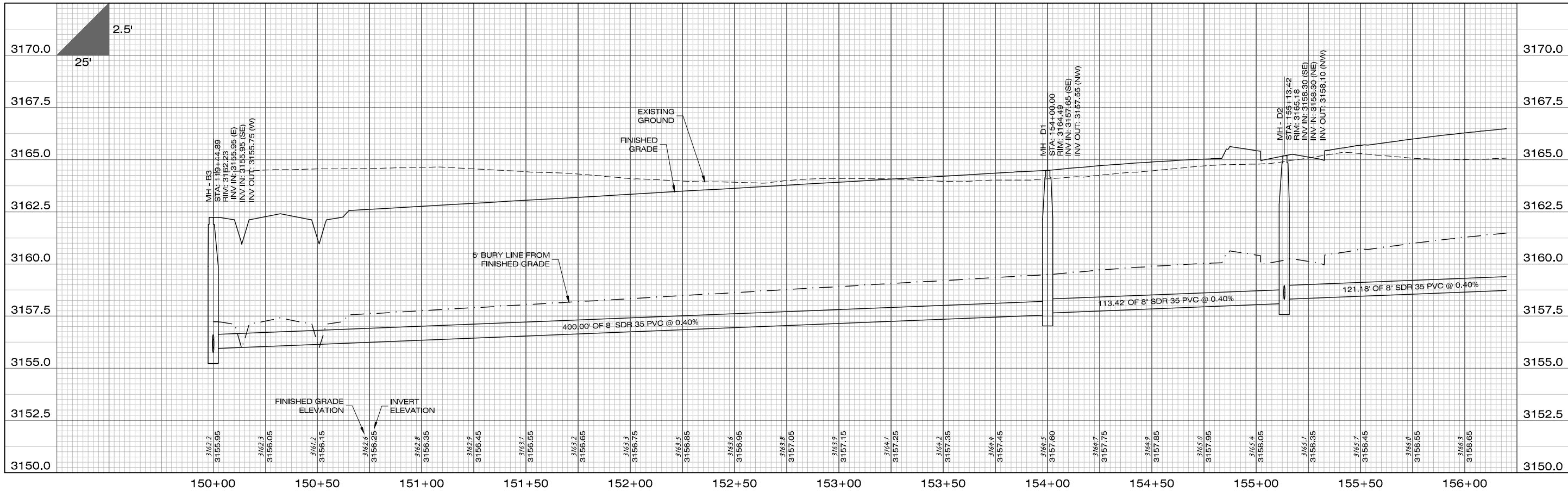
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UTILITY CONSTRUCTION PLANS
SEWER PLAN AND PROFILE SHEET

STAGE 2

DATE LOCATION: \\P001\PROJECTS\2021\210000864\DRAWINGS\UTILITY\SEWER\PLAN\TENTATIVE\SEWER-PLAN-0100864.DWG



PLAN VIEW



PROFILE VIEW

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DATE
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REVISIONS
STAGE 2 REVISIONS
STREET NAMES

DESIGNED: AM
DRAFTED: AM
CHECKED: JR
DATE: MAR. 2022

LOCATION: TRACT D & E OF COS 6850
S 7, T13N., R19W., & S 12, T13N., R20W.
SXBTPQYEN NEIGHBORHOOD

PREPARED FOR: EVERGREEN HOUSING SOLUTIONS

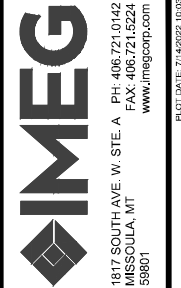
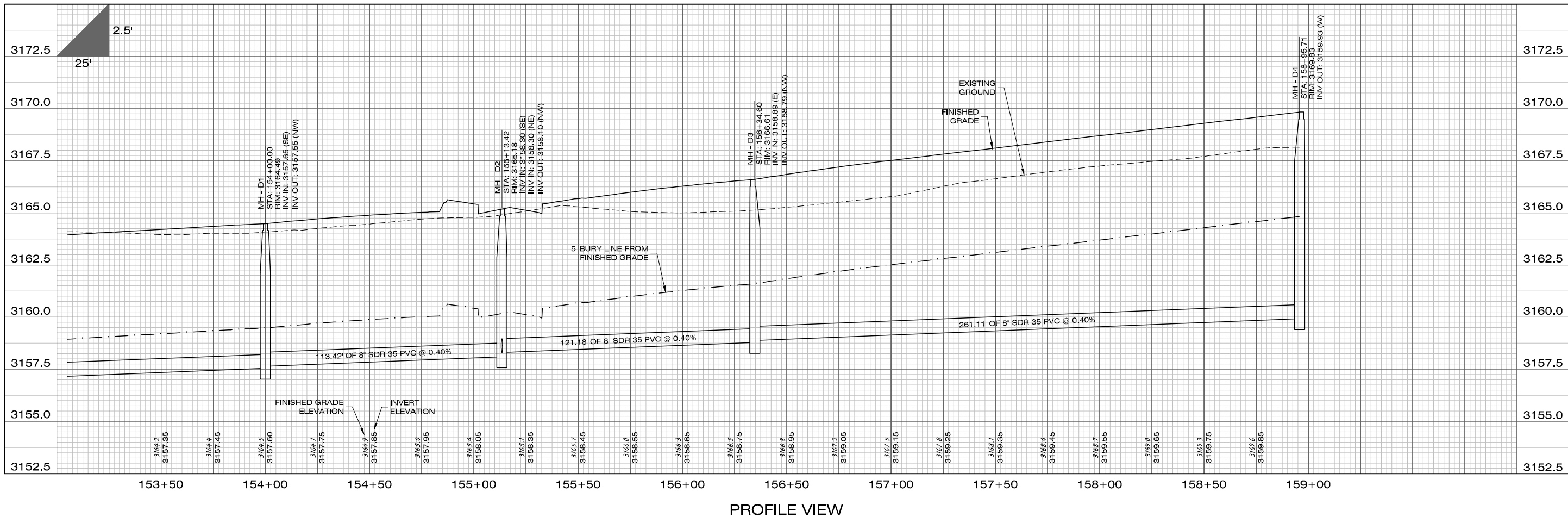
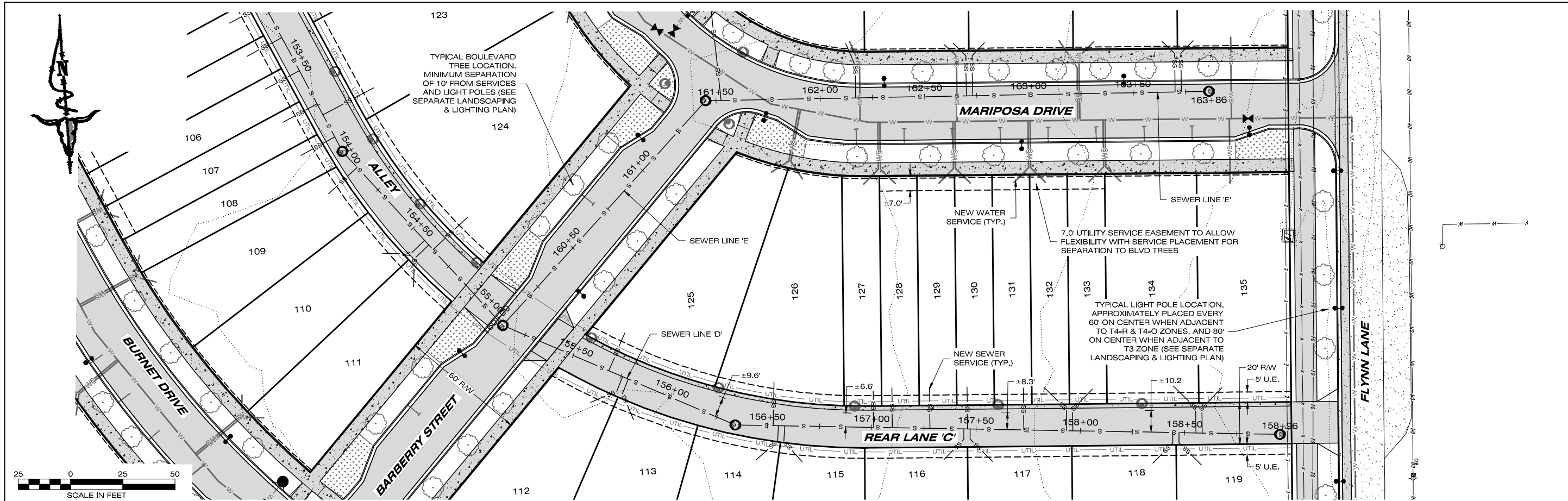
PROJECT NO:
210000864

PROJECT NAME:
WEST END HOMES

SHEET:
12 OF 25

SHEET TITLE:
UTILITY CONSTRUCTION PLANS
SEWER PLAN AND PROFILE SHEET

STAGE 2

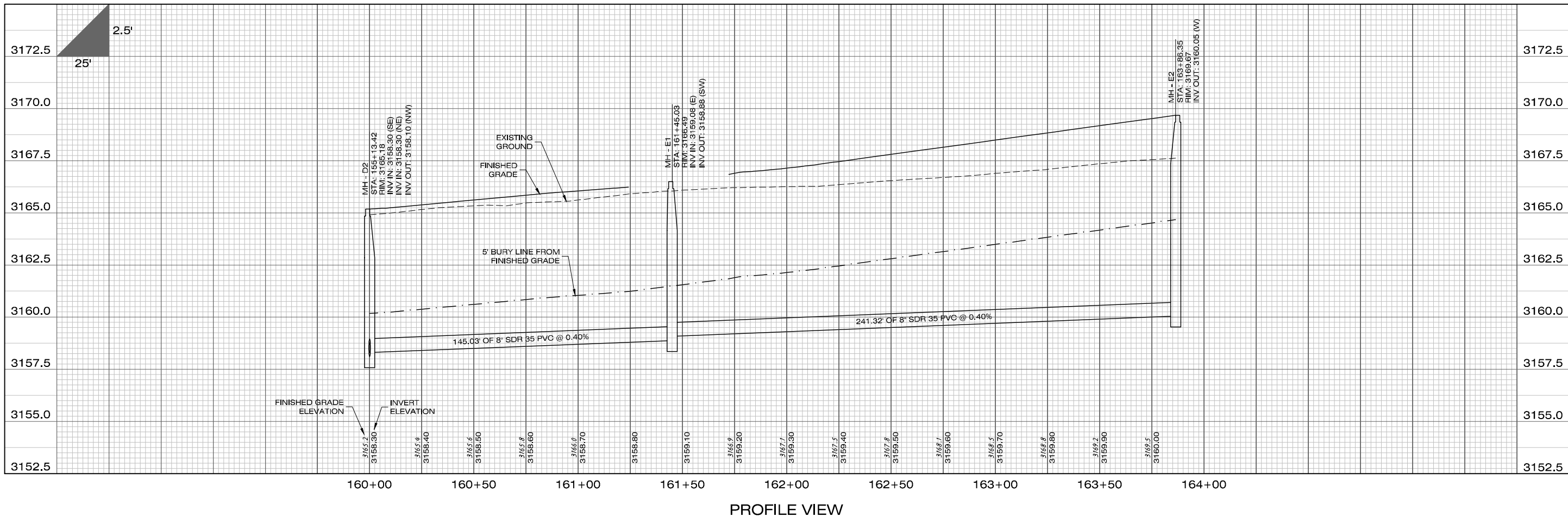
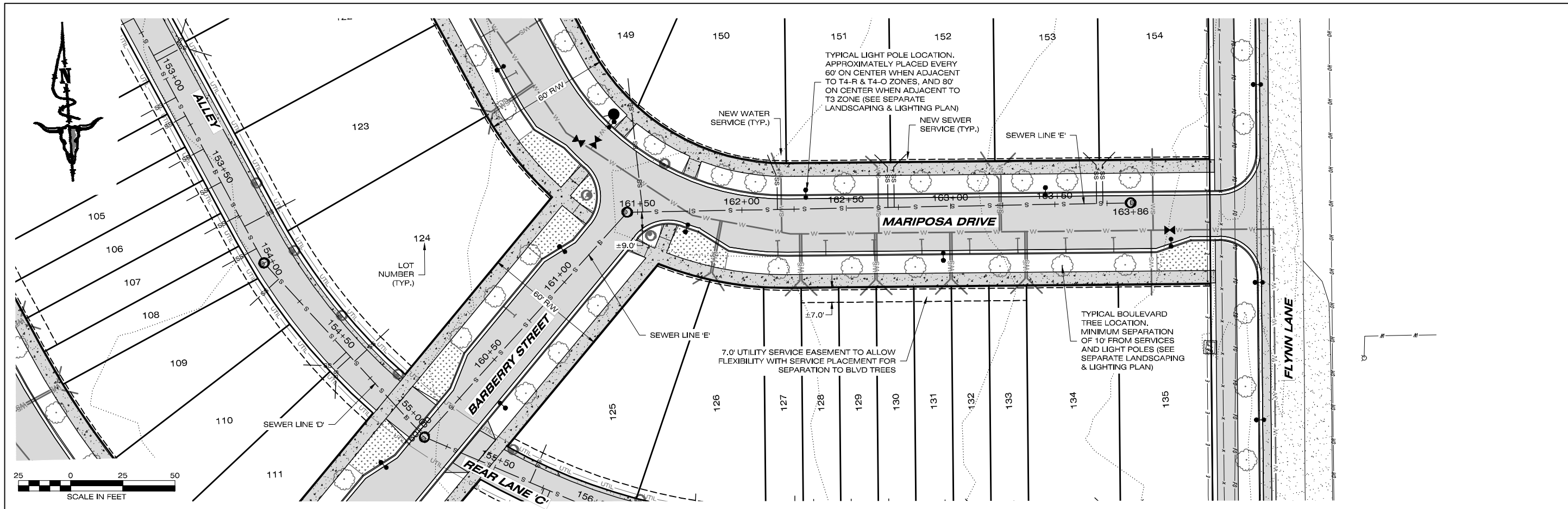


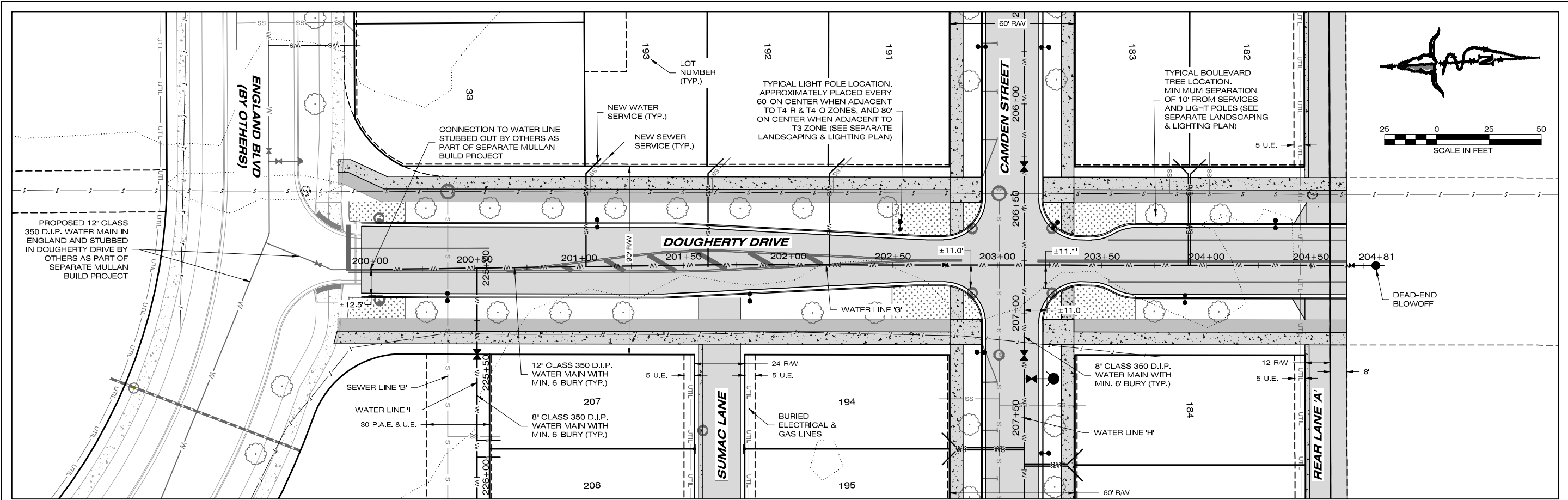
DATE	07/01/2022
REVISIONS	STAGE 2 REVISIONS
STREET NAMES	
DESIGNED:	AM
DRAFTED:	AM
CHECKED:	JR
DATE:	MAR. 2022

LOCATION:	TRACT D & E OF COS 6850 S 7, T13N., R19W., & S 12, T13N., R20W. S.W.TPQYEN NEIGHBORHOOD
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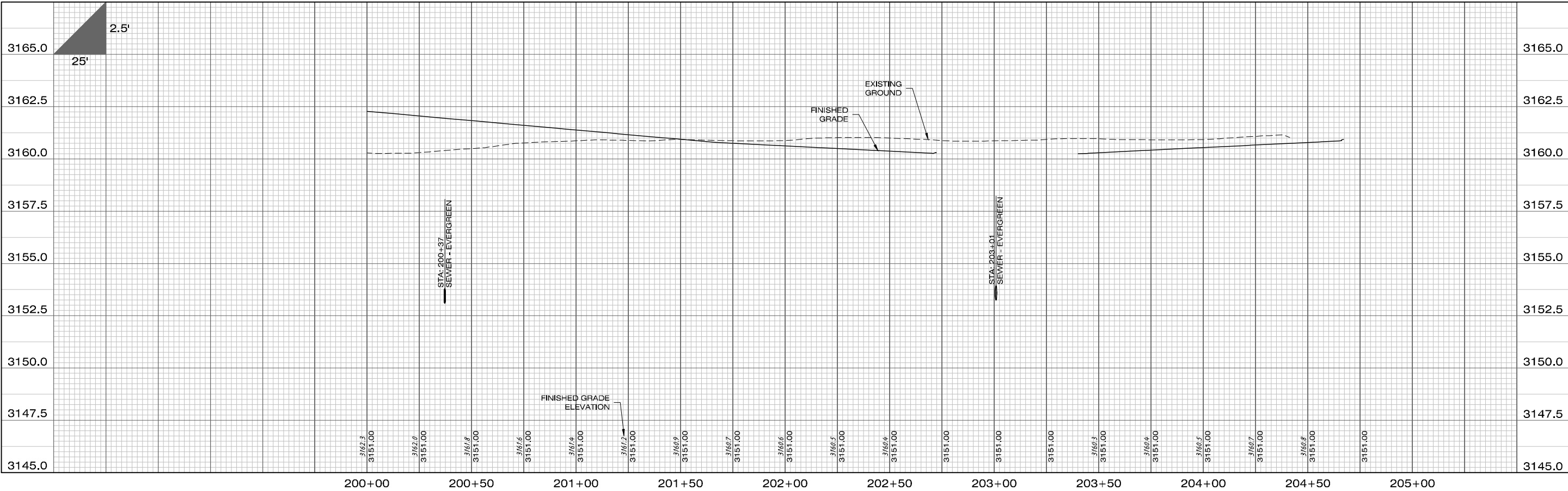
PROJECT NAME	WEST END HOMES
PROJECT NO.	21000864
SHEET TITLE:	UTILITY CONSTRUCTION PLANS
SHEET:	13 OF 25
SHEET:	SEWER PLAN AND PROFILE SHEET

STAGE 2





PLAN VIEW



PROFILE VIEW

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DATE	07/01/2022	DESIGNED:	AM
REVISIONS	STAGE 2 REVISIONS	DRAFTED:	AM
STREET NAMES	07/14/2022	CHECKED:	JR
		DATE:	MAR. 2022

LOCATION: TRACT D & E OF COS 6850 S 7, T13N., R19W., & S 12, T13N., R20W. SXXWTPQYEN NEIGHBORHOOD

PREPARED FOR: EVERGREEN HOUSING SOLUTIONS

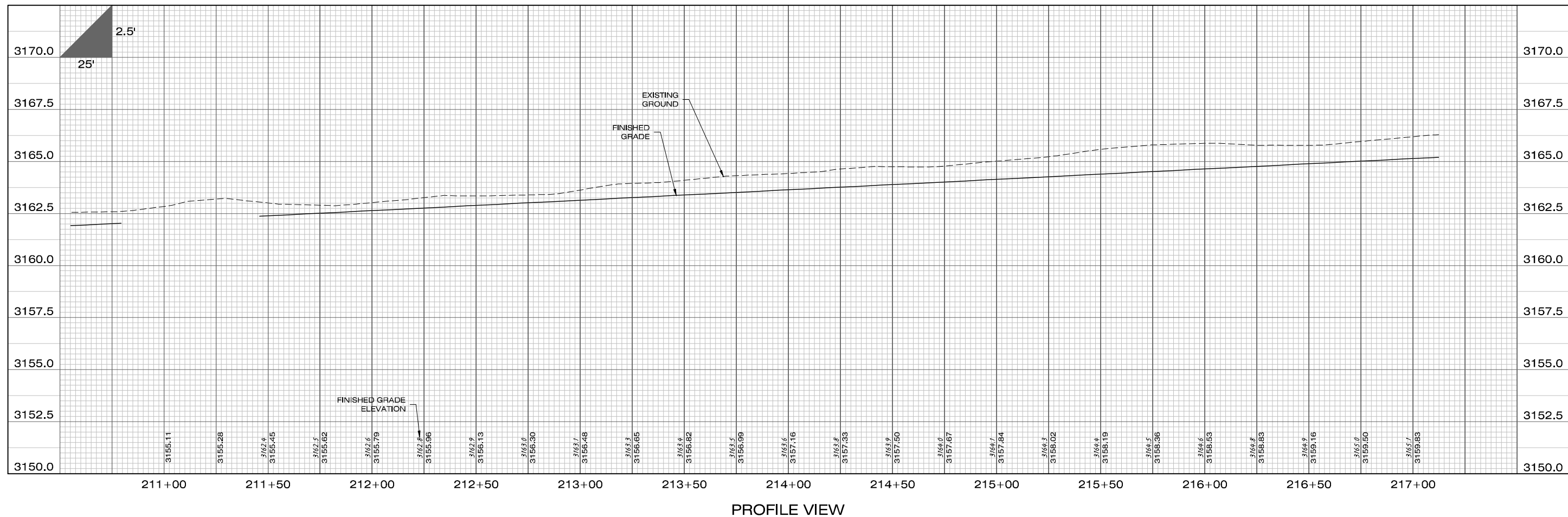
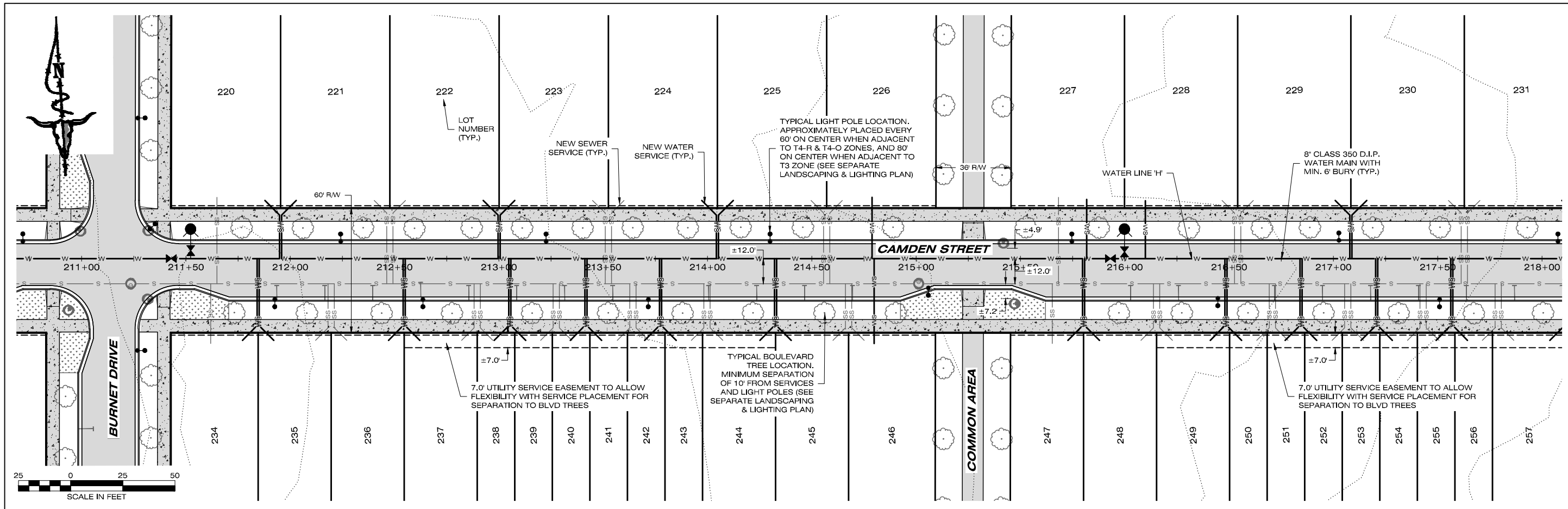
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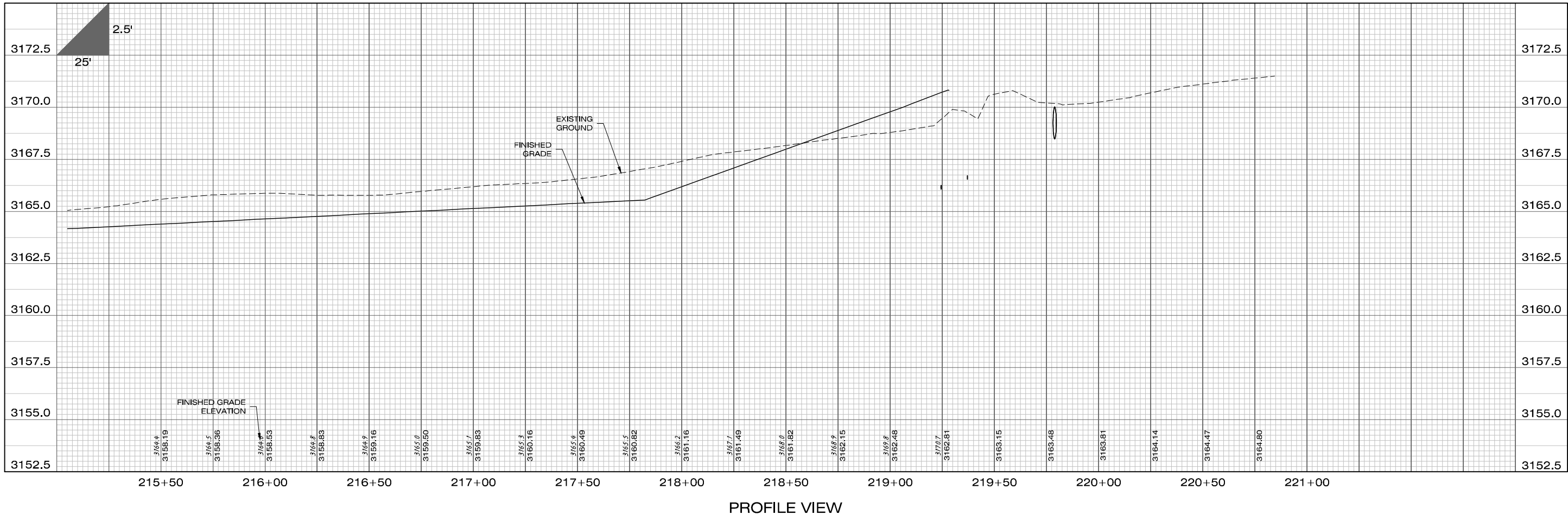
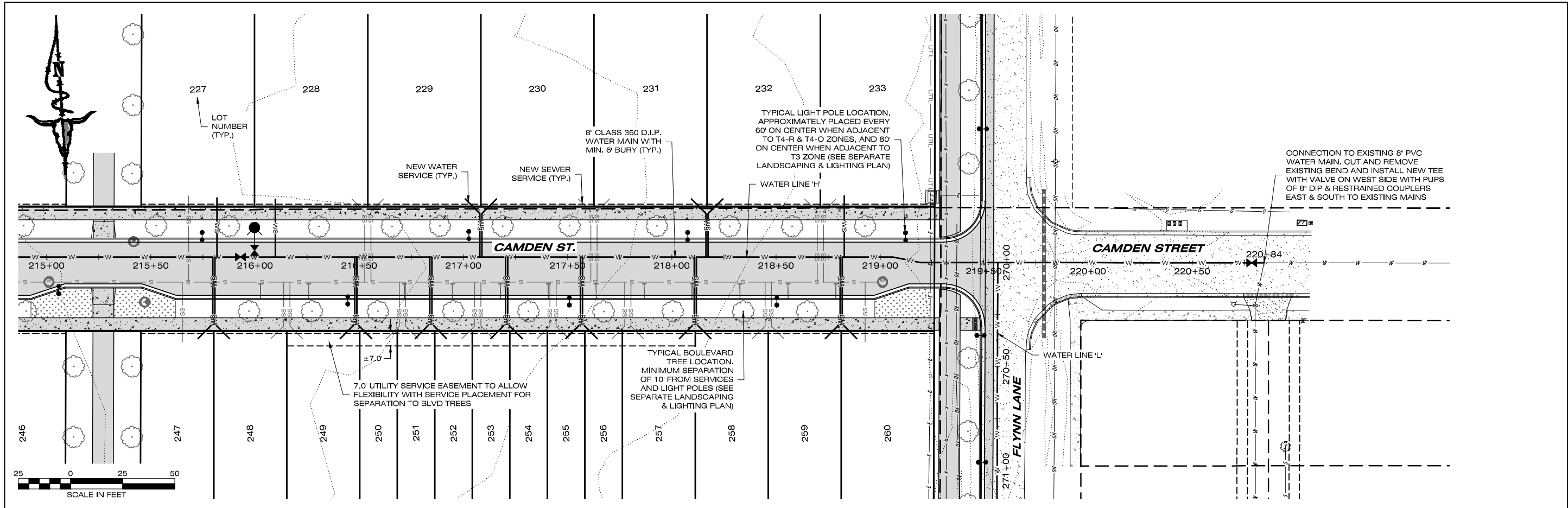
PROJECT NO: 210000864

SHEET: 15 OF 25

SHEET TITLE: UTILITY CONSTRUCTION PLANS WATER PLAN AND PROFILE SHEET

STAGE 2





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REVISIONS: STAGE 2 REVISIONS

DESIGNED: AM

DRAFTED: AM

CHECKED: JR

DATE: MAR. 2022

LOCATION: TRACT D & E OF COS 6850 S 7, T13N., R19W., & S 12, T13N., R20W. S 7, T13N., R19W., & S 12, T13N., R20W. SWWTPQYEN NEIGHBORHOOD

PREPARED FOR: EVERGREEN HOUSING SOLUTIONS

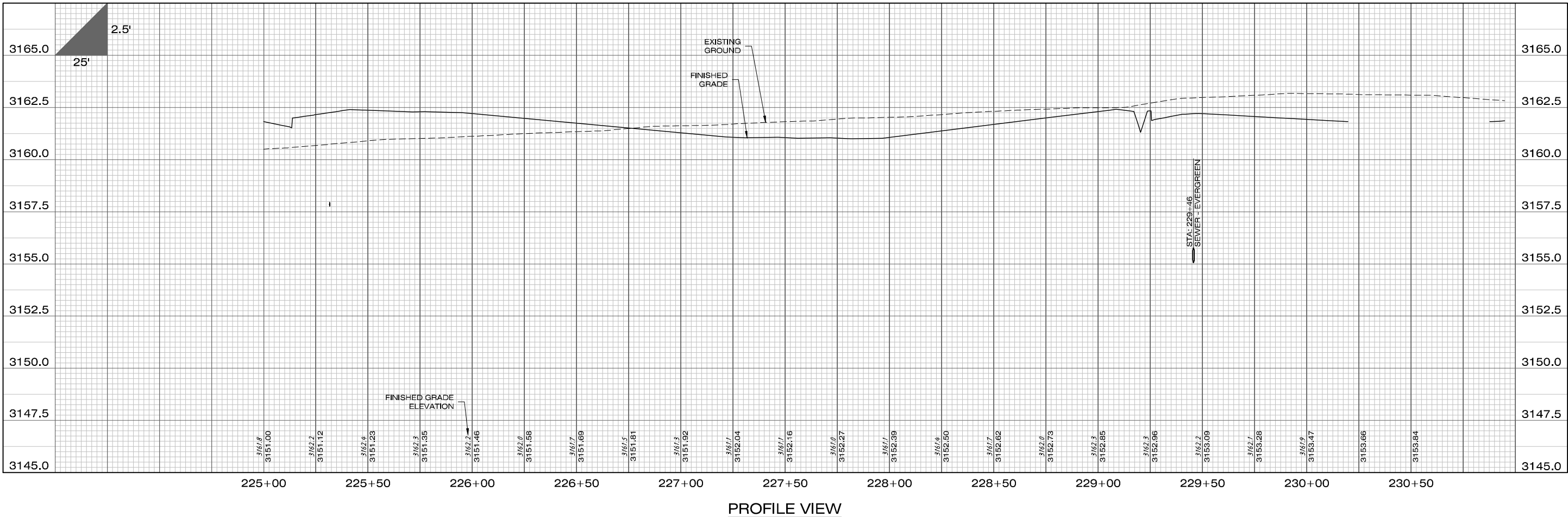
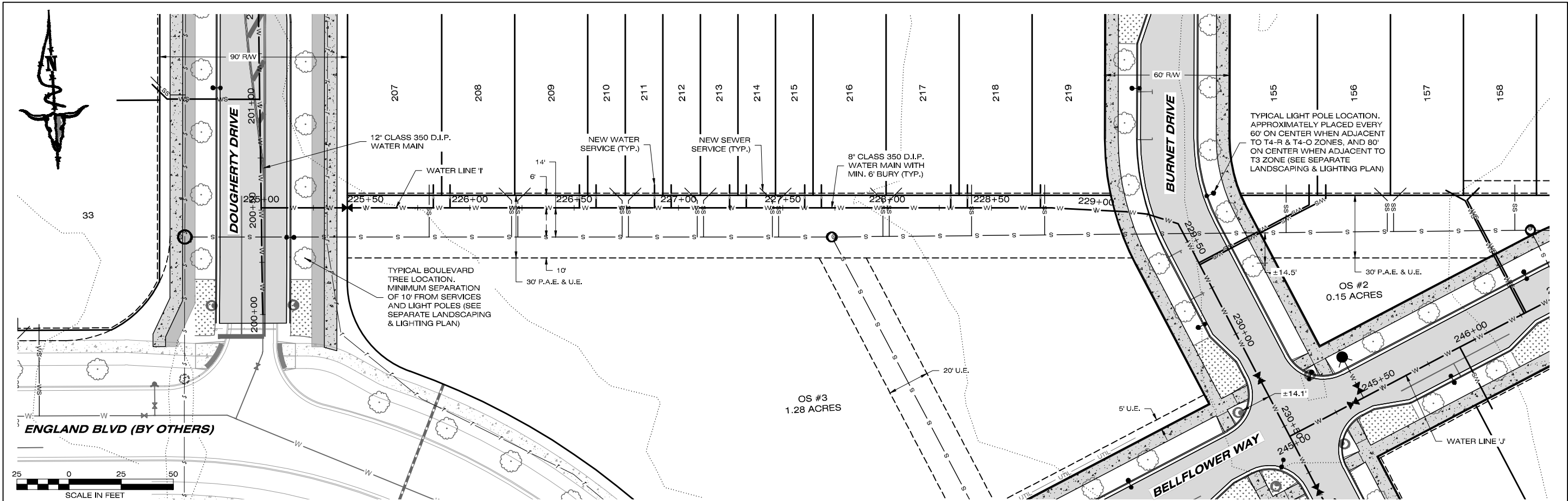
PROJECT NAME: WEST END HOMES

PROJECT NO: 210000864

SHEET: 18 OF 25

SHEET TITLE: UTILITY CONSTRUCTION PLANS WATER PLAN AND PROFILE SHEET

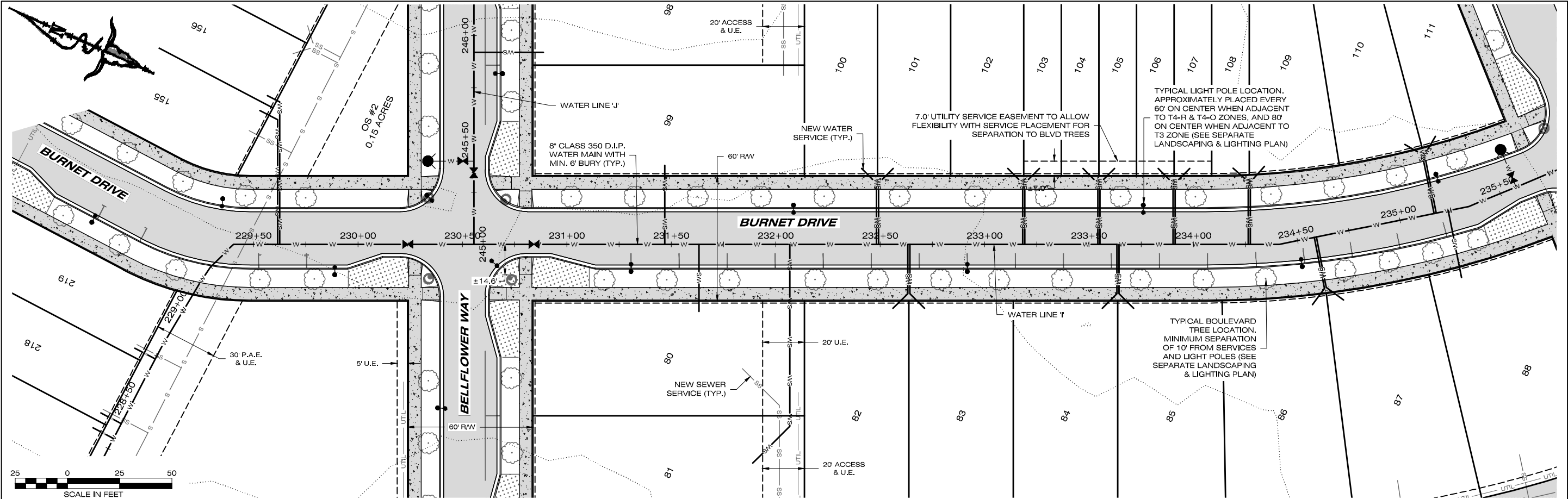
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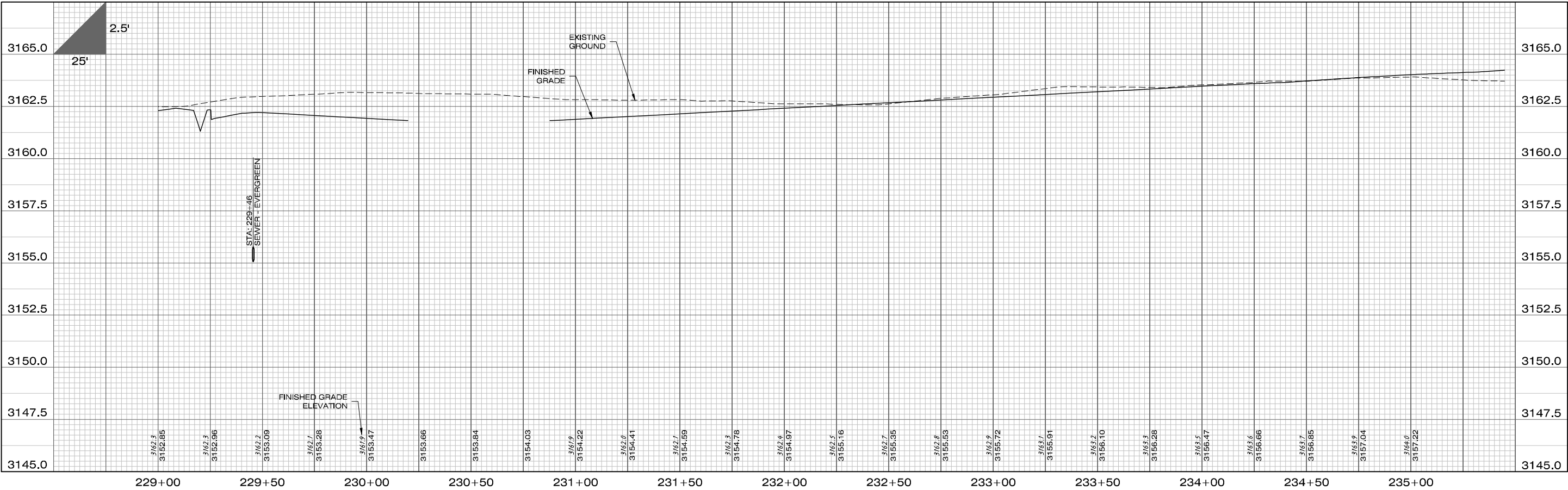
1917 SOUTH AVE. W. STE. A PH: 408.771.0142
MISSOULA, MT FAX: 408.771.5224
www.imegcorp.com 59801

DATE	07/01/2022
REVISIONS	STAGE 2 REVISIONS
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CHECKED:	JR
DATE:	MAR. 2022

LOCATION: TRACT D & E OF COS 6850
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PLAN VIEW



PROFILE VIEW

IMEG

1917 SOUTH AVE. W. STE. A
MISSOULA, MT 59801
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DATE
07/01/2022

REVISIONS
STAGE 2 REVISIONS
STREET NAMES

DESIGNED: AM
DRAFTED: AM
CHECKED: JR
DATE: MAR. 2022

LOCATION:
TRACT D & E OF COS 6850
S 7, T13N., R19W., & S 12, T13N., R20W.
SIXTYPQYEN NEIGHBORHOOD

PREPARED FOR:
EVERGREEN HOUSING
SOLUTIONS

PROJECT NAME
WEST END HOMES

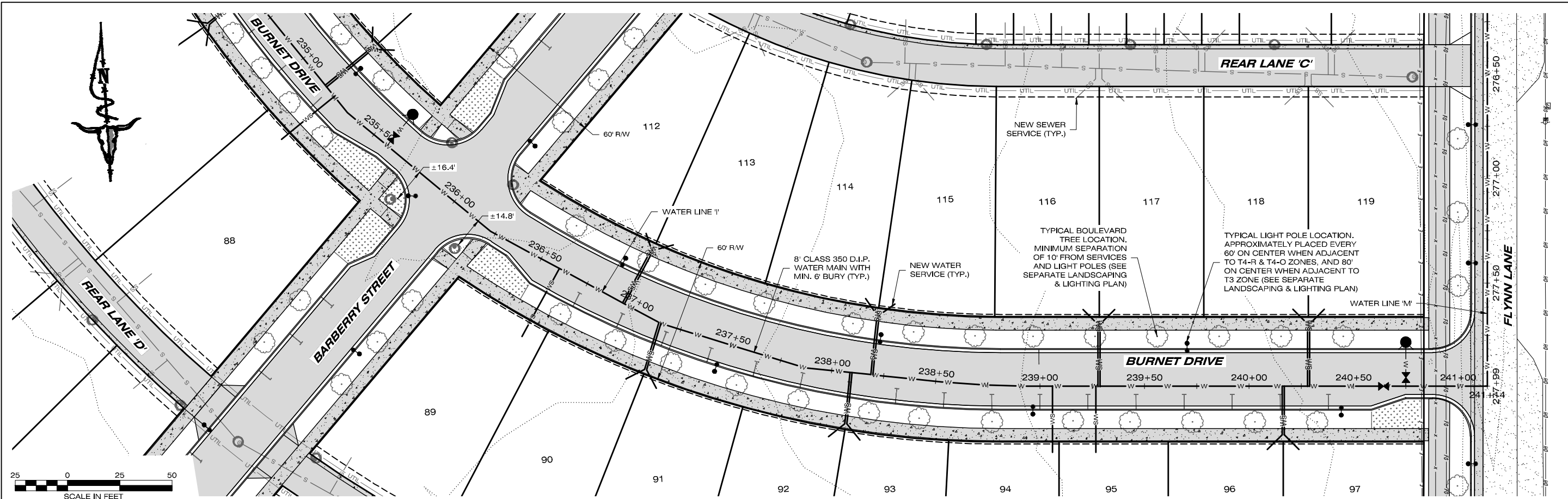
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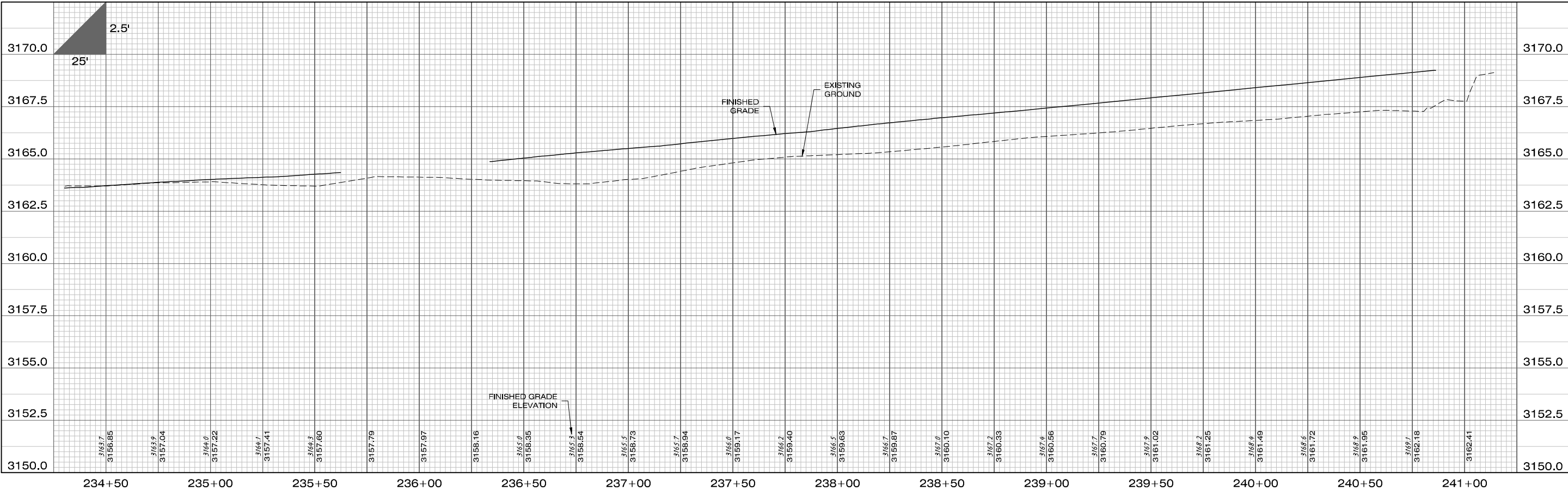
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STAGE 2

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PLAN VIEW



PROFILE VIEW

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S 7, T13N., R19W., & S 12, T13N., R20W.

PREPARED FOR: EVERGREEN HOUSING SOLUTIONS

PROJECT NO: 21000864

PROJECT NAME: WEST END HOMES

SHEET: 21 OF 25

SHEET TITLE: UTILITY CONSTRUCTION PLANS
WATER PLAN AND PROFILE SHEET

STAGE 2

DATE: 07/01/2022

REVISIONS: STAGE 2 REVISIONS

DESIGNED: AM

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CHECKED: JR

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PREPARED FOR: EVERGREEN HOUSING SOLUTIONS

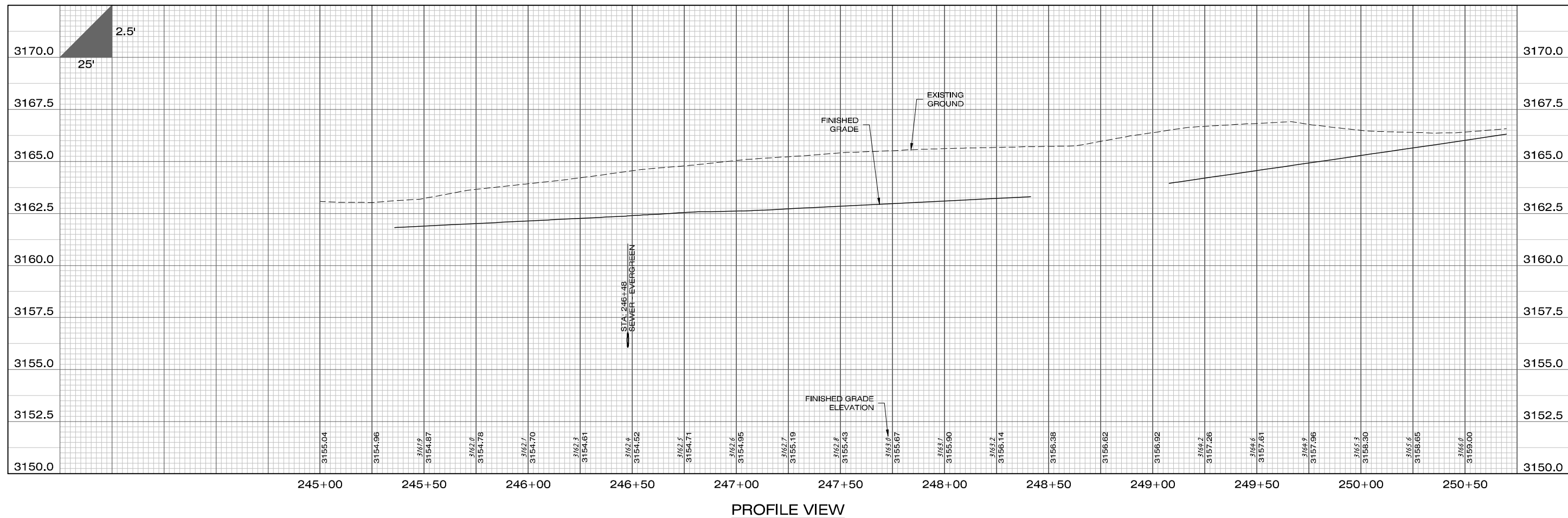
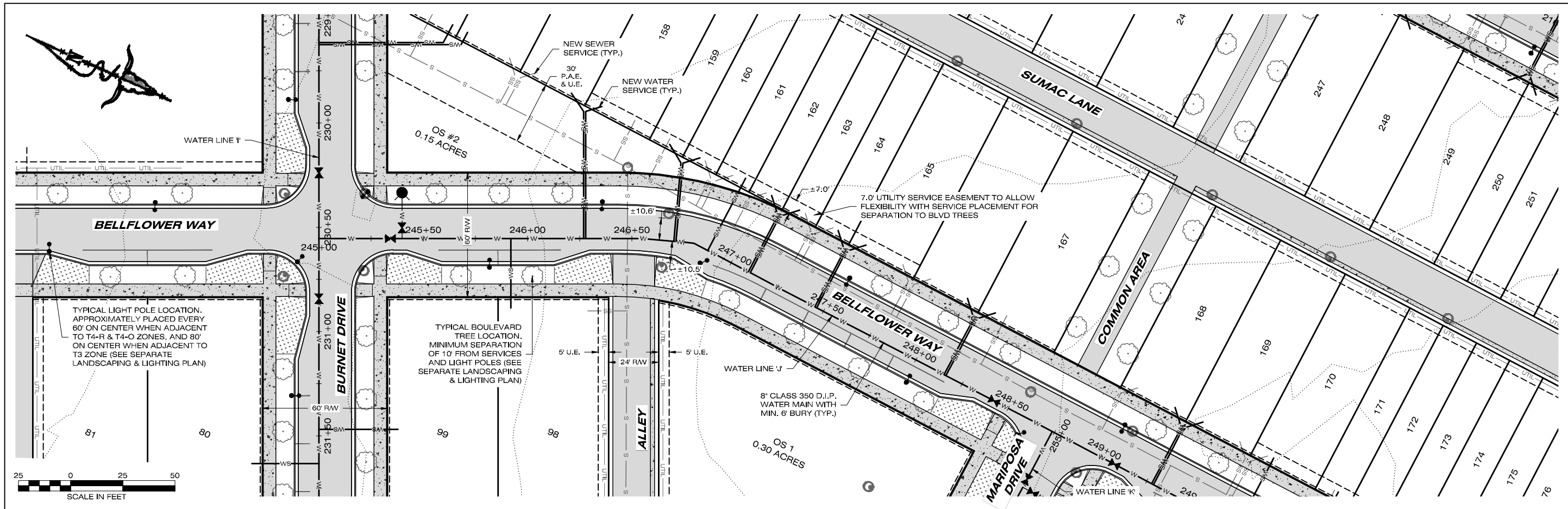
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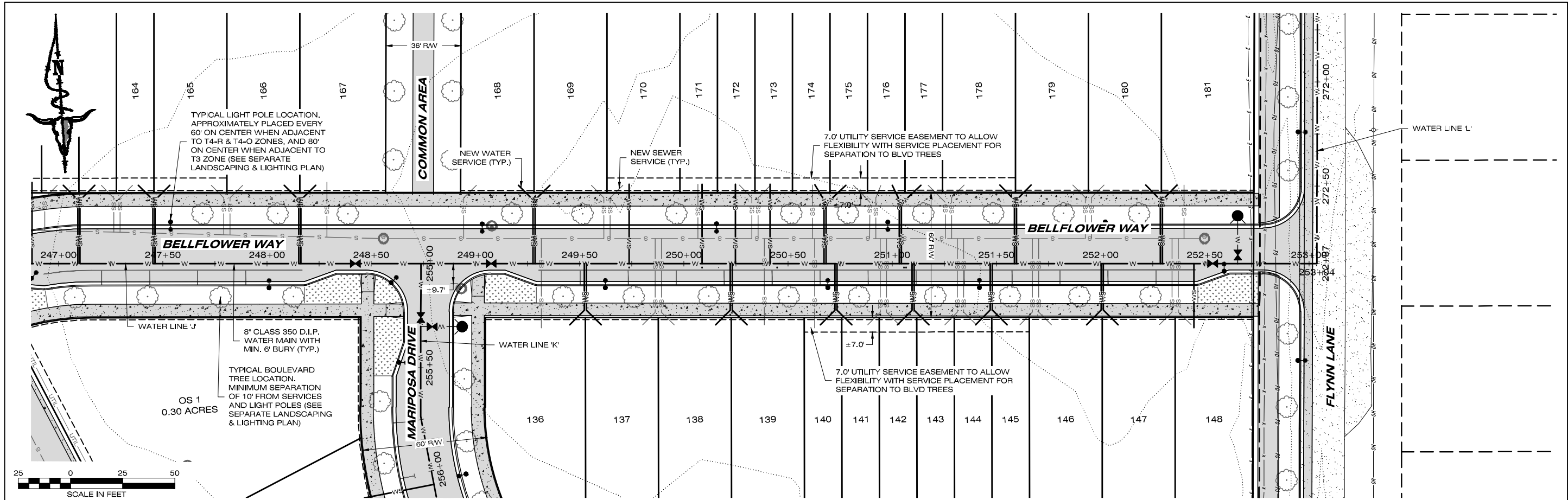
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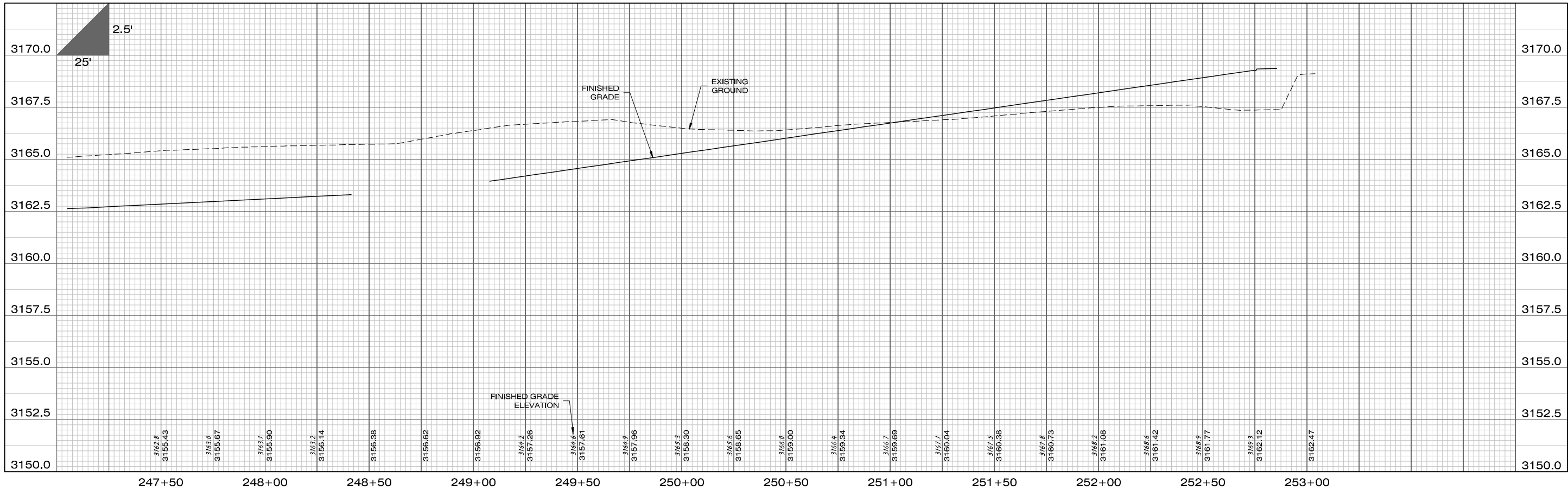
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WATER PLAN AND PROFILE SHEET

STAGE 2





PLAN VIEW



PROFILE VIEW

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REVISIONS:
STAGE 2 REVISIONS
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CHECKED: JR
DATE: MAR. 2022

LOCATION: TRACT D & E OF COS 6850
S 7, T13N., R19W., & S 12, T13N., R20W.
SXBTPQYEN NEIGHBORHOOD

PREPARED FOR: EVERGREEN HOUSING SOLUTIONS

PROJECT NO: 210000864

PROJECT NAME: WEST END HOMES

SHEET: 23 OF 25

SHEET TITLE: UTILITY CONSTRUCTION PLANS
WATER PLAN AND PROFILE SHEET

STAGE 2

DATE: 07/01/2022

REVISIONS:
STAGE 2 REVISIONS
STREET NAMES

DESIGNED: AM
DRAFTED: AM
CHECKED: JR
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LOCATION: TRACT D & E OF COS 6850
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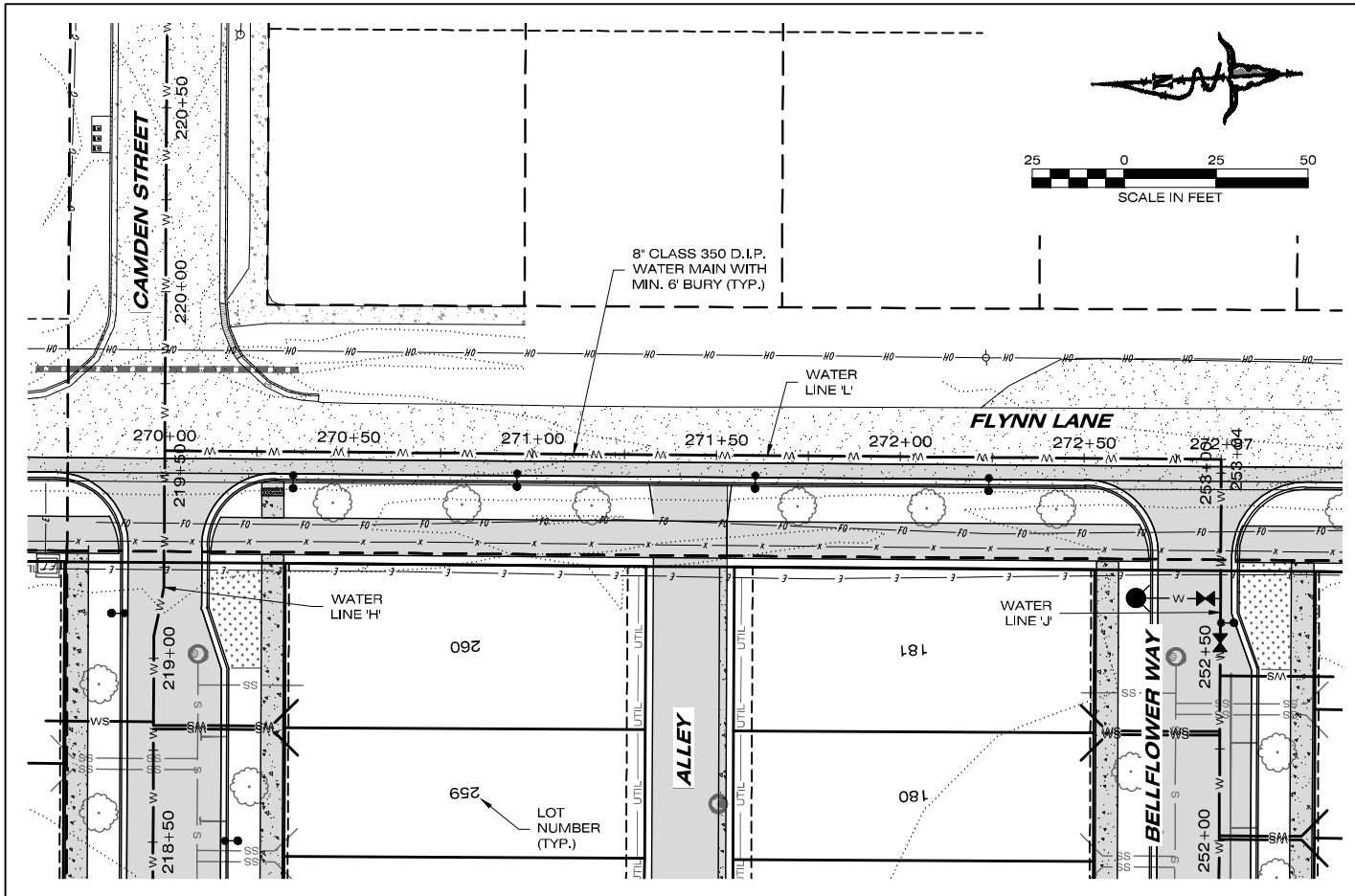
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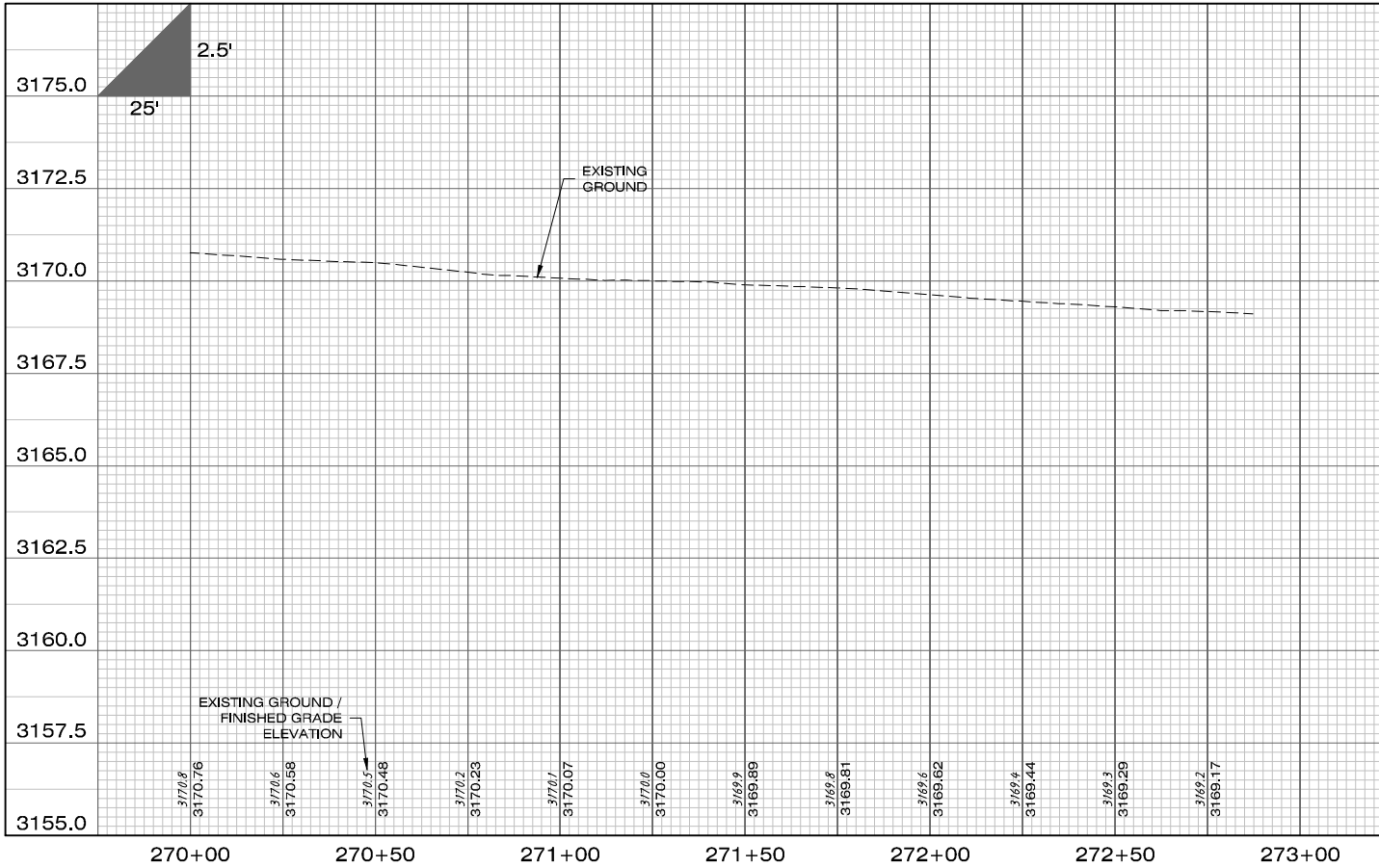
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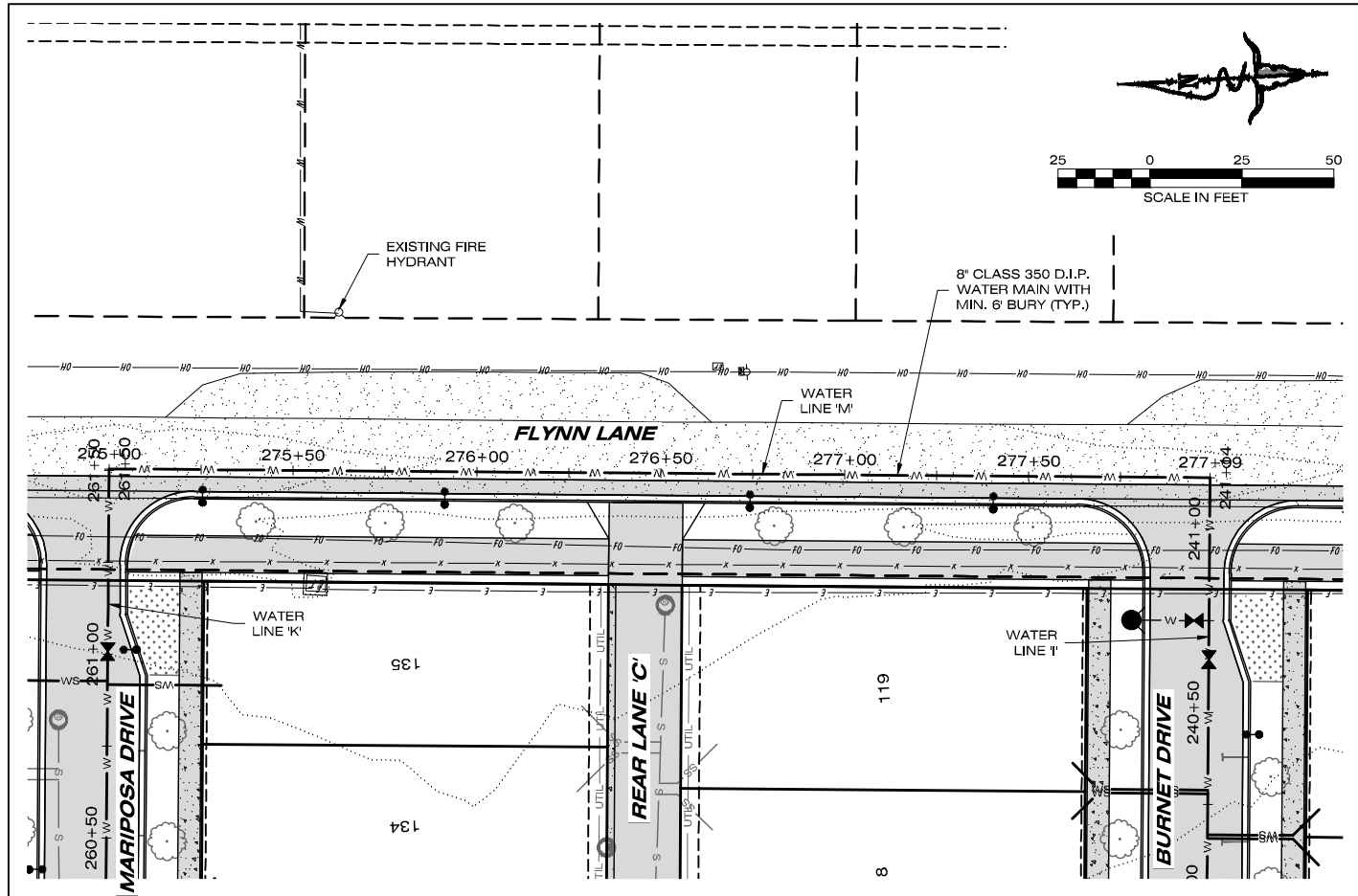
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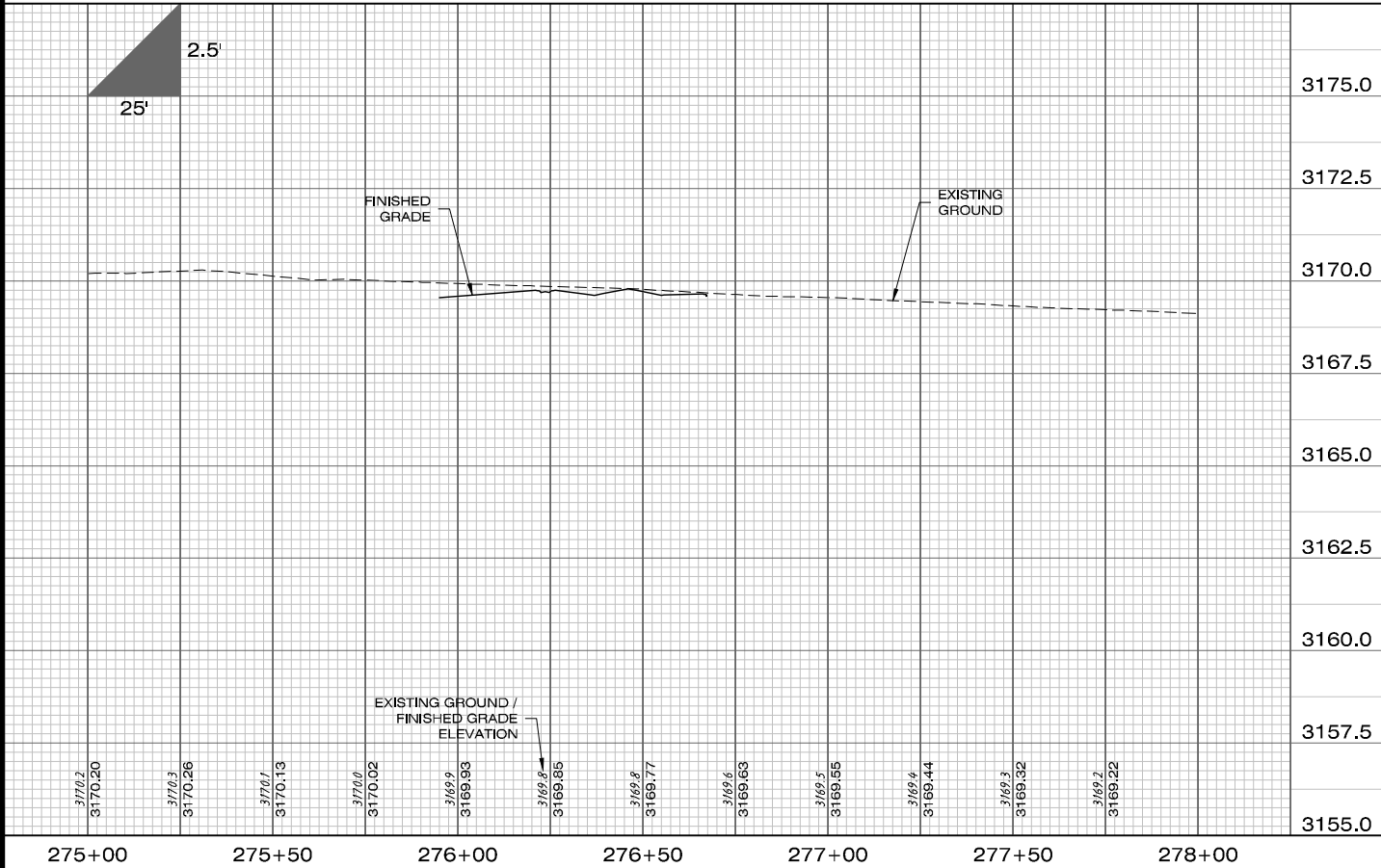
PLAN VIEW - WATER LINE 'L'



PROFILE VIEW - WATER LINE 'L'



PLAN VIEW - WATER LINE 'M'



PROFILE VIEW - WATER LINE 'M'

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DATE: 07/01/2022

REVISIONS: 07/14/2022

STAGE 2 REVISIONS: 07/14/2022

DESIGNED: AM

DRAFTED: AM

CHECKED: JR

DATE: MAR. 2022

LOCATION: TRACT D & E OF COS 6850
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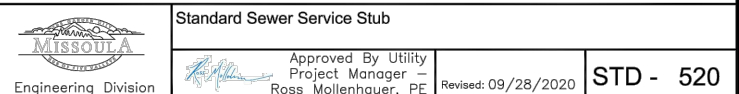
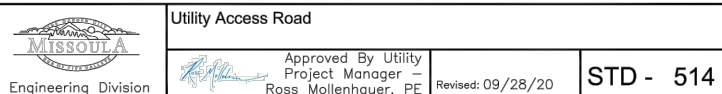
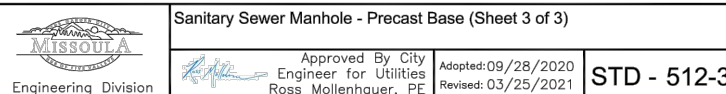
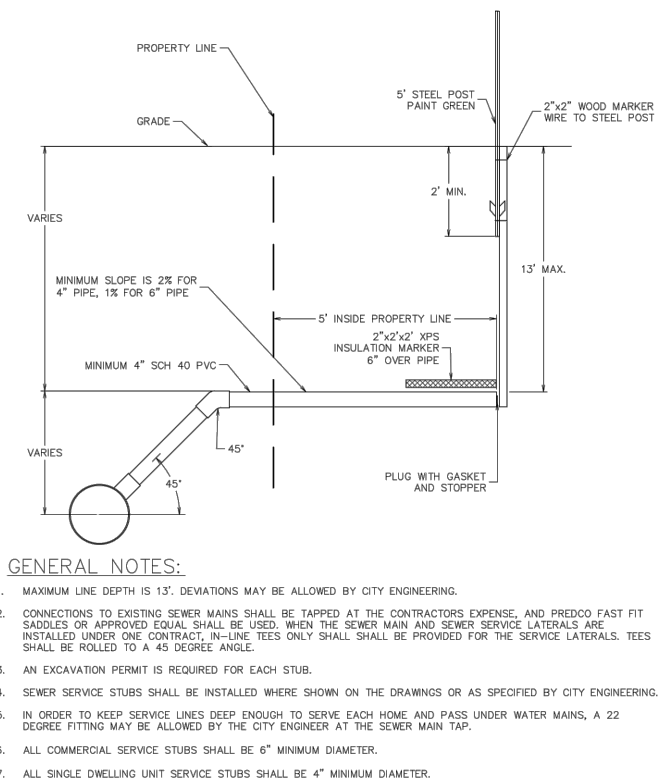
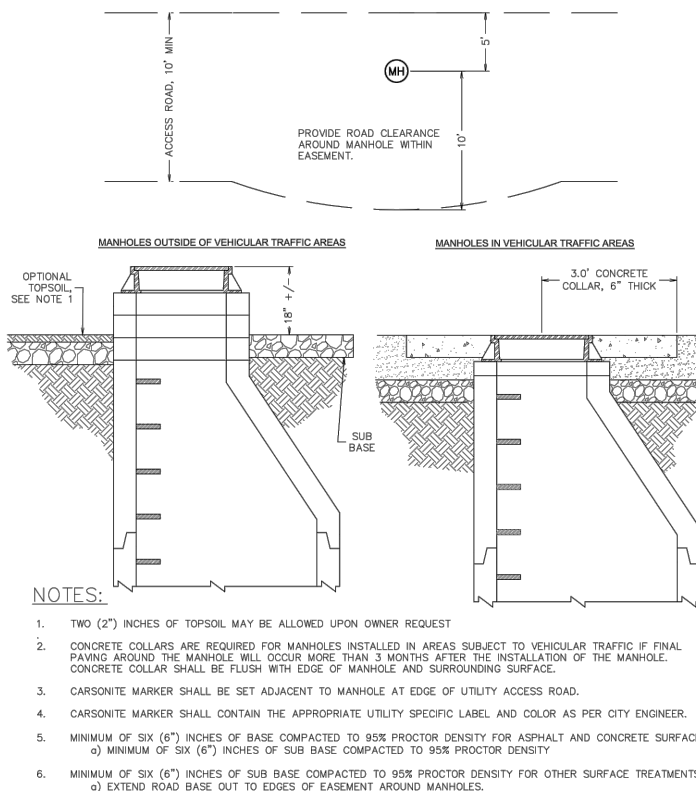
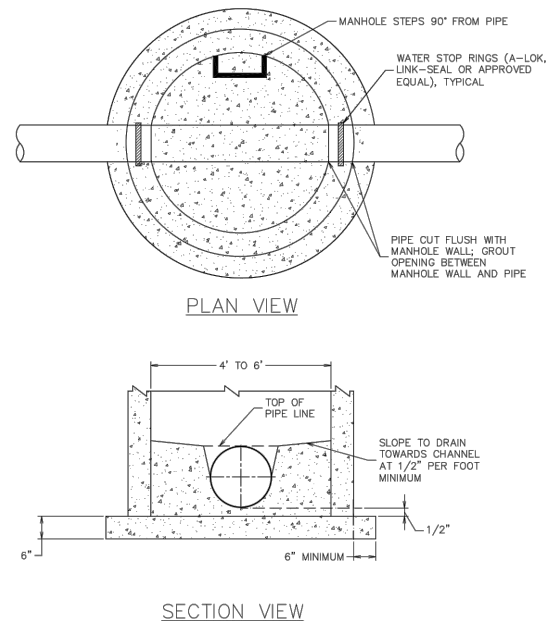
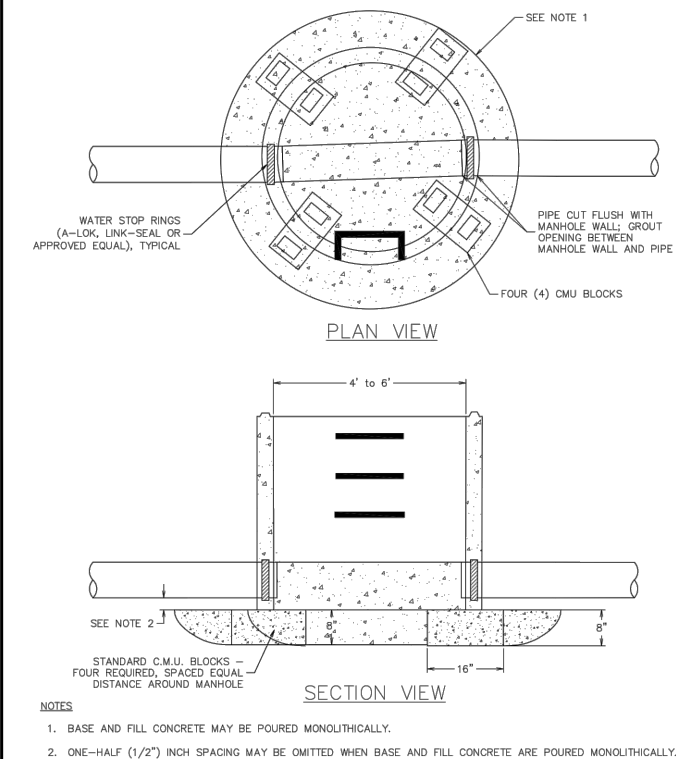
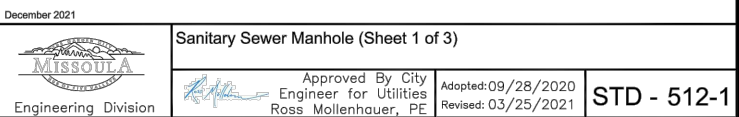
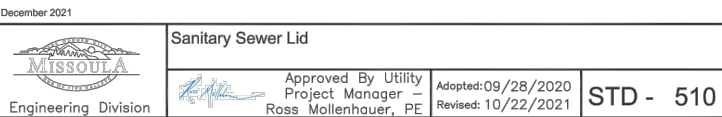
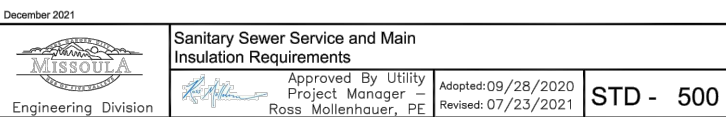
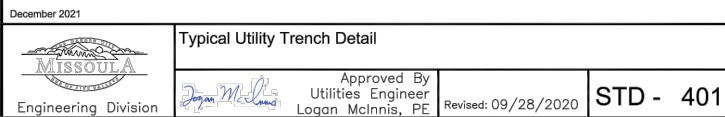
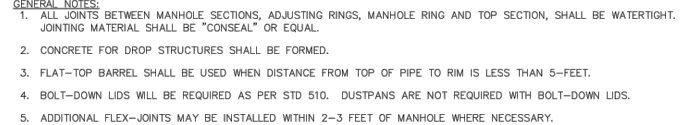
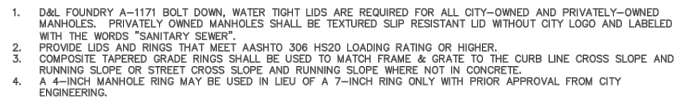
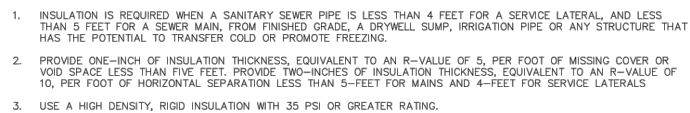
PROJECT NAME: WEST END HOMES

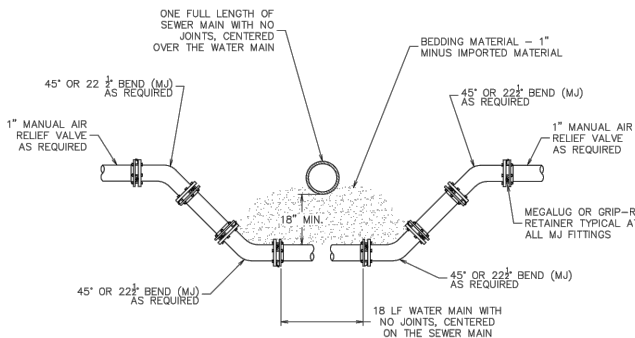
PROJECT NO: 21000864

SHEET: 25 OF 25

SHEET TITLE: UTILITY CONSTRUCTION PLANS
WATER PLAN AND PROFILE SHEET

STAGE 2





CURB BOX CAN ONLY BE INSTALLED UNDER EXISTING OR ANTICIPATED FUTURE SIDEWALKS OR DRIVEWAYS IF APPROVED BY CITY UTILITY ENGINEER. IF APPROVED, THE CURB BOX MUST BE COVERED WITH A ROAD BOX FLUSH WITH THE CONCRETE SURFACE.

#14 BLUE SOLID COATED TRACER WIRE ALONG OUTSIDE OF CURB BOX. LEAVE 12" OF SLACK AND WRAP AROUND TOP OF BOX.

CURB BOX TO BE INSTALLED PLUMB AND CENTERED OVER CURB VALVE. CURB BOX SHALL BE MUELLER, FORD, OR AT MC DONALD, CAST IRON EXTENSION TYPE CURB BOX WITH MINNEAPOLIS PATTERN BASE AND 1/2" MINIMUM INSIDE DIA AND 1/2" MINIMUM INSIDE DIA AND PENTAGON PLUG.

MUELLER 300 SERIES BALL VALVE OR FORD FB-400 SERIES CORPORATION VALVE WITH 1" CC THREAD INLET AND 1 P. THREAD OUTLET.

TAPPING SADDLE ON WATER MAIN.

TRACER WIRE SHALL BE SECURED TO MAINLINE TRACER BY ATTACHING TO CORROSION STOP WHERE NO MAINLINE TRACER WIRE EXISTS. WHERE ATTACHED TO CORP. WRAP TRACER AROUND MAINLINE SEVERAL TIMES AND SECURE WITH ELECTRICAL TAPE.

1" MINIMUM CLASS 250 OR 1/2 P E SERVICE LINE.

NOTE: A. INSTALL CURB BOX IN MIDDLE OF BOULEVARD WHERE APPLICABLE OR 2' FROM EDGE OF RIGHT-OF-WAY.

INSTALL METER PIT AND CURB BOX FLUSH WITH FINISH GRADE.

RIGHT-OF-WAY LINE.

6" REBAR.

LEAVE SLACK TRACE WIRE INSIDE TOP OF PIT.

METER PIT SHALL BE THERMA COIL, FORD F-100 OR AT MC DONALD CON PITESTER WITH COM SIDE-LOOKING LID. PIT 3/4" METERS SHALL BE PVC AND SHALL INCLUDE INSULATION BLANKET PITS FOR 1" METERS 18" PVC. PITS SHALL FULL PORT ANGLE BALL VALVES ON INLET AND LID SHALL INCLUDE E PRE-DRILLED HOLE PLUG OR A LOCATION DESIGNED TO BE EASILY DRILLED OUT TO ACCOMMODATE A RADIO FREQUENCY TRANSMITTER WITH A ANTENNA OF 18". PIT SHALL BE PROVIDED WITH AN ANTI-BASE. PIT SHALL BE FLUSH WITH FINISHED ELEVATION, INCLUDING OF EXTENSIONS WHERE NECESSARY. CONTRACTOR SHALL ALSO INSTALL MINIMUM 6" LENGTH OF REBAR VERTICALLY ADJACENT TO THE METER PIT WITH FINISHED CONCRETE SURFACE.

METER PIT SHALL BE SUPPORTED BY A MINIMUM OF 3 EVENLY SPACED CONCRETE BLOCKS OR BRICK.

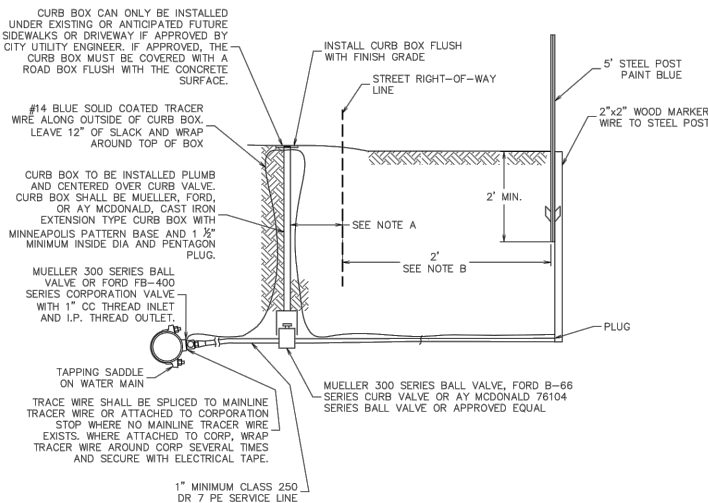
EXTEND TRACE WIRE THROUGH BASEMENT FLOOR AND LEAVE 10" SLACK IN HOUSE.

MUELLER 300 SERIES BALL VALVE, FORD B-66 SERIES CURB VALVE, OR AT MC DONALD 76104 SERIES BALL VALVE OR APPROVED EQUAL.

GENERAL NOTES:

1. WATER SERVICES SHALL BE BURIED A MINIMUM OF 6" DEEP.
2. THIS DETAIL APPROPRIATE FOR 3/4" OR 1" METERS. CONTRACT CITY UTILITY ENGINEER FOR RESIDENTIAL METERS LARGER THAN 1". IRRIGATION METERS LARGER THAN 1" MUST BE INSTALLED IN A CONCRETE PIT PER STD-412 OR OTHER APPROVED DRAWING.
3. PLASTIC METER PITS ARE NOT TRAFFIC RATED. METER PITS ARE NOT ALLOWED IN SIDEWALKS OR IN A TRAFFIC AREA UNLESS APPROVED BY THE CITY UTILITY ENGINEER. IF APPROVED BY THE CITY UTILITY ENGINEER, INSTALLATION SHALL HAVE A FLUSH MOUNTED, TRAFFIC RATED CASTING INSTALLED OVER THE PIT. THE CASTING DIA SHALL BE AT LEAST 3" LARGER THAN THE METER PIT. THE METER TRANSMITTER SHALL BE INSTALLED ON THE BUILDING WALL WITH A 1/2" CONDUIT BETWEEN THE PIT AND THE WALL.
4. NO OBSTRUCTIONS SHALL BE PLACED WITHIN A MIN 4" RADIUS AROUND THE METER PIT TO ENSURE ACCESS TO THE PIT.
5. NO PRVS, CHECK VALVES, OR BACKFLOW DEVICES ALLOWED IN METER PIT.
6. IF THE METER PIT IS NOT FRONT STREET SPECIFIC, THE METER PIT SHALL BE A DESIGN DRAWING. THE OWNER IS RESPONSIBLE TO COMPLY WITH ALL APPLICABLE BUILDING CODES. THIS DETAIL MAY CHANGE AT ANY TIME AND IT IS THE OWNER'S RESPONSIBILITY TO OBTAIN THE MOST CURRENT VERSION OF THIS AND OTHER CITY REQUIREMENTS.
7. IF PROPERTY DOES NOT FRONT A STREET WITH A WATER MAIN, CONTACT CITY FOR SPECIFIC REQUIREMENTS RELATED TO CASSINGS AND METER.
8. WHERE NEW WATER SERVICE LINE TRANSITIONS TO EXISTING GALVANIZED SERVICE LINE, THE NEW TRACER WIRE SHOULD BE ATTACHED TO THE GALVANIZED PIPE USING A CHRISTY'S OR APPROVED EQUAL UL APPROVED BRONZE GROUNDING CLAMP FOR DIRECT BURIAL.
9. IF METER PIT IS INSTALLED TOO LOW THE CONTRACTOR/DEVELOPER SHALL BE RESPONSIBLE FOR THE PURCHASE AND INSTALLATION OF A METER RESETTER TO BRING TO FINISHED GRADE.

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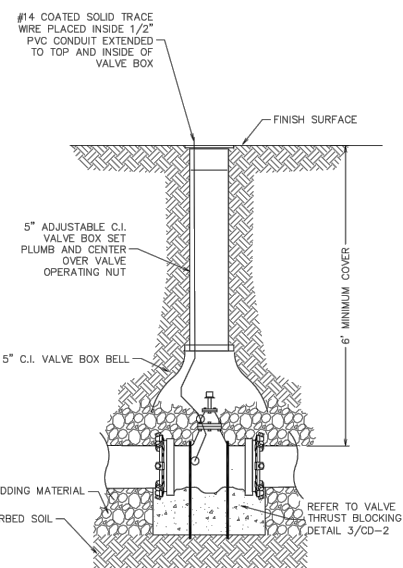
NOTE:

- A. INSTALL CURB BOX IN MIDDLE OF BOULEVARD WHERE APPLICABLE OR 2' FROM EDGE OF RIGHT-OF-WAY
- B. WHERE THERE IS A UTILITY EASEMENT ADJACENT TO THE RIGHT-OF-WAY, METER PIT CAN BE LOCATED 2' ON THE HOUSE SIDE OF THE EASEMENT.

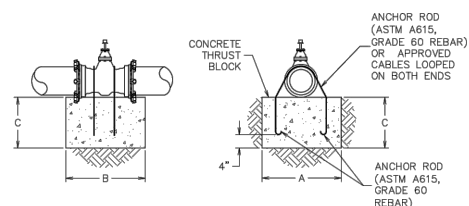
GENERAL NOTES:

1. WATER SERVICES SHALL BE BURIED A MINIMUM OF 6' DEEP.
2. FOR WATER SERVICES STUBS LARGER THAN 2" SEE CITY STANDARD DETAIL STD-413.
3. IF PROPERTY DOES NOT FRONT A STREET WITH A WATER MAIN, CONTACT CITY FOR SPECIFIC REQUIREMENTS RELATED TO EASEMENTS.
4. SERVICE LINE SHALL END AT WOOD POST, NO ABOVE GROUND WHIPS ALLOWED. IT IS THE INSTALLER'S RESPONSIBILITY TO REMOVE AIR FROM THE SERVICE LINES AS NECESSARY.
5. WATER SERVICE STUBS SHALL BE INSTALLED WHERE SHOWN ON THE DRAWINGS OR AS SPECIFIED BY CITY ENGINEERING.

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NOTE: RESTRAINED JOINTS WITHIN 36 FEET OF VALVE WITH MEGALUGS, FIELD LOK GASKETS, OR APPROVED EQUIVALENT.



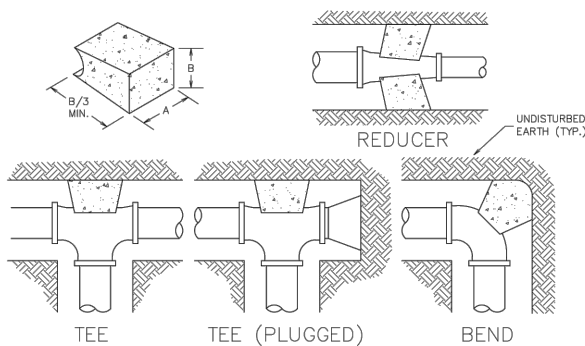
NOTES:

1. DIAGRAM DEPICTS GATE VALVES ONLY, VALVES 12 INCH AND LARGER TO BE BUTTERFLY, AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS WITH BLOCKS CENTERED UNDER LOAD BEARING PORTION OF VALVE.
2. STEEL CABLE (3/4" MINIMUM DIA. OR AS APPROVED BY THE ENGINEER) W/ANCHOR BOLTS MAY BE SUBSTITUTED FOR ANCHOR ROD.

STANDARD THRUST BLOCK DIMENSIONS

ANCHOR ROD SIZE	VALVE SIZE	100 PSI			150 PSI			200 PSI			250 PSI			300 PSI	
		"A"	"B"	"C"	"A"	"B"	"C"	"A"	"B"	"C"	"A"	"B"	"C"	"A"	"B"
3/4"	6" & 8"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"
3/4"	10"	2'-0"	2'-0"	2'-0"	2'-6"	2'-6"	2'-0"	2'-9"	2'-9"	2'-6"	3'-0"	3'-0"	3'-0"	3'-7"	3'-0"
3/4"	12"	2'-3"	2'-0"	2'-0"	3'-0"	2'-0"	2'-8"	3'-5"	3'-0"	3'-0"	4'-3"	3'-0"	3'-0"	5'-1"	3'-0"
1"	14"	2'-3"	2'-0"	2'-4"	3'-5"	3'-0"	3'-0"	4'-6"	3'-0"	3'-0"	4'-0"	4'-0"	4'-0"	4'-9"	4'-0"
1 1/8"	16"	3'-0"	3'-0"	2'-11"	4'-4"	3'-0"	3'-0"	4'-11"	4'-0"	4'-0"	5'-1"	4'-0"	4'-0"	5'-9"	5'-0"
1 1/4"	18"	3'-8"	3'-0"	3'-0"	5'-5"	4'-0"	3'-0"	5'-1"	4'-0"	4'-0"	6'-4"	4'-0"	4'-0"	6'-9"	5'-0"
1 3/8"	24"	4'-4"	4'-0"	4'-0"	6'-5"	4'-0"	4'-0"	6'-6"	5'-0"	5'-0"	6'-5"	6'-0"	6'-0"	7'-8"	6'-0"

NOTE: PRESSURES SHOWN ABOVE ARE MAXIMUM WORKING PRESSURE IN SYSTEM

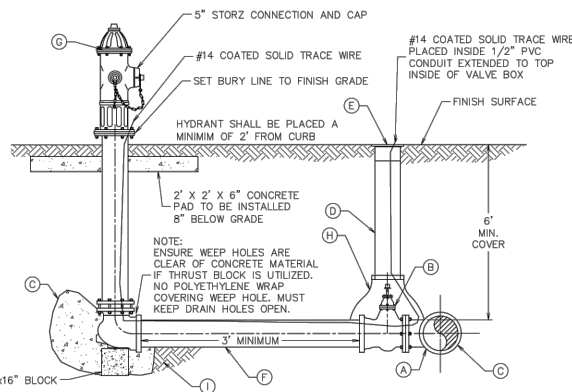


DIMENSIONS FOR THRUST BLOCKING

DIMENSIONS FOR THRU-FAST BLOCKING								
FITTING SIZES	TEES & PLUGS		90° BEND		45° BEND & WYES		REDUCERS & 22 1/2° BEND	
	A	B	A	B	A	B	A	B
4" & 6"	2'-0"	1'-11"	2'-5"	2'-2"	1'-10"	1'-7"	1'-9"	0'-10"
8"	2'-8"	2'-6"	3'-2"	3'-0"	2'-5"	2'-1"	1'-9"	1'-6"
10"	4'-0"	3'-3"	4'-0"	3'-10"	3'-0"	2'-9"	2'-2"	1'-11"
12"	4'-0"	3'-10"	4'-8"	4'-8"	3'-8"	3'-3"	2'-7"	2'-3"
16"	4'-6"	4'-0"	5'-0"	4'-8"	4'-0"	3'-0"	3'-0"	2'-6"
20"	5'-0"	5'-0"	7'-0"	5'-0"	4'-6"	4'-0"	3'-0"	3'-0"
24"	6'-10"	5'-0"	10'-0"	5'-0"	5'-8"	4'-6"	3'-8"	3'-8"

NOTES:

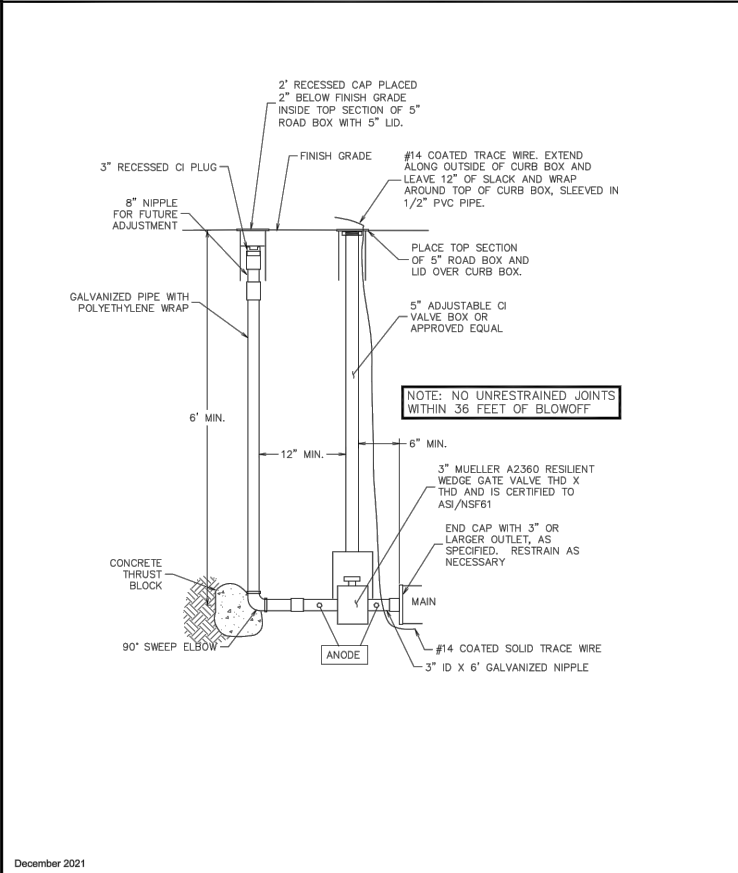
1. THIS TABLE IS BASED ON 2000 PSF SOIL BEARING PRESSURE AND 150 PSI MAIN PRESSURE.
2. WRAP ALL FITTINGS WITH POLYETHYLENE PRIOR TO PLACING CONCRETE.



NOTES:

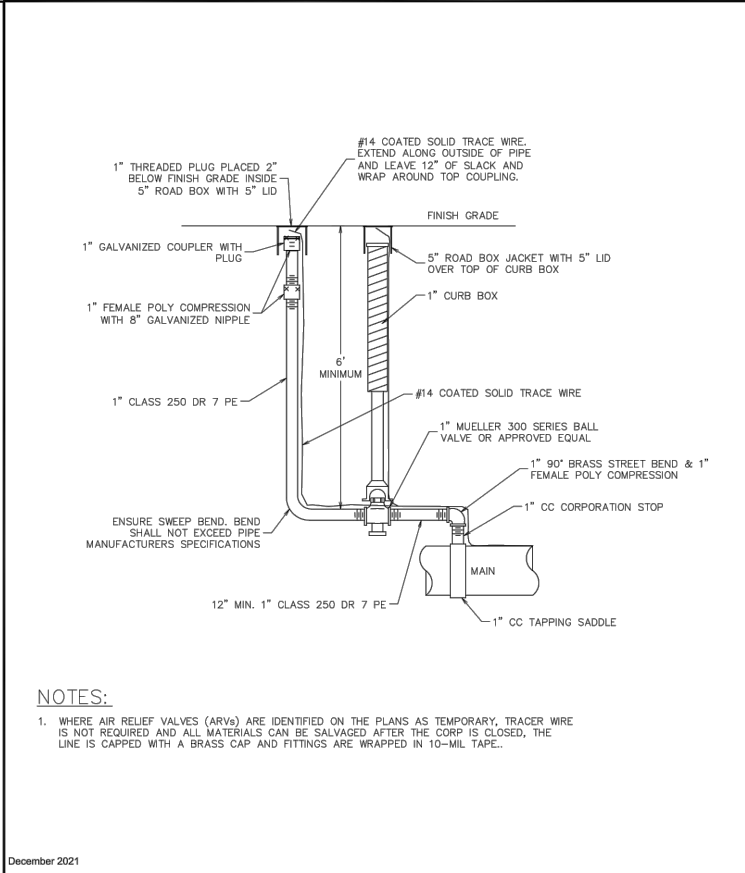
1. DUCTILE IRON PIPE, INCLUDING HYDRANT BARREL, SHALL BE WRAPPED WITH 8 MIL POLYETHYLENE.
2. IF MAIN IS BELOW OR ABOVE STANDARD DEPTH, USE BENDS AS REQUIRED TO INSURE THAT HYDRANT IS PLACED ABOVE GRADE AS SHOWN. PLACE BENDES BETWEEN HYDRANT VALVE & MAIN TO RAISE VALVE TO NORMAL DEPTH WHEN MAIN IS BELOW DEPTH SHOWN.
3. ALL JOINTS ON HYDRANT LEADS SHALL BE RESTRAINED.
4. HYDRANT EXTENSIONS WILL ONLY BE ALLOWED WITH WRITTEN PERMISSION FROM MISSOULA WATER.

(A)	APPROPRIATE SIZE X 6" SWIVEL OR MJ TEE AS REQUIRED.
(B)	6" MJ GATE VALVE---MUELLER OR APPROVED EQUAL
(C)	CONCRETE THRUST BLOCK IN ADDITION TO MEGALUG OR TIE-BOLT RESTRAINTS.
(D)	5" ADJUSTABLE C.I. VALVE BOX
(E)	5" VALVE BOX LID
(F)	6" DUCTILE IRON PIPE WITH #14 COATED SOLID TRACE WIRE
(G)	6" MUELLER CENTURION HYDRANT ASSEMBLY---MJ OR FLANGED (AS REQUIRED)
(H)	5" C.I. VALVE BOX BELL
(I)	PROVIDE IN ALL SOILS 1/2YD MIN. OF 3/4" CRUSHED ROCK. IN CLAY SOILS, PROVIDE 1 YD MIN.



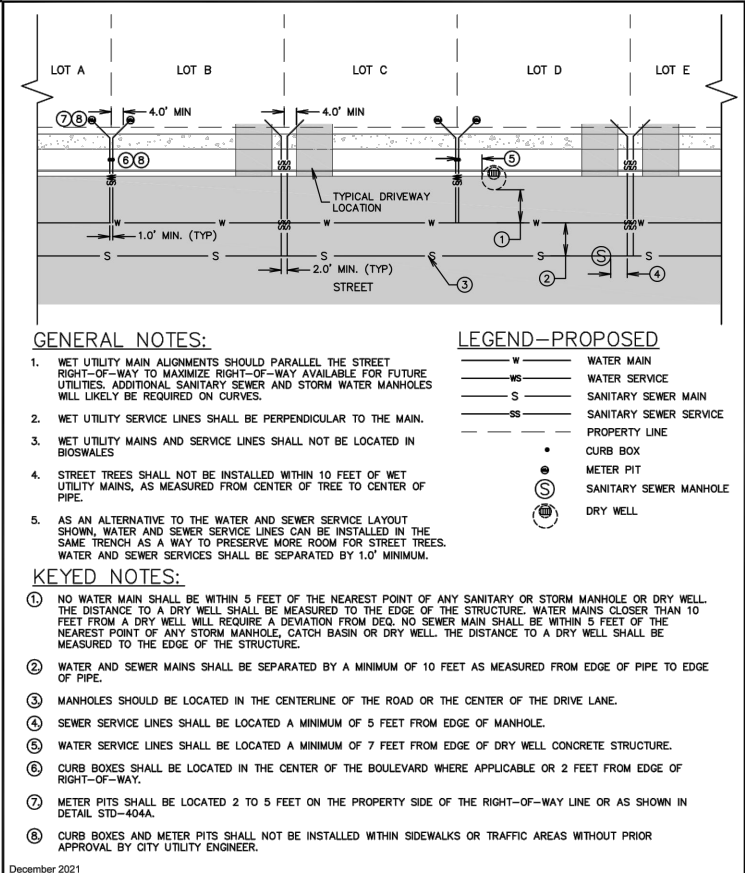
December 2021

Typical Blow-Off Assembly			
Approved By Utilities Engineer Logan McInnis, PE		Adopted: 09/28/2020 Revised: 02/04/2021	STD - 409



December 2021

Manual Air Relief Detail			
Approved By Utilities Engineer Logan McInnis, PE		Revised: 09/28/2020	STD - 410



December 2021

Typical Service Line Location Detail			
Approved By Utilities Engineer Logan McInnis, PE		Adopted: Revised: 03/09/2021	STD - 416

DATE	07/01/2022
REVISIONS	
STAGE 2 REVISIONS	07/14/2022
STREET NAMES	

DESIGNED:	AM
DRAFTED:	AM
CHECKED:	JR
DATE:	MAR. 2022

LOCATION:	TRACT D & E OF COS 6850 S 7, T13N., R19W., & S 12, T13N., R20W., SxwTPQYEN NEIGHBORHOOD
PREPARED FOR:	EVERGREEN HOUSING SOLUTIONS

PROJECT NAME	WEST END HOMES
PROJECT NO.	21000864
SHEET TITLE:	UTILITY CONSTRUCTION PLANS DETAIL SHEET
SHEET:	D3 OF D3