SUBMITTED BY:

04-28-2023

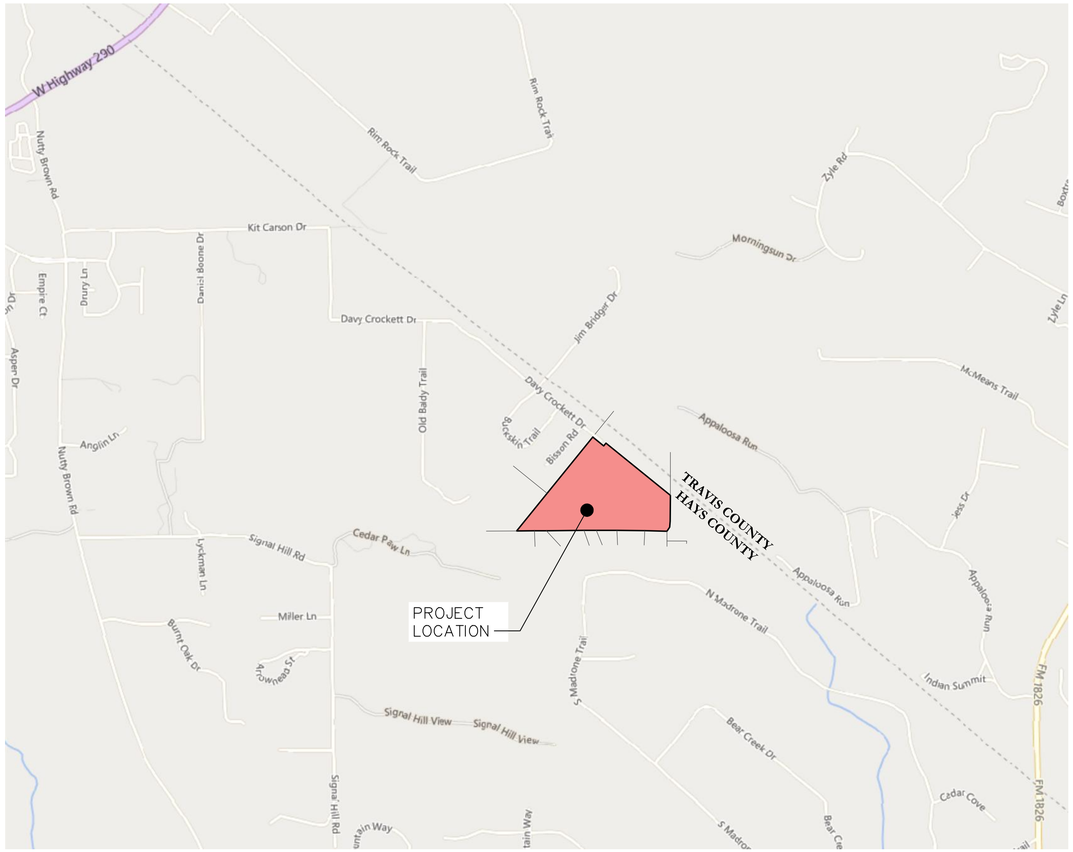
CARLSON, BRIGANCE, AND DOERING INC.
FIRM ID # F3791
5501 W. WILLIAM CANNON
AUSTIN, TX 78749
512-280-5160

HAYS COUNTY DEVELOPMENT SERVICES DEPARTMENT DIRECTOR — DATE

WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY — DATE

ESD #6 (NORTH HAYS COUNTY FIRE DEPARTMENT) — DATE

LOS ROBLES RANCH
HAYS COUNTY, TEXAS
SITE DEVELOPMENT CONSTRUCTION PLANS
STREET, DRAINAGE & WATER IMPROVEMENTS



LOCATION MAP
N.T.S.

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LEGAL DESCRIPTION:

A 39.133 ACRE TRACT OF PARCEL OF LAND MORE PARTICULARLY DESCRIBED AS LOT 8 OF SILVER SPUR RANCHETTES, SECTION TWO.

WATERSHED STATUS:

THIS PROJECT IS LOCATED WITHIN THE ONION CREEK WATERSHED. THIS SITE IS NOT LOCATED OVER THE EDWARDS AQUIFER RECHARGE ZONE, BUT IT IS IN THE CONTRIBUTING ZONE ACCORDING TO TCEQ AND COA MAPS. A CZP WILL BE REQUIRED PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.

NOTES:

1. A PORTION OF THIS TRACT IS WITHIN THE BOUNDARIES OF THE 100 YEAR FLOOD PLAIN OF THE FEDERAL FLOOD INSURANCE ADMINISTRATION FIRM PANEL NO. 48209C0130F FOR HAYS COUNTY, TEXAS, DATED SEPTEMBER 02, 2005.

   ***A LOMA (CASE # 23-06-1454A/APPLICATION 4574190424407) HAS BEEN SUBMITTED TO FEMA TO REMOVE ZONE A SPECIAL FLOOD HAZARD AREA FROM THE TRACT.

2. THERE WILL BE NO INCREASE IN PEAK RATE OF DISCHARGE FROM THE DEVELOPMENT FOR THE DESIGN STORM EVENT AS A RESULT OF THIS PROJECT.

WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY (WTCPUA) NOTES

1. THE WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY IS THE RETAIL WATER PROVIDER.
2. (28) 5/8" METERS FOR DOMESTIC PURPOSES ONLY.
3. WTCPUA DOES NOT GUARANTEE FIRE FLOW.
4. A WTCPUA REPRESENTATIVE MUST BE PRESENT AT THE TIME OF CONNECTION TO THE EXISTING SYSTEM.
5. ALL WATER INFRASTRUCTURE SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF AUSTIN WATER AND WASTEWATER CONSTRUCTION SPECIFICATIONS AND WITH MATERIALS FROM THE CURRENT APPROVED CITY OF AUSTIN STANDARD PRODUCTS LIST (SPL).

NO.	DESCRIPTION	REVISE (R) ADD (A) VOID (V) SHEET NO's	TOTAL # SHEETS IN PLAN SET	HAYS COUNTY APPROVAL/DATE	WEST TRAVIS COUNTY PUA APPROVAL/DATE	EMERGENCY SERVICES DISTRICT #6 APPROVAL/DATE

Know what's below. Call before you dig.

UTILITY PROVIDERS: WATER - WEST TRAVIS COUNTY PUA
ELECTRIC - PEC
GAS - TXGAS

ENGINEER: CARLSON, BRIGANCE & DOERING, INC.
5501 WEST WILLIAM CANNON DRIVE
AUSTIN, TEXAS 78749
PHONE: (512) 280-5160 FAX: (512) 280-5165

OWNER: MISSION OAKS
101 W MISSION BLVD
POMONA, CA 91766

DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
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Phone No. (512) 280-5160
North Office
12129 Rr 620 N., Ste. 600
Austin, Texas 78750
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SHEET NAME: COVER SHEET
JOB NAME: LOS ROBLES RANCH
PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

04-28-2023

DATE: APRIL 2023
JOB NUMBER: 5509
SHEET: 1 OF 41

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WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY (WTCPUA) NOTES

SPOILS MANAGEMENT AND DISPOSAL NOTES

1. Temporary holding sites as necessary to stockpile excavated soils, embedment material, and/or piping and appurtenances may be located within the limits of construction as shown on the plans.
2. No permanent spoils disposal shall be allowed on–site, unless approved by the owner and governing authority.
3. All spoils materials shall be disposed of by the Contractor at an approved spoil disposal site. The Contractor shall be responsible for locating and securing a permit for the site; and shall notify the Owner and/or Engineer at least forty–eight (48) hours prior to disposal of any spoil material.

EROSION /SEDIMENTATION CONTROL NOTES

Use latest City of Austin, City of Dripping Springs, City of Bee Cave, Travis County, Hays County Erosion/Sedimentation Control notes, as appropriate.

STANDARD TREE PROTECTION NOTES

Use latest City of Austin, City of Dripping Springs, City of Bee Cave, Travis County, Hays County Erosion/Sedimentation Control notes, as appropriate.

HOURS OF CONSTRUCTION

1. No work shall be done between the hours of 8:00 P.M. and 6:00 A.M; nor on Sundays or Legal Holidays without the written permission of the WTCPUA in each case, except such work as may be necessary for the proper care, maintenance and protection of the work already done or in the case of an emergency.

LIMITS OF CONSTRUCTION

1. The limits of construction shall be bounded by the right of way line or permanent / temporary casement limits shown on the Plans. Limits of construction may be further restricted by placement of silt fence, tree protection fencing, or other appurtenances as shown on the Plans.
2. Limits of construction shall be clearly delineated by the Contractor by installing silt fence, orange tensar fencing (4 – foot roll tied to 6–foot posts set at 10–foot intervals) or other barriers as approved by the Engineer. All temporary barriers shall be removed at the end of the project.
3. Any areas outside the limits of construction disturbed by the Contractor shall immediately be restored to pre–construction condition.

SANITARY FACILITIES

1. Provisions shall be made for necessary sanitary conveniences for the use of laborers on the The facilities must be properly secluded from public observation and shall be installed and maintained by the contractor. ·

PROTECTION OF BORE PITS

1. Install barrier fencing (Tensar orange fencing or chain link fencing) to surround the bore pits. Barrier fencing shall remain in place at all times while the bore pit is open. Contractor shall be responsible for security and safety at the bore pits.

HORIZONTAL CONTROLS

1. All line work shall be staked prior to construction with sealed cut sheets provided to the WTCPUA inspector prior to construction.

CONSTRUCTION SEQUENCING (modify to fit project)

1. 48 hours prior to beginning any work, call the One–Call Board of Texas at 811 or 1–800–545–6005 for utility locations and obtain street cut permit for any work within city, county, and/or state right–of–way.
2. Install temporary erosion controls and tree/natural area protection fencing prior to pre–construction meeting and prior to any site clearing, grubbing, excavation, material stockpiling, or other construction operations.
3. Schedule and convene a pre–construction meeting including but not limited to the Owner's representative, Engineer, WTCPUA representative, Fire Department, City, County, TxDOT representative, and TCEQ representative, as applicable.
4. Install traffic control measures.
5. Contractor shall locate all existing utilities prior to initiating construction.
6. Rough cut water quality ponds and direct runoff to ponds to act as a sediment trap.
7. Remove and stockpile topsoil in areas as required.
8. Rough cut roads/site, as necessary.
9. Install all underground utilities. Contractor shall be responsible for coordinating with the

   WTCPUA when switching service to the WTCPUA system. It shall be the contractor's responsibility to provide materials/facilities to ensure service is maintained during switchover.

10. Complete all underground installations, including installation of sleeves.
11. Complete subgrade.
12. Complete 1st course base.
13. Complete final course base.
14. Lay pavement and/or complete any pavement repair.
15. Complete water quality ponds.
16. Complete permanent erosion control and site restoration.
17. Remove and dispose of temporary erosion controls.
18. Complete any necessary final dress up of areas disturbed by construction operations.

TRAFFIC CONTROL NOTES (include if applicable)

1. Plans shall indicate responsible agent for traffic control (Engineer or Contractor).
2. Contractor shall maintain reasonable local vehicular traffic throughout construction operations.
3. Contractor shall provide signs, barricades, flaggers, and other measures as required to allow for vehicular and pedestrian traffic to proceed safely with minimum inconvenience.
4. Signs, barricades, flaggers, and related work shall be in accordance with the Texas Manual on Uniform Traffic Control Devices and with the requirements of the governing city/county.
5. For any activity within TxDOT right–of–way, project must ha', e a TxDOT permit. A copy of the TxDOT permit shall be provided to the WTCPUA prior to construction.

SWPPP NOTES

This project is subject to the Texas Commission on Environmental Quality's (TCEQ) Texas Pollution Discharge Elimination System (TPDES) General Permit TXR150000 for Construction Activities. The General Permit requires the preparation of a Storm Water Pollution Prevention Plan (SWPPP), which has been provided by the OWNER for use by the CONTRACTOR. The OWNER shall provide the OWNER'S Notice of Intent (NOI) and Notice of Termination (NOT) to the TCEQ. The CONTRACTOR'S responsibilities are as follows:

1. Maintain a copy of the SWPPP and a set of construction plans with the temporary erosion and sediment control plan at the Work site at all times.
2. File a Notice of Intent (NOI) and applicable payment to the TCEQ at least 2 days prior to site disturbance.
3. Post a copy of the OWNER'S and CONTRACTOR'S NOI forms at the Work site.
4. Sign the certification and obtain a signed certification statement from all Subcontractors responsible for implementing the erosion and sediment control measures which indicates that the CONTRACTOR and Subcontractor understands the permit requirements (forms are in the SWPPP)
5. Follow and comply with all aspects of the TPDES General Permit No. TXR150000. This includes but is not limited to field inspections and report, maintaining and repairing erosion controls and updating erosion controls and updating erosion control plan sheets based on field changes and modifications.
6. File a copy of the CONTRACTOR'S Notice of Termination (NOT) with the TCEQ once the work is completed in accordance with the TPDES general permit no TXR.150000 and has been accepted by the owner.

WTCPUA WATER & WASTEWATER GENERAL CONSTRUCTION NOTES

1. All construction operations shall be accomplished in accordance with applicable state statutes and U.S. Occupational Safety and Health Administration regulations (O.S.H.A.). Copies of O.S.H.A. standards may be purchased from the U.S. Government printing office. Information and related reference materials may be obtained from O.S.H.A. Austin Area Office – La Costa Green Bldg 1033, La Posada Dr, Suite 375, Austin, Texas 78752–3832, 512–374–0271.
2. The attention of the contractor is directed to The City of Austin Standard Specifications and to the State Law, (Vernon's Annotated Texas Statutes, Article 1436 ©) and the need for effective precautionary measures when operating in the vicinity of electrical lines. The contractor is responsible for all safety requirements, and for coordination of all work with the appropriate electric utility company.
3. The Contractor shall contact the One–Call Board of Texas at 811 or 1–800–545–6005 for existing utility locations prior to any excavation. The location and type of utilities and underground facilities shown on these plans are not guaranteed to be accurate or all inclusive. It is the Contractor's responsibility to locate and protect all existing utilities. The Contractor shall verify all depths and locations of existing utilities prior to any construction. In additional to normal precautions when excavating, use extra caution when excavating within 25 feet of any utilities shown on the plans.
4. The Contractor shall be responsible for all coordination between himself and other contractors and utilities in the vicinity of the project. This includes all water, wastewater, gas, electrical, telephone, cable television, and street and drainage work. Once the contractor becomes aware of a possible conflict, it is the contractor's responsibility to notify the engineer and WTCPUA inspector within twenty–four (24) hours.
5. The contractor shall be responsible for disposing of all spoil material from the construction All spoils material shall be disposed of by the contractor at an approved spoil site. The contractor shall be responsible for locating and securing a permit for the site. The contractor shall notify the WTCPUA inspector at least forty–eight (48) hours prior to disposal of the material. No spoils are to remain overnight in the floodplain.
6. No blasting or burning will be allowed.
7. It shall be the responsibility of the contractor to repair, at his expense, all utilities, pavement, curb, fences or any other items damaged during construction regardless of whether these items are shown on the construction plans.
8. Whenever existing utilities, indicated or not on plans, present obstructions to grade and/or alignment of proposed pipe, contractor is to immediately notify the engineer who will determine if existing improvements are to be relocated or if the grade and/or alignment of proposed pipe is to be changed.
9. Dust prevention shall be provided by the Contractor at his own expense. Dust control shall include spraying of water on all disturbed areas, spoil piles, or haul materials associated with the project or other methods approved by the WTCPUA.
10. Cleanup – upon completion and before making application for acceptance of the work, the contractor shall clean all streets and all ground occupied by him in connection with the work of all rubbish,excess materials,excess excavated materials, temporary structures and equipment. All parts of the work shall be left in a neat and presentable condition satisfactory to the WTCPUA and other governmental bodies having jurisdiction prior to submittal of the final payment.
11. The contractor shall maintain access to businesses and residences at all times. The contractor shall coordinate with property owners to minimize disruption of deliveries, parking, and other activities.
12. Dewatering, if necessary, shall be considered incidental to the work and shall not constitute a basis for additional payment.
13. The minimum depth of cover from top of pipe to finished grade for all water lines shall be four Install lines to avoid high points.
14. Concrete shall be Class 'A' with a minimum 28–day compressive strength of 3,000 psi, unless otherwise noted. '
15. Reinforcing steel shall be ASTM A 615M, Grade 60 unless otherwise noted.
16. All responsibility for the adequacy of these plans remains with the engineer who prepared In reviewing these plans, the WTCPUA must rely on the adequacy of the design
engineer. Approval of these plans by the WTCPUA does not release the design engineer of these responsibilities.

WEST TRAVIS COUNTY PUA WATER AND WASTEWATER UTILITY NOTES

1. West Travis County PUA is the water and / or wastewater service provider for this project. A pre–construction meeting with the WTCPUA shall be held prior to commencement of construction to schedule inspection of installation of water/wastewater facilities. Water facilities will be inspected up to, and including, the water meter and/or fire hydrants. The contact number for WTCPUA is (512) 263– 0100.
2. The City of Austin standard specifications and standard details current at the time of construction shall govern materials and methods used to perform this work. City of Austin Specifications and Standard Details are available at https: //library.municode.com/tx/austin/codes/
3. Contractor shall obtain all approvals and permits, including but not limited to street/driveway cut and utility cut permits from the appropriate governmental agency before beginning construction within the right–of–way of a public street or alley.
4. The WTCPUA shall be contacted at (512) 263–0100 at least 48 hours before connecting to their existing water and/or wastewater facilities.
5. The Contractor shall contact the Austin Area "One Call" System at 811 or 1–800–545–6005 for existing utility locations prior to any excavation. In advance of construction, the contractor shall verify the location of all utilities to be extended, tied to, or altered, or subject to damage/inconvenience by the construction operations.
6. No other utility service/appurtenances shall be placed near the property line, or other assigned location designated for water and wastewater utility service that would interfere withthewaterand/orwastewaterservices.
7. Where water lines and sewer line are installed with a separation distance closer than nine feet water lines crossing wastewater lines, water lines paralleling wastewater lines, or water lines next to manholes) the installation must meet the requirements of 30 TAC §217.53(d) (Pipe Design) and 30 TAC §290.44(e) (Water Distribution). Any deviation these standards shall require a variance approved by TCEQ before submitting piping assignments to the WTCPUA.
8. The City of Austin Specification item 509S will be required as a minimum trench safety measure. Contract documents, which include a trench safety plan signed and sealed by a Texas Professional Engineer and a pay item for trench safety measures, in compliance with OSHA, State, County, and City requirements before beginning work on the project.
9. All material tests, including soil density tests and related soil analysis, shall be accomplished by an independent laboratory funded by the owner in accordance with City of Austin Standard Specification Item 1804S.4.
10. Connections to existing WTCPUA water lines shall be made by cut–in tees in accordance with City of Austin Standard Specification Item 510.3(24). Isolation valves shall be installed on the ends of the cut–in tee, as necessary. A shut–out valve plan shall be provided showing the location of existing gate valves in the vicinity of the connection. The shut–out plan shall identify all affected property owners. Contractor shall perform all work and shall furnish all materials, including draining and cutting into existing piping and connecting a new pipeline or other extension into the existing pressure piping, forming an addition to the potable water transmission and distribution network and performing necessary shutoffs. Contractor shall schedule all such connections in advance and such schedule shall be approved by the WTCPUA before beginning the work. At least 48 hoursnotice shall be given to the WTCPUA prior to making the connection, and a representative from the WTCPUA shall be present when the connection is made. Pressure taps may be approved on a caseby–case basis. "Size on Size" taps will NOT be permitted. When approved, any taps shall be made by use of and approved full circle, gasketed cast iron or ductile iron tapping sleeve. Concrete blocking shall be placed behind and under all tap sleeves prior to making the pressure tap and the use of precast blocks may be used to hold the tap in its correction position prior to blocking. The blocking behind and under the tap shall have a minimum of 24 hours curing time before the valve can be reopened for service from that tap. The contractor shall notify the WTCPUA inspector a minimum of seventy–two (72) hours in advance for the WTCPUA to notify the affected customers. The WTCPUA shall be present while all work is performed to make the connection.
11. Thrust restraint shall be by metal thrust restraints in accordance with City of Austin Standard Specification Item 510.3(22).
12. Fire hydrants shall be set in accordance with City of Standard Specification Item 51IS.3 E and shall be approved Fire Department or other appropriate party prior to installation. Fire hydrants on mains under construction shall be securely wrapped with a poly wrap bag and taped into place. The poly wrap will be removed when the mains are accepted and placed in service. Fire hydrants that are to be used as drain hydrants shall be painted silver w/ blue caps prior to acceptance. Where Storz adaptors are required (Hays County), fire hydrants shall be manufactured with integral Storz adaptors.
13. Water line testing and sterilization shall be performed in accordance with City of Austin Standard Specification Item 510.3(29) and/or TCEQ rules.
14. Test pressure for 2–hour test shall be at 175 psi at the lowest point in the line.

Note:

Prior to pressure testing, contractor shall verify that thrust blocking and/or thrust restraint back to and including the valve against which the pressure test shall be performed, has been installed to at least the specifications of this project. Failure to verify that thrust blocking and/or thrust restraint in the existing line meets or exceeds the specifications of this project may result in serious damage to the existing waterline.

15. Water lines shall be filled with water and all air expelled at least 24 hours before testing. All service laterals and drain valve leads, with the hydrant valves closed and nozzle caps open shall be included in the tests.
16. Contractor shall submit a Disinfection and Flushing Plan in accordance with AWWA standards to the WTCPUA for approval. Required flushing volumes, flushing schedule, and method of disposal of flush water shall be in accordance with the approved plan.
17. Gate valves shall be resilient seated gate valves conformingto AWWAC509, with a minimum rated working pressure of 250 psig.
18. Force main testing shall be performed in accordance with the City of Austin Standard Specification Item 510.3(27) and/or TCEQ rules.
19. Gravity sanitary sewer main testing shall be performed in accordance with the City of Austin Standard Specification Items 510.3(26) and/or TCEQ rules. In addition, all gravity sanitary sewer mains shall be televised prior to acceptance by WTCPUA. Digital files (via CD–ROM) clearly showing televised recording shall be submitted to the Engineer of Record following inspection.
20. Locator 'Finder' Wire – All non –metallic water lines shall have a finder wire located above the pipe. The wire shall be poly–insulated No. 10 solid copper and will terminate at each isolation valve such thatitis accessible from the valve box.
21. Locator 'Finder' Wire – All non–metallic wastewater lines shall have a finder wire located above the pipe. The wire shall be poly–insulated No. 10 solid copper and will terminate at readily accessible locations throughout the collection system.
22. All valve risers shall have a 1'–6" square concrete box poured around them at finished grade.
23. All manholes shall be lined with a corrosion resistant lining approved by the WTCPUA.
24. Bolted and gasketed covers shall be used for all manholes located in the 100–year floodplain. Where there are more than three gasketed manholes in a row, vents shall be provided on every third manhole.
25. The downstream end of any force main shall be terminated in a sanitary sewer manhole in a manner to minimize turbulence.
26. Contractor shall have necessary Erosion and Sedimentation Controls in place prior to commencing water/wastewater facility construction.
27. Record drawings, as stipulated by the WTCPUA, shall be submitted to the Engineer of Record for verification and furnished to the WTCPUA upon completion of the project.
28. The WTCPUA will own and operate all water lines and appurtenances up to and including the water meter. These improvements will be defined by a recorded easement orin public right–of–way.
29. Any portions of wastewater lines including services that are located outside of a recorded easement or public right–of–way will be owned and maintained by the property owner, or his/her assigns.
30. Where existing water and/or wastewater infrastructure is to be abandoned, the engineer shall submit an abandonment plan for approval by the WTCPUA.
31. Water services shall be installed using HDPE pipe. Copper is not allowed.
32. For any storm sewer line crossing a water or wastewater line closer than 18", the storm sewer pipe shall be laid such that no storm sewer joints will be over the water pipe crossing.

OTHER NOTES –Engineer is responsible for including all applicable notes, including but not limited to County, City, TxDOT, State, Fire Department, TCEQ (CZP, WPAP, Organized Sewage Collection System Notes, General Construction Notes). Engineer is responsible for ensuring the current adopted version of all notes is included in the construction plans.

TCEQ WATER DISTRIBUTION SYSTEM
GENERAL CONSTRUCTION NOTES
(Revised February 2019 or latest version)

1. This water distribution system must be constructed in accordance with the current Texas Commission on Environmental Quality (TCEQ) Rules and Regulations for Public Water Systems 30 Texas Administrative Code (TAC) Chapter 290 Subchapter D. When conflicts are noted with local standards, the more stringent requirement shall be applied. At a minimum, construction for public water systems must always meet TCEQ's "Rules and Regulations for Public Water Systems."
2. All newly installed pipes and related products must conform to American National Standards Institute (ANSI)/NSF International Standard 61 and must be certified by an organization accredited by ANSI [§290.44(a)(1)].
3. Plastic pipe for use in public water systems must bear the NSF International Seal of Approval (NSF–pw) and have an ASTM design pressure rating of at least 150 psi or a standard dimension ratio of 26 or less [§290.44(a)(2)].
4. No pipe which has been used for any purpose other than the conveyance of drinking water shall be accepted or relocated for use in any public drinking water supply [§290.44(a)(3)].
5. All water line crossings of wastewater mains shall be perpendicular [§290.44(e)(4)(B)].
6. Water transmission and distribution lines shall be installed in accordance with the manufacturer's instructions. However, the top of the water line must be located below the frost line and in no case shall the top of the water line be less than 24 inches below ground surface [§290.44(a)(4)].
7. The maximum allowable lead content of pipes, pipe fittings, plumbing fittings, and fixtures is 0.25 percent [§290.44(b)].
8. The contractor shall install appropriate air release devices with vent openings to the atmosphere covered with 16–mesh or finer, corrosion resistant screening material or an acceptable equivalent [§290.44(d)(1)].
9. The contractor shall not place the pipe in water or where it can be flooded with water or sewage during its storage or installation [§290.44(f)(1)].
10. When waterlines are laid under any flowing or intermittent stream or semi–permanent body of water the waterline shall be installed in a separate watertight pipe encasement. Valves must be provided on each side of the crossing with facilities to allow the underwater portion of the system to be isolated and tested [§290.44(f)(2)].
11. Pursuant to 30 TAC §290.44(a)(5), the hydrostatic leakage rate shall not exceed the amount allowed or recommended by the most current AWWA formulas for PVC pipe, cast iron and ductile iron pipe. Include the formulas in the notes on the plans.
    - The hydrostatic leakage rate for polyvinyl chloride (PVC) pipe and appurtenances shall not exceed the amount allowed or recommended by formulas in America Water Works Association (AWWA) C–605 as required in 30 TAC §290.44(a)(5). Please ensure that the formula for this calculation is correct and most current formula is in use;

$$Q = \frac{LD\sqrt{P}}{148{,}000}$$

Where:
- Q = the quantity of makeup water in gallons per hour,
- L = the length of the pipe section being tested, in feet,
- D = the nominal diameter of the pipe in inches, and
- P = the average test pressure during the hydrostatic test in pounds per square inch (psi).

o The hydrostatic leakage rate for ductile iron (DI) pipe and appurtenances shall not exceed the amount allowed or recommended by formulas in America Water Works Association (AWWA) C–600 as required in 30 TAC §290.44(a)(5). Please ensure that the formula for this calculation is correct and most current formula is in use;

$$L = \frac{SD\sqrt{P}}{148{,}000}$$

Where:
- L = the quantity of makeup water in gallons per hour,
- S = the length of the pipe section being tested, in feet,
- D = the nominal diameter of the pipe in inches, and
- P = the average test pressure during the hydrostatic test in pounds per square inch (psi).

12. The contractor shall maintain a minimum separation distance in all directions of nine feet between the proposed waterline and wastewater collection facilities including manholes. If this distance cannot be maintained, the contractor must immediately notify the project engineer for further direction. Separation distances, installation methods, and materials utilized must meet §290.44(e)(1)–(4).
13. The separation distance from a potable waterline to a wastewater main or lateral manhole or cleanout shall be a minimum of nine feet. Where the nine–foot separation distance cannot be achieved, the potable waterline shall be encased in a joint of at least 150 psi pressure class pipe at least 18 feet long and two nominal sizes larger than the new conveyance. The space around the carrier pipe shall be supported at five–foot intervals with spacers or be filled to the springline with washed sand. The encasement pipe shall be centered on the crossing and both ends sealed with cement grout or manufactured sealant [§290.44(e)(5)].
14. Fire hydrants shall not be installed within nine feet vertically or horizontally of any wastewater line, wastewater lateral, or wastewater service line regardless of construction [§290.44(e)(6)].
15. Suction mains to pumping equipment shall not cross wastewater mains, wastewater laterals, or wastewater service lines. Raw water supply lines shall not be installed within five feet of any tile or concrete wastewater main, wastewater lateral, or wastewater service line [§290.44(e)(7)].
16. Waterlines shall not be installed closer than ten feet to septic tank drainfields [§290.44(e)(8)].
17. The contractor shall disinfect the new waterlines in accordance with AWWA Standard C–651–14 or most recent, then flush and sample the lines before being placed into service. Samples shall be collected for microbiological analysis to check the effectiveness of the disinfection procedure which shall be repeated if contamination persists. A minimum of one sample for each 1,000 feet of completed waterline will be required or at the next available sampling point beyond 1,000 feet as designated by the design engineer [§290.44(f)(3)].
18. De–chlorination of disinfecting water shall be in strict accordance with current AWWA Standard C655–09 or most recent.

DESIGNED BY: CJM	DRAFTED BY: CEL

REVISION	DATE

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FIRM ID #F3791
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www.cbdeng.com

SHEET NAME: GENERAL NOTES (1 OF 2)

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

04-28-2023

DATE: APRIL 2023

JOB NUMBER: 5509

SHEET: 2 OF 41

FILE PATH: J:\JOBS\5509\dwg\5509 - GENERAL NOTES.dwg - Apr 28, 2023 - 9:12am

HAYS COUNTY ROAD DEPARTMENT

TO ALL CONTRACTORS: GENERAL CONSTRUCTION NOTES FOR PLANS
THESE PLANS ARE NOT TO BE CONSIDERED FINAL FOR CONSTRUCTION UNTIL APPROVED BY HAYS COUNTY.
CHANGES MAY BE REQUIRED PRIOR TO APPROVAL.

1. Seventy-Two (72) hours prior to the beginning of construction, the developer shall arrange a pre-construction conference with all pertinent parties.
2. All roadway and drainage improvements shall be designed and constructed in accordance with Hays County specifications. Contractor shall be responsible for obtaining any necessary permits from Hays County Road and Bridge Department prior to beginning any on-site construction. Contractor shall be responsible for scheduling the necessary inspections from the Hays County Road and Bridge Department. All repairs to improvements caused by contractor's failure to install improvements in accordance with Hays County specifications and these construction plans shall be the responsibility of the contractor. Hays County Transportation Department's acceptance of the improvements are contingent on repairs being made to Hays County's satisfaction. Delays caused by repairs are the responsibility of the contractor.
3. A minimum of two (2) Benchmarks shall be shown on the construction plans.
4. All bedding materials used within the ROW shall comply with COA Item 510.
5. All concrete placed within the ROW shall be a minimum of Class A. The use of rebar chairs and tests cylinders will be required on PCC valley gutter placements.
6. The proposed fully developed stormwater runoff rate cannot exceed existing conditions runoff rate.
7. Dewatering operations must use SWPPP-specified methods only. If such methods are only general or not applicable, pump from the top of the pool (rather than the bottom) and discharge to a vegetated, upland area (away from waterbodies or drainages) or use another type of filtration prior to discharge. Refer to the EPA 2017 General Construction Permit, Section 2.4, as applicable.
8. The contractor shall supply qualified personnel to perform SWPPP inspections on project ≥1 acre. Qualified personnel shall have CISEC, CESSWI, or equivalent certification approved by the MS4.
9. Contractor shall ensure that mud and debris tracked onto publicly maintained roadways from vehicles leaving the construction site will be cleaned up daily.
10. No EXPLOSIVES shall be used for this project without TCEQ approval.
11. All holes, trenches and other hazardous areas shall be adequately protected by barricades, fencing, lights and/or other protective devices in compliance with COA 509S and OSHA regulations at all times.
12. The contractor shall submit a Trench Safety Plan prepared and sealed by an engineer licensed by the State of Texas prior to the start of the project. The contractor shall assign a competent person that has been properly trained and is qualified to make inspections and supervise the installation, maintenance, and removal of the trench safety or excavation safety system.
13. Hays County is not responsible for sidewalk maintenance. A fully executed license agreement must be in-place prior to construction of sidewalks within Hays County ROW.
14. Contractor shall comply with construction sequencing which may be specified somewhere in the construction plans.
15. Permit is required for construction in 'Right of Way': Ordinance 7.10. No driveway, utility construction, mailboxes, landscaping or any other encroachment into right-of-way or easement shall be allowed without first obtaining a permit from the Hays County Road and Bridge Department.
16. Prior to the installation of any road building material the subgrade shall be inspected by Hays County. Prior to paving, base material shall be inspected by Hays County. The owner or his agent shall notify Hays County forty-eight (48) hours prior to the time when the inspection is needed :Ordinance 1.05; 2.06.
17. All outfalls constructed within Hays County must be submitted to Hays County with GPS coordinates at the end of each project. Coordinates will be submitted on the NAD 1983 State Plane South Central FIPS 4204 Feet Coordinate System. All coordinates will be submitted in grid The required file type for coordinate data submissions is *txt format.
18. At the time a final inspection and release of performance security is requested; the design engineer shall provide a complete set of "As-Built"Record drawings in PDF format (300dpi) on a virus free disk and shall certify that all road and drainage construction has been completed in substantial accordance with previously approved plans and specifications, except as noted. No performance security will be released without these exhibits.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CONTRIBUTING ZONE PLAN
GENERAL CONSTRUCTION NOTES

1.) WRITTEN CONSTRUCTION NOTIFICATION SHOULD BE PROVIDED TO THE APPROPRIATE TCEQ REGIONAL OFFICE NO LATER THAN 48 HOURS PRIOR TO COMMENCEMENT OF THE REGULATED ACTIVITY. INFORMATION SHOULD INCLUDE THE DATE ON WHICH THE REGULATED ACTIVITY WILL COMMENCE, THE NAME OF THE APPROVED PLAN FOR THE REGULATED ACTIVITY, AND THE NAME OF THE PRIME CONTRACTOR WITH THE NAME AND TELEPHONE NUMBER OF THE CONTACT PERSON.

2.) ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT SHOULD BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED CONTRIBUTING ZONE PLAN AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTOR(S) SHOULD KEEP COPIES OF THE APPROVED PLAN AND APPROVAL LETTER ON-SITE.

3.) NO TEMPORARY ABOVE GROUND HYDROCARBON AND HAZARDOUS SUBSTANCE STORAGE TANK SYSTEM MAY BE INSTALLED WITHIN 150 FEET IF A DOMESTIC, INDUSTRIAL, IRRIGATION, OR PUBLIC WATER SUPPLY WELL.

4.) PRIOR TO COMMENCING CONSTRUCTION, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY SELECTED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND GOOD ENGINEERING PRACTICES. CONTROLS SPECIFIED IN THE SWPPP SECTION OF THE APPROVED EDWARDS AQUIFER CONTRIBUTING ZONE PLAN ARE REQUIRED DURING CONSTRUCTION. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THE CONTROLS MUST REMAIN IN PLACE UNTIL DISTURBED AREAS ARE REVEGETATED AND THE AREAS HAVE BECOME PERMANENTLY STABILIZED.

5.) IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT MUST BE REMOVED AT A FREQUENCY SUFFICIENT TO MINIMIZE OFFSITE IMPACTS TO WATER QUALITY (E.G. FUGITIVE SEDIMENT IN STREET BEING WASHED INTO SURFACE STREAMS OR SENSITIVE FEATURES BY THE NEXT RAIN).

6.) SEDIMENT MUST BE REMOVED FROM SEDIMENT TRAPS OR SEDIMENTATION PONDS NOT LATER THAN WHEN DESIGN CAPACITY HAS BEEN REDUCED BY 50% A PERMANENT STAKE MUST BE PROVIDED THAT CAN INDICATE WHEN THE SEDIMENT OCCUPIES 50% OF THE BASIN VOLUME.

7.) LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BECOMING A POLLUTANT SOURCE FOR STORMWATER DISCHARGES (E.G. SCREENING OUTFALLS, PICKED UP DAILY).

8.) ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE AND STORED ON-SITE MUST HAVE PROPER E$S CONTROLS INSTALLED.

9.) STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, AND CONSTRUCTION ACTIVITIES WILL NOT RESUME WITHIN 21 DAYS. WHEN THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY IS PRECLUDED BY WEATHER CONDITIONS, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE.

10.) THE FOLLOWING RECORDS SHOULD BE MAINTAINED AND MAE AVAILABLE TO THE TCEQ UPON REQUEST: THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR; THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON T PORTION OF THE SITE; AND THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.

11.) THE HOLDER OF ANY APPROVED CONTRIBUTING ZONE PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

– A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY BEST MANAGEMENT PRACTICES OR STRUCTURE(S), INCLUDING BUT NOT LIMITED TO TEMPORARY OR PERMANENT PONDS, DAMS, BERMS, SILT FENCES, AND DIVERSIONARY STRUCTURES;

– B. ANY CHANGE IN THE NATURE OF CHARACTER OF THE REGULATED ACTIVITY FORM THAT WHICH WAS ORIGINALLY APPROVED;

– C. ANY CHANGE THAT WOULD SIGNIFICANTLY IMPACT THE ABILITY TO PREVENT POLLUTION OF THE EDWARDS AQUIFER AND HYDROLOGICALLY CONNECTED SURFACE WATER; OR

– D. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED IN A CONTRIBUTING ZONE PLAN AS UNDEVELOPED.

AUSTIN REGIONAL OFFICE
2800 S. IH-35, SUITE 100
AUSTIN, TEXAS 78704-5712
PHONE (512) 339-2929
FAX (512) 339-3795

SAN ANTONIO REGIONAL OFFICE
14250 JUDSON ROAD
SAN ANTONIO, TEXAS 78233-4480
PHONE (210) 490-3096
FAX (210) 545-4329

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APPENDIX P-1 – EROSION CONTROL NOTES

1. The contractor shall install erosion/sedimentation controls, tree/natural area protective fencing, and conduct "Pre-Construction" tree fertilization (if applicable) prior to any site preparation work (clearing, grubbing or excavation).2.The placement of erosion/sedimentation controls shall be in accordance with the Environmental Criteria Manual and the approved Erosion and Sedimentation Control Plan. The COA ESC Plan shall be consulted and used as the basis for a TPDES required SWPPP. If a SWPPP is required, it shall be available for review by the City of Austin Environmental Inspector at all times during construction, including at the Pre-Construction meeting. The checklist below contains the basic elements that shall be reviewed for permit approval by COA EV Plan Reviewers as well as COA EV Inspectors.

— Plan sheets submitted to the City of Austin MUST show the following:

- Direction of flow during grading operations.
- Location, description, and calculations for off-site flow diversion structures.
- Areas that will not be disturbed; natural features to be preserved.
- Delineation of contributing drainage area to each proposed BMP (e.g., silt fence, sediment basin, etc.).
- Location and type of E&S BMPs for each phase of disturbance.
- Calculations for BMPs as required.
- Location and description of temporary stabilization measures.
- Location of on-site spoils, description of handling and disposal of borrow materials, and description of on-site permanent spoils disposal areas, including size, depth of fill and revegetation procedures.
- Describe sequence of construction as it pertains to ESC including the following elements:

1. Installation sequence of controls (e.g. perimeter controls, then sediment basins, then temporary stabilization, then permanent, etc.)
2. Project phasing if required (LOC greater than 25 acres)
3. Sequence of grading operations and notation of temporary stabilization measures to be used
4. Schedule for converting temporary basins to permanent WQ controls
5. Schedule for removal of temporary controls
6. Anticipated maintenance schedule for temporary controls

— Categorize each BMP under one of the following areas of BMP activity as described below:

3.1 Minimize disturbed area and protect natural features and soil

3.2 Control Stormwater flowing onto and through the project

3.3 Stabilize Soils

3.4 Protect Slopes

3.5 Protect Storm Drain Inlets

3.6 Establish Perimeter Controls and Sediment Barriers

3.7 Retain Sediment On-Site and Control Dewatering Practices

3.8 Establish Stabilized Construction Exits

3.9 Any Additional BMPs

— Note the location of each BMP on your site map(s).

— For any structural BMPs, you should provide design specifications and details and refer to them.

— For more information, see City of Austin Environmental Criteria Manual 1.4.

7. The Placement of tree/natural area protective fencing shall be in accordance with the City of Austin standard Notes for Tree and Natural Area Protection and the approved Grading/Tree and Natural Area Plan.
8. A pre-construction conference shall be held on-site with the contractor, design Engineer/permit applicant and Environmental Inspector after installation of the erosion/sedimentation controls, tree/natural area protection measures and "Pre-Construction" tree fertilization (if applicable) prior to beginning any site preparation work. The owner or owner's representative shall notify the Development Services Department, 512-974-2278 or by email at environmental.inspections@austintexas.gov, at least three days prior to the meeting date. COA approved ESC Plan and TPDES SWPPP (if required) should be reviewed by COA EV Inspector at this time.
9. Any major variation in materials or locations of controls or fences from those shown on the approved plans will require a revision and must be approved by the reviewing Engineer, Environmental Specialist or City Arborist as appropriate. Major revisions must be approved by authorized COA staff. Minor changes to be made as field revisions to the Erosion and Sedimentation Control Plan may be required by the Environmental Inspector during the course of construction to correct control inadequacies.
10. The contractor is required to provide a certified inspector that is either a licensed engineer (or person directly supervised by the licensed engineer) or Certified Professional in Erosion and Sediment Control (CPESC or CPESC – IT), Certified Erosion, Sediment and Stormwater – Inspector (CESSWI or CESSWI – IT) or Certified Inspector of Sedimentation and Erosion Controls (CISEC or CISEC – IT) certification to inspect the controls and fences at weekly or bi-weekly intervals and after one-half (½) inch or greater rainfall events to insure that they are functioning properly. The person(s) responsible for maintenance of controls and fences shall immediately make any necessary repairs to damaged areas. Silt accumulation at controls must be removed when the depth reaches six (6) inches or one-third (⅓) of the installed height of the control whichever is less.
11. Prior to final acceptance by the City, haul roads and waterway crossings constructed for temporary contractor access must be removed, accumulated sediment removed from the waterway and the area restored to the original grade and revegetated. All land clearing debris shall be disposed of in approved spoil disposal sites.
12. All work must stop if a void in the rock substrate is discovered which is; one square foot in total area; blows air from within the substrate and/or consistently receives water during any rain event. At this time it is the responsibility of the Project Manager to immediately contact a City of Austin Environmental Inspector for further investigation. In addition, if the project site is located within the Edwards Aquifer, the Project Manager must notify the Travis County Balcones Canyonlands Conservation Preserve (BCCP) by email at bccp@traviscountytx.gov. Construction activities within 50 feet of the void must stop.
13. Temporary and Permanent Erosion Control: All disturbed areas shall be restored as noted below:A.All disturbed areas to be revegetated are required to place a minimum of six (6) inches of topsoil [see Standard Specification Item No. 601S.3(A)]. Do not add topsoil within the critical root zone of existing trees.

• Topsoil salvaged from the existing site is encouraged for use, but it should meet the standards set forth in 601S.

_An owner/engineer may propose use of onsite salvaged topsoil which does not meet the criteria of Standard Specification 601S by providing a soil analysis and a written statement from a qualified professional in soils, landscape architecture, or agronomy indicating the onsite topsoil will provide an equivalent growth media and specifying what, if any, soil amendments are required.

• Soil amendments shall be worked into the existing onsite topsoil with a disc or tiller to create a well-blended material.

The vegetative stabilization of areas disturbed by construction shall be as follows:

TEMPORARY VEGETATIVE STABILIZATION:

1. From September 15 to March 1, seeding shall be with or include a cool season cover crop; (Western Wheatgrass (Pascopyrum smithii) at 5.6 pounds per acre, Oats (Avena sativa) at 4.0 pounds per acre, Cereal Rye Grain (Secale cereale) at 45 pounds per acre. Contractor must ensure that any seed application requiring a cool season cover crop does not utilize annual ryegrass (Lolium multiflorum) or perennial ryegrass (Lolium perenne). Cool season cover crops are not permanent erosion control.
2. From March 2 to September 14, seeding shall be with hulled Bermuda at a rate of 45 pounds per acre or a native plant seed mix conforming to Item 604S or 609S.
   A. Fertilizer shall be applied only if warranted by a soil test and shall conform to Item No. 606S, Fertilizer. Fertilization should not occur when rainfall is expected or during slow plant growth or dormancy. Chemical fertilizer may not be applied in the Critical Water Quality Zone.
   B. Hydromulch shall comply with Table 1, below.
   C. Temporary erosion control shall be acceptable when the grass has grown at least 1½ inches high with a minimum of 95% total coverage so that all areas of a site that rely on vegetation for temporary stabilization are uniformly vegetated, and provided there are no bare spots larger than 10 square feet.
   D. When required, native plant seeding shall comply with requirements of the City of Austin Environmental Criteria Manual, and Standard Specification 604S or 609S.

Table 1: Hydromulching for Temporary Vegetative Stabilization

Material	Description	Longevity	Typical Applications	Application Rates
100% or any blend of wood, cellulose, straw, and/or cotton plant material (except no mulch shall exceed 30% paper)				70% or greater
Wood/Straw	30% or less Paper or Natural Fibers	0–3 months	Moderate slopes; from flat to 3:1	1,500 to 2,000 lbs per acre

PERMANENT VEGETATIVE STABILIZATION:

1. From September 15 to March 1, seeding is considered to be temporary stabilization only. If cool season cover crops exist where permanent vegetative stabilization is desired, the grasses shall be mowed to a height of less than one-half (½) inch and the area shall be re-seeded in accordance with Table 2 below. Alternatively, the cool season cover crop can be mixed with Bermudagrass or native seed and installed together, understanding that germination of warm-season seed typically requires soil temperatures of 60 to 70 degrees.
2. From March 2 to September 14, seeding shall be with hulled Bermuda at a rate of 45 pounds per acre with a purity of 95% and a minimum pure live seed (PLS) of 0.83. Bermuda grass is a warm season grass and is considered permanent erosion control. Permanent vegetative stabilization can also be accomplished with a native plant seed mix conforming to Item 604S or 609S.
   A. Fertilizer use shall follow the recommendation of a soil test. See Item 606S, Fertilizer. Applications of fertilizer (and pesticide) on City-owned and managed property requires the yearly submittal of a Pesticide and Fertilizer Application Record, along with a current copy of the applicator's license. For current copy of the record template contact the City of Austin's IPM Coordinator.
   B. Hydromulch shall comply with Table 2, below.
   C. Water the seeded areas immediately after installation to achieve germination and a healthy stand of plants that can ultimately survive without supplemental water. Apply the water uniformly to the planted areas without causing displacement or erosion of the materials or soil. Maintain the seedbed in a moist condition favorable for plant growth. All watering shall comply with City Code Chapter 6-4 (Water Conservation), at rates and frequencies determined by a licensed irrigator or other qualified professional, and as allowed by the Austin Water Utility and current water restrictions and water conservation initiatives.
   D. Permanent erosion control shall be acceptable when the grass has grown at least 1½ inches high with a minimum of 95 percent for the non-native mix, and 95 percent coverage for the native mix so that all areas of a site that rely on vegetation for stability must be uniformly vegetated, and provided there are no bare spots larger than 10 square feet.
   E. When required, native plant seeding shall comply with requirements of the City of Austin Environmental Criteria Manual, Items 604S and 609S.

Table 2: Hydromulching for Permanent Vegetative Stabilization

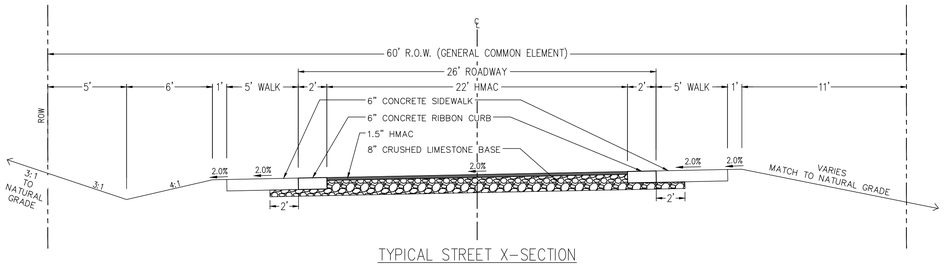
Material	Description	Longevity	Typical Applications	Application Rates
Bonded Fiber Matrix (BFM)			80% Organic defibrated fibers	
10% Tackifier	6 months		On slopes up to 2:1 and erosive soil conditions	2,500 to 4,000 lbs per acre (see manufacturers recommendations)
Fiber Reinforced Matrix (FRM)			65% Organic defibrated fibers 25% Reinforcing Fibers or less	
10% Tackifier	Up to 12 months		On slopes up to 1:1 and erosive soil conditions	3,000 to 4,500 lbs per acre (see manufacturers recommendations)

10.Developer Information:
Owner MISSION OAKS Phone # 310-844-5918 Address 101 W MISSION BOULEVARD, POMONA, CA 91766

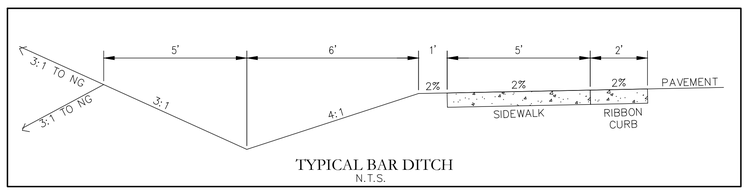
Owner's representative responsible for plan alterations: CARLSON, BRIGANCE & DOERING, INC. Phone # 512-280-5160
Person or firm responsible for erosion/sedimentation control maintenance: CONTRACTOR Phone # _____

Person or firm responsible for tree/natural area protection Maintenance: CONTRACTOR Phone # _____

11. The contractor shall not dispose of surplus excavated material from the site without notifying the Development Services Department at 512-974-2278 at least 48 hours prior with the location and a copy of the permit issued to receive the material.



TYPICAL STREET X-SECTION
PRIVATE ROADWAY 60' R.O.W.



TYPICAL BAR DITCH
N.T.S.

DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
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SHEET NAME: GENERAL NOTES (2 OF 2)
JOB NAME: LOS ROBLES RANCH
PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

04-28-2023

DATE: APRIL 2023
JOB NUMBER: 5509
SHEET: 3 OF 41

OCE-ENGINEERING.CTB

LEGAL DESCRIPTION:
5.06 ACRES OF LAND, MORE OR LESS, OUT OF THE RICHARD HAILEY SURVEY, ABSTRACT NO. 224, IN HAYS COUNTY, TEXAS AND ALSO KNOWN AS LOT 5, BEAR CREEK OAKS SECTION III, AN UNRECORDED SUBDIVISION IN HAYS COUNTY, TEXAS AND BEING THE SAME PROPERTY DESCRIBED AS TRACT 1 IN WARRANTY DEED RECORDED IN VOLUME 1120, PAGE 715, OFFICIAL PUBLIC RECORDS, HAYS COUNTY, TEXAS AND SAID 5.06 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY ACCOMPANYING METES AND BOUNDS DESCRIPTION.

TRACT 2:
LOT 8, SILVER SPUR RANCHETTES, SECTION TWO, ACCORDING TO THE MAP OR PLAT THEREOF, RECORDED IN VOLUME 10, PAGE 234, PLAT RECORDS, HAYS COUNTY, TEXAS.

TITLE COMMITMENT NOTES:
COMMITMENT FOR TITLE INSURANCE PREPARED BY OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, GF. NO. 2176671-DRP, EFFECTIVE DATE OF 1/31/2022, AND ISSUED ON 2/7/2022.

THE SURVEYOR HAS RELIED SOLELY UPON SAID TITLE COMMITMENT FOR THE DEPICTION OF EASEMENTS, RESTRICTIONS AND OTHER MATTERS AFFECTING THIS PROPERTY. NO ADDITIONAL RESEARCH WAS PERFORMED FOR THE PURPOSE OF THIS SURVEY. ITEMS LISTED ARE WORDED ACCORDING TO SAID TITLE COMMITMENT, FOLLOWED BY SURVEYORS NOTES SHOWN IN BRACKETS [ ].

10. THE FOLLOWING MATTERS AND ALL TERMS OF THE DOCUMENTS CREATING OR OFFERING EVIDENCE OF THE MATTERS (WE MUST INSERT MATTERS OR DELETE THIS EXCEPTION.):

THE FOLLOWING AFFECTS TRACT 1:

a. EASEMENT:
RECORDED: VOLUME 304, PAGE 59 AND VOLUME 313, PAGE 446, DEED RECORDS, HAYS COUNTY, TEXAS.
TO: PEDERNALES ELECTRIC COOPERATIVE
PURPOSE: ELECTRIC AND/OR TELEPHONE TRANSMISSION OR DISTRIBUTION LINE OR SYSTEM [AFFECTS WITHIN RIGHT OF WAY/ACCESS EASEMENT]

b. EASEMENT:
RECORDED: VOLUME 328, PAGE 358, DEED RECORDS, HAYS COUNTY, TEXAS.
PURPOSE: 10 FEET IN WIDTH ALONG THE FRONT, REAR AND SIDE PROPERTY LINES FOR UTILITIES AND DRAINAGE [AFFECTS - SHOWN HEREON]

c. EASEMENT:
RECORDED: VOLUME 331, PAGE 583, DEED RECORDS, HAYS COUNTY, TEXAS.
PURPOSE: INGRESS AND EGRESS TO THE PROPERTY OWNERS WITHIN BEAR CREEK OAKS,III [AFFECTS - SHOWN HEREON]

d. ANY AND ALL EASEMENTS, BUILDING SETBACK LINES, CONDITIONS, COVENANTS AND RESTRICTIONS AS SET FORTH IN VOLUME 302, PAGE 503, VOLUME 307, PAGE 495, VOLUME 308, PAGE 816, VOLUME 328, PAGE 358 AND VOLUME 382, PAGE 774, DEED RECORDS, HAYS COUNTY, TEXAS. [AFFECTS - SHOWN HEREON - AFFECTS TREE CLEARING]

e. MAINTENANCE CHARGES AND/OR ASSESSMENTS AS PROVIDED FOR IN INSTRUMENTS RECORDED IN VOLUME 302, PAGE 503, VOLUME 307, PAGE 495, VOLUME 308, PAGE 816 AND VOLUME 382, PAGE 774, DEED RECORDS, HAYS COUNTY, TEXAS. SAID CHARGES AND ASSESSMENTS ARE SUBORDINATE TO THE LIEN OF ANY FIRST MORTGAGE AS SET OUT THEREIN.

f. MINERAL AND/OR ROYALTY INTEREST:
RECORDED: VOLUME 251, PAGE 712, DEED RECORDS, HAYS COUNTY, TEXAS. TITLE TO SAID INTEREST HAS NOT BEEN RESEARCHED SUBSEQUENT TO THE DATE OF THE ABOVE REFERENCED INSTRUMENT.

g. ANY AND ALL PORTION OF THE SUBJECT PROPERTY LYING WITHIN THE BOUNDARIES OF A PUBLIC OR PRIVATE ROADWAY.

h. ANY CLAIM, RIGHT, OR ASSERTION OF TITLE BY THE ADJOINING LAND OWNER IN AND TO THAT STRIP OF LAND LOCATED BETWEEN THE PROPERTY LINE AND THE FENCE(S) AS SHOWN ON THAT SURVEY DATED 12/21/1994, PREPARED BY RALPH W. HARRIS, R.P.L.S. 1729. [NOT PROVIDED COPY OF SURVEY]

AS TO TRACT 2:

i. EASEMENT AS STATED ON THE PLAT AND DEDICATION SET OUT IN SCHEDULE A HEREOF:
PURPOSE: PUBLIC UTILITIES
LOCATION: FIVE (5) FEET ON EACH SIDE OF THE DIVIDING LINES, AND ALONG THE REAR OF ALL LOTS IN THE SUBDIVISION [AFFECTS - SHOWN HEREON]

j. EASEMENT:
RECORDED: VOLUME 242, PAGE 931 AND REAL PROPERTY RECORDS, HAYS COUNTY, TEXAS. (LOT 8)
TO: PEDERNALES ELECTRIC COOPERATIVE, INC.
PURPOSE: ELECTRIC TRANSMISSION AND/OR DISTRIBUTION LINES
[AFFECTS - SHOWN HEREON]

k. EASEMENT RIGHTS FOR ELECTRICAL LINES ACROSS SUBJECT PROPERTY AS SHOWN ON SURVEY DATED 12/21/1994, PREPARED BY RALPH W. HARRIS, RPLS NO. 1729.

l. ANY CLAIM, RIGHT, OR ASSERTION OF TITLE BY THE ADJOINING LAND OWNER IN AND TO THAT STRIP OF LAND LOCATED BETWEEN THE PROPERTY LINE AND THE FENCE(S) AS SHOWN ON THAT SURVEY DATED 12/21/1994, PREPARED BY RALPH W. HARRIS, R.P.L.S. 1729. [LIKELY AFFECTS SOUTH PROPERTY LINE - SHOWN HEREON - NOT PROVIDED COPY OF SURVEY]

m. TERMS, CONDITIONS, AND STIPULATIONS IN OIL, GAS AND MINERAL LEASE:
RECORDED: VOLUME 236, PAGE 187, DEED RECORDS, HAYS COUNTY, TEXAS.
TITLE TO SAID INTEREST HAS NOT BEEN RESEARCHED SUBSEQUENT TO THE DATE OF THE ABOVE REFERENCED INSTRUMENT.

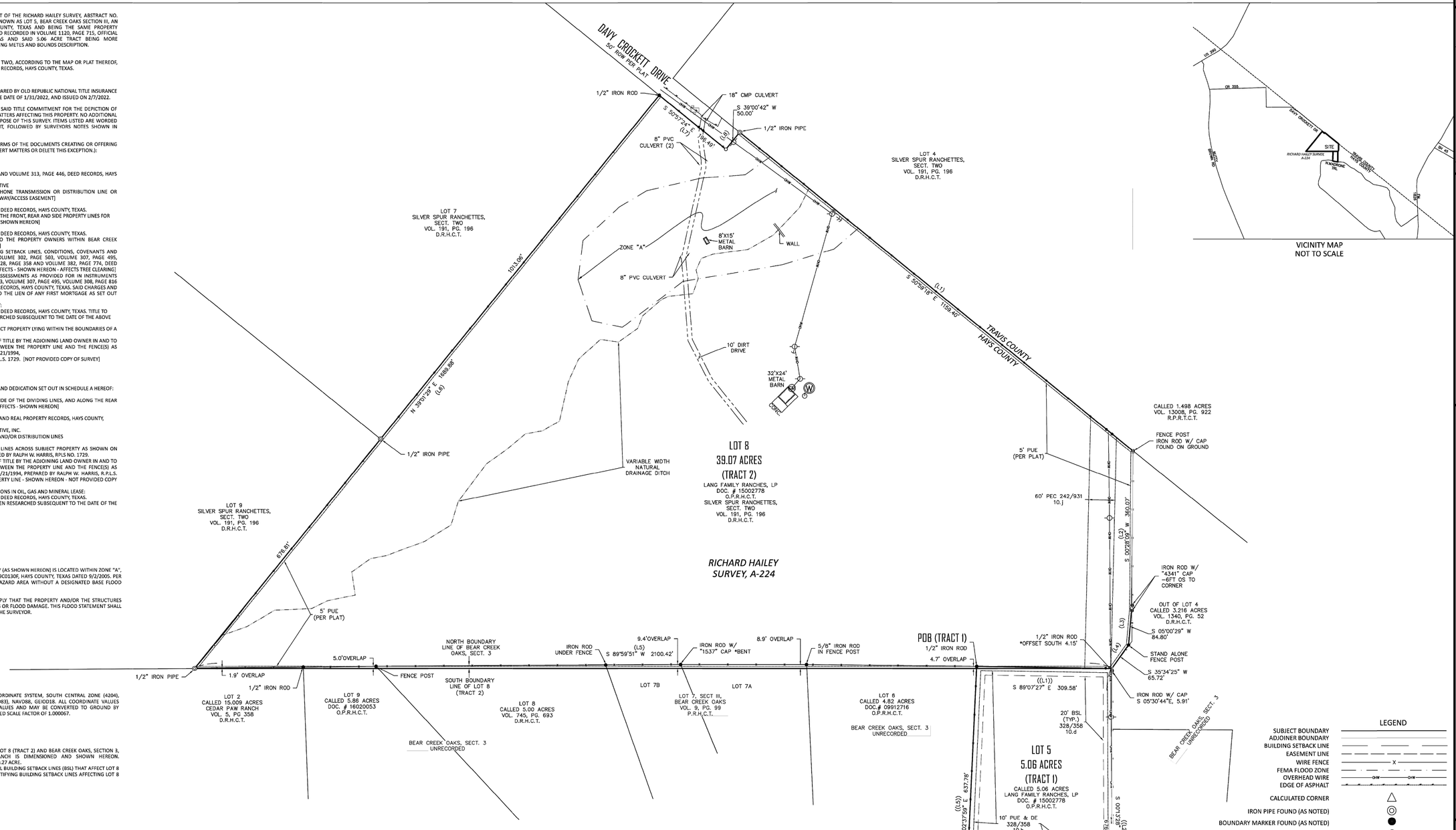
FLOODPLAIN NOTE:
PER FEMA, A PORTION OF THIS PROPERTY (AS SHOWN HEREON) IS LOCATED WITHIN ZONE "A", AS SHOWN ON F.I.R.M. PANEL NO. 48209C0130F, HAYS COUNTY, TEXAS DATED 9/2/2005. PER FEMA ZONE "A" IS A SPECIAL FLOOD HAZARD AREA WITHOUT A DESIGNATED BASE FLOOD ELEVATION.

THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY AND/OR THE STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

CONTROL NOTE:
BASIS OF BEARING IS THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATUM 1983 (NAD83), NAVD88, GEIOD18. ALL COORDINATE VALUES AND DISTANCES SHOWN ARE GRID VALUES AND MAY BE CONVERTED TO GROUND BY MULTIPLYING BY AN INVERSED COMBINED SCALE FACTOR OF 1.000067.
UNITS: US SURVEY FEET.

SURVEYOR'S NOTES:

1. BOUNDARY OVERLAP BETWEEN LOT 8 (TRACT 2) AND BEAR CREEK OAKS, SECTION 3, AND LOT 2 CEDAR PAW RANCH IS DIMENSIONED AND SHOWN HEREON. APPROXIMATE OVERLAP AREA = 0.27 ACRE.
2. POSSIBLY SUBJECT TO ADDITIONAL BUILDING SETBACK LINES (BSL) THAT AFFECT LOT 8 (TRACT 2) - NO DOCUMENT IDENTIFYING BUILDING SETBACK LINES AFFECTING LOT 8 (TRACT 2) PROVIDED.



LEGEND

SUBJECT BOUNDARY	
ADJOINER BOUNDARY	
BUILDING SETBACK LINE	
EASEMENT LINE	
WIRE FENCE	-X-
FEMA FLOOD ZONE	
OVERHEAD WIRE	OHW
EDGE OF ASPHALT	
CALCULATED CORNER	△
IRON PIPE FOUND (AS NOTED)	◎
BOUNDARY MARKER FOUND (AS NOTED)	●
1/2" IRON ROD SET W/ "RPLS 6714" CAP	○
UTILITY POLE	
GUY WIRE	
ELECTRIC METER	EM
WATER WELL	W
WATER SPIGOT	
GATE POST	●
MAILBOX	
RECORD BEARING & DISTANCE	(.....)
CORRUGATED METAL PIPE	CMP
BUILDING SETBACK LINE	BSL
PUBLIC UTILITY EASEMENT	PUE
ACCESS EASEMENT	AE
POINT OF BEGINNING	POB
REAL PROPERTY RECORDS, TRAVIS COUNTY, TEXAS	R.P.R.T.C.TX.
OFFICIAL PUBLIC RECORDS, HAYS COUNTY, TEXAS	O.P.R.H.C.TX.
DEED RECORDS, HAYS COUNTY, TEXAS	D.R.H.C.TX.
PLAT RECORDS, HAYS COUNTY, TEXAS	P.R.H.C.TX.

SURVEYED LINE TABLE LOT 5

LINE	BEARING	DISTANCE
L1	N 79°41'10" W	92.72'
L2	N 72°28'04" W	41.31'

RECORD LINE TABLE LOT 5 ((...))

LINE	BEARING	DISTANCE
L1	S 88°29'54" E	309.58'
L2	S 00°24'06" W	700.72'
L3	N 79°03'57" W	92.72'
L4	N 71°50'31" W	41.31'
L5	N 03°15'32" E	637.78'

RECORD LINE TABLE LOT 8 (...)

LINE	BEARING	DISTANCE
L1	S 50°10'00" E	1159.50'
L2	S 00°39'00" W	360.30'
L3	S 05°49'00" W	84.80'
L4	S 36°32'00" W	65.40'
L5	N 89°12'00" W	2105.40'
L6	N 39°50'00" E	1691.00'
L7	S 50°10'00" E	196.86'
L8	N 39°50'00" E	50.00'

SURVEYED CURVE TABLE LOT 5

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	1245.87'	115.13'	115.09'	N 82°21'23" W	5°17'41"
C2	790.02'	99.90'	99.83'	N 76°05'46" W	7°14'42"

RECORD CURVE TABLE LOT 5 ((...))

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	1245.87'	115.13'	115.09'	N 81°43'50" W	5°17'41"
C2	790.02'	99.90'	99.83'	N 75°28'13" W	7°14'42"

44.13 ACRE
LAND TITLE SURVEY
LOT 8 SILVER SPUR RANCHETTES
&
A CALLED 5.06 ACRES (LOT 5)
BEAR CREEK OAKS SECTION III
(UNRECORDED)
CITY OF BEAR CREEK
HAYS COUNTY, TEXAS

Date: 2/18/2022 GF No. 2176671-DRP
Job No. 64-HY224A Scale: 1"=100' Size: 24X36
Address: DAVY CROCKETT DRIVE Drawn By: GC
City: DRIPPING SPRINGS Zip: 78620 Rev: –

MC SURVEYING, LLC
192 Park Granite Blvd, Dripping Springs, TX 78620
Mobile: 737-707-8333
Email: Garrett@mcsurveytx.com
www.MCSurveyTX.com
TBPELS FIRM # 10194678

STATE OF TEXAS
REGISTERED
GARRETT CAVAIUOLO
6714
PROFESSIONAL
LAND SURVEYOR

SURVEYOR'S CERTIFICATE:
TO: DAVY CROCKETT ESTATES, LLC; OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

I HEREBY CERTIFY THIS SURVEY WAS MADE ON THE GROUND, AND THAT THIS PLAT CORRECTLY REPRESENTS THE FACTS FOUND AT THE TIME OF SURVEY AND THAT THIS PROFESSIONAL SERVICE CONFORMS TO THE TEXAS SOCIETY OF PROFESSIONAL SURVEYORS STANDARDS AND SPECIFICATIONS FOR A CATEGORY 1A CONDITION II LAND TITLE SURVEY.

GARRETT CAVAIUOLO 2/18/2022
REGISTERED PROFESSIONAL LAND SURVEYOR
STATE OF TEXAS REGISTRATION NO. 6714
TBPELS FIRM REG. NO. 10194678

N

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DESIGNED BY: CJM
DRAFTED BY: CEL

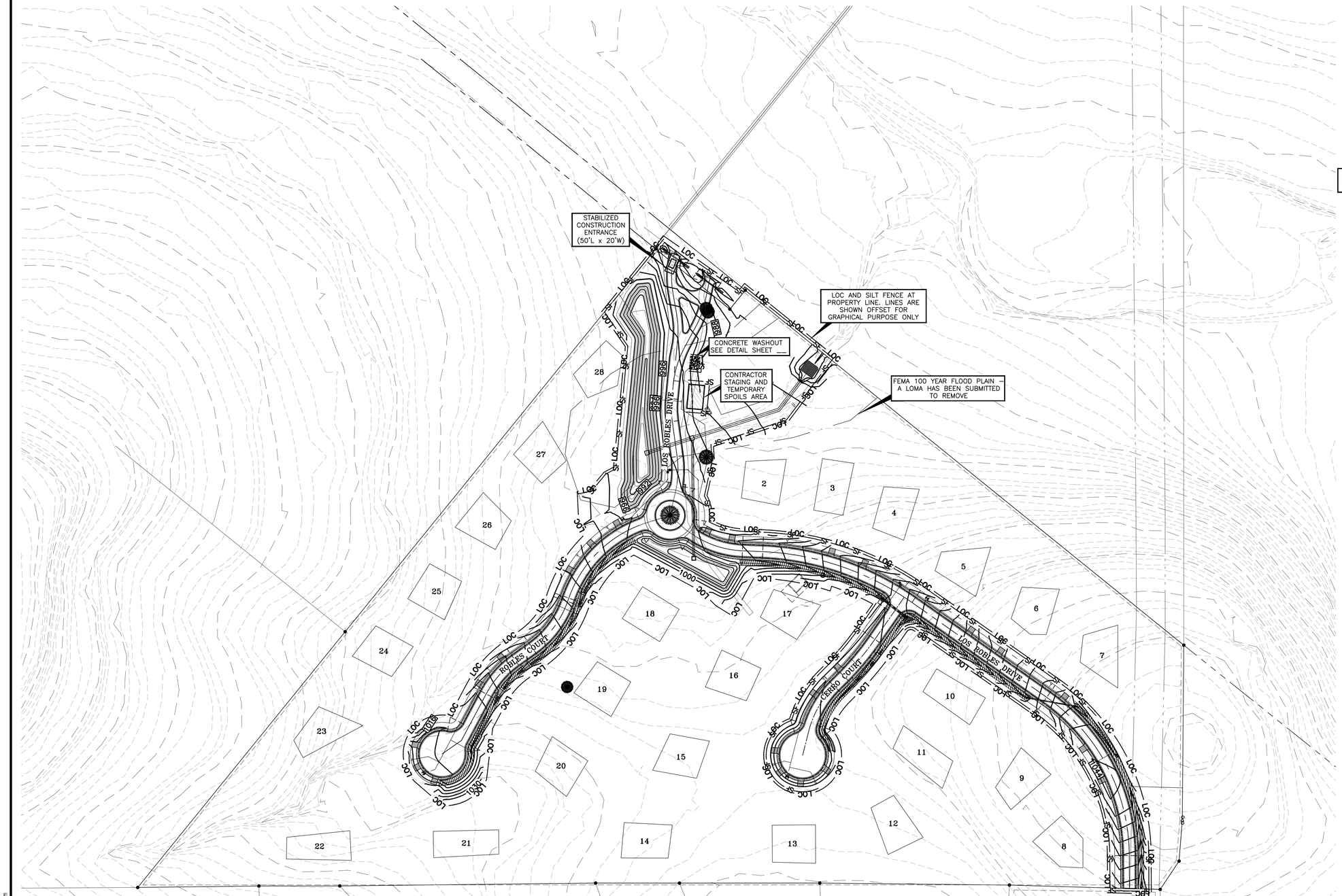
REVISION	DATE

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750
www.cbdeng.com

SHEET NAME: TITLE SURVEY
JOB NAME: LOS ROBLES RANCH
PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791
04-28-2023

DATE: APRIL 2023
JOB NUMBER: 5509
SHEET: 4 OF 41



LEGEND

- SF — SILT FENCE
- LOC — LIMITS OF CONSTRUCTION
- IP — INLET PROTECTION
- RB — ROCK BERM
- JH — J-HOOK
- STABILIZED CONSTRUCTION ENTRANCE
- CONCRETE WASHOUT AREA
- STAGING AND SPOILS AREA
- AREAS OF CUT/FILL 4' AND GREATER
- REVEGE WITH SEED AND TOP SOIL
- EXCEL SS-2 EROSION CONTROL BLANKET

0 100' 200'

SCALE: 1" = 100'

NOTES:

ALL SLOPES 6:1 AND GREATER SHALL BE STRUCTURALLY STABILIZED;

1. STRUCTURALLY STABILIZE WITH EXCEL SS-2 EROSION CONTROL BLANKET, TOP SOIL, AND SEEDING PER GENERAL NOTES.
2. UPON PAVING CONTRACTOR SHALL REMOVE INLET PROTECTION DAMS AT LOW POINT INLETS
3. TEMPORARY ROCK BERMS SHALL BE INSTALLED AT THE END OF CONCRETE HEADWALL OUTLET STRUCTURES.
4. CHANNEL TO BE REVEGETATED WITH TOPSOIL AND SEED

LIMITS OF CONSTRUCTION: 423,000 S.F. / 9.71 AC.
SILT FENCE: 4000 L.F.

DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

Carlson, Brigance & Doering, Inc.
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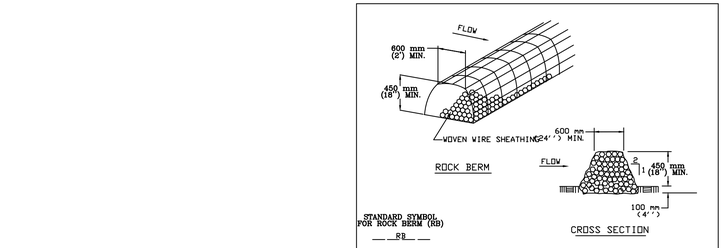
SHEET NAME: EROSION CONTROL PLAN
JOB NAME: LOS ROBLES RANCH
PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

04-28-2023

DATE: APRIL 2023
JOB NUMBER: 5509
SHEET: 5 OF 41

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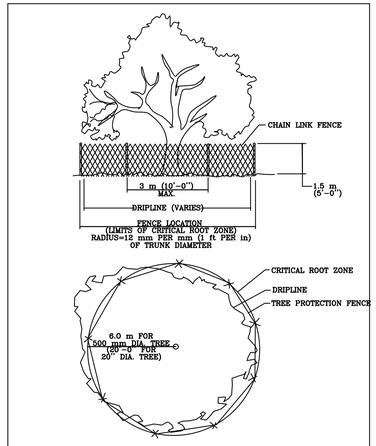
STANDARD SYMBOL FOR ROCK BERM (RB)

RB

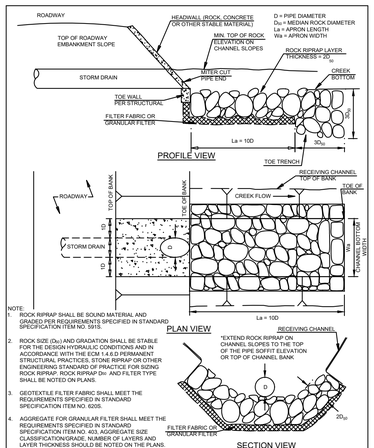
NOTES:

1. USE ONLY OPEN GRADED ROCK 75 to 125 mm (3 to 5") DIAMETER FOR ALL CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 25 mm (1") OPENING AND MINIMUM WIRE DIAMETER OF 12.9 mm (20 GAUGE).
3. THE ROCK BERM SHALL BE INSPECTED DAILY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE–WOVEN SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SEDIMENT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. IF SEDIMENT REACHES A DEPTH EQUAL TO ONE–THIRD THE HEIGHT OF THE BERM OR 150 mm (6"), WHICHEVER IS LESS, THE SEDIMENT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SEDIMENTION PROBLEM.
5. WHEN THE SITE IS COMPLETELY STABILIZED,THE BERM AND ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	ROCK BERM	
RECORD COPY SIGNED BY MORGAN BYARS 8/24/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 639S-1



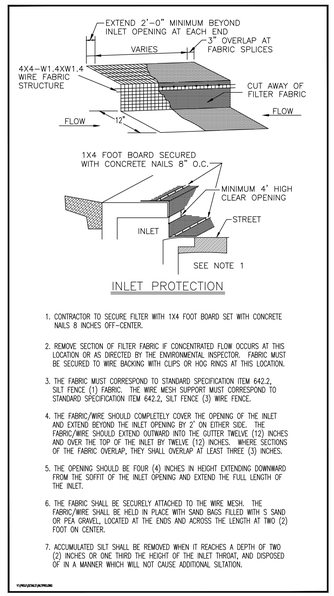
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	TREE PROPTECTION FENCE TYPE A – CHAIN LINK	
RECORD COPY SIGNED BY J. PATRICK MURPHY 11/16/99 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 610S-2



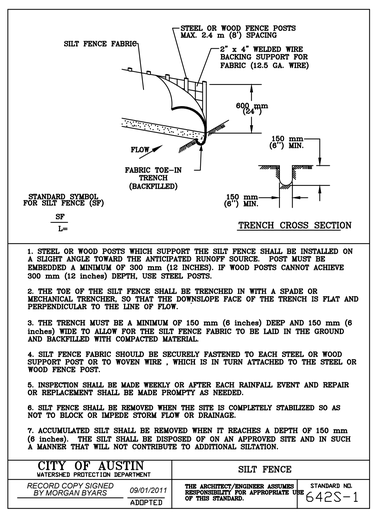
NOTE:

1. ROCK RIPRAP SHALL BE SOUND MATERIAL AND GRADED PER REQUIREMENTS SPECIFIED IN STANDARD SPECIFICATION ITEM NO. 591S.
2. ROCK SIZE (D_{50}) AND GRADATION SHALL BE STABLE FOR THE DESIGN HYDRAULIC CONDITIONS AND IN ACCORDANCE WITH THE ECM 1.4.6.D PERMANENT STRUCTURAL PRACTICES, STONE RIPRAP OR OTHER ENGINEERING STANDARD OF PRACTICE FOR SIZING ROCK RIPRAP. ROCK RIPRAP D_{50} AND FILTER TYPE SHALL BE NOTED ON PLANS.
3. GEOTEXTILE FILTER FABRIC SHALL MEET THE REQUIREMENTS SPECIFIED IN STANDARD SPECIFICATION ITEM NO. 620S.
4. AGGREGATE FOR GRANULAR FILTER SHALL MEET THE REQUIREMENTS SPECIFIED IN STANDARD SPECIFICATION ITEM NO. 403, AGGREGATE SIZE CLASSIFICATION/GRADE, NUMBER OF LAYERS AND LAYER THICKNESS SHOULD BE NOTED ON THE PLANS.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	STORMDRAIN OUTFALL PROTECTION CULVERT UNDER ROADWAY/INLINE	
RECORD COPY SIGNED BY MORGAN BYARS 09/01/2011 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S-20

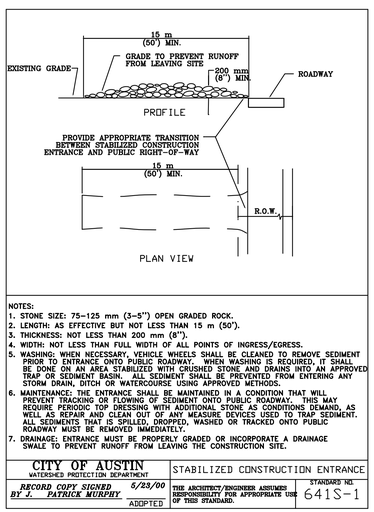


1. CONTRACTOR TO SECURE FILTER WITH 1X4 FOOT BOARD SET WITH CONCRETE NAILS 8 INCHES OFF–CENTER.
2. REMOVE SECTION OF FILTER FABRIC IF CONCENTRATED FLOW OCCURS AT THIS LOCATION OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR HOG RINGS AT THIS LOCATION.
3. THE FABRIC MUST CORRESPOND TO STANDARD SPECIFICATION ITEM 642.2, SILT FENCE (1) FABRIC. THE WIRE MESH SUPPORT MUST CORRESPOND TO STANDARD SPECIFICATION ITEM 642.2, SILT FENCE (3) WIRE FENCE.
4. THE FABRIC/WIRE SHOULD COMPLETELY COVER THE OPENING OF THE INLET AND EXTEND BEYOND THE INLET OPENING BY 2' ON EITHER SIDE. THE FABRIC/WIRE SHOULD EXTEND OUTWARD INTO THE GUTTER TWELVE (12) INCHES AND OVER THE TOP OF THE INLET BY TWELVE (12) INCHES. WHERE SECTIONS OF THE FABRIC OVERLAP, THEY SHALL OVERLAP AT LEAST THREE (3) INCHES.
5. THE OPENING SHOULD BE FOUR (4) INCHES IN HEIGHT EXTENDING DOWNWARD FROM THE SOFFIT OF THE INLET OPENING AND EXTEND THE FULL LENGTH OF THE INLET.
6. THE FABRIC SHALL BE SECURELY ATTACHED TO THE WIRE MESH. THE FABRIC/WIRE SHALL BE HELD IN PLACE WITH SAND BAGS FILLED WITH S SAND OR PEA GRAVEL LOCATED AT THE ENDS AND ACROSS THE LENGTH AT TWO (2) FOOT ON CENTER.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF TWO (2) INCHES OR ONE THIRD THE HEIGHT OF THE INLET THROAT, AND DISPOSED OF IN A MANNER WHICH WILL NOT CAUSE ADDITIONAL SILTATION.



1. STEEL OR WOOD POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 300 mm (12 INCHES). IF WOOD POSTS CANNOT ACHIEVE 300 mm (12 inches) DEPTH, USE STEEL POSTS.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.
3. THE TRENCH MUST BE A MINIMUM OF 150 mm (6 inches) DEEP AND 150 mm (6 inches) WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE FABRIC SHOULD BE SECURELY FASTENED TO EACH STEEL OR WOOD SUPPORT POST OR TO WOVEN WIRE , WHICH IS IN TURN ATTACHED TO THE STEEL OR WOOD FENCE POST.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

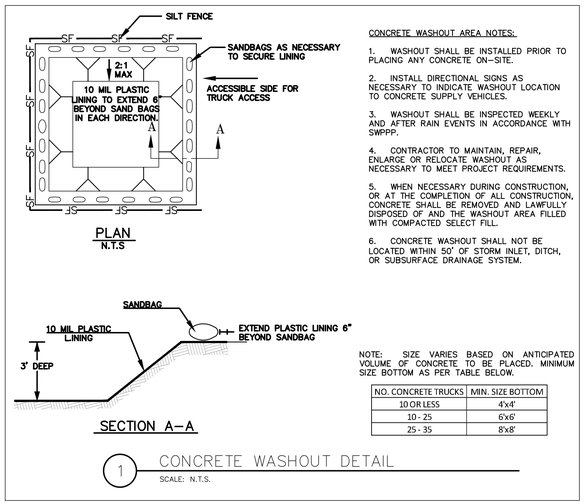
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	SILT FENCE	
RECORD COPY SIGNED BY MORGAN BYARS 09/01/2011 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 642S-1



NOTES:

1. STONE SIZE: 75–125 mm (3–5") OPEN GRADED ROCK.
2. LENGTH: AS EFFECTIVE BUT NOT LESS THAN 15 m (50').
3. THICKNESS: NOT LESS THAN 200 mm (8").
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. WASHING: WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE AND DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AS WELL AS REPAIR AND CLEAN OUT OF ANY MEASURE DEVICES USED TO TRAP SEDIMENT. ALL SEDIMENTS THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
7. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	STABILIZED CONSTRUCTION ENTRANCE	
RECORD COPY SIGNED BY J. PATRICK MURPHY 6/23/00 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 641S-1



CONCRETE WASHOUT AREA NOTES:

1. WASHOUT SHALL BE INSTALLED PRIOR TO PLACING ANY CONCRETE ON–SITE.
2. INSTALL DIRECTIONAL SIGNS AS NECESSARY TO INDICATE WASHOUT LOCATION TO CONCRETE SUPPLY VEHICLES.
3. WASHOUT SHALL BE INSPECTED WEEKLY AND AFTER RAIN EVENTS IN ACCORDANCE WITH SWPPP.
4. CONTRACTOR TO MAINTAIN, REPAIR, ENLARGE OR RELOCATE WASHOUT AS NECESSARY TO MEET PROJECT REQUIREMENTS.
5. WHEN NECESSARY DURING CONSTRUCTION, OR AT THE COMPLETION OF ALL CONSTRUCTION, CONCRETE SHALL BE REMOVED AND LAWFULLY DISPOSED OF AND THE WASHOUT AREA FILLED WITH COMPACTED SELECT FILL.
6. CONCRETE WASHOUT SHALL NOT BE LOCATED WITHIN 50' OF STORM INLET, DITCH, OR SUBSURFACE DRAINAGE SYSTEM.

NOTE: SIZE VARIES BASED ON ANTICIPATED VOLUME OF CONCRETE TO BE PLACED. MINIMUM SIZE BOTTOM AS PER TABLE BELOW.

NO. CONCRETE TRUCKS	MIN. SIZE BOTTOM
10 OR LESS	4'x4'
10 - 25	6'x6'
25 - 35	8'x8'

1 CONCRETE WASHOUT DETAIL

SCALE: N.T.S.

DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750
Phone Nos. (512) 280-5160
www.cbdeng.com

SHEET NAME: EROSION CONTROL DETAILS

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

04-28-2023

DATE: APRIL 2023

JOB NUMBER: 5509

SHEET: 6 OF 41

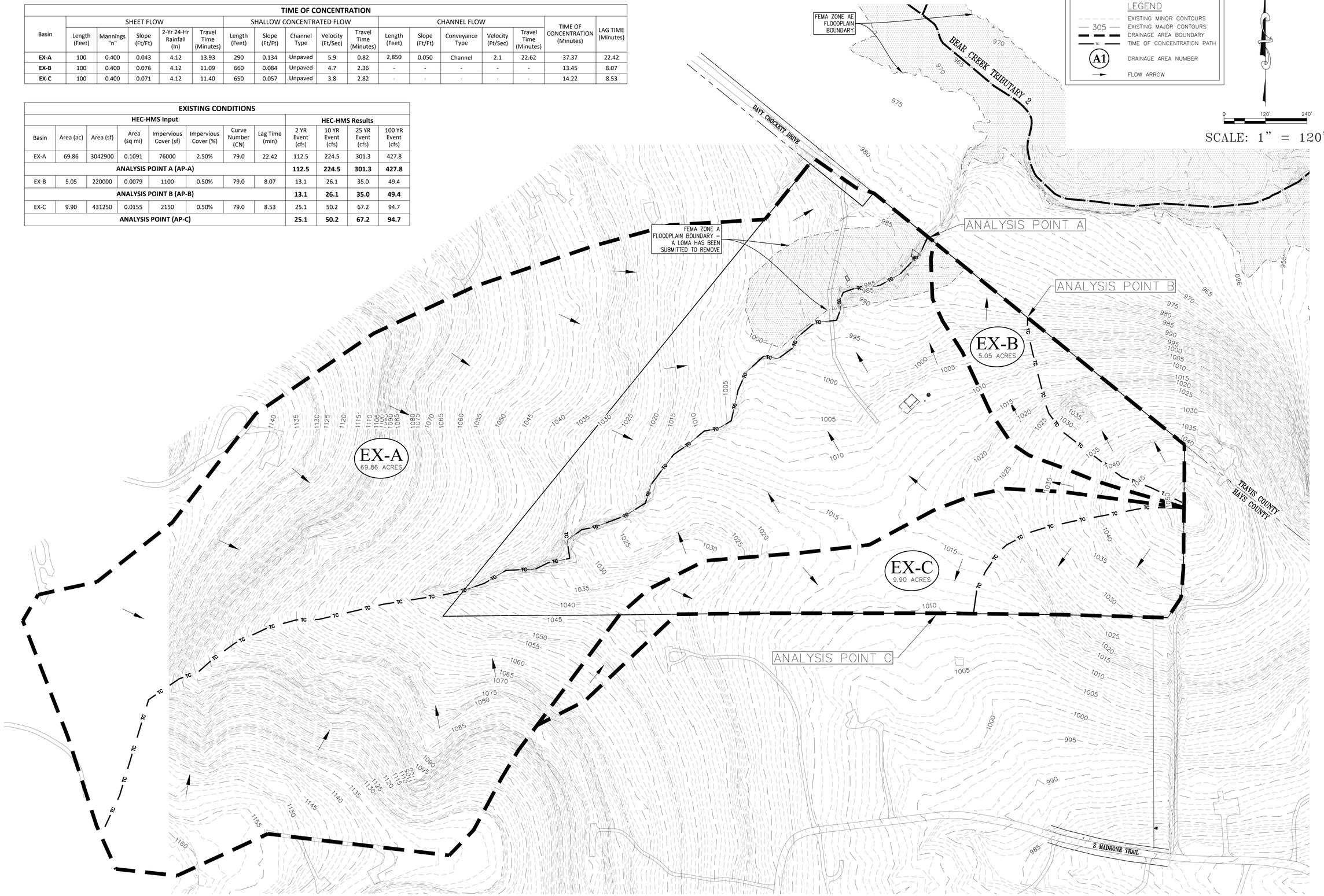
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TIME OF CONCENTRATION

Basin	SHEET FLOW					SHALLOW CONCENTRATED FLOW					CHANNEL FLOW					TIME OF CONCENTRATION (Minutes)	LAG TIME (Minutes)
	Length (Feet)	Mannings "n"	Slope (Ft/Ft)	2-Yr 24-Hr Rainfall (In)	Travel Time (Minutes)	Length (Feet)	Slope (Ft/Ft)	Channel Type	Velocity (Ft/Sec)	Travel Time (Minutes)	Length (Feet)	Slope (Ft/Ft)	Conveyance Type	Velocity (Ft/Sec)	Travel Time (Minutes)		
EX-A	100	0.400	0.043	4.12	13.93	290	0.134	Unpaved	5.9	0.82	2,850	0.050	Channel	2.1	22.62	37.37	22.42
EX-B	100	0.400	0.076	4.12	11.09	660	0.084	Unpaved	4.7	2.36	-	-	-	-	-	13.45	8.07
EX-C	100	0.400	0.071	4.12	11.40	650	0.057	Unpaved	3.8	2.82	-	-	-	-	-	14.22	8.53

EXISTING CONDITIONS

	HEC-HMS Input							HEC-HMS Results			
Basin	Area (ac)	Area (sf)	Area (sq mi)	Impervious Cover (sf)	Impervious Cover (%)	Curve Number (CN)	Lag Time (min)	2 YR Event (cfs)	10 YR Event (cfs)	25 YR Event (cfs)	100 YR Event (cfs)
EX-A	69.86	3042900	0.1091	76000	2.50%	79.0	22.42	112.5	224.5	301.3	427.8
ANALYSIS POINT A (AP-A)								**112.5**	**224.5**	**301.3**	**427.8**
EX-B	5.05	220000	0.0079	1100	0.50%	79.0	8.07	13.1	26.1	35.0	49.4
ANALYSIS POINT B (AP-B)								**13.1**	**26.1**	**35.0**	**49.4**
EX-C	9.90	431250	0.0155	2150	0.50%	79.0	8.53	25.1	50.2	67.2	94.7
ANALYSIS POINT (AP-C)								**25.1**	**50.2**	**67.2**	**94.7**



DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

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Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: EXISTING HYDROLOGY MAP
JOB NAME: LOS ROBLES RANCH
PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791
04-28-2023

DATE: APRIL 2023
JOB NUMBER: 5509
SHEET: 7 OF 41

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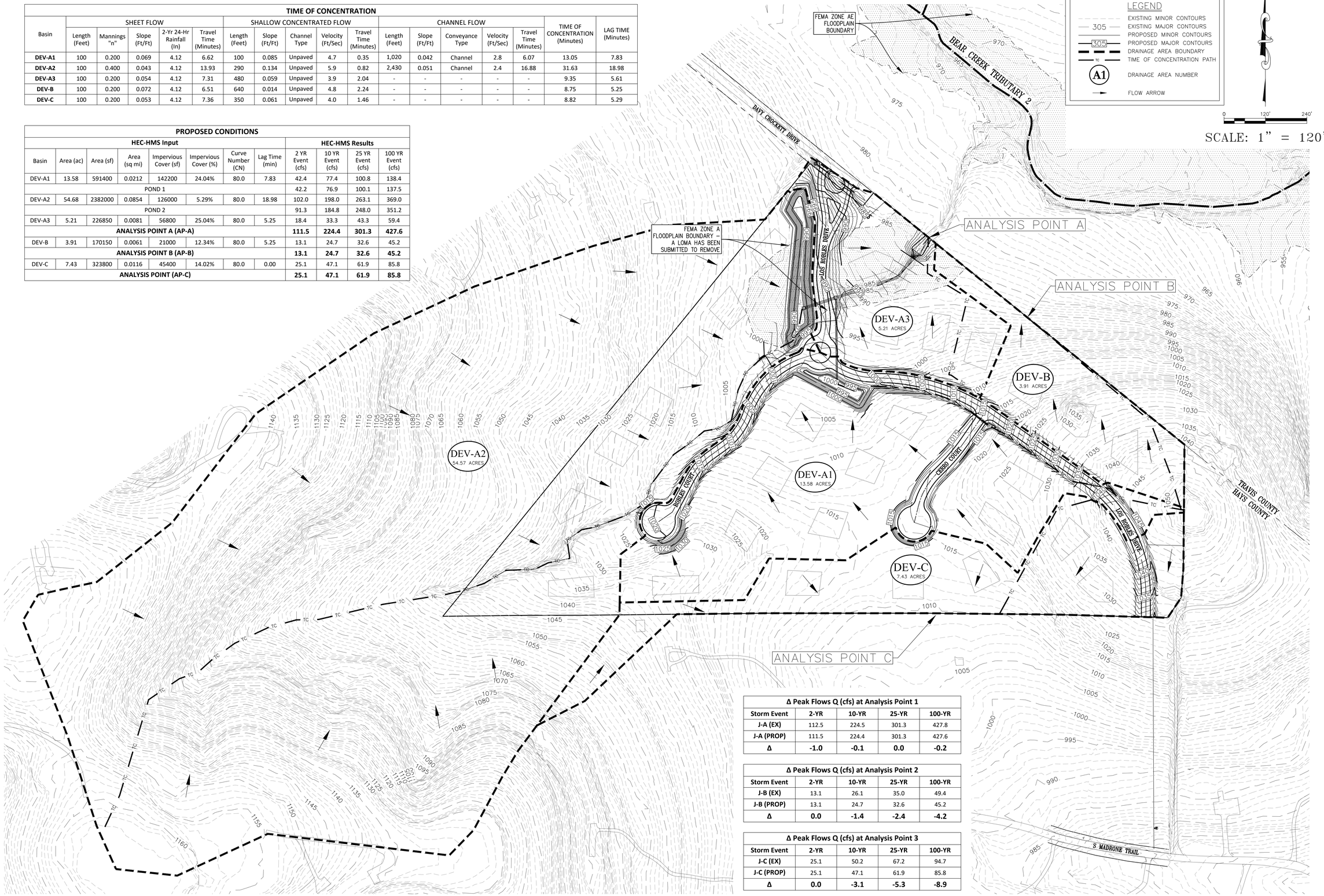
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TIME OF CONCENTRATION

Basin	SHEET FLOW					SHALLOW CONCENTRATED FLOW					CHANNEL FLOW					TIME OF CONCENTRATION (Minutes)	LAG TIME (Minutes)
	Length (Feet)	Mannings "n"	Slope (Ft/Ft)	2-Yr 24-Hr Rainfall (In)	Travel Time (Minutes)	Length (Feet)	Slope (Ft/Ft)	Channel Type	Velocity (Ft/Sec)	Travel Time (Minutes)	Length (Feet)	Slope (Ft/Ft)	Conveyance Type	Velocity (Ft/Sec)	Travel Time (Minutes)		
DEV-A1	100	0.200	0.069	4.12	6.62	100	0.085	Unpaved	4.7	0.35	1,020	0.042	Channel	2.8	6.07	13.05	7.83
DEV-A2	100	0.400	0.043	4.12	13.93	290	0.134	Unpaved	5.9	0.82	2,430	0.051	Channel	2.4	16.88	31.63	18.98
DEV-A3	100	0.200	0.054	4.12	7.31	480	0.059	Unpaved	3.9	2.04	-	-	-	-	-	9.35	5.61
DEV-B	100	0.200	0.072	4.12	6.51	640	0.014	Unpaved	4.8	2.24	-	-	-	-	-	8.75	5.25
DEV-C	100	0.200	0.053	4.12	7.36	350	0.061	Unpaved	4.0	1.46	-	-	-	-	-	8.82	5.29

PROPOSED CONDITIONS

HEC-HMS Input								HEC-HMS Results			
Basin	Area (ac)	Area (sf)	Area (sq mi)	Impervious Cover (sf)	Impervious Cover (%)	Curve Number (CN)	Lag Time (min)	2 YR Event (cfs)	10 YR Event (cfs)	25 YR Event (cfs)	100 YR Event (cfs)
DEV-A1	13.58	591400	0.0212	142200	24.04%	80.0	7.83	42.4	77.4	100.8	138.4
POND 1								42.2	76.9	100.1	137.5
DEV-A2	54.68	2382000	0.0854	126000	5.29%	80.0	18.98	102.0	198.0	263.1	369.0
POND 2								91.3	184.8	248.0	351.2
DEV-A3	5.21	226850	0.0081	56800	25.04%	80.0	5.25	18.4	33.3	43.3	59.4
ANALYSIS POINT A (AP-A)								**111.5**	**224.4**	**301.3**	**427.6**
DEV-B	3.91	170150	0.0061	21000	12.34%	80.0	5.25	13.1	24.7	32.6	45.2
ANALYSIS POINT B (AP-B)								**13.1**	**24.7**	**32.6**	**45.2**
DEV-C	7.43	323800	0.0116	45400	14.02%	80.0	0.00	25.1	47.1	61.9	85.8
ANALYSIS POINT (AP-C)								**25.1**	**47.1**	**61.9**	**85.8**



Δ Peak Flows Q (cfs) at Analysis Point 1				
Storm Event	**2-YR**	**10-YR**	**25-YR**	**100-YR**
J-A (EX)	112.5	224.5	301.3	427.8
J-A (PROP)	111.5	224.4	301.3	427.6
Δ	**-1.0**	**-0.1**	**0.0**	**-0.2**

Δ Peak Flows Q (cfs) at Analysis Point 2				
Storm Event	**2-YR**	**10-YR**	**25-YR**	**100-YR**
J-B (EX)	13.1	26.1	35.0	49.4
J-B (PROP)	13.1	24.7	32.6	45.2
Δ	**0.0**	**-1.4**	**-2.4**	**-4.2**

Δ Peak Flows Q (cfs) at Analysis Point 3				
Storm Event	**2-YR**	**10-YR**	**25-YR**	**100-YR**
J-C (EX)	25.1	50.2	67.2	94.7
J-C (PROP)	25.1	47.1	61.9	85.8
Δ	**0.0**	**-3.1**	**-5.3**	**-8.9**

DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

Carlson, Brigance & Doering, Inc.
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North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: PROPOSED HYDROLOGY MAP

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

04-28-2023

DATE: APRIL 2023

JOB NUMBER: 5509

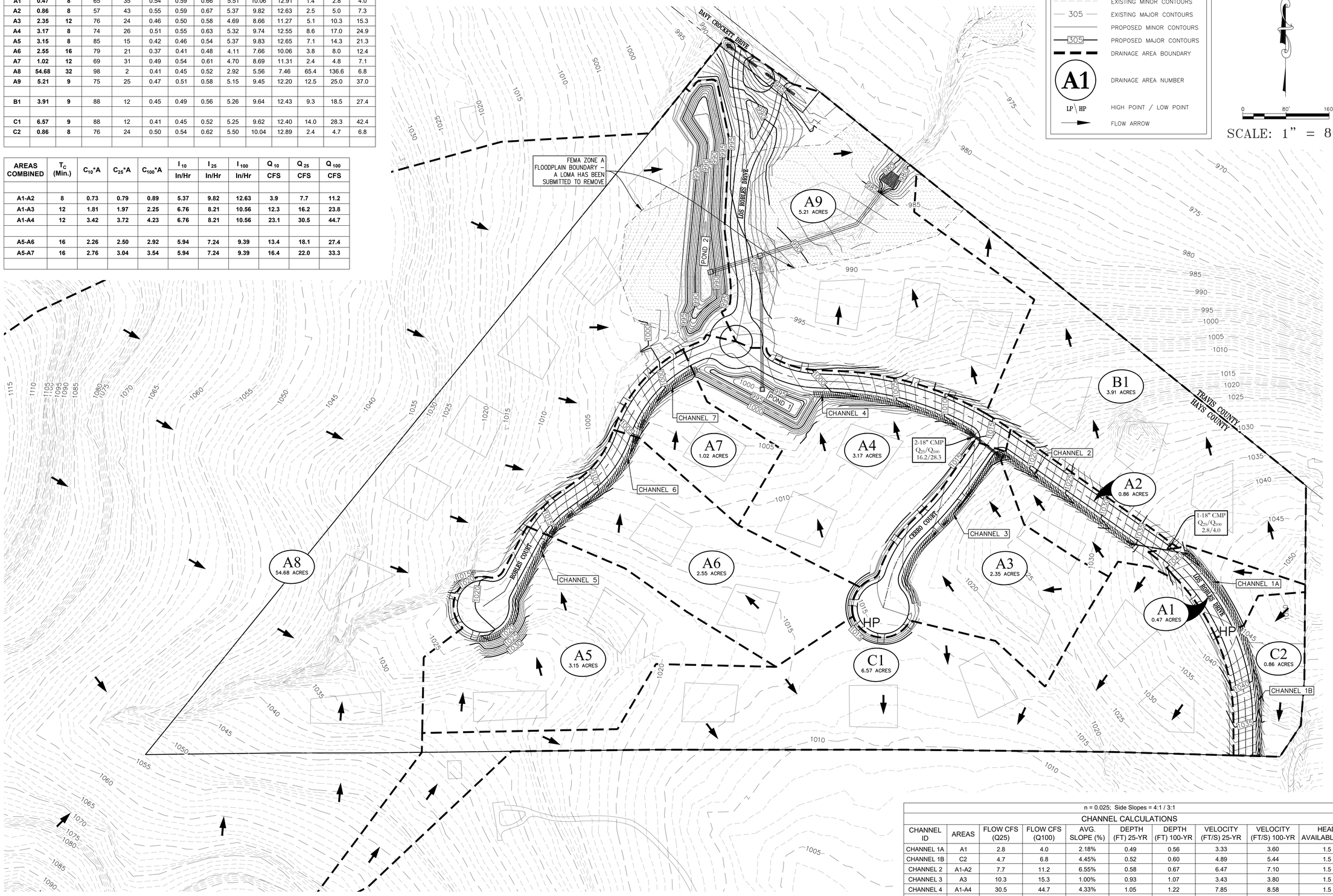
SHEET: 8 OF 41

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Area No.	Area (Acre)	T_C (Min.)	Perv. (%)	Imperv. (%)	C_{10}	C_{25}	C_{100}	I_{10} In/Hr	I_{25} In/Hr	I_{100} In/Hr	Q_{10} CFS	Q_{25} CFS	Q_{100} CFS
A1	0.47	8	65	35	0.54	0.59	0.66	5.51	10.06	12.91	1.4	2.8	4.0
A2	0.86	8	57	43	0.55	0.59	0.67	5.37	9.82	12.63	2.5	5.0	7.3
A3	2.35	12	76	24	0.46	0.50	0.58	4.69	8.66	11.27	5.1	10.3	15.3
A4	3.17	8	74	26	0.51	0.55	0.63	5.32	9.74	12.55	8.6	17.0	24.9
A5	3.15	8	85	15	0.42	0.46	0.54	5.37	9.83	12.65	7.1	14.3	21.3
A6	2.55	16	79	21	0.37	0.41	0.48	4.11	7.66	10.06	3.8	8.0	12.4
A7	1.02	12	69	31	0.49	0.54	0.61	4.70	8.69	11.31	2.4	4.8	7.1
A8	54.68	32	98	2	0.41	0.45	0.52	2.92	5.56	7.46	65.4	136.6	6.8
A9	5.21	9	75	25	0.47	0.51	0.58	5.15	9.45	12.20	12.5	25.0	37.0
B1	3.91	9	88	12	0.45	0.49	0.56	5.26	9.64	12.43	9.3	18.5	27.4
C1	6.57	9	88	12	0.41	0.45	0.52	5.25	9.62	12.40	14.0	28.3	42.4
C2	0.86	8	76	24	0.50	0.54	0.62	5.50	10.04	12.89	2.4	4.7	6.8

AREAS COMBINED	T_C (Min.)	C_{10}*A	C_{25}*A	C_{100}*A	I_{10} In/Hr	I_{25} In/Hr	I_{100} In/Hr	Q_{10} CFS	Q_{25} CFS	Q_{100} CFS
A1-A2	8	0.73	0.79	0.89	5.37	9.82	12.63	3.9	7.7	11.2
A1-A3	12	1.81	1.97	2.25	6.76	8.21	10.56	12.3	16.2	23.8
A1-A4	12	3.42	3.72	4.23	6.76	8.21	10.56	23.1	30.5	44.7
A5-A6	16	2.26	2.50	2.92	5.94	7.24	9.39	13.4	18.1	27.4
A5-A7	16	2.76	3.04	3.54	5.94	7.24	9.39	16.4	22.0	33.3



n = 0.025; Side Slopes = 4:1 / 3:1									
CHANNEL CALCULATIONS									
CHANNEL ID	AREAS	FLOW CFS (Q25)	FLOW CFS (Q100)	AVG. SLOPE (%)	DEPTH (FT) 25-YR	DEPTH (FT) 100-YR	VELOCITY (FT/S) 25-YR	VELOCITY (FT/S) 100-YR	HEAD AVAILABLE (FT)
CHANNEL 1A	A1	2.8	4.0	2.18%	0.49	0.56	3.33	3.60	1.5
CHANNEL 1B	C2	4.7	6.8	4.45%	0.52	0.60	4.89	5.44	1.5
CHANNEL 2	A1-A2	7.7	11.2	6.55%	0.58	0.67	6.47	7.10	1.5
CHANNEL 3	A3	10.3	15.3	1.00%	0.93	1.07	3.43	3.80	1.5
CHANNEL 4	A1-A4	30.5	44.7	4.33%	1.05	1.22	7.85	8.58	1.5
CHANNEL 5	A5	14.3	21.3	2.05%	0.92	1.06	4.87	5.38	1.5
CHANNEL 6	A5-A6	18.1	27.4	4.23%	0.87	1.02	6.80	7.54	1.5
CHANNEL 7	A5-A7	22.0	33.3	4.44%	0.93	1.09	7.25	8.04	1.5

DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

Carlson, Brigance & Doering, Inc.
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North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: DRAINAGE PLAN

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC. @ F3791

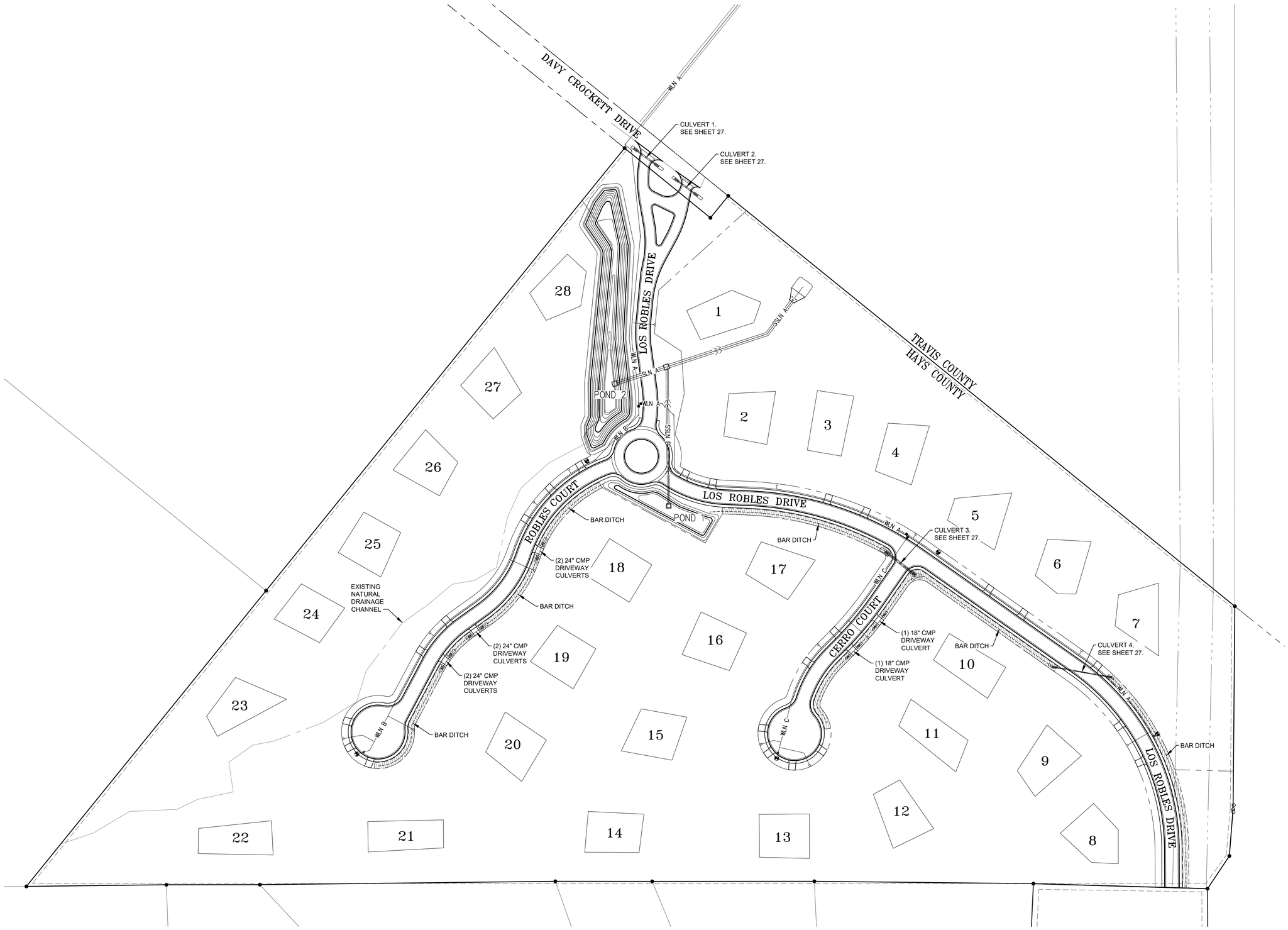
04-28-2023

DATE: APRIL 2023

JOB NUMBER: 5509

SHEET: 9 OF 41

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DESIGNED BY: CJM

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DATE

REVISION

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SHEET NAME: OVERALL SITE LAYOUT

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED
PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

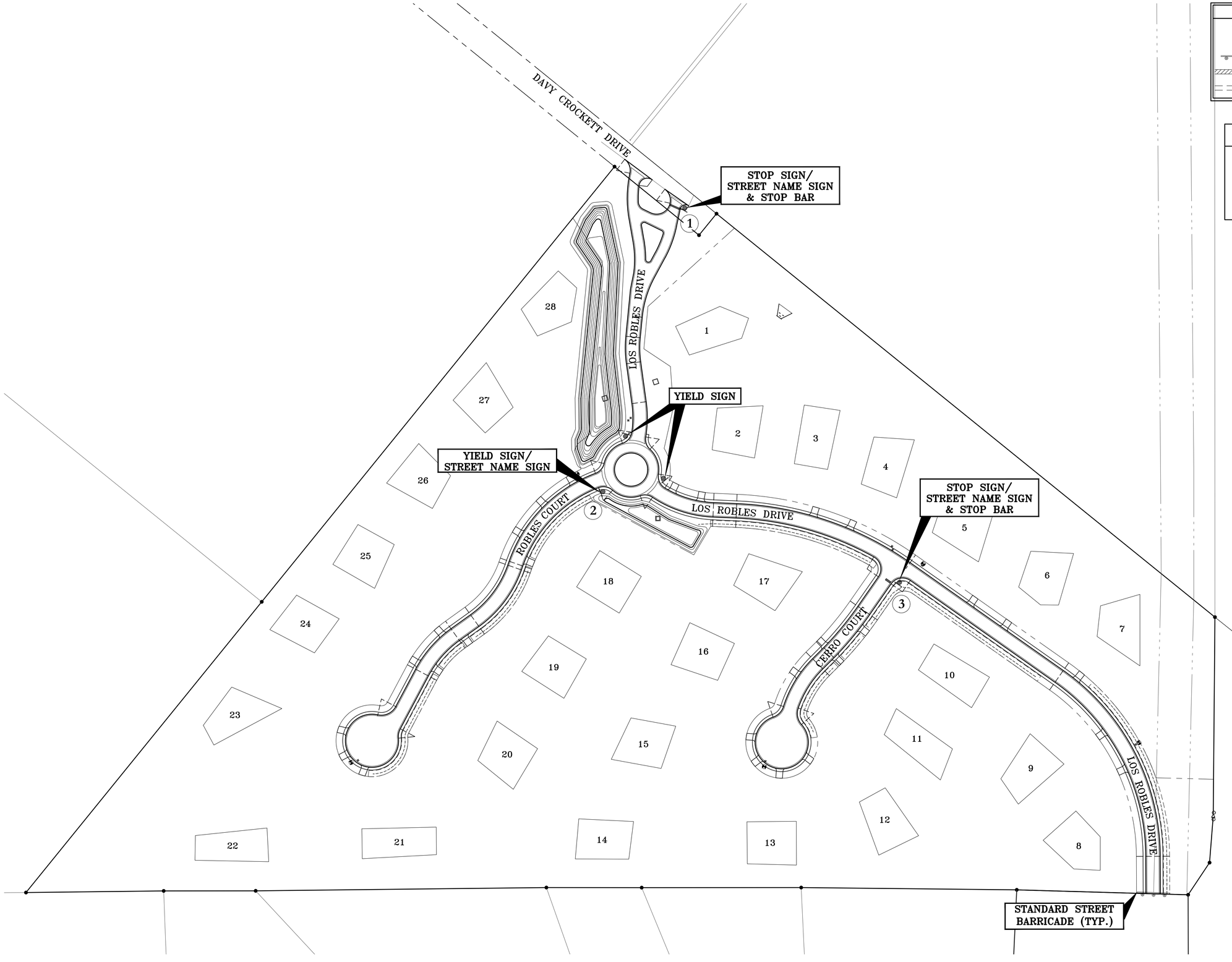
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DATE
APRIL 2023

JOB NUMBER
5509

SHEET
10 OF 41

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LEGEND

- STOP SIGN & STREET NAME SIGN
- STOP BAR
- STANDARD STREET BARRICADE
- SIDEWALK THIS CONTRACT
- SIDEWALK BY HOMEBUILDER

STOP SIGN / STREET NAME LOCATIONS

1. DAVY CROCKETT DRIVE/ LOS ROBLES DRIVE
2. LOS ROBLES DRIVE/ ROBLES COURT
3. LOS ROBLES DRIVE/ CERRO COURT

0 80' 160'

SCALE: 1" = 80'

NOTES:

1. ALL DEVICES SHALL BE SET IN ACCORDANCE WITH THE LATEST EDITION OF THE TXMUTCD.
2. DEVICE SPACING SHALL BE SET ACCORDING TO TXDOT STANADARD BC (2) 14.
3. CONTRACTOR SHALL PROVIDE AND MAINTAIN A 11' TRAVEL LANE IN EACH DIRECTION
4. WORK HOURS WILL BE DETERMINED BY PERMITTING AUTHORITY.
5. ALL SIGNS AND BARRICADES SHALL HAVE SANDBAGS INSTALLED TO PREVENT DISPLACEMENT BY WIND.

DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

Carlson, Brigance & Doering, Inc.
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www.cbdeng.com

SHEET NAME: TRAFFIC CONTROL PLAN

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGANCE & DOERING, INC.
F-3791

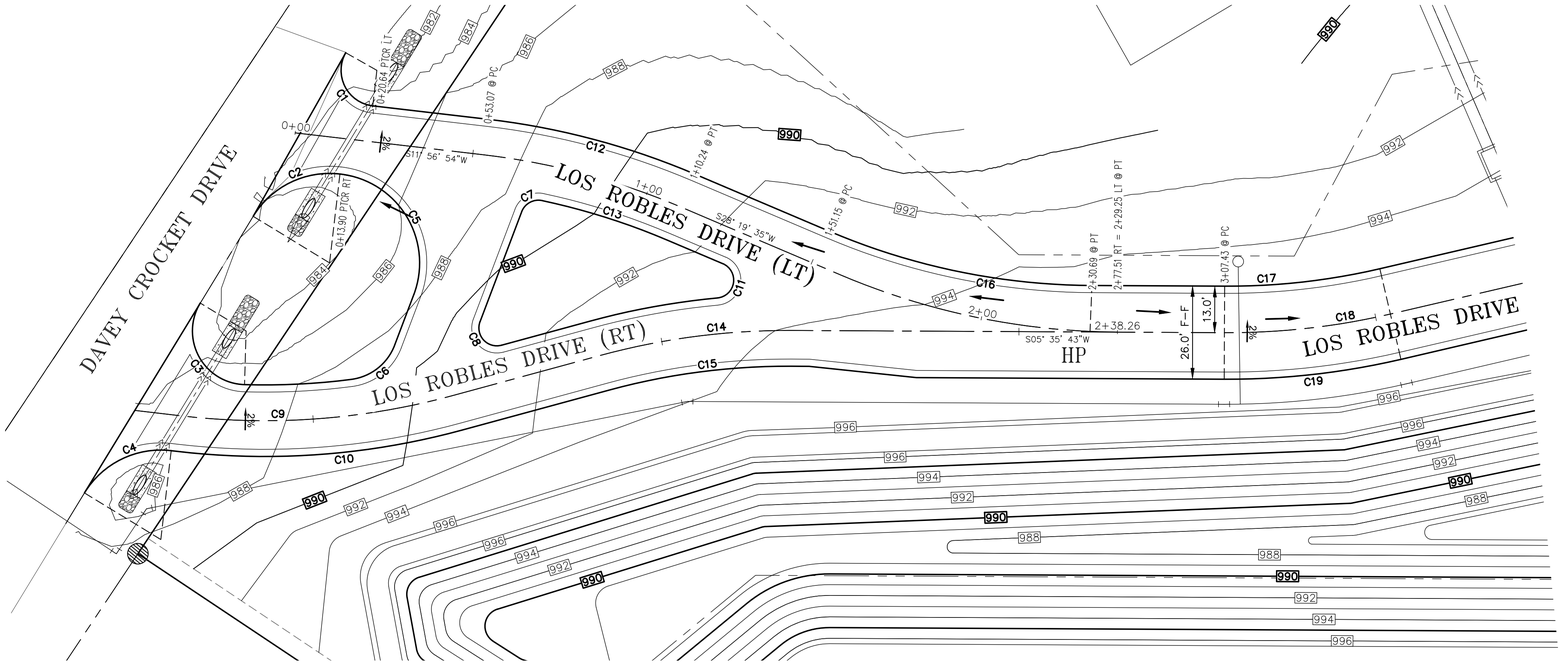
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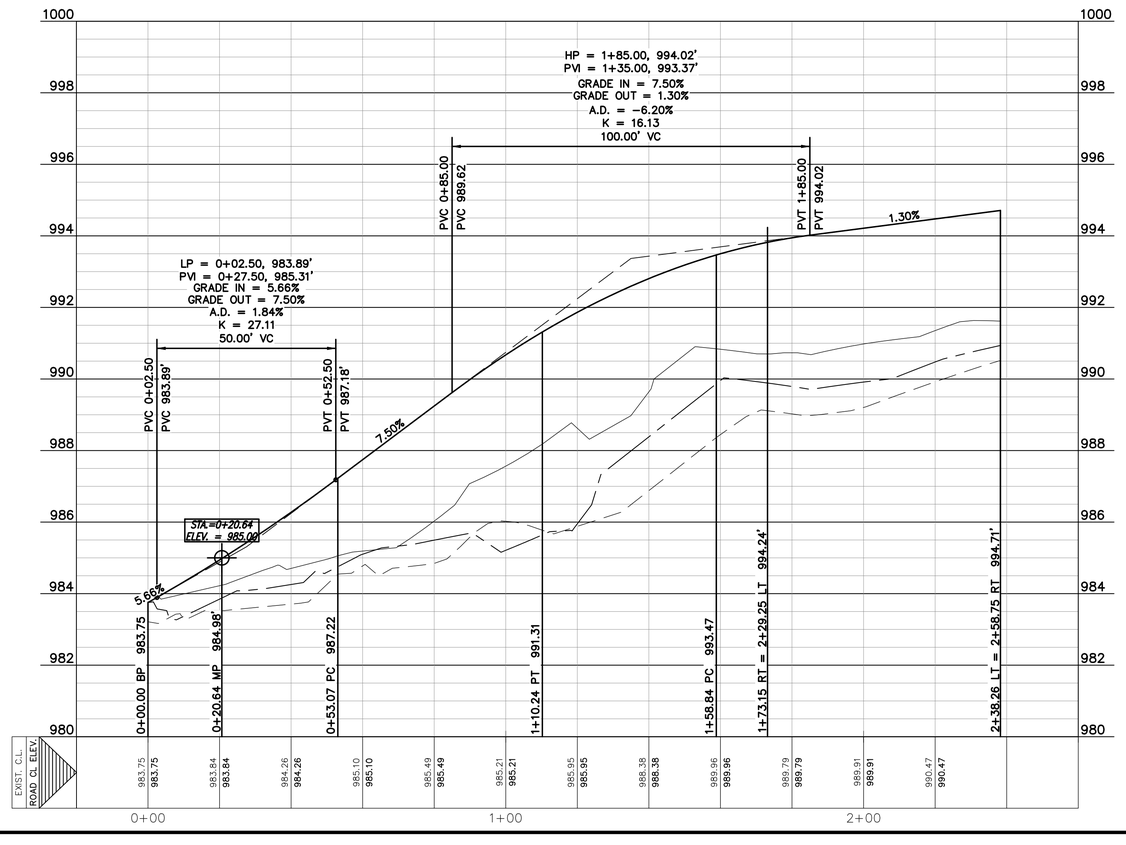
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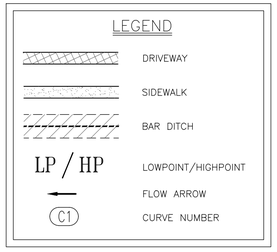
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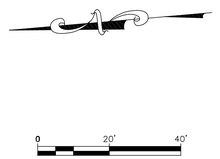


PROFILE SCALE		
HORIZ: 1" = 20'	NATURAL GROUND RT. ———	NATURAL GROUND LT. — — — —
VERT: 1" = 2'	NATURAL GROUND ℄ ——— — ———	PROPOSED T/C LT. & RT. ———



Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C1	10.00'	15.06'	112°49'56"	16.66'	19.69'
C2	25.00'	16.01'	065°15'53"	26.96'	28.48'
C3	15.00'	25.82'	119°41'11"	25.94'	31.33'
C4	25.00'	16.01'	065°15'51"	26.96'	28.48'
C5	25.00'	30.81'	101°53'24"	38.83'	44.46'
C6	15.00'	9.00'	061°55'46"	15.44'	16.21'
C7	5.00'	4.29'	081°14'06"	6.51'	7.09'
C8	5.00'	9.81'	125°58'21"	8.91'	10.99'
C9	200.00'	38.64'	021°52'08"	75.87'	76.34'
C10	210.00'	40.57'	021°52'08"	79.67'	80.15'
C11	5.00'	19.76'	151°36'20"	9.69'	13.23'
C12	210.00'	30.22'	016°22'41"	59.82'	60.03'
C13	190.00'	18.36'	011°02'22"	36.55'	36.61'
C14	200.00'	26.98'	015°21'48"	53.47'	53.63'
C15	190.00'	25.88'	015°30'57"	51.30'	51.45'
C16	190.00'	38.19'	022°43'52"	74.89'	75.38'
C17	187.00'	21.97'	013°24'06"	43.64'	43.74'
C18	200.00'	23.50'	013°24'06"	46.67'	46.78'
C19	213.00'	25.02'	013°24'06"	49.71'	49.82'
C20	213.00'	32.26'	017°13'25"	63.79'	64.03'
C21	200.10'	27.85'	015°50'49"	55.17'	55.35'
C22	187.00'	26.04'	015°51'17"	51.58'	51.75'





SCALE: 1" = 20'

DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

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SHEET NAME: LOS ROBLES DRIVE LT (0+00 TO END)
JOB NAME: LOS ROBLES RANCH
PROJECT: SITE DEVELOPMENT PLANS

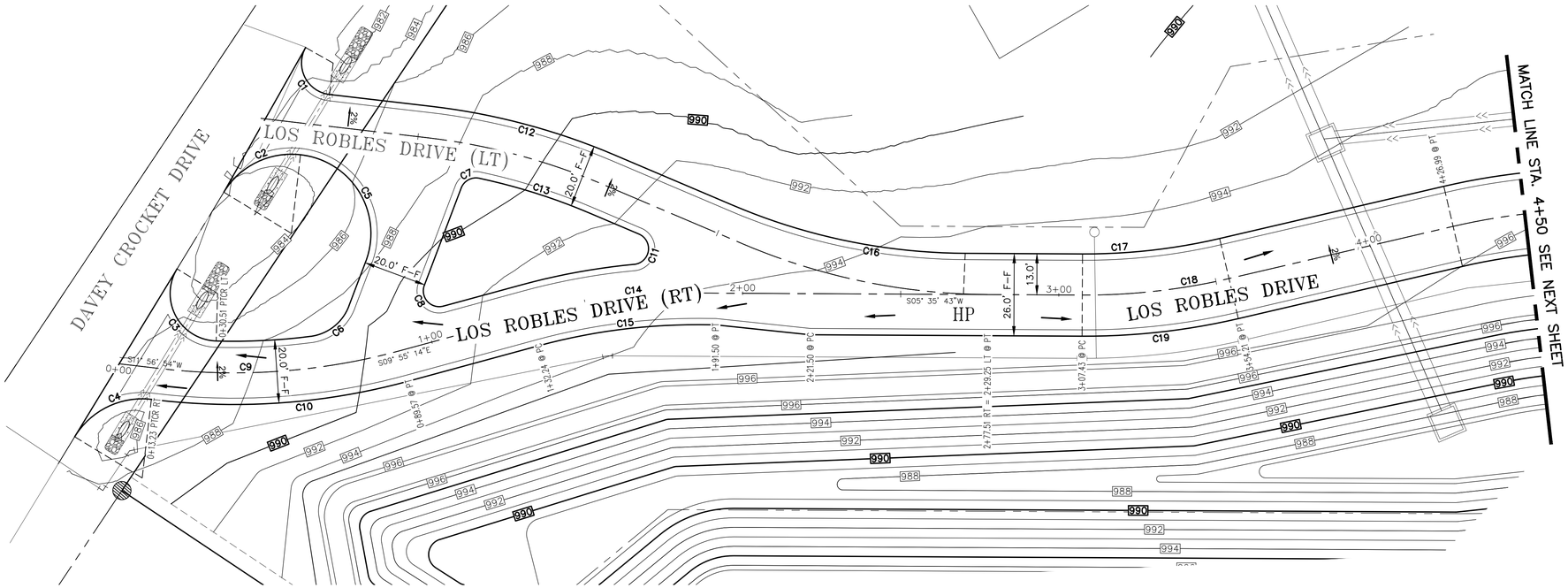
STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
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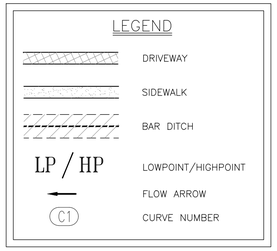
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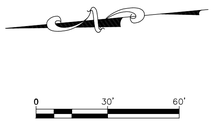
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SHEET: 12 OF 41

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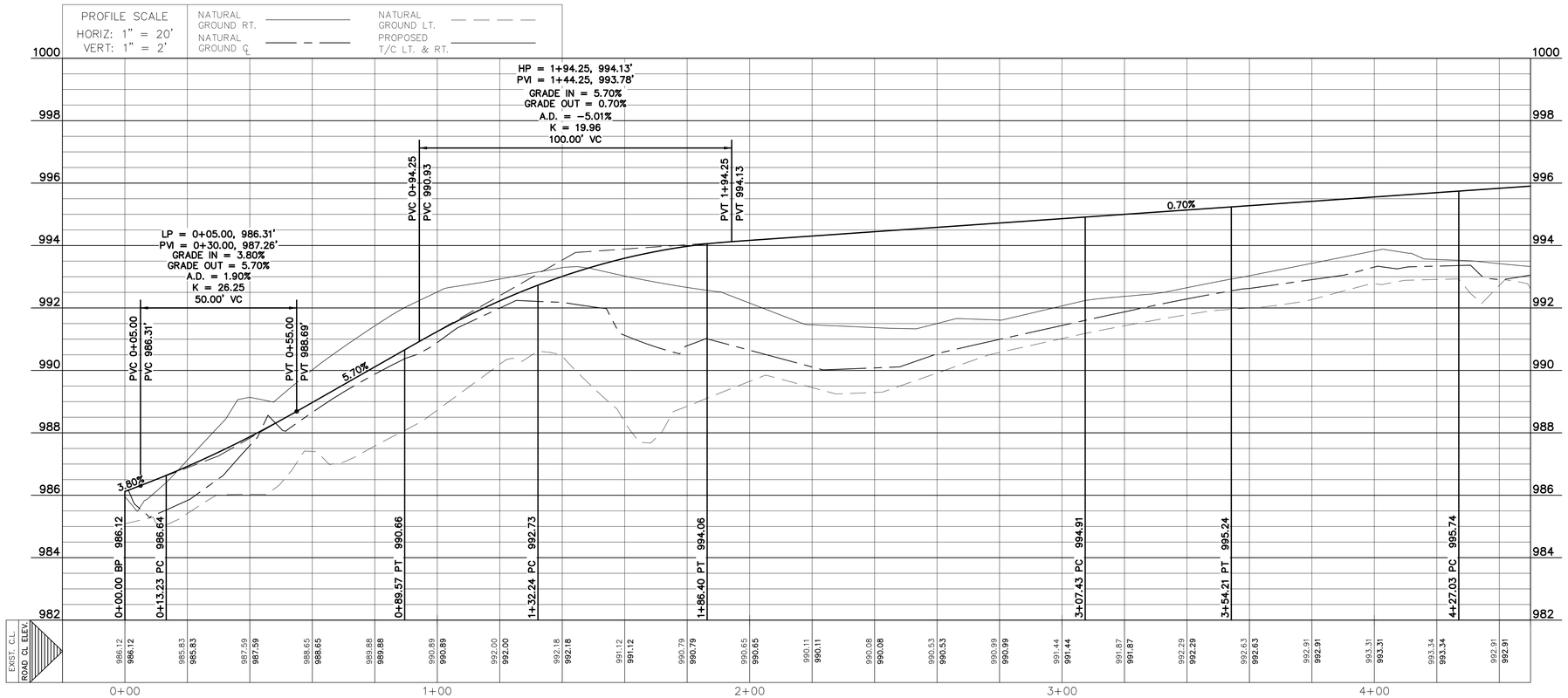
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SCALE: 1" = 30'



Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C1	10.00'	15.06'	112°49'56"	16.66'	19.69'
C2	25.00'	16.01'	065°15'53"	26.96'	28.48'
C3	15.00'	25.82'	119°41'11"	25.94'	31.33'
C4	25.00'	16.01'	065°15'51"	26.96'	28.48'
C5	25.00'	30.81'	101°53'24"	38.83'	44.46'
C6	15.00'	9.00'	061°55'46"	15.44'	16.21'
C7	5.00'	4.29'	081°14'06"	6.51'	7.09'
C8	5.00'	9.81'	125°58'21"	8.91'	10.99'
C9	200.00'	38.64'	021°52'08"	75.87'	76.34'
C10	210.00'	40.57'	021°52'08"	79.67'	80.15'
C11	5.00'	19.76'	151°36'20"	9.69'	13.23'
C12	210.00'	30.22'	016°22'41"	59.82'	60.03'
C13	190.00'	18.36'	011°02'22"	36.55'	36.61'
C14	200.00'	26.98'	015°21'48"	53.47'	53.63'
C15	190.00'	25.88'	015°30'57"	51.30'	51.45'
C16	190.00'	38.19'	022°43'52"	74.89'	75.38'
C17	187.00'	21.97'	013°24'06"	43.64'	43.74'
C18	200.00'	23.50'	013°24'06"	46.67'	46.78'
C19	213.00'	25.02'	013°24'06"	49.71'	49.82'
C20	213.00'	32.26'	017°13'25"	63.79'	64.03'
C21	200.10'	27.85'	015°50'49"	55.17'	55.35'
C22	187.00'	26.04'	015°51'17"	51.58'	51.75'

DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

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Main Office
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SHEET NAME: LOS ROBLES DRIVE (0+00 TO 4+00)

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

04-28-2023

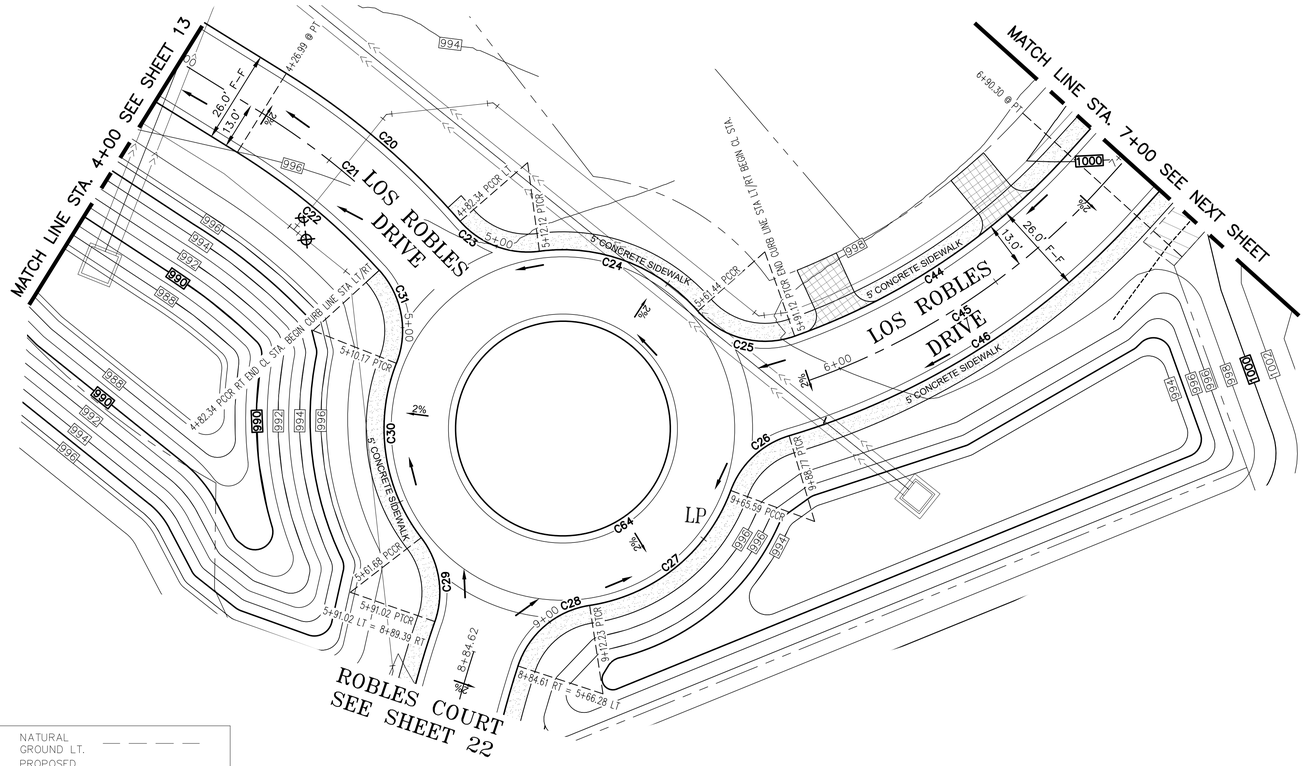
DATE: APRIL 2023

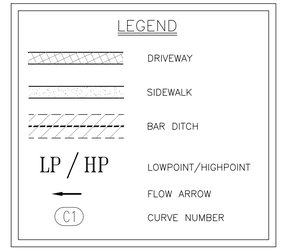
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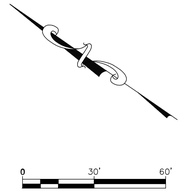
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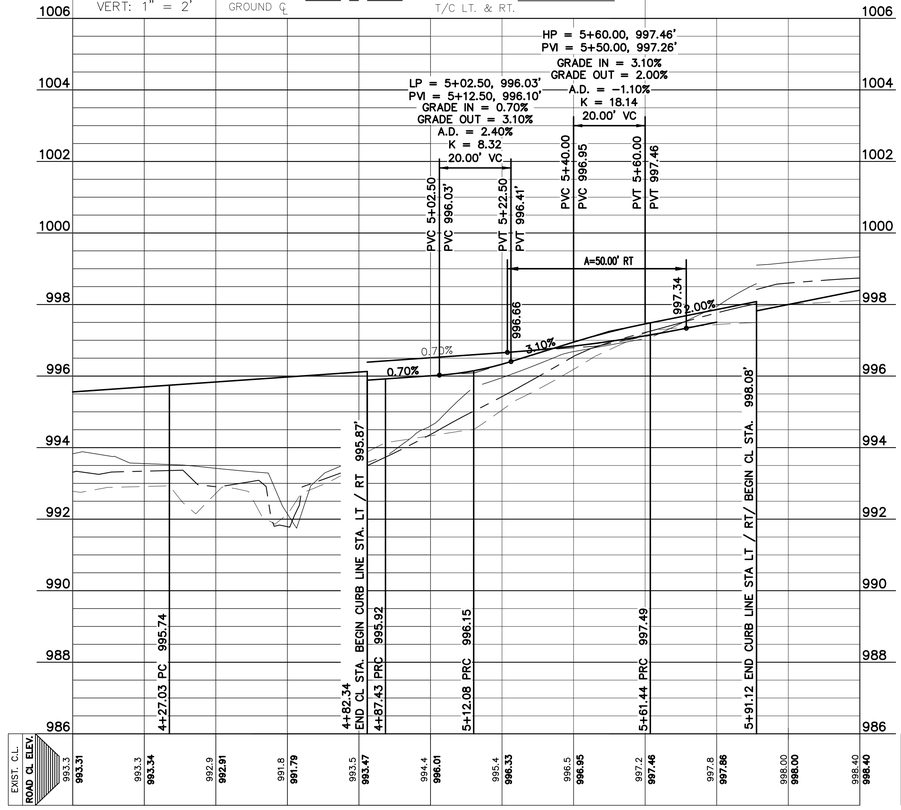
OCE-STREET.CTB







SCALE: 1" = 30'



Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C20	213.00'	32.26'	017°13'25"	63.79'	64.03'
C21	200.10'	27.85'	015°50'49"	55.17'	55.35'
C22	187.00'	26.04'	015°51'17"	51.58'	51.75'
C23	25.00'	13.46'	056°34'51"	23.70'	24.69'
C24	49.82'	26.92'	056°45'30"	47.36'	49.35'
C25	25.00'	16.87'	068°01'23"	27.97'	29.68'
C26	25.00'	12.50'	053°07'22"	22.36'	23.18'
C27	49.75'	29.59'	061°29'22"	50.86'	53.39'
C28	25.00'	15.41'	063°17'28"	26.23'	27.62'
C29	25.01'	13.49'	056°41'56"	23.75'	24.75'
C30	50.00'	28.30'	059°01'37"	49.26'	51.51'
C31	25.00'	15.55'	063°46'32"	26.41'	27.83'
C44	187.00'	47.34'	028°24'51"	91.79'	92.74'
C45	199.93'	50.63'	028°25'25"	98.17'	99.18'
C46	213.00'	59.71'	031°19'13"	114.99'	116.44'
C64	30.00'	0.01'	359°57'43"	0.02'	188.48'

Carlson, Brigance & Doering, Inc.
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North Office
12129 RR 620 N., Ste. 600
Austin, Texas 78750
www.cbdeng.com

DESIGNED BY: CJM
DRAFTED BY: CEL
DATE
REVISION

SHEET NAME: LOS ROBLES DRIVE (4+00 TO 7+00)
JOB NAME: LOS ROBLES RANCH
PROJECT: SITE DEVELOPMENT PLANS

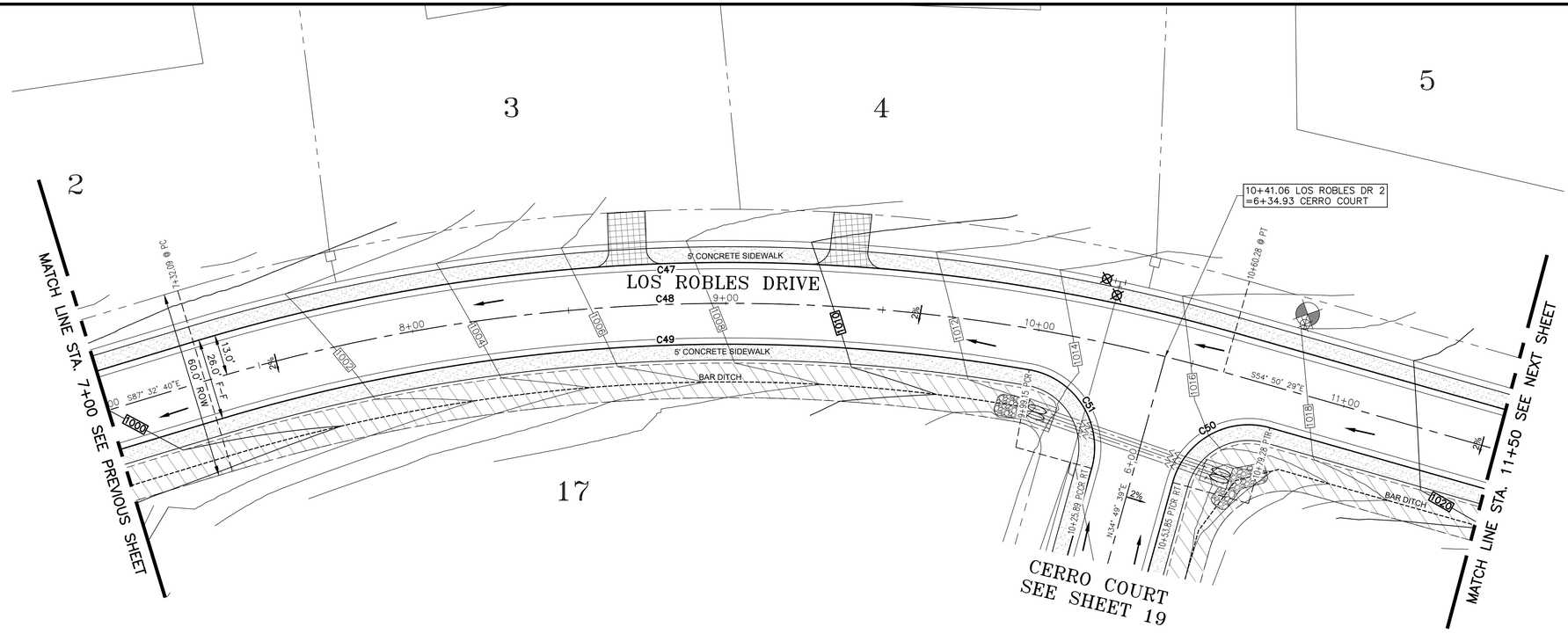
STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

04-28-2023

DATE APRIL 2023
JOB NUMBER 5509
SHEET 14 OF 41

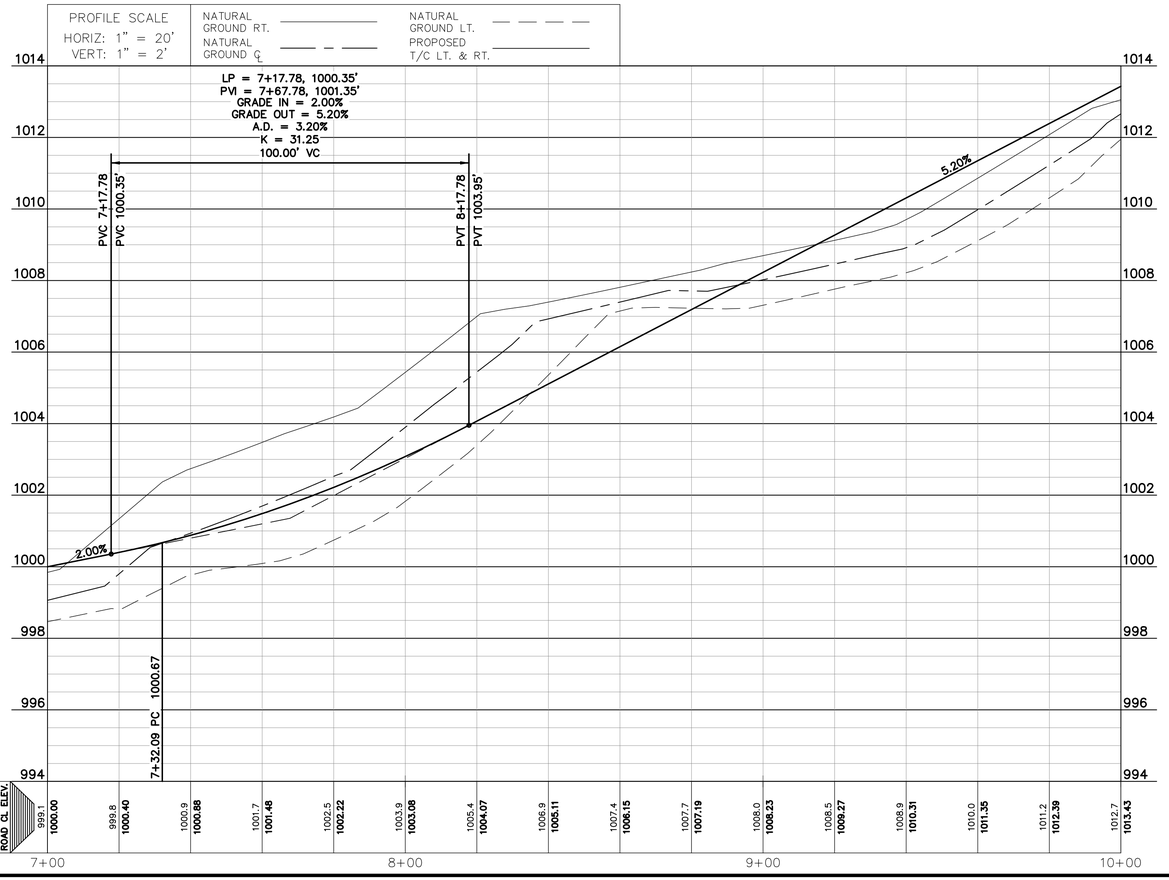
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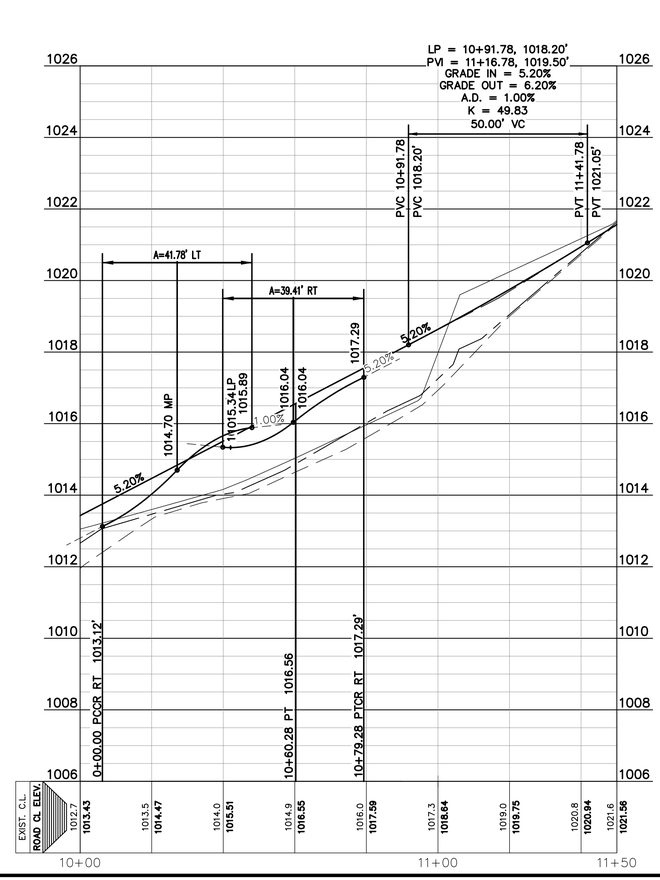
OCE-ENGINEERING.CTB





SCALE: 1" = 20'





Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C44	187.00'	47.34'	028°24'51"	91.79'	92.74'
C45	199.93'	50.63'	028°25'25"	98.17'	99.18'
C46	213.00'	59.71'	031°19'13"	114.99'	116.44'
C47	588.00'	172.52'	032°42'11"	331.08'	335.62'
C48	575.00'	168.70'	032°42'11"	323.76'	328.20'
C49	561.48'	132.92'	026°38'12"	258.68'	261.03'
C50	24.10'	26.17'	094°44'12"	35.45'	39.84'
C51	25.00'	27.65'	095°45'38"	37.09'	41.78'

DESIGNED BY: CJM	DRAFTED BY: CEL
DATE	
REVISION	

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www.cbdeng.com

SHEET NAME: LOS ROBLES DRIVE (7+00 TO 11+50)
JOB NAME: LOS ROBLES RANCH
PROJECT: SITE DEVELOPMENT PLANS

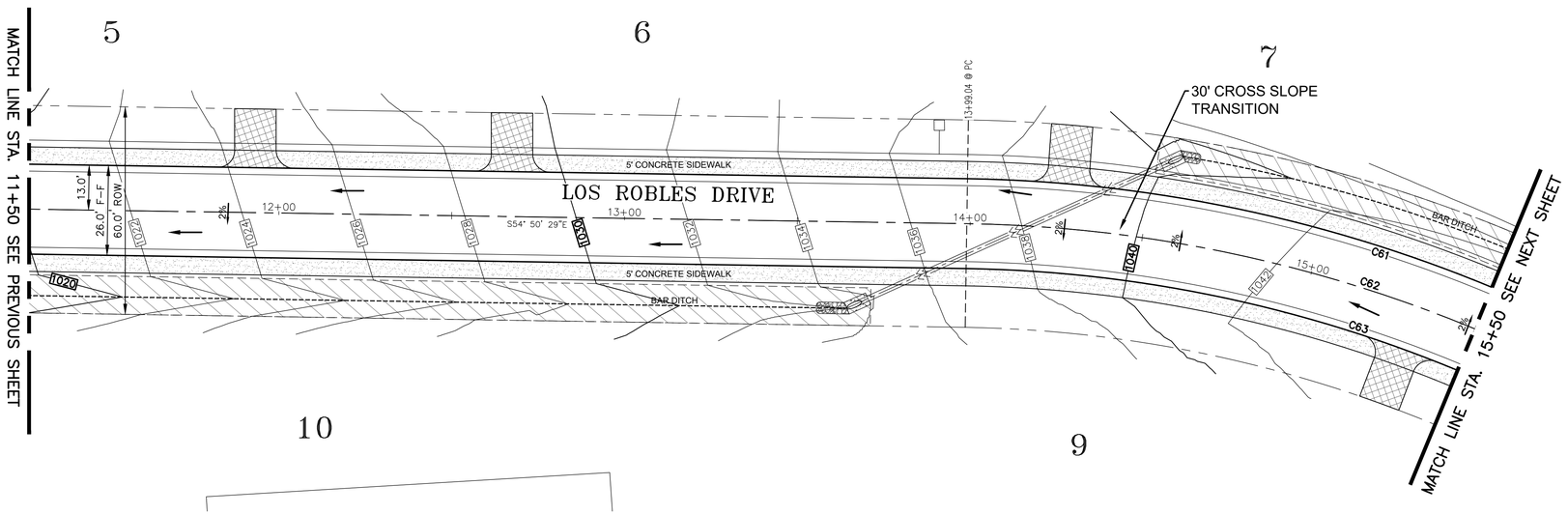
STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

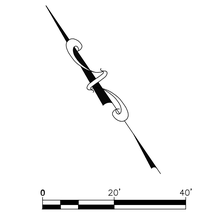
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DATE APRIL 2023
JOB NUMBER 5509
SHEET 15 OF 41

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OCE-ENGINEERING.CTB



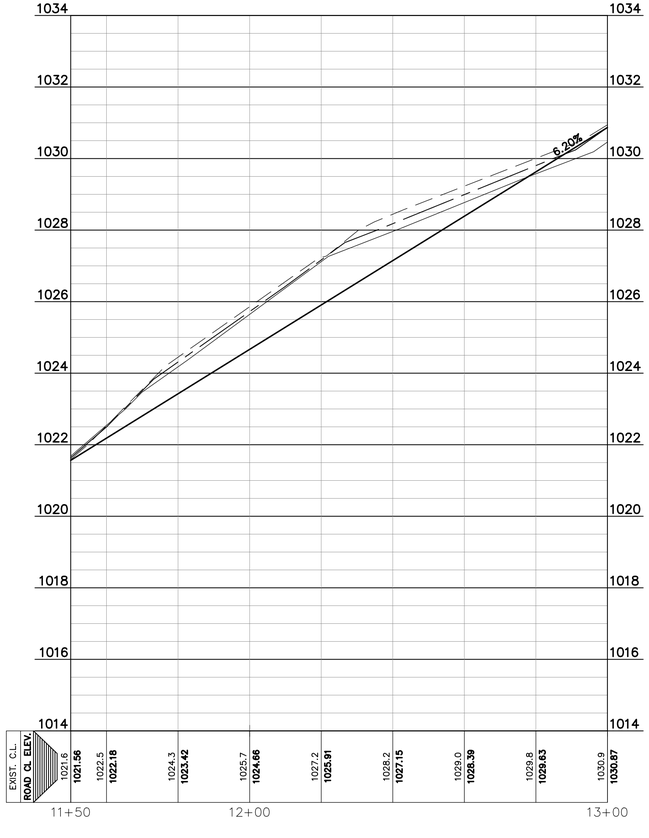


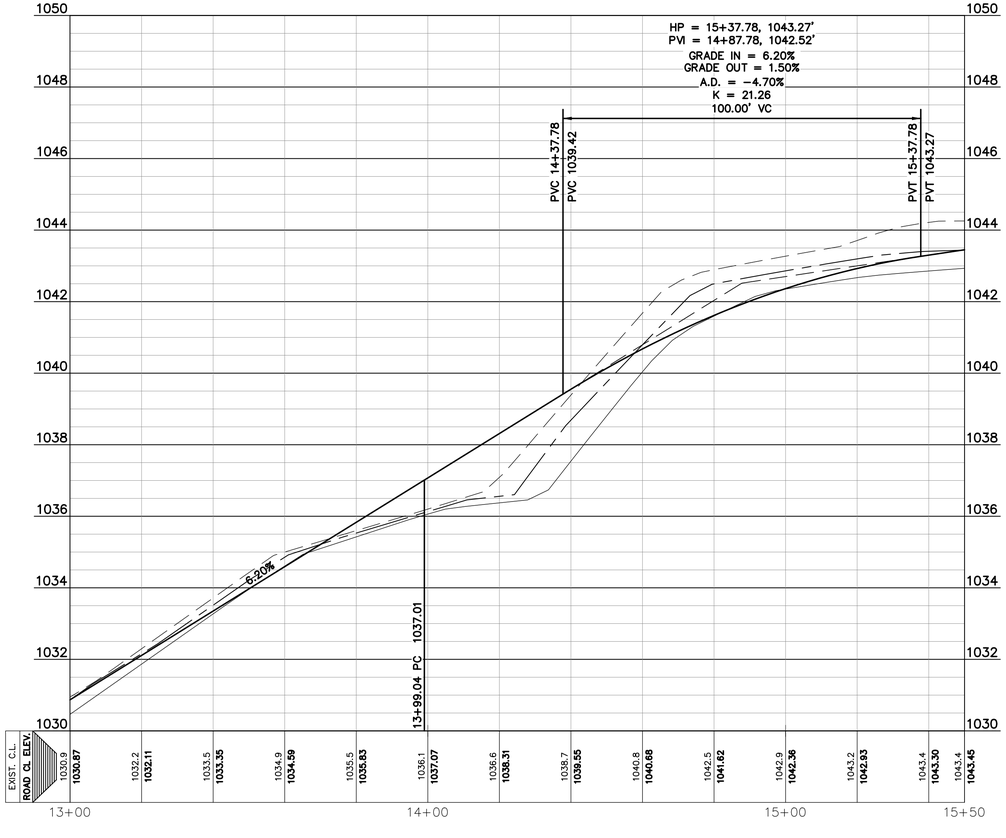
SCALE: 1" = 20'

LEGEND

- DRIVEWAY
- SIDEWALK
- BAR DITCH
- LP / HP — LOWPOINT/HIGHPOINT
- FLOW ARROW
- C1 — CURVE NUMBER

PROFILE SCALE			
HORIZ: 1" = 20'	NATURAL GROUND RT.	NATURAL GROUND LT.	
VERT: 1" = 2'	NATURAL GROUND ℄	PROPOSED T/C LT. & RT.	





Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C61	413.00'	213.24'	054°37'01"	378.95'	393.69'
C62	400.00'	206.53'	054°37'00"	367.02'	381.30'
C63	387.00'	199.82'	054°36'59"	355.09'	368.90'

DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

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SHEET NAME: LOS ROBLES DRIVE (11+50 TO 16+00)

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGANCE & DOERING, INC.
ENGINEERING FIRM F-3791

04-28-2023

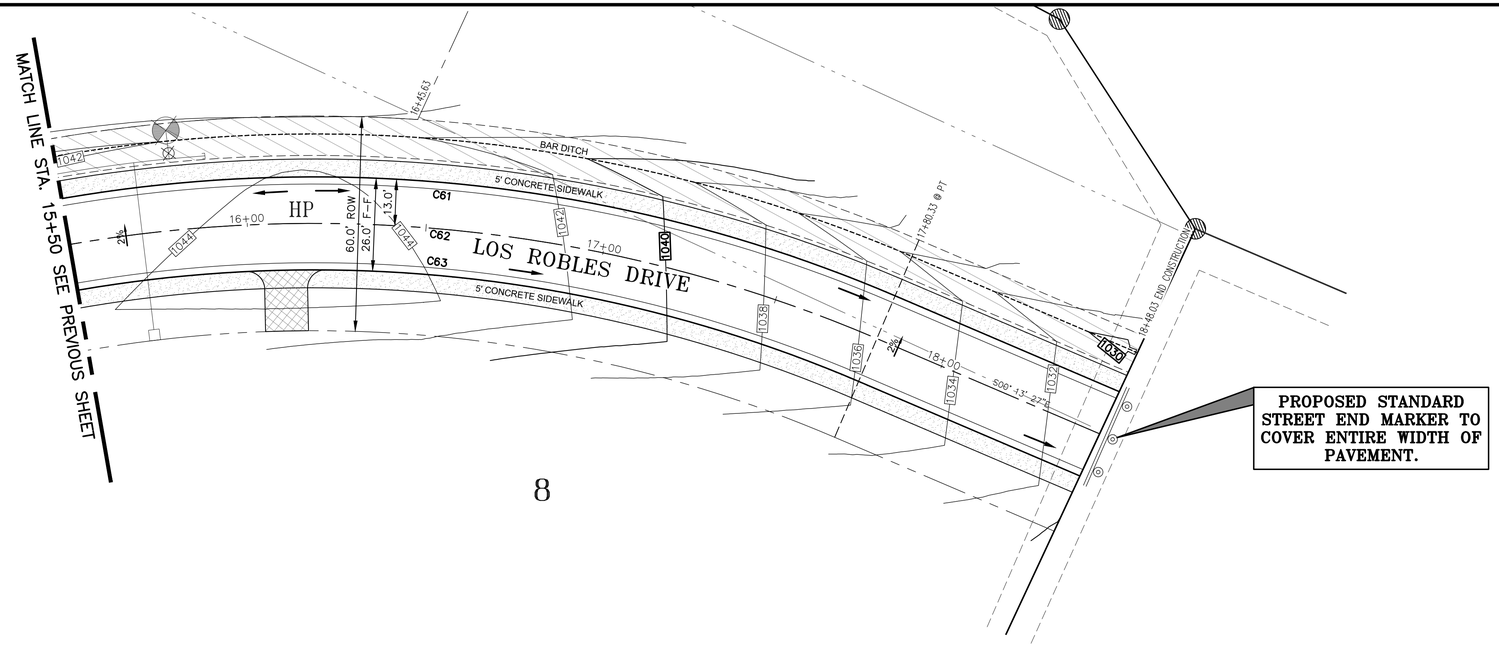
DATE: APRIL 2023

JOB NUMBER: 5509

SHEET: 16 OF 41

FILE PATH: J:\AC2023\5509\dwg\5509 - STREETS LOS ROBLES DRIVE.dwg - Apr 28, 2023 - 9:17am

OCE-STREET.CTB



8



0 20' 40'

SCALE: 1" = 20'

LEGEND	
	DRIVEWAY
	SIDEWALK
	BAR DITCH
LP / HP	LOWPOINT/HIGHPOINT
←	FLOW ARROW
C1	CURVE NUMBER

PROFILE SCALE		
HORIZ: 1" = 20'	NATURAL GROUND RT.	NATURAL GROUND LT.
VERT: 1" = 2'	NATURAL GROUND ℄	PROPOSED T/C LT. & RT.

Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C61	413.00'	213.24'	054°37'01"	378.95'	393.69'
C62	400.00'	206.53'	054°37'00"	367.02'	381.30'
C63	387.00'	199.82'	054°36'59"	355.09'	368.90'

DESIGNED BY: CJM | DRAFTED BY: CEL

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SHEET NAME: LOS ROBLES DRIVE (16+00 TO END)

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

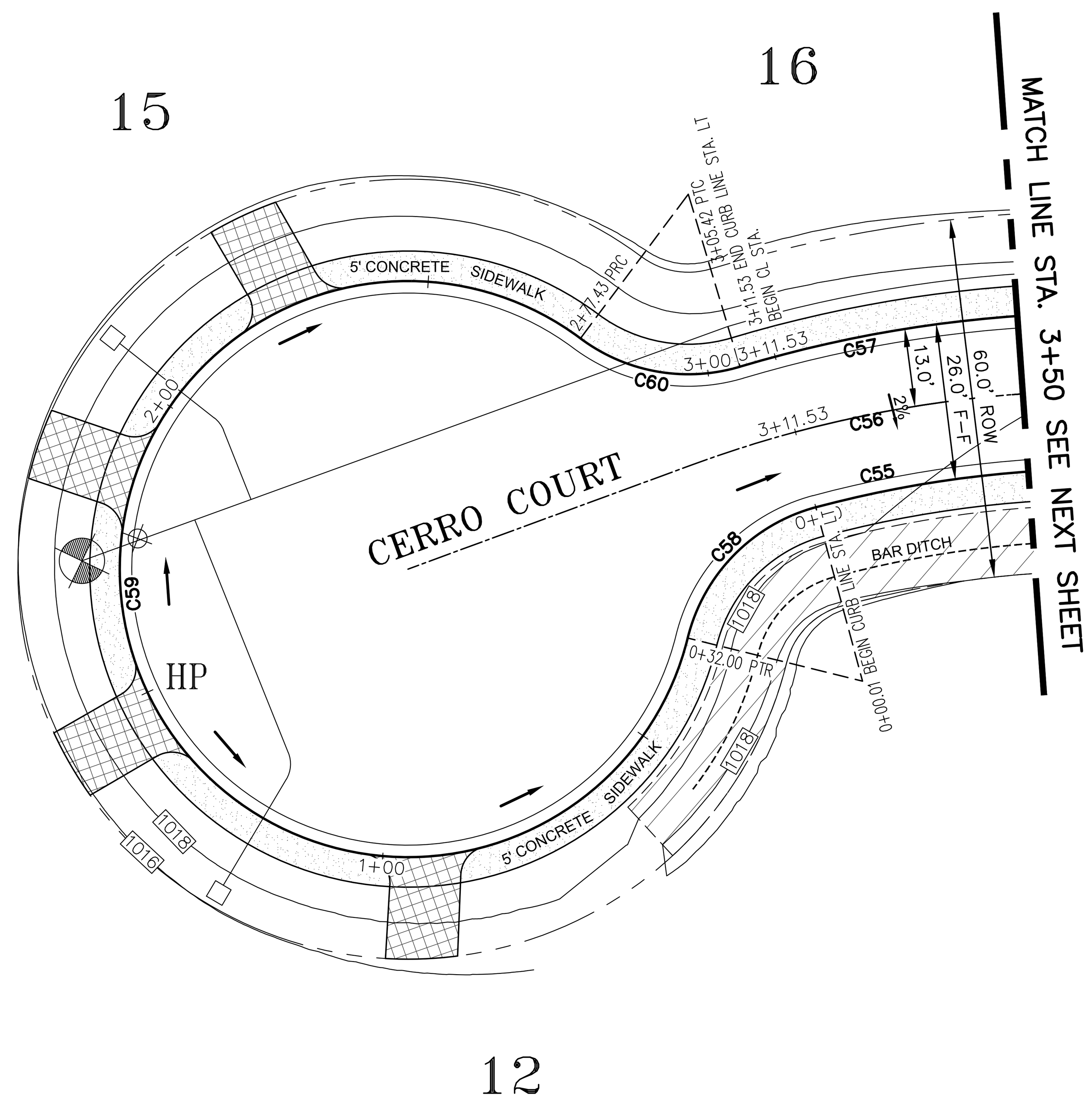
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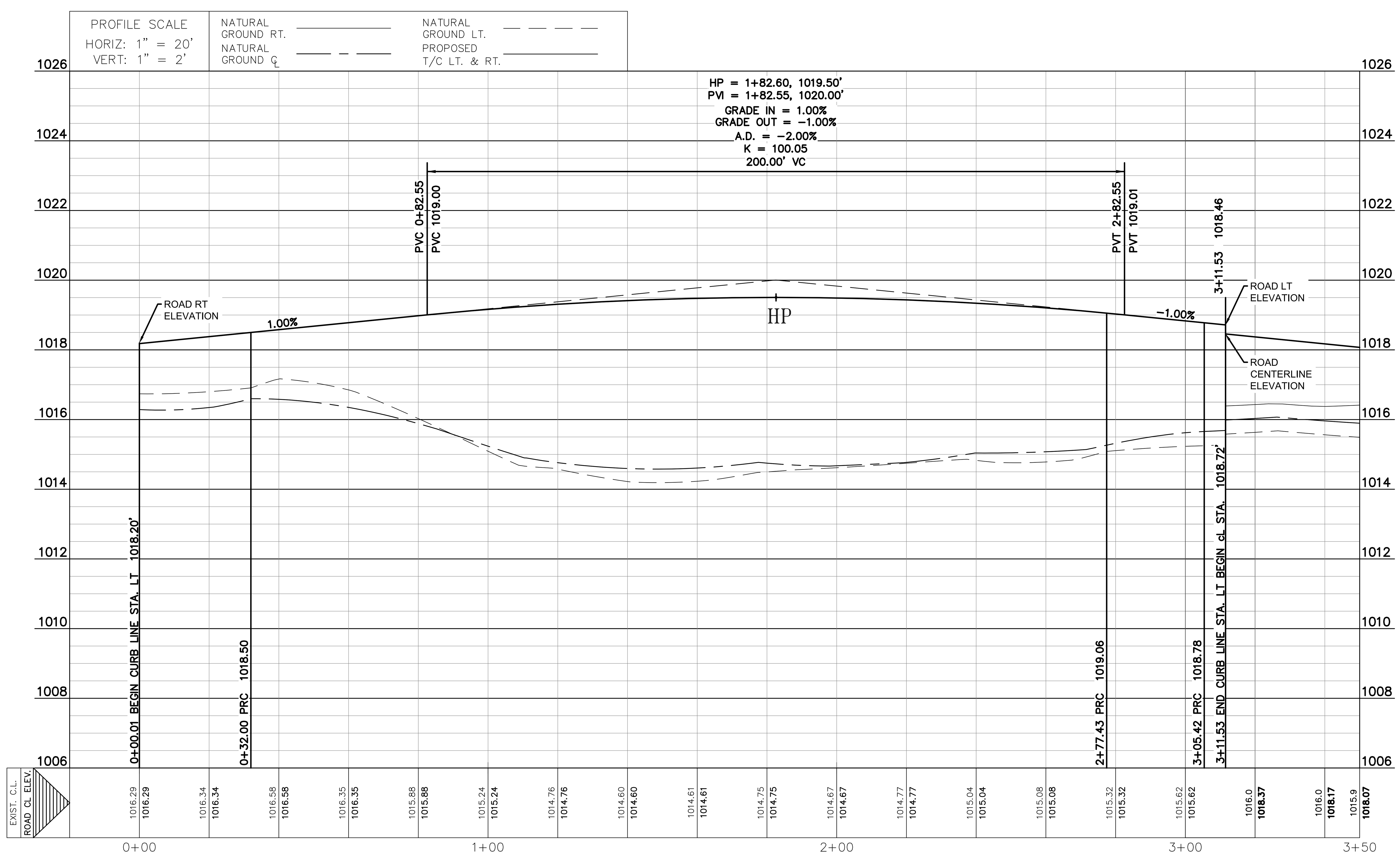
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JOB NUMBER: 5509

SHEET: 17 OF 41

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LEGEND

(driveway symbol)	DRIVEWAY
(sidewalk symbol)	SIDEWALK
(bar ditch symbol)	BAR DITCH
LP / HP	LOWPOINT/HIGHPOINT
←	FLOW ARROW
C1	CURVE NUMBER

0 20' 40'

SCALE: 1" = 20'

Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C55	187.00'	42.86'	025°49'04"	83.55'	84.26'
C56	200.00'	55.34'	030°56'02"	106.67'	107.98'
C57	213.00'	52.04'	027°27'39"	101.11'	102.09'
C58	30.00'	17.70'	061°05'23"	30.49'	31.99'
C59	48.00'	31.81'	292°55'25"	53.04'	245.38'
C60	30.18'	15.09'	053°07'07"	26.99'	27.98'

DESIGNED BY: CJM
DRAFTED BY: CEL

DATE	REVISION

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SHEET NAME: CERRO COURT (0+00 TO 3+50)

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

04-28-2023

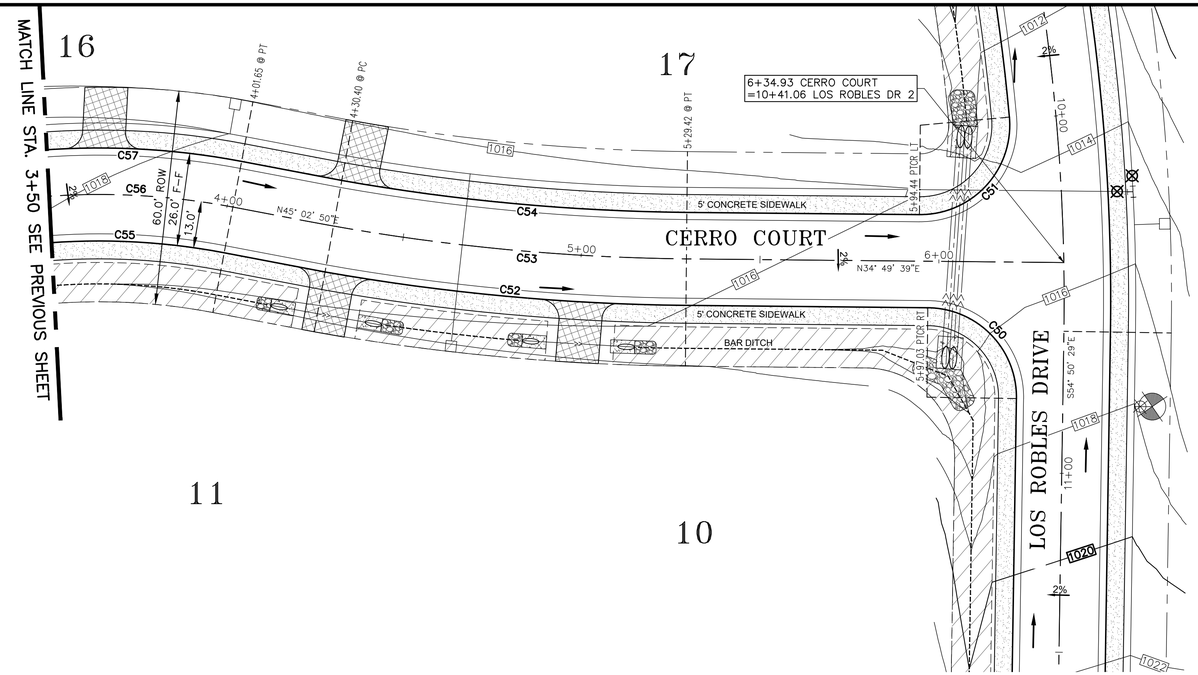
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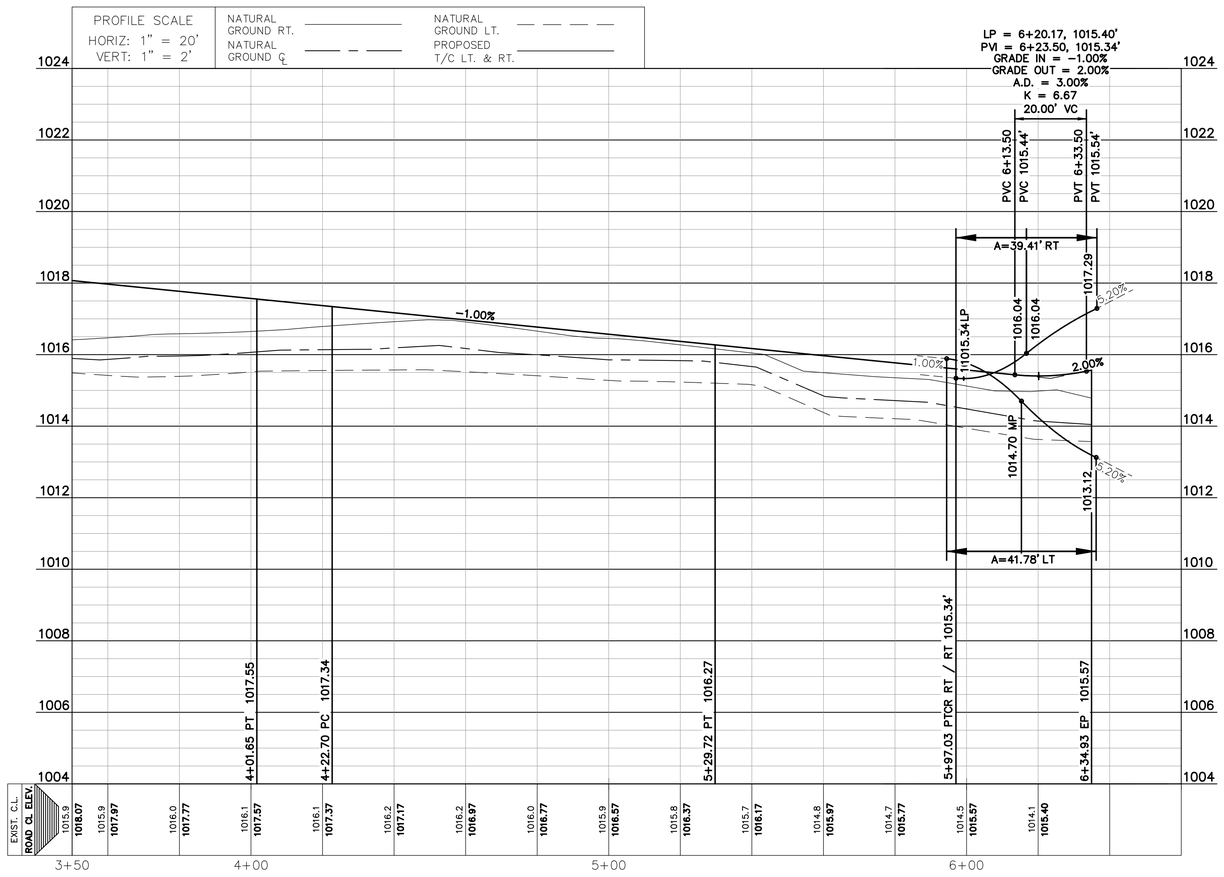
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SHEET 18 OF 41

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OCE-ENGINEERING.CTB





Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C50	24.10'	26.17'	094°44'12"	35.45'	39.84'
C51	25.00'	27.65'	095°45'38"	37.09'	41.78'
C52	613.00'	50.82'	009°28'43"	101.30'	101.41'
C53	608.67'	49.69'	009°20'06"	99.06'	99.17'
C54	587.00'	48.58'	009°27'45"	96.83'	96.94'
C55	187.00'	42.86'	025°49'04"	83.55'	84.26'
C56	200.00'	55.34'	030°56'02"	106.67'	107.98'
C57	213.00'	52.04'	027°27'39"	101.11'	102.09'

LEGEND

- DRIVEWAY
- SIDEWALK
- BAR DITCH
- LP / HP — LOWPOINT/HIGHPOINT
- FLOW ARROW
- C1 — CURVE NUMBER



0 20' 40'

SCALE: 1" = 20'

DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

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www.cbdeng.com

SHEET NAME: CERRO COURT (3+50 TO END)

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

04-28-2023

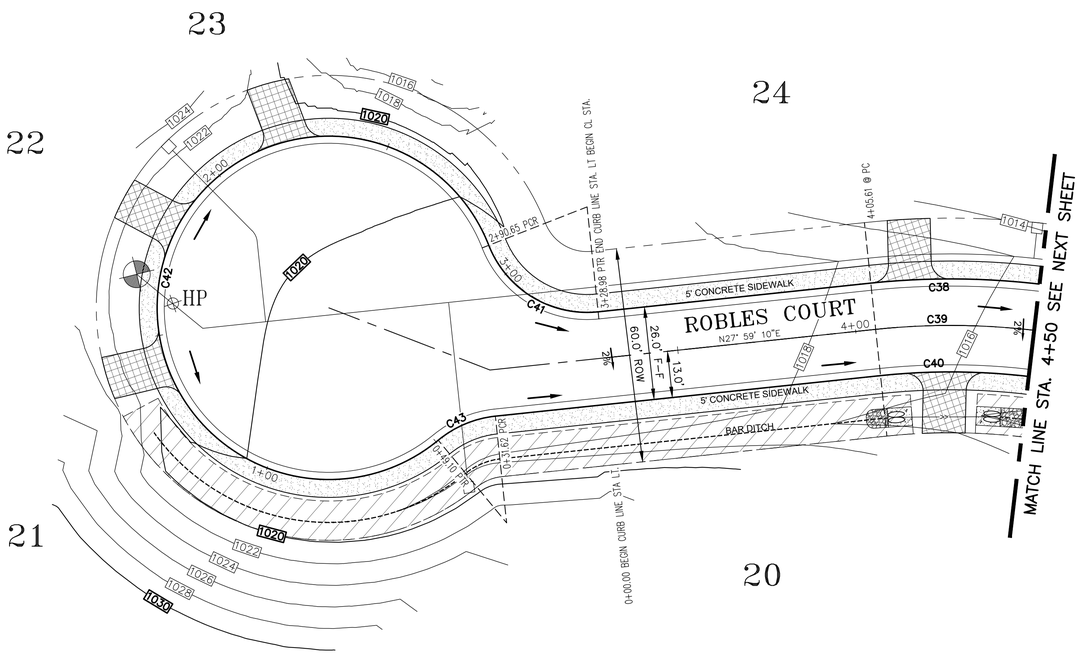
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JOB NUMBER 5509

SHEET 19 OF 41

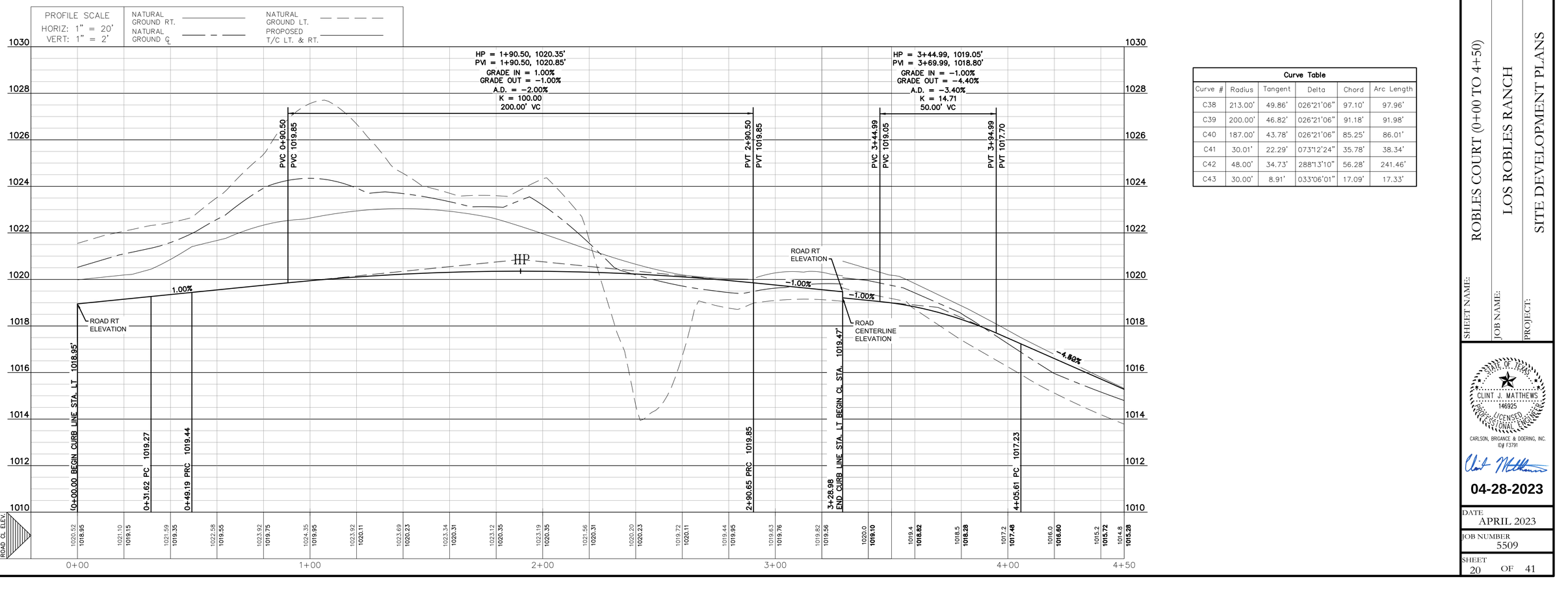
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OCE-ENGINEERING.CTB





SCALE: 1" = 20'



Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C38	213.00'	49.86'	026°21'06"	97.10'	97.96'
C39	200.00'	46.82'	026°21'06"	91.18'	91.98'
C40	187.00'	43.78'	026°21'06"	85.25'	86.01'
C41	30.01'	22.29'	073°12'24"	35.78'	38.34'
C42	48.00'	34.73'	288°13'10"	56.28'	241.46'
C43	30.00'	8.91'	033°06'01"	17.09'	17.33'

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www.cbdeng.com

SHEET NAME: ROBLES COURT (0+00 TO 4+50)

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

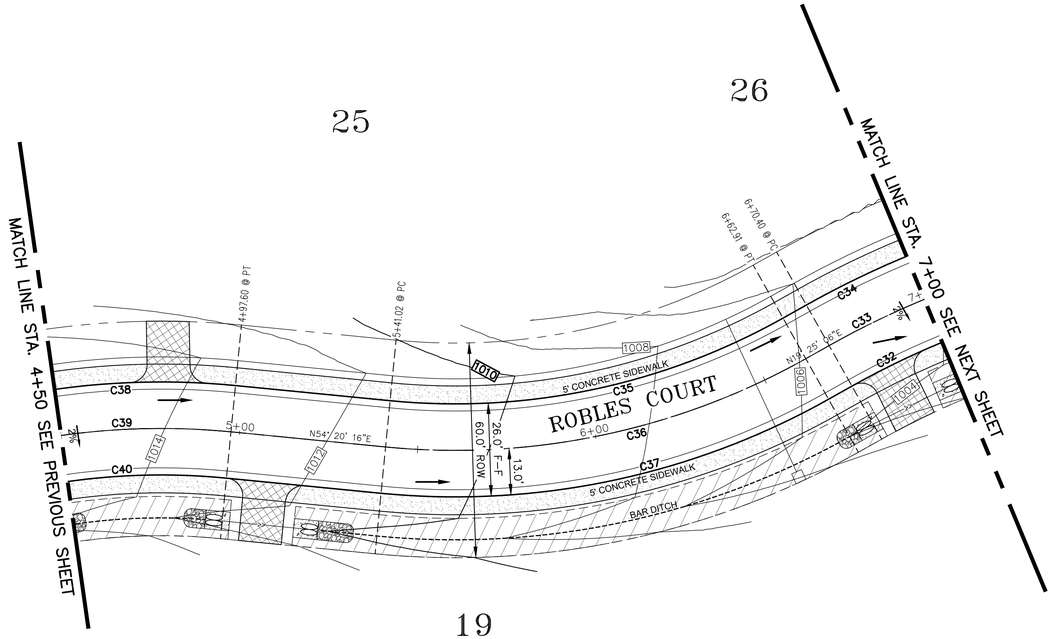
STATE OF TEXAS
CLINT J. MATTHEWS
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CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

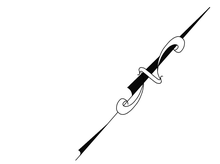
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DATE: APRIL 2023

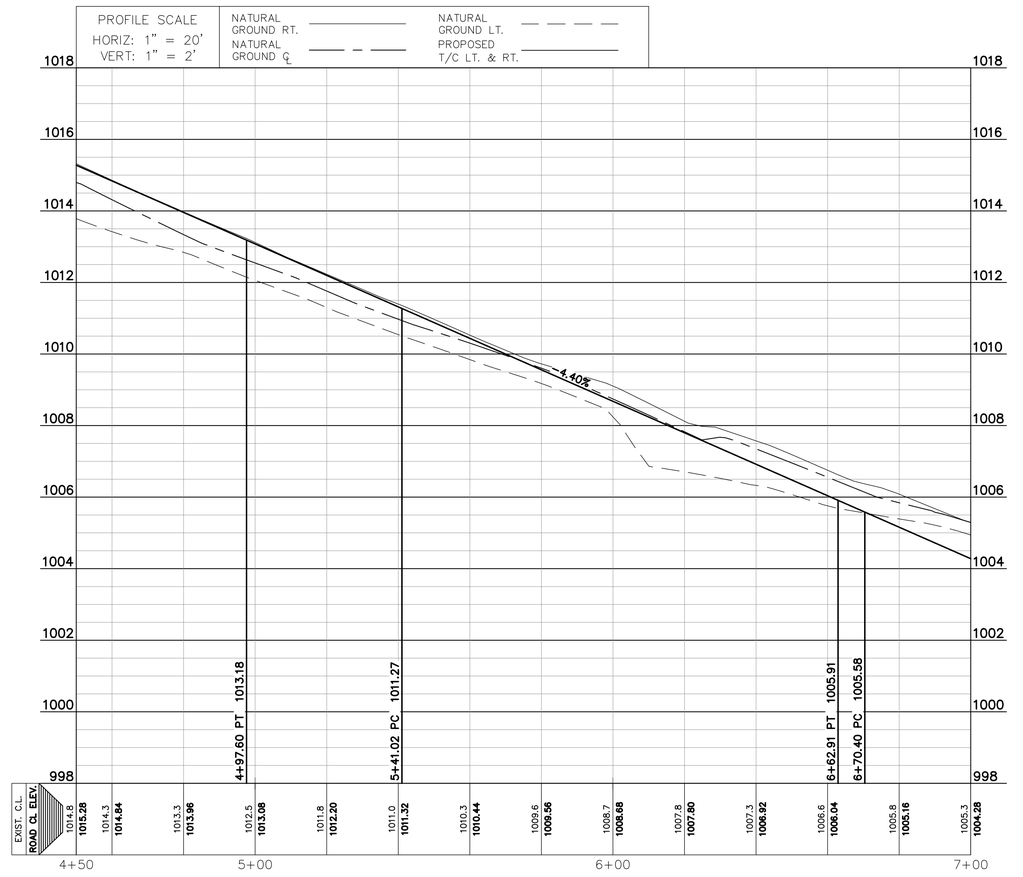
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SHEET: 20 OF 41

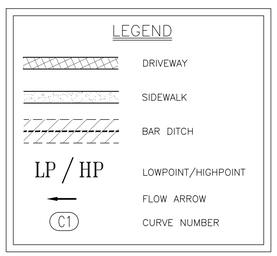




SCALE: 1" = 20'



Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C35	187.00'	58.82'	034°55'10"	112.21'	113.97'
C36	200.00'	62.91'	034°55'10"	120.01'	121.89'
C37	213.00'	66.99'	034°55'10"	127.82'	129.81'
C38	213.00'	49.86'	026°21'06"	97.10'	97.96'
C39	200.00'	46.82'	026°21'06"	91.18'	91.98'
C40	187.00'	43.78'	026°21'06"	85.25'	86.01'



DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

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SHEET NAME: ROBLES COURT (4+50 TO 7+00)

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
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ID# F3791

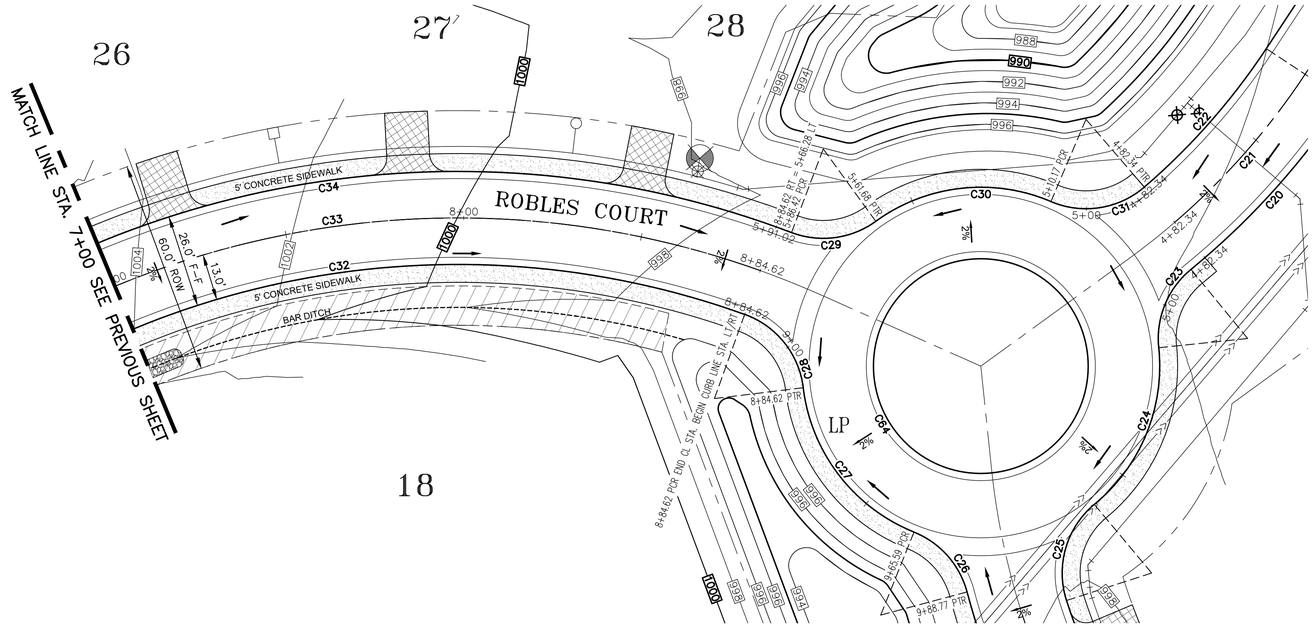
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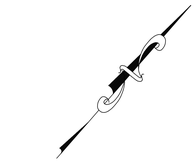
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JOB NUMBER 5509

SHEET 21 OF 41

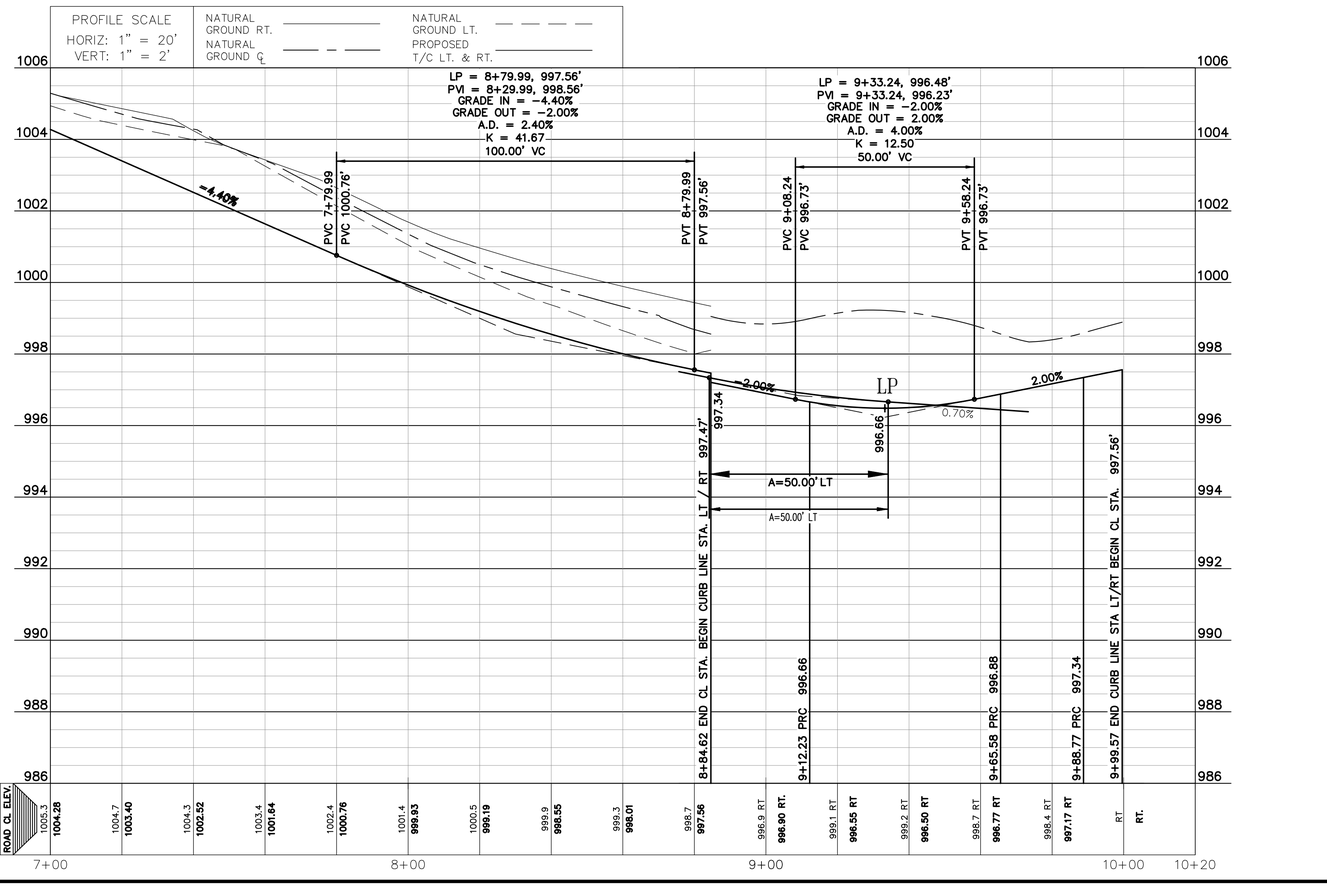
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0 20' 40'

SCALE: 1" = 20'



Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C23	25.00'	13.46'	056°34'51"	23.70'	24.69'
C24	49.82'	26.92'	056°45'30"	47.36'	49.35'
C25	25.00'	16.87'	068°01'23"	27.97'	29.68'
C26	25.00'	12.50'	053°07'22"	22.36'	23.18'
C27	49.75'	29.59'	061°29'22"	50.86'	53.39'
C28	25.00'	15.41'	063°17'28"	26.23'	27.62'
C29	25.01'	13.49'	056°41'56"	23.75'	24.75'
C30	50.00'	28.30'	059°01'37"	49.26'	51.51'
C31	25.00'	15.55'	063°46'32"	26.41'	27.83'
C32	237.00'	108.25'	049°05'43"	196.92'	203.08'
C33	250.00'	114.18'	049°05'43"	207.72'	214.22'
C34	263.00'	122.90'	050°05'39"	222.69'	229.94'
C64	30.00'	0.01'	359°57'43"	0.02'	188.48'

LEGEND

- DRIVEWAY
- SIDEWALK
- BAR DITCH
- LP / HP — LOWPOINT/HIGHPOINT
- FLOW ARROW
- C1 — CURVE NUMBER

DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
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North Office: 12129 RR 620 N., Ste. 600, Austin, Texas 78750, www.cbdeng.com

SHEET NAME: ROBLES COURT (7+00 TO END)

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

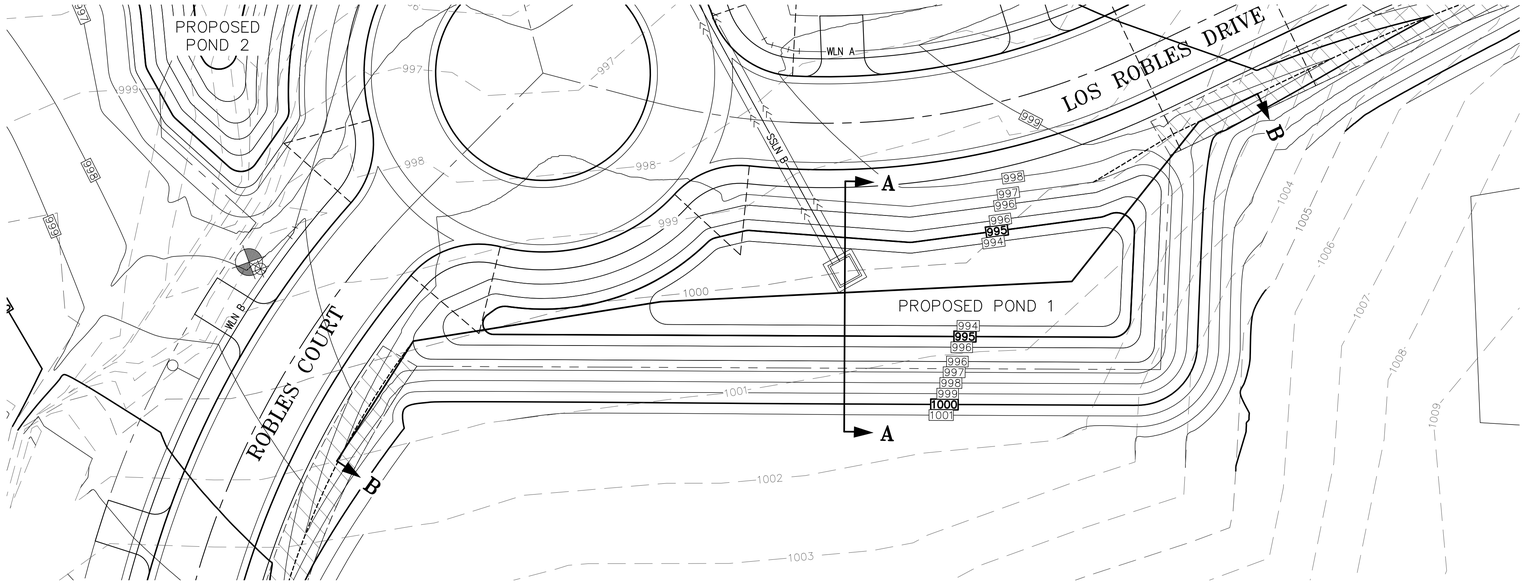
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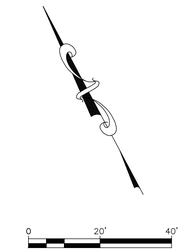
DATE APRIL 2023

JOB NUMBER 5509

SHEET 22 OF 41

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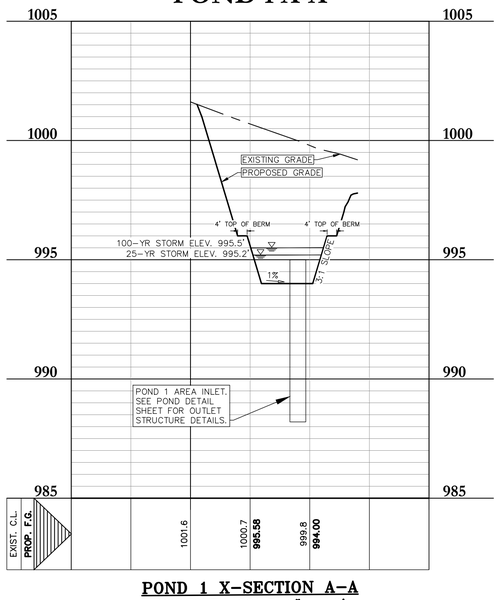
0 20' 40'

SCALE: 1" = 20'

STAGE-STORAGE POND 1					
Stage	Area (sf)	Area (ac)	Incremental Storage (cf)	Cumulative Storage (cf)	Cumulative Storage (ac-ft)
994.00	2,858	0.07	0	0	0.000
995.00	4,182	0.10	3,520	3,520	0.081
996.00	5,548	0.13	4,865	8,385	0.192

24-HR STORM EVENT	BATCH POND 1			
	PEAK Q_{in} (cfs)	PEAK Q_{out} (cfs)	PEAK STORAGE (ac-ft)	PEAK ELEVATION (ft)
2-YR	42.4	42.2	0.1	994.7
10-YR	77.4	76.9	0.1	995.0
25-YR	100.8	100.1	0.1	995.2
100-YR	138.4	137.5	0.1	995.5

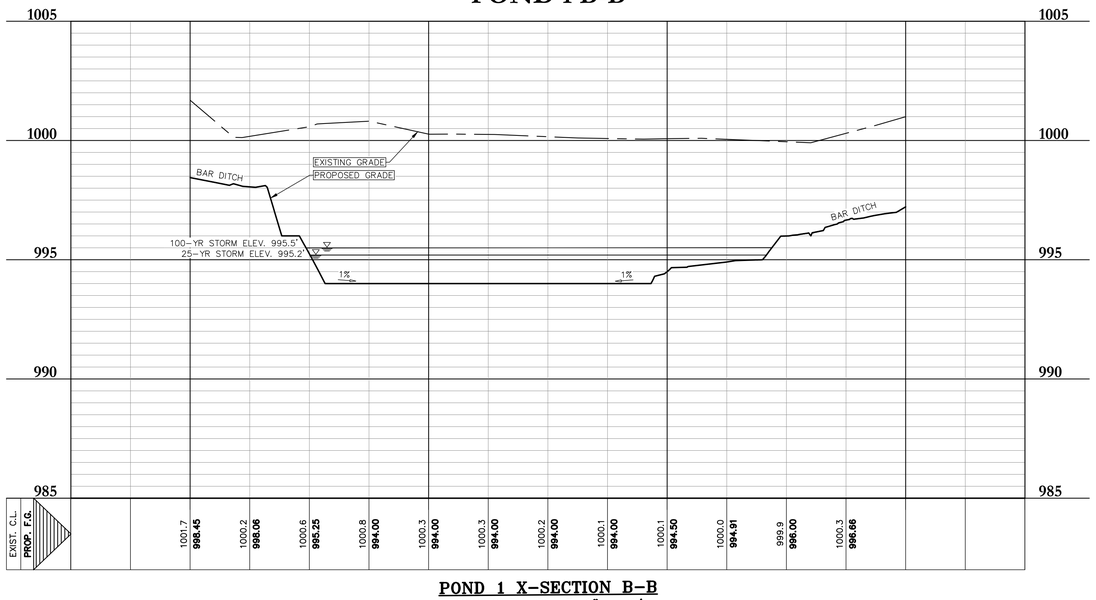
POND 1 A-A



POND 1 X-SECTION A-A

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

POND 1 B-B



POND 1 X-SECTION B-B

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

DESIGNED BY: CJM

DRAFTED BY: CEL

DATE

REVISION

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SHEET NAME: POND 1 PLAN

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
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LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

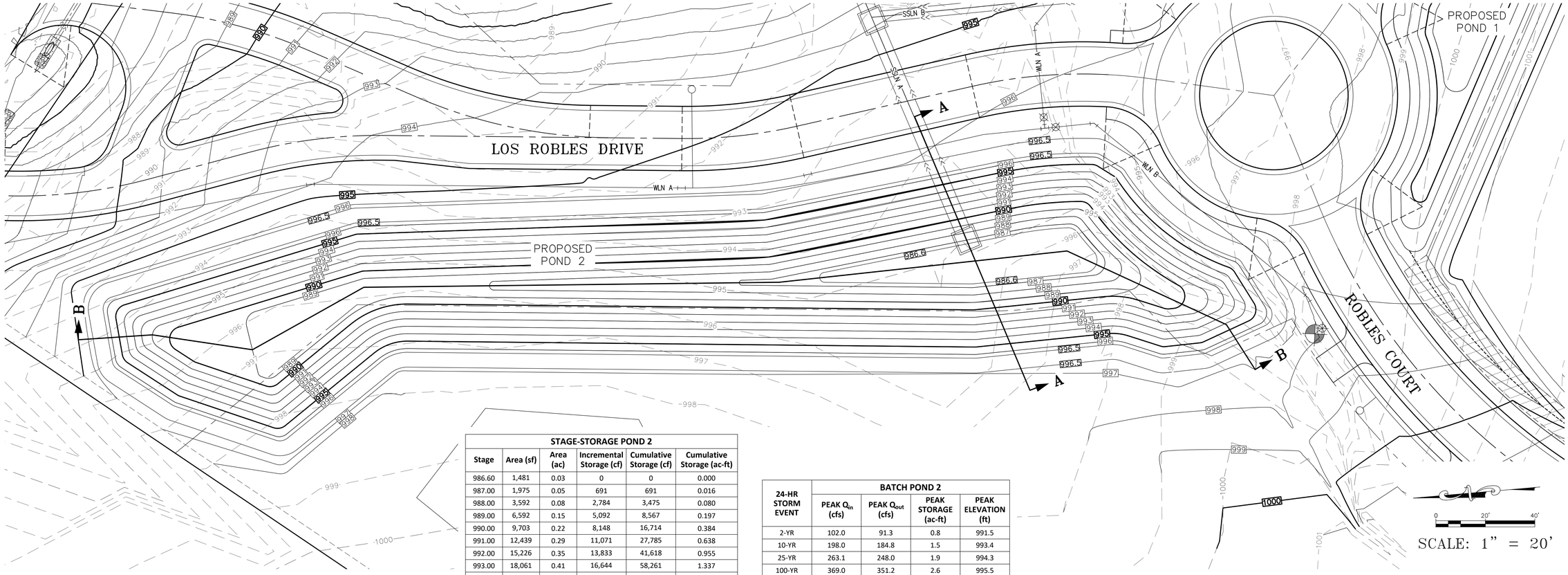
04-28-2023

DATE
APRIL 2023

JOB NUMBER
5509

SHEET
23 OF 41

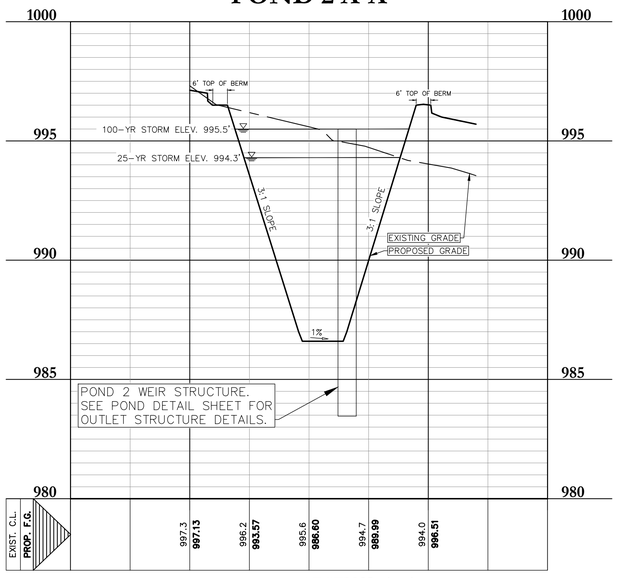
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STAGE-STORAGE POND 2					
Stage	Area (sf)	Area (ac)	Incremental Storage (cf)	Cumulative Storage (cf)	Cumulative Storage (ac-ft)
986.60	1,481	0.03	0	0	0.000
987.00	1,975	0.05	691	691	0.016
988.00	3,592	0.08	2,784	3,475	0.080
989.00	6,592	0.15	5,092	8,567	0.197
990.00	9,703	0.22	8,148	16,714	0.384
991.00	12,439	0.29	11,071	27,785	0.638
992.00	15,226	0.35	13,833	41,618	0.955
993.00	18,061	0.41	16,644	58,261	1.337
994.00	20,961	0.48	19,511	77,772	1.785
995.00	23,928	0.55	22,445	100,217	2.301
996.00	26,961	0.62	25,445	125,661	2.885
996.50	28,502	0.65	13,866	139,527	3.203

24-HR STORM EVENT	BATCH POND 2			
	PEAK Q_{in} (cfs)	PEAK Q_{out} (cfs)	PEAK STORAGE (ac-ft)	PEAK ELEVATION (ft)
2-YR	102.0	91.3	0.8	991.5
10-YR	198.0	184.8	1.5	993.4
25-YR	263.1	248.0	1.9	994.3
100-YR	369.0	351.2	2.6	995.5

POND 2 A-A

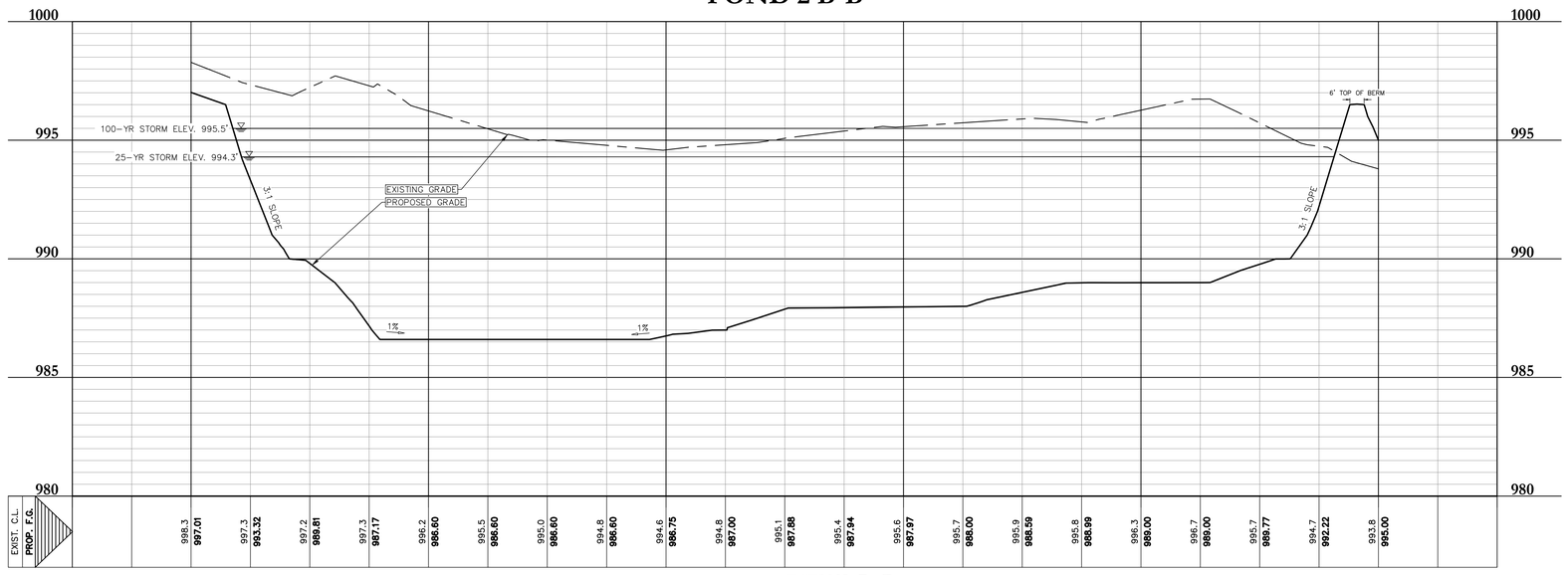


POND 2 X-SECTION A-A

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'

POND 2 B-B



POND 2 X-SECTION B-B

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3'

DESIGNED BY: CJM	DRAFTED BY: CEL

DATE

REVISION

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SHEET NAME: POND 2 PLAN

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS



CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

04-28-2023

DATE APRIL 2023

JOB NUMBER 5509

SHEET 24 OF 41

FILE PATH:J:\ACD\5509\dwg\5509 - POND PLAN.dwg - Apr 28, 2023 - 9:18am

POND 1 AREA INLET

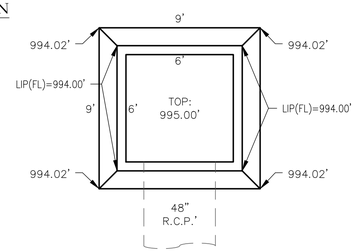
WEIR EQUATION

$$\left(\frac{Q}{C*L}\right)^{2/3} = H$$

$$\left(\frac{137.5}{3*24}\right)^{2/3} = 1.54'$$

$H_{REQ.}$ = 1.54'

$H_{AVAIL.}$ = 2.00'



PLAN

ORIFICE EQUATION

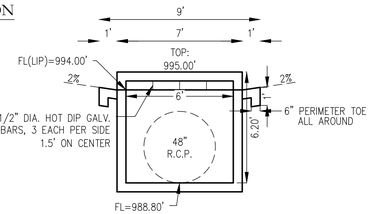
$$\frac{\left(\frac{Q}{C_o*A}\right)^2}{2g} = H$$

$$\frac{\left(\frac{137.5}{0.6*12.57}\right)^2}{64.4} = 5.16'$$

H = 2.00' + 5.16' = 7.16'

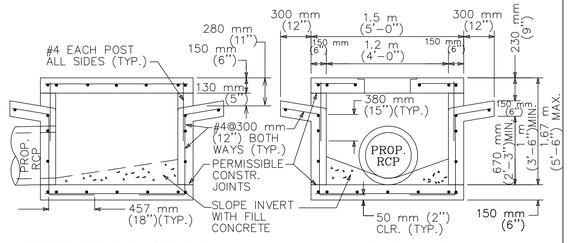
$H_{REQ.}$ = 7.16'

$H_{AVAIL.}$ = 7.20'



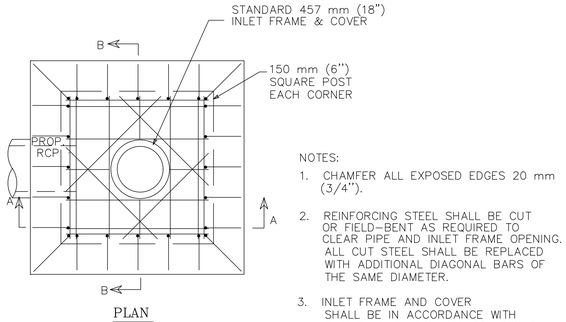
ELEVATION
6'x6' AREA INLET DETAIL

NOTE: POND 1 AREA INLET TO BE CONSTRUCTED PER C.O.A. STD. DET. NO. 508S-9 AS SHOWN ON THIS SHEET.



ELEVATION–SECTION A–A

ELEVATION–SECTION B–B

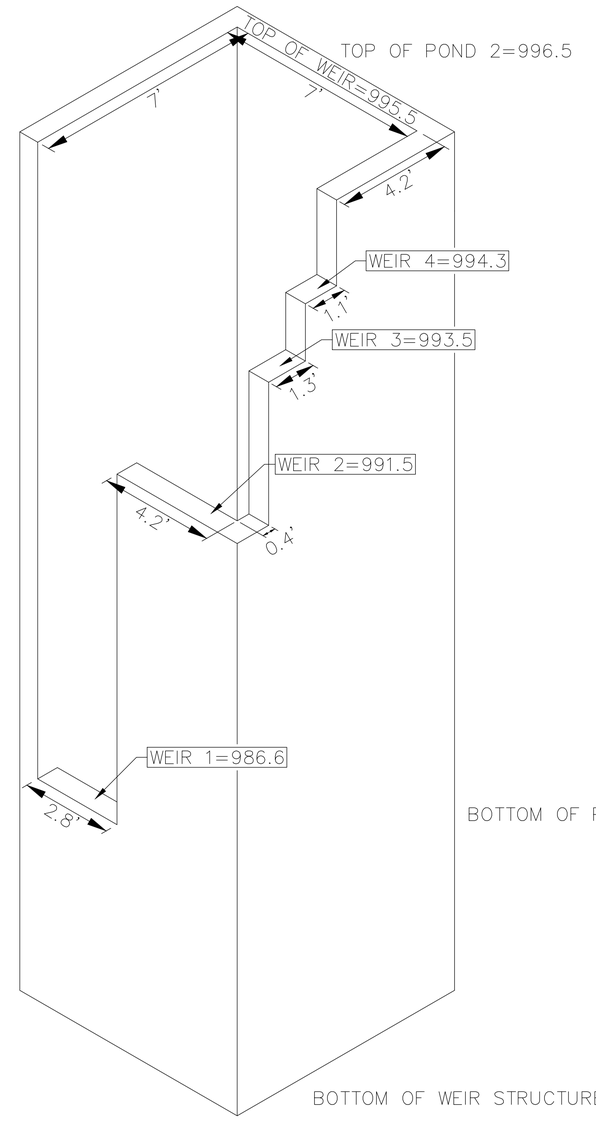


PLAN

NOTES:

1. CHAMFER ALL EXPOSED EDGES 20 mm (3/4").
2. REINFORCING STEEL SHALL BE CUT OR FIELD–BENT AS REQUIRED TO CLEAR PIPE AND INLET FRAME OPENING. ALL CUT STEEL SHALL BE REPLACED WITH ADDITIONAL DIAGONAL BARS OF THE SAME DIAMETER.
3. INLET FRAME AND COVER SHALL BE IN ACCORDANCE WITH CITY OF AUSTIN STANDARD 503S–1.
4. CONCRETE COVERAGE OF STEEL SHALL BE 50 mm (2") MIN. AT ALL SURFACES.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	4–SIDED AREA INLET	
RECORD COPY SIGNED BY ARTHUR C. ROMERO 08/18/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S–9



WEIR DETAIL
N.T.S.

WEIR EQUATION

$$\left(\frac{Q}{C*L}\right)^{2/3} = H$$

$$\left(\frac{351.2}{3*28}\right)^{2/3} = 2.60'$$

$H_{REQ.}$ = 2.60'

$H_{AVAIL.}$ = 10.00'

ORIFICE EQUATION

$$\frac{\left(\frac{Q}{C_o*A}\right)^2}{2g} = H$$

$$\frac{\left(\frac{351.2}{0.6*24.1}\right)^2}{64.4} = 9.16'$$

H = 2.50' + 9.16' = 11.66'

$H_{REQ.}$ = 11.66'

$H_{AVAIL.}$ = 12.44'

DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

Carlson, Brigance & Doering, Inc.
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Austin, Texas 78750
www.cbdeng.com

SHEET NAME: POND DETAILS

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

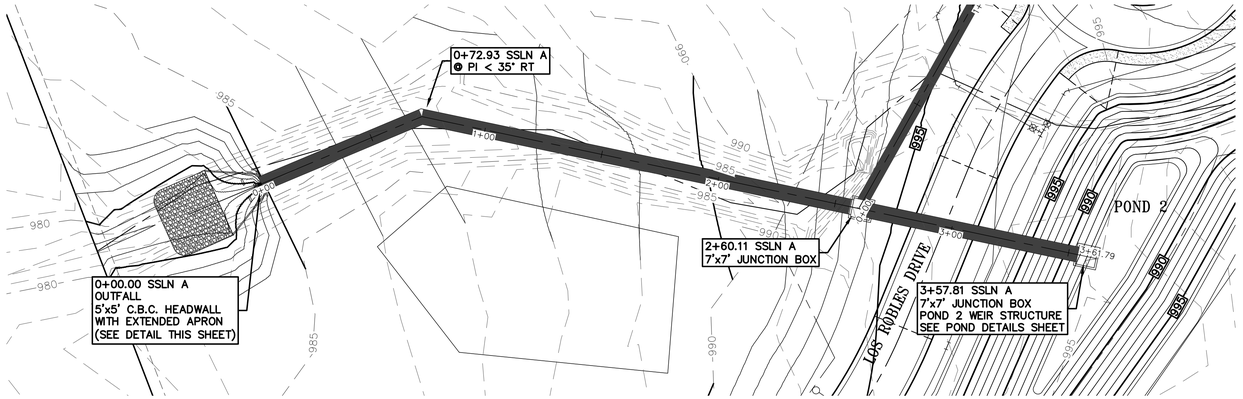
04-28-2023

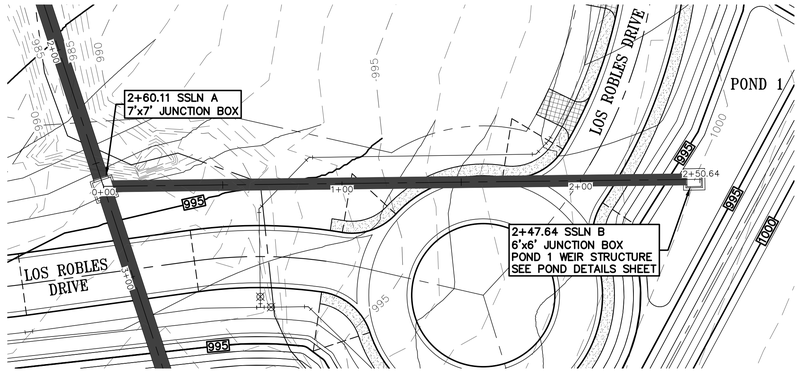
DATE: APRIL 2023

JOB NUMBER: 5509

SHEET: 25 OF 41

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LEGEND

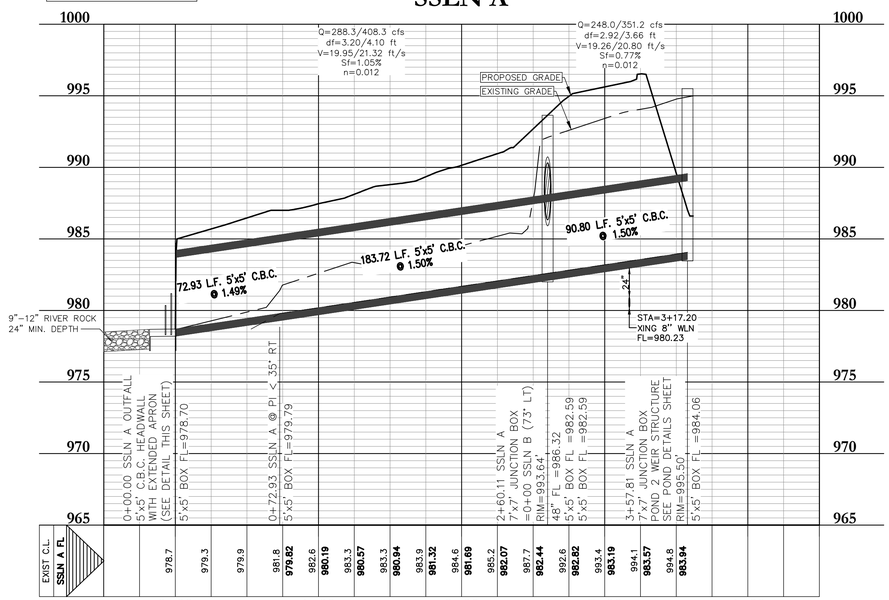
- EXIST. MINOR CONTOUR
- 570 EXIST. MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- 570 PROPOSED MAJOR CONTOUR

0 30' 60'

SCALE: 1" = 30'

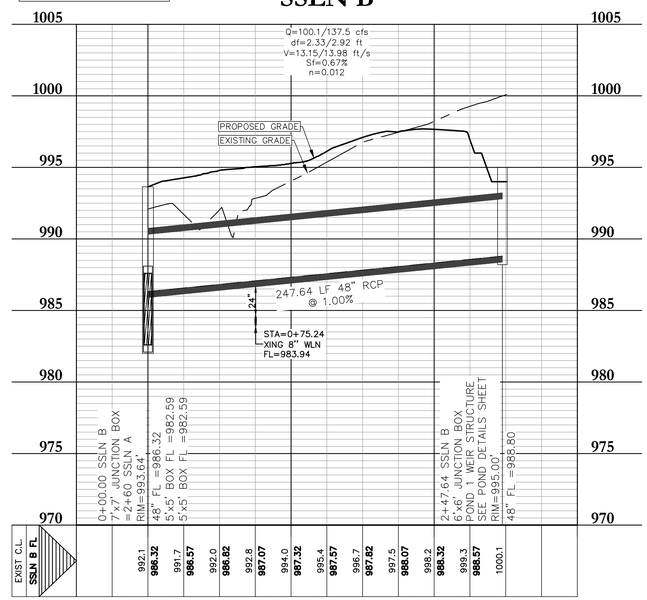
PROFILE SCALE
HORIZ. 1" = 50'
VERT. 1" = 5'

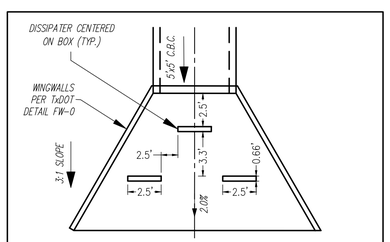
SSLN A



PROFILE SCALE
HORIZ. 1" = 50'
VERT. 1" = 5'

SSLN B





SSLN A OUTFALL: 5'x5' C.B.C. HEADWALL DETAIL

N.T.S.

FILE PATH: J:\ACD\5509\dwg\5509 - STORM.dwg - Apr 28, 2023 - 9:26am

DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

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SHEET NAME: STORM SEWER LINES A & B

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER

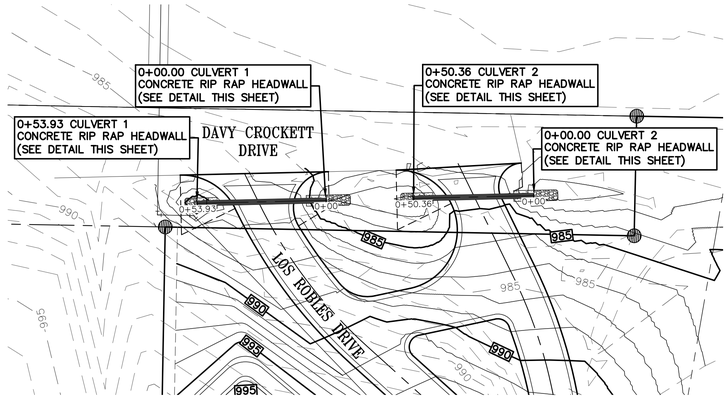
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

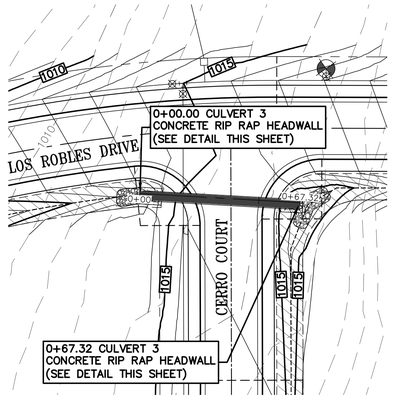
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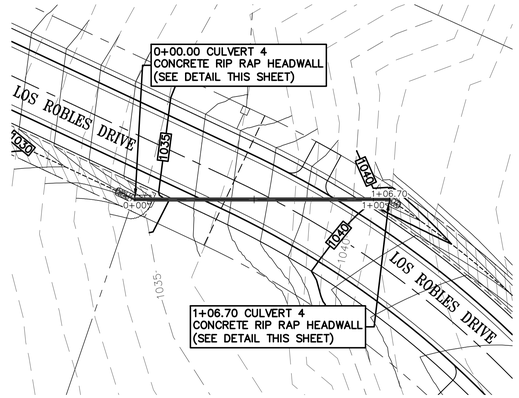
DATE APRIL 2023

JOB NUMBER 5509

SHEET 26 OF 41







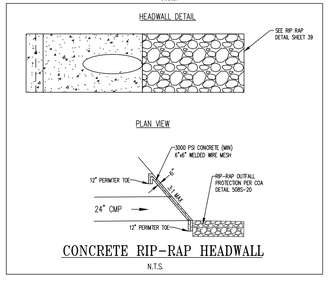
LEGEND

- EXIST. MINOR CONTOUR
- 570 EXIST. MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- 570 PROPOSED MAJOR CONTOUR

0 30' 60'

SCALE: 1" = 30'

1-24" HEADWALL DETAIL
N.T.S.

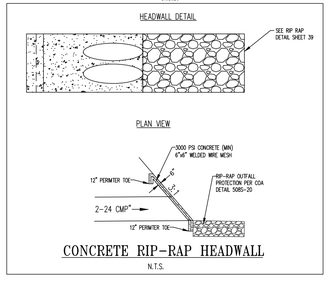


CONCRETE RIP-RAP HEADWALL
N.T.S.

0 30' 60'

SCALE: 1" = 30'

2-24" HEADWALL DETAIL
N.T.S.

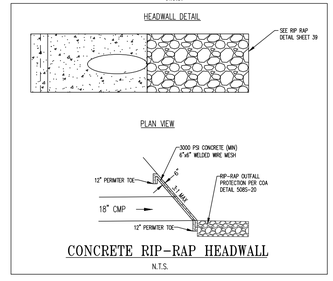


CONCRETE RIP-RAP HEADWALL
N.T.S.

0 30' 60'

SCALE: 1" = 30'

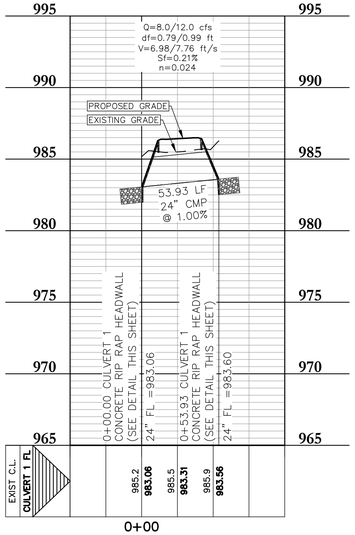
1-18" HEADWALL DETAIL
N.T.S.



CONCRETE RIP-RAP HEADWALL
N.T.S.

PROFILE SCALE
HORIZ. 1" = 50'
VERT. 1" = 5'

CULVERT 1



ORIFICE EQUATION

$$\left(\frac{Q}{C_o * A}\right)^2 \frac{}{2*g} = H$$

$$\left(\frac{12.0}{0.6*3.14}\right)^2 \frac{}{2*32.2} = 0.63'$$

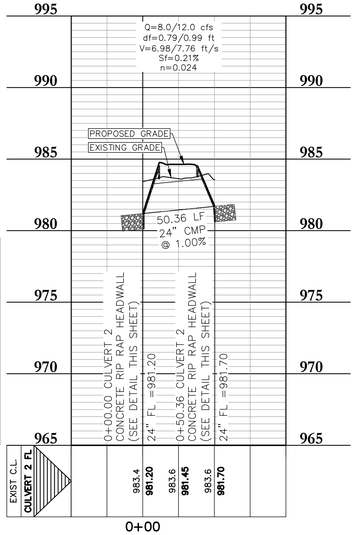
H=0.63'+1.00'=1.63'

$H_{REQ.}$ =1.63'

$H_{AVAIL.}$ = 2.87'

PROFILE SCALE
HORIZ. 1" = 50'
VERT. 1" = 5'

CULVERT 2



ORIFICE EQUATION

$$\left(\frac{Q}{C_o * A}\right)^2 \frac{}{2*g} = H$$

$$\left(\frac{12.0}{0.6*3.14}\right)^2 \frac{}{2*32.2} = 0.63'$$

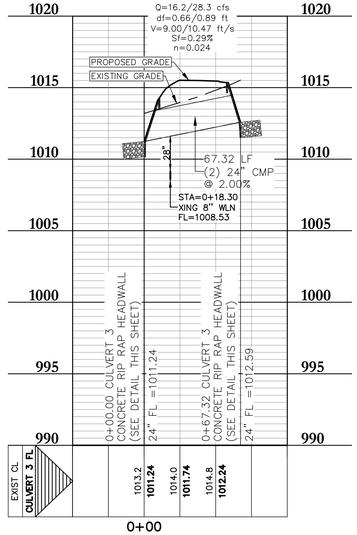
H=0.63'+1.00'=1.63'

$H_{REQ.}$ =1.63'

$H_{AVAIL.}$ = 2.94'

PROFILE SCALE
HORIZ. 1" = 50'
VERT. 1" = 5'

CULVERT 3



ORIFICE EQUATION

$$\left(\frac{Q}{C_o * A}\right)^2 \frac{}{2*g} = H$$

$$\left(\frac{28.3}{0.6*6.28}\right)^2 \frac{}{2*32.2} = 0.88'$$

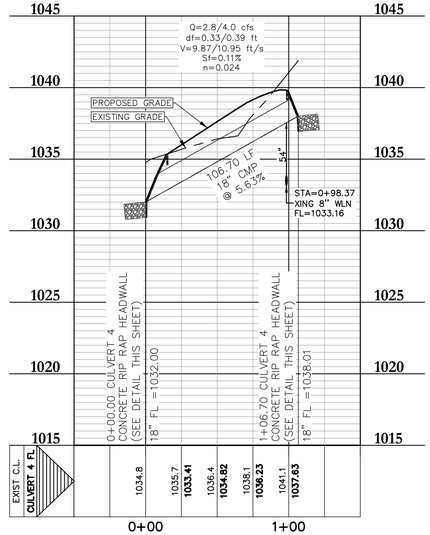
H=0.88'+1.00'=1.88'

$H_{REQ.}$ =1.88'

$H_{AVAIL.}$ = 2.34'

PROFILE SCALE
HORIZ. 1" = 50'
VERT. 1" = 5'

CULVERT 4



ORIFICE EQUATION

$$\left(\frac{Q}{C_o * A}\right)^2 \frac{}{2*g} = H$$

$$\left(\frac{4.0}{0.6*1.77}\right)^2 \frac{}{2*32.2} = 0.22'$$

H=0.22'+0.75'=0.97'

$H_{REQ.}$ =0.97'

$H_{AVAIL.}$ = 1.83'

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DESIGNED BY: CJM	DRAFTED BY: CEL
DATE	
REVISION	

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SHEET NAME: CULVERTS 1 - 4

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

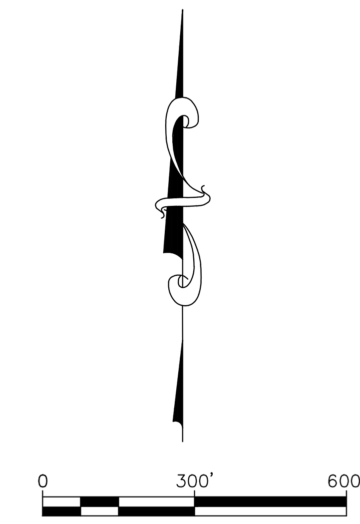
04-28-2023

DATE APRIL 2023

JOB NUMBER 5509

SHEET 27 OF 41





SCALE: 1" = 300'

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24– HOURS PRIOR TO COMMENCING CONSTRUCTION.

WATER LEGEND

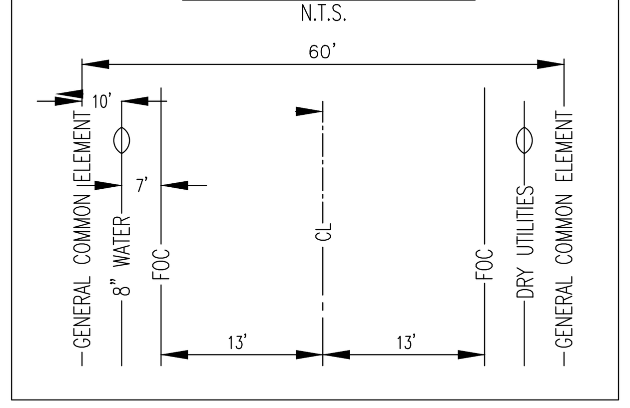
- S — PROPOSED SINGLE SERVICE
- D — PROPOSED DOUBLE SERVICE
- EXISTING SINGLE SERVICE
- EXISTING DOUBLE SERVICE
- PROPOSED FIRE HYDRANT
- PROPOSED GATE VALVE & BOX
- EXISTING FIRE HYDRANT
- EXISTING GATE VALVE & BOX
- BLUE REFLECTOR
- C9 — CURVE NUMBER

FIRE HYDRANT NOTES:

1. TO IDENTIFY THE FIRE HYDRANT LOCATION, A BLUE REFLECTIVE MARKER SHALL BE INSTALLED IN THE CENTER OF THE GENERAL COMMON ELEMENT (ROADWAY). IN LOCATIONS WHERE HYDRANTS ARE SITUATED ON CORNERS, BLUE REFLECTIVE MARKERS SHALL BE INSTALLED ON BOTH APPROACHES WHICH FRONT THE HYDRANT.

2. "STORZ" ADAPTERS REQUIRED. FIRE HYDRANTS SHALL BE PROVIDED WITH APPROPRIATED FIVE (5) INCH "STORZ" TYPE ADAPTERS FOR THE PUMPER (STEAMER) CONNECTION. THIS ADAPTER MUST BE EQUIPPED WITH A BLIND CAP.

TYPICAL UTILITY DIMENSION DETAIL
N.T.S.



WATERLINE NOTES:

1. FIRE HYDRANTS, VALVES, AND LINE SERVICE LOCATIONS SHOWN ARE APPROXIMATE: ACTUAL LOCATIONS SHALL BE IN ACCORDANCE WITH DETAILS SHOWN ON THE "CONSTRUCTION DETAILS SHEET", AVOIDING INLETS, DRIVEWAYS, AND CURB RAMPS.

2. ONLY ONE TIE–IN TO THE EXISTING WATER SYSTEM SHALL BE ALLOWED UNTIL ALL INSTALLED WATERLINES HAVE PASSED TESTING REQUIREMENTS. TEST RESULTS SHALL BE PROVIDED TO THE DESIGN ENGINEER.

3. COST OF ALL FITTINGS, INCLUDING THOSE NOT SHOWN, SHALL BE SUBSIDIARY TO THE COST OF THE PIPE.

4. WHERE SERVICE LOCATIONS CONFLICT WITH INLETS, SERVICES SHALL BE LOCATED 2 FT. FROM OUTSIDE OF THE INLET.

5. CONTRACTOR SHALL COORDINATE OPERATION OF ALL VALVES WITH DRIPPING SPRINGS WATER SERVICE CORPORATION.

6. WHERE A NEW POTABLE WATERLINE CROSSES A NEW, NON–PRESSURE RATED WASTEWATER OR TREATED EFFLUENT MAIN OR LATERAL, THE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER AND SHALL BE PERPENDICULAR TO THE WASTEWATER OR TREATED EFFLUENT MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER OR TREATED EFFLUENT MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST TWO FEET ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER OR TREATED EFFLUENT MAIN OR LATERAL. THE WASTEWATER OR TREATED EFFLUENT PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 115 PSI AT 5.0% DEFLECTION. THE WASTEWATER OR TREATED EFFLUENT MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND WITH A MINIMUM OF 2.5 BAGS OF CEMENT PER CUBIC YARD OF SAND FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END. THE MATERIALS AND METHOD OF INSTALLATION SHALL CONFORM TO ONE OF THE FOLLOWING OPTIONS:

   (A) WITHIN NINE FEET HORIZONTALLY OF EITHER SIDE OF THE WATERLINE, THE WASTEWATER OR TREATED EFFLUENT PIPE AND JOINTS SHALL BE CONSTRUCTED WITH PIPE MATERIAL HAVING A MINIMUM PRESSURE RATING OF AT LEAST 150 PSI. AN ABSOLUTE MINIMUM VERTICAL SEPARATION DISTANCE OF TWO FEET SHALL BE PROVIDED. THE WASTEWATER OR TREATED EFFLUENT MAIN OR LATERAL SHALL BE LOCATED BELOW THE WATERLINE.

   (B) ALL SECTIONS OF WASTEWATER OR TREATED EFFLUENT MAIN OR LATERAL WITHIN NINE FEET HORIZONTALLY OF THE WATERLINE SHALL BE ENCASED IN AN 18–FOOT (OR LONGER) SECTION OF PIPE. FLEXIBLE ENCASING PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 115 PSI AT 5.0% DEFLECTION. THE ENCASING PIPE SHALL BE CENTERED ON THE WATERLINE AND SHALL BE AT LEAST TWO NOMINAL PIPE DIAMETERS LARGER THAN THE WASTEWATER OR TREATED EFFLUENT MAIN OR LATERAL. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE–FOOT (OR LESS) INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. EACH END OF THE CASING SHALL BE SEALED WITH WATERTIGHT NON–SHRINK CEMENT GROUT OR A MANUFACTURED WATERTIGHT SEAL. AN ABSOLUTE MINIMUM SEPARATION DISTANCE OF SIX INCHES BETWEEN THE ENCASEMENT PIPE AND THE WATERLINE SHALL BE PROVIDED. THE WASTEWATER LINE SHALL BE LOCATED BELOW THE WATERLINE.

7. AT ALL WATERLINE INTERSECTIONS THERE SHOULD BE, AT MINIMUM, A 36" PIPE SPOOL PIECE BETWEEN ALL THE TEE/CROSSES AND GATE VALVES.

9. 8" WATERLINES SHALL HAVE A MINIMUM DEPTH OF 48 INCHES.

10. NOTE 6 APPLIES TO ALL TREATED EFFLUENT LINES AS WELL.

11. ALL FIRE HYDRANTS AND WATER SERVICES SHALL EXTEND PAST THE ROADSIDE SWALE. THE SERVICE LINE SHALL END AT THE TOP OF THE BACKSIDE SLOPE. THE WATER SERVICE AND FIRE HYDRANT LEADS SHALL HAVE A MINIMUM 2' OF COVER UNDER THE FLOW LINE OF THE DITCH. ADJUST THE DEPTH OF THE WATER LINE ACCORDINGLY TO ACHIEVE THIS WHILE MAINTAINING A FLAT TO RISING SLOPE ON THE SERVICE.

PIPE RESTRAINT CHART

BEND ANGLE	8" DIA.
Horizontal Bends	
11.25°	2'
22.5°	4'
45°	8'
Tee-Branch	5'
Vertical Bends	
11.25° Upper	6'
11.25° Lower	4'
22.5° Upper	12'
22.5° Lower	8'
45° Upper	25'
45° Lower	9'

Note: All joints within the above lengths from fittings must be restrained.

CALL BEFORE YOU DIG
1-800-245-4545
TEXAS ONE CALL SYSTEM

NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR DETERMINING ALL VERTICAL BENDS REQUIRED SO AS NOT TO BE IN CONFLICT WITH OTHER UTILITIES.

2. ALL PIPES TO HAVE THRUST BLOCKING PROVIDED AS REQUIRED.

3. PIPE RADIUS BENDS LESS THAN 200' REQUIRE 13' PIPE JOINTS.

4. CONTRACTOR TO VERIFY LOCATIONS OF IRRIGATION SLEEVES WITH THE IRRIGATION INSTALLER.

5. ALL SERVICE LINES TO INDIVIDUAL UNITS SHALL BE 1" PIPE.

6. ALL DOMESTIC WATER PIPE SHALL BE SDR–21 200 PSI WITH CASKETED FITTINGS OR BETTER. GLUED JOINTS ARE NOT ALLOWED. PIPE SHALL BE STAMPED WITH NSF OR AWWA.

7. THE FIRE LINE INSTALLER WILL BE REQUIRED TO HAVE AN UNDERGROUND FIRE LINE INSTALLER LICENSE.

DESIGNED BY: CJM	DRAFTED BY: CEL
DATE	REVISION

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Austin, Texas 78749
Phone No. (512) 280-5160
North Office
12129 RR 620 N., Ste. 600
Austin, Texas 78750
www.cbdeng.com

SHEET NAME: OVERALL WATER DISTRIBUTION PLAN

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
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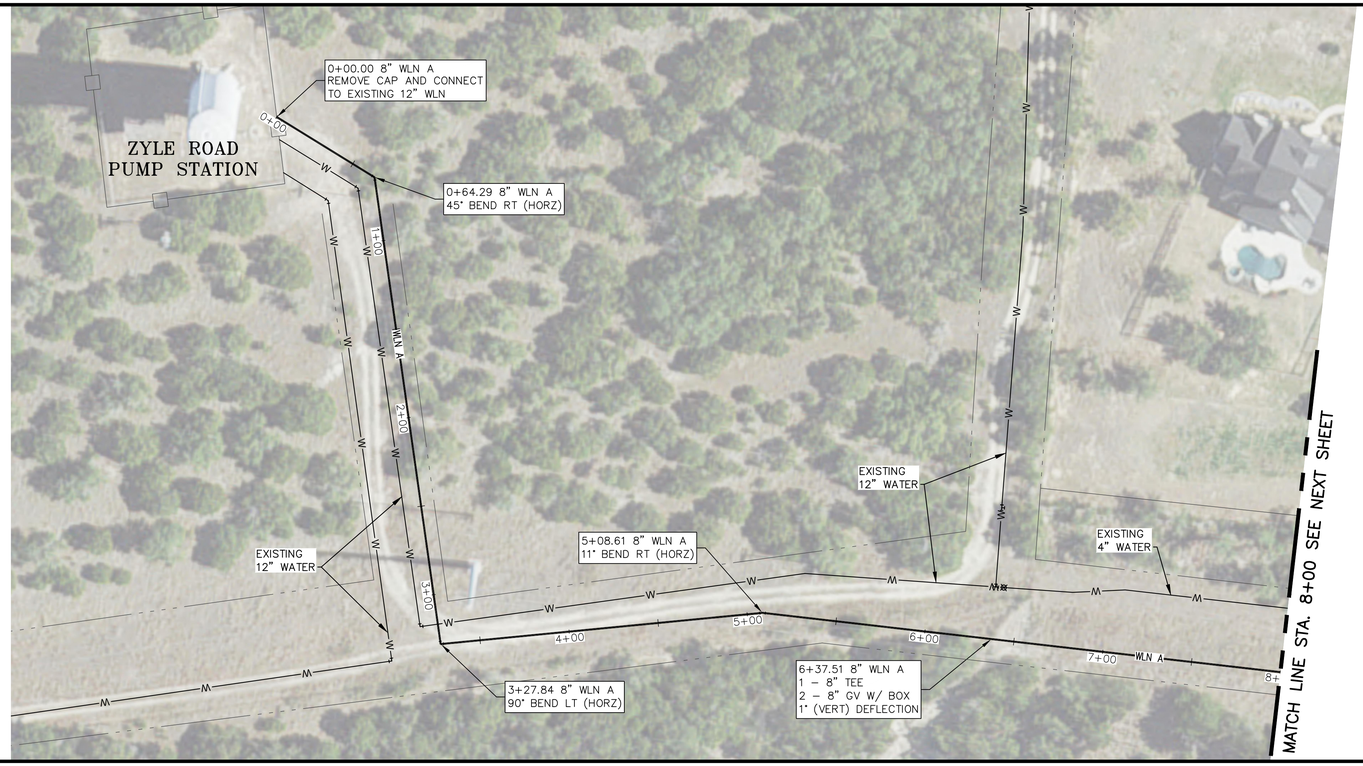
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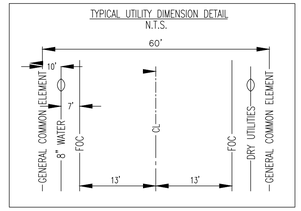


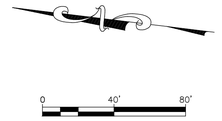
PROFILE SCALE
HORIZ. 1" = 40'
VERT. 1" = 4'

WATER LEGEND

- PROPOSED SINGLE SERVICE
- PROPOSED DOUBLE SERVICE
- PROPOSED MANHOLE
- EXISTING SINGLE SERVICE
- EXISTING DOUBLE SERVICE
- EXISTING MANHOLE
- PROPOSED FIRE HYDRANT
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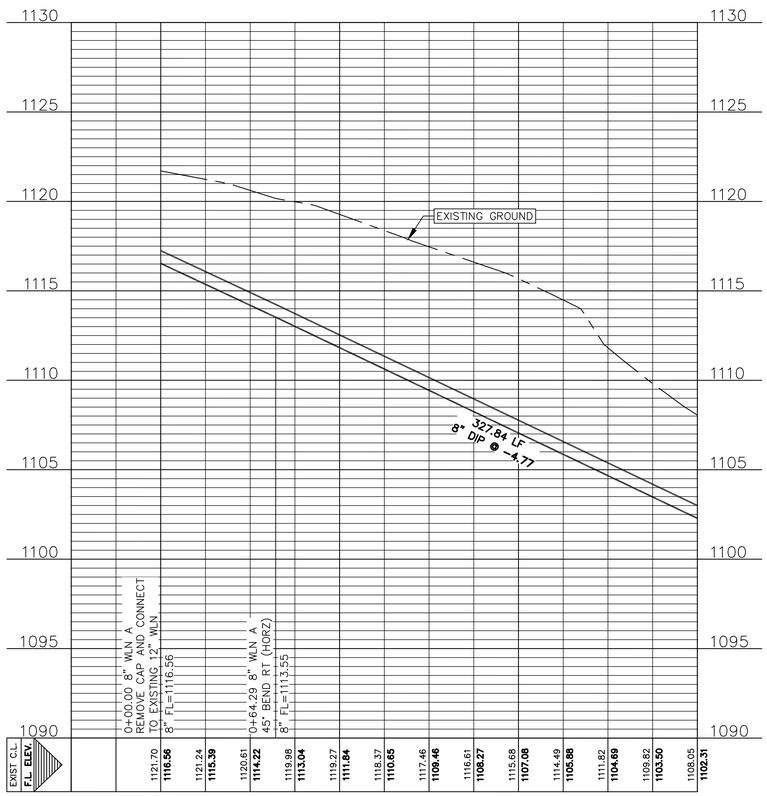
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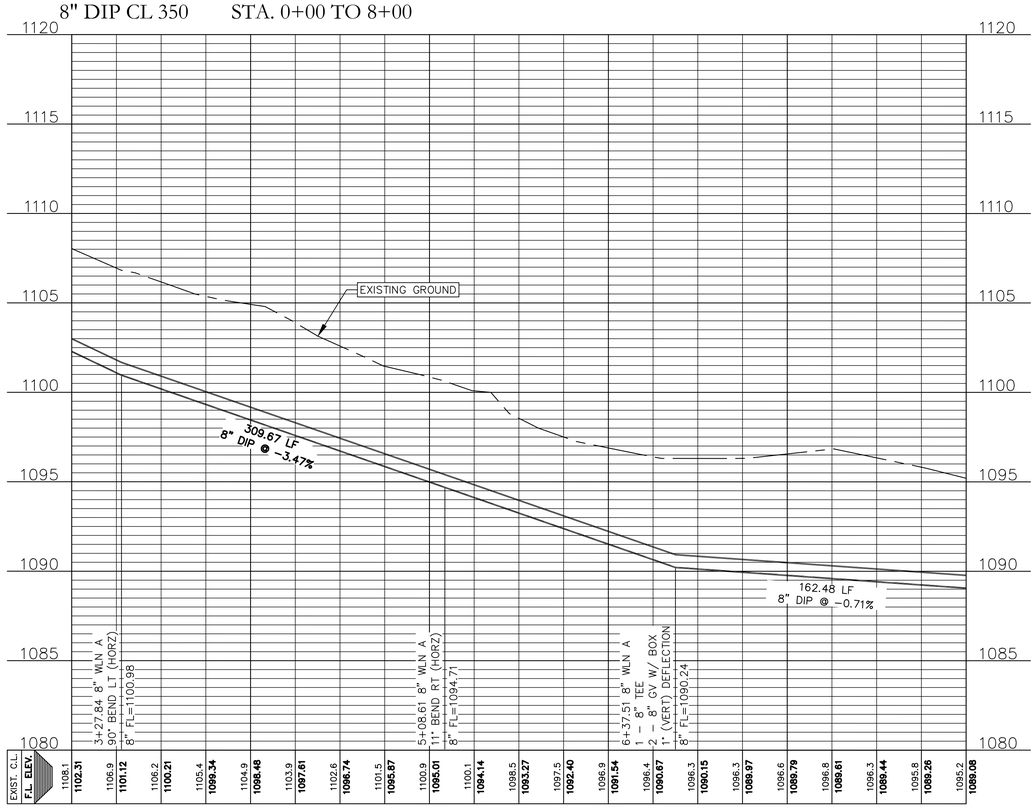




SCALE: 1" = 40'

WATER LINE "A"
8" DIP CL 350 STA. 0+00 TO 8+00





PIPE RESTRAINT CHART

BEND ANGLE	8" DIA.	12" DIA.
Horizontal Bends		
11.25°	2'	3'
22.5°	4'	6'
45°	8'	12'
Tee-Branch	5'	1'
Valves/Dead Ends	51'	72'
Vertical Bends		
11.25° Upper	6'	9'
11.25° Lower	4'	6'
22.5° Upper	12'	17'
22.5° Lower	8'	11'
45° Upper	25'	36'
45° Lower	9'	13'

Note: All joints within the above lengths from fittings must be restrained.

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NOTES:

1.) ALL ONSITE UTILITY MATERIALS AND WORK SHALL CONFORM TO THE CURRENT PLUMBING CODE.

2.) ALL WATER LINES MUST BE CONSTRUCTED IN COMPLIANCE WITH TCEQ RULE 30 TAC SEC. 290.44 RELATED TO WATER DISTRIBUTION LINES. WATER LINES SHALL HAVE A MINIMUM 4' SEPARATION FROM PRESSURE SEWER MAINS.

3.) PRESSURE REDUCING VALVES SHALL BE INSTALLED ON THE PROPERTY OWNERS SIDE OF THE WATER METER WHERE SERVICE PRESSURE IS 65 psi OR GREATER.

4.) FIRE HYDRANTS SPACED MAX. OF 500'

DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

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Austin, Texas 78749
Phone No. (512) 280-5160
North Office
12129 RR 620 N., Ste. 600
Austin, Texas 78750
www.cbdeng.com

SHEET NAME: WATER LINE A (0+00 TO 8+00)

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
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04-28-2023

DATE: APRIL 2023

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SHEET: 29 OF 41

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WATER LEGEND

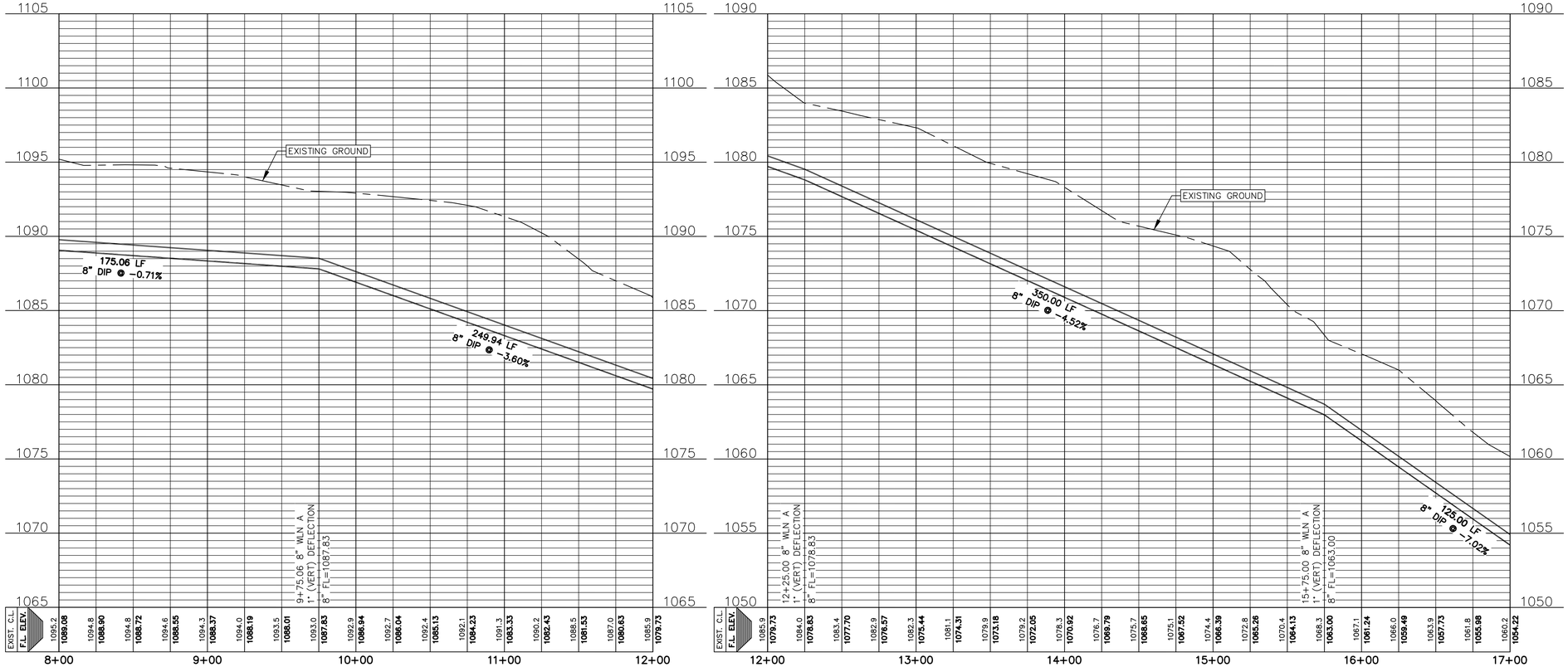
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- BLUE REFLECTOR
- PROPOSED AUTOMATIC FLUSHING DEVICE
- PROPOSED PLUG
- PROPOSED AUTOMATIC AIR RELEASE VALVE

0 40' 80'

SCALE: 1" = 40'

PROFILE SCALE
HORIZ. 1" = 40'
VERT. 1" = 4'

WATER LINE "A"
8" DIP CL 350 STA. 8+00 TO 17+00



EXIST. C.L.	8+00	8+25	8+50	8+75	9+00	9+25	9+50	9+75	10+00	10+25	10+50	10+75	11+00	11+25	11+50	11+75	12+00
F.L. ELEV.	1089.08	1088.90	1088.72	1088.55	1088.37	1088.19	1088.01	1087.83	1087.65	1086.94	1086.04	1085.13	1084.23	1083.33	1082.43	1081.53	1080.63	1079.73
EXIST. C.L.	1095.2	1094.8	1094.8	1094.6	1094.3	1094.0	1093.5	1093.0	1092.9	1092.7	1092.4	1092.1	1091.3	1090.2	1088.5	1087.0	1085.9	1079.73

EXIST. C.L.	12+00	12+25	12+50	12+75	13+00	13+25	13+50	13+75	14+00	14+25	14+50	14+75	15+00	15+25	15+50	15+75	16+00	16+25	16+50	16+75	17+00
F.L. ELEV.	1079.73	1078.83	1077.70	1076.57	1075.44	1074.31	1073.18	1072.05	1070.92	1069.79	1068.65	1067.52	1066.39	1065.26	1064.13	1063.00	1061.24	1059.49	1057.73	1055.98	1054.22
EXIST. C.L.	1085.9	1084.0	1083.4	1082.9	1082.3	1081.1	1079.9	1079.2	1078.3	1076.7	1075.7	1075.1	1074.4	1072.8	1070.4	1068.3	1067.1	1066.0	1063.9	1061.8	1060.2	1054.22

PIPE RESTRAINT CHART

BEND ANGLE	8" DIA.	12" DIA.
Horizontal Bends		
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1.) ALL ONSITE UTILITY MATERIALS AND WORK SHALL CONFORM TO THE CURRENT PLUMBING CODE.

2.) ALL WATER LINES MUST BE CONSTRUCTED IN COMPLIANCE WITH TCEQ RULE 30 TAC SEC. 290.44 RELATED TO WATER DISTRIBUTION LINES. WATER LINES SHALL HAVE A MINIMUM 4' SEPARATION FROM PRESSURE SEWER MAINS.

3.) PRESSURE REDUCING VALVES SHALL BE INSTALLED ON THE PROPERTY OWNERS SIDE OF THE WATER METER WHERE SERVICE PRESSURE IS 65 psi OR GREATER.

4.) FIRE HYDRANTS SPACED MAX. OF 500'

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DATE | REVISION

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SHEET NAME: WATER LINE A (8+00 TO 17+00)

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
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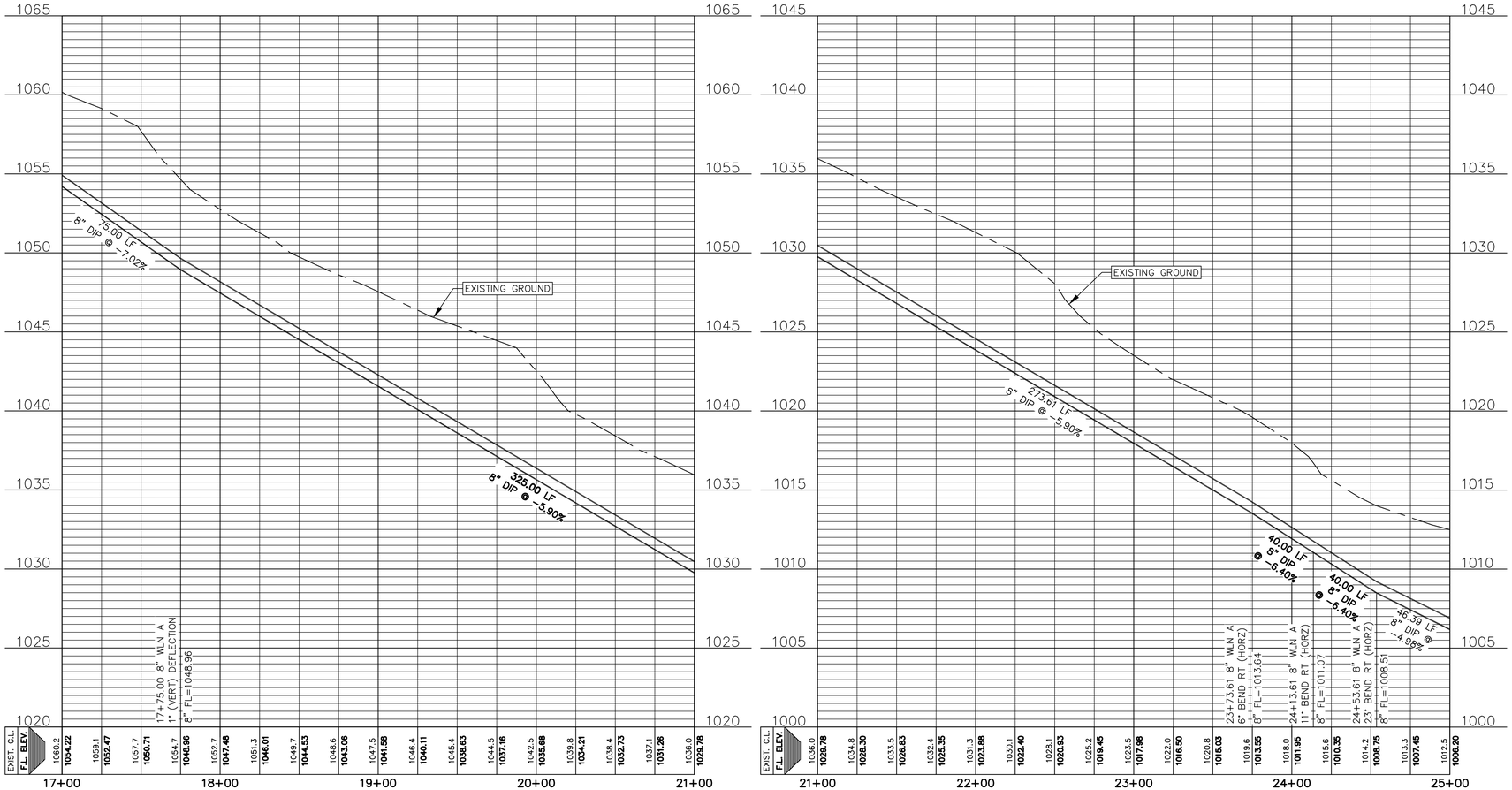
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- PROPOSED AUTOMATIC FLUSHING DEVICE
- PROPOSED PLUG
- PROPOSED AUTOMATIC AIR RELEASE VALVE

0 40' 80'

SCALE: 1" = 40'

PROFILE SCALE
HORIZ. 1" = 40'
VERT. 1" = 4'

WATER LINE "A"
8" DIP CL 350 STA. 17+00 TO 25+00



PIPE RESTRAINT CHART

BEND ANGLE	8" DIA.	12" DIA.
Horizontal Bends		
11.25°	2'	3'
22.5°	4'	6'
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SHEET NAME: WATER LINE A (17+00 TO 25+00)

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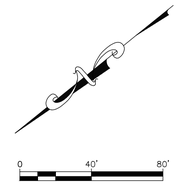
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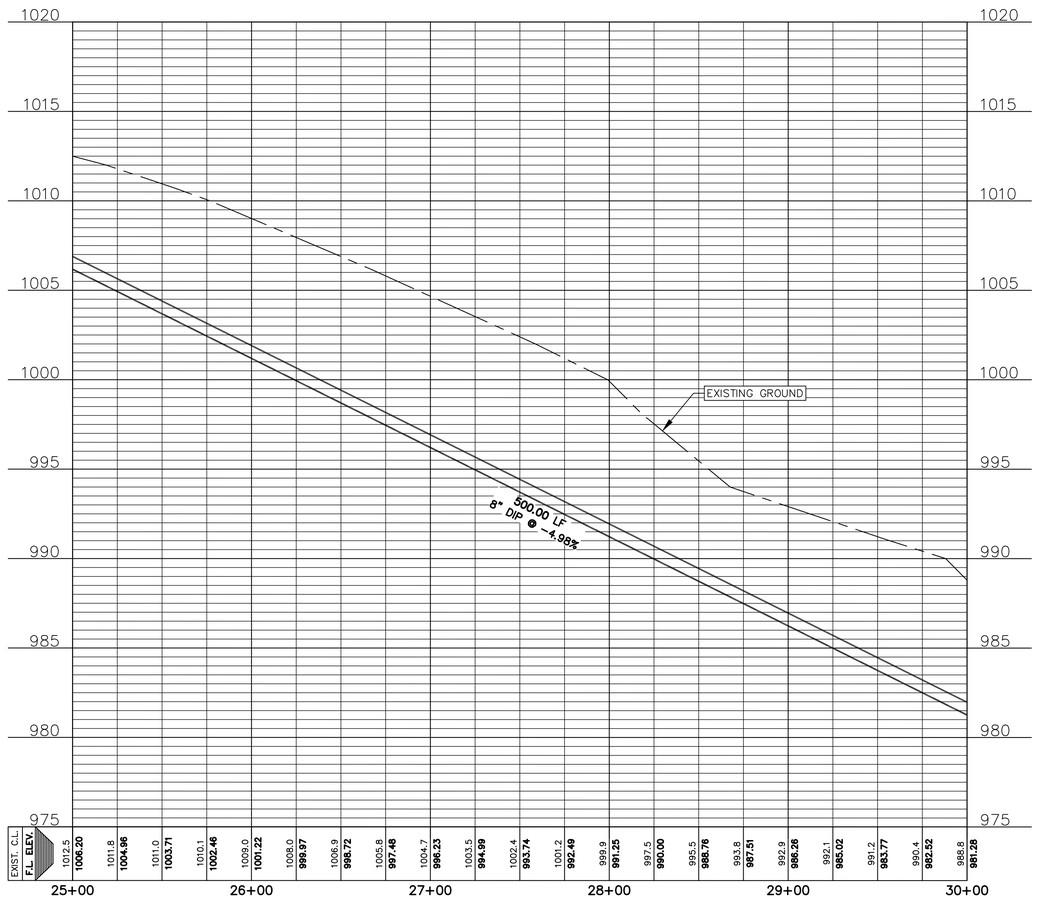
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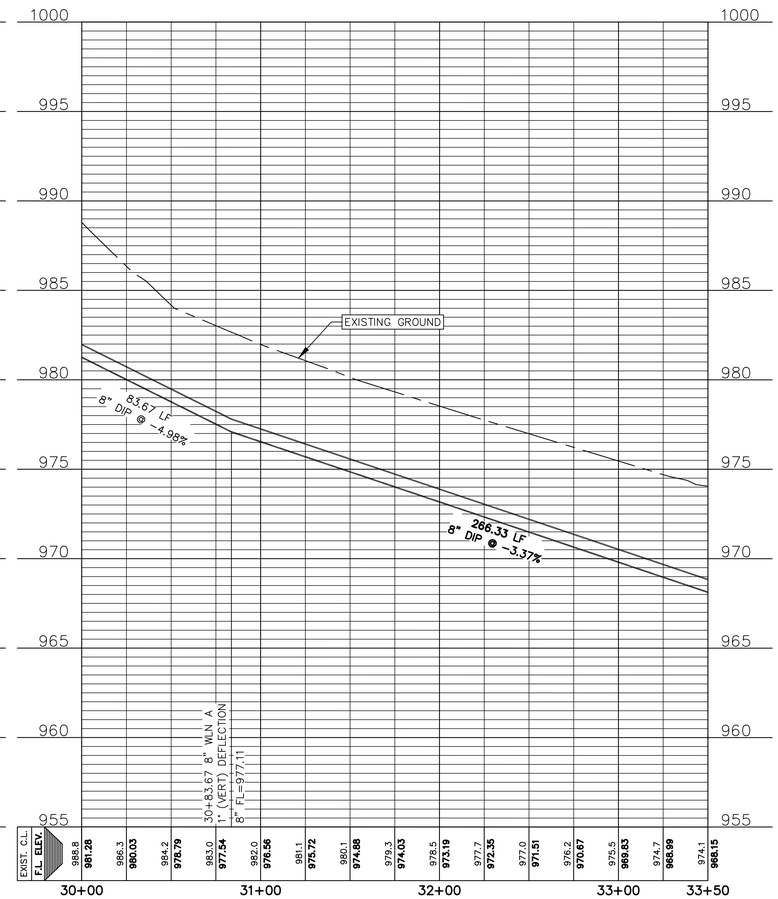


SCALE: 1" = 40'

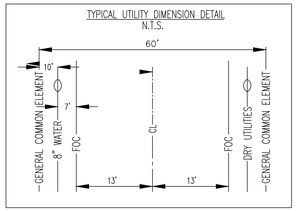
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WATER LINE "A"
8" DIP CL 350 STA. 25+00 TO 34+00





TYPICAL UTILITY DIMENSION DETAIL
N.T.S.



PIPE RESTRAINT CHART

BEND ANGLE	8" DIA.	12" DIA.
Horizontal Bends		
11.25°	2'	3'
22.5°	4'	6'
45°	8'	12'
Tee-Branch	5'	1'
Valves/Dead Ends	51'	72'
Vertical Bends		
11.25° Upper	6'	9'
11.25° Lower	4'	6'
22.5° Upper	12'	17'
22.5° Lower	8'	11'
45° Upper	25'	36'
45° Lower	9'	13'

Note: All joints within the above lengths from fittings must be restrained.

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NOTES:

1.) ALL ONSITE UTILITY MATERIALS AND WORK SHALL CONFORM TO THE CURRENT PLUMBING CODE.

2.) ALL WATER LINES MUST BE CONSTRUCTED IN COMPLIANCE WITH TCEQ RULE 30 TAC SEC. 290.44 RELATED TO WATER DISTRIBUTION LINES. WATER LINES SHALL HAVE A MINIMUM 4' SEPARATION FROM PRESSURE SEWER MAINS.

3.) PRESSURE REDUCING VALVES SHALL BE INSTALLED ON THE PROPERTY OWNERS SIDE OF THE WATER METER WHERE SERVICE PRESSURE IS 65 psi OR GREATER.

4.) FIRE HYDRANTS SPACED MAX. OF 500'

DESIGNED BY: CJM	DRAFTED BY: CEL

DATE

REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office
3501 West William Cannon Dr.
Austin, Texas 78749
Phone No. (512) 280-5160
North Office
12129 RR 620 N., Ste. 600
Austin, Texas 78750
www.cbdeng.com

SHEET NAME: WATER LINE A (25+00 TO 33+50)

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

04-28-2023

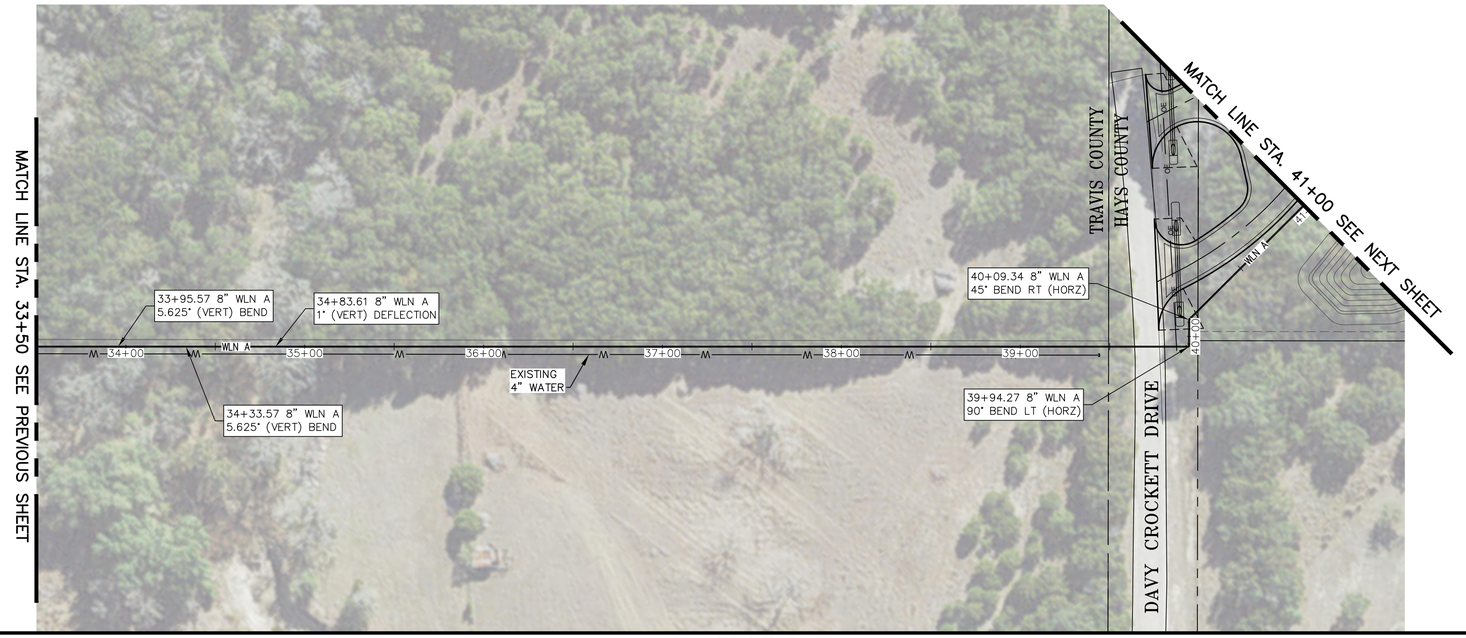
DATE APRIL 2023

JOB NUMBER 5509

SHEET 32 OF 41

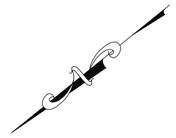
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OCE-ENGINEERING.CTB



WATER LEGEND

- PROPOSED SINGLE SERVICE
- PROPOSED DOUBLE SERVICE
- PROPOSED MANHOLE
- EXISTING SINGLE SERVICE
- EXISTING DOUBLE SERVICE
- EXISTING MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED G.V. & BOX
- EXISTING FIRE HYDRANT
- EXISTING G.V. & BOX
- BLUE REFLECTOR
- PROPOSED AUTOMATIC FLUSHING DEVICE
- PROPOSED PLUG
- PROPOSED AUTOMATIC AIR RELEASE VALVE

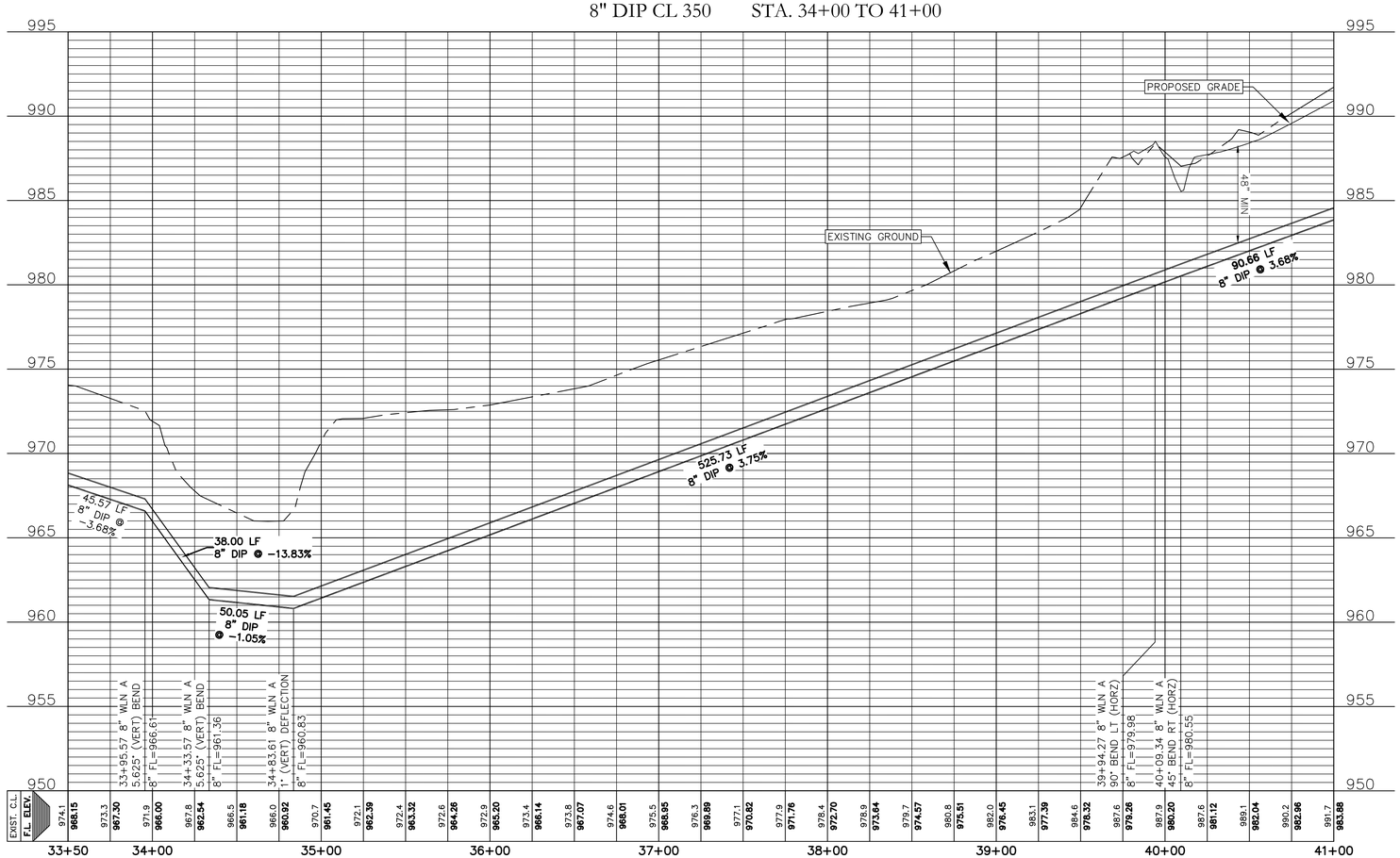


0 40' 80'

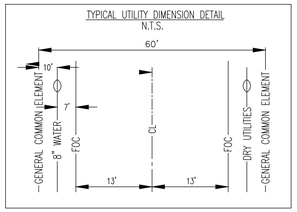
SCALE: 1" = 40'

PROFILE SCALE
HORIZ. 1" = 40'
VERT. 1" = 4'

WATER LINE "A"
8" DIP CL 350 STA. 34+00 TO 41+00



TYPICAL UTILITY DIMENSION DETAIL
N.T.S.



PIPE RESTRAINT CHART

BEND ANGLE	8" DIA.	12" DIA.
Horizontal Bends		
11.25°	2'	3'
22.5°	4'	6'
45°	8'	12'
Tee-Branch	5'	1'
Valves/Dead Ends	51'	72'
Vertical Bends		
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3.) PRESSURE REDUCING VALVES SHALL BE INSTALLED ON THE PROPERTY OWNERS SIDE OF THE WATER METER WHERE SERVICE PRESSURE IS 65 psi OR GREATER.

4.) FIRE HYDRANTS SPACED MAX. OF 500'

DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

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Austin, Texas 78750
www.cbdeng.com

SHEET NAME: WATER LINE A (33+50 TO 41+00)

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

04-28-2023

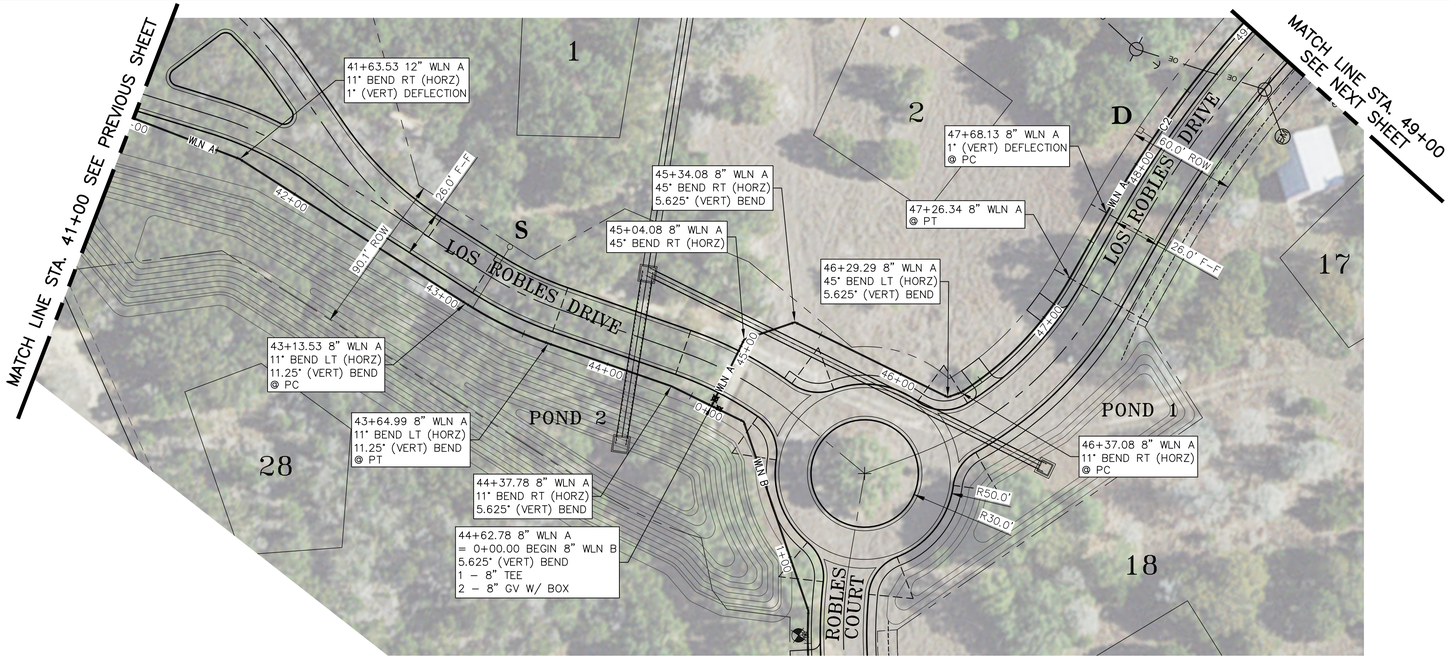
DATE APRIL 2023

JOB NUMBER 5509

SHEET 33 OF 41

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OCE-ENGINEERING.CTB



PROFILE SCALE
HORIZ. 1" = 40'
VERT. 1" = 4'

PIPE RESTRAINT CHART		
BEND ANGLE	8" DIA.	12" DIA.
Horizontal Bends		
11.25°	2'	3'
22.5°	4'	6'
45°	8'	12'
Tee-Branch	5'	1'
Valves/Dead Ends	51'	72'
Vertical Bends		
11.25° Upper	6'	9'
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22.5° Lower	8'	11'
45° Upper	25'	36'
45° Lower	9'	13'

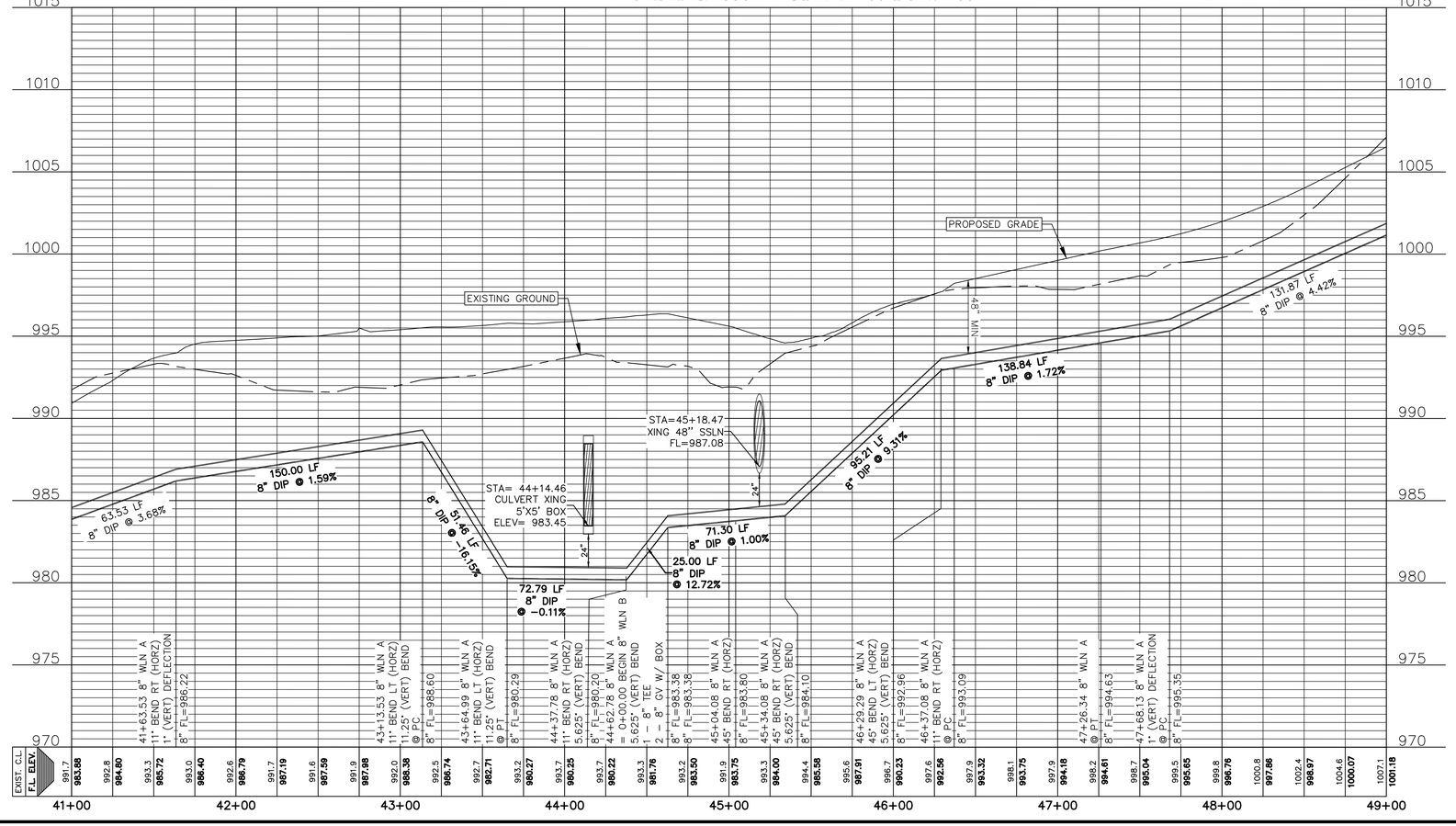
Note: All joints within the above lengths from fittings must be restrained.

WATER LEGEND
- PROPOSED SINGLE SERVICE
- PROPOSED DOUBLE SERVICE
- PROPOSED MANHOLE
- EXISTING SINGLE SERVICE
- EXISTING DOUBLE SERVICE
- EXISTING MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED G.V. & BOX
- EXISTING FIRE HYDRANT
- EXISTING G.V. & BOX
- BLUE REFLECTOR
- PROPOSED AUTOMATIC FLUSHING DEVICE
- PROPOSED PLUG
- PROPOSED AUTOMATIC AIR RELEASE VALVE

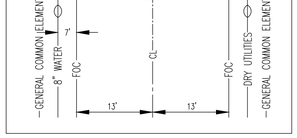
0 40' 80'

SCALE: 1" = 40'

WATER LINE "A"
8" DIP CL 350 STA. 41+00 TO 49+00



TYPICAL UTILITY DIMENSION DETAIL
N.T.S.



Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C1	179.98'	45.57'	028°25'00"	88.35'	89.27'
C2	595.00'	153.39'	028°54'46"	297.08'	300.25'

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3.) PRESSURE REDUCING VALVES SHALL BE INSTALLED ON THE PROPERTY OWNERS SIDE OF THE WATER METER WHERE SERVICE PRESSURE IS 65 psi OR GREATER.

4.) FIRE HYDRANTS SPACED MAX. OF 500'

DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

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3501 West William Cannon Dr.
Austin, Texas 78749
Phone No. (512) 280-5160
North Office
12129 RR 620 N., Ste. 600
Austin, Texas 78750
www.cbdeng.com

SHEET NAME: WATER LINE A (41+00 TO 49+00)

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

04-28-2023

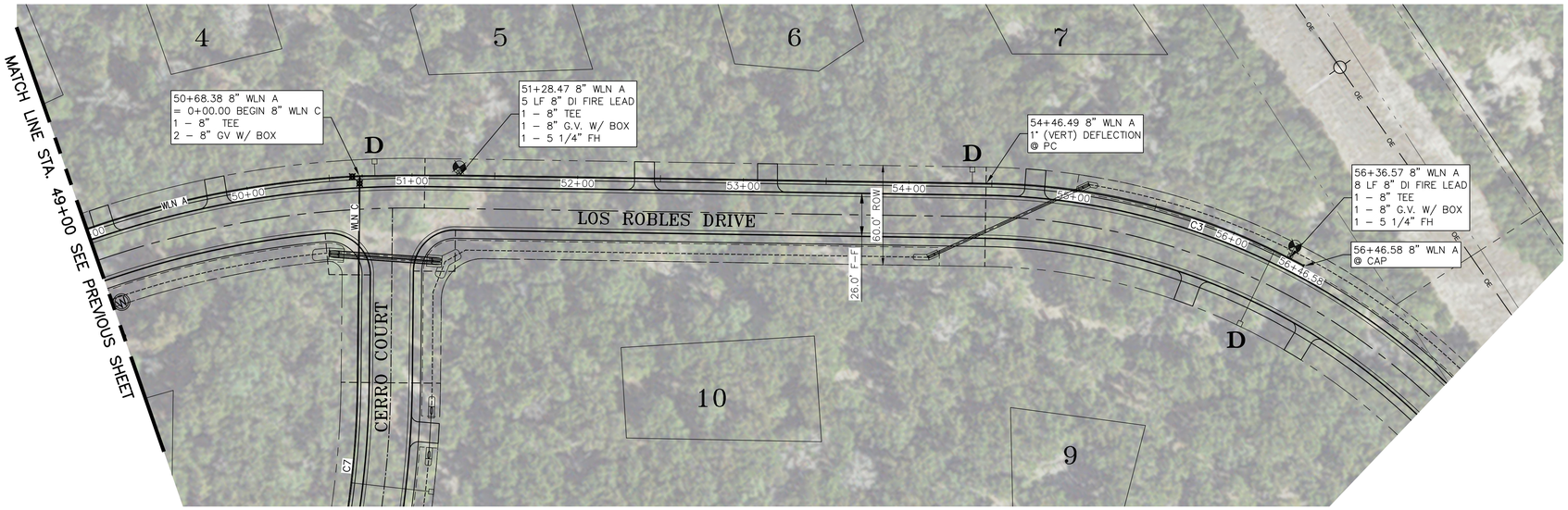
DATE APRIL 2023

JOB NUMBER 5509

SHEET 34 OF 41

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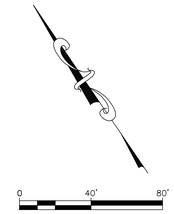


PIPE RESTRAINT CHART		
BEND ANGLE	8" DIA.	12" DIA.
Horizontal Bends		
11.25°	2'	3'
22.5°	4'	6'
45°	8'	12'
Tee-Branch	5'	1'
Valves/Dead Ends	51'	72'
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WATER LEGEND

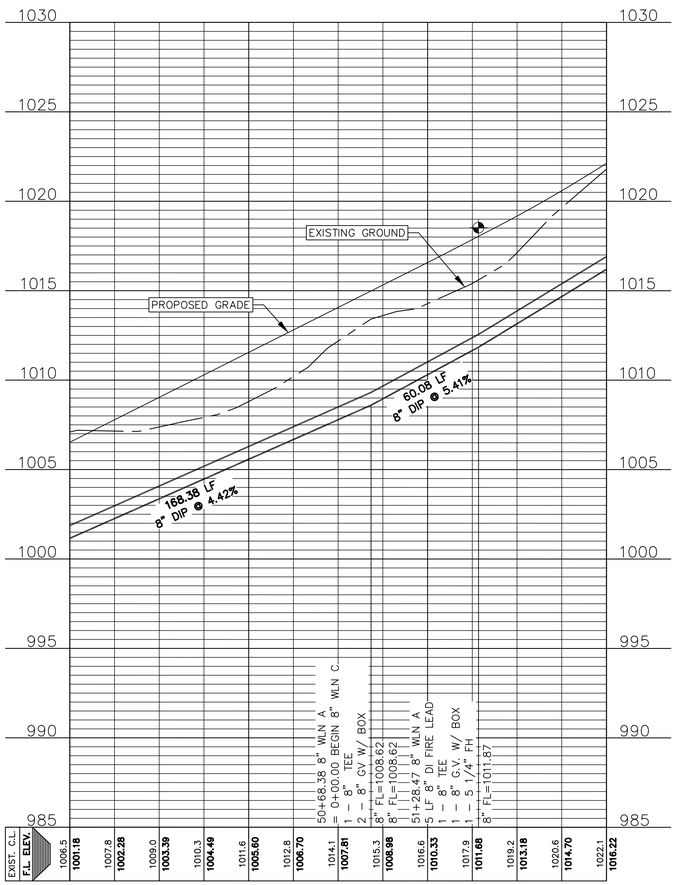
- PROPOSED SINGLE SERVICE
- PROPOSED DOUBLE SERVICE
- PROPOSED MANHOLE
- EXISTING SINGLE SERVICE
- EXISTING DOUBLE SERVICE
- EXISTING MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED G.V. & BOX
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- EXISTING G.V. & BOX
- BLUE REFLECTOR
- PROPOSED AUTOMATIC FLUSHING DEVICE
- PROPOSED PLUG
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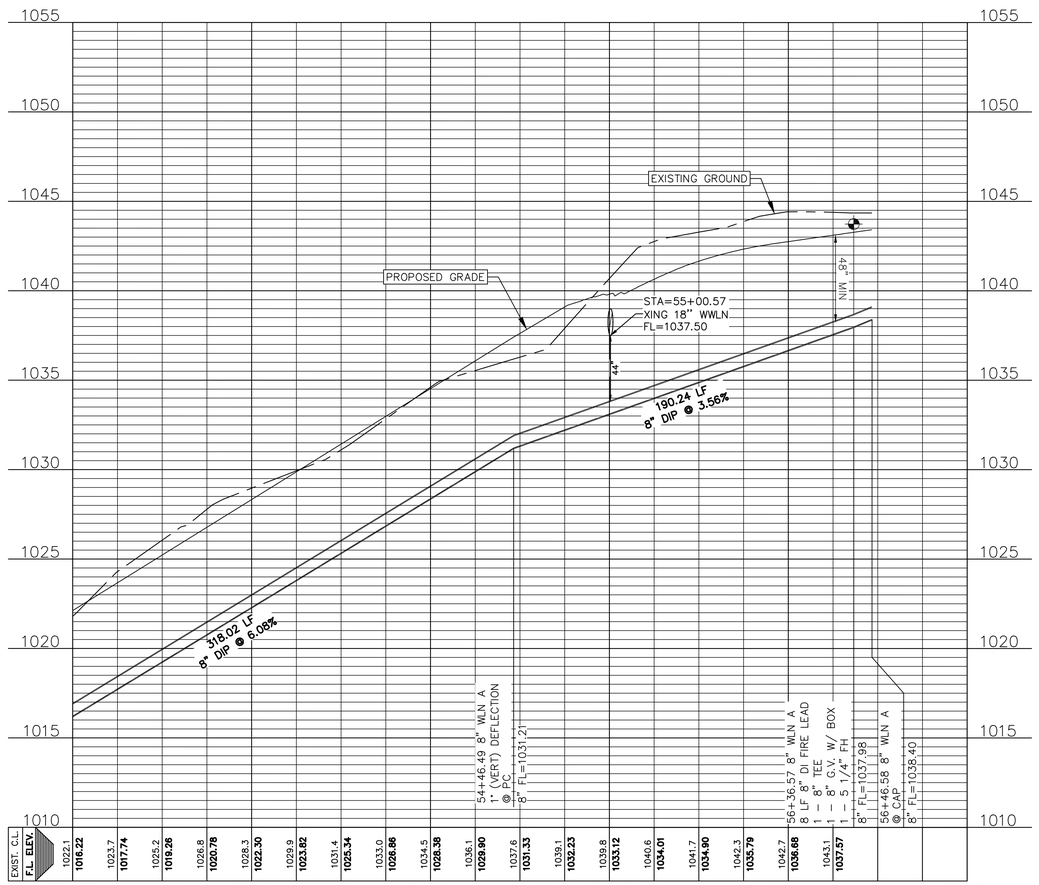


SCALE: 1" = 40'

PROFILE SCALE
HORIZ. 1" = 40'
VERT. 1" = 4'

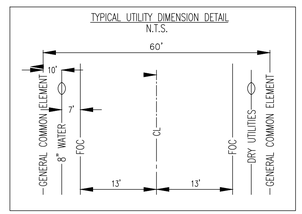
WATER LINE "A"
8" DIP CL 350 STA. 49+00 TO 58+00





Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C2	595.00'	153.39'	028°54'46"	297.08'	300.25'
C3	407.04'	102.17'	028°10'54"	198.20'	200.21'

TYPICAL UTILITY DIMENSION DETAIL
N.T.S.



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4.) FIRE HYDRANTS SPACED MAX. OF 500'

DESIGNED BY: CJM
DRAFTED BY: CEL
DATE
REVISION

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Phone No. (512) 280-5160
North Office
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Austin, Texas 78750
www.cbdeng.com

SHEET NAME: WATER LINE A (49+00 TO END)
JOB NAME: LOS ROBLES RANCH
PROJECT: SITE DEVELOPMENT PLANS

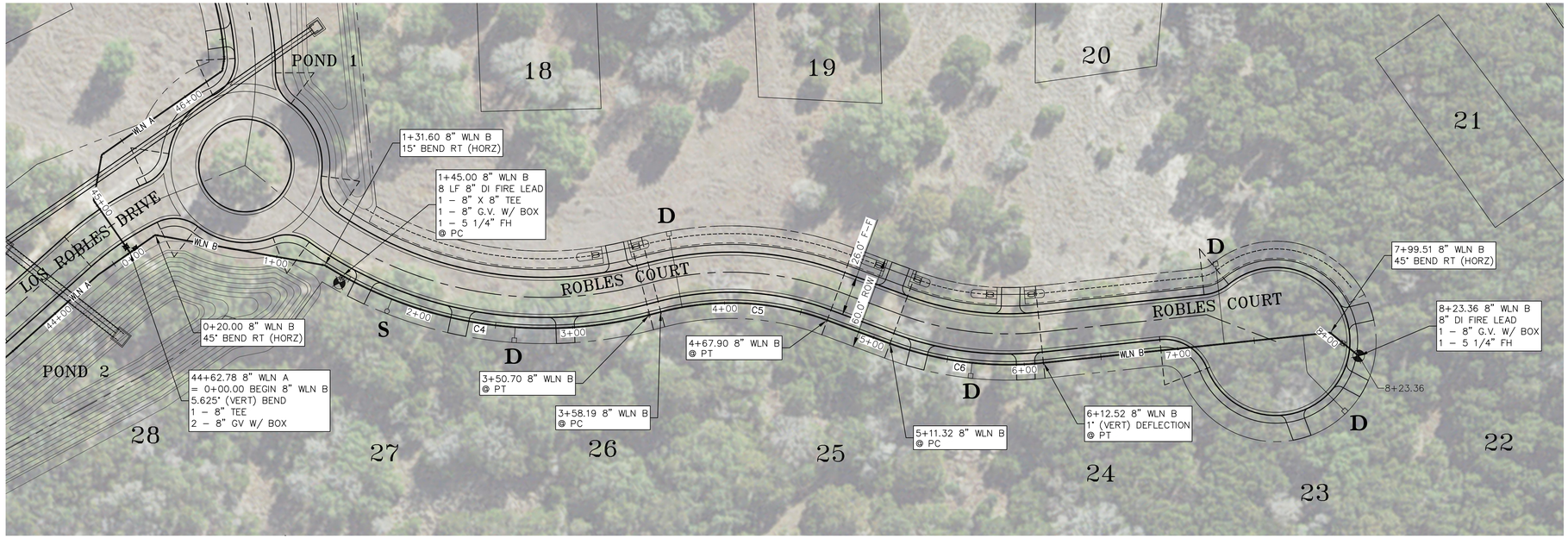
STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

04-28-2023

DATE APRIL 2023
JOB NUMBER 5509
SHEET 35 OF 41

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PIPE RESTRAINT CHART

BEND ANGLE	8" DIA.	12" DIA.
Horizontal Bends		
11.25°	2'	3'
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WATER LEGEND

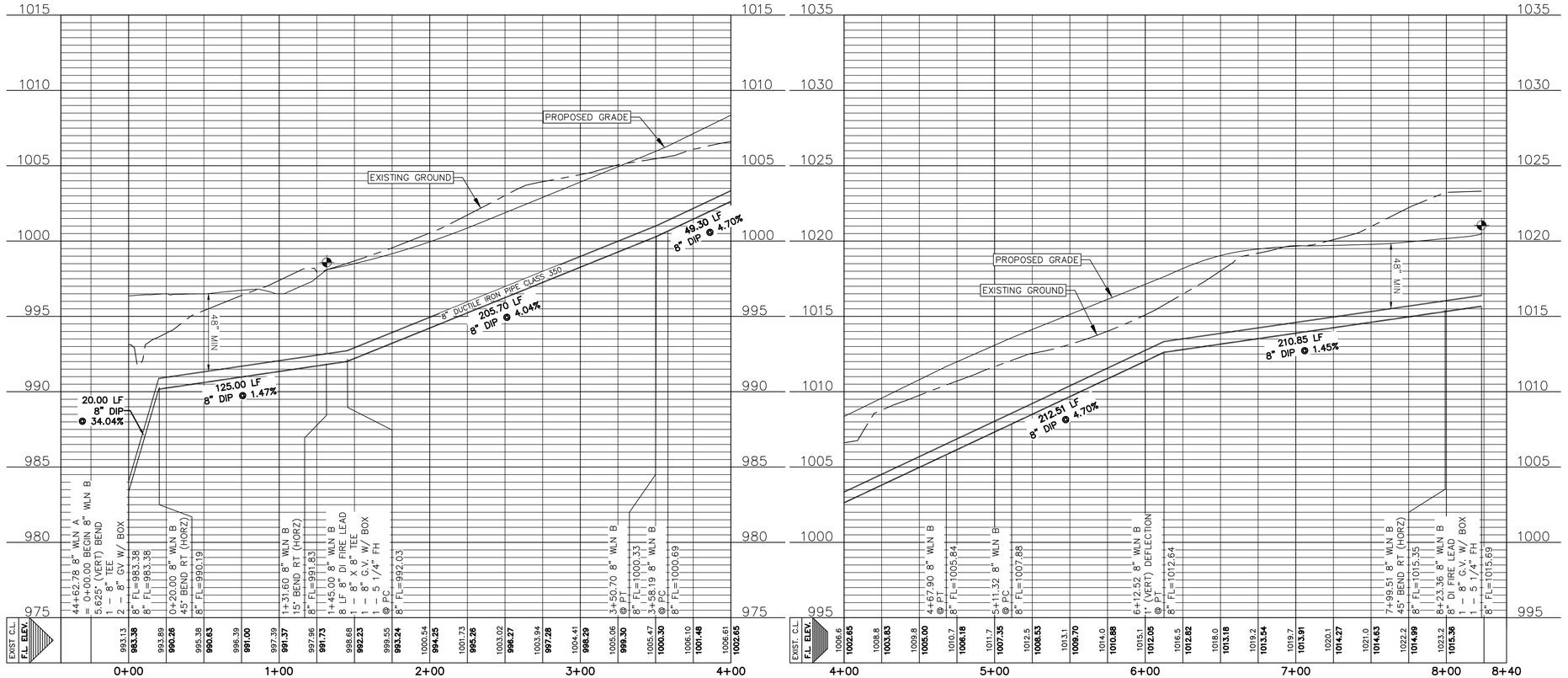
- PROPOSED SINGLE SERVICE
- PROPOSED DOUBLE SERVICE
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- PROPOSED PLUG
- PROPOSED AUTOMATIC AIR RELEASE VALVE

0 40' 80'

SCALE: 1" = 40'

PROFILE SCALE
HORIZ. 1" = 40'
VERT. 1" = 4'

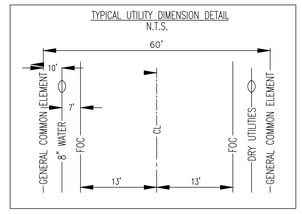
WATER LINE "B"
8" DIP CL 350 STA. 0+00 TO END



Curve Table

Curve #	Radius	Tangent	Delta	Chord	Arc Length
C4	270.00'	108.13'	043°39'03"	200.76'	205.70'
C5	180.00'	56.61'	034°55'10"	108.01'	109.70'
C6	219.29'	51.52'	026°26'30"	100.31'	101.20'

TYPICAL UTILITY DIMENSION DETAIL
N.T.S.



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4.) FIRE HYDRANTS SPACED MAX. OF 500'

DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

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North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: WATER LINE B (0+00 TO END)

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

04-28-2023

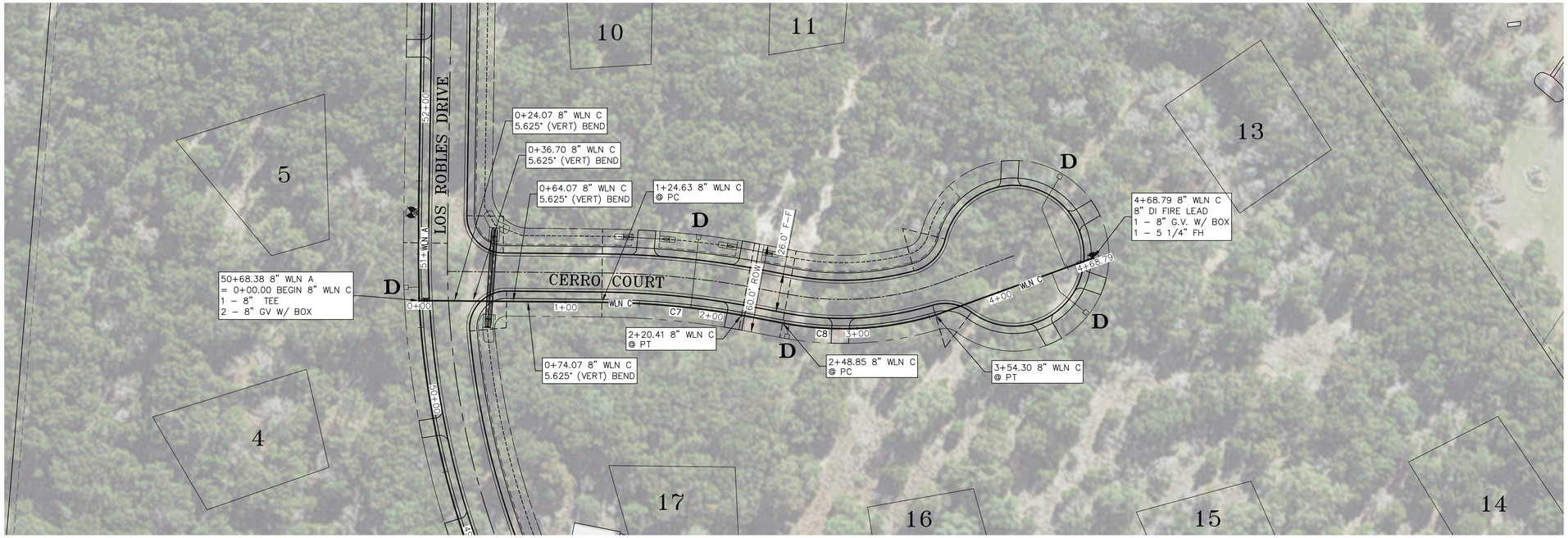
DATE: APRIL 2023

JOB NUMBER: 5509

SHEET: 36 OF 41

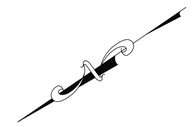
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WATER LEGEND

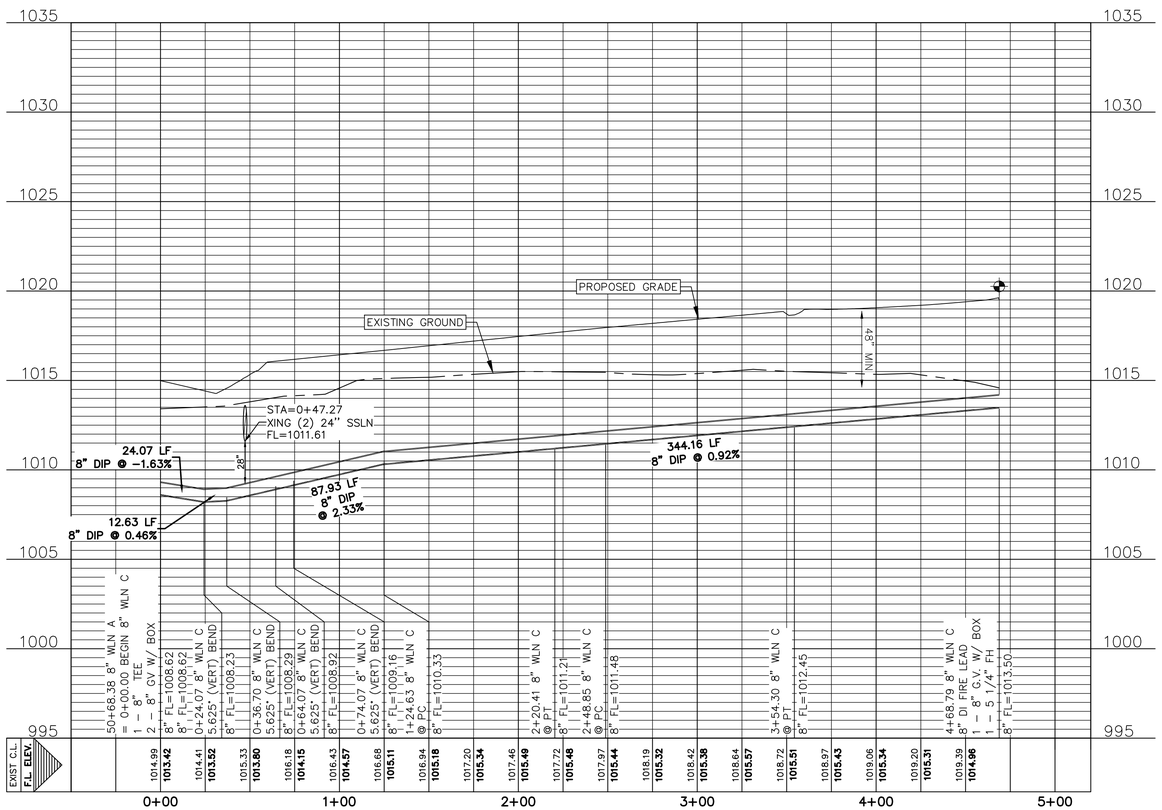
- PROPOSED SINGLE SERVICE
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- PROPOSED G.V. & BOX
- EXISTING FIRE HYDRANT
- EXISTING G.V. & BOX
- BLUE REFLECTOR
- PROPOSED AUTOMATIC FLUSHING DEVICE
- PROPOSED PLUG
- PROPOSED AUTOMATIC AIR RELEASE VALVE



SCALE: 1" = 40'

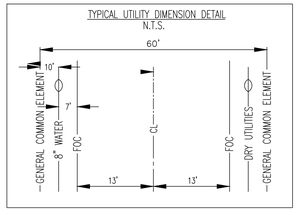
PROFILE SCALE
HORIZ. 1" = 40'
VERT. 1" = 4'

WATER LINE "C"
8" DIP CL 350 STA. 0+00 TO END



Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C7	581.94'	48.00'	009°25'47"	95.67'	95.77'
C8	220.00'	53.75'	027°27'39"	104.44'	105.44'

TYPICAL UTILITY DIMENSION DETAIL
N.T.S.



THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24 – HOURS PRIOR TO COMMENCING CONSTRUCTION.

PIPE RESTRAINT CHART

BEND ANGLE 8" DIA. 12" DIA.		
Horizontal Bends		
11.25°	2'	3'
22.5°	4'	6'
45°	8'	12'
Tee-Branch	5'	1'
Valves/Dead Ends	51'	72'
Vertical Bends		
11.25° Upper	6'	9'
11.25° Lower	4'	6'
22.5° Upper	12'	17'
22.5° Lower	8'	11'
45° Upper	25'	36'
45° Lower	9'	13'

Note: All joints within the above lengths from fittings must be restrained.

NOTES:

1.) ALL ONSITE UTILITY MATERIALS AND WORK SHALL CONFORM TO THE CURRENT PLUMBING CODE.

2.) ALL WATER LINES MUST BE CONSTRUCTED IN COMPLIANCE WITH TCEQ RULE 30 TAC SEC. 290.44 RELATED TO WATER DISTRIBUTION LINES. WATER LINES SHALL HAVE A MINIMUM 4' SEPARATION FROM PRESSURE SEWER MAINS.

3.) PRESSURE REDUCING VALVES SHALL BE INSTALLED ON THE PROPERTY OWNERS SIDE OF THE WATER METER WHERE SERVICE PRESSURE IS 65 psi OR GREATER.

4.) FIRE HYDRANTS SPACED MAX. OF 500'

DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

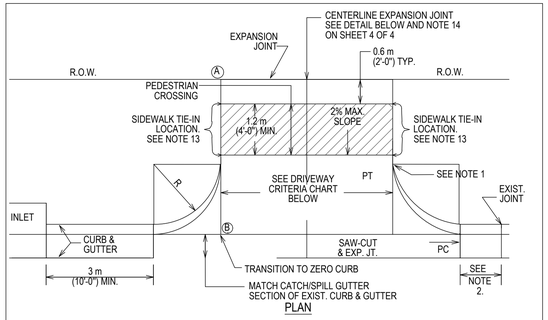
SHEET NAME: WATER LINE C (0+00 TO END)
JOB NAME: LOS ROBLES RANCH
PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
@ F3791

04-28-2023

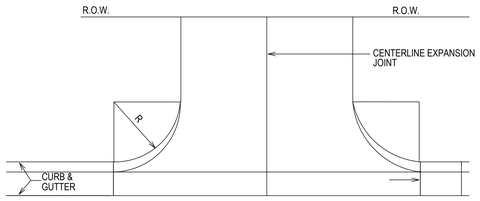
DATE APRIL 2023
JOB NUMBER 5509
SHEET 37 OF 41

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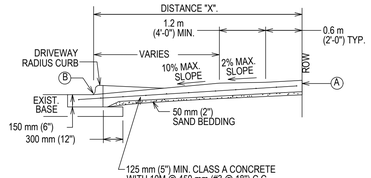
PLAN

NOTE: ALL DRIVEWAYS SHALL BE SLOPED TOWARDS THE STREET FROM THE R.O.W. LINE. ELEVATION OF POINT Ⓐ ABOVE POINT Ⓑ IS, TYPICALLY A MINIMUM OF 150 mm (6") PLUS 20 mm/m (¼" RISE/FOOT) OVER DISTANCE "X" IN METERS (FEET).



PLAN

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPE I DRIVEWAY (1 & 2 FAMILY RESIDENTIAL USE ONLY)	
RECORD COPY SIGNED BY SAM ANGOORI	*10/19/09*	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-1
ADOPTED			1 OF 4



REINFORCEMENT SHALL ACCURATELY PLACED AT SLAB MID-DEPTH AND HELD FIRMLY IN PLACE BY MEANS OF BAR SUPPORTS OF ADEQUATE STRENGTH AND NUMBER THAT WILL PREVENT DISPLACEMENT AND KEEP THE STEEL AT ITS PROPER POSITION DURING THE PLACEMENT OF THE P.C. CONCRETE. IN NO INSTANCE SHALL THE STEEL BE PLACED DIRECTLY ON THE SUBGRADE OR SAND CUSHION LAYER.

CROSS SECTION

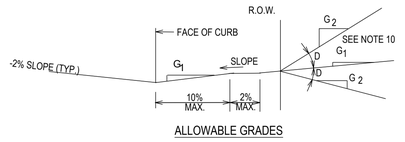
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPE I DRIVEWAY (1 & 2 FAMILY RESIDENTIAL USE ONLY)	
RECORD COPY SIGNED BY SAM ANGOORI	*10/19/09*	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-1
ADOPTED			2 OF 4

DRIVEWAY CRITERIA	WIDTH METERS (FEET)		
USE	MIN.	*OPT.	MAX.
SIN. FAMILY	3.66 (12)	5.50 (18)	11.80 (25)
DUPLEX	4.56 (15)	5.50 (18)	11.80 (25)
TOWN HOME	4.56 (15)	5.50 (18)	11.80 (25)

*OPTIMUM

RADIUS DIMENSION METERS (FEET)			
USE	MIN.	*OPT.	MAX.
SINGLE FAMILY	1.5 (5)	1.5 (5)	3.0 (10)
DUPLEX	1.5 (5)	2.4 (8)	3.0 (10)
TOWN HOME	1.5 (5)	2.4 (8)	3.0 (10)

*OPTIMUM



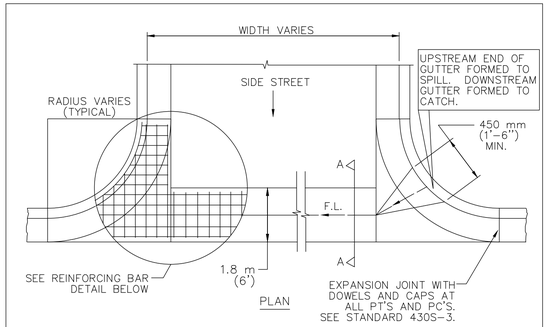
ALLOWABLE GRADES

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPE I DRIVEWAY (1 & 2 FAMILY RESIDENTIAL USE ONLY)	
RECORD COPY SIGNED BY SAM ANGOORI	*10/19/09*	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-1
ADOPTED			3 OF 4

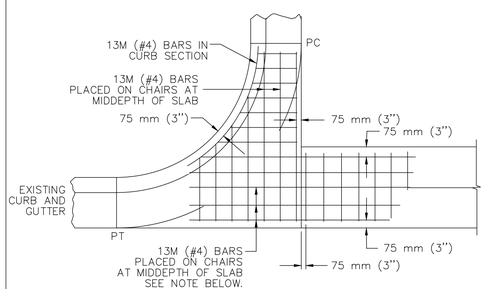
NOTES:

1. "ZERO" CURB AT PT OR SIDEWALK EDGE, WHICHEVER IS ENCOUNTERED FIRST. THE DRIVEWAY EDGE SHALL BE SMOOTHLY TRANSITIONED INTO THE SIDEWALK BEGINNING AT THE RADIUS PC LINE.
2. IF DIMENSION IS LESS THAN 1.5 METERS (5 FEET), REMOVE CURB AND GUTTER TO EXISTING JOINT AND POUR MONOLITHICALLY WITH THE DRIVEWAY.
3. IF THE BASE IS OVER EXCAVATED WHERE THE CURB AND GUTTER WAS REMOVED, BACKFILL WITH CONCRETE MONOLITHICALLY WITH THE DRIVEWAY.
4. ALL DRIVEWAYS MUST BE CONSTRUCTED WITHIN THE STREET FRONTAGE OF THE SUBJECT PROPERTY AS DETERMINED BY EXTENDING THE SIDE PROPERTY LINES TO THE CURB.
5. DRIVEWAYS SHALL NOT EXCEED 70% OF A LOTS' STREET FRONTAGE.
6. TYPE I DRIVEWAYS ARE TO BE LOCATED NO CLOSER TO THE CORNER OF INTER-SECTING RIGHTS-OF-WAY THAN 60% OF PARCEL FRONTAGE OR 15 METERS (50 FEET); WHICHEVER IS LESS.
7. DRIVEWAYS SHALL NOT BE CONSTRUCTED WITHIN THE CURB RETURN OF A STREET INTERSECTION.
8. SINGLE FAMILY LOTS LIMITED TO ONE DRIVEWAY EXCEPT FOR APPROVED SEMICIRCULAR DRIVES.
9. WHEN TWO DRIVEWAYS ARE USED (ONE PER UNIT; TWO MAXIMUM) FOR DUPLEXES AND TOWN HOMES, SINGLE FAMILY STANDARDS SHALL APPLY.
10. WHILE THE PROPERTY OWNER REMAINS RESPONSIBLE FOR GRADE BREAKS WITHIN PRIVATE PROPERTY, THE FIRE DEPARTMENT SHOULD BE CONSULTED WHERE THE DRIVEWAY IS ESSENTIAL TO EMERGENCY VEHICLE ACCESS AND "G2" IS GREATER THAN 15%. "G1" PLUS "D" SHOULD NOT EXCEED 15%.
11. SEE TRANSPORTATION MANUAL SECTION 5 FOR OTHER DRIVEWAY REQUIREMENTS.
12. USE 12 mm (½") ASPHALT BOARD, OR OTHER APPROVED MATERIAL, FOR CURB AND GUTTER EXPANSION JOINTS.
13. THE SIDEWALK, REGARDLESS OF ITS LOCATION WITH RESPECT TO THE CURB OR PROPERTY LINE, SHALL BE CONNECTED TO THE DRIVEWAY AT THESE LOCATIONS.
14. PLACE AN EXPANSION JOINT DOWN THE CENTER OF ALL DRIVEWAYS.
15. WATER METER BOXES AND WASTEWATER CLEAN OUTS ARE PROHIBITED FROM BEING LOCATED IN DRIVEWAY AREAS.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPE I DRIVEWAY (1 & 2 FAMILY RESIDENTIAL USE ONLY)	
RECORD COPY SIGNED BY SAM ANGOORI	*10/19/09*	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-1
ADOPTED			4 OF 4



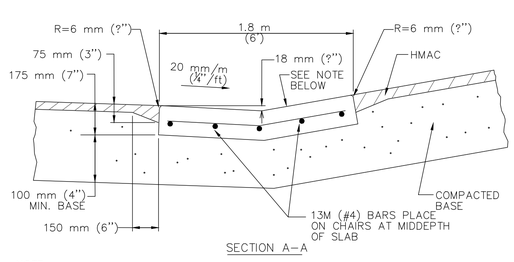
PLAN



REINFORCING BAR DETAIL

NOTE:
ALTERNATE 13M (#4) BARS PLACED ON CHAIRS AT MIDDEPTH OF SLAB TO BE CONTINUOUS ACROSS EXPANSION JOINT. BREAK BOND 150 mm (6") ON EACH SIDE OF EXPANSION JOINT.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		CONCRETE VALLEY GUTTER	
RECORD COPY SIGNED BY BILL GARDNER	06/12/06	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 436S-2
ADOPTED			1 OF 2



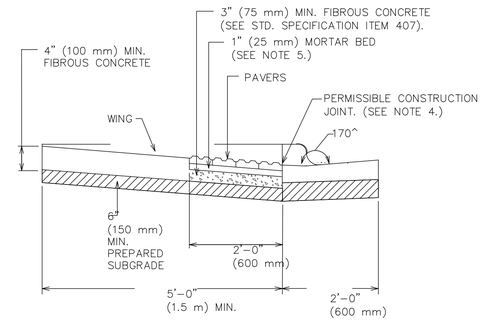
SECTION A–A

NOTE:
ADJUST SLOPE FROM 20 mm/m (?"/ft) MINIMUM TO THE SLOPE OF THE SIDE STREET.

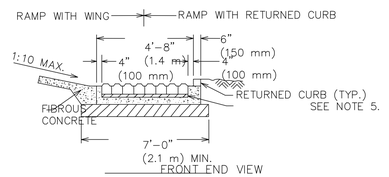
NOTES:

1. MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE CITY OF AUSTIN STANDARD SPECIFICATIONS.
2. CONCRETE FOR THE VALLEY GUTTER SHALL BE CLASS A, ITEM 403S, "CONCRETE FOR STRUCTURES".
3. MONOLITHIC CURB AND GUTTER SHALL BE MEASURED BY PLAN QUANTITY PER SQUARE FEET AND PAID AS VALLEY GUTTER.
4. THE UPSTREAM CURB MID POINT MUST BE AT OR LOWER THAN THE BEGINNING P.C. AND 0.5% MINIMUM HIGHER THAN THE OPPOSING MID POINT.
5. ALLOWABLE CONSTRUCTION JOINT AT THE CENTER LINE WHEN TRAFFIC FLOW MUST BE MAINTAINED, CONSTRUCTED AS A CONTROL JOINT.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		CONCRETE VALLEY GUTTER	
RECORD COPY SIGNED BY BILL GARDNER	06/12/06	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 436S-2
ADOPTED			2 OF 2



CROSS SECTION



FRONT END VIEW

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		DETECTABLE WARNING–PAVER (CITY PROPERTY/EASEMENTS)	
RECORD COPY SIGNED BY BILL GARDNER	06/21/07	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-2A
ADOPTED			1 OF 2

GENERAL NOTES:

1. THIS STANDARD IS APPLICABLE FOR RAMP CONSTRUCTION ON CITY PROPERTY AND EASEMENT AREAS ONLY.
2. PAVERS ARE REQUIRED FOR ALL CURB RAMP INSTALLATIONS.
3. PAVERS WILL HAVE DETECTABLE WARNING THAT CONSISTS OF RAISED TRUNCATED DOMES WITH A DIAMETER OF 0.9" (23 mm), A NOMINAL HEIGHT OF 0.2" (5 mm) AND A NOMINAL CENTER TO CENTER SPACING OF 2.35" (60 mm) AND SHALL CONSTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT–ON–DARK OR DARK–ON–LIGHT (Re: ADAAG SECTION 4.29.2). MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. PAVER PATTERN SHALL BE BASKET WEAVE UNLESS DIRECTED OTHERWISE BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
4. TYPICAL SIDEWALK WIDTHS AND CURB RADII ARE SHOWN FOR ILLUSTRATION ONLY. REFER TO THE TRANSPORTATION CRITERIA MANUAL FOR SIDEWALK WIDTHS, CURB RADII AND CURB BASIS.
5. THE PERMISSIBLE CONSTRUCTION JOINT BETWEEN THE PAVERS AND THE ADJOINING SURFACE SHALL BE LIMITED TO ¼" (6 mm) JOINT SIZE. GAPS LARGER THAN ¼" (6 mm) MUST BE APPROVED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. ALL JOINTS BETWEEN BRICKS AND ADJOINING SURFACE SHALL BE MORTAR FILLED UNLESS DIRECTED OTHERWISE BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
6. MORTAR SHALL CONFORM TO STD. SPECIFICATION ITEM SECTION 403S.3.5, MORTAR AND GROUT. ALL OTHER CONCRETE SHALL CONFORM TO STD. SPECIFICATION ITEM 403S, CONCRETE FOR STRUCTURES, UNLESS OTHERWISE NOTED.
7. CURB RAMPS WITH RETURNED CURB MAY ONLY BE USED WHERE PEDESTRIANS WOULD NOT NORMALLY WALK DIAGONALLY ACROSS THE RAMP.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		DETECTABLE WARNING–PAVER (CITY PROPERTY/EASMENTS)	
RECORD COPY SIGNED BY BILL GARDNER	06/21/07	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-2A
ADOPTED			2 OF 2

DESIGNED BY: CJM	DRAFTED BY: CEL

DATE	REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
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SHEET NAME: CONSTRUCTION DETAILS (1 OF 4)

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

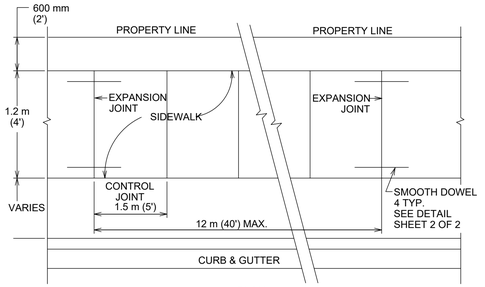
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DATE: APRIL 2023

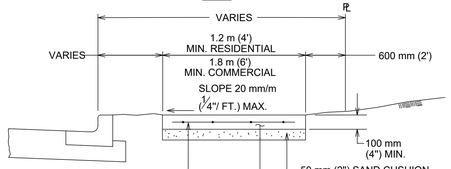
JOB NUMBER: 5509

SHEET: 38 OF 41

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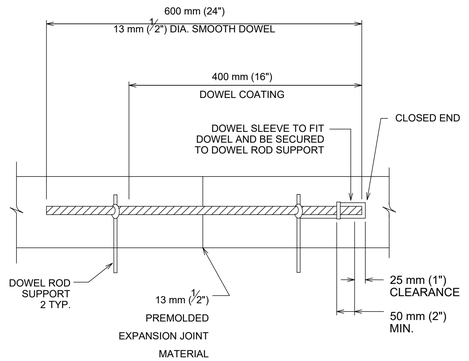
PLAN



POLYPROPYLENE FIBRILLATED FIBERS, OR 150 mm X 150 mm X MW9 X MW9 (6" X 6" X W1.4 X W1.4) WELDED WIRE FABRIC OR ONE LAYER 10M (#3) BARS PLACED NOT MORE THAN 450 mm (18") C.C. BOTH DIRECTIONS.
REINFORCEMENT SHALL ACCURATELY PLACED AT SLAB MID-DEPTH AND HELD FIRMLY IN PLACE BY MEANS OF BAR SUPPORTS OF ADEQUATE STRENGTH AND NUMBER THAT WILL PREVENT DISPLACEMENT AND KEEP THE STEEL AT ITS PROPER POSITION DURING THE PLACEMENT OF THE P.C. CONCRETE. IN NO INSTANCE SHALL THE STEEL BE PLACED DIRECTLY ON THE SUBGRADE OR SAND CUSHION LAYER.

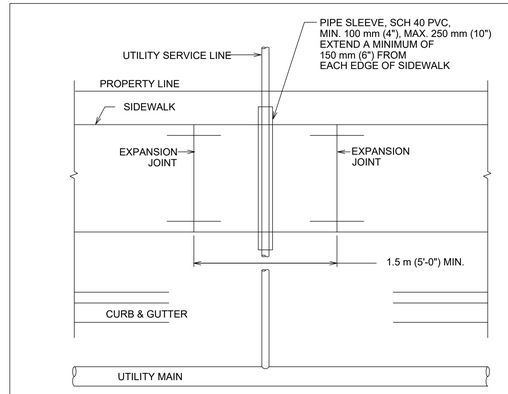
SECTION

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SIDEWALK	
RECORD COPY SIGNED BY BILL GARDNER	03/26/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 1 OF 3

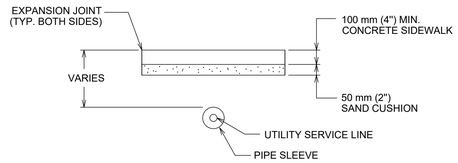


DOWEL DETAIL

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SIDEWALK	
RECORD COPY SIGNED BY BILL GARDNER	03/26/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 2 OF 3



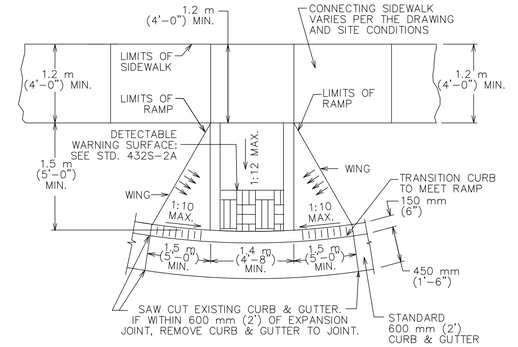
SIDEWALK OVER UTILITY SERVICE LINE PLAN



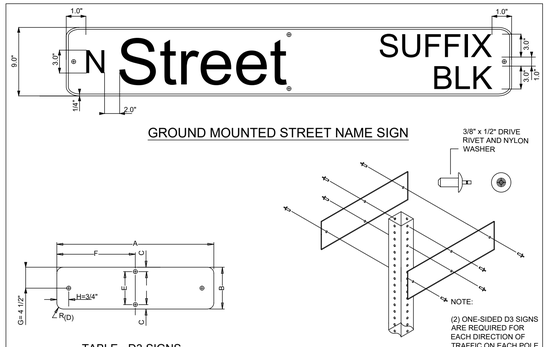
SECTION OF SIDEWALK OVER
UTILITY SERVICE LINES

NOTES:
1. THIS STANDARD APPLIES TO THE INSTALLATION OF NEW UTILITIES OR UTILITIES BEING REPLACED BY A NEW LINE.
2. NO JOINTS IN UTILITY SERVICE PIPE TO BE LOCATED INSIDE PVC PIPE SLEEVE.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SIDEWALK	
RECORD COPY SIGNED BY BILL GARDNER	03/26/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 3 OF 3



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPE 1 SIDEWALK CURB RAMP	
RECORD COPY SIGNED BY BILL GARDNER	9/14/05 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-5



GROUND MOUNTED STREET NAME SIGN

TABLE - D3 SIGNS

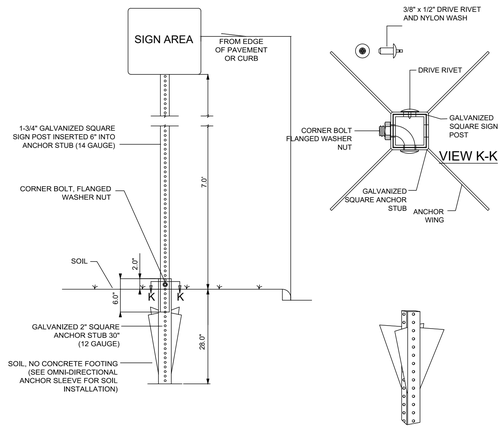
A	B	C	D	E	F	T
24"	9"	1/2"	3/4"	8"	12"	0.08"
30"	9"	1/2"	3/4"	8"	15"	0.08"
36"	9"	1/2"	3/4"	8"	18"	0.08"
42"	9"	1/2"	3/4"	8"	21"	0.08"
48"	9"	1/2"	3/4"	8"	24"	0.08"
54"	9"	1/2"	3/4"	8"	27"	0.08"

SIGN TO POLE INSTALLATION

HEIGHT	9"
LENGTH	24" MIN. 54 MAX. 6" INCREMENTS OF LENGTH
THICKNESS	0.08"
SUBSTRATE	ALUMINUM ALLOY, 6061-T-6, OR TYPE IV 5052-H38 (ASTM B-209)
SIGN FACE MATERIALS	GREEN FILM OVER HIGH INTENSITY PRISMATIC SHEETING
LEGENDS AND SYMBOLS	SERIES D (USUAL) SERIES C OR B FOR MAXIMUM LENGTH SIGN BLANK, IF NECESSARY
COLOR	WHITE LEGEND ON GREEN BACKGROUND WITH ½" WHITE BORDER

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		GROUND MOUNTED TRAFFIC AND STREET NAME SIGNS	
RECORD COPY SIGNED BY KERI JUAREZ	01/04/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 824-2 1 OF 3

TYPE "U" MOUNT
PERFORATED SQUARE METAL TUBING (DRIVEABLE)



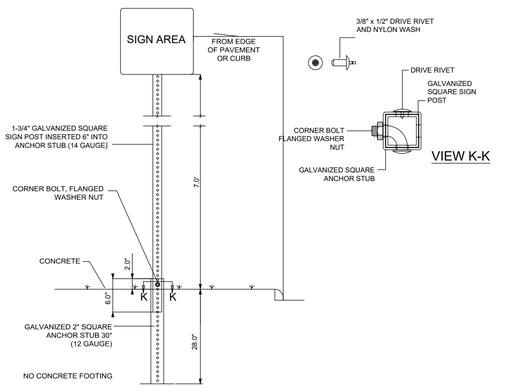
MULTI-DIRECTIONAL ANCHOR
FOR USE IN SOIL

SIGN POST:
12 GAUGE
2" SQUARE x 30"

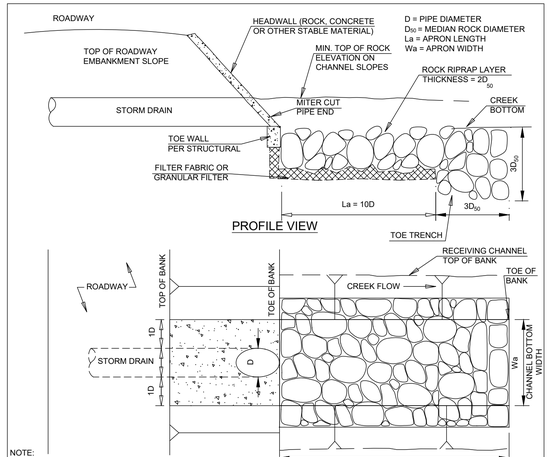
WINGS:
10 GAUGE
4" x 12"
ASTM A569 COM. QUALITY WELDED TO ALL 4
CORNERS STARTING 2 1/2" DOWN FROM TOP

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		GROUND MOUNTED TRAFFIC AND STREET NAME SIGNS - SOIL	
RECORD COPY SIGNED BY KERI JUAREZ	01/04/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 824-2 2 OF 3

TYPE "U" MOUNT
PERFORATED SQUARE METAL TUBING (DRIVEABLE)



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		GROUND MOUNTED TRAFFIC AND STREET NAME SIGNS - CONCRETE	
RECORD COPY SIGNED BY KERI JUAREZ	01/04/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 824-2 3 OF 3



NOTE:
1. ROCK RIPRAP SHALL BE SOUND MATERIAL AND GRADED PER REQUIREMENTS SPECIFIED IN STANDARD SPECIFICATION ITEM NO. 591S.
2. ROCK SIZE (D_{50}) AND GRADATION SHALL BE STABLE FOR THE DESIGN HYDRAULIC CONDITIONS AND IN ACCORDANCE WITH THE ECM 1.4.6.D PERMANENT STRUCTURAL PRACTICES, STONE RIPRAP OR OTHER ENGINEERING STANDARD OF PRACTICE FOR SIZING ROCK RIPRAP. ROCK RIPRAP D_{50} AND FILTER TYPE SHALL BE NOTED ON PLANS.
3. GEOTEXTILE FILTER FABRIC SHALL MEET THE REQUIREMENTS SPECIFIED IN STANDARD SPECIFICATION ITEM NO. 620S.
4. AGGREGATE FOR GRANULAR FILTER SHALL MEET THE REQUIREMENTS SPECIFIED IN STANDARD SPECIFICATION ITEM NO. 403, AGGREGATE SIZE CLASSIFICATION/GRADE, NUMBER OF LAYERS AND LAYER THICKNESS SHOULD BE NOTED ON THE PLANS.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		STORMDRAIN OUTFALL PROTECTION CULVERT UNDER ROADWAY/INLINE	
RECORD COPY SIGNED BY MORGAN BYARS	*09/01/2011* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S-20

DESIGNED BY: CJM	DRAFTED BY: CEL

REVISION	DATE

Carlson, Brigance & Doering, Inc.
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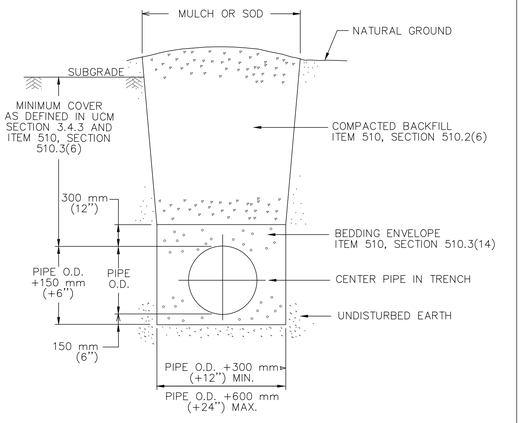
SHEET NAME: CONSTRUCTION DETAILS (2 OF 4)
JOB NAME: LOS ROBLES RANCH
PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED
PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

04-28-2023

DATE: APRIL 2023
JOB NUMBER: 5509
SHEET: 39 OF 41

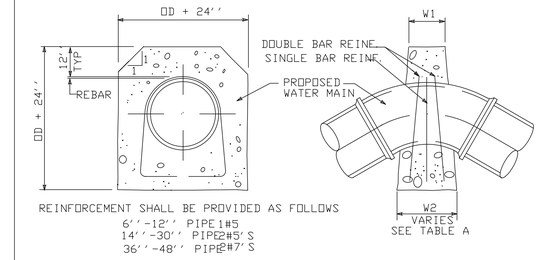
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REFERENCES:

1. UTILITY CRITERIA MANUAL SECTION 3.4.3, "FINAL DESIGN"
2. STANDARD SPECIFICATION MANUAL ITEM 510, SECTION 510.2(6), "SELECT BACKFILL OR BORROW"; SECTION 510.3(6), "TRENCH DEPTH AND DEPTH OF COVER"; SECTION 510.3(14), "PIPE BEDDING ENVELOPE"

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPICAL TRENCH DETAIL WITH UNFINISHED SURFACE	
RECORD COPY SIGNED BY BILL GARDNER 03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 510S-5



REINFORCEMENT SHALL BE PROVIDED AS FOLLOWS
6''-12'' PIPE 1#5
14''-30'' PIPE 2#5's
36''-48'' PIPE 2#7's

VERTICAL DOWN BEND

TABLE A
UPWARD THRUST GRAVITY BLOCKS

PIPE DIA.	MIN. TOP WIDTH W1	ANGLE (degrees)	BOTTOM WIDTH-W2 (in)
6''	6''	0-5	NOTE 2
		5-15	24
		15-25	48
		► 25	NOTE 1
8''	6''	0-5	NOTE 2
		5-9	30
		9-15	36
		►15	NOTE 1
12''	6''	0-5	NOTE 2
		5-15	48
		► 15	NOTE 1
16''	12''	0-5	NOTE 2
		5-10	60
		10-15	96
		► 15	NOTE 1
24'' THRU 36'' DIA.		►5.0	NOTE 1
42'' THRU 48'' DIA.		►3.0	NOTE 1

NOTES:

1- FOR ANGLES GREATER THAN THOSE INDICATED RESTRAINED JOINTS SHALL BE INSTALLED

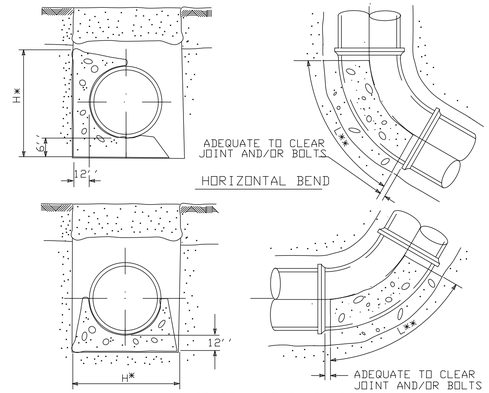
2- FOR JOINT DEFLECTIONS LESS THAN 9 DEGREES, NO HORIZONTAL OR VERTICAL THRUST RESTRAINT IS REQUIRED FOR PIPES LESS THAN 42'' IN DIAMETER.

THRUST BLOCK DESIGN AS FOLLOWS
A. PRESSURE OF 150 P. S. I. (ACTUAL IF HIGHER) + 50 % SURGE ALLOWANCE
B. MAXIMIM SOIL BEARING SEE TABLE BELOW

SOIL TYPES	PRESSURE
LOOSE OR SPONGY SOIL	1500 Lb/Sq. Ft.
UNDISTURBED SOIL, CALICHE	2000 Lb/Sq. Ft.
LIMESTONE ROCK	4000 Lb/Sq. Ft.

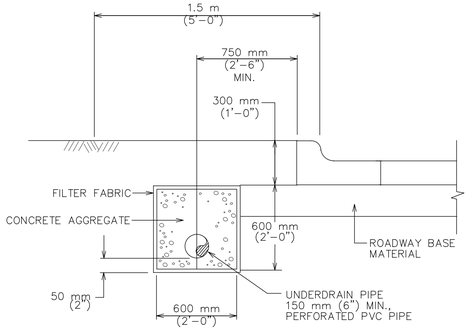
REV. DATE: 2-27-97 DESCRIPTION: STANDARD MANUAL

CITY OF AUSTIN WATER AND WASTEWATER UTILITY	CONCRETE THRUST BLOCKING	
RECORD COPY SIGNED BY JAMES E. THOMPSON 2/11/86 APPROVED DATE	ADOPTED: 2/11/86 SCALE: N. T. S. INITIAL:	STANDARD NO. 510-6 1 OF 2

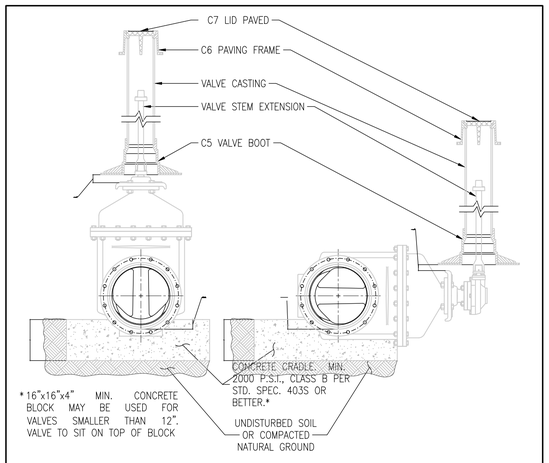


* THE DIMENSION FOR 'H' MUST BE GREATER THAN DIAMETER OF THE PIPE
** LENGTH 'L' ALONG THE BEND MUST BE GREATER THAN 'H' AND LESS THAN 2 TIMES 'H'

CITY OF AUSTIN WATER AND WASTEWATER UTILITY	CONCRETE THRUST BLOCKING	
RECORD COPY SIGNED BY JAMES E. THOMPSON 2/11/86 APPROVED DATE	ADOPTED: 2/11/86 SCALE: N. T. S. INITIAL:	STANDARD NO. 510-6 2 OF 2



CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW	UNDERDRAINS	
RECORD COPY SIGNED BY GEORGE E. OSWALD 3/15/05 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 551S-1



VERTICAL VALVE

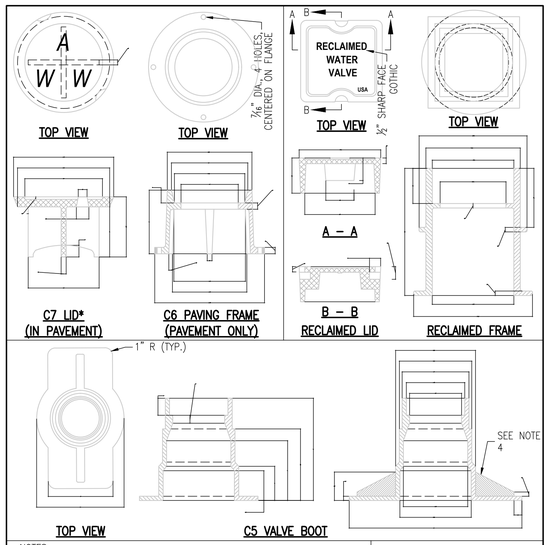
HORIZONTAL VALVE
ONLY TO BE USED WHEN CALLED OUT ON THE DRAWINGS.

NOTES:

1. WELD SOCKET 2½" x 2" DEEP TO 1" SCH. 40 CARBON STEEL ROUND STEM EXTENSION, FITTED ON OPERATING NUT, [SCH. 80 FOR LENGTHS OVER 10'.]
2. VALVE CASTING SHALL BE 6" DI PIPE WITH BELL OR COLLAR CENTERED OVER VALVE BOOT.
3. NUT AT TOP OF VALVE EXTENSION ROD SHALL BE SQUARE 2" LONG WELDED TO TOP OF ROD.
4. VALVE STEM EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 3' DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 12" AND 18" FROM FINISHED GRADE.

RECLAIMED WATER: ALL RECLAIMED PVC PIPE SHALL BE MANUFACTURED PURPLE PIPE. HDPE PIPE SHALL BE MANUFACTURED WITH PURPLE STRIPES. ALL OTHER PIPE AND APPURTENANCES SHALL BE MANUFACTURED PURPLE IF AVAILABLE. ALL PIPE AND FITTINGS THAT ARE NOT AVAILABLE FROM THE MANUFACTURER IN PURPLE SHALL BE PAINTED PURPLE PER SPL WW-3C. ALL BURIED DI AND CI PIPE AND FITTINGS SHALL ALSO BE WRAPPED IN PURPLE POLYETHYLENE PER SPL WW-27D. ALL COVERS SHALL HAVE "RECLAIMED WATER" CAST INTO THEM.

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" – 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 1 OF 4



NOTES:

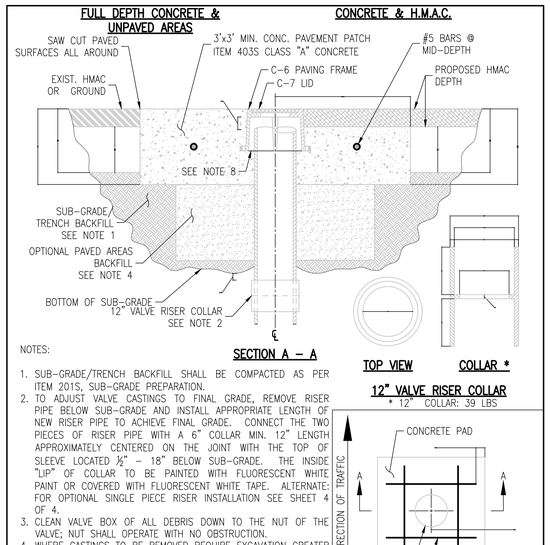
1. MATERIAL SHALL BE GRAY CAST IRON, ASTM A48, GRADE 30B.
2. THE MANUFACTURER'S IDENTIFICATION AND CASTING NUMBER, AND THE COUNTRY WHERE CAST, SHALL BE DISTINCTLY CAST ONTO EACH LID, FRAME, COLLAR AND BASE.
3. DRAFT AND SHRINKAGE ALLOWANCE SHALL BE IN ACCORDANCE WITH NORMAL FOUNDRY PRACTICE.
4. CASTING FINISH BY MANUFACTURER SHALL INCLUDE REMOVAL OF FINS AND FLASHING, AND PAINT WITH BLACK ASPHALT COATING.

WEIGHTS:

C7 LID: 13 LBS
RECLAIMED LID: 15 LBS
C6 FRAME: 23 LBS
RECLAIMED FRAME: 33 LBS
C5 BASE: 78 LBS

* LETTERING SHALL BE 1 ½" 2 PICK BAR SLOTS REQUIRED

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" – 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 2 OF 4



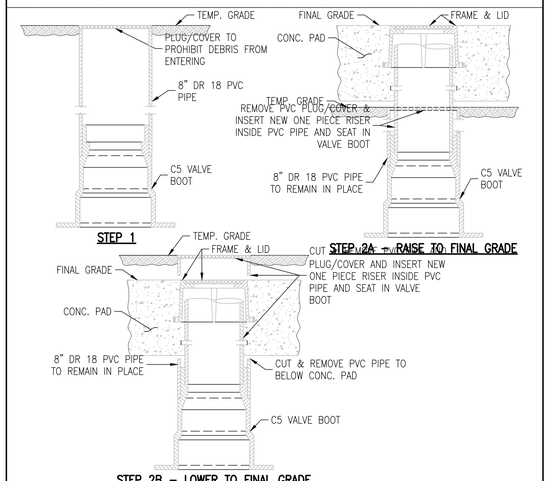
NOTES:

1. SUB-GRADE/TRENCH BACKFILL SHALL BE COMPACTED AS PER ITEM 201S, SUB-GRADE PREPARATION.
2. TO ADJUST VALVE CASTINGS TO FINAL GRADE, REMOVE RISER PIPE BELOW SUB-GRADE AND INSTALL APPROPRIATE LENGTH OF NEW RISER PIPE TO ACHIEVE FINAL GRADE. CONNECT THE TWO PIECES OF RISER PIPE WITH A 6" COLLAR MIN. 12" LENGTH APPROXIMATELY CENTERED ON THE JOINT WITH THE TOP OF SLEEVE LOCATED ½" – 18" BELOW SUB-GRADE. THE INSIDE "LIP" OF COLLAR TO BE PAINTED WITH FLUORESCENT WHITE PAINT OR COVERED WITH FLUORESCENT WHITE TAPE. ALTERNATE: FOR OPTIONAL SINGLE PIECE RISER INSTALLATION SEE SHEET 4 OF 4.
3. CLEAN VALVE BOX OF ALL DEBRIS DOWN TO THE NUT OF THE VALVE; NUT SHALL OPERATE WITH NO OBSTRUCTION.
4. WHERE CASTINGS TO BE REMOVED REQUIRE EXCAVATION GREATER THAN 20" DEEP, CONTRACTOR MAY ELECT TO FILL EXCAVATION WITH CONTROLLED LOW STRENGTH MATERIAL (SPEC. ITEM 402S) TO THE UNDERSIDE OF THE CONCRETE. PAVEMENT PATCH IN LIEU OF COMPACTED BACKFILL.
5. REINFORCING STEEL SHALL MEET SPEC. ITEM 406S.7.
6. NO MORE THAN 2 SECTIONS OF PIPE SHALL BE USED FROM VALVE TO FINAL GRADE.
7. BELL AND SPIGOT IS ACCEPTABLE FOR DEPTH OVER 18'.

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" – 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 3 OF 4

NOTES (CON'T):

8. PAVING FRAME SHALL BE FLUSH WITH THE CONC. PAD AND PLACED ½" – 2" ABOVE RISER PIPE (FRAME SHALL NOT REST ON RISER.)
9. IN UNPAVED AREAS, INSTALL ONE DELINEATOR STAKE IMMEDIATELY ADJACENT TO THE EDGE OF THE CONCRETE PAD. DELINEATOR SHALL BE BLUE FOR POTABLE WATER AND PURPLE FOR RECLAIMED WATER AND SHALL EXTEND AT LEAST 60" ABOVE GROUND. DELINEATORS SHALL HAVE 2" WIDE, WHITE IN COLOR, TYPE I REFLECTIVE TAPE MOUNTED DIAGONALLY AT 12" SPACING ON BOTH SIDES.
10. VALVE SHALL TYPICALLY BE CENTERED IN CONCRETE DIAMOND BUT MAY BE OFFSET WITH A MIN. OF 12" FROM CENTER OF VALVE LID TO EDGE OF CONCRETE IN ALL DIRECTIONS.
11. MIN. TOTAL DEPTH OF ASPHALT PLUS CONC. IS 9" AND MIN. DEPTH OF CONC. PAD SHALL BE 5"



STEP 2B – LOWER TO FINAL GRADE
OPTIONAL ONE PIECE VALVE CASTING INSTALLATION

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" – 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 4 OF 4

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DESIGNED BY: CJM | DRAFTED BY: CEL

DATE | REVISION

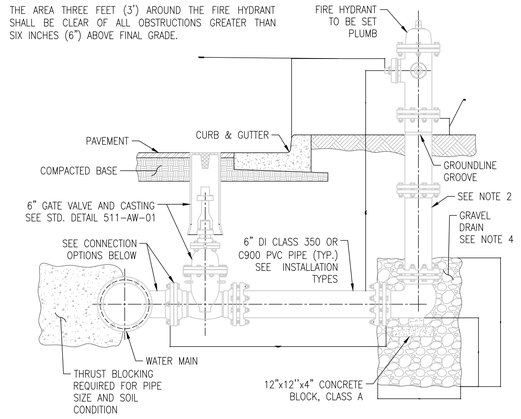
Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 3501 West William Cannon Dr., Austin, Texas 78749, Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600, Austin, Texas 78750, www.cbdeng.com

SHEET NAME: CONSTRUCTION DETAILS (3 OF 4)
JOB NAME: LOS ROBLES RANCH
PROJECT: SITE DEVELOPMENT PLANS

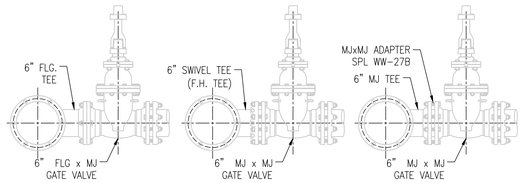
STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

04-28-2023

DATE: APRIL 2023
JOB NUMBER: 5509
SHEET: 40 OF 41

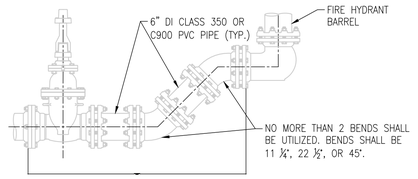


CONNECTION TO MAIN

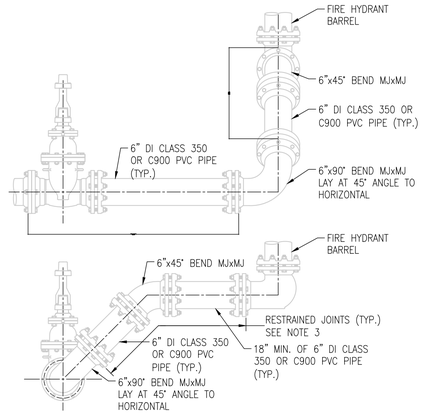


OPTION 1 **OPTION 2** **OPTION 3**

CITY OF AUSTIN AUSTIN WATER	FIRE HYDRANT	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-02 1 OF 3

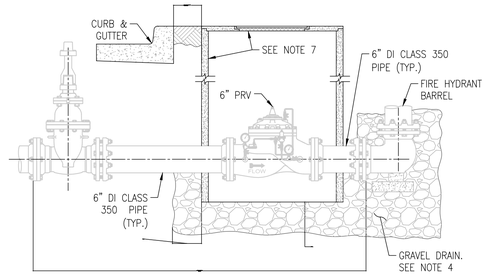


INSTALLATION ON DEEP WATER MAIN



INSTALLATION ON DEEP WATER MAIN WITH 90° BEND

CITY OF AUSTIN AUSTIN WATER	FIRE HYDRANT	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-02 2 OF 3

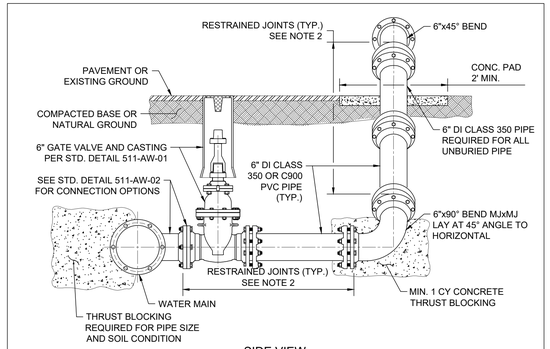


INSTALLATION ON WATER MAIN WITH PRESSURE REDUCING VALVE (PRV)

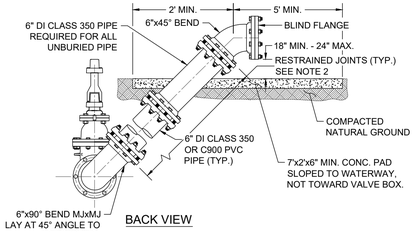
NOTES: APPLICABLE TO ALL INSTALLATION TYPES.

1. NO PART OF A HYDRANT OR ITS NOZZLE CAPS SHALL BE WITHIN 6" OF ANY SIDEWALK OR PEDESTRIAN RAMP. ANY FIRE HYDRANT PLACED NEAR A STREET CORNER SHALL BE LOCATED OUTSIDE THE CURVE RADIUS AND A MINIMUM OF 4' FROM RAMPS.
2. ONE BARREL EXTENSION NOT EXCEEDING 2' LENGTH MAY BE INSTALLED DIRECTLY BELOW THE FIRE HYDRANT IN ORDER TO MEET THE REQUIRED BURY DEPTH OF 4' – 5'. BREAK AWAY BOLTS (SHOE TYPES) SHALL BE PROPERLY SPACED AND PLACED.
3. FIRE LINE SHALL HAVE ALL JOINTS RESTRAINED FROM MAIN TO FIRE HYDRANT. JOINTS SHOWN MAY VARY. SEE SPL WW-27, WW-27A, AND WW-27B FOR RESTRAINT OPTIONS.
4. BELOW EACH HYDRANT, A DRAINAGE PIT 24" IN DIAMETER AND 12" DEEP SHALL BE EXCAVATED AND FILLED WITH COMPACTED COARSE GRAVEL OR BROKEN STONE MIXED WITH COARSE SAND UNDER AND AROUND THE BOWL OF THE HYDRANT, AND TO A LEVEL 12" ABOVE THE HYDRANT DRAIN OPENING (SEE STD. SPEC. 510). THE HYDRANT DRAINAGE PIT SHALL NOT BE CONNECTED TO A SANITARY SEWER. THE DRAIN GRAVEL SHALL BE COVERED WITH FILTER FABRIC PER STD. SPEC. 620S. FOR PRV, GRAVEL SHALL EXTEND UNDER THE PRV VAULT 12" MIN. DEPTH UNDER THE VAULT AND 6" MIN. BEYOND VAULT.
5. FOR FIRE HYDRANT LEADS AT A MAIN OUTLET LARGER THAN 6" DIAMETER, OUTLET SHALL BE FLANGED AND A FLG x FLG REDUCER SHALL BE INSTALLED DIRECTLY ON THE OUTLET.
6. WRAP 8 MIL. POLY–FILM WRAP ON ALL BURIED PIPE AND FITTINGS.
7. FOR HYDRANTS WITH PRV: CLASS III RCP VAULT 60" MIN. I.D. WITH REINFORCED PRECAST CONCRETE LID (AASHTO H–20 LOADING) WITH COA FRAME AND 32" COVER WITH LETTERING MODIFIED FOR WATER.

CITY OF AUSTIN AUSTIN WATER	FIRE HYDRANT	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-02 3 OF 3



SIDE VIEW

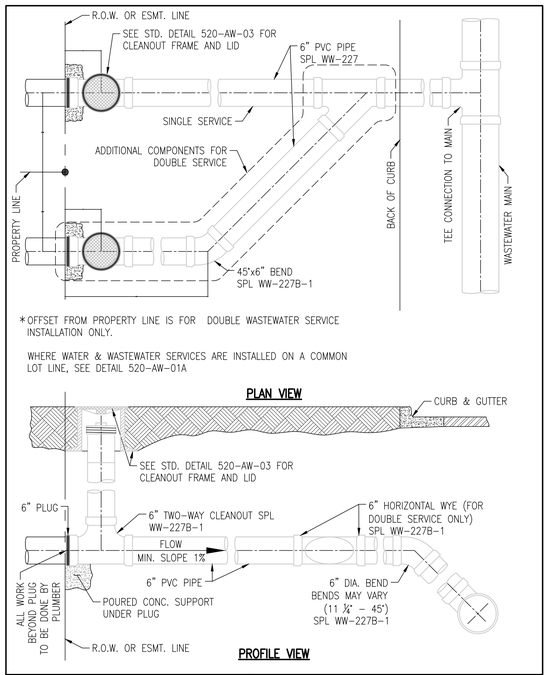


BACK VIEW

NOTES:

1. WRAP 8 MIL. POLY-FILM WRAP ON ALL BURIED PIPE AND FITTINGS.
2. PROVIDE RESTRAINED JOINTS FOR ALL JOINTS PER SPL WW-27A. FLGxFLG JOINTS ARE ACCEPTABLE FROM 90° BEND TO BLIND FLANGE.
3. EXTERIOR SURFACES OF EXPOSED PIPE SHALL BE PAINTED PER SPL WW-3C. POTABLE WATER PIPE SHALL BE PAINTED SAFETY BLUE.

CITY OF AUSTIN AUSTIN WATER	DRAIN VALVE	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-03 1 OF 1

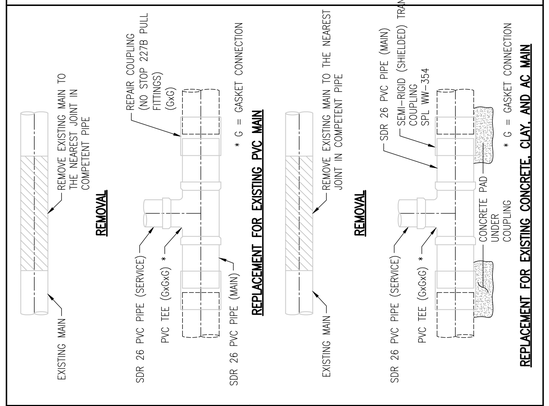


PROFILE VIEW

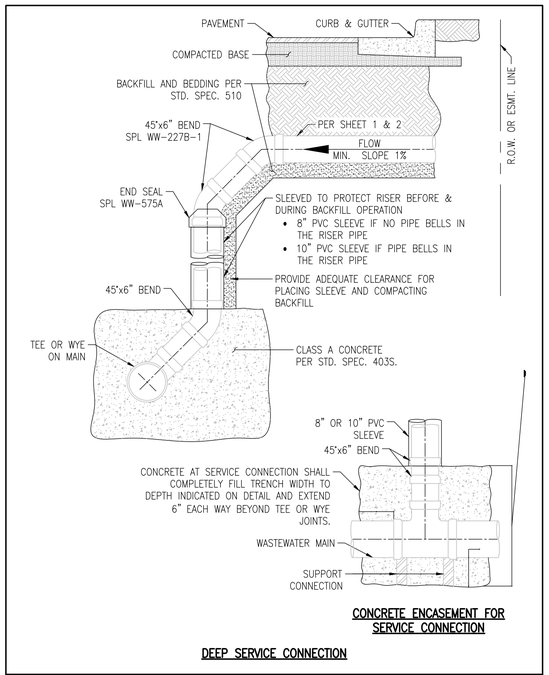
CITY OF AUSTIN AUSTIN WATER	SINGLE AND DOUBLE WASTEWATER SERVICE CONNECTION	
RECORD COPY SIGNED JEFF A. KYLE 11/07/2018 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520-AW-01C 1 OF 4

NOTES:

1. DURING SUBDIVISION CONSTRUCTION, UTILITY CONTRACTOR INSTALLS WASTEWATER TEE CONNECTION TO MAIN, 6" STUB, HORIZONTAL WYE FOR DOUBLE SERVICES, 6" SERVICE BRANCH WITH TWO–WAY CLEANOUT(S) AND RISER, FRAME, AND COVER. CLEANOUT(S) TO BE PLUGGED AT PROPERTY LINE OR EASEMENT LINE END. ALL WASTEWATER PIPING SHALL HAVE ELASTOMERIC GASKET TYPE JOINTS AND SLOPE DOWNWARD TO MAIN 1% MIN. TO 45° MAX. DEPTH OF SERVICE AT PROPERTY LINE WILL BE SHOWN ON PLANS BY ENGINEER IF GREATER THAN 4', OTHERWISE THE INSTALLED DEPTH WILL BE 4' MIN. AND 6' MAX. AT PROPERTY LINE. IF WASTEWATER SERVICE LINE TO MAIN REQUIRES DEFLECTION EXCEEDING 45°, SEE SHEET 3 OF 4.
2. PIPING IN STREET RIGHT–OF–WAY AND IN EASEMENT AREA SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED BY CITY OF AUSTIN STANDARD SPECIFICATION 510.3 (14); MATERIALS SHALL BE AS SPECIFIED IN 510.2 (2)(A) AND (3)(B); BACKFILL ABOVE THE GRANULAR BEDDING SHALL BE AS REQUIRED BY SECTION 510.3 (25). SERVICE LINES IN THESE AREAS SHALL HAVE A MIN. COVER BELOW FINAL STREET GRADE OF 42".
3. PLUMBER SHALL REMOVE PLUG AND CONNECT TO TWO–WAY CLEANOUT. NO CONNECTION TO CLEANOUT STACK IS ALLOWED.



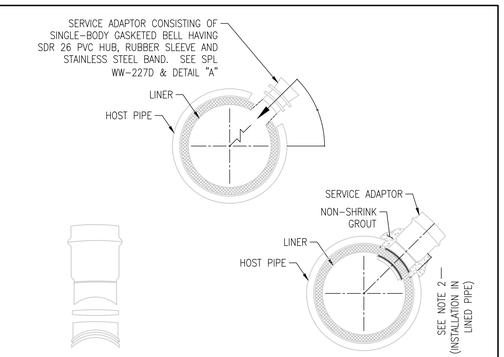
CITY OF AUSTIN AUSTIN WATER	SINGLE AND DOUBLE WASTEWATER SERVICE CONNECTION	
RECORD COPY SIGNED JEFF A. KYLE 11/07/2018 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520-AW-01C 2 OF 4



CONCRETE ENCASEMENT FOR SERVICE CONNECTION

DEEP SERVICE CONNECTION

CITY OF AUSTIN AUSTIN WATER	SINGLE AND DOUBLE WASTEWATER SERVICE CONNECTION	
RECORD COPY SIGNED JEFF A. KYLE 11/07/2018 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520-AW-01C 3 OF 4



DETAIL "A" **DETAIL "B"**

INSTALLATION IN LINED PIPE:

1. MARK LOCATION OF TAP.
2. BREAK & REMOVE HOST PIPE SO THAT OPENING IS AT LEAST 2" BUT NO MORE THAN 3" WIDER THAN DIAMETER OF THE SERVICE ADAPTOR.
3. DO NOT DAMAGE LINER.
4. CORE HOLE THROUGH LINER USING ADAPTOR MANUFACTURER RECOMMENDED BIT.
5. INSTALL SERVICE ADAPTOR.
6. HOLES CUT IN HOST PIPE SHALL BE PACKED WITH NON–SHRINK GROUT (ASTM C1107 GRADE). SEE DETAIL "B"

NOTES:

1. USE ONLY TO TAP EXISTING LINED PIPE.
2. SEE APPROPRIATE STD. FOR SERVICE LINE INFORMATION.
3. THE EDGE OF THE CORE HOLE MUST BE AT LEAST 3' FROM THE ENDS OF THE PIPE, ANY OTHER CORE SERVICE CONNECTIONS, AND ANY FITTINGS.
4. FOR DEEP SERVICE APPLICATIONS SEE SHEET 3 OF 4, EXCEPT SUBSTITUTE A CORED HOLE, AND SERVICE ADAPTOR FOR THE TEE OR WYE.
5. SERVICE CONNECTIONS TO MANHOLES MUST BE MADE USING A PIPE–TO–MANHOLE CONNECTOR WHICH LIMITS THE PIPE SLOPE INTO THE MANHOLE TO 12% MAX.

6" WASTEWATER CONNECTION TO EXISTING LINED MAIN

CITY OF AUSTIN AUSTIN WATER	SINGLE AND DOUBLE WASTEWATER SERVICE CONNECTION	
RECORD COPY SIGNED JEFF A. KYLE 11/07/2018 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520-AW-01C 4 OF 4

DESIGNED BY: CJM	DRAFTED BY: CEL

DATE

REVISION

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SHEET NAME: CONSTRUCTION DETAILS (4 OF 4)

JOB NAME: LOS ROBLES RANCH

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
CLINT J. MATTHEWS
146925
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

04-28-2023

DATE APRIL 2023

JOB NUMBER 5509

SHEET 41 OF 41

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