

Civil Engineering Plans for the Construction of WATER, PAVING IMPROVEMENTS

To Serve

WATER SYSTEM IMPROVEMENT

SNIDER LANE

(From Shady Ln. to Highland Park)

CITY OF LUCAS

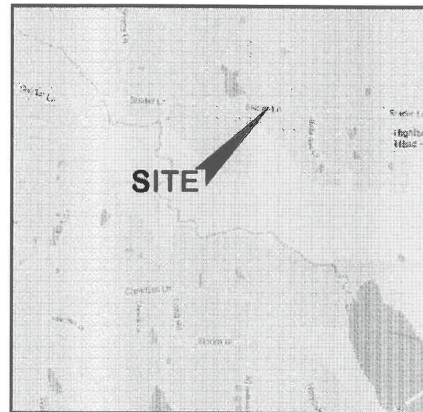
COLLIN COUNTY, TEXAS

APPROVED
CITY OF LUCAS

JAF CIVIL ENGINEER DATE 8.30.17

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VICINITY MAP
(NOT TO SCALE)

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CITY MANAGER
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08.16.2017

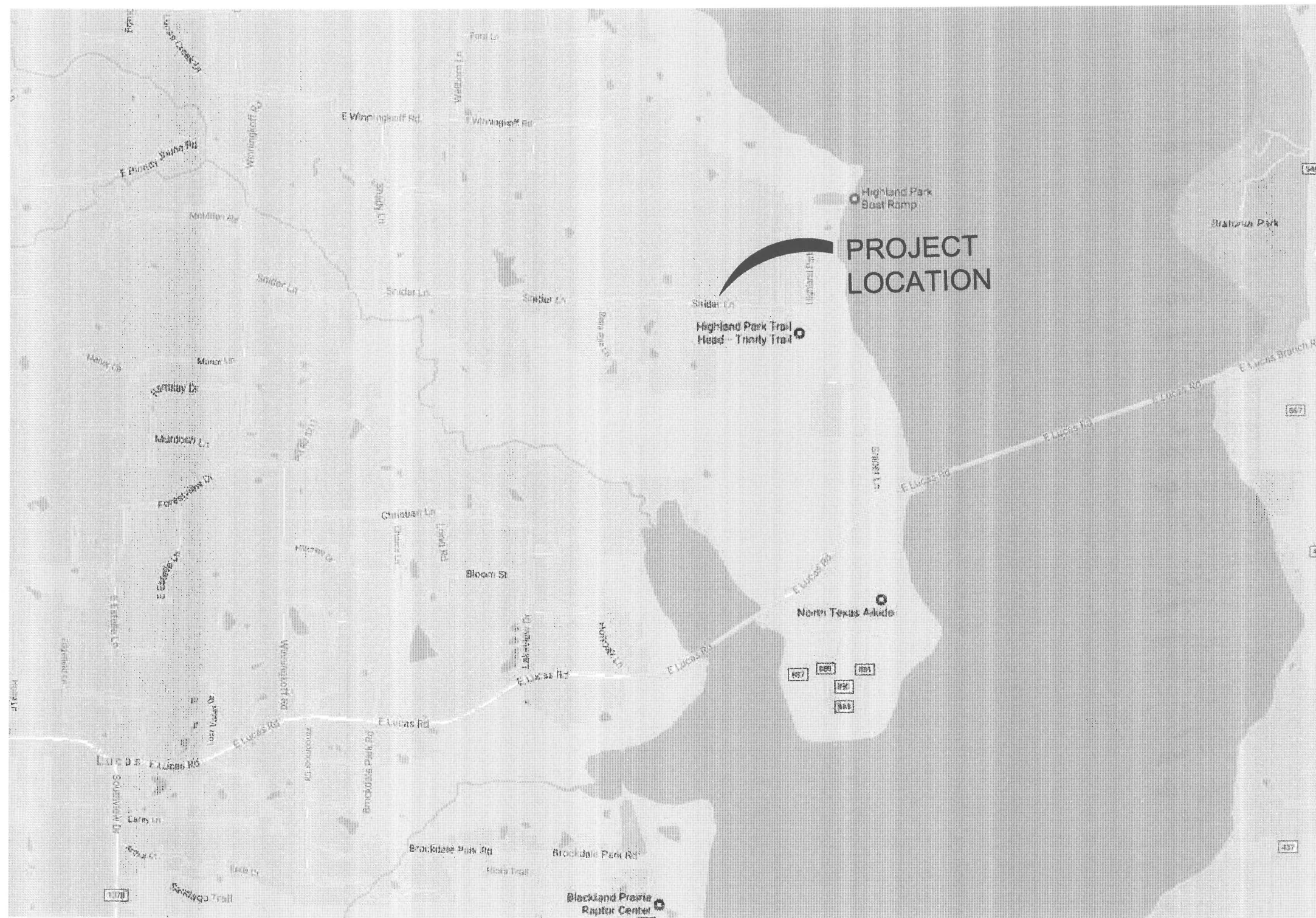
2803.000 WATER SYSTEM IMPROVEMENT SNIDER LANE


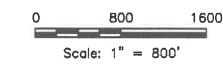


01 of 13

UNPLT: C0.01 COVER PLOTTED: Friday, August 25, 2017 4:10:16 PM BY: BRYAN-KLEIN PLOT SCALE: 1:1 SAVED: 8/25/2017 3:48PM BY: BRYAN-KLEIN
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NO. REVISIONS / SUBMISSIONS		DATE
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 Ion Design Group 7075 Twin Hills Ave Suite 350 Dallas, Texas 75231 Firm TX F6701 214.370.3470 Ph		
JOB NAME WATER SYSTEM IMPROVEMENT SNIDER LANE CITY OF LUCAS, COLLIN COUNTY, TEXAS		
C1.01 LOCATION MAP		
SEAL 	DRAWN FM CHECKED JT REVIEWED BK DATE 08.16.2017 PROJECT NO. 2803.000	SCALE H: 1" = 800' FILENAME C1.01 LOCATION MAP DRAWING NO. C1.01 02 of 13

LAYOUT: C1.01 LOCATION MAP PLOTTED: Friday, August 25, 2017 4:11:31 PM BY: BROWN-ISA PLOT SCALE: 1:1 SAVED: 4/12/2017 12:42PM BY: BROWN-ISA Z:\PROJECTS\2803.00 LBL LUCAS WATER LINE DRAWINGS C\2.01 UTILITY PLANNING

GENERAL NOTES:

- 1. It is the CONTRACTOR's responsibility to maintain neat and accurate plans of record.
2. The CONTRACTOR is responsible for maintaining adequate site drainage throughout the duration of this project.
3. The CONTRACTOR is responsible for obtaining all necessary permits and approvals before construction begins.
4. The CONTRACTOR shall replace all fence removed during construction in as good as or better condition than before construction.
5. The CONTRACTOR shall take all necessary precautions to ensure that electric power and telephone poles are either moved to a safe location by the affected utility company or not disturbed during construction.
6. The CONTRACTOR shall restore all property including driveways, public streets, sidewalks, public utilities, franchise utilities, private utilities, and all other improvements removed or damaged inside and outside the project limits during construction to as good as or better condition than before construction.
7. The information shown on these drawings concerning type and location of underground and other utilities is not guaranteed to be accurate or all-inclusive.
8. The CONTRACTOR shall not place fill or waste material on any private property without prior written permission from the ENGINEER.
9. All streets within the scope of the Contract shall be kept accessible to fire trucks, ambulances and other emergency vehicles.
10. The CONTRACTOR shall be responsible for public safety during the duration of construction.
11. Filter fabric fence for erosion control shall be provided in accordance with specifications and as shown on the plans and in accordance with the EPA regulations.
12. The CONTRACTOR shall use the public right-of-ways and existing utility easements for access to the job site.
13. The CONTRACTOR shall select the subcontractor to be utilized for testing and lab work.
14. The CONTRACTOR shall keep excavated trenches free of groundwater during construction.
15. The CONTRACTOR shall provide means for adequately controlling and avoiding soil erosion during construction.
16. All disturbed earth areas are to be finish graded to original or proposed contours, fertilized and either hydromulched or sodded areas until the entire project is completed and accepted by the City of Lucas.
17. No existing sprinkler/irrigations systems have been shown on the plans; however, they may exist in certain areas.
18. The CONTRACTOR shall maintain adequate sanitary facilities for use by workers throughout construction.
19. The CONTRACTOR shall conform to the Occupational Safety and Health Administration's (OSHA) standards for trench safety that are in effect during the period of construction.
20. All materials and workmanship shall conform to the City of Lucas Standards and Specifications and the North Central Texas Council of Government (NCTCOG) Standards and Specifications, except as noted.
21. No existing trees shall be removed without approval of the City of Lucas.
22. CONTRACTOR shall provide all necessary construction staking.
23. CONTRACTOR's working hours shall be in accordance with the provisions of the current City Ordinance governing hours of construction work in the City.
24. The CONTRACTOR shall assume responsibility for protection of public utilities in the construction of this project.

GENERAL NOTES CONT'D.:

- 25. Driveways affected by construction shall be replaced with driveway of same type material and surface as that removed for installation of water line.
26. All existing water lines and service lines to remain in service during construction.
27. The CONTRACTOR shall phase his daily work schedule so that all driveway crossings are to be complete prior to the end of the day.
28. Water service lines shall be sdr-9 200 psi polyethylene tubing complying with astm d2737.
29. CONTRACTOR shall install isolation gate valves and fire hydrants at locations shown on plans unless otherwise directed by OWNER.
30. The CONTRACTOR is responsible for keeping streets, parking areas, sidewalks, etc., adjacent to the project free of mud and debris from construction.
31. The City of Lucas Public Works Department is to be notified 48 hours (2 working days) prior to any construction of paving and utilities in rights-of-way and easements.
32. Arrangements for construction water shall be made through the City of Lucas.
33. All locations of underground utility lines are approximate.
34. PVC pipe shall be manufactured from a low filler PVC component capable of meeting the highest performance standards of the ASTM specifications.
35. Construction sites shall be secure at all times.
36. As part of bid item, "EROSION CONTROL", the CONTRACTOR shall be responsible for implementing any and all erosion control measures as needed to control runoff of siltation from the project site.
37. CONTRACTOR shall expose each existing pipeline to which a proposed pipeline will be connected and shall verify the horizontal and vertical location of the existing pipeline prior to the installation of the proposed pipeline.
38. Proposed water line shall have a minimum cover of forty two inches (42").
39. The fittings for the proposed water line shall be AWWA C153 compact fittings.
40. All materials furnished and installed on this project shall be domestic materials and shall be in compliance with the appropriate AWWA Standards for such items.
41. Hydromulch or block sodding shall be installed to match surrounding areas where the ground is disturbed in the construction area.
42. If any conflicts with other utilities occur during the construction activities, the CONTRACTOR shall immediately notify the City's representative and shall make adjustments as necessary with City's concurrence.
43. No connections to other City water distribution lines shall be made on Fridays.
44. CONTRACTOR is responsible for locating all existing buried lines.
45. CONTRACTOR shall take the existing water lines out of service and abandon in place once all service connections are changed over.
46. Mega-lugs shall be furnished and installed on all bends, valves, joints, and other fittings that are required for the proposed water line.
47. A 3M locator type 1266 shall be furnished and installed no deeper than 4 feet by the CONTRACTOR beside all valves, above all bends and above all corporation stops on the proposed water line.
48. CONTRACTOR shall furnish and install a tracer wire that is compatible with and will allow detection by radio detection corporation's digital PXL-2 pipe locator.
49. If the CONTRACTOR excavates a trench for the proposed water line to a depth requiring a trench safety plan, CONTRACTOR shall provide a trench safety plan prepared and sealed by a licensed engineer, which shall be in conformance with OSHA requirements.
50. There is no separate pay resulting from any of the work required as a result of the requirements included in these general notes, unless otherwise noted.

GENERAL TRAFFIC CONTROL NOTES

- 1. All temporary signs, markings, cones, channelizing devices, warning lights and barricades shall be in accordance with the current State of Texas Manual on Uniform Traffic Control Devices (MUTCD).
2. Type "A" warning lights shall be placed on all advance warning signs.
3. Any existing conflicting markings shall be removed prior to shifting traffic.
4. All temporary pavement markings required during construction shall be of the removable type.
5. The spacing of signs and channelizing devices may be adjusted to fit the geometric conditions encountered, such as driveways, intersecting roadways, vertical and horizontal alignment, etc., as approved by the City of Lucas.
6. Advance warning signs shall not be deployed more than forty-eight (48) hours before physical construction begins.
7. Use of barricades, portable barrier rails, vertical panels, and drums shall be limited to the immediate areas of construction where a hazard is present.
8. The posted speed for warning signage is to be determined at the site by the City of Lucas.
9. Reduced speed warning signage should be placed prior to and at regular intervals within the construction zone.
10. As part of the bid item, "Construction Barricading/Signing/Traffic Control," the CONTRACTOR is required to submit a traffic control plan for construction a minimum of 3 days prior to changes in traffic handling or movement.
11. The CONTRACTOR shall accommodate existing traffic during construction and shall maintain at least one open lane of traffic at all times.
12. CONTRACTOR shall be required to place temporary pavement markings and/or buttons as needed to maintain traffic in a safe and efficient manner after removal of existing markings.
CONSTRUCTION SEQUENCE:
1. Existing water lines shall remain in service until all new water lines are installed and ready for service. Once new water lines are all installed and ready for service, new water lines shall be placed in service and existing water service connections shall be switched over to the new water line where existing water lines are being replaced by the new water line.

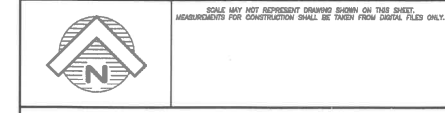
SERVICE CONNECTION NOTES:

- 1. CONTRACTOR shall install new 1" service lines from existing water meters to proposed water lines.
2. For the service connections, CONTRACTOR shall furnish and install Ford brass taps and saddles (double saddles) or approved equal. The cost for the taps and saddles shall be included in the price bid for the service lines.

ENGINEER'S GENERAL NOTES

ENGINEER'S GENERAL NOTES do not supersede the CITY'S NOTES AND STANDARDS
APPROVED PLANS AND DIGITAL CAD FILES
1. No construction activity shall commence prior to ENGINEER receiving Final City-Approved Civil Engineering Design Plans (PLANS).
2. Prior to commencement of construction, OWNER shall provide any company or individual responsible for constructing and/or overseeing improvements (CONTRACTOR) with digital CAD files of PLANS.
3. CONTRACTOR shall not commence construction prior to obtaining digital CAD files of PLANS from OWNER.
4. PLANS are considered a set comprised of ALL sheets. CONTRACTOR shall review all sheets within the PLANS for relevancy to construction, particularly the GENERAL NOTES sheet.
SUBVEY
5. PLANS are prepared utilizing field survey information provided by Miller Surveying, Inc. dated July 8, 2016.
STANDARDS & METHODS
6. ENGINEER has prepared PLANS under the guidance and standards provided by the City.
7. CONTRACTOR shall be responsible for all materials and methods of construction conforming to the City's standards.
PLAN DISCREPANCIES, CONFLICTS OR QUESTIONS
8. It is the intent of the ENGINEER that PLANS provide a design for complete installation of designed improvements.
9. In the event CONTRACTOR locates conflicts in PLANS or between PLANS and applicable standards and/or methods, CONTRACTOR shall notify ENGINEER immediately to obtain guidance prior to proceeding with construction.
PUBLIC UTILITIES AND ADA
10. Information on location, elevations, and dimensions of existing public utilities (water, sanitary sewer, and storm sewer) on PLANS was obtained by ENGINEER from available governmental records.
11. CONTRACTOR shall be responsible for constructing improvements in a manner that is compliant with the Americans with Disabilities Act (ADA).
FRANCHISE UTILITIES
12. PLANS do not include installation and/or relocation of franchise utilities (gas, electric, gas, cable, fiber optic, etc.).
CONSTRUCTION AND RECORD SET OF PLANS
13. Prior to commencing construction, CONTRACTOR shall verify congruency of PLANS with Landscape, Architectural, MEP and other plans.
14. CONTRACTOR shall verify acceptance of variations between City standards (or other standards) and proposed improvements, prior to commencing construction.
15. No field changes or deviations from PLANS shall be made without prior approval of ENGINEER and City.
16. Upon completion of construction, CONTRACTOR shall retain the services of a licensed surveyor to provide a survey of all installed improvements (including building pad elevations) and provide ENGINEER digital CAD files reflecting surveyed information and coding of all deviations or variations from PLANS.

Table with 2 columns: NO. REVISIONS / SUBMISSIONS, DATE. Includes a revision record for MM.DD.YYYY.



Ion Design Group logo and contact information: 7075 Twin Hills Ave, Suite 350, Dallas, Texas 75231, Firm TX F6701, 214.370.3470 Ph.

JOB NAME: WATER SYSTEM IMPROVEMENT
SNIDER LANE
CITY OF LUCAS, COLLIN COUNTY, TEXAS

DRAWING TITLE: C1.02 GENERAL NOTES

Professional Engineer seal for Jason Trafton, License No. 113343, State of Texas. Includes drawing details: DRAWN: FM, SCALE: H: 1" = 50', CHECKED: JT, FILENAME: C1.02 GENERAL NOTES, REVIEWED: BJK, DRAWING NO.: C1.02, DATE: 08.16.2017, PROJECT NO.: 2803.000, SHEET: 03 of 13.

Vertical text on the left margin: LAYOUT: C1.02 GENERAL NOTES PLOTTED: Friday, August 25, 2017 4:11:46 PM BY: BRYAN-USA... PROJECT: 2803.000 LBL LUCAS WATER LINE UPGRADES C1.02 UTILITY PLAN/IMG

SEE SHEET C2.04
MATCH LINE STA 2+50

NOTES

1. WATER DISTRIBUTION WORK, INCLUDING MAINS, FITTINGS, VALVES, SERVICES, ETC. SHALL COMPLY WITH CITY OF LUCAS PLANNING DEPARTMENT, ENGINEERING TECHNICAL SPECIFICATIONS AND STANDARD CONSTRUCTION DETAILS.
2. PIPE FOR WATER MAINS SHALL BE CLASS 200 DR-18 PVC WATER TRANSMISSION PIPE COMPLYING WITH AWWA C900 FOR PIPE SIZES 4" THROUGH 12". JOINTS FOR WATER PIPE SHALL BE PUSH-ON WITH FLEXIBLE ELASTOMERIC SEALS. FITTINGS FOR WATER PIPE SHALL BE DUCTILE IRON WITH MECHANICAL JOINTS.
3. WHERE WATER MAINS ARE SHOWN IN THE RIGHT-OF-WAY, THEY SHALL BE PLACED 5'-FEET FROM THE EDGE OF PAVEMENT. WHERE WATER MAINS ARE SHOWN IN EASEMENTS, THEY SHALL BE PLACED ALONG THE CENTERLINE OF THE EASEMENT WIDTH.
4. WATER SERVICE LINES SHALL BE SDR-9 200 PSI POLYETHYLENE TUBING COMPLYING WITH ASTM D2737. FITTINGS SHALL BE PVC COMPRESSION-TYPE WATER SERVICE FITTINGS. SERVICE LINES SERVING A SINGLE LOT SHALL BE MINIMUM 1" POLYETHYLENE TUBE.
5. ALL WATER MAINS SHALL HAVE A MINIMUM COVER BELOW EXISTING GRADES AS FOLLOWS: 6" & 8" MAINS = 42" OR AS REQUIRED TO CLEAR UTILITIES.
6. FIRE HYDRANTS SHALL BE PLACED 4' TO 7' FEET FROM BACK OF CURB OR EDGE OF PAVEMENT, UNLESS OTHERWISE SHOWN ON PLANS.
7. FIRE HYDRANTS SHALL BE APPROVED, AND PAINTED AS PER CITY OF LUCAS STANDARD SPECIFICATIONS. A BLUE STIMSONITE, FIRE-LITE REFLECTOR OR APPROVED EQUAL, SHALL BE PLACED IN THE CENTER OF THE STREET OPPOSITE FIRE HYDRANT.
8. GATE VALVES WILL BE RESILIENT SEAL FROM APPROVED MATERIAL LIST CONFORMING TO AWWA C-509 AND CITY OF LUCAS SPECIAL PROVISIONS.
9. VALVES WILL BE IN THE CLOSED POSITION ON STUBOUTS INSTALLED FOR FUTURE SERVICE.
10. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
11. IN THE EVENT AN ITEM IS NOT COVERED IN THE SPECIFICATIONS THE CITY'S ENGINEER'S DECISION WILL APPLY.
12. EMBEDMENT FOR THE PROPOSED WATER LINES SHALL BE CLASS "B+" EXCEPT FOR THE PIPELINE EMBEDMENT AT LOW AREAS OR CREEK CROSSING, IN WHICH CASE THE EMBEDMENT SHALL BE CONCRETE ENCASUREMENT TO THE TOP OF BANK ON EACH SIDE OF THE CROSSING.
13. CONTRACTOR SHALL LOCATE EXISTING SERVICES AND RECONNECT PER CITY GUIDELINES.

!! CAUTION !!
UNDERGROUND UTILITIES ARE LOCATED ON THIS SITE. AT LEAST 48-HOURS PRIOR TO ANY EXCAVATION, CONTACT THE TEXAS EXCAVATION SAFETY SYSTEM (TESS) TO LOCATE ALL UNDERGROUND UTILITIES IN THE AREA.
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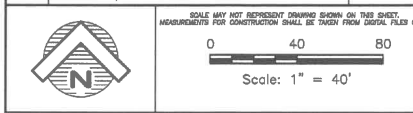
MATCH LINE STA 9+50
SEE THIS SHEET

CONTRACTOR SHALL CALL THE DEPARTMENT OF PUBLIC WORKS AT (972) 912-1206 FOR UTILITY LOCATIONS PRIOR TO ANY WORK IN CITY EASEMENTS OR STREET RIGHT-OF-WAY.

LEGEND

- EXISTING WATER LINE
- EXISTING FIRE HYDRANT
- PROPOSED WATER LINE
- PROPOSED FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE

NO.	REVISIONS / SUBMISSIONS	DATE



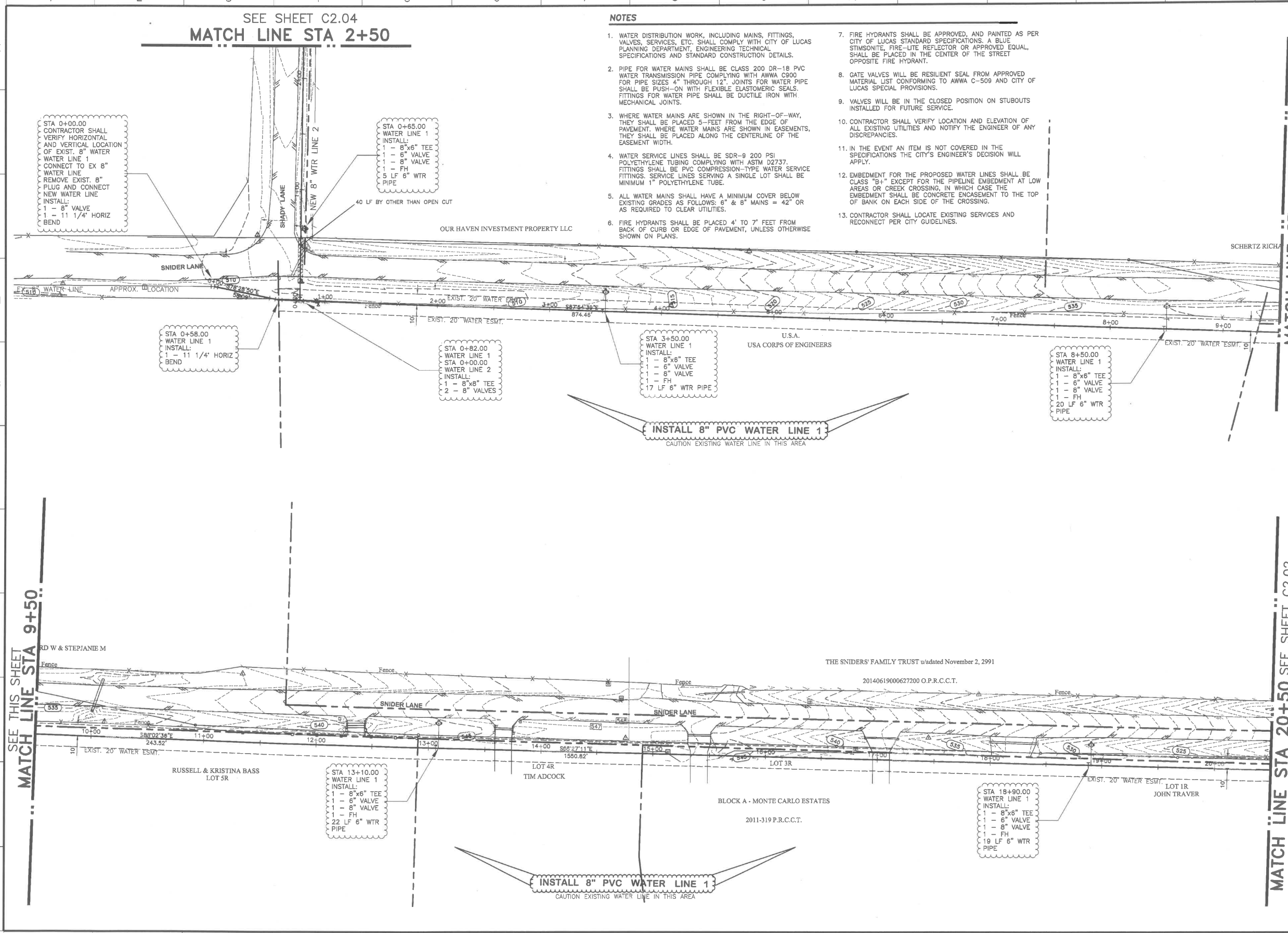
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JOB NAME: WATER SYSTEM IMPROVEMENT
SNIDER LANE
CITY OF LUCAS, COLLIN COUNTY, TEXAS

DRAWING TITLE: C2.01 WATER LINE SH 1

SEAL	DRAWN: FM	SCALE: H: 1" = 40'
	CHECKED: JT	FILENAME: C2.01 WATER LINE SH 1
	REVIEWED: BK	DRAWING NO.: C2.01
DATE: 07.10.2017	PROJECT NO.: 2803.000	04 of 13

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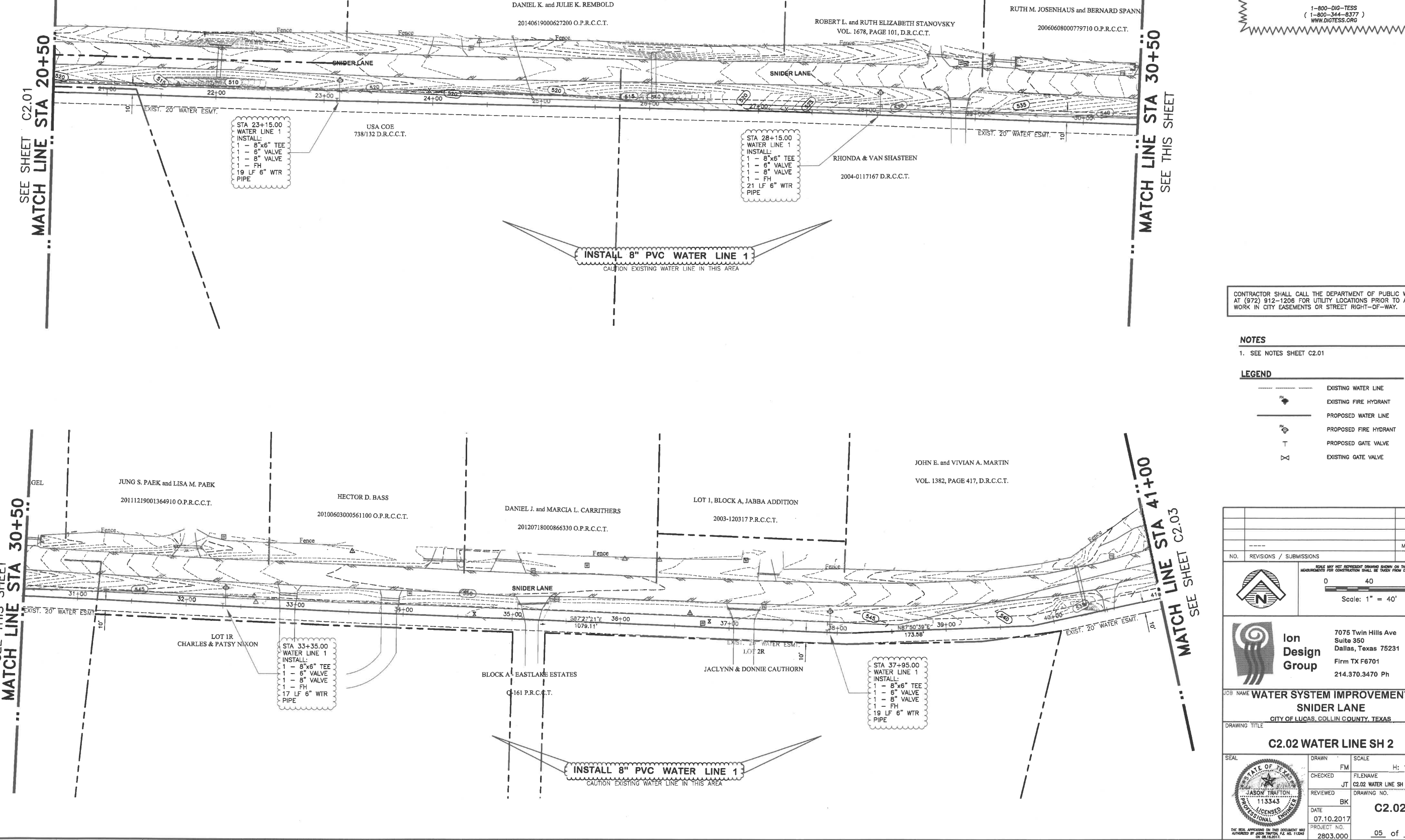
SEE THIS SHEET
MATCH LINE STA 9+50

MATCH LINE STA 20+50 SEE SHEET C2.02

LAYOUT: C2.01 WATER LINE SH 1 PLOTTED: Friday, August 25, 2017 4:11:50 PM BY: BROWN-ISA PLOT SCALE: 1:1 SWGID: 4/12/2017 12:42PM BY: BRYAN-USA Z:\PROJECTS\2803.000 LBL LUCAS WATER LINE\DRAWINGS\C2.01 UTILITY PLAN.DWG

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SEE SHEET C2.01
MATCH LINE STA 20+50

MATCH LINE STA 30+50
SEE THIS SHEET

SEE THIS SHEET
MATCH LINE STA 30+50

MATCH LINE STA 41+00
SEE SHEET C2.03

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(1-800-344-8377)
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CONTRACTOR SHALL CALL THE DEPARTMENT OF PUBLIC WORKS AT (972) 912-1206 FOR UTILITY LOCATIONS PRIOR TO ANY WORK IN CITY EASEMENTS OR STREET RIGHT-OF-WAY.

NOTES

1. SEE NOTES SHEET C2.01

LEGEND

- EXISTING WATER LINE
- EXISTING FIRE HYDRANT
- PROPOSED WATER LINE
- PROPOSED FIRE HYDRANT
- T PROPOSED GATE VALVE
- X EXISTING GATE VALVE

NO.	REVISIONS / SUBMISSIONS	MM.DD.YYYY	DATE
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		Scale: 1" = 40'	

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JOB NAME: **WATER SYSTEM IMPROVEMENT
SNIDER LANE**

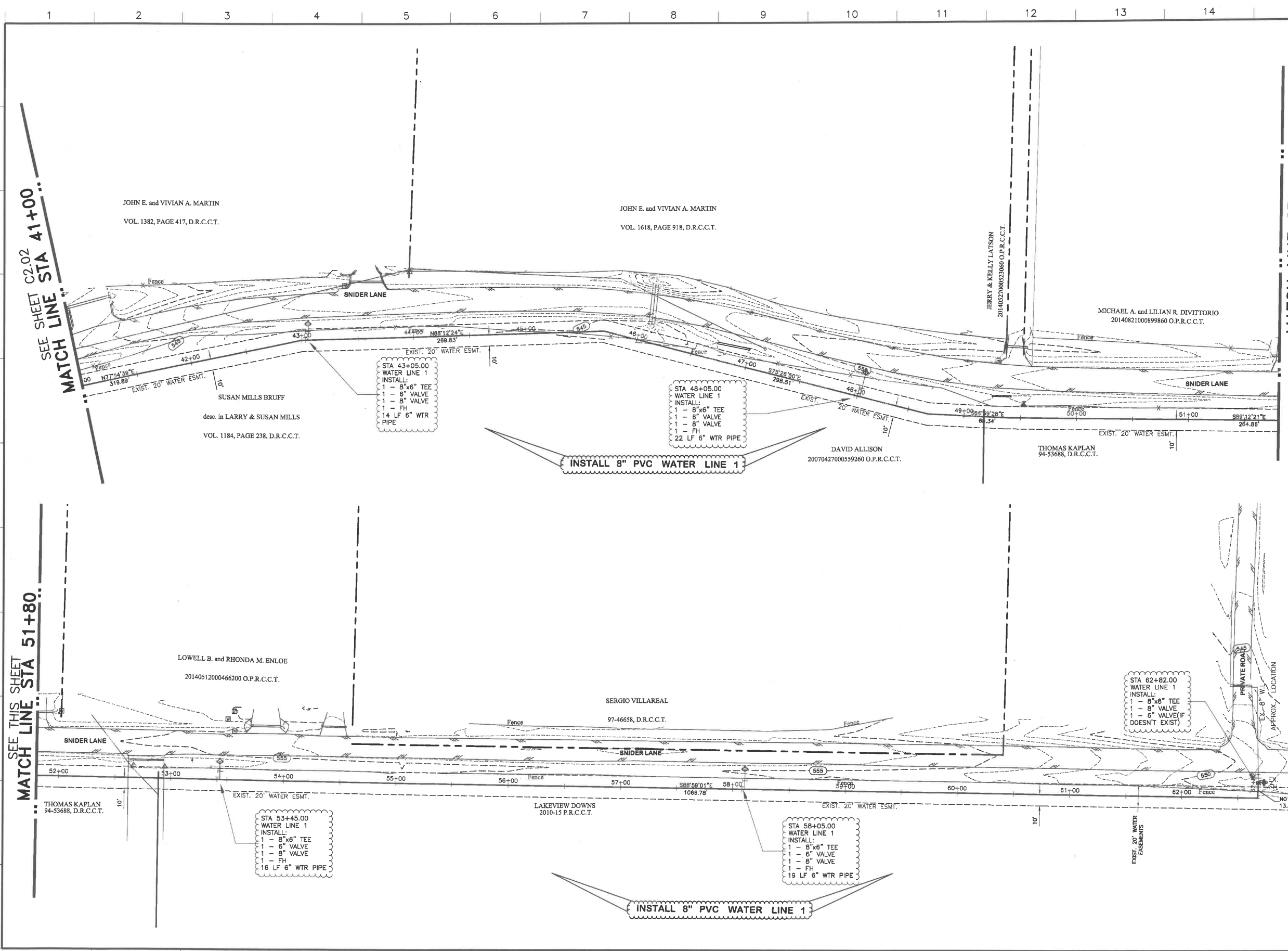
CITY OF LUGAS, COLLIN COUNTY, TEXAS

DRAWING TITLE: **C2.02 WATER LINE SH 2**

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	REVIEWED	DRAWING NO.	
	DATE	PROJECT NO.	C2.02
		05. of 13	

LAYOUT: C2.02 WATER LINE SH 2, PLOTTED: Friday, August 25, 2017 4:11:55 PM BY: BRYAN-15A, PLOT SCALE: 1:1, SAVED: 4/12/2017 12:42PM BY: BRYAN-15A
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LAYOUT: C2.03 WATER LINE SH. 3, PLOTTER: P650, August 25, 2017 4:12:00 PM BY: BRYAN-15A, PLOT SCALE: 1:1, SAVED: 4/12/2017 12:49PM BY: BRYAN-15A
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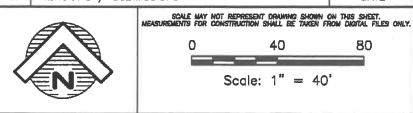
CONTRACTOR SHALL CALL THE DEPARTMENT OF PUBLIC WORKS AT (972) 912-1206 FOR UTILITY LOCATIONS PRIOR TO ANY WORK IN CITY EASEMENTS OR STREET RIGHT-OF-WAY.

NOTES
 1. SEE NOTES SHEET C2.01

LEGEND

	EXISTING WATER LINE
	EXISTING FIRE HYDRANT
	PROPOSED WATER LINE
	PROPOSED FIRE HYDRANT
	PROPOSED GATE VALVE
	EXISTING GATE VALVE

NO.	REVISIONS / SUBMISSIONS	DATE



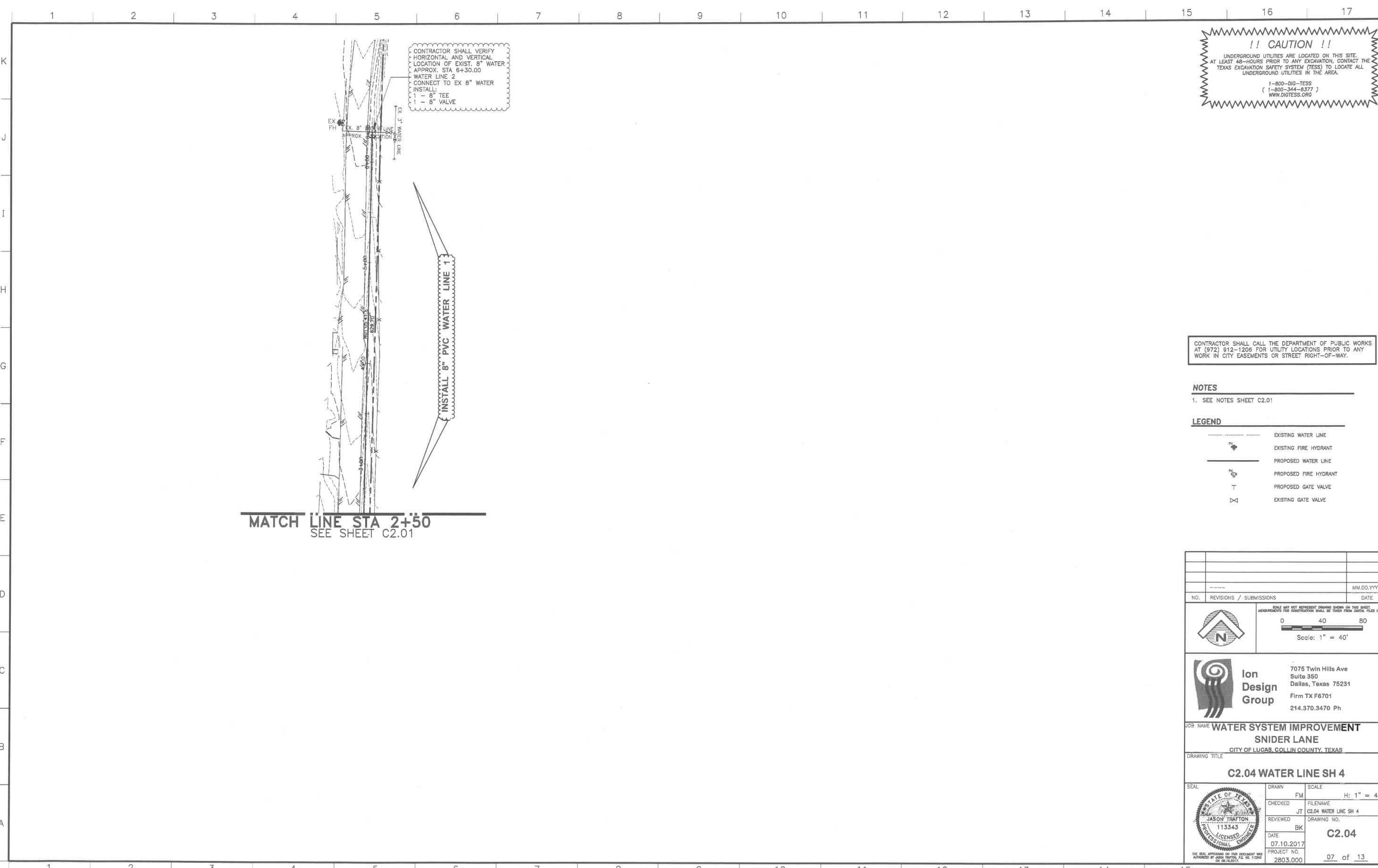
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JOB NAME: **WATER SYSTEM IMPROVEMENT SNIDER LANE**
 CITY OF LUGAS, COLLIN COUNTY, TEXAS

DRAWING TITLE: **C2.03 WATER LINE SH. 3**

	DRAWN	FM	SCALE	H: 1" = 40'
	CHECKED	JT	FILENAME	C2.03 WATER LINE SH. 3
	REVIEWED	BK	DRAWING NO.	C2.03
	DATE	07.10.2017	PROJECT NO.	2803.000
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LAYOUT: C2.04 WATER LINE SH 4 PLOTTED: Friday, August 25, 2017 4:12:05 PM BY: BRYAN-15A PLOT SCALE: 1:1 SAVED: 4/12/2017 12:42PM BY: BRYAN-15A
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CONTRACTOR SHALL CALL THE DEPARTMENT OF PUBLIC WORKS
 AT (972) 912-1206 FOR UTILITY LOCATIONS PRIOR TO ANY
 WORK IN CITY EASEMENTS OR STREET RIGHT-OF-WAY.

NOTES
 1. SEE NOTES SHEET C2.01

LEGEND

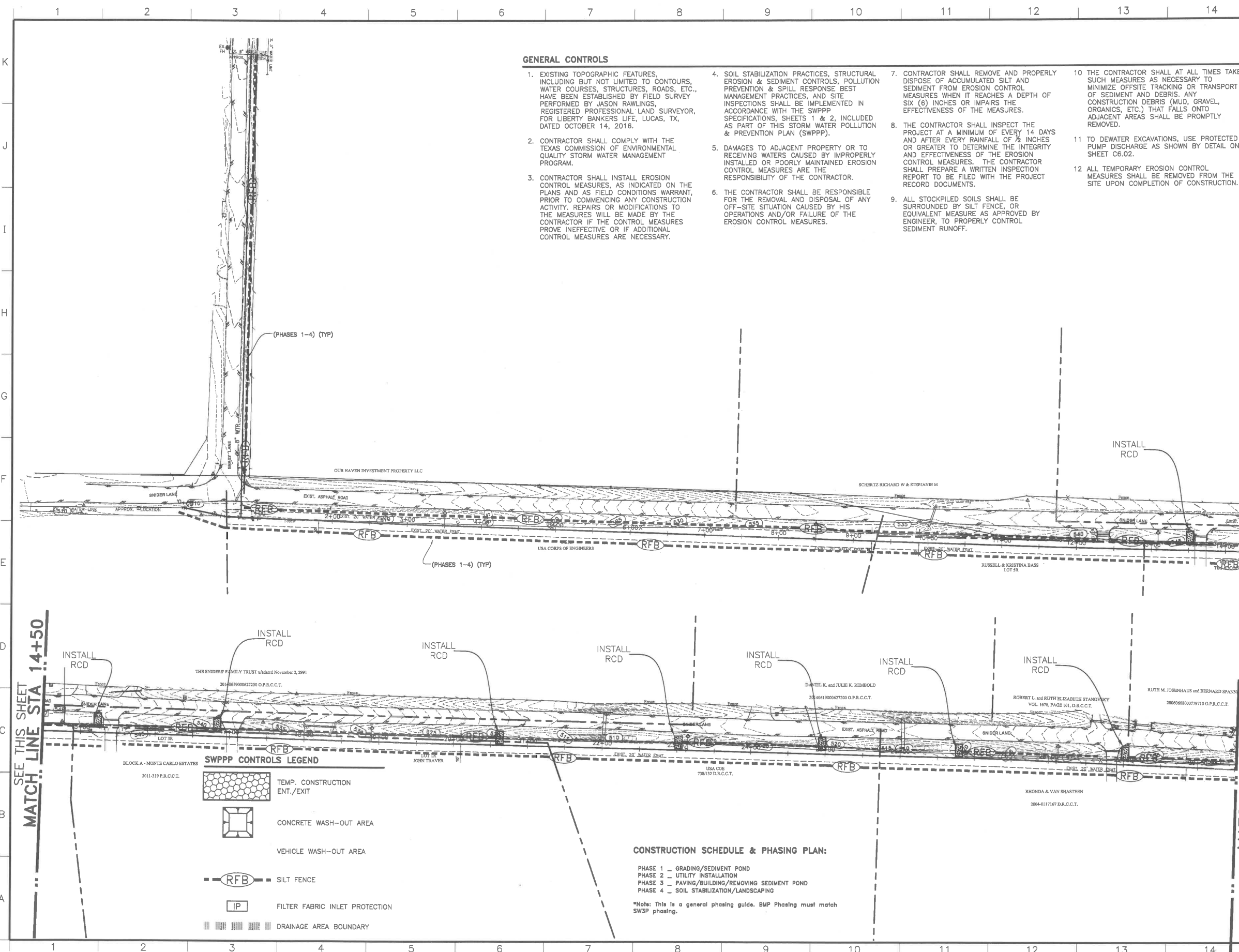
	EXISTING WATER LINE
	EXISTING FIRE HYDRANT
	PROPOSED WATER LINE
	PROPOSED FIRE HYDRANT
	PROPOSED GATE VALVE
	EXISTING GATE VALVE

MATCH LINE STA 2+50
 SEE SHEET C2.01

INSTALL 8" PVC WATER LINE 1

	MM.DD.YYYY
NO.	REVISIONS / SUBMISSIONS
<p>Scale: 1" = 40'</p>	
<p>Ion Design Group</p>	
7075 Twin Hills Ave Suite 350 Dallas, Texas 75231 Firm TX F6701 214.370.3470 Ph	
JOB NAME WATER SYSTEM IMPROVEMENT SNIDER LANE CITY OF LUGAS, COLLIN COUNTY, TEXAS	
DRAWING TITLE C2.04 WATER LINE SH 4	
SEAL 	DRAWN FM SCALE H: 1" = 40' CHECKED JT FILENAME C2.04 WATER LINE SH 4 REVIEWED BK DRAWING NO. C2.04 DATE 07.10.2017 PROJECT NO. 2803.000

LAYOUT: C3.01 SW3P CONTROL PLAN PLOTTED: Friday, August 25, 2017 4:13:02 PM BY: BRYAN-USA P.L.T. SCALE: 1:1 SWMS: 2/22/2017 12:11PM BY: FRANCISCO Z:\PROJECTS\2803.00 LBL LUGO WATER IMPROVEMENT\DRAWINGS\C3.01 SW3P CNL PLANNING



GENERAL CONTROLS

- EXISTING TOPOGRAPHIC FEATURES, INCLUDING BUT NOT LIMITED TO CONTOURS, WATER COURSES, STRUCTURES, ROADS, ETC., HAVE BEEN ESTABLISHED BY FIELD SURVEY PERFORMED BY JASON RAWLINGS, REGISTERED PROFESSIONAL LAND SURVEYOR, FOR LIBERTY BANKERS LIFE, LUCAS, TX, DATED OCTOBER 14, 2016.
- CONTRACTOR SHALL COMPLY WITH THE TEXAS COMMISSION OF ENVIRONMENTAL QUALITY STORM WATER MANAGEMENT PROGRAM.
- CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES, AS INDICATED ON THE PLANS AND AS FIELD CONDITIONS WARRANT, PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY. REPAIRS OR MODIFICATIONS TO THE MEASURES WILL BE MADE BY THE CONTRACTOR IF THE CONTROL MEASURES PROVE INEFFECTIVE OR IF ADDITIONAL CONTROL MEASURES ARE NECESSARY.
- SOIL STABILIZATION PRACTICES, STRUCTURAL EROSION & SEDIMENT CONTROLS, POLLUTION PREVENTION & SPILL RESPONSE BEST MANAGEMENT PRACTICES, AND SITE INSPECTIONS SHALL BE IMPLEMENTED IN ACCORDANCE WITH THE SWPPP SPECIFICATIONS, SHEETS 1 & 2, INCLUDED AS PART OF THIS STORM WATER POLLUTION & PREVENTION PLAN (SWPPP).
- DAMAGES TO ADJACENT PROPERTY OR TO RECEIVING WATERS CAUSED BY IMPROPERLY INSTALLED OR POORLY MAINTAINED EROSION CONTROL MEASURES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ANY OFF-SITE SITUATION CAUSED BY HIS OPERATIONS AND/OR FAILURE OF THE EROSION CONTROL MEASURES.
- CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ACCUMULATED SILT AND SEDIMENT FROM EROSION CONTROL MEASURES WHEN IT REACHES A DEPTH OF SIX (6) INCHES OR IMPAIRS THE EFFECTIVENESS OF THE MEASURES.
- THE CONTRACTOR SHALL INSPECT THE PROJECT AT A MINIMUM OF EVERY 14 DAYS AND AFTER EVERY RAINFALL OF 1/2 INCHES OR GREATER TO DETERMINE THE INTEGRITY AND EFFECTIVENESS OF THE EROSION CONTROL MEASURES. THE CONTRACTOR SHALL PREPARE A WRITTEN INSPECTION REPORT TO BE FILED WITH THE PROJECT RECORD DOCUMENTS.
- ALL STOCKPILED SOILS SHALL BE SURROUNDED BY SILT FENCE, OR EQUIVALENT MEASURE AS APPROVED BY ENGINEER, TO PROPERLY CONTROL SEDIMENT RUNOFF.
- THE CONTRACTOR SHALL AT ALL TIMES TAKE SUCH MEASURES AS NECESSARY TO MINIMIZE OFFSITE TRACKING OR TRANSPORT OF SEDIMENT AND DEBRIS. ANY CONSTRUCTION DEBRIS (MUD, GRAVEL, ORGANICS, ETC.) THAT FALLS ONTO ADJACENT AREAS SHALL BE PROMPTLY REMOVED.
- TO DEWATER EXCAVATIONS, USE PROTECTED PUMP DISCHARGE AS SHOWN BY DETAIL ON SHEET C6.02.
- ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED FROM THE SITE UPON COMPLETION OF CONSTRUCTION.

!! CAUTION !!

UNDERGROUND UTILITIES ARE LOCATED ON THIS SITE. AT LEAST 48-HOURS PRIOR TO ANY EXCAVATION, CONTACT THE TEXAS EXCAVATION SAFETY SYSTEM (TESS) TO LOCATE ALL UNDERGROUND UTILITIES IN THE AREA.

1-800-DIG-TESS
(1-800-344-8377)
WWW.DIGTESS.ORG

- SPECIFIC CONTROLS**
- INSTALL REINFORCED FILTER FABRIC FENCE AROUND PERIMETER OF WORK AREA. FILTER FABRIC FENCE SHALL REPRESENT THE LIMITS OF DISTURBED AREA. REMOVE WHEN FINAL SITE STABILIZATION HAS BEEN COMPLETED.
 - INSTALL & MAINTAIN ROCK-STABILIZED CONSTRUCTION EXIT. REMOVE WHEN PAVING THROUGHOUT PROJECT IS IN PLACE AND PROJECT IS COMPLETE.
 - INSTALL & MAINTAIN ROCK FILTER OUTLET WHERE SILT FENCE IS SUBJECT TO CONCENTRATED FLOWS. EMBED SILT FENCE INTO ROCK FILTER & ENSURE THERE IS NO GAP BETWEEN FENCE AND FILTER. REMOVE WHEN FINAL SITE STABILIZATION HAS BEEN COMPLETED.
 - INLET PROTECTION:
 - INSTALL & MAINTAIN INLET SEDIMENT TRAPS DURING EARTHWORK, UNTIL EARTHWORK HAS ACHIEVED ROUGH GRADES.
 - INSTALL & MAINTAIN INLET PROTECTION AFTER EARTHWORK HAS ACHIEVED ROUGH GRADES, AND AFTER PAVING WORK HAS BEEN COMPLETED. REMOVE WHEN FINAL SITE STABILIZATION HAS BEEN COMPLETED.
 - INSTALL & MAINTAIN CONCRETE WASH-OUT AREA NEAR CONSTRUCTION EXITS. DUMP EXCESS CONCRETE AND RINSE CONCRETE MIX TRUCKS AT CONCRETE WASH-OUT AREAS, PRIOR TO MIX TRUCKS EXITING SITE. REMOVE WHEN ALL CONCRETE WORK HAS BEEN COMPLETED.
 - INSTALL & MAINTAIN VEHICLE WASH-OUT AREA NEAR CONSTRUCTION EXITS. REMOVE WHEN ALL OTHER PAVING IS COMPLETE.

NOTES

CONTRACTOR SHALL CALL THE DEPARTMENT OF PUBLIC WORKS AT (512) 912-1206 FOR UTILITY LOCATIONS PRIOR TO ANY WORK IN CITY EASEMENTS OR STREET RIGHT-OF-WAY.

LEGEND

	EXISTING SANITARY SEWER LINE
	EXISTING WATER LINE
	EXISTING STORM SEWER LINE
	PROPOSED SANITARY SEWER LINE
	PROPOSED WATER LINE
	PROPOSED STORM SEWER LINE
	PROPOSED SANITARY MANHOLE
	PROPOSED FIRE HYDRANT
	PROPOSED GATE VALVE

NO.	REVISIONS / SUBMISSIONS	DATE

Scale: 1" = 60'

SWPPP CONTROLS LEGEND

	TEMP. CONSTRUCTION ENT./EXIT
	CONCRETE WASH-OUT AREA
	VEHICLE WASH-OUT AREA
	SILT FENCE
	FILTER FABRIC INLET PROTECTION
	DRAINAGE AREA BOUNDARY

CONSTRUCTION SCHEDULE & PHASING PLAN:

PHASE 1 - GRADING/SEDIMENT POND
 PHASE 2 - UTILITY INSTALLATION
 PHASE 3 - PAVING/BUILDING/REMOVING SEDIMENT POND
 PHASE 4 - SOIL STABILIZATION/LANDSCAPING

*Note: This is a general phasing guide. BMP Phasing must match SW3P phasing.

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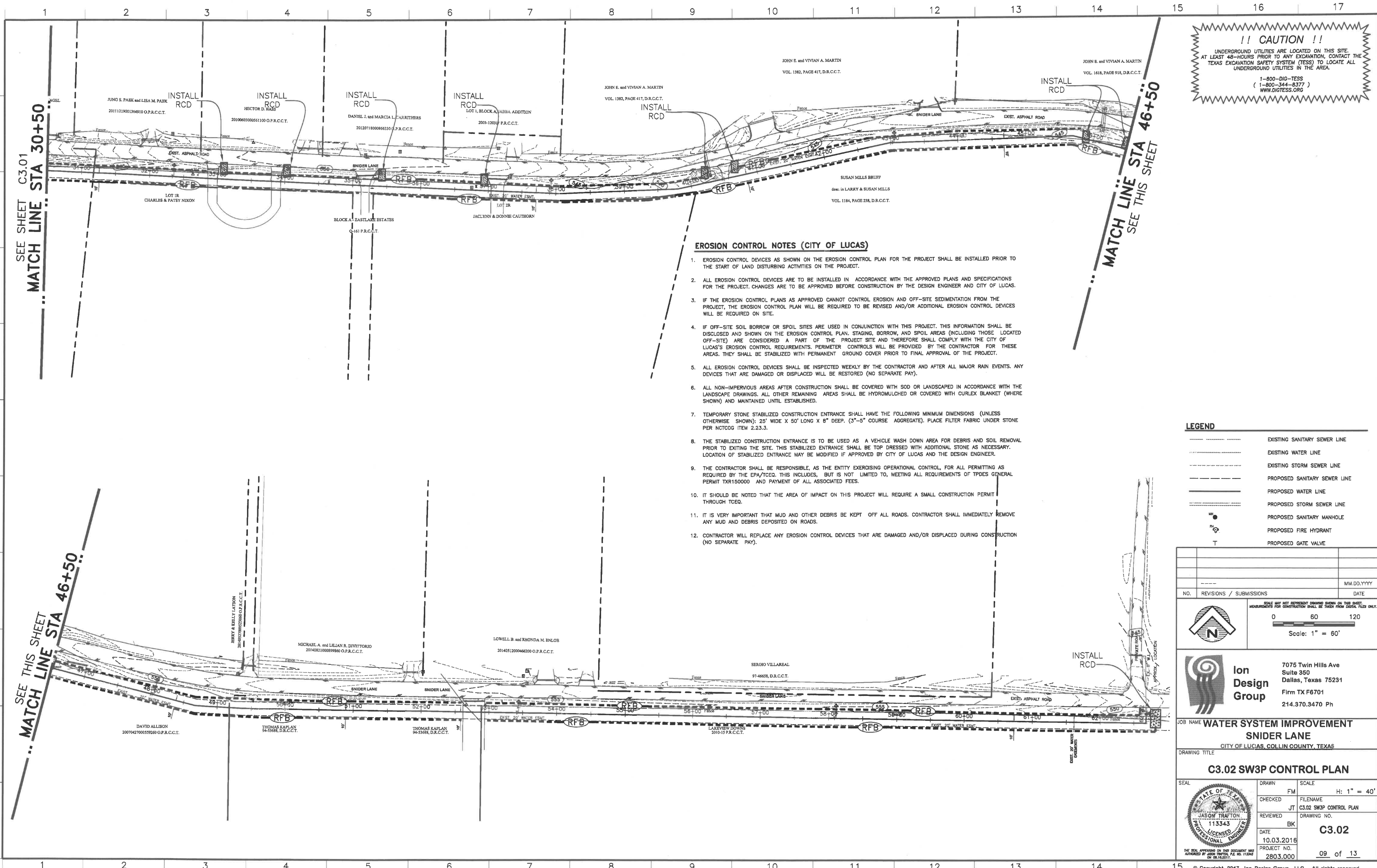
JOB NAME: WATER SYSTEM IMPROVEMENT
 SNIDER LANE
 CITY OF LUCAS, COLLIN COUNTY, TEXAS

DRAWING TITLE: **C3.01 SW3P CONTROL PLAN**

SEAL	DRAWN	SCALE
	FM	H: 1" = 40'
CHECKED	FILENAME	
JT	C3.01 SW3P CONTROL PLAN	
REVIEWED	DRAWING NO.	
BK	C3.01	
DATE	PROJECT NO.	
10.03.2016	2803.000	

PROJECT NO. 2803.000

LAYOUT: C:\02 SW3P CONTROL PLAN PLOTTED: Friday, August 25, 2017 4:13:05 PM BY: BRYAN-USA.PLT SCALE: 1:1 SAVED: 2/22/2017 12:11PM BY: FRANCISCO Z:\PROJECTS\2803.00_LBL_LUCAS WATER LINE DRAWINGS\C3.01 SW3P ONTL PLANNING



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EROSION CONTROL NOTES (CITY OF LUCAS)

1. EROSION CONTROL DEVICES AS SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF LAND DISTURBING ACTIVITIES ON THE PROJECT.
2. ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THE PROJECT. CHANGES ARE TO BE APPROVED BEFORE CONSTRUCTION BY THE DESIGN ENGINEER AND CITY OF LUCAS.
3. IF THE EROSION CONTROL PLANS AS APPROVED CANNOT CONTROL EROSION AND OFF-SITE SEDIMENTATION FROM THE PROJECT, THE EROSION CONTROL PLAN WILL BE REQUIRED TO BE REVISED AND/OR ADDITIONAL EROSION CONTROL DEVICES WILL BE REQUIRED ON SITE.
4. IF OFF-SITE SOIL BORROW OR SPOIL SITES ARE USED IN CONJUNCTION WITH THIS PROJECT, THIS INFORMATION SHALL BE DISCLOSED AND SHOWN ON THE EROSION CONTROL PLAN. STAGING, BORROW, AND SPOIL AREAS (INCLUDING THOSE LOCATED OFF-SITE) ARE CONSIDERED A PART OF THE PROJECT SITE AND THEREFORE SHALL COMPLY WITH THE CITY OF LUCAS'S EROSION CONTROL REQUIREMENTS. PERIMETER CONTROLS WILL BE PROVIDED BY THE CONTRACTOR FOR THESE AREAS. THEY SHALL BE STABILIZED WITH PERMANENT GROUND COVER PRIOR TO FINAL APPROVAL OF THE PROJECT.
5. ALL EROSION CONTROL DEVICES SHALL BE INSPECTED WEEKLY BY THE CONTRACTOR AND AFTER ALL MAJOR RAIN EVENTS. ANY DEVICES THAT ARE DAMAGED OR DISPLACED WILL BE RESTORED (NO SEPARATE PAY).
6. ALL NON-IMPERVIOUS AREAS AFTER CONSTRUCTION SHALL BE COVERED WITH SOD OR LANDSCAPED IN ACCORDANCE WITH THE LANDSCAPE DRAWINGS. ALL OTHER REMAINING AREAS SHALL BE HYDOMULCHED OR COVERED WITH CURLEX BLANKET (WHERE SHOWN) AND MAINTAINED UNTIL ESTABLISHED.
7. TEMPORARY STONE STABILIZED CONSTRUCTION ENTRANCE SHALL HAVE THE FOLLOWING MINIMUM DIMENSIONS (UNLESS OTHERWISE SHOWN): 25' WIDE X 50' LONG X 8" DEEP, (3"-5" COURSE AGGREGATE). PLACE FILTER FABRIC UNDER STONE PER NCTCOG ITEM 2.23.3.
8. THE STABILIZED CONSTRUCTION ENTRANCE IS TO BE USED AS A VEHICLE WASH DOWN AREA FOR DEBRIS AND SOIL REMOVAL PRIOR TO EXITING THE SITE. THIS STABILIZED ENTRANCE SHALL BE TOP DRESSED WITH ADDITIONAL STONE AS NECESSARY. LOCATION OF STABILIZED ENTRANCE MAY BE MODIFIED IF APPROVED BY CITY OF LUCAS AND THE DESIGN ENGINEER.
9. THE CONTRACTOR SHALL BE RESPONSIBLE, AS THE ENTITY EXERCISING OPERATIONAL CONTROL, FOR ALL PERMITTING AS REQUIRED BY THE EPA/TCEQ. THIS INCLUDES, BUT IS NOT LIMITED TO, MEETING ALL REQUIREMENTS OF TYPES GENERAL PERMIT TXR150000 AND PAYMENT OF ALL ASSOCIATED FEES.
10. IT SHOULD BE NOTED THAT THE AREA OF IMPACT ON THIS PROJECT WILL REQUIRE A SMALL CONSTRUCTION PERMIT THROUGH TCEQ.
11. IT IS VERY IMPORTANT THAT MUD AND OTHER DEBRIS BE KEPT OFF ALL ROADS. CONTRACTOR SHALL IMMEDIATELY REMOVE ANY MUD AND DEBRIS DEPOSITED ON ROADS.
12. CONTRACTOR WILL REPLACE ANY EROSION CONTROL DEVICES THAT ARE DAMAGED AND/OR DISPLACED DURING CONSTRUCTION (NO SEPARATE PAY).

LEGEND

	EXISTING SANITARY SEWER LINE
	EXISTING WATER LINE
	EXISTING STORM SEWER LINE
	PROPOSED SANITARY SEWER LINE
	PROPOSED WATER LINE
	PROPOSED STORM SEWER LINE
	PROPOSED SANITARY MANHOLE
	PROPOSED FIRE HYDRANT
	PROPOSED GATE VALVE

NO. REVISIONS / SUBMISSIONS		MM.DD.YYYY
		DATE

SCALE: 1" = 60'

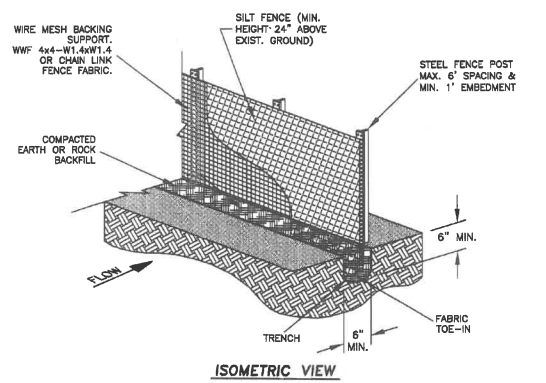
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 214.370.3470 Ph

JOB NAME: **WATER SYSTEM IMPROVEMENT**
SNIDER LANE
 CITY OF LUCAS, COLLIN COUNTY, TEXAS

DRAWING TITLE: **C3.02 SW3P CONTROL PLAN**

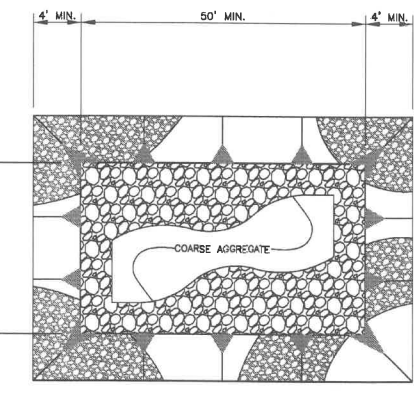
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JT	C3.02 SW3P CONTROL PLAN	
REVIEWED	DRAWING NO.	
BK	C3.02	
DATE	PROJECT NO.	
10.03.2016	2803.000	
		09 of 13



SILT FENCE GENERAL NOTES

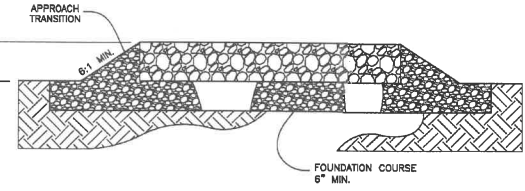
- STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.
- SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE WHICH IN TURN IS ATTACHED TO THE STEEL FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
- 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. WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
- THE TRENCH MUST BE A MINIMUM OF 6" DEEP AND 6" WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAD IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
- INSPECTION SHALL BE MADE EVERY TWO WEEKS AND AFTER EACH 1/2" RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
- ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.
- SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

A SILT CONTROL FENCE INSTALLATION

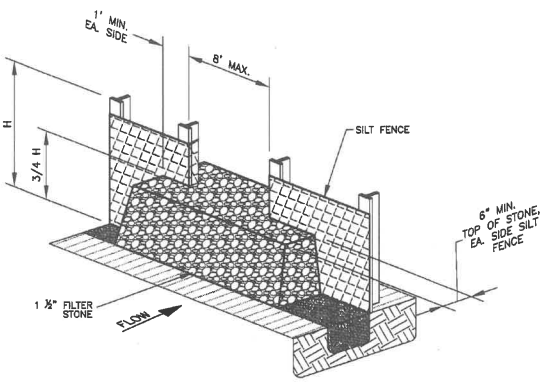
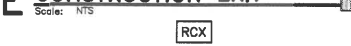


ROCK-STABILIZED CONSTRUCTION EXIT NOTES

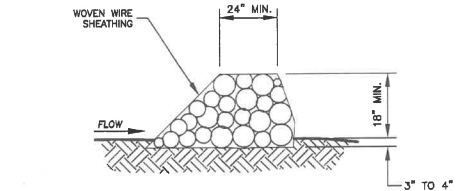
- THE LENGTH OF THE TYPE 1 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 50'.
- THE COARSE AGGREGATE SHOULD BE OPEN GRADED WITH A SIZE OF 4" TO 8".
- THE APPROACH TRANSITIONS SHOULD BE NO STEEPER THAN 8:1 AND CONSTRUCTED AS DIRECTED BY THE ENGINEER.
- THE CONSTRUCTION EXIT FOUNDATION COURSE SHALL BE FLEXIBLE BASE, STIMULOUS CONCRETE, PORTLAND CEMENT CONCRETE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
- THE CONSTRUCTION EXIT SHALL BE GRADED TO ALLOW DRAINAGE TO A SEDIMENT CONTROL DEVICE.
- VEHICLES SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING A PUBLIC ROADWAY. WASHING SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WITH DRAINAGE FLOWING TO A SEDIMENT CONTROL DEVICE, AND AWAY FROM BOTH THE STREET AND THE STABILIZED ENTRANCE.
- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVED SURFACES. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PAVED SURFACES MUST BE REMOVED IMMEDIATELY.



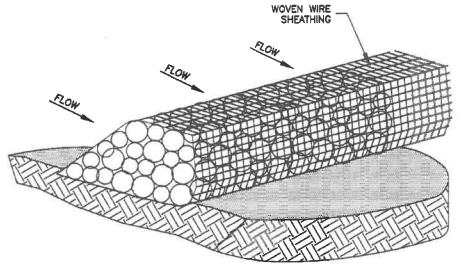
E ROCK-STABILIZED CONSTRUCTION EXIT



B ROCK FILTER OUTLET



CROSS SECTION



ISOMETRIC VIEW

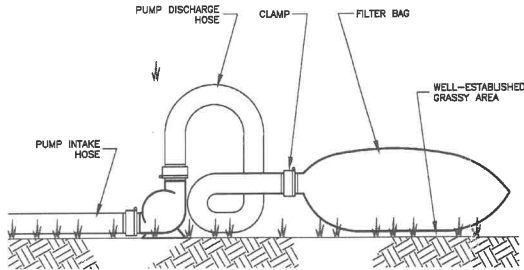
ROCK CHECK DAM GENERAL NOTES

- USE ONLY OPEN GRADED ROCK 4-8 INCHES IN DIAMETER FOR STREAM FLOW CONDITION. USE OPEN GRADED ROCK 3-5 INCHES IN DIAMETER FOR OTHER CONDITIONS.
- THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING A MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE SIZE OF 20 GAUGE AND SHALL BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP.
- THE ROCK BERM SHALL BE INSPECTED EVERY TWO WEEKS OR AFTER EACH 1/2" RAIN EVENT AND SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
- WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD OF THE HEIGHT OF THE BERM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF PROPERLY.
- WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.
- ROCK BERM SHOULD BE USED AS CHECK DAMS FOR CONCENTRATED FLOW AND ARE NOT INTENDED FOR USE IN PERIMETER PROTECTION.

E ROCK CHECK DAM



!! CAUTION !!
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 1-800-DIG-TESS
 (1-800-344-8377)
 WWW.DIGTESS.ORG



PROTECTED PUMP DISCHARGE GENERAL NOTES

- FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE SEWN WITH HIGH STRENGTH, DOUBLE-STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS.
- A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES MUST BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED.
- BAGS SHALL BE LOCATED IN A WELL-ESTABLISHED GRASSY AREA AND DISCHARGE ONTO STABLE, EROSION-RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE FLOW PATH SHALL BE PROVIDED. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 3X.
- THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MFG AND SECURELY CLAMPED.
- THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE PUMP MFG, WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED.
- FILTER BAGS SHALL BE INSPECTED DAILY, WHEN PUMPING OCCURS. IF ANY PROBLEM IS DETECTED, PUMPING SHALL IMMEDIATELY CEASE AND SHALL NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

D PROTECTED PUMP DISCHARGE



LIBERTY BANKERS LIFE
 1605 LBJ Freeway,
 Ste. 710
 Dallas, TX 75234
 Phone: 469.522.4458

Construction Site SWPPP Compliance Inspection Report

Project Name: _____ Project No.: _____
 Contractor: _____ Date of Inspection: _____
 Inspection Conducted by: _____
 Qualifications of the Inspector: _____
 Report prepared by: (Circle One) Contractor Owner
 Type of Inspection: (Circle One) 7 Day Inspection 14 Day Inspection After-Rain Event Inspection

Inspection Issue	Y	N	N/A	Comments
Are copies of inspection reports included with the SWPPP?				
Is an NPDES permit, for all permittees, posted at the construction entrance?				
Is a copy of the SWPPP Certification with the SWPPP?				
Are there any signs of discharge leaving the site?				
Any BMP's in need of repair and/or maintenance?				
Are all BMP's functioning as intended?				
Any additional BMP's required?				
Are stabilized entrance/exits preventing street contamination?				
Are any hazardous materials being exposed to storm water runoff?				
Have there been any reportable spills of hazardous materials?				
If SWPPP controls or practices have been modified, has the SWPPP been updated?				
Have all areas of the site not covered by impervious materials achieved the required coverage?				
Are all soil-disturbing activities complete?				
Has a Notice of Termination (NOT) been filed?				

LIBERTY BANKERS LIFE
 1605 LBJ Freeway,
 Ste. 710
 Dallas, TX 75234
 Phone: 469.522.4458

Construction Site SWPPP Compliance Inspection Report

Project Name: _____ Project No.: _____
 Contractor: _____ Date of Inspection: _____

NOTE: All items of non-compliance shall be repaired/installed within seven (7) calendar days of inspection. Repair/installation shall be completed immediately, if storm conditions are imminent.

Note incidents of non-compliance: _____

I, _____ certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____ Date: _____
 Printed Name: _____
 Title: _____

NO.	REVISIONS / SUBMISSIONS	DATE

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 7075 Twin Hills Ave
 Suite 350
 Dallas, Texas 75231
 Firm TX F6701
 214.370.3470 Ph

**WATER SYSTEM IMPROVEMENT
 SNIDER LANE
 CITY OF LUGAS, COLLIN COUNTY, TEXAS**

C3.03 SW3P DETAILS

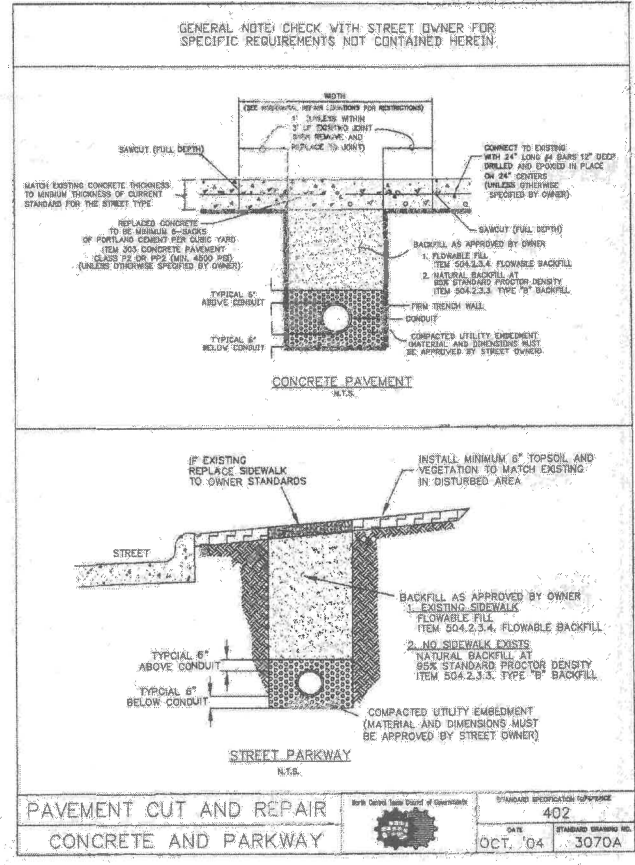
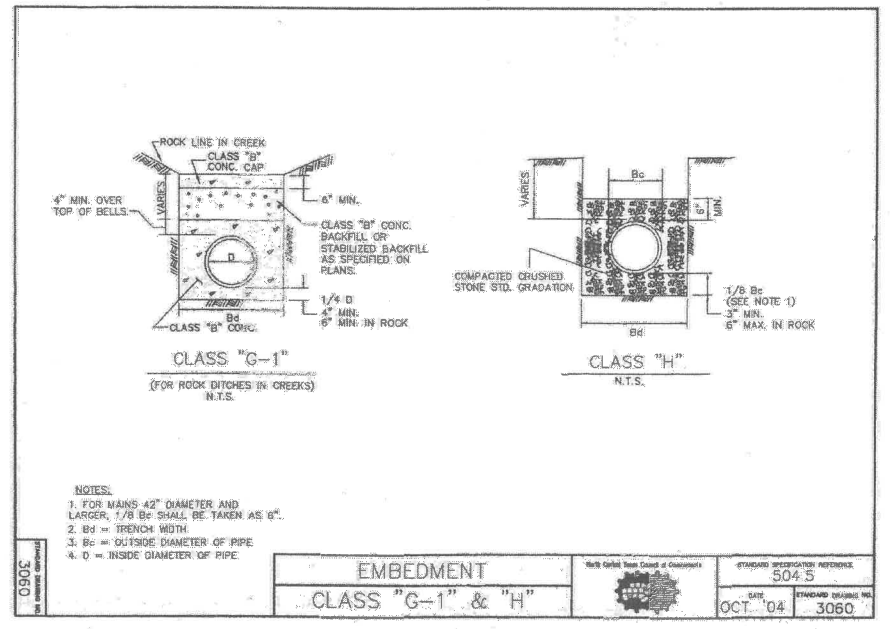
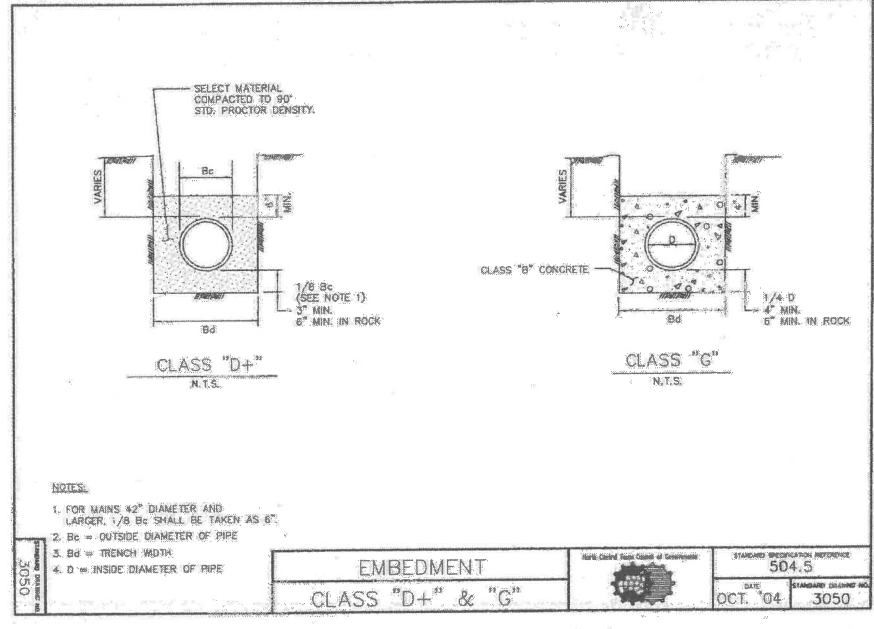
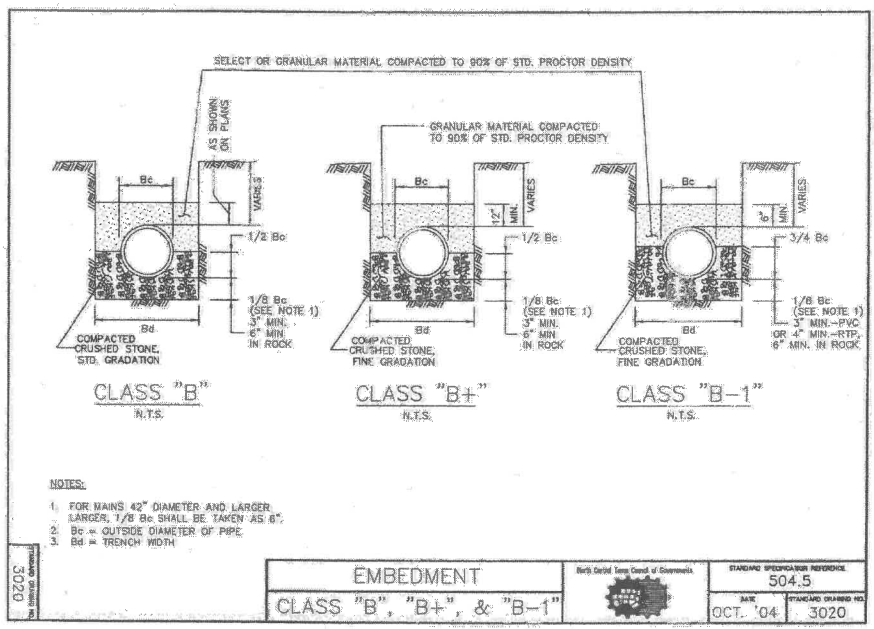
SCALE: 1" = 10'

DATE: 01.16.2017
 PROJECT NO.: 2803.000
 DRAWING NO.: C3.03
 10 of 13

LAYOUT: C3.03 SW3P DETAILS PLOTTED: Friday, August 25, 2017 4:15:11 PM BY: BRYAN-USA PLOT SCALE: 1:1 SAVED: 8/23/2017 4:22PM BY: FRANCISCO Z:\PROJECTS\2803.00 LUGAS WATER LINE UPGRADES C3.03 SW3P DTLS PLOTTING

PROJECT: 2803.00 WATER SYSTEM IMPROVEMENT SNIDER LANE

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 WWW.DIGTESS.ORG



BENCHMARKS
 BM #1
 Cross cut on the southwest corner of an inlet on the southerly right-of-way line of Wittington Place, 460' westerly from the center of Chartwell Drive.
 N: 7019962.269 E: 2453436.916 EL: 429.42
 BM #2
 Cross cut on the southeast corner of an inlet on the easterly right-of-way line of Luna Road, 510' southerly from the center of Mercer Parkway.
 N: 7018165.770 E: 2452183.369 EL: 431.31

NO.	REVISIONS / SUBMISSIONS	DATE
		MM.DD.YYYY
SCALE: N.T.S.		

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WATER SYSTEM IMPROVEMENT
SNIDER LANE
 CITY OF LUCAS, COLLIN COUNTY, TEXAS
C4.01 STD DETAILS

SEAL	DRAWN	SCALE	H: 1" = N.T.S.
	CHECKED	FILENAME	C4.01 STD DETAILS
	REVIEWED	DRAWING NO.	C4.01
	DATE	PROJECT NO.	2803.000
	01.16.2017		11 of 13

LAYOUT, C4.01 STD DETAILS, PLOTTED: Friday, August 25, 2017 4:16:08 PM BY: BRYAN-ISA, PLOT SCALE: 1:1, SAVED: 8/25/2017 4:28:04 PM BY: FRANCISCO ZAVALA, PROJECTS\2803.000\00 LUCAS WATER LINE DRAWINGS\C4.01 STD DETAILS.DWG

HORIZONTAL THRUST BLOCK AT PIPE BEND

REFER TO STD. DWG. No. 4040 FOR GENERAL NOTES.

I.D. (IN.)	T (IN.)	Δ = 11.25°		Δ = 22.50°	
		THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)
4.8, 6	0.4	1.5	1.5	0.9	
10.12	0.5	1.5	1.5	1.2	
16.18	0.6	1.5	1.5	1.8	
20	0.7	1.5	1.5	1.9	
24	0.9	1.5	1.5	2.1	
30	0.9	1.5	1.5	2.4	
36	1.1	1.5	1.5	2.3	
42	1.1	1.5	1.5	2.8	
48	1.2	1.5	1.5	3.3	
54	1.3	1.5	1.5	3.4	
60	1.4	1.5	1.5	3.8	
66	1.5	1.5	1.5	4.1	
72	1.6	1.5	1.5	4.5	
78	1.7	1.5	1.5	4.9	
84	1.8	1.5	1.5	5.3	
90	1.9	1.5	1.5	5.7	
96	2.0	1.5	1.5	6.2	

STANDARD SPECIFICATION REFERENCE: 502.4

DATE: OCT. '04

DESIGNED DRAWING NO.: 4010A

HORIZONTAL THRUST BLOCK AT PIPE BEND

REFER TO STD. DWG. No. 4040 FOR GENERAL NOTES.

I.D. (IN.)	T (IN.)	Δ = 11.25°		Δ = 22.50°	
		THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)
4.8, 6	0.4	1.0	1.0	0.7	0.7
10.12	0.5	1.0	1.0	0.9	0.9
16.18	0.6	1.0	1.0	1.1	1.1
20	0.7	1.0	1.0	1.2	1.2
24	0.9	1.0	1.0	1.3	1.3
30	0.9	1.0	1.0	1.4	1.4
36	1.1	1.0	1.0	1.5	1.5
42	1.1	1.0	1.0	1.6	1.6
48	1.2	1.0	1.0	1.7	1.7
54	1.3	1.0	1.0	1.8	1.8
60	1.4	1.0	1.0	1.9	1.9
66	1.5	1.0	1.0	2.0	2.0
72	1.6	1.0	1.0	2.1	2.1
78	1.7	1.0	1.0	2.2	2.2
84	1.8	1.0	1.0	2.3	2.3
90	1.9	1.0	1.0	2.4	2.4
96	2.0	1.0	1.0	2.5	2.5

STANDARD SPECIFICATION REFERENCE: 502.4

DATE: OCT. '04

DESIGNED DRAWING NO.: 4010B

HORIZONTAL THRUST BLOCK AT PIPE BEND

REFER TO STD. DWG. No. 4040 FOR GENERAL NOTES.

I.D. (IN.)	T (IN.)	Δ = 30°		Δ = 45°	
		THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)
4.8, 6	0.4	1.0	1.0	0.7	0.7
10.12	0.5	1.0	1.0	0.9	0.9
16.18	0.6	1.0	1.0	1.1	1.1
20	0.7	1.0	1.0	1.2	1.2
24	0.9	1.0	1.0	1.3	1.3
30	0.9	1.0	1.0	1.4	1.4
36	1.1	1.0	1.0	1.5	1.5
42	1.1	1.0	1.0	1.6	1.6
48	1.2	1.0	1.0	1.7	1.7
54	1.3	1.0	1.0	1.8	1.8
60	1.4	1.0	1.0	1.9	1.9
66	1.5	1.0	1.0	2.0	2.0
72	1.6	1.0	1.0	2.1	2.1
78	1.7	1.0	1.0	2.2	2.2
84	1.8	1.0	1.0	2.3	2.3
90	1.9	1.0	1.0	2.4	2.4
96	2.0	1.0	1.0	2.5	2.5

STANDARD SPECIFICATION REFERENCE: 502.4

DATE: OCT. '04

DESIGNED DRAWING NO.: 4010C

HORIZONTAL THRUST BLOCK AT TEES AND PLUGS

REFER TO STD. DWG. No. 4040 FOR GENERAL NOTES.

I.D. (IN.)	T (IN.)	EARTH		ROCK	
		THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)
4.8, 6	0.4	1.0	1.0	0.7	0.7
10.12	0.5	1.0	1.0	0.9	0.9
16.18	0.6	1.0	1.0	1.1	1.1
20	0.7	1.0	1.0	1.2	1.2
24	0.9	1.0	1.0	1.3	1.3
30	0.9	1.0	1.0	1.4	1.4
36	1.1	1.0	1.0	1.5	1.5
42	1.1	1.0	1.0	1.6	1.6
48	1.2	1.0	1.0	1.7	1.7
54	1.3	1.0	1.0	1.8	1.8
60	1.4	1.0	1.0	1.9	1.9
66	1.5	1.0	1.0	2.0	2.0
72	1.6	1.0	1.0	2.1	2.1
78	1.7	1.0	1.0	2.2	2.2
84	1.8	1.0	1.0	2.3	2.3
90	1.9	1.0	1.0	2.4	2.4
96	2.0	1.0	1.0	2.5	2.5

STANDARD SPECIFICATION REFERENCE: 502.4

DATE: OCT. '04

DESIGNED DRAWING NO.: 4020

VERTICAL THRUST BLOCK AT PIPE BEND

REFER TO STD. DWG. No. 4040 FOR GENERAL NOTES.

I.D. (IN.)	T (IN.)	11.25°		22.50°		30°		45°		67.50°		90°	
		THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)
4.8, 6	1.0	0.5	2.0	1.0	2.5	1.3	3.6	1.8	4.6	2.3	5.0	2.5	4.6, 6
10.12	1.1	0.5	2.3	1.1	2.9	1.5	4.0	2.0	5.2	2.7	5.7	3.0	10.12
16.18	1.2	0.5	2.7	1.2	3.4	1.8	4.6	2.4	6.0	3.1	6.6	3.4	16.18
20	1.3	0.5	3.1	1.3	3.9	2.1	5.2	2.8	6.7	3.5	7.3	3.7	20
24	1.4	0.5	3.5	1.4	4.4	2.4	5.8	3.2	7.5	3.9	8.1	4.0	24
30	1.5	0.5	4.0	1.5	5.0	2.7	6.6	3.6	8.4	4.4	9.0	4.3	30
36	1.6	0.5	4.5	1.6	5.6	3.0	7.5	4.0	9.6	4.9	10.5	4.7	36
42	1.7	0.5	5.0	1.7	6.2	3.3	8.4	4.4	10.8	5.4	12.0	5.0	42
48	1.8	0.5	5.5	1.8	6.9	3.6	9.4	4.8	12.2	6.0	13.5	5.4	48
54	1.9	0.5	6.0	1.9	7.6	3.9	10.5	5.2	13.8	6.7	15.0	5.8	54
60	2.0	0.5	6.5	2.0	8.4	4.2	11.7	5.6	15.6	7.5	16.5	6.2	60
66	2.1	0.5	7.0	2.1	9.3	4.5	13.0	6.0	17.4	8.4	18.0	6.6	66
72	2.2	0.5	7.5	2.2	10.3	4.8	14.4	6.4	19.4	9.4	20.0	7.0	72
78	2.3	0.5	8.0	2.3	11.4	5.1	15.9	6.8	21.6	10.5	22.0	7.4	78
84	2.4	0.5	8.5	2.4	12.6	5.4	17.5	7.2	24.0	11.7	24.0	7.8	84
90	2.5	0.5	9.0	2.5	13.9	5.7	19.2	7.6	26.7	13.0	26.0	8.2	90
96	2.6	0.5	9.5	2.6	15.3	6.0	21.0	8.0	29.7	14.4	28.0	8.6	96

STANDARD SPECIFICATION REFERENCE: 502.4

DATE: OCT. '04

DESIGNED DRAWING NO.: 4030

THRUST BLOCK GENERAL NOTES

- CONCRETE FOR BLOCKING SHALL BE CLASS "B".
- ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200 PSI FOR DUCTILE IRON, P.V.C., AND 150 PSI FOR CONCRETE PIPE.
- VOLUMES OF THRUST BLOCKS ARE NET VOLUMES OF CONCRETE TO BE FURNISHED. THE CORRESPONDING WEIGHT OF THE CONCRETE (CLASS "B") IS EQUAL TO OR GREATER THAN THE VERTICAL COMPONENT OF THE THRUST ON THE VERTICAL BEND.
- WALL THICKNESS (T) ASSUMED HERE FOR ESTIMATING PURPOSES ONLY.
- POUR CONCRETE FOR BLOCK AGAINST UNDISTURBED EARTH.
- DIMENSIONS MAY BE VARIED AS REQUIRED BY FIELD CONDITIONS WHERE AND AS DIRECTED BY THE ENGINEER. THE VOLUME OF CONCRETE BLOCKING SHALL NOT BE LESS THAN SHOWN HERE.
- THE SOIL BEARING PRESSURES ARE BASED ON 1000 LBS./SQ. FT. IN SOIL AND 2000 LBS./SQ. FT. IN ROCK.
- USE POLYETHYLENE WRAP OR EQUAL BETWEEN CONCRETE AND BEND, TEE, OR PLUG TO PREVENT THE CONCRETE FROM STICKING TO IT.
- CONCRETE SHALL NOT EXTEND BEYOND JOINTS.

STANDARD SPECIFICATION REFERENCE: 502.4

DATE: OCT. '04

DESIGNED DRAWING NO.: 4040

GATE VALVE BOX AND EXTENSION STEM

NOTE: IN UNPAVED AREAS, INSTALL 2' x 2' x 6" CONCRETE VALVE PAD FLUSH WITH THE TOP OF VALVE BOX. REINFORCE WITH #3 BARS ON 8" CENTERS BOTH WAYS.

STANDARD SPECIFICATION REFERENCE: 502.6

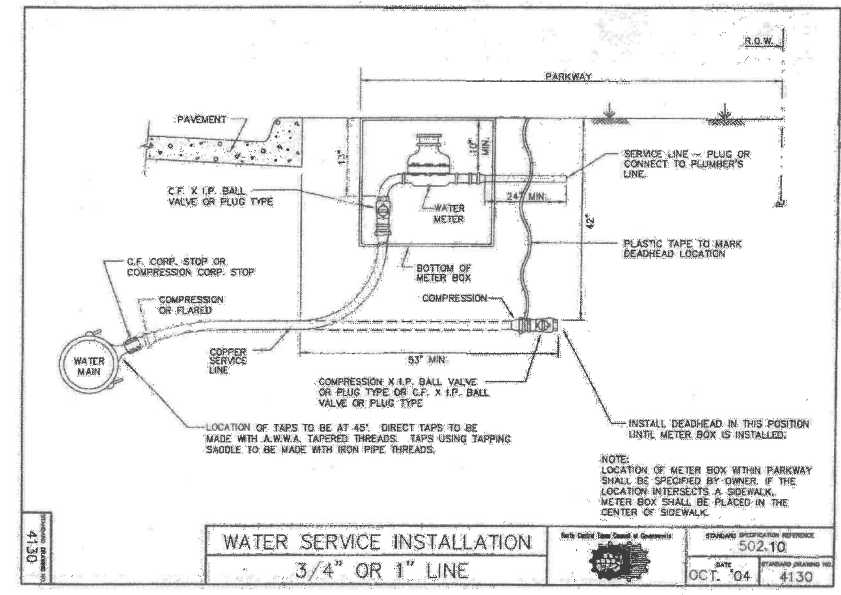
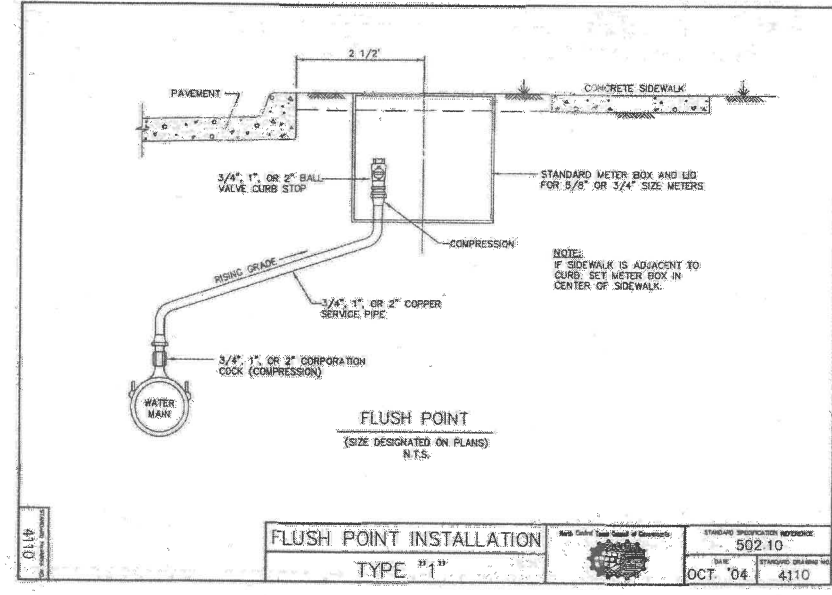
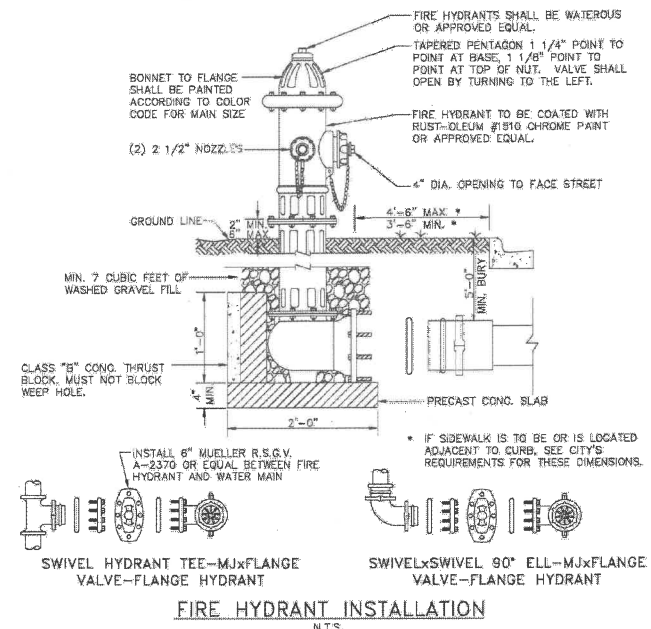
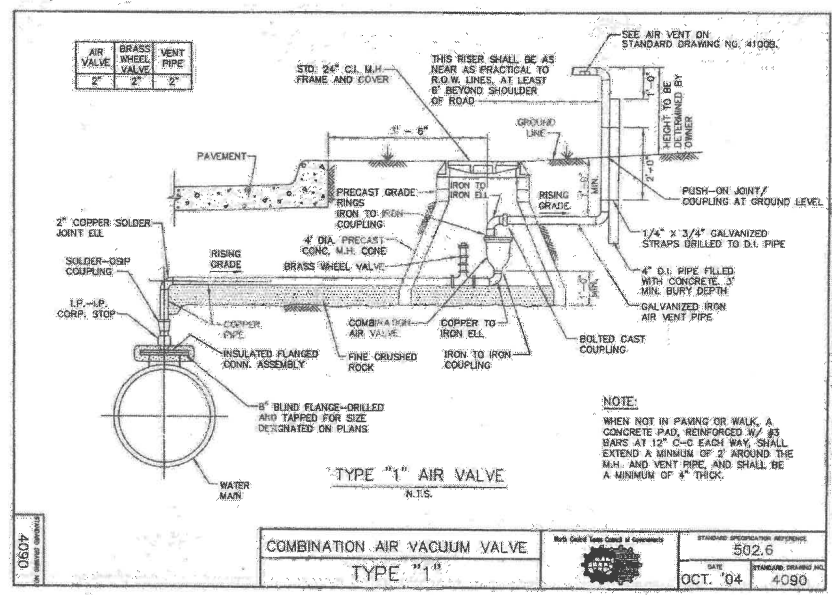
DATE: OCT. '04

DESIGNED DRAWING NO.: 4050

LAYOUT: C4.02 STD. DETAILS DETAIL: ELEVATION AND SECTION SCALE: 1:1 DATE: 07/23/2017 4:28PM BY: FRANCISCO

NO. REVISIONS / SUBMISSIONS		DATE
MM.DD.YYYY		
SCALE: N.T.S.		
7075 Twin Hills Ave Suite 350 Dallas, Texas 75231		
Firm TX F6701		
214.370.3470 Ph		
JOB NAME: WATER SYSTEM IMPROVEMENT		
DRAWING TITLE: SNIDER LANE		
CITY OF LUCAS, COLLIN COUNTY, TEXAS		
DRAWING TITLE: C4.02 STD DETAILS		
SEAL	DRAWN	SCALE
	FM	H: 1" = N.T.S.
	FILENAME	
	C4.02 STD DETAILS	
	DRAWING NO.	
DATE	C4.02	
08.16.2017		
PROJECT NO.	12 of 13	
2803.000		

!! CAUTION !!
 UNDERGROUND UTILITIES ARE LOCATED ON THIS SITE. AT LEAST 48-HOURS PRIOR TO ANY EXCAVATION, CONTACT THE TEXAS EXCAVATION SAFETY SYSTEM (TESS) TO LOCATE ALL UNDERGROUND UTILITIES IN THE AREA.
 1-800-DIG-TESS
 (1-800-344-8377)
 WWW.DIGTESS.ORG



NO. REVISIONS / SUBMISSIONS		DATE
MM.DD.YYYY		
SCALE MAY NOT REPRESENT DIMENSIONS SHOWN ON THIS SHEET. DIMENSIONS FOR CONSTRUCTION SHALL BE TAKEN FROM EXISTING FILES ONLY.		
0 N.T.S.		
Scale: N.T.S.		
Ion Design Group		7075 Twin Hills Ave Suite 350 Dallas, Texas 75231 Firm TX F6701 214.370.3470 Ph
JOB NAME: WATER SYSTEM IMPROVEMENT SNIDER LANE		
DRAWING TITLE: CITY OF LUCAS, COLLIN COUNTY, TEXAS		
C4.03 STD DETAILS		
SEAL 	DRAWN: FM CHECKED: JT REVIEWED: BK DATE: 08.16.2017 PROJECT NO.: 2803.000	SCALE: H: 1" = N.T.S. FILENAME: C4.03 STD DETAILS DRAWING NO.: C4.03 13 of 13

LAYOUT: C4.03 STD DETAILS PLOTTED: Friday, August 25, 2017 4:19:07 PM BY: BROWN,ISA PLOT SCALE: 1:1. SAVED: 8/23/2017 4:27PM BY: FRANCISCO Z:\PROJECTS\2803.00 LIN, LUCAS WATER LINE DRAWINGS\C\04.03 STD DETAILS.DWG