MISCELLANEOUS WATERLINE REPLACEMENT PROJECT

CONSTRUCTION PLANS
FOR
CITY OF HUNTSVILLE
1212 AVE M HUNTSVILLE, TEXAS 77340
MISCELLANEOUS WATERLINE REPLACEMENT PROJECT
(INCLUDING OLD MADISONVILLE ROAD, MARY AVENUE, 13TH STREET, AVENUE P FROM 7TH-10TH STREET AND AVENUE P FROM 19TH-22ND)

AUGUST 2016

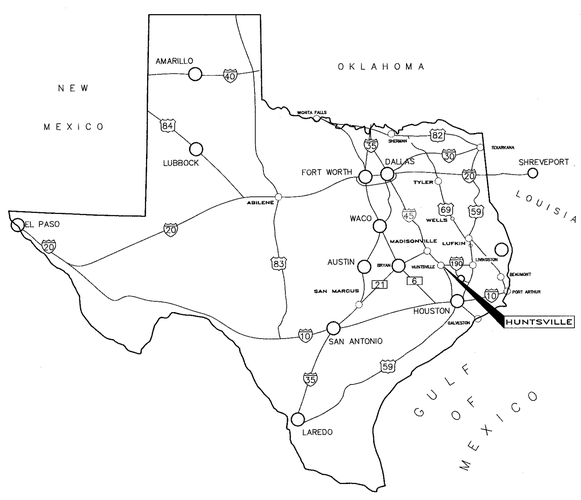
MAYOR & CITY COUNCIL

Andy Brauninger.....Mayor
Keith D. Olson.....City Council
Lydia Montgomery.....City Council
Don H. Johnson.....City Council
Joe Emmett.....City Council
Tish Humphrey.....City Council
Ronald Allen.....City Council
Joe Rodriguez.....City Council
Paul Davidhizar.....City Council

CITY ADMINISTRATION & STAFF

Matt Benoit.....City Manager
Carol A. Reed.....Director of Public Works
Yellambalsi S. Ramachandra.....City Engineer

PROJECT LOCATION MAP



STATE OF TEXAS
JAMES M. LIGHT
96494
LICENSED
PROFESSIONAL ENGINEER

SUBMITTED : James M Light
James M. Light, P.E.
Goodwin-Lasiter-Strong

DATE : 10-10-2016

Sheet List Table	
NO.	Sheet Title
-	Cover Sheet
C1.0	Project Notes and Information
C1.1	Project Location Map
Avenue P (North Area) Waterline Plan & Profile	
C1.2	Sta. 0+00 - Sta. 6+00
C1.3	Sta. 6+00 - End of Project
Avenue P (South Area) Waterline Plan & Profile	
C2.1	Sta. 0+00 - Sta. 6+00
C2.2	Sta. 6+00 - Sta. 12+00
C2.3	Sta. 12+00 - End of Project
13th Street Waterline Plan & Profile	
C3.1	Sta. 0+00 - Sta. 6+00
C3.2	Sta. 6+00 - End of Project
Old Madisonville Road Waterline Plan & Profile	
C4.1	Sta. 0+00 - Sta. 4+00
C4.2	Sta. 4+00 - Sta. 9+00
C4.3	Sta. 9+00 - End of Project
Mary Avenue Waterline Plan & Profile	
C5.1	Sta. 0+00 - Sta. 6+00
C5.2	Sta. 6+00 - Sta. 12+00
C5.3	Sta. 12+00 - End of Project
D1	Project Details
D2	Traffic Control Plan
D3	Traffic Control Plan
D4	Project Quantities

PREPARED BY

GLS
GOODWIN·LASITER·STRONG
ENGINEERING · ARCHITECTURE · INTERIOR DESIGN · SURVEYING
1609 S. CHESTNUT DR. STE. 202 - LUFKIN, TEXAS 75901 - (936) 637-4900
4077 CROSS PARK DR. STE. 100 - BRYAN, TEXAS 77802 - (979) 776-9700
30340 FM 2978 STE. 650 - THE WOODLANDS, TEXAS 77354 - (936) 367-4100
TBPE FIRM REGISTRATION #F-413

D:\197\197026\197026-C0.0-COVER SHEET.DWG 5/3/2016 10:16 AM

MISCELLANEOUS WATERLINE REPLACEMENT PROJECT

THE FOLLOWING NOTES ARE STANDARDS TO ALL CONSTRUCTION AND ARE TO BE INCLUDED IN ALL SETS OF CONSTRUCTION DRAWINGS.

1. MATERIALS, CONSTRUCTION AND TESTING TO BE IN ACCORDANCE WITH THE CITY OF HUNTSVILLE ORDINANCES AND SPECIFICATIONS, LATEST PRINTING AND AMENDMENTS THERETO.

2. CONTRACTOR SHALL GIVE NOTICE TO ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS OR PERSONS IN CHARGE OF PRIVATE AND PUBLIC UTILITIES OR RAILROADS AFFECTED BY HIS OPERATIONS AND THE CITY ENGINEERING, (TELEPHONE: (936) 297-5779) 48 HOURS PRIOR TO COMMENCEMENT OF WORK IN STREET RIGHTS-OF-WAY OR EASEMENTS.

3. ALL EXISTING UNDERGROUND UTILITIES ARE NOT GUARANTEED TO BE COMPLETE OR DEFINITE, BUT WERE OBTAINED FROM THE BEST INFORMATION AVAILABLE. CONTRACTOR HAS SOLE RESPONSIBILITY FOR FIELD VERIFICATION OF ALL EXISTING FACILITIES SHOWN ON DRAWINGS. CONTRACTOR SHALL COORDINATE ALL CONFLICTS WITH THE APPROPRIATE GOVERNING AGENCY. NO SEPERATE PAY.

4. THE LOCATION OF UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL REQUEST THE EXACT LOCATION OF THESE FACILITIES BY CALLING THE UTILITY COMPANIES, AT LEAST 48 HOURS BEFORE COMMENCING WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE WHICH OCCURS DUE TO HIS FAILURE TO REQUEST THE LOCATION AND PRESERVATION OF THESE UNDERGROUND FACILITIES. ANY DAMAGE TO EXISTING FACILITIES INCURRED AS A RESULT OF CONSTRUCTION OPERATIONS WILL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.

5. TEXAS LAW ARTICLE 1436C, PROHIBITS ALL ACTIVITIES IN WHICH PERSONS OR EQUIPMENT MAY COME WITHIN 6 FEET OF ENERGIZED OVERHEAD POWER LINES, AND FEDERAL REGULATION, TITLE 29, PART 1910.130(1) AND PART 1926.440 (A) (15) REQUIRE A MINIMUM CLEARANCE OF 10 FEET FROM THESE FACILITIES. THE ABOVE LAWS CARRY BOTH CRIMINAL AND CIVIL LIABILITIES, WITH CONTRACTORS AND OWNERS BEING LEGALLY RESPONSIBLE FOR THE SAFETY OF WORKERS UNDER THESE LAWS. IF YOU OR YOUR COMPANY MUST WORK NEAR ENERGIZED OVERHEAD POWER LINES, CALL THE POWER COMPANY FOR THE LINES TO BE DE-ENERGIZED AND/OR MOVED AT YOUR EXPENSE.

6. CONSTRUCTION SHALL COMPLY WITH THE LATEST REVISIONS OF OSHA REGULATIONS AND STATE OF TEXAS LAW CONCERNING TRENCHING AND SHORING. CONTRACTOR SHALL PROVIDE A TRENCH SAFETY SYSTEM TO MEET, AS A MINIMUM, THE REQUIREMENTS OF OSHA SAFETY AND HEALTH REGULATION, PART 1926, SUB-PART P AS PUBLISHED IN THE FEDERAL REGISTER, VOLUME 54, NO. 209, DATED OCTOBER 31, 1989, AND CITY OF HUNTSVILLE ORDINANCES AND LATEST REVISIONS.

7. DETAILS DO NOT EXTEND TO OR INCLUDE DESIGNS OR SYSTEMS PERTAINING TO THE SAFETY OF THE CONTRACTOR OR ITS EMPLOYEES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS, INCLUDING THE PLANS AND SPECIFICATIONS REQUIRED BY CHAPTER 756, SUBCHAPTER "C" OF THE TEXAS HEALTH AND SAFETY CODE.

8. CONTRACTOR SHALL COVER OPEN EXCAVATIONS WITH ANCHORED STEEL PLATES DURING NON-WORKING HOURS, ALONG EXISTING ROADWAYS AND TRAFFIC AREAS.

9. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE CITY ENGINEER. ALL CONSTRUCTION RUNOFF SHALL COMPLY WITH STORM WATER MANAGEMENT FOR CONSTRUCTION ACTIVITIES AND THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS.

10. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE FLAGMEN, SIGNING, STRIPING AND WARNING DEVICES, ETC., DURING CONSTRUCTION IN ACCORDANCE WITH THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". CONTRACTOR SHALL MAINTAIN AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION DURING WORKING HOURS OR PROVIDE ALL-WEATHER DETOURS AROUND CONSTRUCTION SITE, PROVIDE PUBLIC NOTIFICATION, AND USE UNIFORMED POLICE OFFICERS TO CONTROL TRAFFIC.

11. EXISTING ROADS AND/OR RIGHT-OF-WAYS DISTURBED DURING CONSTRUCTION SHALL BE AS GOOD OR BETTER THAN THE CONDITION PRIOR TO STARTING THE WORK, UPON COMPLETION OF THE PROJECT.

AFTER DISTURBED AREAS HAVE BEEN COMPLETED TO THE LINES, GRADES, AND CROSS-SECTIONS SHOWN ON THE PLANS, SODDING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS TO ESTABLISH ADEQUATE VEGETATION COVERAGE TO ELIMINATE EROSION.

12. ALL TRENCHES, INCLUDING TRENCHES FOR LEADS AND STUBS UNDER PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL CURBS SHALL BE BACKFILLED WITH CEMENT STABILIZED SAND AS PER SPECIFICATION TO A POINT IMMEDIATELY BELOW THE SUBGRADE. TRENCHES OTHER THAN UNDER PAVEMENT SHALL BE BACKFILLED WITH SUITABLE EARTH MATERIAL IN 6 INCH LAYERS AND MECHANICALLY COMPACTED TO A DENSITY OF NOT LESS THAN 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMPACTION TEST (ASTM DESIGNATION D-698/AASHTO T99). MOISTURE CONTENT OF BACKFILL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CEMENT STABILIZED SAND SPECIFICATIONS. SEE CITY STANDARD DETAIL SHEETS FOR BEDDING AND OTHER DESIGN REQUIREMENTS.

13. INCLUDE PRICE OF ALL BEDDING AND BACKFILL OF TYPE REQUIRED, IN PRICE BID PER LINEAR FOOT OF PIPE.

14. WHEN TRENCH CONDITION REQUIRES THE USE OF WELL POINTS, THIS IS TO BE REQUESTED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.

15. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING THE MUD AND/OR DIRT DEPOSITED ON EXISTING PAVEMENT DUE TO HIS CONSTRUCTION ACTIVITY DAILY. ALL EQUIPMENT AND DEBRIS FROM CONSTRUCTION TO BE MOVED AT END OF PROJECT.

16. CONTRACTOR SHALL CONTACT CITY OF HUNTSVILLE CITY ENGINEER, YELLAMBALSI RAMACHANDRA AT (936) 294-5760, A MINIMUM OF 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.

17. CONTRACTOR SHALL CONTACT CITY OF HUNTSVILLE PUBLIC WORKS DIRECTOR, CAROL REED, AT (936) 294-5768, A MINIMUM OF 48 HOURS PRIOR TO COMMENCING CONSTRUCTION TO SET UP AN INSPECTION TO VERIFY CITY'S FACILITIES.

18. CONTRACTOR SHALL CONTACT THE CITY'S OPERATOR TO OPERATE ALL VALVES. AT NO TIME IS THE CONTRACTOR OR THE CONTRACTOR'S REPRESENTATIVE TO OPERATE ANY PART OF THE CITY OF HUNTSVILLE WATER SYSTEM.

19. THE OWNER OR CONTRACTOR SHALL INSTALL AND TEST APPROPRIATE BACKFLOW PREVENTION, PER CITY OF HUNTSVILLE RULES & REGULATIONS.

20. CONTRACTOR SHALL VISIT THE CONSTRUCTION LOCATION AND FAMILIARIZE THEMSELVES WITH THE WORKING CONDITIONS (TRAFFIC, DEMOLITION WORK, PROPOSED/EXISTING UTILITIES, PAVING, DRAINAGE) OF THE SITE BEFORE BIDDING.

21. CONTRACTOR IS TO DETERMINE ALL QUANTITIES OF WORK PRIOR TO BIDDING TO PROVIDE A COMPLETE AND APPROVED PROJECT TO THE CITY.

22. THE CONTRACTOR IS REQUIRED TO ATTEND A PRE-CONSTRUCTION MEETING WITH CITY ENGINEER, CITY PROJECT MANAGER, CITY INSPECTOR AND CONSULTING ENGINEER PRIOR TO STARTING WORK. NO WORK IS TO BE PERFORMED UNTIL THIS MEETING IS COMPLETED AND A WRITTEN NOTICE TO PROCEED IS ISSUED BY THE CITY ENGINEER TO THE CONTRACTOR. MONTHLY CONSTRUCTION MEETINGS ON SITE DURING CONSTRUCTION ARE ALSO TO BE SCHEDULED WITH THE CITY ENGINEER, INSPECTOR, AND CONSULTANT ENGINEER.

23. IN THE ABSENCE OF SPECIFIC REQUIREMENTS FOR ANY WORK, CONTRACTOR SHALL COORDINATE WITH CITY INSPECTOR FOR DIRECTION. CONTRACTORS ARE NOT TO PROCEED WITH ANY WORK WITHOUT PROPER AUTHORIZATION OF THE CITY ENGINEER. PROCEEDING WITHOUT PROPER DIRECTION FROM CITY ENGINEER'S OFFICE WILL BE AT THE CONTRACTORS SOLE RISK.

24. CONTRACTOR TO MAINTAIN SITE IN "FIRST CLASS" NEAT CONDITION. WORK SITE SHALL BE CLEANED UP AT END OF EACH DAY.

25. CONTRACTOR SHALL COORDINATE A STATUS OF CONSTRUCTION SEQUENCE OR CHANGES IN CONSTRUCTION SEQUENCE. CONSTRUCTION SEQUENCE IS PROVIDED WITHIN CONSTRUCTION PLANS. FINAL DECISION WILL BE MADE BY CITY ENGINEER'S OFFICE. FOR BIDDING PURPOSES, THE CONSTRUCTION SEQUENCE WITHIN THE PLANS ARE TO BE FOLLOWED.

General Construction Notes — 6

26. CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES, AND SERVICE LINES PRIOR TO EXCAVATING FOR UTILITY PLACEMENT. LOCATING METHODS INCLUDE, BUT ARE NOT LIMITED TO: LOCATING SERVICES, "POT HOLING" WITH WATER, SPOT DIGGING, ETC. COSTS FOR VERIFICATION OF EXISTING UTILITIES, AND TIE-IN LOCATIONS ARE TO BE INCLUDED IN BID. THE EXISTING LINES SHOWN ARE APPROXIMATE, BASED ON UTILITY MARKINGS AND CITY'S INFORMATION.

27. CONTRACTOR IS RESPONSIBLE FOR LOCATING UNKNOWN UTILITIES AS ENCOUNTERED IN CONSTRUCTION. CONFLICTS WILL NOT BE REASON FOR CONTRACTOR TO CLAIM A DELAY OR COST ON THE PROJECT.

28. CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING A TRAFFIC HANDLING PLAN. PROVIDE PROPER SIGNING FOR CONSTRUCTION, SAFETY, AND ROUTING OF TRAFFIC. POSITIONING AND CONTENT OF SIGNS, BARRICADES AND FLAGGING SHALL BE IN ACCORDANCE WITH THE CURRENT TEXAS MUTCD.

29. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENCES/BUSINESSES. DRIVE-WAYS & DOORWAY THRESHOLDS SHALL NOT BE IMPASSABLE OVERNIGHT.

30. A FIELD SET OF AS-BUILT DRAWINGS SHOULD BE MAINTAINED BY THE CONTRACTOR FOR TRANSFER TO PERMANENT RECORD DRAWINGS. THESE DRAWINGS SHOULD INCLUDE MEASUREMENTS FROM EACH UNIT RELATED TO TWO PERMANENT OBJECTS. UTILITY SERVICE LOCATIONS SHOULD ALSO BE DOCUMENTED. PROJECT WILL NOT BE CLOSED OUT UNTIL CONTRACTOR HAS PROVIDED THESE FIELD SET(S) TO THE CONSULTING ENGINEER.

31. CONTRACTOR TO STORE MATERIALS AT LOCATION(S) APPROVED BY & COORDINATED WITH THE OWNER. EQUIPMENT IS TO BE STORED OVERNIGHT AT LOCATIONS SO AS NOT TO BLOCK STREETS OR DRIVES. MATERIALS ARE TO BE PROTECTED FROM DAMAGE BY THE ELEMENTS.

32. FINISHED GRADES TO BE SLOPED TO PROVIDE PROPER DRAINAGE.

33. CONTRACTORS ARE TO COORDINATE THE HOLDING/SUPPORT OF UTILITY POLES WITH RESPECTIVE OWNERS WHERE NECESSARY TO FACILITATE CONSTRUCTION. ALL COORDINATION WITH UTILITY COMPANIES IS TO BE INCLUDED WITH BID ITEMS FOR WORK TO BE PERFORMED.

34. CULVERTS DISTURBED/DAMAGED BY CONSTRUCTION THAT ARE NOT SPECIFIED FOR REMOVAL/REPLACEMENT ARE TO BE RESET/REPLACED AT NO ADDITIONAL COST.

35. ON CROSSING OF PAVED ROADS AND DRIVES WHERE TYPE OF CONSTRUCTION IS NOT OTHERWISE INDICATED. THE CONTRACTOR SHALL BORE IN LIEU OF OPEN-CUT AND PAVEMENT REPLACEMENT. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENCES. DRIVEWAYS SHALL NOT BE IMPASSABLE OVERNIGHT. DIRT OR GRAVEL DRIVES MAY BE OPEN CUT PROVIDED THEY ARE BACK FILLED AS DETAILED.

36. ITEMS ASSOCIATED WITH GAS SYSTEM ARE TO REMAIN. CONFLICTS TO BE REPORTED TO CITY INSPECTOR. GAS FACILITY OWNER WILL BE NOTIFIED TO ADDRESS THE CONFLICT.

37. FIBER OPTIC CABLE (FOC) IS IN PROJECT AREA. CONTRACTOR TO HAVE FOC PRECISELY LOCATED INCLUDING DEPTH PRIOR TO EXCAVATION BEGINNING.

38. VERIFY LOCATION AND GRADE OF WATERLINE TIE-INS PRIOR TO CONSTRUCTION.

39. CONTRACTOR TO MAINTAIN STORM WATER POLLUTION PREVENTION PLAN (SWPPP) ON SITE. BEST MANAGEMENT PRACTICES TO BE USED INCLUDING BUT NOT LIMITED TO HAYBALES, SAND BAGS AT INLETS, SILT FENCES, ETC.

General Construction Notes Continued — 5

WATER CONSTRUCTION NOTES

1. PRIOR TO WATER MAIN CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE CITY ENGINEER AND COMPLY WITH ALL REQUIREMENTS NECESSARY FOR THE ISSUANCE OF A WORK ORDER FOR THE WATER MAIN CONSTRUCTION.

2. SEPARATION DISTANCES FOR ALL WATER MAIN AND SANITARY SEWER MAIN CONSTRUCTION SHALL BE GOVERNED BY THE "TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES AND REGULATIONS FOR DESIGN CRITERIA FOR SEWERAGE SYSTEMS", SECTION 217 AND PUBLIC WATER SYSTEMS, SECTION 290, LATEST REVISION.

3. TWELVE-INCH (12") AND SMALLER MAINS SHALL HAVE A MINIMUM COVER OF FOUR FEET (4') FROM THE TOP OF THE CURB OR FIVE FEET (5') FROM THE MEAN ELEVATION OF THE BOTTOM OF THE NEARBY DITCH AND NEARBY RIGHT-OF-WAY ELEVATION FOR OPEN DITCH SECTIONS UNLESS NOTED OTHERWISE.

4. MAINS LARGER THAN TWELVE-INCHES (12") SHALL HAVE A MINIMUM COVER OF FIVE FEET (5') FROM THE TOP OF THE CURB OR SIX FEET (6') FROM THE MEAN ELEVATION FOR OPEN DITCH SECTIONS.

5. ALL WATER MAINS SHALL BE HYDROSTATICALLY TESTED BEFORE BACTERIOLOGICAL TESTING IN ACCORDANCE WITH AWWA STANDARD C-600.

6. ALL WATER PIPING SHALL BE DISINFECTED AND BACTERIOLOGICALLY TESTED PRIOR TO USE IN ACCORDANCE WITH AWWA STANDARD C-601.

7. ALL WATER MAINS 4" THROUGH 12" SHALL BE C-905 (DR-18). ALL WATER MAINS 14" THROUGH 36" SHALL BE C-905 (DR-18).

8. PRIOR TO BACKFILLING OF ALL UNDERGROUND WATER LINES, INSTALL A CONTINUOUS #14 COPPER TRACER WIRE, LOCATED DIRECTLY OVER BURIED LINES AND ACCESSIBLE AT EACH VALVE STACK.

9. CONTRACTOR AND HIS SUPPLIER TO SUPPLY & INSTALL FITTINGS AS DESIGNED. ANY ADDITIONAL FITTING REQUIRED BUT NOT NOTED ON PLANS BUT NECESSARY FOR CONSTRUCTION WILL BE CONSIDERED SUBSIDIARY. CONTRACTOR TO MAKE THEIR OWN DETERMINATION FOR SUBSIDIARY ITEMS. COST TO BE INCLUDED IN PIPE BIDS.

10. EMBEDMENT REQUIREMENTS NOTED ON THESE PLANS ARE TO BE STRICTLY ADHERED TO.

11. CONTRACTOR SHALL COORDINATE ALL MAIN AND SERVICE CONNECTIONS WITH THE CITY OF HUNTSVILLE AND INDIVIDUAL PROPERTY OWNERS (WHERE NECESSARY). CONTRACTOR WILL GIVE 72 HOUR NOTICE TO CUSTOMERS FOR DISRUPTION OF WATER SERVICE. WATER SERVICES SHALL NOT BE INTERRUPTED TO ANY RESIDENCE OR BUSINESS FOR LONGER THAN A SIX HOUR PERIOD.

12. GATE VALVES TO BE SAME SIZE AS LINE IN WHICH INSTALLED UNLESS NOTED. PROVIDE IRON BODIED RESILIENT SEAT GATE VALVES.

13. FITTINGS TO BE DUCTILE IRON CONFORMING TO AWWA C110 AND ANSI A21 10 FOR 2 INCHES IN DIAMETER AND LARGER.

14. CITY WILL SHUT OFF WATER ONLY IF ABSOLUTELY NECESSARY FOR CONTRACTOR TO MAKE TIE-INS. CONTRACTOR WILL GIVE 72 HOUR NOTICE TO CITY. CLOSE COORDINATION IS REQUIRED TO ALLOW CITY SUFFICIENT TIME TO NOTIFY CUSTOMERS WATER WILL BE SHUT-OFF. CITY WILL SHUT WATER OFF ONLY ONCE. CONTRACTOR TO HAVE SUFFICIENT STAFF AND ALL REQUIRED MATERIALS ON SITE PRIOR TO BEGINNING OF WORK AND SYSTEM SHUT DOWN. ALL TIE-INS ARE TO BE COMPLETED WITHIN A 6 HOUR PERIOD.

15. ALL NECESSARY ADJUSTMENTS TO UTILITY RELATED ITEMS (IE: WATER METERS, VALVE BOXES, GAS METERS, VALVE BOXES, MONITORING WELLS, MANHOLES, ETC.) ARE TO BE SUBSIDIARY. COSTS TO BE INCLUDED IN BID.

16. CONTRACTOR TO LOCATE ALL INTERCONNECT/DISCONNECT LOCATIONS PRIOR TO CONSTRUCTION. LINES TO BE CUT, DISCONNECTED & CAPPED AS NOTED IN PLANS.

17. ALL PIPE WITH STEEL CASING SHALL BE CERTA-LOC OR APPROVED EQUAL. COST FOR PIPING WITHIN CASING TO BE INCLUDED IN CASING BID.

Water Construction Notes — 4

Existing

- SS — SANITARY SEWER (SIZE SHOWN)
- W — WATER LINE (SIZE SHOWN)
- E — OVERHEAD ELECTRIC
- 326 — EXISTING CONTOUR
- WM — WATER METER
- WV — WATER VALVE
- B — BLOW OFF VALVE
- S — SANITARY SEWER MANHOLE
- PP — POWER POLE
- BM#2 — BENCH MARK
- CONCRETE SIDEWALK
- FIRE HYDRANT
- LP — LIGHT POLE

Proposed

- STORM SEWER LINE (SIZE & MATERIAL NOTED)
- W — WATER LINE (MATERIAL & SIZE NOTED)
- SS — SANITARY SEWER (MATERIAL & SIZE NOTED)
- SF — SILT FENCE
- 326 — CONTOURS
- CONCRETE SIDEWALK
- FL328.56 — FLOWLINE ELEVATION
- T328.56 — TOP OF CURB ELEVATION
- P328.56 — PAVEMENT ELEVATION
- TG328.56 — TOP OF GRATE
- B — BLOW OFF VALVE
- FIRE HYDRANT
- WATER VALVE (SIZE NOTED)
- SEWER MANHOLE
- CO — CLEANOUT
- LP — LIGHT POLE

LEGEND — 3

Bench Mark/Control Point List

NO.	DESCRIPTION	COORDINATES	ELEVATION
	AVENUE P (NORTH AREA) CONTROL POINTS		
CP#6787	ALUMINUM DISK IN CONC. AT THE INTERSECTION OF AVENUE P AND 7TH STREET, PASS THE CURB ON THE NORTH SIDE OF 7TH STREET.	GLS: N:10260718.7640', E:3796609.8200'	353.36
CP#100	60D NAIL APPROX. 17.8' SOUTH WEST FROM CENTER OF SANITARY SEWER MANHOLE W/ POINT #2532 ON THE WEST SIDE OF AVE P.	GLS: N:10260355.7751', E:3796602.4140'	339.37
CP#101	60D NAIL IN ASPHALT PAVEMENT PARKING LOCATED 7.6' SOUTHWEST OF THE POLE THAT IS LOCATED ON THE NORTHEAST AREA OF THE SAMUEL W. HOUSTON MUSEUM ON THE WEST SIDE OF AVE P.	GLS: N:10259983.5054', E:3796614.9925'	332.09
CP#6542	MAG NAIL IN CURB APPROX. LOCATED 8' FROM CENTER OF SANITARY SEWER W/ POINT #3380 ON THE SOUTH SIDE OF 10TH STREET	GLS: N:10259631.5044", E:3796650.8978'	329.06
	13TH STREET CONTROL POINTS		
CP#106	60D NAIL LOCATED ON THE NORTHEAST SIDE OF THE INTERSECTION OF AVE G. AND 13TH STREET, ALSO 10.5' NORTHWEST FROM THE FOUND CONC. MON.	GLS: N:10258631.9741', E:3800946.6612'	403.67
CP#107	60D NAIL LOCATED ON THE NORTHWEST SIDE OF THE INTERSECTION OF AVE F. AND 13TH STREET, ALSO 6.4' NORTHEAST OF THE FIRE HYDRANT.	GLS: N:10258637.5339', E:3801216.8491'	410.22
CP#108	60D NAIL LOCATED ON THE NORTHWEST SIDE OF THE INTERSECTION OF AVE F. AND 13TH STREET, ALSO 16.9' SOUTHEAST OF LIGHT POLE ON THE NORTH SIDE OF 13TH ST.	GLS: N:10258646.7217', E:3801585.4806'	406.80
CP#104	60D NAIL LOCATED ON THE NORTHWEST SIDE OF THE INTERSECTION OF SYCAMORE AVE. AND 13TH STREET, ALSO 13.4' SOUTHWEST OF LIGHT POLE ON THE NORTH SIDE OF 13TH ST.	GLS: N:10258670.4487', E:3802077.2975'	385.373
	AVENUE P (SOUTH AREA) CONTROL POINTS		
CP#7115	ALUMINUM DISK IN CONC. LOCATED ON THE SOUTHWEST SIDE OF THE INTERSECTION OF 22ND. AND AVE P., ALSO 6.5' NORTHWEST OF STORM SEWER W/ POINT #6093	GLS: N:10254101.3360', E:3796893.1730'	439.70
CP#111	60D NAIL LOCATED APPROX 26' NORTHEAST OF CONC DRIVEWAY, AND NEAR BACK OF CURB FROM THE ADDRESS OF (2010 AVE. P.)	GLS: N:10254907.4743', E:3796867.4025'	438.05
CP#103	60D NAIL LOCATED ON THE NORTHWEST SIDE OF THE INTERSECTION OF AVE P. AND 20TH STREET, ALSO 7.7' SOUTHEAST OF FIRE HYDRANT	GLS: N:10255191.6226', E:3796844.9788'	425.28
CP#7792	RAILROAD SPIKE IN SEAM OF THE INTERSECTION OF 19TH STREET AND AVE P., AND APPROX. 5' NORTHWEST FROM POWERPOLE	GLS: N:10255626.2857', E:3796872.8560'	401.66

CPCM—CONTROL POINT CONCRETE MONUMENT, CPIC—CONTROL POINT IRON ROD W/ CAP, CPPK—CONTROL POINT PARKER KALLON MASONRY NAIL

INFORMATION IN PARENTHESIS (#) IS FROM THE CITY OF HUNTSVILLE GIS WEBSITE.

*CONTROL POINT HELD TO MATCH THE CITY OF HUNTSVILLE GIS INFORMATION.

BENCH MARK/CONTROL POINT LIST — 2

Texas 811
Know what's below.
Call 811 Before You Dig

UTILITY LOCATOR SERVICE — 1

NO.	DATE	ISSUED FOR
1	02-16-16	Review
2	08-26-16	Final
3	10-06-16	Revision 1
4	----	----

D:\197\197026\197026-C1.0-Project Notes.dwg 2/1 /2016

DRAWN BY: DKE | APPV'D BY: JIR | PLOT SCALE: 1:1

TBPE FIRM REGISTRATION: #F-413

© 2015 ALL RIGHTS RESERVED BY GOODWIN-LASITER, INC. UNAUTHORIZED USE OR REPRODUCTION IS PROHIBITED WITHOUT WRITTEN CONSENT FROM GOODWIN-LASITER, INC.

GOODWIN·LASITER·STRONG
ENGINEERING · ARCHITECTURE · INTERIOR DESIGN · SURVEYING
1609 S. CHESTNUT DR. STE. 202 · LUFKIN, TEXAS 75901 · (936) 637-4900
4077 CROSS PARK DR. STE. 100 · BRYAN, TEXAS 77802 · (979) 776-9700
30340 FM 2978 STE. 650 · THE WOODLANDS, TEXAS 77354 · (936) 367-4100

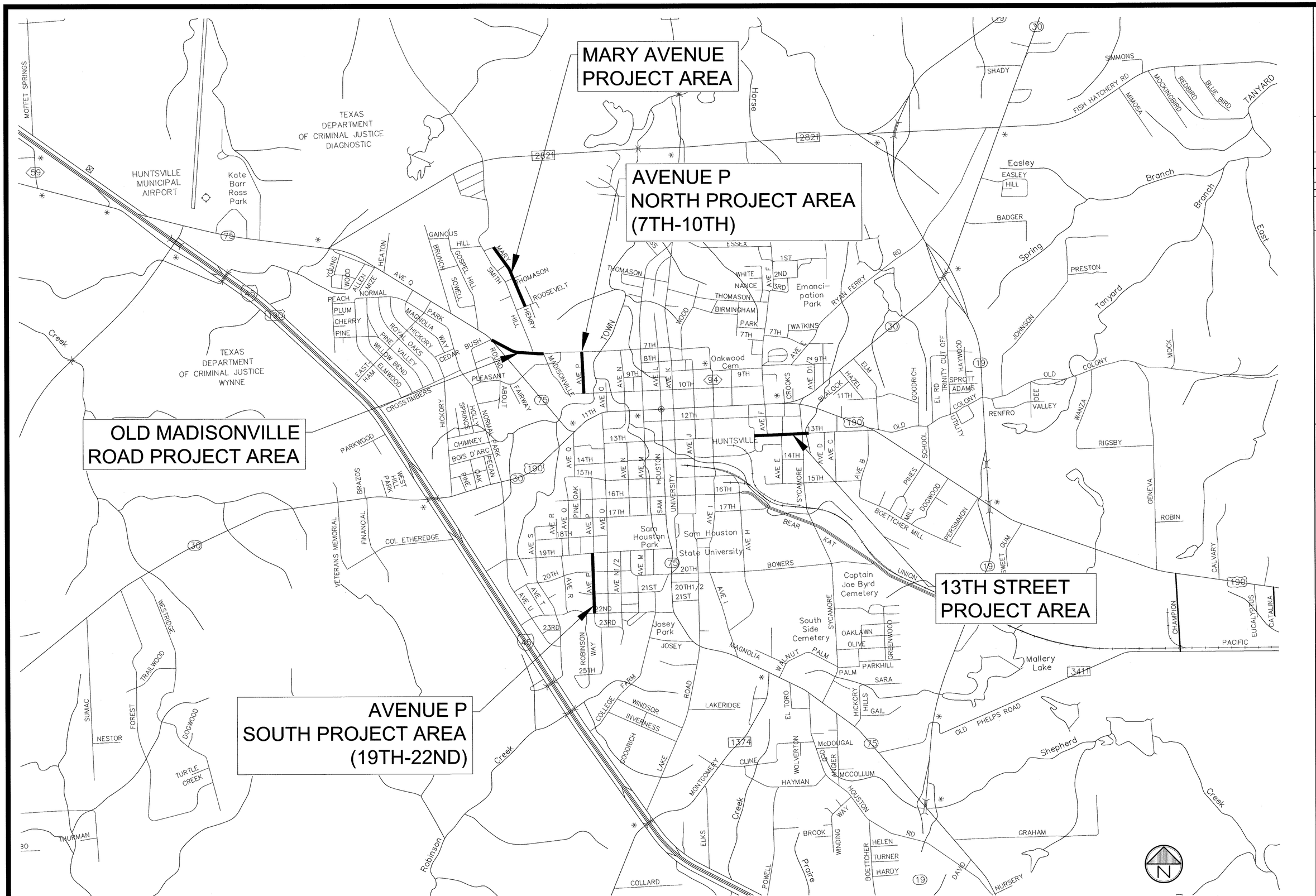
STATE OF TEXAS — JAMES M. LIGHT — 96494 — LICENSED PROFESSIONAL ENGINEER

James M. Light 10-10-2016

Miscellaneous Waterline Replacement Project
City of Huntsville
Huntsville, Texas
Project Notes and Information

CONTRACT NO. 197026

SHEET NO. C1.0



Project Location Map - City Of Huntsville

1"=1000'-0"

1

NO.	DATE	ISSUED FOR
1	02-16-16	Review
2	08-26-16	Final
3	----	----
4	----	----

D:\197\197026\197026-C1.1-Project Location Map.dwg

DRAWN BY: DKE | APPV'D BY: JML | PLOT SCALE: 1:1

TBPE FIRM REGISTRATION: #413

TBPLS FIRM REGISTRATION: #10110901

© 2015 ALL RIGHTS RESERVED BY GOODWIN-LASITER, INC. UNAUTHORIZED USE OR REPRODUCTION IS PROHIBITED WITHOUT WRITTEN CONSENT FROM GOODWIN-LASITER, INC.

GLS
GOODWIN·LASITER·STRONG
ENGINEERS · SURVEYORS · PLANNERS
1609 S. CHESTNUT DR. STE. 202 - LUFKIN, TEXAS 75901 (936) 637-4800
4077 CROSS PARK DR. STE. 100 - BRYAN, TEXAS 77802 (979) 776-9700

STATE OF TEXAS
JAMES M. LIGHT
98494
LICENSED
PROFESSIONAL ENGINEER

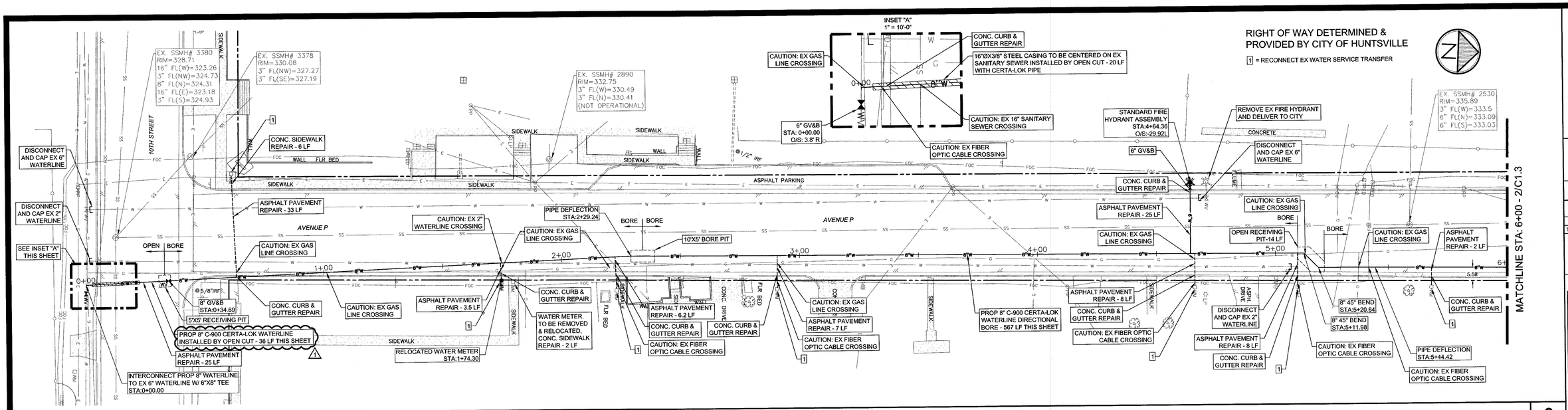
Miscellaneous Waterline Replacement Project

City of Huntsville
Huntsville, Texas
Project Location Map

CONTRACT NO. 197026

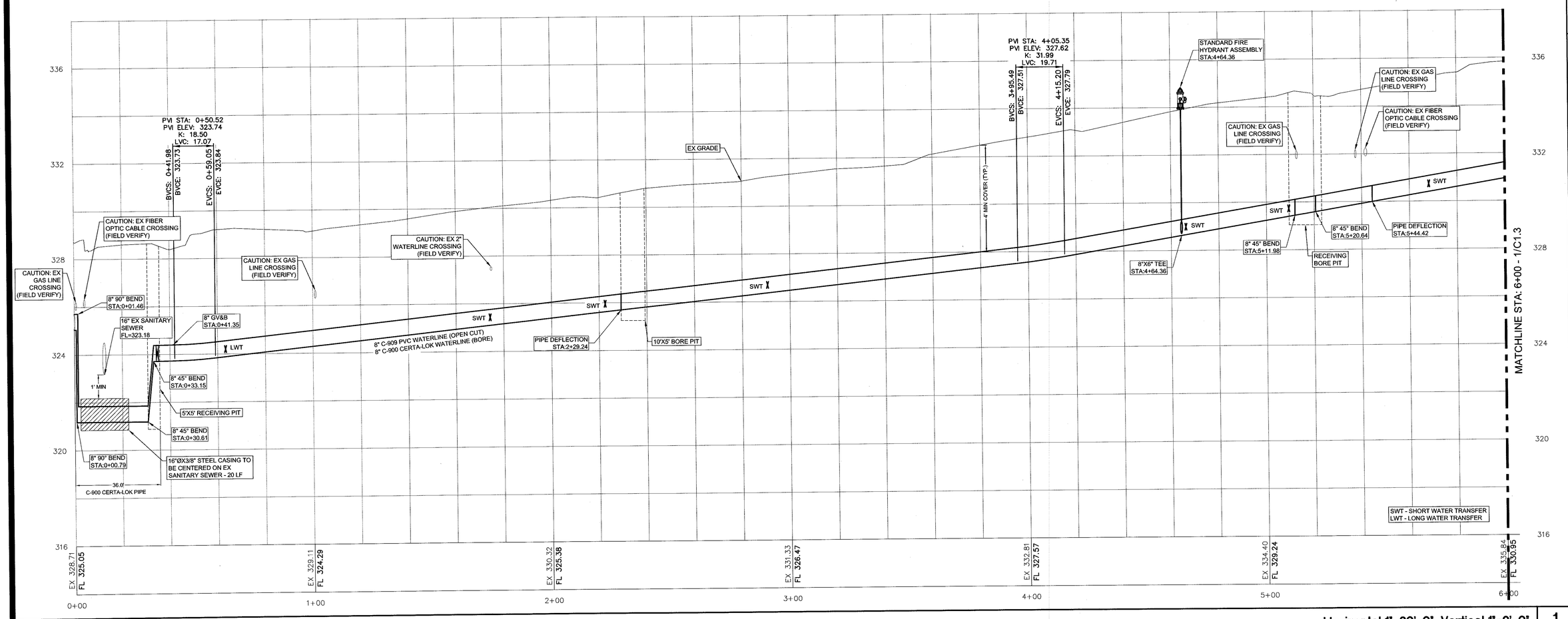
SHEET NO.

C1.1



Avenue P (North Area) Waterline Plan

1"=20'-0" | 2



Avenue P (North Area) Waterline Profile

Horizontal 1"=20'-0", Vertical 1"=2'-0" | 1

NO.	DATE	ISSUED FOR
1	02-16-16	Review
2	08-26-16	Final
3	10-06-16	Revision 1
4		

D:\197\197026\197026-C1.2-Ave P North Waterline Pl

DRAWN BY:	APPV'D BY:	PLOT SCALE:
DKE	JML	1:1

TBPE FIRM REGISTRATION: #413

TBPLS FIRM REGISTRATION: #10110901

© 2016 ALL RIGHTS RESERVED BY GOODWIN-LASITER, INC. UNAUTHORIZED USE OR REPRODUCTION IS PROHIBITED WITHOUT WRITTEN CONSENT FROM GOODWIN-LASITER, INC.

GLS
GOODWIN-LASITER-STRONG
ENGINEERING · SURVEYING · PLANNING
1609 S. CHESTNUT DR. STE. 202 · LUFKIN, TEXAS 75901 · (936) 637-4500
4077 CROSS PARK DR. STE. 100 · BRYAN, TEXAS 77802 · (979) 776-9700

STATE OF TEXAS
JAMES M. LIGHT
96494
LICENSED
PROFESSIONAL ENGINEER
James M Light
10-10-2016

Miscellaneous Waterline Replacement Project

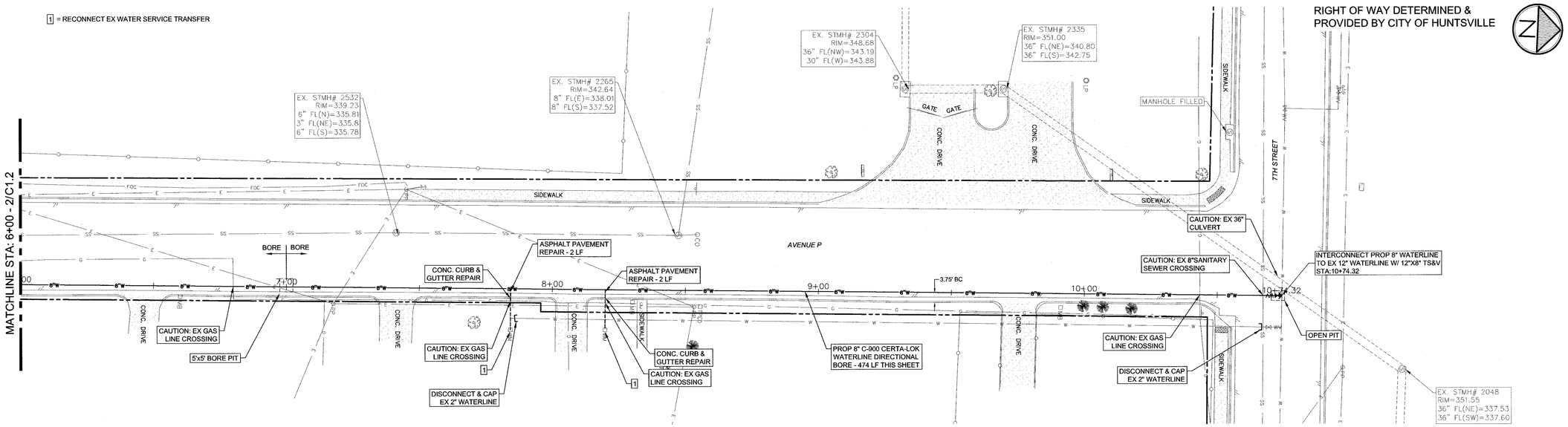
City of Huntsville
Huntsville, Texas

Avenue P (North Area) Waterline Plan & Profile
Sta. 0+00 - Sta. 6+00

CONTRACT NO. 197026

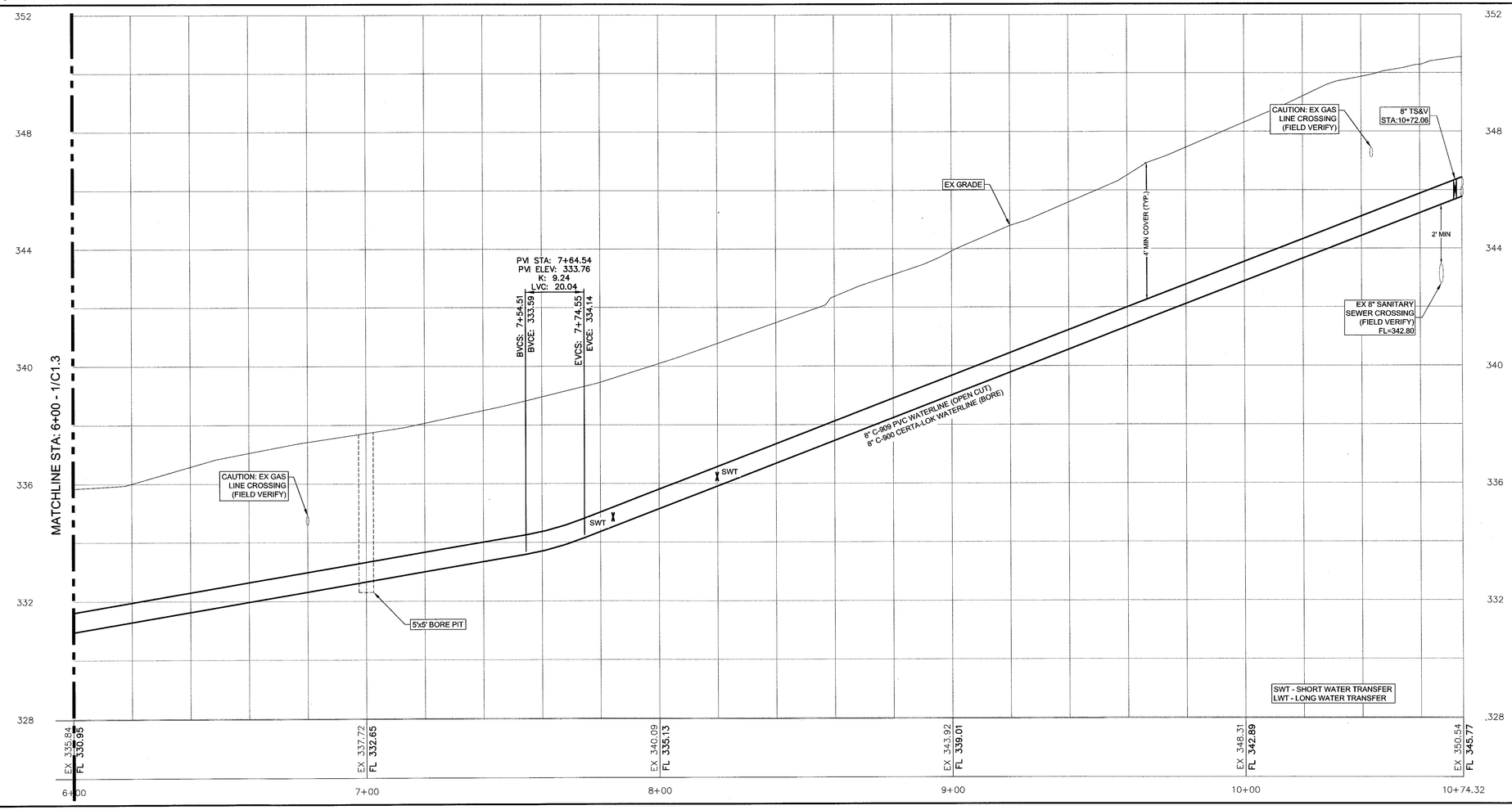
SHEET NO.

C1.2



Avenue P (North Area) Waterline Plan

1"=20'-0" | 2



Avenue P (North Area) Waterline Profile

Horizontal 1"=20'-0", Vertical 1"=2'-0" | 1

NO.	DATE	ISSUED FOR
1	02-16-16	Review
2	08-26-16	Final
3	----	----
4	----	----

D:\197\197026\197026-C1.2-Ave P North Waterline.P

DRAWN BY:	APPV'D BY:	PLOT SCALE:
DKE	JML	1:1

TBPE FIRM REGISTRATION: #413

TBPLS FIRM REGISTRATION: #10110901

© 2016 ALL RIGHTS RESERVED BY GOODWIN-LASITER, INC. UNAUTHORIZED USE OR REPRODUCTION IS PROHIBITED WITHOUT WRITTEN CONSENT FROM GOODWIN-LASITER, INC.

GLS
GOODWIN-LASITER-STRONG
ENGINEERING • SURVEYING • PLANNING
1609 S. CHESTNUT DR. STE. 202 - LUFKIN, TEXAS 75901 - (936) 637-4900
4077 CROSS PARK DR. STE. 100 - BRYAN, TEXAS 77802 - (979) 776-9700

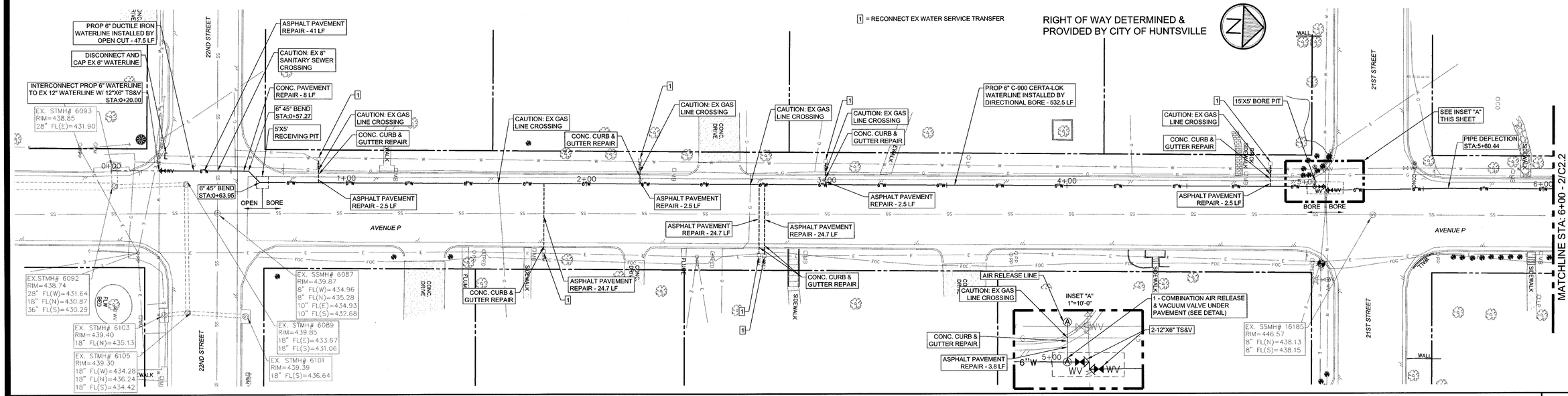
STATE OF TEXAS
JAMES M. LIGHT
96494
LICENSED
PROFESSIONAL ENGINEER
8-27-2016

Miscellaneous Waterline Replacement Project
City of Huntsville
Huntsville, Texas
Avenue P (North Area) Waterline Plan & Profile
Sta. 6+00 - End of Project

CONTRACT NO. 197026

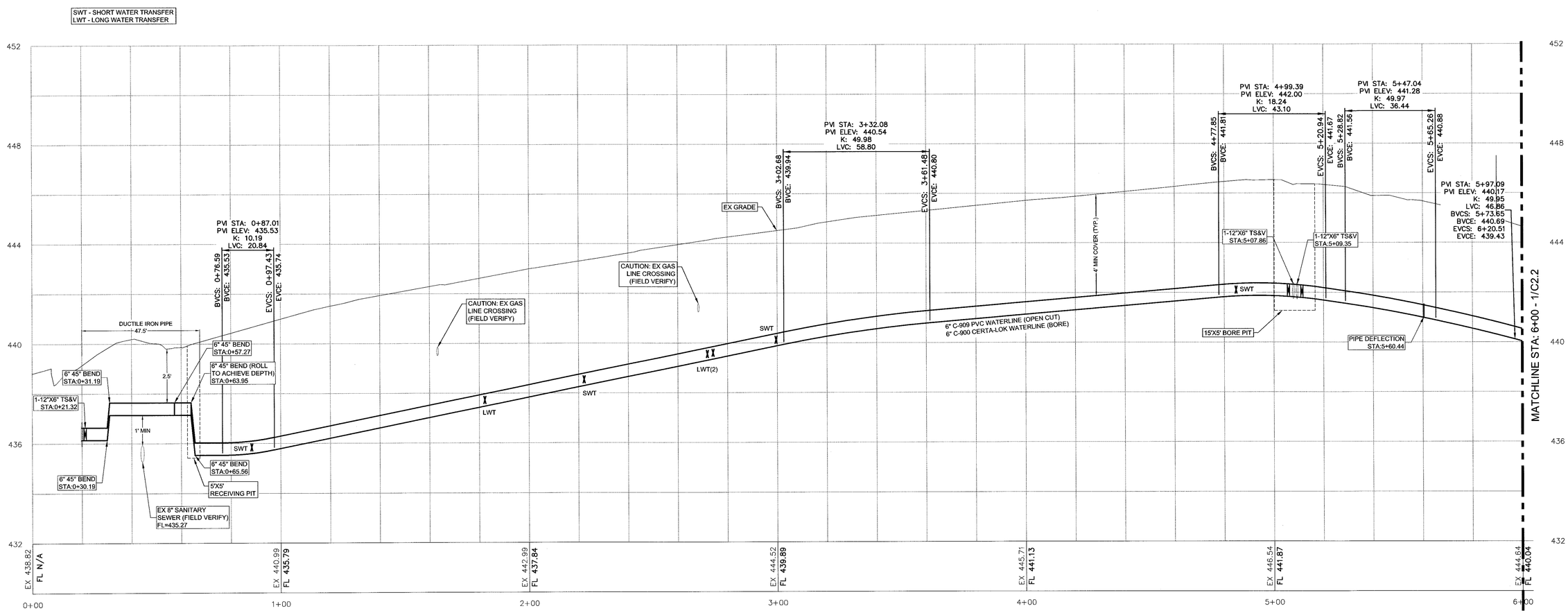
SHEET NO.

C1.3



Avenue P (South Area) Waterline Plan

1"=20'-0" | 2



Avenue P (South Area) Waterline Profile

Horizontal 1"=20'-0", Vertical 1"=2'-0" | 1

NO.	DATE	ISSUED FOR
1	02-16-16	Review
2	08-26-16	Final
3	----	----
4	----	----

D:\197\197026\197026-C2.1-Ave P South Waterline P...

DRAWN BY: DKE | APPV'D BY: JML | PLOT SCALE: 1:1

TBPE FIRM REGISTRATION: #413

TBPLS FIRM REGISTRATION: #10110901

© 2016 ALL RIGHTS RESERVED BY GOODWIN-LASITER, INC. UNAUTHORIZED USE OR REPRODUCTION IS PROHIBITED WITHOUT WRITTEN CONSENT FROM GOODWIN-LASITER, INC.

GLS
GOODWIN-LASITER-STRONG
ENGINEERING WITH PLANNING & SURVEYING
1609 S. CHESTNUT DR. STE. 202 - LUFKIN, TEXAS 75901 (936) 637-4800
4077 CROSS PARK DR. STE. 100 - BRYAN, TEXAS 77802 (979) 776-9700

STATE OF TEXAS JAMES M. LIGHT 86494 LICENSED PROFESSIONAL ENGINEER
8-25-2016

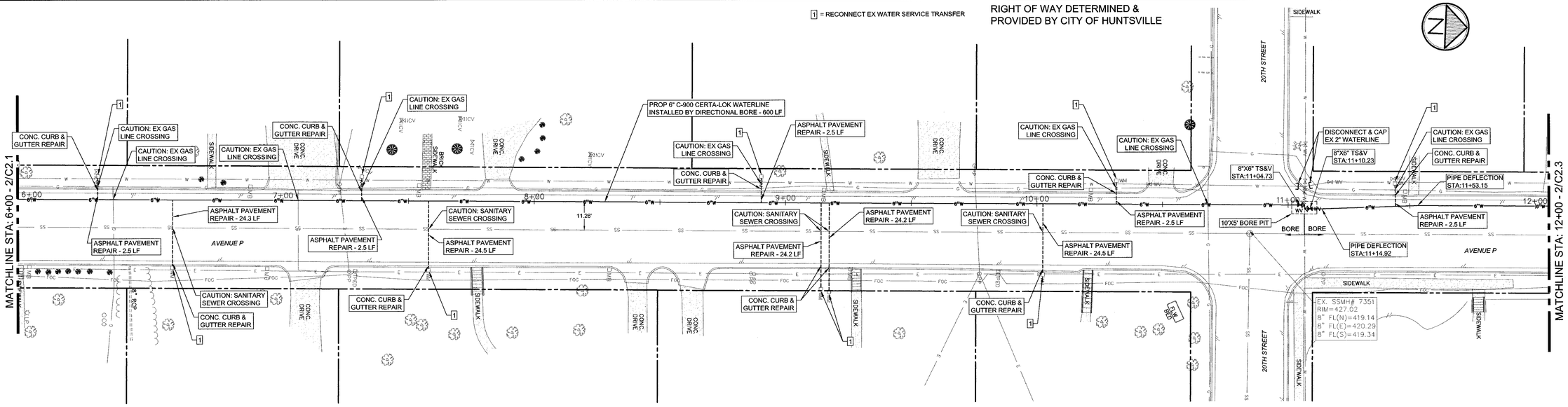
Miscellaneous Waterline Replacement Project

City of Huntsville
Huntsville, Texas

Avenue P (South Area) Waterline Plan & Profile
Sta. 0+00 - Sta. 6+00

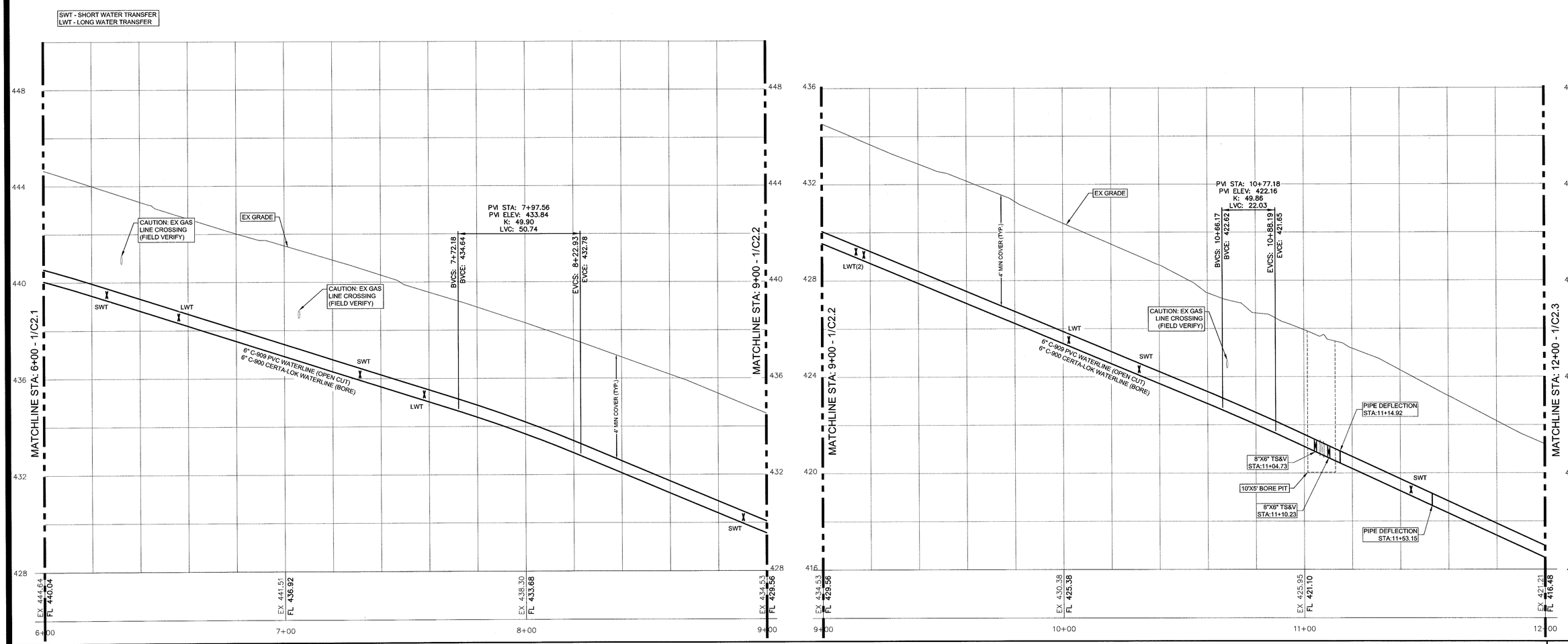
CONTRACT NO. 197026

SHEET NO. C2.1



Avenue P (South Area) Waterline Plan

1"=20'-0" | 2



Avenue P (South Area) Waterline Profile

Horizontal 1"=20'-0", Vertical 1"=2'-0" | 1

NO.	DATE	ISSUED FOR
1	02-16-16	Review
2	08-26-16	Final
3	----	----
4	----	----

D:\197\197026\197026-C2.1-Ave P South Waterline Pl

DRAWN BY: DKE | APP'D BY: JML | PLOT SCALE: 1:1

TBPE FIRM REGISTRATION: #413

TBPLS FIRM REGISTRATION: #10110901

© 2016 ALL RIGHTS RESERVED BY GOODWIN-LASITER, INC. UNAUTHORIZED USE OR REPRODUCTION IS PROHIBITED WITHOUT WRITTEN CONSENT FROM GOODWIN-LASITER, INC.

GLS
GOODWIN·LASITER·STRONG
ENGINEERING · SURVEYING · PLANNING
1609 S. CHESTNUT DR. STE. 202 - LUFKIN, TEXAS 75901 - (936) 637-4900
4077 CROSS PARK DR. STE. 100 - BRYAN, TEXAS 77802 - (979) 776-9700

STATE OF TEXAS · JAMES M. LIGHT · 96494 · LICENSED · PROFESSIONAL ENGINEER

9-26-2016

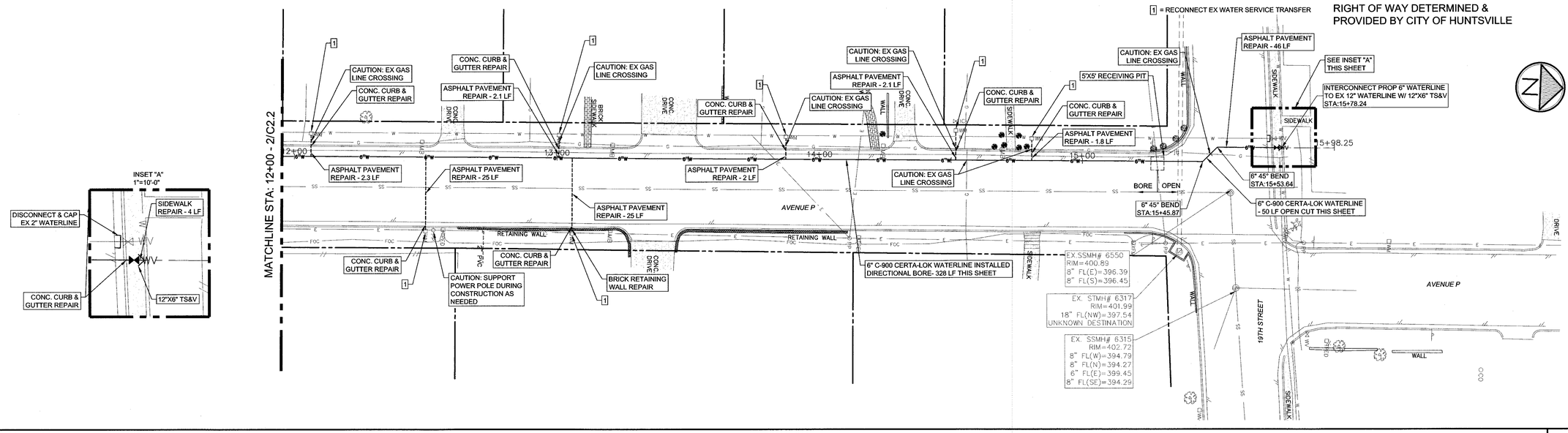
Miscellaneous Waterline Replacement Project

City of Huntsville
Huntsville, Texas

Avenue P (South Area) Waterline Plan & Profile
Sta. 6+00 - Sta. 12+00

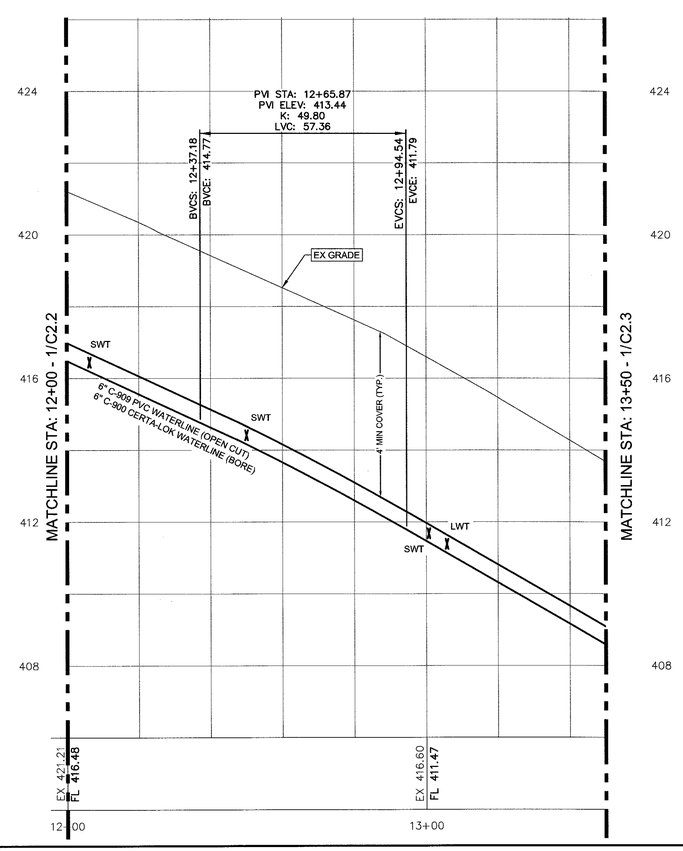
CONTRACT NO. 197026

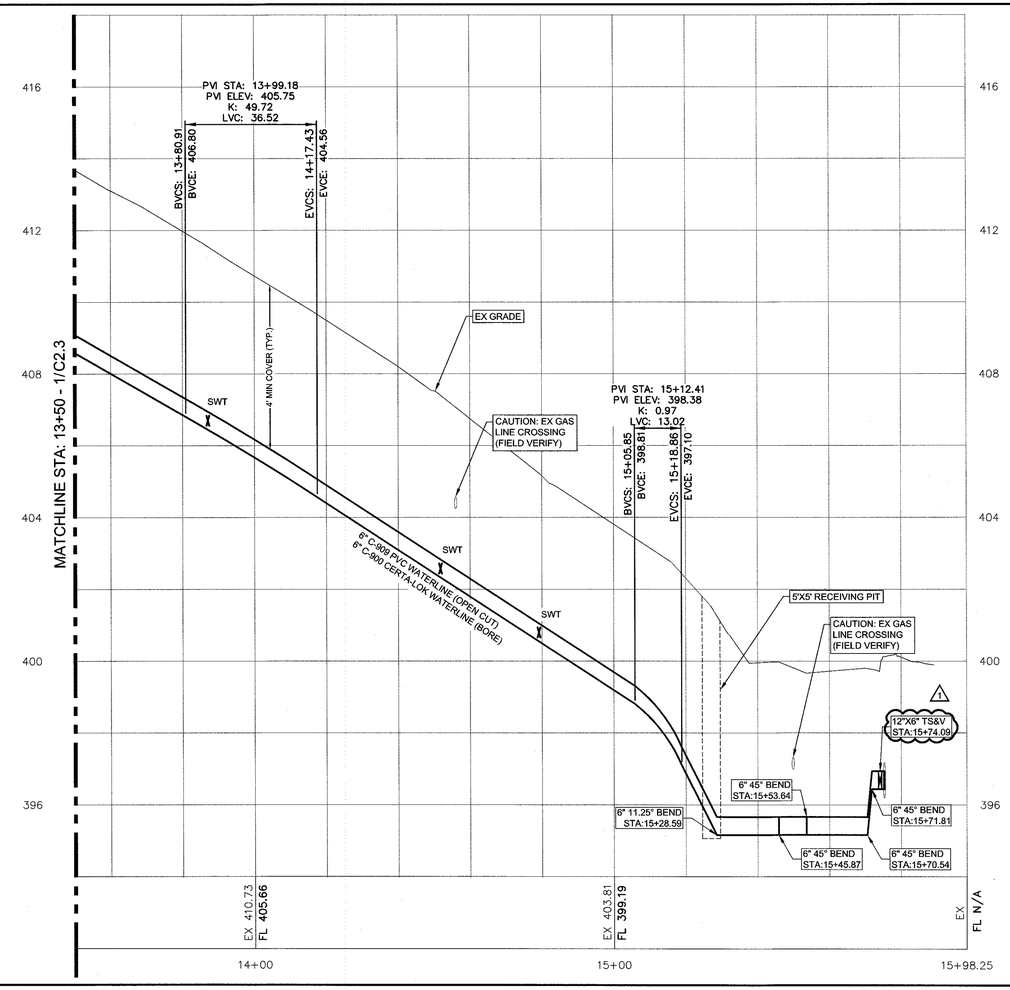
SHEET NO. C2.2



Avenue P (South Area) Waterline Plan

1"=20'-0" | 2





Avenue P (South Area) Waterline Profile

Horizontal 1"=20'-0", Vertical 1"=2'-0" | 1

NO.	DATE	ISSUED FOR
1	02-16-16	Review
2	08-26-16	Final
3	10-06-16	Revision 1
4	----	----

D:\197\197026\197026-C2.1-Ave P South Waterline P

DRAWN BY: DKE | APPV'D BY: JML | PLOT SCALE: 1:1

TBPE FIRM REGISTRATION: #413

TBPLS FIRM REGISTRATION: #10110901

© 2016 ALL RIGHTS RESERVED BY GOODWIN-LASITER, INC. UNAUTHORIZED USE OR REPRODUCTION IS PROHIBITED WITHOUT WRITTEN CONSENT FROM GOODWIN-LASITER, INC.

GLS
GOODWIN·LASITER·STRONG
ENGINEERING · ARCHITECTURE · INTERIOR DESIGN · SURVEYING
1609 S. CHESTNUT DR. STE. 202 · LUFKIN, TEXAS 75901 · (936) 597-4500
4727 CENTRAL DR. STE. 110 · BRYAN, TEXAS 77807 · (979) 776-9500

STATE OF TEXAS · JAMES M. LIGHT · 96494 · LICENSED · PROFESSIONAL ENGINEER

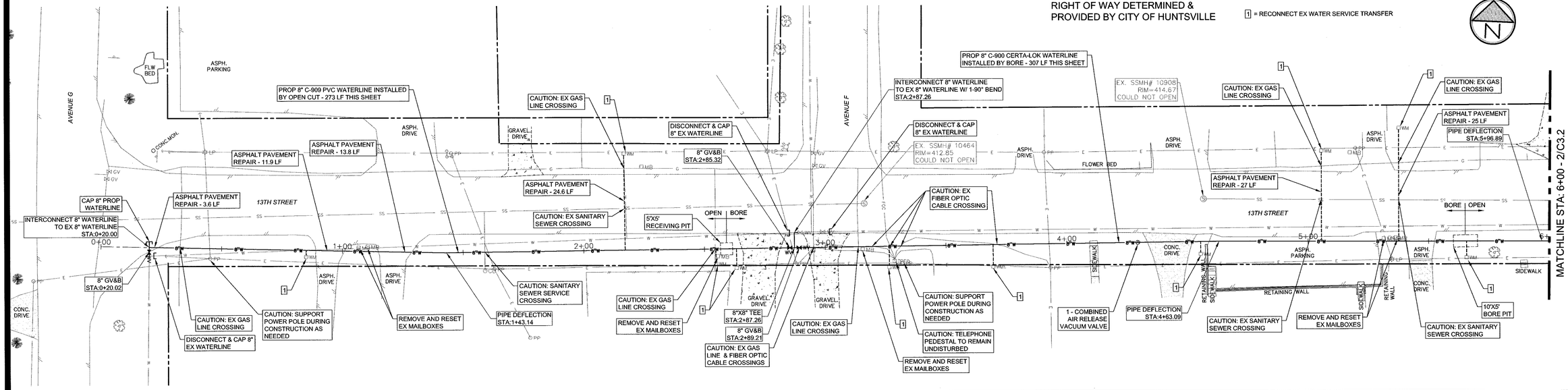
James M Light
10-10-2016

Miscellaneous Waterline Replacement Project
City of Huntsville
Huntsville, Texas
Avenue P (South Area) Waterline Plan & Profile
Sta. 12+00 - End of Project

CONTRACT NO. 197026

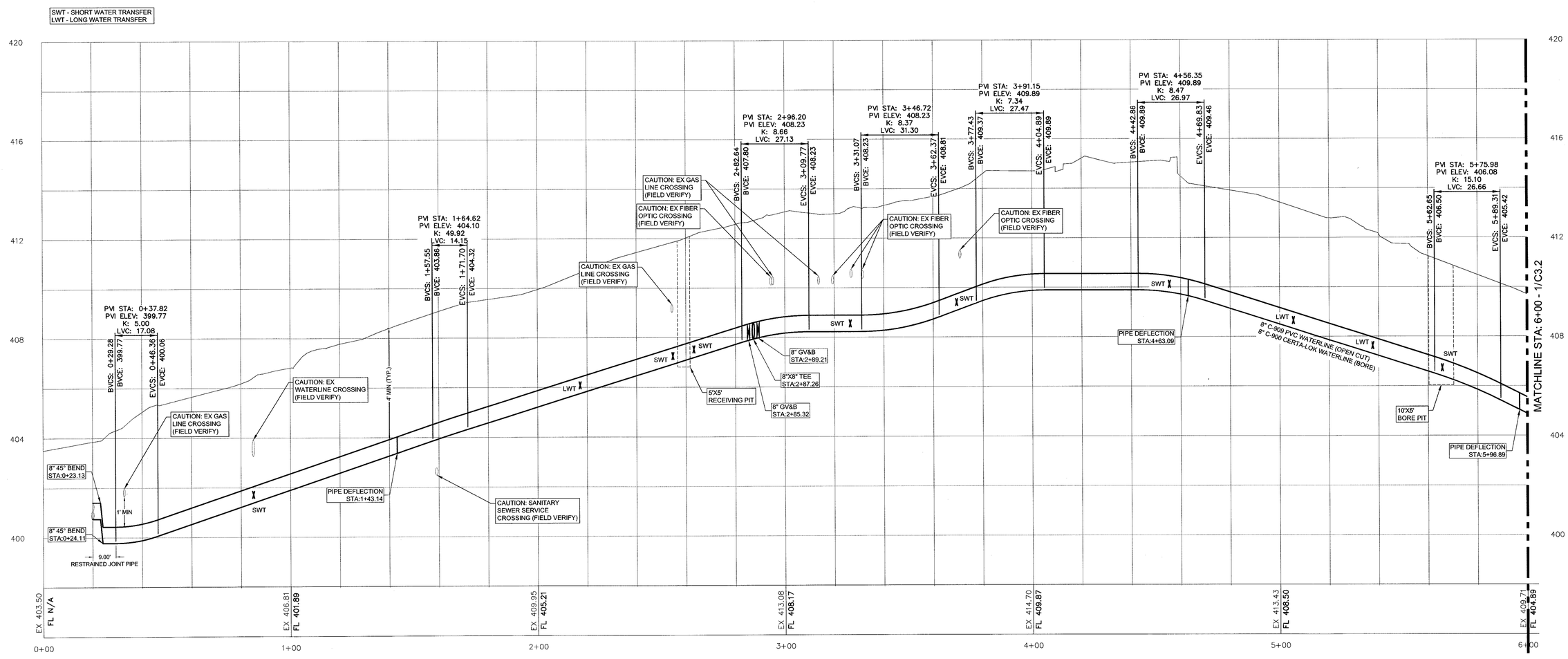
SHEET NO.

C2.3



13th Street Waterline Plan

1"=20'-0" | 2



13th Street Waterline Profile

Horizontal 1"=20'-0", Vertical 1"=2'-0" | 1

NO.	DATE	ISSUED FOR
1	02-16-16	Review
2	08-26-16	Final
3	----	----
4	----	----

D:\197\197026\197026-C3.1-13th Street Waterline Plo & P

DRAWN BY:	APPV'D BY:	PLOT SCALE:
DKE	JML	1:1

TBPE FIRM REGISTRATION: #413

TBPLS FIRM REGISTRATION: #10110901

© 2016 ALL RIGHTS RESERVED BY GOODWIN-LASITER, INC. UNAUTHORIZED USE OR REPRODUCTION IS PROHIBITED WITHOUT WRITTEN CONSENT FROM GOODWIN-LASITER, INC.

GLS
GOODWIN·LASITER·STRONG
ENGINEERING · SURVEYING · PLANNING · INTERIOR DESIGN · ENVIRONMENTAL
1809 S. CHESTNUT DR. STE. 202 · LUFKIN, TEXAS 75901 · (936) 637-4900
4077 CROSS PARK DR. STE. 100 · BRYAN, TEXAS 77802 · (979) 776-9700

TEXAS REGISTERED PROFESSIONAL ENGINEER JAMES M. LIGHT 96494 LICENSED
8-27-2016

Miscellaneous Waterline Replacement Project

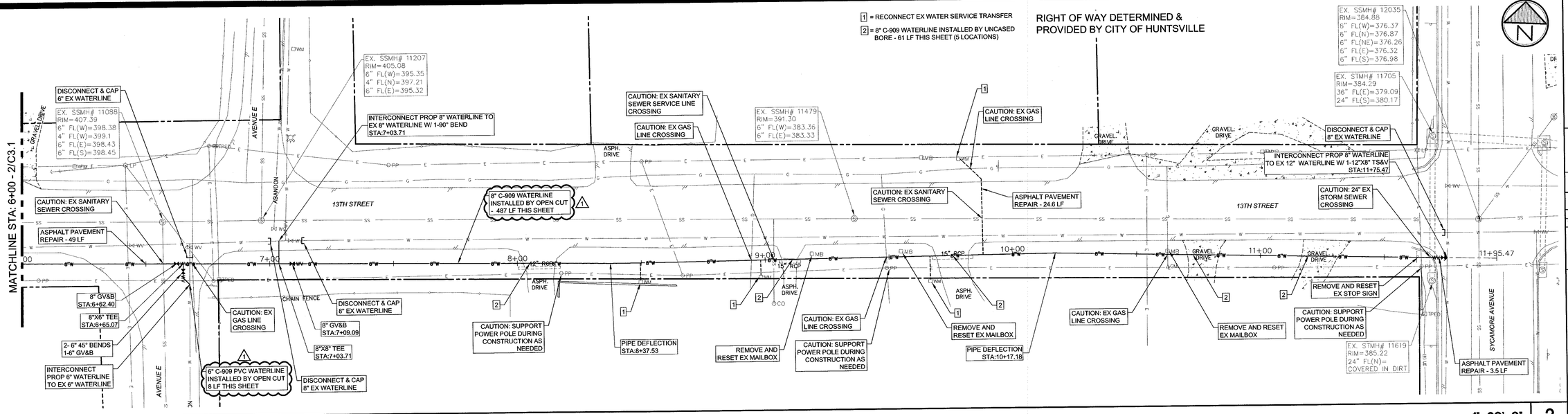
City of Huntsville
Huntsville, Texas

13th Street Waterline Plan & Profile
Sta. 0+00 - Sta. 6+00

CONTRACT NO. 197026

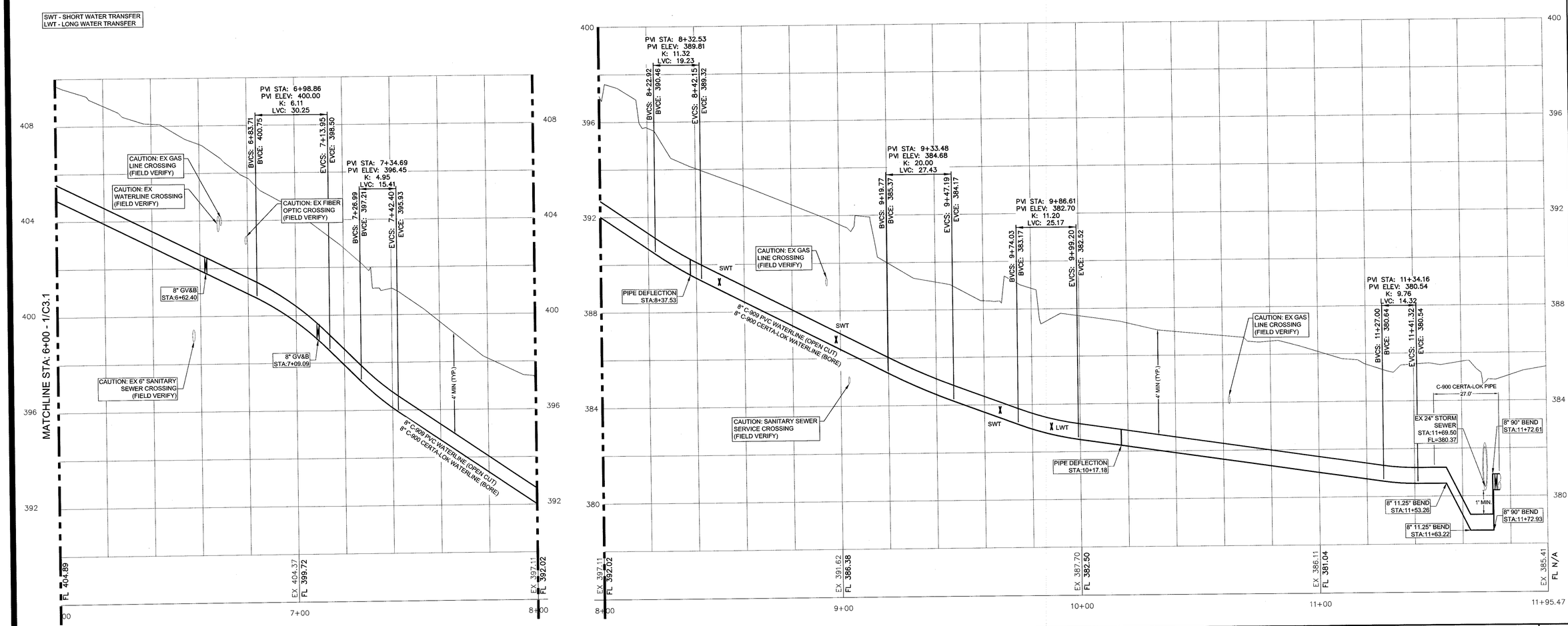
SHEET NO.

C3.1



13th Street Waterline Plan

1"=20'-0" | 2



13th Street Waterline Profile

Horizontal 1"=20'-0", Vertical 1"=2'-0" | 1

NO.	DATE	ISSUED FOR
1	02-16-16	Review
2	08-26-16	Final
3	10-06-16	Revision 1
4		

D:\197\197026\197026-C3.1-13th Street Waterline Plo

DRAWN BY:	APPV'D BY:	PLOT SCALE
DKE	JML	1:1

TBPE FIRM REGISTRATION: #413

TBPLS FIRM REGISTRATION: #10110901

© 2016 ALL RIGHTS RESERVED BY GOODWIN – LASITER, INC. UNAUTHORIZED USE OR REPRODUCTION IS PROHIBITED WITHOUT WRITTEN CONSENT FROM GOODWIN – LASITER, INC.

GLS
GOODWIN–LASITER–STRONG
ENGINEERS • PLANNERS • SURVEYORS
1505 S. CHESTNUT DR. STE. 202 - LUFKIN, TEXAS 75901 - (936) 637-4900
4077 CROSS PARK DR. STE. 100 - BRYAN, TEXAS 77802 - (979) 776-9700

STATE OF TEXAS
JAMES M. LIGHT
96494
LICENSED
PROFESSIONAL ENGINEER
10-10-2016

Miscellaneous Waterline Replacement Project

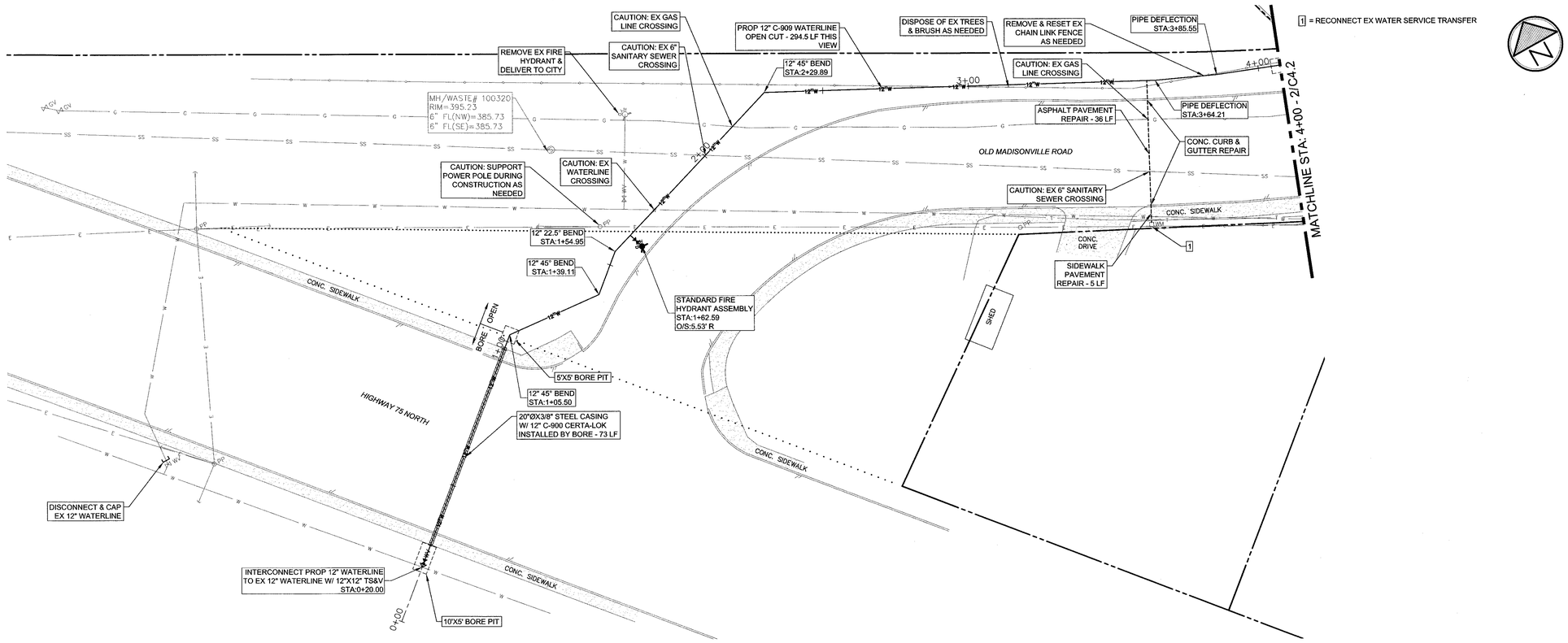
City of Huntsville
Huntsville, Texas

13th Street Waterline Plan & Profile
Sta. 6+00 - End of Project

CONTRACT NO. 197026

SHEET NO.

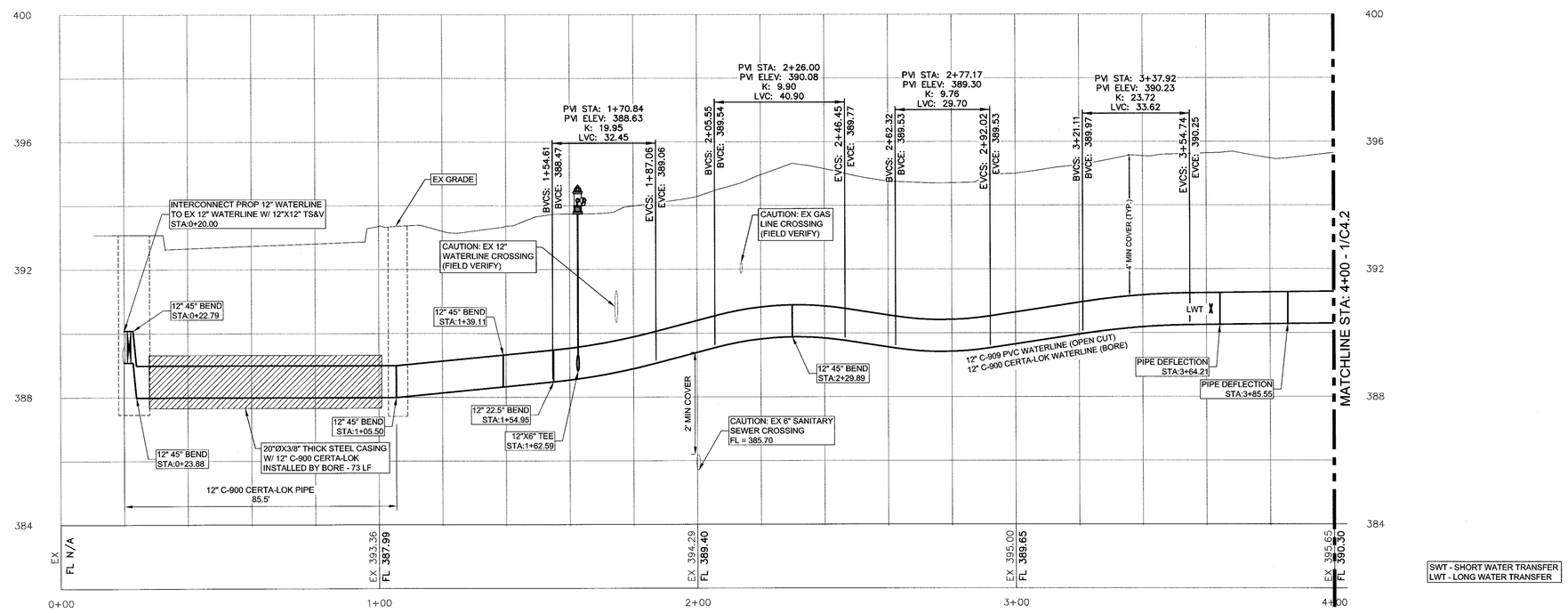
C3.2



TOPOGRAPHIC SURVEY & RIGHT OF WAY
DETERMINED & PROVIDED BY CITY OF HUNTSVILLE

Old Madisonville Road Waterline Plan

1"=20'-0" | 2



SWT - SHORT WATER TRANSFER
LWT - LONG WATER TRANSFER

Old Madisonville Road Waterline Profile

Horizontal 1"=20'-0", Vertical 1"=2'-0" | 1

NO.	DATE	ISSUED FOR
1	02-16-16	Review
2	08-26-16	Final
3	----	----
4	----	----

D:\197\197026\197026-C4.1-Old Madisonville Rd Waterline Pl

DRAWN BY: DKE | APPV'D BY: JML | PLOT SCALE: 1:1

TBPE FIRM REGISTRATION: #413
TBPLS FIRM REGISTRATION: #10110901

© 2016 ALL RIGHTS RESERVED BY GOODWIN-LASITER, INC. UNAUTHORIZED USE OR REPRODUCTION IS PROHIBITED WITHOUT WRITTEN CONSENT FROM GOODWIN-LASITER, INC.

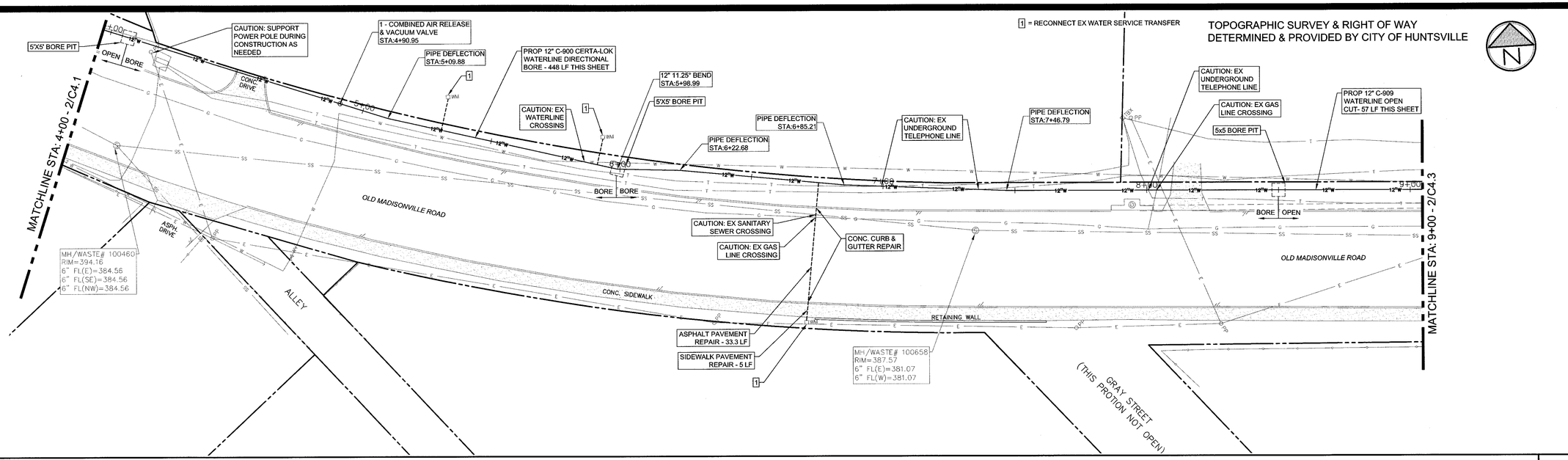
GLS
GOODWIN-LASITER-STRONG
ENGINEERING • SURVEYING • ENVIRONMENTAL
1608 S. CHESTNUT DR. STE. 202 - LUFKIN, TEXAS 75901 - (936) 637-4800
4077 CROSS PARK DR. STE. 100 - BRYAN, TEXAS 77802 - (979) 776-9700

STATE OF TEXAS
JAMES M. LIGHT
98484
LICENSED PROFESSIONAL ENGINEER
8-27-2016

Miscellaneous Waterline Replacement Project
City of Huntsville
Huntsville, Texas
Old Madisonville Road Waterline Plan & Profile
Sta. 0+00 - Sta. 4+00

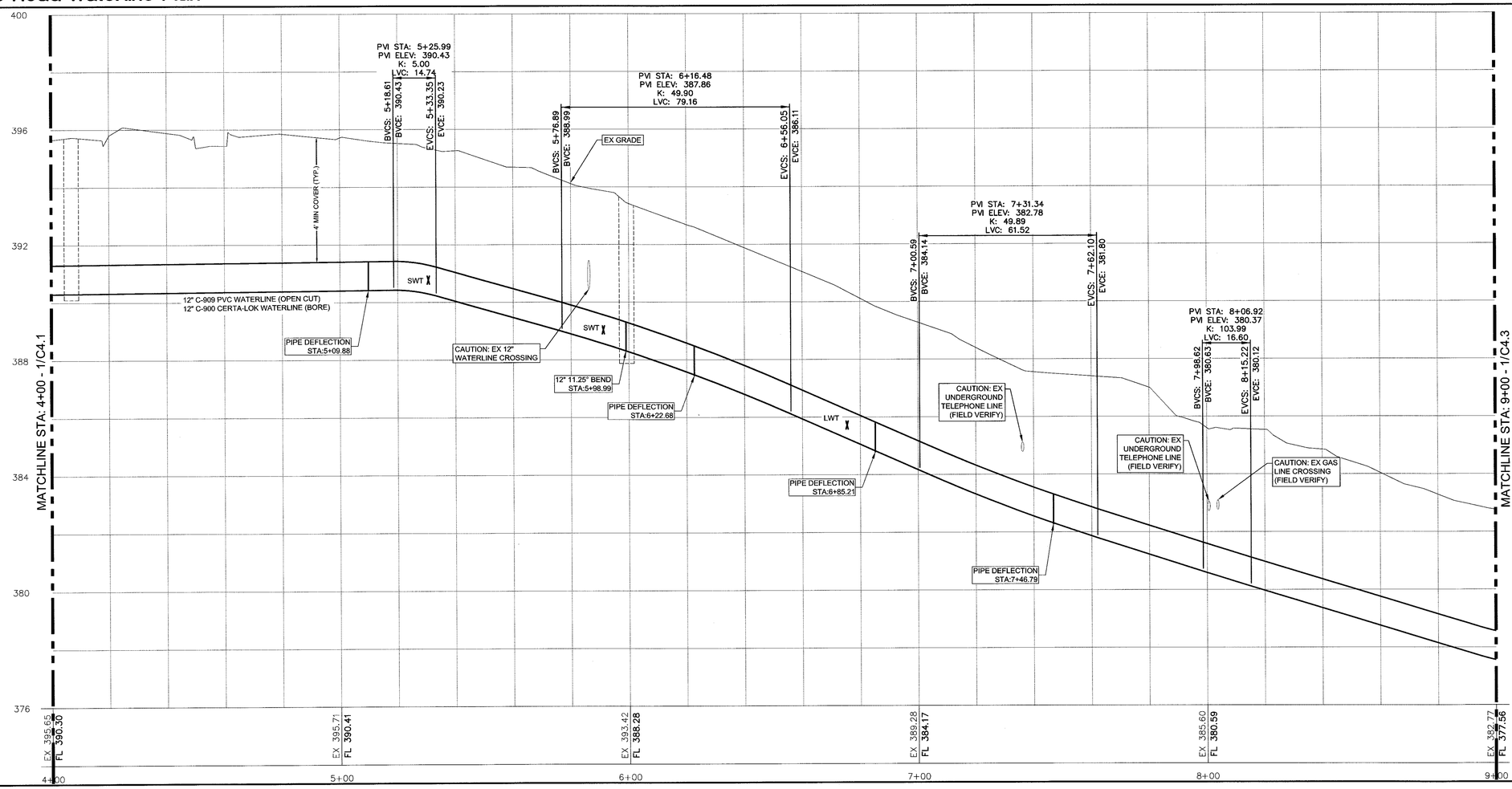
CONTRACT NO. 197026

SHEET NO.
C4.1



Old Madisonville Road Waterline Plan

1"=20'-0" | 2



SWT - SHORT WATER TRANSFER
LWT - LONG WATER TRANSFER

Old Madisonville Road Waterline Profile

Horizontal 1"=20'-0", Vertical 1"=2'-0" | 1

NO.	DATE	ISSUED FOR
1	02-16-16	Review
2	08-26-16	Final
3	----	----
4	----	----

D:\197\197026\197026-C4.1-Old Madisonville Rd Waterline Pl

DRAWN BY:	APPV'D BY:	PLOT SCALE:
DKE	JML	1:1

TBPE FIRM REGISTRATION: #413
TBPLS FIRM REGISTRATION: #10110901

© 2016 ALL RIGHTS RESERVED BY GOODWIN-LASITER, INC. UNAUTHORIZED USE OR REPRODUCTION IS PROHIBITED WITHOUT WRITTEN CONSENT FROM GOODWIN-LASITER, INC.

GLS
GOODWIN·LASITER·STRONG
ENGINEERING · LAND SURVEYING · ENVIRONMENTAL · INTERIOR DESIGN
1609 S. CHESTNUT DR. STE. 202 - LUFKIN, TEXAS 75901 (936) 637-4900
4077 CROSS PARK DR. STE. 100 - BRYAN, TEXAS 77802 (979) 776-9700

STATE OF TEXAS
JAMES M. LIGHT
96494
LICENSED
PROFESSIONAL ENGINEER
8-29-2016

Miscellaneous Waterline Replacement Project

City of Huntsville
Huntsville, Texas

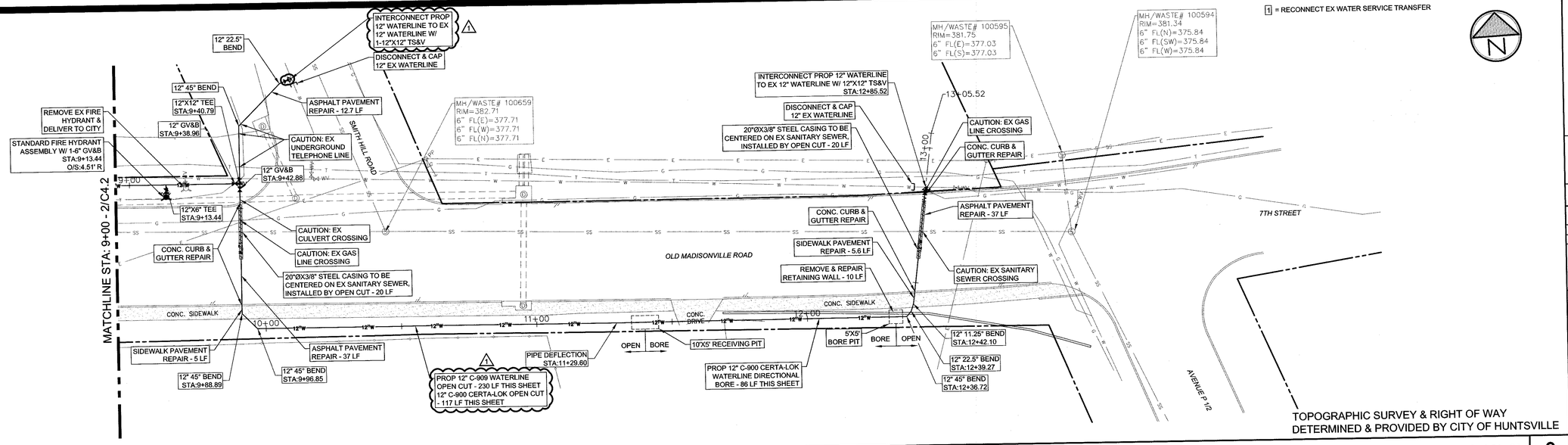
Old Madisonville Road Waterline Plan & Profile

Sta. 4+00 - Sta. 9+00

CONTRACT NO. 197026

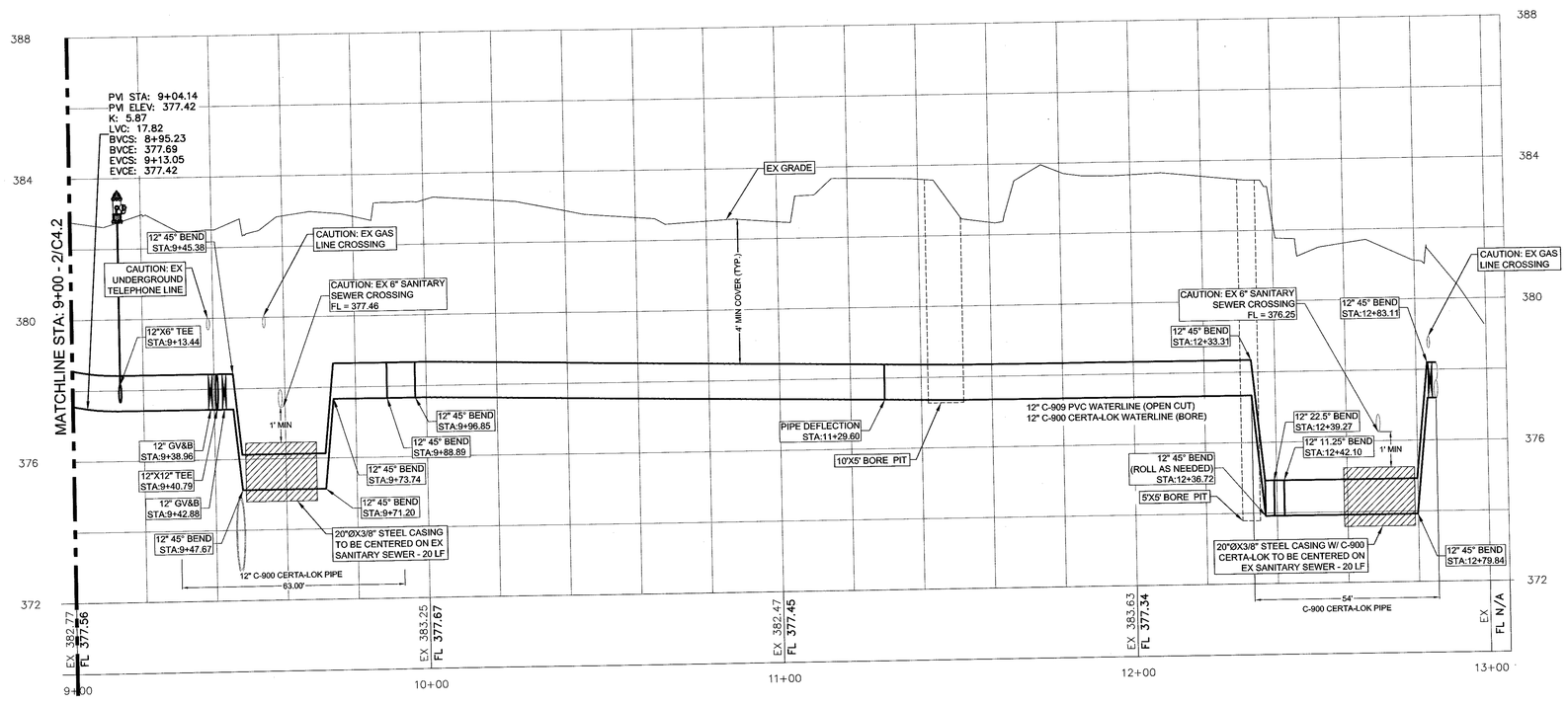
SHEET NO.

C4.2



1"=20'-0" | 2

Old Madisonville Road Waterline Plan



Horizontal 1"=20'-0", Vertical 1"=2'-0" | 1

Old Madisonville Road Waterline Profile

NO.	DATE	ISSUED FOR
1	02-16-16	Review
2	08-26-16	Final
3	10-06-16	Revision 1
4	----	----

D:\197\197026\197026-C4.1-Old Madisonville Rd Water

DRAWN BY:	APP'D BY:	PLOT SCALE:
DKE	JML	1:1

TBPE FIRM REGISTRATION: #413
TBPLS FIRM REGISTRATION: #10110901

© 2016 ALL RIGHTS RESERVED BY GOODWIN-LASITER, INC. UNAUTHORIZED USE OR REPRODUCTION IS PROHIBITED WITHOUT WRITTEN CONSENT FROM GOODWIN-LASITER, INC.

GLS
GOODWIN·LASITER·STRONG
ENGINEERING · ARCHITECTURE · INTERIOR DESIGN · SURVEYING
1609 S. CHESTNUT DR. STE. 500 · LUFKIN, TEXAS · (936) 634-4800
4077 CROSS PARK DR. STE. 100 · BRYAN, TEXAS 77802 · (979) 776-9700

STATE OF TEXAS
JAMES M. LIGHT
96494
LICENSED
PROFESSIONAL ENGINEER
10-10-2016

Miscellaneous Waterline Replacement Project
City of Huntsville
Huntsville, Texas
Old Madisonville Road Waterline Plan & Profile
Sta. 9+00 - End of Project

CONTRACT NO. 197026

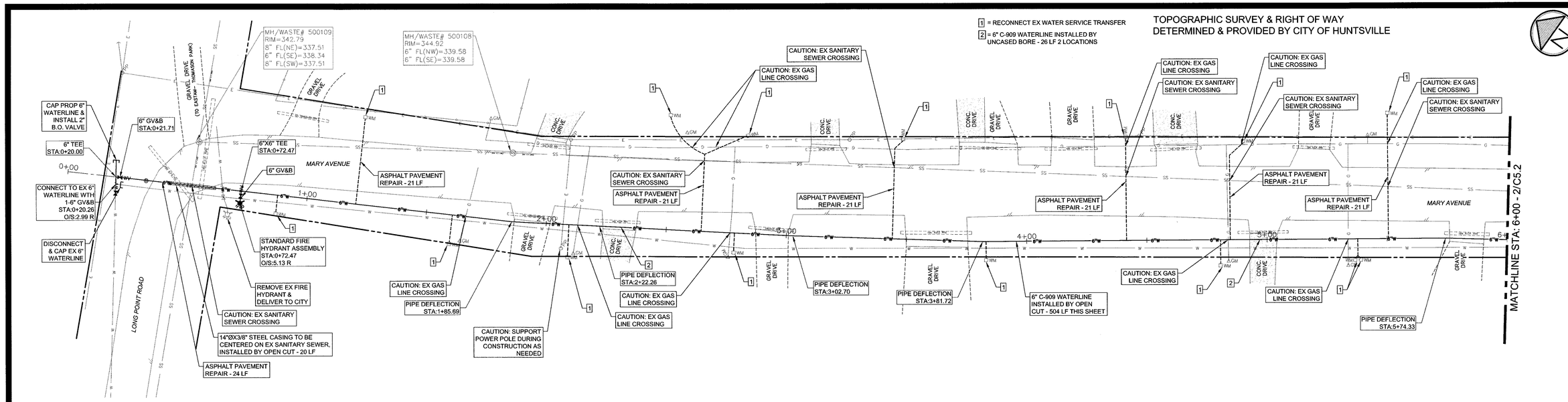
SHEET NO.

C4.3

1 = RECONNECT EX WATER SERVICE TRANSFER

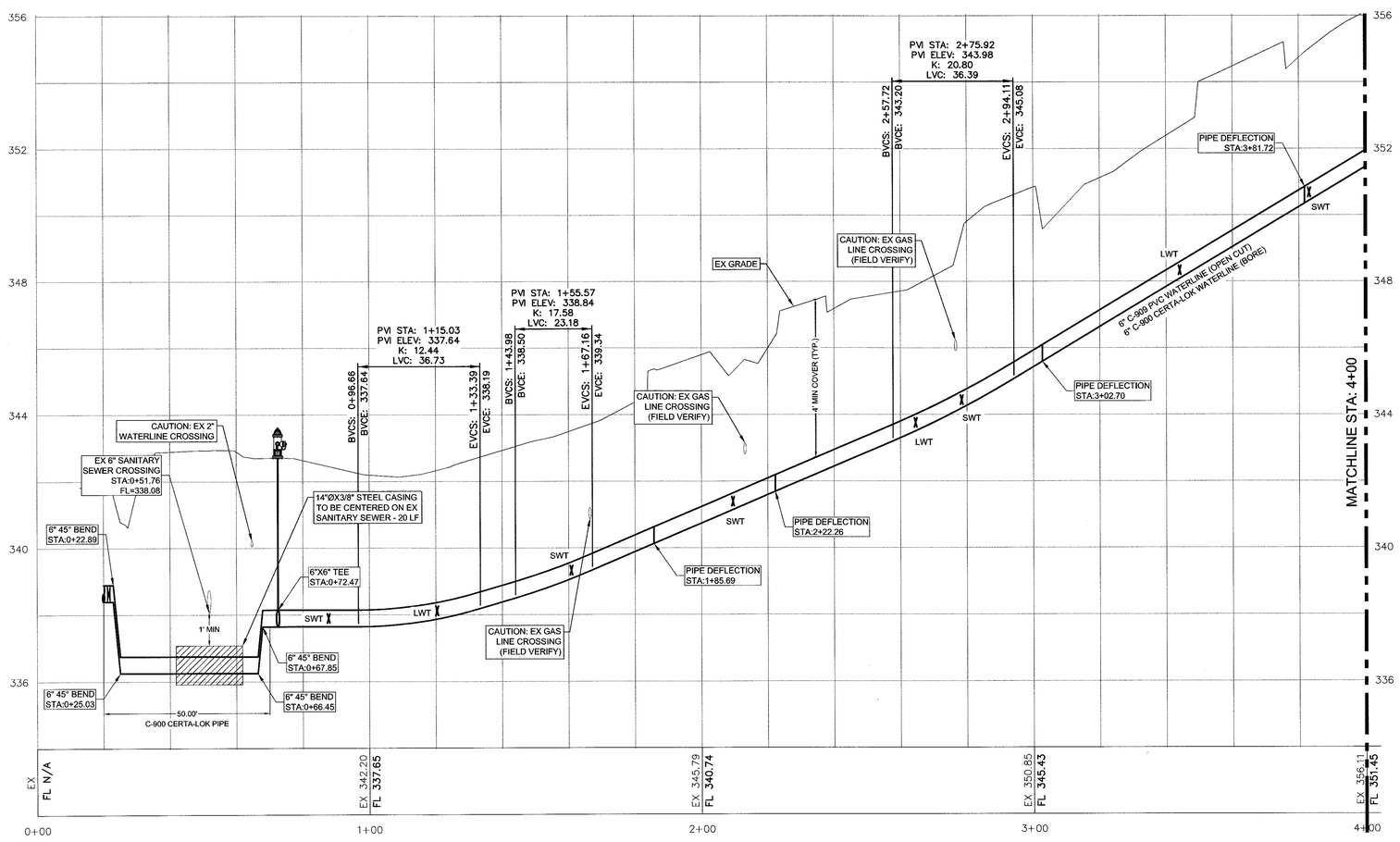
2 = 6" C-909 WATERLINE INSTALLED BY UNCASED BORE - 26 LF 2 LOCATIONS

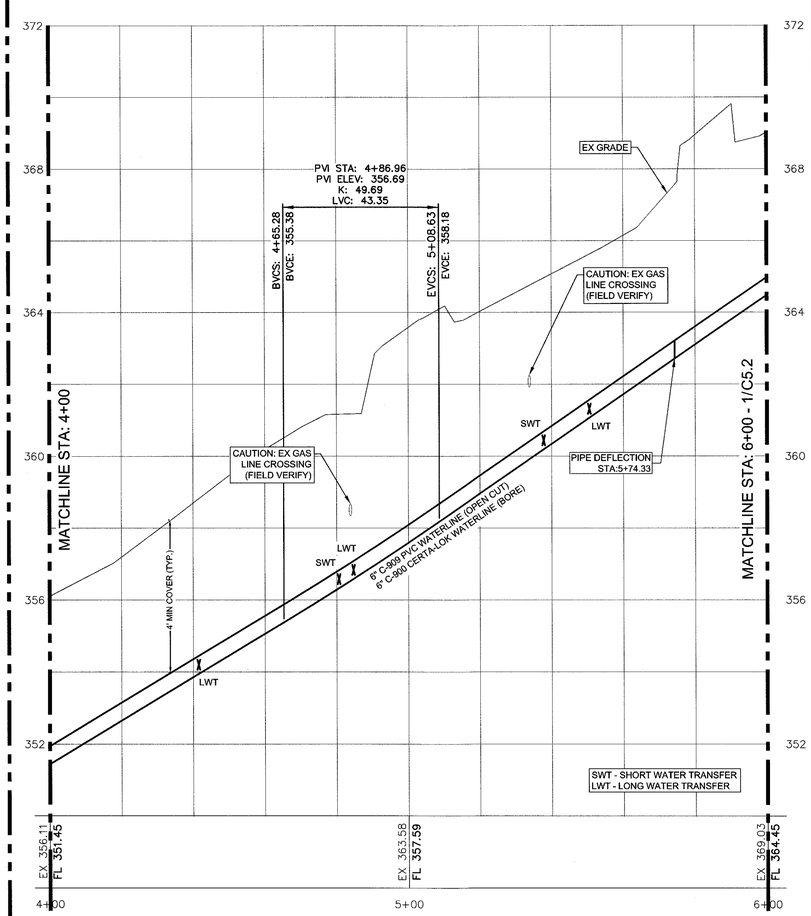
TOPOGRAPHIC SURVEY & RIGHT OF WAY DETERMINED & PROVIDED BY CITY OF HUNTSVILLE



Mary Avenue Waterline Plan

1"=20'-0" | 2





Mary Avenue Waterline Profile

Horizontal 1"=20'-0", Vertical 1"=2'-0" | 1

NO.	DATE	ISSUED FOR
1	02-16-16	Review
2	08-26-16	Final
3	----	----
4	----	----

D:\197\197026\197026-C5.1-Mary Ave Waterline Plan

DRAWN BY:	APPV'D BY:	PLOT SCALE:
DKE	JML	1:1

TBPE FIRM REGISTRATION: #413

TBPLS FIRM REGISTRATION: #10110901

© 2016 ALL RIGHTS RESERVED BY GOODWIN-LASITER, INC. UNAUTHORIZED USE OR REPRODUCTION IS PROHIBITED WITHOUT WRITTEN CONSENT FROM GOODWIN-LASITER, INC.

GLS
GOODWIN-LASITER-STRONG
ENGINEERING · SURVEYING · PLANNING
1609 S. CHESTNUT DR. STE. 202 · LUFKIN, TEXAS 75901 · (936) 637-4800
4077 CROSS PARK DR. STE. 100 · BRYAN, TEXAS 77802 · (979) 776-9700

STATE OF TEXAS · JAMES M. LIGHT · 96494 · LICENSED · PROFESSIONAL ENGINEER
8-27-2016

Miscellaneous Waterline Replacement Project

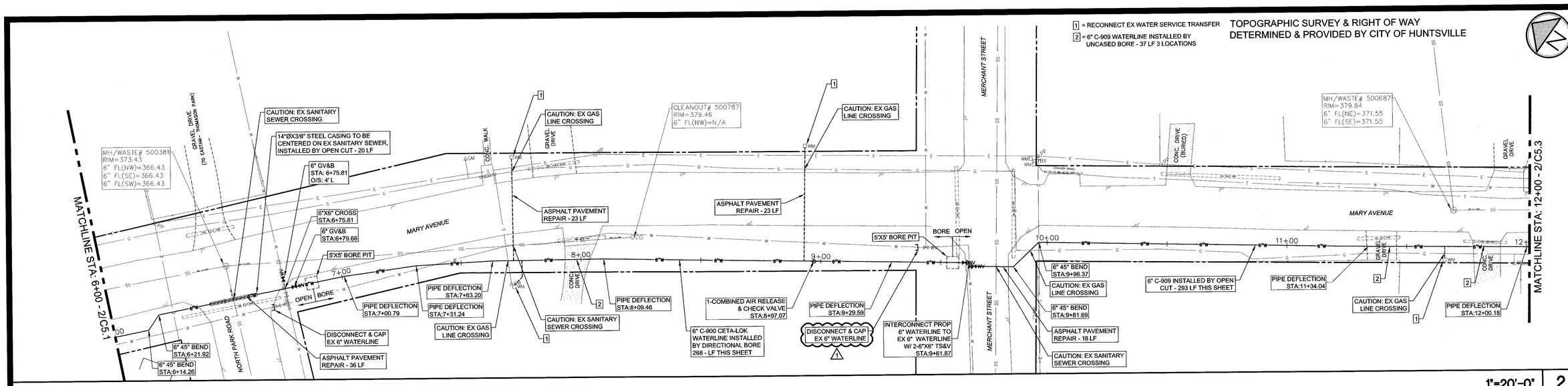
City of Huntsville
Huntsville, Texas

Mary Avenue Waterline Plan & Profile
Sta. 0+00 - Sta. 6+00

CONTRACT NO. 197026

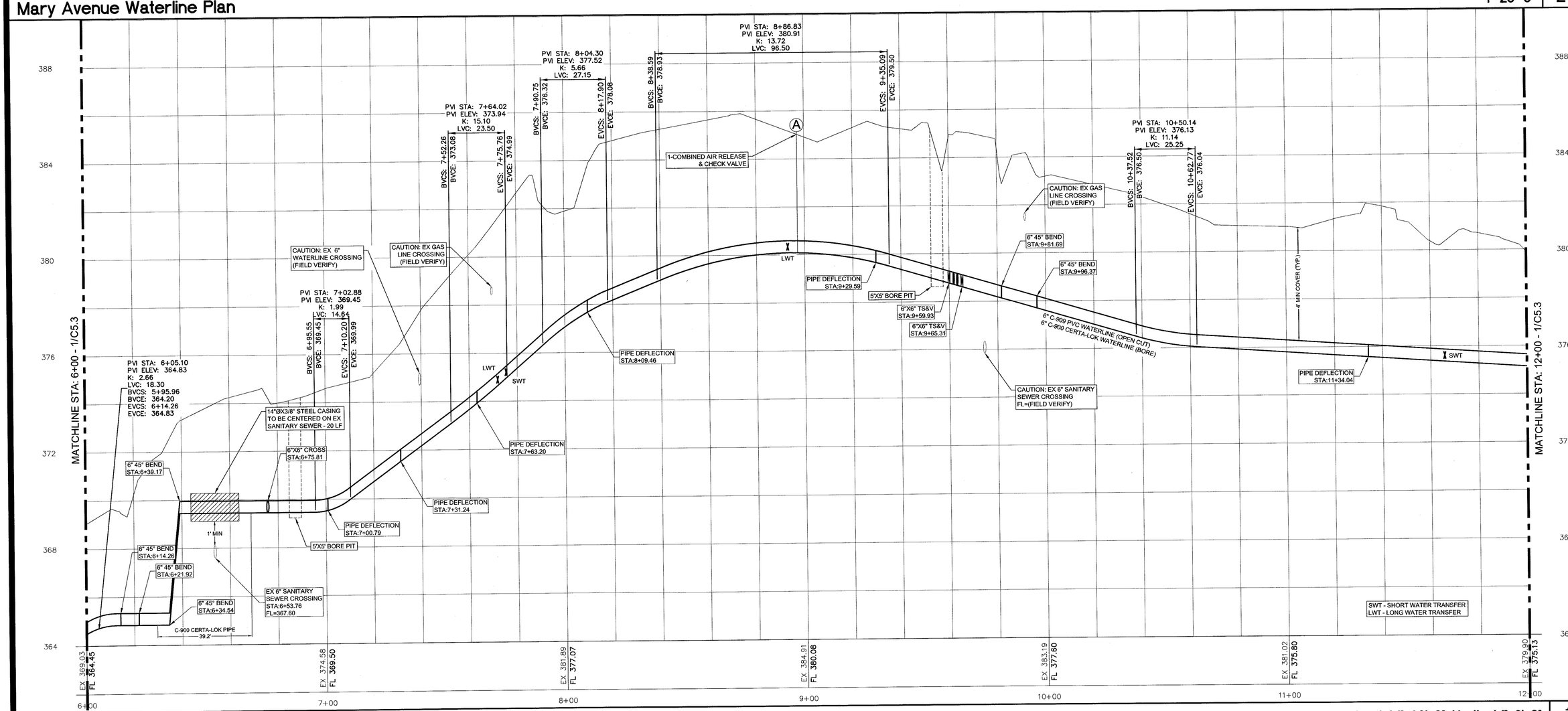
SHEET NO.

C5.1



Mary Avenue Waterline Plan

1"=20'-0" | 2



Mary Avenue Waterline Profile

Horizontal 1"=20'-0", Vertical 1"=2'-0" | 1

NO.	DATE	ISSUED FOR
1	02-16-16	Review
2	08-26-16	Final
3	10-06-16	Revision 1
4	----	----

D:\197\197026\197026-C5.1-Mary Ave Waterline Plan

DRAWN BY: DKE | APPV'D BY: JML | PLOT SCALE: 1:1

TBPE FIRM REGISTRATION: #413

TBPLS FIRM REGISTRATION: #10110901

© 2016 ALL RIGHTS RESERVED BY GOODWIN-LASITER, INC. UNAUTHORIZED USE OR REPRODUCTION IS PROHIBITED WITHOUT WRITTEN CONSENT FROM GOODWIN-LASITER, INC.

GLS
GOODWIN-LASITER-STRONG
ENGINEERING · SURVEYING · MAPPING
1808 S. CHESTNUT DR. STE. 202 - LUFKIN, TEXAS 75901 - (936) 637-4800
4077 CROSS PARK DR. STE. 100 - BRYAN, TEXAS 77802 - (979) 776-9700

STATE OF TEXAS
JAMES M. LIGHT
96494
LICENSED
PROFESSIONAL ENGINEER

James M. Light
10-10-2016

Miscellaneous Waterline Replacement Project

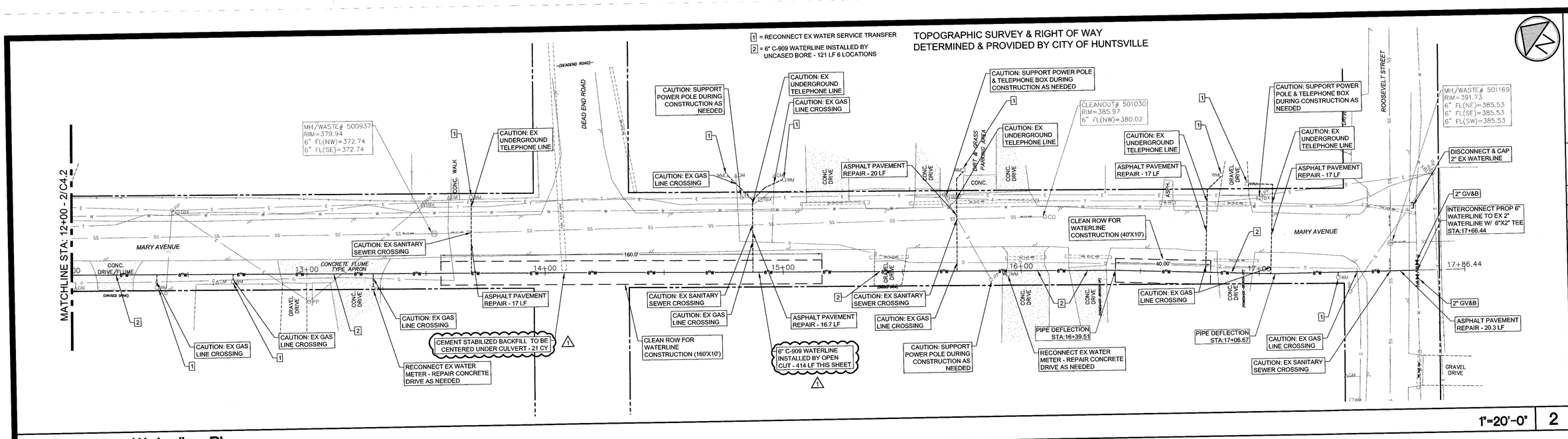
City of Huntsville
Huntsville, Texas

Mary Avenue Waterline Plan & Profile
Sta. 6+00 - Sta. 12+00

CONTRACT NO. 197026

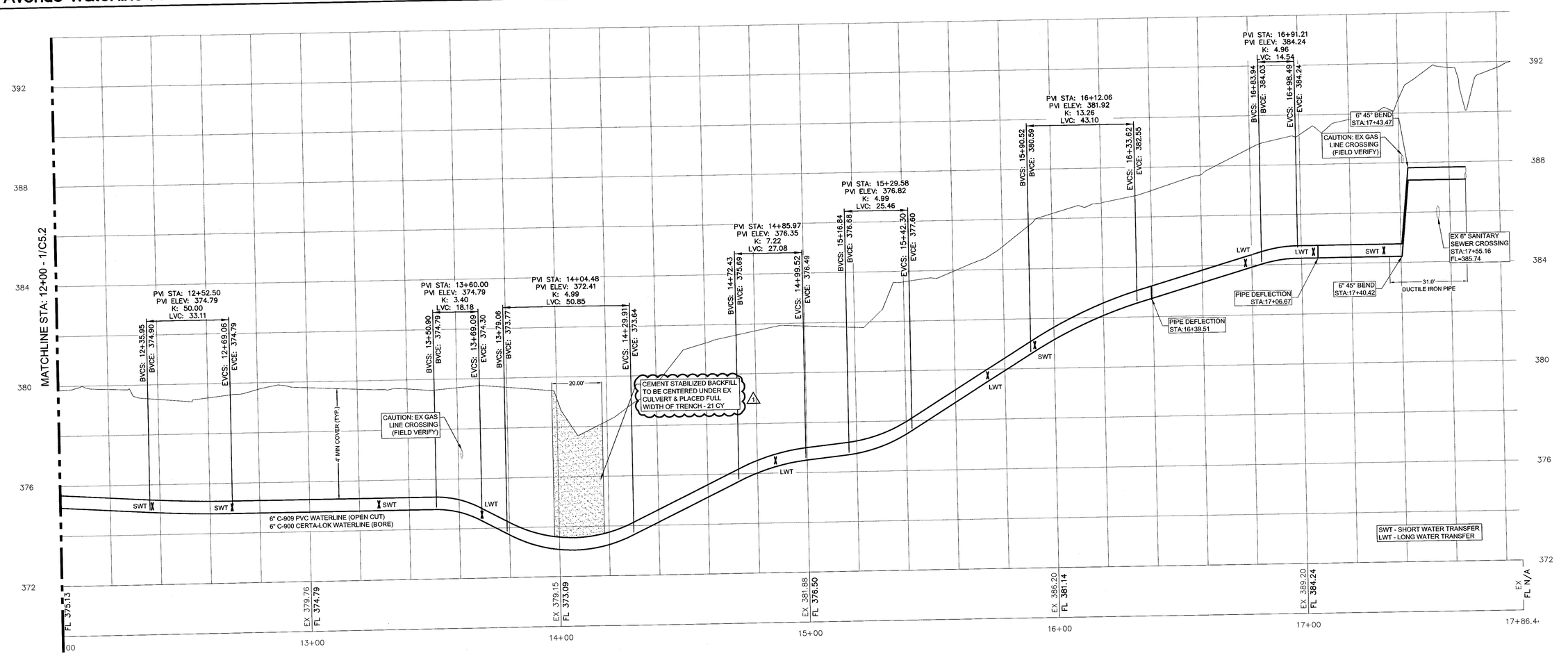
SHEET NO.

C5.2



1"=20'-0" | 2

Mary Avenue Waterline Plan



Horizontal 1"=20'-0", Vertical 1"=2'-0" | 1

Mary Avenue Waterline Profile

NO.	DATE	ISSUED FOR
1	02-16-16	Review
2	08-26-16	Final
3	10-06-16	Revision 1
4	----	----

D:\197\197026\197026-C5.1-Mary Ave Waterline Plan

DRAWN BY: DKE | APPV'D BY: JML | PLOT SCALE: 1:1

TBPE FIRM REGISTRATION: #413

TBPLS FIRM REGISTRATION: #10110901

© 2016 ALL RIGHTS RESERVED BY GOODWIN-LASITER, INC. UNAUTHORIZED USE OR REPRODUCTION IS PROHIBITED WITHOUT WRITTEN CONSENT FROM GOODWIN-LASITER, INC.

GLS
GOODWIN·LASITER·STRONG
ENGINEERING · ARCHITECTURE · INTERIOR DESIGN · SURVEYING
1609 S. CHESTNUT DR STE 202 · LUFKIN, TEXAS 75901 · (936) 875-9900
4077 CROSS PARK DR, STE 100 · BRYAN, TEXAS 77802 · (979) 776-9700

STATE OF TEXAS · JAMES M. LIGHT · 96494 · LICENSED · PROFESSIONAL ENGINEER
10-10-2016

Miscellaneous Waterline Replacement Project

City of Huntsville
Huntsville, Texas

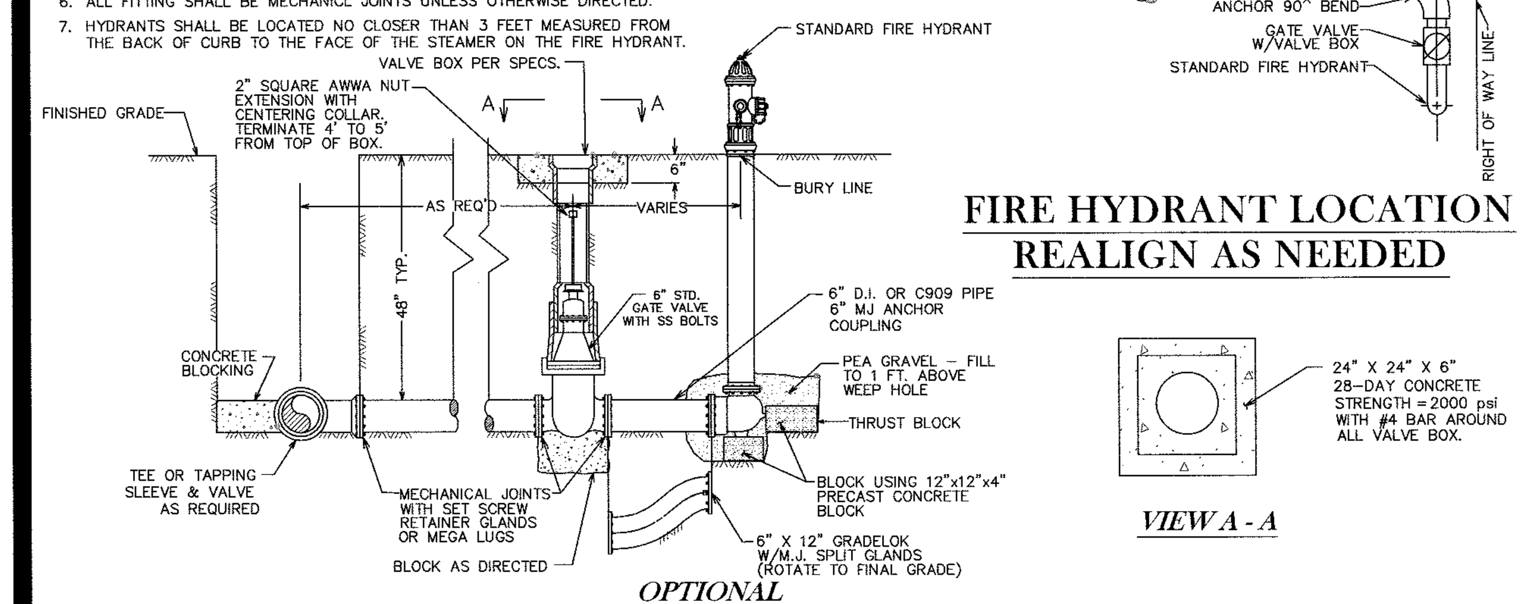
Mary Avenue Waterline Plan & Profile
Sta. 12+00 - End of Project

CONTRACT NO. 197026

SHEET NO. C5.3

GENERAL NOTES:

1. FINELY DIVIDED EARTH FREE OF ROCK, LUMPS AND CLODS EXCEEDING 6" SHALL BE PLACED BY HAND, AND COMPACTED AROUND THE CAST IRON PIPE TO A DEPTH OF 12" OVER THE TOP OF THE PIPE BEFORE BACKFILL IS BEGUN BY ANY MECHANICAL EQUIPMENT.
2. ALL CONCRETE BLOCKING SHALL BE – 28 DAY CONCRETE STRENGTH = 2000psi.
3. ALL THRUST BLOCKING SHALL PROVIDE A MINIMUM OF 2 SQUARE FEET OF BEARING AREA OF CONCRETE ON UNDISTURBED SOIL, OR AS DIRECTED BY THE ENGINEER.
4. WATER MAINS WILL NOT BE FULLY PRESSURIZED UNTIL CONCRETE HAS REACHED 7 DAY STRENGTH.
5. ALL PIPE WILL BE LAID SO AS THE ENTIRE BARRELL WILL HAVE FULL BEARING ON THE FINE GRADED TRENCH BOTTOM. BELL HOLES SHALL BE CUT FOR EACH BELL AND FIRE HYDRANT.
6. ALL FITTING SHALL BE MECHANICL JOINTS UNLESS OTHERWISE DIRECTED.
7. HYDRANTS SHALL BE LOCATED NO CLOSER THAN 3 FEET MEASURED FROM THE BACK OF CURB TO THE FACE OF THE STEAMER ON THE FIRE HYDRANT.

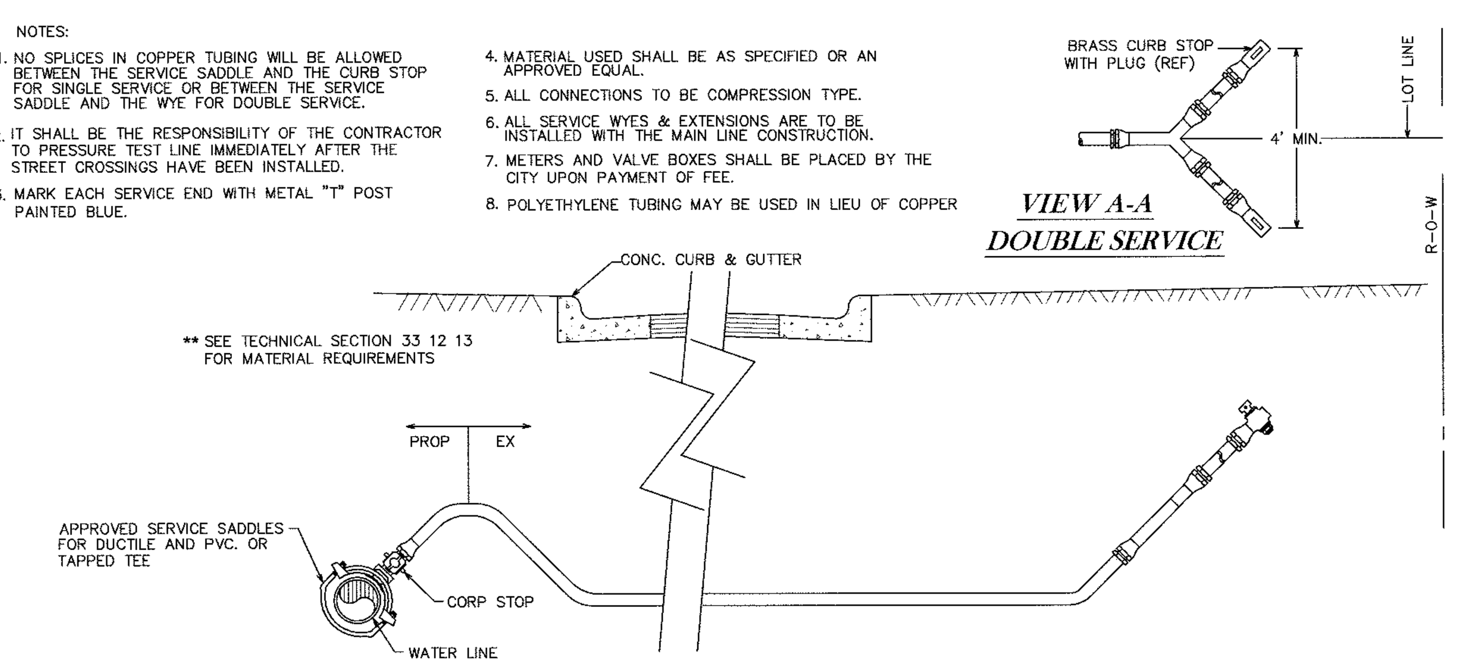


Standard Fire Hydrant Assembly — N.T.S. — 18

NOTES:

1. NO SPLICES IN COPPER TUBING WILL BE ALLOWED BETWEEN THE SERVICE SADDLE AND THE CURB STOP FOR SINGLE SERVICE OR BETWEEN THE SERVICE SADDLE AND THE WYE FOR DOUBLE SERVICE.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PRESSURE TEST LINE IMMEDIATELY AFTER THE STREET CROSSINGS HAVE BEEN INSTALLED.
3. MARK EACH SERVICE END WITH METAL "T" POST PAINTED BLUE.
4. MATERIAL USED SHALL BE AS SPECIFIED OR AN APPROVED EQUAL.
5. ALL CONNECTIONS TO BE COMPRESSION TYPE.
6. ALL SERVICE WYES & EXTENSIONS ARE TO BE INSTALLED WITH THE MAIN LINE CONSTRUCTION.
7. METERS AND VALVE BOXES SHALL BE PLACED BY THE CITY UPON PAYMENT OF FEE.
8. POLYETHYLENE TUBING MAY BE USED IN LIEU OF COPPER

** SEE TECHNICAL SECTION 33 12 13 FOR MATERIAL REQUIREMENTS

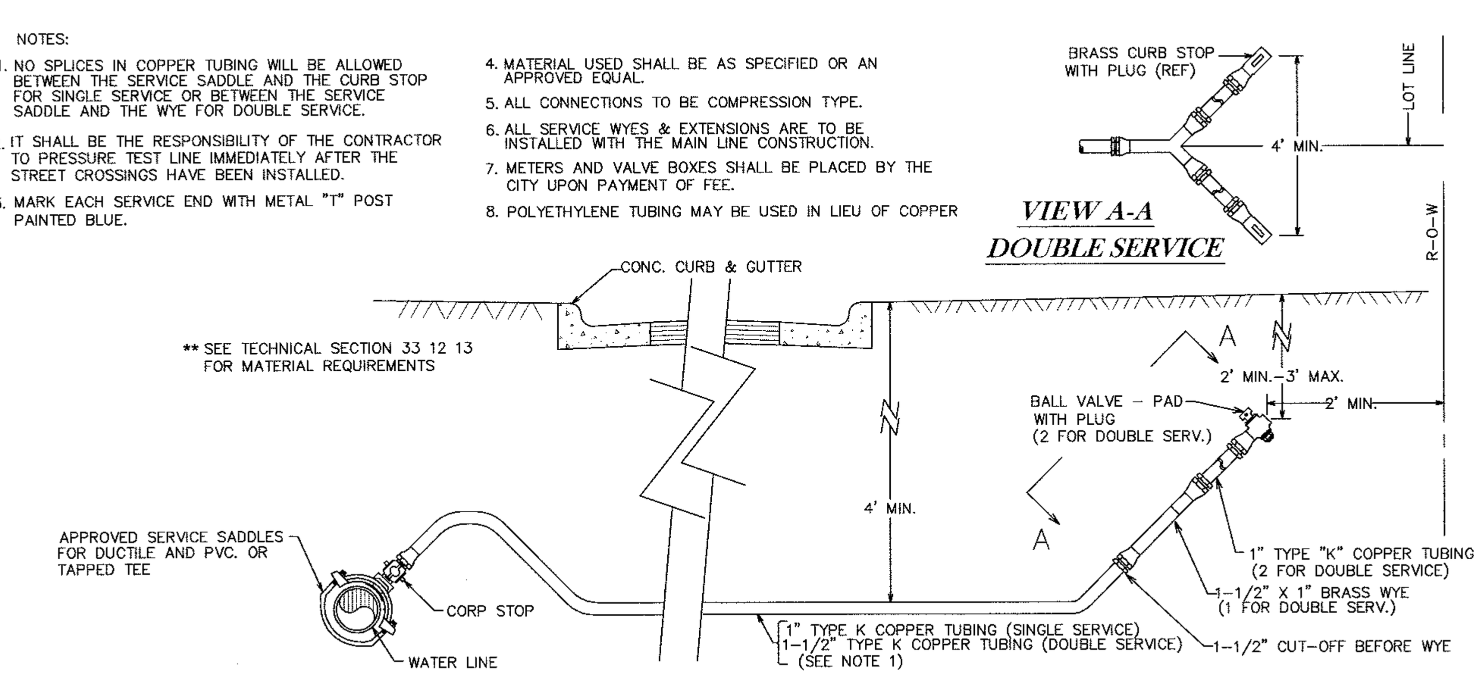


Reconnected Water Service — N.T.S. — 17

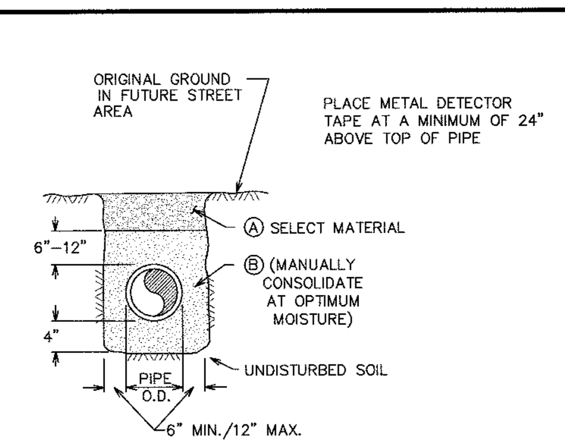
NOTES:

1. NO SPLICES IN COPPER TUBING WILL BE ALLOWED BETWEEN THE SERVICE SADDLE AND THE CURB STOP FOR SINGLE SERVICE OR BETWEEN THE SERVICE SADDLE AND THE WYE FOR DOUBLE SERVICE.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PRESSURE TEST LINE IMMEDIATELY AFTER THE STREET CROSSINGS HAVE BEEN INSTALLED.
3. MARK EACH SERVICE END WITH METAL "T" POST PAINTED BLUE.
4. MATERIAL USED SHALL BE AS SPECIFIED OR AN APPROVED EQUAL.
5. ALL CONNECTIONS TO BE COMPRESSION TYPE.
6. ALL SERVICE WYES & EXTENSIONS ARE TO BE INSTALLED WITH THE MAIN LINE CONSTRUCTION.
7. METERS AND VALVE BOXES SHALL BE PLACED BY THE CITY UPON PAYMENT OF FEE.
8. POLYETHYLENE TUBING MAY BE USED IN LIEU OF COPPER

** SEE TECHNICAL SECTION 33 12 13 FOR MATERIAL REQUIREMENTS



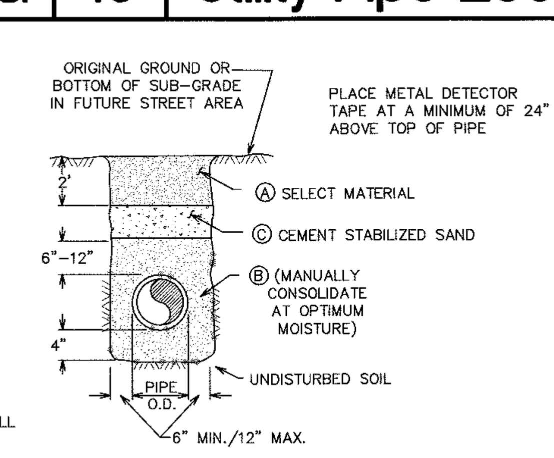
New Water Service — N.T.S. — 16



Ⓐ SELECT MATERIAL
MATERIAL EXCAVATED FROM THE DITCH, (WHICH IS FREE OF ROCKS, LUMPS, CLODS, OR DEBRIS LARGER THAN TWO (2) INCHES IN THE LARGEST DIMENSION), COMPACTED TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D698 (STANDARD) AT A MOISTURE CONTENT WITHIN OPTIMUM TO +4% OF OPTIMUM UNDER NON-STRUCTURAL AREAS (ie...YARDS, PASTURES, EASEMENTS) AND TO A MINIMUM OF 98% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D698 (STANDARD) AT A MOISTURE CONTENT WITHIN OPTIMUM TO +4% OF OPTIMUM UNDER NEW STREET AND PAVEMENT AREAS.

Ⓑ GRANULAR MATERIAL
MATERIAL SHALL BE BANK RUN RIVER SAND WHICH IS FREE OF DETRIMENTAL QUANTITIES OF CLAY, DEBRIS, OR ORGANIC MATERIAL AND WHICH, WHEN TESTED BY STANDARD LABORATORY METHODS, MEET THE FOLLOWING REQUIREMENTS:
MAXIMUM LIQUID LIMIT ———— 45
MAXIMUM PLASTICITY INDEX ———— 15
MAXIMUM PERCENT PASSING NO. 200 SIEVE ———— 35
MINIMUM PERCENT PASSING 3/4" SIEVE ————100
THE MATERIAL SHALL BE FREE FLOWING AND WHEN WET, SHALL NOT ADHERE TO FORM A BALL WHEN PRESSED IN THE HAND.

Ⓒ CEMENT STABILIZED SAND



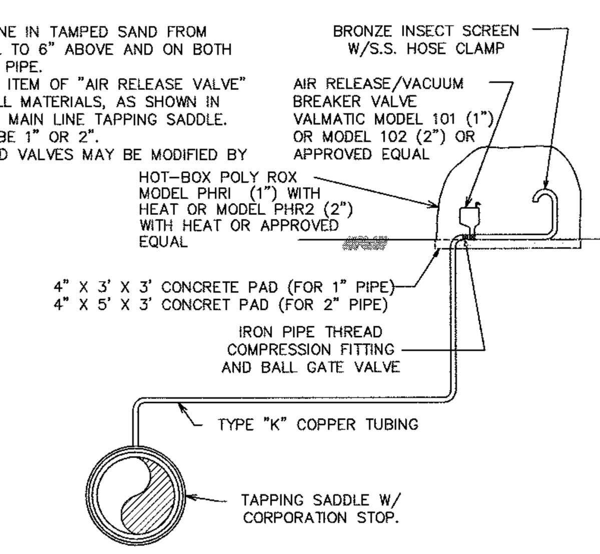
NOTES:

1. *FOR BEDDING AND TRENCHING WITHIN ALL PAVED AREAS SEE DETAILS FOR OPEN CUT STREETS.*
2. ALL BEDDING & INSTALLATION OF PVC PIPE SHALL BE IN ACCORDANCE WITH ANSI/AWWA STANDARDS FOR PVC PIPE.
3. ALL BEDDING & INSTALLATION OF DUCTILE IRON PIPE SHALL BE IN ACCORDANCE WITH ANSI/AWWA C150/A21.50
4. COMPACTION SHALL BE ATTAINED BY MECHANICAL TAMPING.
5. RELATIVE COMPACTION SHALL BE TESTED IN THE PRESENCE OF THE CITY ENGINEER.
6. DUST RESULTING FROM THE CONTRACTOR'S PERFORMANCE OF THE WORK, EITHER INSIDE OR OUTSIDE THE RIGHT-OF-WAY, SHALL BE CONTROLLED BY THE CONTRACTOR.
7. ALL TRENCHES SHALL BE BACK FILLED AND TEMPORARY PAVING OR PLATING PLACED AT THE END OF EACH WORKING DAY.
8. SEE "OPEN CUT DETAILS" ST4–00, ST4–01 & ST4–02.
9. EVERY 100 FEET PROVIDE A WATER STOP BLOCK COMPOSED OF CEMENT SAND OR NATIVE MATERIAL DEPENDING ON EMBEDMENT. BLOCK SHALL BE 6 FEET IN LENGTH. NO BEDDING SAND IN THIS AREA.

Bedding And Trench for DI Pipe And PVC Pipe — N.T.S. — 11

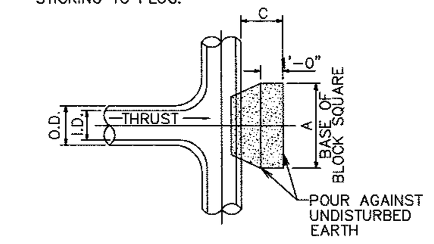
NOTE:

1. EMBED COPPER LINE IN TAMPED SAND FROM UNDISTURBED SOIL TO 6" ABOVE AND ON BOTH SIDES OF COPPER PIPE.
2. PAYMENT FOR BID ITEM OF "AIR RELEASE VALVE" SHALL INCLUDE ALL MATERIALS, AS SHOWN IN DETAIL, INCLUDING MAIN LINE TAPPING SADDLE.
3. PIPE SIZE SHALL BE 1" OR 2".
4. SIZE OF LINES AND VALVES MAY BE MODIFIED BY THE ENGINEER



Air Release Valve And Vacuum Check — N.T.S. — 15

NOTE: USE POLYETHYLENE WRAP OR EQUAL BETWEEN CONCRETE & PLUG TO PREVENT CONCRETE FROM STICKING TO PLUG.



TEE THRUST BLOCK

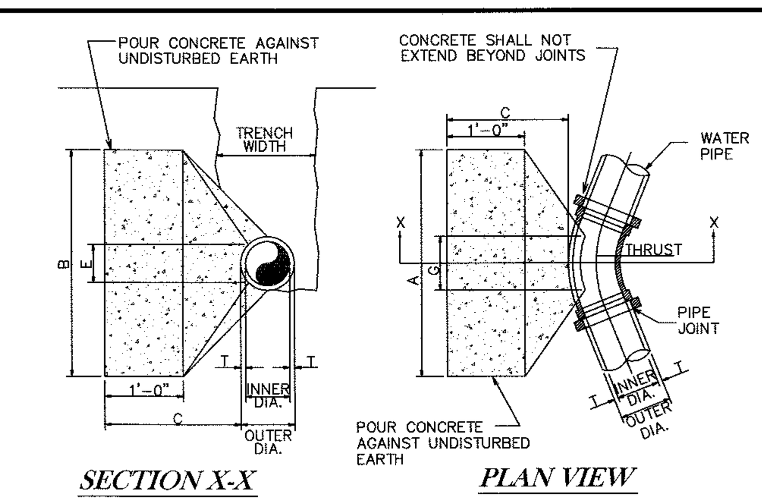
TEE SCHEDULE

ID (in)	THRUST (tons)	C (ft)	A (ft)	VOLUME (c.y.)
4,6,8	5.1	1.5	2.5	0.3
10,12	11.3	1.5	3.5	0.6

THRUST BLOCK NOTES:

1. ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200psi FOR 24" AND SMALLER INNER DIAMETER PIPE.
2. ALL BEARING SURFACES OF THRUST BLOCKS SHALL BE PLACED AGAINST UNDISTURBED EARTH OR ROCK.
3. CONCRETE FOR BLOCKING SHALL BE 2000 psi.
4. DIMENSIONS MAY BE VARIED AS REQUIRED BY FIELD WHERE AND AS DIRECTED BY THE ENGINEER. THE VOLUME OF CONCRETE BLOCKING SHALL NOT BE LESS THAN SHOWN HERE.
5. WATER MAIN SHALL NOT BE PRESSURIZED UNTIL ALL CONCRETE BLOCKING HAS REACHED 1500psi.

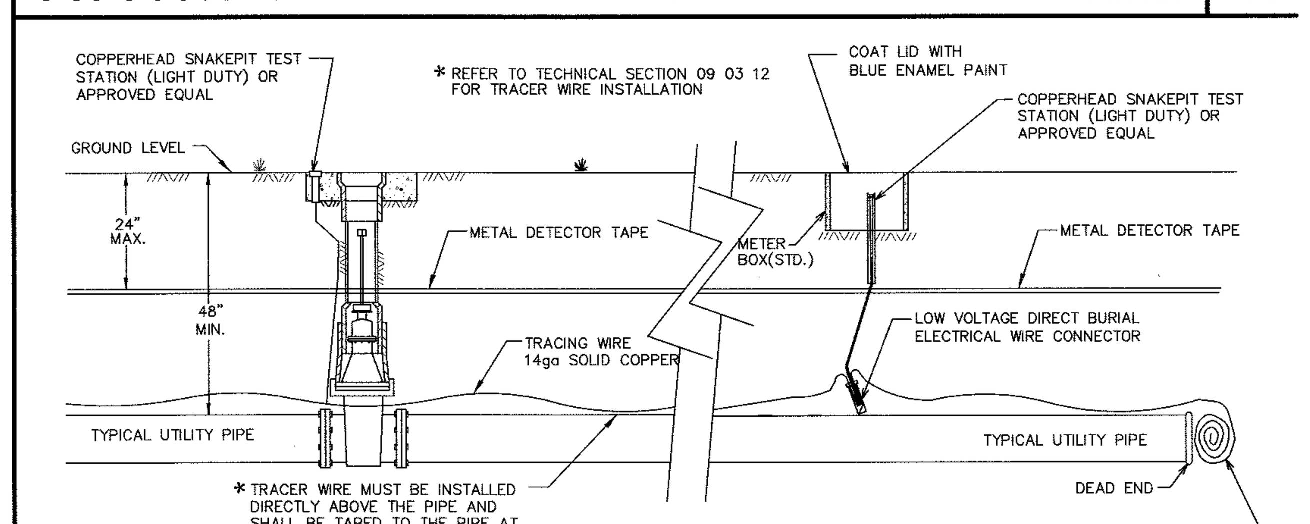
Thrust Block Detail — N.T.S. — 14



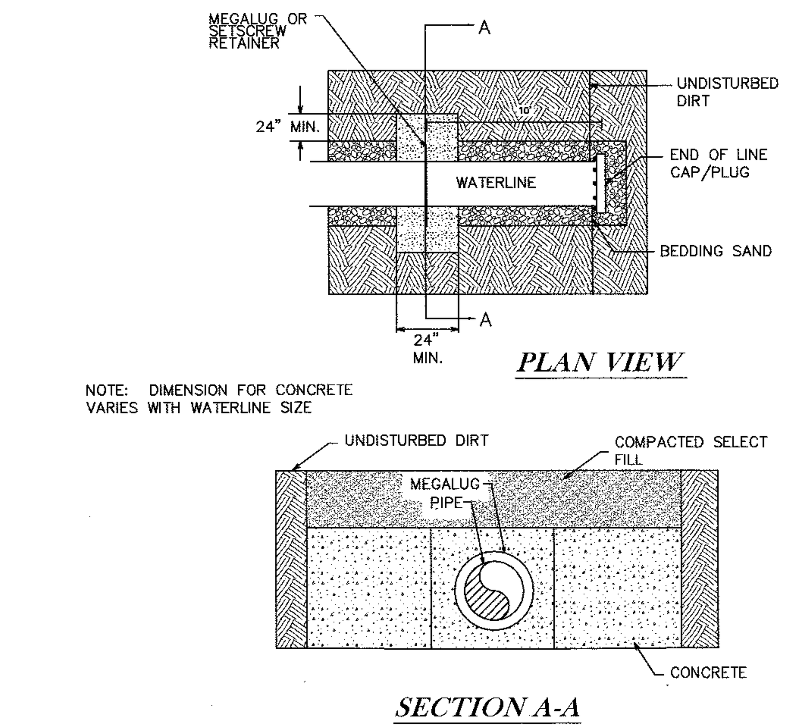
HORIZONTAL THRUST BLOCK SCHEDULE

BEND	SIZE	A (ft)	B (ft)	C (ft)	E (ft)	G (ft)	VOLUME (c.y.)
90°	6,8"	5.0	1.5	1.5	0.9	2.7	0.4
	10,12"	6.5	2.5	1.5	1.2	4.0	1.0
45°	6,8"	2.0	2.0	1.5	0.9	1.5	0.2
	10,12"	3.5	2.5	1.5	1.2	2.2	0.5
22.5°	6,8"	1.5	1.5	1.5	0.9	0.8	0.1
	10,12"	2.0	2.5	1.5	1.2	1.1	0.3
11.25°	6,8"	1.0	1.5	1.5	0.9	0.4	0.1
	10,12"	1.5	1.5	1.5	1.2	0.6	0.1

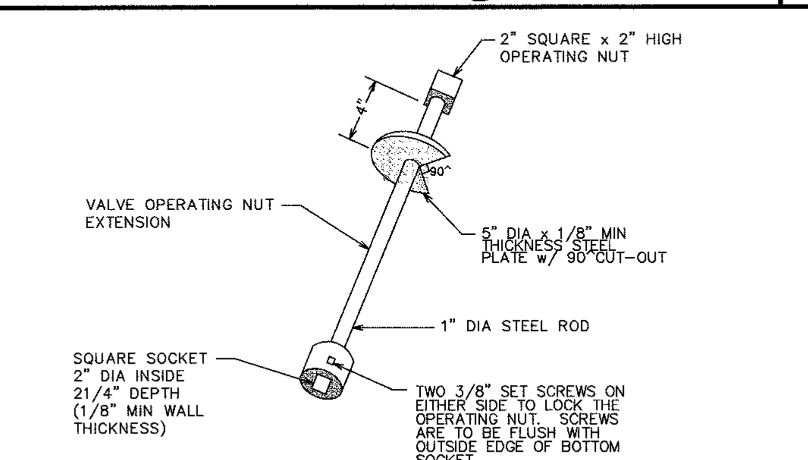
TYP. Horizontal Thrust Block — N.T.S. — 13



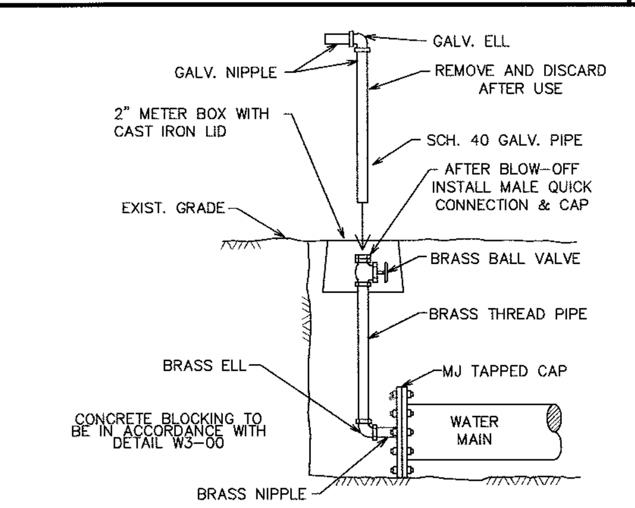
Utility Pipe Location Materials — N.T.S. — 12



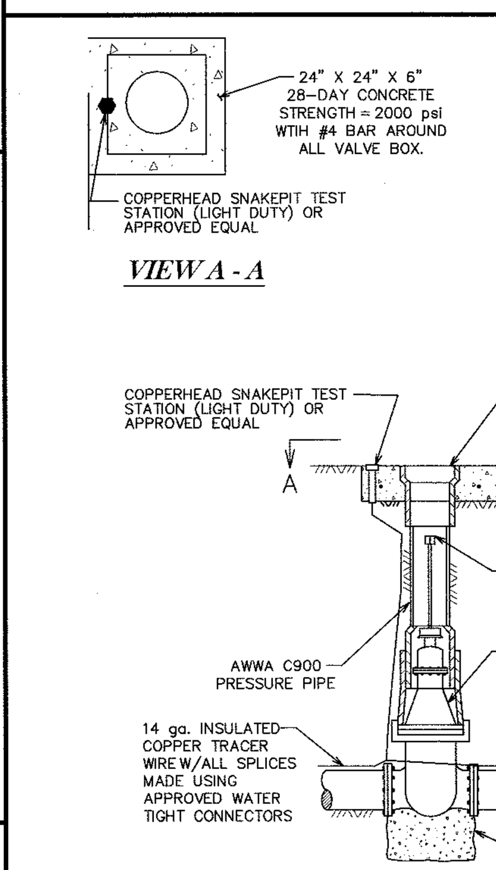
End Of Line Blocking — N.T.S. — 10



Gate Valve Extension — N.T.S. — 9



2" Blow-Off Riser — N.T.S. — 8



NOTE:

1. VALVE EXTENSION TO BE USED ONLY WHEN TOP OF GATE VALVE IS DEEPER THAN 5 FEET FROM FINISHED GRADE.
2. ALL VALVE OPERATING NUT EXTENSIONS ARE TO BE MADE OF STEEL, SIZED AS NOTED, AND PAINTED WITH TWO (2) COATS OF METAL PAINT.
3. EXTENSIONS SHALL BE A MINIMUM OF ONE (1) FOOT LONG.
4. VALVE BOX LIDS LOCATED ON VALVES TO ISOLATE FIRE SUPPRESSION LINES FROM PUBLIC WATER LINES SHALL BE AMPro USA, LL562 LOCKABLE LID.

Gate Valve And Box — N.T.S. — 7

ALL AREAS WHERE EXISTING VEGETATION AND GRASS COVER HAVE BEEN BARED BY CONSTRUCTION SHALL BE ADEQUATELY BLOCK SODDED OR HYDROMULCHED AND WATERED UNTIL GROWTH IS ESTABLISHED. IN DEVELOPED AREAS WHERE GRASS IS PRESENT, BLOCK SOD WILL BE REQUIRED. BARED AREAS SHALL BE SEEDED OR SODDED WITHIN 14 CALENDAR DAYS OF LAST DISTURBANCE.

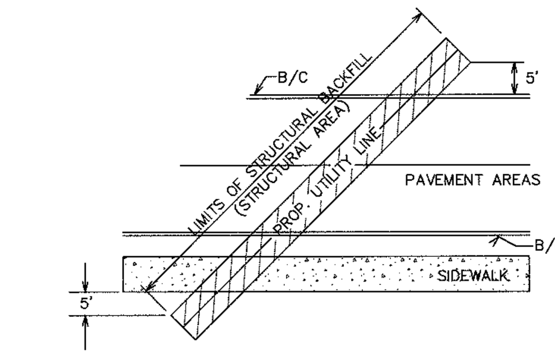
APPROVED EROSION CONTROL MEASURES MUST BE INSTALLED DURING THE ENTIRE TIME THAT EARTH HAS BEEN BARED BY CONSTRUCTION AND SHALL STAY IN PLACE UNTIL ACCEPTABLE VEGETATIVE GROWTH IS ESTABLISHED AFTER CONSTRUCTION IS COMPLETE AND THEN REMOVED BY CONTRACTOR.

ALL EROSION CONTROL MEASURES SHOULD BE CLEANED OF SILT AFTER EVERY RAIN.

ESTABLISHMENT OF VEGETATION IS A WARRANTY ITEM.

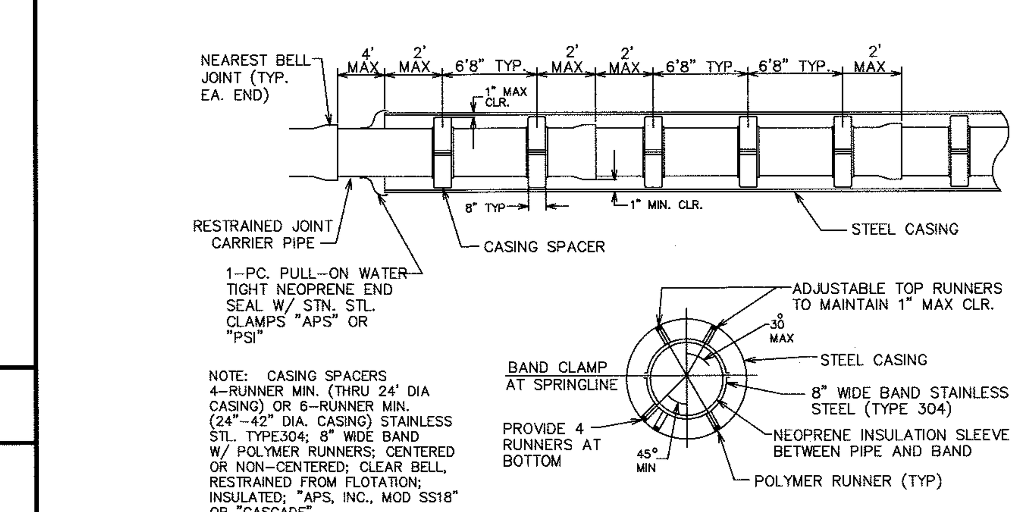
General Notes — N.T.S. — 6

STRUCTURAL BACKFILL AREA INCLUDES ALL PAVED AREAS (SIDEWALKS, STREETS, ALLEYS, DRIVEWAYS, AND PARKING AREAS) AND SHALL EXTEND 5' BEYOND THE CURB LINE. STRUCTURAL BACKFILL SHALL BE CEMENT STABILIZED (OPTION NO. 2 IN W4-03) OR EXCAVATED SOIL COMPACTED TO 98% MAXIMUM DRY DENSITY AS PER ASTM D698 WITHIN OPTIMUM TO +4% WET OF OPTIMUM (OPTION NO. 1 IN W4-02)



STRUCTURAL BACKFILL IS TO BE INCLUDES IN PIPE/CASING INSTALLATION NO SEPARATE PAY ITEM PROVIDED

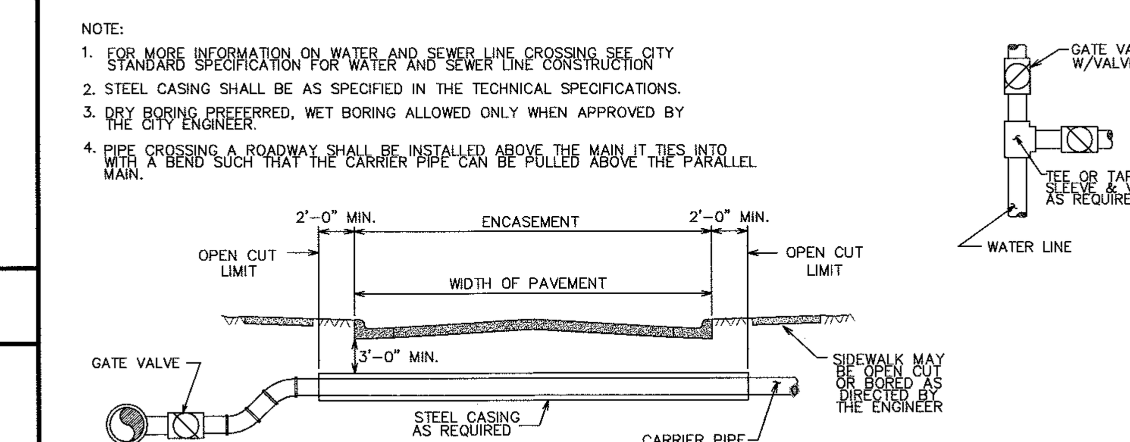
Structural Backfill Area — N.T.S. — 5



Casing Detail — N.T.S. — 4

NOTE:

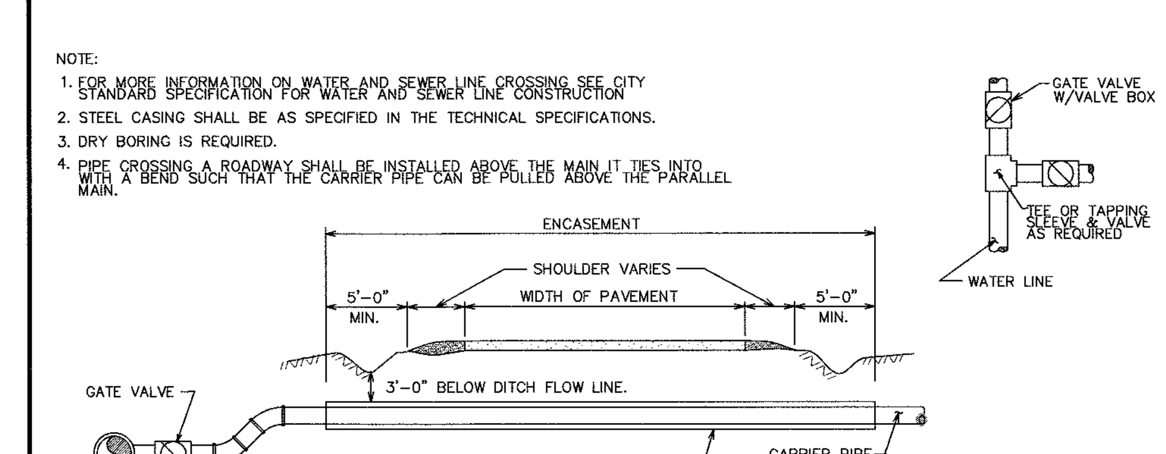
1. FOR MORE INFORMATION ON WATER AND SEWER LINE CROSSING SEE CITY STANDARD SPECIFICATION FOR WATER AND SEWER LINE CONSTRUCTION
2. STEEL CASING SHALL BE AS SPECIFIED IN THE TECHNICAL SPECIFICATIONS.
3. DRY BORING PREFERRED, WET BORING ALLOWED ONLY WHEN APPROVED BY THE CITY ENGINEER.
4. PIPE CROSSING A ROADWAY SHALL BE INSTALLED ABOVE THE MAIN IT TIES INTO WITH A BEND SUCH THAT THE CARRIER PIPE CAN BE PULLED ABOVE THE PARALLEL MAIN.



TYP. Urban City Street Crossing — N.T.S. — 3

NOTE:

1. FOR MORE INFORMATION ON WATER AND SEWER LINE CROSSING SEE CITY STANDARD SPECIFICATION FOR WATER AND SEWER LINE CONSTRUCTION
2. STEEL CASING SHALL BE AS SPECIFIED IN THE TECHNICAL SPECIFICATIONS.
3. DRY BORING IS REQUIRED.
4. PIPE CROSSING A ROADWAY SHALL BE INSTALLED ABOVE THE MAIN IT TIES INTO WITH A BEND SUCH THAT THE CARRIER PIPE CAN BE PULLED ABOVE THE PARALLEL MAIN.



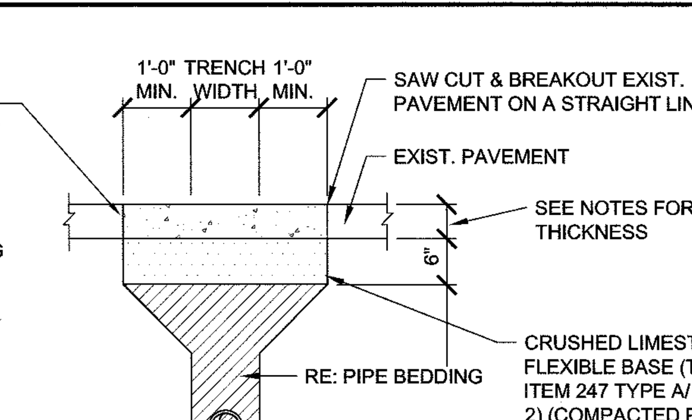
TYP. Rural Street Crossing — N.T.S. — 2

NOTES:

1) CONCRETE:
5" THICK CONC. REINFORCED W/ 6X6-6 GA. WWF CTR. IN SLAB PROVIDE 18" LONG #5 SMOOTH DOWELS @ 12" SPACING BEWTEEN EXIST. AND PROP. PAVEMENT INSTALL BY DRILLING 6" INTO CENTER OF PAVEMENT.

2) ASPHALT:
1 1/2" HOT MIX ASPHALT SURFACE (TXDOT TYPE D)

3) GRAVEL/DIRT:
4" OWNER APPROVED MIXTURE OF GRAVEL



Pavement Repair Detail — N.T.S. — 1

NO.	DATE	ISSUED FOR
1	02-16-16	Review
2	08-26-16	Final
3	-----	-----
4	-----	-----

D:\197\197026\197026-C6.1-Project Details.dwg 2/ /201

DRAWN BY:	APPV'D BY:	PLOT SCALE:
DKE	JIR	1:1

TBPE FIRM REGISTRATION: #413
TBPLS FIRM REGISTRATION: #10110901

© 2015 ALL RIGHTS RESERVED BY GOODWIN-LASITER, INC. UNAUTHORIZED USE OR REPRODUCTION IS PROHIBITED WITHOUT WRITTEN CONSENT FROM GOODWIN-LASITER, INC.

GOODWIN-LASITER-STRONG
ENGINEERING · ARCHITECTURE · INTERIOR DESIGN · SURVEYING
1609 S. CHESTNUT DR. STE. 202 · LUFKIN, TEXAS 75901 · (936) 637-4900
4077 CROSS PARK DR. STE. 100 · BRYAN, TEXAS 77802 · (979) 776-9700

STATE OF TEXAS — JAMES M. LIGHT — 96494 — LICENSED PROFESSIONAL ENGINEER

8-29-2016

Miscellaneous Waterline Replacement Project
City of Huntsville
Huntsville, Texas
Project Details

CONTRACT NO.
197026

SHEET NO.
D1

TYPICAL USAGE:				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

GENERAL NOTES:

1. Unless otherwise stated in the plans, flags attached to signs are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans.
3. On high speed facilities advance warning signs should be installed approximately 3X from the work area or from the beginning of a lane or shoulder taper. On low speed facilities the advance warning signs should be placed based on the 'X' minimum distance.
4. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.

Only pre-qualified products shall be used. A list of compliant products and their sources may be obtained by writing or faxing:

Standards Engineer
Traffic Operations Division - TE
Texas Department of Transportation
125 East 11th Street
Austin, Texas 78701-2483
Phone (512) 416-3335
Fax (512) 416-3161
E-mail TRF-STANDARD@mailgw.dot.state.tx.us

Posted Speed✳✳	Formula	Minimum Desirable Taper Lengths✳✳ 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Device On a Taper	On a Tangent	Minimum Sign Spacing X Distance
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60' -75'	120'
35		205'	225'	245'	35'	70' -90'	160'
40		265'	295'	320'	40'	80' -100'	240'
45	L=WS	450'	495'	540'	45'	90' -110'	320'
50		500'	550'	600'	50'	100' -125'	400'
55		550'	605'	660'	55'	110' -140'	500'
60		600'	660'	720'	60'	120' -150'	✳ 600'
65		650'	715'	780'	65'	130' -165'	✳ 700'
70		700'	770'	840'	70'	140' -175'	✳ 800'

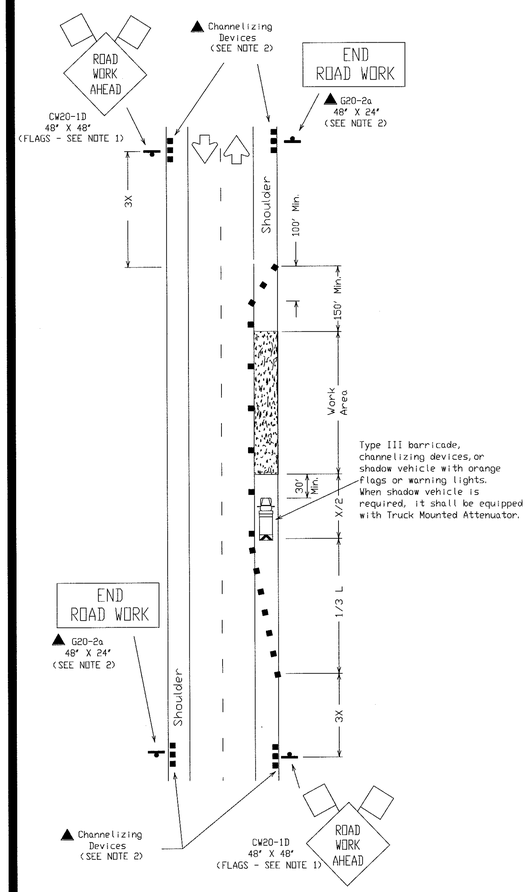
✳ Conventional Roads Only

✳✳ Taper lengths have been rounded off.
L=Length of Taper (FT.) W=Width of Offset (FT.) S=Posted Speed (MPH)

LEGEND

- Type III Barricade
- Channelizing Devices
- Flag
- Heavy Work Vehicle
- Truck Mounted Attenuator
- Trailer Mounted Flashing Arrow Panel
- Portable Changeable Message Sign
- Flagger
- Sign Post

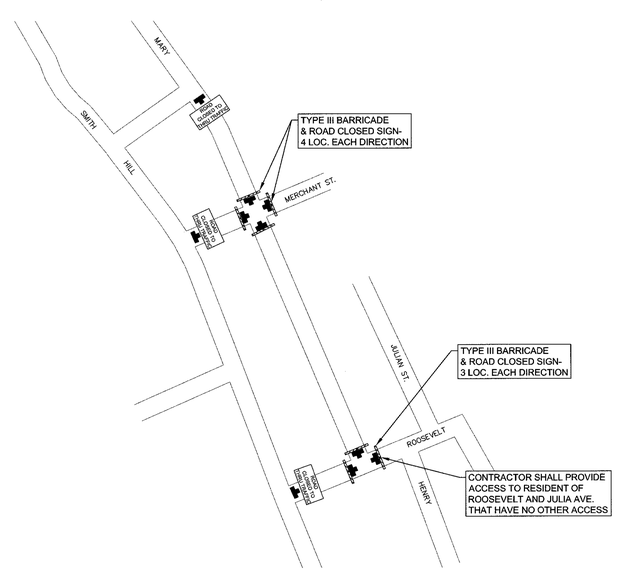
Legend and Notes N.T.S. 4



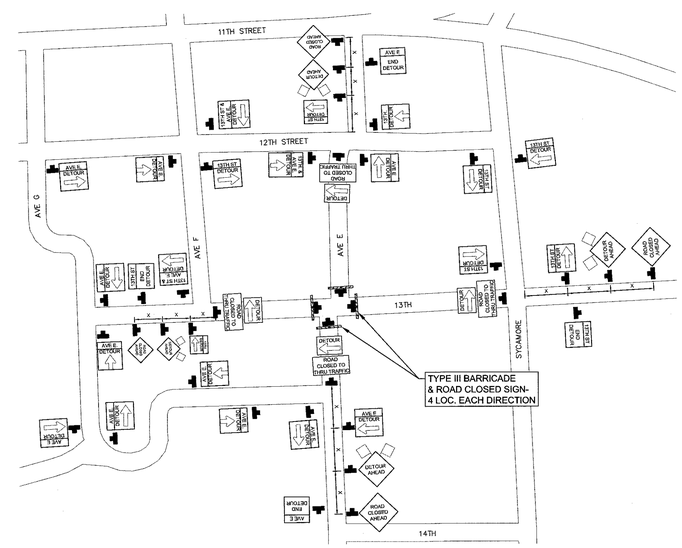
TCP (1-1b)

Work Area on Shoulder

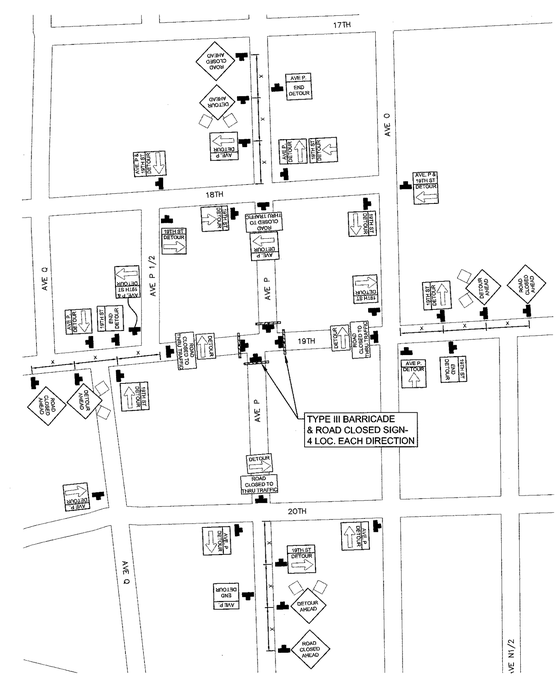
Legend and Notes N.T.S. 4



Mary Ave + Mechant Street / Mary Ave + Rosevelt Street N.T.S. 3



Ave. E + 13th Street Detour N.T.S. 2



Ave P + 19th Street Detour N.T.S. 1

NO.	DATE	ISSUED FOR
1	02-16-16	Review
2	08-26-16	Final
3	----	----
4	----	----

D:\197\197026\197026-C6.1-Project Details.dwg 2/201

DRAWN BY: DKE | APPV'D BY: JML | PLOT SCALE: 1:1

TBPE FIRM REGISTRATION: #413

TBPLS FIRM REGISTRATION: #10110901

© 2015 ALL RIGHTS RESERVED BY GOODWIN-LASITER, INC. UNAUTHORIZED USE OR REPRODUCTION IS PROHIBITED WITHOUT WRITTEN CONSENT FROM GOODWIN-LASITER, INC.

GLS
GOODWIN·LASITER·STRONG
ENGINEERING · ARCHITECTURE · INTERIOR DESIGN · SURVEYING
1609 S. CHESTNUT DR. STE. 202 · LUFKIN, TEXAS 75901 · (936) 637-4900
107 CYPRESS PT. DR. STE. 110 · SPRING, TEXAS 77388 · (281) 257-2000

STATE OF TEXAS · JAMES M. LIGHT · 96494 · LICENSED
8-29-2016

Miscellaneous Waterline Replacement Project

City of Huntsville
Huntsville, Texas

Traffic Control Plan

CONTRACT NO. 197026

SHEET NO.

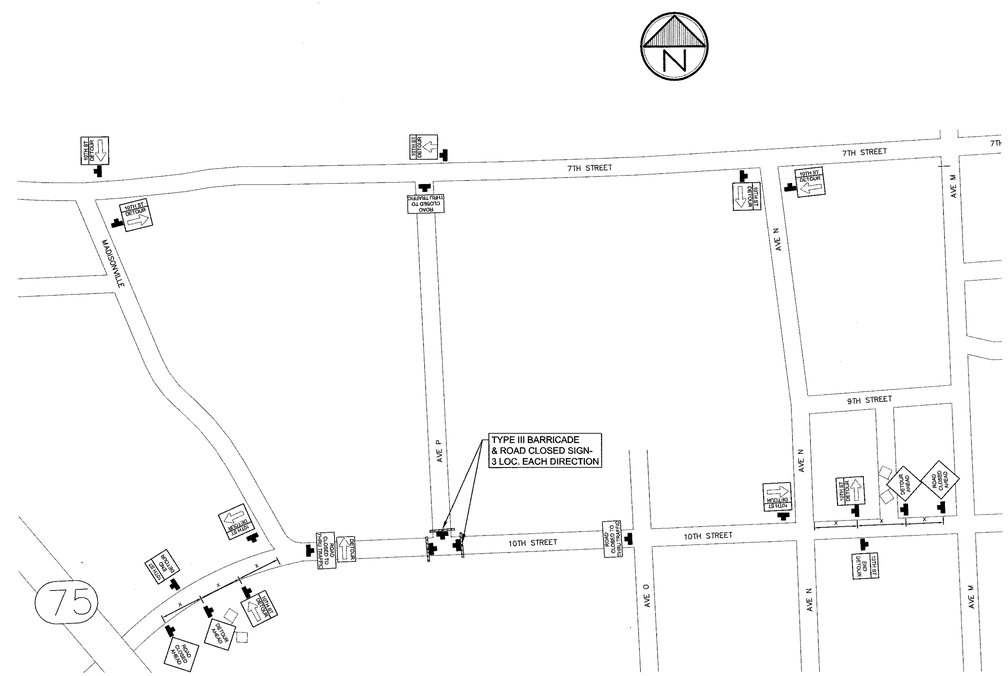
D2

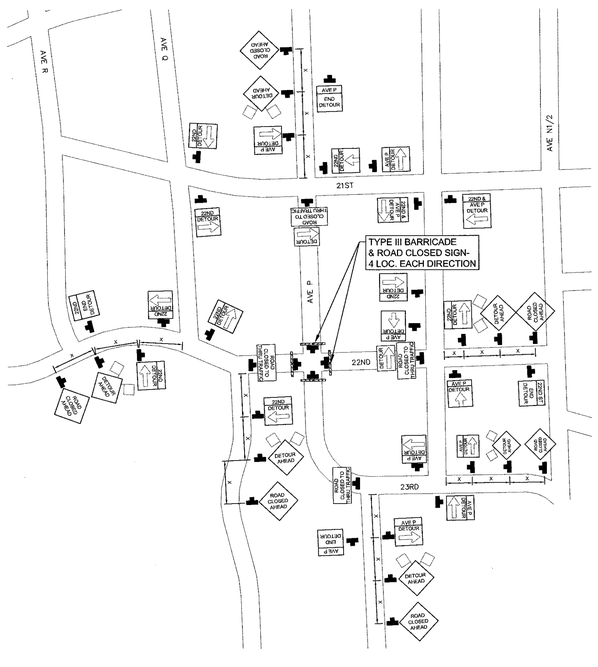
Not Used

N.T.S. | 4

Ave P + 10th Street Detour

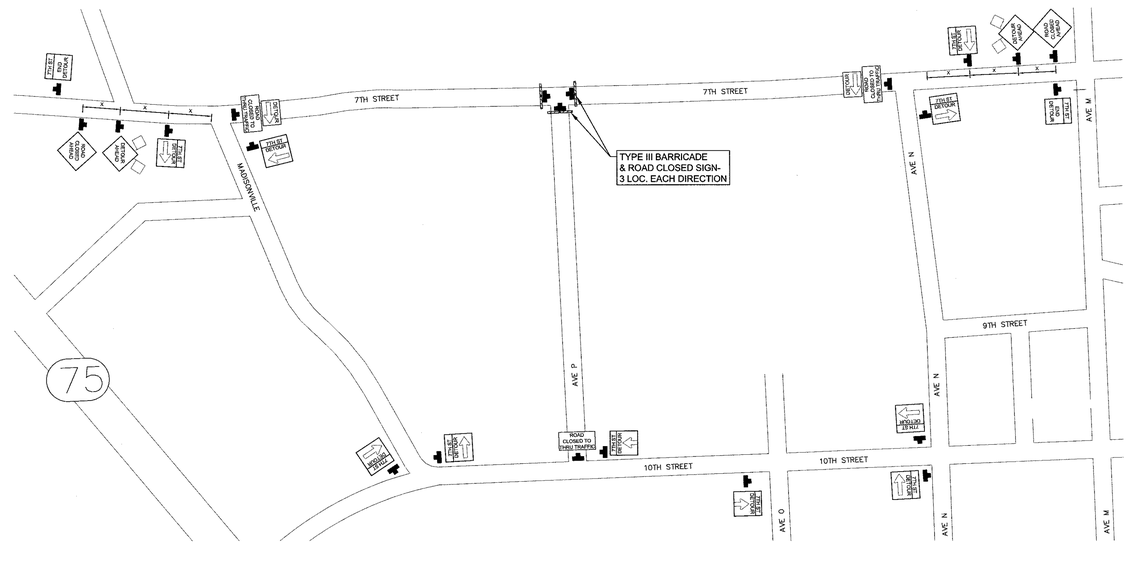
N.T.S. | 2





Ave P + 22nd Street Detour

N.T.S. | 3



Ave P + 7th Street Detour

N.T.S. | 1

NO.	DATE	ISSUED FOR
1	02-16-16	Review
2	08-26-16	Final
3	----	----
4	----	----

D:\197\197026\197026-C6.1-Project Details.dwg 2/ /201

DRAWN BY:	APPV'D BY:	PLOT SCALE:
CR	JML	1:1

TBPE FIRM REGISTRATION: #413

TBPLS FIRM REGISTRATION: #10110901

© 2015 ALL RIGHTS RESERVED BY GOODWIN-LASITER, INC. UNAUTHORIZED USE OR REPRODUCTION IS PROHIBITED WITHOUT WRITTEN CONSENT FROM GOODWIN-LASITER, INC.

GLS
GOODWIN-LASITER-STRONG
ENGINEERING · SURVEYING · ENVIRONMENTAL
1608 S. CHESTNUT DR. STE. 202 - LUFKIN, TEXAS 75901 (936) 637-4800
4077 CROSS PARK DR. STE. 100 - BRYAN, TEXAS 77802 (979) 776-9700

STATE OF TEXAS
JAMES M. LIGHT
86494
LICENSED
PROFESSIONAL ENGINEER

8-29-2016

Miscellaneous Waterline Replacement Project
City of Huntsville
Huntsville, Texas
Traffic Control Plan

CONTRACT NO.
197026

SHEET NO.
D3

General Items

Item No.	Description	Estimated Quantity	Unit of Measure	Final Quantity
1	Mobilization, insurance, project overhead for all equipment, labor, work on project, including related items and appurtenances, COMPLETE IN PLACE	1	LS	
2	Traffic control including all signage, flagging, detours including all related items and appurtenances, COMPLETE IN PLACE	4	Mo	
3	Trench safety plan prepared by Texas Licensed Professional Engineer for excavations 5' and greater in depth, including related equipment, items and appurtenances, COMPLETE IN PLACE	1	LS	
4	Site clean up including 4" of topsoil replacement, final grading of areas disturbed by construction, including related items and appurtenances, COMPLETE IN PLACE	1	LS	
5	Furnish and install block sodding, including watering and installation, COMPLETE IN PLACE	15000	SF	
6	Furnish and install sand bags for erosion control as directed by the city, COMPLETE IN PLACE	100	EA	
7	Furnish and install reinforced silt fence for erosion control as directed by the city, COMPLET IN PLACE	1000	LF	
8	Clearing and Grubbing including offsite disposal of cleared material, COMPLETE IN PLACE	0.5	AC	

Avenue P (North Area) from 7th-10th C1.2-C1.3

Item No.	Description	Estimated Quantity	Unit of Measure	Final Quantity
1	6" C-909 DR 18 PVC Waterline, including related fittings, items, and appurtenances, COMPLETE IN PLACE	30	LF	
2	8" C-900 DR 18 PVC Certa Lok Waterline installed by open trench including related fittings, items, and appurtenances, COMPLETE IN PLACE	36	LF	
3	8" C-900 DR 18 PVC Certa Lok Waterline installed by directional bore including related fittings, items, and appurtenances, COMPLETE IN PLACE	1041	LF	
4	8" gate valve and box including related items and appurtenances, COMPLETE IN PLACE	1	EA	
5	6" gate valve and box including related items and appurtenances, COMPLETE IN PLACE	1	EA	
6	12" X 8" tapping sleeve and valve, including related items and appurtenances, COMPLETE IN PLACE	1	EA	
7	Interconnect proposed 8" waterline to existing 6" waterline including related fittings, items, and appurtenances, COMPLETE IN PLACE	1	EA	
8	Disconnect and cap existing waterline, including related fittings, items, and appurtenances, COMPLETE IN PLACE	6	EA	
9	16" steel casing (3/8" thickness) installed by open cut, including Certa Lok Carrier Pipe, spacers, backfill, related items and appurtenances, COMPLETE IN PLACE	20	LF	
10	Service reconnect of existing long single water service transfer including fittings, service line, corp stops, related items and appurtenances COMPLETE IN PLACE	1	EA	
11	Service reconnect of existing short single water service transfer including fittings, service line, corp stops, related items and appurtenances COMPLETE IN PLACE	8	EA	
12	Remove and relocate existing water meter as shown on plans including related items and appurtenances, COMPLETE IN PLACE	1	EA	
13	Standard fire hydrant assembly including valve, fittings, painting, related items, and appurtenances, COMPLETE IN PLACE	1	EA	
14	Asphalt pavement repair including related items and appurtenances, COMPLETE IN PLACE	121.7	LF	
15	Concrete Sidewalk pavement repair including related items and appurtenances, COMPLETE IN PLACE	8	LF	
16	Concrete curb and gutter repair including related items and appurtenances, COMPLETE IN PLACE	10	EA	
17	Remove and deliver existing fire hydrant to city, including related items and appurtenances, COMPLETE IN PLACE	1	EA	

Avenue P (South Area) from 19th-22nd C2.1-C2.3

Item No.	Description	Estimated Quantity	Unit of Measure	Final Quantity
1	6" C-900 DR 18 PVC Certa Lok Waterline installed by open trench including related fittings, items, and appurtenances, COMPLETE IN PLACE	50	LF	
2	6" Ductile Iron Waterline including related fittings, items, and appurtenances, COMPLETE IN PLACE	47.5	LF	
3	6" C-900 PVC Certa Lok Waterline installed by directional bore including related fittings, items, and appurtenances, COMPLETE IN PLACE	1460.5	LF	
4	8" X 6" tapping sleeve and valve, including related items and appurtenances, COMPLETE IN PLACE	2	EA	
5	12" X 6" tapping sleeve and valve, including related items and appurtenances, COMPLETE IN PLACE	4	EA	
6	Disconnect and cap existing waterline, including related fittings, items, and appurtenances, COMPLETE IN PLACE	3	EA	
7	Service reconnect of existing short single water service transfer including fittings, service line, corp stops, related items and appurtenances COMPLETE IN PLACE	14	EA	
8	Service reconnect of existing long single water service transfer including fittings, service line, corp stops, related items and appurtenances COMPLETE IN PLACE	10	EA	
9	Air release and vacuum valve Installed under raodway, including related items and appurtenances, COMPLETE IN PLACE	1	EA	
10	Asphalt pavement repair including related items and appurtenances, COMPLETE IN PLACE	371.4	LF	
11	Brick retaining wall repair (using existing bricks) including related items and appurtenances, COMPLETE IN PLACE	1	LS	
12	Concrete curb and gutter repair including related items and appurtenances, COMPLETE IN PLACE	26	EA	
13	Concrete pavement repair including related items and appurtenances, COMPLETE IN PLACE	8	LF	
14	Concrete Sidewalk pavement repair including related items and appurtenances, COMPLETE IN PLACE	4	LF	

13th Street C3.1-C3.2

Item No.	Description	Estimated Quantity	Unit of Measure	Final Quantity
1	6" C-909 DR 18 PVC Waterline, including related fittings, items, and appurtenances, COMPLETE IN PLACE	8	LF	
2	8" C-909 DR 18 PVC Waterline including related fittings, items, and appurtenances, COMPLETE IN PLACE	760	LF	
3	8" C-900 DR 18 PVC Certa Lok Waterline installed by directional bore including related fittings, items, and appurtenances, COMPLETE IN PLACE	307	LF	
4	8" C-900 DR 18 PVC Certa Lok Waterline installed by open cut including related fittings, items, and appurtenances, COMPLETE IN PLACE	27	LF	
5	8" C-909 DR 18 PVC Waterline installed by uncased bore including related fittings, items, and appurtenances, COMPLETE IN PLACE	61	LF	
6	8" gate valve and box including related items and appurtenances, COMPLETE IN PLACE	5	EA	
7	6" gate valve and box including related items and appurtenances, COMPLETE IN PLACE	1	EA	
8	12" X 8" tapping sleeve and valve, including related items and appurtenances, COMPLETE IN PLACE	1	EA	
9	Interconnect proposed 8" waterline to existing 8" waterline including related fittings, items, and appurtenances, COMPLETE IN PLACE	3	EA	
10	Interconnect proposed 6" waterline to existing 6" waterline including related fittings, items, and appurtenances, COMPLETE IN PLACE	1	EA	
10	Air release and vacuum valve including related items and appurtenances, COMPLETE IN PLACE	1	EA	
11	Disconnect and cap existing waterline, including related fittings, items, and appurtenances, COMPLETE IN PLACE	8	EA	
12	Service reconnect of existing long single water service transfer including fittings, service line, corp stops, related items and appurtenances COMPLETE IN PLACE	4	EA	
13	Service reconnect of existing short single water service transfer including fittings, service line, corp stops, related items and appurtenances COMPLETE IN PLACE	10	EA	
14	Asphalt pavement repair including related items and appurtenances, COMPLETE IN PLACE	183	LF	
15	Remove and re-set existing mail box to facilitate waterline installation, COMPLETE IN PLACE	10	EA	
16	Remove and re-set existing street sign to facilitate waterline installation, COMPLETE IN PLACE	1	EA	

Old Madisonville Road C4.1-C4.3

Item No.	Description	Estimated Quantity	Unit of Measure	Final Quantity
1	12" C-909 DR 18 PVC Waterline including related fittings, items, and appurtenances, COMPLETE IN PLACE	575.5	LF	
2	12" C-900 DR 18 PVC Certa-Lok Waterline installed by directional bore including related fittings, items, and appurtenances, COMPLETE IN PLACE	534	LF	
3	12" C-900 DR 18 PVC Certa-Lok Waterline installed by open cut including related fittings, items, and appurtenances, COMPLETE IN PLACE	202.5	LF	
4	12" gate valve and box including related items and appurtenances, COMPLETE IN PLACE	2	EA	
5	12" X 12" tapping sleeve and valve, including related items and appurtenances, COMPLETE IN PLACE	3	EA	
6	20" Steel Casing (3/8" thickness) installed by bore,including Certa Lok Carrier Pipe, spacers, backfill, related items and appurtenances, COMPLETE IN PLACE	113	LF	
7	Service reconnect of existing long single water service transfer including fittings, service line, corp stops, related items and appurtenances COMPLETE IN PLACE	2	EA	
8	Service reconnect of existing short single water service transfer including fittings, service line, corp stops, related items and appurtenances COMPLETE IN PLACE	2	EA	
9	Standard fire hydrant assembly including valve, fittings, painting, related items, and appurtenances, COMPLETE IN PLACE	2	EA	
10	Air release and vacuum valve including related items and appurtenances, COMPLETE IN PLACE	1	EA	
11	Asphalt pavement repair including related items and appurtenances, COMPLETE IN PLACE	156	LF	
12	Concrete sidewalk repair including related items and appurtenances, COMPLETE IN PLACE	20.6	LF	
13	Concrete curb and gutter repair including related items and appurtenances, COMPLETE IN PLACE	8	EA	
14	Remove and deliver existing fire hydrant to city, including related items and appurtenances, COMPLETE IN PLACE	2	EA	
15	Disconnect and cap existing waterline, including related fittings, items, and appurtenances, COMPLETE IN PLACE	3	EA	
16	Remove and repair retaining wall, including related items and appurtenances, COMPLETE IN PLACE	10	LF	
17	Remove and re-install extisting chain link fence to facilitate installation of water line, including related items and appurtenances, COMPLETE IN PLACE	1	LS	

Mary Avenue C5.1-C5.3

Item No.	Description	Estimated Quantity	Unit of Measure	Final Quantity
1	6" C-909 DR 18 PVC Waterline, including related fittings, items, and appurtenances, COMPLETE IN PLACE	1211	LF	
2	6" C-900 DR 18 PVC Certa Lok Waterline installed by open cut including related fittings, items, and appurtenances, COMPLETE IN PLACE	50	LF	
3	6" C-909 DR 18 PVC Waterline installed by uncased bore including related fittings, items, and appurtenances, COMPLETE IN PLACE	184	LF	
4	6" C-900 DR 18 PVC Certa-Lok Waterline installed by directional bore including related fittings, items, and appurtenances, COMPLETE IN PLACE	268	LF	
5	Cement stabilized backfill for waterline construction full trench width as noted and detailed including related items and appurtenances, COMPLETE IN PLACE	21	CY	
6	Air release and vacuum valve including related items and appurtenances, COMPLETE IN PLACE	1	EA	
7	6" X 6" tapping sleeve and valve, including related items and appurtenances, COMPLETE IN PLACE	2	EA	
8	6" gate valve and box including related items and appurtenances, COMPLETE IN PLACE	4	EA	
9	2" gate valve and box including related items and appurtenances, COMPLETE IN PLACE	2	EA	
10	Cap proposed line and install 2" Blow off flush valve inlcuding related items and appurtenances, COMPLETE IN PLACE	1	EA	
11	Interconnect proposed 6" waterline to existing 6" waterline including related fittings, items, and appurtenances, COMPLETE IN PLACE	3	EA	
12	Interconnect proposed 6" waterline to existing 2" waterline including related fittings, items, and appurtenances, COMPLETE IN PLACE	1	EA	
13	Disconnect and cap existing waterline, including related fittings, items, and appurtenances, COMPLETE IN PLACE	3	EA	
14	14" steel casing (3/8" thickness) installed by open cut, including Certa Lok Carrier Pipe, spacers, backfill, related items and appurtenances, COMPLETE IN PLACE	40	LF	
15	Service reconnect of existing long single water service transfer with Double meters including fittings, service line, corp stops, related items and appurtenances COMPLETE IN PLACE	2	EA	
16	Service reconnect of existing long single water service transfer including fittings, service line, corp stops, related items and appurtenances COMPLETE IN PLACE	11	EA	
17	Service reconnect of existing short single water service transfer including fittings, service line, corp stops, related items and appurtenances COMPLETE IN PLACE	13	EA	
18	Reconnect existing water meter in concrete drive including concrete repair as shown on plans including related items and appurtenances, COMPLETE IN PLACE	2	EA	
19	Standard fire hydrant assembly including valve, fittings, painting, related items, and appurtenances, COMPLETE IN PLACE	1	EA	
20	Asphalt pavement repair including related items and appurtenances, COMPLETE IN PLACE	418	LF	
21	Remove and deliver existing fire hydrant to city, including related items and appurtenances, COMPLETE IN PLACE	1	EA	
22	6" Ductile Iron Waterline including related fittings, items, and appurtenances, COMPLETE IN PLACE	31	LF	

NO.	DATE	ISSUED FOR
1	05-05-16	Review
2	08-26-16	Final
3	10-06-16	Revision 1
4	----	----

D:\197\197026\197026-C6.1-Project Details.dwg 2/ /201

DRAWN BY:	APPV'D BY:	PLOT SCALE:
DKE	JML	1:1

TBPE FIRM REGISTRATION: #413
TBPLS FIRM REGISTRATION: #10110901

© 2015 ALL RIGHTS RESERVED BY GOODWIN-LASITER, INC. UNAUTHORIZED USE OR REPRODUCTION IS PROHIBITED WITHOUT WRITTEN CONSENT FROM GOODWIN-LASITER, INC.

GLS
GOODWIN-LASITER-STRONG
ENGINEERING · ARCHITECTURE · INTERIOR DESIGN · SURVEYING
1609 S. CHESTNUT DR. STE. 202 · LUFKIN, TEXAS 75901 · (936) 637-4900
4077 CROSS PARK DR. STE. 100 · BRYAN, TEXAS 77802 · (979) 776-9700

STATE OF TEXAS
JAMES M. LIGHT
96494
LICENSED
PROFESSIONAL ENGINEER

James M. Light
10-11-2016

Miscellaneous Waterline Replacement Project
City of Huntsville
Huntsville, Texas
Project Quantities

CONTRACT NO.
197026

SHEET NO.
D4

Project Quantities

N.T.S. 1