GRP PROGRAM CONSTRUCTION PROGRESS

GRP Review Committee Meeting
June 23, 2014

SJRA Board of Directors Meeting
June 26, 2014

SURFACE WATER FACILITY CONSTRUCTION ADMINISTRATION

Project Data Thru 5/31/2014

Contracted Amount:	**$190,704,740.00**
Change Orders:	**$ 0.00**
Estimate to Complete:	**$190,704,740.00**
Amount Invoiced:	**$119,724,940.00**
Percent Complete:	**63%**
Completion Date:	**June 2015**

SURFACE WATER FACILITY CONSTRUCTION ADMINISTRATION

Project Data Thru 5/31/2014

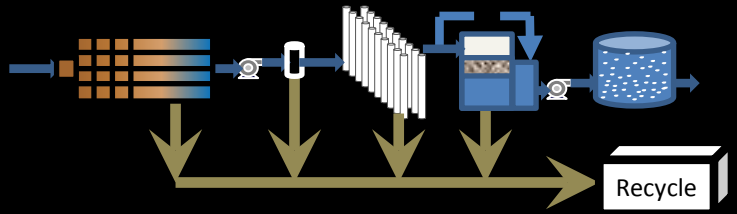
- **Plant startup and commissioning plan development is underway**
- **Structural concrete placement complete**
- **Plant construction daily workforce is approximately 315 workers**


Raw Water Intake
and Pump Station

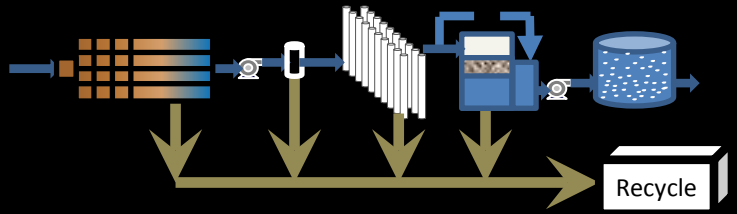
Raw Water Intake & Pump Station - Previous progress photograph

Raw Water Intake & Pump Station – HVAC installation

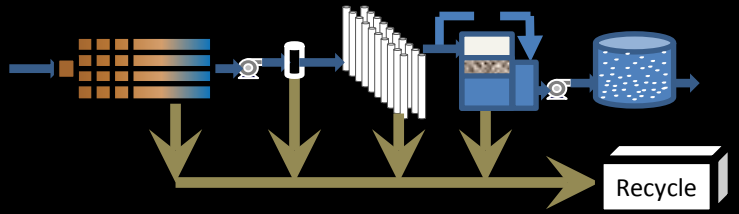

GAC Contactors
Membrane Building
Chemical Facilities
Pretreatment Facilities
Water Treatment Process Structures



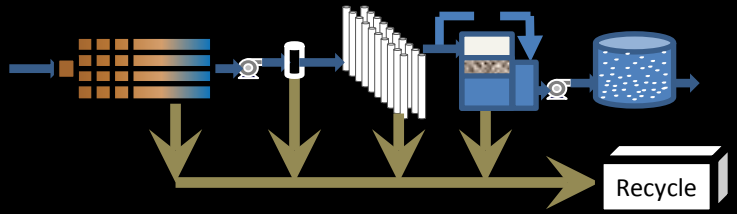
Membrane Building – Previous progress photograph



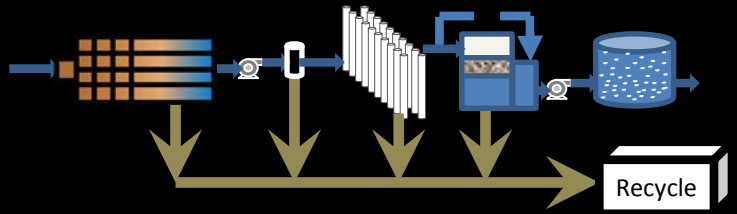
Membrane Building – Installation of membrane feed pumps



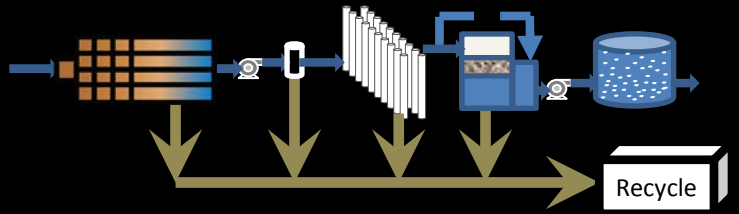
Granulated Activated Carbon Contactors – Previous progress photograph



Granulated Activated Carbon Contactors – Pipe gallery installation

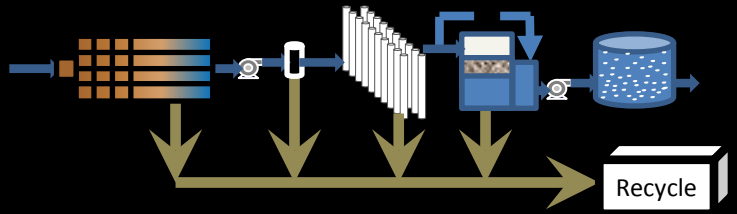


Chemical Building – Previous progress photograph

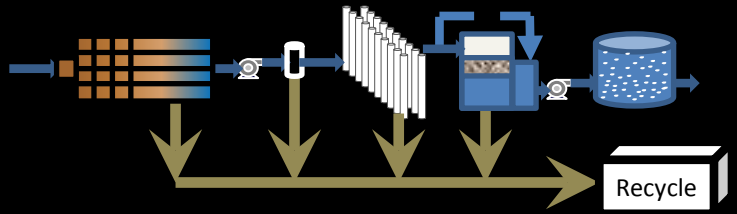


Chemical Building – Installation of sodium hypochlorite tanks

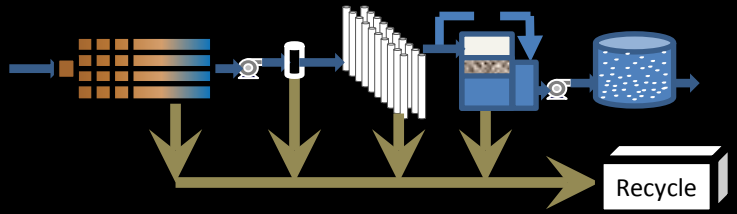

High Service Pump Station,
GST's, and Blower Building
Finished Water Process Structures



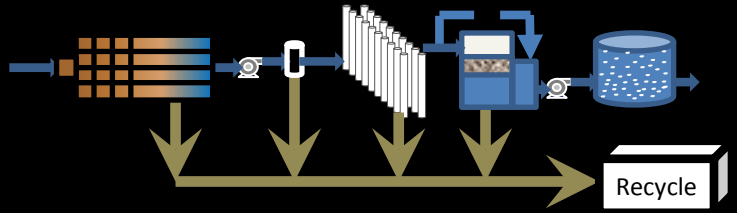
High Service Pump Station - Previous progress photograph



High Service Pump Station – Installation of pumps

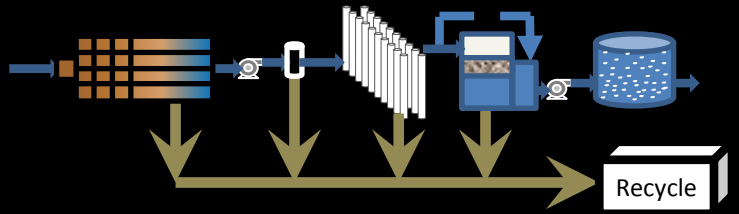


Blower Building – Previous progress photograph

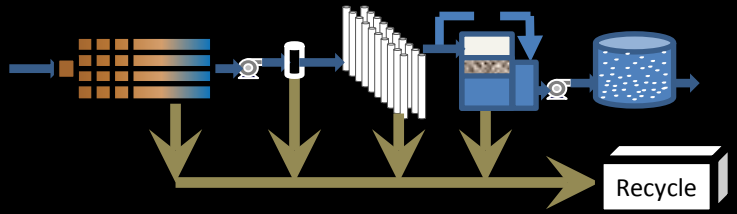


Blower Building – Roofing installation

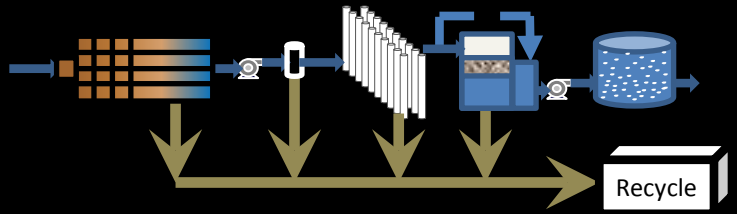
Process Residual Treatment and Disposal Structures



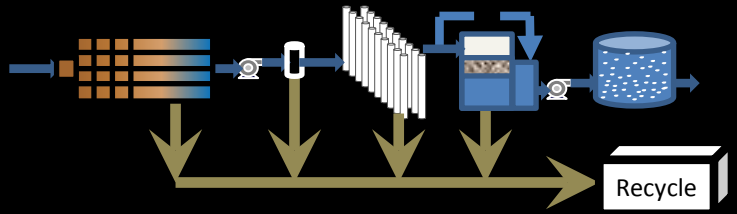
Dewatering Building – Previous progress photograph



Dewatering Building – Masonry installation



Sludge Thickeners – Previous progress photograph



Sludge Thickeners – Pump room concrete roof installation

Operational Structures

Operations Building – Previous progress photograph

Operations Building – Completion of structural systems

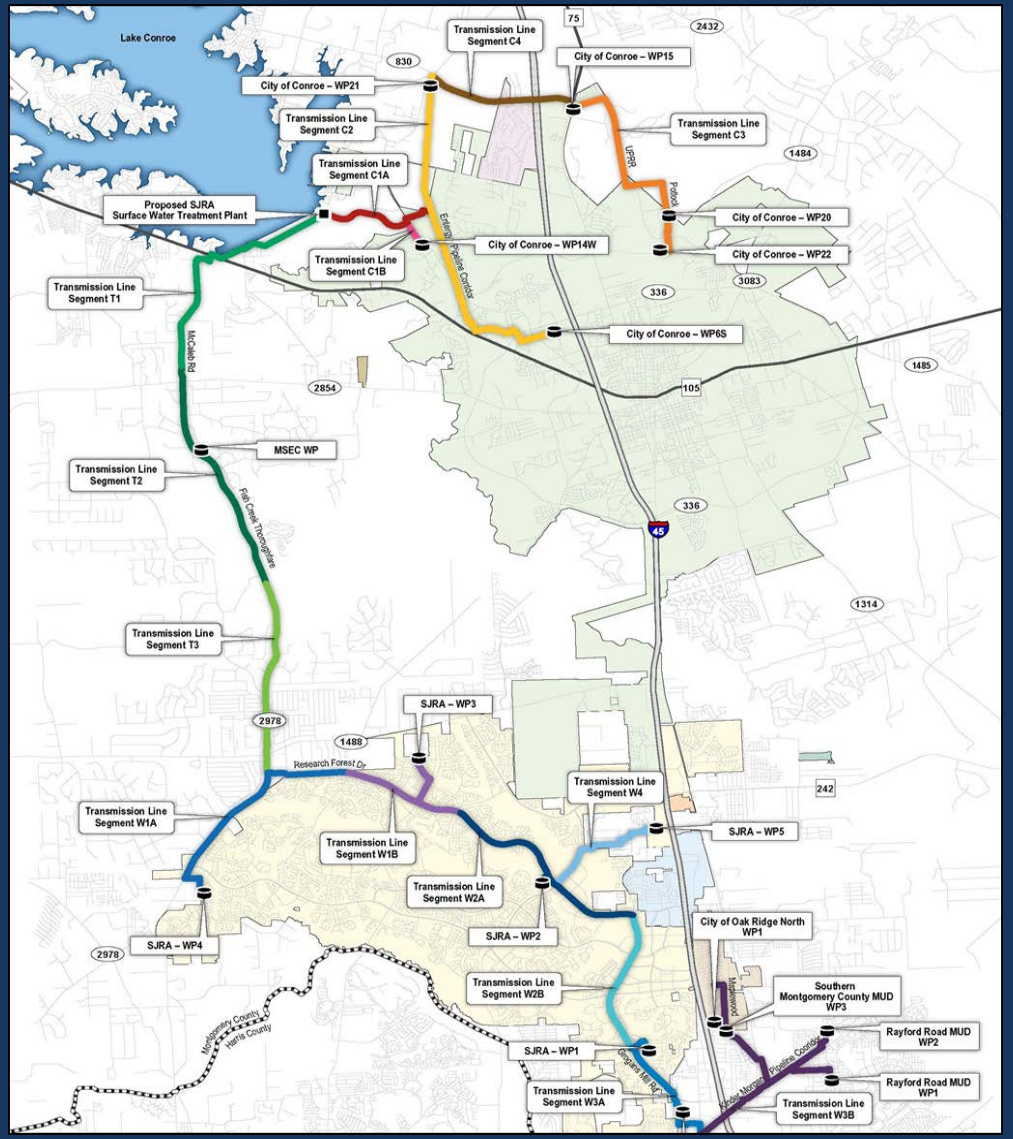
Electrical Facilities – Previous progress photograph

Electrical Facilities – Main electrical switchgear installation

SURFACE WATER FACILITY CONSTRUCTION PROGRESS

Questions?

SURFACE WATER TRANSMISSION SYSTEM CONSTRUCTION PROGRESS



TRANSMISSION LINE SYSTEM CONSTRUCTION ADMINISTRATION

Project Data Thru 5/31/2014

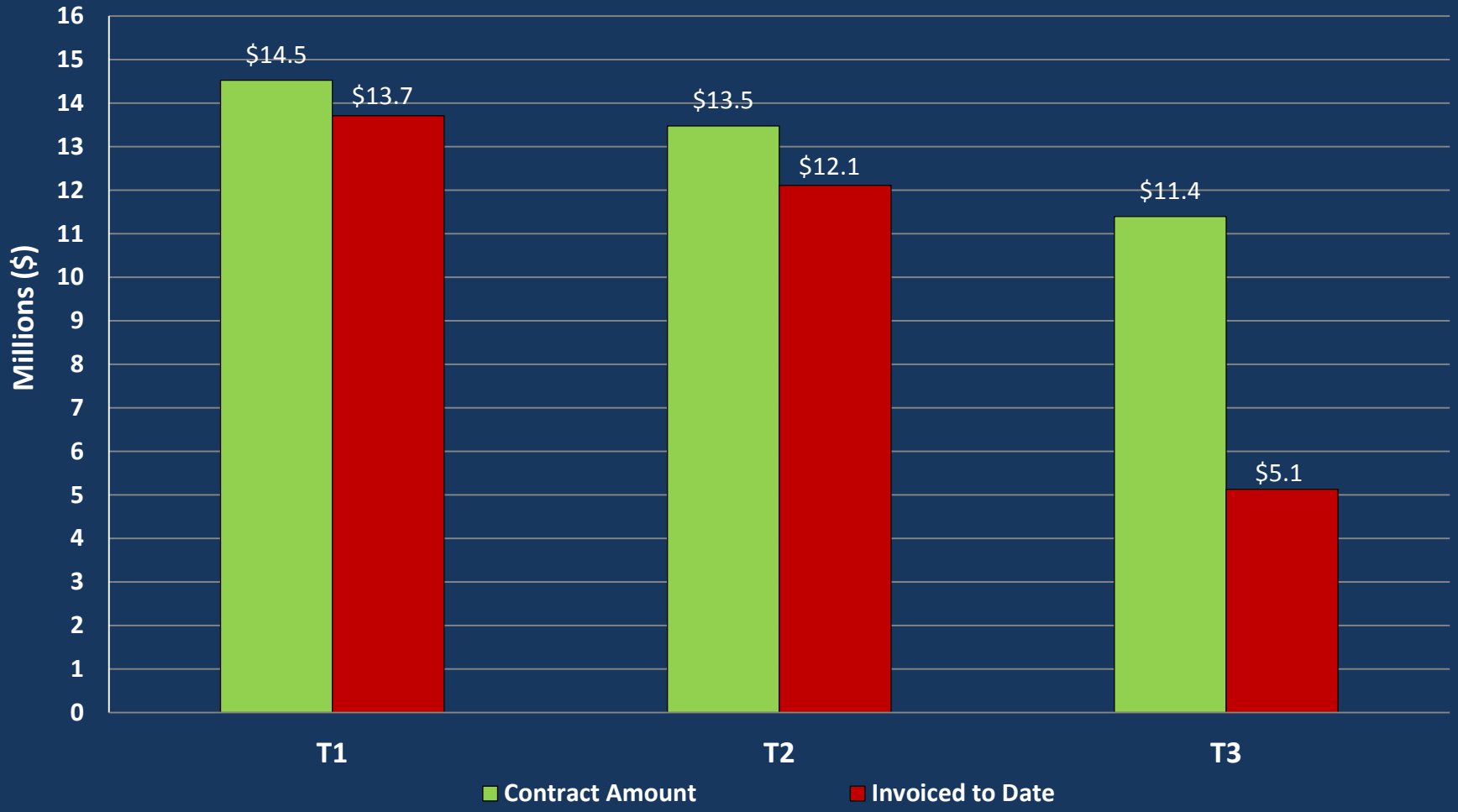
Original Contract Amount:	$ 146,610,000.60
Change Orders:	$ 2,529,447.62
Total Contract Amount:	$149,140,448.22
Amount Invoiced:	$ 89,324,276.30
Percent Complete:	60%
Estimated Completion Date:	May 2015

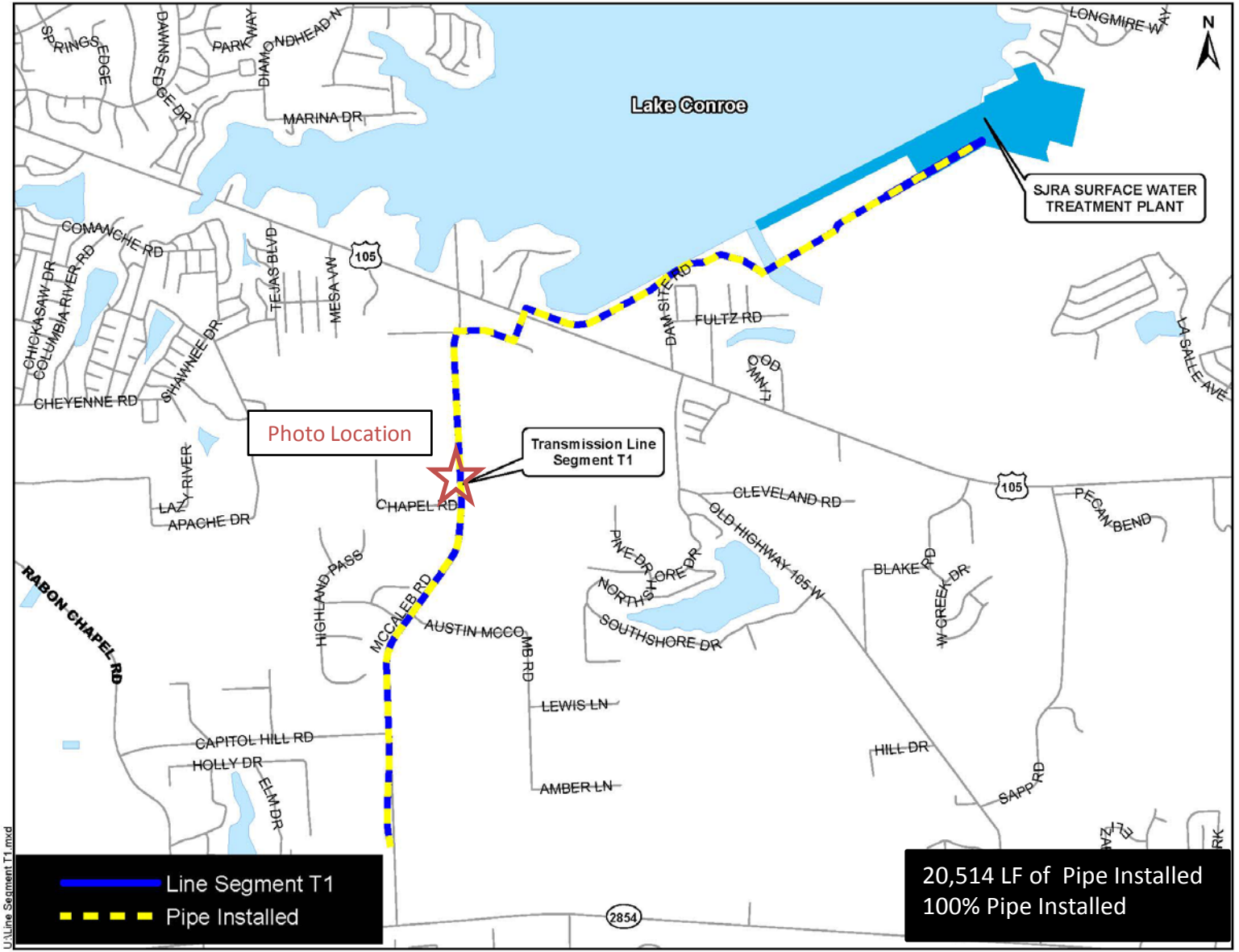
TRANSMISSION LINE SYSTEM CONSTRUCTION ADMINISTRATION

Project Data Thru 5/31/2014

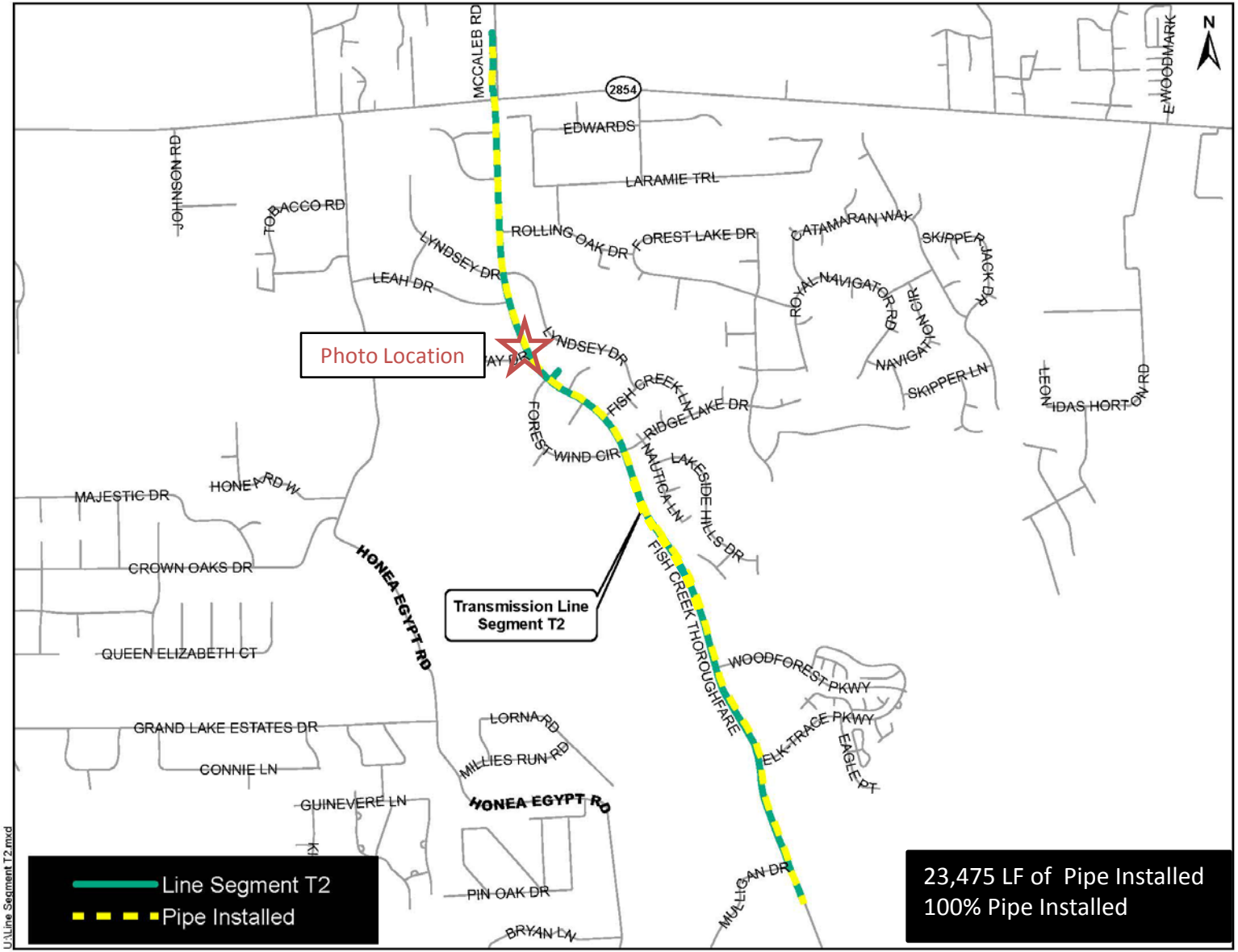
Average Daily workforce:	**294 workers**
Piping installed to date:	**32.5 miles**
Average cost per day:	**$316,495**
Percentage of pipe installed:	**63%**

SURFACE WATER TRANSMISSION SYSTEM "T" ROUTES - PROJECT DATA

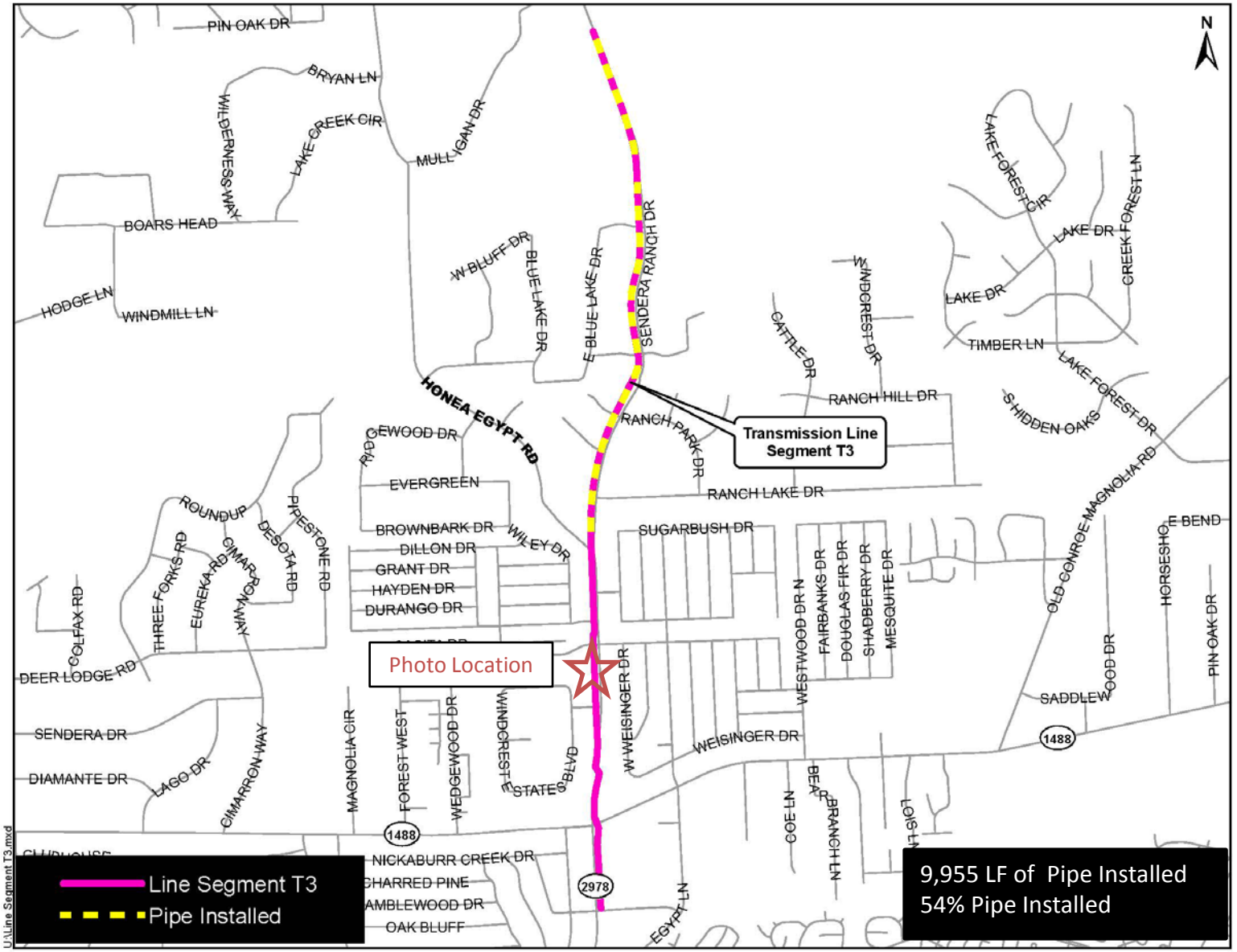



Lake Conroe
SJRA SURFACE WATER TREATMENT PLANT
Photo Location
Transmission Line Segment T1
MARINA DR
COMANCHE RD
CHEYENNE RD
CHAPEL RD
FULTZ RD
CLEVELAND RD
OLD HIGHWAY 105 W
RABON CHAPEL RD
AUSTIN MCCOMB RD
LEWIS LN
AMBER LN
CAPITOL HILL RD
HOLLY DR
HILL DR
SAPP RD
105
2854
N
Line Segment T1
Pipe Installed
20,514 LF of Pipe Installed
100% Pipe Installed

Manhole installation - McCaleb Road

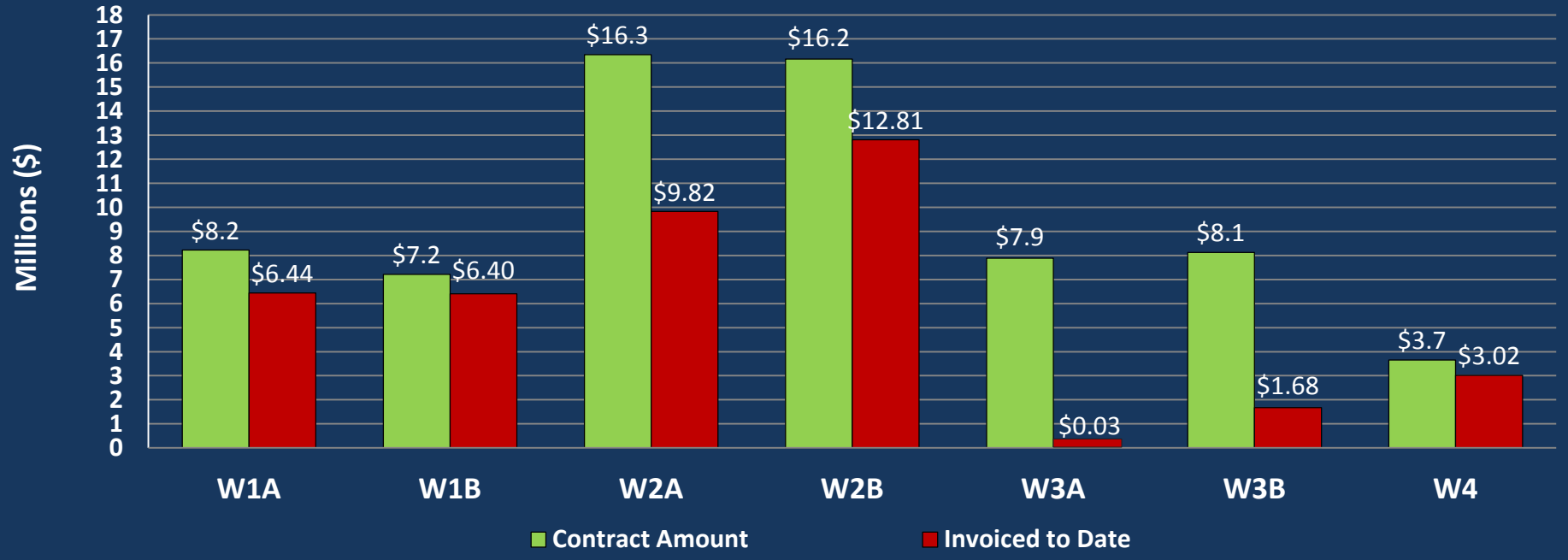

MCCALEB RD
2854
EDWARDS
LARAMIE TRL
JOHNSON RD
TOBACCO RD
ROLLING OAK DR
FOREST LAKE DR
CATAMARAN WAY
SKIPPER JACK DR
LYNDSEY DR
LEAH DR
ROYAL NAVIGATOR RD
NAVIGATOR CIR
SKIPPER LN
LEONIDAS HORTON RD
Photo Location
FISH CREEK LN
RIDGE LAKE DR
FOREST WIND CIR
NAUTICA LN
LAKESIDE HILLS DR
HONEA EGYPT RD W
MAJESTIC DR
CROWN OAKS DR
QUEEN ELIZABETH CT
HONEA EGYPT RD
Transmission Line Segment T2
FISH CREEK THOROUGHFARE
WOODFOREST PKWY
ELK TRACE PKWY
EAGLE PT
GRAND LAKE ESTATES DR
CONNIE LN
GUINEVERE LN
LORNA RD
MILLIES RUN RD
HONEA EGYPT RD
PIN OAK DR
BRYAN LN
MULLIGAN DR
N
Line Segment T2
Pipe Installed
23,475 LF of Pipe Installed
100% Pipe Installed
U:\Line Segment T2.mxd

Fiber optic conduit installation along Fish Creek Thoroughfare


N
PIN OAK DR
BRYAN LN
LAKE CREEK CIR
MULLIGAN DR
WILDERNESS WAY
BOARS HEAD
HODGE LN
WINDMILL LN
W BLUFF DR
BLUE LAKE DR
E BLUE LAKE DR
SENDERA RANCH DR
HONEA EGYPT RD
CATTLE DR
WINDCREST DR
RANCH HILL DR
RANCH PARK DR
Transmission Line Segment T3
LAKE FOREST CIR
LAKE DR
CREEK FOREST LN
TIMBER LN
LAKE FOREST DR
SHIDDEN OAKS
RANCH LAKE DR
OLD CONROE MAGNOLIA RD
HORSESHOE BEND
PIN OAK DR
SADDLEWOOD DR
EVERGREEN
BROWNBARK DR
DILLON DR
GRANT DR
HAYDEN DR
DURANGO DR
WILEY DR
SUGARBUSH DR
WESTWOOD DR N
FAIRBANKS DR
DOUGLAS FIR DR
SHADBERRY DR
MESQUITE DR
ROUNDUP
PIPESTONE RD
DESOTA RD
CIMARRON WAY
THREE FORKS RD
EUREKA RD
COLFAX RD
DEER LODGE RD
Photo Location
W WEISINGER DR
WEISINGER DR
SENDERA DR
DIAMANTE DR
LAGO DR
CIMARRON WAY
MAGNOLIA CIR
FOREST WEST
WEDGEWOOD DR
WINDCREST
E STATES BLVD
1488
NICKABURR CREEK DR
CHARRED PINE
AMBLEWOOD DR
OAK BLUFF
2978
EGYPT LN
BEAR BRANCH LN
LOIS LN
Line Segment T3
Pipe Installed
9,955 LF of Pipe Installed
54% Pipe Installed
U:\Line Segment T3.mxd

54-inch pipe installation along Sendera Ranch Road

SURFACE WATER TRANSMISSION SYSTEM "W" ROUTES - PROJECT DATA



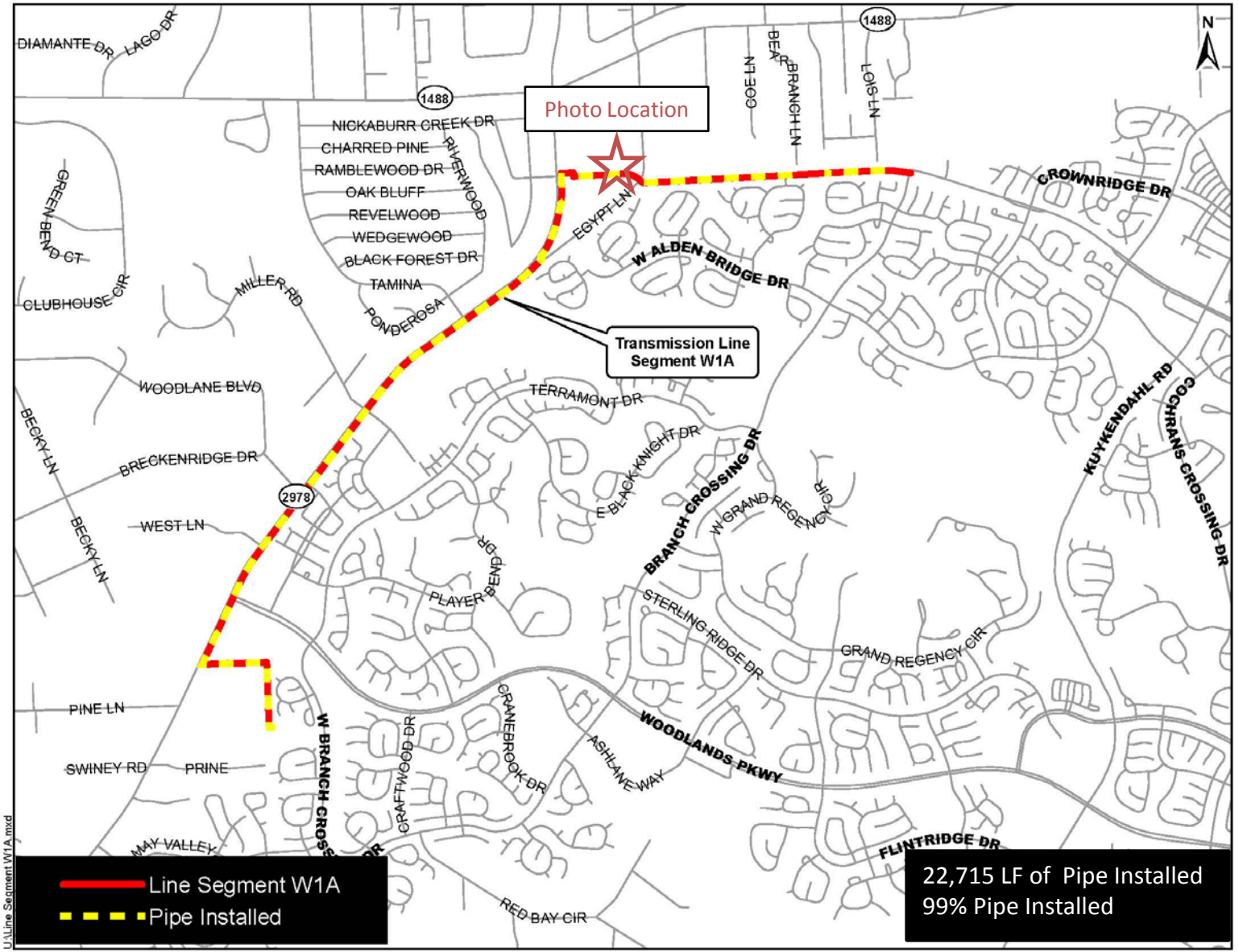
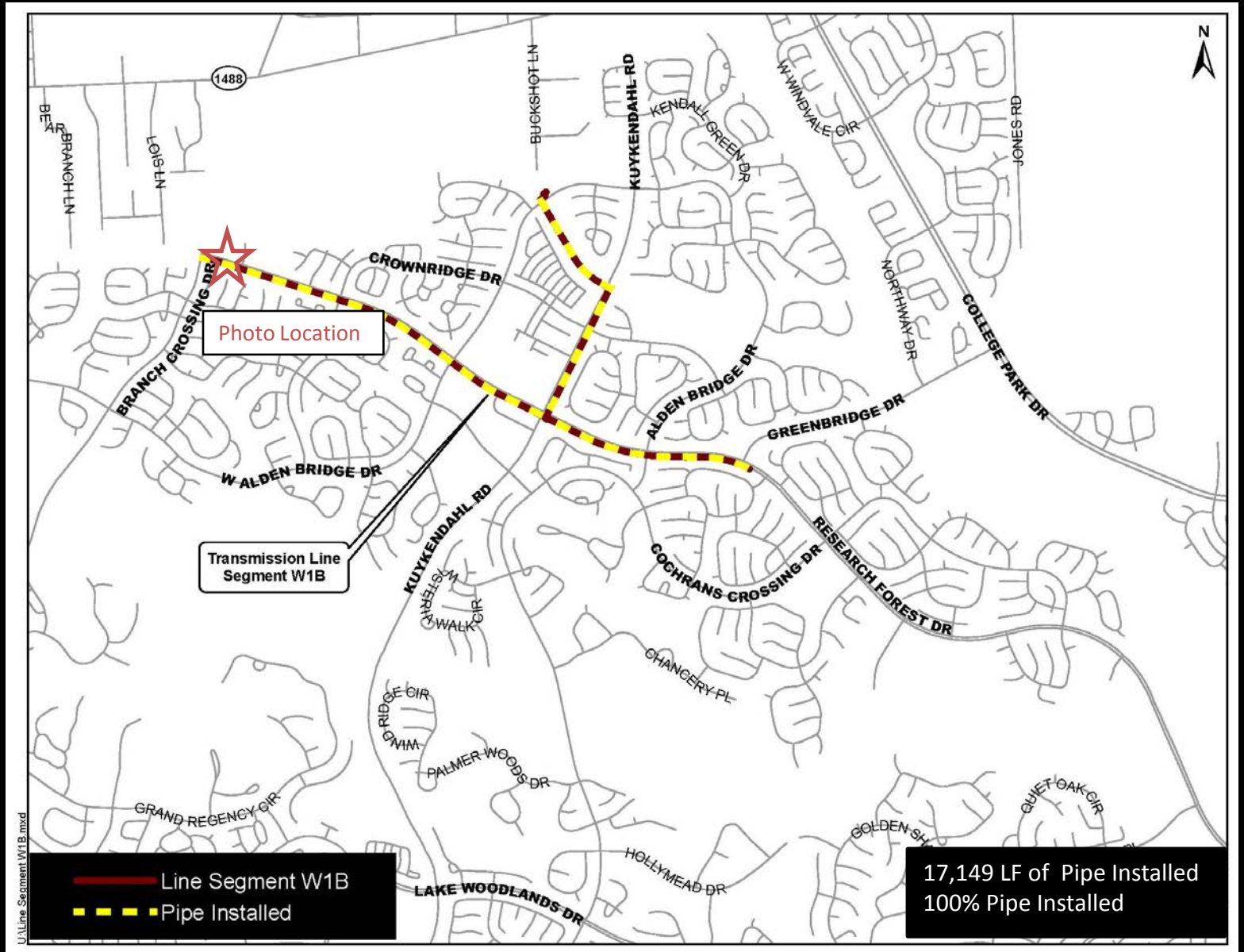
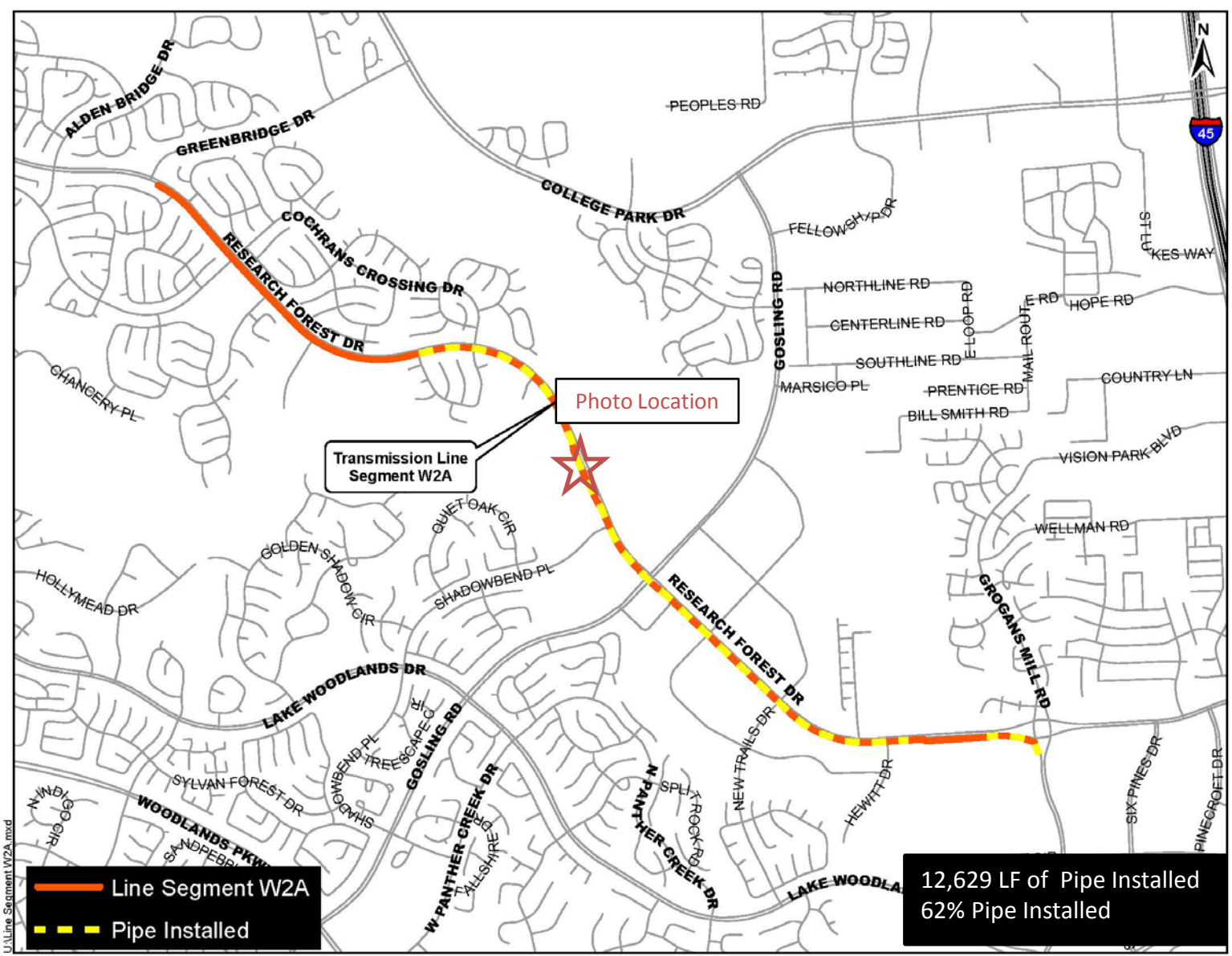


Photo Location
Transmission Line Segment W1A
DIAMANTE DR
LAGO DR
1488
NICKABURR CREEK DR
CHARRED PINE
RAMBLEWOOD DR
OAK BLUFF
REVELWOOD
WEDGEWOOD
BLACK FOREST DR
TAMINA
PONDEROSA
RIVERWOOD
GREEN BEND CT
CLUBHOUSE CIR
MILLER RD
EGYPT LN
W ALDEN BRIDGE DR
CROWNRIDGE DR
BEAR BRANCH LN
LOIS LN
COE LN
WOODLANE BLVD
BECKY LN
BRECKENRIDGE DR
WEST LN
2978
TERRAMONT DR
E BLACK KNIGHT DR
BRANCH CROSSING DR
W GRAND REGENCY CIR
KUYKENDAHL RD
COCHRANS CROSSING DR
PLAYER BEND DR
STERLING RIDGE DR
GRAND REGENCY CIR
WOODLANDS PKWY
PINE LN
SWINEY RD
PRINE
W BRANCH CROSS
CRAFTWOOD DR
CRANEBROOK DR
ASHLANE WAY
FLINTRIDGE DR
MAY VALLEY
RED BAY CIR
N
Line Segment W1A
Pipe Installed
22,715 LF of Pipe Installed
99% Pipe Installed
U:\Line Segment W1A.mxd

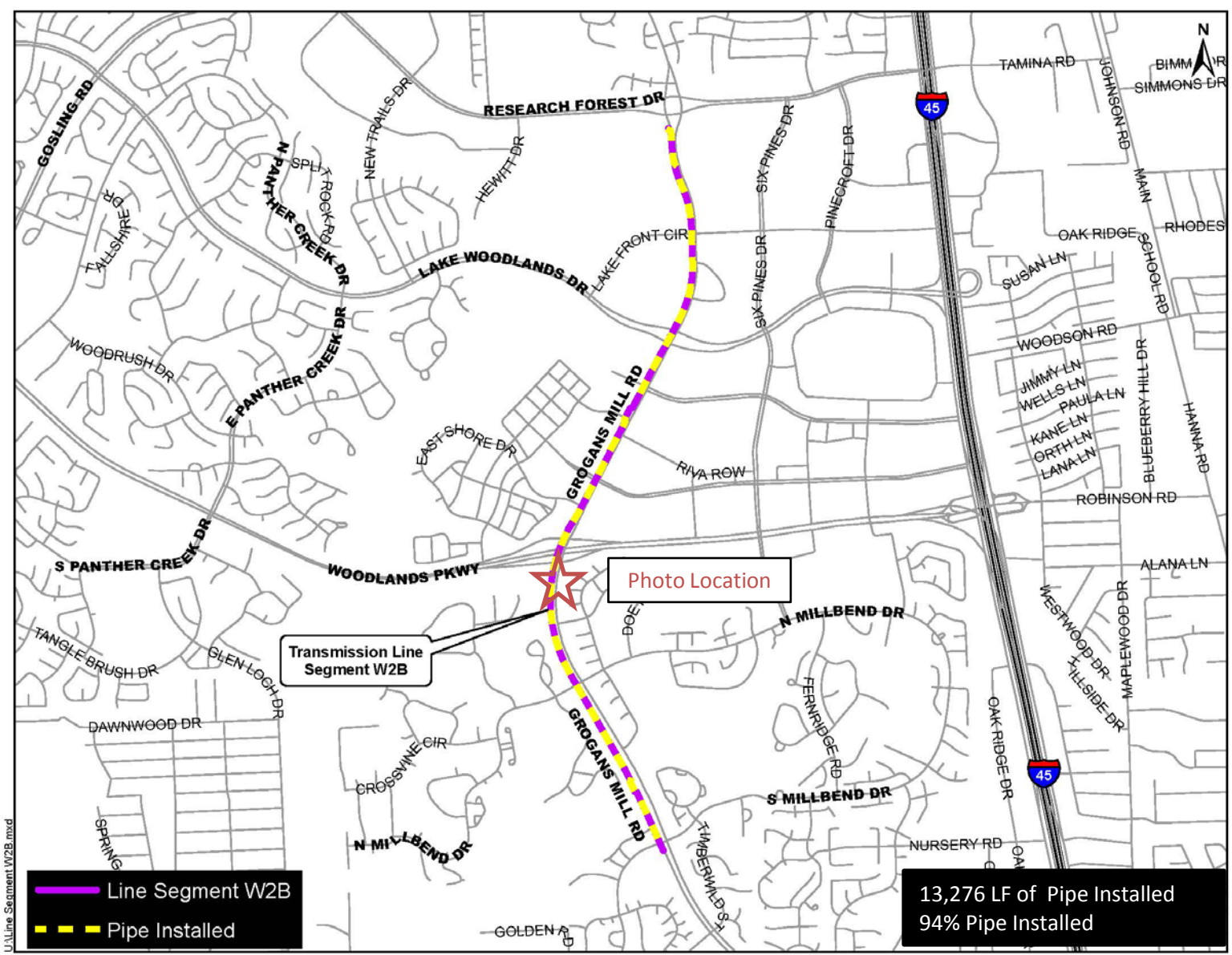
Pavement subgrade stabilization along Research Forest Drive


N
1488
BEAR BRANCH LN
LOIS LN
BUCKSHOT LN
KUYKENDAHL RD
KENDALL GREEN DR
W WINDVALE CIR
JONES RD
NORTHWAY DR
COLLEGE PARK DR
CROWNRIDGE DR
BRANCH CROSSING DR
Photo Location
ALDEN BRIDGE DR
GREENBRIDGE DR
W ALDEN BRIDGE DR
Transmission Line Segment W1B
KUYKENDAHL RD
COCHRANS CROSSING DR
RESEARCH FOREST DR
WISTERIA WALK CIR
CHANCERY PL
WINDRIDGE CIR
PALMER WOODS DR
GRAND REGENCY CIR
HOLLYMEAD DR
LAKE WOODLANDS DR
QUIET OAK CIR
Line Segment W1B
Pipe Installed
17,149 LF of Pipe Installed
100% Pipe Installed
U:\Line Segment W1B.mxd

Manhole installation along Research Forest Drive


ALDEN BRIDGE DR
GREENBRIDGE DR
COCHRANS CROSSING DR
RESEARCH FOREST DR
COLLEGE PARK DR
PEOPLES RD
FELLOWSHIP DR
GOSLING RD
NORTHLINE RD
CENTERLINE RD
SOUTHLINE RD
E LOOP RD
MAIL ROUTE RD
HOPE RD
STILLKES WAY
MARSICO PL
PRENTICE RD
BILL SMITH RD
COUNTRY LN
VISION PARK BLVD
WELLMAN RD
GROGANS MILL RD
CHANCERY PL
Photo Location
Transmission Line Segment W2A
QUIET OAK CIR
GOLDEN SHADOW CIR
SHADOWBEND PL
HOLLYMEAD DR
RESEARCH FOREST DR
LAKE WOODLANDS DR
TREESCAPE DR
SYLVAN FOREST DR
WOODLANDS PKWY
W PANTHER CREEK DR
TALLSHIRE DR
N PANTHER CREEK DR
SPLIT ROCK RD
NEW TRAILS DR
HEWITT DR
SIX PINES DR
PINECROFT DR
N
45
Line Segment W2A
Pipe Installed
12,629 LF of Pipe Installed
62% Pipe Installed
U:\Line Segment W2A.mxd

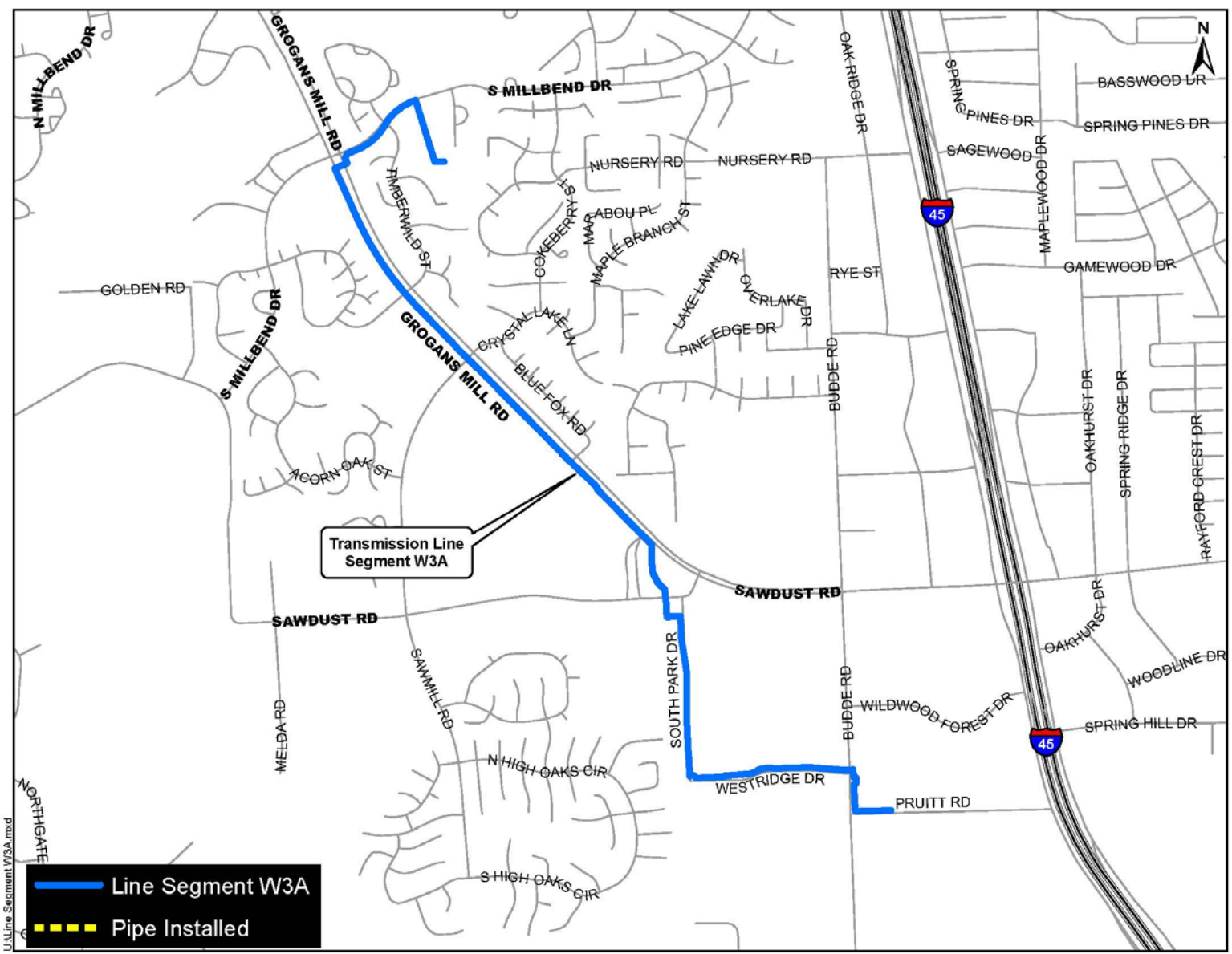
Manhole installation along Research Forest Drive


N
GOSLING RD
RESEARCH FOREST DR
NEW TRAILS DR
HEWITT DR
SPLIT ROCK RD
N PANTHER CREEK DR
TALLSHIRE DR
LAKE WOODLANDS DR
LAKE FRONT CIR
SIX PINES DR
PINECROFT DR
TAMINA RD
JOHNSON RD
BIMM
SIMMONS DR
45
MAIN
OAK RIDGE
RHODES
SCHOOL RD
SUSAN LN
WOODSON RD
JIMMY LN
WELLS LN
PAULA LN
KANE LN
ORTH LN
LANA LN
BLUEBERRY HILL DR
HANNA RD
ROBINSON RD
ALANA LN
WESTWOOD DR
MAPLEWOOD DR
HILLSIDE DR
WOODRUSH DR
E PANTHER CREEK DR
EAST SHORE DR
GROGANS MILL RD
RIVA ROW
S PANTHER CREEK DR
WOODLANDS PKWY
Photo Location
N MILLBEND DR
TANGLE BRUSH DR
GLEN LOCH DR
Transmission Line Segment W2B
DAWNWOOD DR
CROSSVINE CIR
FERNRIDGE RD
OAK RIDGE DR
S MILLBEND DR
NURSERY RD
SPRING
TIMBERWILDS
GOLDEN A
Line Segment W2B
Pipe Installed
13,276 LF of Pipe Installed
94% Pipe Installed
U:\Line Segment W2B.mxd

Concrete placement along Grogans Mill Road

OPENING OF GROGANS MILL

May 16, 2014


N
N MILLBEND DR
GROGANS MILL RD
S MILLBEND DR
NURSERY RD
NURSERY RD
OAK RIDGE DR
SPRING PINES DR
BASSWOOD LN
SPRING PINES DR
SAGEWOOD DR
MAPLEWOOD DR
45
GAMEWOOD DR
TIMBERMILL ST
COKEBERRY ST
MAR ABOU PL
MAPLE BRANCH ST
LAKE LAWN DR
OVERLAKE DR
RYE ST
GOLDEN RD
CRYSTAL LAKE LN
PINE EDGE DR
BUDDE RD
BLUE FOX RD
OAKHURST DR
SPRING RIDGE DR
RAYFORD CREST DR
ACORN OAK ST
Transmission Line Segment W3A
SAWDUST RD
SAWDUST RD
OAKHURST DR
SOUTH PARK DR
SAWMILL RD
WOODLINE DR
WILDWOOD FOREST DR
BUDDE RD
SPRING HILL DR
45
MELDA RD
N HIGH OAKS CIR
WESTRIDGE DR
PRUITT RD
NORTHGATE
S HIGH OAKS CIR
Line Segment W3A
Pipe Installed
U:\Line Segment W3A.mxd

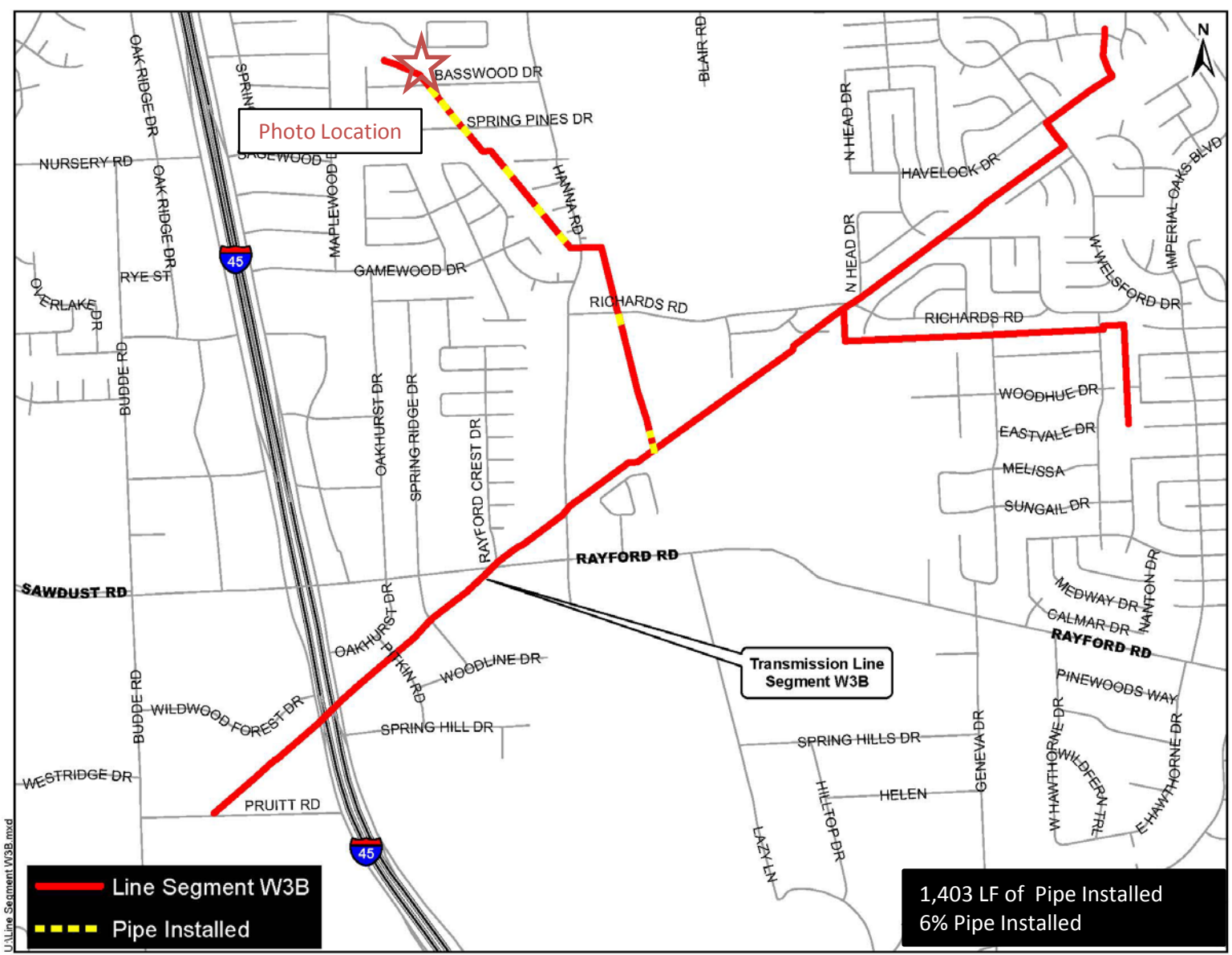
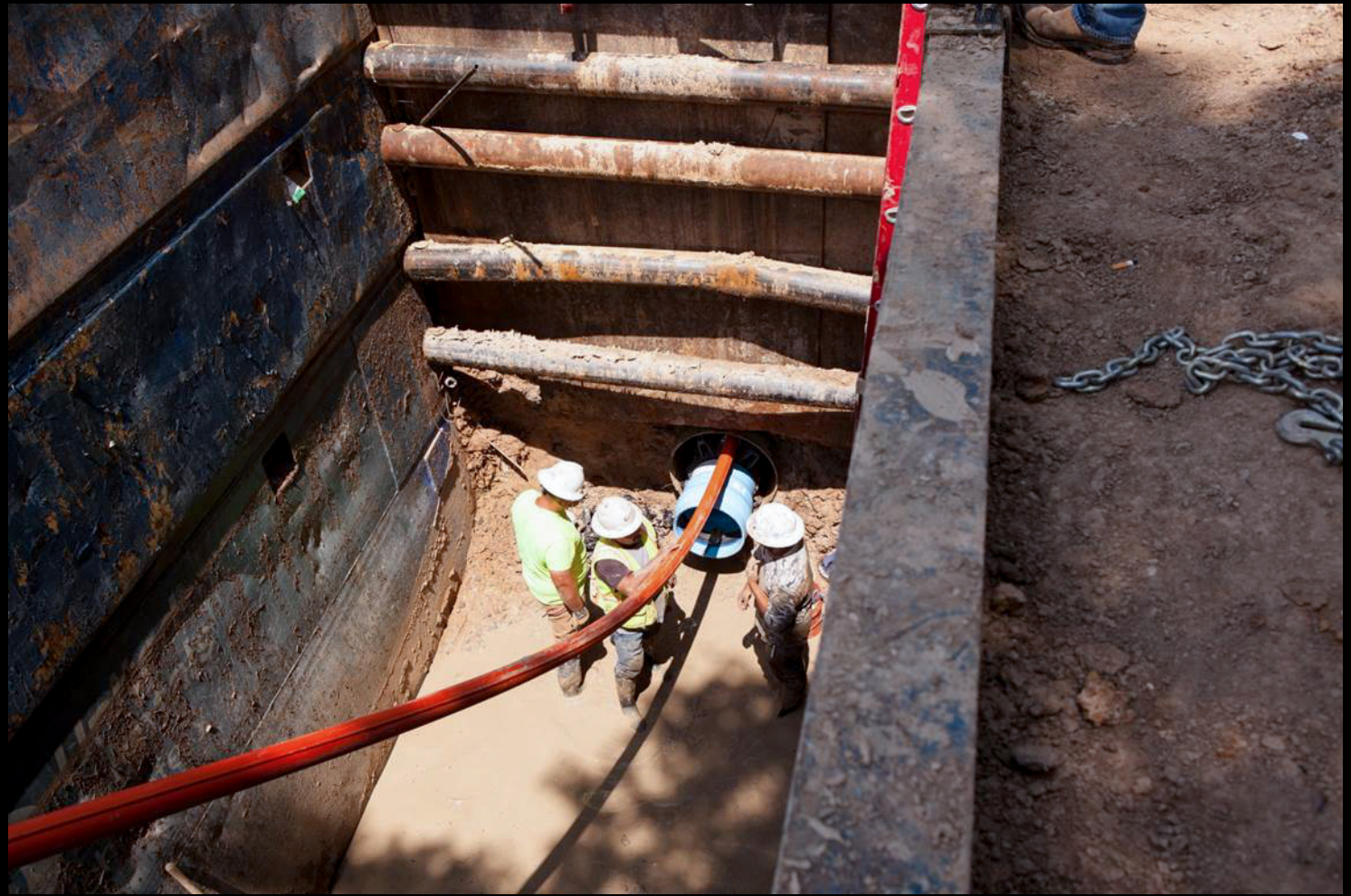


Photo Location
BASSWOOD DR
SPRING PINES DR
HANNA RD
BLAIR RD
N HEAD DR
HAVELOCK DR
IMPERIAL OAKS BLVD
W WELSFORD DR
RICHARDS RD
NURSERY RD
OAK RIDGE DR
MAPLEWOOD E
GAMEWOOD DR
RYE ST
OVERLAKE DR
BUDDE RD
OAKHURST DR
SPRING RIDGE DR
RAYFORD CREST DR
WOODHUE DR
EASTVALE DR
MELISSA
SUNGAIL DR
RAYFORD RD
SAWDUST RD
MEDWAY DR
CALMAR DR
NANTON DR
PINEWOODS WAY
Transmission Line Segment W3B
WOODLINE DR
WILDWOOD FOREST DR
SPRING HILL DR
SPRING HILLS DR
GENEVA DR
W HAWTHORNE DR
WILDFERN TRL
E HAWTHORNE DR
WESTRIDGE DR
PRUITT RD
HELEN
HILLTOP DR
LAZY LN
45
N
Line Segment W3B
Pipe Installed
1,403 LF of Pipe Installed
6% Pipe Installed
U:\Line Segment W3B.mxd



Pipe installation along Montgomery County Drainage District No. 6 right-of-way

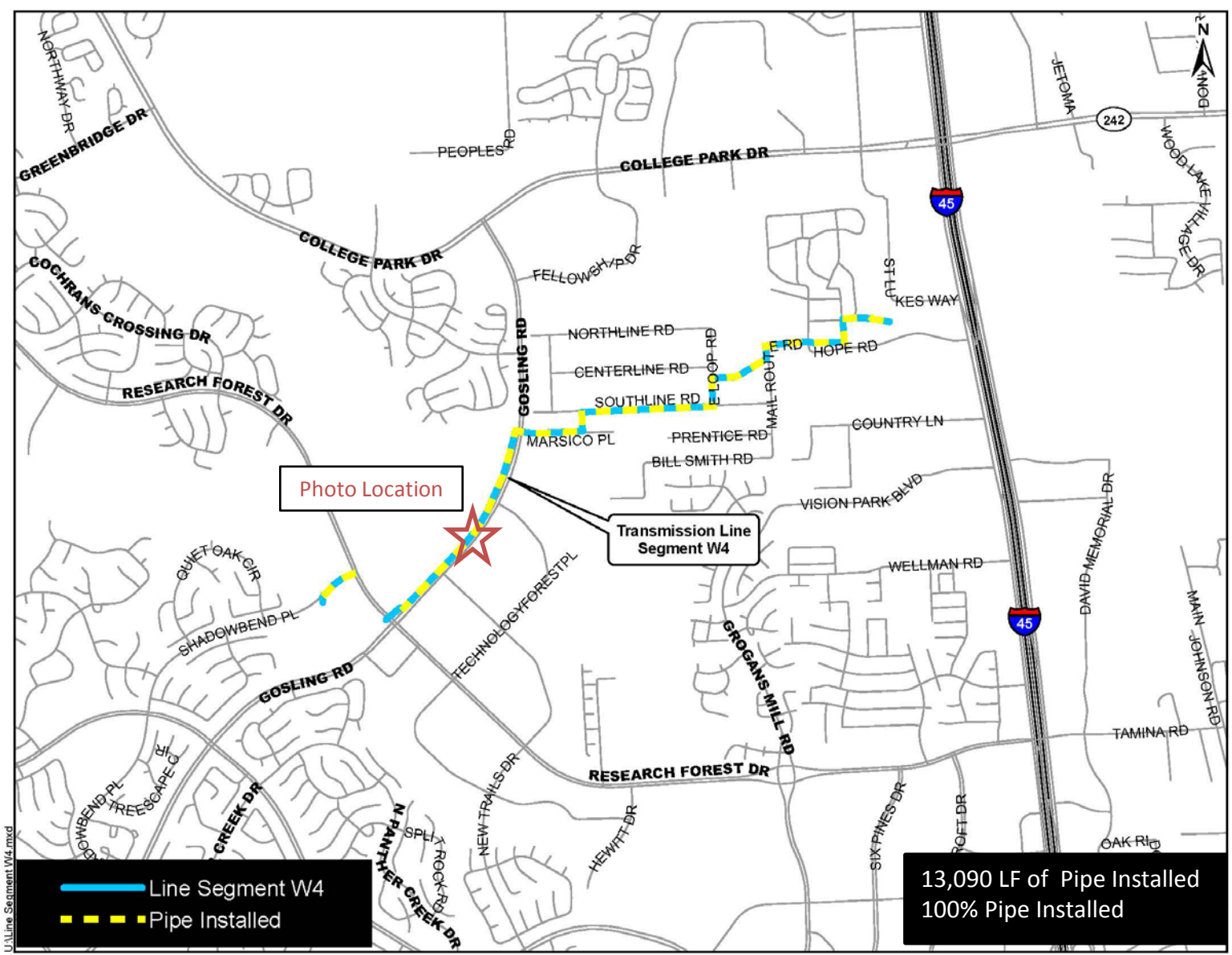
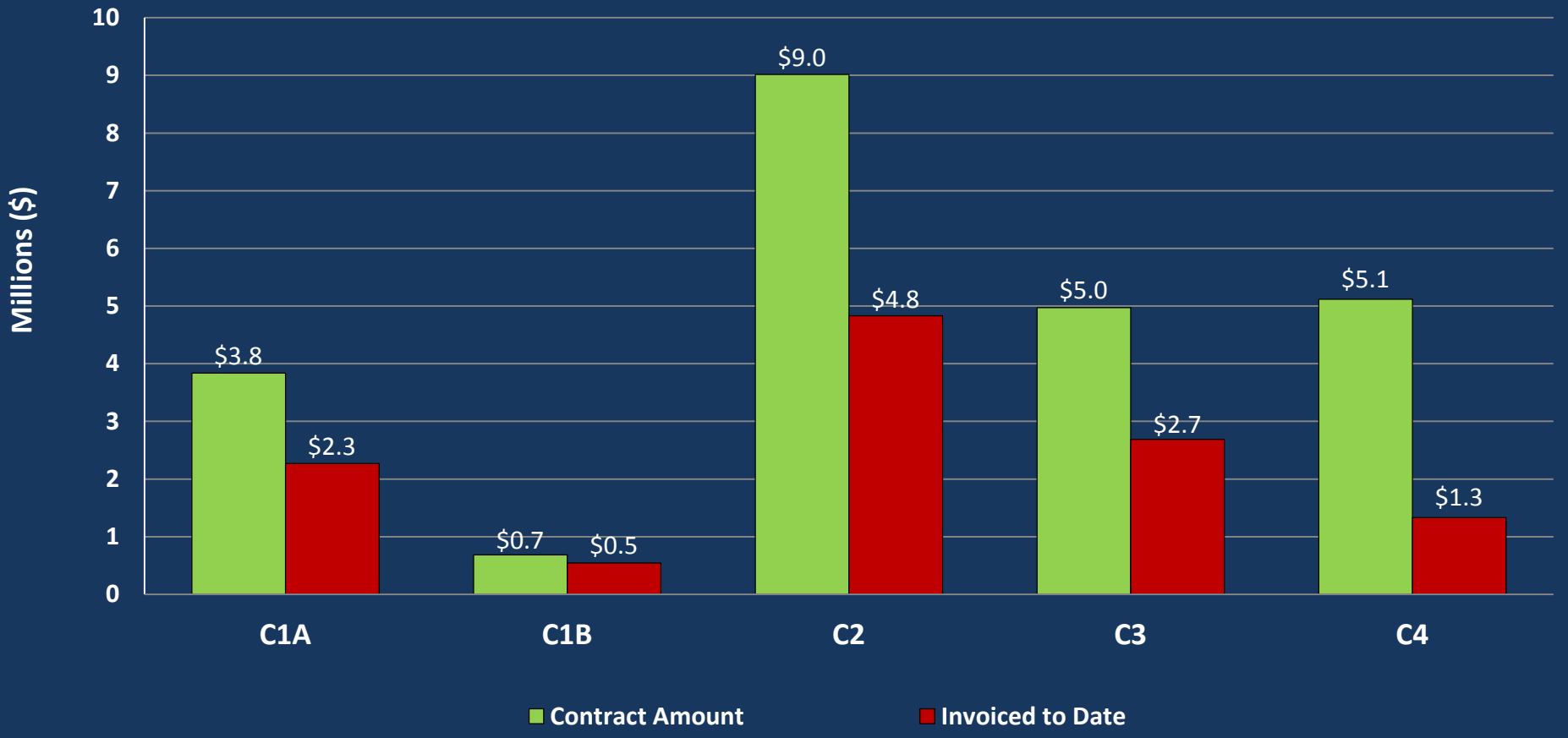
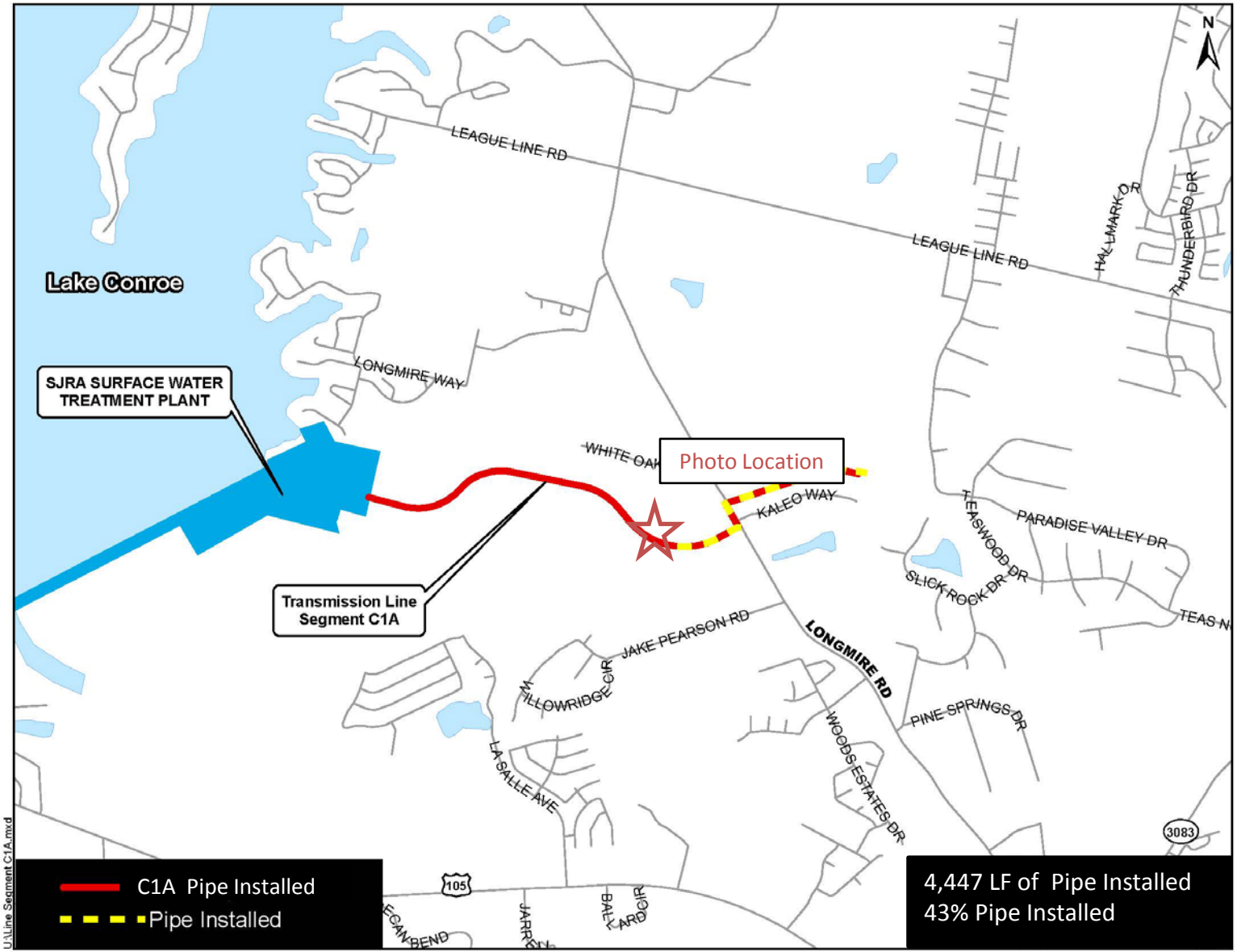


Photo Location
Transmission Line Segment W4
Line Segment W4
Pipe Installed
13,090 LF of Pipe Installed
100% Pipe Installed
GREENBRIDGE DR
NORTHWAY DR
PEOPLES RD
COLLEGE PARK DR
COCHRANS CROSSING DR
RESEARCH FOREST DR
FELLOWSHIP DR
GOSLING RD
NORTHLINE RD
CENTERLINE RD
SOUTHLINE RD
MARSICO PL
PRENTICE RD
BILL SMITH RD
E LOOP RD
MAIL ROUTE
E RD
HOPE RD
KES WAY
COUNTRY LN
VISION PARK BLVD
WELLMAN RD
TECHNOLOGY FOREST PL
GROGANS MILL RD
DAVID MEMORIAL DR
MAIN JOHNSON RD
TAMINA RD
OAK RI
QUIET OAK CIR
SHADOWBEND PL
TREESCAPE CT
NEW TRAILS DR
HEWITT DR
SPLIT ROCK RD
PANTHER CREEK DR
SIX PINES DR
JETOMA
WOOD LAKE VILLAGE DR
242
45
N

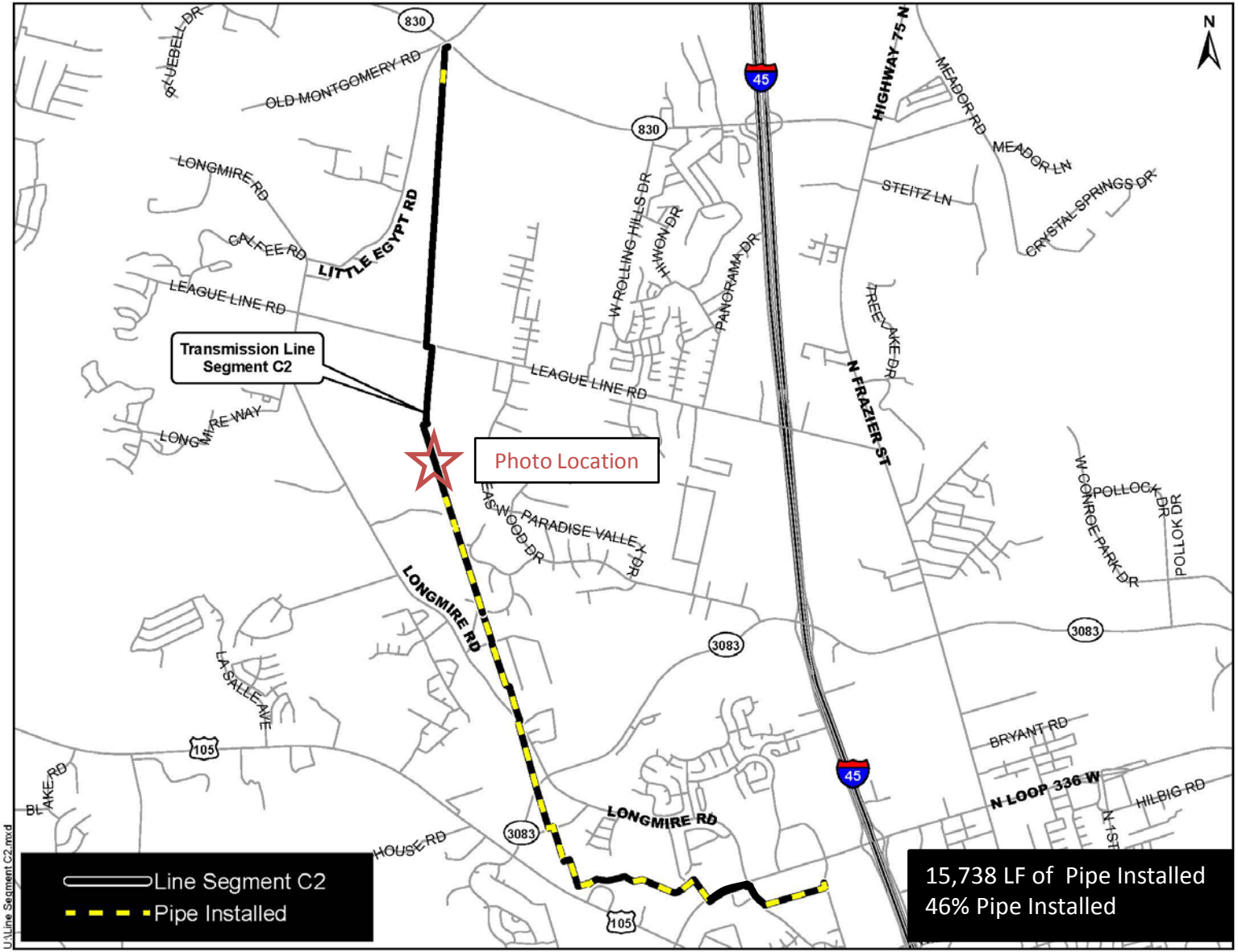
24-inch pipe and fiber optic conduit installation on Gosling

SURFACE WATER TRANSMISSION SYSTEM "C" ROUTES - PROJECT DATA




N
Lake Conroe
LEAGUE LINE RD
LEAGUE LINE RD
HALLMARK DR
THUNDERBIRD DR
LONGMIRE WAY
SJRA SURFACE WATER TREATMENT PLANT
WHITE OAK
Photo Location
KALEO WAY
TEASWOOD DR
PARADISE VALLEY DR
SLICK ROCK DR
TEAS N
Transmission Line Segment C1A
JAKE PEARSON RD
LONGMIRE RD
WILLOWRIDGE CIR
LA SALLE AVE
PINE SPRINGS DR
WOODS ESTATES DR
3083
105
BALLARD CIR
C1A Pipe Installed
Pipe Installed
4,447 LF of Pipe Installed
43% Pipe Installed
U:\Line Segment C1A.mxd

42-inch pipe installation along GRP Access Road


Transmission Line Segment C2
Photo Location
Line Segment C2
Pipe Installed
15,738 LF of Pipe Installed
46% Pipe Installed
OLD MONTGOMERY RD
LONGMIRE RD
LITTLE EGYPT RD
CALFEE RD
LEAGUE LINE RD
LONG MIRE WAY
W ROLLING HILLS DR
PANORAMA DR
HIGHWAY 75 N
MEADOR RD
MEADOR LN
STEITZ LN
CRYSTAL SPRINGS DR
TREE LAKE DR
N FRAZIER ST
W CONROE PARK DR
POLLOCK DR
EASTWOOD DR
PARADISE VALLEY DR
LA SALLE AVE
BRYANT RD
N LOOP 336 W
HILBIG RD
HOUSE RD
BL AKE RD
830
45
3083
105
N

48-inch steel casing installation along Entergy easement

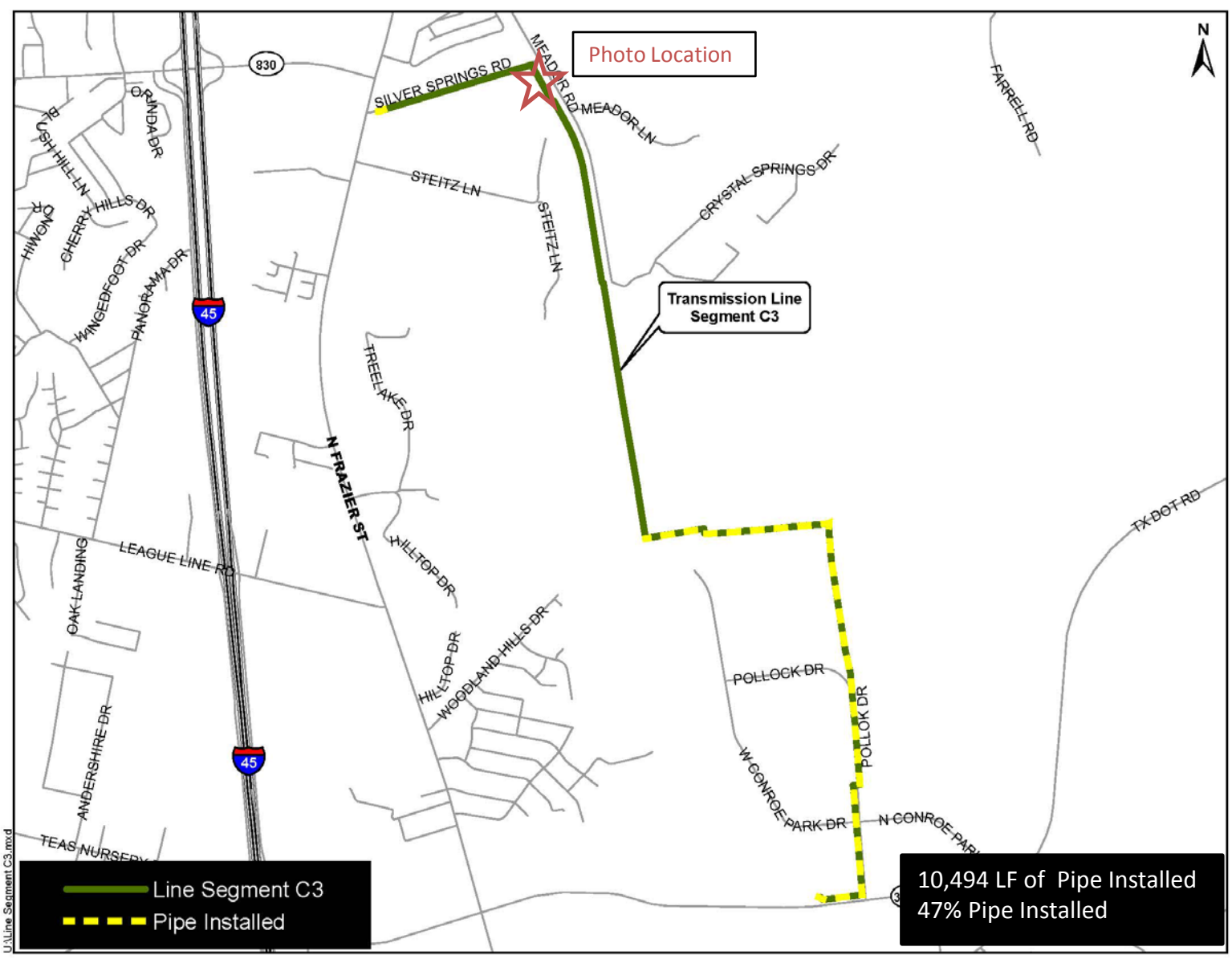
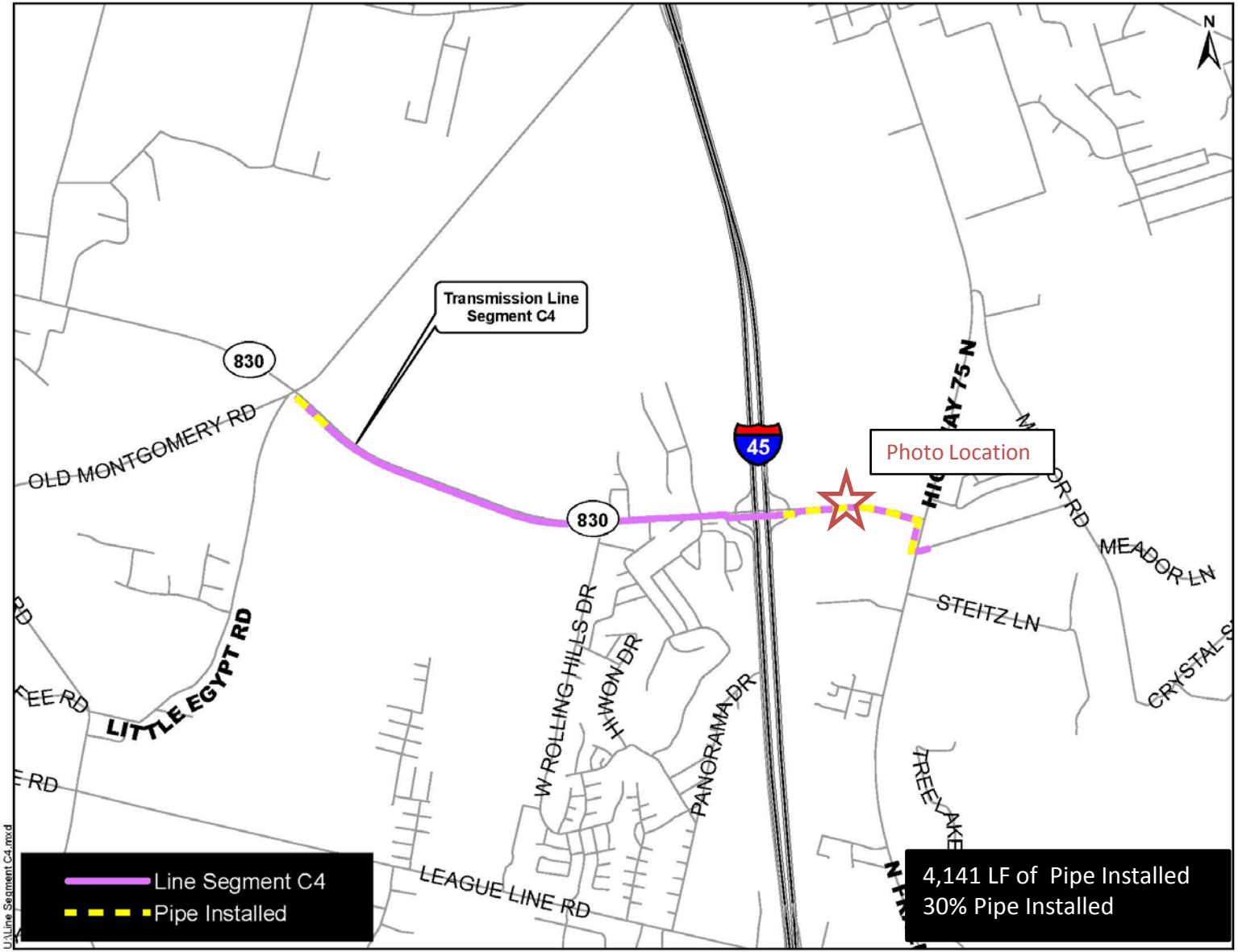


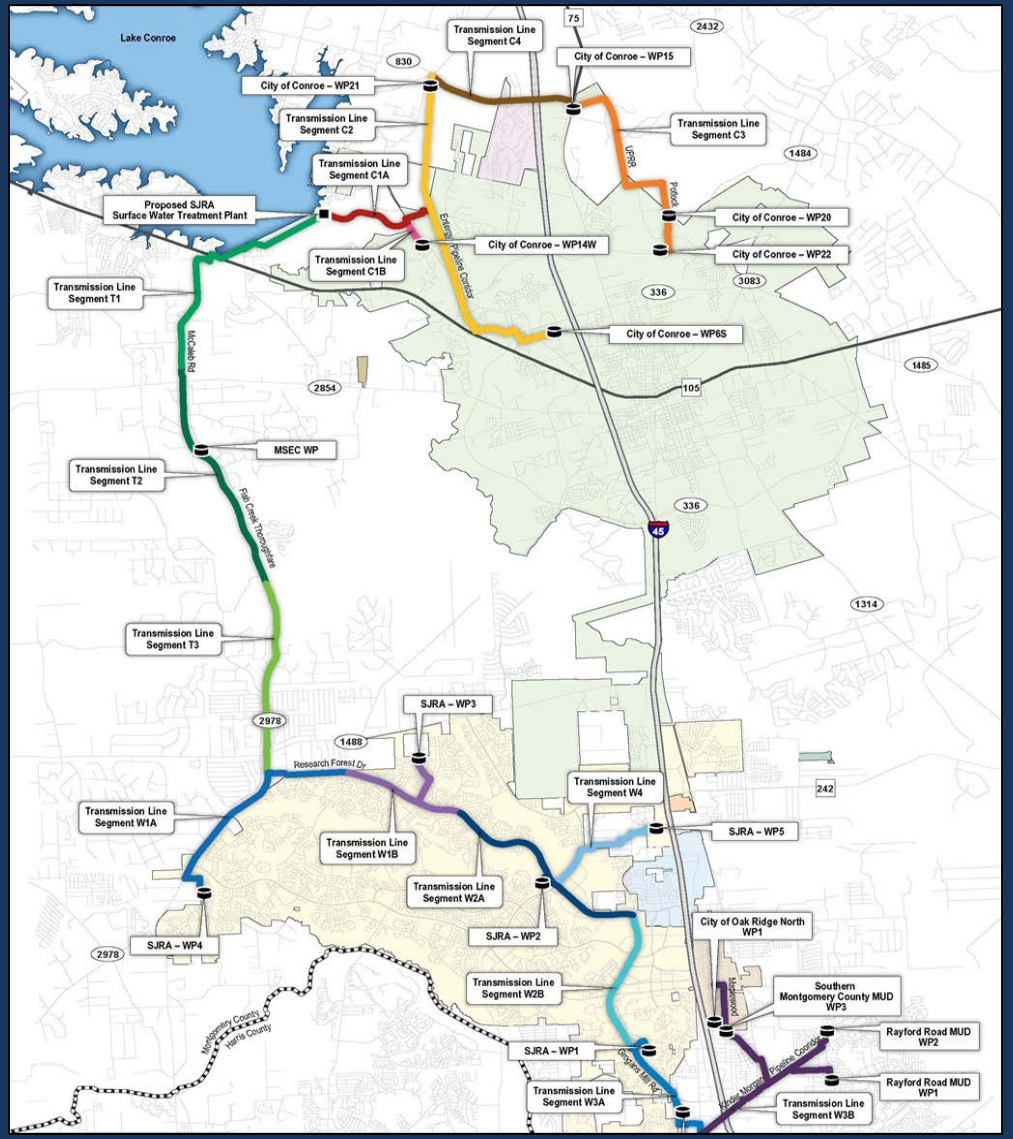
Photo Location
Transmission Line Segment C3
SILVER SPRINGS RD
MEADOR RD
MEADOR LN
STEITZ LN
CRYSTAL SPRINGS DR
FARRELL RD
TREELAKE DR
N FRAZIER ST
HILLTOP DR
LEAGUE LINE RD
OAK LANDING
ANDERSHIRE DR
WOODLAND HILLS DR
POLLOCK DR
W CONROE PARK DR
N CONROE PARK
TX DOT RD
WINGEDFOOT DR
PANORAMA DR
CHERRY HILLS DR
RUSH HILL LN
ORINDA DR
830
45
N
Line Segment C3
Pipe Installed
10,494 LF of Pipe Installed
47% Pipe Installed

Staging of pipe materials along Girl Scout property

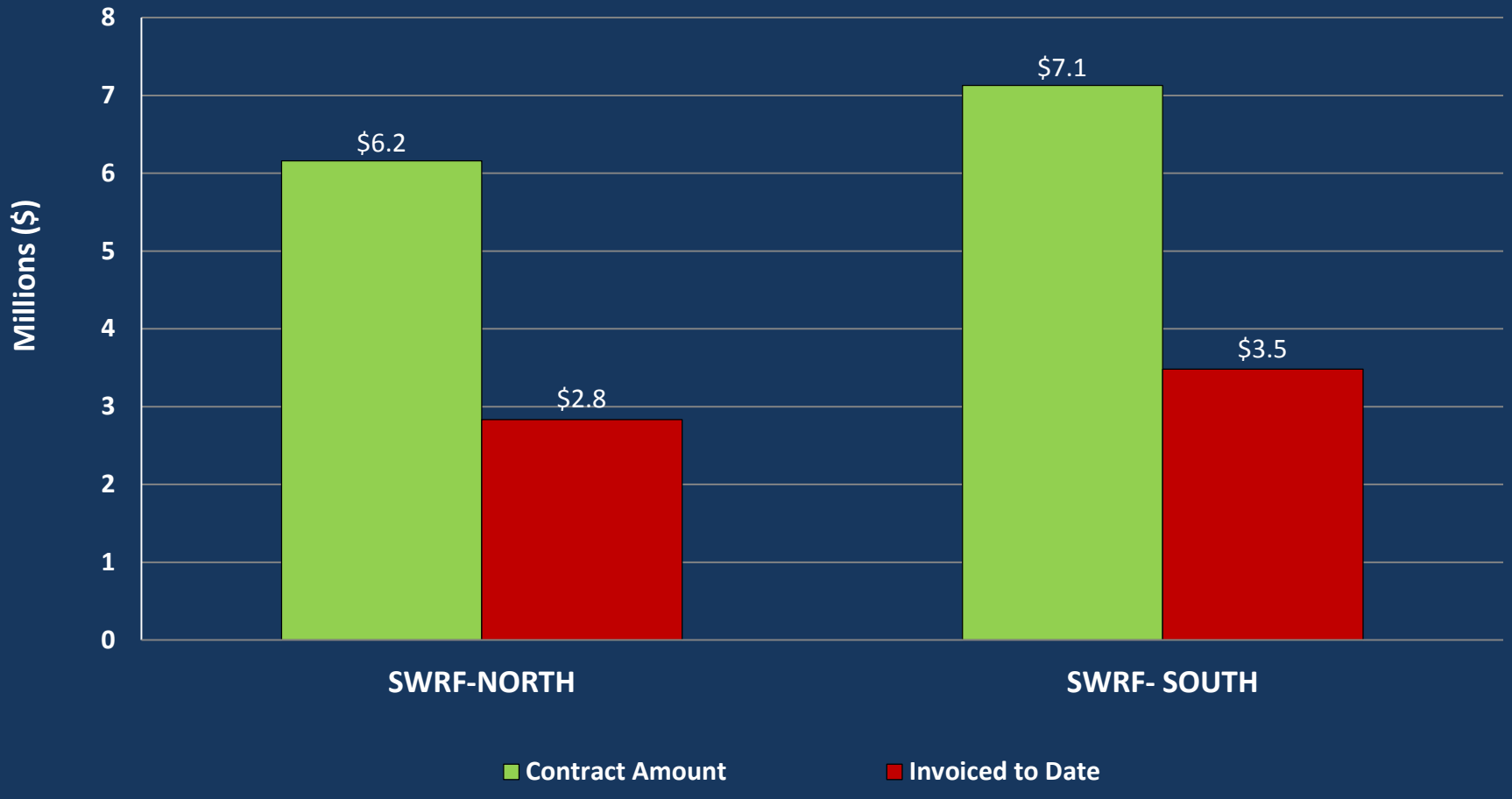

N
Transmission Line Segment C4
830
OLD MONTGOMERY RD
45
Photo Location
830
MEADOR LN
STEITZ LN
LITTLE EGYPT RD
W ROLLING HILLS DR
PANORAMA DR
LEAGUE LINE RD
Line Segment C4
Pipe Installed
4,141 LF of Pipe Installed
30% Pipe Installed

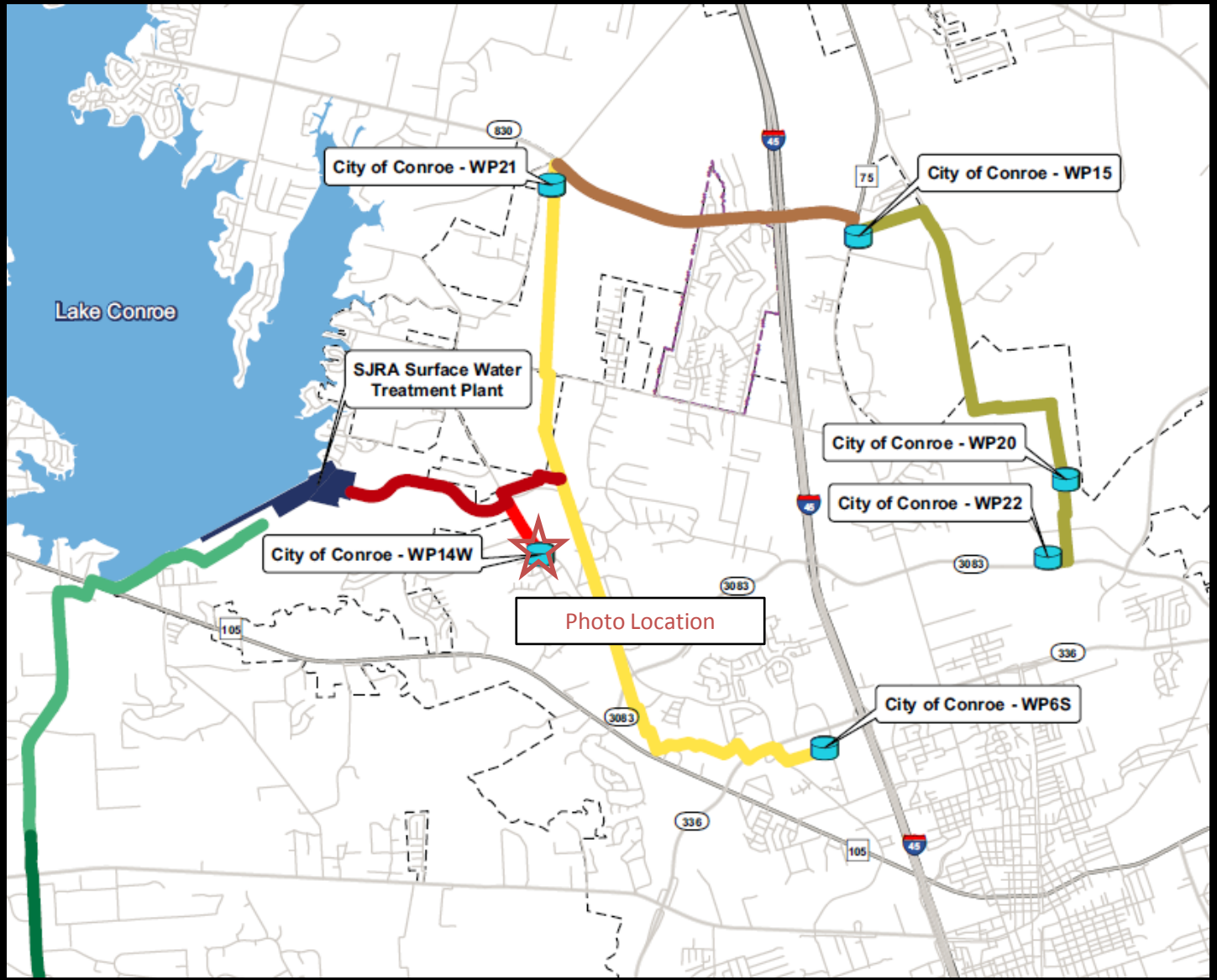
24-inch pipe installation along FM 830

SURFACE WATER RECEIVING FACILITIES CONSTRUCTION PROGRESS

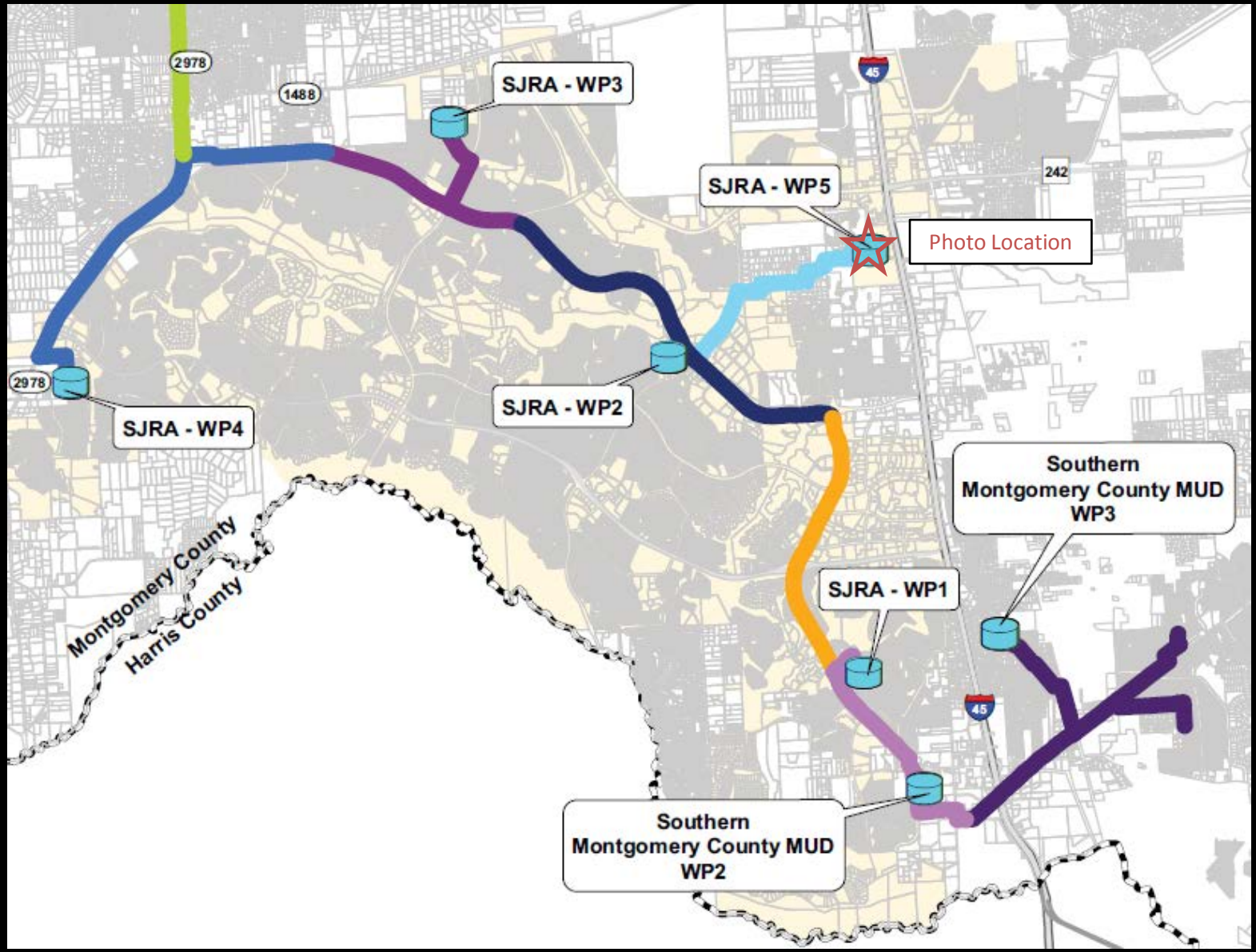


SURFACE WATER TRANSMISSION SYSTEM RECEIVING FACILITIES - PROJECT DATA



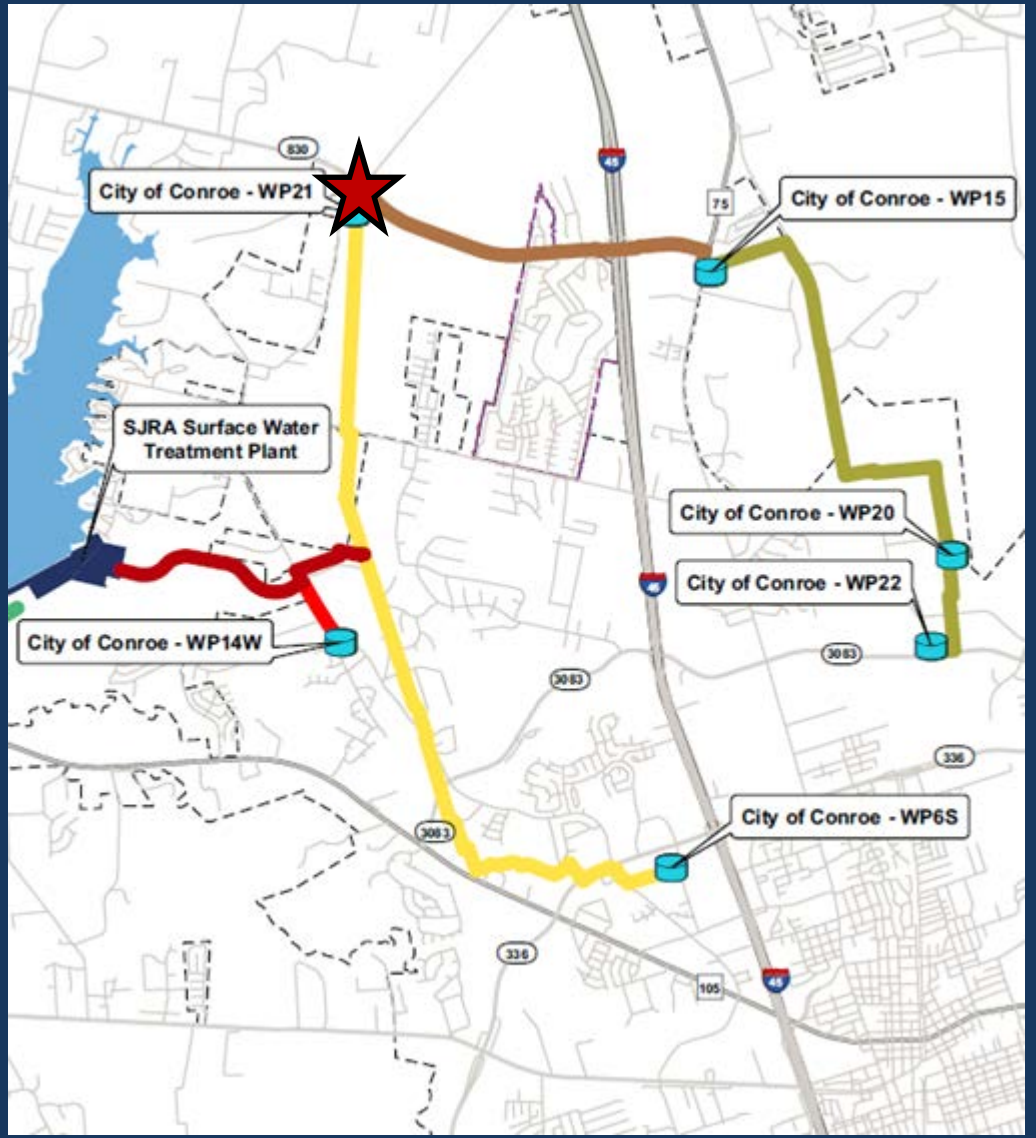

Lake Conroe
City of Conroe - WP21
City of Conroe - WP15
SJRA Surface Water Treatment Plant
City of Conroe - WP20
City of Conroe - WP22
City of Conroe - WP14W
Photo Location
City of Conroe - WP6S
830
45
75
3083
105
336

Flow Control Pressure Slab installation at Conroe Water Plant No. 14

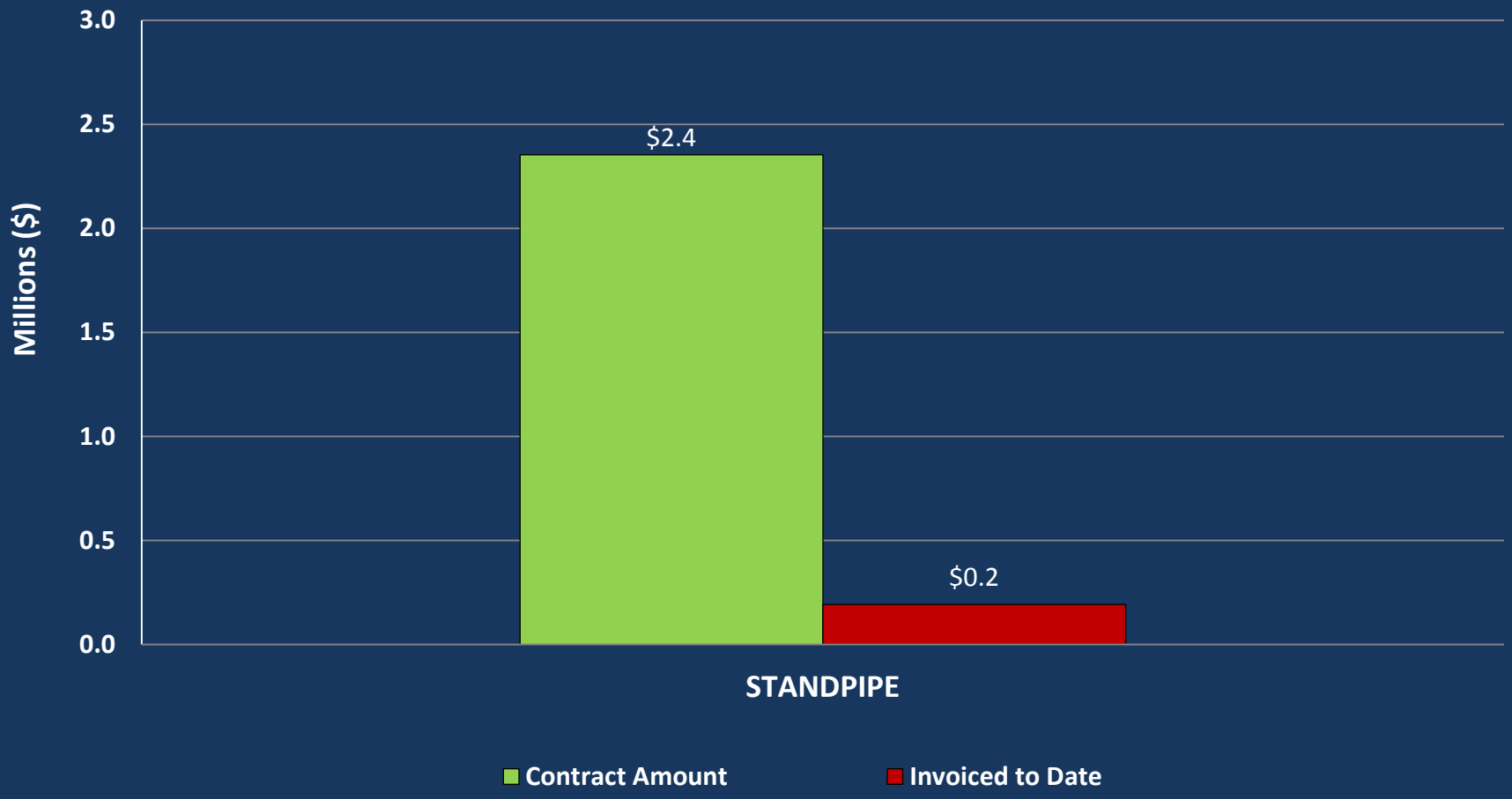

2978
1488
SJRA - WP3
45
242
SJRA - WP5
Photo Location
2978
SJRA - WP4
SJRA - WP2
Southern
Montgomery County MUD
WP3
Montgomery County
Harris County
SJRA - WP1
45
Southern
Montgomery County MUD
WP2

Riser pipe installation at Woodlands Water Plant No. 5

SURFACE WATER STANDPIPE CONSTRUCTION PROGRESS



SURFACE WATER TRANSMISSION SYSTEM
STANDPIPE - PROJECT DATA

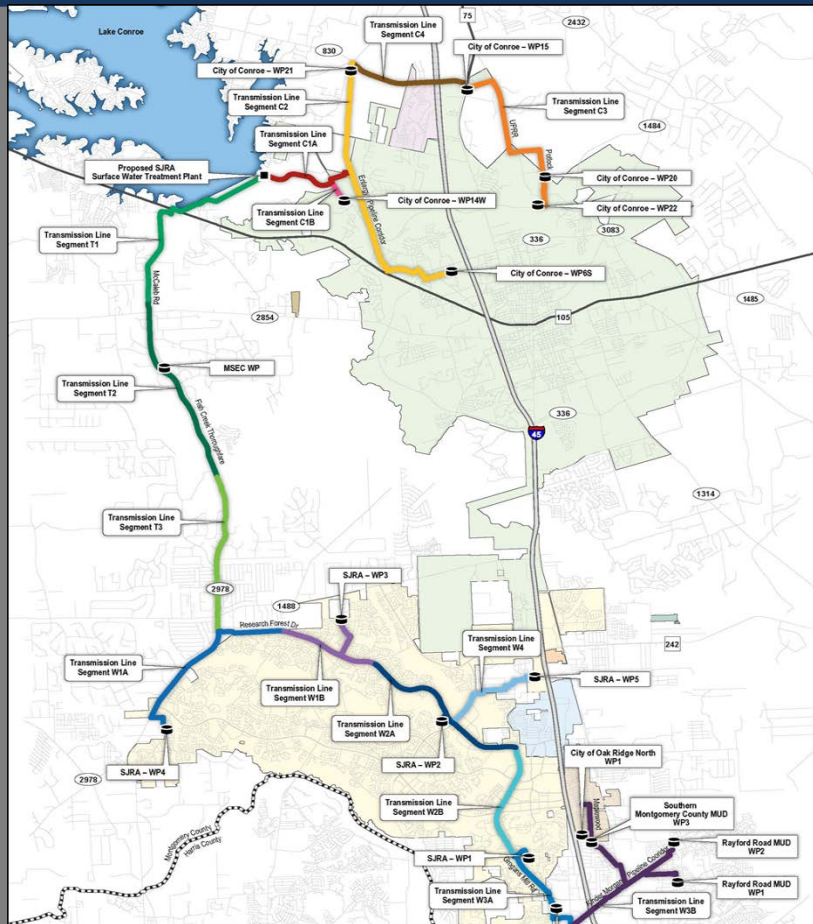


Reinforced steel and formwork installation

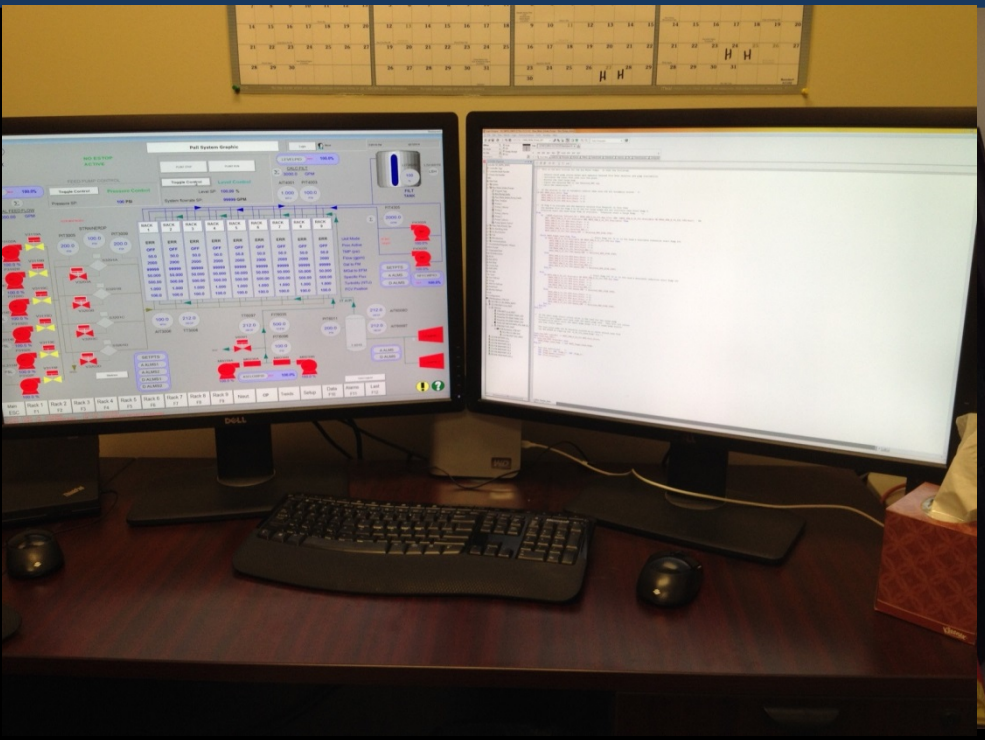
FIBER OPTIC COMMUNICATION CONSTRUCTION ADMINISTRATION

Project Data Thru 5/31/2014

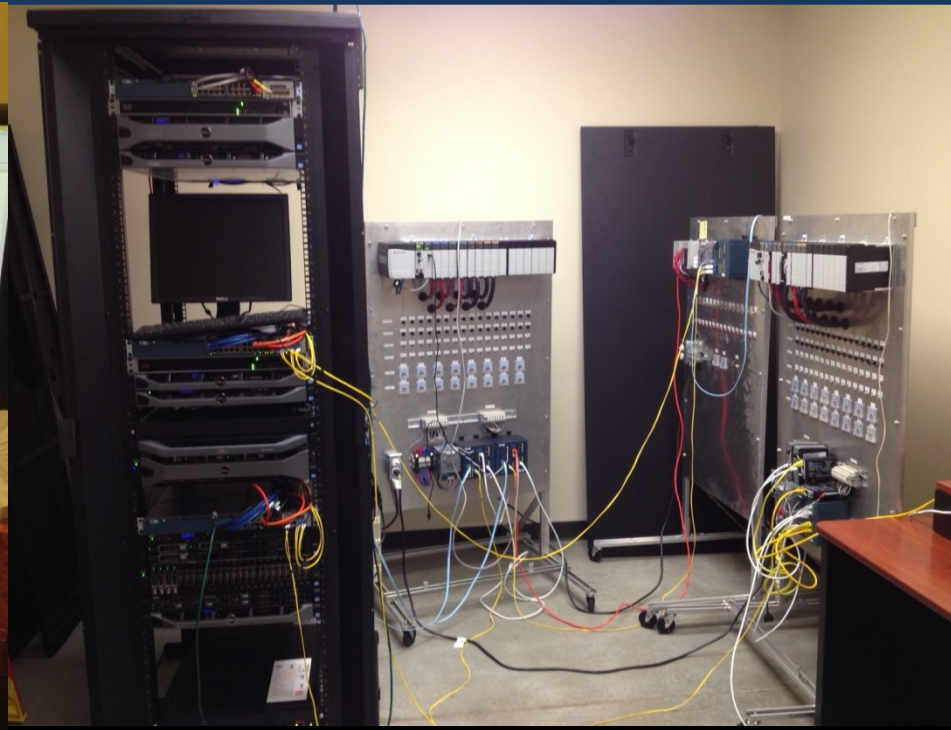
Contracted Amount:	$	2,885,432.35
Change Orders:	$	0.00
Estimate to Complete:	$	2,885,432.35
Amount Invoiced:	$	0.00
Percent Complete:		0%
Completion Date:		June 2015



SCADA SYSTEM PROGRAMMING AND CONFIGURATION PROGRESS



Dual Operator Monitors



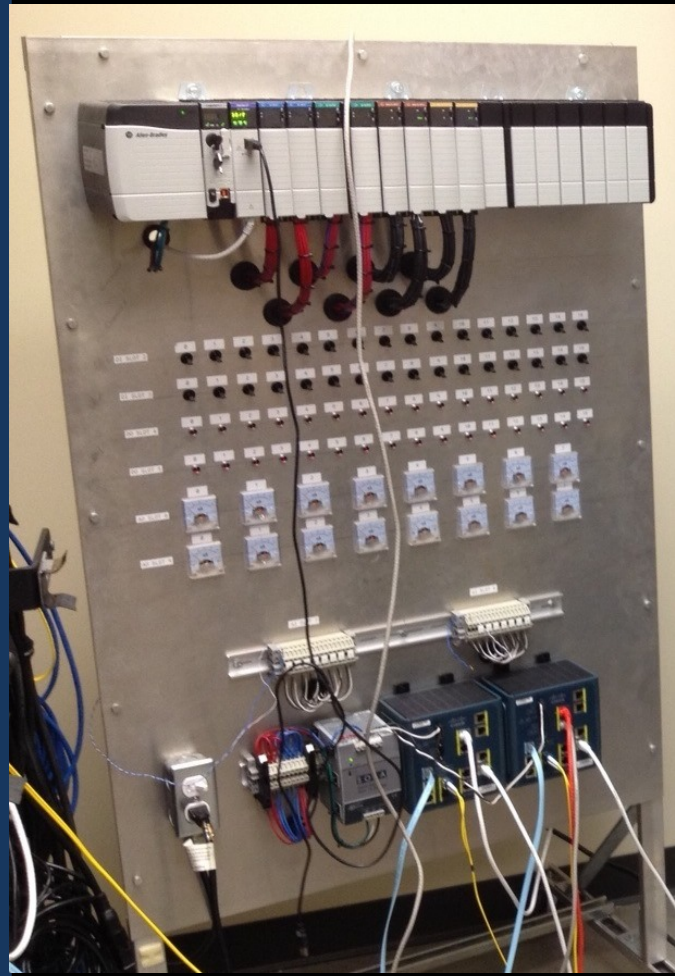
Development System Server Rack & PLCs

PLC Programming

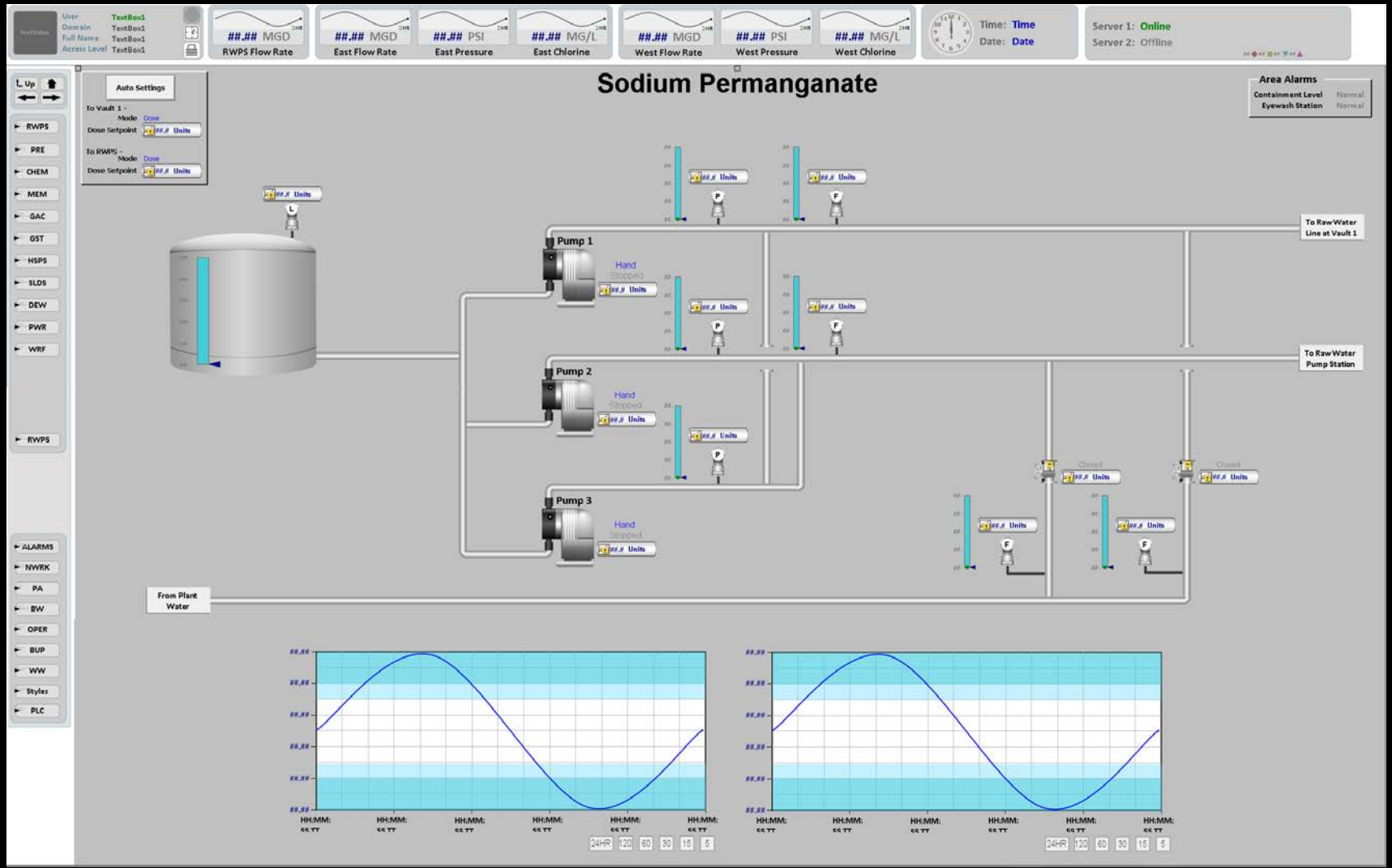
- Control Strategies (90%)
- “Soft” I/O Configuration (65%)

Human-Machine Interface (HMI)

- Templates (90%)
- Graphic Screens
- I/O Database
- Alarm Database
- History Database
- Reporting



Programmable Logic Controller



Typical HMI Graphical Screen

SURFACE WATER TRANSMISSION SYSTEM CONSTRUCTION PROGRESS

QUESTIONS?

SAN JACINTO RIVER AUTHORITY
SJRA
www.SJRA.net