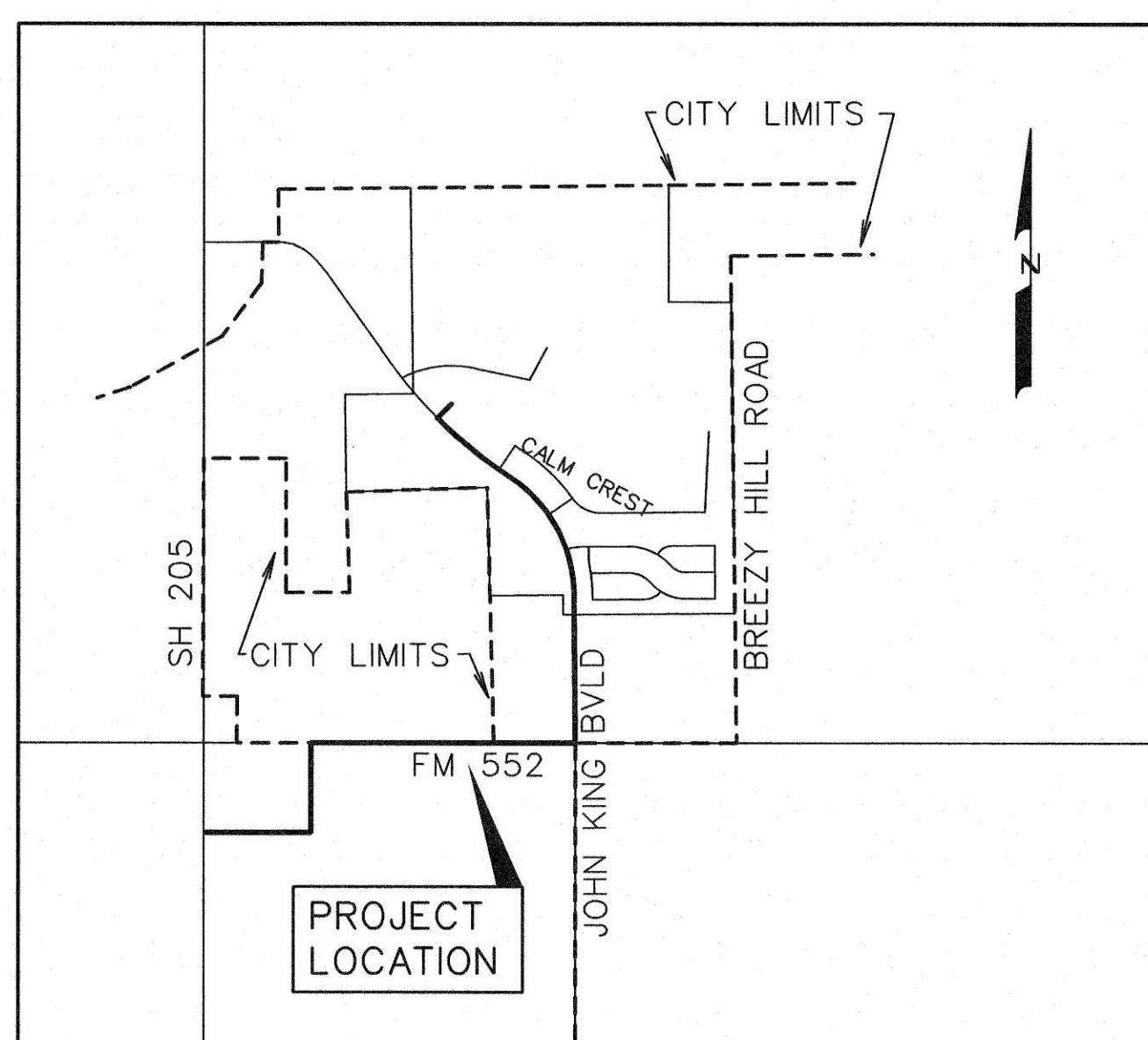


DEVELOPMENT PLANS FOR BREEZY HILL FORCE MAIN CITY OF ROCKWALL, TEXAS

INDEX

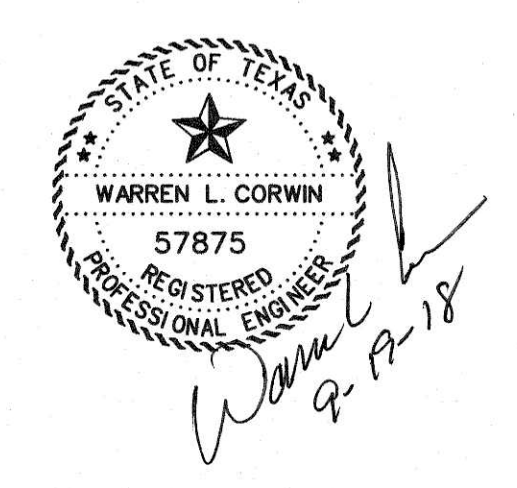
1	TITLE
2	OVERALL MAP
3	FORCE MAIN STA 0+95 TO 13+00
4	FORCE MAIN STA 13+00 TO 24+00
5	FORCE MAIN STA 24+00 TO 36+00
6	FORCE MAIN STA 36+00 TO 48+00
7	FORCE MAIN STA 48+00 TO 60+00
8	FORCE MAIN STA 60+00 TO 72+00
9	FORCE MAIN STA 72+00 TO 83+00
10	FORCE MAIN STA 83+00 TO END, SANITARY SEWER LINE 'S-1'
LS-1	LIFT STATION SITE PLAN



VICINITY MAP
NOT TO SCALE

PREPARED FOR
BH PHASE VISF, LTD.
8214 WESTCHESTER DRIVE, SUITE 710 DALLAS, TEXAS 75225

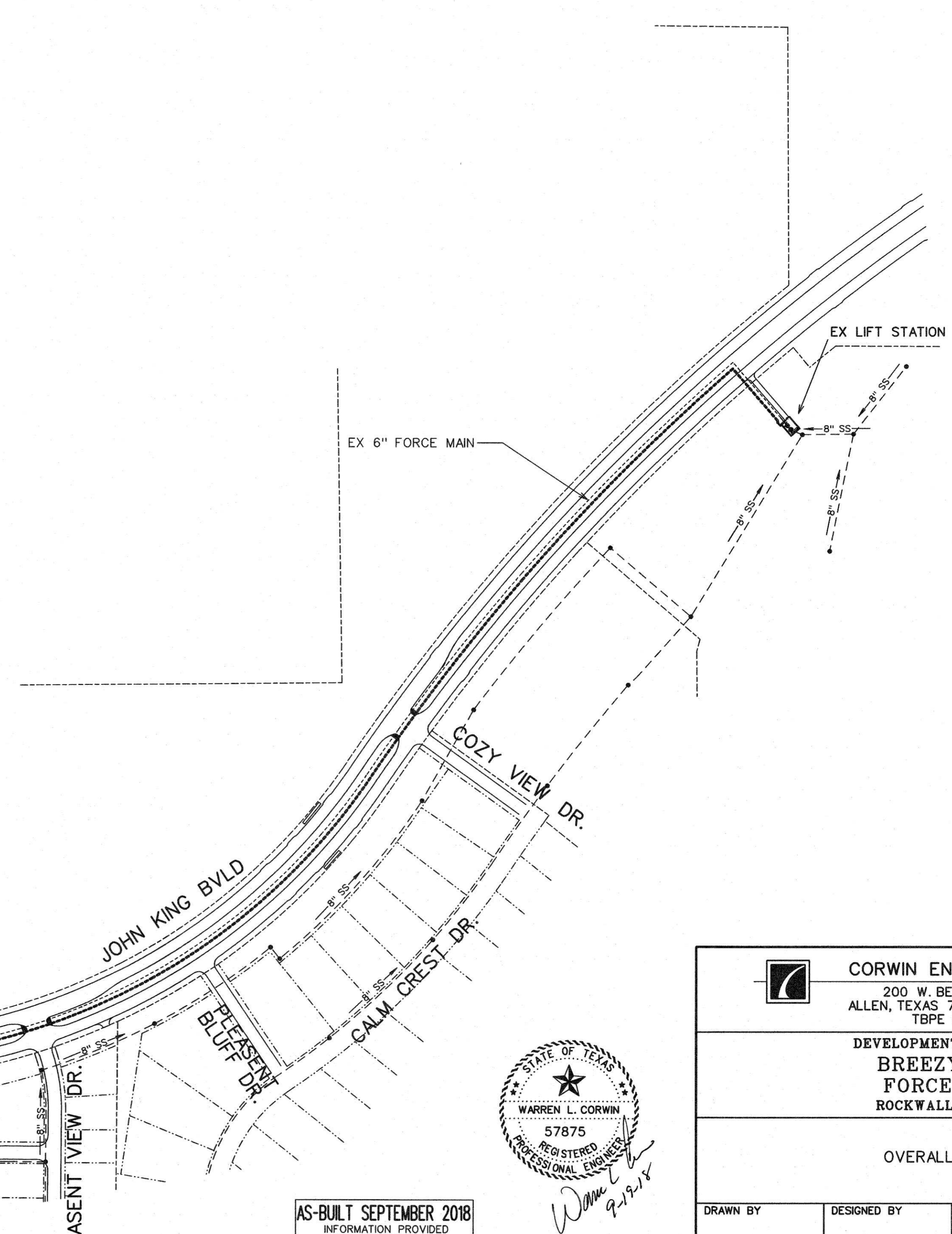
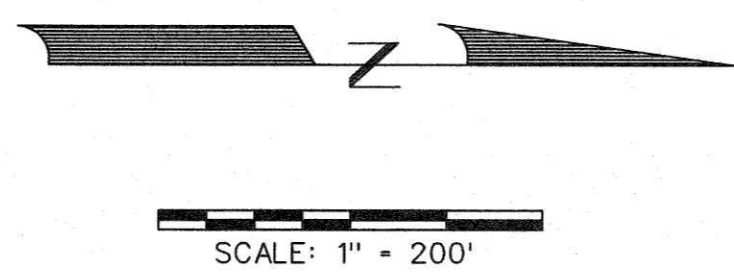
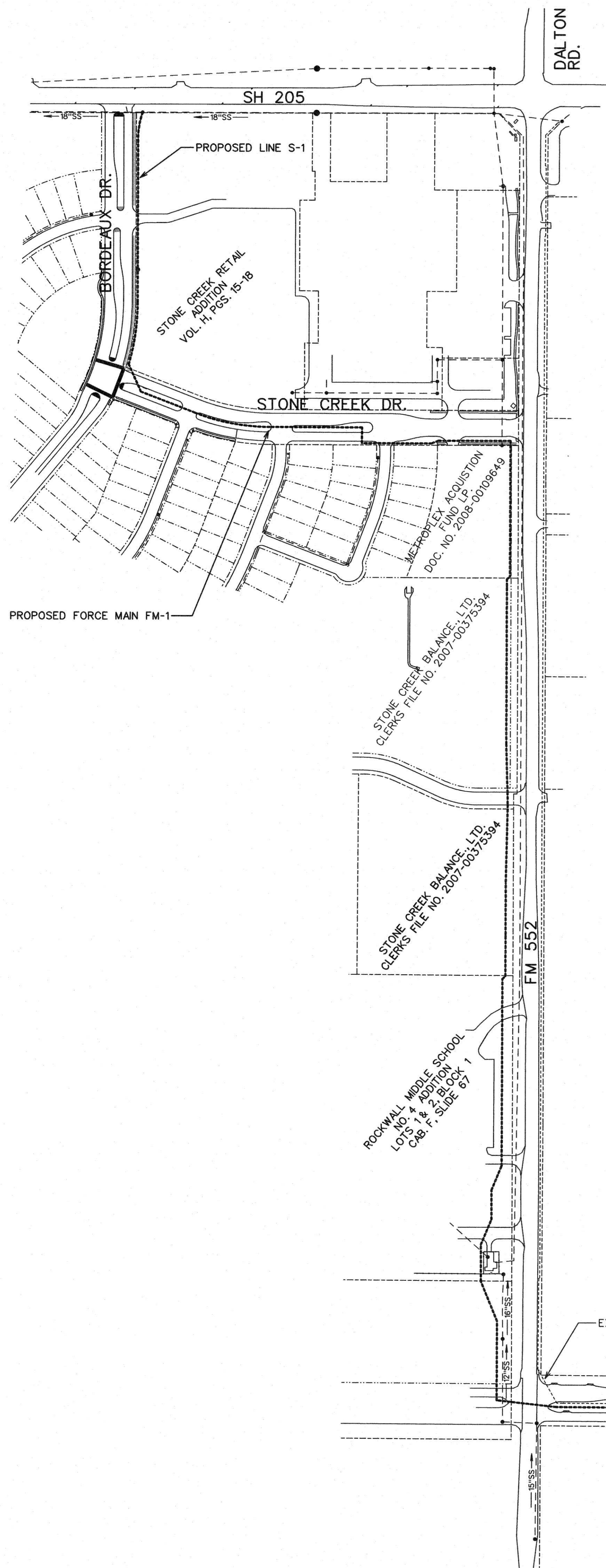
CORWIN ENGINEERING, INC. — CONSULTING ENGINEERS
200 W. BELMONT, SUITE E TBPE FIRM #5951 ALLEN, TEXAS 75013



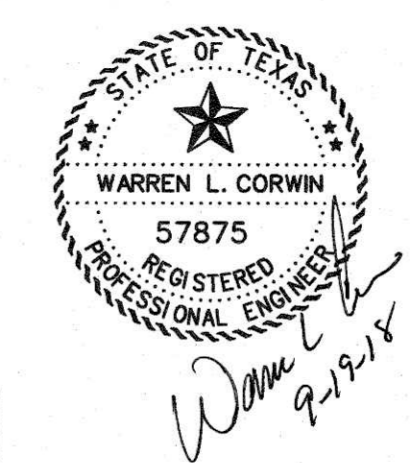
AS-BUILT SEPTEMBER 2018
INFORMATION PROVIDED
BY CONTRACTORS
(NOT FIELD VERIFIED)

NOTE:
CITY OF ROCKWALL STANDARDS
AND NCTCOG 3rd ADDITION STANDARDS
SHALL BE USED FOR REFERENCE.

NO.	REVISIONS	DATE



AS-BUILT SEPTEMBER 2018
 INFORMATION PROVIDED
 BY CONTRACTORS
 (NOT FIELD VERIFIED)



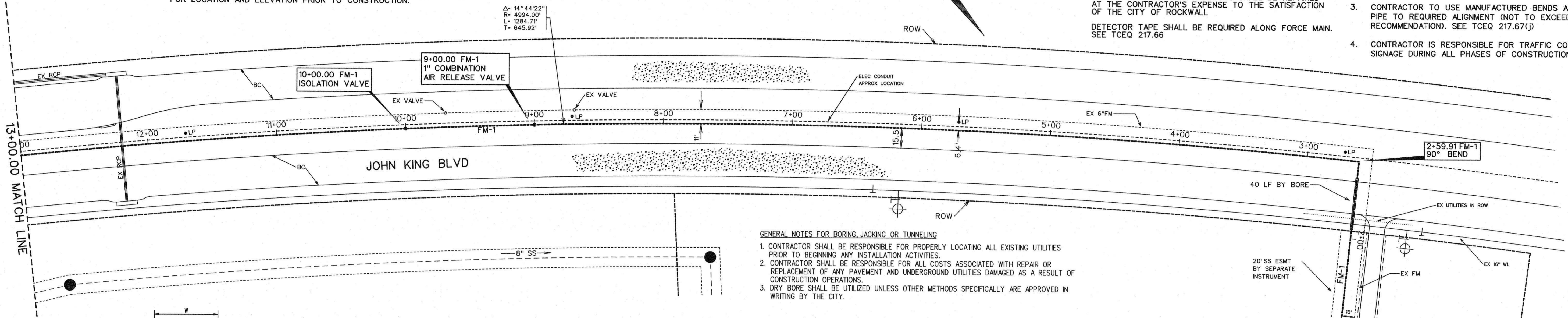
CORWIN ENGINEERING, INC. 200 W. BELMONT, SUITE E ALLEN, TEXAS 75013 (972)396-1200 TBPE FIRM #5951			
DEVELOPMENT PLANS FOR BREEZY HILL FORCE MAIN ROCKWALL, TEXAS			
OVERALL MAP			
DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER	DATE	SCALE:	2 of 10
16029	JULY 2016	1"=200'	

NOTE:
EXISTING UTILITIES SHOWN ARE A GRAPHICAL REPRESENTATION OF THE LOCATION BASED ON AS-BUILT DRAWINGS. ACTUAL LOCATION AND ELEVATION MAY BE DIFFERENT. CONTRACTOR MUST VERIFY ALL EXISTING UTILITIES FOR LOCATION AND ELEVATION PRIOR TO CONSTRUCTION.

SCALE: 1" = 40'

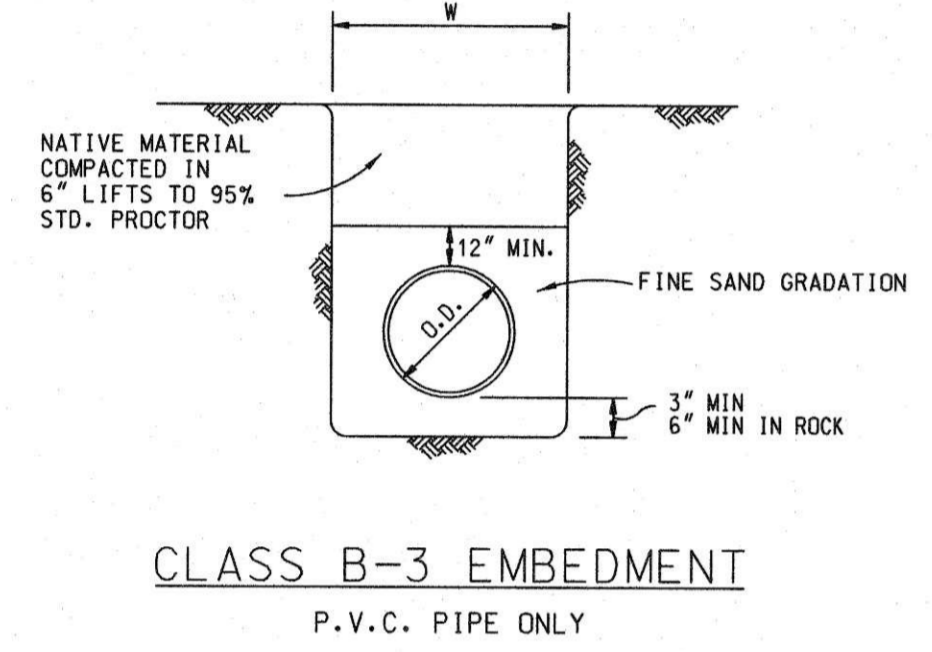
NOTE:
ALL FORCE MAIN TO BE AWWA C-900 PIPE DR14, COLORED GREEN.
INSTALL GREEN SANITARY SEWER MARKER POSTS APPROX. EVERY 250 FEET ABOVE FORCE MAIN.
CAUTION: LIGHT POLE CONDUIT IN MEDIAN OF JOHN KING BLVD. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE CITY OF ROCKWALL.
DETECTOR TAPE SHALL BE REQUIRED ALONG FORCE MAIN. SEE TCEQ 217.66

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- CONTRACTOR TO ADJUST LOCATION OF FORCE MAIN TO AVOID EXISTING PUBLIC AND PRIVATE UTILITIES AS NECESSARY.
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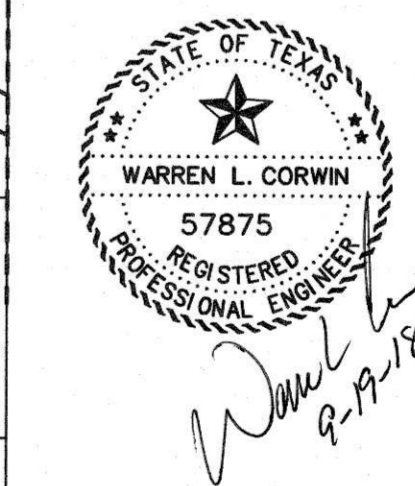
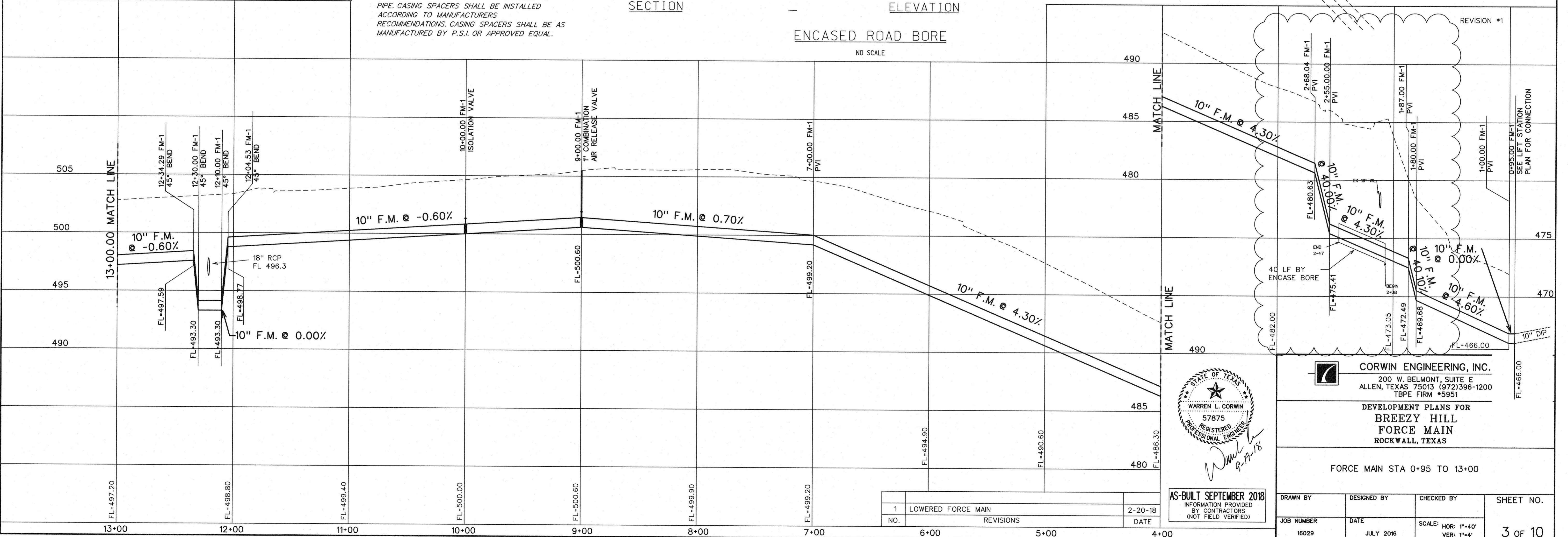
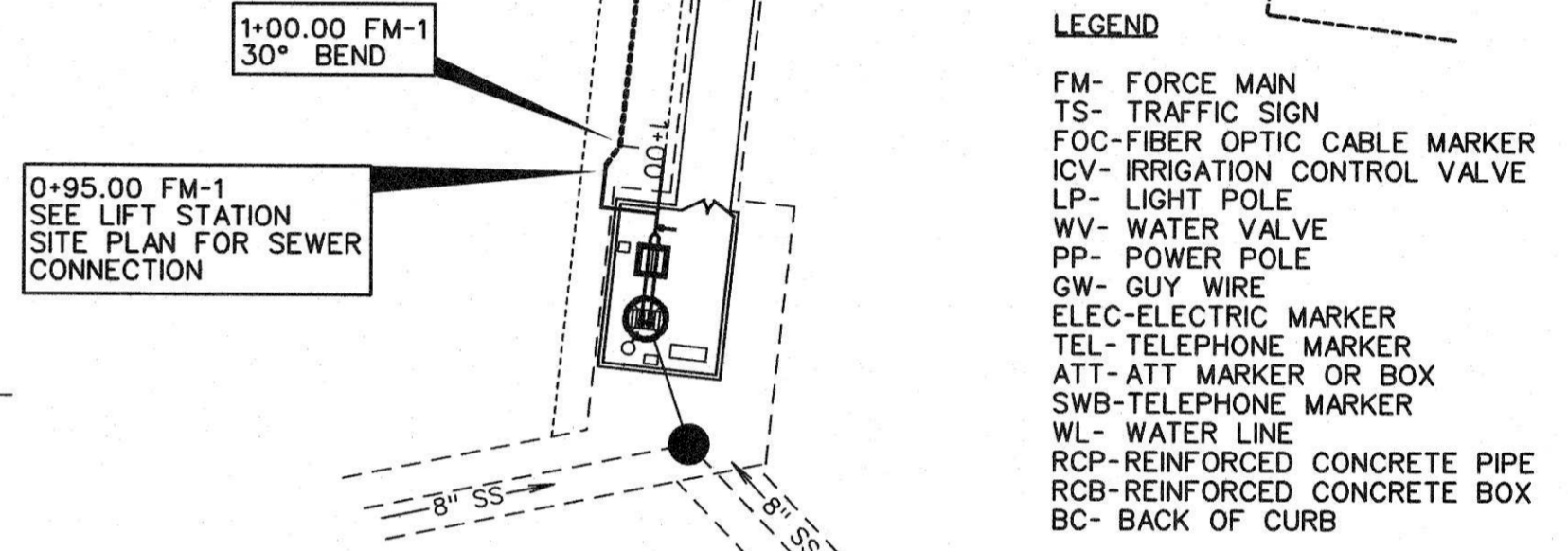
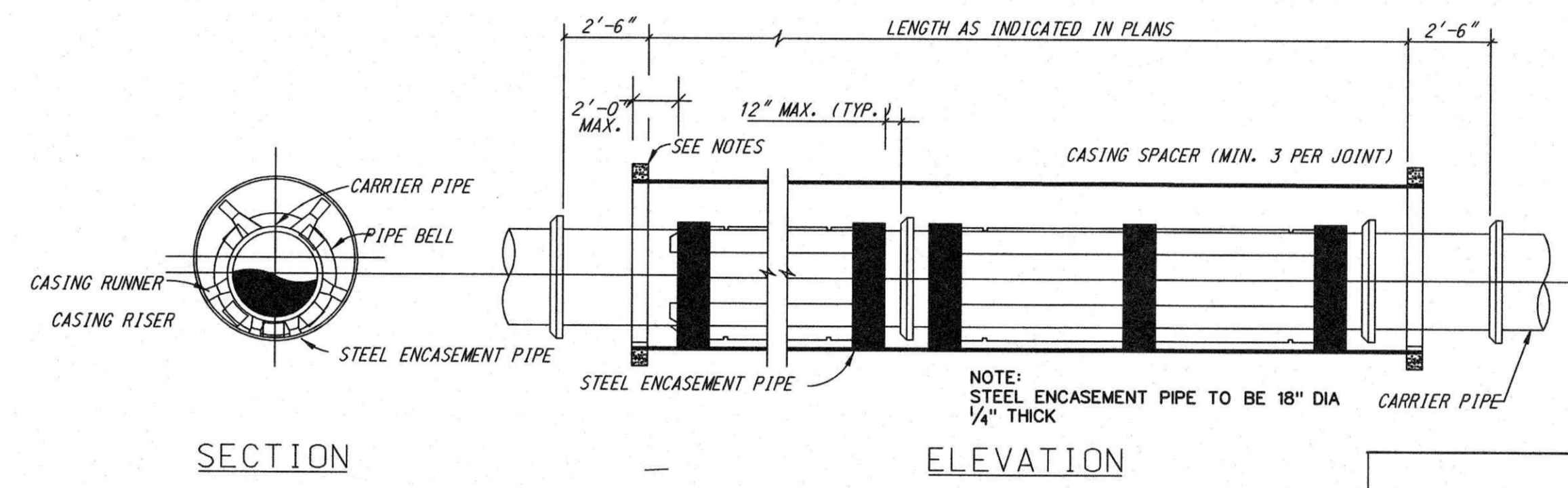


GENERAL NOTES FOR BORING, JACKING OR TUNNELING

- CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY LOCATING ALL EXISTING UTILITIES PRIOR TO BEGINNING ANY INSTALLATION ACTIVITIES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH REPAIR OR REPLACEMENT OF ANY PAVEMENT AND UNDERGROUND UTILITIES DAMAGED AS A RESULT OF CONSTRUCTION OPERATIONS.
- DRY BORE SHALL BE UTILIZED UNLESS OTHER METHODS SPECIFICALLY ARE APPROVED IN WRITING BY THE CITY.



- NOTES:
- CONTRACTOR SHALL PROVIDE SUPPORT UNDER CARRIER PIPE TO HAVE MIN. 1.5" CLEARANCE BETWEEN PIPE BELL AND ENCASEMENT PIPE.
 - ENDS OF ENCASEMENT PIPE SHALL BE PLUGGED WITH BRICK AND MORTAR FOR ROADWAY CROSSINGS.
 - CONTRACTOR SHALL FURNISH & INSTALL A MINIMUM OF 3 CASING SPACERS PER JOINT OF PIPE. CASING SPACERS SHALL BE INSTALLED ACCORDING TO MANUFACTURERS RECOMMENDATIONS. CASING SPACERS SHALL BE AS MANUFACTURED BY P.S.I. OR APPROVED EQUAL.



CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBE FIRM #5951

DEVELOPMENT PLANS FOR
BREEZY HILL
FORCE MAIN
ROCKWALL, TEXAS

FORCE MAIN STA 0+95 TO 13+00

1	LOWERED FORCE MAIN	2-20-18
NO.	REVISIONS	DATE

AS-BUILT SEPTEMBER 2018
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER	DATE	SCALE: HOR: 1"=40'	3 OF 10
16029	JULY 2016	VER: 1"=4'	

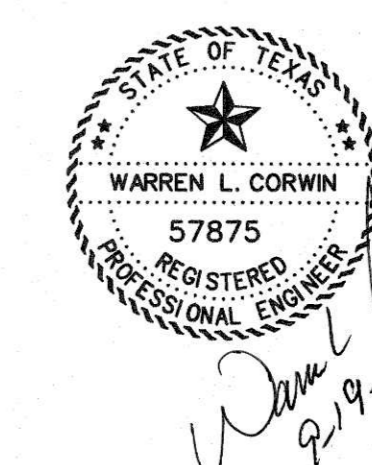
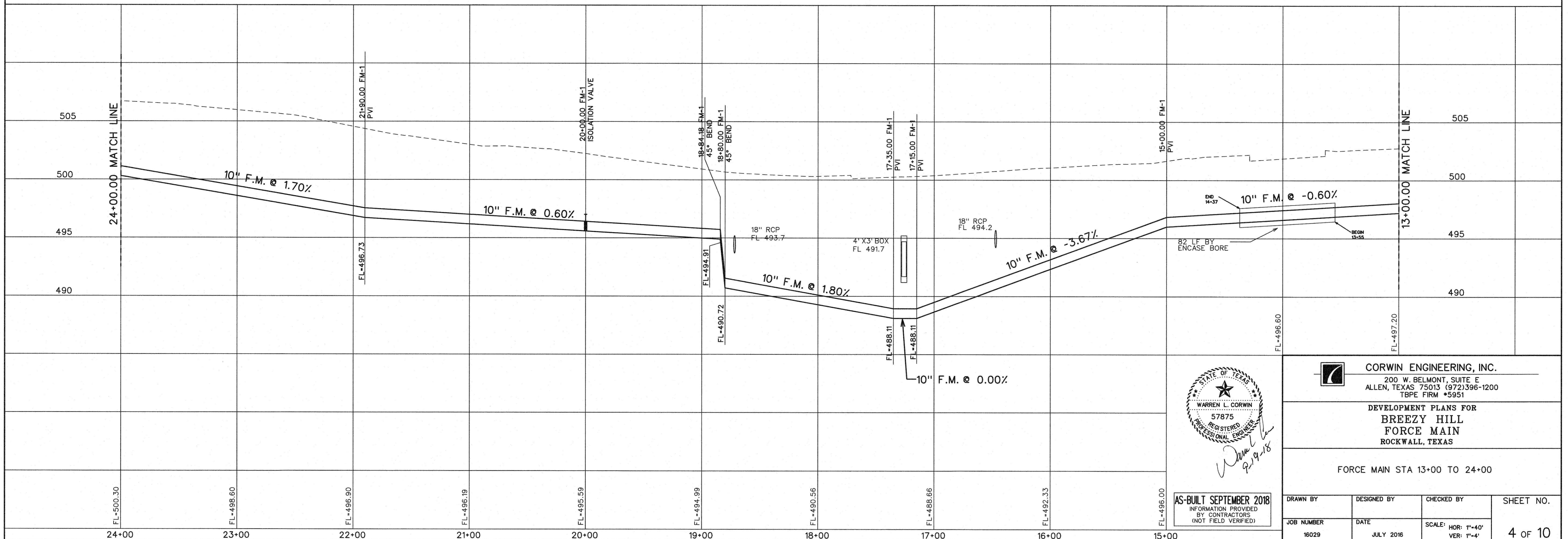
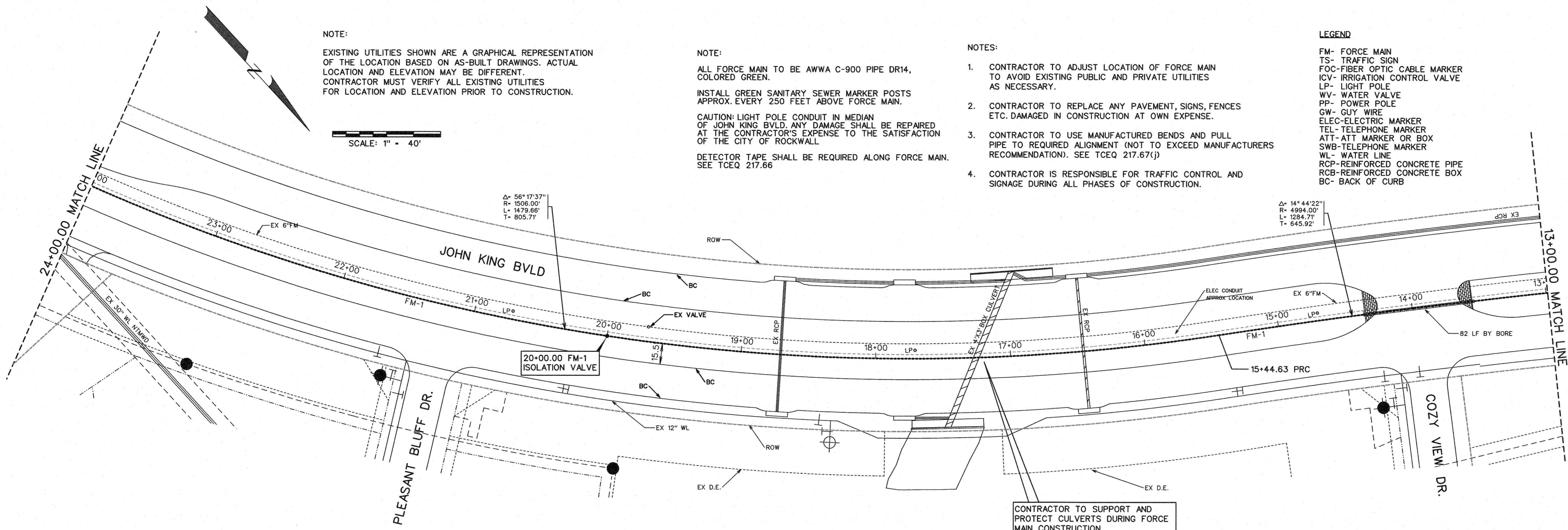
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SCALE: 1" = 40'

NOTE:
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INSTALL GREEN SANITARY SEWER MARKER POSTS APPROX. EVERY 250 FEET ABOVE FORCE MAIN.
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LEGEND
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FOC- FIBER OPTIC CABLE MARKER
ICV- IRRIGATION CONTROL VALVE
LP- LIGHT POLE
WV- WATER VALVE
PP- POWER POLE
GW- GUY WIRE
ELEC- ELECTRIC MARKER
TEL- TELEPHONE MARKER
ATT- ATT MARKER OR BOX
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RCP- REINFORCED CONCRETE PIPE
RCB- REINFORCED CONCRETE BOX
BC- BACK OF CURB



CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
**BREEZY HILL
FORCE MAIN**
ROCKWALL, TEXAS

FORCE MAIN STA 13+00 TO 24+00

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER	DATE	SCALE: HOR: 1"=40' VER: 1"=4"	4 of 10
16029	JULY 2016		

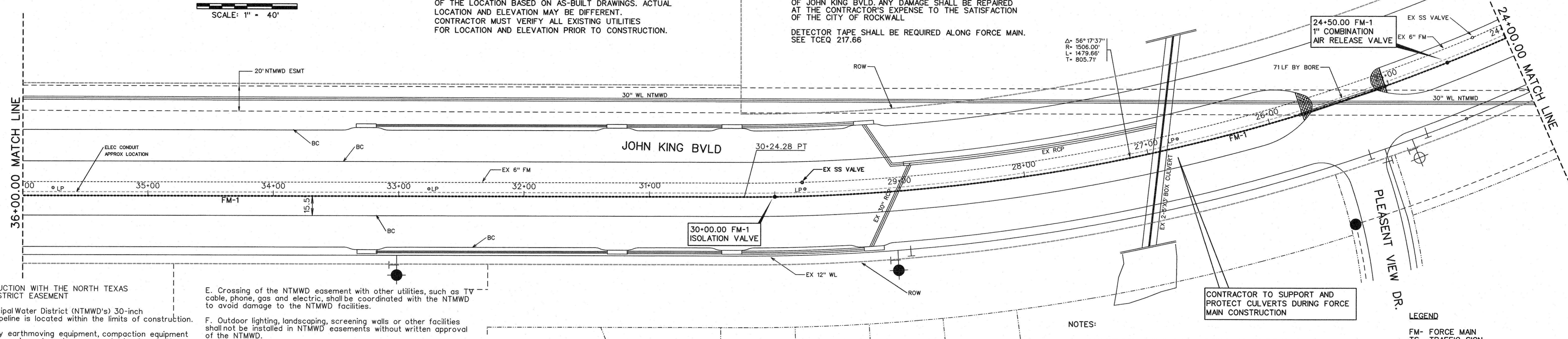
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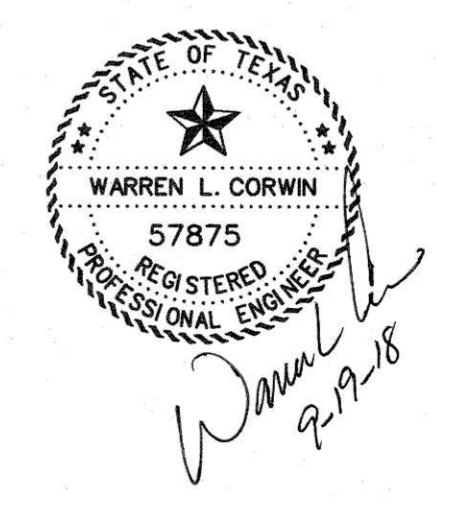
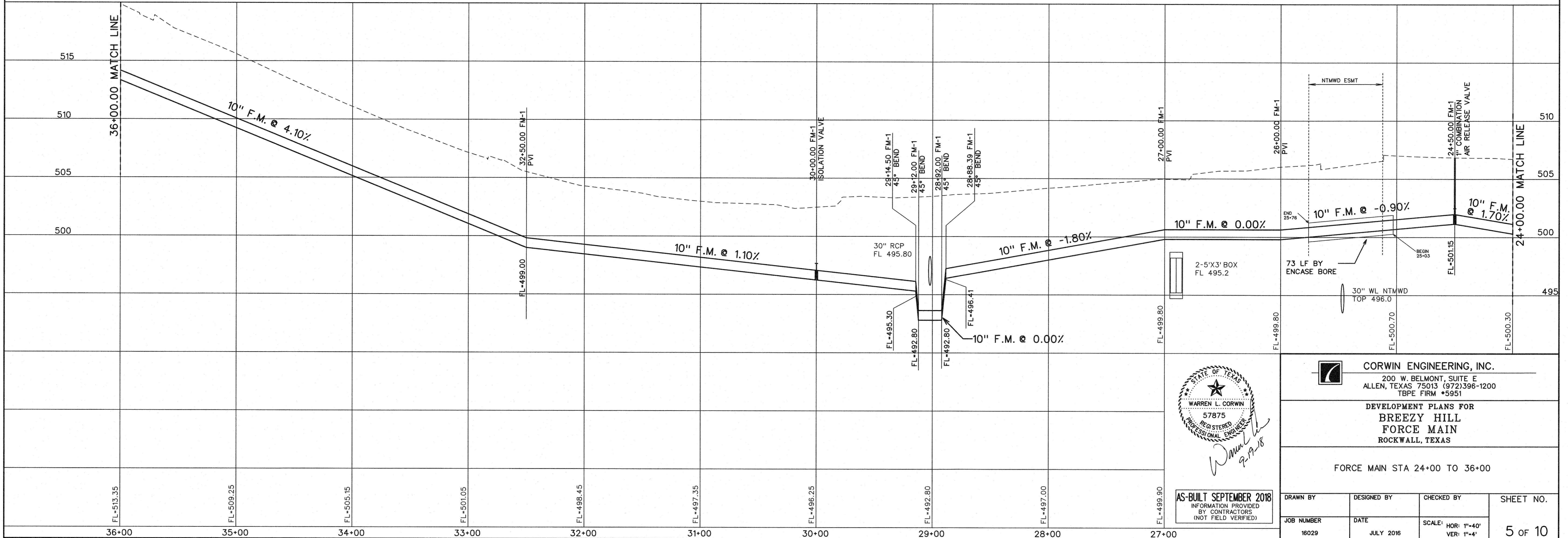
NOTES FOR CONSTRUCTION WITH THE NORTH TEXAS MUNICIPAL WATER DISTRICT EASEMENT
A. North Texas Municipal Water District (NTMWD's) 30-inch water transmission pipeline is located within the limits of construction.
B. Operation of heavy earthmoving equipment, compaction equipment or heavy construction equipment, such as concrete trucks, shall be restricted to specific crossing points across NTMWD easements, as approved by the NTMWD. The crossing shall be designated and verified to provide a minimum of five-feet of cover.
C. To assure that placing of significant loads over the NTMWD pipeline does not damage the existing pipeline, no materials shall be stockpiled on the NTMWD easement, without authorization from the NTMWD. If the contractor desires to use NTMWD's easement for stockpile of materials, contact NTMWD's Engineering Department at (972) 442-5405 so your plans for use of NTMWD's easement can be reviewed.
D. A minimum of three feet separation between the bottom of the pavement and top of NTMWD pipeline is required. In addition, if separation between the bottom of the pavement and the top of the pipeline is less than 3.5 feet, a thickened pavement section is required.

E. Crossing of the NTMWD easement with other utilities, such as TV cable, phone, gas and electric, shall be coordinated with the NTMWD to avoid damage to the NTMWD facilities.
F. Outdoor lighting, landscaping, screening walls or other facilities shall not be installed in NTMWD easements without written approval of the NTMWD.
G. Unless otherwise shown or required a minimum of one-foot clearance shall be provided for all utilities crossing the NTMWD pipelines.
H. The contractor shall contact NTMWD Engineering at (972) 442-5405 at least 48 hours prior to performing any work in the vicinity of the NTMWD facilities.
I. For open cut where crossing under the NTMWD pipeline, within ten feet either side of centerline of pipeline, the trench width to be cut shall be limited to four-foot vertical walls, no sloping bank with the appropriate trench safety. The entire excavation within the limits noted above shall be backfilled with gravel to one-foot above top of NTMWD pipeline. One-foot minimum vertical clearance is required between NTMWD pipeline and proposed utilities.
J. Limits of bore shall be a minimum of the NTMWD easement width centered on NTMWD's pipeline.

K. The casing pipe shall terminate outside of NTMWD's easement.
L. All proposed sanitary sewer crossings where installed above NTMWD's pipeline shall be comprised of a minimum 150-PSI pressure rated carrier pipe and casing pipe. Installation of this carrier pipe and casing pipe shall be installed across the entire NTMWD easement.
M. Water and sewer lines crossing the NTMWD easement shall be installed in compliance with the Rules and Regulations for Public Water Systems Paragraph 290.44 (e), Location of Water lines.

- NOTES:
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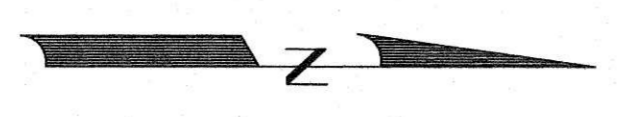
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
BREEZY HILL
FORCE MAIN
ROCKWALL, TEXAS

FORCE MAIN STA 24+00 TO 36+00

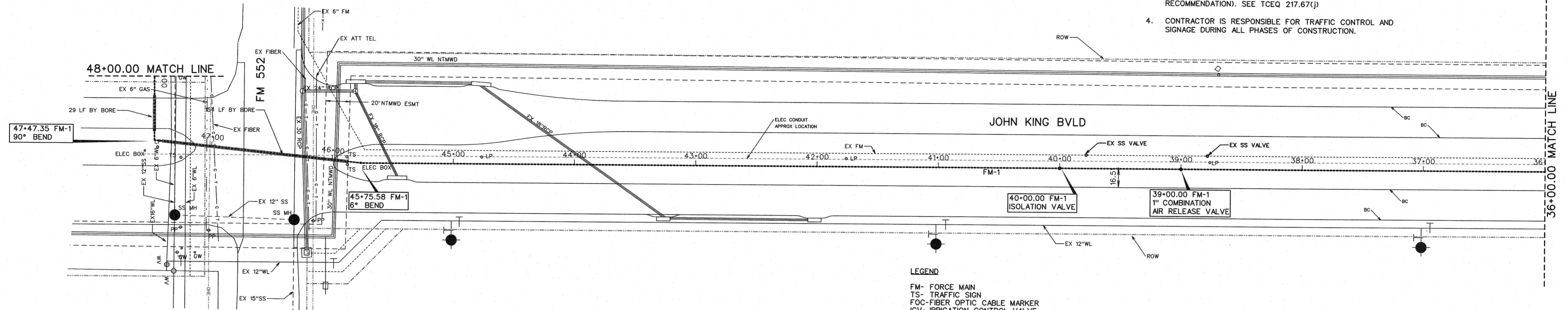
AS-BUILT SEPTEMBER 2018
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER	DATE	SCALE: HOR: 1"=40' VER: 1"=4'	5 of 10
16029	JULY 2016		



SCALE: 1" = 40'

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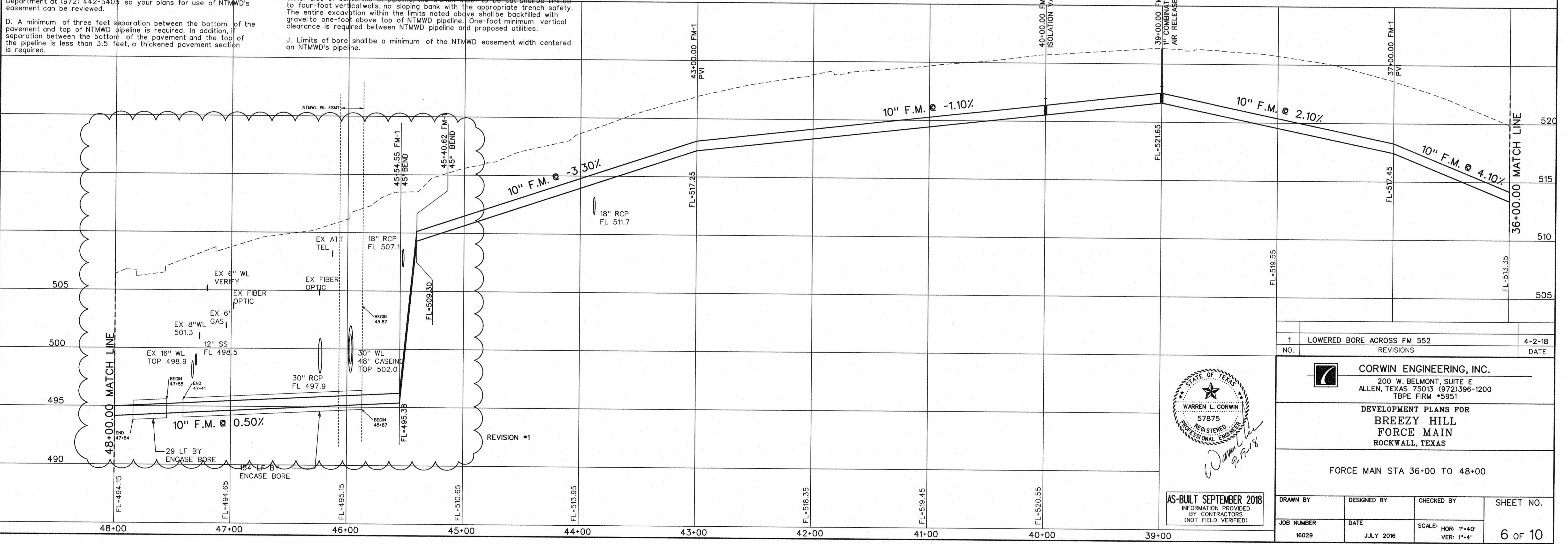
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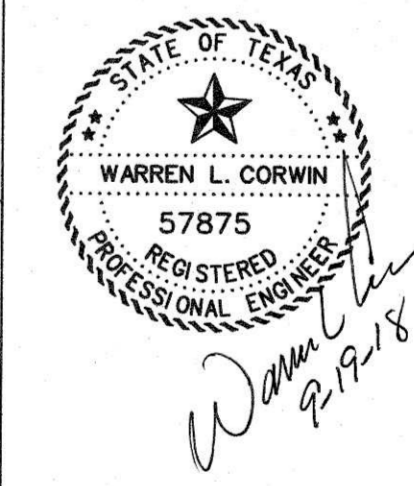
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1	LOWERED BORE ACROSS FM 552	4-2-18
NO. REVISIONS		DATE



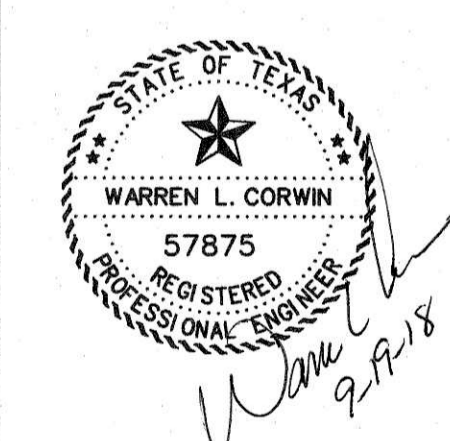
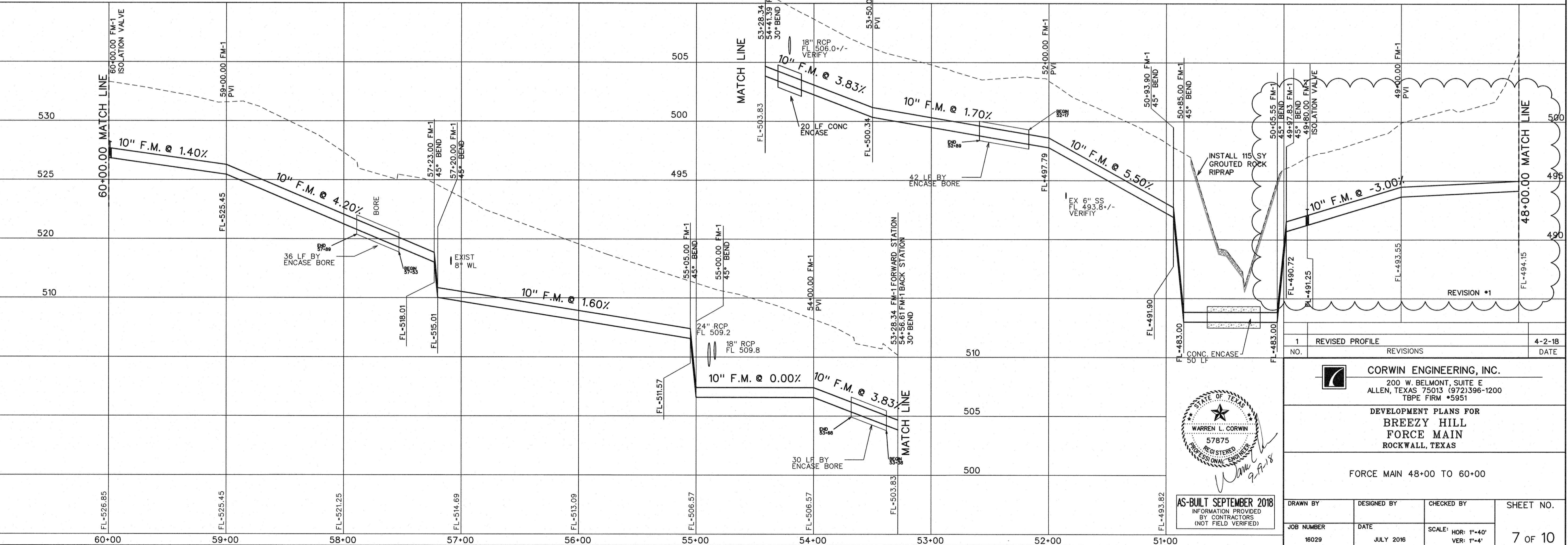
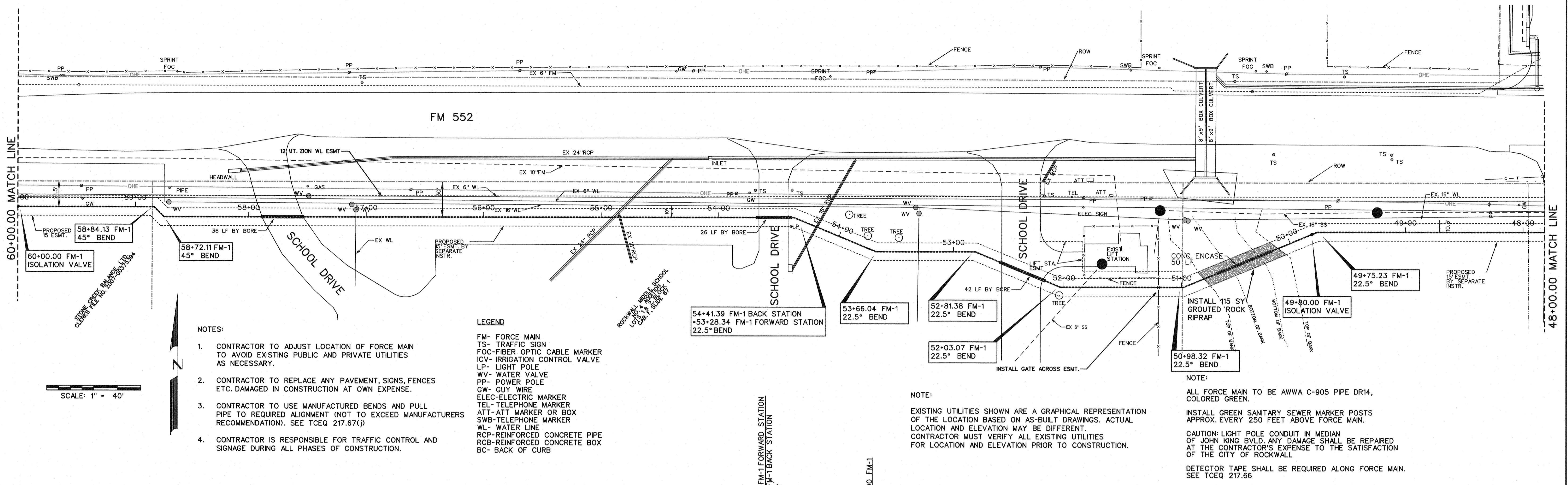
AS-BUILT SEPTEMBER 2018
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBP FIRM #5951

DEVELOPMENT PLANS FOR
**BREEZY HILL
FORCE MAIN**
ROCKWALL, TEXAS

FORCE MAIN STA 36+00 TO 48+00

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER	DATE	SCALE: HOR: 1"=40' VER: 1"=4'	6 OF 10
16029	JULY 2016		



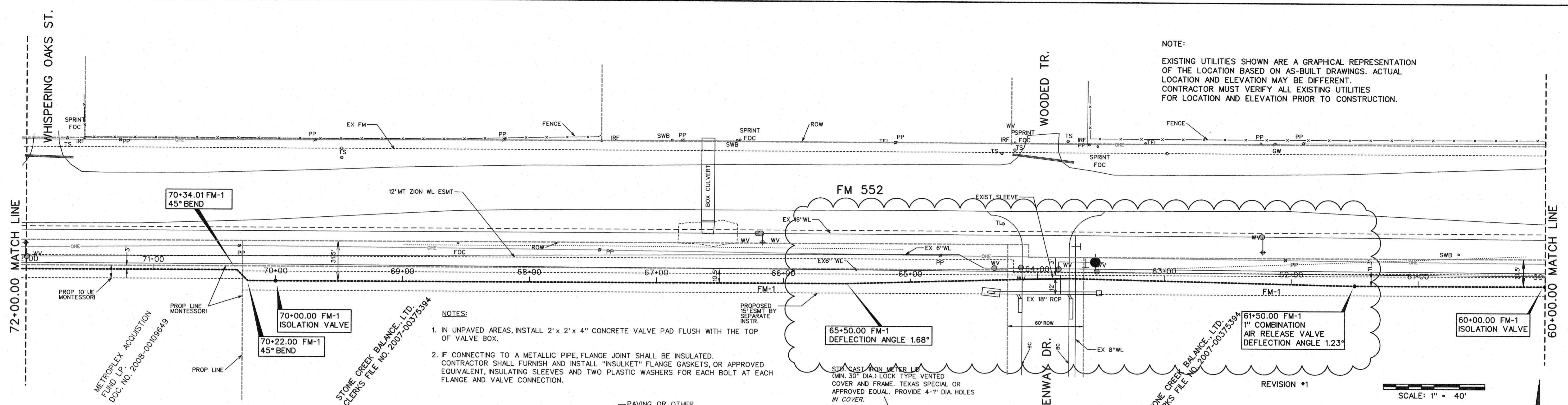
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

**DEVELOPMENT PLANS FOR
BREEZY HILL
FORCE MAIN
ROCKWALL, TEXAS**

FORCE MAIN 48+00 TO 60+00

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER	DATE	SCALE: HOR: 1"=40' VER: 1"=4'	7 OF 10

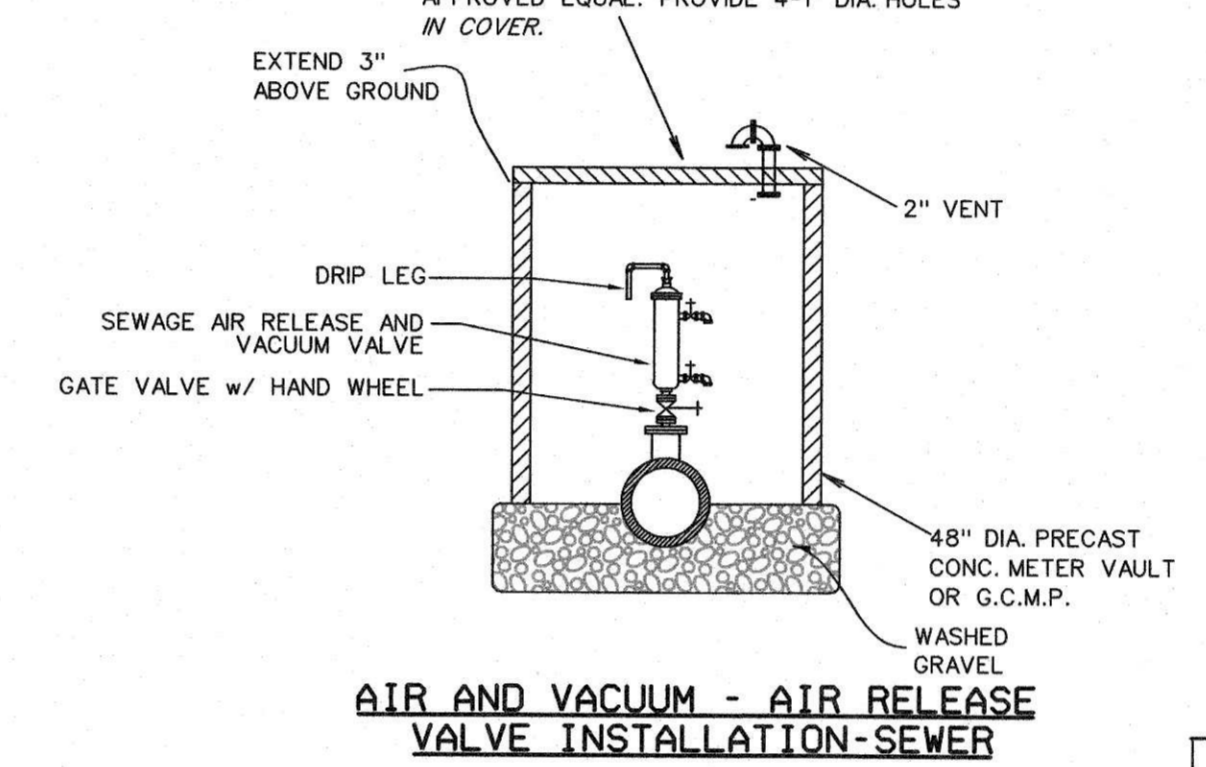
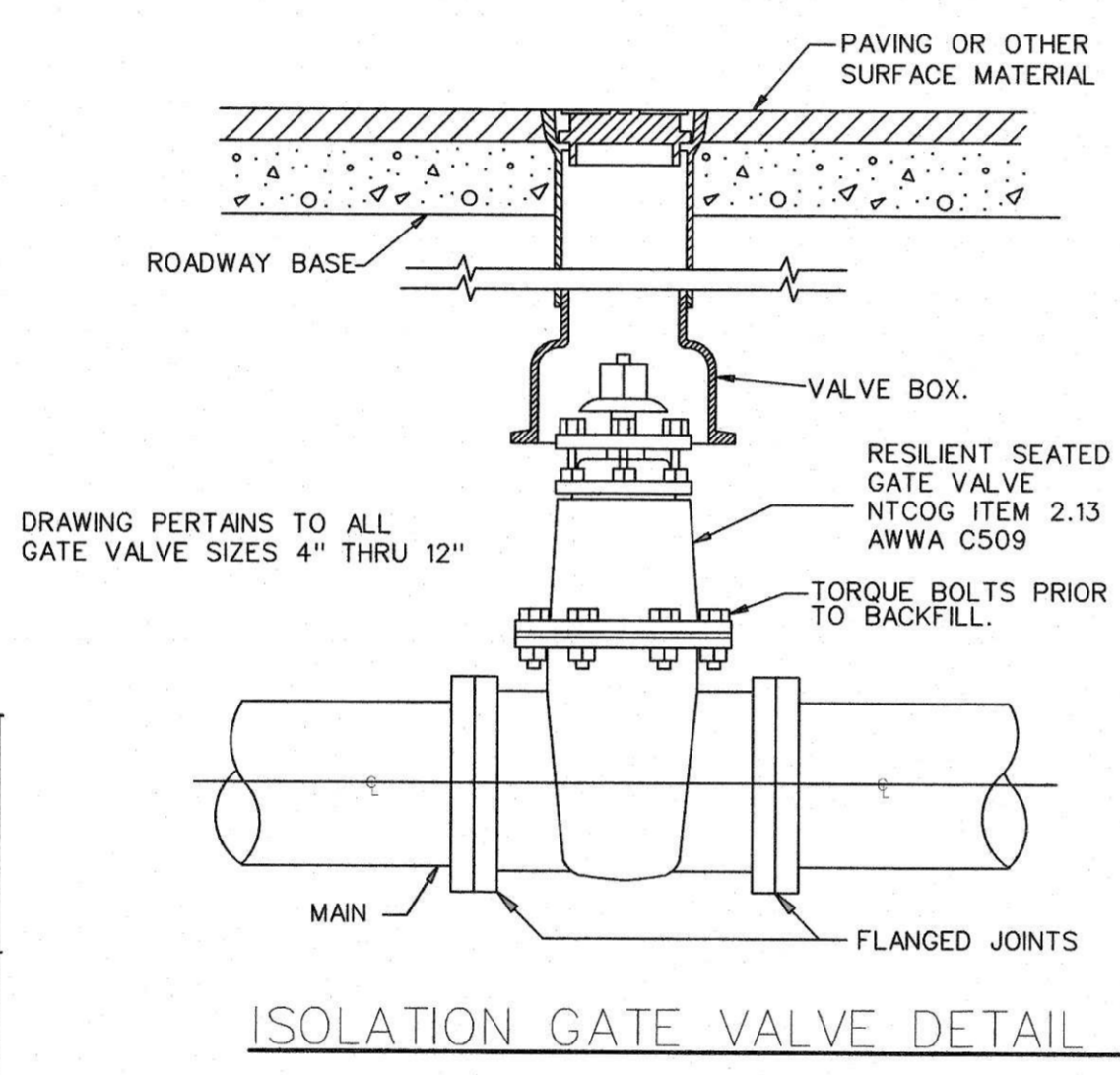
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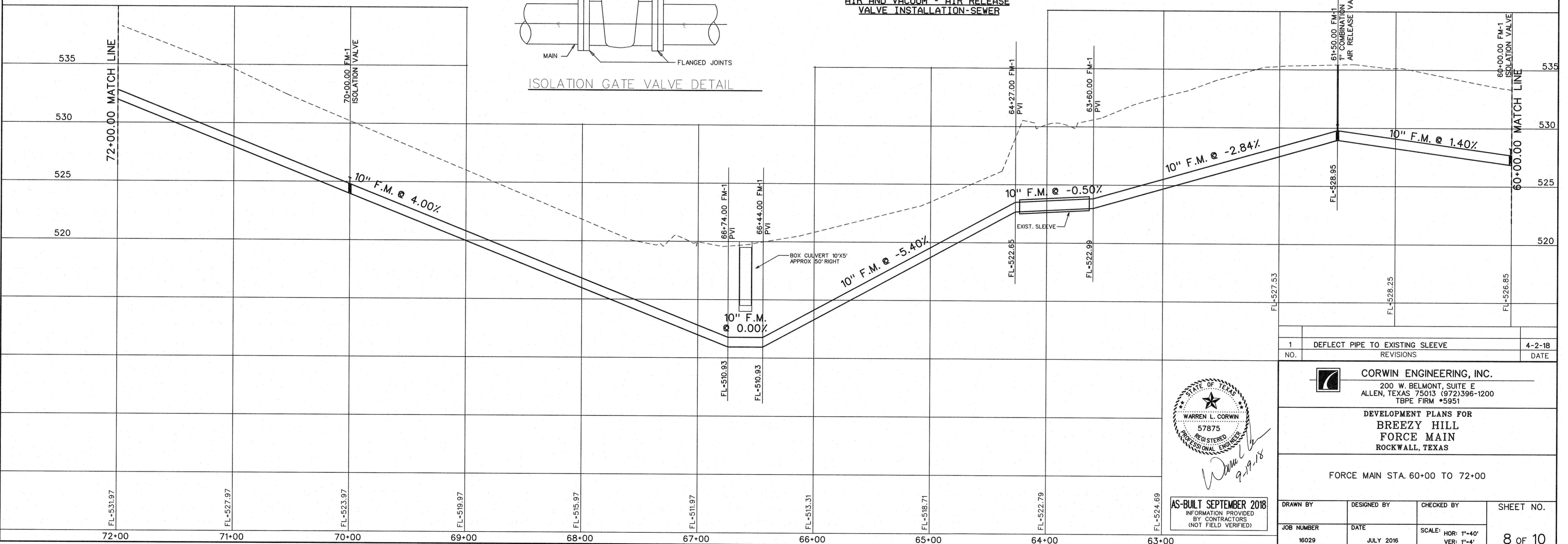
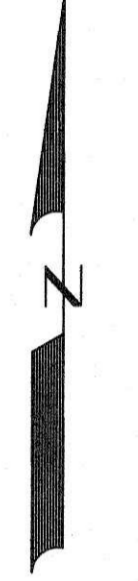
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 - RCP- REINFORCED CONCRETE PIPE
 - RCB- REINFORCED CONCRETE BOX
 - BC- BACK OF CURB

- NOTES:
- IN UNPAVED AREAS, INSTALL 2' x 2' x 4" CONCRETE VALVE PAD FLUSH WITH THE TOP OF VALVE BOX.
 - IF CONNECTING TO A METALLIC PIPE, FLANGE JOINT SHALL BE INSULATED. CONTRACTOR SHALL FURNISH AND INSTALL "INSULKET" FLANGE GASKETS, OR APPROVED EQUIVALENT, INSULATING SLEEVES AND TWO PLASTIC WASHERS FOR EACH BOLT AT EACH FLANGE AND VALVE CONNECTION.

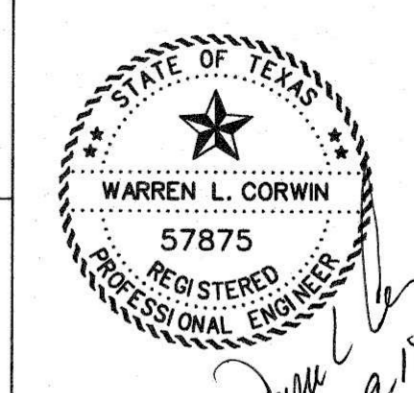


NOTE:
ALL FORCE MAIN TO BE AWWA C-900 PIPE DR14, COLORED GREEN.
INSTALL GREEN SANITARY SEWER MARKER POSTS APPROX. EVERY 250 FEET ABOVE FORCE MAIN.
CAUTION: LIGHT POLE CONDUIT IN MEDIAN OF JOHN KING BLVD. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE CITY OF ROCKWALL.
DETECTOR TAPE SHALL BE REQUIRED ALONG FORCE MAIN. SEE TCEQ 217.66

SCALE: 1" = 40'



NO.	REVISIONS	DATE
1	DEFLECT PIPE TO EXISTING SLEEVE	4-2-18



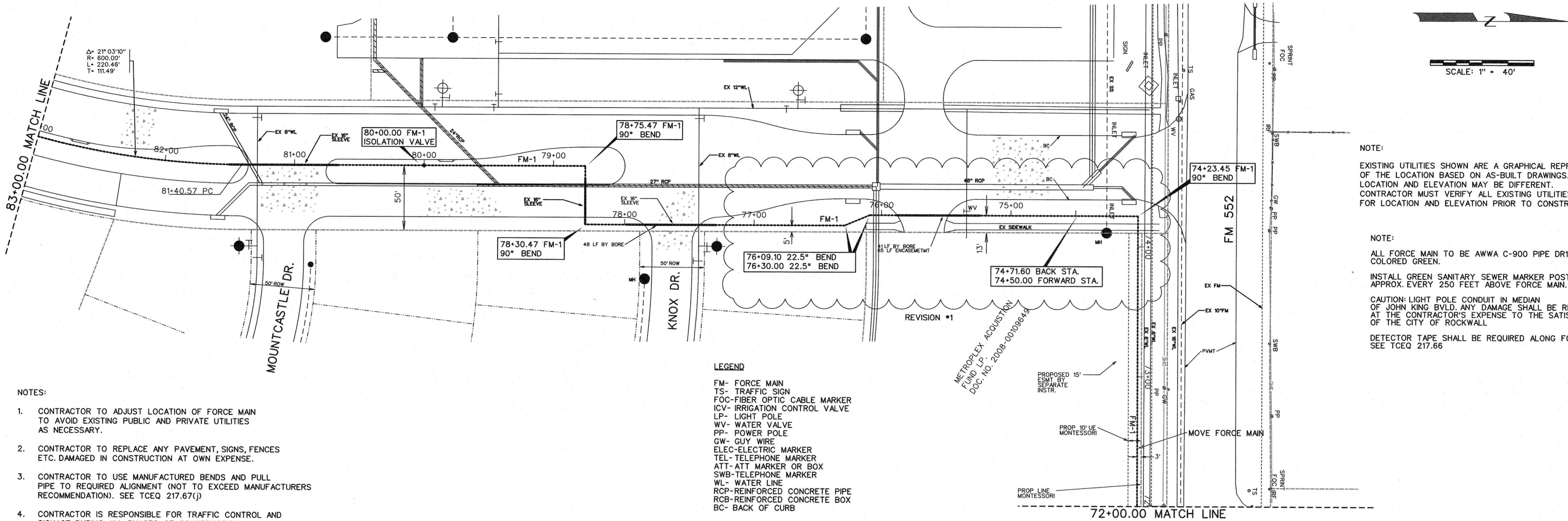
AS-BUILT SEPTEMBER 2018
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
BREEZY HILL
FORCE MAIN
ROCKWALL, TEXAS

FORCE MAIN STA. 60+00 TO 72+00

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
16029	JULY 2016	SCALE: HOR: 1"=40' VER: 1"=4'	8 OF 10

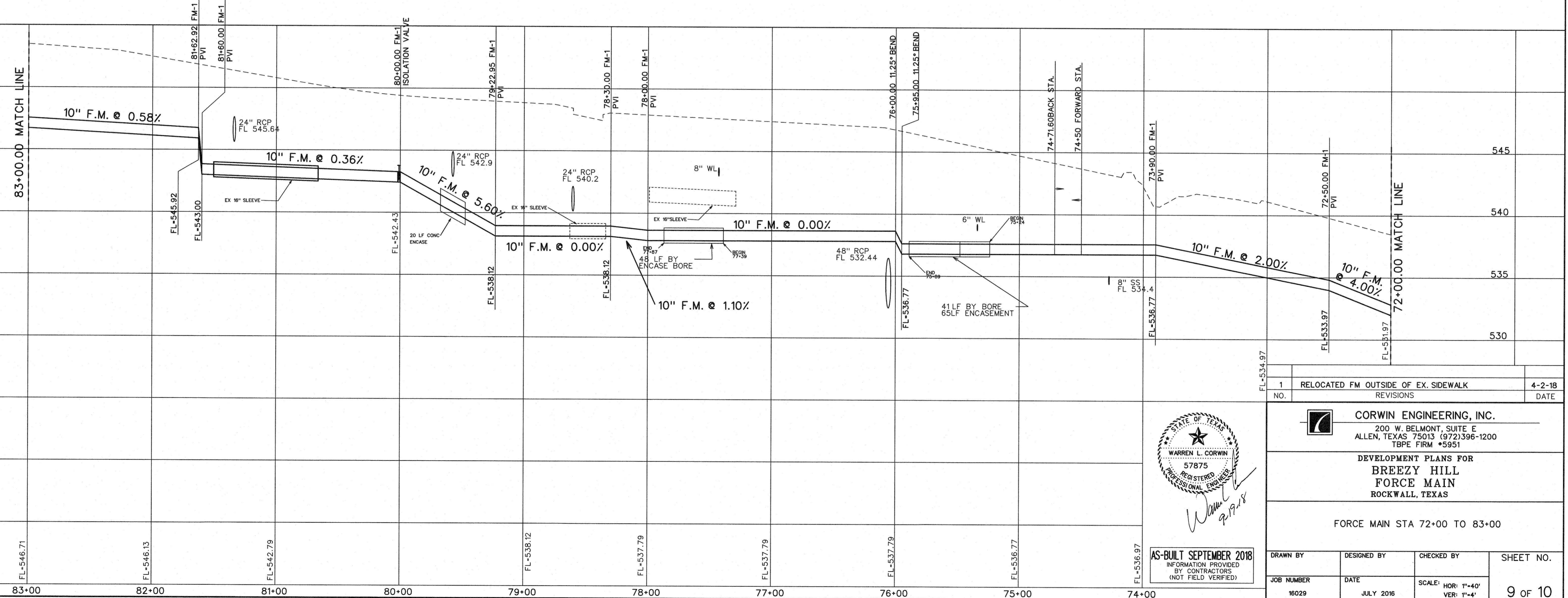


NOTE:
EXISTING UTILITIES SHOWN ARE A GRAPHICAL REPRESENTATION OF THE LOCATION BASED ON AS-BUILT DRAWINGS. ACTUAL LOCATION AND ELEVATION MAY BE DIFFERENT. CONTRACTOR MUST VERIFY ALL EXISTING UTILITIES FOR LOCATION AND ELEVATION PRIOR TO CONSTRUCTION.

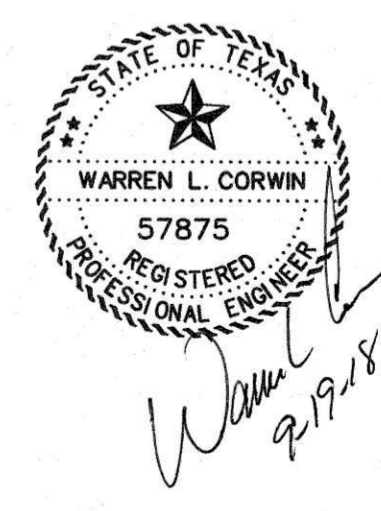
NOTE:
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CAUTION: LIGHT POLE CONDUIT IN MEDIAN OF JOHN KING BLD. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE CITY OF ROCKWALL.
DETECTOR TAPE SHALL BE REQUIRED ALONG FORCE MAIN. SEE TCEQ 217.66

- NOTES:
- CONTRACTOR TO ADJUST LOCATION OF FORCE MAIN TO AVOID EXISTING PUBLIC AND PRIVATE UTILITIES AS NECESSARY.
 - CONTRACTOR TO REPLACE ANY PAVEMENT, SIGNS, FENCES ETC. DAMAGED IN CONSTRUCTION AT OWN EXPENSE.
 - CONTRACTOR TO USE MANUFACTURED BENDS AND PULL PIPE TO REQUIRED ALIGNMENT (NOT TO EXCEED MANUFACTURERS RECOMMENDATION). SEE TCEQ 217.67(j)
 - CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL AND SIGNAGE DURING ALL PHASES OF CONSTRUCTION.

- LEGEND
- FM- FORCE MAIN
 - TS- TRAFFIC SIGN
 - FOC- FIBER OPTIC CABLE MARKER
 - ICV- IRRIGATION CONTROL VALVE
 - LP- LIGHT POLE
 - WV- WATER VALVE
 - PP- POWER POLE
 - GW- GUY WIRE
 - ELEC- ELECTRIC MARKER
 - TEL- TELEPHONE MARKER
 - ATT- ATT MARKER OR BOX
 - SWB- TELEPHONE MARKER
 - WL- WATER LINE
 - RCP- REINFORCED CONCRETE PIPE
 - RCB- REINFORCED CONCRETE BOX
 - BC- BACK OF CURB



1	RELOCATED FM OUTSIDE OF EX. SIDEWALK	4-2-18
NO.	REVISIONS	DATE



CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
**BREEZY HILL
FORCE MAIN**
ROCKWALL, TEXAS

FORCE MAIN STA 72+00 TO 83+00

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER	DATE	SCALE: HOR: 1"=40' VER: 1"=4'	9 OF 10
16029	JULY 2016		

AS-BUILT SEPTEMBER 2018
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

NOTES:

- CONTRACTOR TO ADJUST LOCATION OF FORCE MAIN TO AVOID EXISTING PUBLIC AND PRIVATE UTILITIES AS NECESSARY.
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LEGEND

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NOTE:

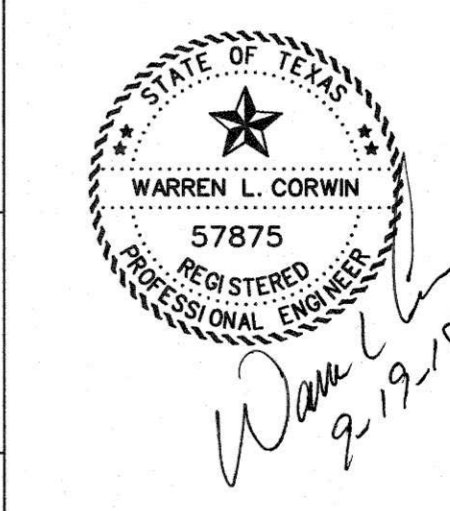
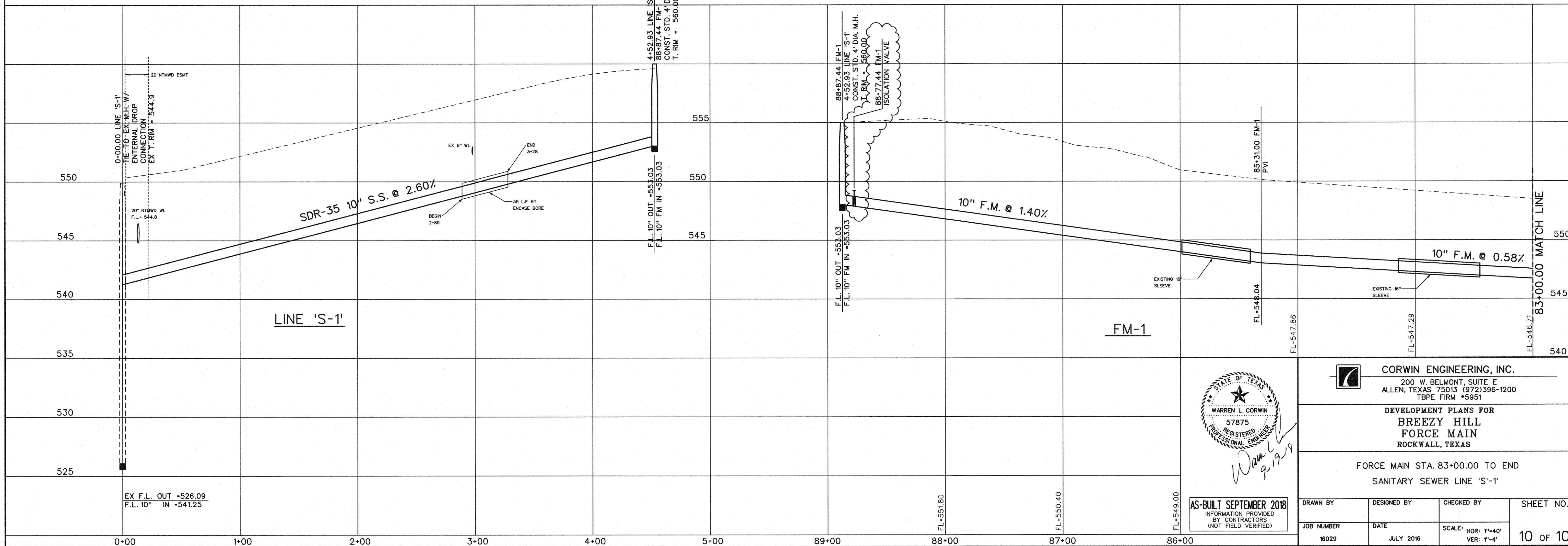
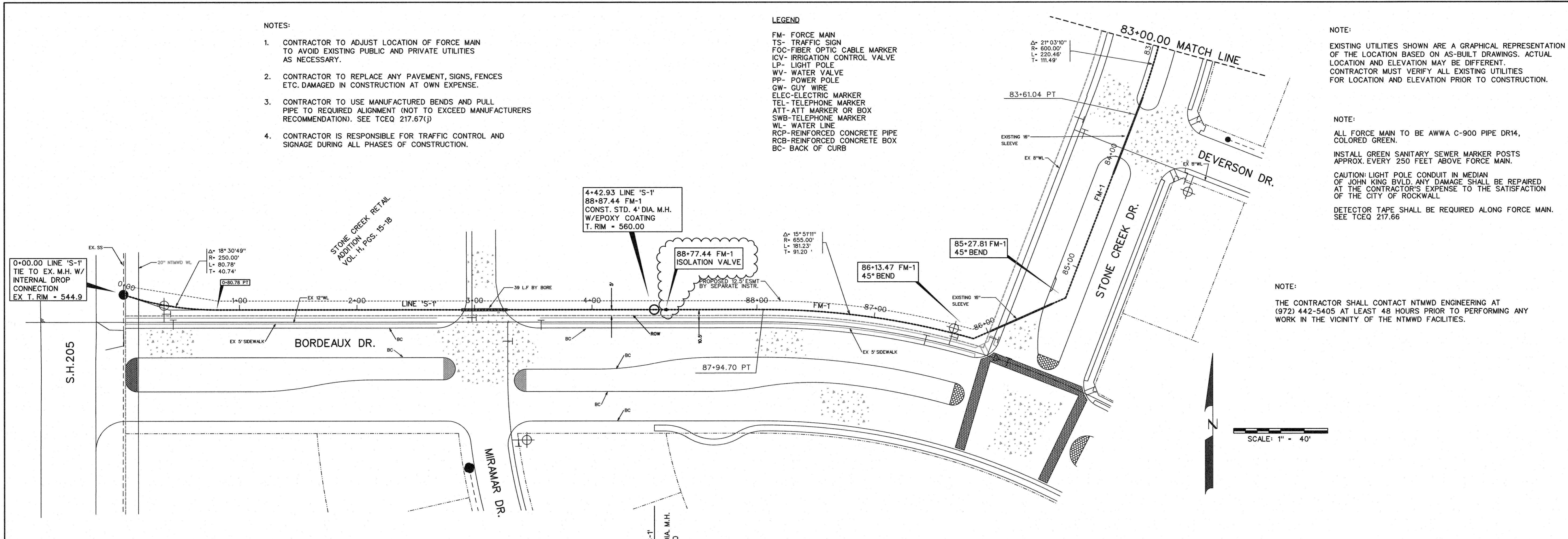
ALL FORCE MAIN TO BE AWWA C-900 PIPE DR14, COLORED GREEN.
INSTALL GREEN SANITARY SEWER MARKER POSTS APPROX. EVERY 250 FEET ABOVE FORCE MAIN.

CAUTION: LIGHT POLE CONDUIT IN MEDIAN OF JOHN KING BLVD. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE CITY OF ROCKWALL.

DETECTOR TAPE SHALL BE REQUIRED ALONG FORCE MAIN. SEE TCEQ 217.66

NOTE:

THE CONTRACTOR SHALL CONTACT NTMWD ENGINEERING AT (972) 442-5405 AT LEAST 48 HOURS PRIOR TO PERFORMING ANY WORK IN THE VICINITY OF THE NTMWD FACILITIES.



AS-BUILT SEPTEMBER 2018
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBP# FIRM #5951

DEVELOPMENT PLANS FOR
**BREEZY HILL
FORCE MAIN**
ROCKWALL, TEXAS

FORCE MAIN STA. 83+00.00 TO END
SANITARY SEWER LINE 'S-1'

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER	DATE	SCALE: HOR: 1"=40' VER: 1"=4'	10 OF 10
16029	JULY 2016		