BETHANY
Oklahoma



CITY OF BETHANY

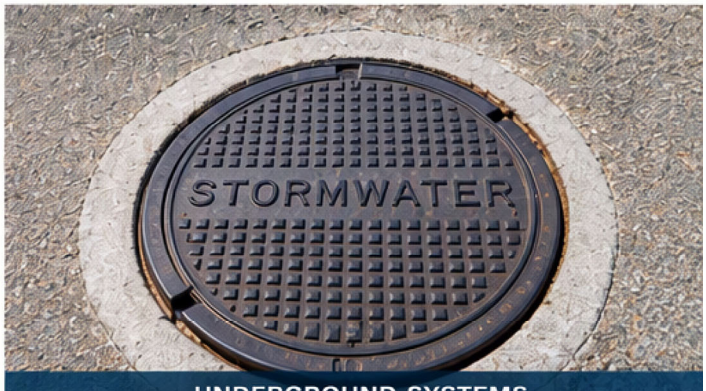
G.O. BOND DRAINAGE REPORT


STORM INLETS


BOX CULVERTS


CULVERTS


DRAINAGE CHANNELS



UNDERGROUND SYSTEMS

PREPARED FOR THE

CITY OF BETHANY, OKLAHOMA

NOVEMBER 5, 2026

TEIM DESIGN

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Introduction

The City of Bethany has numerous drainage structures located throughout the city which consist of pipes, manholes, bridges and reinforced concrete boxes. As is the case with many cities, the condition of this infrastructure is unknown unless it is periodically inspected. This study was separated into a Phase 1 and Phase 2 assessment.

Phase 1 Locations

Phase 1 of the study assessed the condition of drainage infrastructure at six locations in the city shown in Figure 1. These areas are known to have pipes crossing under major streets. Standard Engineering and Field Services was contracted to provide the necessary inspections of the infrastructure at these six locations due to the specialized equipment needed to safely navigate these confined space requirements. Stormwater pipes and manholes at each location were inspected and photographed to clearly identify the condition, material and sizes of the pipes. The complete report provided by Standard Engineering is included in Attachment A.

Location 1: NW 36th and Rockwell Avenue (Figure 2)

The drainage pipes in this area consist of reinforced concrete pipe (RCP) and corrugated metal pipe (CMP) with sizes varying from 18-inch to 42-inch. The 18-inch RCP was determined to be in good condition. The 42-inch CMP has been previously waterproofed but shows visible rust and cracking and also signs of being undersized for the stormwater flow. Sand, gravel and trash were present in the pipe.

Location 2: NW 30th and Rockwell Avenue (Figure 3)

The drainage pipes in this area consist of RCP with both 12-inch and 18-inch pipes from street inlets to the manholes. The pipe is in good condition.

Location 3: NW 30th and Council Road (Figure 4)

Two 18-inch RCP's and one 24-inch RCP were found in the intersection. The 24-inch RCP crosses the intersection from northeast to southwest. The pipe is cracked and sand and debris are present. The pavement above the pipe is cracked which could indicate future pavement settlement. The 18-inch pipes are in good condition.

Location 4: NW 28th Street and N. Glade Avenue (Figure 5)

A 24-inch arched CMP crosses midblock between NW 27th Street and NW 28th Street. The joints of the pipe were found to be in poor condition, with sand and soil inside the pipe. The pavement above the pipe shows surface cracking which could allow for pavement settlement. This pipe ties into a larger pipe network that serves the entire area which experiences localized flooding.

Location 5: NW 23rd and Rockwell Avenue (Figure 6)

The main drainage pipe in this area is a 72-inch CMP that traverses north and south under Rockwell Avenue. This pipe shows signs of a previous waterproofing inside the pipe. The

lower half of the pipe is experiencing rust and cracking of the waterproofing and is in poor condition. Joints need to be sealed; manholes need to be cleaned and repaired. A 24-inch RCP is also in the intersection and is in good condition.

Location 6: NW 16th and Rockwell Avenue (Figure 7)

Two pipes were found in this intersection, an 18-inch RCP and a 78-inch CMP. The 18-inch RCP is in good condition but has debris and needs to be cleaned. The 78-inch CMP has previous waterproofing which shows signs of rust and damage.

Phase 2 Locations

Phase 2 of the study assessed an additional eight areas identified by City staff. These areas show signs of distress such as the street cracking, street settling, and sink holes where underground pipes are located. Some of these areas are also known to have localized high water in storm events. TEIM Design inspected each location with City staff to determine the current conditions.

Location 7: NW 23rd and College (Figure 8)

A 42-inch CMP located along the north side of NW 23rd east and west of College Avenue. There are visible sink holes, numerous past repairs and pavement cracking.

Location 8: NW 31st Terrace and Hammond (Figure 9)

Area experiences localized flooding

Location 9: Redmond – NW 42nd to NW 46th (Figure10)

Street is settling on top of existing CMP.

Location 10: NW 37th and Asbury (Figure 11)

Area experiences localized flooding.

Location 11: Brownville Lane / Bridgeport Lane (Figure 12)

Area experiences localized flooding.

Location 12: 7100 Block of NW 23rd (Figure 13)

Visible sink holes have developed where an existing reinforced concrete box drains runoff from NW 23rd to an open ditch at NW 21st and Divis.

Location 13: 3200 N. Rockwell (Figure 14)

Street experiencing cracking and settlement where pipes cross Rockwell. Area also experiences localized flooding.

Location 14: NW 30th Terrace and Mueller (Figure 15)

Area experiences localized flooding.

Recommendations

Additional study is needed to develop a preliminary improvement plan and cost opinion at each location as outlined below. Once cost opinions are developed, a priority list for "Constructing, improving, enlarging, engineering, equipping, and repairing storm drainage facilities within the City of Bethany" as stated in the 2022 G.O. Bond language can be developed in conjunction with the current allocated funding.

Location 1: NW 36th and Rockwell Avenue

Recommend Basin study to develop hydrology and determine pipe and inlet capacity. Evaluate pipe repair or replacement concepts to develop cost opinions.

Location 2: NW 30th and Rockwell Avenue

Recommend inspecting intersection infrastructure every 2 years to monitor conditions.

Location 3: NW 30th and Council Road

Recommend inspecting intersection infrastructure every 2 years to monitor conditions.

Location 4: NW 28th Street and N. Glade Avenue

Recommend Basin study to develop hydrology and determine pipe and inlet capacity. Evaluate pipe network to determine alternate improvements to allow better runoff and provide safe access during storm events.

Location 5: NW 23rd and Rockwell Avenue

Recommend Basin study to develop hydrology and determine pipe and inlet capacity. Evaluate pipe repair or replacement concepts to develop cost opinions.

Location 6: NW 16th and Rockwell Avenue

Recommend inspecting intersection infrastructure every 2 years to monitor conditions.

Location 7: NW 23rd and College

Recommend Basin study to develop hydrology and determine pipe and inlet capacity. Evaluate pipe repair or replacement concepts to develop cost opinions.

Location 8: NW 31st Terrace and Hammond

Recommend Basin study to develop hydrology and determine pipe and inlet capacity. Evaluate pipe repair or replacement concepts to develop cost opinions.

Location 9: Redmond – NW 42nd to NW 46

Recommend video inspection of the existing storm sewer to determine pipe condition, size and material.

Location 10: NW 37th and Asbury

Recommend Basin study to develop hydrology and determine pipe and inlet capacity. Evaluate pipe repair or replacement concepts to develop cost opinions.

Location 11: Brownville Lane / Bridgeport Lane

This location has been previously studied. A flume was proposed from the intersection to the channel at the back of the properties. Final design will be required and an easement will be needed from the property owner.

Location 12: 7100 Block of NW 23rd

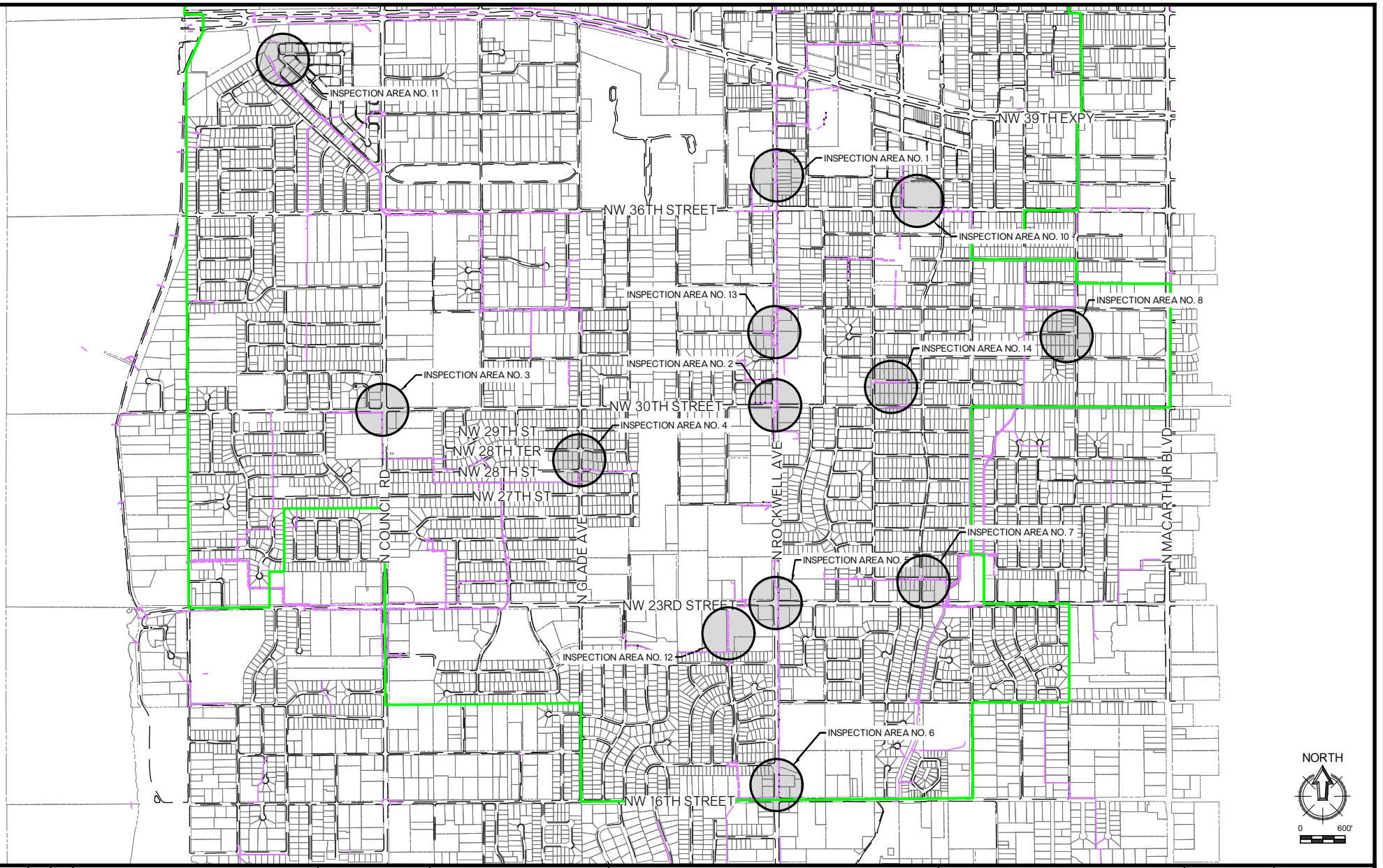
This area needs to be further assessed with inspection of the drainage structures to determine the cause of the sinkholes. Upon inspection completion, recommend Basin study to develop hydrology and determine pipe and inlet capacity. Evaluate pipe repair or replacement concepts to develop cost opinions.

Location 13: 3200 N. Rockwell

This area needs to be further assessed with inspection of the drainage structures to determine pipe condition. Upon inspection completion, recommend Basin study to develop hydrology and determine pipe and inlet capacity. Evaluate pipe repair or replacement concepts to develop cost opinions.

Location 14: NW 30th Terrace and Mueller

Recommend Basin study to develop hydrology and determine pipe and inlet capacity. Evaluate pipe repair or replacement concepts to develop cost opinions.



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TEIM DESIGN

CITY

STORM SEWER INSPECTION LOCATION MAP

CIVIL

FIGURE 1
INSPECTION AREAS

XX-####

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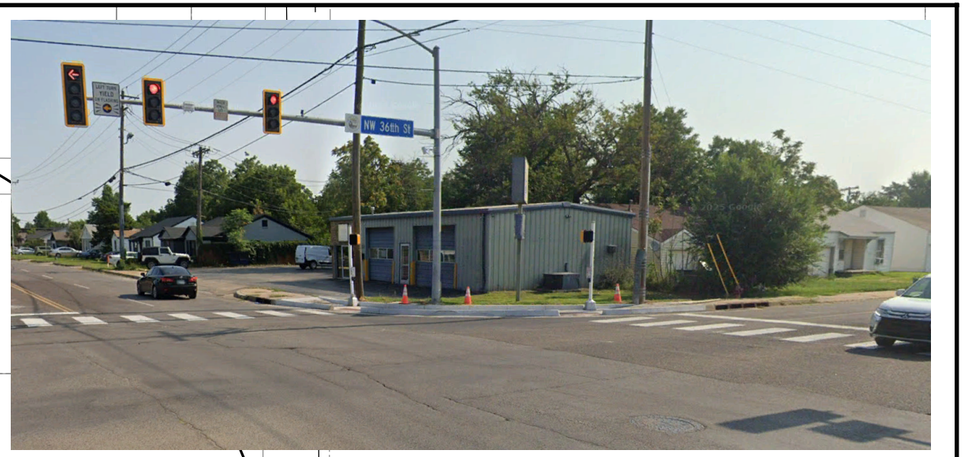

N ROCKWELL AVE

AS BUILT - STORM ? CURB INLET FL=?

AS BUILT - STORM 7 CURB INLET FL=?

AS BUILT - STORM ? INLET FL=?

24" PIPE

AS BUILT - STORM 7 INLET FL=1310.33

PIPE?

AS BUILT - STORM ? CURB INLET FL=?

AS BUILT - STORM ? INLET FL=?

PIPE?

AS BUILT - STORM ? CURB INLET FL=?

AS BUILT - STORM ? CURB INLET FL=?

AS BUILT - STORM 7 42" SMOOTHED LINED PIPE

AS BUILT - STORM ? INLET PIPE? 2

AS BUILT - STORM ? CURB INLET FL=?

AS BUILT - STORM ? CURB INLET FL=?

AS BUILT - STORM 7 INLET FL=1314.10

18" RCP

INSPECTION AREA NO. 1

MANHOLE?

AS BUILT ? 18" RCP; CURB INLET FL =?

AS BUILT - STORM 7 CURB INLET FL 18"=1312.00 EW FL 30"=1310.83

30" PIPE

AS BUILT - STORM 7 MANHOLE FL=?

30" RCP

30" PIPE

AS BUILT - STORM 7 INLETS FL=?

AS BUILT - STORM 7 END 30" RCP

AS BUILT - STORM 7 INLET FL=?

AS BUILT ? CURB INLET FL =?

PIPE?

2 - 24" PIPES

AS BUILT - STORM 7 INLET FL=1308.58

AS BUILT - STORM 7 INLET FL=1308.68

AS BUILT - STORM 7 42" SMOOTHED LINED PIPE

AS BUILT - STORM 7 INLET?

AS BUILT - STORM 7 42" SMOOTHED LINED PIPE

AS BUILT - STORM 7 INLET FL=1308.34

NW 36TH STREET

NORTH

0 50'

W:\ET489-0\Sheet-Locations.dwg, 11/4/2026 4:57:35 PM, pgarrett

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STORM SEWER INSPECTION LOCATION 1

CIVIL

FIGURE 2
INSPECTION AREAS

XX-####

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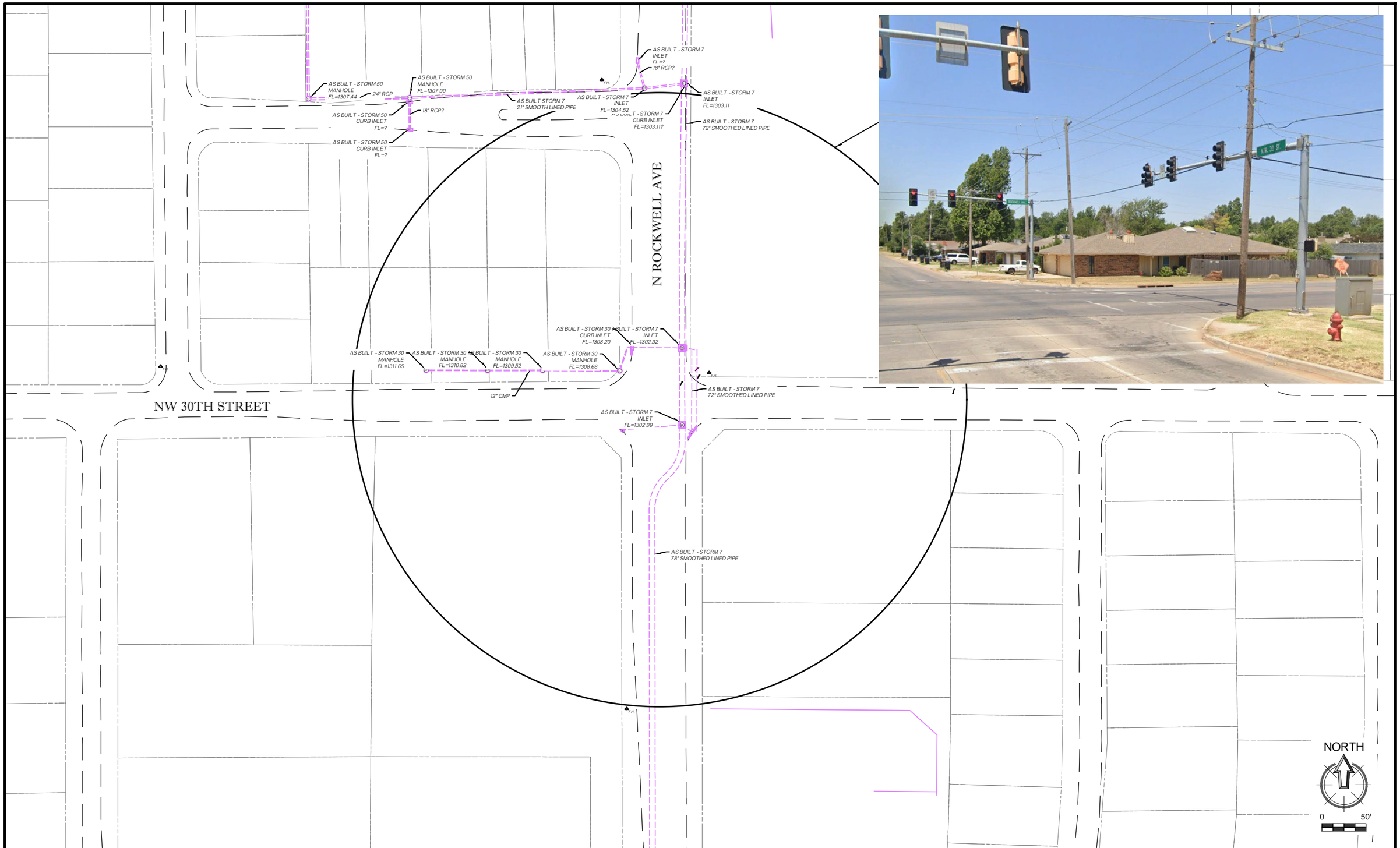

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STORM SEWER INSPECTION LOCATION 2

CIVIL

FIGURE 3
INSPECTION AREAS

XX-####

SHEET NO.

SHEET - OF ----



N COUNCIL RD

NW 30TH STREET

42" RCP

42" RCP

AS BUILT - STORM 22
MANHOLE
FL=1287.58

42" RCP

NORTH

0 50'

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STORM SEWER INSPECTION LOCATION 3

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FIGURE 4
INSPECTION AREAS

XX-####

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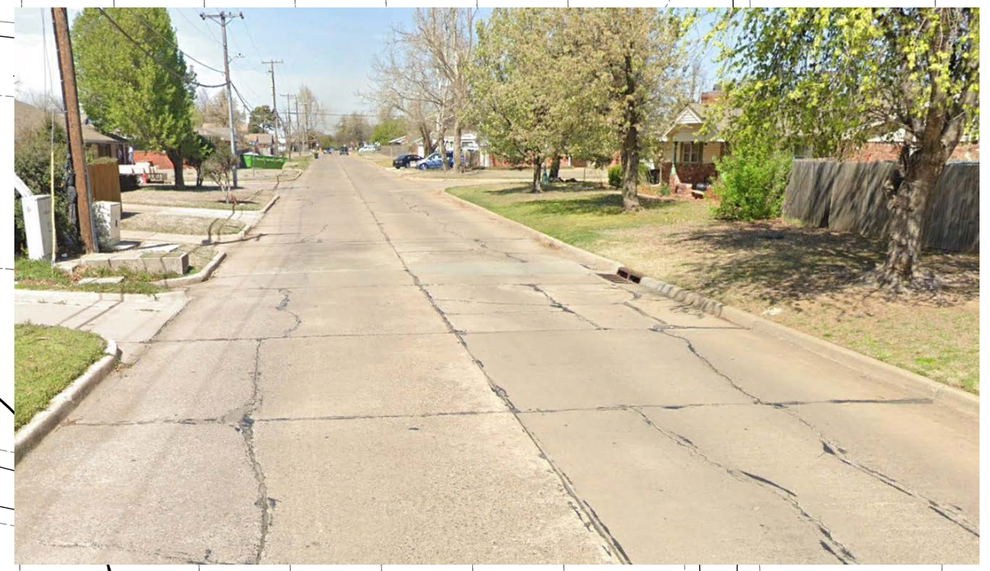

NW 29TH ST

NW 28TH TER

N GLADE AVE

NW 28TH ST

NW 27TH ST

AS BUILT - STORM 33
PIPE BEND
FL=1300.39

AS BUILT - STORM 33
PIPE BEND
FL=1300.85

AS BUILT - STORM 33
PIPE BEND
FL=1300.85

12" PIPE

AS BUILT - STORM 33
PIPE BEND
FL=1301.79

AS BUILT - STO
CURB INLET
FL=1301.80

AS BUILT - STORM 33
PIPE BEND
FL=1300.19

12" PIPE

PIPE?

AS BUILT - STORM 33
CURB INLET
FL=?

21" PIPE

AS BUILT - STORM 33
INLET
FL 21"=1299.68
FL 12"=1300.00

NORTH

0 50'

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STORM SEWER INSPECTION LOCATION 4

CIVIL

FIGURE 5
INSPECTION AREAS

XX-####

SHEET NO.

SHEET - OF ----



AS BUILT - STORM 7
72" SMOOTHED LINED PIPE

N ROCKWELL AVE

NW 23RD STREET

FL =1306.97

8" PVC

BETHANY SELF STORAGE
DETENTION POND

FL =1305.20

STORM PIPE
SIZE?

AS BUILT - STORM ?
GRATED INLET
27" RCP TO SOUTH
FL=?

36" RCP?

24" RCP

AS BUILT - STORM ?
GRATED INLET
FL=1299.24

AS BUILT - STORM ?
MANHOLE
FL N=1299.32
FL W=1299.28
FL S=1299.28

AS BUILT - STORM ?
CURB INLET
FL =1299.01

AS E
6' x

AS BUILT - STORM 8
18" x 30" GRATED INLET

AS BUILT - STORM 8
6' x 3' RCB

AS BUILT - STORM 8
18" x 30" GRATED INLET

AS BUILT - STORM 7
72" SMOOTHED LINED PIPE

NORTH

0 50'

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STORM SEWER INSPECTION LOCATION 5

CIVIL

FIGURE 6
INSPECTION AREAS

XX-####

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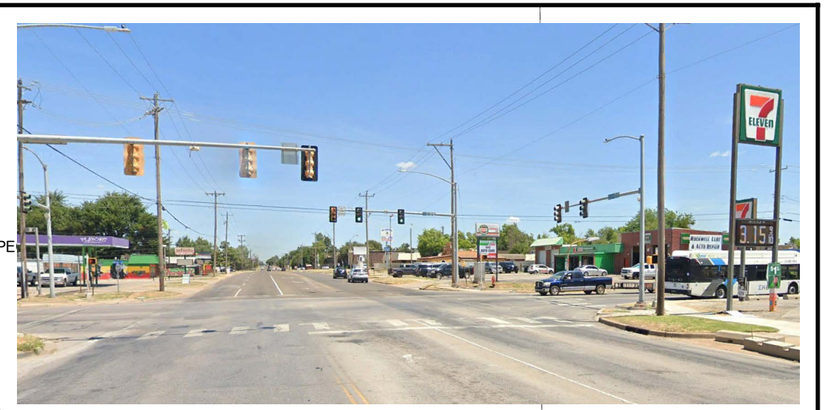

AS BUILT - STORM 29
2 - 6' x 4' RCB
FL=1287.14

AS BUILT - STORM 29
2-4 CURB INLET
FL=1289.39

18" RCP

18" RCP

24" RCP

30" RCP

30" RCP

6' x 4' RCB
FL=1286.54

AS BUILT - STORM 29
2-4 CURB INLET

AS BUILT - STORM 29
MANHOLE
FL=1288.30

FL=1286.80

INSPE

N ROCKWELL AVE

AS BUILT - STORM 7
78" SMOOTH LINED PIPE

AS BUILT - STORM 7
MANHOLE
FL=1285.37

AS BUILT - STORM 29
2 - 6' x 4' RCB
INLET ON TOP
FL=1285.30

AS BUILT - STORM 29
2 - 6' x 4' RCB
INLET ON TOP
FL=1285.20

AS BUILT - STORM 7
MANHOLE
FL=1284.89

AS BUILT - STORM 29
2 - 6' x 4' RCB
INLET ON TOP
FL=1284.46

AS BUILT - STORM 7
78" SMOOTH LINED PIPE
FL=1284.54

AS BUILT - STORM 29
2 - 6' x 4' RCB
AT CENTER OF STREET
FL=1283.80

AS BUILT - STORM 7
CURB INLET & MANHOLE
FL(78")=1282.71

AS BUILT - STORM 7
78" SMOOTH LINED PIPE

AS BUILT - STORM 7
78" SMOOTH LINED PIPE
FL=1284.28

AS BUILT - STORM 7
78" SMOOTH LINED PIPE
FL=1282.52

NW 16TH STREET

NORTH

0 50'

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STORM SEWER INSPECTION LOCATION 6

CIVIL

FIGURE 7
INSPECTION AREAS

XX-####

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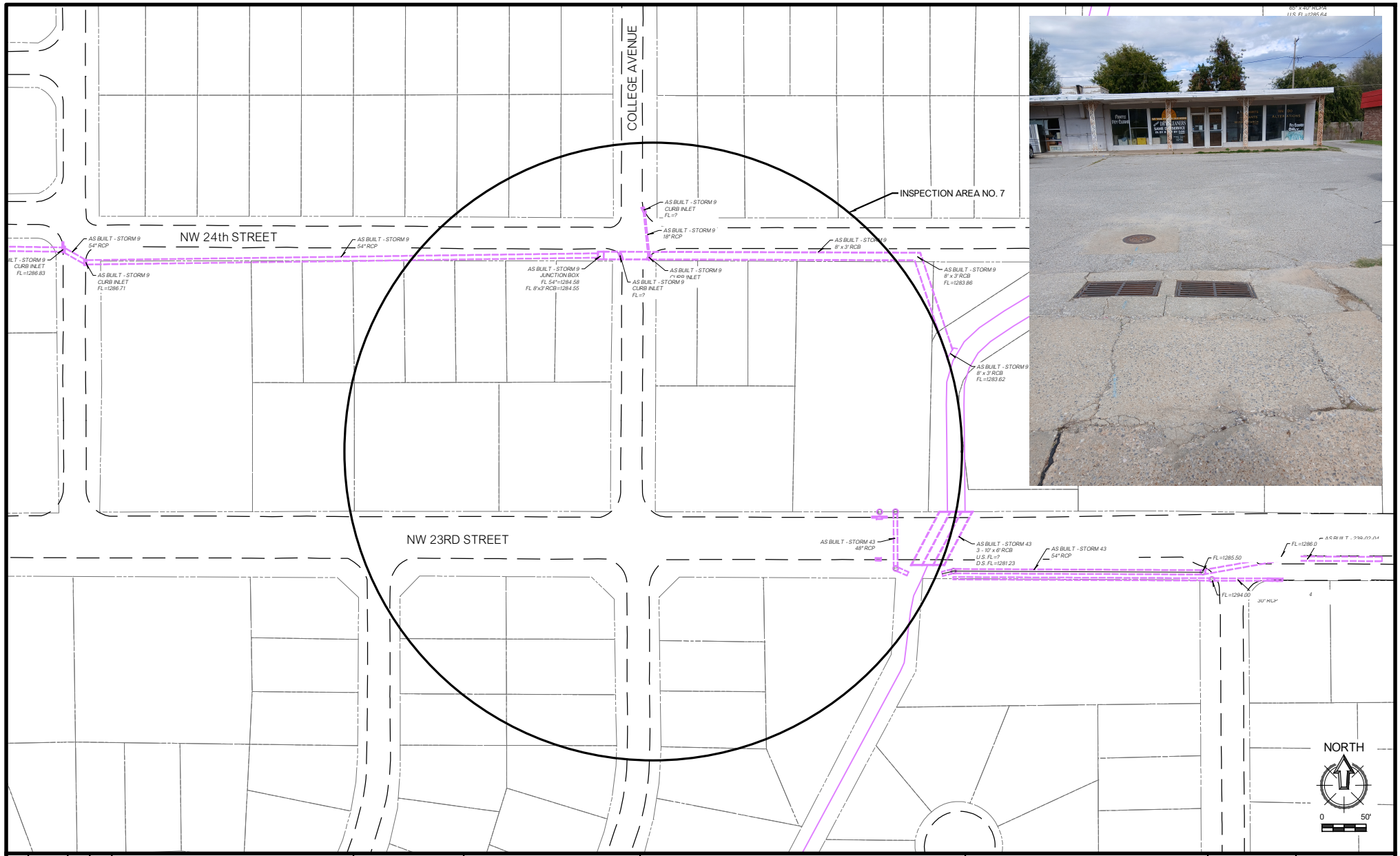

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STORM SEWER INSPECTION LOCATION 7

CIVIL

FIGURE 8
INSPECTION AREAS

XX-####

SHEET NO.



NW 31nd STREET

NW 31st tERRACE

NW 31st STREET

N HAMMOND AVENUE

AS BUILT - STORM 9
36" RCP

AS BUILT - STORM 9
5' WIDE CONCRETE CHANNEL

AS BUILT - STORM 9
10' x 3' RCB

AS BUILT - STORM 9
10' x 3' RCB

AS BUILT - STORM 9
2 - 36" RCP

AS BUILT - STORM 9
10' x 3' RCB
U.S. FL=1301.91
D.S. FL=1301.57

AS BUILT - STORM 9
5' WIDE CONCRETE CHANNEL

10'x4' RCB

5' WIDE CONCRETE CHANNEL

STORM-55

10'x4' RCB

INSPECT

NORTH

0 50'

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STORM SEWER INSPECTION
LOCATION 8

CIVIL

FIGURE 9
INSPECTION AREAS

XX-####

SHEET NO.



N DONALD AVENUE

NW 43rd STREET

NW 44th STREET

NW 45th STREET

NW 46th STREET

N REDMOND AVENUE

INSPECTION AREA NO. 9

N WHEELER AVENUE

NORTH

0 50'

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STORM SEWER INSPECTION LOCATION 9

CIVIL

FIGURE 10
INSPECTION AREAS

XX-####

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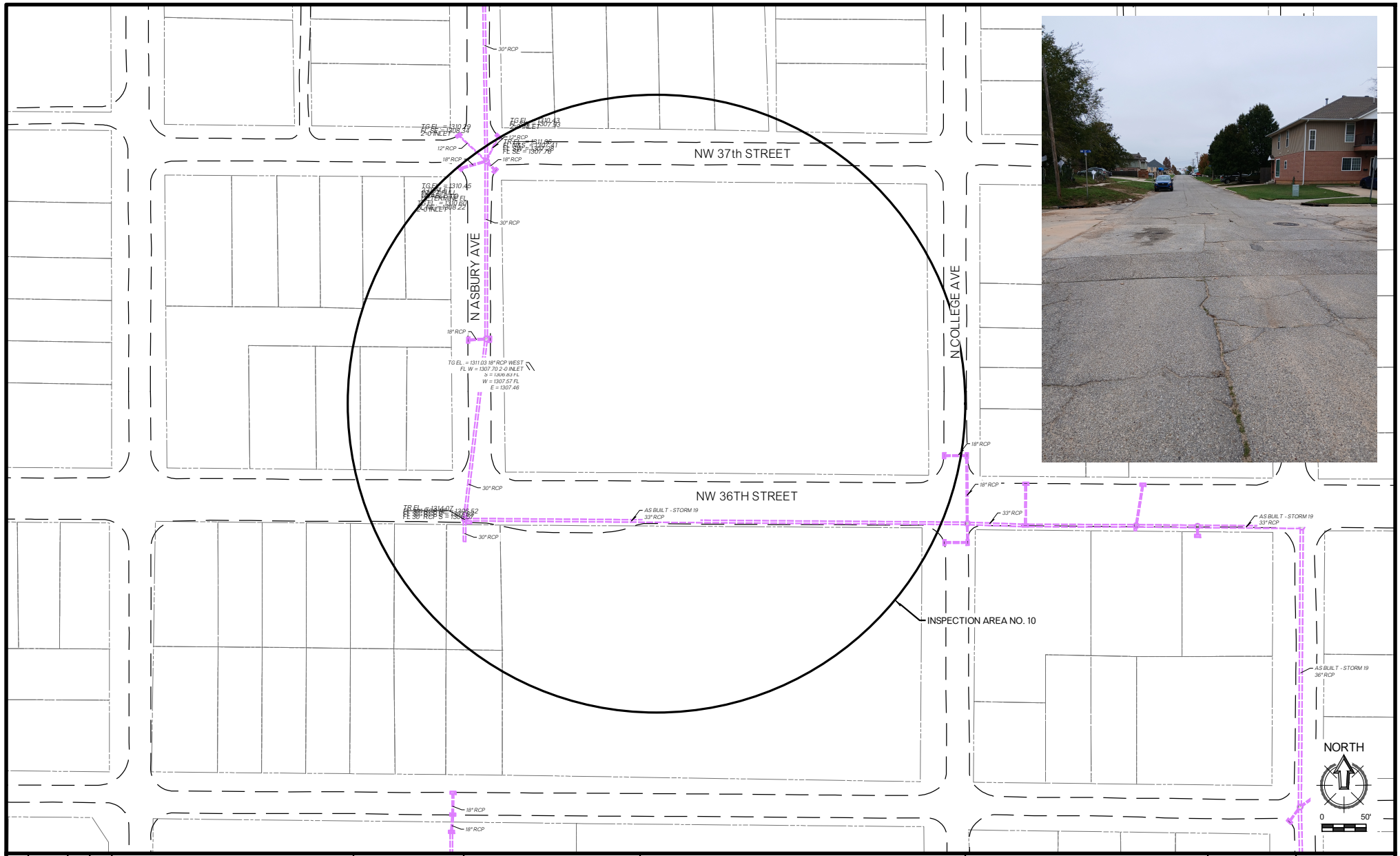

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STORM SEWER INSPECTION LOCATION 10

CIVIL

FIGURE 11
INSPECTION AREAS

XX-####

SHEET NO.



N BRIDGEPORT LANE

BROWNSVILLE LANE

PATTY LANE

INSPECTION AREA NO. 11

NORTH

0 50'

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STORM SEWER INSPECTION
LOCATION 11

CIVIL

FIGURE 12
INSPECTION AREAS

XX-####

SHEET NO.



STORM PIPE SIZE?
AS BUILT - STORM ? GRATED INLET 27" RCP TO SOUTH FL=?
FL=1305.20
24" RCP
36" RCP?
AS BUILT - STORM ? GRATED INLET FL=1299.24
AS BUILT - STORM ? MANHOLE FL N=1299.32 FL W=1299.28 FL S=1299.28
AS BUILT - STORM ? CURB INLET FL=1299.01
AS E 6' x :
NW 2
INSPECTION AREA NO. 12
AS BUILT - STORM 8 18" x 30" GRATED INLET
AS BUILT - STORM 8 6' x 3' RCB
AS BUILT - STORM 8 18" x 30" GRATED INLET
AS BUILT - STORM 3 MANHOLE FL=1298.67
AS BUILT - STORM 3 42" CGMP
AS BUILT - STORM 8 6' x 3' RCB TIED TO EXISTING FLUME
AS BUILT - STORM 3 42" CGMP FL=1293.57
AS BUILT - STORM 8 4' WIDE CONCRETE FLUME
AS BUILT - ? JUNCTION BOX? FL=?
AS BUILT - PAVING 38 CURB INLET FL=?
AS BUILT - PAVING 38 CURB INLET FL=?
15" RCP
AS BUILT - PAVING 38 2 - 50" x 31" CGMP
NW 21st STREET
NORTH
0
50'

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STORM SEWER INSPECTION LOCATION 12

CIVIL

FIGURE 13
INSPECTION AREAS

XX-####

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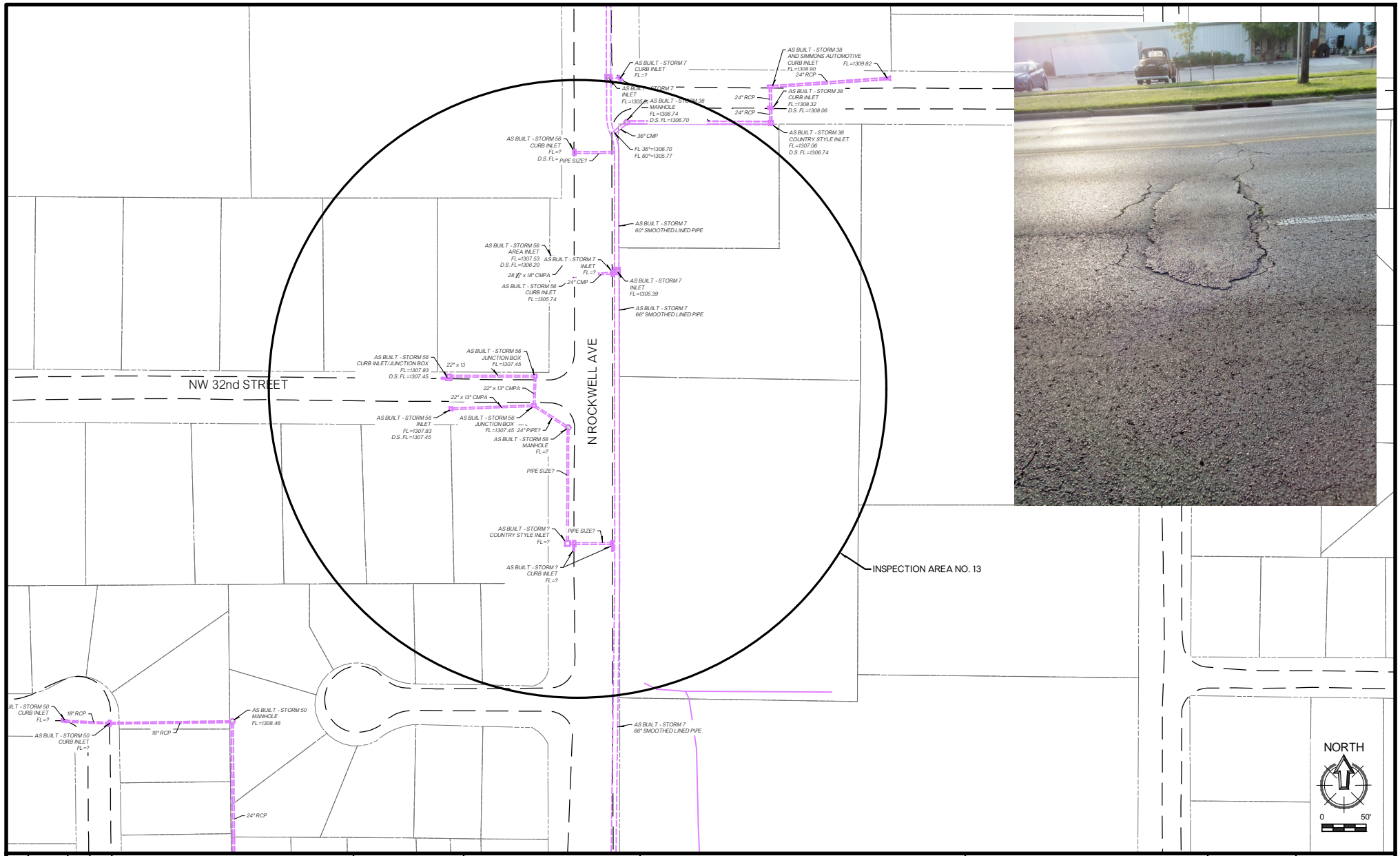

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STORM SEWER INSPECTION LOCATION 13

CIVIL

FIGURE 14
INSPECTION AREAS

XX-####

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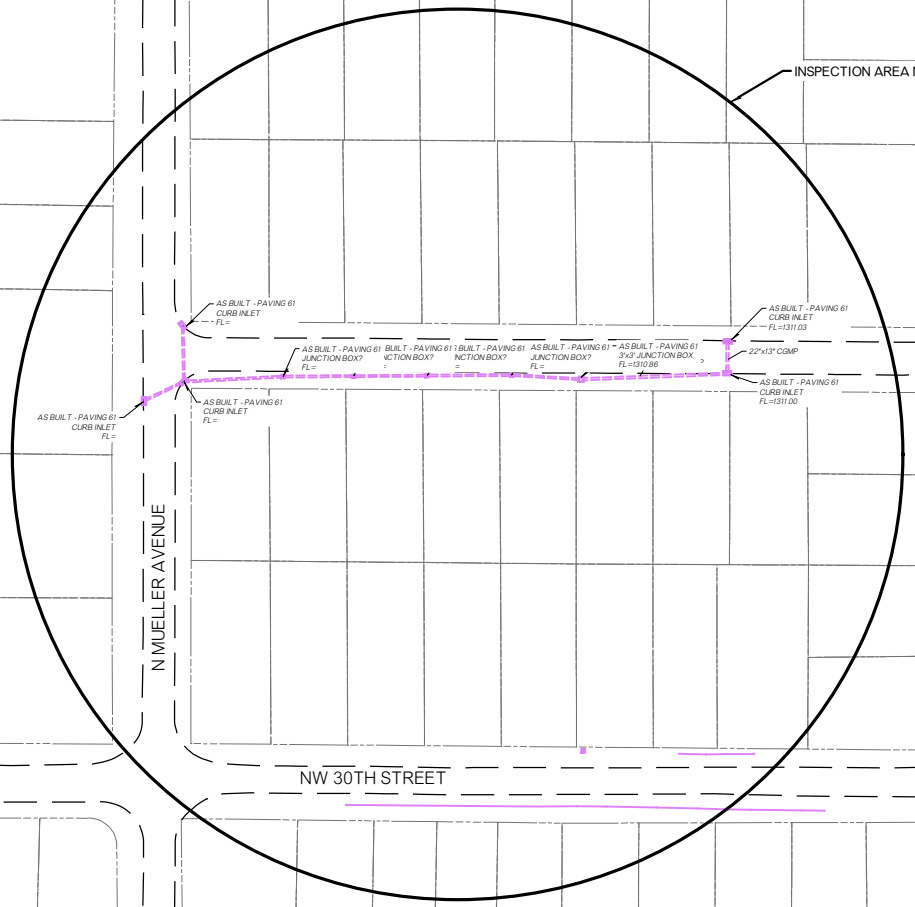



NORTH

0 50'

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STORM SEWER INSPECTION
LOCATION 14

CIVIL

FIGURE 15
INSPECTION AREAS

XX-####

SHEET NO.

Attachment A – Standard Engineering Field Service Inspection Report

Bethany Drainage Inspection — 2409-0959

Bethany Oklahoma

Standard Engineering: Field Service Inspection Report #1

Name	1) NW 36th and Rockwell (2409-0959)
Status	Completed
Assignee	Standard Engineering & Field Services (SEN)
Date	01-27-2025
Plans	—

Executive Summary

Standard Engineering + Field Services	At NW 36th St and N Rockwell Ave, three manholes were in the middle of the intersection. • MH1 (from MH2 to South): In almost good condition, with an 18” concrete pipe (RCP) leading to the right-side outlet and a 36” concrete pipe (RCP) crossing west to the left-side outlet, both in good shape. A 42” corrugated metal pipe (CMP) with black waterproofing extended south, showing some rust at the joints. Water patterns indicated the pipe might be undersized, as the max water level exceeded 2/3 instead of 1/3. • MH1 to MH2 (Northbound): A 42” corrugated metal pipe continued for 20’ to the MH2, without black waterproofing. Gas levels above 23.5% prevented further inspection. • MH2 to MH3 (Northbound): Another 42” corrugated metal pipe (CMP) the depth of the manhole was 12’, 40’ long pipe where it hit the MH3, also no black waterproofing material was applied. • MH3 to North (Toward 38th St): A 42” corrugated metal pipe (CMP) with a depth of 10’ and in good shape had minor bottom cracks and rust. Debris, broken pieces of concrete, sand, and trash were present. Additionally, a small 18” concrete pipe crossing the street going to the east side of 36th St with a good condition hitting the outlet about 80’. Also, a 42” concrete pipe was in good shape but had 2”-4” of sand, stones, and trash at the bottom. It ran 6’ under the street, with the rest extending onto private property following the 36th St to the east. • MH4 to the North: After 314’ to the north side of MH3 we found MH4. We just opened the manhole near 38th St to verify, that there was an 18” concrete pipe crossing the street with a length of 60’. But under that the 42” corrugated metal pipe (CMP) under the street was continued which means it all under the Rockwell (N to S). Overall starting from 38th St and crossing 36th St and continuing to the south side down, a 42” corrugated metal pipe with an approximate total length of over 400’ under the street.

Report Status

PASS	N/A
FAIL	N/A

Construction Drawings

Requested: Specified Area

Storm-7 (NW 16th and Rockwell, NW 23rd and Rockwell, NW 30th and Rockwell, NW 36th and Rockwell).pdf

Reporting Detail

Required information

Scope of Work	Storm Sewer Inspection (under the street) at 6 Intersections at Bethany, OK, which the contractor identified.
Important Notices	Please see the pictures of inspection.
Contractor Information	TEIM Design: Steve Manek P.E (SManek@teimdesign,com - 405 517 2924)

Installation Information	None
Attachments (*Click on the "Blue Link(s)" to view the attachments.)	

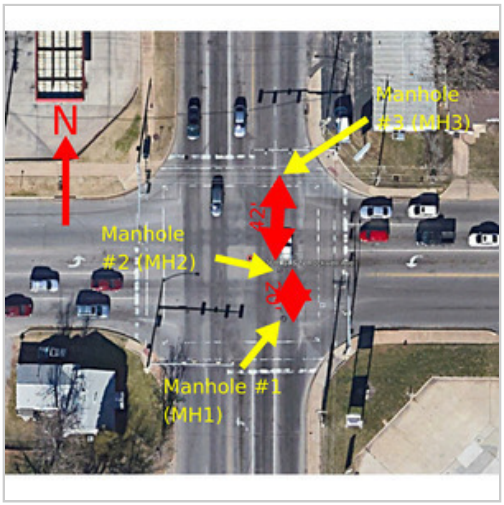
Weather

Time	Condition	Temperature	Precipitation	Humidity	Wind
27 Jan 06:00 AM	Clear	19°F	0.0"	80%	3 mph
27 Jan 12:00 PM	Sunny	39°F	0.0"	41%	5 mph
27 Jan 04:00 PM	Sunny	49°F	0.0"	29%	7 mph

Inspection

Activity	Area	Type	Notes	Testing
Visual Inspection	NW 36th and Rockwell - Bethany, OK	Strom Pipes under street	See the attached photos	None

Inspection Photos











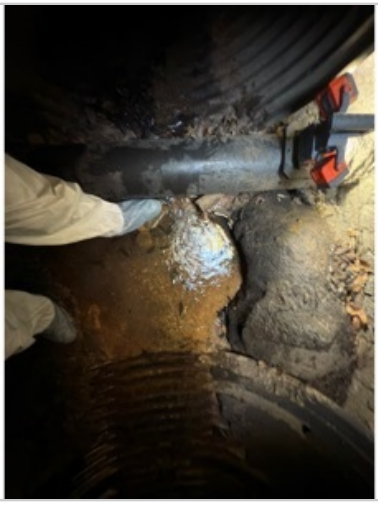


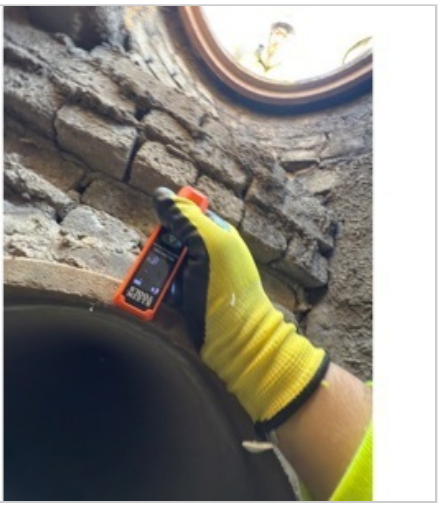


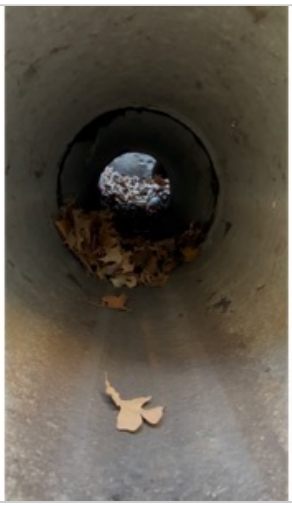




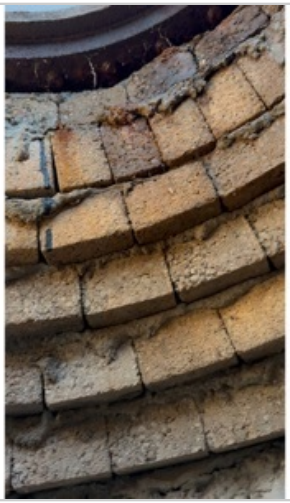




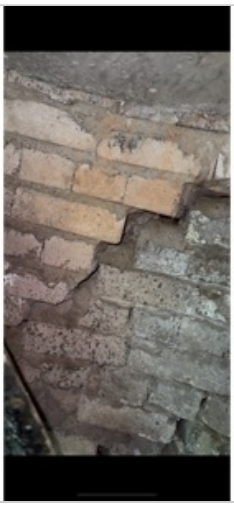
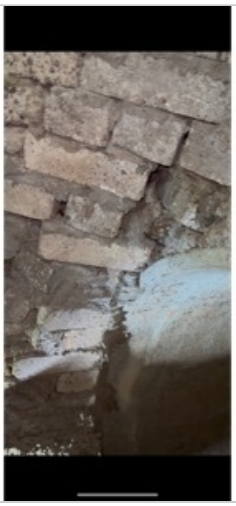
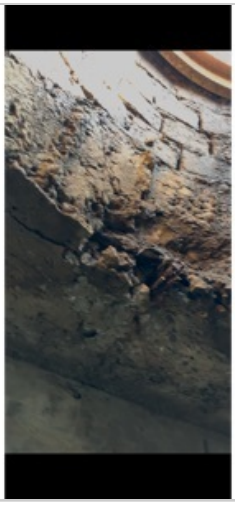


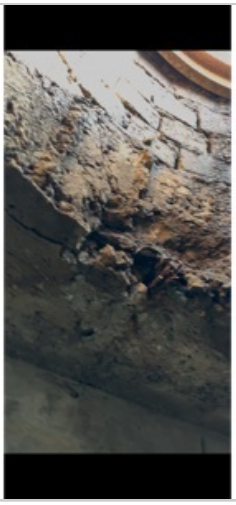
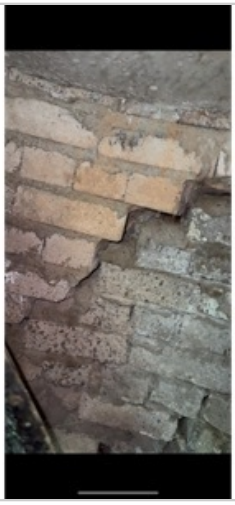
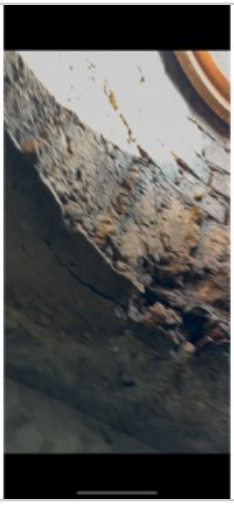










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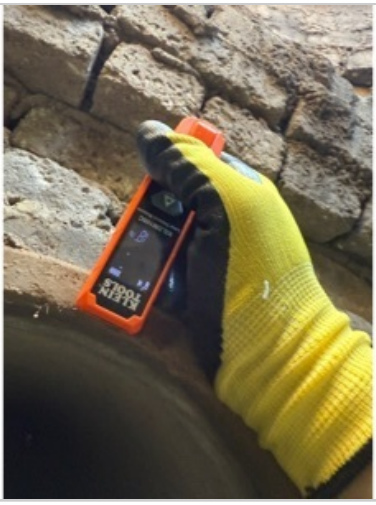




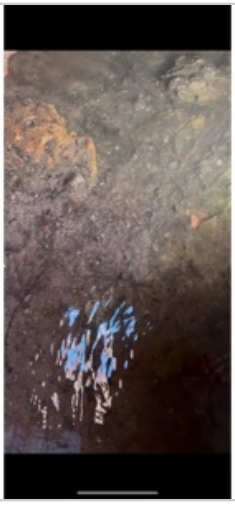


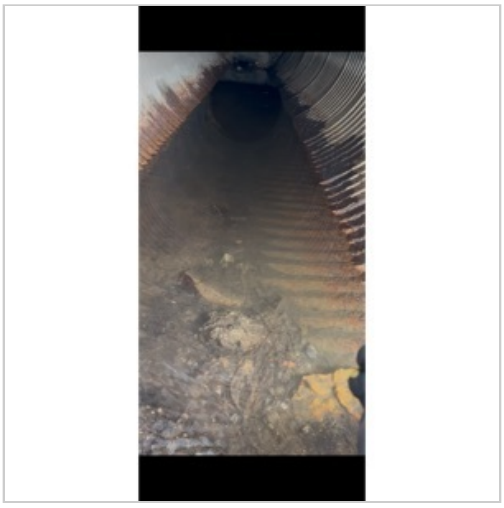












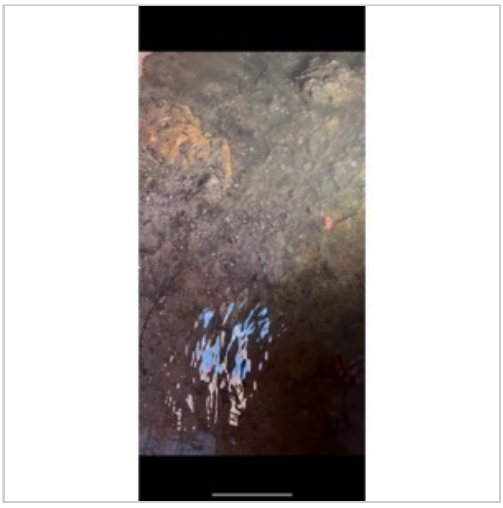


Crop

Crop



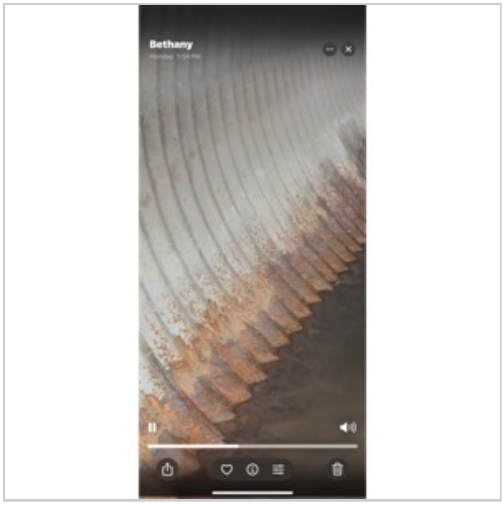










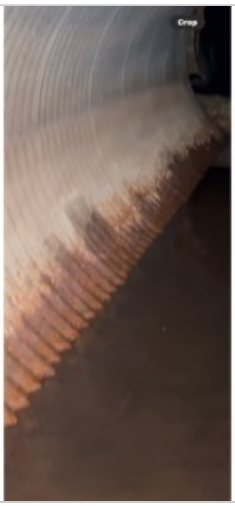

Bethany




Crop

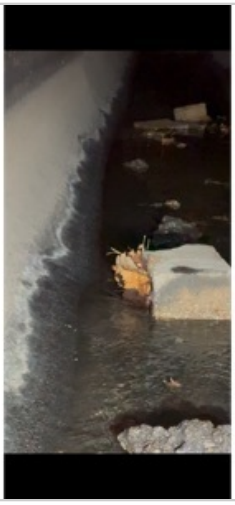










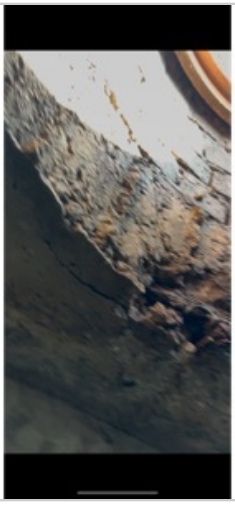




















Work Log

On-Site Hours + Travel Time and Data Development

Type	Work Hours	Date & Time	Time	Notes

Standard Dispatch

Standard Engineering + Field Services Office(s)	Spencer Office- (405) 768-5353

Signature

Signed by Said Dawood Fayaz - Project Manager

on January 31, 2025 12:30 PM from Standard Engineering & Field Services's device

Said Dawood Fayaz - Project Manager

Signature Seals



Bethany Drainage Inspection — 2409-0959

Bethany Oklahoma

Standard Engineering: Field Service Inspection Report #2

Name	2) NW 30th and Rockwell (2409-0959)
Status	Completed
Assignee	Standard Engineering & Field Services (SEN)
Date	01-27-2025
Plans	—

Executive Summary

Standard Engineering + Field Services	At NW 30th and Council, a storm sewer manhole was opened, revealing a 9’ depth with two concrete pipes inside (RCP). One 12” pipe extended from the manhole to the southwest corner drop inlet with an 8' length. Also, another one 18" (RCP) to the northeast curb outlet and the other 30’ to the southeast curb of NW 30th St with a length of 56'. We did not find any other manhole around this intersection, maybe it is buried or covered with grasses.

Report Status

PASS — N/A

FAIL — N/A

Construction Drawings

Requested: Specified Area

Storm-7 (NW 16th and Rockwell, NW 23rd and Rockwell, NW 30th and Rockwell, NW 36th and Rockwell).pdf

Reporting Detail

Required information

Scope of Work	Storm Sewer Inspection (under the street) at 6 Intersections at Bethany, OK, which the contractor identified.
Important Notices	Please see the pictures of inspection.
Contractor Information	TEIM Design: Steve Manek P.E (SManek@teimdesign,com - 405 517 2924)
Installation Information	None
Attachments (*Click on the "Blue Link(s)" to view the attachments.)	

Weather

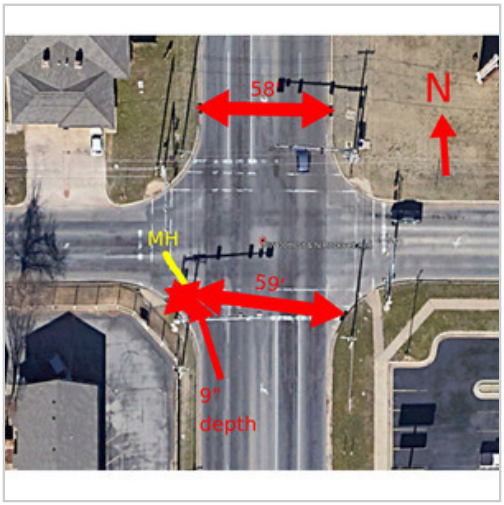
Time	Condition	Temperature	Precipitation	Humidity	Wind
27 Jan 06:00 AM	Clear	19°F	0.0"	80%	3 mph
27 Jan 12:00 PM	Sunny	39°F	0.0"	41%	5 mph

27 Jan 04:00 PM		Sunny	49°F	0.0"	29%	7 mph

Inspection

Activity	Area	Type	Notes	Testing
Visual Inspection	NW 30th and Rockwell - Bethany, OK	Strom Pipes under street	See the attached photos	None

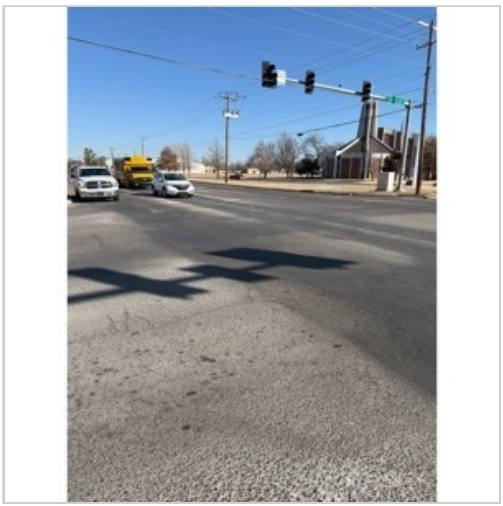
Inspection Photos













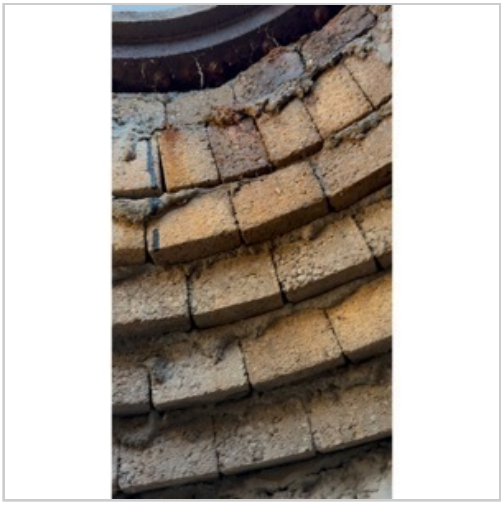

























KLEIN TOOLS
93LDM100C
Laser Distance Measure



Work Log

On-Site Hours + Travel Time and Data Development

Type	Work Hours	Date & Time	Time	Notes

Standard Dispatch

Standard Engineering + Field Services Office(s)	Spencer Office- (405) 768-5353

Signature

Signed by Said Dawood Fayaz - Project Manager

on January 31, 2025 12:30 PM from Standard Engineering & Field Services's device

Said Dawood Fayaz - Project Manager

Signature Seals

Bethany Drainage Inspection — 2409-0959

Bethany Oklahoma

Standard Engineering: Field Service Inspection Report #3

Name	3) NW 30th and Council (2409-0959)
Status	Completed
Assignee	Standard Engineering & Field Services (SEN)
Date	01-27-2025
Plans	—

Executive Summary

Standard Engineering + Field Services	At NW 30th and Council, a storm sewer manhole was opened, revealing a 4’ depth with three concrete pipes (RCP) inside. Two 18” (RCP) extended from the manhole: one 22’ to the northeast curb outlet and the other 38’ to the southeast curb of NW 30th St. A 24” concrete pipe (RCP), 83’ long, crossed the street at the intersection. The manhole was in good condition, but the 24” pipe was in poor shape, filled with sand and debris, with multiple interior cracks and visible moisture, especially at the joints. After 80’, the pipe slopes downward. Notably, two large cracks in the surface of asphalt follow the pipe’s path, posing a potential sinkhole risk. (see the pictures)

Report Status

PASS ➖ N/A

FAIL ➖ N/A

Construction Drawings

Requested: Specified Area

Storm-22 (NW 30th and Council).pdf

Reporting Detail

Required information

Scope of Work	Storm Sewer Inspection (under the street) at 6 Intersections at Bethany, OK, which the contractor identified.
Important Notices	Please see the pictures of inspection.
Contractor Information	TEIM Design: Steve Manek P.E (SManek@teimdesign,com - 405 517 2924)
Installation Information	None
Attachments (*Click on the "Blue Link(s)" to view the attachments.)	

Weather

Time	Condition	Temperature	Precipitation	Humidity	Wind
27 Jan 06:00 AM	Clear	19°F	0.0"	80%	3 mph
27 Jan 12:00 PM	Sunny	39°F	0.0"	41%	5 mph

27 Jan 04:00 PM		Sunny	49°F	0.0"	29%	7 mph

Inspection

Activity	Area	Type	Notes	Testing
Visual Inspection	NW 30th and Council - Bethany, OK	Strom Pipes under street	See the attached photos	None

Inspection Photos















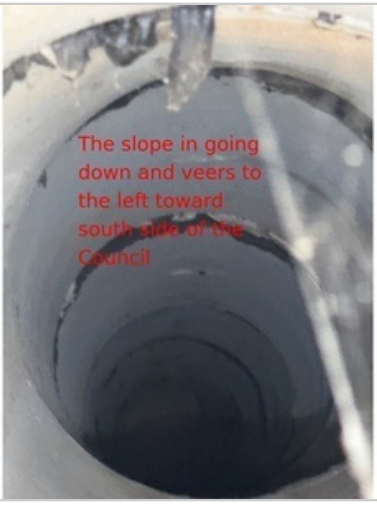




Cracks


Slope after
60'-70'




The slope in going
down and veers to
the left toward
south side of the
Council






Moisture on the top.
It is right under the
intersection.
Bad joints.








cracks at the beginning of the slope


Cracks and
moisture
where the
slope starts.






















Zozen


OKLAHOMA



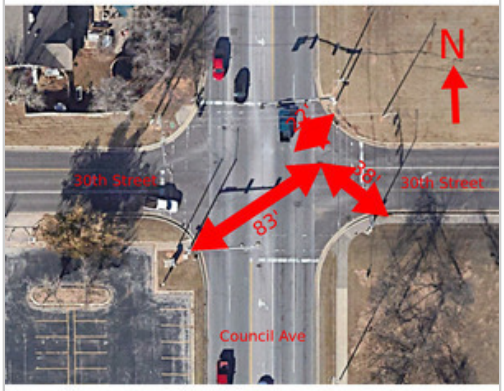












Work Log

On-Site Hours + Travel Time and Data Development

Type	Work Hours	Date & Time	Time	Notes

Standard Dispatch

Standard Engineering + Field Services Office(s)	Spencer Office- (405) 768-5353

Signature

Signed by Said Dawood Fayaz - Project Manager

on January 31, 2025 12:30 PM from Standard Engineering & Field Services's device

Said Dawood Fayaz - Project Manager

Signature Seals



Bethany Drainage Inspection — 2409-0959

Bethany Oklahoma

Standard Engineering: Field Service Inspection Report #4

Name	4) N Glade at NW 28th (2409-0959)
Status	Completed
Assignee	Standard Engineering & Field Services (SEN)
Date	01-27-2025
Plans	—

Executive Summary

Standard Engineering + Field Services	On N Glade at NW 28th St, a 24” X12" corrugated metal pipe (CMP), 35’ long, crossed under 28th street coming from the private property from the east side of 28th St, going to the west side of 28th St, and following the private property. The east-side outlet was filled with soil, sand, leaves, and trash, which we cleared for measurement. The inside of the pipe especially in the joints was in poor condition, with a 2"-3” layer of sand and soil inside the joints. Notably, cracks on two sides of concrete from the top of the street where the joint of concrete and asphalt follows the pipe and across the street, could be a future sinkhole risk. (see the pictures)

Report Status

PASS — N/A

FAIL — N/A

Construction Drawings

Requested: Specified Area



Storm-33 (N. Glade and NW 28th).pdf

Reporting Detail

Required information

Scope of Work	Storm Sewer Inspection (under the street) at 6 Intersections at Bethany, OK, which the contractor identified.

Important Notices	Please see the pictures of inspection.
Contractor Information	TEIM Design: Steve Manek P.E (SManek@teimdesign,com - 405 517 2924)
Installation Information	None
Attachments (*Click on the "Blue Link(s)" to view the attachments.)	

Weather

Time	Condition	Temperature	Precipitation	Humidity	Wind
27 Jan 06:00 AM	Clear	19°F	0.0"	80%	3 mph
27 Jan 12:00 PM	Sunny	39°F	0.0"	41%	5 mph
27 Jan 04:00 PM	Sunny	49°F	0.0"	29%	7 mph

Inspection

Activity	Area	Type	Notes	Testing
Visual Inspection	N Glade at NW 28th - Bethany, OK	Strom Pipes under street	See the attached photos	None

Inspection Photos

















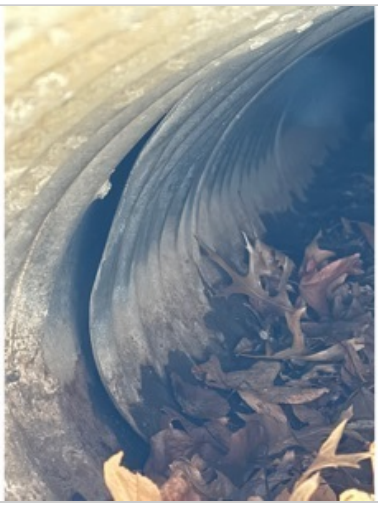
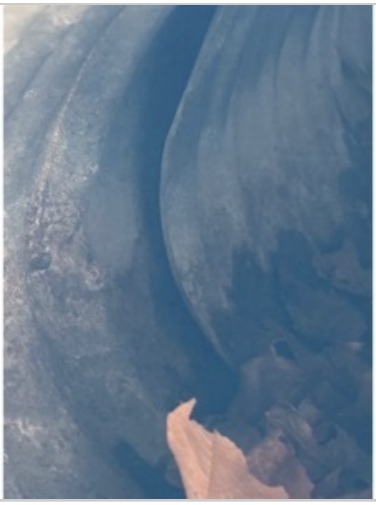


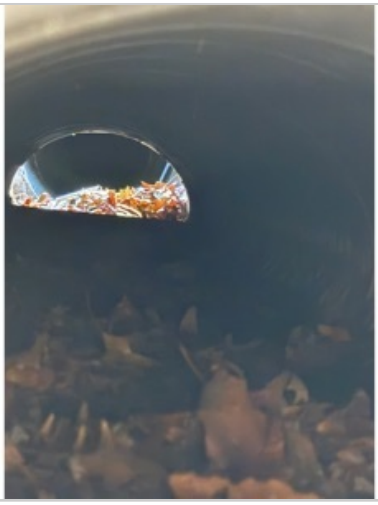








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Work Log

On-Site Hours + Travel Time and Data Development

Type	Work Hours	Date & Time	Time	Notes

Standard Dispatch

Standard Engineering + Field Services Office(s)	Spencer Office- (405) 768-5353

Signature

Signed by Said Dawood Fayaz - Project Manager

on January 31, 2025 12:33 PM from Standard Engineering & Field Services's device

Said Dawood Fayaz - Project Manager

Signature Seals



Bethany Drainage Inspection — 2409-0959

Bethany Oklahoma

Standard Engineering: Field Service Inspection Report #5

Name	5) NW 23rd and Rockwell (2409-0959)
Status	Completed
Assignee	Standard Engineering & Field Services (SEN)
Date	01-27-2025
Plans	—

Executive Summary

Standard Engineering + Field Services

At NW 23rd St and N Rockwell Ave, Two Storm Sewer manholes were found South of the intersection at the East side of Rockwell, about 170’ and 60' from NW 23rd St intersection. Additionally, only one manhole (MH3) was found on the West side of Rockwell when passing about 280' the 23rd St.

Manhole #1, south of the intersection, located at the East of Rockwell was about 5’ deep, filled with trash, debris, pieces of concrete, a broken metal manhole cover, and still water, heading the MH2 in about 110'. Highly at risk of over-flood while a simple rain.

Manhole #2, also on the south side of the intersection, located at the East of Rockwell was 4’ deep with an 8” concrete pipe running north to south under the Rockwell, extending 60’ from the intersection, and is connected to the MH1.

Manhole #3 had a Sanitary Sewer cover but was part of the Storm Sewer system. A 72’ corrugated metal pipe(CMP) with applied black waterproofing material in it, ran north to south. While the manhole was in good condition but rust, erosion, and bug holes were present from the first joint to the southward, continuing through every joint for about 175’ under the street and continuing to the South side but no sign of the next manhole from inside/top outside of the street. North of MH3, up to 150’ was inspected; the first 60’ was filled with small stones, sand, and soil, obscuring the bottom about 2"-3", while beyond 60’, joints remained rusty and signs of erosion in each joint. The top half of the pipe was in good condition, but the bottom half had cracks in the waterproofing material. Overall the pipe was bad.
A 24” concrete pipe (RCP) with a length of 52’ crossed west to east of Rockwell to the drop inlet and was in good condition.

Report Status

PASS ▬ N/A

FAIL ▬ N/A

Construction Drawings

Requested: Specified Area





Storm-7 (NW 16th and Rockwell, NW 23rd and Rockwell, NW 30th and Rockwell, NW 36th and Rockwell).pdf

Reporting Detail

Required information	
Scope of Work	Storm Sewer Inspection (under the street) at 6 Intersections at Bethany, OK, which the contractor identified.
Important Notices	Please see the pictures of inspection.
Contractor Information	TEIM Design: Steve Manek P.E (SManek@teimdesign,com - 405 517 2924)
Installation Information	None
Attachments (*Click on the "Blue Link(s)" to view the attachments.)	

Weather

Time	Condition	Temperature	Precipitation	Humidity	Wind
27 Jan 06:00 AM	Clear	19°F	0.0"	80%	3 mph
27 Jan 12:00 PM	Sunny	39°F	0.0"	41%	5 mph
27 Jan 04:00 PM	Sunny	49°F	0.0"	29%	7 mph

Inspection

Activity	Area	Type	Notes	Testing
Visual Inspection	NW 23rd and Rockwell - Bethany, OK	Strom Pipes under street	See the attached: Documents and Photos	None

Inspection Photos




OKLAHOMA




ENGINEERING

















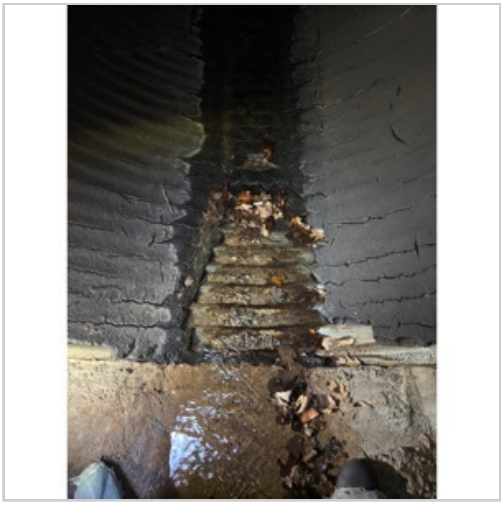








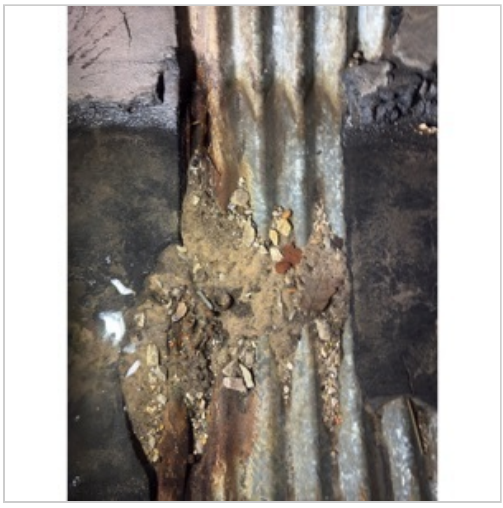




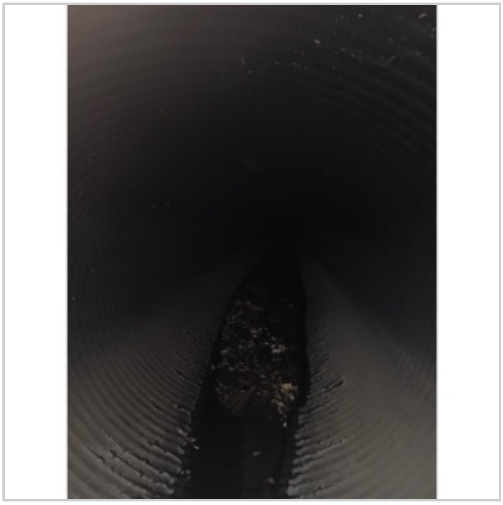










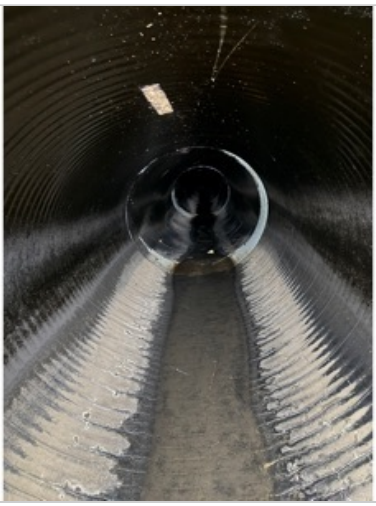




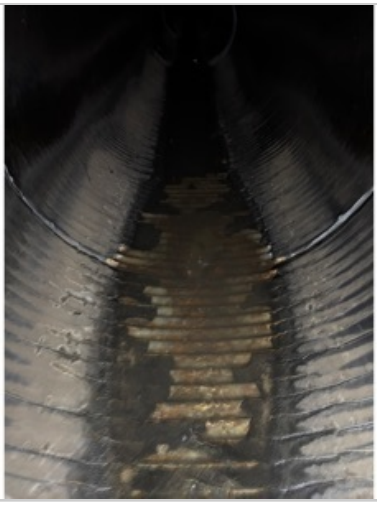


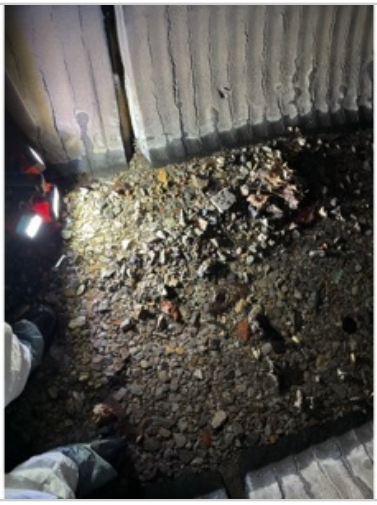


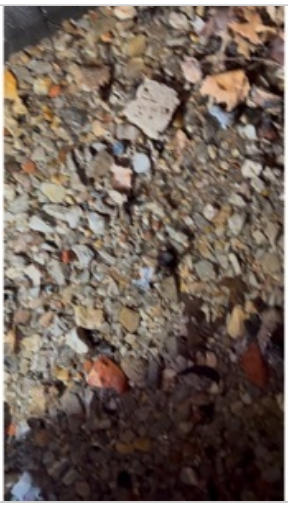


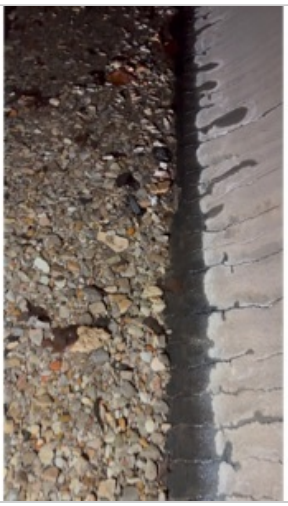
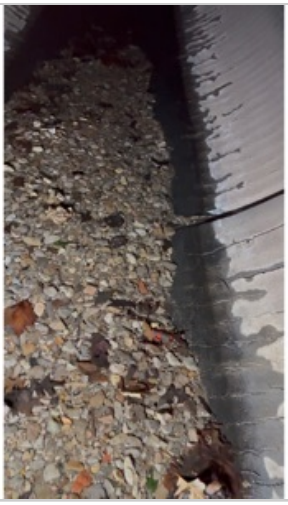
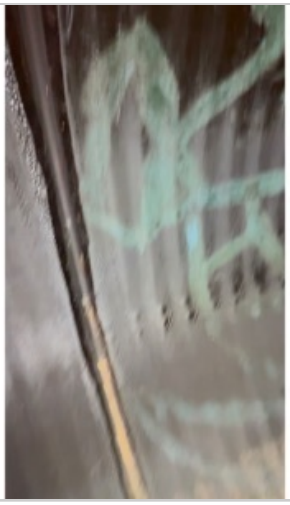
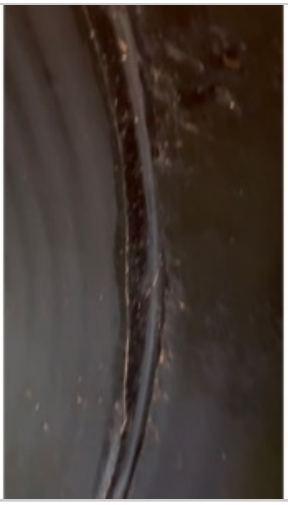
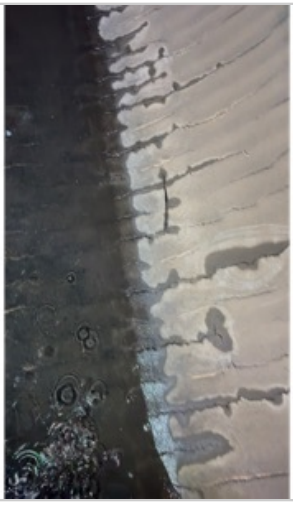





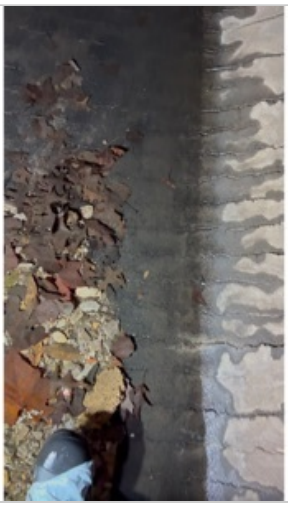
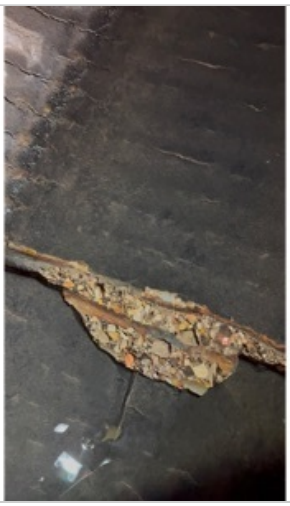


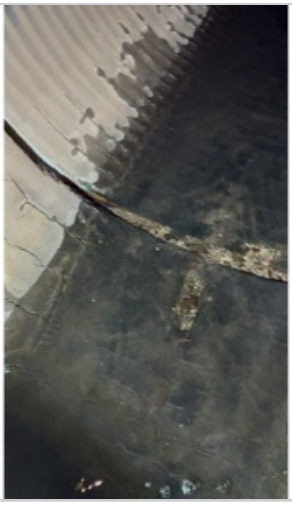



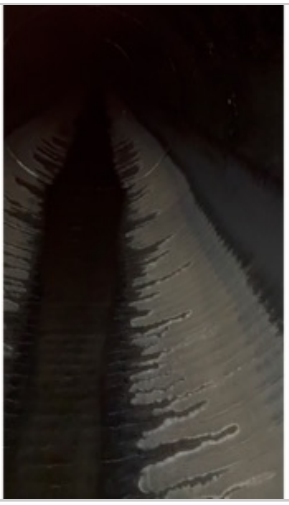



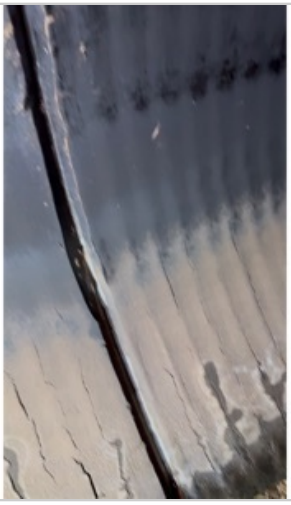
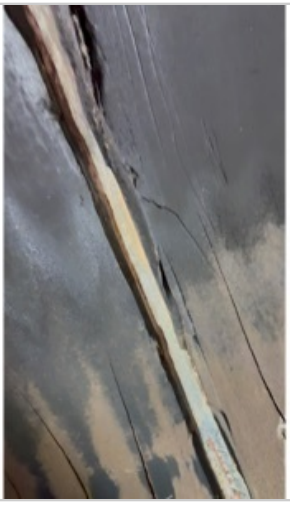






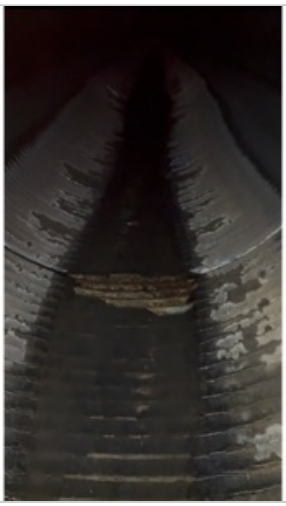


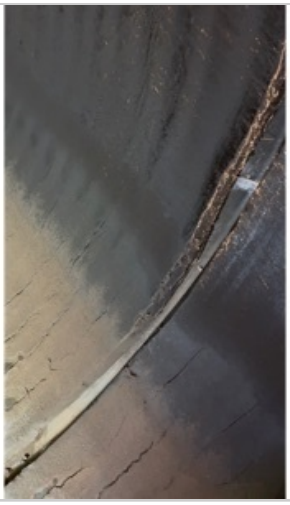





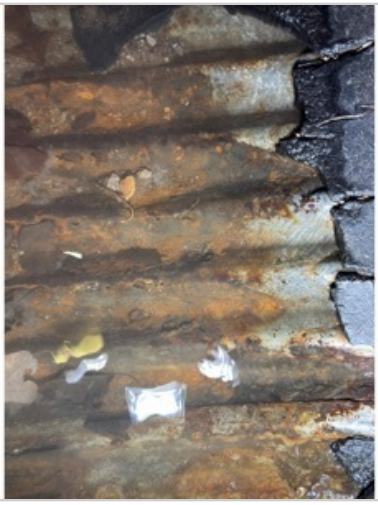












Work Log

On-Site Hours + Travel Time and Data Development

Type	Work Hours	Date & Time	Time	Notes

Standard Dispatch

Standard Engineering + Field Services Office(s)	Spencer Office- (405) 768-5353

Signature

Signed by Said Dawood Fayaz - Project Manager

on January 31, 2025 12:33 PM from Standard Engineering & Field Services's device

Said Dawood Fayaz - Project Manager

Signature Seals


Project
Management
Institute.
PMI Member
2024

Bethany Drainage Inspection — 2409-0959

Bethany Oklahoma

Standard Engineering: Field Service Inspection Report #6

Name	6) NW 16th and Rockwell (2409-0959)
Status	Completed
Assignee	Standard Engineering & Field Services (SEN)
Date	01-27-2025
Plans	—

Executive Summary

Standard Engineering + Field Services

On Friday, 01/24/2025, we began our inspection at the south side of the NW 16th Street and Rockwell intersection and went to the North side. We named this Manhole #1 (MH1), the East side of Rockwell, measuring a depth of 5’ from the top of the manhole (street) to the bottom of the pipe.
• East-West: An 18” concrete pipe runs and crosses under the Rockwell, with a length of 52’ from MH1 to the West, the same pipe runs from the manhole to the East side from MH1 at the curb heading to an drop inlet with a length of 4’. (total 56’ under the street crossing the road).
• North-South: Another 18” concrete pipe (RCP) coming from the N to S under Rockwell, from the drop inlet located at the edge of the intersection to MH1 approximately 155’ and continues to the South side (the pipe is in good shape but has some small holes inside the pipe on the top).
All pipes were in good condition with no cracks, and the interior was dry. They were dry but contained some sand and debris. (see the pictures)

Manhole #2: On the West side of Rockwell street near the curb, there was MH2 with good manhole condition, and the depth is 12’ from the top of the manhole cover to the bottom of the pipe.
• From MH2 to South: A 78” corrugated metal pipe (CMP), covered with black waterproofing materials. The storm pipe is not under the street until approximately 100 feet from MH2, but it veers right at the middle of the intersection for about 70’ and after crossing the roads it continues to the south.
• From MH2 to North: A 78” corrugated metal pipe goes up to the north side and continues all the way up.

The overall condition of MH2 was good, but the pipe joints beyond the second joint (both N and S after 40’ away from the MH2) showed significant erosion, rust, and bug holes, especially under the intersection (70’). Notably, at the lower third of each pipe, water patterns were observed, and beneath the maximum water level line, cracks were present in the black waterproofing material, while the upper sections remained in good condition. Despite past repairs years ago under the street, erosion and rust persist in each joint, and lengths were different from joint to joint, including larger joints measuring 20’ each. (see the pictures for more details)

Report Status

PASS ➖ N/A

FAIL ➖ N/A

Construction Drawings

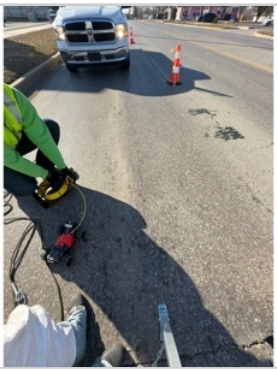
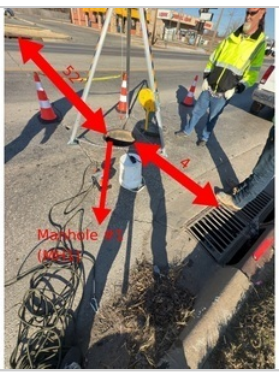
Requested: Specified Area

Storm-7 (NW 16th and Rockwell, NW 23rd and Rockwell, NW 30th and Rockwell, NW 36th and Rockwell).pdf

Reporting Detail

Required information

Scope of Work	Storm Sewer Inspection (under the street) at 6 Intersections at Bethany, OK, which the contractor identified.

Important Notices	Please see the pictures of inspection.
Contractor Information	TEIM Design: Steve Manek P.E (SManek@teimdesign,com - 405 517 2924)
Installation Information	None
Attachments (*Click on the "Blue Link(s)" to view the attachments.)	           



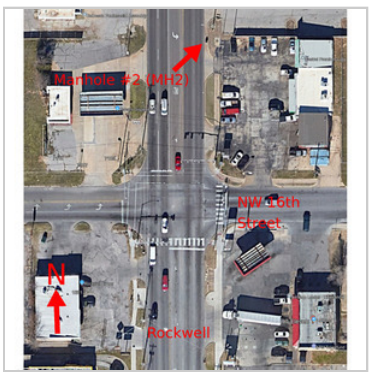











Manhole #2 (MH2)

Manhole #2 (MH2)
NW 16th Street
N
Rockwell















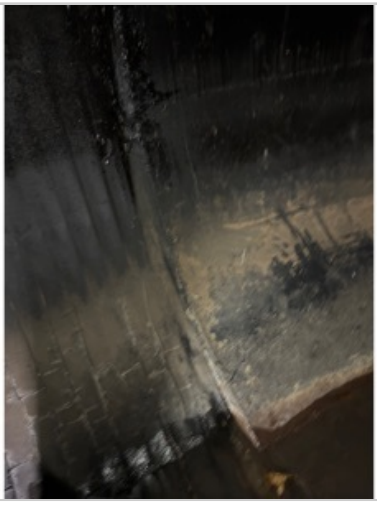
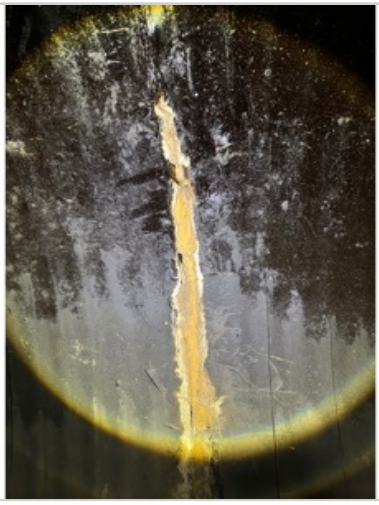

Weather

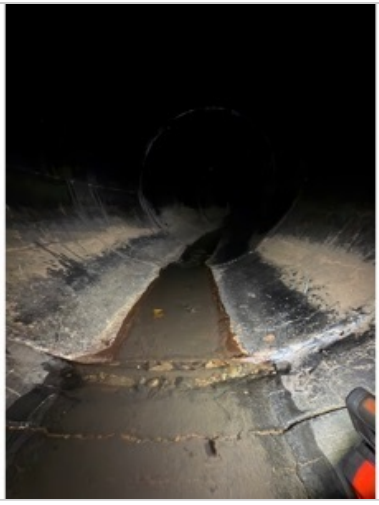
Time	Condition	Temperature	Precipitation	Humidity	Wind
27 Jan 06:00 AM	Clear	19°F	0.0"	80%	3 mph
27 Jan 12:00 PM	Sunny	39°F	0.0"	41%	5 mph
27 Jan 04:00 PM	Sunny	49°F	0.0"	29%	7 mph

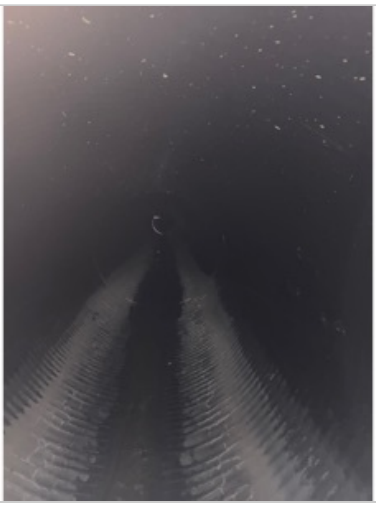
Inspection

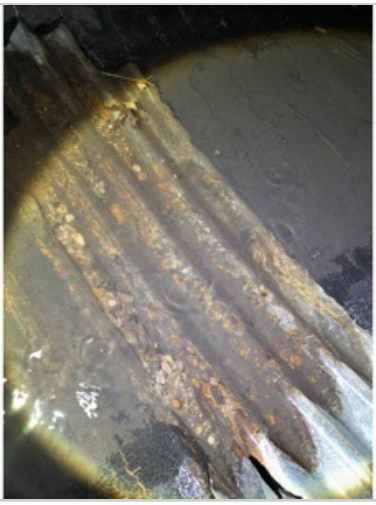
Activity	Area	Type	Notes	Testing
Visual Inspection	NW 16th and Rockwell - Bethany, OK	Strom Pipes under street	See the attached photos	None

Inspection Photos



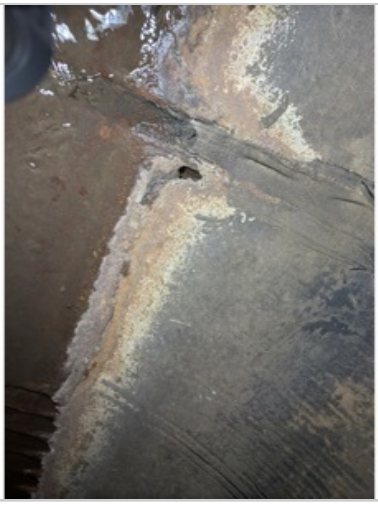






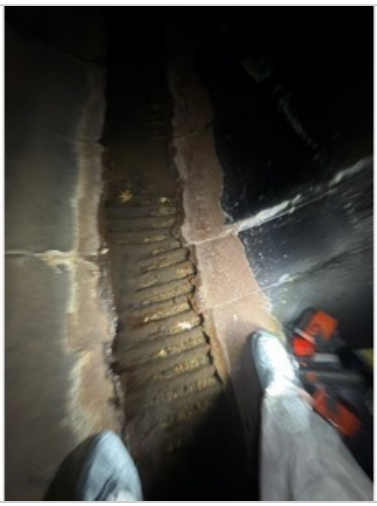


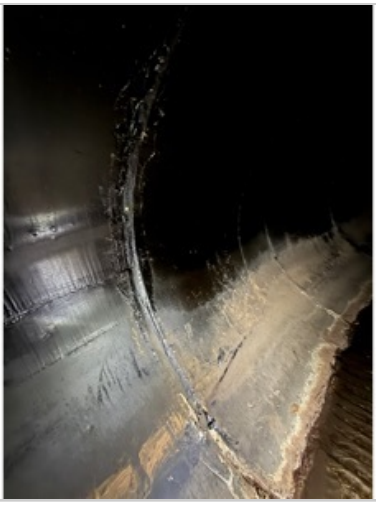






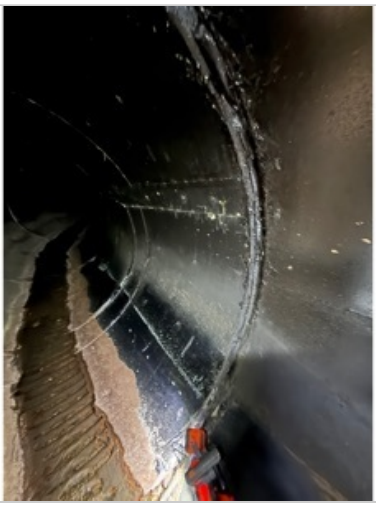










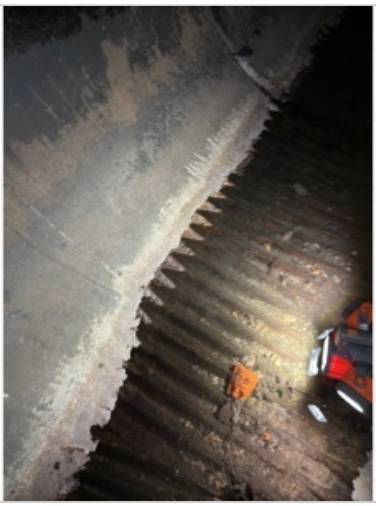



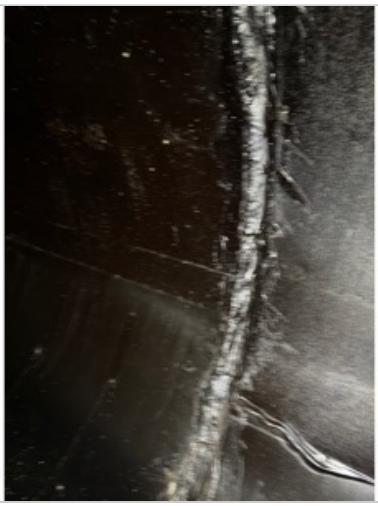
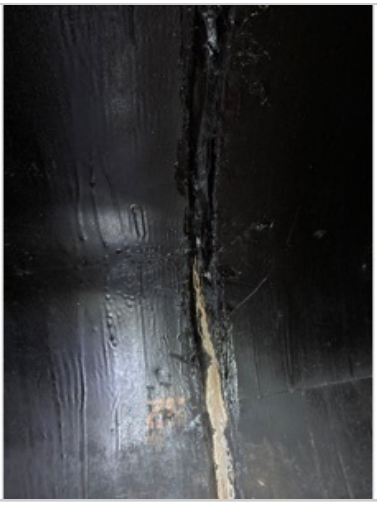
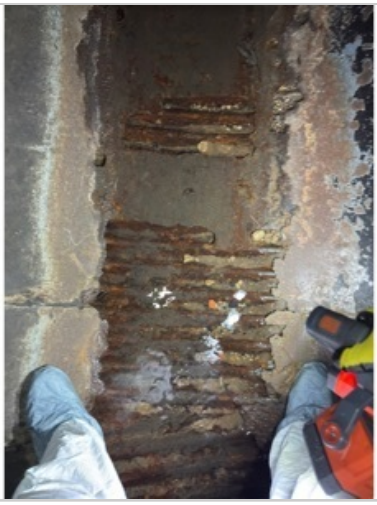








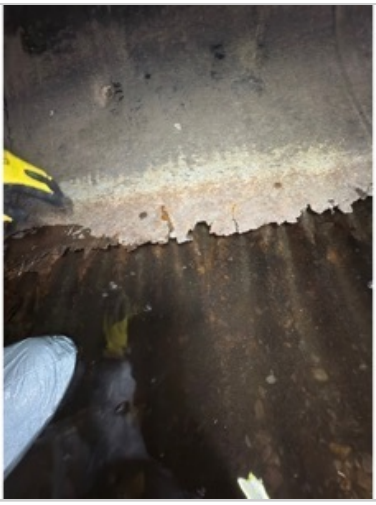


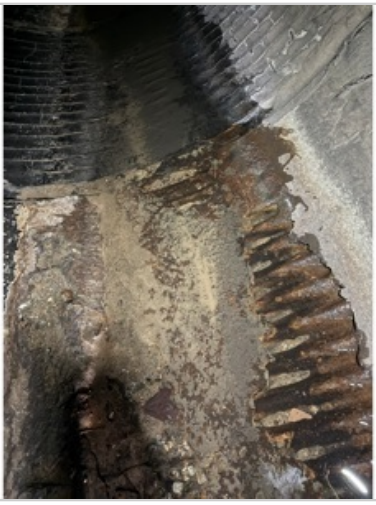








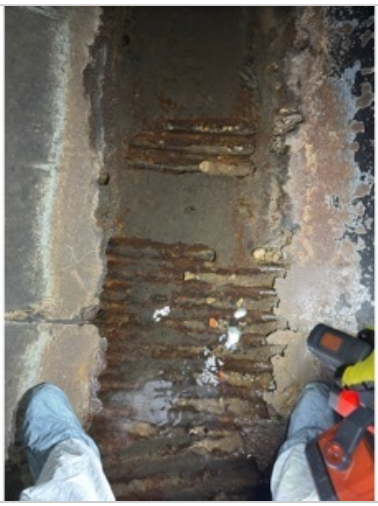


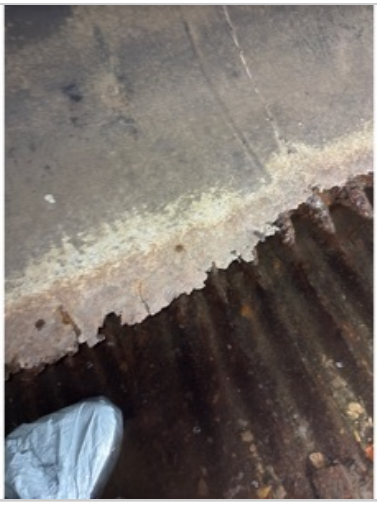





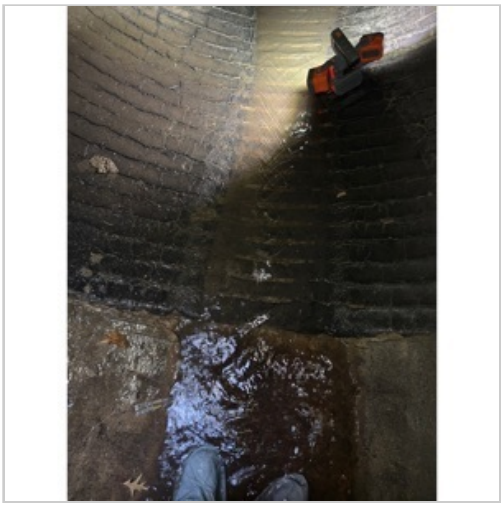
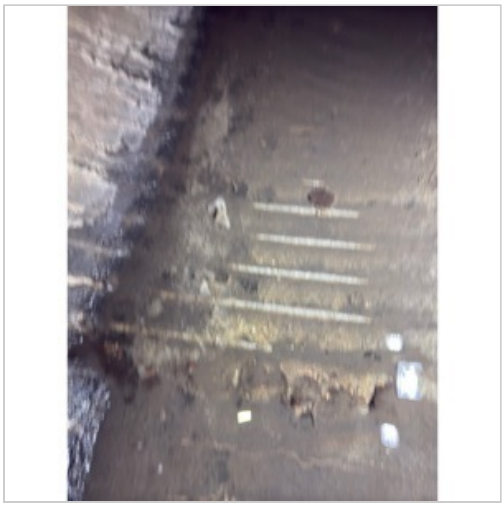


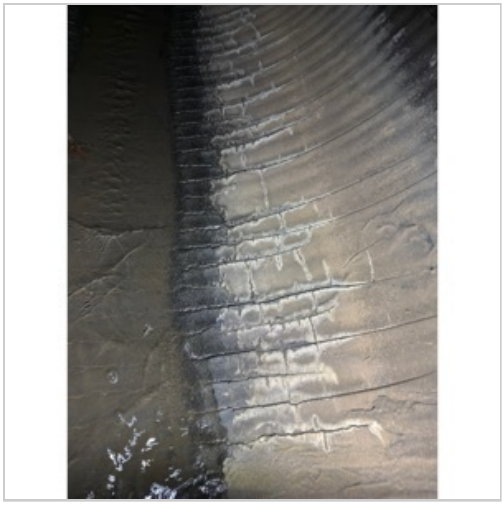


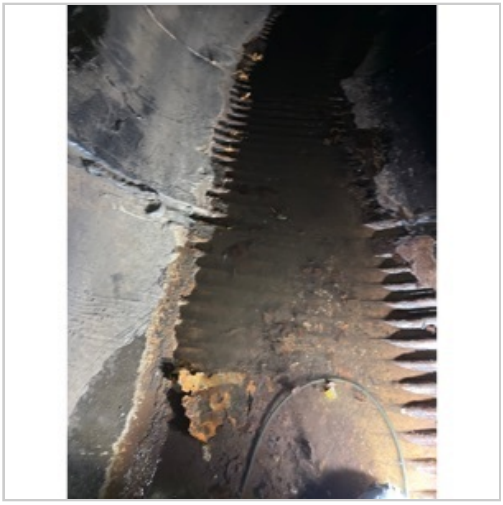
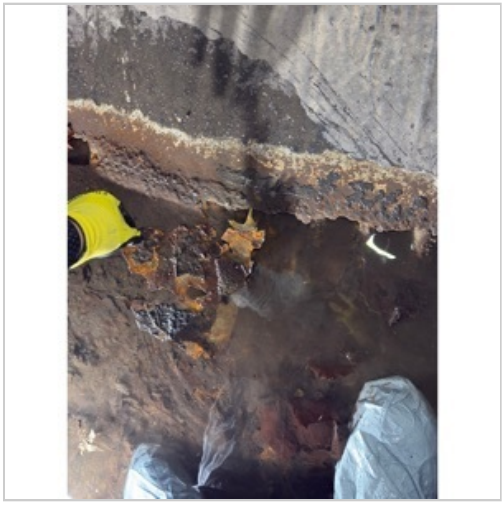








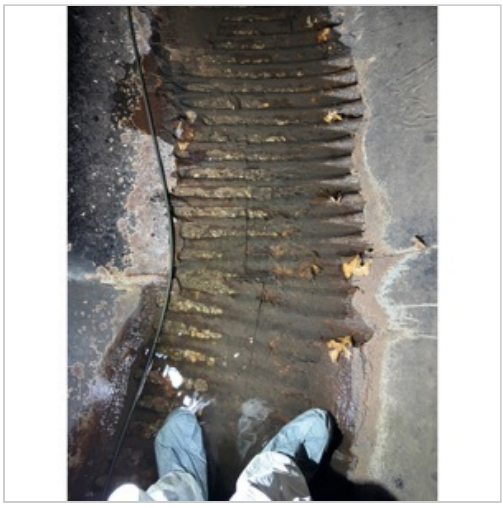








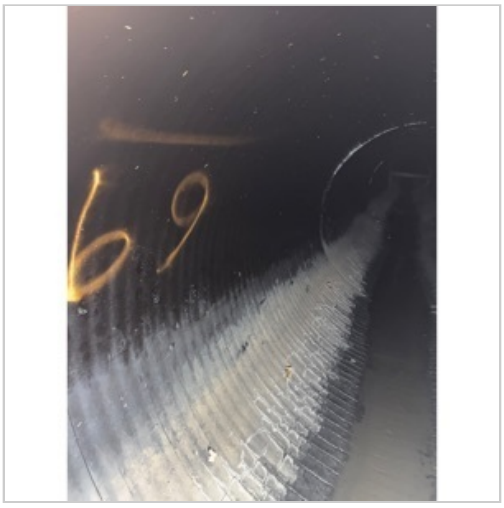


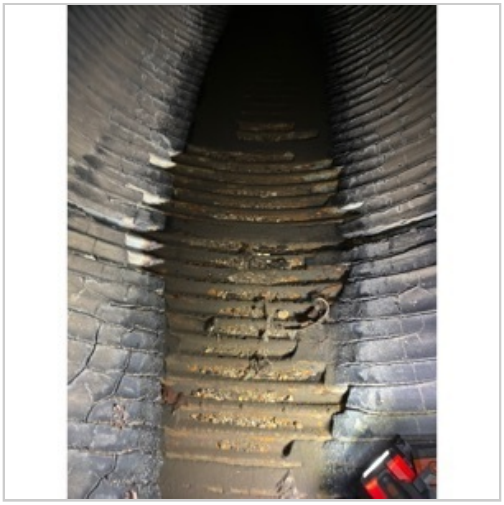


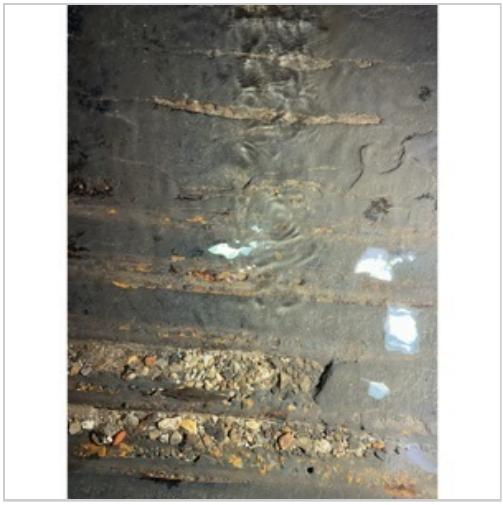






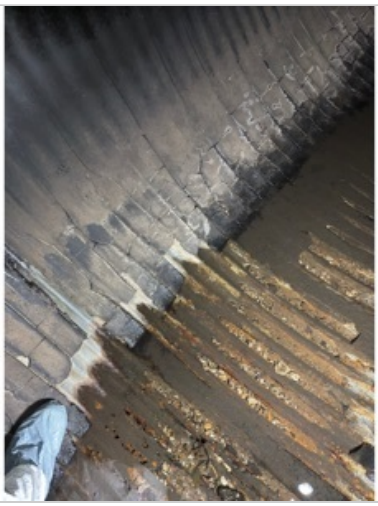








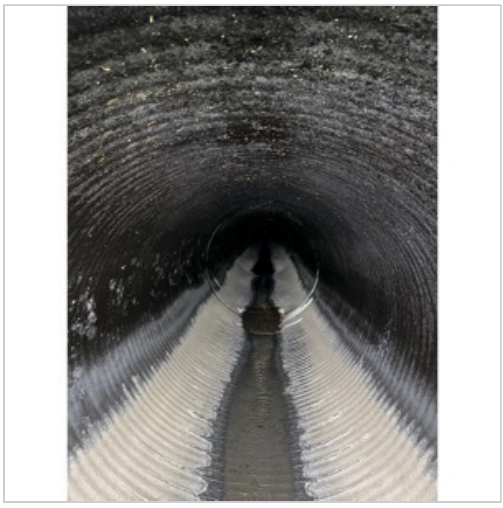













Work Log

On-Site Hours + Travel Time and Data Development

Type	Work Hours	Date & Time	Time	Notes

Standard Dispatch

Standard Engineering + Field Services Office(s)	Spencer Office- (405) 768-5353

Signature

Signed by Said Dawood Fayaz - Project Manager

on January 31, 2025 12:34 PM from Standard Engineering & Field Services's device

Said Dawood Fayaz - Project Manager

Signature Seals


Project
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2024