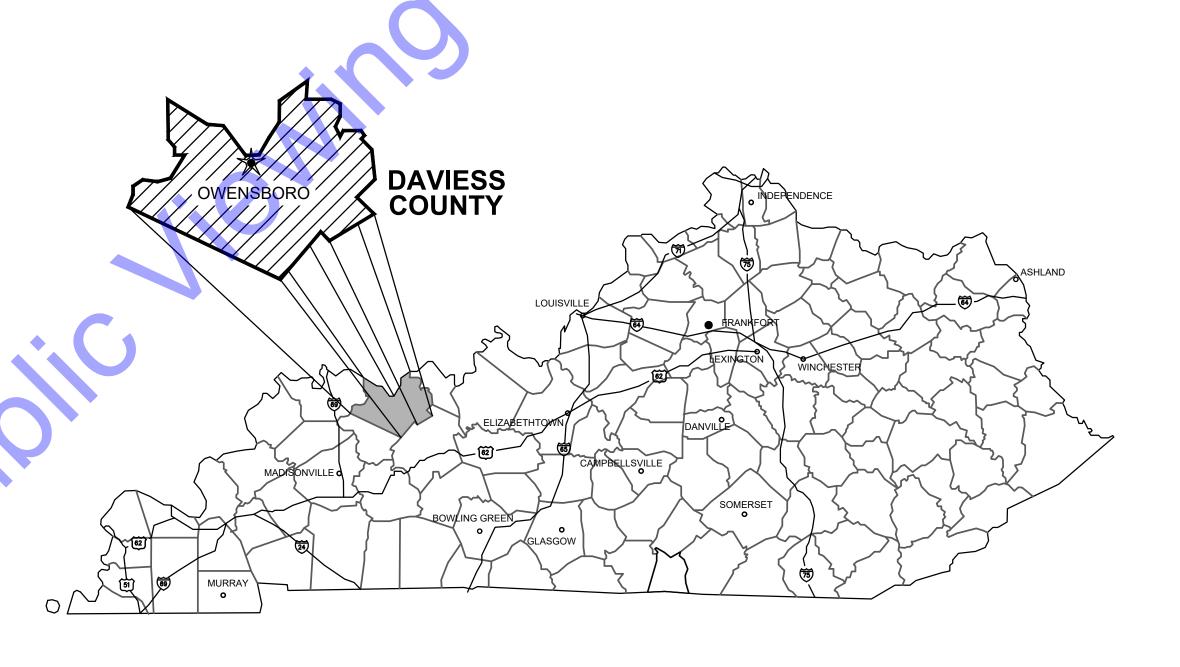
# REGIONAL WATER RESOURCE AGENCY

# MISCELLANEOUS PUMP STATION INSULATION REPAIRS HAIL STORM 2025 CONTRACT #2025-32 MAY 2025

# REGIONAL WATER RESOURCE AGENCY BOARD OF DIRECTORS

TIM ALLEN **BOARD CHAIRMAN** SHAWN PATTERSON \_ **BOARD VICE-PRESIDENT** ED CECIL **BOARD SECRETARY** HARRY ROBERTS, JR. \_ **BOARD MEMBER BOARD MEMBER** TIM KLINE \_\_\_\_ **BOARD MEMBER** BILL WEIKEL \_\_\_ JOHN CUMMINS \_ **BOARD MEMBER** TERRA W. KNIGHT \_ BOARD ATTORNEY





QA/QC BY: TOBY CHURCH 5/1/2025
DATE:

CERTIFIED BY:

TRAVIS S. HARPER, P.E. KENTUCKY P.E. No. 37687

5/1/2025 DATE : TRAVIS S.
HARPER
37687

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CONTRACT NO. : S25061



### SPECIFICATIONS:

THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THESE CONTRACT SPECIFICATIONS, THE "OWENSBORO METROPOLITAN PUBLIC IMPROVEMENT SPECIFICATIONS", THE KENTUCKY TRANSPORTATION CABINET, DEPARTMENT OF HIGHWAYS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", CURRENT EDITION. ANY REFERENCE TO METRIC UNITS IN ANY ABOVE MENTIONED SPECIFICATIONS SHALL BE CONVERTED TO IMPERIAL UNITS WHEN APPLIED TO THIS PROJECT.

THE RIGHT IS RESERVED BY RWRA TO HAVE OTHER WORK PERFORMED BY OTHER CONTRACTORS AND BY ITS OWN FORCES AND TO PERMIT PUBLIC UTILITY COMPANIES AND OTHERS TO DO WORK DURING THE CONSTRUCTION OF, AND WITHIN THE LIMITS OF OR ADJACENT TO THE PROJECT. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS AND COOPERATE WITH SUCH OTHERS SO THAT INTERFERENCE WITH SUCH OTHER WORK WILL BE REDUCED TO A MINIMUM. THE CONTRACTOR SHALL AGREE, AND HEREBY DOES AGREE TO MAKE NO CLAIMS AGAINST RWRA FOR ADDITIONAL COMPENSATION DUE TO DELAYS OR OTHER CONDITIONS CREATED BY THE OPERATIONS OF SUCH OTHER PARTIES. SHOULD A DIFFERENCE OF OPINION ARISE AS TO THE RIGHTS OF THE CONTRACTOR AND OTHERS WORKING WITHIN THE LIMITS OF OR ADJACENT TO THE PROJECT, THE ENGINEER W DECIDE AS TO THE RESPECTIVE RIGHTS OF THE VARIOUS PARTIES INVOLVED IN ORDER TO ASSURE THE COMPLETION OF RWRA'S WORK IN GENERAL HARMONY AND IN A SATISFACTORY MANNER AND HIS DECISIONS SHALL BE FINAL AND BINDING UPON THE CONTRACTOR.

### **BEFORE YOU DIG:**

THE CONTRACTOR IS ADVISED THAT HE SHALL CALL 811 OR 1-800-752-6007 TOLL FREE A MINIMUM OF TWO AND NO MORE THAN TEN BUSINESS DAYS PRIOR TO EXCAVATION FOR INFORMATION ON THE LOCATION OF EXISTING UNDERGROUND UTILITIES WHICH SUBSCRIBE TO THE BEFORE-U-DIG (BUD) SERVICE. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE EXCAVATION WITH ALL UTILITY OWNERS, INCLUDING THOSE WHO DO NOT SUBSCRIBE TO BUD.

### UTILITIES (HAZARDOUS OR FLAMMABLE MATERIAL):

THE CONTRACTOR IS ADVISED TO EXERCISE CAUTION IN HIS OPERATION IN AREAS WHERE PLANS INDICATE THE PRESENCE OF A GAS LINE OR OTHER LINES CARRYING HAZARDOUS MATERIAL. THE CONTRACTOR IS ADVISED TO EXERCISE CAUTION IN HIS OPERATIONS IN ALL WORK AREAS WHICH ARE INHERENTLY SUBJECT TO HAZARDOUS SEWER GASES SUCH AS, BUT NOT LIMITED TO HYDROGEN SULFIDE AND METHANE. CONTRACTOR SHALL TAKE ALL REQUIRED PRECAUTIONS TO MAINTAIN SAFE WORK PRACTICES IN ACCORDANCE WITH ALL OSHA AND APPLICABLE SAFETY ORDINANCE REQUIREMENTS. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL SAFETY-RELATED MEANS, METHODS AND EQUIPMENT AS REQUIRED TO COMPLETE THE WORK. RWRA WILL NOT PROVIDE CONTRACTOR WITH ANY SAFETY EQUIPMENT FOR USE DURING THE WORK.

### **HORIZONTAL & VERTICAL VERIFICATIONS:**

THE CONTRACTOR SHALL FIELD VERIFY ALL HORIZONTAL AND VERTICAL DIMENSIONS AS SHOWN ON THE PLANS.

### PRIVATE PROPERTY DAMAGE

THE CONTRACTOR SHALL BE RESPONSIBLE FOR REIMBURSING PROPERTY OWNERS AT FAIR MARKET VALUE FOR PROPERTY DAMAGE CAUSED BY THE CONTRACTOR'S DISTURBANCE OF PROPERTY OUTSIDE OF THE PERMITTED WORKING LIMITS. THE PERMITTED WORKING LIMITS SHALL BE DEFINED AS THE SUBJECT PROPERTY CONTAINED WITHIN THE PROJECT RIGHT-OF-WAY AND EASEMENTS. FAIR MARKET VALUES SHALL BE DETERMINED BY THE

THE CONTRACTOR SHALL ASSUME THE RESPONSIBILITY TO COORDINATE WITH THE PROPERTY OWNERS FOR ACCESS TO ALL WORK AREAS AS SPECIFIED IN SUMMARY SPECS.

### **ROADWAY CUTS:**

PRIOR TO CONSTRUCTING ANY WORK WITHIN THE CITY'S RIGHT-OF-WAY, THE CONTRACTOR MUST COORDINATE WITH THE CITY ENGINEER.

BUSINESSES ALONG CONSTRUCTION ROUTE SHALL HAVE ACCESS TO THEIR PROPERTIES AT ALL TIMES.

### **DEFINITIONS:**

WHENEVER USED IN THE PLANS OR IN THE CONTRACT DOCUMENTATION, THE FOLLOWING TERMS HAVE THE MEANINGS INDICATED WHICH ARE APPLICABLE TO BOTH SINGULAR AND PLURAL THEREOF.

- ENGINEER SHALL MEAN THE ASSIGNED RESIDENT ENGINEER.
- OWNER SHALL MEAN RWRA.
- OWNERS REPRESENTATIVE SHALL MEAN RWRA'S DIRECTOR OF OPERATIONS.

- 1.) ALL EXPOSED PROCESS PIPING (EXCLUDING AIR PIPING) SHALL BE HEAT TRACED AND INSULATED. REFER TO DRAWINGS AND DETAILED SPECIFICATIONS FOR ADDITIONAL DETAILS.
- 2.) ALL UTILITIES SHALL BE PROTECTED DURING THE COURSE OF CONSTRUCTION. ALL EXISTING INSULATION TO BE REMOVED SHALL BE PROPERLY DISPOSED OF AND AREAS SHALL BE CLEAN FROM INCLUDING BUT NOT LIMITED TO DEBRIS, TRASH, DUST, ETC.

	▲DRAWING SET INDEX		
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### SITE ADDRESSES

100 CENTER ST. OWENSBORO, KY 42301

CENTER ST. PUMP STATION 499 W. VETERANS BLVD. OWENSBORO, KY 42301

OWENSBORO, KY 42301

2381 BARRON DR.

BARRON DR. PUMP STATION

**DUBLIN LN. PUMP STATION** 3 DUBLIN LN. OWENSBORO, KY 42301

### **UTILITY CONTACT INFORMATION:**

**ELECTRIC POWER:** O.M.U. 2070 TAMARACK ROAD OWENSBORO, KY 42301 (270) 926-3200

WATER: O.M.U. 1531 KY 144 OWENSBORO, KY 42303 (270) 926-3200

> CABLE TV: SPECTRUM

CABLE TV:

3021 OLD HARTFORD ROAD

P.O. BOX 21798

CONTACT: JODY GADDIS CONTACT: AUSTIN McLIMORE

NATURAL GAS: ATMOS ENERGY 3275 HIGHLAND POINTE DRIVE OWENSBORO, KY 42303 (270) 836-7229

100 INDUSTRIAL DRIVE OWENSBORO, KY 42301 (812) 253-2767

CONTACT: CODY TOWNSEND CONTACT: JUSTIN STURGEION

**SANITARY SEWER:** 

REGIONAL WATER RESOURCE AGENCY 1722 PLEASANT VALLEY ROAD OWENSBORO, KY 42303

OWENSBORO, KY 42303 (270) 687-8450 (270) 215-6577 CONTACT: CHRIS HENNING

CONTACT: GARRETT GORGON

### **CITY ENGINEER:**

CITY OF OWENSBORO P.O. BOX 10003 OWENSBORO, KY 42302-9003 (270) 687-8641

CONTACT: KEVIN COLLIGNON



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PROJECT LOCATION MAP AND DRAWING SET INDEX

ssue Date: Project No: Scale:

4/28/2025 | S25061 | AS SHOWN

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**PROJECT LOCATION MAP** SCALE: 1"=1000'-0"

## **GENERAL ABBREVIATIONS**

MINIMUM, MINUTE

MECHANICAL JOINT

NORMALLY CLOSED

**NOT IN CONTRACT** 

NORMALLY OPEN

NON-POTABLE WATER

**OUTSIDE DIAMETER** 

POLYETHYLENE EXP. JT. MATERIAL

POUNDS PER SQUARE FOOT

POUNDS PER SQUARE INCH

RETURN ACTIVATED SLUDGE

REINFORCED CONCRETE PIPE

POLYVINYL CHLORIDE

POTABLE WATER

RECIRULCATION

RADIUS

ROOF DRAIN

REINFORCING

REQUIRED

R/W (ROW) RIGHT-OF-WAY

NATURAL GAS

NUMBER

ON CENTER

OPENING

OPPOSITE

PULL BOX

PROPERTY LINE

**PUSH ON JOINT** 

		<u> </u>	
Α	AIR	G	GAS
AB	ANCHOR BOLT	GALV	GALVANIZED
AFF	ABOVE FINISH FLOOR	GEN	GENERAL
ALT	ALTERNATE	GRD	GROUND OR GRADE
ALUM	ALUMINUM		
@	AT	HB	HOSE BIBB
APP.	APPARENT	HORIZ	HORIZONTAL
ATT	AERATION TANK TRANSFER	HP	HORSEPOWER
AUTO	AUTOMATIC	HW	HOT WATER
AVG	AVERAGE		
		ID	INSIDE DIAMETER
В	BAFFLE	IJ	ISOLATION JOINT
BLDG	BUILDING	INV	INVERT
BM	BENCH MARK	IP	IRON PIN
BOT	BOTTOM		
BRG	BEARING	LAV	LAVATORY
		LB	POUND
CFM	CUBIC FEET PER MINUTE	LL	LIVE LOAD
CL	CENTERLINE	LLV	LONG LEG VERTICAL
CO	CLEAN OUT	LTG	LIGHTING
COL/C	COLUMN	MAN	RAAN/IRALIRA
CONC	CONCRETE	MAX	MAXIMUM
COP	COPPER CONSTRUCTION JOINT	MCC	MOTOR CONTROL CENTER
CJ CP	CONSTRUCTION JOINT CONTROL POINT	MGD MH	MILLION GALLONS PER DAY MANHOLE
OF.	CONTROL POINT	IVIII	IVIANTIOLE

NG

NIC

NO

NO.

OC

OD

OPG

OPP

POJ

PSF

PSI

PVC

PW

RAD

RAS

RCP

RD

CW

CY

DEC

DIA

DIM

DL DSPT

DWG

EΑ

EFFL

EW

EX

EXF

EXP JT

**FCAR** 

FD

FDN

FFE

FΗ

FLD

FLG

FLR

FM

FRP FT

FTG

FW

COLD WATER

CUBIC YARD

DECANT

DIAMETER

DIMENSION

DEAD LOAD

DRAWING

**EACH FACE** 

**EFFLUENT** 

**ELEVATION** 

**EACH WAY** 

**EXISTING** 

FILTER

**EXHAUST FAN** 

RESTRAINED

FLOOR DRAIN

FOUNDATION

FIRE HYDRANT

FLANGE

FLOOR

FOOTING

FILTRATE DRAIN

FLUSHING LINE

FORCE MAIN

FEET OR FOOT

FINISHED WATER

**EXPANSION JOINT** 

FLANGED COUPLING ADAPTER,

FINISHED FLOOR ELEVATION

FIBER REINFORCED PLASTIC

EACH

DOWN SPOUT

**DUCTILE IRON PIPE** 

**ELECTRICAL CONDUIT** 

- SAN SANITARY SAS SANITARY SEWER SCH SCHEDULE SECT SECTION SF SQUARE FEET SHT SHEET SL SAMPLE LINE
- SOS STORM SEWER SP STOP PLATE SQ SQUARE STD STANDARD
- S STL, SS STAINLESS STEEL STL STEEL SUP **SUPERNATANT** SY SQUARE YARD TOS TOP OF SLAB TOP OF WALL
- TOW TW TERTIARY WATER TYP **TYPICAL** VACUUM OR VALVE VAR **VARIES VERT** VERTICAL
- W WEIR W/ WITH W/O WITHOUT WAS WASTE ACTIVATED SLUDGE WC WATER CLOSET WH WATER HEATER WL WATER LINE WWF WELDED WIRE FABRIC
- YARD HYDRANT

# **GENERAL NOTES**

- 1. ALL PROPERTY AND RIGHT-OF-WAY LINES INFORMATION SHOWN IN DRAWING SET ARE APPARENT AND SHALL NOT BE DEEMED EXACT LOCATIONS, UNLESS OTHERWISE NOTED. INFORMATION WAS OBTAINED VIA "KENTUCKY ON-LINE" GIS WEBSITE AND RWRA'S EASEMENT AGREEMENT.
- EXISTING UTILITY INFORMATION SHOWN IN DRAWING SET, MEETS "ASCE 36-02" QUALITY LEVEL "D", UNLESS OTHERWISE NOTED.
  - UTILITY COORDINATION AND PROJECT DEPICTION OF EXISTING SUBSURFACE UTILITY DATA:

### **UTILITY QUALITY LEVEL DESCRIPTIONS:**

<u>UTILITY QUALITY LEVEL A</u> - PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE (OR VERIFICATIONS OF PREVIOUSLY EXPOSED AND SURVEYED UTILITIES) AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES, USUALLY AT A SPECIFIC POINT. ACCURACY OF LOCATION MATCHES PROJECT SURVEY TOLERANCE **UTILITY QUALITY LEVEL B** - INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION SUBSURFACE UTILITIES. THE RELIABILITY OF THIS INFORMATION IS SURVEYED TO PROJECT CONTROL AND SUBJECT TO ACCURACY LEVELS OF THE GEOPHYSICAL TOLERANCE DEFINED BY THE PROJECT. UTILITY QUALITY LEVEL C - INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE

**UTILITY QUALITY LEVEL D** - INFORMATION DERIVED FROM EXISTING RECORDS OR VERBAL RECOLLECTIONS.

ABOVE GROUND UTILITY FEATURES AND CORRELATING QUALITY LEVEL "D" INFORMATION.

3. NORTHING AND EASTING COORDINATES SHOWN ON ALL MANHOLE, INLETS, ETC. ARE SHOWN FROM CENTER OF STRUCTURE NOT CASTING, UNLESS OTHERWISE NOTED.



Date

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> SYMBOLS AND ABBREVIATIONS

> > Drawing No: G3

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GENERAL SCHEMATIC LEGEND

			<del></del>
<u> </u>	QUICK DISCONNECT	O	BOOSTER PUMP
Щ	FLANGED SPOOL SECTION	ARV O—	AIR RELIEF VALVE
PRV	PRESSURE REDUCER VALVE	FM	FLOW METER
<del>–</del>	FLANGED COUPLING ADAPTER	$\overset{GV}{\triangleright\!$	GATE VALVE
Z	BALL CHECK VALVE	FCV	FLOW CONTROL VALVE
$\overset{\textstyle M}{\vdash}$	MOTOR ACTUATOR	$\bowtie$	VALVE
X	FLEXIBLE CONNECTION	$\bowtie$	ECCENTRIC PLUG VALVE
SCR	FLANGE FILLER & S.S. MESH SCREEN	u	CHECK VALVE
W V90	90° V-NOTCH WEIR	$\nabla$	INCREASER / REDUCER
<u>M</u>	MAGNETIC FLOW METER	$\sum$ BV	BUTTERFLY VALVE
	ULTRASONIC SENSOR	3 E	PIPE THROUGH FLOOR / WALL
Ğ	SUBMERSIBLE PUMP	اح	BALL VALVE
	NEW PIPING AND EQUIPMENT	<del> </del>	BLIND FLANGE OR PLUG
	EXISTING PIPING AND EQUIPMENT		HOSE BIBB

**FUTURE PIPING AND EQUIPMENT** 

HATCHING SYMBOLS

	+ 4 \
	-CMU WALL (PLAN VIEW) -GRANULAR BACKFILL (PROFILE VIEW)
	- DEMOLITION (CONTRACTOR SHALL REFER TO DETAILED SPECIFICATIONS
	- GROUT
4 4 4	- CONCRETE
	- STEEL
	- COMPACTED GRANULAR BACKFILL OF COMPACTED FOUNDATION
	- ABANDONED IN PLACE

DRAWING SET LEGEND EXISTING OVERHEAD TELEPHONE LINE EXISTING GAS LINE AND VALVE EXISTING WATER LINE AND VALVE EXISTING FIBER OPTIC LINE ——— EXF/O ——— EXF/O ——— ——— EXOHE ——— EXOHE ——— EXISTING BURIED ELECTRIC EXISTING POTABLE WATER LINE EXISTING BURIED TELEPHONE LINE EXISTING FENCE — x — x — x — x — APPARENT RIGHT-OF-WAY APPARENT PROPERTY LINE -------EDGE OF ROAD \_\_\_\_\_\_ EDGE OF ROAD WITH CURB ----785--- EXISTING MAJOR CONTOUR LINE EXISTING MINOR CONTOUR LINE NEW WATER LINE **NEW SANITARY SEWER LINE NEW FORCE MAIN** PROPOSED MAJOR CONTOUR LINE PROPOSED MINOR CONTOUR LINE

AC UNIT TELEPHONE MANHOLE O BOLLARD TELEPHONE LINE MARKER BOULDER / LARGE ROCK ® TRAFFIC MANHOLE **⊠CL CENTER LINE MONUMENT** EXISTING OVERHEAD ELECTRIC LINE CONTROL POINT / BENCH MARK WATER METER ₩ VALVE DRILL HOLE EXISTING NON-POTABLE WATER LINE IRRIGATION CONTROL VALVE MB MAIL BOX FLAG POLE ∀ FIRE HYDRANT O POST FLUSH HYDRANT O STUMP BUSH / HEDGE WALL SPIGOT DECIDUOUS TREE EXISTING PIPE PLUG STORM CATCH BASIN (SQUARE) CONIFEROUS TREE STORM CATCH BASIN (ROUND) SIGN UTILITY LOCATE FLAG STORM CURB INLET (D) STORM MANHOLE GAS LINE MARKER GAS VALVE S SANITARY MANHOLE GAS METER SANITARY VALVE -() GUY POLE OCLEANOUT Ø POWER POLE 어 LIGHT POLE **⋈** NEW VALVE **GUY WIRE NEW FIRE HYDRANT** EM ELECTRIC METER **®** NEW FLUSH HYDRANT **ELECTRIC PANEL** NEW WET SADDLE AND VALVE BODY ET ELECTRIC TRANSFORMER **NEW PLUG** HAND HOLE BOX IS NEW LINE STOP

FIBER OPTIC MARKER

TEL/TV PEDESTAL

NEW CUT AND CAP

DISCLAIMER NOTE: THIS DRAWING REFLECTS TYPICAL INFORMATION, SOME MAY NOT BE APPLICABLE TO THIS PROJECT

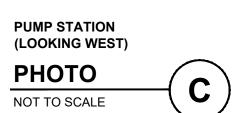




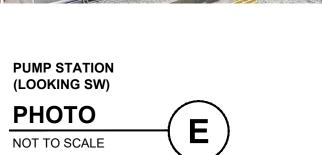














PUMP STATION (LOOKING NORTH)

Designed By: Drawn By: Checked By sue Date: | Project No: | Scale: 4/28/2025 | S25061 | AS SHOWN **PUMP STATION -**

LOCUST ST. PHOTO LOG

Date

Drawing No:

Sheet: 4 OF 11

INDICATES PHOTO NUMBER AND DIRECTION (PHOTOS TAKEN BY COMMONWEALTH ENGINEERS, INC. ON 04/9/25)

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PUMP STATION (LOOKING NW)

**PHOTO** 

NOT TO SCALE







**PHOTO** NOT TO SCALE









PUMP STATION (LOOKING SW) **PHOTO** NOT TO SCALE

sue Date: Project No: Scale: 4/28/2025 | S25061 | AS SHOW **PUMP STATION -**CENTER ST. PHOTO LOG

Sheet: 5 OF 11

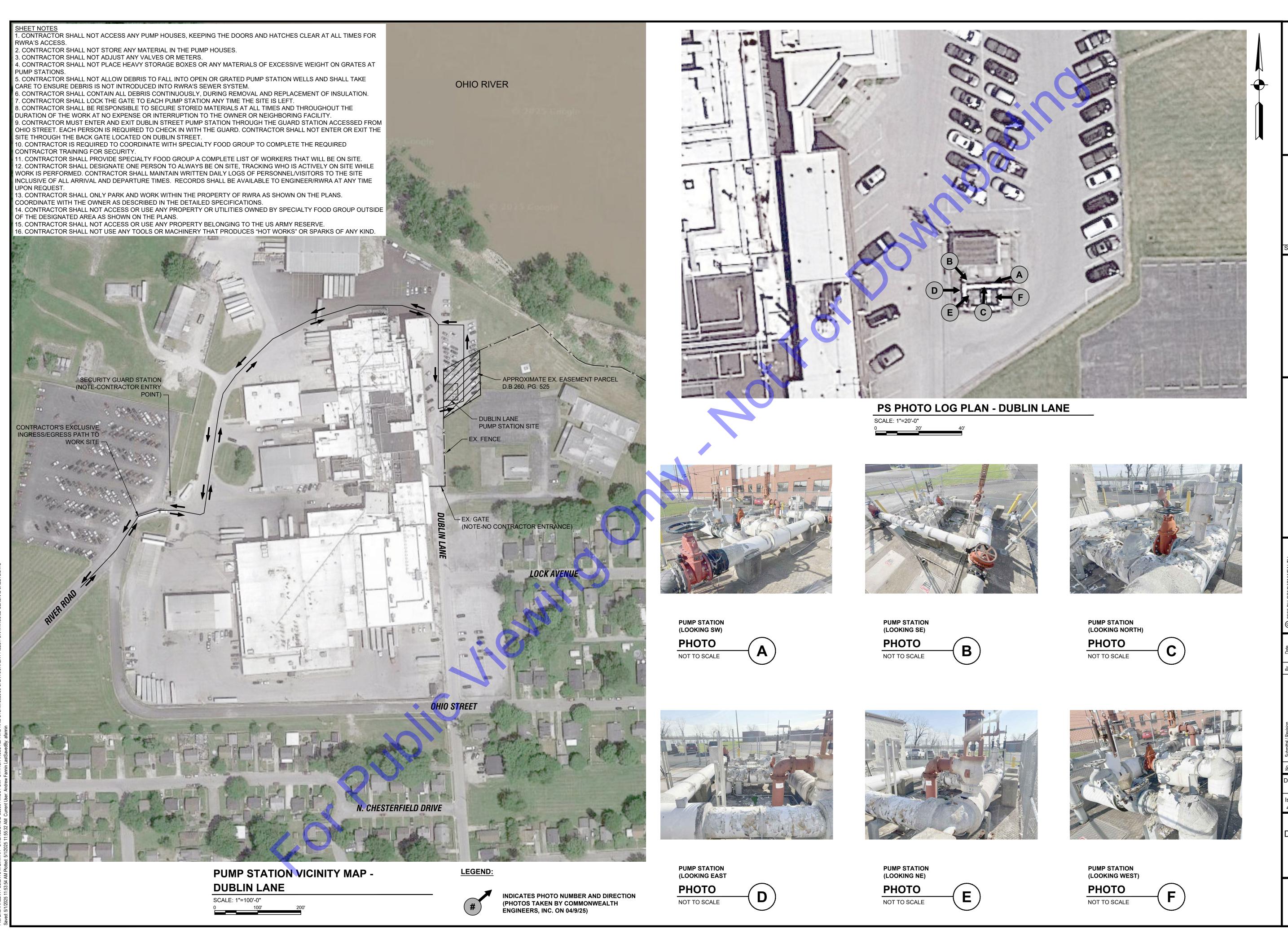
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PUMP STATION (LOOKING NE)

PUMP STATION (LOOKING WEST) **PHOTO** NOT TO SCALE

**PHOTO** 



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TRAVIS S. HARPER 37687

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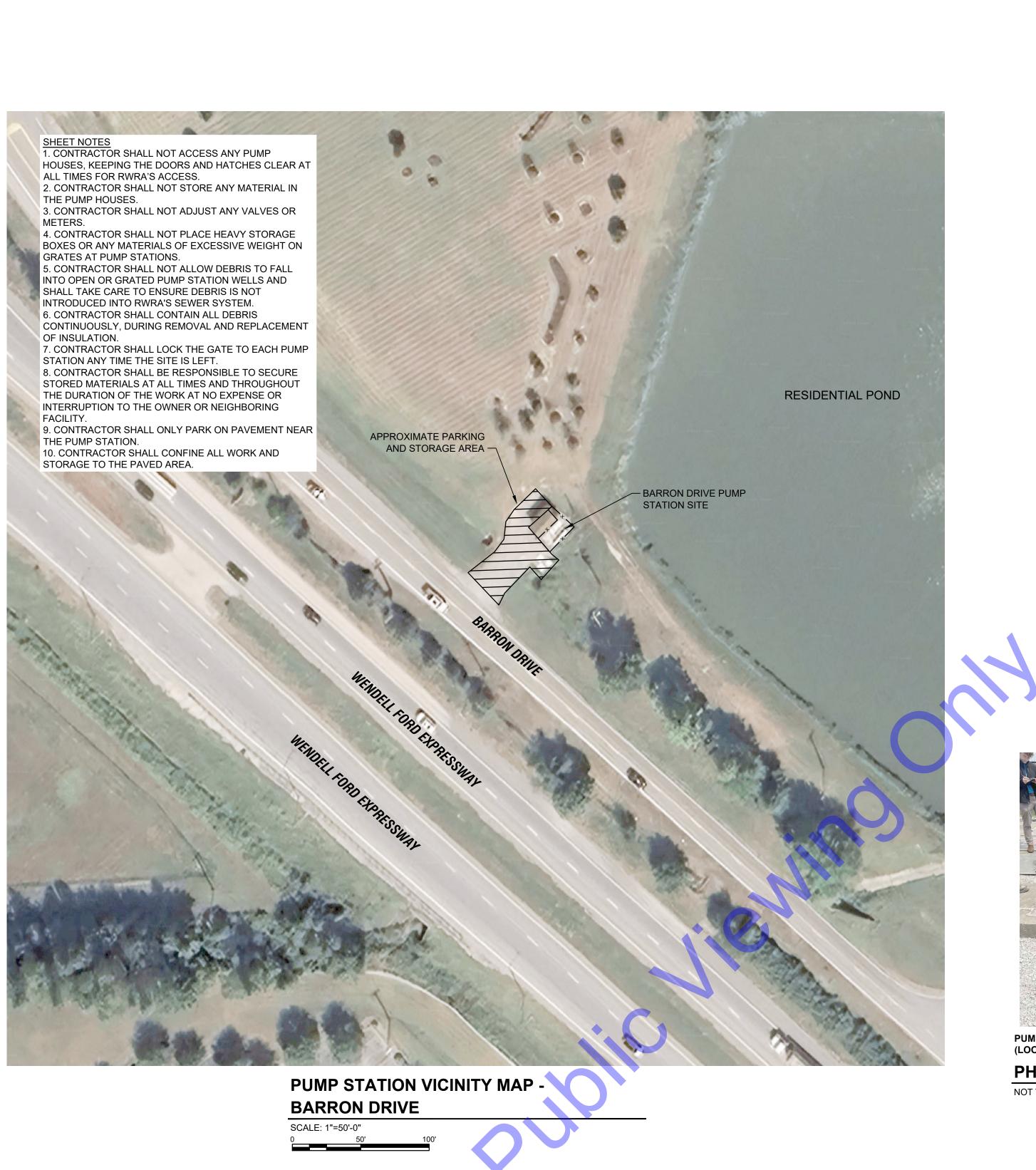
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PUMP STATION -DUBLIN LA. PHOTO LOG

Drawing No:

Sheet: 6 OF 11





PS PHOTO LOG PLAN - BARREN DRIVE

SCALE: 1"=20'-0" 0 20'



PUMP STATION (LOOKING NE)

PHOTO

NOT TO SCALE





PUMP STATION (LOOKING SW)

PHOTO NOT TO SCALE



PUMP STATION (LOOKING SE)

PHOTO NOT TO SCALE

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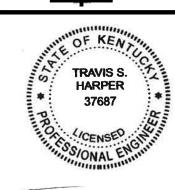
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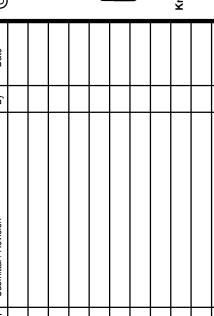


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STATION INSULATION AIRS - HAIL STORM 20

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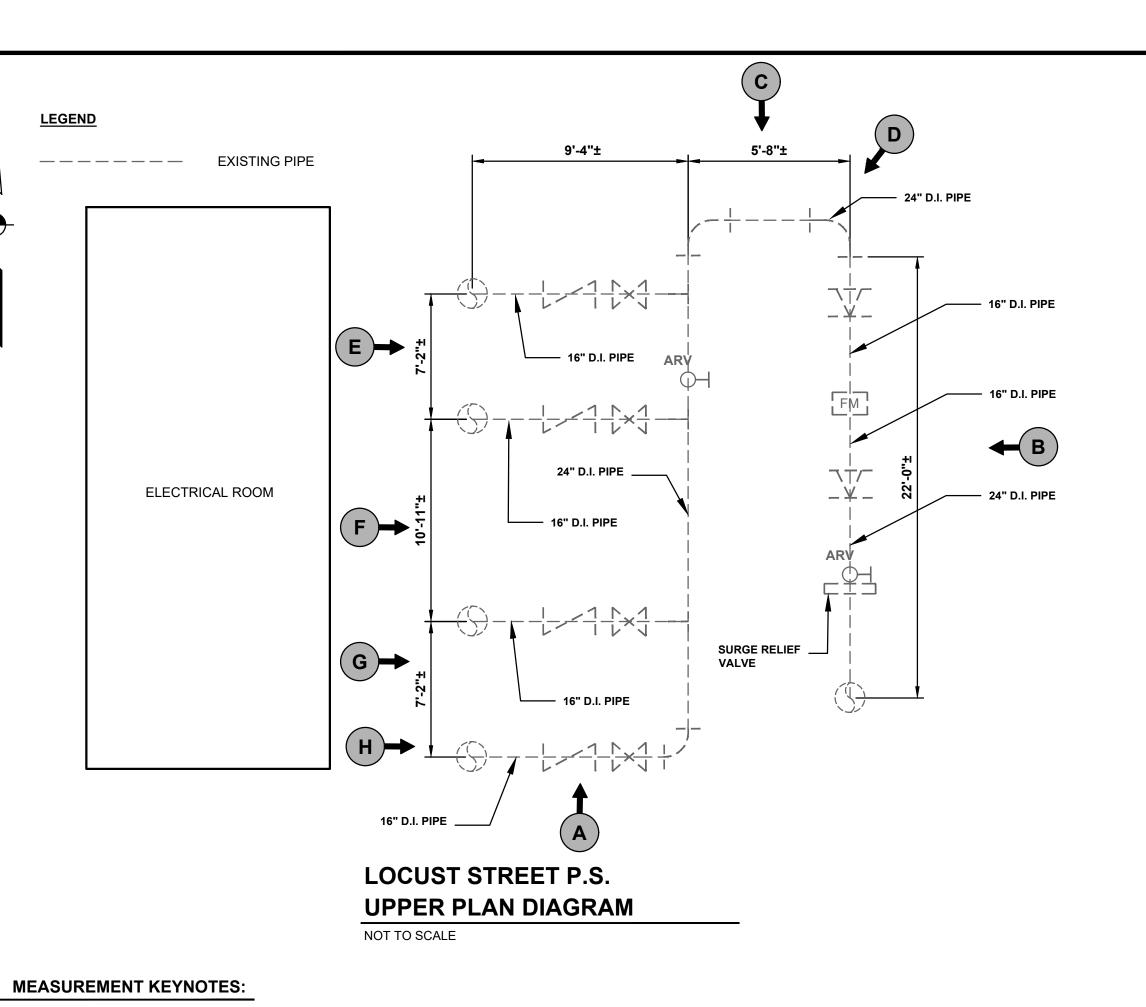
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PUMP STATION -BARRON DR. PHOTO LOG

Drawing **G** 

Sheet: 7 OF 11



LOCUST STREET PUMP STATION NOT TO SCALE



**LOCUST STREET PUMP STATION** 

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PUMP STATION LOCUST ST. DETAILS

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LOCUST STREET PUMP STATION

LOCUST STREET PUMP STATION NOT TO SCALE



LOCUST STREET PUMP STATION



LOCUST STREET PUMP STATION

LOCUST STREET PUMP STATION NOT TO SCALE

28. APPROXIMATE WIDTH OF CONCRETE BLOCK IS 8.5". 29. APPROXIMATE DEPTH OF CONCRETE BLOCK IS 37.5". 30. APPROXIMATE HEIGHT FROM SLAB TO TOP OF INSUALTION ON VALVE IS 70". 31. APPROXIMATE HEIGHT FROM SLAB TO TOP OF INSULATION IS 17". 32. APPROXIMATE DISTANCE FROM ELBOW TO TOP OF FLANGE INSULATION IS 6". 33. APPROXIMATE HEIGHT FROM SLAB TO CENTER OF CHECK VALVE HANDLE IS 39.5". 34. APPROXIMATE DIAMETER OF INSULATION IS 16". 35. APPROXIMATE DISTANCE FROM SLAB TO BOTTOM OF PIPE INSULATION IS 10". 36. APPROXIMATE HEIGHT FROM SLAB TO TOP OF CHECK VALVE INSULATION IS 52". 37. APPROXIMATE HEIGHT FROM SLAB TO TOP OF GATE VALVE INSUALTION IS 53". 38. APPROXIMATE HEIGHT FROM SLAB TO INSULATION JOINT IS 44". 39. APPROXIMATE HEIGHT FROM INSULATION JOINT TO TOP OF INSULATION IS 28". 40. APPROXIMATE DISTANCE FROM OUTSIDE OF INSUALTION TO OUTSIDE OF INSULATION 41. D.I. PIPE IS 6" IN DIAMETER ACCORDING TO AS-BUILTS. 42. APPROXIMATE HEIGHT FROM SLAB TO TOP OF GATE VALVE INSULATION IS 55.5". 43. APPROXIMATE HEIGHT FROM SLAB TO TOP OF CHECK VALVE INSULATION IS 53.25". 44. APPROXIMATE HEIGHT OF BOX INSULATION ON CHECK VALVE IS 44.5". 45. APPROXIMATE LENGTH OF BOX INSULATION ON CHECK VALVE IS 38.25". 46. APPROXIMATE WIDTH OF BOX INSULATION ON CHECK VALVE IS 38.25". 47. APPROXIMATE HEIGHT FROM SLAB TO BOTTOM OF STEEL FRAME IS 44". 48. APPROXIMATE HEIGHT FROM SLAB TO TOP OF STEEL FRAME IS 52.25". 49. APPROXIMATE SPACING BETWEEN STEEL FRAME AND INSULATION IS 0.75". 50. APPROXIMATE DISTANCE FROM ELBOW TO TOP OF FLANGE INSULATION IS 3.5". 51. APPROXIMATE HEIGHT FROM SLAB TO TOP OF INSULATION IS 13". 52. APPROXIMATE HEIGHT OF BOX INSULATION ON CHECK VALVE TO SLAB IS 53.25", 53. APPROXIMATE HEIGHT OF BOX INSULATION ON CHECK VALVE IS 47.75". 54. APPROXIMATE LENGTH OF BOX INSULATION ON CHECK VALVE IS 40.5". 55. APPROXIMATE WIDTH OF BOX INSULATION ON CHECK VALVE IS 39.5". 56. APPROXIMATE HEIGHT OF CONCRETE BLOCK IS 28". 57. APPROXIMATE DEPTH OF CONCRETE BLOCK IS 37.25". 58. APPROXIMATE HEIGHT FROM SLAB TO TOP OF GATE VALVE INSULATION IS 54.25". 59. APPROXIMATE HEIGHT FROM SLAB TO CENTER OF CHECK VALVE HANDLE IS 42.5" 60. APPROXIMATE DISTANCE FROM SLAB TO BOTTOM OF PIPE INSULATION IS 12".

61. APPROXIMATE HEIGHT FROM SLAB TO TOP OF GATE VALVE INSULATION IS 54.25".

APPROXIMATE HEIGHT FROM SLAB TO TOP OF INSULATED PIPE IS 45". APPROXIMATE DISTANCE FROM SLAB TO APPARENT CENTER OF PIPE IS 28".

APPROXIMATE HEIGHT FROM SLAB TO CENTER OF VALVE IS 49.75". APPROXIMATE HEIGHT FROM SLAB TO CENTER OF VALVE IS 54.25". APPROXIMATE LENGTH OF INSULATION ON VALVES IS 65.5".

15. APPROXIMATE WIDTH OF INSULATION ON FLANGE OF REDUCER IS 9.5".

18. APPROXIMATE LEGTH OF INSULATION BETWEEN ELBOWS IS 31".

21. APPROXIMATE HEIGHT FROM SLAB TO TOP OF INSULATION IS 16.5". 22. APPROXIMATE HEIGHT FROM SLAB TO TOP OF CHECK VALVE IS 51.25".

24. APPROXIMATE WIDTH OF INSULATION ON THE GATE VALVE IS 16". 25. APPROXIMATE LENGTH OF INSULATION ON THE GATE VALVE IS 24".

0. APPROXIMATE WIDTH OF CONCRETE BLOCK IS 8". 11. APPROXIMATE HEIGHT OF CONCRETE BLOCK IS 24.5".

12. APPROXIMATE DEPTH OF CONCRETE BLOCK IS 30".

20. APPROXIMATE HEIGHT OF CONCRETE BLOCK IS 26"

27. APPROXIMATE HEIGHT OF CONCRETE BLOCK IS 27.5"

13. APPROXIMATE LENGTH OF INSULATION ON VALVE IS 25". 14. APPROXIMATE LENGTH OF INSULATION ON VALVE IS 14.25".

VALVE IS 14.25".

16. 10" SURGE RELIEF VALVE

19. HEAT TRACING GAUGES.

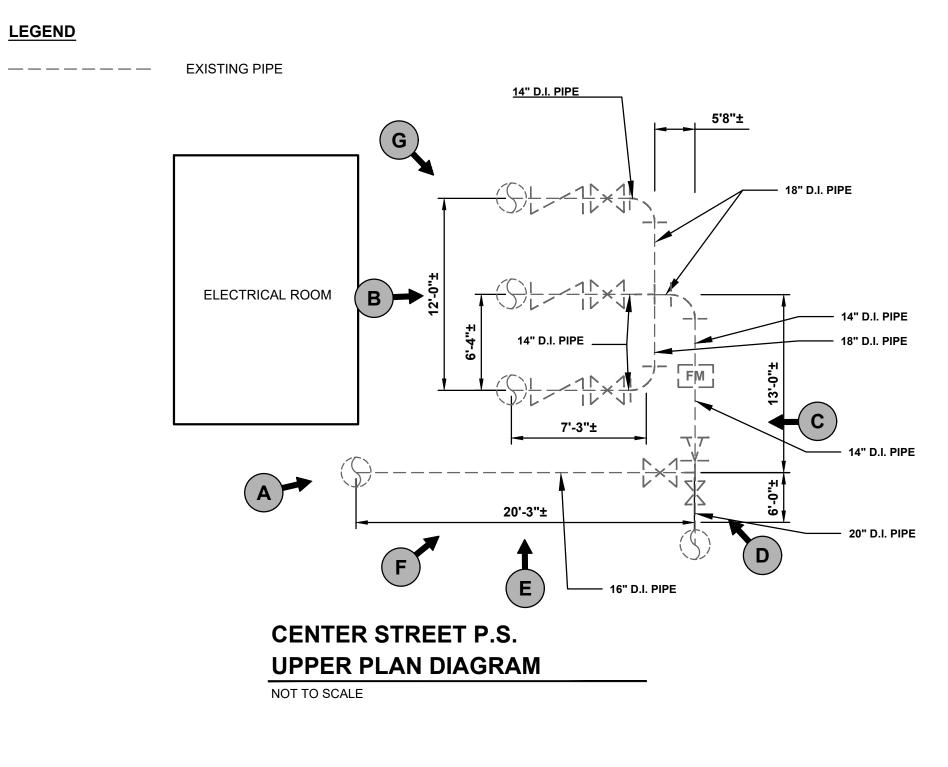
APPROXIMATE HEIGHT FROM TOP OF PIPE INSULATION TO TOP OF INSULATION ON

17. 4" STRAPPING SADDLE & SLEEVE W/4" GATE VALVE & 4" COMBINATION AIR VALVE.

23. APPROXIMATE HEIGHT FROM SLAB TO TOP OF GATE VALVE INSULATION IS 51".

26. APPROXIMATE DIAMETER OF THE INSULATION ON THE CHECK VALVE IS 30".

LOCUST STREET PUMP STATION C NOT TO SCALE





**LEGEND** 

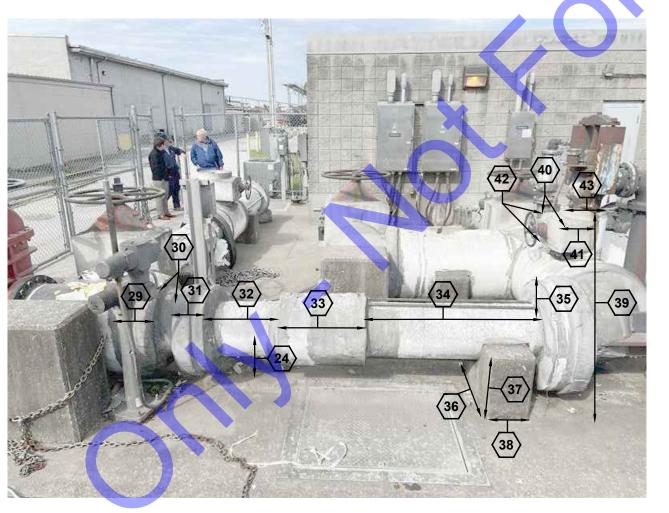
- APPROXIMATE HEIGHT OF INSULATION BOX ON GATE VALVE IS 12".
- APPROXIMATE WIDTH OF INSULATION BOX ON GATE VALVE IS 13". APPROXIMATE LENGTH OF INSULATION BOX ON GATE VALVE IS 19".
- APPROXIMATE HEIGHT FROM TOP OF INSULATION ON VALVE TO SLAB IS 49.5".
- APPROXIMATE DISTANCE FROM INSULATION ON PIPE TO INSULATION ON VALVE IS
- APPROXIMATE DISTANCE FROM APPARENT CENTER OF PIPE TO SLAB IS 21". APPROXIMATE DISTANCE BETWEEN INSULATION OF THE TWO FLANGE IS 62".
- 10. APPROXIMATE WIDTH OF CONCRETE BLOCK IS 12.5". 11. APPROXIMATE HEIGHT OF CONCRETE BLOCK IS 20.25".
- 12. APPROXIMATE DEPTH OF CONCRETE BLOCK IS 32".
- 13. APPROXIMATE LENGTH OF INSULATION ON VALVE. IS 40.5".
- 14. APPROXIMATE DISTANCE BETWEEN INSULATION OF THE TWO FLANGE IS 81". 15. APPROXIMATE WIDTH OF CONCRETE BLOCK IS 12".
- 16. APPROXIMATE HEIGHT OF CONCRETE BLOCK IS 19.5".
- 17. APPROXIMATE DISTANCE BETWEEN BOTTOM OF INSULATION TO SLAB IS 9".
- 18. APPROXIMATE LENGTH OF INSULATION BOX ON GATE VALVE IS 28.5". 19. APPROXIMATE WIDTH OF INSULATION BOX ON GATE VALVE IS 14.5".
- 20. APPROXIMATE HEIGHT OF INSULATION BOX ON GATE VALVE IS 21.5".
- 21. APPROXIMATE HEIGHT FROM INSULATION BOX ON GATE VALVE TO SLAB IS 41".
- 22. APPROXIMATE HEIGHT FROM SLAB TO TOP OF FLANGE ON ELBOW IS 6".
- 23. APPROXIMATE DISTANCE FROM OUTSIDE OF FLANGE TO OUTSIDE OF FLANGE IS
- 25. APPROXIMATE HEIGHT FROM SLAB TO TOP OF GATE VALVE IS 44.5". 26. APPROXIMATE WIDTH OF CONCRETE BLOCK IS 24".
- 27. APPROXIMATE HEIGHT OF CONCRETE BLOCK IS 32".

- 28. APPROXIMATE DEPTH OF CONCRETE BLOCK IS 19".
  29. APPROXIMATE DISTANCE IS 9".
  30. APPROXIMATE DISTANCE IS 5.5".
  31. APPROXIMATE DISTANCE IS 9.5".

- 32. APPROXIMATE DISTANCE BETWEEN INSULATION ON FLANGE AND INSULATION ON
- 33. APPROXIMATE DISTANCE OF INSULATION ON METER IS 25".
  34. APPROXIMATE DISTANCE BETWEEN INSULATION ON FLANGE AND INSULATION ON
- 35. APPROXIMATE HEIGHT OF INSULATED FLANGE IS 7".
- 36. APPROXIMATE DEPTH OF CONCRETE BLOCK IS 30.5".
- 37. APPROXIMATE HEIGHT OF CONCRETE BLOCK IS 19.5".
- 38. APPROXIMATE WIDTH OF CONCRETE BLOCK IS 12.25". 39. APPROXIMATE HEIGHT OF INSULATION BOX ON GATE VALVE TO SLAB IS 49".
- 40. ARPROXIMATE LENGTH OF INSULATION BOX ON GATE VALVE IS 18".
- 41. ARPROXIMATE LENGTH OF INSULATION BOX ON GATE VALVE IS 10". 42. ARPROXIMATE HEIGHT OF INSULATION BOX ON GATE VALVE IS 10".
- 43. APPROXIMATE DIAMETER OF INSULATION ON GATE VALVE IS 14".
- 44. ARPROXIMATE HEIGHT OF INSULATION BOX ON GATE VALVE IS 23". 45. ARPROXIMATE LENGTH OF INSULATION BOX ON GATE VALVE IS 29.25".
- 46. ARPROXIMATE WIDTH OF INSULATION BOX ON GATE VALVE IS 14.75".
- 47. APPROXIMATE HEIGHT FROM TOP OF INSULATION ON VALVE BOX TO SLAB IS 42". 48. APPROXIMATE HEIGHT FROM CHECK VALVE EYE TO SLAB IS 40".
- 49. APPROXIMATE DIAMETER OF CHECK VALVE CAP IS 19".
- 50. APPROXIMATE WIDTH OF INSULATION AT FLANGE OF ELBOW IS 20". 51. APPROXIMATE HEIGHT OF INSULATION AT FLANGE ELBOW IS 9".
- 52. APPROXIMATE DEPTH OF CONCRETE BLOCK IS 36".
- 53. APPROXIMATE HEIGHT OF CONCRETE BLOCK IS 20.5". 54. APPROXIMATE WIDTH OF CONCRETE BLOCK IS 12".
- 55. APPROXIMATE DISTANCE BETWEEN FLANGE TO INSULATION ON REDUCER IS 32.5'



**CENTER STREET PUMP STATION** 



**CENTER STREET PUMP STATION** NOT TO SCALE



CENTER STREET PUMP STATION B

NOT TO SCALE

CENTER STREET PUMP STATION D









CENTER STREET PUMP STATION F NOT TO SCALE



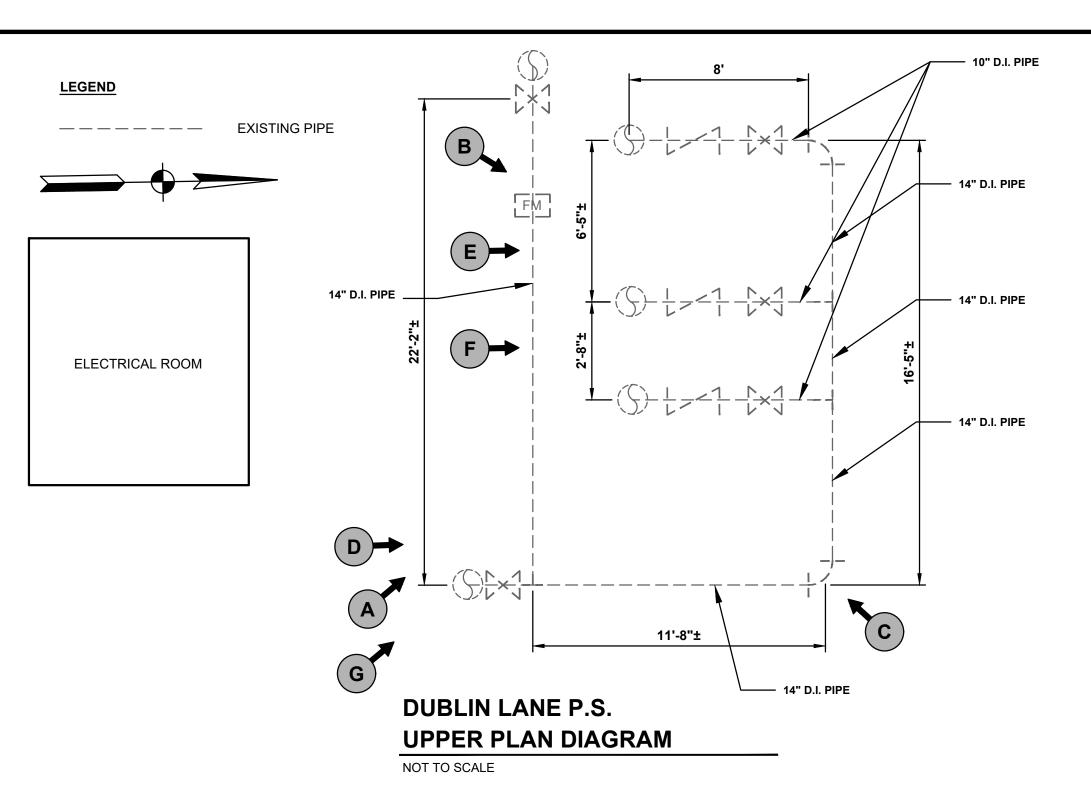
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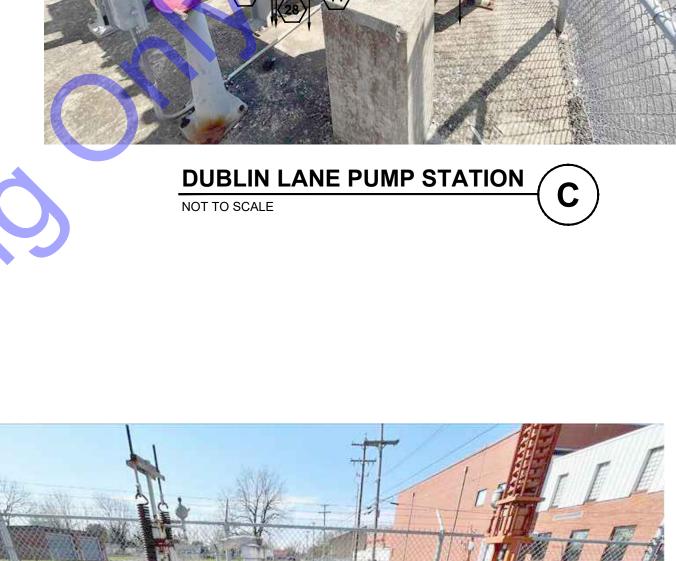
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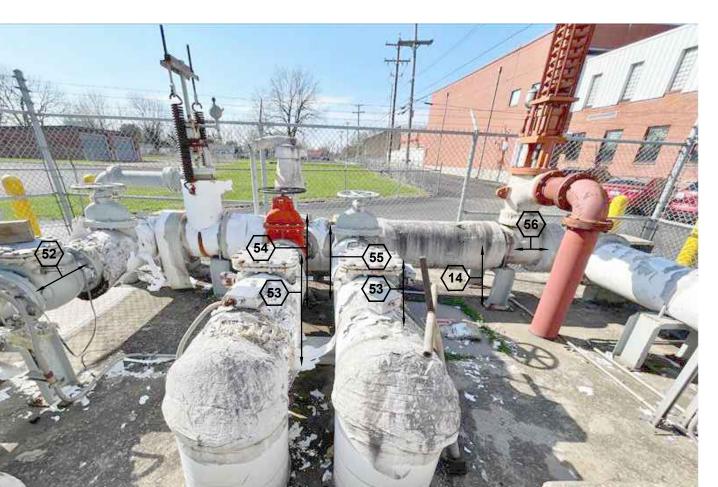
# **MEASUREMENT KEYNOTES:**

- APPROXIMATE DISTANCE FROM OUTSIDE OF INSULATION TO OUTSIDE OF **INSULATION ON FLANGE IS 24".**
- APPROXIMATE HEIGHT FROM SLAB TO TOP OF INSULATION ON FLANGE IS 21" APPROXIMATE HEIGHT FROM SLAB TO BOTTOM OF INSULATION ON FLANGE IS
- APPROXIMATE DIAMETER OF INSULATION NEAR SLAB IS 20".
- APPROXIMATE HEIGHT FROM SLAB TO TOP OF GATE VALVE FLANGE IS 50".
- APPROXIMATE HEIGHT FROM SLAB TO BOTTOM OF GATE VALVE IS 25". APPROXIMATE HEIGHT FROM OTHER SLAB TO BOTTOM OF GATE VALVE IS 17".
- 8. APPROXIMATE LENGTH FROM OUTSIDE OF FLANGE TO OUTSIDE OF FLANGE ON **GATE VALVE IS 18".**
- APPROXIMATE HEIGHT OF CONCRETE BLOCK IS 24".
- 10. APPROXIMATE DEPTH OF CONCRETE BLOCK IS 28". 11. APPROXIMATE WIDTH OF CONCRETE BLOCK IS 18.25".
- 12. APPROXIMATE LENGTH OF INSULATION ON MAG METER IS 36".
- 13. APPROXIMATE HEIGHT FROM BOTTOM OF INSULATION TO SLAB IS 14".
- 14. APPROXIMATE HEIGHT FROM APPARENT CENTER OF PIPE TO SLAB IS 25". 15. APPROXIMATE HEIGHT FROM SLAB TO TOP OF INSULATION ON FLANGE OF
- 16. APPROXIMATE HEIGHT FROM SLAB TO BOTTOM OF INSULATION ON FLANGE OF **ELBOW IS 6.5".**
- 17. APPROXIMATE DIAMETER OF ELBOW IS 16" WITHOUT INSULATION. WILL REQUIRE INSULATION.
- 18. APPROXIMATE DIAMETER OF ELBOW WITH INSULATION IS 18".
- 19. APPROXIMATE LENGTH OF GATE VALVE IS 24.5".
- 20. APPROXIMATE HEIGHT FROM TOP OF GATE VALVE TO SLAB IS 41.25".
- 21. APPROXIMATE DISTANCE FROM OUTSIDE OF FLANGE ON GATE VALVE TO **OUTSIDE OF HEAT TRACING INSULATION IS 20.75".**
- 22. APPROXIMATE LENGTH OF INSULATION ON HEAT TRACING METER 36".
- 23. APPROXIMATE LENGTH OF CONCRETE BLOCK IS 24".
- 24. APPROXIMATE WIDTH OF CONCRETE BLOCK IS 20.25".
- 25. APPROXIMATE DISTANCE FROM FLANGE INSULATION TO FLANGE INSULATION IS
- 26. APPROXIMATE DISTANCE OF INSULATION ON FLANGE OF ELBOW IS 7.25". 27. APPROXIMATE HEIGHT FROM SLAB TO TOP OF METAL BASE IS 19".
- 28. APPROXIMATE HEIGHT FROM SLAB TO BOTTOM OF METAL BASE IS 16.75".
- 29. APPROXIMATE HEIGHT FROM TOP FLANGE TO INSULATED FLANGE AT BOTTOM OF THE VALVE IS 17".

- 30. APPROXIMATE DISTANCE FROM FLANGE TO APPARENT CENTER OF VALVE IS 13". 31. APPROXIMATE DISTANCE FROM FLANGE TO EDGE OF VALVE IS 19".
- 32. APPROXIMATE HEIGHT OF INSULATION ON FLANGE AT VALVE IS 5.5". 33. APPROXIMATE DISTANCE BETWEEN BOTTOM OF INSULATED FLANGE TO SLAB IS
- 34. APPROXIMATE HEIGHT FROM SLAB TO TOP OF INSULATED PIPE IS 61".
- 35. APPROXIMATE HEIGHT FROM SLAB TO BOTTOM OF INSULATED PIPE IS 49".
- **36. APPROXIMATE HEIGHT OF INSULATION IS 11".** 37. APPROXIMATE HEIGHT OF INSULATION IS 18.5".
- 38. APPROXIMATE LENGTH OF INSULATION IS 18.8".
- 39. APPROXIMATE DISTANCE FROM SLAB TO TOP OF INSULATION IS 57.5".
- 40. APPROXIMATE DISTANCE BETWEEN FLANGE OF ELBOW AND FLANGE OF TEE IS
- 41. APPROXIMATE WIDTH OF INSULATION ON ELBOW FLANGE IS 9".
- 42. APPROXIMATE HEIGHT FROM SLAB TO TOP OF METAL BASE IS 17".
- 43. APPROXIMATE HEIGHT FROM SLAB TO TOP OF GATE VALVE IS 37.25".
- 44. APPROXIMATE WIDTH OF GATE VALVE IS 20". WIDTH OF GATE VALVE INTO PAGE
- 45. APPROXIMATE WIDTH OF CHECK VALVE IS 17". WIDTH OF GATE VALVE INTO **PAGE IS 16".**
- 46. APPROXIMATE DISTANCE FROM SLAB TO TOP OF CHECK VALVE IS 37". 47. APPROXIMATE DISTANCE FROM SLAB TO CENTER OF CHECK VALVE HANDLE IS
- 48. APPROXIMATE WIDTH OF GATE VALVE IS 16". WIDTH OF GATE VALVE INTO PAGE
- IS 10".
- 49. APPROXIMATE HEIGHT FROM SLAB TO TOP OF METAL BASE IS 19".
- 50. APPROXIMATE HEIGHT FROM SLAB TO BOTTOM OF METAL BASE IS 16.75". 51. APPROXIMATE HEIGHT FROM SLAB TO BOTTOM OF INSULATION IS 16".
- 52. APPROXIMATE DISTANCE FROM OUTSIDE OF FLANGES ON CHECK VALVE IS
- 53. APPROXIMATE HEIGHT FROM SLAB TO TOP OF CHECK VALVE IS 37.5".
- 54. APPROXIMATE HEIGHT FROM SLAB TO TOP OF GATE VALVE IS 38.5". 55. APPROXIMATE HEIGHT FROM SLAB TO TOP OF GATE VALVE IS 37.5.
- 56. APPROXIMATE LENGTH OF INSULATION IS 20.5". 57. APPROXIMATE LENGTH OF INSULATION IS 64".
- 58. APPROXIMATE HEIGHT OF INSULATION FROM TOP OF PIPE INSULATION TO FLANGE IS 11".



**DUBLIN LANE PUMP STATION** 







**DUBLIN LANE PUMP STATION** 





DUBLIN LANE PUMP STATION

NOT TO SCALE NOT TO SCALE





**DUBLIN LANE PUMP STATION** 

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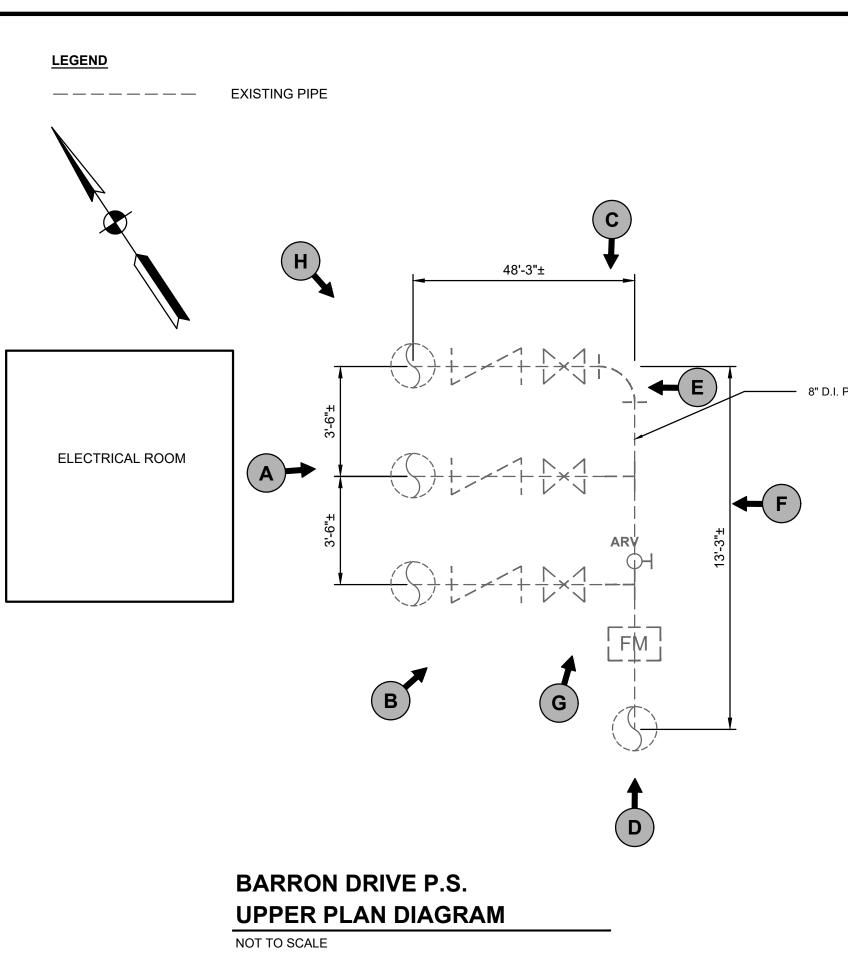
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Drawing No:

Sheet: 10 OF 11

DUBLIN LANE PUMP STATION E



APPROXIMATE WIDTH OF GATE VALVE INSULATION IS 16". APPROXIMATE HEIGHT OF GATE VALVE INSULATION IS 8".

APPROXIMATE HEIGHT OF GATE VALVE INSULATION IS 7.5". TOP OF GATE VALVE INSULATION TO SLAB IS APPROXIMATELY 27". TOP OF GATE VALVE INSULATION TO SLAB IS APPROXIMATELY 26.5". CHECK VALVE INSULATION IS APPROXIMATELY 17" IN DIAMETER.

CHECK VALVE INSULATION HEIGHT IS APPROXIMATELY 4". 9. TOP OF CHECK VALVE INSULATION TO SLAB IS APPROXIMATELY 28".

10. TOP OF CHECK VALVE INSULATION TO SLAB IS APPROXIMATELY 28.5".

11. CENTER OF CHECK VALVE HANDLE TO SLAB IS APPROXIMATELY

MEASUREMENT KEYNOTES:

12. APPARENT CENTER OF PIPE TO SLAB IS 14".
13. APPARENT CENTER OF PIPE TO BASE OF JOINT IS 21".
14. TOP OF PIPE INSULATION TO SLAB IS APPROXIMATELY 23".
15. APPROXIMATE DISTANCE FROM CENTER OF GATE VALVE TO CENTER **OF TEE IS 15".** 

16. APPROXIMATE HEIGHT FROM BASE OF JOINT TO APPARENT CENTER OF ELBOW IS 14".

17. BOTTOM OF PIPE INSULATION TO SLAB IS APPROXIMATELY 7".

18. CONCRETE SUPPORT BLOCK IS APPROXIMATELY 14"H x 14"W x 14"L.

19. CONCRETE SUPPORT BLOCK IS APPROXIMATELY 12.5"H x 14.5"W x 20. CONCRETE SUPPORT BLOCK IS APPROXIMATELY 12"H x 14"W x 14"L.

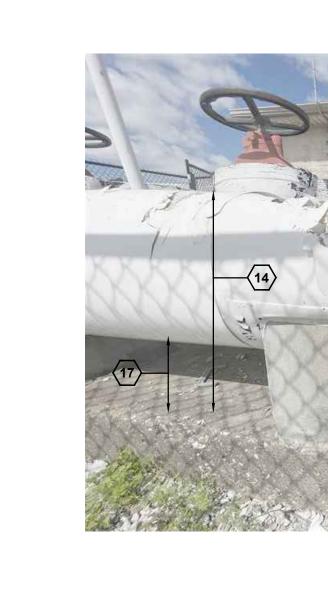
AND (19) IS 41.5". 22. APPROXIMATE DISTANCE BETWEEN CONCRETE SUPPORT BLOCK (19) AND (20) IS 43".



**BARRON DRIVE PUMP STATION** NOT TO SCALE



BARRON DRIVE PUMP STATION NOT TO SCALE



BARRON DRIVE PUMP STATION NOT TO SCALE







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**PUMP STATION** BARRON DR. DETAILS

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BARRON DRIVE PUMP STATION NOT TO SCALE











BARRON DRIVE PUMP STATION (G) NOT TO SCALE

21. APPROXIMATE DISTANCE BETWEEN CONCRETE SUPPORT BLOCK (18)

Sheet: 11 OF 11