SMITHFIELD IRRIGATION COMPANY
MILL RACE PRESSUREIZED PIPELINE PROJECT

SMITHFIELD, UT

2025

SMITHFIELD IRRIGATION COMPANY

Pat Draper ..... President

Chris Chambers ..... Vice President

Dennis Thornley ..... Board Member

Lisa Peterson ..... Board Member

Darin Evans ..... Board Member

LuAnn Hansen ..... Secretary

Lyle Coleman ..... Water Master

ENGINEERING CONSULTANTS (SE)

Sunrise Engineering

Scott Archibald, P.E. ..... Principal Engineer

Steven Wood, P.E. ..... Project Manager

Haiming Peng, P.E. ..... Project Engineer

LICENSED PROFESSIONAL ENGINEER
No. 12401899
Steven David Wood
10/02/2025
STATE OF UTAH

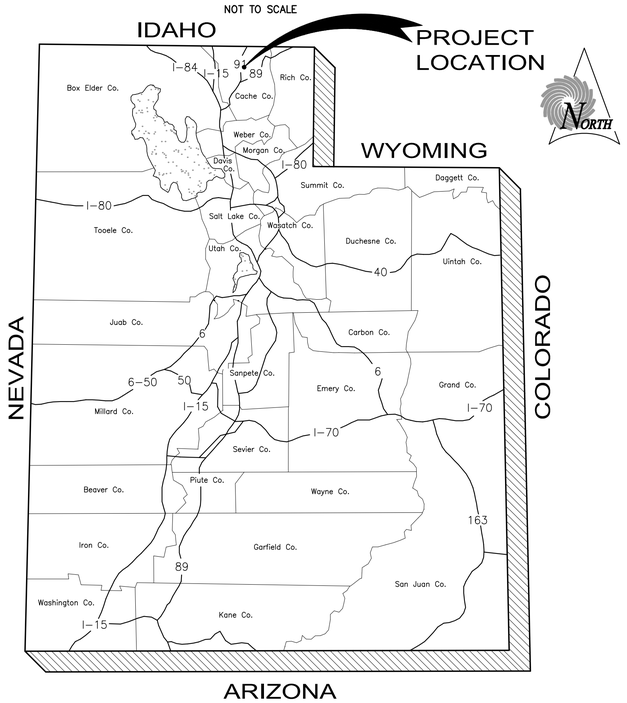
SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
sunrise-eng.com

BID SET

P:\Smithfield Irrigation Company\12499 - SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC-DSI-GN1-PP.dwg Oct 02, 2025 4:36pm jpilley

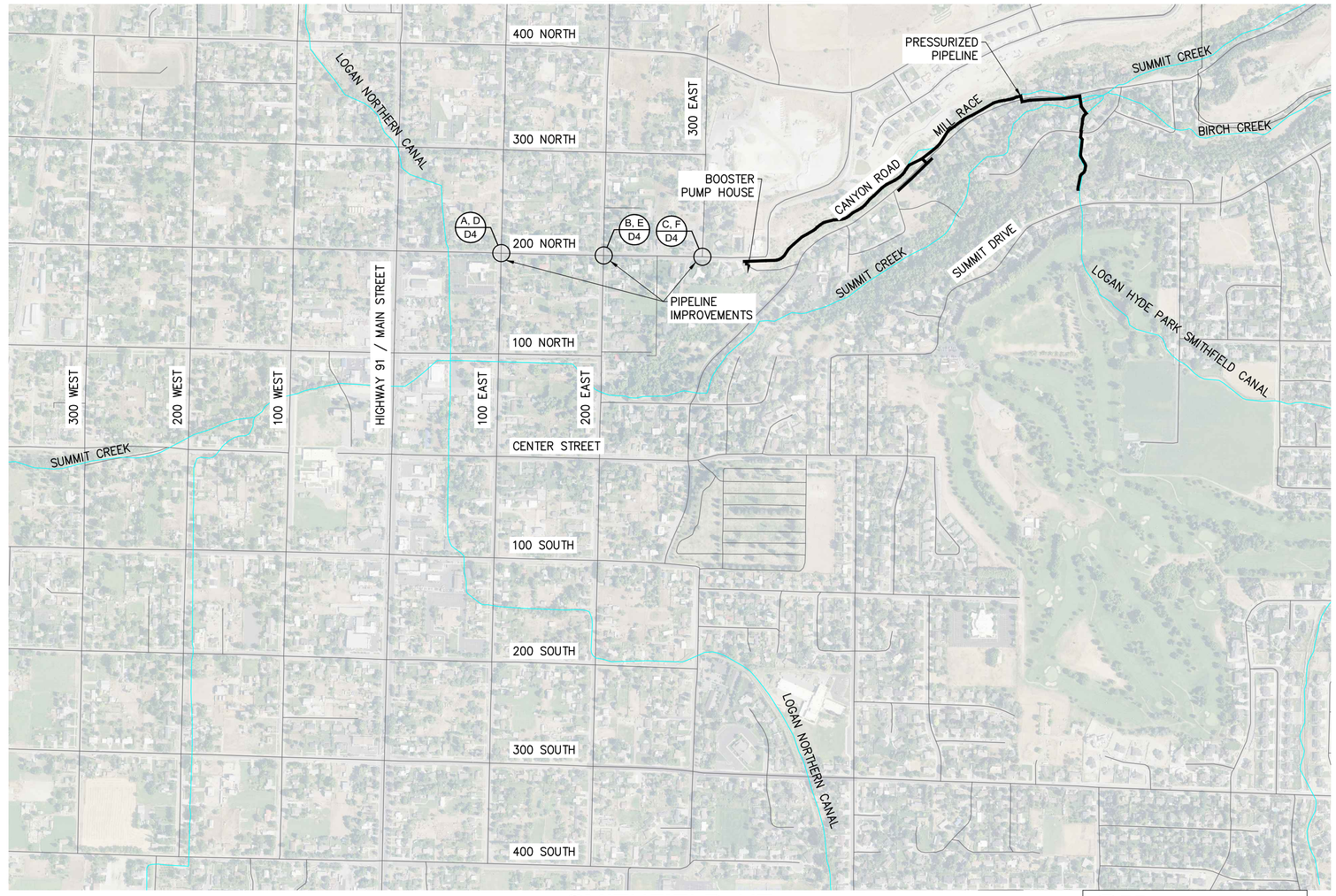
AREA MAP

NOT TO SCALE



SHEET INDEX

LOCATION MAP



SMITHFIELD, UT

811 Know what's below. Call before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

SMITHFIELD IRRIGATION COMPANY

MILL RACE PRESSURIZED PIPELINE
GENERAL
AREA MAPS AND SHEET INDEX

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	2 of 26	GN2

BID SET

P:\Smithfield Irrigation Company\12499 - SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC-DSI-GN2-PP.dwg Oct 02, 2025 4:36pm jpiley

SE GENERAL NOTES

1. ALL SITE WORK SHALL CONFORM TO THE CURRENT EDITION OF THE AMERICAN PUBLIC WORKS ASSOCIATION UNIFORM STANDARD SPECIFICATIONS AND DETAILS (APWA SPECIFICATIONS AND DETAILS) AND ANY SUPPLEMENTS TO THE APWA SPECIFICATIONS AND DETAILS BY SMITHFIELD CITY UNLESS SPECIFICALLY STATED OTHERWISE IN THESE PLANS.

2. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING PERMITS, RENEWAL OF LAPSED PERMITS, AND OBTAINING ANY NEW PERMITS, INCLUDING, BUT NOT LIMITED TO, DUST CONTROL PERMITS, ENCROACHMENT PERMITS, TRAFFIC CONTROL PERMITS, AND/OR UTAH POLLUTANT DISCHARGE ELIMINATE SYSTEM (UPDES) PERMITS.

3. THE CONTRACTOR IS RESPONSIBLE FOR MAKING ARRANGEMENTS FOR INSPECTION AND TESTING BY AN INDEPENDENT AND QUALIFIED LABORATORY.

4. THE CONTRACTOR SHALL NOTIFY SMITHFIELD IRRIGATION COMPANY 24 HOURS PRIOR TO CONSTRUCTION. CONSTRUCTION CONCEALED WITHOUT THE REQUIRED INSPECTION SHALL BE SUBJECT TO EXPOSURE AT THE CONTRACTOR'S EXPENSE.

5. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR MUST CALL BLUE STAKE AT (800) 662-4111 AT LEAST 48 HOURS BEFORE ANY CONSTRUCTION BEGINS.

6. THE CONTRACTOR SHALL FOLLOW GUIDELINES AND REGULATIONS SET FORTH BY O.S.H.A. SUNRISE ENGINEERING, INC. WILL NOT BE RESPONSIBLE FOR JOB-SITE SAFETY PROCEDURES OR CONDITIONS.

7. THE CONTRACTOR IS RESPONSIBLE FOR HIS OWN TAKEOFF QUANTITIES. QUANTITIES IF SHOWN HEREON ARE ESTIMATES ONLY AND AS SUCH ARE NOT TO BE USED FOR BID PURPOSES.

8. THE CONTRACTOR IS RESPONSIBLE FOR THE NOTIFICATION OF THE PROPER AUTHORITY(S) IF THERE ARE OBSTRUCTIONS TO PROPOSED IMPROVEMENTS AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY EXISTING ITEM REMOVED TO FACILITATE CONSTRUCTION SHALL BE REPLACED IN THE SAME OR BETTER CONDITION AT THE CONTRACTOR'S EXPENSE.

9. THE CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES FOR LOCATION OF SERVICE AND/OR RELOCATION OF UTILITIES IN CONFLICT WITH PROPOSED CONSTRUCTION. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR COORDINATING THE RELOCATION OF UTILITIES, POWER POLES, ETC.

10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE AND SAFELY DISPOSE OF ALL REMOVAL MATERIAL AND DEBRIS DEEMED UNSALVAGEABLE BY ENGINEER. THE CONTRACTOR SHALL MAKE APPROPRIATE ARRANGEMENTS FOR DISPOSAL SITES AT WHICH DEBRIS MAY BE LAWFULLY DISPOSED. NO CONSTRUCTION DEBRIS WILL BE BURIED IN THE PIPELINE TRENCH.

11. THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL ON AND AROUND THE CONSTRUCTION SITE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.

12. THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS FOR CLEANING TRUCKS AND/OR OTHER EQUIPMENT OF MUD PRIOR TO ENTERING PUBLIC STREETS, AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLEAN STREETS, AND TAKE WHATEVER MEASURES ARE NECESSARY TO INSURE THAT ALL ROADS ARE MAINTAINED IN A CLEAN, MUD AND DUST FREE CONDITION AT ALL TIMES. NO WORK WILL BE CONSIDERED COMPLETE UNTIL ALL PAVEMENTS HAVE BEEN SWEPT CLEAN OF DIRT AND DEBRIS.

13. A THOROUGH ATTEMPT HAS BEEN MADE TO SHOW THE LOCATIONS OF ALL UNDERGROUND OBSTRUCTIONS AND UTILITY LINES IN THE WORK AREA. HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO OBSTRUCTIONS AND UTILITY LINES ENCOUNTERED DURING CONSTRUCTION AND SHALL DETERMINE THE EXACT LOCATION OF UTILITIES IN ADVANCE OF TRENCHING. THE ENGINEER WILL NOT GUARANTEE ANY ELEVATIONS AT LOCATIONS OF THE EXISTING UNDERGROUND UTILITIES SHOWN ON THESE PLANS.

14. THE CONTRACTOR SHALL PROVIDE A LICENSED SURVEYOR FOR THE SURVEYING/CONSTRUCTION STAKING OF ALIGNMENT AND GRADE FOR EACH MAIN AND/OR FACILITY AS SHOWN ON THE PLANS.

15. EXACT POINT OF MATCHING, TERMINATION AND OVERLAY, IF NECESSARY, MAY BE DETERMINED IN THE FIELD BY THE ENGINEER OF RECORD OR THE RESIDENT ENGINEER OVERSEEING THE PROJECT CONSTRUCTION.

16. ANY AMBIGUITIES OR DEFICIENCIES DISCOVERED ON THESE PLANS ARE TO BE RESOLVED BY SUNRISE ENGINEERING OR ITS APPOINTED REPRESENTATIVE. ANY MODIFICATIONS TO THESE PLANS MADE BY ANYONE OTHER THAN SUNRISE ENGINEERING OR ITS APPOINTED REPRESENTATIVE IS SOLELY RESPONSIBLE FOR THOSE MODIFICATIONS.

17. THE CONTRACTOR SHALL NOT REMOVE, TRIM, OR OTHERWISE CUT ANY TREES WITHOUT WRITTEN APPROVAL FROM SMITHFIELD CITY IN RIGHT-OF-WAY AREAS

18. WHEN REMOVING BRANCHES FROM TREES, THE BRANCH IS TO BE CUT WITH A CLEAN (BLEACHED) SAW BLADE AT THE POINT OF CONNECTION OF THE BRANCH TO A PRIMARY BRANCH OR TRUNK

ABBREVIATIONS

ABC	AGGREGATE BASE COURSE
AC	ASPHALT CONCRETE
BCF	BRASS CAP FLUSH
BCHH	BRASS CAP IN HAND HOLE
BCR	BEGIN CURB RETURN
BM	BENCHMARK
BSW	BACK OF SIDEWALK
BTM	BOTTOM
CB	CATCH BASIN
C/L	CENTERLINE
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
CONC	CONCRETE
CONST	CONSTRUCTION
CY	CUBIC YARD
DI	DUCTILE IRON
D/W	DRIVEWAY
DWG	DRAWING
DTL	DETAIL
E	EAST
ECR	END CURB RETURN
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
ESMT	EASEMENT
EX, EXIST	EXISTING
EG	EXISTING GROUND
FC	FACE OF CURB
FES	FLARED END SECTION
FF	FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT
FL	FLANGE
FND	FOUND
FO	FIBER OPTIC
FPS	FEET PER SECOND
FSW	FRONT OF SIDEWALK
FT	FOOT, FEET
G	GAS, GUTTER, GRADE
GB	GRADE BREAK
GPM	GALLONS PER MINUTE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HP	HIGH POINT
HW	HIGHWATER
IN.	INCH, INCHES
INV	INVERT
IRR, IRRIG	IRRIGATION
L	LENGTH
LF	LINEAR FEET
LT	LEFT
MH	MANHOLE
MJ	MECHANICAL JOINT
N	NORTH
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO.	NUMBER
OHE	OVERHEAD ELECTRIC
OPNG	OPENING
P/L	PROPERTY LINE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVE
PCC	PORTLAND CEMENT CONCRETE
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENCY
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
R/W	RIGHT-OF-WAY
RGRCP	RUBBER GASKETED REINFORCED CONCRETE PIPE
RJ	RESTRAINED JOINT
RT	RIGHT
S	SEWER, SLOPE, SOUTH
SDMH	STORM DRAIN MANHOLE
SF	SQUARE FEET
SSMH	SANITARY SEWER MANHOLE
STA	STATION
STD	STANDARD
SWK	SIDEWALK
SY	SQUARE YARD
TAN	TANGENT
TBC	TOP BACK OF CURB
T, TEL	TELEPHONE
TL	TRUE LENGTH
TOC	TOP OF CONCRETE
TOW	TOP OF WALL
TYP	TYPICAL
UGE	UNDERGROUND ELECTRIC
UPRR	UNION PACIFIC RAILROAD
VNAE	VEHICLE NON-ACCESS EASEMENT
Vr	VOLUME REQUIRED
Vp	VOLUME PROVIDED
W	WATER, WEST, WITH
XFMR	TRANSFORMER

LEGEND

EXISTING

- EXISTING CONCRETE
- EXISTING PAVEMENT TO BE REMOVED
- EXISTING PAVEMENT TO REMAIN
- irr — EXISTING IRRIGATION LINE
- x"s — EXISTING SEWER LINE
- x"sd — EXISTING STORM DRAIN
- x"w — EXISTING WATER LINE
- ohe — EXISTING OVERHEAD ELECTRIC
- uge — EXISTING UNDERGROUND ELECTRIC
- c — EXISTING CABLE (TV) LINE
- fo — EXISTING FIBER OPTIC LINE
- t — EXISTING UNDERGROUND TELEPHONE
- g — EXISTING GAS LINE
- x — EXISTING BARBED WIRE FENCE
- EXISTING EASEMENT
- EXISTING FLOWLINE
- EXISTING PROPERTY LINE
- X 1443.08 — EXISTING SPOT ELEVATION
- 1440 — EXISTING CONTOUR
- EXISTING BRASS CAP MONUMENT
- EXISTING SIGN
- IR — EXISTING IRRIGATION MANHOLE
- EXISTING IRRIGATION VALVE
- EXISTING DRYWELL
- EXISTING SEWER CLEANOUT
- S — EXISTING SEWER MANHOLE
- EXISTING CATCH BASIN
- SD — EXISTING STORM DRAIN MANHOLE
- EXISTING STORM DRAIN W/ STRUCTURE
- W — EXISTING AIR VAC
- EXISTING FIRE HYDRANT
- U — EXISTING UNKNOWN MANHOLE
- EXISTING GATE VALVE
- EXISTING REDUCER
- W — EXISTING WATER MANHOLE (OR WELL)
- WM — EXISTING WATER METER
- C — EXISTING CABLE MANHOLE
- E — EXISTING ELECTRIC MANHOLE
- EXISTING GUY WIRE
- EXISTING LIGHT POLE
- EXISTING POWER POLE
- T — EXISTING TELEPHONE MANHOLE
- T — EXISTING TELEPHONE PEDESTAL
- G — EXISTING GAS MANHOLE
- GM — EXISTING GAS METER
- EXISTING GAS RISER
- EXISTING GAS VALVE
- EXISTING VEGETATION

PROPOSED

- PROPOSED CONCRETE
- PROPOSED PAVEMENT
- X"IRR — EXISTING IRRIGATION LINE
- X"S — PROPOSED SEWER LINE
- X"SD — PROPOSED STORM DRAIN
- X"W — PROPOSED WATER LINE
- OHE — PROPOSED OVERHEAD ELECTRIC
- UGE — PROPOSED UNDERGROUND ELECTRIC
- C — PROPOSED CABLE (TV) LINE
- FO — PROPOSED FIBER OPTIC LINE
- T — PROPOSED UNDERGROUND TELEPHONE
- X"G — PROPOSED GAS LINE
- X — PROPOSED BARBED WIRE FENCE
- PROPOSED EASEMENT
- PROPOSED FLOWLINE
- PROPOSED PROPERTY LINE
- X 1443.08 — PROPOSED SPOT ELEVATION
- 1440 — PROPOSED CONTOUR
- PROPOSED (PLACED) BRASS CAP MONUMENT
- PROPOSED SIGN
- IR — PROPOSED IRRIGATION MANHOLE
- PROPOSED IRRIGATION VALVE
- PROPOSED DRYWELL
- PROPOSED SEWER CLEANOUT
- S — PROPOSED SEWER MANHOLE
- PROPOSED CATCH BASIN
- SD — PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN W/ STRUCTURE
- W — PROPOSED AIR VAC
- PROPOSED FIRE HYDRANT
- PROPOSED FITTINGS
- PROPOSED GATE VALVE
- PROPOSED REDUCER
- W — PROPOSED WATER MANHOLE (OR WELL)
- WM — PROPOSED WATER METER
- C — PROPOSED CABLE MANHOLE
- E — PROPOSED ELECTRIC MANHOLE
- PROPOSED GUY WIRE
- PROPOSED LIGHT POLE
- PROPOSED POWER POLE
- T — PROPOSED TELEPHONE MANHOLE
- G — PROPOSED GAS MANHOLE
- GM — PROPOSED GAS METER
- PROPOSED GAS RISER
- PROPOSED GAS VALVE
- PROPOSED VEGETATION

OTHER

- GB — GRADE BREAK
- HIGH WATERLINE
- LOT LINE
- RIGHT-OF-WAY
- ROADWAY CENTERLINE
- SECTION LINE
- SETBACK LINE
- CONSTRUCTION LIMITS
- POINT OF VERTICAL INTERSECTION
- B / DT2 — PLAN, SECTION, OR DETAIL LABEL / DRAWING TITLE/SHEET NUMBER
- 6.56 — TBC ELEVATION (x1000')
- 6.3 — LOT ELEVATION (x1000')
- BASIN ULTIMATE OUTFALL LOCATION AND DIRECTION
- GRADE BREAK (PROFILE SYMBOL)

811 Know what's below. Call before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

SMITHFIELD IRRIGATION COMPANY

MILL RACE PRESSURIZED PIPELINE

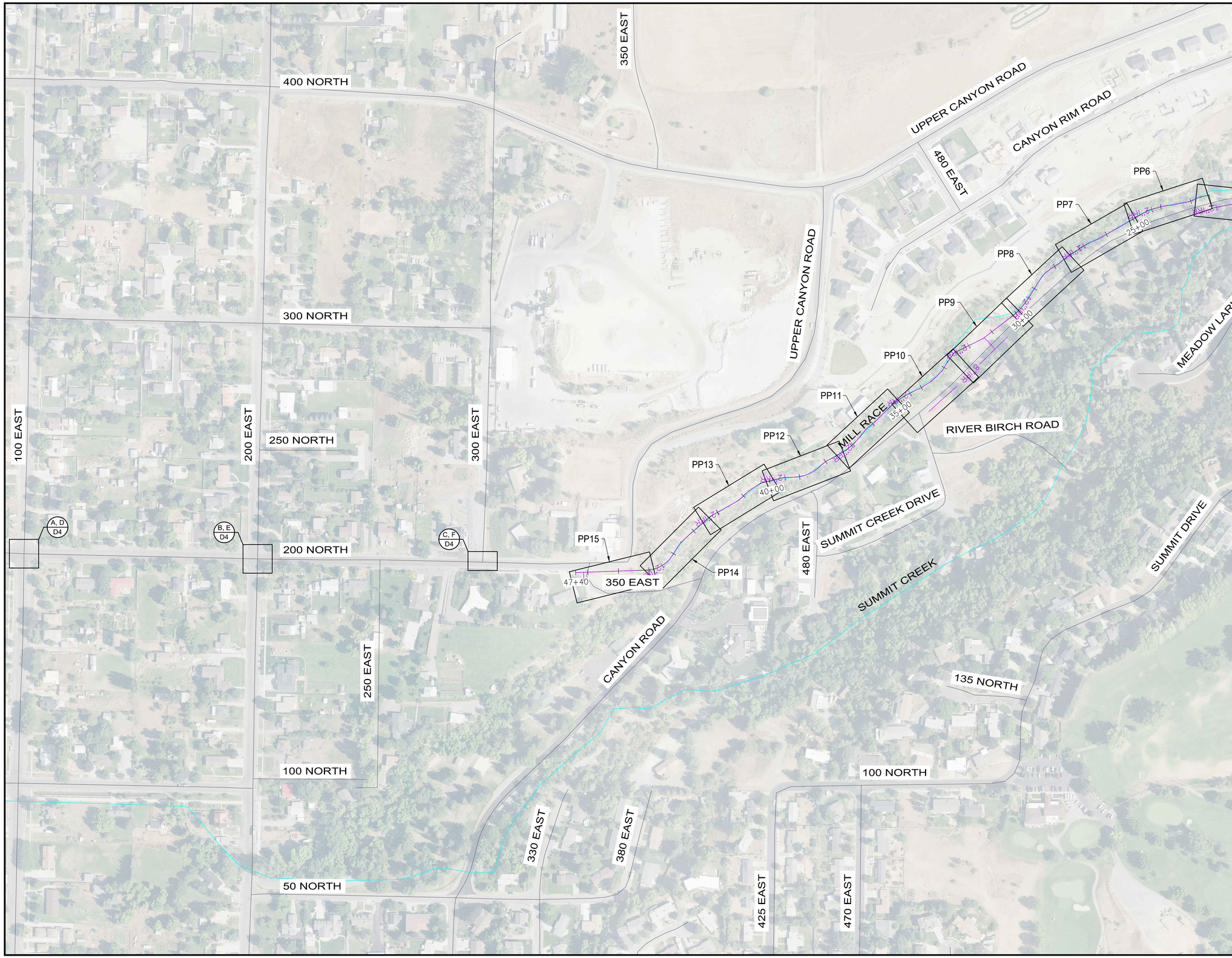
GENERAL

NOTES, ABBREVIATIONS, AND LEGEND

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	3 of 26	GN3

BID SET

BID SET



SCALE
0 150' 300'
HORIZ: 1" = 150' : 22 x 34
HORIZ: 1" = 300' : 11 x 17

811 Know what's **below.** **Call** before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

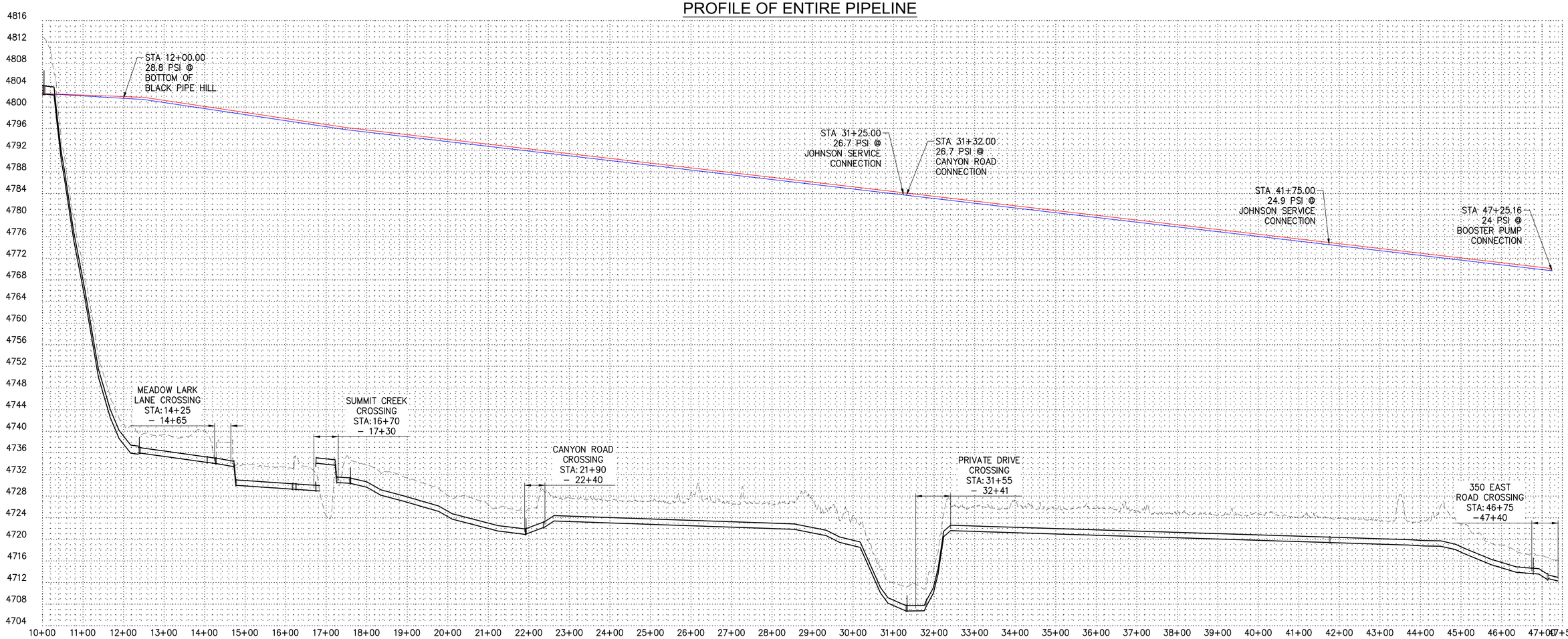
SMITHFIELD IRRIGATION COMPANY

MILL RACE PRESSURIZED PIPELINE
GENERAL
PROJECT OVERVIEW MAP AND INDEX

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	4 of 26	GN4

P:\Smithfield Irrigation Company\12499 - SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC-DSI-GN4-PP.dwg Oct 02, 2025 4:36pm jjolley

PROFILE OF ENTIRE PIPELINE



DESIGN CRITERIA

PRESSURIZED PIPELINES

- DESIGN FLOW: 1,792 GPM
- INITIAL HEAD: 4802.5 FT
- TOTAL FRICTIONAL LOSS: 26.53 FT
- TOTAL MINOR LOSS: 5.92 FT
- TOTAL HEAD LOSS: 32.45 FT
- VELOCITY IN INTAKE LINE: 2.26 FT / SEC (18" HDPE)
- VELOCITY IN TRANSMISSION LINE: 5.09 FT / SEC (12) HDPE)

LEGEND

HGL – HYDRAULIC GRADE LINE

EGL – ENERGY GRADE LINE

SCALE
0 125' 250'

HORIZ: 1" = 125' : 22 x 34
HORIZ: 1" = 250' : 11 x 17
VERT: 1" = 10' : 22 x 34
VERT: 1" = 20' : 11 x 17

HYDRAULIC PROFILE

	STATION	HGL	EGL	SYSTEM PRESSURE	HYDRAULIC PROFILE
1	10+00	4802.5	4802.5	0.0	TOP OF HILL BLACK PIPE INTAKE
2	12+50	4801.4	4801.8	28.8	18" TO 12" TRANSITION
3	17+50	4795.8	4796.2	29.0	THREE CREEKS AREA
4	47+25	4769.7	4770.1	24.0	DUG WAY BOOSTER PUMP HOUSE

FLOW (CFS)	VELOCITY @ 18" INTAKE PIPE (FT/S)	VELOCITY @ 12" TRANSMISSION LINE (FT/S)	TOTAL MINOR LOSS (FT)	TOTAL FRICTIONAL LOSS (FT)	TOTAL HEAD LOSS (FT
1	0.57	1.27	0.37	2.04	2.41
2	1.13	2.55	1.48	7.36	8.84
3	1.70	3.82	3.33	15.58	18.91
4	2.26	5.09	5.92	26.53	32.45

811 Know what's **below.** **Call** before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

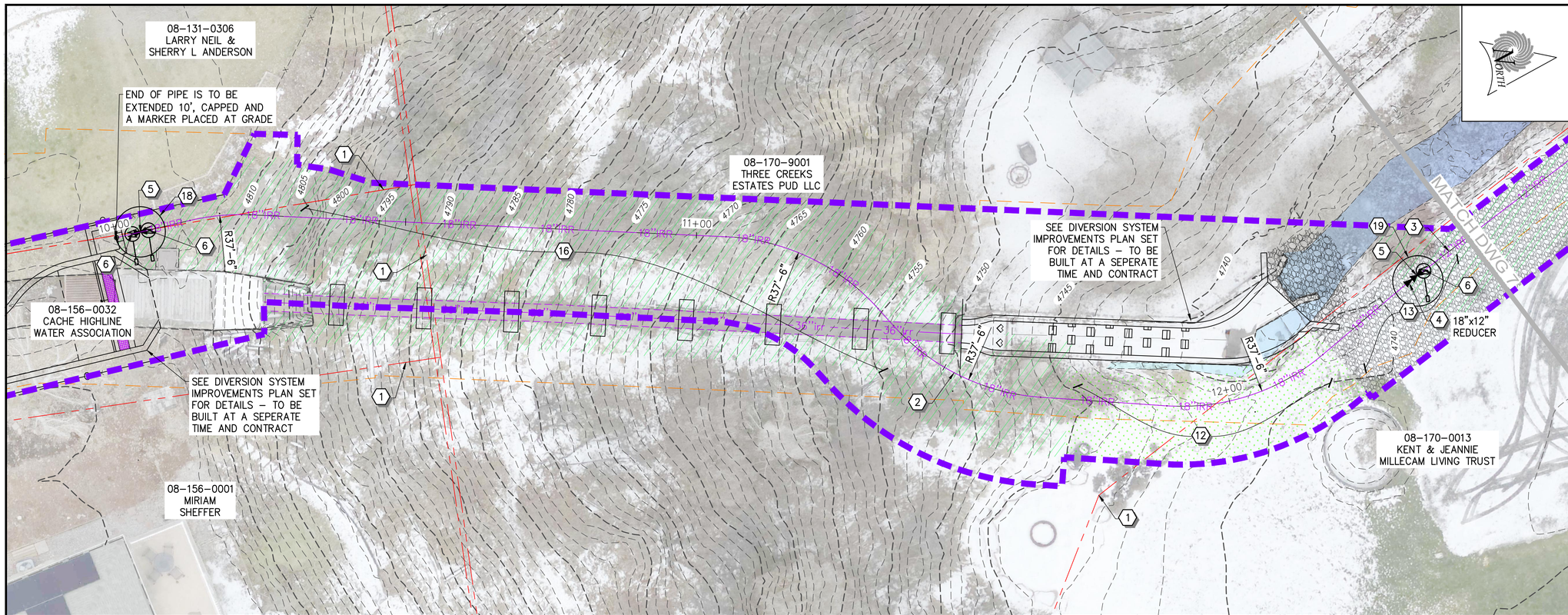
SMITHFIELD IRRIGATION COMPANY

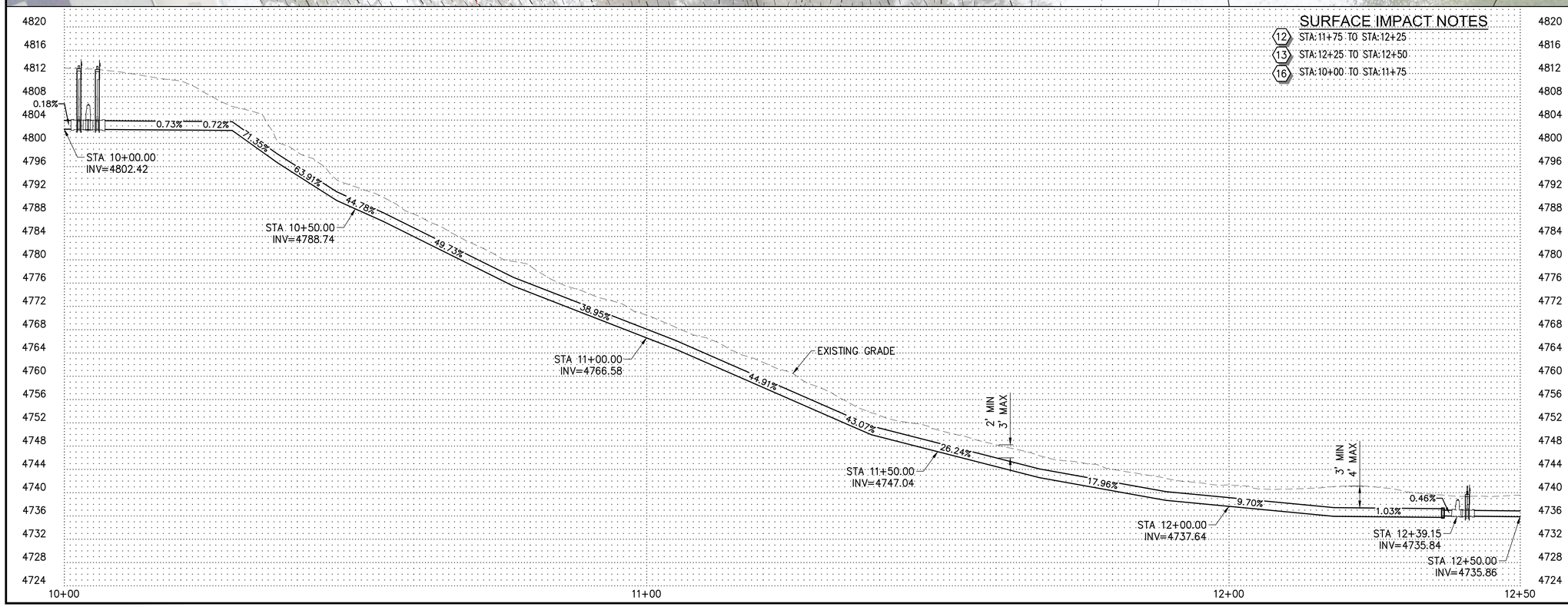
MILL RACE PRESSURIZED PIPELINE
GENERAL
DESIGN CRITERIA

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	5 of 26	GN5

BID SET

P:\Smithfield Irrigation Company\12499 – SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC-DSI-GN5-PP.dwg Oct 02, 2025 4:37pm jolley





SURFACE IMPACT NOTES

12. STA:11+75 TO STA:12+25
13. STA:12+25 TO STA:12+50
16. STA:10+00 TO STA:11+75

CONSTRUCTION NOTES

1. PROPERTY LINES
2. INSTALL 18" HDPE DR11 PIPE (A,B,C / D1)
3. INSTALL 12" HDPE DR11 PIPE (A,B,C / D1)
4. INSTALL FITTING PER PLAN
5. INSTALL ISOLATION VALVE (D / D1)
6. INSTALL AIR / VAC ASSEMBLY (E / D1)
7. INSTALL TRACER WIRE CURB BOX (G / D1)
8. INSTALL MEADOW LARK CROSSING – IN CONCRETE CULVERT, AREA SURROUNDING 12" PIPE IS TO BE CLEANED AND FILLED WITH FLOWABLE FILL – PIPE IS TO BE SECURED WITH STAINLESS STEEL STRAPS (F / D1)
9. INSTALL SUMMIT CREEK CROSSING (K / D1)
10. INSTALL METER MANHOLE (E / D2)
11. INSTALL DIRECTIONAL BORE W/ 12" HDPE DR11 PIPE – NO TRACER WIRE REQUIRED AT BORE
12. RESTORE AREA WITH LANDSCAPING SOD OR MATCHING LANDSCAPING LEVEL WITH SURROUNDING AREA
13. RESTORE AREA WITH GRAVEL MATCHING EXISTING GRAVEL SURFACE – RESTORED AREA TO HAVE 3" MIN GRAVEL
14. PROTECT EXISTING ROCK WALLS IN PLACE
15. PROTECT EXISTING CONCRETE STRUCTURE IN PLACE
16. VEGETATION IN AREA TO BE TRIMMED / REMOVED AS NEEDED FOR PIPE INSTALLATION
17. PLACE ROCKS ALONG BANK WHERE LAND OWNERS HAVE LINED THEIR BANKS
18. CONNECTION #1 (H / D1)
19. CONNECTION #2 (J / D1)
20. INSTALL 4" HDPE DR11 PIPE (A,B,C / D1)
21. INSTALL 8" HDPE DR11 PIPE (A,B,C / D1)
22. INSTALL 4'ø PERFORATED MANHOLE (A, B / D2)
23. INSTALL SERVICE CONNECTION (D / D3)
24. INFILL OLD IRRIGATION DITCH FOR 20' EAST AND WEST OF PIPE CROSSING – COMPACT TO 90%
25. SAWCUT ASPHALT TO PROVIDE CLEAN EDGE – REMOVE ASPALT PAVEMENT
26. REPLACE ASPHALT PAVEMENT (C / D2)
27. RESTORE GRAVEL DRIVEWAY (C / D3)
28. REMOVE CURB AND GUTTER OR SIDEWALK IN FULL SECTIONS
29. REPLACE SIDEWALK / ADA RAMP (A / D3)
30. REPLACE CURB AND GUTTER (B / D3)
31. INSTALL 8" C900 PIPE FROM REDUCER AND SPLICE INTO EXISTING PIPES W/ COUPLER (A,B,C / D1)
32. EXISTING PUMP HOUSE REPLUMBING (A / D5)

SCALE
0 10' 20'

HORIZ: 1" = 10' : 22 x 34
HORIZ: 1" = 20' : 11 x 17
VERT: 1" = 10' : 22 x 34
VERT: 1" = 20' : 11 x 17

811 Know what's **below.** **Call** before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

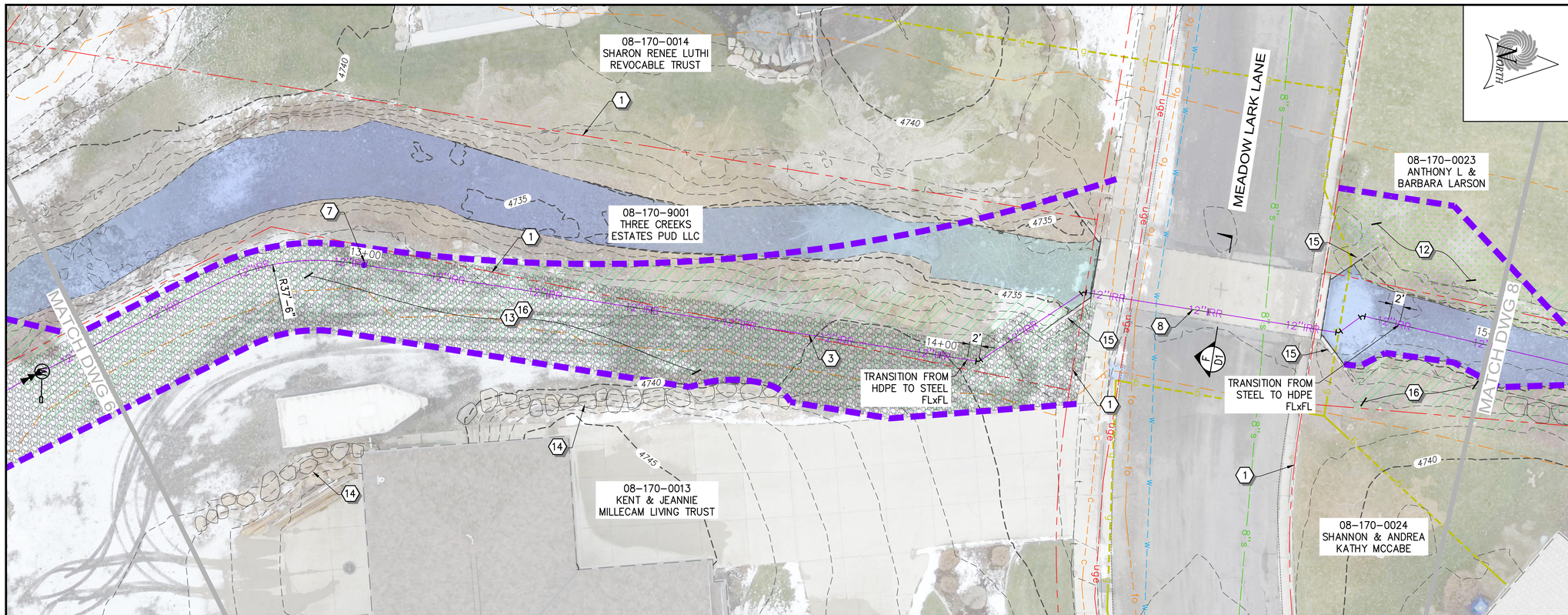
SMITHFIELD IRRIGATION COMPANY

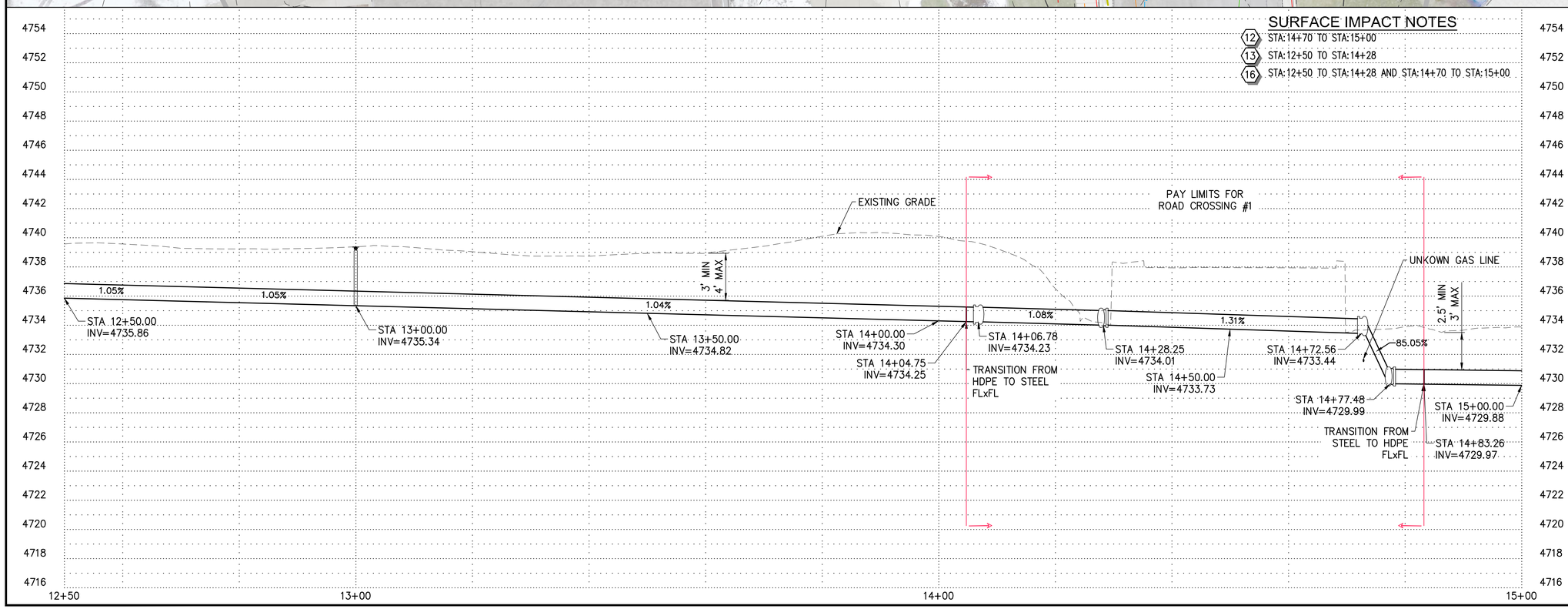
MILL RACE PRESSURIZED PIPELINE
PRESSURIZED PIPELINE
PLAN AND PROFILE

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	6 of 26	PP1

BID SET

P:\Smithfield Irrigation Company\12499 – SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC-DSI-18-12 INCH-PP1.dwg Oct 02, 2025 4:37pm jpilley





CONSTRUCTION NOTES

1. PROPERTY LINES
2. INSTALL 18" HDPE DR11 PIPE (A,B,C / D1)
3. INSTALL 12" HDPE DR11 PIPE (A,B,C / D1)
4. INSTALL FITTING PER PLAN
5. INSTALL ISOLATION VALVE (D / D1)
6. INSTALL AIR / VAC ASSEMBLY (E / D1)
7. INSTALL TRACER WIRE CURB BOX (G / D1)
8. INSTALL MEADOW LARK CROSSING – IN CONCRETE CULVERT, AREA SURROUNDING 12" PIPE IS TO BE CLEANED AND FILLED WITH FLOWABLE FILL – PIPE IS TO BE SECURED WITH STAINLESS STEEL STRAPS (F / D1)
9. INSTALL SUMMIT CREEK CROSSING (K / D1)
10. INSTALL METER MANHOLE (E / D2)
11. INSTALL DIRECTIONAL BORE W/ 12" HDPE DR11 PIPE – NO TRACER WIRE REQUIRED AT BORE
12. RESTORE AREA WITH LANDSCAPING SOD OR MATCHING LANDSCAPING LEVEL WITH SURROUNDING AREA
13. RESTORE AREA WITH GRAVEL MATCHING EXISTING GRAVEL SURFACE – RESTORED AREA TO HAVE 3" MIN GRAVEL
14. PROTECT EXISTING ROCK WALLS IN PLACE
15. PROTECT EXISTING CONCRETE STRUCTURE IN PLACE
16. VEGETATION IN AREA TO BE TRIMMED / REMOVED AS NEEDED FOR PIPE INSTALLATION
17. PLACE ROCKS ALONG BANK WHERE LAND OWNERS HAVE LINED THEIR BANKS
18. CONNECTION #1 (H / D1)
19. CONNECTION #2 (J / D1)
20. INSTALL 4" HDPE DR11 PIPE (A,B,C / D1)
21. INSTALL 8" HDPE DR11 PIPE (A,B,C / D1)
22. INSTALL 4'ø PERFORATED MANHOLE (A,B / D2)
23. INSTALL SERVICE CONNECTION (D / D3)
24. INFILL OLD IRRIGATION DITCH FOR 20' EAST AND WEST OF PIPE CROSSING – COMPACT TO 90%
25. SAWCUT ASPHALT TO PROVIDE CLEAN EDGE – REMOVE ASPALT PAVEMENT
26. REPLACE ASPHALT PAVEMENT (C / D2)
27. RESTORE GRAVEL DRIVEWAY (C / D3)
28. REMOVE CURB AND GUTTER OR SIDEWALK IN FULL SECTIONS
29. REPLACE SIDEWALK / ADA RAMP (A / D3)
30. REPLACE CURB AND GUTTER (B / D3)
31. INSTALL 8" C900 PIPE FROM REDUCER AND SPLICE INTO EXISTING PIPES W/ COUPLER (A,B,C / D1)
32. EXISTING PUMP HOUSE REPLUMBING (A / D5)

SCALE
0 10' 20'

HORIZ: 1" = 10' : 22 x 34
HORIZ: 1" = 20' : 11 x 17
VERT: 1" = 4' : 22 x 34
VERT: 1" = 8' : 11 x 17

811 Know what's below. Call before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

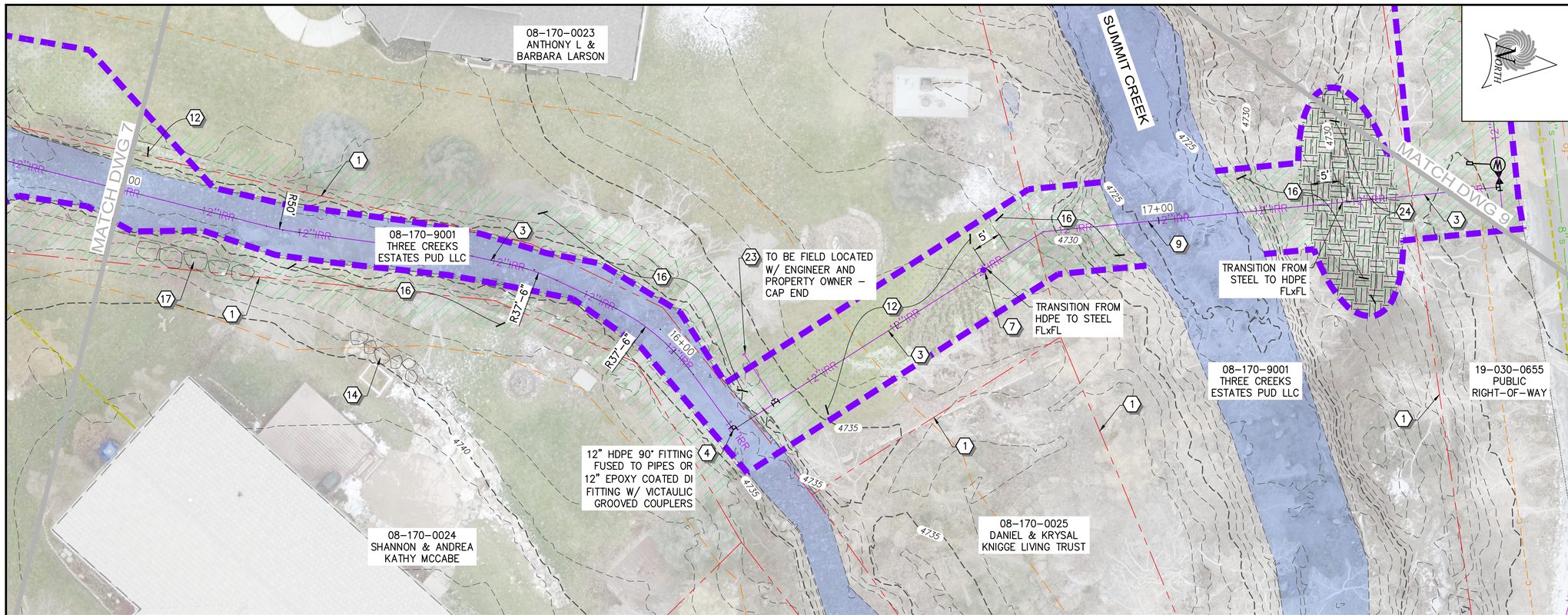
SMITHFIELD IRRIGATION COMPANY

MILL RACE PRESSURIZED PIPELINE
PRESSURIZED PIPELINE
PLAN AND PROFILE

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	7 of 26	PP2

BID SET

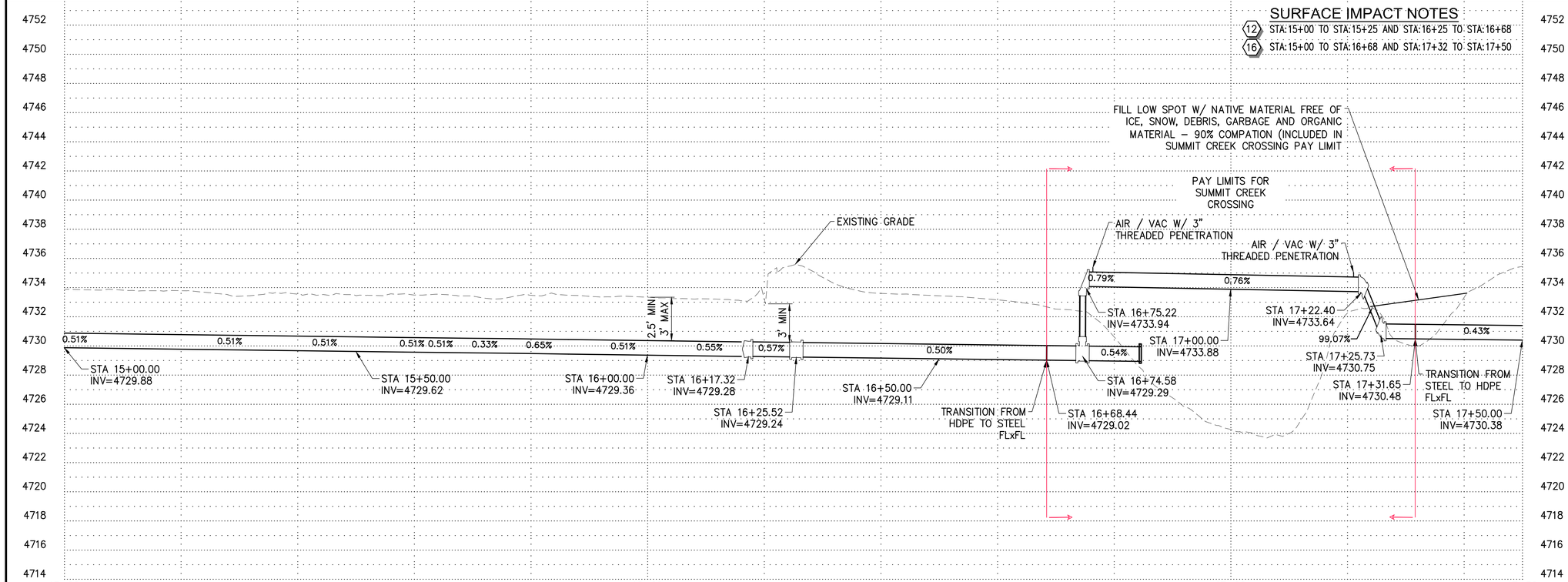
P:\Smithfield Irrigation Company\12499 – SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC-DSI-18-12 NCH-PP2.dwg Oct 02, 2025 4:38pm jjolley



SURFACE IMPACT NOTES

(12) STA:15+00 TO STA:15+25 AND STA:16+25 TO STA:16+68

(16) STA:15+00 TO STA:16+68 AND STA:17+32 TO STA:17+50



CONSTRUCTION NOTES

1. PROPERTY LINES
2. INSTALL 18" HDPE DR11 PIPE (A,B,C / D1)
3. INSTALL 12" HDPE DR11 PIPE (A,B,C / D1)
4. INSTALL FITTING PER PLAN
5. INSTALL ISOLATION VALVE (D / D1)
6. INSTALL AIR / VAC ASSEMBLY (E / D1)
7. INSTALL TRACER WIRE CURB BOX (G / D1)
8. INSTALL MEADOW LARK CROSSING – IN CONCRETE CULVERT, AREA SURROUNDING 12" PIPE IS TO BE CLEANED AND FILLED WITH FLOWABLE FILL – PIPE IS TO BE SECURED WITH STAINLESS STEEL STRAPS (F / D1)
9. INSTALL SUMMIT CREEK CROSSING (K / D1)
10. INSTALL METER MANHOLE (E / D2)
11. INSTALL DIRECTIONAL BORE W/ 12" HDPE DR11 PIPE – NO TRACER WIRE REQUIRED AT BORE
12. RESTORE AREA WITH LANDSCAPING SOD OR MATCHING LANDSCAPING LEVEL WITH SURROUNDING AREA
13. RESTORE AREA WITH GRAVEL MATCHING EXISTING GRAVEL SURFACE – RESTORED AREA TO HAVE 3" MIN GRAVEL
14. PROTECT EXISTING ROCK WALLS IN PLACE
15. PROTECT EXISTING CONCRETE STRUCTURE IN PLACE
16. VEGETATION IN AREA TO BE TRIMMED / REMOVED AS NEEDED FOR PIPE INSTALLATION
17. PLACE ROCKS ALONG BANK WHERE LAND OWNERS HAVE LINED THEIR BANKS
18. CONNECTION #1 (H / D1)
19. CONNECTION #2 (J / D1)
20. INSTALL 4" HDPE DR11 PIPE (A,B,C / D1)
21. INSTALL 8" HDPE DR11 PIPE (A,B,C / D1)
22. INSTALL 4'ø PERFORATED MANHOLE (A, B / D2)
23. INSTALL SERVICE CONNECTION (D / D3)
24. INFILL OLD IRRIGATION DITCH FOR 20' EAST AND WEST OF PIPE CROSSING – COMPACT TO 90%
25. SAWCUT ASPHALT TO PROVIDE CLEAN EDGE – REMOVE ASPALT PAVEMENT
26. REPLACE ASPHALT PAVEMENT (C / D2)
27. RESTORE GRAVEL DRIVEWAY (C / D3)
28. REMOVE CURB AND GUTTER OR SIDEWALK IN FULL SECTIONS
29. REPLACE SIDEWALK / ADA RAMP (A / D3)
30. REPLACE CURB AND GUTTER (B / D3)
31. INSTALL 8" C900 PIPE FROM REDUCER AND SPLICE INTO EXISTING PIPES W/ COUPLER (A,B,C / D1)
32. EXISTING PUMP HOUSE REPLUMBING (A / D5)

SCALE
0 10' 20'

HORIZ: 1" = 10' : 22 x 34
HORIZ: 1" = 20' : 11 x 17
VERT: 1" = 4' : 22 x 34
VERT: 1" = 8' : 11 x 17

811 Know what's **below.** **Call** before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

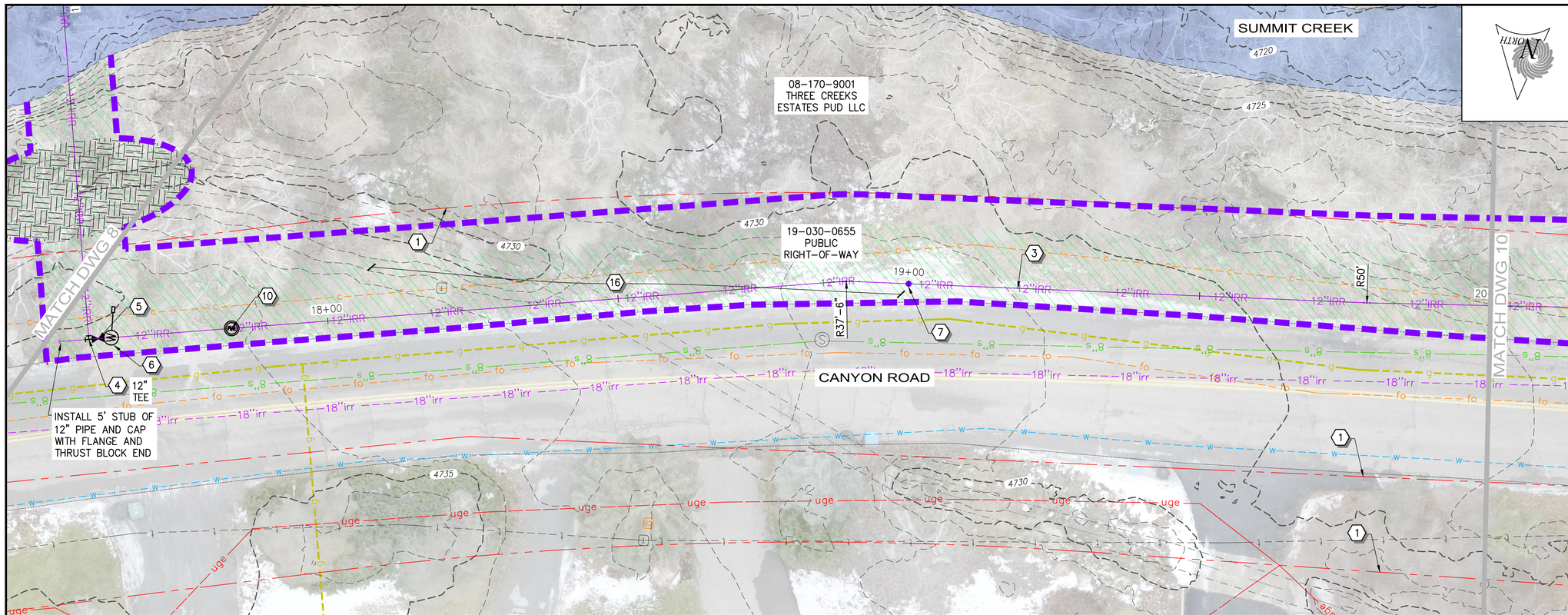
SMITHFIELD IRRIGATION COMPANY

MILL RACE PRESSURIZED PIPELINE
PRESSURIZED PIPELINE
PLAN AND PROFILE

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	8 of 26	PP3

BID SET

P:\Smithfield Irrigation Company\12499 – SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC-DSI-18-12 INCH-PP3.dwg Oct 02, 2025 4:39pm jjolley

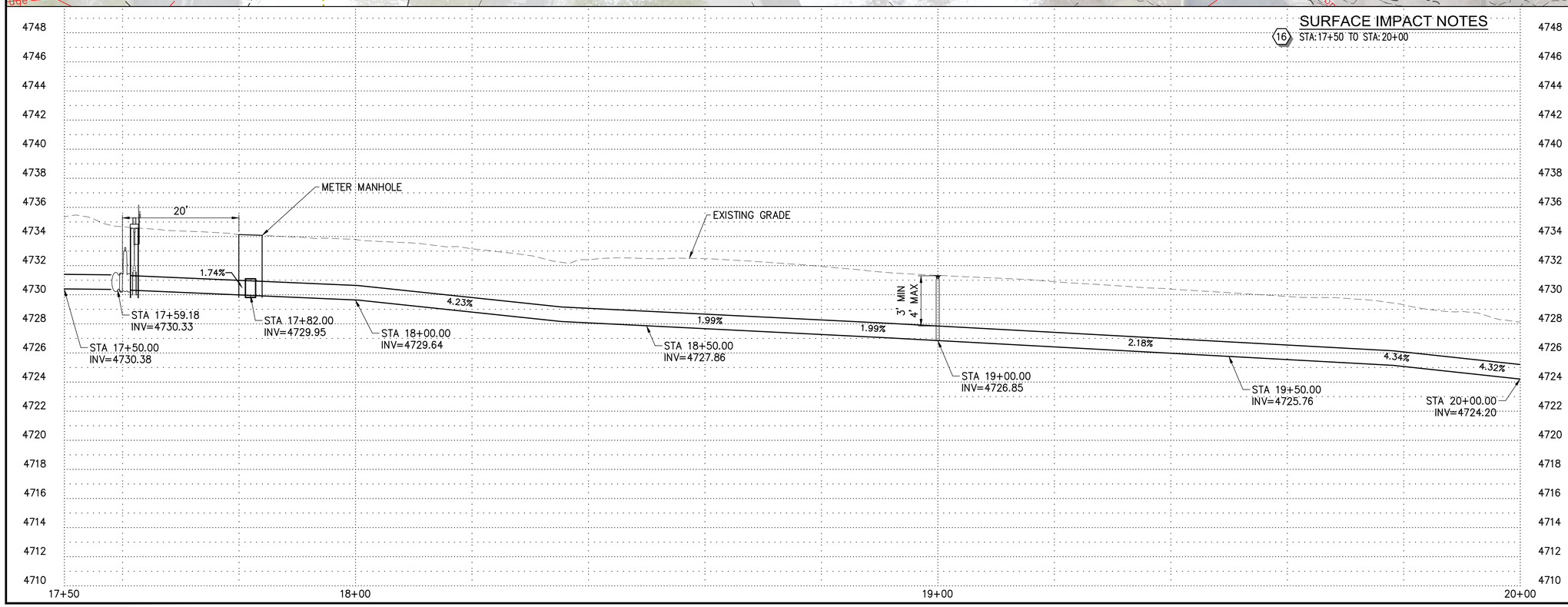


CONSTRUCTION NOTES

1. PROPERTY LINES
2. INSTALL 18" HDPE DR11 PIPE (A,B,C / D1)
3. INSTALL 12" HDPE DR11 PIPE (A,B,C / D1)
4. INSTALL FITTING PER PLAN
5. INSTALL ISOLATION VALVE (D / D1)
6. INSTALL AIR / VAC ASSEMBLY (E / D1)
7. INSTALL TRACER WIRE CURB BOX (G / D1)
8. INSTALL MEADOW LARK CROSSING – IN CONCRETE CULVERT, AREA SURROUNDING 12" PIPE IS TO BE CLEANED AND FILLED WITH FLOWABLE FILL – PIPE IS TO BE SECURED WITH STAINLESS STEEL STRAPS (F / D1)
9. INSTALL SUMMIT CREEK CROSSING (K / D1)
10. INSTALL METER MANHOLE (E / D2)
11. INSTALL DIRECTIONAL BORE W/ 12" HDPE DR11 PIPE – NO TRACER WIRE REQUIRED AT BORE
12. RESTORE AREA WITH LANDSCAPING SOD OR MATCHING LANDSCAPING LEVEL WITH SURROUNDING AREA
13. RESTORE AREA WITH GRAVEL MATCHING EXISTING GRAVEL SURFACE – RESTORED AREA TO HAVE 3" MIN GRAVEL
14. PROTECT EXISTING ROCK WALLS IN PLACE
15. PROTECT EXISTING CONCRETE STRUCTURE IN PLACE
16. VEGETATION IN AREA TO BE TRIMMED / REMOVED AS NEEDED FOR PIPE INSTALLATION
17. PLACE ROCKS ALONG BANK WHERE LAND OWNERS HAVE LINED THEIR BANKS
18. CONNECTION #1 (H / D1)
19. CONNECTION #2 (J / D1)
20. INSTALL 4" HDPE DR11 PIPE (A,B,C / D1)
21. INSTALL 8" HDPE DR11 PIPE (A,B,C / D1)
22. INSTALL 4'ø PERFORATED MANHOLE (A,B / D2)
23. INSTALL SERVICE CONNECTION (D / D3)
24. INFILL OLD IRRIGATION DITCH FOR 20' EAST AND WEST OF PIPE CROSSING – COMPACT TO 90%
25. SAWCUT ASPHALT TO PROVIDE CLEAN EDGE – REMOVE ASPALT PAVEMENT
26. REPLACE ASPHALT PAVEMENT (C / D2)
27. RESTORE GRAVEL DRIVEWAY (C / D3)
28. REMOVE CURB AND GUTTER OR SIDEWALK IN FULL SECTIONS
29. REPLACE SIDEWALK / ADA RAMP (A / D3)
30. REPLACE CURB AND GUTTER (B / D3)
31. INSTALL 8" C900 PIPE FROM REDUCER AND SPLICE INTO EXISTING PIPES W/ COUPLER (A,B,C / D1)
32. EXISTING PUMP HOUSE REPLUMBING (A / D5)

SURFACE IMPACT NOTES

16. STA:17+50 TO STA:20+00



SCALE
0 10' 20'

HORIZ: 1" = 10' : 22 x 34
HORIZ: 1" = 20' : 11 x 17
VERT: 1" = 4' : 22 x 34
VERT: 1" = 8' : 11 x 17

811 Know what's **below.** **Call** before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

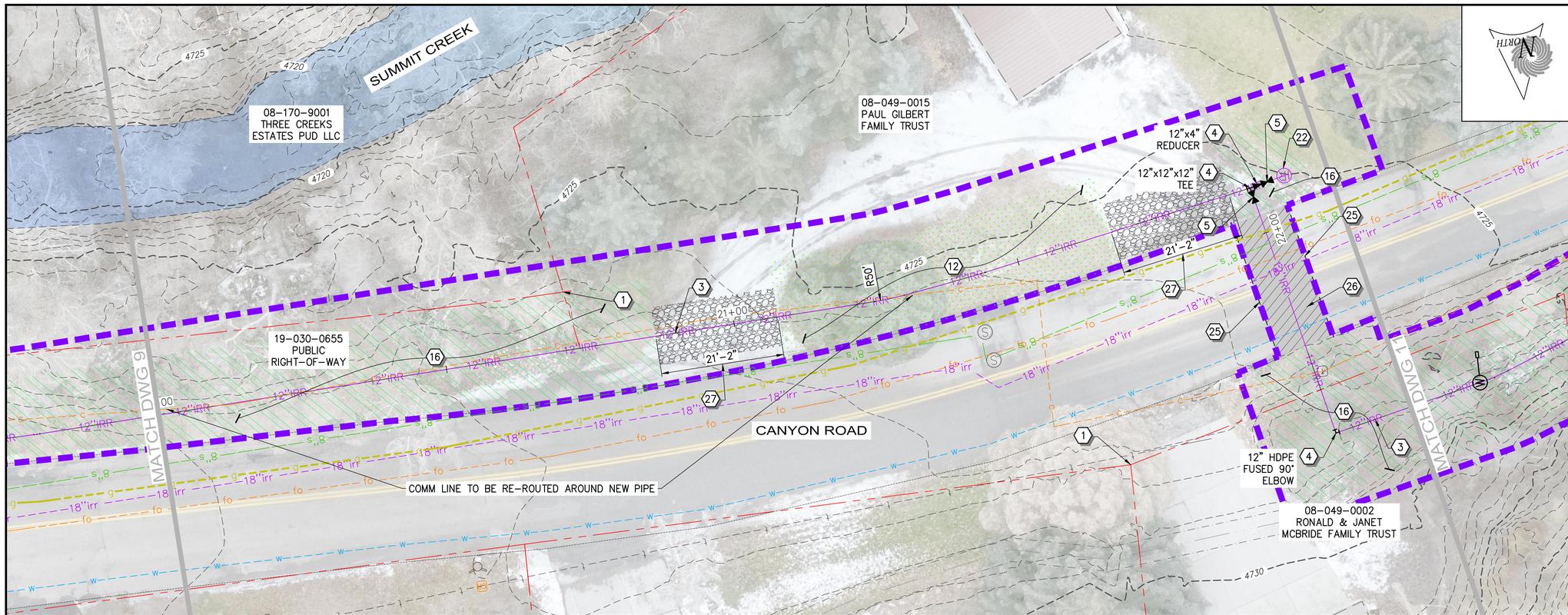
SMITHFIELD IRRIGATION COMPANY

MILL RACE PRESSURIZED PIPELINE
PRESSURIZED PIPELINE
PLAN AND PROFILE

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	9 of 26	PP4

BID SET

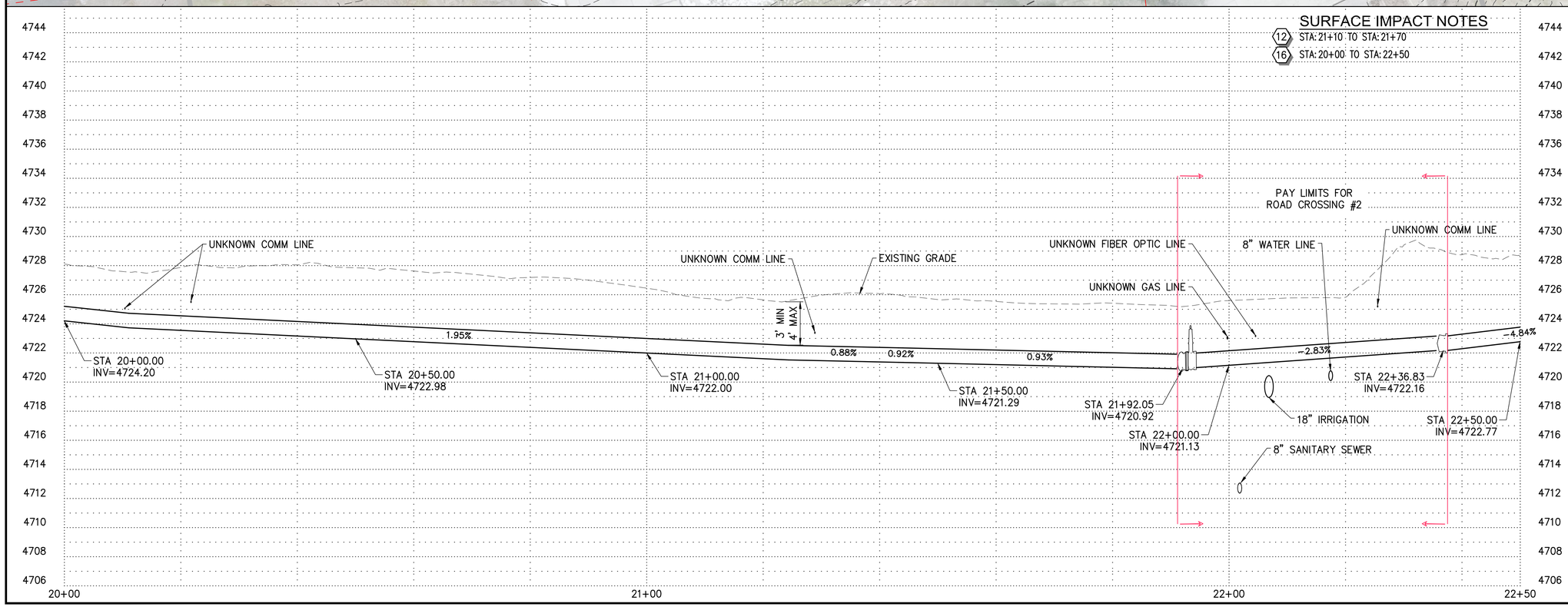
P:\Smithfield Irrigation Company\12499 – SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC-DSI-18-12 NCH-PP4.dwg Oct 02, 2025 4:40pm jjolley



SURFACE IMPACT NOTES

12 STA: 21+10 TO STA: 21+70

16 STA: 20+00 TO STA: 22+50



CONSTRUCTION NOTES

1. PROPERTY LINES
2. INSTALL 18" HDPE DR11 PIPE (A,B,C / D1)
3. INSTALL 12" HDPE DR11 PIPE (A,B,C / D1)
4. INSTALL FITTING PER PLAN
5. INSTALL ISOLATION VALVE (D / D1)
6. INSTALL AIR / VAC ASSEMBLY (E / D1)
7. INSTALL TRACER WIRE CURB BOX (G / D1)
8. INSTALL MEADOW LARK CROSSING – IN CONCRETE CULVERT, AREA SURROUNDING 12" PIPE IS TO BE CLEANED AND FILLED WITH FLOWABLE FILL – PIPE IS TO BE SECURED WITH STAINLESS STEEL STRAPS (F / D1)
9. INSTALL SUMMIT CREEK CROSSING (K / D1)
10. INSTALL METER MANHOLE (E / D2)
11. INSTALL DIRECTIONAL BORE W/ 12" HDPE DR11 PIPE – NO TRACER WIRE REQUIRED AT BORE
12. RESTORE AREA WITH LANDSCAPING SOD OR MATCHING LANDSCAPING LEVEL WITH SURROUNDING AREA
13. RESTORE AREA WITH GRAVEL MATCHING EXISTING GRAVEL SURFACE – RESTORED AREA TO HAVE 3" MIN GRAVEL
14. PROTECT EXISTING ROCK WALLS IN PLACE
15. PROTECT EXISTING CONCRETE STRUCTURE IN PLACE
16. VEGETATION IN AREA TO BE TRIMMED / REMOVED AS NEEDED FOR PIPE INSTALLATION
17. PLACE ROCKS ALONG BANK WHERE LAND OWNERS HAVE LINED THEIR BANKS
18. CONNECTION #1 (H / D1)
19. CONNECTION #2 (J / D1)
20. INSTALL 4" HDPE DR11 PIPE (A,B,C / D1)
21. INSTALL 8" HDPE DR11 PIPE (A,B,C / D1)
22. INSTALL 4'ø PERFORATED MANHOLE (A, B / D2)
23. INSTALL SERVICE CONNECTION (D / D3)
24. INFILL OLD IRRIGATION DITCH FOR 20' EAST AND WEST OF PIPE CROSSING – COMPACT TO 90%
25. SAWCUT ASPHALT TO PROVIDE CLEAN EDGE – REMOVE ASPALT PAVEMENT
26. REPLACE ASPHALT PAVEMENT (C / D2)
27. RESTORE GRAVEL DRIVEWAY (C / D3)
28. REMOVE CURB AND GUTTER OR SIDEWALK IN FULL SECTIONS
29. REPLACE SIDEWALK / ADA RAMP (A / D3)
30. REPLACE CURB AND GUTTER (B / D3)
31. INSTALL 8" C900 PIPE FROM REDUCER AND SPLICE INTO EXISTING PIPES W/ COUPLER (A,B,C / D1)
32. EXISTING PUMP HOUSE REPLUMBING (A / D5)

SCALE
0 10' 20'

HORIZ: 1" = 10' : 22 x 34
HORIZ: 1" = 20' : 11 x 17
VERT: 1" = 4' : 22 x 34
VERT: 1" = 8' : 11 x 17

811 Know what's below. Call before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

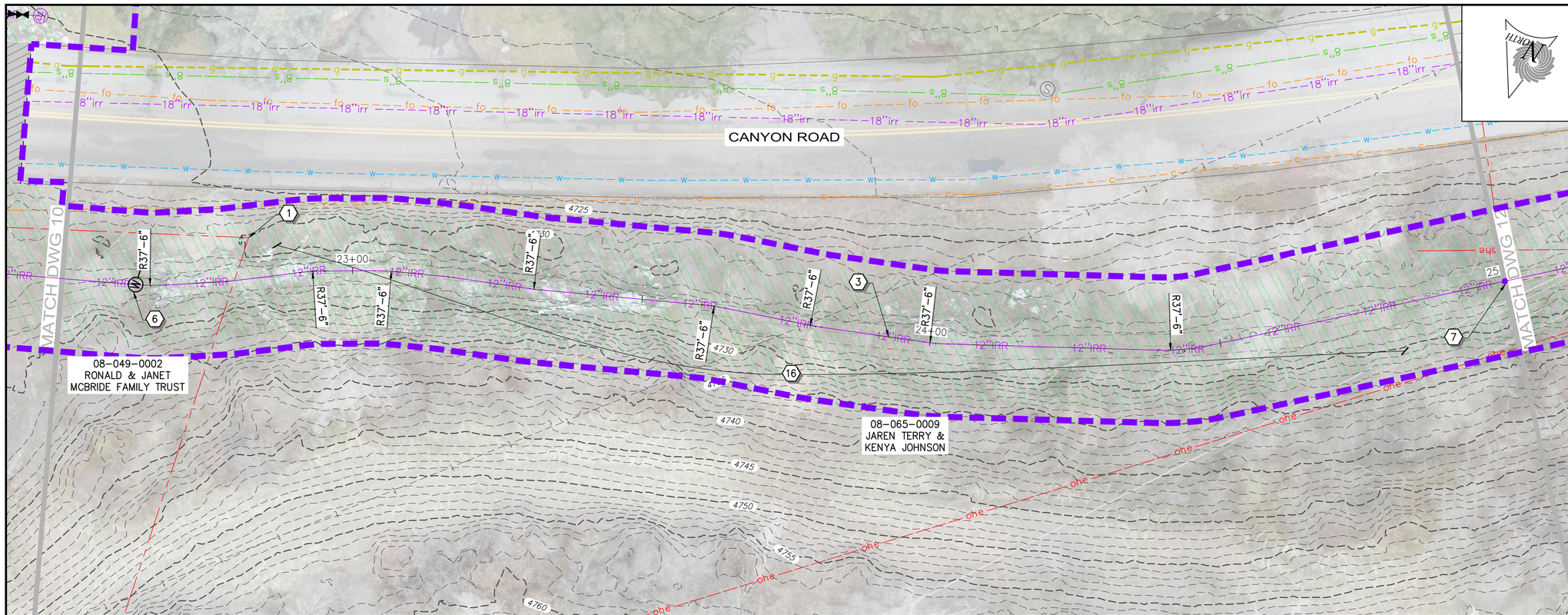
SMITHFIELD IRRIGATION COMPANY

MILL RACE PRESSURIZED PIPELINE
PRESSURIZED PIPELINE
PLAN AND PROFILE

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	10 of 26	PP5

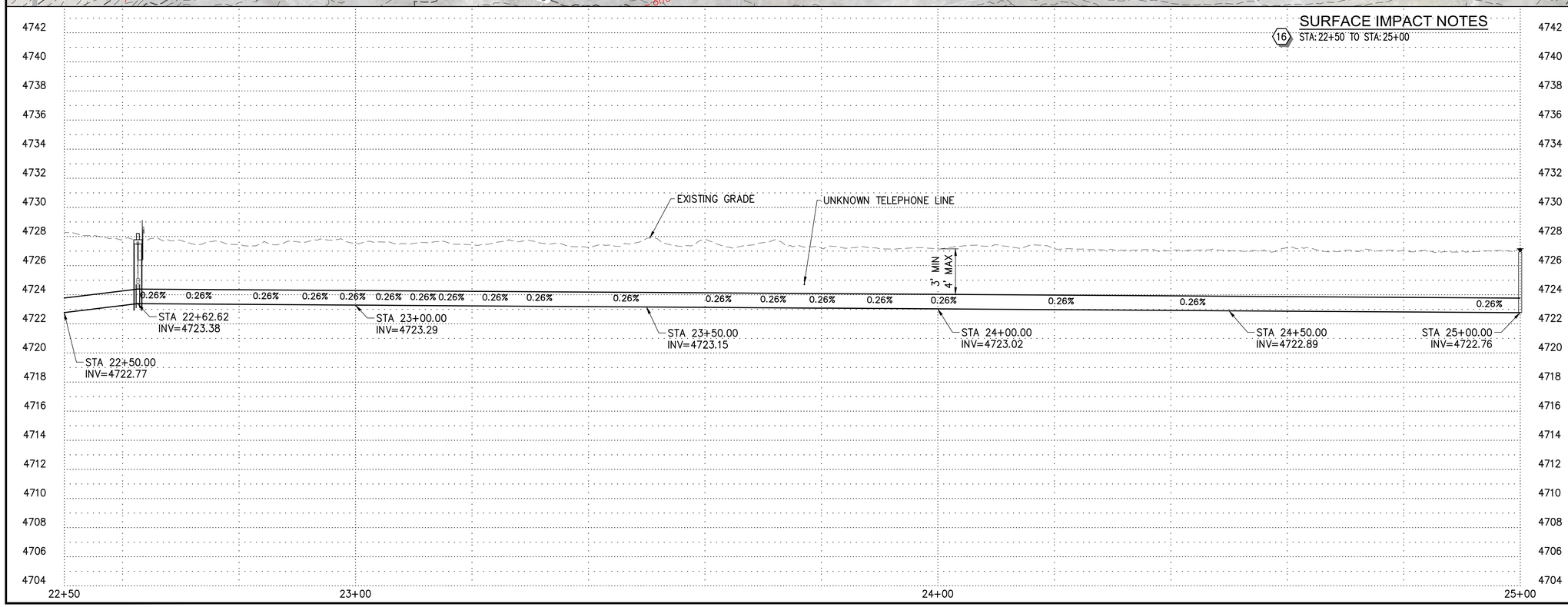
BID SET

P:\Smithfield Irrigation Company\12499 – SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC-DSI-18-12 INCH-PP5.dwg Oct 02, 2025 4:41pm jpilley



SURFACE IMPACT NOTES

(16) STA:22+50 TO STA:25+00



CONSTRUCTION NOTES

1. PROPERTY LINES
2. INSTALL 18" HDPE DR11 PIPE (A,B,C / D1)
3. INSTALL 12" HDPE DR11 PIPE (A,B,C / D1)
4. INSTALL FITTING PER PLAN
5. INSTALL ISOLATION VALVE (D / D1)
6. INSTALL AIR / VAC ASSEMBLY (E / D1)
7. INSTALL TRACER WIRE CURB BOX (G / D1)
8. INSTALL MEADOW LARK CROSSING – IN CONCRETE CULVERT, AREA SURROUNDING 12" PIPE IS TO BE CLEANED AND FILLED WITH FLOWABLE FILL – PIPE IS TO BE SECURED WITH STAINLESS STEEL STRAPS (F / D1)
9. INSTALL SUMMIT CREEK CROSSING (K / D1)
10. INSTALL METER MANHOLE (E / D2)
11. INSTALL DIRECTIONAL BORE W/ 12" HDPE DR11 PIPE – NO TRACER WIRE REQUIRED AT BORE
12. RESTORE AREA WITH LANDSCAPING SOD OR MATCHING LANDSCAPING LEVEL WITH SURROUNDING AREA
13. RESTORE AREA WITH GRAVEL MATCHING EXISTING GRAVEL SURFACE – RESTORED AREA TO HAVE 3" MIN GRAVEL
14. PROTECT EXISTING ROCK WALLS IN PLACE
15. PROTECT EXISTING CONCRETE STRUCTURE IN PLACE
16. VEGETATION IN AREA TO BE TRIMMED / REMOVED AS NEEDED FOR PIPE INSTALLATION
17. PLACE ROCKS ALONG BANK WHERE LAND OWNERS HAVE LINED THEIR BANKS
18. CONNECTION #1 (H / D1)
19. CONNECTION #2 (J / D1)
20. INSTALL 4" HDPE DR11 PIPE (A,B,C / D1)
21. INSTALL 8" HDPE DR11 PIPE (A,B,C / D1)
22. INSTALL 4'ø PERFORATED MANHOLE (A,B / D2)
23. INSTALL SERVICE CONNECTION (D / D3)
24. INFILL OLD IRRIGATION DITCH FOR 20' EAST AND WEST OF PIPE CROSSING – COMPACT TO 90%
25. SAWCUT ASPHALT TO PROVIDE CLEAN EDGE – REMOVE ASPALT PAVEMENT
26. REPLACE ASPHALT PAVEMENT (C / D2)
27. RESTORE GRAVEL DRIVEWAY (C / D3)
28. REMOVE CURB AND GUTTER OR SIDEWALK IN FULL SECTIONS
29. REPLACE SIDEWALK / ADA RAMP (A / D3)
30. REPLACE CURB AND GUTTER (B / D3)
31. INSTALL 8" C900 PIPE FROM REDUCER AND SPLICE INTO EXISTING PIPES W/ COUPLER (A,B,C / D1)
32. EXISTING PUMP HOUSE REPLUMBING (A / D5)

SCALE
0 10' 20'

HORIZ: 1" = 10' : 22 x 34
HORIZ: 1" = 20' : 11 x 17
VERT: 1" = 4' : 22 x 34
VERT: 1" = 8' : 11 x 17

811 Know what's **below.** **Call** before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

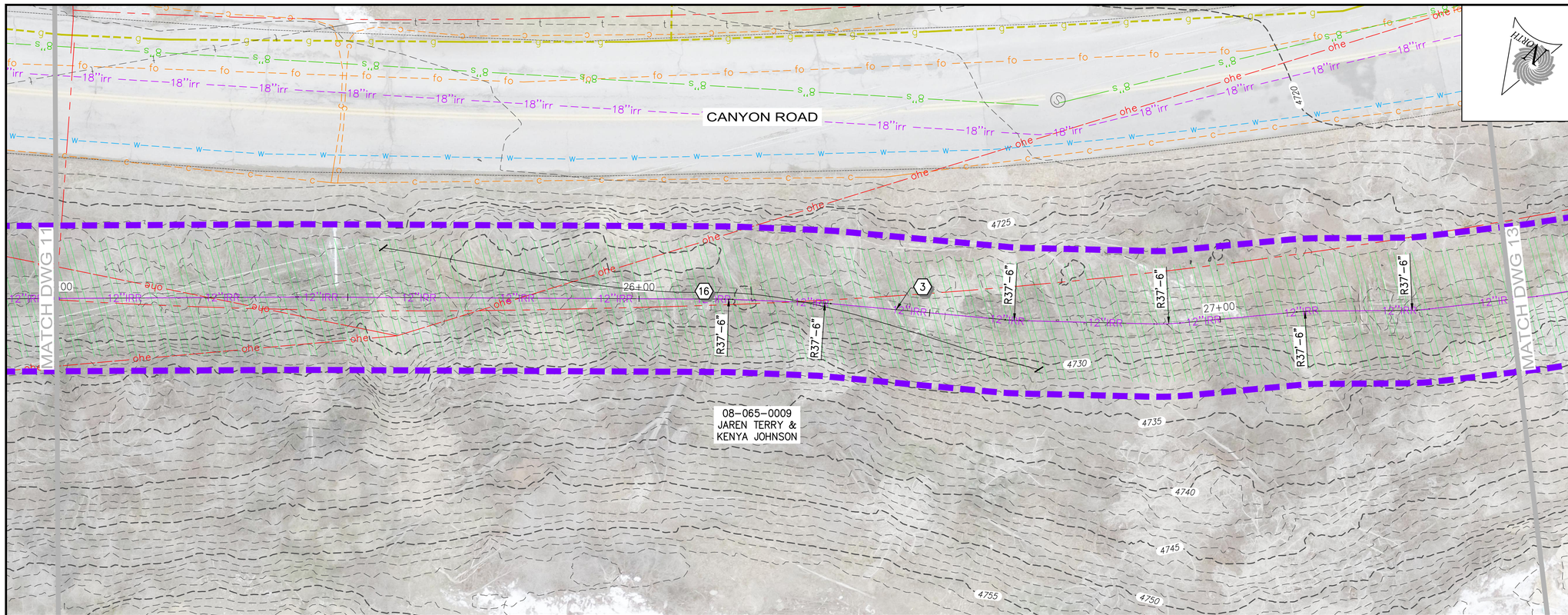
SMITHFIELD IRRIGATION COMPANY

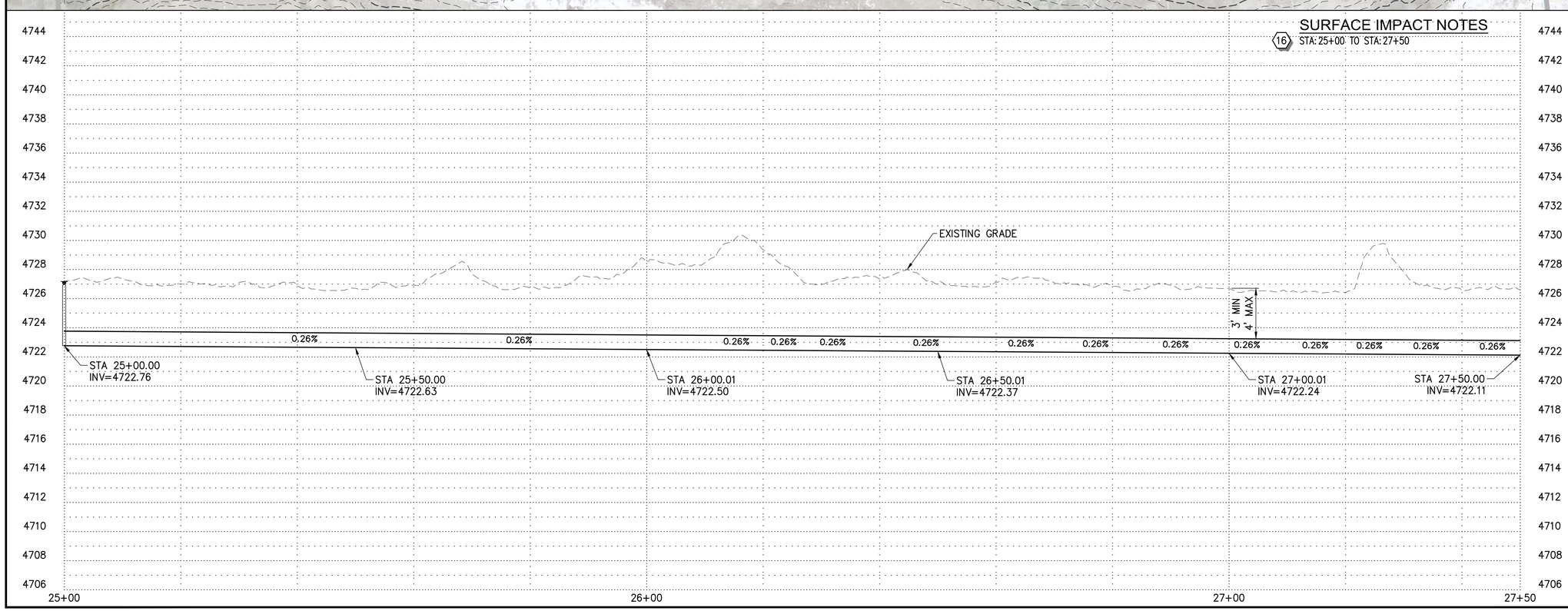
MILL RACE PRESSURIZED PIPELINE
PRESSURIZED PIPELINE
PLAN AND PROFILE

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	11 of 26	PP6

BID SET

P:\Smithfield Irrigation Company\12499 – SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC-DSI-18-12 INCH-PP6.dwg Oct 02, 2025 4:42pm jjolley





CONSTRUCTION NOTES

1. PROPERTY LINES
2. INSTALL 18" HDPE DR11 PIPE (A,B,C / D1)
3. INSTALL 12" HDPE DR11 PIPE (A,B,C / D1)
4. INSTALL FITTING PER PLAN
5. INSTALL ISOLATION VALVE (D / D1)
6. INSTALL AIR / VAC ASSEMBLY (E / D1)
7. INSTALL TRACER WIRE CURB BOX (G / D1)
8. INSTALL MEADOW LARK CROSSING – IN CONCRETE CULVERT, AREA SURROUNDING 12" PIPE IS TO BE CLEANED AND FILLED WITH FLOWABLE FILL – PIPE IS TO BE SECURED WITH STAINLESS STEEL STRAPS (F / D1)
9. INSTALL SUMMIT CREEK CROSSING (K / D1)
10. INSTALL METER MANHOLE (E / D2)
11. INSTALL DIRECTIONAL BORE W/ 12" HDPE DR11 PIPE – NO TRACER WIRE REQUIRED AT BORE
12. RESTORE AREA WITH LANDSCAPING SOD OR MATCHING LANDSCAPING LEVEL WITH SURROUNDING AREA
13. RESTORE AREA WITH GRAVEL MATCHING EXISTING GRAVEL SURFACE – RESTORED AREA TO HAVE 3" MIN GRAVEL
14. PROTECT EXISTING ROCK WALLS IN PLACE
15. PROTECT EXISTING CONCRETE STRUCTURE IN PLACE
16. VEGETATION IN AREA TO BE TRIMMED / REMOVED AS NEEDED FOR PIPE INSTALLATION
17. PLACE ROCKS ALONG BANK WHERE LAND OWNERS HAVE LINED THEIR BANKS
18. CONNECTION #1 (H / D1)
19. CONNECTION #2 (J / D1)
20. INSTALL 4" HDPE DR11 PIPE (A,B,C / D1)
21. INSTALL 8" HDPE DR11 PIPE (A,B,C / D1)
22. INSTALL 4'ø PERFORATED MANHOLE (A, B / D2)
23. INSTALL SERVICE CONNECTION (D / D3)
24. INFILL OLD IRRIGATION DITCH FOR 20' EAST AND WEST OF PIPE CROSSING – COMPACT TO 90%
25. SAWCUT ASPHALT TO PROVIDE CLEAN EDGE – REMOVE ASPALT PAVEMENT
26. REPLACE ASPHALT PAVEMENT (C / D2)
27. RESTORE GRAVEL DRIVEWAY (C / D3)
28. REMOVE CURB AND GUTTER OR SIDEWALK IN FULL SECTIONS
29. REPLACE SIDEWALK / ADA RAMP (A / D3)
30. REPLACE CURB AND GUTTER (B / D3)
31. INSTALL 8" C900 PIPE FROM REDUCER AND SPLICE INTO EXISTING PIPES W/ COUPLER (A,B,C / D1)
32. EXISTING PUMP HOUSE REPLUMBING (A / D5)

SCALE
0 10' 20'

HORIZ: 1" = 10' : 22 x 34
HORIZ: 1" = 20' : 11 x 17
VERT: 1" = 4' : 22 x 34
VERT: 1" = 8' : 11 x 17

811 Know what's **below.** **Call** before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

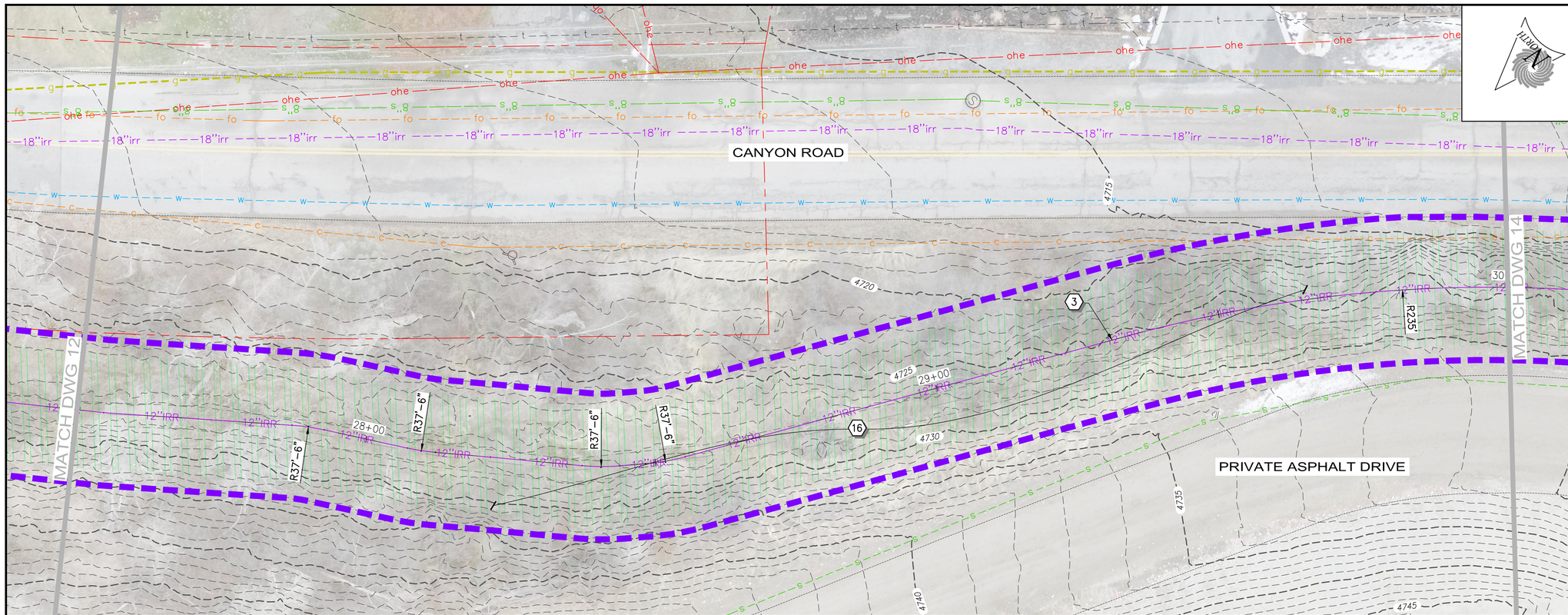
SMITHFIELD IRRIGATION COMPANY

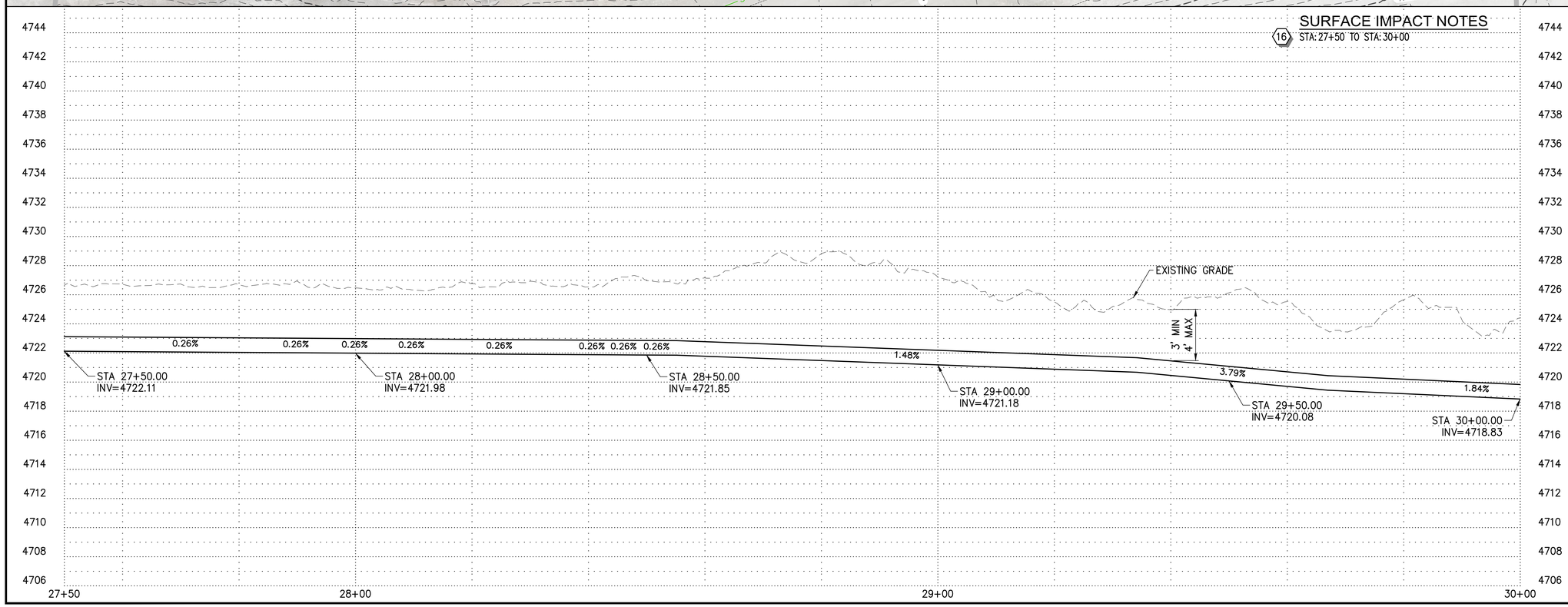
MILL RACE PRESSURIZED PIPELINE
PRESSURIZED PIPELINE
PLAN AND PROFILE

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	12 of 26	PP7

BID SET

P:\Smithfield Irrigation Company\12499 – SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC-DSI-18-12 NCH-PP7.dwg Oct 02, 2025 4:43pm jjolley





SURFACE IMPACT NOTES

16 STA:27+50 TO STA:30+00

CONSTRUCTION NOTES

1. PROPERTY LINES
2. INSTALL 18" HDPE DR11 PIPE (A,B,C / D1)
3. INSTALL 12" HDPE DR11 PIPE (A,B,C / D1)
4. INSTALL FITTING PER PLAN
5. INSTALL ISOLATION VALVE (D / D1)
6. INSTALL AIR / VAC ASSEMBLY (E / D1)
7. INSTALL TRACER WIRE CURB BOX (G / D1)
8. INSTALL MEADOW LARK CROSSING – IN CONCRETE CULVERT, AREA SURROUNDING 12" PIPE IS TO BE CLEANED AND FILLED WITH FLOWABLE FILL – PIPE IS TO BE SECURED WITH STAINLESS STEEL STRAPS (F / D1)
9. INSTALL SUMMIT CREEK CROSSING (K / D1)
10. INSTALL METER MANHOLE (E / D2)
11. INSTALL DIRECTIONAL BORE W/ 12" HDPE DR11 PIPE – NO TRACER WIRE REQUIRED AT BORE
12. RESTORE AREA WITH LANDSCAPING SOD OR MATCHING LANDSCAPING LEVEL WITH SURROUNDING AREA
13. RESTORE AREA WITH GRAVEL MATCHING EXISTING GRAVEL SURFACE – RESTORED AREA TO HAVE 3" MIN GRAVEL
14. PROTECT EXISTING ROCK WALLS IN PLACE
15. PROTECT EXISTING CONCRETE STRUCTURE IN PLACE
16. VEGETATION IN AREA TO BE TRIMMED / REMOVED AS NEEDED FOR PIPE INSTALLATION
17. PLACE ROCKS ALONG BANK WHERE LAND OWNERS HAVE LINED THEIR BANKS
18. CONNECTION #1 (H / D1)
19. CONNECTION #2 (J / D1)
20. INSTALL 4" HDPE DR11 PIPE (A,B,C / D1)
21. INSTALL 8" HDPE DR11 PIPE (A,B,C / D1)
22. INSTALL 4'ø PERFORATED MANHOLE (A, B / D2)
23. INSTALL SERVICE CONNECTION (D / D3)
24. INFILL OLD IRRIGATION DITCH FOR 20' EAST AND WEST OF PIPE CROSSING – COMPACT TO 90%
25. SAWCUT ASPHALT TO PROVIDE CLEAN EDGE – REMOVE ASPALT PAVEMENT
26. REPLACE ASPHALT PAVEMENT (C / D2)
27. RESTORE GRAVEL DRIVEWAY (C / D3)
28. REMOVE CURB AND GUTTER OR SIDEWALK IN FULL SECTIONS
29. REPLACE SIDEWALK / ADA RAMP (A / D3)
30. REPLACE CURB AND GUTTER (B / D3)
31. INSTALL 8" C900 PIPE FROM REDUCER AND SPLICE INTO EXISTING PIPES W/ COUPLER (A,B,C / D1)
32. EXISTING PUMP HOUSE REPLUMBING (A / D5)

SCALE
0 10' 20'

HORIZ: 1" = 10' : 22 x 34
HORIZ: 1" = 20' : 11 x 17
VERT: 1" = 4' : 22 x 34
VERT: 1" = 8' : 11 x 17

811 Know what's **below.** **Call** before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

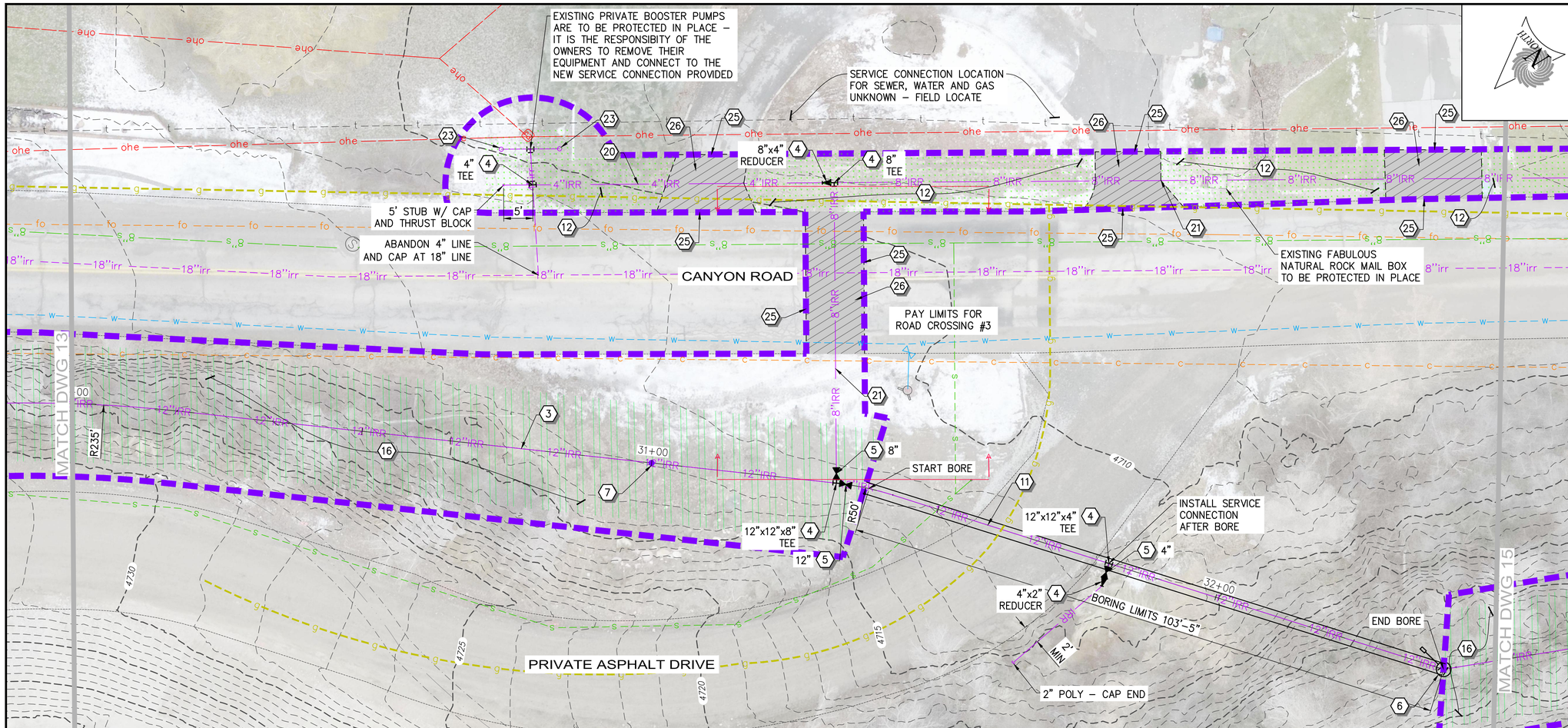
SMITHFIELD IRRIGATION COMPANY

MILL RACE PRESSURIZED PIPELINE
PRESSURIZED PIPELINE
PLAN AND PROFILE

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	13 of 26	PP8

BID SET

P:\Smithfield Irrigation Company\12499 – SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC-DSI-18-12 NCH-PP8.dwg Oct 02, 2025 4:44pm jjolley

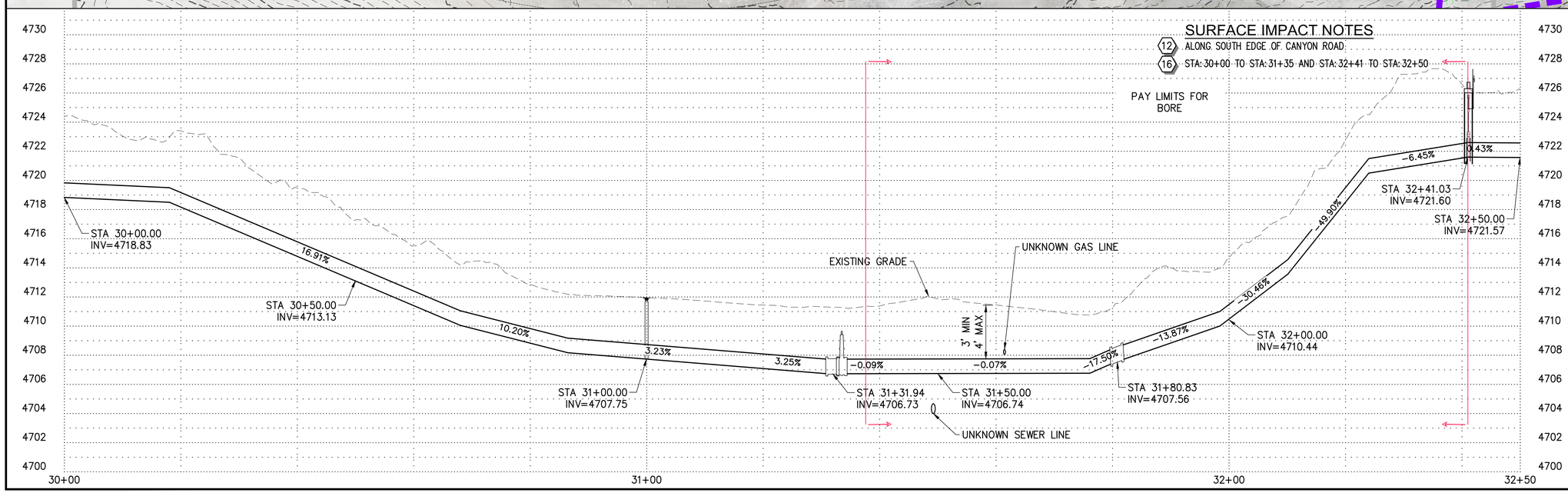


CONSTRUCTION NOTES

1. PROPERTY LINES
2. INSTALL 18" HDPE DR11 PIPE (A,B,C / D1)
3. INSTALL 12" HDPE DR11 PIPE (A,B,C / D1)
4. INSTALL FITTING PER PLAN
5. INSTALL ISOLATION VALVE (D / D1)
6. INSTALL AIR / VAC ASSEMBLY (E / D1)
7. INSTALL TRACER WIRE CURB BOX (G / D1)
8. INSTALL MEADOW LARK CROSSING – IN CONCRETE CULVERT, AREA SURROUNDING 12" PIPE IS TO BE CLEANED AND FILLED WITH FLOWABLE FILL – PIPE IS TO BE SECURED WITH STAINLESS STEEL STRAPS (F / D1)
9. INSTALL SUMMIT CREEK CROSSING (K / D1)
10. INSTALL METER MANHOLE (E / D2)
11. INSTALL DIRECTIONAL BORE W/ 12" HDPE DR11 PIPE – NO TRACER WIRE REQUIRED AT BORE
12. RESTORE AREA WITH LANDSCAPING SOD OR MATCHING LANDSCAPING LEVEL WITH SURROUNDING AREA
13. RESTORE AREA WITH GRAVEL MATCHING EXISTING GRAVEL SURFACE – RESTORED AREA TO HAVE 3" MIN GRAVEL
14. PROTECT EXISTING ROCK WALLS IN PLACE
15. PROTECT EXISTING CONCRETE STRUCTURE IN PLACE
16. VEGETATION IN AREA TO BE TRIMMED / REMOVED AS NEEDED FOR PIPE INSTALLATION
17. PLACE ROCKS ALONG BANK WHERE LAND OWNERS HAVE LINED THEIR BANKS
18. CONNECTION #1 (H / D1)
19. CONNECTION #2 (J / D1)
20. INSTALL 4" HDPE DR11 PIPE (A,B,C / D1)
21. INSTALL 8" HDPE DR11 PIPE (A,B,C / D1)
22. INSTALL 4'ø PERFORATED MANHOLE (A, B / D2)
23. INSTALL SERVICE CONNECTION (D / D3)
24. INFILL OLD IRRIGATION DITCH FOR 20' EAST AND WEST OF PIPE CROSSING – COMPACT TO 90%
25. SAWCUT ASPHALT TO PROVIDE CLEAN EDGE – REMOVE ASPALT PAVEMENT
26. REPLACE ASPHALT PAVEMENT (C / D2)
27. RESTORE GRAVEL DRIVEWAY (C / D3)
28. REMOVE CURB AND GUTTER OR SIDEWALK IN FULL SECTIONS
29. REPLACE SIDEWALK / ADA RAMP (A / D3)
30. REPLACE CURB AND GUTTER (B / D3)
31. INSTALL 8" C900 PIPE FROM REDUCER AND SPLICE INTO EXISTING PIPES W/ COUPLER (A,B,C / D1)
32. EXISTING PUMP HOUSE REPLUMBING (A / D5)

SCALE
0 10' 20'

HORIZ: 1" = 10' : 22 x 34
HORIZ: 1" = 20' : 11 x 17
VERT: 1" = 4' : 22 x 34
VERT: 1" = 8' : 11 x 17



811 Know what's below. Call before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

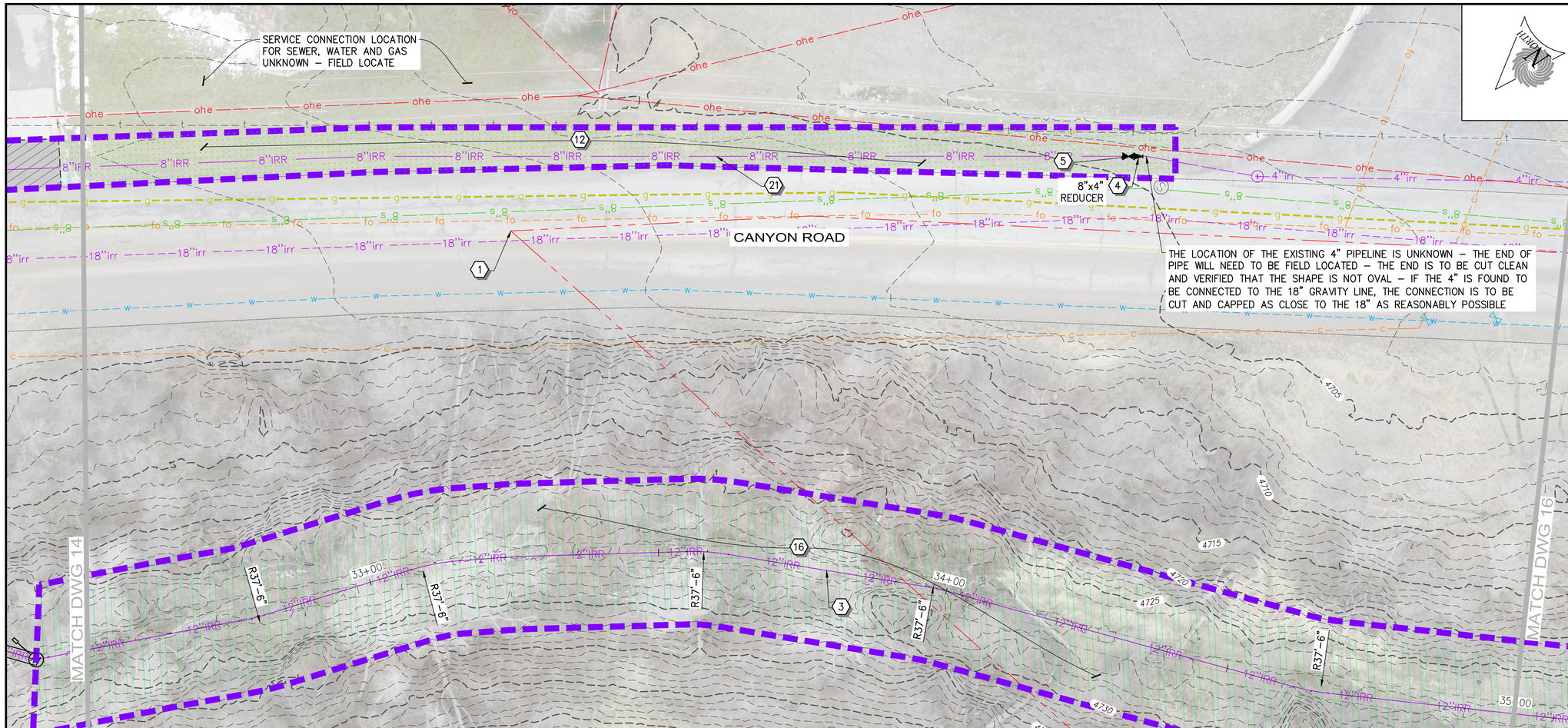
SMITHFIELD IRRIGATION COMPANY

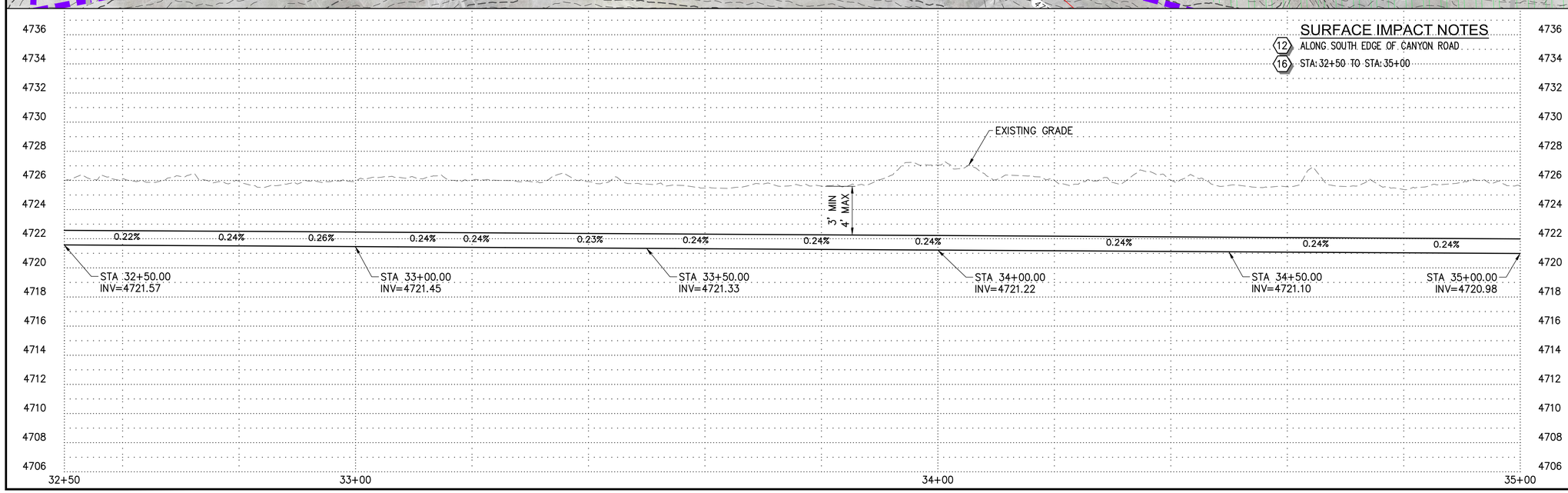
MILL RACE PRESSURIZED PIPELINE
PRESSURIZED PIPELINE
PLAN AND PROFILE

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	14 of 26	PP9

BID SET

P:\Smithfield Irrigation Company\12499 – SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC-DSI-18-12 INCH-PP9.dwg Oct 02, 2025 4:45pm jjolley





CONSTRUCTION NOTES

1. PROPERTY LINES
2. INSTALL 18" HDPE DR11 PIPE (A,B,C / D1)
3. INSTALL 12" HDPE DR11 PIPE (A,B,C / D1)
4. INSTALL FITTING PER PLAN
5. INSTALL ISOLATION VALVE (D / D1)
6. INSTALL AIR / VAC ASSEMBLY (E / D1)
7. INSTALL TRACER WIRE CURB BOX (G / D1)
8. INSTALL MEADOW LARK CROSSING – IN CONCRETE CULVERT, AREA SURROUNDING 12" PIPE IS TO BE CLEANED AND FILLED WITH FLOWABLE FILL – PIPE IS TO BE SECURED WITH STAINLESS STEEL STRAPS (F / D1)
9. INSTALL SUMMIT CREEK CROSSING (K / D1)
10. INSTALL METER MANHOLE (E / D2)
11. INSTALL DIRECTIONAL BORE W/ 12" HDPE DR11 PIPE – NO TRACER WIRE REQUIRED AT BORE
12. RESTORE AREA WITH LANDSCAPING SOD OR MATCHING LANDSCAPING LEVEL WITH SURROUNDING AREA
13. RESTORE AREA WITH GRAVEL MATCHING EXISTING GRAVEL SURFACE – RESTORED AREA TO HAVE 3" MIN GRAVEL
14. PROTECT EXISTING ROCK WALLS IN PLACE
15. PROTECT EXISTING CONCRETE STRUCTURE IN PLACE
16. VEGETATION IN AREA TO BE TRIMMED / REMOVED AS NEEDED FOR PIPE INSTALLATION
17. PLACE ROCKS ALONG BANK WHERE LAND OWNERS HAVE LINED THEIR BANKS
18. CONNECTION #1 (H / D1)
19. CONNECTION #2 (J / D1)
20. INSTALL 4" HDPE DR11 PIPE (A,B,C / D1)
21. INSTALL 8" HDPE DR11 PIPE (A,B,C / D1)
22. INSTALL 4'ø PERFORATED MANHOLE (A,B / D2)
23. INSTALL SERVICE CONNECTION (D / D3)
24. INFILL OLD IRRIGATION DITCH FOR 20' EAST AND WEST OF PIPE CROSSING – COMPACT TO 90%
25. SAWCUT ASPHALT TO PROVIDE CLEAN EDGE – REMOVE ASPALT PAVEMENT
26. REPLACE ASPHALT PAVEMENT (C / D2)
27. RESTORE GRAVEL DRIVEWAY (C / D3)
28. REMOVE CURB AND GUTTER OR SIDEWALK IN FULL SECTIONS
29. REPLACE SIDEWALK / ADA RAMP (A / D3)
30. REPLACE CURB AND GUTTER (B / D3)
31. INSTALL 8" C900 PIPE FROM REDUCER AND SPLICE INTO EXISTING PIPES W/ COUPLER (A,B,C / D1)
32. EXISTING PUMP HOUSE REPLUMBING (A / D5)

SCALE
0 10' 20'

HORIZ: 1" = 10' : 22 x 34
HORIZ: 1" = 20' : 11 x 17
VERT: 1" = 4' : 22 x 34
VERT: 1" = 8' : 11 x 17

811 Know what's below. Call before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

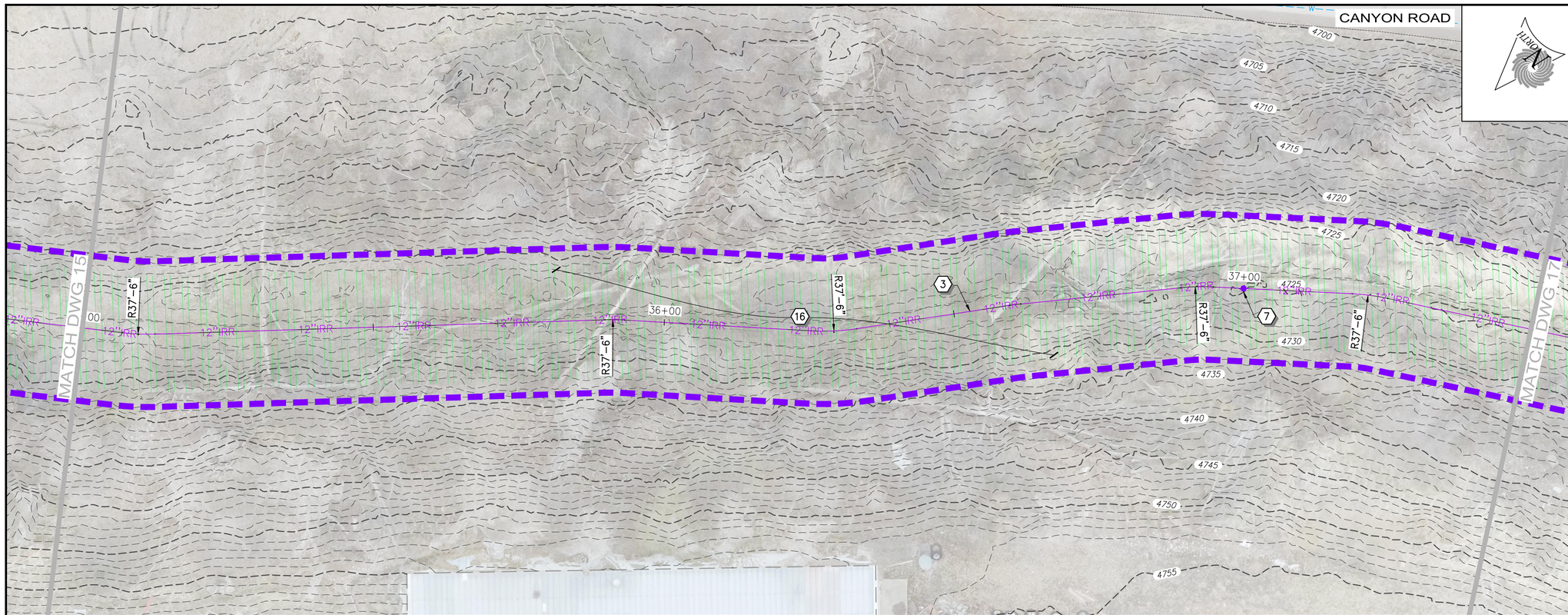
SMITHFIELD IRRIGATION COMPANY

MILL RACE PRESSURIZED PIPELINE
PRESSURIZED PIPELINE
PLAN AND PROFILE

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	15 of 26	PP10

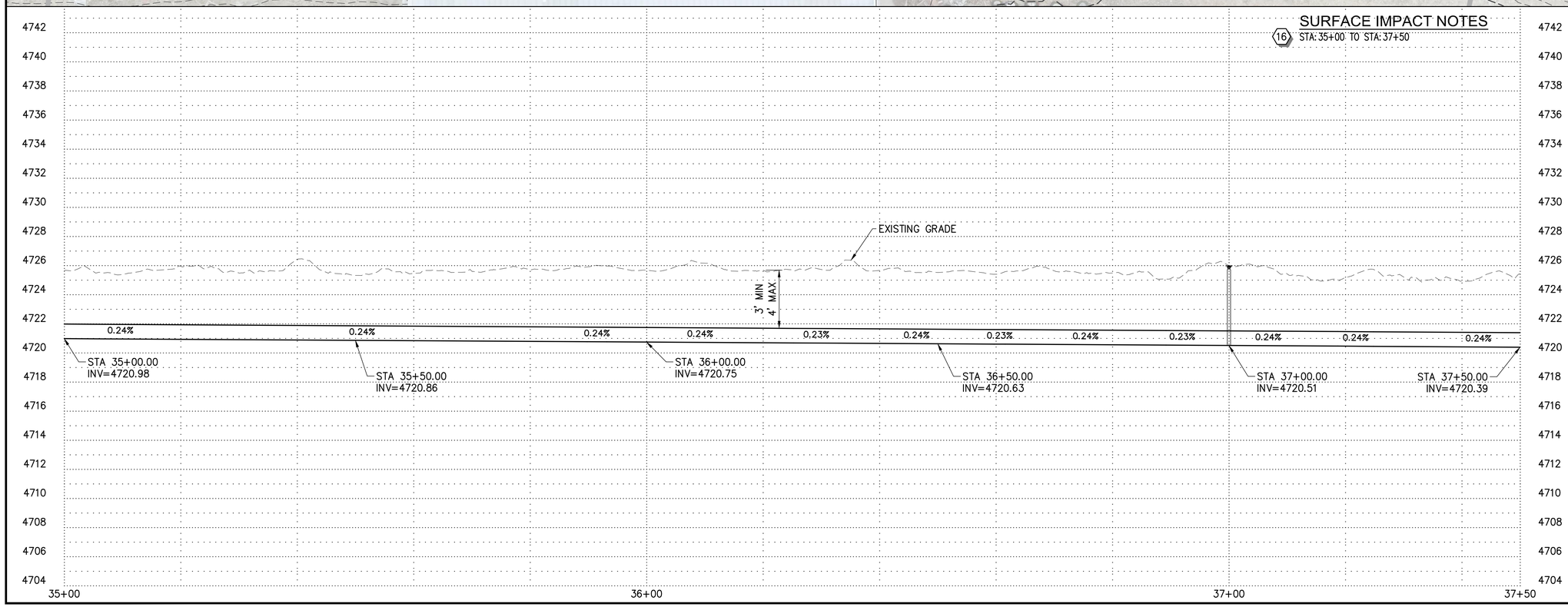
BID SET

P:\Smithfield Irrigation Company\12499 – SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC-DSI-18-12 INCH-PP10.dwg Oct 02, 2025 4:46pm jolley



SURFACE IMPACT NOTES

(16) STA: 35+00 TO STA: 37+50



CONSTRUCTION NOTES

1. PROPERTY LINES
2. INSTALL 18" HDPE DR11 PIPE (A,B,C / D1)
3. INSTALL 12" HDPE DR11 PIPE (A,B,C / D1)
4. INSTALL FITTING PER PLAN
5. INSTALL ISOLATION VALVE (D / D1)
6. INSTALL AIR / VAC ASSEMBLY (E / D1)
7. INSTALL TRACER WIRE CURB BOX (G / D1)
8. INSTALL MEADOW LARK CROSSING – IN CONCRETE CULVERT, AREA SURROUNDING 12" PIPE IS TO BE CLEANED AND FILLED WITH FLOWABLE FILL – PIPE IS TO BE SECURED WITH STAINLESS STEEL STRAPS (F / D1)
9. INSTALL SUMMIT CREEK CROSSING (K / D1)
10. INSTALL METER MANHOLE (E / D2)
11. INSTALL DIRECTIONAL BORE W/ 12" HDPE DR11 PIPE – NO TRACER WIRE REQUIRED AT BORE
12. RESTORE AREA WITH LANDSCAPING SOD OR MATCHING LANDSCAPING LEVEL WITH SURROUNDING AREA
13. RESTORE AREA WITH GRAVEL MATCHING EXISTING GRAVEL SURFACE – RESTORED AREA TO HAVE 3" MIN GRAVEL
14. PROTECT EXISTING ROCK WALLS IN PLACE
15. PROTECT EXISTING CONCRETE STRUCTURE IN PLACE
16. VEGETATION IN AREA TO BE TRIMMED / REMOVED AS NEEDED FOR PIPE INSTALLATION
17. PLACE ROCKS ALONG BANK WHERE LAND OWNERS HAVE LINED THEIR BANKS
18. CONNECTION #1 (H / D1)
19. CONNECTION #2 (J / D1)
20. INSTALL 4" HDPE DR11 PIPE (A,B,C / D1)
21. INSTALL 8" HDPE DR11 PIPE (A,B,C / D1)
22. INSTALL 4'ø PERFORATED MANHOLE (A, B / D2)
23. INSTALL SERVICE CONNECTION (D / D3)
24. INFILL OLD IRRIGATION DITCH FOR 20' EAST AND WEST OF PIPE CROSSING – COMPACT TO 90%
25. SAWCUT ASPHALT TO PROVIDE CLEAN EDGE – REMOVE ASPALT PAVEMENT
26. REPLACE ASPHALT PAVEMENT (C / D2)
27. RESTORE GRAVEL DRIVEWAY (C / D3)
28. REMOVE CURB AND GUTTER OR SIDEWALK IN FULL SECTIONS
29. REPLACE SIDEWALK / ADA RAMP (A / D3)
30. REPLACE CURB AND GUTTER (B / D3)
31. INSTALL 8" C900 PIPE FROM REDUCER AND SPLICE INTO EXISTING PIPES W/ COUPLER (A,B,C / D1)
32. EXISTING PUMP HOUSE REPLUMBING (A / D5)

SCALE
0 10' 20'

HORIZ: 1" = 10' : 22 x 34
HORIZ: 1" = 20' : 11 x 17
VERT: 1" = 4' : 22 x 34
VERT: 1" = 8' : 11 x 17

811 Know what's **below.** **Call** before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

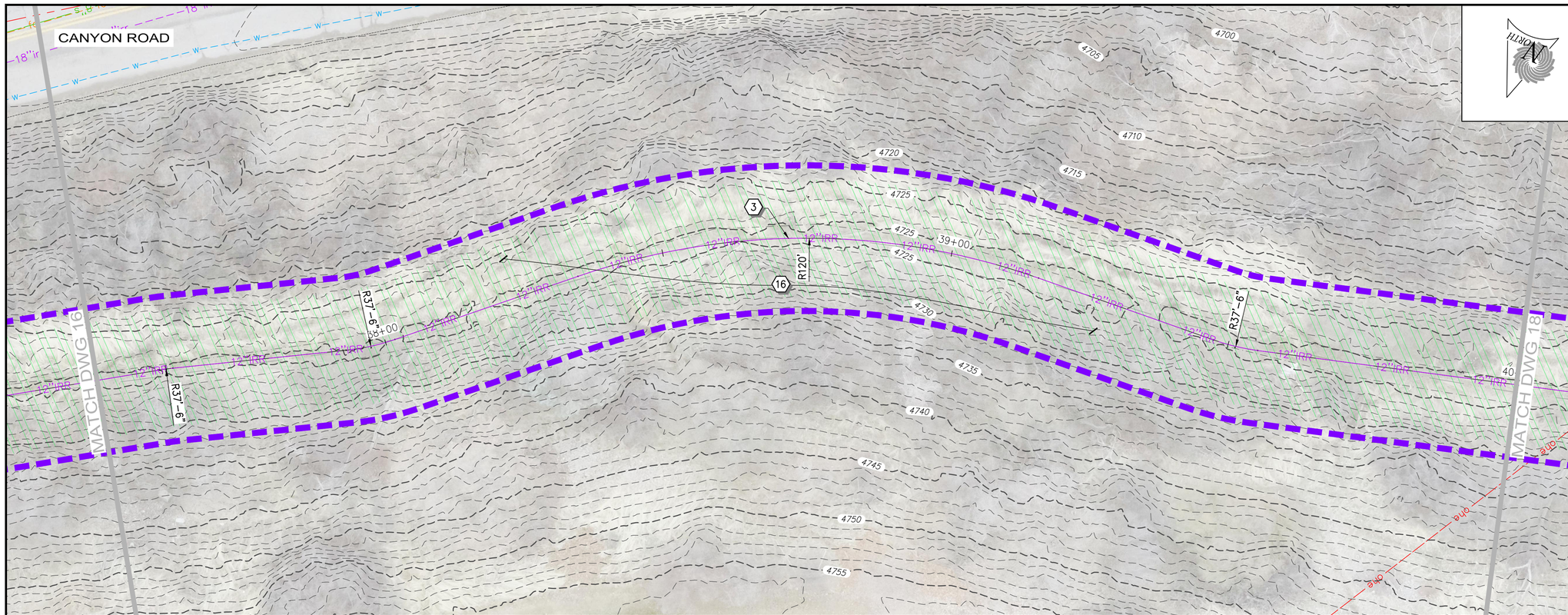
SMITHFIELD IRRIGATION COMPANY

MILL RACE PRESSURIZED PIPELINE
PRESSURIZED PIPELINE
PLAN AND PROFILE

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	16 of 26	PP11

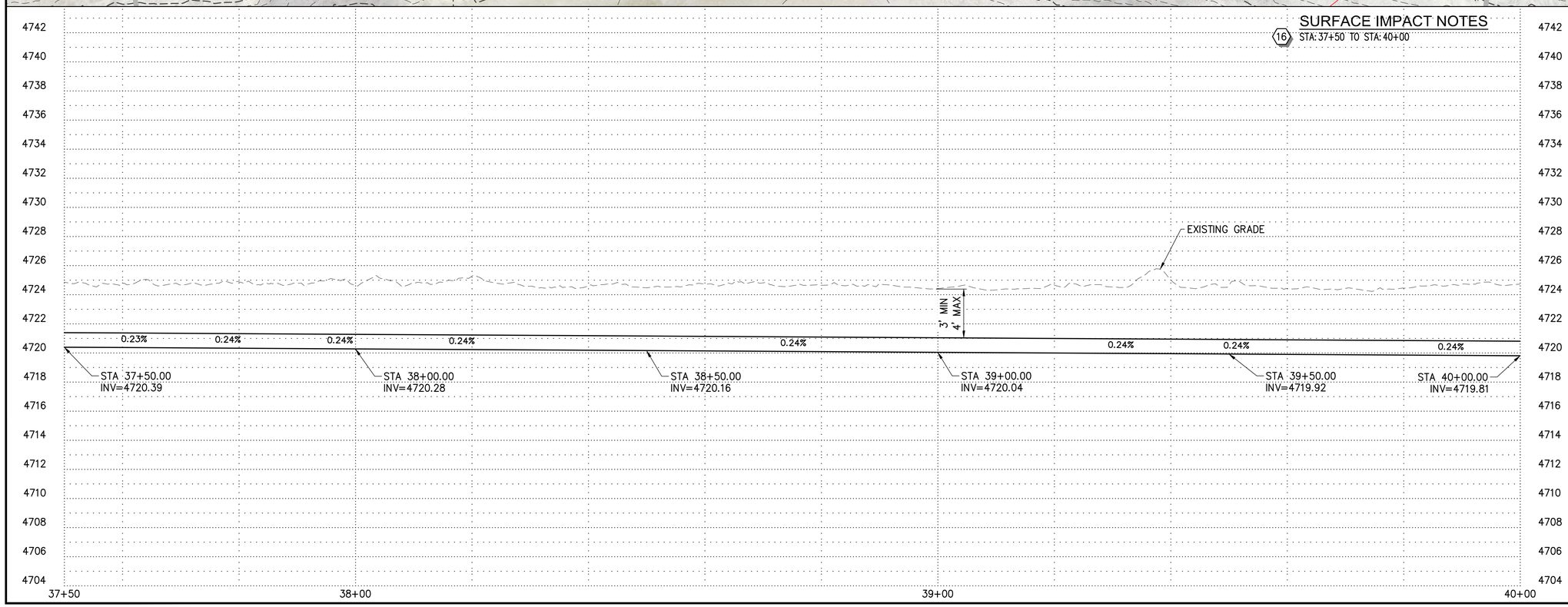
BID SET

P:\Smithfield Irrigation Company\12499 – SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC-DSI-18-12 INCH-PP11.dwg Oct 02, 2025 4:46pm jpilley



SURFACE IMPACT NOTES

(16) STA: 37+50 TO STA: 40+00



CONSTRUCTION NOTES

1. PROPERTY LINES
2. INSTALL 18" HDPE DR11 PIPE (A,B,C / D1)
3. INSTALL 12" HDPE DR11 PIPE (A,B,C / D1)
4. INSTALL FITTING PER PLAN
5. INSTALL ISOLATION VALVE (D / D1)
6. INSTALL AIR / VAC ASSEMBLY (E / D1)
7. INSTALL TRACER WIRE CURB BOX (G / D1)
8. INSTALL MEADOW LARK CROSSING – IN CONCRETE CULVERT, AREA SURROUNDING 12" PIPE IS TO BE CLEANED AND FILLED WITH FLOWABLE FILL – PIPE IS TO BE SECURED WITH STAINLESS STEEL STRAPS (F / D1)
9. INSTALL SUMMIT CREEK CROSSING (K / D1)
10. INSTALL METER MANHOLE (E / D2)
11. INSTALL DIRECTIONAL BORE W/ 12" HDPE DR11 PIPE – NO TRACER WIRE REQUIRED AT BORE
12. RESTORE AREA WITH LANDSCAPING SOD OR MATCHING LANDSCAPING LEVEL WITH SURROUNDING AREA
13. RESTORE AREA WITH GRAVEL MATCHING EXISTING GRAVEL SURFACE – RESTORED AREA TO HAVE 3" MIN GRAVEL
14. PROTECT EXISTING ROCK WALLS IN PLACE
15. PROTECT EXISTING CONCRETE STRUCTURE IN PLACE
16. VEGETATION IN AREA TO BE TRIMMED / REMOVED AS NEEDED FOR PIPE INSTALLATION
17. PLACE ROCKS ALONG BANK WHERE LAND OWNERS HAVE LINED THEIR BANKS
18. CONNECTION #1 (H / D1)
19. CONNECTION #2 (J / D1)
20. INSTALL 4" HDPE DR11 PIPE (A,B,C / D1)
21. INSTALL 8" HDPE DR11 PIPE (A,B,C / D1)
22. INSTALL 4'ø PERFORATED MANHOLE (A,B / D2)
23. INSTALL SERVICE CONNECTION (D / D3)
24. INFILL OLD IRRIGATION DITCH FOR 20' EAST AND WEST OF PIPE CROSSING – COMPACT TO 90%
25. SAWCUT ASPHALT TO PROVIDE CLEAN EDGE – REMOVE ASPALT PAVEMENT
26. REPLACE ASPHALT PAVEMENT (C / D2)
27. RESTORE GRAVEL DRIVEWAY (C / D3)
28. REMOVE CURB AND GUTTER OR SIDEWALK IN FULL SECTIONS
29. REPLACE SIDEWALK / ADA RAMP (A / D3)
30. REPLACE CURB AND GUTTER (B / D3)
31. INSTALL 8" C900 PIPE FROM REDUCER AND SPLICE INTO EXISTING PIPES W/ COUPLER (A,B,C / D1)
32. EXISTING PUMP HOUSE REPLUMBING (A / D5)

SCALE
0 10' 20'

HORIZ: 1" = 10' : 22 x 34
HORIZ: 1" = 20' : 11 x 17
VERT: 1" = 4' : 22 x 34
VERT: 1" = 8' : 11 x 17

811 Know what's **below.** **Call** before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

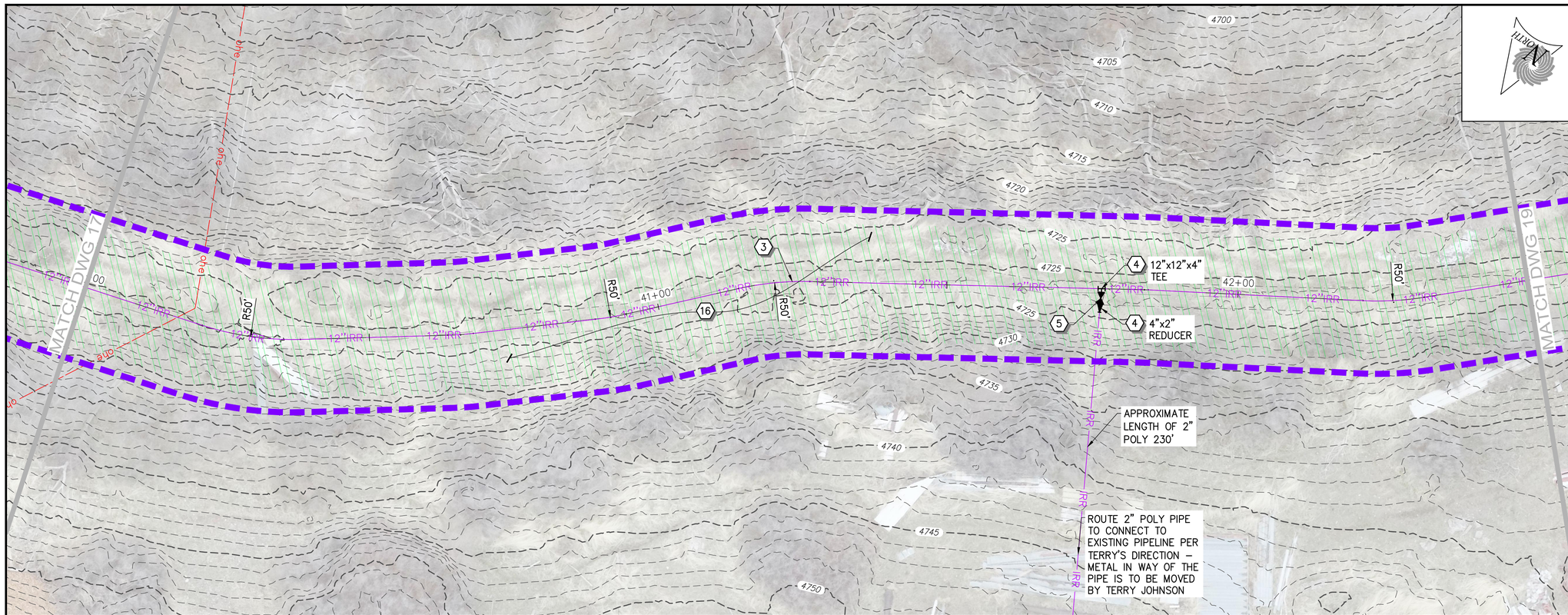
SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

SMITHFIELD IRRIGATION COMPANY

MILL RACE PRESSURIZED PIPELINE
PRESSURIZED PIPELINE
PLAN AND PROFILE

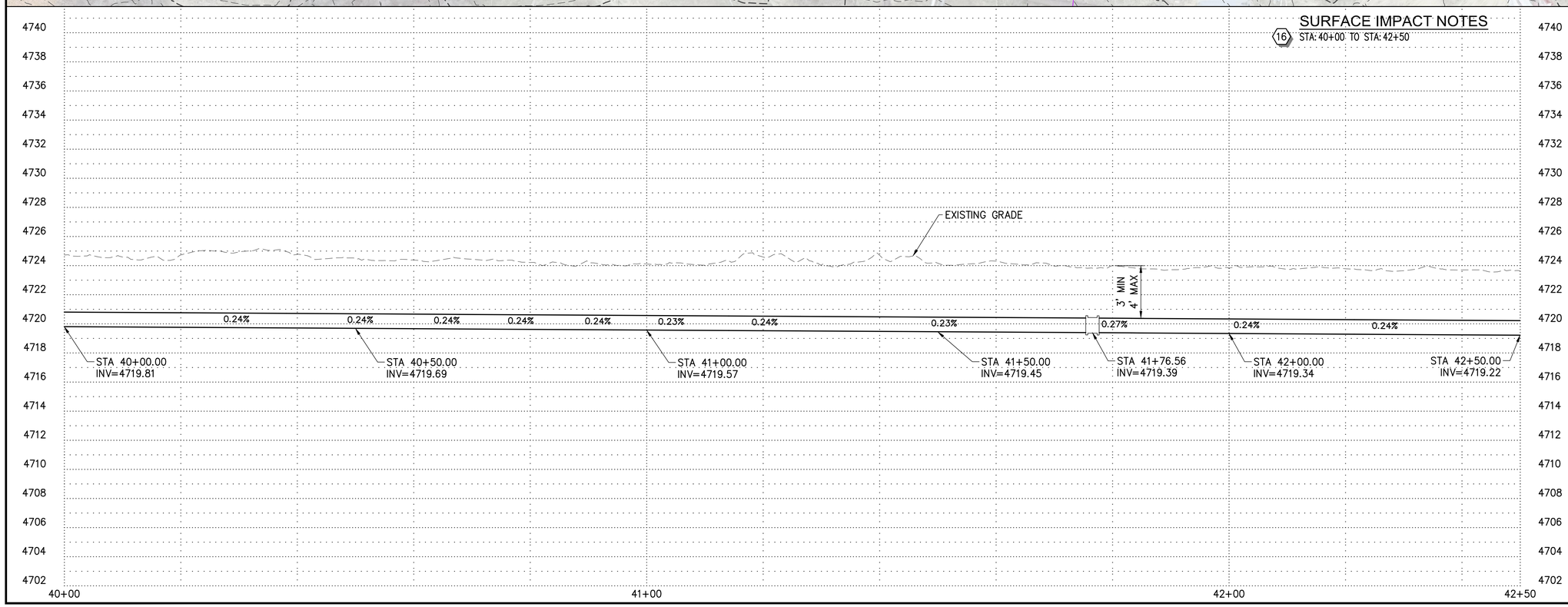
SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	17 of 26	PP12

BID SET



SURFACE IMPACT NOTES

16 STA: 40+00 TO STA: 42+50



CONSTRUCTION NOTES

1. PROPERTY LINES
2. INSTALL 18" HDPE DR11 PIPE (A,B,C / D1)
3. INSTALL 12" HDPE DR11 PIPE (A,B,C / D1)
4. INSTALL FITTING PER PLAN
5. INSTALL ISOLATION VALVE (D / D1)
6. INSTALL AIR / VAC ASSEMBLY (E / D1)
7. INSTALL TRACER WIRE CURB BOX (G / D1)
8. INSTALL MEADOW LARK CROSSING – IN CONCRETE CULVERT, AREA SURROUNDING 12" PIPE IS TO BE CLEANED AND FILLED WITH FLOWABLE FILL – PIPE IS TO BE SECURED WITH STAINLESS STEEL STRAPS (F / D1)
9. INSTALL SUMMIT CREEK CROSSING (K / D1)
10. INSTALL METER MANHOLE (E / D2)
11. INSTALL DIRECTIONAL BORE W/ 12" HDPE DR11 PIPE – NO TRACER WIRE REQUIRED AT BORE
12. RESTORE AREA WITH LANDSCAPING SOD OR MATCHING LANDSCAPING LEVEL WITH SURROUNDING AREA
13. RESTORE AREA WITH GRAVEL MATCHING EXISTING GRAVEL SURFACE – RESTORED AREA TO HAVE 3" MIN GRAVEL
14. PROTECT EXISTING ROCK WALLS IN PLACE
15. PROTECT EXISTING CONCRETE STRUCTURE IN PLACE
16. VEGETATION IN AREA TO BE TRIMMED / REMOVED AS NEEDED FOR PIPE INSTALLATION
17. PLACE ROCKS ALONG BANK WHERE LAND OWNERS HAVE LINED THEIR BANKS
18. CONNECTION #1 (H / D1)
19. CONNECTION #2 (J / D1)
20. INSTALL 4" HDPE DR11 PIPE (A,B,C / D1)
21. INSTALL 8" HDPE DR11 PIPE (A,B,C / D1)
22. INSTALL 4'ø PERFORATED MANHOLE (A, B / D2)
23. INSTALL SERVICE CONNECTION (D / D3)
24. INFILL OLD IRRIGATION DITCH FOR 20' EAST AND WEST OF PIPE CROSSING – COMPACT TO 90%
25. SAWCUT ASPHALT TO PROVIDE CLEAN EDGE – REMOVE ASPALT PAVEMENT
26. REPLACE ASPHALT PAVEMENT (C / D2)
27. RESTORE GRAVEL DRIVEWAY (C / D3)
28. REMOVE CURB AND GUTTER OR SIDEWALK IN FULL SECTIONS
29. REPLACE SIDEWALK / ADA RAMP (A / D3)
30. REPLACE CURB AND GUTTER (B / D3)
31. INSTALL 8" C900 PIPE FROM REDUCER AND SPLICE INTO EXISTING PIPES W/ COUPLER (A,B,C / D1)
32. EXISTING PUMP HOUSE REPLUMBING (A / D5)

SCALE
0 10' 20'
HORIZ: 1" = 10' : 22 x 34
HORIZ: 1" = 20' : 11 x 17
VERT: 1" = 4' : 22 x 34
VERT: 1" = 8' : 11 x 17

811 Know what's **below.** **Call** before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

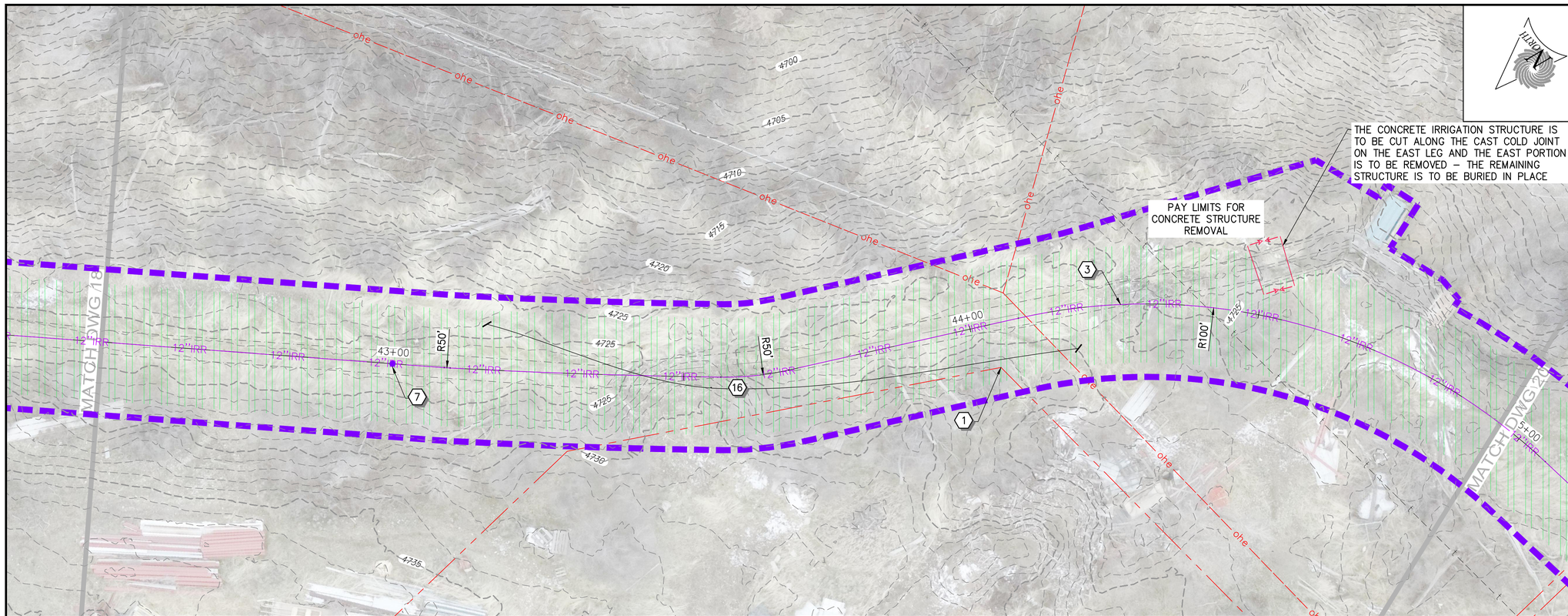
SMITHFIELD IRRIGATION COMPANY

MILL RACE PRESSURIZED PIPELINE
PRESSURIZED PIPELINE
PLAN AND PROFILE

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	18 of 26	PP13

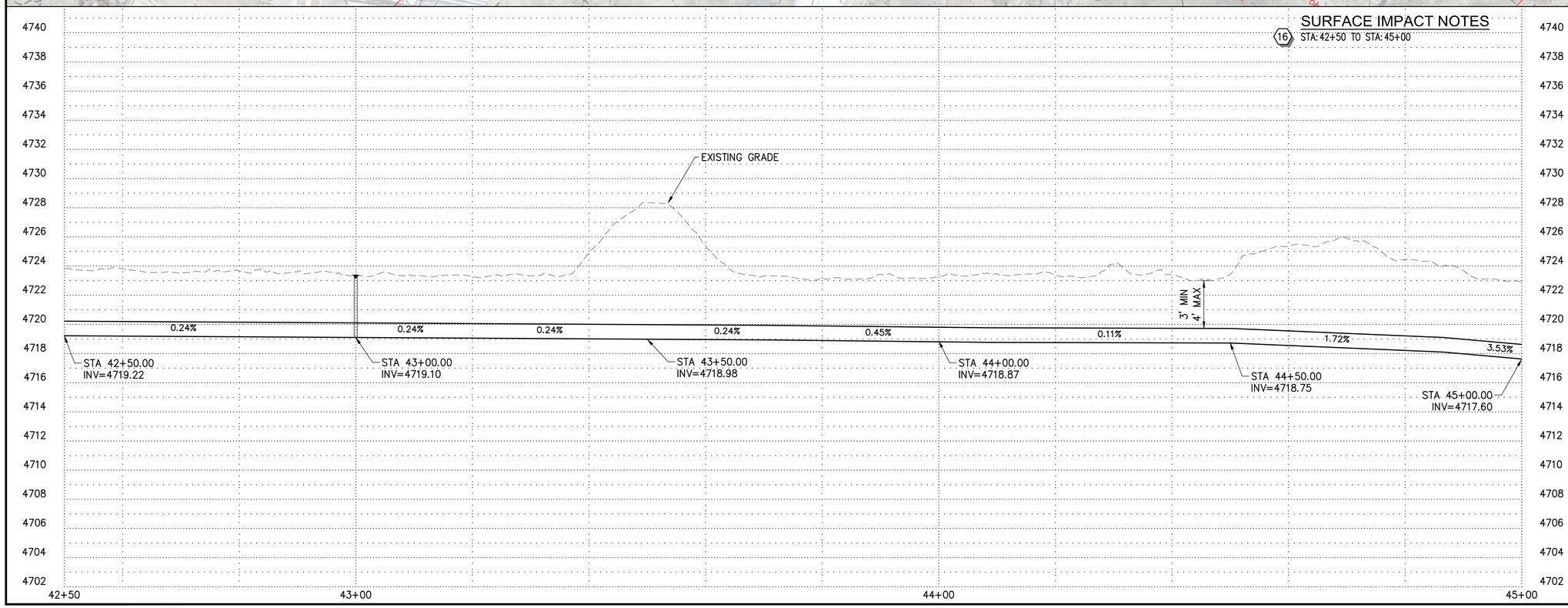
BID SET

P:\Smithfield Irrigation Company\12499 – SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC-DSI-18-12 NCH-PP13.dwg Oct 02, 2025 4:48pm jolley



SURFACE IMPACT NOTES

(16) STA: 42+50 TO STA: 45+00



CONSTRUCTION NOTES

1. PROPERTY LINES
2. INSTALL 18" HDPE DR11 PIPE (A,B,C / D1)
3. INSTALL 12" HDPE DR11 PIPE (A,B,C / D1)
4. INSTALL FITTING PER PLAN
5. INSTALL ISOLATION VALVE (D / D1)
6. INSTALL AIR / VAC ASSEMBLY (E / D1)
7. INSTALL TRACER WIRE CURB BOX (G / D1)
8. INSTALL MEADOW LARK CROSSING – IN CONCRETE CULVERT, AREA SURROUNDING 12" PIPE IS TO BE CLEANED AND FILLED WITH FLOWABLE FILL – PIPE IS TO BE SECURED WITH STAINLESS STEEL STRAPS (F / D1)
9. INSTALL SUMMIT CREEK CROSSING (K / D1)
10. INSTALL METER MANHOLE (E / D2)
11. INSTALL DIRECTIONAL BORE W/ 12" HDPE DR11 PIPE – NO TRACER WIRE REQUIRED AT BORE
12. RESTORE AREA WITH LANDSCAPING SOD OR MATCHING LANDSCAPING LEVEL WITH SURROUNDING AREA
13. RESTORE AREA WITH GRAVEL MATCHING EXISTING GRAVEL SURFACE – RESTORED AREA TO HAVE 3" MIN GRAVEL
14. PROTECT EXISTING ROCK WALLS IN PLACE
15. PROTECT EXISTING CONCRETE STRUCTURE IN PLACE
16. VEGETATION IN AREA TO BE TRIMMED / REMOVED AS NEEDED FOR PIPE INSTALLATION
17. PLACE ROCKS ALONG BANK WHERE LAND OWNERS HAVE LINED THEIR BANKS
18. CONNECTION #1 (H / D1)
19. CONNECTION #2 (J / D1)
20. INSTALL 4" HDPE DR11 PIPE (A,B,C / D1)
21. INSTALL 8" HDPE DR11 PIPE (A,B,C / D1)
22. INSTALL 4'ø PERFORATED MANHOLE (A, B / D2)
23. INSTALL SERVICE CONNECTION (D / D3)
24. INFILL OLD IRRIGATION DITCH FOR 20' EAST AND WEST OF PIPE CROSSING – COMPACT TO 90%
25. SAWCUT ASPHALT TO PROVIDE CLEAN EDGE – REMOVE ASPALT PAVEMENT
26. REPLACE ASPHALT PAVEMENT (C / D2)
27. RESTORE GRAVEL DRIVEWAY (C / D3)
28. REMOVE CURB AND GUTTER OR SIDEWALK IN FULL SECTIONS
29. REPLACE SIDEWALK / ADA RAMP (A / D3)
30. REPLACE CURB AND GUTTER (B / D3)
31. INSTALL 8" C900 PIPE FROM REDUCER AND SPLICE INTO EXISTING PIPES W/ COUPLER (A,B,C / D1)
32. EXISTING PUMP HOUSE REPLUMBING (A / D5)

SCALE
0 10' 20'

HORIZ: 1" = 10' : 22 x 34
HORIZ: 1" = 20' : 11 x 17
VERT: 1" = 4' : 22 x 34
VERT: 1" = 8' : 11 x 17

811 Know what's **below.** **Call** before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

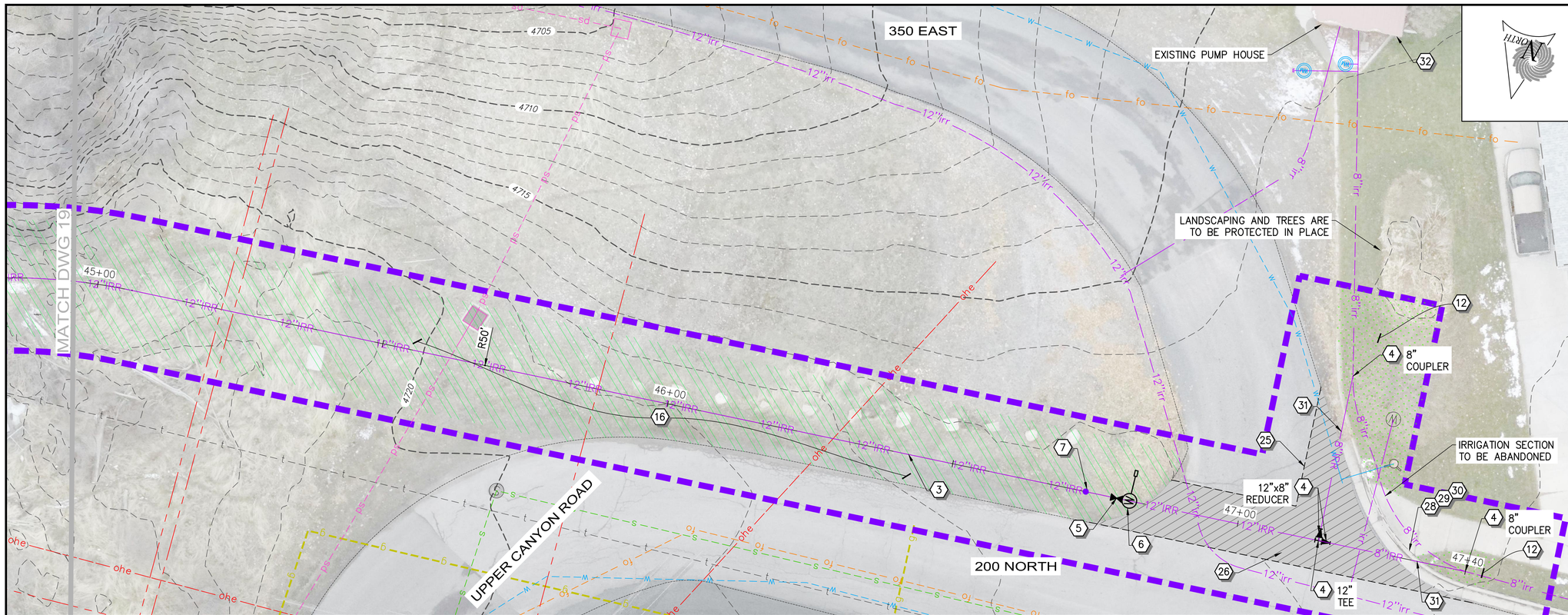
SMITHFIELD IRRIGATION COMPANY

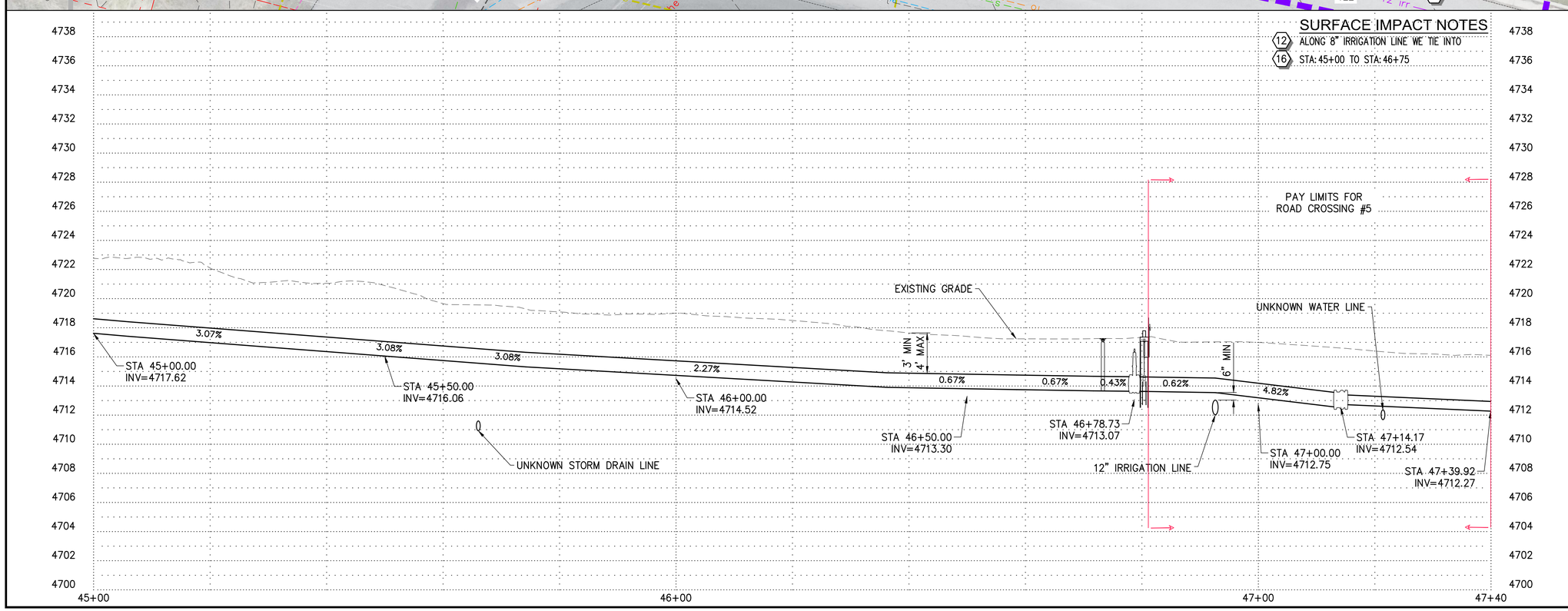
MILL RACE PRESSURIZED PIPELINE
PRESSURIZED PIPELINE
PLAN AND PROFILE

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	19 of 26	PP14

BID SET

P:\Smithfield Irrigation Company\12499 – SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC-DSI-18-12 NCH-PP14.dwg Oct 02, 2025 4:49pm jolley





CONSTRUCTION NOTES

1. PROPERTY LINES
2. INSTALL 18" HDPE DR11 PIPE (A,B,C / D1)
3. INSTALL 12" HDPE DR11 PIPE (A,B,C / D1)
4. INSTALL FITTING PER PLAN
5. INSTALL ISOLATION VALVE (D / D1)
6. INSTALL AIR / VAC ASSEMBLY (E / D1)
7. INSTALL TRACER WIRE CURB BOX (G / D1)
8. INSTALL MEADOW LARK CROSSING – IN CONCRETE CULVERT, AREA SURROUNDING 12" PIPE IS TO BE CLEANED AND FILLED WITH FLOWABLE FILL – PIPE IS TO BE SECURED WITH STAINLESS STEEL STRAPS (F / D1)
9. INSTALL SUMMIT CREEK CROSSING (K / D1)
10. INSTALL METER MANHOLE (E / D2)
11. INSTALL DIRECTIONAL BORE W/ 12" HDPE DR11 PIPE – NO TRACER WIRE REQUIRED AT BORE
12. RESTORE AREA WITH LANDSCAPING SOD OR MATCHING LANDSCAPING LEVEL WITH SURROUNDING AREA
13. RESTORE AREA WITH GRAVEL MATCHING EXISTING GRAVEL SURFACE – RESTORED AREA TO HAVE 3" MIN GRAVEL
14. PROTECT EXISTING ROCK WALLS IN PLACE
15. PROTECT EXISTING CONCRETE STRUCTURE IN PLACE
16. VEGETATION IN AREA TO BE TRIMMED / REMOVED AS NEEDED FOR PIPE INSTALLATION
17. PLACE ROCKS ALONG BANK WHERE LAND OWNERS HAVE LINED THEIR BANKS
18. CONNECTION #1 (H / D1)
19. CONNECTION #2 (J / D1)
20. INSTALL 4" HDPE DR11 PIPE (A,B,C / D1)
21. INSTALL 8" HDPE DR11 PIPE (A,B,C / D1)
22. INSTALL 4'ø PERFORATED MANHOLE (A, B / D2)
23. INSTALL SERVICE CONNECTION (D / D3)
24. INFILL OLD IRRIGATION DITCH FOR 20' EAST AND WEST OF PIPE CROSSING – COMPACT TO 90%
25. SAWCUT ASPHALT TO PROVIDE CLEAN EDGE – REMOVE ASPALT PAVEMENT
26. REPLACE ASPHALT PAVEMENT (C / D2)
27. RESTORE GRAVEL DRIVEWAY (C / D3)
28. REMOVE CURB AND GUTTER OR SIDEWALK IN FULL SECTIONS
29. REPLACE SIDEWALK / ADA RAMP (A / D3)
30. REPLACE CURB AND GUTTER (B / D3)
31. INSTALL 8" C900 PIPE FROM REDUCER AND SPLICE INTO EXISTING PIPES W/ COUPLER (A,B,C / D1)
32. EXISTING PUMP HOUSE REPLUMBING (A / D5)

SCALE
0 10' 20'
HORIZ: 1" = 10' : 22 x 34
HORIZ: 1" = 20' : 11 x 17
VERT: 1" = 4' : 22 x 34
VERT: 1" = 8' : 11 x 17

811 Know what's below. Call before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

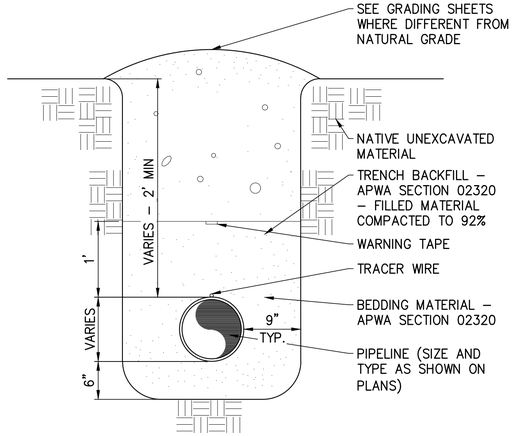
SMITHFIELD IRRIGATION COMPANY

MILL RACE PRESSURIZED PIPELINE
PRESSURIZED PIPELINE
PLAN AND PROFILE

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	20 of 26	PP15

BID SET

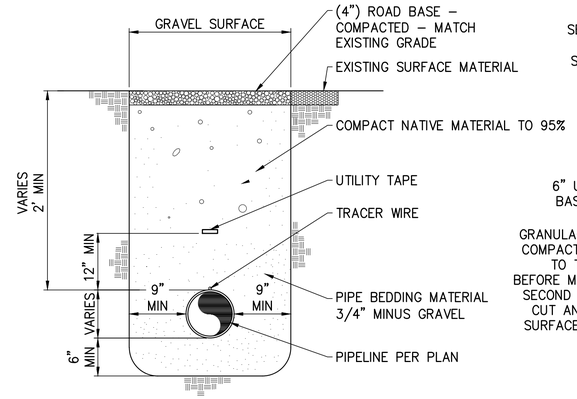
P:\Smithfield Irrigation Company\12499 – SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC-DSI-18-12 NCH-PP15.dwg Oct 02, 2025 4:50pm jolley



1. BEDDING MATERIAL SURROUNDING PIPE SHALL BE LESS THAN 3/4" FOR PVC PIPE AND LESS THAN 1" FOR HDPE PIPE
2. NATIVE BACKFILL MATERIAL SHALL INCLUDE NO ROCKS LARGER THAN 6" DIAMETER, ORGANIC MATERIAL, SNOW, ICE, CONSTRUCTION WASTE, OR DEBRIS

A DETAIL - TRENCH THROUGH NATIVE EARTH

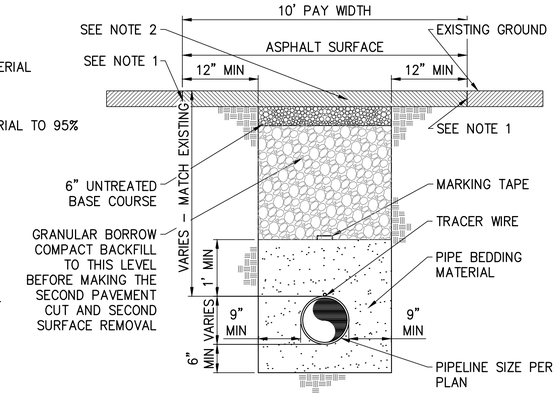
NOT TO SCALE



1. SEE TRENCH EXCAVATION AND BACKFILL SPEC 02200 FOR COMPACTION REQUIREMENTS.
2. A MAXIMUM 3/4" FOR ALL BEDDING MATERIAL
3. ALL AREAS WHERE THIS DETAIL IS USED, THE CONTRACTOR WILL BE RESPONSIVE FOR IT UNDER THE BASE BID
4. ALL PIPE FITTINGS ARE INCIDENTAL TO THE PIPE & WILL BE ACCOUNTED FOR IN THE PIPE INSTALLATION BID ITEMS

B DETAIL - GRAVEL ROAD / DRIVEWAY TRENCH

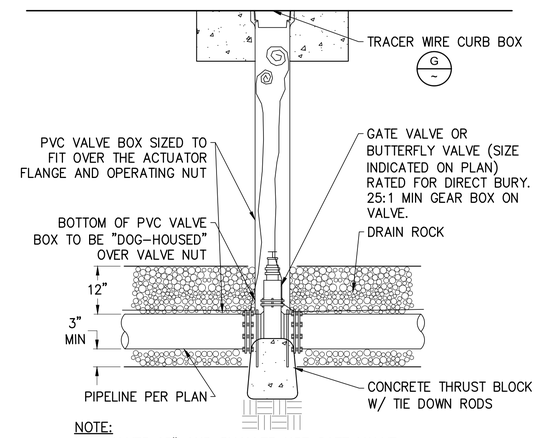
NOT TO SCALE



1. SAW CUT PAVEMENT EDGES. APPLY A HOT–POUR RUBBERIZED ASPHALT JOINT SEALANT OR APPROVED EQUAL, APPLIED AFTER PATCH IS INSTALLED.
2. FOR ASPHALT CONSTRUCTION WITHIN THE CITY ROW USE 3 INCHES OF APPROVED HOT MIX ASPHALT (HMA), PG–GRADE 58–28 ASPHALT BINDER, 1/2 INCH NOMINAL MAX; OVER 4 INCHES UNTREATED BASE COURSE (UTBC GRADE 1) PER APWA 32 11 23; OVER 12 INCHES A–1–A GRANULAR BORROW (GB) PER APWA 31 05 13. PROVIDE DOCUMENTATION OF COMPACTION.
3. TRENCH DETAIL IN EXISTING CITY ROADS

C DETAIL - TRENCH W/ T PATCH

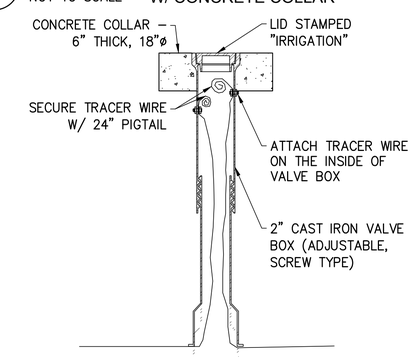
NOT TO SCALE



NOTE:
1. VALVES 12" AND SMALLER USE GATE VALVE
2. VALVES LARGER THAN 12" USE BUTTERFLY VALVE

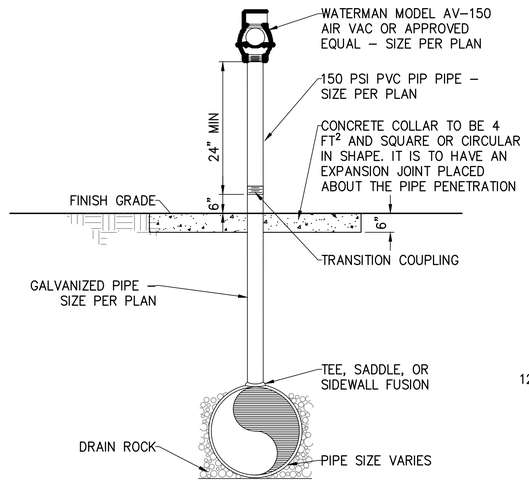
D DETAIL - TYPICAL ISOLATION VALVE

NOT TO SCALE W/ CONCRETE COLLAR



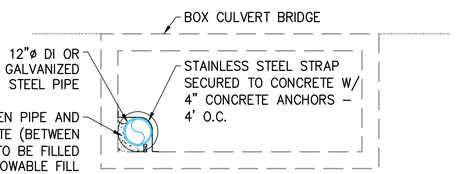
G DETAIL - TRACER WIRE CURB BOX

NOT TO SCALE

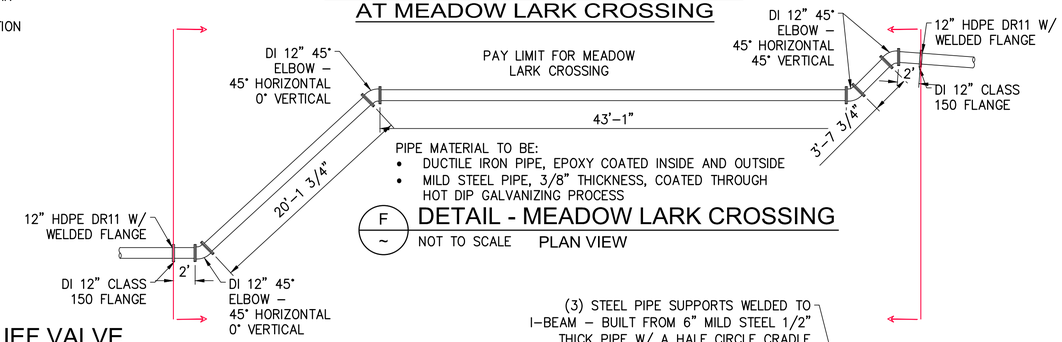


E DETAIL - COMBINATION AIR AND VACUUM RELIEF VALVE

NOT TO SCALE



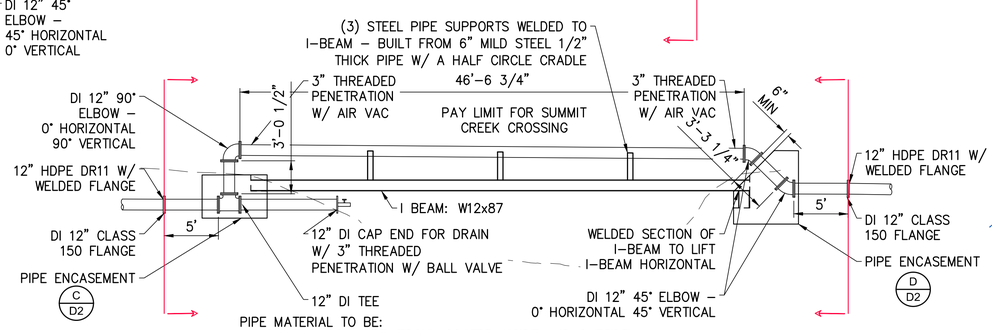
SECTION THROUGH BOX CULVERT AT MEADOW LARK CROSSING



PIPE MATERIAL TO BE:
- DUCTILE IRON PIPE, EPOXY COATED INSIDE AND OUTSIDE
- MILD STEEL PIPE, 3/8" THICKNESS, COATED THROUGH HOT DIP GALVANIZING PROCESS

F DETAIL - MEADOW LARK CROSSING

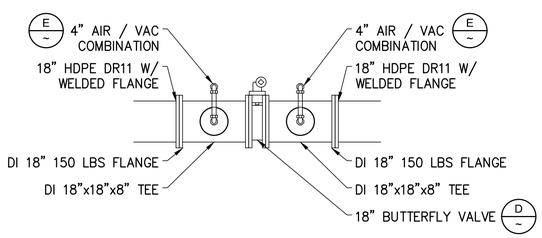
NOT TO SCALE PLAN VIEW



PIPE MATERIAL TO BE:
- DUCTILE IRON PIPE, EPOXY COATED INSIDE AND OUTSIDE
- MILD STEEL PIPE, 3/8" THICKNESS, COATED THROUGH HOT DIP GALVANIZING PROCESS

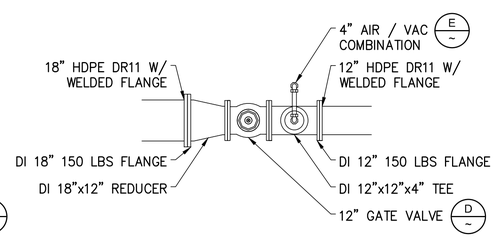
K DETAIL - SUMMIT CREEK CROSSING

NOT TO SCALE ELEVATION VIEW



H DETAIL - CONNECTION #1

NOT TO SCALE



J DETAIL - CONNECTION #2

NOT TO SCALE

811 Know what's below. Call before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

SMITHFIELD IRRIGATION COMPANY

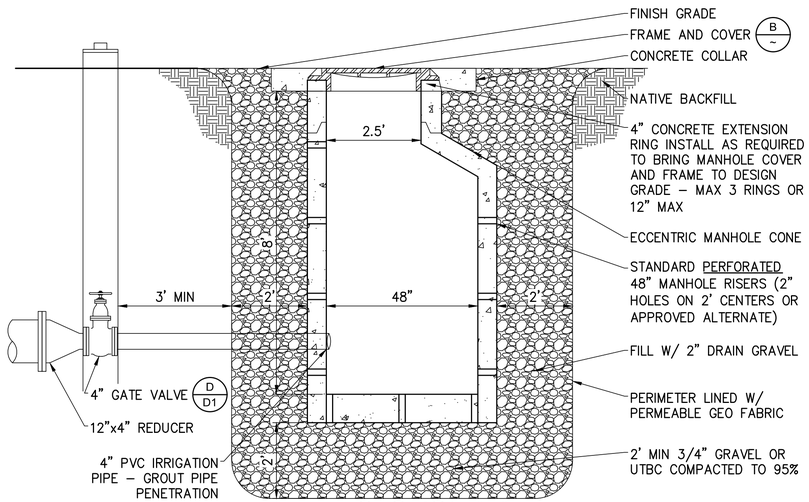
MILL RACE PRESSURIZED PIPELINE
DETAILS
PIPELINE DETAILS

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	21 of 26	D1

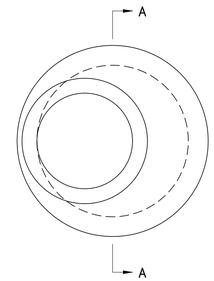
BID SET

P:\Smithfield Irrigation Company\12499 – SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC–DSI–D1.dwg Oct 02, 2025 4:52pm jjolley

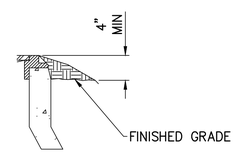
BID SET



SECTION A-A



PLAN

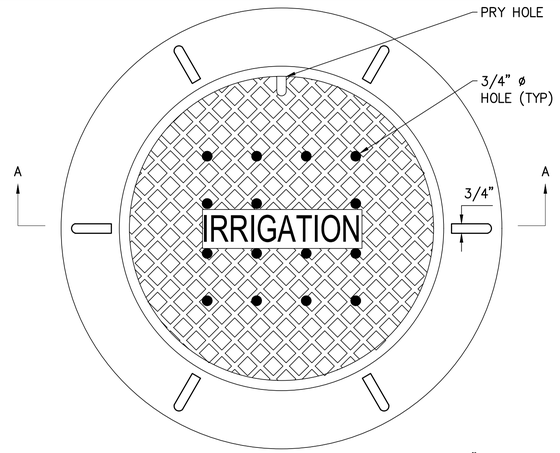


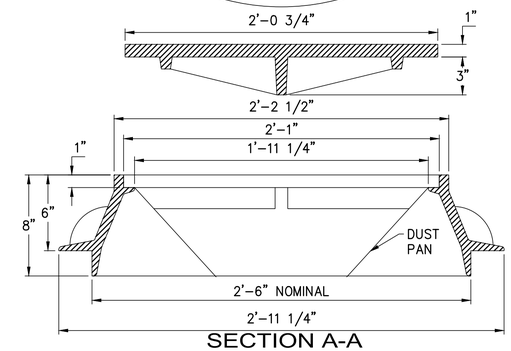
UNIMPROVED AREAS

1. GENERAL
   A. MANHOLE
      1. DIAMETER IS 4 FEET
   B. ALL MANHOLE BASES AND BARRELS SHALL BE PRECAST UNLESS OTHERWISE APPROVED
2. PRODUCTS
   A. BASE COURSE: UNTREATED BASE COURSE, APWA SECTION 32 11 23. DO NOT USE GRAVEL AS A BASE COURSE WITHOUT ENGINEER'S PERMISSION
   B. BACKFILL: COMMON FILL, APWA SECTION 31 05 13. MAX PARTICLE SIZE 2–INCHES
   C. CONCRETE: CLASS 4000, APWA SECTION 03 30 04.
   D. RISER AND REDUCING RISER: ASTM C478
   E. REINFORCEMENT: DEFORMED, 60 KSI YIELD GRADE STEEL, ASTM A615
   F. GROUT: 2 PARS SAND TO 1 PART CEMENT MORTAR, ASTM C1329
   G. STABILIZATION – SEPARATION GEOTEXTILE: STANDARD OR HEAVY AT CONTRACTOR'S CHOICE, APWA SECTION 31 05 19
3. EXECUTION
   A. FOUNDATION STABILIZATION: GET ENGINEER'S PERMISSION TO USE A SEWER ROCK OR A GRANULAR BACKFILL BORROW IN A GEOTEXTILE WRAP TO STABILIZE AN UNSTABLE FOUNDATION
   B. BASE COURSE PLACEMENT: APWA SECTION 32 11 23. MAX LIFT THICKNESS IS 8–INCHES BEFORE COMPACTION. COMPACTION IS 95 PERCENT OR GREATER RELATIVE TO A MODIFIED PROCTOR DENSITY, APWA SECTION 31 23 26
   C. JOINTS: PLACE FLEXIBLE GASKET–TYPE SEALANT IN ALL RISER JOINTS. FINISH WITH GROUT
   D. ADJUSTMENT: IF THE REQUIRED MANHOLE ADJUSTMENT IS MORE THAN 12", REMOVE THE CONE AND GRADE RINGS AND ADJUST THE MANHOLE ELEVATION WITH THE APPROPRIATE MANHOLE SECTION, THE CONE SECTION, AND THE GRADE RINGS OR PLASTIC FORM TO MAKE FRAME AND LID MATCH FINISH GRADE.
   E. FINISH: PROVIDE SMOOTH AND NEAT FINISHES ON INTERIOR OF CONES, SHAFT, AND RINGS. IMPERFECT MOLDINGS OR HONEYCOMBS WILL NOT BE ACCEPTED
   F. BACKFILL: PROVIDE BACKFILL AGAINST THE MANHOLE SHAFT. PEA GRAVEL AND RECYCLED RAP AGGREGATE IS NOT ALLOWED. WATER JETTING NOT ALLOWED. MAX LIFT THICKNESS IS 8–INCHES BEFORE COMPACTION. COMPACTION IS 95 PERCENT OR GREATER RELATIVE TO A STANDARD PROCTOR DENSITY, APWA SECTION 31 23 26

(A/~) DETAIL - PERFORATED MANHOLE

NOT TO SCALE



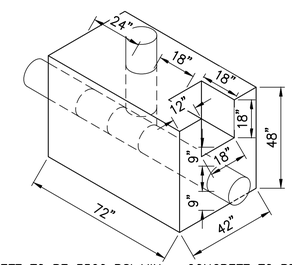


SECTION A-A

1. GENERAL
   A. THE FRAME AND COVER FITS THE MANHOLE (A/~)
2. PRODUCTS
   A. CASTINGS: GREY IRON CLASS 35 MINIMUM, ASTM A48, COATED WITH ASPHALT BASED PAINT OR BETTER (EXCEPT ON MACHINED SURFACES)
      1. CAST THE HEAT NUMBER ON THE FRAME AND COVER
      2. GIVE THE FRAME AND COVER A MACHINE FINISH SO THE COVER WILL NOT ROCK
      3. A CHECK MARK DESIGNATES MACHINED SURFACE
      4. CAST THE WORDS 'IRRIGATION' ON THE COVER IN UPPER CASE FLUSH WITH THE SURFACE FINISH

(B/~) DETAIL - 30" FRAME AND COVER

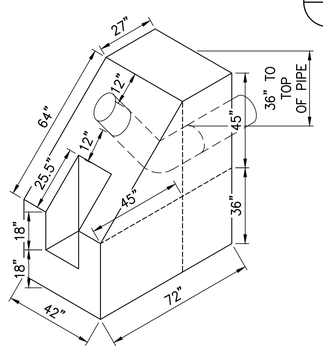
NOT TO SCALE



1. CONCRETE TO BE 3500 PSI MIN – CONCRETE TO BEAR ON NATIVE MATERIAL THAT HAS NOT BEEN EXCAVATED AND HAS BEEN COMPACTED
2. PIPE ENCASEMENT IS TO BE 42" MIN IN WIDTH
3. THE ENCASED PIPE IS TO BE PRESSURE TESTED PRIOR TO ENCASEMENT – PIPE IS TO BE EPOXY COATED INSIDE AND OUTSIDE
4. ENCASEMENT TO BE REINFORCED WITH #4 BAR ON 18" O.C. B.W FOR A BOTTOM MAT, SIDE MATS AND BACK MAT – THE MATS ARE TO BE CONNECTED W/ #4 BAR @ 36" SPACING

(C/~) DETAIL - PIPE ENCASEMENT

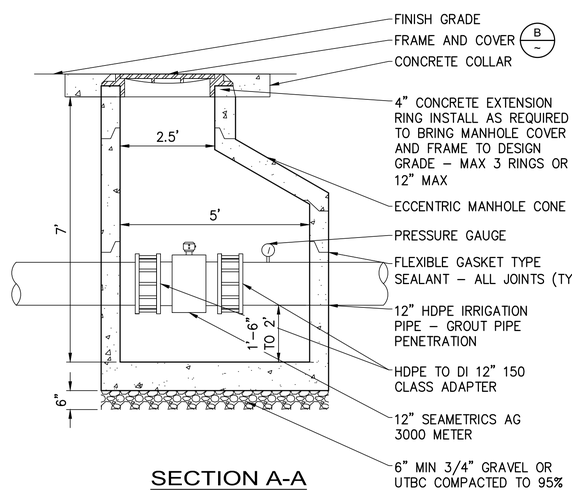
NOT TO SCALE



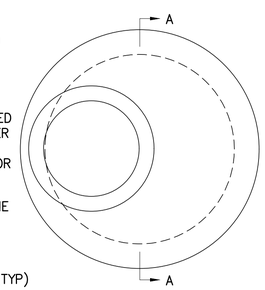
1. CONCRETE TO BE 3500 PSI MIN – CONCRETE TO BEAR ON NATIVE MATERIAL THAT HAS NOT BEEN EXCAVATED AND HAS BEEN COMPACTED
2. PIPE ENCASEMENT IS TO BE 42" MIN IN WIDTH
3. THE ENCASED PIPE IS TO BE PRESSURE TESTED PRIOR TO ENCASEMENT – PIPE IS TO BE EPOXY COATED INSIDE AND OUTSIDE
4. ENCASEMENT TO BE REINFORCED WITH #4 BAR ON 18" O.C. B.W FOR A BOTTOM MAT, SIDE MATS AND BACK MAT – THE MATS ARE TO BE CONNECTED W/ #4 BAR @ 36" SPACING

(D/~) DETAIL - PIPE ENCASEMENT

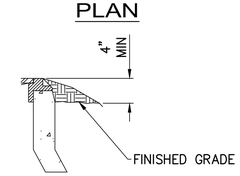
NOT TO SCALE



SECTION A-A



PLAN



UNIMPROVED AREAS

1. GENERAL
   A. MANHOLE
      1. DIAMETER IS 5 FEET
   B. ALL MANHOLE BASES AND BARRELS SHALL BE PRECAST UNLESS OTHERWISE APPROVED
2. PRODUCTS
   A. BASE COURSE: UNTREATED BASE COURSE, APWA SECTION 32 11 23. DO NOT USE GRAVEL AS A BASE COURSE WITHOUT ENGINEER'S PERMISSION
   B. BACKFILL: COMMON FILL, APWA SECTION 31 05 13. MAX PARTICLE SIZE 2–INCHES
   C. CONCRETE: CLASS 4000, APWA SECTION 03 30 04.
   D. RISER AND REDUCING RISER: ASTM C478
   E. REINFORCEMENT: DEFORMED, 60 KSI YIELD GRADE STEEL, ASTM A615
   F. GROUT: 2 PARS SAND TO 1 PART CEMENT MORTAR, ASTM C1329
3. EXECUTION
   A. FOUNDATION STABILIZATION: GET ENGINEER'S PERMISSION TO USE A SEWER ROCK OR A GRANULAR BACKFILL BORROW IN A GEOTEXTILE WRAP TO STABILIZE AN UNSTABLE FOUNDATION
   B. BASE COURSE PLACEMENT: APWA SECTION 32 11 23. MAX LIFT THICKNESS IS 8–INCHES BEFORE COMPACTION. COMPACTION IS 95 PERCENT OR GREATER RELATIVE TO A MODIFIED PROCTOR DENSITY, APWA SECTION 31 23 26
   C. ADJUSTMENT: IF THE REQUIRED MANHOLE ADJUSTMENT IS MORE THAN 12", REMOVE THE CONE AND GRADE RINGS AND ADJUST THE MANHOLE ELEVATION WITH THE APPROPRIATE MANHOLE SECTION, THE CONE SECTION, AND THE GRADE RINGS OR PLASTIC FORM TO MAKE FRAME AND LID MATCH FINISH GRADE.
   D. FINISH: PROVIDE SMOOTH AND NEAT FINISHES ON INTERIOR OF CONES, SHAFT, AND RINGS. IMPERFECT MOLDINGS OR HONEYCOMBS WILL NOT BE ACCEPTED
   E. BACKFILL: PROVIDE BACKFILL AGAINST THE MANHOLE SHAFT. PEA GRAVEL AND RECYCLED RAP AGGREGATE IS NOT ALLOWED. WATER JETTING NOT ALLOWED. MAX LIFT THICKNESS IS 8–INCHES BEFORE COMPACTION. COMPACTION IS 95 PERCENT OR GREATER RELATIVE TO A STANDARD PROCTOR DENSITY, APWA SECTION 31 23 26

(E/~) DETAIL - METER MANHOLE

NOT TO SCALE

811 Know what's **below.** **Call** before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

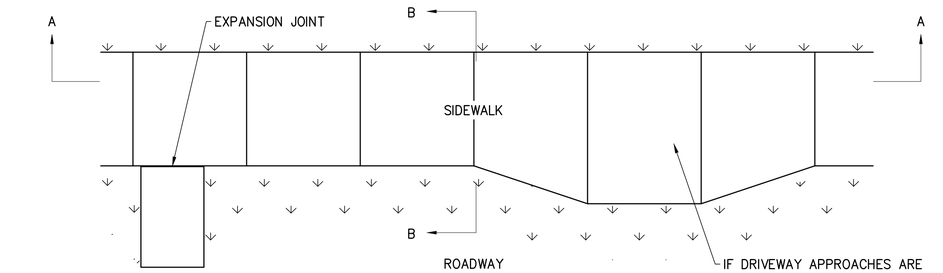
LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

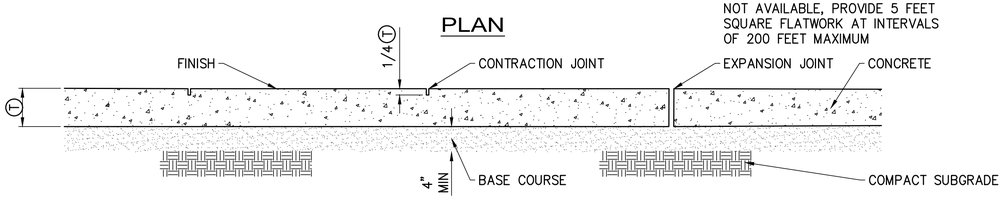
SMITHFIELD IRRIGATION COMPANY

MILL RACE PRESSURIZED PIPELINE
DETAILS
PIPELINE DETAILS

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	22 of 26	D2

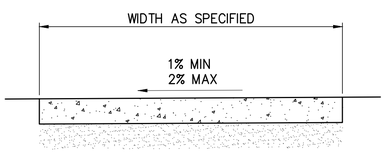


PLAN

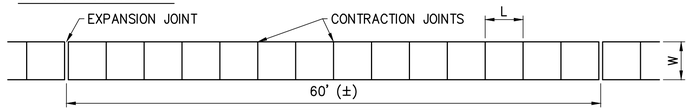


○ STREET TYPE	T
RESIDENTIAL (WITH PARK STRIP)	4"
RESIDENTIAL (NO PARK STRIP)	6"
OTHER	6"
REPLACING EXISTING SIDEWALK	MATCH EXISTING (4" MIN)

SECTION A-A



SECTION B-B



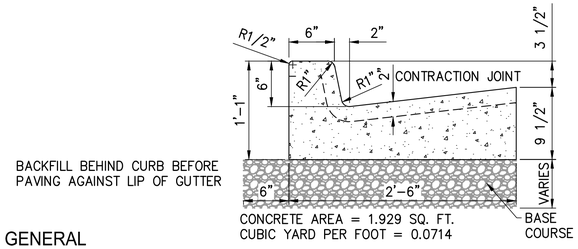
L_{MIN} = W

L_{MAX} (IN FEET) = 2.5 x (T) (IN INCHES)
OR
= 15 FEET MAX

SIDEWALK JOINT DETAIL

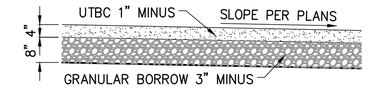
1. GENERAL
   A. VARIANCE FROM SPECIFIED DIMENSIONS AND SLOPES MUST BE ACCEPTABLE TO THE ENGINEER. SYSTEM CONFIGURATION MAY BE CHANGED AT ENGINEER'S DISCRETION
   B. ADDITIONAL REQUIREMENTS ARE SPECIFIED IN APWA SECTION 32 16 14
2. PRODUCTS
   A. BASE COURSE: UNTREATED BASE COURSE, APWA SECTION 32 11 23. DO NOT USE GRAVEL AS A BASE COURSE WITHOUT ENGINEER'S PERMISSION
   B. EXPANSION JOINT FILLER: 1/2-INCH THICK TYPE F1 FULL DEPTH, APWA SECTION 32 13 73
   C. CONCRETE: CLASS 4000, APWA SECTION 03 30 04. IF NECESSARY, PROVIDE CONCRETE THAT ACHIEVES DESIGN STRENGTH IN LESS THAN 7 DAYS. USE CAUTION; HOWEVER, AS CONCRETE CRACKING (SPIDER CRACKS) MAY DEVELOP IF AIR TEMPERATURE EXCEEDS 90 DEGREES F
   D. CONCRETE CURING AGENT: CLEAR MEMBRANE FORMING COMPOUND WITH FUGITIVE DYE (TYPE ID CLASS A), APWA SECTION 03 39 00
3. EXECUTION
   A. BASE COURSE PLACEMENT: APWA SECTION 32 05 10. MAXIMUM LIFT THICKNESS BEFORE COMPACTION IS 8-INCHES WHEN USING RIDING EQUIPMENT OR 6-INCHES WHEN USING HAND HELD EQUIPMENT. COMPACTION IS 95 PERCENT OR GREATER RELATIVE TO A MODIFIED PROCTOR DENSITY, APWA SECTION 31 23 26
   B. CONCRETE PLACEMENT: APWA SECTION 03 30 10
      1. INSTALL EXPANSION JOINTS VERTICAL, FULL DEPTH, WITH TOP OF FILLER SET FLUSH WITH CONCRETE SURFACE
      2. INSTALL CONTRACTION JOINTS VERTICAL, 1/8-INCH WIDE OR 1/4 SLAB THICKNESS IF THE SLAB IS GREATER THAN 8-INCHES THICK. MAXIMUM LENGTH TO WIDTH RATIO FOR NON-SQUARE PANELS IS 1.5 TO 1. MINIMUM PANEL LENGTH (IN FEET) IS 1.5 TIMES THE SLAB THICKNESS (IN INCHES)
      3. PROVIDE 1/2-INCH RADIUS EDGES. APPLY A BROOM FINISH. APPLY A CURING AGENT

(A) ~ DETAIL - SIDEWALK
NOT TO SCALE APWA PLAN 231

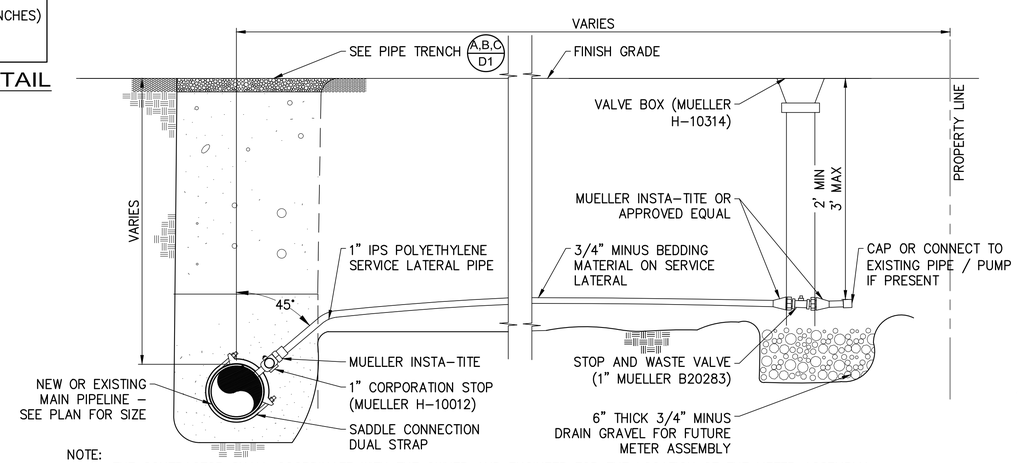


1. GENERAL
   A. VARIANCE FROM SPECIFIED DIMENSIONS AND SLOPES MUST BE ACCEPTABLE TO THE ENGINEER. SYSTEM CONFIGURATION MAY BE CHANGED AT ENGINEER'S DISCRETION.
   B. ADDITIONAL REQUIREMENTS ARE SPECIFIED IN APWA SECTION 32 16 13.
2. PRODUCTS
   A. BASE COURSE: UNTREATED BASE COURSE, APWA SECTION 32 11 23. DO NOT USE GRAVEL AS A BASE COURSE WITHOUT ENGINEER'S PERMISSION.
   B. EXPANSION JOINT FILLER: 1/2-INCH THICK TYPE F1 FULL DEPTH, APWA SECTION 32 13 73.
   C. CONCRETE: CLASS 4000, APWA SECTION 03 30 04. IF NECESSARY, PROVIDE CONCRETE THAT ACHIEVES DESIGN STRENGTH IN LESS THAN 7 DAYS. USE CAUTION: HOWEVER, AS CONCRETE CRAZING (SPIDER CRACKS) MAY DEVELOP IF AIR TEMPERATURE EXCEEDS 90 DEGREES F.
   D. CONCRETE CURING AGENT: CLEAR MEMBRANE FORMING COMPOUND WITH FUGITIVE DYE (TYPE ID CLASS A), APWA SECTION 03 39 00.
3. EXECUTION
   A. BASE COURSE PLACEMENT: APWA SECTION 32 05 10. THICKNESS IS 6-INCHES IF FLOW-LINE GRADE IS 0.5 PERCENT (S=0.005) OR GREATER. IF SLOPE IS LESS, PROVIDE 8-INCHES. MAXIMUM LIFT THICKNESS BEFORE COMPACTION IS 8-INCHES WHEN USING RIDING EQUIPMENT OR 6-INCHES WHEN USING HAND HELD EQUIPMENT. COMPACTION IS 95 PERCENT OR GREATER RELATIVE TO A MODIFIED PROCTOR DENSITY. APWA SECTION 31 23 26.
   B. CONCRETE PLACEMENT: APWA SECTION 03 30 10
      1) INSTALL EXPANSION JOINTS VERTICAL, FULL DEPTH, WITH TOP OF FILLER SET FLUSH WITH CONCRETE SURFACE. INSTALL AT THE START OR END OF A STREET INTERSECTION CURB RETURN. EXPANSION JOINTS ARE NOT REQUIRED IN CONCRETE PLACEMENT USING SLIP-FORM CONSTRUCTION.
      2) INSTALL CONTRACTION JOINTS VERTICAL, 1/8-INCH WIDE OR 1/4 SLAB THICKNESS IF THE SLAB IS GREATER THAN 8-INCHES THICK. MATCH JOINT LOCATION IN ADJACENT PORTLAND-CEMENT CONCRETE ROADWAY PAVEMENT.
      3) PROVIDE 1/2-INCH RADIUS EDGES. APPLY A BROOM FINISH. APPLY A CURING AGENT.
   C. PROTECTION AND REPAIR: PROTECT CONCRETE FROM DEICING CHEMICALS DURING CURE. REPAIR CONSTRUCTION THAT DOES NOT DRAIN. IF NECESSARY, FILL FLOW-LINE WITH WATER TO VERIFY.

(B) ~ DETAIL - CURB AND GUTTER
NOT TO SCALE APWA TYPE A – 30" STANDARD PLAN 205.1



(C) ~ DETAIL - GRAVEL DRIVE
NOT TO SCALE



NOTE:
1. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND ENGINEER FOR THE LOCATION OF THE METER ASSEMBLY.
2. CONTRACTOR SHALL RESTORE ALL DISRUPTED SURFACES TO THEIR ORIGINAL STATE.
3. ONCE BEDDED, NATIVE MATERIAL MAY BE USED TO FILL THE TRENCH ZONE. NATIVE MATERIAL SHALL BE COMPACTED TO 95% W/ 12" MAX LIFTS.

(D) ~ DETAIL - 1" WATER SERVICE CONNECTION
NOT TO SCALE

811 Know what's below. Call before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

SMITHFIELD IRRIGATION COMPANY

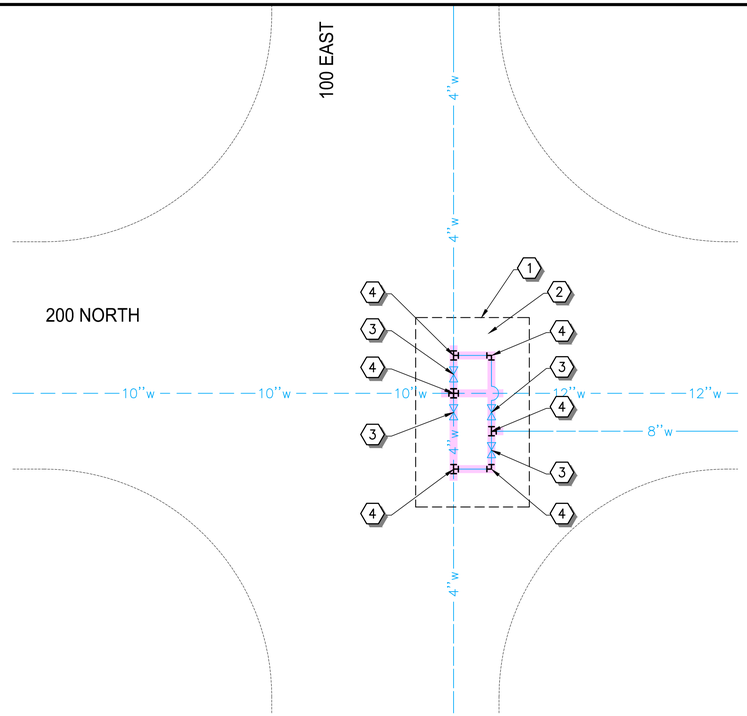
MILL RACE PRESSURIZED PIPELINE
DETAILS
PIPELINE AND SITE DETAILS

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	23 of 26	D3

BID SET

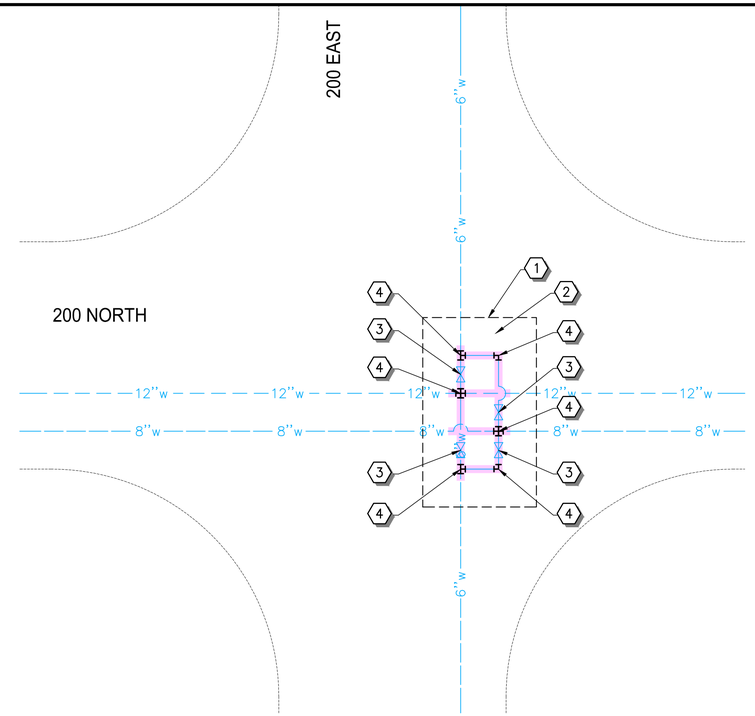
P:\Smithfield Irrigation Company\12499 – SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC-DSI-D3.dwg Oct 02, 2025 4:53pm jpiley

BID SET



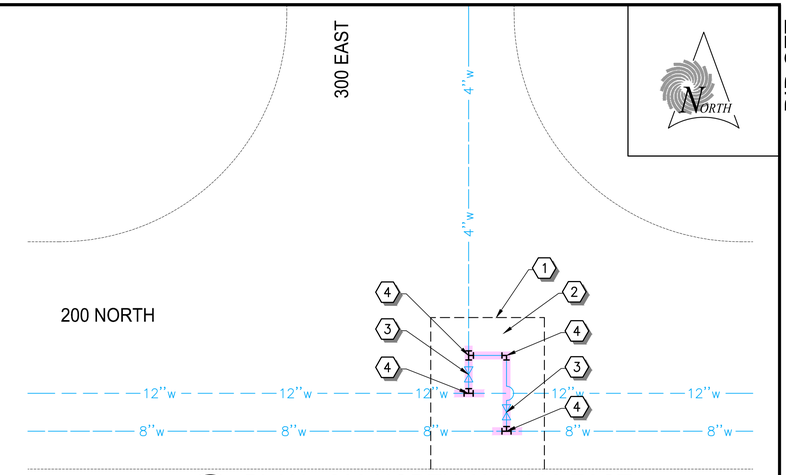
A ~ PLAN - 200 NORTH AND 100 EAST
NOT TO SCALE EXISTING

SURFACE RESTORATION
ASPHALT: 150 SQ. FT.



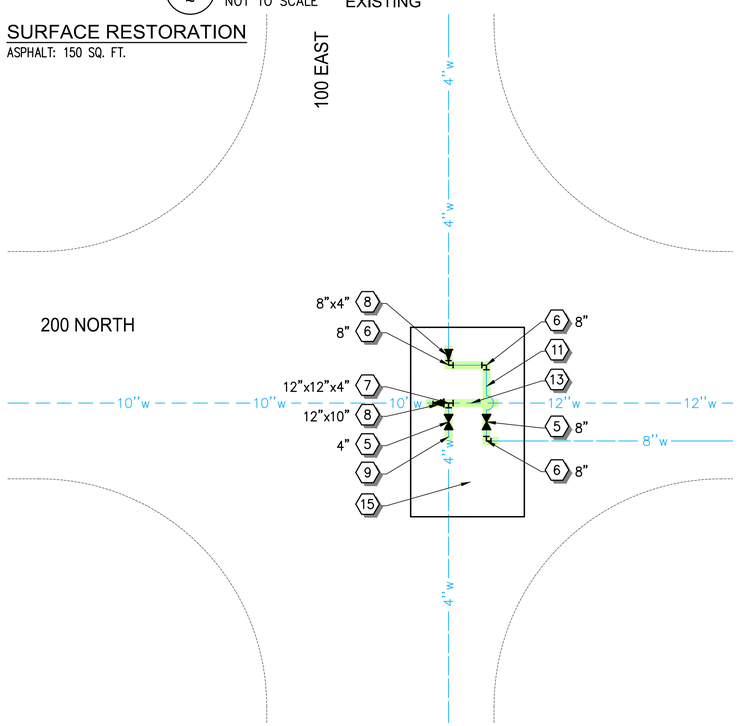
B ~ PLAN - 200 NORTH AND 200 EAST
NOT TO SCALE EXISTING

SURFACE RESTORATION
ASPHALT: 150 SQ. FT.

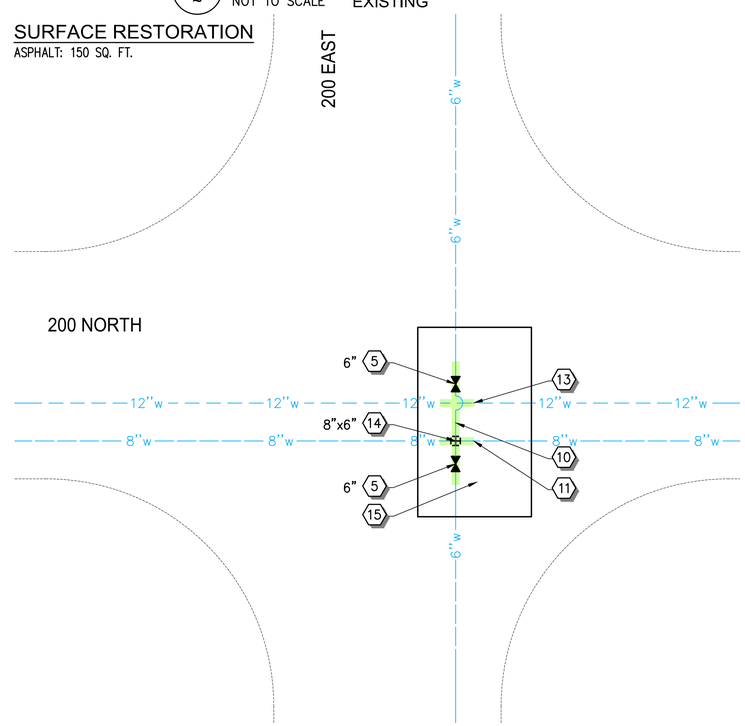


C ~ PLAN - 200 NORTH AND 300 EAST
NOT TO SCALE EXISTING

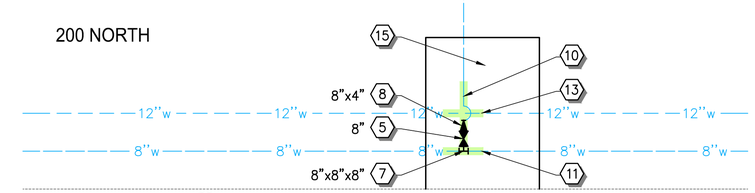
SURFACE RESTORATION
ASPHALT: 100 SQ. FT.



D ~ PLAN - 200 NORTH AND 100 EAST
NOT TO SCALE PROPOSED



E ~ PLAN - 200 NORTH AND 200 EAST
NOT TO SCALE PROPOSED



F ~ PLAN - 200 NORTH AND 300 EAST
NOT TO SCALE PROPOSED

CONSTRUCTION NOTES

1. SAWCUT ASPHALT
2. REMOVE ASPHALT SURFACE
3. REMOVE VALVE
4. REMOVE FITTING
5. INSTALL NEW GATE VALVE (G D1)
6. INSTALL 90° FITTING
7. INSTALL TEE FITTING
8. INSTALL REDUCER FITTING
9. INSTALL 4" PVC C900 PIPE (C D1)
10. INSTALL 6" PVC C900 PIPE (C D1)
11. INSTALL 8" PVC C900 PIPE (C D1)
12. INSTALL 10" PVC C900 PIPE (C D1)
13. INSTALL 12" PVC C900 PIPE (C D1)
14. INSTALL CROSS FITTING
15. REPLACE ASPHALT SURFACE PER SMITHFIELD CITY STANDARDS AND SPECIFICATIONS (C D1)

GENERAL NOTES

12" = GRAVITY ON NORTH

8" = PRESSURE ON SOUTH

811 Know what's below. Call before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

SMITHFIELD IRRIGATION COMPANY

MILL RACE PRESSURIZED PIPELINE
DETAILS
PIPELINE IMPROVEMENTS

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	24 of 26	D4

BID SET

A DETAIL - EXISTING PUMP HOUSE REPLUMBING
NOT TO SCALE

811 Know what's **below.** **Call** before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

SMITHFIELD IRRIGATION COMPANY

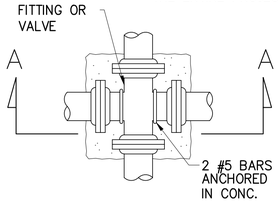
MILL RACE PRESSURIZED PIPELINE
DETAILS
EXISTING PUMP HOUSE REPLUMBING

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	25 of 26	D5

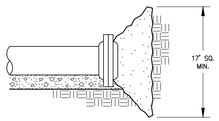
P:\Smithfield Irrigation Company\12499 – SIC Diversion System Improvements Project 2025\DWG\Sheets\SIC-DSI-D5.dwg Oct 02, 2025 4:53pm jpiley

CONCRETE THRUST BLOCK RESTRAINING SYSTEM DETAILS

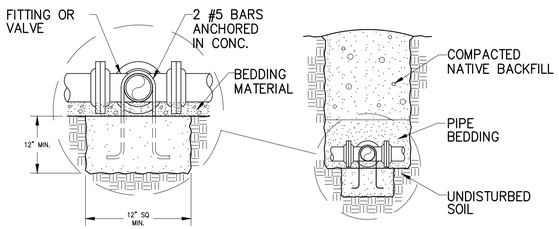
NOTE
CONTRACTOR SHALL USE EITHER MEGALUG OR CONCRETE THRUST RESTRAINING SYSTEM FOR THE ENTIRE PROJECT.



PLAN – THRUST BLOCK



DETAIL – DEAD END THRUST BLOCK



SECTION A–A

THRUST BLOCK BEARING AREA IN SQ. FT.

PIPE SIZE	CROSS	TEE	WYE	DEAD END	VALVE	90° BEND	45° BEND	22.5° BEND	11.25° BEND
4	2.4	1.7	1.7	1.7	1.7	2.4	1.3	1.0	1.0
6	5.4	3.8	3.8	3.8	3.8	5.4	2.9	1.5	1.0
8	9.6	6.8	6.8	6.8	6.8	9.6	5.2	2.7	1.4
10	15.0	10.6	10.6	10.6	10.6	15.0	8.1	4.2	2.1
12	21.5	15.2	15.2	15.2	15.2	21.5	11.7	6.0	3.0
14	29.3	20.7	20.7	20.7	20.7	29.3	15.9	8.1	4.1
16	38.2	27.0	27.0	27.0	27.0	38.2	20.7	10.6	5.3
18	48.4	34.2	34.2	34.2	34.2	48.4	26.2	13.4	6.7
20	59.7	42.2	42.2	42.2	42.2	59.7	32.3	16.5	8.3
24	85.9	60.8	60.8	60.8	60.8	85.9	46.5	23.7	11.9

REDUCER

D2 \ D1	6	8	10	12	14	16	18	20	24
4	2.1	5.1	8.8	13.4	–	–	–	–	–
6	–	3.0	6.7	11.3	16.8	23.1	–	–	–
8	–	–	3.8	8.4	13.8	20.1	27.2	–	–
10	–	–	–	4.6	10.1	16.3	23.5	31.4	–
12	–	–	–	–	5.5	11.7	18.8	26.8	45.2
14	–	–	–	–	–	6.3	13.4	21.3	39.8
16	–	–	–	–	–	–	7.1	15.1	33.5
18	–	–	–	–	–	–	–	8.0	26.3
20	–	–	–	–	–	–	–	–	18.4

NOTES:

1. ALL THRUST BLOCK BEARING FACES SHALL BE PLACED AGAINST UNDISTURBED SOIL OR APPROVED COMPACTED BACKFILL.
2. SQUARE ALL EDGES TO RECEIVE CONCRETE.
3. CONCRETE SHALL BE CLASS C.
4. CALCULATED ON 200 PSI TEST PRESSURE AND ALLOWABLE BEARING PRESSURE OF 1500 LBS. PER SQ. FT.
5. IN POORER SOILS SPECIAL DESIGN IS REQUIRED.
6. ALL FITTINGS AND VALVES SHALL BE ANCHORED WITH TWO #5 REBAR. ONLY ONE REQ'D FOR REDUCER
7. CENTER ALL FITTINGS OVER THRUST BLOCKS.

A ~ DETAIL - THRUST BLOCK
NOT TO SCALE

MEGALUG THRUST RESTRAINING SYSTEM DETAILS

NOTE
CONTRACTOR SHALL USE EITHER MEGALUG OR CONCRETE THRUST RESTRAINING SYSTEM FOR THE ENTIRE PROJECT.

* CALCULATIONS DERIVED FROM EBAA IRON SALES

BASED ON:
TEST PRESSURE 200 PSI
SOIL TYPE: GM – SILTY GRAVEL, GRAVEL-SAND-SILT MIXTURE
BURIAL DEPTH: 4 FT.
TRENCH TYPE: 5 – PIPE BEDDED IN COMPACTED GRANULAR

MATERIAL TO THE CENTER LINE OF PIPE, 4" MIN. UNDER PIPE. COMPACTED GRANULAR OR SELECT MATERIAL TO TOP OF PIPE. (APPROX. 90% STANDARD PROCTOR, AASHTO T-99)
SAFETY FACTOR: 1.5

BID SET

PVC VERTICLE BEND RESTRAINED LENGTHS IN FT. (L_1–BEFORE CONNECTION/L_2, AFTER CONNECTION)

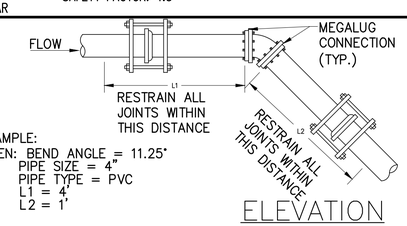
BEND ANGLE	PIPE SIZE									
	4	6	8	10	12	14	16	18	20	24
11.25	4/1	5/2	7/2	9/3	10/3	12/4	13/4	15/5	16/5	19/6
22.5	8/3	11/4	15/5	17/6	21/7	24/8	27/9	30/9	33/10	38/12
45	16/5	23/8	30/10	36/12	43/14	49/16	56/18	62/20	68/21	79/25

CALCULATIONS BASED ON THE ELEVATION OF THE PIPE REMAINING CONSTANT WITH THE CONTOUR OF THE GROUND. FOR TWO WAY FLOW, SUCH AS FOUND IN DISTRIBUTION SYSTEMS, USE L_1 ON BOTH SIDES OF FITTING.

DIP VERTICLE BEND RESTRAINED LENGTHS IN FT. (L_1, BEFORE CONNECTION/L_2–AFTER CONNECTION)

BEND ANGLE	PIPE SIZE									
	4	6	8	10	12	14	16	18	20	24
11.25	2/1	4/2	5/2	6/2	7/3	8/3	8/4	9/4	10/4	12/5
22.5	5/2	7/3	9/4	11/5	13/6	15/6	17/7	19/8	21/9	24/10
45	11/5	15/6	20/8	23/10	28/12	32/13	36/15	40/17	43/18	51/21

CALCULATIONS BASED ON THE ELEVATION OF THE PIPE REMAINING CONSTANT WITH THE CONTOUR OF THE GROUND.



EXAMPLE:
GIVEN: BEND ANGLE = 11.25°
PIPE SIZE = 4"
PIPE TYPE = PVC
L1 = 4'
L2 = 1'

ELEVATION

PVC HORIZONTAL BEND RESTRAINED LENGTHS L, IN FT.

BEND ANGLE	PIPE SIZE									
	4	6	8	10	12	14	16	18	20	24
11.25	1	2	2	3	3	4	4	5	5	6
22.5	3	4	5	6	7	8	9	9	10	12
45	5	8	10	12	14	16	18	20	21	25
90	13	18	24	29	34	38	43	47	52	60

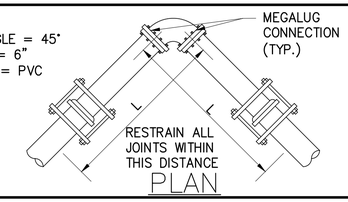
1. ALL JOINTS WITHIN THE "L" DISTANCE SHALL BE RESTRAINED

DIP HORIZONTAL BEND RESTRAINED LENGTHS L, IN FT.

BEND ANGLE	PIPE SIZE									
	4	6	8	10	12	14	16	18	20	24
11.25	1	2	2	2	3	3	4	4	4	5
22.5	2	3	4	5	6	6	7	8	9	10
45	5	6	8	10	12	13	15	17	18	21
90	11	15	20	24	28	32	36	40	44	51

1. ALL JOINTS WITHIN THE "L" DISTANCE SHALL BE RESTRAINED

EXAMPLE:
GIVEN: BEND ANGLE = 45°
PIPE SIZE = 6"
PIPE TYPE = PVC
L = 8'



PLAN

PVC TEE RESTRAINED LENGTHS L, IN FT.

BRANCH SIZE DIA.	RUN SIZE DIAMETER									
	4	6	8	10	12	14	16	18	20	24
4	*	*	*	*	*	*	*	*	*	*
6	–	*	*	*	*	*	*	*	*	*
8	–	–	*	*	*	*	*	*	*	*
10	–	–	–	*	*	*	*	*	*	*
12	–	–	–	–	*	*	*	*	*	*
14	–	–	–	–	–	*	*	*	*	*
16	–	–	–	–	–	–	7	*	*	*
18	–	–	–	–	–	–	–	20	4	*
20	–	–	–	–	–	–	–	–	34	3
24	–	–	–	–	–	–	–	–	–	60

* = FOR THIS CONDITION NEED ONLY RESTRAIN THE OUTLETS OF TEE

NOTES:

1. RESTRAIN THE THREE MECHANICAL JOINTS ON THE TEE.
2. ALL JOINTS WITHIN THE "L" DISTANCE ON THE BRANCH SIDE OF TEE SHALL BE RESTRAINED AND ALL JOINTS WITHIN 18' ON THE RUN SIDE OF THE TEE SHALL BE RESTRAINED.

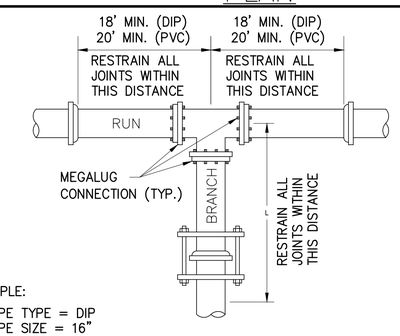
DIP TEE RESTRAINED LENGTHS L, IN FT.

BRANCH SIZE DIA.	RUN SIZE DIAMETER									
	4	6	8	10	12	14	16	18	20	24
4	*	*	*	*	*	*	*	*	*	*
6	–	*	*	*	*	*	*	*	*	*
8	–	–	*	*	*	*	*	*	*	*
10	–	–	–	*	*	*	*	*	*	*
12	–	–	–	–	*	*	*	*	*	*
14	–	–	–	–	–	*	*	*	*	*
16	–	–	–	–	–	–	12	2	*	*
18	–	–	–	–	–	–	–	21	12	*
20	–	–	–	–	–	–	–	–	30	12
24	–	–	–	–	–	–	–	–	–	47

* = FOR THIS CONDITION NEED ONLY RESTRAIN THE OUTLETS OF TEE

NOTES:

1. RESTRAIN THE THREE MECHANICAL JOINTS ON THE TEE.
2. ALL JOINTS WITHIN THE "L" DISTANCE ON THE BRANCH SIDE OF TEE SHALL BE RESTRAINED AND ALL JOINTS WITHIN 18' ON THE RUN SIDE OF THE TEE SHALL BE RESTRAINED.



EXAMPLE:
PIPE TYPE = DIP
PIPE SIZE = 16"
L = 12'

PLAN

PVC REDUCER RESTRAINED LENGTHS L, IN FT. (SMALL SIDE/LARGE SIDE)

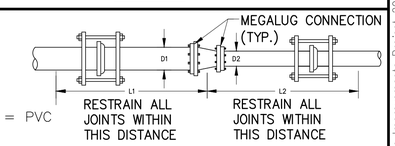
D2 \ D1	6	8	10	12	14	16	18	20	24
4	42/29	100/52	171/71	258/90	–	–	–	–	–
6	–	40/31	88/54	147/75	217/95	297/113	–	–	–
8	–	–	37/29	82/55	135/77	197/98	266/117	–	–
10	–	–	–	36/30	79/56	128/80	183/100	244/120	–
12	–	–	–	–	36/30	77/57	123/80	174/102	293/142
14	–	–	–	–	–	35/30	74/57	118/81	219/124
16	–	–	–	–	–	–	34/30	73/57	161/104
18	–	–	–	–	–	–	–	34/30	111/82
20	–	–	–	–	–	–	–	–	70/57

1. ALL JOINTS WITHIN THE "L" DISTANCE SHALL BE RESTRAINED

DIP REDUCER RESTRAINED LENGTHS L, IN FT. (SMALL SIDE/LARGE SIDE)

D2 \ D1	6	8	10	12	14	16	18	20	24
4	27/18	65/34	110/46	166/58	–	–	–	–	–
6	–	26/20	57/35	95/48	140/61	192/73	–	–	–
8	–	–	24/19	53/35	87/50	127/63	171/75	–	–
10	–	–	–	23/20	51/36	82/51	118/64	158/77	–
12	–	–	–	–	23/20	49/37	79/52	112/66	188/91
14	–	–	–	–	–	22/20	48/37	76/52	141/80
16	–	–	–	–	–	–	22/19	47/37	103/67
18	–	–	–	–	–	–	–	22/19	72/53
20	–	–	–	–	–	–	–	–	45/37

1. ALL JOINTS WITHIN THE "L" DISTANCE SHALL BE RESTRAINED



EXAMPLE:
PIPE TYPE = PVC
D_1 = 8"
D_2 = 6"
L_1 = 31'
L_2 = 40'

PVC DEAD END RESTRAINED LENGTHS L, IN FT.

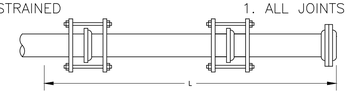
PIPE SIZE									
4	6	8	10	12	14	16	18	20	24
39	55	73	88	104	119	134	149	163	192

1. ALL JOINTS WITHIN THE "L" DISTANCE SHALL BE RESTRAINED

DIP DEAD END RESTRAINED LENGTHS L, IN FT.

PIPE SIZE									
4	6	8	10	12	14	16	18	20	24
25	36	47	57	67	76	86	95	105	123

1. ALL JOINTS WITHIN THE "L" DISTANCE SHALL BE RESTRAINED



EXAMPLE:
PIPE TYPE = DIP
PIPE SIZE = 10"
L = 57'

B ~ DETAIL - MECHANICAL THRUST RESTRAINING SYSTEM DETAILS FOR PRESSURE SYSTEMS
NOT TO SCALE

811 Know what's below. Call before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 12401899 Steven David Wood 10/02/2025 STATE OF UTAH

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

SMITHFIELD IRRIGATION COMPANY

MILL RACE PRESSURIZED PIPELINE
DETAILS
THRUST BLOCK DETAILS

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
12499	HP	JJ	SDW	26 of 26	D6