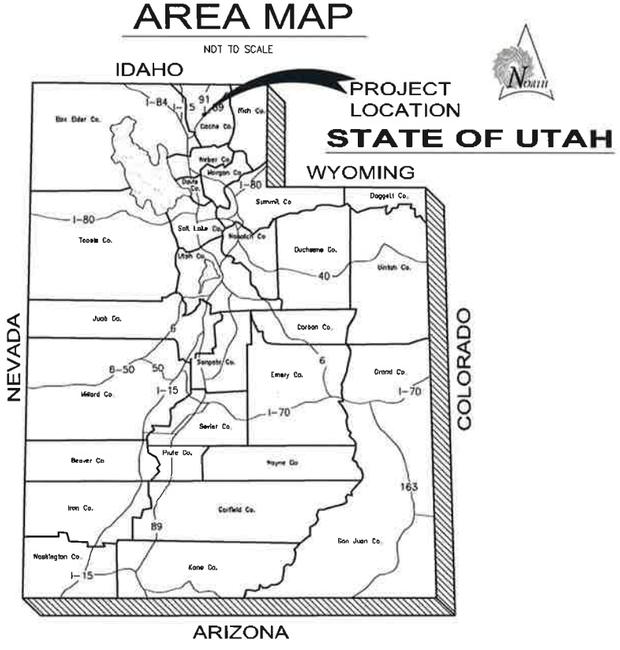
LOGAN CITY

200 NORTH AND 400 NORTH SEWER IMPROVEMENTS PROJECT

2024

AREA MAP

NOT TO SCALE



LOGAN CITY

UNITED IN SERVICE

LOCATION MAP

NOT TO SCALE

PREPARED BY:

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LICENSED PROFESSIONAL ENGINEER
No. 334535
Scott M. Archibald
02/14/2024
STATE OF UTAH

THESE PLANS HAVE BEEN REVIEWED AND APPROVED BY THE FOLLOWING:

PUBLIC WORKS DIRECTOR:	PAUL LINDHARDT, P.E.	DATE 2-14-24
WATER/WASTEWATER MANAGER:	JOSEPH HAWKES, P.E.	DATE 2-14-24
CITY ENGINEER:	DARREN FARAR, P.E.	DATE 2-14-24
PROJECT MANAGER:	ALEX OLIPHANT, P.E.	DATE 2-14-24

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GENERAL NOTES

STANDARDS AND SPECIFICATIONS

1. ALL CONSTRUCTION SHALL MEET CITY OF LOGAN STANDARDS AND SPECIFICATIONS (APWA 2007, AS AMENDED BY LOGAN CITY AS OF DATE APPROVED FOR CONSTRUCTION BY ENGINEER). STANDARDS AND SPECIFICATIONS CAN BE VIEWED AND PRINTED AT: HTTP://WWW.LOGANUTAH.ORG/GOVERNMENT/DEPARTMENTS/PUBLIC_WORKS/ENGINEERING/ENGINEERING_DOCS.PHP
2. ANY AMBIGUITIES OR CONFLICTS IDENTIFIED BY THE CONTRACTOR, CONTRACTOR'S REPRESENTATIVE, ENGINEER, OR ENGINEER'S REPRESENTATIVE SHALL BE IDENTIFIED TO THE ENGINEER IMMEDIATELY. THESE SHALL BE RESOLVED AT NO ADDITIONAL COST TO THE CITY BASED ON THE FOLLOWING ORDER OF PRECEDENCE (PER APWA 2007 SECTION 00 72 00, PART 3, SECTION 3.3) EXCEPT AS NOTED HEREIN:
   - 2.1. CONTRACT FOR CONSTRUCTION (FROM BID DOCUMENTS)
   - 2.2. MODIFICATIONS, ADDENDUMS, OR CHANGE ORDERS SHALL TAKE PRECEDENCE OVER ALL PREVIOUS MODIFICATIONS, ADDENDUMS, OR CHANGE ORDERS.
   - 2.3. APWA 2007 GENERAL CONDITIONS SECTION 00 72 00 AS AMENDED BY LOGAN CITY
   - 2.4. SPECIAL OR SUPPLEMENTAL SPECIFICATIONS
   - 2.5. PLANS (DRAWINGS)
     - 2.5.1. WRITTEN DIMENSIONS OVER MEASURED DIMENSIONS
     - 2.5.2. SPECIAL DETAILS OVER PLANS AND PROFILES EXCEPT THAT LOGAN CITY STANDARD DETAILS SHALL TAKE PRECEDENT OVER CONSTRUCTION DETAILS UNLESS STATED OTHERWISE BY CITY ENGINEER.
   - 2.6. STORM WATER POLLUTION PREVENTION PLAN AND OTHER PERMITS
   - 2.7. LOGAN CITY AMENDMENTS TO APWA 2007 STANDARD DRAWINGS
   - 2.9. LOGAN CITY AMENDMENTS TO APWA 2007 STANDARD SPECIFICATIONS
   - 2.10. APWA 2007 STANDARD DRAWINGS
   - 2.11. APWA 2007 STANDARD SPECIFICATIONS
3. CONTRACTOR IS SOLELY RESPONSIBLE TO REVIEW AND FULLY UNDERSTAND THE PLANS DURING BIDDING. DEVIATIONS OR DISCREPANCIES ARE TO BE IDENTIFIED DURING BIDDING IF AND WHEN IDENTIFIED.

SAFETY IN THE WORK ZONE

1. ALL PERSONNEL ARE REQUIRED TO WEAR A MINIMUM OF HARD-HATS, STEEL TOE BOOTS AND SAFETY GLASSES WITHIN THE WORK ZONE.
2. ORANGE OR FLORESCENT YELLOW VESTS OR CLOTHING SHALL BE WORN WHILE WORKING ON THIS PROJECT COMPLIANT WITH THE FOLLOWING:
   - 2.1. CLASS 3 WHILE WORKING AT NIGHT WITHIN UDOT RIGHT-OF-WAY OR WHERE VEHICLE VELOCITIES MAY EXCEED 50 MPH.
   - 2.2. CLASS 2 WHILE WORKING WITHIN LOGAN CITY RIGHT-OF-WAY AND WHERE VEHICLE VELOCITIES ARE LESS THAN 50 MPH.
3. ALL TRENCHING SHALL BE IN COMPLIANCE WITH OSHA 29 CFS, PART 1926. ALL SOILS SHALL BE CONSIDERED TYPE C WHILE PREPARING TRENCH SHORING CALCULATIONS UNLESS GEOTECHNICAL REPORT SPECIFIES A TYPE D.
4. CONFORM TO ALL OTHER APPLICABLE OSHA RULES AND REGULATIONS WHILE WORKING ON THIS PROJECT.

EXISTING UTILITIES

1. UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE ONLY.
2. CONTRACTOR SHALL FIELD VERIFY ALL UTILITY LOCATIONS BY CONTACTING BLUE STAKES AT 1-800-662-4111 OR 811 AND OTHER APPLICABLE UTILITIES PRIOR TO EXCAVATION.
3. UTILITY CONTACTS ARE AS FOLLOWS:
   - 3.1. WATER AND SEWER: JOE HAWKES (435) 716-9622
   - 3.2. STREET AND STORM WATER: HART WYBROW (801) 633-6617
   - 3.3. LOGAN CITY LIGHT AND POWER: STEVE CROSBY (435) 716-9745
   - 3.4. COMCAST: ALEX VASQUEZ (801) 831-6691
   - 3.5. CENTURY LINK: DARREN KELLER (801) 238-0414
   - 3.6. FIRST DIGITAL: BRANDON BALMFORTH (801) 240-4008
   - 3.7. UTOPIA: JEFF NICHOLAS (801) 866-8356
   - 3.8. SYRINGA: BRIAN LEE (801) 332-0631
   - 3.9. DOMINION ENERGY: NICK WHITE (435) 213-5662
   - 3.10. LOGAN NORTHWEST FIELD IRRIGATION COMPANY: RICHARD BOUDRERO – (435) 760-7959
4. CONTRACTOR SHALL POT-HOLE AND LOCATE EXISTING UTILITIES WHEN NECESSARY TO ENSURE CONSTRUCTION DOES NOT IMPACT EXISTING UTILITIES AND THAT THE LOCATION OF EXISTING UTILITIES DOES NOT AFFECT CONSTRUCTION. POT-HOLING SHALL BE DONE AT THE BEGINNING OF THE PROJECT IN ORDER TO PROVIDE UTILITY OWNERS ADEQUATE TIME TO RELOCATE SERVICES IF NECESSARY OR TO ALLOW ENGINEER TO REDESIGN PRIOR TO FABRICATION OF PRE-CAST STRUCTURES.
5. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COSTS AND REPAIRS DUE TO DAMAGE OF EXISTING UTILITIES. ALL UTILITIES MAY NOT BE SHOWN ON PLANS.
6. ALL UTILITIES SHALL BE KEPT IN WORKING ORDER EXCEPT FOR THE MINIMUM TIME NEEDED FOR EXCAVATION, TRENCHING, CONNECTIONS, ETC.
7. APPROVAL FROM THE ENGINEER IS REQUIRED PRIOR TO WATER AND SEWER SHUT-DOWNS IF REQUIRED TO COMPLETE THIS PROJECT. ALL AFFECTED ENTITIES AND PROPERTY OWNERS SHALL BE NOTIFIED 72 HOURS PRIOR TO APPROVED SHUTDOWNS.

PERMITS

1. CONTRACTOR SHALL COMPLY WITH THE TERMS OF ALL PERMITS REQUIRED FOR THIS PROJECT.
2. CONTRACTOR SHALL OBTAIN AND KEEP COPIES OF ALL REQUIRED PERMITS AT PROJECT LOCATION DURING REASONABLE WORKING HOURS.
3. CONTRACTOR SHALL OBTAIN A ENCROACHMENT PERMIT FROM UDOT, IF NEEDED, PRIOR TO INITIATING ANY SITE DISTURBANCE OR CONSTRUCTION IN LOGAN CITY RIGHT OF WAY
4. CONTRACTOR SHALL OBTAIN A WORK IN THE RIGHT OF WAY PERMIT (CITY OF LOGAN) PRIOR TO INITIATING ANY SITE DISTURBANCE OR CONSTRUCTION IN LOGAN CITY RIGHT OF WAY.
5. THE CONTRACTOR SHALL COMPLY WILL THE DEQ DWQ GENERAL CONSTRUCTION PERMIT (SEE SW1).
6. THE CONTRACTOR WILL OBTAIN THE NOTICE OF INTENT (NOI) AND A NOTICE OF TERMINATION AT THE APPROPRIATE TMES FROM THE STATE OF UTAH DEQ DWQ. THE CONTRACTOR WILL BE INCLUDED ON THE PERMIT AND WILL BE EXPLICITLY RESPONSIBLE FOR THE RESPONSIBILITIES AS LISTED IN THE SWPPP.
7. IF DEWATERING IS REQUIRED, CONTRACTOR SHALL OBTAIN DEWATERING PERMITS FROM THE STATE OF UTAH DIVISION OF WATER QUALITY AND COMPLY WITH ALL STATE REQUIREMENTS.
8. CONTRACTOR SHALL OBTAIN A LOGAN CITY LAND DISTURBANCE PERMIT.

CONSTRUCTION NOTES

SURVEY AND CONSTRUCTION STAKING

1. CONTRACTOR SHALL PROVIDE ALL SURVEY FOR THE PROJECT BY A LICENSED PROFESSIONAL SURVEYOR WHO IS LICENSED IN THE STATE OF UTAH. SURVEY WILL INCLUDE (IF REQUIRED IN THESE PLANS) BUT NOT BE LIMITED TO:
   - 1.1. CONSTRUCTION STAKING, INCLUDING CREATING ALL STAKE OUT FILES.
   - 1.2. UTILITY LOCATIONS
   - 1.3. PROVIDE SURVEY FOR UTILITY RELOCATION FOR UTILITY PROVIDERS
   - 1.4. ROW AND ROAD CENTERLINE MARKERS (CITY PROVIDED PER CITY SURVEYOR)
   - 1.5. LIMIT OF DISTURBANCE
   - 1.6. SURVEY AND MARKING OF BOUNDARY OF WETLANDS TO BE PROTECTED
   - 1.7. AREAS AND LIMITS OF DEMOLITION
   - 1.8. VERIFICATION OF QUANTITIES FOR EACH PAYMENT REQUEST
2. SURVEYOR SHALL PROVIDE COMPLETE RECORD DRAWINGS (INCLUDING RED LINE DRAWINGS WITH SURVEY POINTS VERIFYING LOCATIONS) SHOWING WHERE ANY CHANGES IN THE ORIGINAL DESIGN WHERE REQUIRED. FINAL PUNCH LISTS AND FINAL PAYMENTS SHALL NOT BE MADE UNTIL RECORD DRAWINGS HAVE BEEN RECEIVED, REVIEWED, CORRECTED WHERE REQUIRED, AND APPROVED BY ENGINEER.
3. ALL SURVEY CONTROL DATA ARE INCLUDED ON SHEET S1. FILES WILL BE MADE AVAILABLE TO SURVEYOR FROM CITY AS NEEDED.

ACCESS RESTRICTIONS, ROAD AND LANE CLOSURES, PEDESTRIAN ACCESS AND TRAFFIC CONTROL PLAN

1. CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN, ADEQUATE TRAFFIC CONTROL, SIGNING, BARRICADING, AND PEDESTRIAN DIRECTION THROUGH AND AROUND THE CONSTRUCTION WORK ZONE IN COMPLIANCE WITH THE UDOT MUTCD AS REQUIRED BY UTAH STATE LAW (R920-1).
2. THE TRAFFIC CONTROL PLANS SHALL BE PROVIDED TO THE ENGINEER A MINIMUM OF 48 HOURS PRIOR TO THE PRE-CONSTRUCTION MEETING TO ALLOW REVIEW FOR APPROVAL. COMMENTS AND REQUIRED CHANGES SHALL BE PROVIDED AT THE PRE-CONSTRUCTION MEETING. ALL CORRECTIONS SHALL BE INCORPORATED INTO THE TRAFFIC CONTROL PLAN BEFORE A WORK IN THE RIGHT-OF-WAY PERMIT WILL BE ISSUED.
3. CONTRACTOR SHALL INSTALL AND MAINTAIN ALL TRAFFIC CONTROL AS PART OF THIS PROJECT.
4. CONTRACTOR SHALL INSPECT TRAFFIC CONTROL DAILY TO ENSURE A SAFE WORK ZONE.
5. ANY SIGNIFICANT MODIFICATIONS TO THE TRAFFIC CONTROL PLAN DURING CONSTRUCTION SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO IMPLEMENTATION.
6. PROPERTY OWNERS, RESIDENTS, AND BUSINESSES SHALL BE GIVEN 48 HOURS NOTICE OF DRIVEWAY ACCESS RESTRICTIONS DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR NOTIFYING HOMEOWNERS, RESIDENTS, AND BUSINESSES AS NEW PIPING AND CONCRETE ARE INSTALLED.
7. ACCESS TO ALL BUSINESSES WITHIN THE PROJECT AREA SHALL BE COORDINATED WITH BUSINESS OWNERS AND REASONABLY MAINTAINED DURING CONSTRUCTION.
8. CONTRACTOR SHALL PROVIDE NOTICE OF ROAD CLOSURE TO LOCAL AREA BUSINESSES AT LEAST 48-HOURS IN ADVANCE OF CLOSURE.
9. CONTRACTOR SHALL COORDINATE LANE CLOSURES AND PARTIAL AND COMPLETE ROAD CLOSURES WITH THE ENGINEER.
10. CONTRACTOR SHALL NOTIFY EMERGENCY SERVICES, CACHE VALLEY TRANSIT AUTHORITY, LOGAN CITY ENVIRONMENTAL DEPARTMENT, USU POLICE, AGGIE SHUTTLE, AND THE SCHOOL DISTRICT OF CLOSURE AT LEAST 48- HOURS PRIOR TO CLOSURE. THROUGH TRAFFIC MUST BE MAINTAINED TO THE GREATEST EXTENT REASONABLE AND SAFE.
11. ROAD CLOSURE IS ALLOWED ON CONDITION OF CONTINUAL WORK IN THE ROADWAY. THE ROADWAY SHALL BE OPENED TO THROUGH TRAFFIC AT EVERY OPPORTUNITY WHEN CONDITIONS ARE SAFE AND WORK CREWS ARE NOT ACTIVELY WORKING IN THE ROADWAY.

IRRIGATION AND CANAL IMPACTS

1. DAMAGE OF EXISTING IRRIGATION SYSTEMS AND BOXES WILL BE REPAIRED BY CONTRACTOR.
2. CONTRACTOR SHALL ENSURE PRIVATE IRRIGATION WATER DELIVERED BY CANAL COMPANIES IS AVAILABLE TO ALL USERS OF THE SYSTEM AT THEIR SCHEDULED TIMES OF USE. COORDINATE INTERRUPTIONS WITH INDIVIDUAL USERS.
3. CONTRACTOR SHALL COORDINATE METHOD OF IRRIGATION DELIVERY DURING CONSTRUCTION WITH INDIVIDUAL PROPERTY OWNERS PRIOR TO INITIATING CONSTRUCTION. ALL METHODS OF MITIGATING IMPACT SHALL BE APPROVED IN WRITING BY WATER USERS, OR THEIR DESIGNATED REPRESENTATIVE, PRIOR TO INITIATING DISTURBANCE.
4. AUTHORIZED USERS OF THE IRRIGATION SYSTEM SHALL BE GIVEN 48 HOURS NOTICE PRIOR TO INTERRUPTIONS TO IRRIGATION SYSTEM.

QUALITY CONTROL TESTING

1. CONTRACTOR SHALL EMPLOY AN APPROVED INDEPENDENT QUALITY CONTROL TESTING AGENCY TO PROVIDE TESTING FOR THE SITE IN ACCORDANCE WITH THE APPROPRIATE SECTIONS OF APWA MANUAL OF STANDARDS AND SPECIFICATIONS AS AMENDED BY LOGAN CITY.
2. THE CONTRACTOR'S INDEPENDENT QUALITY CONTROL TESTING AGENCY SHALL PROVIDE PROCTOR, GRADATION, AND CBR VALUES FOR PROPOSED GRANULAR BACKFILL BORROW AND UNTREATED BASE COURSE AT THE PRE-CONSTRUCTION MEETING. COMPACTION TESTS SHALL BE PROVIDED AT LEAST AT THE INTERVALS REQUIRED IN APWA 2007 STANDARD SPECIFICATIONS AS AMENDED BY LOGAN CITY.
3. CONTRACTOR'S INDEPENDENT QUALITY CONTROL TESTING AGENCY SHALL PROVIDE ASPHALT TESTING INCLUDING NUCLEAR DENSITY TESTING FOR COMPACTION AND OTHER FIELD TESTS REQUIRED BY APWA SECTION 32 12 16, ACCEPTANCE. PATCH ALL ASPHALT CORE SAMPLES WITH CONCRETE.
4. CONTRACTOR'S INDEPENDENT QUALITY CONTROL TESTING AGENCY SHALL PROVIDE CONCRETE TESTING INCLUDING AIR, SLUMP, 7 DAY BREAK TEST, AND 28 DAY BREAK TESTS AS REQUIRED BY APWA SECTION 03 30 05.
5. FIELD TEST RESULTS SHALL BE IMMEDIATELY SUBMITTED TO THE ENGINEER FOR THE CITY OF LOGAN, THE DESIGNATED PUBLIC WORKS INSPECTOR FOR THE PROJECT, AND A COPY OF EACH REPORT KEPT ONSITE. EACH FAILED FIELD TEST AND ITS CORRESPONDING PASSING TEST SHALL BE CLEARLY IDENTIFIED IN EACH FIELD TEST REPORT.
6. LABORATORY TEST RESULTS SHALL BE SUBMITTED TO THE ENGINEER FOR THE CITY OF LOGAN WITHIN 48 HOURS OF DETERMINATION.
7. A FINAL SUMMARY REPORT, IN TABULAR FORM, SHALL BE SUBMITTED TO THE ENGINEER FOR THE CITY OF LOGAN PRIOR TO FINAL ACCEPTANCE OF THE PROJECT. THE FINAL SUMMARY REPORT SHALL INCLUDE TABULAR RESULTS SHOWING EACH FAILED TEST AND ITS CORRESPONDING PASSING TEST.

SHEET INDEX

UDOT GENERAL NOTES

1. ALL CONSTRUCTION WITHIN THE UDOT RIGHT-OF-WAY SHALL CONFORM TO THE MOST CURRENT UDOT STANDARD (INCLUDING SUPPLEMENTAL) DRAWINGS AND SPECIFICATIONS.
2. THE CONTRACTOR IS TO OBTAIN AN ENCROACHMENT PERMIT FROM THE APPLICABLE UDOT REGION PERMIT OFFICE PRIOR TO COMMENCING WORK WITHIN UDOT RIGHT-OF-WAY. WORKING HOUR LIMITATIONS WILL BE LISTED IN THE LIMITATIONS SECTION OF THE ENCROACHMENT PERMIT.
3. UDOT RESERVES THE RIGHT, AT ITS OPTION, TO INSTALL A RAISED MEDIAN ISLAND OR RESTRICT THE ACCESS TO A RIGHT-IN OR RIGHT-OUT AT ANY TIME.
4. OWNER, DEVELOPER, AND CONTRACTOR ARE RESPONSIBLE FOR ANY DAMAGES DIRECTLY OR INDIRECTLY WITHIN THE UDOT RIGHT-OF-WAY AS A RESULT OF DEVELOPMENT ACTIVITIES.
5. OWNER, DEVELOPER, AND/OR CONTRACTOR IS REQUIRED TO HIRE AN INDEPENDENT COMPANY FOR ALL TESTING WITHIN THE UDOT RIGHT-OF-WAY.
6. ALL SIGNS INSTALLED ON THE UDOT RIGHT-OF-WAY MUST BE HIGH INTENSITY GRADE (TYPE XI SHEETING) WITH A B3 SLIP BASE. INSTALL ALL SIGNS PER UDOT SN SERIES STANDARD DRAWINGS.
7. COMPLY WITH THE REQUIREMENTS OF UTAH CODE 17-23-14 (DISTURBED CORNERS – COUNTY SURVEYOR TO BE NOTIFIED – COORDINATION WITH CERTAIN STATE AGENCIES).

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

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 334535 Scott L. Archibald 02/14/2024 STATE OF UTAH

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LOGAN CITY

200 NORTH AND 400 NORTH SEWER

GENERAL

GENERAL NOTES, SHEET INDEX

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	2 of 45	G2

P:\Logan City\09195 200 North & 400 North Sewer Improvements\DWG\Sheets\LS-GN.dwg Feb 14, 2024 11:19am jjolley

PROJECT SPECIFIC NOTES

GRUBBING

1. GRUBBED MATERIALS SHALL NOT BE REUSED ON THIS PROJECT. ALL GRUBBING MATERIAL SHALL BE HAULED FROM THE SITE AND DISPOSED OF AT THE LOGAN CITY LANDFILL AS PART OF REMOVAL PAY ITEMS.

EXCAVATION

1. EXCAVATED MATERIALS SHALL NOT BE REUSED ON THIS PROJECT.
2. NATIVE SUBGRADE MATERIAL SHALL BE COMPACTED TO FIRM AND UNYIELDING PRIOR TO THE PLACEMENT OF ANY NEW MATERIAL UNLESS SPECIFIED OTHERWISE IN THESE PLANS.
3. PROOF ROLL EXISTING SUBGRADE PRIOR TO PLACING GRANULAR BACKFILL BORROW FOR ROADWAY PER APWA 32 05 10, SECTION 3.8.

RIGHT OF WAY, CENTERLINE, AND GPS MONUMENTS

1. ALL EXISTING RIGHT OF WAY MONUMENTS, CENTERLINE MONUMENTS, AND GPS MONUMENTS SHALL BE PROTECTED AND MAINTAINED UNDISTURBED UNLESS DIRECTED OTHERWISE BY THESE PLANS OR BY CHANGE ORDER SIGNED BY THE ENGINEER.
2. WHERE DIRECTED ON DRAWINGS TO RESTORE OR RELOCATE MONUMENT:
   2.1. CAREFULLY REMOVE CONCRETE OR ASPHALT FROM AROUND MONUMENT WITHOUT DISTURBING MONUMENT.
   2.2. OBTAIN LID, FRAME, AND COVER TO PLACE OVER MONUMENT FROM LOGAN CITY SURVEYOR.
   2.3. COORDINATE PLACEMENT OF OF LID, FRAME, AND COVER WITH LOGAN CITY SURVEYOR AND INSTALL LID, FRAME AND COVER AT THE FINISHED GRADE SPECIFIED IN THE LOGAN CITY STANDARD DETAILS.
   2.4. COORDINATE FINAL VERIFICATION OF THE LID, FRAME, COVER AND RESTORED MONUMENT HORIZONTAL AND VERTICAL ELEVATIONS FOR FINAL APPROVAL WITH LOGAN CITY SURVEYOR.
3. WHERE DIRECTED ON DRAWINGS:
   3.1. INSTALL RIGHT OF WAY, CENTERLINE, AND GPS MONUMENTS IN ACCORDANCE WITH LOGAN CITY STANDARDS AND SPECIFICATIONS.
   3.2. OBTAIN LID, FRAME, COVER, AND MONUMENT FROM THE LOGAN CITY SURVEYOR.
   3.3. INSTALL TO THE SATISFACTION OF THE LOGAN CITY SURVEYOR.
4. ALL CONCRETE USED TO SET, RESTORE, OR RELOCATE MONUMENTS SHALL BE IN COMPLIANCE WITH CONCRETE COLLARS.

PRE-CAST MANHOLES, JUNCTION BOXES, AND CATCH BASINS, ETC.

1. CONTRACTOR SHALL PROVIDE PRE-CAST SHOP DRAWINGS WITH ASSOCIATED CALCULATIONS TO ENGINEER DURING PRE-CONSTRUCTION MEETING FOR REVIEW AND APPROVAL PRIOR TO PURCHASE. ANY REQUIRED CHANGES SHALL BE INCORPORATED PRIOR TO FABRICATION.
2. DIMENSIONS OF STRUCTURES ARE BASED ON INSIDE DIMENSIONS. WALL THICKNESS, REBAR REINFORCEMENT, AND PLACEMENT OF FRAMES AND GRATES ARE THE RESPONSIBILITY OF THE PRE-CAST MANUFACTURER AND SHALL BE INCLUDED IN THE PRE-CAST SHOP DRAWINGS.
3. ALL CONCRETE SHALL BE CLASS 4000 AT A MINIMUM PER APWA SECTION 03 30 04.
4. ALL STEEL REINFORCEMENT SHALL BE 60,000 PSI STEEL.
5. EPOXY COATING IS NOT REQUIRED FOR THIS PROJECT.
6. ALL PRE-CAST STRUCTURES SHALL BE DESIGNED FOR HL-93 LOADING.
7. CONCRETE KNOCKOUT WALLS SHALL BE ALLOWED FOR PRECAST JUNCTION BOXES AND CATCH BASINS EXCEPT UNDER THE FOLLOWING CONDITIONS:
   7.1. BOX DEPTH EXCEEDS 8 FEET.
   7.2. WALL WILL HAVE OTHER ITEMS ATTACHED TO IT SUCH AS A STORM WATER BMP, LADDER, HEADGATE, ETC.
   7.3. SPECIFIED OTHERWISE IN THESE PLANS.
8. ALL CATCH BASINS LOCATED WITHIN THE CURB AND GUTTER SHALL BE CONSTRUCTED TO ALLOW INSTALLATION OF A D&L SUPPLY BRAND MODEL I-3517 TYPE L GRATE WITH FRAME AND HOOD (OR EQUIVALENT) UNLESS SPECIFIED OTHERWISE.
9. ALL FRAMES AND GRATES FOR SANITARY SEWER MANHOLES AND STORM DRAIN MANHOLES SHALL BE 30" FRAME AND COVER – TYPE A PER APWA PLAN NO. 301. STORM DRAIN LIDS SHALL BE LABELED "STORM DRAIN". SANITARY SEWER LIDS SHALL BE LABELED "SEWER".
10. ALL FRAMES AND LIDS INSTALLED IN SIDEWALK SHALL BE SOLID LIDS WITHOUT AIR VENT HOLES.
11. ALL SANITARY SEWER AND STORM DRAIN MANHOLES SHALL BE ADJUSTED TO MATCH LONGITUDINAL AND LATERAL SLOPES OF FINISHED SURFACES. TOP OF FRAME SHALL BE ¼" TO ½" BELOW FINISHED ASPHALT AND CONCRETE SURFACES. CONCRETE SURFACES SHALL BE TRANSITIONED TO FINISHED SURFACE OVER A 4" WIDTH.
12. WHEN GRATE OR LID IS IN GRASSED AREA, INSTALL LID FLUSH WITH EXISTING SOIL UNLESS INSTRUCTED OTHERWISE ON THE DESIGN PLAN OR DETAILS.
13. ALL SANITARY SEWER MANHOLE BASES SHALL BE POURED WITH TROUGHS PER APWA PLAN NO. 411. DEVIATION FROM THIS DUE TO SPECIFIC SITE CONDITIONS SHALL BE IDENTIFIED AND COORDINATED WITH ENGINEER PRIOR TO CONSTRUCTION.
14. GROUT ALL WALL PENETRATIONS WITH CEMENT BASED SHRINKAGE RESISTANT GROUT PER APWA SECTION 03 61 00.
15. INSTALL CONCRETE COLLARS AT THE EXTERIOR SIDE OF ALL PIPE PENETRATIONS SIMILAR TO MANHOLES AS SHOWN ON APWA PRECAST MANHOLE, PLAN NO. 341.

UNTREATED BASE COURSE

1. PIPE ZONE AND BEDDING AND BACKFILL SHALL BE UNTREATED BASE COURSE MATERIAL CLASS A, B, OR C, GRADE 3/4 IN COMPLIANCE WITH APWA SECTION 32 11 23.
2. UNTREATED BASE COURSE MATERIAL USED FOR ROADWAY, CURB AND GUTTER, AND SIDEWALKS SHALL BE CLASS A, GRADE 3/4 OR GRADE 1, WITH A MINIMUM CBR VALUE OF 70 IN COMPLIANCE WITH APWA SECTION 32 11 23.

HOT MIX ASPHALT

1. SEE DETAIL ON D1 FOR SPECIFIC CROSS SECTION INFORMATION.
2. PROVIDE LOGAN CITY WITH SPECIFIED AND SELECTED ASPHALT MIX DESIGNS, AND SELECTED PRIME COAT AND TACK COAT AT PRE-CONSTRUCTION MEETING.
3. ALL HOT MIX ASPHALT IN UDOT RIGHT OF WAY SHALL BE PG 64-34 ASPHALT BINDER, 1/2" NOMINAL MAX, 7-75-115 GYRATION PER UDOT STANDARD SPECIFICATION 02741.
4. PROVIDE DOCUMENTATION OF COMPACTION FROM A UDOT-QUALIFIED LABORATORY.

ASPHALT AND CONCRETE SAW CUTS AND PATCHES

1. ALL ASPHALT AND CONCRETE CUT LOCATIONS REPRESENT FINISHED LOCATIONS. CUTS ARE TO BE NEAT, CLEAN, AND VERTICAL PRIOR TO PATCHING ASPHALT OR CONCRETE.
2. ANY SAW CUTS REQUIRED PRIOR TO THE FINAL PATCH TO FACILITATE CONSTRUCTION ARE CONTRACTOR WAYS AND MEANS AND WILL NOT BE PAID IN ADDITION TO THE FINAL CUTS. ADDITIONALLY, ANY DAMAGE TO THE SAW CUT EDGE SHALL BE REPAIRED TO MEET UDOT REQUIREMENTS AT NO ADDITIONAL EXPENSE TO THE CITY.
3. ALL SAW CUT EDGES AND FINISHED EDGES SHALL BE CLEANED AND TREATED WITH A TACK COAT PRIOR TO THE PLACEMENT OF ASPHALT IN ACCORDANCE WITH UDOT SPECIFICATIONS.
4. ON 400N ALL PARALLEL SAWCUT LINES OR ROTOMILLING MUST BE LOCATED EITHER AT DESIGNATED LANE LINES OR DESIGNATED CENTER OF LANE.

ROADWAY STANDARD SECTION

1. REMOVE EXISTING ASPHALT.
2. SCARIFY AND EXCAVATE AWAY EXISTING MATERIAL TO PROVIDE FOR THE FINISHED ROAD SECTION AS LISTED IN ITEM 4 BELOW.
3. ROAD SECTION SHALL CONSIST OF 6 INCHES OF COMPACTED IN PLACE UNTREATED BASE COURSE FOR ROADWAY PER UDOT STANDARD SPECIFICATION 02721; OVER 12" GRANULAR BORROW PER UDOT SPECIFICATION 02056.
4. HOT MIX ASPHALT SHALL BE PLACED SUCH THAT FINISHED GRADE IS BETWEEN 1\4 AND 1/2 INCH ABOVE LIP OF GUTTER. PROVIDE AND INSTALL TOP SOIL TO SHAPE AND CONTOUR LAWNS, LANDSCAPED AREAS, AND OTHER LANDS TO MATCH NEW GRADES TO RESTORE AREAS TO PRE-CONSTRUCTION CONDITIONS.
5. UNTREATED BASE COURSE AND ASPHALT COMPACTION TESTS BY NUCLEAR DENSITY TESTING DURING PLACEMENT TO ENSURE A HIGH QUALITY ROAD. CORE SAMPLES SHALL NOT BE COLLECTED.

GRAVITY SANITARY SEWER INSTALLATION (OPEN TRENCH)

1. SHOP DRAWINGS AND CUT SHEETS OF ALL SANITARY SEWER MATERIALS SHALL BE PROVIDED TO THE ENGINEER AT THE PRE-CONSTRUCTION MEETING.
2. ALL POLYVINYL CHLORIDE (PVC) PIPE SHALL BE IN ACCORDANCE WITH APWA SECTION 33 05 07 AND SECTION 33 31 00.
3. ALL PVC SHALL BE SDR 35 FOR DEPTHS LESS THAN 14 FEET AND SDR 26 FOR DEPTHS GREATER THAN 14 FEET.
4. CAP ALL SEWER LATERALS RELOCATED OR REMOVED AT THE MAIN USING ROMAC OR EQUIVALENT STAINLESS STEEL RAP AROUND SADDLE.
5. ALL NEW SEWER LATERAL CONNECTIONS SHALL BE BY ROMAC STAINLESS STEEL SANITARY SEWER TAPPING SADDLE WITH STAINLESS STEEL STRAPS PER APWA PLAN NO. 431 AS AMENDED BY LOGAN CITY.
6. PIPING SHALL BE INSTALLED IN ACCORDANCE WITH APWA STANDARDS AND SPECS AS AMENDED BY LOGAN CITY PLAN NO 382S.
7. TRACER WIRE SHALL BE INSTALLED PER LOGAN CITY STANDARDS AND SPECIFICATIONS ALONG TOP OF PIPE FROM VALVE TO VALVE OR OTHER RISER TYPE.
8. GREEN WARNING TAPE LABELED SEWER SHALL BE INSTALLED ABOVE SEWER PIPE PER LOGAN CITY STANDARDS AND SPECIFICATIONS.
9. ALL GRAVITY FLOW PIPES (SANITARY SEWER, IRRIGATION, AND STORM DRAIN) SHALL HAVE WATER FLUSHED DOWN THE LINE, AND THEN BE CCTV INSPECTED TO ENSURE NO LOW POINTS.
10. ALL GRAVITY FLOW PIPES 24 INCHES OR LARGER SHALL BE MANDREL TESTED TO ENSURE NO PIPE FLEXURE OR DEFLECTION.

GRAVITY SANITARY SEWER INSTALLATION (FOLD AND FORM PVC LINER)

1. THIS METHOD IS TO RECONSTRUCT THE SANITARY SEWER BY THE INSTALLATION OF A POLYVINYL CHLORIDE (PVC) PIPE LINER INTO THE EXISTING SANITARY SEWER. THE PIPE LINER SHALL EXTEND OVER THE LENGTH OF THE PIPE BETWEEN MANHOLES IN A CONTINUOUS, TIGHT FITTING, WATER TIGHT PIPE-WITHIN-A-PIPE.
2. THE LINER SHALL BE FABRICATED TO A SIZE WHICH, WHEN INSTALLED, FITS THE INTERNAL CIRCUMFERENCE OF THE PIPE AS SPECIFIED BY THE ENGINEER. ALLOWANCE FOR CIRCUMFERENTIAL EXPANSION DURING INSTALLATION SHALL BE MADE.
3. THE LINER MATERIAL SHALL BE MADE ONLY FROM PVC.
4. THE MINIMUM LINER LENGTH SHALL SPAN THE DISTANCE FROM MANHOLE TO MANHOLE OF THE PIPE TO BE LINED. THE CONTRACTOR SHALL VERIFY THE LENGTHS IN THE FIELD BEFORE INSERTION OF THE LINER.
5. ALL PIPES 4 INCHES TO 15 INCHES SHALL BE SDR 35. ALL PIPES LARGER THAN 15 INCHES SHALL BE SDR 26.
6. THE CONTRACTOR SHALL PROVIDE A PVC COMPOUND LINER MEETING THE FOLLOWING REQUIREMENTS:
   6.1. TENSILE STRENGTH (ASTM D-638) OF 5000 PSI.
   6.2. TENSILE MODULUS (ASTM D-638) OF >280,000 PSI
   6.3. FLEXURAL MODULUS (ASTM D-790) OF >280,000 PSI
7. DEPENDING ON THE CONDITION OF THE PIPE, AND REVIEW OF THE CCTV INSPECTION, THE CONTRACTOR SHALL PROVIDE ANY NECESSARY POINT REPAIRS IDENTIFIED TO ENSURE THE SUCCESSFUL INSTALLATION OF THE PVC LINER AT NO ADDITIONAL COST TO THE OWNER.
8. LOGAN CITY HAS COMPLETED A DETAILED CCTV INSPECTION OF THIS PROJECT AND HAS INCLUDED THESE VIDEOS WITH THESE PLANS FOR REVIEW.
9. PRODUCT DATA, SHOP DRAWINGS, CUT SHEETS, AND INSTALLATION INSTRUCTIONS BE PROVIDED TO THE ENGINEER AT THE PRE-CONSTRUCTION MEETING INCLUDING:
   9.1. MATERIAL LIST INCLUDING MANUFACTURER'S NAME AND CATALOG NUMBER FOR EACH ITEM.
   9.2. MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION.
10. NO MATERIALS SHALL BE PURCHASED OR DELIVERED ON SITE UNTIL APPROVED BY ENGINEER.
11. UPON APPROVAL OF THE ENGINEER, THE MANUFACTURER'S RECOMMENDATIONS SHALL BECOME THE BASIS OF ACCEPTANCE O F THE PROJECT.
12. THE CONTRACTOR SHALL PROTECT THE SEWER LINING MATERIALS BEFORE, DURING, AND AFTER INSTALLATION FOR THE DURATION OF THE PROJECT.
13. IN THE EVENT OF DAMAGE TO THE LINING MATERIAL, THE CONTRACTOR SHALL MAKE TIMELY REPAIRS AND REPLACEMENT NECESSARY TO THE APPROVAL OF THE ENGINEER AT NOT ADDITIONAL COST TO THE OWNER.
14. THE CONTRACTOR SHALL MAINTAIN THE OPERATING CONDITION OF ALL ACTIVE SANITARY SEWERS ENCOUNTERED DURING THIS PROJECT BY EITHER RE-ROUTING THE FLOWS OR BYPASS PUMPING AT NO ADDITIONAL COST TO THE OWNER.
15. THE CONTRACTOR SHALL RESTORE ALL EXISTING CONNECTIONS IN THE EXISTING SANITARY SEWER AND STRUCTURES, AND CARRY OUT SUCH WORK IN A MANNER CONSISTENT WITH THESE CONSTRUCTION DOCUMENTS.
16. CONTRACTOR SHALL PREVENT DEBRIS FROM ENTERING THE EXISTING SEWER SYSTEM OR CLEAN SUCH DEBRIS FROM THE EXISTING SEWER SYSTEM AT NO ADDITIONAL COST TO THE OWNER.
17. THE CONTRACTOR SHALL CLEAN THE SEWER AND REMOVE ALL DEBRIS, OBSTRUCTIONS, OR ROOTS NECESSARY TO INSTALL THE PVC LINER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AT NO ADDITION COST TO THE OWNER.
18. WHILE THE CONTRACTOR IS PROVIDED THE CCTV DIGITAL DATA FROM LOGAN CITY, THE CONTRACTOR IS RESPONSIBLE TO LOCATE BREAKS, OBSTACLES, AND SERVICE CONNECTIONS AND TO CAREFULLY INSPECT THE INTERIOR OF THE PIPELINE TO DETERMINE THE LOCATION OF ANY CONDITIONS THAT MAY PREVENT PROPER INSTALLATION O F THE LINER INTO THE PIPELINE AND TO CORRECT THOSE CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
19. THE LINER SHALL BE INSERTED INTO THE SEWER THROUGH EXISTING STRUCTURES WITHOUT MODIFICATIONS TO THE STRUCTURES.
20. INSTALLATION SHALL BE PER MANUFACTURER'S RECOMMENDED PROCEDURES.
21. WHEN INSTALLATION IS COMPLETE, THE LINER SHALL BE CONTINUOUS OVER THE ENTIRE LENGTH BETWEEN TWO STRUCTURES AND BE FREE FROM VISUAL DEFECTS, BULGES, FOLDS, PIN HOLES, OR OTHER DEFECTS.
22. ANY DEFECTS WHICH AFFECT THE INTEGRITY OR STRENGTH OF THE LINER PIPE SHALL BE REPAIRED A TH CONTRACTOR'S EXPENSE FOR THE DURATION OF THE WARRANTY.
23. IF, DUE TO BROKEN OR OFFSET PIPE AT THE STRUCTURE WALL, THE PIPE LINER FAILS TO MAKE A SIGHT SEAL, THE CONTRACTOR SHALL SEAL THAT POINT WITH A MATERIAL COMPATIBLE WITH THE PVC LINER AND AS APPROVED BY THE ENGINEER.
24. AFTER THE PIPE LINER HAS BEEN FORMED IN PLACE, THE CONTRACTOR SHALL RECONNECT THE EXISTING ACTIVE SERVICE CONNECTIONS AS DESIGNATED BY THE ENGINEER. THIS SHALL BE DONE WITHOUT EXCAVATION, AND FROM THE INTERIOR OF THE PIPELINE BY MEANS OF A TELEVISION CAMERA AND A CUTTING DEVICE THAT RE-ESTABLISHEDS THE SERVICE CONNECTION TO 100% OF CAPACITY.
25. UV "TOP HAT" SERVICE CONNECTIONS MATCHING THE EXISTING SERVICE SIZE SHALL BE INSTALLED AT EACH SERVICE OR LATERAL TO SEAL THE SERVICE LATERAL AND THE PVC PIPE CONNECTION AFTER THE HOLE HAS BEEN CUT.
26. ALL GRAVITY FLOW SEWER PIPES SHALL HAVE WATER FLUSHED DOWN THE LINE, AND THEN BE CCTV INSPECTED TO ENSURE PROPER INSTALLATION PER MANUFACTURER RECOMMENDATIONS AND NO LOW POINTS.

GRAVITY SANITARY SEWER INSTALLATION (PIPE BURSTING AND UPSIZING)

1. THIS METHOD IS TO RECONSTRUCT THE SANITARY SEWER BY THE INSTALLATION OF A POLYETHYLENE PLASTIC PIPE MADE OF HDPE TO MEET APPLICABLE REQUIREMENTS OF AWWA C906. THE PIPE SHALL EXTEND OVER THE LENGTH OF THE PIPE BETWEEN MANHOLES IN A CONTINUOUS LENGTH.
2. THE PIPE SHALL BE HOMOGENOUS THROUGHOUT AND SHALL BE FREE FROM VISIBLE CRACKS, HOLES, FOREIGN MATERIAL, BLISTERS, OR OTHER DELETERIOUS FAULTS.
3. ALL PIPES SHALL BE SDR 17 FOR PIPE BURSTING
4. ALL HDPE PIPE SHALL BE GREEN STRIPED FOR SANITARY SEWER APPLICATIONS.
5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VIDEO INSPECT THE SEWER PIPE IMMEDIATELY BEFORE THE PIPE BURSTING. A COPY OF THE VIDEO AND DOCUMENTATION SHALL BE PROVIDED TO THE CITY OF LOGAN PRIOR TO ANY CONSTRUCTION. CLEANING OF THE PIPE MAY BE NECESSARY TO ALLOW FOR THE INSPECTION.
6. PRODUCT DATA, SHOP DRAWINGS, CUT SHEETS, AND INSTALLATION INSTRUCTIONS BE PROVIDED TO THE ENGINEER AT THE PRE-CONSTRUCTION MEETING INCLUDING:
   6.1. MATERIAL LIST INCLUDING MANUFACTURER'S NAME AND CATALOG NUMBER FOR EACH ITEM.
   6.2. MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION.
7. NO MATERIALS SHALL BE PURCHASED OR DELIVERED ON SITE UNTIL APPROVED BY ENGINEER.
8. UPON APPROVAL OF THE ENGINEER, THE MANUFACTURER'S RECOMMENDATIONS SHALL BECOME THE BASIS OF ACCEPTANCE OF THE PROJECT.
9. THE CONTRACTOR SHALL PROTECT THE NEW SEWER PIPE BEFORE, DURING, AND AFTER INSTALLATION FOR THE DURATION OF THE PROJECT. THE INSTALLED REPLACEMENT PIPE SHALL BE CONTINUOUS WHEN POSSIBLE OVER THE ENTIRE LENGTH OF EACH PIPE SEGMENT FROM MANHOLE TO MANHOLE AND SHALL BE FREE FROM VISUAL DEFECTS SUCH AS FOREIGN INCLUSIONS, CONCENTRATED RIDGES, DISCOLORATION, PITTING, VARYING WALL THICKNESS, PIPE SEPARATION AND OTHER DEFORMITIES. REPLACEMENT PIPE WITH GASHES, NICKS, ABRASIONS OR ANY SUCH PHYSICAL DAMAGE THAT MAY HAVE OCCURRED DURING STORAGE AND/OR HANDLING, WHICH ARE LARGER/DEEPER THAN 10 PERCENT OF THE WALL THICKNESS SHALL NOT BE USED AND SHALL BE REMOVED FROM THE CONSTRUCTION SITE.
10. THE REPLACEMENT PIPE PASSING THROUGH OR TERMINATING IN A MANHOLE SHALL BE CAREFULLY CUT OUT IN A SHAPE AND MANNER APPROVED BY THE ENGINEER. THE INVERT AND BENCHES SHALL BE STREAMLINED AND IMPROVED FOR SMOOTH FLOW. THE INSTALLED PIPE SHALL MEET THE LEAKAGE REQUIREMENTS OF THE PRESSURE TEST SPECIFIED.
11. THE CONTRACTOR SHALL CLEAN THE SEWER AND REMOVE ALL DEBRIS, OBSTRUCTIONS, OR ROOTS NECESSARY TO INSTALL HDPE PIPE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AT NO ADDITION COST TO THE OWNER.
12. IF PRE-INSTALLATION VIDEO (TELEVISION) INSPECTION REVEALS A SAG IN THE EXISTING SEWER THAT IS GREATER THAN ONE-HALF OF THE DIAMETER OF THE EXISTING PIPE, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSTALL THE REPLACEMENT PIPE TO RESULT IN AN ACCEPTABLE GRADE WITHOUT THE SAG. THE CONTRACTOR SHALL TAKE THE NECESSARY MEASURES TO ELIMINATE THESE SAGS BY THE SYSTEM OF PIPE REPLACEMENT, DIGGING A SAG ELIMINATION PIT AND BRINGING THE BOTTOM OF THE PIPE TRENCH TO A UNIFORM GRADE IN LINE WITH THE EXISTING PIPE INVERT OR BY OTHER MEASURES THAT SHALL BE ACCEPTABLE TO THE ENGINEER.
13. IN THE EVENT OF DAMAGE TO THE HDPE PIPE, THE CONTRACTOR SHALL MAKE TIMELY REPAIRS AND REPLACEMENT NECESSARY TO THE APPROVAL OF THE ENGINEER AT NOT ADDITIONAL COST TO THE OWNER.
14. THE CONTRACTOR SHALL MAINTAIN THE OPERATING CONDITION OF ALL ACTIVE SANITARY SEWERS ENCOUNTERED DURING THIS PROJECT BY EITHER RE-ROUTING THE FLOWS OR BYPASS PUMPING AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL SUBMIT THE BYPASS PUMPING AND/OR DIVERSION PLAN FOR REVIEW BY THE ENGINEER AT LEAST SEVEN DAYS PRIOR TO INITIATING BYPASS PUMPING OR DIVERSION.
15. THE CONTRACTOR SHALL TAKE THE APPROPRIATE ACTIONS TO LOCATE AND EXPOSE ALL SEWER SERVICE CONNECTIONS AND LATERALS PRIOR TO PIPE BURSTING AND INSERTION TO EXPEDITE RECONNECTION. THE CONTRACTOR SHALL EXERCISE DUE DILIGENCE IN EXCAVATING THE EXISTING PIPE SUFFICIENTLY TO ALLOW FOR UNIFORM CIRCUMFERENTIAL EXPANSION OF THE EXISTING PIPE THROUGH THE SERVICE CONNECTION PIT.
16. BEFORE A SECTION IS BURST ALL SEWER SERVICES WILL BE EXPOSED AND A ONE FOOT SECTION OF PIPE REMOVED, AND THE OPEN ENDS CREATED BY REMOVING THE SECTION PLUGGED. THE SECTION REMOVED WILL BE AT LEAST 5 FEET FROM THE SEWER MAIN TO BE BURST SO AS NOT TO CREATE A PREFERENTIAL PATH FOR THE BURSTING TOOL TO FOLLOW. THE PURPOSE OF THIS SERVICE BREAK IS TO ISOLATE THE SERVICE FROM THE VIBRATIONS OF BURSTING THAT MAY TRANSMIT CRACK INDUCING VIBRATIONS ALONG THE SERVICES LENGTH. NOTIFY AFFECTED PROPERTY OWNERS OF IMPENDING SEWER SERVICE INTERRUPTION. UNLESS OTHERWISE APPROVED BY THE ENGINEER LIMIT SERVICE INTERRUPTIONS TO LESS THAN 8 (EIGHT) HOURS.
17. THE CONTRACTOR SHALL RESTORE ALL EXISTING CONNECTIONS IN THE EXISTING SANITARY SEWER AND STRUCTURES IN AN EXPEDITED MANNER, AND CARRY OUT SUCH WORK IN A MANNER CONSISTENT WITH THESE CONSTRUCTION DOCUMENTS.
18. AFTER SUITABLE RELAXATION PERIOD, THE CONTRACTOR SHALL RECONNECT ALL EXISTING LATERALS AND SERVICES.
19. SERVICE CONNECTIONS SHALL BE RECONNECTED TO THE PIPE USING CONNECTORS APPROVED BY THE PIPE MANUFACTURER AND IN CONFORMANCE WITH THE SPECIFIED INSTALLATION PROCEDURE. SERVICE CONNECTIONS SHALL BE WRAP AROUND TYPE SADDLE CONNECTIONS (ROMAC STAINLESS STEEL OR EQUIVALENT) OR ELECTRO-FUSION.
20. CONNECT TO EXISTING MANHOLES WITH A HEAT FUSION COUPLER. JACK-HAMMERING IN THE MANHOLE WILL NOT BE PERMITTED. MODIFY MANHOLE FOR CONNECTION BY CORE DRILLING OR EQUAL APPROVED METHOD. THE REPLACEMENT PIPE SHALL BE INSTALLED WITH A WATER TIGHT SEAL WITH THE EXISTING OR NEW MANHOLE. ENCASE NEW CONNECTION WITH A CEMENTITIOUS MORTAR TO PREVENT INFLOW AT THE MANHOLE. THE TOP HALF OF THE PIPE WITHIN THE MANHOLE SHALL BE NEATLY CUT OFF AND NOT BROKEN OR SHEARED OFF AT LEAST 4 INCHES AWAY FROM THE MANHOLE WALLS BUT NOT MORE THAN 6 INCHES. THE CHANNEL IN THE MANHOLE SHALL BE A SMOOTH CONTINUATION OF THE PIPE(S) AND SHALL BE MERGED WITH OTHER LINES OR CHANNELS, IF ANY. CHANNEL CROSS-SECTION SHALL BE "U" SHAPED WITH A MINIMUM HEIGHT OF HALF PIPE DIAMETER TO 3/4 OF THE PIPE DIAMETER FOR 15 INCHES OR LARGER. THE SIDE OF THE CHANNELS SHALL BE BUILT UP WITH MORTAR OR CONCRETE, AS SPECIFIED, TO PROVIDE BENCHES AT A MAXIMUM OF 1 IN 12 PITCH TOWARDS THE CHANNEL.
21. CONTRACTOR SHALL PREVENT DEBRIS FROM ENTERING THE EXISTING SEWER SYSTEM OR CLEAN SUCH DEBRIS FROM THE EXISTING SEWER SYSTEM AT NO ADDITIONAL COST TO THE OWNER.WHEN CLEANING A SEWER LINE, PLACE A SEDIMENT AND DEBRIS TRAP AT THE DOWNSTREAM MANHOLE/BOX TO COLLECT THE SEDIMENT, DEBRIS, GREASE AND OTHER MATERIAL FOREIGN TO THE SYSTEM. REMOVED MATERIAL MUST BE DISPOSED AT THE CITY'S SEWAGE LAGOONS. DO NOT DISCHARGE SEWAGE OR SOLIDS REMOVED FROM DOWNSTREAM MANHOLES/BOXES, ONTO STREETS, OR INTO DITCHES, CATCH BASINS OR STORM DRAINS.
22. THE CONTRACTOR IS RESPONSIBLE TO LOCATE BREAKS, OBSTACLES, AND SERVICE CONNECTIONS AND TO CAREFULLY INSPECT THE INTERIOR OF THE PIPELINE TO DETERMINE THE LOCATION OF ANY CONDITIONS THAT MAY PREVENT PROPER INSTALLATION OF THE HDPE PIPE INTO THE PIPELINE AND TO CORRECT THOSE CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
23. ACCESS PITS SHALL BE INSTALLED A THE LOCATIONS OF EXISTING MANHOLES. EXCAVATION OF PITS SHALL INCLUDE THE REMOVAL OF EXISTING MANHOLES.
24. INSTALLATION OF NEW MANHOLES SHALL INCLUDE ALL BACKFILL IN ACCORDANCE WITH LOGAN CITY STANDARDS AND SPECIFICATIONS FOR SANITARY SEWER MANHOLES AND AS REQUIRED IN THESE BID DOCUMENTS.
25. ALL HDPE PIPES SHALL BE JOINED USING BUTT-FUSION METHOD.
26. FUSION SHALL BE PERFORMED BY A CERTIFIED TECHNICIAN APPROVED BY THE MANUFACTURER.
27. THE FUSED JOINT SHALL BE WATER TIGHT AND HAVE TENSILE STRENGTH EQUAL TO OR GREATER THAN THAT OF THE PIPE.
28. THE CONTRACTOR SHALL CUT OUT AND REPLACE ANY JOINTS NOT ACCEPTABLE TO THE OWNER AT NO ADDITIONAL COST TO THE OWNER.
29. ALL INTERIOR BEADS SHALL BE REMOVED FROM THE PIPE AFTER COOLING.

CONTINUED ON G4

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 334535 Scott L. Archibald 02/14/2024 STATE OF UTAH

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2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
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LOGAN CITY

200 NORTH AND 400 NORTH SEWER

GENERAL

SPECIAL NOTES

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	3 of 45	G3

P:\Logan City\09195 200 North & 400 North Sewer Improvements\DWG\Sheets\LS-GN.dwg Feb 14, 2024 12:02pm jnelson

PROJECT SPECIFIC NOTES

30. LUBRICATION WITH BENTONITE CLAY OR OTHER OWNER APPROVED EQUAL SHALL BE USED IF DESIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
31. PIPE RESTRAINT AT EACH MANHOLE SHALL BE INCORPORATED INTO THE PIPE BY WAY OF AN ELECTRO FUSION COUPLING APPROVED BY THE MANUFACTURER AND IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS.
32. ALL GRAVITY FLOW SEWER PIPES SHALL HAVE WATER FLUSHED DOWN THE LINE, AND THEN BE CCTV INSPECTED TO ENSURE PROPER INSTALLATION PER MANUFACTURER RECOMMENDATIONS, NO STRUCTURAL DEFICIENCIES, AND NO SAGS.
33. TESTING SHALL BE REQUIRED AFTER THE REPLACEMENT PIPE HAS BEEN INSTALLED IN THE EXISTING SANITARY SEWER MAIN. THE FIRST IS A LOW-PRESSURE AIR TEST OF REPLACEMENT PIPE BEFORE IT HAS BEEN SEALED IN PLACE AT THE MANHOLES AND BEFORE ANY SERVICE RECONNECTIONS HAVE BEEN MADE. THE PURPOSE OF THIS TEST IS TO CHECK THE INTEGRITY OF THE JOINTS THAT HAVE BEEN MADE AND TO VERIFY THAT THE REPLACEMENT PIPE HAS NOT BEEN DAMAGED BY INSERTING IT INTO THE SANITARY SEWER. PRESSURE TESTING FOR THE REPLACEMENT PIPE SHALL FOLLOW THE PROJECT SPECIFICATIONS.

CONCRETE COLLARS

1. SEE DETAILS FROM UDOT DETAIL CB11.
2. CONCRETE MIX TO BE USED FOR CONCRETE COLLARS SHALL BE PROVIDED TO THE ENGINEER AT THE PRE-CONSTRUCTION MEETING SPECIFYING WHO WILL BE PROVIDING THE CONCRETE.
3. CONCRETE USED IN CONCRETE COLLARS SHALL BE LEGRANDE JOHNSON'S UDOT 70-B WITH FIBER MIX, PARSONS AA-AE HP WITH FIBER ADD IN, OR EQUIVALENT HIGH EARLY STRENGTH MESH MIX TO UDOT STANDARDS.
4. CONCRETE CURING AGENT SHALL BE APPLIED. AGENT SHALL BE A TYPE ID CASS A (CLEAR WITH FUGITIVE DYE), MEMBRANE FORMING COMPOUND PER APWA SECTION 03 39 00. SPECIFIC AGENT TO BE USED AND MANUFACTURER LITERATURE CONCERNING THE AGENT SHALL BE PROVIDED IN THE PRE-CONSTRUCTION MEETING.
5. ALL CONCRETE COLLARS SHALL BE 8 INCHES MIN. THICK AND 12 INCHES MIN. WIDE.
6. ALL ASPHALT CUTS FOR CONCRETE COLLARS SHALL BE NEAT, VERTICAL, AND CONCENTRIC. ALL CUTS SHALL BE CLEANED OF ALL DEBRIS, OIL, AND DIRT PRIOR TO PLACING CONCRETE.
7. FINISHED GRADES SHALL HAVE THE ASPHALT FINISHED 1/8 TO 1/4 INCH ABOVE THE CONCRETE COLLAR. IF IT EXCEEDS 1/2 INCH AT ANY PLACE ON THE COLLAR OR LID, THE COLLAR WILL BE REPLACED AND THE LID AND FRAME ADJUSTED AT NO ADDITIONAL COST TO LOGAN CITY.

SIGNING AND STRIPING

1. ALL PAINT TO BE USED FOR STRIPING SHALL BE ACRYLIC WATER BASED PAINT OF THE SPECIFIED PIGMENT PER UDOT STANDARD SPECIFICATION 02765 WITH REFLECTORIZED BEADS.
2. APPLICATION RATES ARE AS DEFINED IN UDOT STANDARD SPECIFICATION 02765.
3. ALL SIGNS ON THIS PROJECT SHALL BE RECYCLED AND REUSED UNLESS SPECIFIED OTHERWISE ON THE DESIGN DRAWING.
4. ALL NEW SIGNS SPECIFIED SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITIONS OF UDOT AND UTAH MUTCD. UNLESS OTHERWISE NOTED IN UDOT STANDARDS AND SPECIFICATION- 2-INCH X 2-INCH POSTS WITH 2-1/4-INCH BASE SLEEVE SHALL BE USED FOR SIGNS WITH DIMENSIONS UP TO 36-INCHES. SIGNS WITH DIMENSION LARGER THAN 36-INCHES SHALL BE MOUNTED ON ROUND POSTS WITH BREAKAWAY BASES IN ACCORDANCE WITH UDOT SN SERIES STANDARD DRAWINGS.

SEWER REHABILITATION (CURED IN PLACE PIPE)

1. THIS METHOD IS TO REHABILITATE SEWER PIPE BY THE INSTALLATION OF A CURED IN PLACE PIPE LINER (CIPP) INTO THE EXISTING SEWER PIPE. IT IS THE INTENT OF THIS METHOD TO PROVIDE FOR THE RESTORATION OF EXISTING SEWER PIPE BY INSTALLATION OF A THE LINER, TIGHTLY FORMED TO THE ORIGINAL CONDUIT. THE LINER IS CURED IN PLACE USING ULTRAVIOLET (UV) LIGHT WITHIN THE LINER. THE CURED-IN-PLACE PIPE (CIPP) WILL BE CONTINUOUS AND TIGHT FITTING TO THE HOST PIPE. ENDS OF THE PIPE LINER SHALL BE SEALED TO THE HOST PIPE TO ELIMINATE THE POSSIBILITY OF LIQUID INFILTRATING BETWEEN THE LINER AND HOST PIPE.
2. THE WORK CONSISTS OF FURNISHING ALL LABOR, TOOLS, MATERIALS, EQUIPMENT, AND SUPERVISION FOR THE PROPER INSTALLATION AND TESTING OF CIPP.
3. THE CONTRACTOR SHALL WARRANT ALL WORK AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL COMPLETION OR AS SPECIFIED IN THE CONTRACT.
4. QUALITY ASSURANCE – CONTRACTOR HAS SUCCESSFULLY INSTALLED OVER 30,000 LINEAR FEET OF CURED-IN-PLACE PIPE. FOREMAN HAS AT LEAST THREE (3) YEARS OF CURED-IN-PLACE PIPE INSTALLATION EXPERIENCE WITH TWO (2) YEARS EXPERIENCE AS AN ONSITE FOREMAN AND HAS DIRECTLY SUPERVISED INSTALLATION OF AT LEAST 10,000 LINEAR FEET OF CURED-IN- PLACE PIPE INSTALLATIONS. FOREMAN'S CREW HAS AT LEAST TWO (2) YEARS EXPERIENCE WITH MAIN LINE SET- UP, BYPASS PUMPING, MATERIALS INSTALLATION, CURING, CONNECTING, AND RE- ESTABLISHING LATERAL CONNECTIONS.
5. NOTICE – PROVIDE SEVEN (7) DAYS INITIAL NOTIFICATION AND 24 HOURS SECONDARY NOTIFICATION BEFORE COMMENCING WORK. DISTRIBUTE WRITTEN NOTIFICATION TO PROPERTY OWNERS, BUSINESS OWNERS AND THE LIKE WITHIN THE PROJECT AREA AND AREAS AFFECTED BY THE PROJECT. PROVIDE A DESCRIPTION OF THE WORK, BEGINNING DATE AND TIME OF THE WORK, WORK DURATION, EXPECTED, PIPELINE USE RESTRICTIONS, ETC. IN THE CASE OF SANITARY SEWER WORK, INFORM OF POTENTIAL ODORS AND SMELLS. PROVIDE ALL RESIDENTS AND BUSINESSES 24 HOURS EMERGENCY CONTACT NAMES AND PHONE NUMBERS OF ONSITE SUPERINTENDANT AND FOREMAN.
6. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION REQUIREMENTS, UV TREATMENT REQUIREMENTS, STORAGE REQUIREMENTS, ETC.
7. UPON APPROVAL BY THE ENGINEER, THE MANUFACTURER'S RECOMMENDATIONS SHALL BECOME THE BASIS OF ACCEPTANCE OF THE PROJECT.
8. UNLESS NOTED OTHERWISE, THE MINIMUM LINER LENGTH SHALL SPAN THE DISTANCE FROM MANHOLE TO MANHOLE OF THE PIPE TO BE LINED WITH NO JOINTS OR OVERLAP OF LINER. PLAN AND PROFILE SHEETS PROVIDE AN ESTIMATED LENGTH OF PIPING TO BE LINED. THE CONTRACTOR SHALL VERIFY THE LENGTHS IN THE FIELD PRIOR TO ORDERING AND INSTALLING LINER MATERIAL.
9. MINIMUM/MAXIMUM WALL THICKNESS (RESPECTIVELY) OF CIPP LINER SHALL BE AS FOLLOWS:
   9.1. PIPING 4 INCHES TO 15 INCHES SHALL BE LINED WITH MINIMUM/MAXIMUM WALL THICKNESS OF 2.8MM/6MM.
   9.2. PIPING 16 INCHES TO 24 INCHES SHALL BE LINED WITH MINIMUM/MAXIMUM WALL THICKNESS 2.8MM/10MM.
   9.3. PIPING 25 INCHES TO 48 INCHES SHALL BE LINED WITH MINIMUM/MAXIMUM WALL THICKNESS 2.8MM/12MM
10. THE LINER SHALL BE STRUCTURALLY DESIGNED FOR:
   10.1. A MINIMUM SERVICE LIFE OF 50 YEARS;
   10.2. FULLY DETERIORATED HOST PIPE/DIRECT BURY CONDITION;
   10.3. 120 LB/CF SOIL PRISM LOADING;
   10.4. SAFETY FACTOR 2;
   10.5. 2% OVALITY FACTOR;
   10.6. 5% MAXIMUM DEFLECTION;
   10.7. 1000 PSI SOIL MODULUS;
   10.8. 5% MAXIMUM LINING ENHANCEMENT FACTOR;
   10.9. HL-93 LIVE LOADING, APPLICABLE LONG TERM MODULUS REDUCTION FACTOR;
   10.10. GROUNDWATER CORRECTION FACTOR OF -27, 4% APPLIED TO THE HYDROSTATIC LOAD ONLY.
11. THE CIPP SHALL CONFORM TO THE FOLLOWING STRUCTURAL STANDARDS:
   11.1. FLEXURAL STRENGTH (ASTM D790) 20,000 PSI;
   11.2. MODULUS OF ELASTICITY (ASTM D790) 500,000 PSI;
12. OVERALL, THE HYDRAULIC CROSS-SECTION SHALL BE MAINTAINED AS LARGE AS POSSIBLE. THE CIPP SHALL HAVE A MINIMUM OF THE FULL FLOW CAPACITY OF THE ORIGINAL PIPE BEFORE REHABILITATION. CALCULATED CAPACITIES MAY BE DERIVED USING A COMMONLY ACCEPTED ROUGHNESS COEFFICIENT FOR THE EXISTING PIPE MATERIAL TAKING INTO CONSIDERATION ITS AGE AND CONDITION. THE ROUGHNESS COEFFICIENT OF THE CIPP SHALL BE EQUAL TO OR BETTER THAN THAT OF THE REHABILITATED HOST PIPE.
13. PRODUCT DATA, SHOP DRAWINGS, CUT SHEETS, AND INSTALLATION INSTRUCTIONS SHALL BE PROVIDED TO THE ENGINEER PRIOR TO THE PRE-CONSTRUCTION MEETING INCLUDING:
   13.1. MATERIAL LIST INCLUDING MANUFACTURER'S NAME AND CATALOG NUMBER FOR EACH ITEM;
   13.2. MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION.
14. NO MATERIALS SHALL BE PURCHASED OR DELIVERED ON SITE UNTIL APPROVED BY ENGINEER.
15. THE INSTALLATION OF UV CURED CIPP SHALL BE IN ACCORDANCE WITH ASTM F2019 FOR UV LIGHT CURING INSTALLATIONS. INSTALLATION/CURING SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
16. THE LINER MATERIAL SHALL BE COMPATIBLE WITH THE MATERIAL OF THE CONDUIT BEING LINED.
17. THE LINER MATERIAL SHALL BE MANUFACTURED WITH RESINS PRE-IMPREGNATED WITHIN THE LINER TO ELIMINATE THE POSSIBILITY OF AIR BUBBLES AND VOIDS.
18. THE CONTRACTOR SHALL CLEAN THE SEWER SYSTEM AND REMOVE ALL DEBRIS, OBSTRUCTIONS, OR ROOTS NECESSARY TO INSTALL THE LINER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AT NO ADDITIONAL COST TO THE OWNER.
19. THE CONTRACTOR SHALL PREVENT DEBRIS FROM ENTERING THE EXISTING SEWER SYSTEM OR CLEAN SUCH DEBRIS FROM THE SYSTEM AT NO ADDITIONAL COST TO THE OWNER.
20. THE CONTRACTOR SHALL PROVIDE POST-WORK VIDEO OF THE PIPING AND PROVIDE THE CITY A COPY. POST-WORK VIDEOS SHALL BE INSPECTED BY PERSONNEL EXPERIENCED IN CCTV INSPECTION OF PIPING.
21. THE CONTRACTOR IS RESPONSIBLE TO LOCATE BREAKS, OBSTACLES, AND CONNECTIONS AND TO CAREFULLY INSPECT THE INTERIOR OF THE PIPELINE TO DETERMINE THE LOCATION OF ANY CONDITIONS THAT MAY PREVENT PROPER INSTALLATION OF THE LINER INTO THE PIPELINE AND TO CORRECT THOSE CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
22. THE CONTRACTOR SHALL PROTECT THE SEWER LINING MATERIALS BEFORE, DURING, AND AFTER INSTALLATION FOR THE DURATION OF THE PROJECT.
23. IN THE EVENT OF DAMAGE TO THE LINING MATERIAL, THE CONTRACTOR SHALL MAKE TIMELY REPAIRS AND REPLACEMENT NECESSARY TO THE APPROVAL OF THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
24. THE CONTRACTOR SHALL MAINTAIN THE OPERATING CONDITION OF ALL SEWER PIPING ENCOUNTERED DURING THIS PROJECT BY EITHER RE-ROUTING THE FLOWS OR BYPASS PUMPING AT NO ADDITIONAL COST TO THE OWNER.
25. THE LINER SHALL BE INSERTED INTO THE SEWER SYSTEM THROUGH EXISTING STRUCTURES WITHOUT MODIFICATIONS TO THE STRUCTURES.
26. WHEN INSTALLATION IS COMPLETE, THE LINER SHALL BE CONTINUOUS OVER THE ENTIRE LENGTH BETWEEN TWO STRUCTURES (EXCEPT AS OTHERWISE SHOWN ON PLANS), SHALL FIT TIGHTLY TO THE INNER CIRCUMFERENCE OF THE HOST PIPE, BE FREE FROM VISUAL DEFECTS, BULGES, FOLDS, WRINKLES, FINS, PIN HOLES, OR OTHER DEFECTS. THE LINER, AFTER CURE, SHALL FORM ONE HOMOGENOUS STRUCTURAL PIPE WALL WITH NO OBVIOUS INDICATION THAT A PART OF THE TUBE WAS LEFT UNSATURATED BY RESIN.
27. ANY DEFECTS WHICH AFFECT THE INTEGRITY OR STRENGTH OF THE LINER PIPE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE FOR THE DURATION OF THE WARRANTY.
28. ALL OTHER DEFECTS FOUND, COSMETIC OR OTHERWISE, SHALL BE DEALT WITH FOLLOWING INDUSTRY ACCEPTED STANDARD PRACTICE AND AS OUTLINED IN STANDARDS AND SPECIFICATIONS.
29. THE PIPE LINER SHALL BE SEALED AT EACH END WITH AN EXPANDING HYDROPHILIC RUBBER JOINT SEAL CONSISTING OF MATERIAL COMPATIBLE WITH BOTH THE HOST PIPE AND THE LINER AND AS APPROVED BY THE ENGINEER.
   29.1. THE RUBBER JOINT SEAL SHALL BE AN EXTENDED HYDROPHILIC RUBBER COMPOUND FROM CHLOROPRENE (NEOPRENE) RUBBER AND A HYDROPHILIC RESIN THAT EXPANDS ON CONTACT WITH WATER.
   29.2. THE RUBBER JOINT SEAL SHALL BE BONDED WITH ADHESIVE ON ONE FACE TO HOLD IT IN PLACE DURING ASSEMBLY.
   29.3. ON CONTACT WITH WATER, THE RUBBER SHALL SWELL BY UP TO 10 TIMES ITS ORIGINAL VOLUME IF NECESSARY AND MOLD ITSELF TO COMPLETELY FILL ANY GAPS AND EXERT PRESSURE EVENLY TO ENSURE THE SEAL. HIGH COMPRESSION OF BOLT UP FORCES SHALL BOT BE NECESSARY TO EFFECT A COMPLETE AND WATERTIGHT SEAL
30. AFTER THE PIPE LINER HAS BEEN FORMED IN PLACE, THE CONTRACTOR SHALL RECONNECT THE EXISTING ACTIVE CONNECTIONS AS DESIGNATED BY THE ENGINEER, PLAN, AND BID DOCUMENTS. THIS SHALL BE DONE WITHOUT EXCAVATION, AND FROM THE INTERIOR OF THE PIPELINE BY MEANS OF A TELEVISION CAMERA AND A CUTTING DEVICE THAT RE-ESTABLISHES THE CONNECTION TO 100% OF CAPACITY.
31. UV "TOP HAT" SERVICE CONNECTIONS MATCHING THE EXISTING SERVICE SIZE SHALL BE INSTALLED AT EACH SERVICE OR LATERAL TO SEAL THE LATERAL AND THE RECEIVING PIPE CONNECTION AFTER THE HOLE HAS BEEN CUT. THE "TOP HAT" SHALL EXTEND AT LEAST 6-INCHES INTO THE LATERAL PIPE. "TOP HAT" SHALL FORM A COMPLETE SEAL AND BE COMPATIBLE WITH LINERS.
32. EACH MANHOLE SHALL BE SEALED TO FORM A WATERTIGHT STRUCTURE ALLOWING FOR NO INFILTRATION/EXFILTRATION. ALL JOINTS, CRACKS, PIPE TO MANHOLE CONNECTIONS, ETC. SHALL BE SEALED WATERTIGHT BY APPLICATION OF GROUT CONTAINING A HYDROPHILIC ADDITIVE APPLIED FROM INSIDE OF MANHOLE.

SEWER MANHOLE REHABILITATION (SPECTRASHIELD LINING)

1. THIS METHOD IS TO LINE EXISTING SANITARY SEWER STRUCTURES BY THE INSTALLATION OF MODIFIED POLYMER AND POLYURETHANE/POLYMERIC BLEND FOAM. THE FOAM SHALL EXTEND THROUGHOUT THE ENTIRETY OF THE STRUCTURE ON EVERY SURFACE. THE APPLICATION OF THE LINING FOAM ON EVERY SURFACE WILL ENSURE THAT GROUNDWATER INFILTRATION IS ELIMINATED, AND CORROSION RESISTANCE IS PRESENT IN THE EXISTING STRUCTURE.
2. THE LINING PRODUCTS TO BE USED SHALL BE SPECTRASHIELD AS MANUFACTURED BY CCI SPECTRUM WHICH INCLUDES THE FOLLOWING COMPONENTS:
   2.1. MOISTURE BARRIER – MODIFIED POLYMER (SILICONE MODIFIED POLYUREA)
   2.2. SURFACER – POLYURETHANE/POLYMERIC BLEND FOAM
   2.3. FINAL CORROSION BARRIER – MODIFIED POLYMER (SILICON MODIFIED POLYUREA)
3. THE APPLICATOR (COMPANY PERFORMING THE SPECTRASHIELD INSTALLATION) SHALL BE COMPLETELY TRAINED IN LEAK REPAIR, SURFACE PREPARATION AND APPLICATION OF THE LINING SYSTEM. IN ADDITION, THE APPLICATOR SHALL BE TRAINED AND PROVIDE A LETTER OF CERTIFICATION FROM THE MANUFACTURER FOR THE HANDLING, MIXING, APPLICATION, AND INSPECTION OF THE LINER SYSTEM AS DESCRIBED.
4. DEPENDING ON THE CONDITION OF THE EXISTING STRUCTURE, THE CONTRACTOR SHALL PROVIDE ANY NECESSARY POINT REPAIRS TO ENSURE CLEAN APPLICATION OF THE LINING PRODUCT AT NO ADDITIONAL COST TO THE OWNER.
5. UPON APPROVAL OF THE ENGINEER, THE MANUFACTURER'S RECOMMENDATIONS SHALL BECOME THE BASIS OF ACCEPTANCE OF THE INSTALLATION.
6. THE CONTRACTOR SHALL PROTECT THE LINING MATERIALS BEFORE, DURING, AND AFTER INSTALLATION FOR THE DURATION OF THE PROJECT.
7. IN THE EVENT OF DAMAGE TO THE LINING MATERIAL, THE CONTRACTOR SHALL MAKE TIMELY REPAIRS AND REPLACEMENT NECESSARY TO THE APPROVAL OF THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
8. THE CONTRACTOR SHALL MAINTAIN THE OPERATING CONDITION OF ALL ACTIVE SANITARY SEWERS ENCOUNTERED DURING THIS PROJECT BY EITHER RE-ROUTING THE FLOWS OR BYPASS PUMPING AT NO ADDITIONAL COST TO THE OWNER.
9. THE CONTRACTOR SHALL RESTORE ALL EXISTING CONNECTIONS IN THE SANITARY SEWER TO THE LINED SANITARY SEWER STRUCTURES AND CARRY OUT SUCH WORK IN A MANNER CONSISTENT WITH THESE CONSTRUCTION DOCUMENTS.
10. THE CONTRACTOR SHALL PREVENT DEBRIS FROM ENTERING THE EXISTING SEWER STRUCTURES OR CLEAN SUCH DEBRIS FROM THE EXISTING SEWER STRUCTURES AT NO ADDITIONAL COST TO THE OWNER.
11. INSTALLATION SHALL BE PER MANUFACTURER'S RECOMMENDED PROCEDURES.
12. PRIOR TO CONDUCTING ANY WORK, AN INITIAL INSPECTION OF THE STRUCTURE SHALL BE PERFORMED TO DETERMINE NEED FOR PROTECTION AGAINST HAZARDOUS GASES OR OXYGEN DEPLETED ATMOSPHERE.
13. SURFACE PREPARATION FOR STANDARD MANHOLE STRUCTURES SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, AND MAY INCLUDE HIGH PRESSURE WATER CLEANING, HYDRO BLASTING, ABRASIVE BLASTING, GRINDING, OR DETERGENT WATER CLEANING, AND SHALL BE SUITED TO PROVIDE A SURFACE COMPATIBLE FOR INSTALLATION OF THE LINER SYSTEM.
14. FOLLOWING SURFACE PREPARATION THE CONTRACTOR SHALL PERFORM A SEVEN POINT CHECK PER THE MANUFACTURER'S INSTRUCTION. PRIOR TO ANY APPLICATION OF THE PRODUCT REPAIRS ARE TO BE MADE TO THESE DEFECTS:
   14.1. LEAKS
   14.2. CRACKS
   14.3. HOLES
   14.4. EXPOSED REBAR
   14.5. RING AND COVER CONDITION
   14.6. INVERT CONDITION
   14.7. INLET AND OUTLET PIPE CONDITION
15. APPLICATION PROCEDURES SHALL CONFORM TO RECOMMENDATIONS OF THE MANUFACTURER, INCLUDING MATERIALS HANDLING, PRIMING, MIXING, ENVIRONMENTAL CONTROLS DURING APPLICATION, SAFETY AND SPRAY EQUIPMENT.
16. APPLICATION OF MULTI-COMPONENT LINER SYSTEM SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER RECOMMENDATION. FINAL INSTALLATION MINIMUM TOTAL THICKNESS SHALL BE 500 MILS. PERMANENT IDENTIFICATION AND DATE OF WORK PERFORMED SHALL BE AFFIXED TO THE STRUCTURE IN A READILY VISIBLE LOCATION.
17. FINAL LINER SYSTEM SHALL BE COMPLETELY FREE OF PINHOLES OR VOIDS. LINER THICKNESS SHALL BE THE MINIMUM VALUE OF 500 MILS.
18. A WRITTEN REPORT DETAILING THE LOCATION, DATE OF WORK, AND DESCRIPTION OF WORK SHALL BE PROVIDED TO THE ENGINEER AND OWNER FOLLOWING THE LINING OF EACH SANITARY SEWER STRUCTURE.

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

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 334535 Scott L. Archibald 02/14/2024 STATE OF UTAH

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

LOGAN CITY

200 NORTH AND 400 NORTH SEWER

GENERAL

SPECIAL NOTES

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	4 of 45	G4

P:\Logan City\09195 200 North & 400 North Sewer Improvements\DWG\Sheets\LS-GN.dwg Feb 14, 2024 12:03pm jhetson

SUBSURFACE UTILITY GENERAL NOTES

1. THE SUBSURFACE UTILITIES SHOWN HAVE BEEN INVESTIGATED AND DEPICTED IN ACCORDANCE WITH CI/ASCE 38-02 AND THE SCOPE OF WORK BETWEEN KCI AND THE CLIENT. KCI RECOMMENDS THAT THE CONTRACTOR AND ANY OTHER USERS OF THIS INFORMATION REVIEWS AND UNDERSTANDS THE SCOPE OF WORK AND LIMITS OF THE UTILITY INVESTIGATION LEADING TO THESE UTILITY DEPICTIONS.

2. UTILITIES INVESTIGATED BY KCI ARE SHOWN IN COLOR. ALL OTHER INFORMATION PROVIDED BY OTHERS.

3. UTILITIES ARE DEPICTED IN ACCORDANCE WITH THEIR ACHIEVED QUALITY LEVELS AS DEFINED IN CI/ASCE 38-02 AND AS SHOWN IN THE LEGEND.

4. A UTILITY QUALITY LEVEL (QL) INDICATES A RELATIVE MEASURE OF THE RELIABILITY OF THE UTILITY LOCATION AND RELATED DATA. THERE ARE FOUR QUALITY LEVELS. QUALITY LEVEL A IS THE MOST RELIABLE. QUALITY LEVEL D IS THE LEAST RELIABLE. QUALITY LEVELS C AND B ARE IN-BETWEEN IN ASCENDING ORDER. ONLY QUALITY LEVEL A CAN HAVE AN ACCURACY ASSOCIATED WITH IT. QUALITY LEVELS ARE FURTHER DESCRIBED BELOW:

   A. QUALITY LEVEL A (QL A) PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES USUALLY AT A SPECIFIC POINT. ACCURACY IS 0.05 FEET VERTICALLY.

   B. QUALITY LEVEL B (QL B) INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES, ALSO CALLED DESIGNATING, AND THEN USING PROFESSIONAL JUDGMENT TO CORRELATE THIS WITH AVAILABLE QL A, QL C AND QL D INFORMATION. THE DESIGNATED POSITION IS SURVEYED TO APPLICABLE TOLERANCES DEFINED BY THE PROJECT.

   C. QUALITY LEVEL C (QL C) INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES AND BY USING PROFESSIONAL JUDGMENT IN CORRELATING THIS INFORMATION TO QUALITY LEVEL D INFORMATION AND ANY ACHIEVED QL B OR QL A INFORMATION. PROFESSIONAL JUDGMENT IS USED TO DETERMINE THE LIKELY POSITION OF A UTILITY LINE SEGMENT BETWEEN IN RELATION TO ABOVE GROUND UTILITY FEATURES. FREQUENCY AND TYPE OF ABOVE-GROUND UTILITY FEATURES; TYPE, SIZE, AND MATERIAL OF THE UTILITY; TOPOGRAPHY; QUALITY OF RECORDS; AND OTHER FACTORS DETERMINE WHETHER INDICATING A DEPICTION TO BE QL C OR QL D IS APPROPRIATE.

   D. QUALITY LEVEL D (QL D) INFORMATION DERIVED FROM A REVIEW AND COMPILATION OF EXISTING RECORDS, ORAL RECOLLECTIONS, ONE-CALL MARKINGS, MANAGED DATA REPOSITORIES, CONTEXT WITH OTHER ACHIEVED QUALITY LEVELS, AND/OR OTHER AVAILABLE EVIDENCE OF EXISTENCE AND LOCATION.

5. FOR QL-A DATA, UTILITY BOTTOM NOTED IS APPARENT BOTTOM UNLESS NOTED AS ACTUAL BOTTOM. ADDITIONAL MATERIAL AND/OR UTILITIES MAY EXIST BELOW APPARENT OR ACTUAL BOTTOM.

6. RELIANCE UPON THIS INFORMATION FOR RISK MANAGEMENT PURPOSES DOES NOT RELIEVE ANY PARTY FROM FOLLOWING ALL APPLICABLE UTILITY DAMAGE PREVENTION STATUTES, POLICIES, AND/OR INDUSTRY BEST PRACTICES WHEN PERFORMING EXCAVATIONS.

7. UTILITY SIZE AND MATERIAL ARE DETERMINED THROUGH AVAILABLE UTILITY OWNER INFORMATION UNLESS OTHERWISE CONFIRMED BY ACTUAL EXPOSURE.

8. UTILITIES LABELED AS UNKNOWN TYPE HAVE NO CORRELATED RECORDS OR VISIBLE APPURTENANCES TO DETERMINE FUNCTION OR TYPE.

9. UTILITY FIELD MAPPING SERVICES WAS STARTED ON 6/15/23 AND COMPLETED ON 08/07/23. UTILITIES MAY HAVE BEEN ADJUSTED, REMOVED, RELOCATED OR ADDED AFTER THIS DATE.

10. LOCATIONS NOTED AS QUALITY LEVEL A HAVE A REFERENCED DATA FORM WITH ADDITIONAL INFORMATION FROM PHYSICALLY OBSERVED AND MEASURED ATTRIBUTES FOR THE INDICATED UTILITY.

11. KCI RECOMMENDS THE USE OF PROFESSIONAL JUDGEMENT FOR DECISIONS IN SELECTING SPECIFIC LOCATIONS FOR QUALITY LEVEL A DATA.

12. SURVEY AND RESULTING COORDINATES AND ELEVATIONS TAKEN FROM FIELD SURVEY PROVIDED BY OTHERS.

13. UTILITIES NOTED TO BE ABANDONED OR OUT OF SERVICE HAVE BEEN NOTED AS SUCH FROM INFORMATION PROVIDED BY OTHERS. USERS OF THIS DATA SHOULD VERIFY THIS STATUS INFORMATION.

14. UTILITY DEPICTION IS TYPICALLY ONLY WITHIN DEFINED PROJECT LIMITS HOWEVER, SOME UTILITY FACILITIES EXTEND BEYOND THESE LIMITS TO SURFACE FEATURES OUTSIDE OF THE LIMITS. ONLY SPECIFIC UTILITIES WERE DESIGNATED ON 400 N FROM MAIN TO 650 E. OTHER UTILITIES EXIST IN THIS AREA.

ABBREVIATIONS

ABBREV	ABBREVIATIONS
ABC	AGGREGATE BASE COURSE
AC	ASPHALT CONCRETE
BC	BACK OF CURB
BCF	BRASS CAP FLUSH
BCHH	BRASS CAP IN HAND HOLE
BCR	BEGIN CURB RETURN
BM	BENCHMARK
BSW	BACK OF SIDEWALK
BTM	BOTTOM
BVC	BEGIN VERTICAL CURVE
CB	CATCH BASIN
C/L	CENTERLINE
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
CONC	CONCRETE
CONST	CONSTRUCTION
CY	CUBIC YARD
D/W	DRIVEWAY
DWG	DRAWING
DTL	DETAIL
E	EAST
ECR	END CURB RETURN
ELE	ELEVATION
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
ESMT	EASEMENT
EVC	END VERTICAL CURVE
EX, EXIST	EXISTING
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
OFF	OFFSET
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
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SF	SQUARE FEET
SSMH	SANITARY SEWER MANHOLE
STA	STATION
STD	STANDARD
SUB	SUBSURFACE
SWK	SIDEWALK
SY	SQUARE YARD
TA	TOP OF ASPHALT
TAN	TANGENT
TBC	TOP BACK OF CURB
TC	TOP OF CONCRETE
T, TEL	TELEPHONE
TG	TOP OF GRAVEL
TL	TRUE LENGTH
TYP	TYPICAL
UGE	UNDERGROUND ELECTRIC
UPRR	UNION PACIFIC RAILROAD
UTIL	UTILITY
VNAE	VEHICLE NON-ACCESS EASEMENT
Vr	VOLUME REQUIRED
Vp	VOLUME PROVIDED
W	WATER, WEST, WITH

LEGEND

EXISTING	PROPOSED
EXISTING CONCRETE	PROPOSED CONCRETE
EXISTING PAVEMENT	PROPOSED PAVEMENT
EXISTING IRRIGATION LINE	EXISTING IRRIGATION LINE
EXISTING SEWER LINE	PROPOSED SEWER LINE
EXISTING STORM DRAIN	PROPOSED STORM DRAIN
EXISTING WATER LINE	PROPOSED WATER LINE
EXISTING OVERHEAD ELECTRIC	PROPOSED OVERHEAD ELECTRIC
EXISTING UNDERGROUND ELECTRIC	PROPOSED UNDERGROUND ELECTRIC
EXISTING CABLE (TV) LINE	PROPOSED CABLE (TV) LINE
EXISTING FIBER OPTIC LINE	PROPOSED FIBER OPTIC LINE
EXISTING UNDERGROUND TELEPHONE	PROPOSED UNDERGROUND TELEPHONE
EXISTING GAS LINE	PROPOSED GAS LINE
EXISTING BARBED WIRE FENCE	PROPOSED BARBED WIRE FENCE
EXISTING EASEMENT	PROPOSED EASEMENT
EXISTING FLOWLINE	PROPOSED FLOWLINE
EXISTING PROPERTY LINE	PROPOSED EDGE OF SWALE
EXISTING SPOT ELEVATION	PROPOSED PROPERTY LINE
EXISTING CONTOUR	PROPOSED SPOT ELEVATION
EXISTING BRASS CAP MONUMENT	PROPOSED CONTOUR
EXISTING SIGN	PROPOSED (PLACED) BRASS CAP MONUMENT
EXISTING IRRIGATION MANHOLE	PROPOSED SIGN
EXISTING IRRIGATION VALVE	PROPOSED IRRIGATION MANHOLE
EXISTING DRYWELL	PROPOSED IRRIGATION VALVE
EXISTING SEWER CLEANOUT	PROPOSED DRYWELL
EXISTING SEWER MANHOLE	PROPOSED SEWER CLEANOUT
EXISTING CATCH BASIN	PROPOSED SEWER MANHOLE
EXISTING STORM DRAIN MANHOLE	PROPOSED CATCH BASIN
EXISTING STORM DRAIN W/ STRUCTURE	PROPOSED STORM DRAIN MANHOLE
EXISTING AIR VAC	PROPOSED STORM DRAIN W/ STRUCTURE
EXISTING FIRE HYDRANT	PROPOSED AIR VAC
EXISTING UNKNOWN MANHOLE	PROPOSED FIRE HYDRANT
EXISTING GATE VALVE	PROPOSED FITTINGS
EXISTING REDUCER	PROPOSED GATE VALVE
EXISTING WATER MANHOLE (OR WELL)	PROPOSED REDUCER
EXISTING WATER METER	PROPOSED WATER MANHOLE (OR WELL)
EXISTING CABLE MANHOLE	PROPOSED WATER METER
EXISTING ELECTRIC MANHOLE	PROPOSED CABLE MANHOLE
EXISTING GUY WIRE	PROPOSED ELECTRIC MANHOLE
EXISTING LIGHT POLE	PROPOSED GUY WIRE
EXISTING POWER POLE	PROPOSED LIGHT POLE
EXISTING TELEPHONE MANHOLE	PROPOSED POWER POLE
EXISTING TELEPHONE PEDESTAL	PROPOSED TELEPHONE MANHOLE
EXISTING GAS MANHOLE	PROPOSED GAS MANHOLE
EXISTING GAS METER	PROPOSED GAS METER
EXISTING GAS RISER	PROPOSED GAS RISER
EXISTING GAS VALVE	PROPOSED GAS VALVE
EXISTING VEGETATION	PROPOSED VEGETATION

OTHER

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

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LICENSED PROFESSIONAL ENGINEER No. 334535 Scott J. Archibald 02/14/2024 STATE OF UTAH

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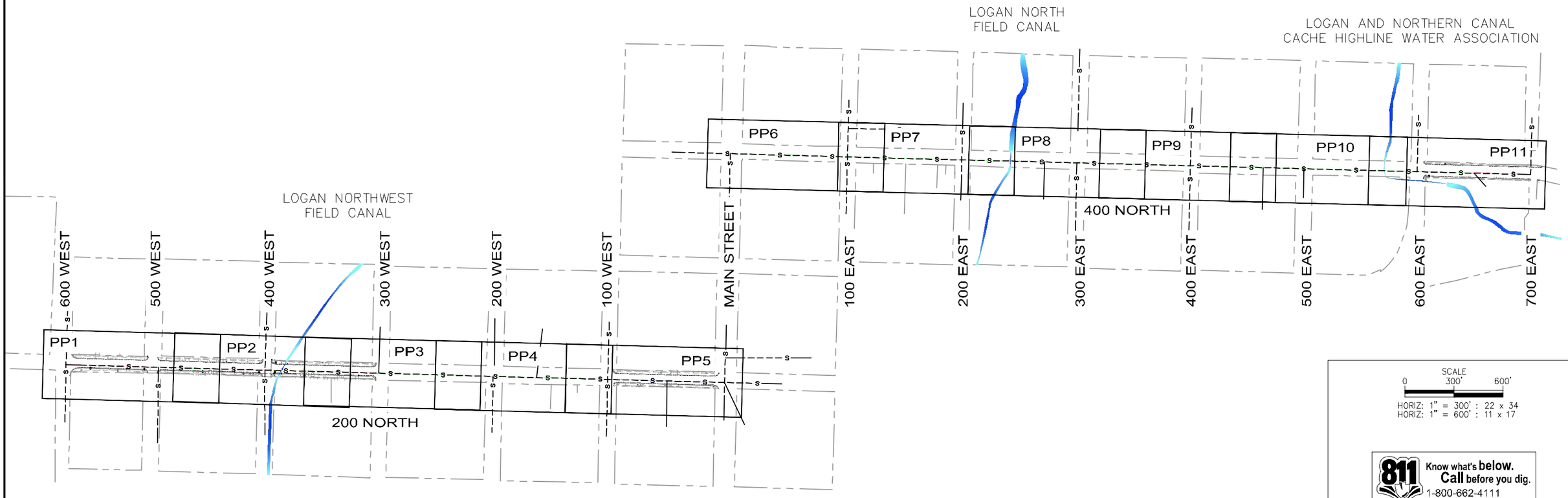
LOGAN CITY

200 NORTH AND 400 NORTH SEWER
GENERAL
SUB UTIL GENERAL NOTES, LEGEND & ABBREV

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	5 of 45	G5

P:\Logan City\09195 200 North & 400 North Sewer Improvements\DWG\Sheets\LS-GN.dwg Feb 14, 2024 11:19am jjolley



SCALE
0 300' 600'
HORIZ: 1" = 300' : 22 x 34
HORIZ: 1" = 600' : 11 x 17

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02/14/2024
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LOGAN CITY

200 NORTH AND 400 NORTH SEWER
GENERAL
ROAD SHEET INDEX

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	6 of 45	G6

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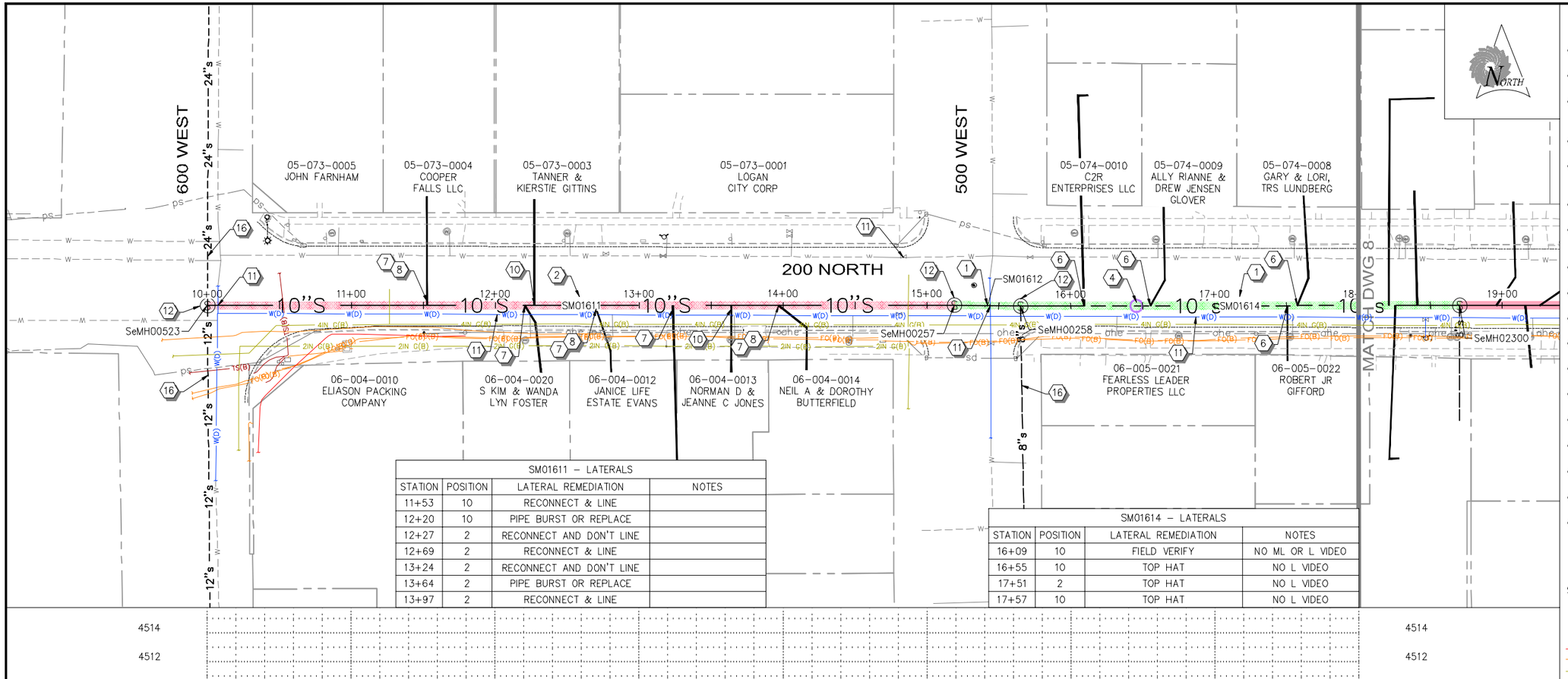
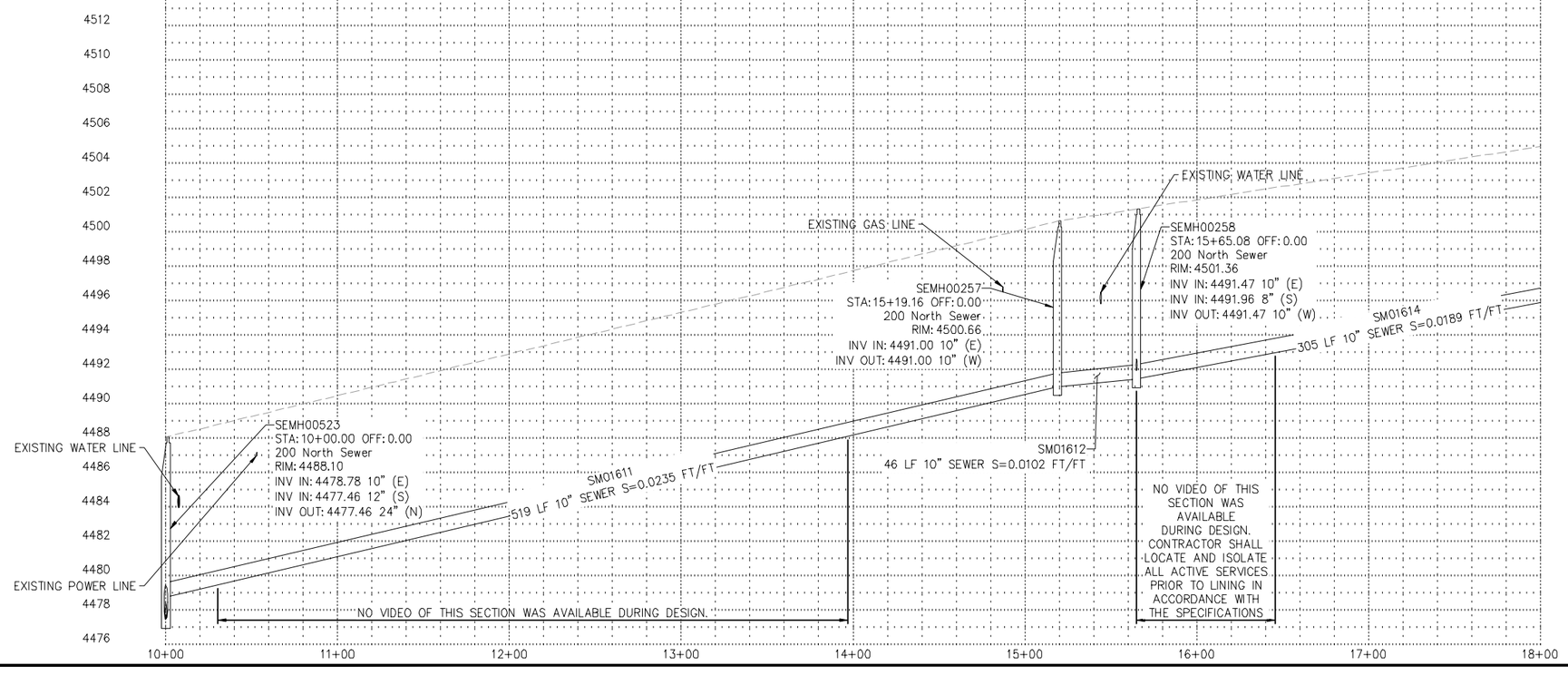


SM01611 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
11+53	10	RECONNECT & LINE	
12+20	10	PIPE BURST OR REPLACE	
12+27	2	RECONNECT AND DON'T LINE	
12+69	2	RECONNECT & LINE	
13+24	2	RECONNECT AND DON'T LINE	
13+64	2	PIPE BURST OR REPLACE	
13+97	2	RECONNECT & LINE	

SM01614 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
16+09	10	FIELD VERIFY	NO ML OR L VIDEO
16+55	10	TOP HAT	NO L VIDEO
17+51	2	TOP HAT	NO L VIDEO
17+57	10	TOP HAT	NO L VIDEO



CONSTRUCTION NOTES

1. LINE EXISTING PIPE
2. REPLACE PIPE
3. REPLACE PIPE W/ 8" SEWER PIPE
4. SPOT REPAIR EXISTING PIPE, THEN LINE
5. UNKNOWN LATERAL – POSSIBLE CORRECTION NEEDED
6. REPAIR LATERAL CONNECTION PER A/D2
7. REPAIR LATERAL CONNECTION TO EDGE OF TRENCH B/D2
8. REPAIR LATERAL CONNECTION WITH LINING PER C/D2
9. REPLACE LATERAL CONNECTION PER D/D2
10. REPAIR LATERAL CONNECTION PER E/D2
11. PROTECT EXISTING WATER LINE IN PLACE
12. LINE MANHOLE
13. REPLACE MANHOLE A/D4
14. PROTECT MANHOLE IN PLACE
15. INSTALL NEW 48"ø MANHOLE A/D4
16. PROTECT EXISTING SEWER PIPE IN PLACE
17. PIPE BURST
18. SPOT REPAIR LATERAL

UTILITY LEGEND

SEE SUBSURFACE UTILITY GENERAL NOTES ON SHEET G4

#IN = UTILITY SIZE IN INCHES
(QL) = QUALITY LEVEL (A, B, C, D)
<< OR >> = FLOW DIRECTION

- #IN E(QL) — EXISTING ELECTRIC
- #IN FO(QL) — EXISTING FIBER OPTIC
- #IN G(QL) — EXISTING GAS (DOMINION)
- #IN SL(QL) — EXISTING STREET LIGHT (UDOT)
- #IN W(QL) — EXISTING WATER
- END OF INVESTIGATION

SCALE
0 40' 80'

HORIZ: 1" = 40' : 22 x 34
HORIZ: 1" = 80' : 11 x 17
VERT: 1" = 4' : 22 x 34
VERT: 1" = 8' : 11 x 17

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200 NORTH AND 400 NORTH SEWER
200 NORTH
PLAN AND PROFILE

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	7 of 45	PP1

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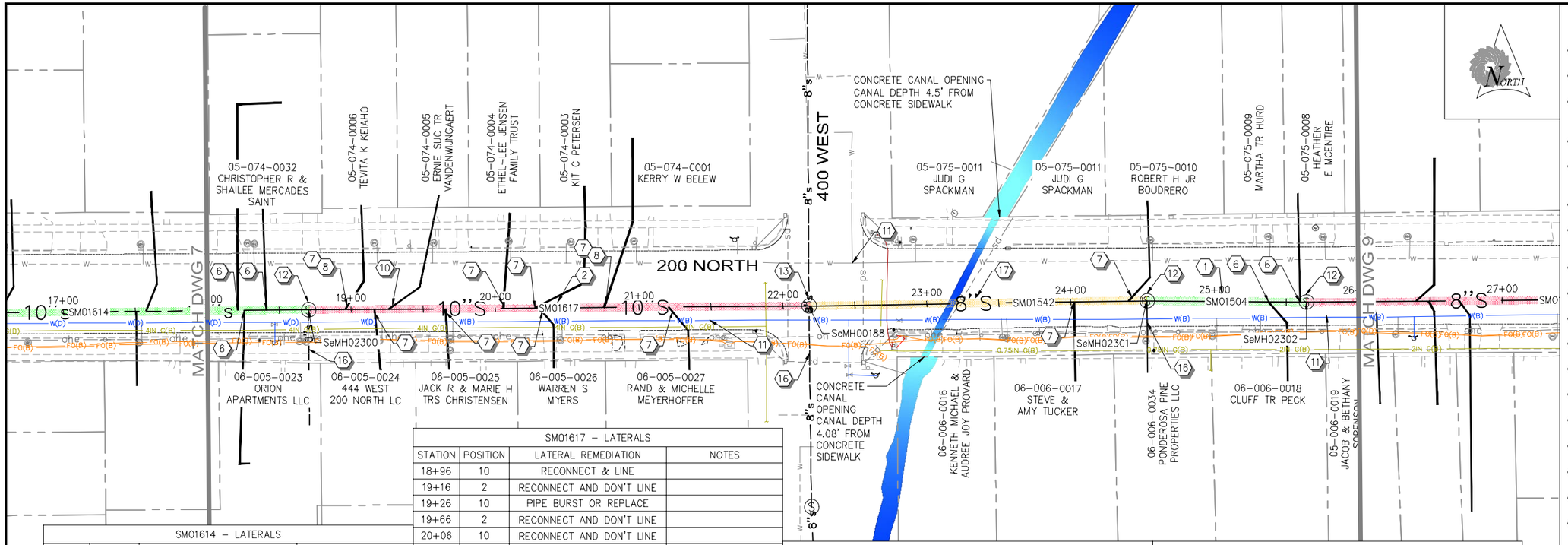
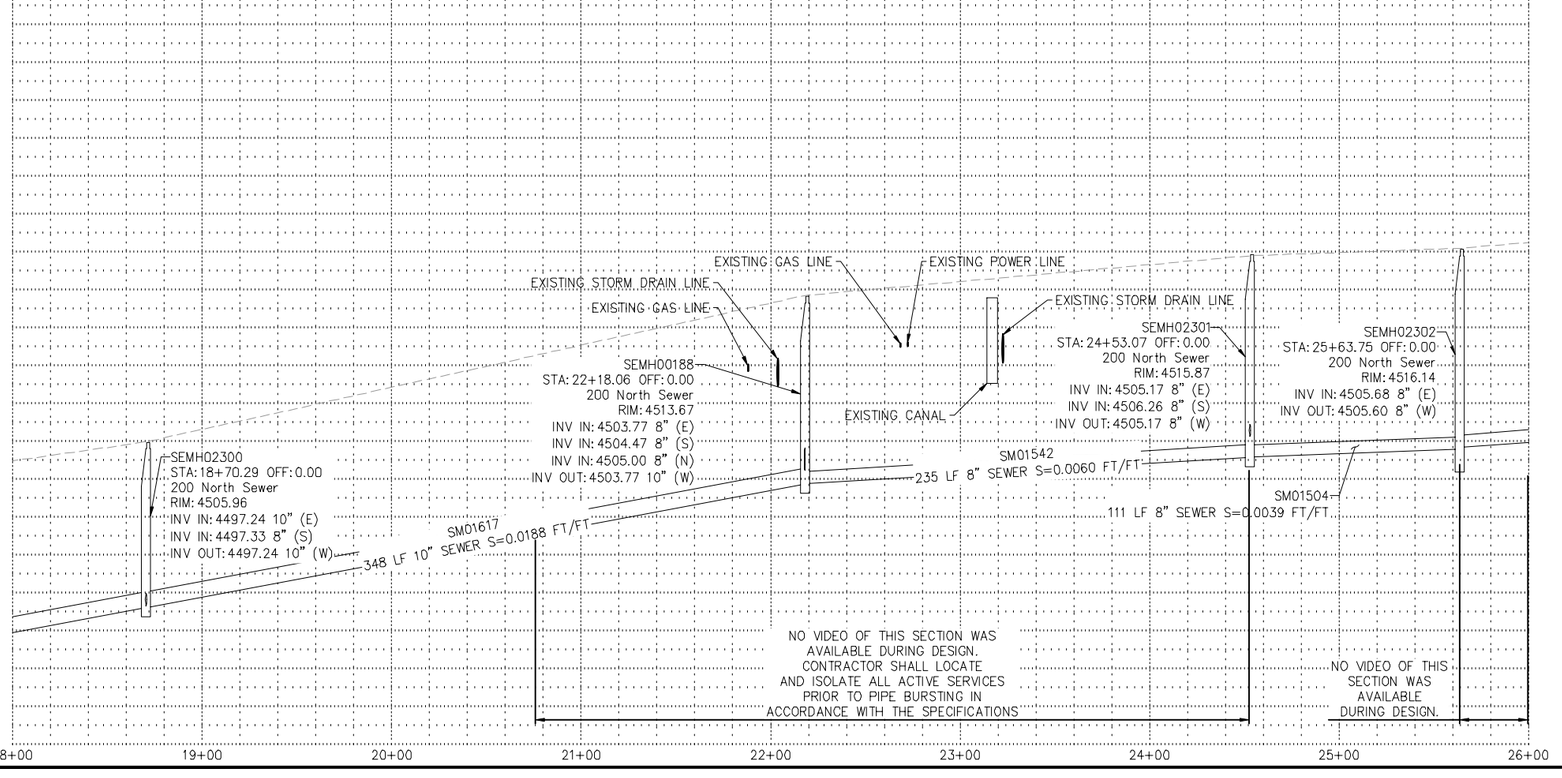


SM01614 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
18+21	10	TOP HAT	
18+26	2	TOP HAT	
18+41	10	TOP HAT	

SM01617 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
18+96	10	RECONNECT & LINE	
19+16	2	RECONNECT AND DON'T LINE	
19+26	10	PIPE BURST OR REPLACE	
19+66	2	RECONNECT AND DON'T LINE	
20+06	10	RECONNECT AND DON'T LINE	
20+28	10	RECONNECT AND DON'T LINE	
20+31	2	RECONNECT AND DON'T LINE	
20+76	10	RECONNECT & LINE	
21+20	2	RECONNECT AND DON'T LINE	

SM01542 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
24+05	2	PIPE BURST OR REPLACE	
24+40	10	PIPE BURST OR REPLACE	

SM01504 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
25+38	2	TOP HAT	
25+59	10	TOP HAT	



CONSTRUCTION NOTES

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2. REPLACE PIPE
3. REPLACE PIPE W/ 8" SEWER PIPE
4. SPOT REPAIR EXISTING PIPE, THEN LINE
5. UNKNOWN LATERAL – POSSIBLE CORRECTION NEEDED
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7. REPAIR LATERAL CONNECTION TO EDGE OF TRENCH B/D2
8. REPAIR LATERAL CONNECTION WITH LINING PER C/D2
9. REPLACE LATERAL CONNECTION PER D/D2
10. REPAIR LATERAL CONNECTION PER E/D2
11. PROTECT EXISTING WATER LINE IN PLACE
12. LINE MANHOLE
13. REPLACE MANHOLE A/D4
14. PROTECT MANHOLE IN PLACE
15. INSTALL NEW 48"ø MANHOLE A/D4
16. PROTECT EXISTING SEWER PIPE IN PLACE
17. PIPE BURST
18. SPOT REPAIR LATERAL

UTILITY LEGEND

SEE SUBSURFACE UTILITY GENERAL NOTES ON SHEET G4

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- #IN FO(QL) — EXISTING FIBER OPTIC
- #IN G(QL) — EXISTING GAS (DOMINION)
- #IN SL(QL) — EXISTING STREET LIGHT (UDOT)
- #IN W(QL) — EXISTING WATER
- END OF INVESTIGATION

SCALE
0 40' 80'
HORIZ: 1" = 40' : 22 x 34
HORIZ: 1" = 80' : 11 x 17
VERT: 1" = 4' : 22 x 34
VERT: 1" = 8' : 11 x 17

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LOGAN CITY

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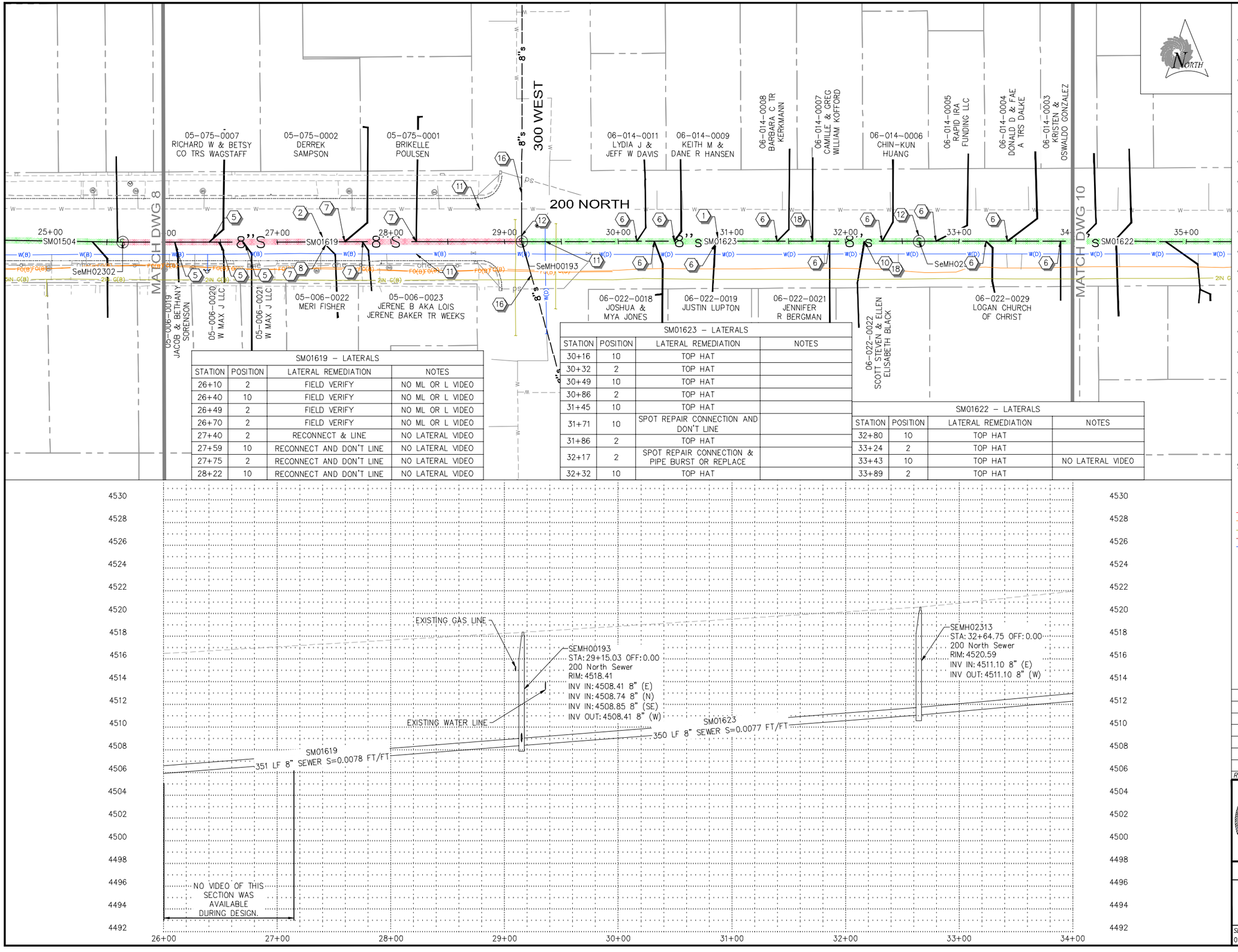

SM01619 – LATERALS

STATION	POSITION	LATERAL REMEDIATION	NOTES
26+10	2	FIELD VERIFY	NO ML OR L VIDEO
26+40	10	FIELD VERIFY	NO ML OR L VIDEO
26+49	2	FIELD VERIFY	NO ML OR L VIDEO
26+70	2	FIELD VERIFY	NO ML OR L VIDEO
27+40	2	RECONNECT & LINE	NO LATERAL VIDEO
27+59	10	RECONNECT AND DON'T LINE	NO LATERAL VIDEO
27+75	2	RECONNECT AND DON'T LINE	NO LATERAL VIDEO
28+22	10	RECONNECT AND DON'T LINE	NO LATERAL VIDEO

SM01623 – LATERALS

STATION	POSITION	LATERAL REMEDIATION	NOTES
30+16	10	TOP HAT	
30+32	2	TOP HAT	
30+49	10	TOP HAT	
30+86	2	TOP HAT	
31+45	10	TOP HAT	
31+71	10	SPOT REPAIR CONNECTION AND DON'T LINE	
31+86	2	TOP HAT	
32+17	2	SPOT REPAIR CONNECTION & PIPE BURST OR REPLACE	
32+32	10	TOP HAT	

SM01622 – LATERALS

STATION	POSITION	LATERAL REMEDIATION	NOTES
32+80	10	TOP HAT	
33+24	2	TOP HAT	
33+43	10	TOP HAT	NO LATERAL VIDEO
33+89	2	TOP HAT	

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8. REPAIR LATERAL CONNECTION WITH LINING PER C D2
9. REPLACE LATERAL CONNECTION PER D D2
10. REPAIR LATERAL CONNECTION PER E D2
11. PROTECT EXISTING WATER LINE IN PLACE
12. LINE MANHOLE
13. REPLACE MANHOLE A D4
14. PROTECT MANHOLE IN PLACE
15. INSTALL NEW 48"ø MANHOLE A D4
16. PROTECT EXISTING SEWER PIPE IN PLACE
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UTILITY LEGEND

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- #IN W(QL) — EXISTING WATER
- END OF INVESTIGATION

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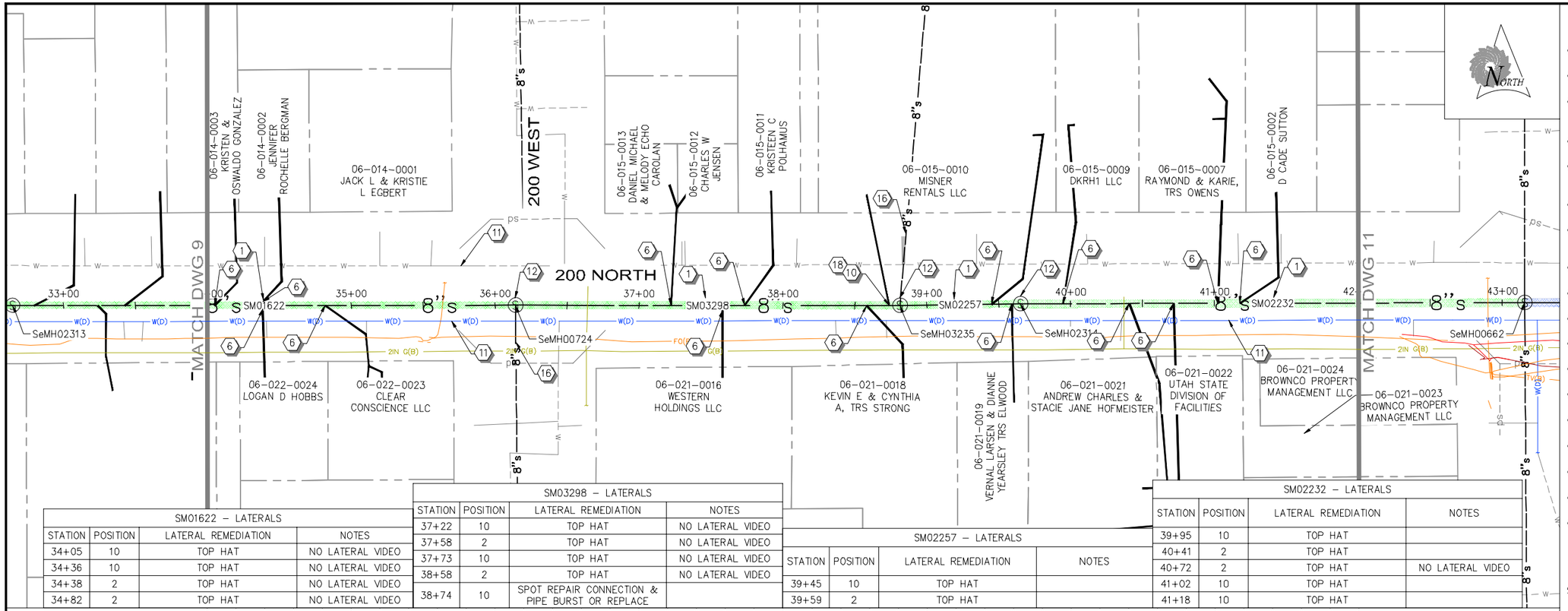
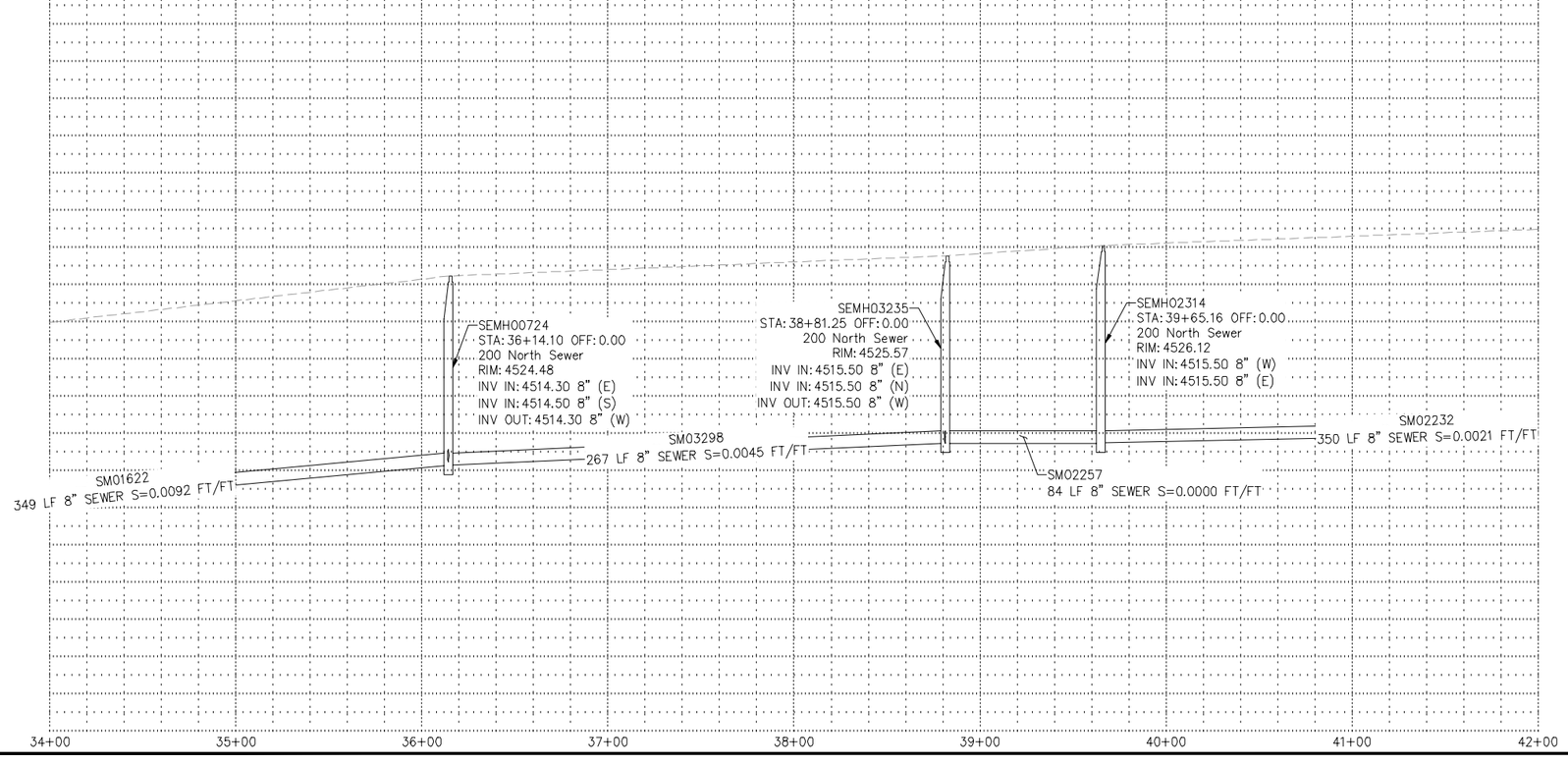


SM01622 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
34+05	10	TOP HAT	NO LATERAL VIDEO
34+36	10	TOP HAT	NO LATERAL VIDEO
34+38	2	TOP HAT	NO LATERAL VIDEO
34+82	2	TOP HAT	NO LATERAL VIDEO

SM03298 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
37+22	10	TOP HAT	NO LATERAL VIDEO
37+58	2	TOP HAT	NO LATERAL VIDEO
37+73	10	TOP HAT	NO LATERAL VIDEO
38+58	2	TOP HAT	NO LATERAL VIDEO
38+74	10	SPOT REPAIR CONNECTION & PIPE BURST OR REPLACE	

SM02257 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
39+45	10	TOP HAT	
39+59	2	TOP HAT	

SM02232 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
39+95	10	TOP HAT	
40+41	2	TOP HAT	
40+72	2	TOP HAT	NO LATERAL VIDEO
41+02	10	TOP HAT	
41+18	10	TOP HAT	



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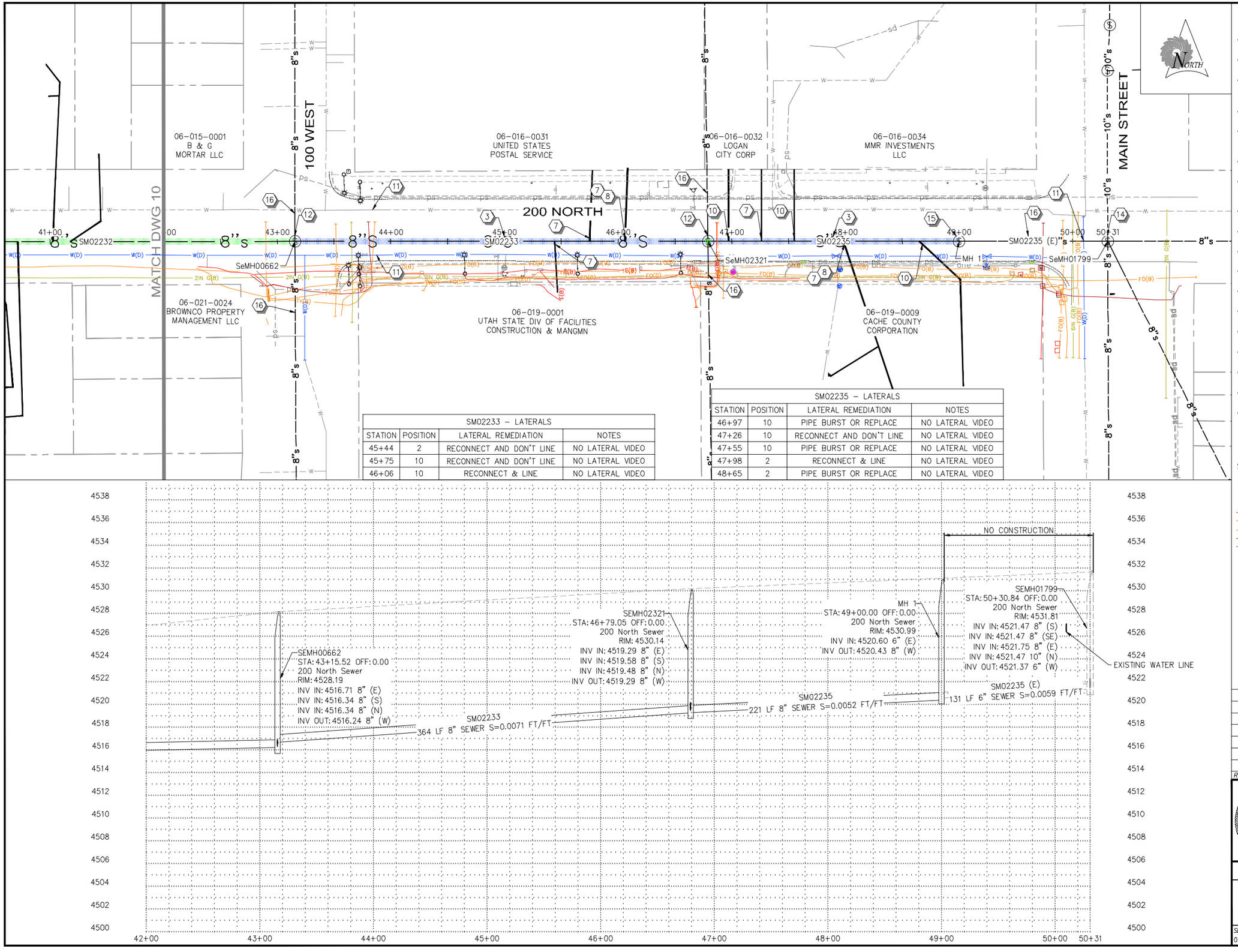

SM02233 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
45+44	2	RECONNECT AND DON'T LINE	NO LATERAL VIDEO
45+75	10	RECONNECT AND DON'T LINE	NO LATERAL VIDEO
46+06	10	RECONNECT & LINE	NO LATERAL VIDEO

SM02235 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
46+97	10	PIPE BURST OR REPLACE	NO LATERAL VIDEO
47+26	10	RECONNECT AND DON'T LINE	NO LATERAL VIDEO
47+55	10	PIPE BURST OR REPLACE	NO LATERAL VIDEO
47+98	2	RECONNECT & LINE	NO LATERAL VIDEO
48+65	2	PIPE BURST OR REPLACE	NO LATERAL VIDEO

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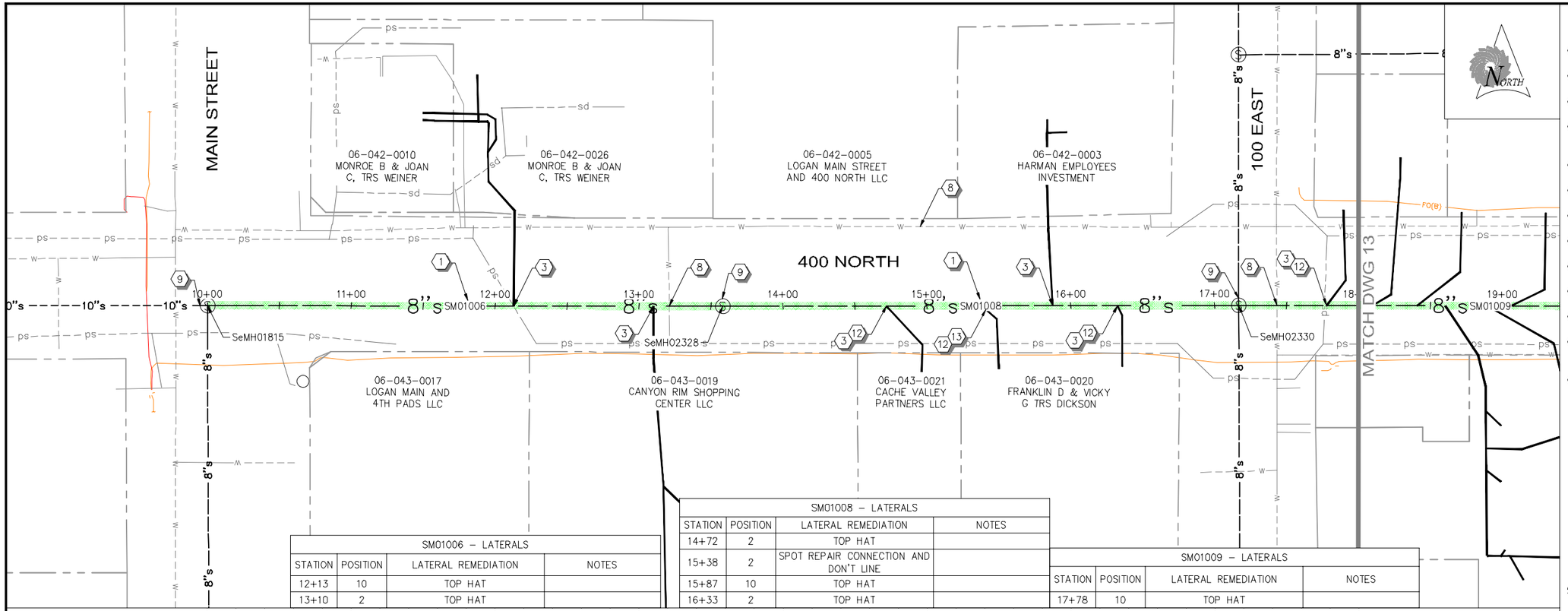
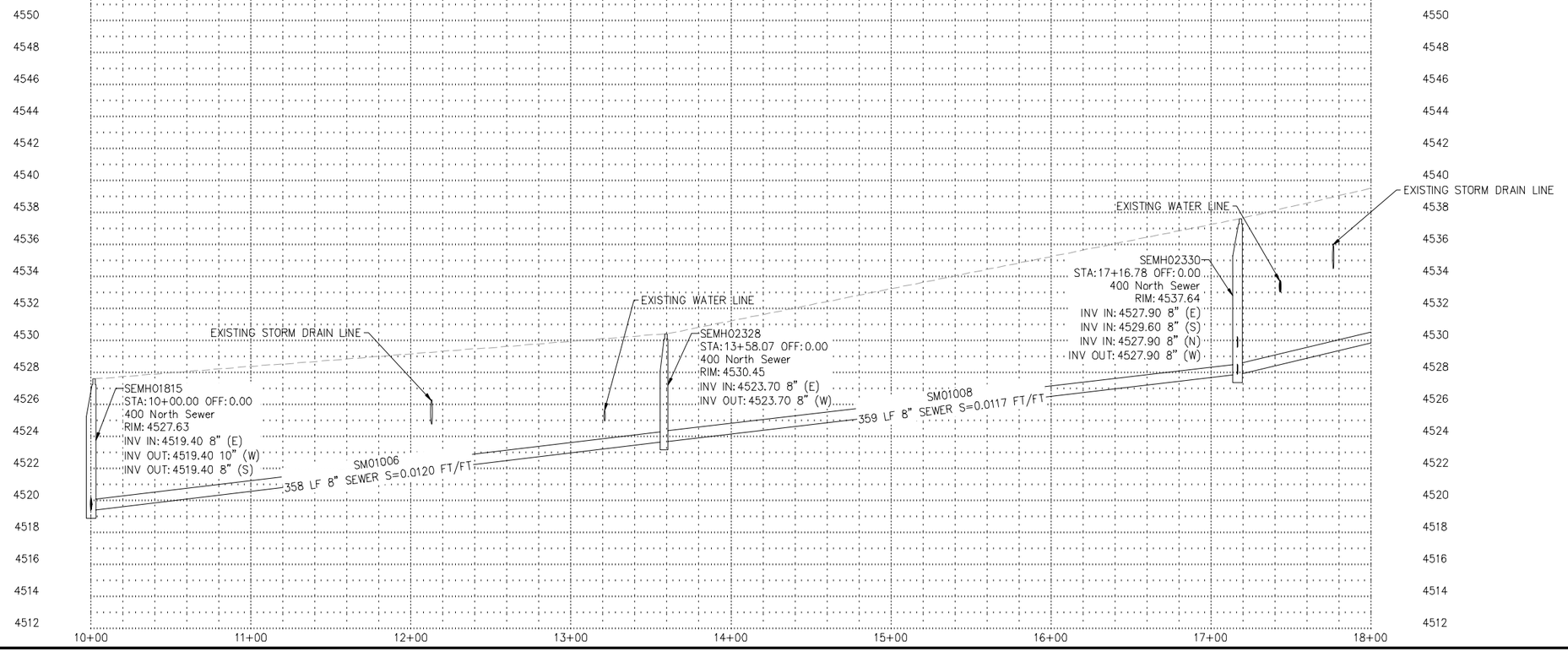


SM01006 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
12+13	10	TOP HAT	
13+10	2	TOP HAT	

SM01008 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
14+72	2	TOP HAT	
15+38	2	SPOT REPAIR CONNECTION AND DON'T LINE	
15+87	10	TOP HAT	
16+33	2	TOP HAT	

SM01009 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
17+78	10	TOP HAT	



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7. REPAIR LATERAL CONNECTION PER E D2
8. PROTECT EXISTING WATER LINE IN PLACE
9. LINE MANHOLE
10. REPLACE MANHOLE B D3
11. PROTECT MANHOLE IN PLACE
12. LATERAL SUSPECTED ABANDONED – FIELD VERIFY
13. SPOT REPAIR LATERAL

UTILITY LEGEND

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- #IN W(QL) — EXISTING WATER
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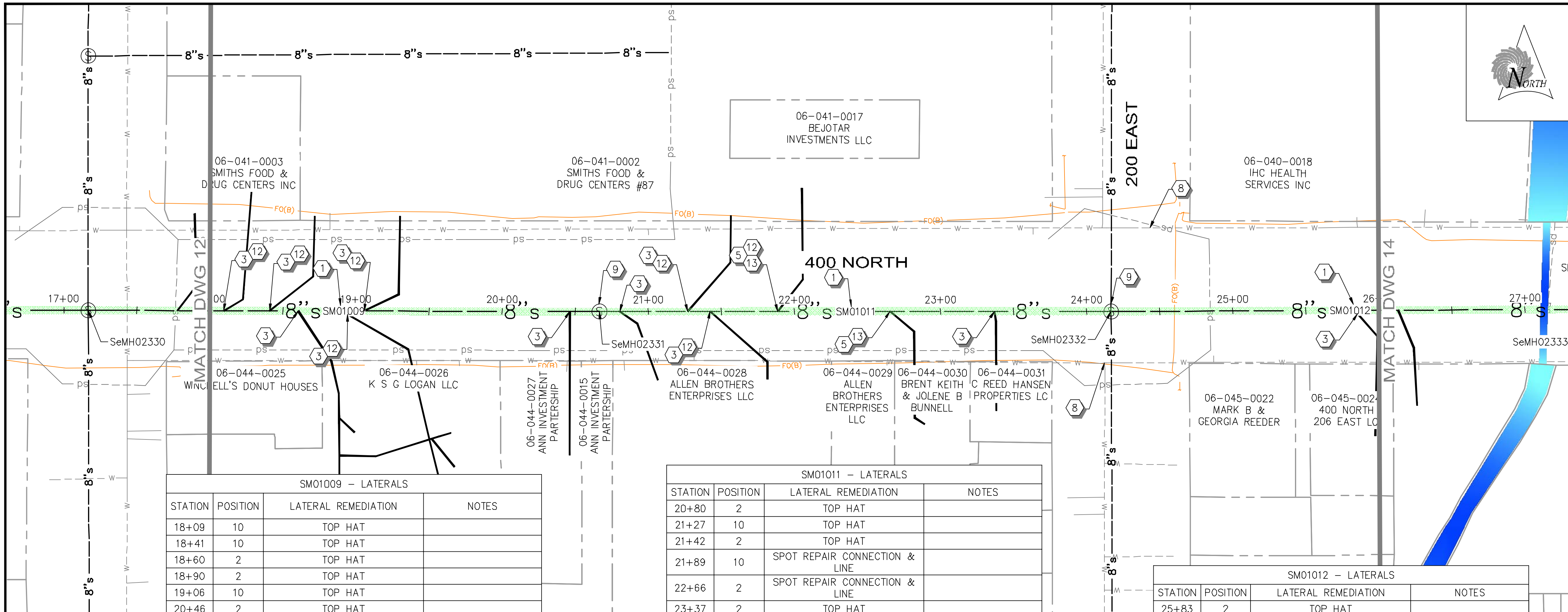
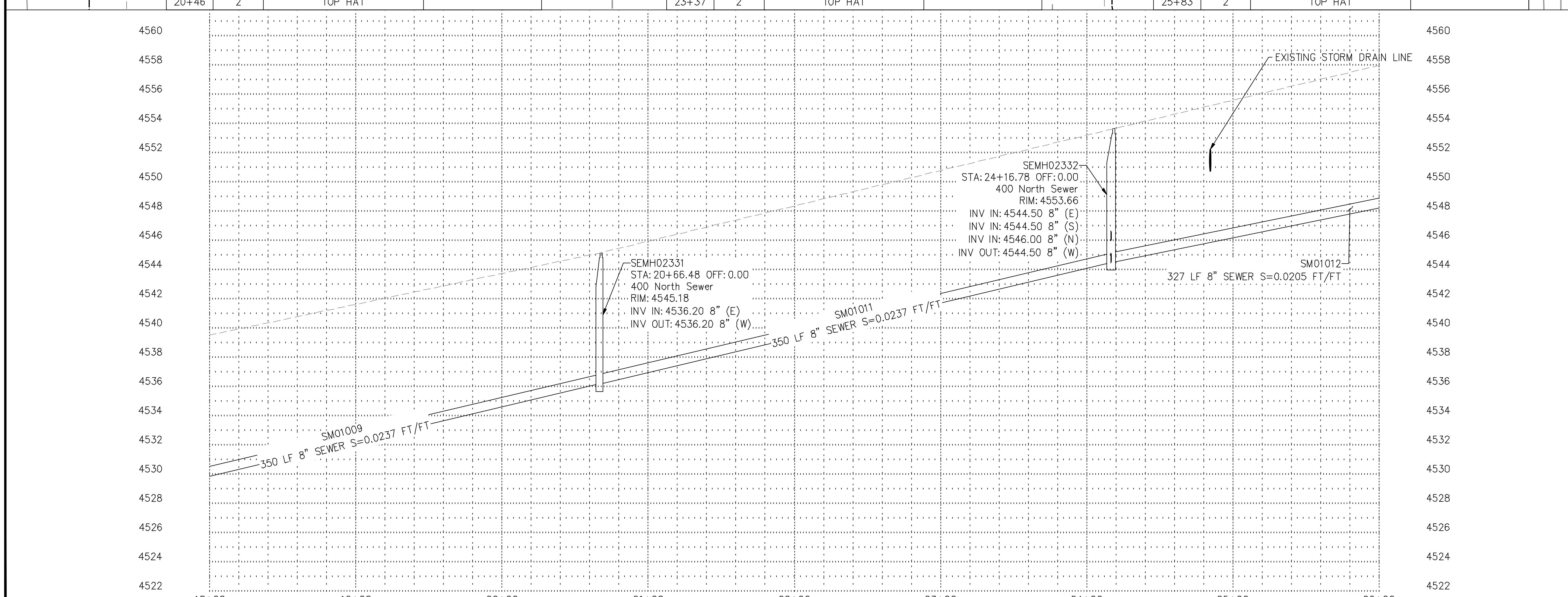


SM01009 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
18+09	10	TOP HAT	
18+41	10	TOP HAT	
18+60	2	TOP HAT	
18+90	2	TOP HAT	
19+06	10	TOP HAT	
20+46	2	TOP HAT	

SM01011 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
20+80	2	TOP HAT	
21+27	10	TOP HAT	
21+42	2	TOP HAT	
21+89	10	SPOT REPAIR CONNECTION & LINE	
22+66	2	SPOT REPAIR CONNECTION & LINE	
23+37	2	TOP HAT	

SM01012 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
25+83	2	TOP HAT	



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8. PROTECT EXISTING WATER LINE IN PLACE
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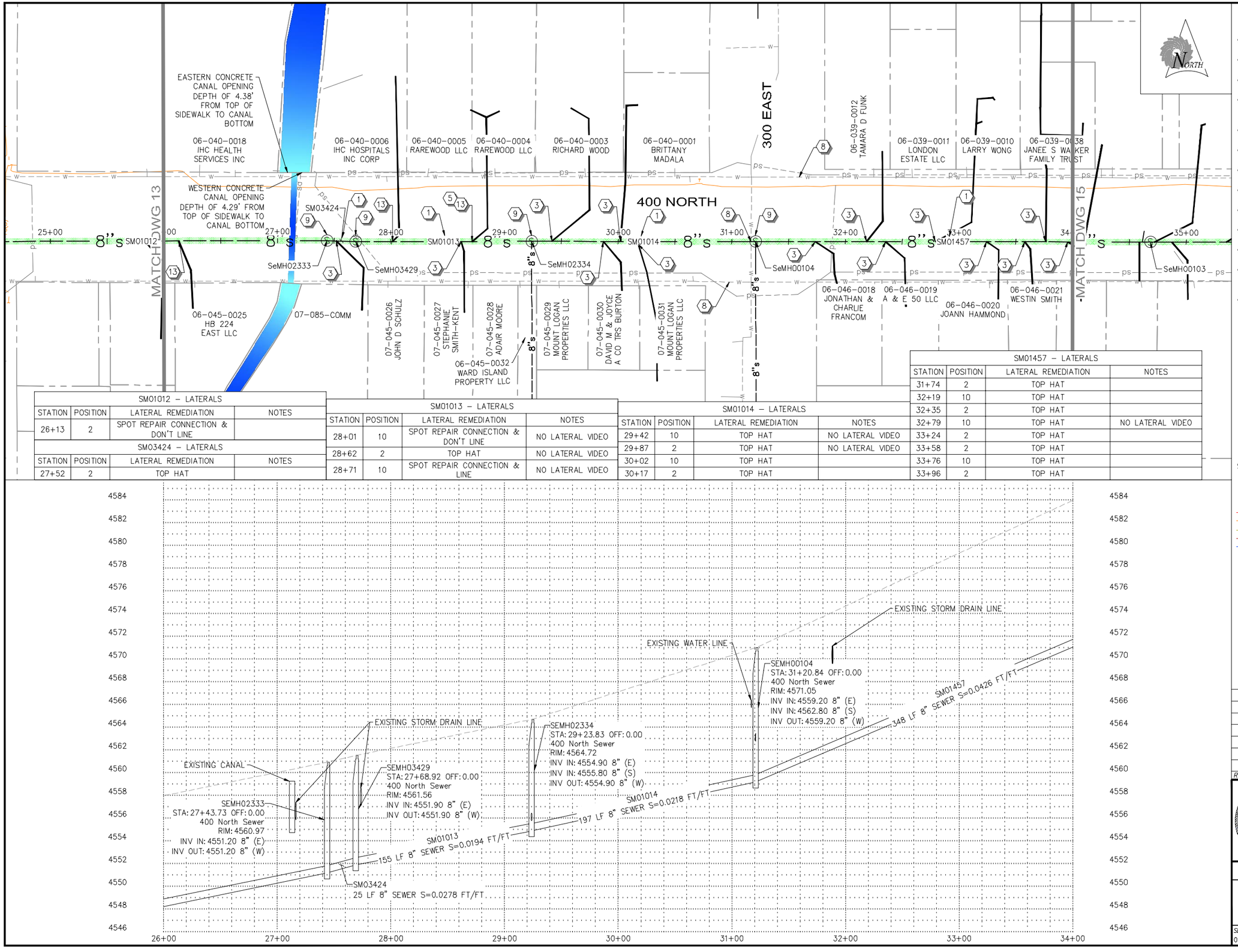

SM01012 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
26+13	2	SPOT REPAIR CONNECTION & DON'T LINE	

SM03424 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
27+52	2	TOP HAT	

SM01013 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
28+01	10	SPOT REPAIR CONNECTION & DON'T LINE	NO LATERAL VIDEO
28+62	2	TOP HAT	NO LATERAL VIDEO
28+71	10	SPOT REPAIR CONNECTION & LINE	NO LATERAL VIDEO

SM01014 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
29+42	10	TOP HAT	NO LATERAL VIDEO
29+87	2	TOP HAT	NO LATERAL VIDEO
30+02	10	TOP HAT	
30+17	2	TOP HAT	

SM01457 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
31+74	2	TOP HAT	
32+19	10	TOP HAT	
32+35	2	TOP HAT	
32+79	10	TOP HAT	NO LATERAL VIDEO
33+24	2	TOP HAT	
33+58	2	TOP HAT	
33+76	10	TOP HAT	
33+96	2	TOP HAT	

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- #IN W(QL) — EXISTING WATER
- ? — END OF INVESTIGATION

SCALE
0 40' 80'

HORIZ: 1" = 40' : 22 x 34
HORIZ: 1" = 80' : 11 x 17
VERT: 1" = 4' : 22 x 34
VERT: 1" = 8' : 11 x 17

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LICENSED PROFESSIONAL ENGINEER No. 334535 Scott L. Archibald 02/14/2024 STATE OF UTAH

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

LOGAN CITY

200 NORTH AND 400 NORTH SEWER
400 NORTH
PLAN AND PROFILE

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	14 of 45	PP8

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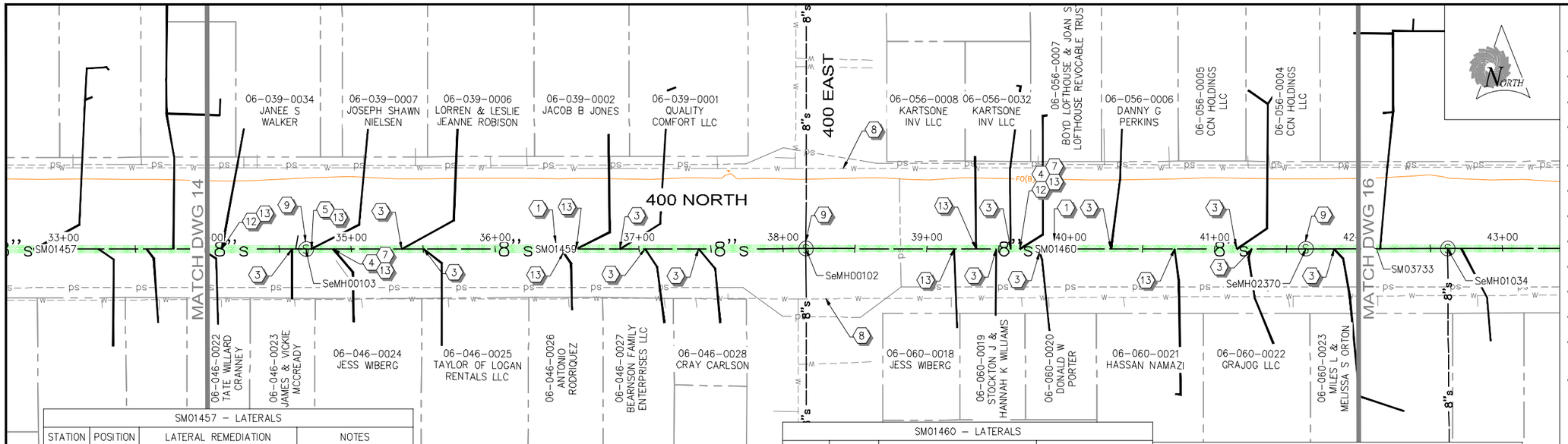
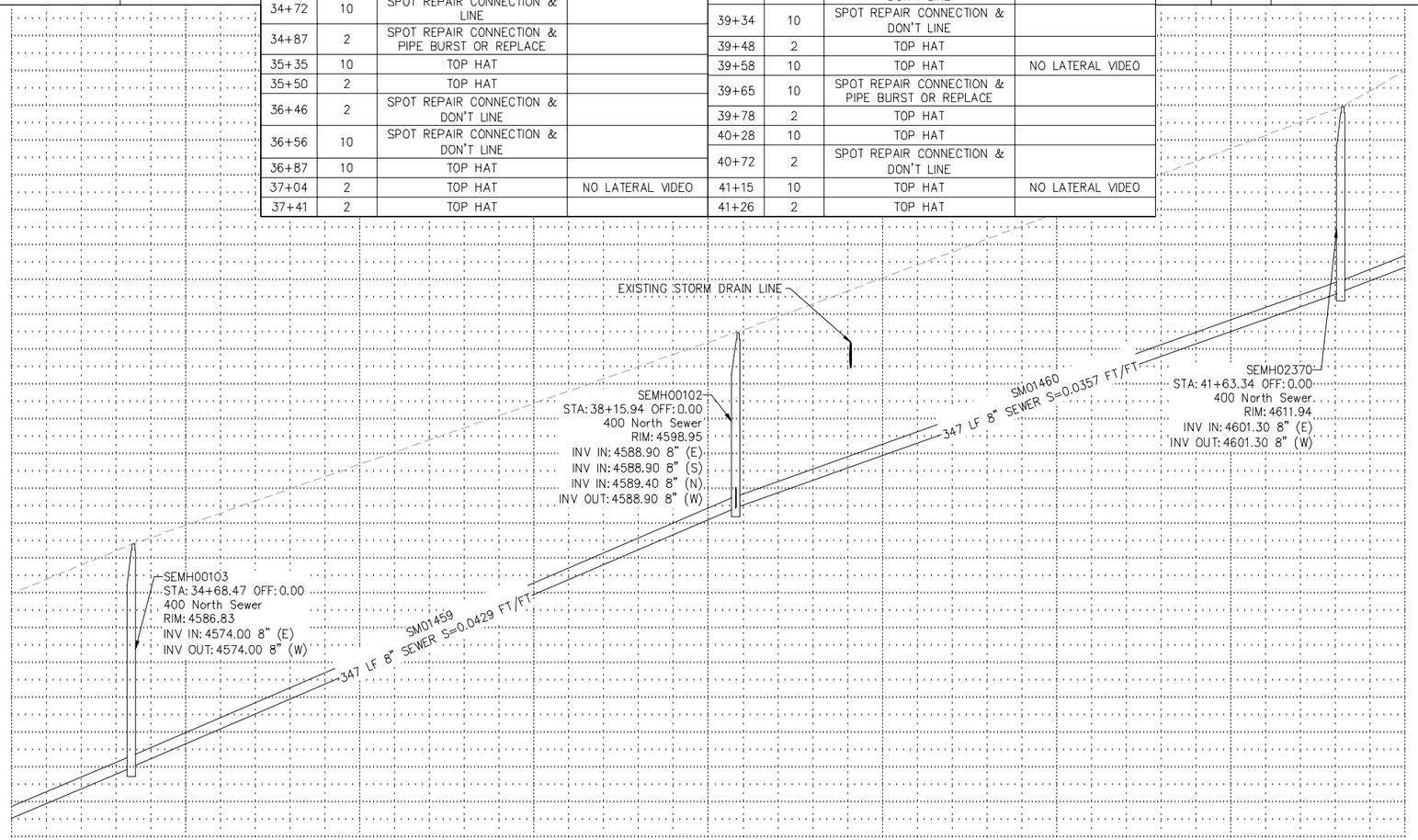


SM01457 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
34+10	10	SPOT REPAIR CONNECTION & DON'T LINE	
34+59	2	TOP HAT	

SM01459 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
34+72	10	SPOT REPAIR CONNECTION & LINE	
34+87	2	SPOT REPAIR CONNECTION & PIPE BURST OR REPLACE	
35+35	10	TOP HAT	
35+50	2	TOP HAT	
36+46	2	SPOT REPAIR CONNECTION & DON'T LINE	
36+56	10	SPOT REPAIR CONNECTION & DON'T LINE	
36+87	10	TOP HAT	
37+04	2	TOP HAT	NO LATERAL VIDEO
37+41	2	TOP HAT	

SM01460 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
39+19	2	SPOT REPAIR CONNECTION & DON'T LINE	NO LATERAL VIDEO
39+34	10	SPOT REPAIR CONNECTION & DON'T LINE	
39+48	2	TOP HAT	
39+58	10	TOP HAT	NO LATERAL VIDEO
39+65	10	SPOT REPAIR CONNECTION & PIPE BURST OR REPLACE	
39+78	2	TOP HAT	
40+28	10	TOP HAT	
40+72	2	SPOT REPAIR CONNECTION & DON'T LINE	
41+15	10	TOP HAT	NO LATERAL VIDEO
41+26	2	TOP HAT	

SM03733 – LATERALS			
STATION	POSITION	LATERAL REMEDIATION	NOTES
41+83	2	TOP HAT	



CONSTRUCTION NOTES

1. LINE EXISTING PIPE
2. REPLACE PIPE
3. REPAIR LATERAL CONNECTION PER A/D2
4. REPAIR LATERAL CONNECTION TO EDGE OF TRENCH B/D2
5. REPAIR LATERAL CONNECTION WITH LINING PER C/D2
6. REPLACE LATERAL CONNECTION PER D/D2
7. REPAIR LATERAL CONNECTION PER E/D2
8. PROTECT EXISTING WATER LINE IN PLACE
9. LINE MANHOLE
10. REPLACE MANHOLE B/D3
11. PROTECT MANHOLE IN PLACE
12. LATERAL SUSPECTED ABANDONED – FIELD VERIFY
13. SPOT REPAIR LATERAL

UTILITY LEGEND

SEE SUBSURFACE UTILITY GENERAL NOTES ON SHEET G4

#IN = UTILITY SIZE IN INCHES
(QL) = QUALITY LEVEL (A, B, C, D)
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- #IN E(QL) — EXISTING ELECTRIC
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- #IN G(QL) — EXISTING GAS (DOMINION)
- #IN SL(QL) — EXISTING STREET LIGHT (UDOT)
- #IN W(QL) — EXISTING WATER
- END OF INVESTIGATION

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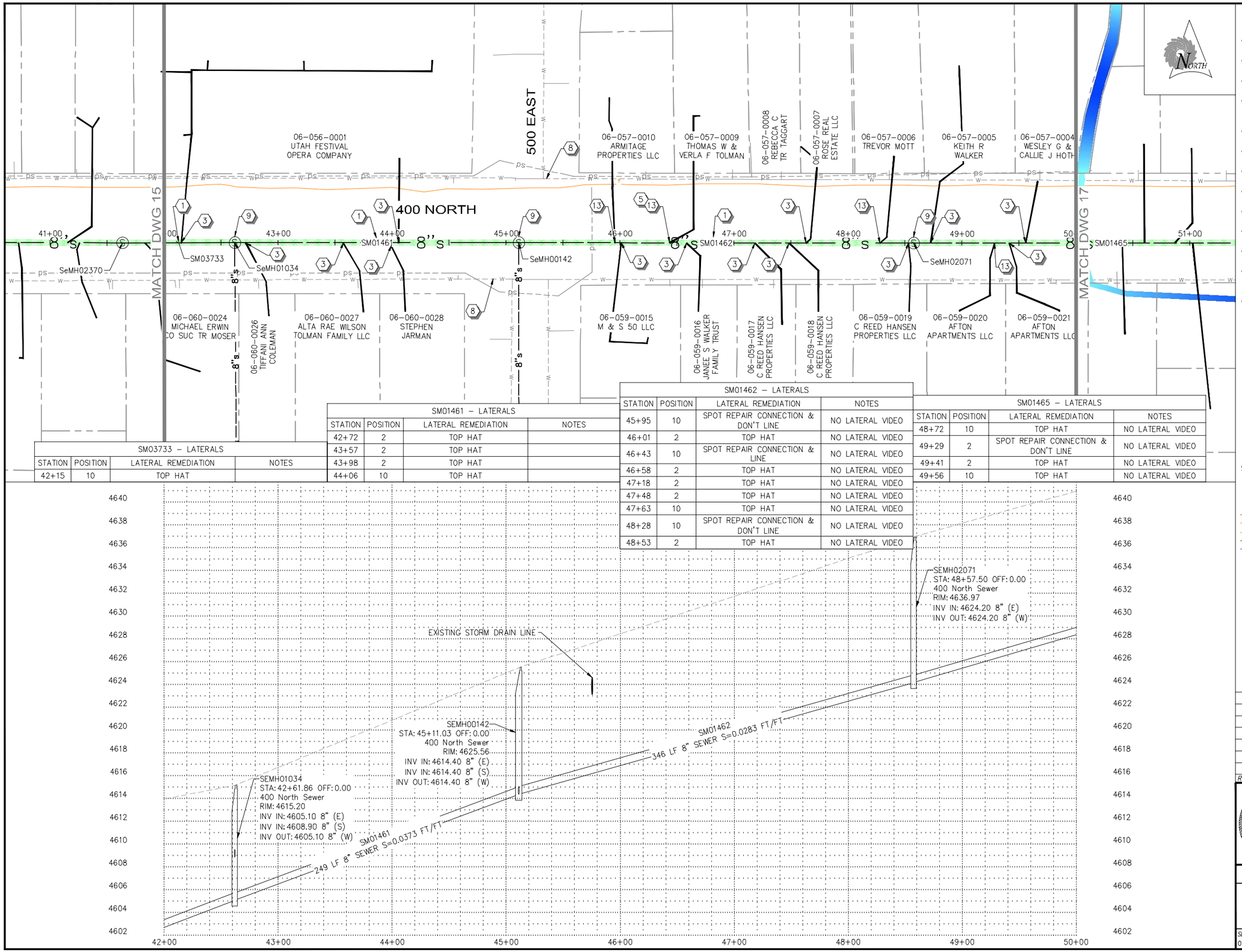

SM03733 – LATERALS

STATION	POSITION	LATERAL REMEDIATION	NOTES
42+15	10	TOP HAT	

SM01461 – LATERALS

STATION	POSITION	LATERAL REMEDIATION	NOTES
42+72	2	TOP HAT	
43+57	2	TOP HAT	
43+98	2	TOP HAT	
44+06	10	TOP HAT	

SM01462 – LATERALS

STATION	POSITION	LATERAL REMEDIATION	NOTES
45+95	10	SPOT REPAIR CONNECTION & DON'T LINE	NO LATERAL VIDEO
46+01	2	TOP HAT	NO LATERAL VIDEO
46+43	10	SPOT REPAIR CONNECTION & LINE	NO LATERAL VIDEO
46+58	2	TOP HAT	NO LATERAL VIDEO
47+18	2	TOP HAT	NO LATERAL VIDEO
47+48	2	TOP HAT	NO LATERAL VIDEO
47+63	10	TOP HAT	NO LATERAL VIDEO
48+28	10	SPOT REPAIR CONNECTION & DON'T LINE	NO LATERAL VIDEO
48+53	2	TOP HAT	NO LATERAL VIDEO

SM01465 – LATERALS

STATION	POSITION	LATERAL REMEDIATION	NOTES
48+72	10	TOP HAT	NO LATERAL VIDEO
49+29	2	SPOT REPAIR CONNECTION & DON'T LINE	NO LATERAL VIDEO
49+41	2	TOP HAT	NO LATERAL VIDEO
49+56	10	TOP HAT	NO LATERAL VIDEO

CONSTRUCTION NOTES

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2. REPLACE PIPE
3. REPAIR LATERAL CONNECTION PER A D2
4. REPAIR LATERAL CONNECTION TO EDGE OF TRENCH B D2
5. REPAIR LATERAL CONNECTION WITH LINING PER C D2
6. REPLACE LATERAL CONNECTION PER D D2
7. REPAIR LATERAL CONNECTION PER E D2
8. PROTECT EXISTING WATER LINE IN PLACE
9. LINE MANHOLE
10. REPLACE MANHOLE B D3
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UTILITY LEGEND

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- #IN W(QL) — EXISTING WATER
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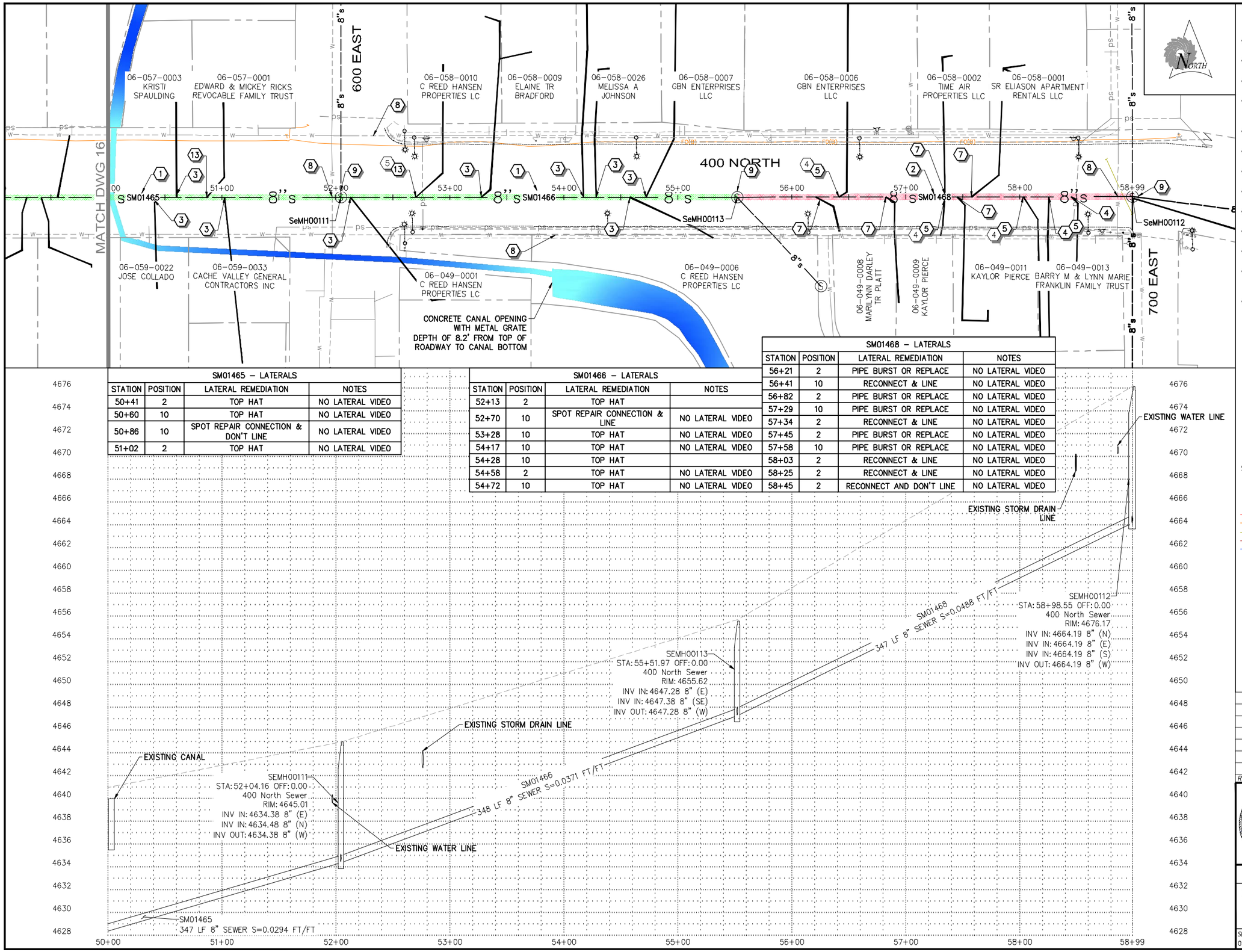

SM01465 – LATERALS

STATION	POSITION	LATERAL REMEDIATION	NOTES
50+41	2	TOP HAT	NO LATERAL VIDEO
50+60	10	TOP HAT	NO LATERAL VIDEO
50+86	10	SPOT REPAIR CONNECTION & DON'T LINE	NO LATERAL VIDEO
51+02	2	TOP HAT	NO LATERAL VIDEO

SM01466 – LATERALS

STATION	POSITION	LATERAL REMEDIATION	NOTES
52+13	2	TOP HAT	
52+70	10	SPOT REPAIR CONNECTION & LINE	NO LATERAL VIDEO
53+28	10	TOP HAT	NO LATERAL VIDEO
54+17	10	TOP HAT	NO LATERAL VIDEO
54+28	10	TOP HAT	
54+58	2	TOP HAT	NO LATERAL VIDEO
54+72	10	TOP HAT	NO LATERAL VIDEO

SM01468 – LATERALS

STATION	POSITION	LATERAL REMEDIATION	NOTES
56+21	2	PIPE BURST OR REPLACE	NO LATERAL VIDEO
56+41	10	RECONNECT & LINE	NO LATERAL VIDEO
56+82	2	PIPE BURST OR REPLACE	NO LATERAL VIDEO
57+29	10	PIPE BURST OR REPLACE	NO LATERAL VIDEO
57+34	2	RECONNECT & LINE	NO LATERAL VIDEO
57+45	2	PIPE BURST OR REPLACE	NO LATERAL VIDEO
57+58	10	PIPE BURST OR REPLACE	NO LATERAL VIDEO
58+03	2	RECONNECT & LINE	NO LATERAL VIDEO
58+25	2	RECONNECT & LINE	NO LATERAL VIDEO
58+45	2	RECONNECT AND DON'T LINE	NO LATERAL VIDEO

CONSTRUCTION NOTES

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4. REPAIR LATERAL CONNECTION TO EDGE OF TRENCH (B D2)
5. REPAIR LATERAL CONNECTION WITH LINING PER (C D2)
6. REPLACE LATERAL CONNECTION PER (D D2)
7. REPAIR LATERAL CONNECTION PER (E D2)
8. PROTECT EXISTING WATER LINE IN PLACE
9. LINE MANHOLE
10. REPLACE MANHOLE (B D3)
11. PROTECT MANHOLE IN PLACE
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400 NORTH
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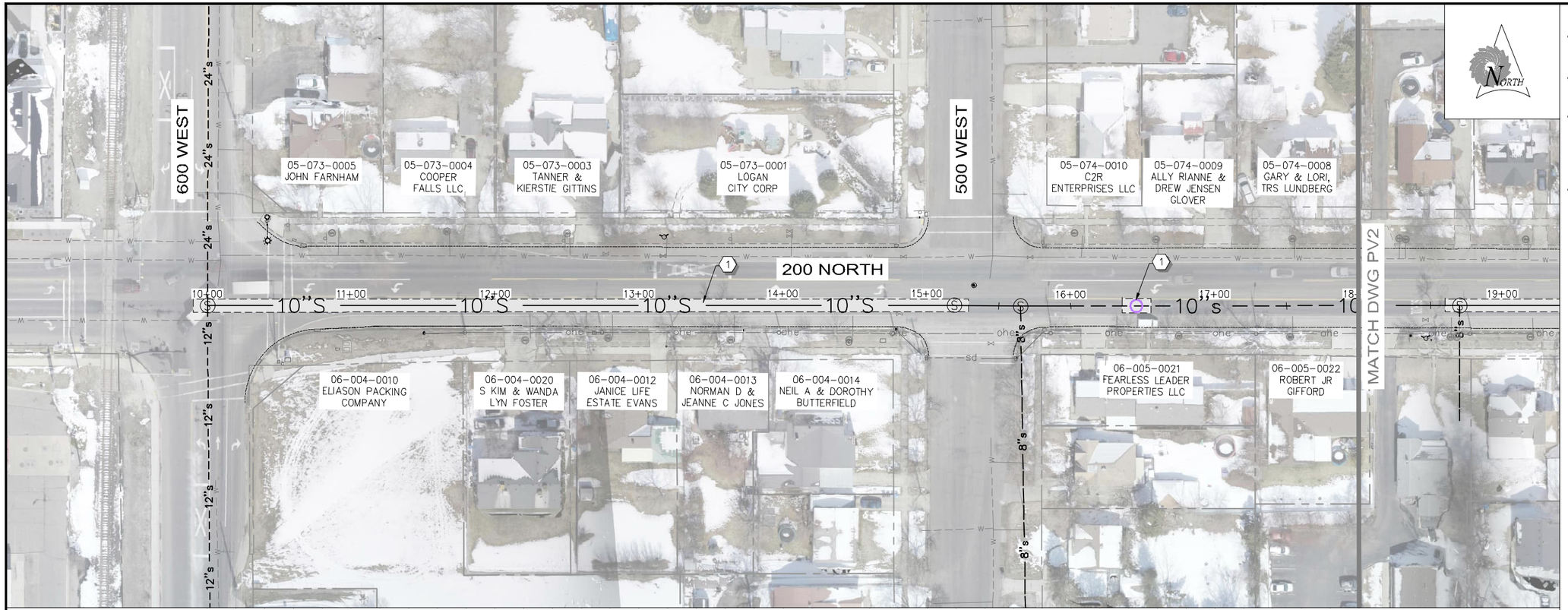

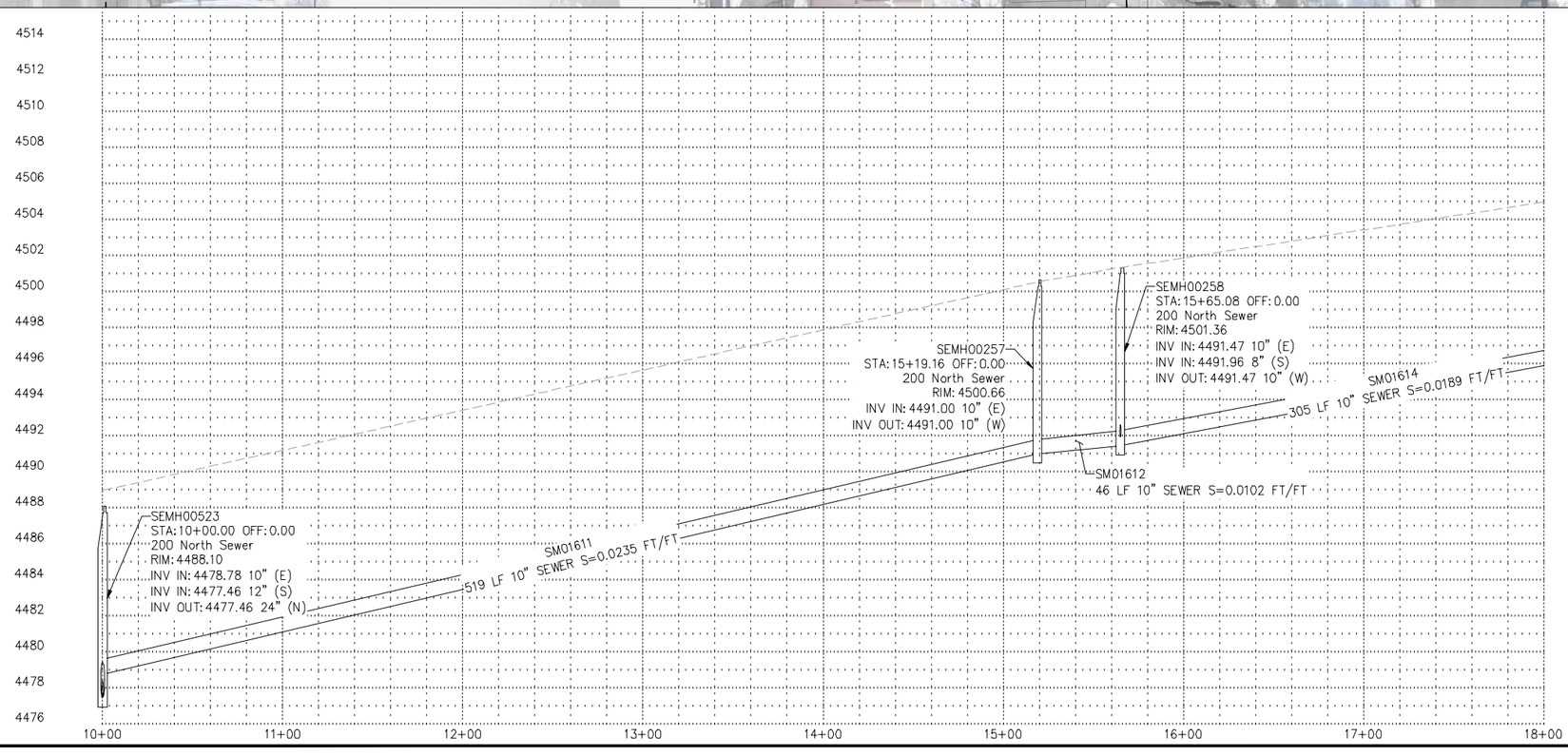

CONSTRUCTION NOTES

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3. T-PATCH WIDTH TO EXTEND FROM MIDDLE OF CENTER TURN LANE TO LANE LINE FROM 10' WEST OF SeMH00113 TO 10' EAST OF SeMH00112 - WIDTH IS APPROXIMATELY 18'
4. 2" MILL AND OVERLAY PER NOTE 4

GENERAL NOTES

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200 NORTH
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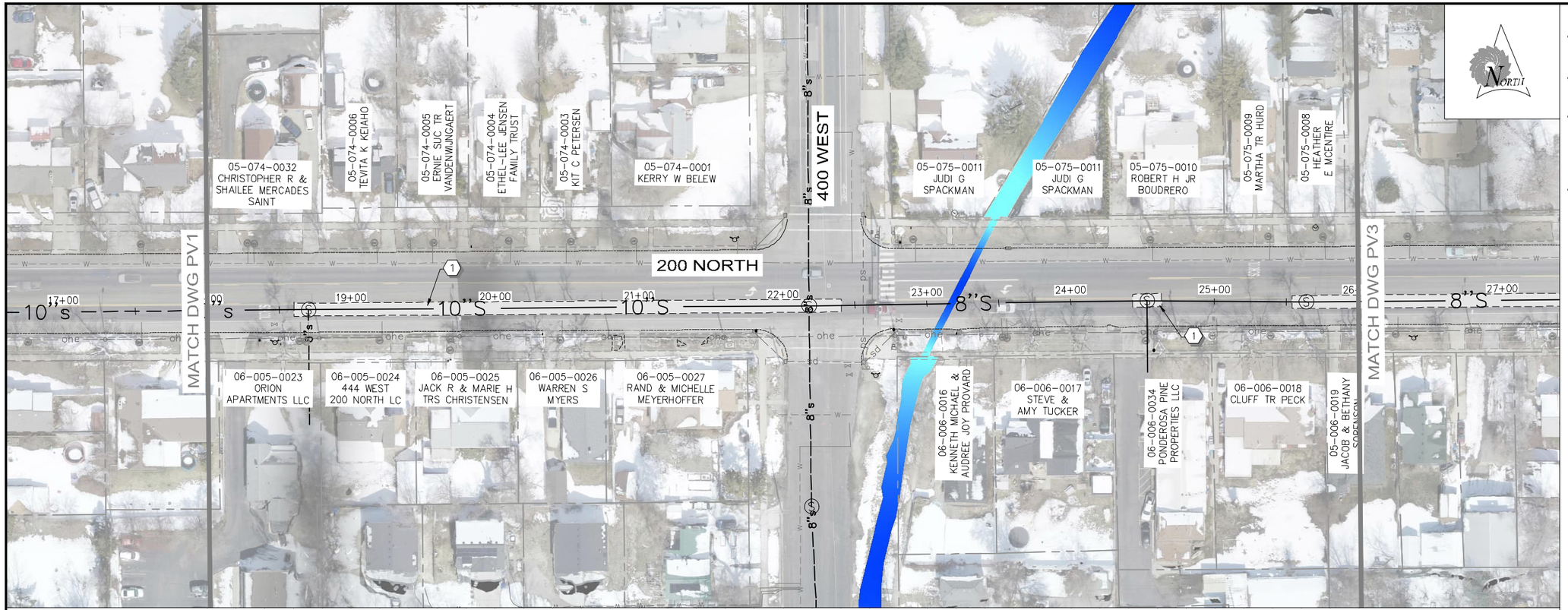

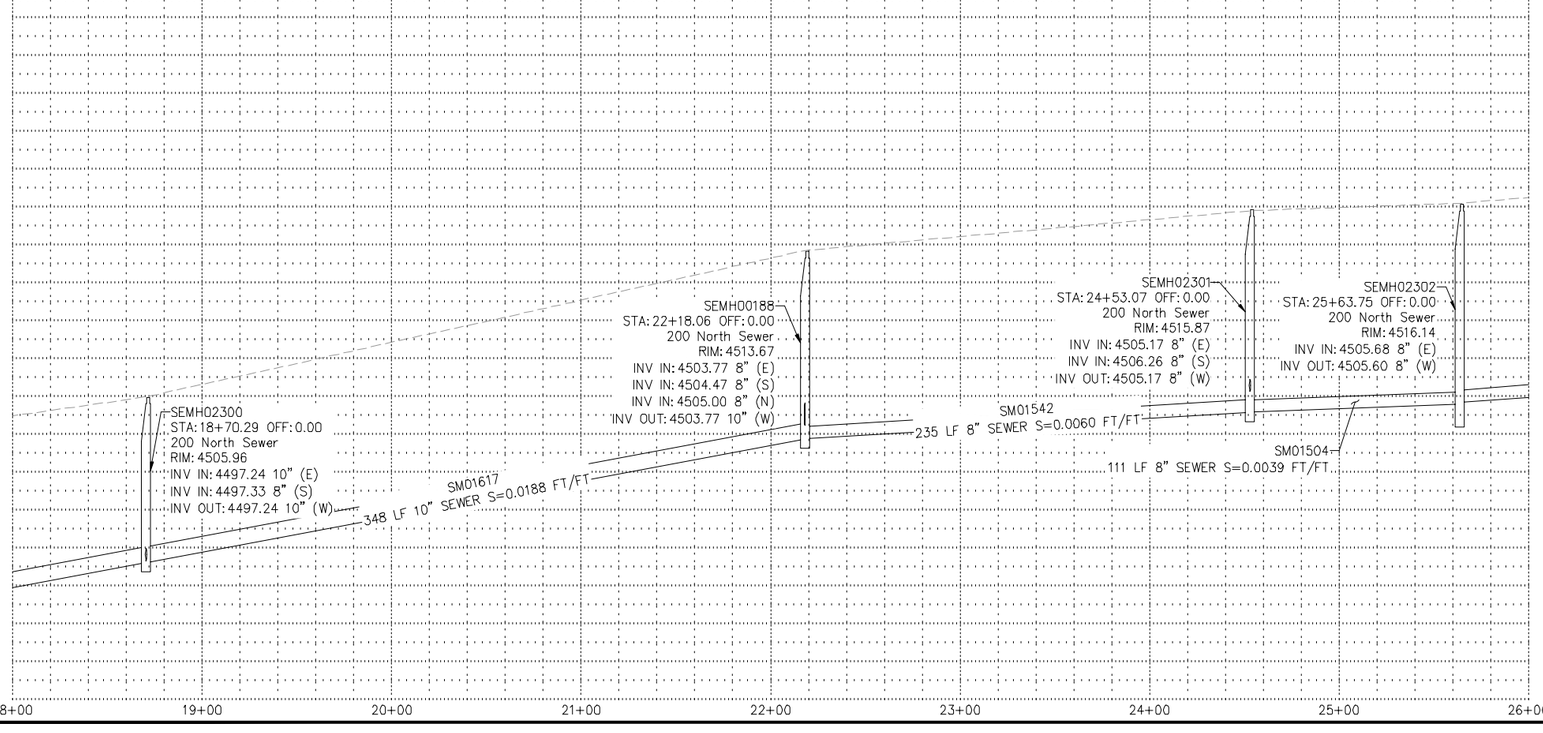

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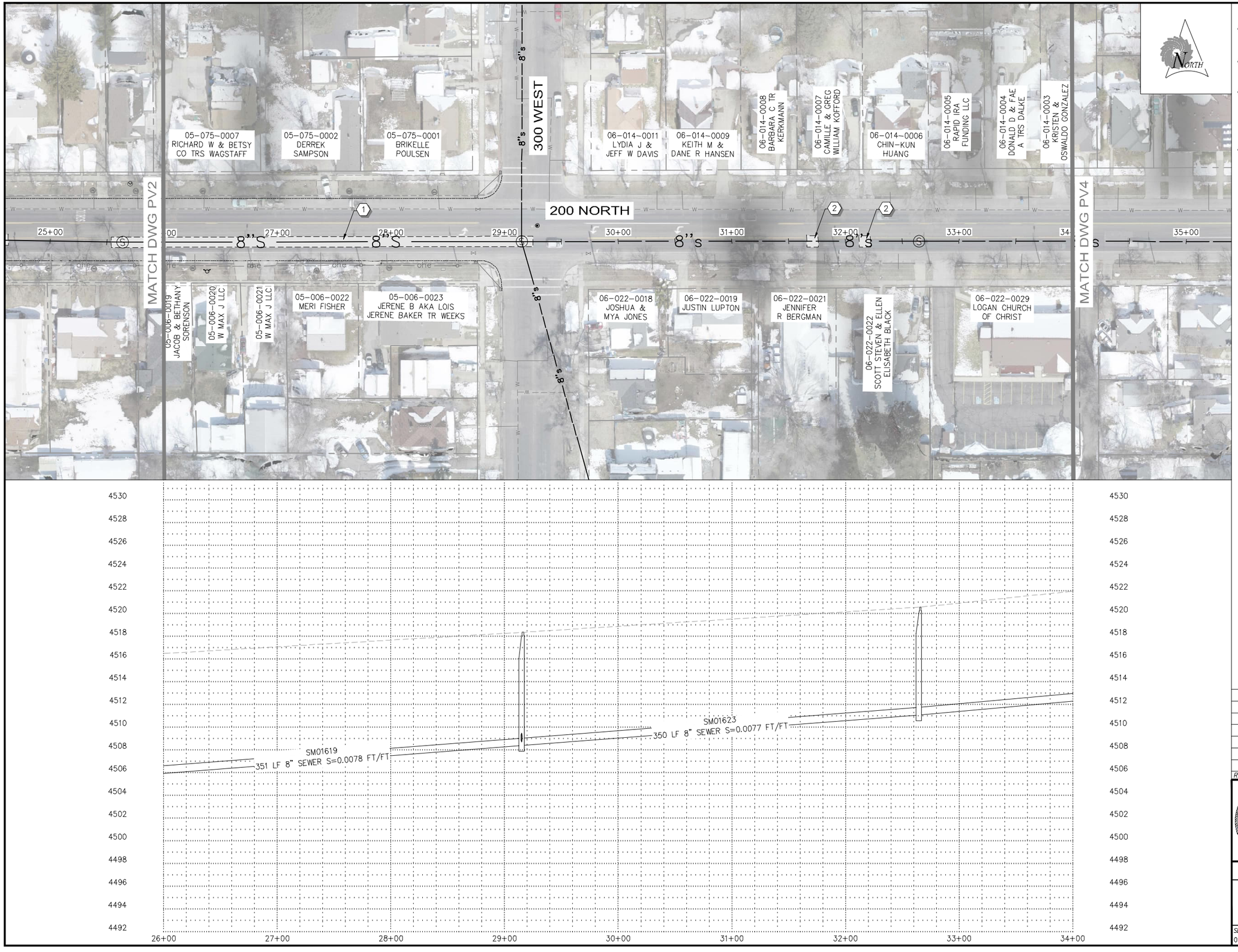

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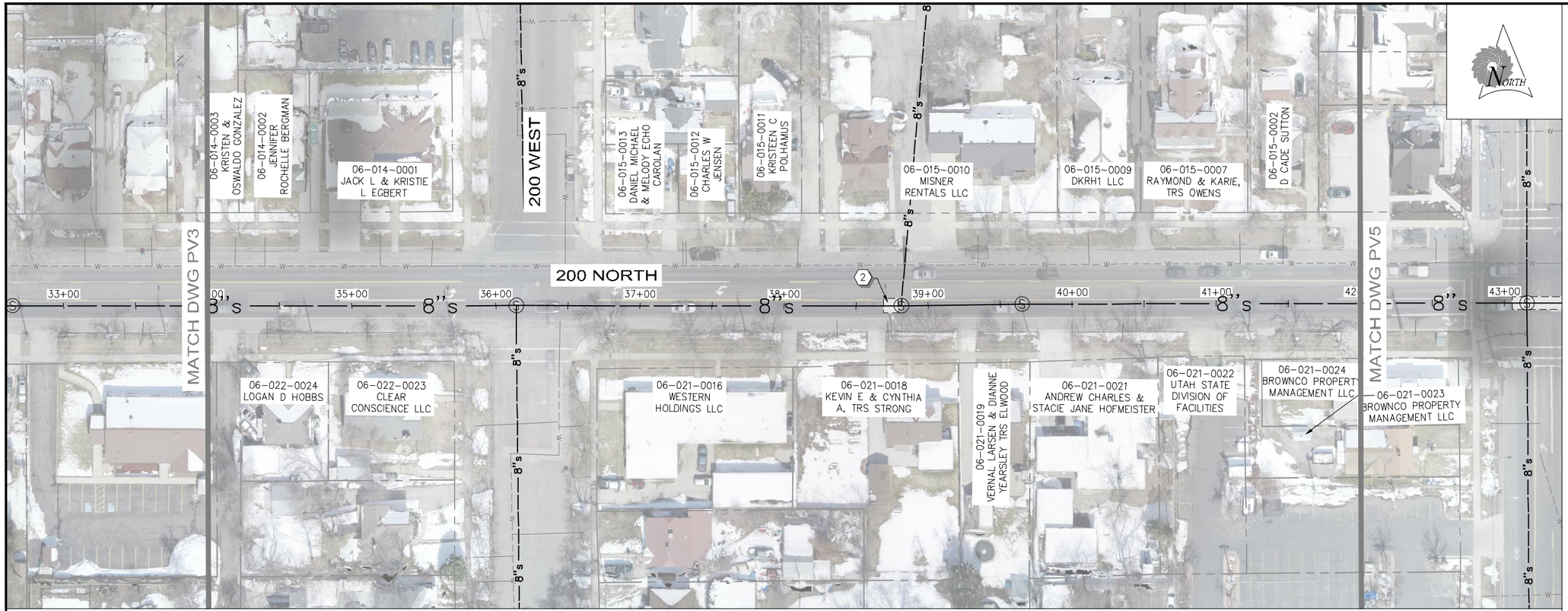

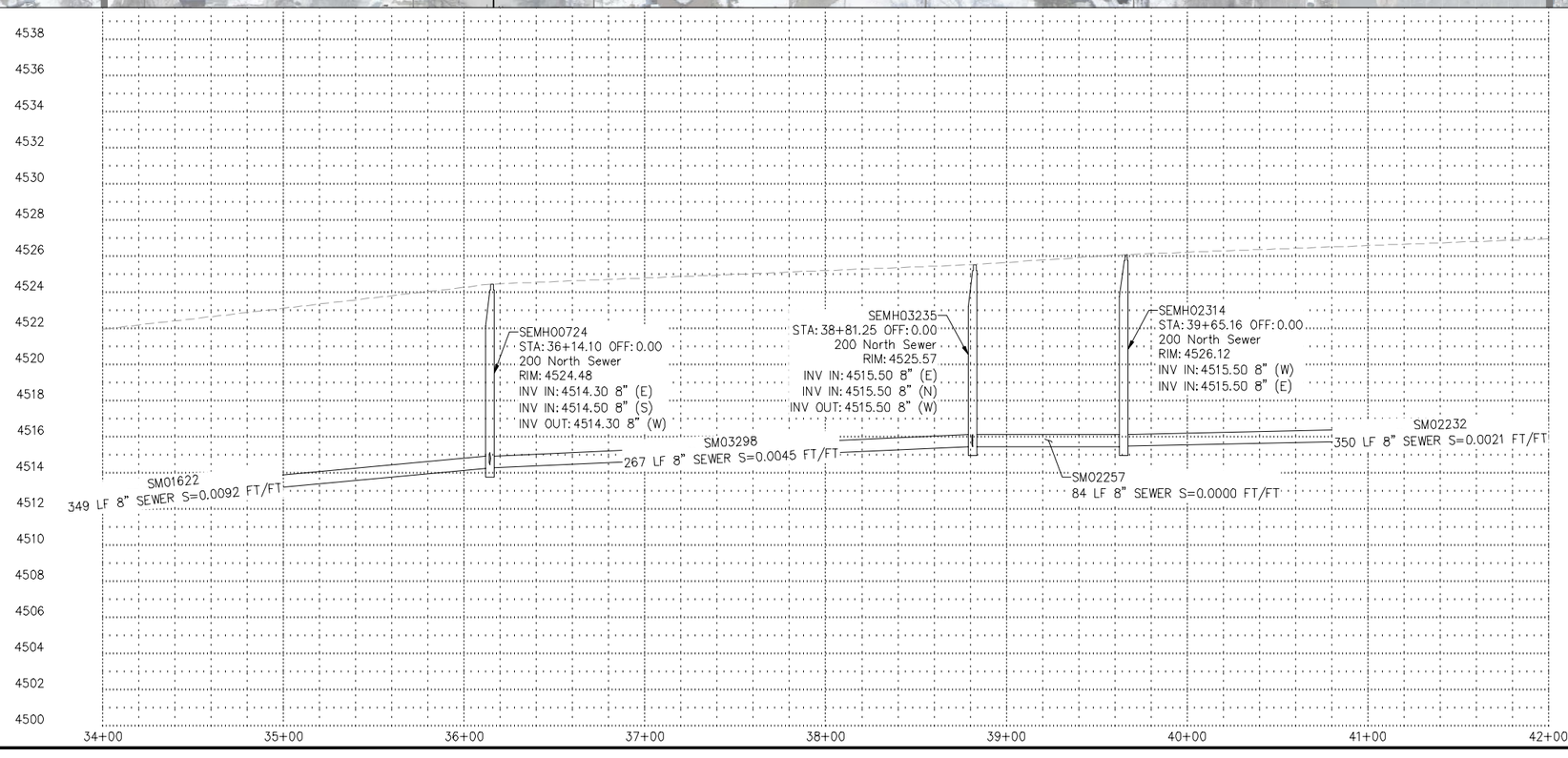

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09195	JTN	JJ	SLA	21 of 45	PV4

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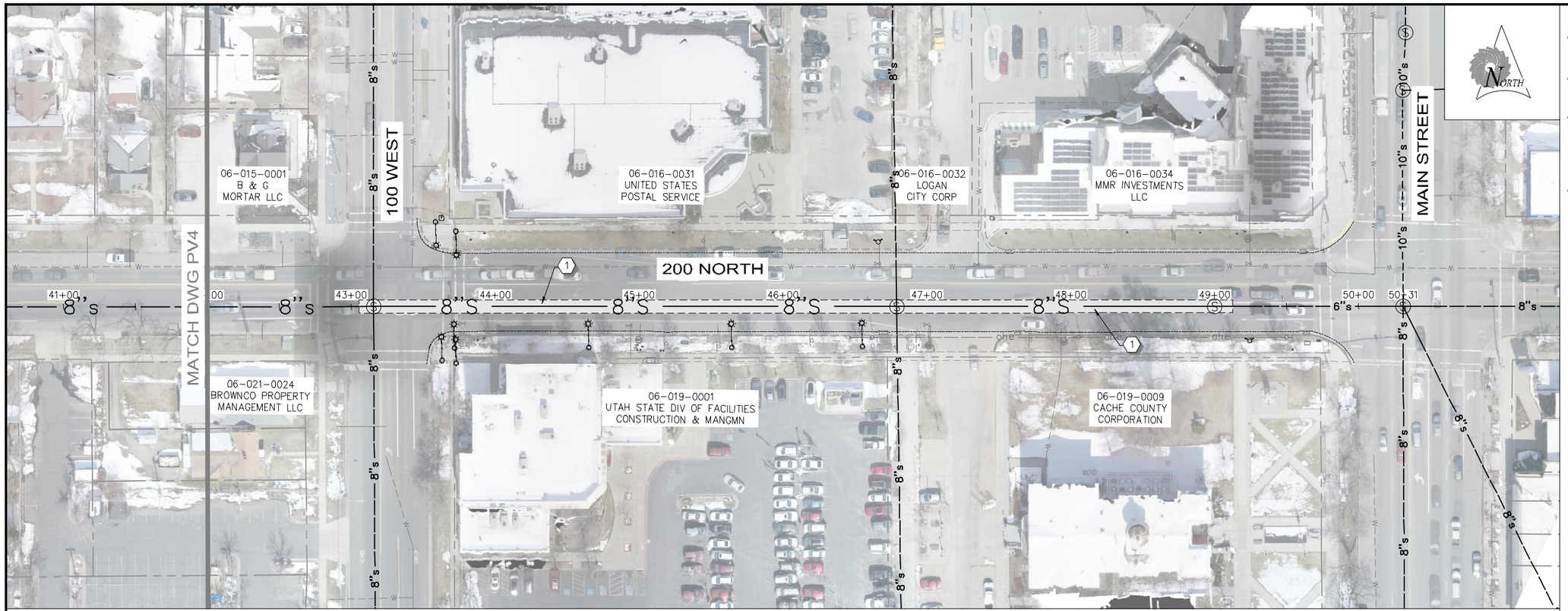

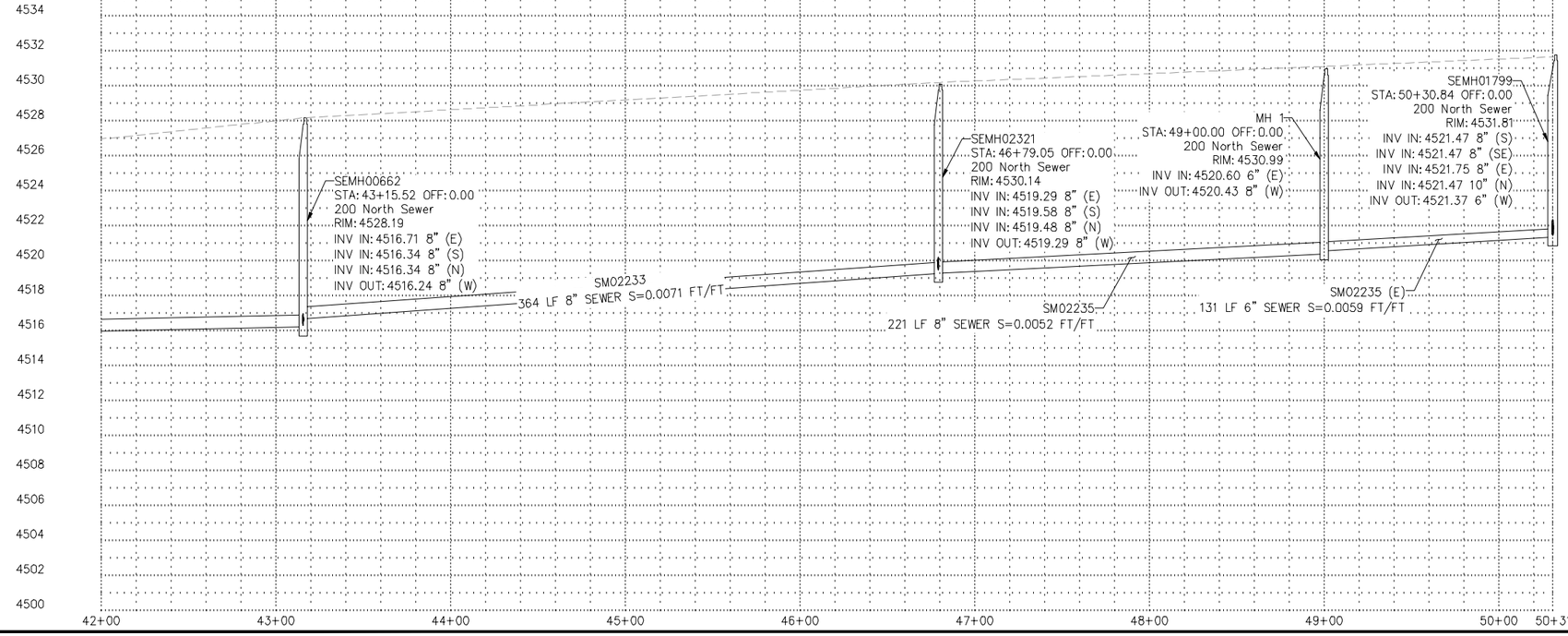

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REV NO.	COMMENT	DATE

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2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
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www.sunrise-eng.com

LOGAN CITY

200 NORTH AND 400 NORTH SEWER
200 NORTH
PAVING PLAN

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	22 of 45	PV5

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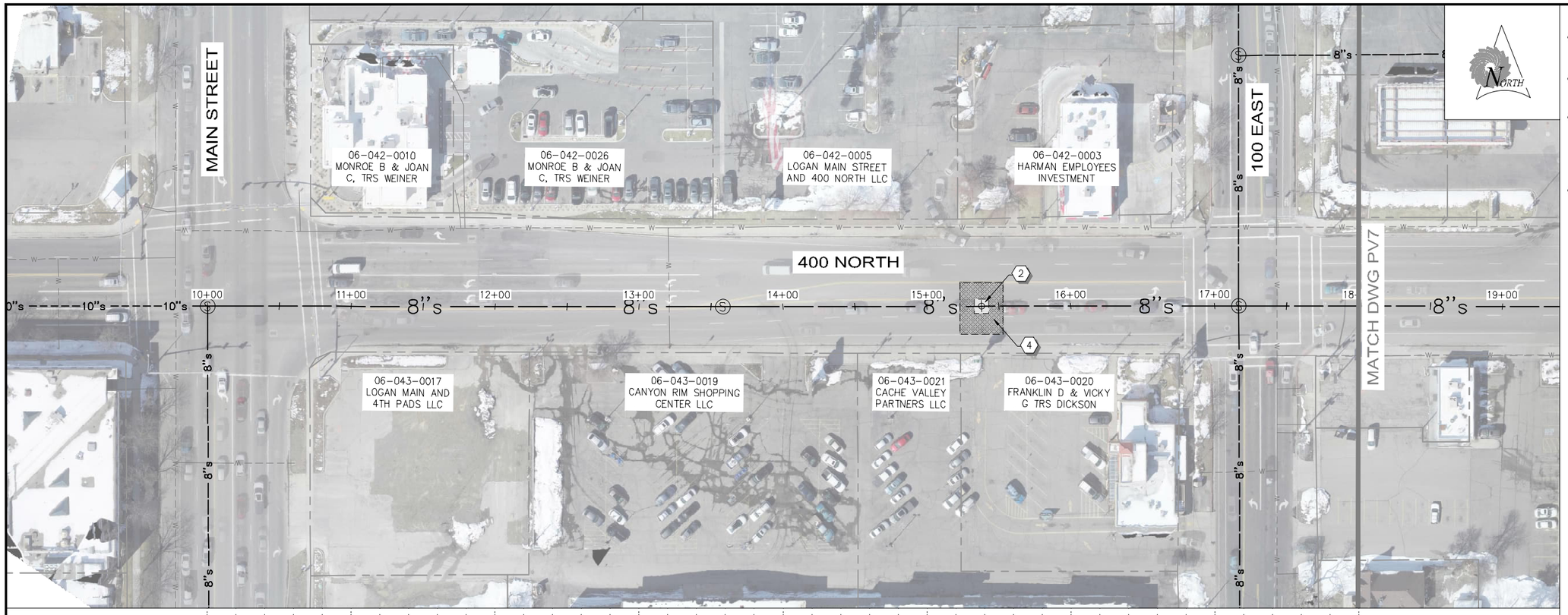

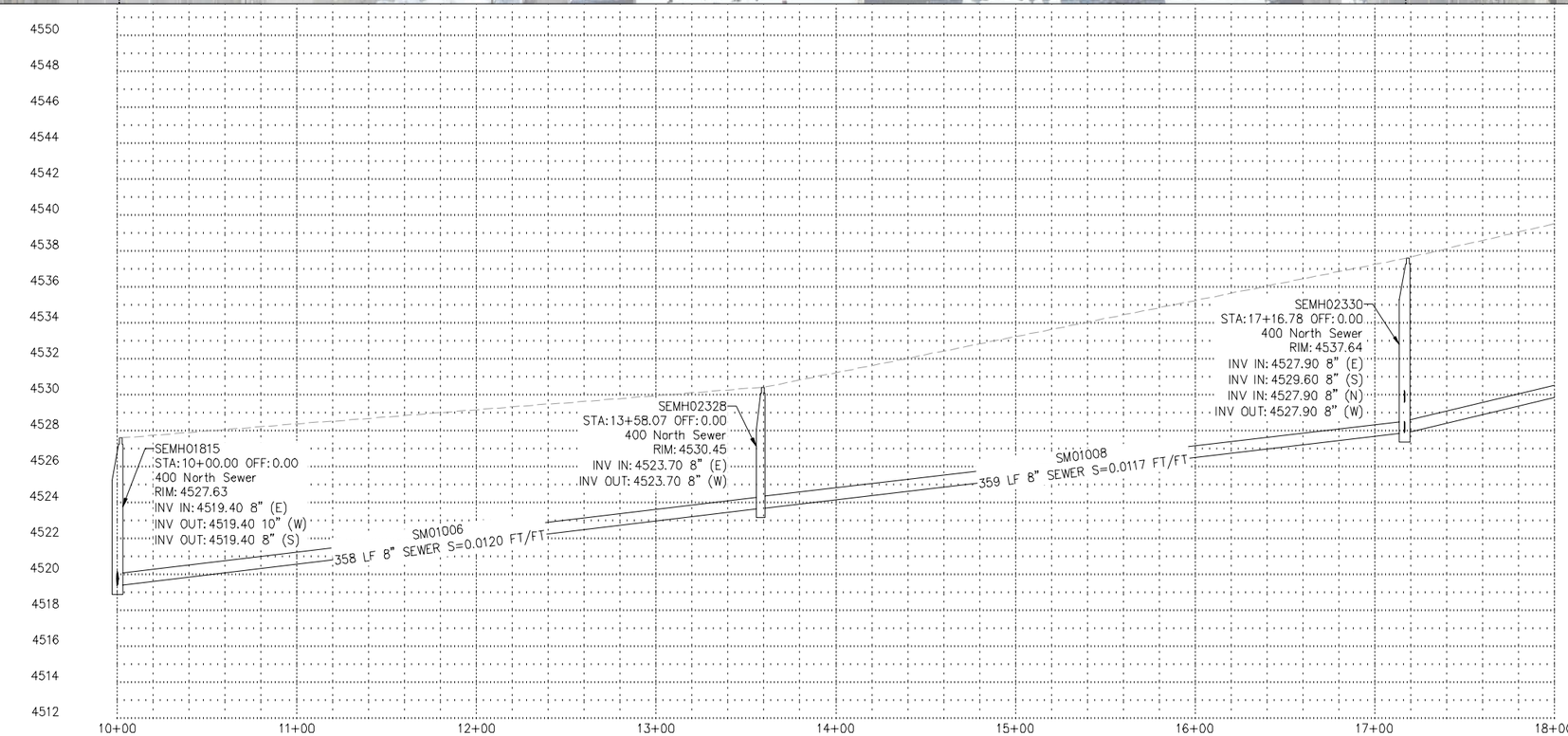

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LOGAN CITY

200 NORTH AND 400 NORTH SEWER
400 NORTH
PAVING PLAN

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	23 of 45	PV6

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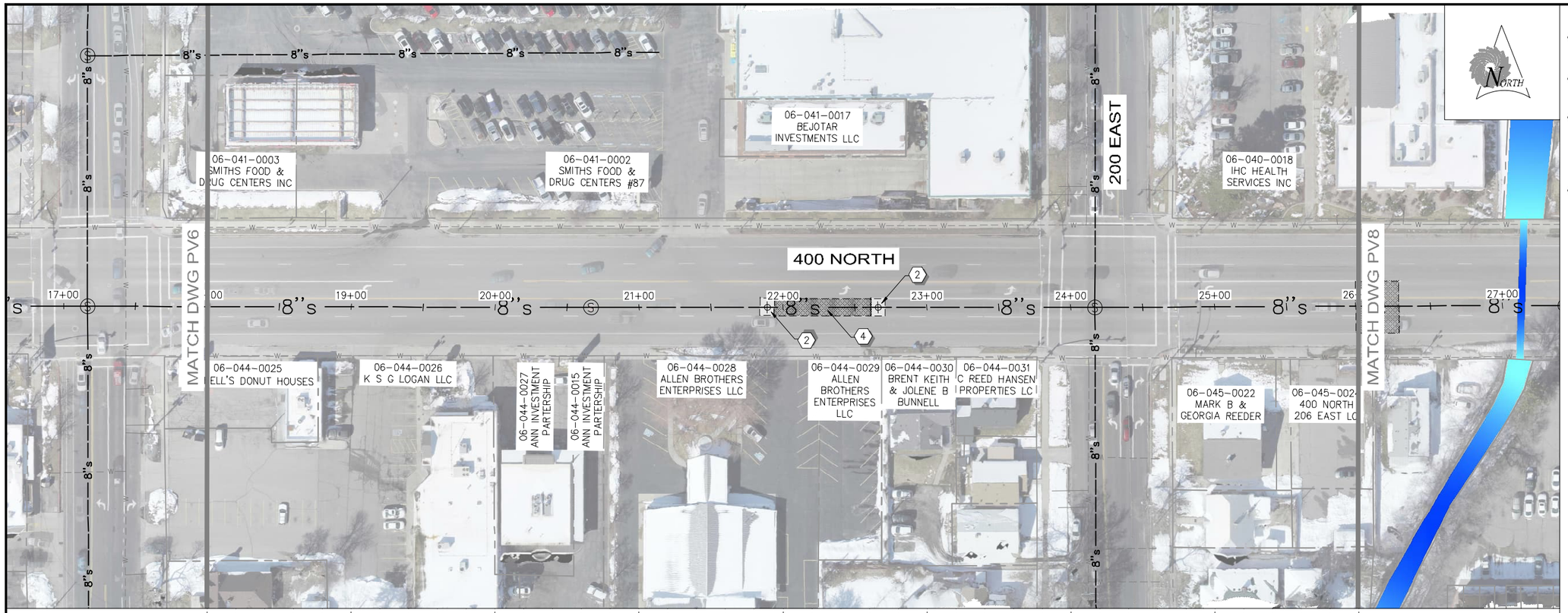

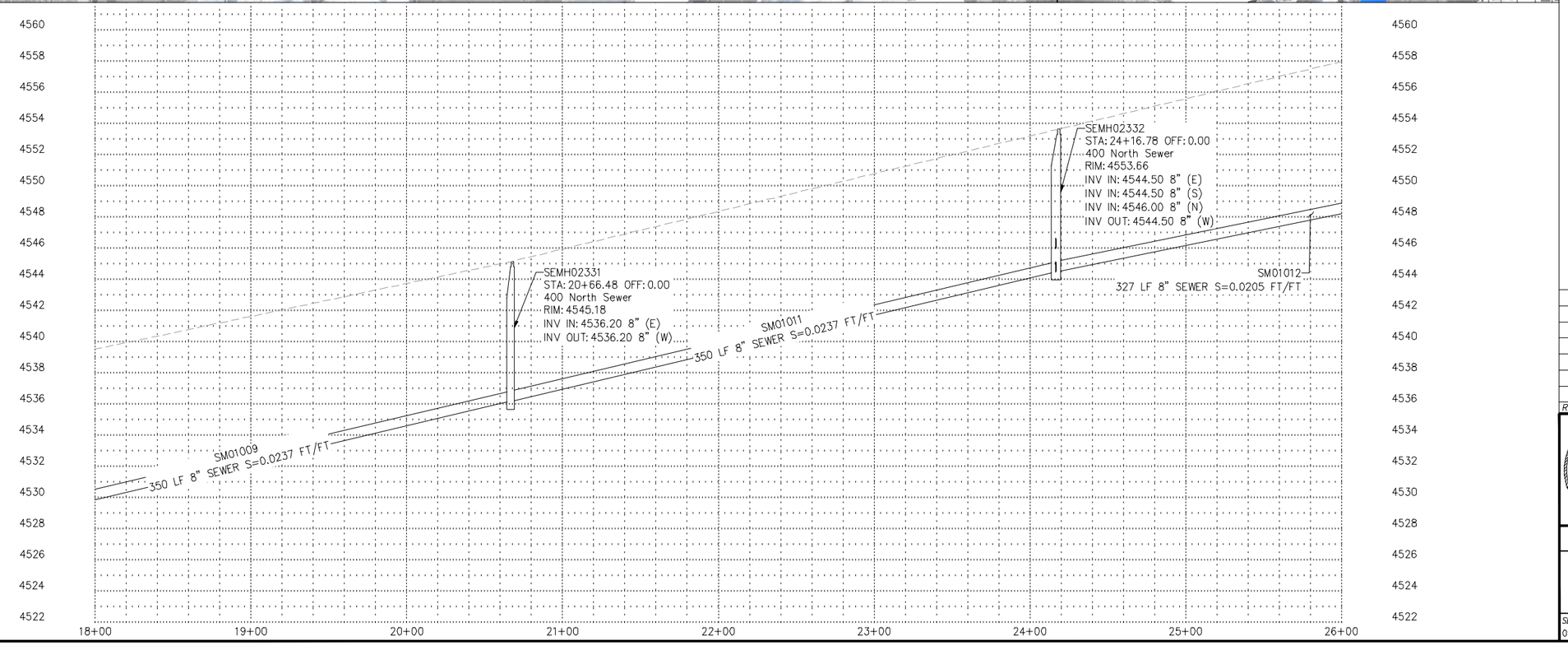

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LOGAN CITY

200 NORTH AND 400 NORTH SEWER
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PAVING PLAN

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	24 of 45	PV7

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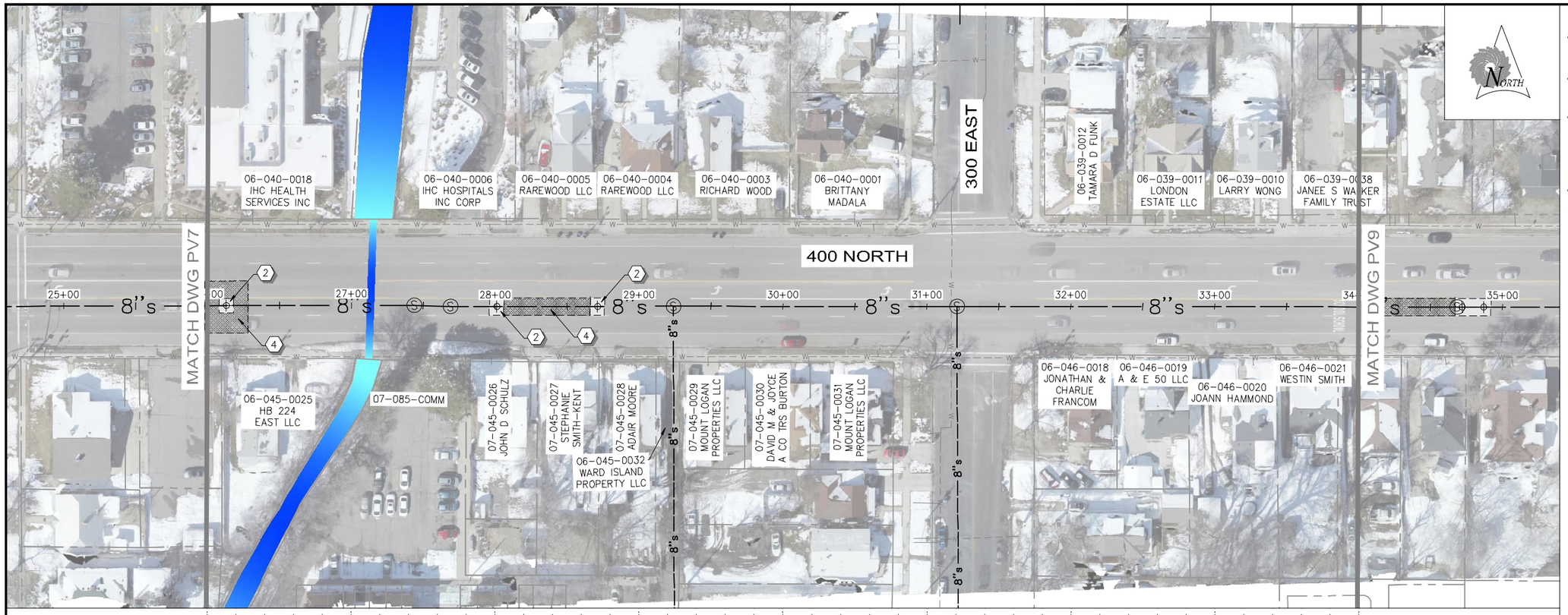

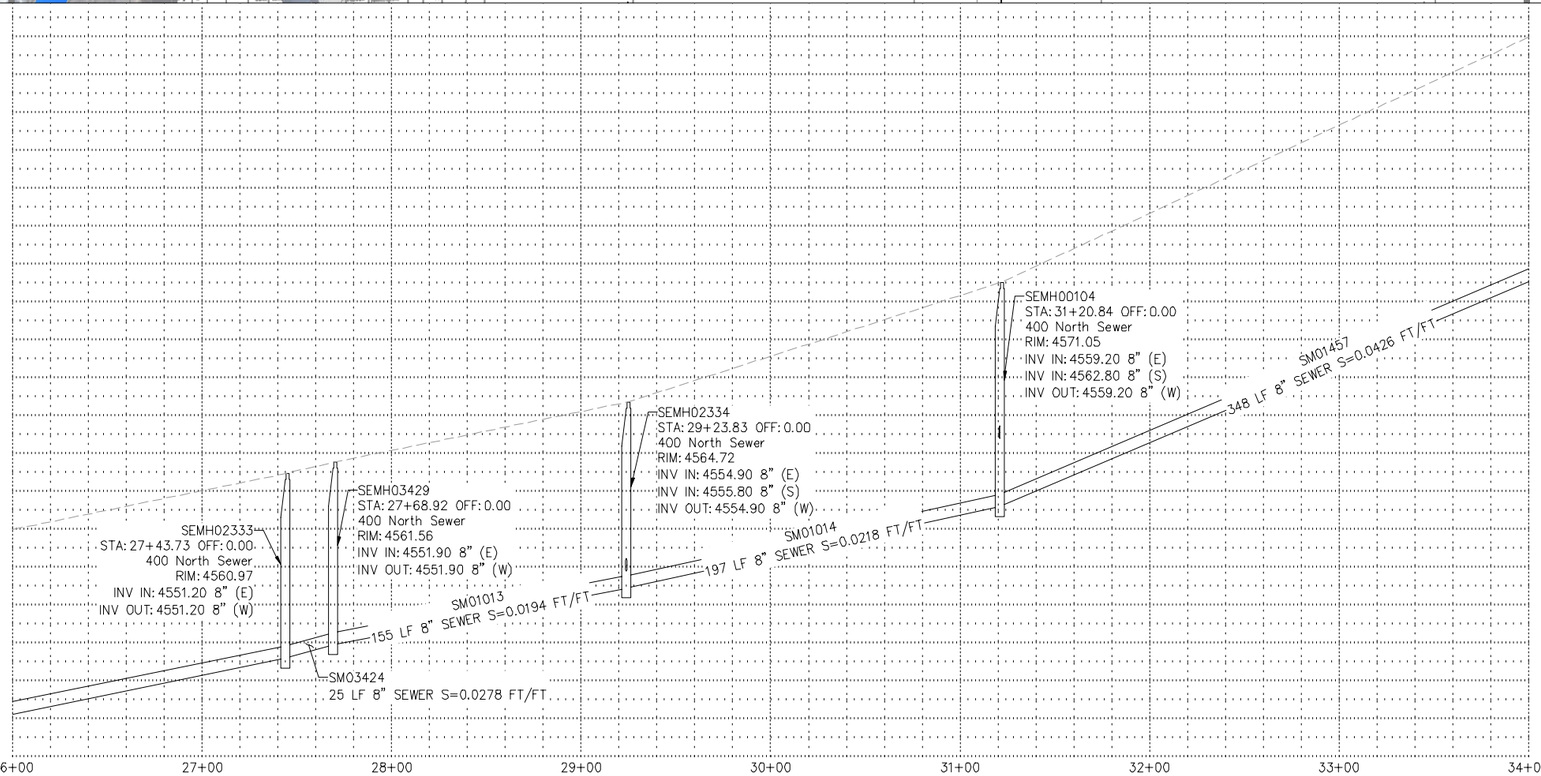

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LOGAN CITY

200 NORTH AND 400 NORTH SEWER
400 NORTH
PAVING PLAN

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	25 of 45	PV8

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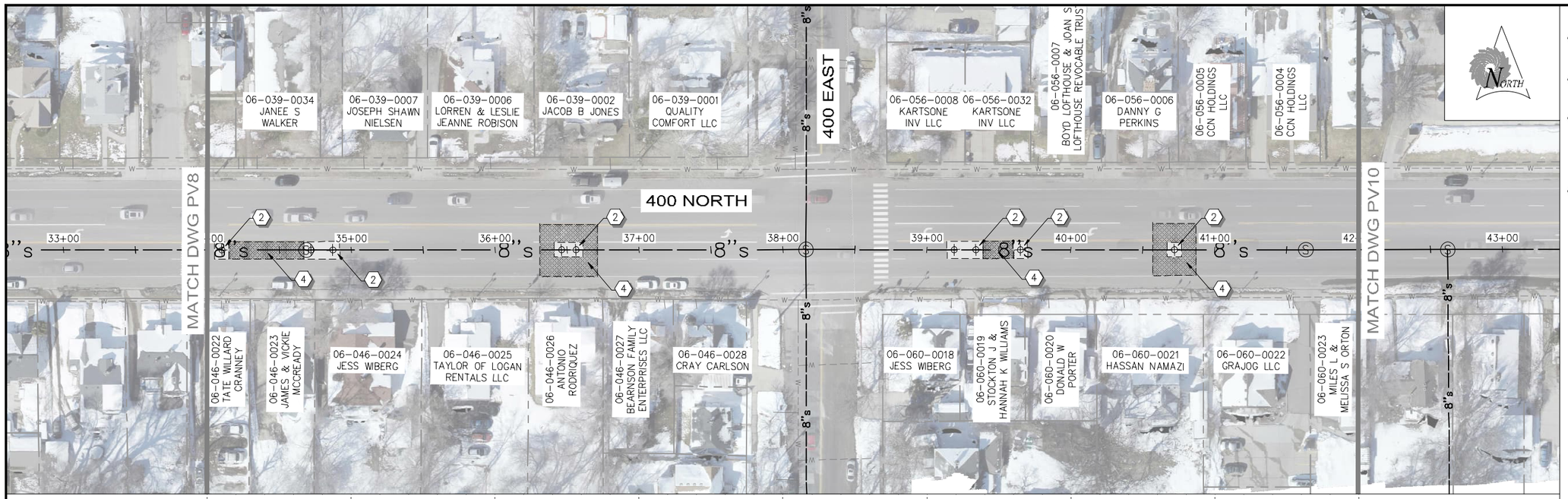

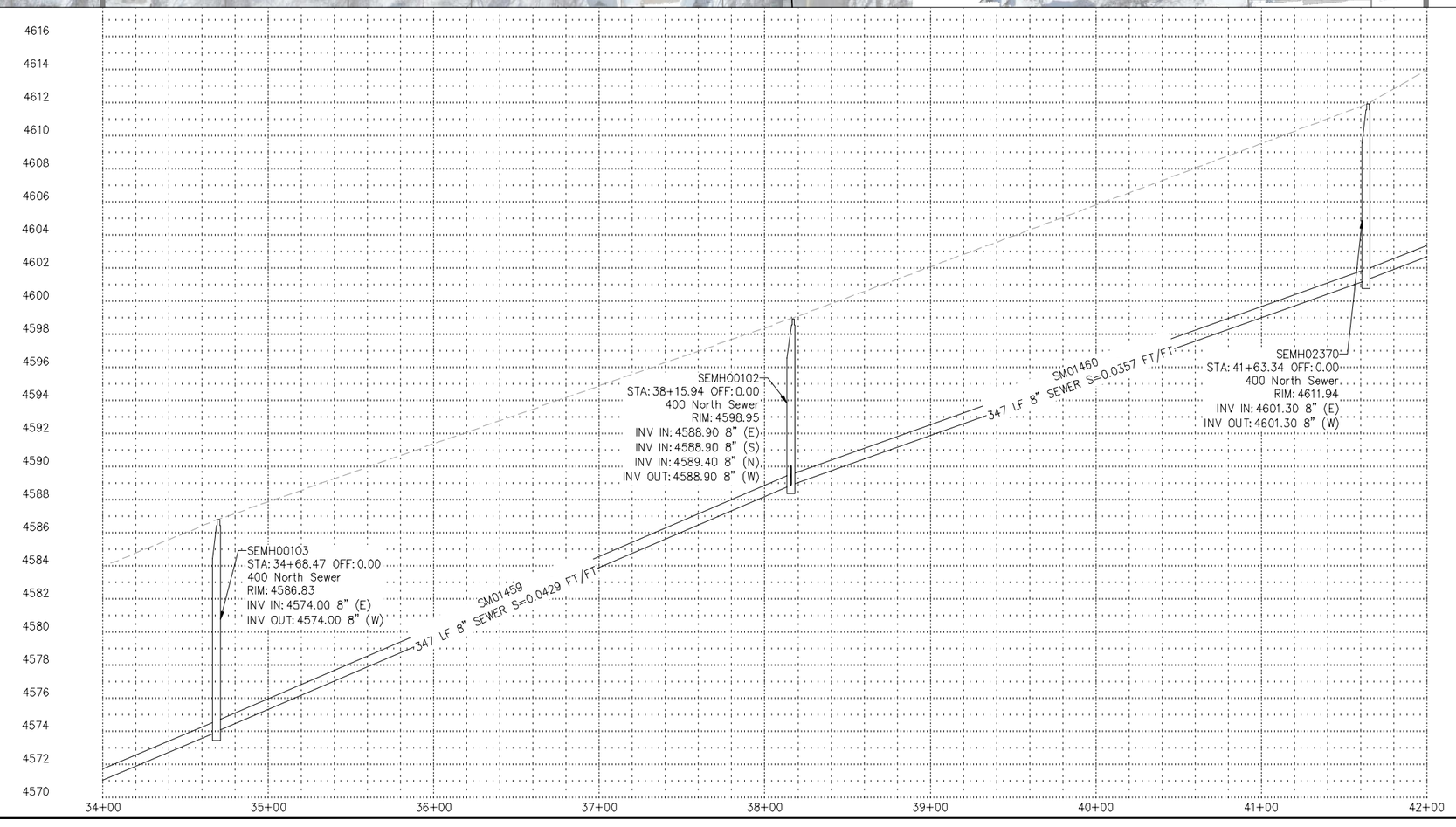

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200 NORTH AND 400 NORTH SEWER
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SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.
09195	JTN	JJ	SLA	26 of 45

PV9

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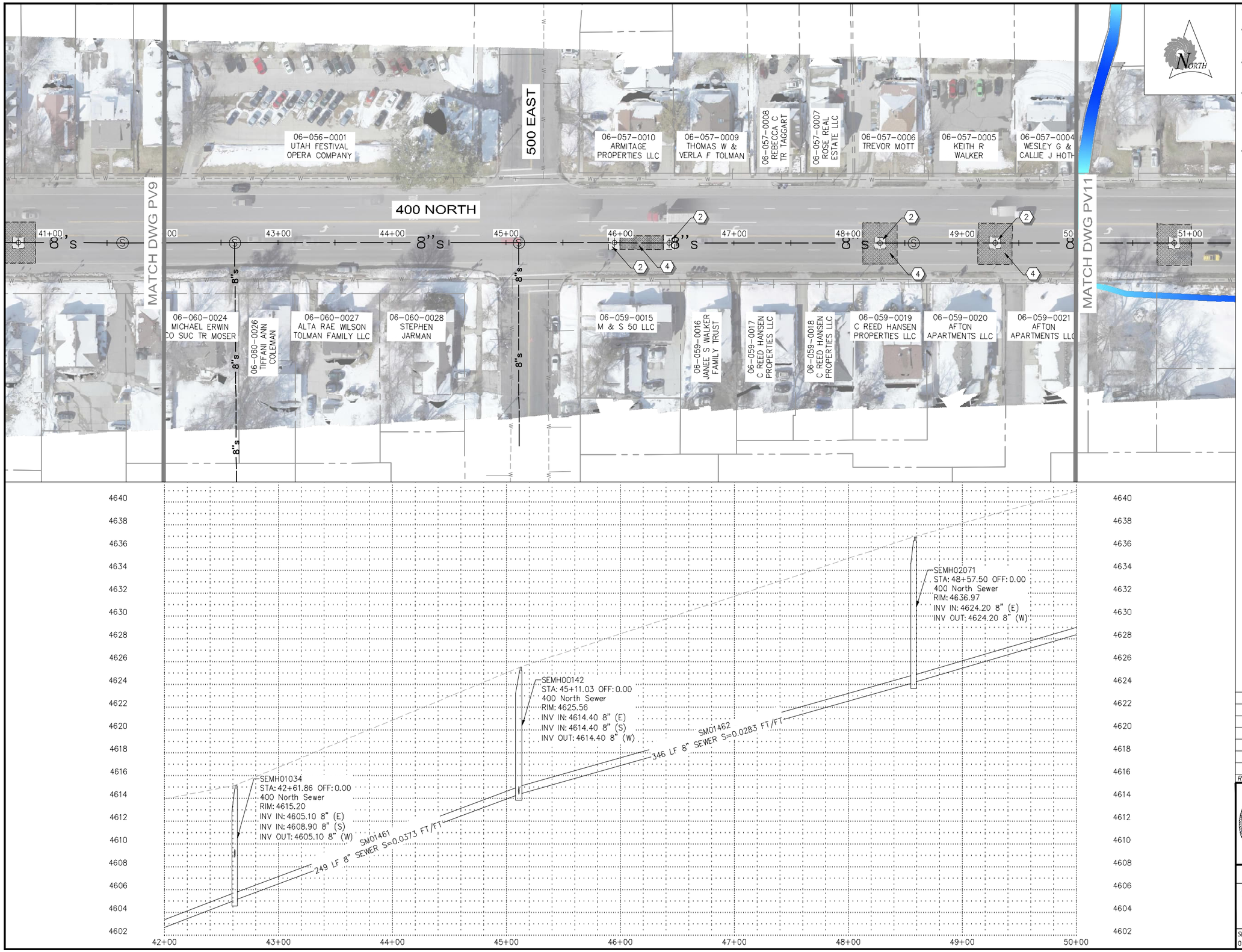

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09195	JTN	JJ	SLA	27 of 45	PV10

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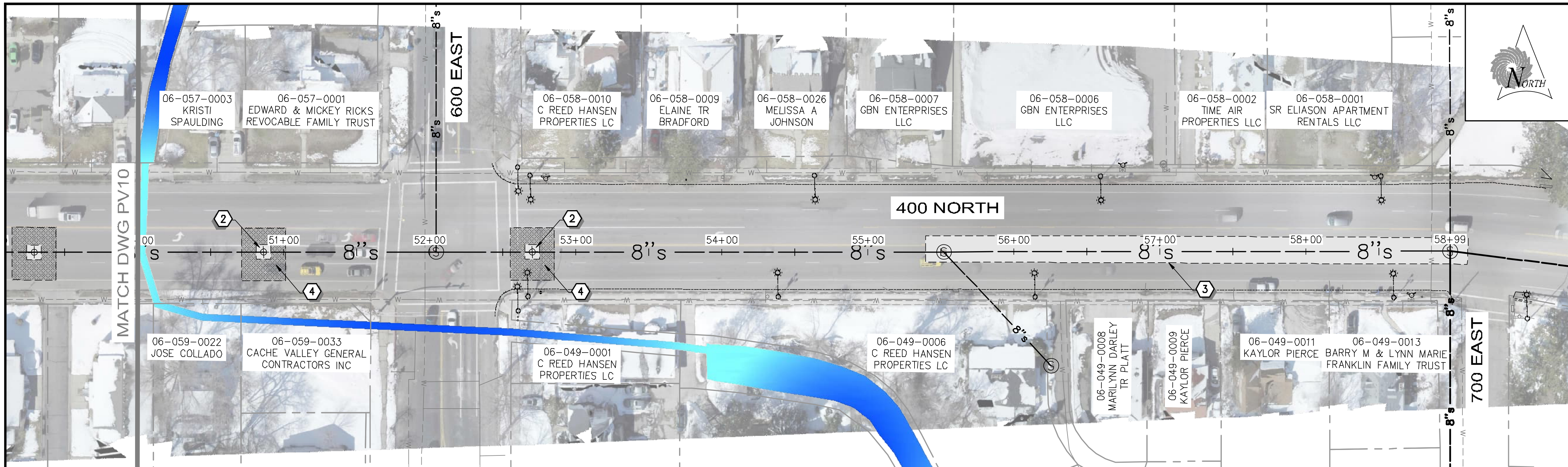

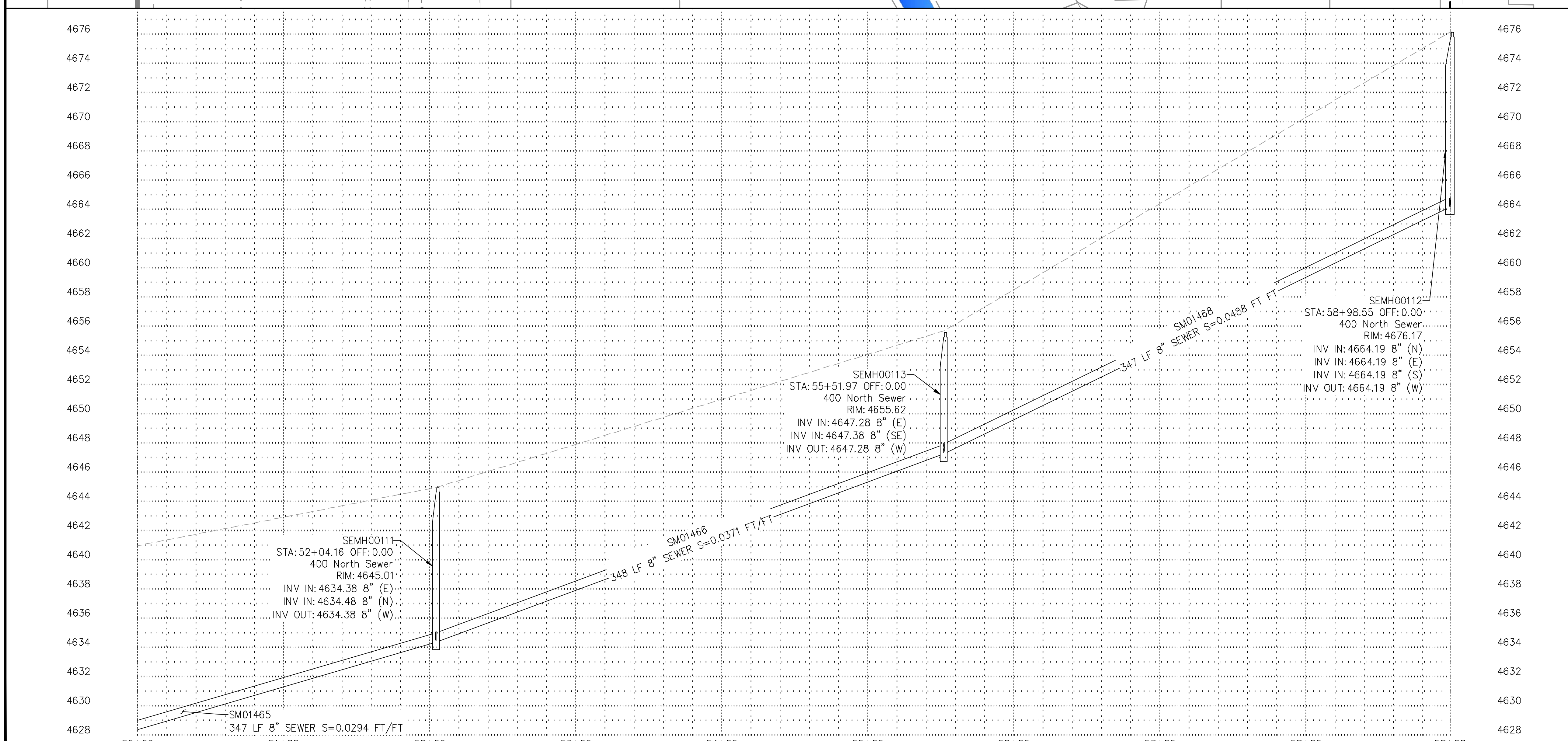

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09195	JTN	JJ	SLA	28 of 45	PV11

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200 NORTH

SM01611 – LATERALS – PP1

STATION	POSITION	LATERAL REMEDIATION	NOTES
11+53	10	RECONNECT & LINE	
12+20	10	PIPE BURST OR REPLACE	
12+27	2	RECONNECT AND DON'T LINE	
12+69	2	RECONNECT & LINE	
13+24	2	RECONNECT AND DON'T LINE	
13+64	2	PIPE BURST OR REPLACE	
13+97	2	RECONNECT & LINE	

SM01614 – LATERALS – PP1

STATION	POSITION	LATERAL REMEDIATION	NOTES
16+09	10	FIELD VERIFY	NO ML OR L VIDEO
16+55	10	TOP HAT	NO L VIDEO
17+51	2	TOP HAT	NO L VIDEO
17+57	10	TOP HAT	NO L VIDEO

SM01614 – LATERALS –PP2

STATION	POSITION	LATERAL REMEDIATION	NOTES
18+21	10	TOP HAT	
18+26	2	TOP HAT	
18+41	10	TOP HAT	

SM01617 – LATERALS – PP2

STATION	POSITION	LATERAL REMEDIATION	NOTES
18+96	10	RECONNECT & LINE	
19+16	2	RECONNECT AND DON'T LINE	
19+26	10	PIPE BURST OR REPLACE	
19+66	2	RECONNECT AND DON'T LINE	
20+06	10	RECONNECT AND DON'T LINE	
20+28	10	RECONNECT AND DON'T LINE	
20+31	2	RECONNECT AND DON'T LINE	
20+76	10	RECONNECT & LINE	
21+20	2	RECONNECT AND DON'T LINE	

SM01542 – LATERALS – PP2

STATION	POSITION	LATERAL REMEDIATION	NOTES
24+05	2	PIPE BURST OR REPLACE	
24+40	10	PIPE BURST OR REPLACE	

SM01504 – LATERALS – PP2

STATION	POSITION	LATERAL REMEDIATION	NOTES
25+38	2	TOP HAT	
25+59	10	TOP HAT	

SM01619 – LATERALS – PP3

STATION	POSITION	LATERAL REMEDIATION	NOTES
26+10	2	FIELD VERIFY	NO ML OR L VIDEO
26+40	10	FIELD VERIFY	NO ML OR L VIDEO
26+49	2	FIELD VERIFY	NO ML OR L VIDEO
26+70	2	FIELD VERIFY	NO ML OR L VIDEO
27+40	2	RECONNECT & LINE	NO LATERAL VIDEO
27+59	10	RECONNECT AND DON'T LINE	NO LATERAL VIDEO
27+75	2	RECONNECT AND DON'T LINE	NO LATERAL VIDEO
28+22	10	RECONNECT AND DON'T LINE	NO LATERAL VIDEO

SM01623 – LATERALS – PP3

STATION	POSITION	LATERAL REMEDIATION	NOTES
30+16	10	TOP HAT	
30+32	2	TOP HAT	
30+49	10	TOP HAT	
30+86	2	TOP HAT	
31+45	10	TOP HAT	
31+71	10	SPOT REPAIR CONNECTION AND DON'T LINE	
31+86	2	TOP HAT	
32+17	2	SPOT REPAIR CONNECTION & PIPE BURST OR REPLACE	
32+32	10	TOP HAT	

SM01622 – LATERALS – PP3

STATION	POSITION	LATERAL REMEDIATION	NOTES
32+80	10	TOP HAT	
33+24	2	TOP HAT	
33+43	10	TOP HAT	NO LATERAL VIDEO
33+89	2	TOP HAT	

SM01622 – LATERALS – PP4

STATION	POSITION	LATERAL REMEDIATION	NOTES
34+05	10	TOP HAT	NO LATERAL VIDEO
34+36	10	TOP HAT	NO LATERAL VIDEO
34+38	2	TOP HAT	NO LATERAL VIDEO
34+82	2	TOP HAT	NO LATERAL VIDEO

SM03298 – LATERALS – PP4

STATION	POSITION	LATERAL REMEDIATION	NOTES
37+22	10	TOP HAT	NO LATERAL VIDEO
37+58	2	TOP HAT	NO LATERAL VIDEO
37+73	10	TOP HAT	NO LATERAL VIDEO
38+58	2	TOP HAT	NO LATERAL VIDEO
38+74	10	SPOT REPAIR CONNECTION & PIPE BURST OR REPLACE	

SM02257 – LATERALS – PP4

STATION	POSITION	LATERAL REMEDIATION	NOTES
39+45	10	TOP HAT	
39+59	2	TOP HAT	

SM02232 – LATERALS – PP4

STATION	POSITION	LATERAL REMEDIATION	NOTES
39+95	10	TOP HAT	
40+41	2	TOP HAT	
40+72	2	TOP HAT	NO LATERAL VIDEO
41+02	10	TOP HAT	
41+18	10	TOP HAT	

SM02233 – LATERALS – PP5

STATION	POSITION	LATERAL REMEDIATION	NOTES
45+44	2	RECONNECT AND DON'T LINE	NO LATERAL VIDEO
45+75	10	RECONNECT AND DON'T LINE	NO LATERAL VIDEO
46+06	10	RECONNECT & LINE	NO LATERAL VIDEO

SM02235 – LATERALS – PP5

STATION	POSITION	LATERAL REMEDIATION	NOTES
46+97	10	PIPE BURST OR REPLACE	NO LATERAL VIDEO
47+26	10	RECONNECT AND DON'T LINE	NO LATERAL VIDEO
47+55	10	PIPE BURST OR REPLACE	NO LATERAL VIDEO
47+98	2	RECONNECT & LINE	NO LATERAL VIDEO
48+65	2	PIPE BURST OR REPLACE	NO LATERAL VIDEO

400 NORTH

SM01006 – LATERALS – PP6

STATION	POSITION	LATERAL REMEDIATION	NOTES
12+13	10	TOP HAT	
13+10	2	TOP HAT	

SM01008 – LATERALS – PP6

STATION	POSITION	LATERAL REMEDIATION	NOTES
14+72	2	TOP HAT	
15+38	2	SPOT REPAIR CONNECTION AND DON'T LINE	
15+87	10	TOP HAT	
16+33	2	TOP HAT	

SM01009 – LATERALS – PP6

STATION	POSITION	LATERAL REMEDIATION	NOTES
17+78	10	TOP HAT	

SM01009 – LATERALS – PP7

STATION	POSITION	LATERAL REMEDIATION	NOTES
18+09	10	TOP HAT	
18+41	10	TOP HAT	
18+60	2	TOP HAT	
18+90	2	TOP HAT	
19+06	10	TOP HAT	
20+46	2	TOP HAT	

SM01011 – LATERALS – PP7

STATION	POSITION	LATERAL REMEDIATION	NOTES
20+80	2	TOP HAT	
21+27	10	TOP HAT	
21+42	2	TOP HAT	
21+89	10	SPOT REPAIR CONNECTION & LINE	
22+66	2	SPOT REPAIR CONNECTION & LINE	
23+37	2	TOP HAT	

SM01012 – LATERALS – PP7

STATION	POSITION	LATERAL REMEDIATION	NOTES
25+83	2	TOP HAT	

SM01012 – LATERALS – PP8

STATION	POSITION	LATERAL REMEDIATION	NOTES
26+13	2	SPOT REPAIR CONNECTION & DON'T LINE	

SM03424 – LATERALS – PP8

STATION	POSITION	LATERAL REMEDIATION	NOTES
27+52	2	TOP HAT	

SM01013 – LATERALS – PP8

STATION	POSITION	LATERAL REMEDIATION	NOTES
28+01	10	SPOT REPAIR CONNECTION & DON'T LINE	NO LATERAL VIDEO
28+62	2	TOP HAT	NO LATERAL VIDEO
28+71	10	SPOT REPAIR CONNECTION & LINE	NO LATERAL VIDEO

SM01014 – LATERALS – PP8

STATION	POSITION	LATERAL REMEDIATION	NOTES
29+42	10	TOP HAT	NO LATERAL VIDEO
29+87	2	TOP HAT	NO LATERAL VIDEO
30+02	10	TOP HAT	
30+17	2	TOP HAT	

SM01457 – LATERALS – PP8

STATION	POSITION	LATERAL REMEDIATION	NOTES
31+74	2	TOP HAT	
32+19	10	TOP HAT	
32+35	2	TOP HAT	
32+79	10	TOP HAT	NO LATERAL VIDEO
33+24	2	TOP HAT	
33+58	2	TOP HAT	
33+76	10	TOP HAT	
33+96	2	TOP HAT	

SM01457 – LATERALS – PP9

STATION	POSITION	LATERAL REMEDIATION	NOTES
34+10	10	SPOT REPAIR CONNECTION & DON'T LINE	
34+59	2	TOP HAT	

SM01459 – LATERALS – PP9

STATION	POSITION	LATERAL REMEDIATION	NOTES
34+72	10	SPOT REPAIR CONNECTION & LINE	
34+87	2	SPOT REPAIR CONNECTION & PIPE BURST OR REPLACE	
35+35	10	TOP HAT	
35+50	2	TOP HAT	
36+46	2	SPOT REPAIR CONNECTION & DON'T LINE	
36+56	10	SPOT REPAIR CONNECTION & DON'T LINE	
36+87	10	TOP HAT	
37+04	2	TOP HAT	NO LATERAL VIDEO
37+41	2	TOP HAT	

SM01460 – LATERALS – PP9

STATION	POSITION	LATERAL REMEDIATION	NOTES
39+19	2	SPOT REPAIR CONNECTION & DON'T LINE	NO LATERAL VIDEO
39+34	10	SPOT REPAIR CONNECTION & DON'T LINE	
39+48	2	TOP HAT	
39+58	10	TOP HAT	NO LATERAL VIDEO
39+65	10	SPOT REPAIR CONNECTION & PIPE BURST OR REPLACE	
39+78	2	TOP HAT	
40+28	10	TOP HAT	
40+72	2	SPOT REPAIR CONNECTION & DON'T LINE	
41+15	10	TOP HAT	NO LATERAL VIDEO
41+26	2	TOP HAT	

SM03733 – LATERALS – PP9

STATION	POSITION	LATERAL REMEDIATION	NOTES
41+83	2	TOP HAT	

SM03733 – LATERALS – PP10

STATION	POSITION	LATERAL REMEDIATION	NOTES
42+15	10	TOP HAT	

SM01461 – LATERALS – PP10

STATION	POSITION	LATERAL REMEDIATION	NOTES
42+72	2	TOP HAT	
43+57	2	TOP HAT	
43+98	2	TOP HAT	
44+06	10	TOP HAT	

SM01462 – LATERALS – PP10

STATION	POSITION	LATERAL REMEDIATION	NOTES
45+95	10	SPOT REPAIR CONNECTION & DON'T LINE	NO LATERAL VIDEO
46+01	2	TOP HAT	NO LATERAL VIDEO
46+43	10	SPOT REPAIR CONNECTION & LINE	NO LATERAL VIDEO
46+58	2	TOP HAT	NO LATERAL VIDEO
47+18	2	TOP HAT	NO LATERAL VIDEO
47+48	2	TOP HAT	NO LATERAL VIDEO
47+63	10	TOP HAT	NO LATERAL VIDEO
48+28	10	SPOT REPAIR CONNECTION & DON'T LINE	NO LATERAL VIDEO
48+53	2	TOP HAT	NO LATERAL VIDEO

SM01465 – LATERALS – PP10

STATION	POSITION	LATERAL REMEDIATION	NOTES
48+72	10	TOP HAT	NO LATERAL VIDEO
49+29	2	SPOT REPAIR CONNECTION & DON'T LINE	NO LATERAL VIDEO
49+41	2	TOP HAT	NO LATERAL VIDEO
49+56	10	TOP HAT	NO LATERAL VIDEO

SM01465 – LATERALS – PP11

STATION	POSITION	LATERAL REMEDIATION	NOTES
50+41	2	TOP HAT	NO LATERAL VIDEO
50+60	10	TOP HAT	NO LATERAL VIDEO
50+86	10	SPOT REPAIR CONNECTION & DON'T LINE	NO LATERAL VIDEO
51+02	2	TOP HAT	NO LATERAL VIDEO

SM01466 – LATERALS – PP11

STATION	POSITION	LATERAL REMEDIATION	NOTES
52+13	2	TOP HAT	
52+70	10	SPOT REPAIR CONNECTION & LINE	NO LATERAL VIDEO
53+28	10	TOP HAT	NO LATERAL VIDEO
54+17	10	TOP HAT	NO LATERAL VIDEO
54+28	10	TOP HAT	
54+58	2	TOP HAT	NO LATERAL VIDEO
54+72	10	TOP HAT	NO LATERAL VIDEO

SM01468 – LATERALS – PP11

STATION	POSITION	LATERAL REMEDIATION	NOTES
56+21	2	PIPE BURST OR REPLACE	NO LATERAL VIDEO
56+41	10	RECONNECT & LINE	NO LATERAL VIDEO
56+82	2	PIPE BURST OR REPLACE	NO LATERAL VIDEO
57+29	10	PIPE BURST OR REPLACE	NO LATERAL VIDEO
57+34	2	RECONNECT & LINE	NO LATERAL VIDEO
57+45	2	PIPE BURST OR REPLACE	NO LATERAL VIDEO
57+58	10	PIPE BURST OR REPLACE	NO LATERAL VIDEO
58+03	2	RECONNECT & LINE	NO LATERAL VIDEO
58+25	2	RECONNECT & LINE	NO LATERAL VIDEO
58+45	2	RECONNECT AND DON'T LINE	NO LATERAL VIDEO

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

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 334535 Scott K. Archibald 02/14/2024 STATE OF UTAH

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

LOGAN CITY

200 NORTH AND 400 NORTH SEWER

LATERAL SUMMARY

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	29 of 45	LS1

P:\Logan City\09195 200 North & 400 North Sewer Improvements\DWG\Sheets\LS-LS1.dwg Feb 14, 2024 11:25am jjolley

Sewer Lateral Connection

1. GENERAL

A. Before installation, secure acceptance by ENGINEER for all pipe, fittings, and couplings to be used.
B. Before backfilling, secure inspection of installation by ENGINEER. Give at least 24 hours notice.

2. PRODUCTS

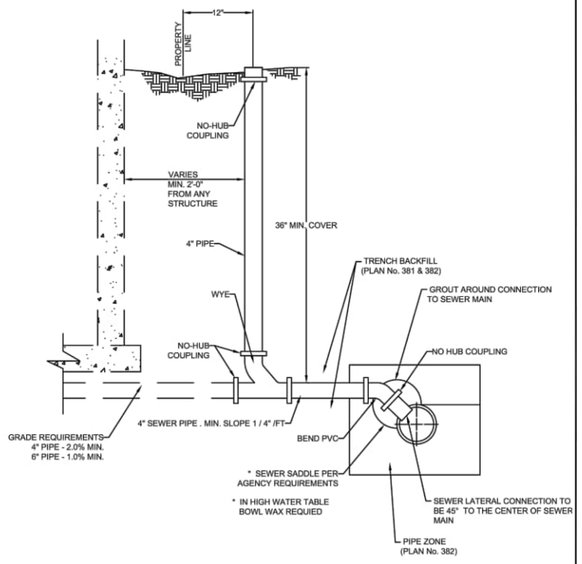
A. BASE COURSE: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
B. BACKFILL: Common fill, APWA Section 31 05 13. Maximum particle size 3-inches.
C. Lateral saddle with stainless steel straps required.
D. Laterals shall be attached to the main through a prefabricated wye.

3. EXECUTION

A. Tape wrap pipe as required by soil conditions.
B. Remove core plug from sewer main. Do not break into sewer main to make connection.
C. BASE COURSE AND BACKFILL PLACEMENT: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a standard proctor density, APWA Section 31 23 26.

LOGAN CITY UNITED IN SERVICE – PUBLIC WORKS DEPARTMENT	STANDARD NOTE	SEWER LATERAL CONNECTION REVISION DATE: 7/31/2023	DETAIL NO. 431

Sewer Lateral Connection



LOGAN CITY UNITED IN SERVICE – PUBLIC WORKS DEPARTMENT	STANDARD DETAIL	SEWER LATERAL CONNECTION REVISION DATE: 7/31/2023	DETAIL NO. 431

A ~ DETAIL - SEWER LATERAL CONNECTION
NOT TO SCALE

Sewer Lateral Relocation

1. GENERAL

A. Before installation, secure acceptance by ENGINEER for all pipe, fittings, and couplings to be used.
B. Before backfilling, secure inspection of installation by ENGINEER. Give at least 24 hours notice.

2. PRODUCTS

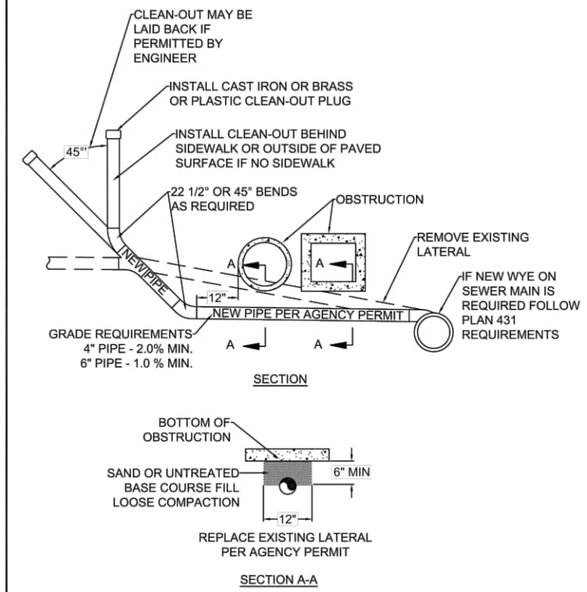
A. BASE COURSE: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
B. BACKFILL: Common fill, APWA Section 31 05 13. Maximum particle size 3-inches.
C. Provide agency approved wye or tee.

3. EXECUTION

A. Tape wrap metal pipe and metal fittings.
B. Do not install couplings under the obstruction.
C. Under the obstruction, loosely compact granular material or sand. Flowable fill not allowed.
D. BASE COURSE AND BACKFILL PLACEMENT: Maximum ift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a standard proctor density, APWA Section 31 23 26.

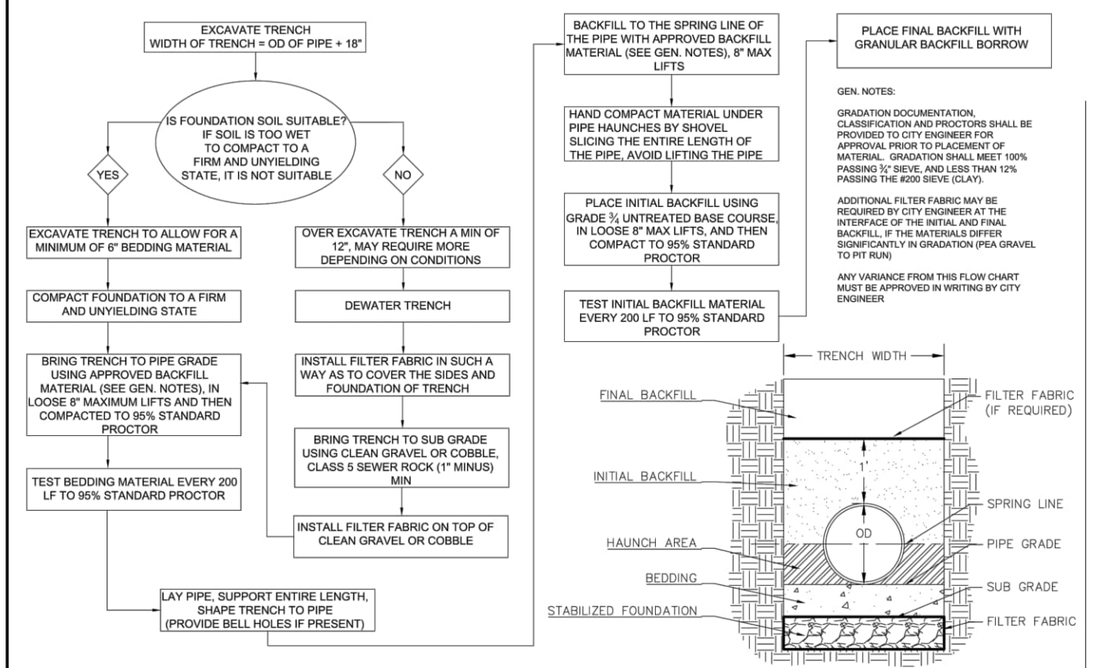
LOGAN CITY UNITED IN SERVICE – PUBLIC WORKS DEPARTMENT	STANDARD NOTE	SEWER LATERAL RELOCATION REVISION DATE: 7/31/2023	DETAIL NO. 432

Sewer Lateral Relocation

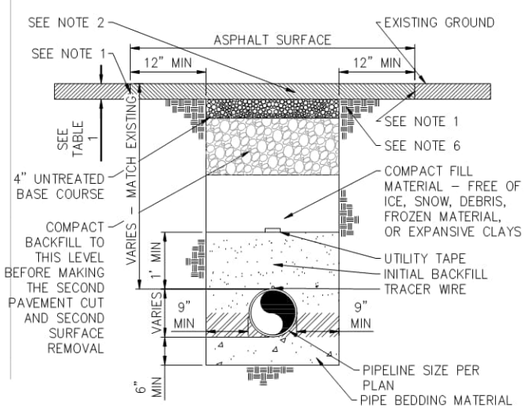


LOGAN CITY UNITED IN SERVICE – PUBLIC WORKS DEPARTMENT	STANDARD DETAIL	SEWER LATERAL RELOCATION REVISION DATE: 7/31/2023	DETAIL NO. 432

B ~ DETAIL - SEWER LATERAL RELOCATION
NOT TO SCALE



C ~ DETAIL - PIPE LAYING FLOWCHART
NOT TO SCALE



D ~ DETAIL - TRENCH W/ T PATCH
NOT TO SCALE

NOTES:

1. SAW CUT PAVEMENT EDGES. APPLY A HOT-POUR RUBBERIZED ASPHALT JOINT SEALANT OR APPROVED EQUAL, APPLIED AFTER PATCH IS INSTALLED.
2. USE HMA MATERIAL FOR T-PATCH. FOR ASPHALT CONSTRUCTION WITHIN THE UDOT ROW MATCH EXISTING, OR THE ANTICIPATED EXISTING OF 6 INCHES OF UDOT-APPROVED HOT MIX ASPHALT (HMA), PG-GRADE 64-34 ASPHALT BINDER, 1/2 INCH NOMINAL MAX, 7-75-115 GYRATION PER UDOT STANDARD SPECIFICATION 02741; OVER 6 INCHES UNTREATED BASE COURSE (UTBC) PER UDOT SPECIFICATION 02721; OVER 12 INCHES GRANULAR BORROW (GB) PER UDOT SPECIFICATION 02056 (WHICHEVER IS GREATER). PROVIDE DOCUMENTATION OF COMPACTION FROM A UDOT-QUALIFIED LABORATORY.
3. USE SAND BACKFILL AND FLOWABLE FILL WITHIN EXISTING ROADWAY, PROPOSED ROADWAY, AND SIDEWALK PAVEMENT AREAS ONLY.
4. INSTALL DETECTABLE PULL TAPE IN ALL EMPTY PIPE.
5. EVENLY APPLY TACK COAT ON FINAL BACKFILL BEFORE INSTALLING T-PATCH.
6. USE 3/8 INCH MINUS WELL-GRADED SAND.

TABLE 1. PATCH RESTORATION

EXISTING ASPHALT PAVEMENT THICKNESS (T1) IN INCHES	RESTORATION T PATCH THICKNESS IN INCHES
0 – 3 1/2"	3 1/2"
3 1/2" – 7"	MATCH EXISTING DEPTH
7" OR GREATER	7"

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LICENSED PROFESSIONAL ENGINEER – No. 334535 – Scott Y. Archibald – 02/14/2024 – STATE OF UTAH

SUNRISE ENGINEERING
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NORTH LOGAN, UTAH 84341
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www.sunrise-eng.com

LOGAN CITY

200 NORTH AND 400 NORTH SEWER
DETAILS
STANDARD DETAILS

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	30 of 45	D1

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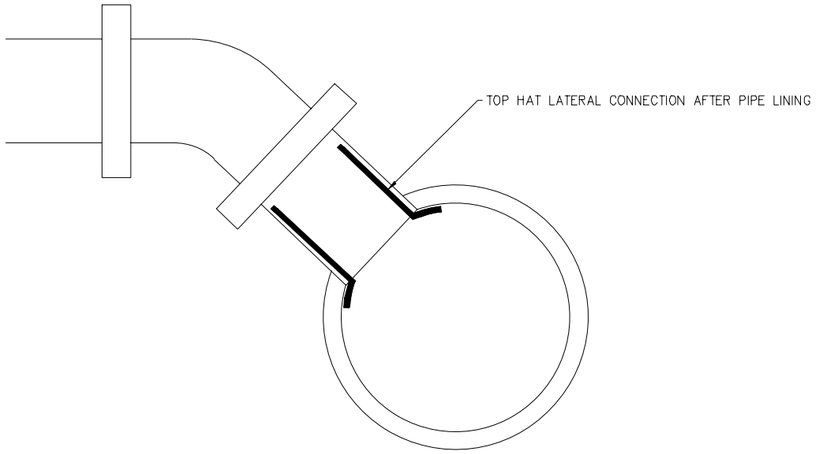
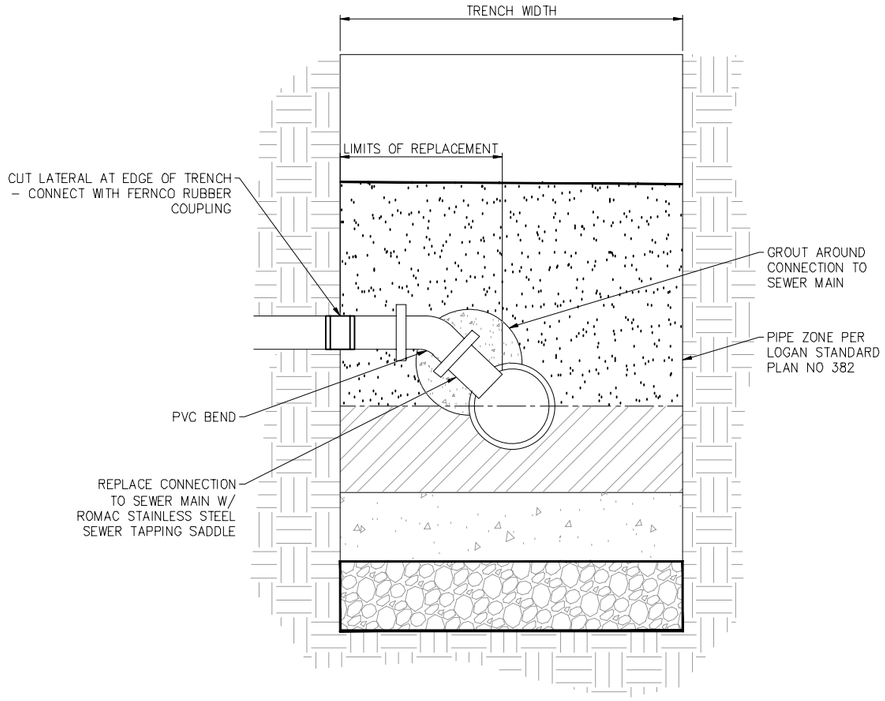
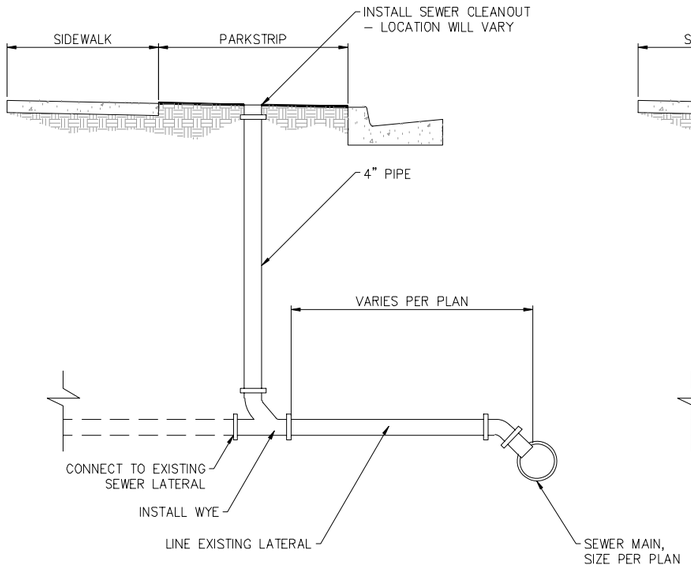


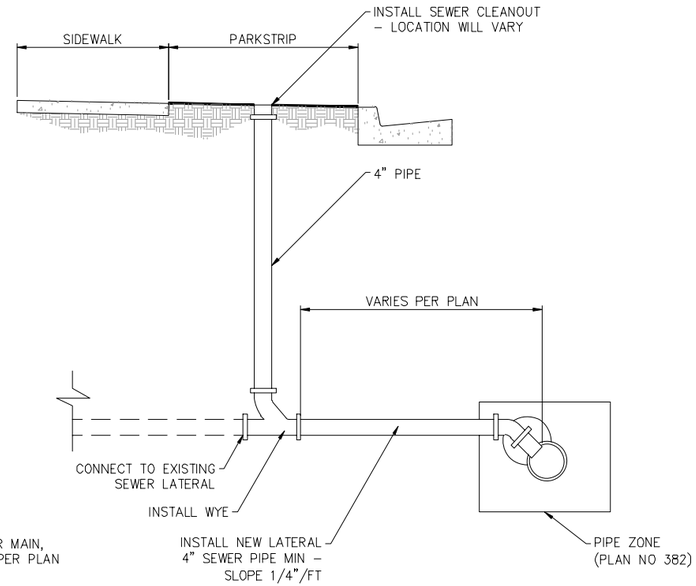
A ~ DETAIL - TOP HAT
NOT TO SCALE



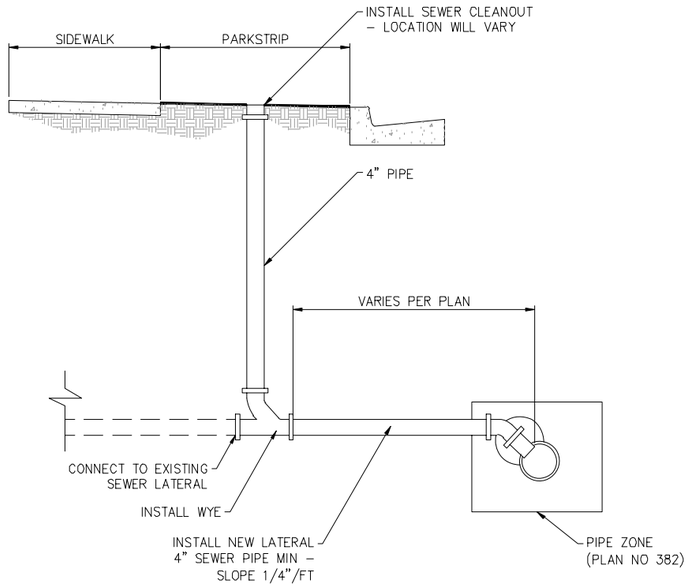
B ~ DETAIL - REPLACE CONNECTION TO EDGE OF TRENCH
NOT TO SCALE



C ~ DETAIL - LINE SEWER LATERAL CONNECTION
NOT TO SCALE



D ~ DETAIL - REPLACE SEWER LATERAL CONNECTION
NOT TO SCALE



E ~ DETAIL - PIPE BURSTING SEWER LATERAL CONNECTION
NOT TO SCALE

NOTES:

1. ALL NEW SEWER CONNECTIONS TO BE PER LOGAN STANDARD DETAIL NO 431
2. TRENCH DETAILS PER LOGAN STANDARD DETAIL NO 382

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LOGAN CITY

200 NORTH AND 400 NORTH SEWER
DETAILS
STANDARD DETAILS

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	31 of 45	D2

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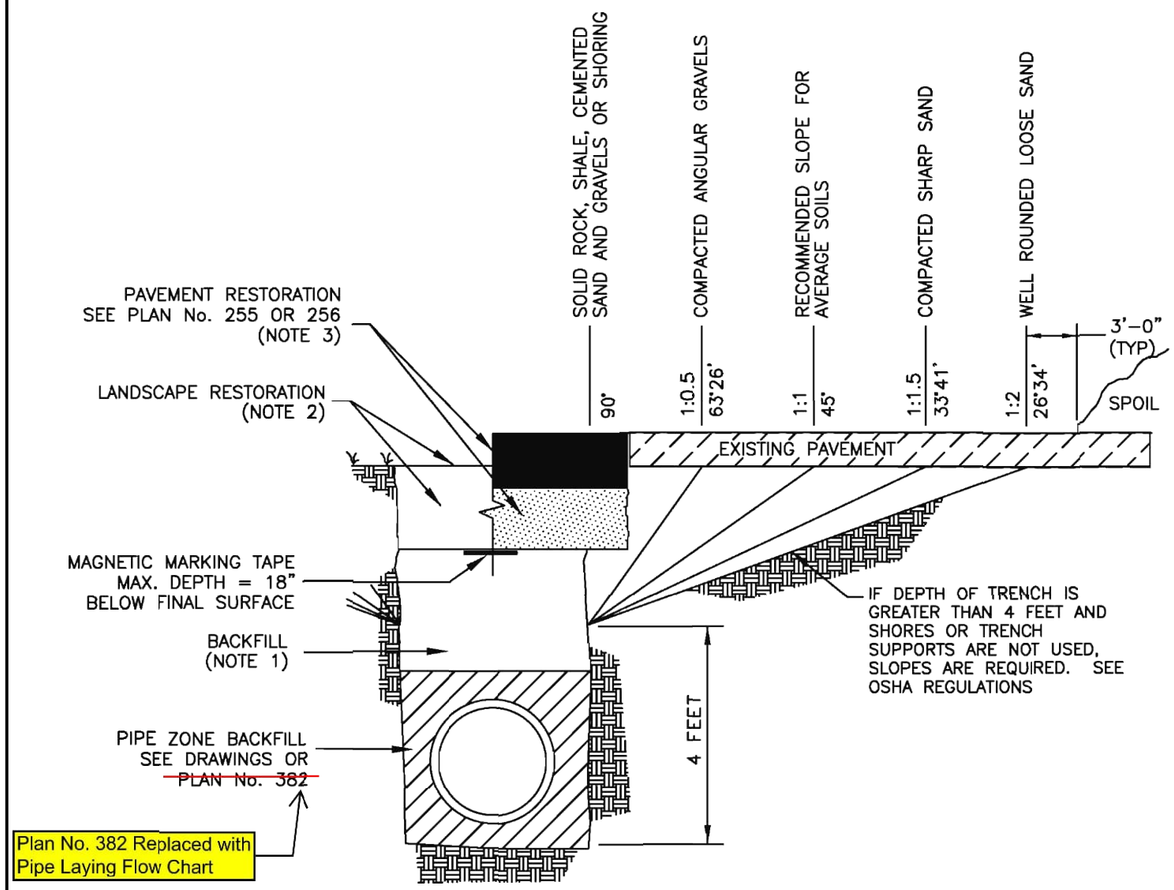

SECTION

Trench backfill

179

Plan No.
381

May 2006

A ~ DETAIL - TRENCH BACKFILL
NOT TO SCALE

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09195	JTN	JJ	SLA	32 of 45	D3

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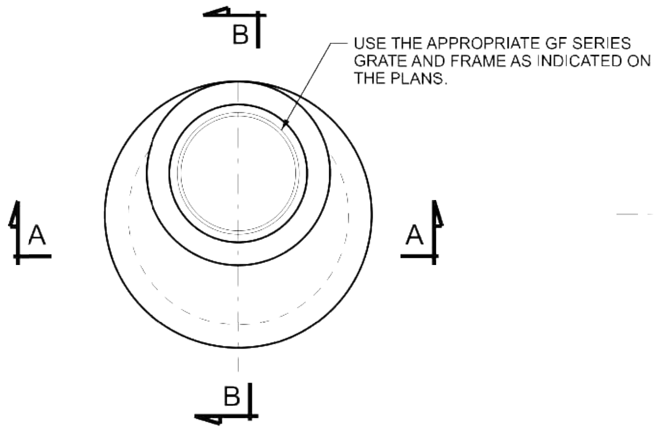
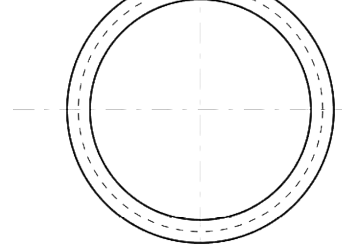
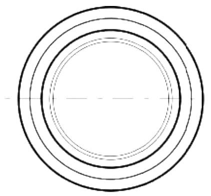


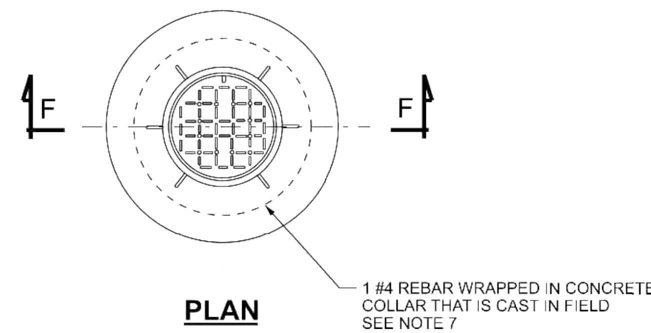
PLAN



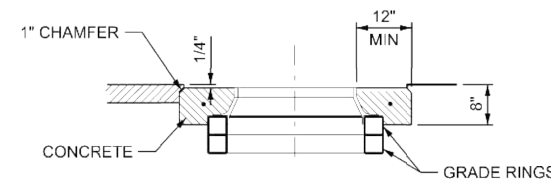
SECTION C-C



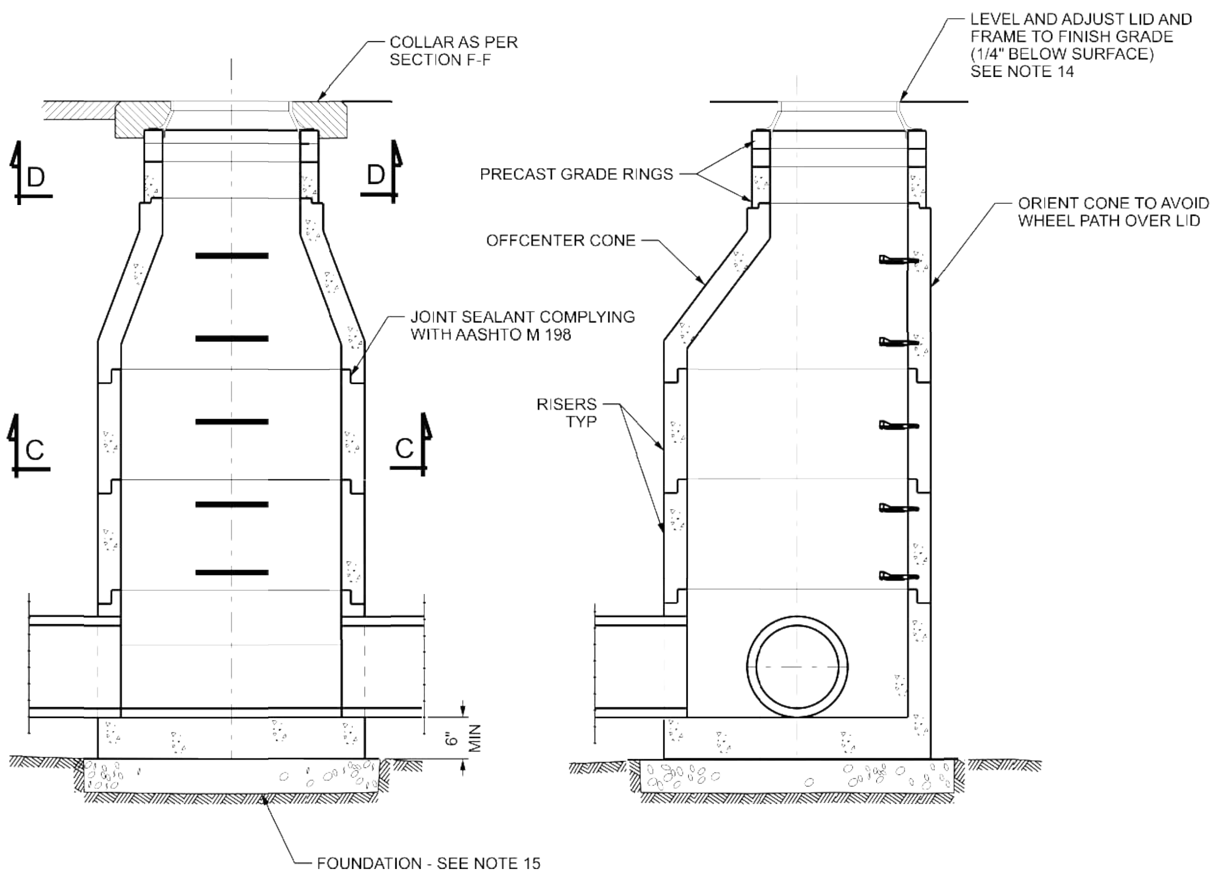
SECTION D-D



PLAN



SECTION F-F



COLLAR AS PER SECTION F-F
D
D
JOINT SEALANT COMPLYING WITH AASHTO M 198
C
C
6" MIN
FOUNDATION - SEE NOTE 15
LEVEL AND ADJUST LID AND FRAME TO FINISH GRADE (1/4" BELOW SURFACE) SEE NOTE 14
PRECAST GRADE RINGS
OFFCENTER CONE
ORIENT CONE TO AVOID WHEEL PATH OVER LID
RISERS TYP

SECTION A-A

SECTION B-B

MAX PIPE O.D.		
DIA	45 DEG ANGLE	90 DEG ANGLE
4'- 0"	27"	18"
5'- 0"	36"	24"

PRECAST SECTIONS	MAX HEIGHT
GRADE RINGS	8"
COMBINED GRADE RINGS AND LID	18"
CONES	36"
RISERS	48"

DESIGN DATA

STRUCTURAL STEEL: Fy = 36,000 psi

STRUCTURAL CONCRETE: f 'c = 4,000 psi; fy = 60,000 psi; n = 8

NOTES

1. PROVIDE PRECAST CONCRETE STANDARD MANHOLE SECTIONS THAT CONFORM TO AASHTO M 199 (ASTM C 478) EXCEPT THAT THE MINIMUM WALL THICKNESS WILL BE 3 INCHES.
2. USE DEFORMED-CARBON REINFORCING STEEL BARS CONFORMING TO M 31, GRADE 60 OR WELDED WIRE REINFORCING CONFORMING TO AASHTO M 55 OR AASHTO M 221.
3. COATED STEEL IS NOT REQUIRED FOR PRECAST MANHOLES.
4. USE CLASS AA (AE) CONCRETE.
5. USE TYPE II CEMENT (LOW ALKALI).
6. PROVIDE 1 INCH OF CONCRETE COVER TO REINFORCING STEEL IN MANHOLE WALLS AND CONE.
7. PROVIDE 2 INCHES OF CONCRETE COVER TO REINFORCING STEEL IN MANHOLE BASE AND COLLAR.
8. PLACE STEPS BEGINNING NOT LESS THAN 12 INCHES BELOW FINISH GRADE AND PLACE ADDITIONAL STEPS ACCORDING TO STD DWG GF 6. MANUFACTURER WILL ADJUST GRADE RINGS AND RISER HEIGHTS TO ACCOMMODATE UNIFORM SPACING OF STEPS ACCORDING TO STD DWG GF 6.
9. USE 3, 4, 6, OR 8 INCH GRADE RINGS FOR RISERS.
10. SEE ROADWAY PLANS FOR NUMBER, LOCATION, AND SIZE OF PIPE.
11. REMOVE THE CONE AND GRADE RINGS AND ADJUST THE MANHOLE ELEVATION WITH THE APPROPRIATE MANHOLE SECTION IF THE REQUIRED MANHOLE ADJUSTMENT IS MORE THAN 1 FT. MATCH FINISH GRADE FOR THE CONE SECTION AND GRADE RINGS, FRAME AND LID.
12. REMOVE DEBRIS FROM MANHOLE AND PIPE INVERTS.
13. REPAIR OR REPLACE MANHOLE SECTIONS, CONES, AND GRADE RINGS DAMAGED BY CONSTRUCTION TO THE SATISFACTION OF THE ENGINEER.
14. USE STD DWG GF 2 FOR RING AND LID UNLESS OTHER GF SERIES AS SHOWN.
15. PROVIDE HYDRAULIC CEMENT MORTAR ACCORDING TO ASTM C 1329.
16. DO NOT OVER EXCAVATE. PLACE 6 INCH MIN UTBC BEDDING ACCORDING TO STANDARD SPECIFICATION 02721 ON FIRM SUBGRADE. DO NOT USE CRUSHED ROCK IN ACTIVE WATER TABLE WITHOUT APPROVAL OF THE ENGINEER.
17. CAST FORMED INVERT TO BE POURED IN PLANT, WHEN SPECIFIED.
18. MANUFACTURE MANHOLE RISERS, BASES, CONES, AND GRADE RINGS INCLUDING STEEL REINFORCING WHERE REQUIRED ACCORDING TO ASTM C 478.

A ~ DETAIL - SEWER MANHOLE

NOT TO SCALE

REVISIONS

NO.	DATE	APPR.	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

STANDARD DRAWING EDITION
2024 Standard Drawing

PRECAST CONCRETE
STANDARD MANHOLE

STANDARD DRAWING TITLE

STD. DWG. NO.
CB 11

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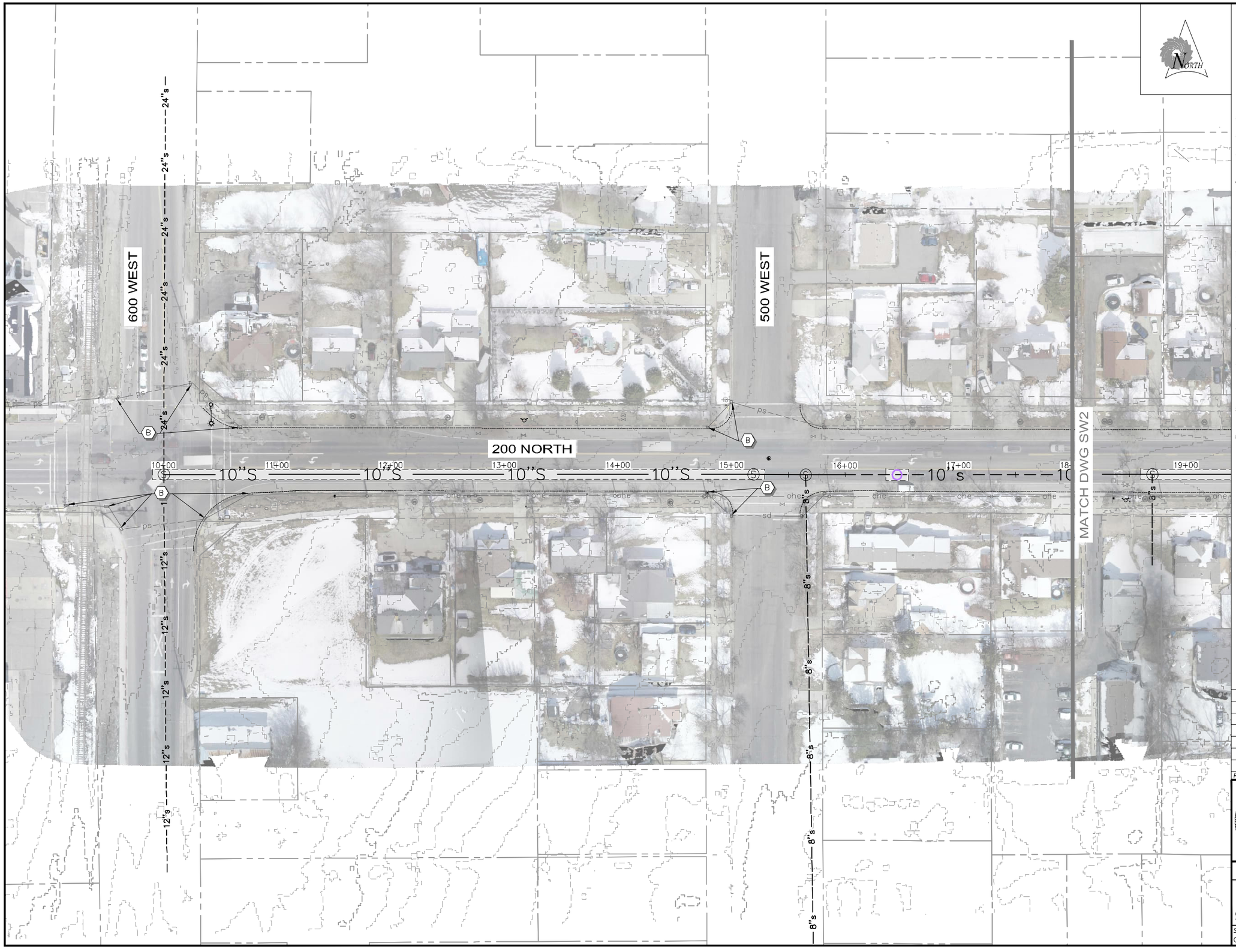
SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

LOGAN CITY

200 NORTH AND 400 NORTH SEWER
DETAILS
UDOT DETAILS

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	33 of 45	D4



LEGEND

−40.9% STORM WATER FLOW

STORAGE/ WASHOUT AREA

CONSTRUCTION NOTES

(A) CONSTRUCT INLET PROTECTION PER DETAIL A

(B) CONSTRUCT GRAVEL SOCK FILTER PER DETAIL B

(C) CONSTRUCT STORAGE / WASHOUT AREA PER DETAIL C

(D) CONSTRUCT WASH DOWN AREA PER DETAIL D

NOTES

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5. ALL PORTA-POTTIES ARE TO BE STAKED AND LOCATED AT LEAST 10' FROM BACK OF CURB
6. CONCRETE WASHOUT IS TO BE LOCATED AWAY FROM ANY STORM DRAIN INLETS

SCALE
0 40' 80'
HORIZ: 1" = 40' : 22 x 34
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811 Know what's below. Call before you dig. 1-800-662-4111

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 334535 Scott J. Archibald 02/14/2024 STATE OF UTAH

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LOGAN CITY

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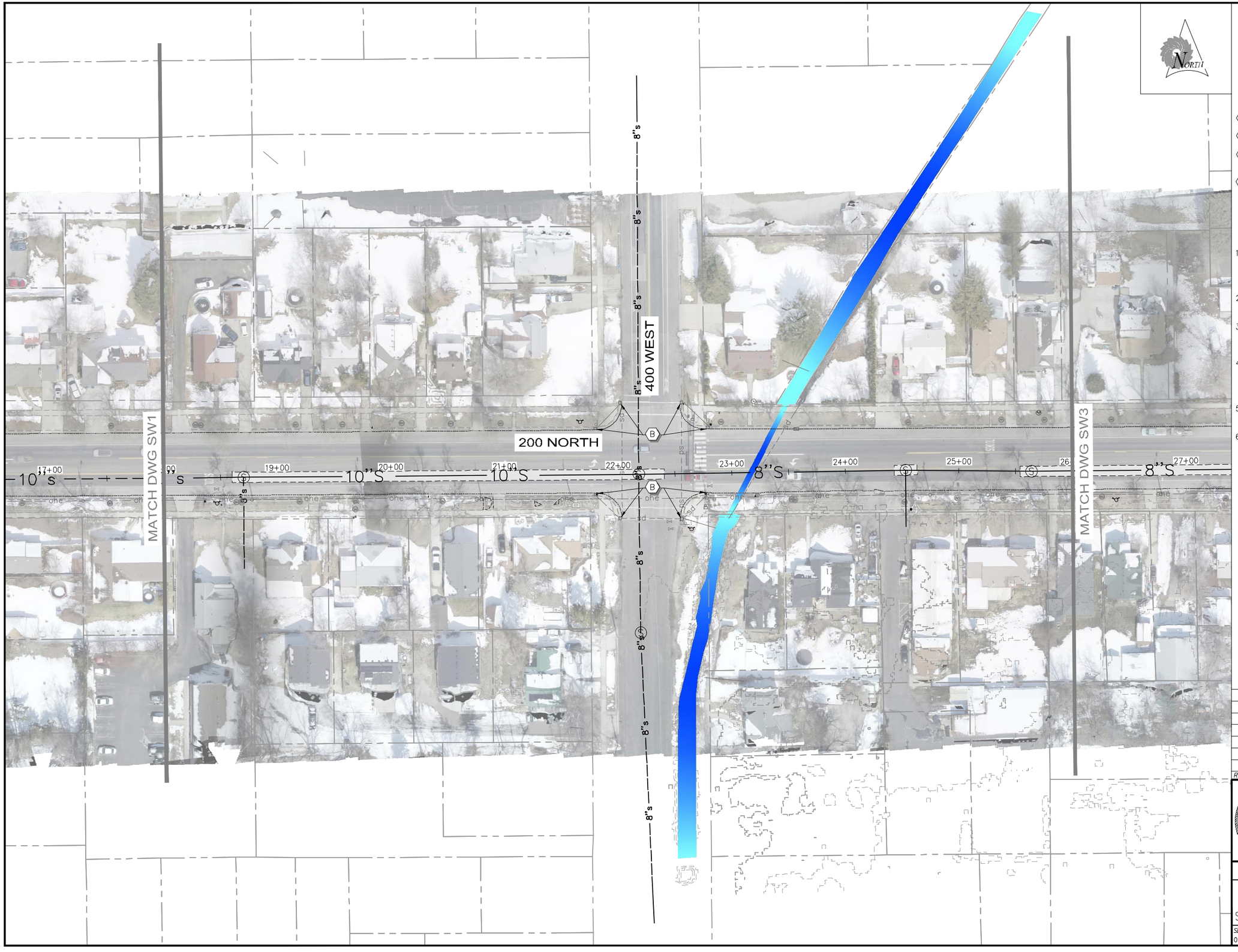
200 NORTH
STORM WATER POLLUTION PREVENTION PLAN

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	34 of 45	SW1

P:\Logan City\09195 200 North & 400 North Sewer Improvements\DWG\Sheets\LS-200 NORTH-SW.dwg Feb 14, 2024 11:27am jjolley



NORTH

LEGEND

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200 NORTH AND 400 NORTH SEWER

200 NORTH

STORM WATER POLLUTION PREVENTION PLAN

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	35 of 45	SW2

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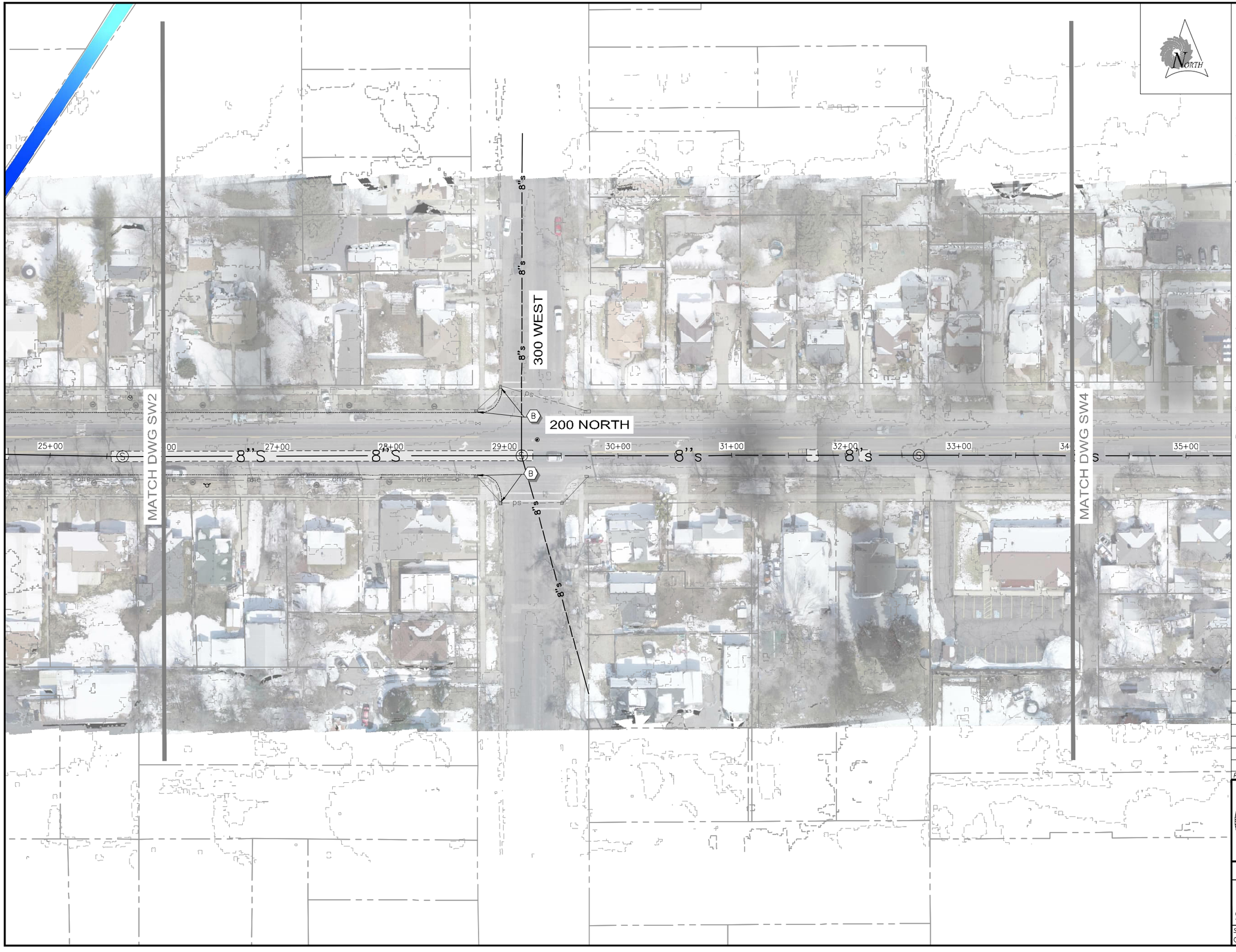

LEGEND

−40.9% STORM WATER FLOW

STORAGE/ WASHOUT AREA

CONSTRUCTION NOTES

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- (B) CONSTRUCT GRAVEL SOCK FILTER PER DETAIL B
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SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	36 of 45	SW3

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LEGEND

-40.9% STORM WATER FLOW

STORAGE/ WASHOUT AREA

NORTH

CONSTRUCTION NOTES

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B. CONSTRUCT GRAVEL SOCK FILTER PER DETAIL B

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200 NORTH
STORM WATER POLLUTION PREVENTION PLAN

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	37 of 45	SW4

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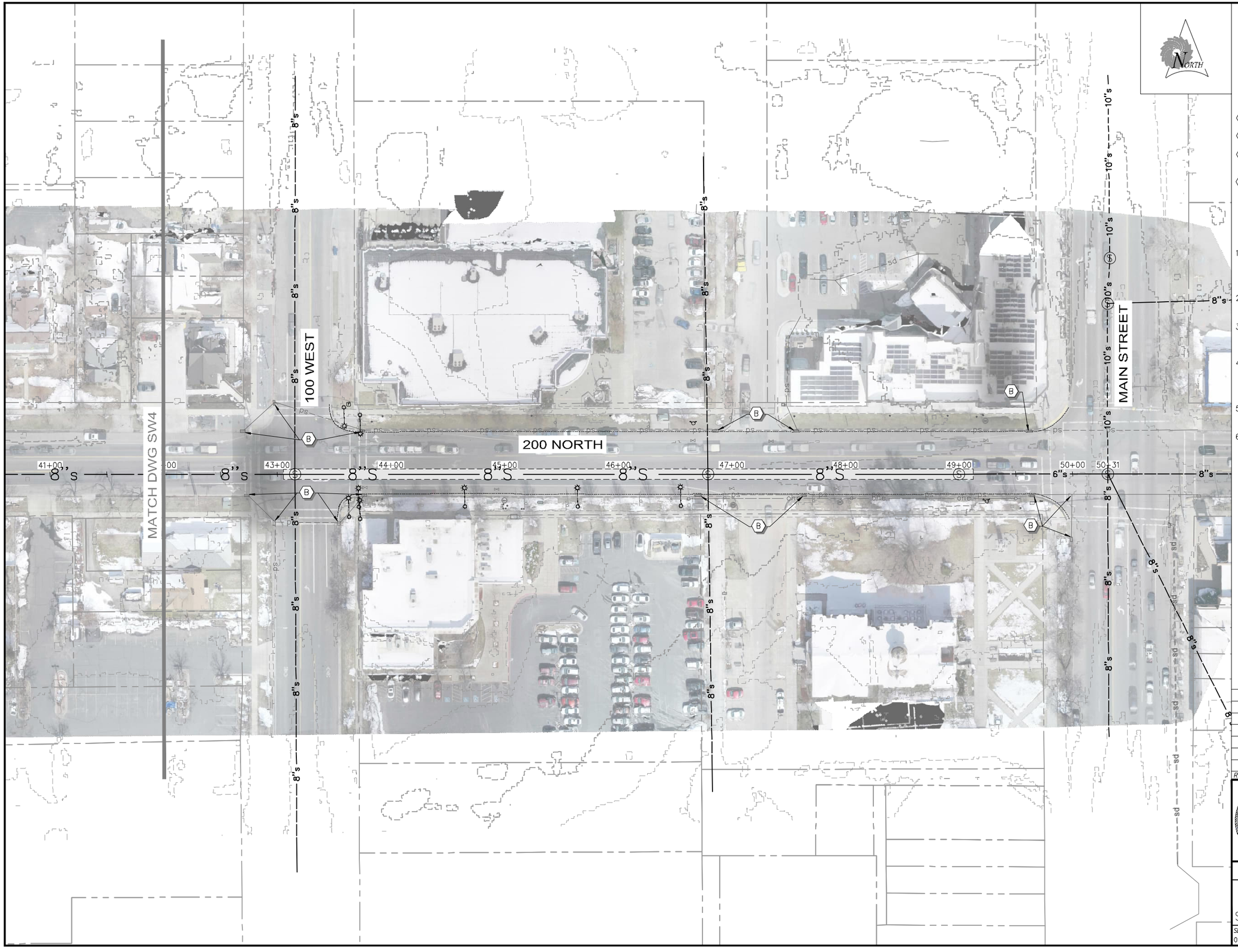

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−40.9% STORM WATER FLOW

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200 NORTH
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SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	38 of 45	SW5

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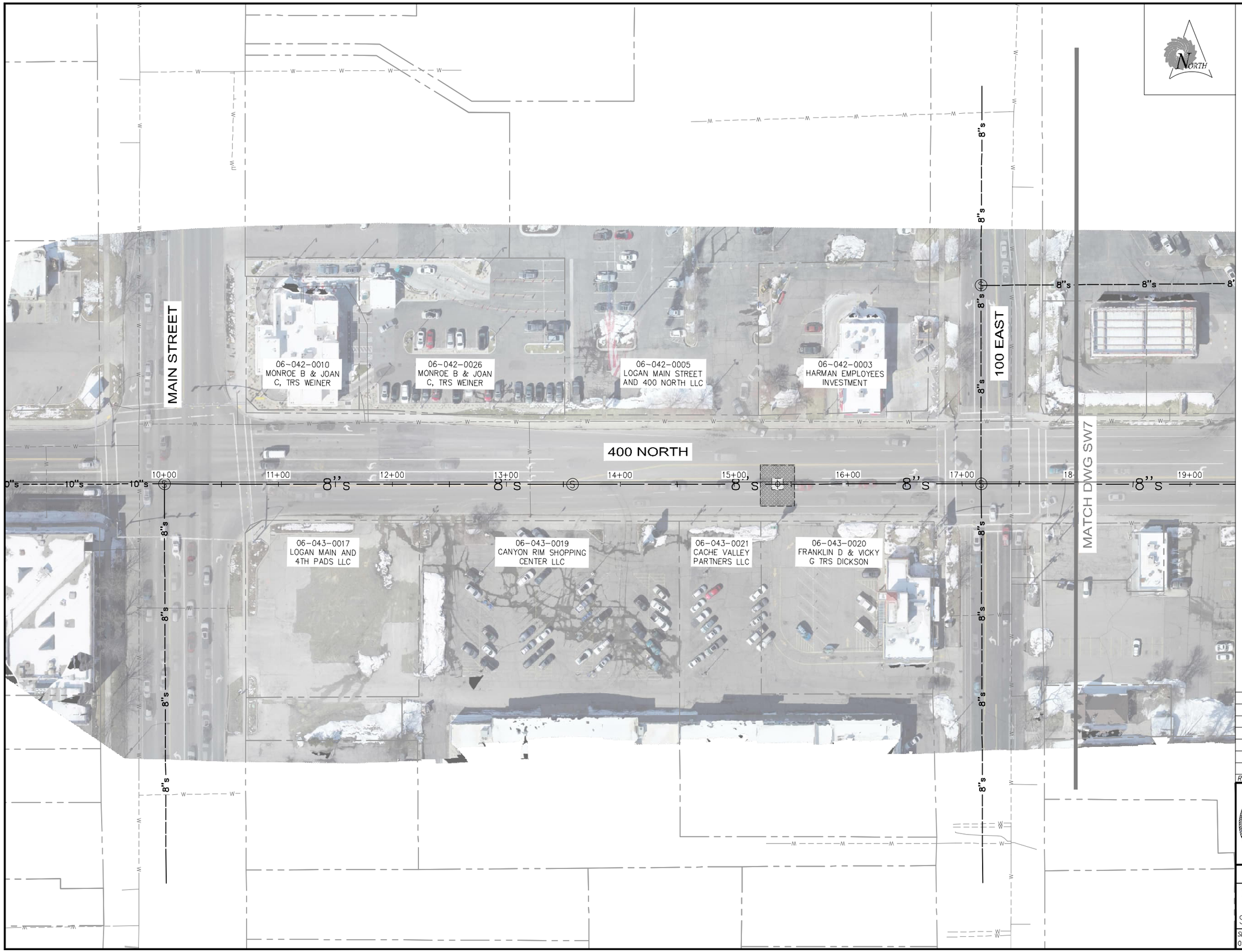

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LOGAN CITY

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STORM WATER POLLUTION PREVENTION PLAN

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	39 of 45	SW6

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LOGAN CITY

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SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	40 of 45	SW7

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SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	41 of 45	SW8

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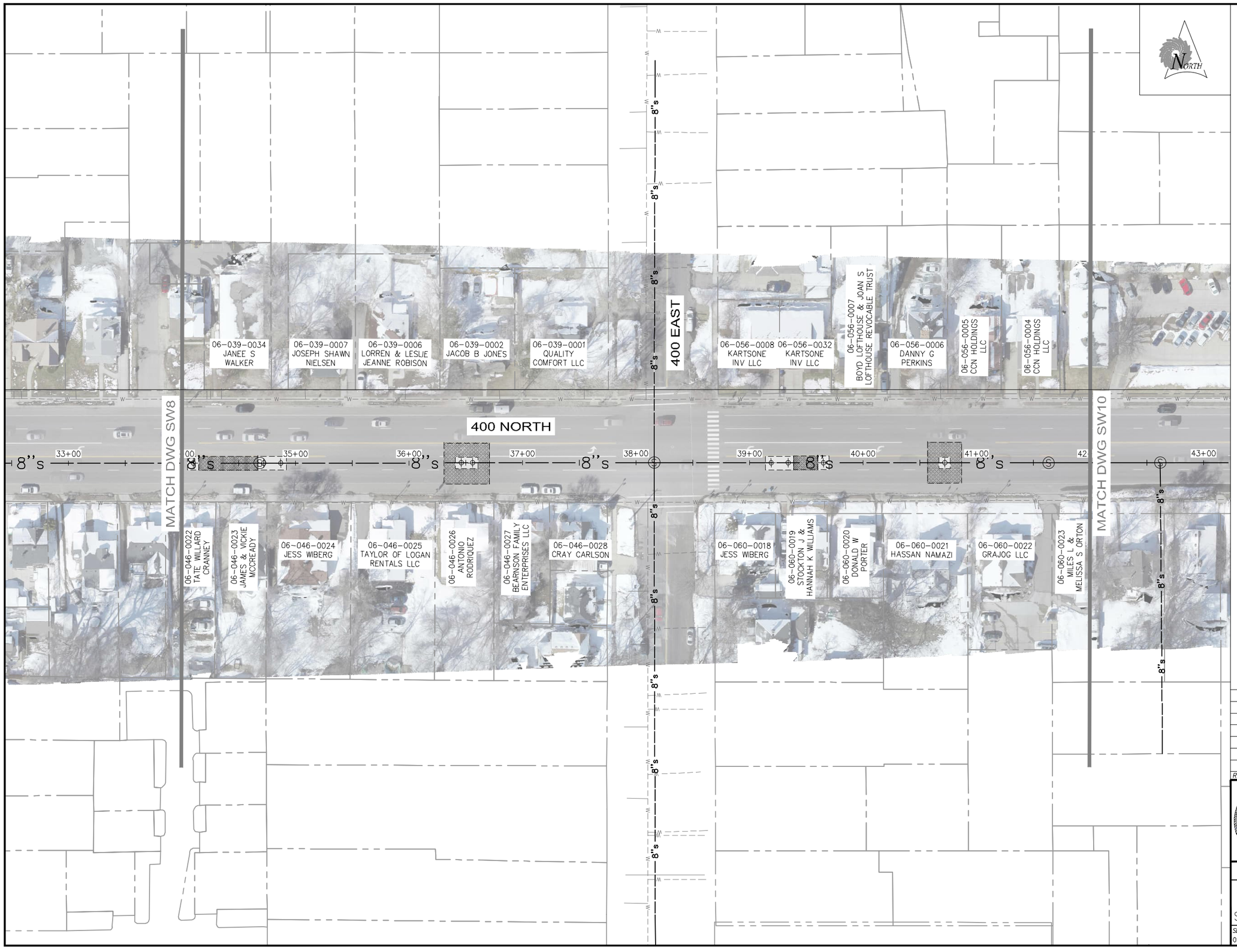

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SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	42 of 45	SW9

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NORTH

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09195	JTN	JJ	SLA	43 of 45	SW10

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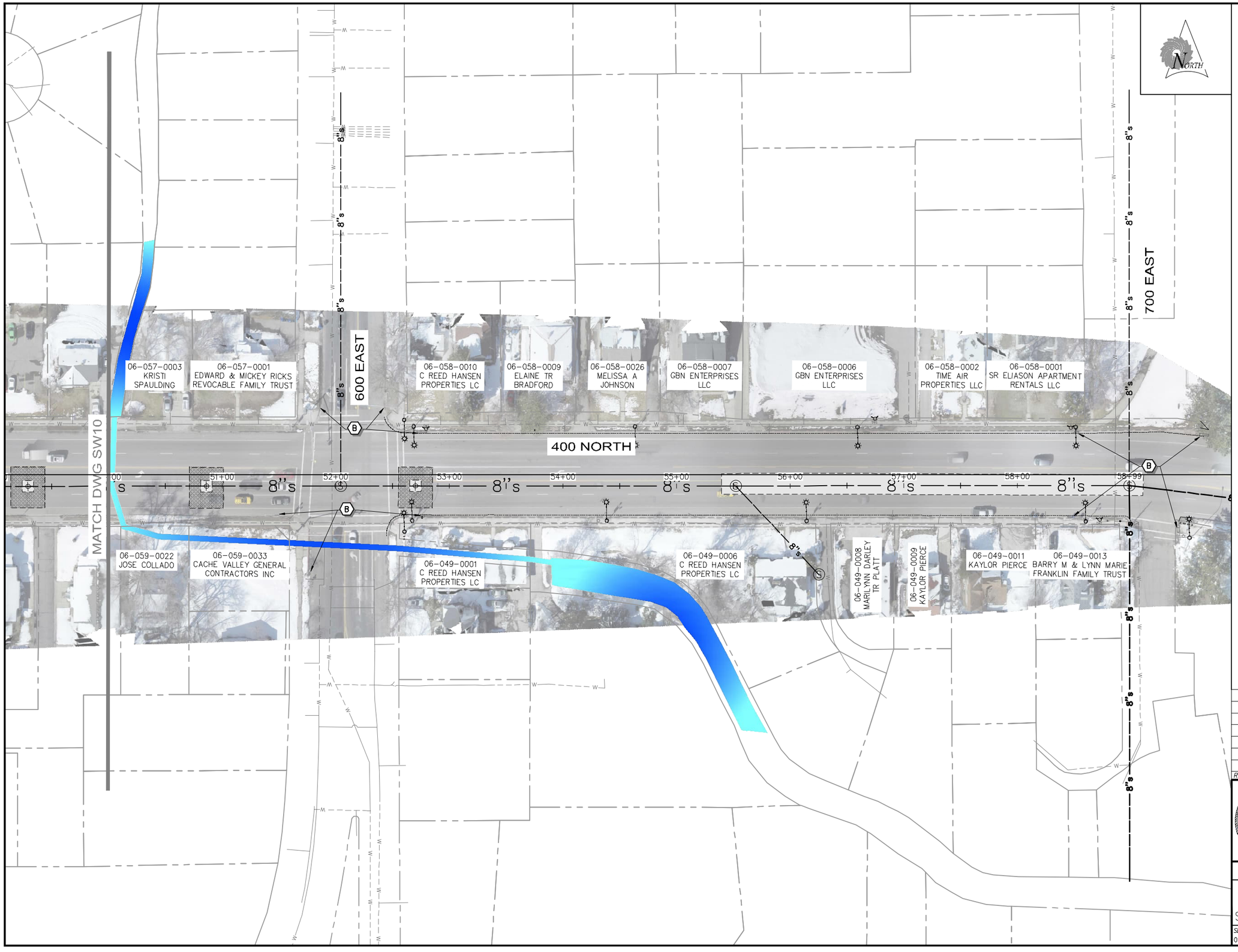

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09195	JTN	JJ	SLA	44 of 45	SW11

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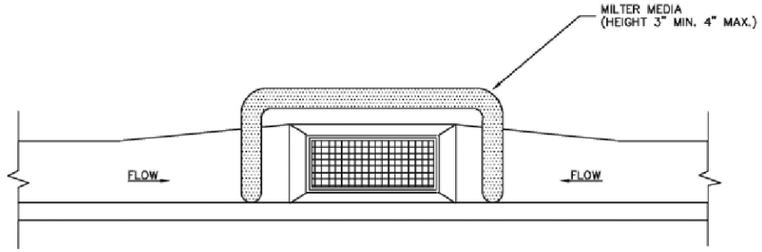
INLET PROTECTION - GRAVEL SOCK

1. DESCRIPTION: PLACEMENT OF GRAVEL SOCK ON GRADE UPSTREAM OF, OR IN FRONT OF STORM DRAIN INLETS TO FILTER OR POND WATER RUNOFF

2. APPLICATION: AT INLETS IN PAVED OR UNPAVED AREAS WHERE UP GRADIENT AREA IS TO BE DISTURBED BY CONSTRUCTION ACTIVITIES.

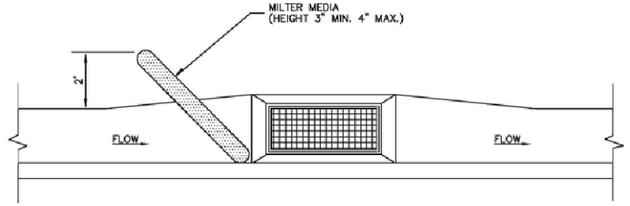
3. INSTALLATION/APPLICATION CRITERIA: REFER TO APWA SECTION 01 57 00
A. DROP INLET PROTECTION:
1. DROP INLET PROTECTION SHOULD BE USED AT LOW POINTS IN THE CURB AND WHEN DIVERTING FLOWS FURTHER DOWNSTREAM WILL NOT CAUSE UNDESIRABLE RESULTS.
2. PREPARE FILTER MEDIA (GRAVEL SOCK, STRAW WADDLE, OR OTHER APPROVED MEDIA) IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
3. INSTALL FILTER MEDIA AROUND THE ENTIRE PERIMETER OF THE INLET GRATE.
4. FILTER MEDIA SHALL BUTT TIGHTLY AGAINST THE FACE OF THE CURB ON BOTH SIDES OF THE INLET GRATE.
5. EXCESSIVE FLOWS WILL EITHER FLOW AROUND THE MEDIA OR OVER THE TOP AND INTO THE INLET BOX.
6. EXPECT PONDING AROUND THE INLET BOX.

4. MAINTENANCE:
A. INSPECT INLET PROTECTION AFTER EVERY LARGE STORM EVENT AND AT A MINIMUM OF ONCE MONTHLY.
B. REMOVE SEDIMENT ACCUMULATED WHEN IT REACHES 2 INCHES IN DEPTH.
C. REPLACE FILTER MEDIUM WHEN DAMAGE HAS OCCURRED OR WHEN MEDIUM IS NO LONGER FUNCTIONING AS INTENDED.



DROP INLET PROTECTION DETAIL

A ~ DETAIL - INLET PROTECTION - GRAVEL SOCK
NOT TO SCALE



GRAVEL SOCK

1. PREPARE FILTER MEDIA (GRAVEL SOCK, STRAW WADDLE, OR OTHER APPROVED MEDIA) IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

2. INSTALL FILTER MEDIA EVERY 200 FT. WHERE POSSIBLE.

3. FILTER MEDIA SHALL BUTT TIGHTLY AGAINST THE FACE OF THE CURB AND ANGLE AT APPROXIMATELY A 45 DEGREE ANGLE AWAY FROM THE CURB TO TRAP RUNOFF BETWEEN THE MEDIA AND THE CURB.

4. EXCESSIVE FLOWS WILL FLOW EITHER OVER OR AROUND THE FILTER MEDIA AND INTO THE INLET BOX.

5. EXPECT PONDING BEHIND THE FILTER MEDIA

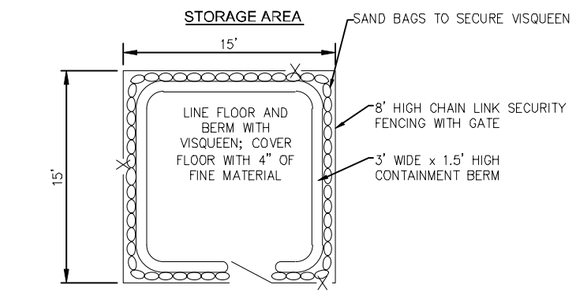
B ~ DETAIL - GRAVEL SOCK PLACEMENT
NOT TO SCALE

NOTES:

1. DO NOT DISPOSE OF WASH-OUT INTO THE STREET, STORM DRAINS, DRAINAGE DITCHES, OR WATERCOURSES. WASH OUT CONCRETE TRANSIT MIXERS ONLY IN THE DESIGNATED AREA AND AS DIRECTED BY THE PROJECT MANAGER.

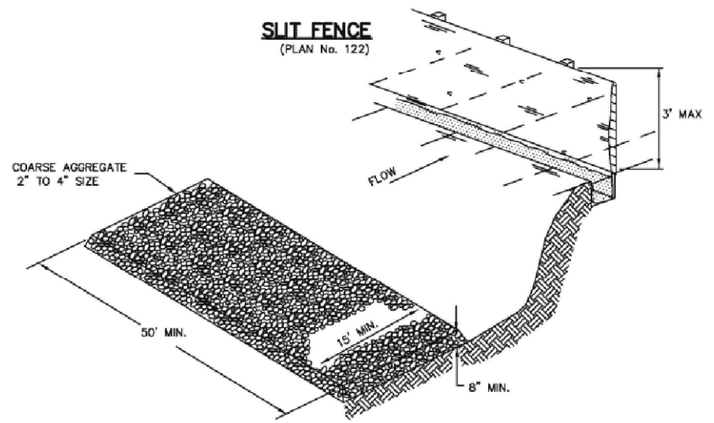
2. DIG WASH OUT PIT LARGE ENOUGH TO HOLD WASTE. LET WATER PERCOLATE THROUGH SOIL AND DISPOSE OF SETTLED, HARDENED CONCRETE.

3. JOB SUPERINTENDENT TO MONITOR ON-SITE CONCRETE WASH-OUT, WASTE STORAGE AND DISPOSAL PROCEDURES AT LEAST WEEKLY.



C ~ DETAIL - STORAGE/WASHOUT AREA
NOT TO SCALE

1. SECURE MESH TO POSTS WITH WIRE STAPLES 1" LONG OR TIE WIRES OR HOG RINGS
2. SECURE FABRIC TO MESH WITH TWINE, STAPLES OR SIMILAR



WASH DOWN AREA

D ~ DETAIL - WASH DOWN AREA
NOT TO SCALE

EQUIPMENT AND VEHICLE WASH DOWN AREA

1. DESCRIPTION: A TEMPORARY STABILIZED PAD OF GRAVEL FOR GENERAL WASHING OF EQUIPMENT AND CONSTRUCTION VEHICLES.

2. APPLICATION: AT ANY SITE WHERE REGULAR WASHING OF VEHICLES AND EQUIPMENT WILL OCCUR. MAY ALSO BE USED AS A FILLING POINT FOR WATER TRUCKS LIMITING EROSION CAUSED BY OVERFLOW OR SPILLAGE OF WATER.

3. INSTALLATION/APPLICATION CRITERIA: REFER TO APWA SECTION 01 57 00.
A. CLEAR AND GRUB AREA AND GRADE TO PROVIDE MAXIMUM SLOPE OF 1 PERCENT AWAY FROM PAVED ROADWAY.
B. COMPACT SUBGRADE.
C. PLACE FILTER FABRIC UNDER WASH DOWN AREA IF DESIRED (RECOMMENDED FOR WASH AREA THAT REMAINS MORE THAN 3 MONTHS).
D. INSTALL SILT FENCE DOWN GRADIENT (SEE DETAIL A)

4. MAINTENANCE:
A. REQUIRES PERIODIC TOP DRESSING WITH ADDITIONAL STONES.
B. SOLELY USED TO CONTROL SEDIMENT IN WASH WATER. CANNOT BE UTILIZED FOR WASHING EQUIPMENT OR VEHICLES THAT MAY CAUSE CONTAMINATION OF RUNOFF (SUCH AS FERTILIZER EQUIPMENT OR CONCRETE EQUIPMENT).
C. THE WASH AREA SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY.
D. PERIODIC TOP DRESSING WITH 2 INCH STONE MAY BE REQUIRED, AS CONDITIONS DEMAND, AND REPAIR ANY STRUCTURES USED TO TRAP SEDIMENTS.
E. INSPECT DAILY FOR LOSS OF GRAVEL OR SEDIMENT BUILDUP.
F. INSPECT ADJACENT AREA FOR SEDIMENT DEPOSIT AND INSTALL ADDITIONAL CONTROLS AS NECESSARY.
G. EXPAND STABILIZED AREA AS REQUIRED TO ACCOMMODATE ACTIVITIES.
H. MAINTAIN SILT FENCE AS OUTLINED IN DETAIL A.

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

REV NO.	COMMENT	DATE

LICENSED PROFESSIONAL ENGINEER No. 334535 Scott K. Archibald 02/14/2024 STATE OF UTAH

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

LOGAN CITY

200 NORTH AND 400 NORTH SEWER
STORM WATER POLLUTION PREVENTION PLAN
SWPPP DETAILS

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09195	JTN	JJ	SLA	45 of 45	SW12

P:\Logan City\09195 200 North & 400 North Sewer Improvements\DWG\Sheets\LS-SW-D.dwg Feb 14, 2024 11:30am jjolley