PRINT DATE/TIME: 2/11/19 9:25 AM

CITY OF LOGAN

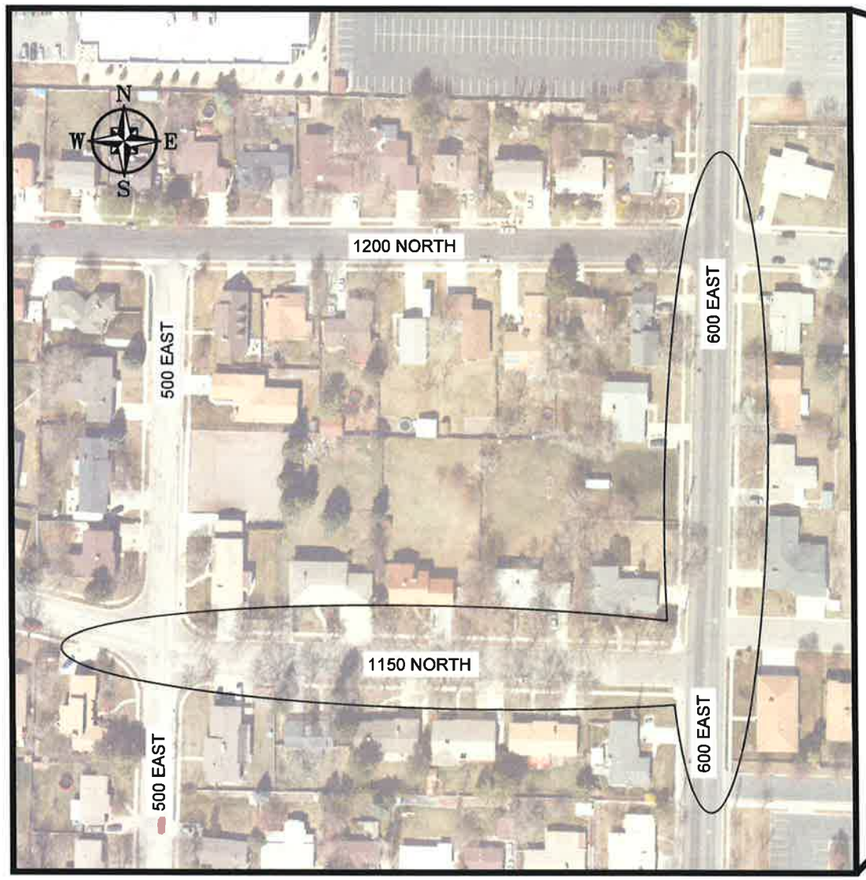
600 E 1200 N SEWER REPLACEMENT

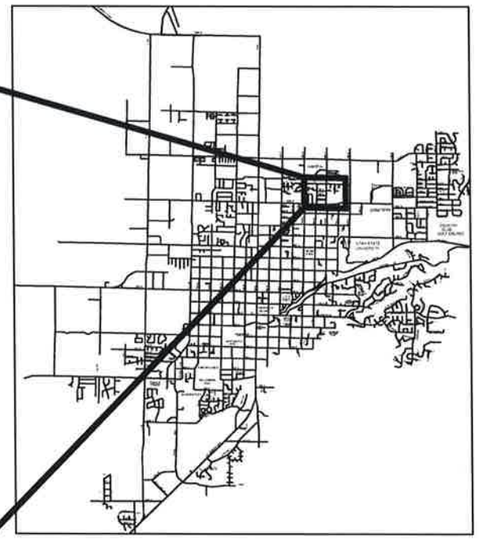
PROJECT LOCATION: 600 EAST 1200 NORTH TO 1150 NORTH TO 500 EAST

PROJECT NUMBER: ENG# 18061

LOGAN CITY UNITED IN SERVICE

PUBLIC WORKS DEPARTMENT





THESE PLANS HAVE BEEN REVIEWED AND APPROVED BY THE FOLLOWING:

PUBLIC WORKS DIRECTOR: Paul Lindhardt — 2-28-19
PAUL LINDHARDT, P.E. — DATE

WASTEWATER DIVISION MANAGER: [signature] — 2-26-2019
CAMERON DRANEY, P.E. — DATE

CITY ENGINEER: Bill Young — 2/25/19
BILL YOUNG, P.E. — DATE

P.E.

LICENSED PROFESSIONAL ENGINEER
No. 171998
WILLIAM M. YOUNG
2/25/2019
STATE OF UTAH

LOGAN CITY ENGINEERING
290 NORTH 100 WEST
LOGAN, UTAH 84321

DESIGNED: TCADY	DATE: 11-Feb-19
DRAFTED: TCADY	PROJECT: 18061
CHECKED: B. YOUNG	REVISION: FINAL

PROJECT FILE LOCATION: G:\pubflow\Engineer\09 Engineering File System\PROJECTS 2019\ENG18061 600 E 1200 N to 1150 N Sewer Line Project\Design [CAD Files]\Design Sheets.dwg

PRINT DATE/TIME: 2/28/19 3:12 PM

Sheet Name	Description
COVER	COVER SHEET
GN1	GENERAL NOTES
SN1	SPECIAL NOTES
SW1	STORMWATER POLLUTION PREVENTION INFORMATION
S1	SURVEY CONTROL
DT-01	DETAIL SHEETS
DT-02	DETAIL SHEETS CONTINUED
D-01	DEMOLITION STA: 0+00 TO STA: 3+00
D-02	DEMOLITION STA: 3+00 TO STA: 6+50
D-03	DEMOLITION STA: 5+50 TO STA: 9+00
D-04	DEMOLITION STA: 8+00 TO STA: 11+00
UT-01	SEWER LINE REPLACEMENT STA: 0+00 TO STA: 3+00
UT-02	SEWER LINE REPLACEMENT STA: 3+00 TO STA: 6+50
UT-03	SEWER LINE REPLACEMENT STA: 5+50 TO STA: 9+00
UT-04	SEWER LINE REPLACEMENT STA: 8+00 TO STA: 11+00
BP-01	BI-PASS PUMPING MAP

UTILITY LEGEND

	EXISTING	PROPOSED
ABANDON		
REMOVE		
NATURAL GAS		
COMMUNICATIONS		
POWER OVERHEAD		
POWER UNDERGROUND		
SANITARY SEWER		
SANITARY SEWER FORCE MAIN		
SANITARY SEWER LATERALS		
STORM DRAIN		
WATER MAINS		
WATER LATERALS		

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 SANITARY SEWER: CAMERON DRANEY (435) 716-9622, KASEY ERICKSON (435) 994-0316 OR JARED PRATT (435) 760-4728.
   - 3.2. STORM WATER: JED AL-IMARI (435) 881-4327 OR SHAWN HANSEN (435) 994-0526.
   - 3.3. LOGAN CITY LIGHT AND POWER: STEVE CROSBY (435) 716-9745 OR (435) 757-8530.
   - 3.4. COMCAST: ALEX VASQUEZ (801) 245-5314
   - 3.5. CENTURY LINK: PAUL HIGBEE (435) 232-3916
   - 3.6. QUESTAR: NICK WHITE (435) 213-5662 OR (435) 755-2205
   - 3.7. USU UTILITIES: LANCE MAUGHN (435) 797-7309
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 WORK IN THE RIGHT OF WAY PERMIT (CITY OF LOGAN) PRIOR TO INITIATING ANY SITE DISTURBANCE OR CONSTRUCTION IN LOGAN CITY RIGHT OF WAY.
4. IF DEWATERING IS REQUIRED, CONTRACTOR SHALL OBTAIN DEWATERING PERMITS FROM THE STATE OF UTAH DIVISION OF WATER QUALITY AND COMPLY WITH ALL STATE REQUIREMENTS.
5. 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, 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.

QUALITY CONTROL TESTING

1. CONTRACTOR SHALL EMPLOY AN APPROVED 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 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 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 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 NO: GN1

SCALE NO SCALE 1" VERIFY SCALE
SCALE = 1/2 SHOWN SCALE IF PLOTTED ON B SIZE PAPER

REVISION BLOCK: ---

DATE: 28-Feb-19 | ENG #: 18061

DESIGNED: TCADY | DRAFTED: TCADY | CHECKED: B. YOUNG

600 E 1200 N SEWER REPLACEMENT

GENERAL NOTES

LOGAN CITY ENGINEERING
290 NORTH 100 WEST
LOGAN, UTAH 84321

LOGAN CITY UNITED IN SERVICE PUBLIC WORKS DEPARTMENT

PROJECT FILE LOCATION: G:\publicwl\Engineer\00 Engineering File System\PROJECTS 2018\ENG\18061 600 E 1200 N to 1150 N Sewer Line Project\Design (CAD Files)\Design Sheets.dwg

PROJECT SPECIFIC NOTES

TRENCH EXCAVATION

1. ALL TRENCH 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.

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 $\frac{1}{4}$" TO $\frac{3}{4}$" 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.

GRANULAR BARROW

1. GRANULAR BORROW SHALL BE IN ACCORDANCE WITH APWA SECTION 31 05 13 WITH A MAXIMUM PARTICLE SIZE OF 3 INCHES (RATHER THAN 2 INCHES). GRANULAR BORROW CONSIST OF AN A-1 (ASTM D3282) SOIL.
2. GRANULAR BORROW SHALL HAVE A MINIMUM CBR VALUE OF 45.
3. GRANULAR BORROW SHALL BE PLACED AS PER APWA STANDARDS AND SPECIFICATIONS.

SEWER ROCK OR WASHED ROCK

1. SEWER ROCK OR WASHED ROCK SHALL BE CRUSHED AND WASHED CLASS 5 SEWER ROCK PER APWA 31 05 13.
2. SEWER ROCK OR WASHED ROCK MAY ONLY BE USED WHERE SPECIFIED IN THESE PLANS OR AS DIRECTED BY THE ENGINEER.

UNTREATED BASE COURSE

1. PIPE ZONE AND BEDDING AND BACKFILL SHALL BE UNTREATED BASE COURSE MATERIAL CLASS A, B, OR C, GRADE $\frac{3}{4}$ 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 $\frac{3}{4}$ OR GRADE 1, WITH A MINIMUM CBR VALUE OF 70 IN COMPLIANCE WITH APWA SECTION 32 11 23.

HOT MIX ASPHALT

1. SEE DETAIL B ON DT-02 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 LOGAN CITY RIGHT OF WAY SHALL BE PG 58-28, DM-1/2, MARSHALL MIX PER APWA 32 12 05.
4. APPLY TACK COAT, COMPLIANT WITH APWA SECTION 32 12 14, BETWEEN LAYERS OR LIFTS IF THE PREVIOUS PAVEMENT LAYER IS DIRTY OR OLDER THAN 24 HOURS PER APWA SECTION 32 12 16.

ASPHALT SAW CUTS AND PATCHES

1. ALL ASPHALT CUT LOCATIONS REPRESENT FINISHED LOCATIONS. CUTS ARE TO BE NEAT, CLEAN, AND VERTICAL PRIOR TO PATCHING ASPHALT OR CONCRETE.
2. SAW CUTS AND FINISHED EDGES, INCLUDING CONCRETE, SHALL BE CLEANED OF OIL, DIRT, AND DEBRIS PRIOR TO APPLICATION OF TACK COAT.
3. 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 LOGAN CITY REQUIREMENTS AT NO ADDITIONAL EXPENSE TO THE CITY.
4. ALL SAW CUT EDGES AND FINISHED EDGES SHALL BE TREATED WITH A TACK COAT PRIOR TO THE PLACEMENT OF ASPHALT IN ACCORDANCE WITH APWA SECTION 32 12 14.

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. ROLLER COMPACT TO FIRM AND UNYIELDING EXISTING MATERIAL. PROOF ROLL TEST EXISTING MATERIAL AFTER COMPACTION PER APWA SECTION 32 05 10, SECTION 3.8 PRIOR TO PLACEMENT OF UNTREATED BASE COURSE.
4. ROAD SECTION SHALL CONSIST OF 6 INCHES OF COMPACTED IN PLACE UNTREATED BASE COURSE FOR ROADWAY, CURB AND GUTTER, AND SIDEWALKS WITH 4 INCHES OF COMPACTED IN PLACE ASPHALT (PLACED IN TWO LAYERS). PROPER PLACEMENT OF UNTREATED BASE COURSE AND PROPER THICKNESS AND COMPACTION SHALL BE VERIFIED BY SURVEYOR PRIOR TO PLACEMENT OF ASPHALT. A PROOF ROLL TEST IS REQUIRED ON FINISHED UNTREATED BASE COURSE.
5. 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.
6. 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.

STORM WATER INSTALLATION

1. SHOP DRAWINGS AND CUT SHEETS OF ALL STORM WATER MATERIALS SHALL BE PROVIDED TO THE ENGINEER AT THE PRE-CONSTRUCTION MEETING.
2. ALL POLYETHYLENE PIPE (PE) SHALL BE CORRUGATED EXTERIOR WALL WITH SMOOTH INTERIOR WALL (PE TYPE S PER APWA SECTION 33 05 06).
3. ALL CATCH BASINS AND REGULATING STRUCTURES SHALL BE MANUFACTURED PER PRECAST IRRIGATION DIVERSION BOX AND CATCH BASINS, ETC. ON THIS SHEET.
4. ALL STORM WATER PIPE SHALL HAVE 12 GAUGE TRACER WIRE INSTALLED DIRECTLY OVER THE TOP CENTER LINE OF THE PIPE WITH CONNECTIONS AT EACH CATCH BASIN IN ACCORDANCE WITH LOGAN CITY STANDARDS AND SPECIFICATIONS.
5. ALL IRRIGATION PIPE SHALL HAVE "IRRIGATION" WARNING TAPE INSTALLED DIRECTLY OVER THE TOP CENTERLINE OF THE PIPE, THE DEEPER OF 6 INCHES BELOW FINISHED GRADE OR 18 INCHES ABOVE TOP OF PIPE.
6. PIPING SHALL BE INSTALLED IN ACCORDANCE WITH APWA STANDARDS AND SPECS AS AMENDED BY LOGAN CITY PLAN NO 382S.
7. 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.
8. ALL GRAVITY FLOW PIPES 24 INCHES OR LARGER SHALL BE MANDREL TESTED TO ENSURE NO PIPE FLEXURE OR DEFLECTION.

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 MANHOLE TO MANHOLE OR OTHER RISER TYPE.
8. 6-INCH 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.

CONCRETE COLLARS

1. SEE DETAIL C ON DT-01.
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-CONSTRUCTIO 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 $\frac{1}{8}$ TO 1/4 INCH ABOVE THE CONCRETE COLLAR. IF IT EXCEEDS $\frac{1}{4}$ 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.

BI-PASS PUMPING

1. LOGAN CITY HAS ESTIMATED THE BASE FLOWS IN THE EXISTING SEWER LINE USING A SEWER MODEL.
2. SEE SHEET BP-01FOR MORE INFORMATION.
3. AREA #1-MANHOLE #3: 600 EAST 1200 NORTH SEWER MANHOLE - THE FLOWS ARE ESTIMATED TO BE 60 GPM.
4. AREA #2-MANHOLE #2: 600 EAST 1150 NORTH SEWER MANHOLE - THE FLOWS ARE ESTIMATED TO BE 4 GPM.
5. THESE FLOWS ARE PROVIDED AS A WAY TO ESTIMATE THE AMOUNT OF PUMPING REQUIRED. HOWEVER THE ACTUAL FLOWS MAY VARY FROM THESE NUMBERS. IT IS THE CONTRACTORS REASONABILITY TO CONFIRM THE ACTUAL FLOWS FOR ACTUAL PUMPING.

SHEET NO: SN1

SCALE
NO SCALE
1" VERIFY SCALE
SCALE = 1/2 SHOWN SCALE IF PLOTTED ON B SIZE PAPER

REVISION BLOCK:

DATE: 28-Feb-19
ENG #: 18061

DESIGNED: TCADY
DRAFTED: TCADY
CHECKED: B. YOUNG

600 E 1200 N SEWER REPLACEMENT

SPECIAL NOTES

LOGAN CITY ENGINEERING
290 NORTH 100 WEST
LOGAN, UTAH 84321

LOGAN CITY UNITED IN SERVICE
PUBLIC WORKS DEPARTMENT

STORM WATER POLLUTION PREVENTION INFORMATION

SITE EVALUATION, ASSESSMENT, AND PLANNING

PROJECT SITE/NAME: 600 E 1200 N SEWER REPLACEMENT
PROJECT LOCATION: 600 EAST 1200 NORTH TO 1150 NORTH TO 500 EAST, SEE COVER SHEET
CITY: LOGAN, UTAH 84321
COUNTY: CACHE
LATITUDE/LONGITUDE (GOOGLE EARTH)
LAT: 41°45'07.54" NORTH LONG: 111°49'09.20" WEST

CONTACT INFORMATION AND RESPONSIBLE PARTIES:

OWNER: LOGAN CITY
290 NORTH 100 WEST
LOGAN, UT 84321
(435) 716-9152 (PUBLIC WORKS)

PROJECT MANAGER:
TYLER CADY
LOGAN CITY ENGINEERING
290 NORTH 100 WEST
LOGAN, UT 84321
(435) 716-9162
TYLER.CADY@LOGANUTAH.ORG

STORMWATER MANAGER AND SWPPP CONTACT
TBD-THIS IS TO BE FILLED IN BY THE CONTRACTOR

LOGAN CITY REGULATORY STORMWATER INSPECTOR
LYNN MAYS
LOGAN CITY STREETS AND STORMWATER FOREMAN
290 NORTH 100 WEST
LOGAN, UT 84321
(435) 716-9167 (DAY)
(435) 716-9090 (AFTER HOURS EMERGENCY)
LYNN.MAYS@LOGANUTAH.ORG

NATURE AND SEQUENCE OF CONSTRUCTION

THE CITY IS INSTALLING A NEW SEWER MAIN ON 600 EAST FROM 1200 NORTH TO 1150 NORTH, THEN TO INSTALL SEWER MAIN TO THE WEST ON 1150 NORTH. THIS PROJECT WILL CONSIST OF REMOVING THE EXISTING SEWER MAIN IN THE AREAS OF THE NEW MAIN LINE, LOGAN CITY ASPHALT T-PATCH. CONSTRUCTION WILL INCLUDE A SEWER MAIN INSTALLATION, RECONNECT LATERALS, REPLACING THE ASPHALT.

BEST MANAGEMENT PRACTICES (BMPS) FOR ALL OF THE ACTIVITIES WILL BE APPLIED TO THE SITE TO PROTECT THE LOGAN RIVER FROM POSSIBLE CONTAMINATION . BI-WEEKLY INSPECTIONS SHALL BE PERFORMED BY THE CONTRACTOR'S RSI INSPECTOR FOR THE DURATION OF CONSTRUCTION.

THE FUNCTION OF THIS ACTIVITY IS PUBLIC.
ESTIMATED START DATE: MAY 2019
ESTIMATED COMPLETION: JUNE 2019

SOILS, SLOPES, VEGETATION, AND CURRENT DRAINAGE PATTERNS

THE SOILS ON THIS SITE ARE RICKS GRAVELLY LOAM, STERLING GRAVELLY LOAM, AND TIMPANOGOS SILT AS OBTAINED BY THE NRCS SOILS SURVEY WEBSITE. INFILTRATION RATES RANGE FROM 0.30 MM/SEC TO .015 MM/SEC.

SLOPES: SLOPES ON THIS PROJECT ARE FROM 2 TO 5 PERCENT. SITE CONDITIONS ARE NOT SUBJECT TO EROSION IN THEIR PRE-CONSTRUCTION CONDITION.

DRAINAGE PATTERNS: DRAINAGE PATTERNS ARE FROM EAST TO WEST

VEGETATION: VEGETATION IS DEVELOPED ASPHALT, GRAVEL, AND GRASS LANDSCAPING.

CONSTRUCTION SITE ESTIMATES

CONSTRUCTION SITE AREA TO BE DISTURBED:	0.14 ACRES
TOTAL PROJECT AREA:	0.14 ACRES
PERCENT IMPERVIOUS AREA BEFORE CONSTRUCTION:	98%
PERCENT IMPERVIOUS AREA AFTER CONSTRUCTION:	98%
RUNOFF CN NUMBER AFTER CONSTRUCTION:	98 SAME AS BEFORE CONSTRUCTION
100-YEAR PEAK RUNOFF BEFORE CONSTRUCTION:	5.6 CFS
100-YEAR PEAK RUNOFF AFTER CONSTRUCTION:	5.6 CFS
DETENTION REQUIREMENTS:	0 ACRE-FEET

RECEIVING WATERS

THE RECEIVING WATER FOR THIS PROJECT IS THE LOGAN FIELD CANAL, AND HYDE PARK CANAL.

SITE FEATURES AND SITE SENSITIVE AREAS TO BE PROTECTED

THERE ARE NOT SITE SENSITIVE AREAS.

ENDANGERED SPECIES

THERE ARE NO ENDANGERED SPECIES ASSOCIATED WITH THIS SITE. IT IS ALL DEVELOPED ROADWAY.

HISTORIC PRESERVATION

THERE ARE NO HISTORIC SITES LISTED ON THIS PROJECT

GENERAL LOCATION MAP

FOR THE GENERAL LOCATION MAP, SEE COVER SHEET.

BMP EVALUATION FOR 90TH PERCENTILE STORM

THE GENERAL STORMWATER MS4 PERMIT REQUIRES PERMITTED AGENCIES TO RETAIN, INFILTRATE, OR EVAPORATE THE 90TH PERCENTILE STORM WHERE POSSIBLE. THE ENGINEER HAS COMPLETED AN ANALYSIS ON THIS SITE AND HAS DETERMINED IT IS NOT POSSIBLE FOR THIS SITE FOR THE FOLLOWING REASONS:

1. THERE IS INSUFFICIENT RIGHT OF WAY TO CONSTRUCT ADDITIONAL STORM WATER BMPS TO RETAIN, INFILTRATE, OR EVAPORATE 0.66 INCHES OF WATER WITHIN THE PROJECT AREA AND BEFORE THE DISCHARGE INTO THE CANAL. ALTERNATIVES EVALUATED INCLUDED SURFACE BMPS SUCH AS RETENTION PONDS, MANY COMMON LID METHODS, AND INCREASED VEGETATIVE COVER.
2. THE NEIGHBORING PROPERTY IS ABOVE THE ELEVATION OF THE ROAD. THIS ROAD HAS A LARGE TWO LARGE STORM DRAIN UTILITIES THAT RUN NORTH AND SOUTH IN 600 EAST. THE DENSITY OF UTILITIES IS PREVENTING THE CITY FROM CONSTRUCTING UNDERGROUND DETENTION OR RETENTION FACILITIES. THE COST OF RELOCATING THESE UTILITIES WOULD BE UNREASONABLE.

SWPPP REQUIREMENTS AND BMPS

1. THE CONTRACTOR SHALL PREPARE A STORM WATER POLLUTION PREVENTION PLAN (SWPPP). THE CONTRACTOR SHALL INSTALL AND MAINTAIN BMPS, INSPECT AND MANAGE THE SITE, AND UPDATE AND MANAGE THE SWPPP DURING CONSTUCTION. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE SWPPP. CONTRACTOR SHALL MAINTAIN A COPY OF THE SWPPP AT THE PROJECT SITE AT A MARKED LOCATION CONTINUOUSLY. SWPPP SHALL BE AVAILABLE FOR REVIEW DURING NORMAL WORK HOURS.
2. THE CONTRACTOR SHALL ENSURE THAT NO POLLUTION LEAVES THE DESIGNATED WORK ZONE BY IMPLEMENTING STANDARD BMPS AND COMMON PRACTICES APPROVED BY THE ENGINEER AND DOCUMENTED IN THE SWPPP.
3. THE CONTRACTOR IS RESPONSIBLE TO PREPARE THE STORM WATER POLLUTION PLAN FOR THIS PROJECT. THE SWPPP SHALL BE PREPARED USING THE SWPPP TEMPLATE PROVIDED BY THE UTAH DIVISION OF WATER QUALITY FOR PROJECTS EXCEEDING 1.0 ACRE. THE SWPPP SHALL BE PROVIDED TO THE LOGAN CITY STORM WATER INSPECTOR FOR REVIEW PRIOR TO THE PRE-CONSTRUCTION MEETING.
4. CONTRACTOR SHALL NOT DISTURB ANY PORTION OF THE SITE UNTIL THE SWPPP IS APPROVED BY THE LOGAN CITY STORM WATER INSPECTOR, CONTRACTOR OBTAINS A NOTICE OF INTENT (NOI), AND CONTRACTOR OBTAINS A LOGAN CITY LAND DISTURBANCE PERMIT.
5. SWPPP BMPS SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION ACTIVITIES.
6. THE CONTRACTOR SHALL INCLUDE THE ASSOCIATED BMPS FOR EACH OF THE POSSIBLE CONTAMINANT SOURCES INCLUDED IN THE ASSOCIATED POTENTIAL POLLUTANTS INCLUDED ON THIS SHEET. THE POTENTIAL SOURCES IN BOLD TYPE ARE EXPECTED BY THE ENGINEER TO BE THE MOST LIKELY TO CAUSE CONTAMINATION AND SHALL BE CLEARLY ADDRESSED IN THE SWPPP.
7. THE CONTRACTOR IS RESPONSIBLE FOR ALL SITE INSPECTIONS BY A CERTIFIED RSI, OR EQUIVALENT, INSPECTOR ON A BI-WEEKLY BASIS OR MORE FREQUENT IF REQUIRED AS FOLLOWS:
   - 7.1. RAINSTORM EXCEEDS $\frac{1}{4}$ INCH OF RAIN IN 24 HOURS AS MEASURED AT EITHER THE USU WEATHER STATION OR KVNU RADIO STATION.
   - 7.2. DISCHARGE FROM SITE POTENTIALLY ENTERS OR IMPACTS A WETLAND OR OTHER WATER OF THE STATE OF UTAH CONSIDERED SENSITIVE OR CURRENTLY ON OR A TRIBUTARY TO A WATER OF THE STATE OF UTAH ON THE 303-D LIST FOR IMPAIRED WATERS.
8. ALL INSPECTIONS AND LOGS SHALL BE RECORDED ON A UTAH DWQ APPROVED INSPECTION FORM.
9. INSPECTIONS SHALL BE CONTINUED UNTIL SITE OBTAINS PERMANENT STABILIZATION AS DEFINED BY THE UPDES CONSTRUCTION GENERAL PERMIT.
10. UPON OBTAINING PERMANENT STABILIZATION, AND WITH APPROVAL FROM THE LOGAN CITY STORM WATER INSPECTOR, CONTRACTOR SHALL OBTAIN AN NOT AND SUBMIT A COPY TO ENGINEER.
11. FINAL PAYMENT SHALL NOT BE PROCESSED UNTIL NOT IS PROVIDED TO ENGINEER.

POTENTIAL SOURCES OF POLLUTION

POTENTIAL POLLUTANT MATERIAL	ACTUAL POLLUTANT	POLLUTANT SOURCE	MANAGEMENT PRACTICE
SEDIMENT/TOTAL SUSPENDED SOLIDS	SEDIMENT	EROSION OF DISTURBED SOILS	MINIMIZE SOIL DISTURBANCE. INSTALL BMPS
SOILS STABILIZATION MATERIAL	VARIOUS MATERIALS BOTH FLOATABLE AND SOLUBLE	DISTURBED AREAS WHERE SLOPES OR SUSCEPTIBLE SOIL TYPES ARE EXPOSED	INSTALL SEDIMENT CONTROL BMPS
CONCRETE-WHITE/SOLID GREY	LIMESTONE, SAND, pH, CHROMIUM	EXTRA CONCRETE WHEN POURING CONCRETE	CLEAN UP EXCESS AND EXTRA CONCRETE AND DISPOSE OF AT SPECIFIED LOCATION. SEE ALSO CONCRETE WASHOUT
OILS-BROWN OILY PETROLEUM AND HYDROCARBONS	MINERAL OIL, HYDRAULIC FLUID, MOTOR OIL, ETC.	VEHICLES AND EQUIPMENT USED IN CONSTRUCTION	NO OILS WILL BE CHANGED ON SITE. LEAKS WILL BE REPAIRED IMMEDIATELY.
ASPHALT AND PAVING - BLACK SOLIDS	OIL AND PETROLEUM DISTILLAGES	ASPHALT PAVING OPERATIONS	PAVING OPERATIONS WILL NOT BE PERFORMED WITHIN 8 HOURS OF EXPECTED STORMS EXCEEDING 0.5 INCH.
GREASE	GREASE AND LUBE OIL	VEHICLES AND EQUIPMENT USED IN CONSTRUCTION	KEEP EQUIPMENT CLEAN AND WIPED DOWN
ANTIFREEZE	ETHYLENE GLYCOL	ENGINE COLLUANT	FIX LEAKS IMMEDIATELY. REPAIRS WILL NOT BE MADE ON SITE
CONSTRUCTION DEWATERING	TSS/SEDIMENTS	DEWATERING ACTIVITIES	CONTRACTOR TO OBTAIN PERMIT IF DEWATERING IS REQUIRED.
FUELS	BENZENE, ETHYL BENZENE, TOULENE, XYLENE, MTBE, PETROLEUM DISTALLATE, OILS/GREASES, NAPHTHALEN, COAL OIL	USED IN VEHICLES AND POWER EQUIPMENT	FUELING WILL NOT BE ALLOWED ON SITE UNLESS OVER AN IMPERMEABLE SURFACE WITH AN EMERGENCY CLEANUP KIT AT THE LOCATION
PESTICIDES AND INSECTICIDES, FUNGICIDES, HERBICIDES, AND RODENTICIDES	CHLORINATED HYDROCARBONS, ORANOPHOSPHATES, CARBAMATES, ARSENIC	USED FOR CONTROL OF PESTS DURING REVEGETATION	APPLICATION WILL BE PER MANUFACTURER INSTRUCTIONS. EXCESS OR LEFT OVER PESTICIDES WILL BE IMMEDIATELY REMOVED FROM SITE
CONCRETE CURING COMPOUNDS - CREAMY WHITE LIQUID	WHITE PIGMENTED LIQUID TYPE 2. (VARIES BY MANUFACTURER	USED FOR CONTROL OF CONCRETE CURING	APPLICATION WILL BE PER MANUFACTURER INSTRUCTIONS. EXCESS OR LEFT OVER WILL BE REMOVED FROM SITE
CONCRETE WASHOUT WATER	pH	CONCRETE TRUCKS AND PUMP TRUCKS	WASH WATER FROM CONCRETE TRUCKS WILL BE CONTAINED IN A LEAK PROOF LOCATION DESIGNATED BY THE CONTRACTOR
TRASH	SOLID WASTES	TRASH LEFT OVER FROM CONSTRUCTION ACTIVITES	REMOVE ALL TRASH FROM SITE DAILY. DO NOT DISPOSE OF TRASH IN HOLES OR TRENCHES
SANITARY WASTE MANAGEMENT	BACTERIA, PARASITES, VIRUSES	FECAL COLIFORM, BACTERIA ASSOCIATED WITH HUMAN OR ANIMAL WASTES	NO PUBLIC RESTROOMS AVAILABLE. CONTRACTOR SHALL PROVIDE PORTABLE FACILITIES AND ENSURE THEY ARE SECURED FROM TIPPING AND ARE MAINTAINED
FERTILIZERS - LIQUID AND SOLID GRAIN	NITROGEN, PHOSPHORUS	FERILIZERS USED IN RESTORING VEGETATION	APPLICATION WILL BE PER MANUFACTURER INSTRUCTIONS. EXCESS WILL BE PROMPTLY REMOVED FROM SITE

BEST MANAGEMENT PRACTICES

SPECIFIC BMPS WILL BE SPECIFIED BY THE CONTRACTORS SWPPP.

SHEET NO: SW1

SCALE NO SCALE 1" VERIFY SCALE
SCALE = 1/2 SHOWN SCALE IF PLOTTED ON B SIZE PAPER

REVISION BLOCK: FINAL

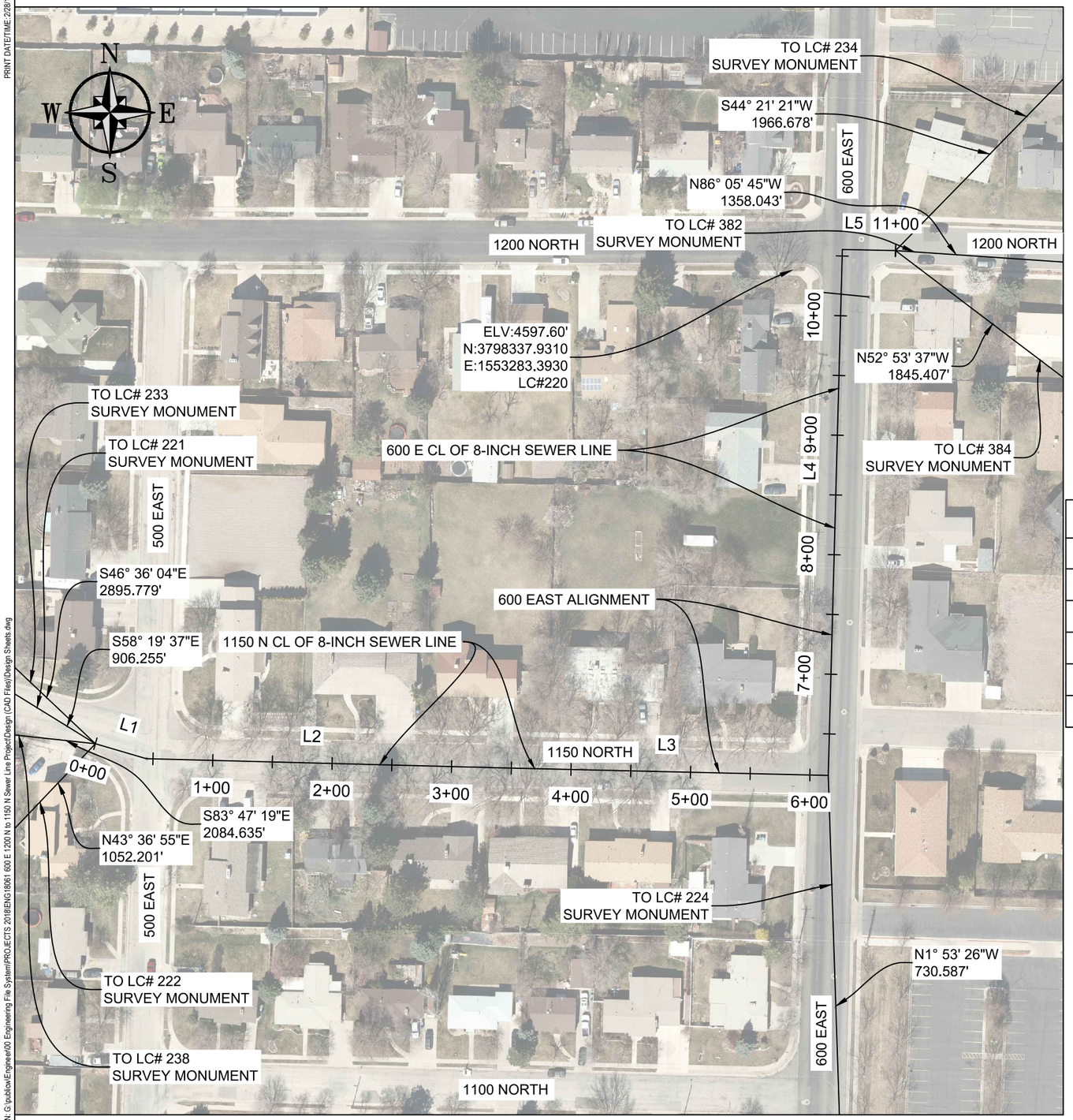
DATE: 28-Feb-19 ENG #: 18061

DESIGNED: TCADY DRAFTED: TCADY CHECKED: B. YOUNG

600 E 1200 N SEWER REPLACEMENT
STORM WATER POLLUTION PREVENTION INFORMATION

LOGAN CITY ENGINEERING
290 NORTH 100 WEST
LOGAN, UTAH 84321

LOGAN CITY UNITED IN SERVICE PUBLIC WORKS DEPARTMENT



SURVEY CONTROL MONUMENTS				
POINT #	ELEVATION (ft)	NORTHING	EASTING	DESCRIPTION
LC#233	4537.812	3799929.346	1550591.351	GPS MON 233 NE34
LC#234	4620.146	3799758.476	1554740.068	GPS MON 234 NE35
LC#384	4684.847	3797238.948	1554836.879	GPS MON 384 NE68
LC#382	4652.747	3798259.813	1554720.03	GPS MON 382B NE66
LC#220	4597.597	3798337.931	1553283.393	GPS MON 220 NE21
LC#221	4563.861	3798415.579	1551924.111	GPS MON 221 NE22
LC#238	4541.122	3798165.286	1550622.991	GPS MON 238 NE39
LC#222	4574.361	3797177.953	1551969.565	GPS MON 222 NE23
LC#224	4611.101	3797182.963	1553332.853	GPS MON 224B NE25

LINE TABLE

LINE #	LENGTH	DIRECTION	START POINT	END POINT	ALIGNMENT NAME
L1	44.52	S73° 43' 17.81"E	(1552695.39,3797939.73)	(1552738.13,3797927.25)	600 EAST SEWER ALIGNMENT
L2	299.85	S88° 31' 05.66"E	(1552738.13,3797927.25)	(1553037.88,3797919.50)	600 EAST SEWER ALIGNMENT
L3	270.95	S88° 40' 44.39"E	(1553037.88,3797919.50)	(1553308.75,3797913.25)	600 EAST SEWER ALIGNMENT
L4	440.16	N1° 32' 45.17"E	(1553308.75,3797913.25)	(1553320.63,3798353.25)	600 EAST SEWER ALIGNMENT
L5	44.52	S88° 45' 06.53"E	(1553320.63,3798353.25)	(1553365.14,3798352.28)	600 EAST SEWER ALIGNMENT

NOTES:

1. ALL CONTROL IS TIED TO LOGAN CITY MONUMENTS.
2. DIGITAL FILES IN CIVIL 3D (2017) MAY BE PROVIDED TO THE SURVEYOR TO SIMPLIFY STAKING. DESIGN FILES INCLUDE ALIGNMENTS AND PROFILES.

SHEET NO: S1

SCALE NO SCALE
VERIFY SCALE 1"
SCALE = 1/2 SHOWN SCALE IF PLOTTED ON B SIZE PAPER

REVISION BLOCK: FINAL

DATE: 28-Feb-19
ENG #: 18061

DESIGNED: TCADY
DRAFTED: TCADY
CHECKED: B. YOUNG

600 E 1200 N SEWER REPLACEMENT

SURVEY CONTROL

LOGAN CITY ENGINEERING
290 NORTH 100 WEST
LOGAN, UTAH 84321

LOGAN CITY UNITED IN SERVICE PUBLIC WORKS DEPARTMENT

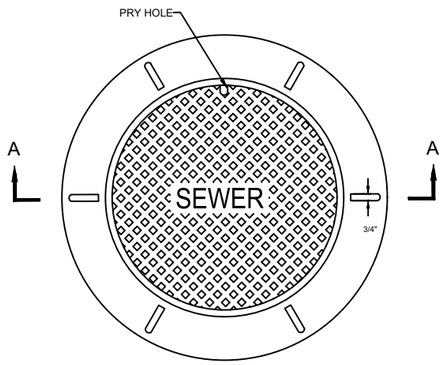
PRINT DATE/TIME: 2/28/19 3:12 PM

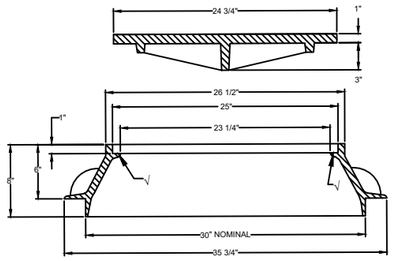
PROJECT FILE LOCATION: G:\pubfow\Engineer\00 Engineering File System\PROJECTS 2018\ENG18061 600 E 1200 N to 1150 N Sewer Line Project\Design (CAD Files)\Design Sheets.dwg

30" Frame and cover

1. GENERAL
   A. The frame and cover fits the manhole in Plan 411.
2. PRODUCTS
   A. Castings: Grey iron class 35 minimum per ASTM A 48, coated with asphalt based paint or better (except on machined surfaces).
      1) Cast the heat number on the frame and cover.
      2) Give the frame and cover a machine finish so the cover will not rock.
      3) Designates a machine finished surface.
      4) Cast the words "SEWER" on the cover in upper case flush with the surface finish.
      5) Vent holes
3. EXECUTION
   A. Except in paved streets, provide locking manhole covers in easements, alleys, parking lots, and all other places, if required by CITY ENGINEER. Drill and tap two holes to a depth of 1-inch at 90 degrees to pry hole and install 3/4 x 3/4-inch allen socket set screws.

TYPE A

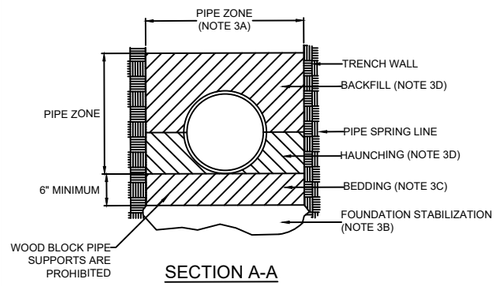




SECTION A-A

A / - SEWER MANHOLE LID DETAIL
NTS

ELEVATION VIEW



SECTION A-A

INSTALLATION

CONCRETE PIPE: FOLLOW ASTM C 1479
"STANDARD PRACTICE FOR INSTALLATION OF PRECAST CONCRETE SEWER, STORM DRAIN, AND CULVERT PIPE USING STANDARD INSTALLATIONS."

PVC AND HDPE PIPE: FOLLOW ASTM D 2321
"STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS"

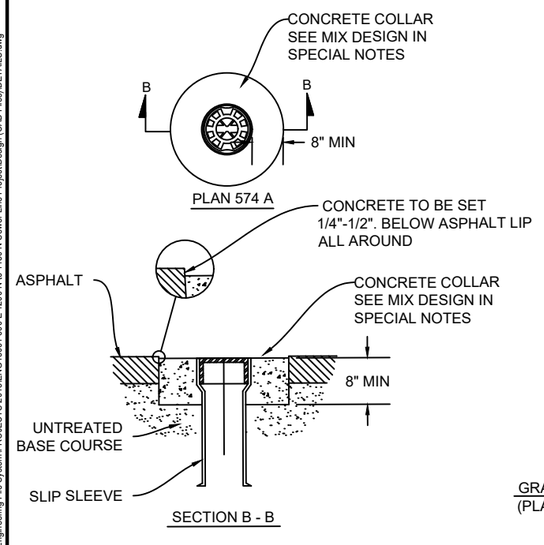
CORRUGATED METAL PIPE: FOLLOW ASTM A 798
"STANDARD PRACTICE FOR INSTALLING FACTORY-MADE CORRUGATED STEEL PIPE FOR SEWERS AND OTHER APPLICATIONS."

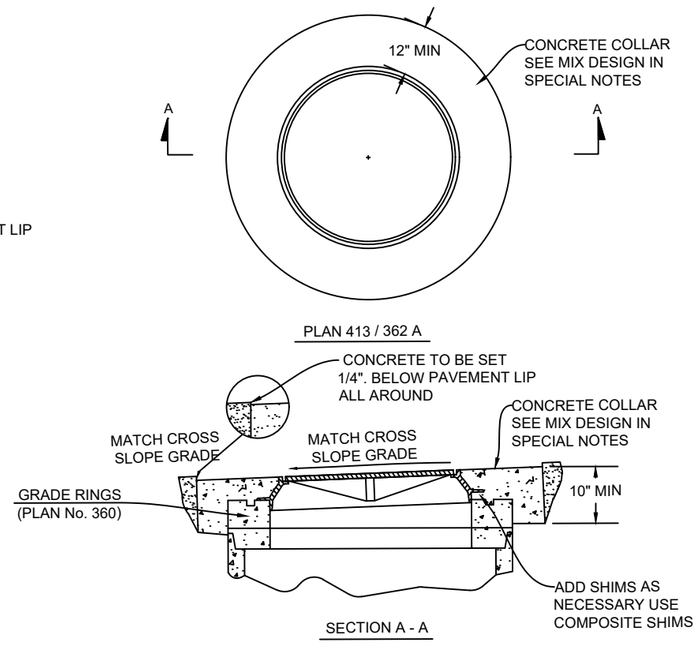
VITRIFIED CLAY PIPE: FOLLOW ASTM C 12
"STANDARD RECOMMENDED PRACTICE FOR INSTALLING VITRIFIED CLAY PIPE LINES."

B / - SEWER PIPE ZONE DETAIL
NTS

Pipe zone backfill

1. GENERAL
   A. Install the pipe in the center of the trench or no closer than 6-inches from the wall of the pipe to the wall of the trench.
   B. Refer to City amended pipe laying flow chart.
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 2-inches.
   C. Concrete: APWA Section 03 30 04.
   D. Flowable Fill: Target is 60 psi in 28 days with 90 psi maximum in 28 days, APWA Section 31 05 15. It must flow easily requiring no vibration for consolidation.
   E. Stabilization-Seperation Geotextile: Moderate or high at CONTRACTOR's choice, APWA Section 31 05 19.
3. EXECUTION
   A. Excavate the Pipe Zone: Width is measured at the pipe spring line and includes any necessary sheathing. Provide width recommended by pipe manufacturer. Follow manufacturer's recommendations when using trench boxes.
   B. Foundation Stabilization: Get ENGINEER's permission before installing common fill. Vibrate to stabilize. Installation of stabilization-separation geotextile will be required to separate backfill material and native subgrade materials if common fill cannot provide a working surface or prevent soils migration.
   C. Base Course:
      1) Furnish untreated base course material unless specified otherwise by pipe manufacturer.
      2) Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
      3) When using concrete, provide at least Class 2,000 per APWA Section 03 30 04.
   D. Pipe Zone: DO NOT USE sewer rock, pea gravel, or recycled RAP aggregate in the pipe zone. Water jetting is NOT allowed.
      1) Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26 unless pipe manufacturer requires more stringent installation.
      2) Submission of quality control compaction test result data developed for haunch zone may be requested by ENGINEER at any time. CONTRACTOR is to provide results of test immediately upon request.
      3) Wood block pipe supports are prohibited.
   E. Flowable Fill (when required and if allowed by pipe manufacture):
      1) Place the controlled low strength material, APWA Section 31 05 15.
      2) Prevent pipe flotation by installing in lifts and providing pipe restraints as required by pipe manufacturer.
      3) Reset pipe to line and grade if pipe "floats" out of position.

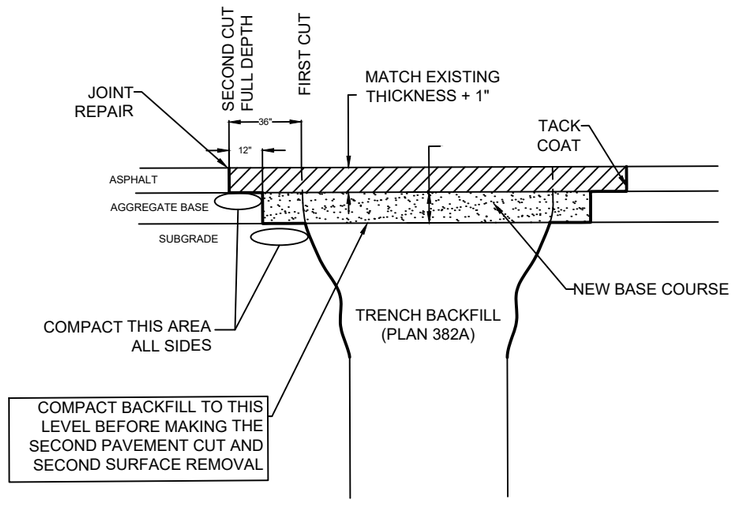




C / - MANHOLE AND WATERVALVE CONCRETE COLLAR
NTS

DEEP EXCAVATION

(MORE THAN 48 INCHES FROM PAVEMENT SURFACE TO BOTTOM OF EXCAVATION)



D / - T-PATCH FOR DEEP EXCAVATION
NTS

SHEET NO: DT-01

NTS

REVISION BLOCK:

DATE: Feb. 28, 19
ENG #: 18061
DESIGNED: TCADY
DRAFTED: TCADY
CHECKED: BYOUNG

600 E 1200 N SEWER REPLACEMENT

DETAILS

LOGAN CITY ENGINEERING
290 NORTH 100 WEST
LOGAN, UTAH 84321

LOGAN CITY UNITED IN SERVICE
PUBLIC WORKS DEPARTMENT

PRINT DATE/TIME: 2/28/19 2:37 PM

Sanitary sewer manhole

1. GENERAL
   - A. The drawing shows typical pipe connections. Refer to construction drawings for connection locations or refer to field location of existing piping when engineering pipe connection to the manhole.
   - B. Manhole size:
     1) Diameter is 4-feet: For sewers under 12" diameter and 2 or less pipes intersect the manhole.
     2) Diameter is 5-feet: For sewers 12" and larger, or when 3 or more drain pipes intersect the manhole.
   - C. Wall thickness:
     1) Wall thickness, floor thickness and steel reinforcing in accordance with HS-20 Loading. Provide shop drawing s for approval.

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: Granular Backfill Barrow, APWA Section 31 05 13. Maximum particle size 3-inches.
   - C. Concrete: Class 4000, APWA Section 03 30 04.
   - D. Riser and Reducing Riser: ASTM C 478.
   - E. Joint Sealant: Rubber based, compressible.
   - F. Reinforcement: Deformed, 60 ksi yield grade steel, ASTM A 615.
   - G. Grout: Cement Based Shrinkage Resistant Grout. APWA 03 61 00.
   - H. Stabilization-Separation Geotextile: Moderate or high at CONTRACTOR's choice, APWA Section 31 05 19.

3. EXECUTION
   - A. Foundation Stabilization: Get ENGINEER's permission to use a sewer rock or a sewer rock in a geotextile wrap to stabilize an unstable foundation.
   - B. Base Course Placement: APWA Section 32 11 23. Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
   - C. Invert Cover: During construction, place invert covers over the top of pipe in manholes that currently convey sewerage. See Plan 412.
   - D. Pipe Connections: Grout around all pipe openings.
   - E. Pipe Seal: Install rubber-based pipe seals on all plastic pipes when connecting plastic pipes to manholes. Hold water-stop in place with stainless steel bands.
   - F. Rotate Eccentric Riser to Align With Steps.
   - G. Joints: Place flexible gasket-type sealant in all riser joints. Finish with grout.
   - H. Adjustment: If the required manhole adjustment is more than 1'-0", remove the cone and grade rings and adjust the manhole elevation with the appropriate manhole section, the cone section, and the grade rings or plastic form to make frame and lid match finish grade.
   - I. Finish: Provide smooth and neat finishes on interior of cones, shafts, and rings. Imperfect moldings or honeycombs will not be accepted.
   - J. Backfill: Provide backfill against the manhole shaft. Pea gravel and recycled RAP aggregate is NOT ALLOWED. Water jetting is NOT allowed. 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.

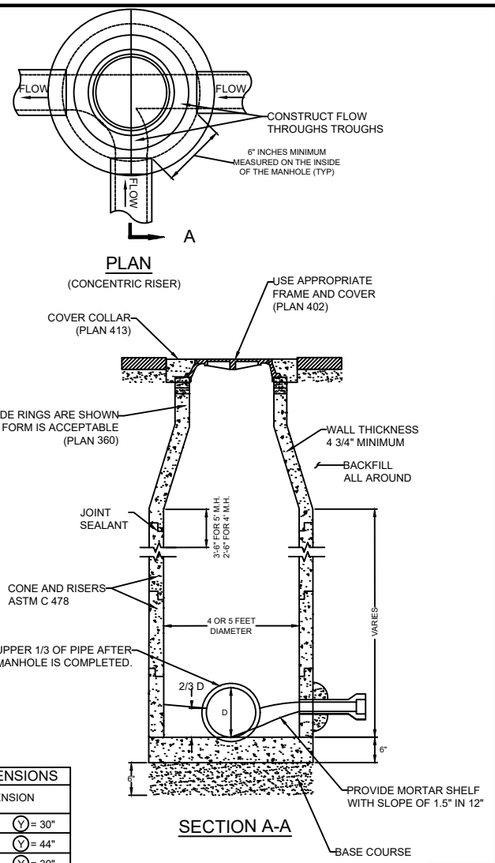
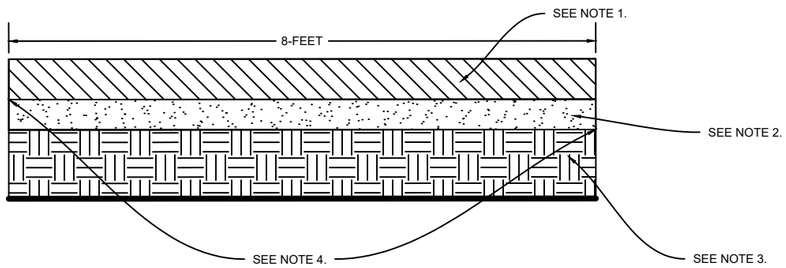


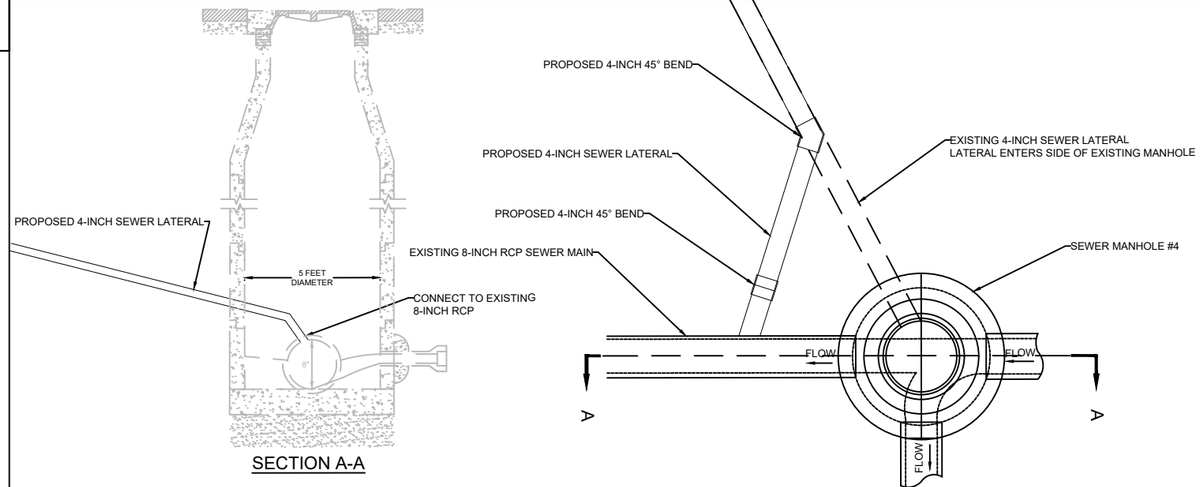
TABLE OF DIMENSIONS	
MANHOLE STYLE	DIMENSION
A	(X) = 48" (Y) = 30"
B	(X) = 60" (Y) = 44"
C	(X) = 60" (Y) = 30"

A
-
SEWER MANHOLE DETAIL
NTS



NOTES.
1. CONSTRUCT COMPACTED HOT MIX ASPHALT 4-INCH THICK IN ROADWAYS WINTHIN LOGAN CITY RIGHT OF WAY (ROW). MAINTAIN FINISHED GRADE $\frac{1}{4}$-INCH TO $\frac{1}{2}$-INCH ABOVE LIP OF GUTTER.
2. CONSTRUCT 6.0-INCH THICK UNTREATED BASE COURSE (UTBC).
3. GRANULAR BARROW IS INCLUDED IN THE GRANULAR BORROW ITEM. GRANULAR BORROW SHOULD BE FROM THE TOP OF PIPE ZONE TO BOTTOM OF UTBC.
4. FULL TRENCH WIDTH.

B
-
ASPHALT CROSS SECTION
NTS



NOTES.
1. SEWER LATERAL IS INTENDED TO BE CONNECTED TO THE EXISTING 8-INCH RCP SEWER MAIN DOWN STREAM OF PROPOSED 5-FOOT MANHOLE.
2. THE SEWER LATERAL CONNECTION WILL NEED TO BE EVALUATED IN THE FIELD BY CONTRACTOR AND ENGINEER.
3. EXCAVATION WILL NEED TO BE DONE AT THE BEGINNING OF THE PROJECT TO EVALUATE THE CORRECT ELEVATION AND LOCATION TO CONNECT TO SEWER LATERAL.

C
-
MANHOLE #4 AND SEWER LATERAL DETAIL
NTS

SHEET NO: DT-02

NTS

REVISION BLOCK:

DATE: Feb. 28, 19
ENG.#: 18061
DESIGNED: TCADY
DRAFTED: TCADY
CHECKED: BYOUNG

600 E 1200 N SEWER REPLACEMENT

DETAILS CONTINUED

LOGAN CITY ENGINEERING
290 NORTH 100 WEST
LOGAN, UTAH 84321

LOGAN CITY UNITED IN SERVICE PUBLIC WORKS DEPARTMENT

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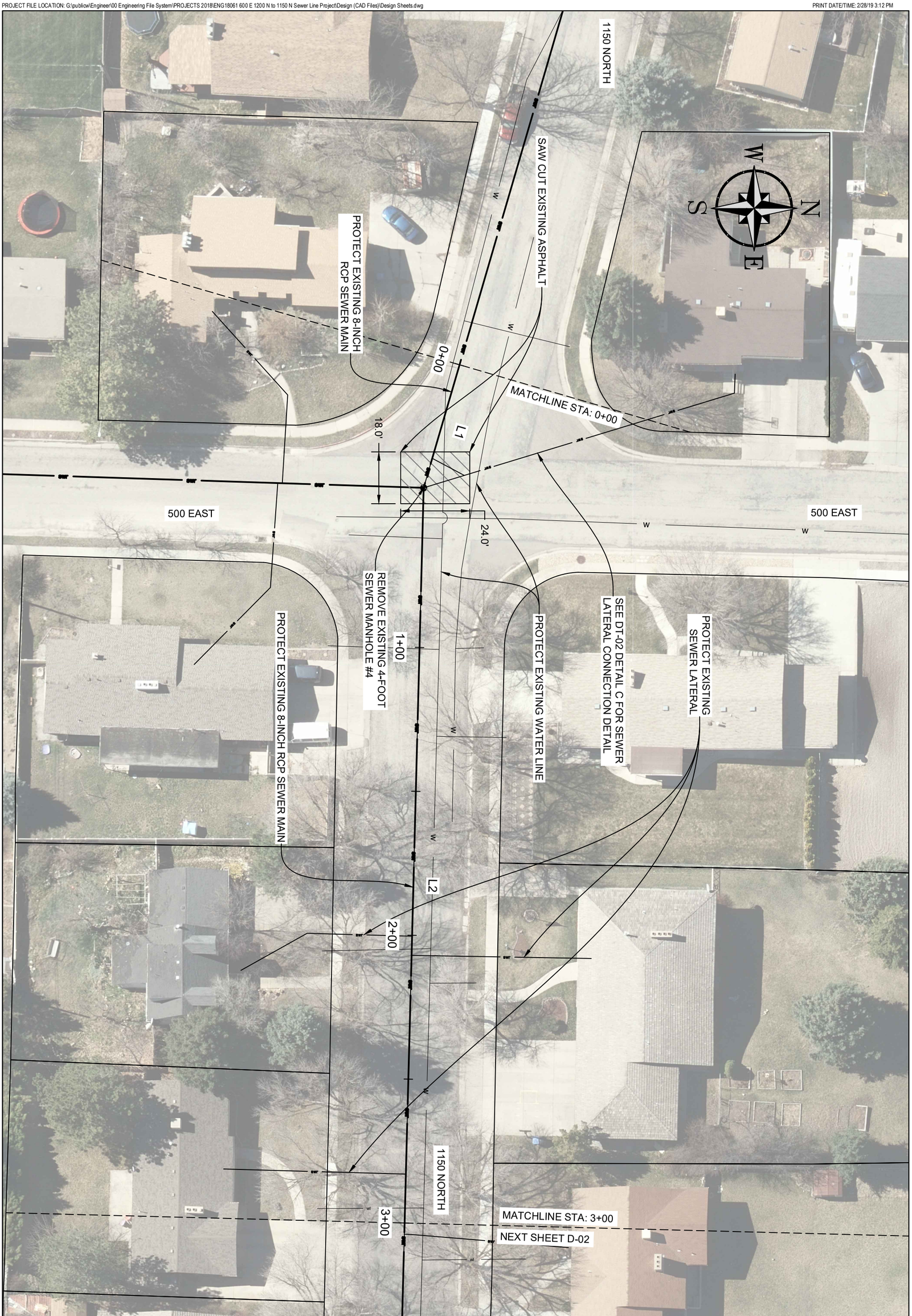


LOGAN CITY ENGINEERING
290 NORTH 100 WEST
LOGAN, UTAH 84321

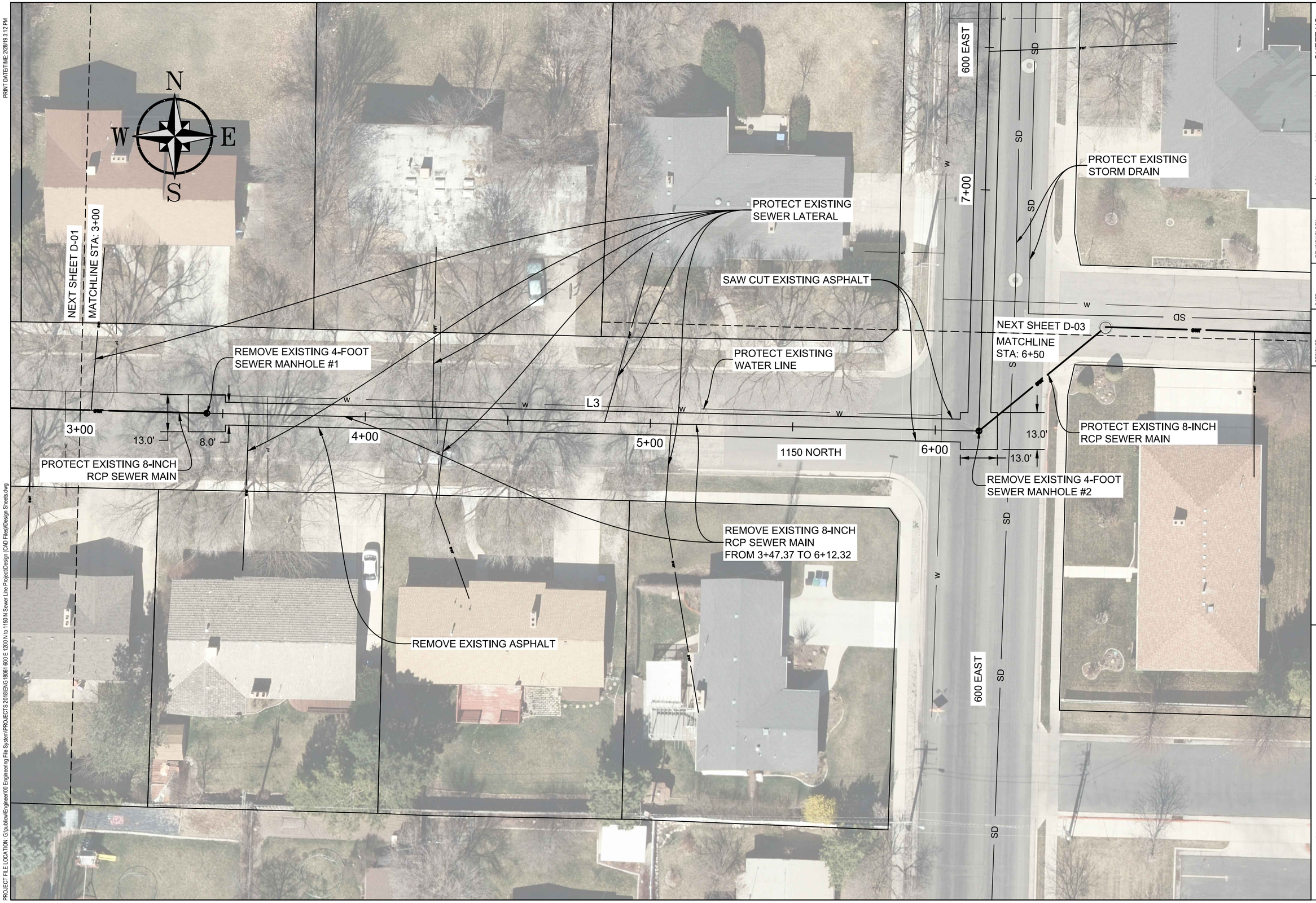
600 E 1200 N SEWER REPLACEMENT

DEMOLITION SHEETS
STA 0+00 TO STA 3+00

DESIGNED: TCADY	DATE: 28-Feb-19	REVISION BLOCK: ##
DRAFTED: TCADY	ENG #: 18061	
CHECKED: B. YOUNG		

30' 15' 0'
1" = 30'
SCALE

SHEET NO:
D-01



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SHEET NO: D-02

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1" = 30'
SCALE

REVISION BLOCK: ##

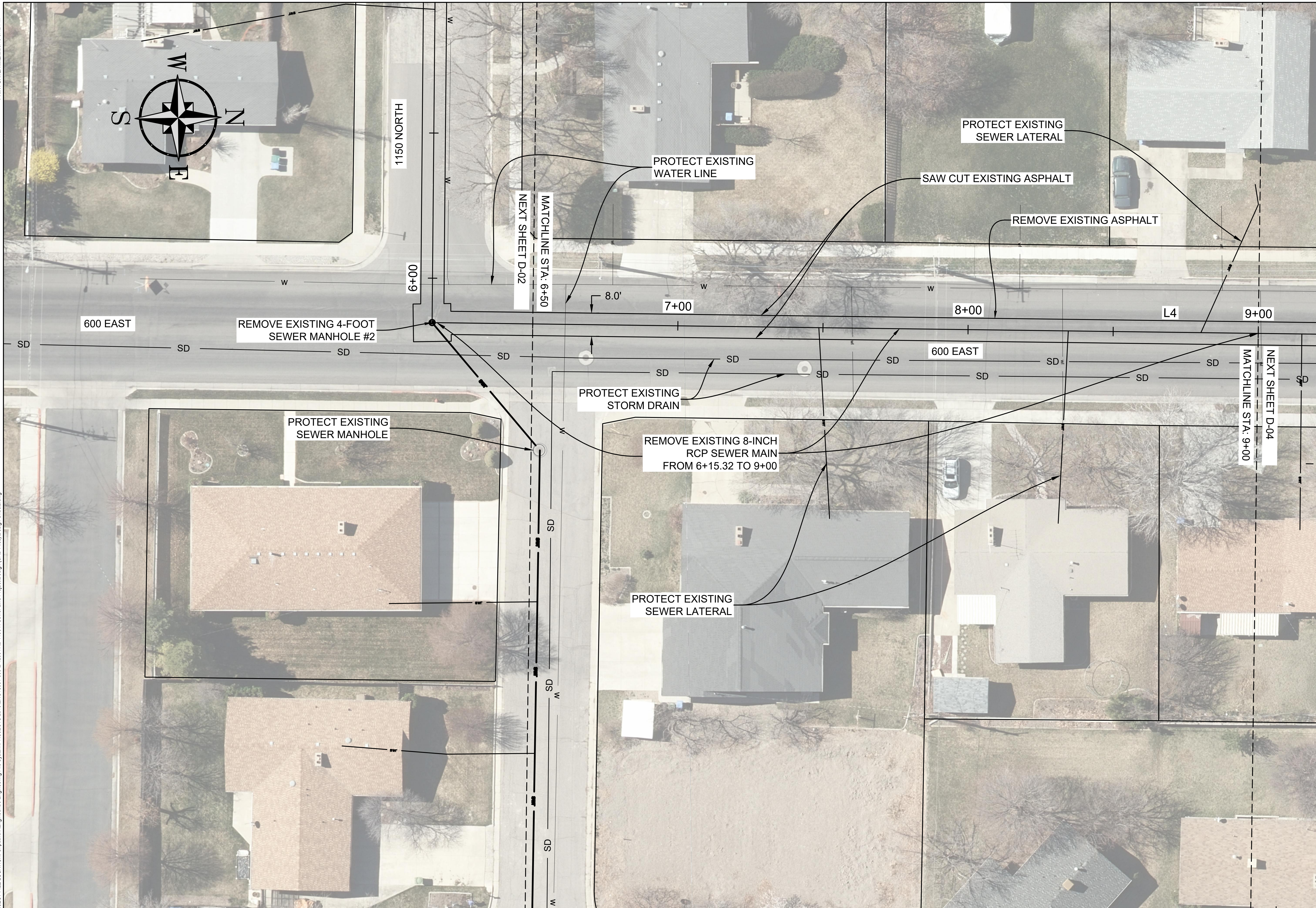
DATE: 28-Feb-19
ENG #: 18061
DESIGNED: TCADY
DRAFTED: TCADY
CHECKED: B. YOUNG

600 E 1200 N SEWER REPLACEMENT

DEMOLITION SHEETS
STA 3+00 TO STA 6+50

LOGAN CITY ENGINEERING
290 NORTH 100 WEST
LOGAN, UTAH 84321

LOGAN CITY UNITED IN SERVICE
PUBLIC WORKS DEPARTMENT



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SHEET NO: D-03

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1" = 30'
SCALE

REVISION BLOCK: ##

DATE: 28-Feb-19
ENG #: 18061

DESIGNED: TCADY
DRAFTED: TCADY
CHECKED: B. YOUNG

600 E 1200 N SEWER REPLACEMENT

DEMOLITION SHEETS
STA 6+50 TO STA 9+00

LOGAN CITY ENGINEERING
290 NORTH 100 WEST
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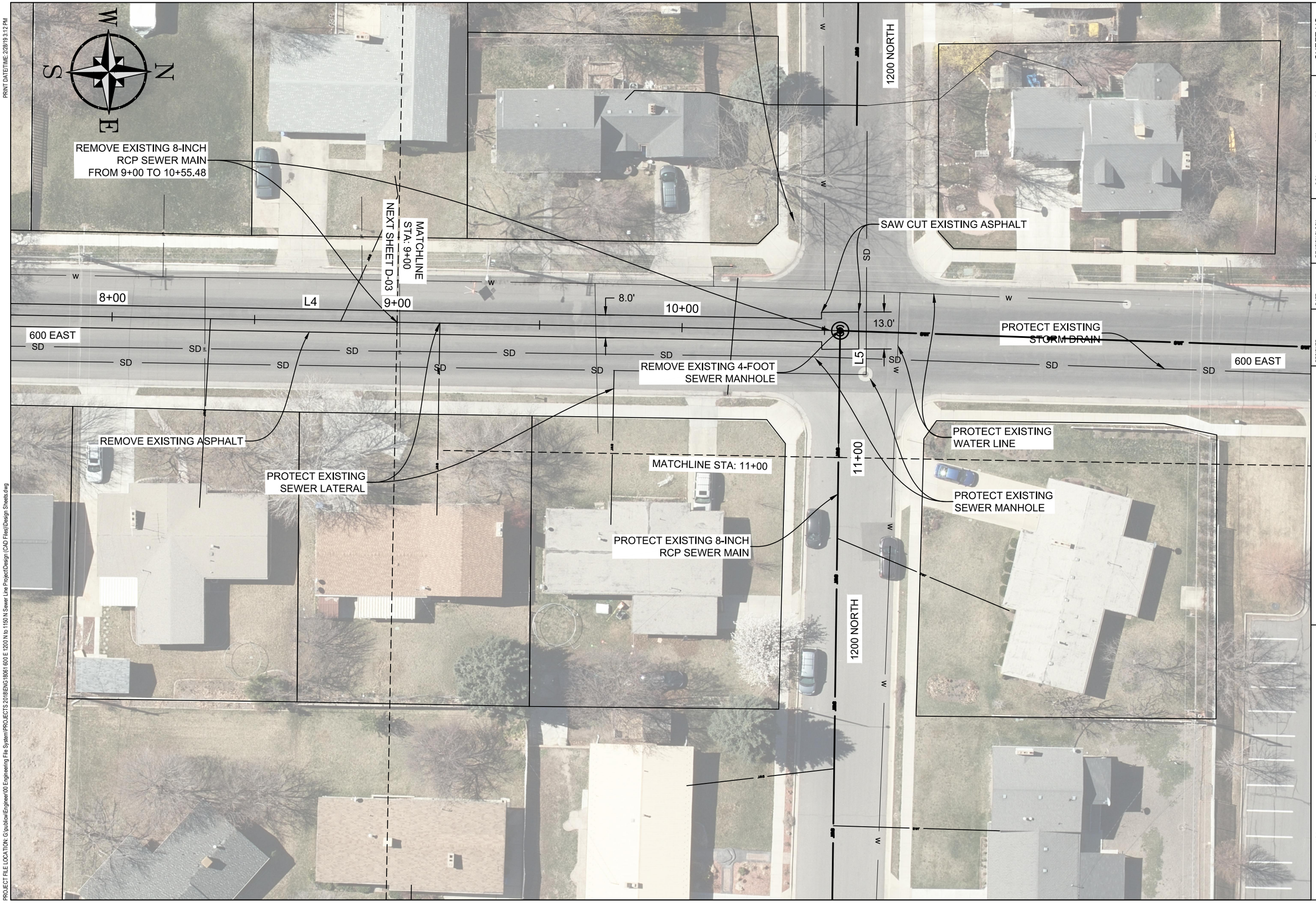

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SHEET NO: D-04

0' 15' 30'
1" = 30'
SCALE

REVISION BLOCK:
| | |

DESIGNED: TCADY	DRAFTED: TCADY	CHECKED: B. YOUNG
DATE: 28-Feb-19	ENG #: 18061	

600 E 1200 N SEWER REPLACEMENT

DEMOLITION SHEETS
STA 9+00 TO STA 11+00

LOGAN CITY ENGINEERING
290 NORTH 100 WEST
LOGAN, UTAH 84321

LOGAN CITY UNITED IN SERVICE
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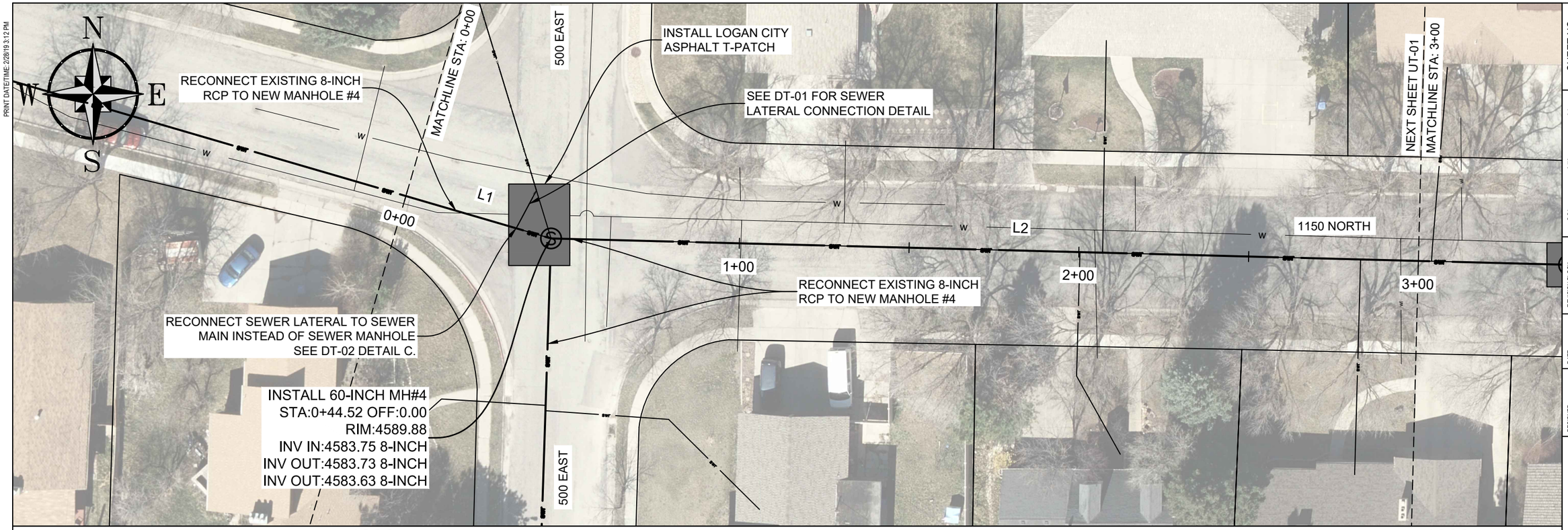
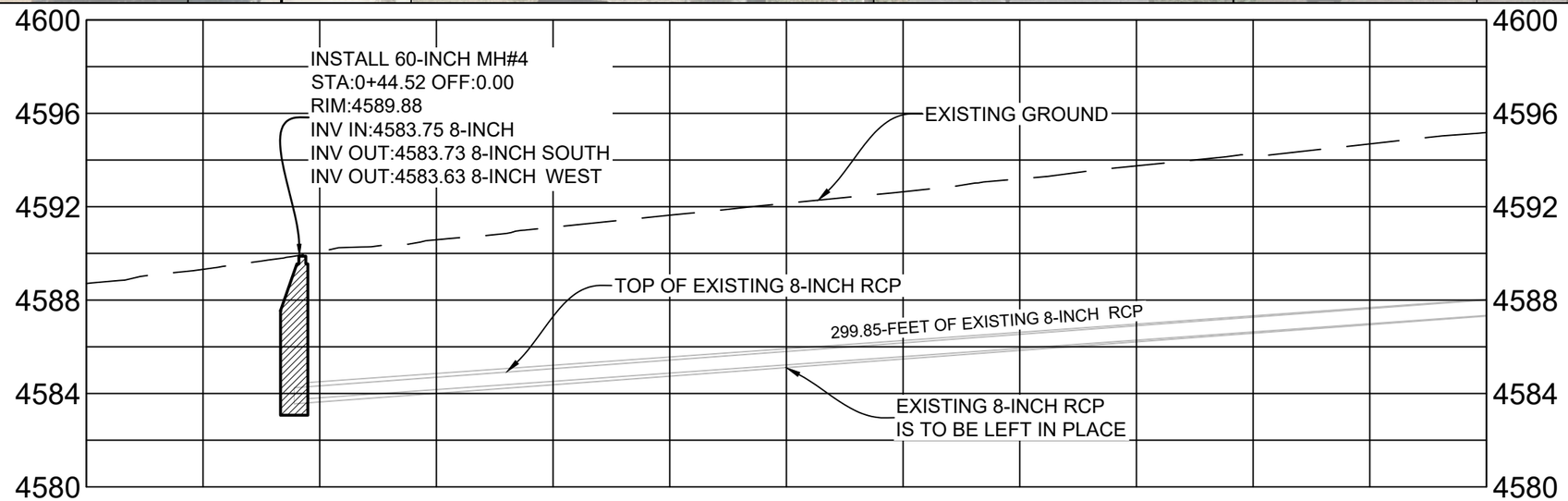


NOTES:

1. CUT DEPTH ON PROFILE ELEVATIONS ARE SHOWN TO TOP OF EXISTING 8-INCH RCP PIPE.
2. EXISTING UTILITIES NOT SHOWN IN PROFILE VIEW. CONTRACTORS RESPONSIBILITY TO VERIFY LOCATION OF EXISTING UTILITIES.
3. SEE DT-01 FOR DETAILS ON 4-INCH SEWER LATERAL CONNECTION. EXISTING CONDITION 4-INCH LATERAL CONNECTS DIRECTLY TO EXISTING SEWER MANHOLE #4. LOGAN CITY WOULD LIKE IT TO CONNECT DIRECTLY TO THE SEWER MAIN DOWN STREAM OF THE NEW SEWER MANHOLE #4.



4588.707	4584.34	4590.084	4585.08	4591.121	4585.81	4592.148
	-5.74		-6.05		-6.34	
0+00	0+50		1+00		1+50	

4586.55	4593.193	4587.28	4594.185	4588.02	4595.179
-6.65		-6.90		-7.16	
2+00		2+50		3+00	

SHEET NO: UT-01

0' 15' 30'
1" = 30'
SCALE

REVISION BLOCK:
| | | |

DATE: 28-Feb-19 | ENG.#: 18061 |

DESIGNED: TCADY | DRAFTED: TCADY | CHECKED: B. YOUNG

600 E 1200 N SEWER REPLACEMENT

UTILITY SHEETS
STA 0+00 TO STA 3+00

LOGAN CITY ENGINEERING
290 NORTH 100 WEST
LOGAN, UTAH 84321

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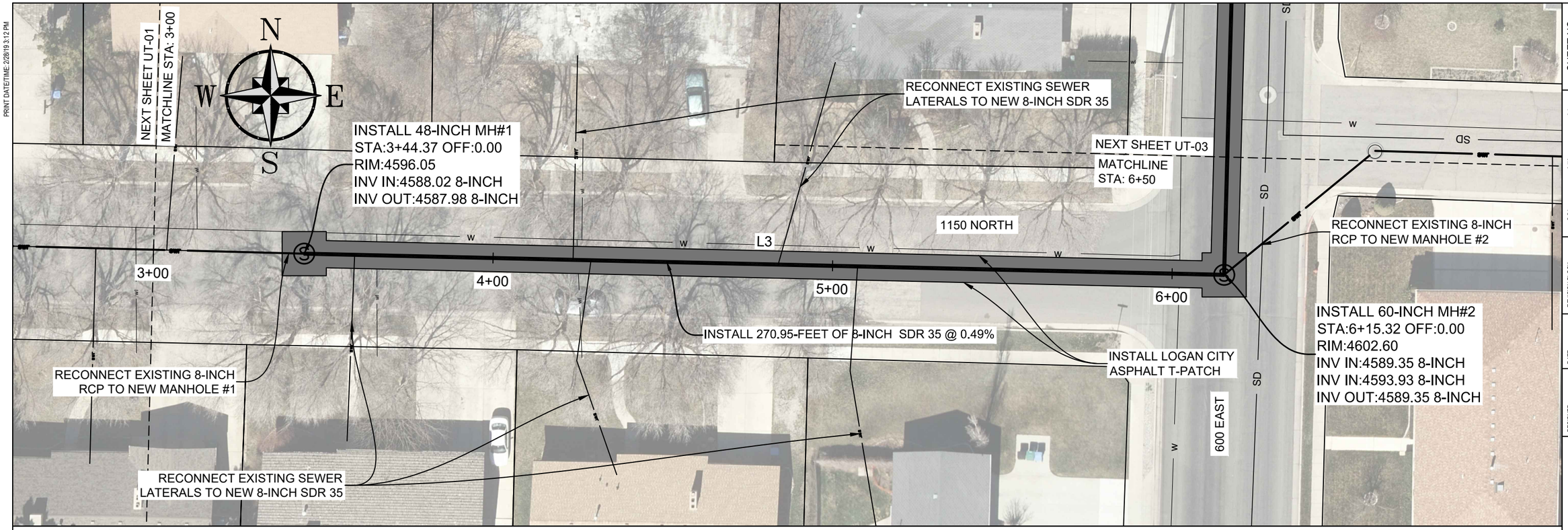

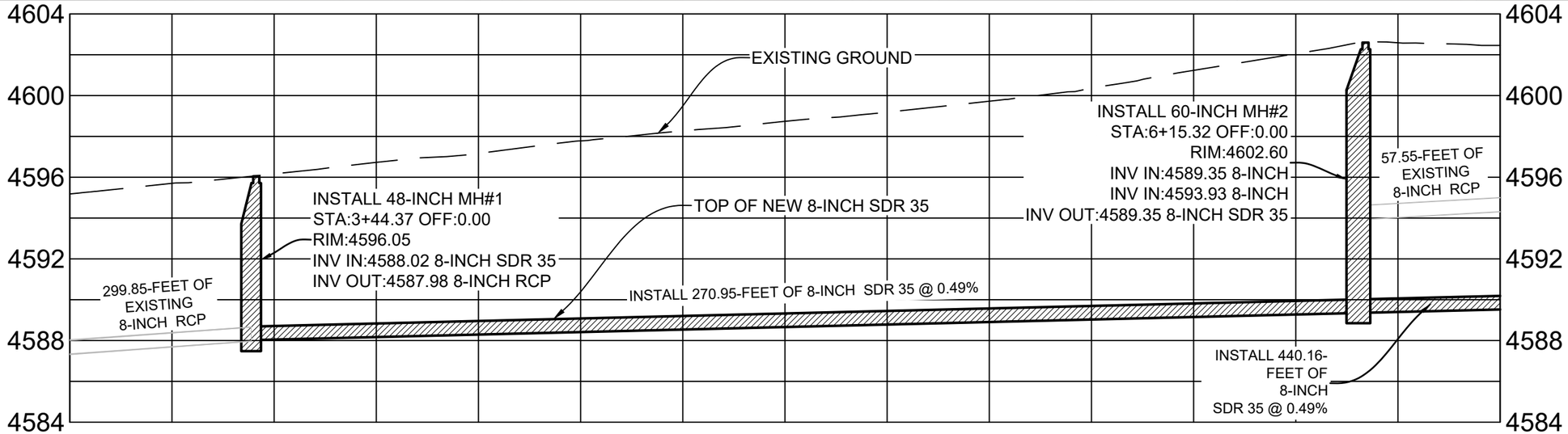

4588.02	4595.179	4588.72	4596.164	4588.96	4597.165	4589.21	4598.269	4589.45	4599.188	4589.70	4600.361	4589.94	4602.048	4590.19	4602.458
-7.16		-7.44		-8.20		-9.06		-9.73		-10.66		-12.11		-12.27	
3+00		3+50		4+00		4+50		5+00		5+50		6+00		6+50	

NOTES:

1. CUT DEPTH ON PROFILE ELEVATIONS ARE SHOWN TO TOP OF EXISTING 8-INCH RCP PIPE AND PROPOSED 8-INCH SDR 35.
2. EXISTING UTILITIES NOT SHOWN IN PROFILE VIEW. CONTRACTORS RESPONSIBILITY TO VERIFY LOCATION OF EXISTING UTILITIES.
3. RECONNECT EXISTING SEWER LATERALS TO NEW 8-INCH SDR 35.

SHEET NO: UT-02

0' 15' 30'
1" = 30'
SCALE

REVISION BLOCK:
| | |

DATE: 28-Feb-19
ENG #: 18061

DESIGNED: TCADY
DRAFTED: TCADY
CHECKED: B. YOUNG

600 E 1200 N SEWER REPLACEMENT

UTILITY SHEETS
STA 3+00 TO STA 6+50

LOGAN CITY ENGINEERING
290 NORTH 100 WEST
LOGAN, UTAH 84321

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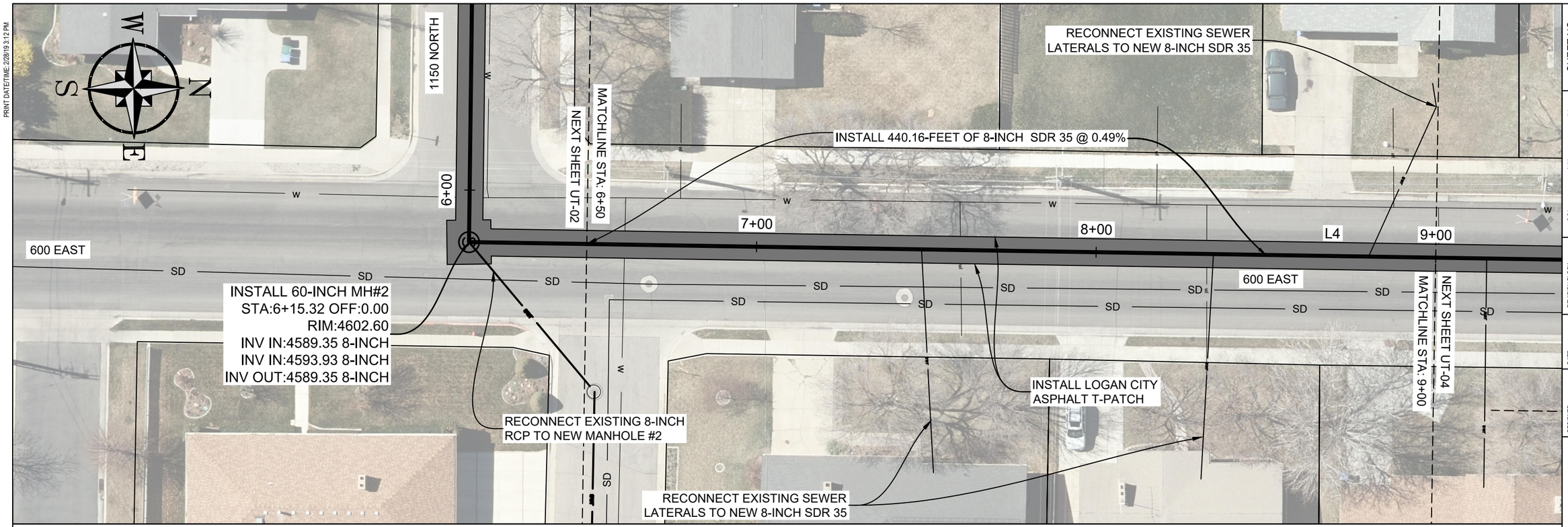
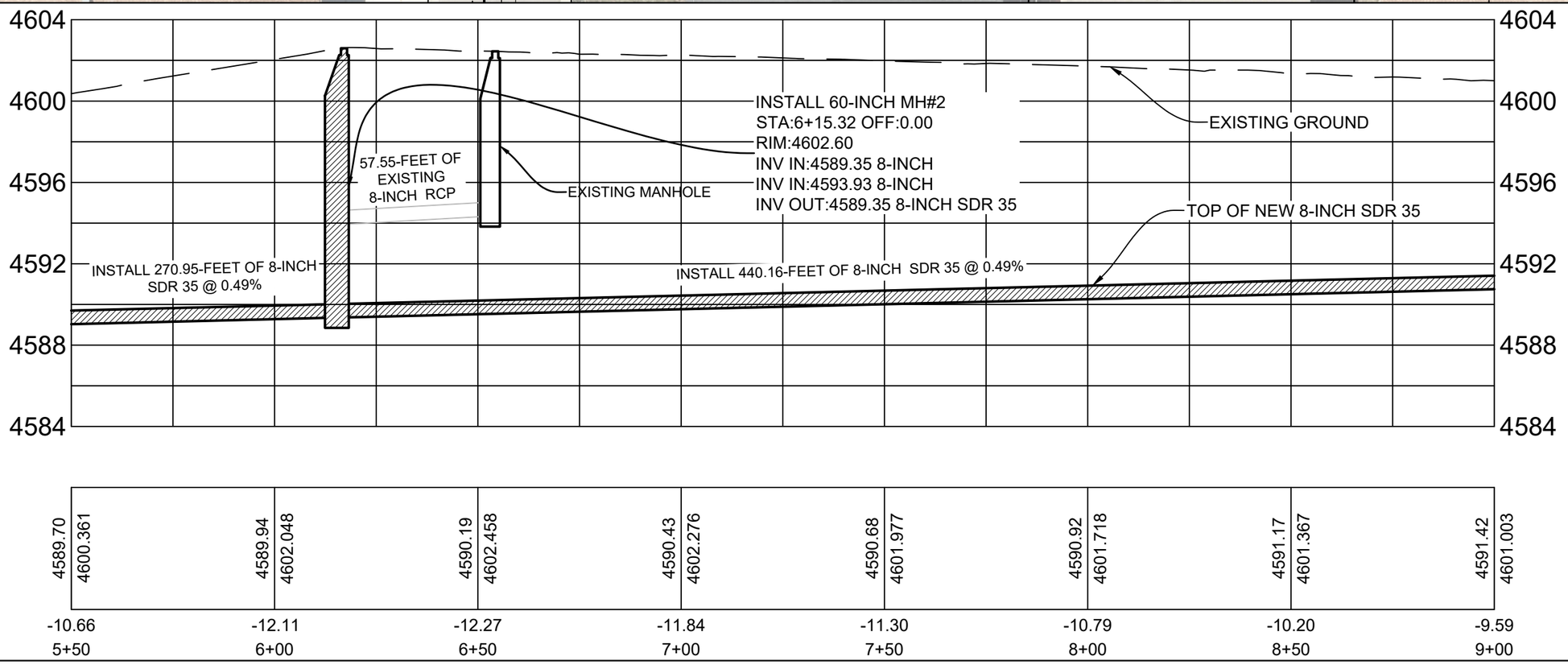


NOTES:

1. CUT DEPTH ON PROFILE ELEVATIONS ARE SHOWN TO TOP OF PROPOSED 8-INCH SDR 35 PIPE.
2. EXISTING UTILITIES NOT SHOWN IN PROFILE VIEW. CONTRACTORS RESPONSIBILITY TO VERIFY LOCATION OF EXISTING UTILITIES.
3. RECONNECT EXISTING SEWER LATERAL TO NEW 8-INCH SDR 35.



SHEET NO: UT-03

0' 15' 30' 1" = 30' SCALE

REVISION BLOCK: ##

DATE: 28-Feb-19 | ENG #: 18061

DESIGNED: TCADY | DRAFTED: TCADY | CHECKED: B. YOUNG

600 E 1200 N SEWER REPLACEMENT

UTLILITY SHEETS
STA 6+50 TO STA 9+00

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290 NORTH 100 WEST
LOGAN, UTAH 84321

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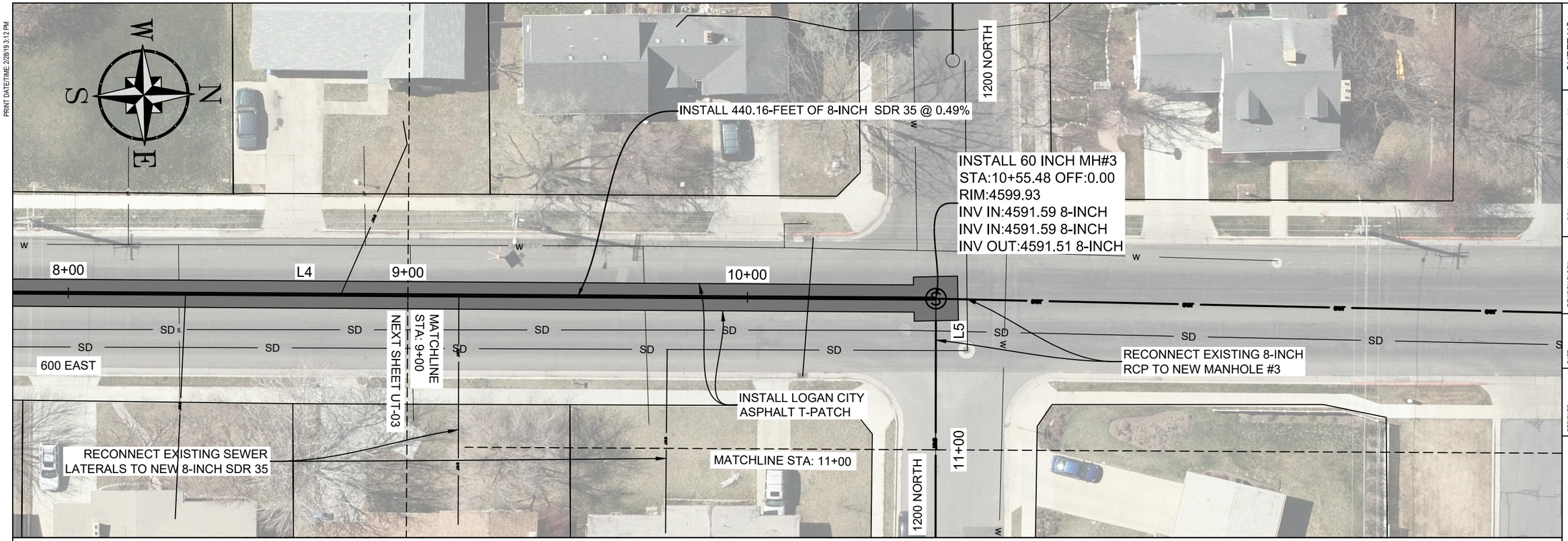

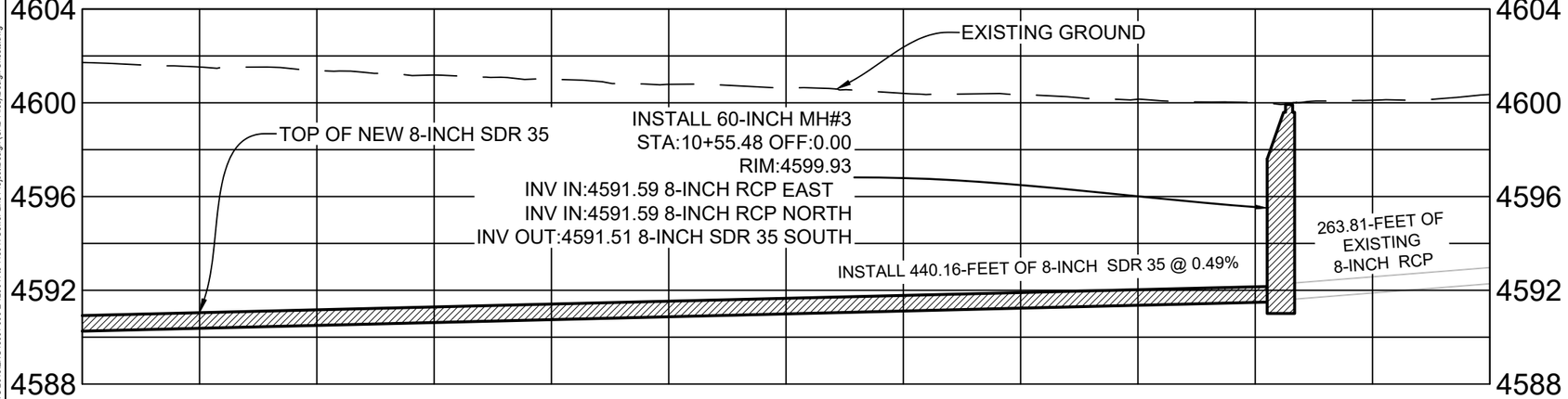

4590.92	4591.17	4591.42	4591.66	4591.91	4592.15	4592.98	
4601.718	4601.367	4601.003	4600.619	4600.344	4600.004	4600.356	
-10.79	-10.20	-9.59	-8.96	-8.44	-7.85	-7.38	
8+00	8+50	9+00	9+50	10+00	10+50	11+00	

NOTES:

1. CUT DEPTH ON PROFILE ELEVATIONS ARE SHOWN TO TOP OF PROPOSED 8-INCH SDR 35 PIPE.
2. EXISTING UTILITIES NOT SHOWN IN PROFILE VIEW. CONTRACTORS RESPONSIBILITY TO VERIFY LOCATION OF EXISTING UTILITIES.
3. RECONNECT EXISTING SEWER LATERAL TO NEW 8-INCH SDR 35.

SHEET NO: UT-04

0' 15' 30' 1" = 30' SCALE

REVISION BLOCK: ##

DATE: 28-Feb-19 | ENG #: 18061

DESIGNED: TCADY | DRAFTED: TCADY | CHECKED: B. YOUNG

600 E 1200 N SEWER REPLACEMENT

UTILITY SHEETS
STA 9+00 TO STA 11+00

LOGAN CITY ENGINEERING
290 NORTH 100 WEST
LOGAN, UTAH 84321

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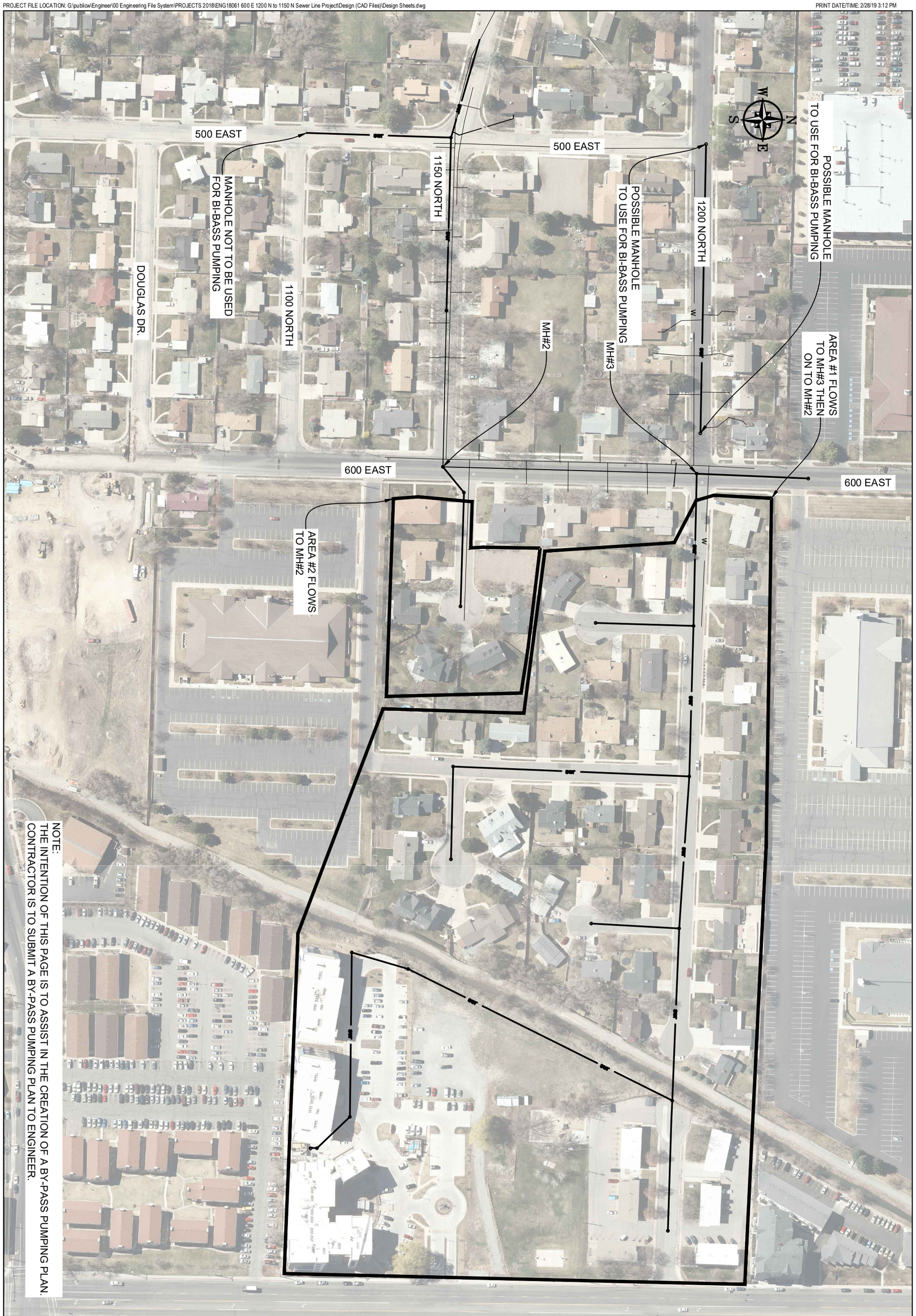

NOTE:
THE INTENTION OF THIS PAGE IS TO ASSIST IN THE CREATION OF A BY-PASS PUMPING PLAN. CONTRACTOR IS TO SUBMIT A BY-PASS PUMPING PLAN TO ENGINEER.

LOGAN CITY
UNITED IN SERVICE
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LOGAN CITY ENGINEERING
290 NORTH 100 WEST
LOGAN, UTAH 84321

600 E 1200 N SEWER REPLACEMENT

BI-PASS PUMPING MAP

DESIGNED: TCADY	DATE: 28-Feb-19	REVISION BLOCK: ##
DRAFTED: TCADY	ENG #: 18061	
CHECKED: B. YOUNG		

150' 75' 0'

1" = 150'

SCALE

SHEET NO:

BP-01