

OGDEN CITY

SA009 - SEWER CIP P.1-12TH ST/CENTURY DR TRUNK LINE CAPACITY - PHASE 1
ADDENDUM NO 3 - FEB 13, 2026

OGDEN CITY

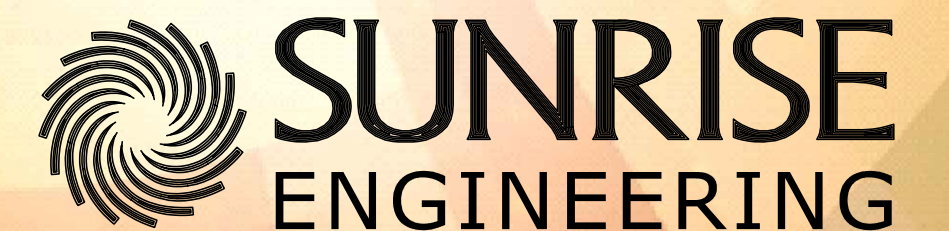
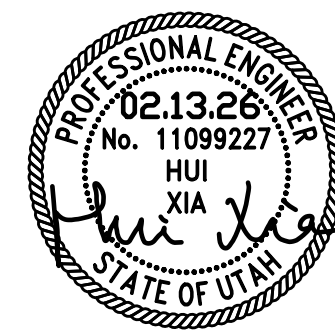
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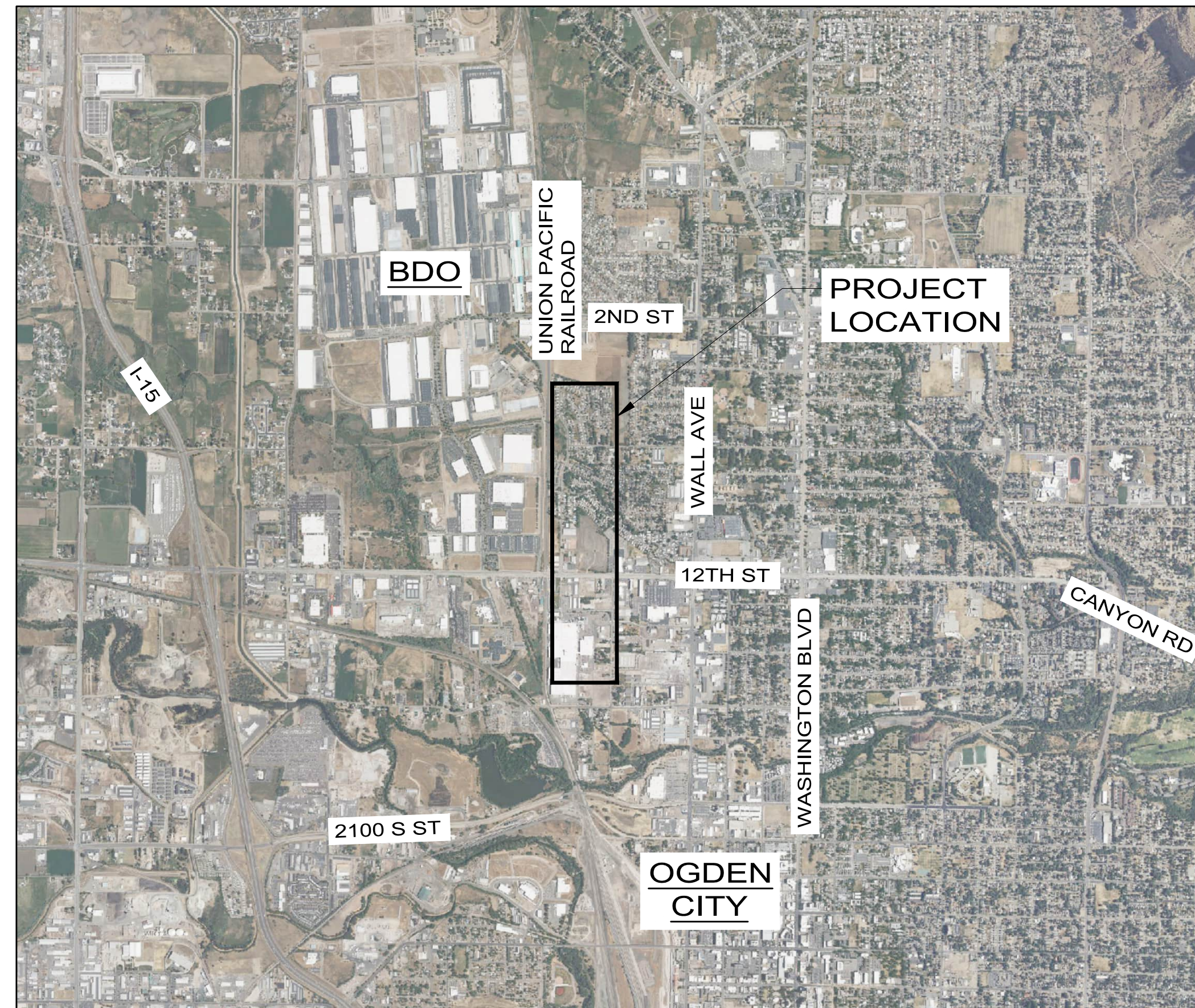
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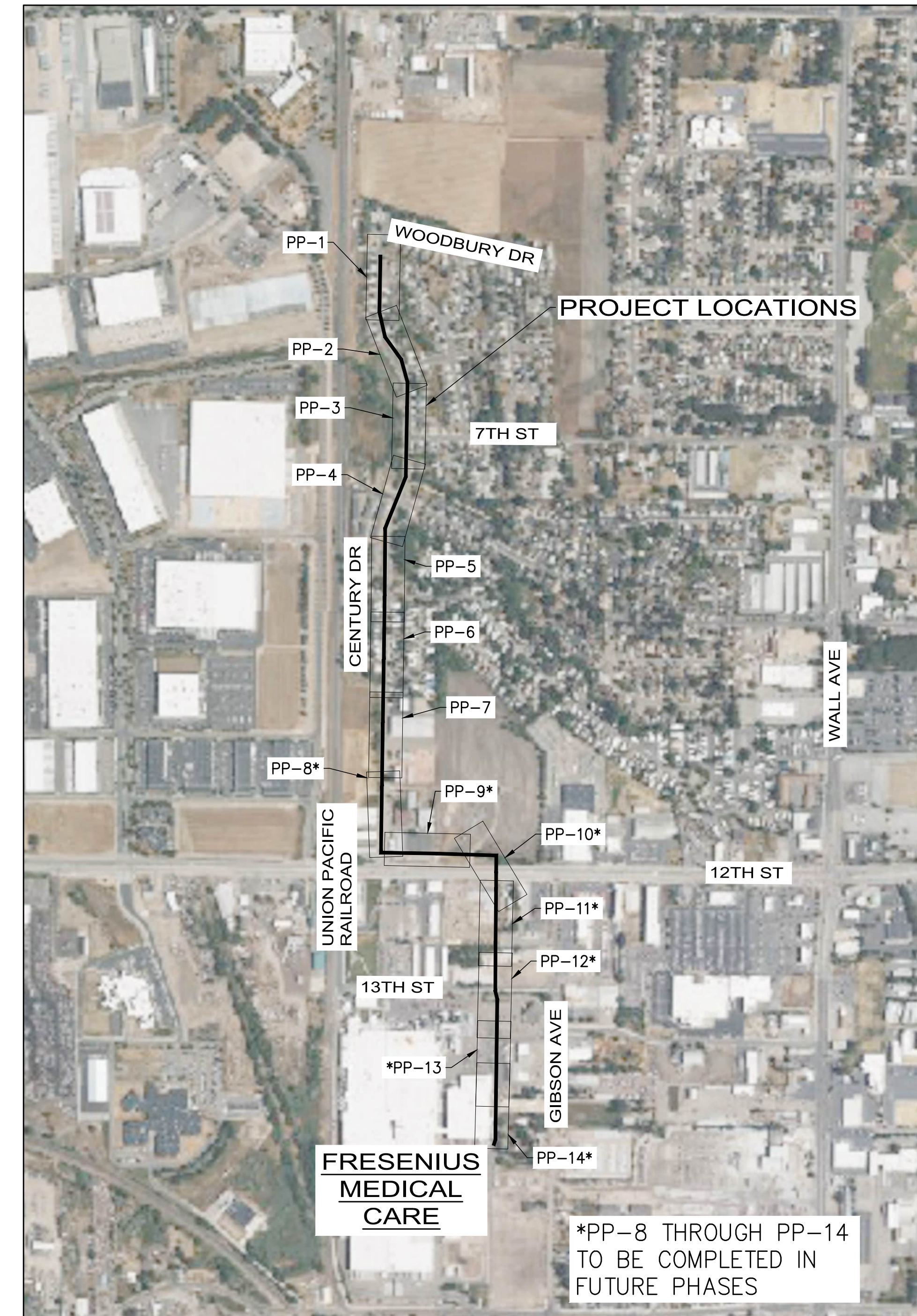
6875 SOUTH 900 EAST
SALT LAKE CITY, UTAH 84047
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PROJECT AREA MAP
NO SCALE

SHEET INDEX

| | | |
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PROJECT LOCATION MAP
NO SCALE

| | | | | | |
|---|----------------|--|---------------|----------------------|------------|
| 2 | ADDENDUM NO 3 | 02-13-26 | | | |
| 1 | ADDENDUM NO 1 | 02-10-26 | | | |
| REV NO. | COMMENT | DATE | | | |
| | | <p>SUNRISE ENGINEERING 6875 SOUTH 900 EAST SALT LAKE CITY, UTAH 84047 TEL 801.523.0100 · FAX 801.523.0990 www.sunrise-eng.com</p> | | | |
| <p>OGDEN CITY</p> <p>12TH ST/CENTURY DR TRUNK LINE CAPACITY AREA MAP, LOCATION MAP, SHEET INDEX</p> | | | | | |
| SEI NO. 15684 | DESIGNED AX | DRAWN MB | CHECKED CL | SHEET NO. 2 of 18 | G-2 |

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GENERAL CONSTRUCTION NOTES

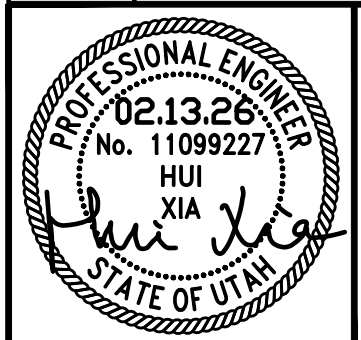
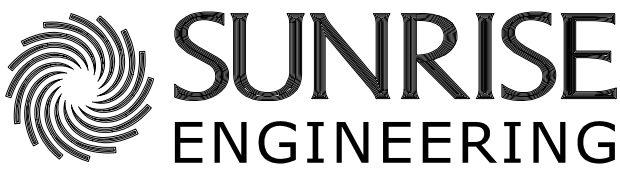
1. ALL CONSTRUCTION WORK SHALL BE PERFORMED WITHIN EXISTING CITY RIGHTS-OF-WAY OR EASEMENTS OBTAINED BY OGDEN CITY FOR CONSTRUCTION PURPOSES. THE WORK IS LOCATED WITHIN OGDEN CITY LIMITS AND MUST COMPLY WITH OGDEN CITY STANDARDS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL THE NECESSARY PERMITS AND PAY ASSOCIATED FEES.
2. ALL PIPELINES SHALL BE INSTALLED AT THE LOCATIONS AND ELEVATIONS AS SHOWN ON THE DRAWINGS OR AS OTHERWISE DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL VERIFY THE DEPTH ON ALL EXISTING SEWER CONNECTIONS & NOTIFY THE PROJECT ENGINEER OF ANY CHANGES BEFORE INSTALLATION.
3. ELEVATIONS AND DIMENSIONS ARE INDICATED ON THE PLANS AND SHALL NOT USE SCALED ELEVATIONS OR DIMENSIONS.
4. ALL PIPELINE AND MANHOLE PROFILE ELEVATIONS ARE SEWER INVERTS UNLESS NOTED OTHERWISE.
5. WITHIN PROJECT LIMITS THERE ARE CULINARY WATER SYSTEM, NATURAL GAS SYSTEM, UNDERGROUND AND OVERHEAD POWER SYSTEMS, TELEPHONE SYSTEMS AND OTHER EXISTING UTILITIES. THE CONTRACTOR HAS THE RESPONSIBILITY OF LOCATING ALL UNDERGROUND UTILITIES AND OVERHEAD UTILITIES AND PROTECTING THEM FROM DAMAGE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL UTILITIES BE PROTECTED, RESTORED, OR RELOCATED TO ORIGINAL CONDITION & SERVICEABILITY IF DISTURBED AS A RESULT OF THE CONSTRUCTION ACTIVITIES.
6. THE CONTRACTOR SHALL INSTALL GRADE RINGS ON MANHOLES TO MATCH FINISH GRADE OF STREETS, SHOULDERS, FIELDS, ETC. GRADE RINGS SHALL NOT EXCEED 6" IN HEIGHT UNLESS APPROVED BY THE ENGINEER.
7. TYPICAL SEWER SERVICE LATERALS ARE 4" AND 6" DIAMETER UNLESS NOTED OTHERWISE.
8. THE CONTRACTOR SHALL INSTALL TREATED WOOD 2X4 MARKERS AT THE ENDS OF ALL SERVICE LATERALS.
9. THE APPROXIMATE LOCATION OF UTILITIES ARE SHOWN ON THE PLANS BASED ON THE RECORD DRAWINGS FROM THE RESPECTIVE UTILITIES. BLUE STAKES SHALL BE NOTIFIED BY CONTRACTOR FOR STAKING OF ALL UTILITIES. CONTRACTOR SHALL CONFIRM LOCATION OF ANY EXISTING UTILITIES. EXISTING UTILITIES DISTURBED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED AT NO ADDITIONAL COST TO THE OWNER.
10. MARKING TAPE IS REQUIRED TO BE INSTALLED ABOVE ALL SEWER MAINS AND SERVICE LATERALS AS SHOWN IN THE COLLECTION SYSTEM TRENCH DETAILS.
11. THE CONTRACTOR SHALL PROVIDE MEANS OF MANAGING ANY STORM WATER, GROUNDWATER, OR NUISANCE WATER AND PREVENT IT FROM INTERFERING WITH THE CONSTRUCTION OPERATION. COST OF CONTROLLING ALL WATER SHALL BE INCLUDED IN THE CONTRACT PRICE FOR RELATED BID ITEMS.
12. THE CONTRACTOR SHALL INCLUDE THE COST FOR ALL EXCAVATION, AND DISPOSAL OF EXCESS AND UNSUITABLE MATERIAL IN THE CONTRACT UNIT PRICE FOR THE RELATED BID ITEM. ALL OTHER COST ASSOCIATED WITH THIS PROJECT SHALL BE INCLUDED IN THE PRICES INDICATED IN THE BID SCHEDULE FOR THE VARIOUS APPURTENANT ITEMS OF WORK. ALL DEBRIS RESULTING FROM WORK ON THE PROJECT SHALL BE DISPOSED OF BY THE CONTRACTOR. THE CONTRACTOR SHALL MAKE APPROPRIATE ARRANGEMENTS FOR DISPOSAL SITES AT WHICH DEBRIS MAY BE LAWFULLY DISPOSED.
13. ALL BENCHMARKS AND SURVEY CONTROL STAKES PROVIDED BY THE OWNER'S ENGINEER FOR THE CONSTRUCTION OF THE PROJECT SHALL BE PROTECTED FROM DISTURBANCE. IF CONTROL STAKES ARE DISTURBED OR REMOVED PREMATURELY, THE WORK OF RE-STAKING SHALL BE DONE BY THE OWNER'S ENGINEER AT THE CONTRACTOR'S EXPENSE.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY AND PROTECTION WITHIN AND ADJACENT TO THE JOBSITE.
15. ANY OMISSIONS OR CONFLICTS BETWEEN THE CONSTRUCTION DRAWINGS AND THE ACTUAL CONDITIONS ENCOUNTERED IN THE VARIOUS ELEMENTS OF THE PROJECT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND RESOLVED BY THE SAME BEFORE PROCEEDING WITH ANY WORK INVOLVED. PRIOR TO MAKING ANY CHANGES IN THE PROJECT ALIGNMENT, THE ENGINEER SHALL CONTACT THE CITY.
16. OBSERVATION VISITS TO THE SITE BY THE ENGINEER SHALL NOT BE CONSTRUED AS APPROVAL OF CONSTRUCTION.
17. WHERE THE SEWER PIPELINE MUST CROSS BENEATH THE CULINARY WATER PIPELINE, THE SEWER PIPELINE SHALL BE INSTALLED WITH A MINIMUM OF 18 INCHES VERTICAL SEPARATION BETWEEN THE OUTER EDGES OF THE AFFECTED PIPELINES. IN ADDITION, THE SEWER PIPELINE SHALL CROSS BENEATH THE PIPELINE AT AN ANGLE AS NEAR PERPENDICULAR AS POSSIBLE. IF THESE CONDITIONS CANNOT BE MET THE CONTRACTOR SHALL NOTIFY THE ENGINEER.
18. A SEWER PIPELINE SHALL NOT BE INSTALLED WITH LESS THAN 10 FEET OF HORIZONTAL SEPARATION OUTSIDE EDGE OF PIPE TO OUTSIDE EDGE OF PIPE FROM A CULINARY WATER PIPELINE.
19. COMPACTION OF ALL TRENCH MATERIALS SHALL BE IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS.
20. DURING CLEANUP ON CITY STREETS, HISTORIC ROAD DRAINAGE PROFILES SHALL BE RESTORED. ALL ROCKS LARGER THAN 2" SHALL BE RAKED OUT AND REMOVED OR BURIED.
21. ALL NEW PIPE SHALL BE PVC (SDR) 35 UNLESS OTHERWISE SPECIFIED ON THE PLANS.
22. THE EXISTING SYSTEM AND THE PROPOSED IMPROVEMENTS ARE SHOWN AS ACCURATELY AS POSSIBLE. ALL PIPELINE LOCATIONS AND SIZES ARE SHOWN ACCORDING TO THE INFORMATION AVAILABLE TO THE ENGINEER. HOWEVER, THE ACTUAL FIELD CONDITIONS MAY VARY. ADDITIONAL WORK MAY BE REQUIRED AND LIKEWISE PROPOSED WORK MAY BE ELIMINATED BASED ON ACTUAL FIELD CONDITIONS. SUCH WORK SHALL REQUIRE APPROVAL BY THE ENGINEER.
23. EXISTING LINES AND SERVICES TO REMAIN IN SERVICE UNTIL PROPOSED LINES COMPLETED, FINISHED, TESTED, TELEVIEWED, AND APPROVED BY OGDEN CITY PERSONNEL.
24. ALL INSTALLED PIPE SHALL BE INSPECTED, PHOTOGRAPHED AND APPROVED FOR BURIAL BY THE RESIDENT INSPECTOR PRIOR TO PIPE BURIAL.
25. ALL DISTURBED LANDSCAPING, IRRIGATION LINES, AND SOD SHALL BE REPLACED AND RESTORED TO THE CONDITIONS EXISTING PRIOR TO CONSTRUCTION ACTIVITIES.
26. CONTRACTOR SHALL BE RESPONSIBLE FOR THE FLOW FROM ALL CONNECTIONS ALONG THE PROJECT UNTIL THE PROJECT IS COMPLETED AND ACCEPTED. CONTRACTOR SHALL RECONNECT ALL ACTIVE SEWER LATERALS.
27. SERVICE LATERAL LOCATIONS SHOWN ON THE PLANS ARE FOR REFERENCE ONLY AND DO NOT REPRESENT EXACT LOCATIONS OF ACTUAL LATERALS. ADDITIONAL ACTIVE SERVICE LATERALS MAY EXIST THAT ARE NOT SHOWN ON THE PLANS.
28. TO VERIFY LOCATION OF ALL EXISTING LATERALS, CONTRACTOR SHALL TELEVIEW EXISTING SEWER. BYPASS PUMPING MAY BE REQUIRED IN ORDER TO FACILITATE TELEVIEWING. LATERALS SHOWN ON PLANS ARE BASED ON INCOMPLETE SEWER PLAT MAPS AND INSTITUTIONAL KNOWLEDGE. ENGINEER MAKES NO ASSURANCES, IMPLIED OR OTHERWISE, THAT ALL THE LATERALS SHOWN EXIST IN THE FIELD OR EXIST IN THE LOCATION SHOWN; OR, THAT ADDITIONAL LATERALS EXIST WHICH ARE NOT SHOWN.
29. CONTRACTOR TO REPLACE CURB/GUTTER AND/OR DRIVEWAY AS REQUIRED FOR NEW SANITARY SEWER.

GENERAL CONSTRUCTION NOTES (CONTINUED)

30. CONTRACTOR TO SAW CUT AND REPLACE ASPHALT FOR SEWER AND ALL LATERALS. FOOTPRINT SHALL BE VERIFIED W/ RESIDENT INSPECTOR.
31. ALL EXISTING FEATURES WHICH ARE NOT BEING IMPROVED SHALL BE PROTECTED IN PLACE, OR REINSTALLED WHEN INDICATED ON PLANS.
32. THE CONTRACTOR SHALL MAINTAIN IN OPERATING CONDITION ALL ACTIVE SANITARY SEWERS BY MEANS OF A PUMP BYPASS LINE, IF NECESSARY. OWNER WILL REQUIRE A SUBMITTAL OF THE BYPASS PLAN.
32. ALL PAVEMENT MARKINGS SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION).
33. THE CONTRACTOR SHALL PROVIDE, INSTALL, AND MAINTAIN ALL ROAD CONSTRUCTION BARRICADES, CHANNELING DEVICES, AND CONSTRUCTION SIGNS AS REQUIRED BY THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND AS REQUIRED BY THE OWNER AND ENGINEER.
34. TRAFFIC ACCESS SHALL BE MAINTAINED FOR LOCAL RESIDENTS TO THEIR RESPECTIVE PROPERTIES DURING CONSTRUCTION, UNLESS APPROVED OTHERWISE BY THE ENGINEER.
35. ALL UTILITIES DEPICTED THROUGHOUT DRAWINGS ARE APPROXIMATE ONLY AND ALL UTILITIES MAY NOT BE SHOWN. CONTRACTOR MUST VERIFY ALL UTILITIES SHOWN OR MARKED IN THE FIELD, PRIOR TO CONSTRUCTION.
36. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE. RESTORE IF DISTURBED AT NO ADDITIONAL COST TO OWNER.
37. ALL UTILITY CROSSING ELEVATIONS ARE APPROXIMATE ONLY. UTILITY DIAMETERS ARE NOT KNOWN UNLESS SHOWN.
38. SEWER LATERAL LOCATIONS ARE APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY LOCATION OF SEWER LATERAL, REPLACE AND RECONNECT THEM TO THE PROPER SEWER.

CENTRAL WEBER SEWER IMPROVEMENT DISTRICT SEWER
MANHOLE AND SERVICE CONNECTION STANDARDS

1. ALL CONNECTIONS MADE TO CENTRAL WEBER SEWER IMPROVEMENT DISTRICT (DISTRICT) OWNED SEWER MAINS SHALL BE DONE IN ACCORDANCE WITH THESE STANDARDS.
2. PLANS SHALL BE COORDINATED WITH THE DISTRICT AT LEAST 3 WEEKS PRIOR TO BEGINNING WORK. THE DISTRICT CAN BE CONTACTED AT 801-731-3011. SUBMISSION OF CONNECTION PLANS TO THE DISTRICT WILL BE REQUIRED. THE SUBMITTED PLANS SHALL IDENTIFY THE LOCATION AND TYPE OF CONNECTION. THE CONNECTION DETAILS CAN REFER TO THESE STANDARDS, HOWEVER, ANY SUBSTITUTION OR DEVIATION FROM THESE STANDARDS MUST BE COORDINATED AND APPROVED BY THE DISTRICT.
3. FOR TRENCH BACKFILL ABOVE PIPE ZONE AND SURFACE RESTORATION REQUIREMENTS AND COORDINATION, SEE SANITARY SEWER MANHOLE STANDARDS.
4. NEW PIPE CONNECTION TO EXISTING SEWER MAIN:
 - A. IF GRADE ALLOWS, NEW PIPE CONNECTIONS SHALL MATCH THE 0.75 DEPTH POINT OF EXISTING SEWER MAIN. OTHERWISE MATCH TOP OF NEW PIPE CONNECTION TO TOP OF EXISTING SEWER MAIN AS APPROVED BY THE DISTRICT ENGINEER.
 - B. INVERTS SHALL BE FULL DEPTH.
5. DEBRIS AND CONSTRUCTION MATERIALS SHALL NOT BE ALLOWED TO ENTER THE EXISTING WASTEWATER SYSTEM. IF DEBRIS AND CONSTRUCTION MATERIALS DO ENTER THE EXISTING WASTEWATER SYSTEM, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF THE MATERIAL, AND ANY DAMAGES CAUSED THEREBY, AS APPROVED BY THE DISTRICT ENGINEER.
6. CONTACT DISTRICT INSPECTOR 48 HOURS (2 BUSINESS DAYS) PRIOR TO CONSTRUCTION.
7. ALL SEWER CONSTRUCTION CONNECTED TO DISTRICT OWNED SEWER MAINS SHALL BE APPROVED BY THE DISTRICT INSPECTOR PRIOR TO COMPLETION OF THE WORK.
8. CONTRACTOR MAY SUBMIT EQUAL PRODUCTS AND MATERIALS IN LIEU OF THOSE SPECIFIED IN THESE STANDARDS FOR REVIEW AND APPROVAL BY THE DISTRICT.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO KEEP ALL SEWER MAINLINES AND LATERALS IN SERVICE DURING CONSTRUCTION. ANY INTERRUPTION OF SEWER LINE SERVICE SHALL BE COORDINATED WITH PROPERTY OWNERS. BYPASS PUMPING OR OTHER MEANS MAY BE NECESSARY AND SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. WHEN BYPASS PUMPING IS REQUIRED, A BYPASS PLAN SHALL BE SUBMITTED TO THE DISTRICT FOR REVIEW AND ACCEPTANCE. AT A MINIMUM, PUMP AND PIPE REDUNDANCY IS REQUIRED FOR PEAK WET WEATHER FLOWS WITH 24-HR, 7-DAY WATCH.
10. CONNECTIONS TO EXISTING CWSID FORCE MAINS ARE FORBIDDEN.
11. SEWER FORCE MAIN CONNECTIONS TO EXISTING GRAVITY SEWER MANHOLES ARE TO BE APPROVED BY THE DISTRICT 30 DAYS PRIOR TO CONSTRUCTION. FORCE MAINS SHALL BE CONVERTED TO GRAVITY SEWER PRIOR TO CONNECTING TO CWSID SEWER LINES.

| 2 | ADDENDUM NO 3 | 02-13-26 |
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| OGDEN CITY | | |
| 12TH ST/CENTURY DR TRUNK LINE CAPACITY | | |
| GENERAL CONSTRUCTION NOTES | | |
| SEI NO. 15684 | DESIGNED AX | DRAWN MB |
| CHECKED CL | SHEET NO. 3 of 18 | G-3 |

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ABBREVIATIONS

| | | | |
|-----------|------------------------------------|-----------|-------------------------------------|
| AB | ANCHOR BOLT | HB | HOSE BIB |
| ALUM. | ALUMINUM | IN. OR " | INCH |
| ∠ | ANGLE | ID | INSIDE DIAMETER |
| APPROX. | APPROXIMATELY | INSUL. | INSULATION |
| ASSY. | ASSEMBLY | INV. | INVERT |
| @ | AT | IPS | IRON PIPE SIZE |
| AV | ALTITUDE VALVE | IRR | IRRIGATION |
| B.M. | BENCH MARK | K | CURVE COEFFICIENT |
| BF | BUTTERFLY | L | LENGTH |
| B.W. | BOTH WAYS | LC | LENGTH OF CHORD ON HORIZONTAL CURVE |
| BTM. | BOTTOM | LF | LINEAR FEET |
| BLDG. | BUILDING | LVC | LENGTH OF VERTICAL CURVE |
| BVCS | BEGINNING VERTICAL CURVE STATION | MH | MANHOLE |
| BVCE | BEGINNING VERTICAL CURVE ELEVATION | MFR. | MANUFACTURER |
| CB | CHORD BEARING | MAX. | MAXIMUM |
| CI | CAST IRON | MECH. | MECHANICAL |
| CL | CENTER LINE | MGD. | MILLION GALLONS PER DAY |
| CLR. | CLEAR | MIN. | MINIMUM |
| CONC. | CONCRETE | MID. | MIDDLE POINT OF HORIZONTAL CURVE |
| CFM | CUBIC FEET per MINUTE | NO. OR # | NUMBER |
| CFS | CUBIC FEET per SECOND | O.C. | ON CENTER |
| CV | CONTROL VALVE | OD | OUTSIDE DIAMETER |
| CW | CONCRETE WALL | PC | POINT OF CURVATURE |
| CY | CUBIC YARD | PT (ROAD) | POINT OF TANGENT |
| DEG. OR ° | DEGREE | PL. | PLATE |
| DIA. OR ∅ | DIAMETER | PE | POLYETHYLENE |
| DWG. | DRAWING | PT | POINT |
| DI | DUCTILE IRON | PVI | POINT OF VERTICAL INTERSECTION |
| EA. | EACH | PRV | PRESSURE REDUCING VALVE |
| E.F. | EACH FACE | PVC | POLYVINYL-CHLORIDE |
| ELL. | ELBOW | LB. OR # | POUND |
| ELEV. | ELEVATION | PSF | POUNDS per SQUARE FOOT |
| ETC. | ETCETERA | PSI | POUNDS per SQUARE INCH |
| EVCE | END OF VERTICAL CURVE ELEVATION | PL | PROPERTY LINE |
| EVCS | END OF VERTICAL CURVE STATION | R | RADIUS OF HORIZONTAL CURVE |
| EXIST. | EXISTING | R&R | REMOVE AND REPLACE |
| EXP. | EXPANSION | RAD | RADIUS |
| E.G. | EXISTING GROUND | RCP | REINFORCED CONCRETE PIPE |
| F | FOOTING OR FOUNDATION SLAB | REINF. | REINFORCEMENT |
| F.F. | FINISH FLOOR | REQ'D. | REQUIRED |
| FT OR ' | FEET | REV. | REVISION |
| F.G. | FINISH GRADE | R/W | RIGHT-OF-WAY |
| FTG. | FITTING | SCH. | SCHEDULE |
| FLG | FLANGE | SPEC. | SPECIFICATION |
| GAL. | GALLON | SQ. | SQUARE |
| GALV. | GALVANIZED | SF | SQUARE FEET |
| GB | GRADE BREAK | SI | SQUARE INCHES |
| GSP OR GS | GALVANIZED STEEL PIPE | ST. STL. | STAINLESS STEEL |
| GI | GALVANIZED IRON PIPE | STD. | STANDARD |
| GA. | GAUGE | STA | STATION |
| GPM | GALLONS per MINUTE | T | TANGENT OF HORIZONTAL CURVE |
| GSN | GENERAL STRUCTURAL NOTES | △ | ANGLE BETWEEN TANGENTS HOR. CURVE |
| GV | GATE VALVE | TYP. | TYPICAL |
| HORIZ. | HORIZONTAL | UBC | UNTREATED BASE COURSE |
| | | U.N.O. | UNLESS OTHERWISE NOTED |
| | | VERT. | VERTICAL |
| | | W/ | WITH |
| | | W/O | WITHOUT |

EXISTING

| | |
|---------------------|---------------------------------------|
| WATERLINE | ----- w ----- w ----- |
| GAS | ----- g ----- g ----- |
| FIBER OPTIC | ----- fo ----- fo ----- |
| TELEVISION | ----- utv ----- |
| TELEPHONE | ----- t ----- t ----- |
| OVERHEAD POWER LINE | ----- ohe ----- |
| SEWER LINE | ----- s ----- s ----- |
| STORM DRAIN | ----- sd ----- sd ----- |
| FENCE | ----- x ----- x ----- x ----- x ----- |
| CENTERLINE | ----- |
| EDGE OF PAVEMENT | ----- |
| PROPERTY LINE | ----- |
| CURB & GUTTER | ===== |
| LANDSCAPED AREA | |
| DIRTROAD | |
| EXISTING GATE VALVE | |
| STORM DRAIN MANHOLE | |
| WATER MANHOLE | |
| FIRE HYDRANT | |
| IRRIGATION BOX | |
| CATCH BASIN | |
| WATER METER | |
| SEWER MANHOLE | |
| POWERPOLE | |
| STREET LIGHT | |
| ELECTRIC BOX | |

LEGEND

PROPOSED

| | |
|------------------------|-------|
| 21" SEWER LINE | ===== |
| 30" SEWER LINE | ===== |
| CURB & GUTTER | ===== |
| SANITARY SEWER MANHOLE | Ⓢ |

| | | |
|--------------------|---|----------------------------|
| CROSS REFERENCING | | DETAIL DESIGNATION |
| | | DRAWING NUMBER |
| CONSTRUCTION NOTES | | TYPICAL OR ADDITIONAL NOTE |
| | | CONSTRUCTION NOTE # |
| R.O.W. MARKER | ⊕ | |
| PROPERTY CORNER | ■ | |
| ALUM CAP U.E.L.S | ● | |

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DESIGN CRITERIA

THE FOLLOWING SUMMARIZES THE EXISTING & DESIGN FLOWS, PIPE CAPACITIES AND VELOCITIES.

1. POPULATION PER EQUIVALENT RESIDENTIAL CONNECTION (ERC) = 2.7 (FROM OGDEN CITY 2023 SEWER MASTER PLAN)
2. STATE REQUIRED ERC DESIGN FLOW FOR INTERCEPTORS AND OUTFALLS = 250 GALLONS PER CAPITA PER DAY (GPCD)

EXISTING CONDITION:

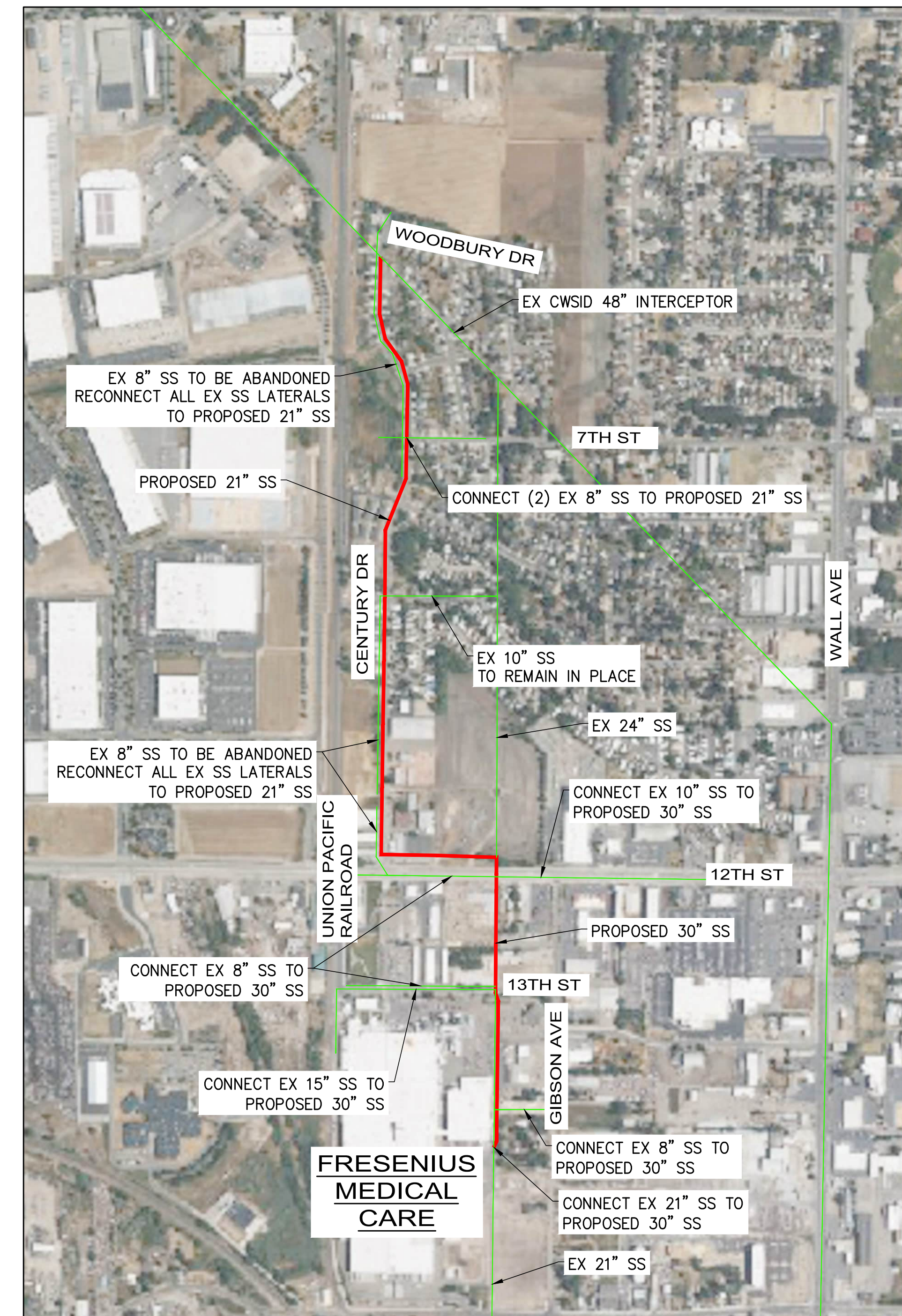
3. EXISTING 24" SS PEAK FLOW (375 W & 7TH ST) = 3,242 GALLONS PER MINUTE (GPM) = 6,898 ERCs
4. EXISTING 24" SS MAX WATER DEPTH / PIPE DIAMETER = 0.83
5. EXISTING 24" SS MAX VELOCITY = 2.86 FT/S

DESIGN CONDITION: (BASED ON MAKE OGDEN SCENARIO AND PROJECTED 2060 FLOW)

6. PROPOSED 30" SS PEAK FLOW (387 W 12TH ST) = 4,049 GPM = 8,615 ERCs
7. PROPOSED 30" SS MAX WATER DEPTH / PIPE DIAMETER = 0.5
8. PROPOSED 30" SS MAX VELOCITY = 4.43 FT/S
9. PROPOSED 21" SS PEAK FLOW (430 W & CENTURY DR) = 2,167 GPM = 4,611 ERCs
10. PROPOSED 21" SS MAX WATER DEPTH / PIPE DIAMETER = 0.65
11. PROPOSED 30" SS MAX VELOCITY = 3.46 FT/S
12. EXISTING 24" SS PEAK FLOW (375 W & 7TH ST) = 2,178 GPM = 4,634 ERCs
13. EXISTING 24" SS MAX WATER DEPTH / PIPE DIAMETER = 0.62
14. EXISTING 24" SS MAX VELOCITY = 4.56 FT/S

DESIGN STANDARDS:

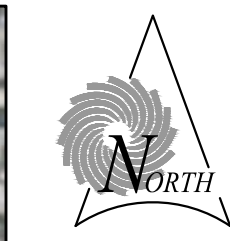
15. MAXIMUM PIPE CAPACITY IS ASSUMED AT: $d/D = 0.75$
16. MANNING'S N-VALUE = 0.013
17. REQUIRED VELOCITY (V) $2.5 \text{ FT/S} < V < 12 \text{ FT/S}$
18. MINIMUM REQUIRED SLOPE FOR 30" SEWER = 0.00057
19. MINIMUM REQUIRED SLOPE FOR 21" SEWER = 0.0012
20. DESIGN SLOPE FOR PROPOSED 21" SEWER = 0.0014



SEWER NETWORK MAP

NO SCALE

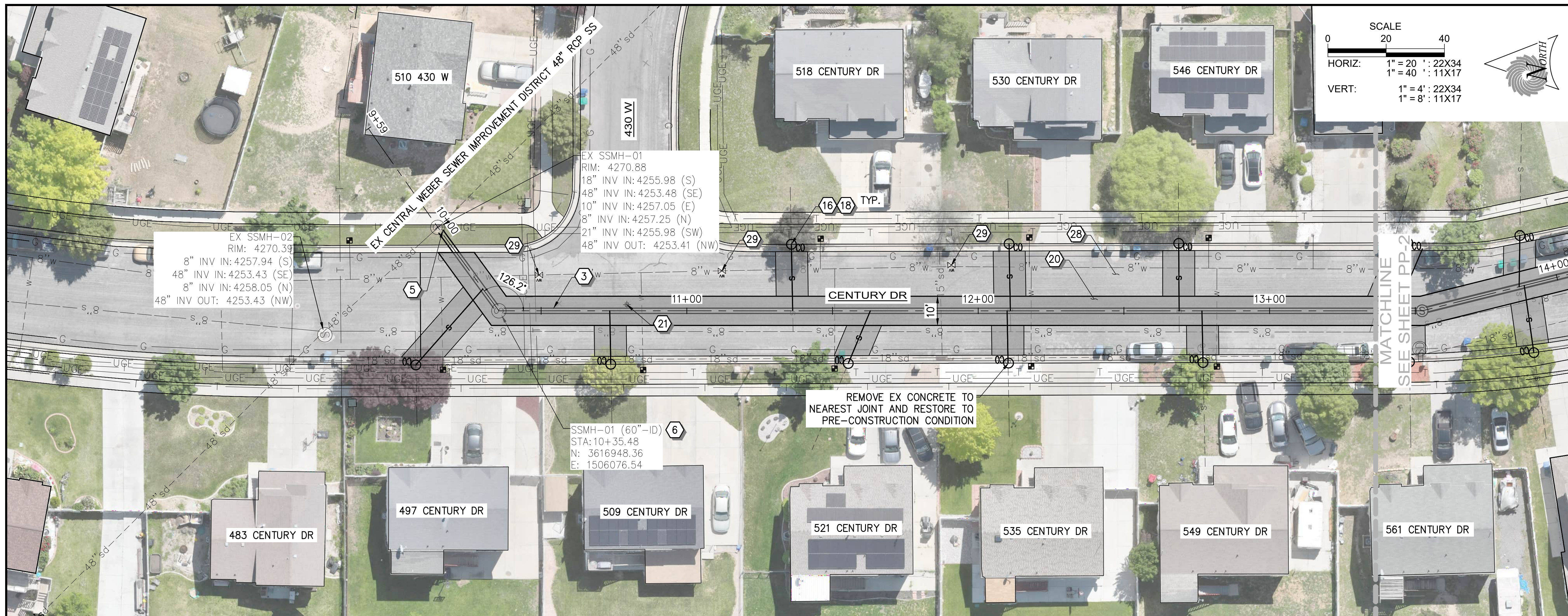
*FOR CLARITY PURPOSES, EXISTING SEWERS THAT DO NOT DIRECTLY CONNECT TO THE PROPOSED SEWER LINE ARE NOT SHOWN ON THIS MAP



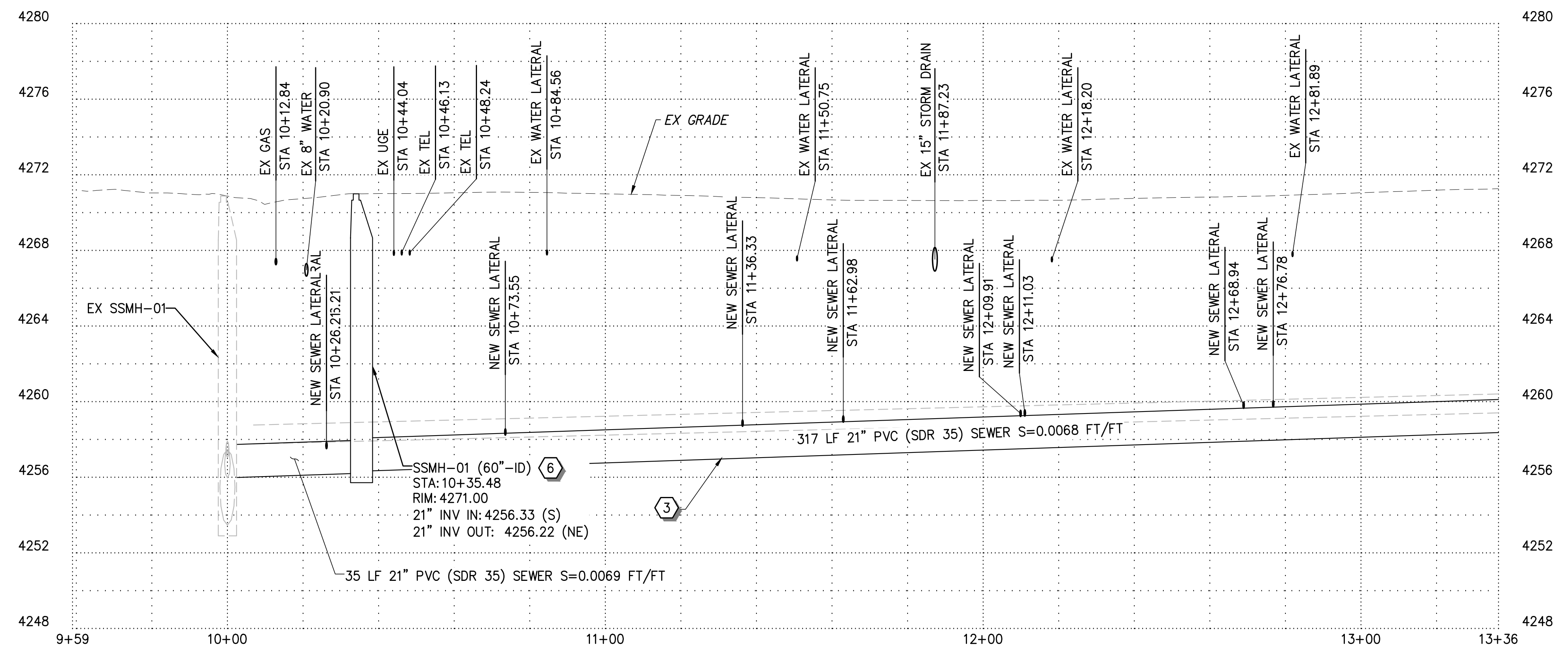
| 2 | ADDENDUM NO 3 | 02-13-26 |
|---|----------------------|-------------|
| 1 | ADDENDUM NO 1 | 02-10-26 |
| REV NO. | COMMENT | DATE |
| | | |
| SUNRISE ENGINEERING 6875 SOUTH 900 EAST SALT LAKE CITY, UTAH 84047 TEL 801.523.0100 · FAX 801.523.0990 www.sunrise-eng.com | | |
| OGDEN CITY | | |
| 12TH ST/CENTURY DR TRUNK LINE CAPACITY DESIGN CRITERIA | | |
| SEI NO. 15684 | DESIGNED AX | DRAWN MB |
| CHECKED CL | SHEET NO. 4 of 18 | G-4 |

ISSUED FOR BID

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PLAN



PROFILE

- ### CONSTRUCTION NOTES
- 1 8" PVC (SDR 35) SEWER PIPE
 - 2 10" PVC (SDR 35) SEWER PIPE
 - 3 21" PVC (SDR 35) SEWER PIPE
 - 4 36" PVC (SDR 35) SEWER PIPE
 - 5 CONNECT TO EXISTING MANHOLE
 - 6 60" SEWER MANHOLE PRECAST
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 - 20 REMOVE AND REPLACE WITH 6" ASPHALT
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 - 31 REMOVE EX WATER VALVE

NOTE:
1. MAINTAIN ACCESS FOR REFUSE, DELIVERY SERVICES, AND FIRST RESPONDERS FOR ALL PROPERTIES AT ALL TIMES OF CONSTRUCTION.

| | | |
|---|---------------|----------|
| 2 | ADDENDUM NO 3 | 02-13-26 |
| 1 | ADDENDUM NO 1 | 02-10-26 |

| REV NO. | COMMENT | DATE |
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| 6875 SOUTH 900 EAST SALT LAKE CITY, UTAH 84047 TEL 801.523.0100 · FAX 801.523.0990 www.sunrise-eng.com | | |

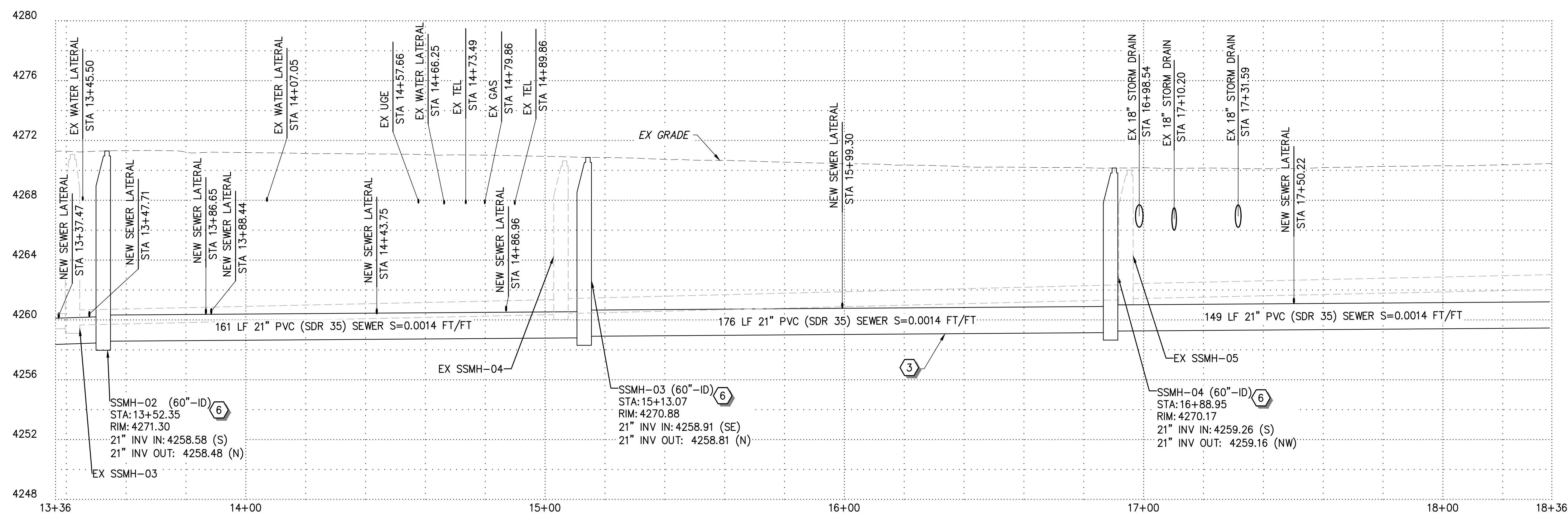
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| OGDEN CITY | | | | | |
| 12TH ST/CENTURY DR TRUNK LINE CAPACITY | | | | | |
| PLAN AND PROFILE - I | | | | | |
| STA 9+54 TO 13+54 | | | | | |
| SEI NO. | DESIGNED | DRAWN | CHECKED | SHEET NO. | |
| 15684 | AX | MB | CL | 6 of 18 | PP1 |

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PLAN



PROFILE

CONSTRUCTION NOTES

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NOTE:
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| 2 | ADDENDUM NO 3 | 02-13-26 |
| 1 | ADDENDUM NO 1 | 02-10-26 |

| REV NO. | COMMENT | DATE |
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| 02.13.26 | | |

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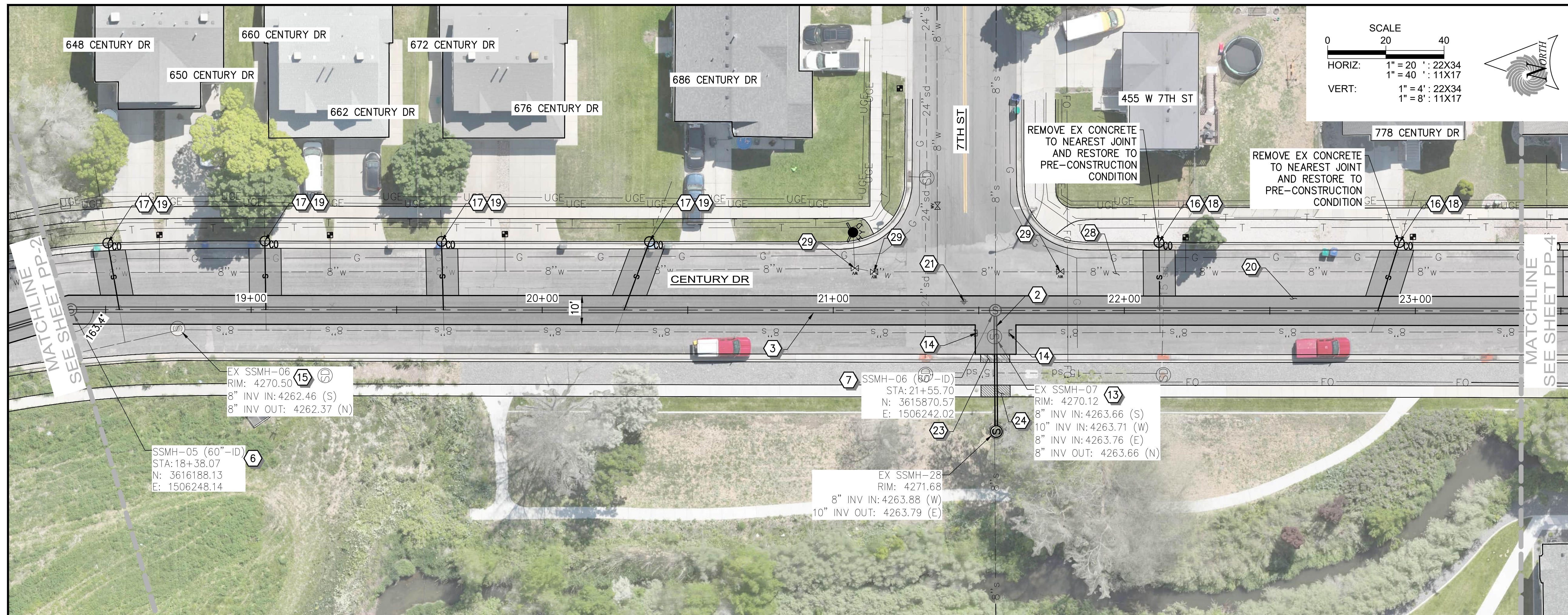
OGDEN CITY
12TH ST/CENTURY DR TRUNK LINE CAPACITY
PLAN AND PROFILE - II
STA 13+54 TO STA 18+54

| | | | | |
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| SEI NO. | DESIGNED | DRAWN | CHECKED | SHEET NO. |
| 15684 | AX | MB | CL | 7 of 18 |

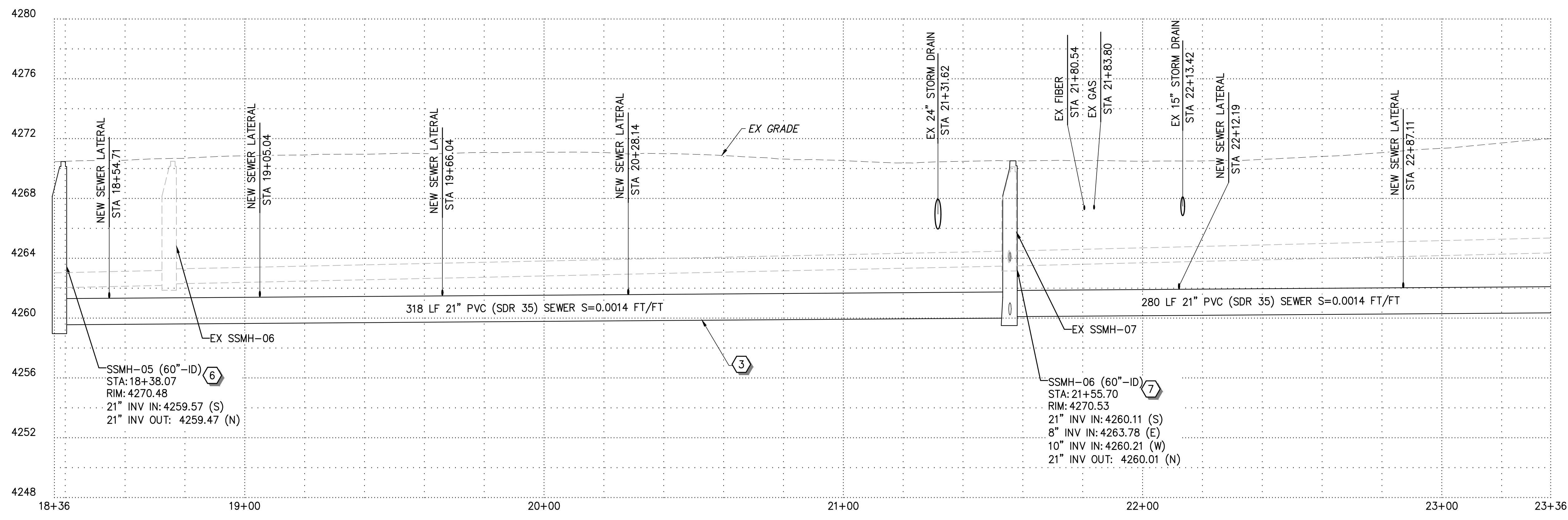
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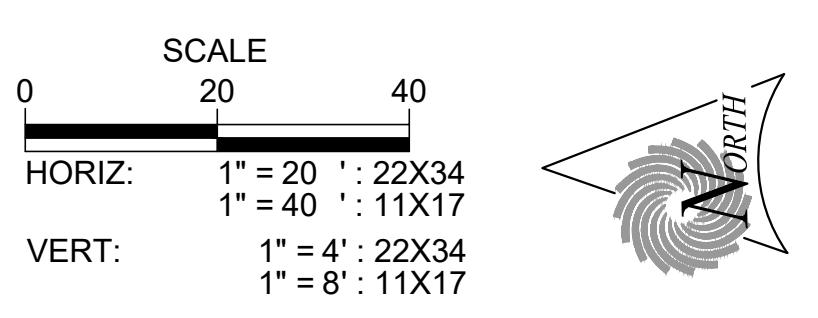
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PLAN



PROFILE



CONSTRUCTION NOTES

- 1 8" PVC (SDR 35) SEWER PIPE
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NOTE:
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| | | |
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| 2 | ADDENDUM NO 3 | 02-13-26 |
| 1 | ADDENDUM NO 1 | 02-10-26 |

| REV NO. | COMMENT | DATE |
|---------|---------------|----------|
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PROFESSIONAL ENGINEER
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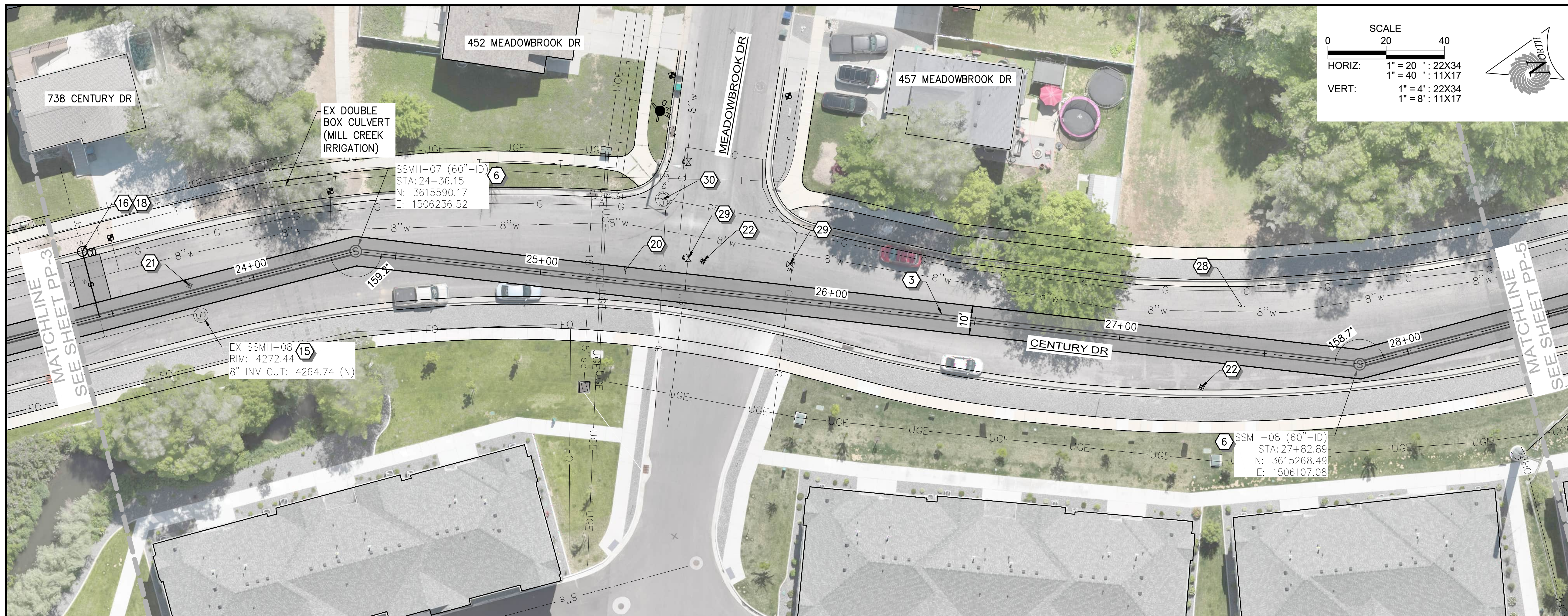
OGDEN CITY

**12TH ST/CENTURY DR TRUNK LINE CAPACITY
PLAN AND PROFILE - III
STA 18+54 TO STA 23+54**

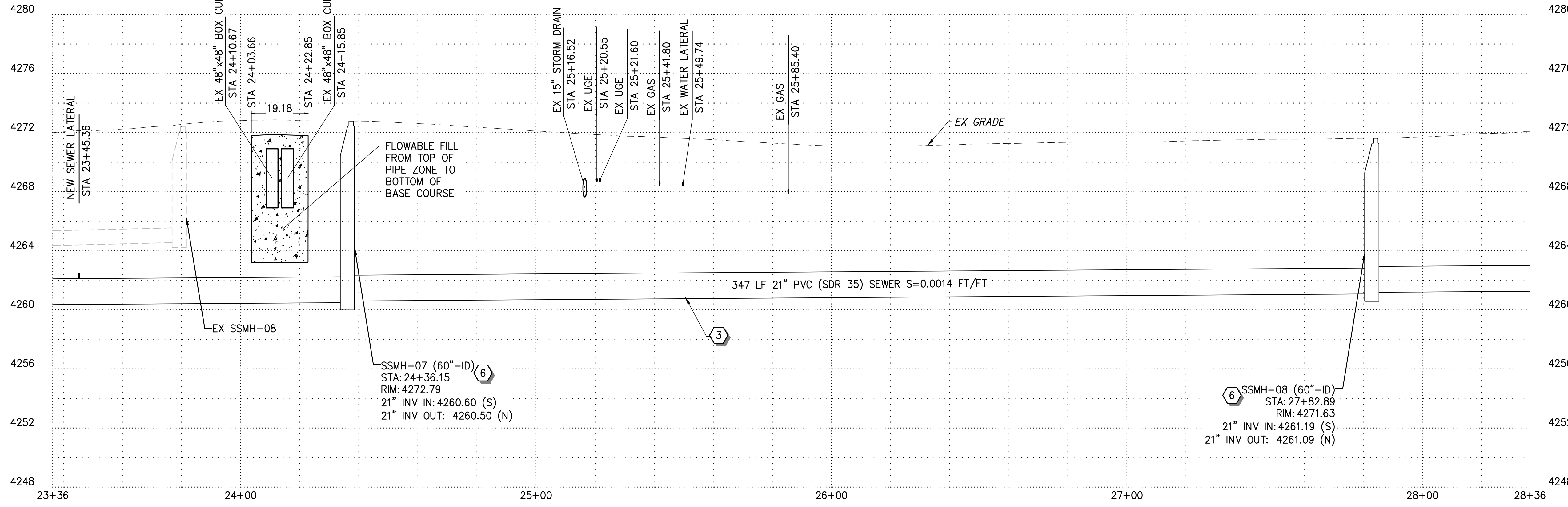
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| SEI NO. 15684 | DESIGNED AX | DRAWN MB | CHECKED CL | SHEET NO. 8 of 18 | PP3 |
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PLAN



PROFILE

SCALE
 0 20 40
 HORIZ: 1" = 20' : 22X34
 1" = 40' : 11X17
 VERT: 1" = 4' : 22X34
 1" = 8' : 11X17

CONSTRUCTION NOTES

- 1 8" PVC (SDR 35) SEWER PIPE
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NOTE:
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| 2 | ADDENDUM NO 3 | 02-13-26 |
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| 1 | ADDENDUM NO 1 | 02-10-26 |
| REV NO. | COMMENT | DATE |

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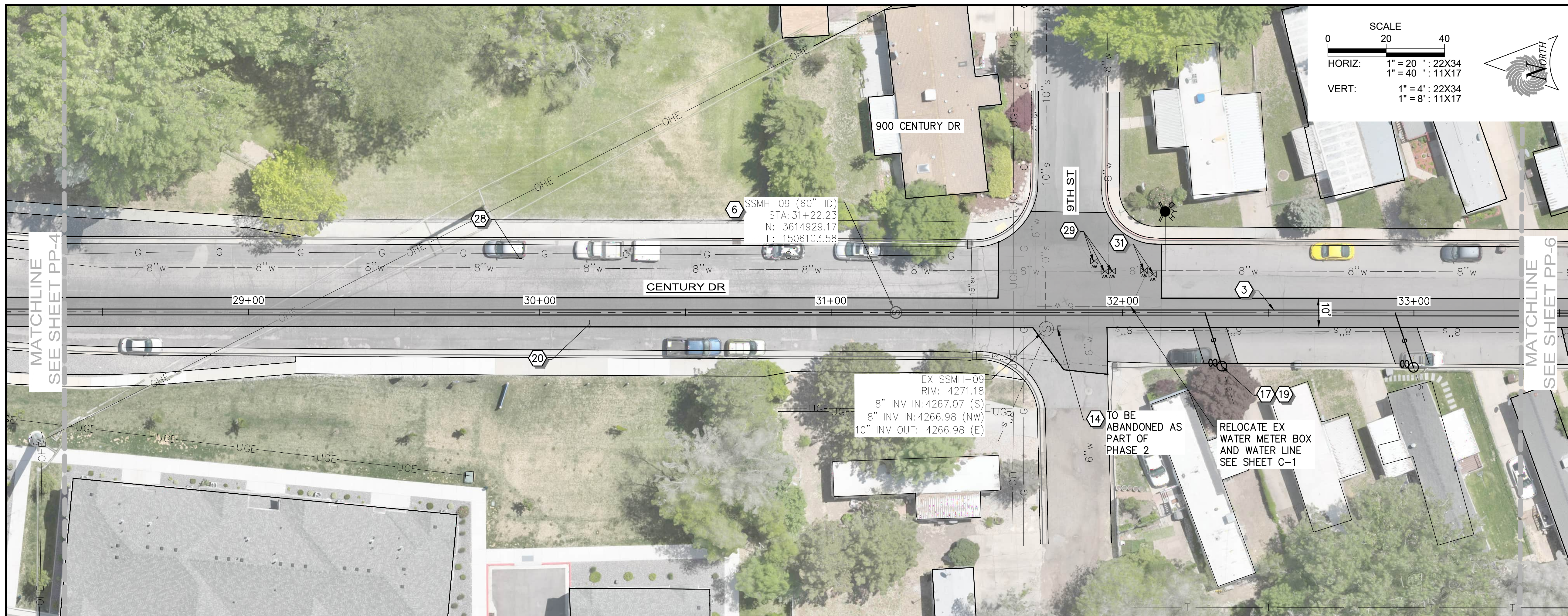
OGDEN CITY

**12TH ST/CENTURY DR TRUNK LINE CAPACITY
 PLAN AND PROFILE - IV
 STA 23+54 TO STA 28+54**

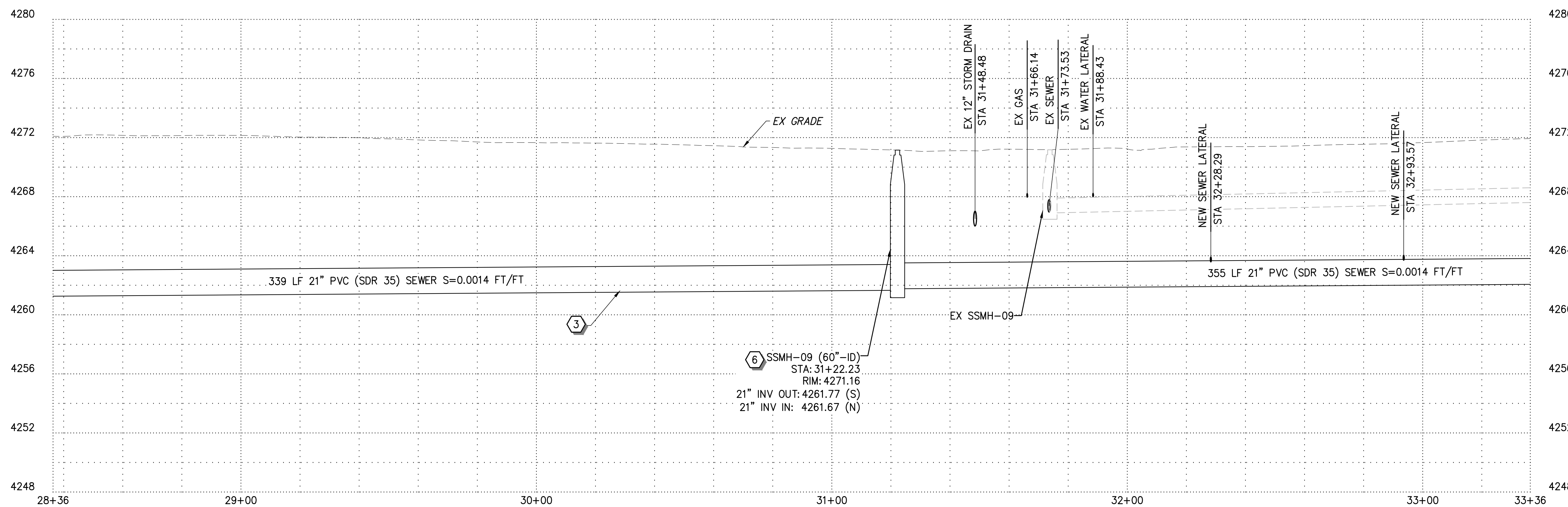
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| SEI NO. 15684 | DESIGNED AX | DRAWN MB | CHECKED CL | SHEET NO. 9 of 18 | PP4 |
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PLAN



PROFILE

CONSTRUCTION NOTES

- 1 8" PVC (SDR 35) SEWER PIPE
- 2 10" PVC (SDR 35) SEWER PIPE
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| 2 | ADDENDUM NO 3 | 02-13-26 |
| 1 | ADDENDUM NO 1 | 02-10-26 |

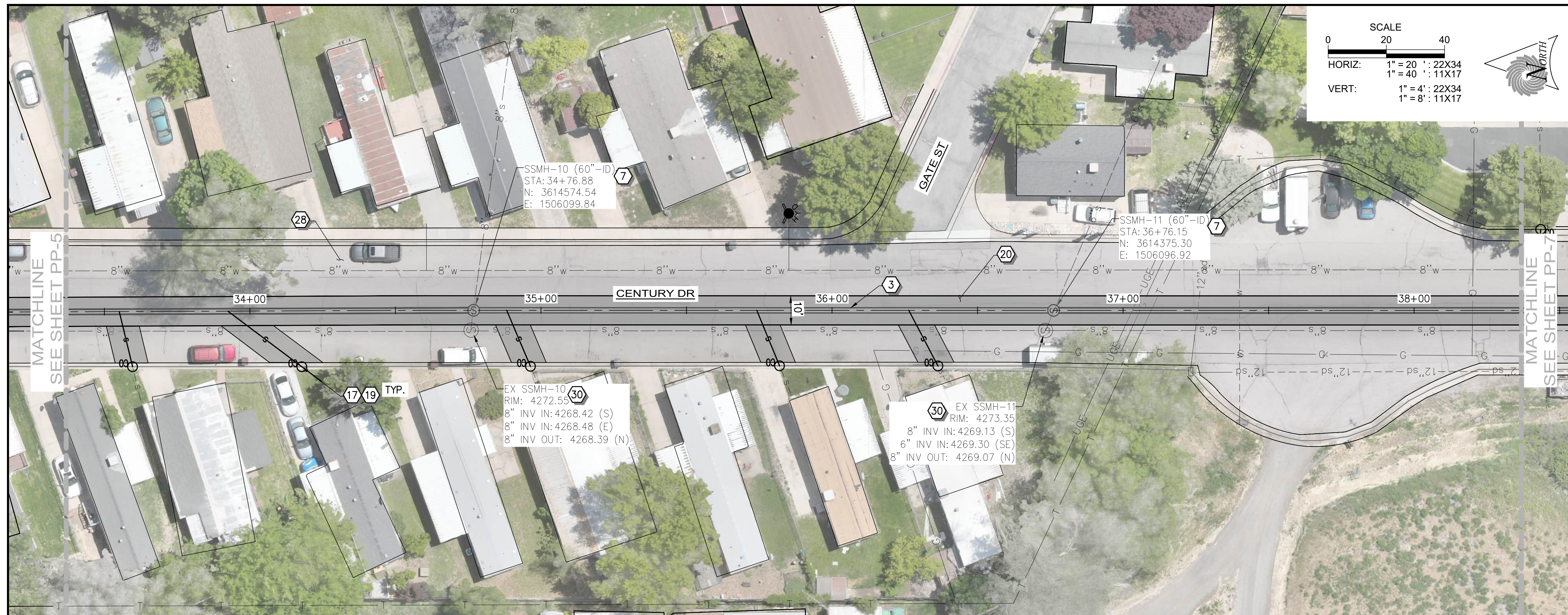
| REV NO. | COMMENT | DATE |
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| 6875 SOUTH 900 EAST SALT LAKE CITY, UTAH 84047 TEL 801.523.0100 · FAX 801.523.0990 www.sunrise-eng.com | | |

OGDEN CITY
12TH ST/CENTURY DR TRUNK LINE CAPACITY
PLAN AND PROFILE - V
STA 28+54 TO STA 33+54

| | | | | | |
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| SEI NO. 15684 | DESIGNED AX | DRAWN MB | CHECKED CL | SHEET NO. 10 of 18 | PP5 |
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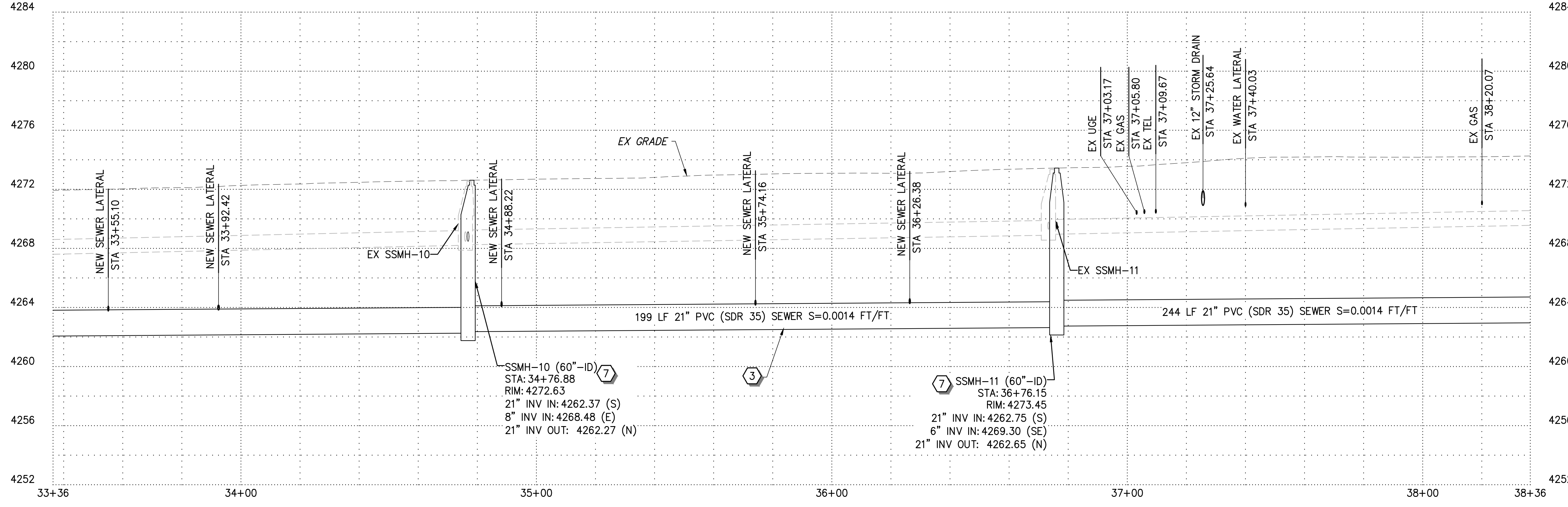
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SCALE
 0 20 40
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PLAN



PROFILE

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| 2 | ADDENDUM NO 3 | 02-13-26 |
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PROFESSIONAL ENGINEER
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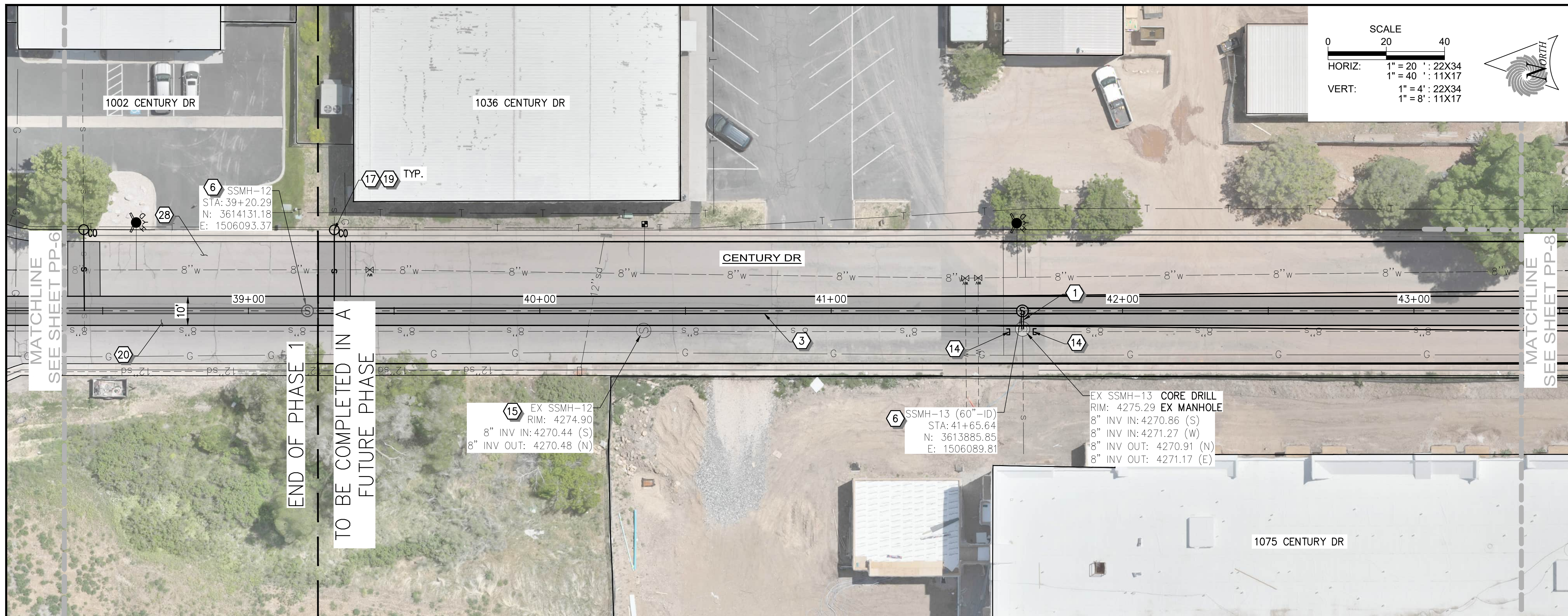
OGDEN CITY

**12TH ST/CENTURY DR TRUNK LINE CAPACITY
 PLAN AND PROFILE - VI
 STA 33+54 TO STA 38+54**

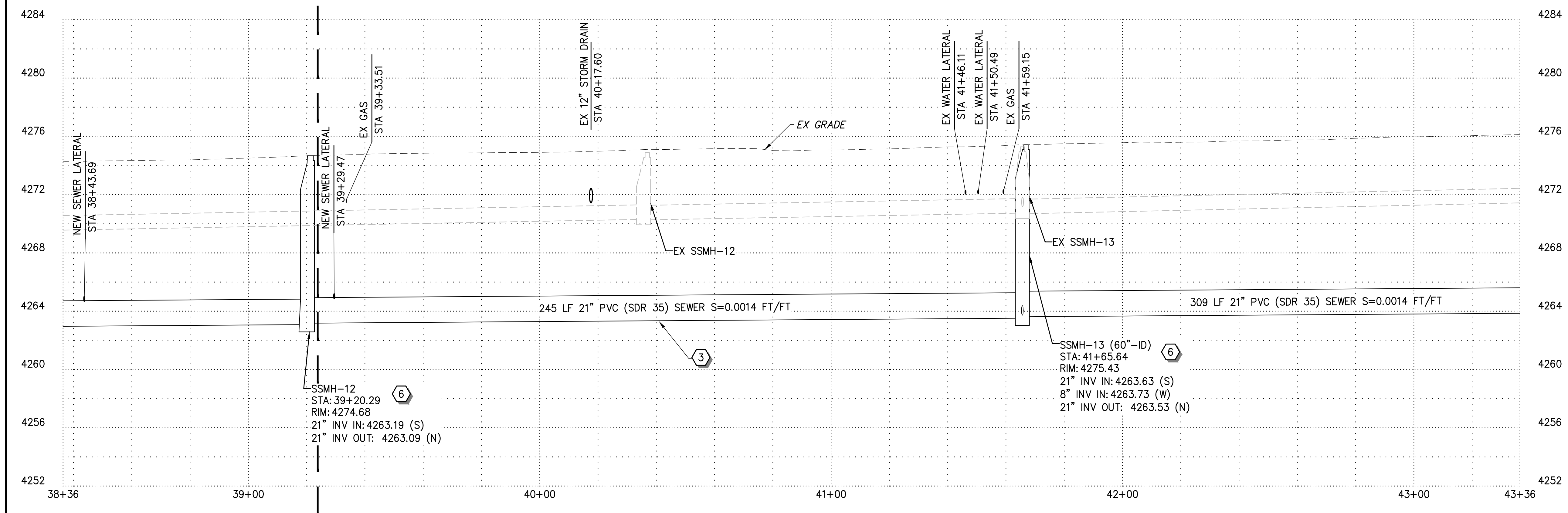
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| SEI NO. 15684 | DESIGNED AX | DRAWN MB | CHECKED CL | SHEET NO. 11 of 18 | PP6 |
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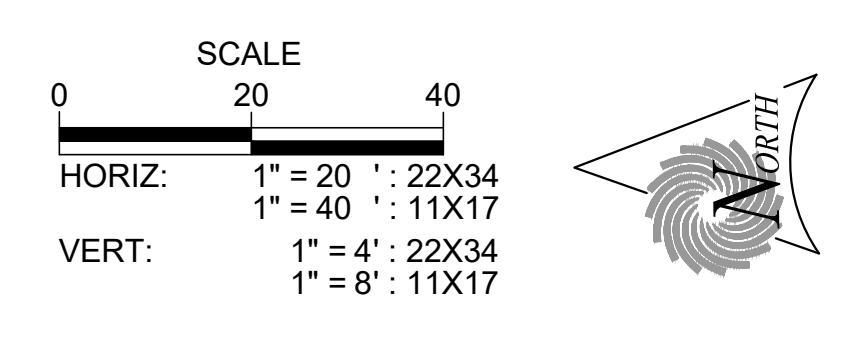
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PLAN



PROFILE



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| 2 | ADDENDUM NO 3 | 02-13-26 |
| 1 | ADDENDUM NO 1 | 02-10-26 |

| REV NO. | COMMENT | DATE |
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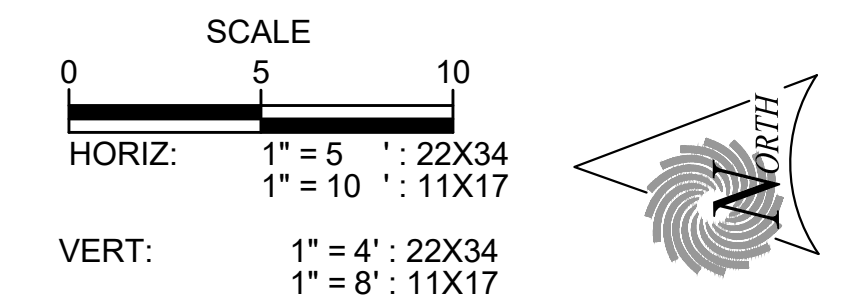
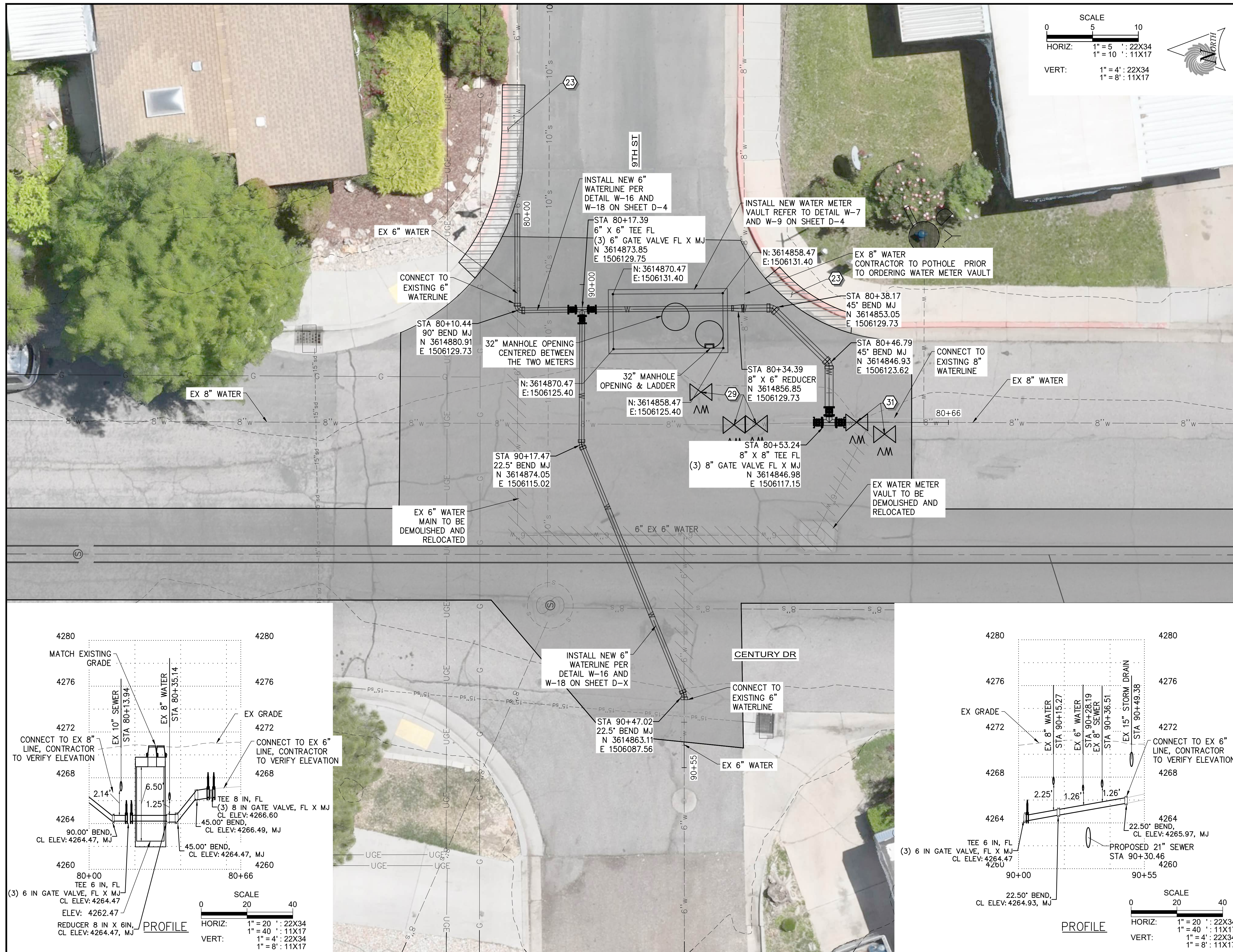
OGDEN CITY

**12TH ST/CENTURY DR TRUNK LINE CAPACITY
PLAN AND PROFILE - VII
STA 38+54 TO STA 43+54**

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| SEI NO. 15684 | DESIGNED AX | DRAWN MB | CHECKED CL | SHEET NO. 12 of 18 | PP7 |
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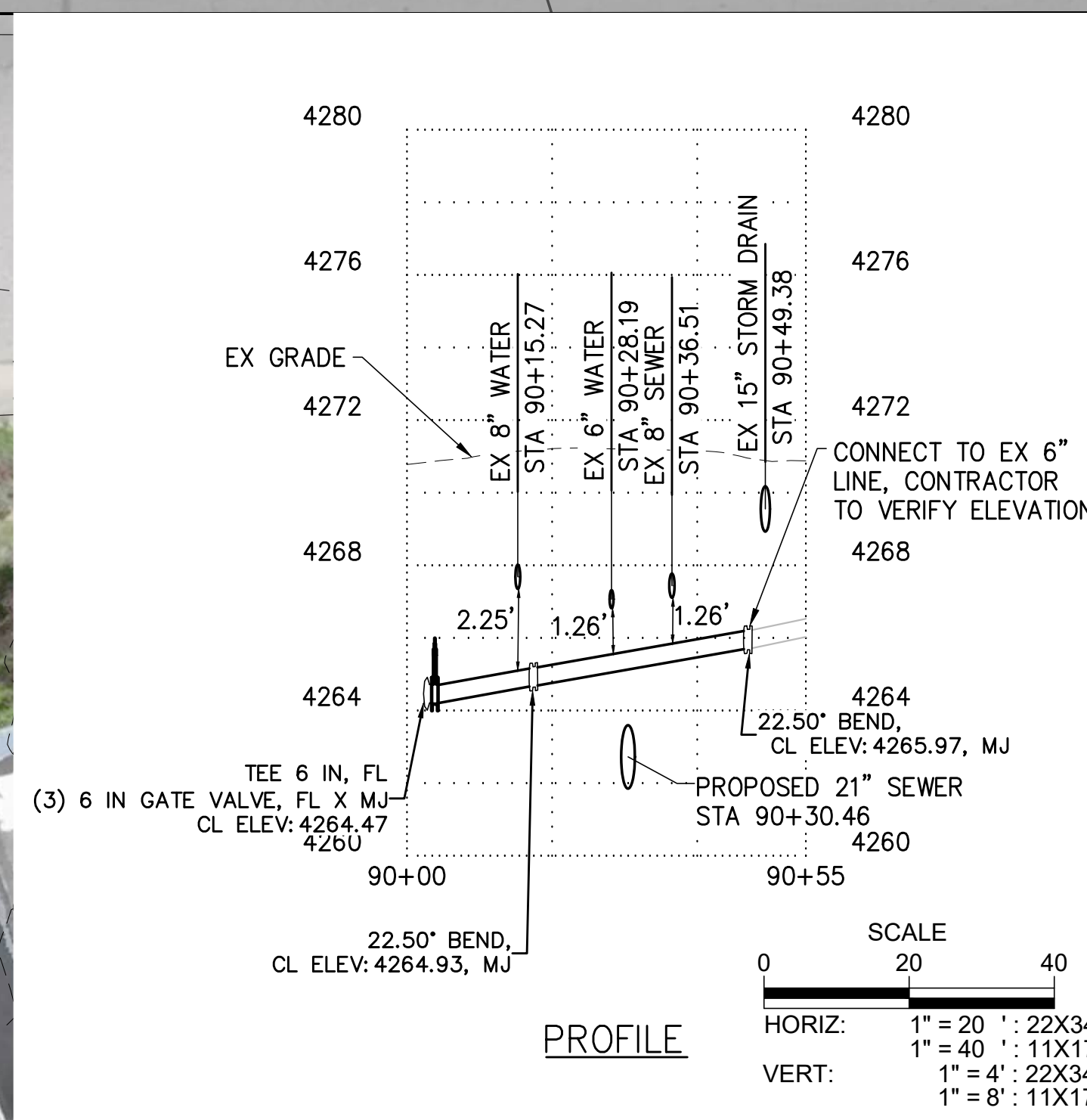
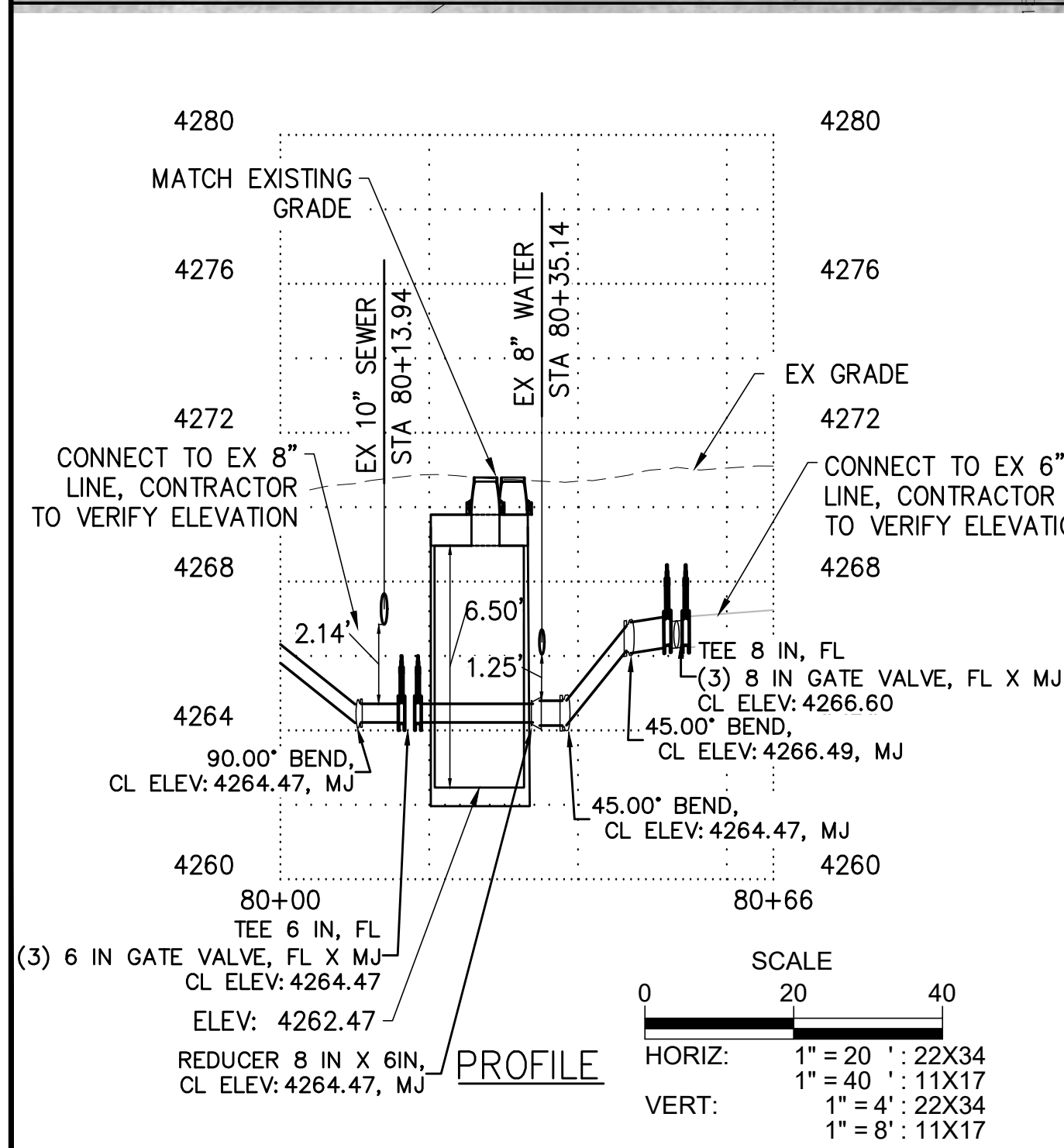
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CONSTRUCTION NOTES

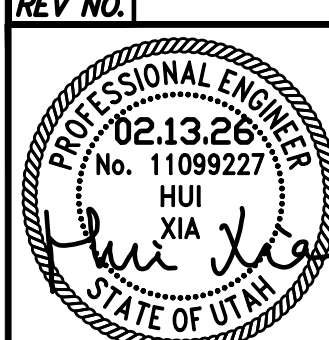
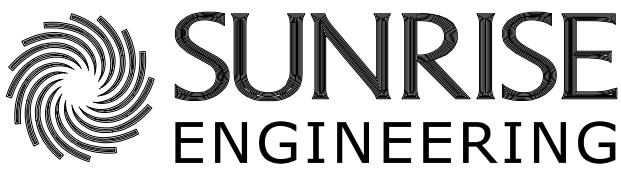
- 1 8" PVC (SDR 35) SEWER PIPE (SS-1) (D-3) (D-3)
- 2 10" PVC (SDR 35) SEWER PIPE (SS-3) (D-3) (D-3)
- 3 21" PVC (SDR 35) SEWER PIPE (SS-3) (D-3) (D-3)
- 4 36" PVC (SDR 35) SEWER PIPE (D-3) (D-3) (D-3)
- 5 CONNECT TO EXISTING MANHOLE (D-3) (A) (A)
- 6 60" SEWER MANHOLE PRECAST (SS-1) (SS-4) (SS-5)
- 7 60" SEWER DROP MANHOLE PRECAST (D-4) (D-3) (D-3)
- 8 72" SEWER MANHOLE PRECAST (SS-1) (SS-5) (SS-6)
- 9 84" SEWER MANHOLE PRECAST (SS-1) (SS-5) (SS-6)
- 10 60" SEWER MANHOLE POUR IN PLACE BASE (D-2) (D-3) (D-3)
- 11 72" SEWER MANHOLE POUR IN PLACE BASE (D-2) (D-3) (D-3)
- 12 REMOVE & DISPOSE EXISTING SEWER PIPE
- 13 REMOVE AND DISPOSE OF EXISTING MANHOLE
- 14 ABANDON EX SANITARY SEWER
- 15 ABANDON EX MANHOLE
- 16 4" PVC SEWER LATERAL (SS-2) (D-2)
- 17 6" PVC SEWER LATERAL (SS-2) (D-2)
- 18 4" CLEANOUT (SS-8) (D-3)
- 19 6" CLEANOUT (SS-8) (D-3)
- 20 REMOVE AND REPLACE WITH 6" ASPHALT (RD-3) (D-1)
- 21 R&R SURVEY MONUMENT (SUR-1) (D-2) (D-2)
- 22 RAISE AND COLLAR SURVEY MONUMENT (SUR-1) (D-2) (D-2)
- 23 R&R CURB & GUTTER (RD-4) (D-1)
- 24 R&R SIDE WALK (RD-5) (D-1)
- 25 R&R FENCE
- 26 R&R UDOT PANELS (PV 2) (D-5) (D-6) (D-7)
- 27 R&R UDOT CURD AND GUTTER (SW 2A) (D-8)
- 28 2" MILL AND OVERLAY (A)
- 29 RAISE AND COLLAR EX WATER VALVE
- 30 RAISE AND COLLAR EX MANHOLE
- 31 REMOVE EX WATER VALVE

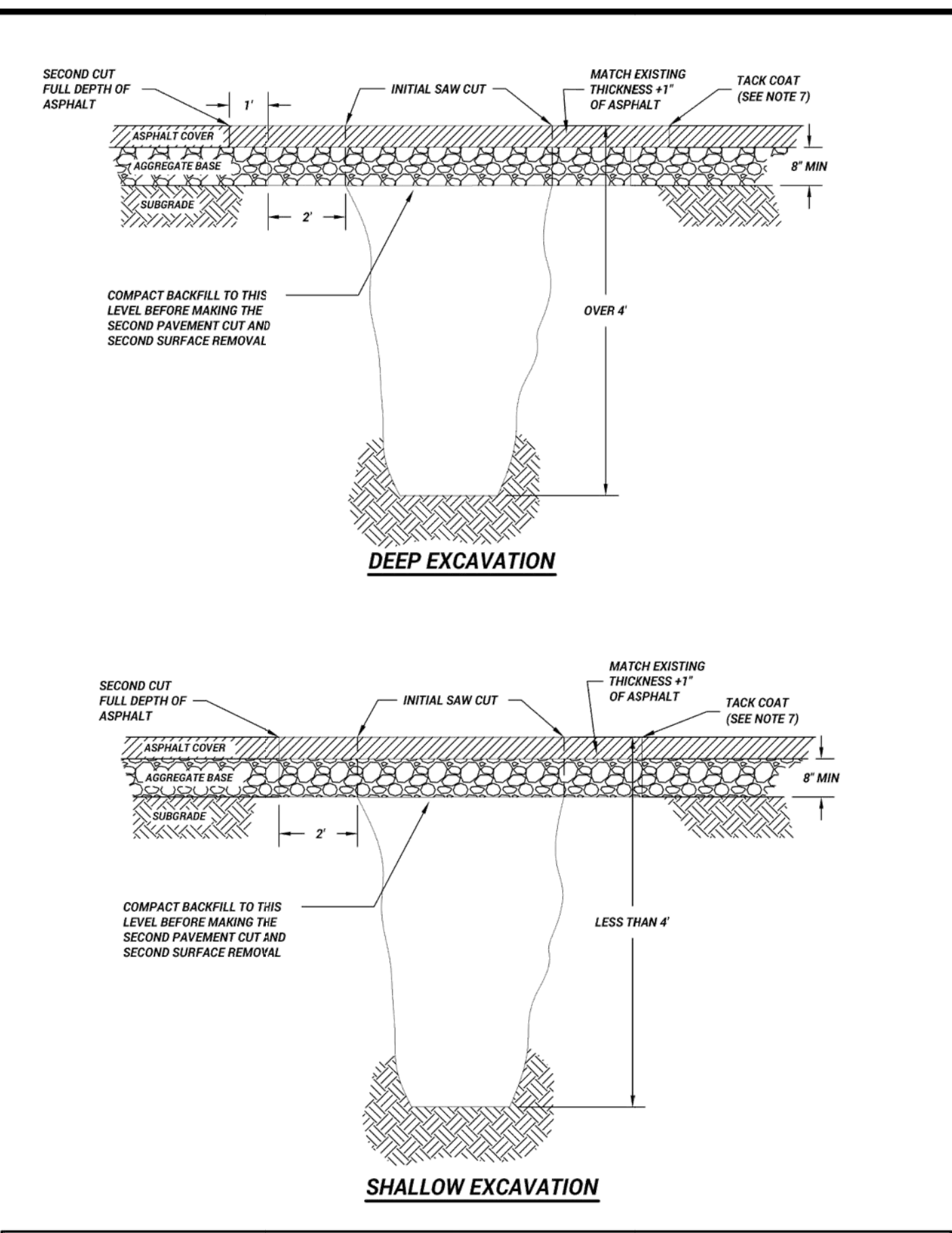
NOTE:
1. MAINTAIN ACCESS FOR REFUSE, DELIVERY SERVICES, AND FIRST RESPONDERS FOR ALL PROPERTIES AT ALL TIMES OF CONSTRUCTION.



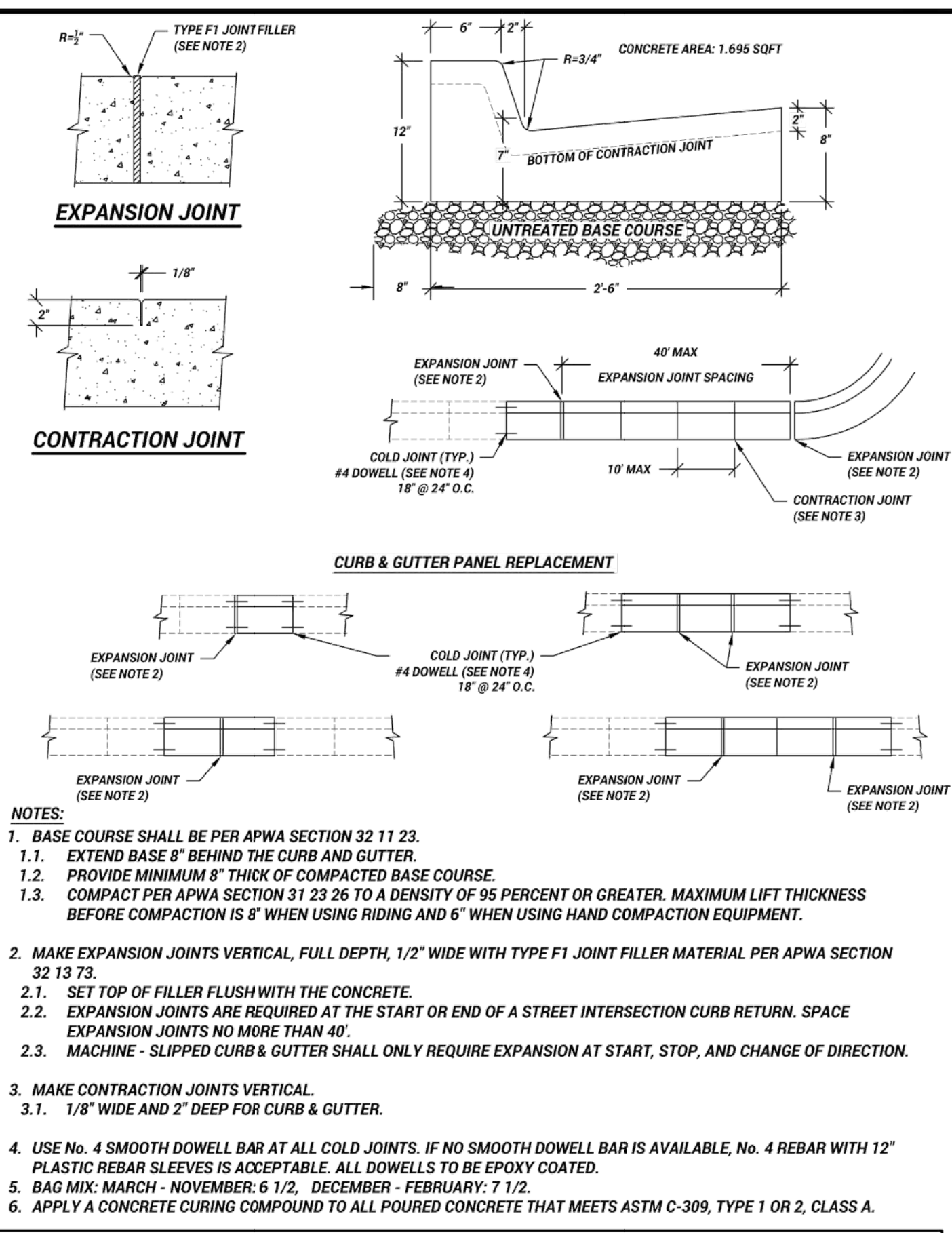
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| | ADDENDUM NO 3 | 02-13-26 |
|---|-----------------------|-------------|
| | ADDENDUM NO 1 | 02-10-26 |
| REV NO. | COMMENT | DATE |
|   <p>SUNRISE ENGINEERING</p> <p>6875 SOUTH 900 EAST SALT LAKE CITY, UTAH 84047 TEL 801.523.0100 · FAX 801.523.0990 www.sunrise-eng.com</p> | | |
| OGDEN CITY | | |
| 12TH ST/CENTURY DR TRUNK LINE CAPACITY UTILITY RELOCATION PLAN | | |
| SEI NO. 15684 | DESIGNED AX | DRAWN MB |
| CHECKED CL | SHEET NO. 19 OF 29 | C-1 |



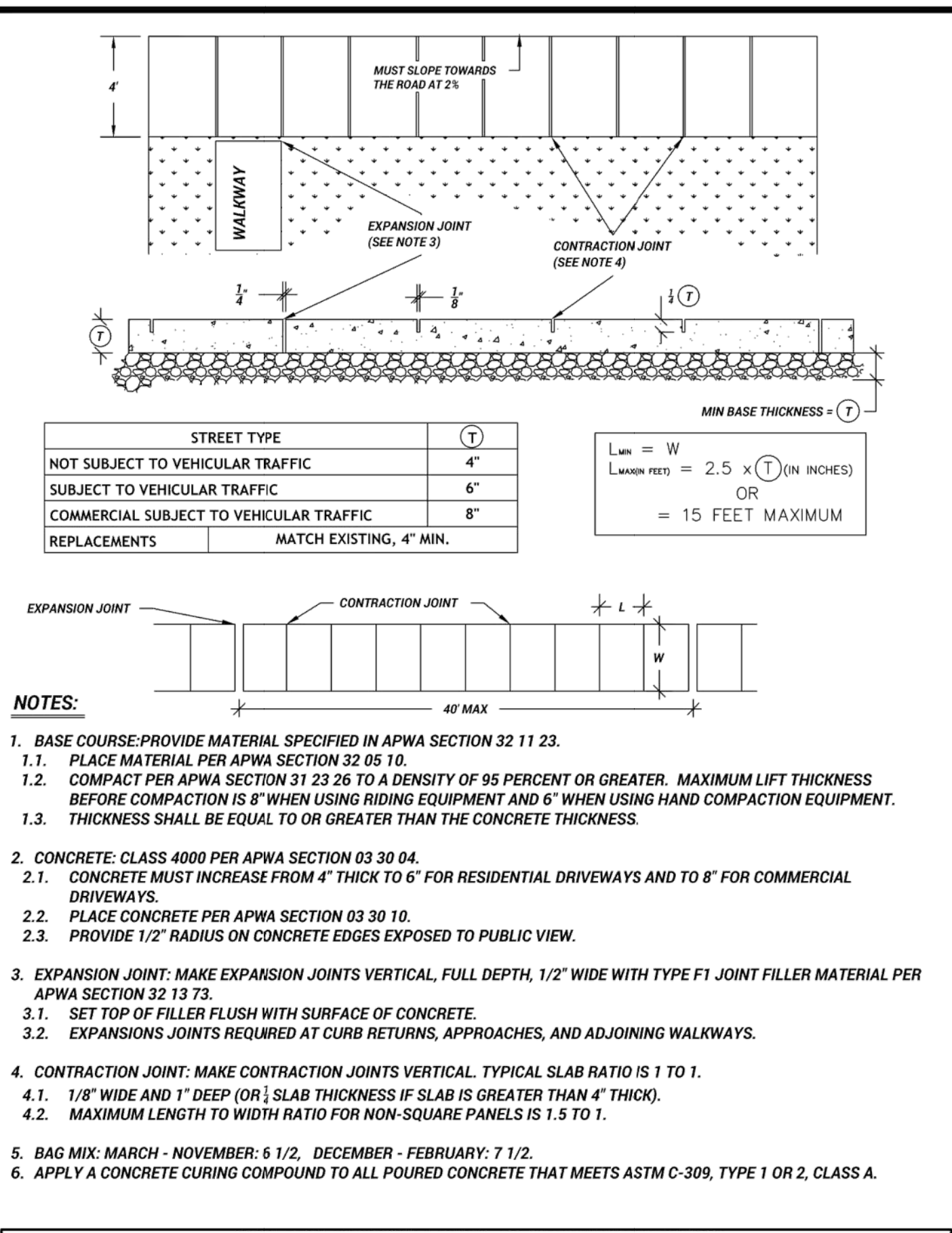
- NOTES:**
- REMOVE ADDITIONAL PAVEMENT TO THE MENTIONED FEATURE IF IT IS WITHIN TWO FEET OF:
 - A NEW SAWCUT
 - A PAINTED LINE STRIPE
 - A LIP OF GUTTER
 - A CURB
 - AN EXISTING PAVEMENT PATCH
 - ALL EXCAVATIONS WITHIN THE CITY RIGHT-OF-WAY REQUIRE AN EXCAVATION PERMIT FROM THE OGDEN CITY ENGINEERING DEPARTMENT.
 - ALL WORK IN THE RIGHT-OF-WAY MUST BE PERFORMED BY A LICENSED CONTRACTOR FOR THE STATE OF UTAH WHO IS BONDED AND INSURED THROUGH OGDEN CITY.
 - NOTIFY UNDERGROUND SERVICE ALERT (BLUE STAKES) TWO (2) WORKING DAYS PRIOR TO THE START OF EXCAVATION AT 1 (800) 662-4111.
 - NOTIFY ENGINEERING DEPARTMENT ONE (1) WORKING DAY (24 HOURS) PRIOR TO START OF CONSTRUCTION TO ARRANGE INSPECTIONS BY CITY PUBLIC WORKS INSPECTORS.
 - ALL EXCAVATIONS SHALL BE MADE, PROTECTED, AND SUPPORTED AS REQUIRED FOR SAFETY BY OSHA REGULATIONS.
 - BASE COURSE: PROVIDE MATERIAL SPECIFIED IN APWA SECTION 32 11 23.
 - PLACE MATERIAL PER APWA SECTION 32 05 10.
 - COMPACT THE MATERIAL PER APWA SECTION 31 23 26. THE MINIMUM APPROVED COMPACTION SHALL BE 95 PERCENT OR GREATER. MAXIMUM LIFT THICKNESS BEFORE COMPACTION IS 8" WHEN USING RIDING EQUIPMENT AND 6" WHEN USING HAND HELD COMPACTION EQUIPMENT.
 - TACK COAT PER APWA SECTION 32 12 14. PROVIDE FULL TACK COAT COVERAGE ON ALL VERTICAL SURFACES.
 - JOINT REPAIR: IF A CRACK OCCURS AT THE PATCH CONNECTION TO THE EXISTING PAVEMENT OR ANY STREET FIXTURE, SEAL THE CRACK PER APWA SECTION 32 01 17.
 - USE BITUMINOUS CONCRETE PAVING AS PER APWA 32 12 16 05 AND THE CURRENT EDITION OF THE OGDEN CITY STANDARDS.
 - MATCH EXISTING THICKNESS PLUS ONE (1) INCH, MINIMUM OF FOUR (4) INCHES, BUT NOT TO EXCEED SEVEN (7) INCHES (OR AS SPECIFIED BY THE CITY ENGINEER).
 - REPAIR THE ASPHALT PAVEMENT IF ANY OF THE FOLLOWING CONDITIONS WITHIN THE PATCH OCCUR:
 - PAVEMENT SURFACE DISTORTION EXCEEDS 1/4" DEVIATION IN 10'.
 - REPAIR OPTION: PLANE OFF SURFACE DISTORTIONS. COAT PLANED SURFACES WITH A CATIONIC OR ANIONIC EMULSION THAT COMPLIES WITH APWA SECTION 32 12 93 AND PROVIDE SAND BLOTTER.
 - CRACKS AT LEAST 1" IN LENGTH AND 1/4" WIDE OCCURRING MORE OFTEN THAN ONE (1) IN 10 SQUARE FEET.
 - REPAIR OPTION: CRACK SEAL
 - ASPHALT RAVELING IS GREATER THAN ONE (1) SQUARE FOOT PER 100 SQUARE FEET.
 - REPAIR OPTION: MILL AND INLAY
 - ALL PAVING, RESURFACING OR REPLACEMENT OF STREET FACILITIES:
 - ON MAJOR OR COLLECTOR STREETS SHALL BE DONE WITHIN THREE (3) CALENDAR DAYS.
 - ON ALL OTHER STREETS SHALL BE DONE IN WITHIN SEVEN (7) CALENDAR DAYS FROM THE TIME THE EXCAVATION COMMENCES.



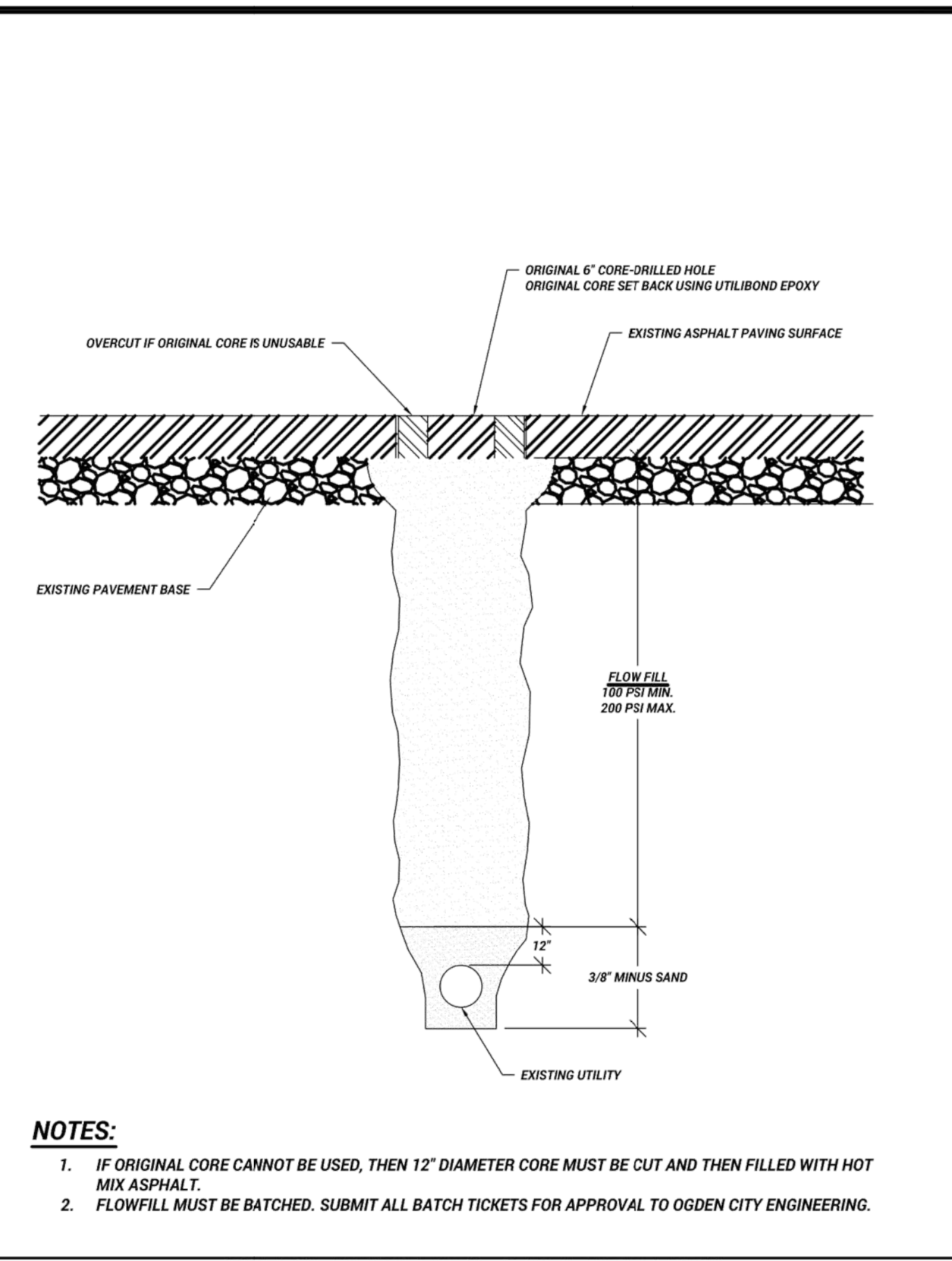
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|--|----------------------|-------------|
| OGDEN CITY ENGINEERING - STANDARD DRAWINGS | | |
| | ASPHALT PATCH | RD-3 |
| TAYLOR NIELSEN, CITY ENGINEER | SHEET 1 OF 2 2025 | |

| | | |
|--|----------------------|-------------|
| OGDEN CITY ENGINEERING - STANDARD DRAWINGS | | |
| | ASPHALT PATCH | RD-3 |
| TAYLOR NIELSEN, CITY ENGINEER | SHEET 2 OF 2 2025 | |

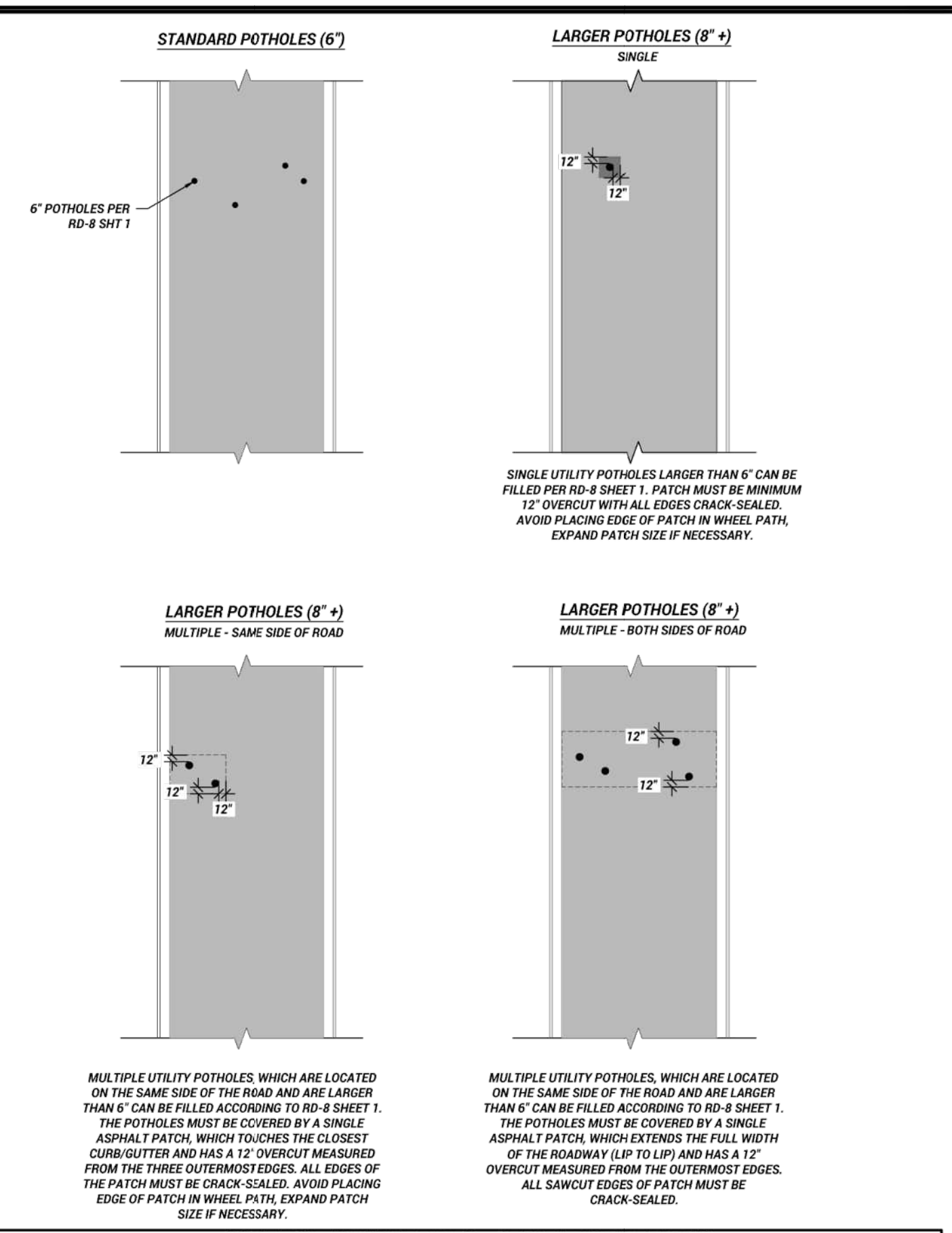
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|--|---------------------------------|-------------|
| OGDEN CITY ENGINEERING - STANDARD DRAWINGS | | |
| | TYPE A CURB & GUTTER | RD-4 |
| TAYLOR NIELSEN, CITY ENGINEER | SHEET 1 OF 1 2025 | |



| | | |
|--|------------------------|-------------|
| OGDEN CITY ENGINEERING - STANDARD DRAWINGS | | |
| | SIDEWALK DETAIL | RD-5 |
| TAYLOR NIELSEN, CITY ENGINEER | SHEET 1 OF 1 2025 | |



| | | |
|--|--------------------------|-------------|
| OGDEN CITY ENGINEERING - STANDARD DRAWINGS | | |
| | UTILITY POTHOLING | RD-8 |
| TAYLOR NIELSEN, CITY ENGINEER | SHEET 1 OF 2 2025 | |



| | | |
|--|--------------------------|-------------|
| OGDEN CITY ENGINEERING - STANDARD DRAWINGS | | |
| | UTILITY POTHOLING | RD-8 |
| TAYLOR NIELSEN, CITY ENGINEER | SHEET 2 OF 2 2025 | |

| 2 | ADDENDUM NO 3 | 02-13-26 |
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| 1 | ADDENDUM NO 1 | 02-10-26 |
| REV. NO. | COMMENT | DATE |

PROFESSIONAL ENGINEER
No. 11099227
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OGDEN CITY
12TH ST/CENTURY DR TRUNK LINE CAPACITY
STANDARD DETAILS - I

| | | | | | |
|---------|----------|-------|---------|-----------|------------|
| SEI NO. | DESIGNED | DRAWN | CHECKED | SHEET NO. | D-1 |
| 15684 | AX | MB | CL | 14 of 18 | |

OGDEN CITY SURVEY 20--
E INT.
L.S. XXXX
MONUMENT

CAP PLAN
CAP CAN BE PURCHASED FROM ENGINEERS OFFICE

ABBREVIATIONS:
INT - INTERSECTION
ML INT - MONUMENT LINE INTERSECTION
P.C. - POINT OF CURVATURE
P.C.C. - POINT OF COMPOUND CURVATURE
P.I. - POINT OF INTERSECTION
P.O.C. - POINT ON CURVE
P.O.T. - POINT ON TANGENT
P.R.C. - POINT OF REVERSE CURVE
P.T. - POINT OF TANGENCY
S.C. - SECTION CORNER
W.C. - WITNESS CORNER

ATTACH CAP TO REBAR WITH WIRE FOR INITIAL PLACEMENT

REINFORCEMENT (3) #5 @ 2'

3" MIN.
3" MIN.
1/4"
1/2"

8" MIN. Ø
30" MIN.

SECTION OF BASE
(TYPICAL SETTING)

CAP SECTION

NOTES:
1. DATE: SHOW MONTH, DAY, AND YEAR WHEN CAP WAS MARKED.
2. LICENCE: SHOW LICENCE NUMBER OF LAND SURVEYOR WHO MARKED THE CAP.
3. CONCRETE: CLASS 4000 PER APWA SECTION 03 30 04.
4. REINFORCEMENT: ASTM A 615, GRADE 60, DEFORMED STEEL REBAR.

OGDEN CITY ENGINEERING - STANDARD DRAWINGS
MONUMENT CAP & BASE
TAYLOR NIELSEN, CITY ENGINEER
SUR-1
SHEET 1 OF 1 2025

FRAME AND COLLAR SEE SUR-3

6" MIN.
1" MIN.
SEWER ROCK
MONUMENT CAP AND BASE SEE SUR-1

ASPHALT PAVING

6" PLAN

ASPHALT PAVEMENT (THICKNESS VARIES)
1/4" MIN. TO 1/2" MAX

CONCRETE PAVING

SECTION A-A

NOTES:
1. BACKFILL: INSTALL AND COMPACT BACKFILL MATERIAL PER APWA SECTION 32 05 10.
2. FOUNDATION: COMPACT BOTTOM OF EXCAVATED HOLE BEFORE PLACEMENT OF PRECAST OR CAST IN-PLACE MONUMENT POST.
3. CONCRETE: CLASS 4000 PER APWA SECTION 03 30 04 WITH MICRO FIBER MESH ADDITIVE (FOR COLLAR).
4. JOINTS: PROVIDE A VERTICAL JOINT BETWEEN EXISTING AND NEW SURFACES. PROVIDE A CONCENTRIC CIRCLE CUT.
5. THE SURVEY MONUMENT BASE CONCRETE SHALL BE POURED SEPARATELY FROM THE FRAME AND COVER COLLAR CONCRETE.

OGDEN CITY ENGINEERING - STANDARD DRAWINGS
SURVEY MONUMENT PLACEMENT UNDER ASPHALT PAVEMENTS
TAYLOR NIELSEN, CITY ENGINEER
SUR-2
SHEET 1 OF 1 2025

COVER

FRAME

SECTION A-A

SECTION B-B

EXTENSION

NOTES:
1. CASTINGS: GREY IRON CLASS 20 MINIMUM PER ASTM A 48.
2. COATINGS: COAT ALL METAL PARTS WITH ASPHALTUM PAINT.
3. SETTING: SET FRAME INDEPENDENT OF MONUMENT BASE.
4. USE D&L JOLYMPIC COVER K-6313

OGDEN CITY ENGINEERING - STANDARD DRAWINGS
FRAME AND COVER FOR MONUMENT
TAYLOR NIELSEN, CITY ENGINEER
SUR-3
SHEET 1 OF 1 2025

PRECAST CONCRETE MANHOLE
STAINLESS STEEL BANDS
PIPE TO BE INSTALLED BY CONTRACTOR

FLOWLINE OF MANHOLE

PRE-INSTALLED RUBBER BOOT

GROUT ALL FLOWLINE VOIDS

SECTION VIEW

GROUT ALL FLOWLINE VOIDS BETWEEN MANHOLE AND PIPE

PRECAST CONCRETE MANHOLE

UTBC IF IN GROUNDWATER, GROUND STABILIZATION METHODS MUST BE UTILIZED AND APPROVED BY THE CITY ENGINEER

6" MIN.

WIDTH OF EXCAVATION

PROFILE VIEW

OGDEN CITY ENGINEERING - STANDARD DRAWINGS
SEWER MANHOLE PRECAST
TAYLOR NIELSEN, CITY ENGINEER
SS-1
SHEET 1 OF 2 2025

NOTES:
1. BACKFILL: PROVIDE AND PLACE PER APWA SECTION 31 23 23.
1.1. COMPACT PER APWA SECTION 31 23 26 TO A DENSITY OF 95 PERCENT OR GREATER. MAXIMUM LIFT THICKNESS BEFORE COMPACTION IS 8" WHEN USING RIDING AND 6" WHEN USING HAND COMPACTION EQUIPMENT.
2. CONCRETE CLASS 4000 PER APWA SECTION 03 30 04. PLACE CONCRETE PER APWA 03 30 10.
3. MANHOLE SIZE
3.1. 4' DIAMETER FOR SEWER PIPES UNDER 12" IN DIAMETER AND NOT SUBJECT TO ANY CONDITIONS LISTED FOR THE 5' MANHOLE.
3.2. 5' DIAMETER FOR THE FOLLOWING:
3.2.1. DEFLECTION ANGLE IS GREATER THAN OR EQUAL TO 45°
3.2.2. WHEN THE MANHOLE HAS THREE OR MORE LINES
3.2.3. FOR SEWERS WITH A PIPE DIAMETER OF 12" OR GREATER
3.2.4. WHEN THE COVER IS GREATER THAN 14".
4. SEE SS-5 FOR MANHOLE FRAME/COVER SPECIFICATIONS.
5. OUTLET PIPE TO BE A MINIMUM OF 1" BELOW INLET PIPE FLOW LINES EXCEPT AS NOTED BELOW IN FIG. 1 (BELOW).
6. STEEL FRAMES: USE ASTM A 36 STEEL.
7. LOW PROFILE LIDS WILL NOT BE ALLOWED IN ANY OGDEN CITY RIGHT OF WAY.
8. REINFORCEMENT: USE ASTM A 615, GRADE 60. REFER TO APWA 03 20 00.
8.1. CAST IN PLACE REBAR SCHEDULE MUST BE STAMPED BY A STRUCTURAL ENGINEER.
9. COATINGS: EXCEPT MACHINED SURFACES, COAT ALL METAL WITH ASPHALTUM PAINT.
10. GROUT ALL PIPE OPENINGS WITH 2:1 SAND/CEMENT MORTAR.
11. PLACE FLEXIBLE GASKET-TYPE SEALANT IN ALL MANHOLE JOINTS. SEAL MUST MEET THE REQUIREMENTS OF SS-S-00210 (210A), AASHTO M-198, AND ASTM C990.
12. PRECAST REINFORCED CONCRETE WALLS MUST BE 5" THICK.
13. CAST-IN-PLACE CONCRETE WALLS MUST BE A MINIMUM OF 8" THICK.
14. CONTRACTOR SHALL CONTACT SEWER DEPARTMENT PRIOR TO ENTRANCE INTO MANHOLE
14.1. ENTRANCE INTO MANHOLE SHALL BE PER OSHA STANDARDS
15. MINIMUM PIPE SLOPE: REFER TO TABLE 1 - MINIMUM SEWER MAIN PIPE SLOPE, OF THE OGDEN CITY ENGINEERING STANDARDS FOR MINIMUM SEWER MAIN PIPE SLOPE.
16. ALL CONCRETE UTILITY COLLARS (I.E. MANHOLES, VALVES, ETC.) SHALL BE CLASS 4000 CONCRETE WITH MICRO FIBER MESH ADDITIVE.

| NORMAL DROPS (IN FEET) STRAIGHT THROUGH MANHOLES AT INVERTS FOR MINIMUM GRADES OR GREATER EXCEPT AS NOTED BELOW | | | | | |
|---|------|------|------|------|-----|
| INLET SIZE | 8" | 10" | 12" | 15" | 18" |
| 8" | 0.10 | --- | --- | --- | --- |
| 10" | 0.17 | 0.10 | --- | --- | --- |
| 12" | 0.33 | 0.17 | 0.10 | --- | --- |
| 15" | 0.58 | 0.42 | 0.25 | CL | --- |
| 18" | 0.80 | 0.71 | 0.63 | 0.50 | CL |

FIGURE 1
CL INDICATES THE DROP THROUGH THE MANHOLE SHALL BE THE EXISTING FLOWLINE BASED ON THE PIPE SLOPE

OGDEN CITY ENGINEERING - STANDARD DRAWINGS
SEWER MANHOLE PRECAST
TAYLOR NIELSEN, CITY ENGINEER
SS-1
SHEET 2 OF 2 2025

LOCATION OF THE SERVICE LATERAL MUST BE STAMPED INTO THE TOP OF CURB.

STANDARD SIDEWALK

PVC SEWER LATERAL SLOPE:
4" = 2% MINIMUM
6" = 1% MINIMUM

4" MINIMUM DIAMETER PVC FOR SINGLE FAMILY RESIDENTIAL
6" MINIMUM DIAMETER PVC FOR ALL OTHERS

7" MINIMUM COVER

PVC CONNECTOR (SEE BELOW)

LOCATOR TAPE

SEWER MAIN (8" MINIMUM DIAMETER)

PVC JOINTS OF RUBBER RING TYPE MUST COMPLY WITH ASTM D-1869

TYP. 45° STREET ELBOW (BELL x SPIGOT)

NOTE: PVC PIPE FITTINGS ASTM D-3034 WITH A SDR 35

TAPPING SADDLE

RUBBER GASKET SPEC ASTM D-1869 (FERROC DONUT)

WYE OR TEE

TAPPING TO AN EXISTING MAIN

CONNECTING VIA WYE OR TEE

NOTES:
1. CONNECTION FEES WILL BE ASSESSED AT THE TIME A PERMIT IS ISSUED. SEWER TAPS WILL BE PERFORMED BY OGDEN CITY PERSONNEL. WYE CONNECTIONS WILL BE PERFORMED BY THE CONTRACTOR UNDER THE SUPERVISION OF AN OGDEN CITY INSPECTOR. ANY TAP CONNECTIONS PERFORMED BY THE CONTRACTOR MUST BE APPROVED BY THE SEWER MANAGER.
2. SEWER TAPS INTO EXISTING 8" DIAMETER SANITARY SEWER PIPES SHALL NOT BE GREATER THAN 4".
3. ALLOWABLE SANITARY SEWER LATERAL PIPE MATERIAL:
3.1. PVC SDR-35, GREEN IN COLOR
3.2. HDPE DR-17 WITH FACTORY GREEN STRIPE
4. REQUIREMENTS FOR THE BEDDING OF A LATERAL IS THE SAME AS SHOWN IN SS-4.
5. THE SEWER LATERAL LOCATIONS SHALL BE MARKED WITH AN "S" IN THE TOP OF THE CONCRETE CURB.
6. PVC JOINTS OF RUBBER RING MUST COMPLY WITH ASTM D-1869.
7. FOR NEW PROJECTS: EXTEND SEWER LATERAL 5' BEHIND THE BACK OF THE SIDEWALK OR PROPERTY LINE, WHICHEVER IS FURTHER. THE END OF A LATERAL SHALL BE MARKED WITH A 2x4, SET IN THE GROUND, AND HAVE THE END COLORED GREEN.
8. CLEANOUTS SHALL BE REQUIRED EVERY 100'.
9. SEWER PIPE SHALL BE MARKED WITH A 6" DETECTABLE GREEN COLORED LOCATOR TAPE LABELED "SANITARY SEWER"

OGDEN CITY ENGINEERING - STANDARD DRAWINGS
SEWER LATERAL CONNECTION
TAYLOR NIELSEN, CITY ENGINEER
SS-2
SHEET 1 OF 1 2025

| 2 | ADDENDUM NO 3 | 02-13-26 |
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| 1 | ADDENDUM NO 1 | 02-10-26 |
| REV NO. | COMMENT | DATE |

PROFESSIONAL ENGINEER
02.13.26
No. 11099227
HUI XIA
STATE OF UTAH

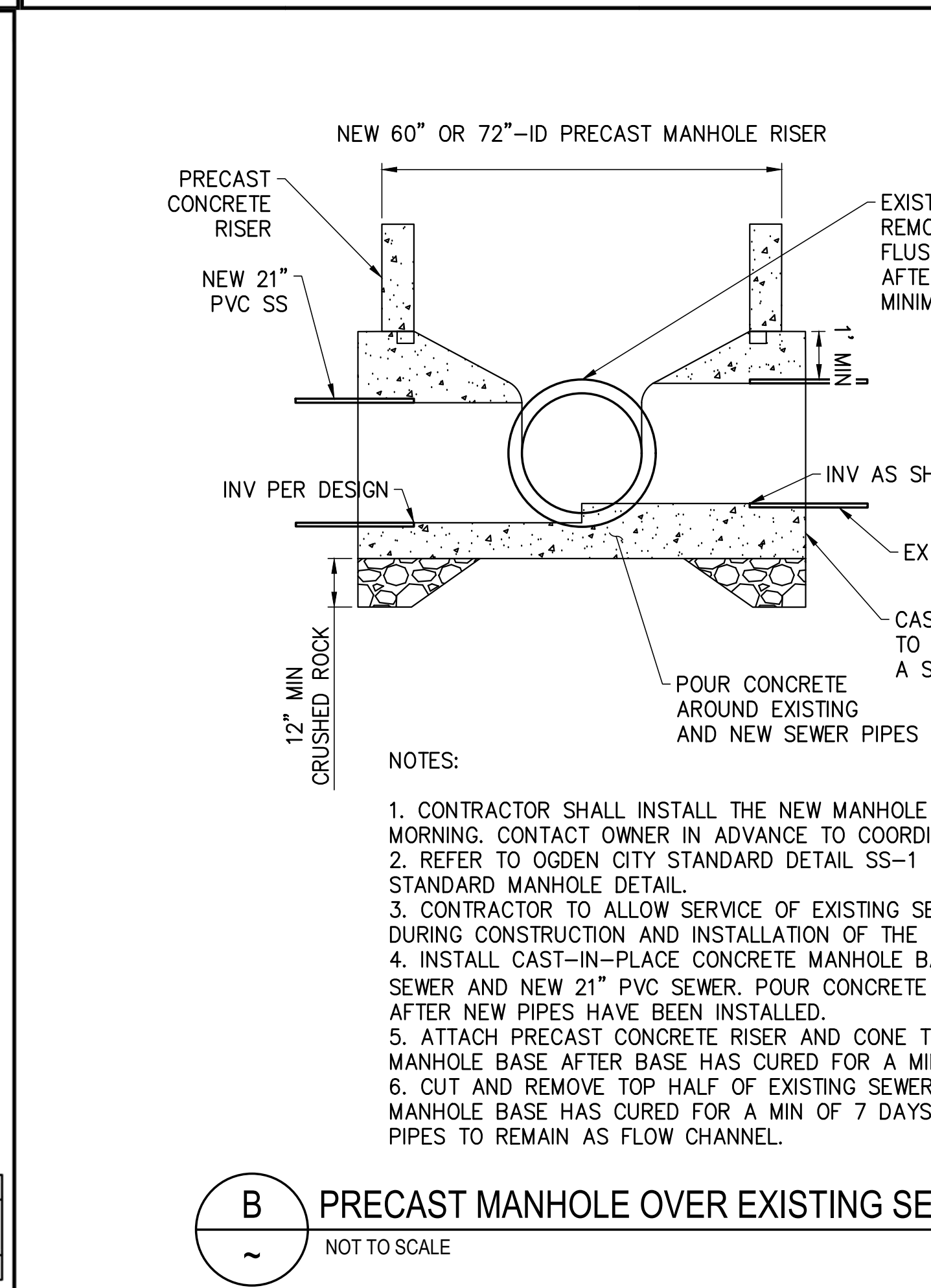
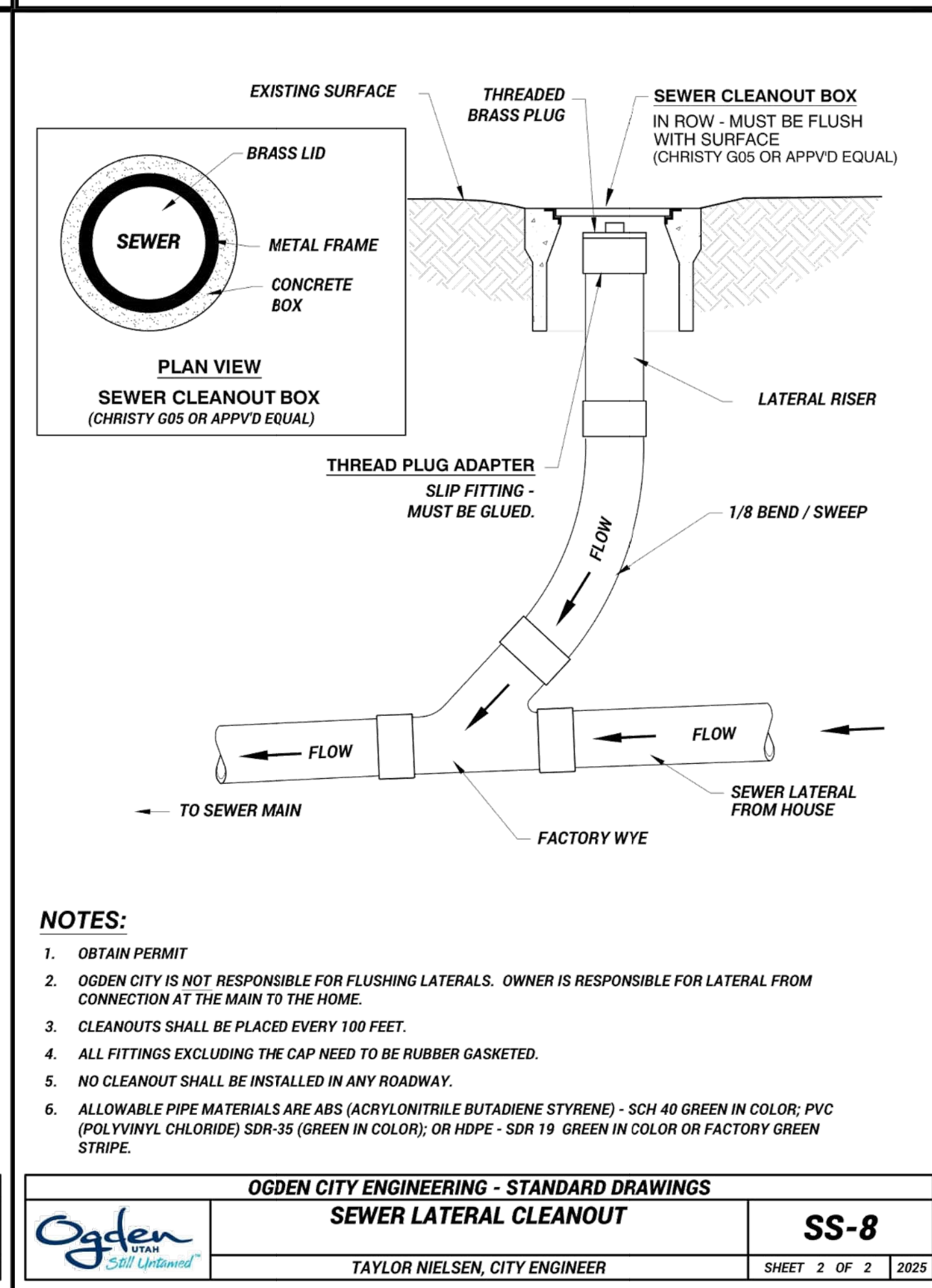
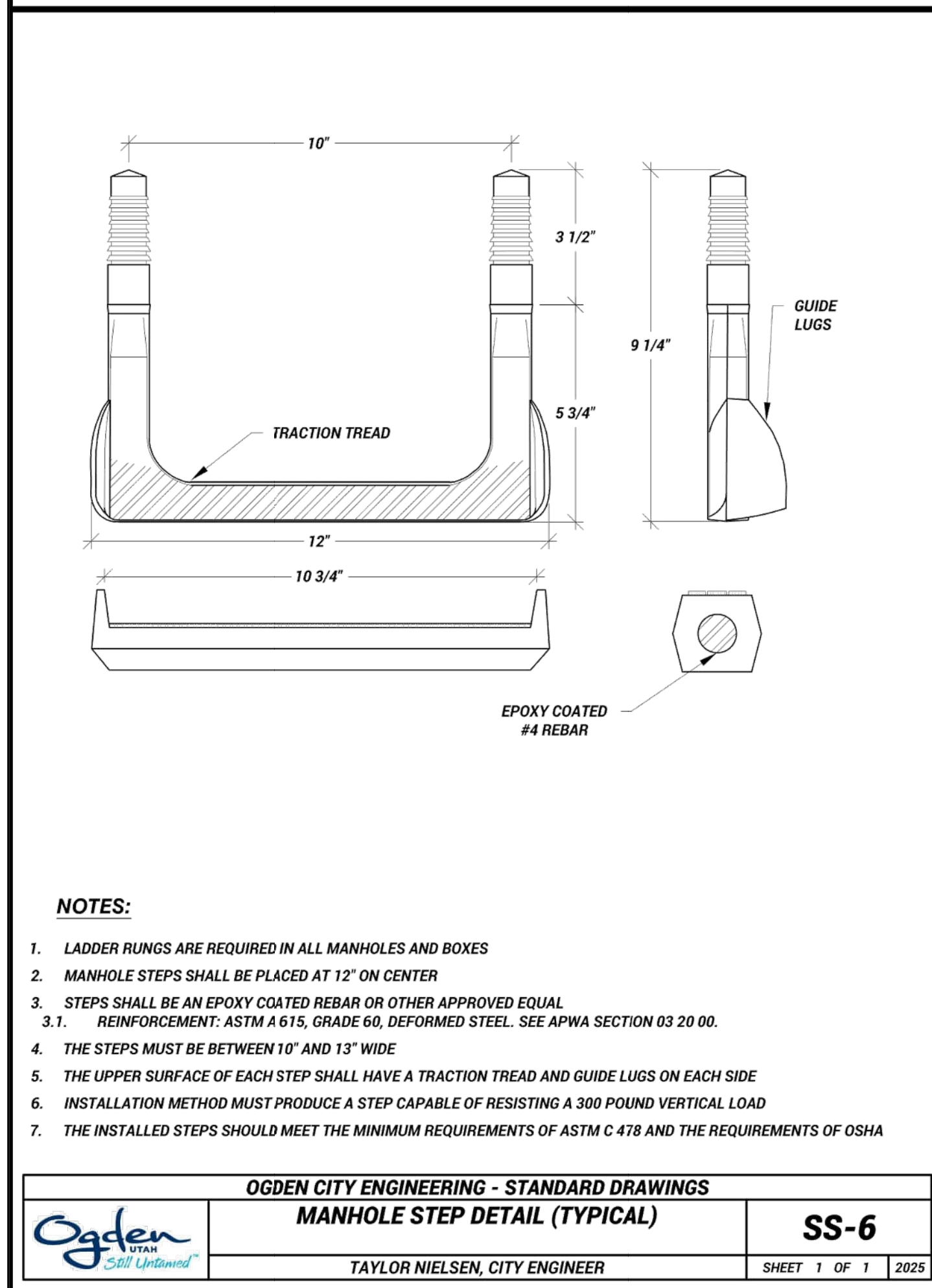
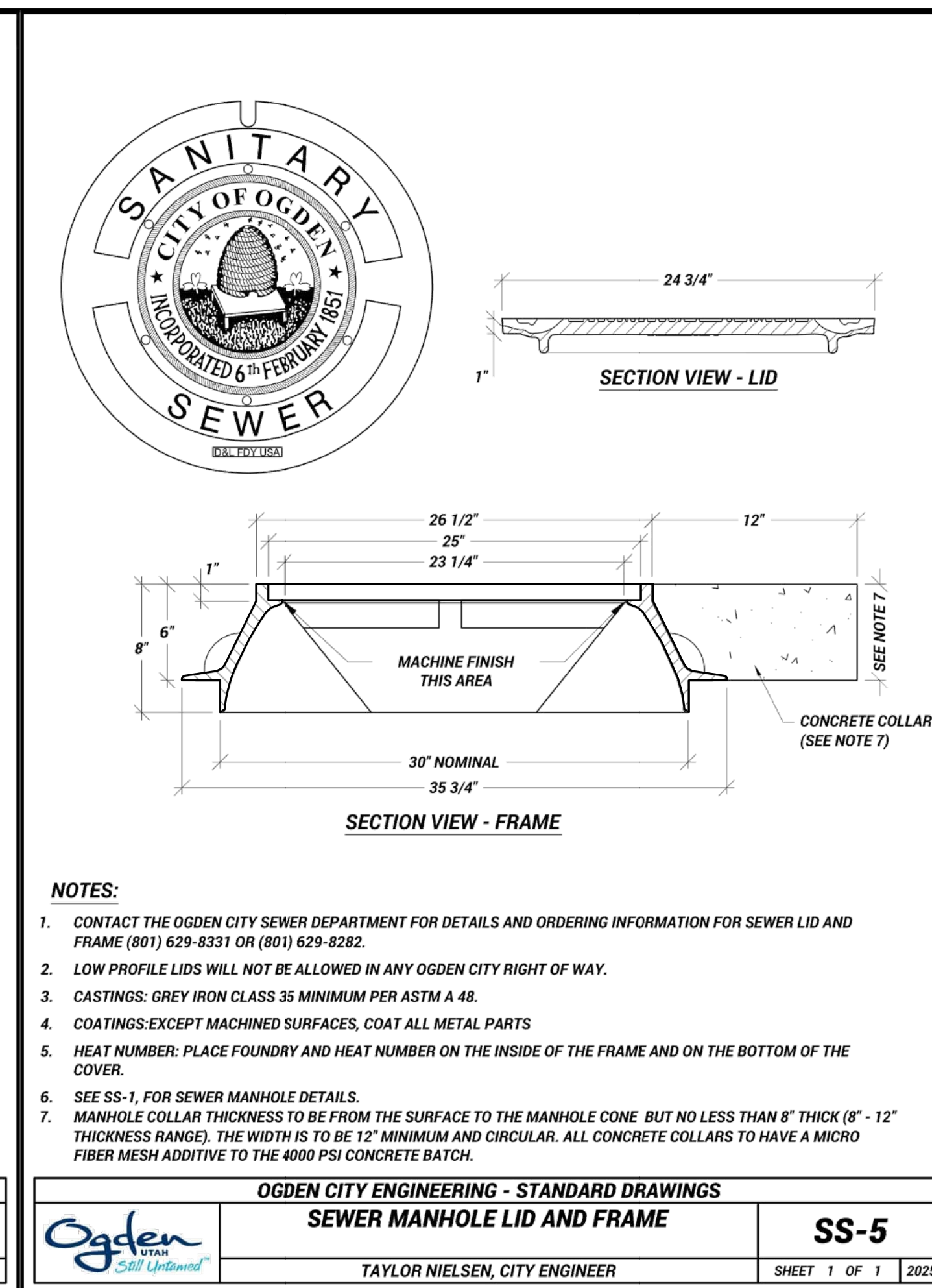
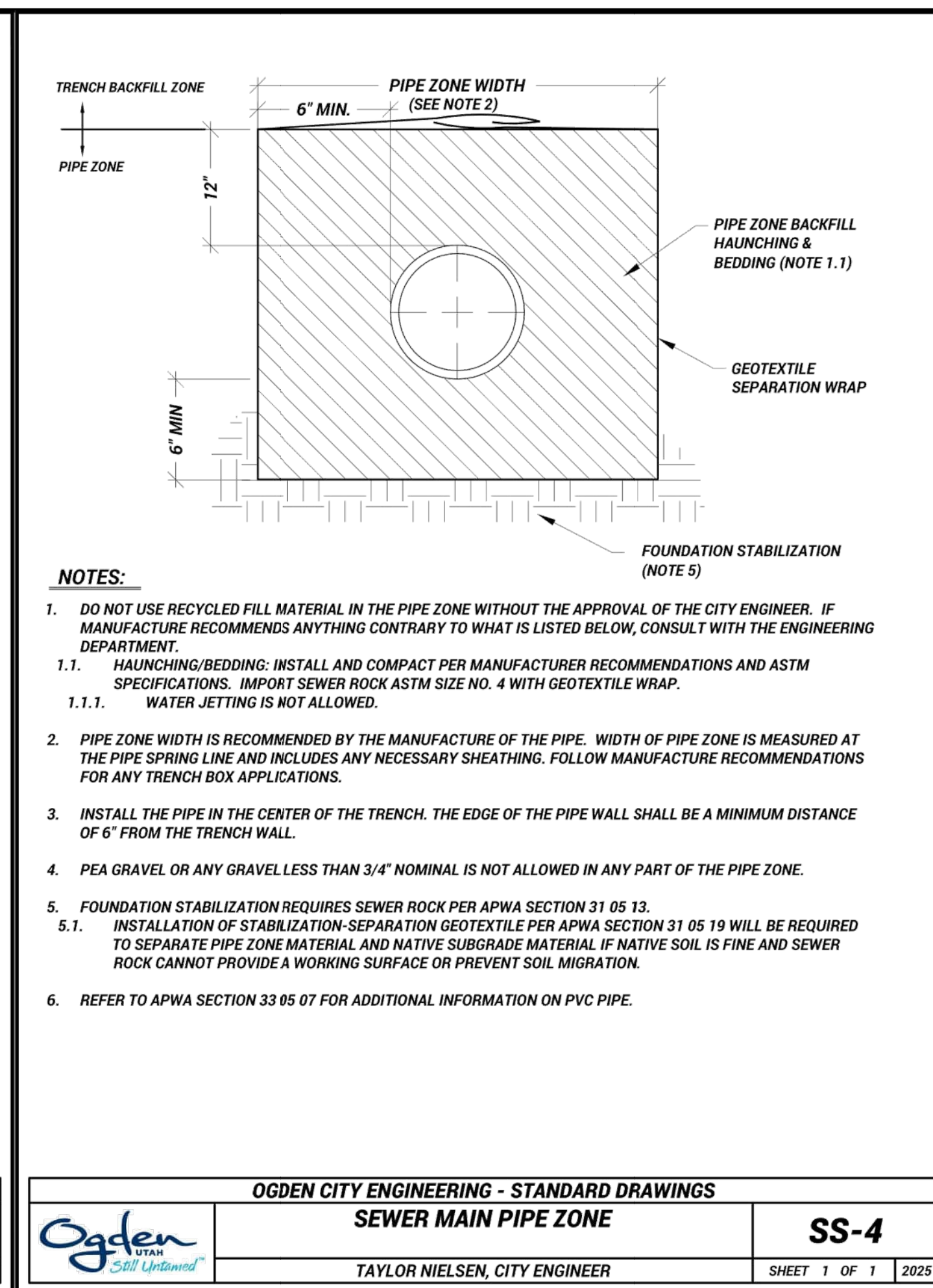
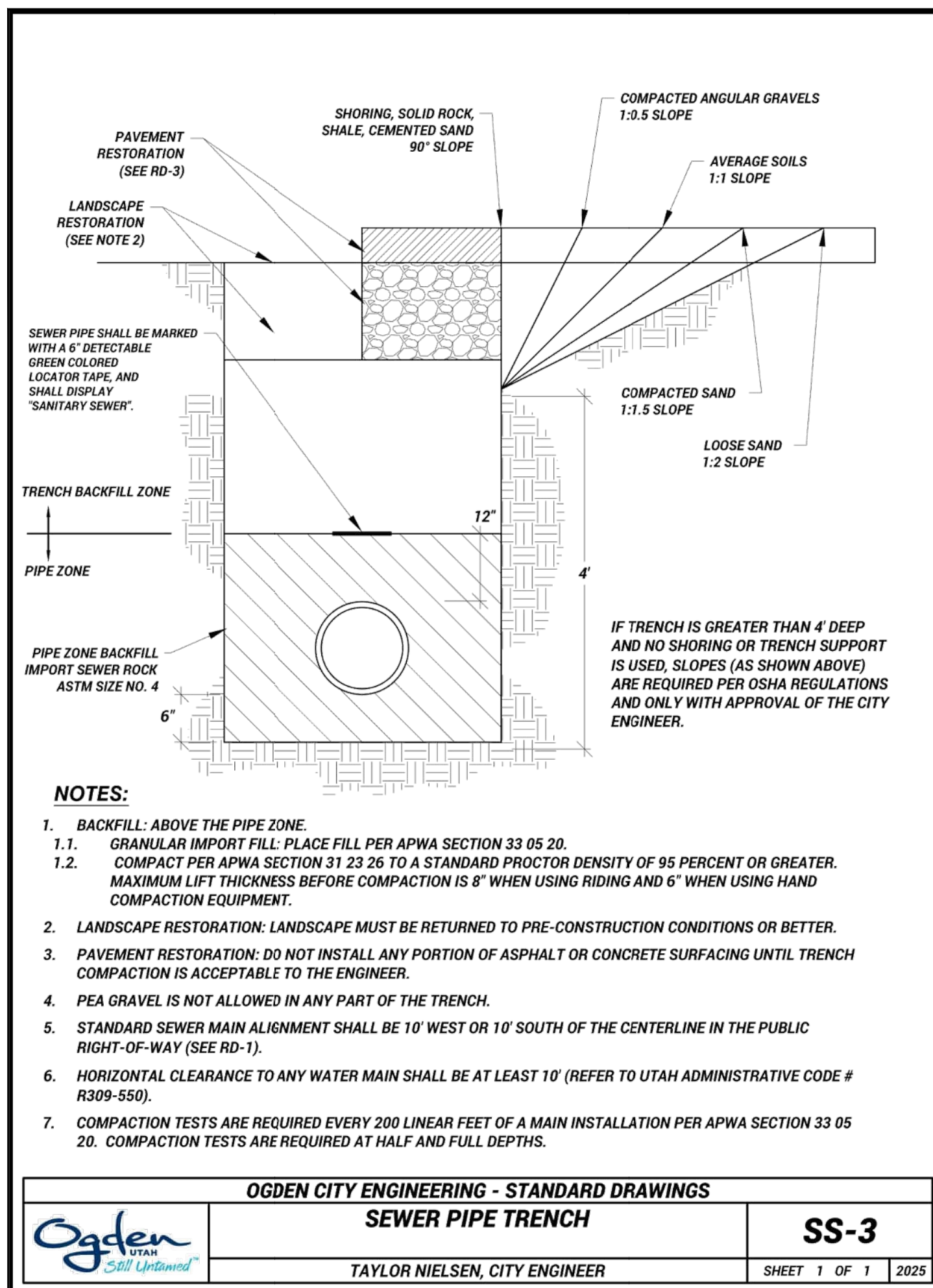
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OGDEN CITY
12TH ST/CENTURY DR TRUNK LINE CAPACITY
STANDARD DETAILS - II

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| SEI NO. | DESIGNED | DRAWN | CHECKED | SHEET NO. | D-2 |
| 15684 | AX | MB | CL | 15 of 18 | |

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OGDEN CITY ENGINEERING - STANDARD DRAWINGS
SEWER MAIN PIPE ZONE
SS-4
 TAYLOR NIELSEN, CITY ENGINEER SHEET 1 OF 1 2025

OGDEN CITY ENGINEERING - STANDARD DRAWINGS
SEWER MANHOLE LID AND FRAME
SS-5
 TAYLOR NIELSEN, CITY ENGINEER SHEET 1 OF 1 2025

OGDEN CITY ENGINEERING - STANDARD DRAWINGS
MANHOLE STEP DETAIL (TYPICAL)
SS-6
 TAYLOR NIELSEN, CITY ENGINEER SHEET 1 OF 1 2025

OGDEN CITY ENGINEERING - STANDARD DRAWINGS
SEWER LATERAL CLEANOUT
SS-8
 TAYLOR NIELSEN, CITY ENGINEER SHEET 2 OF 2 2025

OGDEN CITY ENGINEERING - STANDARD DRAWINGS
SEWER MANHOLE OVER EXISTING SEWER
SS-7
 TAYLOR NIELSEN, CITY ENGINEER SHEET 1 OF 1 2025

OGDEN CITY
12TH ST/CENTURY DR TRUNK LINE CAPACITY
STANDARD DETAILS - III

| | | |
|---------|---------------|----------|
| REV NO. | COMMENT | DATE |
| 2 | ADDENDUM NO 3 | 02-13-26 |
| 1 | ADDENDUM NO 1 | 02-10-26 |

PROFESSIONAL ENGINEER
 No. 11099227
 HUI XIA
 STATE OF UTAH

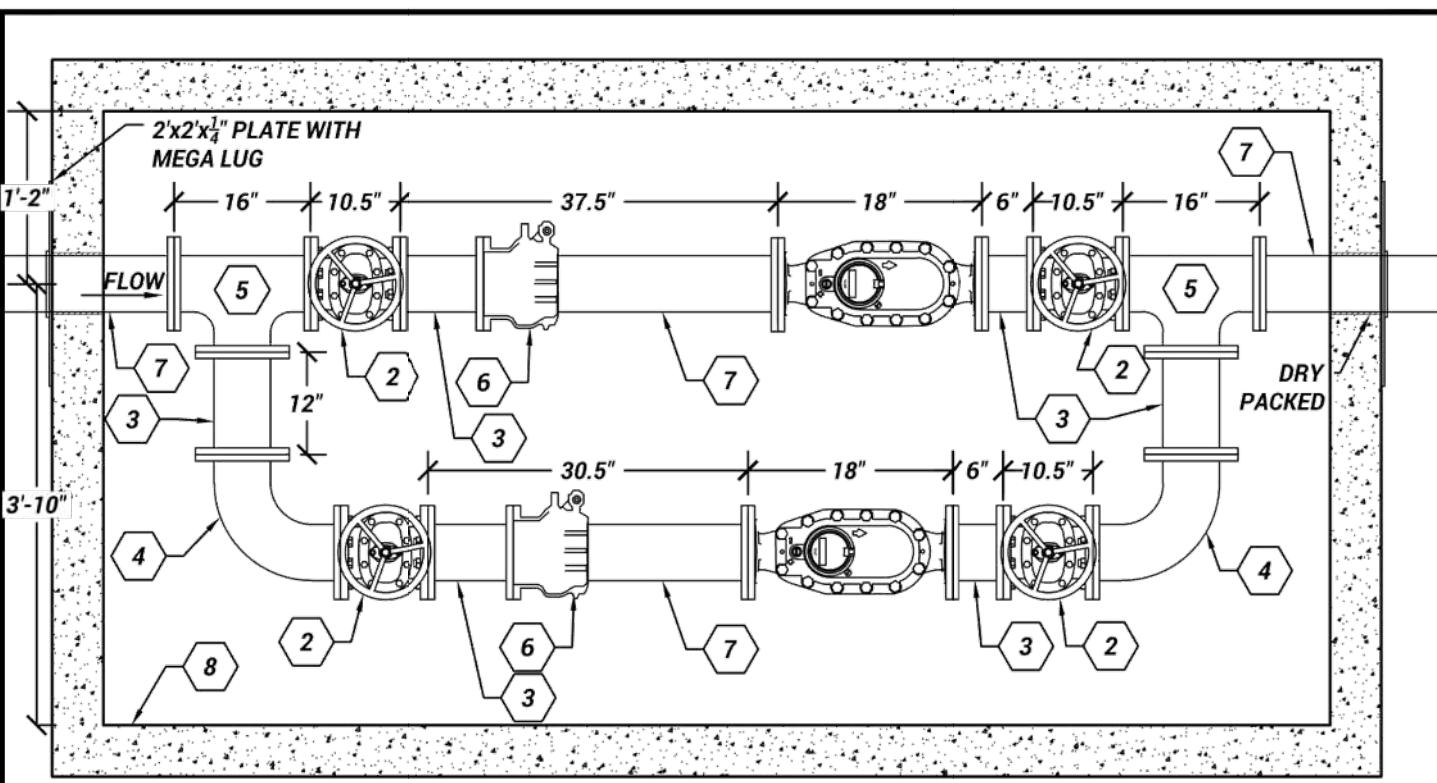
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| | | | | |
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| SEI NO. | DESIGNED | DRAWN | CHECKED | SHEET NO. |
| 15684 | AX | MB | CL | 16 of 18 |

D-3

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NOTES:
 CONTRACTOR TO PROVIDE AND INSTALL ALL MATERIALS AS SHOWN ON THE DETAIL, UNLESS DIRECTED OTHERWISE BY OGDEN CITY WATER. REFER TO W-19 DETAIL FOR HATCH/LID.

1. PROVIDE AND PLACE BACKFILL PER APWA SECTION 33 05 20. COMPACT PER APWA SECTION 31 23 26 TO A DENSITY OF 95 PERCENT OR GREATER. MAXIMUM LIFT THICKNESS IS 8" WHEN USING RIDING COMPACTION AND 6" WHEN USING HAND HELD COMPACTION EQUIPMENT.
2. SEE STANDARD DRAWING W-9 FOR ADDITIONAL PRECAST VAULT DETAILS. ALLOW 1" CLEARANCE AROUND THE LINE THROUGH THE VAULT WALL. DRY PACK REMAINING SPACE AROUND THE PIPE. SUPPORT WATER METER ON LATERAL AND BYPASS WITH JACK STANDS.
3. ALL FITTINGS TO BE FLANGED, AND ALL JOINTS MUST BE RESTRAINED.
4. IF GROUNDWATER CONDITIONS ALLOW, CORE A 6" Ø HOLE IN THE LOWEST POINT OF THE FLOOR FOR A RELIEF DRAIN.

| ITEM | QTY | DESCRIPTION |
|------|-----|--|
| 1 | 2 | 6" NEPTUNE MACH 10 WATER METER (CITY PROVIDED - FEE REQ'D) EU3F2G1S690 |
| 2 | 4 | 6" GATE VALVE (FLxFL) WITH HANDWHEEL |
| 3 | 6 | 6" DUCTILE IRON SPOOL (FLxFL) |
| 4 | 2 | 6" 90° BEND (FLxFL) |
| 5 | 2 | 6"x6"x6" TEE (FLxFL) |
| 6 | 2 | 6" RESTRAINED FLANGE COUPLING ADAPTOR |
| 7 | 4 | 6" DUCTILE IRON PIPE (FLxCUT TO FIT) |
| 8 | 1 | 6" (INTERIOR) PRECAST CONCRETE VAULT (SEE STD DWG W-9) |

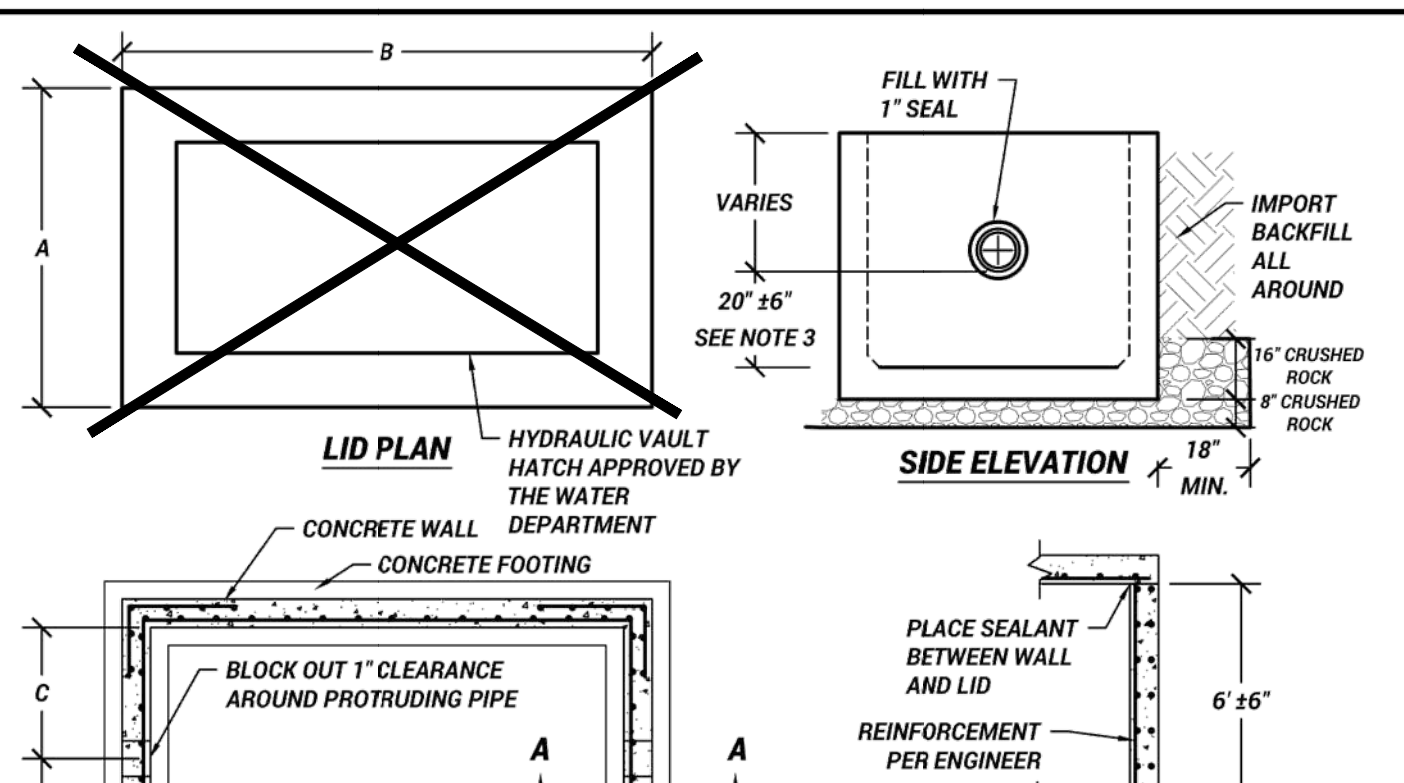
OGDEN CITY ENGINEERING - STANDARD DRAWINGS

6" MACH 10 ULTRASONIC WATER METER WITH 6" BYPASS

W-7

TAYLOR NIELSEN, CITY ENGINEER

SHEET 1 OF 1 2025



SECTION A-A

PRECAST BOX DIMENSIONS

| No. | METER SIZE | | | |
|-----|------------|--------|--------|--------|
| | 8" | 6" | 4" | 3" |
| A | 19'-0" | 19'-0" | 11'-0" | 9'-0" |
| B | 3'-4" | 1'-8" | 1'-11" | 1'-11" |
| C | 4'-8" | 4'-4" | 4'-1" | 4'-1" |
| D | 14'-0" | 12'-0" | 10'-0" | 8'-0" |

NOTES:

1. ALL VAULTS TO BE TRAFFIC RATED, DESIGNED, AND APPROVED BY A LICENSED STRUCTURAL ENGINEER.
 - 1.1. PROVIDE CLASS 4000 CONCRETE, APWA 03 30 04. VAULT SHALL BE APPROVED BY OGDEN CITY ENGINEERING PRIOR TO INSTALLATION. VAULT LAYOUT FOR AN 8" WATER METER WITH BYPASS MUST BE APPROVED BY OGDEN CITY ENGINEERING.
2. BACKFILL: PROVIDE AND PLACE PER APWA SECTION 31 23 23. COMPACT PER APWA SECTION 31 23 26 TO A DENSITY OF 95 PERCENT OR GREATER. MAXIMUM LIFT THICKNESS IS 8" BEFORE COMPACTION.
3. 8" MINIMUM OF CRUSHED ROCK (WITH SEPARATION FABRIC) TO BE PLACED BELOW FOOTING. 12" MINIMUM CLEAR SPACE FROM BOTTOM OF PIPE TO CRUSHED ROCK.
4. FILL ANNULAR SPACE AROUND PIPE WALL PENETRATIONS WITH WATERPROOF SEAL.
5. PRE-CAST VAULTS ARE ALLOWED, DRAWINGS MUST BE APPROVED BY THE CITY.
6. PRE-PLUMBED VAULTS ARE ALLOWED, DRAWINGS MUST BE APPROVED BY THE CITY.
7. CENTER THE VAULT HATCH LID OVER THE METER.
8. ALL METER VAULTS (AND PRV VAULTS) ARE REQUIRED TO HAVE A BOLT-ON ALUMINUM LADDER WITH SAFETY EXTENSION DEVICE. SUBMITTAL OF LADDER/EXTENSION DEVICE ALONG WITH LOCATION WILL BE REQUIRED FOR APPROVAL ON ALL VAULTS.

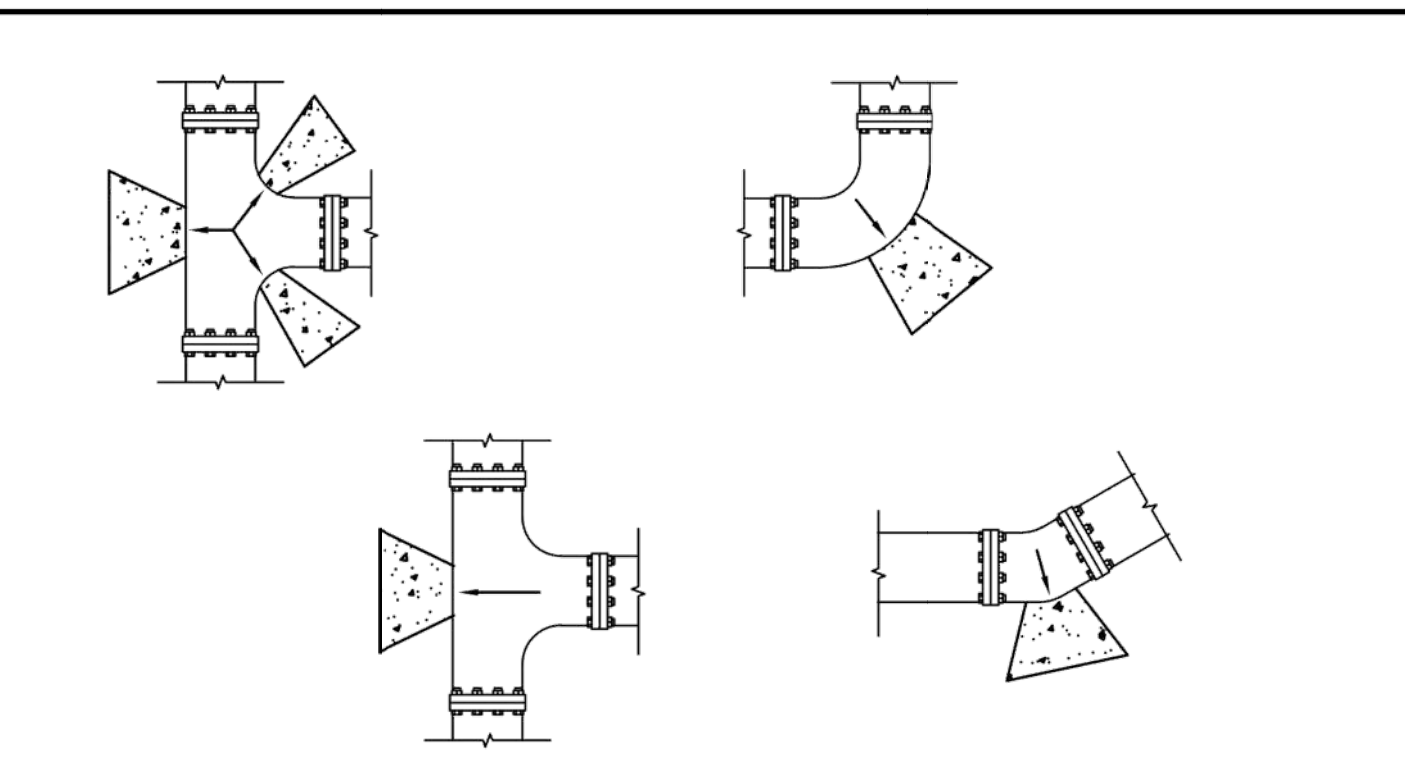
OGDEN CITY ENGINEERING - STANDARD DRAWINGS

CONCRETE METER VAULTS

W-9

TAYLOR NIELSEN, CITY ENGINEER

SHEET 1 OF 1 2025



MINIMUM BEARING AREA IN SQUARE FEET

| SIZE | TEES, VALVES, DEAD ENDS | 90° BENDS | 45° BENDS | 22.5° BENDS | 11.25° BENDS |
|------|-------------------------|-----------|-----------|-------------|--------------|
| 4" | 2 | 3 | 2 | 2 | 2 |
| 6" | 4 | 5.5 | 3 | 1.5 | 1 |
| 8" | 6 | 9.5 | 5 | 2.75 | 1.5 |
| 12" | 14 | 20 | 11 | 5.5 | 3 |

NOTES:

1. ALL PIPES WITHIN OGDEN CITY MUST BE RESTRAINED USING JOINT RESTRAINT DEVICES. THRUST BLOCKS ARE ONLY TO BE USED IN SITUATIONS THAT WOULD REQUIRE A THRUST BLOCK SUCH AS AT HYDRANTS AND AT CONNECTIONS TO EXISTING.
2. CONCRETE: CLASS 4000 MINIMUM PER APWA SECTION 03 30 04. POUR AGAINST UNDISTURBED SOIL. NO BAG MIXES ALLOWED. SANDIES OR KAPP UCART ARE ALLOWED FOR USE FOR THRUST BLOCKS.
3. PIPE JOINTS: DO NOT COVER WITH CONCRETE. LEAVE COMPLETELY ACCESSIBLE.
4. GREASE: APPLY POLY-FM GREASE TO ALL BURIED METAL SURFACES. WRAP 8 MIL THICK POLYETHYLENE SHEET AND TAPE WRAP.
5. SPECIAL CONSTRUCTION REQUIREMENTS:
 - 5.1. THRUST DESIGN FOR PIPE SIZES OR CONFIGURATIONS NOT SHOWN REQUIRE A SPECIAL DESIGN.
 - 5.2. BEARING AREAS, VOLUMES, AND SPECIAL THRUST BLOCKING DETAILS SHOWN ON CONSTRUCTION PLANS TAKE PRECEDENCE OVER THIS PLAN.
6. INSPECTIONS: PRIOR TO BACKFILLING AROUND THE THRUST BLOCK, SECURE INSPECTION OF INSTALLATION BY ENGINEER.
7. BACKFILL: PROVIDE AND PLACE PER APWA SECTION 33 05 20. COMPACT PER APWA SECTION 31 23 26 TO A DENSITY OF 95 PERCENT OR GREATER. MAXIMUM LIFT THICKNESS IS 8" WHEN USING RIDING COMPACTION AND 6" WHEN USING HANDHELD COMPACTION EQUIPMENT.

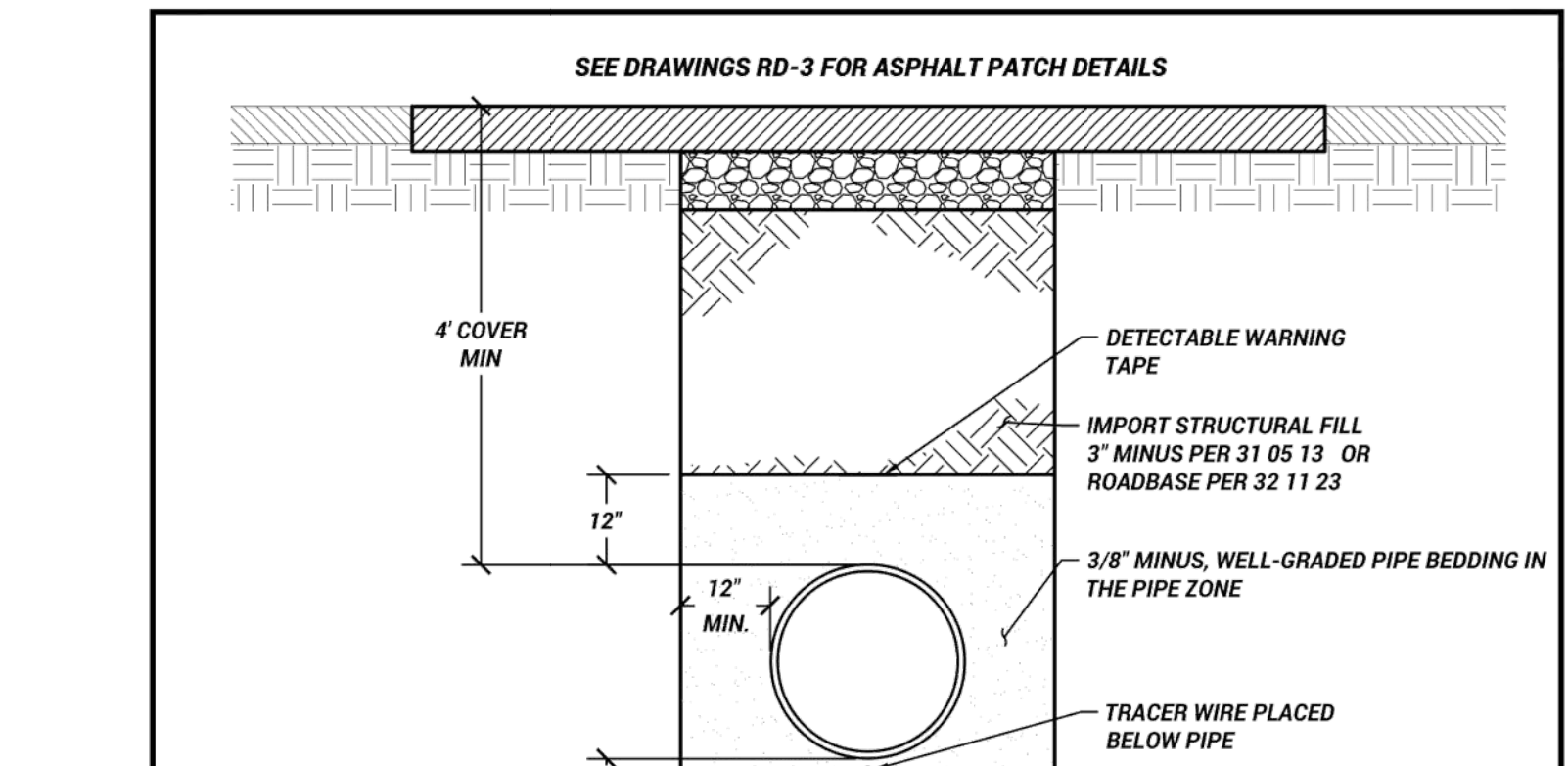
OGDEN CITY ENGINEERING - STANDARD DRAWINGS

DIRECT BEARING THRUST BLOCK

W-16

TAYLOR NIELSEN, CITY ENGINEER

SHEET 1 OF 1 2025



NOTES:

1. PIPE ZONE WIDTH IS RECOMMENDED BY THE MANUFACTURE OF THE PIPE. WIDTH OF THE PIPE ZONE IS MEASURED AT THE PIPE SPRING LINE AND INCLUDES ANY NECESSARY SHEATHING. FOLLOW MANUFACTURER RECOMMENDATIONS FOR ANY TRENCH BOX APPLICATIONS.
2. INSTALL THE PIPE IN THE CENTER OF THE TRENCH.
3. BASE COURSE PER APWA SECTION 32 11 23.
4. WIDTH OF EXCAVATION IS MEASURED AT THE PIPE SPRING LINE AND INCLUDES ANY NECESSARY SHEATHING.
5. USE 3/8" MINUS WELL-GRADED PIPE BEDDING IMPORT FILL IN THE PIPE ZONE. MAXIMUM LIFT THICKNESS IS 8" BEFORE COMPACTION.
6. DO NOT USE RECYCLED RAP AGGREGATE IN THE TRENCH. IF MANUFACTURER RECOMMENDS ANYTHING CONTRARY TO WHAT IS LISTED BELOW, CONSULT WITH THE ENGINEERING DEPARTMENT.
 - 6.1. HAUNCHING/BEDDING: INSTALL AND COMPACT PER MANUFACTURER RECOMMENDATIONS AND ASTM SPECIFICATIONS. WATER SETTING IS NOT ALLOWED.
 - 6.2. SUBMISSION OF COMPACTION TEST DATA FOR THE HAUNCHING AREAS MAY BE REQUESTED AT ANY TIME.
7. PEA GRAVEL OR ANY GRAVEL LESS THAN 3/8" NOMINAL SIZE IS NOT ALLOWED IN ANY PART OF THE TRENCH.
8. REFER TO APWA SECTION 33 05 07 FOR ADDITIONAL INFORMATION ON PVC PIPE.
9. ALL TRACER WIRE SHALL BE TESTED FOR CONTINUITY IN THE PRESENCE OF A REPRESENTATIVE FROM OGDEN CITY WATER PRIOR TO ASPHALT PLACEMENT. ANY TRACER WIRE FOUND NOT TO BE CONTINUOUS AFTER TESTING SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE PRIOR TO ASPHALT PLACEMENT.
10. ALL TRACER WIRE WILL BE RE-TESTED AT THE 1-YEAR WARRANTY INSPECTION. ANY TRACER WIRE FOUND NOT TO BE CONTINUOUS AFTER TESTING SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.

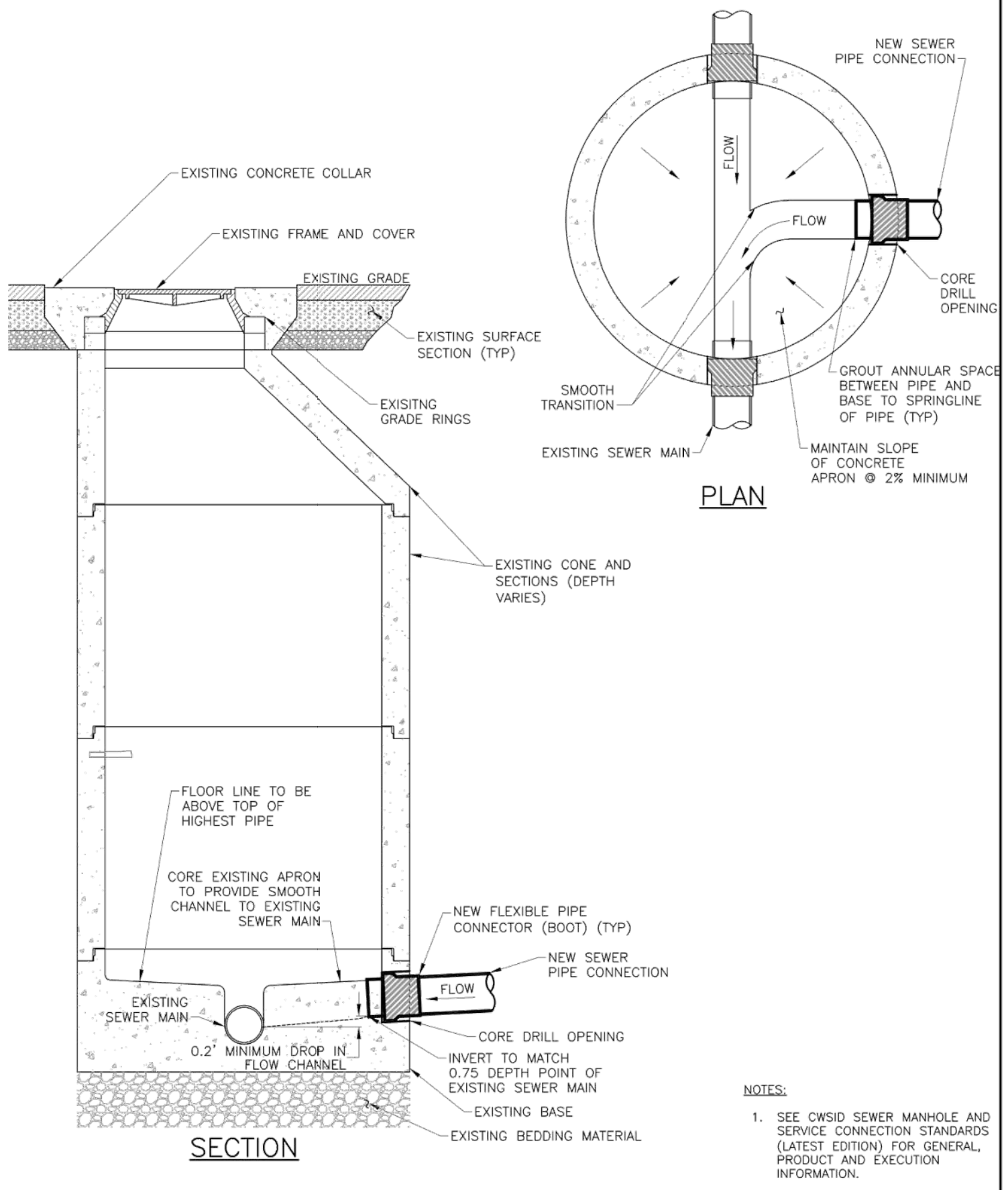
OGDEN CITY ENGINEERING - STANDARD DRAWINGS

TYPICAL WATERLINE TRENCH

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TAYLOR NIELSEN, CITY ENGINEER

SHEET 1 OF 1 2025



CENTRAL WEBER SEWER IMPROVEMENT DISTRICT

CONNECTION TO EXISTING MANHOLE

NO SCALE

DRAWN: [] DESIGNED: [] CHECKED: [] APPROVED: []

DATE: JUL '22 FILE NAME: [] DRAWING NAME: D-3

CONNECTION TO EXISTING MANHOLE (DETAIL D-3)

1. GENERAL
 - A. The following notes are in addition to those that apply found listed under the Sanitary Sewer Manhole standards.
 - B. Connection to existing manhole shall be approved by the District Engineer prior to construction.
 - C. Any portion of the existing manhole damaged shall be repaired or replaced by the Contractor at the Contractor's expense and as approved by the District Engineer.
2. PRODUCTS (NO ADDITIONAL PRODUCTS USED)
3. EXECUTION
 - A. Existing Manhole Assessment: Prior to construction, condition of the existing manhole shall be assessed by the District Inspector.
 - 1) If Determined that the Manhole is Suitable to Core:
 - a. District Inspector shall witness all core drilling of existing manholes.
 - b. Contractor shall core drill existing manhole wall and apron as required with appropriate size coring machine to allow for placement of new pipe to flexible pipe connector (boot) in manhole at design elevation and provide a channel in the apron for new pipe.
 - c. Install flexible pipe connector (boot) in core drilled wall per manufacturer's recommendations and standards to provide a watertight seal.
 - d. Existing apron shall be built up with epoxy grout anchored to existing concrete with Type 316 stainless steel anchors or as otherwise directed by the District Engineer to provide a full depth channel from the new pipe to the existing channel as directed by the District Engineer.
 - e. Chipping, cutting and grinding of existing apron and channel and finishing with epoxy grout may be required.
 - f. Transition from new invert to existing invert shall be smooth and uniform and shall provide a long radius sweep to redirect flow to the existing downstream pipe.
 - 2) If Determined that the Manhole is Not Suitable to Core: Existing manhole shall be removed and replaced with a new manhole with precast base.
 - B. During construction of new sewer line to existing manhole, the alignment of existing precast sections, grade rings, and castings shall be maintained and the joints between sections, grade rings, and casting, lift holes and connections of existing inflow and outflow pipes shall be watertight.
 - C. Contractor shall provide for continuous wastewater flow and shall prevent entrance of any groundwater, storm water, debris or dirt into existing facilities during construction process.

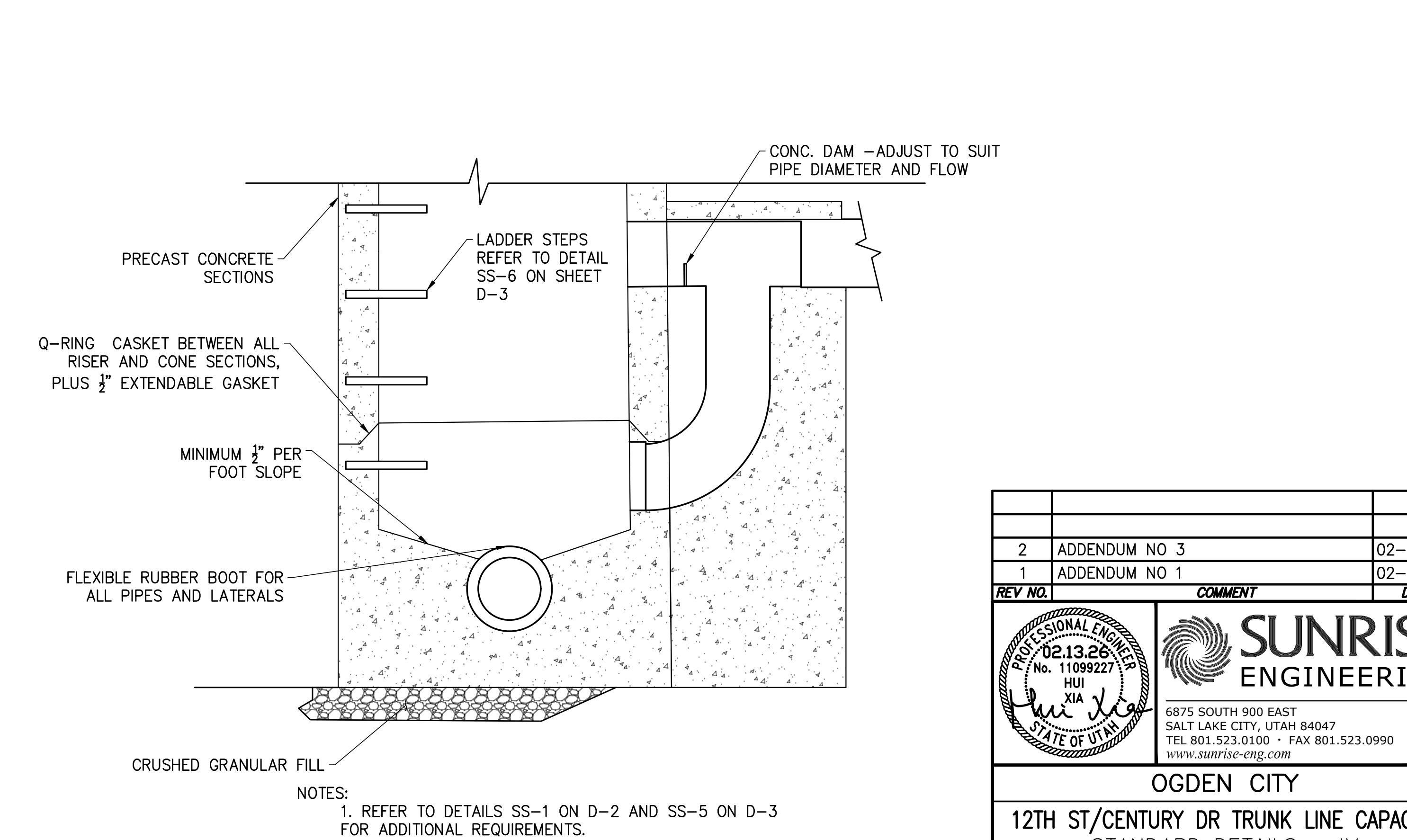
OGDEN CITY ENGINEERING - STANDARD DRAWINGS

CONCRETE METER VAULTS

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TAYLOR NIELSEN, CITY ENGINEER

SHEET 1 OF 1 2025



OGDEN CITY

12TH ST/CENTURY DR TRUNK LINE CAPACITY

STANDARD DETAILS - IV

A DROP MANHOLE

NOT TO SCALE

| | | |
|---------|---------------|----------|
| REV NO. | COMMENT | DATE |
| 2 | ADDENDUM NO 3 | 02-13-26 |
| 1 | ADDENDUM NO 1 | 02-10-26 |

PROFESSIONAL ENGINEER
 No. 11099227
 HUI XIA
 STATE OF UTAH

6875 SOUTH 900 EAST
 SALT LAKE CITY, UTAH 84047
 TEL 801.523.0100 · FAX 801.523.0990
 www.sunrise-eng.com

| | | | | |
|---------|----------|-------|---------|-----------|
| SEI NO. | DESIGNED | DRAWN | CHECKED | SHEET NO. |
| 15684 | AX | MB | CL | 17 of 18 |

D-4

ISSUED FOR BID

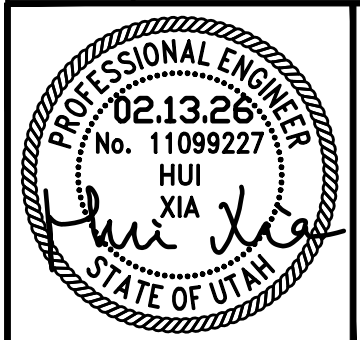
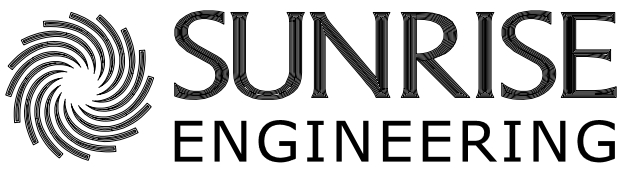
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EX 18' CAPPED PIPE
 NEW 21" PVC SEWER INVERT TO MATCH EX 18" PIPE INVERT



A EX CWSID MANHOLE PHOTO
 ~ NOT TO SCALE

EX CWSID 48" RCP SEWER

| 2 | ADDENDUM NO 3 | 02-13-26 |
|--|-----------------------|-------------|
| 1 | ADDENDUM NO 1 | 02-10-26 |
| REV NO. | COMMENT | DATE |
|   <p>SUNRISE ENGINEERING 6875 SOUTH 900 EAST SALT LAKE CITY, UTAH 84047 TEL 801.523.0100 · FAX 801.523.0990 www.sunrise-eng.com</p> | | |
| OGDEN CITY 12TH ST/CENTURY DR TRUNK LINE CAPACITY REFERENCE DRAWING - I | | |
| SEI NO. 15684 | DESIGNED AX | DRAWN MB |
| CHECKED CL | SHEET NO. 18 of 18 | R-1 |