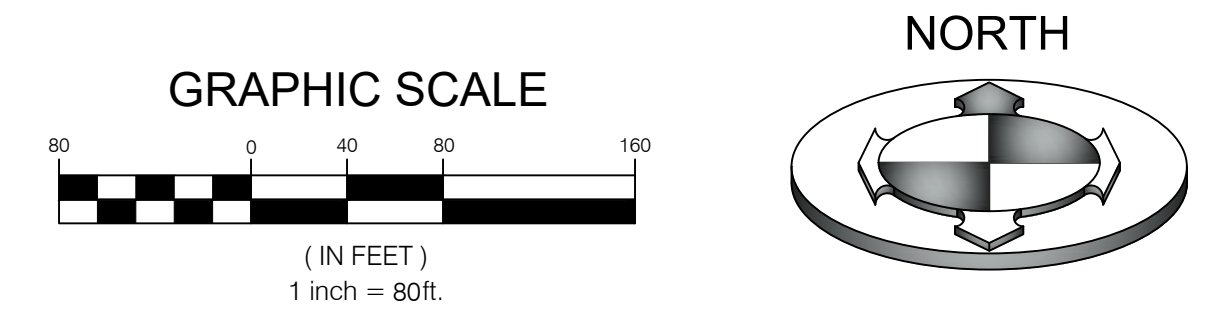
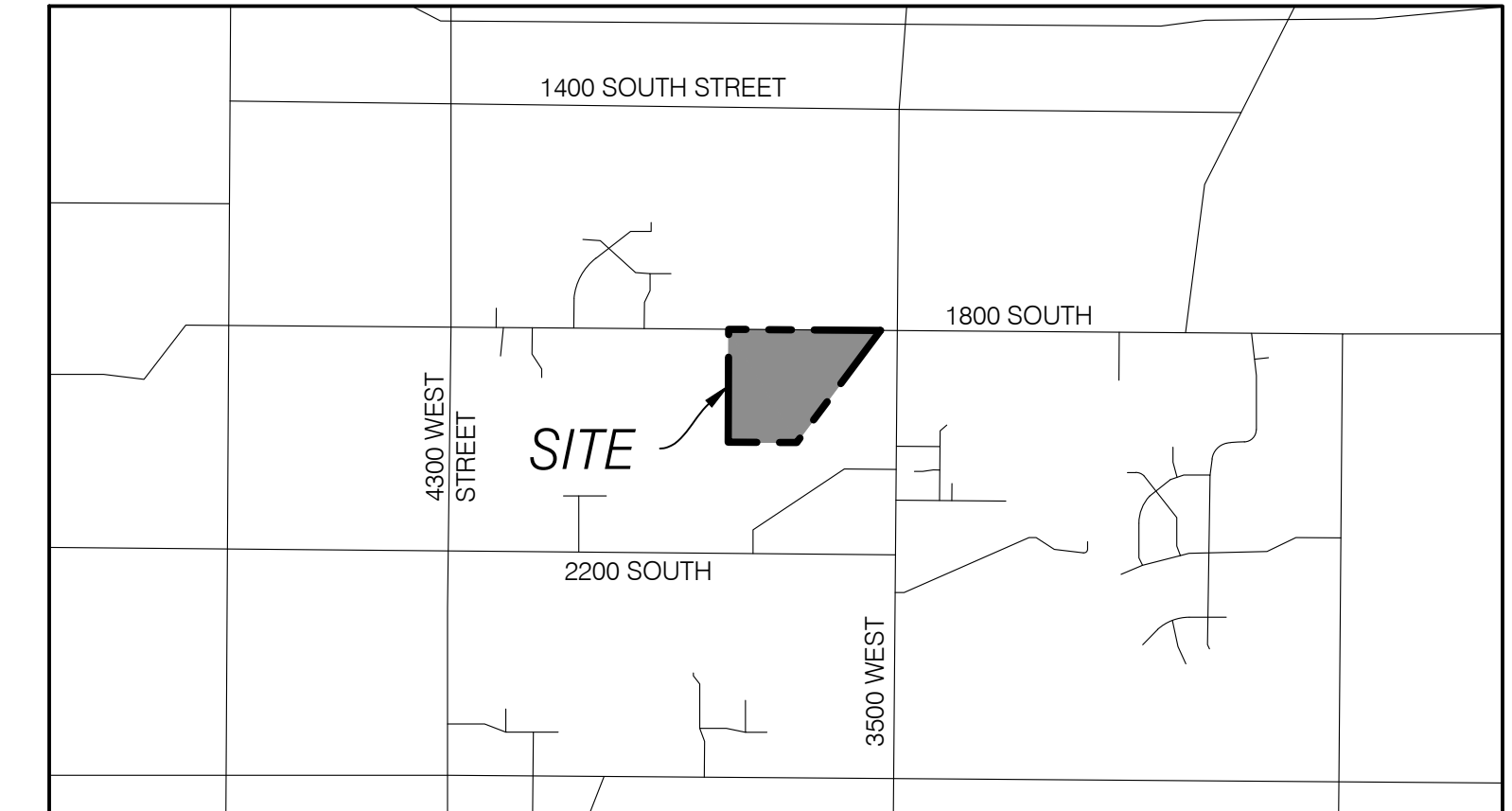
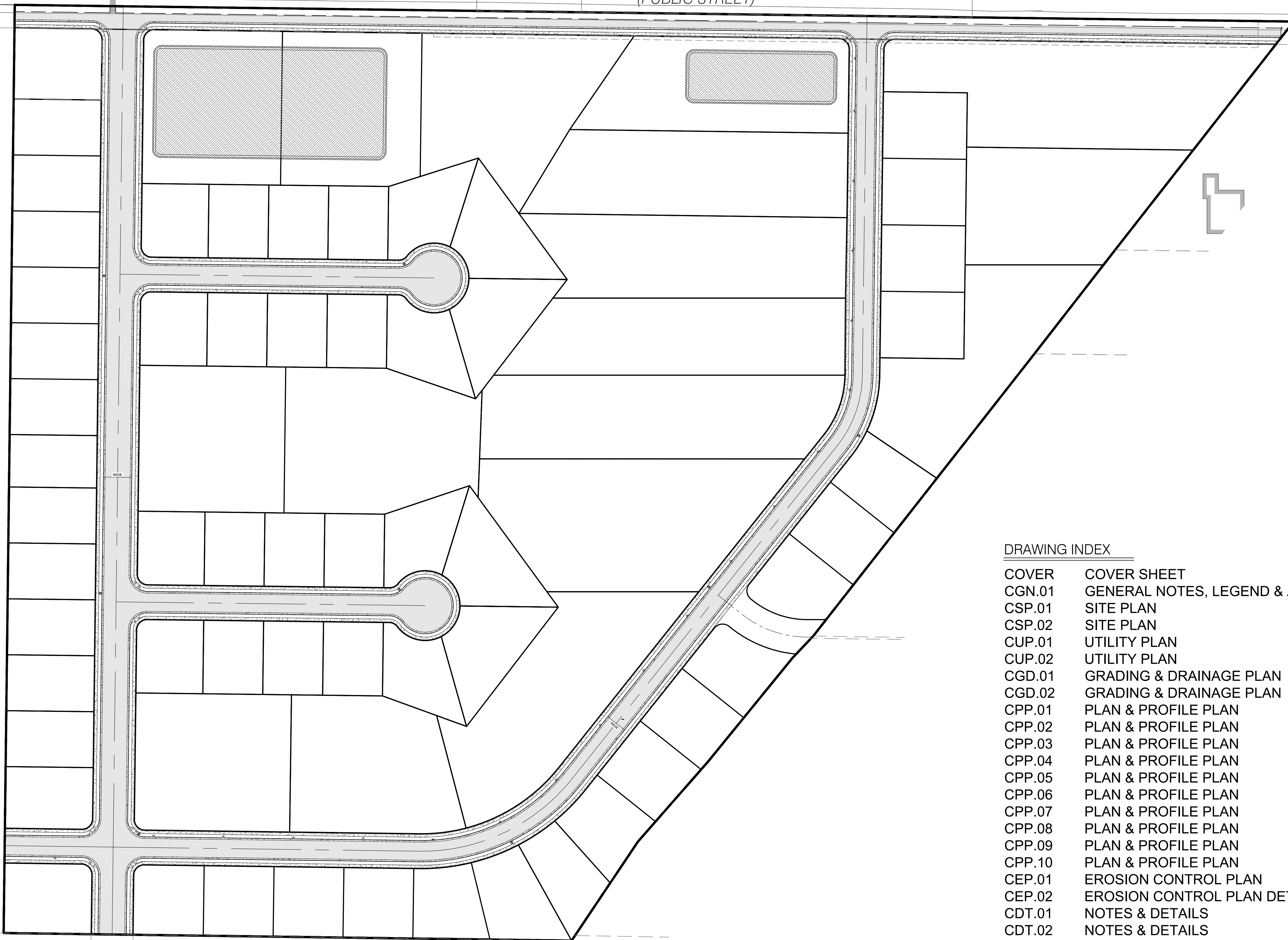


# WINSTON PARK

LOCATED IN THE NORTHEAST QUARTER OF SECTION 28,  
TOWNSHIP 6 NORTH NORTH, RANGE 2 WEST,  
SALT LAKE BASE AND MERIDIAN  
WEBER COUNTY, UTAH  
APRIL 2017



1800 SOUTH  
(PUBLIC STREET)



VICINITY MAP  
N.T.S

OWNER/DEVELOPER:  
RICE ASSET MANAGEMENT, LLC  
JAY RICE  
4968 HOLLADAY PINES COURT  
HOLLADAY, UT 84117  
801-633-3994  
Jrrice2014@gmail.com

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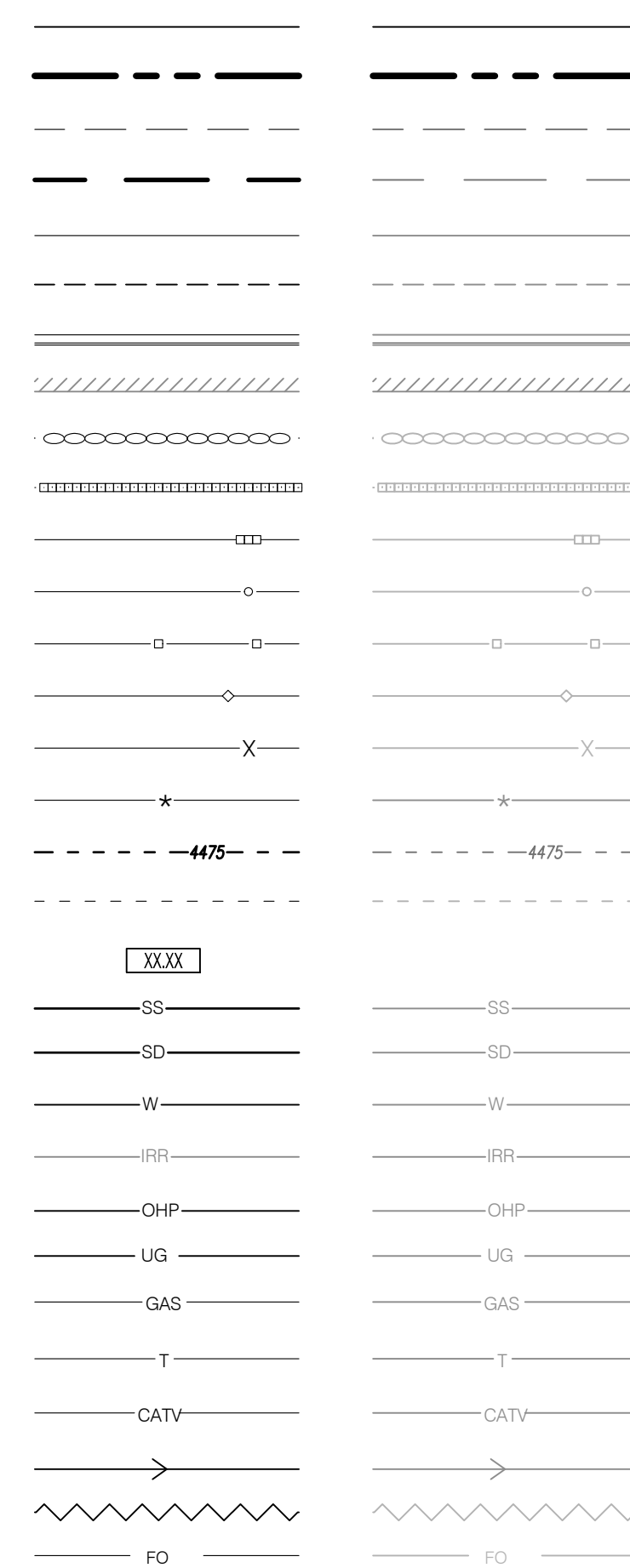
## CIVIL CONSTRUCTION PLANS

	<b>BENCHMARK ENGINEERING &amp; LAND SURVEYING</b> <small>9130 SOUTH STATE STREET SUITE # 100 SANDY, UTAH 84070 (801) 542-7192 www.benchmarkcivil.com</small>		<small>PROJECT NO.</small> 1607138																				
	<small>WINSTON PARK 3701 WEST 1800 SOUTH WEST WEBER, UTAH</small>	<table border="1"> <tr> <td><small>DRAWN TJB</small></td> <td><small>DESIGNED DPS</small></td> <td><small>CHECKED DPS</small></td> </tr> <tr> <td><small>DATE: 06/28/2017</small></td> <td><small>DATE: 06/28/2017</small></td> <td><small>DATE: 06/28/2017</small></td> </tr> </table>	<small>DRAWN TJB</small>	<small>DESIGNED DPS</small>	<small>CHECKED DPS</small>	<small>DATE: 06/28/2017</small>	<small>DATE: 06/28/2017</small>	<small>DATE: 06/28/2017</small>	<table border="1"> <tr> <td><small>No.</small></td> <td><small>DATE</small></td> <td><small>DESCRIPTION</small></td> </tr> <tr> <td>1</td> <td>10/31/17</td> <td>REVISED PER COUNTY COMMENTS</td> </tr> <tr> <td>2</td> <td>02/16/18</td> <td>REVISED PER COUNTY COMMENTS</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	<small>No.</small>	<small>DATE</small>	<small>DESCRIPTION</small>	1	10/31/17	REVISED PER COUNTY COMMENTS	2	02/16/18	REVISED PER COUNTY COMMENTS					
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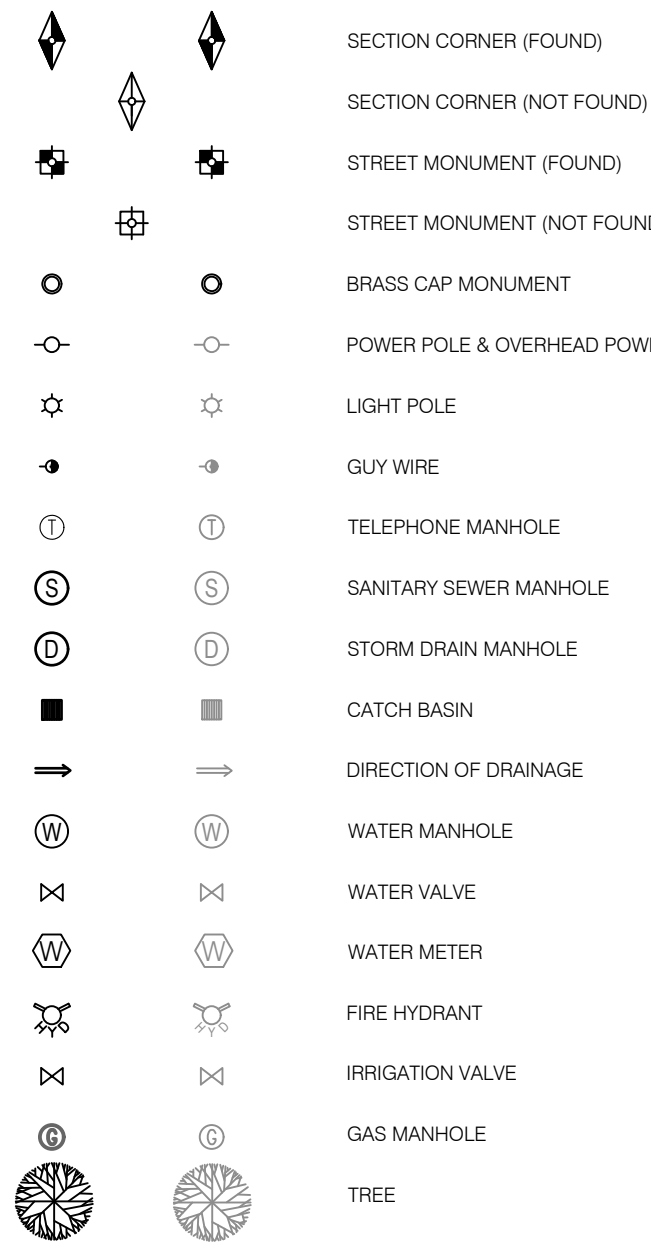
LINETYPES:

NEW EXISTING



SYMBOLS:

NEW EXISTING



ABBREVIATIONS

Table with 3 columns: Abbreviation, Full Name, and Symbol. Includes BC BAR & CAP, COR. SECTION CORNER, CB CATCH BASIN, D DELTA ANGLE, EOA EDGE OF ASPHALT, EOC EDGE OF CONCRETE, FFE FINISH FLOOR ELEVATION, FH FIRE HYDRANT, FL FLOW LINE, GB GRADE BREAK, GW GUY WIRE, HW HEAD WALL, I.E. INVERT ELEVATION, L.P. LENGTH OF CURVE, L LP OF CURB, LP LOW POINT, M-M MONUMENT TO MONUMENT, MH MANHOLE, MON. SURVEY MONUMENT, OHP OVERHEAD POWER, PC POINT OF CURVATURE, PI POINT OF INTERSECTION, PP POWER POLE, PT POINT OF TANGENCY, PUE PUBLIC UTILITY EASEMENT, R RADIUS OF CURVE, RR RAILROAD, RW RIGHT-OF-WAY, SMH SEWER MANHOLE, SD STORM DRAIN, TBC TOP BACK OF CURB, TMH TELEPHONE MANHOLE, TOA TOP OF ASPHALT, TOC TOP OF CONCRETE, TOF TOP OF FOOTING, TOE TOE OF SLOPE, TOG TOP OF GRATE, TOP TOP OF SLOPE, TOW TOP OF WALL, TR TELEPHONE RISER, UGP UNDERGROUND POWER, VCP VERTICAL POINT OF CURVATURE, VPI VERTICAL POINT OF INTERSECTION, VPT VERTICAL POINT OF TANGENCY, WM WATER METER, WW WATER VALVE.

CONSTRUCTION NOTES

RESPONSIBLE DISTRICTS OR AGENCIES AND APPLICABLE STANDARDS: CITY OF COUNTY WEBER COUNTY, WATER UTILITY COMPANY TAYLOR-WEST WEBER WATER IMPROVEMENT DISTRICT, SECONDARY WATER HOOPER IRRIGATION COMPANY, SEWER WEBER COUNTY ENGINEERING, STORM DRAIN/GROUNDWATER WEBER COUNTY ENGINEERING, ELECTRICAL ROCKY MOUNTAIN POWER, TELEPHONE CENTURY LINK, NATURAL GAS DOMINION ENERGY. APPLICABLE STANDARDS: APWA 2017 STANDARDS.

GENERAL

- 1. ALL MATERIALS AND CONSTRUCTION IN THE PUBLIC RIGHT OF WAY SHALL BE IN ACCORDANCE WITH RESPONSIBLE DISTRICT OR AGENCY.
2. CONTRACTOR AND APPLICABLE SUBCONTRACTORS SHALL ATTEND ALL PRE-CONSTRUCTION CONFERENCES AND PERIODIC PROGRESS MEETINGS PRIOR TO ANY WORK BEING PERFORMED. THE CONTRACTOR SHALL CONTACT THE RESPONSIBLE DISTRICT OR AGENCY FOR A PRE-CONSTRUCTION CONFERENCE. CONTRACTOR SHALL ALSO NOTIFY THE APPROPRIATE PROJECT CONTACTS (48 HOURS IN ADVANCE) OF SAID MEETING.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PUBLIC SAFETY AND OSHA STANDARDS.
4. THE CONTRACTOR SHALL FAMILIARIZE HIM/HER SELF WITH THE PLANS, THE GEOLOGY REPORTS AND THE SITE CONDITIONS PRIOR TO COMMENCING WORK. CONTRACTOR SHALL INSPECT THE SITE OF WORK PRIOR TO BIDDING TO SATISFY THEMSELVES BY PERSONAL EXAMINATION OR BY SUCH OTHER MEANS AS THEY MAY PREFER, OF THE LOCATION OF THE PROPOSED WORK AND OF THE ACTUAL CONDITIONS OF AND AT THE SITE OF WORK.
CONDITIONS WHICH APPEAR TO THEM TO BE IN CONFLICT WITH THE LETTER OR SPIRIT OF THE PROJECT PLANS AND SPECIFICATIONS, THEY SHALL CONTACT THE ENGINEER FOR ADDITIONAL INFORMATION AND EXPLANATION BEFORE SUBMITTING THEIR BID.
SUBMISSION OF A BID BY THE CONTRACTOR SHALL CONSTITUTE ACKNOWLEDGMENT THAT IF AWARDED THE CONTRACT, THEY HAVE RELIED UPON THEIR OWN EXAMINATION OF (1) THE SITE OF THE WORK, (2) ACCESS TO THE SITE, AND (3) ALL OTHER DATA AND MATTERS REQUISITE TO THE FULFILLMENT OF THE WORK AND ON THEIR OWN KNOWLEDGE OF EXISTING FACILITIES ON AND IN THE VICINITY OF THE SITE OF THE WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.
THE INFORMATION PROVIDED BY THE OWNER OR THE ENGINEER IS NOT INTENDED TO BE A SUBSTITUTE FOR, OR A SUPPLEMENT TO, THE INDEPENDENT VERIFICATION BY THE CONTRACTOR TO THE EXTENT SUCH INDEPENDENT INVESTIGATION OF SITE CONDITIONS IS DEEMED NECESSARY OR DESIRABLE BY THE CONTRACTOR. CONTRACTOR SHALL ACKNOWLEDGE THAT THEY HAVE NOT RELIED SOLELY UPON OWNERS OR ENGINEER FURNISHED INFORMATION REGARDING SITE CONDITIONS IN PREPARING AND SUBMITTING THEIR BID.
5. ALL WORK SHALL COMPLY WITH THE AMERICAN PUBLIC WORKS ASSOCIATION UTAH CHAPTER (APWA) MANUAL OF STANDARD SPECIFICATIONS 2017 EDITION AND THE MANUAL OF STANDARD SPECIFICATIONS 2017 EDITION STANDARD SPECIFICATIONS AND PLANS SHALL BE SUBSIDIARY TO MORE STRINGENT REQUIREMENTS BY APPLICABLE LOCAL JURISDICTION.
6. THE CONTRACTOR SHALL BE SKILLED AND REGULATORY ENGAGED IN THE GENERAL CLASS AND TYPE OF WORK CALLED FOR IN THE PROJECT PLANS AND SPECIFICATIONS. THEREFORE, THE OWNER IS RELYING UPON THE EXPERIENCE AND EXPERTISE OF THE CONTRACTOR. IT SHALL BE EXPECTED THAT THE PRICES PROVIDED WITHIN THE CONTRACT DOCUMENTS SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY AND PROPER FOR THE WORK CONTEMPLATED AND THAT THE WORK BE COMPLETED IN ACCORDANCE WITH THEIR TRUE INTENT AND PURPOSE.
THE CONTRACTOR SHALL BE COMPETENT, KNOWLEDGEABLE AND HAVE SPECIAL SKILLS ON THE NATURE, EXTENT AND INHERENT CONDITIONS OF THE WORK TO BE PERFORMED. CONTRACTOR SHALL ALSO ACKNOWLEDGE THAT THERE ARE CERTAIN REGULAR AND INHERENT CONDITIONS EXISTENT IN THE CONSTRUCTION OF THE PARTICULAR FACILITIES WHICH MAY CREATE, DURING THE CONSTRUCTION PROGRAM, UNUSUAL OR UNUSUAL UNFAIR CONDITIONS WHICH MAY BE AVOIDED BY THE CONTRACTOR THROUGH CAREFUL MANAGEMENT AND PROPER CONSTRUCTION. CONTRACTOR SHALL OBTAIN APPROPRIATE PERMITS WHERE APPLICABLE FOR ANY WORK DONE WITHIN RIGHT-OF-WAY OR EASEMENTS FROM THE CITY AND/OR LOCAL GOVT. CONTRACTOR SHALL NOTIFY CITY, COUNTY, AND/OR STATE, 24 HOURS IN ADVANCE OF COMMUNICATING THE WORK, OR AS REQUIRED BY SAID PERMITS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS AND LICENSES REQUIRED FOR THE CONSTRUCTION AND COMPLETION OF THE PROJECT, AND SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS AND CONDITIONS OF ALL PERMITS AND APPROVALS APPLICABLE TO THIS PROJECT. THE CONTRACTOR SHALL ENSURE THAT THE NECESSARY RIGHT-OF-WAY EASEMENTS AND PERMITS ARE SECURED PRIOR TO CONSTRUCTION. CONTRACTOR SHALL OBTAIN APPROPRIATE PERMITS WHERE APPLICABLE FOR ANY WORK DONE WITHIN RIGHT-OF-WAY OR EASEMENTS FROM THE CITY AND/OR LOCAL GOVT. CONTRACTOR SHALL NOTIFY CITY, COUNTY, AND/OR STATE, 24 HOURS IN ADVANCE OF COMMUNICATING THE WORK, OR AS REQUIRED BY SAID PERMITS.
8. CONSTRUCTION STAKING FOR GRADING, CURB, GUTTER, SIDEWALK, SANITARY SEWER, STORM DRAIN, WATER, AND ELECTRICIERS SHALL BE DONE BY THE OWNERS SURVEYOR. THE CONTRACTOR SHALL NOTIFY THE SURVEYOR/FORTY-EIGHT (48) HOURS IN ADVANCE OF THE NEED FOR STAKING. ANY STAKING REQUESTED BY THE CONTRACTOR OR THEIR SUBCONTRACTORS THAT IS ABOVE AND BEYOND STANDARD STAKING NEEDS, WILL BE SUBJECT TO AN EXTRA WORK BACK CHARGE TO THE CONTRACTOR. THE CONTRACTOR SHALL EXERCISE DUE CAUTION AND SHALL CAREFULLY PRESERVE BENCH MARKS, CONTROL POINTS, REFERENCE POINTS AND ALL SURVEY STAKES, AND SHALL BEAR ALL EXPENSES FOR REPLACEMENT AND/OR ERRORS CAUSED BY THEIR UNNECESSARY LOSS OR DISTURBANCE.
9. IT IS INTENDED THAT THESE PLANS AND SPECIFICATIONS REQUIRE ALL LABOR AND MATERIALS NECESSARY AND PROPER FOR THE WORK CONTEMPLATED AND THAT THE WORK BE COMPLETED IN ACCORDANCE WITH THEIR TRUE INTENT AND PURPOSE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY REGARDING ANY DISCREPANCIES OR AMBIGUITIES WHICH MAY EXIST IN THE PLANS OR SPECIFICATIONS. THE ENGINEERS INTERPRETATION THEREOF SHALL BE CONCLUSIVE. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY FIELD CHANGES MADE WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE OWNER AND/OR ENGINEER.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATELY SCHEDULING INSPECTION AND TESTING OF ALL FACILITIES CONSTRUCTED UNDER THIS CONTRACT. ALL TESTING SHALL CONFORM TO THE REGULATORY AGENCIES STANDARD SPECIFICATIONS. ALL TESTING AND INSPECTION SHALL BE PAID FOR BY THE OWNER. ALL RE-TESTING AND/OR REINSPECTION SHALL BE PAID FOR BY THE CONTRACTOR.
11. IF EXISTING IMPROVEMENTS NEED TO BE DISTURBED AND/OR REMOVED FOR THE PROPER PLACEMENT OF IMPROVEMENTS TO BE CONSTRUCTED BY THESE PLANS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING IMPROVEMENTS FROM DAMAGE. COST OF REPLACING OR REPAIRING EXISTING IMPROVEMENTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEMS REQUIRING REMOVAL AND/OR REPLACEMENT OF EXISTING IMPROVEMENTS AND ANYTHING THAT HAS BEEN DESTROYED, THERE WILL BE NO EXTRA COST. I.E. THE CONTRACTOR FOR REPLACING OR REPAIRING EXISTING IMPROVEMENTS. WHENEVER EXISTING FACILITIES ARE REMOVED, DAMAGED, BROKEN, OR CUT IN THE INSTALLATION OF THE WORK COVERED BY THESE PLANS OR SPECIFICATIONS, SAID FACILITIES SHALL BE REPLACED AT THE CONTRACTORS EXPENSE. AFTER PROPER BACKFILLING AND/OR CONSTRUCTION, WITH MATERIALS EQUAL TO OR BETTER THAN THE MATERIALS USED IN THE ORIGINAL EXISTING FACILITIES. THE FINISHED PRODUCT SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER, THE ENGINEER, AND THE RESPECTIVE REGULATORY AGENCY.
12. THE CONTRACTOR SHALL MAINTAIN A NEATLY MARKED SET OF FULL SIZE AS-BUILT RECORD DRAWINGS SHOWING THE LOCATION OF ALL UTILITIES AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING IMPROVEMENTS FROM DAMAGE. COST OF REPLACING OR REPAIRING EXISTING IMPROVEMENTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEMS REQUIRING REMOVAL AND/OR REPLACEMENT OF EXISTING IMPROVEMENTS AND ANYTHING THAT HAS BEEN DESTROYED, THERE WILL BE NO EXTRA COST. I.E. THE CONTRACTOR FOR REPLACING OR REPAIRING EXISTING IMPROVEMENTS. WHENEVER EXISTING FACILITIES ARE REMOVED, DAMAGED, BROKEN, OR CUT IN THE INSTALLATION OF THE WORK COVERED BY THESE PLANS OR SPECIFICATIONS, SAID FACILITIES SHALL BE REPLACED AT THE CONTRACTORS EXPENSE. AFTER PROPER BACKFILLING AND/OR CONSTRUCTION, WITH MATERIALS EQUAL TO OR BETTER THAN THE MATERIALS USED IN THE ORIGINAL EXISTING FACILITIES. THE FINISHED PRODUCT SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER, THE ENGINEER, AND THE RESPECTIVE REGULATORY AGENCY.
13. PRIOR TO ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL DELIVER TO ENGINEER, ONE SET OF NEATLY MARKED AS-BUILT RECORD DRAWINGS SHOWING THE INFORMATION REQUIRED ABOVE. AS-BUILT RECORD DRAWINGS SHALL BE REVIEWED AND THE COMPLETE AS-BUILT RECORD DRAWINGS SET SHALL BE SUBMITTED TO WEBER COUNTY.
14. CONTRACTOR TO SPACE UTILITIES TO PROVIDE MINIMUM DISTANCES AS REQUIRED BY LOCAL, COUNTY, STATE, AND INDIVIDUAL UTILITY CODES.
15. ALL UTILITIES INSTALLED IN ACCORDANCE WITH THE RESPONSIBLE DISTRICTS OR AGENCIES STANDARDS AND SPECIFICATIONS.
16. COORDINATE ALL SERVICE LATERAL AND BUILDING CONNECTIONS WITH CORRESPONDING ARCHITECTURAL, MECHANICAL OR ELECTRICAL DRAWING FOR LOCATION AND ELEVATION. NOTIFY ENGINEER IMMEDIATELY IF ANY DISCREPANCIES ARE ENCOUNTERED.
17. ALL STORM DRAIN MANHOLES AND CATCH BASINS ARE TO BE PRECAST CONCRETE FROM APPROVED LOCAL MANUFACTURERS UNLESS OTHERWISE NOTED, AND COMPLY WITH CITY/UTILITY STANDARD.
18. ALL STORM WATER CONVEYANCE PIPING TO BE RCP - CLASS 3 OR EQUAL UNLESS OTHERWISE NOTED.
19. ALL ELECTRICAL CONDUITS/LINES TO BE PVC SCH 40 OR BETTER.
20. ALL GAS LINES TO BE HDPE WITH COPPER TRACER WIRE AND DETECTA TAPE. TERMINATE TRACER WIRE AT APPROVED LOCATIONS.
21. ALL GAS LINE TAPS, VALVES AND CAPS TO BE FUSED USING ELECTRO - FUSION TECHNOLOGY.
22. ALL PHONE AND TV CONDUITS TO BE PVC SCH 40 OR BETTER.
23. NO GROUNDWATER OR DEBRIS TO BE ALLOWED TO ENTER THE NEW PIPE DURING CONSTRUCTION. THE OPEN END OF ALL PIPES IS TO BE COVERED AND EFFECTIVELY SEALED AT THE END OF EACH DAYS WORK.
24. THE CONTRACTOR SHALL PROVIDE ALL SHORING, BRACING, SLOPING OR OTHER PROVISIONS NECESSARY TO PROTECT WORKMEN FOR ALL AREAS TO BE EXCAVATED TO A DEPTH OF 4 OR MORE AND SHALL COMPLY WITH INDUSTRIAL COMMISSION OF UTAH SAFETY ORDERS SECTION 68 - EXCAVATIONS, AND SECTION 69 - TRENCHES, ALONG WITH ANY LOCAL CODES OR ORDINANCES.
25. PRIOR TO OPENING AN EXCAVATION, EFFORT SHALL BE MADE TO DETERMINE WHETHER UNDERGROUND INSTALLATIONS: I. SEWER, WATER, FUEL, ELECTRIC LINES, ETC. WILL BE ENCOUNTERED AND IF SO, WHERE SUCH UNDERGROUND INSTALLATIONS ARE LOCATED. WHEN THE EXCAVATION APPROACHES THE APPROXIMATE LOCATION OF SUCH AN INSTALLATION, THE EXACT LOCATION SHALL BE DETERMINED BY CAREFUL PROBING OR HAND DIGGING, AND, WHEN IT IS UNCOVERED, ADEQUATE PROTECTION SHALL BE PROVIDED FOR THE EXISTING INSTALLATION. ALL KNOWN OWNERS OF UNDERGROUND FACILITIES IN THE AREA CONCERNED SHALL BE ADVISED OF PROPOSED WORK AT LEAST 48 HOURS PRIOR TO THE START OF ACTUAL EXCAVATION.
26. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO INSTALL PIPE OF ADEQUATE CLASSIFICATION WITH SUFFICIENT BEDDING TO MEET ALL REQUIREMENTS AND RECOMMENDATIONS FOR H-20 LOAD REQUIREMENTS.
27. ACTUAL CONNECTIONS TO EXISTING WATER LINES WILL NOT BE PERMITTED PRIOR TO THE COMPLETION OF STERILIZATION AND TESTING OF NEW WATER MAINS. ALL EXISTING WATER VALVES TO BE OPERATED UNDER THE DIRECTION OF TAYLOR WEST WEBER WATER PERSONNEL ONLY.

SEWER

- 28. ALL UNDERGROUND UTILITIES SHALL BE IN PLACE PRIOR TO INSTALLATION OF CURB, GUTTER, SIDEWALK, AND STREET PAVING.
29. ALL SEWER LINE TO BE FUSHED, PRESSURE TESTED TO 5 PSI VIDEO INSPECTED AND OTHERWISE TESTED IN ACCORDANCE WITH DISTRICT STANDARDS PRIOR TO PLACING IN SERVICE.
30. ALL SEWER LINES SHOULD BE PVC C-900 SDR-18 AND LATERALS ARE TO BE SDR-35 PVC PIPE.

- 31. SEWER MANHOLES, LATERALS AND CLEANOUTS TO BE INSTALLED PER RESPONSIBLE DISTRICT OR AGENCY STANDARDS. THE UNIT COST OF THE SEWER LATERAL INCLUDES CONNECTION TO THE SEWER MAIN. THE CLEANOUT RISER FOR EACH SERVICE SHALL BE INSTALLED BY THE CONTRACTOR.

- 32. DURING CONSTRUCTION OF THE SEWERLINE, WYES NEED TO BE INSTALLED FOR THE LATERALS. LATERALS ARE 4" AND MUST TO COME IN AT THE TOP OF THE PIPE WITH A WYE. (SEE RESPONSIBLE DISTRICT OR AGENCY STANDARDS)

WATER

- 33. WATERLINES TO BE PVC C-900 WATER LINES SHALL BE A MINIMUM OF 10' HORIZONTALLY FROM SEWER MAINS. CROSSINGS SHALL MEET STATE (UTAH) STANDARDS. MECHANICAL JOINTS REQUIRED WHEN LESS THAN 18" VERTICAL OR TEN FEET HORIZONTAL SEPARATION FROM SEWERLINE)
34. ALL WATERLINES SHALL BE 8" MINIMUM SIZE AND SERVICE LATERALS SHALL BE 1-1/2" MINIMUM UNLESS OTHERWISE NOTED.

- 35. WATER SERVICE LATERALS TO INCLUDE ALL BRASS SADDLE, CORP. STOP LATERAL, DOUBLE CHECK VALVE AND BACKFLOW PREVENTION DEVICE, AND SHUTOFF VALVE IN BOX NEAR BUILDING EDGE.

- 36. ALL WATERLINES SHALL BE 4" BELOW FINISH GROUND TO TOP OF PIPE. ALL VALVE BOXES AND MANHOLES SHALL BE RAISED OR LOWERED TO FINISH GRADE AND SHALL INCLUDE A CONCRETE COLLAR IN PAVED AREAS. ALL WATER LINES SHALL BE LOOPED AROUND GRAVITY LINES OR RODES PER WATER PRO INSPECTOR.

- 37. CONTRACTOR TO NOTIFY WATERPRO FOR CHLORINE TEST PRIOR TO FLUSHING LINES. CHLORINE LEFT IN PIPE 24 HRS. MINIMUM WITH 25 PPM RESIDUAL. ALL TURNING OF MAINLINE VALVES, CHLORINATION, FLUSHING, PRESSURE TESTING, BACTERIA TESTING, ETC. TO BE COORDINATED WITH RESPONSIBLE DISTRICT OR AGENCY. ALL TESTS TO BE IN ACCORDANCE WITH WATERPRO.

- 38. BOTTOM FLANGE OF FIRE HYDRANTS TO BE SET TO APPROXIMATELY 4 INCHES ABOVE CURB OF BUMP ELEVATION. HYDRANTS TO INCLUDE TEE, 1" LINE VALVE, AND HYDRANT COMPLETE TO MEET RESPONSIBLE DISTRICT OR AGENCY STANDARDS, UNLESS OTHERWISE NOTED ON PLANS.

EXISTING UTILITIES

- 39. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UTILITIES SHOWN OR NOT SHOWN. THE INFORMATION SHOWN ON THE PLANS WITH REGARDS TO THE EXISTING UTILITIES AND/OR IMPROVEMENTS WAS DERIVED FROM FIELD INVESTIGATION AND/OR RECORD INFORMATION. NO REPRESENTATION IS MADE AS TO THE ACCURACY OR COMPLETENESS OF SAID UTILITY INFORMATION. THE CONTRACTOR SHALL TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE FACILITIES SHOWN AND ANY OTHER FACILITIES NOT OF RECORD OR NOT SHOWN ON THESE PLANS. PRIOR TO CONSTRUCTION, IT SHALL BE THE CONTRACTORS SOLE RESPONSIBILITY TO VERIFY ALL EXISTING IMPROVEMENTS AND TO EXPOSE ALL EXISTING UNDERGROUND UTILITIES RELATED TO THE PROJECT, INCLUDING BUT NOT LIMITED TO, SEWER, STORM DRAIN, GAS, ELECTRIC, ETC. AND SHALL NOTIFY THE ENGINEER IN WRITING FORTY-EIGHT (48) HOURS IN ADVANCE OF EXPOSING THE UTILITIES SO, THAT THE EXACT LOCATION AND ELEVATION CAN BE VERIFIED AND DOCUMENTED. THE COST ASSOCIATED TO PERFORM THIS WORK SHALL BE INCLUDED IN EITHER THE LUMP SUM CLEARING COST OR IN THE VARIOUS ITEMS OF WORK. IF LOCATION AND/OR ELEVATION DIFFERS FROM THAT SHOWN ON THE DESIGN PLANS, PROVISIONS TO ACCOMMODATE NEW LOCATION BE MADE PRIOR TO CONSTRUCTION.

- 40. PRIOR TO COMMENCING ANY WORK, IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO HAVE EACH UTILITY COMPANY LOCATE, IN THE FIELD, THEIR MAIN AND SERVICE LINES. THE CONTRACTOR SHALL NOTIFY BLUE STAKES 48 HOURS IN ADVANCE OF PERFORMING ANY EXCAVATION WORK. THE CONTRACTOR SHALL RECORD THE BLUE STAKES ORDER NUMBER AND FURNISH ORDER NUMBER TO OWNER AND ENGINEER PRIOR TO ANY EXCAVATION. IT WILL BE THE CONTRACTORS SOLE RESPONSIBILITY TO DIRECTLY CONTACT ANY OTHER UTILITY COMPANIES THAT ARE NOT MEMBERS OF BLUE STAKES. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROTECT ALL EXISTING UTILITIES SO THAT NO DAMAGE RESULTS TO THEM DURING THE PERFORMANCE OF THIS CONTRACT. ANY REPAIRS NECESSARY TO DAMAGED UTILITIES SHALL BE PAID FOR BY THE CONTRACTORS AND UTILITY COMPANIES INSTALLED NEW STRUCTURES, UTILITIES AND SERVICE TO THE PROJECT.

- 41. ALL UTILITY MANHOLE RIMS, CATCH BASIN GRATES AND VALVE BOX COVERS ARE TO BE ADJUSTED TO FIT THE FINISHED GRADE OF THE SITE.

- 42. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ASSURE THAT ALL PIPES, WALLS, ETC. ARE ADEQUATELY BRACED DURING CONSTRUCTION.

CLEARING AND GRADING

- 43. CONTRACTOR SHALL PERFORM EARTHWORK IN ACCORDANCE WITH APWA 2017 STANDARD DRAWINGS AND STANDARD SPECIFICATIONS AND THE RECOMMENDED EARTHWORK SPECIFICATION FOUND IN THE PROFESSIONALLY PREPARED REPORT OF GEOTECHNICAL INVESTIGATION.

- 44. THE CONTRACTOR SHALL REMOVE ALL VEGETATION AND DELETERIOUS MATERIALS FROM THE SITE UNLESS NOTED OTHERWISE. ALL EXISTING WELLS AND SEPTIC TANKS SHALL BE REMOVED AND/OR ABANDONED PER THE REQUIREMENTS OF ALL LOCAL, STATE AND FEDERAL REGULATIONS. THE COST TO PERFORM THIS WORK SHALL BE INCLUDED IN THE LUMP SUM CLEARING COST.

- 45. SUBSOIL INVESTIGATIONS HAVE BEEN CONDUCTED AT THE SITE OF THE WORK, BEFORE FOOTING, FOUNDATION OR STRUCTURAL WALL CONSTRUCTION CAN COMMENCE, A REVIEW OF THE PROFESSIONALLY PREPARED REPORT OF THESE INVESTIGATIONS, MUST BE REVIEWED.

- SOIL INVESTIGATIONS WERE CONDUCTED FOR DESIGN PURPOSES ONLY, AND THE DATA SHOWN IN THE REPORTS ARE FOR SUBSURFACE CONDITIONS FOUND AT THE TIME OF THE INVESTIGATION. THE OWNER AND ENGINEER DISCLAIM RESPONSIBILITY FOR THE INTERPRETATION BY THE CONTRACTOR OF DATA, SUCH PROJECTION OR EXTRAPOLATION, FROM THE TEST HOLES TO OTHER LOCATIONS ON THE SITE OF THE WORK, SOIL BEARING VALUES AND PROFILES, SOIL STABILITY AND PRESENCE, LEVEL AND EXTENT OF UNDERGROUND WATER FOR SUBSURFACE CONDITIONS DURING CONSTRUCTION OPERATIONS.

- 46. ALL PROPOSED ELEVATIONS SHOWN ON THE GRADING PLAN ARE TO FINISHED SURFACE. THE CONTRACTOR IS RESPONSIBLE TO DEDUCT THE THICKNESS OF THE PAVEMENT STRUCTURAL SECTION FOR TOP OF SUB GRADE ELEVATIONS.

- 47. IF AT ANY TIME DURING CONSTRUCTION ANY UNFAVORABLE GEOLOGICAL CONDITIONS ARE ENCOUNTERED, WORK IN THAT AREA WILL STOP UNTIL APPROVED CORRECTIVE MEASURES ARE OBTAINED FROM THE ENGINEER.

- 48. UNSUITABLE MATERIAL, SUCH AS TOP SOIL, WEATHERED BED ROCK, ETC. SHALL BE REMOVED AS REQUIRED BY THE SOILS ENGINEER (AND/OR ENGINEERING GEOLOGIST, WHERE EMPLOYED) FROM ALL AREAS TO RECEIVE COMPACTED FILL OR DRAINAGE STRUCTURES.

- 49. NO TREES SHALL BE REMOVED OR DAMAGED WITHOUT SPECIFIC WRITTEN AUTHORIZATION FROM PROPERTY OWNER.

- 50. THE EXISTING TOPOGRAPHY ON THESE PLANS IS BASED ON A TOPOGRAPHIC SURVEY PERFORMED BY BENCHMARK ENGINEERING AND LAND SURVEYING AND MAY HAVE BEEN MODIFIED SINCE THIS SURVEY WAS PERFORMED.

- 51. FILLS IN EXCESS OF 4 FEET IN THICKNESS AND BENEATH ALL FOUNDATIONS OR PAVEMENT SECTIONS SHALL BE COMPACTED TO 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE ASTM D-1557 COMPACTION CRITERIA. ALL OTHER STRUCTURAL FILL LESS THAN 4 FEET IN THICKNESS SHOULD BE COMPACTED TO AT LEAST 90 PERCENT OF THE ABOVE CRITERIA.

- 52. COMPACTION TESTING WILL BE ACCOMPLISHED BY THE CONTRACTOR, OR THE CONTRACTOR WILL HAVE SUCH TESTING ACCOMPLISHED BY A SEPARATE CONTRACTOR. TEST RESULTS WILL BE SUBMITTED FOR REVIEW WITHIN 24 HOURS AFTER TEST.

- 53. CONTRACTOR TO SUBMIT PROCTOR AND/OR MARSHALL TEST DATA 24 HOURS PRIOR TO TEST.

- 54. STRAIGHT GRADE SHALL BE MAINTAINED BETWEEN CONTOUR LINES AND SPOT ELEVATIONS UNLESS OTHERWISE SHOWN ON PLANS.

- 55. ALL SLOPES ADJOINING STREETS, DRAINAGE CHANNELS, OR OTHER FACILITIES SHALL BE GRADED NO STEEPER THAN 2 TO 1 FOR CUT AND FILL.

- 56. GRADES WITHIN ASPHALT PARKING AREAS SHALL BE CONSTRUCTED TO WITHIN 0.10 FEET OF THE DESIGN GRADE. HOWEVER, THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE IN ALL PAVEMENT AREAS AND AROUND ALL CURBS. ALL CURBS SHALL BE BUILT IN ACCORDANCE TO THE PLAN, CURBS AND PAVEMENT AREAS WHICH DO NOT PROVIDE PROPER DRAINAGE MUST BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

- 57. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.

- 58. WHERE NEW CURB AND GUTTER IS BEING CONSTRUCTED ADJACENT TO EXISTING ASPHALT ON CONCRETE PAVEMENT, THE FOLLOWING SHALL APPLY: PRIOR TO PLACEMENT OF CONCRETE THE CONTRACTOR SHALL HAVE A LICENSE SURVEYOR VERIFY THE GRADE AND CROSS SLOPE OF THE CURB AND GUTTER FORMS. THE CONTRACTOR SHALL SUBMIT THE SLOPE AND GRADES TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SECTION WHICH DOES NOT CONFORM TO THE DESIGN OR TYPICAL CROSS SECTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CURB AND GUTTER FORMS WITHOUT THE APPROVAL OF THE ENGINEER.

- 59. SITE WORK SHALL MEET OR EXCEED OWNERS SITE SPECIFICATIONS.

- 60. ALL CONCRETE TO HAVE A MINIMUM OF 28 DAY COMPRESSION STRENGTH OF 4000 PSI.

- 61. CUT SLOPES SHALL BE NO STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL.

- 62. FILL SLOPES SHALL BE NO STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL.

- 63. APPROVED PROTECTIVE MEASURES AND TEMPORARY DRAINAGE PROVISIONS MUST BE USED TO PROTECT ADJOINING PROPERTIES DURING THE GRADING PROJECT.

DEWATERING

- 64. THE CONTRACTOR SHALL FURNISH, INSTALL, OPERATE AND MAINTAIN ALL MACHINERY, APPLIANCES AND EQUIPMENT TO MAINTAIN ALL EXCAVATIONS FREE FROM WATER DURING CONSTRUCTION. THE CONTRACTOR SHALL PROTECT PUBLIC OR PRIVATE PROPERTY, OR TO CAUSE A NUISANCE OR INTERFERENCE TO THE PUBLIC OR VIOLATE THE LAW. THE DEWATERING SYSTEM SHALL BE DESIGNED AND OPERATED SO THAT THE GROUND LEVEL OUTSIDE THE EXCAVATION IS NOT REDUCED TO THE EXTENT WHICH WOULD CAUSE DAMAGE AND EXCESSIVE ADJACENT STRUCTURES OR PROPERTY. ALL COST FOR DEWATERING SYSTEMS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ALL WORK OUTSIDE THE EXCAVATION. THE STATIC WATER LEVEL SHALL BE DRAWN DOWN A MINIMUM OF 1 FOOT BELOW THE BOTTOM OF EXCAVATIONS TO MAINTAIN THE UNDISTURBED STATE OF NATURAL SOILS AND ALLOW THE PLACEMENT OF ANY FILL TO THE SPECIFIED DENSITY. THE CONTRACTOR SHALL HAVE ON HAND, PUMPING EQUIPMENT AND MACHINERY IN GOOD CONDITION FOR EMERGENCIES AND SHALL HAVE WORKMEN AVAILABLE FOR ITS OPERATION. DEWATERING SYSTEM SHALL OPERATE CONTINUOUSLY UNTIL BACKFILL HAS BEEN COMPLETED TO 1 FOOT ABOVE THE NORMAL STATIC GROUNDWATER LEVEL.

- 65. THE CONTRACTOR SHALL CONTROL SURFACE WATER TO PREVENT ENTRY TO EXCAVATIONS. AT EACH EXCAVATION, A SUFFICIENT NUMBER OF TEMPORARY OBSERVATION WELLS TO CONTINUOUSLY CHECK THE GROUNDWATER LEVEL SHALL BE PROVIDED.

- 66. SLUMPS SHALL BE NO DEEPER THAN 5 FEET AND SHALL BE AT THE LOW POINT OF EXCAVATION. EXCAVATION SHALL BE GRADED TO DRAIN TO THE SLUMPS.

- 67. THE CONTROL OF GROUNDWATER SHALL BE SUCH THAT SOFTENING OF THE BOTTOM OF EXCAVATIONS, OR FORMATION OF "CUCU" CONDITIONS OR SOILS DOES NOT OCCUR. DEWATERING SYSTEMS SHALL BE DESIGNED AND OPERATED SO AS TO PREVENT REMOVAL OF NATURAL SOILS. THE RELEASE OF GROUNDWATER AT ITS STATIC LEVEL SHALL BE PERFORMED IN SUCH A MANNER AS TO MAINTAIN THE UNDISTURBED STATE OF NATURAL FOUNDATION SOILS. PREVENT DISTURBANCE OF COMPACTED BACKFILL, AND PREVENT FLOTATION OR MOVEMENT OF STRUCTURES, PIPES AND SEWERS. IF A UPDES (UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM) PERMIT IS REQUIRED FOR DISPOSAL OF WATER FROM CONSTRUCTION DEWATERING ACTIVITIES, IT SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO ANY DEWATERING ACTIVITIES.

- 68. ONE HUNDRED PERCENT STANDBY PUMPING CAPACITY SHALL BE AVAILABLE ON SITE AT ALL TIMES AND SHALL BE CONNECTED TO THE DEWATERING SYSTEM PIPING AS TO PREPARE IMMEDIATE USE. IN ADDITION STANDBY EQUIPMENT AND APPLIANCES FOR ALL OPERATING EMERGENCIES AND TO MAINTAIN THE NEAREST MAINTENANCE OF ALL DEWATERING EQUIPMENT SHALL BE ON SITE AT ALL TIMES. STANDBY EQUIPMENT SHALL INCLUDE EMERGENCY POWER GENERATION AND AUTOMATIC SWITCH OVER TO THE EMERGENCY GENERATOR WHEN NORMAL POWER FAILS. DEWATERING SYSTEM SHALL NOT TO BE SHUT DOWN BETWEEN SHIFTS, ON HOLIDAYS, ON WEEKENDS, OR DURING WORK STOPPAGES.

SITE SAFETY AND MAINTENANCE

- 69. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY, AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH PERFORMANCE OF WORK ON THIS PROJECT.

- 70. CONTRACTOR SHALL INSTALL EROSION CONTROLS (SILT FENCES, STRAW BALES, ETC) AS REQUIRED BY REGULATORY AGENCIES. SAID CONTROLS SHALL BE INSTALLED IN ACCORDANCE WITH AGENCY STANDARDS AND FOLLOWING BEST MANAGEMENT PRACTICES FOR ACTUAL PLACEMENT ON SITE. STRAW BALES SHOWN ON THESE DRAWINGS ARE INTENDED AS A MINIMUM REQUIREMENT. ADDITIONAL CONTROLS AS REQUESTED BY AGENCY INSPECTORS SHALL BE REQUIRED. DUST CONTROL SHALL BE PROVIDED AT ALL TIMES. AT THE CONTRACTORS EXPENSE, TO MINIMIZE ANY DUST NUISANCE AND SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY.

- 71. THE CONTRACTOR AGREES THAT:

- A. THEY SHALL BE RESPONSIBLE TO CLEAN THE JOB SITE AT THE END OF EACH PHASE OF WORK.
B. THEY SHALL BE RESPONSIBLE TO REMOVE AND DISPOSE OF ALL TRASH, SCRAP AND UNUSED MATERIAL AT THEIR OWN EXPENSE IN A TIMELY MANNER.
C. THEY SHALL BE RESPONSIBLE TO MAINTAIN THE SITE IN A NEAT, SAFE AND ORDERLY MANNER AT ALL TIMES.
D. THEY SHALL BE RESPONSIBLE TO KEEP MATERIALS, EQUIPMENT, AND TRASH OUT OF THE WAY OF OTHER CONTRACTORS SO AS NOT TO DELAY THE JOB. FAILURE TO DO SO WILL RESULT IN A DEDUCTION FOR THE COST OF CLEAN UP FROM THE FINAL PAYMENT.
E. THEY SHALL BE RESPONSIBLE FOR THEIR OWN SAFETY, TRAFFIC CONTROL, PERMITS, RE-TESTING AND REINSPECTIONS AT THEIR OWN EXPENSE.
F. UNLESS OTHERWISE NOTED ALL EXCESS SOILS AND MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE LAWFULLY DISPOSED OF OFF SITE AT THE CONTRACTORS EXPENSE.
G. THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, BARRICADES, SIGNS, FLAGMEN OR OTHER DEVICES NECESSARY FOR PUBLIC SAFETY.
H. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL WATER, POWER, SANITARY FACILITIES AND TELEPHONE SERVICES AS REQUIRED FOR THE CONTRACTORS USE DURING CONSTRUCTION.

- I. ALL DEBRIS AND FOREIGN MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT APPROVED DISPOSAL SITES. THE CONTRACTOR SHALL OBTAIN NECESSARY PERMITS FOR THE TRANSPORTATION OF MATERIAL TO AND FROM THE SITE.

- 72. FOR ALL WORK WITHIN PUBLIC RIGHTS-OF-WAY OR EASEMENTS, THE CONTRACTOR SHALL PRESERVE THE INTEGRITY AND LOCATION OF ANY AND ALL PUBLIC UTILITIES AND PROVIDE THE NECESSARY CONSTRUCTION TRAFFIC CONTROL. CONTRACTOR SHALL THROUGH THE ENFORCEMENT PERMITS PROCESS, VERIFY WITH THE NECESSARY REGULATORY AGENCIES, THE NEED FOR ANY TRAFFIC ROUTING PLAN. IF PLAN IS REQUIRED, CONTRACTOR SHALL PROVIDE PLAN AND RECEIVED APPROVALS PRIOR TO BEGINNING CONSTRUCTION. WORK IN EASEMENT AND/OR RIGHT-OF-WAY IS SUBJECT TO THE APPROVAL AND ACCEPTANCE OF THE REGULATORY AGENCY RESPONSIBLE FOR OPERATION AND OR MAINTENANCE OF SAID AND/OR RIGHT-OF-WAY. ALL CONSTRUCTION WORK IN RIGHT-OF-WAY SHALL BE SUBJECT TO INSPECTION BY THE STATE ENGINEER. THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT INSPECTIONS TAKE PLACE WHERE AND WHEN REQUIRED AND TO INSURE THAT ALL WORK IS COMPLETED TO UDOT STANDARDS.

SURFACE IMPROVEMENTS

- 73. SUBGRADE PREPARATION: SUBGRADE SHALL BE COMPACTED TO A 95% RELATIVE COMPACTION TO A MINIMUM DEPTH OF 8" FOR ALL ON-SITE DEVELOPMENT, ALL OFF-SITE IMPROVEMENTS SHALL BE DONE PER AFWA STANDARDS.

- 74. AGGREGATE SUB-BASE: AGGREGATE SUB-BASE SHALL BE GRANULAR BACKFILL BORROW. AGGREGATE SUB-BASE MATERIAL SHALL BE CLEAN AND FREE FROM VEGETABLE MATTER AND OTHER DELETERIOUS SUBSTANCE. AGGREGATE SHALL COMPLY WITH THE QUALITY REQUIREMENTS FOR PAVEMENTS FOUND IN THE PROFESSIONALLY PREPARED OF THE SOILS INVESTIGATIONS COMPLETED ON THIS SITE.

- 75. AGGREGATE BASE: AGGREGATE BASE SHALL BE GRADE 3/4 UNTREATED BASE COURSE, AND COMPLY PREPARED REPORT OF THE SOILS INVESTIGATION PREPARED ON THIS SITE.

- 76. ALL MANHOLE RIMS, LAMPHOLES, VALVES AND MONUMENT BOXES, ETC. SHALL BE ADJUSTED TO FINISH GRADE AFTER STREET PAVING, UNLESS OTHERWISE NOTED. COST FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICES FOR SAID FACILITIES.

- 77. ALL SIDEWALKS AND CROSSINGS TO MEET CURRENT ADA STANDARDS/ APWA STANDARDS.

- 78. PAYMENT FOR PAVEMENT WILL BE MADE ONLY FOR AREAS SHOWN ON PLANS. REPLACEMENT OF PAVEMENT WHICH IS BROKEN OR CUT DURING THE INSTALLATION OF THE WORK COVERED BY THESE SPECIFICATIONS, AND WHICH LIES OUTSIDE OF SAID AREAS, SHALL BE INCLUDED IN THE CONTRACTORS UNIT PRICE FOR PAVEMENT, AND NO ADDITIONAL PAYMENT SHALL BE MADE FOR SUCH WORK.

- 79. INSTALLATION OF STREET LIGHTS SHALL BE IN ACCORDANCE WITH CITY STANDARDS.

- 80. PRIOR TO FINAL ACCEPTANCE OF THE IMPROVEMENTS BUILT BY THESE PLANS AND SPECIFICATIONS THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH THE OWNER, CITY, AND POWER COMPANY TO HAVE THE ELECTRICAL SYSTEM AND ALL STREET LIGHTS ENERGIZED.

- 81. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL STRIPING AND/OR PAVEMENT MARKINGS NECESSARY TO THE EXISTING STRIPING UNTIL FUTURE STRIPING. METHOD OF REMOVAL SHALL BE BY GRINDING OR SANDBLASTING.

- 82. STRIPING AND PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH MUTCD & APWA 32 17.23.

- 83. DURING THE BIDDING PROCESS, CONTRACTOR TO REVIEW DESIGN SLOPES SHOWN FOR PAVEMENT AND WARRANTY THE PAVEMENT TO THE OWNER BASED UPON THE DESIGN SLOPES SHOWN HEREON. CONCERNS WITH SLOPES MUST BE BROUGHT DURING THE BIDDING PROCESS.

- 84. IT IS THE INTENT ON THESE PLANS THAT ALL PAVEMENT SLOPE TO A CATCH BASIN, INLET BOX OR OUT INTO A STREET CONTRACTOR TO VERIFY FINISH SPOT ELEVATIONS AND NOTIFY ENGINEER IF THERE ARE DISCREPANCIES THAT WOULD CAUSE PUDDING ON THE SITE.

NOTE:

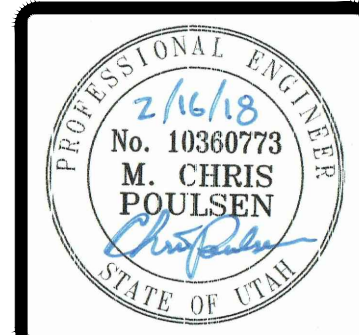
IN THE EVENT THAT THE CONSTRUCTION NOTES CONFLICT WITH RESPONSIBLE DISTRICT OR AGENCY STANDARDS, NOTES AND SPECIFICATIONS, THE DISTRICT OR AGENCY STANDARD NOTES AND SPECIFICATIONS GOVERN.

CAUTION NOTICE TO CONTRACTORS

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS ARE BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO THE NORMAL WORKING HOURS, AND THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT. EXCEPTING FOR LIABILITY ARISING FROM SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.

Table with columns: No., DATE, REVISION PER COUNTY COMMENTS, KVIS, DATE, SURVEY, DATE, FILE, SHEETS, TOTAL SHEETS. Includes project details like SANDY, UTAH 84076, (801) 542-7192.



BENCHMARK ENGINEERING & LAND SURVEYING logo and address: 9130 SOUTH STATE STREET SUITE 100, SANDY, UTAH 84076, (801) 542-7192, www.benchmarkkvt.com

WINSTON PARK 3908 W 1800 S WEBER COUNTY, UTAH

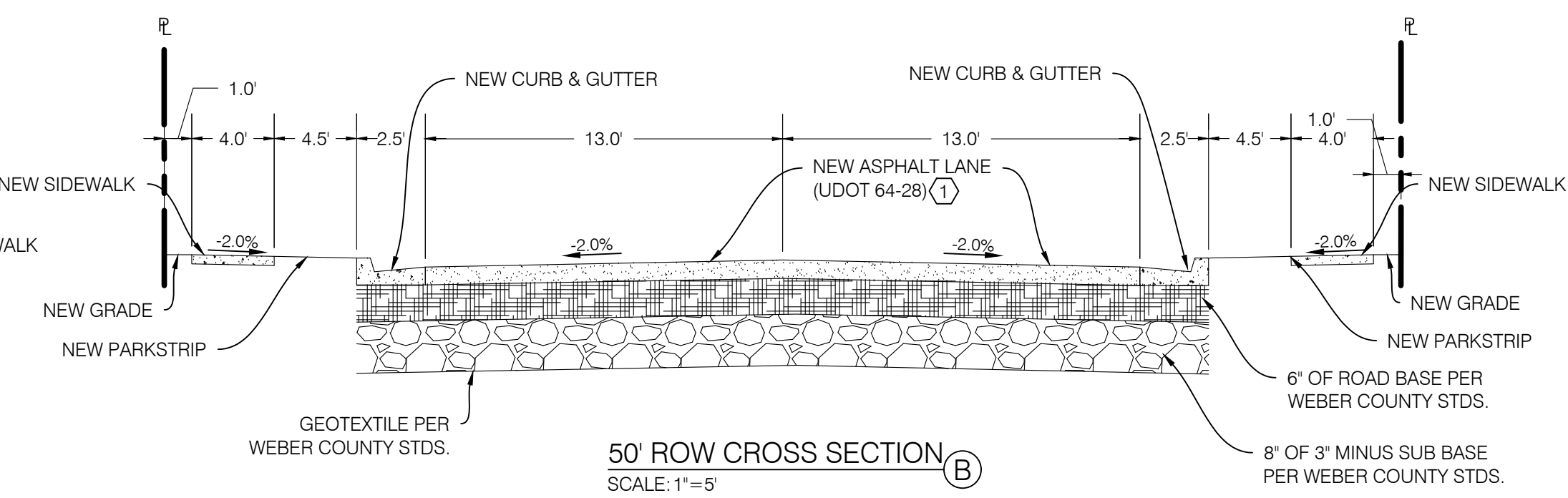
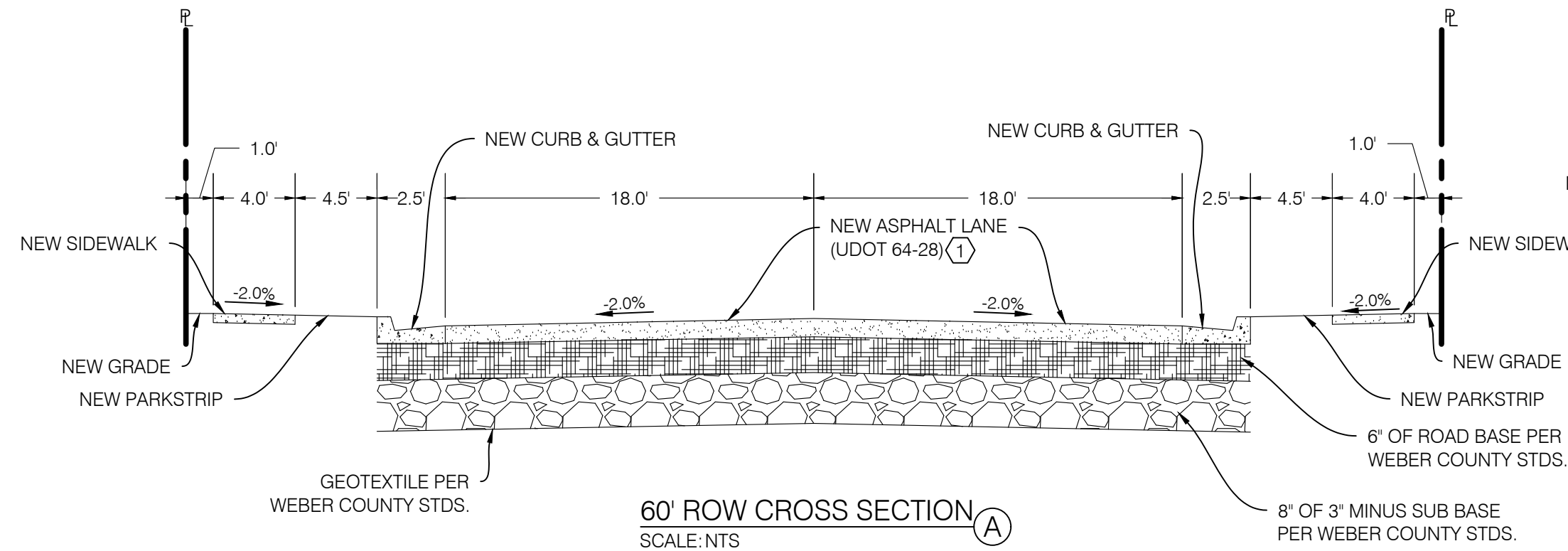


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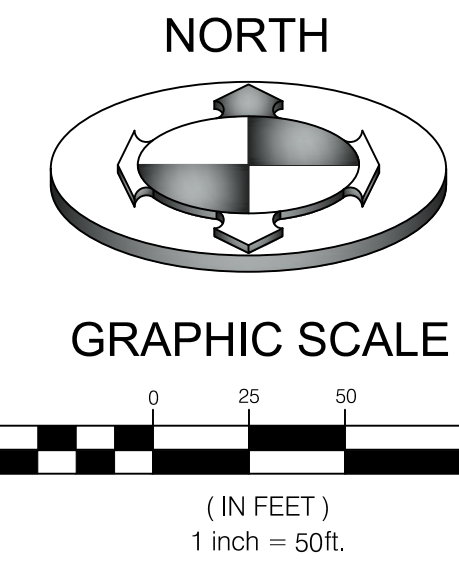
BONUS DENSITY TABLE		
OVERALL AREA (S.F.)	1,693,711	
R.O.W. AREA	236,527	
MAXIMUM 40,000 S.F. LOTS	36	
APPLICABLE ITEMS	% DENSITY BONUS	ADDITIONAL LOTS
a. CLUSTER	10	3.6
b. ROADWAY LANDSCAPE/DESIGN	20	7.2
g. AGRICULTURE	15	5.4
i. SEWER CAPACITY	5	1.8
<b>TOTAL BONUS</b>	<b>50</b>	<b>18</b>
TOTAL PROPOSED LOTS	54	

AREA TABLE		
PARTICULARS	S.F.	%
AREA OF LOTS	578,504	34.2
R.O.W.	236,527	14.0
OPEN SPACE	878,680	51.8
TOTAL	1,693,711	100
AVERAGE LOT AREA = 10,571 S.F.		

CONSTRUCTION KEY NOTES REFERENCE		
NO	DESCRIPTION	DETAIL
①	ASPHALT PAVEMENT WITH GRANULAR BASE	1/CDT.01
②	CONCRETE CURB AND GUTTER PER WEBER COUNTY PUBLIC STDS. SHEET 4	2/CDT.01
③	SIDEWALK PER WEBER COUNTY PUBLIC STDS. SHEET 4	2/CDT.01
④	ADA RAMP WITH GRAY CAST IN PLACE TRUNCATED DOME DETECTABLE WARNING SURFACE PER APWA #235.1	1/CDT.02
⑤	'NO PARKING' SIGN	



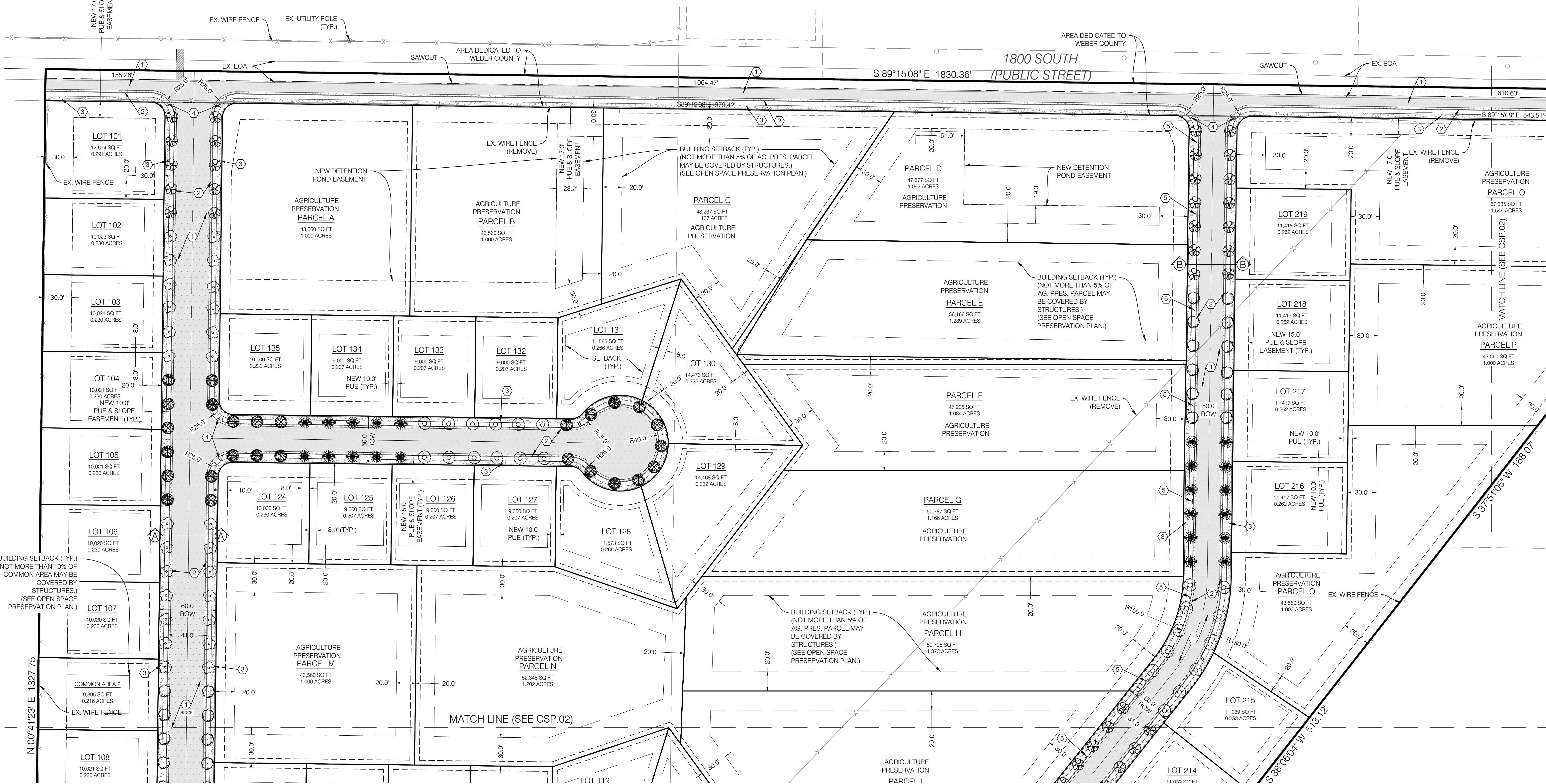
TREE LEGEND		
NO	TREE NAME	DETAIL
Ⓐ	FLOWERING PEAR	
Ⓑ	COLUMNAR GINKGO	
Ⓒ	ENGLISH HAWTHORN	
Ⓓ	WASHINGTON HAWTHORN	
Ⓔ	RED MAPLE	
Ⓕ	HEDGE MAPLE	
INSTALL ORGANIC ROOT BARRIER AT ALL TREE ROOT BALL LOCATIONS		



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UTILITY NOTIFICATION CENTER

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NO.	DATE	DESCRIPTION
1	10/11/17	REVISED PER COUNTY COMMENTS
2	02/16/18	REVISED PER COUNTY COMMENTS
3	09/29/2017	SURVEY
4	16/07/138186	PROJECT FILE

SCALE: MEASUREMENTS ON ALL SIZE SHEETS SHALL ACCORD TO THE REVISIONS SHEETS.

PROFESSIONAL ENGINEER  
No. 21618  
M. CHRIS POULSEN  
STATE OF UTAH

**BENCHMARK CIVIL**

BENCHMARK ENGINEERING & LAND SURVEYING

9130 SOUTH STATE STREET SUITE # 100  
SANDY, UTAH 84070 (801) 542-7192  
www.benchmarkcivil.com

**WINSTON PARK**

3908 W 1800 S  
WEBER COUNTY, UTAH

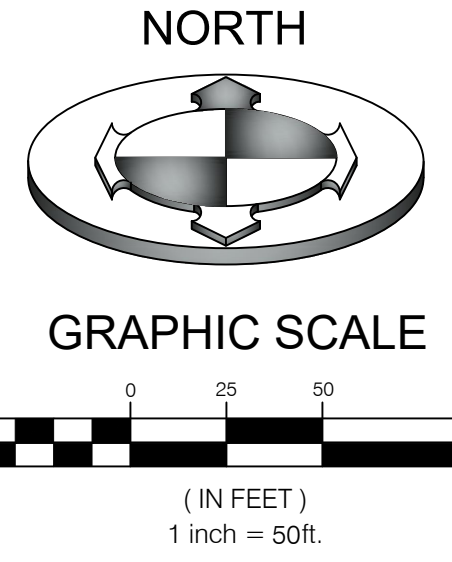
PROJECT NO: 1607138

**SITE PLAN**

CSP.01  
3 OF 24



MATCH LINE (SEE CSP.01)

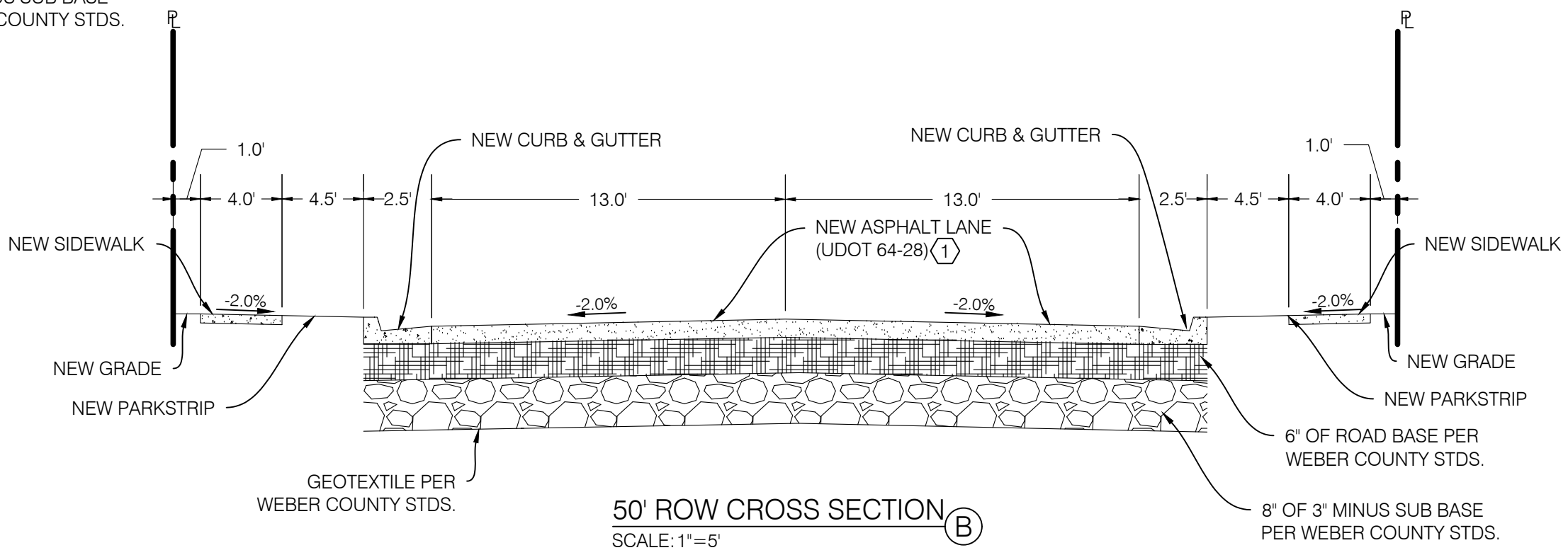
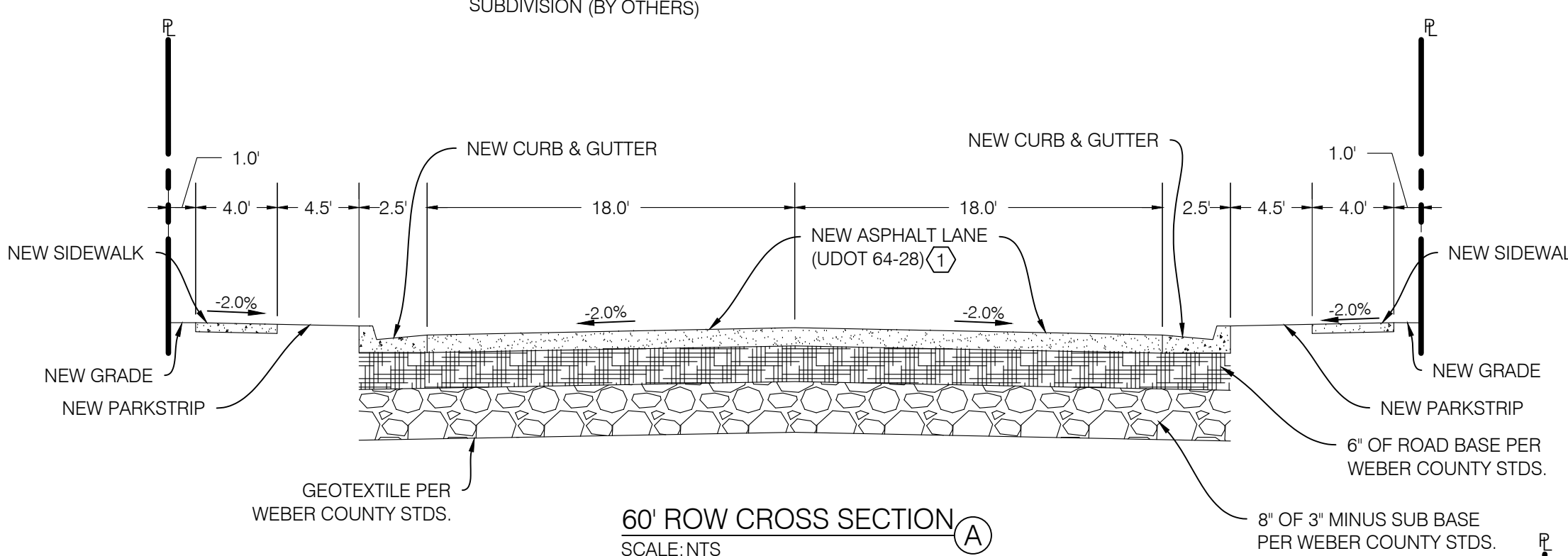
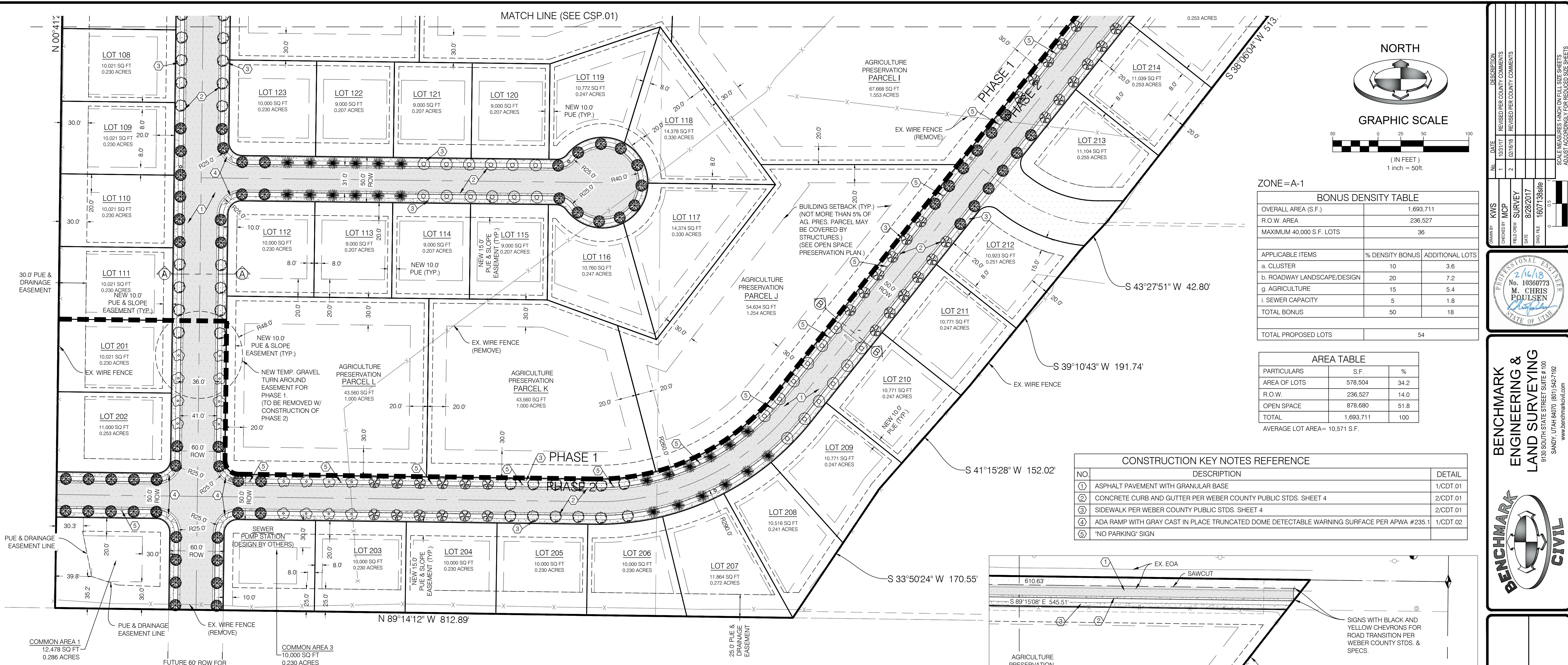


ZONE=A-1

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b. ROADWAY LANDSCAPE/DESIGN	20	7.2
g. AGRICULTURE	15	5.4
i. SEWER CAPACITY	5	1.8
TOTAL BONUS	50	18
TOTAL PROPOSED LOTS	54	

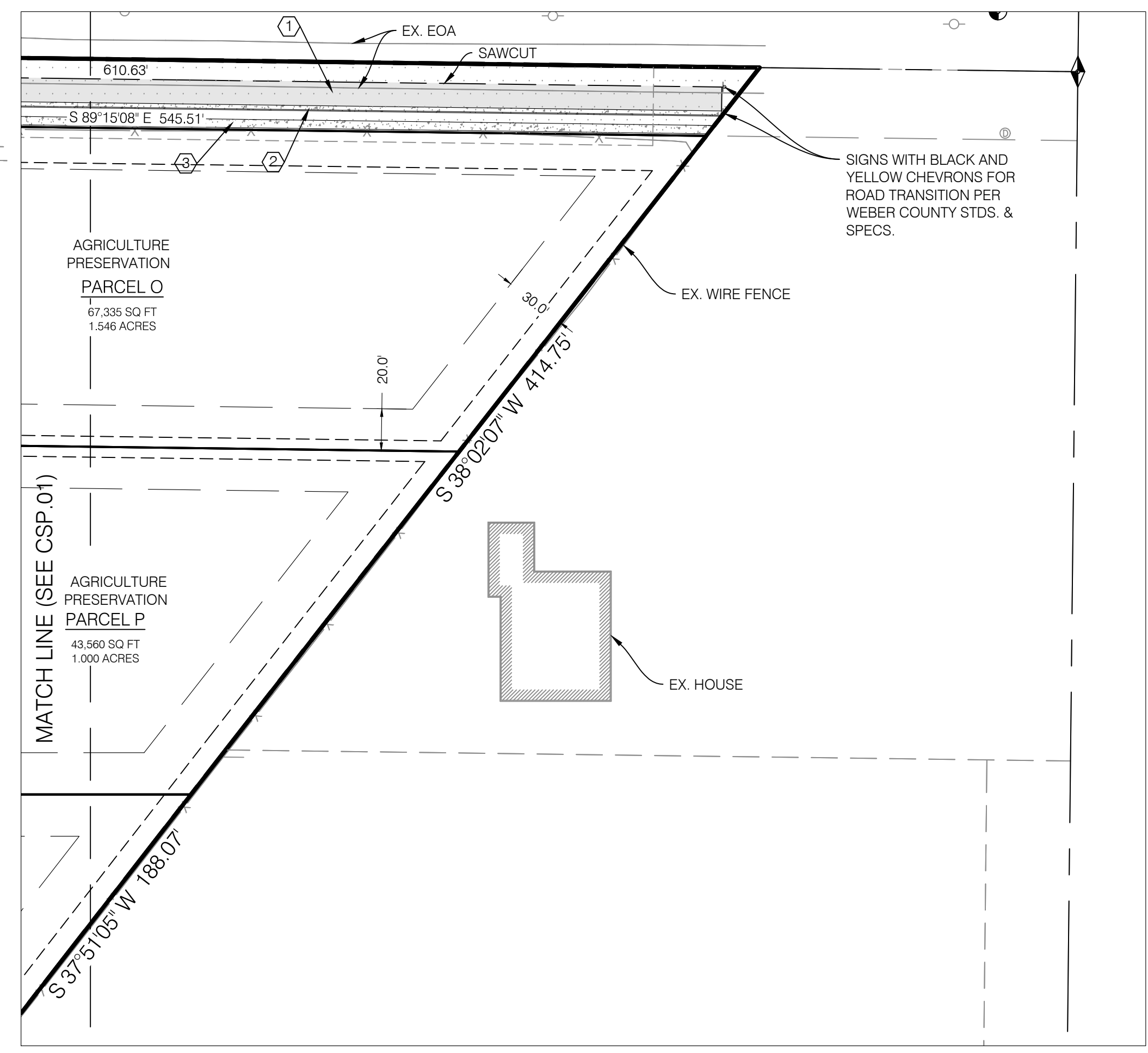
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NO.	TREE NAME	DETAIL
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Ⓓ	WASHINGTON HAWTHORN	
Ⓔ	RED MAPLE	
Ⓕ	HEDGE MAPLE	

\*INSTALL ORGANIC ROOT BARRIER AT ALL TREE ROOT BALL LOCATIONS



NO.	DATE	DESCRIPTION
1	10/11/17	REVISED PER COUNTY COMMENTS
2	02/16/18	REVISED PER COUNTY COMMENTS
3	02/16/18	REVISED PER COUNTY COMMENTS
4	02/16/18	REVISED PER COUNTY COMMENTS
5	02/16/18	REVISED PER COUNTY COMMENTS
6	02/16/18	REVISED PER COUNTY COMMENTS
7	02/16/18	REVISED PER COUNTY COMMENTS
8	02/16/18	REVISED PER COUNTY COMMENTS
9	02/16/18	REVISED PER COUNTY COMMENTS
10	02/16/18	REVISED PER COUNTY COMMENTS

PROJECT NO. 1607138

SCALE: 1"=50'

ADJUST ACCORDINGLY FOR REDUCED SIZE SHEETS

**BENCHMARK CIVIL**

**BENCHMARK ENGINEERING & LAND SURVEYING**

PROFESSIONAL ENGINEER  
No. 10360773  
M. CHRIS POULSEN  
STATE OF UTAH

9130 SOUTH STATE STREET SUITE # 100  
SANDY, UTAH 84070 (801) 542-7192  
www.benchmarkcivil.com

**WINSTON PARK**

3908 W 1800 S  
WEBER COUNTY, UTAH



CONSTRUCTION KEY NOTES REFERENCE		
NO.	DESCRIPTION	DETAIL
①	8" PVC C-900 CULINARY WATER MAIN	
②	3/4" TYPE K COPPER WATER SERVICE LINE	
③	3/4" WATER METER PER WEBER COUNTY ENGINEERING STDS.	3/CDT.01
④	3/4" POLY WATER SERVICE LINE	
⑤	6" PVC C-900 FIRELINE	
⑥	FIRE HYDRANT PER WEBER COUNTY ENGINEERING STDS.	3/CDT.01
⑦	THRUST BLOCK PER WEBER COUNTY ENGINEERING STDS.	3/CDT.01
⑧	GATE VALVE PER WEBER COUNTY ENGINEERING STDS.	
⑨	BLOW OFF VALVE PER TAYLOR-WEST WEBER WATER ID STDS.	
⑩	8" PVC SDR-35 SEWER MAIN PER WEBER COUNTY ENGINEERING STDS.	
⑪	4" PVC SDR-35 SEWER LATERAL (2.0% MIN. SLOPE)	2/CDT.03
⑫	4" SSMH PER WEBER COUNTY ENGINEERING STDS.	1/CDT.03
⑬	8" PVC C-900 SECONDARY WATER LINE PER HOOPER IRRIGATION COMPANY STDS.	
⑭	2" POLY SECONDARY WATER LINE PER HOOPER IRRIGATION COMPANY STDS.	
⑮	SECONDARY WATER VALVE ASSEMBLY PER HOOPER IRRIGATION COMPANY STDS.	2/CDT.02
⑯	COMBINATION AIR VAC PER HOOPER IRRIGATION COMPANY STDS.	1/CDT.04
⑰	THRUST BLOCK PER HOOPER IRRIGATION COMPANY STDS.	2/CDT.04
⑱	GATE VALVE PER HOOPER IRRIGATION COMPANY STDS.	5/CDT.01
⑲	5" SSMH PER WEBER COUNTY ENGINEERING STDS.	1/CDT.03
⑳	STREET LIGHT PER WEBER COUNTY STDS.	

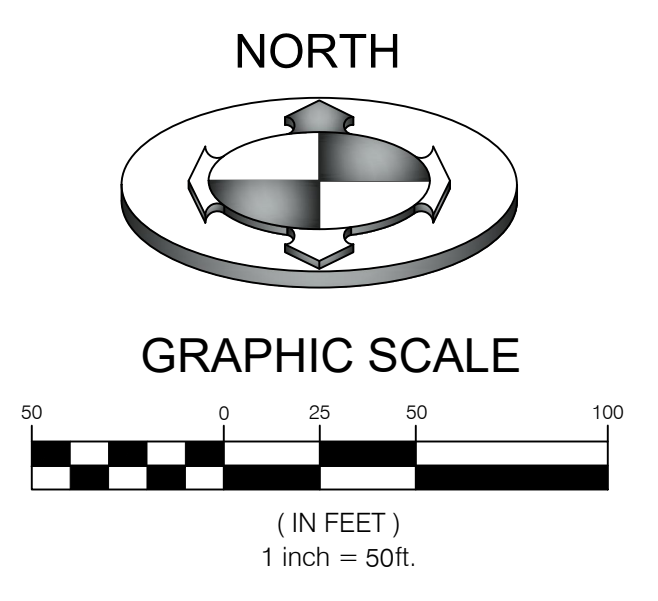
NOTE:  
PRIOR TO FABRICATION OR CONSTRUCTION, CONTRACTOR IS TO BEGIN AT THE LOW END OF ALL GRAVITY UTILITY LINES AND VERIFY THE INVERT ELEVATION OF THE POINT OF CONNECTION AND NOTIFY ENGINEER IF THIS POINT IS HIGHER THAN SHOWN ON THE PLANS FOR A REDESIGN.

NOTE:  
CONTRACTOR IS RESPONSIBLE FOR POTHOLING TO IDENTIFY ANY CONFLICTS BEFORE ANY PIPE INSTALLATION. CONTACT ENGINEER IF ANY CONFLICTS ARE IDENTIFIED.

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NO.	DATE	DESCRIPTION
1	10/31/17	REVISED PER COUNTY COMMENTS
2	02/16/18	REVISED PER COUNTY COMMENTS

DESIGNED BY: MCP  
FIELD DRAWN: SURVEY  
DATE: 8/28/2017  
DWG FILE: 1607138.rvt

SCALE: MEASUREMENTS SHOWN ON ALL SIZE SHEETS  
AS SHOWN ACCORDING TO THE RELEVANT SPECIFICATIONS

PROFESSIONAL ENGINEER

2/16/18  
No. 10360773  
M. CHRIS  
POULSEN

STATE OF UTAH

**BENCHMARK  
CIVIL**

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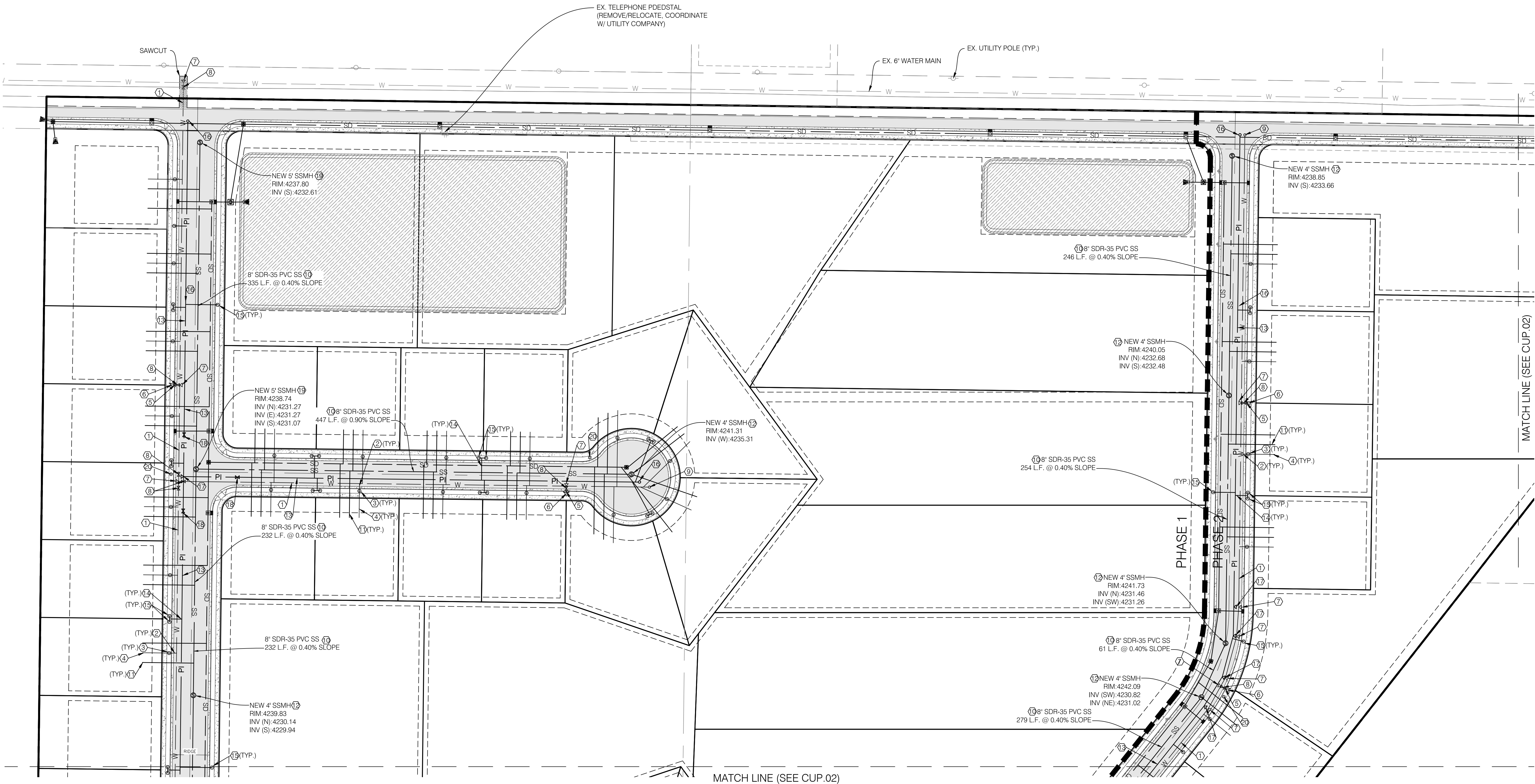
**WINSTON PARK**

3908 W 1800 S  
WEBER COUNTY, UTAH

PROJECT NO. 1607138

UTILITY PLAN

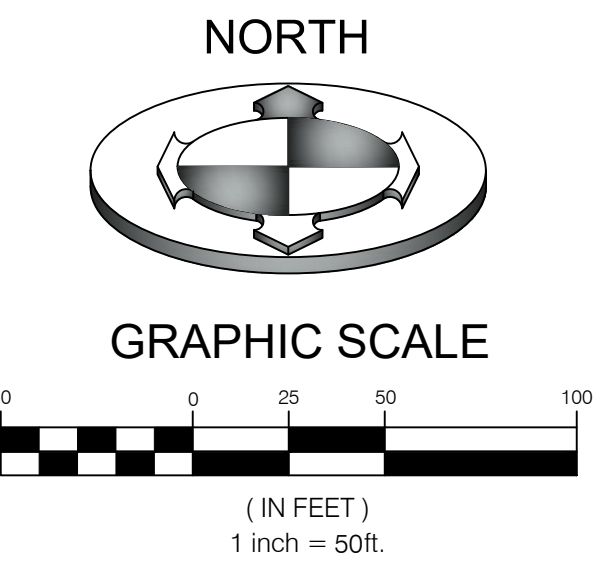
CUP.01  
5 OF 24



MATCH LINE (SEE CUP.02)

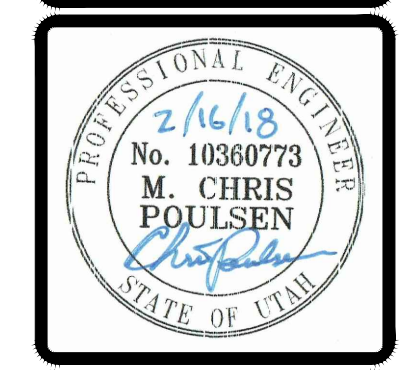


MATCH LINE (SEE CUP.01)



CONSTRUCTION KEY NOTES REFERENCE		
NO.	DESCRIPTION	DETAIL
①	8" PVC C-900 CULINARY WATER MAIN	
②	3/4" TYPE K COPPER WATER SERVICE LINE	
③	3/4" WATER METER PER WEBER COUNTY ENGINEERING STDS.	3/CDT.01
④	3/4" POLY WATER SERVICE LINE	
⑤	6" PVC C-900 FIRELINE	
⑥	FIRE HYDRANT PER WEBER COUNTY ENGINEERING STDS.	3/CDT.01
⑦	THRUST BLOCK PER WEBER COUNTY ENGINEERING STDS.	3/CDT.01
⑧	GATE VALVE PER WEBER COUNTY ENGINEERING STDS.	
⑨	BLOW OFF VALVE PER TAYLOR-WEST WEBER WATER ID STDS.	
⑩	8" PVC SDR-35 SEWER MAIN PER WEBER COUNTY ENGINEERING STDS.	
⑪	4" PVC SDR-35 SEWER LATERAL (2.0% MIN. SLOPE)	2/CDT.03
⑫	4" SSMH PER WEBER COUNTY ENGINEERING STDS.	1/CDT.03
⑬	8" PVC C-900 SECONDARY WATER LINE PER HOOPER IRRIGATION COMPANY STDS.	
⑭	2" POLY SECONDARY WATER LINE PER HOOPER IRRIGATION COMPANY STDS.	
⑮	SECONDARY WATER VALVE ASSEMBLY PER HOOPER IRRIGATION COMPANY STDS.	2/CDT.02
⑯	COMBINATION AIR VAC PER HOOPER IRRIGATION COMPANY STDS.	1/CDT.04
⑰	THRUST BLOCK PER HOOPER IRRIGATION COMPANY STDS.	2/CDT.04
⑱	GATE VALVE PER HOOPER IRRIGATION COMPANY STDS.	5/CDT.01
⑲	5" SSMH PER WEBER COUNTY ENGINEERING STDS.	1/CDT.03
⑳	STREETLIGHT PER WEBER COUNTY STDS.	

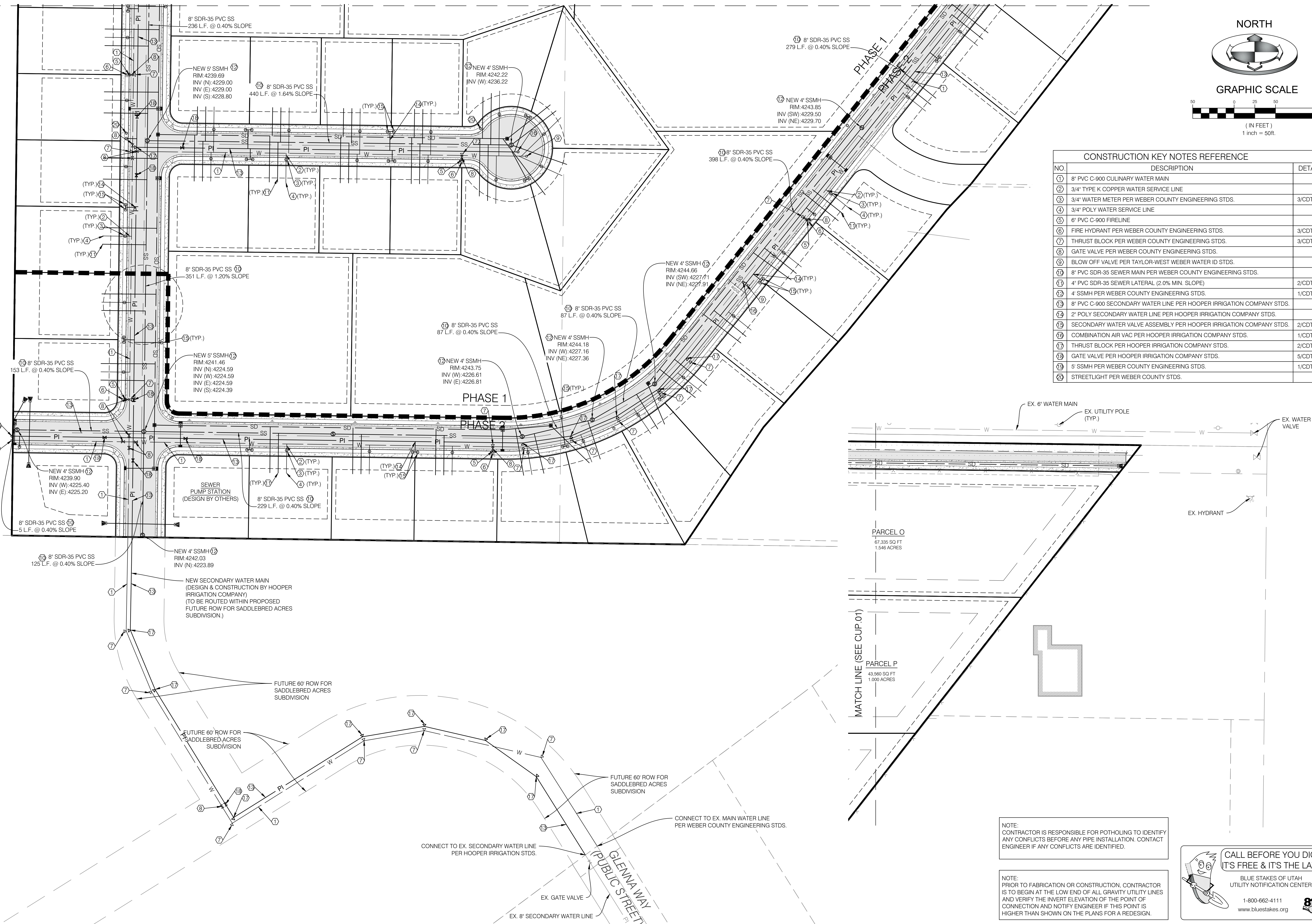
NO.	DATE	DESCRIPTION
1	10/31/17	REVISED PER COUNTY COMMENTS
2	02/18/18	REVISED PER COUNTY COMMENTS
3	02/28/2017	DATE
4	1607-33816	PROJECT NO.



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**WINSTON PARK**  
 3908 W 1800 S  
 WEBER COUNTY, UTAH

PROJECT NO. 1607138  
**UTILITY PLAN**  
 CUP.02  
 6 OF 24



NOTE:  
 CONTRACTOR IS RESPONSIBLE FOR POT-HOLING TO IDENTIFY ANY CONFLICTS BEFORE ANY PIPE INSTALLATION. CONTACT ENGINEER IF ANY CONFLICTS ARE IDENTIFIED.

NOTE:  
 PRIOR TO FABRICATION OR CONSTRUCTION, CONTRACTOR IS TO BEGIN AT THE LOW END OF ALL GRAVITY UTILITY LINES AND VERIFY THE INVERT ELEVATION OF THE POINT OF CONNECTION AND NOTIFY ENGINEER IF THIS POINT IS HIGHER THAN SHOWN ON THE PLANS FOR A REDESIGN.

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GRADING AND DRAINAGE KEY NOTES REFERENCE		
NO.	DESCRIPTION	DETAIL
1	GRADE SITE TO ELEVATIONS SHOWN ON PLAN	
2	7.5" ORIFICE PLATE (SEE DETAIL 'A')	5A/CDT.04
3	3.8" ORIFICE PLATE (SEE DETAIL 'B')	5B/CDT.04
4	STORM DRAIN INLET BOX	4/CDT.01
5	5'X5' SDCO W/ BAFFLE (SEE DETAIL 'A')	6A/CDT.04
6	STORM DRAIN CLEANOUT	4/CDT.01
7	STORM DRAIN COMBO BOX	3/CDT.04
8	FLARED END SECTION	4/CDT.04
9	REVERSED STORM DRAIN COMBO BOX	
10	SNOUT	3/CDT.03
11	4" PVC FOUNDATION DRAIN LATERAL PER WEBER COUNTY ENGINEERING STDS. (0.5% MIN. SLOPE)	
12	4'X4' SDCO W/ BAFFLE (SEE DETAIL 'B')	6B/CDT.04

NOTE: CONTRACTOR IS RESPONSIBLE FOR POTHOLING TO IDENTIFY ANY CONFLICTS BEFORE ANY PIPE INSTALLATION. CONTACT ENGINEER IF ANY CONFLICTS ARE IDENTIFIED.

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NOTE: STORM DRAIN PIPES ARE TO BE LAID WITHOUT GASKETS AT JOINTS AND GRAVEL IS TO BE PLACED AROUND AT LEAST EVERY OTHER JOINT.

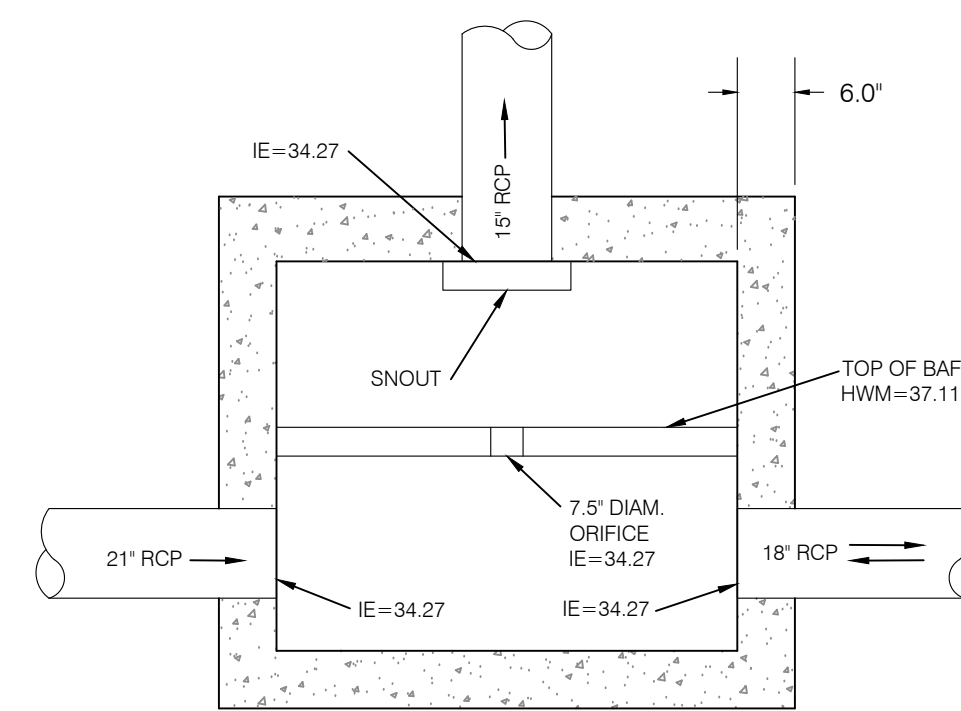
NOTE: PER GEOTECH REPORT, THE WATER TABLE VARIES FROM 4-1/2 TO 7' BELOW EXISTING GRADE. FROM THIS, IT IS RECOMMENDED THAT THE LOWEST HABITABLE ELEVATION SHOULD BE 3' ABOVE THE OBSERVED WATER TABLE ELEVATION. ENSURE THAT BUILDING FOUNDATION DRAINS SLOPE TOWARD STORM DRAIN INFRASTRUCTURE.

BENCHMARK  
WEBER COUNTY BENCHMARK 62121-2-5217  
SURVEY BENCHMARK  
ELEVATION NGVD 88 = 4241.87  
(FOUND 3" BRASS CAP SET IN 6" CONCRETE POST, SET IN 1954 BY BUREAU OF RECLAMATION, GOOD CONDITION)

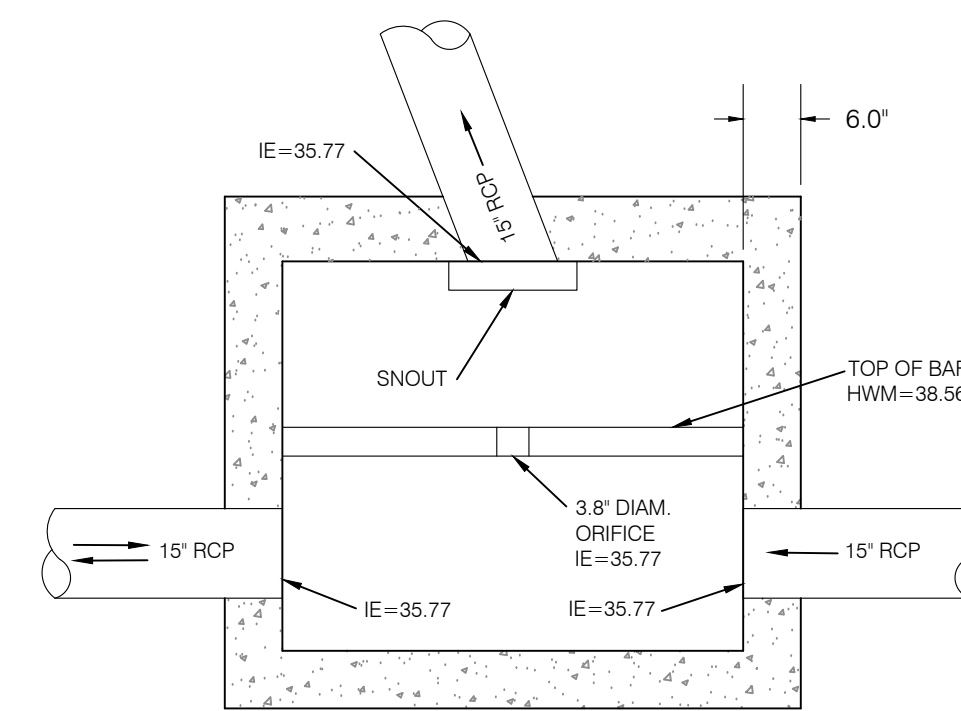
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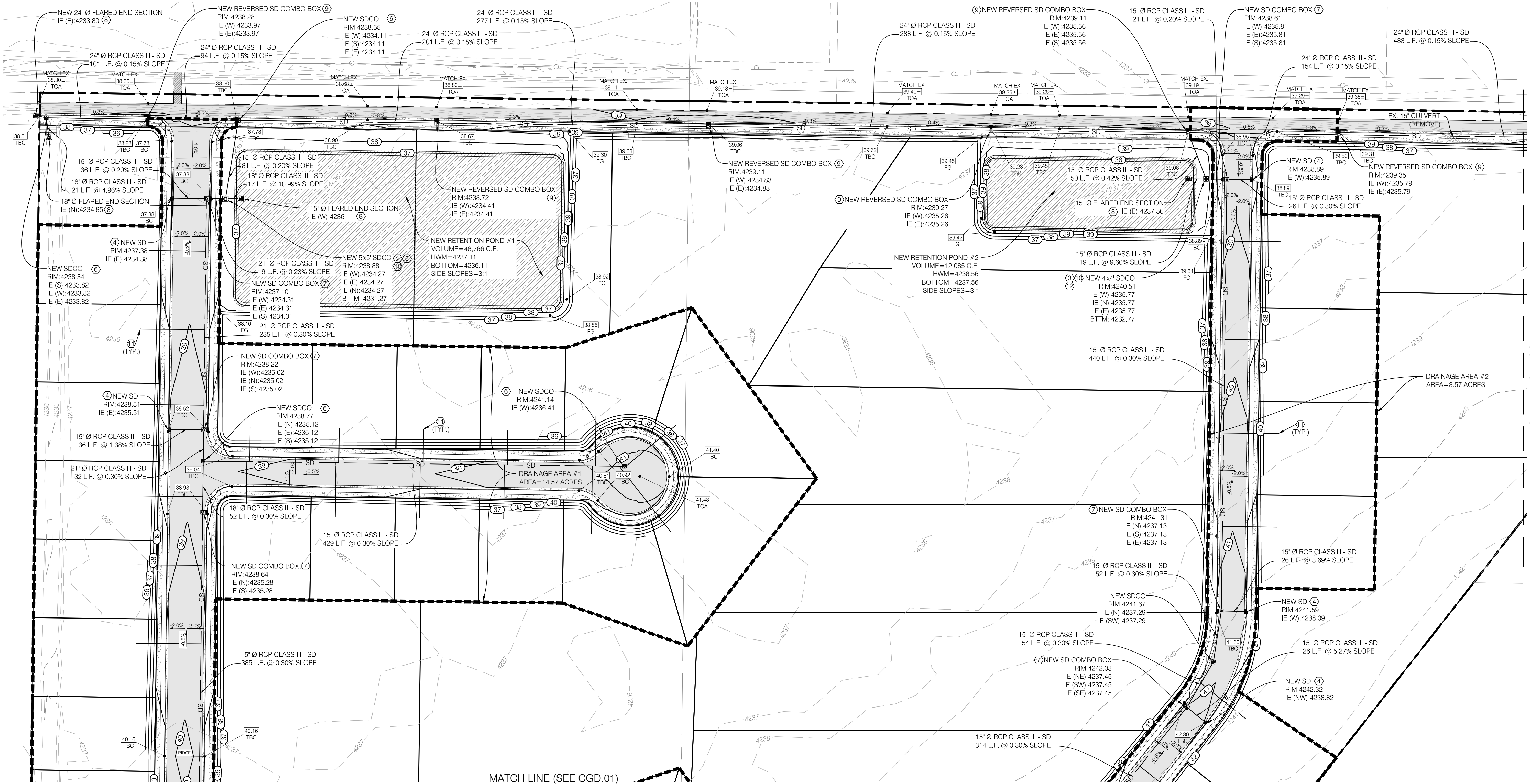
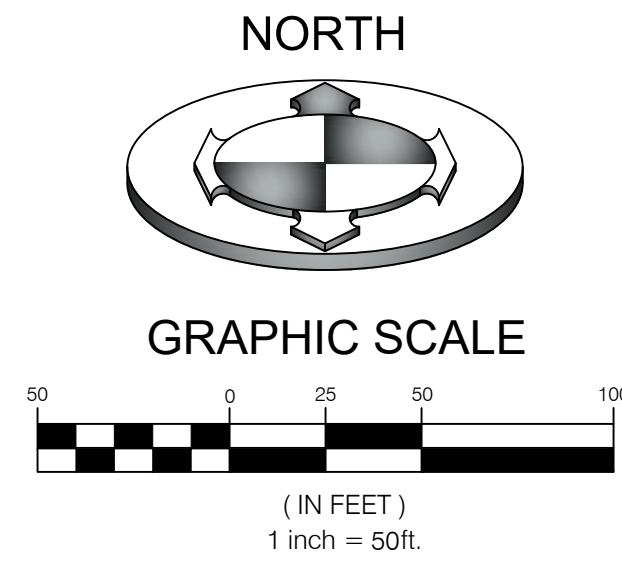
1-800-662-4111  
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5'X5' SDCO W/ BAFFLE  
PLAN VIEW  
SCALE: N.T.S.



4'X4' SDCO W/ BAFFLE  
PLAN VIEW  
SCALE: N.T.S.



NO.	DATE	DESCRIPTION
1	10/31/17	REVISED PER COUNTY COMMENTS
2	02/16/18	REVISED PER COUNTY COMMENTS

PROJECT NO. 1607138

DATE 02/28/2017

DESIGNER SURVEY

DRAWN BY KVIS

CHECKED BY MCP

SCALE MEASURES: DIMENSIONS ON ALL SIZE SHEETS AS SHOWN, ACCORDING TO REQUESTED SIZE SHEETS

PROFESSIONAL ENGINEER  
No. 10360773  
M. CHRIS POULSEN  
STATE OF UTAH

BENCHMARK  
ENGINEERING &  
LAND SURVEYING  
LAND SURVEYING  
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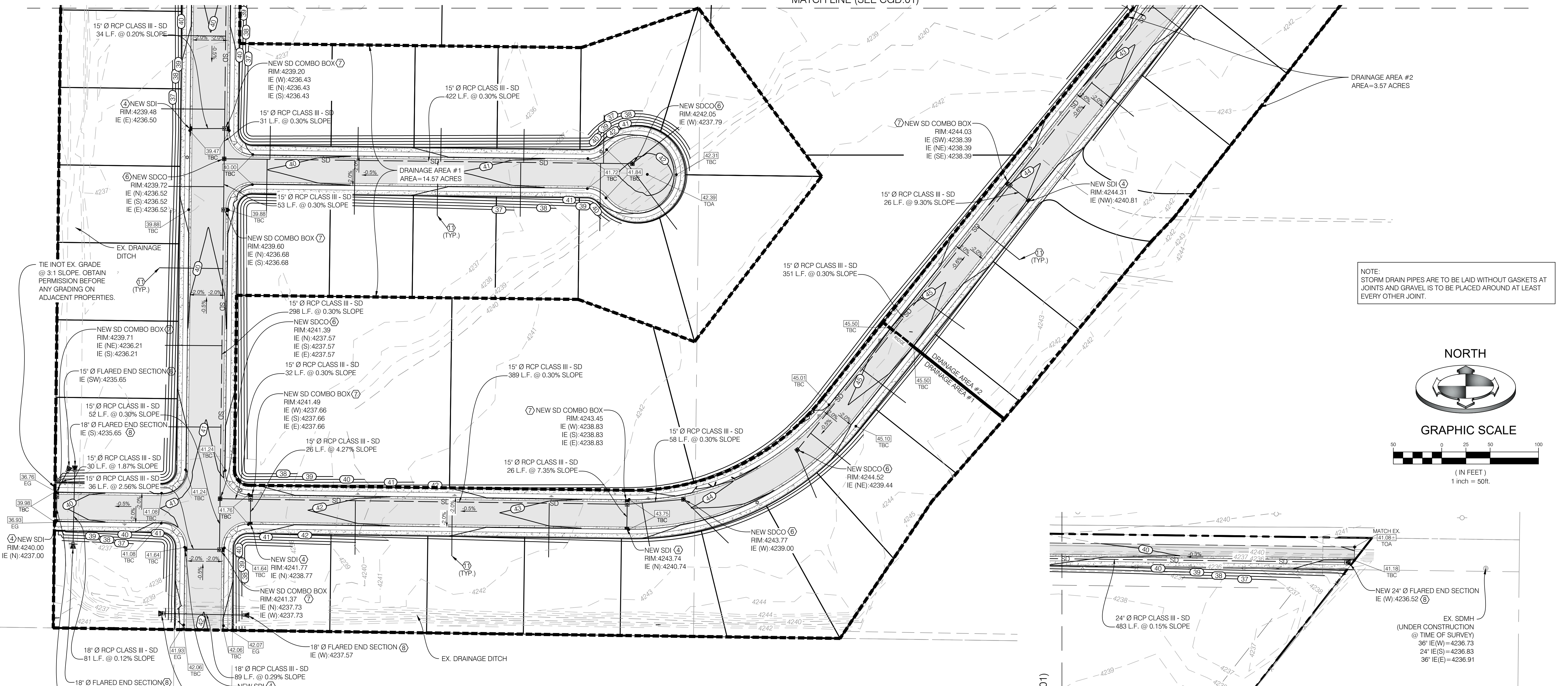
WINSTON PARK  
3908 W 1800 S  
WEBER COUNTY, UTAH

PROJECT NO. 1607138

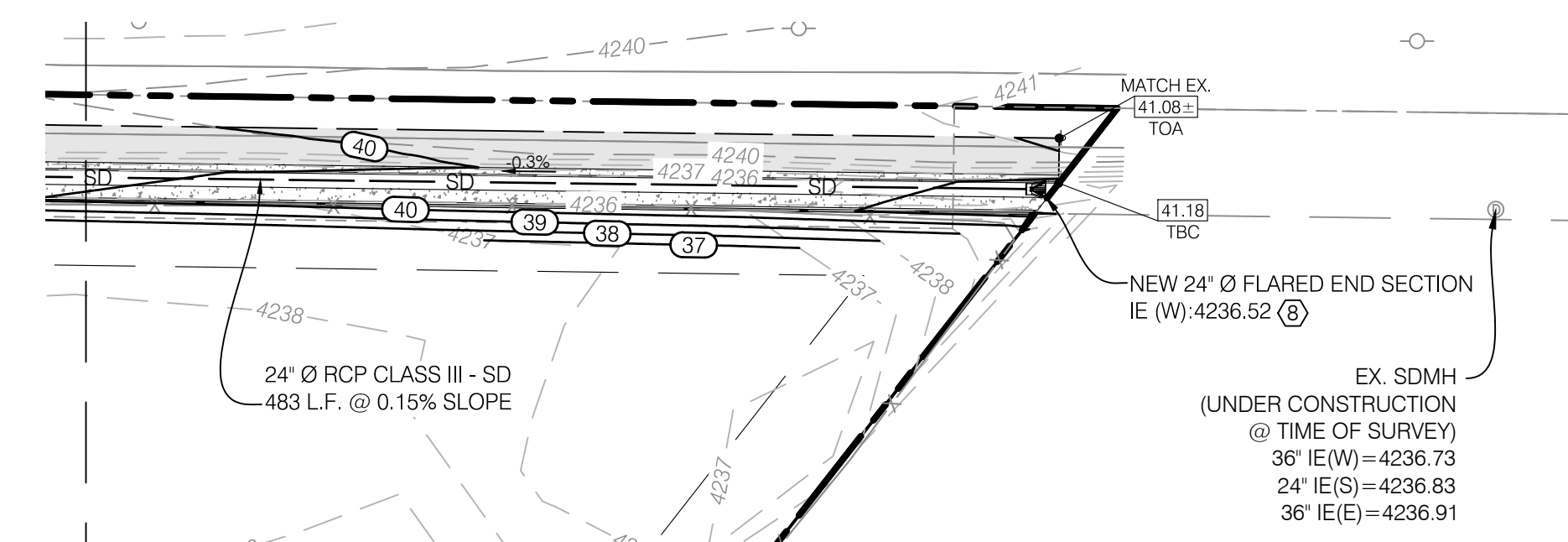
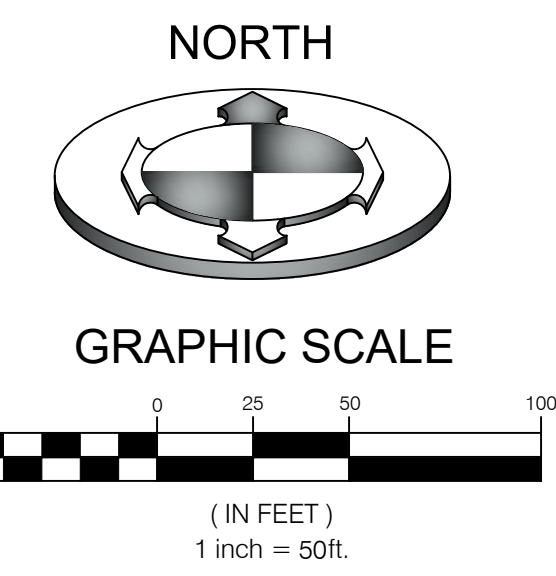
GRADING & DRAINAGE PLAN

CGD.01  
7 OF 24





NOTE:  
STORM DRAIN PIPES ARE TO BE LAID WITHOUT GASKETS AT JOINTS AND GRAVEL IS TO BE PLACED AROUND AT LEAST EVERY OTHER JOINT.



GRADING AND DRAINAGE KEY NOTES REFERENCE		
NO	DESCRIPTION	DETAIL
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2	7.5" ORIFICE PLATE (SEE DETAIL 'A')	5A/CDT.04
3	3.8" ORIFICE PLATE (SEE DETAIL 'B')	5B/CDT.04
4	STORM DRAIN INLET BOX	4/CDT.01
5	5X5' SDCO W/ BAFFLE (SEE DETAIL 'A')	6A/CDT.04
6	STORM DRAIN CLEANOUT	4/CDT.01
7	STORM DRAIN COMBO BOX	3/CDT.04
8	FLARED END SECTION	4/CDT.04
9	REVERSED STORM DRAIN COMBO BOX	
10	SNOUT	3/CDT.03
11	4" PVC FOUNDATION DRAIN LATERAL PER WEBER COUNTY ENGINEERING STDS. (0.5% MIN. SLOPE)	
12	4X4' SDCO W/ BAFFLE (SEE DETAIL 'B')	6B/CDT.04

NOTE:  
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NOTE:  
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NOTE:  
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**STORM DRAINAGE CALCULATIONS  
DRAINAGE AREA #1  
Rational Method (Q=CIA)**

Area Identification (A)	Rational Coefficient (C)	C*A
**Roof = 117,500	0.9	105750 S.F.
**Pavement = 161,425	0.9	145283 S.F.
Landscaping = 355,828	0.2	71166 S.F.
Sum: 634753 S.F.		Sum: 322198 S.F.

NOAA ATLAS 14 (100 YEAR STORM)					
Time (min)	Intensity (in/hr)	Rainfall (inches)	Rainfall Excess (cu.ft.)	Allowed Discharge (cu.ft.)	Volume to Detain (cu.ft.)
15	4.56	1.140	30609	1311	29297
30	3.07	1.535	41215	2623	38592
60	1.90	1.900	51015	5246	45769
120	1.09	2.180	58533	10492	48041
180	0.75	2.250	60412	13738	44574
360	0.41	2.484	66695	31475	35220
720	0.25	3.048	81838	62951	18888
1440	0.14	3.432	92149	125901	0

\* Assumed 2,500 sq. ft. per home  
\*\* Assumed 400 sq. ft. per driveway

Detention Calculations  
**Pond Volume**  
Pond 1 Civil 3D = **48,766 cf**  
Is there adequate storage? Storage Provided = **48,766 cf**  
Req. Storage = **48,041 cf** **YES**

Orifice Design:  
The storm runoff will be detained at 0.1 cfs/acre  
 $Q = C_d A_o \sqrt{2gh}$   
Total acreage of development: 14.57 acres  
Allowable discharge: 0.1 cfs/acre  
Max head: 0.93 ft  
Design diameter for new orifice: 7.5 inch

**STORM DRAINAGE CALCULATIONS  
DRAINAGE AREA #2  
Rational Method (Q=CIA)**

Area Identification (A)	Rational Coefficient (C)	C*A
**Roof = 22,500	0.9	20250 S.F.
**Pavement = 47,439	0.9	42695 S.F.
Landscaping = 85,633	0.2	17127 S.F.
Sum: 155572 S.F.		Sum: 80072 S.F.

NOAA ATLAS 14 (100 YEAR STORM)					
Time (min)	Intensity (in/hr)	Rainfall (inches)	Rainfall Excess (cu.ft.)	Allowed Discharge (cu.ft.)	Volume to Detain (cu.ft.)
15	4.56	1.140	7607	321	7285
30	3.07	1.535	10243	643	9600
60	1.90	1.900	12678	1286	11392
120	1.09	2.180	14546	2571	11975
180	0.75	2.250	15013	3857	11156
360	0.41	2.484	16575	7714	8861
720	0.25	3.048	20338	15429	4910
1440	0.14	3.432	22901	30857	0

\* Assumed 2,500 sq. ft. per home  
\*\* Assumed 400 sq. ft. per driveway

Detention Calculations  
**Pond Volume**  
Pond 1 Civil 3D = **12,085 cf**  
Is there adequate storage? Storage Provided = **12,085 cf**  
Req. Storage = **11,975 cf** **YES**

Orifice Design:  
The storm runoff will be detained at 0.1 cfs/acre  
 $Q = C_d A_o \sqrt{2gh}$   
Total acreage of development: 3.57 acres  
Allowable discharge: 0.1 cfs/acre  
Max head: 0.86 ft  
Design diameter for new orifice: 3.8 inch

MATCH LINE (SEE CGD.01)

BENCHMARK:  
WEBER COUNTY BENCHMARK 62121-2-5217  
SURVEY BENCHMARK  
ELEVATION NGVD 88 = 4241.87  
(FOUND 3" BRASS CAP SET IN 6" CONCRETE POST. SET IN 1954 BY BUREAU OF RECLAMATION. GOOD CONDITION)

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3	02/28/2017	SURVEY
4	02/28/2017	DATE
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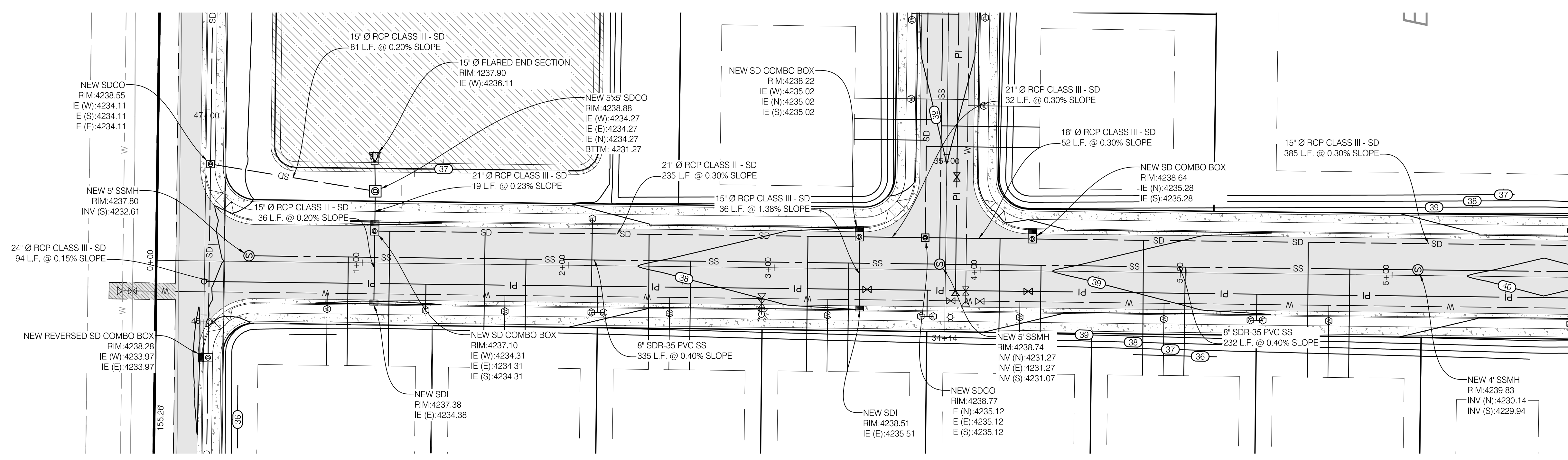
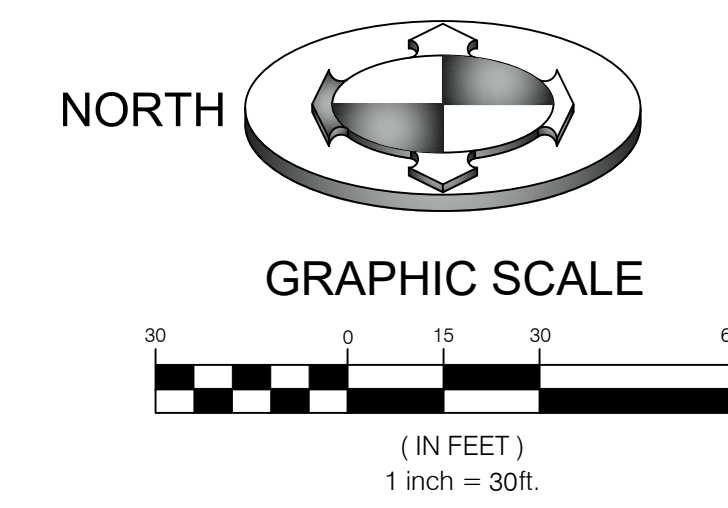
PROFESSIONAL ENGINEER  
No. 21618  
M. CHRIS POULSEN  
STATE OF UTAH

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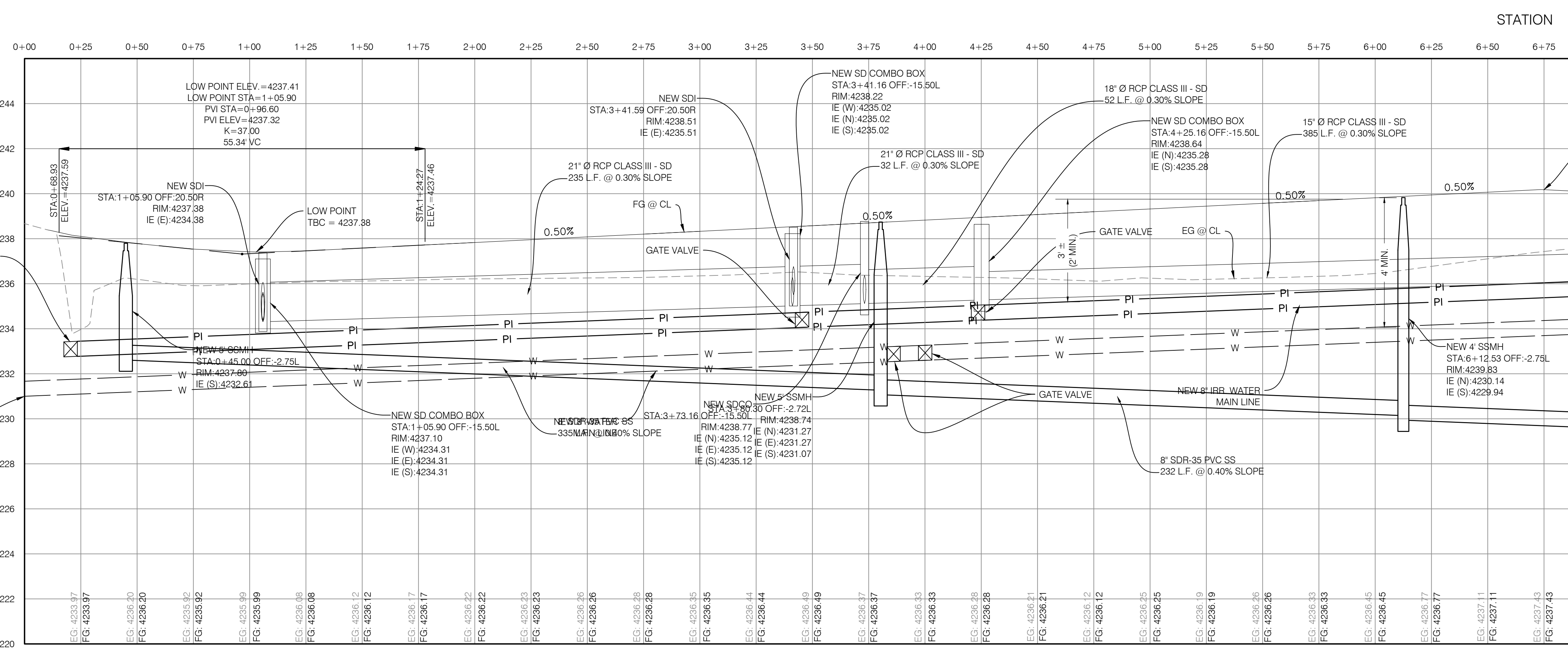
WINSTON PARK  
3908 W 1800 S  
WEBER COUNTY, UTAH

PROJECT NO. 1607138  
GRADING &  
DRAINAGE  
PLAN  
CGD.02  
8 OF 24

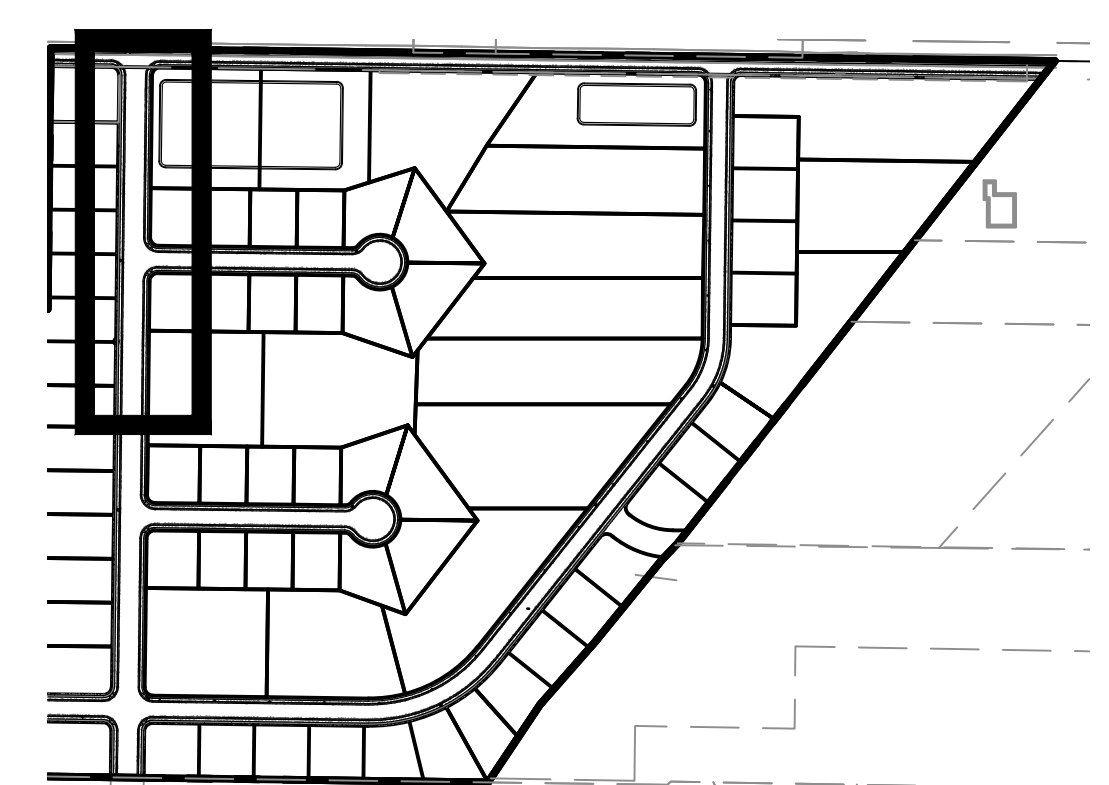




ROAD PLAN



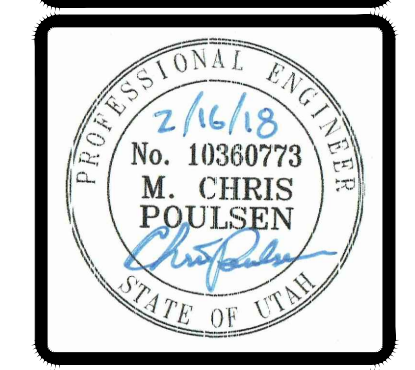
ROAD PROFILE



KEY MAP N.T.S.

WEST ROAD PF

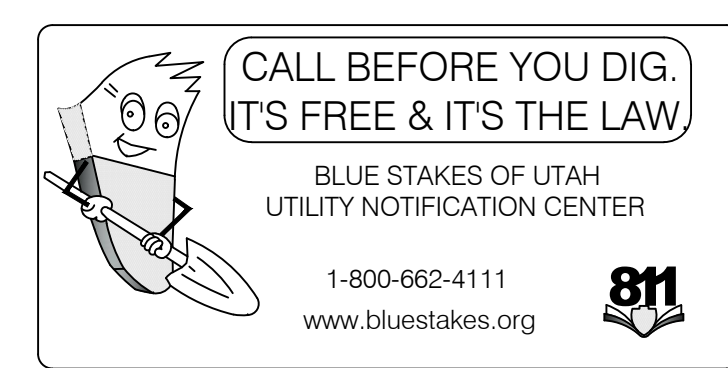
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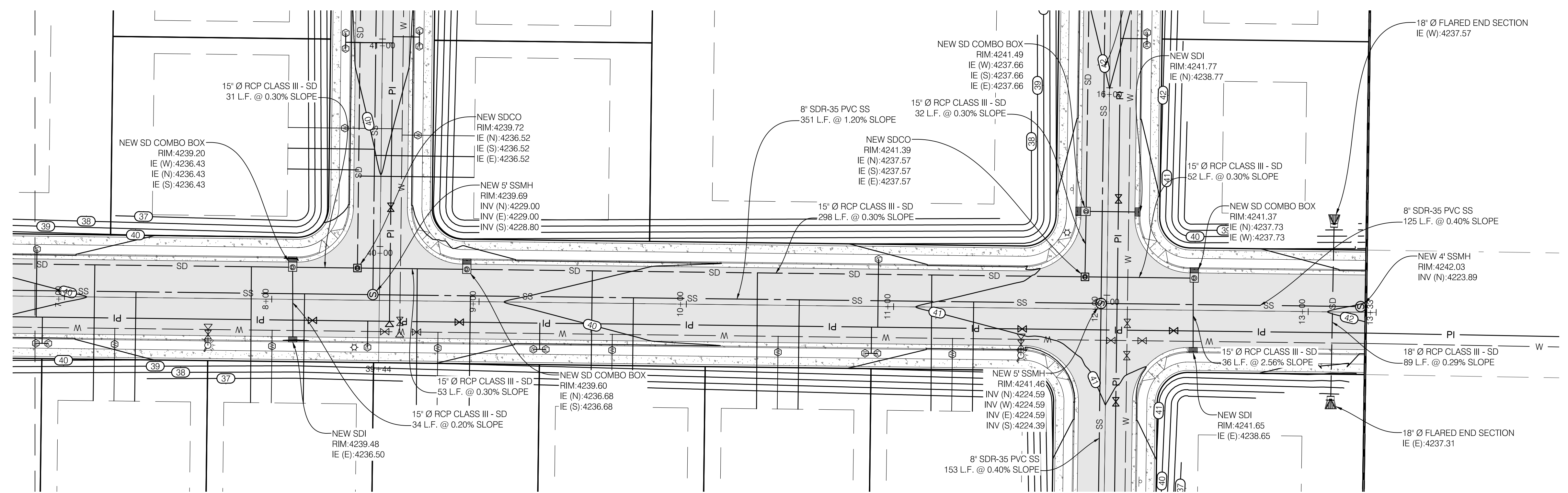
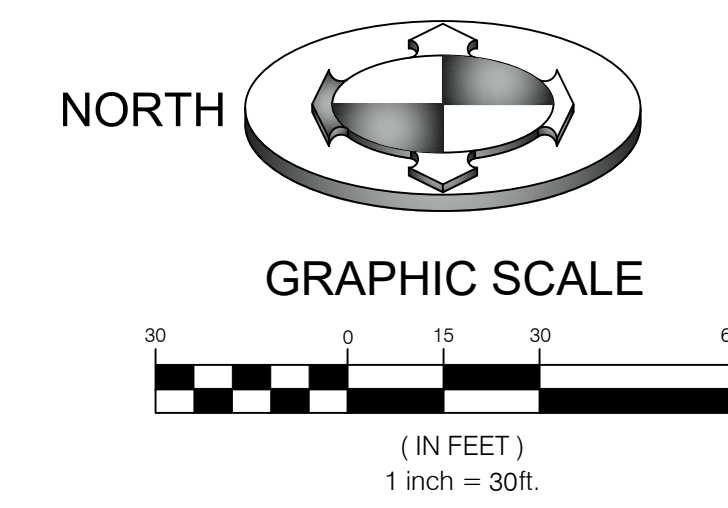
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**WINSTON PARK**  
 3908 W 1800 S  
 WEBER COUNTY, UTAH

PROJECT NO. 1607138  
**PLAN & PROFILE**  
 CPP.01  
 9 OF 24

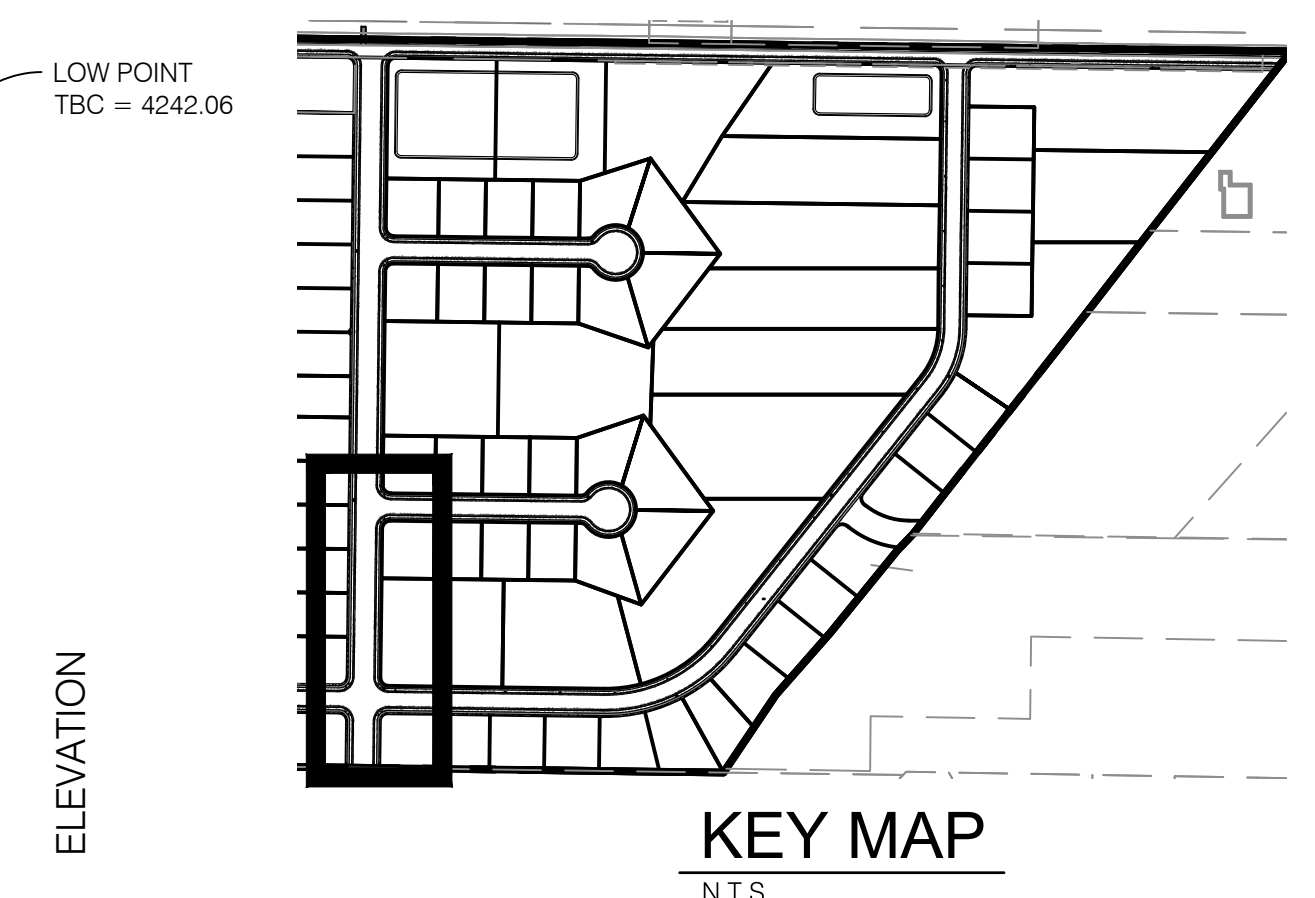
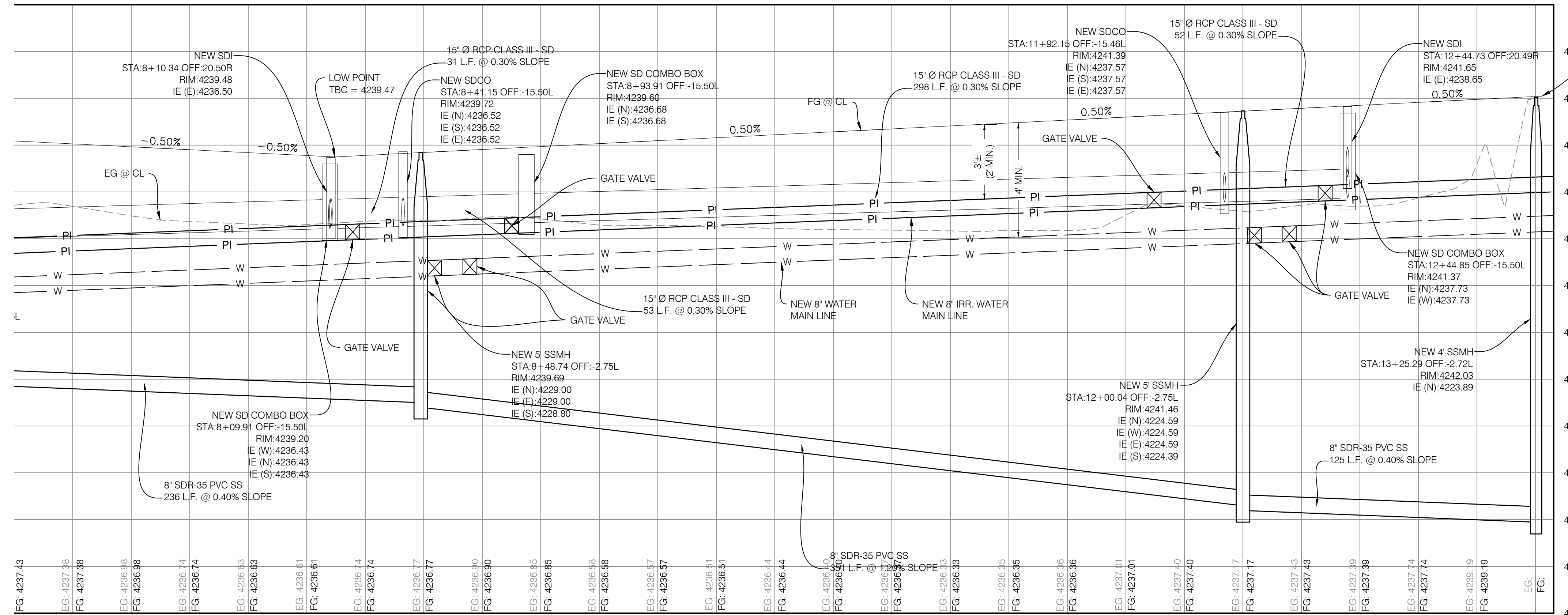






ROAD PLAN

75 7+00 7+25 7+50 7+75 8+00 8+25 8+50 8+75 9+00 9+25 9+50 9+75 10+00 10+25 10+50 10+75 11+00 11+25 11+50 11+75 12+00 12+25 12+50 12+75 13+00 13+25+33



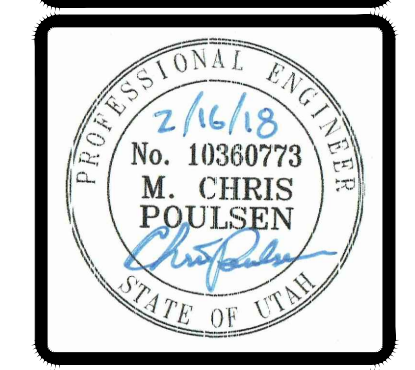
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ROAD PROFILE

NO.	DATE	DESCRIPTION
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2	02/16/18	REVISED PER COUNTY COMMENTS

APPROVED BY	DATE
KVIS	
MCP	
SURVEY	8/28/2017
DATE	
DWG FILE	1607138.rvt



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**WINSTON PARK**  
 3908 W 1800 S  
 WEBER COUNTY, UTAH

PROJECT NO. 1607138

**PLAN & PROFILE**

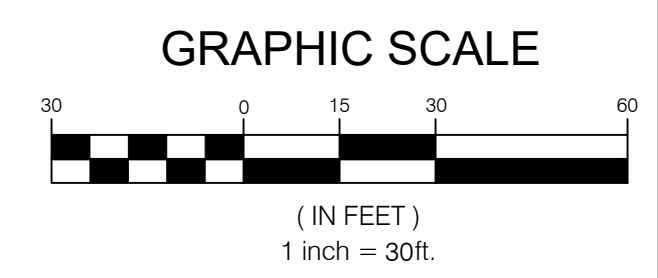
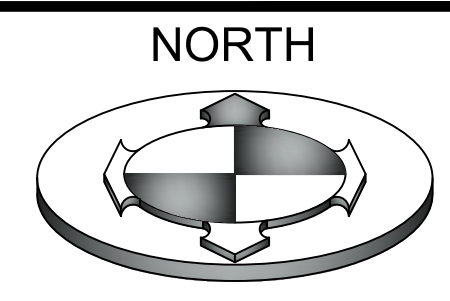
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10 OF 24

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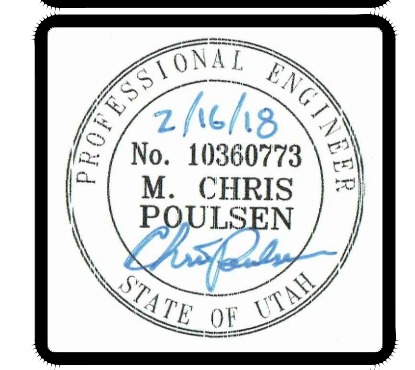
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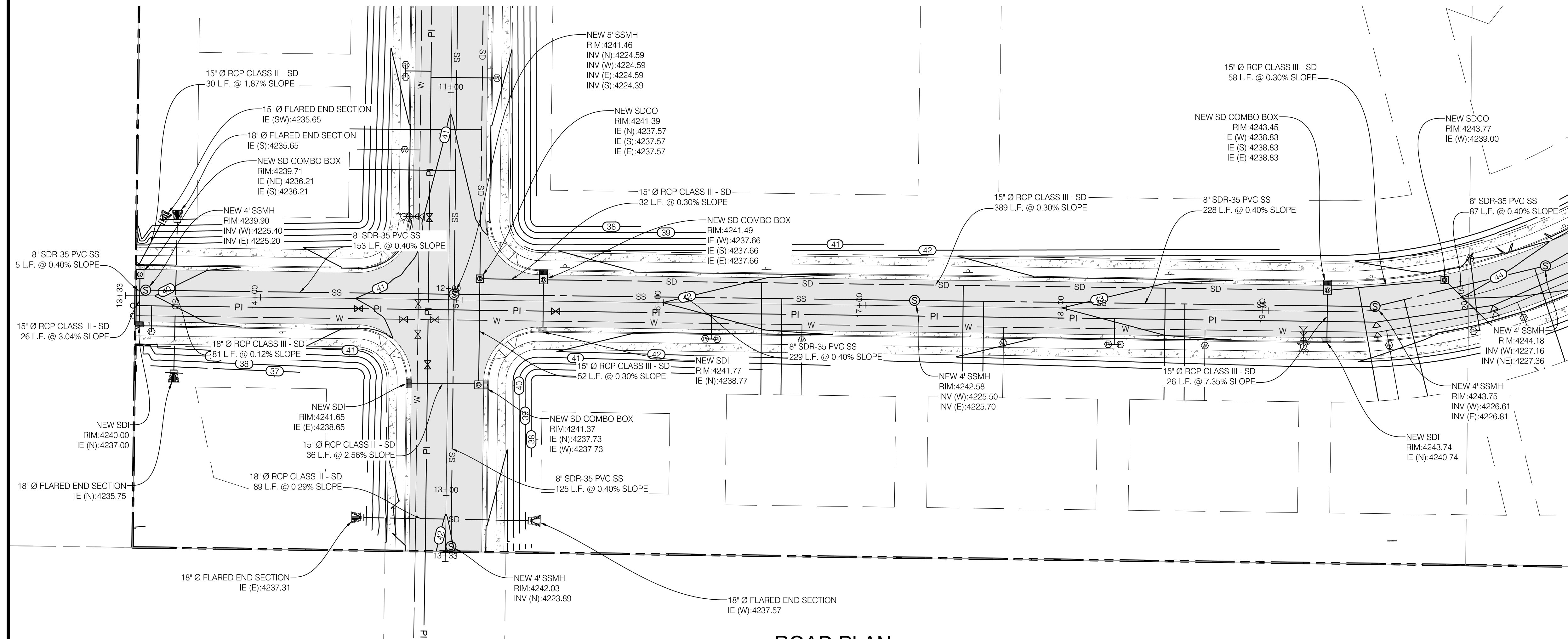
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3	02/28/2017	SURVEY
	02/28/2017	DATE
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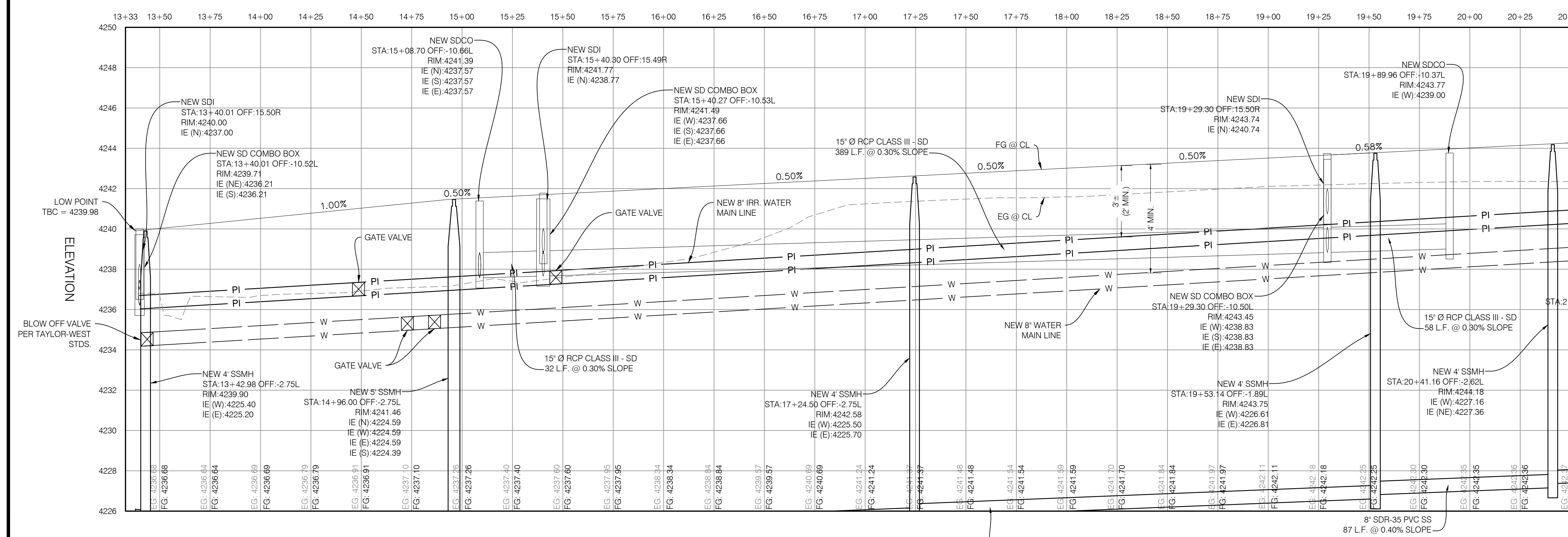
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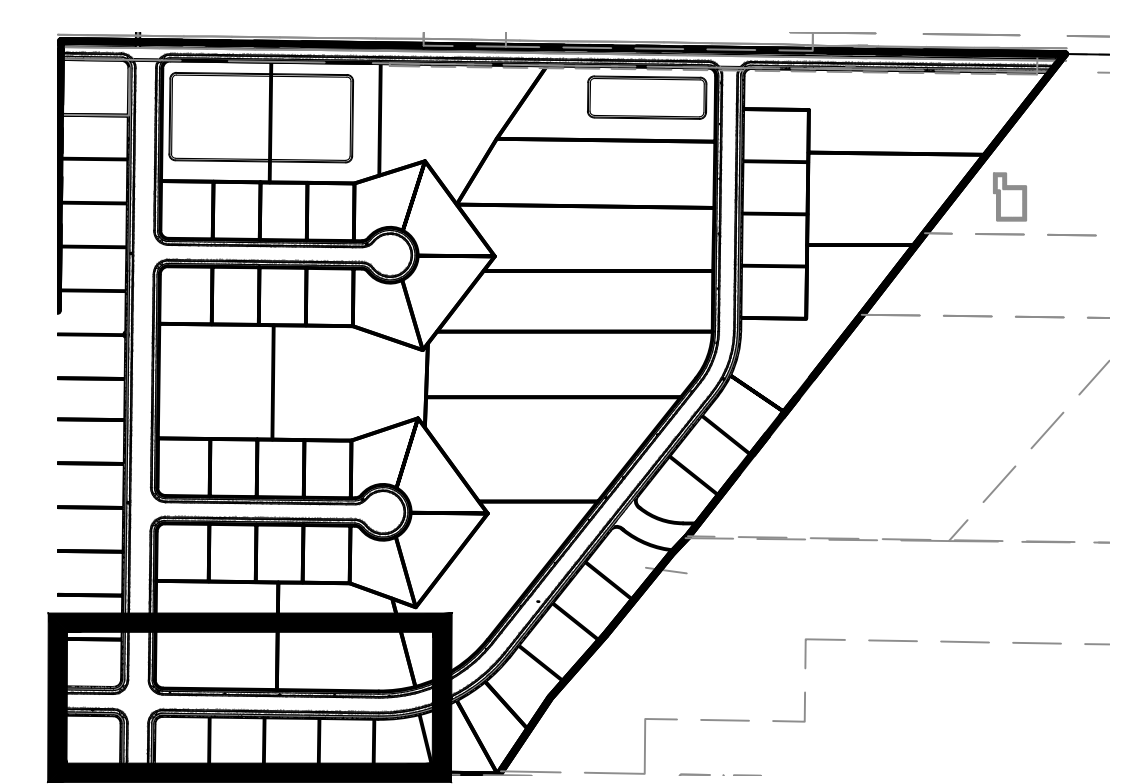
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**PLAN & PROFILE**  
 CPP.03  
 11 OF 24



ROAD PLAN



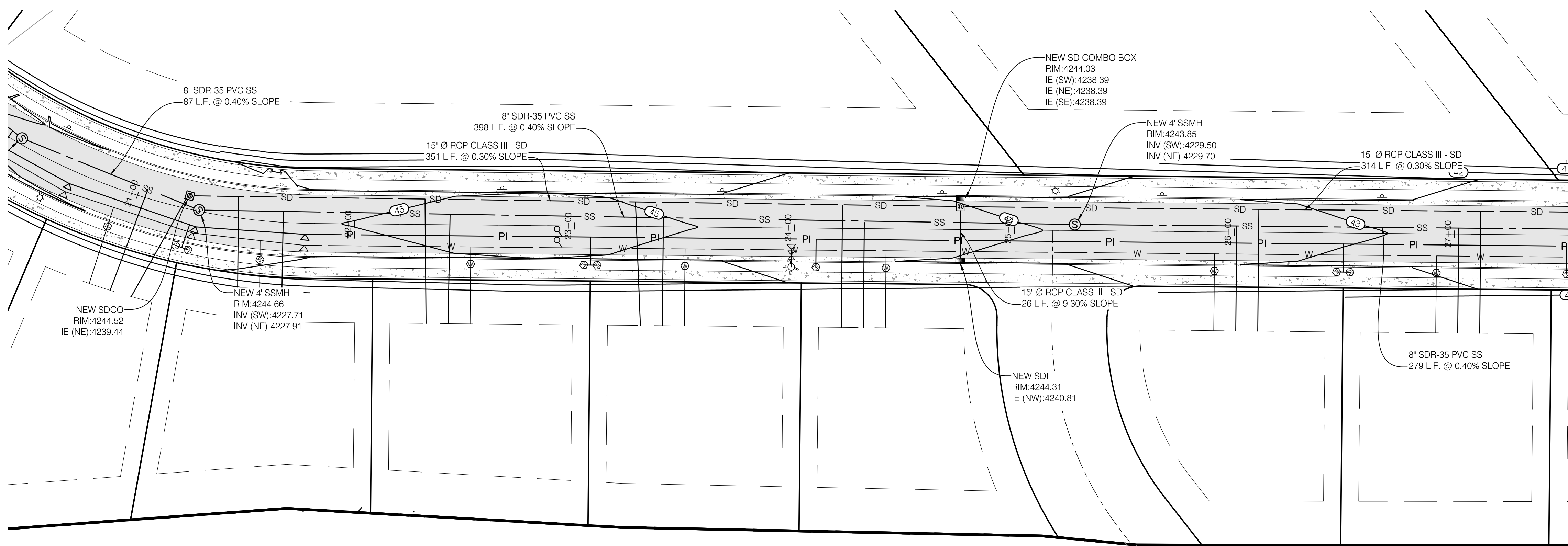
ROAD PROFILE



KEY MAP  
N.T.S.

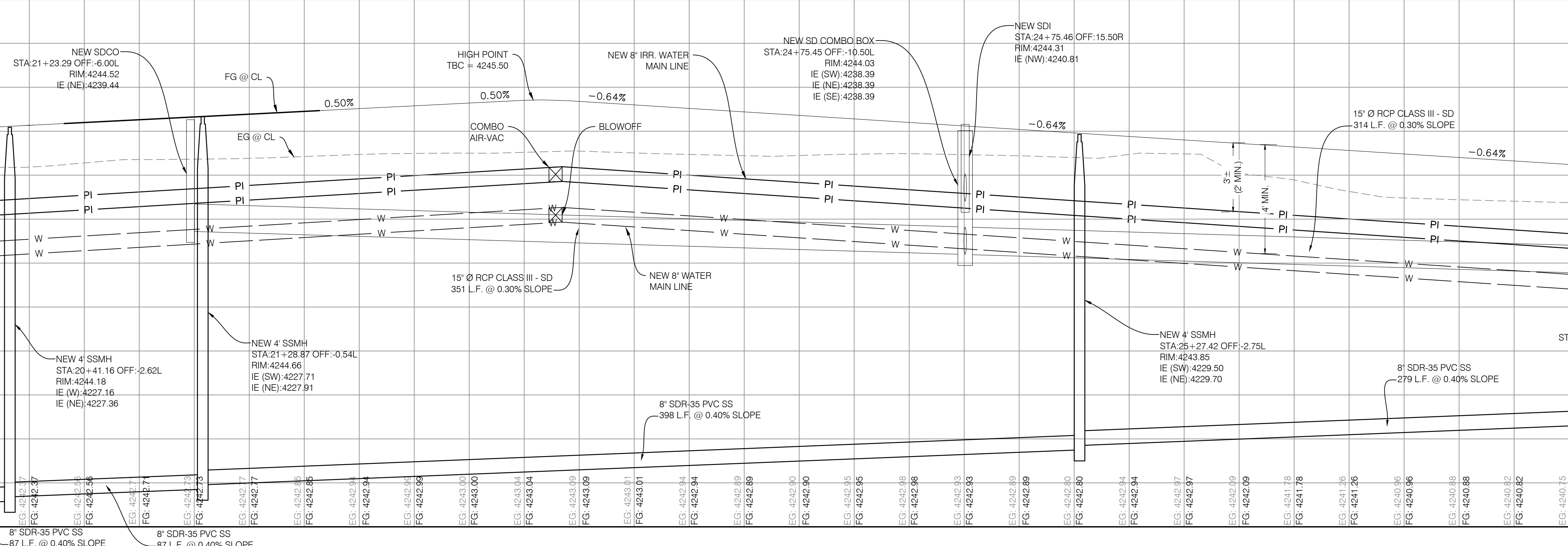
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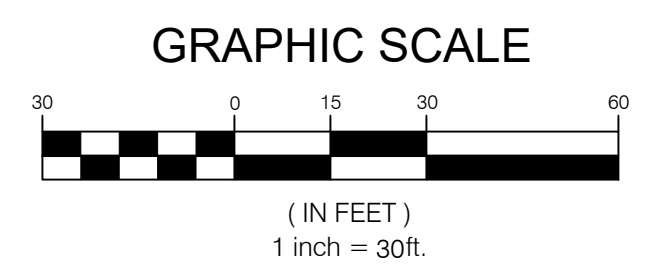
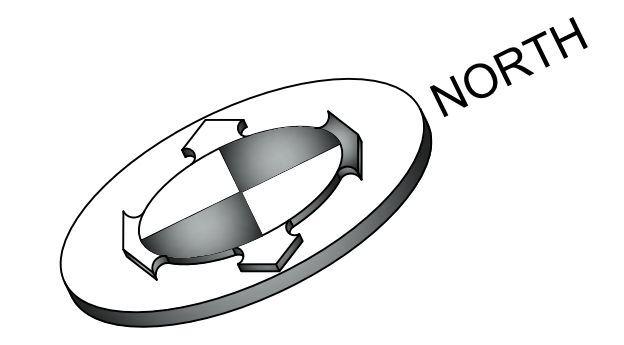


ROAD PLAN

STATION  
 20+50 20+75 21+00 21+25 21+50 21+75 22+00 22+25 22+50 22+75 23+00 23+25 23+50 23+75 24+00 24+25 24+50 24+75 25+00 25+25 25+50 25+75 26+00 26+25 26+50 26+75 27+00 27+25 27+50



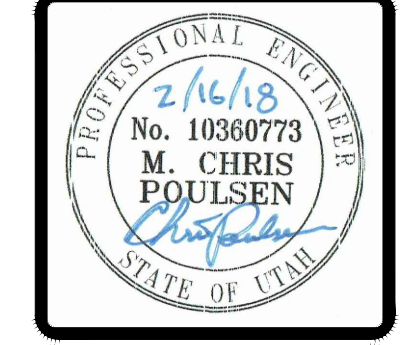
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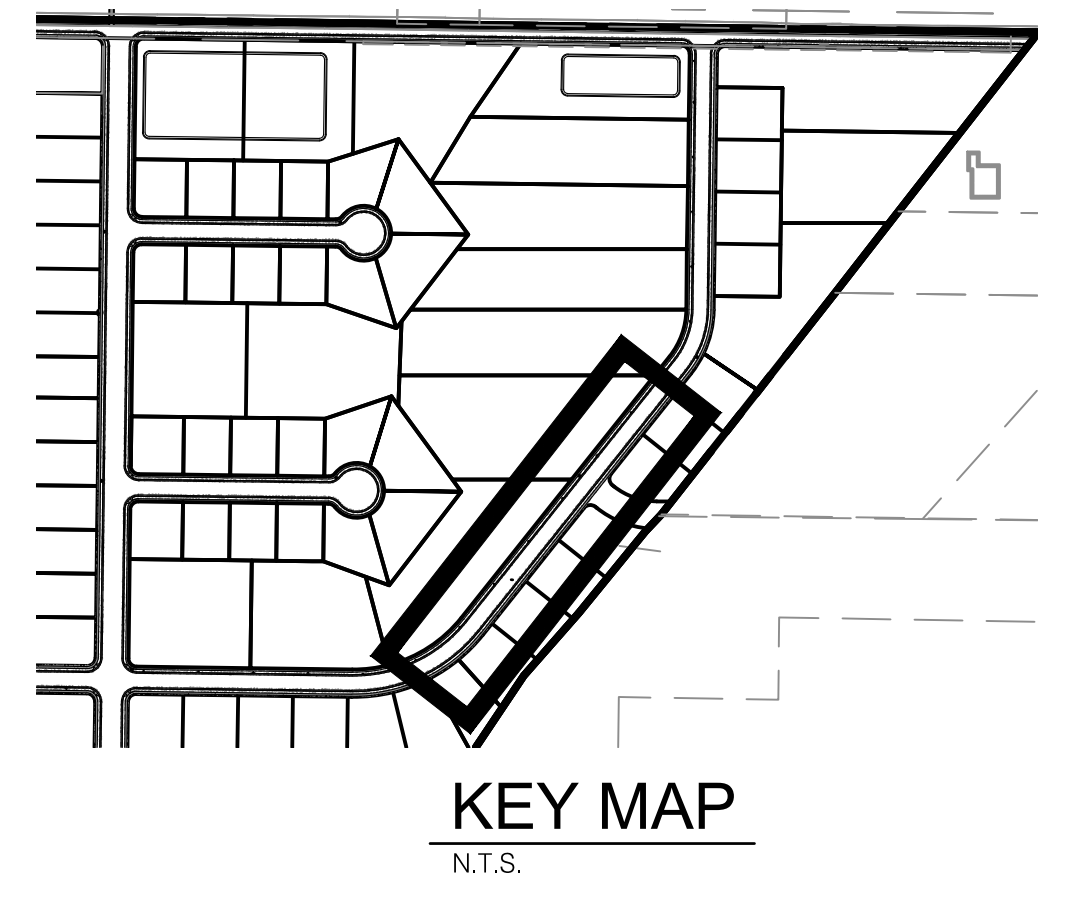
NO.	DATE	DESCRIPTION
1	10/31/17	REVISED PER COUNTY COMMENTS
2	02/18/18	REVISED PER COUNTY COMMENTS

NO.	DATE	DESCRIPTION
1	02/28/2017	SURVEY
2	02/28/2017	DATE
1607138816		DWG FILE



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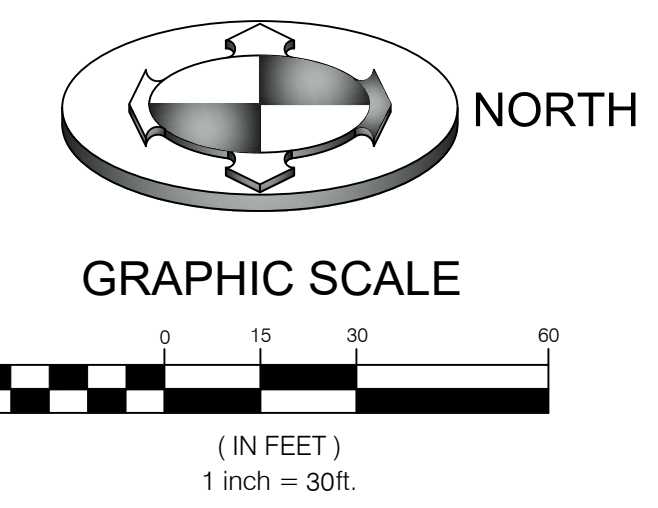
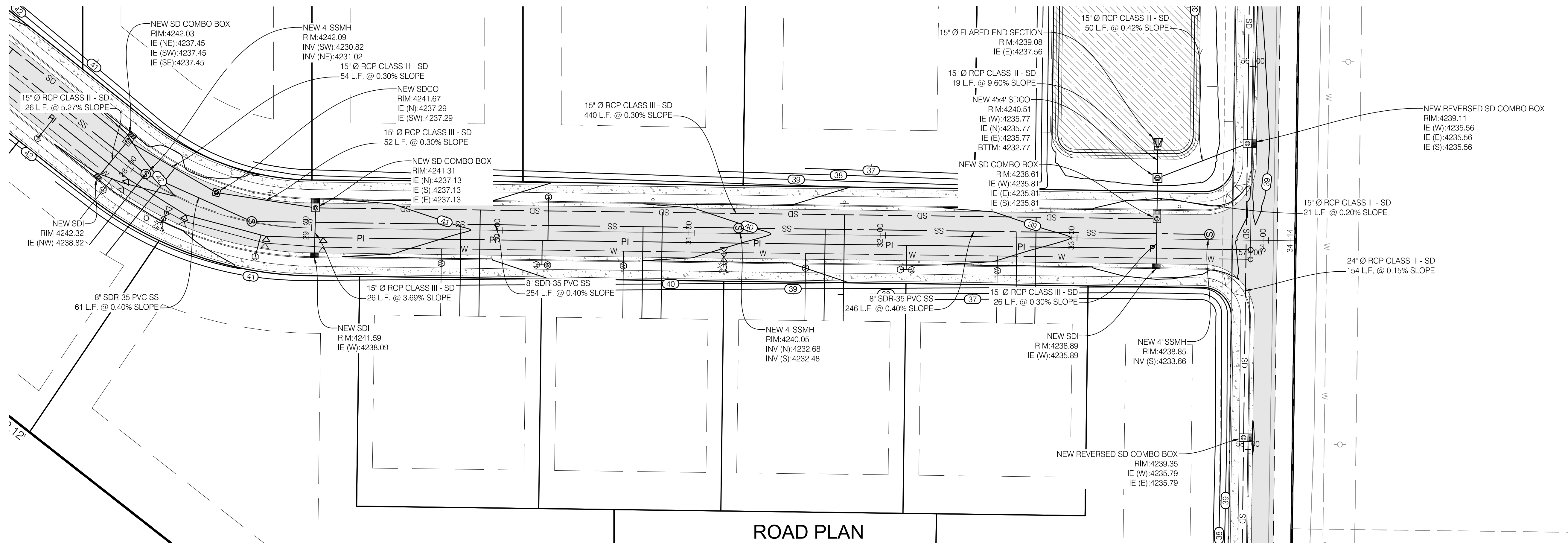


KEY MAP  
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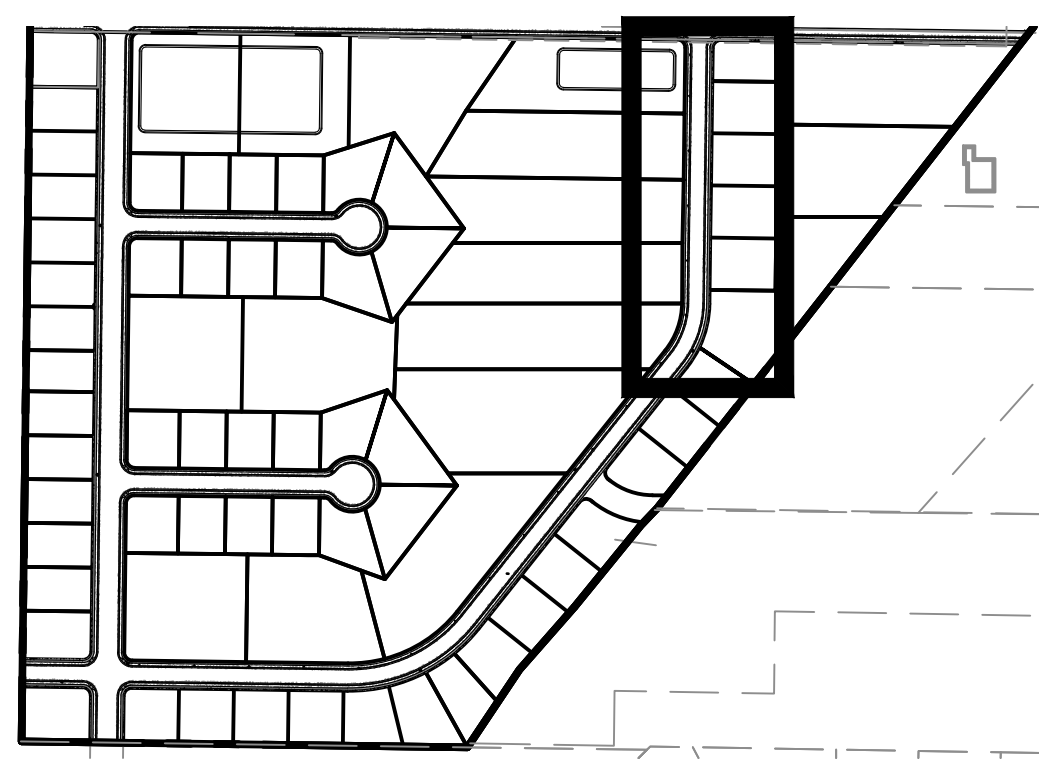
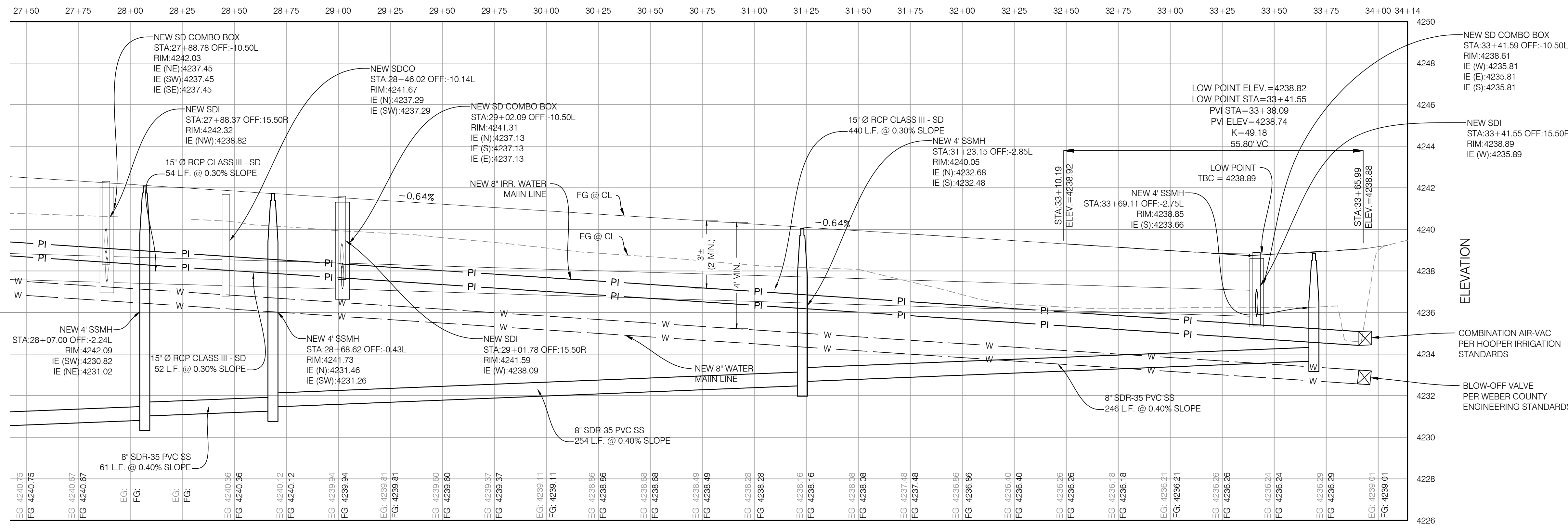
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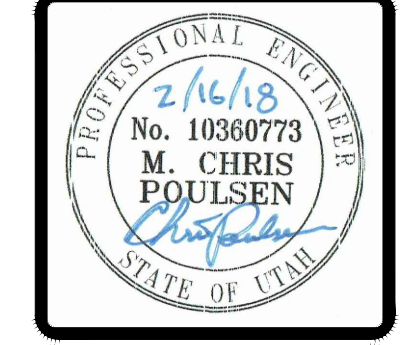
ROAD PLAN



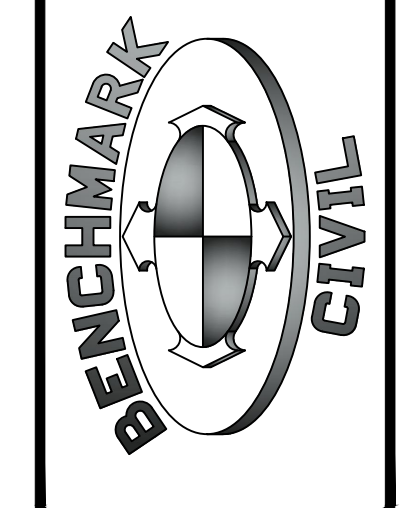
KEY MAP  
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ROAD PROFILE

NO.	DATE	DESCRIPTION
1	10/31/17	REVISED PER COUNTY COMMENTS
2	02/18/18	REVISED PER COUNTY COMMENTS
3	08/28/2017	SURVEY
4	1607138.rvt	DWG FILE



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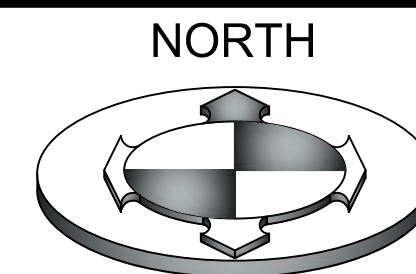
PROJECT NO. 1607138

**PLAN & PROFILE**

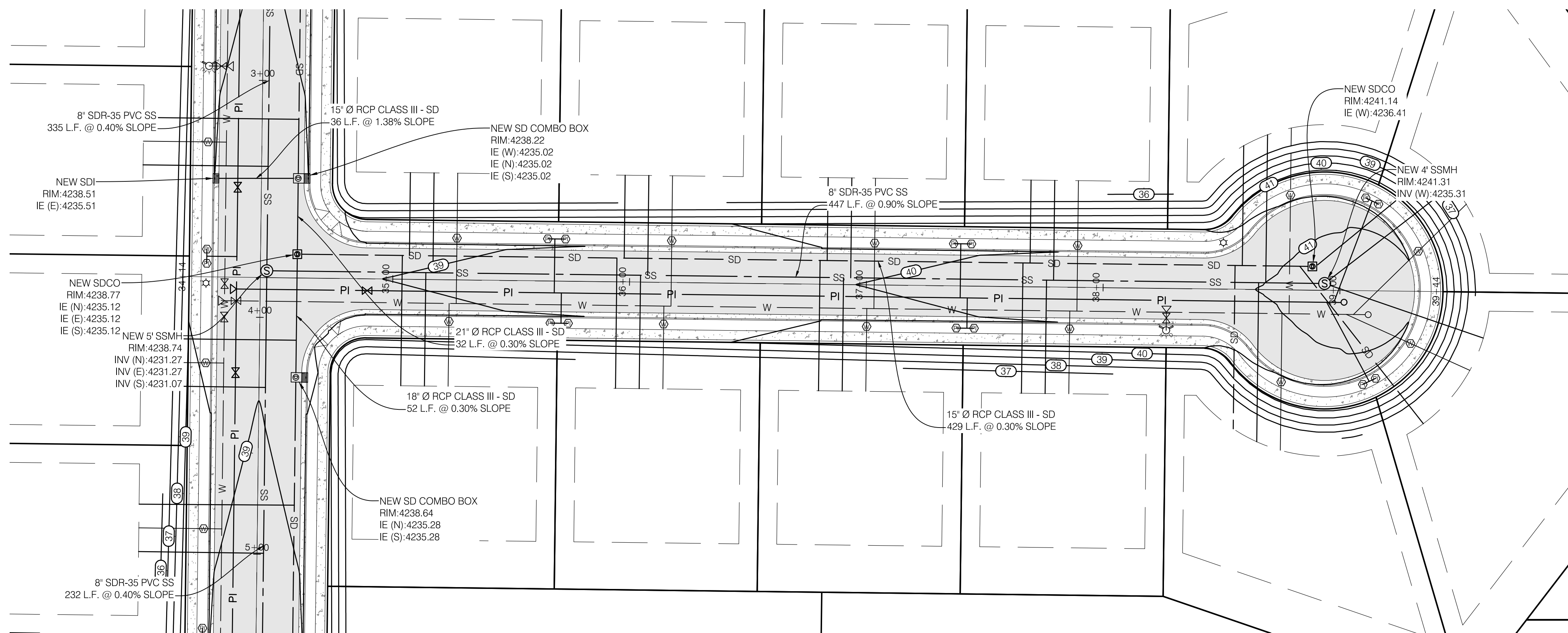
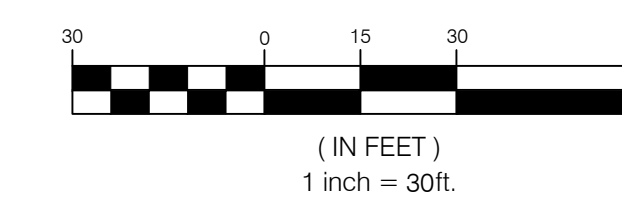
CPP.05  
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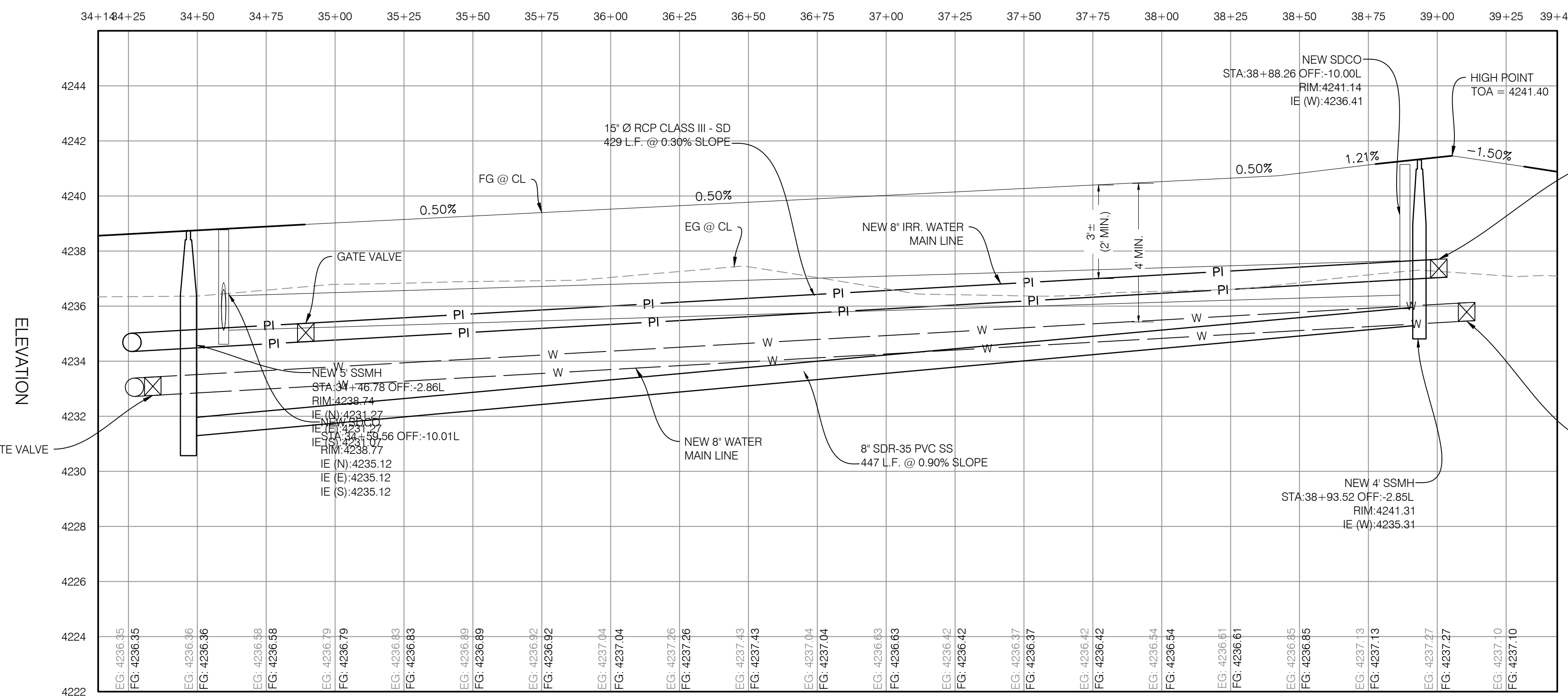


GRAPHIC SCALE

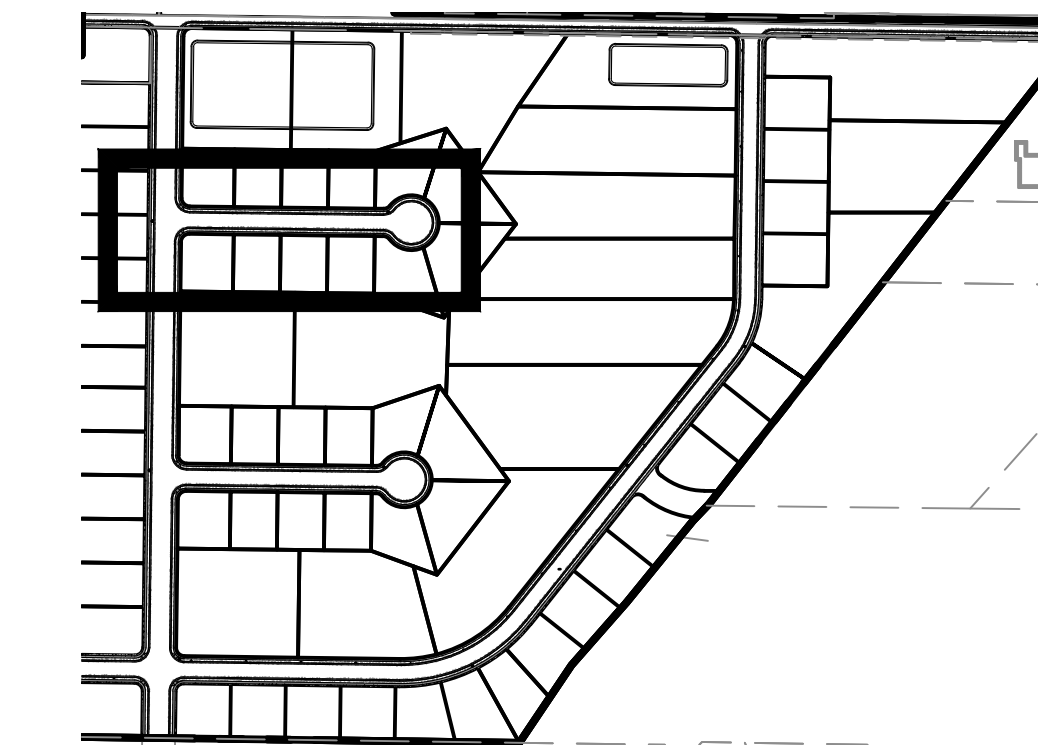


ROAD PLAN

STATION



ROAD PROFILE



KEY MAP  
N.T.S.

NO.	DATE	DESCRIPTION
1	10/31/17	REVISED PER COUNTY COMMENTS
2	02/16/18	REVISED PER COUNTY COMMENTS
3	02/28/2017	REVISED PER COUNTY COMMENTS
4	02/28/2017	REVISED PER COUNTY COMMENTS



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WEBER COUNTY, UTAH

PROJECT NO. 1607138

**PLAN & PROFILE**

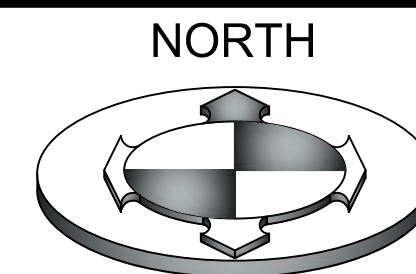
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14 OF 24

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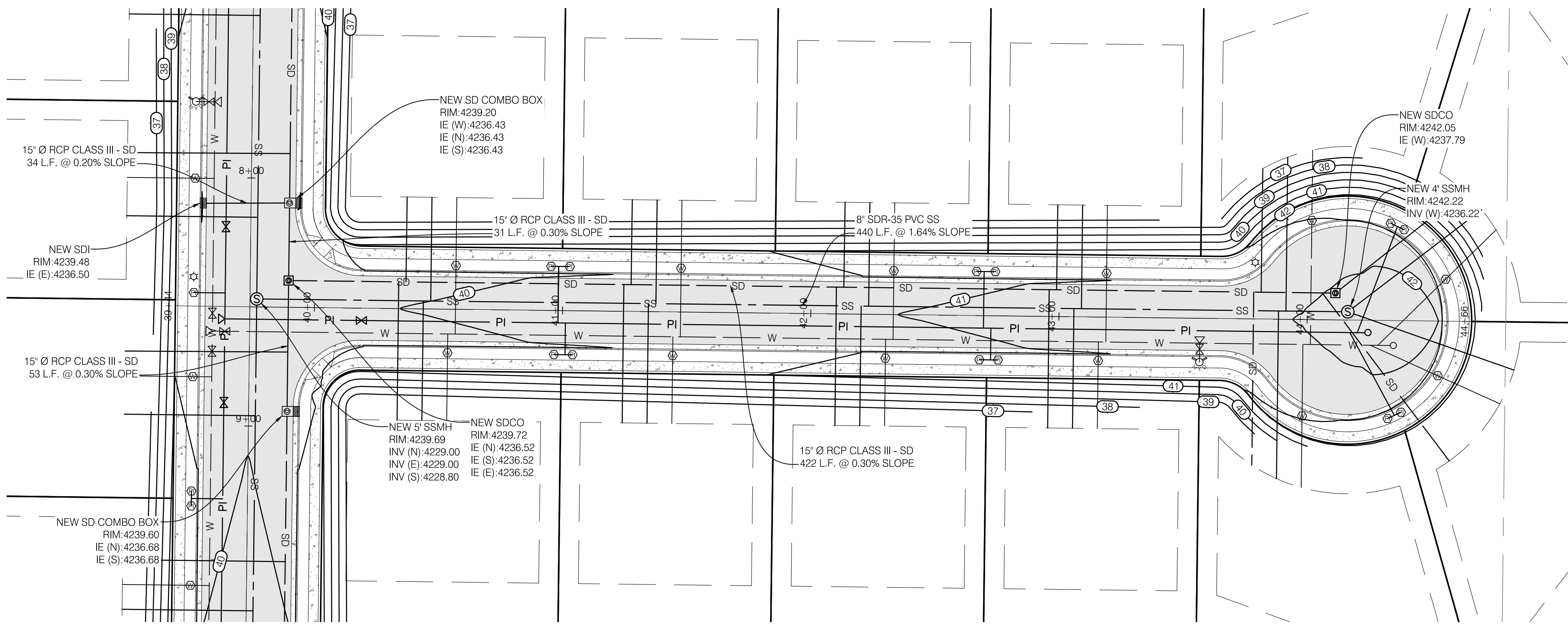
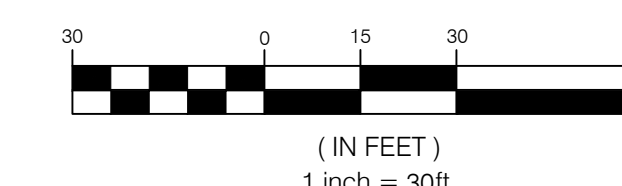
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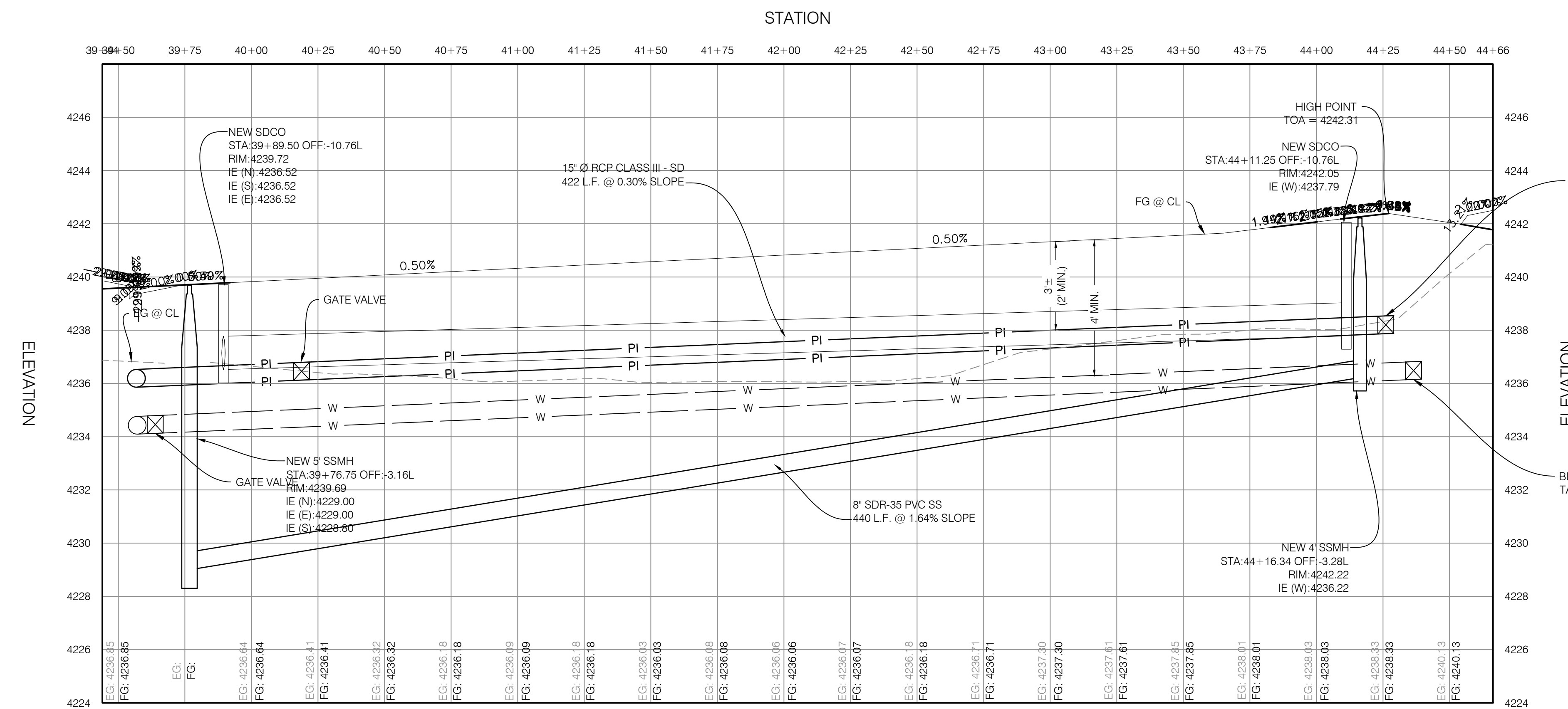




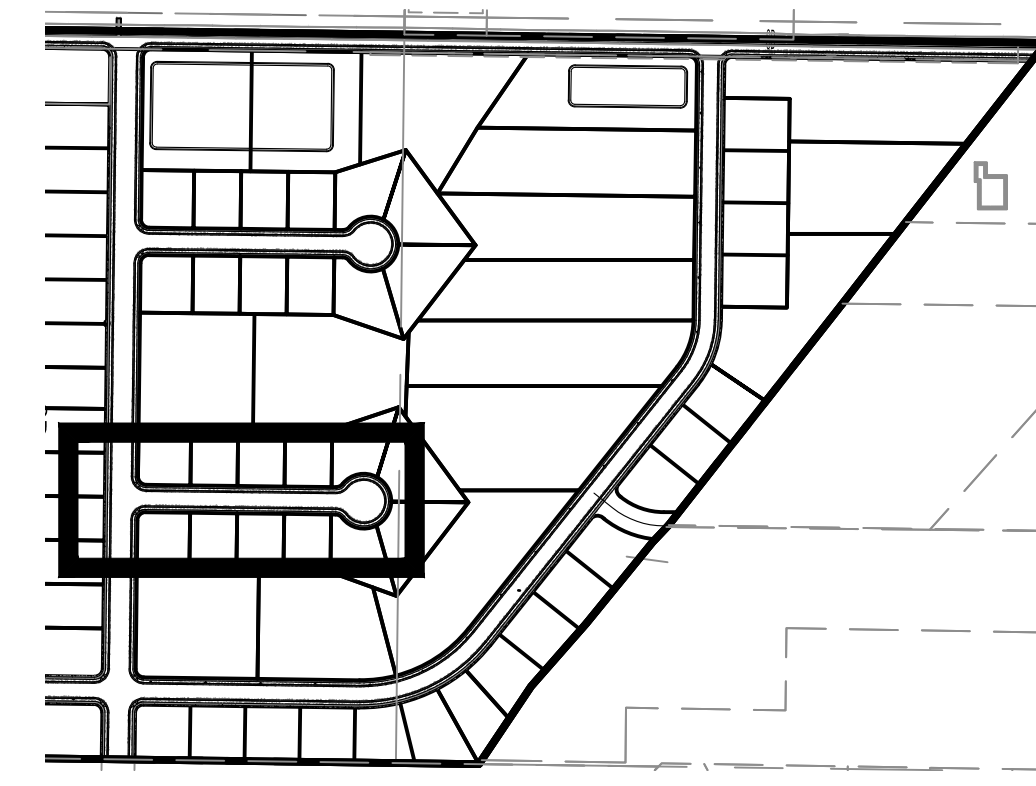
GRAPHIC SCALE



ROAD PLAN



ROAD PROFILE

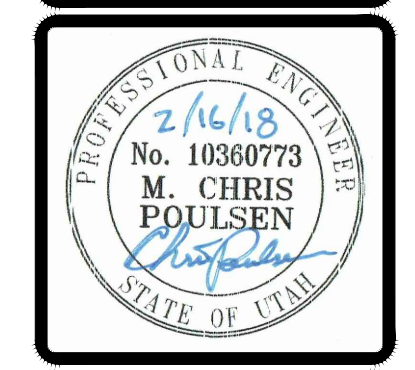


KEY MAP  
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NO.	DATE	DESCRIPTION
1	10/31/17	REVISED PER COUNTY COMMENTS
2	02/16/18	REVISED PER COUNTY COMMENTS

NO.	DATE	DESCRIPTION
1	02/28/2017	SURVEY
2	02/28/2017	DATE



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PROJECT NO. 1607138

**PLAN & PROFILE**

CPP.07  
15 OF 24

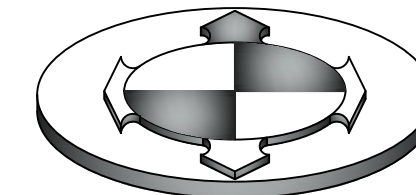
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NORTH



GRAPHIC SCALE



(IN FEET)  
1 inch = 30ft.

NO.	DATE	DESCRIPTION
1	10/31/17	REVISED PER COUNTY COMMENTS
2	02/16/18	REVISED PER COUNTY COMMENTS

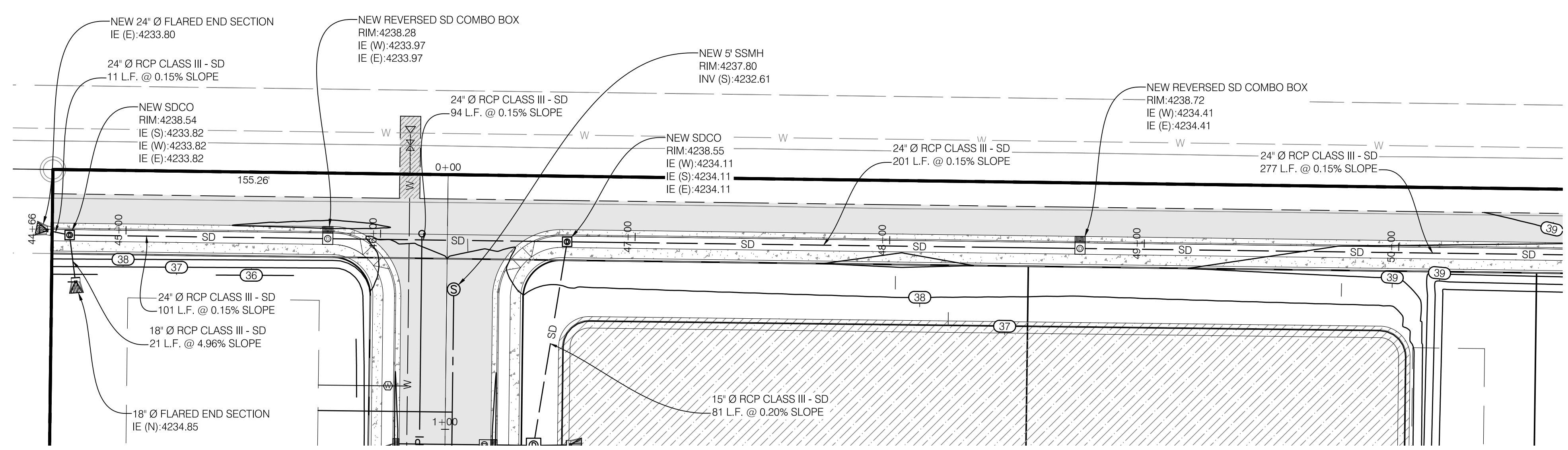
NO.	DATE	DESCRIPTION
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2	08/28/2017	DATE
1607138.sfb		DWG FILE



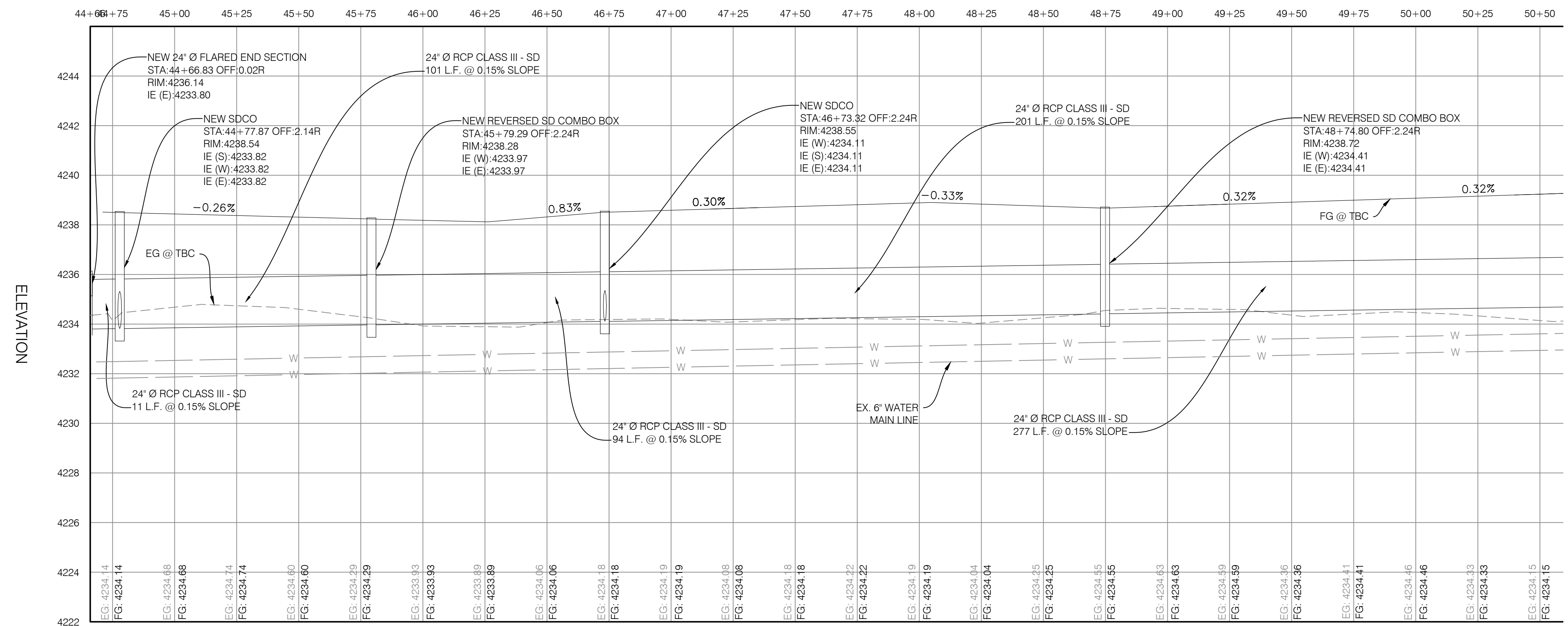
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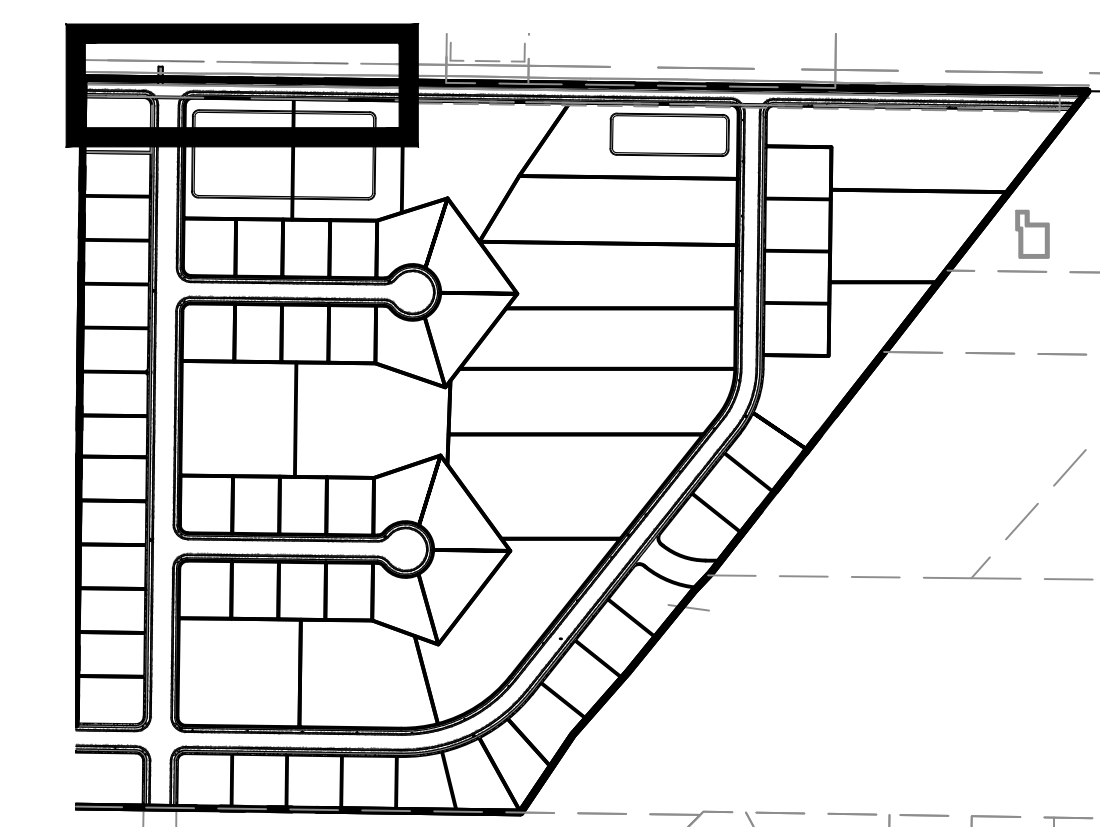
PROJECT NO. 1607138  
**PLAN & PROFILE**  
 CPP.08  
 16 OF 24



ROAD PLAN



ROAD PROFILE

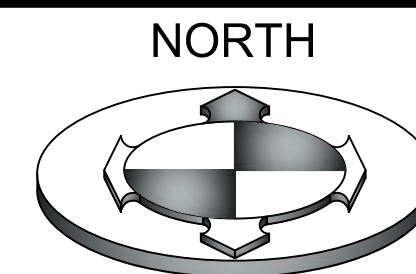


KEY MAP  
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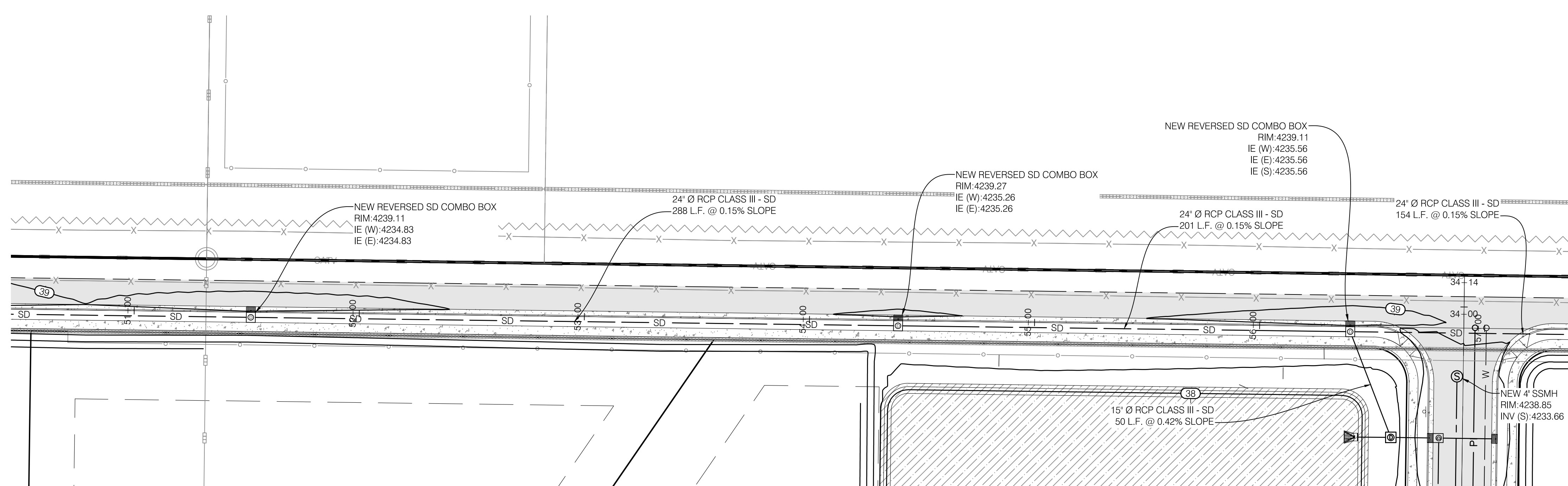
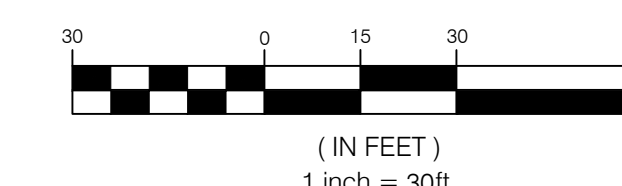
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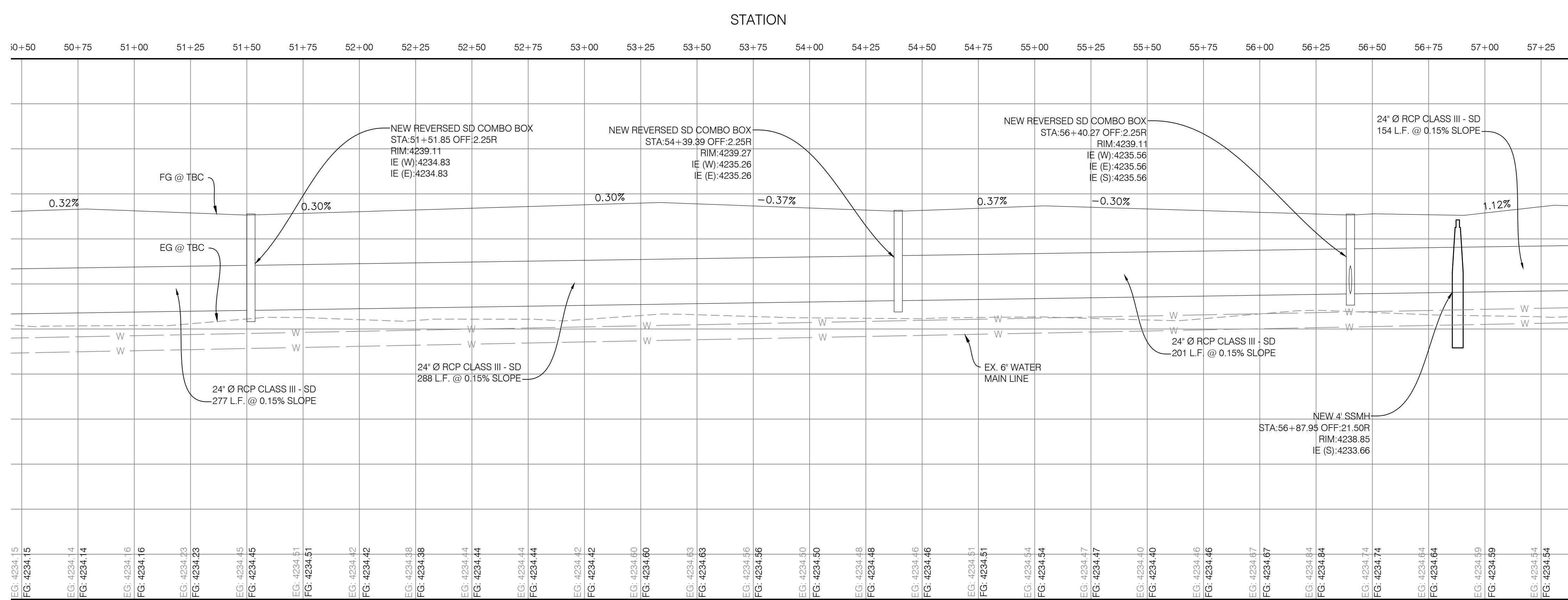




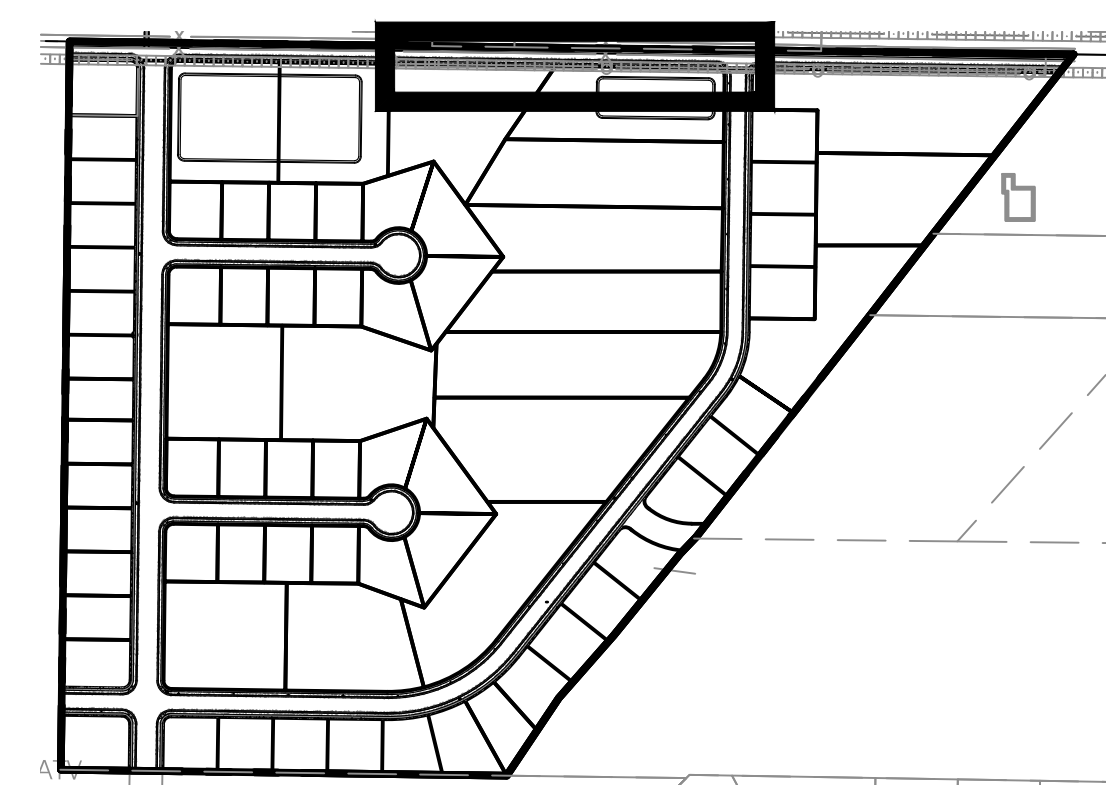
GRAPHIC SCALE



ROAD PLAN



ROAD PROFILE

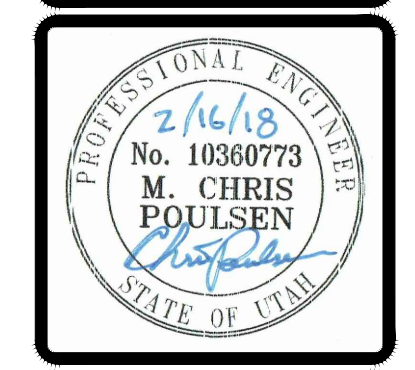


KEY MAP  
N.T.S.

NO.	DATE	DESCRIPTION
1	10/31/17	REVISED PER COUNTY COMMENTS
2	02/16/18	REVISED PER COUNTY COMMENTS

DRAWN BY	KVWS
CHECKED BY	MCP
FIELD CREW	SURVEY
DATE	8/28/2017
DWG FILE	1607138.sfb
DATE	0
SCALE	AS SHOWN



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**PLAN & PROFILE**

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17 OF 24

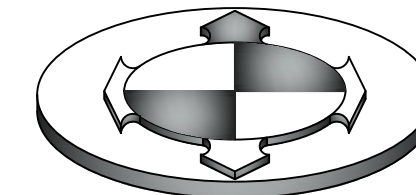
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NORTH



GRAPHIC SCALE

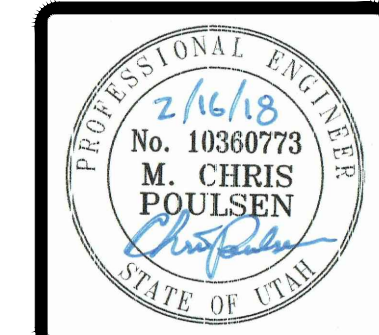


(IN FEET)  
1 inch = 30ft.

NO.	DATE	DESCRIPTION
1	10/31/17	REVISED PER COUNTY COMMENTS
2	02/16/18	REVISED PER COUNTY COMMENTS

DRAWN BY	KVIS
CHECKED BY	MCP
FIELD CREW	SURVEY
DATE	8/28/2017
DWG. FILE	1607138.sfb
DATE	0
SCALE	AS SHOWN



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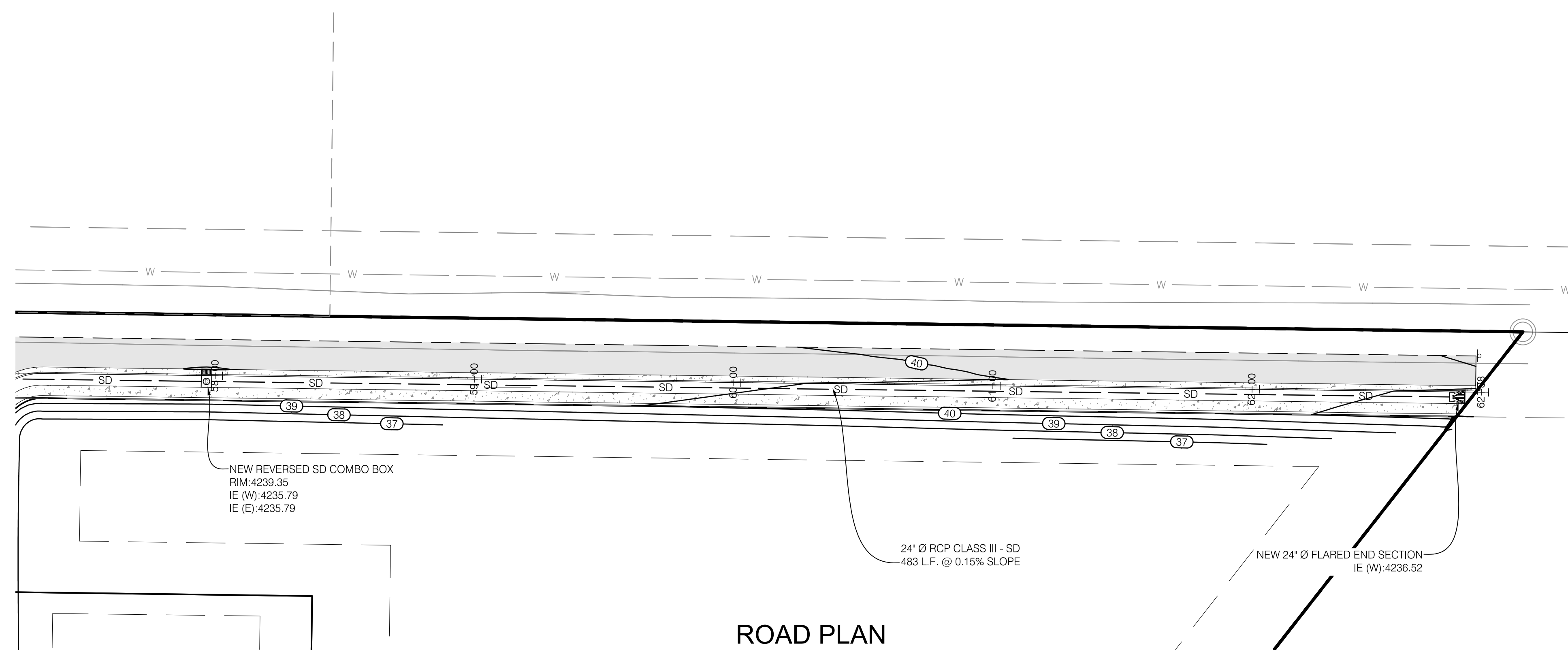
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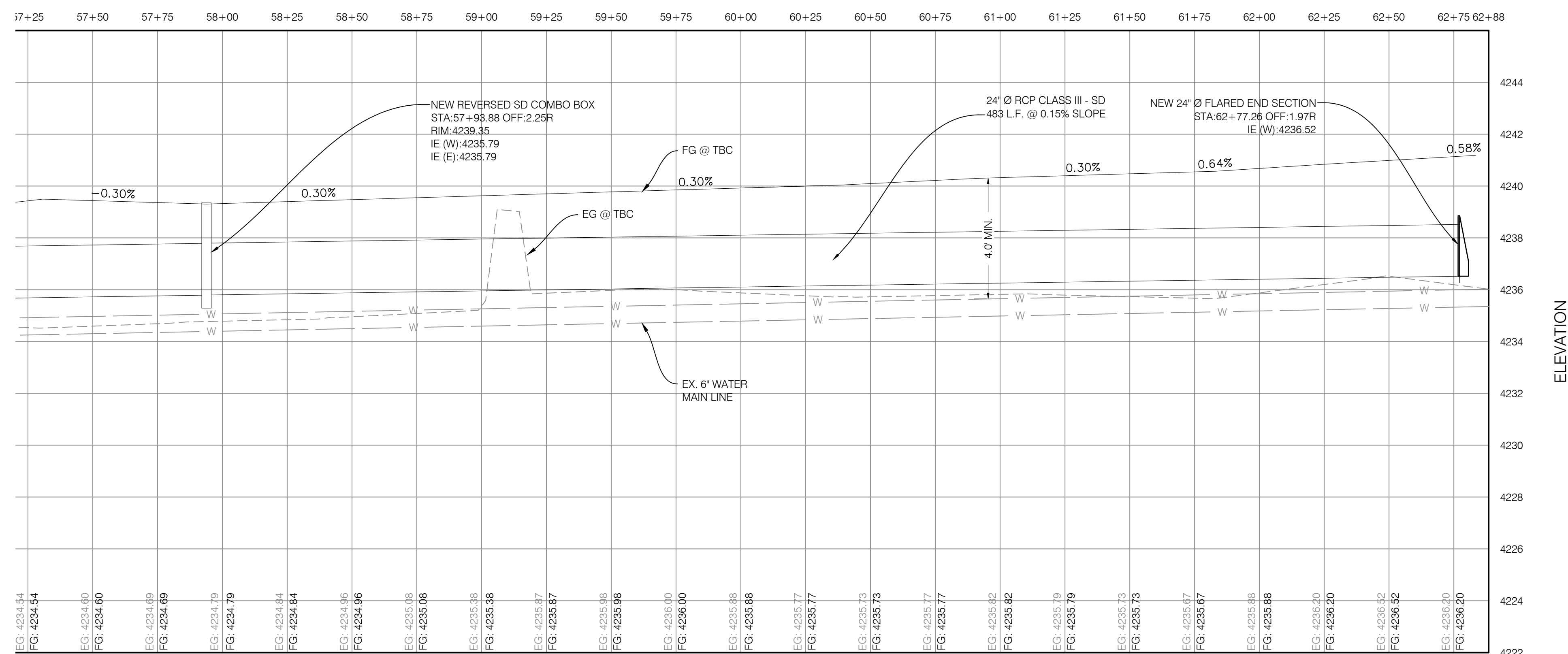
PROJECT NO. 1607138

**PLAN & PROFILE**

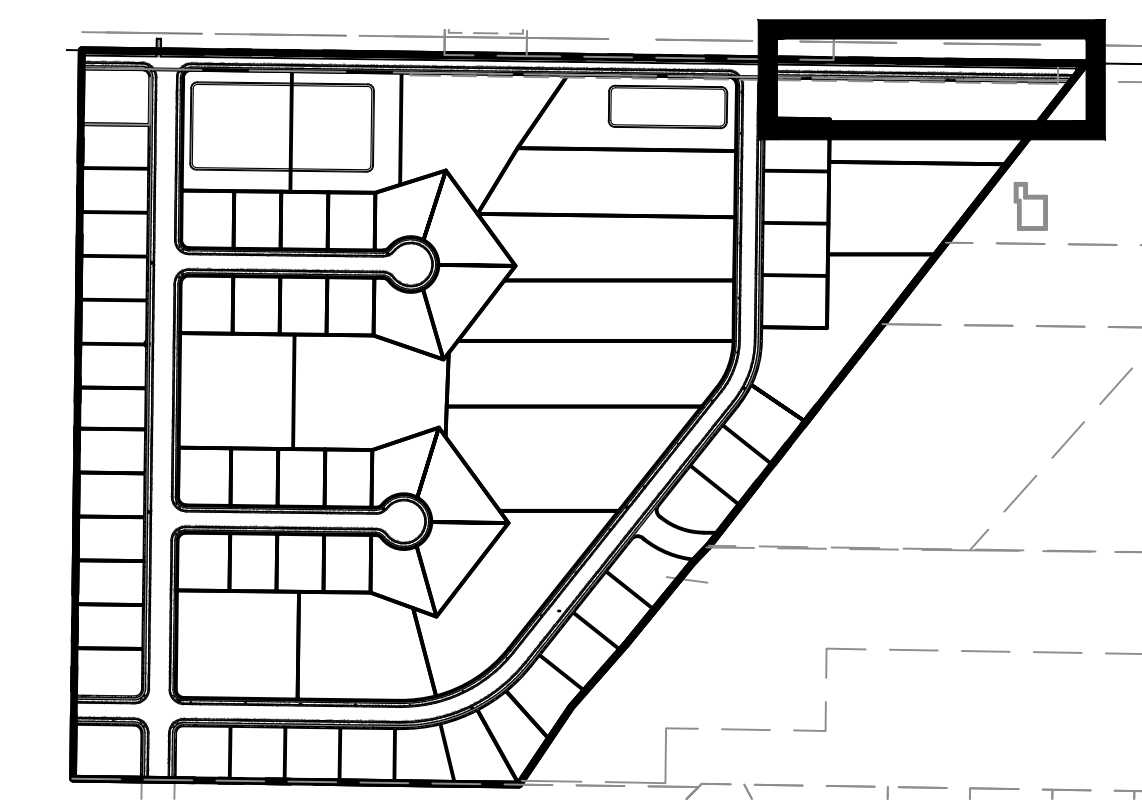
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ROAD PLAN



ROAD PROFILE



KEY MAP  
N.T.S.

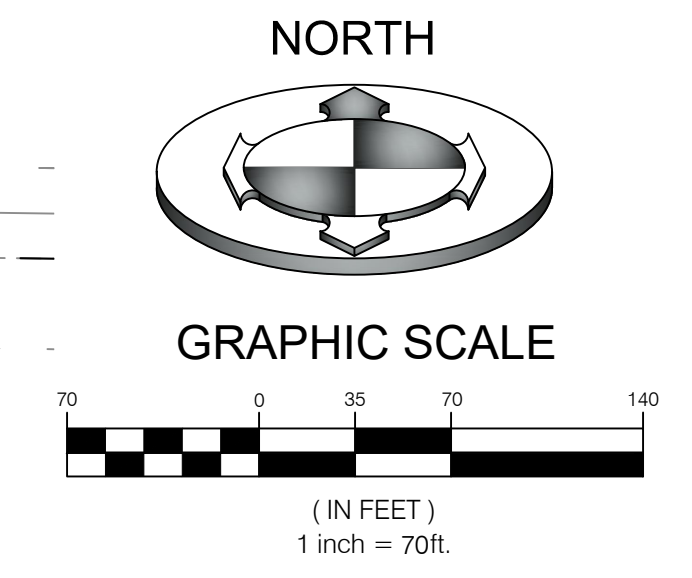
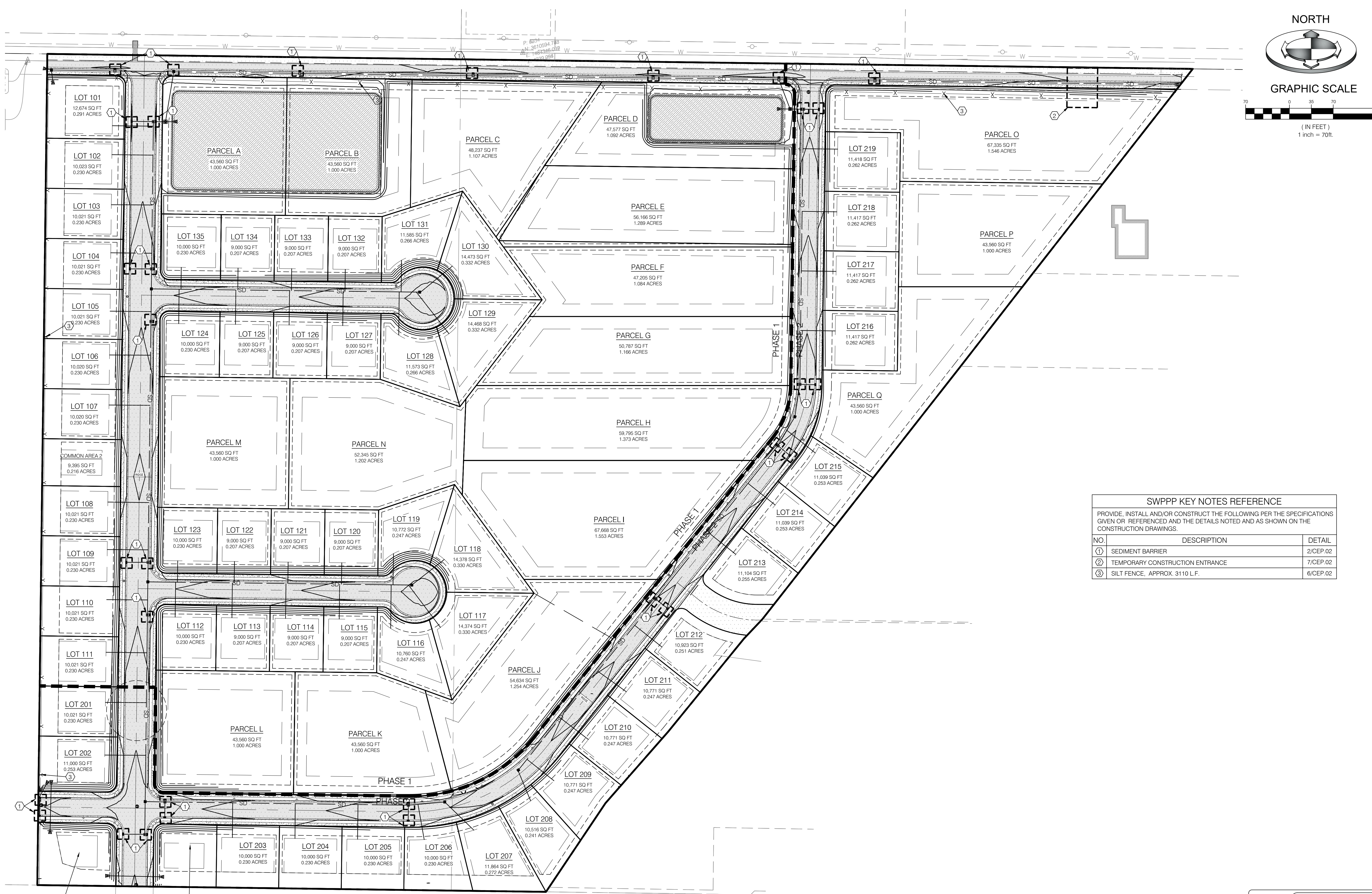
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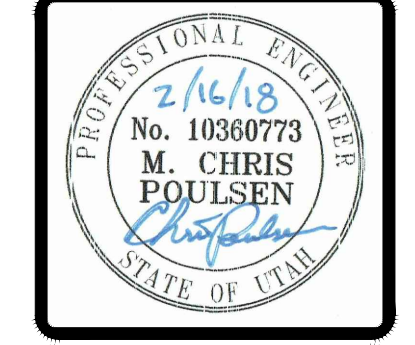
**SWPPP KEY NOTES REFERENCE**

PROVIDE, INSTALL AND/OR CONSTRUCT THE FOLLOWING PER THE SPECIFICATIONS GIVEN OR REFERENCED AND THE DETAILS NOTED AND AS SHOWN ON THE CONSTRUCTION DRAWINGS.

NO.	DESCRIPTION	DETAIL
①	SEDIMENT BARRIER	2/CEP.02
②	TEMPORARY CONSTRUCTION ENTRANCE	7/CEP.02
③	SILT FENCE, APPROX. 3110 L.F.	6/CEP.02

NO.	DATE	DESCRIPTION
1	10/31/17	REVISED PER COUNTY COMMENTS
2	02/18/18	REVISED PER COUNTY COMMENTS

DRAWN BY: KVIS  
 CHECKED BY: MCP  
 SURVEY FIELD DATE: 8/28/2017  
 DATE: 8/28/2017  
 DWG. FILE: 1607138.rvt



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**EROSION CONTROL PLAN**

CEP.01  
19 OF 24

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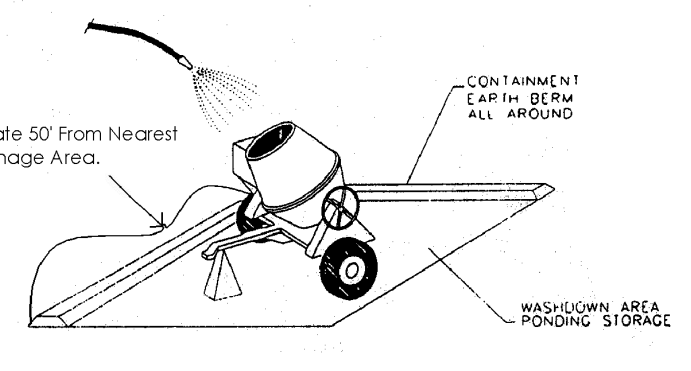
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COMMON AREA 1  
12,478 SQ FT  
0.286 ACRES

COMMON AREA 3  
10,000 SQ FT  
0.230 ACRES



### BMP: Concrete Waste Management



**DESCRIPTION:**  
Prevent or reduce the discharge of pollutants to storm water from concrete waste by conducting washout off-site, performing on-site washout in a designated area, and training employees and subcontractors.

**APPLICATIONS:**  
This technique is applicable to all types of sites.

**INSTALLATION/APPLICATION CRITERIA:**

- Store dry and wet materials under cover, away from drainage areas.
- Avoid mixing excess amounts of fresh concrete or cement on-site.
- Perform washout of concrete trucks off-site or in designated areas only.
- Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
- Do not allow excess concrete to be dumped on-site, except in designated areas.
- When washing concrete to remove fine particles and expose the aggregate, avoid creating runoff by draining the water within a bermed or level area. (See Earth Berm Barrier information sheet.)
- Train employees and subcontractors in proper concrete waste management.

**LIMITATIONS:**

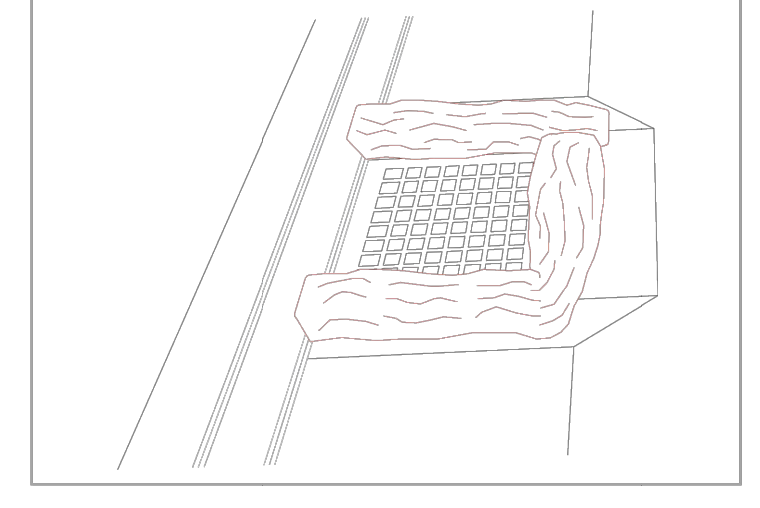
- Off-site washout of concrete wastes may not always be possible.

**MAINTENANCE:**

- Inspect subcontractors to ensure that concrete wastes are being properly managed.
- If using a temporary pit, dispose hardened concrete on a regular basis.

### BMP: Inlet Protection – Wattle

IP-W  
CONSTRUCTION



**DESCRIPTION:**  
Sediment barrier erected around storm drain inlet.

**APPLICATION:**  
Construct at storm drainage inlets located down-gradient of areas to be disturbed by construction.

**INSTALLATION/APPLICATION CRITERIA:**

- Provide up-gradient sediment controls, such as silt fence during construction of inlet
- When construction of curb and gutter and roadways is complete, install gravel filled wattles around perimeter of inlet

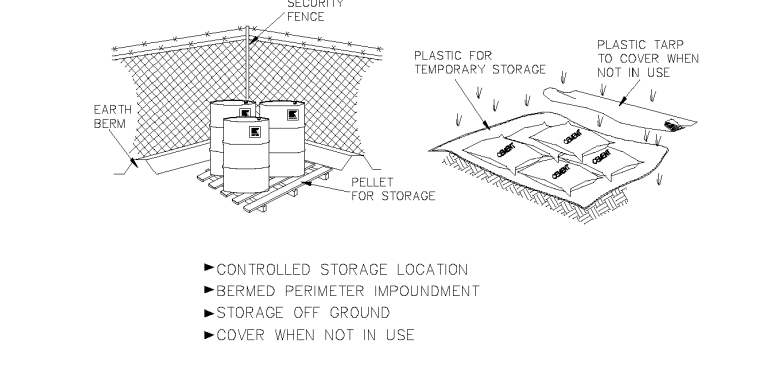
**LIMITATIONS:**

- Recommended maximum contributing drainage area of one acre
- Requires shallow slopes adjacent to inlet

**MAINTENANCE:**

- Inspect inlet protection following storm event and at a minimum of once every 14 days.
- Remove accumulated sediment when it reaches 4 inches in depth.
- Look for bypassing or undercutting and repair or realign as needed.

### BMP: Materials Storage



**DESCRIPTION:**  
Controlled storage of on-site materials.

**APPLICATION:**

- Storage of hazardous, toxic, and all chemical substances.
- Any construction site with outside storage of materials.

**INSTALLATION/APPLICATION CRITERIA:**

- Designate a secured area with limited access as the storage location. Ensure no waterways or drainage paths are nearby.
- Construct compacted earthen berm (See Earth Berm Barrier Information Sheet), or similar perimeter containment around storage location for impoundment in the case of spills.
- Ensure all on-site personnel utilize designated storage area. Do not store excessive amounts of material that will not be utilized on site.
- For active use of materials away from the storage area ensure materials are not set directly on the ground and are covered when not in use. Protect storm drainage during use.

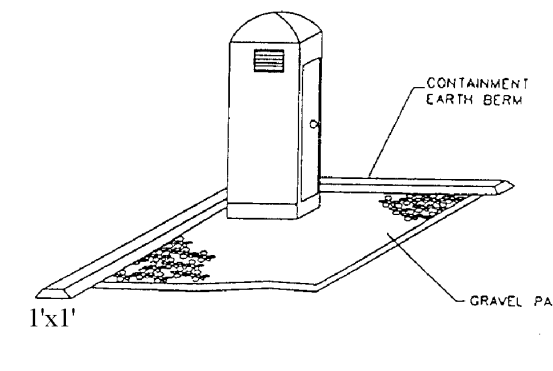
**LIMITATIONS:**

- Does not prevent contamination due to mishandling of products.
- Spill Prevention and Response Plan still required.
- Only effective if materials are actively stored in controlled location.

**MAINTENANCE:**

- Inspect daily and repair any damage to perimeter impoundment or security fencing.
- Check materials are being correctly stored (i.e. standing upright, in labeled containers, lightly capped) and that no materials are being stored away from the designated location.

### BMP: Portable Toilets



**DESCRIPTION:**  
Temporary on-site sanitary facilities for construction personnel.

**APPLICATION:**  
All sites with no permanent sanitary facilities or where permanent facility is too far from activities.

**INSTALLATION/APPLICATION CRITERIA:**


- Locate portable toilets in convenient locations throughout the site.
- Prepare level, gravel surface and provide clear access to the toilets for servicing and for on-site personnel.
- Construct earth berm perimeter (See Earth Berm Barrier Information Sheet), control for spill/protection leak.

**LIMITATIONS:**  
No limitations.

**MAINTENANCE:**

- Portable toilets should be maintained in good working order by licensed service with daily observation for leak detection.
- Regular waste collection should be arranged with licensed service.
- All waste should be deposited in sanitary sewer system for treatment with appropriate agency approval.

### BMP: Spill Clean-Up



**DESCRIPTION:**  
Practices to clean-up leakage/spillage of on-site materials that may be harmful to receiving waters.

**APPLICATION:**  
All sites

**GENERAL:**

- Store controlled materials within a storage area.
- Educate personnel on prevention and clean-up techniques.
- Designate an Emergency Coordinator responsible for employing preventative practices and for providing spill response.
- Maintain a supply of clean-up equipment on-site and post a list of local response agencies with phone numbers.

**METHODS:**

- Clean-up spills/leaks immediately and remediate cause.
- Use as little water as possible. NEVER HOSE DOWN OR BURY SPILL CONTAMINATED MATERIAL.
- Use rags or absorbent material for clean-up. Excavate contaminated soils.
- Dispose of clean-up material and soil as hazardous waste.
- Document all spills with date, location, substance, volume, actions taken and other pertinent data.
- Contact local Fire Department and State Division of Environmental Response and Remediation (Phone #536-4100) for any spill of reportable quantity.

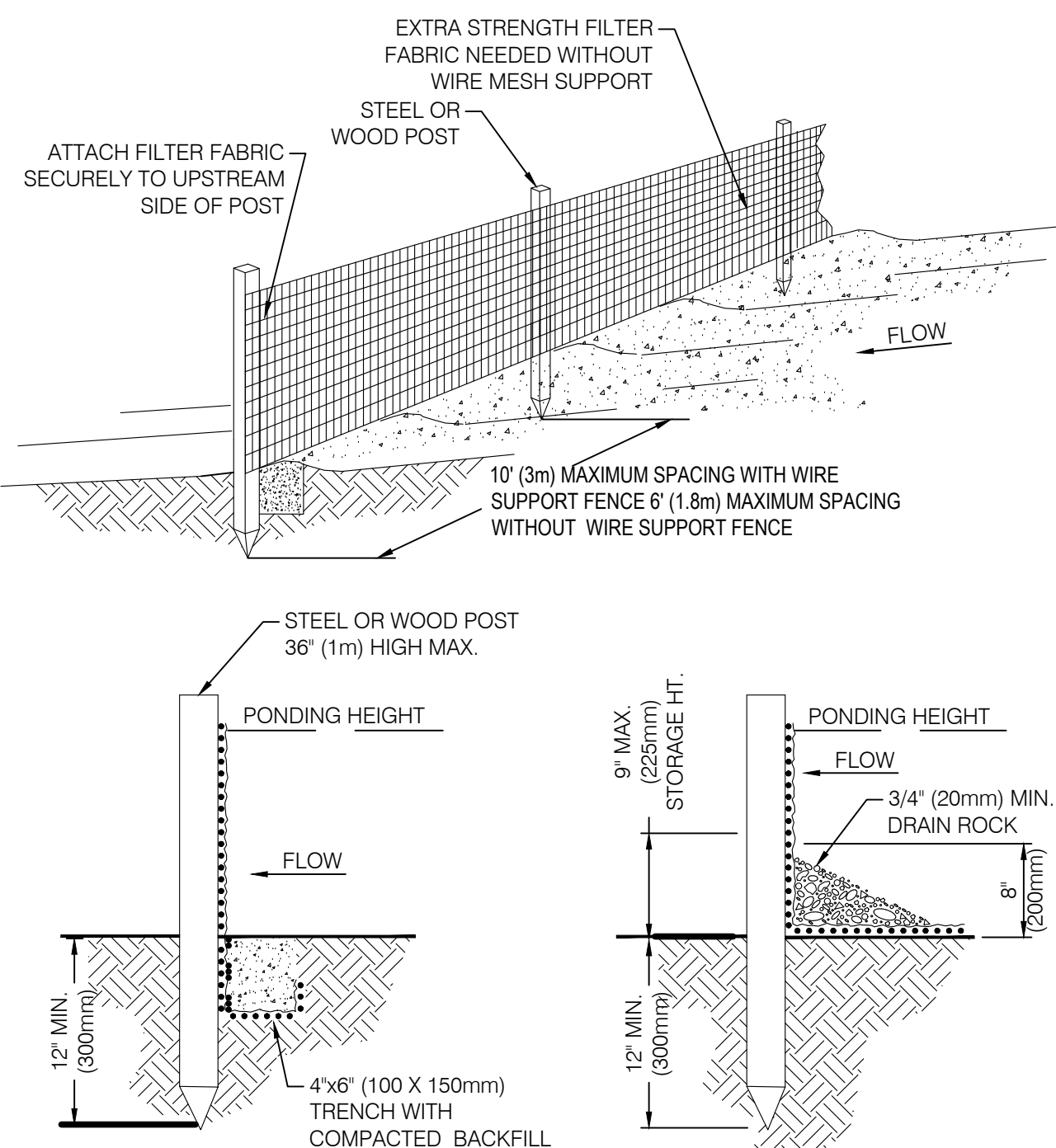
**CONCRETE WASTE MANAGEMENT**  
SCALE: N.T.S.

**INLET PROTECTION WATTLE**  
SCALE: N.T.S.

**MATERIALS STORAGE**  
SCALE: N.T.S.

**PORTABLE TOILETS**  
SCALE: N.T.S.

**SPILL CLEAN-UP**  
SCALE: N.T.S.

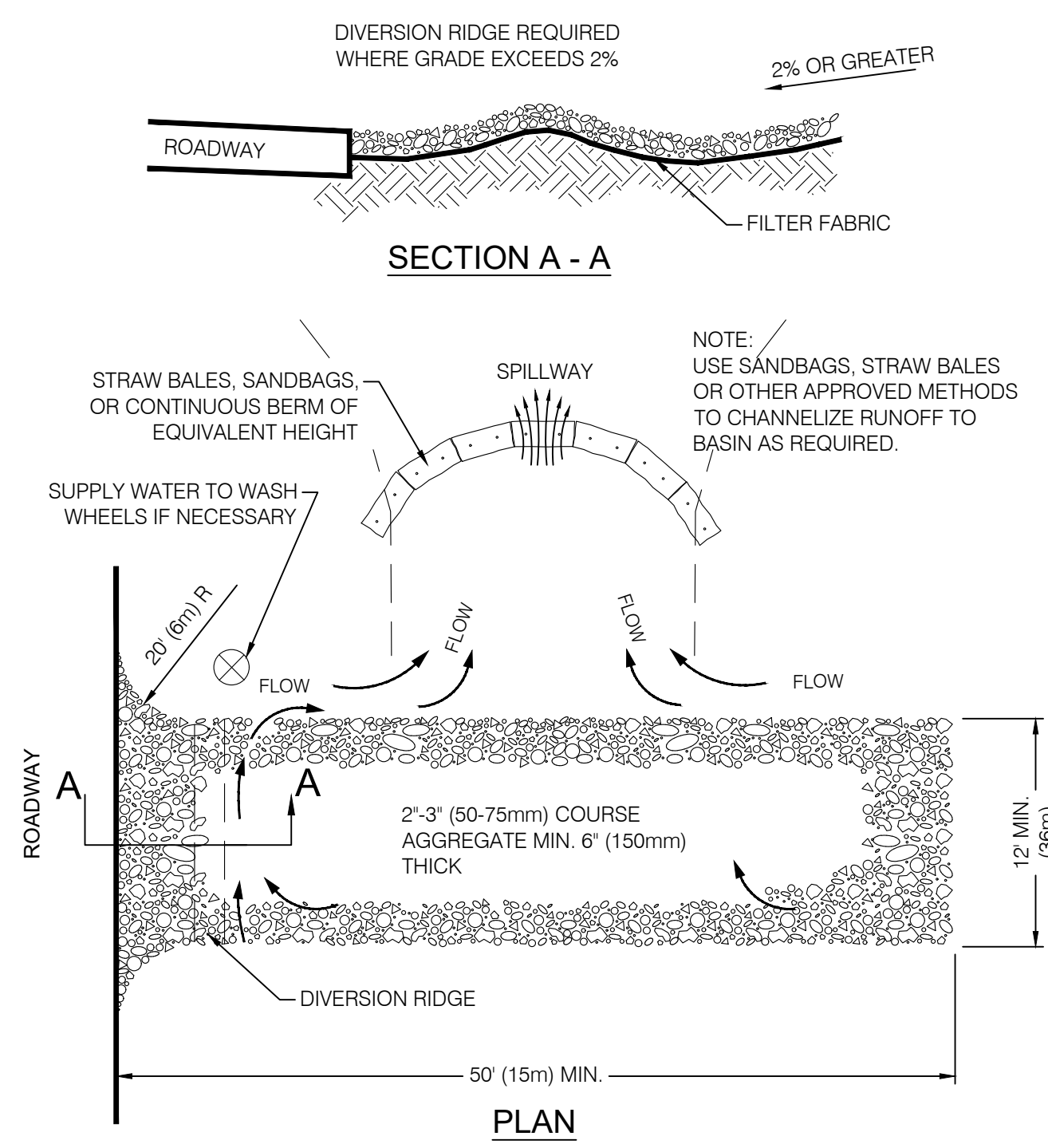


**TRENCH DETAIL**  
**INSTALLATION WITHOUT TRENCHING**

NOTES:

1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" (225mm) MAXIMUM RECOMMENDED STORAGE HEIGHT.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

**SILT FENCE**  
SCALE: N.T.S.



**SECTION A - A**  
**PLAN**

NOTES:


1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

**TEMPORARY GRAVEL CONSTRUCTION ENTRANCE / EXIT**  
SCALE: N.T.S.

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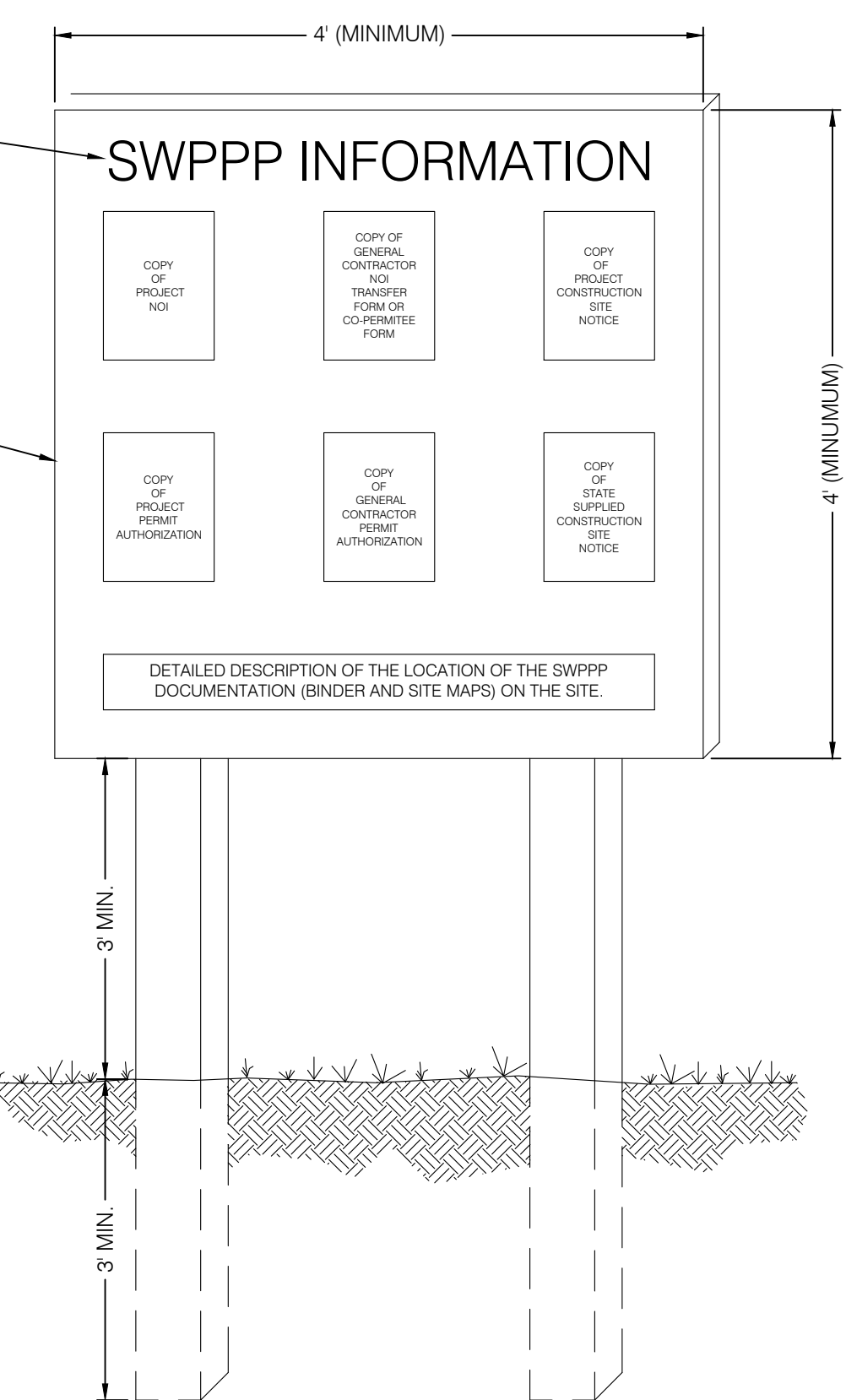
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"SWPPP INFORMATION" MUST BE DISPLAYED PROMINENTLY ACROSS THE TOP OF THE SIGN, AS SHOWN IN THE DETAIL.

SIGN TO BE CONSTRUCTED OF A RIGID MATERIAL, SUCH AS PLYWOOD OR OUTDOOR SIGN BOARD. SIGN MUST BE CONSTRUCTED IN A MANNER TO PROTECT DOCUMENTS FROM DAMAGE DUE TO WEATHER (WIND, SUN, MOISTURE, ETC.)



NOTES:

- 1) THE SWPPP INFORMATION SIGN MUST BE LOCATED NEAR THE CONSTRUCTION EXIT OF THE SITE, SUCH THAT IT IS ACCESSIBLE AND VIEWABLE BY THE GENERAL PUBLIC, BUT NOT OBSTRUCTING VIEWS AS TO CAUSE A SAFETY HAZARD.
- 2) ALL POSTED DOCUMENTS MUST BE MAINTAINED IN A CLEARLY READABLE CONDITION AT ALL TIMES THROUGHOUT CONSTRUCTION AND UNTIL THE NOTICE-TO-TERMINATION (NOT) IS FILED FOR THE PERMIT.
- 3) CONTRACTOR SHALL POST OTHER STORM WATER AND/OR EROSION AND SEDIMENT CONTROL RELATED PERMITS ON THE SIGN AS REQUIRED BY THE GOVERNING AGENCY.
- 4) SIGN SHALL BE LOCATED OUTSIDE OF PUBLIC RIGHT-OF-WAY AND EASEMENTS UNLESS APPROVED BY THE GOVERNING AGENCY.
- 5) CONTRACTOR IS RESPONSIBLE FOR ENSURING STABILITY IF THE SWPPP INFORMATION SIGN.

**SWPPP INFORMATION SIGN**  
(NOT TO SCALE)

NO.	DATE	DESCRIPTION
1	10/31/17	REVISED PER COUNTY COMMENTS
2	02/18/18	REVISED PER COUNTY COMMENTS

PROJECT NO. 1607138  
DATE 8/28/2017  
DRAWN BY SURVEY  
CHECKED BY MCP  
SCALE: MEASURES SHOWN ON ALL SIZE SHEETS  
ASST. ACCORDINGLY FOR REQUESTED SIZE SHEETS

PROFESSIONAL ENGINEER  
No. 10360773  
M. CHRIS POULSEN  
STATE OF UTAH

**BENCHMARK ENGINEERING & LAND SURVEYING**  
9130 SOUTH STATE STREET SUITE # 100  
SANDY, UTAH 84070 (801) 542-7192  
www.benchmarkcivil.com

**BENCHMARK CIVIL**

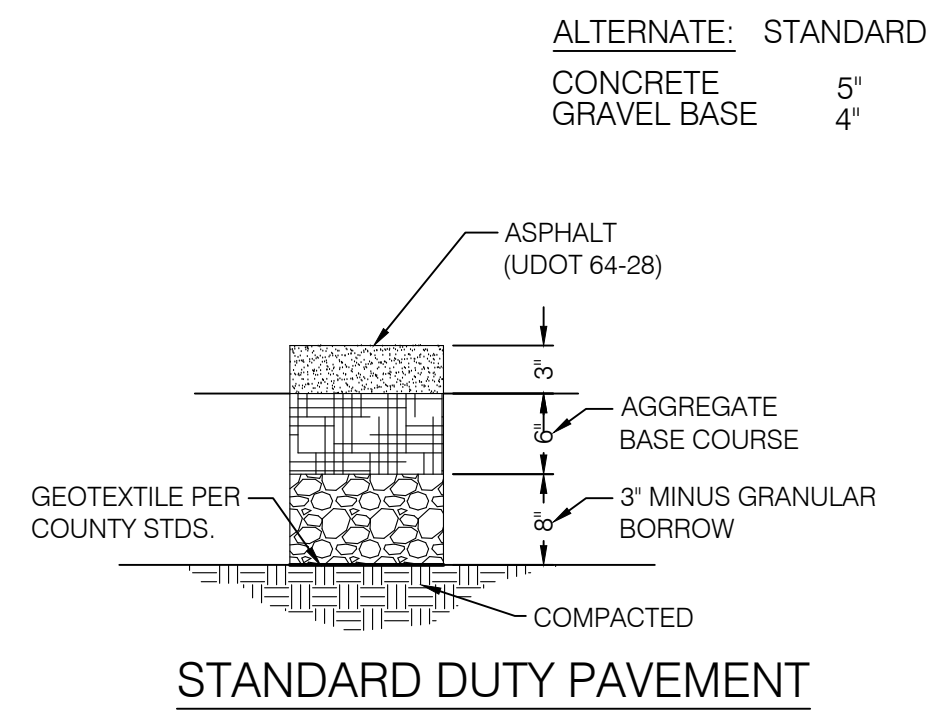
**WINSTON PARK**  
3908 W 1800 S  
WEBER COUNTY, UTAH

PROJECT NO. 1607138

**EROSION CONTROL DETAILS**

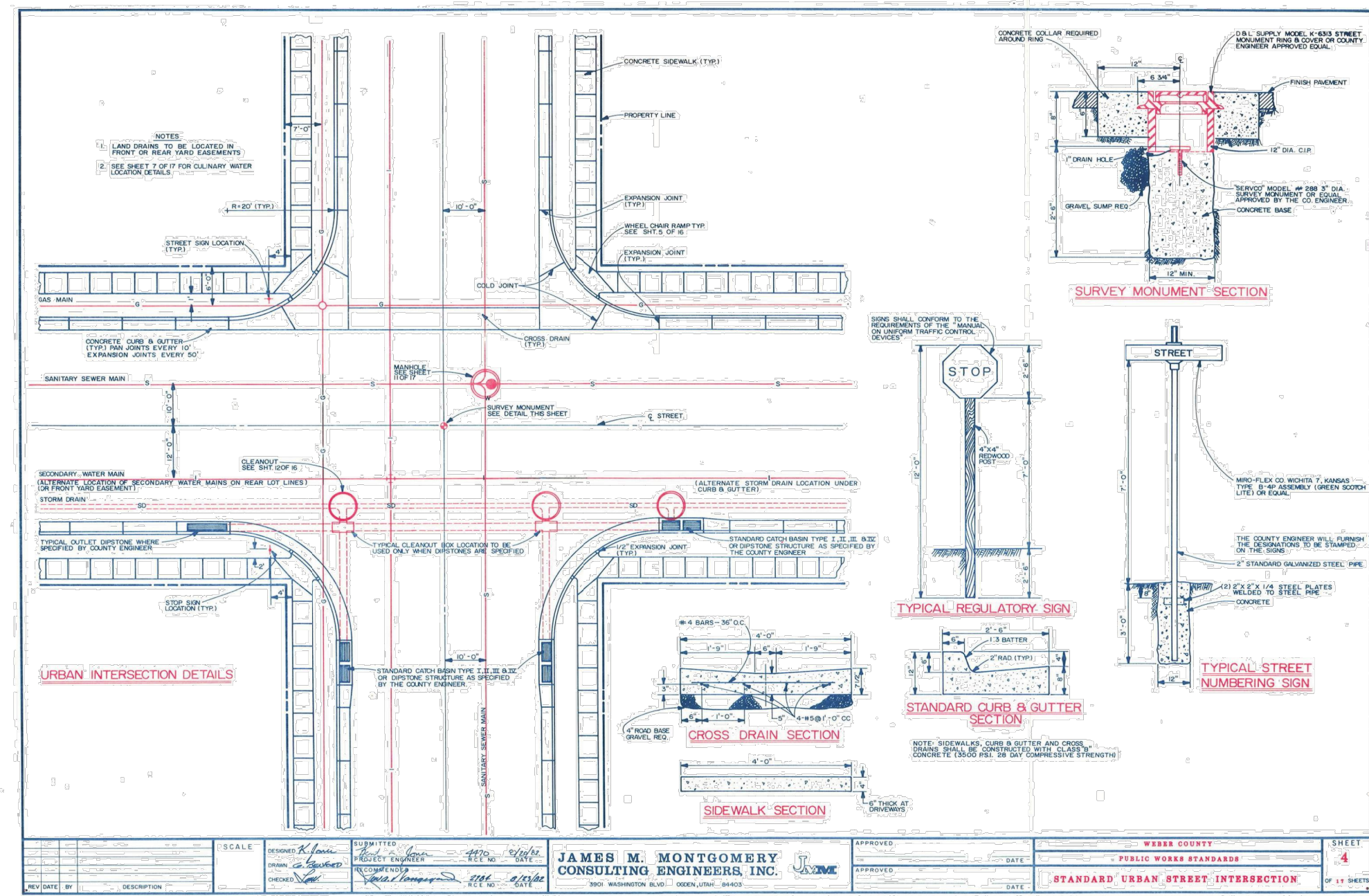
CEP.02  
20 OF 24



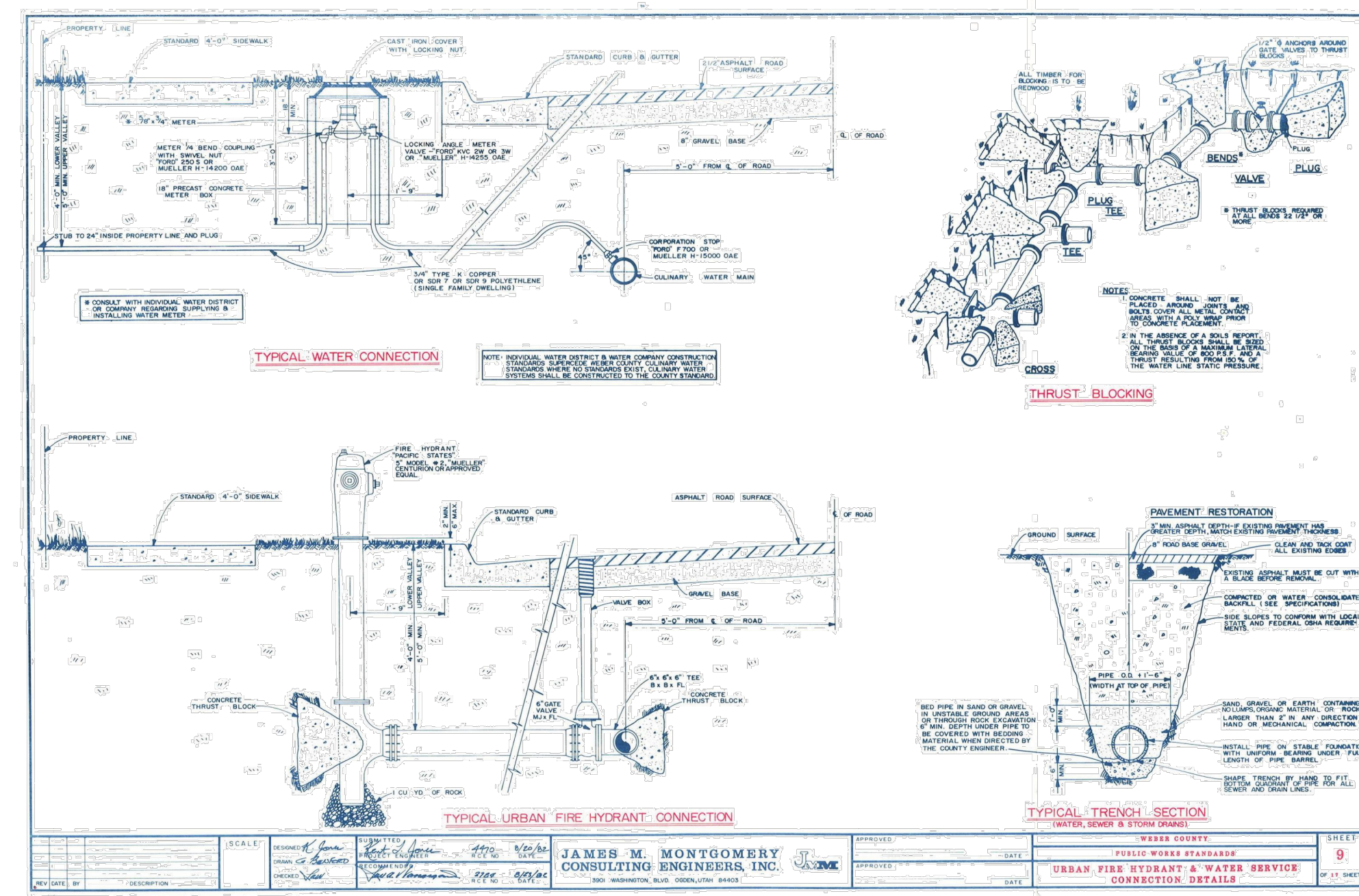


- NOTE:
1. FOR REINFORCEMENT DESIGN OF PCC PAVEMENT SECTIONS SEE STRUCTURAL ENGINEER
  2. FOR DOWEL DESIGN OF PCC PAVEMENT SECTIONS SEE GEOTECHNICAL ENGINEER
  3. REFER TO GEOTECHNICAL REPORT #1160708 PREPARED BY AGECC ON OCTOBER 12, 2016 FOR PAVEMENT DESIGN. DEFER TO GEOTECHNICAL REPORT OR COUNTY STANDARDS, WHICHEVER IS MORE CONSERVATIVE.
  4. COMPACTION TESTING REQUIRED FOR BOTH ROAD BASE AND SUB-BASE PER WEBER COUNTY STANDARDS.

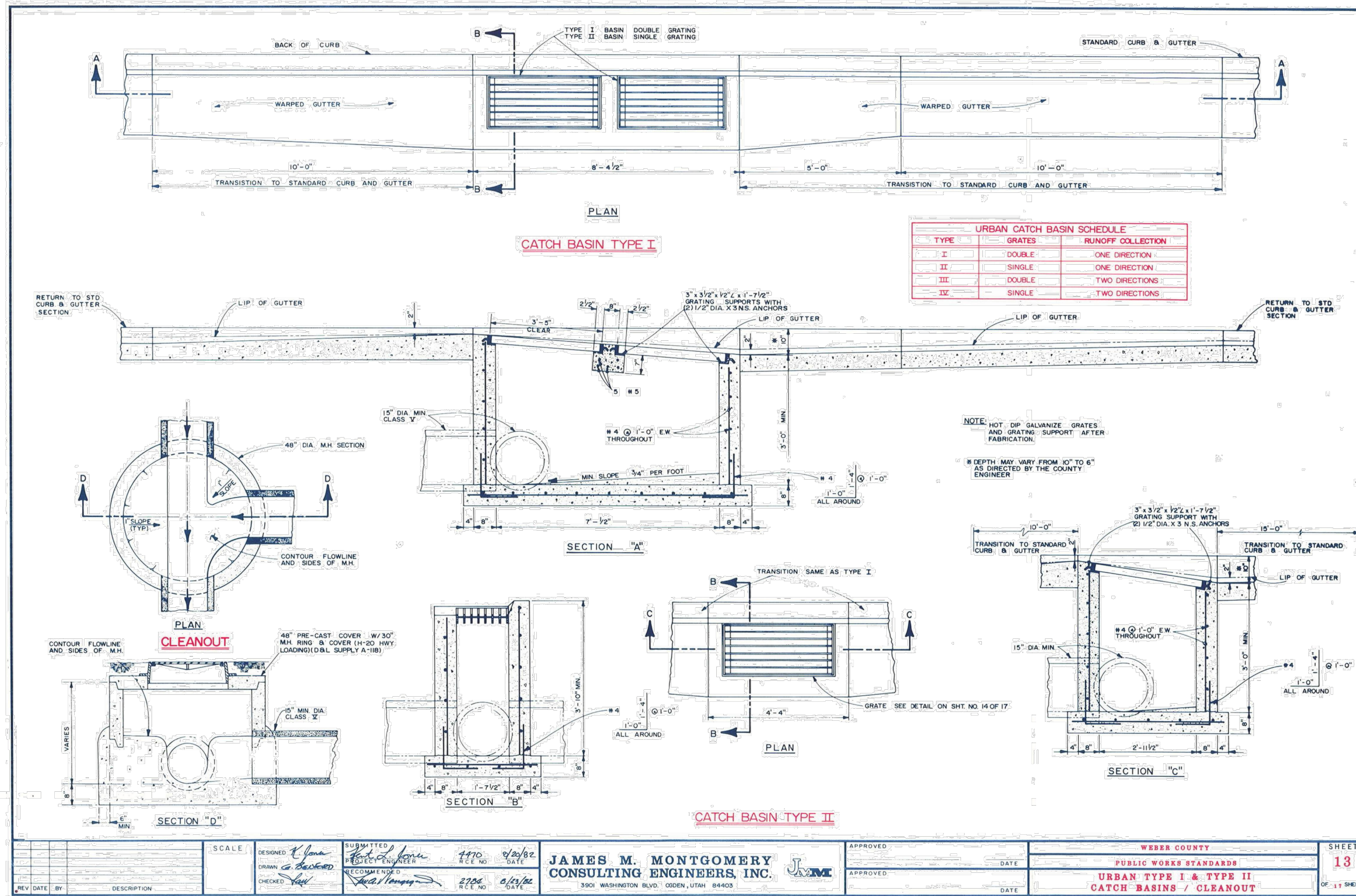
PAVEMENT SECTIONS 1  
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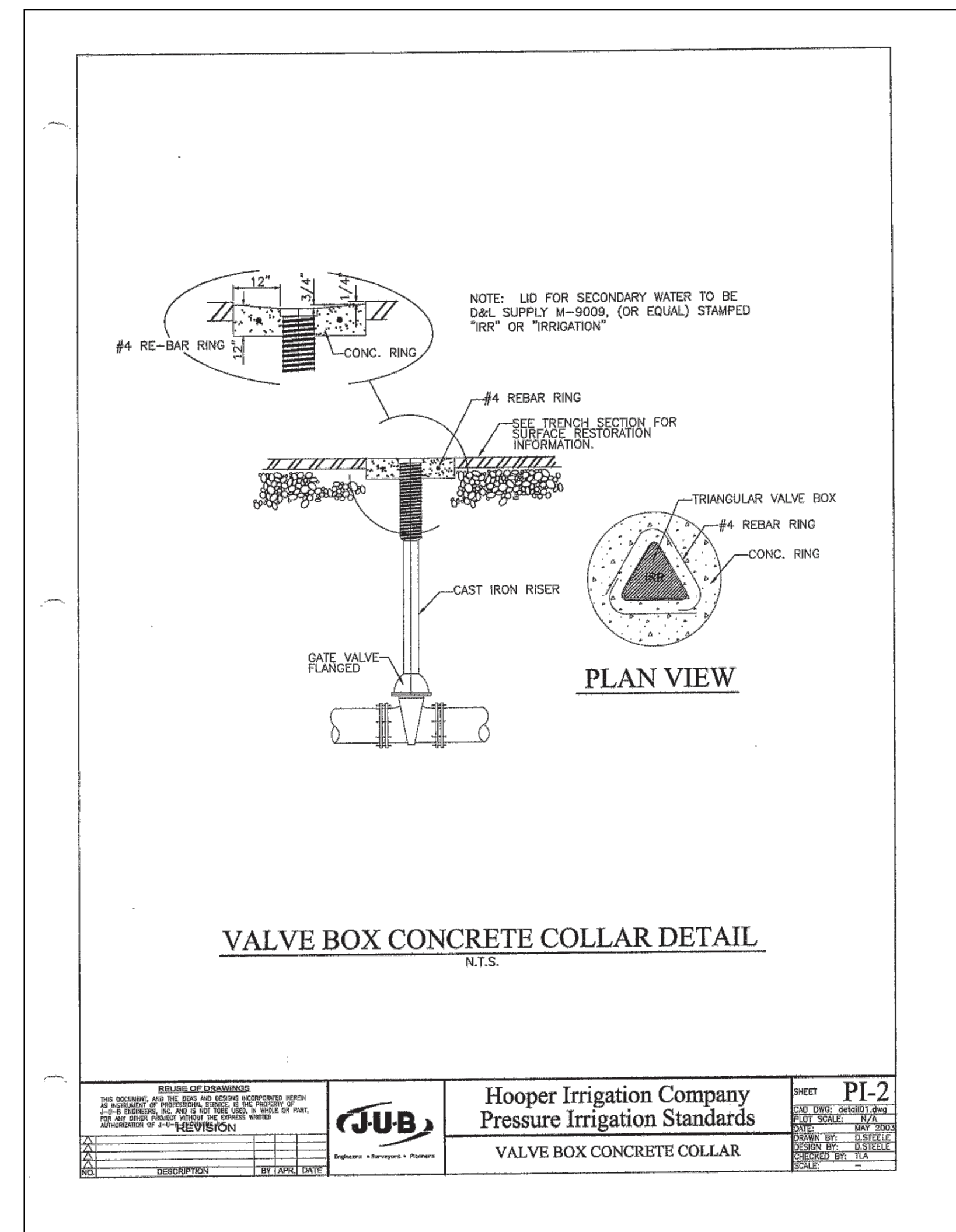
CURB, GUTTER & SIDEWALK 2  
 SCALE: N.T.S.



CULINARY WATER DETAILS 3  
 SCALE: N.T.S.



CATCH BASIN / CLEANOUT 4  
 SCALE: N.T.S.



HOOPER IRR. GATE VALVE 5  
 SCALE: N.T.S.

NO.	DATE	DESCRIPTION
1	10/31/17	REVISED PER COUNTY COMMENTS
2	02/16/18	REVISED PER COUNTY COMMENTS

DESIGNED BY: MCP  
 SURVEY  
 DATE: 8/28/2017  
 DWG FILE: 1607138.rvt

SCALE: MEASURES FUNCTION ON ALL SIZE SHEETS  
 AS NOTED OTHERWISE FOR REDUCED SIZE SHEETS

PROFESSIONAL ENGINEER  
 No. 21618  
 M. CHRIS PULSEN  
 STATE OF UTAH

BENCHMARK ENGINEERING & LAND SURVEYING  
 930 SOUTH STATE STREET SUITE #100  
 SANDY, UTAH 84070 (801) 542-7192  
 www.benchmarkcivil.com

WINSTON PARK  
 3908 W 1800 S  
 WEBER COUNTY, UTAH

PROJECT NO. 1607138

DETAILS & NOTES

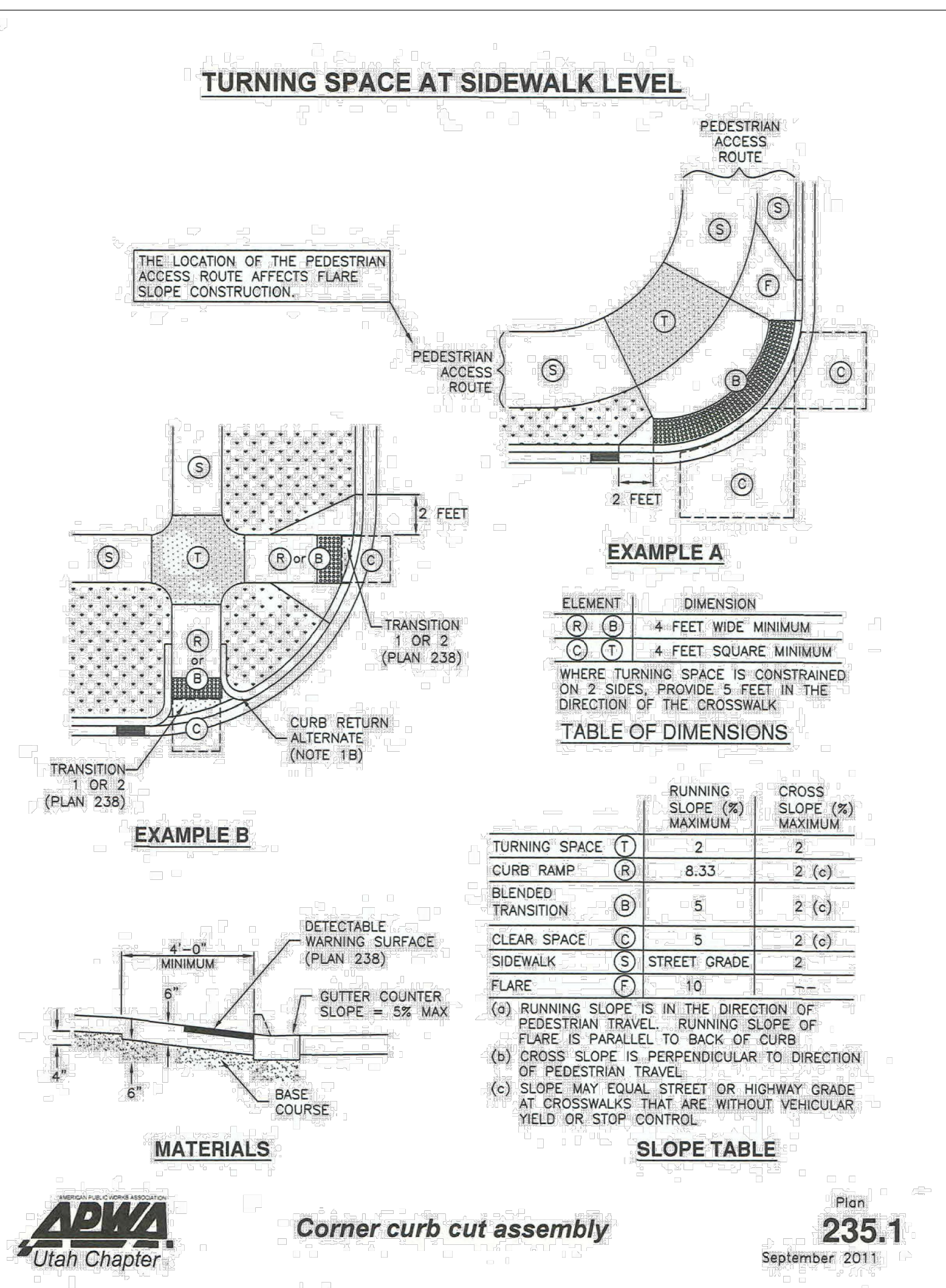
CDT.01  
 21 OF 24



**Corner curb cut assembly**

1. **GENERAL**
  - A. Where existing elements or spaces are altered to receive an assembly, slopes and dimensions shall comply with slopes and dimensions shown on the drawing, or to the maximum extent feasible permitted by the ENGINEER. Final configuration of the assembly may be different than shown. Where physical constraints (e.g. utility covers, poles, vaults, etc.) prevent compliance, a single diagonal curb cut assembly may serve both pedestrian street crossings.
  - B. Installation of flares or curb returns is ENGINEER's choice.
  - C. Definitions and supplemental requirements are specified in APWA Section 32 16 14.
2. **PRODUCTS**
  - A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
  - B. Expansion Joint Filler: 1/2-inch thick type F1 full depth, APWA Section 32 13 73.
  - C. Detectable Warning Surface: Paver, ribbed composite panel, or tile. Provide a color that contrasts with adjacent walking surface, either light-on-dark or dark-on-light. ENGINEER to select type and color unless indicated elsewhere.
  - D. Concrete: Class 4000, APWA Section 03 30 04.
  - E. Concrete Curing Agent: Clear membrane forming compound with fugitive dye (Type ID Class A), APWA Section 03 39 00.
3. **EXECUTION**
  - A. Base Course Placement: APWA Section 32 05 10. Maximum lift thickness before compaction is 8-inches when using riding equipment or 6-inches when using hand held equipment. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
  - B. Curb Modifications:
    - 1) The sloped surface created to accommodate a flare area shall be perpendicular to the back of curb.
    - 2) No grade break shall exist between the flow-line and the foot of the curb ramp or blended transition. Length of the curb modification abutting the curb ramp or transition is 4 feet minimum for each crosswalk served.
  - C. Curb Ramp: Length not required to exceed 15 feet. Grade breaks are perpendicular to the direction of ramp run and are not permitted on ramp or turning space surface. Sides are parallel to each other and perpendicular to the ends. At the bottom grade break it may be necessary to install a transition zone, (APWA Plan 238).
  - D. Concrete Placement: APWA Section 03 30 10.
    - 1) Maximum length to width ratio for rectangular panel joints is 1.5 to 1. Joint spacing measured in feet not to exceed twice slab thickness measured in inches or a maximum of 15 feet.
    - 2) Install expansion joints vertical, full depth, with top of filler set flush with concrete surface. Install contraction joints vertical, 1/8-inch wide, and 1/4 of the depth of the concrete flatwork.
    - 3) Provide 1/2-inch radius edges. Apply a broom finish. Apply a curing agent.
  - E. Clear Space: No trip hazards in the clear space.

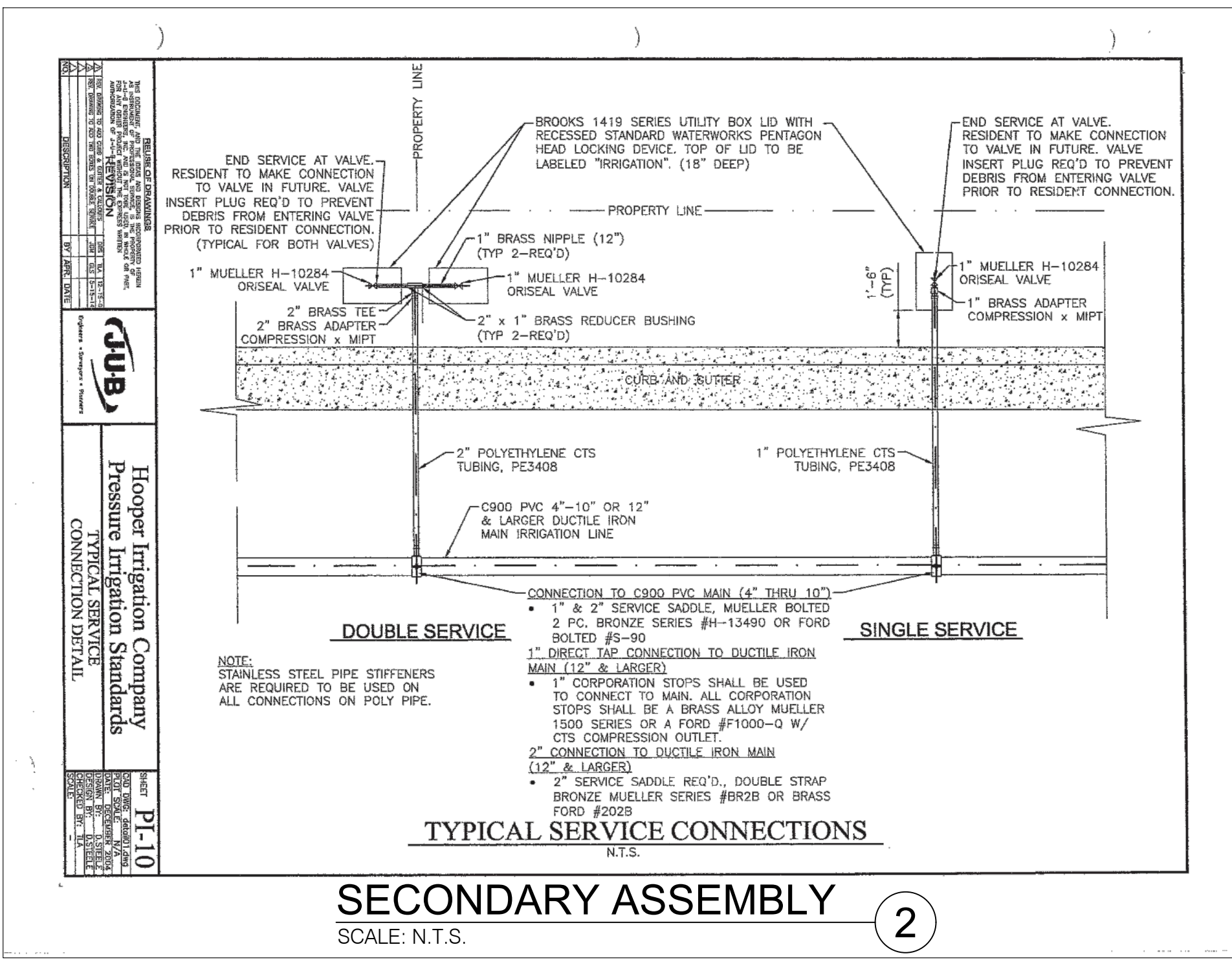
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**STANDARD ACCESS RAMP**

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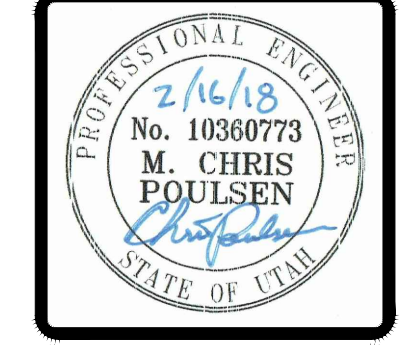
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NO.	DATE	DESCRIPTION
1	10/31/17	REVISED PER COUNTY COMMENTS
2	02/16/18	REVISED PER COUNTY COMMENTS

DESIGNED BY: KVIS  
CHECKED BY: MCP  
FIELD DRAWN: SURVEY  
DATE: 8/28/2017  
DWG FILE: 1607138.rvt

SCALE: MEASURED DIMENSIONS ON ALL SIZE SHEETS  
ADJUST ACCORDINGLY FOR REDUCED SIZE SHEETS



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**BENCHMARK CIVIL**

**WINSTON PARK**

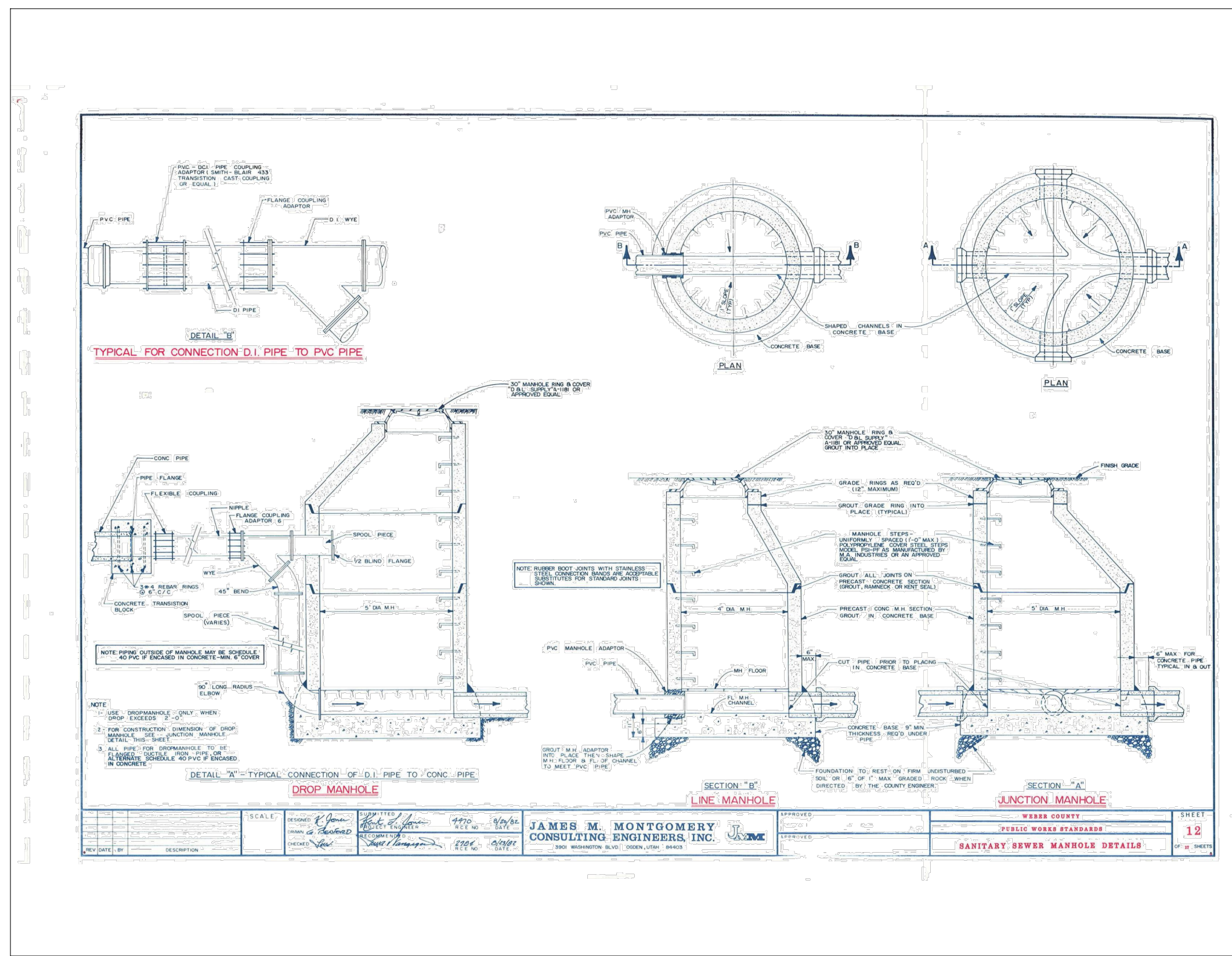
3908 W 1800 S  
WEBER COUNTY, UTAH

PROJECT NO. 1607138

**DETAILS & NOTES**

CDT.02  
22 OF 24

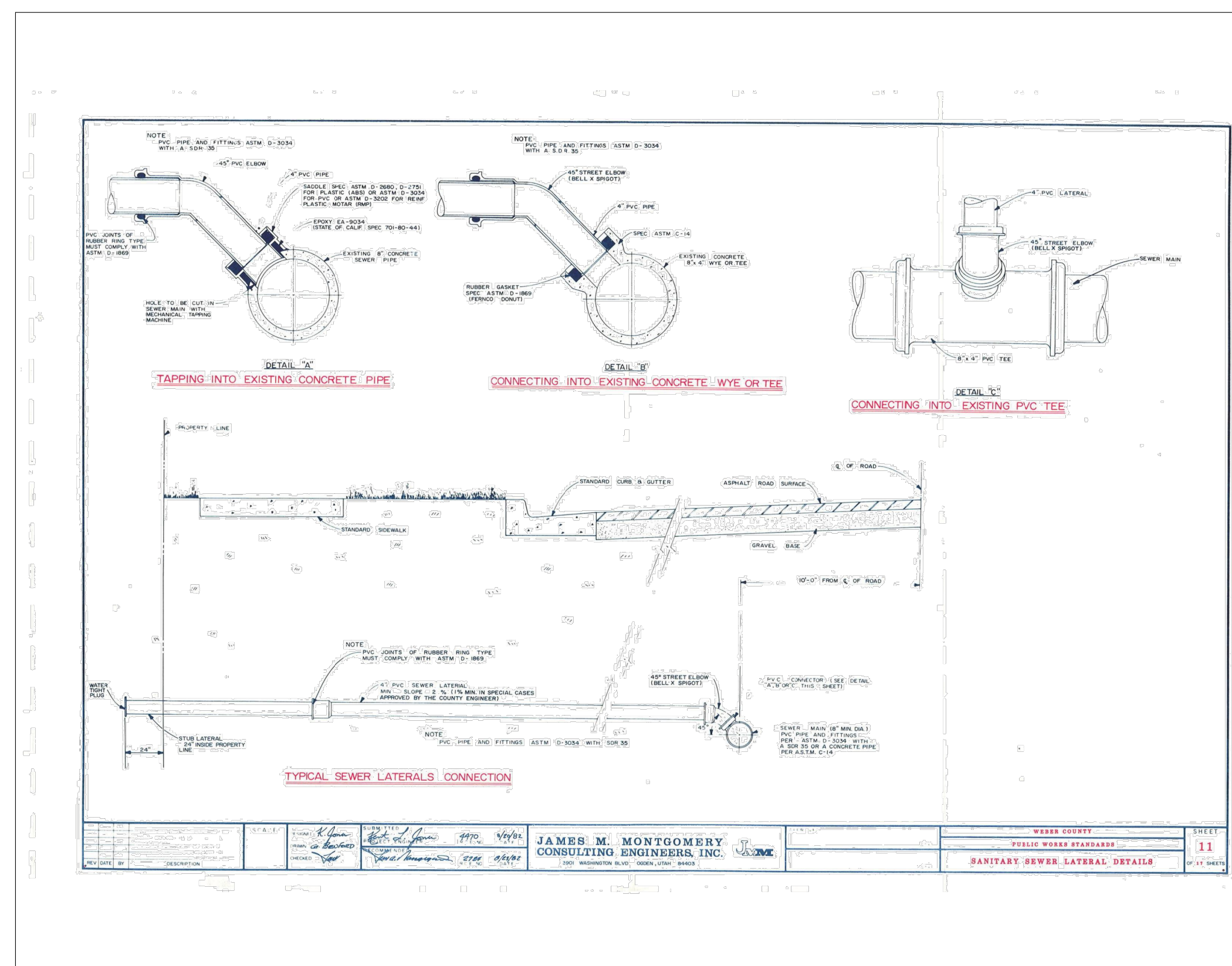




**SEWER MANHOLE**

SCALE: N.T.S.

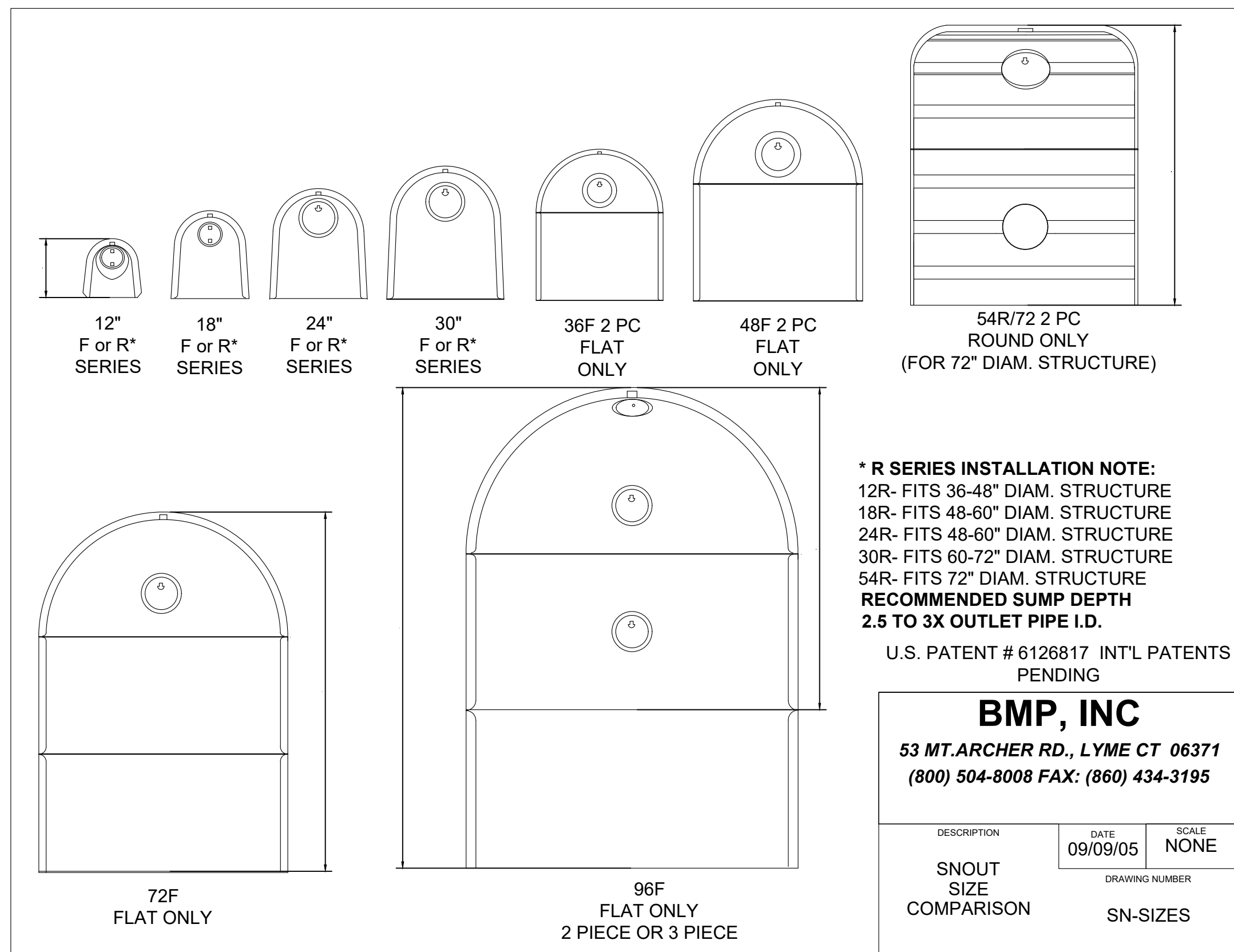
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**SEWER LATERAL CONNECTION**

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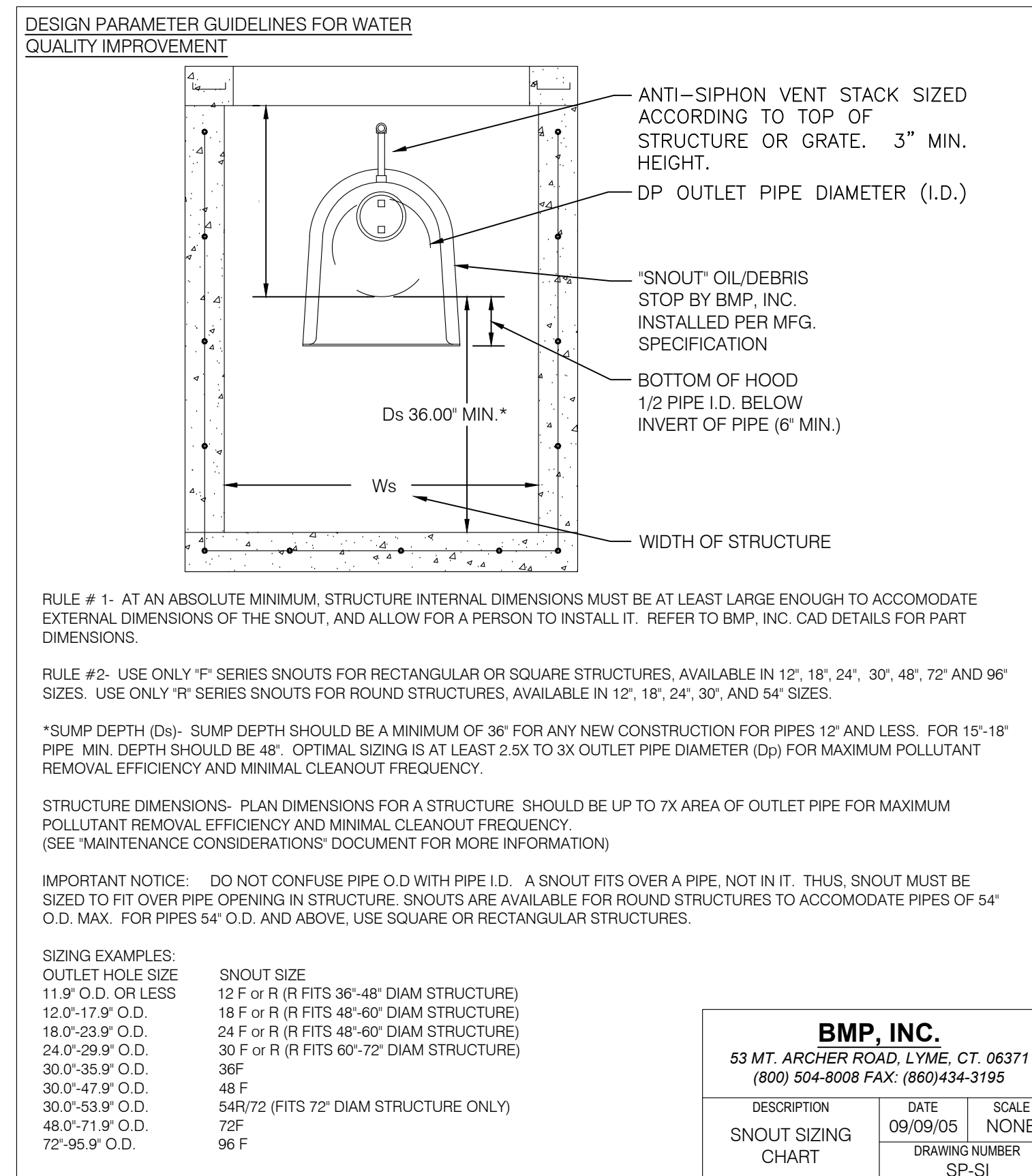
2



**SNOUT DETAILS**

SCALE: N.T.S.

3



**DESIGN PARAMETER GUIDELINES FOR WATER QUALITY IMPROVEMENT**

RULE #1- AT AN ABSOLUTE MINIMUM, STRUCTURE INTERNAL DIMENSIONS MUST BE AT LEAST LARGE ENOUGH TO ACCOMMODATE EXTERNAL DIMENSIONS OF THE SNOUT, AND ALLOW FOR A PERSON TO INSTALL IT. REFER TO BMP, INC. CAD DETAILS FOR PART DIMENSIONS.

RULE #2- USE ONLY 'F' SERIES SNOUTS FOR RECTANGULAR OR SQUARE STRUCTURES, AVAILABLE IN 12", 18", 24", 30", 48", 72" AND 96" SIZES. USE ONLY 'R' SERIES SNOUTS FOR ROUND STRUCTURES, AVAILABLE IN 12", 18", 24", 30", AND 54" SIZES.

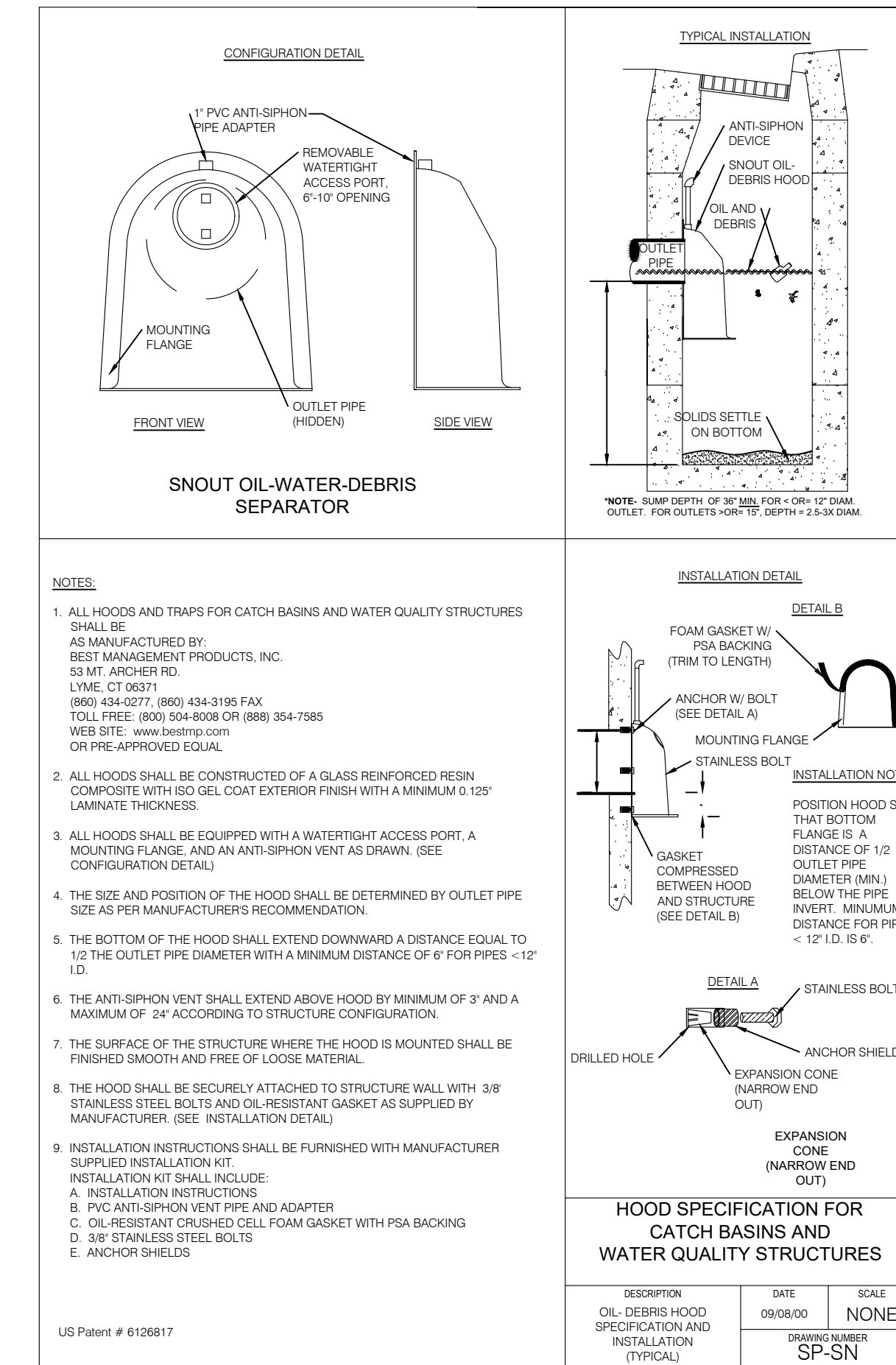
\*SUMP DEPTH (Ds)- SUMP DEPTH SHOULD BE A MINIMUM OF 36" FOR ANY NEW CONSTRUCTION FOR PIPES 12" AND LESS. FOR 15"-18" PIPE. MIN. DEPTH SHOULD BE 48". OPTIMAL SIZING IS AT LEAST 2.5X TO 3X OUTLET PIPE DIAMETER (Dp) FOR MAXIMUM POLLUTANT REMOVAL EFFICIENCY AND MINIMAL CLEANOUT FREQUENCY.

STRUCTURE DIMENSIONS- PLAN DIMENSIONS FOR A STRUCTURE SHOULD BE UP TO 7X AREA OF OUTLET PIPE FOR MAXIMUM POLLUTANT REMOVAL EFFICIENCY AND MINIMAL CLEANOUT FREQUENCY. (SEE 'MAINTENANCE CONSIDERATIONS' DOCUMENT FOR MORE INFORMATION)

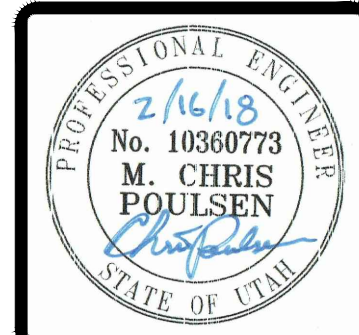
IMPORTANT NOTICE: DO NOT CONFUSE PIPE O.D WITH PIPE I.D. A SNOUT FITS OVER A PIPE, NOT IN IT. THUS, SNOUT MUST BE SIZED TO FIT OVER PIPE OPENING IN STRUCTURE. SNOUTS ARE AVAILABLE FOR ROUND STRUCTURES TO ACCOMMODATE PIPES OF 54" O.D. MAX. FOR PIPES 54" O.D. AND ABOVE, USE SQUARE OR RECTANGULAR STRUCTURES.

OUTLET HOLE SIZE	SNOUT SIZE
11.9" O.D. OR LESS	12 F or R (R FITS 36"-48" DIAM STRUCTURE)
12.0"-17.9" O.D.	18 F or R (R FITS 48"-60" DIAM STRUCTURE)
18.0"-23.9" O.D.	24 F or R (R FITS 48"-60" DIAM STRUCTURE)
24.0"-29.9" O.D.	30 F or R (R FITS 60"-72" DIAM STRUCTURE)
30.0"-35.9" O.D.	36F
30.0"-47.9" O.D.	48 F
30.0"-53.9" O.D.	54R/72 (FITS 72" DIAM STRUCTURE ONLY)
48.0"-71.9" O.D.	72F
72"-95.9" O.D.	96 F

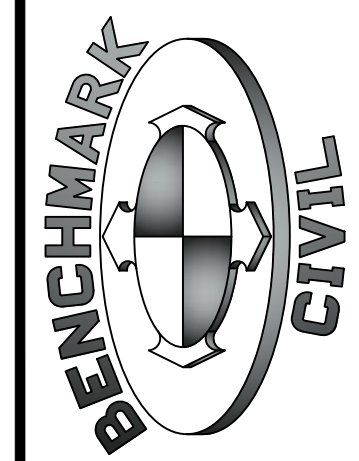
BMP, INC.		
53 MT. ARCHER ROAD, LYME, CT. 06371		
(800) 504-8008 FAX: (860) 434-3195		
DESCRIPTION	DATE	SCALE
SNOUT SIZING CHART	09/09/05	NONE
DRAWING NUMBER	SP-SI	



NO.	DATE	DESCRIPTION
1	10/31/17	REVISED PER COUNTY COMMENTS
2	02/18/18	REVISED PER COUNTY COMMENTS



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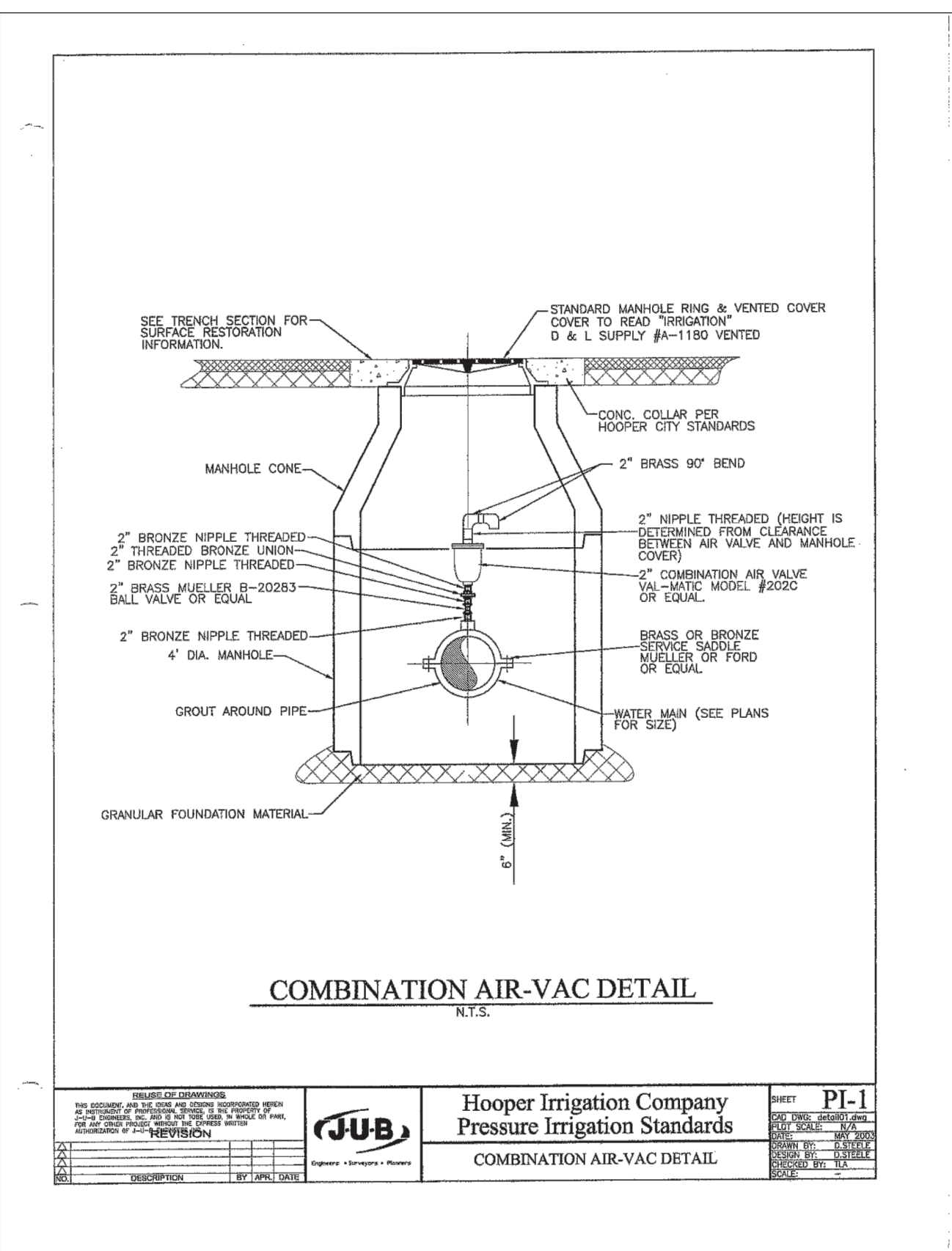
**WINSTON PARK**  
 3908 W 1800 S  
 WEBER COUNTY, UTAH

PROJECT NO. 1607138

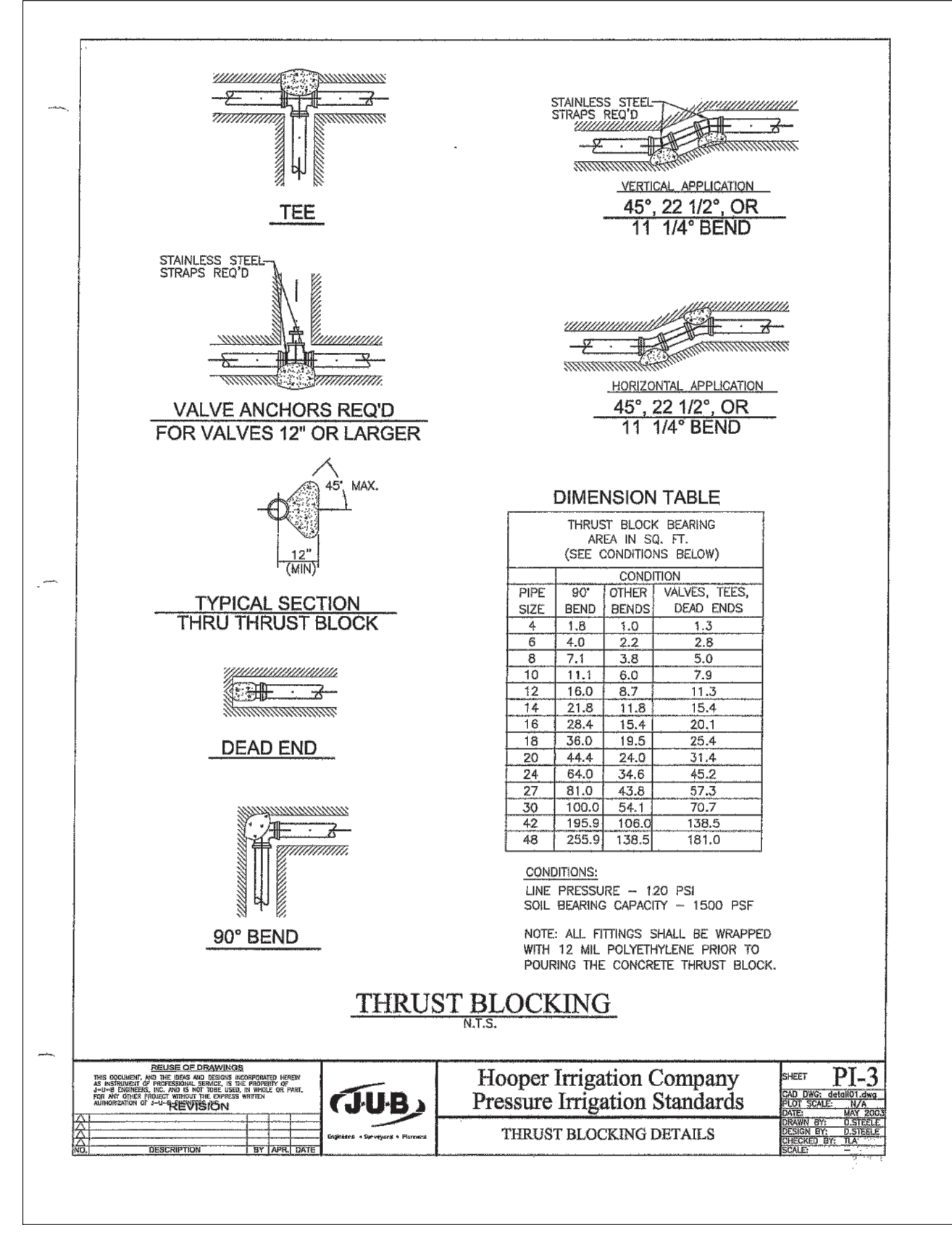
**DETAILS & NOTES**

CDT.03  
 23 OF 24

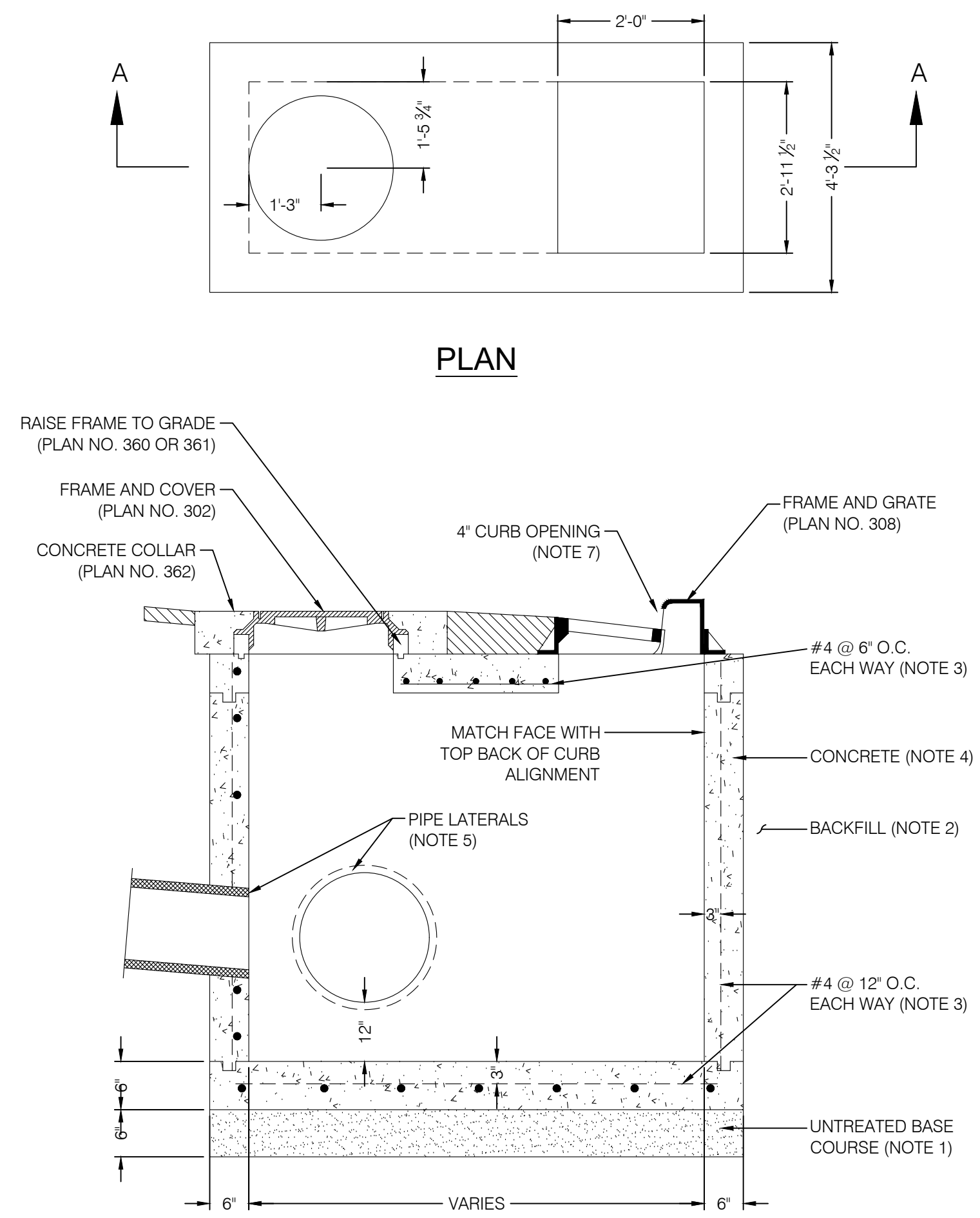




**COMBO AIR-VAC**  
SCALE: N.T.S.

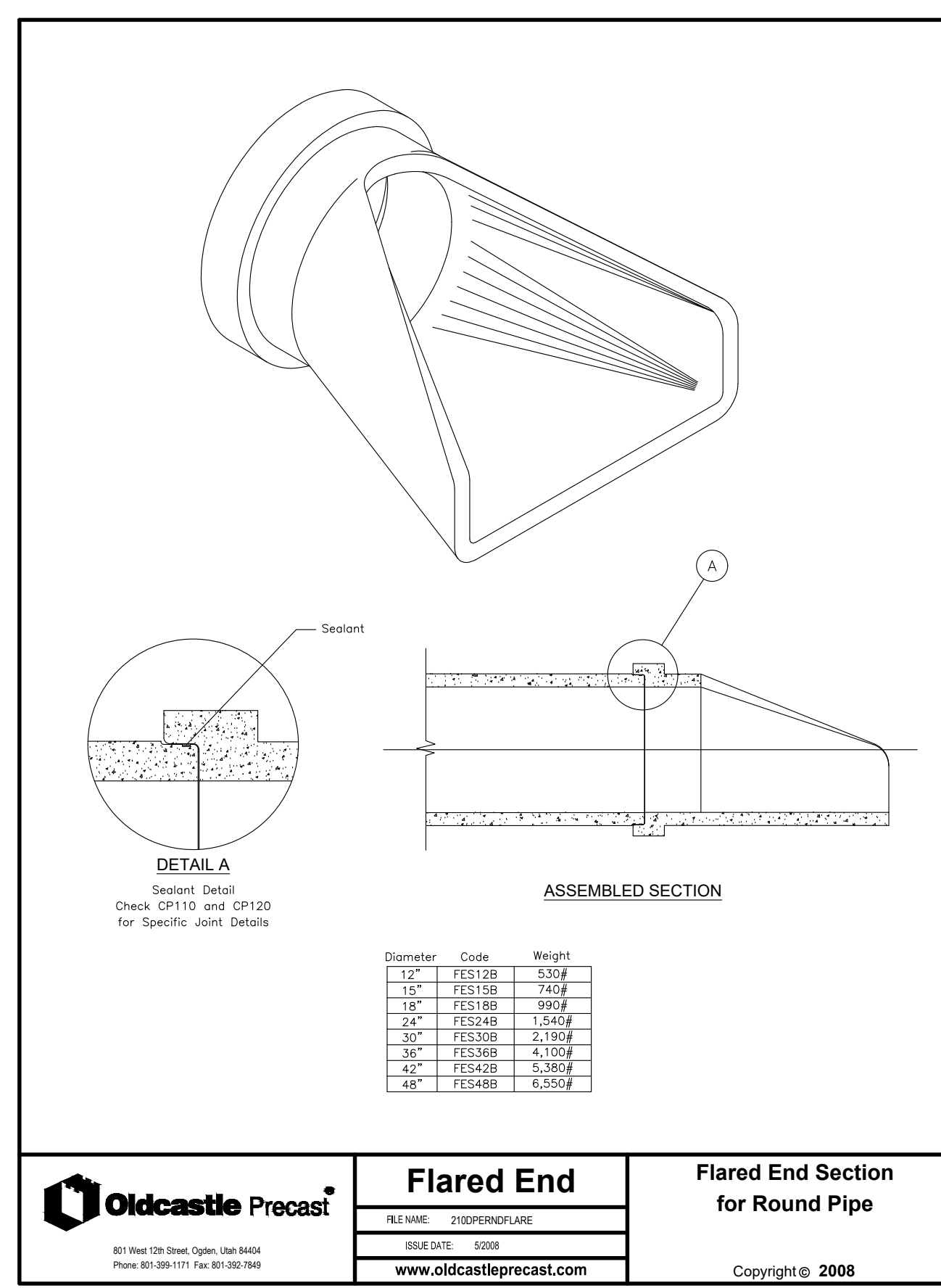


**HOOPER THRUST BLOCK**  
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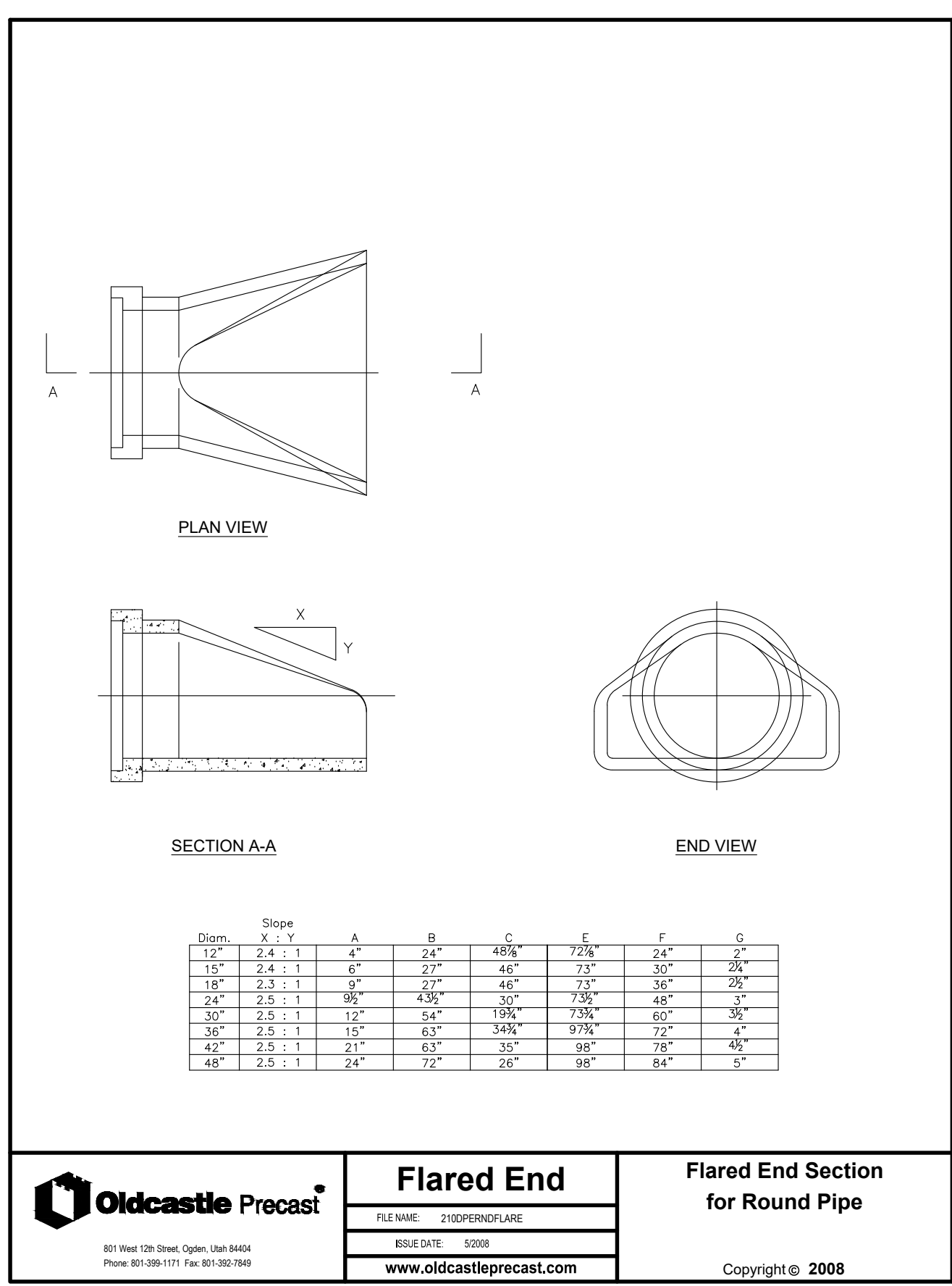


**COMBINATION INLET/CLEANOUT BOX**  
SCALE: N.T.S.

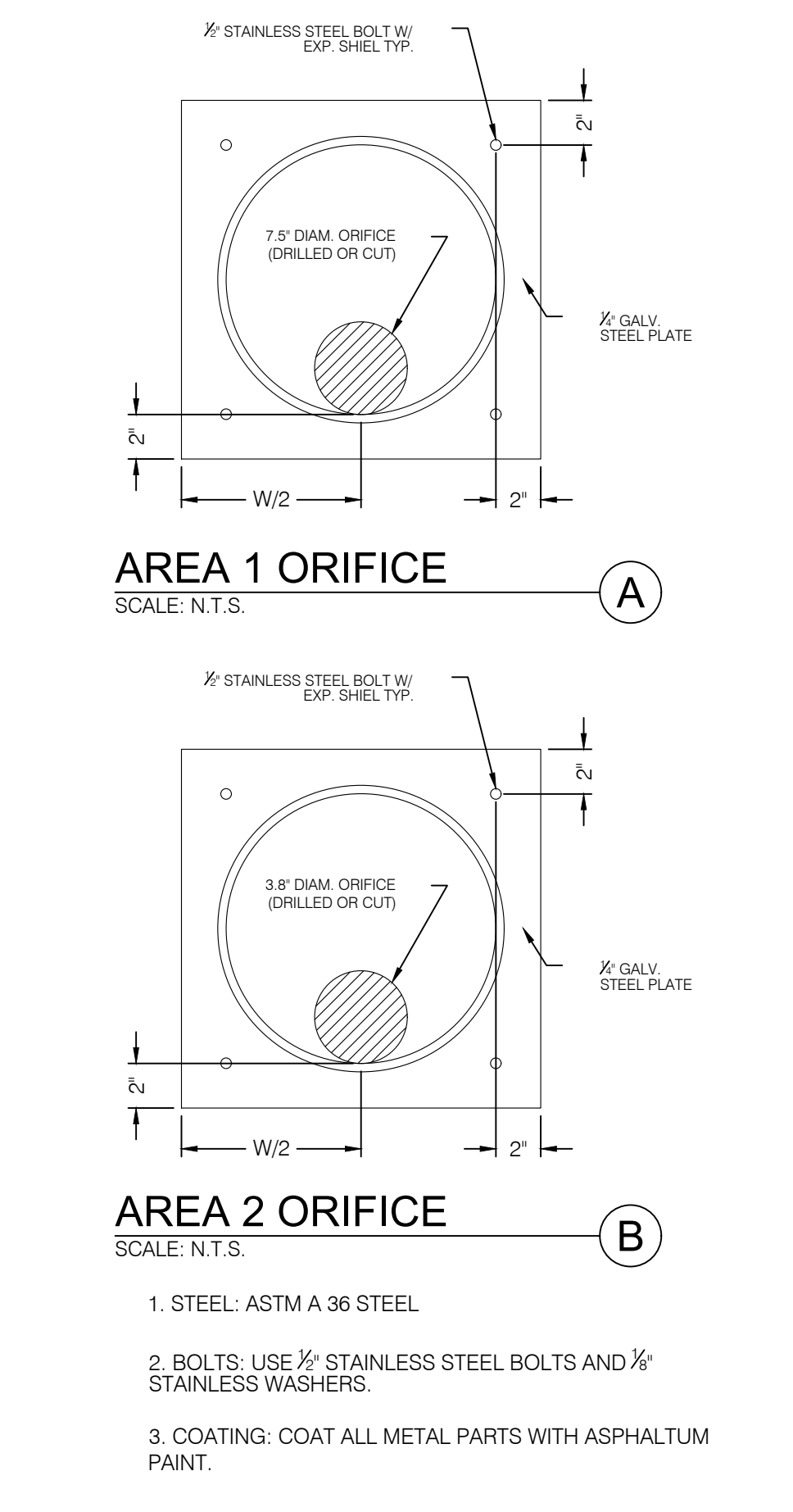
- UNTREATED BASE COURSE: PROVIDE MATERIAL SPECIFIED IN APWA SECTION 32 11 23.
  - DO NOT USE GRAVEL AS A SUBSTITUTE FOR UNTREATED BASE COURSE WITHOUT ENGINEER'S PERMISSION.
  - PLACE MATERIAL PER APWA SECTION 32 23 23.
  - COMPACT PER APWA SECTION 31 23 26 TO A MODIFIED PROCTOR DENSITY OF 95 PERCENT OR GREATER. MAXIMUM LIFT THICKNESS BEFORE COMPACTION IS 8 INCHES WHEN USING RIDING COMPACTION EQUIPMENT OR 6 INCHES WHEN USING HAND HELD COMPACTION EQUIPMENT.
- BACKFILL: PROVIDE AND PLACE PER APWA SECTION 31 23 23 ON ALL SIDES OF BASIN. COMPACT PER APWA SECTION 31 23 26 TO A MODIFIED PROCTOR DENSITY OF 95 PERCENT OR GREATER. MAXIMUM LIFT THICKNESS IS 8 INCHES BEFORE COMPACTION.
- REINFORCEMENT: ASTM A 615, GRADE 60, DEFORMED STEEL. SEE APWA SECTION 03 20 00 REQUIREMENTS.
- CONCRETE: CLASS 4000 PER APWA SECTION 03 30 04. PLACE CONCRETE PER APWA SECTION 03 30 10. CURE PER APWA SECTION 03 39 00.
- PIPE LATERALS: THE DRAWING SHOWS ALTERNATE CONNECTIONS TO THE CATCH BASIN. REFER TO CONSTRUCTION DRAWINGS FOR CONNECTION LOCATIONS.
- LADDER RUNGS: PROVIDE PLASTIC COATED STEEL LADDER RUNGS IN BOXES OVER 6 FEET DEEP. PLACE BOTTOM RUNG 6 INCHES ABOVE TOP OF PIPE.
- CURB FACE OPENING: MAKE OPENING AT LEAST 4 INCHES HIGH. PROVIDE AT LEAST A 2 INCH DROP FROM THE CONCRETE GUTTER FLOW-LINE TO THE TOP OF THE GRATE AT THE CURB FACE OPENING.



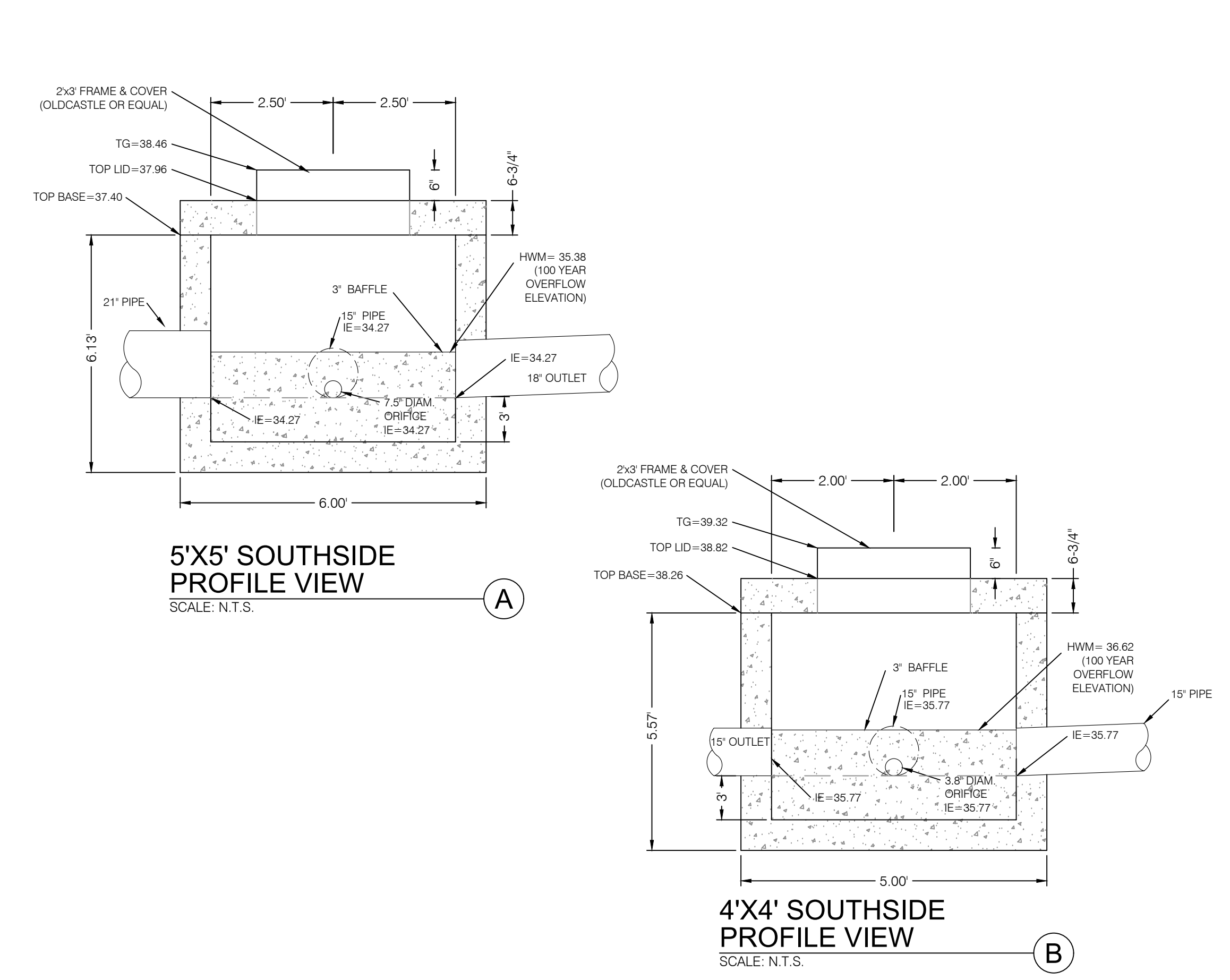
**FLARED END SECTION WITH TRASH GATE**  
SCALE: N.T.S.



**FLARED END SECTION for Round Pipe**  
SCALE: N.T.S.



**ORIFICE RESTRICTOR**  
SCALE: N.T.S.



**CATCH BASIN WITH BAFFLE**  
SCALE: N.T.S.

PROJECT NO. 1607138  
**Winston Park**  
 3908 W 1800 S  
 WEBER COUNTY, UTAH  
 SCALE MEASURES DIMENSIONS ON ALL SIZE SHEETS UNLESS OTHERWISE NOTED FOR REVISIONS SEE SHEETS

NO.	DATE	DESCRIPTION
1	02/18/17	REVISED PER COUNTY COMMENTS
2	02/18/18	REVISED PER COUNTY COMMENTS

DRAWN BY: KVIS  
 CHECKED BY: MCP  
 SURVEY DATE: 8/28/2017  
 DATE: 8/28/2017  
 DWG FILE: 1607138.rvt  
 SCALE MEASURES DIMENSIONS ON ALL SIZE SHEETS UNLESS OTHERWISE NOTED FOR REVISIONS SEE SHEETS

**BENCHMARK ENGINEERING & LAND SURVEYING**  
 No. 10360773  
 M. CHRIS POULSEN  
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**DETAILS & NOTES**  
 CDT.04  
 24 OF 24