THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. - PH. 2A, 2B & 2C & HARBOR VIEW ESTATES SUBDIVISION

WEBER COUNTY , UTAH

TRAFFIC CONTROL & SAFETY NOTES

1. BARRICADING AND DETOURING SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS OF THE CURRENT STATE OF UTAH DEPARTMENT OF TRANSPORTATION MANUAL OF TRAFFIC CONTROLS FOR CONSTRUCTION AND MAINTENANCE WORK ZONES, AND THE CURRENT WEBER COUNTY STANDARD DRAWING, AND SHALL BE APPROVED BY THE WEBER COUNTY ENGINEER PRIOR TO ANY WORK.

2. NO STREET SHALL BE CLOSED TO TRAFFIC WITHOUT WRITTEN PERMISSION FROM THE WEBER COUNTY TRAFFIC ENGINEER, EXCEPT WHEN DIRECTED BY LAW ENFORCEMENT OR FIRE OFFICIALS.

3. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO PROVIDE FOR SMOOTH TRAFFIC FLOW AND SAFETY. ACCESS SHALL BE MAINTAINED FOR ALL PROPERTIES ADJACENT TO THE WORK.

4. DETOURING OPERATIONS FOR A PERIOD OF SIX CONSECUTIVE CALENDAR DAYS, OR MORE, REQUIRE THE INSTALLATION OF TEMPORARY STREET STRIPING AND REMOVAL OF INTERFERING STRIPING BY SANDBLASTING. THE DETOURING STRIPING PLAN OR CONSTRUCTION TRAFFIC CONTROL PLAN MUST BE SUBMITTED TO THE WEBER COUNTY TRAFFIC ENGINEER FOR REVIEW AND APPROVAL.

5. ALL TRAFFIC CONTROL DEVICES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE END OF THE WORK TO THE SATISFACTION OF THE WEBER COUNTY TRAFFIC ENGINEER

6. TRAFFIC CONTROL DEVICES (TCDs) SHALL REMAIN VISIBLE AND OPERATIONAL AT ALL TIMES.

UTILITY DISCLAIMER

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT EXISTING UNDERGROUND UTILITIES AND IMPROVEMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATIONS BASED UPON RECORD INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF PLANS. LOCATIONS MAY NOT HAVE BEEN VERIFIED IN THE FIELD AND NO GUARANTEE IS MADE AS TO ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. IT SHALL BE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXISTENCE AND LOCATION OF THOSE UTILITIES SHOWN ON THESE PLANS OR INDICATED IN THE FIELD BY LOCATING SERVICES. ANY ADDITIONAL COSTS INCURRED AS A RESULT OF CONTRACTOR'S FAILURE TO VERIFY LOCATIONS OF EXISTING UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION IN THEIR VICINITY SHALL BE BORNE BY THE CONTRACTOR AND ASSUMED INCLUDED IN THE CONTRACT.

NOTICE TO CONTRACTOR

ALL CONTRACTORS AND SUBCONTRACTORS PERFORMING WORK SHOWN ON OR RELATED TO THESE PLANS SHALL CONDUCT THEIR OPERATIONS SO THAT ALL EMPLOYEES ARE PROVIDED A SAFE PLACE TO WORK AND THE PUBLIC IS PROTECTED. ALL CONTRACTORS AND SUBCONTRACTORS SHALL COMPLY WITH THE "OCCUPATIONAL SAFETY AND HEALTH REGULATIONS: OF THE U.S. DEPARTMENT OF LABOR AND THE STATE OF UTAH DEPARTMENT OF INDUSTRIAL RELATIONS CONSTRUCTION SAFETY ORDERS". THE CIVIL ENGINEER SHALL NOT BE RESPONSIBLE IN ANY WAY FOR CONTRACTORS AND SUBCONTRACTORS COMPLIANCE WITH SAID REGULATIONS AND ORDERS.

CONTRACTOR FURTHER 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 NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE CIVIL 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 THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.

SANITARY SEWER GENERAL NOTES

1. ALL SANITARY SEWER CONSTRUCTION SHALL BE IN CONFORMANCE WITH STATE STANDARDS, HEALTH DEPARTMENT STANDARDS AND WEBER COUNTY STANDARDS AND SPECIFICATIONS.
2. ALL GRAVITY SANITARY SEWER LINES SHALL BE SDR-35 PVC MATERIAL. SEWER LINE CONSTRUCTION AND MATERIALS SHALL CONFORM TO ASTM STANDARDS AND SPECIFICATIONS.
3. DISTANCES SHOWN ON PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT.
4. RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATION. PIPELINE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT AND STEEL SHIMS TO ADJUST THE MANHOLE FRAME TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS. ALL FRAMES SHALL BE ADJUSTED TO FINAL GRADE.
5. ALL SANITARY SEWER MAIN TESTING SHALL BE IN ACCORDANCE WITH THE WEBER COUNTY STANDARDS AND SPECIFICATIONS. COPIES OF ALL TEST RESULTS SHALL BE PROVIDED TO THE PUBLIC WORKS SANITARY SEWER DEPARTMENT HEAD PRIOR TO FINAL ACCEPTANCE.
6. COMPACTION TESTING OF ALL TRENCHES WITH THE PROJECT SITE MUST BE ATTAINED AND RESULTS SUBMITTED TO THE WEBER COUNTY ENGINEER PRIOR TO FINAL ACCEPTANCE.
7. CONTRACTOR IS RESPONSIBLE TO PROTECT ALL EXISTING STRUCTURES AND IMPROVEMENTS DURING INSTALLATION OF SANITARY SEWER LINE.
8. WHERE CONNECTION TO EXISTING UTILITY IS PROPOSED, CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION AND NOTIFY OWNER/ENGINEER IF LOCATION AND ELEVATION OF EXISTING UTILITY VARIES FROM THE DESIGN.
9. CAMERA TESTING AND PRESSURE TESTING PER WEBER COUNTY STANDARD.
10. CONTRACTOR IS TO INSTALL BENTONITE CLAY CUTOFF COLLARS AS SHOWN IN PLAN AND PROFILE SHEETS.
11. ALL SEWER PIPE TO MANHOLE CONNECTIONS TO USE KOR-N-SEAL CONNECTORS.

DEVELOPERS:

STEVE FENTON
6130 E. LAST CAMP CIR.
SLC, UT 84108
801-535-4055

KEVIN DEPPE
110 W. 1700 N.
CENTERVILLE, UT 84014
801-535-4032

GENERAL NOTES

1. ALL MATERIALS, WORKMANSHIP AND CONSTRUCTION OF SITE IMPROVEMENTS SHALL MEET OR EXCEED THE STANDARDS AND SPECIFICATIONS SET FORTH BY THE WEBER COUNTY ENGINEER, PLANNING, CODES AND SPECIFICATIONS AND APPLICABLE STATE AND FEDERAL REGULATIONS. WHERE THERE IS CONFLICT BETWEEN THESE PLANS AND SPECIFICATIONS, OR ANY APPLICABLE STANDARDS, THE HIGHER QUALITY STANDARD SHALL APPLY.
2. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND OR ELEVATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS, ESPECIALLY AT THE CONNECTION POINTS AND AT POTENTIAL UTILITY CONFLICTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.
3. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM ALL APPLICABLE AGENCIES. THE CONTRACTOR SHALL NOTIFY THE DESIGNATED PUBLIC WORKS INSPECTOR AT LEAST 48 HOURS PRIOR TO THE START OF ANY EARTH DISTURBING ACTIVITY, OR CONSTRUCTION ON ANY AND ALL PUBLIC IMPROVEMENTS.
4. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH WEBER COUNTY AND ALL UTILITY COMPANIES INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION AND TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE.
5. THE CONTRACTOR SHALL HAVE ONE (1) COPY OF APPROVED PLANS, AND ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB, ON SITE AT ALL TIMES.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING BUT NOT LIMITED TO, EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY.
7. IF DURING THE CONSTRUCTION PROCESS CONDITIONS ARE ENCOUNTERED BY THE CONTRACTOR, HIS SUBCONTRACTORS, OR OTHER AFFECTED PARTIES, WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
8. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR THE COMPLETION OF THE INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED TO BE PROVIDED, INSTALLED, CONSTRUCTED, REMOVED AND RELOCATED UNLESS SPECIFICALLY NOTED OTHERWISE.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADWAYS FREE AND CLEAR OF ALL CONSTRUCTION DEBRIS AND DIRT TRACKED FROM THE SITE.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING AS-BUILT DRAWINGS ON A SET OF RECORD DRAWINGS KEPT AT THE CONSTRUCTION SITE, AND AVAILABLE TO THE WEBER COUNTY INSPECTOR AT ALL TIMES.
11. THE CONTRACTOR SHALL SEQUENCE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO MINIMIZE POTENTIAL UTILITY CONFLICTS. IN GENERAL, STORM SEWER AND SANITARY SEWER SHOULD BE CONSTRUCTED PRIOR TO INSTALLATION OF WATER LINES AND DRY UTILITIES.
12. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL UTILITY RELOCATIONS CONSISTENT WITH THE CONTRACTORS SCHEDULE FOR THIS PROJECT, WHETHER SHOWN OR NOT SHOWN AS IT RELATES TO THE CONSTRUCTION ACTIVITIES CONTEMPLATED IN THESE PLANS.

SWPPP GENERAL NOTES

1. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AS REQUIRED BY WEBER COUNTY AND STATE.
2. ALL STRUCTURAL EROSION MEASURES SHALL BE INSTALLED AS SHOWN ON THE SWPP PLAN, PRIOR TO ANY OTHER GROUND-DISTURBING ACTIVITY. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED IN GOOD REPAIR BY THE CONTRACTOR, UNTIL SUCH TIME AS THE ENTIRE DISTURBED AREAS ARE STABILIZED WITH HARD SURFACE OR LANDSCAPING.

STORM SEWER GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING:
   A)OBTAIN ALL REQUIRED PERMITS FROM WEBER COUNTY OR REGULATORY AGENCIES, INCLUDING PERMITS TO WORK IN THE RIGHT-OF-WAY.
   B)RESTORATION OF EXISTING IMPROVEMENTS INCLUDING BUT NOT LIMITED TO FENCES, SOD, LANDSCAPING, PAVEMENT, SPRINKLER SYSTEM.
   C)VERIFICATION AND PROTECTION OF ALL EXISTING IMPROVEMENTS WITHIN THE LIMITS OF CONSTRUCTION.
   D)PROVIDING AS-BUILT DRAWINGS TO WEBER COUNTY AND THE ENGINEER.
   E)ALL PERMITTING, DEVELOPMENT, LOCATION, CONNECTION AND INSPECTION AND SCHEDULING FOR SUCH.
2. ALL STORM SEWER CONNECTIONS SHALL BE IN CONFORMANCE WITH COUNTY STANDARDS AND SPECIFICATIONS.
3. RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATION. PIPELINE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT, AND STEEL SHIMS TO ADJUST THE MANHOLE FRAME TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH WEBER COUNTY STANDARDS AND SPECIFICATIONS AND PLANS. ALL FRAMES SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO PLACEMENT OF ASPHALT PAVING.
4. COMPACTION OF ALL TRENCHES WITHIN THE PROJECT SITE MUST BE ATTAINED AND COMPACTION RESULTS SUBMITTED TO THE ENGINEER AND WEBER COUNTY PRIOR TO FINAL ACCEPTANCE.
5. ALL STORM DRAIN PIPES IN WEBER COUNTY RIGHT-OF-WAY SHALL BE RCP CL III.
6. ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH THE PAVEMENT AND SHALL HAVE TRAFFIC BEARING LIDS. ALL STORM SEWER LIDS SHALL BE LABELED "STORM DRAIN".
7. WHERE CONNECTION TO EXISTING UTILITY IS PROPOSED, CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION AND NOTIFY OWNER/ENGINEER IF LOCATION AND ELEVATION OF EXISTING UTILITY VARIES FROM THE DESIGN.

ALL IMPROVEMENTS TO CONFORM TO CURRENT WEBER COUNTY STANDARDS AND SPECIFICATIONS

CULINARY WATER IMPROVEMENTS TO CONFORM TO CRIMSON RIDGE WATER COMPANY UTILITY STANDARDS AND SPECIFICATIONS

GENERAL GRADING NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST APWA STANDARDS AND SPECIFICATION FOR PUBLIC WORKS AND WEBER COUNTY STANDARDS. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AWAY FROM BUILDING FOUNDATIONS AND ENTRIES. FINISHED GRADE AT FOUNDATION FOR WOOD FRAMED STRUCTURES SHALL BE 8 INCHES BELOW TOP OF FOUNDATION AND DRAINAGE SHALL BE A MINIMUM OF 5% WITHIN 10 FEET FROM THE BUILDING.
2. MAXIMUM SLOPES SHALL BE 3:1 FOR CUT AND FILL UNLESS OTHERWISE NOTED.
3. COMPACTION REQUIREMENTS AND TESTING SHALL BE PERFORMED TO MEET WEBER COUNTY STANDARDS.
4. NO FILL SHALL BE PLACED UNTIL VEGETATION HAS BEEN REMOVED AND SUB-GRADE PREPARED PER THE SOILS REPORT.
5. DUST SHALL BE CONTROLLED BY WATERING OR OTHER APPROVED METHODS.
6. CONTRACTOR SHALL COMPLY WITH STORM WATER POLLUTION PREVENTION PLAN BY INSTALLING BMP'S PRIOR TO COMMENCEMENT OF EXCAVATION ACTIVITIES. CONTACT THE WEBER COUNTY INSPECTOR FOR INSPECTION.
7. ALL RECOMMENDATIONS OF THE GEOTECHNICAL REPORT AND ALL SUBSEQUENT REPORTS, ADDENDUM ETC. SHALL BE CONSIDERED A PART OF THIS GRADING PLAN AND SHALL BE COMPLIED WITH.
8. THE CONTRACTOR SHALL CONTACT BLUE STAKES FOR LOCATION MARKING PRIOR TO COMMENCING EXCAVATION ACTIVITIES.
9. WEBER COUNTY MAY REQUIRE A PRE-CONSTRUCTION MEETING BEFORE A PERMIT IS ISSUED.
10. STREETS ADJACENT TO THE PROJECT SHALL BE CLEAN AT ALL TIMES.
11. CONTRACTOR IS RESPONSIBLE FOR ARRANGING FOR ALL REQUIRED INSPECTIONS.
12. PRIOR TO TAKING WATER FROM A WEBER COUNTY FIRE HYDRANT, THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE WATER UTILITY TO OBTAIN A WATER METER.

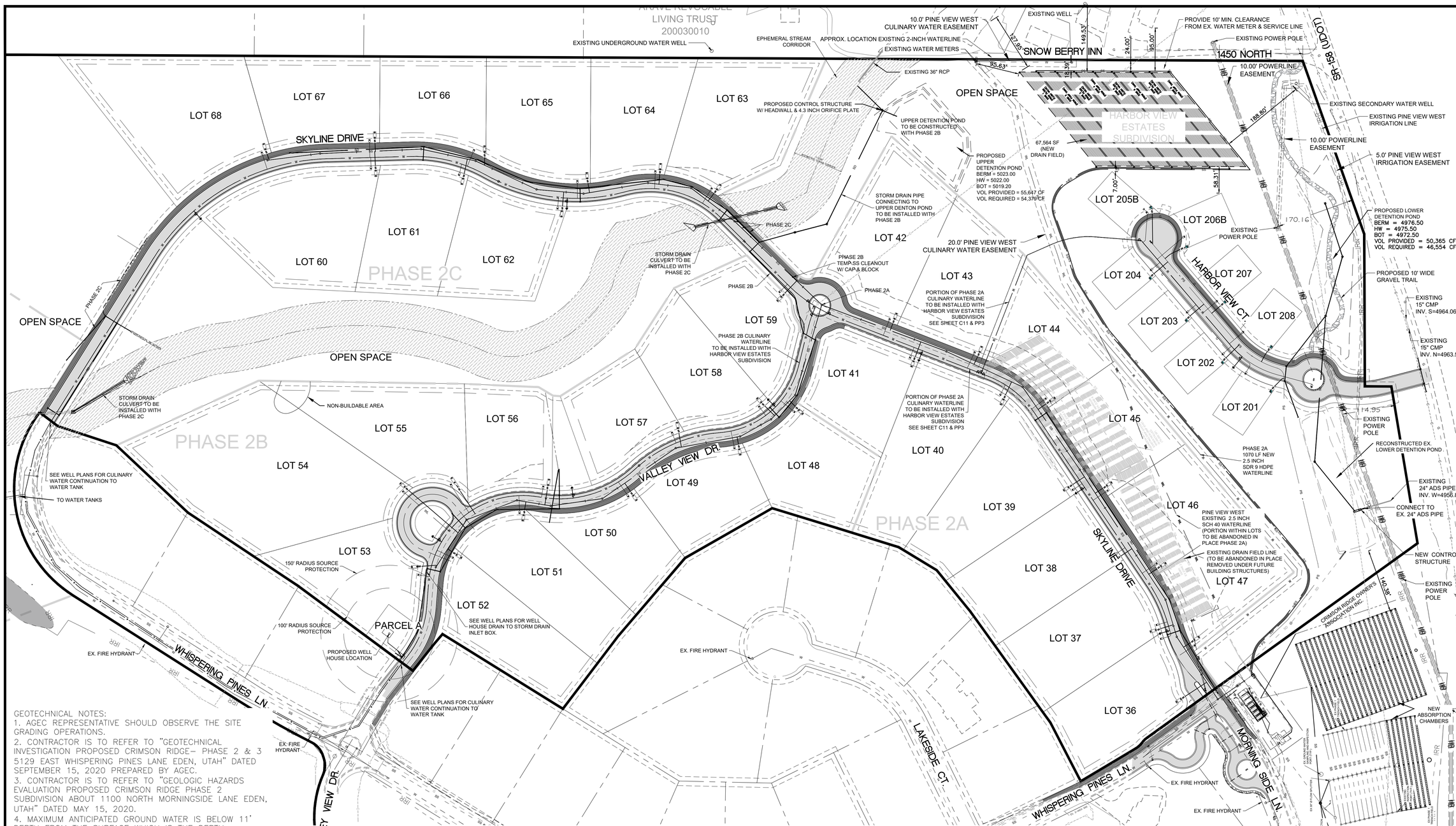
CULINARY WATER GENERAL NOTES

1. ALL INSTALLATION AND MATERIALS SHALL CONFORM TO CRIMSON RIDGE WATER COMPANY STANDARDS, SPECIFICATIONS AND PLANS. AVAILABLE UPON REQUEST.
2. BEFORE AN DURING BACK FILL OPERATIONS, CONSTRUCITON WORK WILL BE INSPECTED BY A REPRESENTATIVE OF CRIMSON RIDGE WATER COMPANY.
3. THRUST BLOCKING IS REQUIRED AT ALL BENDS AND FITTINGS. TIE RODS SHALL BE USED AT ALL BENDS AND FITTINGS WHERE THRUST BLOCKS DO NOT BEAR AGAINST UNDISTURBED SOIL.
4. ALL WATERLINES AT SEWER CROSSINGS SHALL BE LOCATED ABOVE AND HAVE AN 18-INCH VERTICAL SEPARATION FROM THE SEWER PIPE. IF THIS IS NOT PROVIDED, THE WATERLINE SHALL BE INSTALLED WITH 20 L.F. OF CONCRETE CASING CENTERED OVER THE SEWER PIPE.
5. DISINFECTION TESTS IS REQUIRED PER WATER COMPANY SPECIFICATIONS.
6. A MINIMUM HORIZONTAL CLEARANCE OF 10 FEET SHALL BE MAINTAINED FROM SANITARY SEWER MAINS.
7. UNLESS OTHERWISE SPECIFIED, ALL WATERLINES SHALL BE AWWA C900 PVC CLASS 200 PIPE, PER ASTM D2241. WASHOUT ASSEMBLIES SHALL CONSIST OF A KUPFERLE FOUNDRY CO. 2" BLOW-OFF HYDRANT (OR WATER COMPANY APPROVED EQUIV.) PLACED IN A BOX LOCATED IN THE PARK STRIP. WATER LINES SHALL BE ADJUSTED IN DEPTH AND GATE VALVES IN LOCATIONS AS NOT TO INTERFERE WITH STORM DRAIN CROSSINGS.
8. CONTRACTOR SHALL LOCATE VALVES PRIOR TO CONNECTION WITH EXISTING SYSTEM, BUT SHALL NOT OPERATE ANY VALVE WITHOUT PERMISSION FROM THE WATER UTILITY.
9. ALL WATER MAINS, VALVES, FIRE HYDRANTS, SERVICES AND APPURTENANCES SHALL BE INSTALLED, TESTED, AND APPROVED PRIOR TO PAVING.
10. THERE SHALL BE A WATER SUPPLY TO THE DEVELOPMENT BEFORE ANY WOOD CONSTRUCTION STARTS.
11. THE WATER UTILITY REQUIRES THE USE OF CORROSION RESISTANT MATERIALS FOR ALL CULINARY WATER IMPROVEMENTS. SPECIFICALLY, ROMAC BLUE BOLTS OR STAINLESS STEEL BOLTS MUST BE USED ON ALL FITTINGS. FURTHER, ALL METAL FITTINGS SHALL BE POLY WRAPPED.

SHEET INDEX

PROFESSIONAL STRUCTURAL ENGINEER
4/29/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. - PH. 2A, 2B, & 2C
& HARBOR VIEW ESTATES SUBDIVISION
CONSTRUCTION DOCUMENTS



GEOTECHNICAL NOTES:
1. AGEC REPRESENTATIVE SHOULD OBSERVE THE SITE GRADING OPERATIONS.
2. CONTRACTOR IS TO REFER TO "GEOTECHNICAL INVESTIGATION PROPOSED CRIMSON RIDGE– PHASE 2 & 3 5129 EAST WHISPERING PINES LANE EDEN, UTAH" DATED SEPTEMBER 15, 2020 PREPARED BY AGEC.
3. CONTRACTOR IS TO REFER TO "GEOLOGIC HAZARDS EVALUATION PROPOSED CRIMSON RIDGE PHASE 2 SUBDIVISION ABOUT 1100 NORTH MORNINGSIDE LANE EDEN, UTAH" DATED MAY 15, 2020.
4. MAXIMUM ANTICIPATED GROUND WATER IS BELOW 11' DEPTH FROM THE SURFACE WHICH IS THE DEPTH INVESTIGATED WITH THE GEOTECH REPORT. EXISTING MONITORING WELLS INSTALLED WITH PHASE 1 TO VERIFY.

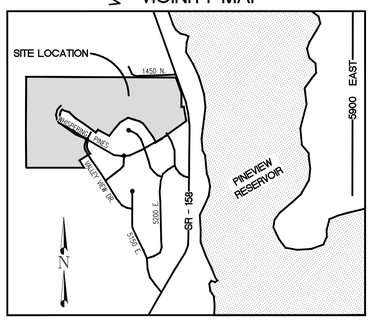
ENGINEER
GARDNER ENGINEERING
TYLER M. NIELSON
(801) 476–0202
tyler@gecivil.com

CULINARY WATER
CRIMSON RIDGE WATER COMPANY
801–535–4032
110 W. 1700 N. CENTERVILLE, UT 84014

PUBLIC WORKS / SANITARY SEWER
CHAD MEYERHOFFER (WEBER COUNTY ENGINEERING)
(801) 399–8004
cmeyerho@co.weber.ut.us

WEBER COUNTY FIRE MARSHAL
DAVID REED
(801) 782–3580 EXT. 205
dreed@weberfd.com

VICINITY MAP



HOUSING TYPE
SINGLE FAMILY RESIDENTIAL HOMES.

ORENCO 1,000 GALLON PROCESSOR TANK WITH PUMP DISCHARGE FOR EACH LOT IN HARBOR VIEW ESTATES SUBDIVISION. SEE DETAIL SHEET D1. (TO BE INSTALLED BY FUTURE LOT OWNER).

FOR PHASE 2A, 2B, AND 2C, ORENCO 1,500 GALLON GRAVITY PROCESSOR FOR 5 BEDROOMS AND LARGER. OTHERWISE 1,000 GALLON GRAVITY PROCESSOR FOR 4 BEDROOMS OR LESS. 2000 GALLON SEPTIC TANK MAY ALSO BE INSTALLED AS AVAILABLE. SEE DETAIL SHEET D2. (TO BE INSTALLED BY FUTURE LOT OWNER).

DEVELOPERS:

STEVE FENTON
6130 E. LAST CAMP CIR.
SLC, UT 84108
801–535–4055

KEVIN DEPPE
110 W. 1700 N.
CENTERVILLE, UT 84014
801–535–4032

0' 50' 100' 200' 300'
Scale in Feet
1" = 100'

LEGEND

- SUBDIVISION BOUNDARY
- ROAD CENTERLINE
- EXISTING EDGE OF ASPHALT
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- FINISH GRADE 1' CONTOUR
- EXISTING SANITARY SEWER
- NEW SANITARY SEWER
- NEW PRESSURE SEWER LATERAL
- EXISTING STORM DRAIN
- NEW STORM DRAIN
- EXISTING CULINARY WATER
- NEW CULINARY WATER
- NEW CULINARY WATER LATERAL
- NEW CULINARY WATER METER
- EXISTING FIRE HYDRANT
- NEW FIRE HYDRANT
- EXISTING SECONDARY WATER
- NEW ASPHALT PAVING

SCALE: 1" = 100'
DATE: 3/22/2021
DESIGN: BSD/KJS
DRAWN: BSD/KJS
CHECKED: TMN
DWG: 8-1.0208 – B&H INVESTMENTS\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE – C05.DWG

REVISIONS

DATE	DESCRIPTION

PROFESSIONAL STRUCTURAL ENGINEER
3/22/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

OVERALL UTILITY PLAN
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL · LAND PLANNING
MUNICIPAL · LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

C1

LATE PLEISTOCENE TO HOLOCENE LANDSLIDE AND/OR SLOPE COLLUVIUM

ARAVE REVOCABLE LIVING TRUST 200030010

EPHEMERAL STREAM CORRIDOR

SNOW BERRY INN

1450 NORTH

10.00' POWERLINE EASEMENT

UPPER DETENTION POND LOCATOIN

OPEN SPACE

SHEET C8

SR-158 (UDOT)

SHEET PP8

SHEET C7

SHEET C6

SHEET C3 & SHEET C4

SHEET PP7

SHEET PP6

SHEET PP5 (RT)

SHEET PP5

SHEET PP4

SHEET PP3

SHEET PP2

SHEET PP1

LOT 68 LOT 67 LOT 66 LOT 65 LOT 64 LOT 63 LOT 62 LOT 61 LOT 60 LOT 59 LOT 58 LOT 57 LOT 56 LOT 55 LOT 54 LOT 53 LOT 52 LOT 51 LOT 50 LOT 49 LOT 48 LOT 47 LOT 46 LOT 45 LOT 44 LOT 43 LOT 42 LOT 41 LOT 40 LOT 39 LOT 38 LOT 37 LOT 36 LOT 201 LOT 202 LOT 203 LOT 204 LOT 205R LOT 206R LOT 207 LOT 208

SKYLINE DRIVE

HARBOR VIEW CT.

VALLEY VIEW DR.

SKYLINE DRIVE

WHISPERING PINES LN

LAKESIDE CT.

MORNING SIDE LN

LOWER DETENTION POND LOCATION

RECONSTRUCTED EX. LOWER DETENTION

HOLOCENE LANDSLIDE

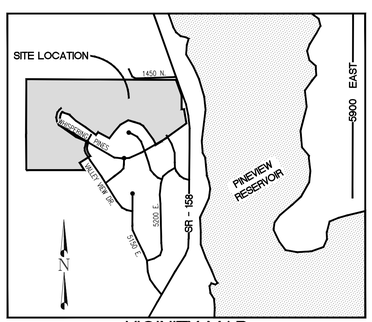
NON-BUILDABLE AREA

PARCEL A

CRIMSON RIDGE OWNER'S ASSOCIATION INC.

HOLOCENE

GEOTECHNICAL NOTES:
1. AGEC REPRESENTATIVE SHOULD OBSERVE THE SITE GRADING OPERATIONS.
2. CONTRACTOR IS TO REFER TO "GEOTECHNICAL INVESTIGATION PROPOSED CRIMSON RIDGE– PHASE 2 & 3 5129 EAST WHISPERING PINES LANE EDEN, UTAH" DATED SEPTEMBER 15, 2020 PREPARED BY AGEC.
3. CONTRACTOR IS TO REFER TO "GEOLOGIC HAZARDS EVALUATION PROPOSED CRIMSON RIDGE PHASE 2 SUBDIVISION ABOUT 1100 NORTH MORNINGSIDE LANE EDEN, UTAH" DATED MAY 15, 2020.



VICINITY MAP

0' 50' 100' 200' 300'

Scale in Feet
1" = 100'

LEGEND

- SUBDIVISION BOUNDARY
- ROAD CENTERLINE
- EXISTING EDGE OF ASPHALT
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- FINISH GRADE 1' CONTOUR
- EXISTING SANITARY SEWER
- NEW SANITARY SEWER
- NEW PRESSURE SEWER LATERAL
- EXISTING STORM DRAIN
- NEW STORM DRAIN
- EXISTING CULINARY WATER
- NEW CULINARY WATER
- NEW CULINARY WATER LATERAL
- NEW CULINARY WATER METER
- EXISTING FIRE HYDRANT
- NEW FIRE HYDRANT
- EXISTING SECONDARY WATER
- NEW ASPHALT PAVING

SCALE: 1" = 100'
DATE: 3/22/2021
DESIGN: BSD/WJS
DRAWN: BSD/WJS
CHECKED: TMN
DWG: R:\2018 - B&H INVESTMENTS\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - C05.DWG

REVISIONS

DATE	DESCRIPTION

PROFESSIONAL STRUCTURAL ENGINEER
3/22/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

OVERALL SHEET LAYOUT
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL · LAND PLANNING
MUNICIPAL · LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

C2

LOT 36

EXISTING FENCE PORTION (TO REMAIN)

SEE SHEET C6, D3, D4, AND D6 FOR SEWER PLANT

DEMO 111 LF EXISTING FENCING (PHASE 2&)

RELOCATE EXISTING ELECTRICAL CABINET & ASSOCIATED ELECTRICAL WIRING (COORDINATE W/ UTILITY OWNER)

EXISTING FENCE PORTION (TO REMAIN)

RELOCATE EXISTING COMMUNICATION BOX (COORDINATE W/ UTILITY OWNER)

PROTECT EXISTING 2-INCH GAS

EXISTING WATER METER

PORTION OF EXISTING SEWER LINE TO BE RECONSTRUCTED AND 4" AIR LINE INSTALLED. REFER TO SHEET D4.

APPROXIMATE LOCATION EXISTING COMMUNICATION LINE (PROTECT/RELOCATE AS REQUIRED)

DEMO EX COLUMN

ADJUST INLET GRATE TO FINISH GRADE

ADJUST WATER VALVE COVER TO FINISH GRADE

DEMO PORTION EXISTING ASPHALT TRAIL

DEMO EXISTING STAMPED CONCRETE

DEMO EXISTING CURB & GUTTER

DEMO EX PILLAR

ADJUST EX. ELECTRICAL TRANSFORMER TO FINISH GRADE (AS REQUIRED)

PORTION OF EXISTING SEWER LINE TO BE REROUTED. REFER TO SHEET D4.

DEMO/EXISTING IRR VALVE

EX. SS LINE (TO REMAIN)

PROTECT EXISTING 2-INCH GAS

DEMO/RELOCATE EXISTING IRR PIPES TO NEW LANDSCAPING AT ENTRYWAY (FIELD VERIFY PIPE LOCATIONS AS REQUIRED)

END DEMO ASPHALT TRAIL

END DEMO CURB & GUTTER

END DEMO CURB & GUTTER

DEMO EXISTING ROCK RETAINING WALL

SLOPE GRADE AT 2% SLOPE TO MATCH EXISTING

EXISTING WATER METER

EX. SSCO (TO REMAIN)

TYPE III BARRICADES

DEMO EX INLET BOX

RELOCATE EXISTING COMMUNICATION BOX (COORDINATE W/ UTILITY OWNER)

RELOCATE EXISTING POWER METERS & ASSOCIATED ELECTRICAL WIRING (COORDINATE W/ UTILITY OWNER)

DEMO/SALVAGE (AS DESIRED BY OWNERS) EXIST AUTOMATIC GATE OPENER PULL BOX & GATE

ADJUST TO FINISH GRADE. EXISTING COMMUNICATION BOX (COORDINATE W/ UTILITY OWNER)

END DEMO CURB & GUTTER

EXISTING COMMUNITY MAIL BOXES (TO REMAIN)

TYPE III BARRICADES

END TRAIL DEMO

EX. SSCO (TO REMAIN)

POSSIBLE EXISTING PUMP (ADJUST AS REQUIRED)

EXISTING ELECTRIC BOX & SIGN (TO REMAIN)

EXISTING ROCK RETAINING WALL (TO REMAIN)

EXISTING ROCK RETAINING WALL (TO REMAIN)

EXISTING FIRE HYDRANT (TO REMAIN)

END DEMO CURB & GUTTER

DEMO EXISTING CURB & GUTTER

EXISTING IRRIGATION VALVES (TO REMAIN)

DEMO/RELOCATE EXISTING GATE POWER SOURCE (AS APPLICABLE)

EXISTING FIRE HYDRANT (TO REMAIN)

EXISTING BACK FLOW PREVENTER (TO REMAIN)

EXISTING WATER METER (TO REMAIN)

EX. 2-INCH GAS

LEGEND

- SUBDIVISION BOUNDARY
- ROAD CENTERLINE
- EXISTING EDGE OF ASPHALT
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- FINISH GRADE 1' CONTOUR
- SS — EXISTING SANITARY SEWER
- SS — NEW SANITARY SEWER
- SL — NEW PRESSURE SEWER LATERAL
- SD — EXISTING STORM DRAIN
- SD — NEW STORM DRAIN
- W — EXISTING CULINARY WATER
- W — NEW CULINARY WATER
- WL — NEW CULINARY WATER LATERAL
- WM — NEW CULINARY WATER METER
- EXISTING FIRE HYDRANT
- NEW FIRE HYDRANT
- IRR — EXISTING SECONDARY WATER
- NEW ASPHALT PAVING

0' 10' 20' 40' 60'

Scale in Feet
1" = 20'

SCALE: 1" = 20'
DATE: 3/22/2021
DESIGN: BSD/WJS
DRAWN: BSD/WJS
CHECKED: TMN

REVISIONS

DATE	DESCRIPTION

DWG: R:\2018 - B&H INVESTMENTS\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - C05.DWG

PROFESSIONAL STRUCTURAL ENGINEER
3/22/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

ENTRY ACESS DEMO

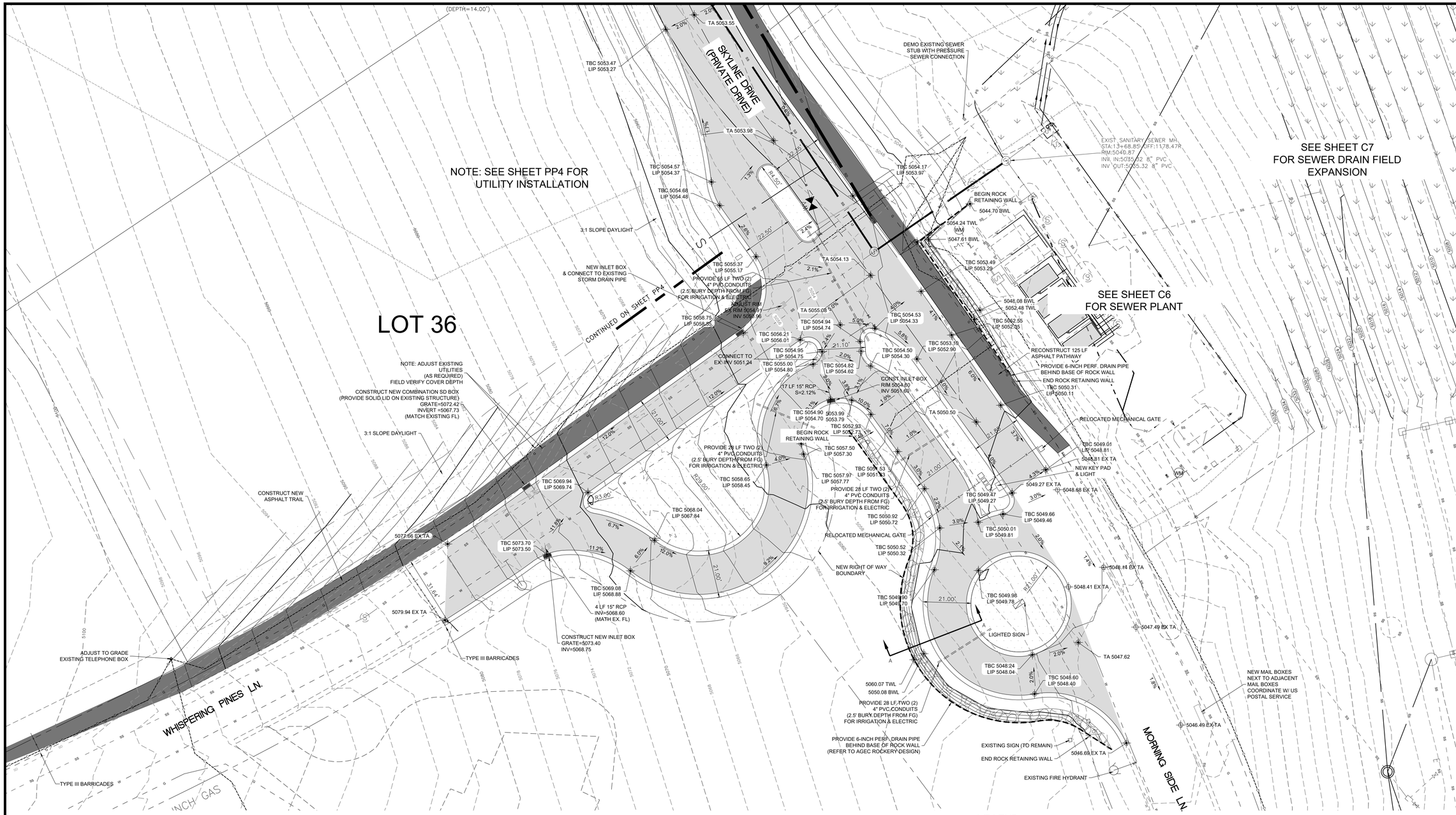
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2

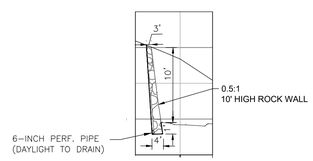
1250 NORTH 5200 EAST

EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL • LAND PLANNING
MUNICIPAL • LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

C3





CROSS SECTION VIEW A-A
(SEE GEOTECH NOTE 4., 5. 6. ON SHEET PP1)

LEGEND

- SUBDIVISION BOUNDARY
- ROAD CENTERLINE
- EXISTING EDGE OF ASPHALT
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- FINISH GRADE 1' CONTOUR
- EXISTING SANITARY SEWER
- NEW SANITARY SEWER
- NEW PRESSURE SEWER LATERAL
- EXISTING STORM DRAIN
- NEW STORM DRAIN
- EXISTING CULINARY WATER
- NEW CULINARY WATER
- NEW CULINARY WATER LATERAL
- NEW CULINARY WATER METER
- EXISTING FIRE HYDRANT
- NEW FIRE HYDRANT
- EXISTING SECONDARY WATER
- NEW ASPHALT PAVING
- 6" DEPTH CUT AREA OVER EX & 6" TOPSOIL OR 6" TRAIL MATERIAL PLACEMENT (HYDRO SEED IN DESIGNATED PHASE)
- HYDRO SEED FILL SLOPES IN DESIGNATED PHASE

0' 10' 20' 40' 60'
Scale in Feet
1" = 20'

SCALE: 1" = 20'
DATE: 3/22/2021
DESIGN: BSD/WJS
DRAWN: BSD/WJS
CHECKED: TMN
DWG: R:\2008 - B&H INVESTMENTS\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - C05.DWG

REVISIONS

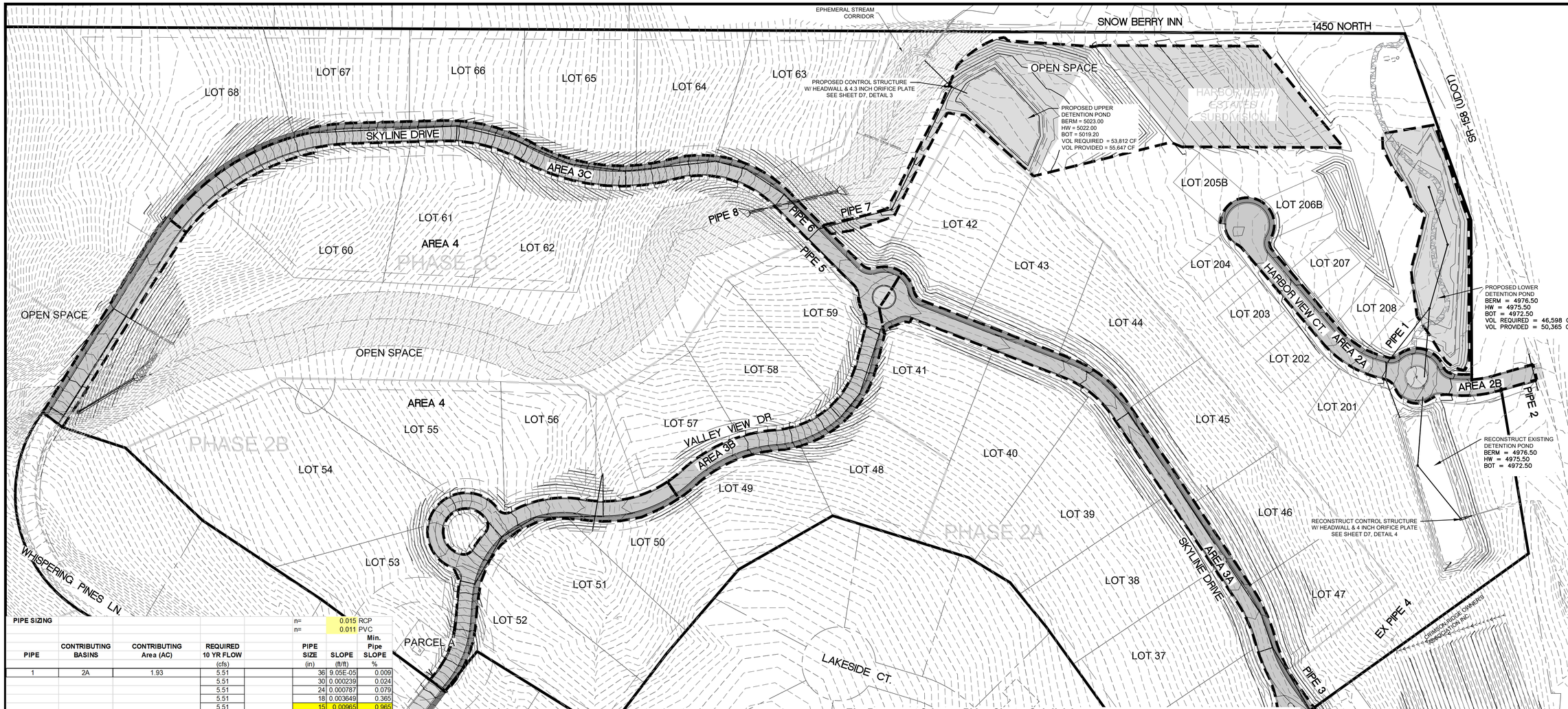
DATE	DESCRIPTION

PROFESSIONAL STRUCTURAL ENGINEER
3/22/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

ENTRY ACESS REGRADING
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL • LAND PLANNING
MUNICIPAL • LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

C4



PIPE SIZING							
					n=	0.015	RCP
					n=	0.011	PVC
PIPE	CONTRIBUTING BASINS	CONTRIBUTING Area (AC)	REQUIRED 10 YR FLOW (cfs)		PIPE SIZE (in)	SLOPE (ft/ft)	Min. Pipe SLOPE %
1	2A	1.93	5.51		36	9.05E-05	0.009
			5.51		30	0.000239	0.024
			5.51		24	0.000787	0.079
			5.51		18	0.003649	0.365
			5.51		15	0.00965	0.965
			5.51		12	0.031722	3.172
2	2B	0.72	2.04		36	1.24E-05	0.001
			2.04		30	3.28E-05	0.003
			2.04		24	0.000108	0.011
			2.04		18	0.0005	0.050
			2.04		15	0.001322	0.132
			2.04		12	0.004346	0.435
3	3A	1.34	1.63		36	7.89E-06	0.001
			1.63		30	2.09E-05	0.002
			1.63		24	6.86E-05	0.007
			1.63		18	0.000318	0.032
			1.63		15	0.000841	0.084
			1.63		12	0.002766	0.277
4	1 (Ex.), 3A	5.93	5.58		36	9.26E-05	0.009
	(Plus Existing Flows Estimate)		5.58		30	0.000245	0.024
			5.58	(Ex S=17.77%)	24	0.000805	0.081
			5.58		18	0.003735	0.373
			5.58		15	0.009875	0.988
			5.58		12	0.032465	3.246
5	3B	1.29	1.62		36	7.8E-06	0.001
			1.62		30	2.06E-05	0.002
			1.62		24	6.78E-05	0.007
			1.62		18	0.000315	0.031
			1.62		15	0.000832	0.083
			1.62		12	0.002735	0.274
6	3C	1.88	2.59		36	2E-05	0.002
			2.59		30	5.28E-05	0.005
			2.59		24	0.000174	0.017
			2.59		18	0.000806	0.081
			2.59		15	0.00213	0.213
			2.59		12	0.007002	0.700
7	3B, 3C	3.18	4.21		36	5.28E-05	0.005
			4.21		30	0.00014	0.014
			4.21		24	0.000459	0.046
			4.21		18	0.002127	0.213
			4.21		15	0.005624	0.562
			4.21		12	0.01849	1.849
8	Upsteam+Area 4	23.05	596.00	(Upstream	72	0.026226	2.623
		(Additional area added	596.00	Design Flows	60	0.069347	6.935
		to Upstream design)	596.00	with 100 Yr)	54	0.121638	12.164
			596.00		48	0.227973	22.797
			596.00		36	1.057361	105.736

The Reserve at Crimson Ridge Cluster Subdivision
1250 North 5200 East
Eden, Weber County, Utah
(Phase 2B-2C 11 detainable homes)

Gardner Engineering

Areas	Total Site Sq. Ft.	Acre	C
Asphalt Hard Surface	200,043	4.5923	0.90
Gravel Areas	0	0.0000	0.50
Landscape	49,433	1.1348	0.10
Detention Ponds	58,697	1.3475	0.10
Building & Concrete	143,000	3.2828	0.90
Total/Weighted	**451,173**	10.3575	0.71

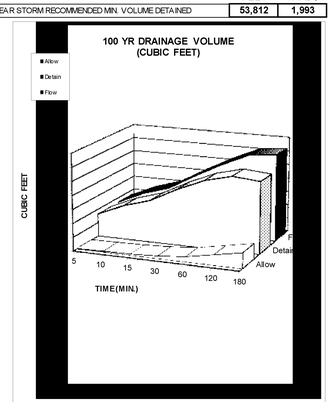
Allow Release Rate (cfs/acre): 0.100 cfs/acre
Q Allowable (cfs): 1.04
Undetained Release: 0.00 cfs
Total Allowed Release: 1.04 cfs

100 YEAR STORM RECOMMENDED MIN. VOLUME DETAINED	FEET	YARDS
	53,812	**1,993**

100 yr

MIN	Runoff Vol (cf) Allowable	*Inch / Hr i100	Total Vol (cf) 100 YEAR	Detain Vol (cf) Difference
5	311	7.57	16,660	16,349
10	621	5.76	25,353	24,731
15	932	4.76	31,427	30,495
30	1,864	3.21	42,367	40,522
60	3,729	1.99	52,554	48,825
120	7,457	1.16	61,269	53,812
180	11,186	0.797	63,144	51,958
360	22,372	0.452	71,622	49,249
720	44,744	0.286	90,636	45,892
1440	89,489	0.166	105,214	15,725

NOAA - Atlas 14



Orifice Calculation

H =	4.5	Maximum water height (ft)
Q =	1.04	Flowrate out of orifice (cfs)
Cc =	0.62	Coefficient of Contraction
Cv =	0.98	Coefficient of Velocity
Area =	0.100	Orifice Area (ft^2)
Π =	3.14	
g =	32.17	Gravitational Constant
d =	4.29	Orifice Diameter (in)
d =	**4 2/7**	**Orifice**

The Reserve at Crimson Ridge Cluster Subdivision
1250 North 5200 East
Eden, Weber County, Utah
(Harbor View Esates Subdivison and Phase 2A Crimson Ridge - 21 LOTS)

Gardner Engineering

Areas	Total Site Sq. Ft.	Acre	C
Asphalt Hard Surface	108,484	2.4904	0.90
Gravel Areas	0	0.0000	0.50
Landscape	104,577	2.4007	0.10
Detention Ponds	58,326	1.3390	0.10
Building & Concrete	182,249	4.1838	0.90
Total/Weighted	**453,636**	10.4140	0.61

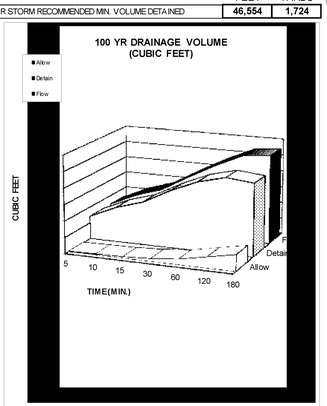
Allow Release Rate (cfs/acre): 0.090 cfs/acre
Q Allowable (cfs): 0.94
Total Allowed Release: 0.94 cfs

100 YEAR STORM RECOMMENDED MIN. VOLUME DETAINED	FEET	YARDS
	46,554	**1,724**

100 yr

MIN	Runoff Vol (cf) Allowable	*Inch / Hr i100	Total Vol (cf) 100 YEAR	Detain Vol (cf) Difference
5	281	7.57	14,491	14,210
10	562	5.76	22,052	21,491
15	842	4.76	27,335	26,493
30	1,685	3.21	36,868	35,184
60	3,369	1.99	45,712	42,343
120	6,739	1.16	53,293	46,554
180	10,108	0.797	54,924	44,816
360	20,216	0.452	62,297	42,081
720	40,432	0.286	78,836	38,404
1440	80,864	0.166	91,516	10,653

NOAA - Atlas 14



Orifice Calculation

H =	7.5	Maximum water height (ft)
Q =	0.94	Flowrate out of orifice (cfs)
Cc =	0.62	Coefficient of Contraction
Cv =	0.98	Coefficient of Velocity
Area =	0.070	Orifice Area (ft^2)
Π =	3.14	
g =	32.17	Gravitational Constant
d =	3.59	Orifice Diameter (in)
d =	**3 3/5**	**Orifice**

EXISTING LOWER POND ORIFICE DESIGN SIZE = 19.8 INCH = 2.14 SF AREA
ADDITIONAL AREA FOR HARBOR VIEW ESTATES AND CRIMSON RIDGE PHASE 2A
= 0.07 SF (FOR 0.1 CFS/ ACRE RELEASE

LOWER POND NEW ORIFICE = 20.2 INCH = 2.21 SF

(SEE SHEET D7, DETAIL 4 FOR NEW CONTROL STRUCTURE DETAIL)

0' 50' 100' 200' 300'
Scale in Feet
1" = 100'

REVISIONS	
DATE	DESCRIPTION

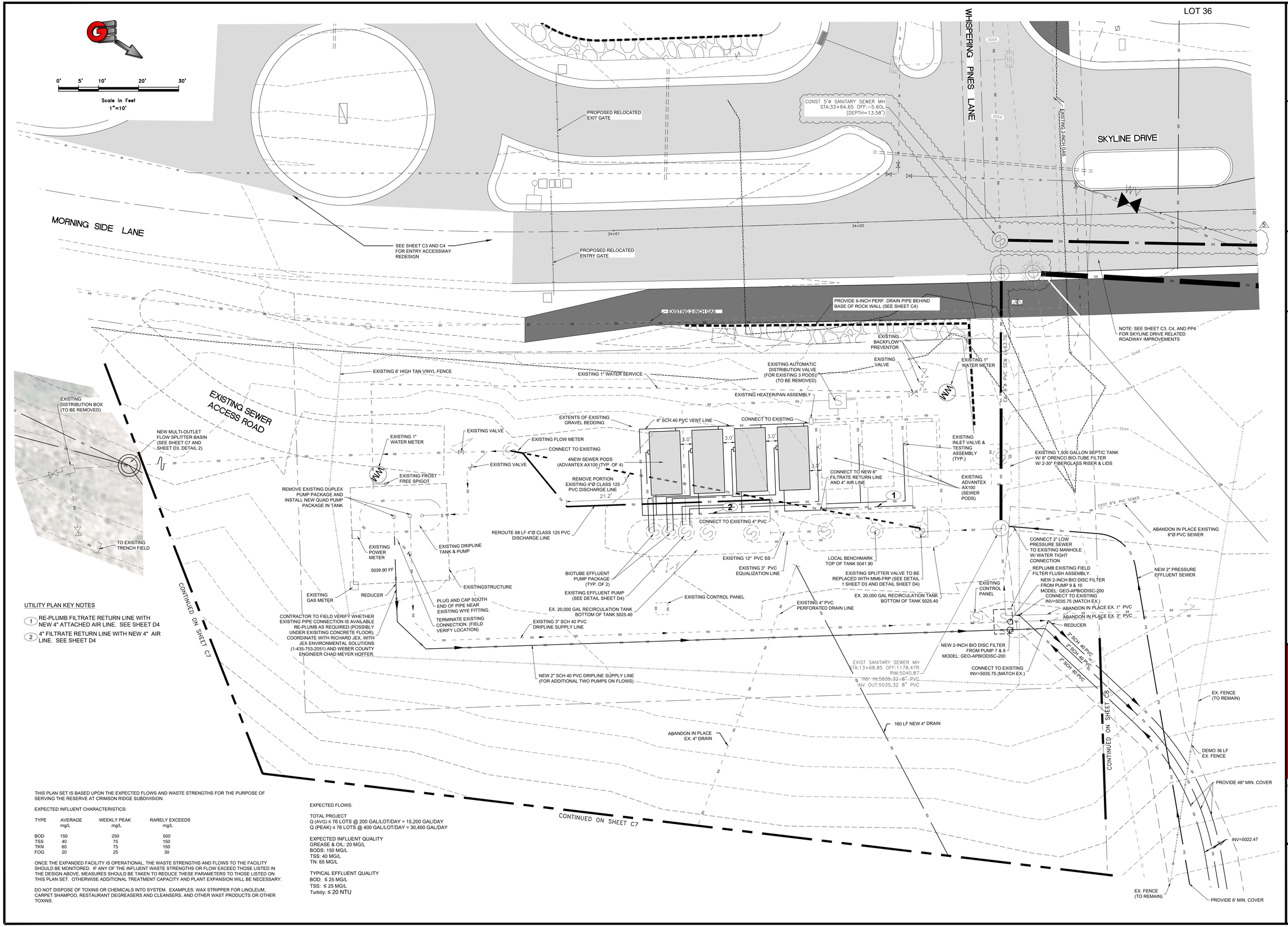
SCALE: 1" = 100'
DATE: 3/22/2021
DESIGN: BSD/WJS
DRAWN: BSD/WJS
CHECKED: TMN
DWG: R:\2008 - B&M INVESTMENTS\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - C05.DWG

PROFESSIONAL STRUCTURAL ENGINEER
3/22/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

DRAINAGE CALCS
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL - LAND PLANNING
MUNICIPAL - LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

C5



UTILITY PLAN KEY NOTES

1. RE-PLUMB FILTRATE RETURN LINE WITH NEW 4" ATTACHED AIR LINE. SEE SHEET D4
2. 4" FILTRATE RETURN LINE WITH NEW 4" AIR LINE. SEE SHEET D4

THIS PLAN SET IS BASED UPON THE EXPECTED FLOWS AND WASTE STRENGTHS FOR THE PURPOSE OF SERVING THE RESERVE AT CRIMSON RIDGE SUBDIVISION.

EXPECTED INFLUENT CHARACTERISTICS:

TYPE	AVERAGE mg/L	WEEKLY PEAK mg/L	RARELY EXCEEDS mg/L
BOD	150	250	500
TSS	40	75	150
TKN	65	75	150
FOG	20	25	30

ONCE THE EXPANDED FACILITY IS OPERATIONAL, THE WASTE STRENGTHS AND FLOWS TO THE FACILITY SHOULD BE MONITORED. IF ANY OF THE INFLUENT WASTE STRENGTHS OR FLOW EXCEED THOSE LISTED IN THE DESIGN ABOVE, MEASURES SHOULD BE TAKEN TO REDUCE THESE PARAMETERS TO THOSE LISTED ON THIS PLAN SET. OTHERWISE ADDITIONAL TREATMENT CAPACITY AND PLANT EXPANSION WILL BE NECESSARY.

DO NOT DISPOSE OF TOXINS OR CHEMICALS INTO SYSTEM. EXAMPLES: WAX STRIPPER FOR LINOLEUM, CARPET SHAMPOO, RESTAURANT DEGREASERS AND CLEANSERS, AND OTHER WAST PRODUCTS OR OTHER TOXINS.

EXPECTED FLOWS:

TOTAL PROJECT
Q (AVG) ≤ 76 LOTS @ 200 GAL/LOT/DAY = 15,200 GAL/DAY
Q (PEAK) ≤ 76 LOTS @ 400 GAL/LOT/DAY = 30,400 GAL/DAY

EXPECTED INFLUENT QUALITY
GREASE & OIL: 20 MG/L
BODS: 150 MG/L
TSS: 40 MG/L
TN: 65 MG/L

TYPICAL EFFLUENT QUALITY
BOD: ≤ 25 MG/L
TSS: ≤ 25 MG/L
Turbity: ≤ 20 NTU

SCALE: 1"=10'
DATE: 9/30/2021
DESIGN: BSD/WJS
DRAWN: BSD/WJS
CHECKED: TMN

REVISIONS

DATE	DESCRIPTION
4 5/13/21	SEWER UPDATES
5 5/26/21	SEWER UPDATES

DWG: R:\0208 - BAM INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - C05.DWG

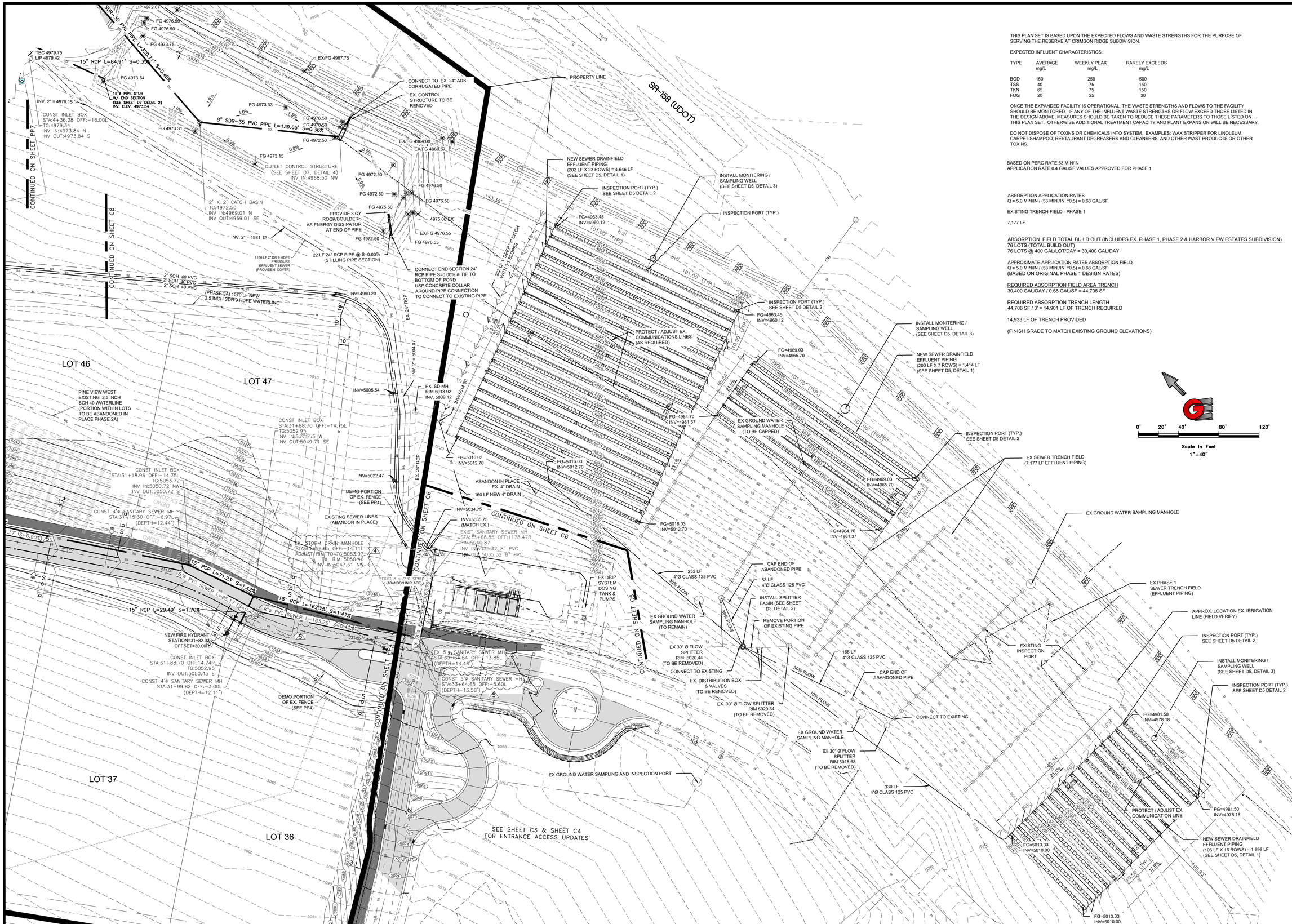
PROFESSIONAL STRUCTURAL ENGINEER
3/30/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

EFFLUENT TREATMENT FACILITY

THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL · LAND PLANNING
MUNICIPAL · LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

C6



THIS PLAN SET IS BASED UPON THE EXPECTED FLOWS AND WASTE STRENGTHS FOR THE PURPOSE OF SERVING THE RESERVE AT CRIMSON RIDGE SUBDIVISION.

EXPECTED INFLUENT CHARACTERISTICS:

TYPE	AVERAGE mg/L	WEEKLY PEAK mg/L	RARELY EXCEEDS mg/L
BOD	150	250	500
TSS	40	75	150
TKN	65	75	150
FOG	20	25	30

ONCE THE EXPANDED FACILITY IS OPERATIONAL, THE WASTE STRENGTHS AND FLOWS TO THE FACILITY SHOULD BE MONITORED. IF ANY OF THE INFLUENT WASTE STRENGTHS OR FLOW EXCEED THOSE LISTED IN THE DESIGN ABOVE, MEASURES SHOULD BE TAKEN TO REDUCE THESE PARAMETERS TO THOSE LISTED ON THIS PLAN SET. OTHERWISE ADDITIONAL TREATMENT CAPACITY AND PLANT EXPANSION WILL BE NECESSARY.

DO NOT DISPOSE OF TOXINS OR CHEMICALS INTO SYSTEM. EXAMPLES: WAX STRIPPER FOR LINOLEUM, CARPET SHAMPOO, RESTAURANT DEGREASERS AND CLEANSERS, AND OTHER WAST PRODUCTS OR OTHER TOXINS.

BASED ON PERC RATE 53 MIN/IN
APPLICATION RATE 0.4 GAL/SF VALUES APPROVED FOR PHASE 1

ABSORPTION APPLICATION RATES
Q = 5.0 MIN/IN / (53 MIN./IN ^0.5) = 0.68 GAL/SF

EXISTING TRENCH FIELD - PHASE 1

7,177 LF

ABSORPTION FIELD TOTAL BUILD OUT (INCLUDES EX. PHASE 1, PHASE 2 & HARBOR VIEW ESTATES SUBDIVISION)
76 LOTS (TOTAL BUILD OUT)
76 LOTS @ 400 GAL/LOT/DAY = 30,400 GAL/DAY

APPROXIMATE APPLICATION RATES ABSORPTION FIELD
Q = 5.0 MIN/IN / (53 MIN./IN ^0.5) = 0.68 GAL/SF
(BASED ON ORIGINAL PHASE 1 DESIGN RATES)

REQUIRED ABSORPTION FIELD AREA TRENCH
30,400 GAL/DAY / 0.68 GAL/SF = 44,706 SF

REQUIRED ABSORPTION TRENCH LENGTH
44,706 SF / 3' = 14,901 LF OF TRENCH REQUIRED

14,933 LF OF TRENCH PROVIDED

(FINISH GRADE TO MATCH EXISTING GROUND ELEVATIONS)

SCALE: 1"=40'
DATE: 9/30/2021
DESIGN: BSD/W-S
DRAWN: BSD/W-S
CHECKED: TMN

REVISIONS

DATE	DESCRIPTION
4 5/13/21	SEWER UPDATES
5 5/26/21	SEWER UPDATES

DWG: R:\2028 - B&H INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

PROFESSIONAL STRUCTURAL ENGINEER
3/30/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

SEWER DRAIN FIELD EXPANSION
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL · LAND PLANNING
MUNICIPAL · LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

C7

THIS PLAN SET IS BASED UPON THE EXPECTED FLOWS AND WASTE STRENGTHS FOR THE PURPOSE OF SERVING THE RESERVE AT CRIMSON RIDGE SUBDIVISION.

EXPECTED INFLUENT CHARACTERISTICS:

TYPE	AVERAGE mg/L	WEEKLY PEAK mg/L	RARELY EXCEEDS mg/L
BOD	150	250	500
TSS	40	75	150
TKN	65	75	150
FOG	20	25	30

ONCE THE EXPANDED FACILITY IS OPERATIONAL, THE WASTE STRENGTHS AND FLOWS TO THE FACILITY SHOULD BE MONITORED. IF ANY OF THE INFLUENT WASTE STRENGTHS OR FLOW EXCEED THOSE LISTED IN THE DESIGN ABOVE, MEASURES SHOULD BE TAKEN TO REDUCE THESE PARAMETERS TO THOSE LISTED ON THIS PLAN SET. OTHERWISE ADDITIONAL TREATMENT CAPACITY AND PLANT EXPANSION WILL BE NECESSARY.

DO NOT DISPOSE OF TOXINS OR CHEMICALS INTO SYSTEM. EXAMPLES: WAX STRIPPER FOR LINOLEUM, CARPET SHAMPOO, RESTAURANT DEGREASERS AND CLEANSERS, AND OTHER WAST PRODUCTS OR OTHER TOXINS.

DRIP SYSTEM DESIGN

1. PERCOLATION RATE = 21.8 MIN/INCH
2. ALLOWED APPLICATION RATE = 0.45 GAL/SF/DAY
3. TOTAL FLOW TO BE DISPERSED
   76 LOTS @ 400 GAL/LOT/DAY = 30,400 GAL/DAY
4. REQUIRED DRIP SYSTEM AREA
   (30,400 GAL/DAY)/(0.45 GAL/SF/DAY) = 67,556 SF
   67,556 SF/2 = 33,778 LF OF DRIP TUBING
   8 ZONES (33,778/8) = 4,222 LF / ZONE
5. EMITTER COVERS 4 SF (4 SF)(0.45 GAL/SF/DAY) = 1.8 GAL / DAY (PER EMITTER)
6. EMITTER SUPPLIES 0.53 GAL/HR (PER EMITTER)
7. TOTAL TIME TO BE APPLIED EACH DAY
   (1.8 GAL/DAY)/(0.53 GAL/HR) = 3.4 HR/DAY = 204 MIN/DAY
8. RUN TIME RANGE 5 MINUTE/DOSE CYCLE TO 10 MINUTE/DOSE CYCLE

DOSING REQUIREMENTS

1. 21 CYCLES/DAY/ZONE
2. 210 MIN/DAY/21 CYCLES/DAY/ZONE = 10 MINUTES/CYCLE ZONE AREA

ZONE AREAS

1. 8 ZONES
2. TOTAL REQUIRED DRIP SYSTEM AREA = 67,556 SF / 8 ZONES = 8,445 SF / ZONE
3. (8,446 SF / ZONE) (0.45 GAL/DAY/SF) = 3,810 GPD / ZONE
4. (3,810 GPD/ZONE)/(21 CYCLES/DAY) = 181 GAL/CYCLE
5. (181 GAL/CYCLE)/(10 MINUTE/CYCLE) = 18 GAL / MINUTE
   DESIGNED 16 ROWS PER ZONE WITH 266 LF PER ROW FOR A TOTAL OF 4,256 LF

   OPERATING FLOW RATE PER ZONE = 18 GAL/MINUTE
   FLOW RATE PER ZONE FLUSHING AT 0.5 FEET/SEC = 35 GAL/MINUTE

   FLOW RATE PER ZONE RETURNING DURING A FLUSH CYCLE = 35 GAL/MINUTE - 18 GAL/MINUTE = 17 GAL/MINUTE

ADDITIONAL NOTES:
A. PRESSURE COMPENSATING TUBING WASTEFLOW DRIPLINE 0.53 GAL/HOUR EMITTER INSTALLED AT 2' SPACED INCREMENTS (TYP.)

PUMP REQUIREMENTS

DRIP IRRIGATION SYSTEM
DOSING TANK

HEAD
ELEVATION HEAD 5018-5024.50 (PUMP) = -6.5'
FRICTION LOSS IN 3" PVC SCH 40 @ 40 GAL/MIN

(0.2*1888/100) = 3.8'

FITTINGS (EQUIVALENT PIPE LENGTH)
4 - 45° = 4*4.0' = 16 LF
1 - 90° = 1*12.0' = 12 LF
VALVE = 11.9 LF

TOTAL = 39.9 * 0.2/100 = 0.08

PRESSURE @ END OF PIPE (20PSI) = 20*2.31=46 FEET

TOTAL HEAD = 43 FEET

(EXISTING PUMP DESIGNED FOR 96 FEET HEAD)

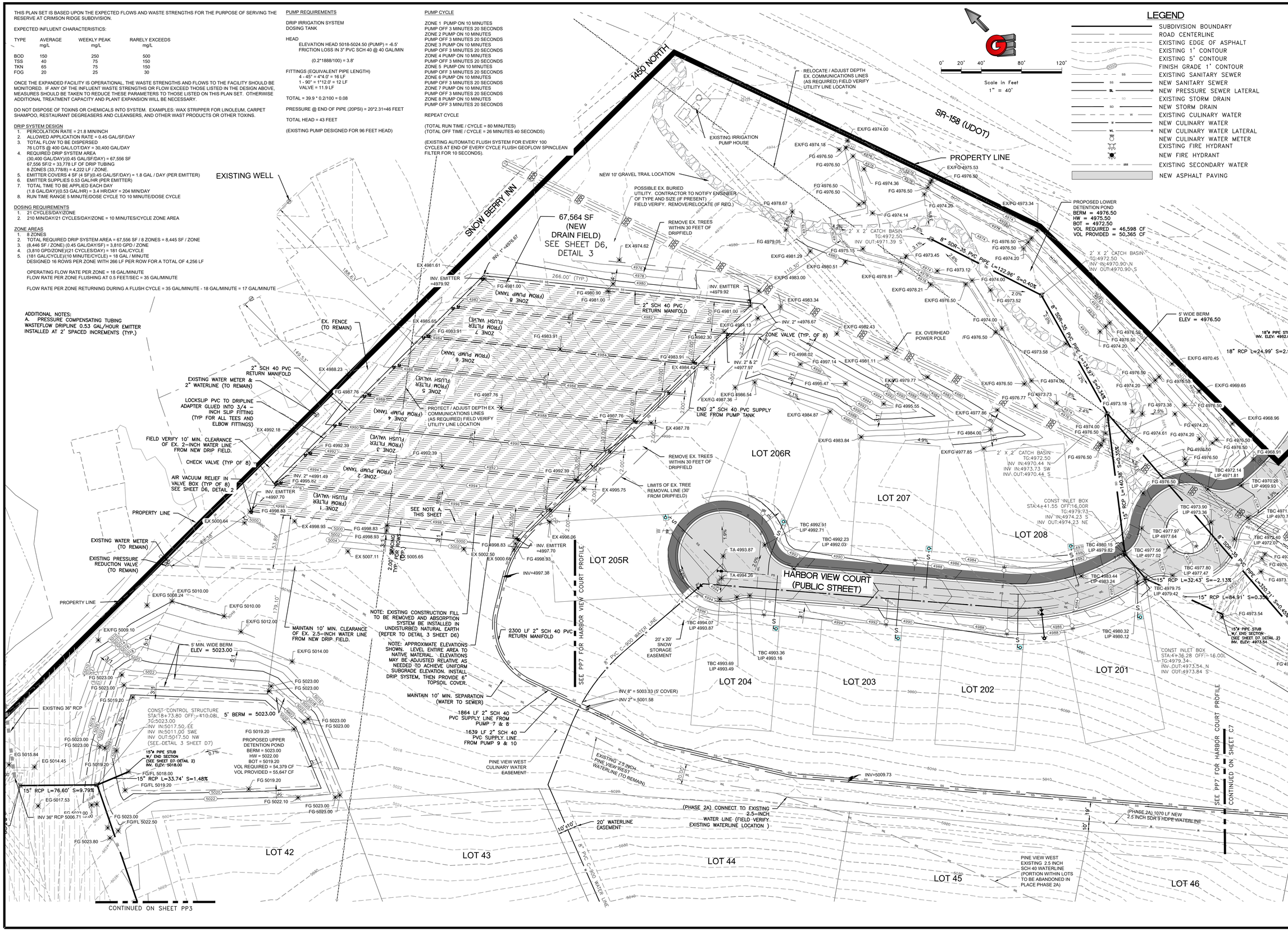
PUMP CYCLE

ZONE 1 PUMP ON 10 MINUTES
PUMP OFF 3 MINUTES 20 SECONDS
ZONE 2 PUMP ON 10 MINUTES
PUMP OFF 3 MINUTES 20 SECONDS
ZONE 3 PUMP ON 10 MINUTES
PUMP OFF 3 MINUTES 20 SECONDS
ZONE 4 PUMP ON 10 MINUTES
PUMP OFF 3 MINUTES 20 SECONDS
ZONE 5 PUMP ON 10 MINUTES
PUMP OFF 3 MINUTES 20 SECONDS
ZONE 6 PUMP ON 10 MINUTES
PUMP OFF 3 MINUTES 20 SECONDS
ZONE 7 PUMP ON 10 MINUTES
PUMP OFF 3 MINUTES 20 SECONDS
ZONE 8 PUMP ON 10 MINUTES
PUMP OFF 3 MINUTES 20 SECONDS

REPEAT CYCLE

(TOTAL RUN TIME / CYCLE = 80 MINUTES)
(TOTAL OFF TIME / CYCLE = 26 MINUTES 40 SECONDS)

(EXISTING AUTOMATIC FLUSH SYSTEM FOR EVERY 100 CYCLES AT END OF EVERY CYCLE FLUSH GEOFLOW SPINCLEAN FILTER FOR 10 SECONDS).



REVISIONS	
DATE	DESCRIPTION

SCALE: 1" = 40'
DATE: 9/30/2021
DESIGN: BSD/W-S
DRAWN: BSD/W-S
CHECKED: TMN

DWG: R:\2028 - B&M INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

PROFESSIONAL STRUCTURAL ENGINEER
3/30/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

DRIP SYSTEM + DETENTION PONDS

THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL • LAND PLANNING
MUNICIPAL • LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

C8

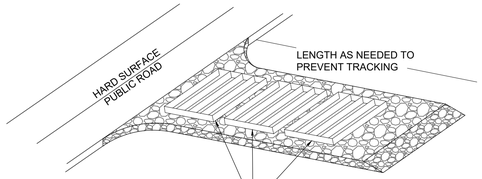
EROSION CONTROL NOTES:

1. SANDBAGS WILL BE PLACED AT DISCHARGE LOCATIONS TO CONTAIN AND DIVERT STORM WATER THROUGH THE INLET PROTECTION.

2. AN EARTHEN BERM 6" HIGH WILL BE CONSTRUCTED TO CONTAIN THE STORM WATER AND DIVERT IT TO DISCHARGE AREAS.

3. STORM WATER WILL BE DISCHARGED INTO AN EXISTING DRAINAGE SYSTEM. EXISTING LINES SHALL BE INSPECTED PRIOR TO CERTIFICATE OF OCCUPANCY AND CLEANED IF NECESSARY.

4. THE STORM WATER POLLUTION PREVENTION PLAN SHALL CONFORM TO ALL STATE DIVISION OF ENVIRONMENTAL PROTECTION REGULATIONS.



A SERIES OF STEEL PLATES (3 OR MORE) WITH RUMBLE STRIPS OR MIN. 3" COARSE AGGREGATE.

ENTRANCE STABILIZATION NOTES:

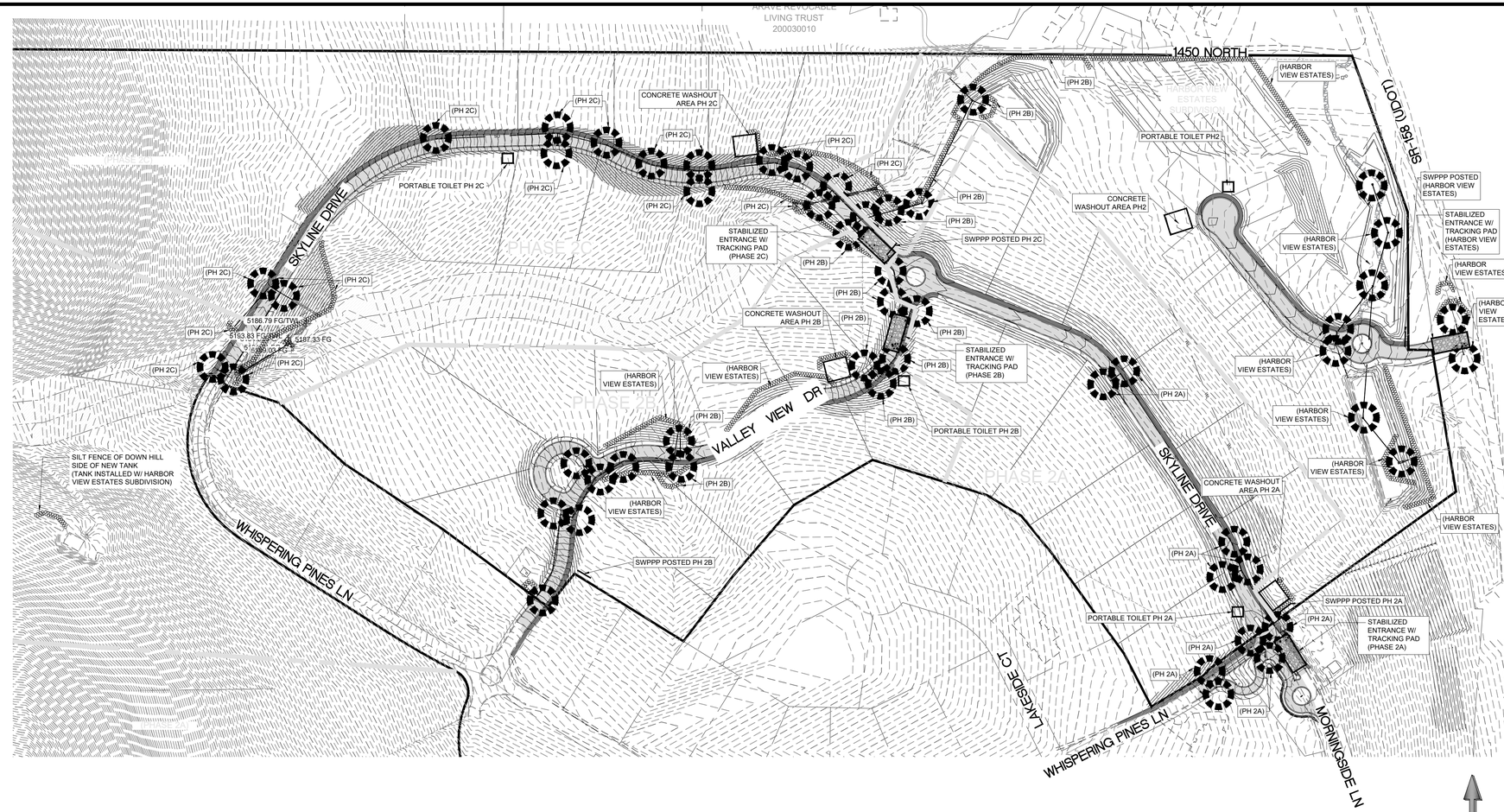
1. SEDIMENTS AND OTHER MATERIALS SHALL NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS SHALL BE STABILIZED SO AS TO PREVENT SEDIMENTS FROM BEING DEPOSITED INTO THE STORM DRAIN SYSTEMS. DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS INTO THE STORM DRAIN SYSTEM.
2. STABILIZED CONSTRUCTION ENTRANCE SHALL BE:
a. LOCATED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE TO OR FROM A PUBLIC RIGHT-OF-WAY, STREET, ALLEY AND SIDEWALK OR PARKING AREA.
b. A SERIES OF STEEL PLATES WITH "RUMBLE STRIPS", AND/OR MIN. 3" COARSE AGGREGATE WITH LENGTH, WIDTH AND THICKNESS AS NEEDED TO ADEQUATELY PREVENT ANY TRACKING ONTO PAVED SURFACES.
3. ADDING A WASH RACK WITH A SEDIMENT TRAP LARGE ENOUGH TO COLLECT ALL WASH WATER CAN GREATLY IMPROVE EFFICIENCY.
4. ALL VEHICLES ACCESSING THE CONSTRUCTION SITE SHALL UTILIZE THE STABILIZED CONSTRUCTION ENTRANCE SITES.

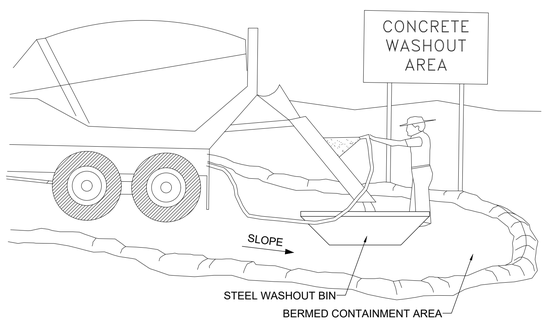
STREET MAINTENANCE NOTES:

1. REMOVE ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS IMMEDIATELY.
2. SWEEP PAVED AREAS THAT RECEIVE CONSTRUCTION TRAFFIC WHENEVER SEDIMENT BECOMES VISIBLE.
3. PAVEMENT WASHING WITH WATER IS PROHIBITED IF IT RESULTS IN A DISCHARGE TO THE STORM DRAIN SYSTEM.

NOTE:

CONTRACTOR SHALL COMPLETE AND SUBMIT A STATE NOTICE OF INTENT (NOI) AND A STORM WATER POLLUTION PREVENTION PLAN BOOKLET





NOTES:

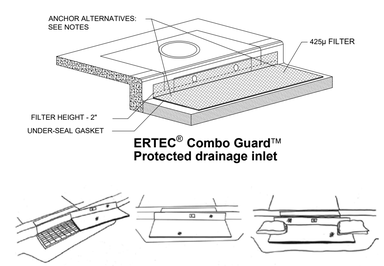
1. EXCESS AND WASTE CONCRETE SHALL BE DISPOSED OF OFF SITE OR AT DESIGNATED AREAS ONLY.
2. EXCESS AND WASTE CONCRETE SHALL NOT BE WASHED INTO THE STREET OR INTO A DRAINAGE SYSTEM.
3. FOR WASHOUT OF CONCRETE AND MORTAR PRODUCTS ONSITE, A DESIGNATED CONTAINMENT FACILITY OF SUFFICIENT CAPACITY TO RETAIN LIQUID AND SOLID WASTE SHALL BE PROVIDED.
4. ONSITE CONCRETE WASHOUT CONTAINMENT FACILITY SHALL BE A STEEL BIN OR APPROVED ALTERNATE.
5. SLURRY FROM CONCRETE AND ASPHALT SAW CUTTING SHAL BE VACUUMED OR CONTAINED, DRIED, PICKED UP AND DISPOSED OF PROPERLY.

INLET PROTECTION (EITHER OPTION)

SILT FENCE

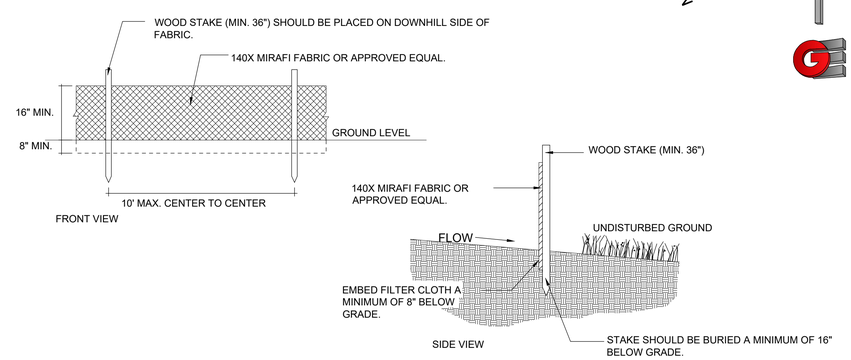
INSTALLATION NOTES

1. PLACEMENT: PLACE CG TIGHTLY AGAINST CURB OPENING AND COVER ENTIRE GRATE. CG SHOULD EXTEND AT LEAST 2 INCHES PAST GRATE TOWARDS STREET.
2. OVERLAP FOR LONG OPENINGS: OVERLAP CG UNITS AT LONGER OPENINGS.
3. ANCHOR: ANCHOR CG SO THAT WATER CANNOT FLOW BEHIND IT.
4. ALTERNATE ANCHOR METHODS: A) INSTALL GRAVEL BAGS AT EACH SIDE OF CG - HALF-ON AND HALF-OFF THE EDGES. USE HALF-FILLED GRAVEL BAGS (15 OR 20 LBS). ROUND ROCK IS RECOMMENDED. OR B) ATTACH WITH 16 GAUGE TIE-WIRE. CUT WIRE TO 18" LENGTH. AT EACH CORNER OF CG, FEED ONE END OF WIRE DOWN THROUGH CG, AROUND GRATE BAR, AND BACK UP THRU CG. ABOVE GROUND, TWIST WIRES SEVERAL TIMES, CUT-OFF EXCESS. OR C) FASTEN WITH CONCRETE ANCHORS/NAILS AT THE OUTSIDE EDGES OF CG.



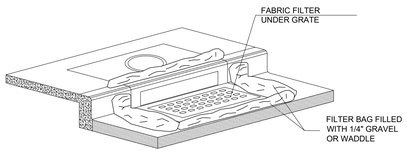
1A INLET PROTECTION - OPTION 1

Scale: NTS



2 SILT FENCE

Scale: NTS



1B INLET PROTECTION - OPTION 2

Scale: NTS

DEVELOPERS:

STEVE FENTON
6130 E. LAST CAMP CIR.
SLC, UT 84108
801-535-4055

KEVIN DEPPE
110 W. 1700 N.
CENTERVILLE, UT 84014
801-535-4032

0' 75' 150' 300' 450'

Scale in Feet
1" = 150'

SCALE: 1"=50'
DATE: 3/30/2021
DESIGN: BSD/W-S
DRAWN: BSD/W-S
CHECKED: TMN

REVISIONS

DATE	DESCRIPTION

DWG: R:\2028 - B&M INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

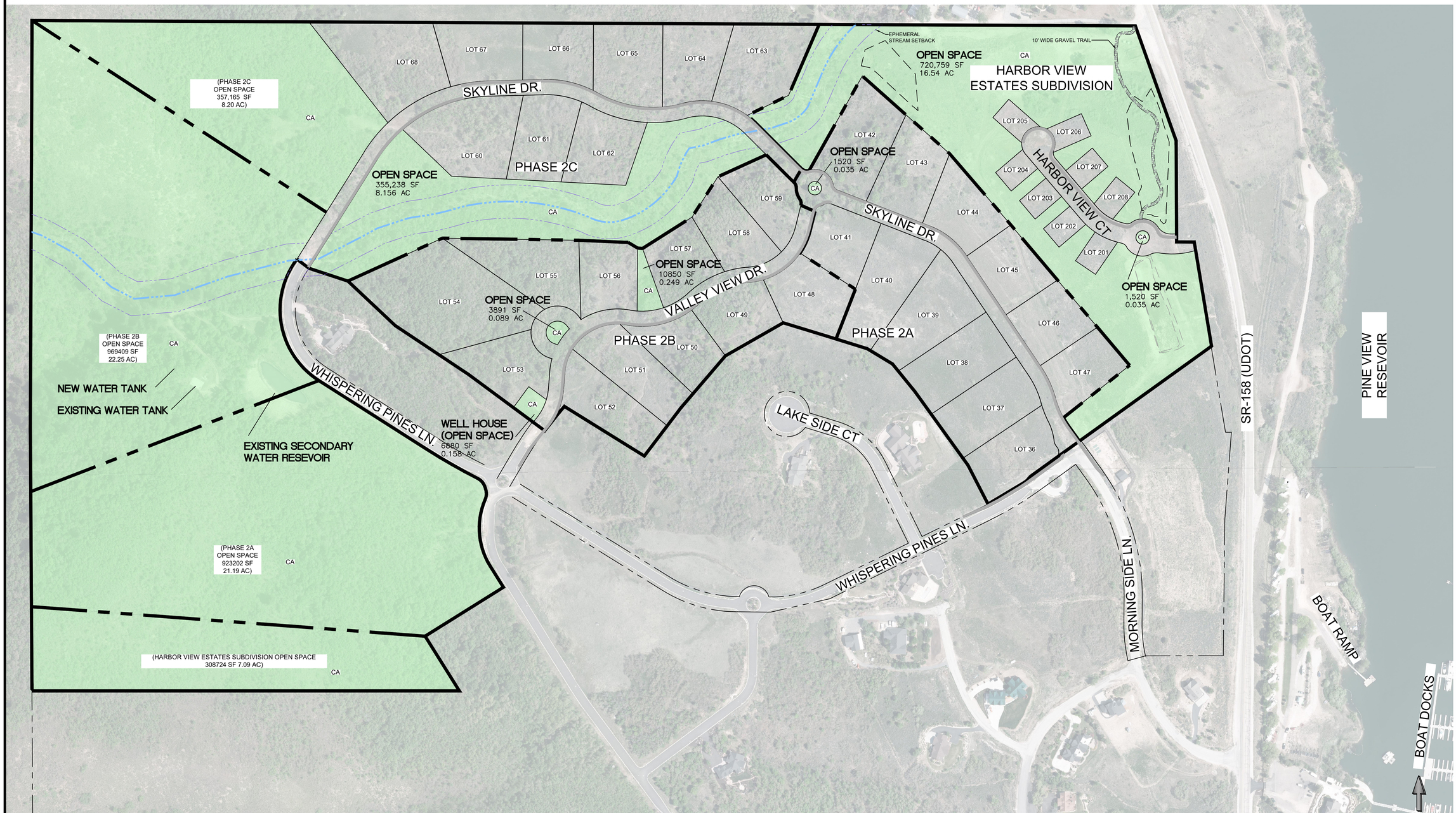
PROFESSIONAL STRUCTURAL ENGINEER
3/30/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

SWPPP
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL · LAND PLANNING
MUNICIPAL · LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

OPEN SPACE PRESERVATION PLAN

THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. - PHASE 2A, 2B, 2C + HARBOR VIEW ESTATES SUBDIVISION



OPEN SPACE TABLE

PHASE (LOTS)	AREA (AC)	OPEN SPACE (AC)	COMBINED PHASE PERCENTAGE
* (8 LOTS)	26.68	23.78	89.14% (HARBOR VIEW ESTATES SUBDIVISION)
2A (12 LOTS)	37.94	21.23	69.66% (*-2A)
2B (12 LOTS)	40.22	22.75	64.63% (*-2B)
2C (9 LOTS)	31.38	16.37	61.80% (*-2C)

* = INITIAL PHASE IS HARBOR VIEW ESTATES SUBDIVISION

OPEN SPACE NARRATIVE:

1. ALL OPEN SPACE AREAS TO BE MAINTAINED BY THE HOA. AREAS WEST OF SKYLINE DRAIVE AND WHISPERING PINES LANE ARE TO BE PRESERVED AS NATURAL OPEN SPACE AREAS WITH THE EXCEPTION OF AREAS WHERE WATER TANK IS CURRENTLY INSTALLED AND NEW WATER TANK WILL BE INSTALLED AS A PART OF THIS DEVELOPMENT. IN THESE AREAS ANY DISTURBED AREAS WILL BE RESEEDED WITH A NATIVE SEED MIX TO HELP RE-ESTABLISH THE EXISTING LANDSCAPING. THESE OPEN SPACE AREAS WILL BE ACCESSIBLE FOR RESIDENTS OF THIS DEVELOPMENT TO UTILIZE FOR LIGHT FOOT TRAFFIC. EXISTING VEGETATION AND MATURE TREES WILL BE PRESERVED AND AREA CAN BE UTILIZED BY WILDLIFE.
2. COMMON AREAS NEAR THE EPHEMERAL STREAM CORRIDOR WILL BE PRESERVED AS EXISTING NATURAL AREAS. ANY LOG REMOVAL OR OTHER DEBRIS WHERE PIPES CROSS UNDER A ROADWAY WILL BE MAINTAINED TO PREVENT LOGS FROM PLUGGING UP DESIGNED STORM WATER GOING UNDER ROADWAYS. AREAS NEAR THE EPHEMERAL STREAM SHALL ALSO BE ACCESSIBLE TO ALL RESIDENTS OF THIS DEVELOPMENT TO UTILIZE FOR LIGHT FOOT TRAFFIC. EXISTING VEGETATION AND MATURE TREES WILL BE PRESERVED AND AREA CAN BE UTILIZED BY WILDLIFE.
3. SMALLER COMMON AREAS WITHIN THE DEDICATED ROADWAY SHALL BE MAINTAINED BY THE HOA IN AN ATTRACTIVE MANNER AS DESIRED BY THE HOA. THESE AREAS ARE FOR AESTHETICALLY VISIBLE FEATURES FOR THIS DEVELOPMENT.

DEVELOPERS:

STEVE FENTON
6130 E. LAST CAMP CIR.
SLC, UT 84108
801-535-4055

KEVIN DEPPE
110 W. 1700 N.
CENTERVILLE, UT 84014
801-535-4032

LEGEND:
OPEN SPACE AREAS -

0' 75' 150' 300' 450'
Scale In Feet
1" = 150'

SCALE: 1" = 150'
DATE: 12/10/2020
DESIGN: WB
DRAWN: WB
CHECKED: TMN
DWG: 8A\2020 - BAM INVESTMENTS\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - OPEN SPACE PLAN.dwg

REVISIONS

DATE	DESCRIPTION

PROFESSIONAL STRUCTURAL ENGINEER
12/10/2020
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

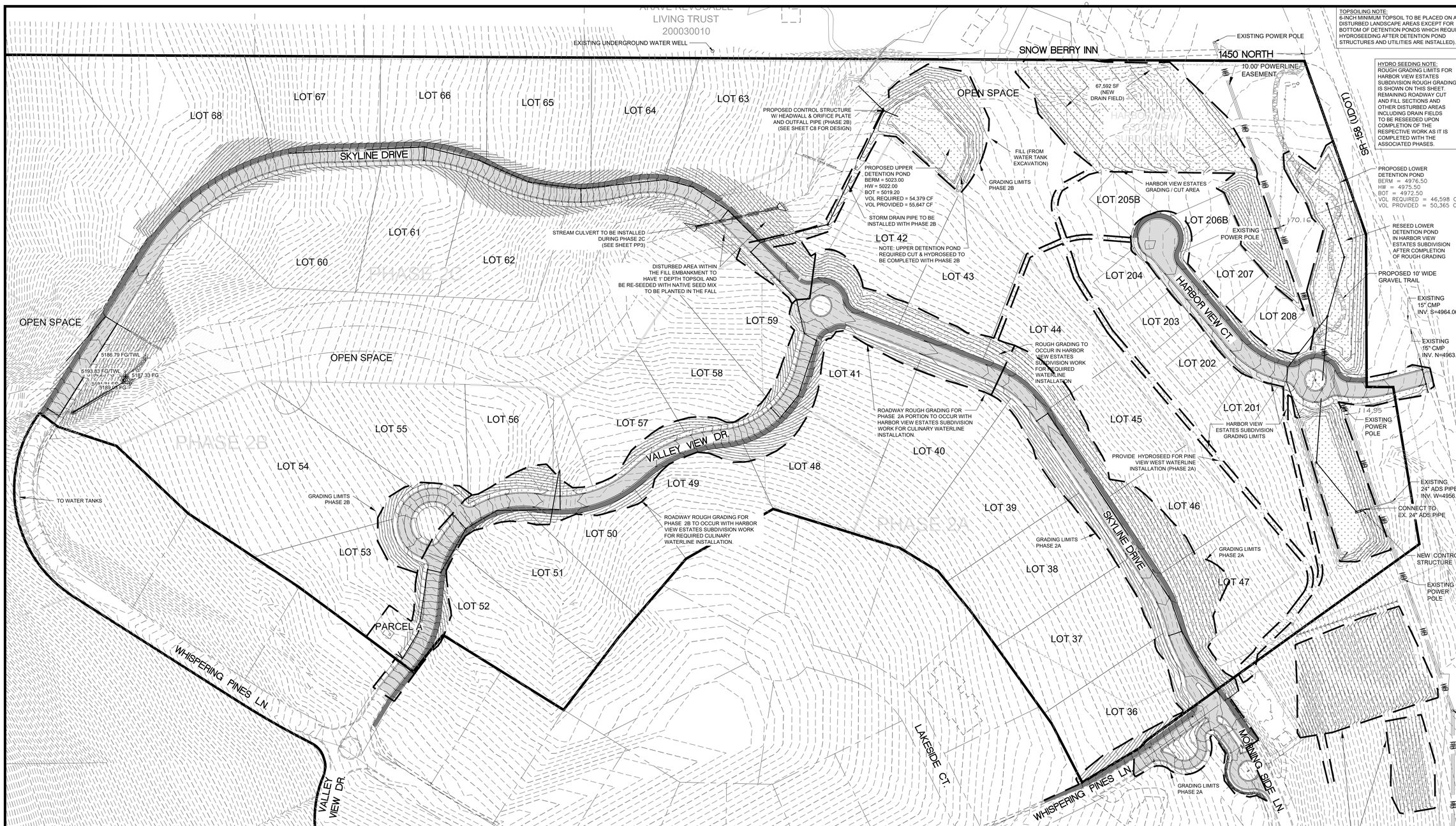
OPEN SPACE PRESERVATION PLAN
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD.
+ HARBOR VIEW ESTATES SUBDIVISION
1250 NORTH 5200 EAST
OGDEN VALLEY, WEBER, UTAH

GARDNER ENGINEERING
CIVIL · LAND PLANNING
MUNICIPAL · LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

C10

TOPSOILING NOTE:
6-INCH MINIMUM TOPSOIL TO BE PLACED ON ALL DISTURBED LANDSCAPE AREAS EXCEPT FOR BOTTOM OF DETENTION PONDS WHICH REQUIRE HYDROSEEDING AFTER DETENTION POND STRUCTURES AND UTILITIES ARE INSTALLED).

HYDRO SEEDING NOTE:
ROUGH GRADING LIMITS FOR HARBOR VIEW ESTATES SUBDIVISION ROUGH GRADING IS SHOWN ON THIS SHEET. REMAINING ROADWAY CUT AND FILL SECTIONS AND OTHER DISTURBED AREAS INCLUDING DRAIN FIELDS TO BE RESEEDED UPON COMPLETION OF THE RESPECTIVE WORK AS IT IS COMPLETED WITH THE ASSOCIATED PHASES.



EARTHWORK NEAT LINE QUANTITIES
HARBOR VIEW ESTATES SUBDIVISION (INCLUDES HARBOR VIEW ESTATES SUBDIVISION WITH EXCEPTION OF UPPER DETENTION POND. ALSO INCLUDES PHASE 2B AND PORTION OF PHASE 2A ROUGH GRADING):
UNADJUSTED CUT VOLUME (RAW) = 25,793 CY
UNADJUSTED FILL VOLUME = 30,255 CY
ADJUSTED FILL VOLUME (FOR IMPORTED PAVEMENT SECTION AND TRAILS) = 25,195

HARBOR VIEW ESTATES (W/PH 2B AND PORTION OF PH 2A) OVERALL NET CUT = 599 CY

TOPSOIL REMOVAL, STOCKPILING & RESPREADING TOPSOIL, 6-INCH OVEREX FOR CUT EMBANKMENTS AND GRAVEL TRAIL (IS INCIDENTAL TO EARTHWORK CUT AND FILL)

ESTIMATED SEWER POD & CHAMBER ADDITIONAL CUT DURING HARBOR VIEW ESTATES WORK = 3,031 CY

(EXCESS CUT TO BE STOCKPILED ON LOT 42)

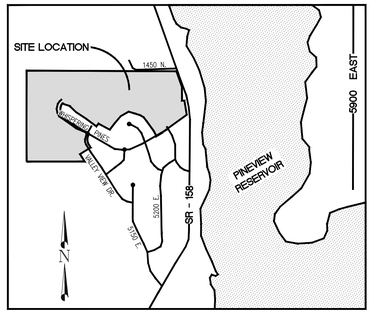
APPROXIMATELY 1,000 CY OF CUT FROM WATER TANK EXCAVATION TO BE PLACED BETWEEN UPPER DETENTION POND AND WEST OF NEW SEWER DRIP FIELD.

	PHASE 2A	PHASE 2B	PHASE 2C
CUT	5,783 CY	2,488 CY	19,298 CY
FILL	8,679 CY	3,489 CY	24,958 CY
ADJUSTED FILL	6,138 CY	3,079 CY	21,110 CY

(OVERALL NET CUT PHASE 2A – 2C 870 CY CUT)

(SOIL SHRINKAGE FACTOR OR UTILITY TRENCHING SPOILS QUANTITIES NOT CALCULATED).

VICINITY MAP



DEVELOPERS:

STEVE FENTON
6130 E. LAST CAMP CIR.
SLC, UT 84108
801-535-4055

KEVIN DEPPE
110 W. 1700 N.
CENTERVILLE, UT 84014
801-535-4032

ENGINEER
GARDNER ENGINEERING
TYLER M. NIELSON
(801) 476-0202
tyler@gecivil.com

0' 50' 100' 200' 300'
Scale in Feet
1" = 100'

LEGEND

- SUBDIVISION BOUNDARY
- ROAD CENTERLINE
- EXISTING EDGE OF ASPHALT
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- FINISH GRADE 1' CONTOUR
- EXISTING SANITARY SEWER
- NEW SANITARY SEWER
- NEW PRESSURE SEWER LATERAL
- EXISTING STORM DRAIN
- NEW STORM DRAIN
- EXISTING CULINARY WATER
- NEW CULINARY WATER
- NEW CULINARY WATER LATERAL
- NEW CULINARY WATER METER
- EXISTING FIRE HYDRANT
- NEW FIRE HYDRANT
- EXISTING SECONDARY WATER
- NEW ASPHALT PAVING
- 6" DEPTH CUT AREA OVER EX & 6" TOPSOIL WITH HYDROSEED OR 6" TRAIL MATERIAL PLACEMENT (HYDRO SEED IN DESIGNATED PHASE)
- HYDROSEED FILL SLOPE OR BOTTOM OF DETENTION POND

SCALE: 1" = 100'
DATE: 3/30/2021
DESIGN: BSD/WJS
DRAWN: BSD/WJS
CHECKED: TMN

REVISIONS

DATE	DESCRIPTION

DWG: R:\2018 - B&H INVESTMENTS\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - C05.DWG

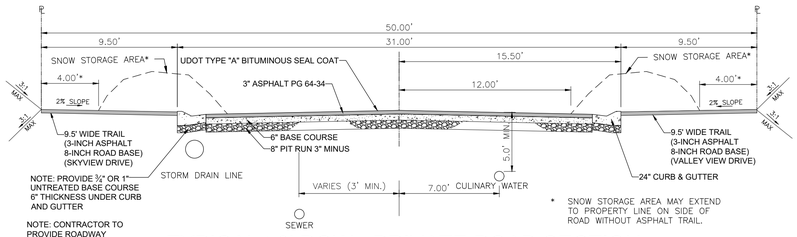
PROFESSIONAL STRUCTURAL ENGINEER
3/30/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

OVERALL GRADING PLAN (WITH PHASED WORK)

THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL · LAND PLANNING
MUNICIPAL · LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

C11

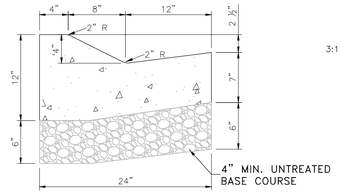


NOTE: PROVIDE ¾" OR 1" UNTREATED BASE COURSE 6" THICKNESS UNDER CURB AND GUTTER

NOTE: CONTRACTOR TO PROVIDE ROADWAY COMPACTION TESTING MEETING WEBER COUNTY MIN. COMPACTION STANDARDS.

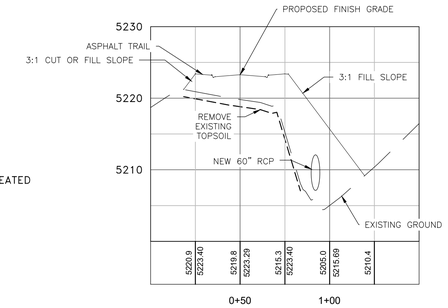
TYPICAL 50' ROW - PRIVATE ROAD SECTION

NOT TO SCALE

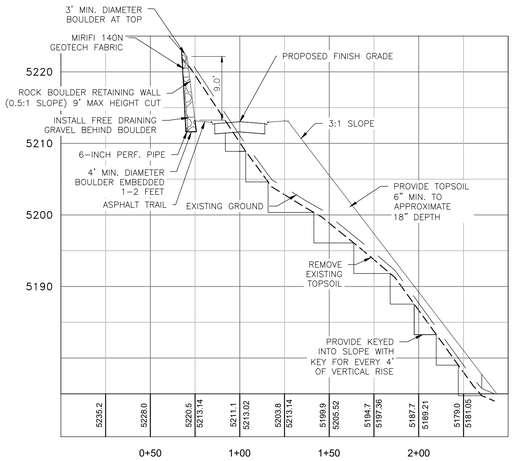


TYPICAL 24' TYPE M-1 CURB AND GUTTER

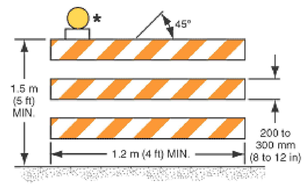
(NOT TO SCALE)



CROSS SECTION VIEW
SKYLINE DRIVE STA 0+50
(APPLIES FOR STA 0+00 - STA 2+75)
(SEE GEOTECH NOTE 4.)

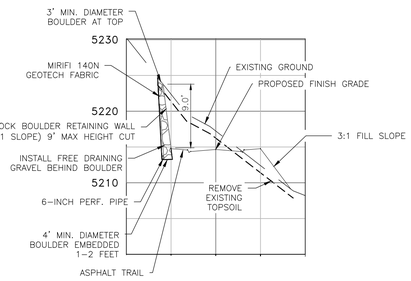


CROSS SECTION VIEW
SKYLINE DRIVE STA 3+25
(APPLIES FOR STA 2+75 - STA 3+75)
(SEE GEOTECH NOTE 4., 5., 6.)

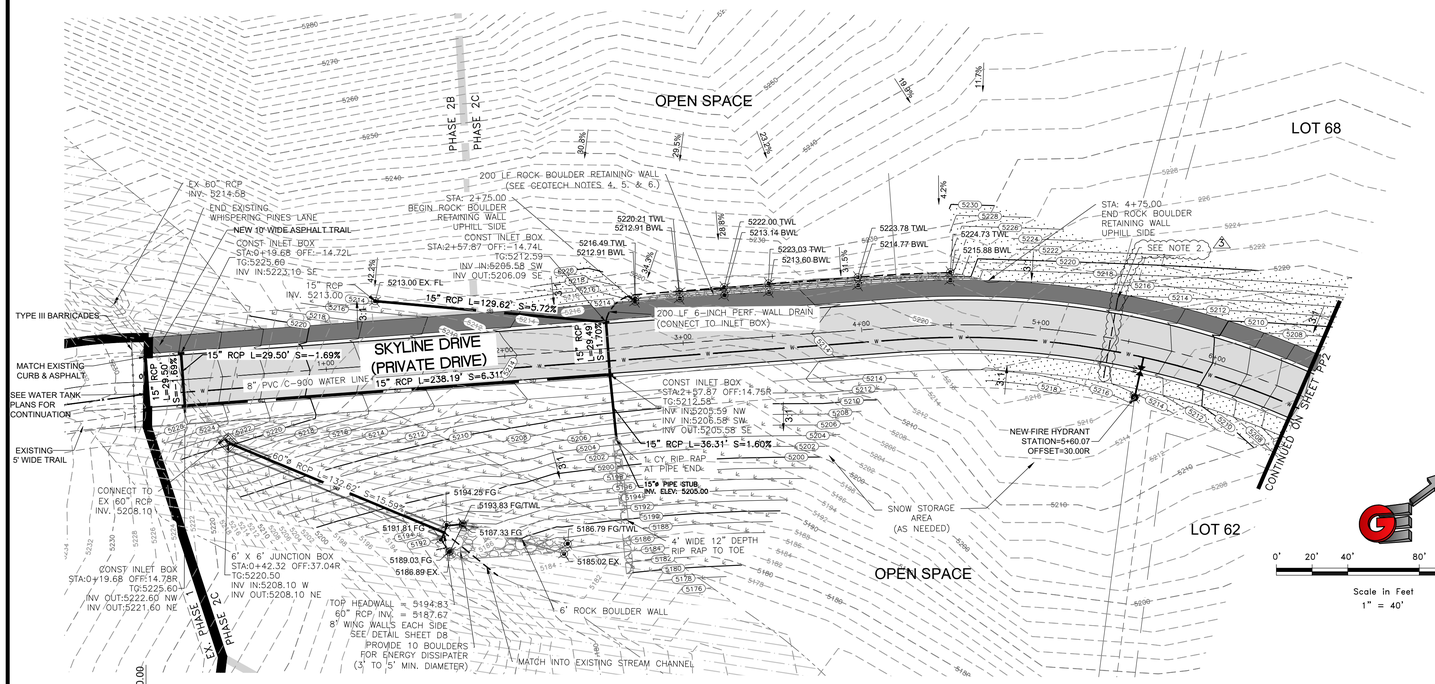


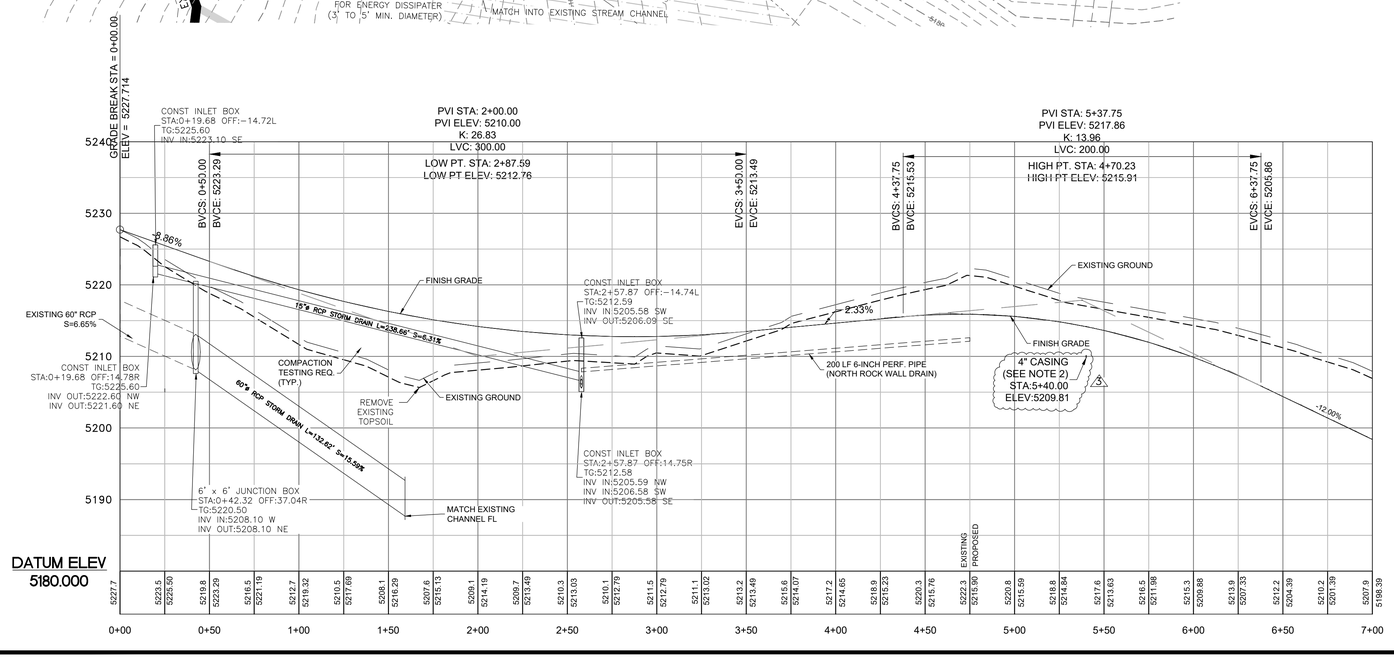
TYPE III BARRICADE

* Warning lights (optional)



CROSS SECTION VIEW
(APPLIES FOR STA 3+75 - STA 4+75)
(SEE GEOTECH NOTE 4., 5., 6.)





DATUM ELEV
5180.000

NOTES:
1. THE HOA WILL BE RESPONSIBLE FOR REMOVING ANY DEBRIS NEAR THE HEADWALL STRUCTURES AND STORM DRAIN PIPE CULVERTS THAT MAY CREATE A POTENTIAL FOR A LOG JAM OR OTHER DEBRIS (AS APPLICABLE). STREAM CULVERT EXTENSION TO BE INSTALLED WITH PHASE 2C WORK TO ACCOMMODATE REQUIRED ROUGH GRADING OF THE SITE.
2. INSTALL DOMINION ENERGY CASING, 45 LF OF 4 INCH NON GRAY, 40 INCH DEPTH FROM TOP OF PIPE, 3' AWAY FROM ALL OTHER UTILITIES RUNNING PARALLEL, 1' MIN. SEPARATION IF CROSSING.

LEGEND

- SUBDIVISION BOUNDARY
- ROAD CENTERLINE
- EXISTING EDGE OF ASPHALT
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- FINISH GRADE 1' CONTOUR
- EXISTING SANITARY SEWER
- NEW SANITARY SEWER
- NEW PRESSURE SEWER LATERAL
- EXISTING STORM DRAIN
- NEW STORM DRAIN
- EXISTING CULINARY WATER
- NEW CULINARY WATER
- NEW CULINARY WATER LATERAL
- NEW CULINARY WATER METER
- EXISTING FIRE HYDRANT
- NEW FIRE HYDRANT
- EXISTING SECONDARY WATER
- NEW ASPHALT PAVING
- 6" DEPTH CUT AREA OVER EX & 6" TOPSOIL OR 6" TRAIL MATERIAL PLACEMENT (HYDRO SEED IN DESIGNATED PHASE)
- HYDRO SEED FILL SLOPES IN DESIGNATED PHASE

GEOTECHNICAL NOTES:
1. AGEC REPRESENTATIVE SHOULD OBSERVE THE SITE GRADING OPERATIONS.
2. CONTRACTOR IS TO REFER TO "GEOTECHNICAL INVESTIGATION PROPOSED CRIMSON RIDGE– PHASE 2 & 3 5129 EAST WHISPERING PINES LANE EDEN, UTAH" DATED SEPTEMBER 15, 2020 PREPARED BY AGEC.
3. CONTRACTOR IS TO REFER TO "GEOLOGIC HAZARDS EVALUATION PROPOSED CRIMSON RIDGE PHASE 2 SUBDIVISION ABOUT 1100 NORTH MORNINGSIDE LANE EDEN, UTAH" DATED MAY 15, 2020.
4. REPRESENTATIVE FROM AGEC TO BE PRESENT PRIOR TO CONSTRUCTION AT PRE–CONSTRUCTION MEETING.
5. REPRESENTATIVE FROM AGEC TO BE ONSITE DURING CONSTRUCTION TO OBSERVE ROCK WALL CONSTRUCTION AND FILL MATERIAL PLACEMENT
6. REFER TO ROCKERY RECOMMENDATIONS REPORT BY AGEC.

SCALE: 1"=40'
DATE: 9/30/2021
DESIGN: BSD/WJS
DRAWN: BSD/WJS
CHECKED: TMN

REVISIONS

DATE	DESCRIPTION
4/27/21	GAS CONDUIT ADD

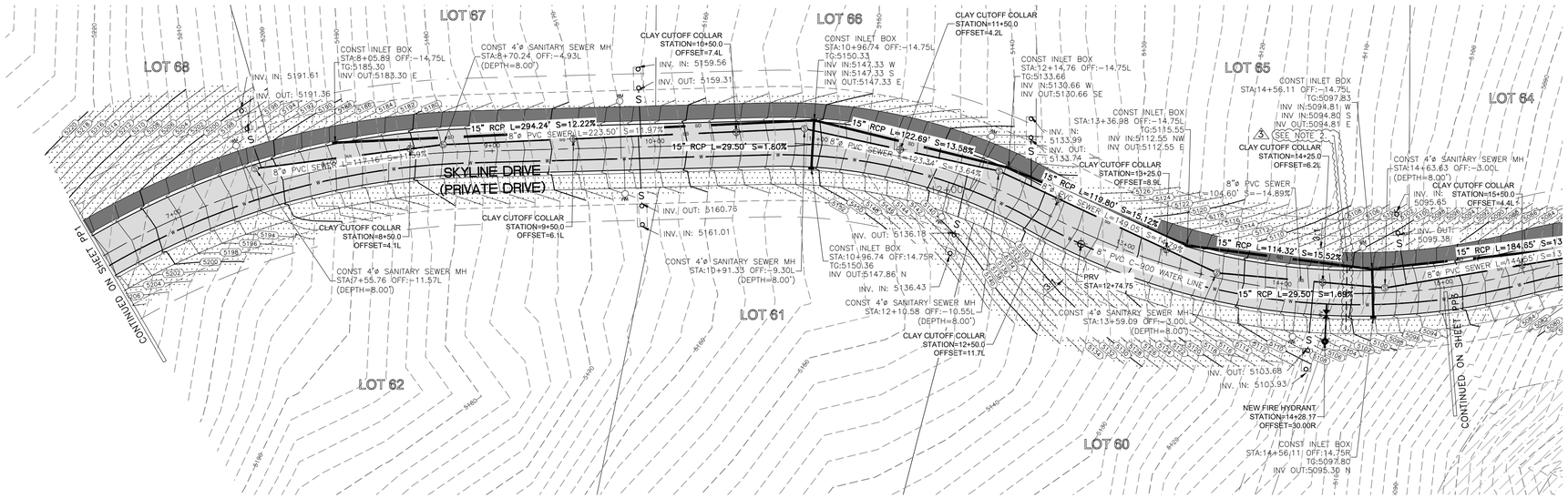
DWG: R:\2028 - B&M INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

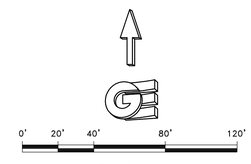
PROFESSIONAL STRUCTURAL ENGINEER
3/30/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

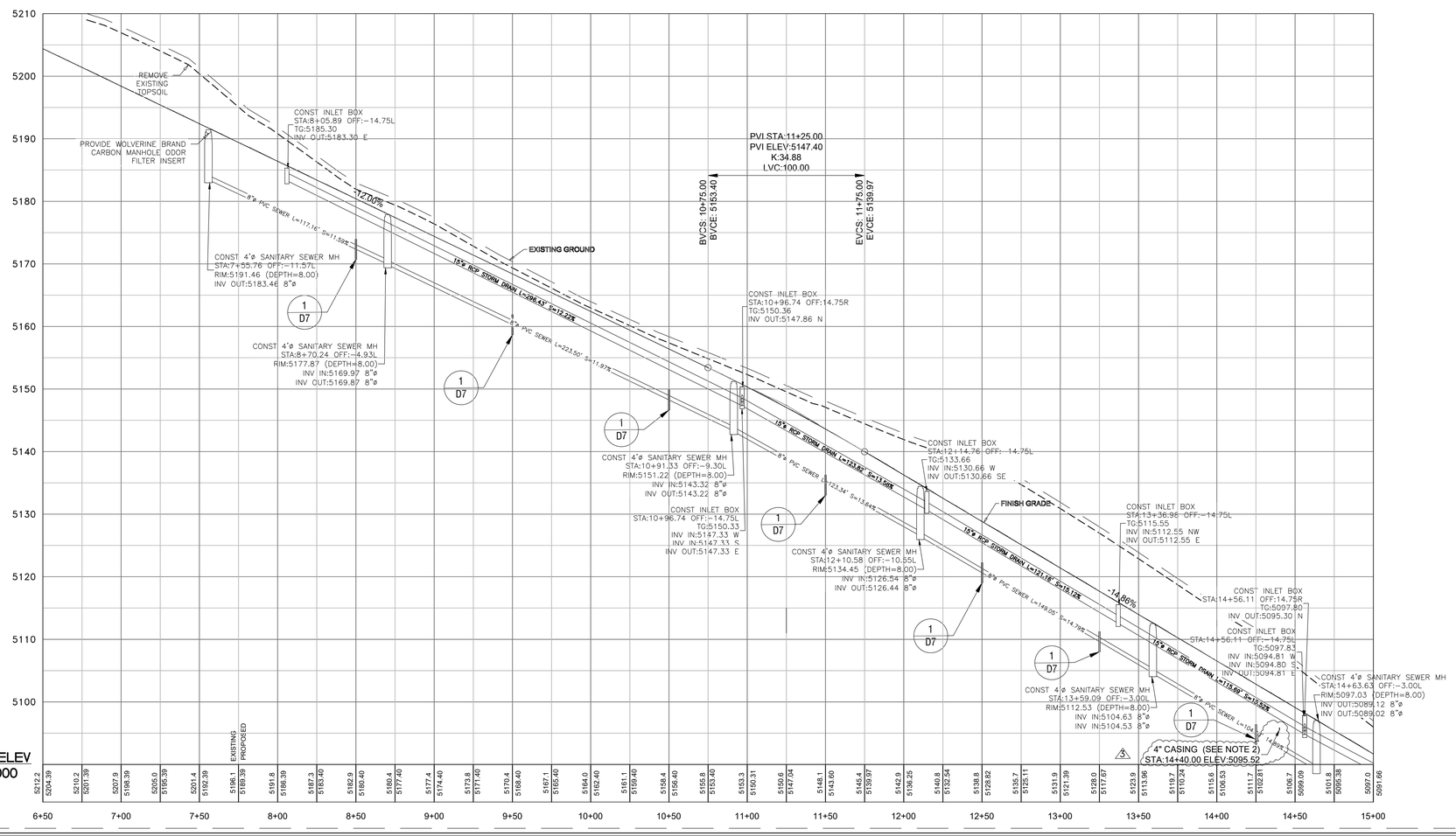
SKYLINE DRIVE - PLAN AND PROFILE
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL • LAND PLANNING
MUNICIPAL • LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

PP1







LEGEND

- SUBDIVISION BOUNDARY
- ROAD CENTERLINE
- EXISTING EDGE OF ASPHALT
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- FINISH GRADE 1' CONTOUR
- EXISTING SANITARY SEWER
- NEW SANITARY SEWER
- NEW PRESSURE SEWER LATERAL
- EXISTING STORM DRAIN
- NEW STORM DRAIN
- EXISTING CULINARY WATER
- NEW CULINARY WATER
- NEW CULINARY WATER LATERAL
- NEW CULINARY WATER METER
- EXISTING FIRE HYDRANT
- NEW FIRE HYDRANT
- EXISTING SECONDARY WATER
- NEW ASPHALT PAVING
- 6" DEPTH CUT AREA, OVER EX & 6" TOPSOIL OR 6" TRAIL MATERIAL PLACEMENT (HYDRO SEED IN DESIGNATED PHASE)
- HYDRO SEED FILL SLOPES IN DESIGNATED PHASE

NOTES:
1. NA FOR THIS SHEET.
2. INSTALL DOMINION ENERGY CASING, 45 LF OF 4 INCH NON GRAY, 40 INCH DEPTH FROM TOP OF PIPE, 3' AWAY FROM ALL OTHER UTILITIES RUNNING PARALLEL, 1' MIN. SEPARATION IF CROSSING. 3

REVISIONS	
DATE	DESCRIPTION
3 4/27/21	GAS CONDUIT ADD

SCALE: 1" = 40'
DATE: 3/30/2021
DESIGN: BSD/WJS
DRAWN: BSD/WJS
CHECKED: TMN

DWG: R:\0208 - B&H INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

PROFESSIONAL STRUCTURAL ENGINEER
3/30/2021
No. 4809845
TYLER M. NIELSON
STATE OF UTAH

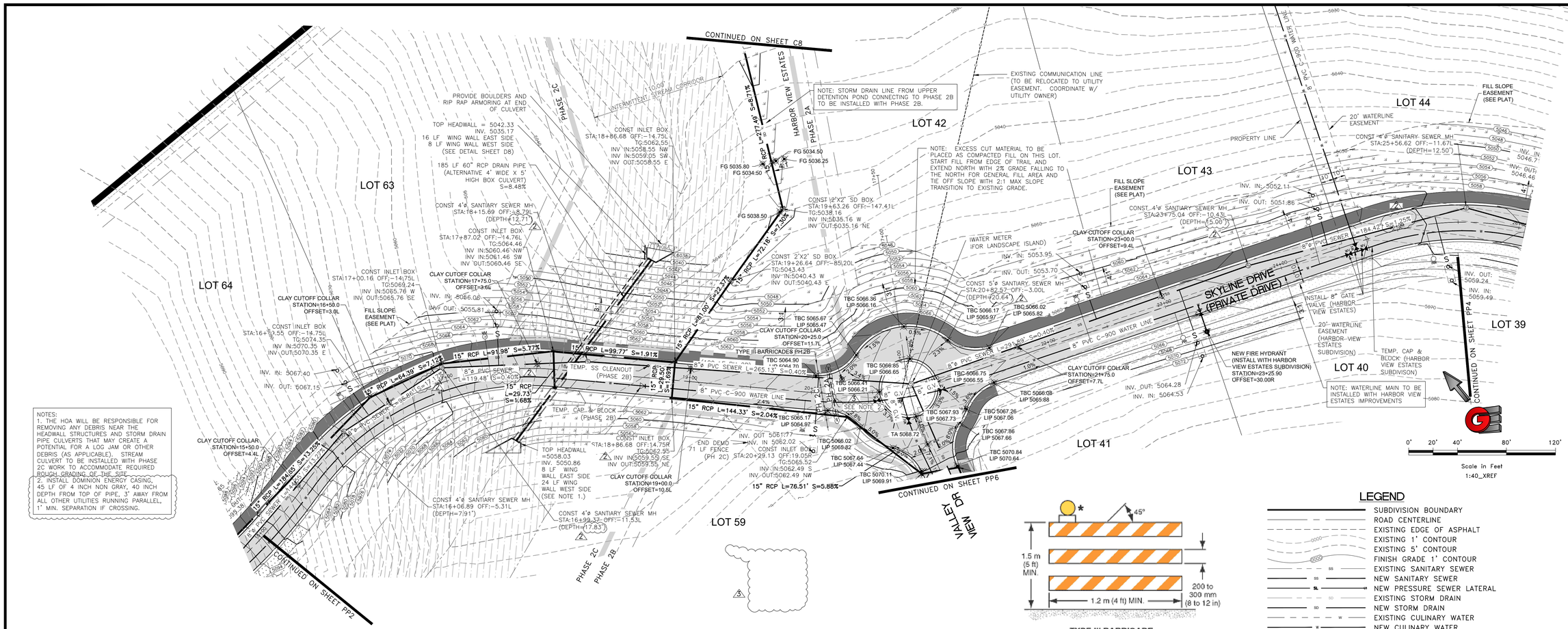
SKYLINE DRIVE - PLAN AND PROFILE

THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2

1250 NORTH 5200 EAST

EDEN, WEBER COUNTY, UTAH

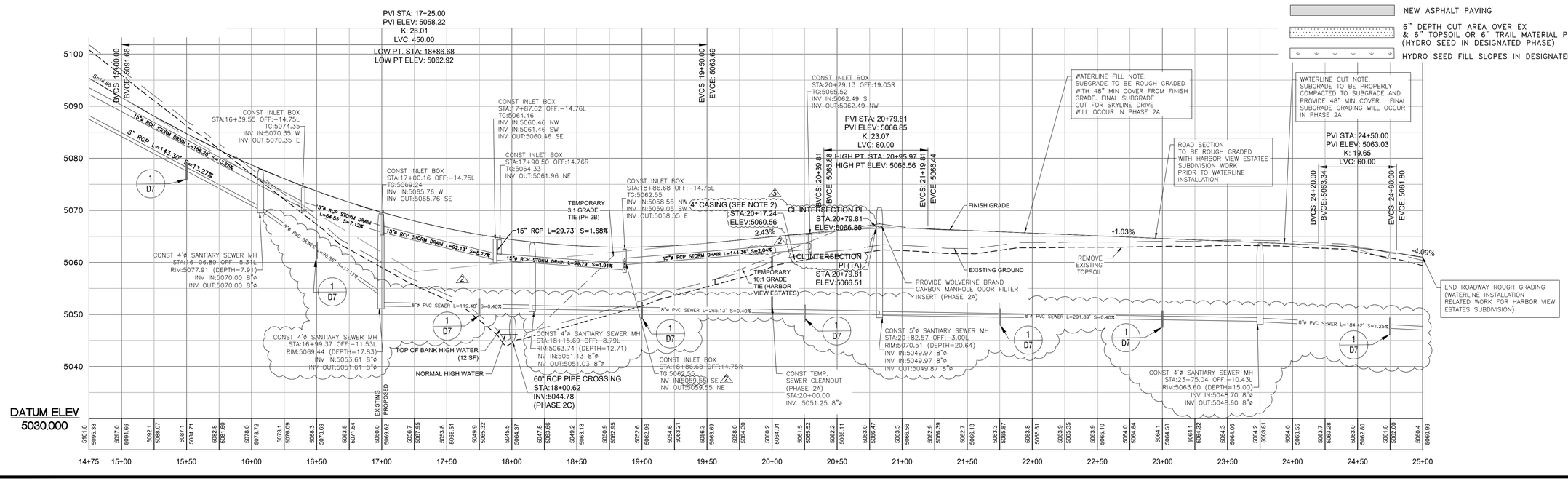
PP2



NOTES:
1. THE HOA WILL BE RESPONSIBLE FOR REMOVING ANY DEBRIS NEAR THE HEADWALL STRUCTURES AND STORM DRAIN PIPE CULVERTS THAT MAY CREATE A POTENTIAL FOR A LOG JAM OR OTHER DEBRIS (AS APPLICABLE). STREAM CULVERT TO BE INSTALLED WITH PHASE 2C WORK TO ACCOMMODATE REQUIRED ROUGH GRADING OF THE SITE.
2. INSTALL DOMINION ENERGY CASING, 45 LF OF 4 INCH NON GRAY, 40 INCH DEPTH FROM TOP OF PIPE, 3' AWAY FROM ALL OTHER UTILITIES RUNNING PARALLEL, 1' MIN. SEPARATION IF CROSSING.

LEGEND

- SUBDIVISION BOUNDARY
- ROAD CENTERLINE
- EXISTING EDGE OF ASPHALT
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- FINISH GRADE 1' CONTOUR
- EXISTING SANITARY SEWER
- NEW SANITARY SEWER
- NEW PRESSURE SEWER LATERAL
- EXISTING STORM DRAIN
- NEW STORM DRAIN
- EXISTING CULINARY WATER
- NEW CULINARY WATER
- NEW CULINARY WATER LATERAL
- NEW CULINARY WATER METER
- EXISTING FIRE HYDRANT
- NEW FIRE HYDRANT
- EXISTING SECONDARY WATER
- NEW ASPHALT PAVING
- 6" DEPTH CUT AREA OVER EX & 6" TOPSOIL OR 6" TRAIL MATERIAL PLACEMENT (HYDRO SEED IN DESIGNATED PHASE)
- HYDRO SEED FILL SLOPES IN DESIGNATED PHASE



REVISIONS		
DATE		DESCRIPTION
4/16/21	2	SEWER & SD REV.
4/27/21	3	GAS CONDUIT ADD

SCALE: 1"=40'
DATE: 9/30/2021
DESIGN: BSD/WJS
DRAWN: BSD/WJS
CHECKED: TMN
DWG: R:\2028 - B&M INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

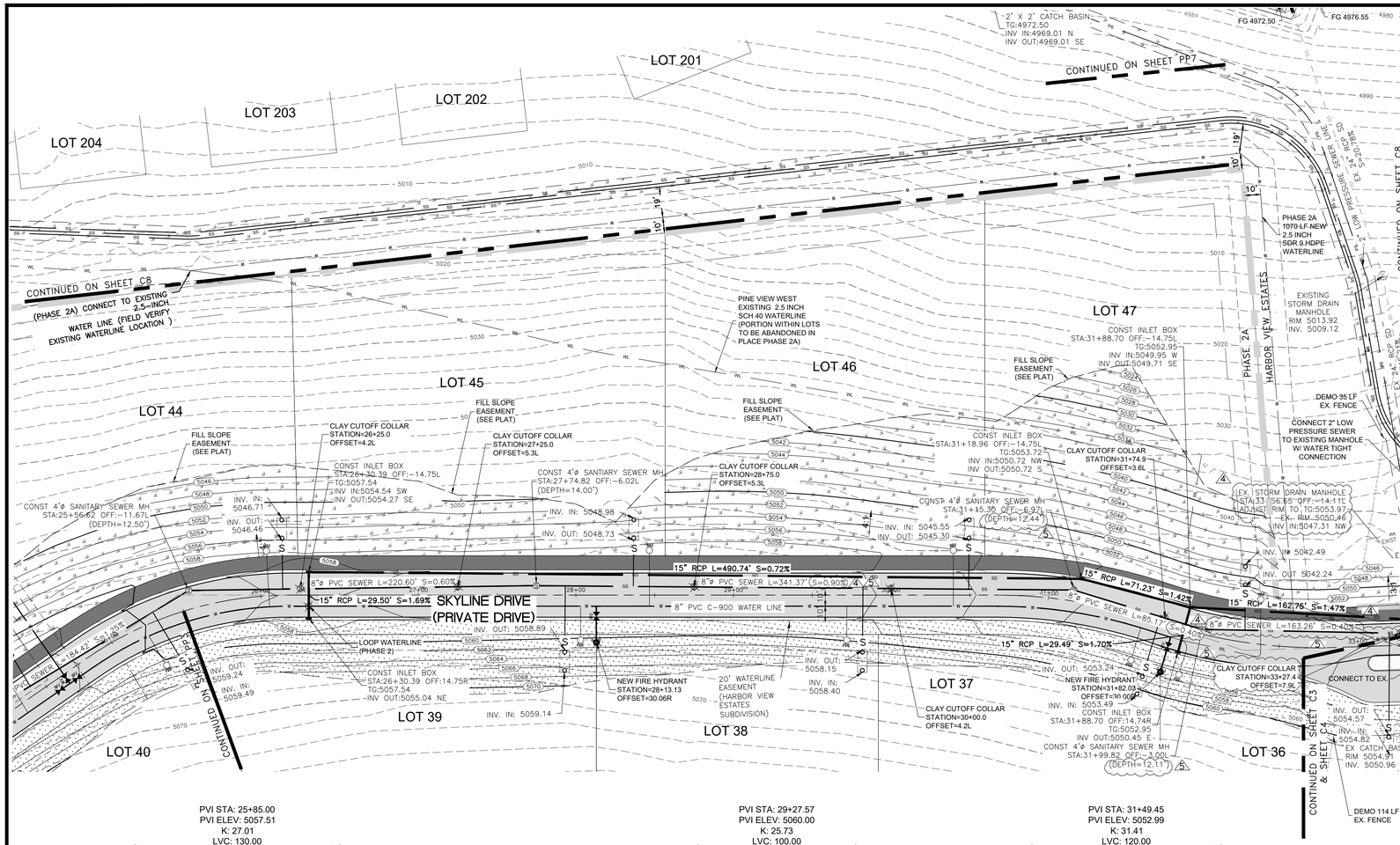
PROFESSIONAL STRUCTURAL ENGINEER
3/30/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

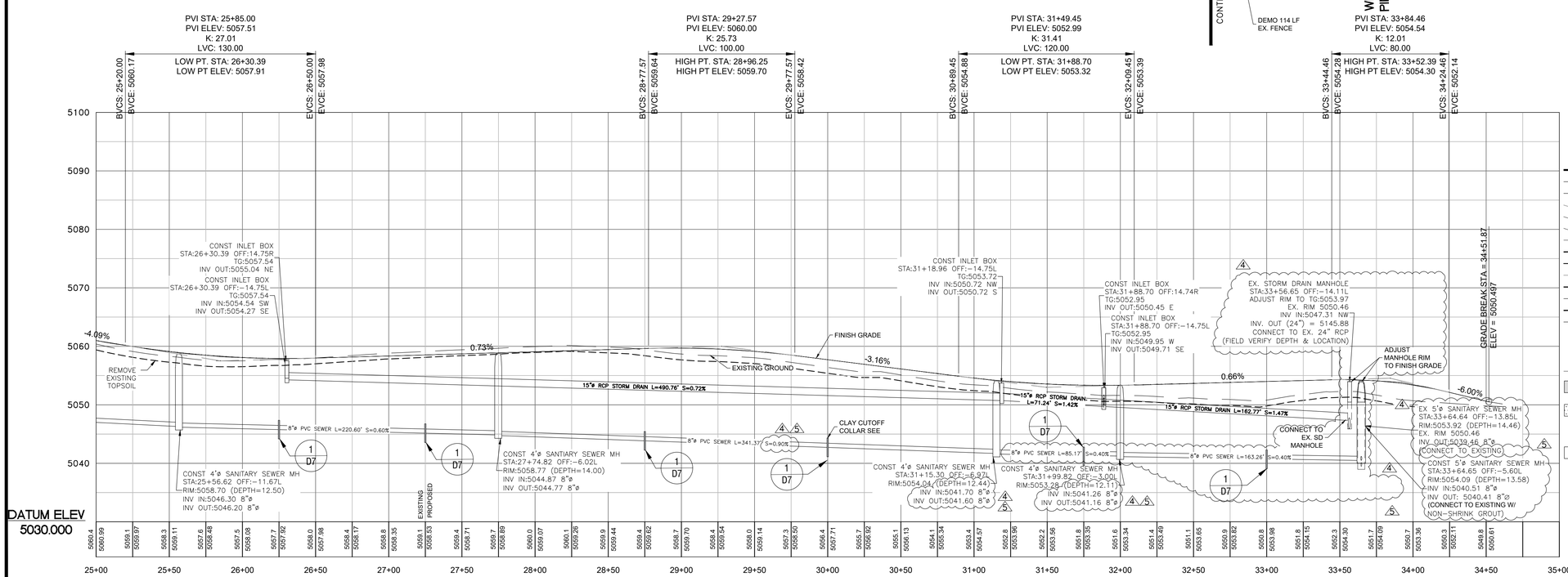
SKYLINE DRIVE - PLAN AND PROFILE

THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL · LAND PLANNING
MUNICIPAL · LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

PP3





LEGEND

- SUBDIVISION BOUNDARY
- ROAD CENTERLINE
- EXISTING EDGE OF ASPHALT
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- FINISH GRADE 1' CONTOUR
- EXISTING SANITARY SEWER
- NEW SANITARY SEWER
- NEW PRESSURE SEWER LATERAL
- EXISTING STORM DRAIN
- NEW STORM DRAIN
- EXISTING CULINARY WATER
- NEW CULINARY WATER
- NEW CULINARY WATER LATERAL
- NEW CULINARY WATER METER
- EXISTING FIRE HYDRANT
- NEW FIRE HYDRANT
- EXISTING SECONDARY WATER
- NEW ASPHALT PAVING
- 6" DEPTH CUT AREA OVER EX & 6" TOPSOIL OR 6" TRAIL MATERIAL PLACEMENT (HYDRO SEED IN DESIGNATED PHASE)
- HYDRO SEED FILL SLOPES IN DESIGNATED PHASE

REVISIONS		
	DATE	DESCRIPTION
4	5/13/21	SEWER UPDATES
5	5/26/21	SEWER UPDATES

SCALE: 1"=40'
DATE: 9/30/2021
DESIGN: BSD/W-S
DRAWN: BSD/W-S
CHECKED: TMN

DWG: R:\2028 - B&M INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

PROFESSIONAL STRUCTURAL ENGINEER 3/30/2021 No. 4859845 TYLER M. NIELSON LICENSED STATE OF UTAH

SKYLINE DRIVE - PLAN AND PROFILE

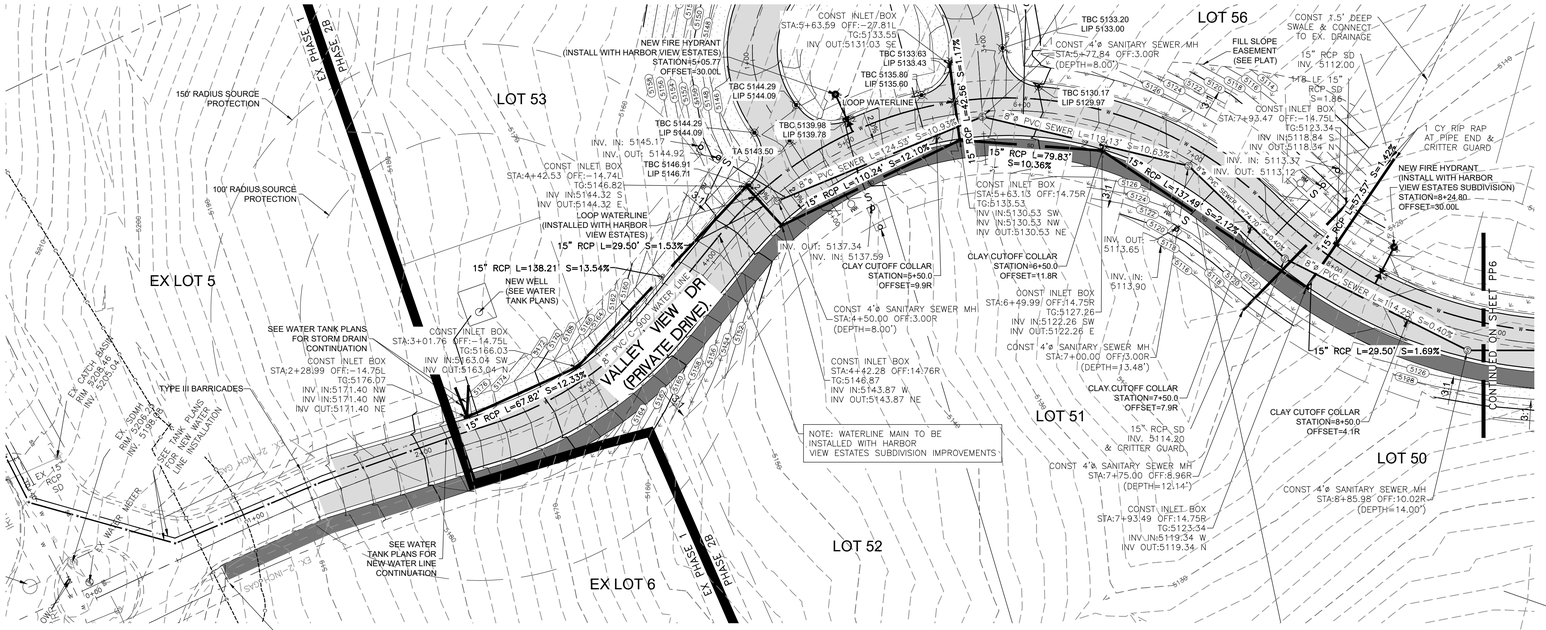
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2

1250 NORTH 5200 EAST

EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL · LAND PLANNING
MUNICIPAL · LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

PP4

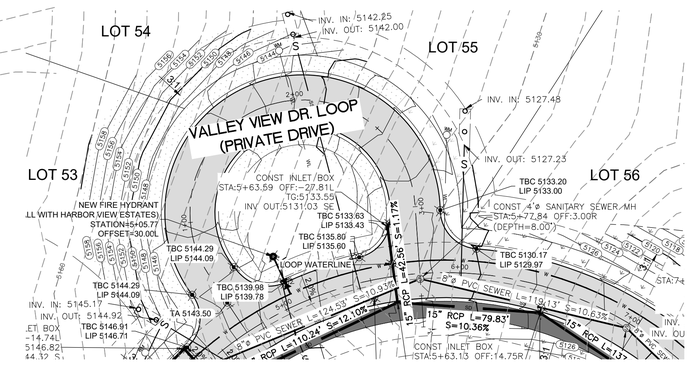


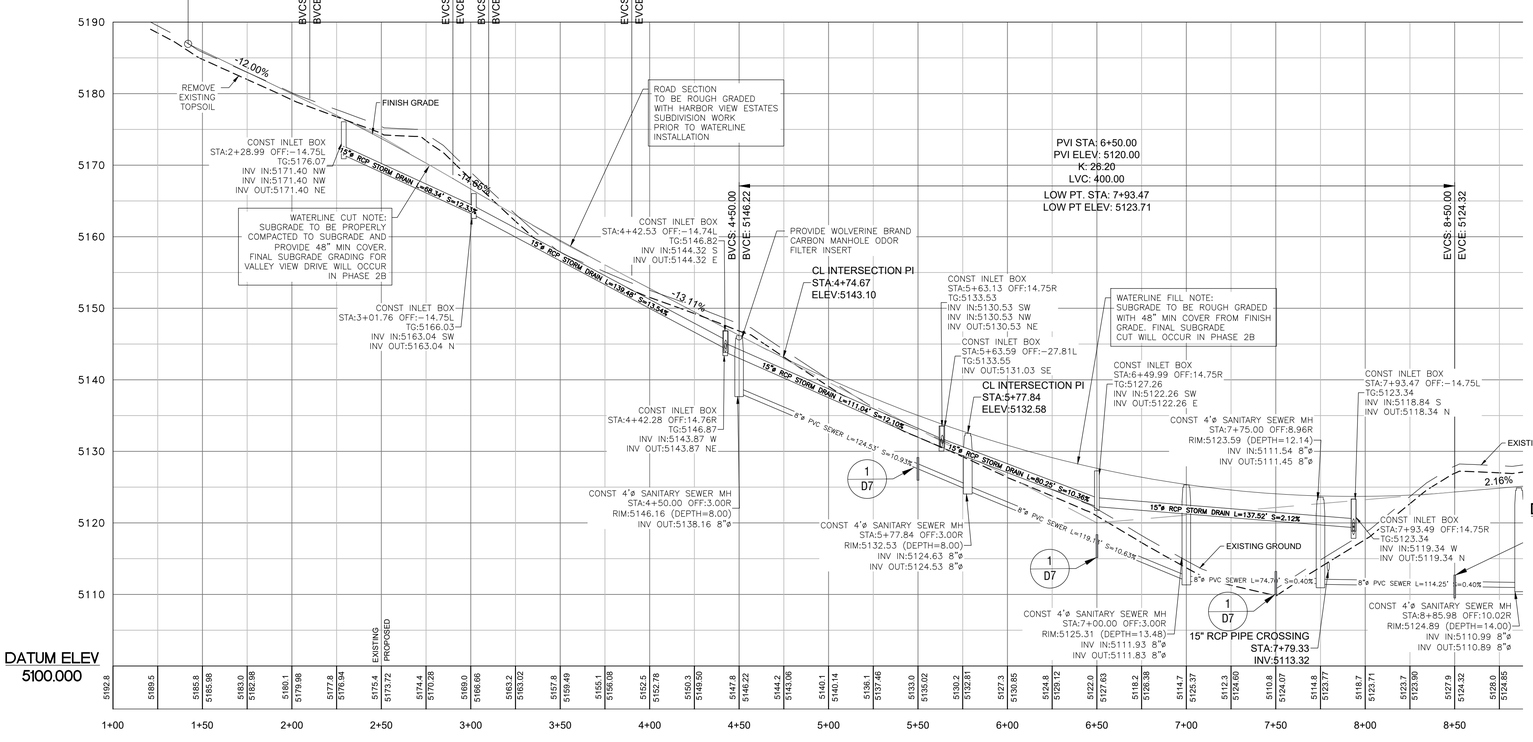
LEGEND

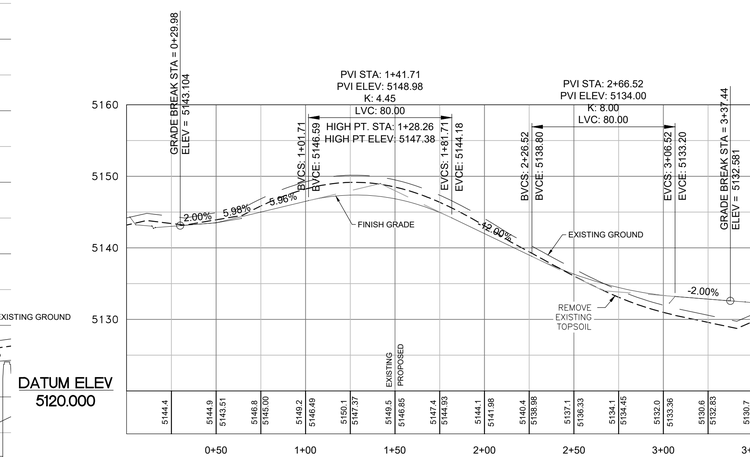
- SUBDIVISION BOUNDARY
- ROAD CENTERLINE
- EXISTING EDGE OF ASPHALT
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- FINISH GRADE 1' CONTOUR
- EXISTING SANITARY SEWER
- NEW SANITARY SEWER
- NEW PRESSURE SEWER LATERAL
- EXISTING STORM DRAIN
- NEW STORM DRAIN
- EXISTING CULINARY WATER
- NEW CULINARY WATER
- NEW CULINARY WATER LATERAL
- NEW CULINARY WATER METER
- EXISTING FIRE HYDRANT
- NEW FIRE HYDRANT
- EXISTING SECONDARY WATER
- NEW ASPHALT PAVING
- 6" DEPTH CUT AREA OVER EX & 6" TOPSOIL OR 6" TRAIL MATERIAL PLACEMENT (HYDRO SEED IN DESIGNATED PHASE)
- HYDRO SEED FILL SLOPES IN DESIGNATED PHASE

0' 20' 40' 80' 120'

Scale in Feet
1" = 40'







SCALE	1" = 40'
DATE	3/30/2021
DESIGN	BSD/WJS
DRAWN	BSD/WJS
CHECKED	TMN

REVISIONS

DATE	DESCRIPTION

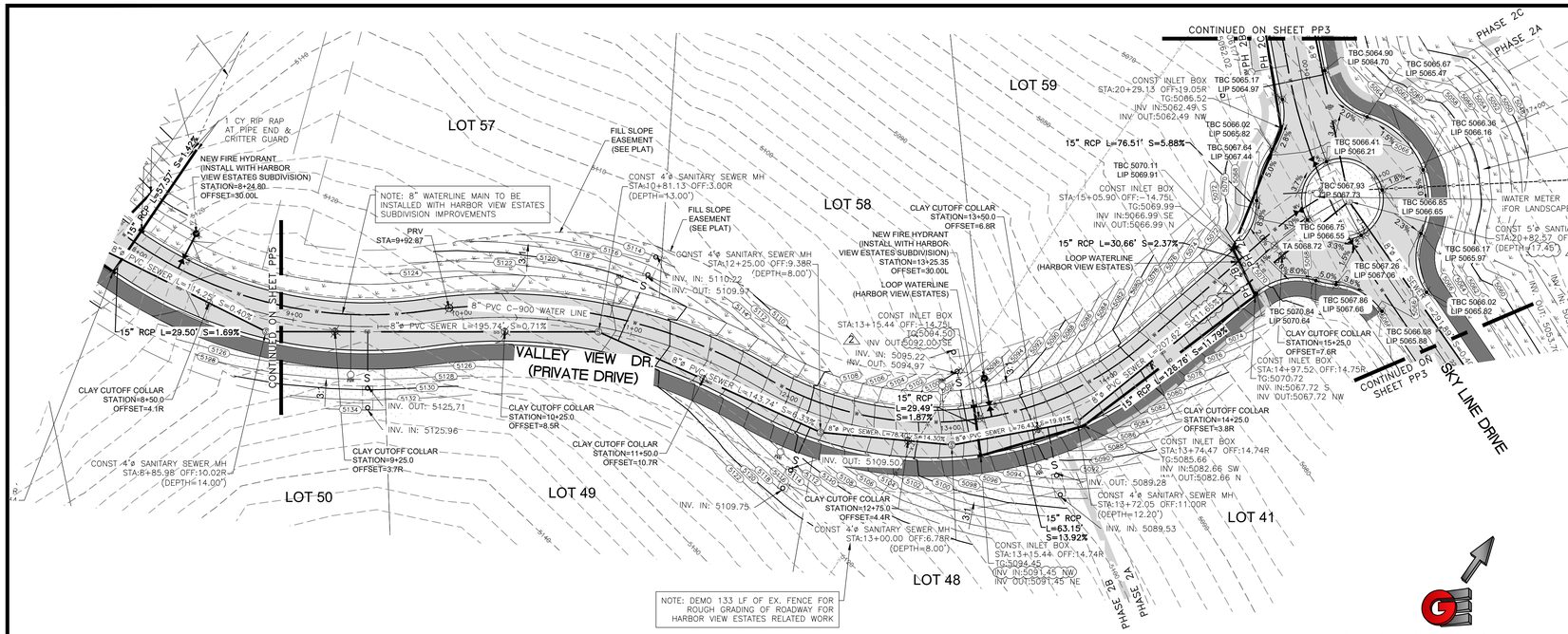
DWG: R:\2028 - B&M INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

PROFESSIONAL STRUCTURAL ENGINEER
3/30/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

VALLEY VIEW DR - PLAN AND PROFILE
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

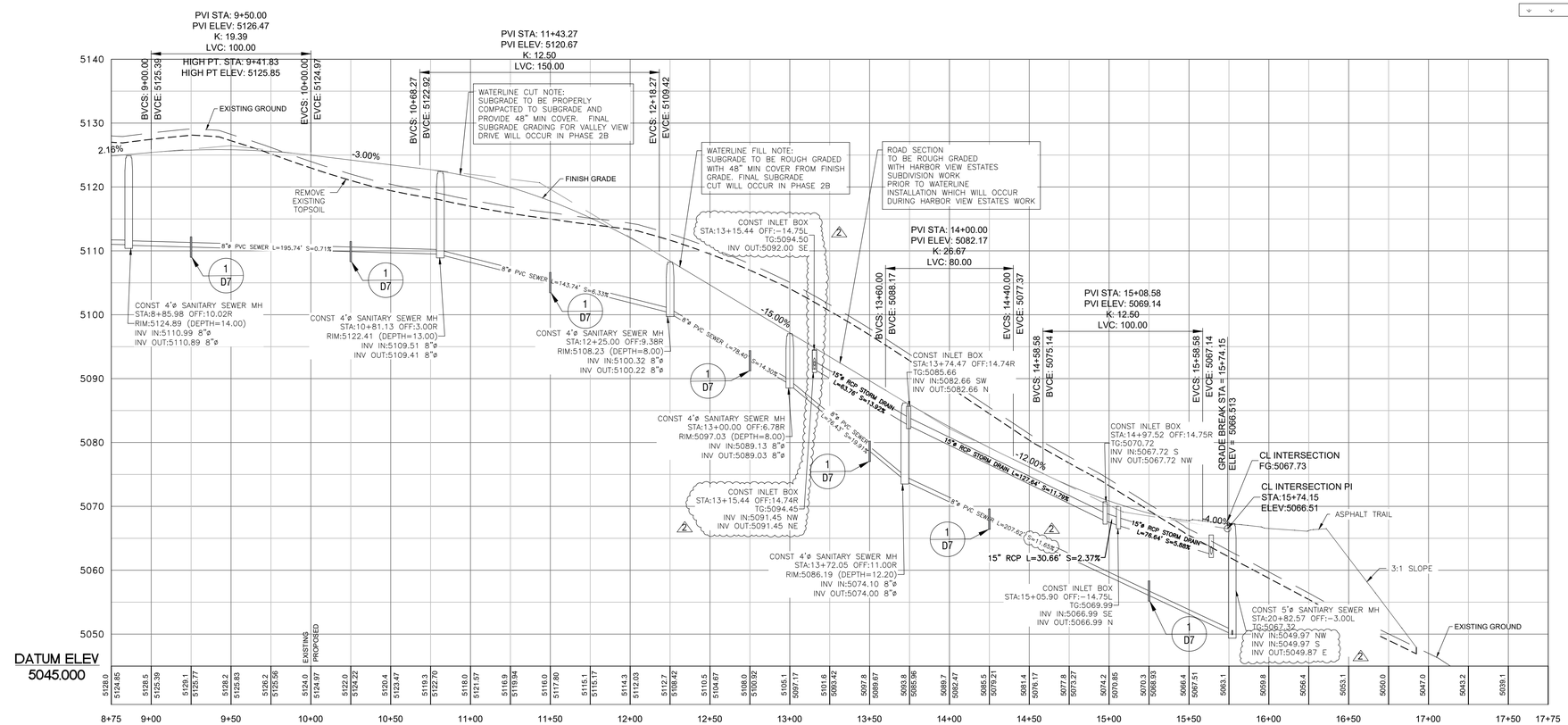
GARDNER ENGINEERING
CIVIL • LAND PLANNING
MUNICIPAL • LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

PP5



LEGEND

- SUBDIVISION BOUNDARY
- ROAD CENTERLINE
- EXISTING EDGE OF ASPHALT
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- FINISH GRADE 1' CONTOUR
- EXISTING SANITARY SEWER
- NEW SANITARY SEWER
- NEW PRESSURE SEWER LATERAL
- EXISTING STORM DRAIN
- NEW STORM DRAIN
- EXISTING CULINARY WATER
- NEW CULINARY WATER
- NEW CULINARY WATER LATERAL
- NEW CULINARY WATER METER
- EXISTING FIRE HYDRANT
- NEW FIRE HYDRANT
- EXISTING SECONDARY WATER
- NEW ASPHALT PAVING
- 6" DEPTH CUT AREA OVER EX & 6" TOPSOIL OR 6" TRAIL MATERIAL PLACEMENT (HYDRO SEED IN DESIGNATED PHASE)
- HYDRO SEED FILL SLOPES IN DESIGNATED PHASE



REVISIONS	
DATE	DESCRIPTION
4/16/21	SEWER & SD REV.

SCALE: 1" = 40'
DATE: 3/30/2021
DESIGN: BSD/WJS
DRAWN: BSD/WJS
CHECKED: TMN

DWG: R1/2028 - B&H INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

PROFESSIONAL STRUCTURAL ENGINEER
3/30/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

VALLEY VIEW DR - PLAN AND PROFILE

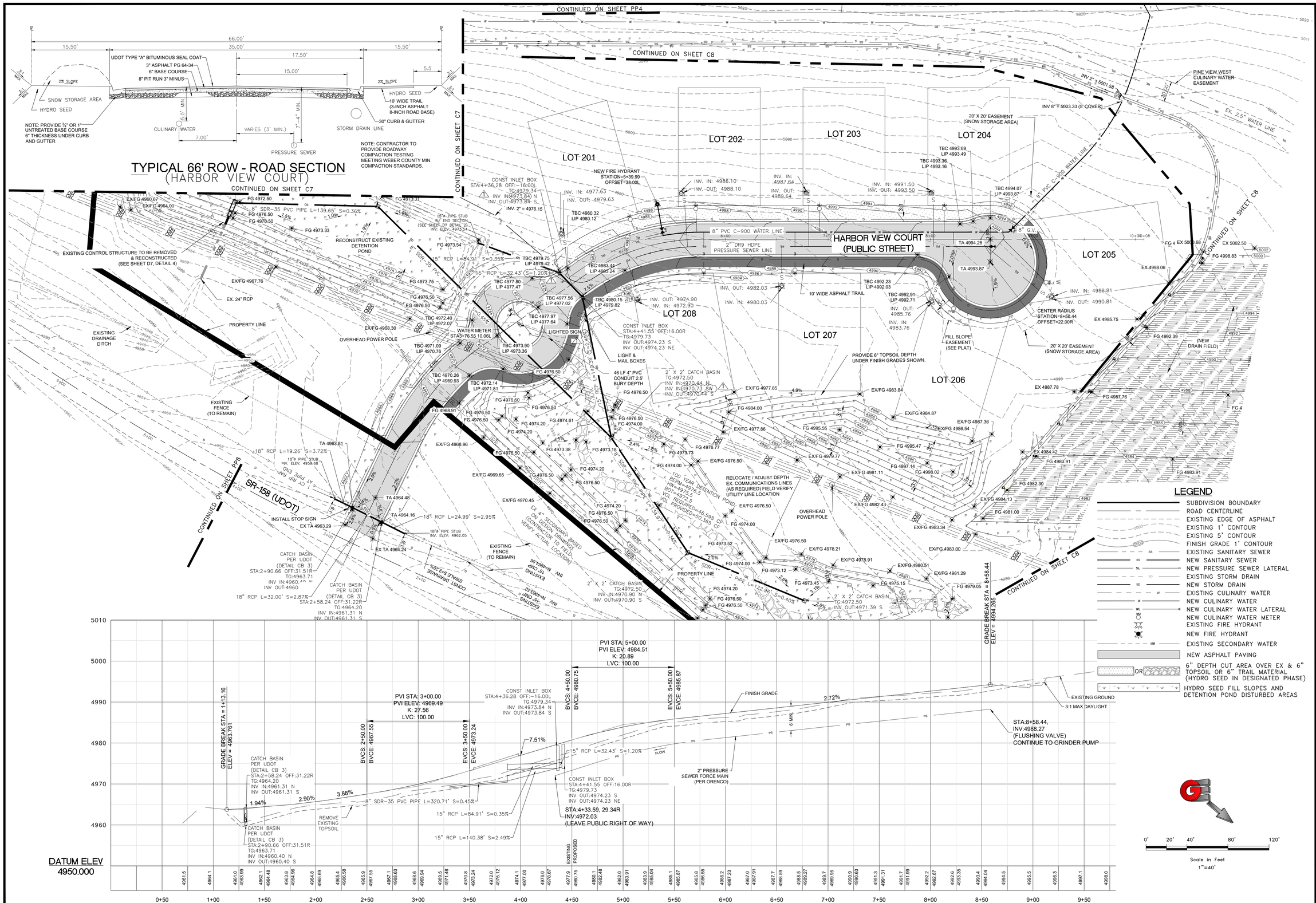
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2

1250 NORTH 5200 EAST

EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL · LAND PLANNING
MUNICIPAL · LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

PP6



SCALE 1"=40'
DATE 12/10/2020
DESIGN BSD/W-S
DRAWN BSD/W-S
CHECKED TMN

REVISIONS

DATE	DESCRIPTION
4/6/21	STORM DRAIN REV.

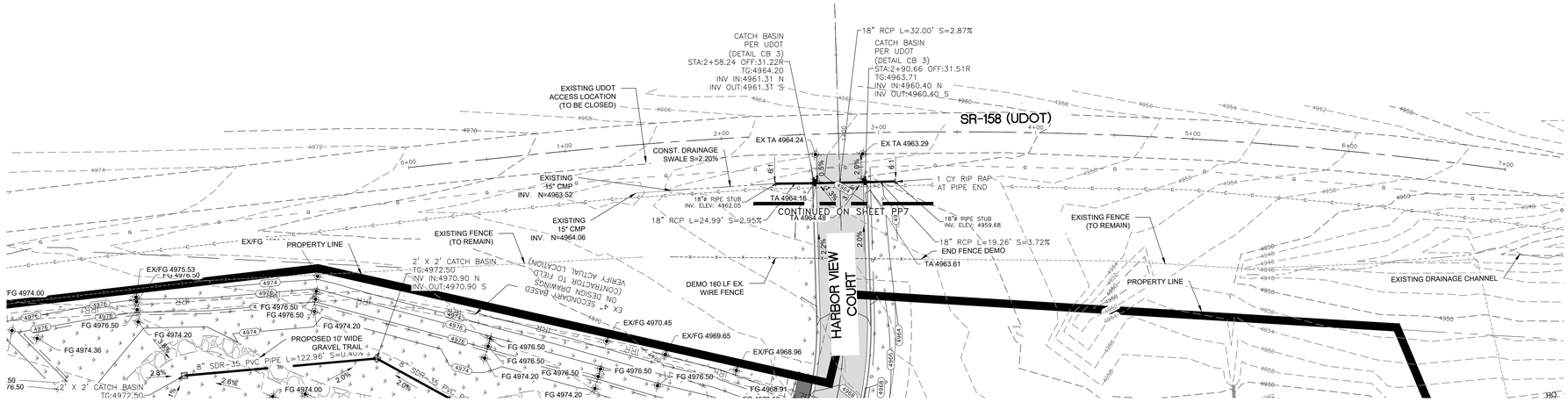
DWG: R:\2018 - BAH INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

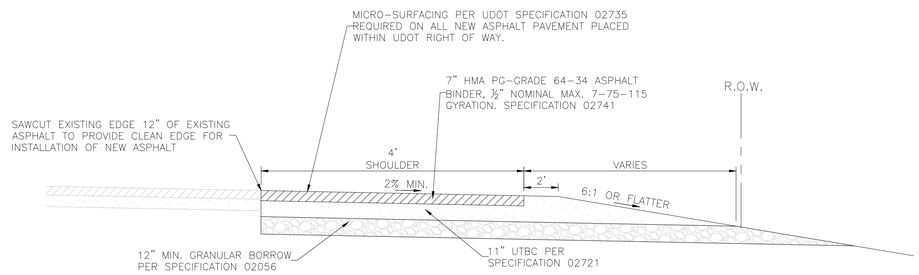
PROFESSIONAL STRUCTURAL ENGINEER 12/10/2020 No. 4859845 TYLER M. NIELSON LICENSED STATE OF UTAH

HARBOR VIEW COURT - PLAN AND PROFILE
HARBOR VIEW ESTATES SUBDIVISION
HARBOR VIEW COURT (1250 NORTH) HWY 158
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL · LAND PLANNING
MUNICIPAL · LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

PP7



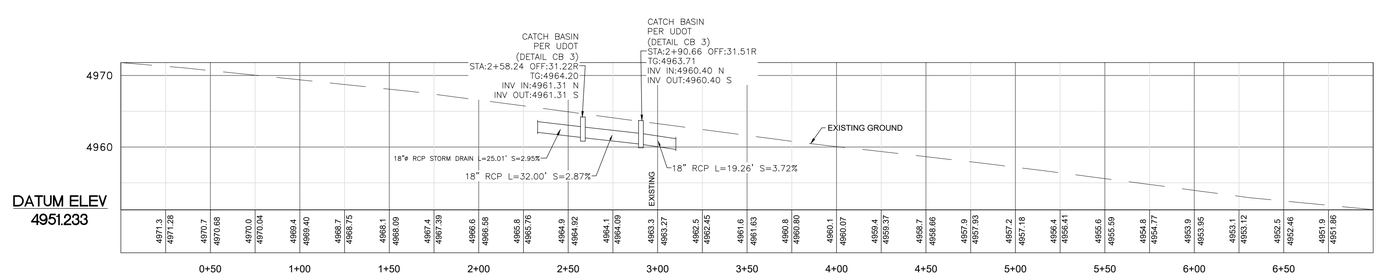


TYPICAL SECTION - SR-158
NOT TO SCALE

LEGEND

- SUBDIVISION BOUNDARY
- ROAD CENTERLINE
- EXISTING EDGE OF ASPHALT
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- FINISH GRADE 1' CONTOUR
- EXISTING SANITARY SEWER
- NEW SANITARY SEWER
- NEW PRESSURE SEWER LATERAL
- EXISTING STORM DRAIN
- NEW STORM DRAIN
- EXISTING CULINARY WATER
- NEW CULINARY WATER
- NEW CULINARY WATER LATERAL
- NEW CULINARY WATER METER
- EXISTING FIRE HYDRANT
- NEW FIRE HYDRANT
- EXISTING SECONDARY WATER
- NEW ASPHALT PAVING
- 6" DEPTH CUT AREA OVER EX & 6" TOPSOIL OR 6" TRAIL MATERIAL (HYDRO SEED IN DESIGNATED PHASE)
- HYDRO SEED FILL SLOPES AND DETENTION POND DISTURBED AREAS

0' 20' 40' 80' 120'
Scale in Feet
1:40_XREF



SCALE: 1:40_XREF
DATE: 12/10/2020
DESIGN: BSD/W-S
DRAWN: BSD/W-S
CHECKED: TMN
DWG: R:\0208 - B&H INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

REVISIONS

DATE	DESCRIPTION

PROFESSIONAL STRUCTURAL ENGINEER
12/10/2020
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

SR-158 (UDOT) - PLAN AND PROFILE
HARBOR VIEW ESTATES SUBDIVISION
HARBOR VIEW COURT (1250 NORTH) HWY 158
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL • LAND PLANNING
MUNICIPAL • LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

Pump Selection for a Non-Pressurized System - Single Family Residence Project

Crimson Ridge / Harbor View Estates - Effluent Sewer Section

Parameters

Discharge Assembly Size	1.25	inches
Transport Length	70	feet
Transport Pipe Class	40	
Transport Line Size	1.25	inches
Distributing Valve Model	None	
Max Elevation Lift	10	feet
Design Flow Rate	10	gpm
Flow Meter	None	inches
'Add-on' Friction Losses	76	feet

Calculations

Transport Velocity	2.2	fps

Frictional Head Losses

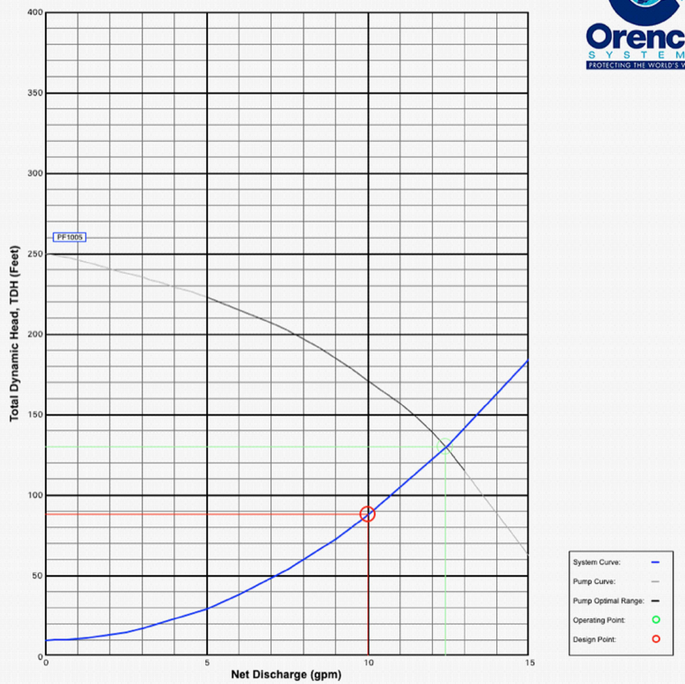
Loss through Discharge	0.7	feet
Loss in Transport	1.0	feet
Loss through Valve	0.0	feet
Loss through Flowmeter	0.0	feet
'Add-on' Friction Losses	76.0	feet

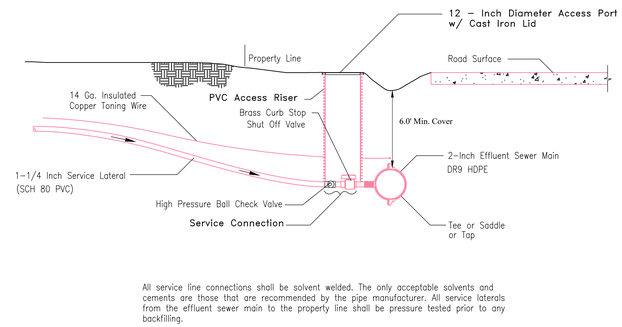
Pipe Volumes

Vol of Transport Line	5.4	gals

Minimum Pump Requirements

Design Flow Rate	10.0	gpm
Total Dynamic Head	87.7	feet





All service line connections shall be solvent welded. The only acceptable solvents and cements are those that are recommended by the pipe manufacturer. All service laterals from the effluent sewer main to the property line shall be pressure tested prior to any backfilling.

1 EFFLUENT PRESSURE SEWER TYPICAL SERVICE CONNECTION

Scale: (NOT TO SCALE)

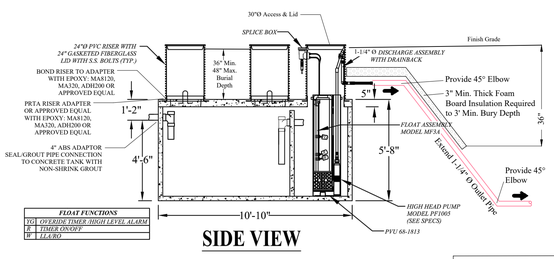
1500 GALLON SEPTIC TANK DETAIL

NOTES:
WEIGHT: 10,800 LBS
EXCAVATION DIMS: 8' X 13'
SEALED WITH BUTYL ROPE
4" SANITARY TEE
4500 PSI CONCRETE

REINFORCING:
TANK - 6X6-6X6 WELDED WIRE FABRIC CAGE
#4 BAR OVERLAP 2' O.C.
LID: #4 BAR 8" O.C.E.W.

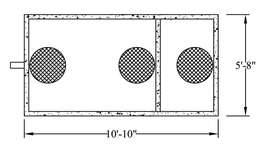
SPECS ON THICKNESS
WALLS-3"
FLOOR-3"
LID-5"

NOTE:
WATERTIGHT TANK TEST TO EXTEND A MINIMUM OF 3" ABOVE HIGHEST JOINT IN ACCESS RISER



FLOAT FUNCTIONS	
YG	OVERIDE TIMER /HIGH LEVEL ALARM
R	TIMER ON/OFF
B	LEAD

SIDE VIEW



TOP VIEW

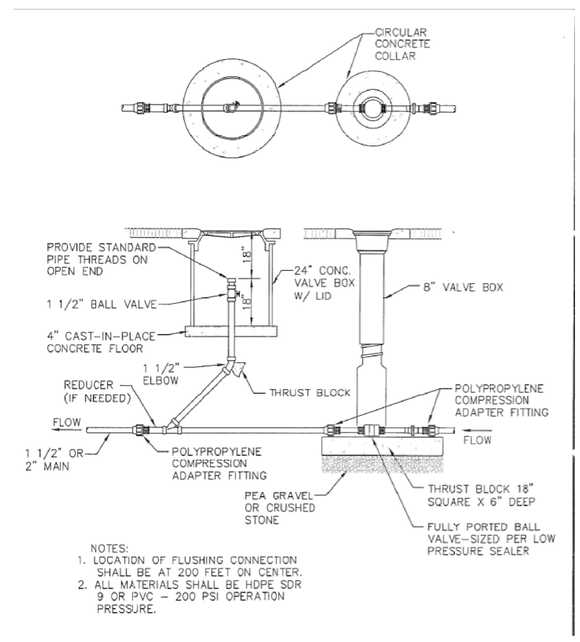
SEPTIC TANK NOTE:
CONTACT ALTERNATIVEONSITE
BEN WITT 801-380-0103
FOR CONCRETE TANK (COMPLETE). TO BE INSTALLED AND MAINTAINED BY FUTURE HOME OWNER. AT LEAST TWO INDEPENDENT POWER SOURCES WITH APPROVED WIRING SHALL BE INSTALLED FOR SEWER PUMP.

FOR ORENCO PUMPS CONTACT
AUTHORIZED DEALER
JEX ENVIRONMENTAL SOLUTIONS
PO BOX 3603
LOGAN, UT 84323
1-435-753-2051

2 1,500 GALLON TANK W/ PUMP (HARBOR VIEW ESTATES ONLY)

(4 BEDROOMS OR LESS)

Scale: (NOT TO SCALE)



NOTES:
1. LOCATION OF FLUSHING CONNECTION SHALL BE AT 200 FEET ON CENTER.
2. ALL MATERIALS SHALL BE HDPE SDR 9 OR PVC - 200 PSI OPERATION PRESSURE.

3 EFFLUENT PRESSURE SEWER TYPICAL FLUSING CONNECTION ON MAIN LINE

Scale: (NOT TO SCALE)

SCALE: NTS
DATE: 3/30/2021
DESIGN: BSD/WJS
DRAWN: BSD/WJS
CHECKED: TMN

REVISIONS

DATE	DESCRIPTION

DWG: R:\2028 - B&H INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

PROFESSIONAL STRUCTURAL ENGINEER
3/30/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

SEWER DETAILS - HARBOR VIEW ESTATES SUBDIVISION
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL • LAND PLANNING
MUNICIPAL • LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

D1

Pump Selection for a Non-Pressurized System - Single Family Residence Project

Crimson Ridge / Harbor View Estates - Effluent Sewer Section

Parameters

Discharge Assembly Size	1.25	inches
Transport Length	70	feet
Transport Pipe Class	40	
Transport Line Size	1.25	inches
Distributing Valve Model	None	
Max Elevation Lift	10	feet
Design Flow Rate	10	gpm
Flow Meter	None	inches
'Add-on' Friction Losses	76	feet

Calculations

Transport Velocity	2.2	fps

Frictional Head Losses

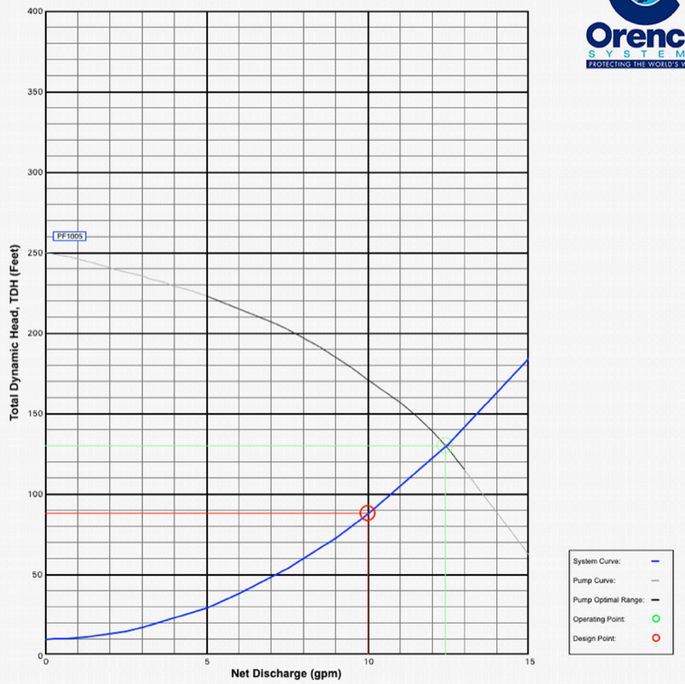
Loss through Discharge	0.7	feet
Loss in Transport	1.0	feet
Loss through Valve	0.0	feet
Loss through Flowmeter	0.0	feet
'Add-on' Friction Losses	76.0	feet

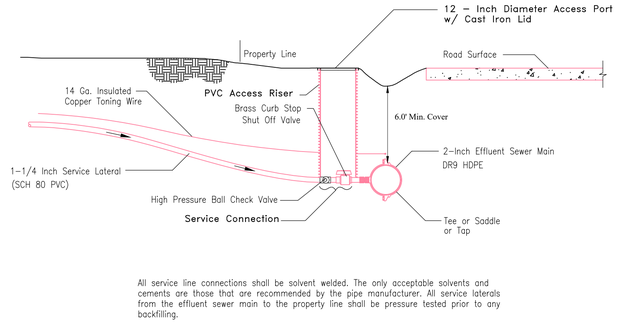
Pipe Volumes

Vol of Transport Line	5.4	gals

Minimum Pump Requirements

Design Flow Rate	10.0	gpm
Total Dynamic Head	87.7	feet

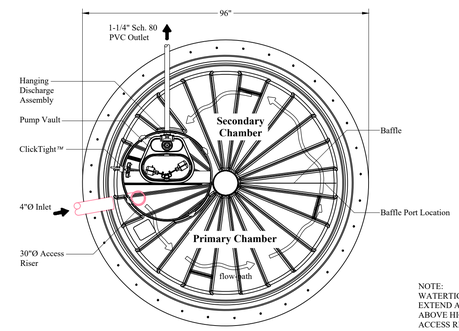




All service line connections shall be solvent welded. The only acceptable solvents and cements are those that are recommended by the pipe manufacturer. All service laterals from the effluent sewer main to the property line shall be pressure tested prior to any backfilling.

1 EFFLUENT PRESSURE SEWER TYPICAL SERVICE CONNECTION

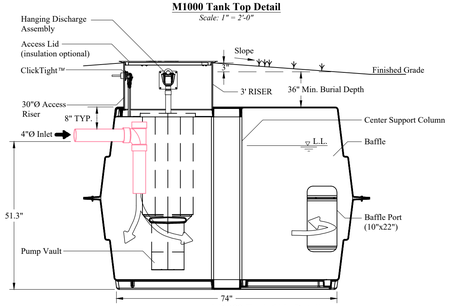
Scale: (NOT TO SCALE)



NOTE:
WATERTIGHT TANK TEST TO EXTEND A MINIMUM OF 3" ABOVE HIGHEST JOINT IN ACCESS RISER

M1000 Tank Top Detail

Scale: 1" = 2'-0"



M1000 Tank Side Detail

Scale: N.T.S.

Inside Height Inches	Total Gallons
60	1217
54	1124
48	1006
42	881
36	744
30	601
24	460
18	324
12	200
6	83
0	0

General Notes:

Tank Volumes: *Total Volume: 1223 gals*
Operating Volume: 1006 gals @ 48"
Unit volume at typical Operating Depth: 20 gal./in.±

Loads: *Top = 500 psf minimum*
Lateral Load = 62.4 pcf, EFP
Concentrated Wheel Load = 2500 lb.
The septic tank shall be capable of withstanding long-term hydrostatic loading, in addition to the soil loading, due to a water table maintained at ground surface.
Soil Bearing = 1000 psf (re-evaluate support base if soil bearing is less or unequal)

Method of calcuations:
1. Tanks shall be analyzed using strength design methods and finite element analysis for buried structures.
2. Calculations shall address the following:
- *strength*
- *buckling*
- *deflection of 0.5 - 1% of the tank diameter, based on service load (including long-term deflection lag)*
- *buoyancy*

3. Performance testing shall include vacuum testing followed by a hydrostatic test.

Material: *Resin: polydicyclopentadiene*

The properties listed here along with the minimum thickness as shown in the details are considered design minimums that must be maintained during the manufacturing of the tanks. The primary strength properties are listed below:

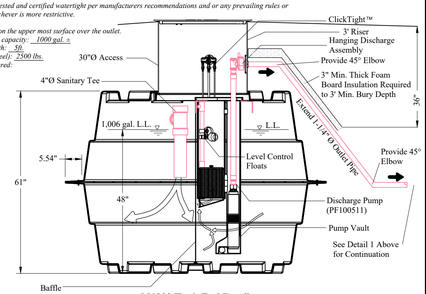
Property	*DCPD*
Flexural modulus E_f	*274,000 psi*
Tensile strength F_t	*6,700 psi*
Flexural strength F_b	*10,500 psi*
Compressive strength F_c	*9,200 psi*
Shear In-Plane F_s	*7,180 psi*
Flexural Rigidity	*585 psi*

Poisson ratio = 0.400 (Any permanent metal part shall be 300 series stainless steel.)

Installation: *Installation, bedding, compaction, etc., shall be in "strict" compliance with the manufacturers standards and state or local rules and or guidelines. All tanks shall be set level on a minimum 4 inch thick compacted sand or approved granular bedding overlying a firm uniform base. The base shall be stable and uniform in order to ensure equal bearing across the tank bottom. Installations with 18 inches or less of ground cover may require additional buoyancy considerations as described in the manufacturers instructions. A minimum cover of 12 inches is required over the tank in areas subject to occasional light wheel loads.*

Test: *Tanks shall be tested and certified watertight per manufacturers recommendations and or any prevailing rules or guidelines, whichever is more restrictive.*

Tank Markings: *Place marking on the upper most surface over the outlet.*
Nominal Liquid capacity: 1000 gal. ±
Max burial depth: 58"
Max traffic (wheel): 2500 lbs.
Date manufactured:
Permit no.:



M1000 Tank End Detail

Scale: N.T.S.

ORENCO AUTHORIZED DEALER
JEX ENVIRONMENTAL SOLUTIONS
PO BOX 3603
LOGAN, UT 84323
1-435-753-2051

PRELOS 1000 GALLON PROCESSOR WITH PUMP NOTES:
THIS UNIT (COMPLETE) TO BE INSTALLED AND MAINTAINED BY FUTURE HOME OWNER. AT LEAST TWO INDEPENDENT POWER SOURCES WITH APPROVED WIRING SHALL BE INSTALLED.

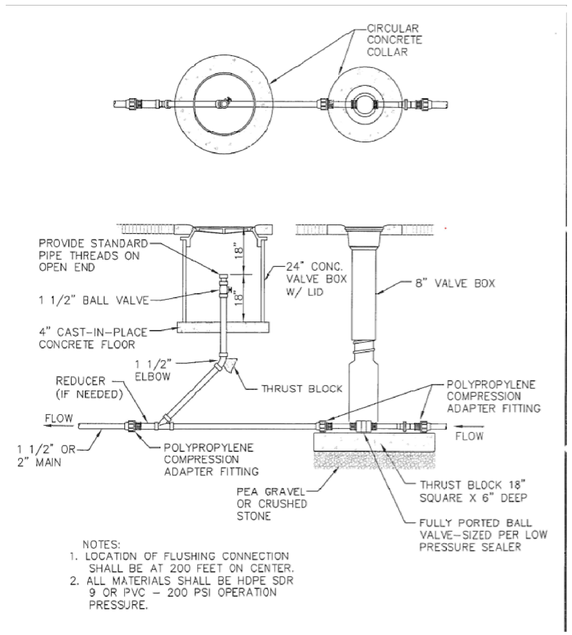
Orenco SYSTEMS

Disclaimer: This Proposed System Configuration Drawing is provided solely as a design aid and illustrates one possible configuration of a system that would comply with Orenco's design criteria for the requirements and/or specifications that have been communicated to Orenco (based on third-party standards testing protocols and performance reports, as applicable). Design decisions, including the actual layout and configuration of the system and its viability for the project, are at the sole discretion of the systems's designer.

Prelos 1000 Processor with Pump Discscharge	Drawn By: CSJ	Scale: N.T.S.	
	Reviewed By: TB	Sheet: 1 OF 1	
DESIGN AID	File Name: NDW-TD-LOS-100-1.DWG	Rev: 1.0	Date: 11/24/20

2 ORENCO 1,000 GALLON PROCESSOR WITH PUMP DISCHARGE

Scale: (NOT TO SCALE)



NOTES:
1. LOCATION OF FLUSHING CONNECTION SHALL BE AT 200 FEET ON CENTER.
2. ALL MATERIALS SHALL BE HDPE SDR 9 OR PVC - 200 PSI OPERATION PRESSURE.

3 EFFLUENT PRESSURE SEWER TYPICAL FLUSING CONNECTION ON MAIN LINE

Scale: (NOT TO SCALE)

SCALE: NTS
DATE: 3/30/2021
DESIGN: BSD/W-S
DRAWN: BSD/W-S
CHECKED: TMN

REVISIONS

DATE	DESCRIPTION

DWG: R:\0208 - B&H INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

PROFESSIONAL STRUCTURAL ENGINEER
3/30/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

ORENCO ALT DETAILS - HARBOR VIEW ESTATES SUBDIVISION
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL · LAND PLANNING
MUNICIPAL · LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

D1A LT

DURA-CRETE INC.
1475 W. 3500 S.
WVC, UTAH 84119
801-972-8686
SALES@DURACRETE.COM

MFG. TANK MARKINGS
INLET & OUTLET
TANK GAL. SIZE
MFG. NAME ON OUTLET SIDE

ENGINEERED FOR 48" EARTH COVERAGE

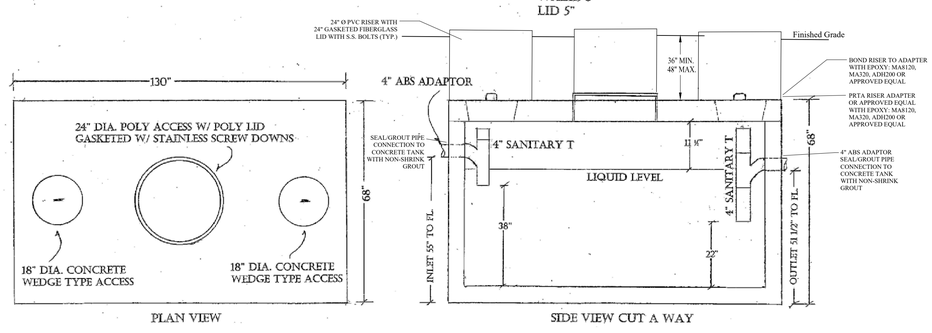
1500 GALLON SEPTIC TANK

DURA-CRETE INC.

EXCAVATION HOLE SIZE
8'X 13'

WEIGHT 12,400 LBS

CONCRETE THICKNESS
FLOOR 3"
WALLS 3"
LID 5"



1 1,500 GALLON CONCRETE SEPTIC TANK (GRAVITY EFFLUENT)
(4 BEDROOMS OR LESS)
Scale: (NOT TO SCALE)

SEPTIC TANK NOTE:
CONTACT ALTERNATIVEONSITE
BEN WITT 801-380-0103
FOR CONCRETE TANK (COMPLETE).
TO BE INSTALLED AND MAINTAINED
BY FUTURE HOME OWNER.

NOTE:
WATERTIGHT TANK TEST TO
EXTEND A MINIMUM OF 3"
ABOVE HIGHEST JOINT IN
ACCESS RISER

DURA-CRETE INC.
1475 W. 3500 S.
WVC, UTAH 84119
801-972-8686
SALES@DURACRETE.COM

MFG. TANK MARKINGS
INLET & OUTLET
TANK GAL. SIZE
MFG. NAME ON OUTLET SIDE

ENGINEERED FOR 48" EARTH COVERAGE

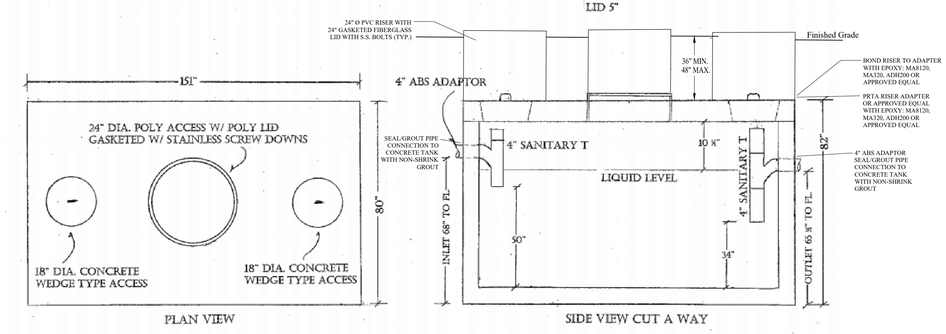
2500 GALLON SEPTIC TANK

DURA-CRETE INC.

EXCAVATION HOLE SIZE
9'X 15'

WEIGHT 16,000 LBS

CONCRETE THICKNESS
FLOOR 5"
WALLS 4"
LID 5"



2 2,500 GALLON CONCRETE SEPTIC TANK (GRAVITY EFFLUENT)
(5 BEDROOMS OR MORE)
Scale: (NOT TO SCALE)

SEPTIC TANK NOTE:
CONTACT ALTERNATIVEONSITE
BEN WITT 801-380-0103
FOR CONCRETE TANK (COMPLETE).
TO BE INSTALLED AND MAINTAINED
BY FUTURE HOME OWNER.

NOTE:
WATERTIGHT TANK TEST TO
EXTEND A MINIMUM OF 3"
ABOVE HIGHEST JOINT IN
ACCESS RISER

SCALE: NTS
DATE: 3/30/2021
DESIGN: BSD/WJS
DRAWN: BSD/WJS
CHECKED: TMN

REVISIONS

DATE	DESCRIPTION

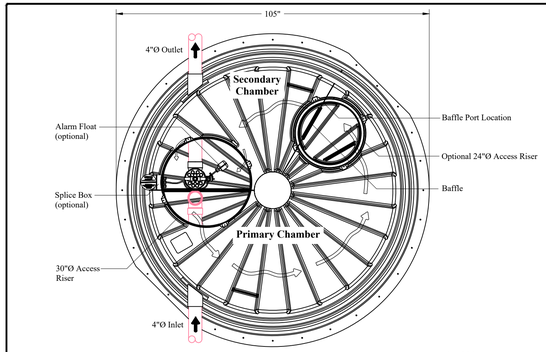
DWG.: R:\0208 - B&H INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

PROFESSIONAL STRUCTURAL ENGINEER
3/30/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

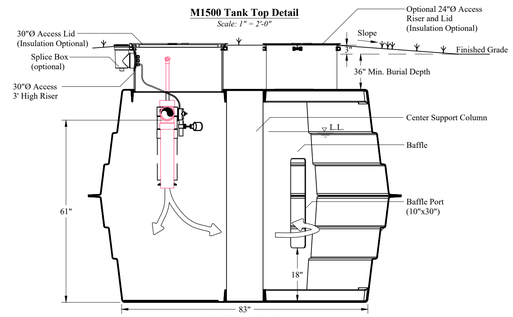
SEPTIC TANK DETAILS PHASE 2A. 2B. + 2C
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL · LAND PLANNING
MUNICIPAL · LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

D2



M1500 Tank Top Detail
Scale: 1" = 2'-0"



M1500 Tank Side Detail
Scale: N.T.S.

Inside Height Inches	Total Gallons
71	1788
66	1714
60	1574
54	1425
48	1264
42	1090
36	906
30	721
24	544
18	382
12	230
6	89
0	0

General Notes:

Tank Volumes: *Total Volume: 1788 gals*
Operating Volume: 1550 gals @ 59"
Unit volume at typical Operating Depth : 25 gal./in.±
Chamber Options: 1000/500 or 876/623

Loads: *Top = 500 psf minimum*
Lateral Load = 62.4 pcf, EFP
Concentrated Wheel Load = 2500 lb.
The septic tank shall be capable of withstanding long-term hydrostatic loading, in addition to the soil loading, due to a water table maintained at ground surface.
Soil Bearing = 1000 psf (re-evaluate support base if soil bearing is less or unequal)

Method of calcuations:
1. Tanks shall be analyzed using strength design methods and finite element analysis for buried structures.
2. Calculations shall address the following:
- *strength*
- *buckling*
- *deflection of 0.5 - 1% of the tank diameter, based on service load (including long-term deflection lag)*
- *buoyancy*

3. Performance testing shall include vacuum testing followed by a hydrostatic test.

Material: *Resin: polydicyclopentadiene*

The properties listed here along with the minimum thickness as shown in the details are considered design minimums that must be maintained during the manufacturing of the tanks. The primary strength properties are listed below:

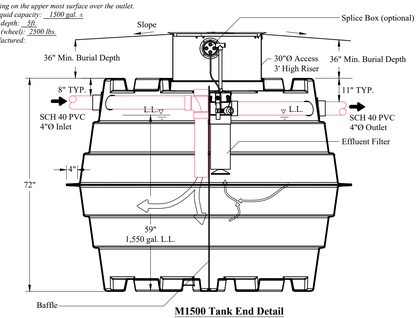
Property	DCPD
Flexural modulus E_f	274,000 psi
Tensile strength F_t	6,700 psi
Flexural strength F_b	10,500 psi
Compressive strength F_c	9,200 psi
Shear In-Plane F_s	7,180 psi
Flexural Rigidity	585 psi

Poisson ratio = 0.400 (Any permanent metal part shall be 300 series stainless steel.)

Installation: *Installation, bedding, compaction, etc., shall be in "strict" compliance with the manufacturers standards and state or local rules and or guidelines. All tanks shall be set level on a minimum 4 inch thick compacted sand or approved granular bedding overlying a firm uniform base. The base shall be stable and uniform in order to ensure equal bearing across the tank bottom. Installations with 18 inches or less of ground cover may require additional buoyancy considerations as described in the manufacturers instructions. A minimum cover of 12 inches is required over the tank in areas subject to occasional light wheel loads.*

Test: *Tanks shall be tested and certified watertight per manufacturers recommendations and or any prevailing rules or guidelines, whichever is more restrictive.*

Tank Markings: *Place marking on the upper most surface over the outlet.*
Nominal Liquid capacity: 1500 gal. ±
Max burial depth: 50.
Max traffic (wheel): 2500 lbs.
Date manufactured:
Permit no.:



M1500 Tank End Detail
Scale: N.T.S.

NOTE:
WATERTIGHT TANK TEST TO EXTEND A MINIMUM OF 3" ABOVE HIGHEST JOINT IN ACCESS RISER

PRELOS 1500 GALLON GRAVITY PROCESSOR NOTES: THIS UNIT (COMPLETE) TO BE INSTALLED AND MAINTAINED BY FUTURE HOME OWNER. AT LEAST TWO INDEPENDENT POWER SOURCES WITH APPROVED WIRING SHALL BE INSTALLED.

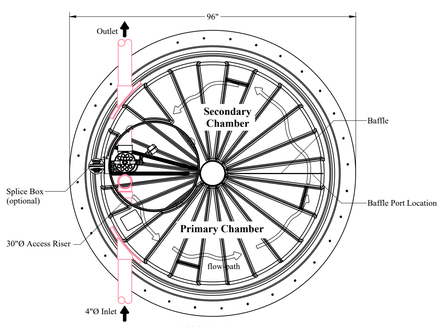
ORENCO AUTHORIZED DEALER
JEX ENVIRONMENTAL SOLUTIONS
PO BOX 3603
LOGAN, UT 84323
1-435-753-2051

Orenco SYSTEMS

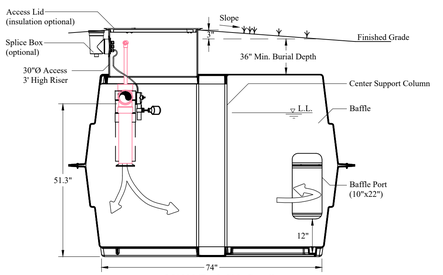
Disclaimer: This Proposed System Configuration Drawing is provided solely as a design aid and illustrates one possible configuration of a system that would comply with Orenco's design criteria for the requirements and/or specifications that have been communicated to Orenco (based on third-party standards testing protocols and performance reports, as applicable). Design decisions, including the actual layout and configuration of the system and its viability for the project, are at the sole discretion of the systems's designer.

Prelos 1500 Gravity Processor with Effluent Filter and 1/3 2/3 Baffle	Drawn By: CSJ	Scale: N.T.S.	
	Reviewed By: TB	Sheet: 1 OF 1	
DESIGN AID	File Name: NDW-TD-LOS-1500-3.DWG	Rev: 1.0	Date: 11/24/20

2 ORENCO 1,500 GALLON GRAVITY PROCESSOR DISCHARGE
(5 BEDROOMS OR LARGER) Scale: (NOT TO SCALE)



M1000 Top Detail
Scale: 1" = 2'-0"



M1000 Tank Side Detail
Scale: N.T.S.

Inside Height Inches	Total Gallons
60	1217
54	1124
48	1006
42	881
36	744
30	601
24	460
18	324
12	200
6	83
0	0

General Notes:

Tank Volumes: *Total Volume: 1223 gals*
Operating Volume: 1006 gals @ 48"
Unit volume at typical Operating Depth : 20 gal./in.±

Loads: *Top = 500 psf minimum*
Lateral Load = 62.4 pcf, EFP
Concentrated Wheel Load = 2500 lb.
The septic tank shall be capable of withstanding long-term hydrostatic loading, in addition to the soil loading, due to a water table maintained at ground surface.
Soil Bearing = 1000 psf (re-evaluate support base if soil bearing is less or unequal)

Method of calcuations:
1. Tanks shall be analyzed using strength design methods and finite element analysis for buried structures.
2. Calculations shall address the following:
- *strength*
- *buckling*
- *deflection of 0.5 - 1% of the tank diameter, based on service load (including long-term deflection lag)*
- *buoyancy*

3. Performance testing shall include vacuum testing followed by a hydrostatic test.

Material: *Resin: polydicyclopentadiene*

The properties listed here along with the minimum thickness as shown in the details are considered design minimums that must be maintained during the manufacturing of the tanks. The primary strength properties are listed below:

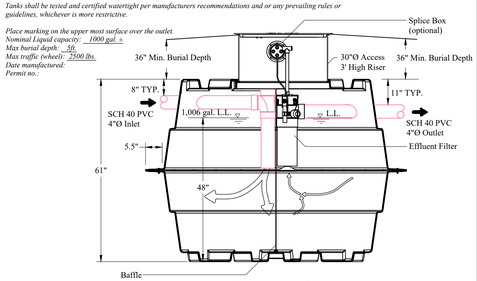
Property	DCPD
Flexural modulus E_f	274,000 psi
Tensile strength F_t	6,700 psi
Flexural strength F_b	10,500 psi
Compressive strength F_c	9,200 psi
Shear In-Plane F_s	7,180 psi
Flexural Rigidity	585 psi

Poisson ratio = 0.400 (Any permanent metal part shall be 300 series stainless steel.)

Installation: *Installation, bedding, compaction, etc., shall be in "strict" compliance with the manufacturers standards and state or local rules and or guidelines. All tanks shall be set level on a minimum 4 inch thick compacted sand or approved granular bedding overlying a firm uniform base. The base shall be stable and uniform in order to ensure equal bearing across the tank bottom. Installations with 18 inches or less of ground cover may require additional buoyancy considerations as described in the manufacturers instructions. A minimum cover of 12 inches is required over the tank in areas subject to occasional light wheel loads.*

Test: *Tanks shall be tested and certified watertight per manufacturers recommendations and or any prevailing rules or guidelines, whichever is more restrictive.*

Tank Markings: *Place marking on the upper most surface over the outlet.*
Nominal Liquid capacity: 1000 gal. ±
Max burial depth: 50.
Max traffic (wheel): 2500 lbs.
Date manufactured:
Permit no.:



M1000 Tank End Detail
Scale: N.T.S.

NOTE:
WATERTIGHT TANK TEST TO EXTEND A MINIMUM OF 3" ABOVE HIGHEST JOINT IN ACCESS RISER

PRELOS 1000 GALLON GRAVITY PROCESSOR NOTES: THIS UNIT (COMPLETE) TO BE INSTALLED AND MAINTAINED BY FUTURE HOME OWNER. AT LEAST TWO INDEPENDENT POWER SOURCES WITH APPROVED WIRING SHALL BE INSTALLED.

ORENCO AUTHORIZED DEALER
JEX ENVIRONMENTAL SOLUTIONS
PO BOX 3603
LOGAN, UT 84323
1-435-753-2051

Orenco SYSTEMS

Disclaimer: This Proposed System Configuration Drawing is provided solely as a design aid and illustrates one possible configuration of a system that would comply with Orenco's design criteria for the requirements and/or specifications that have been communicated to Orenco (based on third-party standards testing protocols and performance reports, as applicable). Design decisions, including the actual layout and configuration of the system and its viability for the project, are at the sole discretion of the systems's designer.

Prelos 1000 Gravity Processor with Effluent Filter	Drawn By: CSJ	Scale: N.T.S.	
	Reviewed By: TB	Sheet: 1 OF 1	
DESIGN AID	File Name: NDW-TD-LOS-1000-2.DWG	Rev: 1.0	Date: 11/24/20

3 ORENCO 1,000 GALLON GRAVITY PROCESSOR DISCHARGE
(4 BEDROOMS OR LESS) Scale: (NOT TO SCALE)

SCALE: N.T.S.
DATE: 3/30/2021
DESIGN: BSD/W-JS
DRAWN: BSD/W-JS
CHECKED: TMN

REVISIONS

DATE	DESCRIPTION

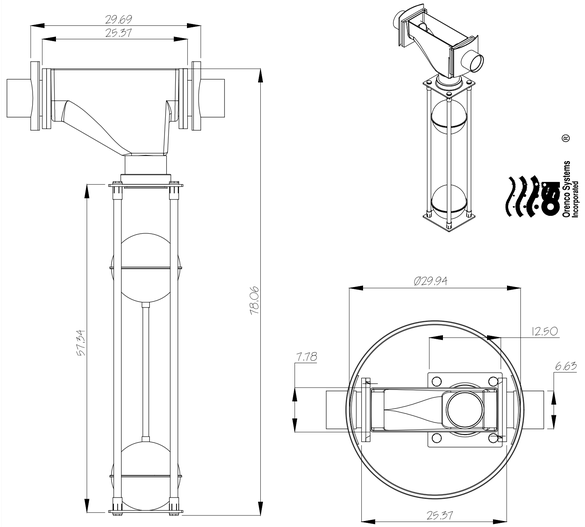
DWG: R:\2038 - BAH INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

PROFESSIONAL STRUCTURAL ENGINEER
3/30/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

ORENCO ALT SEPTIC TANK DETAILS PHASE 2A. 2B. + 2C
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

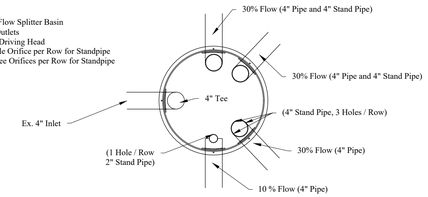
GARDNER ENGINEERING
CIVIL • LAND PLANNING
MUNICIPAL • LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

D2ALT

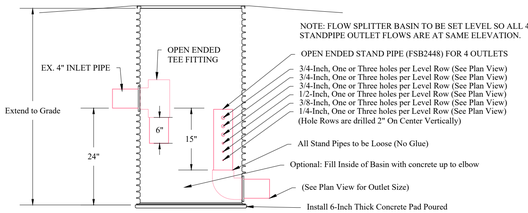


1 RECIRCULATING SPLITTER VALVE DETAIL (MM6-FRP)
Scale: (NOT TO SCALE)

Orenco Multi-Outlet Flow Splitter Basin
- FSB2448 (4) Outlets
- Minimum 15" Driving Head
- (1) Outlet Single Orifice per Row for Standpipe
- (3) Outlets Three Orifices per Row for Standpipe

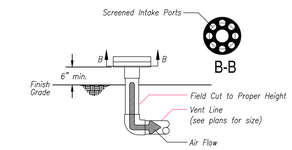


PLAN VIEW

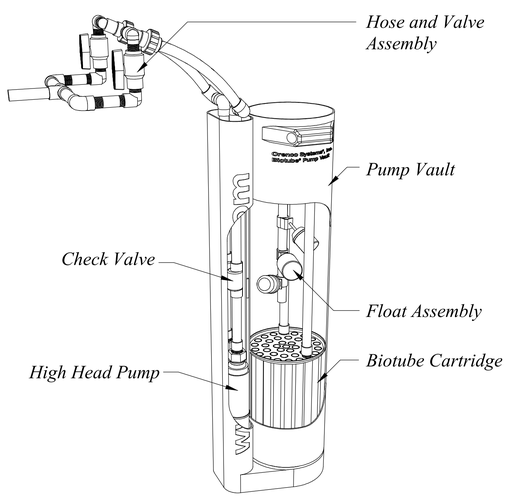


SECTION VIEW

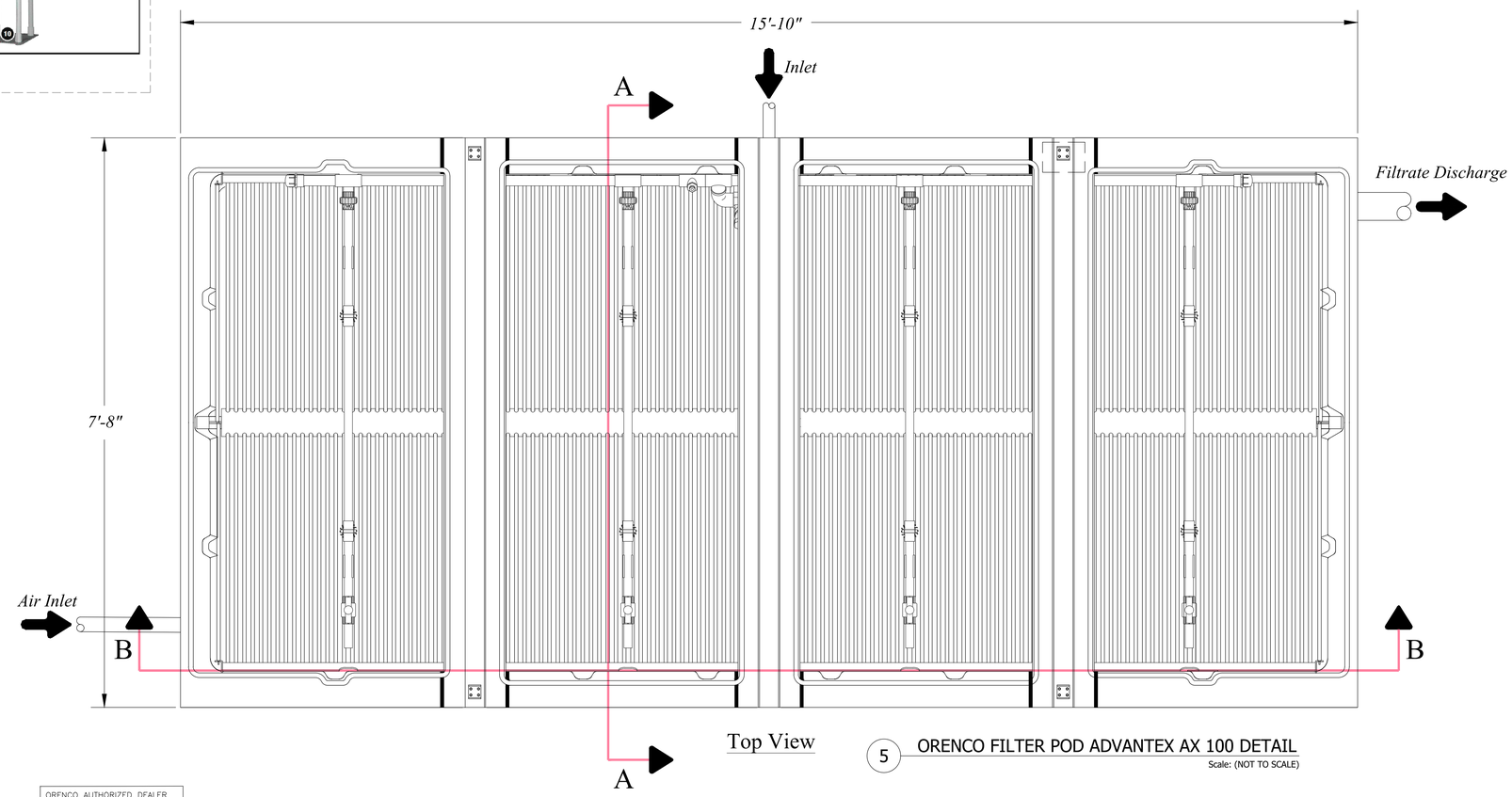
2 MULTI-OUTLET FLOW SPLITTER BASIN DETAIL
Scale: (NOT TO SCALE)



4 COLLECTIVE AIR INLET DETAIL
Scale: (NOT TO SCALE)



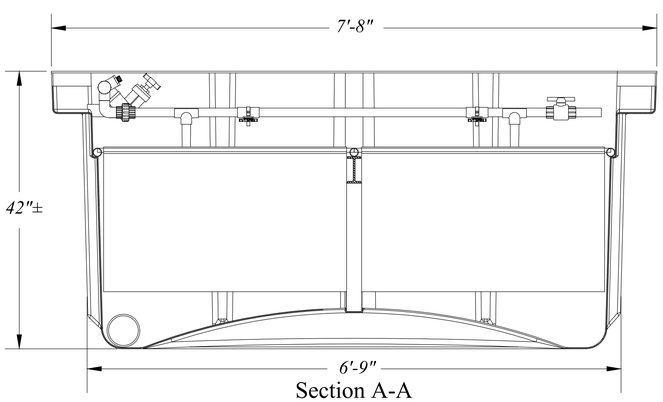
3 DUPLEX PUMP VAULT DETAIL
Scale: (NOT TO SCALE)



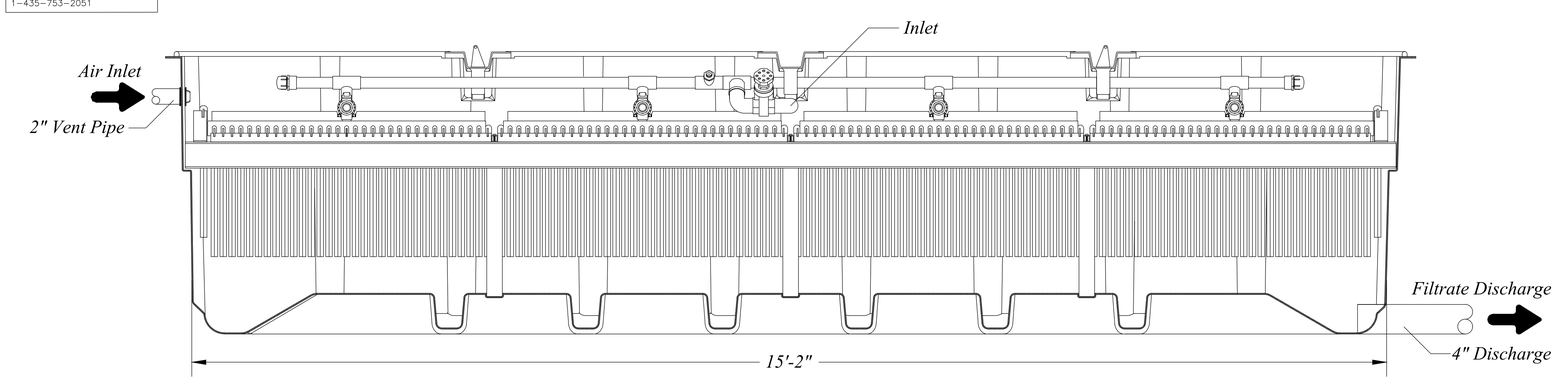
Top View

5 ORENCO FILTER POD ADVANTEX AX 100 DETAIL
Scale: (NOT TO SCALE)

ORENCO AUTHORIZED DEALER
JEX ENVIRONMENTAL SOLUTIONS
PO BOX 3603
LOGAN, UT 84323
1-435-753-2051



Section A-A



Section B-B

REVISIONS	
DATE	DESCRIPTION

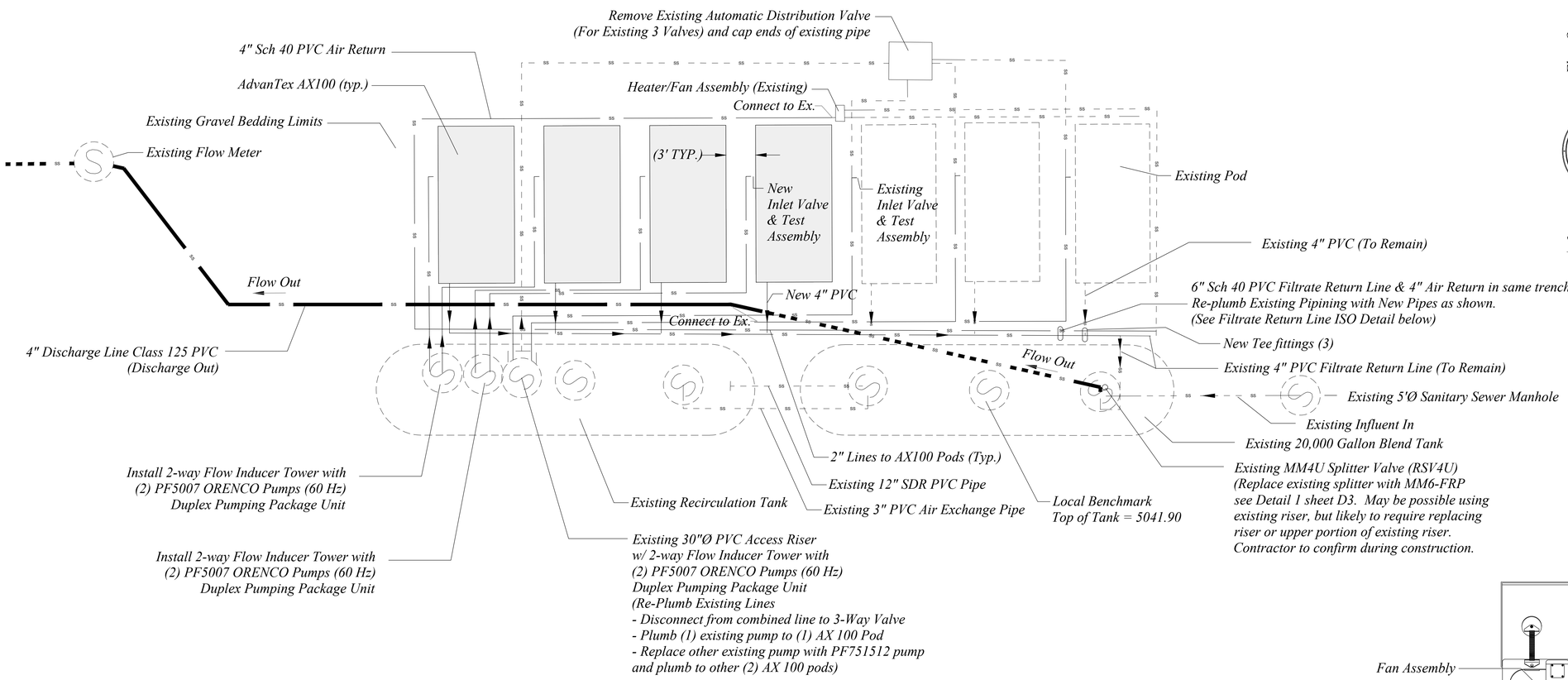
SCALE: N.T.S.
DATE: 3/22/2021
DESIGN: BSD/W-S
DRAWN: BSD/W-S
CHECKED: TMN
DWG: R:\0208 - BAH INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

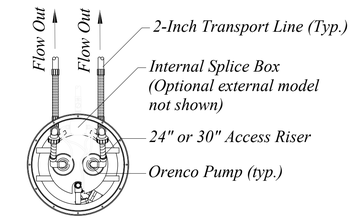
PROFESSIONAL STRUCTURAL ENGINEER
3/22/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

EFFLUENT TREATMENT FACILITY DETAILS
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

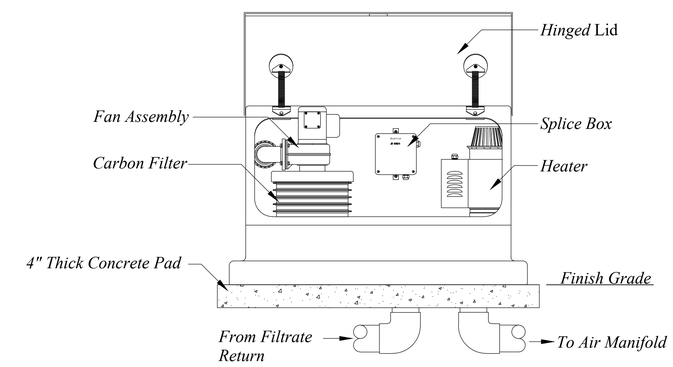
GARDNER ENGINEERING
CIVIL · LAND PLANNING
MUNICIPAL · LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

D3

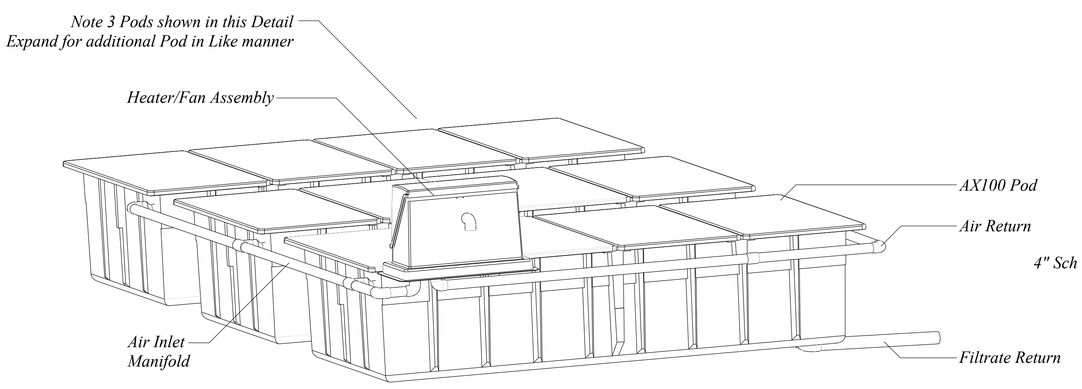




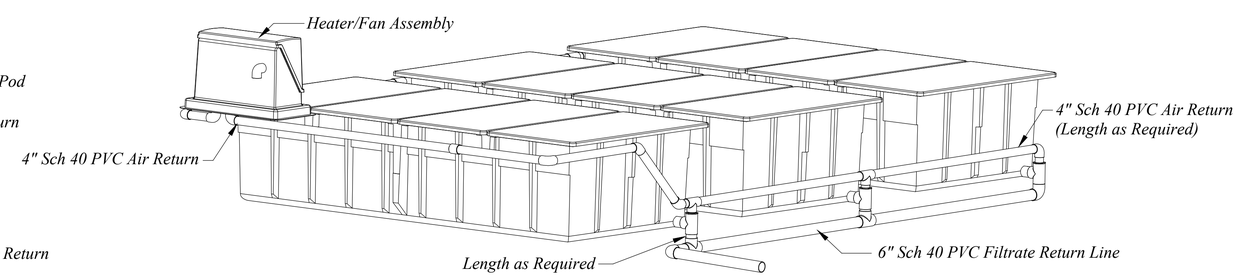
Duplex Flow Inducer
Typical Plumbing Example
Not To Scale



Above Ground Fan Assembly (Existing)
Not To Scale



Air Manifold Iso
Not To Scale



Filtrate Return Line Iso
Not To Scale

AdvanTex AX100 System
Cold Weather Venting (Example)

SCALE: NTS
DATE: 3/22/2021
DESIGN: BSD/WJS
DRAWN: BSD/WJS
CHECKED: TMN

REVISIONS

DATE	DESCRIPTION

DWG: R:\0208 - BAH INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

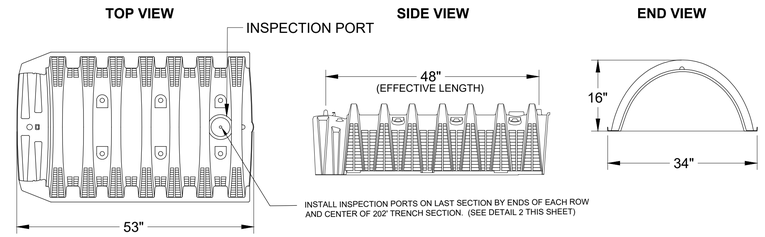
PROFESSIONAL STRUCTURAL ENGINEER
3/22/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

EFFLUENT + AIR POD DETAILS
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

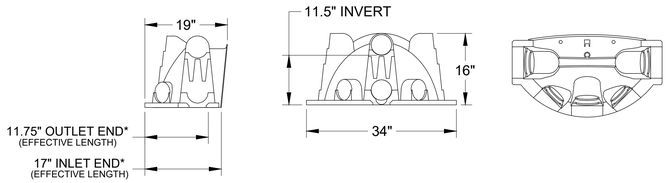
GARDNER ENGINEERING
CIVIL · LAND PLANNING
MUNICIPAL · LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

D4

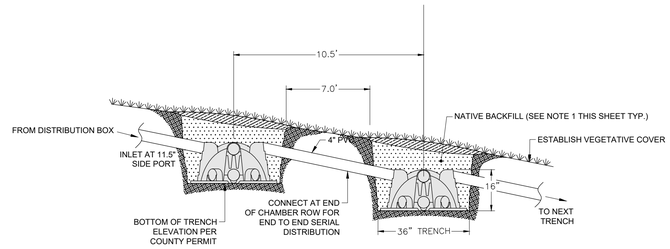
INFILTRATOR WATER TECHNOLOGIES
QUICK4 HIGH CAPACITY CHAMBER
PRODUCT SPECIFICATIONS
(NOT TO SCALE)



QUICK4 HIGH CAPACITY MULTIPORT END CAP



*ALL VIEWS = INSTALLED LENGTHS.



SEE SHEET C7 FOR PLAN VIEW LENGTHS.
CENTER TO CENTER SPACING PER STATE CODE.

NOTES:
1. MAX SIZE ROCK: 3-4". BACKFILL CAREFULLY PLACED (LADLED IN, OR PUSHED IN LIGHTLY FROM THE SIDES). NO DUMPING - IMPACT LOADING.

INFILTRATOR WATER TECHNOLOGIES
QUICK4 HIGH CAPACITY CHAMBER
SERIAL DISTRIBUTION TYPICAL DETAIL
SECTION VIEW
(NOT TO SCALE)

THIS PLAN SET IS BASED UPON THE EXPECTED FLOWS AND WASTE STRENGTHS FOR THE PURPOSE OF SERVING THE RESERVE AT CRIMSON RIDGE SUBDIVISION.

EXPECTED INFLUENT CHARACTERISTICS:

TYPE	AVERAGE mg/L	WEEKLY PEAK mg/L	RARELY EXCEEDS mg/L
BOD	150	250	500
TSS	40	75	150
TKN	65	75	150
FOG	20	25	30

ONCE THE EXPANDED FACILITY IS OPERATIONAL, THE WASTE STRENGTHS AND FLOWS TO THE FACILITY SHOULD BE MONITORED. IF ANY OF THE INFLUENT WASTE STRENGTHS OR FLOW EXCEED THOSE LISTED IN THE DESIGN ABOVE, MEASURES SHOULD BE TAKEN TO REDUCE THESE PARAMETERS TO THOSE LISTED ON THIS PLAN SET. OTHERWISE ADDITIONAL TREATMENT CAPACITY AND PLANT EXPANSION WILL BE NECESSARY.

DO NOT DISPOSE OF TOXINS OR CHEMICALS INTO SYSTEM. EXAMPLES: WAX STRIPPER FOR LINOLEUM, CARPET SHAMPOO, RESTAURANT DEGREASERS AND CLEANSERS, AND OTHER WAST PRODUCTS OR OTHER TOXINS.

BASED ON PERC RATE 53 MIN/IN
APPLICATION RATE 0.4 GAL/SF PER TABLE 1 PAGE 8 GEOFLOW WASTE WATER DESIGN, INSTALLATION & MAINTENANCE GUIDELINES.

ABSORPTION APPLICATION RATES
Q = 5.0 MIN/IN / (53 MIN./IN ^0.5) = 0.68 GAL/SF

EXISTING TRENCH FIELD - PHASE 1

7,177 LF

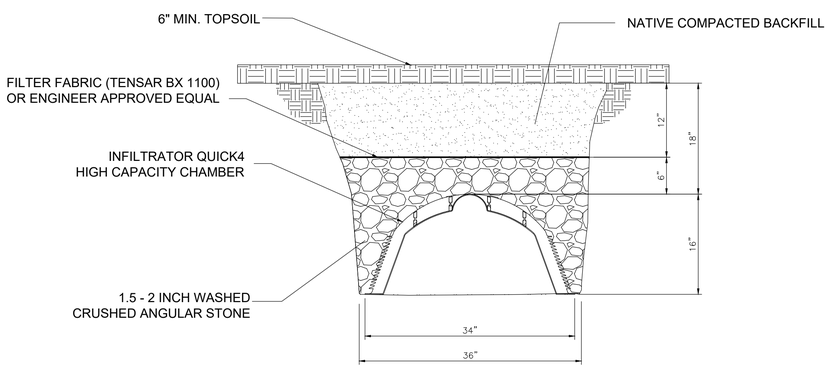
ABSORPTION FIELD TOTAL BUILD OUT (INCLUDES EX. PHASE 1, PHASE 2 & HARBOR VIEW ESTATES SUBDIVISION
76 LOTS (TOTAL BUILD OUT)
76 LOTS @ 400 GAL/LOT/DAY = 30,400 GAL/DAY

APPROXIMATE APPLICATION RATES ABSORPTION FIELD
Q = 5.0 MIN/IN / (53 MIN./IN ^0.5) = 0.68 GAL/SF
(BASED ON ORIGINAL PHASE 1 DESIGN REQUIREMENTS)

REQUIRED ABSORPTION FIELD AREA TRENCH
30,400 GAL/DAY / 0.68 GAL/SF = 44,706 SF

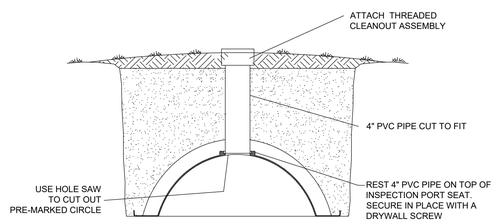
REQUIRED ABSORPTION TRENCH LENGTH
44,706 SF / 3' = 14,901 LF OF TRENCH REQUIRED

14,933 LF OF TRENCH PROVIDED



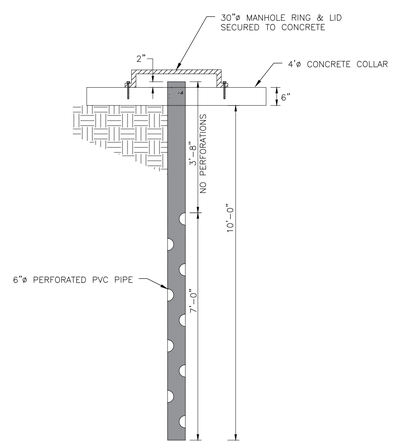
CHAMBER SYSTEM
TRENCH DETAIL
(NOT TO SCALE)

1 INFILTRATION TRENCH DETAIL
Scale: (NOT TO SCALE)



QUICK4 CHAMBERS
INSPECTION PORT
TYPICAL INSTALLATION DETAIL
(Not to Scale)

2 CHAMBER CLEANOUT DETAIL
Scale: (NOT TO SCALE)



3 MONITERING / SAMPLING WELL
Scale: (NOT TO SCALE)

SCALE: NTS
DATE: 3/22/2021
DESIGN: BSD/W.S
DRAWN: BSD/W.S
CHECKED: TMN

REVISIONS

DATE	DESCRIPTION

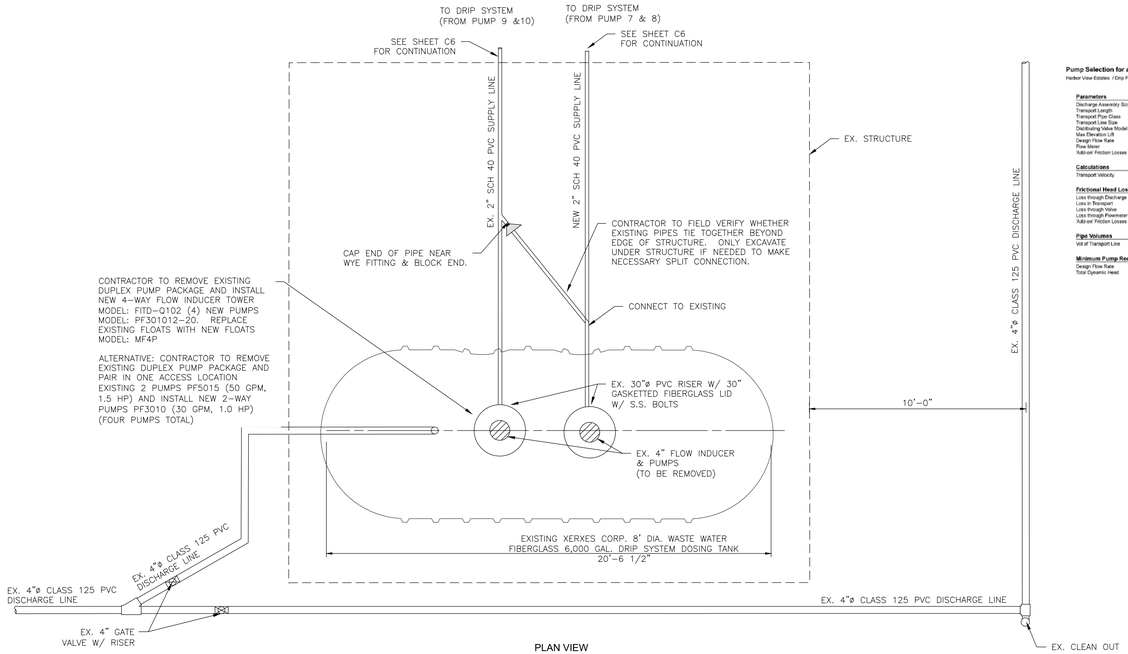
DWG: R:\2028 - B&H INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

PROFESSIONAL STRUCTURAL ENGINEER
3/22/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

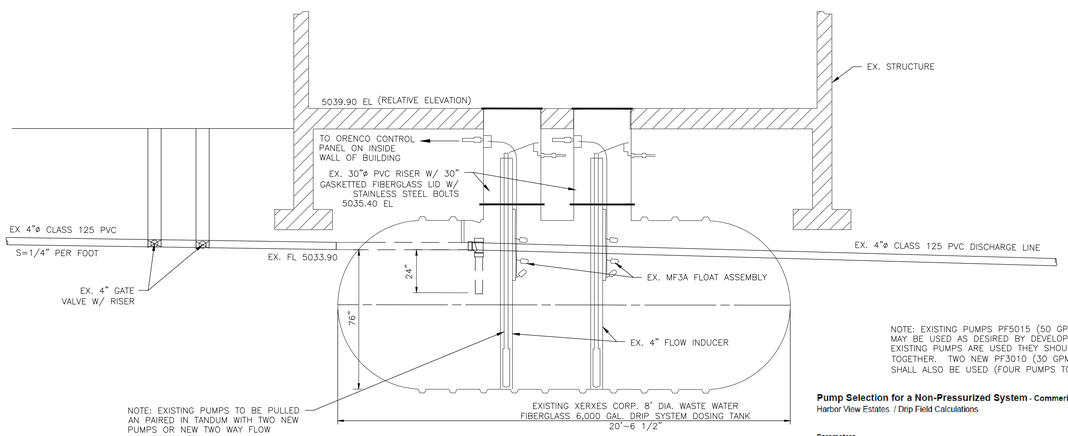
EFFLUENT TREATMENT - ABSORPTION BED DETAILS
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL • LAND PLANNING
MUNICIPAL • LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

D5



PLAN VIEW



SECTION VIEW

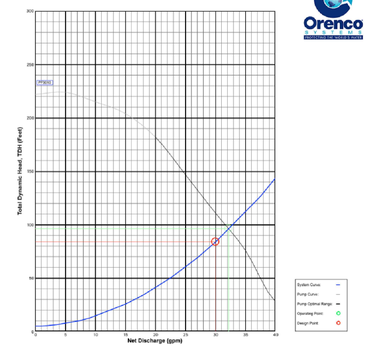
NOTE: EXISTING PUMPS PF5015 (50 GPM, 1.5 HP) MAY BE USED AS DESIRED BY DEVELOPER. IF EXISTING PUMPS ARE USED THEY SHOULD BE PAIRED TOGETHER. TWO NEW PF3010 (30 GPM, 1.0 HP) SHALL ALSO BE USED (FOUR PUMPS TOTAL)

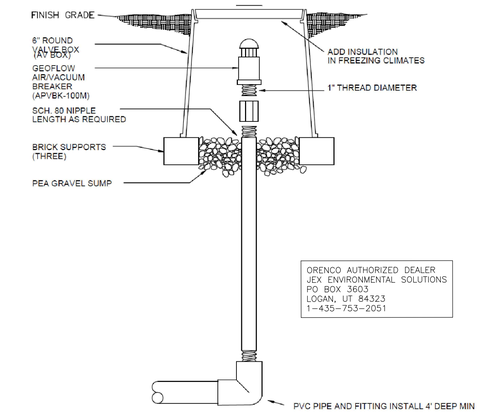
1 DRIP SYSTEM DOSING TANK (EXISTING)

Scale: (NOT TO SCALE)

Pump Selection for a Non-Pressurized System - Commerical Project
Harbor View Estates / Drip Field Calculations

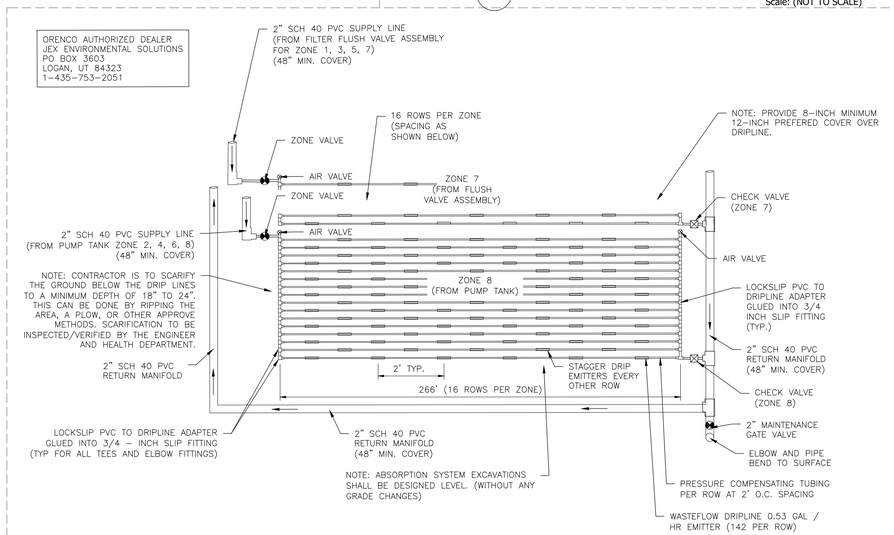
Parameters		
Discharge Assembly Size	2.00	inches
Transport Length	2000	feet
Transport Pipe Class	40	
Transport Line Size	2.00	inches
Distributing Valve Model	None	
Max Elevation Lift	0	feet
Design Flow Rate	30	gpm
Flow Meter	None	inches
Add-on Friction Losses	46	feet
Calculations		
Transport Velocity	2.9	fps
Frictional Head Losses		
Loss through Discharge	1.6	feet
Loss in Transport	31.1	feet
Loss through Valve	0.0	feet
Loss through Flowmeter	0.0	feet
Add-on Friction Losses	46.0	feet
Pipe Volumes		
Vol of Transport Line	348.6	gals
Minimum Pump Requirements		
Design Flow Rate	30.0	gpm
Total Dynamic Head	83.9	feet





2 1-INCH AIR / VACUUM RELEASE VALVE

Scale: (NOT TO SCALE)

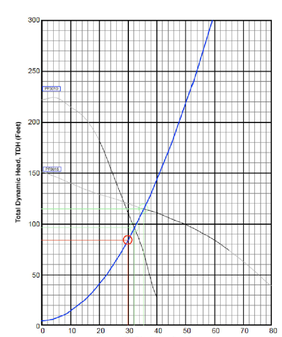


3 TYPICAL DRIPFIELD LAYOUT

Scale: (NOT TO SCALE)

Pump Selection for a Non-Pressurized System - Commerical Project
Harbor View Estates / Drip Field Calculations

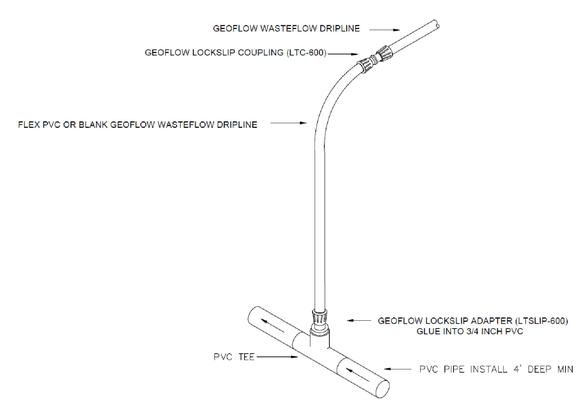
Parameters		
Discharge Assembly Size	2.00	inches
Transport Length	2000	feet
Transport Pipe Class	40	
Transport Line Size	2.00	inches
Distributing Valve Model	None	
Max Elevation Lift	0	feet
Design Flow Rate	30	gpm
Flow Meter	None	inches
Add-on Friction Losses	46	feet
Calculations		
Transport Velocity	2.9	fps
Frictional Head Losses		
Loss through Discharge	1.6	feet
Loss in Transport	31.1	feet
Loss through Valve	0.0	feet
Loss through Flowmeter	0.0	feet
Add-on Friction Losses	46.0	feet
Pipe Volumes		
Vol of Transport Line	348.6	gals
Minimum Pump Requirements		
Design Flow Rate	30.0	gpm
Total Dynamic Head	83.9	feet



PumpData
PF3010 High Head Effluent Pump
30 GPM, 1HP
230V 1Ø 60Hz, 2034/60V 3Ø 60Hz

PF5015 High Head Effluent Pump
50 GPM, 1.5 HP
230V 1Ø 60Hz, 360V 3Ø 60Hz

Legend
System Curve
Pump Curve
Pump Optimal Range
Operating Point
Design Point



- DRIP TUBING TO MANIFOLD CONNECTION DETAILS

Scale: (NOT TO SCALE)

SCALE: NTS
DATE: 9/22/2021
DESIGN: BSD/W.S
DRAWN: BSD/W.S
CHECKED: TMN

REVISIONS

DATE	DESCRIPTION

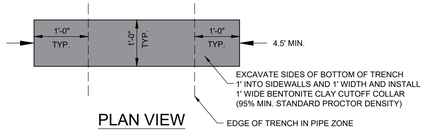
DWG: R:\2028 - B&M INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

PROFESSIONAL STRUCTURAL ENGINEER
3/22/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

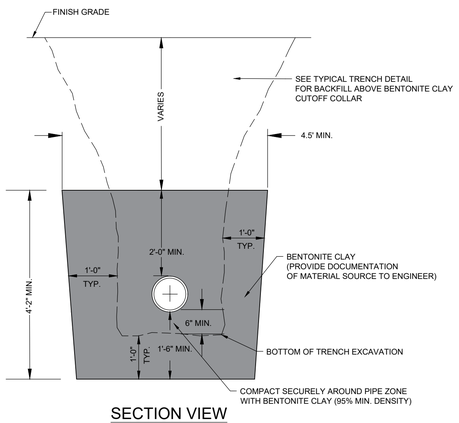
EFFLUENT TREATMENT FACILITY DRIP SYSTEM DETAILS
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL · LAND PLANNING
MUNICIPAL · LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

D6



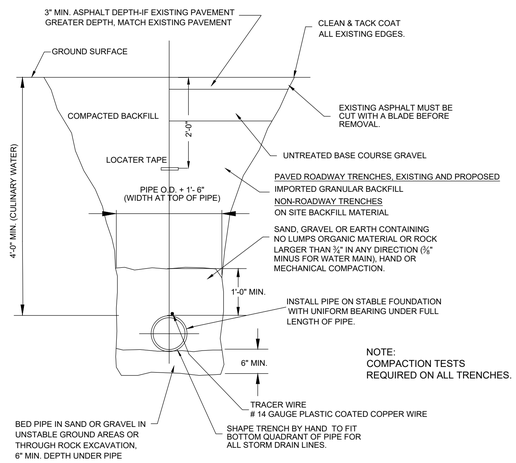
PLAN VIEW



SECTION VIEW

1 CUTOFF TRENCH DETAIL

Scale: (NOT TO SCALE)



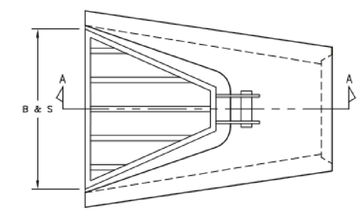
- TYPICAL TRENCH DETAIL

Scale: (NOT TO SCALE)

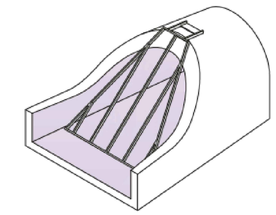
Oldcastle Precast®

Water

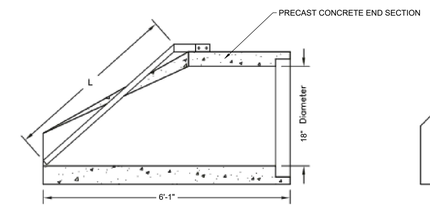
Circular FES Trash Guards
Model: FES Trash Guard



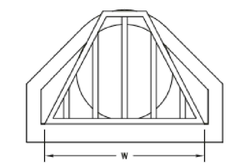
Plan View



Isometric View
(For Reference Only)



Section A-A



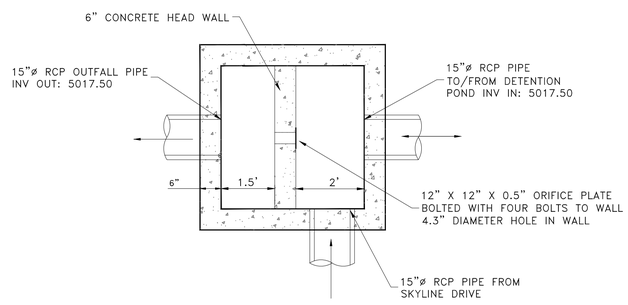
End View

Pipe Diameter	Trash Rack Width W (in.)	Trash Rack Length L (in.)	Total # of Bars B	Bar Spacing S (in.)
12"	21.00"	30.00"	3	6.0"
15"	28.00"	32.00"	3	6.5"
18"	33.00"	34.00"	3	8.0"

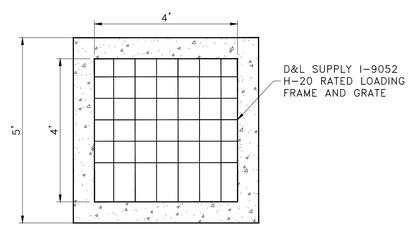
(6 REQUIRED)

2 FLARED END SECTION

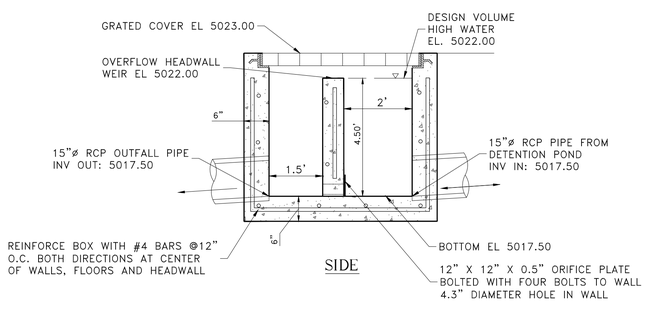
OR ENGINEER APPROVED EQUAL Scale: (NTS)



PLAN VIEW



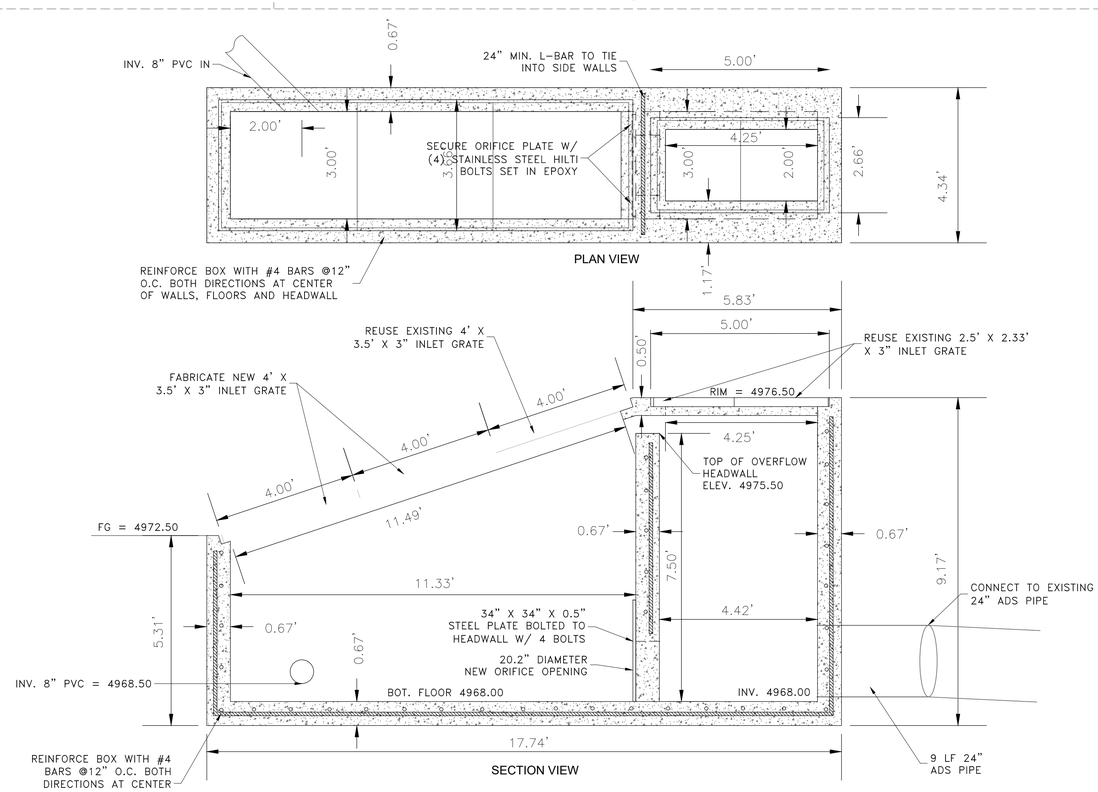
LID



SIDE

3 4' x 4' STORM DRAIN OUTLET CONTROL BOX (UPPER DETENTION POND)

Scale: (NOT TO SCALE)



4 OUTLET CONTROL BOX (LOWER DETENTION POND)

Scale: (NOT TO SCALE)

SCALE: NTS
DATE: 3/22/2021
DESIGN: BSD/W-S
DRAWN: BSD/W-S
CHECKED: TMN

REVISIONS

DATE	DESCRIPTION

DWG: R:\0208 - B&H INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

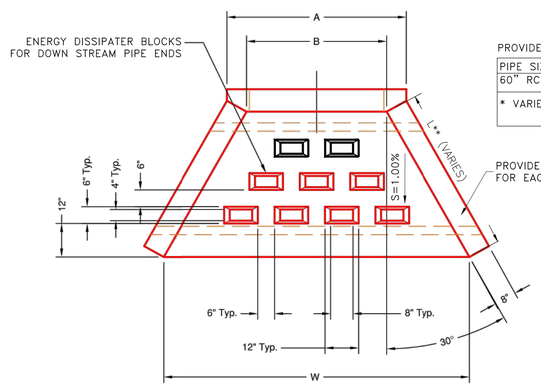
PROFESSIONAL STRUCTURAL ENGINEER
3/22/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

MISC. DETAILS

THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL · LAND PLANNING
MUNICIPAL · LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

D7



PROVIDE OLDCASTLE PRECAST (OR CAST IN PLACE)

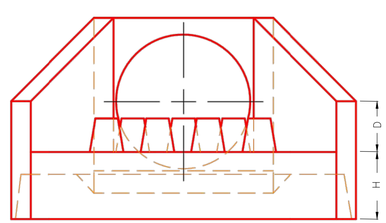
PIPE SIZE	HOLE SIZE	W	L	H	A	B	C	D	E	F	G	H
60" RCP	76"	205"	*	24"	105"	96"	86"	33"	20"	26"	8"	24"

* VARIES SEE PROFILE SHEET FOR DIMENSIONS

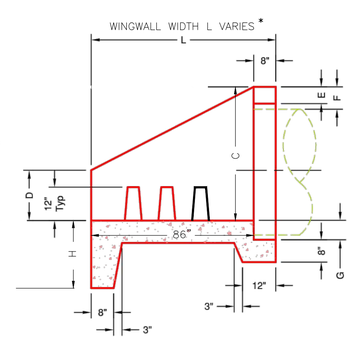
PROVIDE 2 ROWS 12-INCH O.C. EACH WAY NO. 5 BAR
FOR EACH FACE 2.5-INCH MIN. CLEAR FROM OUTER EDGE

NOTE: HEADWALLS AND RELATED PIPES FOR EPHEMERAL STREAM TO BE INSTALLED DURING DRY PERIODS AND WHEN NO WATER IS IN THE STREAM BED.

PLAN VIEW



FRONT VIEW



SECTION A-A

1 60-INCH PIPE HEADWALL DETAIL
Scale: (NOT TO SCALE)

SCALE: NTS
DATE: 3/22/2021
DESIGN: BSD/WJS
DRAWN: BSD/WJS
CHECKED: TMN
DWG: R:\0208 - B&M INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG

REVISIONS

DATE	DESCRIPTION

PROFESSIONAL STRUCTURAL ENGINEER
3/22/2021
No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

MISC. DETAILS
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL • LAND PLANNING
MUNICIPAL • LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066

D8