

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

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

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.

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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 SWPPP 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

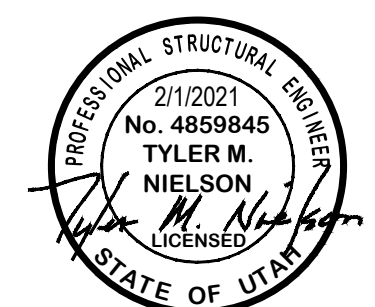
1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST APWA STANDARDS AND SPECIFICATION FOR PUBLIC WORKS AND WEBER COUNTY STANDARDS. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AWAY FROM BUILDING FOUNDATIONS AND ENTRIES. FINISHED GRADE AT FOUNDATION FOR WOOD FRAMED STRUCTURES SHALL BE 8 INCHES BELOW TOP OF 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.

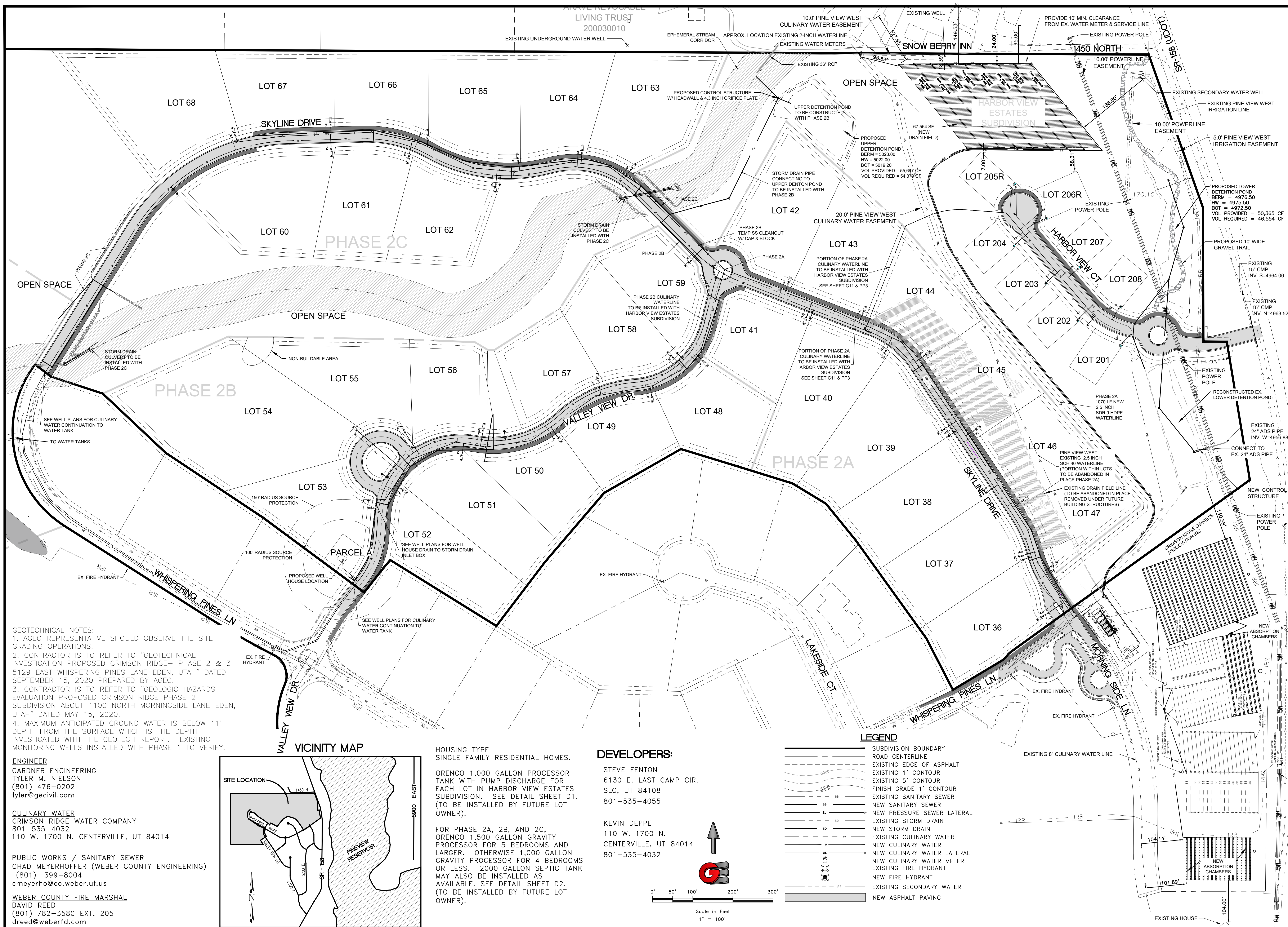
CULINARY WATER GENERAL NOTES

1. ALL INSTALLATION AND MATERIALS SHALL CONFORM TO CRIMSON RIDGE WATER COMPANY STANDARDS, SPECIFICATIONS AND PLANS.
2. BEFORE AN DURING BACK FILL OPERATIONS, CONSTRUCTION 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 SHALL BE PERFORMED BY THE WATER UTILITY WITH COOPERATION FROM THE CONTRACTOR IN PERFORMING ANY NECESSARY EXCAVATION AND SUBSEQUENT BACKFILLING AT NO COST TO WEBER COUNTY.
6. CHLORINATION OF COMPLETED WATER LINE. THE NEW WATER LINES SHALL BE DISINFECTED BY CHLORINATION. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL RELATED COSTS AND FEES RELATED TO THE CHLORINATION OF THE COMPLETED WATER LINE. THIS TEST SHALL BE PERFORMED PRIOR TO CONNECTION OF THE NEW WATER LINES TO THE EXISTING WATER SYSTEM. THE CONTRACTOR SHALL NOTIFY THE WATER UTILITY AT LEAST 24 HOURS BEFORE THE CHLORINATION IS DESIRED.
7. A MINIMUM HORIZONTAL CLEARANCE OF 10 FEET SHALL BE MAINTAINED FROM SANITARY SEWER MAINS.
8. 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 COUNTY-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.
9. CONTRACTOR SHALL LOCATE VALVES PRIOR TO CONNECTION WITH EXISTING SYSTEM, BUT SHALL NOT OPERATE ANY VALVE WITHOUT PERMISSION FROM THE WATER UTILITY.
10. ALL WATER MAINS, VALVES, FIRE HYDRANTS, SERVICES AND APPURTENANCES SHALL BE INSTALLED, TESTED, AND APPROVED PRIOR TO PAVING.
11. THERE SHALL BE A WATER SUPPLY TO THE DEVELOPMENT BEFORE ANY WOOD CONSTRUCTION STARTS.
12. 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.
13. ALL TEES AND WATER VALVE CONNECTIONS ARE TO BE MJ X MJ (MECHANICAL JOINT) FITTING CONNECTIONS.

SHEET INDEX

COVER SHEET
C1 - OVERALL UTILITY PLAN
C2 - OVERALL SHEET LAYOUT
C3 - ENTRY ACCESS DEMO
C4 - ENTRY ACCESS REGRADING
C5 - DRAINAGE CALCS
C6 - EFFLUENT TREATMENT FACILITY
C7 - SEWER DRAIN FIELD EXPANSION
C8 - DRIP SYSTEM & DETENTION PONDS
C9 - SWPPP
C10 - OPEN SPACE PRESERVATION PLAN
C11 - OVERALL GRADING PLAN (WITH PHASED WORK)
PP1 - SKYLINE DRIVE - PLAN AND PROFILE
PP2 - SKYLINE DRIVE - PLAN AND PROFILE
PP3 - SKYLINE DRIVE - PLAN AND PROFILE
PP4 - SKYLINE DRIVE - PLAN AND PROFILE
PP5 - VALLEY VIEW DRIVE - PLAN AND PROFILE
PP6 - VALLEY VIEW DRIVE - PLAN AND PROFILE
PP7 - HARBOR VIEW COURT - PLAN AND PROFILE
PP8 - SR-158 (UDOT) - PLAN AND PROFILE
D1 - ORENCO DETAILS (HARBOR VIEW ESTATES SUBDIVISION)
D2 - SEPTIC DETAILS PHASE 2A, 2B & 2C)
D3 - EFFLUENT TREATMENT FACILITY DETAILS
D4 - EFFLUENT AND AIR POD DETAILS
D5 - EFFLUENT TREATMENT - ABSORPTION BED DETAILS
D6 - EFFLUENT TREATMENT FACILITY DRIP SYSTEM DETAILS
D7 - MISC. DETAILS
D8 - MISC. DETAILS





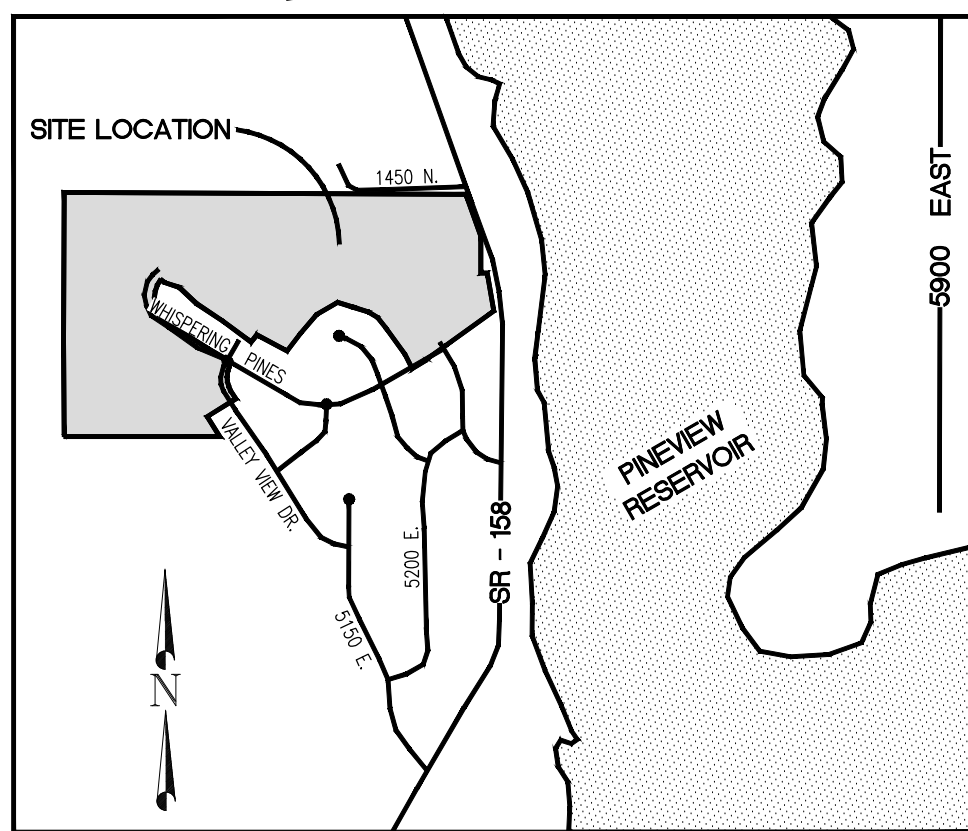
GEOTECHNICAL NOTES:
 1. AGEC REPRESENTATIVE SHOULD OBSERVE THE SITE GRADING OPERATIONS.
 2. CONTRACTOR IS TO REFER TO "GEOTECHNICAL INVESTIGATION PROPOSED CRIMSON RIDGE- PHASE 2 & 3 5129 EAST WHISPERING PINES LANE EDEN, UTAH" DATED SEPTEMBER 15, 2020 PREPARED BY AGEC.
 3. CONTRACTOR IS TO REFER TO "GEOLOGIC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

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HOUSING TYPE
 SINGLE FAMILY RESIDENTIAL HOMES.

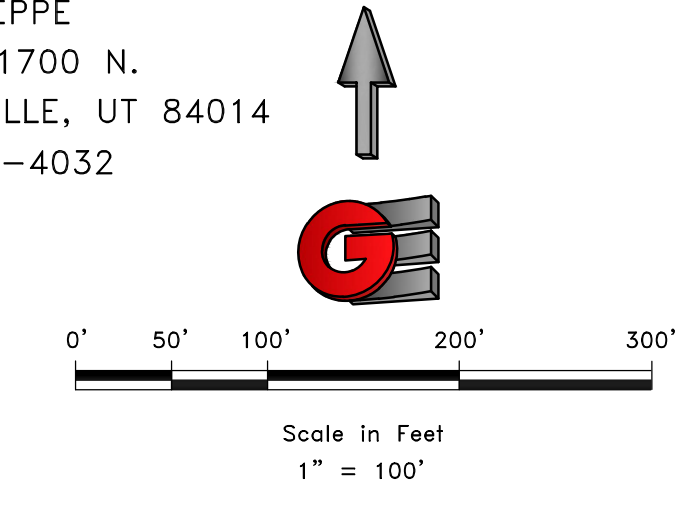
ORENCO 1,000 GALLON PROCESSOR TANK WITH PUMP DISCHARGE FOR EACH LOT IN HARBOR VIEW ESTATES SUBDIVISION. SEE DETAIL SHEET D1. (TO BE INSTALLED BY FUTURE LOT OWNER).

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:

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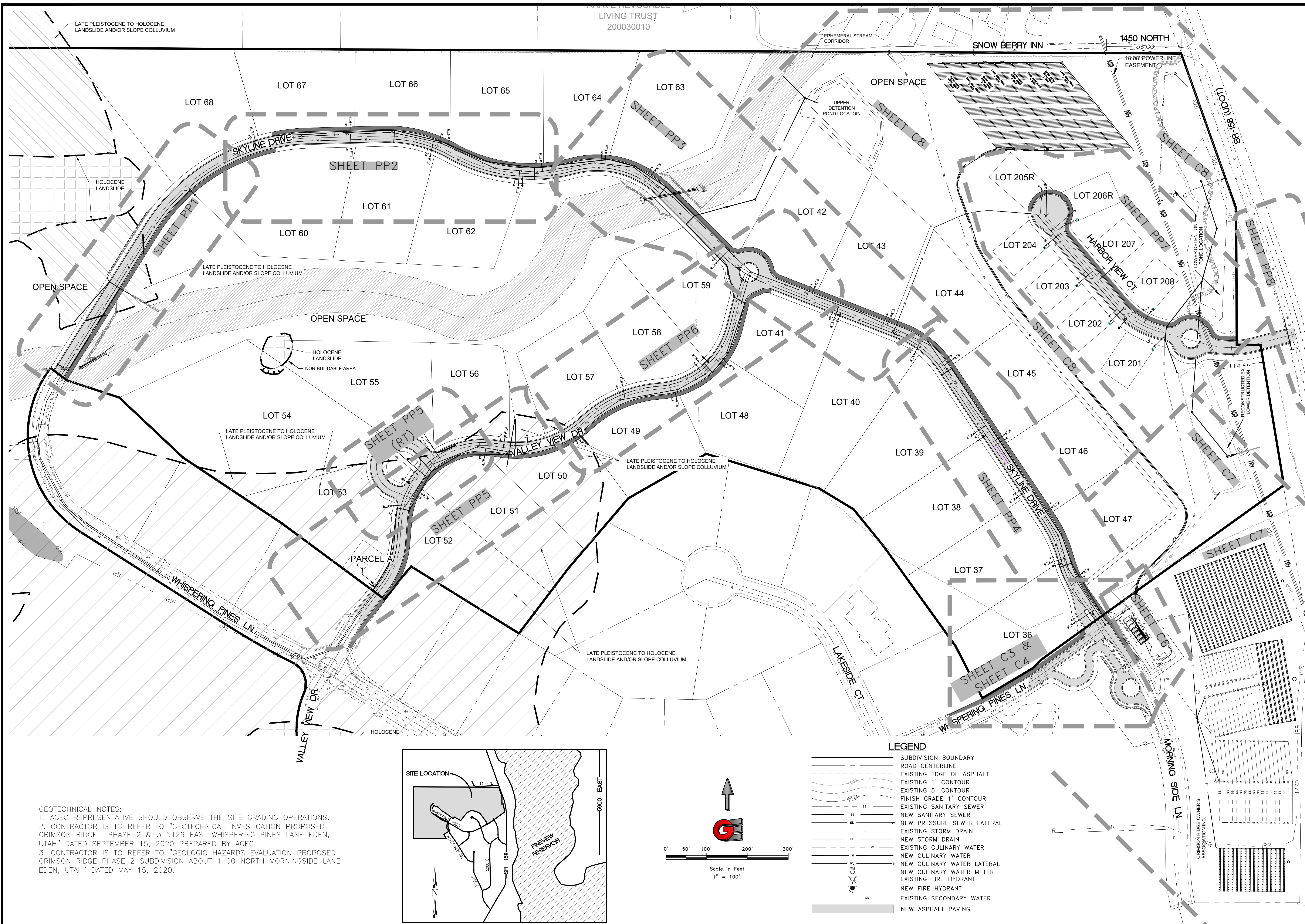
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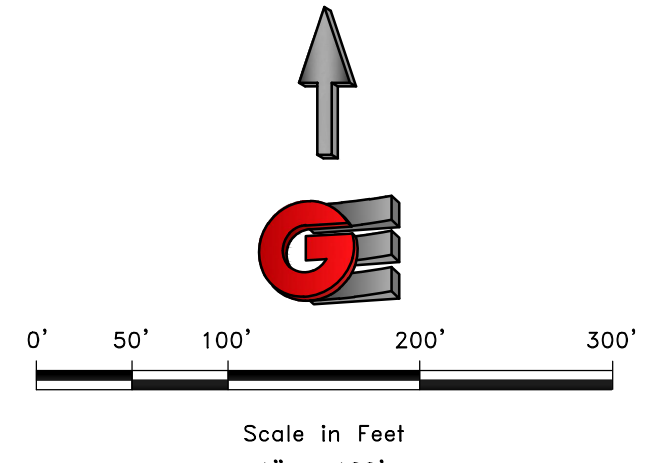
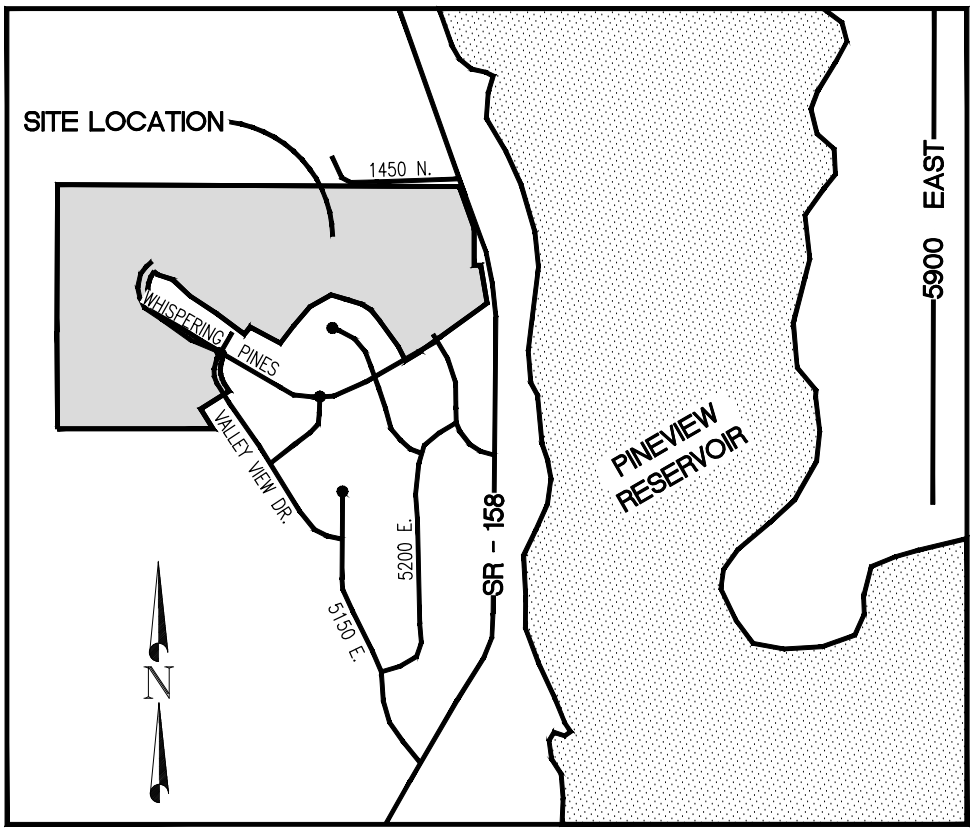
LEGEND

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

SCALE: 1" = 100'	DATE: 2/1/2021	DESIGN: BBD/WJS	DRAWN: BBD/WJS	CHECKED: TAN
REVISIONS	DATE	DESCRIPTION		
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: 801.476.0866				



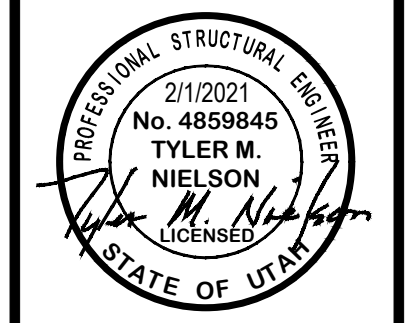
GEOTECHNICAL NOTES:
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 2. CONTRACTOR IS TO REFER TO "GEOTECHNICAL INVESTIGATION PROPOSED CRIMSON RIDGE- PHASE 2 & 3 5129 EAST WHISPERING PINES LANE EDEN, UTAH" DATED SEPTEMBER 15, 2020 PREPARED BY AGEC.
 3. CONTRACTOR IS TO REFER TO "GEOLOGIC HAZARDS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



- 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	2/1/2021
DESIGN	BRD/JWS
DRAWN	BRD/JWS
CHECKED	TAN

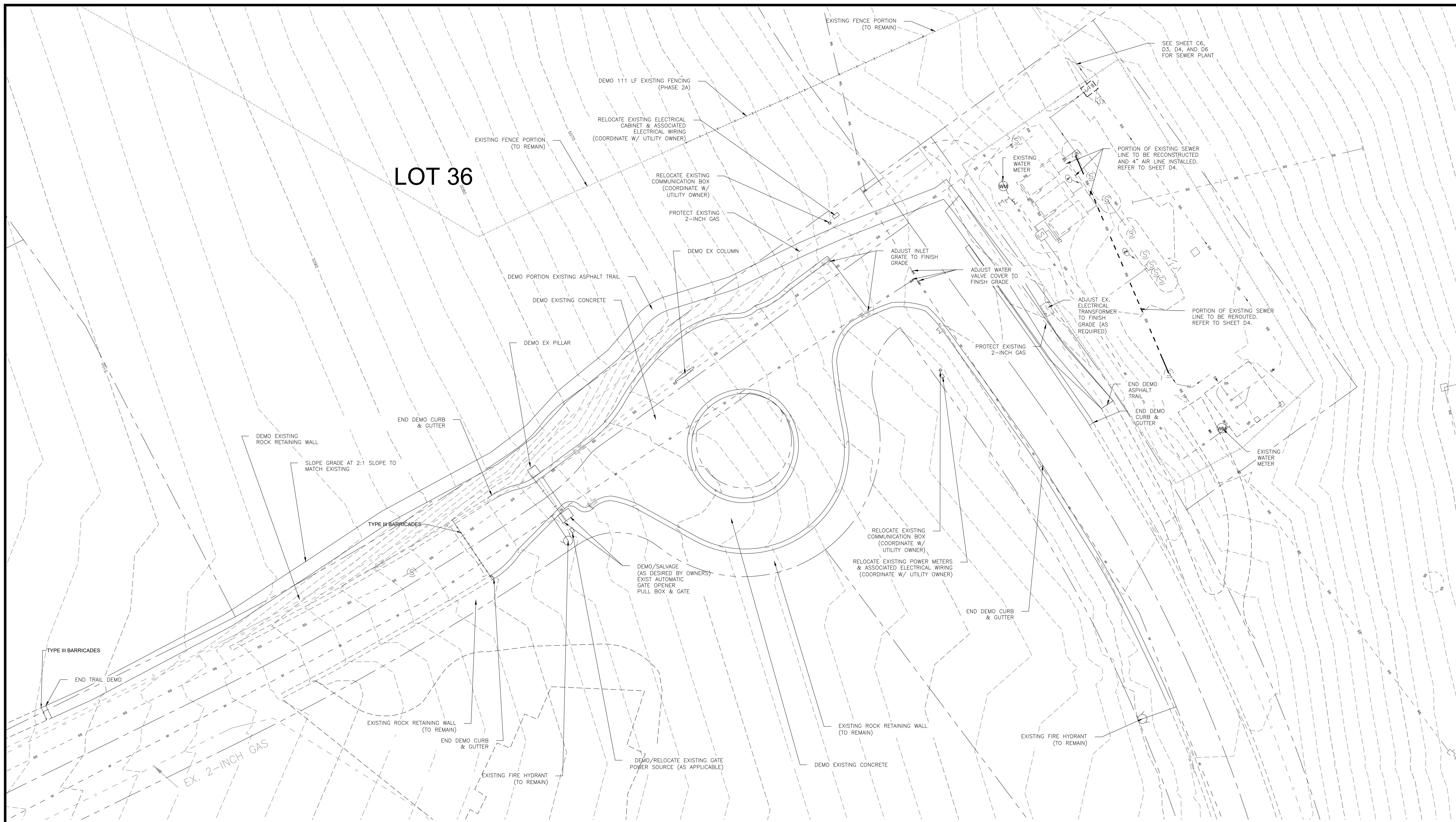
REVISIONS	DESCRIPTION
DATE	



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
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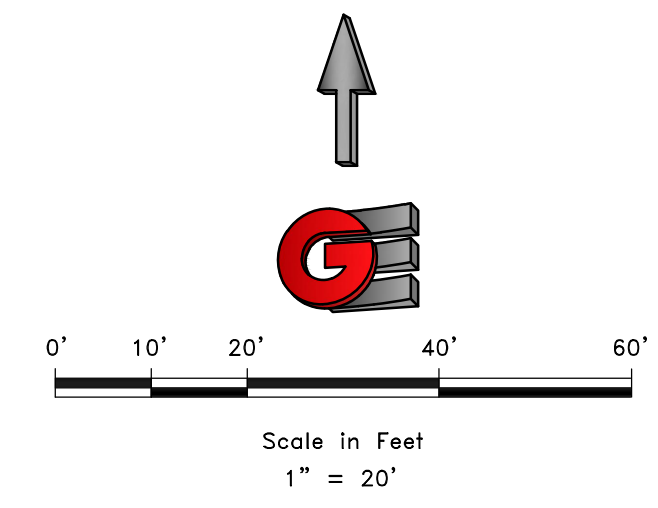
C2



LOT 36

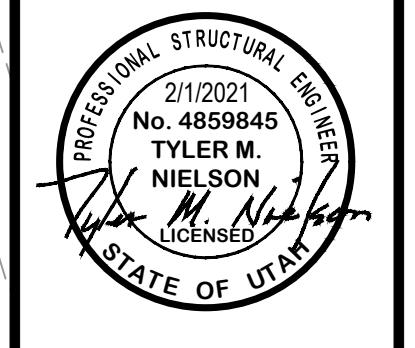
LEGEND

- 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
- SS --- 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
- EXISTING SECONDARY WATER
- NEW ASPHALT PAVING



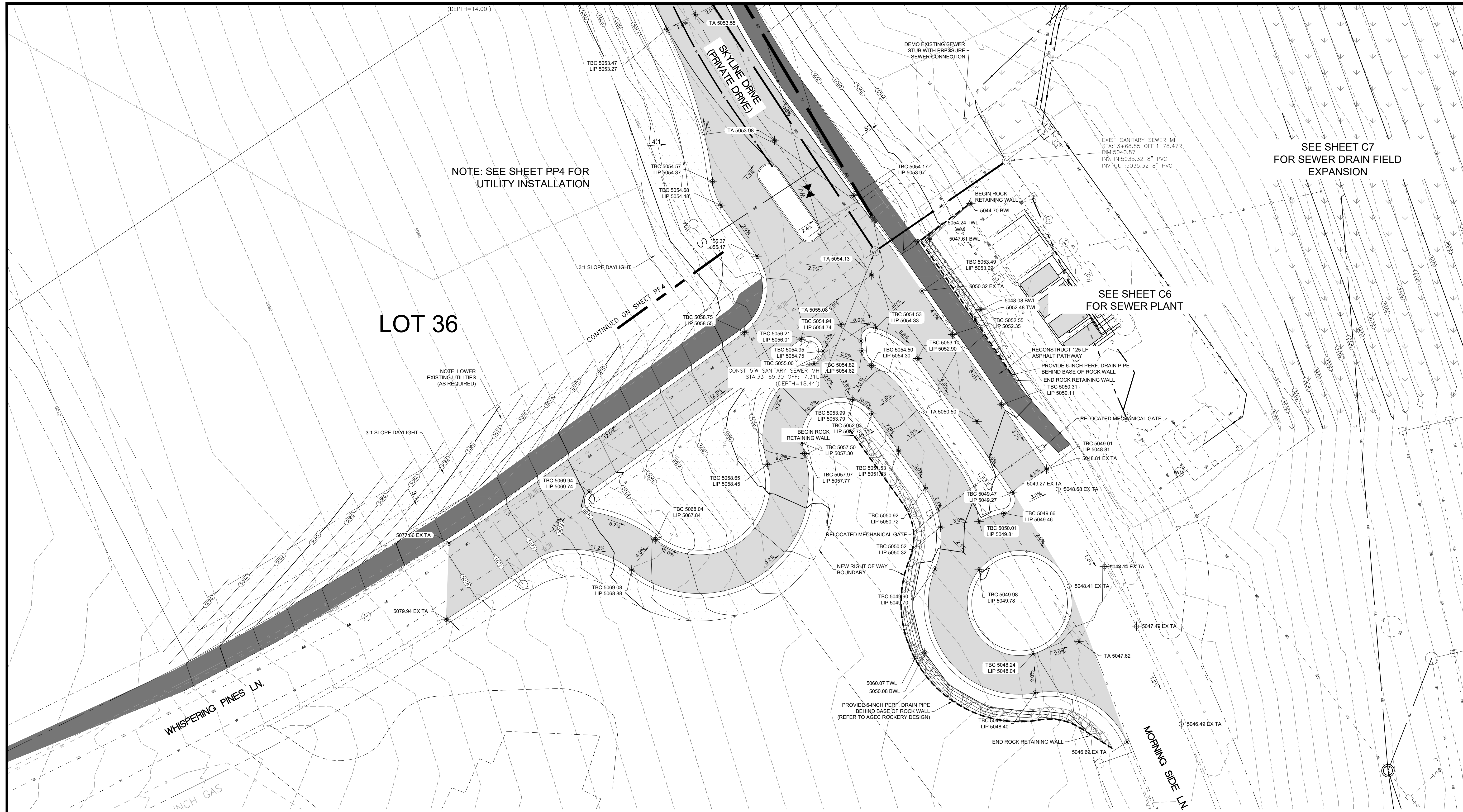
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DATE	2/1/2021
DESIGN	BRD/WJS
DRAWN	BRD/WJS
CHECKED	TAN

REVISIONS	DESCRIPTION
DATE	



ENTRY ACCESS 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



LOT 36

NOTE: SEE SHEET PP4 FOR UTILITY INSTALLATION

SEE SHEET C7 FOR SEWER DRAIN FIELD EXPANSION

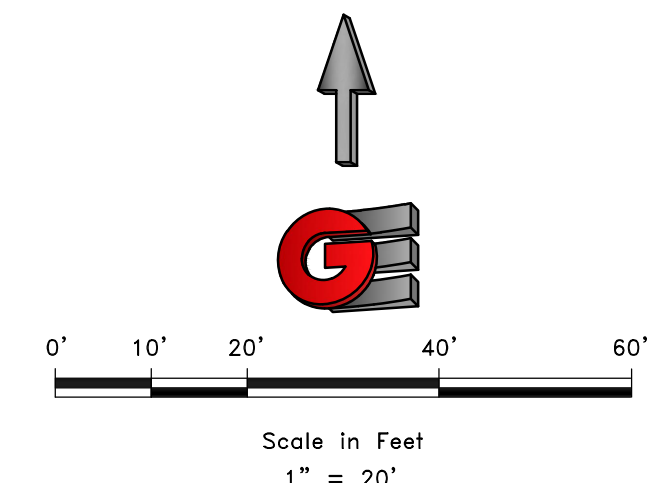
SEE SHEET C6 FOR SEWER PLANT

WHISPERING PINES LN.

MORNING SIDE LN.

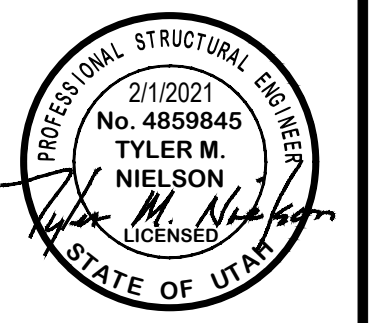
LEGEND

- 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



SCALE	1" = 20'
DATE	2/1/2021
DESIGN	BRD/WJS
DRAWN	BRD/WJS
CHECKED	TAN

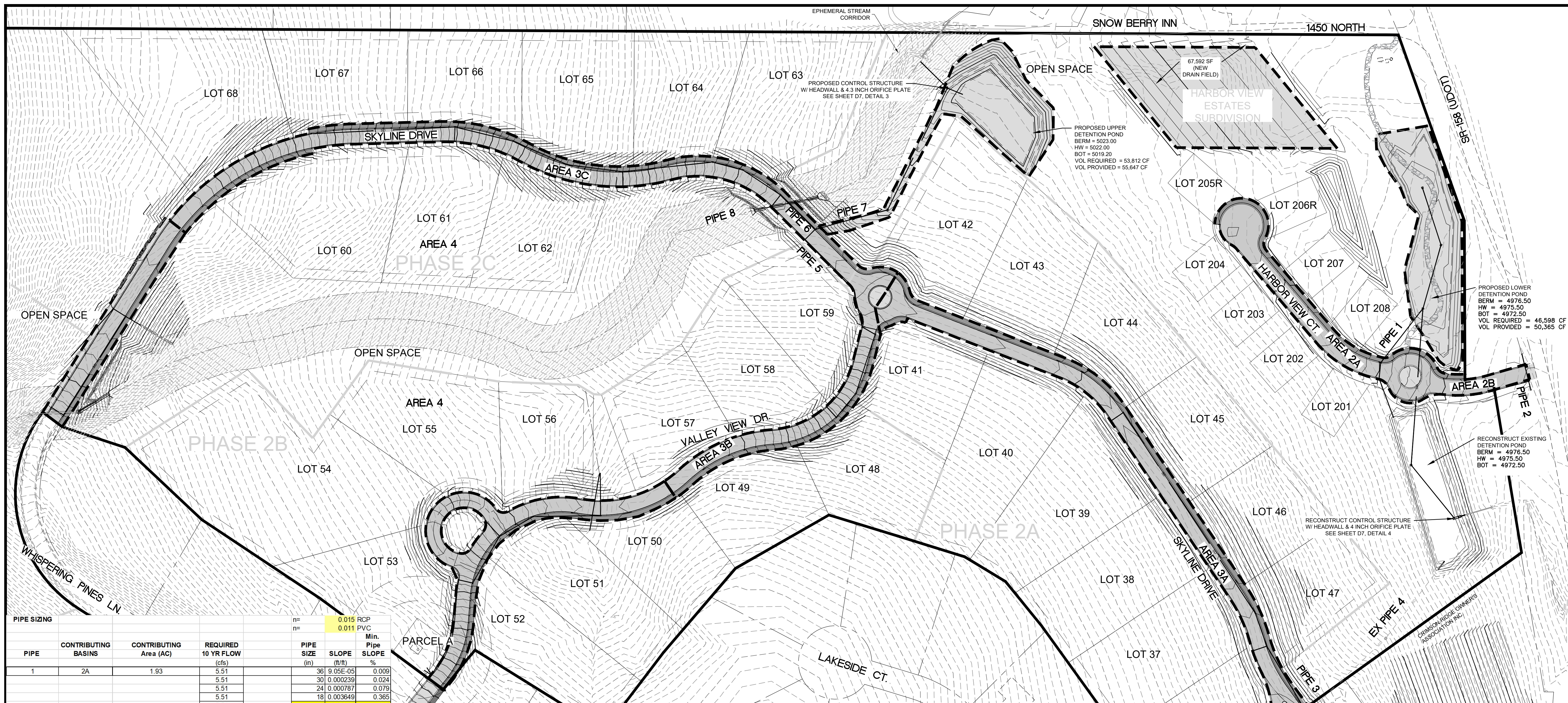
REVISIONS	DESCRIPTION
DATE	



ENTRY ACCESS 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	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	0.015	0.009
			5.51	30	0.00239	0.024
			5.51	24	0.00787	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	2.08E-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
			5.58	30	0.000245	0.024
			5.58	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	Upstream+Area 4	23.05	596.00	72	0.026226	2.623
			596.00	60	0.069347	6.935
			596.00	54	0.121638	12.164
			596.00	48	0.227973	22.797
			596.00	42	0.427961	42.796
			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)

Areas	Sq. Ft.	Acre	C
Asphalt Hard Surface	200,043	4.5923	0.80
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

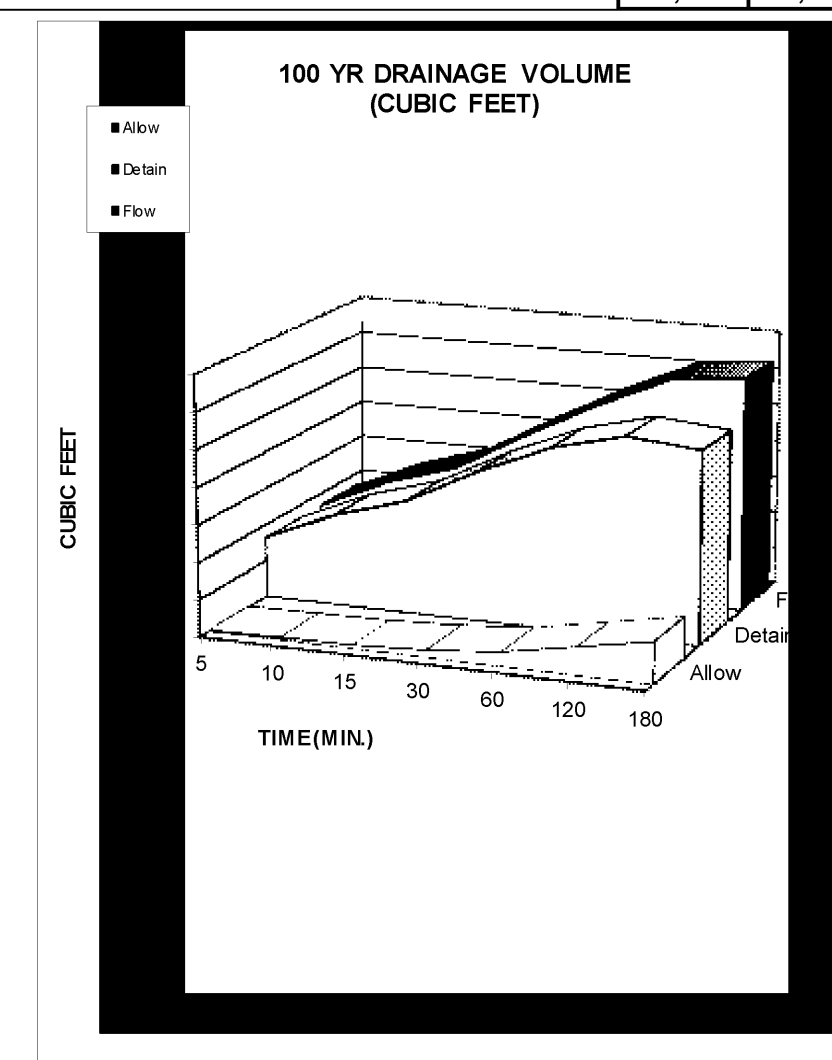
The Reserve at Crimson Ridge Cluster Subdivision
 1250 North 5200 East
 Eden, Weber County, Utah
 (Harbor View Estates Subdivision and Phase 2A Crimson Ridge - 21 LOTS)

Areas	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

Runoff Vol (cf)	1" Inch / Hr	Total Vol (cf)	Detain Vol (cf)
311	7.57	16,660	16,349
621	5.76	25,353	24,731
932	4.76	31,427	30,496
1,864	3.21	42,387	40,522
3,729	1.99	52,554	48,825
7,457	1.16	61,269	53,812
11,186	0.797	63,144	51,958
22,372	0.452	71,622	49,249
44,744	0.286	90,636	45,892
89,488	0.166	105,214	15,725

NOAA - Atlas 14

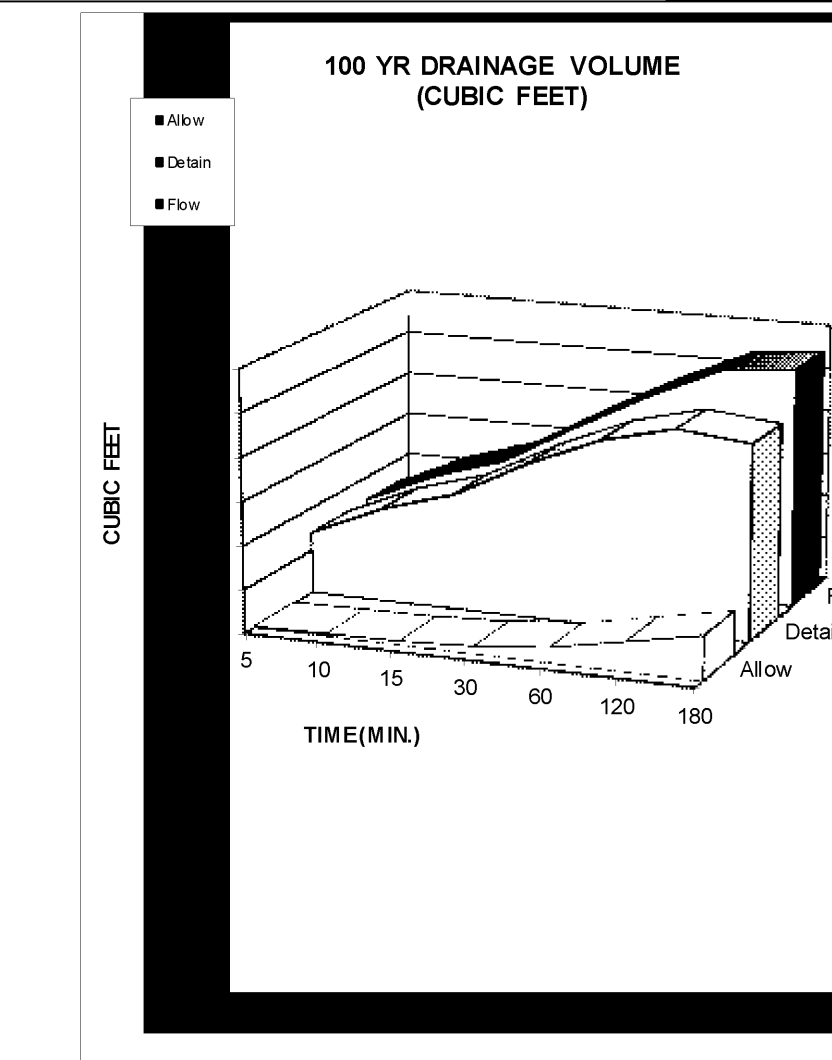


Orifice Calculation
 H = 4.5 Maximum water height (ft)
 Q = 1.04 Flowrate out of orifice (cfs)
 Cc = 0.62 Coefficient of Contraction
 Cv = 0.98 Coefficient of Velocity
 Area = 0.100 Orifice Area (ft²)
 It = 3.14
 g = 32.17 Gravitational Constant
 d = 4.29 Orifice Diameter (in)
 d = 4.27 Orifice

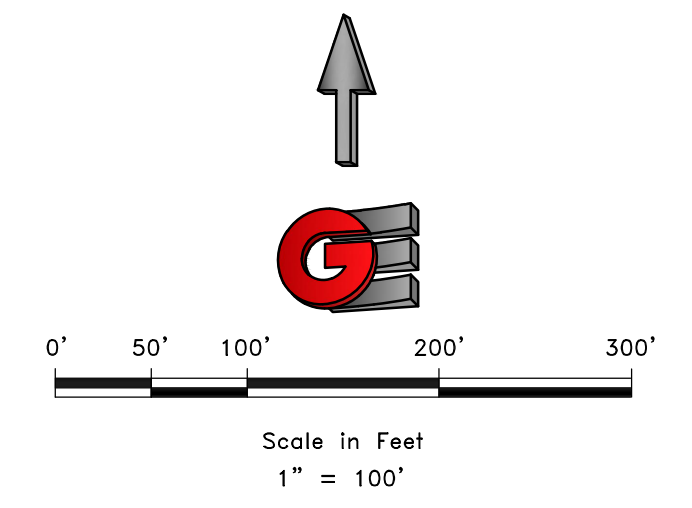
Runoff Vol (cf)	1" Inch / Hr	Total Vol (cf)	Detain Vol (cf)
281	7.57	14,491	14,210
562	5.76	22,052	21,491
842	4.76	27,335	26,493
1,685	3.21	36,868	35,184
3,369	1.99	45,712	42,343
6,739	1.16	53,293	46,554
10,108	0.797	54,924	44,816
20,216	0.452	62,297	42,081
40,432	0.286	78,836	38,404
80,864	0.166	91,516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

NOAA - Atlas 14

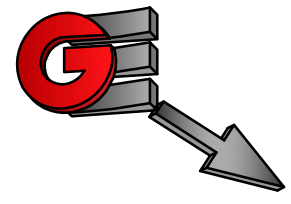
Orifice Calculation
 H = 7.5 Maximum water height (ft)
 Q = 0.94 Flowrate out of orifice (cfs)
 Cc = 0.62 Coefficient of Contraction
 Cv = 0.98 Coefficient of Velocity
 Area = 0.070 Orifice Area (ft²)
 It = 3.14
 g = 32.17 Gravitational Constant
 d = 3.59 Orifice Diameter (in)
 d = 3 3/5 Orifice



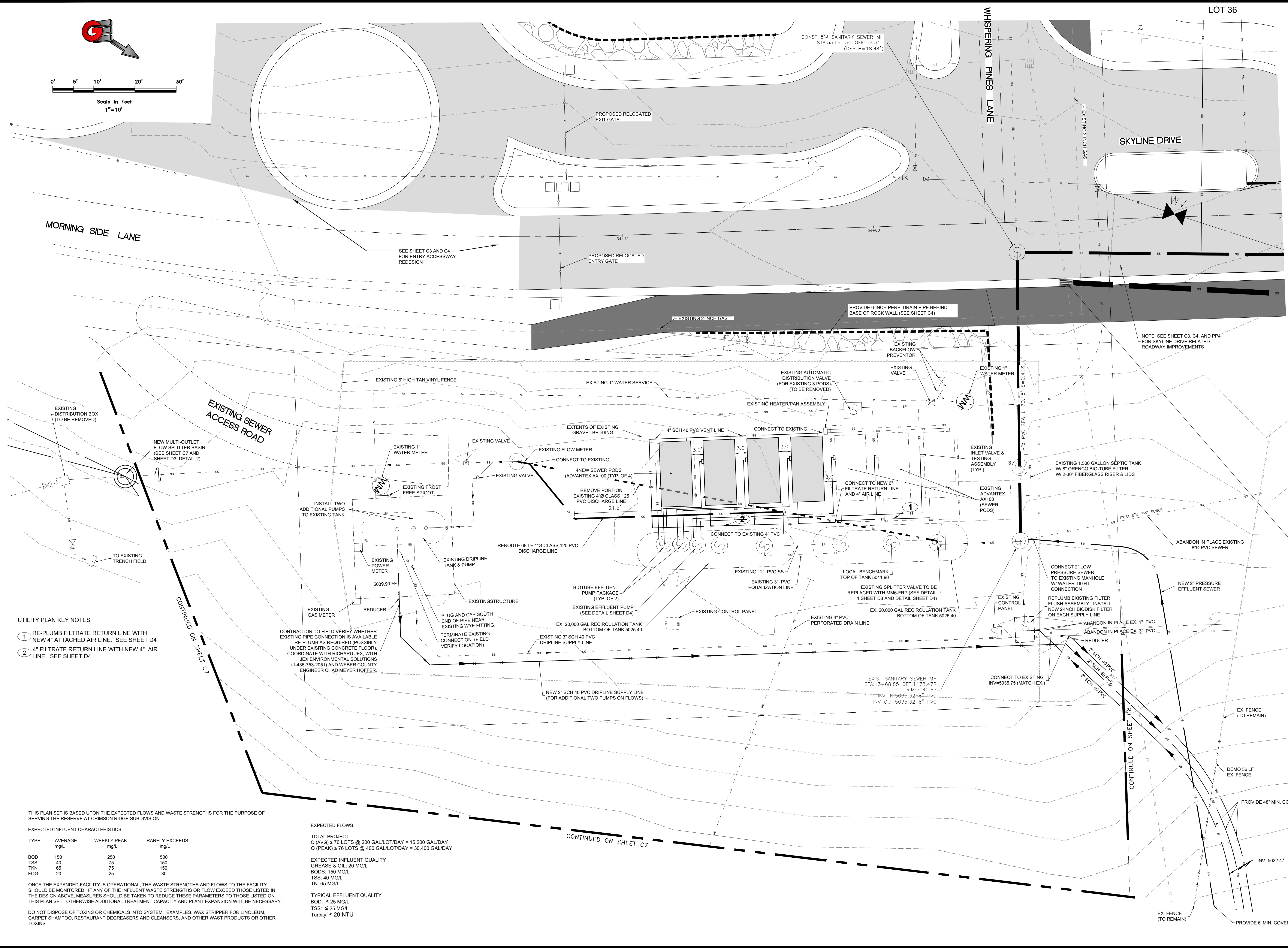
EXISTING LOWER POND ORIFICE DESIGN SIZE = 19.8 INCH = 2.14 SF AREA
 ADDITIONAL AREA FOR HARBOR VIEW ESTATES AND CRIMSON RIDGE PHASE 2A
 = 0.07 SF (FOR 0.1 CFS/ACRE RELEASE)
 LOWER POND NEW ORIFICE = 20.2 INCH = 2.21 SF
 (SEE SHEET D7, DETAIL 4 FOR NEW CONTROL STRUCTURE DETAIL)



SCALE: T = 10'	DATE: 1/26/2021	DESIGN: BRD/WJS	DRAWN: BRD/WJS	CHECKED: TMN
REVISIONS	DATE	DESCRIPTION		
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: 801.476.0866				
C5				



Scale in Feet
1"=10'



- 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
Turbidity: ≤ 20 NTU

SCALE: 1"=10'

DATE: 2/1/2021

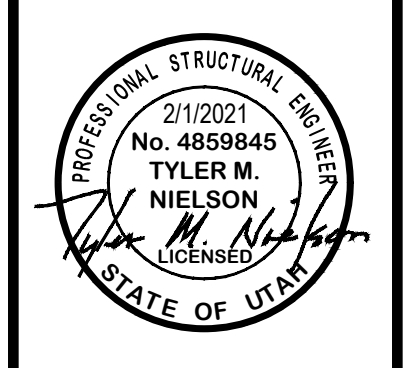
DESIGN: BBD/MLB

DRAWN: BBD/MLB

CHECKED: TMM

DWG: 8/1/2024 - B&H INVESTMENT/CRIMSON RIDGE DESIGN/DWG/CRIMSON RIDGE - COS.DWG

REVISIONS	DESCRIPTION
DATE	



EFFLUENT TREATMENT FACILITY

THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2

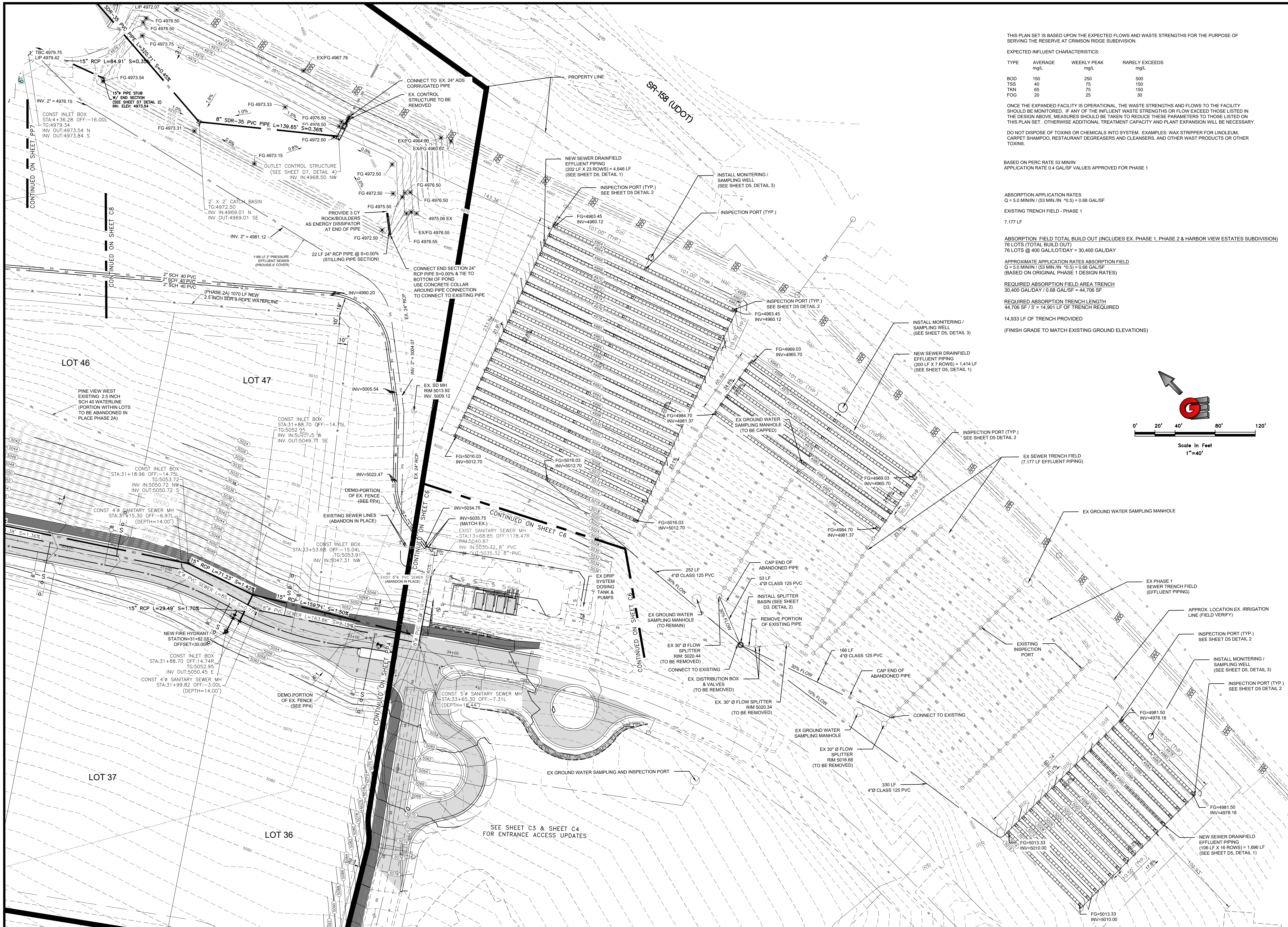
1250 NORTH 5200 EAST

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



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
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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 PER 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 GALLON/DAY = 30,400 GAL/DAY

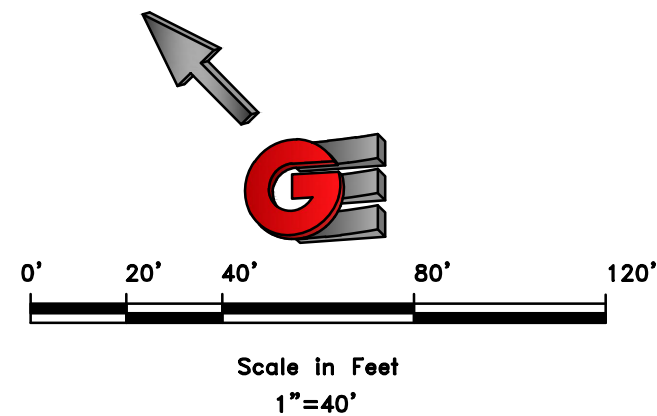
APPROXIMATE APPLICATION RATES ABSORPTION FIELD
Q = 5.0 MIN IN / (53 MIN IN / 0.5) = 0.68 GAL/SF (BASED ON ORIGINAL PHASE 1 DESIGN RATES)

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

REQUIRED ABSORPTION TRENCH LENGTH
44,706 SF / 7.3' = 14,901 LF OF TRENCH REQUIRED

14,933 LF OF TRENCH PROVIDED

(FINISH GRADE TO MATCH EXISTING GROUND ELEVATIONS)



SCALE: 1"=40' DATE: 2/1/2021 DESIGN: BBD/MS DRAWN: BBD/MS CHECKED: TMM DWG: 152084 - 884 INVESTMENT, CRIMSON RIDGE, CRIMSON RIDGE - COS.DWG	REVISIONS <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	DATE	DESCRIPTION			PROFESSIONAL STRUCTURAL ENGINEER 2/1/2021 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
DATE	DESCRIPTION						

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
FG	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 WASTE PRODUCTS OR OTHER TOXINS.

DRIP SYSTEM DESIGN

- PERCOLATION RATE = 2.18 MIN/INCH
- ALLOWED APPLICATION RATE = 0.45 GAL/SF/DAY
- TOTAL FLOW TO BE DISPERSED
76 LOTS @ 400 GAL/LOT/DAY = 30,400 GAL/DAY
- 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 / 4,222 LF / ZONE)
- EMITTER COVERS 4 SF (4 SF / 0.45 GAL/SF/DAY) = 1.8 GAL / DAY (PER EMITTER)
- EMITTER SUPPLIES 0.53 GAL/HR (PER EMITTER)
- TOTAL TIME TO BE APPLIED EACH DAY
(1.8 GAL/DAY) / (0.53 GAL/HR) = 3.4 HR/DAY = 204 MIN/DAY
- RUN TIME RANGE 5 MINUTE DOSE CYCLE TO 10 MINUTE DOSE CYCLE

DOSEING REQUIREMENTS

- 21 CYCLES/DAY/ZONE
- 210 MIN/DAY (21 CYCLES/DAY / ZONE = 10 MINUTES / CYCLE ZONE AREA)

ZONE AREAS

- 8 ZONES
- TOTAL REQUIRED DRIP SYSTEM AREA = 67,556 SF / 8 ZONES = 8,445 SF / ZONE
(8,445 SF / ZONE) (0.45 GAL/DAY/SF) = 3,800 GPD / ZONE
(3,800 GPD / ZONE) (21 CYCLES/DAY) = 181 GAL / CYCLE
(181 GAL / CYCLE) (10 MINUTE / CYCLE) = 18 GAL / MINUTE
DESIGNED 16 ROWS PER ZONE WITH 266 LF PER ROW FOR A TOTAL OF 4,266 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

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" x 45' = 41.4' = 16 LF
1" 90° = 11.2' = 12 LF
VALVE = 11.9 LF

TOTAL = 39.9' * 0.2/100 = 0.08

PRESSURE @ END OF PIPE (20PSI) = 20' x 31.46 FEET

TOTAL HEAD = 43 FEET

(EXISTING PUMP DESIGNED FOR 96 FEET HEAD)

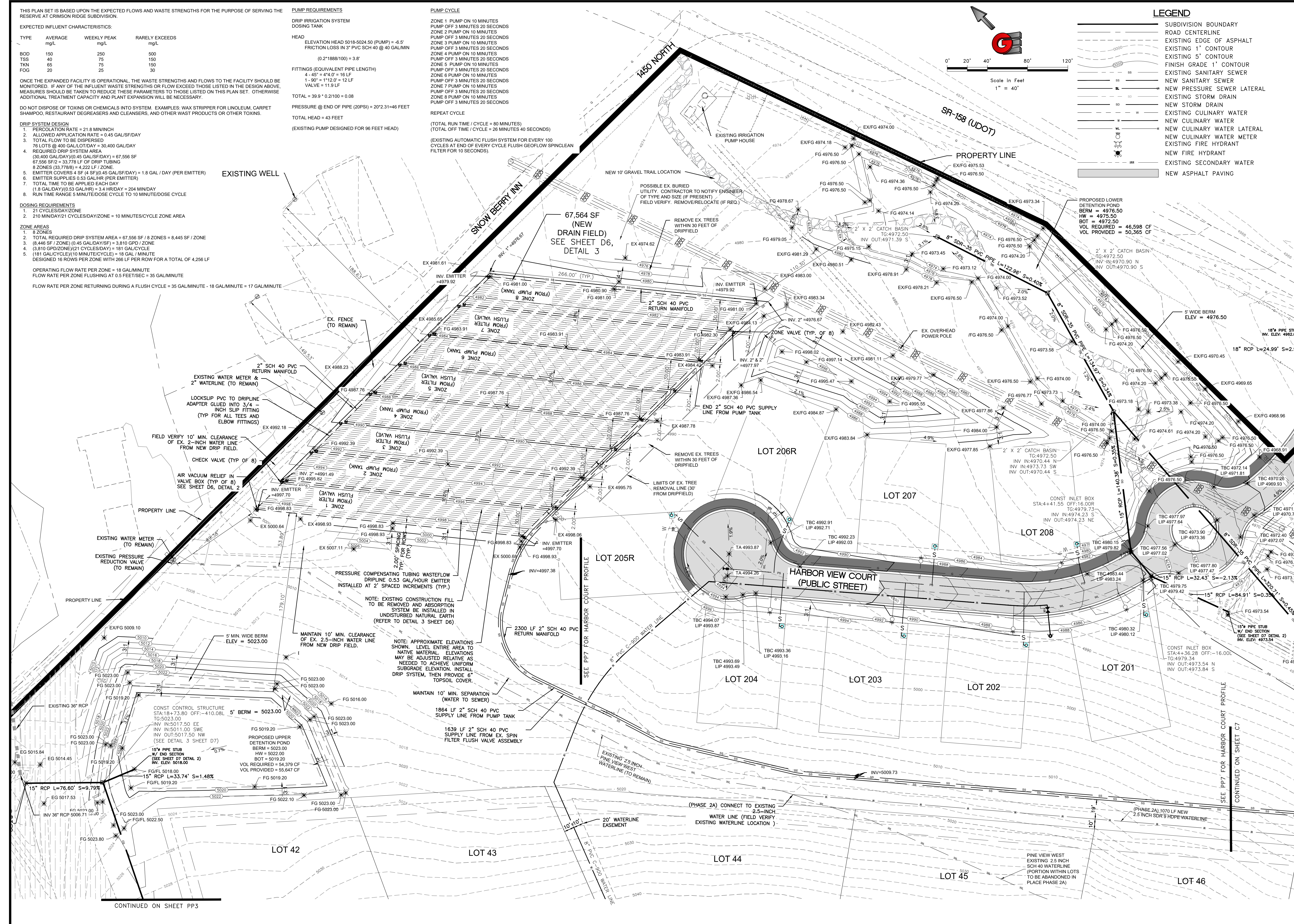
PUMP CYCLE

- 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).



LEGEND

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

SCALE: 1" = 40'

DATE: 2/11/2021

DESIGN: BBD/WAS

DRAWN: BBD/WAS

CHECKED: TAN

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

PROFESSIONAL STRUCTURAL ENGINEER
2/11/2021
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

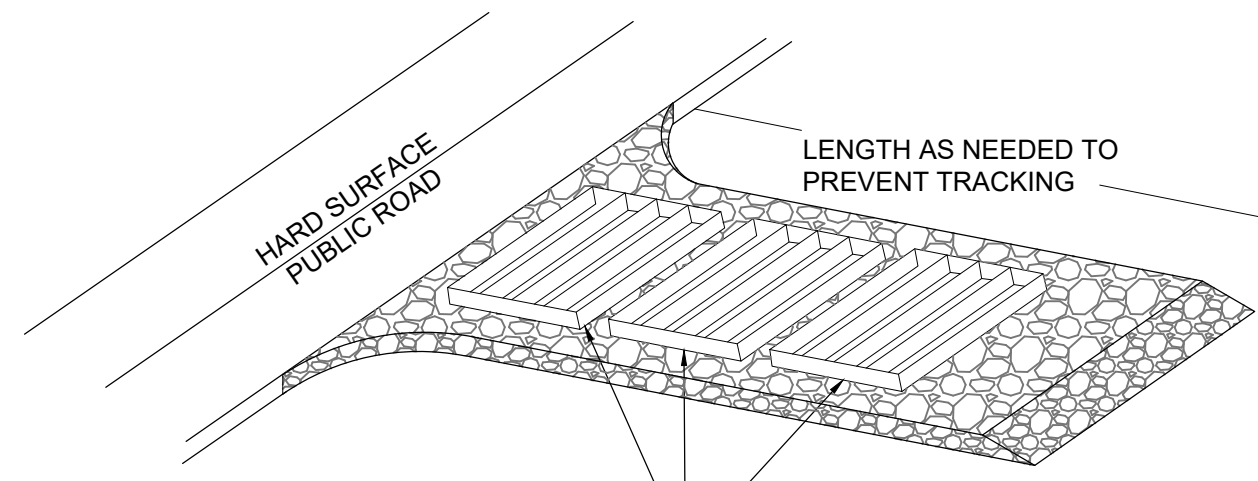
CIVIL-LAND PLANNING
MUNICIPAL-LAND SURVEYING

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:

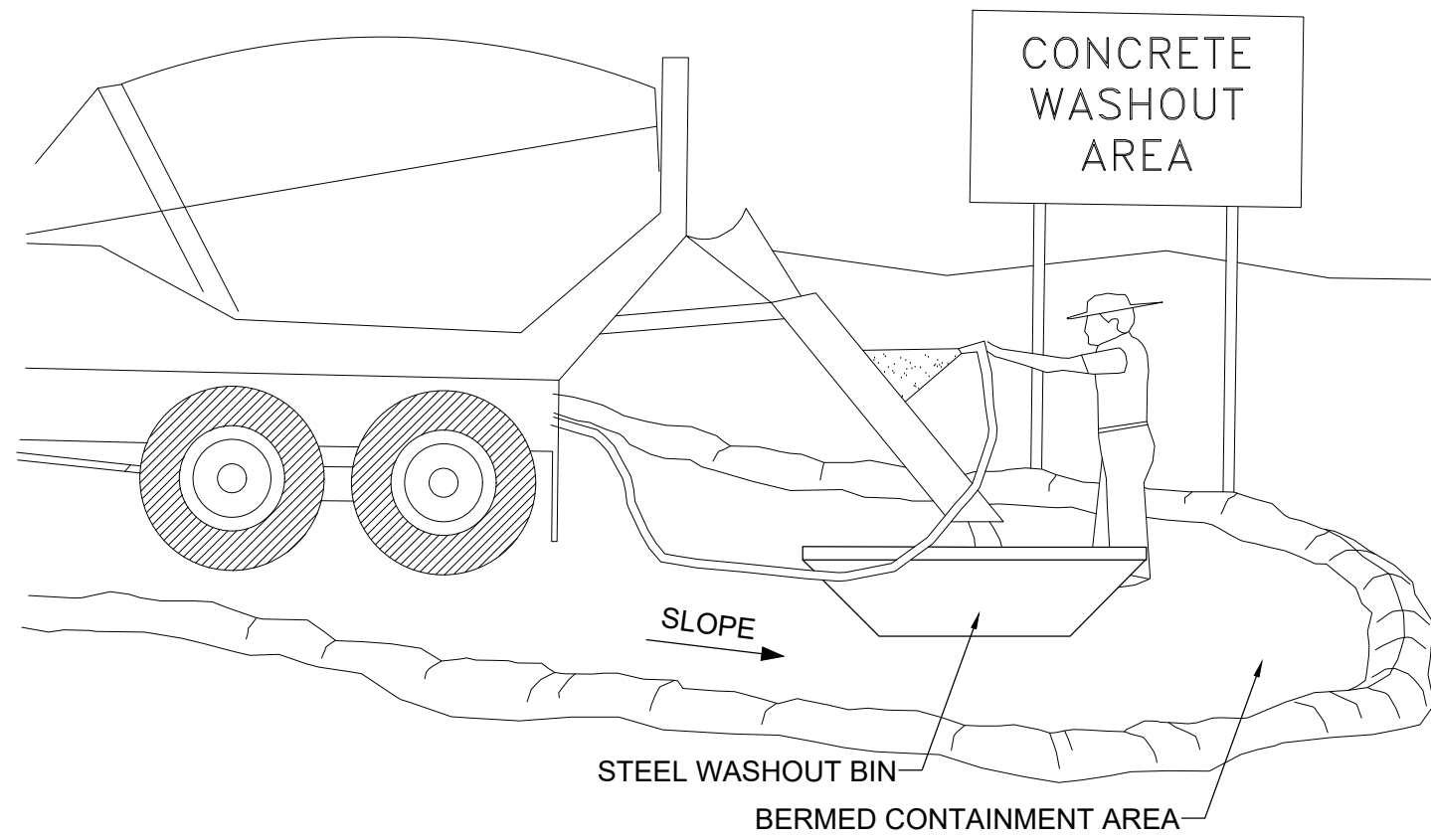
1. SEDIMENTS AND OTHER MATERIALS SHALL NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS SHALL BE STABILIZED SO AS TO PREVENT SEDIMENTS FROM BEING DEPOSITED INTO THE STORM DRAIN SYSTEMS. DEPOSITIONS MUST BE SWEEPED UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR 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.

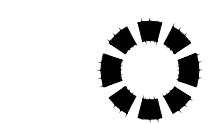
NOTE:

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

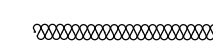


NOTES:

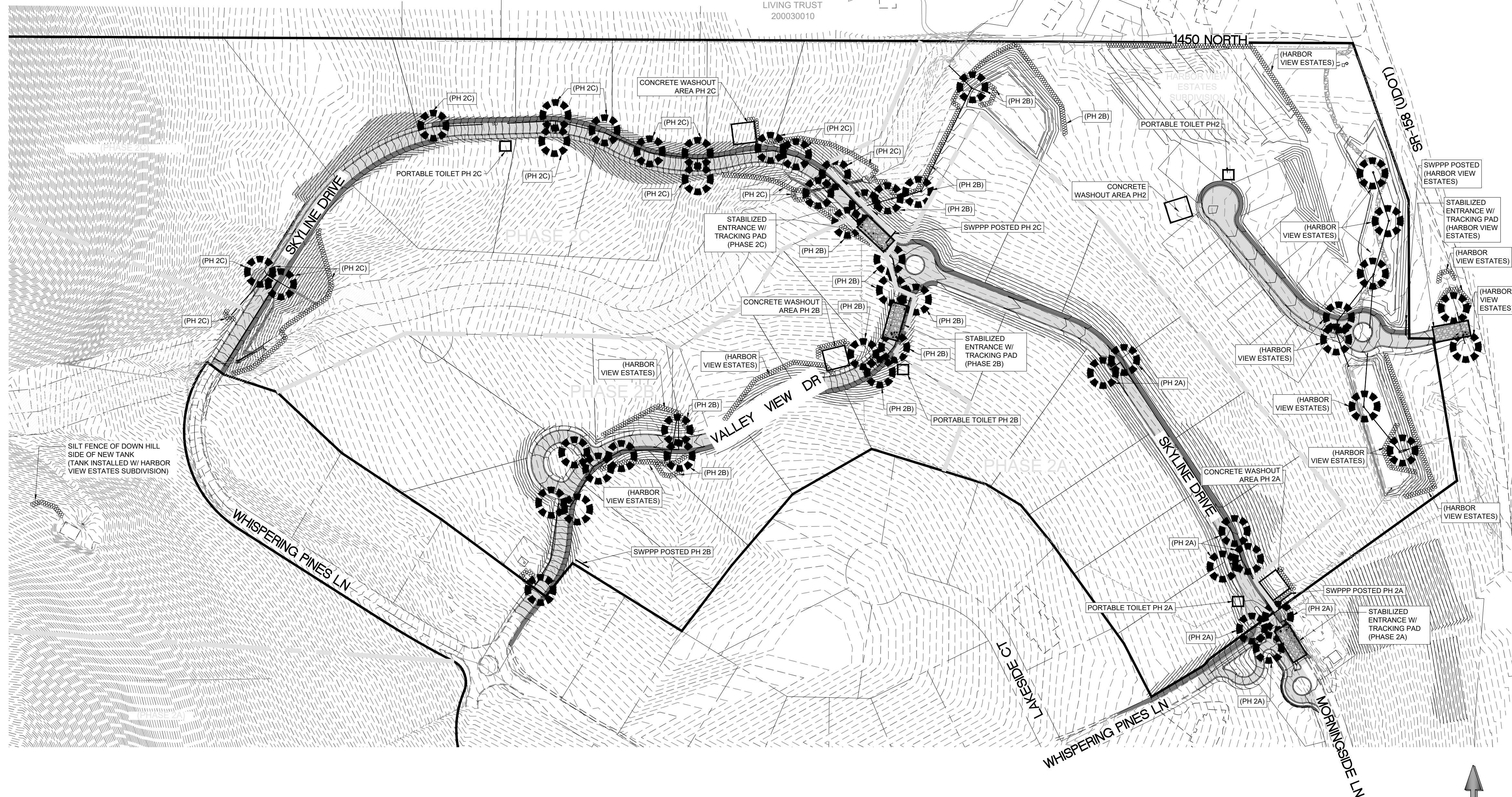
1. EXCESS AND WASTE CONCRETE SHALL BE DISPOSED OF OFF SITE OR AT DESIGNATED AREAS ONLY.
2. EXCESS AND WASTE CONCRETE SHALL NOT BE WASHED INTO THE STREET OR INTO A DRAINAGE SYSTEM.
3. FOR WASHOUT OF CONCRETE AND MORTAR PRODUCTS ONSITE, A DESIGNATED CONTAINMENT FACILITY OF SUFFICIENT CAPACITY TO RETAIN 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 SHALL BE VACUUMED OR CONTAINED, DRIED, PICKED UP AND DISPOSED OF PROPERLY.



INLET PROTECTION (EITHER OPTION)

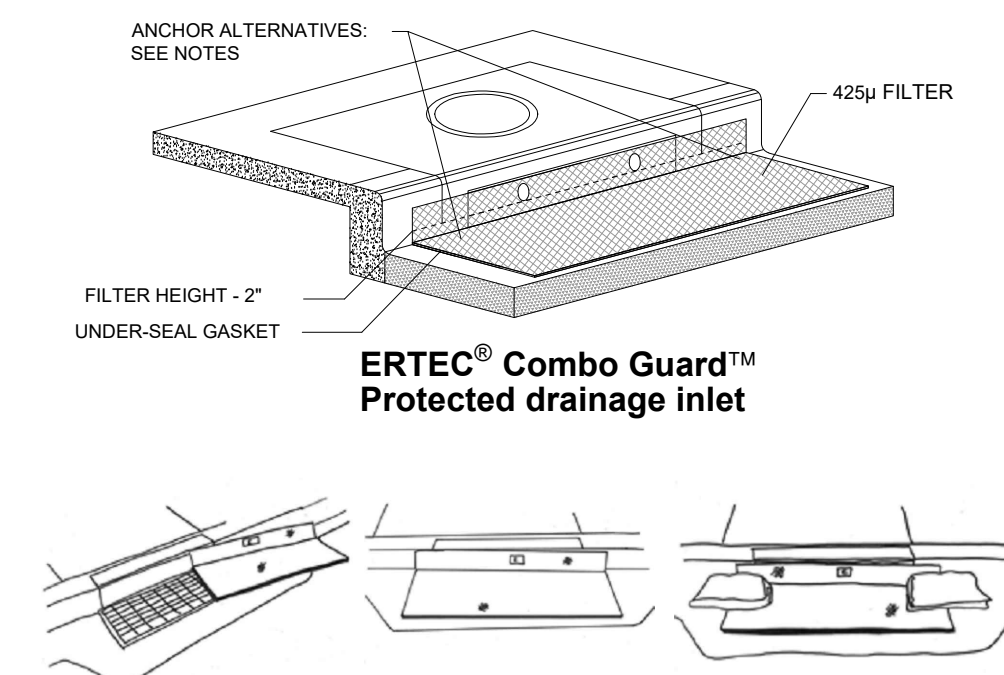


SILT FENCE

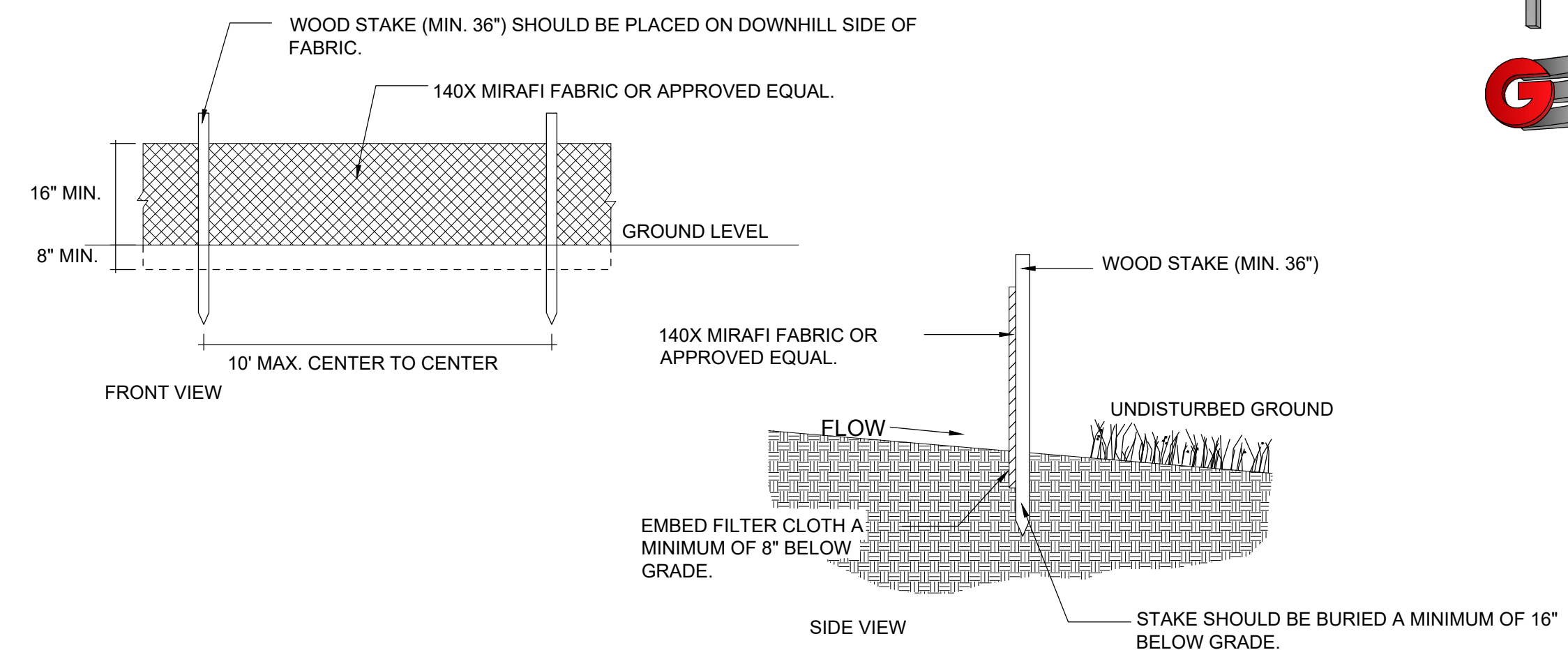


INSTALLATION NOTES

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.



ERTEC® Combo Guard™ Protected drainage inlet

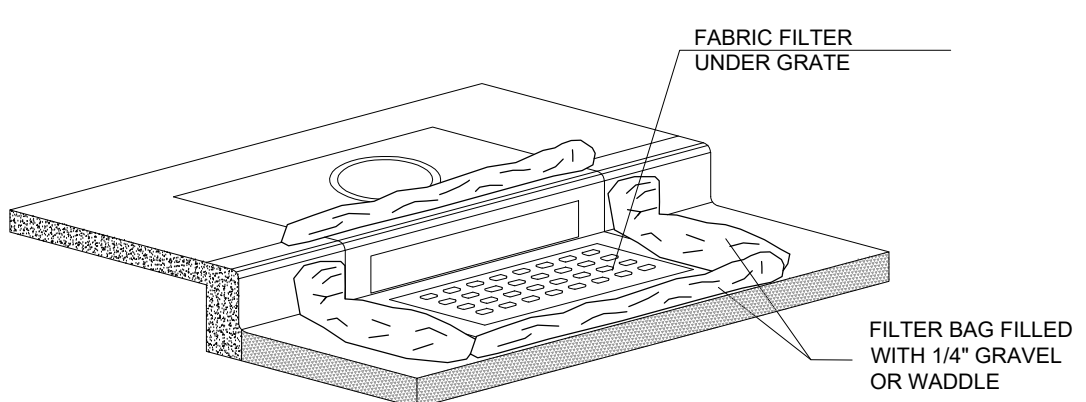


2 SILT FENCE

Scale: NTS

1A INLET PROTECTION - OPTION 1

Scale: NTS



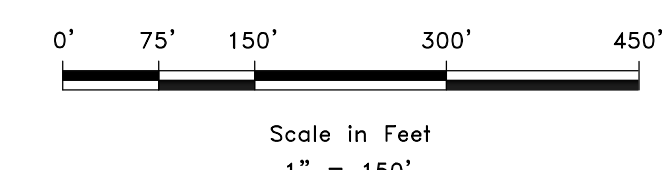
1B INLET PROTECTION - OPTION 2

Scale: NTS

DEVELOPERS:

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KEVIN DEPPE
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CENTERTVILLE, UT 84014
801-535-4032



SCALE: 1"=60'	DATE: 2/1/2021	DESIGN: BBD/MJS	DRAWN: BBD/MJS	CHECKED: TMN
REVISIONS		DESCRIPTION		
DATE				

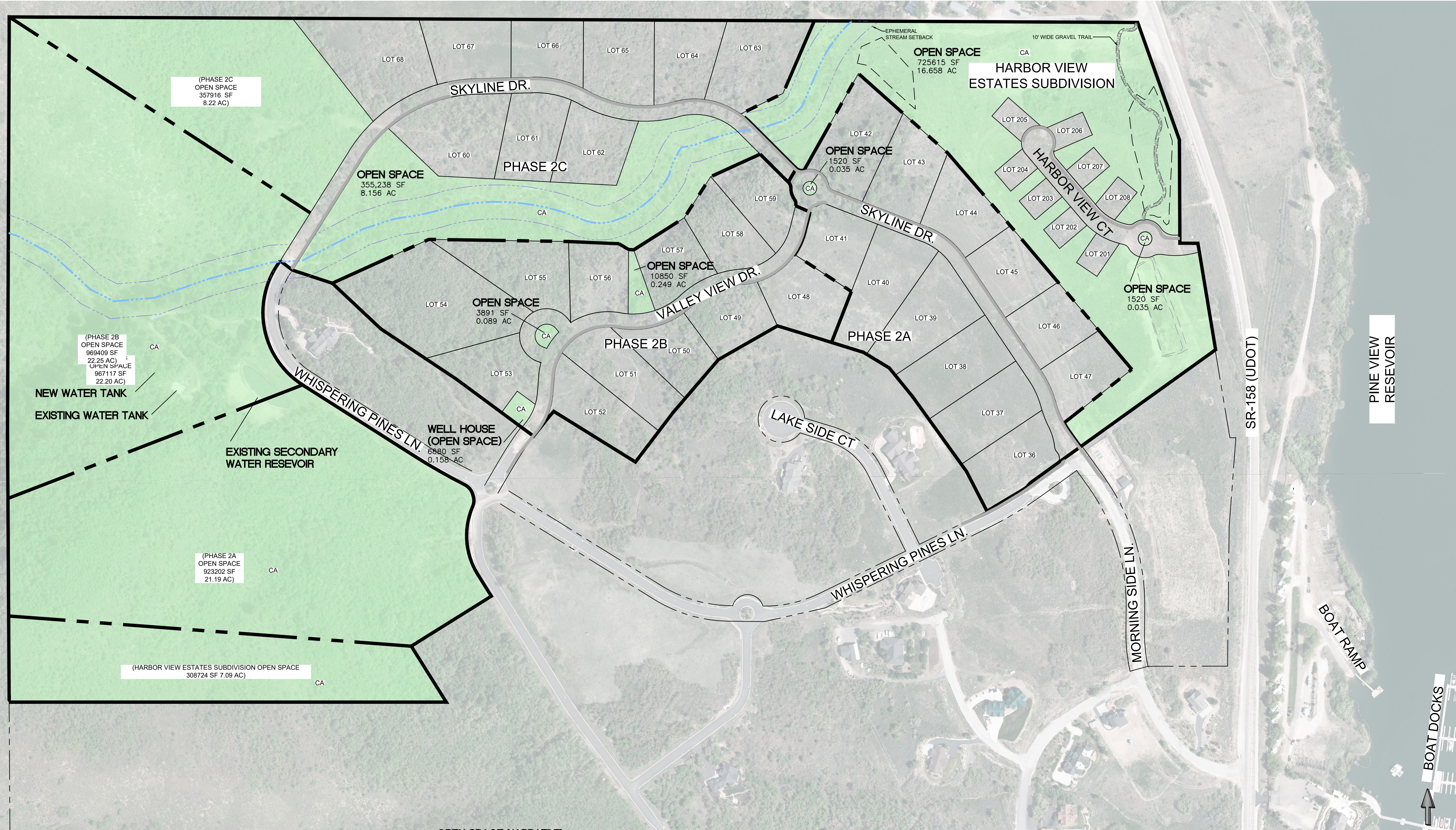
SWPPP
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL-LAND PLANNING
MUNICIPAL-LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
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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 SUBDIVISION

OPEN SPACE NARRATIVE:

- ALL OPEN SPACE AREAS TO BE MAINTAINED BY THE HOA. AREAS WEST OF SKYLINE DRIVE 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 RESEED 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.
- 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.
- 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.

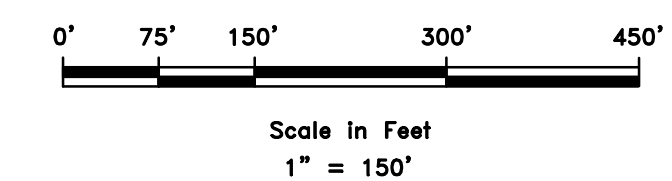
DEVELOPERS:

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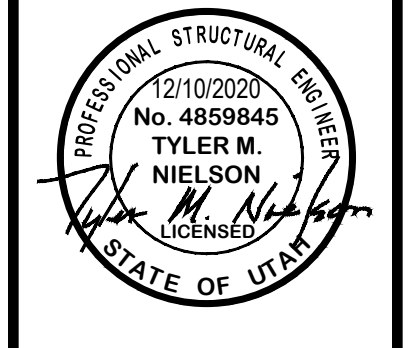
KEVIN DEPPE
110 W. 1700 N.
CENTERVILLE, UT 84014
801-535-4032

LEGEND:

OPEN SPACE AREAS -



REVISIONS	DATE	DESCRIPTION



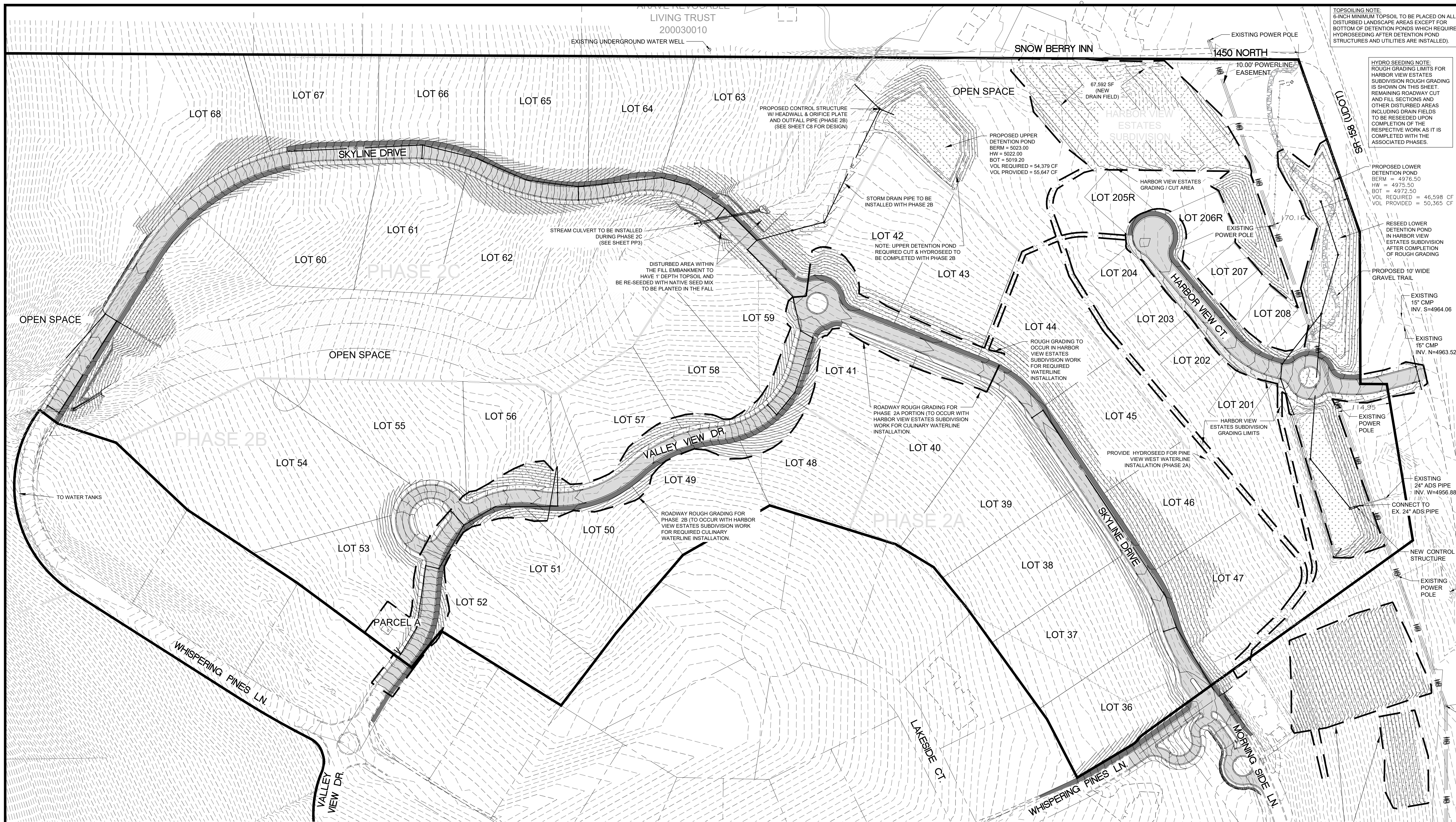
OPEN SPACE PRESERVATION PLAN
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD.
+ HARBOR VIEW ESTATES SUBDIVISION
1250 NORTH 5200 EAST
OGDEN VALLEY, WEBER, UTAH

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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 RESEED UPON COMPLETION OF THE RESPECTIVE WORK AS IT IS COMPLETED WITH THE ASSOCIATED PHASES.

PROPOSED UPPER DETENTION POND
BERM = 5023.00
HW = 5022.00
BOT = 5019.20
VOL REQUIRED = 54,379 CF
VOL PROVIDED = 55,647 CF

PROPOSED LOWER DETENTION POND
BERM = 4976.50
HW = 4975.50
BOT = 4972.50
VOL REQUIRED = 46,598 CF
VOL PROVIDED = 50,365 CF

RESEED LOWER DETENTION POND
IN HARBOR VIEW ESTATES SUBDIVISION AFTER COMPLETION OF ROUGH GRADING

PROPOSED 10' WIDE GRAVEL TRAIL

EXISTING 15" CMP
INV. S=4964.06

EXISTING 16" CMP
INV. N=4963.52

EXISTING 24" ADS PIPE
INV. W=4956.88

CONNECT TO EX. 24" ADS PIPE

NEW CONTROL STRUCTURE

EXISTING POWER POLE

CHAMBER ABSORPTION SYSTEM
TO BE INSTALLED IN HARBOR VIEW ESTATES SUBDIVISION

EARTHWORK NET 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

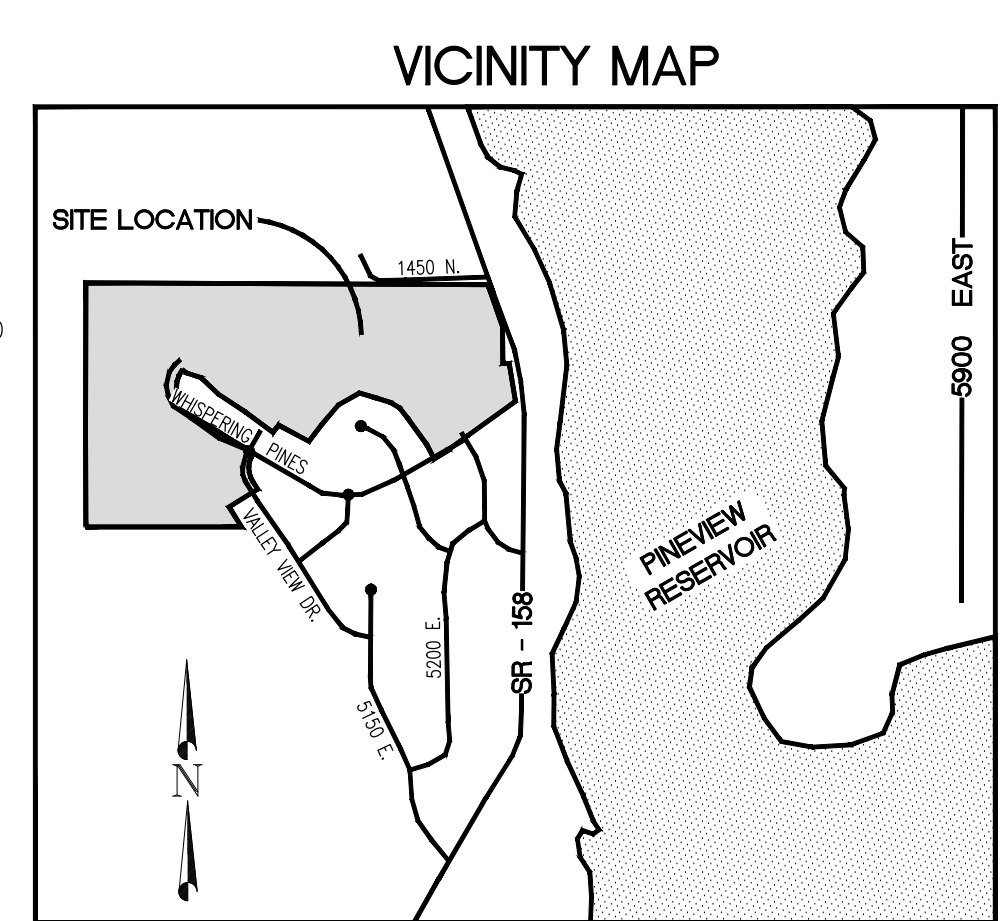
TOPSOIL REMOVAL, STOCKPILING & RESPREADING TOPSOIL, 6-INCH OVEREX FOR CUT EMBANKMENTS AND GRAVEL TRAIL (IS INCIDENTAL TO EARTHWORK CUT AND FILL)

ESTIMATED SEWER POD & CHAMBER ADDITIONAL CUT DURING HARBOR VIEW ESTATES WORK = 3,031 CY
(EXCESS CUT TO BE STOCKPILED ON LOT 42)

(FUTURE AND REMAINING PORTION OF PHASES FOR EARTHWORK)

	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 FOR REMAINING PHASES 870 CY CUT
(SOIL SHRINKAGE FACTOR OR UTILITY TRENCHING SPOILS QUANTITIES NOT CALCULATED).



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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 in Feet
1" = 100'

SCALE: 1" = 100'

DATE: 2/1/2021

DESIGN: BBD/WJS

DRAWN: BBD/WJS

CHECKED: TMN

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

PROFESSIONAL STRUCTURAL ENGINEER
2/1/2021
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

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C11