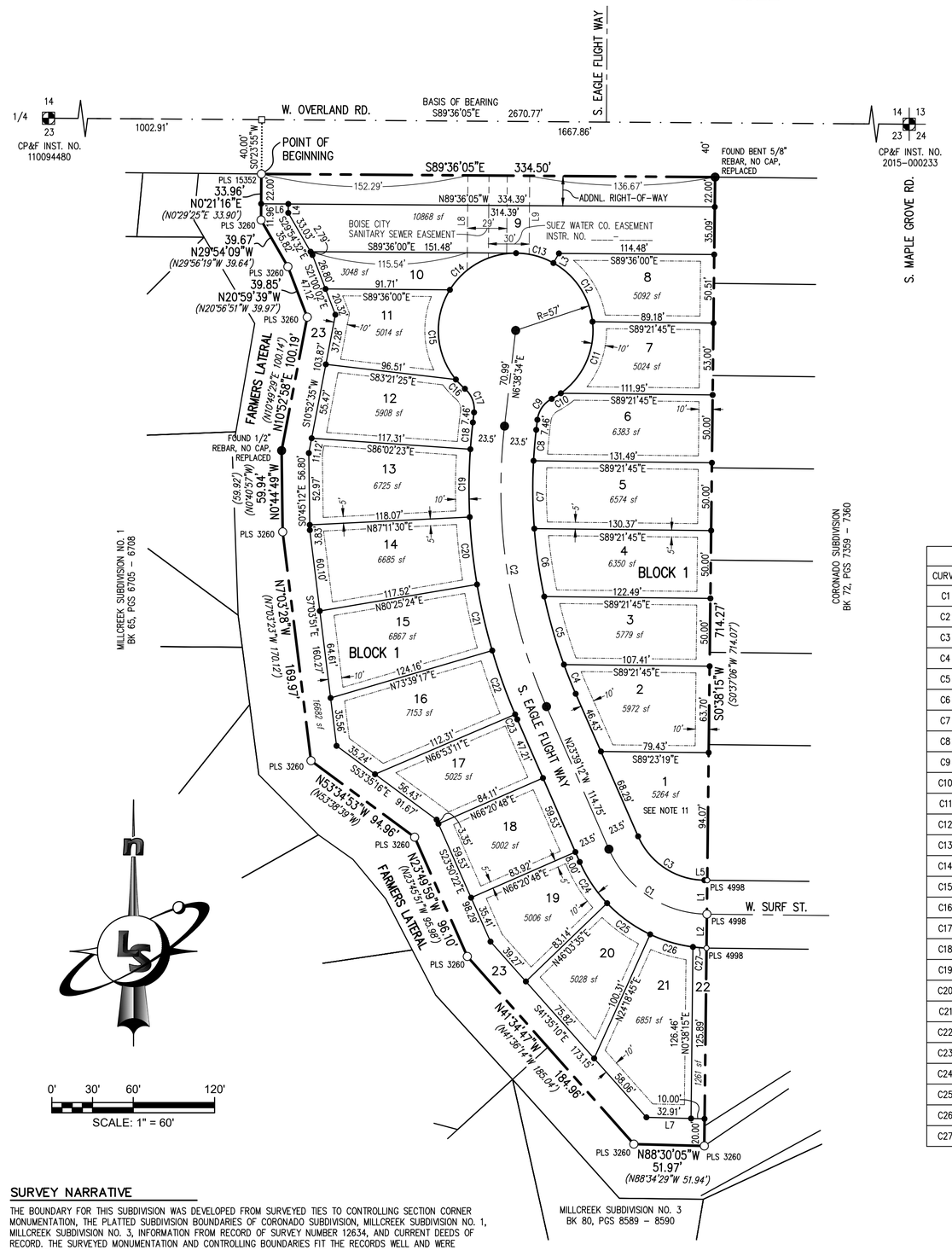
BOXELDER CREEK SUBDIVISION

BOOK ____ , PAGE _____

A PARCEL OF LAND BEING A PORTION OF THE NW 1/4 OF THE NE 1/4 OF SECTION 23, TOWNSHIP 4 NORTH, RANGE 1 WEST, BOISE MERIDIAN, CITY OF BOISE, ADA COUNTY, IDAHO
2022



LINE TABLE		
LINE	LENGTH	BEARING
L1	25.00'	N0°38'38"E
L2	25.00'	N0°38'38"E
L3	8.12'	N30°01'17"E
L4	6.57'	N0°20'53"E
L5	2.12'	N89°21'22"W
L6	20.00'	N89°36'05"W
L7	42.91'	S88°30'28"E
L8	69.86'	S0°27'01"W
L9	57.80'	S0°24'29"W

CURVE TABLE					
CURVE	LENGTH	RADIUS	DELTA	BEARING	CHORD
C1	91.57'	80.00'	65°35'01"	S56°26'42"E	86.65'
C2	211.51'	400.00'	30°17'46"	S8°30'19"E	209.05'
C3	61.92'	54.00'	65°42'10"	S56°30'17"E	58.59'
C4	23.20'	376.50'	3°31'48"	S21°53'17"E	23.19'
C5	52.27'	376.50'	7°57'14"	S16°08'46"E	52.22'
C6	50.65'	376.50'	7°42'31"	S8°18'54"E	50.62'
C7	50.05'	376.50'	7°37'00"	S0°39'08"E	50.01'
C8	22.91'	376.50'	3°29'13"	S4°53'58"W	22.91'
C9	19.41'	20.00'	55°36'08"	S34°26'39"W	18.66'
C10	7.92'	57.00'	7°57'41"	N58°15'52"E	7.91'
C11	60.48'	57.00'	60°47'43"	N23°53'09"E	57.68'
C12	53.99'	57.00'	54°16'10"	N33°38'47"W	51.99'
C13	28.78'	57.00'	28°55'57"	N75°14'51"W	28.48'
C14	58.26'	57.00'	58°33'53"	S61°00'14"W	55.76'
C15	70.69'	57.00'	71°03'30"	S3°48'27"E	66.25'
C16	9.57'	57.00'	9°37'22"	S44°08'53"E	9.56'
C17	19.41'	20.00'	55°36'07"	N21°09'30"W	18.66'
C18	19.83'	423.50'	2°40'58"	S5°18'06"W	19.83'
C19	50.03'	423.50'	6°46'07"	S0°34'34"W	50.00'
C20	50.03'	423.50'	6°46'07"	S6°11'33"E	50.00'
C21	50.03'	423.50'	6°46'07"	S12°57'40"E	50.00'
C22	50.03'	423.50'	6°46'07"	S19°43'46"E	50.00'
C23	3.99'	423.50'	0°32'22"	S23°23'01"E	3.99'
C24	36.67'	106.10'	19°47'59"	S33°33'11"E	36.48'
C25	39.43'	106.10'	21°17'37"	S54°05'59"E	39.21'
C26	33.01'	106.10'	17°49'28"	S73°39'32"E	32.87'
C27	10.03'	106.10'	5°24'57"	S85°16'45"E	10.03'

LEGEND

- SUBDIVISION BOUNDARY
- SECTION LINE
- RIGHT-OF-WAY LINE
- CENTERLINE
- LOT LINE
- EXISTING PARCEL LINE
- PUBLIC UTILITY, PRESSURE IRRIGATION & LOT DRAINAGE EASEMENT LINE – SEE NOTES 1 & 2
- OTHER EASEMENT LINE AS NOTED
- FOUND ALUMINUM CAP AS NOTED
- SET 5/8"x24" REBAR w/PLASTIC CAP
- SET 1/2"x24" REBAR w/PLASTIC CAP
- FOUND 5/8" REBAR, AS NOTED
- FOUND 1/2" REBAR, AS NOTED
- 11 LOT NUMBER
- (N0°40'57"W) RECORD DATA

NOTES

1. EACH LOT IS HEREBY DESIGNATED AS HAVING A PERMANENT EASEMENT FOR PUBLIC UTILITIES, BOXELDER CREEK SUBDIVISION HOMEOWNER'S ASSOCIATION PRESSURE IRRIGATION, BOISE CITY STREET LIGHTS AND LOT DRAINAGE OVER THE TEN (10) FEET ADJACENT TO ANY PUBLIC STREET. THIS EASEMENT SHALL NOT PRECLUDE THE CONSTRUCTION OF HARD-SURFACED DRIVEWAYS AND WALKWAYS TO EACH LOT.

2. UNLESS OTHERWISE SHOWN AND DIMENSIONED, EACH LOT IS HEREBY DESIGNATED AS HAVING A PERMANENT EASEMENT FOR PUBLIC UTILITIES, BOXELDER CREEK HOMEOWNERS ASSOCIATION PRESSURE IRRIGATION AND LOT DRAINAGE OVER THE FIVE (5) FEET ADJACENT TO ANY INTERIOR SIDE LOT LINE, AND OVER THE TEN (10) FEET ADJACENT TO ANY REAR LOT LINE OR SUBDIVISION BOUNDARY.

3. ANY RE-SUBDIVISION OF THIS PLAT SHALL COMPLY WITH THE APPLICABLE ZONING REGULATIONS IN EFFECT AT THE TIME OF THE RESUBDIVISON.

4. IRRIGATION WATER HAS BEEN PROVIDED TO EACH LOT IN COMPLIANCE WITH IDAHO CODE SECTION 31-3805(1)(B). THIS SUBDIVISION IS WITHIN THE BOUNDARIES OF THE NEW YORK IRRIGATION DISTRICT AND BOISE-KUNA IRRIGATION DISTRICT. ALL LOTS WITHIN THE SUBDIVISION WILL BE ENTITLED TO IRRIGATION WATER RIGHTS, AND WILL BE OBLIGATED FOR ASSESSMENTS FROM THE APPLICABLE DISTRICTS.

5. MINIMUM BUILDING SETBACKS SHALL BE IN ACCORDANCE WITH THE CITY OF BOISE APPLICABLE ZONING AND SUBDIVISION REGULATIONS AT THE TIME OF ISSUANCE OF INDIVIDUAL BUILDING PERMITS.

6. MAINTENANCE OF ANY IRRIGATION OR DRAINAGE PIPE OR DITCH CROSSING A LOT IS THE RESPONSIBILITY OF THE LOT OWNER UNLESS SUCH RESPONSIBILITY IS ASSUMED BY AN IRRIGATION/DRAINAGE ENTITY.

7. THE DEVELOPMENT OF THIS PROPERTY SHALL BE IN COMPLIANCE WITH THE BOISE DEVELOPMENT CODE.

8. LOTS 1, 9, 10, 22 AND 23 OF BLOCK 1 ARE COMMON LOTS TO BE OWNED AND MAINTAINED BY THE BOXELDER CREEK SUBDIVISION HOMEOWNERS ASSOCIATION OR ITS ASSIGNS. SAID LOTS ARE COVERED BY BLANKET EASEMENTS FOR PUBLIC UTILITIES AND BOXELDER CREEK SUBDIVISION HOMEOWNERS ASSOCIATION PRESSURE IRRIGATION.

9. THIS DEVELOPMENT RECOGNIZES SECTION 22-4503, IDAHO CODE, RIGHT-TO-FARM, WHICH STATES THAT NO AGRICULTURAL OPERATION, AGRICULTURAL FACILITY OR EXPANSION THEREOF SHALL BE OR BECOME A NUISANCE, PRIVATE OR PUBLIC, BY ANY CHANGED CONDITIONS IN OR ABOUT THE SURROUNDING NON-AGRICULTURAL ACTIVITIES AFTER IT HAS BEEN IN OPERATION FOR MORE THAN ONE (1) YEAR, WHEN THE OPERATION, FACILITY OR EXPANSION WAS NOT A NUISANCE AT THE TIME IT BEGAN OR WAS CONSTRUCTED PROVIDED THAT THE PROVISIONS OF THIS SECTION SHALL NOT APPLY WHEN A NUISANCE RESULTS FROM THE IMPROPER OR NEGLIGENT OPERATION OF AN AGRICULTURAL OPERATION, AGRICULTURAL FACILITY OR EXPANSION THEREOF.

10. THIS DEVELOPMENT IS SUBJECT TO THE TERMS OF A DEVELOPMENT AGREEMENT WITH THE CITY OF BOISE RECORDED AS INSTRUMENT NO. _____-_____, RECORDS OF ADA COUNTY, IDAHO.

11. LOT 1, BLOCK 1 IS SERVIENT TO AND CONTAINS THE ADA COUNTY HIGHWAY DISTRICT STORM WATER DRAINAGE SYSTEM. THIS LOT IS ENCUMBERED BY THAT FIRST AMENDED MASTER PERPETUAL STORM WATER DRAINAGE EASEMENT RECORDED ON NOVEMBER 10, 2015 AS INSTRUMENT NO. 2015-103256, OFFICIAL RECORDS OF ADA COUNTY, AND INCORPORATED HEREIN BY THIS REFERENCE AS IF SET FORTH IN FULL (THE "MASTER EASEMENT"). THE MASTER EASEMENT AND THE STORM WATER DRAINAGE SYSTEM ARE DEDICATED TO THE ADA COUNTY HIGHWAY DISTRICT PURSUANT TO SECTION 40-2302 IDAHO CODE. THE MASTER EASEMENT IS FOR THE OPERATION AND MAINTENANCE OF THE STORM WATER DRAINAGE SYSTEM.

12. THIS DEVELOPMENT IS SUBJECT TO THE TERMS OF AN ADA COUNTY HIGHWAY DISTRICT TEMPORARY LICENSE AGREEMENT RECORDED AS INSTRUMENT NO. _____-_____ RECORDS OF ADA COUNTY, IDAHO.

13. THIS DEVELOPMENT IS SUBJECT TO THE COVENANTS, CONDITIONS AND RESTRICTIONS (CC&R'S) THAT PERTAIN TO THIS DEVELOPMENT, TO BE FILED AND RECORDED IN THE ADA COUNTY RECORDER'S OFFICE.

14. DIRECT LOT ACCESS TO W. OVERLAND ROAD IS PROHIBITED.

15. THE LAND WITHIN THIS SUBDIVISION IS SUBJECT TO AN AVIGATION EASEMENT AS RECORDED IN INSTRUMENT NO. 9370126, ADA COUNTY RECORDS.

16. LOT 23 OF BLOCK 1 IS SUBJECT TO A BLANKET EASEMENT FOR PEDESTRIAN ACCESS, AND A BLANKET EASEMENT FOR THE USE AND MAINTENANCE OF THE FARMERS LATERAL IRRIGATION CANAL.

17. LOTS 9 AND 10 OF BLOCK 1 SHALL BE SUBJECT TO A BOISE CITY SANITARY SEWER EASEMENT AS DELINEATED HEREON.

SURVEY NARRATIVE

THE BOUNDARY FOR THIS SUBDIVISION WAS DEVELOPED FROM SURVEYED TIES TO CONTROLLING SECTION CORNER MONUMENTATION, THE PLATTED SUBDIVISION BOUNDARIES OF CORONADO SUBDIVISION, MILLCREEK SUBDIVISION NO. 1, MILLCREEK SUBDIVISION NO. 3, INFORMATION FROM RECORD OF SURVEY NUMBER 12634, AND CURRENT DEEDS OF RECORD. THE SURVEYED MONUMENTATION AND CONTROLLING BOUNDARIES FIT THE RECORDS WELL AND WERE ACCEPTED TO ESTABLISH THE BOUNDARY FOR THIS SUBDIVISION SHOWN HEREON.

PROFESSIONAL LAND SURVEYOR
REGISTERED
11,118
01/24/22
STATE OF IDAHO
CLINTON W. HANSEN

JOB NO. 21-56
SHEET 1 OF 3

ENGINEERING SOLUTIONS, LLP
MERIDIAN, IDAHO

LandSolutions
Land Surveying and Consulting
231 E. 5th St. Ste. A, Meridian ID 83642
(208) 288-2040 - (208) 288-2557 fax

STANDARD ABBREVIATIONS

ABS	Acrylonitrile-Butadiene-Styrene	DBL	Double	GB	Grade Break	OHP	Overhead Power	SD	Storm Drain
ABAN	Abandon	DI	Drop Inlet	GIRR	Gravity Irrigation	PC	Point of Curvature	SDR	Standard Thermoplastic Pipe Dimension Ratio
ABAND	Abandoned	DIA	Diameter	GL	Grade Line, Ground Line	P.C.C.	Portland Cement Concrete	SEC	Section
AC	Asphalt Concrete	DIP	Ductile Iron Pipe	GM	Gas Meter	PCC	Point of Compound Curvature	SF	Square Foot (feet)
ACP	Asbestos Cement Pipe	DW	Driveway	GR	Grade	PCVC	Point of Compound Vertical Curve	SG	Sand and Grease Trap
AH	Ahead	DWG	Drawing	HDPE	High Density Polyethylene	PE	Polyethylene	SP	Signal Pole
ALT	Alternate	E	Easting	HORIZ	Horizontal	PIRR	Pressurized Irrigation	SPRK	Sprinkler
BC	Beginning of Curve	EA	Each	HP	High Point	PL	Property line	SS	Sanitary Sewer
BCR	Beginning of Curb Return	EC	End of Curve	INCL	Including	POC	Point on Curve	STA	Station
BK	Back	ECR	End of Curb Return	INV	Invert	POT	Point on Tangent	STD	Standard
BM	Bench mark	EG	Edge of Gutter	IP	Iron Pipe	PP	Power Pole	SVC	Supered Vertical Curb
BVC	Beginning of Vertical Curve	ELEV	Elevation	IRR	Irrigation	PSI	Pounds per Square Inch	SW	Sidewalk
BW	Back of Walk	EM	Electric Meter	ISPWC	Idaho Standards For Public Works Construction	PT	Point of Tangency	SY	Square Yard
CB	Catch Basin	ENGR	Engineer, Engineering			PVC	Polyvinyl Chloride	TAN	Tangent
CF	Curb Face	EP	Edge of Pavement	L	Length	PV	Pavers	TC	Top of Curb
cf	Cubic Foot	ESMT	Easement	LB	Pound	R	Radius	TEL	Telephone
CL	Centerline	EVC	End of Vertical Curve	LF	Linear Foot	R/W	Right-of-Way	TOPO	Topography
CO	Clean-Out (Sewer)	EXIST	Existing	LP	Low Point	RCP	Reinforced Concrete Pipe	TRANS	Transition
CONC	Concrete	FG	Finished Grade	LT	Left	REF	Reference	TYP	Typical
CONN	Connection	FH	Fire Hydrant	MAINT	Maintenance	RL	Roof Line	VB	Valve Box
CONST	Construct, Construction	FL	Flow Line	MH	Manhole	RR	Railroad	VC	Vertical Curb
COORD	Coordinate	FTG	Footing	MW	Monitoring Well	Rt	Right	VERT	Vertical
CTV	Cable Television	FS	Finished Surface	N	Northing	S	Slope	WM	Water Meter
CY	Cubic Yard	GALV	Galvanized	NO.	Number	SB	Seepage Bed		

GENERAL CONSTRUCTION NOTES

1. All construction work shall be done in accordance with the current version of the Idaho Standards for Public Works Construction (ISPWC), the City of Boise Supplemental Specifications to the ISPWC, the requirements of the Ada County Highway District (ACHD) and/or the requirements of the Idaho Transportation Department (ITD). The more stringent of any of these standards shall be the controlling standards or specifications.
2. Contractor shall obtain construction permit from Ada County Highway District (ACHD) 24 hours before commencing construction. No construction shall begin before preconstruction meeting is held according to the "Construction Quality Assurance Manual". The Contractor is required to attend the preconstruction meeting.
3. Contractors shall notify the appropriate agency when materials are on site or inspection of the work is required. No work may begin on any project without Twenty Four (24) hour prior notice.
4. All material furnished on, or for the project must meet the minimum requirements of the approving agencies. At the request of the approving agency or the Design Engineer, Contractors shall furnish proof that all materials installed on this project meet the specification requirements set forth in General Construction Note No. 1.
5. Work subject to approval by any governmental agency must be approved prior to (A) backfilling trenches for pipe; (B) placing of aggregate base; (C) placing of concrete; (D) placing of asphalt paving. Work done without such approval does not relieve the Contractor from the responsibility of performing the work in an acceptable manner.
6. Inspection, approval and final acceptance of all water and sewer construction shall be by the Public Works Department, and their decision shall be final. Such inspections shall not relieve the contractor from the responsibility of performing the work in an acceptable manner in accordance with the DEQ/QLPE approved construction plans.
7. Any deviation from the approved plans and specifications must have the applicable agency approval in writing prior to construction.
8. Take all lot dimensions, easements and certain off-site easements from the plat.
9. The Contractor shall maintain all existing drainage facilities within the construction area until the drainage and irrigation improvements are in place and functioning.
10. All Contractors working within the project boundaries are responsible for compliance with all applicable safety laws of any jurisdictional body. The Contractor shall be responsible for all barricades, safety devices and control of traffic within and around the construction area.
11. All Contractors working within the public road right-of-way are required to secure a right-of-way construction permit from ACHD at least twenty-four (24) hours prior to any construction.
12. The locations of existing underground utilities are shown in an approximate way only. The Contractor shall determine the exact location of all existing utilities before commencing work, The Contractor assumes all responsibility for any and all damages caused by his failure to exactly locate and preserve any and all underground utilities. Contracor shall call Dig Line at 1-800-342-1585 prior to any excavation.
13. Only plan sets stamped "Approved for Construction" and signed by the City Engineer or his authorized representative shall be used by the project contractor(s). Use of any plans on the job without the "Approved for Construction" stamp shall be grounds for the issuance of a stop work order.
14. Locate subsurface stormwater disposal facilities (including infiltration beds and drywells) at least 25 feet from water mains. This requirement does not apply to catch basins or sand and grease traps.
15. Any common lot containing public water or sewer mains shall be fenced at the lot line(s).
16. The Contractor shall keep on site at all times the approved construction plans on which is recorded the actual locations of the constructed pipe line and any other utilities encountered. The Contractor shall provide these locations to the Design Engineer for use in the production of record drawings.
17. ACHD will inspect all improvements which fall within ACHD right-of-way or easements including but not limited to storm drain construction, trench backfill procedures, road way construction and concrete work. Any work to be done outside of the 300' extended boundary of the project will require a separate permit through ACHD Construction Services Division. The Contractor will schedule on inspection, requested through ACHD Construciton Services, 208-387-3280, a minimum of 24 hrs. prior to construction starting.

ROADWAY/PARKING NOTES

1. All Contractors working within the public road right-of-way are required to secure a right-of-way construction permit from ACHD or ITD at least twenty-four (24) hours prior to any construction.
2. ACHD or ITD will inspect all work within the public rights-of-way to include utility trenches above the pipe zone.
3. Boise City Public Works will inspect storm drainage improvements serving private roads and parking lot improvements outside the public right-of-way.
4. All construction in the public right-of-way shall conform to the current Edition of the I.S.P.W.C. and the latest edition of the ACHD Supplemental Specifications. No exceptions to ACHD policy, standards, and the I.S.P.W.C. will be allowed unless specific written approval is granted prior to construction of any improvements.
5. Ada County Highway District will inspect all work within the right-of- ways. Boise Public Works will inspect private roads, parking lots and other paving improvements outside the public right-of-way.
6. Set the tops of all valve boxes and sewer manholes flush with the slope of the finished street grades.
7. Ada County Highway District will inspect and approve all storm drainage improvements. Boise Public Works will inspect storm drainage improvements serving private roads, parking lots and other paving improvements outside the public right-of-way.
8. Place all water valves, blow-offs and manholes so that they do not conflict with any concrete curb and gutter, valley gutter or sidewalk improvements.
9. The street Contractor shall backfill all sidewalks at the completion of the paving.
10. Actual field conditions during trenching may require additional pavement repair beyond the limits shown on the plans. The following conditions are listed in Section 6000 of ACHD Policy Manual.
    1). All asphalt match lines for pavement repair shall be parallel to the centerline of the street and include any area damaged by equipment during trenching operations.
    2). If the cumulative damaged pavement area exceeds 50% of the total road surface, contractor shall replace the entire roadway surface.
    3). Contractor shall replace the pavement surface to ensure matchline does not fall within the wheel path of a lane. Matchline shall only fall in the center or edge of a travel lane.
    4). Flowable fill or imported material may be required if the native trench material is deemed unsuitable by ACHD Inspector, does not meet compaction standards or time is a critical factor.
    5). Any exceptions to these rules shall be pre-approved in writing.
11. The Engineer of Record certifies that the plans are prepared in substantial conformance with the ACHD Policy and standards in effect at the time of preparation. The Engineer acknowledges that ACHD assumes no liability for errors or deficiencies in the design. All variances from ACHD Policy shall be approved in writing. The following variances, listed by date and short description, were approved for the project:

SEWER NOTES

1. All work shall be done in accordance with the latest Sewer Specifications and Standard Drawings of the Idaho Standards for Public Works Construction (ISPWC), Boise Public Works Department and/or the Ada County Highway District (ACHD) modifications to the ISPWC.
2. The Contractor shall construct the sanitary sewer in accordance with the stamped plans approved by the Boise Public Works Department. These plans will be provided to the Contractor by the Project Inspector prior to construction. Work shall not be done without the current set of approved plans.
3. Final approval and acceptance of all sewer construction will be by the Boise Public Works Department.
4. Sewer inspections will be by the Boise Public Works Department and their decisions should be considered as final. The Contractor will notify the Boise Public Works Department 48 hours prior to construction. Boise City will provide periodic inspections for an eight-hour day, from 8:00 a.m. to 5:00 p.m., for a forty hour week. The Contractor shall reimburse the City at rates established by the City for inspection in excess of the normal work week, including legal holidays. Overtime inspection rates and a list of legal holidays can be obtained from the Boise Public Works Department.
5. Sewer construction will meet specific details and requirements of the Idaho Standards for Public Works Construction including Boise City revisions. Boise City revisions to the ISPWC standard drawings are available online.
6. Groundwater levels shall be maintained below the bottom of the trench during the pipe laying and pipe joining operations. All manholes located within limits of seasonal groundwater shall have the exterior of all concrete surfaces coated with two coats of Coal Tar Epoxy.
7. The Contractor shall install a removable plug upstream of SSMH SW8514A between SSMH SW8514A and SSMH SW8514B. This plug shall remain in place during construction until final acceptance of this sewer project.
8. Service lines shall be marked in accordance with the specifications and standard drawing SD 512. Service line markers shall remain in place during construction and be present for final inspection. On lots where roof drains are utilized, the contractor shall color the roof drain markers to clearly differentiate roof drain markers from sewer service markers.
9. The Horizontal separation of the water and sewer mains shall be a minimum of ten (10) feet. Where it is necessary for sewer and water to cross each other and the sewer line is less than 18 inches below or above the water main, the sewer line crossing shall be P.V.C. pressure pipe conforming to AWWA C-900 or ASTM D2241, for a distance of 10' on both sides of water line. One full length of both water main and sewer line shall be centered over the crossing point so that all joints will be as far from the crossing as possible.
10. All stationing relates to the gravity sewer centerline.
11. The Contractor shall provide Boise City's Inspector with "cut sheets" for the staking provided for construction of the sanitary sewer. "Cut Sheets" shall be provided to the City prior to construction. Additionally, temporary bench marks must be provided to the Boise Public Works Department, Inspection section prior to the commencement of construction.
12. Prior to construction, Temporary Bench Marks (TBM's) shall be set in the field by a licensed surveyor or engineer and shall be flagged and clearly visible from all directions. A TBM shall be located within 100 feet of the tie-in to existing sewer and spaced no greater than 500 feet along the sewer alignment thereafter. TBM's shall have elevations tied to the NAVD 1988 Datum.
13. Sewer pipe with cover of greater than 3 feet, shall be bell and spigot, polyvinyl chloride (PVC), SDR 35, ASTM D-3034 for 4-inch through 15-inch and ASTM F679 for 18-inch through 27-inch as set forth by the Boise Public Works Department. Sewer pipe with less than 3 feet of cover shall be ductile iron conforming to ANSI A-21.51 or AWWA C-151 minimum Class 50. A rubber ring is to be installed where the pipe is in contact with the manhole base and/or its channel in order to ensure a water-tight seal.
14. The sewer contractor shall supply all lid assemblies and the required number of riser and grade rings. The sewer contractor shall field verify the elevation of the top of the manhole cone to assure that ring elevations match final street grades. The maximum height of the grade rings shall be such that the finished grade elevation of the manhole frame and cover shall not be more than twenty-one (21") inches above the top of the manhole cone.
15. The paving contractor shall set the grade rings and pour the concrete collars per Standard Drawing No. SD 508. The paving contractor shall contact ACHD 24 hours prior to pouring concrete collars.
16. The trench backfill above the pipe zone will be inspected by the ACHD or by the developer's engineer in accordance with the latest edition of the "Construction Quality Assurance Manual". Compaction tests are required on the backfill above the pipe zone, within public right-of-way. Testing shall be conducted to meet all ACHD requirements and the results shall be submitted to Boise Public Works Department and ACHD prior to final acceptance.
17. The Boise Public Works Department may test the compaction of the sewer pipeline bedding. Testing will be done by an independent testing laboratory. The cost of the first test will be paid by the Boise Public Works Department. If the first test fails to meet required compaction, all re-testing shall be paid by the sewer contractor. The Contractor shall contact the Boise Public Works Department and/or testing laboratory to schedule the tests prior to any pipe laying and backfilling.
18. The Contractor shall leave the excavation for the upstream end of all service lines open for field verification of the invert elevation by the City's inspector. The Contractor shall not backfill the ends of service lines until he has obtained approval from Boise City's inspector or made other arrangements for the verification of service line invert elevations.
19. Prior to Final Acceptance, after all utilities are in and prior to paving, an air test shall be conducted. The Contractor shall contact the city of Boise a minimum of 24 hours prior to testing. All manholes shall be tested in accordance with the ISPWC and Boise City's modifications.
20. The sewer main shall be tested for deflection in accordance with the ISPWC and Boise City's modifications. All sewer lines shall be televised with a closed circuit television camera in accordance with the ISPWC and Boise City's modifications. No standing water shall be present.

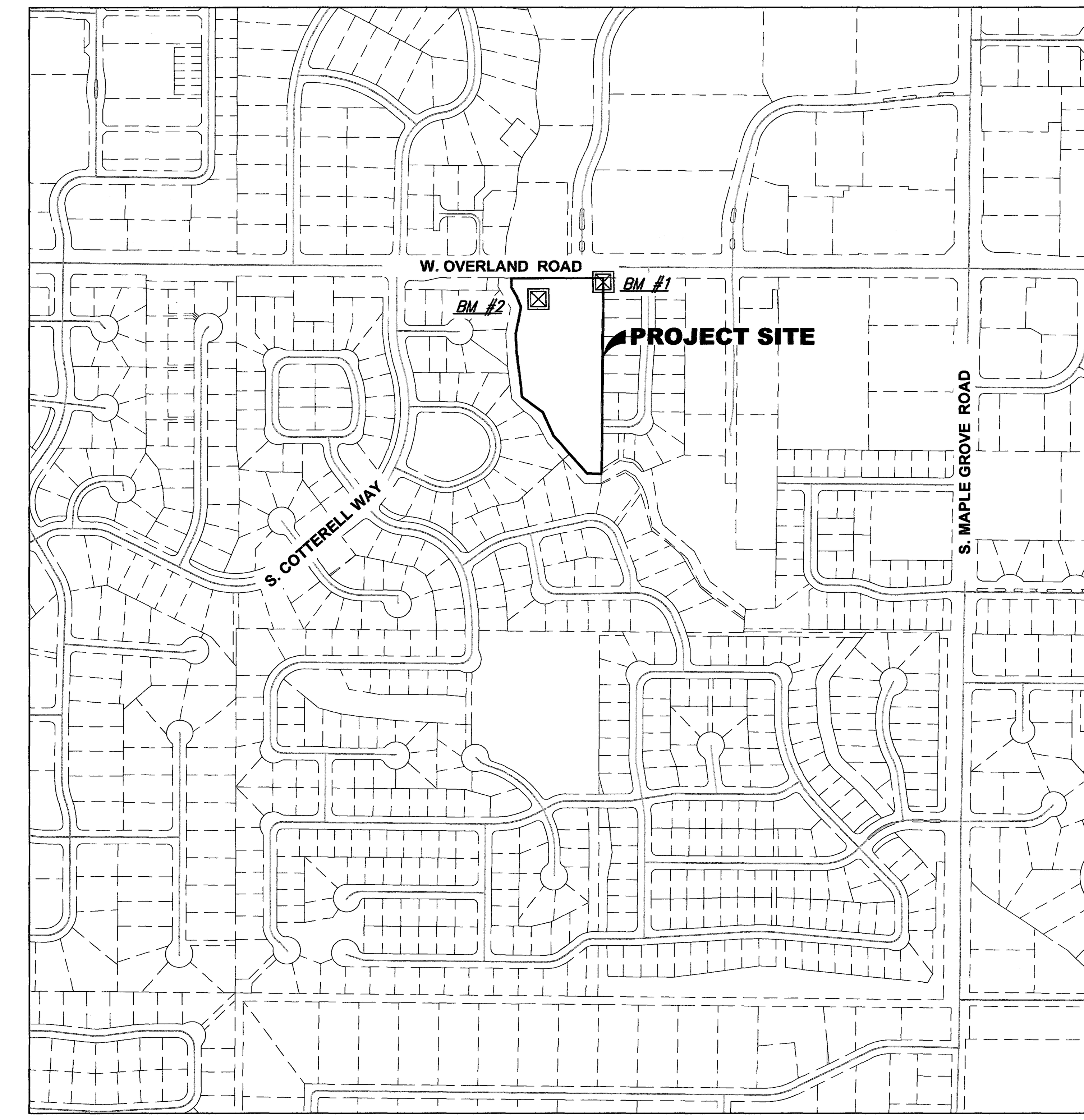
WATER NOTES

1. All water lines shall be installed in accordance with Suez Water Special Specifications and Standard Drawings.
2. The horizontal separation of potable water mains and non-potable mains (sanitary sewer, storm drain, and irrigation) shall be a minimum of ten (10) feet. Where it is necessary for a potable water main and non-potable main to cross with less than than eighteen (18) inches of vertical separation, the shall be constructed in accordance with Section 542.07 of the Idaho Rules for Public Drinking Water Systems (IDAPA 58.01.08) and Section 430.02 of the Wastewater Rules (IDAPA 58.01.16).
3. The horizontal separation of non-potable services and potable water services or potable water mains shall be minimum of six (6) feet. Where it is necessary for a potable water main and non-potable main to cross with less than eighteen (18) inches of vertical separation, the crossing shall be constructed in accordance with Section 542.07 of the Idaho Rules for Public Drinking Water Systems (IDAPA 58.01.08) and Section 430.02 of the Wastewater Rules (IDAPA 58.01.16).

SHEET INDEX

LEDGEND

- SUBDIVISION BOUNDARY
- INTERIOR LOT LINES
- RIGHT-OF-WAY
- EXISTING SEWER
- EXISTING WATER
- EASEMENTS
- SECTION LINE
- CENTER LINE



VICINITY MAP

N.T.S.

LOCATED IN THE NW 1/4 OF NE 1/4 OF SECTION 23, T.3N., R1E., B.M.
BOISE, ADA COUNTY, IDAHO

HORIZONTAL DATUM USED

US GOVERNMENT HORIZONTAL NAD83 ADJUSTED TO THE ADA COUNTY H.A.R.N. SURVEY

☒ BENCH MARKS

NAVD88 VERTICAL DATUM	NAD83 (ADA CO. HARN) HORIZONTAL DATUM
BM #1	
ELEVATION = 2730.01 5/8 REBAR NO CAP	N = 701,574.1 E = 2,479,608.0
BM #2	
ELEVATION = 2726.47 5/8 REBAR	N = 701,508.5 E = 2,479,321.0

APPROVED
SANITARY SEWER ONLY
BOISE CITY PUBLIC WORKS
APPROVAL DATE Digitally signed by DeAnn Brown Date: 2022.02.17 08:42:17 -07'00'
REVISION DATE

Plans Are Accepted For Public Street Construction

By stamping and signing the improvement plans, the Registered Engineer ensures the District that the plans conform to all District policies and standards. Variances or waivers must be specifically and previously approved by the District in writing. Acceptance of the improvement plans by the District does not relieve the Registered Engineer of these responsibilities.

BY Greg Korsak DATE 02/16/2022
ADA COUNTY HIGHWAY DISTRICT

DEVELOPER

STERLING HOMES, INC
1159 E. Iron Eagle Drive. Suite #170-K
Eagle, Idaho 83616
Contact: Dennis Hudspeth
Phone (208) 850-3613
E-Mail: dh@sterlinghomes.us

ENGINEER

ENGINEERING SOLUTIONS, LLP
Joshua H Mann, P.E.
1029 N. Rosario St., Ste. 100
Meridian, Idaho 83642
Phone (208) 938-0980
E-Mail: joshm@engsol.org

APPROVED FOR CONSTRUCTION
DATE: 02/16/2022

Plans Are Accepted For Public Street Construction

By stamping and signing the improvement plans, the Registered Engineer ensures the District that the plans conform to all District policies and standards. Variances or waivers must be specifically and previously approved by the District in writing. Acceptance of the improvement plans by the District does not relieve the Registered Engineer of these responsibilities.

By ADA COUNTY HIGHWAY DISTRICT Date:

PROFESSIONAL ENGINEER
LICENSED
20305
2/14/22
STATE OF IDAHO
JOSHUA H. MANN

REVISIONS
1/25/22
2/16/22

ENGINEERING SOLUTIONS LLP
1029 N. ROSARIO ST., STE. 100
MERIDIAN, ID 83642
Phone (208) 938-0980 Fax (208) 938-0941

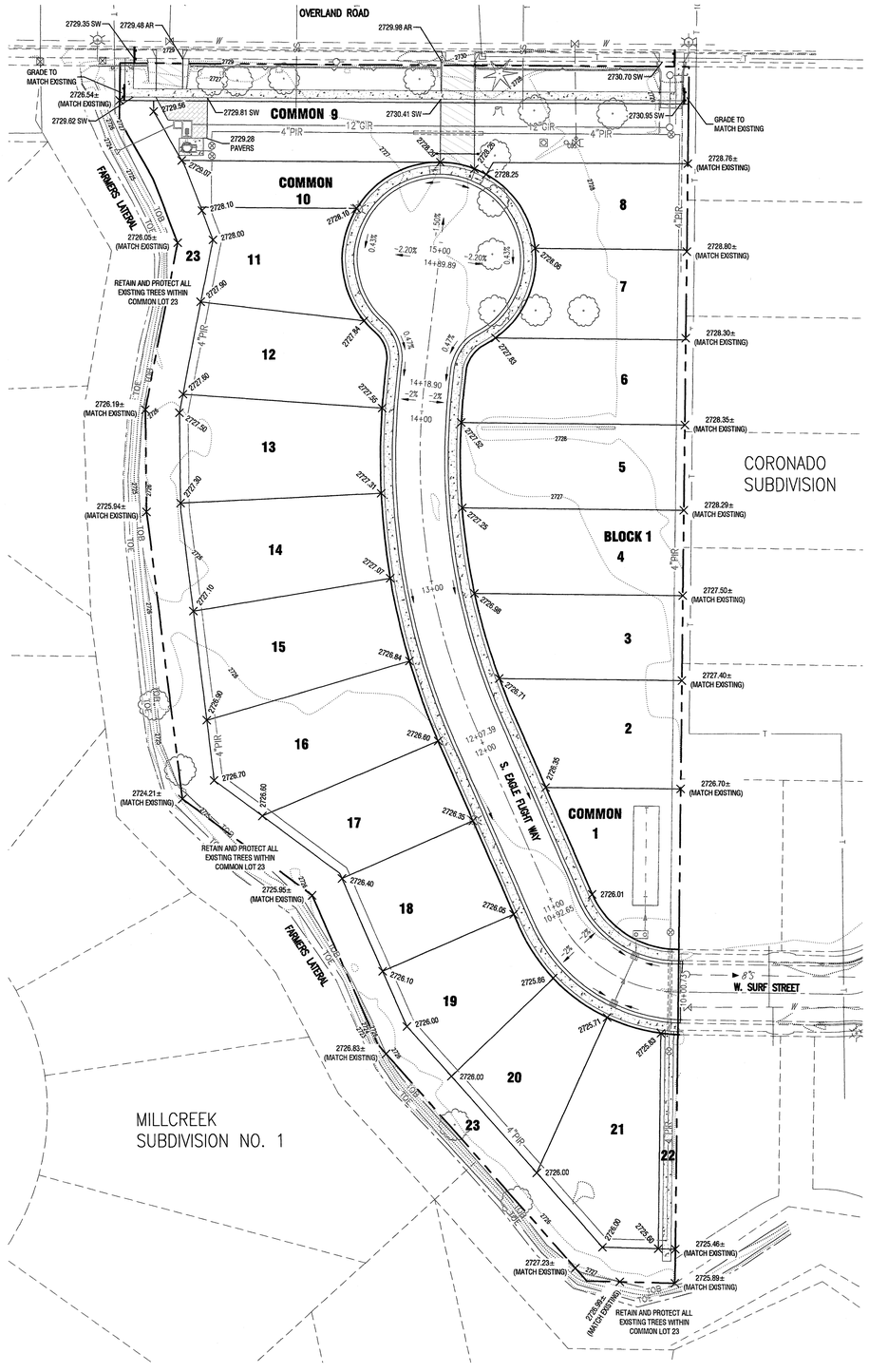
BOXELDER CREEK SUBDIVISION
LOCATED IN SECTION 23, T.3N., R.1E., B.M.
BOISE, ADA COUNTY, IDAHO

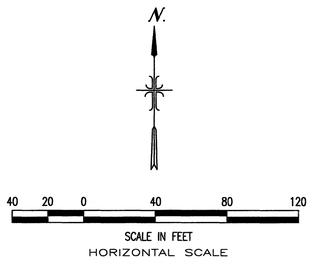
TITLE SHEET

SCALE	N.T.S.
DWG.DATE	10/28/21
PROJ. NO.	200806
SHEET	1 OF 12

T-1

CONSTRUCTION/200806-T1.DWG





NOTES:

1. THE CONTRACTORS SHALL REMOVE ALL OBSTRUCTIONS ABOVE AND BELOW GROUND REQUIRED FOR THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS. THIS WORK INCLUDES CLEARING AND GRUBBING, WHICH INCLUDES CLEARING THE GROUND SURFACE OF ALL TREES, STUMPS, BRUSH, UNDERGROWTH, HEDGES, HEAVY GROWTH OF GRASS AND/OR WEEDS, FENCES, STRUCTURES, DEBRIS, RUBBISH, AND OTHER MATERIAL NOT SUITABLE FOR THE FOUNDATION OF PAVEMENTS AND OTHER STRUCTURES. ALL MATERIAL NOT SUITABLE FOR FUTURE USE ON-SITE SHALL BE DISPOSED OF OFF-SITE AT AN APPROVED LOCATION.
2. CONTRACTOR SHALL STRIP AND STOCKPILE TOPSOIL FROM ALL TRENCHING OPERATIONS FOR REUSE. DO NOT MIX TOPSOIL WITH SUBGRADE SOILS. TOPSOIL SHALL BE REUSED AND COMPACTED TO ORIGINAL CONDITIONS.
3. IN AREAS THAT REQUIRE FILL OVER 1 FOOT THAT ARE OUTSIDE OF RIGHT-OF-WAY, CONTRACTOR SHALL STRIP EXISTING GROUND AND BACKFILL WITH STRUCTURAL FILL TO 95% MODIFIED PROCTOR IN 1' MAXIMUM LIFTS. COMPACTION TESTING AND INSPECTION SHALL BE PERFORMED BY A TESTING LABORATORY QUALIFIED TO PERFORM SUCH INSPECTIONS. COMPACTION TEST RESULTS MUST BE SUBMITTED TO THE PROJECT ENGINEER, CITY OF BOISE PUBLIC WORKS AND BUILDING DEPARTMENTS PRIOR TO ISSUANCE OF BUILDING PERMITS, AS TESTS ARE PERFORMED. ALL CONSTRUCTION SHALL ADHERE TO THE ATLAS TECHNICAL CONSULTANTS REPORT DATED OCTOBER 23, 2020.
4. GRAVEL PATH SHALL HAVE A 1.5% MAXIMUM CROSS SLOPE, AND SHALL MEET ALL ADA REQUIREMENTS.

GRADING:

(SW)= SIDEWALK
(GP)= GRAVEL PATH
(AR)= ACCESS ROAD

PROFESSIONAL ENGINEER
LICENSED
20305
STATE OF IDAHO
JOSHUA H. MANN
5/12/22

REVISIONS
1/25/22
2/16/22
5/12/22

ENGINEERING SOLUTIONS, LLP
1029 N. ROSARIO STREET, SUITE 100
MERIDIAN, IDAHO 83642
Phone (208) 938-0980 Fax (208) 938-0941

BOXELDER CREEK SUBDIVISION

LOCATED IN SECTION 23, T.3N., R.1E., B.M.
BOISE, ADA COUNTY, IDAHO

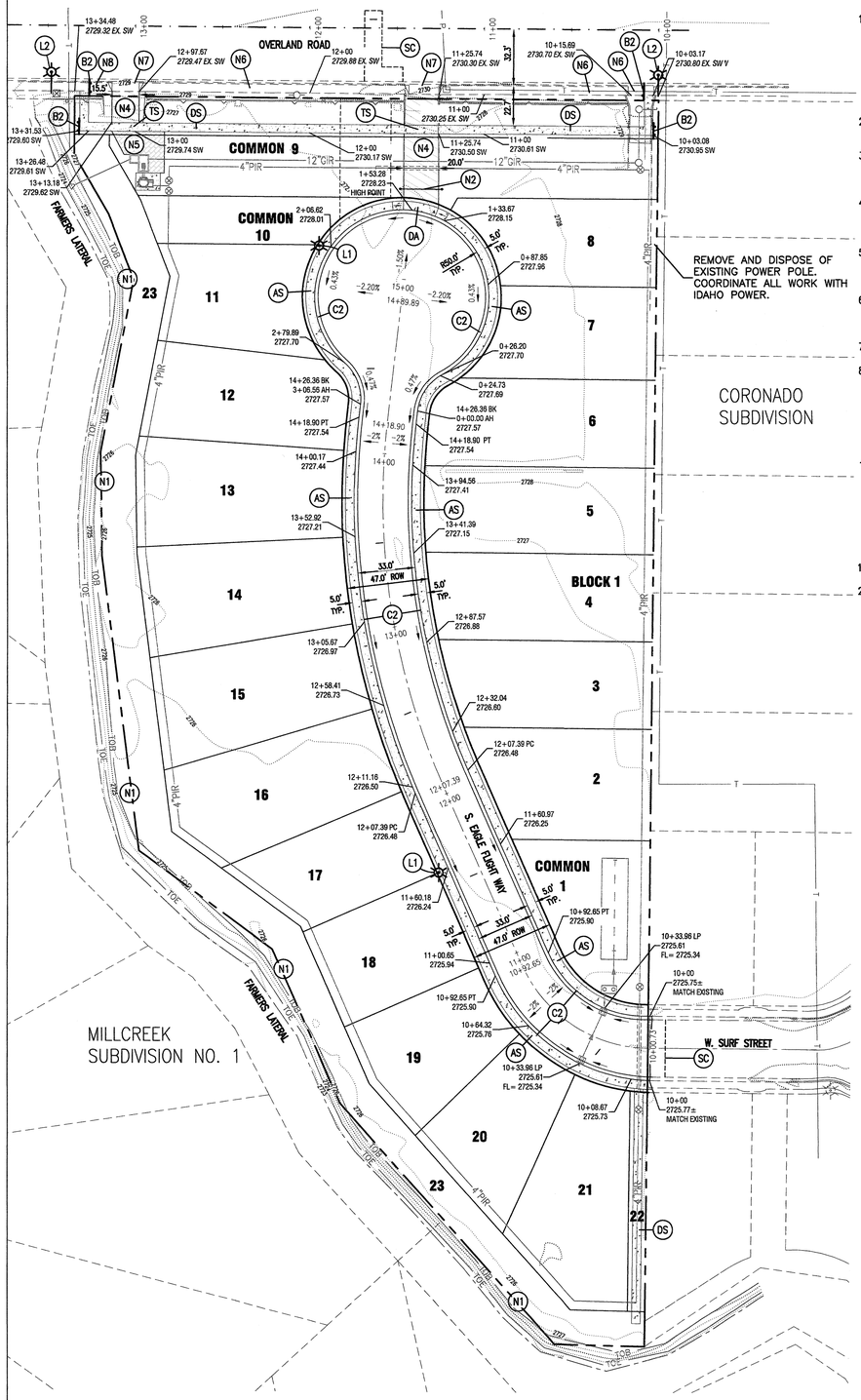
GRADING PLAN

SCALE	1"=40'
DWG.DATE	10/28/21
PROJ. NO.	200806
SHEET	2 OF 12

GRD-1

CONSTRUCTION/200806-GRD.DWG

APPROVED FOR CONSTRUCTION
DATE: 05/12/2022



STREET NOTES:

1. MINIMUM 2" ASPHALT CUT LINE. ALL ASPHALT REPAIR SHALL MEET ISPWC STANDARD DRAWINGS, SD-301, SD-303 AND SD-806. CONSTRUCT ALL PAVEMENT MATCHES (INCLUDING DRIVEWAY APPROACHES AND UTILITY CUT STREET REPAIRS) WITHIN ACHD RIGHT-OF-WAY TO MATCH THE EXISTING STREET PAVEMENT SECTION OR TO USE THE FOLLOWING: PRINCIPAL ARTERIAL ROADWAYS SHALL BE SP-3, 0.50 (½") MIX, PG 64-28 FIVE INCHES (5") THICK, AS A MINIMUM WITH 4" OF ¾" BASE AND 25" OF 6" MINUS PIT RUN. MINOR ARTERIAL ROADWAYS SHALL BE SP-3, 0.50 INCH (½") MIX, PG 64-28 FIVE INCHES (5") THICK, AS A MINIMUM WITH 4" OF ¾" BASE AND 25" OF 6" MINUS PIT RUN. COLLECTOR, LOCAL COMMERCIAL, AND LOCAL INDUSTRIAL ROADWAYS SHALL BE SP-3, 0.50 INCH (½") MIX, PG 64-28 THREE INCHES (3") THICK, AS A MINIMUM WITH 4" OF ¾" BASE AND 20" OF 6" MINUS PIT RUN. COLLECTOR, LOCAL RESIDENTIAL ROADWAYS SHALL BE SP-3, 0.50 INCH (½") MIX, PG 58-28 TWO AND A HALF INCHES (2.5") THICK, AS A MINIMUM WITH 4" OF ¾" BASE AND 14" OF 6" MINUS PIT RUN.
2. CONTRACTOR SHALL RETAIN AND PROTECT ALL EXISTING UTILITIES, EVEN IF NOT SHOWN. COORDINATE ALL WORK WITH UTILITY COMPANIES INCLUDING BUT NOT LIMITED TO IDAHO POWER CO., INTERMOUNTAIN GAS CO., CABLE ONE AND CENTURY LINK TELEPHONE.
3. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR ANY AND ALL DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. CONTRACTOR SHALL CALL DIG LINE AT 1-800-342-1585 PRIOR TO ANY EXCAVATION.
4. PEDESTRIAN RAMPS: CONSTRUCT RAMPS PER ACHD SUPPLEMENT TO ISPWC SD-712H (REVISED FOR VERTICAL CURB) WITH TRUNCATED DOMES SIMILAR TO ISPWC SD-712. DOMES SHALL BE RIGID INSERTS WET-SET INTO THE CONCRETE (CONCRETE STAMP & ADHESIVE MATS NOT ALLOWED) AND SHALL BE COLORED 'TRAFFIC YELLOW.' PEDESTRIAN RAMPS MUST MEET THE LATEST ADA AND ICC/ANSI A-117.1 REQUIREMENTS.
5. ACHD INSPECTION STAFF WILL BE MORE CLOSELY MONITORING PEDESTRIAN FACILITIES FOR COMPLIANCE WITH ADA STANDARDS. THE CROSS SLOPE OF ALL PEDESTRIAN HANDICAP RAMPS SHALL NOT BE GREATER THAN 1.5% SLOPE. AS A REMINDER, SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2.0%; THERE ARE NO "TOLERANCES" ALLOWED. ALL SIDEWALKS SHALL MEET ADA REQUIREMENTS.
6. ABANDONED BUILDINGS, TEST PITS OR WATERWAYS LOCATED WITHIN CURRENT OR FUTURE RIGHT-OF-WAY SHALL BE RE-EXCAVATED TO NATIVE SOIL AND BACKFILLED WITH STRUCTURAL FILL PER ISPWC SPECIFICATIONS. PROVIDE SOILS DATA TO VERIFY NATIVE MATERIAL MEETS THE REQUIREMENTS FOR ENGINEERED FILL PER ISPWC SPECIFICATIONS AND A COPY OF THE COMPACTION TESTS.
7. ADJUST ALL EXISTING WATER VALVE AND SEWER MANHOLE IN EXISTING ROAD AS NEEDED AND POUR CONCRETE COLLARS AROUND THEM AS NEEDED.
8. INTERRUPTION TO ACHD'S FIBER OPTIC NETWORK SHALL ONLY BE PERMITTED OF WEEKEND WORK. DISRUPTION SHALL OCCUR NO EARLIER THAN FRIDAY AT 10PM AND SHALL BE RETURNED TO SERVICE NO LATER THAN MONDAY AT 5AM. THE CONTRACTOR SHALL PROVIDE A MINIMUM TWO (2) WEEK NOTICE PRIOR TO THE START OF ANY WORK THAT MAY IMPACT ACHD'S NETWORK FOR REVIEW. DEPENDING ON THE IMPACT TO THE DISTRICT OR PARTNERING AGENCIES, ACHD RESERVES THE RIGHT TO MODIFY THE REQUESTED DATES FOR THE SCHEDULED OUTAGE. CONTACT BRIAN FROBERG AT 208-941-9132 OR BRIAN THIES AT 208-484-3926 TO SCHEDULE WORK.

STRUCTURAL FILL NOTE:

1. IN BUILDABLE LOTS THAT REQUIRE FILL OVER 1-FOOT DEEP THE CONTRACTOR SHALL STRIP EXISTING GROUND AND BACKFILL WITH STRUCTURAL FILL TO 95% MODIFIED PROCTOR IN 1-FOOT MAXIMUM LIFTS. COMPACTION TESTING AND INSPECTION SHALL BE PERFORMED BY A TESTING LABORATORY QUALIFIED TO PERFORM SUCH INSPECTIONS. COMPACTION TEST RESULTS MUST BE SUBMITTED TO THE BUILDING DEPARTMENT PRIOR TO ISSUANCE OF BUILDING PERMITS, AND TO ENGINEERING SOLUTIONS AS TESTS ARE PERFORMED. ALL WORK SHALL MEET GEOTECHNICAL REPORT BY ATLAS. DATED OCTOBER 23, 2020.

ACHD NOTES:

1. ALL TREES MUST BE OFFSET A MINIMUM OF 10-FEET FROM ALL STORM DRAIN FACILITIES.
2. MAILBOX CLUSTERS SHALL NOT BE LOCATED ON TOP OF STORM DRAIN FACILITY AND SHALL NOT BLOCK MAINTENANCE ACCESS TO THE STORM DRAIN FACILITY. LOCATION OF MAILBOX CLUSTERS SHALL BE COORDINATED WITH ACHD.

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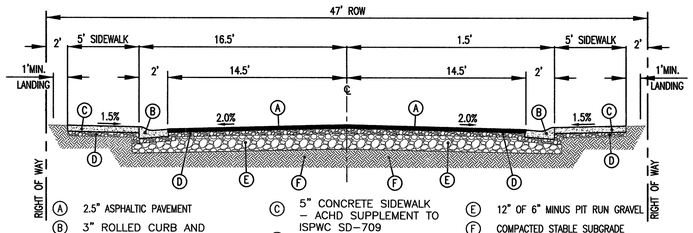
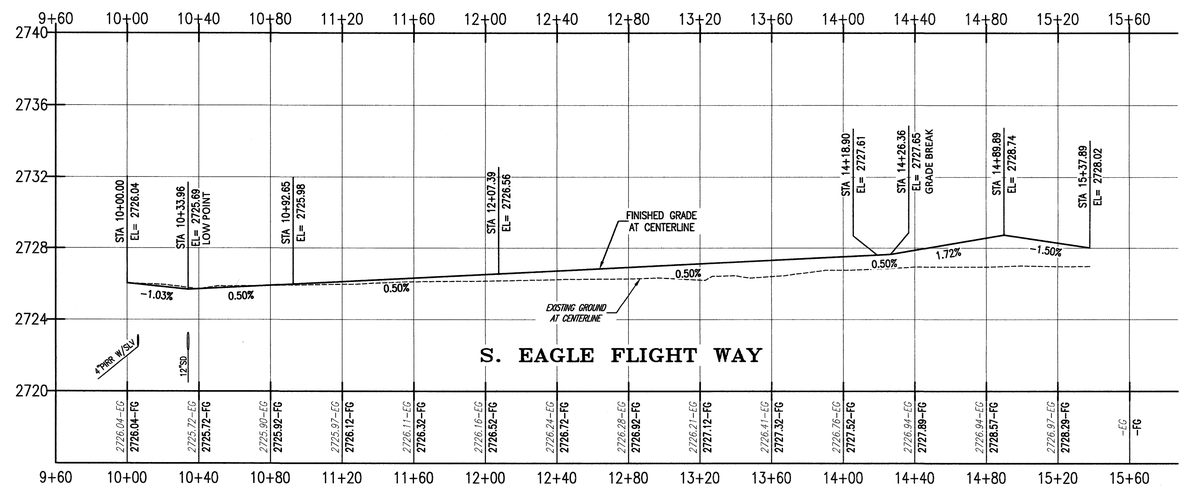
BY Greg Korsak DATE 05/12/2022
ADA COUNTY HIGHWAY DISTRICT



STREET SECTION - 47' RIGHT-OF-WAY
3" ROLLED CURB - 5' ATTACHED SIDEWALK
(TYPICAL STREET SECTION)

NOTE: LOCAL RESIDENTIAL STREETS SHALL BE A SP-3 0.5 INCH (½") MIX, PG 58-28.



40 20 0 40 80 120
SCALE IN FEET
HORIZONTAL SCALE

4 2 0 4 8 12
SCALE IN FEET
VERTICAL SCALE

N.

STREET KEYNOTE ITEM LIST

ITEM	DESCRIPTION
AS	CONSTRUCT CONCRETE SIDEWALK, ATTACHED 5' x 5" THICK (SEE PLAN), PER ACHD SUPPLEMENT TO ISPWC SD-709.
B2	INSTALL TYPE II BARRICADE AT THE END OF SIDEWALK PER ACHD SUPPLEMENT TO ISPWC SD-1132A, PER MUTCD PROVISIONS SECTION 60.02. THE BARRICADE SHALL INCLUDE A KICK PLATE AT THE BASE OF THE SIGN TO PROVIDE CANE DETECTION.
C2	CONSTRUCT CONCRETE ROLLED CURB AND GUTTER PER ACHD SUPPLEMENT TO ISPWC SD-702.
DA	CONSTRUCT 20' CONCRETE ACCESS WITH 6" THICK RAMPED SIDEWALK PER ACHD SUPPLEMENT TO ISPWC SD-710B.
DS	CONSTRUCT 5' DETACHED SIDEWALK PER ACHD SUPPLEMENT TO ISPWC SD-709.
L1	INSTALL STREET LIGHT, 25' HIGH, 50-WATT CLASS LED, PER CITY OF BOISE STREET LIGHT REQUIREMENTS AND APPROVED PART NUMBER LISTING FOR CITY OF BOISE STREET LIGHTING "RESIDENTIAL LIGHT POLES".
L2	DEVELOPER MUST COORDINATE WITH IDAHO POWER AND REQUEST 41A, 85-WATT LED FIXTURES WITH 12' MAST ARMS TO BE INSTALLED ON THE EXISTING POWER POLES AND PAY THE REQUIRED FEES FOR INSTALLATION.
N1	RETAIN AND PROTECT EXISTING TREES ALONG THE FARMERS LATERAL.
N2	INSTALL GATE FOR EMERGENCY ACCESS TO OVERLAND ROAD. COORDINATE LOCATION AND LOCK TYPE WITH BOISE FIRE DEPARTMENT.
N3	NOT USED
N4	CONSTRUCT PAVED ACCESS/EMERGENCY ROAD. STREET SECTION SHALL BE 2.5" ASPHALTIC PAVEMENT, 4" OF 3/4" MINUS CRUSHED GRAVEL AND 12" OF 6" MINUS PIT RUN GRAVEL OVER COMPACTED SUBGRADE.
N5	CONSTRUCT GRASS PAVER ACCESS TO PRESSURE IRRIGATION PUMP HOUSE, PER NDS TUFFTRACK TT24, HS-20 (MIN.) LOADING OR APPROVED EQUIVALENT FOR GRAVITY IRRIGATION PUMP HOUSE ACCESS.
N6	REMOVE AND DISPOSE OF EXISTING DRIVEWAY ACCESS'S AND SIDEWALK. RETAIN AND PROTECT EXISTING CURB AND GUTTER. REPAIR OR REPLACE CURB AND GUTTER IF DAMAGED. ALL IMPROVEMENTS MUST MEET ADA REQUIREMENTS.
N7	INSTALL DRIVEWAY TO ACCESS ROAD PER ACHD SUPPLEMENT TO ISPWC SD-710.
SC	SAWCUT LINE
TS	6" THICK SIDEWALK

STREET LIGHT NOTES

1. CONTRACTORS INSTALLING LIGHTING WILL BE REQUIRED TO CONTACT BOISE CITY PUBLIC WORKS INSPECTION SECTION 48 HRS. PRIOR TO SCHEDULE THE PRELIMINARY INSPECTION PRIOR TO PLACING CONCRETE OR COVERING CONDUITS. IN ADDITION, THE ELECTRICAL CONTRACTOR IS REQUIRED TO CALL 24 HOURS IN ADVANCE TO SCHEDULE A FINAL INSPECTION BY THE BOISE CITY PUBLIC WORKS INSPECTION SECTION AFTER ALL WORK HAS BEEN COMPLETED. ELECTRICAL CONTRACTOR MUST BE PRESENT AT ALL INSPECTIONS (TO SCHEDULE YOUR PUBLIC WORKS INSPECTION, PHONE 208-608-7549). FOR METERED SERVICES AN ADDITIONAL INSPECTION IS REQUIRED BY THE ELECTRICAL INSPECTOR HAVING JURISDICTION AT THE PROJECTS LOCATION (BOISE CITY WITH CITY LIMITS, STATE IF IN THE COUNTY WITHIN THE CITY'S AREA OF IMPACT.
2. FOR DESIGN INFORMATION OR QUESTION, CONTACT TOM MARSHALL, 208-608-7526. ALL STREET LIGHTS SHALL BE INSTALLED PER ISPWC, NEC CODES, ACHD CODES FOR WORKING WITH IN THE PUBLIC RIGHT-OF-WAY, AND BOISE CITY PUBLIC WORKS STREET LIGHT STANDARD REVISIONS TO THE ISPWC.
3. DEVELOPER SHALL NOT CONNECT, OR ALLOW ANY SUBCONTRACTOR TO CONNECT ANY IRRIGATION TIMERS, DECORATIVE LIGHTING, ENTRANCE LIGHTING, OR OUTLETS OF OTHER ELECTRICAL DEVICES TO ANY STREET LIGHTING CIRCUITS. ANY AND ALL IRRIGATION TIMERS, DECORATIVE LIGHTING, ENTRANCE LIGHTING, OUTLETS OR OTHER ELECTRICAL DEVICES SHALL BE CONNECTED DIRECTLY TO IDAHO POWER AT AN IDAHO POWER APPROVED LOCATION VIA A SEPARATE CONDUIT SYSTEM.
4. WORK MUST CONFORM TO BOISE CITY STREET LIGHT SPECIFICATIONS (SEE WWW.CITYOF BOISE.ORG FOR MORE INFORMATION).
5. UNDERGROUND WIRE CAN BE EITHER #6 COPPER, AWG, THWN, 600 VOLT INSULATED (NO ALUMINUM WIRE).
6. ALL ELECTRICAL CONDUITS SHALL BE SCHEDULE 40 PVC, UL LABELED.
7. A LOCATING WIRE IS REQUIRED IN ALL EMPTY PVC ELECTRICAL CONDUITS.

APPROVED FOR CONSTRUCTION
DATE: 05/12/2022

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BY ADA COUNTY HIGHWAY DISTRICT Date: _____

PROFESSIONAL ENGINEER LICENSED 20305 STATE OF IDAHO JOSHUA H. MANN

REVISIONS
1/25/22
2/16/22
5/12/22

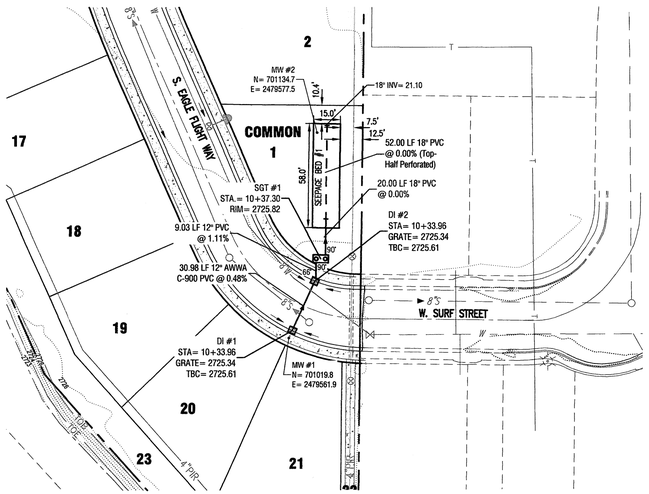
ENGINEERING SOLUTIONS, LLP
1029 N. ROSARIO STREET, SUITE 100
MERIDIAN, IDAHO 83642
Phone (208) 938-0980 Fax (208) 938-0941

BOXELDER CREEK SUBDIVISION
LOCATED IN SECTION 23, T.3N., R.1E., B.M.
BOISE, ADA COUNTY, IDAHO

STREET PLAN, DETAIL AND PROFILE

SCALE	1"=40' HORIZ 1"=4' VERT
DWG.DATE	10/28/21
PROJ. NO.	200806
SHEET	3 OF 12
	ST-1

/CONSTRUCTION/200806-ST.DWG



SEEPAGE BED #1 DATA

DI #1
STA. 10+33.96, 15.30' LT
INLET CATCH BASIN, TYPE IV, ACHD SUPPLEMENT TO ISPWC SD-604A,
FOR ROLLED CURB WITH 1' SUMP
GRATE = 2725.34
12" INV. OUT = 2722.30 AWWA C900 PVC
30.98 LF OF 12" PVC @ S=-0.48% TO DI #2

Q(2)= 0.34 cfs V(2)= 543 cf
Q(25)= 0.88 cfs V(25)= 1441 cf
Q(100)= 1.26 cfs V(100)= 2004 cf

DI #2
STA. 10+33.96, 15.30' RT
INLET CATCH BASIN, TYPE IV, ACHD SUPPLEMENT TO ISPWC SD-604A,
FOR ROLLED CURB WITH 1' SUMP
GRATE = 2725.34
12" INV. IN = 2722.15
12" INV. OUT = 2722.05
9.03 LF OF 12" PVC @ S=-1.11% TO SG #1

Q(2)= 0.28 cfs V(2)= 445 cf
Q(25)= 0.73 cfs V(25)= 1180 cf
Q(100)= 1.04 cfs V(100)= 1642 cf

SG #1
STA. 10+37.30, 21.8' LT
1000-GAL. SAND & GREASE TRAP (WITH 20" BAFFLE SPACING)
RIM = 2725.82± (MATCH FINISHED GRADE)
12" INV. IN= 2721.95
TOP OF BAFFLE OUT = 2721.85
18" INV. OUT = 2721.10
20 LF 18" PVC S=-0.00% TO SB #1

18" INV. @ SB# 1= 2721.10

SEEPAGE BED #1
58' L x 15' W x 10' D
(SEE PLAN VIEW)
TOP OF ROCK = 2724.50
BTM OF ROCK = 2714.50
52.0 LF 18" PVC (TOP-HALF PERFORATED) @ 0.00%

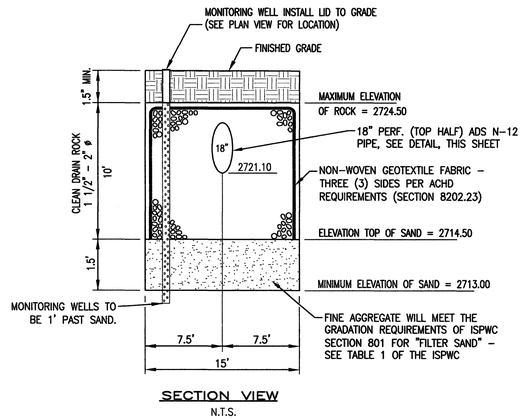
V(100)= 3,646 cf

PERCOLATION RATE = 2"/hr

GROUND WATER NOT ENCOUNTERED, PIEZOMETER INSTALLED TO 15.2 FEET BGS.

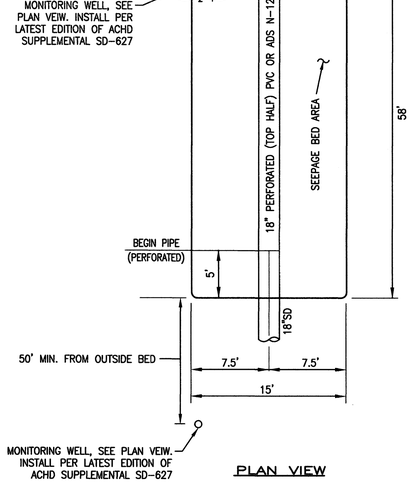
SEE SEEPAGE BED DETAILS THIS SHEET

GEOTECHNICAL EVALUATION AND GROUNDWATER INFORMATION PROVIDED BY ATLAS TECHNICAL CONSULTANTS, LLC, DATED OCTOBER 23, 2020.



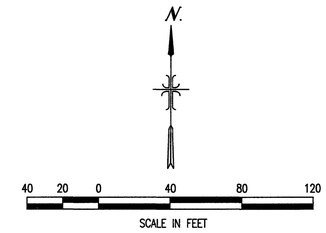
SECTION VIEW
N.T.S.

SEEPAGE BED PIPE NOTE:
ALL PIPE ELEVATIONS SHOWN ARE AT ENTRANCE OF SEEPAGE BEDS, SEE PLAN VIEW FOR SLOPES AND OTHER PIPE ELEVATIONS.



PLAN VIEW

SEEPAGE BED #1
N.T.S.

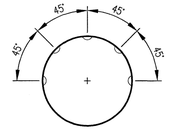


NOTES:

1. ALL TREES MUST BE OFFSET A MINIMUM OF 10-FEET FROM ALL STORM DRAIN FACILITIES.
2. CONTRACTOR SHALL CALL ACHD FOR INSPECTION OF THE STORM DRAIN SYSTEM. ACHD INSPECTOR SHALL BE ON-SITE DURING SEEPAGE BED INSTALLATION.
3. ELECTRONIC MARKERS ARE REQUIRED ON EACH CORNER OF UNDERGROUND INFILTRATION SYSTEMS. CONTRACTOR SHALL COORDINATE WITH ACHD INSPECTION FOR PLACEMENT OF THE MARKERS DURING CONSTRUCTION AND PRIOR TO BACKFILLING. ACHD IS CURRENTLY SUPPLYING THE DEVICES.
4. ALL PIPES CALLED OUT AS PVC (EXCLUDING AWWA C-900 OR AWWA C-905) MAY BE PVC ASTM D 3034 (SDR35) OR ADS N-12HP.
5. SEEPAGE BEDS SHALL HAVE A MINIMUM OF 1.5' OF COVER FROM FINISHED GRADE.

SEEPAGE BED NOTES:

1. PLACE MONITORING WELLS IN SIDEWALK OR BACK OF WALK WHEN POSSIBLE, VERIFY WITH ACHD OR ENGINEER IF NEEDED.
2. CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF GROUNDWATER IS ENCOUNTERED WITHIN 3-FEET OF THE BOTTOM DESIGN ELEVATION FOR ANY INFILTRATION FACILITY, AND/OR IF IT IS HIGHER THAN ANTICIPATED.
3. IF ROCK IS ENCOUNTERED; CONTRACTOR TO HAVE PERCOLATION TEST PERFORMED BY SOILS ENGINEER AFTER SEEPAGE TRENCH IS FULL EXCAVATED. IF THE PERCOLATION IS LESS THAN SPECIFIED BY THE SOILS REPORT AND ENGINEER, CONTRACTOR MAY NEED TO BLAST OR BORE TO CREATE CONDUIT FOR DRAINAGE TO OCCUR OR REDESIGN THE SYSTEM TO ACHIEVE THE REQUIRED INFILTRATION.
4. ACHD INSPECTOR SHALL BE ON-SITE DURING SEEPAGE BED INSTALLATION.
5. ACHD STAFF MUST VERIFY THE INFILTRATION RATE AFTER THE FACILITY IS FULLY EXCAVATED.



NOTE:
18"ø PVC PERFORATED DRAIN PIPE. PERFORATIONS SHALL BE IN ACCORDANCE WITH AASHTO M304-03 AND ORIENTED UPWARD FROM TOP HALF (ACCEPTABLE PIPE REPLACEMENT: 18"ø ADS N-12 HDPE PERFORATED PER AASHTO M-294).

18" PIPE PERFORATION DETAIL
(TOP HALF)
N.T.S.

MONITORING WELLS

CONTROL POINTS	NORTHING	EASTING
NW CORNER OF NW ¼ OF NE ¼ OF SECTION 23	701,623.4	2,478,270.8
NE CORNER OF NW ¼ OF NE ¼ OF SECTION 23	701,613.8	2,479,625.1

MW= MONITORING WELL
PER ACHD SUPPLEMENT TO THE ISPWC SD-627.

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BY Greg Konsak ACHD COUNTY HIGHWAY DISTRICT DATE 05/12/2022

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PROFESSIONAL ENGINEER LICENSED 20305 5/12/22 STATE OF IDAHO JOSHUA H. MANN

REVISIONS
1/25/22
2/16/22
5/12/22

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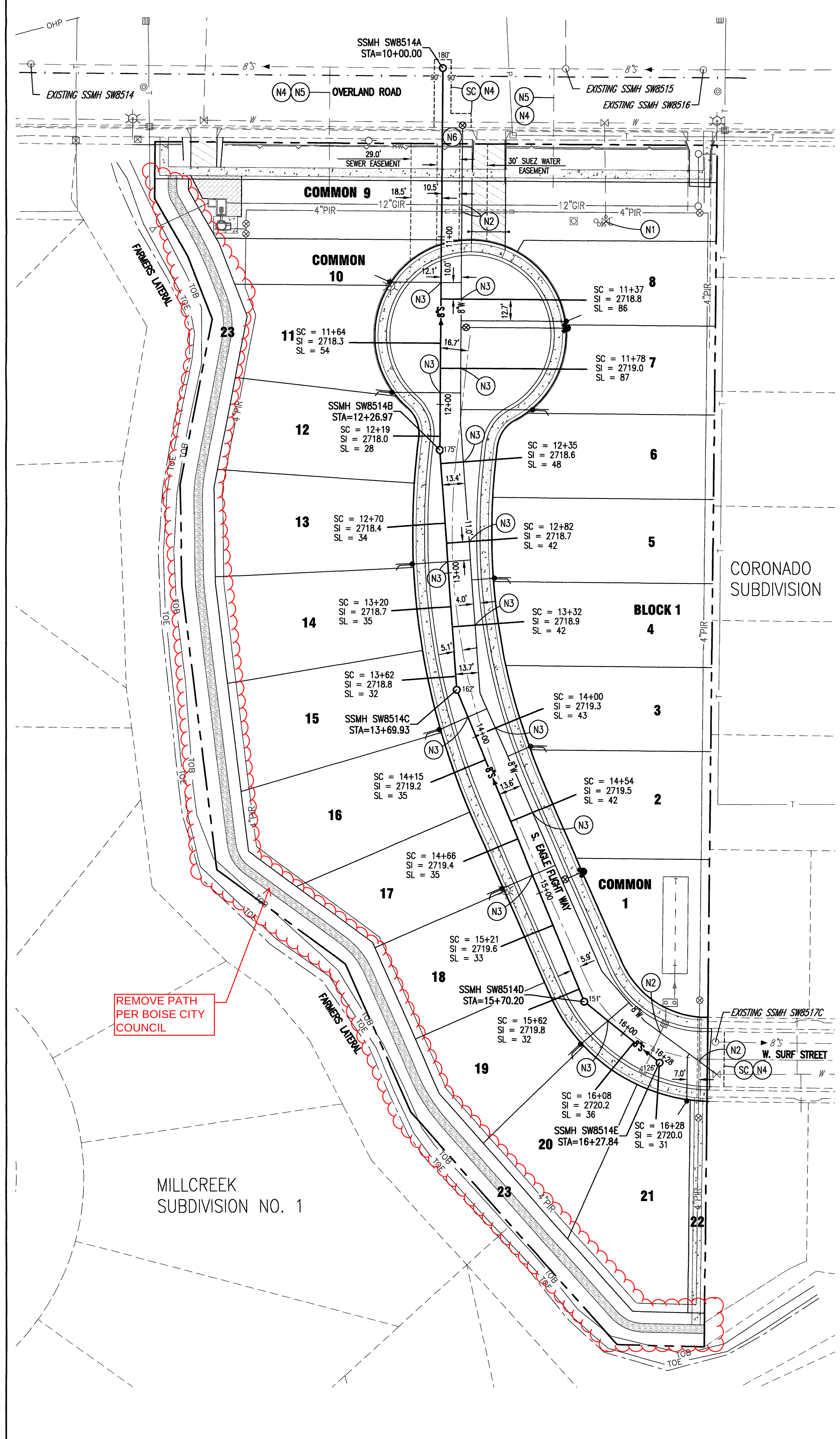
BOXELDER CREEK SUBDIVISION
LOCATED IN SECTION 23, T.3N., R.1E., B.M.
BOISE, ADA COUNTY, IDAHO

STORM DRAIN PLAN AND DETAILS

SCALE 1"=40'
DWG.DATE 10/28/21
PROJ. NO. 200806
SHEET 4 OF 12
SD-1

CONSTRUCTION/190715-SD.DWG



SEWER & WATER KEYNOTE LIST

ITEM	DESCRIPTION
N1	Remove And Dispose Of Existing Sewer Service And Water Service.
N2	See Water Note No. 2 and Sewer Note No. 9 on the Title Sheet. (Adjust Water Line, As Needed, to Maintain Minimum Separation. Add Elbows As Needed.
N3	See Water Note No. 3 and Sewer Note No. 3 on the Title Sheet.
N4	Type 'P' Pavement Repair (ISPWC ACHD Supplement SD-303) Is Required At Minimum. If Existing Pavement Section Is Greater Than The Type 'P', Then Contractor Shall Match Existing Section. Construct All Pavement Matches (Including Driveway Approaches And Utility Cut Street Repairs) Within ACHD Right-Of-Way To Match The Existing Street Pavement Section Or To Use The Following: Principal Arterial Roadways Shall Be SP-3, 0.50 (½") Mix, Pg 64-28 Five Inches (5") Thick, As A Minimum With 4" Of ¾" Base And 25" Of 6" Minus Pit Run. Minor Arterial Roadways Shall Be SP-3, 0.50 Inch (½") Mix, Pg 64-28 Five Inches (5") Thick, As A Minimum With 4" Of ¾" Base And 25" Of 6" Minus Pit Run. Collector, Local Commercial, And Local Industrial Roadways Shall Be SP-3, 0.50 Inch (½") Mix, Pg 64-28 Three Inches (3") Thick, As A Minimum With 4" Of ¾" Base And 20" Of 6" Minus Pit run. Local Residential Roadways Shall Be SP-3, 0.50 Inch (½") Mix, Pg 58-28 Two And A Half Inches (2.5") Thick, As A Minimum With 4" Of ¾" Base And 14" Of 6" Minus Pit Run.
N5	Plug Existing Sewer Service At The Sewer Main. Contact Boise City Public Works 48 Hours In Advance To Obtain A Sewer Plug Permit And Schedule An Inspection.
N6	Retain And Protect All Existing Utilities Including ACHD Fiber, Zayo Fiber, Boise City Fiber and Natural Gas Located Within Overland Road Even If Not Shown. Contractor Shall Contact Digline Prior To Any Work (See Note 1 This Sheet).
SC	Sawcut Line.

WATER NOTES

1. ALL WATER LINES SHALL BE INSTALLED IN ACCORDANCE WITH SUEZ WATER SPECIAL SPECIFICATIONS AND STANDARD DRAWINGS.
2. THRUST BLOCKS MUST BE INSTALLED ON THE WATER MAIN PER IDAPA 58.01.08.542.02, ALL TEES, BENDS, PLUGS AND HYDRANTS SHALL BE INSTALLED WITH REACTION BLOCKING TO PREVENT MOVEMENT.
3. EXISTING WELL SHALL BE ABANDONED FROM DOMESTIC USE IN ACCORDANCE WITH IDAHO DEPARTMENT OF WATER RESOURCE REQUIREMENTS (IDWR).

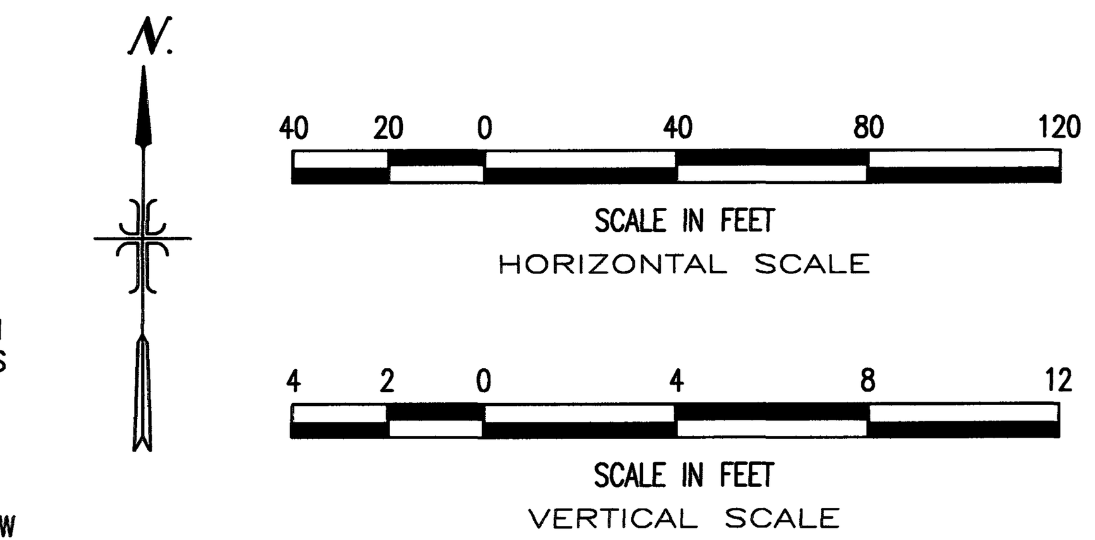
NOTES

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR ANY AND ALL DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. DIG LINE TELEPHONE NUMBER IS 1-800-342-1585.
2. RETAIN AND PROTECT EXISTING FIRE HYDRANTS, SEWER AND WATER SERVICES AND MANHOLES. RESET MANHOLES AND/OR METERS TO NEW FINISHED SIDEWALK OR NEW FINISHED STREET ELEVATIONS, EVEN IF NOT SHOWN.
3. CONTRACTOR SHALL FIELD-VERIFY THAT ALL SERVICES ARE EXISTING AS SHOWN, PRIOR TO PAVING OR CONCRETE CONSTRUCTION BEGINS. CONTRACTOR SHALL INSTALL ANY MISSING SERVICES AS NEEDED.
4. ALL SEWER SERVICES SHALL BE 4" UNLESS OTHERWISE NOTED. ALL SEWER SERVICES SHALL HAVE A MINIMUM OF 2% GRADE TO PROPERTY LINE, IN ACCORDANCE WITH ISPWC STANDARD DRAWING SD-511A.
5. ALL WATER MAINS SHALL HAVE 4 FEET OF COVER.
6. CONTRACTOR SHALL RESTORE ALL OFFSITE DAMAGED AREAS TO ORIGINAL OR BETTER CONDITION.
7. WHERE SEWER CONSTRUCTION IS LOCATED ON PRIVATE PROPERTY, CONTRACTOR SHALL SECURE INDEPENDENT COMPACTION TESTING ON TRENCH BACKFILL AND SUBMIT TEST RESULTS TO BOISE CITY PUBLIC WORKS.

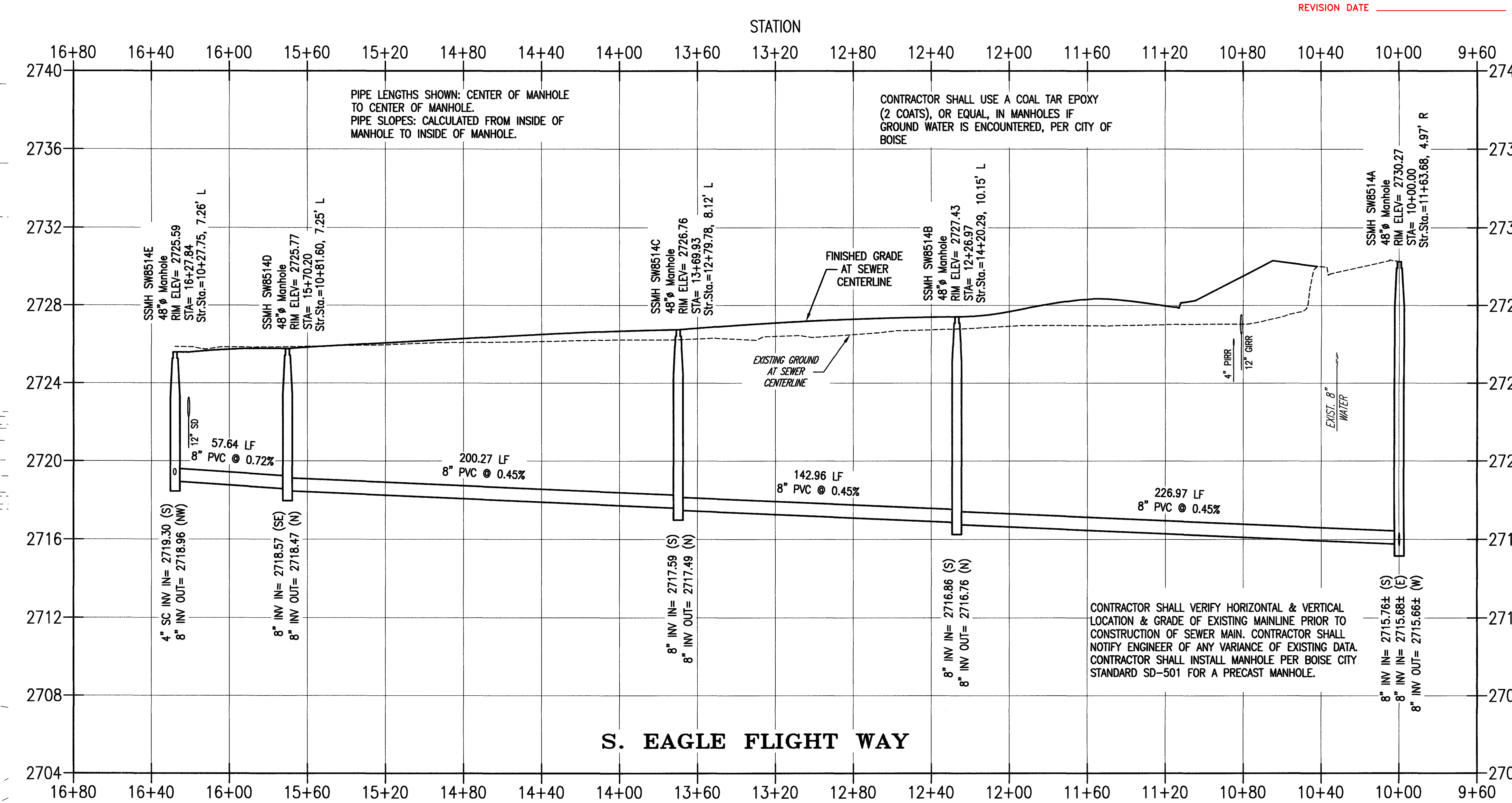
PAVEMENT REPAIR NOTES:

ACTUAL FIELD CONDITIONS DURING TRENCHING MAY REQUIRE ADDITIONAL PAVEMENT REPAIR BEYOND THE LIMITS SHOWN ON THE PLAN. THE FOLLOWING CONDITIONS ARE LISTED IN SECTION 6000 OF THE ACHD POLICY MANUAL.

1. ALL ASPHALT MATCH LINES FOR PAVEMENT REPAIR SHALL BE PARALLEL TO THE CENTERLINE OF THE STREET AND INCLUDE ANY AREA DAMAGED BY EQUIPMENT DURING TRENCHING OPERATIONS.
2. IF THE CUMULATIVE DAMAGED PAVEMENT AREA EXCEEDS 50% OF THE TOTAL ROAD SURFACE, CONTRACTOR SHALL REPLACE THE ENTIRE ROAD SURFACE.
3. CONTRACTOR SHALL REPLACE THE PAVEMENT SURFACE TO ENSURE MATCH LINE DOES NOT FALL WITHIN THE WHEEL PATH OF A LANE. MATCH LINE SHALL ONLY FALL IN THE CENTER OR EDGE OF A TRAVEL LANE.
4. FLOWABLE FILL OR IMPORTED MATERIAL MAY BE REQUIRED IT THE NATIVE TRENCH MATERIAL IS DEEMED UNSUITABLE BY ACHD INSPECTOR, DOES NOT MEET COMPACTION STANDARDS OR TIME IS A CRITICAL FACTOR.
5. ANY EXCEPTIONS TO THESE RULES SHALL BE PRE-APPROVED IN WRITING BY DISTRICT STAFF BEFORE CONSTRUCTION BEGINS.



APPROVED
SANITARY SEWER ONLY
BOISE CITY PUBLIC WORKS
APPROVAL DATE
REVISION DATE



APPROVED FOR CONSTRUCTION
DATE: 02/16/2022

PROFESSIONAL ENGINEER
LICENSED
20305
2/16/22
STATE OF IDAHO
JOSHUA H. MANN

REVISIONS
1/25/22
2/16/22

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ENGINEERING SOLUTIONS LLP
1029 N. ROSARIO STREET, SUITE 100
MERIDIAN, IDAHO 83642
Phone (208) 938-0980 Fax (208) 938-0941

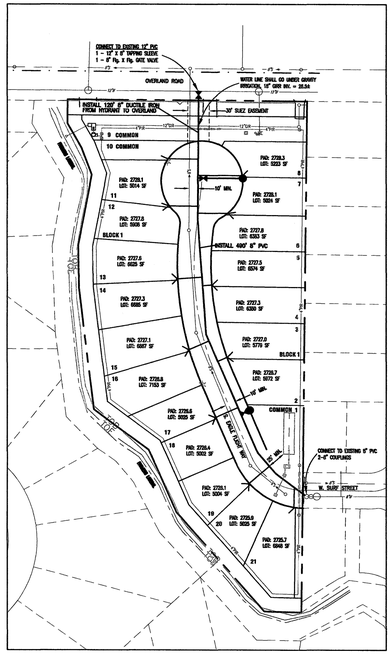
BOXELDER CREEK SUBDIVISION
LOCATED IN SECTION 23, T.3N., R.1E., B.M.
BOISE, ADA COUNTY, IDAHO

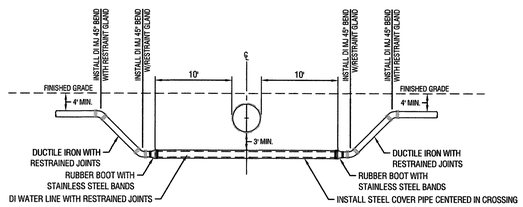
SEWER AND WATER PLAN AND PROFILE
S. EAGLE FLIGHT WAY

SCALE	1"=40' HORIZ 1"=4' VERT
DWG.DATE	10/28/21
PROJ. NO.	200806
SHEET	5 OF 12

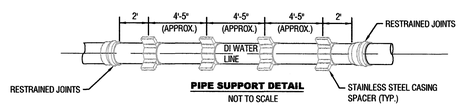
S-1

CONSTRUCTION/200806-SS.DWG





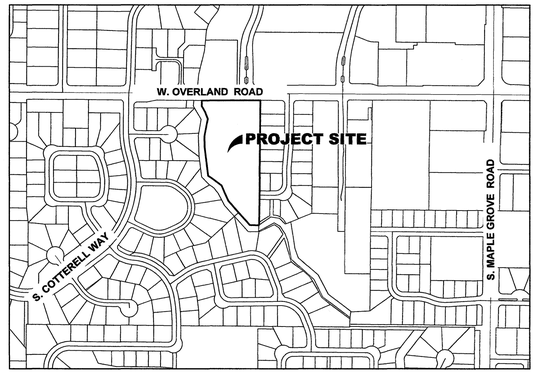
GRAVITY IRRIGATION CROSSING DETAIL
NOT TO SCALE



PIPE SUPPORT DETAIL
NOT TO SCALE

N

SCALE: 1"=100'



VICINITY MAP
N.T.S.

NOTES

ALL WATER LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST VERSION OF ISPWC AND SUEZ SUPPLEMENTAL SPECIFICATIONS TO ISPWC AND STANDARD DRAWINGS.

THE SEAL BELOW RELATES TO THE WATER SYSTEM DESIGN ONLY. ALL OTHER UTILITIES, RIGHTS OF WAY AND RELATED SURVEY DATA ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY.

THE HORIZONTAL SEPARATION OF THE WATER AND NON-POTABLE MAINS SHALL BE A MINIMUM OF 10 FEET. WHERE IT IS NECESSARY FOR THE WATER AND NON-POTABLE MAINS TO CROSS EACH OTHER AND THE NON-POTABLE MAIN IS LESS THAN 18 INCHES BELOW OR ABOVE THE WATER MAIN, THE NON-POTABLE MAIN SHALL BE CONSTRUCTED WITH 150 PSI CLASS WATER PIPE FOR A DISTANCE OF 10 FEET ON BOTH SIDES OF THE WATER MAIN. ONE FULL LENGTH OF BOTH WATER MAIN AND NON-POTABLE LINE SHALL BE CENTERED AT THE CROSSING POINT SO THAT ALL JOINTS WILL BE AS FAR FROM THE CROSSING AS POSSIBLE. A SEPARATION DISTANCE OF 25 FEET SHALL BE MAINTAINED FROM THE WATER MAIN TO ANY SUBSURFACE DISPOSAL SYSTEM.

IF THE NON-POTABLE LINE CROSSES ABOVE THE WATER LINE, AT LESS THAN 18", THEN THE NON-POTABLE LINE MUST BE SUPPORTED ACCORDING TO IDAPA 58.01.08.542.07 h(v). ONE FULL LENGTH OF BOTH WATER LINE AND NON-POTABLE WATER LINE SHALL BE CENTERED OVER THE CROSSING POINT SO THAT ALL JOINTS WILL BE AS FAR FROM THE CROSSING AS POSSIBLE. IN LIEU OF CONSTRUCTION OR RECONSTRUCTING THE NON-POTABLE WATER LINE EITHER THE NON-POTABLE LINE OR WATER LINE MAY BE ENCASED WITH A SLEEVING MATERIAL ACCEPTABLE TO DEQ FOR A DISTANCE OF TEN (10) HORIZONTAL FEET ON BOTH SIDES OF THE CROSSING

CENTER OF METER BOX AND FIRE HYDRANTS TO BE LOCATED 32 INCHES BEHIND SIDEWALK

PLATTED UTILITY EASEMENT ALONG RIGHT-OF-WAY IS 10 FEET WIDE

SITE FIRE FLOW REQUIRED BY JURISDICTIONAL FIRE AGENCY FOR THIS PROJECT IS 1500 GPM

INSTALL 4" DI SLEEVES ON SERVICES THROUGH ANY EXISTING OR NEW STORM DRAINAGE BEDS

ALL ROADWAYS ARE WITHIN ACHD RIGHT-OF-WAY.

LEGEND

- PROPOSED WATER LINE
- PROPOSED FIRE HYDRANT
- PROPOSED BLOW-OFF
- PROPOSED GATE VALVE
- PROPOSED SINGLE SERVICE
- PROPOSED COMMON SERVICE
- EXISTING FIRE HYDRANT W/VALVE
- EXISTING GATE VALVE
- EXISTING SERVICE
- EXISTING WATER LINE
- EXISTING BLOW-OFF

SUEZ INSPECTION	
Inspector:	Date of As-built:
Contractor:	
Foreman:	
SUEZ GIS INFORMATION	
Flushing Zone:	CW WO No.:

N
0 100 200

DEVELOPER INFORMATION	ENGINEER INFORMATION
STERLING HOMES, INC 1159 E. IRON EAGLE DRIVE, SUITE #170-K EAGLE, IDAHO 83616 PHONE: (208) 850-3613 CONTACT: DENNIS HUDSPETH EMAIL: dh@sterlinghomes.us	ENGINEERING SOLUTIONS, LLP 1029 N. ROSARIO STREET, SUITE 100 MERIDIAN, IDAHO 83642 PHONE (208) 938-0980 FAX (208) 938-0941 CONTACT: JOSH MANN
PRESSURIZED IRRIGATION BY: BOISE PROJECT BOARD OF CONTROL	

SUEZ
8248 W. VICTORY ROAD BOISE, IDAHO 83709

BOXELDER CREEK SUBDIVISION
WATER PLAN

Drawn By: JHM	Map No.: 1123-1	Ref. No.: 21054	
Scale: 1"=100'		Sewer Dist.: BOISE CITY	
Date: 02/06/22	Town,Range,Sec.: 3N, 1E, SEC. 23	Fire Dist.: BOISE CITY	
CEA:		SHEET: 1 OF 1	

APPROVED FOR CONSTRUCTION
DATE: 05/12/2022

PROFESSIONAL ENGINEER LICENSED Joshua H. Mann 20305 6/13/22 STATE OF IDAHO JOSHUA H. MANN

REVISIONS
1/25/22
2/16/22
5/12/22

ENGINEERING SOLUTIONS, LLP
1029 N. ROSARIO STREET, SUITE 100
MERIDIAN, IDAHO 83642
Phone (208) 938-0980 Fax (208) 938-0941

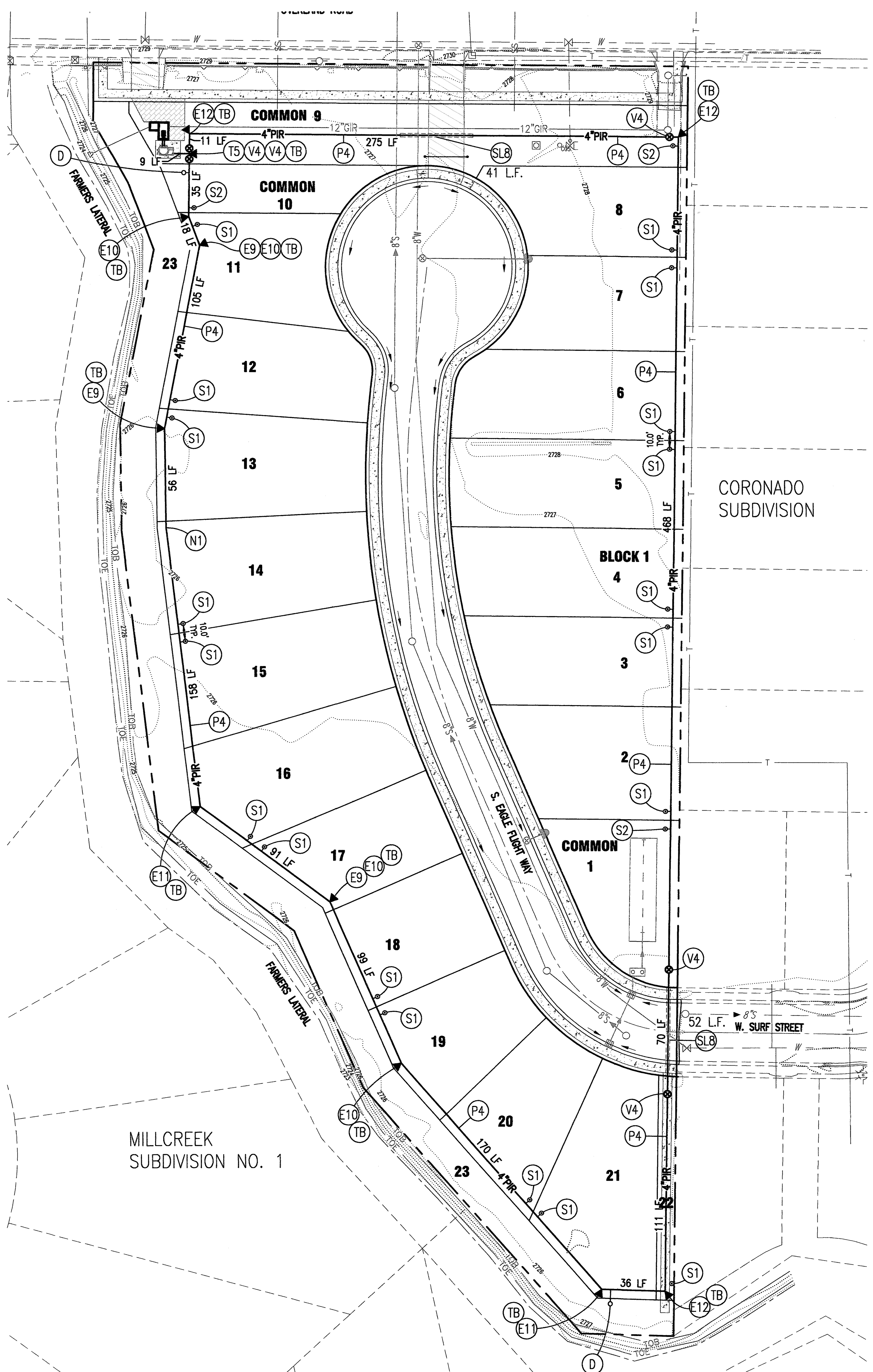
BOXELDER CREEK SUBDIVISION
LOCATED IN SECTION 23, T.3N., R.1E., B.M.
BOISE, ADA COUNTY, IDAHO

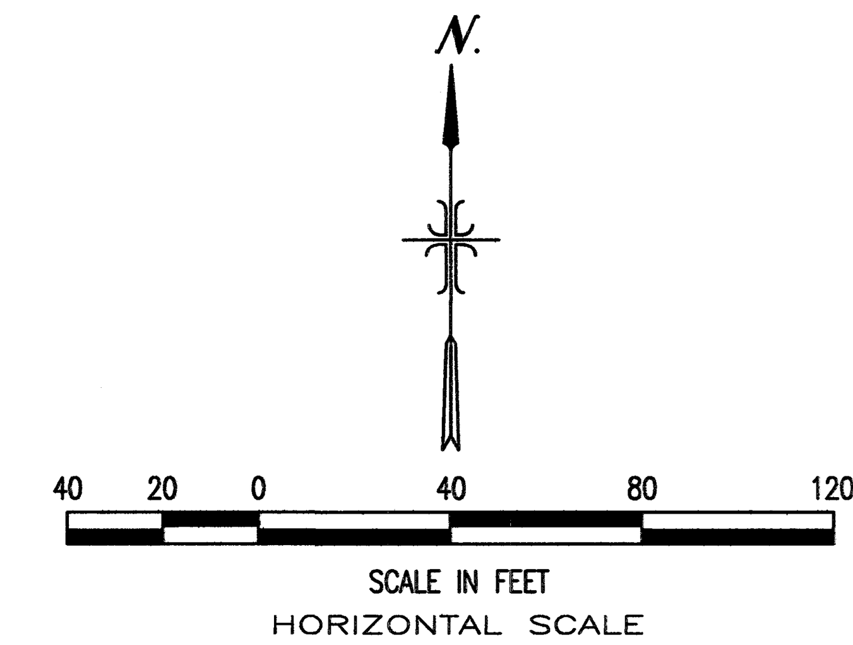
SUEZ WATER PLAN

SCALE	1"=100' HORIZ
DWG.DATE	10/28/21
PROJ. NO.	200806
SHEET	6 OF 12

W-1

CONSTRUCTION/200806-W-1.DWG





PRESSURE IRRIGATION KEYNOTE LIST

ITEM	DESCRIPTION
D	Pressure Irrigation Mainline Drain
E9	Elbow, 4", 11 1/4°
E10	Elbow, 4", 22 1/2°
E11	Elbow, 4", 45°
E12	Elbow, 4", 90°
P4	Pressure Irr. Main, 4", PVC, CL-200
S1	Irrigation Service, 3/4"
S2	Irrigation Service, 1"
SL8	Pressure Irr. Sleeve, 8" PVC, AWWA C-900
T5	Tee, 4"x 4"x 4"
TB	P.C.C. Thrust Block (As Required Even If Not Shown).
V4	Valve, 4" Gate

PRESSURE IRRIGATION LEGEND

— 4"PIRR —	EXISTING PRESSURE IRRIGATION LINE
—4"PIR— 200 LF	CONSTRUCT PRESSURE IRRIGATION LINE & SERVICES
▶	CONCRETE THRUST BLOCK
⊗	VALVE
(SL) 40 LF	SLEEVE (AWWA C-900 OR C-905)
o—	DRAIN
▶—	AIR RELEASE VALVE

NOTES:

1. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR ANY AND ALL DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. CONTRACTOR SHALL CALL DIG LINE AT 1-800-342-1585 PRIOR TO ANY EXCAVATION.
2. CONTRACTOR SHALL RETAIN AND PROTECT ALL EXISTING UTILITIES, EVEN IF NOT SHOWN.
3. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING SERVICES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF THERE ARE ANY DISCREPANCIES.
4. CONTRACTOR SHALL VERIFY THAT EVERY LOT HAS A PRESSURE IRRIGATION SERVICE. CONTRACTOR SHALL INSTALL A SERVICE TO EVERY LOT AS NEEDED.
5. CONTRACTOR SHALL PROTECT AND RETAIN EXISTING FENCE LINES WITHIN SUBDIVISION.
6. SEE SHEET PIRR-2 FOR DETAILS AND NOTES.
7. PRESSURE IRRIGATION SYSTEM TO BE OWNED & MAINTAINED BY THE HOA.

Plans Are Accepted For Public Street Construction

By stamping and signing the improvement plans, the Registered Engineer ensures the District that the plans conform to all District policies and standards. Variances or waivers must be specifically and previously approved by the District in writing. Acceptance of the improvement plans by the District does not relieve the Registered Engineer of these responsibilities.

BY Greg Korsak DATE 05/12/2022
ADA COUNTY HIGHWAY DISTRICT

APPROVED FOR CONSTRUCTION
DATE: 05/12/2022

Plans Are Accepted For Public Street Construction

By stamping and signing the improvement plans, the Registered Engineer ensures the District that the plans conform to all District policies and standards. Variances or waivers must be specifically and previously approved by the District in writing. Acceptance of the improvement plans by the District does not relieve the Registered Engineer of these responsibilities.

By ______ Date: ______
ADA COUNTY HIGHWAY DISTRICT

PROFESSIONAL ENGINEER
LICENSED
20305
5/12/22
STATE OF IDAHO
JOSHUA H. MANN

REVISIONS
1/25/22
2/16/22
5/12/22

ENGINEERING SOLUTIONS LLP
1029 N. ROSARIO STREET, SUITE 100
MERIDIAN, IDAHO 83642
Phone (208) 938-0980 Fax (208) 938-0941

BOXELDER CREEK SUBDIVISION

LOCATED IN SECTION 23, T.3N., R.1E., B.M.
BOISE, ADA COUNTY, IDAHO

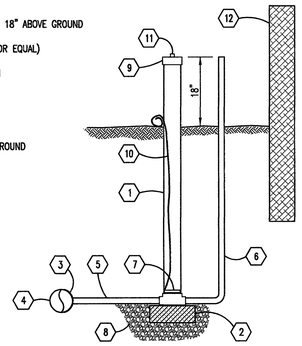
PRESSURE IRRIGATION PLAN

SCALE	1"=40'
DWG.DATE	10/28/21
PROJ. NO.	200806
SHEET	7 OF 12

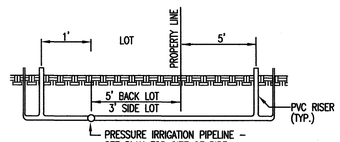
PIRR-1

CONSTRUCTION/200806-PIRR.DWG

1. 3" SDR 21" PVC RISER EXTEND 18" ABOVE GROUND
2. 3" x 4" x 6" CINDER BLOCK (OR EQUAL)
3. 4" or 6" x 1" SADDLE MINIMUM
4. 4" or 6" MAIN LINE MINIMUM
5. 1" BRASS PIPE
6. 1" 200 PSI POLY 18" ABOVE GROUND
7. 1" BRASS CURB STOP
8. ROCK CHIPS
9. 3" FEMALE ADD.
10. LOCATER WIRE
11. 3" PVC PLUG
12. MARKER, STEEL 1" POST

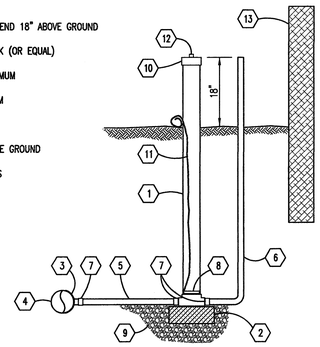


"MODIFIED" TYPE A RISER
SHORT SIDE SERVICE
NOT TO SCALE

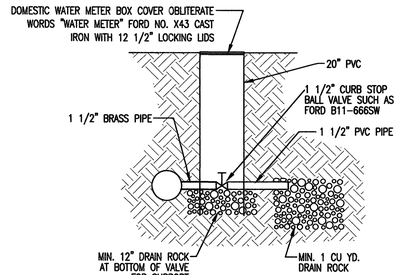


TYPICAL PIPE LOCATION
NOT TO SCALE

1. 3" SDR 21" PVC RISER EXTEND 18" ABOVE GROUND
2. 3" x 4" x 6" CINDER BLOCK (OR EQUAL)
3. 4" or 6" x 1" SADDLE MINIMUM
4. 4" or 6" MAIN LINE MINIMUM
5. 1" POLY PIPE 200 PSI
6. 1" 200 PSI POLY 18" ABOVE GROUND
7. 1" BRASS COMP. COUPLINGS
8. 1" BRASS CURB STOP
9. ROCK CHIPS
10. 3" FEMALE ADD.
11. LOCATER WIRE
12. 3" PVC PLUG
13. MARKER, STEEL 1" POST



"MODIFIED" TYPE A RISER
LONG SIDE SERVICE
NOT TO SCALE



DRAIN VALVE
NOT TO SCALE

PRESSURIZED IRRIGATION NOTES

1. The pressured irrigation system must be built to the standards of the irrigation district in which it is being constructed.

2. Install a reduced pressure backflow preventer in any connection between the potable water system and the pressure irrigation system. The device must be approved by the Idaho Department of Enviromental Quality (DEQ) and SUEZ Water.

3. Install all crossings of the Public Rights-of-Way, private roadways and travelways with pressure irrigation at a minimum depth of two-and one-half (2-1/2) feet and in an AWWA C-900 pipe sleeve with locator wire. SUEZ Water, ACHD and Engineering Solutions, shall inspect all crossings prior to backfilling.

4. The horizontal separation of potable water mains and non-potable water mains (sanitary sewer, storm drain, and irrigation) shall be a minimum of ten (10) feet. Where it is necessary for a potable water main and non-potable water main to cross with less than eighteen (18) inches of vertical separation, the crossing shall be constructed in accordance with Section 542.07 of the Idaho Rules for Public Drinking Water Systems (IDAPA 58.01.08) and Section 430.02 of the Wastewater Rules (IDAPA 58.01.16).

5. The horizontal separation of non-potable services and potable water services or potable water mains shall be a minimum of six (6) feet. Where it is necessary for a potable water main and non-potable water main to cross with less than eighteen (18) inches of vertical separation, the crossing shall be constructed in accordance with Section 542.07 of the Idaho Rules for Public Drinking Water Systems (IDAPA 58.01.08) and Section 430.02 of the Wastewater Rules (IDAPA 58.01.16).

6. Install finder tape with all irrigation mains. Tape shall be two (2) inches wide, metallic red in color, with the words DANGER -UNSAFE WATER or NON-POTABLE WATER clearly marked along its length. Place the tape between six (6) inches below the surface and eighteen (18) inches above the top of the pipe.

7. Label all irrigation risers and faucets with durable tags carrying the warning DANGER-UNSAFE WATER or NON-POTABLE WATER.

8. Label all valve boxes and vaults with durable tags carrying the warning DANGER-UNSAFE WATER or NON-POTABLE WATER. The valves and boxes are to be located a minimum of ten (10) feet outside of the Public Right-of-Way, private roadways and travelways.

9. Install a reduced pressure backflow preventer in any connection between the potable water system and the pressure irrigation system. The device must be approved by the Idaho Department of Environmental Quality (DEQ) and SUEZ Water.

10. Engineering Solutions, shall inspect all pressurized irrigation unless a properly executed agreement for inspection and maintenance is in effect with the applicable Irrigation District. Forty-eight (48) hours advance notice is required.

11. Pressure irrigation mains must be along rear lot lines. Where pressure irrigation mains traverse a side lot line in order to cross a street, the domestic water service and pressure irrigation mains must be on opposite sides of a lot.

12. Pressure test the irrigation system to one hundred-fifty (150) pounds per square inch (psi) with allowable loss in accordance with the Supplemental Specifications and Drawings to ISPWC.

13. All construction materials and installation shall comply with the Irrigation District Standard Specifications for Pressurized Irrigation System - latest edition, except as modified here on.

14. All pipe shall be PVC - Class 200 - SDR21 or better. Pipes three inches and smaller shall be solvent weld. Pipe four inches and larger shall have mechanical joints.

15. Minimum depth cover over all pipe shall be 30".

16. Minimum compaction shall be:
    a. 95% in Rights-of-way.
    b. 85% everywhere else.

17. Concrete thrust blocks shall be required at all tees and bends as shown on this plan. Angle fittings required at all change of direction of pipes over 11 1/4° where shown on this plan.

18. All services shall be placed at the rear lot or side lot line unless otherwise shown on this plan. They shall extend past property line into lot as shown on detail.

19. Contractor shall verify the location of all other utilities before installing the irrigation pipe.

20. Contractor to verify location of all landscape lot services with owner prior to installation.

21. Where pipe must be deflected to keep alignment shown on this plan, the contractor shall not exceed pipe manufacturers recommendations.

22. All valves must be at most 10' from the street Right-of-way, unless otherwise shown.

23. All valves at street crossings shall be on both sides of streets.

24. Contractor shall install plugs at end of fittings that serve areas not included in construction of this phase.

25. Contractor shall be responsible for verifying all pipe lengths shown on this plan before pipe installation.

26. Contractor shall be responsible for repairing and replacing disturbed fence and landscaping in order to install new services. Each Homeowner shall be notified at least 24 hours before any property disturbance.

27. Retain and protect all existing utilities and irrigation facilities.

28. Contractor shall install a drain at all low points in the pipe and a pressure relief valve at all high points in the pipe (even if not shown).

29. Wherever the pressure irrigation line crosses the gravity irrigation and there is a conflict, the pressure irrigation line shall go below the gravity irrigation line and a drain shall be installed at the low point of each location, unless the pressure irrigation line can go over the gravity irrigation and still have a minimum cover of 30".

30. Contractor shall install pressure irrigation line to depths that match the final grading plan with 30" of minimum cover.

31. Contractor shall install a service to every lot including common lots, even if not shown.

APPROVED FOR CONSTRUCTION
DATE: 05/12/2022

Plans Are Accepted For Public Street Construction

By stamping and signing the improvement plans, the Registered Professional Engineer certifies that the plans conform to all District policies and standards. Variances or waivers must be specifically and previously approved by the District in writing. Acceptance of the improvement plans by the District does not relieve the Registered Engineer of these responsibilities.

By _____ Date: _____
ADA COUNTY HIGHWAY DISTRICT

PROFESSIONAL ENGINEER
LICENSED
20305
5/12/22
STATE OF IDAHO
JOSHUA H. MANN

REVISIONS
1/25/22
2/16/22
5/12/22

ENGINEERING SOLUTIONS, LLP
1029 N. ROSARIO STREET, SUITE 100
MERIDIAN, IDAHO 83642
Phone (208) 938-0980 Fax (208) 938-0941

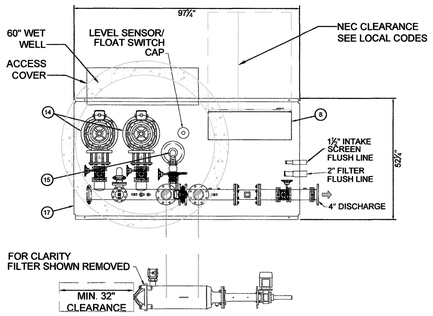
BOXELDER CREEK SUBDIVISION
LOCATED IN SECTION 23, T.3N., R.1E., B.M.
BOISE, ADA COUNTY, IDAHO

PRESSURE IRRIGATION
DETAILS AND NOTES

SCALE	N.T.S.
DWG.DATE	10/28/21
PROJ. NO.	200806
SHEET	8 OF 12

PIRR-2

CONSTRUCTION/200806-PIRR.DWG

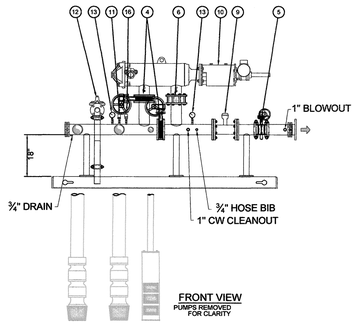


PLAN VIEW

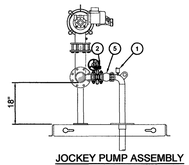
DESIGN SPECIFICATIONS			
Design Flow Rate:	200 GPM @ 70 PSI		
Duty Pump Details:	12 HP/Pump	200 GPM @	180 TDH
Jockey Pump Details:	2 HP/Pump	30 GPM @	180 TDH
Incoming Power:	460 Volt / 3 Phase		
Model #			

BILL OF MATERIALS

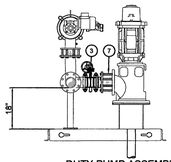
ITEM	DESCRIPTION	SIZE	Count
1	AIR RELIEF VALVE	1/4"	1
2	BUTTERFLY VALVE, GO, GV	2"	1
3	BUTTERFLY VALVE, GO, GV	4"	3
4	BUTTERFLY VALVE, GO	4"	2
5	CHECK VALVE, GROOVED	2"	1
6	CHECK VALVE, ENBEE	4"	1
7	CHECK VALVE, SILENT	4"	2
8	ELECTRICAL PANEL		1
9	PROPELLER FLOW METER	4"	1
10	FILTER, SAF 1500	4"	1
11	HIGH PRESSURE SWITCH	1/4"	1
12	HP RELIEF VALVE, ANGLED	2"	1
13	PRESSURE GAUGE	2-1/2"	2
14	PUMP, TURBINE	- HP	2
15	PUMP, JOCKEY, SUBMERSIBLE	- HP	1
16	PRESSURE SENSOR	1/4"	1
17	SKID	96X48	1



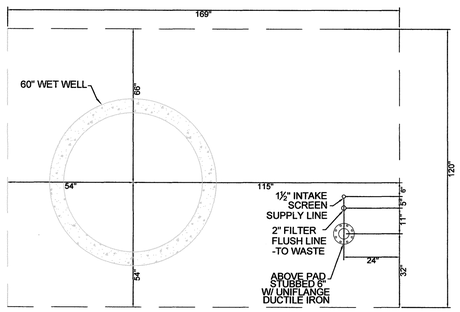
FRONT VIEW
PUMPS REMOVED FOR CLARITY



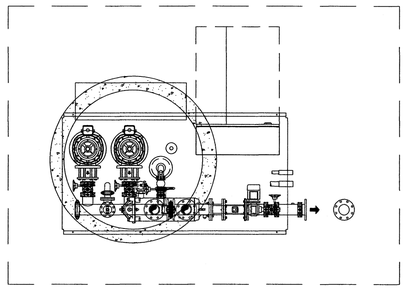
JOCKEY PUMP ASSEMBLY

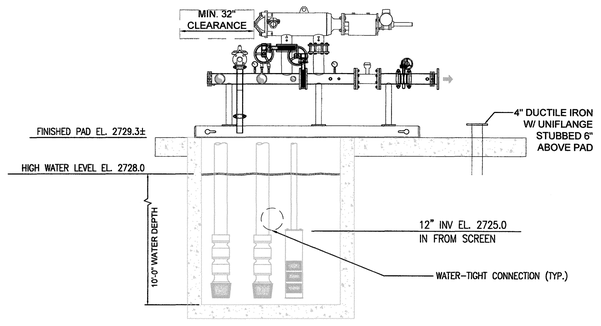


DUTY PUMP ASSEMBLY



CONCRETE PAD & WET WELL LAYOUT





SCOPE OF WORK

Packaged Pump Station supplier shall provide a variable speed vertical turbine pump station complete with pump, piping, valves, sensors, variable frequency drive (VFD), programmable logic controller (PLC), UL 508A listed control panel, and all appurtenances necessary for a complete and functioning pumping system. The station shall be mounted to press broke formed steel base and enclosed in a powder-coated marine grade aluminum enclosure. The pump station shall be manufactured by a UL QCZJ certified pump station manufacturer.

Technical Service and Support. The manufacturer shall provide access 24/7 phone support with a factory certified technician. The technician shall have access to all relevant data specific to the pump station, including specifications, submittal, shop drawings,programming, and detailed photos of the system.

Factory Testing. The pump station shall undergo and pass all of the following system performance tests: Hydrostatic testing that meets ANSI/HI specifications and standards; Flow testing that meets ANSI/HI 14.6 specifications and standards; and Vibration testing that meets ANSI/HI 9.6.4 Vibration Measurement and Allowable Values specifications and standards. The pumping system shall be flow tested as a complete unit, which shall include function testing of pumps, motors, instrumentation, appurtenances, and control panel. The results of all tests shall be available to the owner.

PRODUCTS

Piping, Valves, Skid Base, & Station Enclosure.

Piping. The station piping shall be standard wall pipe with grooved connections. Flanged or welded connections shall not be acceptable. Threaded connections between the main piping sections other than at the pump volute shall not be acceptable.

Valves. Gear Operated Butterfly style isolation valves--with grooved connections--shall be included on station suction and discharge piping. Flanged or threaded connections shall not be accepted. A non-slam check valve shall be included on the discharge of each pump. An air release valve shall be included, located immediately after the pump check valve.

Skid. The pump skid shall be made of 1/4" press broke A36 steel. No welded bases or open rail systems shall be acceptable.

Corrosion Protection. The pump skid and appurtenances shall be cleaned to bare steel and hot dip galvanized. All piping including elbows shall be galvanized inside and out. The pump station shall be pressure tested prior to galvanizing. No welding shall be performed after the pump station is galvanized. The skid an piping shall be warrantied for a period of 25 years.

Automatic Filter: The pump station shall include an automatic screen filter. The filter shall use suction scanning devices to automatically remove debris from the filter element. The filter shall be Amiad SAF or approved equal. Control logic for filter flush shall be included as part of the main control panel PLC programming.

Pump Control System

NEMA Rating. The VFD, PLC, and associated electrical equipment shall be mounted in a NEMA 12/NEMA 4 enclosure rated for indoor/outdoor installation depending on site location. To avoid potential water or rodent damage, VFD's mounted outside the main control panel are not acceptable.

Control Panel Manufacturing & Testing. The pump control panel shall be manufactured and listed by a UL508A Panel Shop. The panel shall be UL labeled as an "Enclosed Industrial Control Panel". The pump control panel shall be completely manufactured, tested and programmed prior to delivery to the job site.

Documentation. A color wiring schematic and pump nameplate information shall be permanently affixed to the inside of the control enclosure. All field terminal connections shall be numbered and labeled.

Cooling System. The control panel cooling system shall be appropriately sized for the ambient conditions. The cooling system shall not allow dust, insects or rodents inside the pump control panel. Two sets of spare filters shall be included with the pumping system.

Main Disconnect. A service-entrance rated, non-fused disconnect shall be mounted in the pump control panel and shall isolate all power to the control panel. The disconnect shall include an operating handle mounted on the control panel enclosure door that is mechanically interlocked to prevent entry while the disconnect is in the ON position. To prevent damage from vandalism, a disconnect external to the pump station enclosure shall not be accepted.

Overcurrent Protection. The VFD bridge rectifiers shall be protected from over current by an appropriately sized circuit breaker. Fuses are not acceptable.

Lightning & Surge Protection. The Pump Control Panel shall be equipped with transient voltage and surge arrestors.

Convenience Outlet. The Pump Control Panel shall be equipped with a duplex outlet.

Variable Frequency Drive (VFD). The VFD shall be appropriately sized to meet the FLA (full load amps) required by the pump motor, as stated on the motor nameplate. The VFD shall be manufactured by ABB Industrial Systems, Mitsubishi, or approved equal. Initial start-up and calibration shall be performed by a factory certified technician, which shall extend the warranty on the control panel to a total of three (3) years.

Programmable Logic Controller (PLC). The PLC shall be fully programmed prior to pump panel installation. The technician installing and programming the PLC is to be factory trained and certified by the PLC manufacturer. The PLC programming shall be non-proprietary, and the complete station programming shall be made available to the owner via a USB drive included with the station control panel.

PLC Operator Interface. The PLC shall be equipped with a 5.7" LCD color touchscreen. The operator interface shall allow the user to make adjustments to the PLC program locally without requiring any additional equipment such as a laptop computer. A VFD control keypad is not an acceptable substitution for the digital operator interface. The PLC shall have an Ethernet port to enable remote access.

To ensure that the control system warnings and parameters can be safely understood by a wide range of operators, the interface shall have user-selectable English or Spanish Interface

PLC Control Functions:

1. User settable Local or Remote control.
2. System Pressure Setpoint
3. Pump Sleep Settings, with two threshold modes: Sleep by Flow or Sleep by Frequency
4. System Protection Settings, including fault and warning parameters for low flow, high flow, low pressure, high pressure, restort trials and restart delay time.
5. Load Factory Default Settings, User Saved Default Settings.
6. Pre-Programmed Start-Up Routines to limit and/or delay starting and acceleration of the pump to eliminate excessive velocity and pressure. It shall also include initial start-up, mainline fill, power outage and automatic re-starts.

PLC Monitoring Functions

1. The LCD color touchscreen must be capable of alternating between English and Spanish during operation by an end-user accessible button located within an operator screen. The system diagnostic utility must be capable of being displayed in both English and Spanish.
2. Pump operating status, total pump run hours, motor frequency, motor amperage
3. System pressure, flow rate
4. Fault Log with time stamps and diagnostic utility.
5. Trend Data, with graphic display of system pressure, flow, motor frequency and amperage. Data shall be exportable to MS Excel.
6. USB port to upload, download of program, and data storage.

Web-Based Remote Monitoring and Control

The pump station control panel shall include a web-based remote control and monitoring system that can be accessed from any device with a web browser, such as a PC, tablet, or smart phone. No 3rd party application or software must be required for accessing this information. The web page shall include full graphical representation of the pump station and its features and shall be capable of remotely changing all operating parameters of the pump station. The pump station shall automatically send email or text alerts regarding warnings and faults and specify the station and specific fault/alarm.

The pump station manufacturer shall supply all required communication hardware except computer and computer accessories, including all necessary direct burial cable and antennas.

Instrumentation.

Pressure Gauges shall have a 304 stainless steel case, with bezel construction. Gauges shall have a 2.5" diameter and be liquid filled.

Pressure Transmitter(s) shall be constructed of stainless steel and rated for the pump station discharge pressure.

Flow Meter. The station shall include a micrometer flow meter. The flow meter shall have flange connections. Current and totalized flow shall be read at the pump control panel HMI. Inserion flow meters and sensors shall not be accepted.

High Pressure Switch shall be located on the station discharge manifold. It shall signal a system fault if the discharge pressure reaches a user-adjustable setting, with the adjustment mechanism located on the switch. The high pressure switch shall be IFM or approved equal.

Diaphragm Style Pressure Relief Valve shall protect the piping network by bypassing or relieving excess pressure and shall maintain close pressure limits without causing surges. If upstream pressure decreases below the spring setting, the valve shall close. The valve shall be a Cla-Val Co. Model No. 50-01/650-01 Pressure Relief and Pressure Sustaining Valve as manufactured by Cla-Val or approved equal. Filter relief piping shall be plumbed to the system wet well.

Pump Protection Shrouds

Each pump and motor shall be completely encased in a slotted PVC well casing. Both ends of the shall be thoroughly sealed to ensure that no water can enter at either end. Water shall only enter the casing through precision laser cut slots, which will not allow debris larger than can be passed entirely through the pump. All water entering the casing shall pass over, and cool the motor, prior to entering the pump.

PROFESSIONAL ENGINEER LICENSED 20305 STATE OF IDAHO JOSHUA H. MANN 5/12/22

REVISIONS
1/25/22
2/16/22
5/12/22

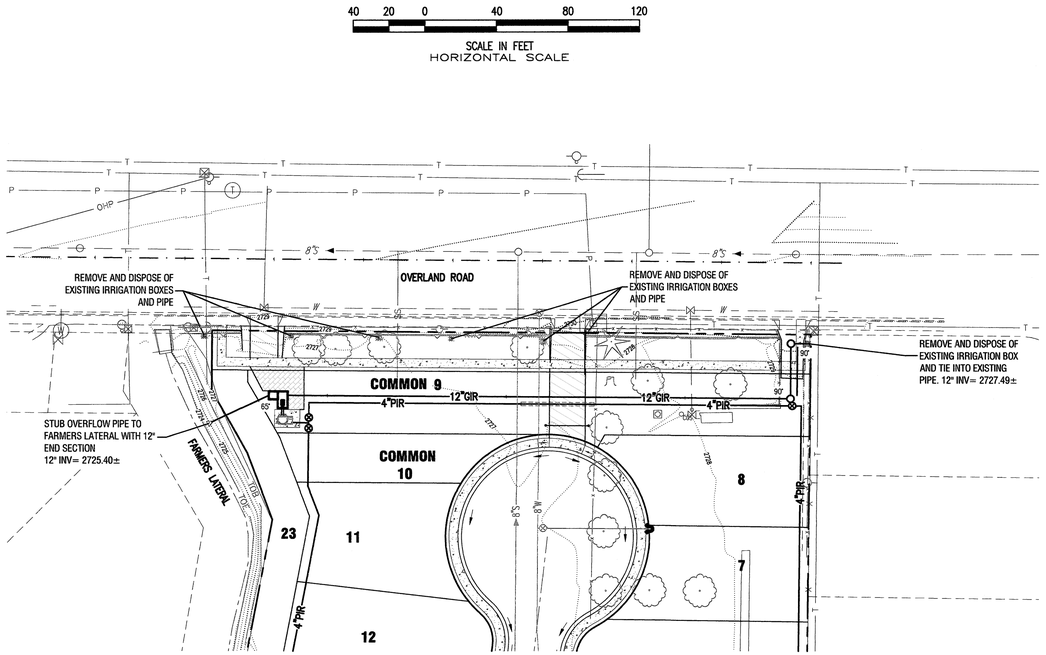
ENGINEERING SOLUTIONS, LLP
1029 N. ROSARIO STREET, SUITE 100
MERIDIAN, IDAHO 83642
Phone (208) 938-0980 Fax (208) 938-0941

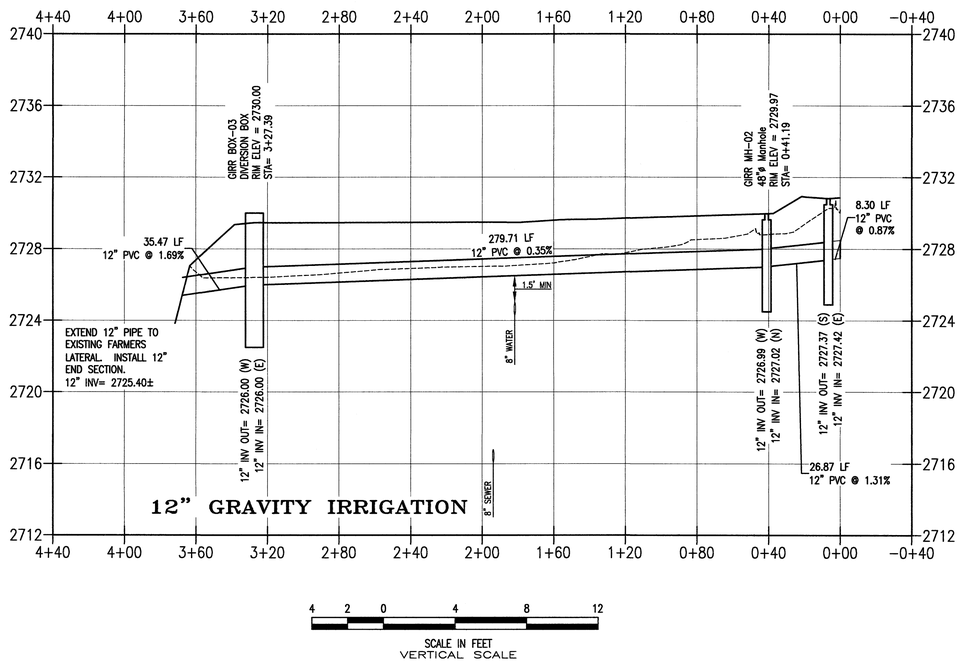
BOXELDER CREEK SUBDIVISION
LOCATED IN SECTION 23, T.3N., R.1E., B.M.
BOISE, ADA COUNTY, IDAHO

PRESSURE IRRIGATION PUMP STATION

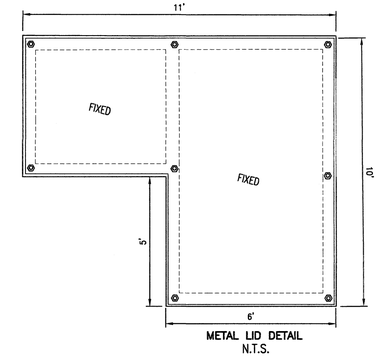
SCALE NTS
10/28/21
PROJ. NO. 200806
SHEET 9 OF 12
PMP-1
CONSTRUCTION/200806-PUMP.DWG

APPROVED FOR CONSTRUCTION
DATE: 05/12/2022





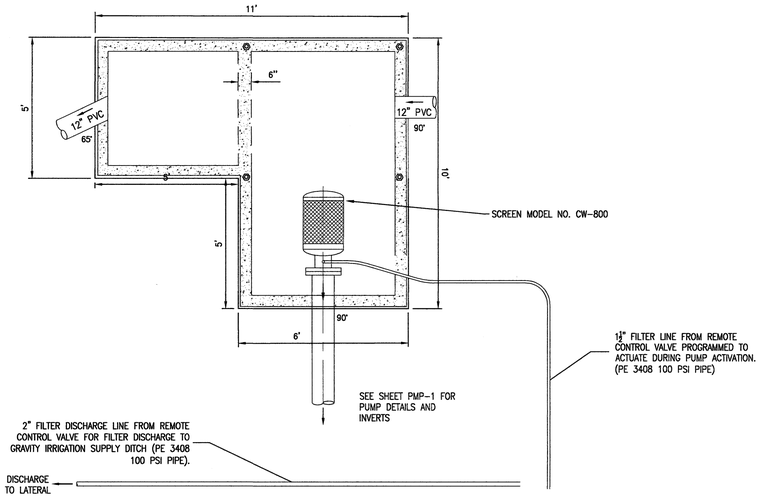
4 2 0 4 8 12
SCALE IN FEET
VERTICAL SCALE



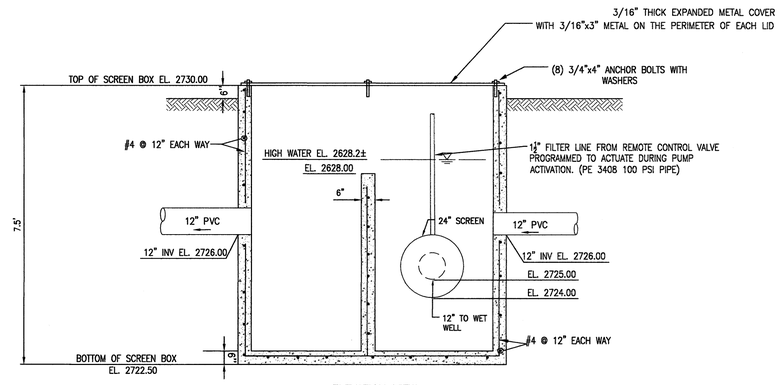
METAL LID DETAIL
N.T.S.

NOTES

1. ALL CONSTRUCTION MATERIALS AND INSTALLATION SHALL COMPLY WITH ISPWC LATEST STANDARD SPECIFICATIONS.
2. CONTRACTOR SHALL STRIP EXISTING GROUND AND BACKFILL TO 95% STANDARD PROCTOR IN 1' MAXIMUM LIFTS. COMPACTION TESTING AND INSPECTION SHALL BE PERFORMED BY A TESTING LABORATORY QUALIFIED TO PERFORM SUCH INSPECTIONS. COMPACTION TEST RESULTS MUST BE SUBMITTED TO THE PROJECT ENGINEER.
3. SEE PLAN/PROFILE FOR PIPE ANGLES, PIPE SIZES, ELEVATIONS AND DIRECTION FLOW.
4. MANHOLE STRUCTURES CAN BE PRECAST OR POUR IN PLACE. SEE DETAIL THIS SHEET FOR DIVERSION BOX DETAIL.



PLAN VIEW
N.T.S.



ELEVATION VIEW
N.T.S.

APPROVED FOR CONSTRUCTION
DATE: 05/12/2022

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STATE OF IDAHO
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1/25/22
2/16/22
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ENGINEERING SOLUTIONS, LLP
1029 N. ROSARIO STREET, SUITE 100
MERIDIAN, IDAHO 83642
Phone (208) 938-0980 Fax (208) 938-0941

BOXELDER CREEK SUBDIVISION

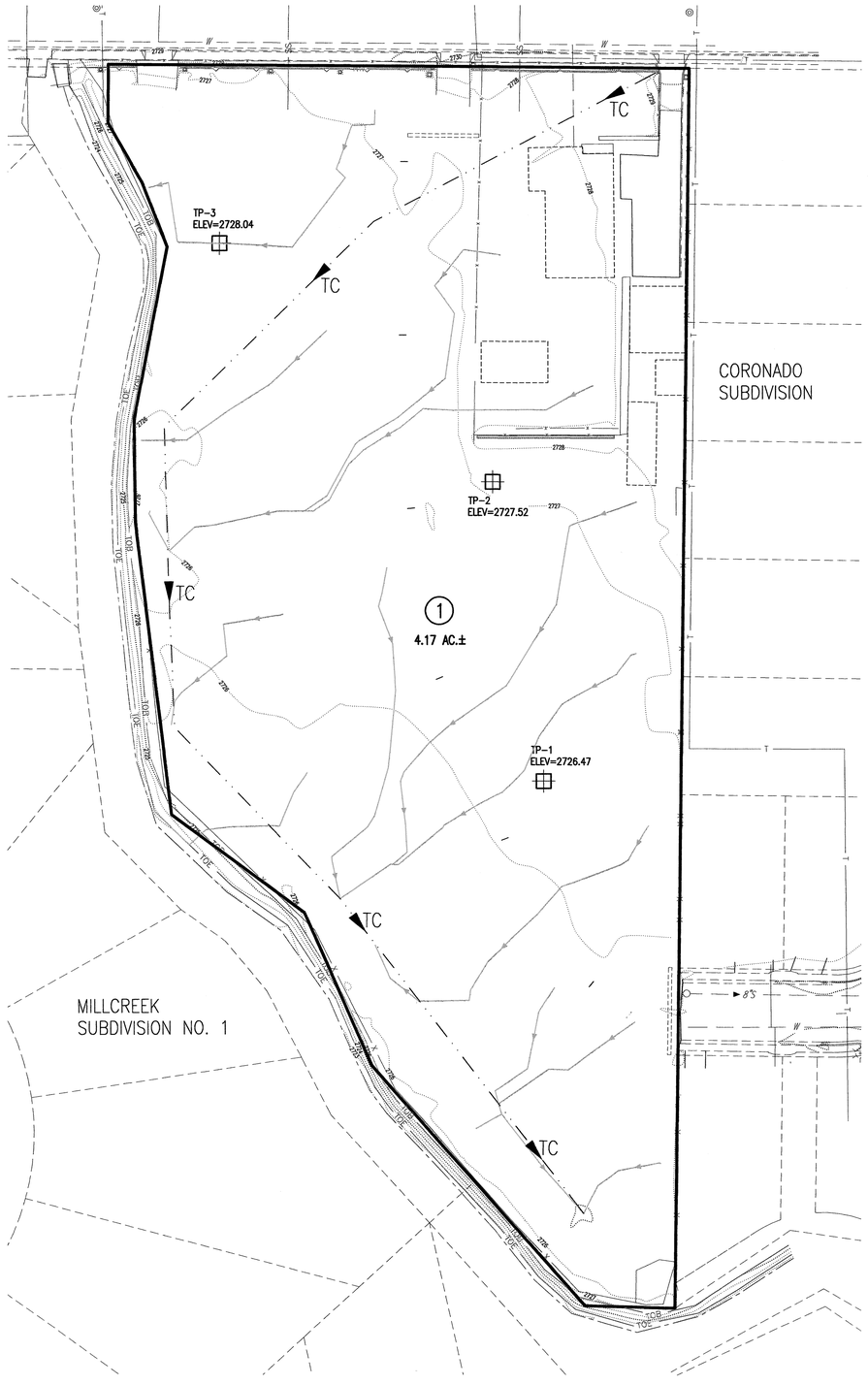
LOCATED IN SECTION 23, T.3N., R.1E., B.M.
BOISE, ADA COUNTY, IDAHO

GRAVITY IRRIGATION PLANS, DETAILS AND PROFILE

SCALE	1"=40' HORIZ 1"=4' VERT
DWG.DATE	10/28/21
PROJ. NO.	200806
SHEET	10 OF 12

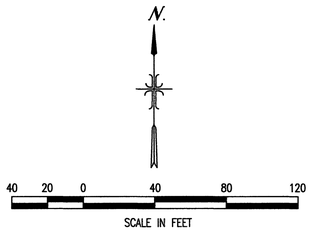
GIRR-1

CONSRUCTION/200806-GIRR.DWG



BOXELDER SUBDIVSION	Kinematic Equation from ACHD Spreadsheet
PRE-DEVELOPMENT	$t_c=(K_u/P_2^{0.4})*(nL/S^{0.5})^{0.6}$
	$t_c=(0.933/0.04^{0.4})*(nL/S^{0.5})^{0.6}$
Date: October 19, 2021	$t_c=3.38*(nL/S^{0.5})^{0.6}$
	L = distance traveled, in feet
Job Number: 200806	S = slope, in ft/ft
	N= mannings overland roughness coefficient
	N = 0.24 (dense grass)
	N = 0.06 (Cultivated Soils)
	P_2 = 2 yr 24 hour = 0.04

Area	Length (ft)	Slope (ft/ft)	Time of Concentration(min)
1	892	0.45	107.5



LEGEND

- ② / 4.17 AC.± — DRAINAGE BASIN NUMBER WITH ACRE AND BASIN BOUNDARY LINE
- TC — TIME OF CONCENTRATION
- SURFACE FLOW DIRECTION
- SUBDIVISION BOUNDARY
- 2500 — 5' CONTOUR LINE
- 2501 — 1' CONTOUR LINE
- TP-1 ELEV=2727.00 — TEST HOLE NUMBER AND GROUND ELEVATION AT T.H.

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REVISIONS
1/25/22
2/16/22
5/12/22

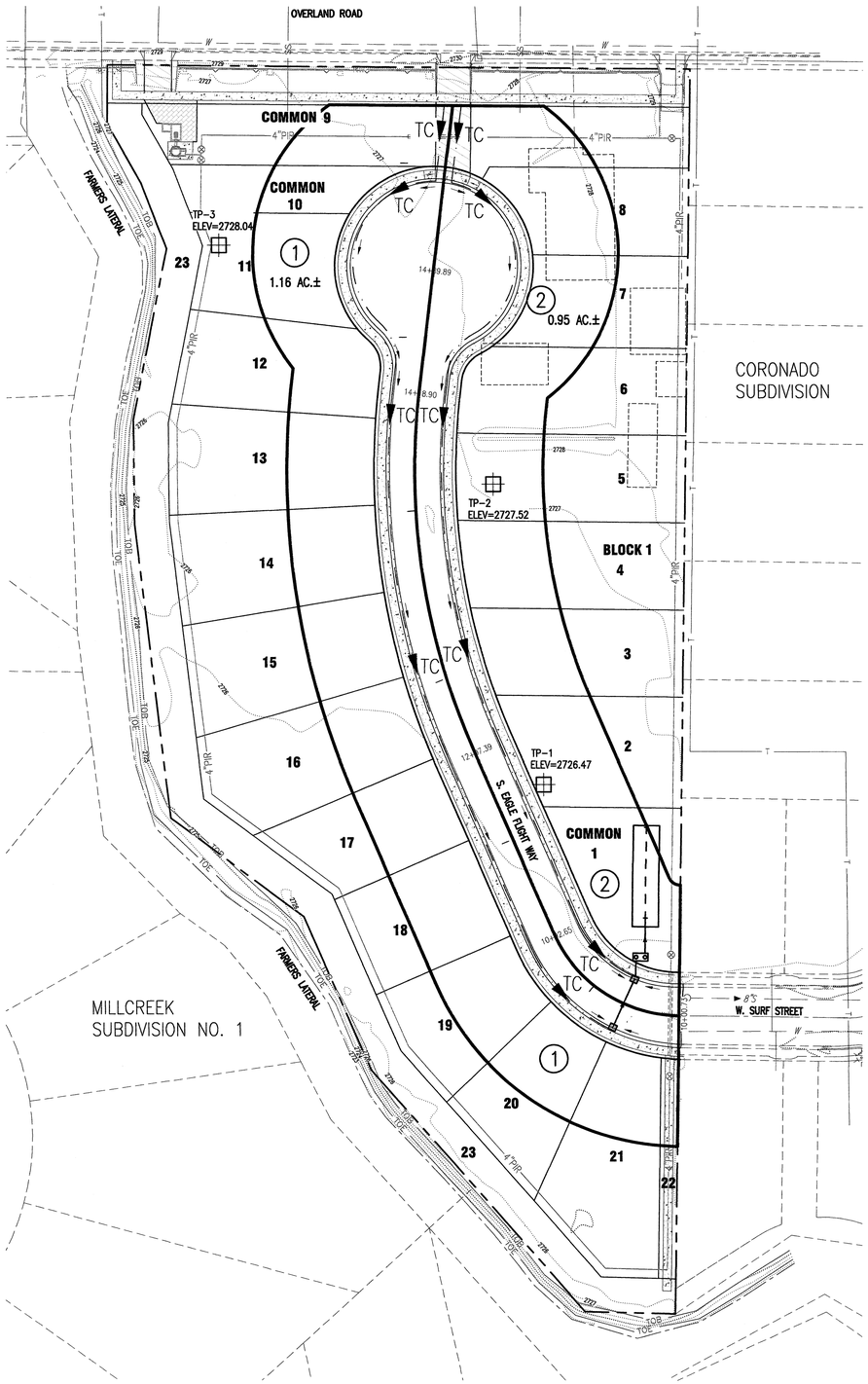
ENGINEERING SOLUTIONS, LLP
1029 N. ROSARIO STREET, SUITE 100
MERIDIAN, IDAHO 83642
Phone (208) 938-0980 Fax (208) 938-0941

BOXELDER CREEK SUBDIVISION
LOCATED IN SECTION 23, T.3N., R.1E., B.M.
BOISE, ADA COUNTY, IDAHO

SITE PRE-DEVELOPMENT DRAINAGE PLAN

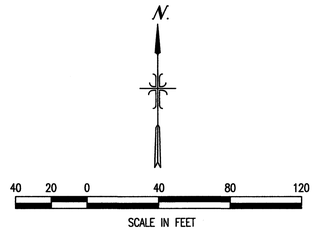
SCALE 1" = 40'
DWG.DATE 10/28/2021
PROJ. NO. 200806
SHEET 11 OF 12
DRN-1
CONSTRUCTION/200608-DRN.DWG

APPROVED FOR CONSTRUCTION
DATE: 05/12/2022



Boxelder Creek Subdivision			PEAK FLOW					STORM DRAINAGE VOLUME			
			Q_2 =0.50 I_2A	(Assumes C = 0.50)	Asphalt-Sidewalk			V_2 = Area * 468	(Assumes C = 0.50)	Water Quality Storm	I = 0.26"
Job No. : 200806			Q_{25} =0.50 I_{25}A	(Assumes C = 0.50)	Asphalt-Sidewalk			V_{25} = Area * 1242	(Assumes C = 0.50)		I = 0.69"
21-Jul-21			Q_{100} =0.50 I_{100}A	(Assumes C = 0.50)	Asphalt-Sidewalk			V_{100} = Area * 1728	(Assumes C = 0.50)		I = 0.96"

BASIN NO.	AREA (acres)	Tc (minutes)	I_2	I_{25}	I_{100}	Q_2 (cfs)	Q_{25} (cfs)	Q_{100} (cfs)	V_2 (cubic feet)	V_{25} (cubic feet)	V_{100} (cubic feet)
1	1.16	15.70	0.58	1.52	2.18	0.34	0.88	1.26	543	1441	2004
2	0.95	15.30	0.58	1.54	2.18	0.28	0.73	1.04	445	1180	1642
Seepage Bed No. 1	2.11	15.70	0.58	1.52	2.18	0.61	1.61	2.30	987	2621	3646



LEGEND

- ② / 0.75 AC.± — DRAINAGE BASIN NUMBER WITH ACRE AND BASIN BOUNDARY LINE
- TC — TIME OF CONCENTRATION
- STORM DRAINAGE COLLECTION SYSTEM
- STORM DRAIN BED
- SUBDIVISION BOUNDARY
- 2500 — 5' CONTOUR LINE
- 2501 — 1' CONTOUR LINE
- TP-1 ELEV=2727.00 — TEST HOLE NUMBER AND GROUND ELEVATION AT T.H.

APPROVED FOR CONSTRUCTION
DATE: 05/12/2022

PROFESSIONAL ENGINEER LICENSED 20305 5/12/22 STATE OF IDAHO JOSHUA H. MANN

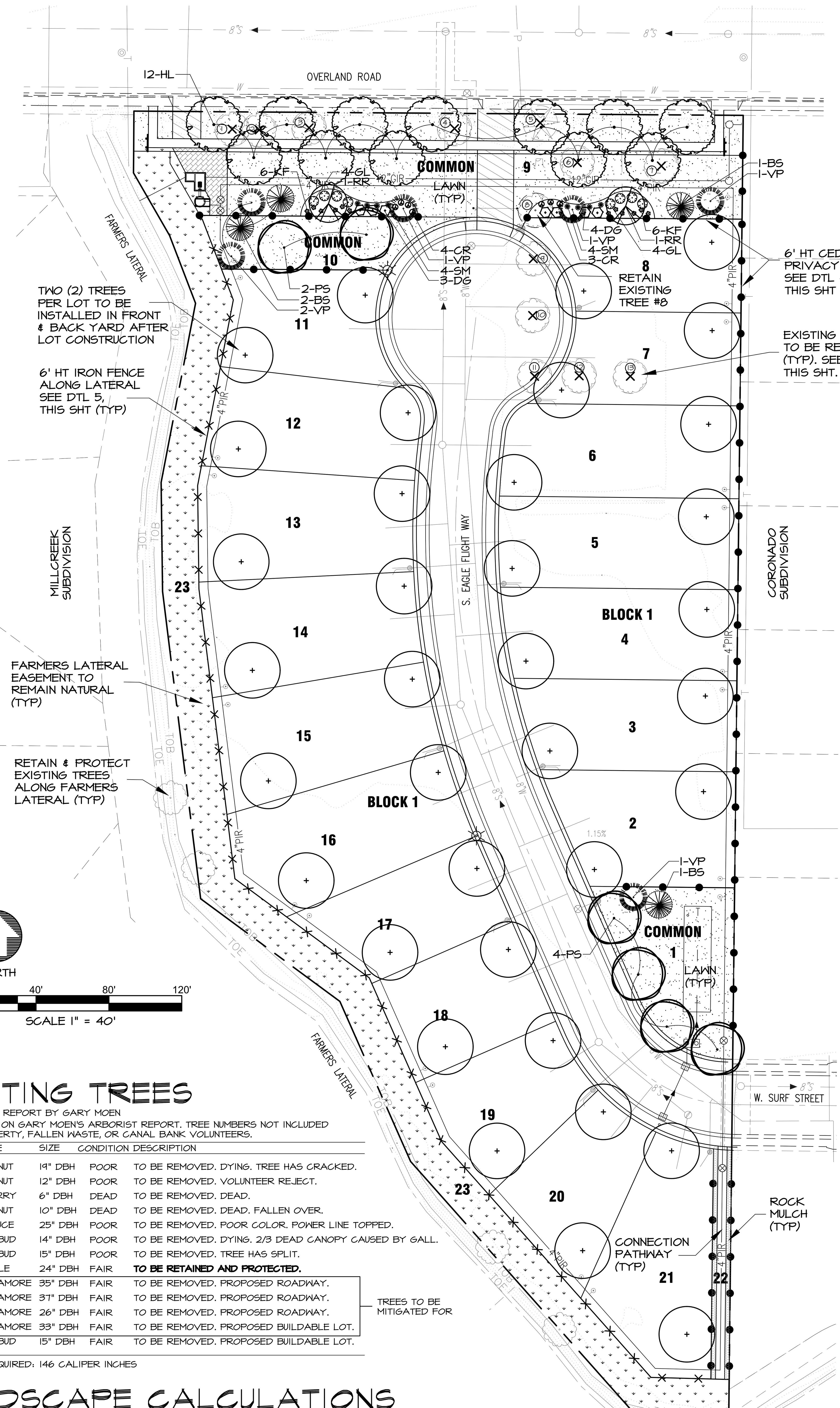
REVISIONS
1/25/22
2/16/22
5/12/22

ENGINEERING SOLUTIONS, LLP
1029 N. ROSARIO STREET, SUITE 100
MERIDIAN, IDAHO 83642
Phone (208) 938-0980 Fax (208) 938-0941

BOXELDER CREEK SUBDIVISION
LOCATED IN SECTION 23, T.3N., R.1E., B.M.
BOISE, ADA COUNTY, IDAHO

SITE DRAINAGE PLAN

SCALE 1" = 40'
DWG.DATE 10/28/2021
PROJ. NO. 200806
SHEET 12 OF 12
DRN-2
CONSTRUCTION/200608-DRN.DWG



EXISTING TREES

PER ARBORIST REPORT BY GARY MOEN

* TREE NUMBER ON GARY MOEN'S ARBORIST REPORT. TREE NUMBERS NOT INCLUDED ARE OFF PROPERTY, FALLEN WASTE, OR CANAL BANK VOLUNTEERS.

NO.	*	TYPE	SIZE	CONDITION	DESCRIPTION
1	9*	WALNUT	19" DBH	POOR	TO BE REMOVED. DYING. TREE HAS CRACKED.
2	10*	WALNUT	12" DBH	POOR	TO BE REMOVED. VOLUNTEER REJECT.
3	11*	CHERRY	6" DBH	DEAD	TO BE REMOVED. DEAD.
4	12*	WALNUT	10" DBH	DEAD	TO BE REMOVED. DEAD. FALLEN OVER.
5	17*	SPRUCE	25" DBH	POOR	TO BE REMOVED. POOR COLOR. POWER LINE TOPPED.
6	19*	REDBUD	14" DBH	POOR	TO BE REMOVED. DYING. 2/3 DEAD CANOPY CAUSED BY GALL.
7	18*	REDBUD	15" DBH	POOR	TO BE REMOVED. TREE HAS SPLIT.
8	20*	MAPLE	24" DBH	FAIR	**TO BE RETAINED AND PROTECTED.**
9	21*	SYCAMORE	35" DBH	FAIR	TO BE REMOVED. PROPOSED ROADWAY.
10	22*	SYCAMORE	37" DBH	FAIR	TO BE REMOVED. PROPOSED ROADWAY.
11	23*	SYCAMORE	26" DBH	FAIR	TO BE REMOVED. PROPOSED ROADWAY.
12	24*	SYCAMORE	33" DBH	FAIR	TO BE REMOVED. PROPOSED BUILDABLE LOT.
13	25*	REDBUD	15" DBH	FAIR	TO BE REMOVED. PROPOSED BUILDABLE LOT.

(Trees 9–12: TREES TO BE MITIGATED FOR)

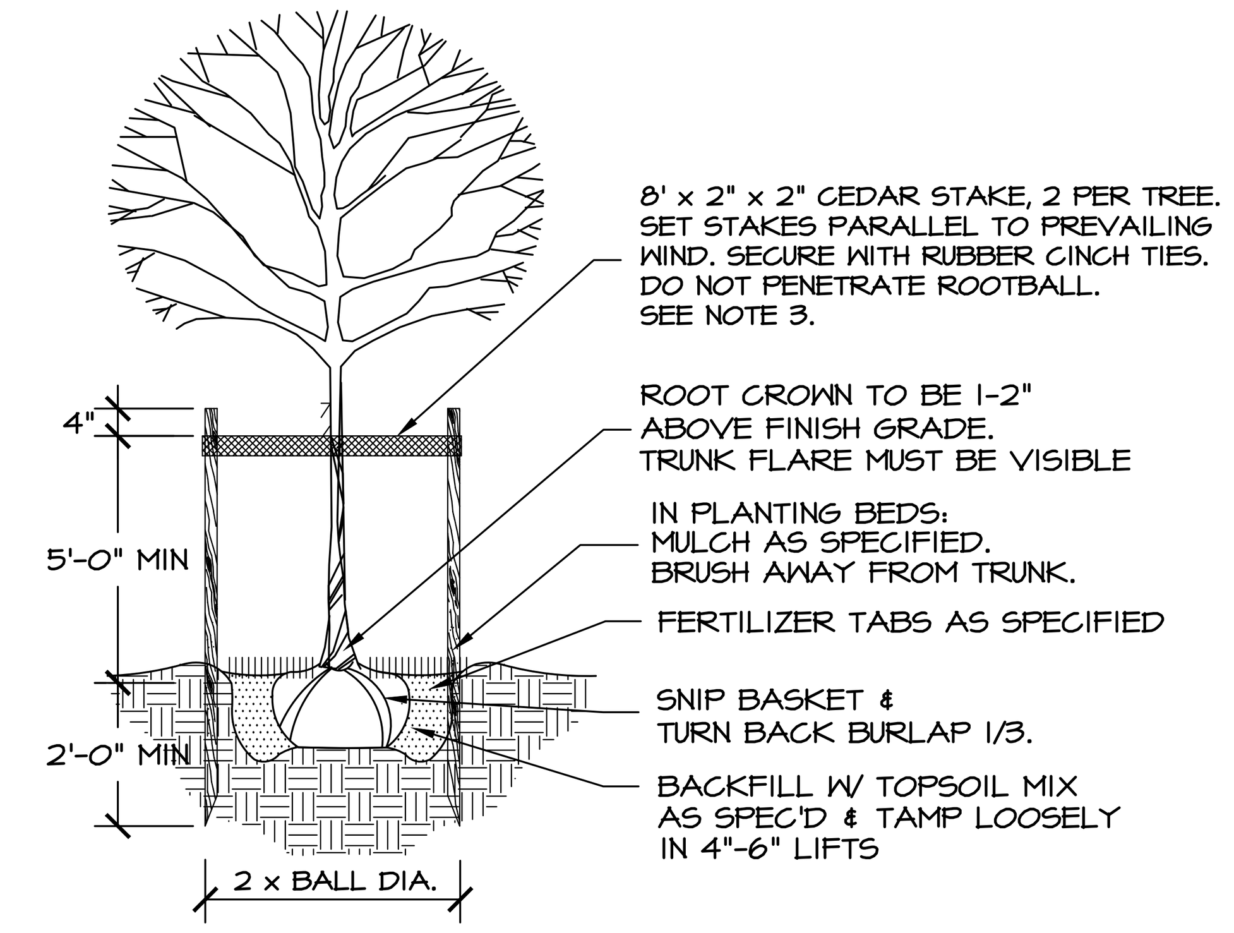
MITIGATION REQUIRED: 146 CALIPER INCHES

LANDSCAPE CALCULATIONS

LOCATION	BUFFER WIDTH	LENGTH	REQUIRED	PROVIDED
W. OVERLAND RD.	35'	295' / 40' =	7 TREES	20 TREES
COMMON AREA				10 TREES
TWO (2) TREES PER RESIDENTIAL LOTS				36 TREES
TOTAL NUMBER OF TREES:			7 TREES	66 TREES

MITIGATION (146" CAL INCHES REQUIRED):

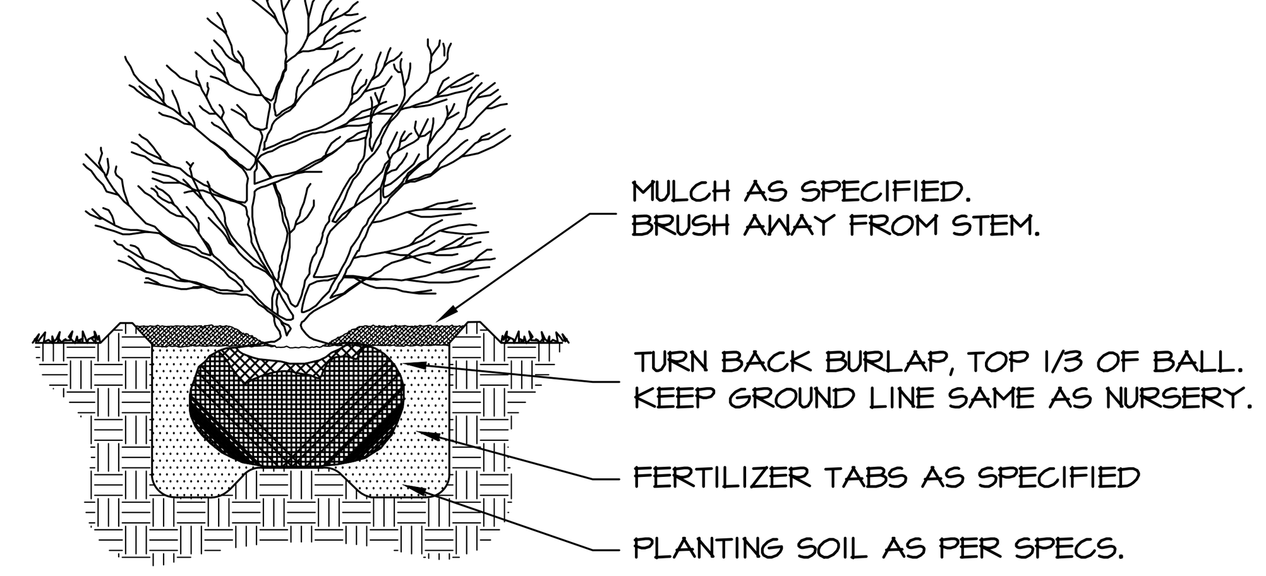
TWO (2) TREES PER RESIDENTIAL LOTS:	36 TREES x 2.5" CAL =	90"
ADDITIONAL BUFFER/COMMON LOT TREES:	23 TREES x 2.5" CAL =	57.5"
		147.5" CAL INCHES PROVIDED



NOTES:
1. REMOVE ALL TWINE, ROPE, OR BINDINGS FROM ALL TRUNKS.
2. REMOVE BURLAP AND WIRE BASKETS FROM THE TOP 1/3 OF ALL ROOT BALLS AFTER PLANTING. IF SYNTHETIC WRAP/BURLAP IS USED, IT MUST BE COMPLETELY REMOVED.
3. STAKING OF TREES TO BE THE CONTRACTOR'S OPTION; HOWEVER, THE CONTRACTOR IS RESPONSIBLE TO INSURE THAT ALL TREES ARE PLANTED STRAIGHT AND REMAIN STRAIGHT FOR A MIN OF 1 YEAR. ALL STAKING SHALL BE REMOVED AT THE END OF THE 1 YEAR WARRANTY PERIOD.
4. TREES PLANTED IN TURF AREAS: REMOVE TURF 3' DIA. FROM TREE TRUNK.

1 TREE PLANTING/STAKING

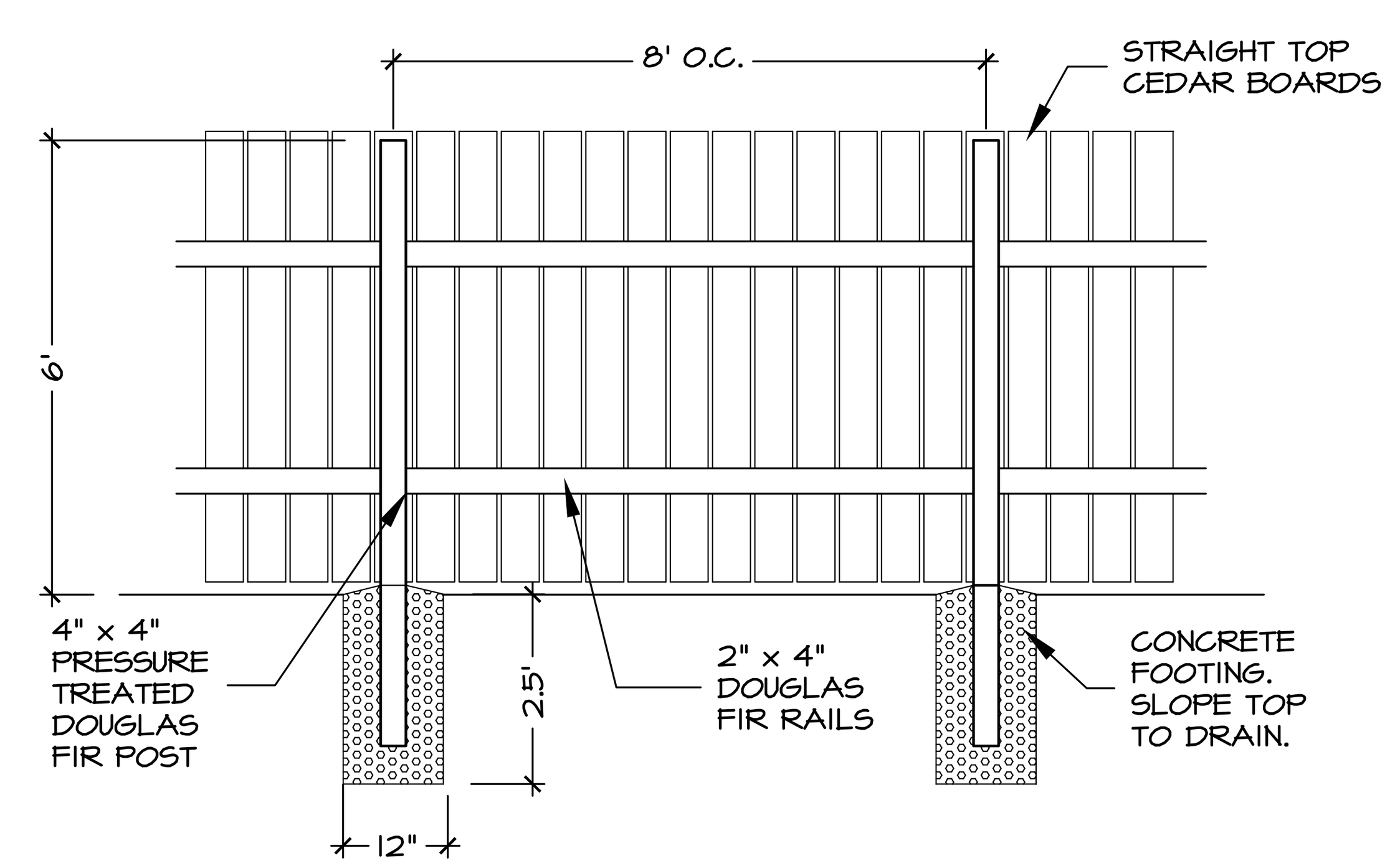
NOT TO SCALE



NOTE: DIG HOLE TWICE THE SIZE OF ROOTBALL.

2 SHRUB PLANTING

NOT TO SCALE



NOTE:
1. FENCE TO STEP DOWN TO 3' HEIGHT 20' FROM ROW.
2. FENCE STYLE MAY VARY SLIGHTLY.

4 CEDAR PRIVACY FENCE

NOT TO SCALE

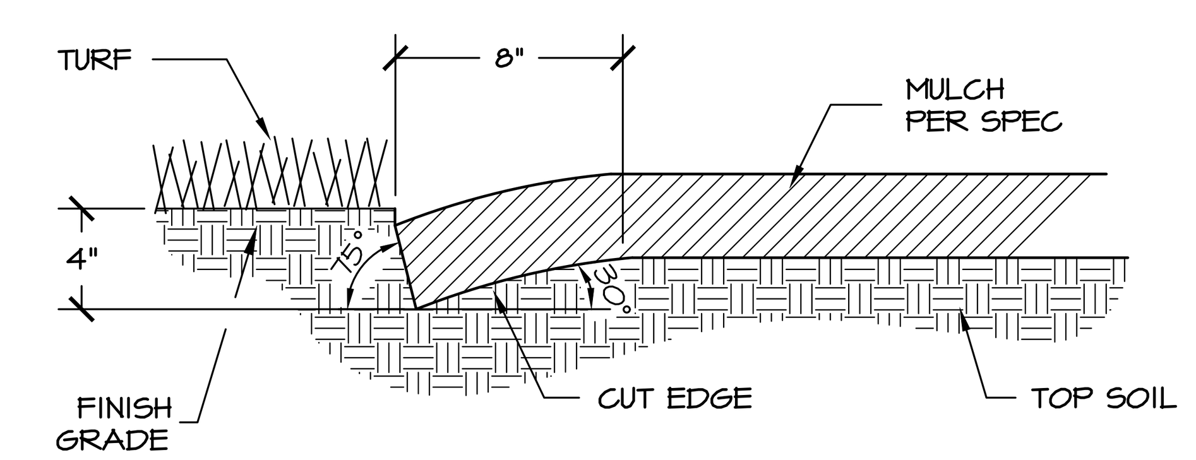
PLANT SCHEDULE

SYM	COMMON NAME	BOTANICAL NAME	SIZE
EVERGREEN TREES			
BS	HOOPS BLUE SPRUCE	PICEA PUNGENS 'HOOPSII'	8-10' HT B&B
VP	VANDERWOLFS PINE	PINUS FLEXILIS 'VANDERWOLFS'	8-10' HT B&B
SHADE/STREET TREES (CLASS II)			
HL	SKYLINE HONEYLOCUST	GLEDITSIA TRIACANTHOS INERMIS 'SKYCOLE'	2.5" CAL B&B
PS	PACIFIC SUNSET MAPLE	ACER TRUNCATUM x A. PLATANOIDES 'WARRENRED'	2.5" CAL B&B
ORNAMENTAL TREES (CLASS I)			
RR	ROYAL RAINDROPS CRABAPPLE	MALUS x 'JFS-KW5'	2.5" CAL B&B
SHRUBS/ORNAMENTAL GRASSES/PERENNIALS			
CR	RED FLOWER CARPET ROSE	ROSA 'FLOWER CARPET- NOARE'	3 GAL
DG	DARTS GOLD NINEBARK	PHYSOCARPUS OPULIFOLIUS 'DART'S GOLD'	5 GAL
GL	GRO-LOW SUMAC	RHUS AROMATICA 'GRO-LOW'	5 GAL
KF	KARL FOERSTER REED GRASS	CALAMAGROSTIS ARUNDINACEA 'K.F.'	1 GAL
SM	SLOWMOUND MUGO PINE	PINUS MUGO 'SLOWMOUND'	3 GAL

SOD LAWN — 6' CEDAR PRIVACY FENCE ALONG PERIMETER PROPERTY LINES. SEE DTL 4, THIS SHT (TYP) — 5' OPEN VISION IRON FENCE ALONG FARMERS LATERAL. SEE DTL 5, THIS SHT (TYP)

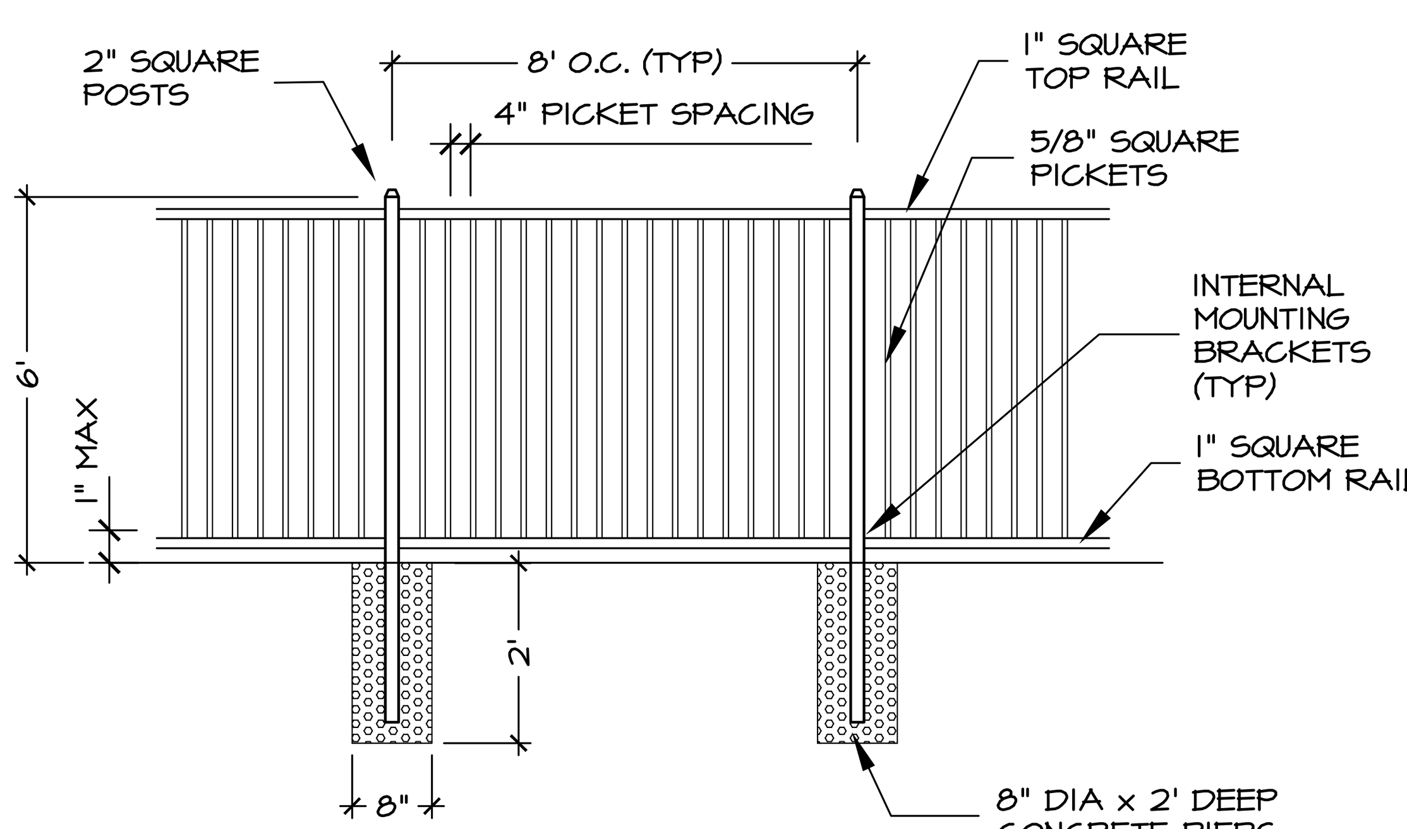
NOTES

1. ALL PLANTING AREAS SHALL BE INSTALLED BE IN ACCORDANCE WITH CITY OF BOISE CODE. REFER TO SHEET L2 - SPEC SECTION 32 90 00 - LANDSCAPE SPECIFICATIONS.
2. ALL PLANTING AREAS TO BE WATERED WITH AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM. REFER TO SHEET L2 - SPEC SECTION 32 84 00 - IRRIGATION PERFORMANCE SPECIFICATIONS.
3. LOCATE AND PROTECT ALL UTILITIES DURING CONSTRUCTION.
4. TREES SHALL NOT BE PLANTED WITHIN THE 10-FOOT CLEAR ZONE OF ALL STORM DRAIN PIPE, STRUCTURES, OR FACILITIES IN PARKSTRIPS. SEEPAGE BEDS MUST BE PROTECTED FROM ANY AND ALL CONTAMINATION DURING THE CONSTRUCTION AND INSTALLATION OF THE LANDSCAPE IRRIGATION SYSTEM. ALL SHRUBS PLANTED OVER OR ADJACENT TO SEEPAGE BEDS TO HAVE A ROOT BALL THAT DOES NOT EXCEED 18" IN DIAMETER. NO LAWN SOD TO BE PLACED OVER DRAINAGE SWALE SAND WINDOWS.
5. NO TREES SHALL IMPEDE THE 40' VISION TRIANGLE AT ALL INTERSECTIONS. NO CONIFEROUS TREES OR SHRUBS OVER 3' HIGH AT MATURITY WILL BE LOCATED WITHIN SIGHT TRIANGLE OR ROW. AS TREES MATURE, THE OWNER SHALL BE RESPONSIBLE FOR PRUNING TREE CANOPIES TO MEET REQUIREMENTS FOR MAINTAINING CLEAR VISIBILITY WITHIN 40' STREET VISION TRIANGLE.
6. TREES SHALL BE PLANTED NO CLOSER THAN 50' FROM INTERSECTION STOP SIGNS.
7. TREE LOCATIONS MAY BE ALTERED TO ACCOMMODATE UTILITIES. TREES SHALL NOT BE PLANTED WITHIN 5' OF WATER METERS OR UNDERGROUND UTILITY LINES.
8. PLANT LIST IS SUBJECT TO SUBSTITUTIONS OF SIMILAR SPECIES DUE TO PLANT MATERIAL AVAILABILITY. BURLAP AND WIRE BASKETS TO BE REMOVED FROM ROOT BALL AS MUCH AS POSSIBLE, AT LEAST HALFWAY DOWN THE BALL OF THE TREE. ALL NYLON ROPES TO BE COMPLETELY REMOVED FROM TREES.
9. EXISTING TREES ON SITE TO BE REMOVED EXCEPT ONE (1) AS NOTED. REFER TO EXISTING TREE TABLE, THIS SHEET.



3 PLANTER CUT BED EDGE

NOT TO SCALE



NOTES:
1. FENCE TO STEP DOWN TO 3' HEIGHT 20' FROM ROW.
2. ALL GALVANIZED & POWDERCOATED BLACK.

5 IRON FENCE

NOT TO SCALE

JENSENBELTS ASSOCIATES

Site Planning / Landscape Architecture

1509 Tyrell Lane, Ste 130 Boise, ID 83706 Ph. (208) 343-7175 www.jensenbelts.com

SURVEYOR
NV5 (TRAVIS P. FOSTER)
690 S. INDUSTRY WAY, STE 10
MERIDIAN, IDAHO 83642
PHONE (208) 342-5400

OWNER OF RECORD
COLSON FAMILY TRUST
9435 W. OVERLAND ROAD
BOISE, IDAHO 83709

DEVELOPER
STERLING LAND DEVELOPMENT, INC.
1159 E. IRON EAGLE DRIVE, STE. 170-H
EAGLE, IDAHO 83616
Phone (949) 226-4482

PLANNER / CONTACT
BECKY McKAY
1029 N. ROSARIO ST. STE 100
MERIDIAN, ID 83642
Phone (208) 938-0980
Fax (208) 938-0941

REVISIONS
1. EXISTING TREE TABLE 12/21/21
2. TREE MITIGATION 1/28/22
3. CITY COMMENTS 5/11/22

ENGINEERING SOLUTIONS LLP
1029 N. ROSARIO ST. STE 100
MERIDIAN, IDAHO 83642
Phone (208) 938-0980 Fax (208) 938-0941

BOXELDER CREEK SUBDIVISION

FINAL PLAT LANDSCAPE PLAN

LOCATED IN THE NW 1/4 OF THE NE 1/4 OF SECTION 23 TOWNSHIP 3 NORTH, RANGE 1 EAST, B.M. BOISE, ADA COUNTY, IDAHO

SCALE	AS SHOWN
DWG.DATE	12/07/21
PROJ. NO.	JBA-2125
SHEET	1 of 2
	L1

SECTION 32 90 00 - LANDSCAPE WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections.

1.2 SUMMARY
A. This Section includes provisions for the following items:
1. Trees.
2. Shrubs; Ground cover.
3. Lawns.
4. Topsoil and Soil Amendments.
5. Miscellaneous Landscape Elements.
6. Initial maintenance of landscape materials.
B. Related Sections: The following sections contain requirements.
1. Underground sprinkler system is specified in Section 32 84 00 - Irrigation

1.3 QUALITY ASSURANCE
A. Subcontract landscape work to a single firm specializing in landscape work.
B. Source Quality Control:
1. General: Ship landscape materials with certificates of inspection required by governing authorities. Comply with regulations applicable to landscape materials.
2. Do not make substitutions. If specified landscape material is not obtainable, submit proof of non-availability to Architect, with proposal for use of equivalent material.
3. Analysis and Standards: Package standard products with manufacturer's certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists, wherever applicable.
4. Trees, Shrubs and Groundcovers: Provide trees, shrubs, and groundcovers of quantity, size, genus, species, and variety shown and scheduled for work complying with recommendations and requirements of ANSI Z60.1 "American Standard for Nursery Stock". Provide healthy, vigorous stock, grown in recognized nursery in accordance with good horticultural practice and free of disease, insects, eggs, larvae, and defects such as knots, sun-scald, injuries, abrasions, or disfigurement.
5. Label at least one tree and one shrub of each variety with attached waterproof tag with legible designation of botanical and common name.
a. Where formal arrangements or consecutive order of trees or shrubs are shown, select stock for uniform height and spread.
6. Inspection: The Architect may inspect trees and shrubs either at place of growth or at site before planting, for compliance with requirements for genus, species, variety, size, and quality. Architect retains right to further inspect trees and shrubs for size and condition of balls and root systems, insects, injuries and latent defects, and to reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from project site.

1.4 SUBMITTALS
A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
B. Plant and Material Certifications:
1. Certificates of inspection as required by governmental authorities.
2. Manufacturer's or vendor's certified analysis for soil amendments and fertilizer materials.
3. Label data substantiating that plants, trees, shrubs and planting materials comply specified requirements.
C. Mulch: Submit 1 gal bag of mulch sample for approval.

1.5 DELIVERY, STORAGE AND HANDLING
A. Sod: Time delivery so that sod will be placed within 24 hours after stripping. Protect sod against drying and breaking of rolled strips.
B. Trees and Shrubs: Provide freshly dug trees and shrubs. Do not prune prior to delivery unless otherwise approved by Architect. Do not bend or bind-tie trees or shrubs in such manner as to damage bark, break branches, or destroy natural shape. Provide protective covering during delivery. Do not drop balled and burlapped stock during delivery.
C. Deliver trees and shrubs after preparations for planting have been completed and plant immediately. If planting is delayed more than 6 hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage, and keep roots moist by covering with mulch, burlap or other acceptable means of retaining moisture.
D. Do not remove container-grown stock from containers until planting time.
E. Do not drop or dump materials from vehicles during delivery or handling. Avoid any damage to rootballs during deliver, storage and handling.

1.6 JOB CONDITIONS
A. Utilities: Determine location of underground utilities and work in a manner which will avoid possible damage. Hand excavate, as required. Maintain grade stakes until removal is mutually agreed upon by parties concerned.
B. Excavation: When conditions detrimental to plant growth are encountered, such rubble fill, adverse drainage conditions, or obstructions, notify Architect before planting.
C. Adjacent Landscape: Protect planted areas adjacent to construction area. Replace or recondition to prior conditions at project completion.

1.7 SEQUENCING AND SCHEDULING
A. Planting Time: Proceed with, and complete landscape work as rapidly as portions of site become available, working within seasonal limitations for each kind of landscape work required.
1. Plant or install all plant materials during normal planting seasons from 15 March to 15 November.
2. Correlate planting with specified maintenance periods to provide maintenance from date of substantial completion.
B. Coordination with Lawns: Plant trees and shrubs after final grades are established and prior to planting of lawns, unless otherwise acceptable to Architect. If planting of trees and shrubs occurs after lawn work, protect lawn areas and promptly repair damage to lawns resulting from planting operations.

1.8 SPECIAL PROJECT WARRANTY
A. Warranty lawns through specified lawn maintenance period, until Final Project Acceptance.
B. Warranty trees and shrubs, for a period of one year after date of substantial completion, against defects including death and unsatisfactory growth, except for defects resulting from neglect by Owner, abuse or damage by others, or unusual phenomena or incidents beyond Landscape Installer's control.
C. Remove and replace trees, shrubs, or other plants dead or in unhealthy condition during warranty period. Make replacements during growth season following end of warranty period. Replace trees and shrubs which are in doubtful condition at end of warranty period; unless, in opinion of Architect, it is advisable to extend warranty period for a full growing season.

PART 2 - PRODUCTS

2.1 TOPSOIL
A. If deemed usable, native topsoil shall be stockpiled for re-use in landscape work. Topsoil shall be fertile, friable, natural loam, surface soil, reasonable free of subsoil, clay lumps, brush, weeds, roots, stumps, stones larger than 1 inch in any dimension, and other extraneous or toxic matter harmful to plant growth.
1. Contractor shall send a minimum of three (3) representative topsoil samples for testing. See testing requirements below. Contractor is responsible for whatever soil additives are recommended by the tests. Submit to Architect for approval. Compost will be added to other additives and added regardless of test results.
B. If quantity of stockpiled topsoil is insufficient, contractor to provide imported topsoil that is fertile, friable, natural loam, surface soil, reasonably free of subsoil, clay lumps, brush, weeds and other litter, and free of roots, stumps, stones larger than 1 inches in any dimension, and other extraneous or toxic matter harmful to plant growth.
1. Obtain topsoil from local sources or areas with similar soil characteristics to that of project site. Obtain topsoil only from naturally well-drained sites where topsoil occurs in a depth of not less than 4 inches. Do not obtain from bogs or marshes.
2. Composition: Topsoil shall contain from 1 to 20% organic matter as determined by the Organic Carbon, 6A, Chemical Analysis Method described in USDA Soil Survey Investigation Report No. 1. Maximum particle size, 3/4-inch, with maximum 3% retained on 1/4-inch screen.
Other components shall conform to the following limits:

pH	6.5 to 7.5
Soluble Salts	600 ppm maximum
Silt	25-50%
Clay	10-30%
Sand	20-50%

3. Contractor shall submit representative soil report on imported topsoil proposed for use for approval. Report shall meet standards below. Contractor is responsible for whatever soil additives are recommended by the test. Compost will be in addition to other additives and added regardless of test results.

C. Soil Testing
1. Soil tests are required for this project (see above for requirements). Test shall be provided as follows:
a. Provide certified analysis at time of sample submitted (three samples imported topsoil). Amend soils per chemist's recommendations and as herein specified unless otherwise approved by Architect.
2. Test shall include, but not limited to recommendations on chemical distributions, organic contents, pH factors, and sieve analysis as necessary. Test #1T by Western Laboratories (1-800-658-3858) is required.
3. Contractor is responsible for whatever soil additives are recommended by the soil testing laboratory.
4. Contractor shall coordinate, obtain and pay for all soil tests.
5. If regenerative noxious weeds are present in the soil, remove all resultant growth including roots throughout one-year period after acceptance of work, at no cost to Owner.

2.2 pH ADJUSTERS
A. When pH does not comply with this specification, commercial grade aluminum sulfate shall be used to adjust soil pH.

2.3 SOIL AMENDMENTS
A. Compost: Compost: “Cascade Compost” from Cloverdale Nursery (208) 375-5262 and NuSoil Compost (208) 629-6912 or approved equal in equal amounts by volume.
B. Commercial Fertilizer: Fertilizer shall be complete, standard commercial brand fertilizer. It shall be free-flowing and packaged in new waterproof, non-overlaid bags clearly labeled as to weight, manufacturer, and content. Protect materials from deterioration during delivery and while stored at site.
1. Commercial fertilizer "A" for trees and shrubs during planting; slow release Agriform Planting 5-gram tablets 20-10-5 type or equal.
2. Commercial fertilizer "B" for lawn areas, applied to bed prior to seeding or sodding, to be 16-16-17 applied at the rate of ten pounds per acre.
3. Commercial fertilizer "C" for lawn areas three to four weeks after planting (sod) or after first mowing (seed). Organic Fertilizer Milorganite (6-0-2) type or equal.
C. Herbicide: Pre-emergent for topical application in planting beds. Oxiadiazon 2G brand or pre-approved equal. Use in accordance with manufacturer's recommendation on all planting beds.

2.4 PLANT MATERIALS
A. Quality: Provide trees, shrubs, and other plants of size, genus, species, and variety shown for landscape work and complying with recommendations and requirements of ANSI Z60.1 "American Standard for Nursery Stock".
B. Deciduous Trees: Provide trees of height and caliper scheduled or shown with branching configuration recommended by ANSI Z60.1 for type and species required. Single stem trees except where special forms are shown or listed.
C. Deciduous Shrubs: Provide shrubs of the height shown or listed, not less than minimum number of canes required by ANSI Z60.1 for type and height of shrub.
D. Coniferous and Broadleafed Evergreens: Provide evergreens of sizes shown or listed. Dimensions indicate minimum spread for spreading and semi-spreading type evergreens and height for other types, such as globe, dwarf, cone, pyramidal, broad upright, and columnar. Provide normal quality evergreens with well balanced form complying with requirements for other size relationships to the primary dimension shown.

2.5 GRASS MATERIALS
A. Lawn sod: Provide strongly rooted sod, not less than 1 growing season old, and free of weeds and undesirable native grasses. Provide only sod capable of growth and development when planted (viable, not dormant).
1. Provide sod of uniform pad sizes with maximum 5% deviation in either length or width. Broken pads or pads with uneven ends will not be acceptable. Sod pads incapable of supporting their own weight when suspended vertically with a firm grasp on upper 10% of pad will be rejected.
B. Provide sod composed of: Rhizomatous Tall Fescue (RTF) from the The Turf Company, Meridian, ID (208) 888-3760 or approved equal.

2.6 MISCELLANEOUS LANDSCAPE MATERIALS
A. Anti-Desiccant: Emulsion type, film-forming agent designed to permit transpiration, but retard excessive loss of moisture from plants. Deliver in manufacturer's fully identified containers and mix in accordance with manufacturer's instructions.
B. Mulch: Mulch for planting beds shall be medium ground bark mulch, free of splinters, consistent in appearance, and shall contain no toxic substance detrimental to plant life.
C. Stakes and Guys: Provide stakes and deadmen of sound new hardwood, treated softwood, or redwood, free of knot holes and other defects. Provide wire ties and guys of 2-strand, twisted, pliable galvanized iron wire, not lighter than 12 ga. with zinc-coated turnbuckles. Provide not less than 2 inch diameter rubber or plastic hose, cut to required lengths and of uniform color, material, and size to protect tree trunks from damage by wires.

PART 3 - EXECUTION

3.1 PREPARATION - GENERAL
A. General Contractor shall be responsible for excavating planting areas to appropriate depths for placement of topsoil as specified herein.
B. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations and outline areas and secure Architect's acceptance before start of planting work. Make minor adjustments as may be required.

3.2 PREPARATION OF PLANTING SOIL
A. Before mixing, clean topsoil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful or toxic to plant growth.
B. Mix specified compost and fertilizers with topsoil at rates specified. Delay mixing fertilizer if planting will not follow placing of planting soil in a few days.
Compost: Lawn Areas: 1/4 compost, : 3/4 topsoil.
Shrub Areas: 1/3 compost, 2/3 topsoil.
Fertilizer: Per soil test and manufacture's recommendations.
C. For shrub and lawn area, mix planting soil either prior to planting or apply on surface of topsoil and mix thoroughly before planting.

3.3 PREPARATION FOR PLANTING LAWNS
A. After excavating and removing surface material to proper depth, loosen subgrade of lawn areas to a minimum depth of 4 inches. Remove stones measuring over 1-1/2 inches in any dimension. Remove sticks, roots, rubbish, and other extraneous matter. Limit preparation to areas which will be planted promptly after preparation.
1. Spread topsoil mix to minimum depth of 4 inches for sodded lawns as required to meet lines, grades, and elevations shown, after light rolling, addition of amendments, and natural settlement. Place approximately 1/2 of total amount of topsoil required. Work into top of loosened subgrade to create a transition layer and then place remainder of planting soil. Add specified soil amendments as required and mix thoroughly into upper 4 inches of topsoil.

3.4 PREPARATION OF PLANTING BEDS
A. Loosen subgrade of planting areas to a minimum depth of 6 inches using a culti-mulcher or similar equipment. Remove stones measuring over 1 1/2 inches in any dimension. Remove stocks, stones, rubbish, and other extraneous matter.
B. Spread planting soil mixture to minimum 12 inch depth required to meet lines, grades, and elevations shown, after light rolling and natural settlement. Add 1 1/2 inches of specified compost over entire planting area and mix thoroughly into upper 6 inches of topsoil. Place approximately 1/2 of total amount of planting soil required. Work into top of loosened subgrade to create a transition layer, then place remainder of the planting soil.
C. Apply Pre-Emergent per manufacturer's recommendation.

3.5 PLANTING TREES AND SHRUBS
A. Set balled and burlapped (B&B) stock on layer of compacted planting soil mixture, plumb and in center of pit or trench with top of ball at same elevation as adjacent finished landscape grades. Remove burlap from sides of balls; retain on bottoms. When set, place additional backfill around base and sides of ball, and work each layer to settle backfill and eliminate voids and air pockets. Place fertilizer tablets in excavated area per manufacture's written instructions. When excavation is approximately 2/3 full, water roughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill. Remove all ties from around base of trunk.
B. Set container grown stock, as specified, for balled burlapped stock, except cut cans on 2 sides with an approved can cutter and remove can; remove bottoms of wooden boxes after partial backfilling so as not to damage root balls.
C. Trees planted in turf area: Remove turf 3' dia around tree trunk. Dish top of backfill to allow for mulching.
D. Mulch pits, and planted areas. Provide not less than following thickness of mulch, and work into top of backfill and finish level with adjacent finish grades.
1. Provide 3 inches thickness of mulch.
E. If season and weather conditions dictate, apply anti-desiccant, using power spray, to provide an adequate film over trunks, branches, stems, twigs and foliage.
F. Prune, thin out, and shape trees and shrubs in accordance with standard horticultural practice. Prune trees to retain required height and spread. Unless otherwise directed by Architect, do not cut tree leaders, and remove only injured or dead branches from flowering trees, if any. Prune shrubs to retain natural character.
G. Remove and replace excessively pruned or misformed stock resulting from improper pruning.
H. Guy and stake trees immediately after planting, as indicated.
I. Apply approved herbicide to all shrub bed areas at manufacture specified rate. Re-apply as necessary for elimination of weeds.

3.6 SODDING NEW LAWNS
A. General: Install lawn sod in all areas designated on the drawings.
B. Soil Preparation
1. Any sod lawn areas that may have become compacted prior to sodding must be scarified to a depth of eight (8) inches by approved means, then finish graded as hereinbefore described.
C. Lay sod within 24 hours from time of stripping. Do not plant dormant sod or if ground is frozen.
D. Sod Placement
1. Sod will be brought onto lawn areas by wheeled means with proper protection of sod beds. Sod layers shall be experienced, or if inexperienced, shall be constantly supervised by an experienced foreman. The Contractor shall insure that the base immediately ahead of sod layer is moist. Sod shall be laid tight with not gaps. Allowance shall be made for shrinkage. Lay sod with long edges perpendicular to primary slope.
2. Lay to form a solid mass with tightly fitted joints. Butt ends and sides of strips; do not overlap. Stagger strips to offset joints in adjacent courses. Work on boards to avoid damage to subgrade or sod. Tamp or roll lightly to ensure contact with subgrade. Work sifted soil into minor cracks between pieces; remove excess to avoid smothering of adjacent grass.
3. Sod shall be rolled with a two hundred (200) pound roller after installation to insure proper contact between soil and sod. Final rolling must provide a uniform surface. After final rolling, the sod lawn shall be mowed and watered. Approval of sod lawns shall be based on uniform, healthy and vigorous growth with no dry or dead spots.
4. Add fertilizer "B" at the manufacturer's recommended application rate.
E. Water sod thoroughly with a fine spray immediately after planting.
F. Sodded Lawn Establishment
1. The Contractor shall be responsible for first mowing, subsequent mowings and fertilizing of sod lawn areas until Final Acceptance of the project.
2. Mowing shall be done by an approved "reel" type mower. Mower blades shall be set at two (2) inches high for all mowings.
3. Subsequent fertilizing shall occur three to four weeks after installation. Apply fertilizer as per the Manufacturer's recommended application rate. Verify all methods of application. Contractor shall notify the Architect in writing that the fertilizer applications have occurred and on what dates.

3.7 MAINTENANCE
A. Begin landscape maintenance immediately after planting. Maintenance shall continue until Project Final Acceptance.
B. Maintain trees, shrubs, and other plants by pruning, cultivating, and weeding as required for healthy growth. Restore planting saucers. Tighten and repair stake and guy supports and reset trees and shrubs to proper grades or vertical position as required. Restore or replace damaged wrappings. Spray as required to keep trees and shrubs free of insects and disease.
C. Maintain lawns by watering, fertilizing, weeding, mowing, trimming, and other operations such as tolling, regrading and replanting as required to establish a smooth, acceptable lawn, free of eroded or bare areas.
D. Maintain lawns for no less than period stated above, or longer as required to establish acceptable lawn.

3.8 CLEANUP AND PROTECTION
A. During landscape work, keep pavements clean and work area in an orderly condition.
B. Protect landscape work and materials from damage due to landscape operations, operations by other contractors and trades, and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged landscape work as directed.

3.9 INSPECTION AND ACCEPTANCE
A. When landscape work is completed, including maintenance, Architect will, upon request, make an inspection to determine acceptability.
B. When inspected landscape work does not comply with requirements, replace rejected work and continue specified maintenance until reinspected by Architect and found to be acceptable. Remove rejected plants and materials promptly from project site.

END OF SECTION

SECTION 32 84 00 - IRRIGATION (PERFORMANCE)

PART 1 - GENERAL

1.1 CONDITIONS AND REQUIREMENTS:
A. General and Supplementary Conditions, and Division 1 General Requirements.

1.2 SUMMARY
A. Work included:
1. Provide and install a complete and operating automatic irrigation system for all lawn and planting areas.
2. Connect to main water supply at existing site stubout as provided.
3. Sleeving under paved areas (by others)
4. Obtain and pay for all permits and fees for the work of this section.
5. Perform work on a design/construct basis, subject to the requirements of the Contract Documents, applicable codes, and good design practice.
6. Winterization of system.

1.3 SUBMITTALS
A. Within 30 days after Contractor's receipt of Owner's Notice to Proceed, submit:
1. Manufacturer's printed product information and catalog cut sheets for all system components; five copies.
B. Shop Drawings: Submit shop drawings for underground irrigation system including plan layout and details illustrating location and type of head, type and size of valve, piping circuits, circuit GPM, pipe size, controls, and accessories.
C. Record Drawings: At completion of this work, submit to the Contractor:
1. Record Drawings; reproducible and five prints.
2. Operations and Maintenance information (2 copies), including:
a. Information including descriptive details, parts list, specifications, maintenance schedules and procedures for system components.
b. Operation, adjustment of system and components instructions.
c. Winterization procedures.
d. Schedule indicating required open valve time to produce given precipitation amounts and seasonal adjustments.
e. Warranties and guarantees.
f. Submit five copies.

1.4 GUARANTEE
A. Guarantee in writing all materials, equipment and workmanship furnished to be free of all defects of workmanship and materials. Within one year after date of Substantial Completion repair or replace all defective parts or workmanship that may be found at no additional cost to Owner.
B. Fill and repair all depressions and replace all necessary lawn and planting which result from the settlement of irrigation trenches for one year after date of Substantial Completion.
C. Supply all manufacturer's printed guarantees.

1.5 QUALITY ASSURANCE
A. Contractor shall be licensed in the State in which this work is being performed.
B. Contractor shall have at least two years prior experience in projects of equal or larger scope. Provide minimum of three references and list of similar projects with owners' names, addresses, and phone numbers, when requested by Owner.
C. Contractor shall employ on site at all times a foreman who is thoroughly experienced and competent in all phases of the work of this Section.

1.6 SYSTEM DESCRIPTION
A. Design requirements:
1. Minimum water coverage: Planting areas - 85%, Lawn areas - 100%
2. Layout system to obtain optimum coverage using manufacturer's standard heads. Spray on walks, walls or paved areas is not acceptable.
3. Zoning shall be designed for optimum use of available pressure and efficient distribution for types of plantings and shapes of planting areas.
4. Design pressures: Install pressure regulating equipment as necessary.
5. Provide/install approved fixed tee or coupling device for air blow winterization. Location shall be on main supply line downstream from main shut off valve.
6. Install approved backflow prevention device in conformance with local or prevailing codes, and in approved site location. Provide for drainage without erosive damage.

1.7 EXTRA EQUIPMENT
A. In addition to installed system, furnish owner with the following:
1. Valve operating key and marker key.
2. Wrench for each sprinkler head cover type.
3. Two (2) sprinkler head bodies of each size and type.
4. Two (2) nozzles for each size and type used.
B. Store above items safely until Substantial Completion.
C. Deliver above items at Substantial Completion.

PART 2 - PRODUCTS

2.1 PIPE AND FITTINGS
A. PVC 1120, ASTM D-1784, permanently marked with manufacturer's name, schedule rating, size, type. Solvent-weld type:
1. Pipe:
a. Pressure lines: Schedule 40 solvent weld.
b. Lateral lines: Class 200 pvc.
c. Sleeving: Class 200 pvc.
2. Fittings: Schedule 40 PVC, solvent-weld type. Install threaded joints where required at valves, risers, etc.
3. Risers: Lawn and shrub heads - flexible and damage-resistant plastic "polypipe" riser.
4. Solvent: NSF approved solvent for Type I & II PVC.
B. Polyethylene Pipe
1. Pipe: Class 100, 3/4" lateral line, for use on drip irrigation zone(s) where drip tubing is not otherwise used.
2. Fittings: Schedule 80 PVC.
3. Clamps: Stainless Steel.
C. Drip Line: Netafim Techline Dripperline, with .6 GPH drippers at 18" spacing.

2.2 SPRINKLER HEADS
A. Description: Appropriate for application in throw, pressure and discharge. Each type of head shall be of a single manufacturer.
1. Lawn heads: pop-up type.
B. Manufacturer: Rainbird, Hunter, Weathermatic Irrigation Company.

2.3 AUTOMATIC CONTROL SYSTEM
A. General; Furnish low voltage system manufactured expressly for control of automatic circuit valves of underground irrigation systems. Provide unit of capacity to suit number of circuits as indicated.
B. Control Enclosure: Manufacturer's standard wall mount with locking cover, complying with NFPA 70.
C. Circuit Control: each circuit variable from approximately 5 to 60 minutes. Including switch for manual or automatic operation of each circuit.
D. Timing Device: Adjustable 24-hour and 7 or 14 day clocks to operate any time of day and skip any day in a 7 or 14 day period.
E. Wiring: Solid or stranded direct-burial type as recommended by manufacturer of control unit; type AWG-UF, UL approved.

2.4 VALVING
A. Manual valves: brass or bronze for direct burial, gate valves, 150 pound class, threaded connection with cross type handle designed to receive operating key.
B. Automatic circuit valves: high impact plastic with corrosion-resistant internal parts. Low power solenoid control, normally closed, with manual flow adjustment; same manufacturer as control unit.
1. Standard sprinkler valve shall be Rainbird PEB-PRS-B. Use scrubber valve if not connected to potable water.
2. Drip Control Zone Kit: Hunter PCZ-101.
C. Quick coupler valve: brass or bronze construction with hinged top. One per zone or valve grouping.
D. Manual drain valves:
1. Bronze construction, straight type, 150 pound class, threaded connections, with cross type operating handle designed to receive operating key. Calco, Champion 100, or approved equal.
2. Size: 3/4 inch.
E. Pressure Regulator: Netafim Model PRV075HF35, 3/4", one per zones.
F. Flushing Valve: Netafim Model TLFV-1, two per zone (each end).
G. Filter: Netafim Model DF075-120, 3/4" filter; one per drip zone.
H. Air Relief Valve: Netafim Model TLAVRV,

2.5 MISCELLANEOUS
A. Chemicals: primer and solvent glue as required by pipe manufacturer.
B. Valve box - high impact plastic, green in color.
C. Valve cover and frame - compatible with valve box with provision for locking.
D. Drainage backfill - clean gravel or crushed stone, graded from 3" maximum to 3/4" minimum.

PART 3 - EXECUTION

3.1 GENERAL
A. Install system to provide for adequate protection against freeze damage.
B. Install system in accordance with approved Contractor design drawings. All deviations from the plans must be approved, and clearly recorded on record drawing.
C. Install system and components in strict accordance with manufacturer's recommendations.
D. Install quick coupler(s) on main supply line, approximately equal spacing, at valve box locations or intervals of approximately 200 feet, whichever is greater. Locate adjacent to paved surfaces, at valve boxes where practical.

3.2 SURFACE CONDITIONS
A. Examine the areas and conditions under which work will be performed. Notify Contractor of conditions detrimental to timely and proper completion of Section work. Do not proceed until unsatisfactory conditions are corrected.
B. Locate all underground utilities and structures and notify Architect of any conflict with Section work. Protect structures and utilities. Repair or replace said structures or utilities damaged by this work at no cost to the Owner.

3.3 SLEEVING
A. Sleeving installed by others. Coordinate with other trades.

3.4 TRENCHING AND BACKFILLING
A. Trenching and backfilling shall be per applicable ISPWC Section.
B. Cut trenches straight and without abrupt grade changes to allow the following minimum cover:
1. Main Lines and Sleeving: 18 inches.
2. PVC Laterals: 12 inches.
C. Surround lines with 2 inches of clean rock-free material on all sides.

3.5 MISCELLANEOUS VALVES
A. Install manual drain valves up stream. Install devise at mainline tap in accordance with manufacturer requirements for complete operation. Install backflow provision and connect to controller.

3.6 CIRCUIT VALVES
A. Install in valve box, arranged for easy adjustment and removal.
1. Provide union on downstream side.
2. Adjust automatic control valves to provide flow rate of rated operating pressure required for each sprinkler circuit.

3.7 PIPE INSTALLATION
A. Lay PVC pipe in accordance with standard and acceptable practice. Thrust blocks to be used at points of intersection and change of direction in main line pipe as per manufacturer's recommended specifications. Install manual drains.
B. PVC pipe joints, solvent welded except as indicated. Cut pipe square, deburr, wipe from surface all saw chips, dust, dirt, moisture and any foreign matter which may contaminate the cemented joint. Apply cleaner/primer and solvent cement, make joints in accordance with manufacturer's recommendations. Use Teflon thread sealant (tape) at all threaded joints.
C. Contractor shall size pipe according to schedule provided. Flow velocities shall not exceed 5 feet/second in all cases. Lateral lines shall be laid out and installed per zone to balance the pressure loss and provide minimum fluctuation in system operating pressures.

Pipe Size	Pipe Section	Pipe Size	Pipe Section
3/4"	0-9 GPM	1 1/2"	26-34 GPM
1"	10-17 GPM	2"	35-50 GPM
1 1/4"	18-25 GPM	2 1/2"	51-80 GPM

D. Techline Drip Line: Place in shallow furrow at 1"-2" below finish topsoil grade, below layer of specified mulch. Lay in uniform grid pattern in groundcover/shrub areas (rows 18"-24" apart max). Coil 20 linear feet at each balled and burlapped tree around base and to allow for tree removal if required. Staple drip line every 36" max. Flush all lines with full head of water prior to installation of flush valves at end of circuit runs.
E. Flush Valves: Install flush valve at end of each drip line run.

3.8 SPRINKLER HEADS
A. Flush circuit lines with full head of water prior to head installation.
1. Install heads at level with mulch
2. Locate part-circle shrubbery heads to maintain a minimum distance of six inches (6") from walls and four inches (4") from other boundaries unless otherwise indicated. Keep overspray to a minimum.

3.9 CONTROL WIRE INSTALLATION
A. Bury wires beside or below main line pipe in same trench.
B. Bundle multiple wires together with tape at ten feet (10') maximum intervals.
C. Provide 36 inch loop in wires at each valve where controls are connected and at 100' maximum intervals between.
D. Make all electrical joints (splices) in boxes only. Make electrical joints waterproof. Scotch-Lock connectors, or approved.

3.10 AUTOMATIC CONTROLLER
A. Install on site as approved. Verify location with Owner Representative.
B. Install typewritten legend inside controller door.

3.11 TESTING
A. Do not allow or cause any work of this Section to be covered up or enclosed until it has been inspected and tested.
B. Pressure testing:
1. Make necessary provision for thoroughly bleeding the line of air and debris.
2. Before testing, cap all risers, and install all valves.
3. Fill all main supply lines with water. Pressurize to 100 psi. Close air supply and test for leakage. Test shall be approved if no greater than 5 psi loss occurs in 15 minutes.
4. Fill all zone lines with water to static pressure. Hold for 15 minutes. Inspect for leakage.
5. Contractor shall provide all required testing equipment and personnel. Test shall be performed in presence of Architect. Contractor shall make notice of test (48) hours in advance.
6. Provide required testing equipment and personnel.
7. Repair leaks, and retest until acceptance by the Architect.
C. Coverage inspection: upon completion of all systems, perform a coverage test to determine if coverage of water afforded all areas is complete, adequate and uniform. Change heads, nozzles, orifices and/or adjustment as directed to provide uniform coverage.
D. Final inspection:
1. Clean, adjust, and balance all systems. Verify that:
a. Remote control valves are properly balanced;
b. Heads are properly adjusted for radius and arc of coverage;
c. The installed system is workable, clean and efficient.
E. Winterization: Winterize system at the end of first season of system operation. Review procedures with Owner Representative.

END OF SECTION

JENSENBELTS ASSOCIATES
Site Planning / Landscape Architecture
1509 Tyrell Lane, Ste 130 Boise, ID 83706
Ph. (208) 343-7175 www.jensenbelts.com

SURVEYOR
NV5 (TRAVIS P. FOSTER)
690 S. INDUSTRY WAY, STE 10
MERIDIAN, IDAHO 83642
PHONE (208) 342-5400

OWNER OF RECORD
COLSON FAMILY TRUST
9435 W. OVERLAND ROAD
BOISE, IDAHO 83709

DEVELOPER
STERLING LAND DEVELOPMENT, INC.
1159 E. IRON EAGLE DRIVE
STE. 170-H
EAGLE, IDAHO 83616
Phone (949) 226-4482

PLANNER / CONTACT
BECKY McKAY
1029 N. ROSARIO ST. STE 100
MERIDIAN, ID 83642
Phone (208) 938-0980
Fax (208) 938-0941

REVISIONS
1. EXISTING TREE TABLE 12/21/21
2. TREE MITIGATION 1/28/22
3. CITY COMMENTS 5/11/22

ENGINEERING SOLUTIONS LLP
1029 N. ROSARIO ST. STE 100
MERIDIAN, IDAHO 83642
Phone (208) 938-0980 Fax (208) 938-0941

BOXELDER CREEK SUBDIVISION
FINAL PLAT LANDSCAPE PLAN
LOCATED IN THE NW 1/4 OF THE NE 1/4 OF SECTION 23
TOWNSHIP 3 NORTH, RANGE 1 EAST, B.M.
BOISE, ADA COUNTY, IDAHO

SCALE AS SHOWN
DWG.DATE 12/07/21
PROJ. NO. JBA-2125
SHEET 2 of 2
L2