P&Z Packet

Planning Commission Meeting 02/03/22

01/28/2021

Grantsville City Corporation
Kristy Clark, Zoning Administrator
Email: kclark@grantsvilleut.gov

P&Z 02/03/22

MEETING AGENDA

We will continue to broadcast the Planning Commission meetings electronically on Zoom. If you choose to attend, please wear a face covering.

PUBLIC NOTICE

Notice is hereby given that the Grantsville City Planning Commission will hold a regular meeting on **Thursday, February 3, 2022** in the Grantsville City Hall Council Chambers at 429 East Main Street in Grantsville Utah. The meeting shall begin promptly at 7:00 p.m.

THE REGULAR MEETING WILL OFFICIALLY BE CALLED TO ORDER BY COMMISSION CHAIRMAN, BRIAN PATTEE.

PLEDGE OF ALLEGIANCE

PUBLIC HEARINGS:

a. **Proposed Preliminary Plan for Iconic Development, LLC. on the Blue Spruce Subdivision located approximately at 620 South Quirk Street for the creation of thirteen (13) ½ acre lots in the R-1-21 zone.**

b. **Proposed Home Occupation Conditional Use Permit for Alisa Niesporek to own and operate a hair salon out of her home located at 259 South Cooley Street in the RM-7 zone.**

IMMEDIATELY FOLLOWING PUBLIC HEARINGS, THE MEETING WILL BE CALLED TO ORDER BY CHAIRMAN, BRIAN PATTEE.

1. **Consideration to approve a Home Occupation Conditional Use Permit for Alisa Niesporek to own and operate a hair salon out of her home located at 259 South Cooley Street in the RM-7 zone.**

2. **Consideration to recommend approval of the Preliminary Plan for Iconic Development, LLC. on the Blue Spruce Subdivision located approximately at 620 South Quirk Street for the creation of thirteen (13) ½ acre lots in the R-1-21 zone.**

3. **Consideration to approve the meeting minutes for the previous P&Z Meeting that was held January 20, 2022.**

4. **Report from City Council Liaison Mayor Critchlow.**

5. **Adjourn.**

DATED January 24, 2021. By the Order of Grantsville City Planning Commission Chairman, Brian Pattee.
Kristy Clark, Zoning Administrator

The anchor location will be City Hall at the above address." All interested persons are invited to attend the Zoom meeting. All public comments for the public hearing section must be written comment and will need to be submitted to the Zoning Administrator in advance. The current zoning Code and proposed amendments may be reviewed on the Grantsville City website located at www.grantsvilleut.gov. In accordance with the Americans with Disabilities Act, Grantsville City will accommodate reasonable requests to assist the disabled to participate in meetings. Request for assistance may be made by calling City Hall at 435-884-3411 at least 24 hours prior to the meeting that will be attended.

CERTIFICATE OF POSTING: This agenda was posted on the Grantsville City Hall Notice Board, the State Public Notice website at www.utah.gov/pmn/index.html, the Tooele Transcript Bulletin, and the Grantsville City website at www.grantsvilleut.gov.

Join The Zoom Meeting
Meeting ID: 871 0961 4260

STAFF REPORT / MEMO

MEMORANDUM

DATE: January 28, 2021

TO: Planning Commission, Mayor Critchlow, City Manager, Jesse Wilson and Attorney Coombs

FROM: Kristy Clark, Zoning Administrator

RE: **Application Enclosures, Zoning Administrator Staff Report and Site Plan Review Reports - P&Z Meeting on February 3, 2022**

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1. **Consideration to approve a Home Occupation Conditional Use Permit for Alisa Niesporek to own and operate a hair salon out of her home located at 259 South Cooley Street in the RM-7 zone.**

   Enclosed is a copy of the application, a detailed description of the business proposed, pictures and site plan.

   Staff Comments:
   The application is complete and is in compliance with the zoning code. Notices were mailed out and no comments were received as of today.

2. **Consideration to recommend approval of the Preliminary Plan for Iconic Development, LLC. on the Blue Spruce Subdivision located approximately at 620 South Quirk Street for the creation of thirteen (13) ½ acre lots in the R-1-21 zone.**

   Enclosed is a memo from Shay Stark, a copy of the application, and the Preliminary Plan. The application is complete and is in compliance with both the General Plan and the Zoning code.

-END OF MEMORANDUM-

AGENDA ITEM #1

GRANTSVILLE CITY CONDITIONAL USE APPLICATION
(Home Occupation)

DATE PAID 1-13-22
AMOUNT PAID $200.00
HEARING DATE February 3, 2022

PERMIT # _____

FEE IS $75.00 IF REVIEWED IN HOUSE, $200.00 IF REVIEWED BY COMMISSION

Name Alisa Niksporek Phone # _____

Address of subject property 259 S. Cooley St

Mailing Address 259 S. Cooley St

E-mail address of applicant alisarat@hotmail.com

Do you own subject property? Yes

Current zone of property RM-7

You must have an appointment to submit the following. Please email kclark@grantsvilleut.gov to schedule your appointment.

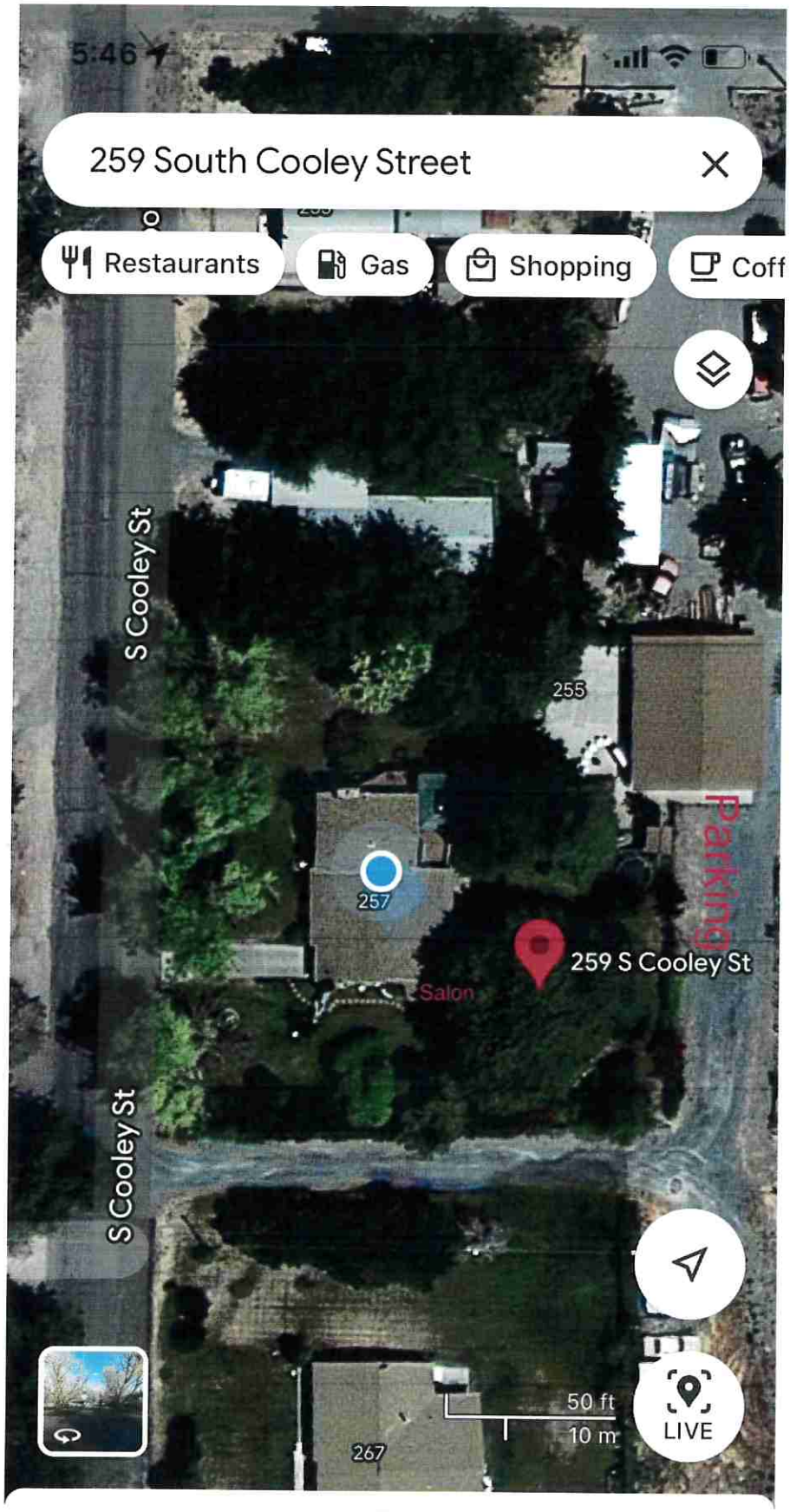
Required Items to be Submitted with your Application for an In-House/Planning Commission Approval:

1) A complete detailed description of the type of business proposed, which includes:
   a) the expected number of clients per day;
   b) a list of the individuals at the home who will be working in the business;
   c) the expected hours of operation of the business; and
   d) storage of material (tools, product, etc), what and where.
2) Approval letter from the owner of the property if you are renting or leasing.
3) Vicinity map of area with North indicated.
4) A site plan which includes actual dimensions of the property, the size and location of all existing buildings, and all driveways and areas for and number of parking spaces. Also, include in the site plan, the work area location and where the tools and materials needed for the business will be stored.
5) **A plat of the parcel and a Radius Report obtained from Tooele County Recorder's office, self-sealing envelopes, mailing labels and first class postage for all property owners located within 500 feet of subject property boundary. DON'T PUT MAILING ADDRESSES ON ENVELOPES! THANK YOU! Addresses must be from Tooele County Recorder's Office!**

Alisa Niksporek
SIGNATURE OF APPLICANT

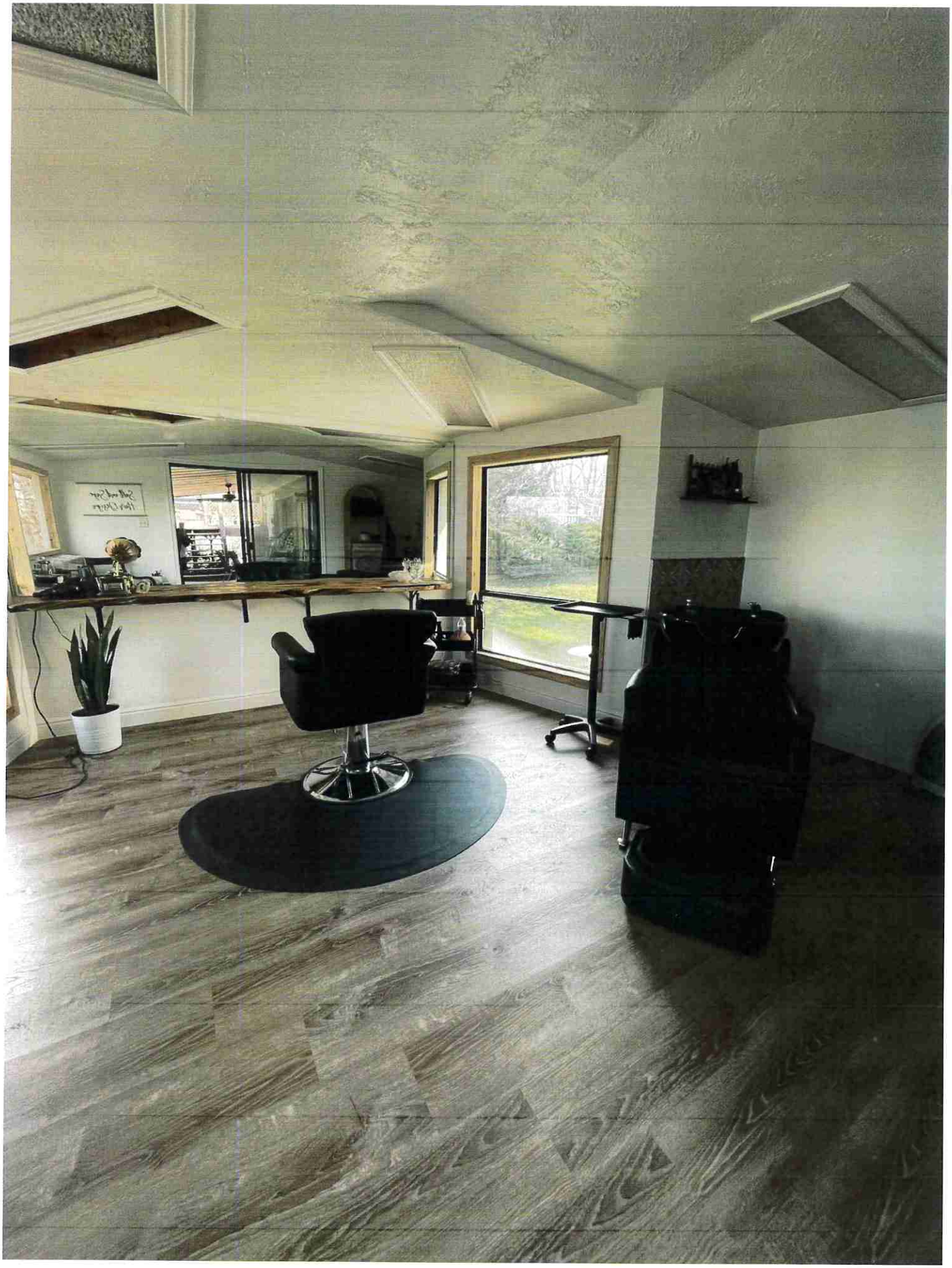
SIGNATURE OF CO-APPLICANT

I would like to own and operate a Hair Salon out of my home at 259 South Cooley Street. I have a room connected to the south side of the house. Hours of operation would be 11:00 am to 7:00 pm 3 days a week. I am the only stylist that will be working out of the salon doing hair color and cuts. I will have up to 5 clients per day. I have a cabinet located on the back wall that stores my hair color and developers and a shelf for my shampoo and conditioner as well as my towels and mixing bowls. My curling iron, blow dryer, shears and clippers, brushes, and combs and barbicide are stored at the front of the salon in a cart. I have parking available in the back of the house.

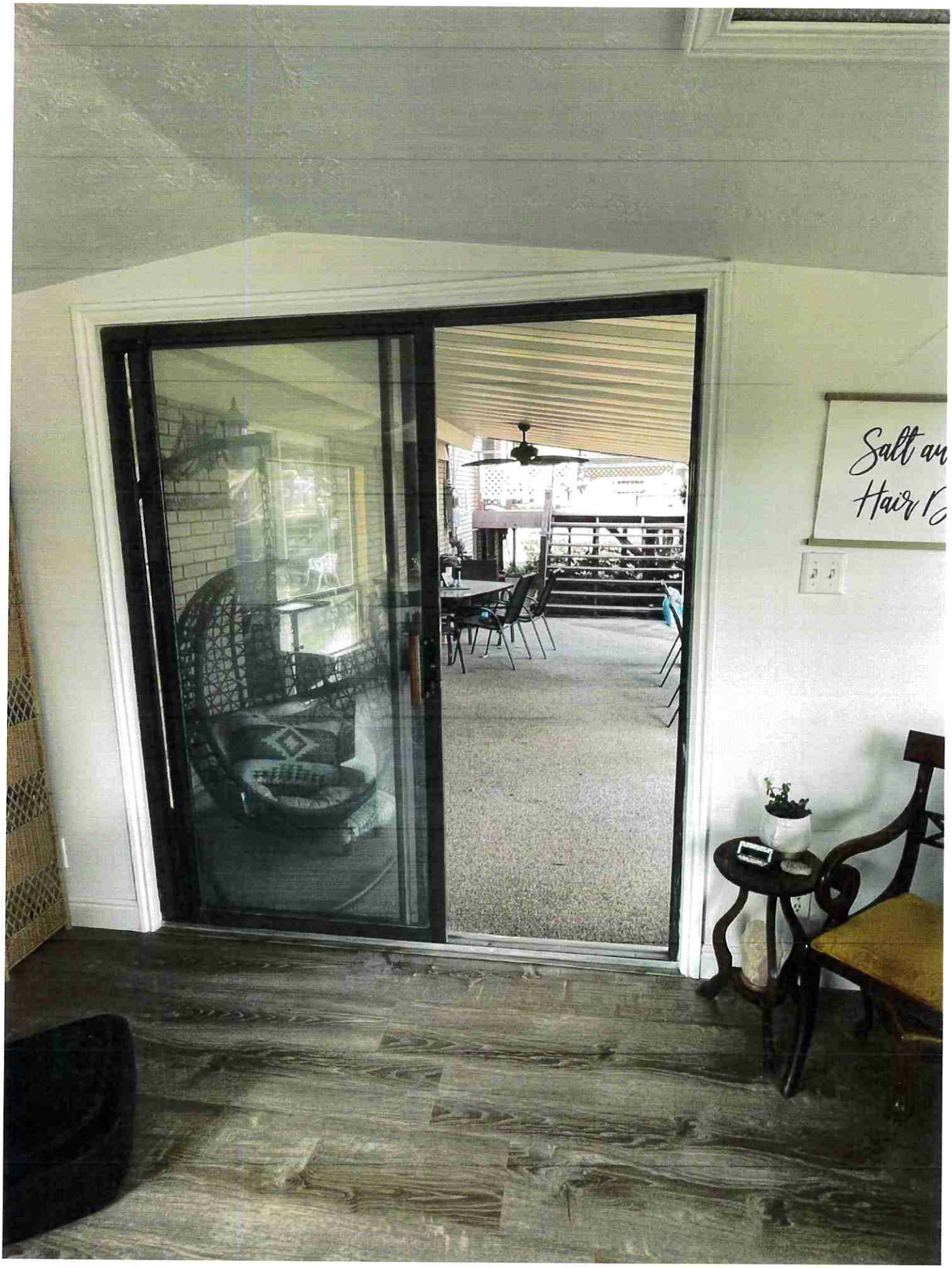


259 S Cooley St

259 S Cooley St, Grantsville, UT 84029




I AM GRATEFUL FOR ALL
THAT IS KNOWN TO ME
AND ALL THAT IS YET TO BE SHOWN
Product storage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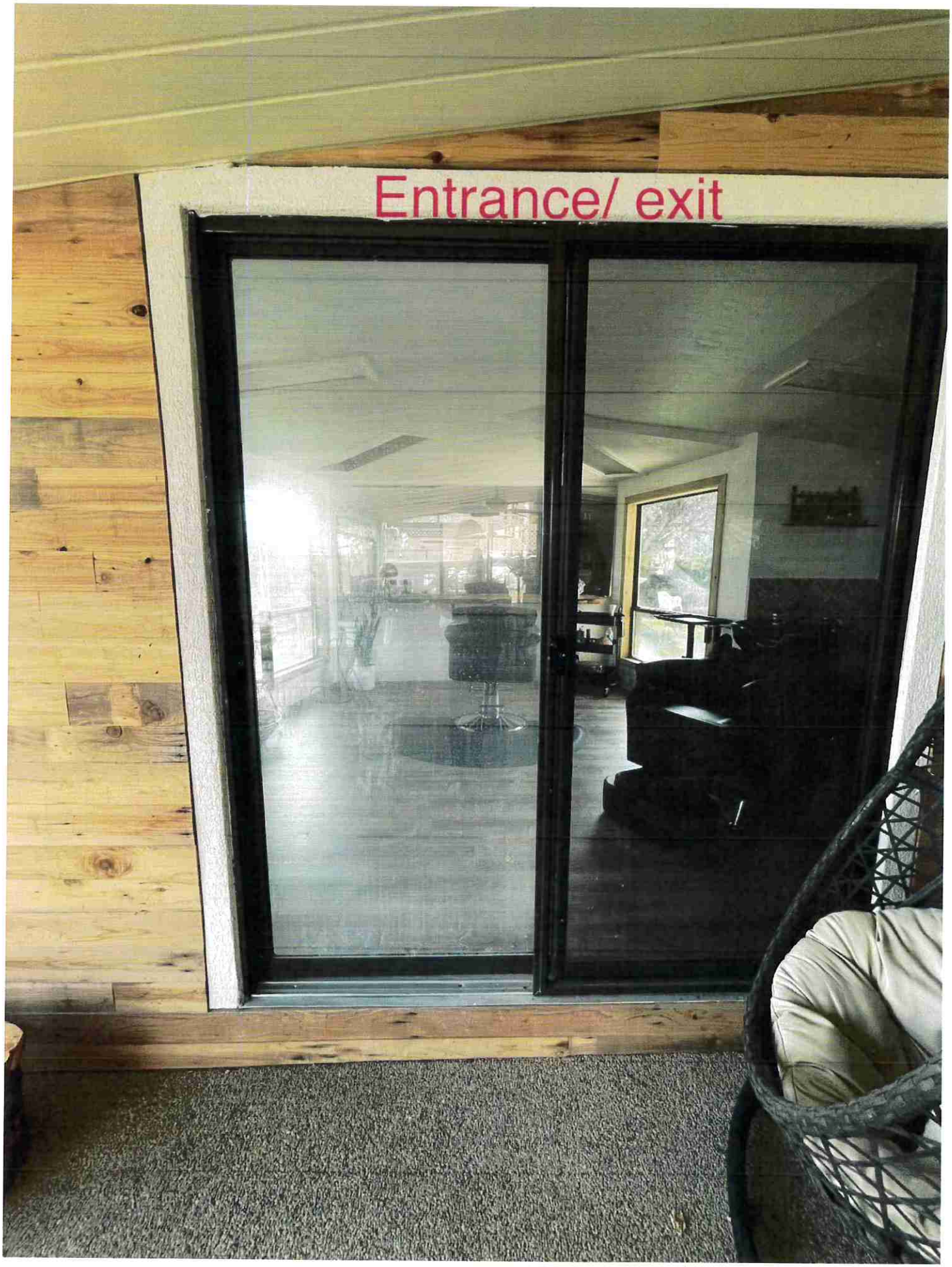

Entrance/ exit

APPLICATION FOR A **HOME OCCUPATION - CONDITIONAL USE PERMIT** CONSIDERATION BY GRANTSVILLE CITY PLANNING COMMISSION

This is to inform you that an application has been received in our office for consideration of a home occupation conditional use permit for:

Alisa Niesporek to own and operate a hair salon out of her home located at 259 South Cooley Street in the RM-7 zone.

This site is in the area of, or adjoins property you own, according to the tax rolls of Tooele County. A public hearing and meeting to discuss and consider action and to make a determination will be held in the Grantsville City Hall Council Chambers, 429 E Main Street, on:

Thursday February 3, 2022 at 7:00 p.m.

You are invited to request a copy of the application and detail description for the business by emailing me at kclark@grantsvilleut.gov.

We will continue to broadcast the Planning Commission meetings electronically on Zoom. If you choose to attend, please wear a face covering. Comments through email or by mail must be received no later than 5:00 p.m. on February 3, 2022. For more information, please call me at 435-884-4604 or email me.

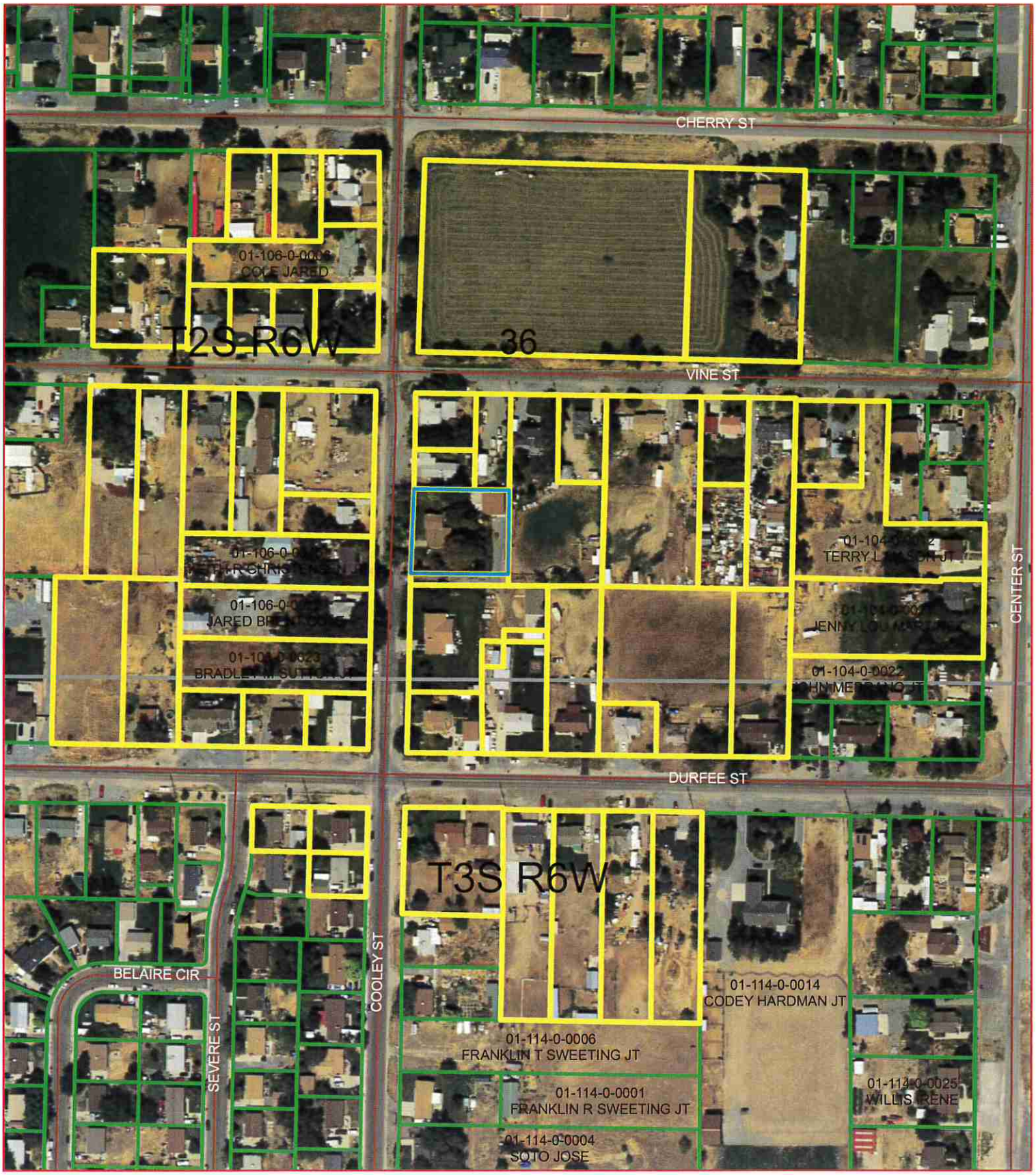
Thank you,

Kristy Clark
Zoning Administrator

Join Zoom Meeting
https://us02web.zoom.us/j/87109614260

Meeting ID: 871 0961 4260
One tap mobile
+13462487799,,87109614260# US (Houston)
+16699009128,,87109614260# US (San Jose)

Dial by your location
+1 346 248 7799 US (Houston)
+1 669 900 9128 US (San Jose)
+1 253 215 8782 US (Tacoma)
+1 312 626 6799 US (Chicago)
+1 646 558 8656 US (New York)
+1 301 715 8592 US (Washington DC)
Meeting ID: 871 0961 4260
Find your local number:
https://us02web.zoom.us/u/kc6ihDxobw



GIS Map Disclaimer:

TOOELE COUNTY

This is not an official map but for reference use only. The data was compiled from the best sources available, but various errors from the sources may be inherent on the map. All boundaries and features therein should be treated as such. For boundary information, the pertinent County Departments or Municipalities should be contacted. This map is a representation of ground features and is not a legal document of their locations. The scale represented is approximate, so this is NOT a Survey or Engineering grade map and should by no means be used as such. This map is not intended for all uses. Tooele County is not responsible or liable for any derivative or misuse of this map.

Alisa Niesporek
01-104-0-0020

0 65 130 260 390 520
Feet

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Date: 1/12/2022
blanca.rodriguez

AGENDA ITEM #2

TECHNICAL MEMORANDUM

TO: Kristy Clark, Grantsville City Planning and Zoning Administrator

FROM: Shay Stark, Planner

DATE: January 28, 2022

SUBJECT: Blue Spruce Subdivision - Preliminary - Planning Commission Memo

PROJECT NO.:

Grantsville City has received an application for Blue Spruce Subdivision. The Subdivision is located on the westside of Quirk Street consists of thirteen lots. The property includes the parcel containing the dance studio at 628 South Quirk Street.

PROJECT OVERVIEW

Zoning: R-1-21

Project Total Acreage: 10.47 acres

Total Number of Single-Family Residential Lots: 13 lots for a density of 1.24 units per acre.

TECHNICAL REVIEW COMMENTS

The subdivision meets the current zoning requirements, and no exceptions are being requested. The subdivision has been designed to line up with the Williams Lane alignment. This subdivision will also provide access to the field to the west of the subdivision. While there will be additional detail needed for construction drawings the drawings are complete enough to show that the proposed layout is feasible and meets the zoning requirements and therefore is ready for Preliminary consideration.

DEVELOPMENT AGREEMENT:

The city's standard Development Agreement will be used. At this point there are no exceptions or offsite improvements that need to be included in the Development Agreement.

RECOMENDATION

Based upon a favorable discussion by the Planning Commission, the staff recommends the Planning Commission provide a recommendation to the City Council for the approval of the Blue Spruce Subdivision Preliminary Application. Please state any specific requirements or guidance that Planning Commission would like addressed in the motion.

END

533 W 2600 S Suite 275 Bountiful, UT 84010
Phone: 801.299.1327 | Fax: 801.299.0153

Preliminary Plan:
$750.00 Zoning Fees
+ $100.00 per Lot
(ALL FEES ARE SUBJECT TO CHANGE)

GRANTSVILLE CITY
ZONING DEPARTMENT

429 EAST MAIN STREET
GRANTSVILLE, UTAH 84029
PHONE (435) 884-3411
FAX (435) 884-0426

Engineering Fees:
0-10 Lots - $2,250.00
11-50 Lots - $4,125.00
51-100 Lots - $5,500.00
101 + Lots - $5,500.00

PRELIMINARY PLAN APPLICATION

Date of Application 9/13/21

Property Location 620 S. Quirk Street

Property Owner(s) Iconic Development, LLC

Owner Phone _____

Acting Agent Name Sean Perkins

Acting Agent Phone _____

Email Address Sean@straightedgellc.com

Subdivision Name Blue Spruce Subdivision

Number of Acres in Subdivision 10.47

Total Number Lots 13 Lot Sizes 1/2 Acre

Current Zoning of Property R-1-21 Parcel Number 19-034-0-004/A

Signature of Owner or Agent

JERRY M. HOUGHTON
TOOELE COUNTY RECORDER
47 SOUTH MAIN STREET, Room 213
TOOELE, UTAH 84074
OFFICE (435) 843-3180
FAX (435) 843-3273

September 14, 2021

SUBJECT: Approval of Subdivision Name:

ADDRESSED TO Grantsville City

Name/Developer/Point of Contact: Iconic Development, LLC Sean Perkins
Phone/E-mail: 435-850-8436 sean@straightedgellc.com
The Tooele County Recorder has approved the proposed subdivision name of:
(Please include P.U.D, Condominium, Townhomes, or Subdivision in name)

- Blue Spruce Subdivision

The approved name is acceptable, with no other derivative thereof.

JERRY M. HOUGHTON
Tooele County Recorder

By Deputy: Kylisha Ulin

Date: 9/14/2021

***This name approval will be voided if an active application has not been submitted to our office within 6 months from the date the name was approved.**

INTENT TO SERVE FORM

Iconic Development
Name of Owner

Sean Perkins
Name of Agent or Representative

7/13/2021
Date Approving Agency Signed

620 S Quirk Street
Property Address or Location

13
Number of Lots Proposed

Sean Perkins
Signature of Owner or Agent

Name of Approving Agency Grantsville City

(Please indicate approval status)

SEWER	X	**APPROVED**		**DISAPRROVED**
WATER	X	**APPROVED**		**DISAPRROVED**
ROADS	X	**APPROVED**		**DISAPRROVED**

Conditions, Restrictions or Comments:

Water and sewer modelling required. All water and sewer connections shall be inspected by Grantsville City Engineering or Public Works Dept. staff prior to being placed into service.

Environmental impact study required.

Expiration Date of Approval 7/13/2022

7/13/2021
DATE SIGNED

James Waltz, Public Works Director, Grantsville City
AUTHORIZED SIGNATURE FOR AGENCY

-TO BE SUBMITTED WITH SUBDIVISION APPLICATION-

July 20, 2021

To Whom It May Concern:

Re: Natural Gas Service Availability to

Natural gas can be made available to serve approximate area of: ***620 S. Quirk St., Grantsville,*** **UT,** when the following requirements are met:

1. Developer provides plat maps, drawings, construction schedules, average size of homes, units, and/or buildings that will be served by natural gas, and any and all other relevant information regarding commercial and residential uses, including but not limited to, proposed natural gas appliances (number and type of appliances per unit, home, building), and provide minimum utility clearances and setbacks.

2. Review and analysis by Dominion Energy Engineering and/or Preconstruction Department to determine load requirements, system reinforcement requirements and estimated costs to bring natural gas to the development.

Upon completion of Dominion Energy review of the developments natural gas requirements, agreements will be prepared, as necessary, for high pressure, intermediate high pressure and/or service line extensions required to serve the development. These service extensions must be paid in advance, but may qualify for credits or refunds, as provided in Dominion Energy tariff.

To accommodate your construction schedule and provide cost estimates to you, please contact me at your earliest convenience.

Please note: Gas Main location needs to be a minimum of 10' away from structure and 3' from other utilities. It is the customer's responsibility to provide adequate clearances.

Sincerely,

Candis Miller
Pre-Construction Rep
Candis.miller@dominionenergy.com
801-324-5014

INTENT TO SERVE FORM

IVONIC DEVELOPMENT Name of Owner	SEAN PERKINS Name of Agent or Representative
7-20-21 Date Approving Agency Signed	620 S. QUIRK ST. Property Address or Location
13 Number of Lots Proposed	Signature of Owner or Agent

Name of Approving Agency GVFD

(Please indicate approval status)

FIRE DEPT. ✓ **APPROVED** _____ **DISAPRROVED**

Conditions, Restrictions, or Comments:

Must comply with the following:

1) All pertinent sections of the International Fire Code including the appendix sections, particularly appendix "C" (fire department water supply) and appendix "D" (fire department access)
2) All Grantsville City codes and ordinances pertaining to water supply and streets.
3) Submitted drawing with streets must have a cross sections drawing of all streets, cul-de-sacs, temporary turnarounds and all fire department access and turnarounds

Expiration Date of Approval 7-20-22

7-20-21 DATE SIGNED	Jason E. Smith AUTHORIZED SIGNATURE FOR AGENCY

-TO BE SUBMITTED WITH SUBDIVISION APPLICATION-

INTENT TO SERVE FORM

Iconic Development
Name of Owner

Sean Perkins
Name of Agent or Representative

Date Approving Agency Signed

620 S. Quirk St.
Property Address or Location

13
Number of Lots Proposed

Signature of Owner or Agent

Name of Approving Agency GIC

(Please indicate approval status)

IRRIGATION CO. X **APPROVED** _____ **DISAPPROVED**

Conditions, Restrictions, or Comments:

All main lines must be upgraded to C900. Grantsville Irrigation will relocate and/or upgrade at developer's cost unless otherwise specified. Bodee Paulick 435-496-3349

21" PiP must be upgraded to 20" C900 for the entire north property

Expiration Date of Approval 2/14/2021

7/14/2021
DATE SIGNED

AUTHORIZED SIGNATURE FOR AGENCY

-TO BE SUBMITTED WITH SUBDIVISION APPLICATION-

INTENT TO SERVE FORM

ICONIC DEVELOPMENT
Name of Owner

SEAN PERKINS
Name of Agent or Representative

7/13/21
Date Approving Agency Signed

620 S. QUIRK ST
Property Address or Location

13
Number of Lots Proposed

Signature of Owner or Agent

Name of Approving Agency COMCAST

(Please indicate approval status)

COMMUNICATIONS ✓ **APPROVED** _____ **DISAPPROVED**

Comments, Restrictions, or Comments:

Expiration Date of Approval_____

7/13/2021
DATE SIGNED

AUTHORIZED SIGNATURE FOR AGENCY

-TO BE SUBMITTED WITH SUBDIVISION APPLICATION-

INTENT TO SERVE FORM

Ivonic Development Name of Owner	Sean Perkins Name of Agent or Representative
7/14/21 Date Approving Agency Signed	620 S. Quirk St Property Address or Location
13 Number of Lots Proposed	_____ Signature of Owner or Agent

Name of Approving Agency Rocky Mountain Power

(Please indicate approval status)

ELECTRIC COMPANY X **APPROVED** _____ **DISAPPROVED**

Conditions, Restrictions, or Comments: _____

Expiration Date of Approval _____

7/14/21 DATE SIGNED	 AUTHORIZED SIGNATURE FOR AGENCY

-TO BE SUBMITTED WITH SUBDIVISION APPLICATION-

INTENT TO SERVE FORM

ICONIC DEVELOPMENT	SEAN PERKINS
Name of Owner	Name of Agent or Representative
	620 S. QUIRK ST.
Date Approving Agency Signed	Property Address or Location
13	
Number of Lots Proposed	Signature of Owner or Agent

GRANTSVILLE CITY POST OFFICE

Conditions, Restrictions, or Comments:

Mail delivered via CBU to be purchased installed by developer at agreed upon location with Post Office

7/14/2021	
DATE SIGNED	AUTHORIZED SIGNATURE FOR AGENCY

-TO BE SUBMITTED WITH SUBDIVISION APPLICATION-

APPLICATION FOR A **PRELIMINARY PLAN** CONSIDERATION BY GRANTSVILLE CITY PLANNING COMMISSION

An application has been received in our office for consideration of a Preliminary Plan approval for:

Iconic Development, LLC. on the Blue Spruce Subdivision located approximately at 620 South Quirk Street for the creation of thirteen (13) ½ acre lots in the R-1-21 zone.

This site is in the area of, or adjoins property you own, according to the tax rolls of Tooele County. A public hearing to receive public input and meeting to discuss and consider action on the proposed project and make a recommendation to the City Council will be held through Zoom on:

Thursday, February 3, 2022 at 7:00 p.m.

You are invited to view the application and proposed plans by emailing me at kclark@grantsvilleut.gov.

We will continue to broadcast the Planning Commission meetings electronically on Zoom. If you choose to attend, please wear a face covering. Comments through email or by mail must be received no later than 5:00 p.m. on February 3, 2022. For more information, please call me at 435-884-4604 or email me.

For more information, please email me at kclark@grantsvilleut.gov.

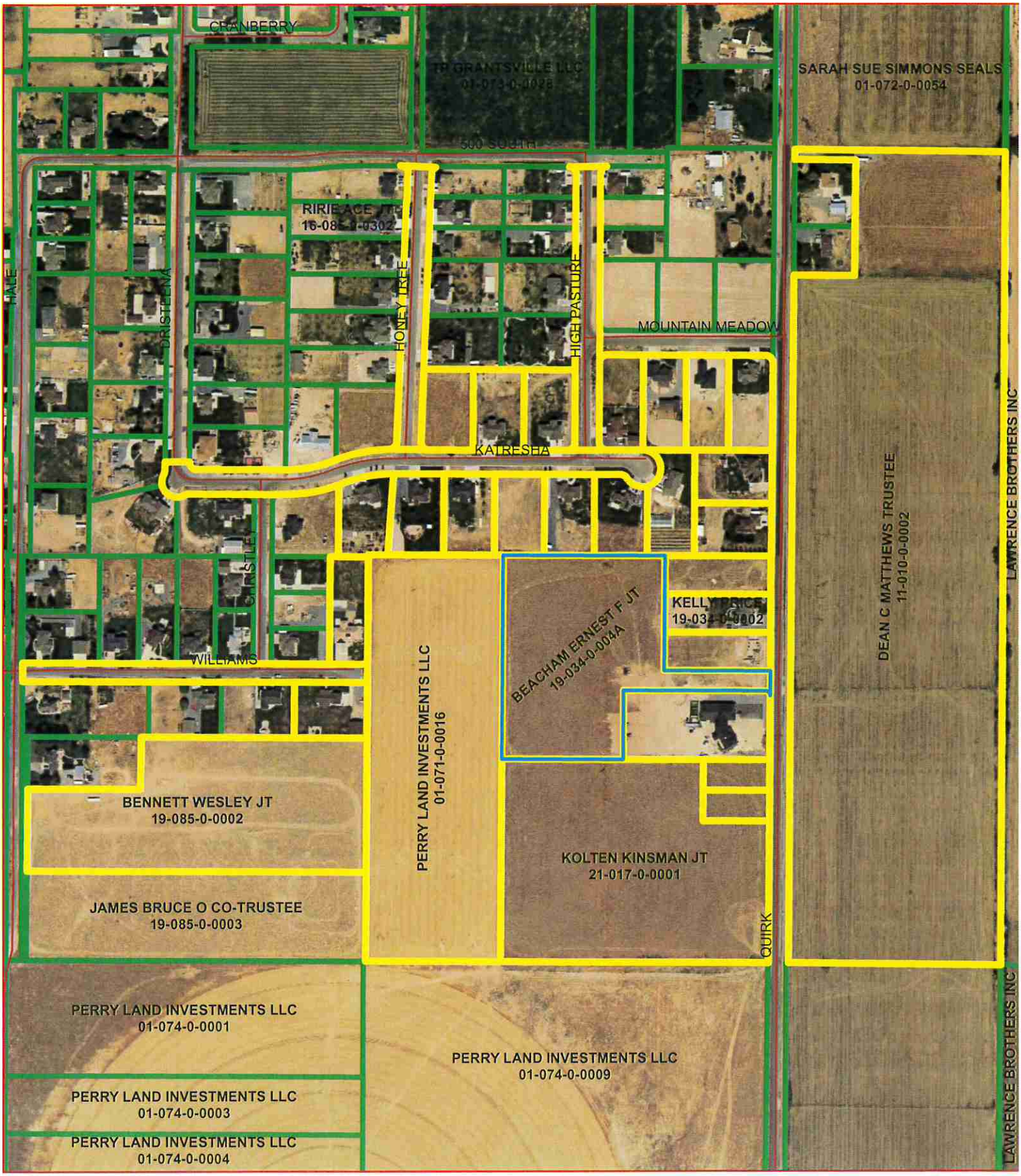
Thank you,

Kristy Clark
Zoning Administrator

Join Zoom Meeting
https://us02web.zoom.us/j/87109614260

Meeting ID: 871 0961 4260
One tap mobile
+13462487799,,87109614260# US (Houston)
+16699009128,,87109614260# US (San Jose)

Dial by your location
+1 346 248 7799 US (Houston)
+1 669 900 9128 US (San Jose)
+1 253 215 8782 US (Tacoma)
+1 312 626 6799 US (Chicago)
+1 646 558 8656 US (New York)
+1 301 715 8592 US (Washington DC)
Meeting ID: 871 0961 4260
Find your local number:
https://us02web.zoom.us/u/kc6ihDxobw



GIS Map Disclaimer:

TOOELE COUNTY

This is not an official map but for reference use only. The data was compiled from the best sources available, but various errors from the sources may be inherent on the map. All boundaries and features therein should be treated as such. For boundary information, the pertinent County Departments or Municipalities should be contacted. This map is a representation of ground features and is not a legal document of their locations. The scale represented is approximate, so this is NOT a Survey or Engineering grade map and should by no means be used as such. This map is not intended for all uses. Tooele County is not responsible or liable for any derivative or misuse of this map.

Sean Perkins
19-034-0-004A

0 150 300 600 900 1,200 Feet

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rulin
Date: 6/29/2021

811 CALL BLUESTAKES @ 811 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.
Know what's below. Call before you dig.

BENCHMARK

CENTER OF SECTION 2, T2S, R4W, SLB&M (FOUND 3" BRASS AND PIPE TOOELE COUNTY SURVEYORS MONUMENT, DATED 2010)

ELEV = 4200.00'

BLUE SPRUCE SUBDIVISION

QUIRK STREET
GRANTSVILLE CITY, UTAH

FOR REVIEW
NOT FOR CONSTRUCTION

DATE PRINTED
January 27, 2022

INDEX OF DRAWINGS

NOTICE TO CONTRACTOR

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

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

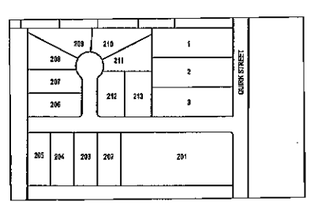
NOTICE TO DEVELOPER/ CONTRACTOR

UNAPPROVED DRAWINGS REPRESENT WORK IN PROGRESS, ARE SUBJECT TO CHANGE, AND DO NOT CONSTITUTE A FINISHED ENGINEERING PRODUCT. ANY WORK UNDERTAKEN BY DEVELOPER OR CONTRACTOR BEFORE PLANS ARE APPROVED IS UNDERTAKEN AT THE SOLE RISK OF THE DEVELOPER, INCLUDING BUT NOT LIMITED TO BIDS, ESTIMATION, FINANCING, BONDING, SITE CLEARING, GRADING, INFRASTRUCTURE CONSTRUCTION, ETC.

UTILITY DISCLAIMER

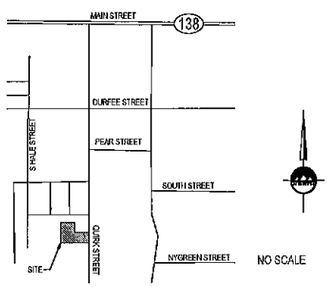
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND / OR ELEVATIONS OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE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

KEY MAP



NO SCALE

VICINITY MAP



NO SCALE

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO GRANTSVILLE CITY STANDARDS & SPECIFICATIONS.
2. CALL BLUE STAKES AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES.
3. BENCHMARK ELEVATION = CENTER OF SECTION 2, T2S, R4W, SLB&M (FOUND 3" BRASS AND PIPE TOOELE COUNTY SURVEYORS MONUMENT, DATED 2010)

   ELEV = 4200.00'

NOTES:
- APPROVED BY CITY COUNCIL ON _____.
- PRE-CONSTRUCTION MEETING DATE: _____.

APPROVED FOR CONSTRUCTION ON THIS _____ DAY OF _____, 20__.

_____
GRANTSVILLE CITY PUBLIC WORKS DIRECTOR

APPROVED BY CITY ENGINEER: GRANTSVILLE CITY, UTAH
FOR PUBLIC IMPROVEMENTS ONLY (SHEETS_____)

_____ _____
CITY ENGINEER DATE

APPROVAL OF THESE PLANS DOES NOT RELEASE THE DEVELOPER FROM RESPONSIBILITY FOR CORRECTION OF MISTAKES, ERRORS OR OMISSIONS CONTAINED THEREIN. IF DURING THE COURSE OF CONSTRUCTION THE PUBLIC INTEREST REQUIRES A MODIFICATION OR A DEPARTURE FROM THE CITY SPECIFICATIONS, OR THE APPROVED PLANS, THE CITY SHALL HAVE THE AUTHORITY TO REQUIRE SUCH MODIFICATION OR A DEPARTURE, AND TO SPECIFY THE MANNER IN WHICH THE SAME IS MADE.

ENSIGN
THE STANDARD IN ENGINEERING

TOOELE
169 N. Main Street, Unit 1
Tooele, UT. 84074
Phone: 435.843.3590

SALT LAKE CITY
Phone: 801.255.0529

LAYTON
Phone: 801.547.1100

CEDAR CITY
Phone: 435.865.1453

RICHFIELD
Phone: 435.896.2983

WWW.ENSIGNENG.COM

FOR:
ICON DEVELOPMENT, LLC
3410 NORTH MOYLE LANE
ERDA, UTAH, 84074
CONTACT:
SEAN PERKINS
PHONE: 435-859-8435

BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

NO.	DATE	REVISION	BY
1		FOR REVIEW	
2			
3			
4			
5			
6			

COVER

PROJECT NUMBER: T1216E
PRINT DATE: 2022-01-27
DRAWN BY: C. CHILD
CHECKED BY: J. CLEGG
PROJECT MANAGER: C. CHILD

C-000

BLUE SPRUCE SUBDIVISION
PRELIMINARY PLAT

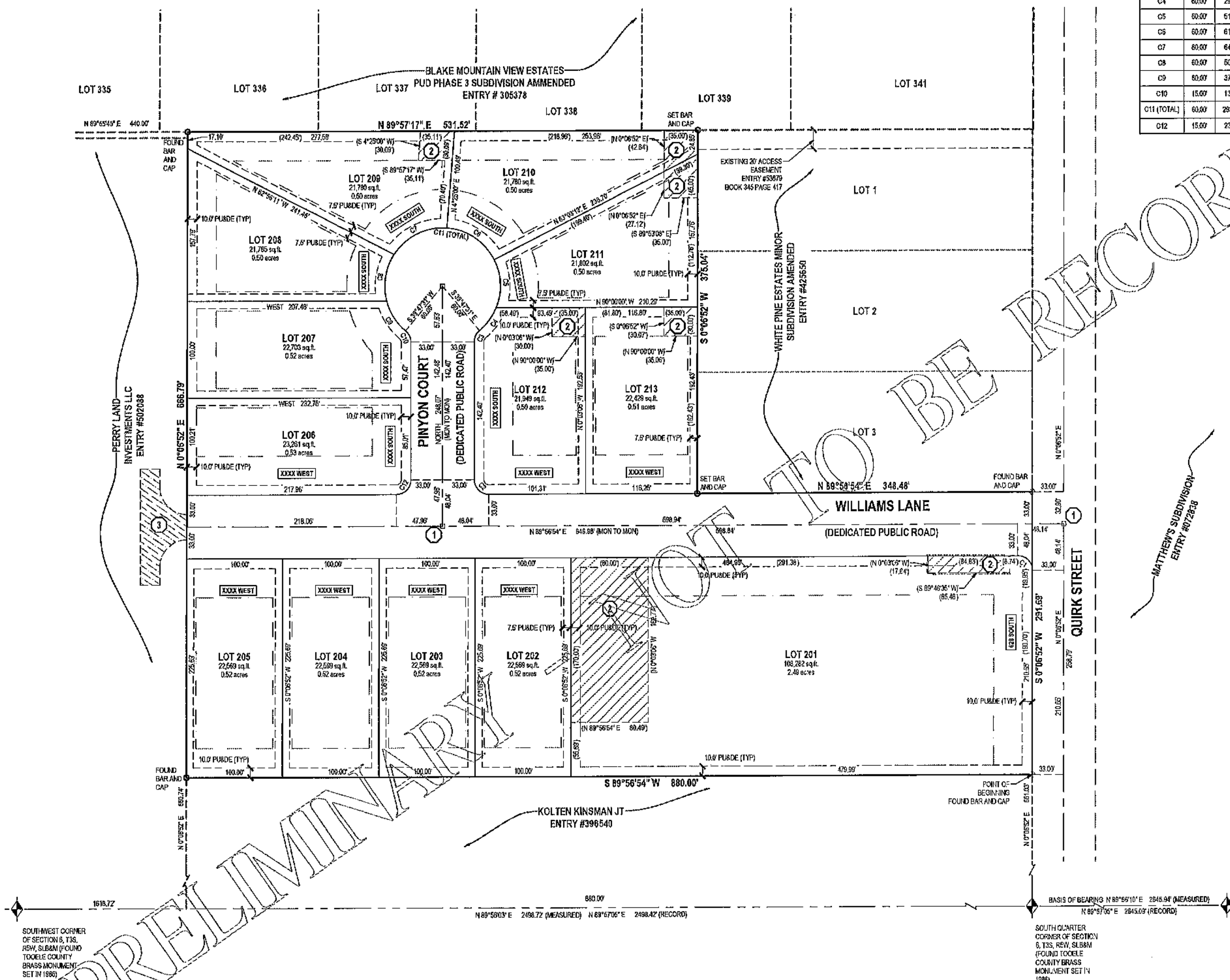
(AMENDING LOT 4 OF WHITE PINE ESTATES SUBDIVISION AMENDED)
LOCATED IN THE SOUTHWEST QUARTER
OF SECTION 6, TOWNSHIP 3 SOUTH, RANGE 5 WEST, SALT LAKE BASE
AND MERIDIAN, GRANTSVILLE CITY, TOOELE COUNTY, UTAH

KEYNOTES:

1. INSTALL STREET MONUMENT PER GRANTSVILLE CITY STANDARDS AND SPECIFICATIONS.
2. STORM DRAIN EASEMENT HEREBY DEDICATED TO GRANTSVILLE CITY TO ALLOW CITY ACCESS AND TO BE MAINTAINED BY PROPERTY OWNER TO GRANTSVILLE CITY DRAIN BASIN STANDARDS.
3. TEMPORARY TURN AROUND EASEMENT ENTRY #____________.

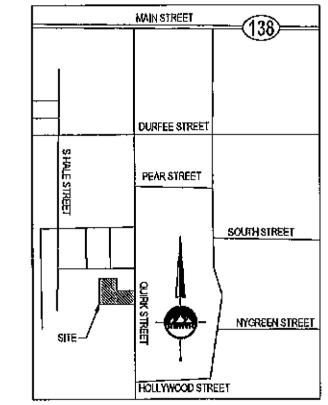
NOTES

1. ALL PUBLIC STREETS ARE HEREBY DEDICATED TO GRANTSVILLE CITY AS RIGHT-OF-WAY ("R.O.W.") FOR PUBLIC USE.
2. NO DRIVEWAYS SHALL BE CONSTRUCTED SO AS TO SLOPE TOWARD ANY STRUCTURES WITHOUT WRITTEN PERMISSION FROM GRANTSVILLE CITY ENGINEER.
3. 5/8" X 24" REBAR AND CAP TO BE SET AT ALL LOT CORNERS UNLESS OTHERWISE INDICATED.
4. INDIVIDUAL LOT OWNERS ARE REQUIRED TO GRADE LOTS TO PREVENT DRAINAGE ONTO NEIGHBORING PROPERTIES.



CURVE TABLE

CURVE	RADIUS	LENGTH	DELTA	BEARING	CHORD
C1	15.00'	23.61'	90°09'58"	N44°58'07"W	21.24'
C2	15.00'	23.58'	90°03'06"	S45°01'33"E	21.22'
C3	15.00'	13.14'	50°12'29"	S25°06'15"W	12.73'
C4	60.00'	29.62'	28°16'59"	S36°04'00"W	29.32'
C5	60.00'	51.18'	48°52'17"	S2°30'39"E	49.64'
C6	60.00'	61.40'	58°38'13"	S56°15'54"E	58.76'
C7	60.00'	64.13'	61°14'23"	N63°47'45"E	61.12'
C8	60.00'	50.00'	47°45'06"	N9°18'01"E	48.57'
C9	60.00'	37.32'	35°38'08"	N32°23'29"W	36.72'
C10	15.00'	13.14'	50°12'29"	N25°06'15"W	12.73'
C11 (TOTAL)	60.00'	293.65'	280°24'59"	N90°00'00"W	76.80'
C12	15.00'	23.55'	89°56'54"	N44°58'27"E	21.20'



VICINITY MAP
NOT TO SCALE

SURVEYOR'S CERTIFICATE

I, Douglas J. Kinsman , do hereby certify that I am a Professional Land Surveyor, and that I hold License No. 334575, in accordance with Title 58, Chapter 22, of the Professional Engineers and Land Surveyors Act. I further certify that by authority of the owners I have completed a survey of the property described on this SUBDIVISION plat in accordance with Section 17-23-17, have verified all measurements, and have subdivided said tract of land into lots and streets, together with easements, hereafter to be known as

BLUE SPRUCE SUBDIVISION

and that the same has been correctly surveyed and monumented on the ground as shown on this plat.

Date
Douglas J. Kinsman
License no. 334575

PROFESSIONAL LAND SURVEYOR No. 334575 DOUGLAS J. KINSMAN STATE OF UTAH

BOUNDARY DESCRIPTION

A parcel of land, situate in the Southwest Quarter of Section 6, Township 3 South, Range 5 West, Salt Lake Base and Meridian, more particularly described as follows:

All of Lot 4 of "White Pine Estates Minor SUBDIVISION Amended" as recorded March 4th, 2016, under Entry no. 425650, in the Tooele County Recorder's Office;

Parcel contains: 456,042 square feet or 10.47 acres, 13 Lots, 1 Parcel.

OWNER'S DEDICATION

Know all men by these present that the undersigned are the owner(s) of the hereon described tract of land and hereby cause the same to be divided into lots and streets together with easements as set forth hereafter to be known as:

BLUE SPRUCE SUBDIVISION

The undersigned owner(s) hereby dedicate to Grantsville City all those parts or portions of said tract of land on said plat designated hereon as streets, the same to be used as public thoroughfares forever. The undersigned owner(s) also hereby convey to Grantsville City and to any and all public utility companies providing service to the hereon described tract a perpetual, non-exclusive easement over the public utility and drainage easements shown on this plat, the same to be used for sewer, water lines appurtenances, fire facilities, drainage facilities and the installation, maintenance and operation of public utility service lines and facilities. The undersigned owners also hereby convey any other easements as shown and/or noted on this plat to the parties indicated and for the purposes shown hereon.

In witness whereof I / we have hereunto set my / our hand this______day of_______________A.D., 20_____.

By: ICON DEVELOPMENT, LLC
Sean Perkins, Managing Member

By:

LIMITED LIABILITY COMPANY ACKNOWLEDGMENT

STATE OF UTAH
County of Tooele } S.S.

On the ______ day of __________________ A.D., 20________, ____________________, personally appeared before me, the undersigned Notary Public, in and for said County of __________________ in the State of Utah, who after being duly sworn, acknowledged to me that He/She is the ____________________ of ____________________ a Limited Liability Company and that He/She signed the Owner's Dedication freely and voluntarily for and in behalf of said Limited Liability Company for the purposes therein mentioned and acknowledged to me that said Corporation executed the same.

MY COMMISSION EXPIRES:____________________.

____________________ RESIDING IN__________________ COUNTY.
NOTARY PUBLIC

LEGEND

EXISTING STREET MONUMENT	PU&DE	PUBLIC UTILITY & DRAINAGE EASEMENT		EASEMENT LINE	
PROPOSED STREET MONUMENT TO BE SET		BOUNDARY LINE		RIGHT OF WAY LINE	
SECTION CORNER		ADJACENT PROPERTY LINE		ADJACENT RIGHT OF WAY LINE	
5/8"x24" REBAR WITH YELLOW PLASTIC CAP, OR NAIL STAMPED "ENSIGN ENG. & LAND SURV."		SECTION LINE		TANGENT LINE	
		CENTER LINE		DRAINAGE EASEMENT.	
				TEMPORARY TURN AROUND EASEMENT.	

ENSIGN ENG. LAND SURV.

TOOELE COUNTY TREASURER

I HEREBY CERTIFY THAT PROPERTY TAXES DUE AND OWNING HAVE BEEN PAID IN FULL THIS _______ DAY OF _______________, 20______.
FOR PARCEL NO.

TOOELE COUNTY TREASURER

CITY MAYOR APPROVAL

APPROVED THIS _______ DAY OF _______________, 20______.
BY THE GRANTSVILLE CITY MAYOR.

GRANTSVILLE CITY MAYOR ATTEST: GRANTSVILLE CITY RECORDER

CITY ATTORNEY'S APPROVAL

APPROVED THIS _______ DAY OF _______________, 20______.
BY THE GRANTSVILLE CITY ATTORNEY.

GRANTSVILLE CITY ATTORNEY

BLUE SPRUCE SUBDIVISION
PRELIMINARY PLAT

(AMENDING LOT 4 OF WHITE PINE ESTATES SUBDIVISION AMENDED)
LOCATED IN THE SOUTHWEST QUARTER OF SECTION 6, TOWNSHIP 3 SOUTH, RANGE 5 WEST, SALT LAKE BASE AND MERIDIAN, GRANTSVILLE CITY, TOOELE COUNTY, UTAH

CITY FIRE DEPARTMENT APPROVAL

APPROVED THIS _______ DAY OF _______________, 20______.
BY THE GRANTSVILLE CITY FIRE DEPT.

GRANTSVILLE CITY FIRE CHIEF

GRANTSVILLE CITY PUBLIC WORKS APPROVAL

APPROVED THIS _______ DAY OF _______________, 20______.
BY THE GRANTSVILLE CITY PUBLIC WORKS.

GRANTSVILLE CITY PUBLIC WORKS DIRECTOR

PLANNING COMMISSION APPROVAL

APPROVED THIS _______ DAY OF _______________, 20______.
BY THE GRANTSVILLE CITY PLANNING COMMISSION.

CHAIR, GRANTSVILLE CITY PLANNING COMMISSION

TOOELE COUNTY SURVEY DEPARTMENT

APPROVED THIS _______ DAY OF _______________, 20______.
BY THE TOOELE COUNTY SURVEY DEPARTMENT.

RECORD OF SURVEY FILE #2008-0060-01

TOOELE COUNTY SURVEY DEPT. DIRECTOR

ENGINEER'S CERTIFICATE

I HEREBY CERTIFY THAT THIS OFFICE HAS EXAMINED THIS PLAT AND IT IS CORRECT IN ACCORDANCE WITH INFORMATION ON FILE IN THIS OFFICE.

GRANTSVILLE CITY ENGINEER DATE

DEVELOPER
ICON DEVELOPMENT, LLC
3410 N. MOYLE LANE
ERDA, UTAH, 84074
SEAN PERKINS
435-850-8436

SHEET 1 OF 1
PROJECT NUMBER : T1216E
MANAGER : C. CHILD
DRAWN BY : C. CHILD
CHECKED BY : D. KINSMAN
DATE : 1/28/22

ENSIGN
TOOELE
169 North Main Street Unit 1
Tooele, Utah 84074
Phone: 435.843.3590
Fax: 435.576.0108
WWW.ENSIGNENG.COM

SALT LAKE CITY
LAYTON
CEDAR CITY
RICHFIELD

TOOELE COUNTY RECORDER

RECORDED #____________
STATE OF UTAH, COUNTY OF TOOELE, RECORDED AND FILED AT THE
REQUEST OF :____________________
DATE __________ TIME __________
FEES __________ TOOELE COUNTY RECORDER

GRANTSVILLE GENERAL NOTES

1. ALL WORK DONE OR IMPROVEMENTS INSTALLED WITHIN GRANTSVILLE CITY INCLUDING BUT NOT LIMITED TO EXCAVATION, CONSTRUCTION, ROADWORK AND UTILITIES SHALL CONFORM TO THE GRANTSVILLE CITY CONSTRUCTION STANDARDS AND SPECIFICATIONS, CITY MUNICIPAL CODE, THE LATEST EDITION OF THE APWA MANUAL OF STANDARD SPECIFICATIONS AND MANUAL OF STANDARD PLANS, THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND ANY STATE OR FEDERAL REGULATIONS AND PERMIT REQUIREMENTS OF VARIOUS GOVERNING BODIES. THE CONTRACTOR IS RESPONSIBLE TO HAVE A COPY OF THESE SPECIFICATIONS AND TO KNOW AND CONFORM TO THE APPROPRIATE CODES, REGULATIONS, DRAWINGS, STANDARDS AND SPECIFICATIONS.
2. THE EXISTENCE AND LOCATION OF ANY OVERHEAD OR UNDERGROUND UTILITY LINES, PIPES, OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A RESEARCH OF THE AVAILABLE RECORDS. EXISTING UTILITIES ARE LOCATED ON PLANS ONLY FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR SHALL BEAR FULL RESPONSIBILITY FOR THE PROTECTION OF UTILITIES AND THE ENGINEER BEARS NO RESPONSIBILITY FOR UTILITIES NOT SHOWN ON THE PLANS OR NOT IN THE LOCATION SHOWN ON THE PLANS. THIS INCLUDES ALL SERVICE LATERALS OF ANY KIND. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, LOCATE ALL UNDERGROUND AND OVERHEAD INTERFERENCES, WHICH MAY AFFECT HIS OPERATION DURING CONSTRUCTION AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE OF THE SAME. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR OVERHEAD UTILITIES SO AS TO SAFELY PROTECT ALL PERSONNEL AND EQUIPMENT, AND SHALL BE RESPONSIBLE FOR ALL COST AND LIABILITY IN CONNECTION THEREWITH.
3. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING UTILITY LINES, STRUCTURES, SURVEY MONUMENTS AND STREET IMPROVEMENTS WHICH ARE TO REMAIN IN PLACE, FROM DAMAGE, AND ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED SATISFACTORY TO THE CITY ENGINEER AND OWNING UTILITY COMPANY AT THE EXPENSE OF THE CONTRACTOR.
4. ALL CONSTRUCTION SHALL BE AS SHOWN ON THESE PLANS, ANY REVISIONS SHALL HAVE THE PRIOR WRITTEN APPROVAL OF THE CITY ENGINEER AND PUBLIC WORKS DIRECTOR.
5. PERMITS ARE REQUIRED FOR ANY WORK IN THE PUBLIC WAY. THE CONTRACTOR SHALL SECURE ALL PERMITS AND INSPECTIONS REQUIRED FOR THIS CONSTRUCTION.
6. CURB, GUTTER, AND SIDEWALK, FOUND TO BE UNACCEPTABLE PER CITY STANDARDS AND APWA SHALL BE REMOVED AND REPLACED.
7. CONTRACTOR SHALL PROVIDE ALL NECESSARY HORIZONTAL AND VERTICAL TRANSITIONS BETWEEN NEW CONSTRUCTION AND EXISTING SURFACES TO PROVIDE FOR PROPER DRAINAGE AND FOR INGRESS AND EGRESS TO NEW CONSTRUCTION. THE EXTENT OF TRANSITIONS TO BE AS SHOWN ON PLANS.
8. ANY SURVEY MONUMENTS DISTURBED SHALL BE REPLACED AND ADJUSTED PER TOOELE COUNTY SURVEYORS REQUIREMENTS.
9. ALL PRIVACY WALLS, NEW OR EXISTING, ARE ONLY SHOWN ON CIVIL PLANS FOR THE PURPOSE OF REVIEWING GRADING RELATIONSHIPS; FLOOD CONTROL AND SIGHT DISTANCE AT INTERSECTIONS. ALL WALLS SHALL HAVE A MINIMUM 2 FT X 2 FT X 30 INCH DEEP SPOT FOOTINGS. BOTTOM OF ALL FOOTINGS ON ALL WALLS SHALL BE A MINIMUM OF 30 INCHES BELOW FINISHED GRADE. WALLS GREATER THAN 6 FEET REQUIRE A SEPARATE PERMIT AND INSPECTION BY THE BUILDING DEPARTMENT.
10. ALL CONSTRUCTION MATERIALS PER APWA MUST BE SUBMITTED AND APPROVED BY THE CITY ENGINEER PRIOR TO THE PLACEMENT OF ASPHALT WITHIN CITY RIGHT OF WAY. GRANTSVILLE PUBLIC WORKS WILL APPROVE PIPE ZONE MATERIAL TO BE PLACED.
11. REQUEST FOR INSPECTION BY THE GRANTSVILLE CITY ENGINEERING DEPT. SHALL BE MADE BY THE CONTRACTOR AT LEAST 48 HOURS BEFORE THE INSPECTION SERVICES WILL BE REQUIRED.
12. WORK IN PUBLIC WAY, ONCE BEGUN, SHALL BE PROSECUTED TO COMPLETION WITHOUT DELAY AS TO PROVIDE MINIMUM INCONVENIENCE TO ADJACENT PROPERTY OWNERS AND TO THE TRAVELING PUBLIC. PLEASE SEE CODE 17 GENERAL PROVISIONS FOR MORE DETAILS.
13. THE CONTRACTOR SHALL TAKE ALL NECESSARY AND PROPER PRECAUTIONS TO PROTECT ADJACENT PROPERTIES FROM ANY AND ALL DAMAGE THAT MAY OCCUR FROM STORM WATER RUNOFF AND/OR DEPOSITION OF DEBRIS RESULTING FROM ANY AND ALL WORK IN CONNECTION WITH CONSTRUCTION.
14. POWER POLES AND/OR OTHER EXISTING FACILITIES NOT IN PROPER LOCATION BASED ON PROPOSED IMPROVEMENTS SHOWN HEREON WILL BE RELOCATED AT NO EXPENSE TO THE GRANTSVILLE CITY. POWER LINES AND ALL OTHER AERIAL UTILITIES ARE TO BE BURIED AND POLES REMOVED AS DETERMINED BY THE CITY ENGINEER.
15. CURB AND GUTTER WITH A GRADE OF LESS THAN FOUR-TENTHS OF ONE PERCENT SHALL BE CONSTRUCTED BY FORMING. EACH JOINT SHALL BE CHECKED FOR A GRADE PRIOR TO CONSTRUCTION AND WATER TESTED AS SOON AS POSSIBLE AFTER CONSTRUCTION.
16. CONTRACTOR TO FOLLOW GRANTSVILLE CITY NOISE ORDINANCE STANDARDS CODE ORDINANCE 2018-19
17. CONTRACTORS ARE RESPONSIBLE FOR ALL OSHA REQUIREMENTS ON THE PROJECT SITE.
18. A UPDES (UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM) PERMIT IS REQUIRED FOR ALL CONSTRUCTION ACTIVITIES AS PER STATE LAW AS WELL AS PROVIDING A STORM WATER POLLUTION PREVENTION PLAN TO THE CITY.
19. ALL CITY MAINTAINED UTILITIES INCLUDING; WATERLINE, FIRE HYDRANTS, STREETLIGHT WIRING, AND STORM DRAIN MUST BE IN PUBLIC RIGHT OF WAY OR IN RECORDED EASEMENTS.
20. CONTRACTOR SHALL WORK GRANTSVILLE CITY REGULAR WORKING HOURS OF MONDAY THROUGH FRIDAY 7:00 AM TO 4:00 PM
21. PRIOR TO 90% BOND RELEASE, A LEGIBLE AS-BUILT DRAWING MUST BE SUBMITTED TO THE GRANTSVILLE CITY STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER. AS-BUILTS MUST SHOW ALL CHANGES AND ACTUAL FIELD LOCATIONS OF STORM DRAINAGE, WATERLINES, IRRIGATION, STREET LIGHTING, AND POWER. AS-BUILTS WILL BE HELD TO THE SAME STANDARD AS APPROVED DESIGN DRAWINGS. NO 'REDLINED PLANS' ALLOWED. IN THE ABSENCE OF CHANGES, COPIES OF THE APPROVED DRAWINGS WILL BE REQUIRED STATING 'INSTALLED AS PER DRAWINGS'. AS-BUILT DRAWINGS FOR NEW DEVELOPMENTS SHALL BE SUBMITTED TO THE CITY IN THE FOLLOWING FORMATS AND QUANTITIES PRIOR TO THE 90% BOND RELEASE: 1 .DXF COPY, 1 .PDF COPY, AND 1 GIS SHAPE FILE CONTAINING THE SAME.
22. FILTER FABRIC WRAPPED AROUND AN INLET GRATE IS NOT AN ACCEPTABLE INLET SEDIMENT BARRIER. SEE GRANTSVILLE CITY CONSTRUCTION STANDARDS AND SPECIFICATIONS FOR DETAILS OF APPROVED STORM WATER BMPS WHICH SPECIFICALLY STATES THE UTILIZATION OF AN OIL WATER SNOUT SEPARATOR.
23. ASPHALT PAVING IS NOT ALLOWED WITHOUT A WRITTEN EXCEPTION FROM THE ENGINEERING DEPARTMENT AND PUBLIC WORKS DEPARTMENT BELOW AN AMBIENT TEMPERATURE OF 50 DEGREES AND RISING.
24. TO ENSURE PROPER PLANTING, PROTECTION AND IRRIGATION OF TREES, MITIGATING RISK OF TREE FAILURE OR FUTURE DAMAGE TO INFRASTRUCTURE, CONTRACTORS ARE REQUIRED TO FOLLOW THE STANDARDS AND SPECIFICATIONS OF THE ISA - INTERNATIONAL SOCIETY OF ARBORICULTURE.
25. WHEN A PROPOSED DEVELOPMENT BORDERS A COLLECTOR, MINOR COLLECTOR OR ARTERIAL STREET AND IS REQUIRED TO CONSTRUCT COLLECTOR STREET FENCING ALONG THE BACK OF SIDEWALK, THE DEVELOPMENT SHALL ALSO BE REQUIRED PUT IN A CONCRETE MOW STRIP FROM THE BACK OF SIDEWALK TO UNDERNEATH THE FENCE PANELS. CONCRETE MOW STRIPS SHALL ALSO BE REQUIRED BETWEEN THE SIDEWALK AND FENCING ALONG THE REAR OF DOUBLE FRONTAGE LOTS.
26. CONCRETE FOR ALL SURFACE IMPROVEMENTS INCLUDING BUT NOT LIMITED TO; SIDEWALK, DRIVEWAY ENTRANCES, PEDESTRIAN RAMPS, CURB AND GUTTER, WATER WAYS, MANHOLE, VAULT AND VALVE COLLARS, AND ANY OTHER CAST IN PLACE SURFACE CONCRETE FEATURES SHALL BE CONSTRUCTED WITH MINIMUM 4,500 PSI CONCRETE.
27. CULINARY WATER AND SEWER SERVICE LATERALS SHALL BE MARKED ON THE TOP BACK OF CURB AND LIP OF CURB AT THEIR ACTUAL LOCATION OF CROSSING THE CURB AND GUTTER. PINS OR STAMPS SHALL BE USED AND MUST BE INSTALLED WHILE THE CONCRETE IS STILL WET AND WILL READILY ACCEPT THE MARKER. GRINDING MARKING DUE TO DRY CEMENT IS NOT ALLOWED.

GRANTSVILLE CITY GRADING NOTES

1. IN THE EVENT THAT ANY UNFORESEEN CONDITIONS NOT COVERED BY THESE NOTES ARE ENCOUNTERED DURING GRADING OPERATIONS, THE OWNER AND CITY ENGINEER SHALL BE IMMEDIATELY NOTIFIED FOR DIRECTION.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM ALL NECESSARY CUTS AND FILLS WITHIN THE LIMITS OF THIS PROJECT AND THE RELATED OFF-SITE WORK, SO AS TO GENERATE THE DESIRED SUBGRADE, FINISH GRADES AND SLOPES SHOWN.
3. CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ALL EXCAVATION. ADEQUATE SHORING SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR TO PREVENT UNDERMINING OF ANY ADJACENT FEATURES OR FACILITIES AND/OR CAVING OF THE EXCAVATION.
4. THE CONTRACTOR IS WARNED THAT AN EARTHWORK BALANCE WAS NOT NECESSARILY THE INTENT OF THIS PROJECT. ANY ADDITIONAL MATERIAL REQUIRED OR LEFTOVER MATERIAL FOLLOWING EARTHWORK OPERATIONS BECOMES THE RESPONSIBILITY OF THE CONTRACTOR.
5. CONTRACTOR SHALL GRADE THE PAVEMENT AREA SUBGRADE TO THE LINES (HORIZONTAL) AND ELEVATIONS (VERTICAL) SHOWN ON THE PLANS WITHIN A TOLERANCE OF 0.1 + TO 0.1 -.
6. ALL CUT AND FILL SLOPES SHALL BE PROTECTED UNTIL EFFECTIVE EROSION CONTROL HAS BEEN ESTABLISHED.
7. THE USE OF POTABLE WATER WITHOUT A SPECIAL PERMIT FOR BUILDING OR CONSTRUCTION PURPOSES INCLUDING CONSOLIDATION OF BACKFILL OR DUST CONTROL IS PROHIBITED. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR CONSTRUCTION WATER FROM GRANTSVILLE CITY ENGINEERING AND UTILITIES DEPARTMENT.
8. THE CONTRACTOR SHALL MAINTAIN THE STREETS, SIDEWALKS AND ALL OTHER PUBLIC RIGHT-OF WAY IN A CLEAN, SAFE AND USABLE CONDITION. ALL SPILLS OF SOIL, ROCK OR CONSTRUCTION DEBRIS SHALL BE PROMPTLY REMOVED FROM THE PUBLICLY OWNED PROPERTY DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT. ALL ADJACENT PROPERTY, PRIVATE OR PUBLIC SHALL BE MAINTAINED IN A CLEAN, SAFE AND USABLE CONDITION.
9. IN THE EVENT THAT ANY TEMPORARY CONSTRUCTION ITEM IS REQUIRED THAT IS NOT SHOWN ON THESE DRAWINGS, THE DEVELOPER AGREES TO PROVIDE AND INSTALL SUCH ITEM AT HIS OWN EXPENSE AND AT THE DIRECTION OF THE CITY ENGINEER. TEMPORARY CONSTRUCTION INCLUDES DITCHES, BERMS, ROAD SIGNS AND BARRICADES, ETC.
10. ALL GRADING WORK SHALL CONFORM TO THE SOILS REPORT AS PREPARED BY THE SOILS ENGINEER AND APPROVED BY THE CITY ENGINEER, AND AS SHOWN ON THESE PLANS.
11. ALL QUALITY CONTROL TESTING SHALL BE PERFORMED BY AN INDEPENDENT LICENSED AND CERTIFIED THIRD-PARTY TESTING SERVICE.

GRANTSVILLE CITY TRAFFIC NOTES

1. WHEN A DESIGNATED 'SAFE ROUTE TO SCHOOL' IS ENCROACHED UPON BY A CONSTRUCTION WORK ZONE THE SAFE ROUTE SHALL BE MAINTAINED IN A MANNER ACCEPTABLE TO GRANTSVILLE CITY.
2. IF THE IMPROVEMENTS NECESSITATE THE OBLITERATION, TEMPORARY OBSTRUCTION, TEMPORARY REMOVAL OR RELOCATION OF ANY EXISTING TRAFFIC PAVEMENT MARKING, SUCH PAVEMENT MARKING SHALL BE RESTORED OR REPLACED WITH LIKE MATERIALS TO THE SATISFACTION OF THE CITY ENGINEER, PUBLIC WORKS DIRECTOR OR DESIGNEE.
3. THE STREET SIGN CONTRACTOR SHALL OBTAIN STREET NAMES AND BLOCK NUMBERING FROM THE PLANNING DEPARTMENT PRIOR TO CONSTRUCTION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL PERMANENT SIGNS SHOWN ON THE PLANS. STREET NAME SIGNS SHALL CONFORM IN THEIR ENTIRETY TO CURRENT CITY STANDARDS AND THE LATEST MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) MANUAL. ALL OTHER SIGNS SHALL BE STANDARD SIZE UNLESS OTHERWISE SPECIFIED ON THE PLANS. ALL SIGN POSTS SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT CITY STANDARDS AND THE LATEST MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) MANUAL.
5. ALL PERMANENT TRAFFIC CONTROL DEVICES CALLED FOR HEREON SHALL BE IN PLACE AND IN FINAL POSITION PRIOR TO ALLOWING ANY PUBLIC TRAFFIC ONTO THE PORTIONS OF THE ROAD(S) BEING IMPROVED HEREUNDER, REGARDLESS OF THE STATUS OF COMPLETION OF PAVING OR OTHER OFF-SITE IMPROVEMENTS CALLED FOR PER APPROVED CONSTRUCTION DRAWINGS UNLESS APPROVED BY THE CITY ENGINEER & PUBLIC WORKS DIRECTOR.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING UTAH TRANSIT AUTHORITY (UTA) IF APPLICABLE. IF THE CONSTRUCTION INTERRUPTS OR RELOCATES A BUS STOP OR HAS AN ADVERSE EFFECT ON BUS SERVICE ON THAT STREET TO ARRANGE FOR TEMPORARY RELOCATION OF STOP.
7. BEFORE ANY WORK IS STARTED IN THE RIGHT-OF-WAY, THE CONTRACTOR SHALL INSTALL ALL ADVANCE WARNING SIGNS FOR THE CONSTRUCTION ZONE. THE CONTRACTOR SHALL INSTALL TEMPORARY STOP SIGNS AT ALL NEW STREET ENCROACHMENTS INTO EXISTING PUBLIC STREETS. ALL CONSTRUCTION SIGNING, BARRICADING, AND TRAFFIC DELINEATION SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) PER THE CURRENT EDITION ADOPTED BY UDOT AND BE APPROVED BY THE GRANTSVILLE CITY BEFORE CONSTRUCTION BEGINS. TRAFFIC CONTROL PLANS SHALL BE SUBMITTED AS PART OF THE ENGINEERING CONSTRUCTION PACKAGE AND APPROVED BY THE GRANTSVILLE CITY ENGINEER AND PUBLIC WORKS DIRECTOR.
8. ALL SIGNS LARGER THAN 36" X 36" OR 1296 SQUARE INCHES PER SIGN POLE SHALL BE MOUNTED ON A SLIP BASE SYSTEM PER UDOT STANDARD DRAWING SN 10B (DETAIL DRAWING ATTACHED TO STANDARD DRAWINGS) WITH A 'Z' BAR BACKING. SIGNS OF THIS SIZE ARE NOT ALLOWED TO BE MOUNTED ON A YIELDING POLE.
9. SIGN COMPONENTS SUCH AS SHEETING, EC FILM, INKS, LETTERS AND BORDERS ARE ALL REQUIRED TO BE FROM THE SAME MANUFACTURER. ONLY EC FILM MAY BE USED TO ACHIEVE COLOR. VINYL EC FILM IS NOT ACCEPTED.
10. ALL NEW ROUNDABOUTS, CROSSWALKS, STOP BARS AND LEGENDS SHALL BE INSTALLED WITH PAINT AND GLASS BEAD.
11. PAVING ASPHALT BINDER GRADE SHALL BE PG 58-28 UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER. ASPHALT AGGREGATE SIZE SHALL BE ½ INCH FOR RESIDENTIAL AND COLLECTOR ROADS. NO MORE THAN 15% RAP (RECLAIMED ASPHALT PAVEMENT) BY WEIGHT WILL BE ALLOWED IN THE ASPHALT MIX DESIGN FOR THE PAVING OF PUBLIC AND PRIVATE STREETS. UP TO THE 15 PERCENT WILL BE ALLOWED WITH NO CHANGE IN THE SPECIFIC BINDER GRADE. THE ASPHALT MIX DESIGN SHALL HAVE NO MORE THAN 3½ % AIR VOIDS.
14. POTHOLING: ALL POTHOLES MUST BE SAW CUT SQUARE AND HAVE A MINIMUM SIZE OF 1 SQUARE FOOT. WHEN REPAIRING A POTHOLE, SAND OR PEA GRAVEL MEETING GRANTSVILLE CITY STANDARDS SHALL BE PLACED OVER THE EXPOSED UTILITY TO A DEPTH OF 6 INCHES, FOLLOWING THE PEA GRAVEL WILL BE FLOWABLE FILL UP TO 1 INCH BELOW THE BOTTOM EDGE OF THE EXISTING ASPHALT. THE REMAINING PORTION OF THE HOLE SHALL BE FILLED WITH ASPHALT, WHICH WILL HAVE AN OVERALL THICKNESS OF THE EXISTING ASPHALT PLUS 1 INCH.
15. ALL FILL WITHIN THE PUBLIC RIGHT OF WAY SHALL BE A-1-A TO A-3, WITH THE EXCEPTION OF TOP SOIL IN THE PARK STRIP FOR LANDSCAPING AND TRENCH BACKFILL, TRENCH BACKFILL MATERIAL UNDER PAVEMENTS OR SURFACE IMPROVEMENTS SHALL BE CLEAN, NONCLUMPING, GRANULAR AND FLOWABLE, 2" MINUS, A-1-A TO A-2-7 SOILS ACCORDING TO AASHTO 145 SOIL CLASSIFICATION SYSTEM. LIME TREATED FLOWABLE FILLS, IF APPROVED, SHALL HAVE A 28-DAY STRENGTH OF 65 PSI. 16. ALL TRAFFIC ROAD CLOSURES INVOLVING 1 OR MORE LANES OF TRAFFIC MUST RECEIVE PRIOR APPROVAL FROM THE CITY ENGINEER, PUBLIC WORKS DIRECTOR OR HIS/HER REPRESENTATIVE. VMS PCMS BOARDS MUST BE PLACED A MINIMUM OF 7 DAYS IN ADVANCE OF ANY LANE CLOSURE ON COLLECTOR, MINOR COLLECTOR OR ARTERIAL STREET. VMS PCMS BOARDS MUST ALSO BE PLACED IN ADVANCE OF ANY LANE CLOSURES ON A SUBDIVISION STREET PER THE CITY ENGINEER'S DIRECTION.
17. ROUNDABOUTS, INCLUDING THEIR INGRESS AND EGRESS, SHALL BE CONSTRUCTED WITH CONCRETE PAVEMENT. ENGINEER SHALL DESIGN CROSS SECTION AND SUBMIT TO THE CITY FOR REVIEW AND APPROVAL.

GRANTSVILLE CITY WATER NOTES

1. THE FOLLOWING GRANTSVILLE CITY WATER NOTES ARE INTENDED FOR GENERAL WATER STANDARDS ONLY AND ARE NOT ALL INCLUSIVE. THE CITY HAS INCLUDED THE CULINARY WATER DESIGN AND CONSTRUCTION STANDARDS WITHIN THE CITY CONSTRUCTION STANDARDS AND SPECIFICATIONS.
2. NO WORK SHALL BEGIN UNTIL THE WATER PLANS HAVE BEEN RELEASED FOR CONSTRUCTION BY THE ENGINEERING DEPARTMENT. FOLLOWING WATER PLAN APPROVAL, FORTY-EIGHT (48) HOUR NOTICE SHALL BE GIVEN TO THE ENGINEERING DEPARTMENT AND THE PUBLIC WORKS DEPARTMENT PRIOR TO THE START OF CONSTRUCTION. NOTICE MUST BE GIVEN BY 2:00 P.M. THE BUSINESS DAY PRIOR TO AN INSPECTION.
3. ALL WORK WITHIN GRANTSVILLE CITY SHALL CONFORM TO GRANTSVILLE CITY STANDARDS AND SPECIFICATIONS, AWWA AND APWA.
4. FOR RESIDENTIAL DEVELOPMENTS - THE DEVELOPER SHALL PURCHASE AND INSTALL METER BOXES AND SETTERS ACCORDING TO CITY STANDARDS ON NEWLY DEVELOPED LOTS AND REAL PROPERTY AT THE TIME OF WATER MAIN INSTALLATION. WATER METERS WILL BE SUPPLIED AND INSTALLED BY THE GRANTSVILLE UTILITIES DEPARTMENT (AT DEVELOPER'S EXPENSE). THE DEVELOPER SHALL ALSO PROVIDE THE SITE ADDRESS, LOT NUMBER, METER SIZE AND PAY METER FEES PRIOR TO BUILDING PERMIT APPROVAL. THE DEVELOPER SHOULD ALSO PAY FOR RENTAL OF A HYDRANT METER, AND/OR USE THE GRANTSVILLE CITY PUBLIC WATER STANDPIPE LOCATED BY THE PUBLIC WORKS BUILDING.
5. FOR COMMERCIAL AND CONDOMINIUM DEVELOPMENTS - THE DEVELOPER SHALL PURCHASE AND INSTALL METER BOXES AND SETTERS ACCORDING TO CITY STANDARDS. WATER METERS WILL BE SUPPLIED BY GRANTSVILLE CITY PUBLIC WORKS DEPARTMENT (AT DEVELOPER'S EXPENSE) AND INSTALLED BY DEVELOPER.
6. ALL WATER FACILITIES SHALL BE FILLED, DISINFECTED, PRESSURE TESTED, FLUSHED, FILLED AND AN ACCEPTABLE WATER SAMPLE OBTAINED PRIOR TO COMMISSIONING THE NEW WATER LINE TO THE GRANTSVILLE CITY CULINARY WATER DISTRIBUTION SYSTEM.
7. GRANTSVILLE CITY UTILITIES DEPARTMENT MUST APPROVE WATER SHUT DOWN WHICH MAY REQUIRE EVENING AND WEEKEND SHUT DOWN AS DEEMED NECESSARY, REQUIRING THE CONTRACTOR TO BE BILLED FOR OVERTIME. 48 HOUR NOTICE IS REQUIRED.
8. WATER STUB-OUT INSTALLATIONS WILL NOT BE CONSTRUED AS A COMMITMENT FOR WATER SERVICE.
9. CONDITIONAL APPROVAL OF VALVED OUTLET (6" AND LARGER): IN THE EVENT THE WATER PLANS SHOW ONE OR MORE VALVED OUTLETS EXTENDING OUT OF PAVED AREAS, INSTALLATIONS OF THESE OUTLETS IS ACCEPTABLE, HOWEVER, IF THE OUTLETS ARE INCORRECTLY LOCATED OR NOT USED FOR ANY REASON WHEN THE PROPERTY IS DEVELOPED, THE DEVELOPER SHALL ABANDON THE OUTLETS AT THE CONNECTION TO THE ACTIVE MAIN IN ACCORDANCE WITH THE CITY STANDARDS AND AT THE DEVELOPER'S EXPENSE.
10. ALL LINES TO BE PRESSURE TESTED ACCORDING TO GRANTSVILLE CITY AND AWWA STANDARDS AND CHLORINATED PRIOR TO USE AND FINAL ACCEPTANCE.
11. ALL FITTINGS TO BE COATED WITH POLY FM GREASE AND WRAPPED WITH 8-MIL THICK POLYETHYLENE.
12. NO OTHER UTILITY LINES MAY BE PLACED IN THE SAME TRENCH WITH WATER LINE UNLESS APPROVED BY THE CITY ENGINEER.
13. ANY CONFLICT WITH EXISTING UTILITIES SHALL BE IMMEDIATELY CALLED TO THE ATTENTION OF THE CITY ENGINEER OR DESIGNEE.
14. ALL WATER VAULTS WILL BE CONSTRUCTED PER GRANTSVILLE CITY STANDARD DRAWINGS AND SPECIFICATIONS. NO VAULTS ARE ALLOWED IN TRAFFIC AREAS WITHOUT PRIOR APPROVAL OF THE CITY ENGINEER.
15. LANDSCAPING AND IRRIGATION ADJACENT TO VAULTS SHALL DRAIN AWAY FROM VAULTS.
16. ONCE THE WATERLINE HAS BEEN TESTED, APPROVED AND CITY WATER IS FLOWING THROUGH THE PIPE, ONLY CITY PERSONNEL ARE AUTHORIZED TO SHUT DOWN AND CHARGE THE WATERLINE.
17. MEGALUG FOLLOWING RING OR AN APPROVED EQUIVALENT SHALL BE USED ON ALL FITTINGS.
18. APWA PLAN 562, CITY REQUIRES STAINLESS STEEL TIE-DOWN RESTRAINTS WITH TURNBUCKLES ONLY, 5/8" REBAR IS NOT ACCEPTABLE. MEGALUG FOLLOWERS REQUIRED ON ALL FITTINGS AND ALL DIMENSIONS OF THRUST BLOCKING STILL APPLY. THRUST BLOCKS MAY BE ELIMINATED IF HORIZONTAL TIE DOWN RESTRAINTS HAVE BEEN PRE-ENGINEERED AND RECEIVE PRIOR CITY APPROVAL.
19. WATER MAINS WILL BE HOT TAPPED AS CALLED OUT ON THE APPROVED PLANS. UNDER SPECIAL CIRCUMSTANCES, WHEN A CONTRACTOR SUBMITS A REQUEST FOR A SHUTDOWN CONTRARY TO THE APPROVED PLANS AND THE REQUEST IS APPROVED AT THE DISCRETION OF THE CITY ENGINEER OR DESIGNEE, THE CONTRACTOR MUST PROVIDE 48-HOUR NOTICE TO NEIGHBORS AND THOSE AFFECTED. IF BUSINESSES ARE IMPACTED BY THE SHUTDOWN IT WILL BE DONE AFTER HOURS AND ALL OVERTIME FEES FOR CITY PERSONNEL, EQUIPMENT AND VEHICLES MUST BE PAID IN ADVANCE.
20. CONTRACTORS ARE REQUIRED TO WRITE THE LOT NUMBER WITH A BLACK PERMANENT MARKER ON THE INSIDE OF THE WATER METER BARRELS AS THEY ARE INSTALLED.

GRANSTVILLE CITY FIRE DEPARTMENT NOTES

1. ON ANY NEW HOME OR BUILDING INSTALLATION, ACCESSIBLE FIRE HYDRANTS SHALL BE INSTALLED BEFORE COMBUSTIBLE CONSTRUCTION COMMENCES AND SAID FIRE HYDRANTS SHALL BE IN GOOD WORKING ORDER WITH AN ADEQUATE WATER SUPPLY.
2. CONTRACTOR SHALL CALL THE PUBLIC WORKS DEPARTMENT AND ENGINEERING DEPARTMENT FOR UNDERGROUND INSPECTION, PRESSURE AND FLUSH VERIFICATION OF ALL FIRE HYDRANTS AND FIRE LINES BEFORE BACK FILLING.
3. PAINTING OF THE CURBS AND HYDRANT AND ANY WORK NECESSARY FOR PROTECTION OF HYDRANTS FROM PHYSICAL DAMAGE SHALL BE APPROVED BEFORE BEING CONSTRUCTED. HYDRA-FINDERS WILL BE INSTALLED PER GRANTSVILLE CITY STANDARDS DETAIL.
4. A FLOW TEST MUST BE WITNESSED BY THE FIRE DEPARTMENT PRIOR TO OCCUPANCY FOR VERIFICATION OF REQUIRED ON-SITE WATER SUPPLY.
5. ALL ON-SITE FIRE MAIN MATERIALS MUST BE U.L. LISTED AND A.W.W.A. APPROVED.
6. THE TURNING RADIUS FOR ANY FIRE APPARATUS ACCESS ROAD AND/OR FIRE LANE, PUBLIC OR PRIVATE, SHALL BE NOT LESS THAN FORTY-EIGHT FEET (48') OUTSIDE RADIUS EQUALING 96' OR LARGER AND TWENTY-TWO FEET (22') INSIDE RADIUS AND SHALL BE PAVED.
7. A FIRE APPARATUS ROAD SHALL BE REQUIRED WHEN ANY PORTION OF AN EXTERIOR WALL OF THE FIRST STORY IS LOCATED MORE THAN ONE-HUNDRED FIFTY FEET (150') FROM FIRE DEPARTMENT VEHICLE ACCESS ROADS AND/OR FIRE LANES, PUBLIC OR PRIVATE, IN EXCESS OF ONE HUNDRED FIFTY FEET (150') IN LENGTH SHALL BE PROVIDED WITH AN APPROVED TURN AROUND AREA. CONTRACTOR/ENGINEER SHALL FOLLOW LATEST INTERNATIONAL FIRE CODE REGULATIONS AT ALL TIMES IN REGARDS TO DISTANCE.
8. ACCESS ROADS SHALL BE MARKED BY PLACING APPROVED SIGNS AT THE START OF THE DESIGNATED FIRE LANE, ONE SIGN AT THE END OF THE FIRE LANE AND WIDTH SIGNS AT INTERVALS OF ONE-HUNDRED FEET (100') ALONG ALL DESIGNATED FIRE LANES. SIGNS TO BE PLACED ON BOTH SIDES OF AN ACCESS ROADWAY IF NEEDED TO PREVENT PARKING ON EITHER SIDE. SIGNS SHALL BE INSTALLED AT LEAST 6', MEASURED FROM THE BOTTOM EDGE OF THE SIGN TO THE NEAR EDGE OF PAVEMENT. WHERE PARKING OR PEDESTRIAN MOVEMENTS OCCUR, THE CLEARANCE TO THE BOTTOM OF THE SIGN SHALL BE AT LEAST 7'. THE CURB ALONG OR ON THE PAVEMENT OR CEMENT IF CURB IS NOT PRESENT, SHALL BE PAINTED WITH RED WEATHER RESISTANT PAINT IN ADDITION TO THE SIGNS.
9. ELECTRICALLY CONTROLLED ACCESS GATES SHALL BE PROVIDED WITH AN APPROVED EMERGENCY VEHICLE DETECTOR/RECEIVER SYSTEM. SAID SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE GRANTSVILLE CITY F.D. APPROVAL. GATES ARE ONLY ALLOWED WITH PRIOR APPROVAL.
10. ALL PRIVATE UNDERGROUND FIRE LINES THAT SERVICE AUTOMATIC FIRE SPRINKLER SYSTEMS SHALL BE NO SMALLER THAN EIGHT (8) INCHES IN DIAMETER AND HAVE A POST INDICATOR VALVE (PIV) BETWEEN THE WATER MAIN AND THE BUILDING. IF A PIV ISN'T FEASIBLE DUE TO SITE CONSTRAINTS, A WATER INDICATOR VALVE (WIV) MAY BE USED WITH THE APPROVAL OF THE CITY ENGINEER OR FIRE CODE OFFICIAL. FOR A WIV TO BE ALLOWED, ANOTHER VALVE MUST BE INSTALLED ON THE FIRE SERVICE LINE BACK AT THE CONNECTION TO THE WATER MAIN, WHICH WILL BE MAINTAINED BY THE CITY AS PART OF IT'S CULINARY WATER SYSTEM. ALL FIRE LINES MATERIAL SHALL BE DUCTILE IRON. (DUCTILE IRON FROM THE PIV TO THE BUILDING SHALL BE PERMITTED OR DUCTILE IRON FROM THE MAIN WATER LINE TO THE WIV).
11. POST INDICATOR VALVES (PIV) SHALL BE BETWEEN 5 AND 40 FEET FROM BUILDINGS NOT EXCEEDING THREE STORIES OR EQUIVALENT IN HEIGHT AND BETWEEN 30 AND 40 FEET ON BUILDINGS IN EXCESS OF THREE OR MORE STORIES IN HEIGHT OR EQUIVALENT.
12. ROADS AND ACCESSES SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS. SURFACE SHALL BE PAVED BEFORE THE APPLICATION OF COMBUSTIBLE MATERIAL.
13. ALL NEW BUILDINGS EQUIPPED WITH A FIRE DEPARTMENT CONNECTION (FDC) MUST HAVE INLETS SECURED WITH KNOX BRAND LOCKING FDC CAP(S) WITH A SWIVEL COLLAR. ALL NEW BUILDINGS ARE ALSO REQUIRED TO HAVE A KNOX BRAND KEY LOCK BOX MOUNTED ON THE EXTERIOR BUILDING, SUCH THAT FIRE DEPARTMENT PERSONNEL MAY GAIN ACCESS IN CASE OF AN EMERGENCY.

ABBREVIATIONS

APWA	AMERICAN PUBLIC WORKS ASSOCIATION
AR	ACCESSIBLE ROUTE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWWA	AMERICAN WATER WORKS ASSOCIATION
BMP	BEST MANAGEMENT PRACTICES
BOS	BOTTOM OF STEP
BVC	BEGIN VERTICAL CURVE
C	CURVE
CB	CATCH BASIN
CF	CURB FACE
CO	CLEAN OUT
COMM	COMMUNICATION
CONC	CONCRETE
CONT	CONTINUOUS
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
ELEC	ELECTRICAL
ELEV	ELEVATION
EOA	EDGE OF ASPHALT
EVC	END OF VERTICAL CURVE
EW	EACH WAY
EXIST	EXISTING
FF	FINISH FLOOR
FG	FINISH GRADE
FH	FIRE HYDRANT
FL	FLOW LINE OR FLANGE
GB	GRADE BREAK
GV	GATE VALVE
HC	HANDICAP
HP	HIGH POINT
IRR	IRRIGATION
K	RATE OF VERTICAL CURVATURE
LD	LAND DRAIN
LF	LINEAR FEET
LP	LOW POINT
MH	MANHOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
NG	NATURAL GROUND
NO	NUMBER
OC	ON CENTER
OCEW	ON CENTER EACH WAY
OHP	OVERHEAD POWER
PC	POINT OF CURVATURE OR PRESSURE CLASS
PCC	POINT OF COMPOUND CURVATURE
PI	POINT OF INTERSECTION
PIP	PLASTIC IRRIGATION PIPE
PIV	POST INDICATOR VALVE
PRC	POINT OF REVERSE CURVATURE
PRO	PROPOSED
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
R	RADIUS
RD	ROOF DRAIN
ROW	RIGHT OF WAY
S	SLOPE
SAN SWR	SANITARY SEWER
SD	STORM DRAIN
SEC	SECONDARY
SS	SANITARY SEWER
STA	STATION
SW	SIDEWALK
SWL	SECONDARY WATER LINE
TBC	TOP BACK OF CURB
TOG	TOP OF GRATE
TOA	TOP OF ASPHALT
TOC	TOP OF CONCRETE
TOF	TOP OF FOUNDATION
TOW	TOP OF WALL
TOS	TOP OF STEP
TYP	TYPICAL
VC	VERTICAL CURVE
WIV	WALL INDICATOR VALVE
WL	WATER LINE

NOTE: MAY CONTAIN ABBREVIATIONS THAT ARE NOT USED IN THIS PLAN SET.

LEGEND

SECTION CORNER	EXISTING EDGE OF ASPHALT
EXISTING MONUMENT	PROPOSED EDGE OF ASPHALT
PROPOSED MONUMENT	EXISTING STRIPING
EXISTING REBAR AND CAP	PROPOSED STRIPING
SET ENSIGN REBAR AND CAP	EXISTING FENCE
EXISTING WATER METER	PROPOSED FENCE
PROPOSED WATER METER	EXISTING FLOW LINE
EXISTING WATER MANHOLE	PROPOSED FLOW LINE
PROPOSED WATER MANHOLE	GRADE BREAK
EXISTING WATER BOX	EXISTING STORM DRAIN LINE
EXISTING WATER VALVE	PROPOSED STORM DRAIN LINE
PROPOSED WATER VALVE	ROOF DRAIN LINE
EXISTING FIRE HYDRANT	CATCHMENTS
PROPOSED FIRE HYDRANT	HIGHWATER LINE
PROPOSED FIRE DEPARTMENT CONNECTION	EXISTING SANITARY SEWER
EXISTING SECONDARY WATER VALVE	PROPOSED SANITARY SEWER LINE
PROPOSED SECONDARY WATER VALVE	PROPOSED SAN. SWR. SERVICE LINE
EXISTING IRRIGATION BOX	EXISTING LAND DRAIN LINE
EXISTING IRRIGATION VALVE	PROPOSED LAND DRAIN LINE
PROPOSED IRRIGATION VALVE	PROPOSED LAND DRAIN SERVICE LINE
EXISTING SANITARY SEWER MANHOLE	EXISTING CULINARY WATER LINE
PROPOSED SANITARY SEWER MANHOLE	PROPOSED CULINARY WATER LINE
EXISTING SANITARY CLEAN OUT	PROPOSED CULINARY WATER SERVICE LINE
EXISTING STORM DRAIN CLEAN OUT BOX	EXISTING SECONDARY WATER LINE
PROPOSED STORM DRAIN CLEAN OUT BOX	PROPOSED SECONDARY WATER LINE
EXISTING STORM DRAIN INLET BOX	PROPOSED SEC. WATER SERVICE LINE
EXISTING STORM DRAIN CATCH BASIN	EXISTING IRRIGATION LINE
PROPOSED STORM DRAIN CATCH BASIN	PROPOSED IRRIGATION LINE
EXISTING STORM DRAIN COMBO BOX	EXISTING OVERHEAD POWER LINE
PROPOSED STORM DRAIN COMBO BOX	EXISTING ELECTRICAL LINE
EXISTING STORM DRAIN CLEAN OUT	EXISTING GAS LINE
EXISTING STORM DRAIN CULVERT	EXISTING TELEPHONE LINE
PROPOSED STORM DRAIN CULVERT	ACCESSIBLE ROUTE
TEMPORARY SAG INLET PROTECTION	SAW CUT LINE
TEMPORARY IN-LINE INLET PROTECTION	STRAW WATTLE
ROOF DRAIN	TEMPORARY BERM
EXISTING ELECTRICAL MANHOLE	TEMPORARY SILT FENCE
EXISTING ELECTRICAL BOX	LIMITS OF DISTURBANCE
EXISTING TRANSFORMER	EXISTING GRAVEL
EXISTING UTILITY POLE	EXISTING WALL
EXISTING LIGHT	PROPOSED WALL
PROPOSED LIGHT	EXISTING CONTOURS
EXISTING GAS METER	PROPOSED 0.5' CONTOURS
EXISTING GAS MANHOLE	BUILDABLE AREA WITHIN SETBACKS
EXISTING GAS VALVE	PUBLIC DRAINAGE EASEMENT
EXISTING TELEPHONE MANHOLE	EXISTING ASPHALT TO BE REMOVED
EXISTING TELEPHONE BOX	PROPOSED ASPHALT
EXISTING TRAFFIC SIGNAL BOX	EXISTING CURB AND GUTTER
EXISTING CABLE BOX	PROPOSED CURB AND GUTTER
EXISTING BOLLARD	PROPOSED REVERSE PAN CURB AND GUTTER
PROPOSED BOLLARD	TRANSITION TO REVERSE PAN CURB
EXISTING SIGN	TYPE D MOUNTABLE CURB AND GUTTER
PROPOSED SIGN	CONCRETE TO BE REMOVED
EXISTING SPOT ELEVATION	EXISTING CONCRETE
PROPOSED SPOT ELEVATION	PROPOSED CONCRETE
EXISTING FLOW DIRECTION	STAMPED CONCRETE
EXISTING TREE	BUILDING TO BE REMOVED
DENSE VEGETATION	EXISTING BUILDING
	PROPOSED BUILDING

NOTE: MAY CONTAIN SYMBOLS THAT ARE NOT USED IN THIS PLAN SET.

ENSIGN
THE STANDARD IN ENGINEERING

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Tooele, UT. 84074
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FOR:
ICON DEVELOPMENT, LLC
3410 NORTH MOYLE LANE
ERDA, UTAH, 84074
CONTACT:
SEAN PERKINS
PHONE: 435-850-8436

BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

GENERAL NOTES

PROJECT NUMBER: T1216E	PRINT DATE: 2022-01-27
DRAWN BY: C. CHILD	CHECKED BY: J. CLEGG
PROJECT MANAGER: C. CHILD	

C-001

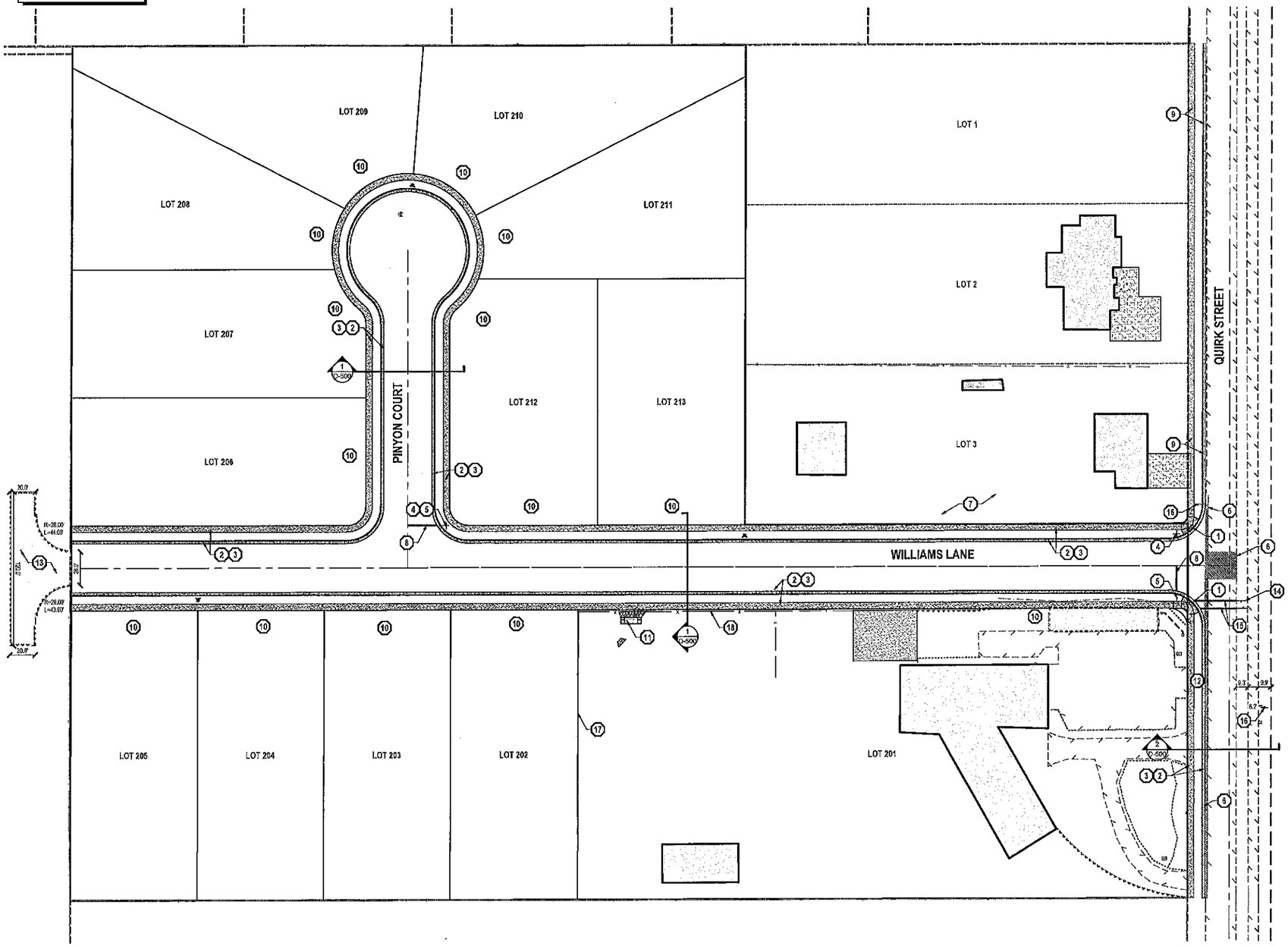
811 Know what's below. Call before you dig.

CALL BLUESTAKES @ 811 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

BENCHMARK

CENTER OF SECTION 2, T2S, R4W, SLB&M
FOUND 3" BRASS AND PIPE TOOELE COUNTY SURVEYORS MONUMENT, DATED 2000

ELEV = 4260.67



GENERAL NOTES

1. ALL WORK TO COMPLY WITH THE GOVERNING AGENCY'S STANDARDS AND SPECIFICATIONS.
2. ALL IMPROVEMENTS MUST COMPLY WITH ADA STANDARDS AND RECOMMENDATIONS.
3. SEE LANDSCAPE/ARCHITECTURAL PLANS FOR CONCRETE MATERIAL, COLOR, FINISH, AND SCORE PATTERNS THROUGHOUT SITE.
4. ALL PAVEMENT MARKINGS SHALL CONFORM TO THE LATEST EDITION OF THE M.U.T.C.D. (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES).
5. ALL SURFACE IMPROVEMENTS DISTURBED BY CONSTRUCTION SHALL BE RESTORED OR REPLACED, INCLUDING TREES AND DECORATIVE SHRUBS, SOD, FENCES, WALLS AND STRUCTURES, WHETHER OR NOT THEY ARE SPECIFICALLY SHOWN ON THE CONTRACT DOCUMENTS.
6. NOTIFY ENGINEER OF ANY DISCREPANCIES IN DESIGN OR STAKING BEFORE PLACING CONCRETE OR ASPHALT.
7. THE CONTRACTOR IS TO PROTECT AND PRESERVE ALL EXISTING IMPROVEMENTS, UTILITIES, AND SIGNS, ETC. UNLESS OTHERWISE NOTED ON THESE PLANS.
8. GRADING PERMIT MUST BE OBTAINED FROM GRANTSVILLE CITY PRIOR TO DISTURBING ANY VEGETATION OR MOVING ANY SOIL. CONTACT THE CITY ENGINEER AT 435-884-1691.
9. RIGHT-OF-WAY ENCROACHMENT PERMIT MUST BE OBTAINED FROM GRANTSVILLE CITY PRIOR TO DOING ANY WORK IN THE EXISTING RIGHT-OF-WAY, OR ON ANY STATE ROADS.

SCOPE OF WORK:

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

1. CONSTRUCT HANDICAP ACCESS RAMP PER APWA PLAN No. 235 AND SPECIFICATIONS, WITH DETECTIBLE WARNING SURFACE PER APWA PLAN No. 238 AND SPECIFICATIONS.
2. CONSTRUCT 2.5' TYPE A CURB AND GUTTER PER APWA PLAN No. 205 AND SPECIFICATIONS. (TYP.)
3. CONSTRUCT 5.0' SIDEWALK PER APWA PLAN No. 231 AND SPECIFICATIONS. (TYP.)
4. INSTALL STREET INTERSECTION IDENTIFICATION PER GRANTSVILLE CITY STANDARDS AND SPECIFICATIONS AND MUTCD R1-1.
5. INSTALL STOP SIGN PER MUTCD R1-1.
6. SAWCUT 2' PAST EXISTING EDGE OF EXISTING ASPHALT PAVEMENT TO PROVIDE A CLEAN EDGE FOR THE TRANSITION BETWEEN EXISTING AND PROPOSED ASPHALT PAVEMENT.
7. PROTECT AND PRESERVE ALL EXISTING IMPROVEMENTS, UTILITIES, SIGNS, ETC. (TYPICAL UNLESS OTHERWISE NOTED).
8. 12" WIDE SOLID STOP BAR PER M.U.T.C.D. STANDARD PLANS.
9. HOME OWNER AND CONTRACTOR TO COORDINATE WITH GRANTSVILLE CITY ON INSTALLING THESE IMPROVEMENTS SIMULTANEOUSLY WITH SUBDIVISION IMPROVEMENTS.
10. DRIVE WAY AND APPROACH TO BE INSTALLED BY LOT OWNER PER GRANTSVILLE CITY STANDARDS.
11. CONCRETE SPILLWAY - SEE GRADING PLAN AND DETAIL 10/D-500.
12. OWNER TO COORDINATE WITH GRANTSVILLE CITY ON EXISTING DRIVE APPROACHES.
13. TEMPORARY TURNAROUND CONSTRUCTED WITH A HARD SURFACE: 10" AGGREGATE BASE 95% MOD PROCTOR ON SUITABLE NATURAL SOILS, PROPERLY PREPARED SOILS, AND/OR STRUCTURAL FILL EXTENDING TO PROPERLY PREPARED/SUITABLE NATURAL SOILS; CAPABLE OF SUPPORTING THE IMPOSED LOAD OF AT LEAST 75,000 POUNDS AND COMPACTION PROCTOR TO AT LEAST 95%. TURNAROUND TO BE INSPECTED BY DEVELOPMENT INSPECTOR.
14. 3" ASPHALTIC CONCRETE PER SPECIFICATIONS, 064-12, PG 64-22, MAX RAP = 15%. ON 8" OF UNTREATED BASE COURSE COMPACTED PER GRANTSVILLE CITY STANDARDS. ENSURE PROPER COVERAGE OVER THE STORM DRAIN CULVERT
15. 6" WIDE SOLID CROSS WALK BAR PER M.U.T.C.D. STANDARD PLANS
16. INSTALL CROSS WALK SIGN PER M.U.T.C.D. STANDARD PLANS
17. EXISTING MASONRY WALL
18. INSTALL MATCHING MASONRY FENCE WITH OPENING FOR RETENTION BASIN EMERGENCY OVERFLOW

NOTE: MAY CONTAIN KEYNOTES THAT ARE NOT USED ON THIS SHEET.

HORIZONTAL GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
HORZ: 1 inch = 40 ft.

ENSIGN
THE STANDARD IN ENGINEERING

TOOELE
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SEAN PERKINS
PHONE: 435-850-8436

BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

NO.	DATE	REVISION	BY
		FOR REVIEW	

SITE PLAN

PROJECT NUMBER: Y1218E
PRINT DATE: 2022-01-27
DRAWN BY: C. CHILD
CHECKED BY: J. CLEGG
PROJECT MANAGER: C. CHILD

C-100

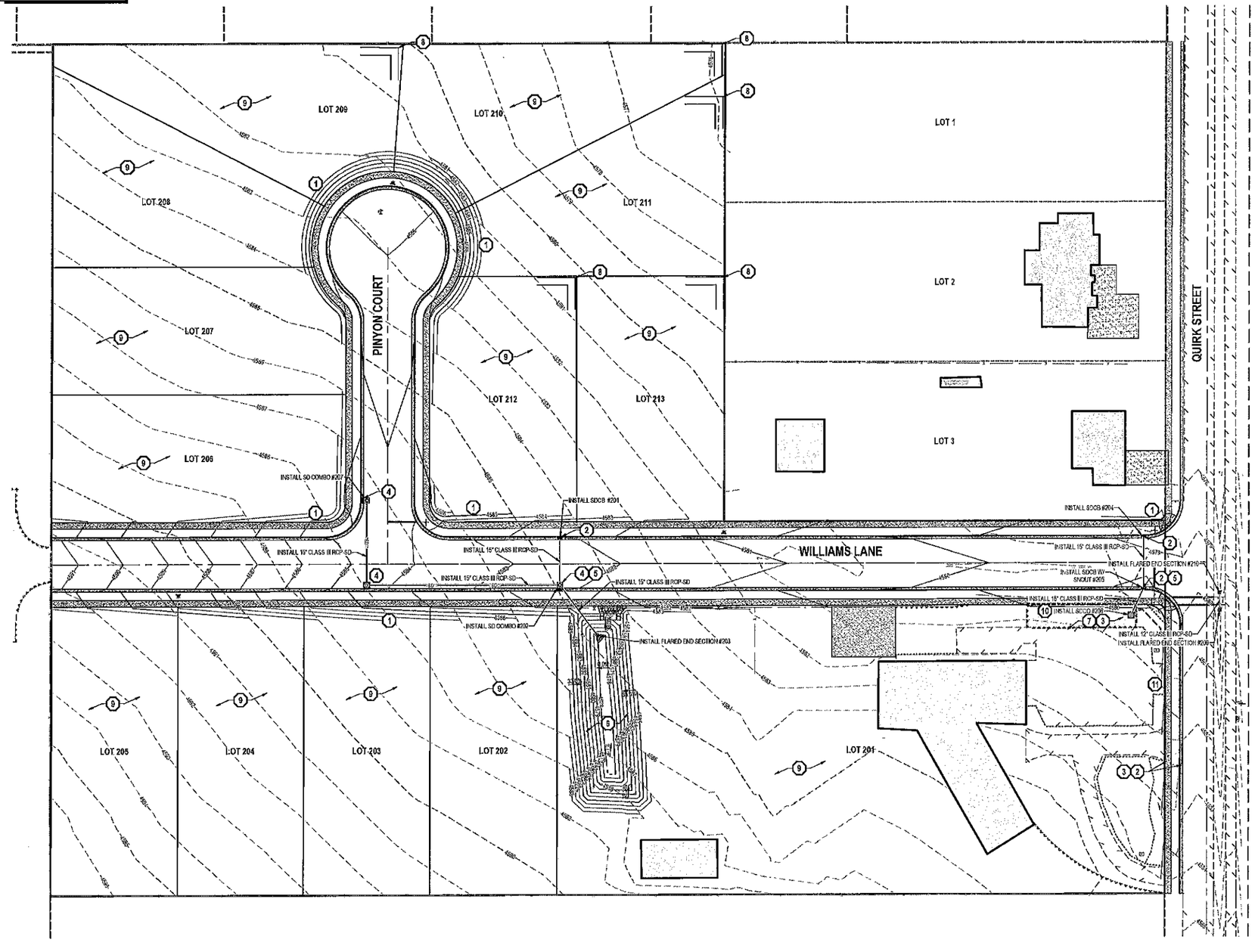
811 CALL BLUESTAKES @ 811 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

Know what's below. Call before you dig.

BENCHMARK

CENTER OF SECTION 2, T2S, R4W, SLB&M (FOUND 3" BRASS AND PIPE TOOELE COUNTY SURVEYORS MONUMENT, DATED 2010)

ELEV = 4200.00'



GENERAL NOTES

1. ALL WORK TO COMPLY WITH THE GOVERNING AGENCY'S STANDARDS AND SPECIFICATIONS.
2. ALL IMPROVEMENTS MUST COMPLY WITH ADA STANDARDS AND RECOMMENDATIONS.
3. ALL WORK SHALL COMPLY WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER POSSIBLY INCLUDING, BUT NOT LIMITED TO, REMOVAL OF UNCONSOLIDATED FILL, ORGANICS, AND DEBRIS, PLACEMENT OF SUBSURFACE DRAIN LINES AND GEOTEXTILE, AND OVEREXCAVATION OF UNSUITABLE BEARING MATERIALS AND PLACEMENT OF ACCEPTABLE FILL MATERIAL.
4. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE EXISTING SOIL CONDITIONS.
5. EXISTING UNDERGROUND UTILITIES AND IMPROVEMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATIONS BASED UPON RECORD INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. LOCATIONS MAY NOT HAVE BEEN VERIFIED IN THE FIELD AND NO GUARANTEE IS MADE AS TO THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXISTENCE AND LOCATION OF THE UTILITIES SHOWN ON THESE PLANS OR INDICATED IN THE FIELD BY LOCATING SERVICES. ANY ADDITIONAL COSTS INCURRED AS A RESULT OF THE CONTRACTOR'S FAILURE TO VERIFY THE LOCATIONS OF EXISTING UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION IN THEIR VICINITY SHALL BE BORNE BY THE CONTRACTOR AND ASSUMED INCLUDED IN THE CONTRACT. THE CONTRACTOR IS TO VERIFY ALL CONNECTION POINTS WITH THE EXISTING UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE CAUSED TO THE EXISTING UTILITIES AND UTILITY STRUCTURES THAT ARE TO REMAIN. IF CONFLICTS WITH EXISTING UTILITIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONSTRUCTION TO DETERMINE IF ANY FIELD ADJUSTMENTS SHOULD BE MADE.
6. ALL STORM DRAIN INFRASTRUCTURE TO BE INSTALLED PER GOVERNING AGENCY OR APWA STANDARD PLANS AND SPECIFICATIONS.
7. ENSURE MINIMUM COVER OVER ALL STORM DRAIN PIPES PER MANUFACTURER'S RECOMMENDATIONS. NOTIFY ENGINEER IF MINIMUM COVER CANNOT BE ATTAINED.
8. THE CONTRACTOR SHALL ADJUST TO GRADE ALL EXISTING UTILITIES AS NEEDED PER LOCAL GOVERNING AGENCY'S STANDARDS AND SPECIFICATIONS.
9. NOTIFY ENGINEER OF ANY DISCREPANCIES IN DESIGN OR STAKING BEFORE PLACING CONCRETE, ASPHALT, OR STORM DRAIN STRUCTURES OR PIPES.
10. THE CONTRACTOR IS TO PROTECT AND PRESERVE ALL EXISTING IMPROVEMENTS, UTILITIES, AND SIGNS, ETC. UNLESS OTHERWISE NOTED ON THESE PLANS.
11. GRADING PERMIT MUST BE OBTAINED FROM GRANTSVILLE CITY PRIOR TO DISTURBING ANY VEGETATION OR MOVING ANY SOIL. CONTACT THE CITY ENGINEER AT 435-884-1561.
12. RIGHT-OF-WAY ENCROACHMENT PERMIT MUST BE OBTAINED FROM GRANTSVILLE CITY PRIOR TO DOING ANY WORK IN THE EXISTING RIGHT-OF-WAY, OR ON ANY STATE ROADS.

SCOPE OF WORK:

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

1. DAYLIGHT TO EXISTING GROUND WITH MAXIMUM 3:1 SLOPE.
2. CATCH BASIN PER CITY STANDARDS AND SPECIFICATIONS.
3. STORM BRIXX UNDERGROUND RETENTION AREA. (WE WILL BE PROVIDED WITH FINAL DESIGN)
4. COMBINATION INLET/CLEANOUT BOX PER CITY STANDARDS AND SPECIFICATIONS.
5. SNOUT 18" OR APPROVED EQUAL. CUT PIPE FLUSH WITH STRUCTURAL WALL. ENSURE PIPE/STRUCTURE INTERFACE IS SMOOTH AND FREE OF DEBRIS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS. INSTALL ON SOUTH SIDE OF STORM DRAIN BOX.
6. RETENTION BASIN I, SEE C-201 AND DETAIL SD-509.
7. RETENTION BASIN II, STORM BRIXX DESIGN (WE WILL BE PROVIDED WITH FINAL DESIGN)
8. BACKYARD 25' X 30' WIDE RETENTION BASIN PER DETAIL SD-509, MINIMUM VOLUME PER C-201 CALCULATIONS.
9. INDIVIDUAL LOT OWNERS ARE REQUIRED TO GRADE LOTS TO PREVENT DRAINAGE ONTO NEIGHBORING PROPERTIES.
10. DRIVE WAY AND APPROACH TO BE INSTALLED BY LOT OWNER PER GRANTSVILLE CITY STANDARDS.
11. OWNER TO COORDINATE WITH GRANTSVILLE CITY ON EXISTING DRIVE APPROACHES.

NOTE: MAY CONTAIN KEYNOTES THAT ARE NOT USED ON THIS SHEET.

HORIZONTAL GRAPHIC SCALE

40 0 20 40 80

(IN FEET)

HORZ: 1 inch = 40 ft.

ENSIGN
THE STANDARD IN ENGINEERING

TOOELE
169 N. Main Street, Unit 1
Tooele, UT. 84074
Phone: 435.843.3590

SALT LAKE CITY
Phone: 801.255.0529

LAYTON
Phone: 801.547.1100

CEDAR CITY
Phone: 435.865.1453

RICHFIELD
Phone: 435.896.2983

WWW.ENSIGNENG.COM

FOR:
ICON DEVELOPMENT, LLC
3410 NORTH MOYLE LANE
ERDA, UTAH 84074
CONTACT:
SEAN PERKINS
PHONE: 435-850-8408

BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

NO.	DATE	REVISION	BY
1		FOR REVIEW	
2			
3			
4			
5			

GRADING PLAN

PROJECT NUMBER: T1218E
PRINT DATE: 2022-01-27
DRAWN BY: C. CHILD
CHECKED BY: J. CLEGG
PROJECT MANAGER: C. CHILD

C-200

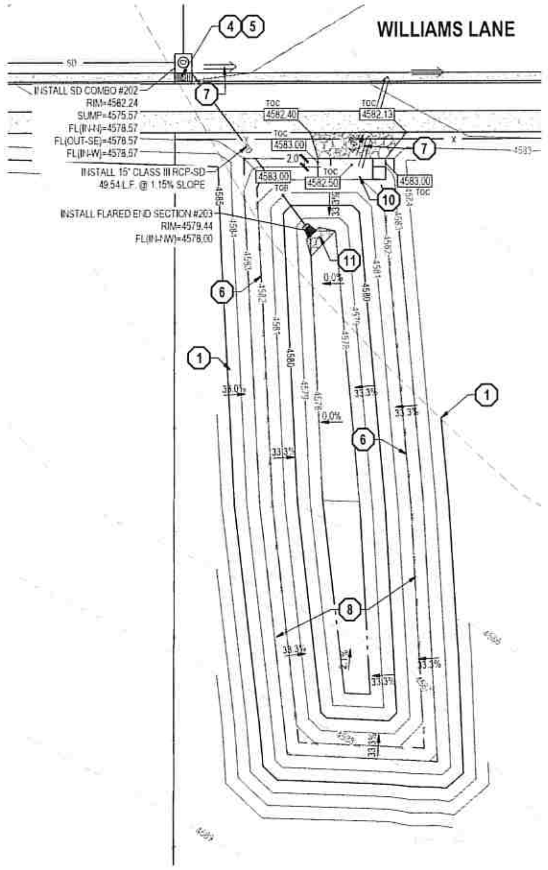
811 Know what's below. Call before you dig.

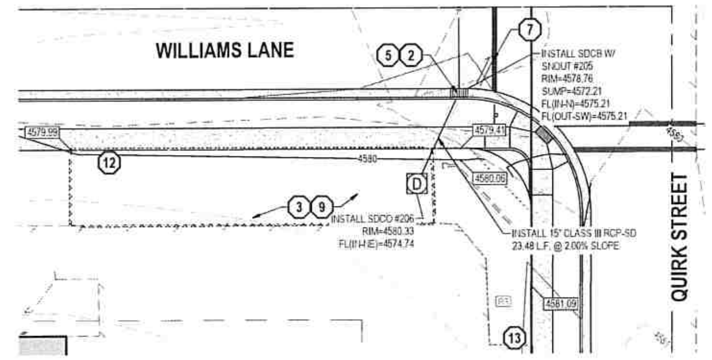
CALL BLUESTAKES @ 811 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

BENCHMARK

CENTER OF SECTION 2, T2S, R4W, SLB&M (FOUND 3" BRASS AND PIPE TOOELE COUNTY SURVEYORS MONUMENT, DATED 2010)

ELEV = 4200.00'





SCOPE OF WORK:

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

(1) DAYLIGHT TO EXISTING GROUND WITH MAXIMUM 3:1 SLOPE.

(2) CATCH BASIN PER CITY STANDARDS AND SPECIFICATIONS.

(3) STORM BRIXX UNDERGROUND RETENTION AREA. SEE C-202 AND ACO, INC DESIGN

(4) COMBINATION INLET/CLEANOUT BOX PER CITY STANDARDS AND SPECIFICATIONS.

(5) SNOUT 15F OR APPROVED EQUAL. CUT PIPE FLUSH WITH STRUCTURAL WALL. ENSURE PIPE/STRUCTURE INTERFACE IS SMOOTH AND FREE OF DEBRIS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS. INSTALL ON SOUTH SIDE OF STORM DRAIN BOX.

(6) HIGH-WATER ELEVATION

(7) 100-YEAR FLOOD ROUTE

(8) RETENTION BASIN I
BASIN TOP OF POND = 4583.00
SPILLWAY ELEVATION = 4582.50
HIGH WATER ELEVATION = 4582.00
BOTTOM OF POND = 4578.50
VOLUME REQUIRED = 7,520 C.F.
VOLUME PROVIDED = 8,028 C.F.

(9) RETENTION BASIN II
TOP OF UNDERGROUND RETENTION = 4975.99
VOLUME REQUIRED = 5,474 C.F.
VOLUME PROVIDED = 5,801 C.F.

(10) CONCRETE SPILLWAY AND RIP RAP- SEE GRADING PLAN AND DETAIL 10/D-500.

(11) OUTLET RIPRAP PER SHEET D-511.

(12) DRIVE WAY AND APPROACH TO BE INSTALLED BY LOT OWNER PER GRANTSVILLE CITY STANDARDS.

(13) OWNER TO COORDINATE WITH GRANTSVILLE CITY ON EXISTING DRIVE APPROACHES.

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GENERAL NOTES

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2. ALL IMPROVEMENTS MUST COMPLY WITH ADA STANDARDS AND RECOMMENDATIONS.
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HORIZONTAL GRAPHIC SCALE

40 0 10 20 40

(IN FEET)
HORZ: 1 inch = 20 ft.

7/7/2021 Precipitation Frequency Data Server

NOAA Atlas 14, Volume 1, Version 5
Location name: Grantsville, Utah, USA*
Latitude: 40.581°, Longitude: -112.4575°
Elevation: 4394.13 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years) 1	2	5	10	25	50	100	200	500	1000
5-min	1.44 (1.26-1.62)	1.82 (1.63-2.09)	2.53 (2.24-2.87)	3.17 (2.78-3.59)	4.15 (3.58-4.73)	5.03 (4.22-5.77)	6.06 (4.98-7.04)	7.25 (5.78-8.56)	9.12 (6.91-11.0)	10.8 (7.88-13.2)
10-min	1.09 (0.960-1.24)	1.39 (1.24-1.59)	1.92 (1.71-2.18)	2.41 (2.12-2.72)	3.16 (2.72-3.59)	3.82 (3.22-4.39)	4.61 (3.79-5.36)	5.52 (4.38-6.52)	6.94 (5.26-8.34)	8.23 (5.99-10.1)
15-min	0.904 (0.796-1.02)	1.15 (1.02-1.31)	1.59 (1.41-1.81)	1.99 (1.75-2.26)	2.61 (2.25-2.97)	3.16 (2.66-3.63)	3.81 (3.13-4.43)	4.56 (3.62-5.38)	5.73 (4.34-6.89)	6.80 (4.95-8.32)
30-min	0.608 (0.534-0.688)	0.774 (0.690-0.884)	1.07 (0.950-1.22)	1.34 (1.18-1.52)	1.76 (1.52-2.00)	2.13 (1.79-2.44)	2.57 (2.11-2.98)	3.07 (2.44-3.63)	3.86 (2.92-4.64)	4.58 (3.34-5.60)
60-min	0.376 (0.331-0.426)	0.479 (0.427-0.547)	0.662 (0.588-0.753)	0.829 (0.730-0.939)	1.09 (0.939-1.24)	1.32 (1.11-1.51)	1.59 (1.31-1.85)	1.90 (1.51-2.24)	2.39 (1.81-2.87)	2.83 (2.06-3.47)
2-hr	0.225 (0.204-0.250)	0.284 (0.258-0.319)	0.374 (0.341-0.419)	0.456 (0.411-0.509)	0.586 (0.517-0.656)	0.704 (0.606-0.794)	0.839 (0.702-0.956)	0.996 (0.808-1.16)	1.25 (0.958-1.48)	1.47 (1.09-1.78)
3-hr	0.171 (0.158-0.188)	0.212 (0.194-0.234)	0.271 (0.250-0.299)	0.322 (0.294-0.354)	0.405 (0.361-0.444)	0.475 (0.416-0.534)	0.562 (0.481-0.643)	0.665 (0.554-0.778)	0.834 (0.681-0.996)	0.988 (0.750-1.20)
6-hr	0.108 (0.100-0.117)	0.134 (0.124-0.144)	0.163 (0.152-0.176)	0.190 (0.176-0.204)	0.228 (0.209-0.246)	0.260 (0.234-0.282)	0.296 (0.262-0.324)	0.344 (0.298-0.384)	0.425 (0.357-0.505)	0.497 (0.408-0.607)
12-hr	0.067 (0.063-0.072)	0.082 (0.077-0.089)	0.100 (0.094-0.108)	0.114 (0.106-0.123)	0.134 (0.124-0.145)	0.150 (0.138-0.164)	0.167 (0.150-0.184)	0.185 (0.164-0.206)	0.222 (0.192-0.252)	0.252 (0.214-0.305)
24-hr	0.041 (0.038-0.044)	0.051 (0.047-0.055)	0.061 (0.056-0.066)	0.069 (0.064-0.074)	0.080 (0.074-0.086)	0.088 (0.081-0.095)	0.097 (0.089-0.104)	0.105 (0.096-0.114)	0.118 (0.105-0.128)	0.128 (0.112-0.154)
2-day	0.022 (0.020-0.024)	0.027 (0.025-0.029)	0.032 (0.030-0.035)	0.037 (0.034-0.040)	0.043 (0.040-0.046)	0.047 (0.044-0.051)	0.052 (0.048-0.056)	0.057 (0.052-0.061)	0.063 (0.057-0.068)	0.067 (0.061-0.078)
3-day	0.016 (0.015-0.017)	0.019 (0.018-0.021)	0.023 (0.022-0.025)	0.026 (0.024-0.028)	0.031 (0.029-0.033)	0.034 (0.031-0.037)	0.038 (0.035-0.040)	0.041 (0.038-0.044)	0.046 (0.042-0.050)	0.049 (0.045-0.055)
4-day	0.012 (0.012-0.013)	0.015 (0.014-0.017)	0.018 (0.017-0.020)	0.021 (0.020-0.023)	0.025 (0.023-0.026)	0.027 (0.025-0.029)	0.030 (0.028-0.033)	0.033 (0.030-0.036)	0.037 (0.034-0.040)	0.040 (0.036-0.044)
7-day	0.008 (0.008-0.009)	0.010 (0.009-0.011)	0.012 (0.011-0.013)	0.014 (0.013-0.015)	0.016 (0.015-0.017)	0.017 (0.016-0.019)	0.019 (0.018-0.021)	0.021 (0.019-0.022)	0.023 (0.021-0.025)	0.025 (0.022-0.027)
10-day	0.006 (0.006-0.007)	0.008 (0.007-0.008)	0.009 (0.009-0.010)	0.010 (0.010-0.011)	0.012 (0.011-0.013)	0.013 (0.012-0.014)	0.014 (0.013-0.015)	0.015 (0.014-0.017)	0.017 (0.016-0.018)	0.018 (0.016-0.019)
20-day	0.004 (0.004-0.004)	0.005 (0.005-0.005)	0.006 (0.006-0.006)	0.007 (0.006-0.007)	0.007 (0.007-0.008)	0.008 (0.008-0.009)	0.009 (0.008-0.009)	0.009 (0.009-0.010)	0.010 (0.009-0.011)	0.011 (0.010-0.011)
30-day	0.003 (0.003-0.003)	0.004 (0.004-0.004)	0.005 (0.004-0.005)	0.005 (0.005-0.006)	0.006 (0.006-0.006)	0.007 (0.006-0.007)	0.007 (0.007-0.008)	0.008 (0.007-0.008)	0.008 (0.008-0.009)	0.009 (0.008-0.009)
45-day	0.003 (0.002-0.003)	0.003 (0.003-0.003)	0.004 (0.004-0.004)	0.004 (0.004-0.004)	0.005 (0.004-0.005)	0.005 (0.005-0.005)	0.006 (0.005-0.006)	0.006 (0.005-0.006)	0.006 (0.006-0.007)	0.006 (0.006-0.007)
60-day	0.002 (0.002-0.003)	0.003 (0.003-0.003)	0.003 (0.003-0.004)	0.004 (0.004-0.004)	0.004 (0.004-0.004)	0.005 (0.004-0.005)	0.005 (0.005-0.005)	0.005 (0.005-0.005)	0.005 (0.005-0.006)	0.006 (0.005-0.006)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_printpage.html?lat=40.5810&lon=-112.4575&data=intensity&units=english&series=pds 1/4

White Pine Estates Subdivision

Phase 2

Soil Evaluation

0 – 48" Sandy Clay Loam

48"-120" Sandy Loam 20% Gravel 10% Cobble

No ground water encountered or anticipated @ 120".

.9 Gallon/Sq Ft/24 hrs Application rate

Caleb Knoblauch

Utah State On-site soil evaluation Cert # 02966-OSP-2

Expires 12.31.2022

NOTE: USE LOT 213 CALCULATIONS FOR LOT 209-213

Study Summary Statistics	LOT - 213
No. of Lots	1
Roof SF/lot	2500
Drive SF/lot	1000
Total Lots Hardscape, SF	3500
Total Road Hardscape SF	0
Total Hardscape, SF	3500
Total Area, SF	22429
Landscaped Area, SF	18929
Weighted Average C	0.26

Retention Calculations (100-year storm)

Basin Tributary Area	22,429	SF
Runoff coefficient C:	0.259	
Basin Area	1,000	SF
Allowable Discharge Rate	-	cfs/acre
Total Discharge	-	cfs
Infiltration Rate per Utah State On-Site Evaluation Cert #02966-OSP2 RATE = 5 min per inch = 8 in/hr	5.3	Factor Safety RATE/1.5 in/hr

Time (min)	i (in/hr)	Cumulative Runoff to Basin (cf)	Infiltration (cf)	Required Storage (cf)
5	6.06	245	37	208
10	4.61	373	74	299
15	3.81	462	111	351
30	2.56	620	222	398
60	1.59	770	444	326
120	0.84	814	889	(75)
180	0.56	819	1,333	(514)
360	0.30	858	2,667	(1,809)
720	0.17	974	5,333	(4,359)
1440	0.10	1,124	10,667	(9,543)
		Required Retention:		398
		Provided Retention:		1,341

Study Summary Statistics	Basin I
No. of Lots	11
Roof SF/lot	2500
Drive SF/lot	720
Total Lots Hardscape, SF	35420
Total Road Hardscape SF	27776
Total Hardscape, SF	63196
Total Area, SF	257993
Landscaped Area, SF	194797
Weighted Average C	0.32

Retention Calculations (100-year storm)

Basin Tributary Area	257,993	SF
Runoff coefficient C:	0.321	
Basin Area	5,204	SF
Allowable Discharge Rate	-	cfs/acre
Total Discharge	-	cfs
Infiltration Rate per Utah State On-Site Evaluation Cert # 02966-OSP2 RATE = 5 min per inch = 8 in/hr	5.3	Factor Safety RATE/1.5

Time (min)	i (in/hr)	Cumulative Runoff to Basin (cf)	Infiltration (cf)	Required Storage (cf)
5	6.06	3,490	193	3,297
10	4.61	5,315	385	4,929
15	3.81	6,587	578	6,008
30	2.56	8,847	1,156	7,690
60	1.59	10,989	2,313	8,676
120	0.84	11,611	4,626	6,985
180	0.56	11,680	6,939	4,742
360	0.30	12,233	13,877	(1,644)
720	0.17	13,892	27,755	(13,863)
1440	0.10	16,034	55,509	(39,475)
		Required Retention:		8,676
		Provided Retention:		9,206

Catchment Calculations (10-year storm)

Time of Concentration:	30	min
Rainfall Intensity I:	1.34	in/hr
Mannings N	0.013	

Catchment	Area (SF)	C	Flow (CFS)	Destination
1	63,243	0.321	0.631	201
2	116,225	0.321	1.159	202
3	76,675	0.321	0.765	207

Pipe Design (10-year storm)

Pipe	Tributary Basins	Surface Flow (CFS)	Upstream Pipes	Pipe Flow (CFS)	Total Flow (CFS)	Pipe Slope	Diameter (IN)	Full Flow Capacity (CFS)	% of Full-Flow Capacity
207-208	3	0.765	None	0.000	0.765	1.80%	15	8.690	8.8%
202-208	-	0.000	207-208	0.765	0.765	0.81%	15	5.829	13.1%
201-202	2	1.159	None	0.000	1.159	0.50%	15	4.580	25.3%
202-203	1	0.631	201-202, 202-208	1.923	2.554	1.15%	15	6.946	36.8%

Retention Basin Drainage Calculations (100-year storm)

Basin Tributary Area	257,993	SF
Runoff coefficient C:	0.321	
Basin Area	5,204	SF
Allowable Discharge Rate	-	cfs/acre
Total Discharge	-	cfs
Infiltration Rate per Utah State On-Site Evaluation Cert # 02966-OSP2 RATE = 5 min per inch = 8 in/hr STORAGE RATE = 8 in/hr	2.1	Factor Safety STROAGE RATE/2.5

Time (min)	Time (days)	Cumulative Runoff to Basin (cf)	Infiltration (cf)	Required Storage (cf)
0	0.000	8,676	-	8,676
5	0.003	8,676	77	8,599
10	0.007	8,599	154	8,445
15	0.010	8,445	231	8,214
30	0.021	8,214	463	7,751
60	0.042	7,751	925	6,826
120	0.083	6,826	1,850	4,976
180	0.125	4,976	2,775	2,200
360	0.250	2,200	5,551	(3,351)
720	0.500	(3,351)	11,102	(14,453)
1440	1.00	(14,453)	22,204	(36,656)

Study Summary Statistics	Basin II
No. of Lots	2
Roof SF/lot	2500
Drive SF/lot	14214
Total Lots Hardscape, SF	33428
Total Road Hardscape SF	15478
Total Hardscape, SF	48906
Total Area, SF	69539
Landscaped Area, SF	20633
Weighted Average C	0.64

Retention Calculations (100-year storm)

Basin Tributary Area	69,539	SF
Runoff coefficient C:	0.642	
Basin Area	1,000	SF
Allowable Discharge Rate	-	cfs/acre
Total Discharge	-	cfs
Infiltration Rate per Utah State On-Site Evaluation Cert #02966-OSP2 RATE = 5 min per inch = 8 in/hr	5.3	Factor Safety RATE/1.5 in/hr

Time (min)	i (in/hr)	Cumulative Runoff to Basin (cf)	Infiltration (cf)	Required Storage (cf)
5	6.06	1,880	37	1,843
10	4.61	2,862	74	2,788
15	3.81	3,547	111	3,436
30	2.56	4,764	222	4,542
60	1.59	5,918	444	5,474
120	0.84	6,253	889	5,364
180	0.56	6,290	1,333	4,957
360	0.30	6,588	2,667	3,921
720	0.17	7,481	5,333	2,148
1440	0.10	8,635	10,667	(2,031)
		Required Retention:		5,474
		Provided Retention:		
		Provided Sump Retention:		5,801
		Total Retention:		5,801

SUMP DESIGN

Q = (area sq. ft.) / (perc min/in) / (60 sec/min) / (12 in/ft) Sump volume = ((sump area)x(sump depth)x(void ratio))/(factor of safety)
Void Ratio = 0.40 Factor of Safty = 1.5

Sump Area sq. ft. 1487.5

Construct 85' x 17.5' x 6.5' deep gravel sump

Pipe Design (10-year storm)

Pipe	Tributary Basins	Surface Flow (CFS)	Upstream Pipes	Pipe Flow (CFS)	Total Flow (CFS)	Pipe Slope	Diameter (IN)	Full Flow Capacity (CFS)	% of Full-Flow Capacity
204-205	3	0.553	None	0.000	0.553	0.50%	15	4.580	12.1%
205-206	4	0.832	204-205	0.553	1.385	7.66%	15	17.927	7.7%

ENSIGN
THE STANDARD IN ENGINEERING

TOOELE
169 N. Main Street, Unit 1
Tooele, UT. 84074
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SALT LAKE CITY
Phone: 801.255.0529

LAYTON
Phone: 801.547.1100

CEDAR CITY
Phone: 435.865.1453

RICHFIELD
Phone: 435.896.2983

WWW.ENSIGNENG.COM

FOR:
ICON DEVELOPMENT, LLC
3410 NORTH MOYLE LANE
ERDA, UTAH 84074
CONTACT:
SEAN PERKINS
PHONE: 435-850-8436

BLUE SPRUCE SUBDIVISION PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

NO.	DATE	REVISION	BY
1		FOR REVIEW	
2			
3			
4			
5			
6			
7			
8			

GRADING PLAN

PROJECT NUMBER: T1216E
PRINT DATE: 2022-01-27
DRAWN BY: C. CHILD
CHECKED BY: J. CLEGG
PROJECT MANAGER: C. CHILD

C-201

SD

ACO

Design Number: 1220043

ACO StormBrixx System Optimizer

Project Title

Blue Spruce Subdivision

Notes / Tank Reference

SD Infiltration
1 Layer (2ft)
2 Access Locations

Assumptions

Invert Depth 7 ft in

- Ground improvement may be required
- Traffic - Car park loading
- Asphalt surfacing

Tank parameters - SD

Length	Width	Depth	Total Gross Volume
104ft 3.591in	17ft 8.395in	2ft 11.984in	5647.29ft³
			Total Net Volume
			5477.87ft³

SD tank has a void ratio of 0.97

Selected	Product Code	Product Description	Quantity
		Main Components	
✓	314090	StormBrixx SD Half Module	488 pcs.
✓	314091	StormBrixx SD Side Panel	126 pcs.
✓	314092	StormBrixx SD Top Cover	484 pcs.
✓	314093	StormBrixx SD Layer Connector	243 pcs.
	314094	StormBrixx SD Half Layer Top Cover Plate	pcs.
	314095	StormBrixx SD Half Layer Side Panel	pcs.

Selected	Product Code	Product Description	Quantity
		Access	
	135141	StormBrixx SD Remote Access Unit	pcs.
✓	314075	StormBrixx Remote Access Plate	2 pcs.
✓	314038	StormBrixx Inspection Shaft	10 pcs.
	314039	StormBrixx Inspection Shaft with Socket	pcs.
	27018	Vertical Inspection Point Connector	pcs.
		SD and HD horizontal pipe connector	
	93139	Horizontal Pipe Connector SDR35 - 4 inch (102mm) pipe	pcs.
	93140	Horizontal Pipe Connector SDR35 - 6 inch (152mm) pipe	pcs.
	93141	Horizontal Pipe Connector SDR35 - 8 inch (203mm) pipe	pcs.
	93142	Horizontal Pipe Connector SDR35 - 12 inch (305mm) pipe	pcs.
✓	93144	Horizontal Pipe Connector SDR35 - 15 inch (381mm) pipe	1 pcs.
	93145	Horizontal Pipe Connector SCH40 - 4 inch (102mm) pipe	pcs.
	93146	Horizontal Pipe Connector SCH40 - 6 inch (152mm) pipe	pcs.
	93147	Horizontal Pipe Connector SCH40 - 8 inch (203mm) pipe	pcs.
		Covers load class D 400	
✓	314043	Access Chamber Ductile Iron Cover (Load Class D400)	2 pcs.
	314053	Access Chamber Ductile Iron Vented Cover (Load Class D400)	pcs.
	314044	Inspection Point Ductile Iron Cover (Load Class D400)	pcs.
		Covers load class D 400	
		Non-woven geotextile	ft² (15% overlap)
		GEOMEMBRANE ROLL	ft² (15% overlap)
✓		Infiltration geotextile	5156.82 ft² (15% overlap) 2 rolls (4.5x100m)

Estimated Assembly Time: 3hr 59mins 53secs

Assumptions

Assembly rate of the StormBrixx system is estimated to be 2.55 seconds per cubic foot (1.5 mins/m³) for SD and 3.4 seconds per cubic foot (2 mins/m³) for HD.

The assembly time is based on two workers, and one machinery operator lifting pallets into the hole. It does not include hole excavation, base preparation and compaction, nor laying of the geotextile membranes. It is the assembly time for building the StormBrixx tank only and does not include pipe connections.

Disclaimer

Assembly times are accurate to the best of ACO Inc.'s knowledge, testing and observation. These times should be used for guidance only. Every site installation will be different and local conditions may vary. Installing contractor should determine the accuracy of installed times accordingly.

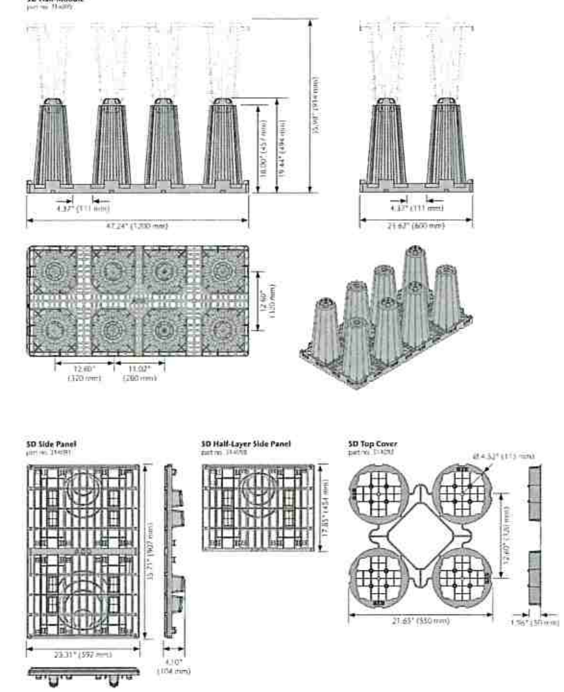
WEST SALES OFFICE
825 W BEECHCRAFT ST.
CASA GRANDE, AZ 85122
Tel: (888) 490-9552
Fax (520) 421-9899

SD Half-Module

SD Side Panel

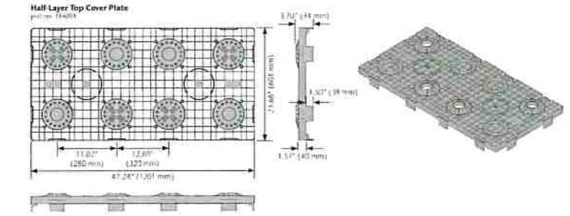
SD Half-Layer Side Panel

SD Top Cover

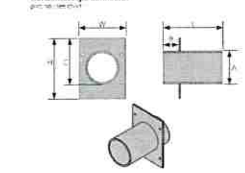


ACO Specification Information

Half-Layer Top Cover Plate



Horizontal Pipe Connector

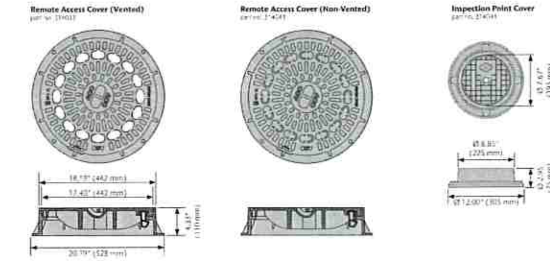


Part No.	A in (mm)	B in (mm)	C in (mm)	H in (mm)	W in (mm)	L in (mm)
93139	SDR 35 4"	2.00 (51)	6.21 (158)	8.25 (209)	6.70 (170)	8.00 (203)
93145	SCH 40 4"	2.00 (51)	7.47 (189)	8.29 (210)	6.70 (170)	8.00 (203)
93140	SDR 35 6"	2.00 (51)	8.95 (227)	9.93 (252)	10.22 (259)	8.00 (203)
93146	SCH 40 6"	2.00 (51)	9.11 (231)	9.94 (252)	10.22 (259)	8.00 (203)
93141	SDR 35 8"	2.00 (51)	10.46 (265)	11.19 (289)	11.64 (295)	8.00 (203)
93147	SCH 40 8"	2.00 (51)	10.57 (268)	11.39 (289)	11.64 (295)	8.00 (203)
93142	SDR 35 12"	2.00 (51)	13.46 (342)	14.30 (363)	16.66 (423)	8.00 (203)
93144	SCH 35 15"	2.00 (51)	17.28 (439)	19.25 (489)	19.25 (489)	8.00 (203)

Remote Access Cover (Vented)

Remote Access Cover (Non-Vented)

Inspection Point Cover



ACO Specification Information

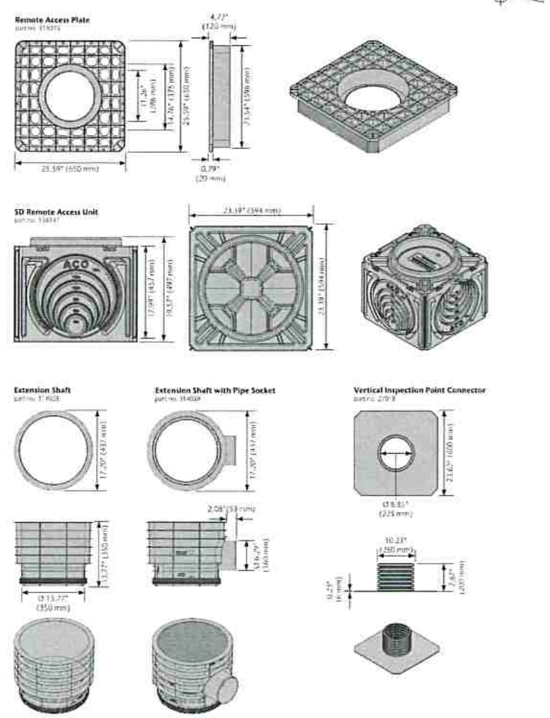
Remote Access Plate

SD Remote Access Unit

Extension Shaft

Extension Shaft with Pipe Socket

Vertical Inspection Point Connector



ACO Specification Information

ACO StormBrixx SD Parts Table	Part No.	Length in (mm)	Width in (mm)	Depth in (mm)	Weight lbs (kg)
SD Half Module	314090	47.24 (1200)	23.62 (600)	19.45 (494)	21.60 (9.80)
SD Side Panel	314091	35.71 (907)	23.31 (592)	1.57 (40)	7.20 (3.30)
SD Half Layer Side Panel	314095	17.85 (454)	23.31 (592)	1.57 (40)	3.40 (1.54)
SD Top Cover	314092	21.65 (550)	21.65 (550)	1.96 (50)	1.60 (0.70)
Half Layer Top Cover Plate	314094	47.25 (1200)	23.63 (600)	3.70 (94)	7.70 (3.50)
SD Remote Access Unit	135141	23.39 (594)	23.39 (594)	19.57 (497)	40.00 (18.12)
SD Layer Connector	314093	2.11 (54)	1.75 (44)	1.05 (27)	0.03 (0.02)
Remote Access Plate	314075	25.59 (650)	25.59 (650)	4.72 (120)	10.78 (4.90)
Remote Access Cover - Ductile Iron (Load Class D400)	314043		Ø 20.79 (528)	4.34 (110)	86.46 (39.30)
Remote Access Vented Cover - Ductile Iron (Load Class D400)	314053	-	Ø 20.79 (528)	4.34 (110)	83.60 (38.00)
Inspection Point Cover - Ductile Iron (Load Class D400)	314044		Ø 8.85 (225)	2.95 (75)	34.54 (15.70)
Extension Shaft	314038	-	Ø 17.21 (437)	13.78 (350)	4.84 (2.60)
Extension Shaft with Pipe Socket	314039	-	Ø 17.21 (437)	13.78 (350)	8.16 (2.30)
Vertical Inspection Point Connector	27018	-	Ø 8.85* (225)	7.87 (200)	5.52 (2.50)
Horizontal Pipe Connectors					
SDR 35 - 4"	93139		4.00* (102)		1.9 (0.87)
SCH 40 - 4"	93145		4.00* (102)		1.9 (0.87)
SDR 35 - 6"	93140		6.00* (152)		3.2 (1.19)
SCH 40 - 6"	93146	8.00 (203)	6.00* (152)		3.20 (1.49)
SDR 35 - 8"	93141		8.00* (203)		5.52 (2.50)
SCH 40 - 8"	93147		8.00* (203)		5.52 (2.50)
SDR 35 - 12"	93142		12.00* (305)		5.52 (2.50)
SDR 35 - 15"	93144		15.00* (381)		5.52 (2.50)

*Internal width

Specifications

General
The StormBrixx stormwater Detention*/Infiltration*/Retention* system shall be ACO StormBrixx SD as supplied by ACO, Inc.

ACO StormBrixx SD meets AASHTO H 20 and HS 20 loading conditions.

Materials
The half-module shall be manufactured from polypropylene and have minimum properties as follows:
Tensile impact strength: 13.2 ft-lb/in² (319 kJ/m²)
Tensile strength, ultimate: 3,480 psi (23,994 kPa)
Water absorption: 0.01%
Frost proof, UV proof and fuels and oil resistant

The stormwater tank shall provide an average 97% open area, holding up to 22.5 ft³ (0.63 m³) per module (2 half modules assembled) and offer full access to all areas and levels for maintenance.

Geomembranes/Geotextiles
The StormBrixx stormwater system shall be wrapped in appropriate permeable geotextile or impermeable geomembrane* (supplied by others) as indicated by project design engineer.

Accessories
The StormBrixx stormwater system shall be used in conjunction with remote access unit or plate**/extension shaft**/inspection point connector**.

Installation
The StormBrixx stormwater system shall be installed in strict accordance with the manufacturer's installation instructions and recommendations.

*Choose one
**Choose none, one or more
Configuration and use of [illegible] marginally impact these figures.

ACO Specification Information

ACO, Inc.

ACO, creating the future of drainage

ACO

ENSIGN
THE STANDARD IN ENGINEERING

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RICHFIELD
Phone: 435.896.2983

WWW.ENSIGNENG.COM

FOR:
ICON DEVELOPMENT, LLC
3410 NORTH MOYLE LANE
ERDA, UTAH, 84074

CONTACT:
SEAN PERKINS
PHONE: 435-850-8436

BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

STORM BRIXX DESIGN

PROJECT NUMBER: T1216E
PRINT DATE: 2022-01-27
DRAWN BY: C. CHILD
CHECKED BY: J. CLEGG
PROJECT MANAGER: C. CHILD

C-202

GENERAL NOTES

1. IT IS CUSTOMERS RESPONSIBILITY TO ENSURE THAT EACH PRODUCT IS FIT FOR ITS INTENDED PURPOSE AND THAT THE ACTUAL CONDITIONS ARE SUITABLE.
2. IT IS THE CUSTOMERS RESPONSIBILITY TO FOLLOW ACO, INC. INSTALLATION INSTRUCTIONS FOR EACH PRODUCT. SEEK ENGINEERING ADVICE FOR INSTALLATIONS NOT ILLUSTRATED IN THE INSTALLATION GUIDELINES.
3. FOR FURTHER PRODUCT INFORMATION, CUT SHEETS, SPECIFICATIONS AND INSTALLATION INSTRUCTIONS, PLEASE VISIT US AT OUR WEBSITE: **ACOSTORMBRIXX.US**

STORMBRIXX NOTES

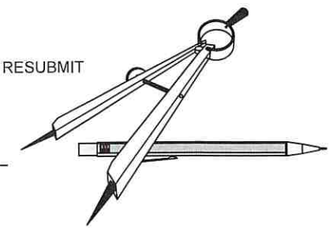
1. ALL FABRICATIONS TO BE COMPLETED BY INSTALLING CONTRACTOR. HE/SHE TO VERIFY THE ENTIRE SCOPE OF STORMBRIXX SD HAS BEEN PROVIDED FOR THIS PROJECT.
2. DIMENSIONS ARE FROM OUTSIDE TO OUTSIDE.
3. LAYOUT IS BASED ON SHEET C-201 PROVIDED TO THE ACO, INC. TECHNICAL SERVICES DEPARTMENT.
4. THIS PLAN VIEW REPRESENT ONE OF TWO STORMBRIXX SD HALF LAYER ORIENTATIONS REQUIRED FOR THIS TANK. FOR COMPLETE, BRICK - BONDABLE INSTALLATION DRAWINGS, PLEASE REQUEST THIS SERVICE FROM THE ACO, INC. SALES DEPARTMENT.
5. THE NUMBER OF ACCESS/INSPECTION LOCATIONS DISPLAYED ARE RECOMMENDATIONS, AND MORE/LESS CAN BE ADDED WITH EASE VIA REVISION.
6. ACCESS UNITS OCCUPY A PROFILE EQUIVALENT TO HALF OF ON HALF MODULE AND ALLOW FOR DIRECT ACCESS TO UP 15" PIPE CONNECTIONS.
7. ACCESS PLATES OCCUPY THE EQUIVALENT PROFILE OF HALF OF ONE HALF MODULE AND MUST BE SURROUNDED BY BRICK BONDED MODULES. ACCESS PLATES CAN BE PLACED ANYWHERE BESIDES THE EDGE OF THE SYSTEM.
8. HOLDING CAPACITY OF ONE FULLY ASSEMBLED STORMBRIXX SD MODULE = 22.54 CF

INSTALLATION NOTES

1. ALL FABRICATIONS TO BE COMPLETED BY INSTALLING CONTRACTOR.
2. EXCAVATE AWAY FROM TANK'S PROFILE PER OSHA STANDARDS.
3. UP TO 18" PIPE CONNECTIONS CAN BE CORED DIRECTLY INTO STORMBRIXX SD SIDE PANELS.
4. USE LAYER CONNECTORS TO RESTRICT SHEARING MOVEMENT BETWEEN BRICK-BONDED LAYERS/HALF LAYERS.
5. USE LAYER CONNECTORS TO ADHERE ACCESS UNITS TO BRICK-BONDED HALF MODULES.
6. A VOID AREA EQUIVALENT TO HALF OF ONE HALF MODULE IS PRESENT UNDER EACH ACCESS PLATE.
7. IRREGULAR TANKS - TRIM SIDE PANELS A CORNER JUNCTIONS FOR EXACT FIT.

ALL DRAWINGS ARE AS ACCURATE AS THE INFORMATION SUPPLIED. ALL REASONABLE CARE HAS BEEN TAKEN IN COMPILING THE INFORMATION WITHIN. PLEASE REVIEW THIS INFORMATION FOR ACCURACY.

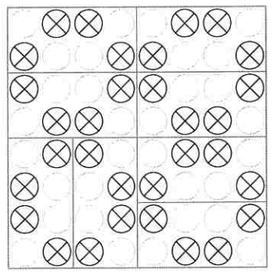
☐ APPROVED ☐ REVISE AND RESUBMIT
☐ APPROVED AS NOTED ☐ REJECTED



SIGNED: _____

DATE: _____

COMMENTS:



ALWAYS ARRANGE THE SAME
4 PILLARS IN A SQUARE

SHEET INDEX

BLUE SPRUCE SUBDIVISON GRANTSVILLE CITY, UT	
DRAWN BY: JW	EMAIL: John.Wyman@aco.com
DATE 1/20/2022	CHECKED BY: -
SHEET NO. SHEET 1 OF 2	DESIGN SERV. NO. 1220043C REV.

NOTES

SYSTEM **SD** LAYER(S) **1**

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	-	-	-
B			
C			

ACO, INC.

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825 W BEECHCRAFT ST.
CASA GRANDE, AZ 85122
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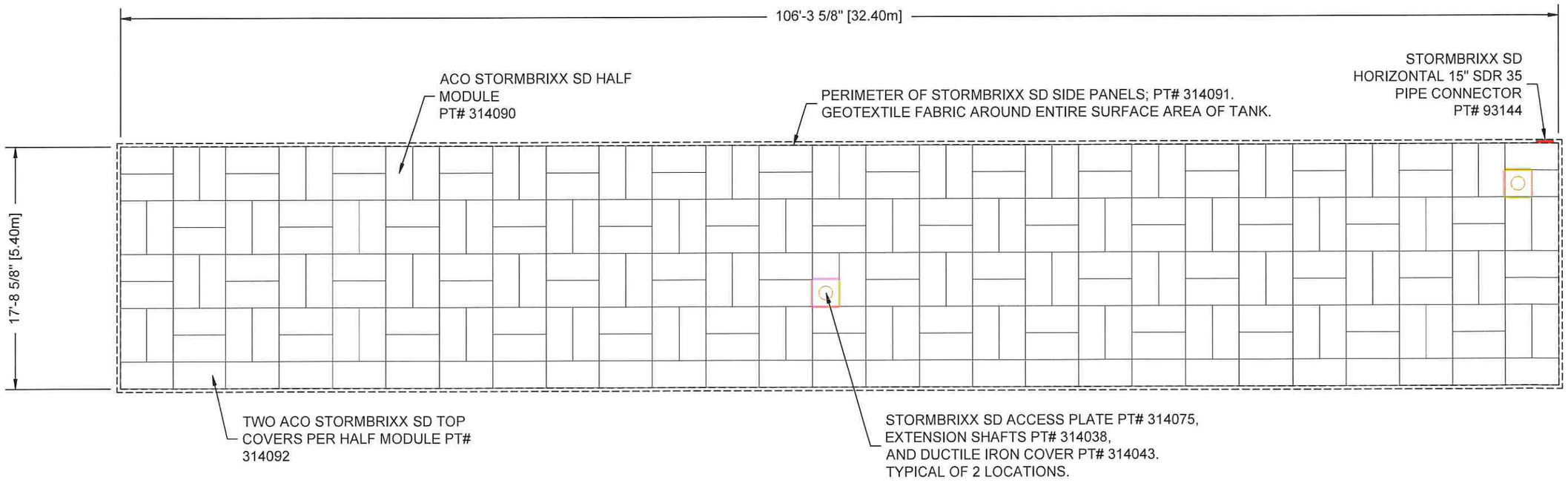
MENTOR, OH 44060
Tel. (800) 543-4764
Fax (440) 639-7235

SOUTHEAST SALES OFFICE
4211 PLEASANT RD.
FORT MILL, SC 29708
Tel. (800)-543-4764
Fax (803)-802-1063

www.acousa.com

ACO STORMBRIXX SD TANK
TANK STRUCTURAL VOLUME 5,647.29 FT³
TOTAL HOLDING VOLUME 5,477.87 FT³
NUMBER OF LAYERS = 1 (3FT)



BLUE SPRUCE SUBDIVISON GRANTSVILLE CITY, UT		STORMBRIXX PLAN VIEW			
DRAWN BY: JW	EMAIL: John.Wyman@aco.com	SYSTEM SD		LAYER(S) 1	
DATE 1/20/2022	CHECKED BY: -	REVISIONS			
SHEET NO. SHEET 2 OF 2	DESIGN SERV. NO. REV. 1220043C	NO.	DESCRIPTION	DATE	BY
		A	-	-	-
		B			
		C			

ACO, INC.

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Fax (803)-802-1063

www.acousa.com

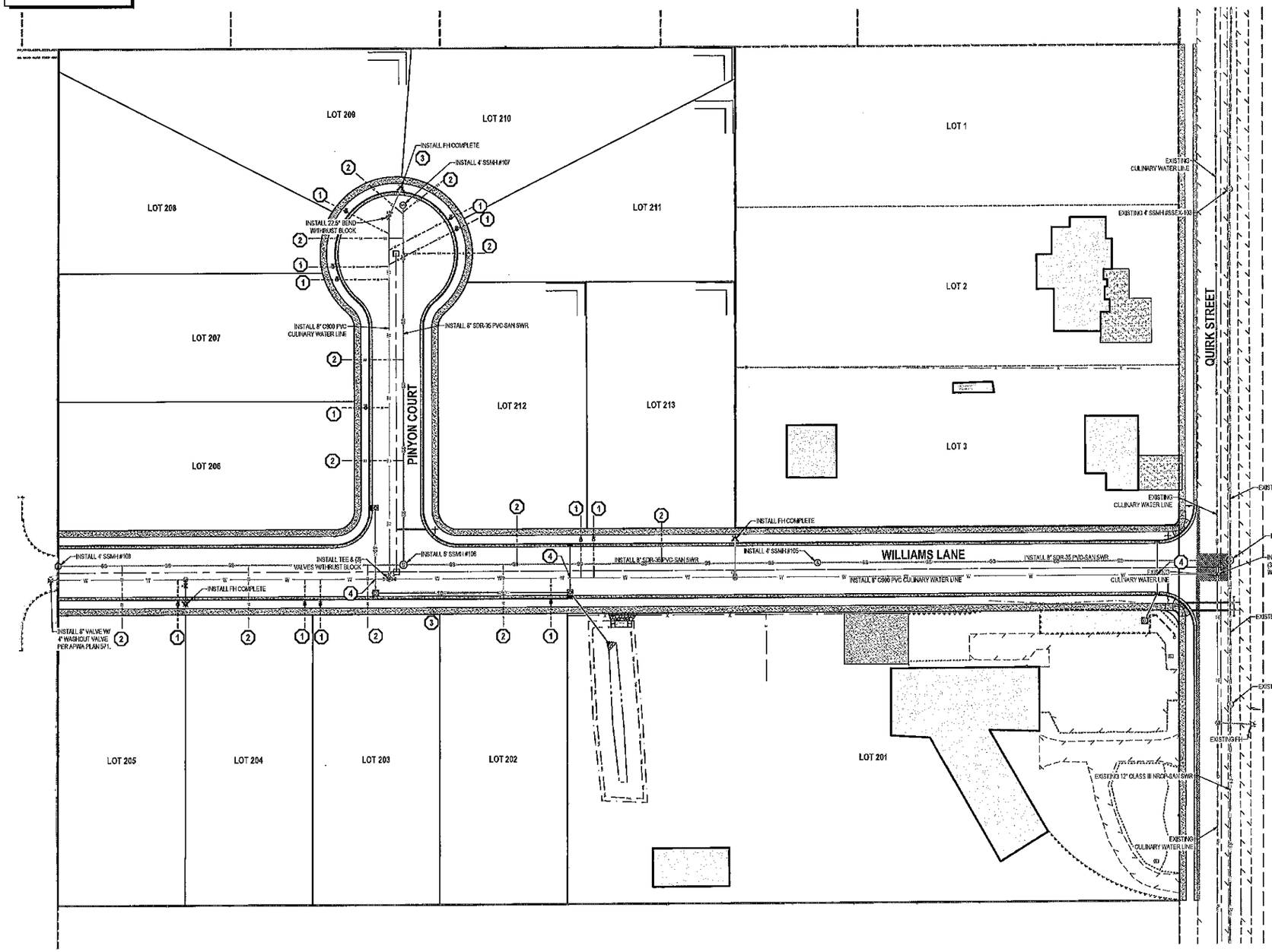
811 Know what's below. Call before you dig.

CALL BLUESTAKES @ 811 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

BENCHMARK

CENTER OF SECTION 2, T2S, R4W, SLB&M (FOUND 3" BRASS AND PIPE TOOELE COUNTY SURVEYORS MONUMENT, DATED 2016)

ELEV= 4220.09



GENERAL NOTES

1. ALL WORK TO COMPLY WITH THE GRANTSVILLE CITY'S STANDARDS AND SPECIFICATIONS.
2. EXISTING UNDERGROUND UTILITIES AND IMPROVEMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATIONS BASED UPON RECORD INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. LOCATIONS MAY NOT HAVE BEEN VERIFIED IN THE FIELD AND NO GUARANTEE IS MADE AS TO THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXISTENCE AND LOCATION OF THE UTILITIES SHOWN ON THESE PLANS OR INDICATED IN THE FIELD BY LOCATING SERVICES. ANY ADDITIONAL COSTS INCURRED AS A RESULT OF THE CONTRACTOR'S FAILURE TO VERIFY THE LOCATIONS OF EXISTING UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION IN THEIR VICINITY SHALL BE BORNE BY THE CONTRACTOR AND ASSUMED INCLUDED IN THE CONTRACT. THE CONTRACTOR IS TO VERIFY ALL CONNECTION POINTS WITH THE EXISTING UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE CAUSED TO THE EXISTING UTILITIES AND UTILITY STRUCTURES THAT ARE TO REMAIN. IF CONFLICTS WITH EXISTING UTILITIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONSTRUCTION TO DETERMINE IF ANY FIELD ADJUSTMENTS SHOULD BE MADE.
3. ALL SANITARY SEWER INFRASTRUCTURE TO BE INSTALLED PER GRANTSVILLE CITY STANDARD PLANS AND SPECIFICATIONS.
4. ALL WATER INFRASTRUCTURE TO BE INSTALLED PER GRANTSVILLE CITY OR APWA STANDARD PLANS AND SPECIFICATIONS.
5. NOTIFY ENGINEER OF ANY DISCREPANCIES IN DESIGN OR STAKING BEFORE PLACING UTILITY STRUCTURES OR PIPES.
6. DEFLECT OR LOOP ALL WATERLINES TO AVOID CONFLICTS WITH OTHER UTILITIES PER GRANTSVILLE CITY'S STANDARDS AND SPECIFICATIONS.
7. PROJECT SHALL COMPLY WITH ALL UTAH DIVISION OF DRINKING WATER RULES AND REGULATIONS INCLUDING, BUT NOT LIMITED TO, THOSE PERTAINING TO BACKFLOW PROTECTION AND CROSS CONNECTION PREVENTION.
8. THE CONTRACTOR IS TO COORDINATE ALL UTILITIES WITH MECHANICAL/PLUMBING PLANS.
9. THE CONTRACTOR SHALL ADJUST TO GRADE ALL EXISTING UTILITIES AS NEEDED PER GRANTSVILLE CITY'S STANDARDS AND SPECIFICATIONS.
10. THE CONTRACTOR IS TO PROTECT AND PRESERVE ALL EXISTING IMPROVEMENTS, UTILITIES, AND SIGNS, ETC. UNLESS OTHERWISE NOTED ON THESE PLANS.
11. GRADING PERMIT MUST BE OBTAINED FROM GRANTSVILLE CITY PRIOR TO DISTURBING ANY VEGETATION OR MOVING ANY SOIL. CONTACT THE CITY ENGINEER AT 435-884-1661.
12. RIGHT-OF-WAY ENCROACHMENT PERMIT MUST BE OBTAINED FROM GRANTSVILLE CITY PRIOR TO DOING ANY WORK IN THE EXISTING RIGHT-OF-WAY, OR ON ANY STATE ROADS.

SCOPE OF WORK:

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

1. INSTALL 3/4" HDPE SDR 9 CULINARY WATER SERVICE LATERAL AND 3/4" METER SET PER GRANTSVILLE CITY STANDARD PLAN LOCATED APPROX. 5' FROM CENTERLINE OF CURVE OF GOOSEBERRY SEWER SERVICE LATERAL. TO BE EXTENDED 9' FROM BACKSIDE OF SIDEWALK. CONTRACTOR TO MAINTAIN 10' OF SEPARATION BETWEEN INTERSECTING PIPELINES PER APWA STANDARD PLAN #561, #562 AND #581, TYPICAL.
2. INSTALL 4" SDR-35 PVC SEWER SERVICE LATERAL @ 2.0% MINIMUM SLOPE PER APWA PLAN #401. CONTRACTOR TO MAINTAIN 10' OF SEPARATION BETWEEN INTERSECTING PIPELINES, TYPICAL.
3. FIRE HYDRANT ASSEMBLY COMPLETE PER CITY STANDARDS AND SPECIFICATIONS.
4. CONTRACTOR TO MAINTAIN 10' OF SEPARATION BETWEEN INTERSECTING PIPELINES. LOOP CULINARY WATERLINE PER GRANTSVILLE CITY AND APWA PLAN #561, #562, #581 STANDARDS AND SPECIFICATIONS.

NOTE: MAY CONTAIN KEYNOTES THAT ARE NOT USED ON THIS SHEET.

HORIZONTAL GRAPHIC SCALE

40 0 20 40 80

(IN FEET)

HORZ. 1 inch = 40 ft.

ENSIGN
THE STANDARD IN ENGINEERING

TOOELE
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Tooele, UT. 84074
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SALT LAKE CITY
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LAYTON
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CEDAR CITY
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RICHFIELD
Phone: 435.896.2983

WWW.ENSIGNENG.COM

FOR:
ICON DEVELOPMENT, LLC
5410 NORTH MCKYLE LANE
ERDA, UTAH, 84074
CONTACT:
SEAN PERKINS
PHONE: 435-850-8436

BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

NO.	DATE	REVISION	BY
1		FOR REVIEW	

UTILITY PLAN

PROJECT NUMBER: T1216E
PRINT DATE: 2022-01-27
DRAWN BY: C. CHILD
CHECKED BY: J. CLEGG
PROJECT MANAGER: C. CHILD

C-300

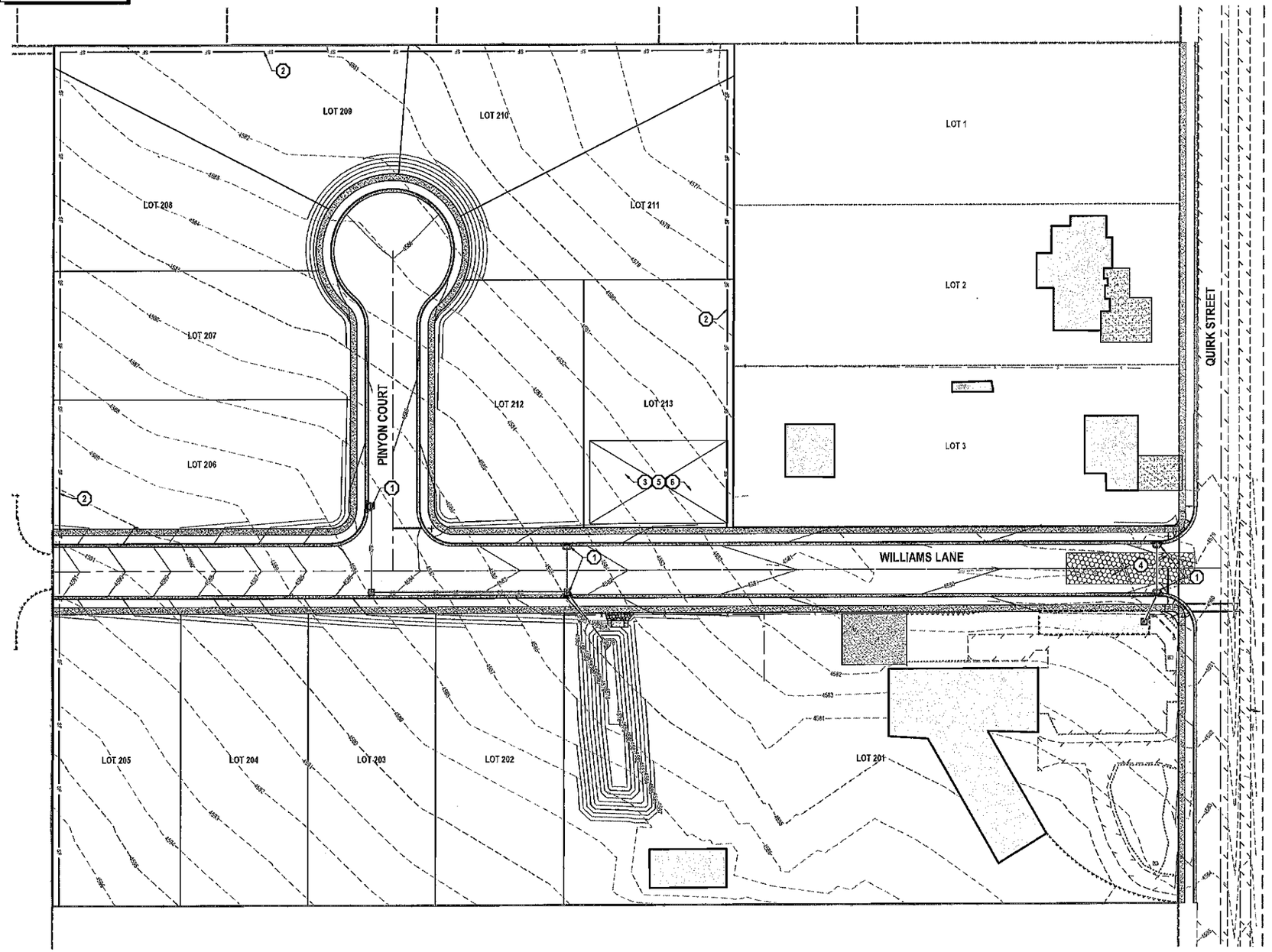
811 Know what's below. Call before you dig.

CALL BLUESTAKES @ 811 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

BENCHMARK

CENTER OF SECTION 2, T2S, R4W, SLB&M (FOUND 3" BRASS AND PIPE TOOELE COUNTY SURVEYORS MONUMENT, DATED 2010)

ELEV= 4208.09



GENERAL NOTES

1. THIS PLAN IS DESIGNED AS A FIRST APPRAISAL OF NECESSARY MEANS TO PROTECT THE WATERS OF THE STATE FROM POTENTIAL POLLUTION. IT IS THE RESPONSIBILITY OF THE OWNER/OPERATOR TO ADD WARRANTED BEST MANAGEMENT PRACTICES (BMP'S) AS NECESSARY, MODIFY THOSE SHOWN AS APPROPRIATE, AND DELETE FROM THE PROJECT THOSE FOUND TO BE UNNECESSARY. FEDERAL AND STATE LAW ALLOWS THESE UPDATES TO BE MADE BY THE OWNER/OPERATOR ONSITE AND RECORDED BY THE OWNER/OPERATOR ON THE COPY OF THE SWPPP KEPT ONSITE.
2. DISTURBED LAND SHALL BE KEPT TO A MINIMUM. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. HOWEVER, WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH DISTURBING ACTIVITIES WILL BE RESUMED WITHIN 21 DAYS, TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE.
3. RESEED DISTURBED LAND WITH NATIVE GRASS MIXTURE WITHIN 14 CALENDAR DAYS OF ACHIEVEMENT OF FINISH GRADE TO STABILIZE SOILS IF LAND IS NOT TO BE RE-WORKED WITHIN 14 CALENDAR DAYS OF THE CESSATION OF CONSTRUCTION ACTIVITIES AT THAT LOCATION.
4. DETAILS SHOWN ARE TO BE EMPLOYED TO PROTECT RUNOFF AS APPROPRIATE DURING CONSTRUCTION. NOT ALL DETAILS ARE NECESSARY AT ALL PHASES OF THE PROJECT. IT SHALL BE THE RESPONSIBILITY OF THE OWNER/OPERATOR TO USE APPROPRIATE BEST MANAGEMENT PRACTICES AT THE APPROPRIATE PHASE OF CONSTRUCTION. SEE SWPPP FOR BMP IMPLEMENTATION SCHEDULE.
5. VARIOUS BEST MANAGEMENT PRACTICES HAVE BEEN SHOWN ON THE PLANS AT SUGGESTED LOCATIONS. THE CONTRACTOR MAY MOVE AND RECONFIGURE THESE BMP'S TO OTHER LOCATIONS IF PREFERRED, PROVIDED THE INTENT OF THE DESIGN IS PRESERVED.
6. NOT ALL POSSIBLE BMP'S HAVE BEEN SHOWN. THE CONTRACTOR IS RESPONSIBLE TO APPLY CORRECT MEASURES TO PREVENT THE POLLUTION OF STORM WATER PER PROJECT SWPPP.
7. A UPDES (UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM) PERMIT IS REQUIRED FOR ALL CONSTRUCTION ACTIVITIES 1 ACRE OR MORE.

SCOPE OF WORK:

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

1. INLET PROTECTION PER DETAIL 3D-500.
2. SILT FENCE PER DETAIL 4D-500.
3. PORTABLE TOILET PER DETAIL 8D-500.
4. VEHICLE WASHDOWN AND STABILIZED CONSTRUCTION ENTRANCE PER DETAIL 6D-500.
5. SUGGESTED TEMPORARY CONSTRUCTION SITE PARKING, STAGING, DUMPSTER, AND MATERIAL STORAGE AREA.
6. SUGGESTED STOCKPILE AREA.
7. NOTE: MAY CONTAIN KEYNOTES THAT ARE NOT USED ON THIS SHEET.

REVISION SCHEDULE

NUMBER	DATE	AUTHOR	COMPANY REPRESENTATIVE SIGNATURE
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

HORIZONTAL GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
HORZ: 1 inch = 40 ft.

ENSIGN
THE STANDARD IN ENGINEERING

TOOELE
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SALT LAKE CITY
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CONTACT:
SEAN PERKINS
PHONE: 435-868-8436

BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

NO.	DATE	REVISION	BY
1		FOR REVIEW	

EROSION CONTROL PLAN

PROJECT NUMBER: T1218E
PRINT DATE: 2022-01-27
DRAWN BY: C. CHILD
CHECKED BY: J. CLEGG
PROJECT MANAGER: C. CHILD

C-400

811 Know what's below. Call before you dig.

CALL BLUESTAKES @811 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

BENCHMARK

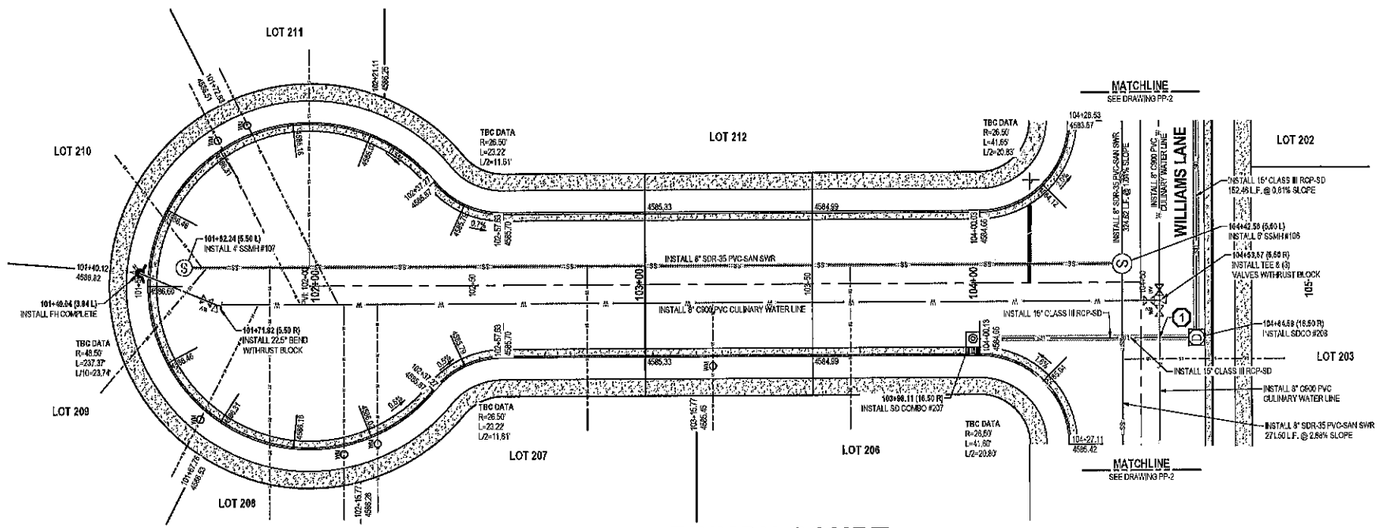
CENTER OF SECTION 2, T2S, R4W, SLB&M (FOUND 3" BRASS AND PIPE TOOELE COUNTY SURVEYORS MONUMENT, DATED 2010)

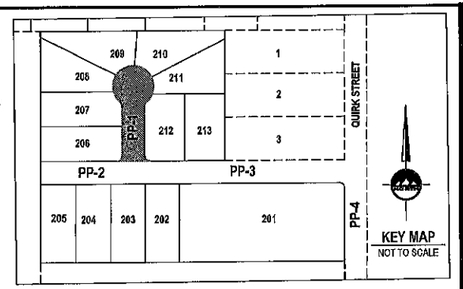
ELEV = 4220.00

SCOPE OF WORK:

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

1. CONTRACTOR TO MAINTAIN 18" OF SEPARATION BETWEEN INTERSECTING PIPE LINES. LOOP CULINARY WATER LINE PER GRANTSVILLE CITY AND APWA PLAN #543.1, #543.2, #562 STANDARDS AND SPECIFICATIONS.





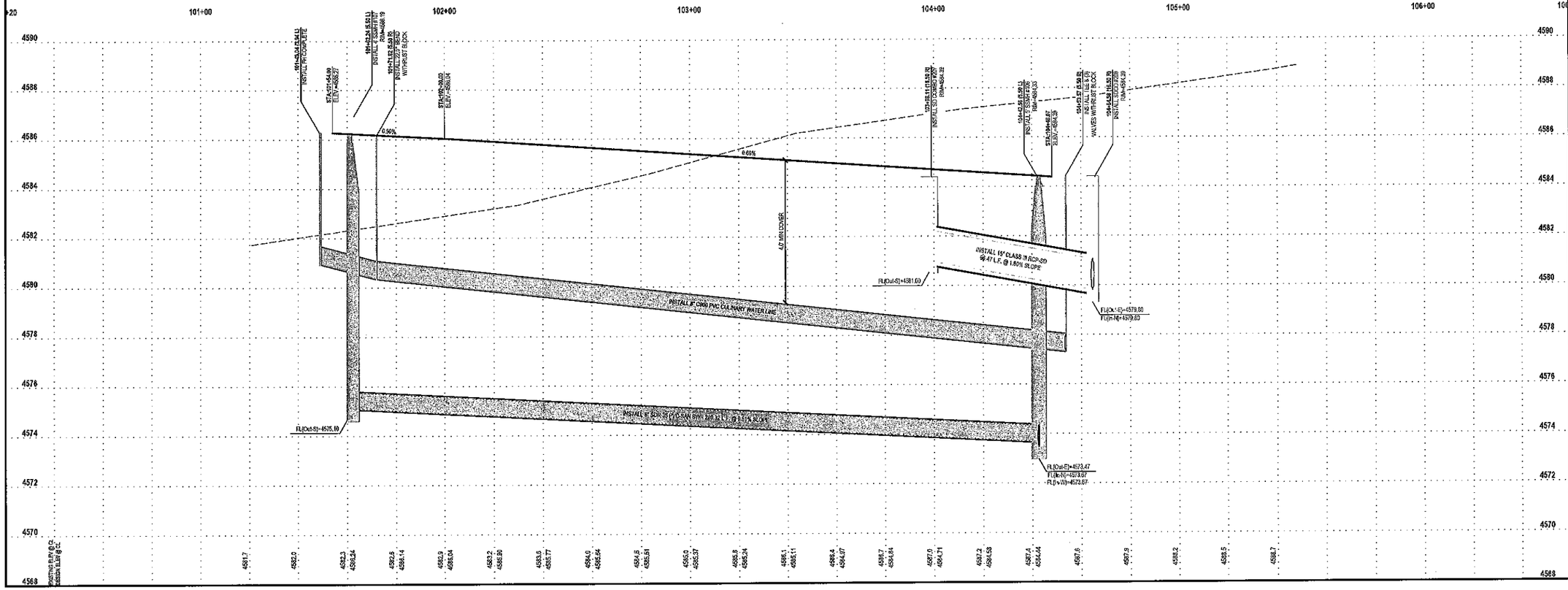
HORIZONTAL GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

HORZ. 1 inch = 20 ft.

VERT. 1 inch = 2 ft.



ENSIGN
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BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

STREET PLAN AND PROFILE

PROJECT NUMBER T1218E
PHASE/DATE
DRAWN BY C. CHILD
CHECKED BY J. CLEGG
PROJECT MANAGER C. CHILD

PP-1

811 Know what's below. Call before you dig.

CALL BLUESTAKES @ 811 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

BENCHMARK

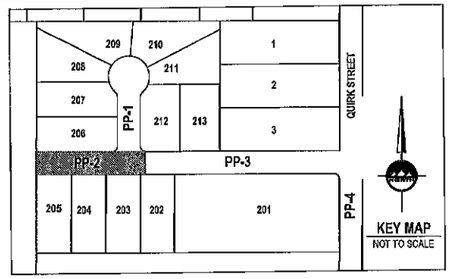
CENTER OF SECTION 2, T2S, R4W, SLB&M (FOUND 3" BRASS AND PIPE TOOELE COUNTY SURVEYORS MONUMENT, DATED 2010)

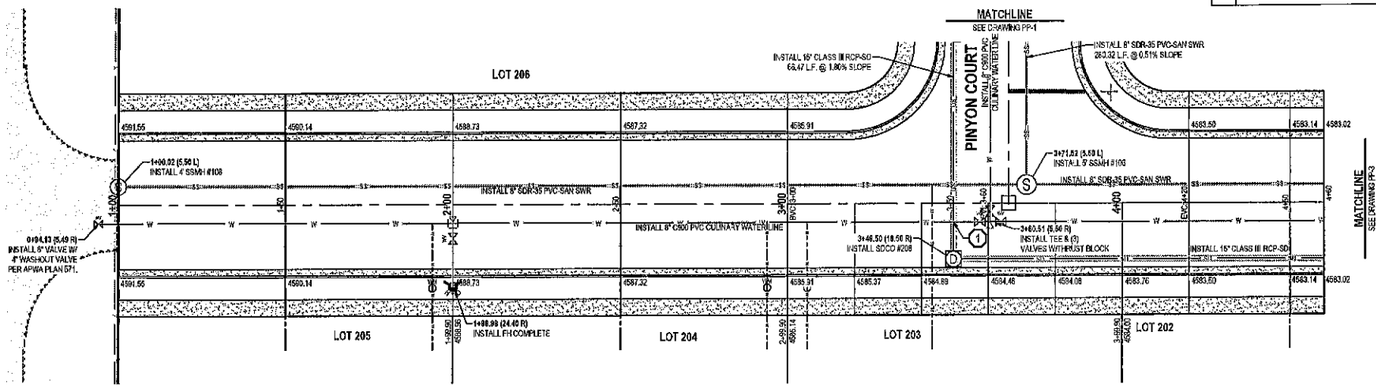
ELEV = 4260.00'

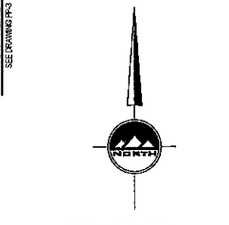
SCOPE OF WORK:

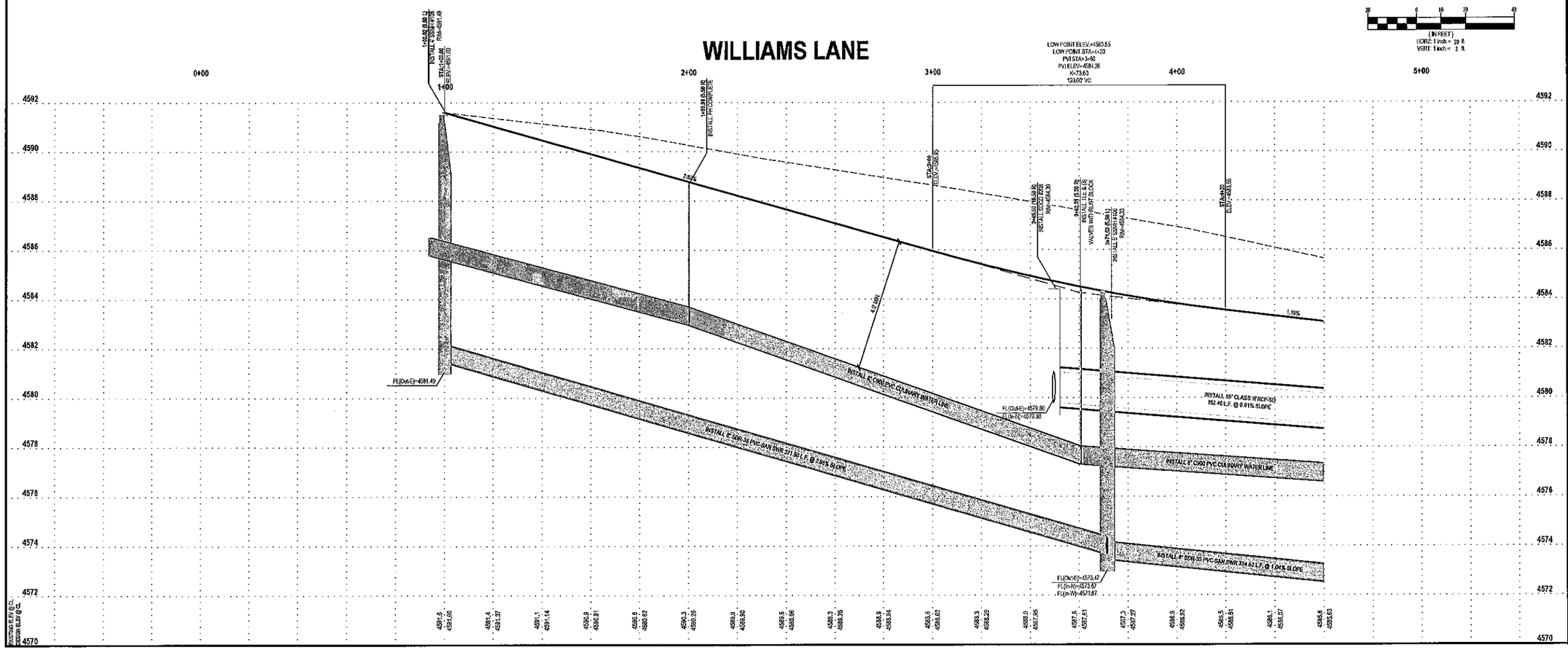
PROVIDE, INSTALL AND/OR CONSTRUCT THE FOLLOWING PER THE SPECIFICATIONS GIVEN OR REFERENCED, THE DETAILS NOTED, AND/OR AS SHOWN ON THE CONSTRUCTION DRAWINGS:

1. CONTRACTOR TO MAINTAIN 18" OF SEPARATION BETWEEN INTERSECTING PIPE LINES. LOOP CULINARY WATER LINE PER GRANTSVILLE CITY AND APWA PLAN #3.43.1, #3.43.2, #562 STANDARDS AND SPECIFICATIONS.









ENSIGN
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SEAN PERKINS
PHONE: 435-850-8438

BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

STREET PLAN AND PROFILE

PROJECT MANAGER: T1216E
DRAWN BY: C. CHILD
CHECKED BY: J. CLEGG
PROJECT ENGINEER: C. CHILD

PP-2

811 Know what's below. Call before you dig.

CALL BLUESTAKES @ 811 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

BENCHMARK

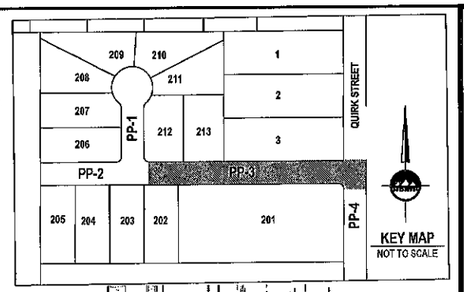
CENTER OF SECTION 2, T2S, R4W, SLB&M (FOUND 3" BRASS AND PIPE TOOELE COUNTY SURVEYORS MONUMENT, DATED 2016)

ELEV = 4208.00'

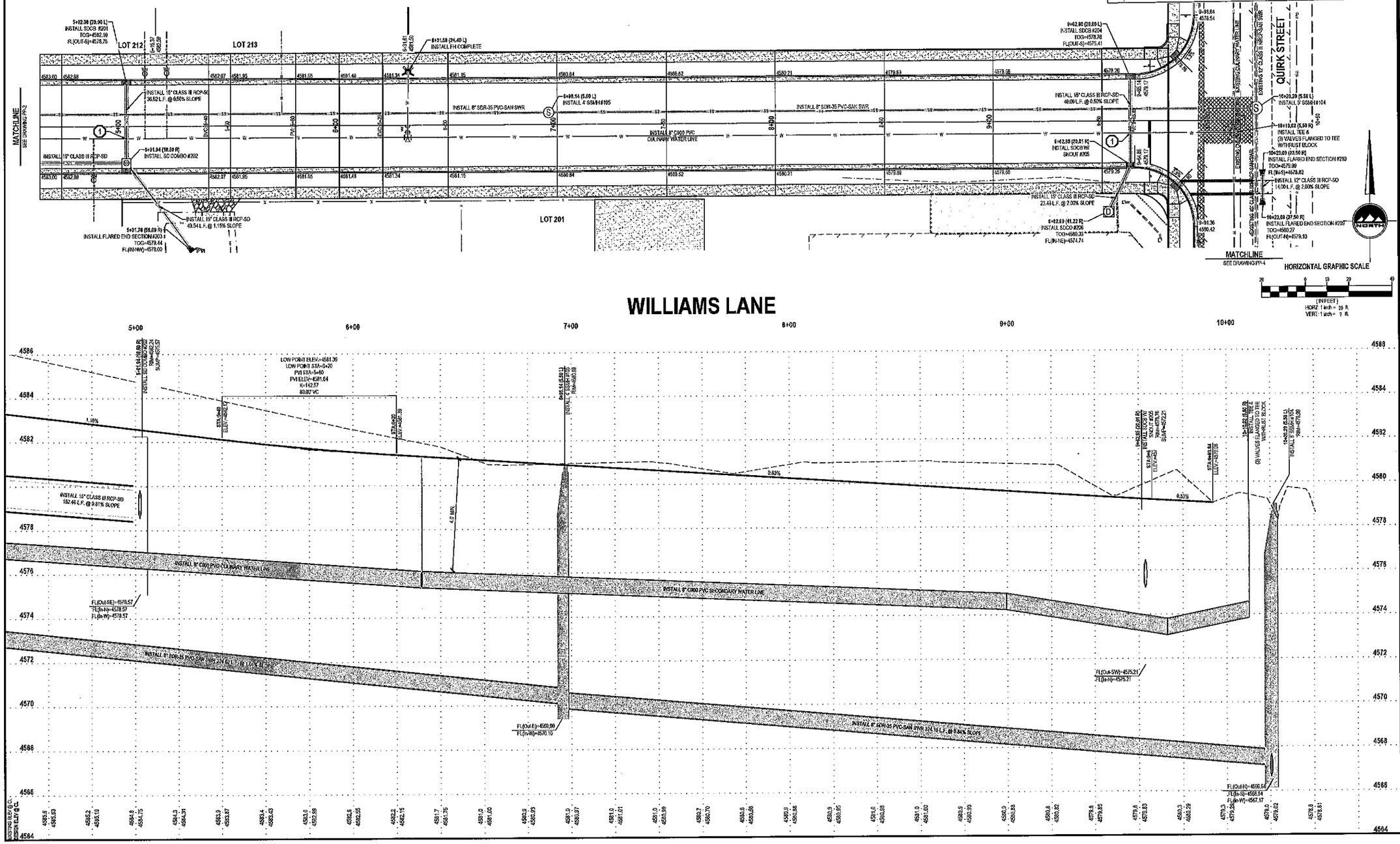
SCOPE OF WORK:

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

1. CONTRACTOR TO MAINTAIN 18" OF SEPARATION BETWEEN INTERSECTING PIPE LINES. LOOP CULINARY WATER LINE PER GRANTSVILLE CITY AND APWA PLAN #503.1, #503.2, #562 STANDARDS AND SPECIFICATIONS.



KEY MAP
NOT TO SCALE



ENSIGN
THE STANDARD IN ENGINEERING

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FOR:
ICON DEVELOPMENT, LLC
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ERDA, UTAH, 84074
CONTACT:
SEAN PERKINS
PHONE: 435-850-8436

BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

STREET PLAN AND PROFILE

PROJECT NUMBER: T1216E
ISSUE DATE:
DRAWN BY: C. CHILD
CHECKED BY: J. CLEGG
PROJECT MANAGER: C. CHILD

PP-3

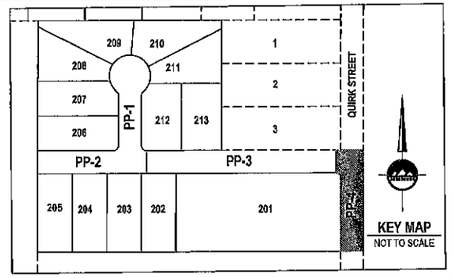
811 Know what's below. Call before you dig.

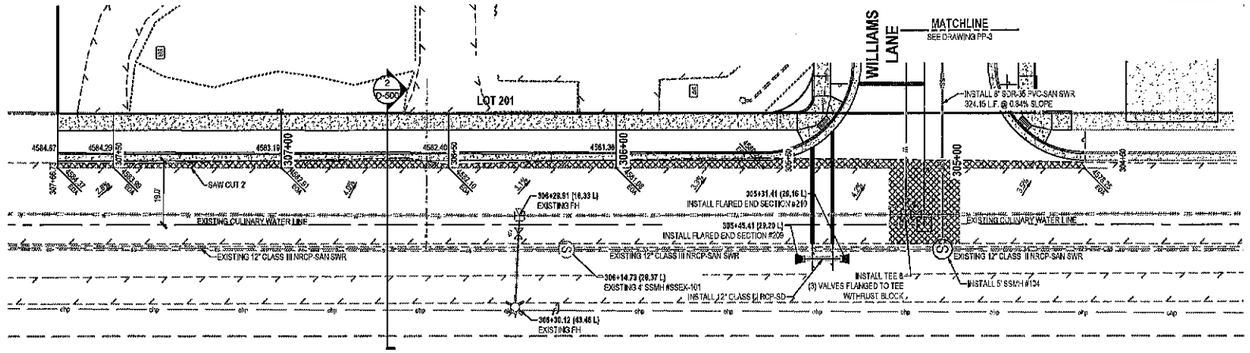
CALL BLUESTAKES @ 811 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

BENCHMARK

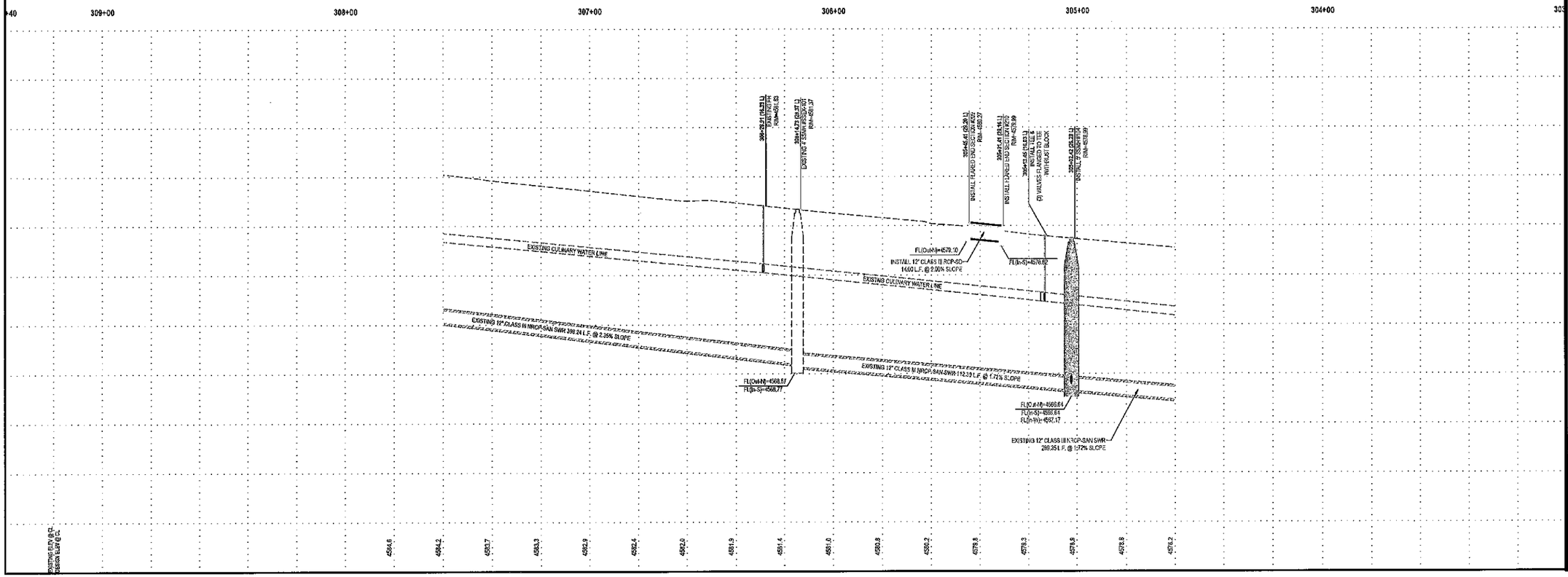
CENTER OF SECTION 2, T2S, R4W, SLB&M (FOUND 3" BRASS AND PIPE TOOELE COUNTY SURVEYORS MONUMENT, DATED 2010)

ELEV = 4200.00'





QUIRK STREET



HORIZONTAL GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
HORZ: 1 inch = 20 ft.
VERT: 1 inch = 2 ft.

ENSIGN
THE STANDARD IN ENGINEERING

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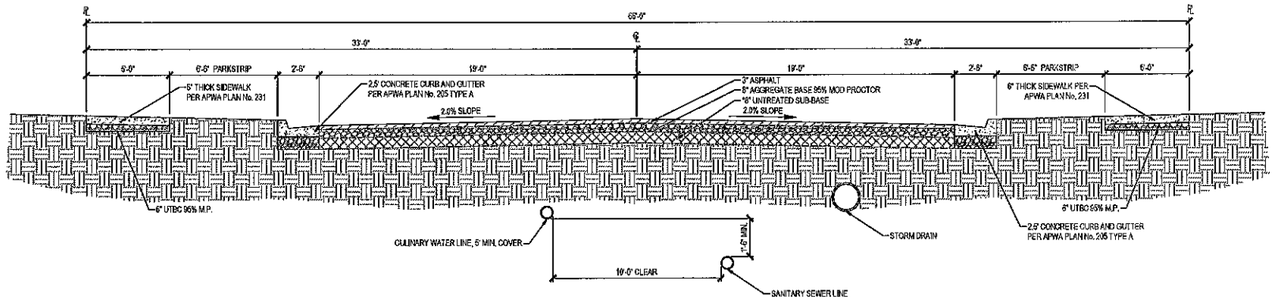
BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

STREET PLAN AND PROFILE

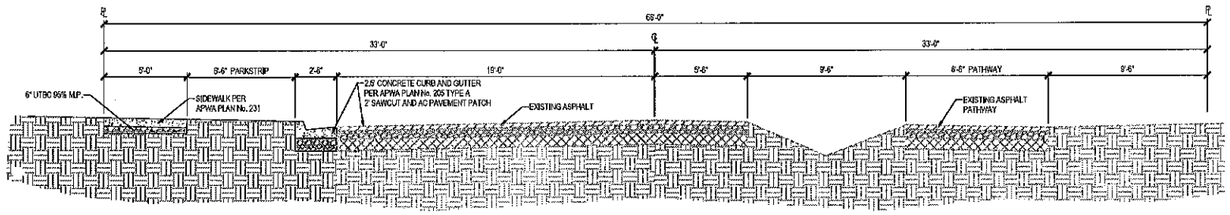
PROJECT NUMBER: T1216E
PRINT DATE:
DRAWN BY: C. CHILD
CHECKED BY: J. CLEGG
PROJECT MANAGER: C. CHILD

PP-4



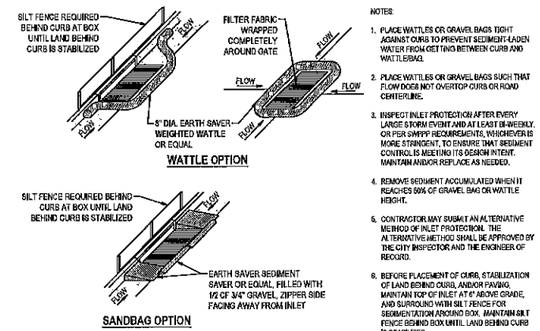
1 TYPICAL 66 FOOT ROAD CROSS SECTION

SCALE: NONE



2 QUIRK STREET 66 FOOT ROAD CROSS SECTION

SCALE: NONE

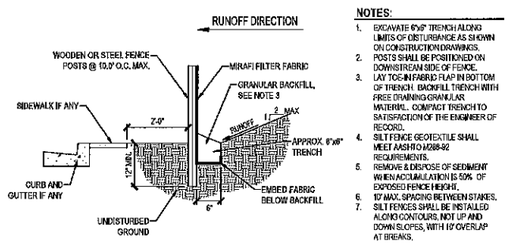


NOTES:

1. PLACE WATTLES OR GRAVEL BAGS TIGHT AGAINST CURB TO PREVENT SEDIMENT-LADEN WATER FROM GETTING BETWEEN CURB AND WATTLE/BAG.
2. PLACE WATTLES OR GRAVEL BAGS SUCH THAT FLOW DOES NOT OVERTOP CURB OR ROAD CENTERLINE.
3. INSPECT INLET PROTECTION AFTER EVERY LARGE STORM EVENT AND AT LEAST BI-WEEKLY, OR PER SWPPP REQUIREMENTS, WHICHEVER IS MORE STRINGENT, TO ENSURE THAT SEDIMENT CONTROL IS MEETING ITS DESIGN INTENT. MAINTAIN AND/OR REPLACE AS NEEDED.
4. REMOVE SEDIMENT ACCUMULATED WHEN IT REACHES 50% OF GRAVEL BAG OR WATTLE HEIGHT.
5. CONTRACTOR MAY SUBMIT AN ALTERNATIVE METHOD OF INLET PROTECTION. THE ALTERNATIVE METHOD SHALL BE APPROVED BY THE CITY INSPECTOR AND THE ENGINEER OF RECORD.
6. BEFORE PLACEMENT OF CURB, STABILIZATION OF LAND BEHIND CURB, AND/OR PAVING, MAINTAIN TOP OF INLET AT 6" ABOVE GRADE, AND SURROUND WITH SILT FENCE FOR SEDIMENTATION AROUND BOX. MAINTAIN SILT FENCE BEHIND BOX UNTIL LAND BEHIND CURB IS STABILIZED.

3 SAG INLET PROTECTION

SCALE: NONE

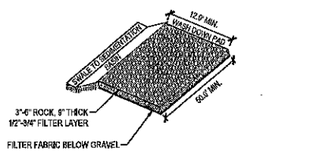


NOTES:

1. EXCAVATE 6"x8" TRENCH ALONG LIMITS OF DISTURBANCE AS SHOWN ON CONSTRUCTION DRAWINGS.
2. POSTS SHALL BE POSITIONED ON DOWNSTREAM SIDE OF FENCE.
3. LAY TOE-IN FABRIC FLAP IN BOTTOM OF TRENCH. BACKFILL TRENCH WITH FREE DRAINING GRANULAR MATERIAL. COMPACT TRENCH TO SATISFACTION OF THE ENGINEER OF RECORD.
4. SILT FENCE GEOTEXTILE SHALL MEET AASHTO M288-92 REQUIREMENTS.
5. REMOVE & DISPOSE OF SEDIMENT WHEN ACCUMULATION IS 50% OF EXPOSED FENCE HEIGHT.
6. 10' MAX. SPACING BETWEEN STAKES.
7. SILT FENCES SHALL BE INSTALLED ALONG CONTOURS, NOT UP AND DOWN SLOPES, WITH 10' OVERLAP AT BREAKS.

4 TEMPORARY SILT FENCE

SCALE: NONE

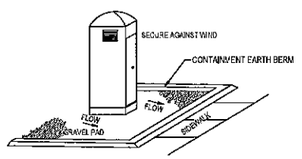


NOTE:

1. PLACE SIGN ADJACENT TO ENTRANCE " CONSTRUCTION TRAFFIC ONLY - ALL CONSTRUCTION TRAFFIC SHALL ENTER AND EXIT SITE AT THIS LOCATION"

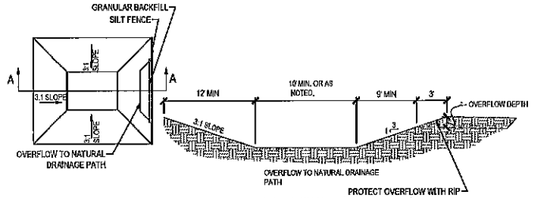
5 STABILIZED CONSTRUCTION ENTRANCE

SCALE: NONE



6 PORTABLE TOILET

SCALE: NONE

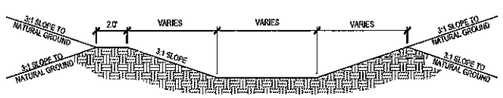


NOTES:

1. CLEAN OUT BASIN WHEN CAPACITY IS REDUCED BY HALF.
2. SIZE BASIN PER MINIMUM DIMENSIONS SHOWN, AND PER DIMENSIONS IN PLAN, WHICHEVER IS GREATER.
3. SAFETY FENCING IS REQUIRED FOR DEPTH GREATER THAN THREE FEET.
4. WHERE 2:1 RATIO OF LENGTH TO WIDTH IS NOT AVAILABLE, CONSTRUCT BERM(S) FOR BAFFLE(S) BETWEEN INLET AND OUTLET TO ACHIEVE 2:1 FLOW LENGTH RATIO.
5. WHERE TEMPORARY SEDIMENTATION WILL BE CONVERTED TO A PERMANENT DETENTION POND, PROTECT OUTLET PER DTL. L TEMPORARY BASIN OUTLET PROTECTION.

7 TEMPORARY SEDIMENTATION BASIN

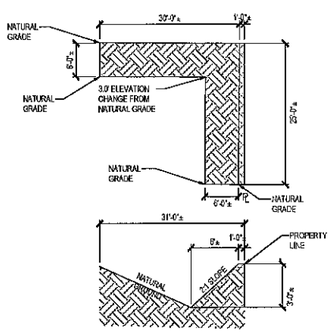
SCALE: NONE



8 RETENTION BASIN LAYOUT

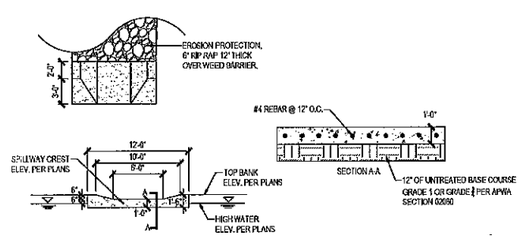
SCALE: NONE

NOTE:
ALL CONCRETE SURFACE IMPROVEMENTS SHALL BE CONSTRUCTED USING 4,500 PSI CONCRETE



9 EARTH RETENTION BERM BASIN

SCALE: NONE



10 CONCRETE SPILLWAY

SCALE: NONE

ENSIGN
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ICON DEVELOPMENT, LLC
3449 NORTH MOVIE LANE
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SEAN PERKINS
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BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

DETAILS

PROJECT NUMBER: T1219E
PRINT DATE: 1/27/22
DRAWN BY: C. CHILD
CHECKED BY: J. CLEGG
PROJECT MANAGER: C. CHILD

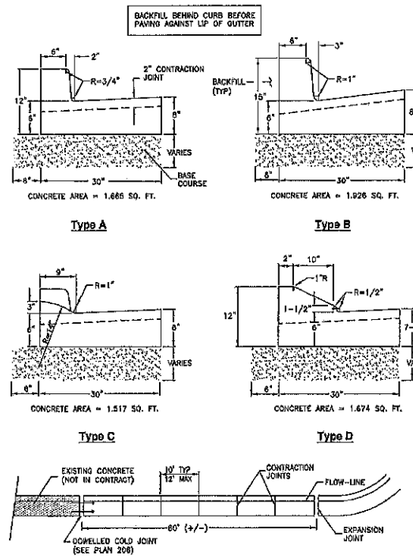
D-500

Curb and gutter

1. **GENERAL**
   - A. Variance from specified dimensions and slopes must be acceptable to the ENGINEER. System configuration may be changed at ENGINEER's discretion.
   - B. Additional requirements are specified in APWA Section 32 16 13.

2. **PRODUCTS**
   - A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   - B. Expansion Joint Filler: 1/2-inch thick type F1 full depth, APWA Section 32 13 73.
   - C. Concrete: Class 4000, APWA Section 03 30 04. If necessary, provide concrete that achieves design strength in less than 7 days. Use caution; however, as concrete crazing (spider cracks) may develop if air temperature exceeds 90 degrees F.
   - D. Concrete Curing Agent: Clear membrane forming compound with fugitive dye (Type ID Class A), APWA Section 03 39 00.

3. **EXECUTION**
   - A. Base Course Placement: APWA Section 32 05 10. Thickness is 6-inches if flow-line grade is 0.5 percent (s=0.005) or greater. If slope is less, provide 8-inches. Maximum lift thickness before compaction is 8-inches when using riding equipment or 6-inches when using hand held equipment. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
   - B. Concrete Placement: APWA Section 03 30 10.
     1) Install expansion joints vertical, full depth, with top of filler set flush with concrete surface. Install at the start or end of a street intersection curb return. Expansion joints are not required in concrete placement using slip-form construction.
     2) Install contraction joints vertical, 1/8-inch wide or 1/4 slab thickness if the slab is greater than 8-inches thick. Match joint location in adjacent Portland-cement concrete roadway pavement.
     3) Provide 1/2-inch radius edges. Apply a broom finish. Apply a curing agent.
   - C. Protection and Repair: Protect concrete from deicing chemicals during cure. Repair construction that does not drain. If necessary, fill flow-line with water to verify.



APWA Utah Chapter

Curb and gutter

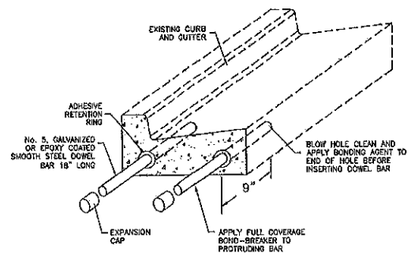
Curb and gutter connection

1. **GENERAL**
   - A. Connect new curb and gutter to existing curb and gutter that has not been placed by CONTRACTOR.

2. **PRODUCTS**
   - A. Reinforcement: Galvanized or epoxy coated, 60 ksi yield grade steel, ASTM A615.
   - B. Adhesive: Epoxy adhesive grout, APWA Section 03 61 00.
   - C. Bond Breaker: Paraffin wax, lithium grease, or other semi-solid, inert lubricant.
   - D. Expansion Cap: Plastic, with bar movement allowance of 1/2-inch.

3. **EXECUTION**
   - A. Ensure drill rigs (or jigs) are set at mid-depth of the gutter and horizontal to the surface. Make hole size large enough to account for dowel bar and adhesive.
   - B. Clean holes and dowel bars of dirt, dust and particles. Ensure coating on bars have no surface defects.
   - C. Place bonding agent in the back of each hole so adhesive flows out around each bar fully encasing it. DO NOT apply adhesive to end of the bar and then insert the bar into the hole.
   - D. Insert dowels with at least one full turning motion and if necessary, place a grout retention disk on the dowel after insertion to contain adhesive.
   - E. Apply complete coverage of bond-breaker on the protruding end of each dowel.
   - F. Install expansion caps on protruding dowel bar ends.

NOTE:
ALL CONCRETE SURFACE IMPROVEMENTS SHALL BE CONSTRUCTED USING 4,500 PSI CONCRETE



APWA Utah Chapter

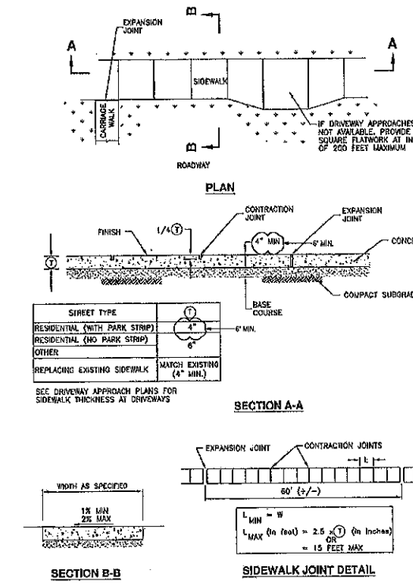
Curb and gutter connection

Sidewalk

1. **GENERAL**
   - A. Variance from specified dimensions and slopes must be acceptable to the ENGINEER. System configuration may be changed at ENGINEER's discretion.
   - B. Additional requirements are specified in APWA Section 32 16 13.

2. **PRODUCTS**
   - A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   - B. Expansion Joint Filler: 1/2-inch thick type F1 full depth, APWA Section 32 13 73.
   - C. Concrete: Class 4000, APWA Section 03 30 04. If necessary, provide concrete that achieves design strength in less than 7 days. Use caution; however, as concrete crazing (spider cracks) may develop if air temperature exceeds 90 degrees F.
   - D. Concrete Curing Agent: Clear membrane forming compound with fugitive dye (Type ID Class A), APWA Section 03 39 00.

3. **EXECUTION**
   - A. Base Course Placement: APWA Section 32 05 10. Maximum lift thickness before compaction is 8-inches when using riding equipment or 6-inches when using hand held equipment. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
   - B. Concrete Placement: APWA Section 03 30 10.
     1) Install expansion joints vertical, full depth, with top of filler set flush with concrete surface.
     2) Install contraction joints vertical, 1/8-inch wide or 1/4 slab thickness if the slab is greater than 8-inches thick. Maximum length to width ratio for non-square panels is 1.5 to 1. Maximum panel length (in feet) is 1.5 times the slab thickness (in inches).
     3) Provide 1/2-inch radius edges. Apply a broom finish. Apply a curing agent.



APWA Utah Chapter

Sidewalk

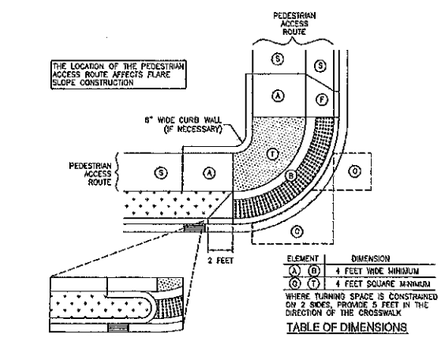
Corner curb cut assembly

1. **GENERAL**
   - A. Where existing elements or spaces are altered to receive an assembly; slopes and dimensions shall comply with slopes and dimensions shown on the drawing, or to the maximum extent feasible permitted by the ENGINEER. Final configuration of the assembly may be different than shown. Where physical constraints (e.g. utility covers, poles, vaults, etc.) prevent compliance, a single diagonal curb cut assembly may serve both pedestrian street crossings.
   - B. Installation of a curb wall, flares, or curb returns is ENGINEER's choice.
   - C. Definitions and supplemental requirements are specified in APWA Section 32 16 14.

2. **PRODUCTS**
   - A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   - B. Expansion Joint Filler: 1/2-inch thick type F1 full depth, APWA Section 32 13 73.
   - C. Detectable Warning Surface: Paver, ribbed composite panel, or tile. Provide a color that contrasts with adjacent walking surface, either light-on-dark or dark-on-light. ENGINEER to select type and color unless indicated elsewhere.
   - D. Concrete: Class 4000, APWA Section 03 30 04.
   - E. Concrete Curing Agent: Clear membrane forming compound with fugitive dye (Type ID Class A), APWA Section 03 39 00.

3. **EXECUTION**
   - A. Base Course Placement: APWA Section 32 05 10. Maximum lift thickness before compaction is 8-inches when using riding equipment or 6-inches when using hand held equipment. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
   - B. Curb Modifications:
     1) The sloped surface created to accommodate a flare area shall be perpendicular to the back of curb.
     2) No grade break shall exist between the flow-line and the foot of the curb ramp, or blended transition. Length of the curb modification abutting the curb ramp or transition is 4 feet minimum for each crosswalk served.
   - C. Blended Transition: Determine turning space position and elevation so that flatwork sloping to and from the turning space meets slope requirements.
   - D. Curb Wall: Set top of curb wall equal to elevation of extended lateral lines of sidewalk.
   - E. Concrete Placement: APWA Section 03 30 10.
     1) Maximum length to width ratio for rectangular panel joints is 1.5 to 1. Joint spacing measured in feet not to exceed twice slab thickness measured in inches or a maximum of 15 feet.
     2) Install expansion joints vertical, full depth, with top of filler set flush with concrete surface. Install contraction joints vertical, 1/8-inch wide, and 1/4 of the depth of the concrete flatwork.
     3) Provide 1/2-inch radius edges. Apply a broom finish. Apply a curing agent.
   - F. Clear Space: No trip hazards in the clear space.

TURNING SPACE BETWEEN SIDEWALK AND STREET LEVELS



ELEMENT		DIMENSION
A or B	T	4 FEET WIDE MINIMUM
Q or R	T	4 FEET SQUARE MINIMUM

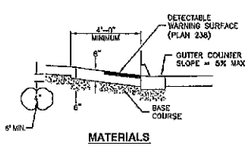
WHERE TURNING SPACE IS CONSTRAINED ON 2 SIDES, PROVIDE 5 FEET IN THE DIRECTION OF THE CROSSWALK.

TABLE OF DIMENSIONS

		RUNNING SLOPE (R) MAXIMUM	CROSS SLOPE (R) MAXIMUM
TURNING SPACE	T	2	2
BLENDED TRANSITION	B	5	2 (c)
CLEAR SPACE	C	5	2 (c)
SIDEWALK	S	STREET GRADE	2
FLARE	F	10	----
APPROACH	A	8.33	2

(a) RUNNING SLOPE IS IN THE DIRECTION OF PEDESTRIAN TRAVEL. RUNNING SLOPE OF FLARE IS PARALLEL TO BACK OF CURB
(b) CROSS SLOPE IS PERPENDICULAR TO DIRECTION OF PEDESTRIAN TRAVEL
(c) SLOPE MAY EQUAL STREET OR HIGHWAY GRADE AT CROSSWALKS THAT ARE WITHOUT VEHICULAR YIELD OR STOP CONTROL.

SLOPE TABLE



MATERIALS

APWA Utah Chapter

Corner curb cut assembly

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BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

NO.	DATE	REVISION	BY
1		FOR REVIEW	
2			
3			
4			
5			
6			

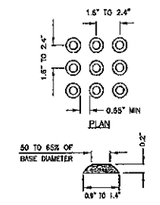
DETAILS

PROJECT NUMBER T12186
PRINT DATE 1/27/2022
DRAWN BY C. CHILD
CHECKED BY J. CLEGG
PROJECT MANAGER C. CHILD

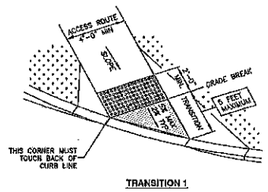
D-501

Detectable warning surface

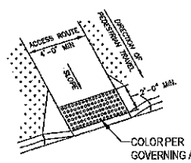
1. **GENERAL**
   - A. Detectable warnings consist of a surface of truncated domes aligned in a square or radial grid pattern with dome size, dome spacing, contrast and panel size as indicated.
   - C. Definitions and supplemental requirements are specified in APWA Section 32 16 14.
2. **PRODUCTS**
   - A. Pavers:
     1) Concrete, APWA Section 32 14 13.
     2) Brick and Mortar, APWA Section 32 14 16.
   - B. Tile: Unless indicated elsewhere, selection is by CONTRACTOR as allowed by ENGINEER.
   - C. Ribbed Composite Panel: Unless indicated elsewhere, selection is by CONTRACTOR as allowed by ENGINEER.
   - D. Bedding Sand, Joint Sand, Geotextile: APWA Section 32 14 13.
3. **EXECUTION**
   - A. Layout:
     1) Joints Between Units: 3/16 inch maximum or manufacturer's recommendation.
     2) Flares: Do not install detectable warning units on flared surfaces.
     3) Alignment: Where a ramp, turning space, or blended transition provides access to the street continuously around a corner, align the vertical rows of truncated domes to be perpendicular or radial to the grade break between the ramp and the street for a 4 feet minimum width for each crosswalk served.
     4) Transition 1 or 2: Selection is by ENGINEER unless indicated elsewhere.
     5) At Rail Crossings: The edge of the detectable warning surface nearest the rail crossing is 6 feet minimum and 15 feet maximum from the centerline of the nearest rail.
   - B. Paver Installation: APWA Section 32 14 13. If paver must be cut, minimum paver cut length is 3/4 paver, or 1/2 paver length providing the adjacent paver is also reduced no more than 1/2 its original length. Do not cut pavers longitudinally. Remove domes that were cut.
   - C. Tile Installation: Install according to manufacturer's recommendations. Remove domes that were cut.
   - D. Ribbed Composite Panel Installation: Install according to manufacturer's recommendation. Remove domes that were cut. Seal cuts to prevent water intrusion.



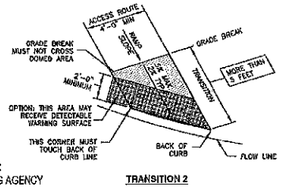
TRUNCATED DOME DETAIL



TRANSITION 1

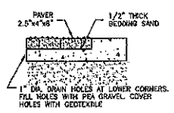


PERPENDICULAR ASSEMBLY

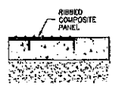


TRANSITION 2

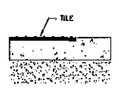
NON-PERPENDICULAR ASSEMBLY



STYLE P



STYLE R



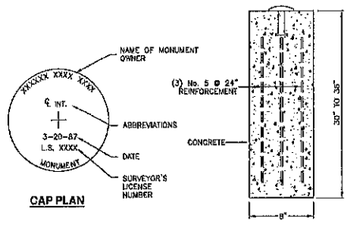
STYLE T

Monument cap and base

1. **GENERAL**
   - A. Includes fabrication of monument cap and base.
2. **PRODUCTS**
   - A. Cap: Brass or bronze with the following abbreviations. Apply other marks and abbreviations as applicable.

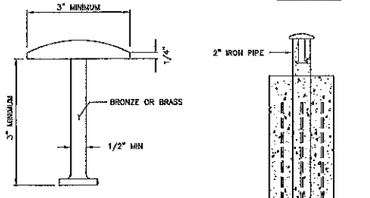
INT	Intersection
ML INT	Monument line intersection
P.C.	Point of curvature
P.C.C.	Point of compound curve
P.I.	Point of intersection
P.O.C.	Point on curve
P.O.T.	Point on Tangent
P.R.C.	Point of reverse curve
P.T.	Point of tangency
S.C.	Section Corner
W.C.	Witness corner

   - B. Concrete: Class 4000, APWA Section 03 30 04.
   - C. Reinforcement: Galvanized or epoxy coated, deformed, 60 ksi yield grade steel, ASTM A615.
3. **EXECUTION**
   - A. Monument Cap: Show month, day, and year when cap was marked.
   - B. License: Show license number of land surveyor who marked the cap.
   - C. Provide either precast or cast in-place monument base.



CAP PLAN

SECTION OF BASE
TYPICAL SETTING



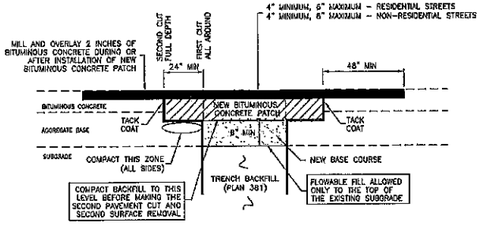
CAP SECTION

SECTION OF BASE
ALTERNATE SETTING

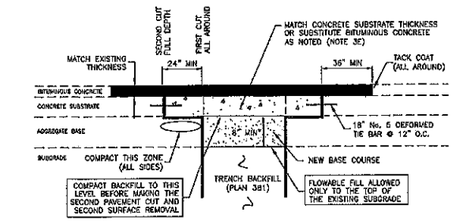
NOTE:
ALL CONCRETE SURFACE IMPROVEMENTS SHALL BE CONSTRUCTED USING 4,500 PSI CONCRETE

Bituminous pavement T-patch

1. **GENERAL**
   - A. Vertical cuts in bituminous pavement may be done by saw or pavement zipping. If cuts greater than 6 inches are necessary to prevent pavement "break off" consult ENGINEER for directions on handling additional costs.
   - B. Repair a T-patch restoration if any of the following conditions occur prior to final payment or at the end of the one year correction period.
     1) Pavement surface distortion exceeds 1/4-inch deviation in 10 feet. Repair option - plane off surface distortions. coat planed surface with a cationic or anionic mulsion that complies with APWA Section 32 12 03..
     2) Separation appears at a connection to an existing pavement or any Street Fixture. Repair option - blow separation clean and apply joint sealant, Plan 265.
     3) Cracks at least 1-foot long and 1/4-inch wide occur more often than 1 in 10 square feet. Repair option - blow clean and apply crack seal, Plan 265.
     4) Pavement raveling is greater than 1 square foot per 100 square feet. Repair option - Mill and Inlay, APWA Sections 32 01 16.71 and 32 12 05.
2. **PRODUCTS**
   - A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   - B. Flowable Fill: Target is 60 psi in 28 days with 90 psi maximum in 28 days, APWA Section 31 05 16. It must flow easily requiring no vibration for consolidation.
   - C. Reinforcement: No. 5, galvanized or epoxy coated, deformed, 60 ksi yield grade steel, ASTM A615.
   - D. Concrete: Class 4000, APWA Section 03 30 04.
   - E. Tack Coat: APWA Section 32 12 13.13.
   - F. Bituminous Concrete. APWA Section 32 12 05.
     1) Warm Weather Patch: PG64-22-DM-1/2, unless indicated otherwise.
     2) Cold Weather Patch: Modified MC-250-FM-1 as indicated in APWA Section 33 05 25.
3. **EXECUTION**
   - A. Base Course Placement: APWA Section 32 05 10. Maximum lift thickness before compaction is 8-inches when using riding equipment or 6-inches when using hand held equipment. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 28.
   - B. Flowable Fill: Cure to initial set before placing aggregate base or bituminous pavement. Use in excavations that are too narrow to receive compaction equipment.
   - C. Tack Coat. Clean all horizontal and vertical surfaces. Apply full coverage all surfaces.
   - D. Pavement Placement: Follow APWA Section 32 12 16.13. Unless indicated otherwise, lift thickness is 3-inches minimum after compaction. Compact to 94 percent of ASTM D2041 (Rice density) plus or minus 2 percent.
   - E. Bituminous Concrete Substitution: If bituminous concrete is substituted for Portland cement concrete substrate, omit rebar and provide 1.25 inches of bituminous concrete for each 1 inch of Portland cement concrete. Follow paragraph E requirements.
   - F. Reinforcement. Required if thickness of existing Portland-cement concrete substrate is 6-inches or greater. Not required if 1) less than 6-inches thick, 2) if existing concrete is deteriorating, 3) if excavation is less than 3 feet square, or 4) if bituminous pavement is substituted for Portland-cement concrete substrate.
   - G. Concrete Substrate. Cure to initial set before placing new bituminous concrete patch.



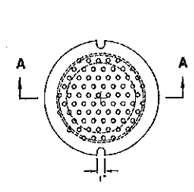
BITUMINOUS CONCRETE RESTORATION



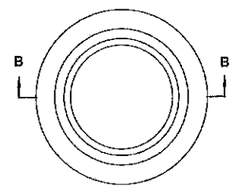
COMPOSITE RESTORATION

Frame and cover for monument

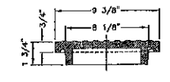
1. **GENERAL**
   - A. The drawing is a frame and cover castings for monument boxes, Plan 274 and 275.
2. **PRODUCT**
   - A. Castings: Class 20 grey iron, ASTM A48, coated with asphalt based paint or better.
3. **EXECUTION**
   - A. Set frame independent of monument post.



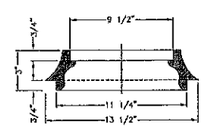
COVER



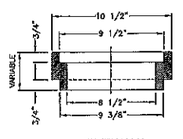
FRAME



SECTION A-A



SECTION B-B



EXTENSION

NOTE: USE EXTENSION IN PORTLAND CEMENT CONCRETE PAVEMENTS. USE FRAME IN BITUMINOUS CONCRETE PAVEMENTS.

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BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

NO.	DATE	REVISION	BY
1		ADJUSTMENT	

DETAILS

PROJECT NUMBER: T12166
PRINT DATE: 10/7/2022
DRAWN BY: C. CHILD
CHECKED BY: J. CLEGG
PROJECT MANAGER: C. CHILD

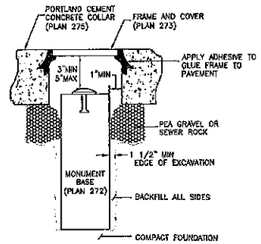
D-502

Survey monument placement under pavements

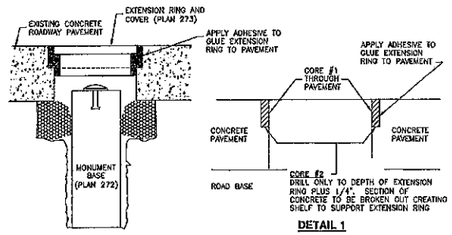
1. **GENERAL**
   A. The installed monument must be independent of the roadway pavement so that vibrations of the pavement surface are transmitted to the underlying soils and not to the monument. This will assure the monument remains undisturbed.

2. **PRODUCT**
   A. Castings: Class 20 grey iron, ASTM A48, coated with asphalt based paint or better.
   B. Backfill: Native soil or backfill borrow, APWA Section 31 05 13.
   C. Concrete: Class 4000, APWA Section 03 30 04.
   D. Adhesive: Epoxy adhesive grout, APWA Section 03 30 10.
   E. Pea Gravel: Nominal size 3/4, APWA Section 31 05 13.
   F. Sewer Rock: Nominal size 1", APWA Section 31 05 13.

3. **EXECUTION**
   A. Locate monument base so reference point falls within 1-inch diameter circle in the center of marker plate. Install maker plate in monument base before the concrete sets.
   B. Compact bottom of excavated hole before placement of precast or cast-in-place monument post.
   C. Compact backfill to 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
   D. Set top of frame and cover level with concrete collar.
   E. Set frame independent of monument post.



BITUMIOUS CONCRETE PAVEMENTS



DETAIL 1

CEMENT CONCRETE PAVEMENTS

(REQUIRES TWO CONCRETE CORE DRILLS)

APWA Utah Chapter

Survey monument placement under pavements

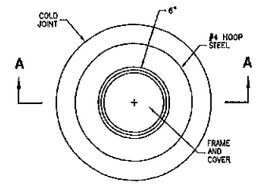
Plan 274 December 2001

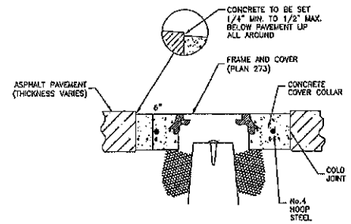
Cover collar for survey monuments

1. **GENERAL**
   A. In a pavement surface, fill an annular space around a frame and cover casting with concrete. The concrete will support the casting under traffic loadings.

2. **PRODUCTS**
   A. Concrete: Class 4000, APWA Section 03 30 04.
   B. Concrete Curing Agent: Clear membrane forming compound with fugitive dye (Type ID Class A), APWA Section 03 39 00.

3. **EXECUTION**
   A. Pavement Preparation: Provide a neat vertical and concentric joint between concrete and existing bituminous concrete surfaces. Clean edges of all dirt, oil, and loose debris.
   B. Concrete Placement: Fill the annular space around the frame and cover casting with concrete. Apply a broom finish. Apply a curing agent.





SECTION A-A

APWA Utah Chapter

Cover collar for survey monuments

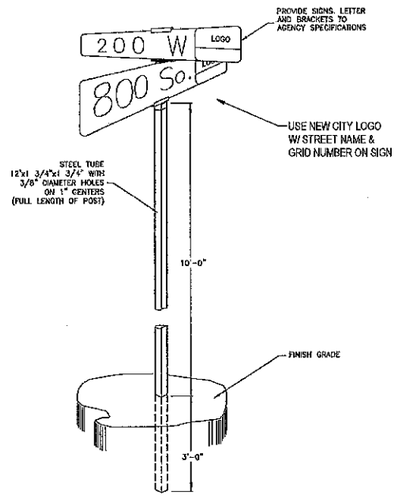
Plan 275 April 2011

Street name signpost

1. **GENERAL**
   A. Get ENGINEER's approval of sign format and installation.

2. **PRODUCTS**
   A. Bolts, Nuts, Washers, Accessories: Stainless or galvanized steel, APWA Section 05 05 23.

3. **EXECUTION**
   A. Install sign posts on corner selected by ENGINEER.
   B. Install the edge of the sign 2 feet from the vertical extension of the back of curb as near as possible to the approach curb P.C. (point of curvature).



APWA Utah Chapter

Street name signpost

Plan 292 April 1997

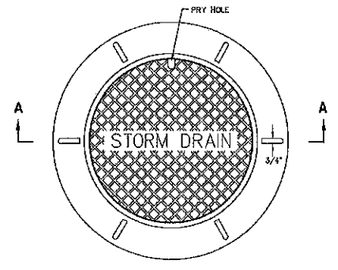
30" Frame and cover

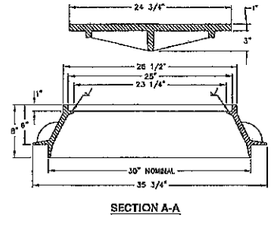
1. **GENERAL**
   A. The frame and cover fits.
      1) Cleanout box type B in Plan 331, and
      2) Precast manhole in Plan 341.

2. **PRODUCTS**
   A. Castings: Grey iron class 35 minimum, ASTM A48.
      1) Coated with asphalt based paint or better (except on machined surfaces).
      2) Cast the heat number on the frame and cover.
      3) Give the frame and cover a machine finish so the cover will not rock.
      4) √ designates a machine finished surface.
      5) Cast the words "STORM DRAIN" on the cover in upper case flush with the surface finish.

3. **EXECUTION**
   A. Except in paved streets, provide locking manhole covers in easements, alleys, parking lots, and all other places. Drill and tap two holes to a depth of 1-inch at 90 degrees to pry hole and install 3/4 x 3/4-inch allen socket set screws.

TYPE A





SECTION A-A

APWA Utah Chapter

30" Frame and cover

Plan 302.1 September 2001

NOTE:
ALL CONCRETE SURFACE IMPROVEMENTS SHALL BE CONSTRUCTED USING 4,500 PSI CONCRETE

ENSIGN
THE STANDARD IN ENGINEERING

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SEAN PERKINS
PHONE: 435-850-8436

BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

NO.	DATE	REVISION	BY
1		FOR REVIEW	

DETAILS

PROJECT MANAGER: T.TAYLOR
PROJECT NUMBER: T1216E
DRAWN BY: C. CHILD
CHECKED BY: J. CLEGG
PROJECT ENGINEER: C. CHILD

D-503

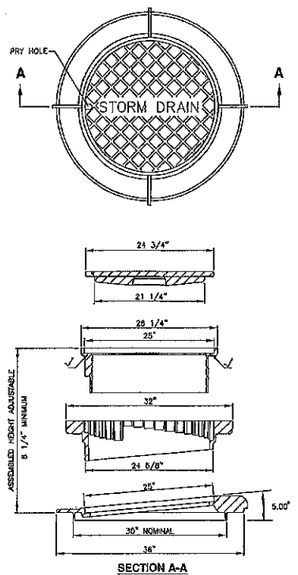
30" Frame and cover

1. **GENERAL**
   A. The frame and cover fits.
      1) Cleanout box type B in Plan 331, and
      2) Precast manhole in Plan 341.

2. **PRODUCTS**
   A. Castings: Grey iron class 35 minimum, ASTM A48.
      1) Coated with asphalt based paint or better (except on machined surfaces).
      2) Cast the heat number on the frame and cover.
      3) Give the frame and cover a machine finish so the cover will not rock.
      4) √ designates a machine finished surface.
      5) Cast the words "STORM DRAIN" on the cover in upper case flush with the surface finish.

3. **EXECUTION**
   A. Except in paved streets, provide locking manhole covers in easements, alleys, parking lots, and all other places. Drill and tap two holes to a depth of 1-inch at 90 degrees to pry hole and install 3/4 x 3/4-inch allen socket set screws.

TYPE B



SECTION A-A

APWA Utah Chapter

30" Frame and cover

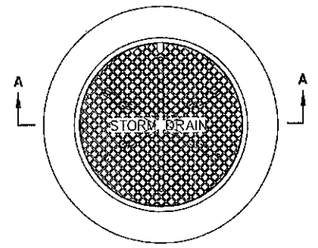
Plan 302.2 September 2001

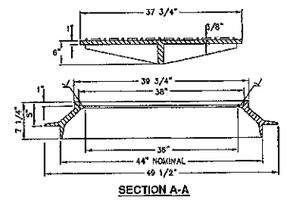
44" Frame and cover

1. **GENERAL**
   A. The frame and cover fits.
      1) Cleanout box type B in Plan 331, and
      2) Precast manhole in Plan 341.

2. **PRODUCTS**
   A. Castings: Grey iron class 35 minimum, ASTM A48, coated with asphalt based paint or better (except on machined surfaces).
      1) Cast the heat number on the frame and cover.
      2) Give the frame and cover a machine finish so the cover will not rock.
      3) √ designates a machine-finished surface.
      4) Cast the words "STORM DRAIN" on the cover in upper case flush with the surface finish.

3. **EXECUTION**
   A. Except in paved streets, provide locking manhole covers in easements, alleys, parking lots, and all other places. Drill and tap two holes to a depth of 1-inch at 90 degrees to pry hole and install 3/4 x 3/4-inch allen socket set screws.





SECTION A-A

APWA Utah Chapter

44" Frame and cover

Plan 303 November 2001

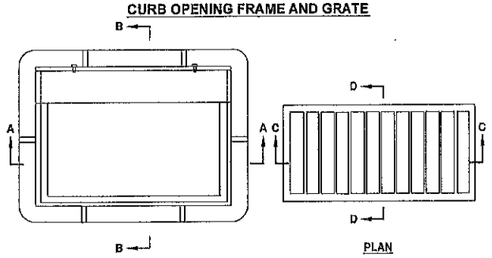
35 1/2" Grate and frame

1. **GENERAL**
   A. The grate and frame fits concrete boxes in Plan 315.

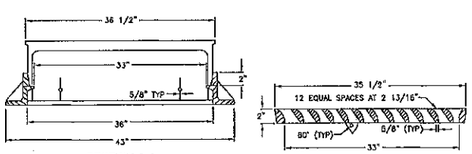
2. **PRODUCTS**
   A. Castings: Grey iron class 35 minimum per ASTM A48, coated with asphalt based paint or better.
   B. Bolts, Nuts, Washers, Accessories: Stainless steel, APWA Section 05 05 23.

3. **EXECUTION** (Not used)

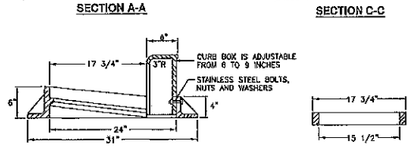
CURB OPENING FRAME AND GRATE



PLAN



SECTION A-A SECTION C-C



SECTION B-B SECTION D-D

APWA Utah Chapter

35 1/2" Grate and frame

Plan 308 January 1999

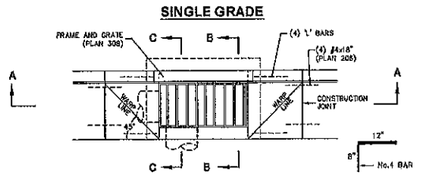
Catch basin

1. **GENERAL**
   A. The drawing shows typical pipe connections. Refer to construction drawings for connection locations or refer to field location of existing piping when engineering pipe connection to the box.

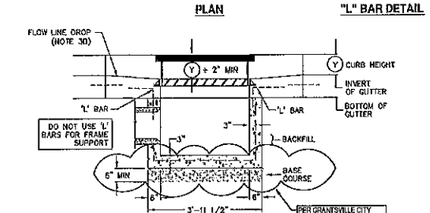
2. **PRODUCTS**
   A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
   C. Concrete: Class 4000, APWA Section 03 30 04.
   D. Reinforcement: Deformed, 60 ksi yield grade steel, ASTM A615.

3. **EXECUTION**
   A. Base Course Placement: APWA Section 32 11 23. Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
   B. Curb Face Opening: Make opening at least 4-inches high. Provide at least a 2-inch drop between the "warp line" in the gutter flow-line and the top of the grate at the curb face opening.
   C. Concrete Placement: APWA Section 03 30 10. Provide 1/2-inch radius edges. Apply a broom finish. Apply a curing agent.
   D. Backfill: Place backfill against the basin wall. Pea gravel and recycled RAP aggregate is NOT ALLOWED. Water jetting is NOT allowed. Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a standard proctor density, APWA Section 31 23 26.

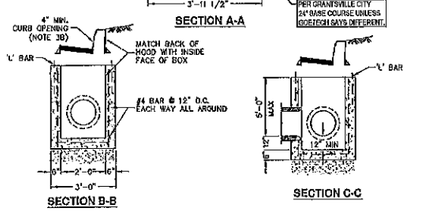
SINGLE GRADE



PLAN "L" BAR DETAIL



SECTION A-A



SECTION B-B SECTION C-C

APWA Utah Chapter

Catch basin

Plan 315.1 September 2010

NOTE:
ALL CONCRETE SURFACE IMPROVEMENTS SHALL BE CONSTRUCTED USING 4,500 PSI CONCRETE

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BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

NO.	DATE	REVISION	BY
1		2ND REVIEW	

DETAILS

PROJECT NUMBER T1216E
PRINT DATE 1/27/2022
DRAWN BY C. CHILD
CHECKED BY J. CLEGG
PROJECT MANAGER C. CHILD

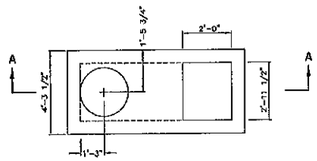
D-504

Combination catch basin and cleanout box

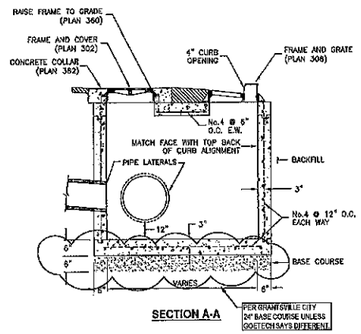
1. **GENERAL**
   A. The drawing shows typical pipe connections. Refer to construction drawings for connection locations or refer to field location of existing piping when engineering pipe connection to the box.

2. **PRODUCTS**
   A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
   C. Concrete: Class 4000, APWA Section 03 30 04.
   D. Reinforcement: Deformed, 60 ksi yield grade steel, ASTM A615.
   E. Ladder Rungs: Plastic, or plastic coated steel typically 8-inches wide.

3. **EXECUTION**
   A. Base Course Placement: APWA Section 32 11 23. Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
   B. Curb Face Opening: Make opening at least 4-inches high. Provide at least a 2-inch drop between the "begin warp" line in the gutter flow-line and the top of the grate at the curb face opening.
   C. Ladder Rungs: Provide rungs in boxes over 6 feet deep. When measured from the floor of the box, place bottom rung the greater distance of 4 feet from the floor of the box or 1 foot above the top of the pipe. Place top rung within 3 feet of bottom of box ceiling.
   D. Concrete Placement: APWA Section 03 30 10. Provide 1/2-inch radius edges. Apply a broom finish. Apply a curing agent.
   E. Backfill: Provide backfill against all sides of the box. Pea gravel and recycled RAP aggregate is NOT ALLOWED. Water jetting is NOT allowed. Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a standard proctor density, APWA Section 31 23 26.



PLAN



SECTION A-A

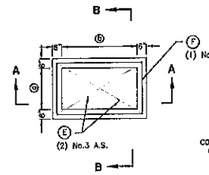
APWA Utah Chapter *Combination catch basin and cleanout box* Plan 316 March 2011

Precast box

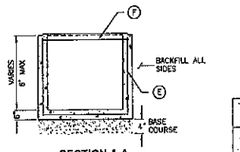
1. **GENERAL**
   A. The drawing shows typical pipe connections. Refer to construction drawings for connection locations or refer to field location of existing piping when engineering pipe connection to the box.
   B. This drawing is acceptable where the water table elevation is less than 3 feet above the floor of the box. If elevation of water table is higher, engineering calculations and drawings must be submitted to and approved by the ENGINEER.
   C. Submit bar design detail for ENGINEER's review.

2. **PRODUCTS**
   A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
   C. Precast Concrete: Class 4000 precast, APWA Section 03 40 00.
   D. Reinforcement: Deformed, 60 ksi yield grade steel, ASTM A615. Coated steel is not required for small drainage structures shown on this drawing.
   E. Frame and Cover (or Grate): Use the appropriate unit indicated in the Contract Documents.
   F. Joint Sealant: Rubber-based, compressible.

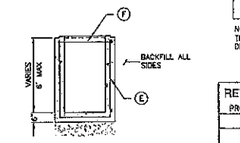
3. **EXECUTION**
   A. Concrete Placement: Provide 2-inches of concrete cover over reinforcing steel.
   B. Lifting Points: Provide at least 2 lifting points per section that avoid interference with the reinforcing steel and that are designed according to PCI (Prestressed Concrete Institute) design handbook. Lift only from the engineered lifting points.
   C. Depth: Drainage boxes and riser combinations that exceed 8-feet from finished grade to the bottom of the box requires ENGINEER's approval. Submit design calculations and shop drawings.
   D. Core Holes:
      1) Provide core holes that are at least 4" larger than attaching outer pipe diameter. Cut core holes at the manufacturing plant unless ENGINEER permits field core holes.
      2) Center core holes to leave 2" of concrete measured horizontally from inside wall of the box to core hole. Locate core hole vertically so bottom of core hole will be at or above floor elevation with at least 8-inches of concrete directly above the core hole to the top of the box.
      3) Deviations from core hole tolerances require shop drawings. Shop drawings will identify lifting point number and location.
   E. Precast Top: Design precast top for AASHTO HL-93 live loads and submit rebar detail and stamped design drawings to ENGINEER. Show connection detail for frame and grate or cover.



PLAN

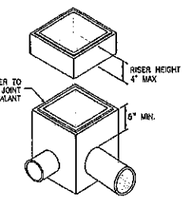


SECTION A-A



SECTION B-B

RISERS: ON BOXES DEEPER THAN 4 FEET, PROVIDE AN UNREINFORCED PRECAST CONCRETE RISER MATCHING THE DRAINAGE BOX SIZE



OBLIQUE

TABLE OF DIMENSIONS		
BOX SIZE	ⓐ	ⓑ
1.5 x 4	18"	48"
2 x 2	24"	24"
2 x 3	24"	36"
2.5 x 4	30"	48"
3 x 3	36"	36"
3 x 3.5	36"	42"
4 x 4	48"	48"

NOTE: OTHER BOX SIZES (LESS THAN 48") WITH DIFFERENT a AND b DIMENSIONS ARE ACCEPTABLE

REINFORCING STEEL LAYOUT	
PROVIDE 2" MIN. COVER ON ALL BARS	
BAR (E)	BAR (F)
	12"

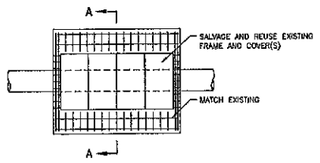
APWA Utah Chapter *Precast box* Plan 332 June 2010

Adjust reinforced concrete deck to grade

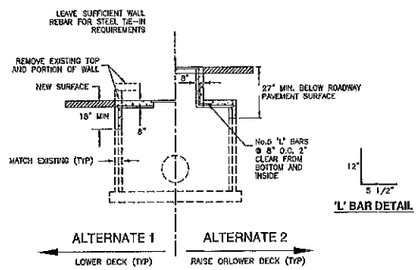
1. **GENERAL**
   A. Alternate 1 applies to lowering the whole deck to grade.
   B. Alternate 2 applies to raising or lowering part of the deck to grade.

2. **PRODUCTS**
   A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
   C. Concrete: Class 4000, APWA Section 03 30 04.
   D. Reinforcement: Deformed, 60 ksi yield grade steel, ASTM A615.

3. **EXECUTION**
   A. Steel Placement: APWA Section 03 20 00.
   B. Concrete Placement: APWA Section 03 30 10. Adjust concrete dimensions at frame accordingly. Provide 1/2-inch radius edges. Apply a broom finish. Apply a curing agent.



PLAN



'L' BAR DETAIL

NOTE: FIELD MEASURE AND VERIFY DIMENSIONS OF EACH STRUCTURE PRIOR TO CONSTRUCTION OF DECK LID

SECTION A-A

APWA Utah Chapter *Adjust reinforced concrete deck to grade* Plan 335 February 2003

NOTE:
ALL CONCRETE SURFACE IMPROVEMENTS SHALL BE CONSTRUCTED USING 4,500 PSI CONCRETE

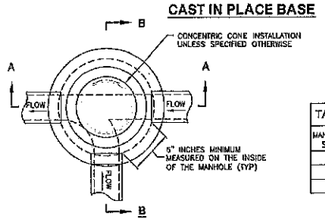
Precast manhole

1. **GENERAL**
   A. The drawing shows typical pipe connections. Refer to construction drawings for connection locations or refer to field location of existing piping when engineering pipe connection to the manhole.
   B. Manhole size.
      1) Diameter is 4-feet: For pipe under 12" diameter.
      2) Diameter is 5-feet: For pipe 12" and larger, or when 3 or more drain pipes intersect the manhole.
   C. Wall thickness:
      1) Precast reinforced concrete wall 4 3/4" minimum.
      2) Cast-in-place concrete to be 8 inches thick minimum.

2. **PRODUCTS**
   A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
   C. Concrete: Class 4000, APWA Section 03 30 04.
   D. Riser and Reducing Riser: ASTM C478.
   E. Joint Sealant: Rubber based, compressible.
   F. Grout: 2 parts sand to 1 part cement mortar, ASTM C1329.
   G. Stabilization-Separation Geotextile: Moderate or high at CONTRACTOR's choice, APWA Section 31 05 19.

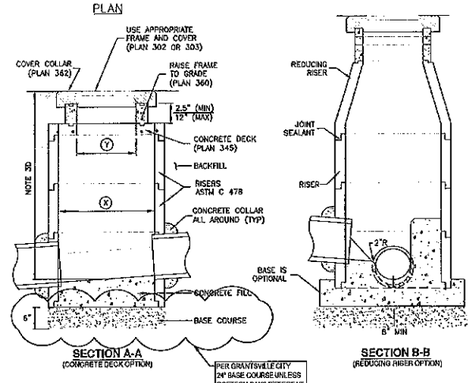
3. **EXECUTION**
   A. Foundation Stabilization: Get ENGINEER's permission to use a sewer rock or a sewer rock in a geotextile wrap to stabilize an unstable foundation.
   B. Base Course Placement: APWA Section 32 11 23. Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
   C. Invert cover. During construction, place invert covers over the top of pipe in manholes that currently convey sewerage. See Plan 412.
   D. Concrete Deck or Reducing Riser: When depth of manhole from pipe invert to finish grade exceeds 7 feet, use an ASTM C478 reducing riser.
   E. Pipe Connections: Grout around all pipe openings.
   F. Pipe Seal: Install rubber-based pipe seals on all plastic pipes when connecting plastic pipes to manholes. Hold water-stop in place with stainless steel bands.
   G. Joints: Place flexible sealant in all riser joints. Finish with grout.
   H. Adjustment: If the required manhole adjustment is more than 1'-0", remove the cone and grade rings and adjust the manhole elevation with the appropriate manhole section, the cone section, and the grade rings or plastic form to make frame and lid match finish grade.
   I. Finish: Provide smooth and neat finishes on interior of cones, shelfs, and rings. Imperfect moldings or honeycombs will not be accepted.
   J. Backfill: Provide backfill against the manhole shaft. Pea gravel and recycled RAP aggregate is NOT ALLOWED. Water jetting is NOT allowed. Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a standard proctor density, APWA Section 31 23 26.

CAST IN PLACE BASE



PLAN

TABLE OF DIMENSIONS	
MANHOLE STYLE	DIMENSION
A	(X) =48" (Y) =30"
B	(X) =60" (Y) =44"
C	(X) =60" (Y) =30"



SECTION A-A (CONCRETE DECK OPTION)

SECTION B-B (REDUCING RISER OPTION)

APWA Utah Chapter *Precast manhole* Plan 341.1 November 2010

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BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

NO.	DATE	REVISION	BY
1		FOR REVIEW	
2			
3			
4			
5			
6			
7			
8			

DETAILS

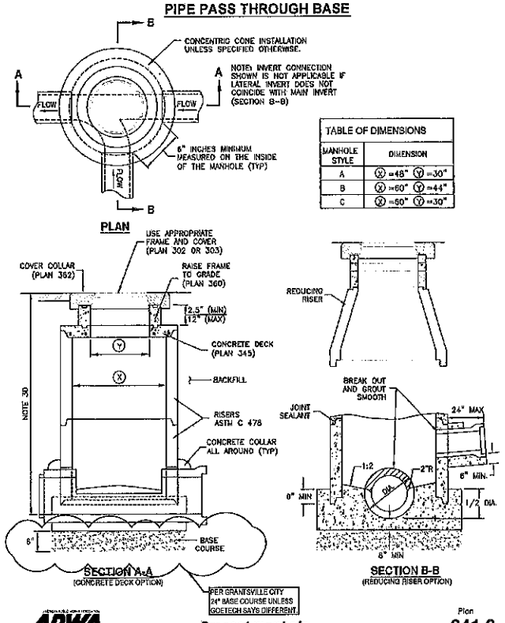
PROJECT MANAGER: T.TAYLOR
PROJECT NO.: 1Z220022
DRAWN BY: C. CHILD
CHECKED BY: J. CLEGG
PROJECT ENGINEER: C. CHILD

D-505

Precast manhole

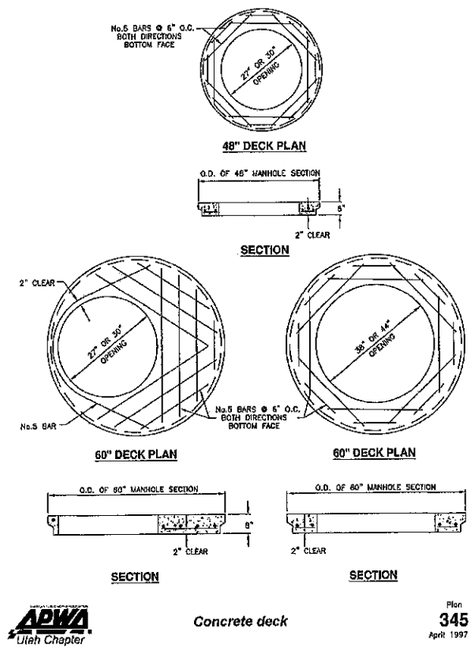
1. **GENERAL**
   A. The drawing shows typical pipe connections. Refer to construction drawings for connection locations or refer to field location of existing piping when engineering pipe connection to the manhole.
   B. Manhole size.
      1) Diameter is 4 feet: For pipe under 12" diameter.
      2) Diameter is 6 feet: For pipe 12" and larger, or when 3 or more drain pipes intersect the manhole.
   C. Wall thickness:
      1) Precast reinforced concrete walls 4 3/4" minimum.
      2) Cast-in-place concrete to be 8 inches thick minimum.
2. **PRODUCTS**
   A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
   C. Concrete: Class 4000, APWA Section 03 30 04.
   D. Riser and Reducing Riser: Reinforced concrete pipe, Class III, ASTM C478.
   E. Joint Sealant: Rubber based, compressible.
   F. Grout: 2 parts sand to 1 part cement mortar.
3. **EXECUTION**
   A. Foundation Stabilization: Get ENGINEER's permission to use a sewer rock or pea gravel to stabilize an unstable foundation.
   B. Base Course Placement: APWA Section 32 11 23. Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
   C. Invert cover. During construction, place invert covers over the top of pipe in manholes that currently convey sewerage. See Plan 412.
   D. Concrete Deck or Reducing Riser: When depth of manhole from pipe invert to finish grade exceeds 7 feet, use an ASTM C478 reducing riser cone.
   E. Pipe Connections: Grout around all pipe openings.
   F. Water Stops: Install rubber-based water-stops on all plastic pipes when connecting plastic pipes to manholes. Hold water-stop in place with stainless steel bands.
   G. Joints: Place flexible sealant in all joints. Finish with grout.
   H. Finish: Provide smooth and neat finishes on interior of cones, shafts, and rings. Imperfect moldings or honeycombs will not be accepted.
   I. Backfill: Provide backfill against the manhole shaft. Pea gravel and recycled RAP aggregate is NOT ALLOWED. Water jetting is NOT allowed. Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a standard proctor density, APWA Section 31 23 26.

PIPE PASS THROUGH BASE



Concrete deck

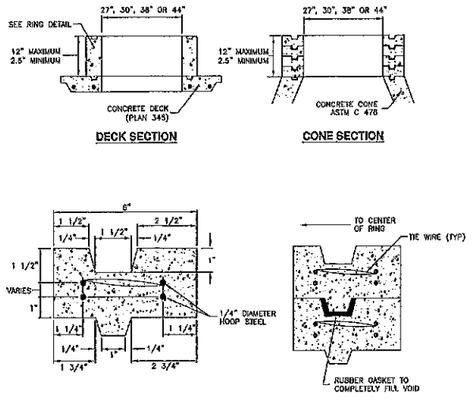
1. **GENERAL**
   A. Deck is made for round manhole riser grade rings.
2. **PRODUCTS**
   A. Reinforcement: Deformed, 60 ksi yield grade steel, ASTM A615.
   B. Concrete: Class 4000, APWA Section 03 40 00
3. **EXECUTION**
   A. Reinforcement: Placement APWA Section 03 20 00.
   B. Concrete Placement: APWA Section 03 30 10. Apply a curing agent.



Raise frame to grade

1. **GENERAL**
   A. Grade rings are used in non-pressurized applications to adjust frame to grade.
2. **PRODUCTS**
   A. Concrete: Class 4000, APWA Section 03 30 04.
   B. Reinforcement: Deformed, 60 ksi yield grade hoop steel, ASTM A615.
      1) 2 1/2" High Rings: Provide two 1/4" diameter steel hoops tied with No. 14 AWS gage wire, 8" on center.
      2) 6" and 8" High Rings: Provide four 1/4" diameter steel hoops, tied with No. 14 AWS gage wire, 8" on center.
   C. Gasket: Rubber-based, compressible.
3. **EXECUTION**
   A. Ring Manufacture:
      1) Fabrication, APWA Section 03 30 10.
      2) Cure, APWA Section 03 39 00.
   B. Field Installation: Seat rings with a compressible gasket.

GRADE RING

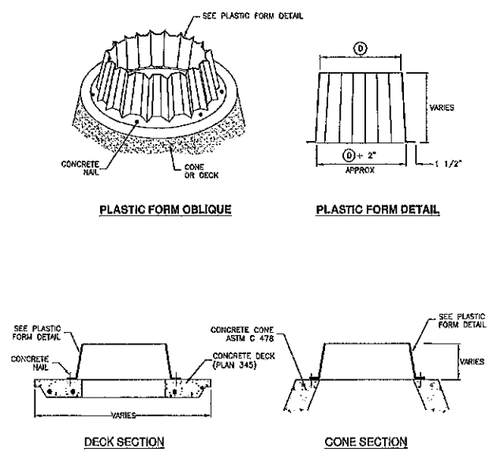


NOTE:
ALL CONCRETE SURFACE IMPROVEMENTS SHALL BE CONSTRUCTED USING 4,500 PSI CONCRETE

Raise frame to grade

1. **GENERAL**
   A. The plastic form is used to keep concrete in the annular space when fabricating cover collars for storm drain manholes, sanitary sewer manholes or other utilities.
2. **PRODUCTS**
   A. Concrete Nails: CONTRACTOR's choice.
3. **EXECUTION**
   A. Adjust plastic form height so that the top of the manhole frame and cover matches longitudinal slope and cross slope of the pavement surface, and cover is 1/2-inch lower than the pavement surface.

PLASTIC FORM



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BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

NO.	DATE	REVISION	BY
1		FOR REVIEW	

DETAILS

PROJECT NUMBER T12158
PRINT DATE 10/7/2022
DRAWN BY C. CHILD
CHECKED BY J. CLEGG
PROJECT MANAGER C. CHILD

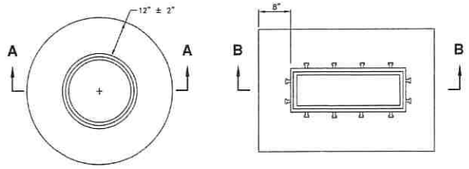
D-506

Cover collar for storm drains

1. **GENERAL**
   A. In a pavement surface, the concrete will support the frame under traffic loadings.

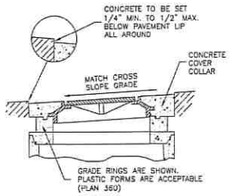
2. **PRODUCTS**
   A. Concrete: Class 4000, APWA Section 03 30 04.
   B. Concrete Curing Agent: Clear membrane forming compound with fugitive dye (Type ID Class A), APWA Section 03 39 00.

3. **EXECUTION**
   A. Pavement Preparation: Provide a neat vertical and concentric joint between concrete and existing bituminous concrete surfaces. Clean edges of all dirt, oil, and loose debris.
   B. Concrete Placement: APWA Section 03 30 10. Fill the annular space around the frame and cover casting with concrete. Apply a broom finish. Apply a curing agent.

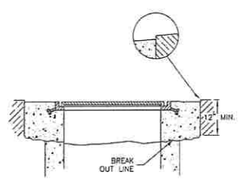


PLAN
(ROUND FRAME)

PLAN
(RECTANGULAR FRAME)



SECTION A-A



SECTION B-B

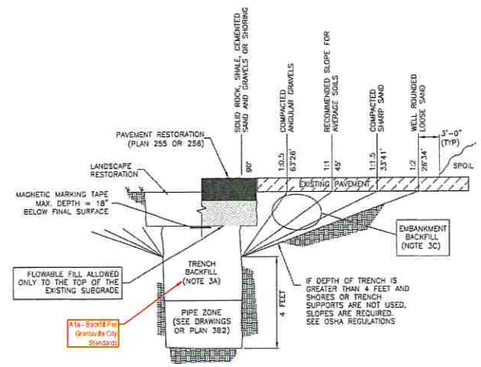
Trench backfill

1. **GENERAL**
   A. The drawing applies to backfilling a trench (and embankment) above the pipe zone.

2. **PRODUCTS**
   A. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 3-inches.
   B. Flowable Fill: APWA Section 31 05 15. Target is 60 psi in 28 days with 90 psi maximum in 28 days, It must flow easily requiring no vibration for consolidation.

3. **EXECUTION**
   A. Trench Backfill Above the Pipe Zone: Follow requirement indicated in APWA Section 33 05 20 and the following provisions. See Standard Plan 382 for backfilling the pipe zone.
      1) DO NOT USE sewer rock, pea gravel, or recycled RAP aggregate as trench backfill.
      2) Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a standard proctor density, APWA Section 31 23 26.
      3) Water jetting is NOT allowed.
   B. Flowable Fill: If controlled low strength material is placed in the trench. Cure the material before placing surface restorations.
   C. Embankment Backfill: When trench sides are sloped proceed as follows.
      1) Maximum lift thickness is 8-inches before compaction.
      2) Compact per APWA Section 31 23 26 to 95 percent or greater relative to a standard proctor density.
      3) Submission of quality control compaction test result data may be requested by ENGINEER at any time. Provide results of tests immediately upon request.
   D. Surface Restoration:
      1) Landscaped Surface: Follow APWA Section 32 92 00 (turf or grass) or APWA Section 32 93 13 (ground cover) requirements. Rake to match existing grade. Replace vegetation to match pre-construction conditions.
      2) Paved Surface: Follow APWA Section 33 05 25 (bituminous pavement surfacing), or APWA Section 33 05 25 (concrete pavement surfacing) Do not install surfacing until compaction density is acceptable to ENGINEER.

NARRATIVE: THIS PLAN SHOWS VARIOUS SLOPES RECOMMENDED FOR VARIOUS TYPES OF SLOPE STABILITY PROBLEMS. THE VERTICAL TEXT INDICATES VARIOUS MATERIALS THAT MAY BE ENCOUNTERED. THE SERVICES OF A PROFESSIONAL SOILS ENGINEER SHOULD BE USED TO VERIFY SLOPE STABILITY.

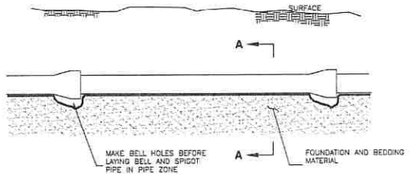


Pipe zone backfill

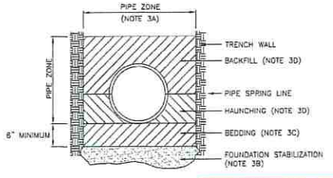
1. **GENERAL**
   A. Install the pipe in the center of the trench or no closer than 6-inches from the wall of the pipe to the wall of the trench.

2. **PRODUCTS**
   A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
   C. Concrete: APWA Section 03 30 04.
   D. Flowable Fill: Target is 60 psi in 28 days with 90 psi maximum in 28 days, APWA Section 31 05 15. It must flow easily requiring no vibration for consolidation.
   E. Stabilization-Separation Geotextile: Moderate or high at CONTRACTOR's choice, APWA Section 31 05 19.

3. **EXECUTION**
   A. Excavate the Pipe Zone: Width is measured at the pipe spring line and includes any necessary sheathing. Provide width recommended by pipe manufacturer. Follow manufacturer's recommendations when using trench boxes.
   B. Foundation Stabilization: Get ENGINEER's permission before installing common fill. Vibrate to stabilize. Installation of stabilization-separation geotextile will be required to separate backfill material and native subgrade materials if common fill cannot provide a working surface or prevent soils migration.
   C. Bedding: Follow APWA Section 33 05 20 requirements and the following provisions.
      1) Furnish untreated base course material unless specified otherwise by pipe manufacturer.
      2) Maximum lift thickness is 8-inches.
      3) Bedding immediately under the pipe should not be compacted, but loosely placed.
      4) Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
      5) When using concrete, provide at least Class 2,000, APWA Section 03 30 04.
   D. Pipe Zone: DO NOT USE sewer rock, pea gravel, or recycled RAP aggregate in the pipe zone. Water jetting is NOT allowed.
      1) Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26 unless pipe manufacturer requires more stringent installation.
      2) Submission of quality control compaction test result data developed for the haunch zone may be requested by ENGINEER at any time. CONTRACTOR is to provide results of tests immediately upon request.
   E. Flowable Fill (when required and if allowed by pipe manufacturer):
      1) Place the controlled low strength material. APWA Section 31 05 15.
      2) Prevent pipe flotation by installing in lifts and providing pipe restraints as required by pipe manufacturer.
      3) Reset pipe to line and grade if pipe "floats" out of position.



ELEVATION VIEW



SECTION A-A

WATER DESIGN - ALL PVC PIPES TO BE BEDDED IN 4" THICK OF SAND

SEWER DESIGN - SHOULD BE 3/4" MINUS BEDDING CRUSHED DRAIN ROCK. PER UTAH CODE R309-550-9(2) AND 3.

INSTALLATION

CONCRETE PIPE: FOLLOW ASTM C 1479
"STANDARD PRACTICE FOR INSTALLATION OF PRECAST CONCRETE SEWER, STORM DRAIN, AND CULVERT PIPE USING STANDARD INSTALLATIONS."

PLASTIC PIPE: FOLLOW ASTM D 2321
"STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS"

CORRUGATED METAL PIPE: FOLLOW ASTM A 798
"STANDARD PRACTICE FOR INSTALLING FACTORY-MADE CORRUGATED STEEL PIPE FOR SEWERS AND OTHER APPLICATIONS."

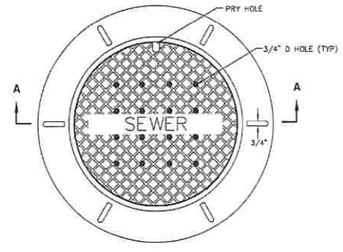
VITRIFIED CLAY PIPE: FOLLOW ASTM C 12.
"STANDARD RECOMMENDED PRACTICE FOR INSTALLING VITRIFIED CLAY PIPE LINES."

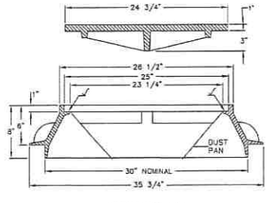
30" Frame and cover

1. **GENERAL**
   A. The frame and cover fits the manhole in Plan 411.

2. **PRODUCTS**
   A. Castings: Grey iron class 35 minimum, ASTM A48, coated with asphalt based paint or better (except on machined surfaces).
      1) Cast the heat number on the frame and cover.
      2) Give the frame and cover a machine finish so the cover will not rock.
      3) √ designates machined surface.
      4) Cast the words "SEWER" on the cover in upper case flush with the surface finish.

3. **EXECUTION**
   A. Except in paved streets, provide locking manhole covers in easements, alleys, parking lots, and all other places. Drill and tap two holes to a depth of 1-inch at 90 degrees to pry hole and install 3/4 x 3/4-inch allen socket set screws.





SECTION A-A

NOTE:
ALL CONCRETE SURFACE IMPROVEMENTS SHALL BE CONSTRUCTED USING 4,500 PSI CONCRETE

ENSIGN
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BLUE SPRUCE SUBDIVISION
PRELIMINARY
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GRANTSVILLE CITY, UTAH

NO.	DATE	REVISION	BY
1		FOR REVIEW	
2			
3			
4			
5			
6			
7			
8			

DETAILS

PROJECT NUMBER: T1216E
PRINT DATE: 1/27/2022
DRAWN BY: C. CHILD
DESIGN BY: J. CLEGG
PROJECT MANAGER: C. CHILD

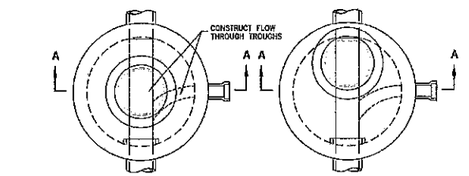
D-507

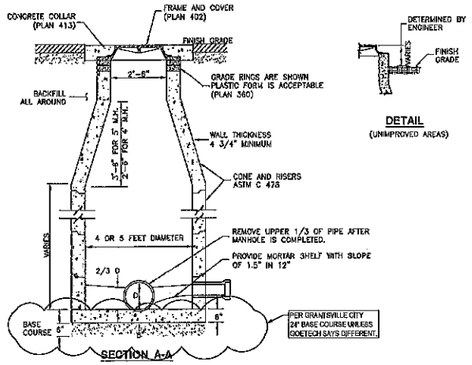
Sanitary sewer manhole

1. **GENERAL**
   - A. The drawing shows typical pipe connections. Refer to construction drawings for connection locations or refer to field location of existing piping when engineering pipe connection to the manhole.
   - B. Manhole size.
     1) Diameter is 4 feet: For sewers under 12" diameter.
     2) Diameter is 5 feet: For sewers 12" and larger, or when 3 or more pipes intersect the manhole.

2. **PRODUCTS**
   - A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   - B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
   - C. Concrete: Class 4000, APWA Section 03 30 04.
   - D. Riser and Reducing Riser: ASTM C478.
   - E. Reinforcement: Deformed, 60 ksi yield grade steel, ASTM A615.
   - F. Grout: 2 parts sand to 1 part cement mortar, ASTM C1329.
   - G. Stabilization-Separation Geotextile: Moderate or high at CONTRACTOR's choice, APWA Section 31 05 19.

3. **EXECUTION**
   - A. Foundation Stabilization: Get ENGINEER's permission to use a sewer rock or a granular backfill borrow in a geotextile wrap to stabilize an unstable foundation.
   - B. Base Course Placement: APWA Section 32 11 23. Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
   - C. Invert Cover. During construction, place invert covers over the top of pipe in manholes that currently convey sewerage. See Plan 412.
   - D. Pipe Connections: Grout around all pipe openings.
   - E. Pipe Seal: Install rubber-based pipe seals on all plastic pipes when connecting plastic pipes to manholes. Hold water-stop in place with stainless steel bands.
   - F. Joints: Place flexible gasket-type sealant in all riser joints. Finish with grout.
   - G. Adjustment: If the required manhole adjustment is more than 1'-0", remove the cone and grade rings and adjust the manhole elevation with the appropriate manhole section, the cone section, and the grade rings or plastic form to make frame and lid match finish grade.
   - H Finish: Provide smooth and neat finishes on interior of cones, shafts, and rings. Imperfect moldings or honeycombs will not be accepted.
   - I. Backfill: Provide backfill against the manhole shaft. Pea gravel and recycled RAP aggregate is NOT ALLOWED. Water jetting is NOT allowed. Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a standard proctor density, APWA Section 31 23 26.





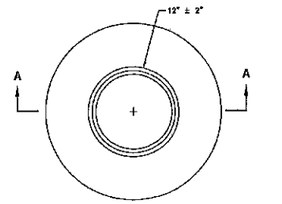
Utah Chapter *Sanitary sewer manhole* Plan 411 April 2011

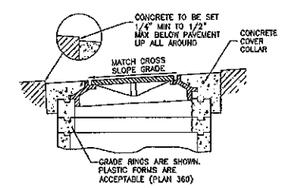
Cover collar for sanitary sewer manhole

1. **GENERAL**
   - A. In a pavement surface, the concrete will support the frame under traffic loadings.

2. **PRODUCTS**
   - A. Concrete: Class 4000, APWA Section 03 30 04.
   - B. Concrete Curing Agent: Type ID Class A (clear with fugitive dye), membrane forming compound, APWA Section 03 39 00.

3. **EXECUTION**
   - A. Pavement Preparation: Provide a neat vertical and concentric joint between the concrete collar and the bituminous pavement surface. Clean edges of all dirt, oil, and loose debris.
   - B. Concrete Placement: Fill the annular space around the frame and covar casting with concrete. Apply a broom finish. Apply a curing agent.





SECTION A-A

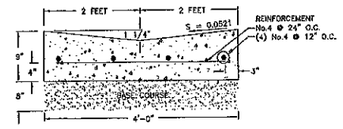
Utah Chapter *Cover collar for sanitary sewer manhole* Plan 413 September 2001

Waterway

1. **GENERAL**
   - A. Variance from specified dimensions and slopes must be acceptable to the ENGINEER. System configuration may be changed at ENGINEER's discretion.
   - B. Unless indicated otherwise, width of waterway as follows.
     1) 4 feet for a residential street.
     2) 6 feet for a non-residential street.
     3) If wider than 6 feet, offset the flow line in the waterway to match (line up with) the curb and gutter flow line. Adjust cross slopes to match existing slopes.
   - C. Additional requirements are specified in APWA Section 32 16 13.

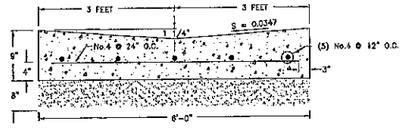
2. **PRODUCTS**
   - A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   - B. Expansion Joint Filler: 1/2-inch thick type F1 full depth, APWA Section 32 13 73.
   - C. Concrete: Class 4000, APWA Section 03 30 04. If necessary, provide concrete that achieves design strength in less than 7 days. Use caution; however, as concrete crazing (spider cracks) may develop if air temperature exceeds 90 degrees F.
   - D. Reinforcement: Galvanized or epoxy coated, deformed, 60 ksi yield grade steel, ASTM A615.
   - E. Concrete Curing Agent: Clear membrane forming compound with fugitive dye (Type ID Class A), APWA Section 03 39 00.

3. **EXECUTION**
   - A. Base Course Placement: APWA Section 32 05 10. Thickness is 6-inches if flow-line grade is 0.5 percent (s=0.005) or greater. If slope is less, provide 8-inches. Maximum lift thickness before compaction is 8-inches when using riding equipment or 6-inches when using hand held equipment. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
   - B. Concrete Placement: APWA Section 03 30 10.
     1) Install expansion joints vertical, full depth, with top of filler set flush with concrete surface. Expansion joints are not required in concrete placement using slip-form construction.
     2) Install contraction joints vertical, 1/8-inch wide or 1/4 slab thickness if the slab is greater than 8-inches thick. Match joint location in adjacent Portland-cement concrete roadway pavement.
     3) Provide 1/2-inch radius edges. Apply a broom finish. Apply a curing agent.
   - C. Protection and Repair: Protect concrete from deicing chemicals during cure. Repair construction that does not drain. If necessary, fill flow-line with water to verify.



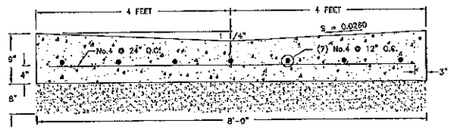
4'-0" WATERWAY

CONCRETE AREA = 2.583 SQ. FT.



6'-0" WATERWAY

CONCRETE AREA = 3.875 SQ. FT.



8'-0" WATERWAY

CONCRETE AREA = 5.166 SQ. FT.

Utah Chapter *Waterway* Plan 211 July 2011

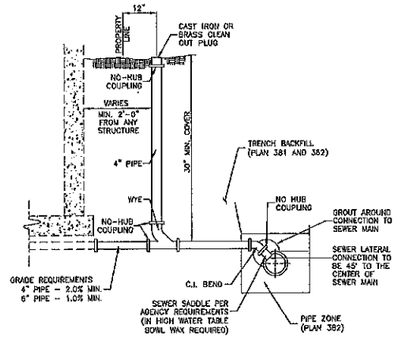
NOTE:
ALL CONCRETE SURFACE IMPROVEMENTS SHALL BE CONSTRUCTED USING 4,500 PSI CONCRETE

Sewer lateral connection

1. **GENERAL**
   - A. Before installation, secure acceptance by ENGINEER for all pipe, fittings, and couplings to be used.
   - B. Before backfilling, secure inspection of installation by ENGINEER. Give at least 24 hours notice.
   - C. Verify if CONTRACTOR or agency is to install the wye.

2. **PRODUCTS**
   - A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   - B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
   - C. Provide agency approved wye or tee with appropriate donut.
   - D. Stainless steel straps required.

3. **EXECUTION**
   - A. Tape wrap pipe as required by soil conditions.
   - B. Remove core plug from sewer main. Do not break into sewer main to make connection.
   - C. Base Course and Backfill Placement: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a standard proctor density, APWA Section 31 23 26.



Utah Chapter *Sewer lateral connection* Plan 431 January 2011

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SEAN PERKINS
PHONE: 435-850-8436

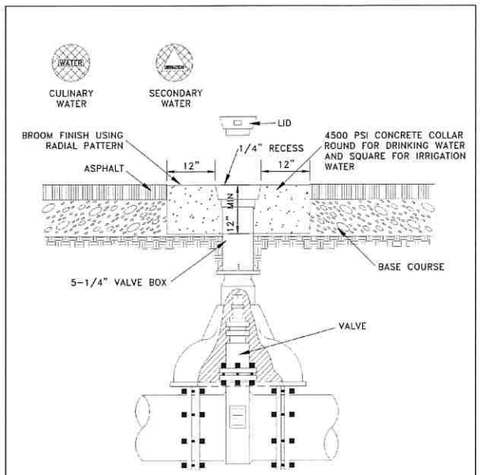
BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

NO	DATE	REVISION	BY
1		FOR REVIEW	

DETAILS

PROJECT NUMBER T12186
PRINT DATE 10/7/2022
DRAWN BY C. CHILD
CHECKED BY J. CLEGG
PROJECT MANAGER C. CHILD

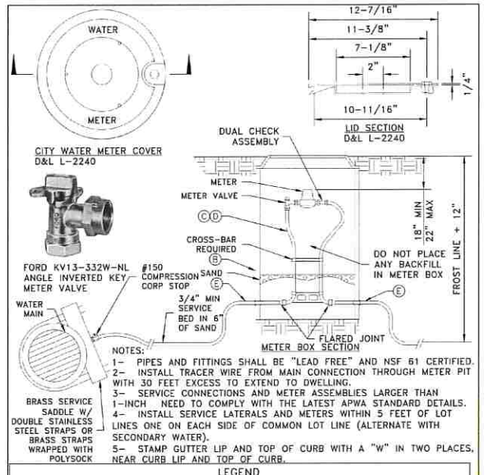
D-508



NOTES:
1. RAISE VALVE BOX AND PLACE CONCRETE COLLAR AFTER PAVING OPERATION IS COMPLETED.
2. ALL PIPES, FITTINGS & APPURTENANCES SHALL BE NSF-61 CERTIFIED.
3. BURIED GATE VALVES SHALL BE USED FOR LINES 10-INCHES AND SMALLER. BURIED BUTTERFLY VALVES SHALL BE USED FOR LINES 12-INCHES AND LARGER.
4. ISOLATION VALVES SHALL BE PROVIDED AT NO MORE THAN 500-FOOT INTERVALS IN COMMERCIAL DISTRICTS AND AT NOT MORE THAN ONE BLOCK OR 800-FOOT INTERVALS IN OTHER DISTRICTS, [UAC 309-550-5(8)].

REV. 01-22

GRANTSVILLE CITY
VALVE BOX COLLAR DETAIL

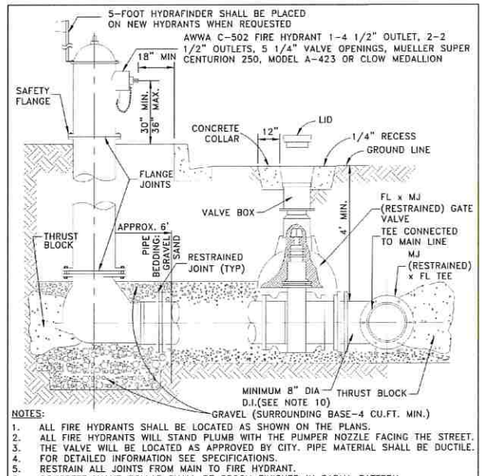


NOTES:
1- PIPES AND FITTINGS SHALL BE "LEAD FREE" AND NSF 61 CERTIFIED.
2- INSTALL TRACER WIRE FROM MAIN CONNECTION THROUGH METER PIT WITH 30 FEET EXCESS TO EXTEND TO DWELLING.
3- SERVICE CONNECTIONS AND METER ASSEMBLIES LARGER THAN 1-INCH NEED TO COMPLY WITH THE LATEST APWA STANDARD DETAILS.
4- INSTALL SERVICE LATERALS AND METERS WITHIN 5 FEET OF LOT LINES ONE ON EACH SIDE OF COMMON LOT LINE (ALTERNATE WITH SECONDARY WATER).
5- STAMP GUTTER LIP AND TOP OF CURB WITH A "W" IN TWO PLACES, NEAR CURB LIP AND TOP OF CURB.

LEGEND

No	*	ITEM	DESCRIPTION
A		FRAME AND COVER	CAST IRON COVER (GRASS) DUCTILE IRON COVER (DRIVEWAY)
B		METER BOX (21" DIAMETER) (30" TO 36" DEEP)	WHITE CORRUGATED PE
C		3/4" METER YOKE	DUAL CHECK ASSEMBLY REQUIRED
D		1" METER YOKE	OPTIONAL BACKFLOW PROTECTION PER AGENCY REQUIREMENTS
E		3/4" AND 1" SERVICE LINE	HDPE IPS SDR 11

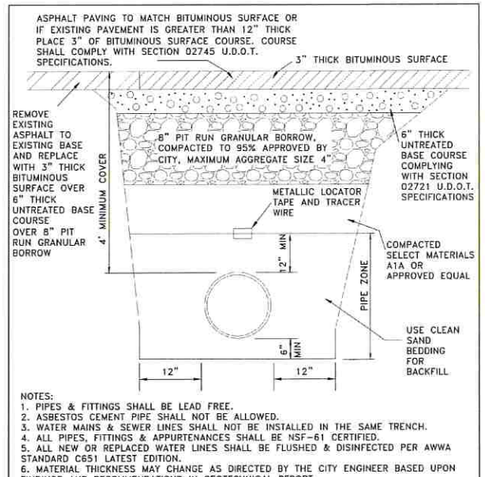
GRANTSVILLE CITY
SERVICE CONNECTION & METER ASSEMBLY



NOTES:
1. ALL FIRE HYDRANTS SHALL BE LOCATED AS SHOWN ON THE PLANS.
2. ALL FIRE HYDRANTS WILL STAND PLUMB WITH THE PUMPER NOZZLE FACING THE STREET.
3. THE VALVE WILL BE LOCATED AS APPROVED BY CITY. PIPE MATERIAL SHALL BE DUCTILE.
4. FOR DETAILED INFORMATION SEE SPECIFICATIONS.
5. RESTRAIN ALL JOINTS FROM MAIN TO FIRE HYDRANT.
6. CONCRETE VALVE COLLAR SHALL BE BROOM FINISHED IN RADIAL PATTERN.
7. ALL NEW OR REPLACED WATER LINES SHALL BE FLUSHED & DISINFECTED PER AWWA STANDARD C651 LATEST EDITION.
8. PROVIDE 3-FOOT CLEAR SPACE AROUND THE CIRCUMFERENCE OF FIRE HYDRANTS (IFC 507.5.5)
9. HYDRANT DRAINS SHALL NOT BE CONNECTED TO, OR LOCATED WITHIN, 10 FEET OF SANITARY SEWERS, WHERE POSSIBLE, HYDRANT DRAINS SHALL NOT BE LOCATED WITHIN 10 FEET OF STORM DRAINS. [UAC R309-550-6(5)(a)]
10. MINIMUM WATER MAIN SIZE SERVICING A FIRE HYDRANT LATERAL SHALL BE 8 INCHES IN DIAMETER UNLESS A HYDRAULIC ANALYSIS INDICATES THAT REQUIRED FLOW AND PRESSURES CAN BE MAINTAINED BY 6" LINES. [UAC R309-550-5(4)]

REV. 09-21

GRANTSVILLE CITY
FIRE HYDRANT ASSEMBLY

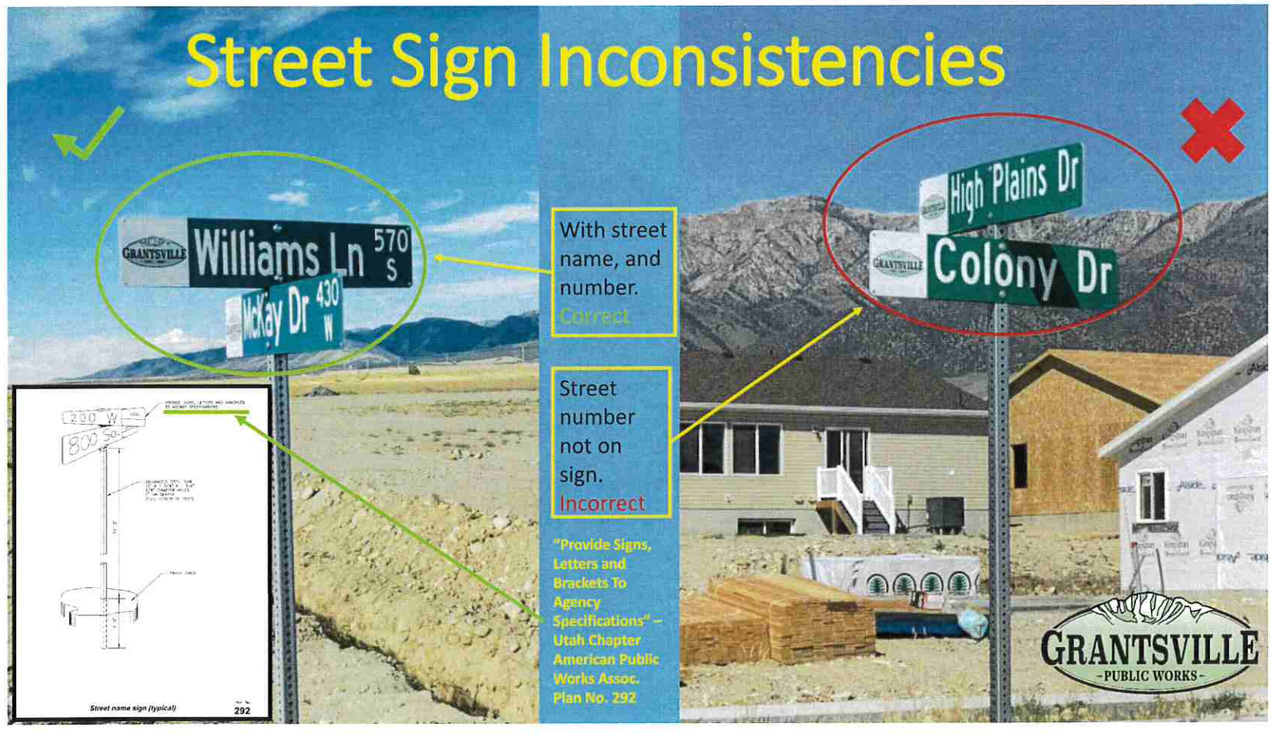


NOTES:
1. PIPES & FITTINGS SHALL BE LEAD FREE.
2. ASBESTOS CEMENT PIPE SHALL NOT BE ALLOWED.
3. WATER MAINS & SEWER LINES SHALL NOT BE INSTALLED IN THE SAME TRENCH.
4. ALL PIPES, FITTINGS & APPURTENANCES SHALL BE NSF-61 CERTIFIED.
5. ALL NEW OR REPLACED WATER LINES SHALL BE FLUSHED & DISINFECTED PER AWWA STANDARD C651 LATEST EDITION.
6. MATERIAL THICKNESS MAY CHANGE AS DIRECTED BY THE CITY ENGINEER BASED UPON FINDINGS AND RECOMMENDATIONS IN GEOTECHNICAL REPORT.
7. FOR WATER METERS NOT CONNECTED TO FIRE HYDRANTS, THE MINIMUM LINE SIZE SHALL BE 4" IN DIAMETER, UNLESS THEY SERVE PICNIC SITES, PARKS, SEMI-DEVELOPED CAMPS, PRIMITIVE CAMPS, OR ROADWAY REST-STOPS. MINIMUM WATER MAIN SIZE SERVICING A FIRE HYDRANT LATERAL SHALL BE 8 INCHES IN DIAMETER UNLESS A HYDRAULIC ANALYSIS INDICATES THAT REQUIRED FLOW AND PRESSURES CAN BE MAINTAINED BY 6" LINES. [UAC R309-550-5(4)].
8. ALL TYPES OF INSTALLED PIPE SHALL BE PRESSURE TESTED AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA C600 (LATEST EDITION).
9. UNDER NO CIRCUMSTANCES SHALL THE PIPE OR ACCESSORIES BE DROPPED INTO THE TRENCH.

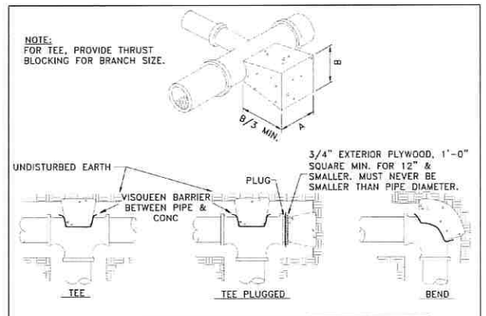
LOCATED IN SURFACED ROAD

REV. 01-22

GRANTSVILLE CITY
UTILITY TRENCH FOR WATER MAIN



NOTE:
ALL CONCRETE SURFACE IMPROVEMENTS SHALL BE CONSTRUCTED USING 4,500 PSI CONCRETE



DIMENSIONS FOR THRUST BLOCKING

FITTING SIZES	TEES & PLUGS A	TEES & PLUGS B	90° BENDS A	90° BENDS B	45° BENDS & "Y"S A	45° BENDS & "Y"S B	22 1/2° BENDS A	22 1/2° BENDS B
4"	1'-6"	1'-6"	1'-6"	1'-9"	1'-3"	0'-6"	1'-0"	0'-6"
6"	2'-0"	1'-0"	2'-0"	2'-0"	1'-3"	1'-6"	1'-0"	1'-3"
8"	2'-0"	1'-6"	2'-3"	2'-3"	1'-6"	1'-6"	1'-0"	1'-3"
10"	2'-6"	2'-3"	2'-9"	2'-10"	2'-3"	1'-10"	1'-3"	2'-0"
12"	3'-0"	2'-9"	3'-6"	3'-3"	2'-6"	2'-4"	2'-0"	1'-6"
14"	3'-5"	3'-0"	4'-0"	3'-8"	3'-6"	2'-4"	2'-0"	2'-3"
16"	4'-0"	3'-6"	5'-0"	4'-0"	3'-6"	3'-0"	2'-6"	2'-3"
18"	4'-0"	4'-3"	6'-0"	4'-0"	4'-0"	3'-3"	2'-9"	2'-6"
20"	5'-0"	4'-3"	6'-0"	5'-0"	4'-3"	4'-0"	3'-0"	2'-9"
24"	6'-0"	5'-3"	8'-0"	5'-6"	6'-0"	4'-0"	4'-0"	3'-0"

NOTES:
1. THIS TABLE IS BASED ON 200 P.S.I. MAIN PRESSURE AND 2000 P.S.F. SOIL BEARING PRESSURE. ADJUST BEARING AREAS IN ACCORDANCE WITH SOIL CONDITIONS AND PRESSURES ENCOUNTERED.
2. USE POLYETHYLENE ENCASEMENT BETWEEN CONCRETE AND PIPE.
3. REFER TO CONCRETE STANDARD SPECIFICATIONS.
4. THE "THRUST BLOCKING DETAILS" IN NO WAY LIMITS THE LOCATION OR SIZE OF ADDITIONAL BLOCKING WHEN SO WARRANTED OR REQUIRED BY THE ENGINEER.
5. THRUST BLOCKS NEED TO BE INSPECTED BY CITY PRIOR TO BACKFILL.

GRANTSVILLE CITY
THRUST BLOCK DETAIL

ENSIGN
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RICHFIELD
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FOR:
ICON DEVELOPMENT, LLC
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ERDA, UTAH, 84074
CONTACT:
SEAN PERKINS
PHONE: 435-850-8436

BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

NO.	DATE	REVISION	BY
1		FOR REVIEW	
2			
3			
4			
5			
6			
7			
8			

DETAILS

PROJECT NUMBER T12185
PRINT DATE 1/28/2022
DRAWN BY C. CHILD
CHECKED BY J. CLEGG
PROJECT MANAGER C. CHILD

D-509

STYLE A

Water main line loop

1. **GENERAL**
   A. Before backfilling, secure inspection of installation by ENGINEER.

2. **PRODUCTS**
   A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   B. Piping: Match existing pipe, fittings, coupling sizes and materials.
   C. Thrust Bocks: Concrete Class 4000, APWA Section 03 30 04.
   D. Reinforcement: Deformed, 60 ksi yield grade steel, ASTM A615.
   E. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
   F. Grease: Non-oxide poly-FM.
   G. Couplings: Brass.

3. **EXECUTION**
   A. Thrust Blocks: Not required for flanged or welded pipe systems. Before pouring thrust block concrete, wrap pipe system in plastic sheet to prevent bonding of concrete to pipe system.
   B. Fittings: Use copper to copper flare fittings or copper to iron pack joint coupling with locking split clamp on iron pipe side and flare on copper side.
   C. Grease: Apply grease to all buried metal surfaces. Wrap with polyethylene sheet and tape wrap.
   D. Steel Spool: Weld in place and provide slip on flange except when fitting in pipe system could move. Epoxy line per AWWA C210, C213, and coated per AWWA C208, or C214.
   E. Location: Loop water mains over top of sewer lines.
   F. Base Course and Backfill Placement: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.

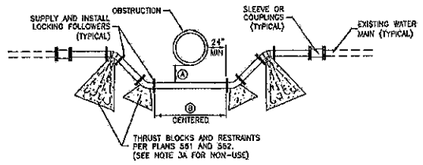


TABLE OF DIMENSIONS		
OBSTRUCTION	Ⓐ	Ⓑ
SEWER	18" MIN	20" MIN
OTHER	12" MIN	O.D. + 48"

Utah Chapter

Water main line loop

Water main line loop

1. **GENERAL**
   A. Before backfilling, secure inspection of installation by ENGINEER.

2. **PRODUCTS**
   A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   B. Piping: Match existing pipe, fittings, coupling sizes and materials.
   C. Thrust Bocks: Concrete Class 4000, APWA Section 03 30 04.
   D. Reinforcement: Deformed, 60 ksi yield grade steel, ASTM A615.
   E. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
   F. Grease: Non-oxide poly-FM.

3. **EXECUTION**
   A. Thrust Blocks: Not required for flange or welded pipe systems. Before pouring thrust block concrete, wrap pipe system with plastic sheet to prevent bonding of concrete to pipe system.
   B. Fittings: Use copper to copper flare fittings or copper to iron pack joint coupling with locking split clamp on iron pipe side and flare on copper side. All couplings to be brass.
   C. Grease: Apply grease to all buried metal surfaces. Wrap with polyethylene sheet and tape wrap.
   D. Steel Spool: Weld in place and provide slip on flange except when fitting in pipe system could move. Epoxy line per AWWA C210, C213, and coated per AWWA C208, or C214.
   E. Location: Loop water mains over top of sewer lines.
   F. Base Course and Backfill Placement: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.

STYLE B AND C

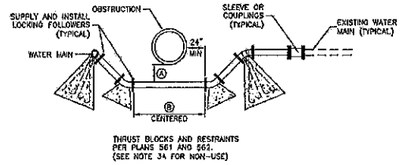


TABLE OF DIMENSIONS		
OBSTRUCTION	Ⓐ	Ⓑ
SEWER	18" MIN	20" MIN
OTHER	12" MIN	O.D. + 48"

STYLE B

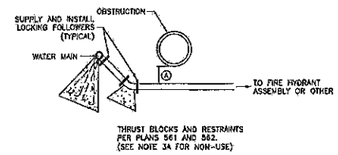


TABLE OF DIMENSIONS	
OBSTRUCTION	Ⓐ
SEWER	18" MIN
OTHER	12" MIN

STYLE C

Utah Chapter

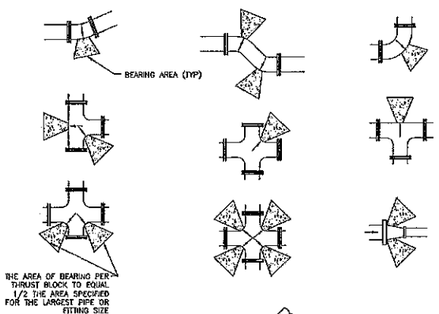
Water main line loop

Direct bearing thrust block

1. **GENERAL**
   A. Thrust design for pipe sizes or configurations not shown require special design.
   B. Bearing areas, volumes, and special thrust blocking details shown on Drawings take precedence over this plan.
   C. Restraint sizing is based upon a maximum operating pressure of 150 psi and a test pressure of 200 psi, and a minimum soil bearing strength of 2,000 psf. Operating pressures in excess of 150 psi or soils with less than 2,000 pound bearing strength will require special design.
   D. Before backfilling around thrust block, secure inspection of installation by ENGINEER.

2. **PRODUCTS**
   A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
   C. Thrust Bocks: Concrete Class 4000, APWA Section 03 30 04.
   D. Grease: Non-oxide poly-FM.

3. **EXECUTION**
   A. Pour concrete against undisturbed soil.
   B. Pipe Joints: Do not cover with concrete. Leave completely accessible.
   C. Grease: Apply grease to all buried metal surfaces. Wrap with polyethylene sheet and tape wrap.
   D. Locking restraint devices may be used in conjunction with concrete thrust blocking (at discretion of ENGINEER).
   E. Base Course and Backfill Placement: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.



SIZE OF PIPE	MINIMUM BEARING AREA IN SQ. FT.				
	TEES, VALVES DEAD ENDS	90° BENDS	45° BENDS	22 1/2° BENDS	11 1/4° BENDS
4"	2	3	2	2	2
6"	4	5.5	3	2.5	2
8"	8.5	9.5	5	2.75	2.5
12"	18	20	11	5.5	3
16"	33	36.5	14.5	7.5	4
18"	24	34	18.5	9.5	5
20"	27	52	28.5	14.5	8
24"	53	74	41	21	12
30"	91	116	62	32	18

NOTE:
ALL CONCRETE SURFACE IMPROVEMENTS SHALL BE CONSTRUCTED USING 4,500 PSI CONCRETE

Utah Chapter

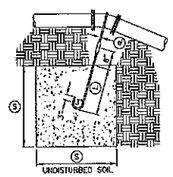
Direct bearing thrust block

Tie-down thrust restraints

1. **GENERAL**
   A. Thrust design for pipe sizes or configurations not shown require special design.
   B. Bearing areas, volumes, and special thrust blocking details shown on Drawings take precedence over this plan.
   C. Restraint sizing is based upon a maximum operating pressure of 150 psi and a test pressure of 200 psi, and a minimum soil bearing strength of 2,000 psf. Operating pressures in excess of 150 psi or soils with less than 2,000 pound bearing strength will require special design.
   D. Before backfilling around thrust block, secure inspection of installation by ENGINEER.

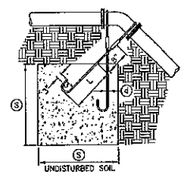
2. **PRODUCTS**
   A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
   C. Concrete: Class 4,000 minimum, APWA Section 03 30 04.
   D. Reinforcement: Deformed, steel, ASTM A615. Give bars an epoxy coating at least 15 mils thick. Minimum stress yield strength of steel tie-down bars is 70,000 ksi.
   E. Grease: Non-oxide poly-FM.

3. **EXECUTION**
   A. Pour concrete against undisturbed soil. Concrete must be allowed to cure in thrust restraints for 5 days before pressurizing water lines or have additional approved thrust restraints installed before pressurizing the water line.
   B. Pipe Joints: Do not cover with concrete. Leave completely accessible.
   C. Grease: Apply grease to all buried metal surfaces. Wrap with polyethylene sheet and tape wrap.
   D. Locking restraint devices may be used in conjunction with concrete thrust blocking (at discretion of ENGINEER).
   E. Base Course and Backfill Placement: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.



TYPE A RESTRAINT
FOR 11 1/4° – 22 1/2° VERTICAL BENDS

TABLE OF DIMENSIONS						
PIPE SIZE - NOMINAL DIAMETER - INCH	VERTICAL BEND IN DEGREES	CONCRETE BLOCKING IN CUBIC FEET	Ⓢ SIDE OF CUBE - FEET	Ⓓ DIAMETER OF SHANK OR REBAR RODS - INCH	Ⓛ DEPTH OF ROD IN CONCRETE - FEET	
4"	11 1/4°	8	2.0	5/8"	1.5	
	22 1/2°	15.6	2.5	5/8"	2.0	
6"	11 1/4°	15.6	2.5	5/8"	2.0	
	22 1/2°	34.3	3.25	5/8"	2.0	
8"	11 1/4°	27	3.0	5/8"	2.0	
	22 1/2°	64	4.0	5/8"	2.0	
12"	11 1/4°	64	4.0	5/8"	2.0	
	22 1/2°	125	5.0	3/4"	3.0	
16"	11 1/4°	107	4.25	7/8"	3.0	
	22 1/2°	216	6.0	7/8"	3.0	
20"	11 1/4°	138	5.17	1"	3.5	
	22 1/2°	334	6.94	1"	4.0	
24"	11 1/4°	240	6.22	1"	4.0	
	22 1/2°	476	7.81	1"	4.0	
30"	11 1/4°	369	7.17	1"	4.0	
	22 1/2°	733	9.02	1"	4.0	



TYPE B RESTRAINT
FOR 45° VERTICAL BENDS

TABLE OF DIMENSIONS						
PIPE SIZE - NOMINAL DIAMETER - INCH	VERTICAL BEND IN DEGREES	CONCRETE BLOCKING IN CUBIC FEET	Ⓢ SIDE OF CUBE - FEET	Ⓓ DIAMETER OF SHANK OR REBAR RODS - INCH	Ⓛ DEPTH OF ROD IN CONCRETE - FEET	
4"	45°	1	3.0		5/8"	2.0
6"		2.37	4.0		5/8"	2.5
8"		3.67	4.75		5/8"	3.0
					5/8"	
12"		9.04	6.25		5/8"	4.0
					5/8"	
16"		17.24	7.75		3/4"	4.0
					3/4"	
20"		26.52	92.17		3/4"	4.0
					3/4"	
24"		37.82	10.07		3/4"	4.0
					3/4"	
30"		58.26	11.63		3/4"	4.0
					3/4"	

Utah Chapter

Tie-down thrust restraints

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LAYTON
Phone: 801.547.1100

CEDAR CITY
Phone: 435.865.1453

RICHFIELD
Phone: 435.896.2983

WWW.ENSIGNENG.COM

FOR:
ICON DEVELOPMENT, LLC
3440 NORTH MOVIE LANE
ERDA, UTAH, 84074
CONTACT:
SEAN PERKINS
PHONE: 435-850-8436

BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

NO.	DATE	REVISION	BY
1		FOR REVIEW	
2			
3			
4			
5			
6			

DETAILS

PROJECT LEADER: T.TEE
FIELD DATE: 1/27/2022
DRAWN BY: C. CHILD
CHECKED BY: J. CLEGG
PROJECT MANAGER: C. CHILD

D-510

When type of maintenance is required?

Inspect rock outlet structures after heavy rains to see if any erosion around or below the riprap has taken place or if stones have been dislodged. Immediately make all needed repairs to prevent further damage. Remove any debris that has collected on the outlet pad.

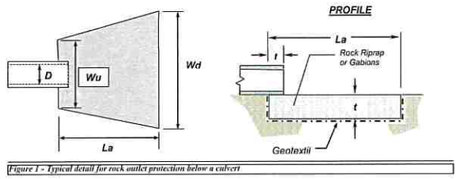

Figure 1 - Typical detail for rock outlet protection below a culvert

Culvert Size D, (inches)	Rock Size d_{50} (inches)	Apron Legnth La, (feet)	Upstream Width Wu, (feet)	Downstream Width Wd, (feet)	Thickness t_r (inches)	Quanitty (tons)
12	6	12	3	13	18	15
18	9	16	4.5	18	24	20
21	9	18	5	20	24	35
24	9	20	6	22	24	60
30	9	22	7.5	24	24	75
36	12	24	9	27	30	120
42	18	26	10.5	30	36	180
48	18	28	12	32	36	215

TABLE 1 - Rock outlet protection apron dimensions

Smallest Dimension in Inches					% of rocks small than size shown
Gadion Rock	6"d_{50}	9"d_{50}	12"d_{50}	18"d_{50}	
8	12	15	21	30	100
6	9	12	18	24	50-70
4	6	9	12	18	35-50
3	2	3	4	6	2-10

TABLE 2 - Required rock gradation

NOTE: After a fire many trees are weakened from burning around the base of the trunk. The trees can fall over or blow down without warning. Shallow rooted trees can also fall. Therefore be extremely alert when around burned trees.

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NRCS Natural Resources Conservation Service

Rock Outlet Protection

Denver Federal Center
Building 56, Room 2604
PO Box 25426
Denver, Co 80225-0426

720-544-2810 - office
www.co.nrcs.usda.gov

What is rock outlet protection?

A pad or apron of heavy rock placed at the outlet end of culverts or chutes.

When is rock outlet protection used?

Rock outlet protection is installed where the energy at the outlets of culverts or chutes are sufficient to erode the receiving channel or area. This fact sheet does not apply to continuous rock linings of channels or streams. Pipes that dump water at the top of a slope, or down slopes steeper than 10 percent, or flow at rates greater than 10 feet per second require a site specific design that is beyond the scope of this fact sheet.

How is rock outlet protection installed?

Apron length: Apron length ***(La)*** shall be determined from Table 1.

Apron width: The apron width is based on the diameter of the discharge pipe, ***(D)***. The apron width will be ***3D*** at the upstream end ***(Wu)***, and the downstream width ***(Wd)*** will be equal to ***(D + La)***. The apron shall extend across the channel bottom and up side slopes for a minimum height equal to the diameter of the pipe, ***(D)***.

Alignment: The apron shall be located so that there are no bends in the horizontal alignment. The apron should be level over its length, and the elevation of the downstream end of the apron must be the same as the elevation of the receiving channel or adjacent ground.

Thickness: The required apron thickness is shown in Table 1.

Gabions: When a gabion mattress is used it shall be made of double twisted galvanized steel wire. Gabions shall be fabricated in such a manner that the sides, ends, and lid can be assembled at the construction site into mats a minimum of 12 inches thick.

Materials: Outlet protection may be done using rock riprap or gabion mattresses to construct the apron. The rock shall consist of field stone or rough unhewn quarry stone. The stone shall be hard and angular and of a quality that will not disintegrate on exposure to water or weathering. Broken concrete may be used provided it does not have any exposed steel or reinforcing bars, and that it is broken into blocky pieces such that the largest dimension of each piece is no more than 3 times the smallest dimension. The required rock size is shown in Tables 1 and 2. In all cases a geotextile (filter fabric) shall be placed between the apron and the underlying soil to prevent soil movement into and through the riprap.

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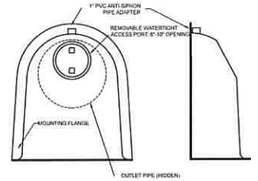
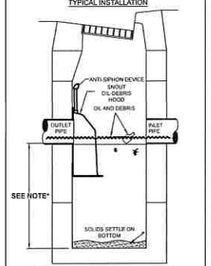
CONFIGURATION DETAIL



SNOUT OIL-WATER-DEBRIS SEPARATOR

TYPICAL INSTALLATION



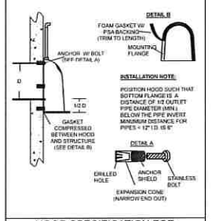
*NOTE - SUMP DEPTH OF 36" MIN. FOR UP TO 12" ID PIPE OUTLET. FOR PIPES 15" ID AND ABOVE SUMP DEPTH OF 2.5 TO 3 TIMES PIPE ID RECOMMENDED (E.G. 5' DEEP for 24" PIPE)

NOTES:

1. ALL HOODS AND TRAPS FOR CATCH BASINS AND WATER QUALITY STRUCTURES SHALL BE AS MANUFACTURED BY
BESTT MANAGEMENT PRODUCTS, INC.
9 MATHEWS DRIVE, UNIT A1-A2
EAST HADDAM, CT 06423
TOLL FREE: (800) 504-8008 OR (888) 434-0277, FAX: (877) 434-3197
WEB SITE: www.bmtpnc.com
OR PRE-APPROVED EQUAL
2. ALL HOODS SHALL BE CONSTRUCTED OF A GLASS REINFORCED RESIN COMPOSITE WITH ISO GEL COAT EXTERIOR FINISH WITH A MINIMUM 0.125" LAMINATE THICKNESS
3. ALL HOODS SHALL BE EQUIPPED WITH A WATERTIGHT ACCESS PORT, A MOUNTING FLANGE AND AN ANTI-SIPHON VENT PIPE AND ELBOW AS DRAWN. (SEE CONFIGURATION DETAIL)
4. THE SIZE AND POSITION OF THE HOOD SHALL BE DETERMINED BY OUTLET PIPE SIZE AS PER MANUFACTURER'S RECOMMENDATION (SNOUT SIZE ALWAYS LARGER THAN PIPE SIZE)
5. THE BOTTOM OF THE HOOD SHALL EXTEND DOWNWARD A MINIMUM DISTANCE EQUAL TO 1/2 THE OUTLET PIPE DIAMETER WITH A MINIMUM DISTANCE OF 6" FOR PIPES <12" I.D.
6. THE ANTI-SIPHON VENT SHALL EXTEND ABOVE HOOD BY MINIMUM OF 3" AND A MAXIMUM OF 12" ACCORDING TO STRUCTURE CONFIGURATION
7. THE SURFACE OF THE STRUCTURE WHERE THE HOOD IS MOUNTED SHALL BE FINISHED SMOOTH AND FREE OF LOOSE MATERIAL AND PIPE SHALL BE FINISHED FLUSH TO WALL
8. ALL STRUCTURE JOINTS SHALL BE WATERTIGHT
9. THE HOOD SHALL BE SECURELY ATTACHED TO STRUCTURE WALL WITH 2 STAINLESS STEEL BOLTS AND OIL-RESISTANT GASKET AS SUPPLIED BY MANUFACTURER. (SEE INSTALLATION DETAIL)
10. INSTALLATION INSTRUCTIONS SHALL BE FURNISHED WITH MANUFACTURER SUPPLIED INSTALLATION KIT
INSTALLATION KIT SHALL INCLUDE:
A. INSTALLATION INSTRUCTIONS
B. PVC ANTI-SIPHON VENT PIPE AND ADAPTER
C. OIL-RESISTANT CRUSHED CELL FOAM GASKET WITH PSA BACKING
D. 3/8" STAINLESS STEEL BOLTS
E. ANCHOR SHIELDS

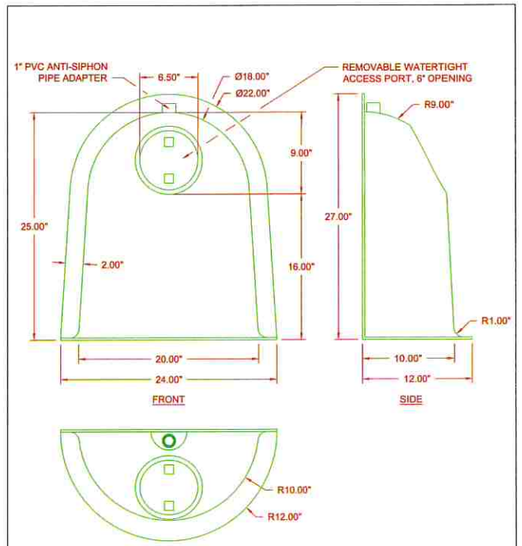
US Patent # 6126817, 7951294, 7857966, 8512556
Canada Patent # 2235146, 2690156, 2690156 others pending

INSTALLATION DETAIL



HOOD SPECIFICATION FOR CATCH BASINS AND WATER QUALITY STRUCTURES

DESCRIPTION	DATE	SCALE
OIL- DEBRIS HOOD SPECIFICATION AND INSTALLATION (TYPICAL)	09/08/18	NONE
	DRAWING NUMBER	SP-SN



US PATENT #6126817 ADDITIONAL PATENTS PENDING

BMP, INC.
53 MT. ARCHER ROAD, LYME, CT. 06371
(800) 504-8008 FAX: (860)434-3195

DESCRIPTION	DATE	SCALE
18F SNOUT OIL & DEBRIS STOP	09/14/99	NONE
	DRAWING NUMBER	18F

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LAYTON
Phone: 801.547.1100

CEDAR CITY
Phone: 435.865.1453

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Phone: 435.896.2983

WWW.ENSIGNENG.COM

FOR:
ICON DEVELOPMENT, LLC
3410 NORTH MOYLE LANE
ERDA, UTAH, 84074
CONTACT:
SEAN PERKINS
PHONE: 435-850-8436

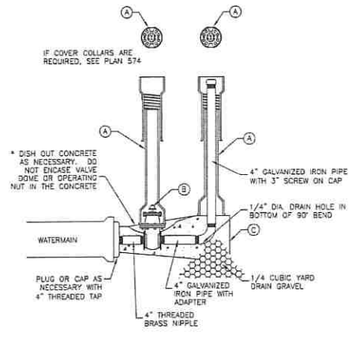
BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

4" washout valve

1. **GENERAL**
   A. Before backfilling, secure inspection of installation by ENGINEER.
   B. Water mains 12-inches and larger will require a special washout assembly design.

2. **PRODUCTS**
   A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
   C. Concrete: Class 4000, APWA Section 03 30 04.

3. **EXECUTION**
   A. Pour concrete against undisturbed soil.
   B. Apply tape wrap to the exterior of all galvanized pipe per AWWA C209.
   C. Place plastic sheet at least 6 mils thick over drain gravel to prevent silting.
   D. After installation of washout valve assembly, verify the washout valve riser drains to gravel.
   E. Backfill and Base Course Placement: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater of a modified proctor density, APWA Section 31 23 26.



LEGEND		
No.	ITEM	DESCRIPTION
A	VALVE BOX WITH LID	2 PIECE CAST IRON
B	4" GATE VALVE WITH SCREW ENDS	2" x 2" OPERATING NUT
C	CONCRETE THRUST BLOCK	PLAN 561

NOTE:
ALL CONCRETE SURFACE IMPROVEMENTS SHALL BE CONSTRUCTED USING 4,500 PSI CONCRETE

NO.	DATE	REVISION	BY
1		FOR REVIEW	

DETAILS

PROJECT NUMBER	PRINT DATE
T1216E	1/27/2022
DRAWN BY: C. CHILD	CHECKED BY: J. CLEGG
PROJECT MANAGER: C. CHILD	

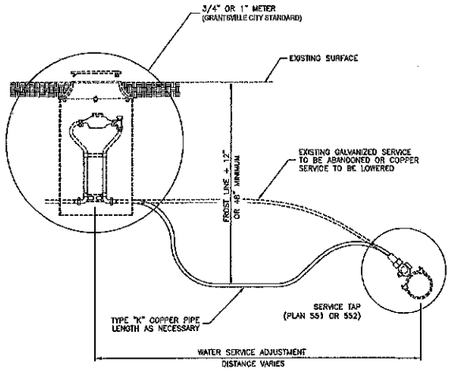
D-511

Water service line

1. **GENERAL**
   A. Before backfilling, secure inspection of installation by ENGINEER.

2. **PRODUCTS**
   A. Fittings: Provide brass fittings and nipples. Do not use galvanized materials.
   B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.

3. **EXECUTION**
   A. Backfill: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.

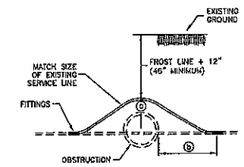


Water service line loop

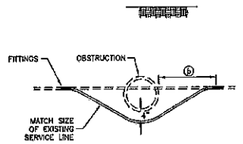
1. **GENERAL**
   A. Before backfilling, secure inspection of installation by ENGINEER.

2. **PRODUCTS**
   A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   B. Piping: Match existing pipe, fittings, coupling sizes and materials.
   C. Thrust Bocks: Concrete Class 4000, APWA Section 03 30 04.
   D. Reinforcement: Deformed, 60 ksi yield grade steel, ASTM A615.
   E. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
   F. Grease: Non-oxide poly-FM.

3. **EXECUTION**
   A. Thrust Blocks: Not required for flange or welded pipe systems. Before pouring thrust block concrete, wrap pipe system with plastic sheet to prevent bonding of concrete to pipe system.
   B. Fittings: Use copper to copper flare fittings or copper to iron pack joint coupling with locking split clamp on iron pipe side and flare on copper side. All couplings to be brass.
   C. Grease: Apply grease to all buried metal surfaces. Wrap with polyethylene sheet and tape wrap.
   D. Steel Spool: Weld in place and provide slip on flange except when fitting in pipe system could move. Epoxy line per AWWA C210, C213, and coated per AWWA C206, or C214.
   E. Location: Loop water mains over top of sewer lines.
   F. Base Course and Backfill Placement: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.



STYLE A



STYLE B

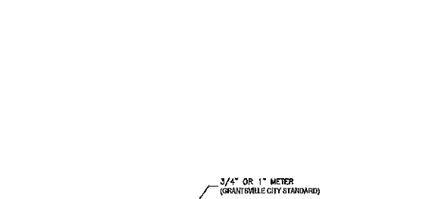
TABLE OF DIMENSIONS		
	OBSTRUCTION	
	SEWER MAIN	OTHER
A	18"	12" MIN.
B	10'-0"	12" MIN.

3/4" and 1" Service taps

1. **GENERAL**
   A. Before backfilling around taps, secure inspection of installation by ENGINEER.

2. **PRODUCTS**
   A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
   C. Tape: Teflon tape is required on all taps.

3. **EXECUTION**
   A. Tapping: Place taps a minimum of 36-inches apart. Use a tapping tool which is sized corresponding to the size of the service line to be installed. No taps within 36-inches of end of pipe.
   B. PVC or AC Pipe: A service saddle clamp is required on all PVC and AC pipe taps unless specified otherwise.
   C. Base Course and Backfill Placement: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.



SADDLE CLAMP TAP

DUCTILE IRON DIRECT TAP
(PIPE > 12" DIAMETER ONLY)

LEGEND			
No.	*	ITEM	DESCRIPTION
A		COPPER PIPE	TYPE K - SOFT
B		CORPORATION STOP	BRASS
C		SERVICE SADDLE CLAMP	(D.I., C.I., A.C.) **
D		SERVICE SADDLE CLAMP	(P.V.C.)
E		WATER MAIN PIPE	(D.I., C.I., A.C., P.V.C.)
F		WATER MAIN PIPE	(DUCTILE IRON (D.I.) ONLY

* FURNISHED BY UTILITY AGENCY
** DI & CI PIPE MAY BE DIRECT TAPPED

NOTE:
ALL CONCRETE SURFACE IMPROVEMENTS SHALL BE CONSTRUCTED USING 4,500 PSI CONCRETE

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THE STANDARD IN ENGINEERING

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CONTACT:
SEAN PERKINS
PHONE: 435.850.8436

BLUE SPRUCE SUBDIVISION
PRELIMINARY
QUIRK STREET
GRANTSVILLE CITY, UTAH

NO.	DATE	REVISION	BY
1		FOR REVIEW	

DETAILS

PROJECT NUMBER: T12186
PRINT DATE: 12/7/2022
DRAWN BY: C. CHILD
CHECKED BY: J. CLEGG
PROJECT MANAGER: C. CHILD

D-512

AGENDA ITEM #3

MINUTES OF THE GRANTSVILLE CITY PLANNING COMMISSION HELD 01/20/2022. THE MEETING WAS HELD IN THE GRANTSVILLE CITY HALL AT 429 EAST MAIN STREET AND ON ZOOM.

Commission Members Present: Commission Chair Brian Pattee, Commission Member Gary Pinkham, and Commission Member Jaime Topham

Commission Members that were present on Zoom:

Commission Members that were absent: Commission Member Erik Stromberg, Commission Member John Limburg

Appointed Officers and Employees Present: Zoning Administrator, Kristy Clark; Grantsville City Attorney, Brett Coombs; City Engineer Dan England

Appointed Officers and Employees that were present on Zoom or Absent:

Citizens and Guests Present: Lana and Claude McKean, Doug (Darrell) Peterson, Darryl Kelley, Holly Jones, Breck Russell, Barry Bunderson, Scott Stapley, Michelle and Mike Warner, Monte and Crystal Sides, Vicky and Ernie Matthews, Sandra and Adam Sadler, and Travis Daniels.

THE REGULAR MEETING WAS OFFICIALLY CALLED TO ORDER BY COMMISSION CHAIR, BRIAN PATTEE AT 7:06 P.M.

PLEDGE OF ALLEGIANCE

PUBLIC HEARINGS:

a. Proposed Preliminary Plan for Holly Jones on the Cadence Worthington Subdivision located approximately at 405 South Worthington Street for the creation of four (4) lots in the R-1-21 zone.

Chairman Brian Pattee opened the public hearing at 7:06 p.m. and called for comments.

Cindy Burt emailed comments and concerns to the Commission that stated: Mayor Critchlow, City Council, and Planning Commissioners, we received the preliminary plan notice for the Cadence Worthington subdivision. Our home is on a one-acre lot and the majority of our property sits behind the North side of the proposed development. We share approximately 440 feet of property line between the East and North side. We have livestock and have fenced the perimeter of our property to contain our animals. We are concerned that replacing the existing fenced farmland with new homes will allow access and bring temptation to feed our animals through the fence or climb up or possibly over the fence. In an effort to avoid issues and possible accidents we respectfully ask that the new development be required to install a solid fence along the shared

property lines. Joe and Cindy Burt, 695 E Clover Gate Lane

No additional comments were offered, Chairman Brian Pattee closed the public hearing at 7:08 p.m.

b. Proposed Multiple Housing Conditional Use/Site Plan and PUD Applications for Holly Jones located at 225 S Willow Street for the creation of 10 units in the RM-7 zone.

Chairman Brian Pattee opened the public hearing at 7:08 p.m. and called for comments.

Monte Sites stated to the Commission: I live right next to this property we're discussing. I'm pretty unhappy about it. It seems like every couple years, I'm in here trying to keep somebody from trying to shoe horn, some houses in an area that I don't think there should be. There's been just under two acre lots all through there for the last 18 years, as I've been here. I don't think they got enough access or anything. I'd like to see some serious thought on how we're going with these kinds of decisions in Grantsville. Thank you.

Michelle Warner stated to the Commission: Thank you for this opportunity. I'm a neighbor. I live at 341 Legacy Lane. My concern is with this repeat presentation of PUDS to existing land use. Looking at the land use ordinances. When I look at proposed changes for a PUD. I see some real issues with this one it looks to me like if I start in purposes on item 12, one under planned unit developments, a planned development is a distinct category of conditional use as such as intended to encourage the efficient use of land and resources and goes on. And then it goes down to number a that says creation of a more desirable environment than would be possible through strict application of other city land use regulations. So I've got a look at what it's proposed and say, gosh, is that really creating a more desirable environment? Number two, the use of design landscape or architectural features to create a pleasing environment while preserving desirable site characteristics going to happen here? I wonder. Under C, preservation of buildings such as architecturally or historically significant to contribute to the character of the city and the number D establishment of interconnecting paths and trails for alternative trail transportation routes, um, which lead to common and popular destinations. And then when I, I turn over to section 12, three, and it says minimum areas, and then it says under multiple residential district, RM-7, you shouldn't be even considering this, if it's not a five-acre piece of ground. So, I guess my question is why is this even under consideration? If you're considering the feelings of the current residents and people who live there now, I mean, it doesn't look to me like this fits within the planned unit development structure that you follow as a planning and zoning commission. So, my question is why is it even under consideration, I guess, thank you for your time. Thank you.

Vicki Matthews stated to the Commission: I live down the street from the 225 Willow property. On three sides of the property, there are animals, and that's what it's zoned right now for animals plus a dwelling. And that's how it's zoned. I don't think 10 dwellings in that little spot is going to be conducive to animals and to the neighbors. Also, my brother-in-law several years ago, put in a subdivision on some of our property. And there were four homes that went in. He

was required to put in a 90-foot cul-de-sac so that the fire truck could get in there and do whatever they needed to do in case of fire, my concern on this, how would a fire truck ever get in and out of that little piece of ground? Also, it showed on the map or the drawing of the apartments, that there would be a little garage for each apartment, but most families have two cars. I don't see how another car besides the one they already have would fit in that little area. Also, Willow street is very narrow and I don't think that, adding another 10 homes to come out onto Willow Street from one little area would be a very smart thing to do either. Thank you.

Michelle Warner spoke again and added: The other concern that I have that just is bothering the back of my mind is that I'm told that we have elected officials who are serving the city who are finding ways to encourage developers and people to come in and circumvent our existing ordinances, ways to get around our existing ordinances using the PUD and other conflicting things. As far as a resident of Grantsville City. I mean, if I'm a resident of Grantsville city, I expect that as a planning and zoning commission, as a city council, as a mayor, people that are here to represent me truly are representing me. Why would we have public officials working with developers to circumvent our own rules and our own regulations? I mean, just a question in my mind, but as a planning and zoning commission, I think you should be aware that there's some real concern in the citizenship out there. Thank you.

Katherine Smith emailed comments and concerns to the Commission that stated: I would like to write concerning the building of the Holly Willow Townhomes. My first concern is the traffic it will bring to Willow Street. Willow Street, as you know, is already an extremely narrow street and it is extremely busy. With the added units to this neighborhood this would create more traffic added to the already small and busy street. Second, because these townhomes are to be placed on only 1.48 acres and due to the direction they are facing, neighbors in the surrounding homes will no longer have the privacy that they have been used to for so long. Regardless of trees and fences being built, adjacent neighbors will feel like people are looking into their yard and homes. Finally, these townhomes are not owned by individuals but are instead planned to be rentals. This can cause surrounding property prices to stagnate or even drop. For these reasons I strongly feel that the Holly Willow Townhomes should be allowed to be built. Katherine Smith

Sandra Killian emailed comments and concerns to the Commission that stated: Thank you for providing us the opportunity to participate and provide comments specific to the townhome proposal. We look forward to learning more at the Zoom meeting scheduled on January 20, 2022. Our comments, questions, and concerns are as follows: Mainly, as the direct neighbor to the north of the 225 Willow St. property, it will affect me in a variety of ways involving aesthetics, nuisances, safety, and financially. The residents of 235 Willow St. strongly oppose the potential townhomes at 225 Willow. It will decrease our property value. I don't see how this proposal will benefit us or any other neighbors. Grantsville is a livestock community. In order to be happy neighbors, smells, noise, trash and other nuisances must be kept at a minimum and if they are building townhomes close to our livestock, bringing their own barking pets along with an added dog park.

General questions:
At what stage is this application? Has it been approved or will neighbor comments have the potential to cancel or delay the project?

What are the benefits of building this townhome to all parties involved including occupants and neighbors?

What is the nature of this development? Has the property or project been sold to a private developer? Is it a smaller personal development? We fear that ten multi-housing unit creation isn't a reasonable consideration specifically since the neighborhood is currently an agricultural and animal habitat.

Will there be HOA regulations?

How will such a small area of land not become a nuisance to us as neighbors? Parking rules will not be followed. In general, these rules aren't enforced and we will be the ones suffering from this.

Have livestock and wildlife been considered? The area surrounding this property is all utilized for livestock purposes and we fear this will affect rancher and farmer livelihoods. There are deer, owls, hawks, foxes, and other wildlife that frequent the properties and rely on the current open spaces for habitat.

Some regulatory concerns:
Is it legal to build within 100 ft. of a corral or livestock? Horses and cattle surround this property.

Is it legal to build within 30 ft. of a house?

How will this affect irrigation rights? Water rights? Water shares?

How and where will the water drain from these units? Where will it drain? Will there be impacts to the water table? What other environmental impacts will be made? Potential water pollution? Will there be pipes or other structures installed on neighboring properties as a result of these townhomes? Willow St. is narrow and does not even have lines painted. Yet, a large 10 multi-housing unit development is being considered? Currently, apartments and a mobile home park exist on the street and have proven to increase traffic, drug use, and pollution.
The current zoning of the property is for livestock. Single home dwelling dynamics will be severely impacted by such a large community conversion. Why should a change in zoning be considered? This is a livestock community.

Will there be impacts to plumbing or electricity?

Will this development and occupants be in compliance and respect local noise ordinances?

If the project is approved, how long will construction take?

At what hours of the day will construction take place?

Safety concerns:
Neighbors not familiar with livestock tend to throw grass over fences to "feed" the horses. This is not a safe practice and has killed many horses. This is a great fear for us and neighbors. There doesn't seem to be room to allow a fire engine to turn around in the case of emergency. According to the 2018 fire code of Utah, different driveway classifications require different regulations for emergency vehicle access such as "dead-end fire apparatus access roads in excess of 150 feet in length shall be provided with an approved area for turning around fire apparatus". Similarly, is the width of the road large enough?

Will there be groundwater contamination from the water run off?

Some concerns about nuisances:
An increase in noise and trash pollution is already being observed with current Willow St. mobile home park and apartment complex. We do not want to find more trash on our property and would like to retain the relative quietness of Grantsville compared to larger cities.

Another nuisance observed in relation to current apartments and mobile home park that would increase with the addition of these homes is lost or incorrectly delivered mail/address mix ups. There will be an increase in noise from construction and further concentrated living quarters. Has the height of the proposed townhomes been considered as this takes away from the existing majestic views we enjoy daily. If this townhome complex is approved, it will provide opportunities for worse air quality and higher crime rates due to increased vehicle traffic, overcrowding of people, drug use, and a general decrease in the safety of the neighborhood. There may be houses near livestock and resulting occupants may complain about the smell. This is a livestock community and we would like to retain our rights to practice ranching and farming.

Financial concerns:
With more people sharing the same availability of water, water and irrigation rates will increase. The completion of this multiple housing will decrease the value of our house and surrounding houses/property.

Aesthetic concerns:
How will the property be up kept? Better than current conditions in order to not drag property values down?

If a multiple housing site is built, our mountain view will be lost.

In conclusion, the concerns about this Holly Jones Willows Townhomes seem endless and we strongly oppose the changes that Holly Jones applied for. If this application is unfortunately in

the final stages and already in progress, some demands we would make going forward are a larger and higher quality privacy fence, better property upkeep and cleanup. Finish yard/landscaping, upkeep driveway, sidewalks, and other structures in the yard.

We appreciate you taking time to read our concerns and look forward to sorting out answers on Thursday, January 20, 2022 @ 7:00 p.m. Sincerely, 235 Willow St. residents: Adam and Sandra Sadler.

No additional comments were offered, Chairman Brian Pattee closed the public hearing at 7:27 p.m.

COMMISSION CHAIR BRIAN PATTEE OFFICIALLY CALLED THE MEETING TO ORDER AT 7:27 P.M.

1. **Consideration to recommend approval of the Preliminary Plan for Holly Jones on the Cadence Worthington Subdivision located approximately at 405 South Worthington Street for the creation of four (4) lots in the R-1-21 zone.**

   Holly Jones and Barry Bunderson were present for this agenda item:

   Gary Pinkham stated, since our last staff review you've addressed everything. I feel that this is a good use for the parcel.

   Gary made a motion to recommend approval of the Preliminary Plan for Holly Jones on the Cadence Worthington Subdivision located approximately at 405 South Worthington Street for the creation of four (4) lots in the R-1-21 zone. Jaime seconded the motion. All voted in favor and the motion carried unanimously.

2. **Consideration to recommend approval of the Final Plat for Holly Jones on the Cadence Worthington Subdivision located approximately at 405 South Worthington Street for the creation of four (4) lots in the R-1-21 zone.**

   Holly Jones and Barry Bunderson were present for this agenda item:

   Commission didn't have any additional comments.

   Gary made a motion to recommend approval of the Final Plat for Holly Jones on the Cadence Worthington Subdivision located approximately at 405 South Worthington Street for the creation of four (4) lots in the R-1-21 zone. Jaime seconded the motion. All voted in favor and the motion carried unanimously.

3. Discussion to Amend Chapter 14 and Chapter 15 of the Grantsville Land Use and Management Code.

Gary Pinkham stated to the Commission: what brought this up is in some of our discussions on drawings, we've been having a lot of problem trying to figure out how to get utilities and driveways in some of these narrow frontages, particularly in cul-de-sacs and the way the code reads is the cul-de-sac dimension for driveway is figured at the edge of pavement, not the right way line. If we look at the edge of pavement and the necessary separation between driveways and making room for the utilities, its apparent that we're not able to really accommodate everything that needs to be there with narrow frontage that is currently in the code. There's also one spot in our code where it actually goes down to 30 feet for cul-de-sacs, for frontage, which is impossible, to get the driveway and the water and sewer water and sewer themselves take up 15 feet. That would be on one side of the driveway. The other side of the driveway would require a minimum of six to have the separation between this driveway and the neighbor's driveway. So in order to dimensionally, make it work on the cul-de-sacs. We need to revise the sections or subsections 14.3 paren three, 14.4 paren three, 14.5 paren three, 15.1 paren one, 15.2 paren one,15.3 paren one, 15.4 paren one, and 15.5 paren one. I would propose that we go out to 70 feet, which gets us wide enough on the cul-de-sacs to accommodate the driveways and utilities. Even on our smallest lot, 70 feet of frontage is pretty much common on a 7,000 square foot block, um, that would allow a hundred-foot-deep block taking out the building setbacks. We still have a 55 by 55 building pad area, which is over 3000 square feet. So, we're not going to make these lots where they can't be built basically the way they're being built on now. It just simply gives us the frontage we need to accommodate driveways and utilities and so on and still meet the requirements of the code in the public utility work. We've had some cul-de-sac lots where you can't get 16-foot driveway to work. So that's part of our problem here.

Brian Pattee asked, Dan, do have anything to add?

Dan England answered, I absolutely agree with everything that Gary has brought up. It would end up making the cul-de-sac extend probably a little bit farther to make it work. So it might be a little bit more expensive on the developer, but it would leave enough room for 30-foot driveway plus the car to parallel park in front of their lot that way.

Brian Pattee asked, Kristy, this is set for just a discussion?

Kristy Clark answered, yes. I also sent you all Chapter 14 and Chapter 15 ordinances in case there is something else that needs to be looked at and amended at this time.

4. **Consideration to approve the meeting minutes for the previous P&Z Meeting that was held January 6, 2022.**

   Gary made the motion to approve the meeting minutes for the previous P&Z Meeting that was held January 6, 2022. Jaime seconded the motion. All voted in favor. Motion carried unanimously.

5. **Report from City Council Liaison, Mayor Neil Critchlow.** Was absent.

6. **Adjourn. Gary made the motion to adjourn the meeting. Jaime seconded the motion. The meeting was adjourned at 7:40 pm.**

Kristy Clark
Zoning Administrator