

KAYSVILLE CITY PLANNING COMMISSION NOTICE AND AGENDA

Notice is hereby given that the Kaysville City Planning Commission will hold their regular meeting on Thursday, June 11, 2020 at 7:00 p.m.

In response to Utah Executive Order No. 2020-5, the only way to view or participate in this meeting will be through remote means.

- **The public is encouraged to contact the Planning Commission or Kaysville City Community Development Office prior to the meeting with any questions or comments regarding items on the agenda.**
- **To watch the proceeding in real-time, visit www.kaysvillelive.com where a link to view a live stream of the meeting via YouTube Live.**
- **If you wish to make comments during the meeting, a link to participate via Zoom will be available also on the home page of www.kaysvillelive.com.**

The agenda shall be as follows:

1. Opening and approval of the minutes from the May 28, 2020 meeting.
2. Conditional Use Permit for a Major Home Occupation 'B', for private and group violin lessons located at 545 East 250 North for the Davis County Violin School/Mckenzie Clawson.
3. Public Hearing for the rezone of 1.1 acres of property located at 1599 West Galbraith Lane for the creation of a flag lot with a PRUD (Planned Residential Unit Development) overlay zone for Nathan Alvey.
4. Public Hearing and preliminary plat approval for the Alvey Subdivision located at 1599 West Galbraith Lane for Nathan Alvey.
5. Public Hearing for the consideration of a development agreement and the rezone of approximately 14 acres of property located at 1773 West 200 North, from the A-5 (Heavy Agriculture) to the R-10, R-1-14, R-1-6 (Single Family) zones and the R-2 (One and Two Family Residential) zone with the PRUD (Planned Residential Unit Development) overlay zone to be included over each district for Nephi and Malcolm Harvey.
6. Public Hearing and preliminary plat approval for the Salt Grass Subdivision located at 1773 West 200 North for Nephi and Malcolm Harvey.
7. Public Hearing for the rezone of 1.5 acres of property located at 1480 Willow Drive, from the R-1-20 to include the PRUD (Planned Residential Unit Development) overlay zone for James J. Neuner.

8. Public Hearing and preliminary plat approval for the Bailey Subdivision located at 1480 Willow Drive for James J. Neuner.
9. Final Plat approval for the Bailey Subdivision located at 1480 Willow Drive for James J. Neuner.
10. Final Plat approval for the Horne Subdivision located at 1422 South Sunset Drive for Carl and Marvin Horne.
11. Public Hearing to consider an ordinance enacting subsection 19-5-7, Technical Specifications and Drawings, of Chapter 19-5, Subdivision Standards, of Title 19, Subdivisions, of the revised ordinances of Kaysville City.
12. Amendment to the Kaysville City Annexation Policy Plan.
13. Call to the public.
14. Other matters that properly come before the Planning Commission:
 - a. Reports.
 - b. Correspondence.
 - c. Calendar.
15. Adjournment.

I hereby certify that I posted a copy of the foregoing Notice and Agenda at the Kaysville Municipal Center and mailed copies to the media representatives on Friday June 5, 2020.



Lyle Gibson – Community Development Director

******To send comments to the Planning Commission please visit:**
<https://www.kaysvillecity.com/435/Planning-Commission>

Comments received in writing will be referred to and read into the record of the public meeting.

To contact the Community Development Office please call 801-546-1241.



Planning Commission Staff Report

Conditional Use Permit for a Major Home Occupation 'B', Group Violin Lessons. June 11, 2020

Applicant/Owner: McKenzie Clawson
Location: 545 East 250 North
Zone: R-1-8 (Single Family Residential)

Description:

The applicant is requesting a conditional use permit for Major Home Occupation "B" at the above listed address to offer violin lessons. Ms. Clawson plans to teach primarily one-on-one lessons to students a few days a week in the afternoon, but hopes to be able to hold a group session twice a month where a group as large as 10 students would be able to attend.

Per KCC 7-26-4 (12) 3, organized classes are permitted by approval of the Planning Commission, but shall have a limit placed on the number of students and/or the number of vehicles transporting students to the home occupation to prevent congestion.

Recommendation:

Staff is recommending approval of the proposed conditional use permit for a Major Home Occupation "B" preschool, at the above listed address with the following condition:

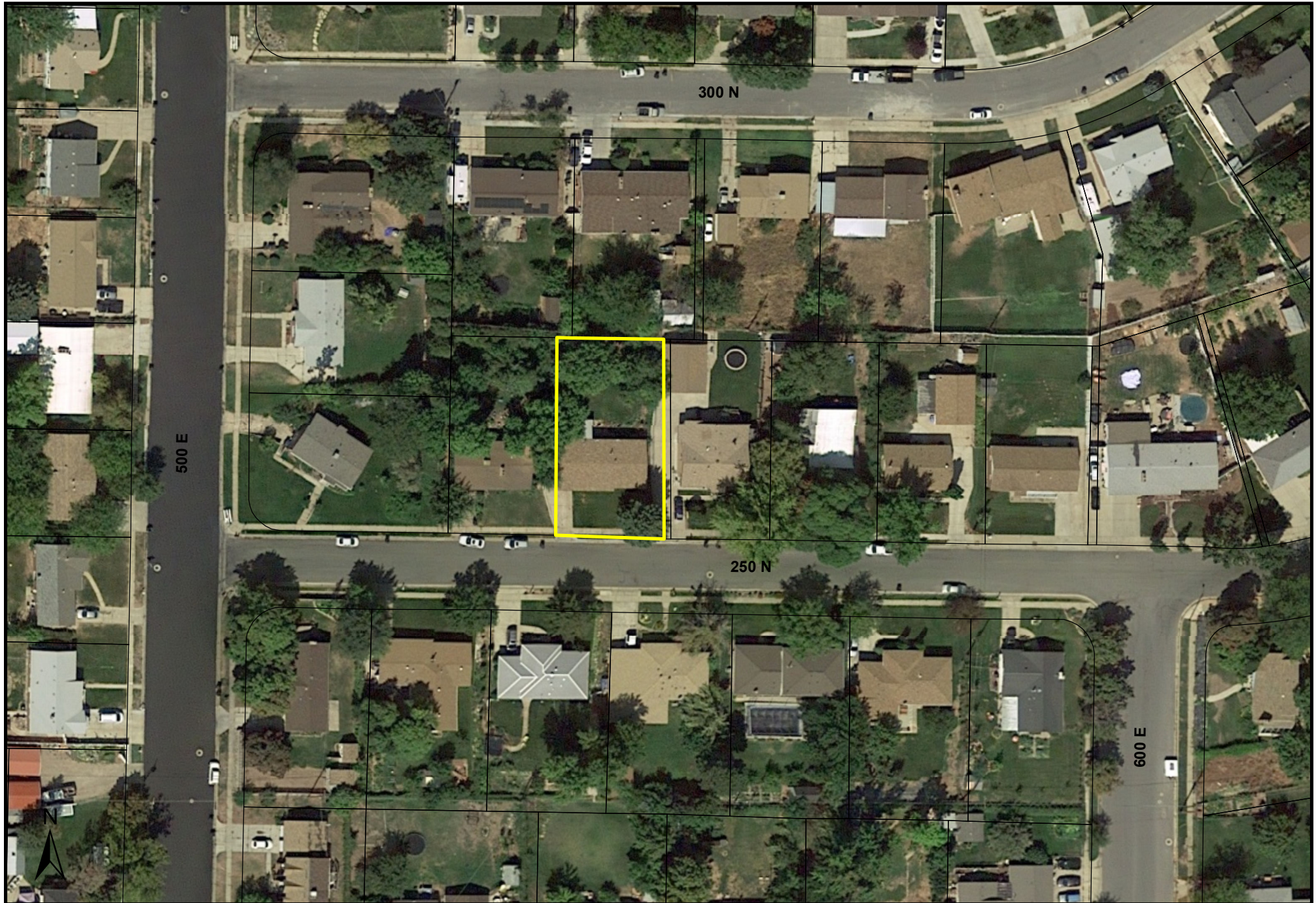
- Groups lessons be allowed only 3 days a month, and
- Groups be limited to no more than 10 students at a time.
- When doing group lessons, there must be a gap of at least 15 minutes after the last lesson and before the next lesson to allow for pick-up and drop-off to complete.

Reasoning:

The restrictions of the ordinance together with the recommended condition appear to be appropriate for mitigating potentially anticipated detrimental impacts.

Attachment 1: Area Map

545 East 250 North





Planning Commission Staff Report

Public hearing for the rezone of 1.1 acres of property to include the PRUD overlay zone and Preliminary Plat. June 11, 2020

Applicant/Owner:
Location:
Current Zone:

Applicant: Nathan Alvey – Owner: Lamont and Carolee Anderson
1599 West Galbraith Lane
R-A

Description:

The property includes an existing home fronting Galbraith Lane which is proposed to remain with some modifications while the primary purpose of the request for the PRUD overlay is to accommodate a new lot behind the home to the south.

The underlying R-A zone would remain in effect. The proposed preliminary plat indicates 2 lots that each meet the minimum frontage or width requirement as well as the minimum acreage for the R-A zone. The flag lot provisions of the PRUD ordinance require that the standard lot fronting the street keep its typical standards for width and setbacks and the access to the new lot be provided at 30 feet in width to a single lot. Each lot must be at least 10,000 sq. ft. in size or meet the minimum for the zone which in this case is 21,780 sq. ft. The property contains enough acreage and is wide enough to accommodate 2 lots which comply with the provisions of the applicable ordinances, but in order to meet the required side yard setback from a property line it is necessary to remove portions of the home as proposed on the preliminary plat.

This area are multiple flag lots in the immediate area. There have also been concerns expressed to staff in recent years regarding water which collects in this section of town in the rear yards of properties along Leola St. which would be appropriate to consider with final plat details if the commission and council are on boards with pursuit of the idea of a flag lot at this location.

Recommendation:

The planning commission is tasked with considering 2 motions.

First, the planning Commission should determine if the PRUD overlay zone is appropriate for the requested property based on its location and compatibility with the general plan. A recommendation on this option should be forwarded to the city council.

Second, if the PRUD is found to be desirable, staff recommends that a recommendation of approval be forwarded to the city council for the preliminary plat with the condition that the existing home be modified before a final plat is recorded. (Final plat application and review would also be a necessary future step)

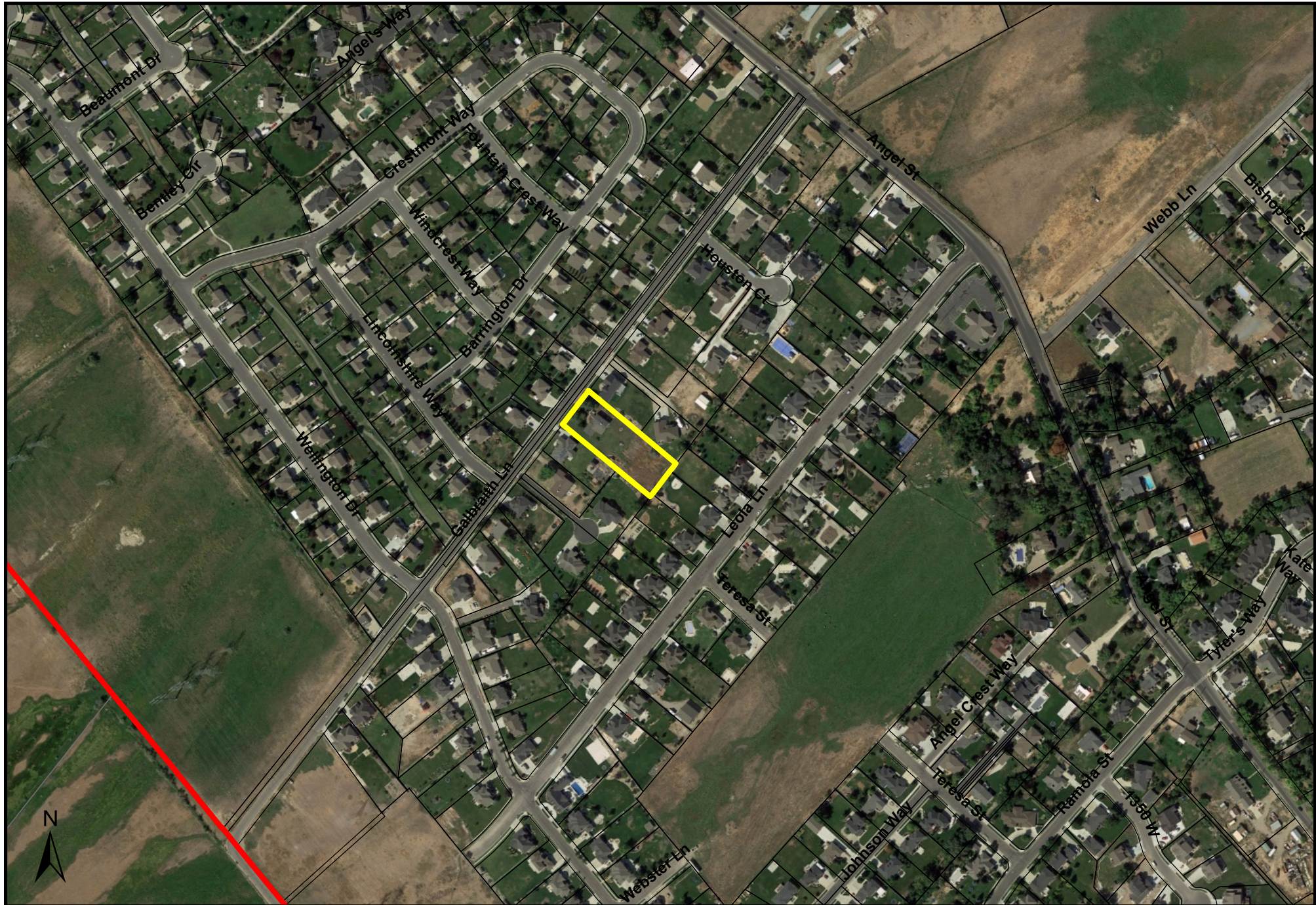
Reasoning:

The rezone is a legislative decision so is open to interpretation of the commission.

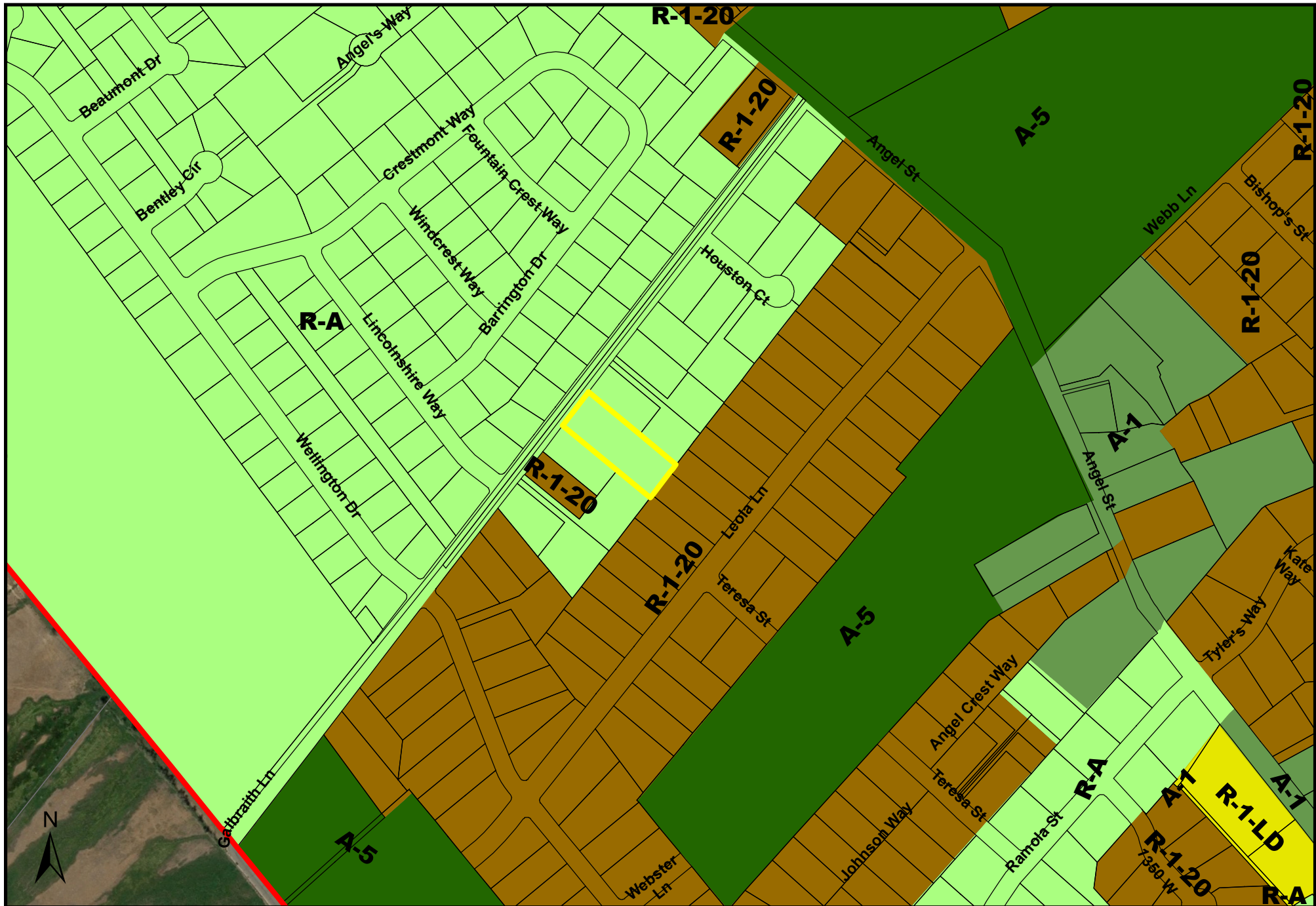
The plat is consistent with zoning requirements and meets applicable ordinances and standards.

Attachments: Area Map, Subdivision Plat, and Zoning Ordinance.

1599 West Galbraith Lane - Rezone to include the PRUD overlay for a flag lot.



1599 West Galbraith Lane - Rezone to include the PRUD overlay for a flag lot.

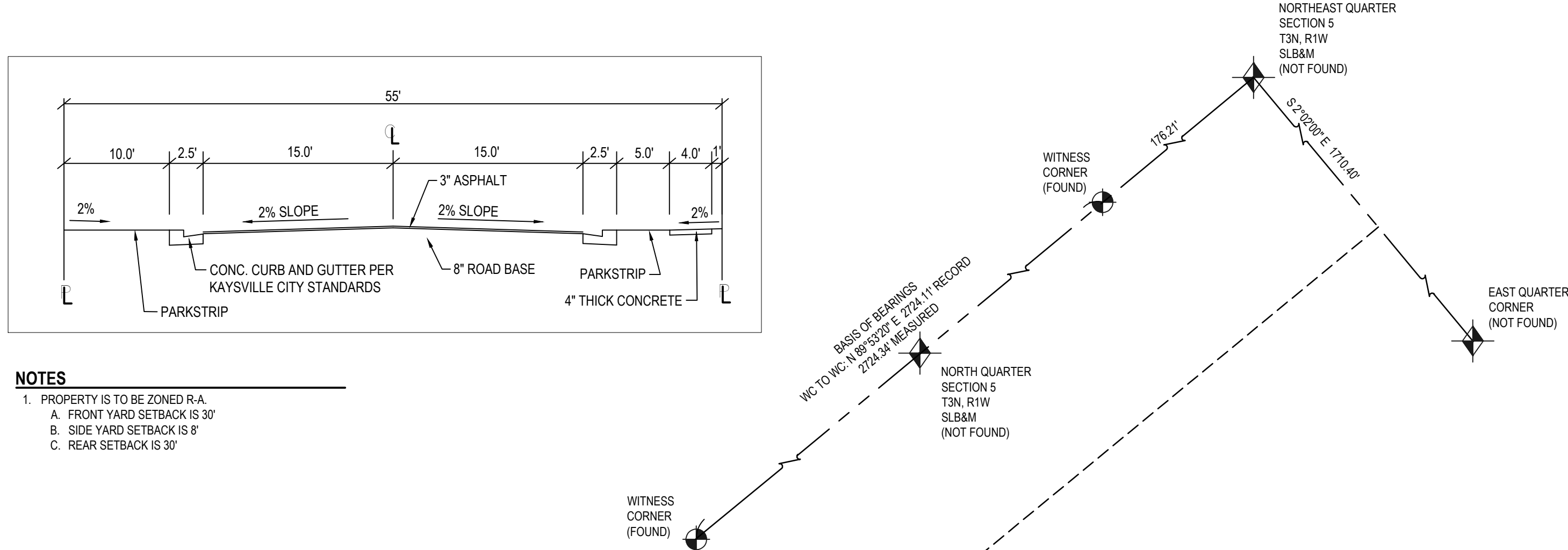


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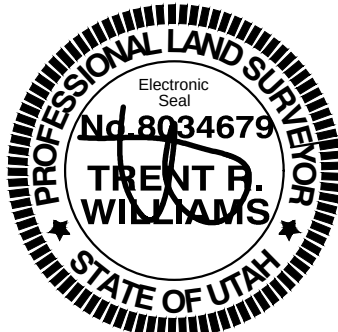
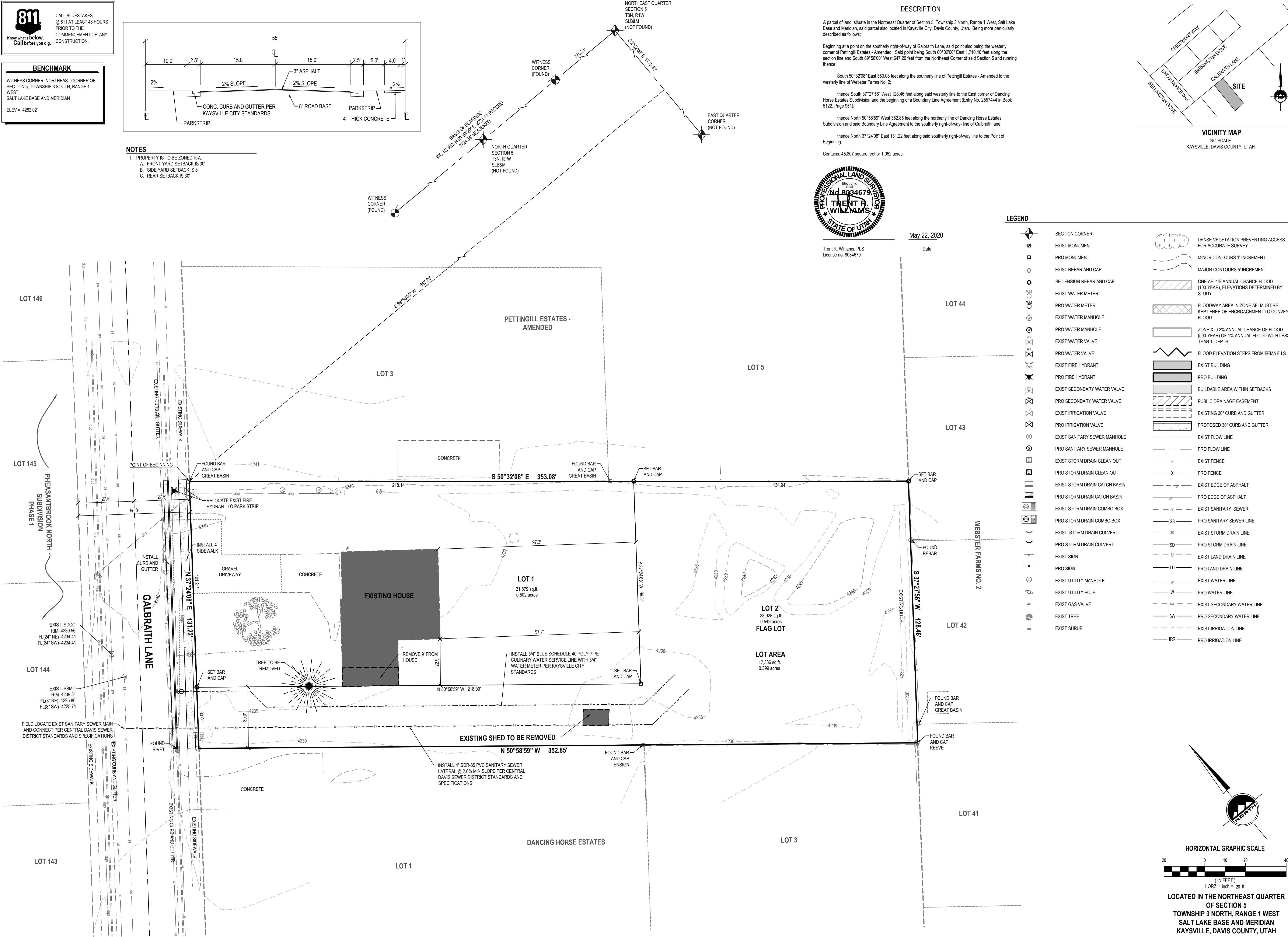
CALL BLUESTAKES
@ 811 AT LEAST 48 HOURS
PRIOR TO THE
COMMENCEMENT OF ANY
CONSTRUCTION.
Know what's below.
Call before you dig.

BENCHMARK

WITNESS CORNER, NORTHEAST CORNER OF
SECTION 5, TOWNSHIP 3 SOUTH, RANGE 1
WEST
SALT LAKE BASE AND MERIDIAN
ELEV = 4252.02



- NOTES**
1. PROPERTY IS TO BE ZONED R-A.
A. FRONT YARD SETBACK IS 30'
B. SIDE YARD SETBACK IS 8'
C. REAR SETBACK IS 30'



Trent R. Williams, PLS
License no. 8034679

May 22, 2020

Date

	SECTION CORNER		DENSE VEGETATION PREVENTING ACCESS FOR ACCURATE SURVEY
	EXIST MONUMENT		MINOR CONTOURS 1' INCREMENT
	PRO MONUMENT		MAJOR CONTOURS 5' INCREMENT
	EXIST REBAR AND CAP		ONE AE: 1% ANNUAL CHANCE FLOOD (100-YEAR), ELEVATIONS DETERMINED BY STUDY
	SET ENSIGN REBAR AND CAP		FLOODWAY AREA IN ZONE AE: MUST BE KEPT FREE OF ENCROACHMENT TO CONVEY FLOOD
	EXIST WATER METER		ZONE X: 0.2% ANNUAL CHANCE OF FLOOD (500-YEAR), 1% ANNUAL FLOOD WITH LESS THAN 1' DEPTH.
	PRO WATER METER		FLOOD ELEVATION STEPS FROM FEMA F.I.S.
	EXIST WATER MANHOLE		EXIST BUILDING
	PRO WATER MANHOLE		PRO BUILDING
	EXIST WATER VALVE		BUILDABLE AREA WITHIN SETBACKS
	PRO WATER VALVE		PUBLIC DRAINAGE EASEMENT
	EXIST FIRE HYDRANT		EXISTING 30\"/>
	PRO FIRE HYDRANT		PROPOSED 30\"/>
	EXIST SECONDARY WATER VALVE		EXIST FLOW LINE
	PRO SECONDARY WATER VALVE		PRO FLOW LINE
	EXIST IRRIGATION VALVE		EXIST FENCE
	PRO IRRIGATION VALVE		PRO FENCE
	EXIST SANITARY SEWER MANHOLE		EXIST EDGE OF ASPHALT
	PRO SANITARY SEWER MANHOLE		PRO EDGE OF ASPHALT
	EXIST STORM DRAIN CLEAN OUT		EXIST SANITARY SEWER
	PRO STORM DRAIN CLEAN OUT		PRO SANITARY SEWER LINE
	EXIST STORM DRAIN CATCH BASIN		EXIST STORM DRAIN LINE
	PRO STORM DRAIN CATCH BASIN		PRO STORM DRAIN LINE
	EXIST STORM DRAIN COMBO BOX		EXIST LAND DRAIN LINE
	PRO STORM DRAIN COMBO BOX		PRO LAND DRAIN LINE
	EXIST STORM DRAIN CULVERT		EXIST WATER LINE
	EXIST SIGN		PRO WATER LINE
	PRO SIGN		EXIST SECONDARY WATER LINE
	EXIST UTILITY MANHOLE		PRO SECONDARY WATER LINE
	EXIST UTILITY POLE		EXIST IRRIGATION LINE
	EXIST GAS VALVE		PRO IRRIGATION LINE
	EXIST TREE		
	EXIST SHRUB		

THE STANDARD IN ENGINEERING

LAYTON
919 North 400 West
Layton, UT 84041
Phone: 801.547.1100

SALT LAKE CITY
Phone: 801.255.0529

TOOELE
Phone: 435.843.3590

CEDAR CITY
Phone: 435.865.1453

RICHFIELD
Phone: 435.896.2983

WWW.ENSIGNENG.COM

FOR:
NATHAN ALVEY
2116 GRASSY PLAIN DRIVE
KAYSVILLE, UTAH 84037
CONTACT:
NATHAN ALVEY
PHONE: 801-750-5996

GALBRAITH KAYSVILLE

1599 WEST GALBRAITH LANE
KAYSVILLE, UTAH

PROFESSIONAL LAND SURVEYOR
Electronic Seal
No. 8034679
TRENT R. WILLIAMS
May 22, 2020
STATE OF UTAH

PRELIMINARY PLAT

PROJECT NUMBER
9878

PRINT DATE
5/22/20

DRAWN BY
J.MOSS

CHECKED BY
T.WILLIAMS

PROJECT MANAGER
T.WILLIAMS

1 OF 1

ORDINANCE NO. 20-_____

AN ORDINANCE REZONING A CERTAIN PORTION OF KAYSVILLE CITY TO INCLUDE THE PRUD (PLANNED RESIDENTIAL UNIT DEVELOPMENT) OVERLAY ZONE, HEREINAFTER FULLY DESCRIBED; PROVIDING FOR REPEALER; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE

WHEREAS, the City Council of Kaysville City, State of Utah, has determined in an open meeting to include the PRUD overlay zone for the purpose of accommodating a new flag lot subdivision; and

WHEREAS, said meeting was duly and regularly held and the interested parties were given an opportunity to be heard; and

WHEREAS, the Kaysville City Planning Commission has made a recommendation to the City Council on said zoning action; and

WHEREAS, the City Council after due consideration of said overlay zone has concluded that it is in the best interest of the City and the inhabitants thereof that said zone be implemented;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF KAYSVILLE CITY, UTAH:

SECTION I: Repealer. If any provisions of the City's Code previously adopted are inconsistent herewith they are hereby repealed.

SECTION II:

The real property as shown on the attached map, which is made a part hereof, containing approximately 1.1 acres, shall be and the same is hereby rezoned and the Zoning Map amended by adding the Kaysville City PRUD (Planned Residential Unit Development) overlay zone.

SECTION III: Severability. If any section, subsection, sentence, clause or phrase of this ordinance is declared invalid or unconstitutional by a court of competent jurisdiction, said portion shall be severed and such declaration shall not affect the validity of the remainder of this ordinance.

SECTION VI:

This Ordinance shall take effect upon approval of a final subdivision plat found to be consistent with the provisions of the approved development agreement for the subject property.

PASSED AND ADOPTED by the City Council of Kaysville City, Utah, this ___th day of _____, 2020

Katie Witt
Mayor

ATTEST:

Annemarie Plaizier
City Recorder

APPROVED AS TO FORM:

Nicholas C. Mills, City Attorney



Planning Commission Staff Report

Public Hearing for the Rezone of 14 acres of property at approximately 1773 West 200 North from A-5 (Heavy Agriculture) to the R-1-10, R-1-14, R-1-6 (Single Family) zones and the R-2 (One and Two Family Residential) zone with the PRUD (Planned Residential Unit Development) overlay zone to be included over each district for Nephi Harvey and Malcolm Harvey.

June 11, 2020

Applicant/Owner: Nephi and Malcolm Harvey for Salt Grass Land & Cattle LLC

Description:

The applicants are requesting a rezone to multiple different zoning districts to accommodate their desire for a future residential development with a variety of lot sizes and housing types. The applicant has submitted a preliminary plat to demonstrate their desired use of the property which includes an anticipated 4 phases of development along public streets which are designed to create connections from existing stubbed dead ends to 200 North street. There are some private streets and common areas and varied lot sizes. At the request of staff to better predict and administer the type of development to occur each phase has been proposed to be regulated by a separate zoning district.

Phase 1 which would be regulated by the R-1-10 district contains 9 lots ranging in size from 10,922 sq. ft. to 21,841 sq. ft. in size all along a standard public right of way.

Phase 2 is proposed to be included in the R-2 district includes 55 lots in a townhome style configuration with common open space. Spread over 5.2 acres this phase has a density of 10.5 units an acre.

Phase 3 is proposed to be in the R-1-14 district includes 8 lots ranging in size from 15,534 sq. ft. to 23,325 sq. ft. in size. Most of the lots are accessed from a private cul-de-sac street.

Phase 4 is proposed to be in the R-1-6 zoning district with 6 lots at 7,007 sq. ft. to 8,509 sq. ft. in size.

All phases of the proposed preliminary plat are dependent upon approval of a rezone as the property currently requires that all divisions be to lots of at least 210,000 sq. ft. in size.

The specifics of the requested zoning districts are found as follows:

R-1 districts: [KCC 17-12 \(Single Family Residential District\)](#)

R-2 district: [KCC 17-14 \(One and Two Family Residential District\)](#)

PRUD Overlay Zone: [KCC 17-34 \(Planned Residential Unit Development\)](#)

In considering the rezone the Planning Commission should refer to the General Plan and look at the specifics of the proposed location to determine if the request is appropriate for the area.

The City's [General Plan](#) states, among other things:

Identity and Character:

Kaysville should be primarily a residential community with a vision to promote business, industry and public use.

- A. Housing:
Housing should be located throughout the City and restricted only where it is incompatible with other necessary uses.
 - 1. West of I-15, allow for similar housing densities in existing neighborhoods while considering medium density housing along the major streets and higher density housing near transit stops and arterial streets (200 North, Interstate 15, and the West Davis Corridor).
- B. The majority of the housing should be single unit attached or detached. The City will seek to provide a variety of housing choices throughout the community including a means for allowing homes of a variety of sizes. Multiple unit housing should consist mostly of duplexes (two unit structures) and some three to six unit structures dispersed throughout the City.
- C. Housing development should have a minimum of through vehicular traffic and a maximum of open space.
- D. Housing developments should essentially pay for themselves.

Consideration to Plan for Additional Moderate Income Housing which is a portion of the General Plan found through the link above may be appropriate for consideration as well.

Recommendation:

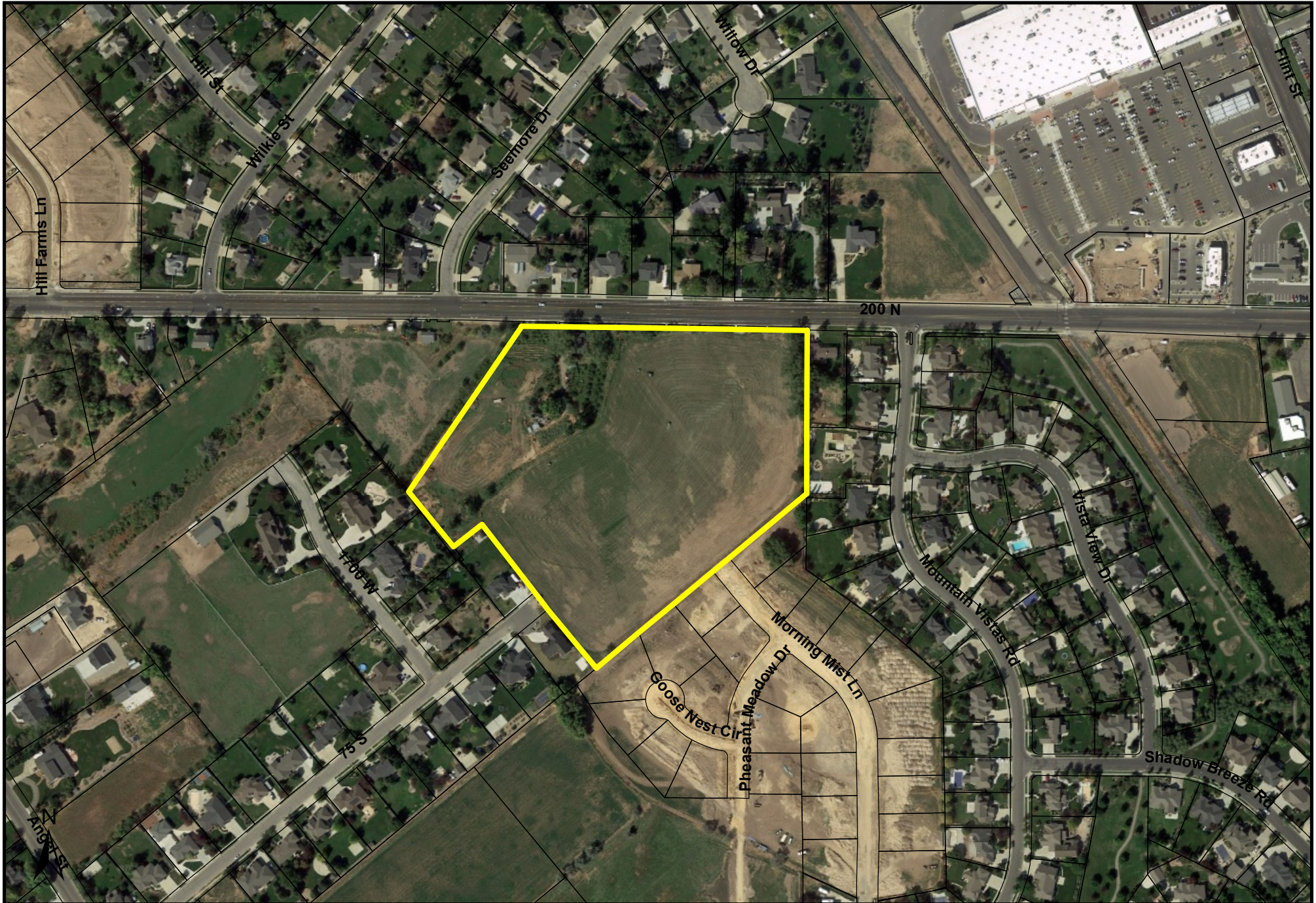
The Planning Commission is tasked with making a recommendation to the City Council addressing the rezone request based on its findings of compatibility with the General Plan and how well the proposal works at this specific location.

If residential development as proposed is desired it is recommended that the Commission review the terms of the development agreement and consider whether or not additional stipulations are appropriate to control and regulate what may occur to the property over the course of its development. The Planning Commission may forward a recommendation to the council subject to the attached agreement as proposed, or may ask for additional details or changes to the agreement before making a recommendation. The Planning Commission may also recommend denial of the requested zoning if it finds that it is not in accord with the city's General Plan or that it isn't appropriate at the proposed location.

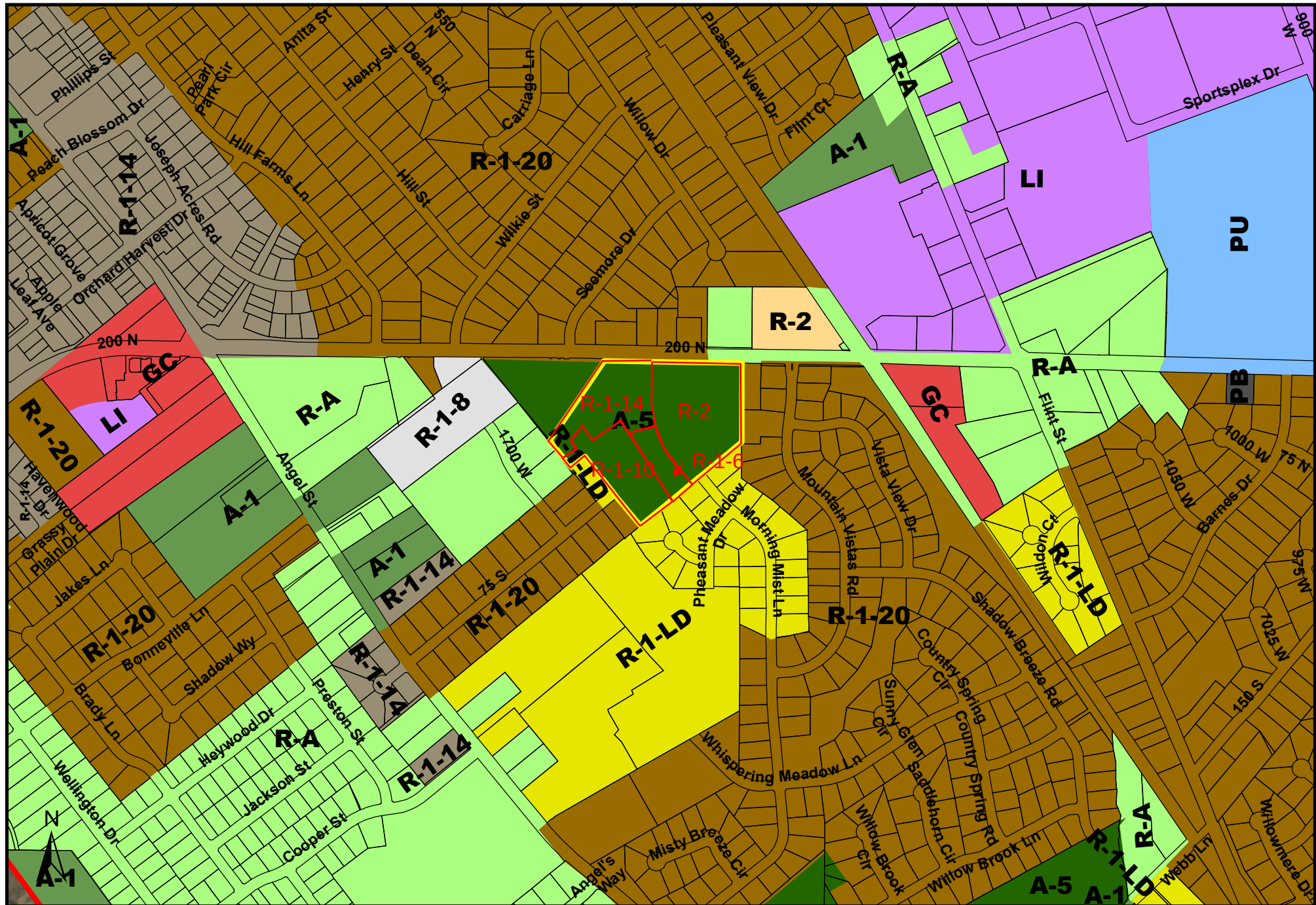
Should the zoning and terms of the development agreement be acceptable, the Planning Commission would recommend approval of a preliminary plat that meets the terms of the development agreement. While some more specific details would still need to be verified such as a verification of open space provided and verification of compliance with the standards of 17-34-7, the density and public street layout are acceptable to staff as proposed.

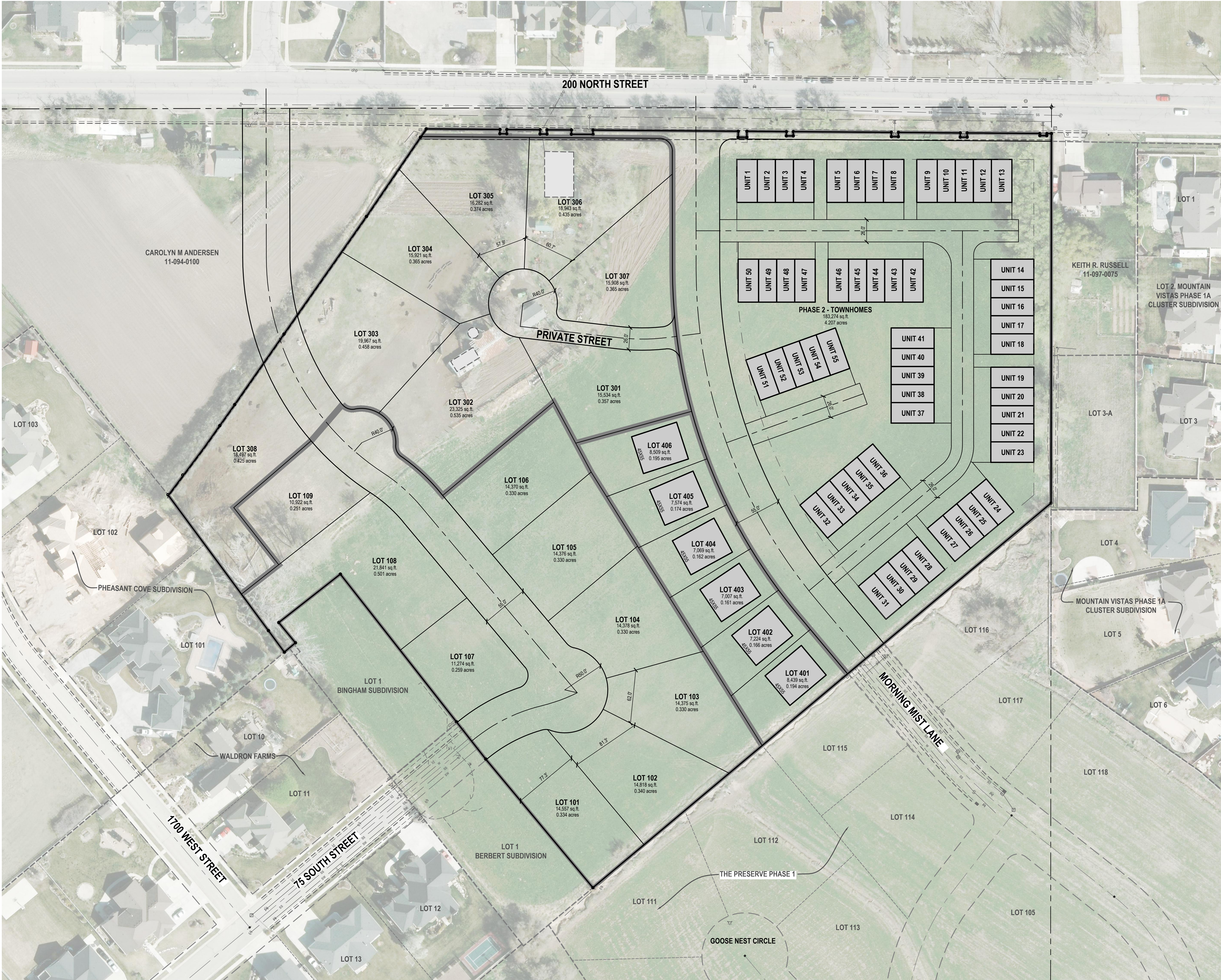
- Attachment 1: Area Map
- Attachment 2: Zoning Map
- Attachment 3: Concept Plans
- Attachment 4: Development Agreement
- Attachment 5: Rezone Ordinance

1773 West 200 North



**1773 West 200 North - Rezone from A-5 to R-1-10, R-1-14, R-1-6, and R-2
to include the PRUD overlay zone**





PHASING AREA	
PHASE 1	164,696 sq. ft.
PHASE 2	223,488 sq. ft.
PHASE 3	1161,971 sq. ft.
PHASE 4	45,822 sq. ft.

ROADWAY AREA	
PHASE 1 PUBLIC ROADWAY	33,768 sq. ft.
PHASE 2 PUBLIC ROADWAY	42,474 sq. ft.
PHASE 3 PRIVATE ROADWAY	9,197 sq. ft.
PHASE 3 PUBLIC ROADWAY	6,138 sq. ft.



LAYTON
1485 W. Hill Field Rd., Ste. 204
Layton, UT 84041
Phone: 801.547.1100

SALT LAKE CITY
Phone: 801.255.0529

TOOELE
Phone: 435.843.3590

CEDAR CITY
Phone: 435.865.1453

RICHFIELD
Phone: 435.896.2983

WWW.ENSIGNENG.COM

FOR:
SALT GRASS & CATTLE LLC
1773 WEST 200 NORTH
KAYSVILLE, UTAH 84037
CONTACT:
NEPHI HARVEY
PHONE: 801-726-1540

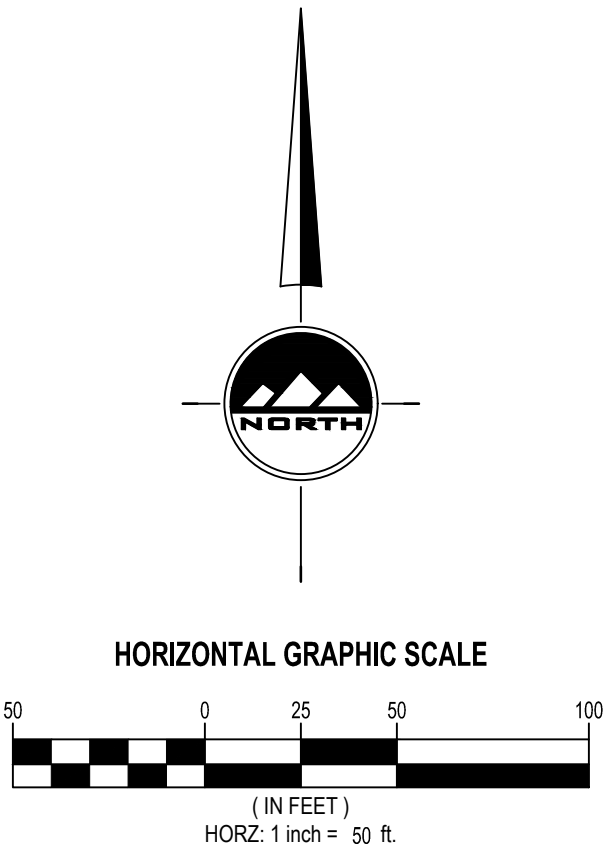
SALT GRASS SUBDIVISION

1773 WEST 200 NORTH
KAYSVILLE, UTAH

CONCEPT PLAN

PROJECT NUMBER
9794
DRAWN BY
M.ELMER
PROJECT MANAGER
T.WILLIAMS
PRINT DATE
5/11/20
CHECKED BY
T.WILLIAMS

1 OF 1



When Recorded, Return to:
Kaysville City
Community Development Office
23 East Center Street
Kaysville, UT 84037

Affecting Tax Parcel No.: 11-098-0074

**DEVELOPMENT AGREEMENT
FOR A COMMON OPEN SPACE AND PRIVATE STREET SUBDIVISION**

THIS AGREEMENT is made and entered into this ____ day of _____, 2020 by and between Kaysville City, a municipal corporation organized and existing under the laws of the State of Utah (hereinafter the “City”), and DEVELOPER (hereinafter the “Developer;”) (“Developer” includes successors and/or assigns of DEVELOPER), as follows:

RECITALS

WHEREAS, Developer is desirous of developing a residential subdivision (the “Subdivision”) on certain real property located in the City of Kaysville, County of Davis, State of Utah and more particularly described on the Property Location Map attached hereto as Exhibit A and the Area Description of Section 1 A.; and

WHEREAS, the purpose of this Agreement is to define the development standards, conditions and improvements, schedule for development of the Subdivision and other terms and conditions pursuant to which the Subdivision proposed by Developer is to be developed within the City; and

WHEREAS, the City is willing to grant a rezone of the property to include the R-1-10, R-1-14, R-1-6, and R-2 to include the PRUD (Planned Residential Unit Development) overlay upon approval of a final plat and to authorize the development of the subdivision proposed by Developer in conformance with this Agreement, City Ordinances, and applicable Utah law;

NOW, THEREFORE, in consideration of the mutual covenants and conditions set forth herein, and other good and valuable consideration, the sufficiency of which is hereby acknowledged, the parties agree as follows:

AGREEMENT

1. GENERAL DESCRIPTION.

A. Area Description. The property upon which the Subdivision shall be developed (the “Property”) is located as shown on the Property Location Map, a copy of which is attached as Exhibit A hereto and incorporated by reference herein. The property is further described as parcels # 110940096, 110940054, and 110940097.

B. Project Description. The project proposed by Developer is a common open space subdivision with private streets, which will consist of no more than 78 residential dwellings arranged in a manner similar to that included in the exhibit of this agreement.

2. DEVELOPMENT STANDARDS AND GUIDELINES

A. Adoption of Development Standards. The City hereby adopts, as the development standards and guidelines for the Facility (the “Development Standards”), the following in addition to all other applicable City Ordinances, standards and guidelines:

- a. The Subdivision shall comply with the development standards set forth in Kaysville City Code 17-34-7 for required open space, setbacks from street improvements and other standards outlined therein.

Findings of Compatibility. In adopting the Development Standards identified in Section 2.A, the City hereby expressly finds that the development of the Subdivision , in conformance with the Development Standards and this Agreement, promotes the creation of a desirable residential development in an appropriate location. The City further finds that the development of the Subdivision, in conformance with the Development Standards and this Agreement, will not violate the general purpose, goals and objectives of the City Ordinances and any plans adopted by the Planning Commission and City Council of the City.

Subject to the Developer's performance and compliance with the terms of this Agreement and City Ordinances in effect on the date of this Agreement, Developer's rights to develop the Subdivision in accordance with the exhibits herein is vested.

3. ON-SITE PROJECT IMPROVEMENTS

Developer shall construct and install all site improvements, including utilities, required for the Subdivision, at Developer's sole cost and expense, in compliance with approvals, and all applicable ordinances, regulations, standards and status of the City, the secondary water provider as applicable, The Central Davis Sewer District, other providers and the State of Utah.

4. OFF-SITE PROJECT IMPROVEMENTS

In accordance with applicable standards and subject to the design approval of the City Engineer, Developer shall construct and install street improvements, sidewalks, utilities, and drainage improvements, on 200 North Street, Morning Mist Lane, and 75 South Street with the construction of the on-site improvements.

5. REPRESENTATIONS OF DEVELOPER

A. Authority. Developer hereby represents that it has authority to proceed with the Subdivision.

B. Ability. Developer represents that it has the ability to timely proceed with the development and construction of the Subdivision.

6. ASSIGNMENT

Developer may assign this Agreement to any other third party provided that the City consents to such assignment, which consent shall not be unreasonably withheld, upon a showing

to the satisfaction of the City that such third party has the financial ability to perform Developer's obligations hereunder.

The City may withhold approval of assignment, without consequence, if the city reasonably believes that the anticipated assignee will be unable to meet the requirements of this agreement or any City ordinances.

7. BINDING EFFECT

This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

8. ATTORNEY'S FEES

In the event that this Agreement or any provision hereof shall be enforced by an attorney retained by a party hereto, whether by suit or otherwise, the fees and costs of such attorney shall be paid by the party who breaches or defaults hereunder, including fees and costs incurred upon appeal or in bankruptcy court.

9. SEVERABILITY

If any term or provision of this Agreement shall, to any extent, be determined by a court of competent jurisdiction to be void, voidable, or unenforceable, such void, voidable or unenforceable term or provision shall not affect the enforceability of any other term or provision of this Agreement.

10. CAPTIONS

The section and paragraph headings contained in this Agreement are for the purposes of reference only and shall not limit, expand or otherwise affect the construction of any provisions hereof.

11. GOVERNING LAW

This Agreement and all matters relating hereto, shall be governed by, construed and interpreted in accordance with the laws of the State of Utah.

12. ENTIRE AGREEMENT

This Agreement, together with the exhibits attached hereto, constitutes the entire understanding and agreement by and among the parties hereto, and supersedes all prior agreements, representations or understandings by and among them, whether written or oral, pertaining to the subject matter hereof.

13. CONSTRUCTION

As used herein, all words in any gender shall be deemed to include the masculine, feminine, or neuter gender, all singular words shall include the plural, and all plural words shall include the singular, as the context may require.

14. AUTHORIZATION OF EXECUTION

A. City. The execution of this Agreement by the City has been authorized by the City Council of Kaysville City at a regularly scheduled meeting of that body, pursuant to the notice.

B. Developer. The execution of this Agreement has been duly authorized by the Developer.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the day and year first above written.

DEVELOPER

ATTEST:

By: _____

TITLE

TITLE

KAYSVILLE CITY

ATTEST:

By: _____

Katie Witt
Mayor

Annemarie Plaizier
City Recorder

On the ____ day of _____, 2019, personally appeared before me KATIE WITT, and ANNEMARIE PLAIZIER, who being by me duly sworn did say, each for himself and herself that he, the said KATIE WITT, is the Mayor of Kaysville City, Davis County, State of Utah and that she, the said ANNEMARIE PLAIZIER, is the City Recorder of Kaysville City, and that the within and foregoing instrument was signed on behalf of the said Kaysville City by authority of the City Council of Kaysville City and said KATIE WITT and ANNEMARIE PLAIZIER, each duly acknowledged to me that the said Kaysville City executed the same and that the seal affixed is the seal of the said Kaysville City.

NOTARY PUBLIC

(SEAL)

STATE OF UTAH)

: ss.

COUNTY OF DAVIS)

On the ____ day of _____, 2020, personally appeared before me, _____, the signer of the foregoing Development Agreement for DEVELOPER, who duly acknowledged to me that he executed the same for and on behalf of DEVELOPER.

NOTARY PUBLIC

(SEAL)

STATE OF UTAH

)

: ss.

COUNTY OF DAVIS

)

Exhibit A

1773 West 200 North

Parcel ID 11-094-0096

Legal Description: BEG 0.62 CHAINS S FR THE NE COR OF THE SE 1/4 OF SEC 32-T4N-R1W, SLM; & RUN TH W 11.12 CHAINS; TH S 34^00' W 7.65 CHAINS; TH S 39^30' E 181.68 FT, M/L, TO THE NW'LY LINE OF FIRST PPTY DESC IN QC DEED RECORDED 10/28/2013 AS E# 2773940 BK 5883 PG 65; TH ALG SD PPTY THE FOLLOWING TWO COURSES: N 51^47'49" E 92.30 FT & S 38^12'11" E 219.64 FT TO THE NE COR OF BERBERT SUB; TH ALG SD SUB THE FOLLOWING 2 COURSES: S 38^11'52" E 55.03 FT & S 39^49'29" E 194.68 FT TO A BNDRY LINE AGMT RECORDED 09/15/2014 AS E# 2823497; SD PT IS ALSO AN OLD WIRE FENCE LINE; TH ALG SD FENCE N 50^00'00" E 695.89 FT; TH N 419.67 FT TO THE POB. CONT. 14.413 ACRES.

Parcel ID 11-094-0054

Legal Description: BEG AT A PT THAT LIES S 40.92 FT & W 733.92 FT & S 34^00'00" W 504.90 FT FR THE E 1/4 COR OF SEC 32-T4N-R1W, SLM; & RUN TH N 39^30'00" W 264.98 FT; TH S 52^00' W 1.0 FT, M/L, TO NE COR OF LOT 103, PHEASANT COVE SUB; TH ALG SD SUB S 38^50'51" E 251.91 FT; TH S 36^33'29" E 14.91 FT; TH S 36^33'29" E 212.92 FT; TH N 49^56'25" E 16.85 FT, M/L; TH N 39^30'00" W 214.22 FT TO THE POB. CONT. 0.077 ACRES

Parcel ID 11-094-0097

Legal Description: COM AT THE CENTER OF SEC 32-T4N-R1W, SLB&M, & S 89^43'14" E 1910.97 FT ALG THE 1/4 SEC LINE OF SD SEC 32 & DUE S 21.69 FT TO THE POB; SD PT BEING AT ENGINEER STATION 41+22.42, OFFSET 33.50 FT RIGHT FR THE 200 NORTH CENTERLINE; TH S 88^47'14" E 84.63 FT; TH S 01^12'46" W 5.00 FT; TH S 88^47'14" E 8.00 FT; TH N 01^12'46" E 5.00 FT; TH S 88^47'14" E 38.76 FT; TH S 01^12'46" W 5.00 FT; TH S 88^47'14" E 8.00 FT; TH N 01^12'46" E 5.00 FT; TH S 88^47'14" E 28.42 FT; TH S 01^12'46" W 5.00 FT; TH S 88^47'14" E 25.13 FT; TH N 01^12'46" E 5.00 FT; TH S 88^47'14" E 169.04 FT; TH S 01^12'46" W 7.00 FT; TH S 88^47'14" E 10.00 FT; TH N 01^12'46" E 7.00 FT; TH S 88^47'14" E 45.99 FT; TH S 01^12'46" W 5.00 FT; TH S 88^47'14" E 8.00 FT; TH N 01^12'46" E 5.00 FT; TH S 88^47'14" E 114.07 FT; TH S 01^12'46" W 5.00 FT; TH S 88^47'14" E 8.00 FT; TH N 01^12'46" E 5.00 FT; TH S 88^47'14" E 72.02 FT; TH S 01^12'46" W 5.00 FT; TH S 88^47'14" E 8.00 FT; TH N 01^12'46" E 5.00 FT; TH S 88^47'14" E 84.60 FT; TH S 01^12'46" W 2.50 FT; TH S 88^47'14" E 8.00 FT; TH N 01^12'46" E 2.50 FT; TH S 88^47'14" E 5.50 FT TO A PT, SD PT BEING AT ENGINEER STATION 48+48.59, OFFSET 33.50 FT RIGHT FR THE 200 NORTH CENTERLINE; TH S 00^21'17" W 7.41 FT; TH N 89^10'13" W 734.49 FT; TH N 34^49'47" E 14.79 FT TO THE POB. CONT. 0.16 ACRES

Image on following page.

1773 West 200 North

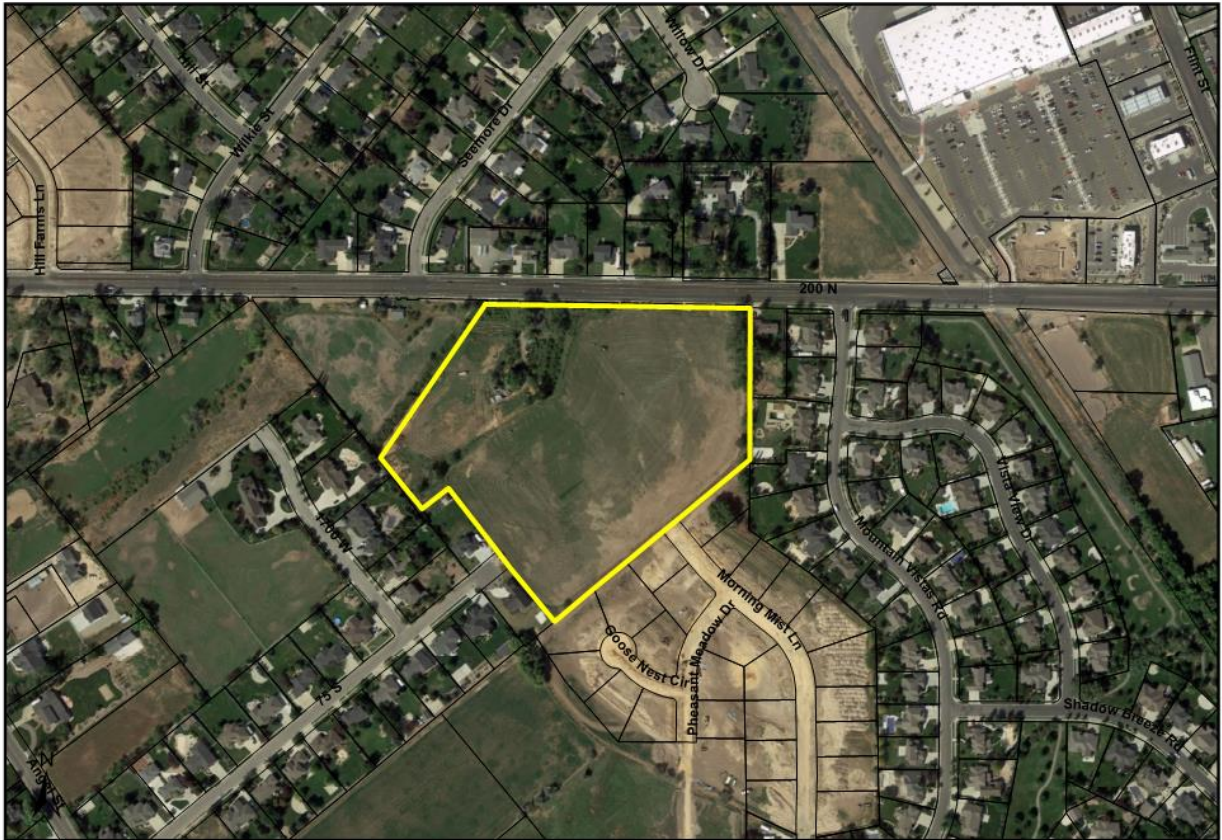


Exhibit B

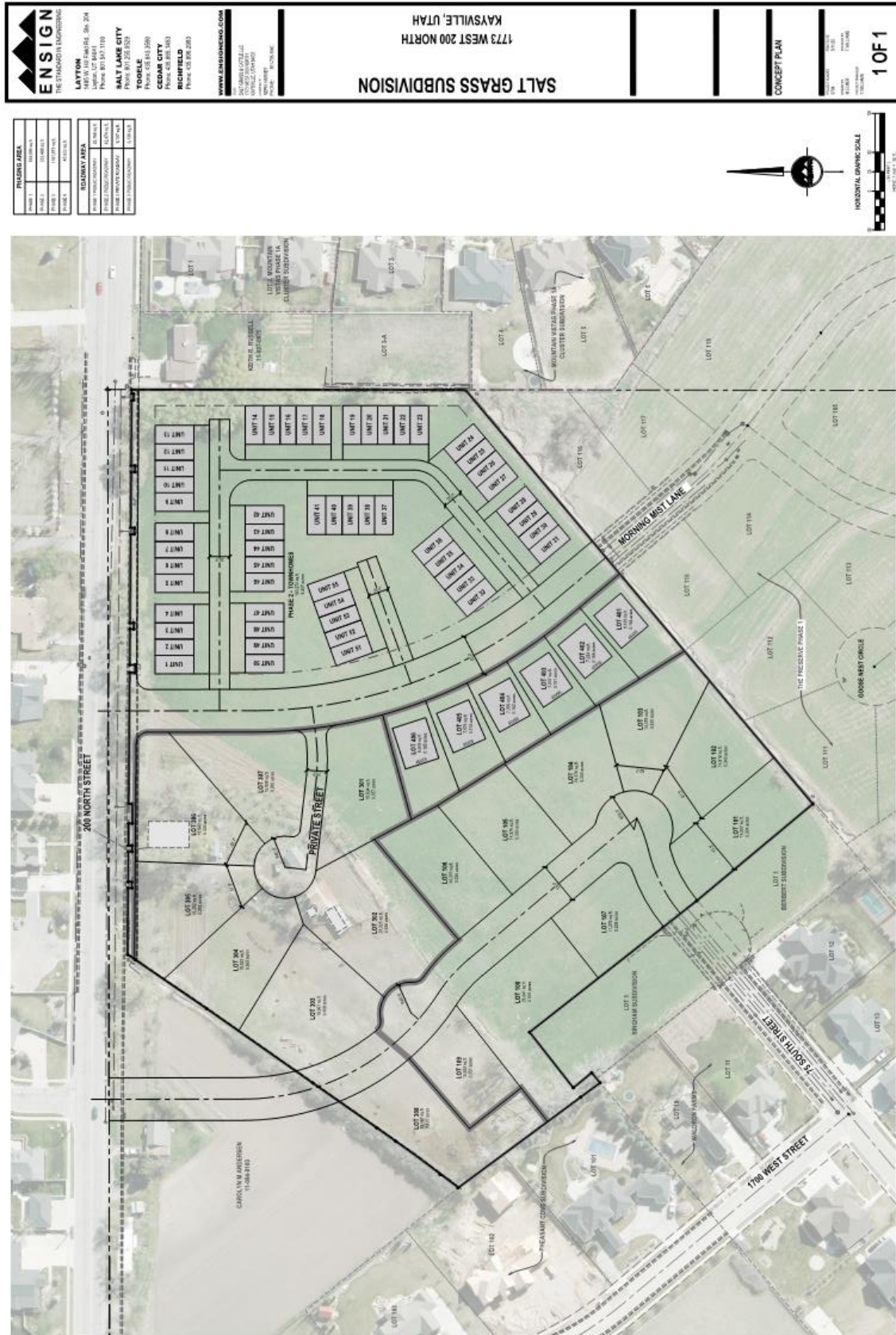
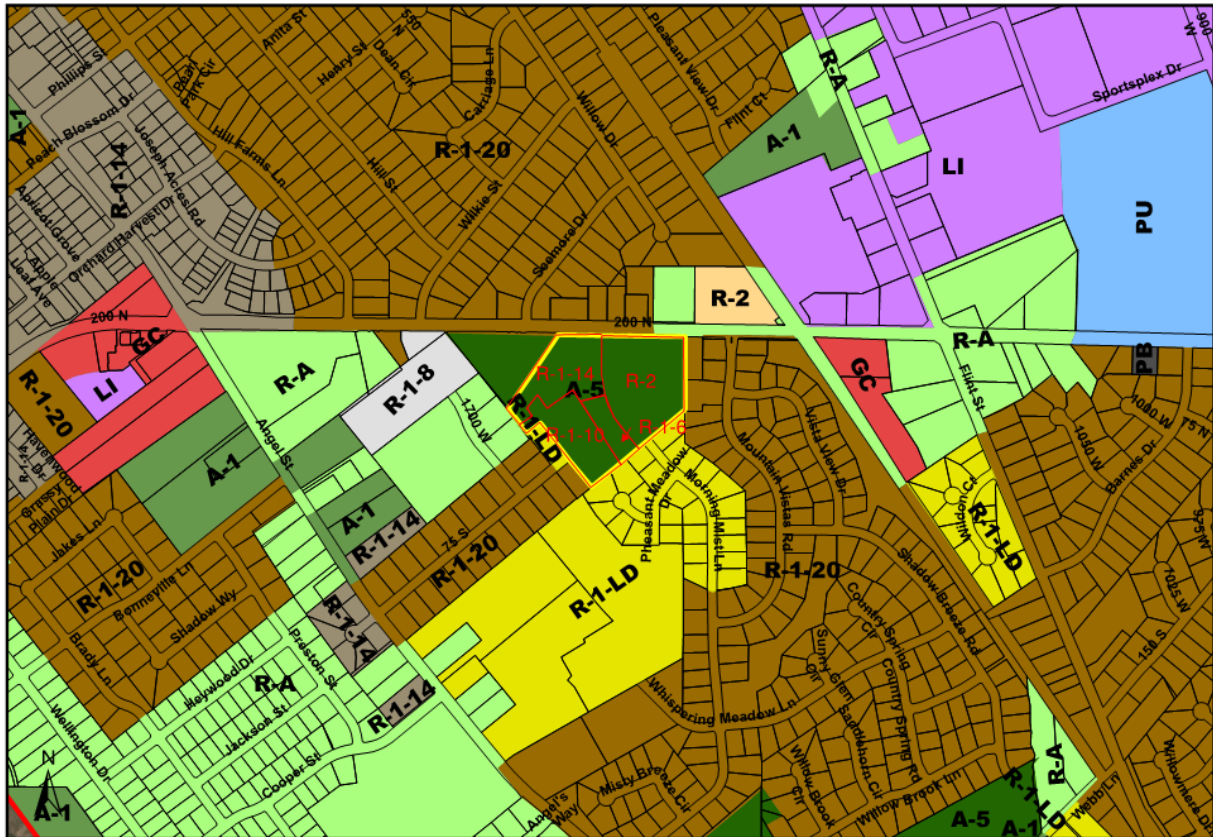


Exhibit C

1773 West 200 North - Rezone from A-5 to R-1-10, R-1-14, R-1-6, and R-2
to include the PRUD overlay zone



ORDINANCE NO. 20-____

AN ORDINANCE REZONING A CERTAIN PORTION OF KAYSVILLE CITY FROM THE KAYSVILLE CITY A-5 (HEAVY AGRICULTURE) ZONE TO THE KAYSVILLE CITY R-1-10, R-1-14, R-1-6 (SINGLE FAMILY) ZONES AND THE R-2 (ONE AND TWO FAMILY RESIDENTIAL) ZONE WITH THE PRUD (PLANNED RESIDENTIAL UNIT DEVELOPMENT) OVERLAY ZONE TO BE INCLUDED OVER EACH DISTRICT, HEREINAFTER FULLY DESCRIBED; PROVIDING FOR REPEALER; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE

WHEREAS, the City Council of Kaysville City, State of Utah, has determined in an open meeting to rezone certain real property by removing it from Kaysville City A-5 and placing it in Kaysville City R-1-10, R-1-14, R-1-6, R-2 zoning districts to include the PRUD overlay as outlined herein; and

WHEREAS, said meeting was duly and regularly held and the interested parties were given an opportunity to be heard; and

WHEREAS, the Kaysville City Planning Commission has made a recommendation to the City Council on said rezoning; and

WHEREAS, the City Council after due consideration of said rezoning has concluded that it is in the best interest of the City and the inhabitants thereof that said rezoning be accomplished;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF KAYSVILLE CITY, UTAH:

SECTION I: Repealer. If any provisions of the City's Code previously adopted are inconsistent herewith they are hereby repealed.

SECTION II:

The real property as shown on the attached map, which is made a part hereof, containing approximately 14 acres, shall be and the same is hereby rezoned and the Zoning Map amended by removing the same from Kaysville City A-5 zone and placing the same in Kaysville R-1-10, R-1-14, R-1-6, R-2 zoning districts to include the PRUD overlay zoning district.

SECTION III: Severability. If any section, subsection, sentence, clause or phrase of this ordinance is declared invalid or unconstitutional by a court of competent jurisdiction, said

portion shall be severed and such declaration shall not affect the validity of the remainder of this ordinance.

SECTION VI:

This Ordinance shall take effect 30 days after final passage by the Kaysville City Council.

PASSED AND ADOPTED by the City Council of Kaysville City, Utah, this __th day of _____, 2020.

Katie Witt
Mayor

ATTEST:

Annemarie Plaizier
City Recorder

APPROVED AS TO FORM:

Nicholas C. Mills, City Attorney



Planning Commission Staff Report

Public hearing for the rezone of 1.5 acres of property to include the PRUD overlay zone and Preliminary and Final Plat for Bailey Subdivision. June 11, 2020

Applicant/Owner: Blake Bailey
Location: 1480 W Willow Drive
Current Zone: R-1-20

Description:

The property is located at 1480 W Willow Drive and is currently zoned R-1-20. The existing lot is 66,806 square feet in size. The applicant, Blake Bailey, is anticipating creating a new lot of 21,929 square feet with 143.5 feet of frontage. This will leave the existing home on a 45,672 square foot lot. The new proposed lot will face the private road in the new subdivision which is under construction to the south. Both the existing and new proposed lot meet the frontage and square footage requirements for the existing R-1-20 zoning district, however the PRUD overlay is needed as the access for the new lot will be off of the new private street. The owner has coordinated with the developer of the property to the south for permission and ability to get utility services to the new proposed lot.

The new lot facing Wooden Shoe Way North is deep enough to provide a building pad that meets the minimum dwelling size requirements of [17-31-16, Dwellings](#).

All setbacks are standard for the R-1-20 zone with the exception of a 20 foot front yard set back requested along the private road consistent with 17-34-8 (d).

Recommendation:

The planning commission is tasked with considering 3 motions.

First, the planning Commission should determine if the PRUD overlay zone is appropriate for the requested property based on its location and compatibility with the general plan. A recommendation on this option should be forwarded to the city council.

Second, if the PRUD is found to be desirable, staff recommends that a recommendation of approval be forwarded to the city council for the preliminary plat.

Third, assuming the PRUD and preliminary plat are recommended for approval, staff recommends that the Planning Commission approve the final plat for the Baily Subdivision subject to final approval of the PRUD overlay zone and preliminary plat by the city council.

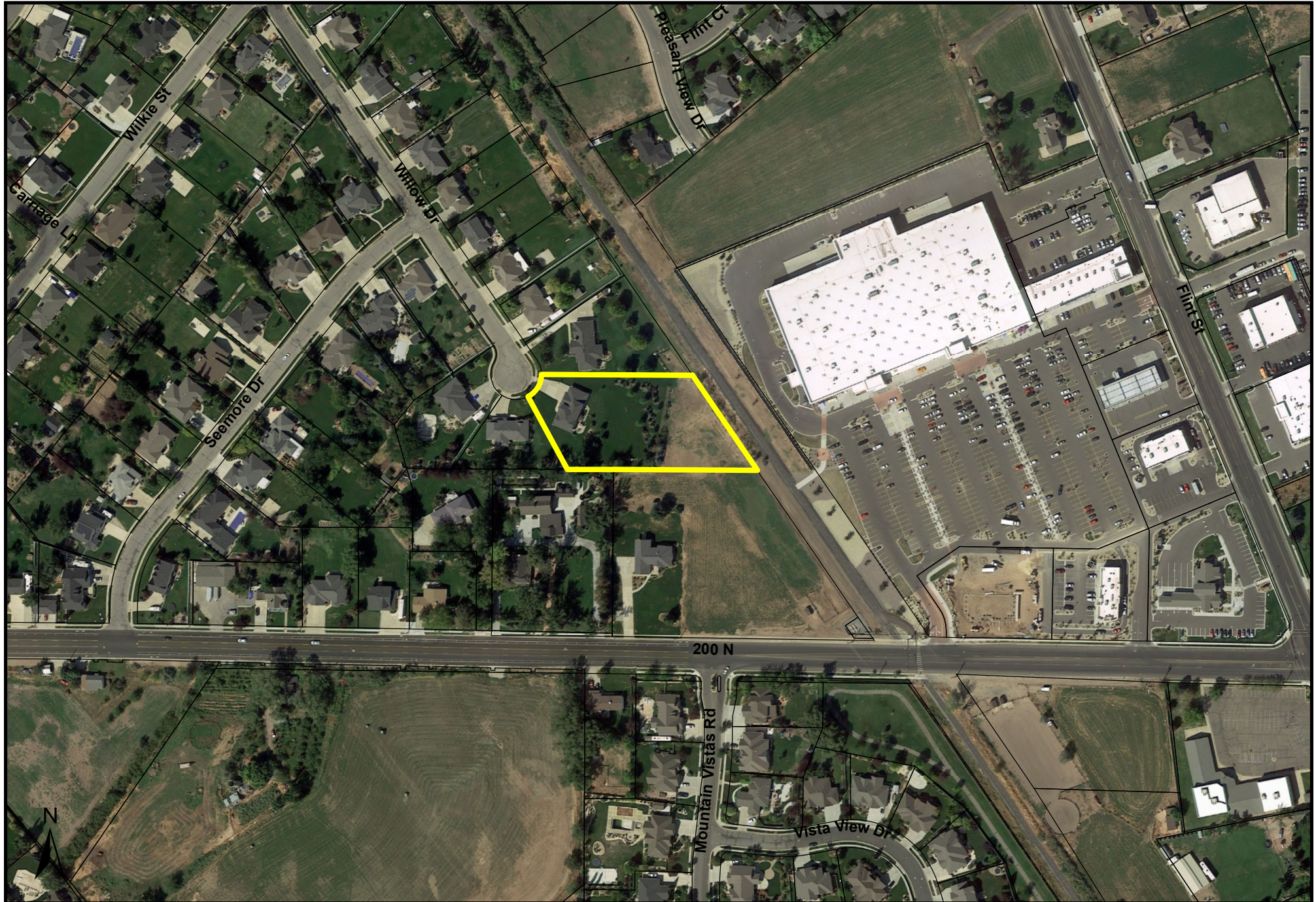
Reasoning:

The rezone is a legislative decision so is open to interpretation of the commission.

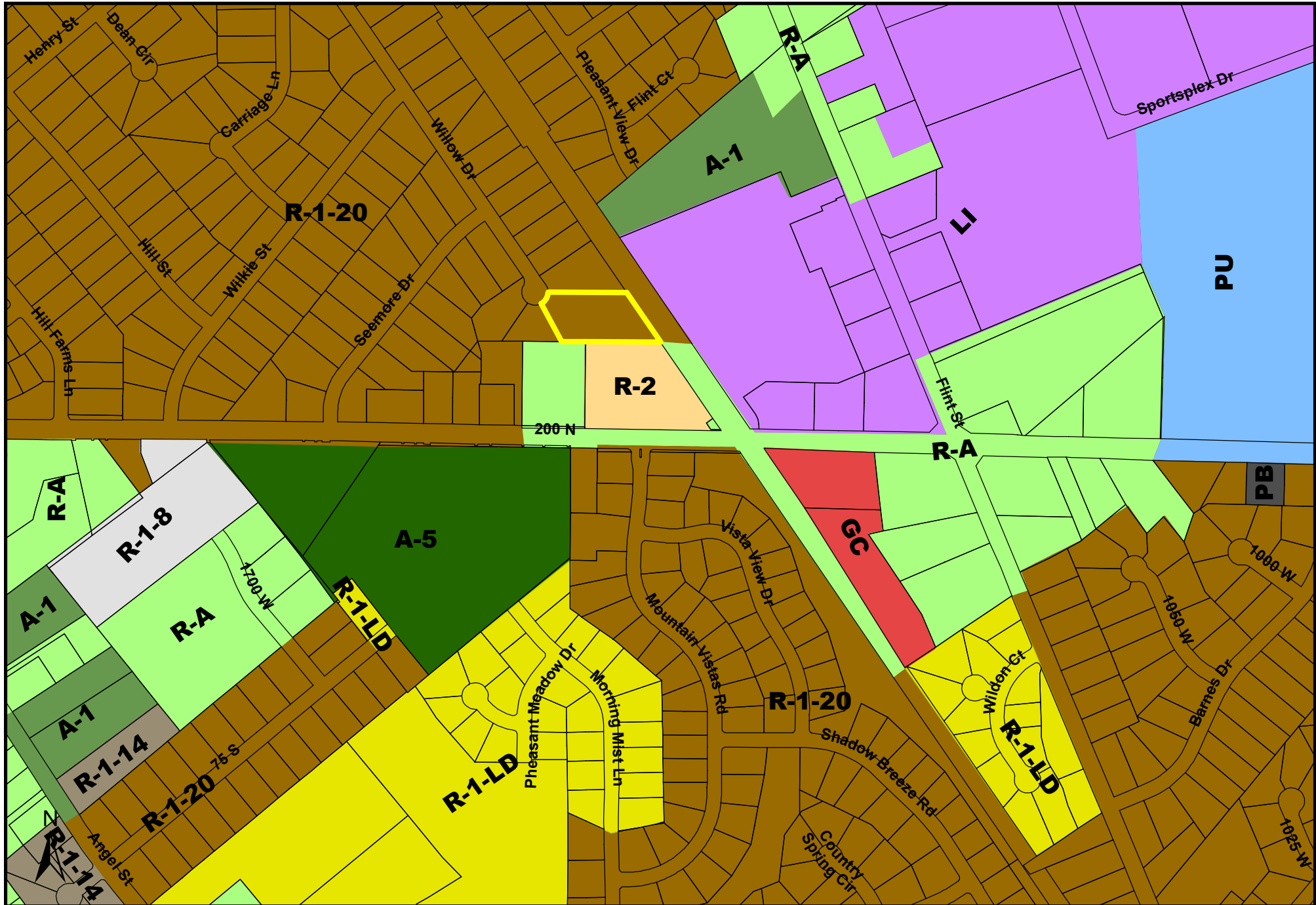
The plat is consistent with zoning requirements and meets applicable ordinances and standards.

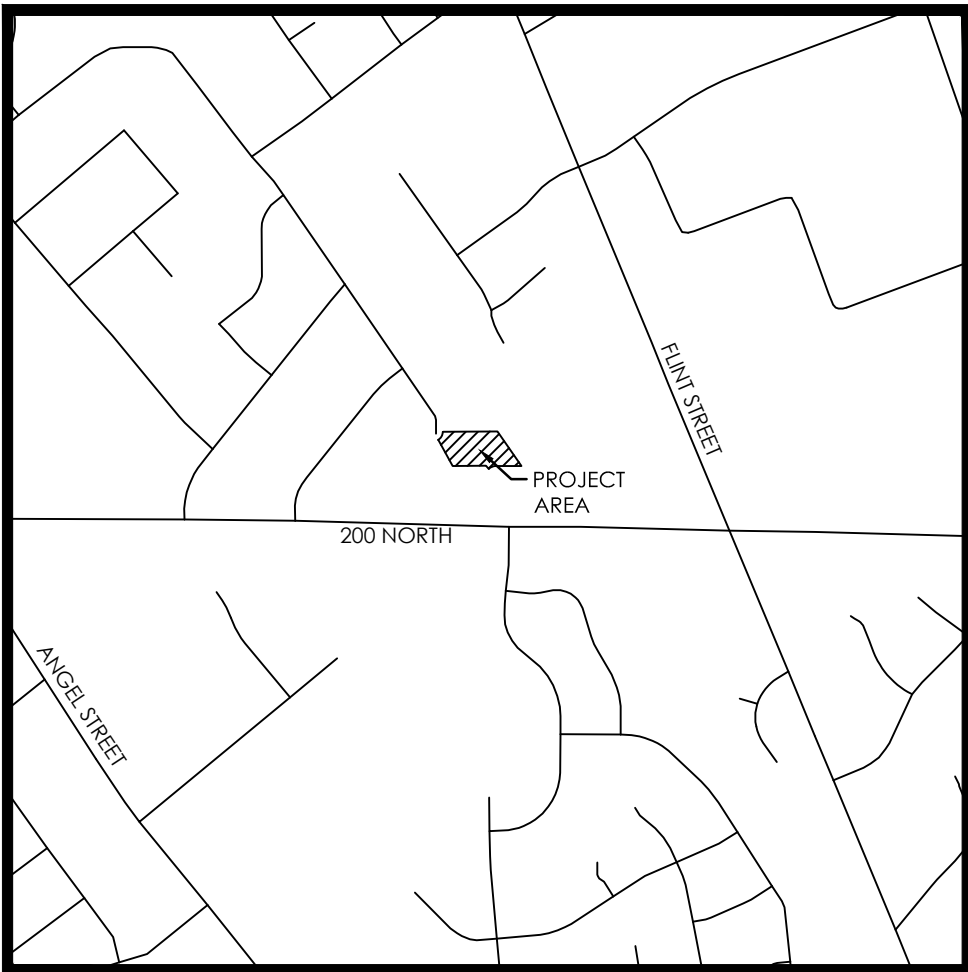
Attachments: Area Map, Subdivision Plat, and Zoning Ordinance.

1480 Willow Drive



1480 Willow Drive - Rezone to include the PRUD overlay.





VICINITY MAP

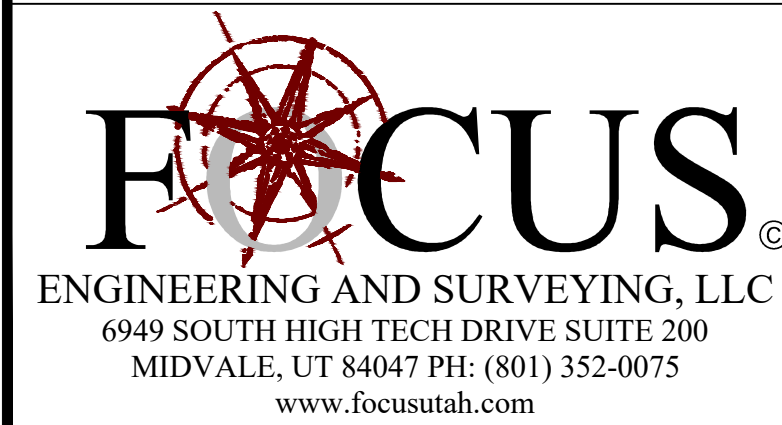
N.T.S.

NOTES

1. DUE TO THE 40' EASEMENT ALONG THE EAST LINE OF LOT 1, A 20' FRONT YARD SETBACK HAS BEEN REQUESTED.
2. #5 REBAR AND CAP TO BE SET AT ALL REAR LOT CORNERS. NAILS OR LEAD PLUGS TO BE SET IN CURB AT EXTENSION OF SIDE LOT LINES.

LEGEND

	BOUNDARY
	SECTION LINE
	EASEMENT
	RIGHT-OF-WAY LINE
	BUILDING SETBACK
	EXISTING PROPERTY LINE
	SECTION MONUMENT (FOUND)
	BOUNDARY MARKERS
	PUBLIC UTILITY & DRAINAGE EASEMENT



PLANNING COMMISSION

Approved as to form this _____ day of _____, 20____ by the Kaysville City Planning Commission.

Chairman, Planning Commission

CITY ENGINEER

Approved as to form this _____ day of _____, A.D., 20____.

Kaysville City Engineer

CITY ATTORNEY

Approved as to form this _____ day of _____, A.D., 20____.

Kaysville City Attorney

CITY COUNCIL

Presented to the Kaysville City Council this _____ day of _____, 20____ at which time this subdivision was approved and accepted.

Mayor _____

Attest: _____

City Recorder

SURVEYORS CERTIFICATE

I, Spencer W. Llewelyn, do hereby certify that I am a Professional Land Surveyor, and that I hold Certificate No. 10516507 in accordance with Title 58, Chapter 22 of Utah State Code. I further certify by authority of the owners(s) that I have completed a Survey of the property described on this Plat in accordance with Section 17-23-17 of said Code, and have subdivided said tract of land into lots, blocks, streets, and easements, and the same has, or will be correctly surveyed, staked and monumented on the ground as shown on this Plat, and that this Plat is true and correct.

Spencer W. Llewelyn
Professional Land Surveyor
Certificate No. 10516507

Date

BOUNDARY DESCRIPTION

All of Lot 14, GREENLAND ESTATES SUBDIVISION NO. 2, according to the Official Plat thereof recorded as Entry No. 1337316 in Book 2156 at Page 100 in the Office of the Davis County Recorder and a portion of Parcel B, THE VILLAS AT GREEN MANOR PRUD SUBDIVISION, according to the Official Plat thereof recorded as Entry No. _____ in Book _____ at Page _____ in the Office of the Davis County Recorder, located in the NE1/4 of Section 32 and the NW1/4 of Section 33, Township 4 North, Range 1 West, Salt Lake Base and Meridian, more particularly described as follows:

Beginning a point on the northerly right of way line of Wooden Shoe Way, said point also being a southwesterly corner of Parcel B, THE VILLAS AT GREEN MANOR PRUD SUBDIVISION, according to the Official Plat thereof recorded as Entry No. _____ in Book _____ at Page _____ in the Office of the Davis County Recorder, located S89°50'13"E 161.12 feet along the 1/4 Section Line and North 347.59 from the West 1/4 Corner of Section 33, T4N, R1W, SLB&M; running thence along said Parcel B N44°03'11"W 23.44 feet to the southerly line of Lot 14, GREENLAND ESTATES SUBDIVISION NO. 2, according to the Official Plat thereof recorded as Entry No. 1337316 in Book 2156 at Page 100 in the Office of the Davis County Recorder; thence along said Lot 14 the following five (5) courses: (1) S89°36'55"W 183.06 feet; thence (2) N28°54'33"W 163.88 feet; thence (3) northeasterly along the arc of a non-tangent curve to the left having a radius of 50.00 feet (radius bears: N28°54'21"W) a distance of 53.62 feet through a central angle of 61°26'32" Chord: N30°22'23"E 51.09 feet; thence (4) N89°38'57"E 299.32 feet; thence (5) S34°59'27"E 232.26 feet to and along the easterly line of said Parcel B; thence N89°48'20"W 142.03 feet to and along said Wooden Shoe Way; thence along said Wooden Shoe Way along the arc of a curve to the left with a radius of 54.00 feet a distance of 41.70 feet through a central angle of 44°14'51" Chord: S68°04'15"W 40.67 feet to the point of beginning.

Contains: 1.55 acres+/-

OWNER'S DEDICATION

WE, THE UNDERSIGNED OWNERS OF THE HEREON DESCRIBED TRACT OF LAND, HEREBY SET APART AND SUBDIVIDE THE SAME INTO LOTS AND STREETS AS SHOWN ON THIS PLAT, AND NAME SAID TRACT

BAILEY SUBDIVISION

(ALL OF LOT 14, GREENLAND ESTATES No. 2 SUBDIVISION AND A PORTION OF PARCEL B, THE VILLAS AT GREEN MANOR PRUD SUBDIVISION) AND DO HEREBY DEDICATE, GRANT AND CONVEY TO KAYSVILLE CITY, DAVIS COUNTY, UTAH, ALL EASEMENTS AS SHOWN ON THIS PLAT AS PUBLIC UTILITY EASEMENTS, THE SAME TO BE USED FOR THE INSTALLATION, MAINTENANCE AND OPERATION OF PUBLIC UTILITY SERVICE LINES AND DRAINAGE AS MAY BE AUTHORIZED BY KAYSVILLE CITY.

SIGNED THIS _____ DAY OF _____, 20____

ACKNOWLEDGMENT

STATE OF UTAH
S.S.
COUNTY OF _____

ON THE _____ DAY OF _____, 20____ PERSONALLY APPEARED BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, IN AND FOR THE COUNTY OF _____, IN SAID STATE OF UTAH, _____ THE PERSON SIGNING THE FOREGOING OWNER'S DEDICATION WHO DULY ACKNOWLEDGED TO ME THAT HE DID EXECUTE THE SAME FREELY AND VOLUNTARILY AND FOR THE USES AND PURPOSES THEREIN DESCRIBED.

MY COMMISSION EXPIRES: _____ A NOTARY PUBLIC COMMISSIONED IN UTAH RESIDING IN _____ COUNTY

MY COMMISSION No. _____ PRINTED FULL NAME OF NOTARY _____

RECORDED # _____

State of Utah, County of Davis
Recorded at the request of _____

Date _____ Time _____ Book _____ Page _____

\$ _____
Fee _____ County Recorder

Z:_2020\20-0161 Bailey Subdivision Kaysville\design 20-0161\dwg\sheet\02 - FINAL PLAT.dwg

ORDINANCE NO. 20-_____

AN ORDINANCE REZONING A CERTAIN PORTION OF KAYSVILLE CITY TO INCLUDE THE PRUD (PLANNED RESIDENTIAL UNIT DEVELOPMENT) OVERLAY ZONE, HEREINAFTER FULLY DESCRIBED; PROVIDING FOR REPEALER; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE

WHEREAS, the City Council of Kaysville City, State of Utah, has determined in an open meeting to include the PRUD overlay zone for the purpose of accommodating a new lot to be accessed by a private street; and

WHEREAS, said meeting was duly and regularly held and the interested parties were given an opportunity to be heard; and

WHEREAS, the Kaysville City Planning Commission has made a recommendation to the City Council on said zoning action; and

WHEREAS, the City Council after due consideration of said overlay zone has concluded that it is in the best interest of the City and the inhabitants thereof that said zone be implemented;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF KAYSVILLE CITY, UTAH:

SECTION I: Repealer. If any provisions of the City's Code previously adopted are inconsistent herewith they are hereby repealed.

SECTION II:

The real property as shown on the attached map, which is made a part hereof, containing approximately 1.5 acres, shall be and the same is hereby rezoned and the Zoning Map amended by adding the Kaysville City PRUD (Planned Residential Unit Development) overlay zone.

SECTION III: Severability. If any section, subsection, sentence, clause or phrase of this ordinance is declared invalid or unconstitutional by a court of competent jurisdiction, said portion shall be severed and such declaration shall not affect the validity of the remainder of this ordinance.

SECTION VI:

This Ordinance shall take effect upon approval of a final subdivision plat found to be consistent with the provisions of the approved development agreement for the subject property.

PASSED AND ADOPTED by the City Council of Kaysville City, Utah, this ___th day of _____, 2020

Katie Witt
Mayor

ATTEST:

Annemarie Plaizier
City Recorder

APPROVED AS TO FORM:

Nicholas C. Mills, City Attorney



Planning Commission Staff Report

Final plat approval for the Horne Subdivision at 1422 South Sunset Drive.

June 11, 2020

Applicant/Owner: Carl and Marvin Horne.

Description:

The city council approved the PRUD to allow for a flag lot and the preliminary plat for the Horne Subdivision at this location early this year.

The proposed final plat is consistent with the preliminary plat that was previously approved and meets the minimum lot size and frontage requirements.

All of the right-of-way improvements such as curb, gutter, and sidewalk are already in place. Only utility stubs are needed prior to recording.

Recommendation:

Staff is ready to recommend approval of the Horne Subdivision

Attachment 1: Area Map

Attachment 2: Preliminary Plat

Attachment 3: Final Plat

1422 South Sunset Drive - Rezone from R-A to R-1-LD PRUD

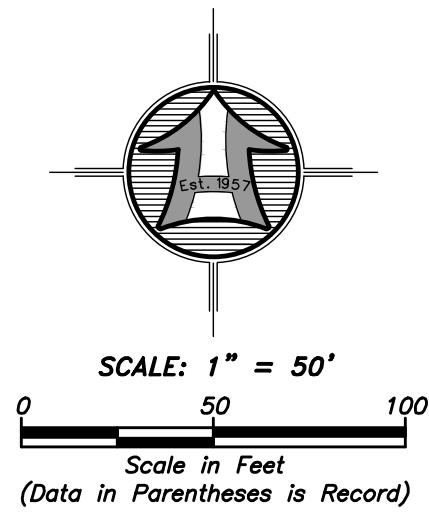


HORNE SUBDIVISION

A PART OF THE NORTHEAST QUARTER OF SECTION 9, AND A PART OF THE NORTHWEST QUARTER OF SECTION 10,
TOWNSHIP 3 NORTH, RANGE 1 WEST, SALT LAKE BASE & MERIDIAN
KAYSVILLE CITY, DAVIS COUNTY, UTAH

NORTH QUARTER CORNER OF SEC. 9,
T. 3 N., R. 1 W., SLB&M.
FOUND DAVIS CO. BRASS CAP MONUMENT

NORTHEAST CORNER OF SEC. 9,
T. 3 N., R. 1 W., SLB&M.
FOUND DAVIS CO. MAG NAIL MONUMENT



- LEGEND**
- SUBJECT PROPERTY LINE
 - INTERIOR LOT LINE
 - ADJOINING PROPERTY LINE
 - CENTERLINE
 - EASEMENT
 - EXISTING CONCRETE
 - FENCE LINE
 - STREET MONUMENT
 - FOUND REBAR SET BY CORNERSTONE
 - SET 5/8"x24" REBAR WITH CAP
 - SECTION CORNER
 - CALCULATED SECTION CORNER

**KAYSVILLE SUNSET
EQUESTRIAN ESTATES
PLAT 12**
(ENTRY NO. 2719052)

LOT 1224

NARRATIVE

THE PURPOSE OF THIS SURVEY WAS TO ESTABLISH AND SET THE PROPERTY CORNERS OF THE 2 LOT SUBDIVISION AS SHOWN AND DESCRIBED HEREON. THIS SURVEY WAS ORDERED BY CARL HORNE. THE CONTROL USED TO ESTABLISH THE PROPERTY CORNERS WAS MITCHELL MANOR SUBDIVISION, KAYSVILLE SUNSET EQUESTRIAN ESTATES PLAT 6, KAYSVILLE SUNSET EQUESTRIAN ESTATES PLAT 12, RECORDED AS ENTRY NO. 2163103, 2241520 & 2719052 IN THE DAVIS COUNTY RECORDER'S OFFICE, ALONG WITH THE EXISTING DAVIS COUNTY SURVEY MONUMENTATION SURROUNDING SECTION 9, T3N, R1W, SLB&M. THE RIGHT-OF-WAY OF SUNSET DRIVE WAS ESTABLISHED FROM SAID SUBDIVISIONS WHICH FALLS IN HARMONY WITH THE FOUND KAYSVILLE CENTERLINE MONUMENTATION AS SHOWN HEREON.

THE BASIS OF BEARING IS THE EAST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 9 WHICH BEARS SOUTH 0°13'19" EAST, DAVIS COUNTY BEARING.

KAYSVILLE CITY COUNCIL

THIS IS TO CERTIFY THAT THIS SUBDIVISION PLAT WAS DULY APPROVED BY THE CITY COUNCIL OF KAYSVILLE CITY THIS _____ DAY OF _____, 2020.

Attest: _____
RECORDER

By: _____
MAYOR

ENGINEER'S CERTIFICATE

APPROVED BY THE KAYSVILLE CITY ENGINEER ON THIS
DAY OF _____, 2020.

By: _____
KAYSVILLE CITY ENGINEER

ACKNOWLEDGMENT

STATE OF UTAH)
COUNTY OF DAVIS)

ON THIS _____ DAY OF _____, 2020, CARL OWEN HORNE, PERSONALLY APPEARED BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC IN AND FOR SAID COUNTY OF DAVIS, IN THE STATE OF UTAH, THE SIGNER OF THE ATTACHED OWNERS DEDICATION, ONE IN NUMBER, WHO DULY ACKNOWLEDGED TO ME HE SIGNED IT FREELY AND VOLUNTARILY AND FOR THE PURPOSE THEREIN MENTIONED.

NOTARY PUBLIC

KAYSVILLE CITY PLANNING COMMISSION

APPROVED BY THE KAYSVILLE CITY PLANNING COMMISSION
THIS _____ DAY OF _____, 2020.

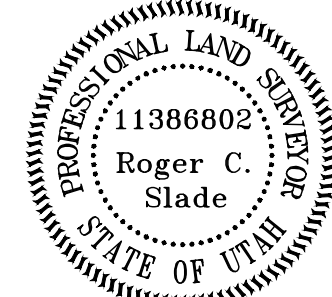
By: _____
KAYSVILLE CITY PLANNING COMMISSION CHAIRMAN

SURVEYOR'S CERTIFICATE

I, ROGER C. SLADE, DO HEREBY CERTIFY THAT I AM A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF UTAH IN ACCORDANCE WITH TITLE 58, CHAPTER 22, PROFESSIONAL ENGINEERS AND LAND SURVEYORS ACT; AND I HAVE COMPLETED A SURVEY OF THE PROPERTY DESCRIBED ON THIS PLAT IN ACCORDANCE WITH SECTION 17-23-17 AND HAVE VERIFIED ALL MEASUREMENTS, AND HAVE PLACED MONUMENTS AS REPRESENTED ON THIS PLAT, AND HAVE HEREBY SUBDIVIDED SAID TRACT INTO TWO (2) LOTS KNOWN HEREAFTER AS HORNE SUBDIVISION IN KAYSVILLE CITY, DAVIS COUNTY, UTAH, AND HAS BEEN CORRECTLY DRAWN TO THE DESIGNATED SCALE AND IS TRUE AND CORRECT REPRESENTATION OF THE HEREIN DESCRIBED LANDS INCLUDED IN SAID SUBDIVISION, BASED UPON DATA COMPILED FROM RECORDS IN THE DAVIS COUNTY RECORDER'S OFFICE AND FROM SAID SURVEY MADE BY ME ON THE GROUND. I FURTHER HEREBY CERTIFY THAT THE REQUIREMENTS OF ALL APPLICABLE STATUTES AND ORDINANCES OF DAVIS COUNTY CONCERNING ZONING REQUIREMENTS REGARDING LOT MEASUREMENTS HAVE BEEN COMPLIED WITH.

SIGNED THIS _____ DAY OF _____, 2020.

ROGER C. SLADE, P.L.S.
UTAH LAND SURVEYOR LICENCE NO. 11386802



SUBDIVISION BOUNDARY DESCRIPTION

A PART OF THE NORTHEAST QUARTER OF SECTION 9 AND A PART OF THE NORTHWEST QUARTER OF SECTION 10, TOWNSHIP 3 NORTH, RANGE 1 WEST OF THE SALT LAKE BASE AND MERIDIAN.

BEGINNING AT A POINT ON THE WESTERLY RIGHT-OF-WAY LINE OF SUNSET DRIVE ALSO BEING THE SOUTHEASTERLY CORNER OF KAYSVILLE SUNSET EQUESTRIAN ESTATES PLAT 6, RECORDED AS ENTRY NO. 2241520 IN THE DAVIS COUNTY RECORDER'S OFFICE LOCATED 1447.51 FEET SOUTH 00°13'19" EAST ALONG THE EAST LINE OF SAID NORTHEAST QUARTER AND 72.71 FEET NORTH 90°00'00" EAST FROM THE NORTHEAST CORNER OF SAID SECTION 9;

RUNNING THENCE SOUTH 22°00'56" EAST 200.00 FEET ALONG SAID WESTERLY RIGHT-OF-WAY LINE TO THE NORTHEASTERLY CORNER OF MITCHELL MANOR SUBDIVISION, RECORDED AS ENTRY NO. 2163103; THENCE SOUTH 67°36'04" WEST 528.02 FEET ALONG THE NORTHERLY LINE OF SAID MITCHELL MANOR SUBDIVISION TO THE EASTERLY LINE OF KAYSVILLE SUNSET EQUESTRIAN ESTATES PLAT 12, RECORDED AS ENTRY NO. 2719052; THENCE NORTH 34°54'26" WEST 158.07 FEET ALONG SAID EASTERLY LINE TO THE SOUTHERLY LINE OF SAID KAYSVILLE SUNSET EQUESTRIAN ESTATES PLAT 6; THENCE NORTH 62°58'04" EAST 565.44 FEET ALONG SAID SOUTHERLY LINE TO THE POINT OF BEGINNING. CONTAINING 2.228 ACRES.

OWNERS DEDICATION

KNOW ALL MEN BY THESE PRESENTS THAT WE, THE UNDERSIGNED OWNERS OF THE ABOVE DESCRIBED TRACT OF LAND HAVING CAUSED THE SAME TO BE SUBDIVIDED INTO TWO (2) LOTS AS SHOWN ON THIS PLAT AND NAME SAID TRACT HORNE SUBDIVISION AND HEREBY DEDICATE TO KAYSVILLE CITY, DAVIS COUNTY THOSE CERTAIN STRIPS AS PUBLIC UTILITY EASEMENTS AS SHOWN HEREON, FOR PUBLIC UTILITY AND DRAINAGE PURPOSES, THE SAME TO BE USED FOR THE ACCESS, INSTALLATION, MAINTENANCE AND OPERATION OF PUBLIC AND PRIVATE UTILITY SERVICE LINES, IRRIGATION AND DRAINAGE APPURTENANCES AS MAY BE AUTHORIZED BY KAYSVILLE CITY.

IN WITNESS WE HAVE HEREUNTO SET OUR SIGNATURE THIS _____ DAY OF _____, 2020.

MARVIN K. HORNE, TRUSTEE OF THE
MARVIN AND JEANNINE HORNE FAMILY TRUST DATED THE 26TH DAY OF APRIL, 1999

JEANNINE S. HORNE, TRUSTEE OF THE
MARVIN AND JEANNINE HORNE FAMILY TRUST DATED THE 26TH DAY OF APRIL, 1999

CARL OWEN HORNE

TRUST ACKNOWLEDGMENT

STATE OF UTAH)
COUNTY OF DAVIS)

ON THIS _____ DAY OF _____, 2020, TRUSTEES FOR THE MARVIN AND JEANNINE HORNE FAMILY TRUST DATED THE 26TH DAY OF APRIL, 1999, PERSONALLY APPEARED BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC IN AND FOR SAID COUNTY OF BOX ELDER, IN THE STATE OF UTAH, THE SIGNERS OF THE ATTACHED OWNERS DEDICATION, TWO IN NUMBERS, WHO DULY ACKNOWLEDGED TO ME THEY SIGNED IT FREELY AND VOLUNTARILY AND FOR THE PURPOSE THEREIN MENTIONED ON BEHALF OF SAID TRUST.

NOTARY PUBLIC

KAYSVILLE CITY ATTORNEY

I HEREBY CERTIFY THAT THE REQUIREMENTS OF ALL APPLICABLE STATUTES AND ORDINANCES PREREQUISITE TO APPROVAL BY THE KAYSVILLE CITY COUNCIL OF THE FORGOING PLAT HAVE BEEN COMPLIED WITH.

SIGNED THIS _____ DAY OF _____, 2020.

By: _____
KAYSVILLE CITY ATTORNEY

COUNTY RECORDER

ENTRY NO. _____ FEE PAID _____
FILED FOR RECORD AND
RECORDED _____, AT
IN BOOK _____ OF OFFICIAL
RECORDS, PAGE _____
COUNTY RECORDER
DEPUTY

DEVELOPER:
CARL HORNE
265 N. MAIN, STE D-316
KAYSVILLE, UT 84037
801-718-0839



HANSEN & ASSOCIATES, INC.
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20-3-73 20-3-73v15.dwg 04/29/2020 RS



Planning Commission Staff Report

Public Hearing for consideration of an ordinance enacting subsection 19-5-7, Technical Specifications and Drawings, of Chapter 19-5, Subdivision Standards, of Title 19, Subdivisions, of the Revised Ordinances of Kaysville City.

June 11, 2020

Description:

Kaysville City has utilized standards specifying the way that public improvements such as streets and utilities are constructed that were adopted in 1994. These standards have been in file with Kaysville City and distributed upon request to developers or others doing work to build, maintain, and repair the city's infrastructure.

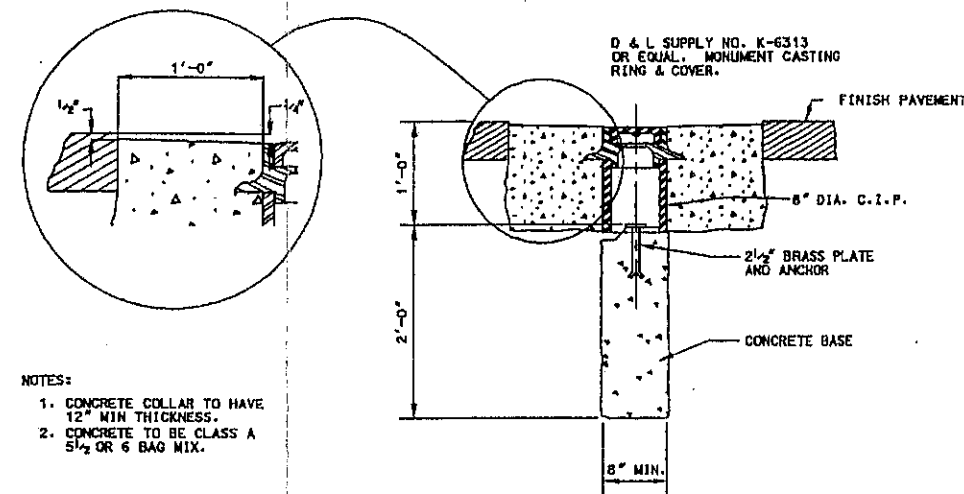
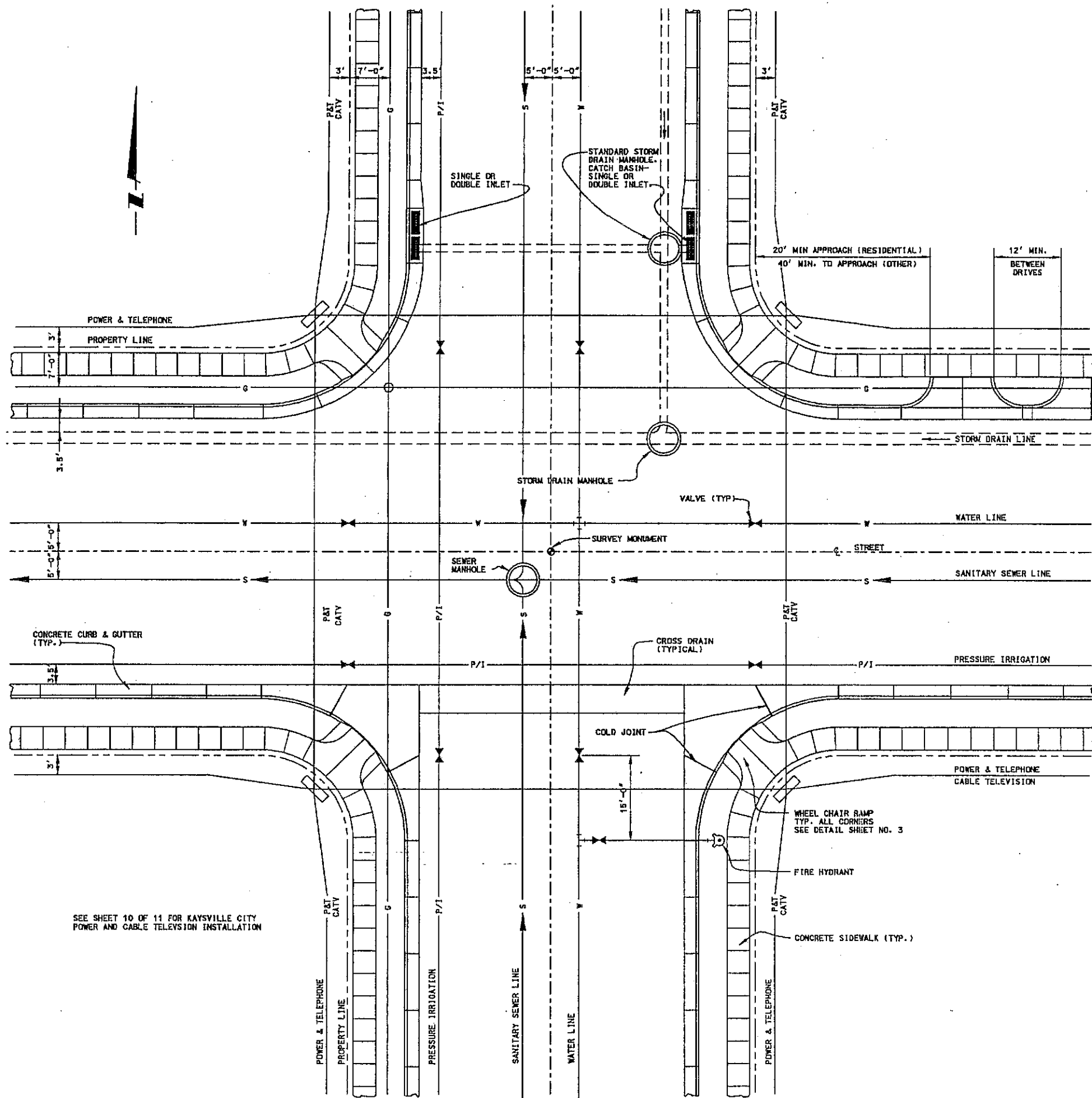
The proposed ordinance updates the standards and provides more clear detail and drawings that will be adopted by ordinance. This will make it easier for the standards to be found and make it more clear what the city expects. Many of the standards remain the same as they have served the city well for many years, one of the big changes is the requirement to install conduit to house future communications infrastructure.

Recommendation:

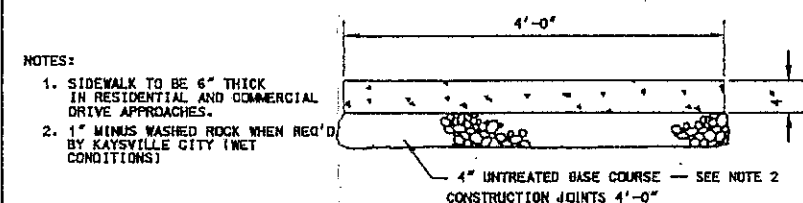
Kaysville City staff recommends approval of the proposed ordinance as prepared, with the understanding that some changes to formatting will be made before full adoption by the Kaysville City Council.

Attachment 1: Existing Standard Drawings

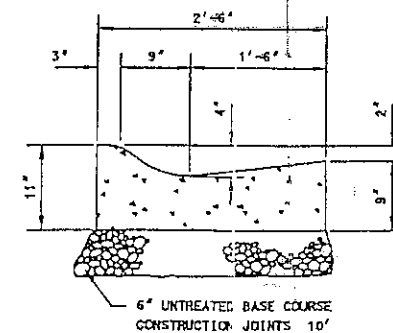
Attachment 2: Draft Ordinance for Technical Specifications and Standard Drawings.



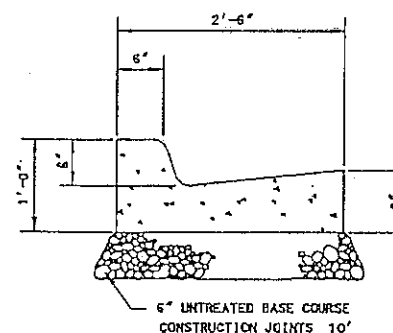
SURVEY MONUMENT SECTION



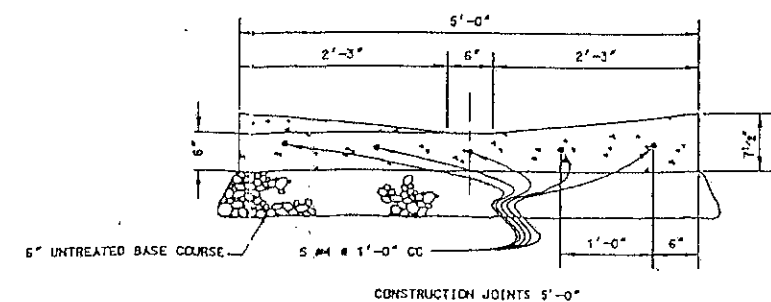
SIDEWALK SECTION



STANDARD ROLLED GUTTER



STANDARD CURB



CROSS DRAIN SECTION

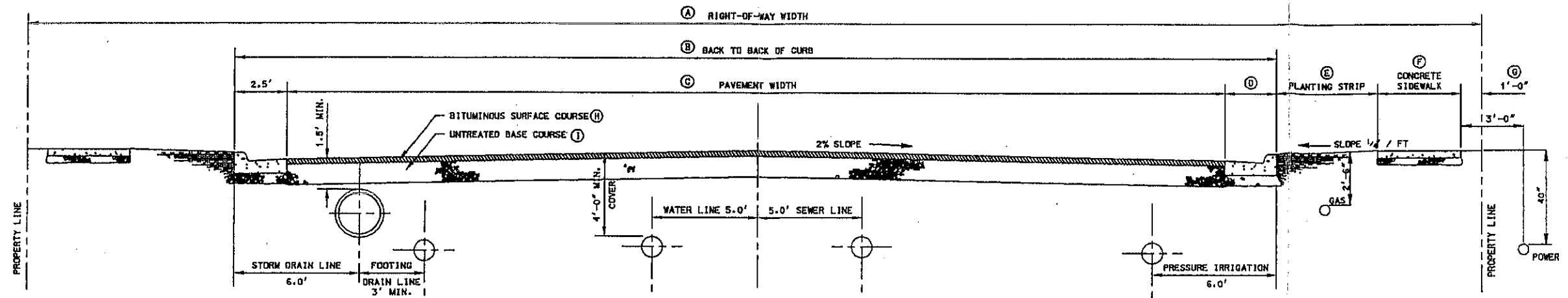
5			DESIGNED
4			DRAFTSMAN
3			CHECKED
2			DATE 7-19-94
1	12/94	REVISIONS PER KAYSVILLE CITY	
REV.	DATE	APPR.	

KAYSVILLE CITY

23 EAST CENTER
KAYSVILLE, UTAH

KAYSVILLE CITY CORPORATION
DEVELOPMENT STANDARDS
STANDARD STREET IMPROVEMENTS

SHEET NO.
1
OF 11 SHEETS



NOTES:

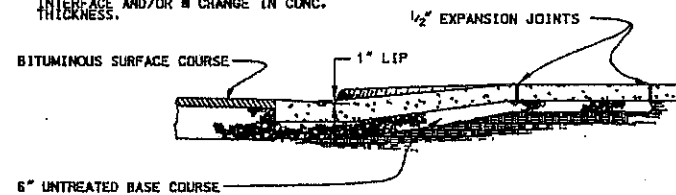
1. TOP BACK OF CURB ON BOTH SIDES OF ROAD TO BE SAME ELEVATIONS.
2. ON MAJOR STREETS THE CITY ENGINEER SHALL APPROVE PAVEMENT DESIGN. (SEE SPECIFICATIONS)
3. ALL UTILITIES STUBBED PAST PROPERTY LINE MUST BE AT 4 FT. MIN DEPTH.
4. POWER LINES TO MAINTAIN MIN. 30" COVER IN STREETS.

STANDARD STREET SECTION

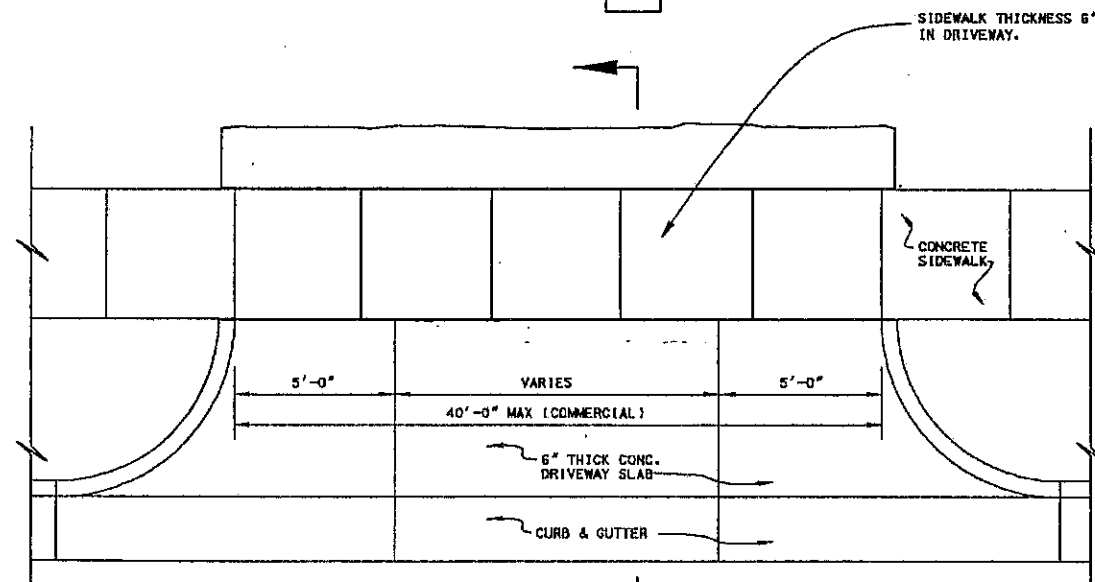
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
100'	80'	75'	2.5'	5'	4'	1'	NOTE 2	NOTE 2
80'	60'	55'	2.5'	5'	4'	1'	NOTE 2	NOTE 2
70'	50'	45'	2.5'	5'	4'	1'	NOTE 2	NOTE 2
66'	46'	41'	2.5'	5'	4'	1'	3"	12"
60'	40'	35'	2.5'	5'	4'	1'	3"	12"
55'	35'	30'	2.5'	5'	4'	1'	3"	12"

NOTES:

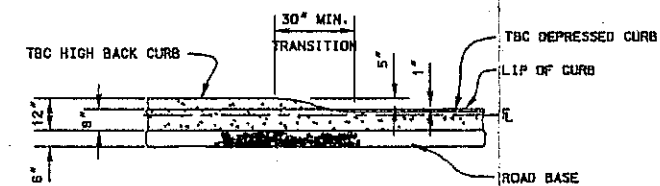
- SCRIBE SIDEWALK 1/2" DEPTH AT EACH 4'-0"
- EXPANSION JOINTS REQ'D. @ NEW & OLD INTERFACES AND/OR @ CHANGE IN CONC. THICKNESS.



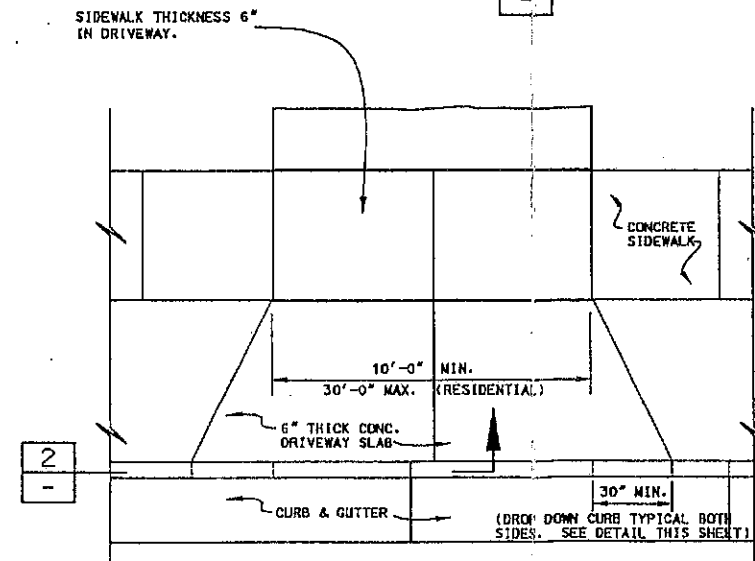
SECTION 1



TYPE 1 DRIVEWAY APPROACH
PREFERRED STYLE FOR COMMERCIAL DEVELOPMENT



SECTION 2



TYPE 2 DRIVEWAY APPROACH
PREFERRED STYLE FOR RESIDENTIAL DEVELOPMENT

1. 600'-0" MAX. DISTANCE FROM CENTERLINE OF ADJOINING STREET TO RADIUS OF CUL-DE-SAC.
2. CUL-DE-SAC SHOULD BE USED ONLY WHERE UNUSUAL CONDITIONS EXIST.
3. MAX. GRADE IN CUL-DE-SAC AREA IS TO BE 2.5%.



1. LOCATE RAISED TRUNCATED DOMES SO THAT THE EDGE NEAREST THE CURB LINE IS WITHIN 6 TO 8 INCHES FROM THE CURB LINE. PROVIDE 2-FOOT OF TRUNCATED DOME PATTERN AT THE LOWER END OF ALL CURB RAMPS EXTENDING THE FULL WIDTH OF THE CURB RAMP.

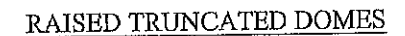
2. CHANGES IN ELEVATION GREATER THAN $\frac{1}{4}$ "
SHALL BE BEVELED WITH A SLOPE NO GREATER
THAN 1:2 (MAXIMUM $\frac{1}{2}$ INCH).

3. THE DETECTABLE WARNING SURFACE DOMES SHALL BE ORIENTED SUCH THAT THE ROWS ARE PARALLEL WITH THE DIRECTION OF PEDESTRIAN TRAVEL TO THE RAMP ON THE OPPOSITE SIDE OF THE STREET.

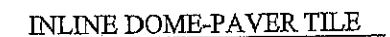
4. THE DETECTABLE WARNING SHALL BE A CONTRASTING COLOR.

5. WHEN A DETECTABLE WARNING SURFACE DOME IS CUT, THE REMAINING PORTION OF THE DOME SHALL BE BEVELED TO A MAXIMUM SLOPE OF 1:2 WITH A MAXIMUM OF 1/2 INCH.

6. INSTALLATION SHALL BE DONE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.



DETAIL B
SCALE: N.T.S. -



DETECTABLE WARNING
SYSTEM DETAIL

SCALE: N.T.S.

CURB RAMP DETAIL

SCALE N.T.S.

5				DESIGNED
4				DRAFTSMAN
3				
2	3/06	REVISED PER KAYSVILLE CITY		CHECKED
1	12/94	REVISIONS PER KAYSVILLE CITY		DATE 3-9-06
REV. DATE APPR.				

KAYSVILLE CITY

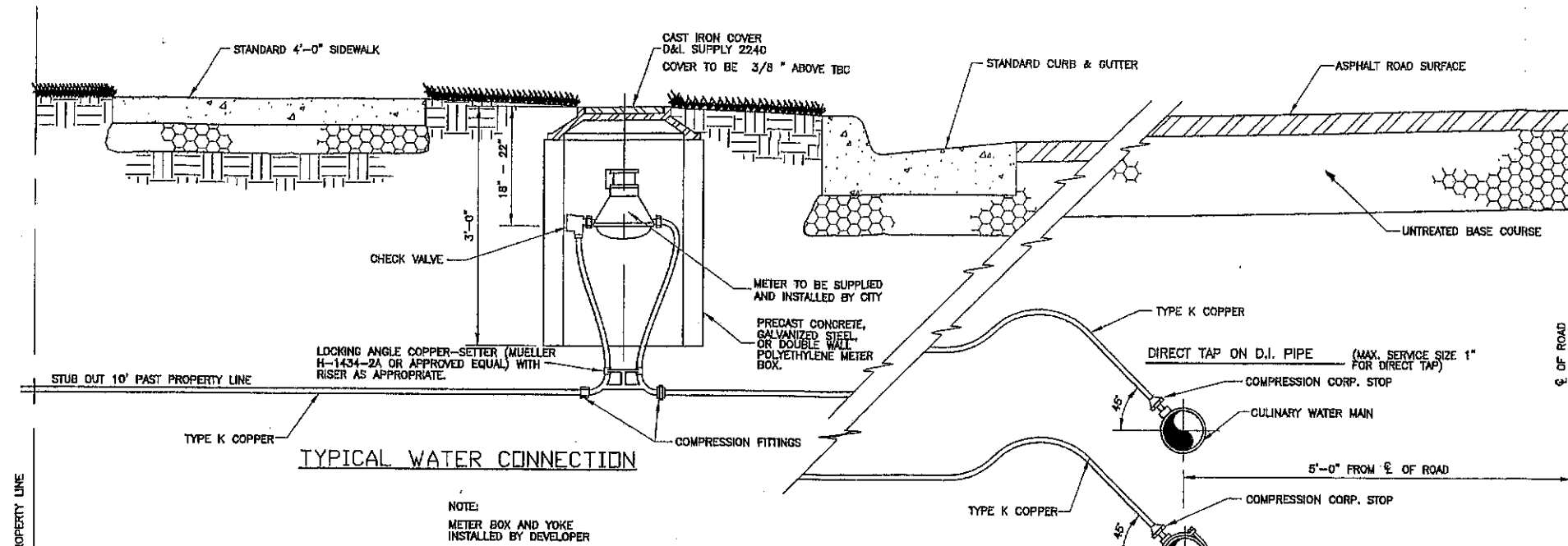
23 EAST CENTER
KAYSVILLE, UTAH

KAYSVILLE CITY CORPORATION
DEVELOPMENT STANDARDS

TYPICAL CUL-DE-SAC & WHEELCHAIR RAMP

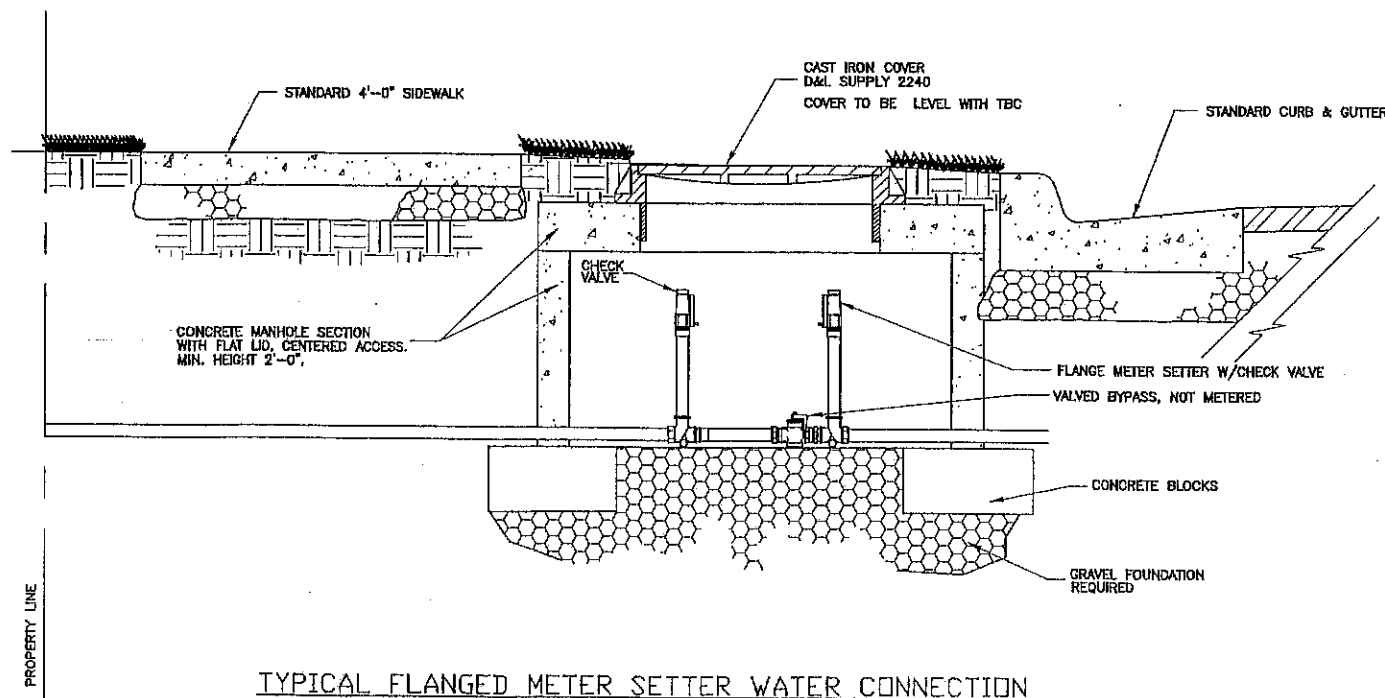
3

OF 11 SHEETS

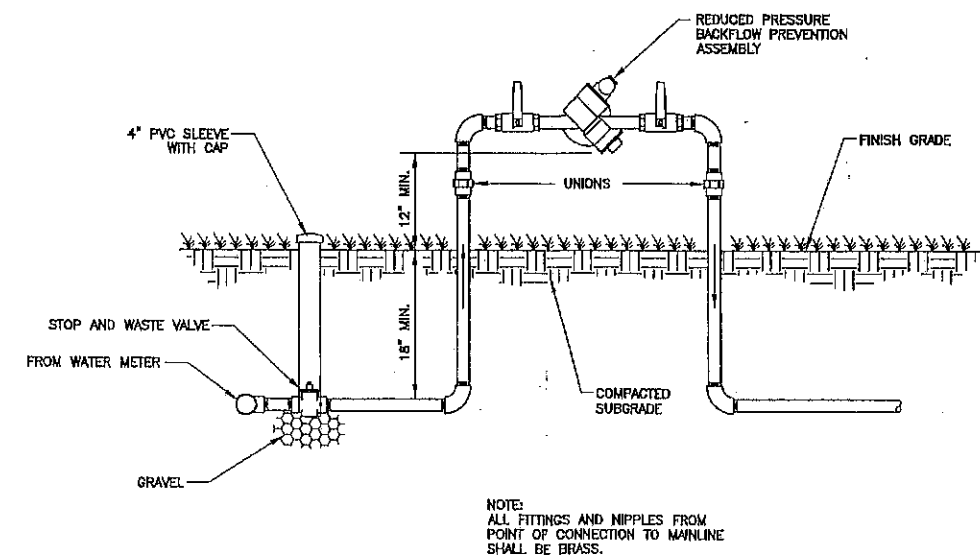


KAYSVILLE CITY CORPORATION WATER SERVICE INFORMATION						
SERVICE SIZE	METER BOX SIZE	TYPE OF MATERIAL FOR METER BOX	WATER METER	CONNECTION TYPE	BYPASS	DIST. BETWEEN FLANGE
3/4"	18" DIA	CONCRETE, GALVANIZED, POLYETHYLENE	BY CITY	NPT	NO	-
1"	24" DIA	CONCRETE, GALVANIZED, POLYETHYLENE	BY CITY	NPT	NO	-
1 1/2"	48" DIA	CONCRETE	BADGER RECORDALL MOD. 120	FLANGE	1"	13 1/4"
2"	48" DIA	CONCRETE	COMPOUND METER	FLANGE	1"	15 1/2"
3"	80" DIA	CONCRETE	COMPOUND METER	FLANGE	1"	*
4"	4'X6' BOX	CONCRETE	COMPOUND METER	FLANGE	2"	*

* CONTACT KAYSVILLE CITY



TYPICAL FLANGED METER SETTER WATER CONNECTION



REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY

5					
4					
3	5/05	RDS	ADDED REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY		
2	7/98	BRD	ADDED CHECK VALVE & STD DIMS (MIKE B.)		
1	12/94		REVISIONS PER KAYSVILLE CITY		
REV.	DATE	APPR.			

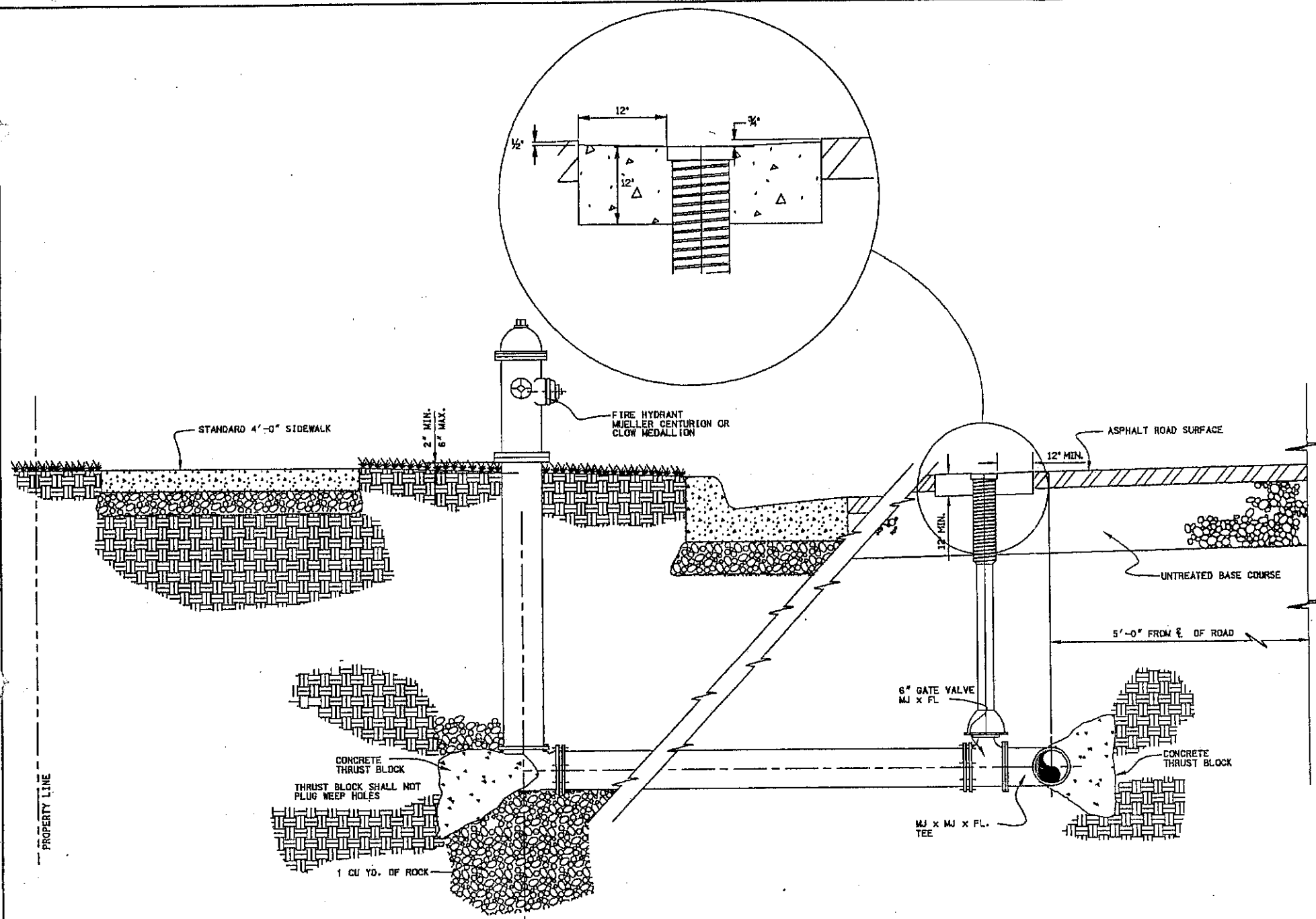
DESIGNED
DRAFTSMAN
CHECKED
DATE 7-21-94

KAYSVILLE CITY

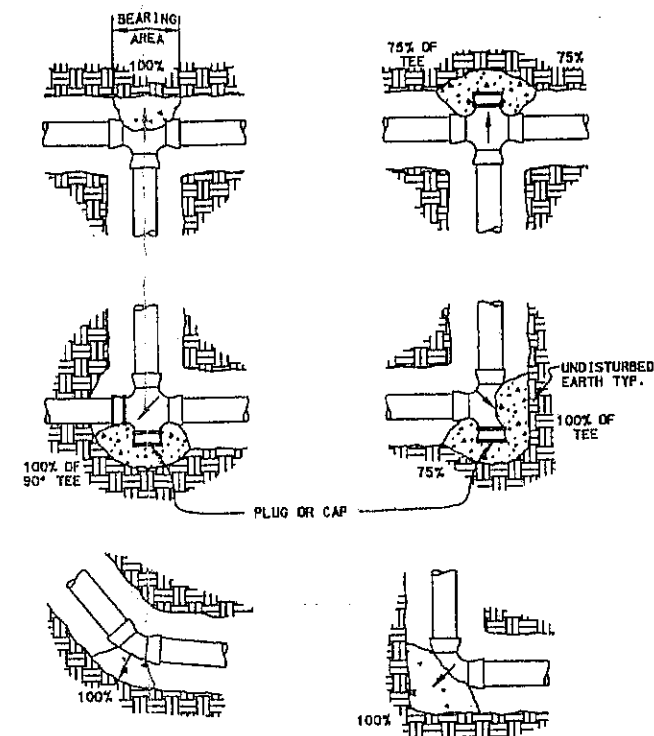
23 EAST CENTER
KAYSVILLE, UTAH

KAYSVILLE CITY CORPORATION
DEVELOPMENT STANDARDS
TYPICAL WATER SERVICE CONNECTION
DETAILS

SHEET NO.
4
of 11 SHEETS



TYPICAL FIRE HYDRANT CONNECTION



NOTE:
ALL MJ AND FLANGED FITTINGS TO BE WRAPPED WITH POLYETHYLENE WRAP PRIOR TO POURING THRUST BLOCK.

DETAIL NOTES:
FIGURE (100%) AT THRUST BLOCK INDICATES PER CENT OF TOTAL THRUST TO BE APPLIED FOR BEARING AREA.
ARROW (—) INDICATES THRUST DIRECTION
CONCRETE FOR THRUST BLOCKS TO BE 2000 P.S.I.

SIDE THRUST PER 100 LB./SQ. IN. PRESSURE PER DEGREE OF DEFLECTION			
PIPE SIZE	SIDE THRUST-lb.	PIPE SIZE	SIDE THRUST-lb.
4	35	14	377
6	72	16	466
8	122	18	665
10	197	20	790
12	278	24	1150

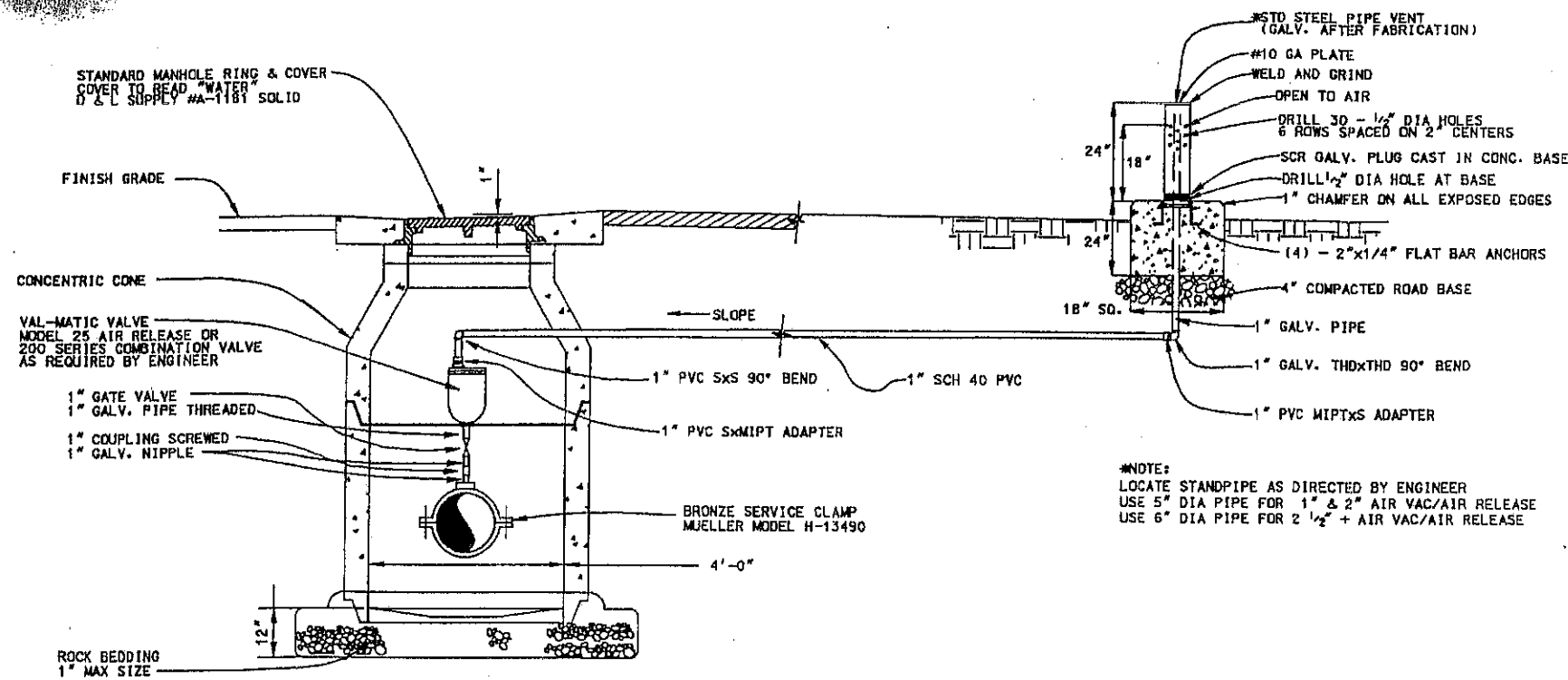
MULTIPLY THRUST BY DEGREE OF DEFLECTION TO OBTAIN TOTAL THRUST

SIDE THRUST PER 100 LB./SQ. IN. PRESSURE PER DEGREE OF DEFLECTION				
PIPE SIZE	DEAD END OR TEE	90° ELBOW	45° ELBOW	22-1/2° ELBOW
4	19	27	15	7
6	39	56	30	15
8	67	94	51	26
10	109	154	84	43
12	155	218	119	61
14	210	296	161	82
16	272	383	209	106
18	351	494	269	137
20	434	611	333	169
24	623	878	478	244

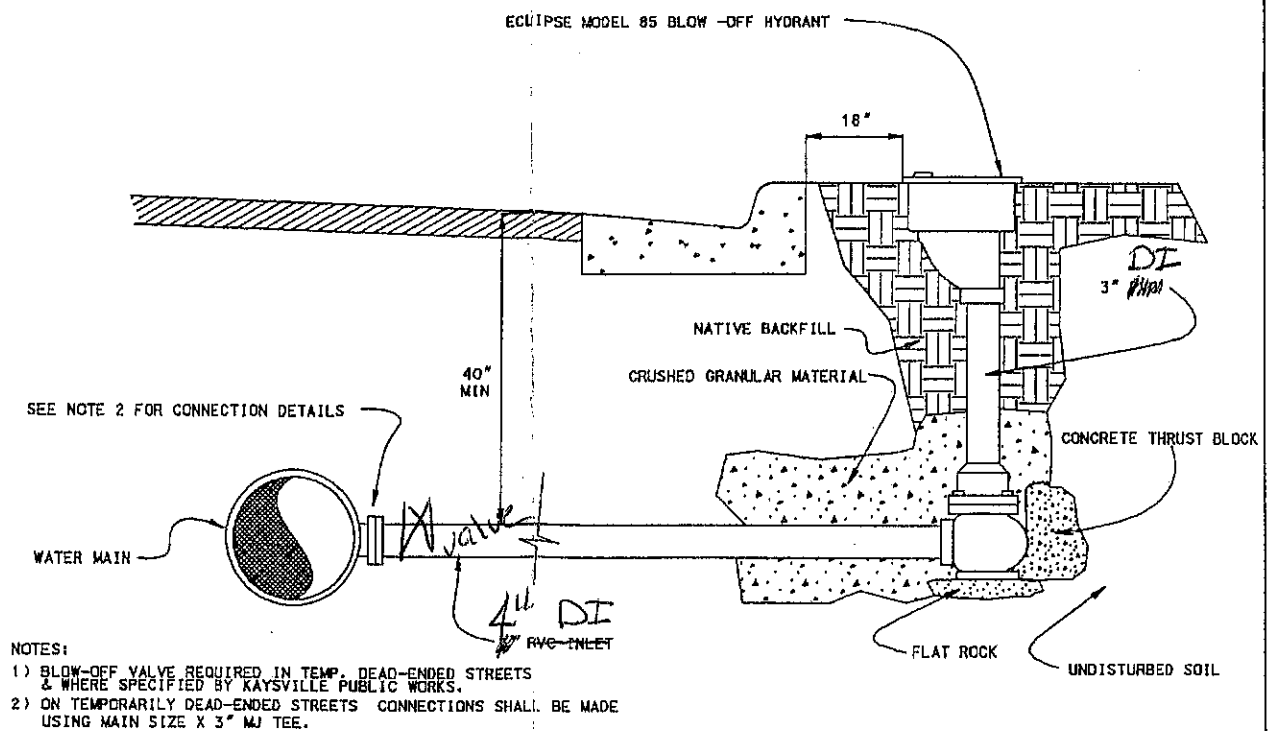
EXAMPLE:
8-INCH 90° ELBOW, PRESSURE = 200 LB. / SQ. IN.
FROM TABLE: THRUST = 94 x 200 = 18,800 LB.
ASSUME BEARING STRENGTH OF SOIL = 2000 LB. / SQ. FT.
18,800 / 2000 = 9.4 SQ. FT. = AREA OF BEARING REQUIRED FOR THRUST BLOCK.

TABLE NOTES:
IN USING THE ABOVE TABLES, USE THE MAXIMUM INTERNAL PRESSURE ANTICIPATED (I.E. HYDROSTATIC TEST PRESSURE, POSSIBLE SURGE PRESSURE DUE TO PUMP SHUT-OFF, ETC.)
SEE SOILS REPORT FOR BEARING STRENGTH OF SOIL IN THE ABSENCE OF A SOILS REPORT, AN AVERAGE SOIL (SPADABLE MEDIUM CLAY) CAN BE ASSUMED TO HAVE A BEARING STRENGTH OF 2000 P.S.F.

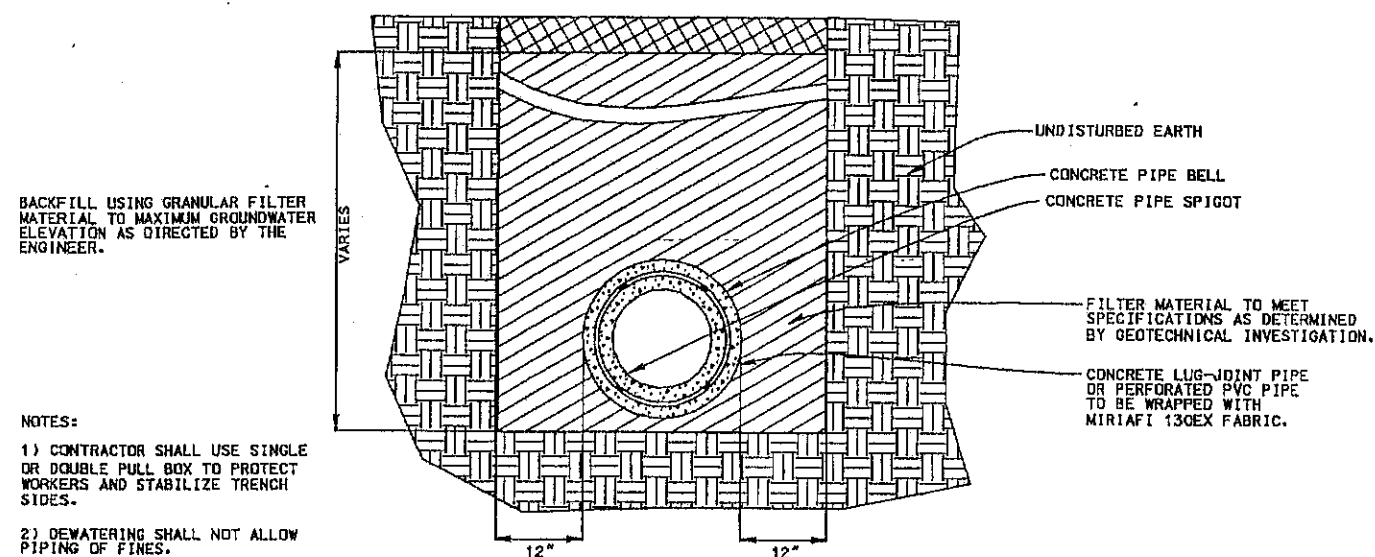
THRUST BLOCK DETAILS



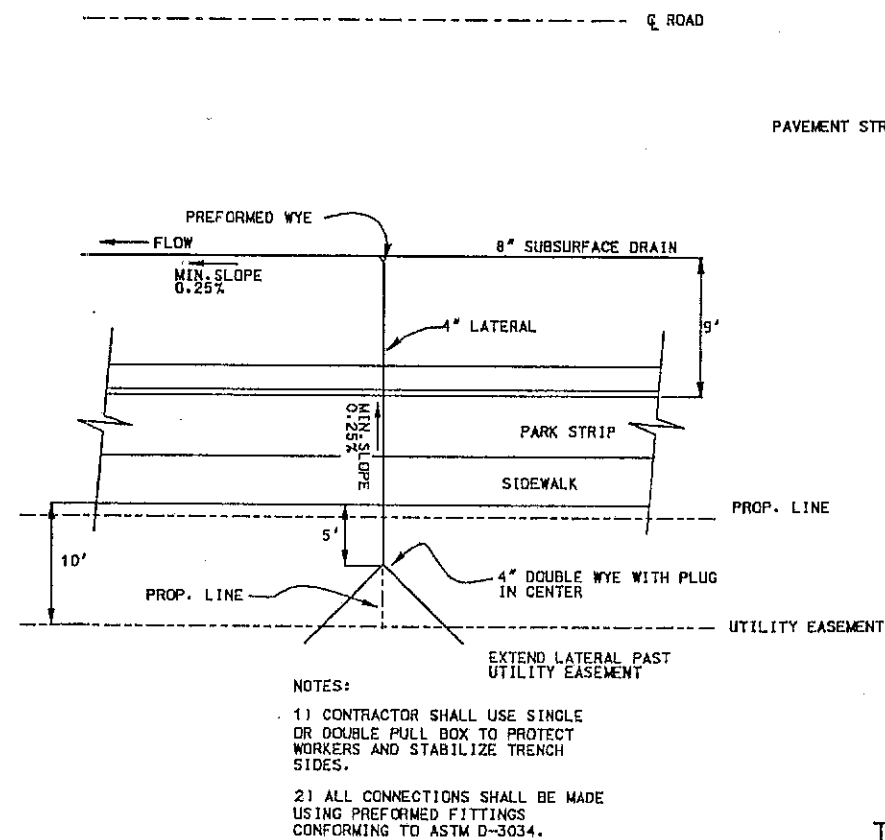
TYPICAL AIR RELEASE VALVE MANHOLE AND SPLASH BLOCK



TYPICAL BLOWOFF VALVE DETAIL



LOOSE-JOINT SUBSURFACE DRAIN DETAIL



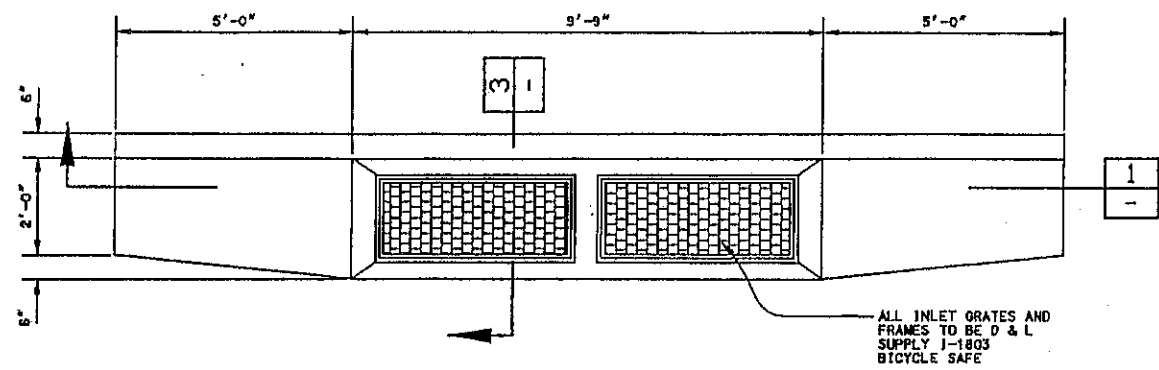
TIGHT-JOINT SUBSURFACE DRAIN DETAIL

DESIGNED	
DRAFTSMAN	
CHECKED	
DATE	9-21-94

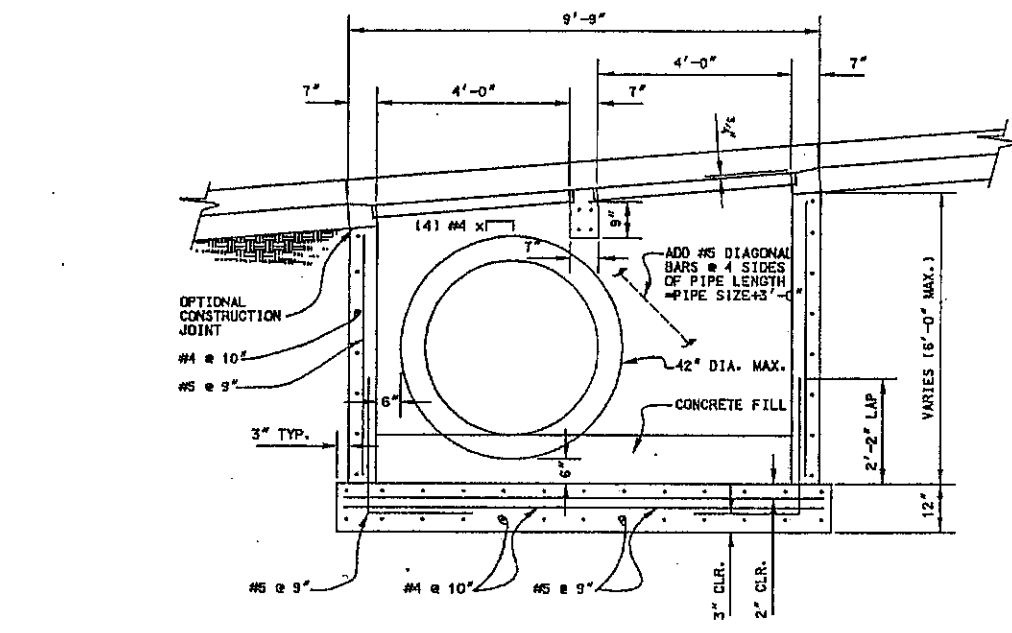
KAYSVILLE CITY
23 EAST CENTER
KAYSVILLE, UTAH

KAYSVILLE CITY CORPORATION
DEVELOPMENT STANDARDS
SUBSURFACE DRAIN & CULINARY DETAILS

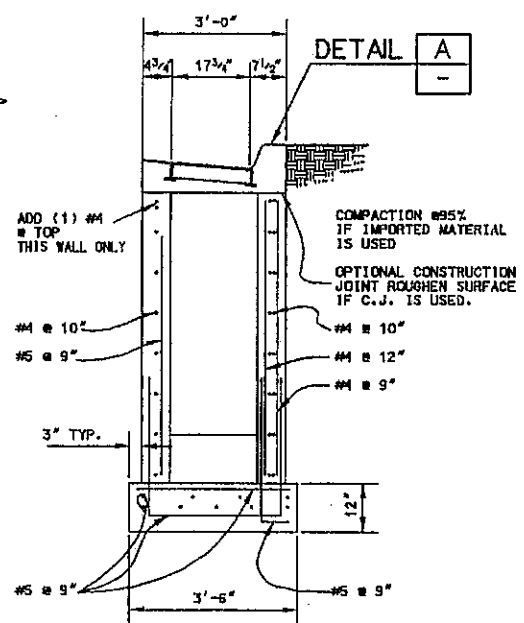
SHEET NO.
6
OF 11 SHEETS



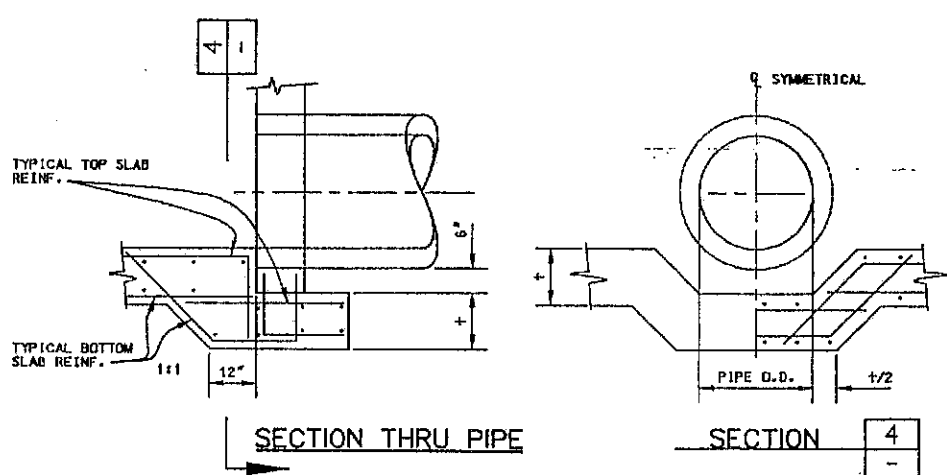
PLAN @ DOUBLE CATCH BASIN



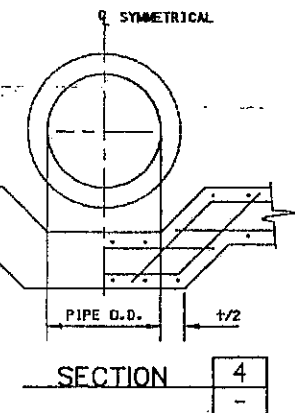
SECTION 1



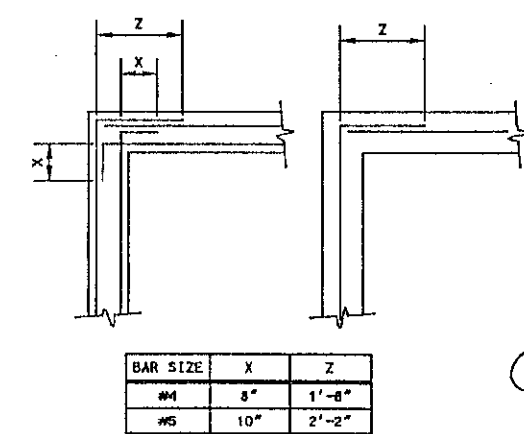
SECTION 3



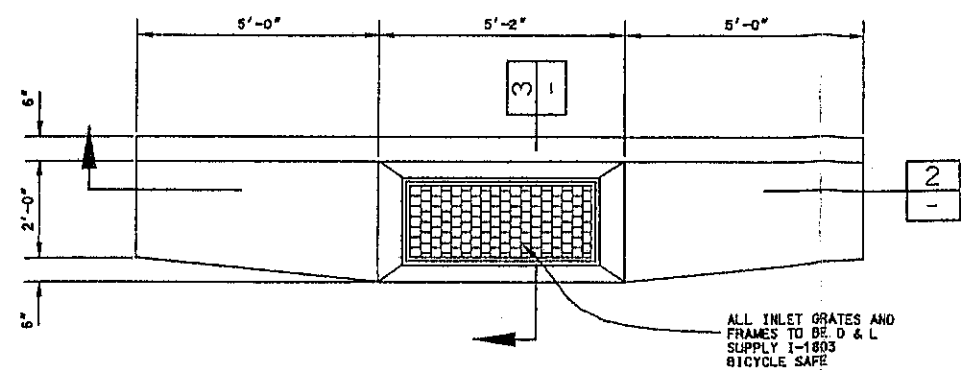
SECTION THRU PIPE



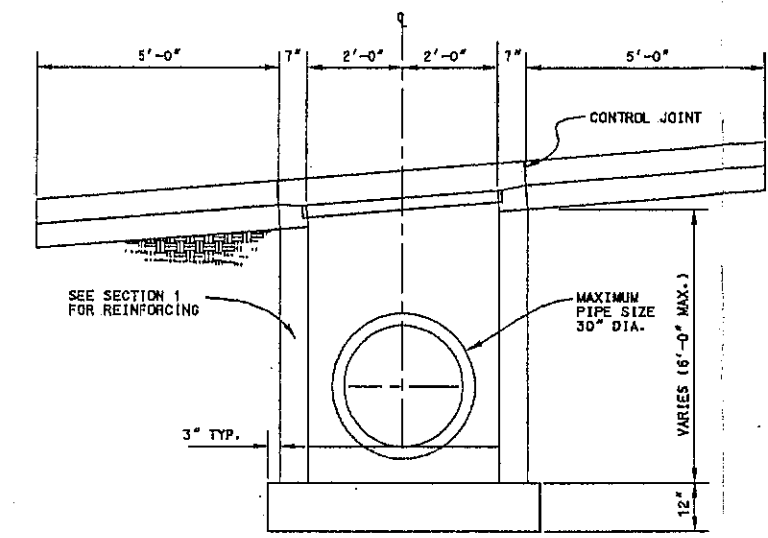
SECTION 4



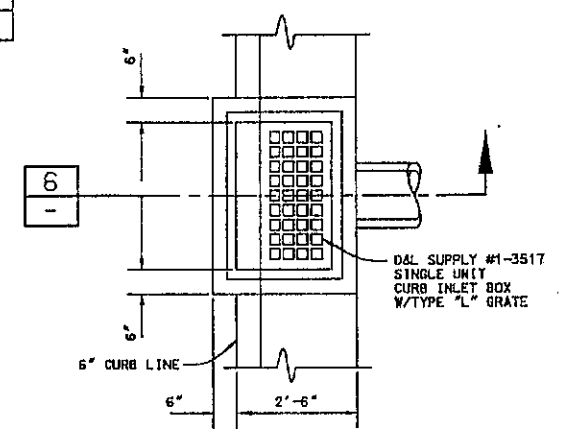
HORIZONTAL REINFORCEMENT AT WALL INTERSECTIONS



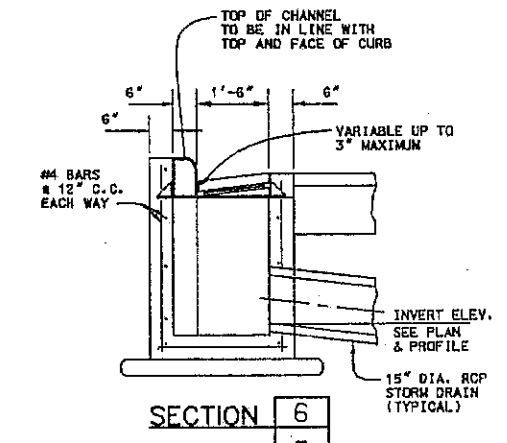
PLAN @ SINGLE CATCH BASIN



SECTION 2



CATCH BASIN PLAN



SECTION 6

ALTERNATE CATCH BASIN

WHERE DIRECTED BY CITY ENGINEER

GENERAL NOTES:

- ALL STRUCTURAL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI IN 28 DAYS.
- REINFORCEMENT STEEL SHALL BE DEFORMED BARS CONFORMING IN QUALITY TO THE REQUIREMENTS OF ASTM DESIGNATION A-615, GRADE 60, INCLUDING SUPPLEMENTARY REQUIREMENTS (S1).
- ALL DETAILING, FABRICATION AND PLACING OF REINFORCING BARS SHALL BE IN ACCORDANCE WITH THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" ACI-315, LATEST EDITION.
- TOLERANCES IN PLACING REINFORCEMENT SHALL BE:
 - 3/8 INCH FOR MEMBERS WITH d # 8 INCHES
 - 1/2 INCH FOR MEMBERS WITH d # 8 INCHES
- DOWELS, PIPES, WATERSTOPS AND OTHER INSTALLED MATERIALS AND ACCESSORIES SHALL BE HELD SECURELY IN POSITION WHILE CONCRETE IS BEING PLACED.
- UNLESS OTHERWISE SHOWN, ASIDE FROM NORMAL ACCESSORIES USED TO HOLD REINFORCING BARS FIRMLY IN POSITION, THE FOLLOWING SHALL BE ADDED:
 - A) IN SLABS #5 RISER BARS AT 36 INCHES O.C. MAXIMUM TO SUPPORT TOP REINFORCING BARS.
 - B) IN WALLS WITH 2 CURTAINS #3 U OR Z SHAPE SPACES AT 6 FEET O.C. EACH WAY.
- METAL CLIPS OR SUPPORTS SHALL NOT BE PLACED IN CONTACT WITH THE FORMS OR THE SUBGRADE. CONCRETE BLOCKS (OR DOBBIES) SUPPORTING BARS ON SUBGRADE SHALL BE IN SUFFICIENT NUMBERS TO SUPPORT THE BARS WITHOUT SETTLEMENT, BUT IN NO CASE SHALL SUCH SUPPORT BE CONTINUOUS.
- DOWELS SHALL BE WIRED OR OTHERWISE HELD IN POSITION. THEY SHALL NOT BE SHOWN INTO FRESHLY PLACED CONCRETE.
- REINFORCED BARS AND ACCESSORIES SHALL NOT BE IN CONTACT WITH ANY PIPE, PIPE FLANGE OR METAL PARTS EMBEDDED IN CONCRETE. A MINIMUM OF 2 INCHES CLEARANCE SHALL BE PROVIDED AT ALL TIMES.
- STRUCTURES SHALL BE BACKFILLED WITH GRANULAR SOIL.
- ALL CONSTRUCTION JOINTS SHALL BE ROUGHEN AND CLEANED AND FREE OF LAITANCE.
- STRUCTURES HAVE BEEN DESIGNED FOR THE FOLLOWING: IF CONDITIONS ARE EXCEEDED THE ENGINEER SHALL BE NOTIFIED.
 - A) AASHTO HS-20 TRUCK LOAD
 - B) 1'-6" MAX. SOIL ABOVE THE ROOF OF THE STRUCTURE
 - C) GROUND WATER TO TOP OF STRUCTURE
 - D) "AT-REST" LATERAL SOIL PRESSURE OF 60 PCF FOR DRY SOIL CONDITIONS AND 92.4 PCF WHEN GROUND WATER IS PRESENT.

KAYSVILLE CITY
23 EAST CENTER
KAYSVILLE, UTAH

KAYSVILLE CITY CORPORATION
DEVELOPMENT STANDARDS
STANDARD CATCH BASINS

SHEET NO.
7
OF 11 SHEETS

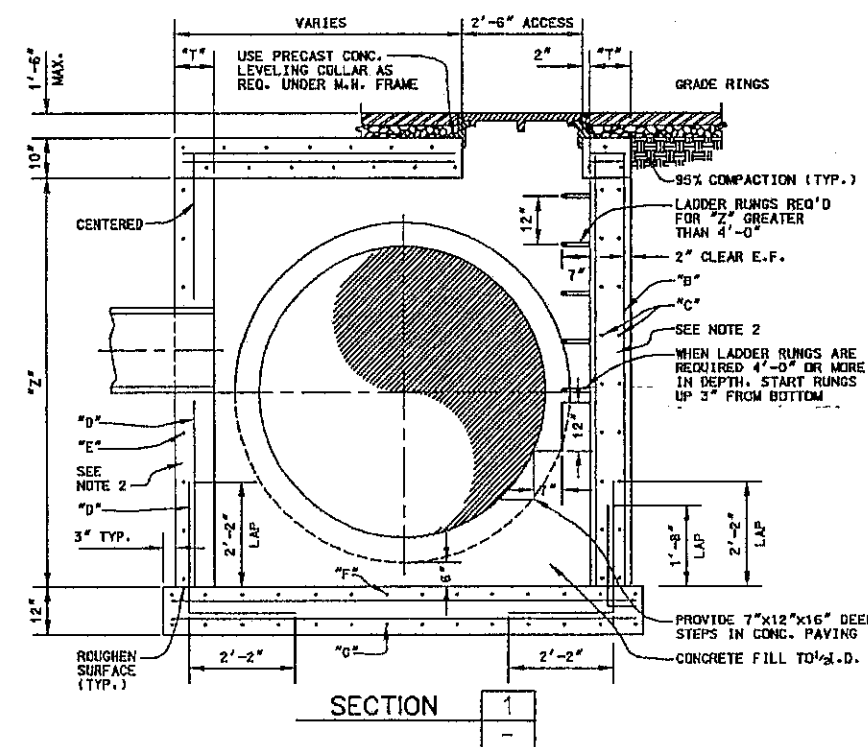
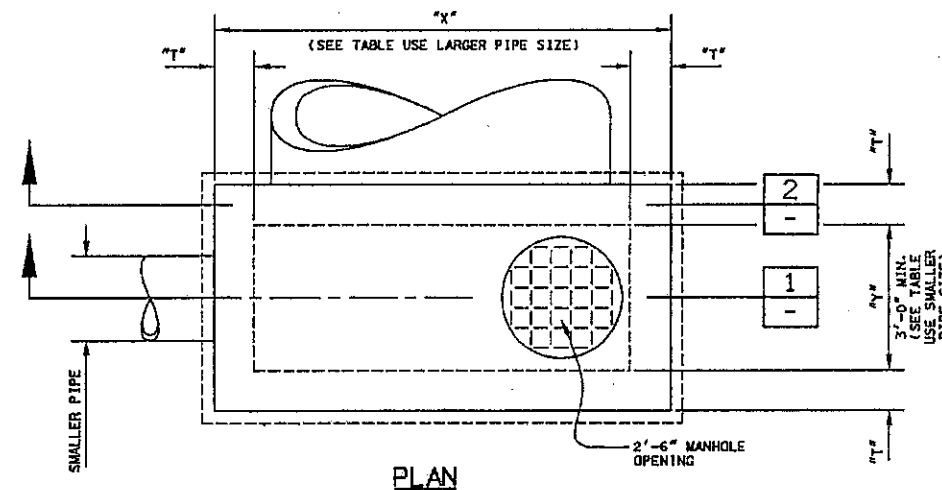
LICENSE	CITY ENGINEER	DESIGNED	
REV. DATE APPR.		DRAFTSMAN	
		CHECKED	
		DATE	7-21-94

PIPE SIZE (In.)	USE LARGEST PIPE SIZE FOR THESE DIMENSIONS AND REBAR EXCEPT DIMENSION "Y"									
	"X"	"2"	"T"	"A"	"B"	"C"	"D"	"E"	"F"	"G"
18	3'-0"	3'-3"	6"	#4 @ 12"	---	---	#5 @ 9"	#4 @ 12"	#4 @ 12"	#5 @ 9"
21	3'-3"	3'-6"	6"	#4 @ 12"	---	---	#5 @ 9"	#4 @ 12"	#4 @ 12"	#5 @ 9"
24	3'-6"	3'-9"	6"	#4 @ 12"	---	---	#5 @ 9"	#4 @ 12"	#4 @ 12"	#5 @ 9"
27	3'-9"	4'-0"	6"	#4 @ 12"	---	---	#5 @ 9"	#4 @ 12"	#4 @ 12"	#5 @ 9"
30	4'-2"	4'-5"	6"	#4 @ 12"	---	---	#5 @ 9"	#4 @ 12"	#4 @ 12"	#5 @ 9"
33	4'-5"	4'-8"	6"	#4 @ 12"	---	---	#5 @ 9"	#4 @ 12"	#4 @ 12"	#5 @ 9"
36	4'-8"	4'-11"	6"	#4 @ 12"	---	---	#5 @ 9"	#4 @ 12"	#4 @ 12"	#5 @ 9"
42	5'-3"	5'-6"	6"	#4 @ 12"	---	---	#5 @ 9"	#4 @ 12"	#4 @ 12"	#5 @ 9"
48	5'-10"	6'-1"	10"	#4 @ 12"	#5 @ 12"	#4 @ 12"	---	---	#4 @ 12"	#5 @ 12"
64	6'-5"	6'-8"	10"	#4 @ 12"	#5 @ 12"	#4 @ 12"	---	---	#4 @ 12"	#5 @ 12"
60	7'-0"	7'-3"	10"	#4 @ 12"	#5 @ 12"	#4 @ 12"	---	---	#4 @ 12"	#5 @ 12"
66	7'-7"	8'-10"	10"	#4 @ 12"	#5 @ 12"	#4 @ 12"	---	---	#4 @ 9"	#5 @ 12"
72	8'-2"	8'-5"	10"	#4 @ 12"	#5 @ 12"	#4 @ 12"	---	---	#4 @ 9"	#5 @ 12"

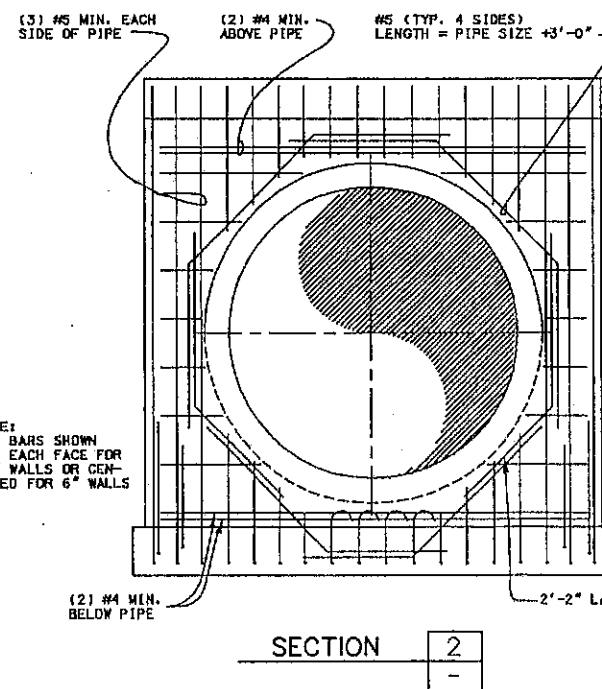
NOTES: 1. THE "H" REBAR IS BASED ON THE SMALLER PIPE. WHEN THE SMALLER PIPE IS 18" TO 36" USE #4 @ 6". WHEN THE SMALLER PIPE IS 42" TO 60" USE #5 @ 6". WHEN THE SMALLER PIPE IS 66" OR 72" USE #6 @ 6".

2. WALL THICKNESS IS BASED ON THE LARGEST OF THE PIPES. FOR 10" WALLS, USE 2 LAYERS OF STEEL. FOR 6" WALLS, USE A SINGLE LAYER OF STEEL.

3. WHEN "Z" IS LESS THAN 4'-0", THE VERTICAL REBAR LAP MAY BE ELIMINATED AND DOWELS EXTENDED TO THE TOP OF THE WALL.

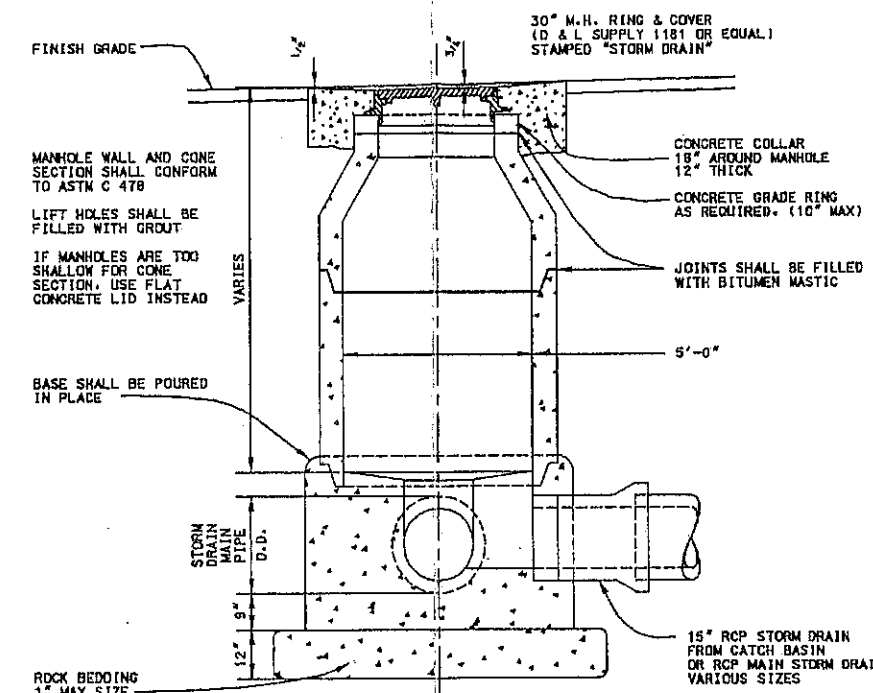
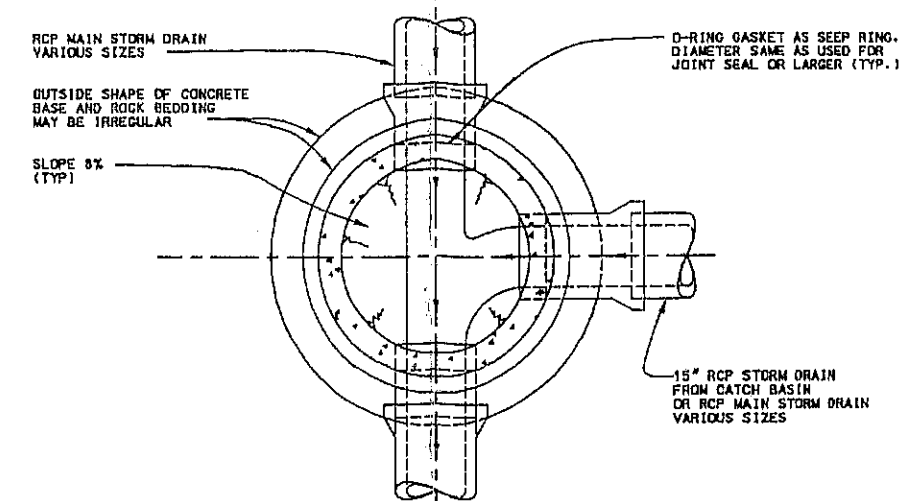


STANDARD CLEANOUT
(TYPE 1)

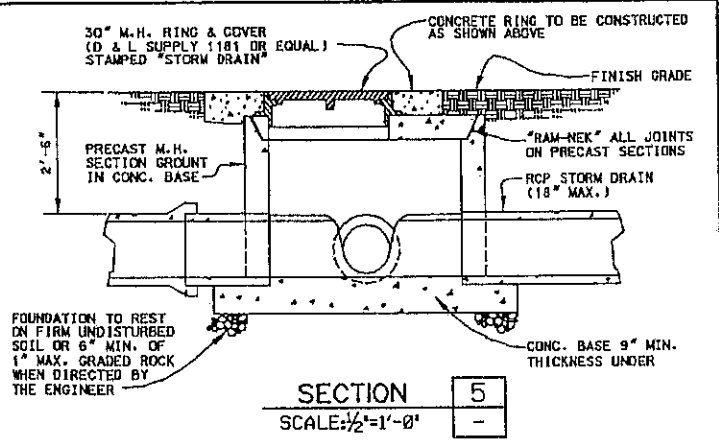
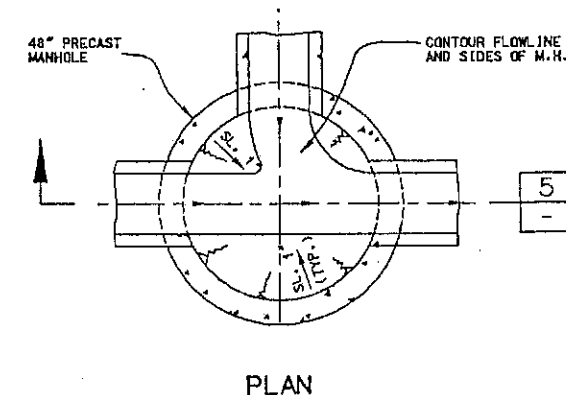


GENERAL NOTES:

1. ALL STRUCTURAL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI IN 28 DAYS.
2. REINFORCEMENT STEEL SHALL BE DEFORMED BARS CONFORMING IN QUALITY TO THE REQUIREMENTS OF ASTM DESIGNATION A-615, GRADE 60, INCLUDING SUPPLEMENTARY REQUIREMENTS (S11).
3. ALL DETAILING, FABRICATION AND PLACING OF REINFORCING BARS SHALL BE IN ACCORDANCE WITH THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" ACI-315, LATEST EDITION.
4. TOLERANCES IN PLACING REINFORCEMENT SHALL BE:
±3/8 INCH FOR MEMBERS WITH d ≤ 8 INCHES
±1/2 INCH FOR MEMBERS WITH d ≥ 8 INCHES
5. DOWELS, PIPES, WATERSTOPS AND OTHER INSTALLED MATERIALS AND ACCESSORIES SHALL BE HELD SECURELY IN POSITION WHILE CONCRETE IS BEING PLACED.
6. UNLESS OTHERWISE SHOWN, ASIDE FROM NORMAL ACCESSORIES USED TO HOLD REINFORCING BARS FIRMLY IN POSITION, THE FOLLOWING SHALL BE ADDED:
 - A) IN SLABS #5 RISER BARS AT 36 INCHES O.C. MAXIMUM TO SUPPORT TOP REINFORCING BARS.
 - B) IN WALLS WITH 2 CURTAINS #5 U OR Z SHAPE SPACES AT 6 FEET O.C. EACH WAY.
7. METAL CLIPS OR SUPPORTS SHALL NOT BE PLACED IN CONTACT WITH THE FORMS OR THE SUBGRADE. CONCRETE BLOCKS (OR DOBBIES) SUPPORTING BARS ON SUBGRADE SHALL BE IN SUFFICIENT NUMBERS TO SUPPORT THE BARS WITHOUT SETTLEMENT, BUT IN NO CASE SHALL SUCH SUPPORT BE CONTINUOUS.
8. DOWELS SHALL BE WIRED OR OTHERWISE HELD IN POSITION. THEY SHALL NOT BE SHOVED INTO FRESHLY PLACED CONCRETE.
9. REINFORCED BARS AND ACCESSORIES SHALL NOT BE IN CONTACT WITH ANY PIPE, PIPE FLANGE OR METAL PARTS EMBEDDED IN CONCRETE. A MINIMUM OF 2 INCHES CLEARANCE SHALL BE PROVIDED AT ALL TIMES.
10. STRUCTURES SHALL BE BACKFILLED WITH GRANULAR SOIL.
11. ALL CONSTRUCTION JOINTS SHALL BE ROUGHED AND CLEANED AND FREE OF LAITANCE.
12. STRUCTURES HAVE BEEN DESIGNED FOR THE FOLLOWING; IF CONDITIONS ARE EXCEEDED THE ENGINEER SHALL BE NOTIFIED.
 - A) AASHTO HS-20 TRUCK LOAD
 - B) 1'-6" MAX. SOIL ABOVE THE ROOF OF THE STRUCTURE
 - C) GROUND WATER TO TOP OF STRUCTURE
 - D) "AT-REST" LATERAL SOIL PRESSURE OF 60 PCF FOR DRY SOIL CONDITIONS AND 92.4 PCF WHEN GROUND WATER IS PRESENT.



NOTE:
MAX MANHOLE SPACING 500'.



STORM DRAIN MANHOLE
FLAT LID

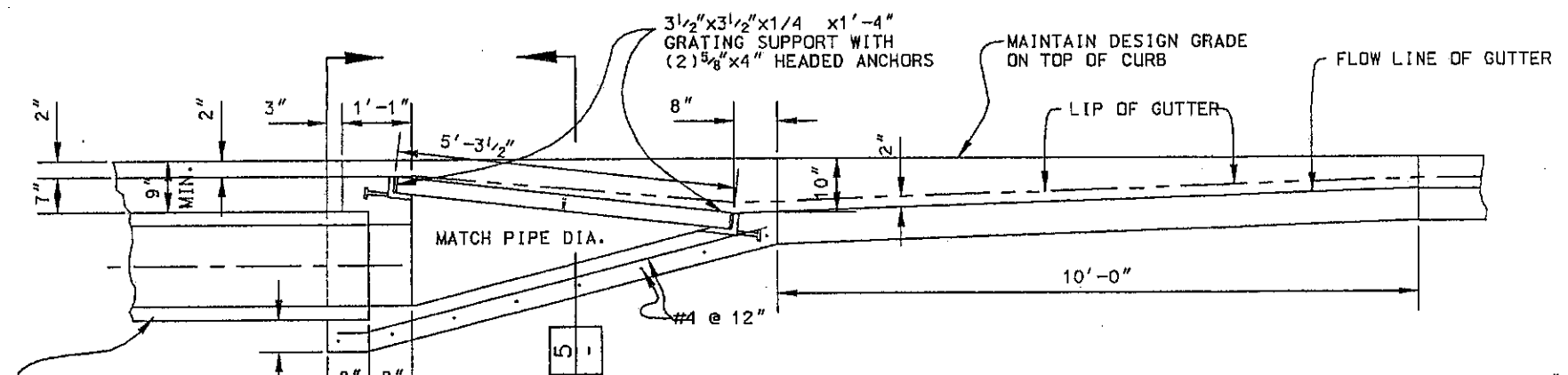
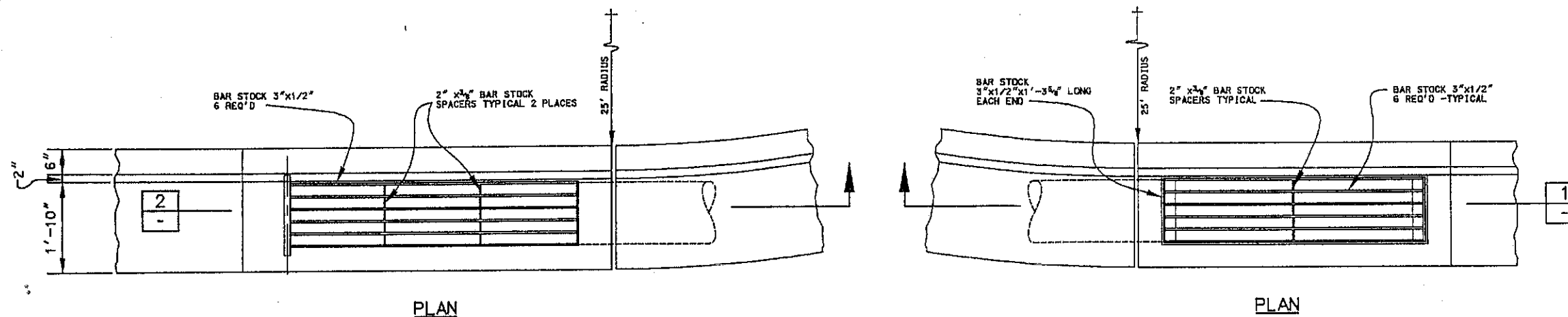
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4				DRAFTSMAN 
3				CHECKED
2				DATE
1	12/94		REVISIONS PER KAYSVILLE CITY	7-21-94
REV.	DATE	APPR.		

KAYSVILLE CITY
23 EAST CENTER
KAYSVILLE, UTAH

KAYSVILLE CITY CORPORATION
DEVELOPMENT STANDARDS

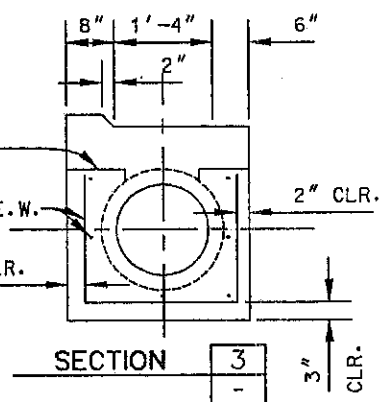
STANDARD STORM DRAIN MANHOLES

SHEET NO.
8
11 SHEETS

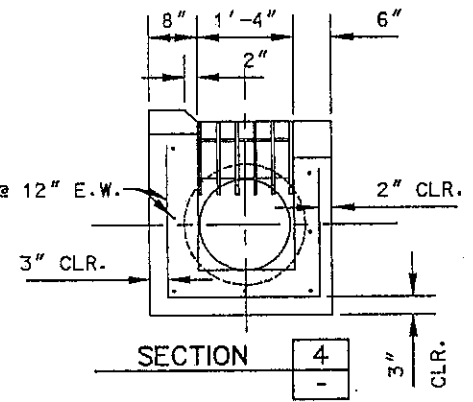


SECTION 1

TYPICAL INLET

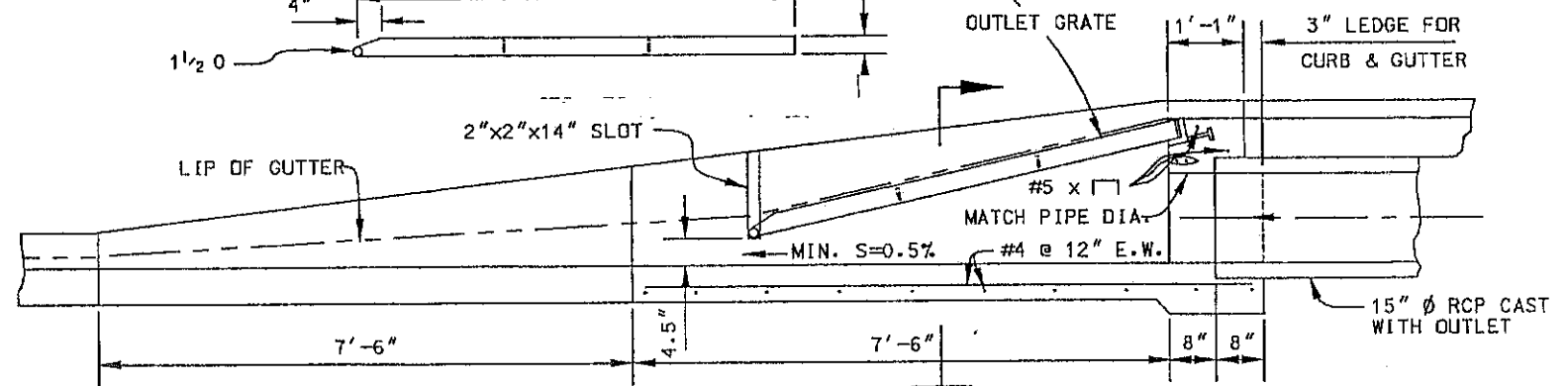
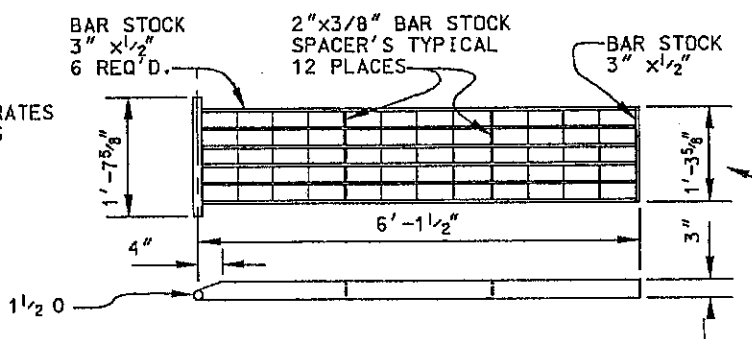


SECTION 3



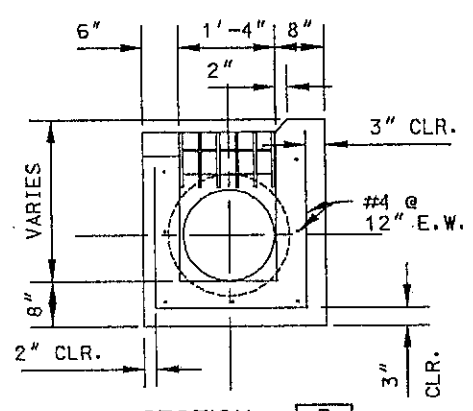
SECTION 4

NOTE:
HOT DIP GALVANIZE GRATES
AND FRATING SUPPORTS
AFTER FABRICATION.



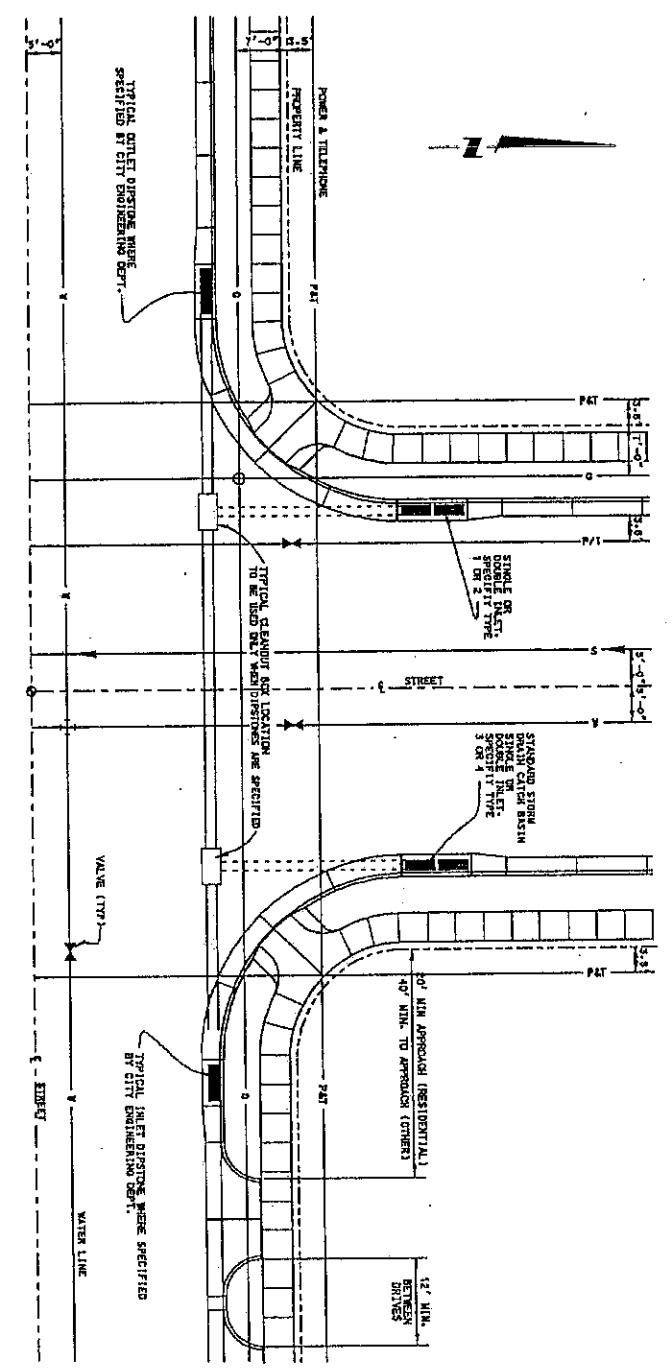
SECTION 2

TYPICAL OUTLET



SECTION 5

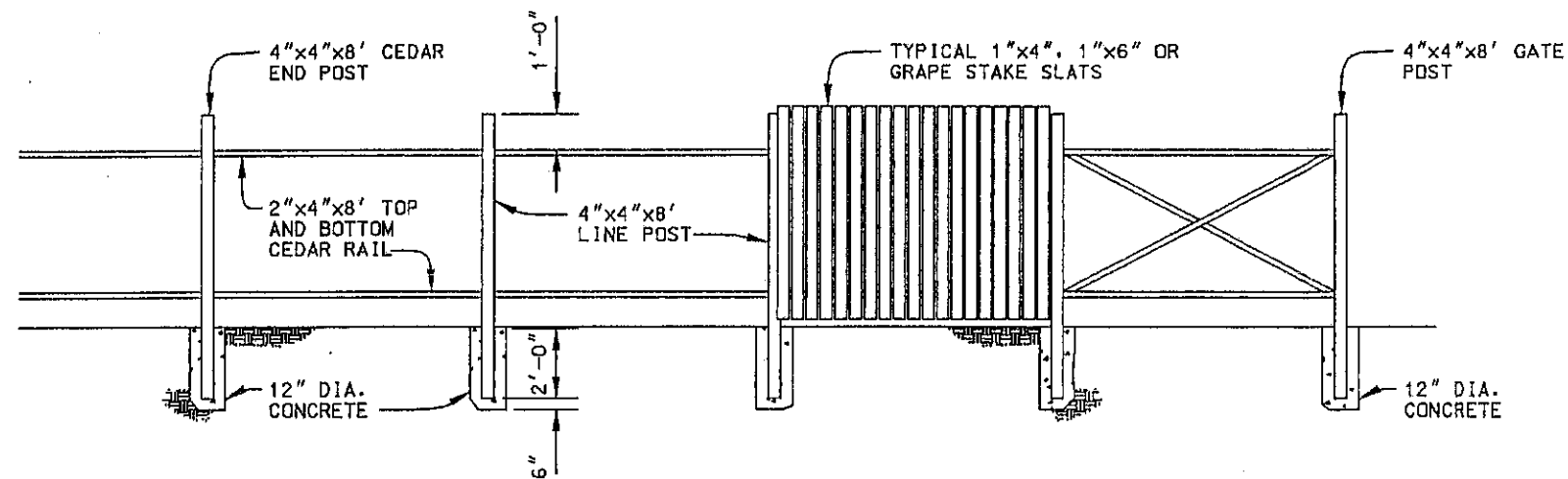
DIPSTONE STYLE DRAINAGE CROSSING



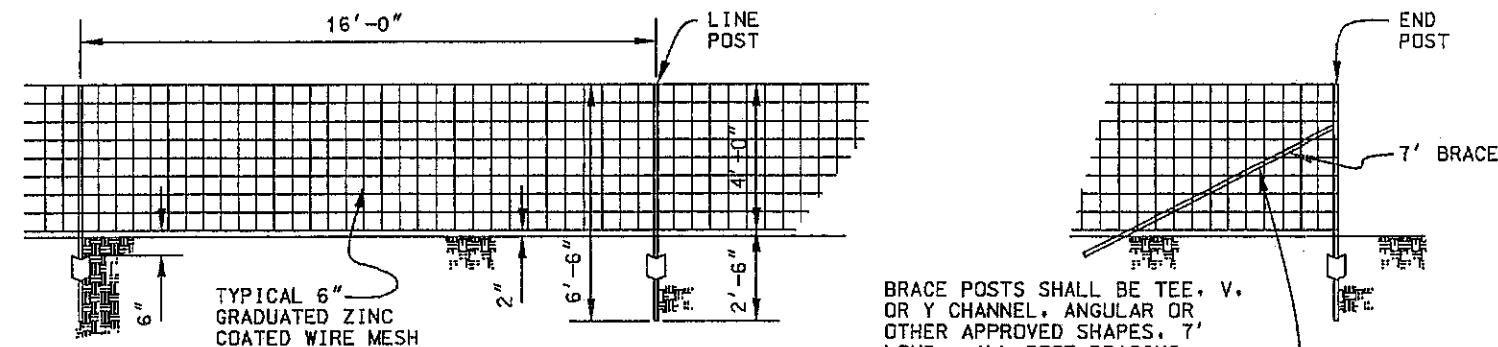
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4				DRAFTSMAN	
3				CHECKED	
2				DATE	7-24-94
1	12/94	REVISIONS PER KAYSVILLE CITY			
REV.	DATE	APPR.			

KAYSVILLE CITY
23 EAST CENTER
KAYSVILLE, UTAH

KAYSVILLE CITY CORPORATION
DEVELOPMENT STANDARDS
STANDARD INLET-OUTLET DIPSTONE DETAILS

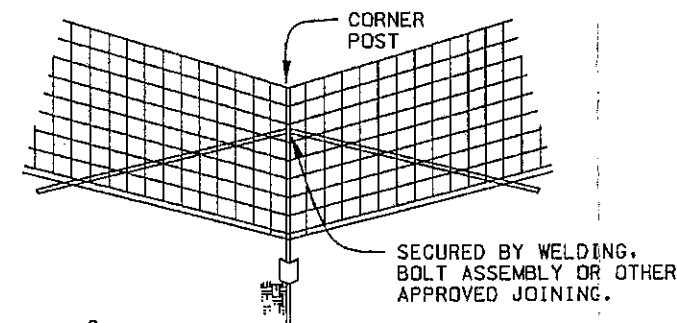


PLAN
SCALE: 3/8" = 1'-0"



TYPE "D" CONSTRUCTION FENCE

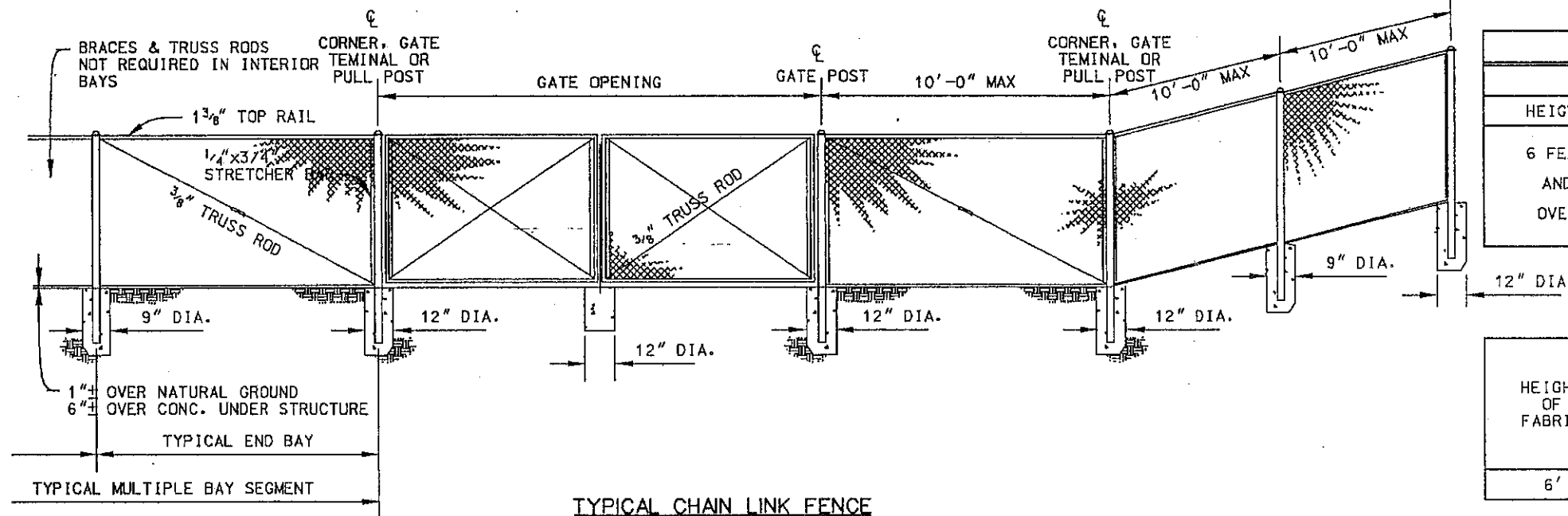
BRACE POSTS SHALL BE TEE, V, OR Y CHANNEL, ANGULAR OR OTHER APPROVED SHAPES, 7' LONG. ALL POST BRACING SHALL BE 12" TO 16" FROM TOP OF POST.



TYPICAL CORNER POST

NOTE:

1. ALL FABRIC SHALL BE 6' HIGH CHAIN LINK OF 2" GALVANIZED MESH OF 11 1/2 GAUGE
2. ALL STEEL PIPE MEMEBERS SHALL CONFORM TO THE REQUIREMENTS OF A.S.T.M. DESIGNATION A-120, SCHEDULE 40, HOT DIPPED ZINC COATED STEEL PIPE.
3. ALL POSTS SHALL BE SET IN CONCRETE AND SHALL BE TOPPED WITH BALL TYPE OR OTHER APPROVED ORNAMENT.
4. ALL END, CORNER OR PULL POST SHALL BE 9 FEET IN LENGTH WITH A MINIMUM DIAMETER OF 2 7/8 INCHES. ALL LINE POSTS SHALL BE 8 FEET 8 INCHES IN LENGTH WITH A MINIMUM DIAMETER OF 2 3/8 INCHES.



TYPICAL CHAIN LINK FENCE

GATES			
GATE POSTS AND GATE FRAMES			
HEIGHT	GATE OPENING	GATE POST	GATE FRAME
6 FEET AND OVER	SINGLE TO 6' OR DOUBLE TO 12'	2 7/8"	1 7/8"
	SINGLE OVER 6' TO 13' OR DOUBLE OVER 12' TO 24'	4"	
	SINGLE OVER 13' TO 18' OR DOUBLE OVER 24' TO 36'	6 5/8"	
	SINGLE OVER 18' OR DOUBLE OVER 36'	8 5/8"	

SIZE OF POSTS						
HEIGHT OF FABRIC	DEPTH OF POST	LENGTH OF END, CORNER OR PULL POSTS	LENGTH OF LINE POSTS	END, CORNER AND PULL PIPE OPTION	LINE POST (MIN. SIZE) PIPE OPTION	GATE POSTS
6'	3'+	9'+	8'-8"	2-7/8"	2-3/8"	4"

AN ORDINANCE ENACTING 19-5-7, TECHNICAL SPECIFICATIONS AND DRAWINGS, OF CHAPTER 19-5, SUBDIVISION STANDARDS, OF TITLE 19, SUBDIVISIONS, OF THE REVISED ORDINANCES OF KAYSVILLE CITY PROVIDING FOR REPEALER; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the Kaysville City has prepared updated details and drawings for development and construction of city infrastructure; and

WHEREAS, Kaysville City has used the same drawings for several years without a comprehensive update; and

WHEREAS, the Kaysville City Council desires to have communications conduit included with new development; and

WHEREAS, the technical specifications and standard drawings should be adopted by ordinance.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF KAYSVILLE CITY, UTAH:

SECTION I: Repealer. If any provisions of the City's Code previously adopted are inconsistent herewith they are hereby repealed.

SECTION II: Enactment. 19-5-7, Technical Specifications and Drawings, of Chapter 19-5, Subdivision Standards, of Title 19, Subdivisions, of the Revised Ordinances of Kaysville City is enacted as included as attached:

SECTION III: Severability. If any section, subsection, sentence, clause or phrase of this ordinance is declared invalid or unconstitutional by a court of competent jurisdiction, said portion shall be severed and such declaration shall not affect the validity of the remainder of this ordinance.

SECTION IV: Effective Date. This Ordinance shall take effect 20 days after being passed and adopted by the City Council.

PASSED AND ADOPTED by the City Council of Kaysville City, Utah, this ____th day of _____, 2020

Katie Witt
Mayor

ATTEST:

Maria T. Devereux
City Recorder

KAYSVILLE CITY DEVELOPMENT CODE



TECHNICAL SPECIFICATIONS
AND STANDARD DRAWINGS
FOR ALL DEVELOPMENT AND
CONSTRUCTION

SECONDARY WATER SPECIFICATION REFERENCES

DIVISION 1

GENERAL IMPROVEMENT REQUIREMENTS

1.01 SCOPE OF WORK:

This Division defines the general requirements for improvements to be built by the Developer or Subdivider or Contractor (“Developer”).

The improvements shall include all street improvements in front of all lots and along all dedicated streets to a connection with existing improvements of the same kind. Layout must provide for future extension to adjacent development and to be compatible with the contour of the ground for proper drainage. All water lines, sewer lines, power lines, secondary water lines, and any other buried conduit shall be installed to the boundary lines of the development.

1.02 CONSTRUCTION DRAWINGS:

Complete and detailed construction plans and drawings of all improvements shall be submitted to the City for review and approval prior to receiving final plat approval from the City. No construction shall be started until plans have been checked and approved by all responsible parties.

1.03 STANDARDS FOR CONSTRUCTION DRAWINGS:

The following instructions are for the purpose of standardizing the preparation of drawings to obtain uniformity in appearance, clarity, size, and style.

These plans and designs shall meet the standards defined in the specifications and drawings hereinafter outlined. The minimum information required on drawings for improvements are as follows:

All drawings and/or prints shall be clear and legible and conform to accepted engineering and drafting practices on a computer aided drafting program. Size of drawings shall be 22” x 34” with a one inch (1”) border on all sides.

A. In general, the following shall be included on drawings:

- (1) North Arrow (plan)
- (2) Scale and elevations referenced to State Plane datum
- (3) Stationing and elevations for profiles
- (4) Title block, located in lower right corner of sheet to include:
 - a) Name of City
 - b) Project Title (subdivision, etc.)
 - c) Specific type and location of work
 - d) Space for approval signature of City Engineer and date
 - e) Name of engineer or firm preparing drawings with license number, stamp and signature

- B. Curb and gutter, drains and drainage structures, sidewalks and street surfacing drawings shall show:
- (1) Scale: No smaller than 1" = 50' horizontal and 1" = 5' vertical
 - (2) Both plan view and profiles must be shown for each side of the street; street centerline profile must be shown
 - (3) Stationing and top of curb elevations with curve data must be shown
 - (4) Flow direction and type of cross drainage structures at intersections with adequate flow line elevations
 - (5) Bench Mark (B.M.) location and elevation (use State Plane datum)
 - (6) Typical cross section for all street sizes and variations including pavement structure detail (thickness of granular subbase, base course, and asphalt surface course)
- C. Where applicable, Storm Water Pollution Prevention Plans (SWPPP) shall be required. The plan shall meet State criteria and show Best Management Practices (BMPs) that will be used for the construction project. The SWPPP shall be reviewed and approved by the Storm Water Official prior to work commencing.
- D. Sewer drawings shall conform to the applicable Sewer District Standards and show:
- (1) Scale: No smaller than 1" = 50' horizontal and 1" = 5' vertical (may be shown on street or utility drawings)
 - (2) Location, size, and slope of mains
 - (3) Manhole size, location, and flow line elevation
 - (4) Type of pipe
 - (5) Bench Mark (B.M.) location and elevation (use State Plane datum)
 - (6) An overall development plan view of the sewer (horizontal scale 1" = 100')
- E. Culinary water drawings shall show:
- (1) Scale: 1" = 100' horizontal; an overall development plan view
 - (2) Size and location of water mains, valves, hydrants, and any other culinary water structure
 - (3) Type of pipe
- F. Each set of plans shall be accompanied by a separate sheet of details for structures which are to be constructed. All structures shall be designed in accordance with minimum requirements established by Kaysville City Development Standards.
- (1) Drawing size: 22" x 34" (trim line)
 - (2) Scale of each detail

- (3) Title block, lower right hand corner (same format on all sheets) including the name of the development
- (4) Completely dimensioned and described

Six (6) copies of the construction plans shall be submitted to the City. One copy will be stamped as “Approved” and returned to the Developer. This approved set shall be kept available at the construction site at all times. A reproducible and electronic copy of all drawings shall be submitted to the City at the time of the Preconstruction Conference. A reproducible and electronic copy of all drawings containing all “as constructed” information and a list detailing the location of all service laterals shall also be submitted to the City prior to the issuance of building permits.

1.04 PRECONSTRUCTION CONFERENCE:

A preconstruction conference shall be held before any excavation or other work is begun in the development. The meeting will be held at a time and location to be set by Kaysville City and will include: (a) City Engineer; (b) Developer; (c) development engineer; (d) all contractors and subcontractors involved with installing the development improvements; (e) a representative of Kaysville City Public Works and Power Departments; (f) a representative from Central Davis Sewer District; (g) a representative from Davis County Flood Control, where applicable; (h) representatives of utility companies including pressure irrigation, natural gas, telephone, and cable TV; and (i) a SWPPP Inspector.

The Developer shall give five (5) days notice of when they will be ready for a Preconstruction Conference. Items pertaining to the construction and inspection of the development improvements will be discussed. Once work starts, an approved set of plans must be on site at all times.

1.05 PERMISSIBLE MATERIALS:

Permissible materials for use in constructing required improvements and related sections in the Technical Specifications are as follows:

- A. Water Lines
 - (1) C-900 PVC Pipe (Division 4a)
 - (2) High Density Polyethylene Pipe (Division 4b), when specifically approved by the City Engineer.
- B. Water Laterals/Services
 - (1) Copper Pipe (Division 4d)
 - (2) Poly Pipe Schedule 40
 - (3) Service Saddles (Division 4d)
- C. Sanitary Sewer Line – As required by the applicable Sewer District (either Central Davis Sewer District “CDSD” or North Davis Sewer District “NDSD”).

- D. Sanitary Sewer Laterals – As required by CDSO or NDSO.
- E. Storm Drain – Minimum 15” Diameter, unless otherwise approved by the City Engineer
 - (1) Reinforced Concrete Pipe (RCP) (Division 3a)
 - (2) Double Wall Polyethylene Pipe (Division 3c), when specifically approved by the City Engineer.
 - (3) High Density Polyethylene Pipe (Division 4b), when specifically approved by the City Engineer.
- F. Gravity Flow Irrigation Lines
 - (1) Concrete Pipe (Division 3a)
 - (2) Double Wall Polyethylene Pipe (Division 3c), when specifically approved by the City Engineer.
 - (3) High Density Polyethylene Pipe (Division 4b), when specifically approved by the City Engineer.
- G. Subsurface Drain Lines – are generally tight joint pipe and shall be open jointed and/or perforated only when specifically approved by the City Engineer.
 - (1) Concrete Pipe (Division 3a)
 - (2) Perforated PVC (Division 3b)
 - (3) Perforated Polyethylene (Division 3c)
- H. Culinary Water Appurtenances–
 - (1) Water Meter Boxes and Lids
 - i. Concrete Boxes (Division 4d), when specifically approved by the City Engineer.
 - ii. Double Wall Polyethylene (Division 4d)
 - iii. Cast Iron Lids (Division 4d)
 - (2) Water Valves (Division 4c)
 - (3) Fire Hydrants (Division 4c)
- I. Secondary Water – As required by the applicable service provider.

1.06 INSPECTION:

All construction work involving the installation of improvements in development shall be subject to inspection by the City. It shall be the responsibility of the person responsible for construction to insure that inspections take place where and when required. Certain types of construction shall have continuous inspection, while others may have only periodic inspections.

- A. Continuous inspection shall be required on the following types of work:
 - (1) Laying of street asphalt surfacing
 - (2) Placing of concrete for curb and gutter, sidewalks, and other structures
 - (3) Laying of sewer pipe, drainage pipe, water pipe, valves, hydrants and testing

- B. Periodic inspections shall be required on the following:
- (1) Street grading and gravel base
 - (2) Excavations for curb and gutter and sidewalks
 - (3) Trenches for laying pipe
 - (4) Forms for curb and gutter, sidewalks, and structures

On construction requiring continuous inspection, no work shall be done except in the presence or by permission of the City PW Inspector, or the applicable utilities inspector.

1.07 REQUESTS FOR INSPECTION:

Requests for inspections shall be made to the City by the person responsible for the construction. Requests for inspection on work requiring continuous inspection shall be made three (3) working days prior to the start of work needing inspection. Notice shall also be given twenty-four (24) hours in advance of the starting of work requiring periodic inspection.

1.08 CONSTRUCTION COMPLETION INSPECTIONS:

A written inspection request shall be made by email or letter to the PW Inspector, after the necessary construction work is completed before building permits can be issued. Any defective work or work that does not comply with the applicable standards shall be corrected by the Developer within a period of thirty-five (35) days from the date on punch list. If items are found to still be incomplete, there will be a \$50.00 inspection fee charged to the Developer for the second (2nd) inspection and for every inspection thereafter.

Requests for inspection shall be made three (3) working days prior to the needed inspection. Inspections shall require that all snow, ice or other visual obstructions be removed by the Developer from inspected items and surfaces before the inspection.

1.09 GUARANTEE OF WORK:

The Developer shall warrant and guarantee (and post bond in the amount of ten (10) percent of the estimated cost of improvements as approved by Kaysville City at the time of final approval) that the improvements provided for in the Subdivision Ordinance, and every part thereof, will remain in good condition during the warranty period. The Developer shall also make all repairs to and maintain the improvements and every part thereof in good condition during that time with no cost to the City. The guarantee hereby stipulated shall extend to and include, but shall not be limited to, the entire street base and all pipes, joints, valves, backfill and compaction, as well as the working surface, curbs, gutters, sidewalks, and other accessories that are or may be affected by the construction operations.

No more than thirty (30) days before the conclusion of the warranty period, a written inspection request shall be made by email or letter to the PW Inspector. A punch list shall be generated and delivered to the Developer listing any defective work or work that does not comply with the applicable standards. These items shall be corrected by the Developer, and a request for

verification of punch list completion shall be made, via email or writing, to the PW Inspector. If items are found to still be incomplete, there will be a \$50.00 inspection fee charged to the Developer for the second (2nd) inspection and for every inspection thereafter.

If the Developer fails to do so within fifteen (15) days from the date of the service of such notice, the City Engineer shall have such repairs made, and the cost of such repairs shall be paid by the Developer, together with twenty-five (25) percent in addition thereto, as and for stipulated damages for such failure on the part of the Developer to make the repairs.

In order to receive final acceptance of improvements, the following criteria must be met:

- A. Completion of end of warranty period punch list items.
- B. PW inspector or their designee shall get signed approval from utility companies. This includes, but not limited to, Public Works, Power, CDSO or NDSO, the secondary water provider, and Davis County Flood Control.
- C. Notice of Termination (NOT) for Storm Water Pollution Prevention Plan (SWPPP) at the end of the warranty period.
- D. Conclusion of the one (1) year warranty period.

1.10 DEVELOPMENT SAFETY:

It shall be the responsibility of the Developer and/or his development representative to maintain and enforce all Federal, State, and Local safety codes involved with the development.

DIVISION 2a

TRENCH EXCAVATION AND BACKFILL

1.11 GENERAL:

This Division covers the requirements for trenching and backfilling for underground utilities. Unless otherwise directed by the City Engineer, pipe shall be laid in an open trench. All incidental clearing, preliminary grading, structure removal, and benching shall be considered a part of the trenching operation.

1.12 BARRICADES:

It is the Developer's responsibility to submit a traffic control plan to the City for approval at least forty-eight (48) hours prior to digging, and shall not commence until City approval is received. Barriers shall be placed at each end of all excavations and at such places as may be necessary along excavations to warn all pedestrians and vehicular traffic of such excavations. Warning signs shall also be installed placed on both sides of overhead lines to warn workers, operators, truck drivers etc. of potential dangers. Lights or reflective barricades shall also be placed along excavations from one hour before sunset each day to one hour after sunrise of the next day until such excavations are entirely refilled, compacted, and surfaced or final graded. All excavations shall be barricaded in such a manner as to prevent persons from falling, walking, or otherwise entering any excavation in any street, roadway, parking lot, or any other area, public or private. Impacted residents, businesses or other parties shall be contacted no less than twenty-four (24) hours prior to excavations that will impact utilities at or access to those properties.

1.13 BLASTING:

Blasting will not be allowed except by permission from the City Engineer. The Developer shall comply with all laws, ordinances, and applicable safety code requirements and regulations relative to the handling, storage, and use of explosives and protection of life and property, and it shall be fully responsible for all damage attributable to its blasting operations. Excessive blasting or overshooting will not be permitted, and any material outside the authorized cross section which may be shattered or loosened by blasting shall be removed by the Developer.

1.14 SHEETING, BRACING AND SHORING OF EXCAVATIONS:

Excavations shall be sheeted, braced, and shored as required to support the walls of the excavations, to eliminate sliding and settling and as may be required to protect the workmen, the work in progress, and existing utilities, structures and improvements. All such sheeting, bracing, and shoring shall comply with the requirements of the Utah Labor Commission, Occupational Safety and Health Act (OSHA), and accident prevention and safety provisions of the contract.

The Developer shall be fully responsible for the adequacy of methods and materials used in trench sheeting, bracing, shoring, and/or other systems provided to protect workmen. Injury to or

death of workmen resulting from inadequate trench safety measures shall be the full and complete responsibility of the Developer.

All damages resulting from lack of adequate sheeting, bracing, and shoring shall be the responsibility of the Developer, and the Developer shall affect all necessary repairs or reconstruction at its own expense resulting from such damage.

Sheeting or shoring that does not extend below the centerline of the pipe may be removed at the discretion and responsibility of the Developer after the trench backfill has been placed and compacted to a level twelve inches (12") above the top of the pipe. Following removal of the sheeting or bracing, the trench shall be immediately backfilled and compacted or consolidated.

1.15 CONTROL OF GROUNDWATER:

All trenches shall be kept free from water during excavation, fine grading, pipe laying and jointing, and pipe embedment operations. Where the trench bottom is mucky or otherwise unstable because of the presence of groundwater, and in all cases where the static groundwater is above the bottom of any trench or bell hole excavation, such groundwater shall be lowered to the extent necessary to keep the trench free from water and the trench bottom stable when the work within the trench is in progress. The discharge from excavation dewatering shall be conducted to natural drainage channels, gutters, or storm drains, in accordance with applicable water quality regulations and requirements. No sanitary sewer shall be used for disposal of trench water. If any evidence of contamination in the water based on olfactory or visual indication, cease excavation work until potential risks are evaluated. During evaluation, handle water as a contaminated material. Surface water shall be prevented from entering trenches.

1.16 TRENCH EXCAVATION

Excavation for pipelines shall follow the line and grade shown on the approved plans. Trenches shall be excavated to the depths and widths required to accommodate construction of the pipelines, as follows:

A. Authorized Over-Excavation:

Excavation for trenches in ledge rock, cobble rock, stones, or other material unsatisfactory for pipe foundation shall extend to a depth of at least six inches (6") below the bottom of the pipe. Where unstable earth or muck is encountered in the excavation at the grade of the pipe, a minimum of twelve inches (12") below grade will be removed. Such over-excavation and placing imported special foundation material shall not be made except as directed by the City Engineer or their designee. Over-excavations not ordered, specified, or shown shall be handled the same as unauthorized over-excavation.

B. Unauthorized Over-Excavation:

Where any unauthorized excavation is carried below the elevation required to install the pipe to the grade shown on the plans, specified in these specifications or directed by the City Engineer, the excavation shall be backfilled in accordance with these specifications for “Imported Granular Material” and “Gravel Foundation for Pipelines and Pipeline Structures,” all at the Developer’s expense.

C. Trench Width:

The trench shall be excavated such that the pipe is always centered in the trench. The clear trench width at the horizontal diameter of the pipe must be equal to eighteen inches (18”) on either side. If a trench is excavated to a greater width, the Developer will be required to restore the trench to an acceptable condition by following the steps outlined in these specifications for “Trenches in Embankments.”

Trench width for pipeline structures, valves, or other accessories shall be sufficient to leave at least twelve inches (12”) clear between their outer surfaces and the trench. Backfill with native soil or excavated spoils under structures, pipes or valves will not be permitted. Any unauthorized excess excavation below the elevation indicated for foundation of any structures shall be backfilled in accordance with these specifications for “Imported Granular Materials,” and “Gravel Foundation Pipelines and Pipeline Structures,” all at the Developer’s expense.

D. Trenches in Embankments:

Before laying pipes that are to be in fill or embankment areas, the embankment shall first be placed and compacted to the specified density to a depth of not less than two feet (2’) above the top of the proposed pipe. After placing and compacting the embankment, the trench for the pipe or conduit shall be excavated through the fill and fine graded and the pipe installed as specified.

E. Placement of Excavated Material:

All excess excavated material not fit for use in construction shall be hauled away from the construction site and disposed of in an area obtained by the Developer. The Developer shall be responsible for all rights-of-way, easements, and access associated with the disposal of excess excavated material. It shall further be responsible to obtain permission from the property owner or person(s) controlling the property where the Developer plans to dispose of excavated material.

Otherwise, excavated material shall be piled in a manner that will not endanger the work, will avoid obstructing sidewalks, driveways and streets and will comply with all applicable water quality rules and regulations. Gutters and irrigation ditches shall be kept clear for street drainage and continuity of irrigation.

Grading of the area surrounding the trenches, including excavated materials, shall be performed as necessary to prevent surface water from flowing into trenches, or other excavations. Control of groundwater shall be as specified herein.

F. Fine Grading the Trench Bottom:

The bottom of the Trench shall be accurately graded and prepared to provide uniform bearing and support on undisturbed soil or compacted gravel foundation at every point along the entire length of the pipe. Bell holes shall be hand excavated after the trench bottom has been fine graded. Bell holes shall be only large enough to permit making the joints and to assure that the pipe is not supported by any portion of the joint or bell.

1.17 TRENCH BACKFILL

A. Imported Granular Material:

1. General. When the excavated materials are not satisfactory for pipe foundation, pipe bedding or backfill, as determined by the Engineer, the Developer shall provide imported granular material. Imported granular material for foundation, bedding and backfill shall be cleaned, crushed rock or gravel free from sod, vegetation and other organic or deleterious material. Slag will not be allowed in the pipe zone.

2. Gradation. Imported granular material shall conform to the following gradation specifications:

Gravel Foundation Material:

One hundred (100) percent passing a one (1) inch screen and five (5) percent passing a one half (1/2) inch screen.

Gravel Bedding Material:

Ductile Iron or concrete pipe - One hundred (100) percent passing a one (1) inch screen and five (5) percent passing a No. 4 sieve.

PVC or polyethylene pipe - One hundred (100) percent passing a three quarter (3/4) inch screen and five (5) percent passing a No. 4 sieve.

Copper tubing - One hundred (100) percent passing a three quarter (3/4) inch screen and five (5) percent passing a No. 4 sieve.

Gravel Backfill Material:

One hundred (100) percent passing a three (3) inch square sieve and fifteen (15) percent passing a 200 mesh sieve.

B. Gravel Foundation for Pipe and Pipeline Structures:

The Gravel foundation is defined as fill material below the bottom of the pipe, pipeline structure or accessory. Wherever the trench is excavated below the subgrade for the pipe, pipeline structure, or accessory the subgrade shall be replaced with crushed rock or gravel to an elevation sufficiently above the bottom of the pipe so that the trench can be properly fine graded as specified and the pipe will be true to line and grade. The gravel material shall be deposited over the entire trench width in layers. The layers shall have a maximum un-compacted thickness of six (6) inches. The gravel material is to be compacted using vibratory equipment to 96% of the maximum index density of the material as determined by ASTM D4253 (Relative Density Test).

The material shall then be fine graded in accordance with the specification for Fine Grading herein.

C. Pipe Bedding:

Pipe bedding is fill material in the pipe zone. The pipe zone is defined as the area from the bottom of the pipe to twelve (12) inches above the top of the pipe, or any area within twelve (12) inches of any pipe, pipeline structure or accessory.

Excavated materials consisting of loose earth, sand or gravel having no material larger than two (2) inches in any dimension, no greater than one (1) inch in any dimension for PVC pipe or no greater than one half (1/2) inch for copper tubing may be considered for use as pipe bedding material. The City Engineer, or their designee, shall qualify excavated material for use as bedding.

If the excavated materials are not satisfactory, imported granular material as specified herein shall be used for pipe bedding. When gravel is used around pipe bedding, the Developer must place a fabric over gravel layer to keep fines from washing into gravel, creating a void. Fabric must be at least a two hundred (200) pound tensile strength woven ground stabilization fabric (in accordance with AASHTO M 288) and shall be installed on top of gravel prior to sand or roadbase placement.

After the pipe is in place, bedding material shall be placed at any point below the mid-point of the pipe simultaneously and uniformly on both sides of the pipe in un-compacted layers not to exceed ten (10) inches or one half (1/2) the diameter of the pipe, whichever is less. Bedding material shall be placed with care to prevent displacement of or damage to the pipe during the bedding process. Material shall be scattered alongside the pipe and not dropped into the trench in compact masses.

That section of the pipe zone from the mid-point of the pipe to twelve (12) inches above the top of the pipe shall then be filled with bedding materials and compacted to the density required in these specifications for backfill in this section of the trench.

D. Trench Backfill:

The trench shall be backfilled from twelve (12) inches above the top of the pipe to the natural surface level or the finished grade specified on the approved drawings. Excavated materials consisting of good sound earth, sand, and gravel may be used for backfill. No oil cake, asphalt, concrete, rocky, clay or other lumpy material may be used in the backfill. Perishable or spongy material shall not be used in backfilling. The City Engineer, or their designee, shall qualify excavated material for use as backfill.

Under pavements, shoulders or other surface improvements, the in-place density shall be a minimum of ninety-six (96) percent of laboratory standard maximum dry density as determined by AASHTO T-180 (ASTM D1557). In shoulders and other areas the in-place density shall be a minimum of ninety (90) percent of the maximum dry density as determined by AASHTO T-180 (ASTM D1557). The backfill in the trenches shall be either compacted or consolidated according to the requirements of the materials being placed.

Density and compaction testing shall be done at a frequency of one (1) test per two hundred (200) lineal feet of trench.

E. Compaction of Backfill:

Backfill shall be compacted by means of sheepfoot rollers, pneumatic tire rollers, vibrating rollers, or mechanical tampers. Where compaction methods are used, the material shall be placed at a moisture content and un-compacted lift thickness such that after compaction the required relative densities will be produced. In no event will the material be placed in lifts which, prior to compaction, exceed twelve (12) inches.

Prior to compaction each layer shall be evenly spread, moistened, and worked by disk harrowing or other equivalent means.

If the required relative density is not attained, test sections will be required to determine any adjustments in compaction equipment, thickness of layers, moisture content, and compactive effort necessary to attain the specified minimum relative density.

Approval of equipment, thickness of layers, moisture content, and compactive effort shall not be deemed to relieve the Developer of the responsibility for attaining the specified minimum relative densities. The Developer, in planning its work, shall allow sufficient time to perform the work connected with test sections and to permit the City Engineer or their designee to make tests for relative densities.

F. Consolidation of Backfill:

Consolidation of backfill, when authorized by the City Engineer, shall be accomplished by those methods in which water is used as the essential agent to produce the desired condition of density and stability. Water shall be applied by jetting unless flooding is specifically authorized by the City Engineer. Authorization by the City Engineer to use any consolidation method does not relieve the Developer of their responsibility to meet the specified density requirements. Water for consolidation shall be furnished by the Developer at their expense.

In the jetting procedure the jets shall be inserted at not more than four (4) foot intervals (staggered throughout the length of the backfilled area) and shall be slowly forced down to the bottom of the trench or to of the previously jetted lift and held until the trench backfill is completely saturated with water. Depth of a jetted lift shall not exceed five (5) feet.

The minimum size of hose equipment shall be such as to provide a minimum pressure of thirty-five (35) psi at the discharge. The jet shall be rigid iron pipe with a minimum diameter of one (1) inch.

After the water-settled trench has set for several days, any depression in the trench shall be filled, mounded over and wheel rolled to compact the material thus placed.

All precautions necessary shall be taken by the Developer to prevent damage and movement (including floating) of the pipeline, structures, and existing adjacent improvements and utilities. The allowance of the use of consolidation methods shall not be construed as guaranteeing or implying that the use of such methods will not result in damage to the adjacent ground. The Developer shall make their own determination in this regard and shall assume all risks and liability for settlement or lateral movement of adjacent ground, or improvements, or utilities, either on the surface of the ground or underground.

1.18 TRENCH CROSSINGS AND EASEMENTS:

At road crossings or where existing driveways occur on a road, the Developer shall make provisions for trench crossings either by means of backfills, tunnels, or temporary bridges.

When excavating within easements, the Developer shall carefully remove all shrubs, fences, and other above ground items, carefully cut and remove any lawn sod and remove the topsoil for a depth of at least twelve (12) inches (or the depth of the actual topsoil if less than twelve (12) inches with the width of the lawn sod and/or topsoil removal being at least two (2) feet wider (one (1) foot each side) than the excavated trench width and excavated material pile. The lawn sod and topsoil material shall be piled separately from and shall not be mixed with the remainder of the excavated material.

When working in already developed areas on private property the City Engineer may require that following completion of the backfilling and the compaction of the trench, the Developer shall replace topsoil, lawn sod, shrubs, fences, and other items that may have been removed from within the easement area and clean up and remove any rocks, dirt or any other debris that remain from the construction work. When required, the Developer shall obtain a release from the property owner stating that the repairs have been made to the satisfaction of the Owner. A copy of said release shall be delivered to the City Engineer.

1.19 RESTORATION OF CONSTRUCTION SITE:

During the progress of the Work, the Developer shall clean up all construction debris, excess excavation and construction materials, and shall restore all fences, irrigation structures, ditches, culverts, and similar items. The Developer shall stockpile the excavated trench material so as to do the least damage to adjacent grassed areas, or fences, regardless of whether these are on private property or public rights of way. All excavated materials shall be removed from grassed and planted areas and these surfaces shall be left in a condition equivalent to their original surface and free from all rocks, gravel, boulders, or other foreign materials.

1.20 DEVELOPER'S RESPONSIBILITY:

The Developer will be responsible to see that the backfilling, consolidation and compaction are properly and adequately done. Settlement of trenches within a period of one (1) year after final acceptance of the project, shall be considered incontrovertible evidence of inadequate compaction, and the Developer shall be responsible for correcting the condition in accordance with the provisions of these Specifications, including the replacement of the surface materials. The Developer is responsible to maintain and repair any problems caused by them to adjoining properties.

1.21 KAYSVILLE CITY POWER AND LIGHT UNDERGROUND CONDUIT REQUIREMENTS:

The Developer is responsible for installing conduit for road crossings. The properties should be marked and radius for corners marked and staked. A representative from Kaysville City Power and Light will mark crossing for the Developer. The Developer is required to dig a trench four (4) feet deep and stub eight feet (8') from the back of curb for future tie-in of conduit. The Developer will seal both ends of conduit crossing with conduit seal.

Prior to the digging of the trench for the conduit system, the Developer will have curb and gutter in with property marks on curb and property stakes in back of properties. The Developer will dig a serviceable trench four feet (4') deep and thirteen feet (13') from the center of trench to the back of curb with road crossing conduit exposed for Kaysville City Power and Light. (Offsets may vary depending on type of subdivision.) If trench is not serviceable, Developer is required to re-excavate, pump out water, etc. A representative from Kaysville City Power and Light will decide what is considered a serviceable trench. Generally, a serviceable trench means that it is level, no cave-ins, water, etc.

When trench is serviceable, Kaysville City Power and Light will schedule time to install conduit. Kaysville City Power and Light will be the only utility allowed in trench. They will be notified prior to any changes or if problems occur. They will approve or disapprove of any changes.

The backfilled trenches should have the center of the pipe or bundles of pipe, to be located thirteen feet (13') back of curb. The dirt to be backfilled must be suitable enough to prevent conduit damage. If conditions are not acceptable, sand may be required to shade conduit to protect it from damage. Conduit must be adequately shaded before backfilling. Any broken conduit pipe found by Kaysville City Power and Light will be dug up by the Developer. Kaysville City Power and Light will repair the conduit only and the Developer will be responsible to backfill the hole, repair road, and any other necessary tasks to complete the project.

DIVISION 2b

EARTHWORK

1.22 GENERAL:

This Division defines the requirements for excavation and backfill for structures, construction requirements for embankments and fills, and subgrade preparation for pavements and other surface improvements.

1.23 EXCAVATION FOR STRUCTURES:

Where suitable subgrade soils exist structures shall be founded on undisturbed original subsoil. All unauthorized excavation below the specified subgrade shall be replaced with concrete, monolithic with that of the slab above or with coarse gravel thoroughly compacted into place.

Subgrade soils for structures not suitable for proper support shall be replaced with firm, dense, thoroughly compacted and consolidated material free from mud and muck. Coarse gravel or crushed stone may be used for subsoil reinforcement if satisfactory results can be obtained thereby. Such material shall be applied in thin layers, each layer being embedded in the subsoil by thorough tamping. All excess soil shall be removed to compensate for the displacement of the gravel or crushed stone and the finished elevation of any subsoil reinforced in this manner shall not be above the specified subgrade elevation.

1.24 BACKFILL AROUND STRUCTURES:

Backfill around structures shall be placed to the lines shown on the drawings, or as directed. After completion of foundation footings and walls and other construction below the elevation of the final grades, and prior to backfilling, all forms shall be removed and the excavation shall be cleaned of all trash and debris. Material for backfilling shall consist of suitable excavated material or imported sand, gravel, or other suitable material, and shall be placed in lifts which will allow the densities to be achieved and which in any event shall not exceed eight (8) inches in uncompacted thickness. Each layer shall be compacted by hand or machine tampers or by other suitable equipment to a density equal to 96% of maximum dry density as measured by AASHTO T-180 (ASTM D1557).

1.25 CONSTRUCTION OF EMBANKMENTS AND FILLS:

Unsuitable materials, such as roots, vegetation, or other organic material that occur in the foundations for embankments and fills shall be removed by clearing, stripping, and/or grubbing. Where suitable materials occur after stripping, the foundation shall be scarified to a depth of not less than six inches, and the loosened material shall be moistened and compacted as hereinafter specified for each layer. All materials in embankments and fills shall be placed, moistened, and compacted as provided in the following paragraphs.

When the embankment or fill exceeds the amount of excavation, sufficient additional material shall be obtained from borrow pits provided by the Developer. All material proposed to be imported shall be subject to the review and approval of the Engineer or his representative prior to starting of hauling operations.

The materials used for embankment and fill construction shall be free from sod, grass, trash, clods, rocks larger than eight inches in diameter, and all other material unsuitable for construction of compacted fills.

Grading of completed embankments and fills shall bring the surfaces to a smooth, uniform condition with final grades being within 0.1 foot of the design grade.

1.26 COMPACTING EARTH MATERIALS:

The material shall be deposited in horizontal layers having a thickness of not more than ten inches prior to being compacted as hereinafter specified; provided that when mechanical equipment is used for placing and compacting the material on a sloping foundation, the layers may be placed parallel to the foundations. The distribution of materials shall be such that the compacted material will be homogeneous and free from lenses, pockets, or other imperfections.

Prior to and during compaction operations, the material shall have the optimum moisture content required for the purpose of compaction, and the moisture content shall be uniform throughout the layers, insofar as practicable. The moisture shall be controlled at two percent plus or minus of the optimum moisture as determined by AASHTO T-180 (ASTM D1557). Moistening of the material shall be performed at the site of excavation, but such material shall be supplemented as required by sprinkling at the site of construction. If the moisture content is more than optimum for compaction, the compaction operations shall be delayed until such time as the material has dried to the optimum moisture content. When the material has been conditioned as hereinbefore specified, the backfill or embankment shall be compacted as follows:

- (a) All trenches in the City Right of Way (under roadways and extending one foot beyond the proposed back of walk and under sidewalks and drive approaches to at least one foot each side of the edge of the slab), the fill or embankment material shall be compacted to a density equal to not less than 96% of maximum dry density as measured by AASHTO T-180 (ASTM D1557).
- (b) Other fills and embankments not listed above shall be compacted to a density equal to not less than 90% of maximum dry density, as measured by AASHTO T-180 (ASTM D1557).

DIVISION 3a

CONCRETE PIPE

3a.01 GENERAL:

This Division covers the requirements for concrete pipe materials and installation in sanitary sewer, storm drain, and other gravity line construction.

3a.02 PIPE:

Concrete pipe used in sewer line, storm drain line and other gravity line construction shall be reinforced concrete pipe for fifteen (15) inch and larger. The minimum size for storm drain pipes is a fifteen inch (15") inside diameter pipe, unless otherwise instructed by the City Engineer. (See Sewer District standards for minimum pipe sizes for sanitary sewer lines.):

A. Reinforced Concrete Pipe:

All reinforced concrete pipe used in the construction shall be of the rubber gasket type, bell and spigot joint design, conforming to the requirements of the latest revision of ASTM C76. Pipe class shall be as shown on the approved set of plans. The minimum joint length of all pipe provided shall be 7 1/2 feet

B. Bell and Spigot Joints:

Bell and spigot joints, including rubber gaskets, shall conform to the requirements of the latest revision of ASTM C443. The pipe joint shall be so designed as to provide for self centering, and when assembled, to compress the gasket to form a watertight seal. The gasket shall be confined in a groove on the spigot, so that pipe movement or hydrostatic pressure cannot displace the gasket.

C. Tracer Wire:

All non-conductive pipes require a tracer wire (12 gauge) for locating purposes placed on top of pipe from manhole to manhole. Where splices are to be made, a water tight splice kit must be used. See Drawings for tracer wire installation. Tracer wire tail length must not exceed two feet (2').

3a.03 PIPE LAYING:

All concrete pipe installation shall proceed upgrade on a stable foundation, with joints closely and accurately fitted. Rubber gaskets shall be fitted properly in place, and care shall be taken in joining the pipe units to avoid twisting of gaskets. Joints shall be clean and dry, and a joint lubricant as recommended by the pipe supplier shall be applied uniformly to the mating joint surfaces to facilitate easy positive joint closure.

Pipe shall be installed with uniform bearing under the full length of the barrel, with suitable excavations being made to receive pipe bells.

Select material shall be compacted around the pipe to firmly bed the pipe in position. If adjustment of position of a pipe length is required after being laid, it shall be removed and re-jointed as for a new pipe. When laying is not in progress, the ends of the pipe shall be closed with a tight-fitting stopper to prevent the entrance of foreign material.

In addition to the above requirements, all pipe installation shall comply with the specific requirements of the pipe manufacturer.

3a.04 GRAVEL FOUNDATION FOR PIPE:

Wherever the subgrade material does not afford a sufficiently solid foundation to support the pipe and superimposed load, or where groundwater must be drained, the subgrade shall be excavated to such depth as may be necessary and replaced with crushed rock or gravel compacted into place.

Gravel for concrete pipe foundation shall be clean crushed rock or gravel with one hundred percent (100%) passing a one-inch (1") screen and five percent (5%) passing a No. 4 sieve.

3a.05 INSTALLATION REQUIREMENTS FOR LINE AND GRADE:

All concrete pipes shall be installed accurately to the defined line and grade with the following limits:

Variance from established line and grade shall not be greater than one sixteenth (1/16) inch per inch of pipe diameter in ten feet, and not to exceed one half inch in ten feet, provided that such variation does not result in a level or reverse sloping invert; provided also that variation in the invert elevation between adjoining ends of pipe, due to non concentricity of joining surface and pipe interior surfaces, does not exceed one sixty fourth (1/64) inch per inch of pipe diameter, or one half (1/2) inch maximum.

3a.06 PIPE BEDDING:

All pipe shall be protected from lateral displacement and possible damage resulting from impact or unbalanced loading during backfilling operations by being adequately bedded. Bell holes shall be excavated so that only the barrel of the pipe receives bearing from the trench bottom.

Pipe bedding materials placed at any point below the mid-point of the pipe shall be deposited and compacted in layers not to exceed ten-inches (10") in uncompacted depth. Deposition and compaction of bedding materials shall be done simultaneously and uniformly on both sides of the pipe. Compaction shall be accomplished with hand or mechanical compactors. All bedding materials shall be placed in the trench in such a manner that they will be scattered alongside the pipe and not dropped into the trench in compact masses. Bedding materials shall be loose earth,

free from lumps; sand or gravel, free from rocks larger than two-inch (2") diameter. All materials shall be free from roots, sod, or other vegetable matter.

In the event trench materials are not satisfactory for pipe bedding, modified bedding will be required. Modified bedding shall consist of placing compacted granular material on each side of and to the level of twelve-inches (12") above the top of the pipe.

Modified bedding material shall be graded as follows: One-hundred percent (100%) passing a one and one-half inch (1-1/2") screen and five percent (5%) passing a No. 4 sieve. If gravel is used to bed pipe, then at least a two hundred pound (200 lb) tensile strength woven ground stabilization fabric (in accordance with AASHTO M 288) should be installed on top of gravel prior to sand or roadbase placement.

3a.07 TESTS:

The Developer will be required to conduct an air test and displacement test in the presence of the City Engineer or his representative. If these tests prove to be inconclusive, any or all of the other required tests shall be conducted in the presence of the City Engineer or his representative. Tests shall be performed as follows:

A. Displacement Test:

In conducting the displacement test a light will be flashed between manholes or, if the manholes have not as yet been constructed, between the locations of the manholes, by means of a flashlight or by reflecting sunlight with a mirror. If the illuminated interior of the pipe shows broken, misaligned, or displaced pipe or other defects, the defects designated by the City Engineer shall be remedied at the Developer's expense.

B. Infiltration Test:

The Developer shall furnish labor, equipment, and materials, including pumps, and shall assist the City Engineer in making infiltration tests of the completed line before it can be placed into service. The Developer shall furnish and install the measuring weirs or other measuring devices. The length of line to be tested at any time shall be subject to the approval of the City Engineer. The maximum allowable infiltration shall not exceed one-hundred-fifty (150) gallons per inch diameter per mile per twenty-four (24) hours for all installed pipe. If the quantity of infiltration is in excess of the maximum allowable, the leaking joints shall be repaired to the satisfaction of the City Engineer at the expense of the Developer.

C. Exfiltration Test:

The Developer shall furnish labor, equipment, and materials, including pumps, and shall assist the City Engineer in making exfiltration tests of the completed line before it can be placed into service. The length of line to be tested at one time

shall be limited to the length between adjacent manholes. The maximum allowable exfiltration shall not exceed one-hundred-fifty (150) gallons per inch diameter per mile per 24 hours for all installed pipe. The end of the line which projects into the manhole shall be plugged. The pipe shall then be filled with water from the upper manhole, and the line maintained under a light pressure of four feet (4') of head. The inflow of water necessary to maintain this head shall be recorded as the leakage of the system. If the quantity of exfiltration is in excess of the maximum allowable, the leaking joints shall be repaired to the satisfaction of the City Engineer at the expense of the Developer.

D. Air Testing:

The Developer or their representative (a qualified firm or individual agreed upon by the City Engineer and the Developer) shall furnish labor, equipment, and materials, including pumps and compressors, and shall perform, in the presence of the City Engineer, air tests of the completed pipe before it can be placed in service. Each section of sanitary sewer pipeline between manholes shall be tested after all the four-inch (4") service laterals (and plugs) have been installed. Each test section shall be pressurized to 4.0 psi. For the purpose of stabilizing the air pressure in each test section, the 4.0 psi pressure shall be maintained for a two-minute period. Each test section shall then be re-pressurized to 4.0 psi for a period of four (4) minutes. The test section shall be accepted if, after four (4) minutes, the pressure gauge indicates 3.5 psi or greater. Failure of the Developer's testing equipment to properly function shall render the test unacceptable. All faulty sections of pipeline shall be repaired and retested until the minimum air testing requirements have been met.

E. Camera Inspection Test:

The Developer or their representative shall hire a qualified firm or individual to clean and then inspect, via camera, the entire length of the piping, and provide a digital copy of the video recording of that inspection on a thumb drive to the PW Inspector for review. At the City's discretion, any defects found with the pipe, its function or installation will be fixed at the Developer's expense. Pipes shall be left clean and free of debris.

DIVISION 3b

PVC PLASTIC PIPE FOR GRAVITY LINES

3a.08 GENERAL:

This Division covers the requirements for PVC plastic pipe materials and installation of main line storm drain, land drain, and other gravity line construction. For information regarding requirements for sanitary sewer, refer to the standard drawings and specifications of either the Central Davis Sewer District or North Davis Sewer District, depending on the location.

3a.09 PIPE:

PVC gravity pipe and fittings shall conform to ASTM D3034, for diameters from four-inch (4") to fifteen-inch (15") and ASTM F679 for eighteen-inch (18") to twenty-seven-inch (27"), with integral bell gasket joints. Rubber gaskets shall be factory installed and conform to ASTM F477. Pipe shall be made of PVC plastic having a cell classification of 12454A or 13364B (with minimum tensile modulus of 500,000 PSI) as defined in ASTM D1784 and shall have a SDR of 35, and minimum pipe stiffness of 46PSI according to ASTM D2412.

Pipe shall be installed in compliance with ASTM D2321 and the manufacturer's requirements. Land drain pipes will be white or green in color, and shall include locating tape labeled "LAND DRAIN" placed two feet (2') above the top of the pipe, including laterals within the right of way.

3a.10 FITTINGS:

Fittings shall be made of PVC plastic conforming to ASTM D1784, have a cell classification as outlined in ASTM D3034.

3a.11 PIPE LAYING:

All pipe installation shall proceed upgrade on a stable foundation, with joints closely and accurately fitted. Joints shall be clean and dry, and a joint lubricant as recommended by the pipe supplier shall be applied uniformly to the mating joint surfaces to facilitate easy positive joint closure.

Pipe shall be installed with uniform bearing under the full length of the barrel, with suitable excavations being made to receive pipe bells.

Select material shall be compacted around the pipe to firmly bed the pipe in position. Haunching material (bed to springline) should be carefully worked under the haunches of the pipe and compacted from the pipe to the trench wall or two and one half (2-1/2) pipe diameters on each side of the pipe to ensure support. If adjustment of position of a pipe length is required after being laid, it shall be removed and re-jointed as for a new pipe. When laying is not in progress, the ends of the pipe shall be closed with a tight-fitting stopper to prevent the entrance of foreign material.

All non-conductive pipes require a tracer wire (12 gauge) for locating purposes placed on top of pipe from manhole to manhole. Where splices are to be made, a water tight splice kit must be used. Tail length on tracer wire shall not exceed two feet (2'). See Drawings for tracer wire installation.

In addition to the above requirements, all pipe installation shall rigidly adhere to the specific requirements of the pipe manufacturer.

3a.12 GRAVEL FOUNDATION FOR PIPE:

Wherever the subgrade material does not afford a sufficiently solid foundation to support the pipe and superimposed load, or where groundwater must be drained, the subgrade shall be excavated to such depth as may be necessary and replaced with crushed rock or gravel compacted into place.

Gravel for PVC pipe foundation shall be clean crushed rock or gravel with one hundred percent (100%) passing a one-inch (1") screen and five percent (5%) passing a No. 4 sieve.

3a.13 INSTALLATION REQUIREMENTS FOR LINE AND GRADE:

All PVC pipe shall be installed accurately to the defined line and grade with the following limits:

Variance from established line and grade shall not be greater than one sixteenth ($1/16''$) inch per inch of pipe diameter in ten feet, and not to exceed one half inch in ten feet, provided that such variation does not result in a level or reverse sloping invert; provided also that variation in the invert elevation between adjoining ends of pipe, due to non concentricity of joining surface and pipe interior surfaces, does not exceed one sixty fourth ($1/64''$) inch per inch of pipe diameter, or one half ($1/2''$) inch maximum. Ponding of one quarter ($1/4''$) inch or more of water in a belly in the pipe, shall be dug up and fixed.

3a.14 PIPE BEDDING:

All pipe shall be protected from lateral displacement and possible damage resulting from impact or unbalanced loading during backfilling operations by being adequately bedded.

A groove shall be excavated in the bottom of the trench to receive the bottom quadrant of the pipe. Before preparing the groove, the trench bottom shall be excavated or filled and compacted to an elevation sufficiently above the grade of the pipe so that, when completed, the pipe will be true to line and grade. Bell holes shall be excavated so that only the barrel of the pipe receives bearing from the trench bottom.

Pipe bedding materials placed at any point below the mid-point of the pipe shall be deposited and compacted in layers not to exceed ten-inches (10") in uncompacted depth. Deposition and compaction of bedding materials shall be done simultaneously and uniformly on both sides of the pipe. Compaction shall be accomplished with hand or mechanical compactors. All bedding

materials shall be placed in the trench in such a manner that they will be scattered alongside the pipe and not dropped into the trench in compact masses. Bedding materials shall be gravel, free from rocks larger than one-inch (1") diameter. All materials shall be free from debris, roots, sod, or other vegetative matter.

In the event trench materials are not satisfactory for pipe bedding, modified bedding will be required. Modified bedding shall consist of placing compacted granular material on each side of and to the level of twelve-inches (12") above the top of the pipe.

Modified bedding material shall be graded as follows: One-hundred percent (100%) passing a one and one-half inch (1-1/2") screen and five percent (5%) passing a No. 4 sieve. Gravel shall be used to bed pipe, then at least a two hundred pound (200 lb) tensile strength woven ground stabilization fabric (in accordance with AASHTO M 288) shall be installed on top of gravel prior to sand or roadbase placement.

3a.15 TESTS:

The Developer shall be required to conduct a camera investigation. The Developer or their representative shall hire a qualified firm or individual to clean and then inspect, via camera, the entire length of the piping, and provide a digital copy of the video recording of that inspection on a thumb drive to the PW Inspector for review. At the City's discretion, any defects found with the pipe, its function or installation will be fixed at the Developer's expense. Pipes shall be left clean and free of debris.

3a.16 MANHOLE CONNECTIONS:

PVC pipe connections to manholes shall be achieved by use of manhole coupling adapters, rubber ring waterstops, or rubber boots with 300 series nonmagnetic corrosion-resistant steel bands. PVC may not be grouted directly to concrete.

DIVISION 3c

CORRUGATED POLYETHYLENE PIPE

3a.17 GENERAL:

This Division covers the requirements for corrugated polyethylene pipe with integrally formed smooth interior for use in ditch piping, storm drain, and other gravity line construction with water tight joints. All pipe shall be smooth bore double wall unless an alternate is specifically authorized in writing by the City Engineer.

3a.18 PIPE:

Corrugated polyethylene (PE) pipe and fittings shall conform to ASTM F667, for diameters from three-inch (3”) to six-inch (6”) and ASTM F667 for eight-inch (8”) to twenty-four-inch (24”), with gasketed PVC thermo-molded joints and fittings manufactured in accordance with ASTM D3034. Rubber gaskets shall be factory installed and conform to ASTM F477. Other applicable documents include:

ASTM Standards

D618	Methods of Conditioning Plastics and Electrical Insulating Materials for Testing
D1248	Specifications for Polyethylene Plastics Molding and Extrusion Materials
D2412	Test Method for External Loading of Plastic Pipe by Parallel-Plate Loading
D2444	Test Method for Impact Resistance of Thermoplastic Pipe and Fittings by Means of a Tup (Falling Weight)
F412	Definitions of Terms Relating to Plastic Piping Systems
F449	Recommended Practice for Subsurface Installation of Corrugated Thermoplastic Tubing for Agricultural Drainage or Water Table Control

AASHTO Standards

M252	Corrugated Polyethylene Drainage Tubing
M294	Corrugated Polyethylene Pipe, 12 to 36 in. Diameter

Pipe shall be installed in compliance with the manufacturer's requirements.

3a.19 FITTINGS:

Fittings shall be water tight rubber gasket fittings made of PVC plastic conforming to ASTM D1784, have a cell classification as outlined in ASTM D3034.

3a.20 PIPE LAYING:

All pipe installation shall proceed upgrade on a stable foundation, with joints closely and accurately fitted. Joints shall be clean and dry, and a joint lubricant as recommended by the pipe supplier shall be applied uniformly to the mating joint surfaces to facilitate easy positive joint closure.

Pipe shall be installed with uniform bearing under the full length of the barrel, with suitable excavations being made to receive pipe bells.

Select material shall be compacted around the pipe to firmly bed the pipe in position. Haunching material (bed to springline) should be carefully worked under the haunches of the pipe and compacted from the pipe to the trench wall or two and one half (2-1/2) pipe diameters on each side of the pipe to ensure support. If adjustment of position of a pipe length is required after being laid, it shall be removed and re-jointed as for a new pipe. When laying is not in progress, the ends of the pipe shall be closed with a tight-fitting stopper to prevent the entrance of foreign material.

All non-conductive pipes require a tracer wire (12 gauge) for locating purposes placed on top of pipe from manhole to manhole. Where splices are to be made, a water tight splice kit must be used. Tail length on tracer wire shall not exceed two feet (2'). See Drawings for tracer wire installation.

In addition to the above requirements, all pipe installation shall rigidly adhere to the specific requirements of the pipe manufacturer.

3a.21 GRAVEL FOUNDATION FOR PIPE:

Wherever the subgrade material does not afford a sufficiently solid foundation to support the pipe and superimposed load, or where groundwater must be drained, the subgrade shall be excavated to such depth as may be necessary and replaced with crushed rock or gravel compacted into place.

Gravel for corrugated PE pipe foundation shall be clean crushed rock or gravel with one hundred percent (100%) passing a one-inch (1") screen and five percent (5%) passing a No. 4 sieve.

3a.22 INSTALLATION REQUIREMENTS FOR LINE AND GRADE:

All corrugated PE pipe shall be installed accurately to the defined line and grade with the following limits:

Variance from established line and grade shall not be greater than one sixteenth (1/16) inch per inch of pipe diameter in ten feet, and not to exceed one half inch in ten feet, provided that such variation does not result in a level or reverse sloping invert; provided also that variation in the invert elevation between adjoining ends of pipe, due to non concentricity of joining surface and pipe interior surfaces, does not exceed one sixty fourth (1/64) inch per inch of pipe diameter, or one half (1/2) inch maximum.

3a.23 PIPE BEDDING:

All pipe shall be protected from lateral displacement and possible damage resulting from impact or unbalanced loading during backfilling operations by being adequately bedded.

Bell holes shall be excavated so that only the barrel of the pipe receives bearing from the trench bottom.

Pipe bedding materials placed at any point below the mid-point of the pipe shall be deposited and compacted in layers not to exceed ten-inches (10") in uncompacted depth. Deposition and compaction of bedding materials shall be done simultaneously and uniformly on both sides of the pipe. Compaction shall be accomplished with hand or mechanical compactors. All bedding materials shall be placed in the trench in such a manner that they will be scattered alongside the pipe and not dropped into the trench in compact masses. Bedding materials shall be loose earth, free from lumps; sand or gravel, free from rocks larger than one-inch (1") diameter. All materials shall be free from roots, sod, or other vegetable matter.

In the event trench materials are not satisfactory for pipe bedding, modified bedding will be required. Modified bedding shall consist of placing compacted granular material on each side of and to the level of twelve-inches (12") above the top of the pipe.

Modified bedding material shall be graded as follows: One-hundred percent (100%) passing a one and one-half inch (1-1/2") screen and five percent (5%) passing a No. 4 sieve. If gravel is used to bed pipe, then at least a two hundred pound (200 lb) tensile strength woven ground stabilization fabric (in accordance with AASHTO M 288) shall be installed on top of gravel prior to sand or roadbase placement.

3a.24 TESTS:

The Developer will be required to conduct an air test and displacement test in the presence of the City Engineer or his representative. If these tests prove to be inconclusive, any or all of the other required tests shall be conducted in the presence of the City Engineer or his representative. Tests shall be performed as follows:

F. Displacement Test:

In conducting the displacement test a light will be flashed between manholes or, if the manholes have not as yet been constructed, between the locations of the manholes, by means of a flashlight or by reflecting sunlight with a mirror. If the illuminated interior of the pipe shows broken, misaligned, or displaced pipe or other defects, the defects designated by the City Engineer shall be remedied at the Developer's expense.

G. Infiltration Test:

The Developer shall furnish labor, equipment, and materials, including pumps, and shall assist the City Engineer in making infiltration tests of the completed line before it can be placed into service. The Developer shall furnish and install the measuring weirs or other measuring devices. The length of line to be tested at any time shall be subject to the approval of the City Engineer. The maximum allowable infiltration shall not exceed one-hundred-fifty (150) gallons per inch diameter per mile per twenty-four (24) hours for all installed pipe. If the quantity of infiltration is in excess of the maximum allowable, the leaking joints shall be repaired to the satisfaction of the City Engineer at the expense of the Developer.

H. Exfiltration Test:

The Developer shall furnish labor, equipment, and materials, including pumps, and shall assist the City Engineer in making exfiltration tests of the completed line before it can be placed into service. The length of line to be tested at one tie shall be limited to the length between adjacent manholes. The maximum allowable exfiltration shall not exceed one-hundred-fifty (150) gallons per inch diameter per mile per 24 hours for all installed sewer pipe. The end of the line which projects into the manhole shall be plugged. The pipe shall then be filled with water from the upper manhole, and the line maintained under a light pressure of four feet (4') of head. The inflow of water necessary to maintain this head shall be recorded as the leakage of the system. If the quantity of exfiltration is in excess of the maximum allowable, the leaking joints shall be repaired to the satisfaction of the City Engineer at the expense of the Developer.

I. Air Testing:

The Developer or his representative (a qualified firm or individual agreed upon by the City Engineer and the Developer) shall furnish labor, equipment, and materials, including pumps and compressors, and shall perform, in the presence of the City Engineer, air tests of the completed pipe before it can be placed in service. Each section of sanitary sewer pipeline between manholes shall be tested after all the four-inch (4") service laterals (and plugs) have been installed. Each test section shall be pressurized to 4.0 psi. For the purpose of stabilizing the air pressure in each test section, the 4.0 psi pressure shall be maintained for a two-minute period. Each test section shall then be repressurized to 4.0 psi for a period of four (4) minutes. The test section shall be accepted if, after four (4) minutes, the pressure gauge indicates 3.5 psi or greater. Failure of the Developer's testing equipment to properly function shall render the test unacceptable. All faulty sections of pipeline shall be repaired and retested until the minimum air testing requirements have been met.

J. Camera Test:

The Developer or their representative shall hire a qualified firm or individual to clean and then inspect, via camera, the entire length of the piping, and provide a

digital copy of the video recording of that inspection on a thumb drive to the PW Inspector for review. At the City's discretion, any defects found with the pipe, its function or installation will be fixed at the Developer's expense. Pipes shall be left clean and free of debris.

3a.25 MANHOLE CONNECTIONS:

Corrugated PE pipe connections to manholes shall be achieved by use of manhole coupling adapters, rubber ring waterstops, or rubber boots with 300 series nonmagnetic corrosion-resistant steel bands or concrete collars on the exterior and grouted on the interior.

DIVISION 3d

MANHOLES

3a.26 GENERAL:

This Division covers the requirements for manhole materials and installation. Manholes shall be installed at the locations and at the depth shown on the Drawings. Manholes shall be furnished complete with new cast iron rings and covers. Recycled rings and covers will not be accepted.

3a.27 CONCRETE BASES:

The manholes shall be furnished without bases.

3a.28 WALL AND CONE SECTIONS:

All manholes shall be precast, sectional, reinforced concrete pipe of either forty-eight-inch (48") or sixty-inch (60") I.D., as specified. Both cylindrical and taper sections shall conform to all requirements of ASTM C478 for Precast Reinforced Concrete Manhole Sections with the following exceptions:

1. The throat section of the manhole shall be adjustable, by use of manhole sections, up to forty eight inches (48") in height.
2. The taper section shall be a maximum of three feet (3') in height, shall be of concentric conical design, and shall taper uniformly to thirty inches (30") inside diameter.
3. The pipe used in the base section shall be furnished in section lengths of one, two three and four feet (1, 2, 3, and 4 feet) as required. The base section shall be notched to fit over the pipe as shown on the Drawings without bearing directly on the pipe. A 6-inch (6") gravel base shall be furnished under the base section.

All joint surfaces of precast sections and the face of the manhole base shall be thoroughly cleaned and wet prior to setting precast sections. All joints, including grade rings shall be set in mortar consisting of one (1) part cement and one and one half (1 1/2) parts sand with sufficient water added to bring the mixture to workable consistency, or the joints shall be sealed with a butyl rubber gasket that is permanently flexible and non shrinking. All joints shall be water tight and free from appreciable irregularities in the interior wall surface.

3a.29 CIRCULAR FLAT COVERS:

Where the line does not have sufficient depth to permit using a taper section a circular flat cover reinforced to meet H-20 Highway Loading shall be used. The cover shall have a 30-inch concentric opening for a standard ring and cover.

3a.30 IRON CASTING:

All iron casting shall conform to the requirements of ASTM A48 (Class 30) for grey iron castings.

Rings and covers shall be equal to the twenty four inch (24") Standard with machined bearing surfaces and with cover weight of one hundred and fifty pounds (150 lbs.) and ring weight of two hundred and thirty three pounds (233 lbs.). Each cover shall contain one (1) pick hole but shall not contain air vent holes. In addition to the foundry name and year of manufacture, the cover shall be marked for the type of line. All rings and covers shall be new; recycled or reused rings and covers shall not be allowed. Rings must be 6" tall; no flat rings will be permitted.

All manhole rings shall be carefully set to the grade shown on the Drawings or as directed by the City Engineer. Manholes placed in asphalt surfacing shall require a concrete ring around the cast iron ring and cover to be one-quarter (1/4) inch below the existing pavement. There must be a round concrete collar, 18 inches (18") from edge of ring, or 12 inches (12") if fiber mesh is used. The depth of the concrete collar shall be at least twelve inches (12").

3a.31 PRECAST MANHOLE BOXES:

Precast manhole boxes shall be constructed to the dimensions and requirements shown on the plans. Shop drawings shall be submitted for approval of the City Engineer, prior to construction of the precast manhole boxes.

Concrete and reinforcing steel shall comply to all requirements outlined in Division 5c and Division 5d, respectively.

All pressurized manholes as shown on the drawings shall have the manhole ring cast into the concrete lid.

3a.32 BACKFILL:

Backfill around manholes shall be per Division 2b. Compaction should be tested around all manholes.

3e.08 Sewer Manholes

All sanitary sewer improvements should be per Central Davis Sewer District (CDSD) standards. The manholes should be concentric without any steps. The manhole lids should be stamped "Sewer" and not be vented. There must be no infiltration of groundwater or no exfiltration of water or sewer from the manholes. The manhole should be clean of debris. There should be only 12" or less of grade rings. The pan of the sewer manhole, where pipe comes in, must be grouted.

DIVISION 3e

LAND DRAIN SERVICE LATERALS

3a.33 GENERAL:

This Division covers the requirements for land drain and footing drain service laterals. They shall be constructed with the materials specified and at the locations shown on the Drawings or at the actual location established during construction by the City Engineer or his representative. Unless otherwise specified and approved in writing by the City Engineer, land drain main lines are maintained by the City, and service laterals, between the main line and a property are maintained by the property owner.

3a.34 SPECIFIC REQUIREMENTS:

Service laterals shall be constructed with materials and procedures stated in Division 3b. All laterals shall be four-inches (4") in diameter unless shown otherwise.

A. EXTENT OF LATERALS:

Service laterals shall extend from the sewer or footing drain main to a point ten-feet (10') beyond the street right-of-way line. A two-inch (2") by four-inch (4") by six-foot (6') marker, with the top twelve-inches (12") painted green for sewer and orange for footing drains, shall be installed to clearly mark the end of each lateral line. Laterals shall be capped with a cap suitable to withstand the test pressure. An identifying tape that says "Land Drain" must go the length of the lateral and wrap around the very end of the pipe.

B. EXCAVATION AND BACKFILL:

Trench excavation, bedding and backfill shall conform to the applicable paragraphs of Division 2a. Gravel shall be used to bed the pipe, then at least a two hundred pound (200 lb) tensile strength woven ground stabilization fabric (in accordance with AASHTO M 288) shall be installed on top of gravel prior to sand or roadbase placement. Fabric shall extend from the main to the edge of the City right of way.

C. PIPE:

Pipe used for service laterals shall be white PVC Plastic Pipe (unless shown otherwise) conforming to ASTM D3034 SDR 35.

D. CONNECTION TO MAIN:

Connections to the main shall be made with preformed wyes for new mains. Connections to existing mains shall be by means of a stainless steel saddle for concrete pipe or a gasketed tee for PVC pipe. The recommendations of the manufacturer of the materials used shall be carefully followed. All lateral connections into new land drain mains shall

be through preformed wye fittings installed in the main line or with field installed service saddles (gasketed and clamped). All connections by field installed service saddles on new or existing sewer mains shall be done with a tapping machine and all required fittings and materials. Connections shall be at the locations shown in the approved set of plans or as staked in the field. Lateral connections shall be made at ten (10) o'clock or two (2) o'clock positions on the main. New laterals shall be located within ten feet (10')

E. TESTING:

The service laterals shall be tested as a part of the footing drain main to which they are connected.

F. DAMAGE AND REPAIR OF MAINS AND APPURTENANCES

The Developer shall be responsible for the protection of existing improvements, and any damage resulting from his operations shall be his sole responsibility.

Damage to the mains and/or appurtenances shall be repaired by acceptable and approved methods.

DIVISION 3f

HIGH DENSITY POLYETHYLENE PRESSURE PIPE (for non-pressure applications)

3f.01 GENERAL:

This Division covers furnishing and installing High Density Polyethylene (HDPE) pressure pipe and fittings to the lines and grades shown on the Drawings and/or established in the field for non-pressure applications. See Division 4b for pipe specifications.

DIVISION 4a

PVC PRESSURE PIPE

3a.35 GENERAL:

This Division covers furnishing and installing PVC pressure pipe (as part of the City drinking water distribution system) to the lines and grades shown on the Drawings and/or established in the field, and all flushing, testing, and repairing required to ensure adequate and safe operation of the water system. Minimum pipe size for culinary water main line is eight inch (8") diameter, and six inch (6") diameter for fire lines, unless otherwise shown and approved by City Engineer. For information regarding furnishing and installing irrigation PVC pressure pipe, please see the standard drawings and specifications of Hights Creek Irrigation, Davis and Weber Canal Company or Benchland Water, depending on the location.

3a.36 MATERIALS:

Pipe for the transmission and distribution of water shall be manufactured in accordance with ANSI/AWWA C900, "AWWA Standard for Polyvinyl Chloride (PVC) Pressure Pipe, 4-inch through 12-inch, for Water". The PVC pipe shall have a cast-iron-pipe-equivalent outside diameter. PVC pipe 14-inches and larger shall be manufactured in accordance with ANSI/AWWA C905, "AWWA Standard for Polyvinyl Chloride (PVC) Water Transmission Pipe, Nominal Diameters 14-inch through 36-inch." All PVC pipe 4-inch and larger shall be DR18 with a working pressure of 150 PSI. Pipe smaller than 4-inch shall be Schedule 40 PVC. Culinary water pipe must be blue in color and secondary water pipe must be purple.

3a.37 JOINTS:

Joints shall be push on rubber gasket type. Lubrication shall be water soluble, non-toxic, non-objectionable in taste and odor imparted to the water, non-supporting of bacteria growth, and have no deteriorating effect on the PVC pipe or rubber gaskets. It shall conform in every way to the National Sanitation Foundation NSF/ANSI Standard 61.

3a.38 FITTINGS:

All fittings to be used with the PVC pipe shall be the same as fittings for Ductile Iron Pipe and shall conform to the provisions of ANSI/AWWA C110/A21.10 or C153/A21.53. Mechanical joints should be restrained. Megalug by EBAA Iron is the preferred mechanical joint restraint.

3a.39 POLYETHYLENE WRAPPING:

All fittings for PVC pipe shall be wrapped as specified herein. All materials placed shall be wrapped with a polyethylene plastic wrap, including all fittings and valves, in accordance with the manufacturer's specifications.

All compression couplings, mechanical joints, flanged joints, and valves exposed to soil shall be wrapped with 8-mil thick polyethylene film adhesive tape equal to Polyken No. 900 or Scotchrap No. 50. The tape shall be installed to adhere securely to both the pipe and polyethylene. Enough film shall be used to overlap the adjoining pipe a minimum of one foot (1').

Valves shall be wrapped by bringing the wrap on the adjacent pipe over the bells of flanges of the valve and sealing with the adhesive tape. The valve bodies are then wrapped with a flat sheet of the film passed under the valve bottom and brought up around the body to the stem and fastened in place with the adhesive tape.

All fittings that require concrete blocking should be completely wrapped prior to pouring the concrete backing block.

Polyethylene wrap shall be protected from the sun and weathering prior to use. Care shall be exercised during backfilling of the protected areas to prevent puncturing the film.

3a.40 PIPE INSTALLATION:

A. Cutting:

Cutting of pipe for closure pieces or for other reasons shall be done in a neat and workmanlike manner by a method recommended by the manufacturer. After cutting, the pipe shall be beveled and filed to prevent gasket damage in joint assembly.

B. Dewatering of Trench:

Where water is encountered in the trench, it shall be removed during pipe laying operations and the trench so maintained until the ends of the pipe are sealed. See "Control of Groundwater" in Division 2 Trench - Excavation and Backfill.

C. Laying of Pipe:

The pipe and pipe coating (where applicable) shall be inspected for defects before installation. Any defects shall be repaired or the pipe shall be replaced, whichever is deemed necessary by the City Engineer or Representative.

All pipes shall be laid and maintained to the required lines and grades with fittings and valves at the required locations. The pipes shall be installed with 48 inches to the top of the pipe minimum cover from finished road surface for culinary water. The Developer shall be responsible to install the pipe line to the alignment set by the City Engineer or Representative or as shown on the Drawings.

All pipes, fittings and valves shall be carefully lowered from the truck when unloading or when installing into the trench. This should be done one piece at a time in order to prevent damage to pipe materials and protective coatings and linings. Under no circumstances shall materials be dropped or dumped from the truck or into the trench.

The Developer shall take the necessary precautions such that foreign materials do not enter into the pipe. No debris, tools, or other materials shall be placed in the pipe during laying operations. When laying of pipe is not in progress, the pipe shall be closed by a water-tight plug.

Deflections in PVC pipe shall be made by longitudinal bending of the pipe barrel of the pipe rather than deflecting the pipe joints. Longitudinal bending shall be limited to eighty percent (80%) of that allowed by the manufacturer. This is accomplished by dividing the minimum recommended bending radius by 0.8.

All non-conductive drinking water pipes require a tracer wire (12 gauge) for locating purposes placed on top of the pipe and connected to the nearest fire hydrant, unless otherwise directed. Where splices are to be made, a water tight splice kit must be used. The wire should be run from the mainline, to the nearest fire hydrant, and connected to an above ground access station (a blue Snakepit RB14-TP, or approved equal). See standard drawings for additional detail.

D. Pipe Bedding:

All pipes shall be protected from lateral displacement and possible damage resulting from impact or unbalanced loading during backfilling operations by being adequately bedded.

In the event trench materials are not, in the judgment of the City Engineer or Representative, satisfactory for pipe bedding, imported granular bedding will be required. See Division 2a of these specifications.

E. Thrust Blocking:

Thrust blocking shall be applied at all tees, valves, plugs, caps and at bends deflecting 1 1/4 degrees or more. The fitting shall be encased in a 12 mil protective plastic wrap before the thrust block is poured. Reaction blocking shall be concrete, having a compressive strength of not less than 3000 pounds per square inch at 28 days. Blocking shall be placed between undisturbed soil and the fitting to be anchored. The area of bearing on the pipe and on the ground shall be as shown in the Drawings. Restraint sizing is based upon a maximum operating pressure of 150 psi and a test pressure of 200 psi, and a minimum soil bearing stress of 2,000 psf.

The blocking shall be so placed that the pipe and the fittings will be accessible for repair. Prior to backfilling around thrust block, secure inspection of installation by City Engineer or Representative. Concrete must be allowed to cure in thrust restraints for 5 days prior to pressurizing water lines or have additional approved thrust restraints installed prior to pressurizing the water line.

F. Connections to Existing Water Lines:

Information on the drawings regarding existing water lines is taken from "record" drawings from the city or utility company files and may or may not be accurate as to size, type of material or location. The Developer will be responsible to determine the proper fittings and materials required, obtain the City Engineer's approval of the planned connection, and perform the construction in a suitable fashion.

G. Magnetic Locator Tape:

All pipe shall include a three inch (3") magnetic locator tape installed in the pipeline trench approximately twenty four inches (24") above the top of pipe. This tape shall be prepared for culinary water with white or black printing on a blue field having the words: POTABLE WATER.

This tape shall be prepared for secondary water with white or black printing on a purple field, color Pantone 512C, having the words: CAUTION: NONPOTABLE WATER - DO NOT DRINK.

3a.41 FLUSHING AND TESTING:

K. Pressure Test:

A leakage test shall be conducted concurrently with the pressure test. After the pipe has been laid, all newly laid pipe or any valved section thereof shall be subjected to a hydrostatic pressure of at least 1.5 times the working pressure at the point of testing.

a. Test Pressure Restrictions:

Test pressures shall:

- i. Not be less than 1.25 times working pressure at the highest point along the test section or a minimum of 200psi.
- ii. Not exceed pipe or thrust restraint design pressures.
- iii. Be of at least 2-hour duration.
- iv. Not vary by more than plus or minus five (± 5) psi for the duration of the test.
- v. Not exceed twice the rated pressure of the valves or hydrants when the pressure boundary of the test section includes closed gate valves or hydrants.
- vi. Not exceed the rated pressure of the valves when the test boundary of the test section includes closed, resilient-seated gate valves or butterfly valves.

b. Pressurization:

Each valved section of pipe shall be slowly filled with water and the specified test pressure, based on the elevation of the lowest point of the line or section under test and corrected to the elevation of the test gage, shall be applied by means of a pump connected to the pipe in a manner satisfactory to the City Engineer.

c. Air Removal:

Before applying the specified test pressure, air shall be expelled completely from the pipe, valves, and hydrants. If permanent air vents are not located at all high points, the Developer shall install corporation cocks at such points so that the air can be expelled as the line is filled with water. After all the air has been expelled, the corporation cocks shall be closed and the test pressure applied. At the conclusion of the pressure test, the corporation cocks shall be removed and plugged.

d. Examination:

All exposed pipe, fittings, valves, hydrants, and joints shall be examined carefully during the test. Any damaged or defective pipe, fittings, valves, or hydrants that are discovered following the pressure test shall be repaired or replaced with sound materials and the test shall be repeated until it is satisfactory to the Owner.

L. Leakage Test:

A leakage test shall be conducted concurrently with the pressure test.

a. Leakage Defined:

Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any valved section thereof, to maintain pressure within 5 psi of the specified test pressure after the air in the pipeline has been expelled and the pipe has been filled with water.

b. Allowable Leakage:

No pipe installation will be accepted if the leakage is greater than that determined by the following formula:

$$L = \frac{SD(P)^{0.5}}{133,200}$$

in which L is the allowable leakage, in gallons per hour; S is the length of pipeline tested in feet; D is the nominal diameter of the pipe, in inches; and P is the average test pressure during the leakage test, in pounds per square inch gage.

a) Allowable leakage at various pressures is shown in Table 1.

b) When testing against closed metal-seated valves, an additional leakage per closed valve of 0.0078 gal/hr/in. of nominal valve size shall be allowed.

c) When hydrants are in the test section, the test shall be made against the closed hydrant.

TABLE 1

Allowable Leakage per 1000 ft of Pipeline - gph

Average Test Pressure psi (Bar)	Nominal Pipe Diameter—in.															
	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	54
450 (31)	0.480	0.640	0.950	1.271	1.591	1.911	2.232	2.552	2.872	3.183	3.823	4.784	5.735.4	6.696.	7.647	8.608.
400 (28)	0.450	0.600	0.900	1.201	1.501	1.801	2.101	2.402	2.702	3.002	3.603	4.504	5.415.0	6.315.	7.216	8.117.
350 (24)	0.420	0.560	0.840	1.121	1.401	1.681	1.961	2.242	2.53	2.812	3.413	4.213	5.064.6	5.905.	6.746	7.587.
300 (21)	0.390	0.520	0.780	1.041	1.301	1.561	1.821	2.081	2.342	2.60	3.373	3.903	4.684.4	5.465.	6.245	7.026.
275 (19)	0.370	0.500	0.750	1.000	1.241	1.491	1.741	1.991	2.242	2.492	3.122	3.733	4.484.2	5.234	6.024	6.726.
250 (17)	0.360	0.470	0.710	0.950	1.191	1.431	1.671	1.911	2.142	2.372	2.992	3.563	4.274.0	4.99	5.705	6.416.
225 (16)	0.340	0.440	0.660	0.880	1.101	1.321	1.541	1.761	2.03	2.252	2.852	3.383	4.053.8	4.734.	5.415	6.035.
200 (14)	0.320	0.420	0.630	0.840	1.050	1.260	1.470	1.680	1.91	2.121	2.702	3.192	3.823.5	4.464.	5.094	5.735.
175 (12)	0.300	0.400	0.600	0.800	1.000	1.200	1.400	1.600	1.79	1.981	2.552	2.982	3.583.3	4.173.	4.774	5.364.
150 (10)	0.28	0.380	0.570	0.760	0.950	1.140	1.330	1.520	1.71	1.841	2.382	2.762	3.253.0	3.863.	4.414	4.974.
125 (9)	0.250	0.350	0.530	0.710	0.890	1.070	1.250	1.430	1.61	1.681	2.212	2.522	3.013.0	3.533.	4.033	4.534.
100 (7)	0.23	0.320	0.490	0.660	0.830	1.000	1.170	1.340	1.51	1.50	2.011	2.25	2.70	3.15	3.60	4.05

*If the pipeline under test contains sections of various diameters, the allowable leakage will be the sum of the computed leakage for each size.

**To obtain leakage in liters/hour, multiply the values in the table by 3.785.

c. Acceptance of Installation:

Acceptance shall be determined on the basis of allowable leakage. If any test of pipe laid discloses leakage greater than specified, the Developer/Developer shall, at its own expense, locate and repair the defective material until the leakage is within the specified allowance.

All visible leaks are to be repaired regardless of the amount of leakage.

M. Flushing:

All new water systems or extensions to existing systems shall be thoroughly flushed before being placed in service. Flushing shall be accomplished through hydrants, or end of line blow-off assemblies at a minimum flushing velocity of 2.5-feet per second.

FLOW RATE AND OPENINGS TO FLUSH PIPELINES

(40- psi Residual Pressure)

Pipe Size (inches)	Flow Required to Produce 2.5 fps velocity (gpm)
2	26

4	100
6	220
8	390
10	610
12	880
14	1,200
16	1,565
18	1,980
20	2,450
24	3,525
30	5,507

N. Disinfection:

After flushing, all culinary water lines shall be disinfected by chlorination. Chlorination shall provide a minimum of 25 ppm residual after 24 hours contact in the pipeline. This may be expected with an application of 50 ppm, although some conditions may require more. Chlorine in the form of a 1% slurry of high-test calcium hypochlorite (HTH, Perchloron, Pittchlor, etc. which are 70% available chlorine by weight) shall be fed into the pipeline in such a manner as to mix with the water flowing in the pipeline. (A 1% slurry – 10,000 ppm – results from mixing one pound of calcium hypochlorite with 8.40 gallons of water.)

The following table provides information as to the required quantity of slurry to be used per 100 feet of pipe to provide a chlorine concentration of 50 ppm:

Pipe Size (in.)	Vol. of 100 ft. Length (gal)	Required Amount of 1% Chlorine Slurry (gal)
1 1/2	9.18	0.07
2	16.32	0.12
2 1/2	25.50	0.18
3	36.73	0.26
4	65.28	0.47
6	146.90	1.05
8	261.10	1.87
10	408.10	2.92
12	587.60	4.20

During the process of chlorinating the pipeline, all valves and other pipeline appurtenances shall be operated several times to provide sufficient contact with the chlorinating agent. Following chlorination, the water line shall be drained and thoroughly flushed according to Section A above and, if necessary, rechlorinated until a satisfactory bacteriological test is obtained. After passing a bacterial test, water must be flushed from the pipe and discharged in accordance with all local, state and federal water quality requirements.

Disinfection shall conform to the requirements of AWWA C651 (or latest edition). Main lines must pass bacteria test. Number of samples to be determined by inspector and will be based on the size of the development. If a new main is connected to an existing main, a bacteria test must be completed and passed prior to any pressure testing being conducted.

DIVISION 4b

HIGH DENSITY POLYETHYLENE PRESSURE PIPE

3a.42 GENERAL:

This Division covers furnishing and installing High Density Polyethylene (HDPE) pressure pipe and fittings to the lines and grades shown on the Drawings and/or established in the field, and all flushing, testing, and repairing required to ensure adequate and safe operation of the water system. Use of HDPE pipe in pressurized applications is restricted, unless otherwise approved by the City Engineer. The minimum size for culinary water mains is 10" SDR 11 IPS (Iron Pipe Size).

If approved by the City Engineer, use of HDPE in the culinary distribution system shall only be allowed for transmission lines, meaning no service connections or saddles. In addition, the standards in this division shall be considered a minimum and the City shall reserve the right to make additional requirements to ensure proper safeguarding of the distribution system, as well as other infrastructure.

3a.43 MATERIALS:

High density polyethylene pipe shall be manufactured from resins exhibiting a cell classification of PE 345434C as defined in ASTM D3350 with an established hydrostatic design basis of 1600 psi for water at 73° F. HDPE pipe shall conform to ASTM F714. HDPE pipe shall also conform in every way to ANSI/AWWA C-906, "AWWA Standard for Polyethylene (PE) Pressure Pipe and Fittings, four inch (4") through 63 inch for Water Distribution." The HDPE pipe shall be Iron Pipe Size (IPS). Coloring or marking is to be submitted to and approved by City Engineer.

3a.44 JOINTS:

HDPE pipe shall be joined by thermal butt fusion or flange assemblies. If flange assemblies are used, stainless steel bolts will be required with full-faced rubber gaskets and torqued to manufacturer's specifications.

Only formally trained and certified technicians may conduct fusions, whether thermal butt fusions, electro fusions or otherwise. Qualification of the fusion technician shall be demonstrated for the type of fusion, the size of the pipe, and the equipment to be used on a project.

HDPE pipe shall not be joined by solvent cements, adhesives (such as epoxies) or threaded connections. All joining methods shall be capable of conveying water at a minimum of 2.0 times the working pressure rating of the pipe.

3a.45 PIPE INSTALLATION:

H. Cutting:

Cutting of pipe for shall be done in a neat and workmanlike manner by a method recommended by the manufacturer. Pipe should be cut with a chainsaw, with no bar oil. Use liquid dish soap as a lubricant. After cutting, the pipe shall be cleaned and prepared per the manufacturer's recommendations.

I. Dewatering of Trench:

Where water is encountered in the trench, it shall be removed during pipe laying operations and the trench so maintained until the ends of the pipe are sealed. See "Control of Groundwater" in Division 2 Trench - Excavation and Backfill.

J. Laying of Pipe:

The pipe shall be inspected for defects before installation. Any defects shall be repaired or the pipe shall be replaced, whichever is deemed necessary by the City Engineer or Representative.

All pipes shall be laid and maintained to the required lines and grades with fittings and valves at the required locations. The pipes shall be installed with 48 inches to the top of the pipe minimum cover from finished road surface for culinary water. The Developer shall be responsible to install the pipe line to the alignment set by the City Engineer or Representative or as shown on the Drawings.

All pipes, fittings and valves shall be carefully lowered from the truck when unloading or when installing into the trench. This should be done one piece at a time in order to prevent damage to pipe materials and protective coatings and linings. Under no circumstances shall materials be dropped or dumped from the truck or into the trench.

The Developer shall take the necessary precautions such that foreign materials do not enter into the pipe. No debris, tools, or other materials shall be placed in the pipe during laying operations. When laying of pipe is not in progress, the pipe shall be closed by a water-tight plug.

Deflections in HDPE pipe shall be limited to eighty percent (80%) of that allowed by the manufacturer. This is accomplished by dividing the minimum recommended bending radius by 0.8.

All non-conductive pipes require a tracer wire (12 gauge) for locating purposes placed on top of pipe and be connected to all valves and fire hydrants. Where splices are to be made, a water tight splice kit must be used. The wire should be looped up valve boxes and fire hydrants. See Drawings for tracer wire installation.

K. Pipe Bedding:

All pipes shall be protected from lateral displacement and during backfilling operations by being adequately bedded.

In the event trench materials are not, in the judgment of the City Engineer or Representative, satisfactory for pipe bedding, imported granular bedding will be required. See Division 2a of these specifications.

L. Thrust Blocking:

Thrust blocking shall be applied at all tees, bends, plugs, caps and any non HDPE bends deflecting 11 1/4 degrees or more. The fitting shall be encased in a 12 mil protective plastic wrap before the thrust block is poured. Reaction blocking shall be concrete having a compressive strength of not less than 3000 pounds per square inch at 28 days. Blocking shall be placed between undisturbed soil and the fitting to be anchored. The area of bearing on the pipe and on the ground shall be as shown in the Drawings. Restraint sizing is based upon a maximum operating pressure of 150 psi and a test pressure of 200 psi, and a minimum soil bearing stress of 2,000 psf.

The blocking shall be so placed that the pipe and the fittings will be accessible for repair. Prior to backfilling around thrust block, secure inspection of installation by City Engineer or Representative. Concrete must be allowed to cure in thrust restraints for 5 days prior to pressurizing water lines or have additional approved thrust restraints installed prior to pressurizing the water line.

M. Connections to Existing Water Lines:

Information on the drawings regarding existing water lines is taken from "record" drawings from the city or utility company files and may or may not be accurate as to size, type of material or location. The Developer will be responsible to determine the proper fittings and materials required, obtain the City Engineer's approval of the planned connection, and perform the construction in a suitable fashion. Connection to the existing PVC or Ductile Iron main shall be made using a mechanical joint Ductile Iron sleeve (long) or reducer or equivalent fitting which complies with the recommendations of the pipe manufacturer for transitioning from HDPE to PVC or ductile iron pipe.

N. Magnetic Locator Tape:

All pipe shall include a three inch (3") magnetic locator tape installed in the pipeline trench approximately twenty four inches (24") above the top of the pipe. This tape shall be prepared for culinary water with white or black printing on a blue field having the words: POTABLE WATER.

O. Valving:

All valves ten (10) inches and smaller shall be gate valves (resilient seated gate valve), and all valves larger than ten (10) inches shall be butterfly valves made by Christy (no spacer needed) or approved equal (spacer required), in accordance with Division 4c.

3a.46 FLUSHING AND TESTING:

O. Pressure Test:

A leakage test described in ASTM F2164, "Standard Practice for Field Testing of Polyethylene (PE) Pressure Piping Systems Using Hydrostatic Pressure", shall be conducted concurrently with the pressure test.

The maximum permissible test pressure is measured at the lowest elevation in the test section. The maximum permissible test pressure is the lower of (a) 150% of the system design operating pressure provided that all components in the test section are rated for the test pressure, or (b) the pressure rating of the lowest pressure rated component in the test section.

a. Pressurization:

Each valved section of pipe shall be slowly filled with water and the specified test pressure, based on the elevation of the lowest point of the line or section under test and corrected to the elevation of the test gage, shall be applied by means of a pump connected to the pipe in a manner satisfactory to the City Engineer. The maximum test duration is eight (8) hours including time to pressurize, time for initial expansion, time at test pressure, and time to depressurize the test section. Damage to the system may occur if testing at excessive pressure or for an excessive time period.

b. Air Removal:

Before applying the specified test pressure, air shall be expelled completely from the pipe, valves, and hydrants. If permanent air vents are not located at all high points, the Developer shall install corporation cocks at such points so that the air can be expelled as the line is filled with water. After all the air has been expelled, the corporation cocks shall be closed and the test pressure applied. At the conclusion of the pressure test, the corporation cocks shall be removed and plugged.

c. Examination:

All exposed pipe, fittings, valves, hydrants, and joints shall be examined carefully during the test. Any damaged or defective pipe, fittings, valves, or hydrants that are discovered following the pressure test shall be repaired or replaced with sound materials and the test shall be repeated until it is satisfactory to the Owner.

P. Leakage Test:

A leakage test described in ASTM F2164, “Standard Practice for Field Testing of Polyethylene (PE) Pressure Piping Systems Using Hydrostatic Pressure”, shall be conducted concurrently with the pressure test.

Gradually pressurize the test section to test pressure, and maintain test pressure for three (3) hours. During the initial expansion phase, polyethylene pipe will expand slightly. Additional test liquid (typically water) will be required to maintain pressure. Immediately after the initial expansion phase, there are two alternatives to determine if there is leakage.

1. Reduce test pressure by 10 psi, and stop adding test liquid. If test pressure remains steady (within 5% of the target value) for one (1) hour, then no leakage is indicated.
2. (This alternative is applicable when the test pressure is 150% of the system design pressure.) Monitor the amount of make-up water required to maintain test pressure for one (1), or two (2), or three (3) hours. If the amount of make-up water needed to maintain test pressure does not exceed the amount in the manufacturer’s literature, then no leakage is indicated.

Acceptance of Installation:

Acceptance shall be determined on the basis of allowable leakage. If any test of pipe laid discloses leakage greater than specified, the Developer/Developer shall, at its own expense, locate and repair the defective material until the leakage is within the specified allowance. All visible leaks are to be repaired regardless of the amount of leakage.

Q. Flushing:

All new water systems or extensions to existing systems shall be thoroughly flushed before being placed in service. Flushing shall be accomplished through hydrants, or end of line blow-off assemblies at a minimum flushing velocity of 2.5-feet per second.

FLOW RATE AND OPENINGS TO FLUSH PIPELINES

(40- psi Residual Pressure, assumed DR 11)

Pipe Size (inches)	Flow Required to Produce 2.5 fps velocity (gpm)
2	23
4	81
6	175
8	297
10	461
12	648
14	782
16	1,021
18	1,292
20	1,595

24	2,296
30	3,588

R. Disinfection:

After flushing, all culinary water lines shall be disinfected by chlorination. Chlorination shall provide a minimum of 25 ppm residual after 24 hours contact in the pipeline. This may be expected with an application of 50 ppm, although some conditions may require more. Chlorine in the form of a 1% slurry of high-test calcium hypochlorite (HTH, Perchloron, Pittchlor, etc. which are 70% available chlorine by weight) shall be fed into the pipeline in such a manner as to mix with the water flowing in the pipeline. (A 1% slurry – 10,000 ppm – results from mixing one pound of calcium hypochlorite with 8.40 gallons of water.)

The following table provides information as to the required quantity of slurry to be used per 100 feet of pipe to provide a chlorine concentration of 50 ppm:

Pipe Size (in.)	Vol. of 100 ft. Length (gal)	Required Amount of 1% Chlorine Slurry (gal)
2	14.98	0.11
4	53.82	0.40
6	116.63	0.88
8	197.70	1.48
10	307.08	2.30
12	432.01	3.24

During the process of chlorinating the pipeline, all valves and other pipeline appurtenances shall be operated several times to provide sufficient contact with the chlorinating agent. Following chlorination, the water line shall be drained and thoroughly flushed according to Section A above and, if necessary, rechlorinated until a satisfactory bacteriological test is obtained.

Disinfection shall conform to the requirements of AWWA C651, latest edition. Main lines must pass bacteria test. Number of samples to be determined by inspector and will be based on site of development. If a new main is connected to an existing main, a bacteria test must be completed and passed prior to any pressure testing being conducted.

Following chlorination, the water line shall be drained and thoroughly flushed and, if necessary, rechlorinated until a satisfactory bacteriological test is obtained. After passing a bacterial test, water must be flushed from the pipe and discharged in accordance with all local, state and federal water quality requirements.

DIVISION 4c

VALVES, COUPLINGS AND FIRE HYDRANTS

3a.47 GENERAL:

This Division covers distribution valves to be used in the water system, couplings and fire hydrants.

3a.48 RESILIENT SEATED GATE VALVE:

Valves in sizes 4" through 12" shall be of the iron body, non rising bronze stem, resilient seated type, manufactured to equal or exceed all applicable AWWA C-509 latest revision and all specific requirements outlined in these specifications. Acceptable manufacturers are Mueller Company, American Flow Control and Clow Valve Company, as directed by the City.

1. Valves shall open left and be provided with 2" square operating wrench nuts unless otherwise specified.
2. When valves are 'Mechanical Joint', they shall be furnished with all necessary glands, gaskets, followers, bolts and nuts to complete installation.
3. The disc shall have integrally cast ASTM B62 bronze stem nut to prevent twisting, binding or angling of the stem. Designs with loose stem nuts are not acceptable.
4. Bronze valve stems shall be interchangeable with stems of the double disc valves of the same size, direction of opening and manufacture.
5. All internal ferrous surfaces shall be coated, holiday free, to a minimum thickness of 4 mils with a two part thermo setting epoxy coating. Said coating shall be non-toxic, impart no taste to the water, formulated from materials deemed acceptable in the Food and Drug Administration Document Title 21 of the Federal Regulations on food additives, Section 121.2514 entitled Resins and Polymeric Coatings. It shall protect all seating and adjacent surfaces from corrosion and prevent build-up of scale or tuberculation.
6. The sealing element shall be secured to the disc with self-locking stainless steel screws, and it shall be field replaceable, and shall be such that it cannot be installed improperly.
7. Stem failure from over torquing in either the open or closed position shall occur externally at such a point as to enable the stem to be safely turned by use of a readily available tool after exposure of the valve through excavation.
8. Valve design shall incorporate a positive metal to metal stop to prevent over-compression of the sealing element.

9. A full faced composition gasket placed between machined body and bonnet flanges is required to eliminate cold flow or creep action present with "O" ring gasketed bodies.
10. Valves shall have a test plug in the bonnet area to vent air and allow line pressure testing.
11. The exterior of the valves shall be Asphalt Varnish, JAN-P-450. If exterior epoxy is used, all bolts and nuts shall be made of Stainless Steel to prevent galvanic corrosion of said nuts and bolts due to insulation from the ferrous valve and line.

3a.49 BUTTERFLY VALVE:

All butterfly valves (Acceptable manufacturers are Mueller Company, M&H, Avtek and Clow Valve Company) shall conform to the latest revision of ANSI/AWWA Standard C504, Class 150-B, and comply with the following:

1. Valve bodies shall be cast iron, ASTM A126 Class B. Body ends shall be flanged with facing and drilling in accordance with ANSI B16.1, Class 125; or mechanical joint in accordance with ANSI/AWWA C-111/A21.11. All 'Mechanical Joint' end valves shall be furnished complete with joint accessories (bolts, nuts, gaskets, and glands). All valves shall conform with ANSI/AWWA Standard C-504, Table 3, Laying Lengths for Flanged Valves and Minimum Body Shell Thickness for all Body Types.
2. Valve disc shall be Ductile Iron ASTM A536, Grade 65-45-12. Valve disc shall be of the offset design providing 360 degree uninterrupted seating.
3. The resilient seat shall be natural rubber bonded to an 18-8, Type 304 Stainless Steel retaining ring secured to the disc by 18-8, Type 304 Stainless Steel screws. The seat shall be capable of mechanical adjustment in the field and field replaceable without the need for special tools. Valve body seat shall be 18-8, Type 304 Stainless Steel.
4. Valve shafts shall be 18-8, Type 304 Stainless Steel. Shafts shall be of the two piece stub design and attached to the disc by means of "O" ring sealed taper pins with lock nuts.
5. The valve assembly shall be furnished with a non-adjustable factory set thrust bearing designed to center the valve disc at all times.
6. Shaft bearings shall be contained in the integral hubs of the valve body and shall be self-lubricated sleeve type.
7. Valve shaft seal shall consist of "O" rings. Where the valve shaft projects through the valve body for actuator connection, the "O" ring packing seal shall be field replaceable as a part of a removable bronze cartridge.

8. When manual actuators are required they shall be of the traveling nut design capable of withstanding 450 foot pounds of input torque against the open and closed stops. All actuators shall have adjustable mechanical stop limits. The closed position stop shall be externally adjustable. Valves shall be installed with the shaft horizontal unless otherwise directed by the City Engineer and shall be provided with a 2-inch square operating nut for manually operating the valve with a "T" handle wrench.
9. All valves shall be coated with epoxy in conformance to AWWA Standard C-550, latest revision. Interior wetted ferrous surfaces shall be coated a nominal 10 mils thick for long life; and body exterior shall have a minimum of 3 to 4 mils coating thickness in order to provide superior base for field-applied finish coats.

3a.50 VALVE BOXES:

All buried valves shall be installed complete with two-piece, cast iron, screw type, 5-1/4-inch shaft valve box with locking lid. The lid shall have the word "Water" or "Irrigation", as appropriate, cast in the metal.

Valves and valve boxes shall be installed where shown on the drawings. Valves and valve boxes shall be set within ¼ to ½" plumb. Valve boxes shall be vertically centered directly over the valve within a tolerance of +/- ½". Valves shall be aligned with property lines where possible. Earth fill shall be carefully tamped around the valve box to a distance of four (4) feet on all sides of the box, or to the undisturbed trench face if less than four (4) feet. Valve boxes shall have the interiors cleaned of all foreign matter before installation and before and after backfill, being accessible and free of debris.

All valve boxes located in streets shall be installed as nearly to grade as possible. Valve boxes placed in bituminous asphalt concrete surfaces, after the pavement is in place, the valve boxes shall be raised to grade (¼ - ½" lower than asphalt), the surrounding asphalt shall be neatly cut to form a circular opening 2'-6" in diameter with the valve box centered, and a 12" thick concrete collar shall be cast around the box. Valve boxes shall be installed as shown on the Drawings. Valve boxes in off-road areas shall extend six (6) inches above grade and be collared and marked.

3a.51 COUPLINGS:

Acceptable manufacturers of couplings are HYMAX (grip), Romac (alpha) or Smith-Blair (18" long). Cast iron sleeves may be utilized, as approved by the City Engineer. Couplings shall be of the straight, transition, or reducing style as required by the City for the specific installation. All steel fittings and bolts shall be coated with a non-oxide coating and wrapped with 12 mil polyethylene.

3a.52 FIRE HYDRANTS:

Fire hydrants shall be "traffic model" type designed to conform to AWWA C502 and shall be of either the compression or toggle joint type. Hydrants shall be the Mueller Modern Centurion A-442, Clow Medallion or Waterous Pacer (with alpha base).

Hydrant valves shall be a minimum of 6-inch size. Hydrants shall be supplied complete with two 2 1/2-inch hose nozzles and one 4 1/2-inch pumper nozzle. All nozzles shall be provided with National Standard threading. A one cubic yard gravel sump shall be provided at each hydrant. All hydrants shall be mechanical joint end and shall be connected to the main by means of a flanged tee and flanged by mechanical joint auxiliary gate valve (or flange by alpha gate valve) and box as shown on Kaysville Standard Drawings. Each hydrant shall also be supplied with O-ring seals, a National Standard pentagon operating nut which is designed for clockwise rotation closing, and a 6-inch mechanical joint inlet.

All hydrants shall be factory painted red and must function properly. Where a parkstrip exists, hydrants shall be centered in the parkstrip +/- 3". Hydrants must have a three (3) foot minimum clear space around the hydrant. Hydrants must be located as shown on approved plans/drawings and be set vertically within +/- 1" out of level (plumb).

DIVISION 4d

WATER SERVICE LATERALS

3a.53 GENERAL:

Water service laterals shall be constructed with materials specified and at the locations shown on the Drawings or at the actual location established during construction by the City Engineer or his representative. The City shall maintain the service lateral from the main line to the end of the meter setter; the service lateral between the end of the meter setter and the property is to be maintained by the property owner.

3a.54 WATER SERVICE LATERALS:

Pipe for water service laterals shall be three quarter-inch ($\frac{3}{4}$ ") Type K-soft copper tubing or blue HDPE SDR 9 Copper Tube Size (CTS) with a 200 psi rating.

A. Extent of Laterals:

Water service laterals shall extend from the water main to a point 10-feet beyond the street right-of-way line. A curb stop valve shall be installed on the end of the line. Type K-soft copper tubing water services shall not have any joints between the corporation stop and the meter setter. A two-inch (2") by four-inch (4") by six-foot (6') marker, with the top twelve-inches (12") painted blue, shall be installed to clearly mark the end of each lateral line. Tracer wire (12 gauge) shall be installed from the main to the end of each lateral line, and come up the outside of each meter box, and come into the meter box in a notch between the meter ring and the box. Meter boxes shall be installed in accordance with the Kaysville City standard drawings.

B. Excavation and Backfill:

Trench excavation and backfill shall conform to the applicable paragraphs of Division 2a. Bedding shall meet the requirement of Division 2a for PVC or polyethylene pipe.

C. Connection to Main:

Connections to the main lines shall be made by means of corporation stops using direct pipe taps for $\frac{3}{4}$ " and 1" services on Ductile Iron pipe, tapped tees for 2" service or approved service saddles for PVC and any of the above. HDPE fused saddles should be Frialen 10"-20" universal service saddle with 2" female threaded outlet or equivalent.

D. Service Saddle Specifications:

(For use with AWWA C-900 CI O.D. for PVC plastic pipe.)

All service clamps shall be a “Full encirclement design”, and shall be O.D. controlled, which design will eliminate the possibility of pipe crushing due to the over torquing of the nuts upon installation.

All service clamps shall be manufactured of brass cast in conformance to AWWA C800, General Section – 1, Paragraph 1.2 (ASTM B62).

The two sides of the clamp shall be held together by high quality Silicon Bronze Hex Bolts (in sizes 1” and over) or Silicon Bronze Slotted Screws (in sizes under 1”), no dissimilar metals shall be allowed at this point thus eliminating the possibility of galvanic corrosion.

All service clamps shall be Mueller Model H-13490 Series, or Ford Model S-91 Series for sizes through 12” and Romac 305 Series for 14” or larger.

(For use with Ductile Iron Pipe.)

All service clamps shall be of the double strap design with brass body, flattened silicon bronze straps, rolled strap threads and O-ring sealed outlet. Saddles shall meet all applicable parts of ANSI/AWWA C-800.

All service clamps shall be Mueller Model H-16000 Series or approved equal.

E. Sample Stations:

The City may require an above ground sample station for water quality testing (Eclipse 88 type or approved equal). When required, sample stations shall be installed at a depth of 3 to 4 feet, and in accordance with the Kaysville City standard drawings. Sample station locations shall be determined by the City Engineer.

The line from the main to the sample station shall be subject to the same requirements as a service lateral.

F. Corporation Stops:

Connections of services to main lines shall be through a corporation type stop and a 24-inch gooseneck formed with copper tube. Inlet connection shall be a AWWA I.P. thread and the outlet shall be a compression fitting. Ford or Mueller are the approved manufacturers.

All connection made to pressurized water lines shall be done using a “wet-tap” method.

G. Service Tubing:

Water service lines from the main to the meter box shall be ¾", 1", or 2" type K-soft copper tube or blue HDPE SDR 9 Copper Tube Size (CTS) with a 200 psi rating.

When transferring or replacing existing galvanized steel or plastic services, copper replacement tubing or blue HDPE shall be used, as detailed above.

All tubing for service lines shall be cut and installed in a neat and workmanlike manner by use of a wheel cutter.

H. Compression Connections:

- (1) The interior surface of the coupling nut, including threads, shall have a baked on, fluorocarbon coating to reduce assembly friction and prevent the gasket from turning and twisting during tightening. The nut shall bottom on a cast or machined shoulder on the body when properly assembled. This design will provide a visual check to assure connection is properly assembled.
- (2) The sealing gasket shall be of molded synthetic rubber (ASTM D-2000) with molded in place bronze spring (ASTM A-134 Alloy #6) to eliminate the possible cold flow of the gasket between the pipe and fitting.
- (3) A gripper band of hardened Stainless Steel (ANSI Type 401) shall be fitted into the gasket. When the gasket is compressed it will cause the gripper ring to distort the pipe giving the fitting a high resistance to pull out. The gripper band shall overlap itself to prevent cold flow of the gasket into the cavity under the band.
- (4) Compression connections and fittings shall be Mueller 110 or equal.

I. Flushing, Testing, and Disinfection:

Flushing, testing and disinfection shall be done at the time the water main is flushed, tested and disinfected. The end of the trench where the curb valve is located shall be left open to allow for discharging water out of the service line for proper flushing and to insure that the line has been adequately disinfected. Flushing, testing and disinfection shall conform to the applicable paragraphs of Division 4a or 4b.

J. Damage and Repair of Water Mains and Appurtenances:

The Developer shall be responsible for any damage to water mains and water facilities caused by their operations.

Any damage to water gates, hydrants, valve chambers, and other surface appurtenances which result from the Developer's operation shall be their sole responsibility.

DIVISION 4e

SECONDARY WATER

3a.55 GENERAL:

See the requirements of the applicable Secondary Water Provider with jurisdiction.

3a.56 PIPES:

All pipes will have locator tape and a tracer wire for locating. This should meet the City requirements for culinary water pipes (Divisions 4a-b).

3a.57 VALVES:

All valves in roadways will be set and have same requirements as culinary valves (Division 4c). The valve covers/lids must be stamped 'Secondary' or 'Irrigation'.

3a.58 SERVICE BOXES:

All boxes in the park strip will be level with the TBC + 3/8".

3a.59 APPROVALS:

Kaysville City will require a letter of approval from secondary water provider before acceptance/warranty.

DIVISION 5a

ROADWAY CONSTRUCTION

5a.01 GENERAL:

This Division covers roadway construction; earthwork, subgrade preparation, imported granular subgrade, base course, asphalt surface and raising manholes and valve boxes to grade.

All streets shall be built in accordance with the following, unless otherwise specified by the City Engineer:

- A. Local Streets
 - 1) 12-inch minimum crushed 1.25" minus (State spec.) gravel untreated base course over prepared subgrade.
 - 2) 3-inch minimum compacted thickness ½" PG 58/28 with 15% max rap hot plant asphalt surfacing on streets.
- B. Significant Local Streets
 - 1) 12-inch minimum crushed 1.25" minus (State spec.) gravel untreated base course over prepared subgrade.
 - 2) 4-inch minimum compacted thickness of ½" PG 58/28 with 15% max rap hot plant asphalt surfacing on streets. Lifts must be completed in two 2" thick levels.
- C. Minor Collector Streets
 - 1) 12-inch minimum crushed 1.25" minus (State spec.) gravel untreated base course over prepared subgrade.
 - 2) 4-inch minimum compacted thickness of ½" PG 58/28 with 15% max rap hot plant mix asphalt surfacing on streets. Lifts must be completed in two 2" thick levels.
- D. Major Collector Streets
 - 1) 12-inch minimum crushed 1.25" gravel untreated base course over prepared subgrade.
 - 2) 4-inch minimum compacted thickness of ½" PG 58/28 with 15% max rap hot plant mix asphalt surfacing on streets. Lifts must be completed in two 2" thick levels.
- E. Arterial Streets

Pavement structure will be based on ½" PG 58/28 with 15% max rap hot plant mix asphalt surfacing on streets, and a modified or more specific design to meet conditions and traffic loads/volumes may be required.

Note: Alternative designs, materials or cross sections may be proposed, however, the City retains the right to determine the adequacy of such proposal. An approved excavation permit may be

required for work or repairs required on new road surfaces and/or rights of way, in which case, the requirements of said permit must be followed.

5a.02 EARTHWORK:

The earthwork needed for roadway construction shall meet the requirements of Division 2b, Earthwork.

5a.03 SUBGRADE PREPARATION:

This work shall consist of the shaping and compacting of the subgrade in accordance with these specifications and in conformity with the lines, grades, and typical cross sections shown on the Drawings or as established by the City Engineer. The granular material shall be placed and compacted to not less than 96% maximum dry density as determined by AASHTO T-180 (ASTM D1557). No less than a 2% crown unless approved by the City Engineer (no more than 7%).

Once the subgrade is properly graded, including a 2% crown, the Developer shall notify Kaysville City to determine if a deflection test is required for the subgrade. Any soft spots found during testing shall be repaired prior to the placement of any granular base course. A deflection test of the base course will be required prior to paving.

5a.04 GRANULAR SUBBASE:

Granular subbase material, if required, shall consist of granular bank run material with a maximum size of 4 inches and less than 15% passing a No. 200 sieve.

The granular subbase material shall be compacted to not less than 96% maximum dry density as determined by AASHTO T-180 (ASTM D1557). Surfaces shall be true to the established grade with thickness being not less than 1/4-inch from the required layer thickness and with the surface elevation varying not more than 3/8-inch in ten feet from the true profile and cross section.

5a.05 BASE COURSE:

Base for all streets shall consist of crushed select material and shall be graded as per the latest edition of Section 02721 of the Utah Department of Transportation Standards and Specifications.

Mixing, placing, compacting, finishing, thickness tolerance, and quality control testing shall be in accordance with the applicable provisions of Section 02721 of the above referenced Standard Specifications.

5a.06 ASPHALT CONCRETE PAVEMENT:

Asphalt Concrete Pavement shall be in accordance with the applicable provisions of Section 02745 Asphalt Material of the latest edition of the Utah Department of Transportation Standards and Specifications, except as noted herein: 1/2"-inch PG-58-28 mix with max 15% RAP.

It is the responsibility of the Developer to control traffic. All traffic shall be kept off the completed surface for a minimum period of 24 hours, unless otherwise approved by the City Engineer. Ambient and base course temperature at time of placement shall be 50° F and rising for two (2) hours prior to placement and two (2) hours after rolling/compaction. Asphalt temperature should be at least 220° F at the time of initial rolling/compaction and no less than 200° F at the time of final rolling/compaction. If less than 50° F degrees, an additional warranty term shall be required in writing.

5a.07 PRIME COAT:

Prime Coat is NOT required when the granular base material is clean and free from other soils tracked onto the roadway. However, the City Engineer may at his discretion require a prime coat for any areas that have been contaminated or damaged in other ways.

5a.08 ADJUSTING MANHOLES AND VALVE BOXES TO FINAL GRADE:

This section covers the requirements for adjusting manholes and valves to final grade. The adjustment shall be made with cast in place concrete rings/collars. Rings shall be constructed after the asphalt surface has been placed. Rings shall be constructed in a neat, workmanlike manner.

Concrete shall conform to the requirements of Division 5c. Concrete shall be Class AA (AE).

Manholes and valves shall require a concrete ring/collar around the cast iron ring and cover constructed such that the cast iron ring is one fourth inch (1/4") lower than the existing pavement. On newly asphalted or overlaid streets, the cast in place concrete collar shall be placed one quarter (1/4") lower than the surrounding asphalt. This is to allow for some consolidation of the new asphalt due to traffic and other conditions.

The concrete collars shall be 18" from outer manhole ring, and shall be a minimum of 12" in thickness. The concrete collars shall be 12" from outer valve ring, and shall be a minimum of 12" in thickness. If fiber mesh is used in concrete, then City will allow 12" around manholes.

Where manholes are to be raised this is to be accomplished by removing the cover and frame and raising the manhole to proper elevation with concrete. Any adjustments over three inches (3") require that the ring and cover be removed and a concrete grade ring be added to the top of the cone. Concrete grade rings placed on the cone combined shall be twelve inches (12") or less in height. In the case this is to be exceeded, the cone section shall be removed and a one foot (1') manhole section installed with the cone reinstalled on top of the manhole section. "Whirlygig" riser systems, or an approved equal, will be allowed in place of concrete grade rings.

DIVISION 5b

RESTORATION OF SURFACE IMPROVEMENTS

5a.09 GENERAL:

The Developer shall be responsible for the protection and the restoration or replacement of any improvements existing on public or private property at the start of work or placed there during the progress of the work.

Existing improvements shall include but not be limited to permanent surfacing, curbs, gutters, sidewalks, planted areas, sprinklers, ditches, driveways, culverts, fences, decorative features and walls. All improvements shall be reconstructed to equal or better, in all respects, than the existing improvements removed. Any work being done in the City right of way shall first require an approved excavation permit. There are costs associated with these permits, based on the consolidated fee schedule. All work done in the City right of way shall conform with the requirements of the excavation permit.

5a.10 FIELD VERIFICATION OF IMPROVEMENTS:

The Developer will be deemed to have carefully examined the site of the work and to have acquainted themselves with all conditions relating to the protection and restoration of existing improvements. The Developer shall be responsible to protect or restore existing improvements, whether shown on the drawings or not, unless agreed to in writing by the effected property owner and approved by the City.

5a.11 REMOVAL OF PAVEMENT, SIDEWALKS, CURBS, ETC.:

Prior to any removal of road surface, the surface shall be cut vertically along the lines forming the trench, in such a manner as to not cause damage to adjoining pavement, sidewalk, curb and gutter, driveway, etc. For removal of sidewalk, curb and gutter, vertical cuts shall be made in the concrete only at the next adjacent joint. The portion to be removed shall then be broken up in a manner that will not cause damage to the asphalt or concrete outside the limits of the cuts; however, any surface damaged by the Developer or their work shall be replaced at the Developer's expense. The Public Works inspector shall determine the extents or limits of adjacent damage requiring replacement.

Broken paving materials and debris shall be removed immediately from the site of the work. If four (4) feet or less of asphalt is left between the edge of a trench and the lip of the curb (or edge of pavement if there is no curb) after removal, then the asphalt shall be removed to the lip of curb (or edge of road if there is no curb) to safeguard against differential settlement.

5a.12 MATERIALS:

Materials used for repair or replacement of surface improvements shall be equal to or better than the material removed:

- A. Untreated Base Course. Untreated base course shall comply with Utah Department of Transportation Standard Specifications, latest edition. The Developer shall take samples of the untreated base course on a random basis. All materials not meeting the tolerance requirements shall be removed from the project and replaced with specification material.
- B. Asphalt. The asphalt surface shall be hot-rolled plant mix in accordance with the requirements of Division 5a.
- C. Concrete. Concrete shall comply with section 02753 of the Utah Department of Transportation Standard Specifications.

5a.13 RESTORING CONCRETE OR ASPHALT STREET SURFACES:

Where trenches are in or cross asphalt or concrete surfaced roads, traffic lanes, driveways, parking areas, etc., the asphalt or concrete surface must be restored in accordance with the requirements of the excavation permit, including, but not limited to:

- A. Before Excavation. All existing asphalt or concrete surfaces shall be saw cut or roto-milled to a square edge before excavation.
- B. Temporary Graded Surface. Until resurfacing can be done in paved areas a temporary untreated base course surface shall be placed deep enough to provide a minimum of twelve inches (12") below the bottom of the asphalt surface and shall be brought flush with the top of the adjacent paved surface.

The untreated base shall be placed in the trench at the time it is backfilled. Excess material shall be removed from the premises immediately. The temporary untreated base course surface will be maintained as needed by the Developer until the asphalt is placed.

- C. Preparation for Paving. The area over trenches to be resurfaced shall be graded and rolled with a roller weighing not less than 12 tons, until the subgrade is firm and unyielding. Mud or other soft or spongy material shall be removed and the void filled with untreated base course and rolled and tamped thoroughly in layers not exceeding twelve (12") inches in thickness. Sink holes in asphalt shall be cut out, excavated and replaced. Asphalt sinking of any kind will be cut out and replaced once the problem has been fixed. The edges of trenches which deteriorate or crumble prior to paving shall be removed and trimmed neatly before resurfacing.

Before any permanent resurfacing is placed, the Developer shall trim the existing paving to clean, straight lines as nearly parallel to the centerline of the trench as practicable.

Following backfill, the existing adjacent asphalt paving shall be cut back a minimum of eighteen (18") additional inches beyond the previous cuts for the excavation so that the edges of the new paving will rest on at least six-inches eighteen (18") inches of undisturbed soil.

- D. Asphalt Surface. The bituminous surface shall be restored by standard paving practices to a minimum thickness as indicated in Division 5a and on the standard drawings. Pavement over 3" shall be placed and rolled in two lifts. The asphalt surface should be ¼"-½" above the lip of curb and gutter. If the asphalt is more than ½" or less than ¼" over the lip of the curb and gutter, an overlay to adjust the grade shall be required, as directed by the City Engineer.

Pavement restoration shall include priming of pavement edges with Type MC-70 bituminous material (tackifier) and placing rolled plant hot mix asphalt material to a level of 1/8" to ¼" above the adjacent pavement surfaces. Areas where there is unraveling of asphalt will be replaced.

5a.14 CRACK FILLING/SEALING:

When pavement crack repairs are needed, vegetative growth should be removed from cracks, edges, and joints. Cracks should be prepared by blowing them out and dry prior to being filled by crack sealant. Melting of sealant should be per manufacturer's guidelines. The pavement crack seal should be dry before applying asphalt coatings.

Crack seal material should be per UDOT Standards 02745, Section 2.3 HOT-POUR CRACK SEALANT FOR BITUMINOUS CONCRETE or applicable current APWA standard 32.01.17 PAVEMENT CRACK SEAL. Crack seal shall be done prior to all asphalt coating projects.

5a.15 ASPHALT COATINGS:

Depending on various factors, including, but not limited to the age and condition of adjacent asphalt, project scheduling and traffic conditions, asphalt surfacing may require a preventative maintenance coating, as determined and specified by the City Engineer. Asphalt coatings consist of chip seals with type A chips and a fog coat, type II slurries and seal coats (type specified by the City Engineer). All asphalt coatings shall be applied in accordance with applicable APWA Utah standards.

5a.16 GRAVEL SURFACE:

Where trenches are excavated through gravel-surfaced areas such as roads and shoulders, parking areas, unpaved driveways, etc., the gravel surface shall be restored and maintained as follows:

- A. The gravel shall be placed deep enough to provide a minimum of six inches of material.
- B. The gravel shall be placed in the trench at the time it is backfilled. The surface shall be maintained by blading, sprinkling, rolling, adding gravel, etc., to maintain a safe, uniform surface. Excess material shall be removed from the premises immediately.

- C. Material for use on gravel surfaces shall be obtained from sound, tough, durable gravel or rock meeting the following requirements for grading:

Passing 1-inch sieve	100%
Passing 1/2-inch sieve	79-91%
Passing No. 4 sieve	49-61%
Passing No. 16 sieve	27-35%
Passing No. 200 sieve	7-11%

5a.17 MISCELLANEOUS IMPROVEMENTS:

It shall be the Developer's responsibility to restore to their original condition all irrigation canals, levees, culverts, gates, fences, drainage ditches, and all such improvements which are cut or disturbed during construction. Topsoil in farming areas or along road edges shall be stored separate from subsoil during pipe trench excavation. Topsoil shall be replaced during backfill operations as nearly as possible to its original condition, thereby assuring suitable soil for reseeded.

5a.18 RESTORATION OF SURFACES:

Unless otherwise directed, all street surfacing, curbs, gutters, sidewalks, driveways, or other hard surface that must be removed in the performance of the work shall be restored in kind by the Developer in accordance with the Specifications contained herein. Deviation of more than one-fourth inch (1/4") between old and new work or within new construction shall be corrected. Such measurement shall be made from a ten foot (10') minimum length straight edge. Adjoining surfaces between old and new must be flush.

5a.19 CLEANUP:

At the completion of each area of work all equipment, barricades, and similar items shall be removed from the area. All excess material will be removed. Adjacent borrow pits and road shoulders disturbed or used for storage of excavating materials will be smoothed and returned to its original contour.

5a.20 PAVEMENT MARKINGS:

The Developer shall be responsible for restoration of pavement markings on all roadways. Restoration of pavement markings shall be provided for any removed or obliterated markings. The temporary markings shall conform to UDOT standards and specifications. Permanent pavement markings will then be replaced to conform to the applicable local and state specifications with approval from the City Engineer or their Representative.

DIVISION 5c

PORTLAND CEMENT CONCRETE

5a.21 GENERAL:

The work shall consist of furnishing, forming, placing, finishing, and curing Portland cement concrete as required.

5a.22 MATERIALS:

- A. Portland Cement shall be Type II and shall comply with the Standard Specification for Portland Cement, ASTM C150.

If air-entraining cement is to be used, the Developer shall furnish the manufacturer's written statement giving the source, amount and brand name of the air-entraining addition.

Cement shall be stored in such a manner as to be protected from weather, dampness or other destructive agents. Cement that is partially hydrated or otherwise damaged will be rejected.

- B. Aggregates shall conform to Tentative Specifications for Concrete Aggregates, ASTM C33 for the specified sizes. Aggregates that fail to meet any requirement may be accepted only when: (1) the specified alternate conditions of acceptance can be proved prior to the use of the aggregates on the job and within a period of time such that no work under the contract will be delayed by the requirements of such proof; or, (2) the specification for concrete expressly contains a provision of special mix requirements to compensate for the effects of the deficiencies.

The potential reactivity of aggregates with the alkalis in cement shall be evaluated by petrographic examination and, where applicable, the chemical method of test, ASTM C289, or by the results of previous tests or service records of concrete made from similar aggregates from the same source. The standards for evaluating potential reactivity shall be as described in ASTM Specification C-33, Appendix A1.

Aggregates indicated by any of the above to be potentially reactive shall not be used, except under one of the following conditions:

1. Applicable test results of mortar bar tests, made according to ASTM C227, are available which indicate an expansion of less than 0.10 percent at six months in mortar bars made with cement containing not less than 0.8% alkalis expressed as sodium oxide; or
2. Concrete made from similar aggregates from the same source has been demonstrated to be sound after 3 years or more of service under conditions of

exposure to moisture and weather similar to those anticipated for the concrete under these specifications.

Aggregates indicated to be potentially reactive, but within acceptable limits as determined by mortar bar test results or service records, shall be used only with "low alkali" cement, containing less than 0.6% alkalis expressed as sodium oxide.

Aggregate of each class and size shall be stored and handled by methods that prevent segregation of particle sizes or contamination by intermixing with other materials.

- C. Water shall be cleaned and free from injurious amounts of oil, salt, acid, alkali, organic matter or other deleterious substances.
- D. Air-entraining agent shall be used in all concrete exposed to the weather. The agent shall conform to ASTM C150 and C260, except that the relative durability factor in the freezing and thawing test shall be not less than 95.
- E. Steel reinforcement shall be free from rust, oil, grease, paint or other deleterious matter.

Steel bars for concrete reinforcement requiring bends shall be deformed billet-steel bars conforming to ASTM A615, Grade 40 or Grade 60.

Straight steel bars shall be deformed bars conforming to one of the following specifications:

Deformed Billet-Steel Bars for Concrete Reinforcement (Grade 40 or Grade 60) - ASTM A615.

Rail-Steel Deformed Bars for Concrete Reinforcement (Grade 50 or Grade 60) - ASTM A616.

Axle-Steel Deformed Bars for Concrete Reinforcement (Grade 40 or Grade 60) - ASTM A617.

Fabricated Steel bar mats shall conform to the requirements of ASTM A184.

Welded steel wire fabric reinforcement shall conform to the requirements of ASTM A185.

Welded deformed steel wire fabric for concrete reinforcement shall conform to the requirements of ASTM A497.

Cold-drawn steel wire reinforcement shall conform to the requirements of ASTM A82.

Deformed steel wire for concrete reinforcement shall conform to the requirements of ASTM A496.

Gages, spacing and arrangement of wires in welded steel wire fabric shall be as defined in ACI Standard 315 of the American Concrete Institute for the specified style designations.

Steel reinforcement stored at the site of the work shall be stored above the ground surface on platforms, skids or other supports and shall be protected from mechanical injury and corrosion.

- F. Water-reducing and set-retarding admixtures shall conform to the requirements of ASTM C494, except that resistance to freezing and thawing shall be determined in all cases, and the minimum relative durability factor shall be 95.

Admixtures shall be Type A, Water-Reducing or Type D, Water-Reducing and Retarding, as defined in ASTM C494.

When added, in the manner and amount recommended by the manufacturer, to the concrete used on the job, with no change in the cement content or proportions of the aggregates, admixtures shall have the following effects:

Type A or Type D: The water content at the required slump shall be at least 5 per cent less with the admixture than without. The air content shall remain within the range specified, but shall not exceed 8 percent in any case.

Type D: The time of initial setting, determined as prescribed in ASTM C494, shall be from 1 to 3 hours longer with the admixture than without.

- G. Curing compound for concrete shall meet the requirements of ASTM C309.

Unless otherwise specified, the compound shall be Type 2.

All curing compound shall be delivered to the site of the work in the original container bearing the name of the manufacturer and the brand name. The compound shall be stored in a manner to prevent damage to the containers and to protect water-emulsion types from freezing.

5a.23 CLASS OF CONCRETE:

For the purpose of practical identification, concrete has been divided into four classes: Class AA(AE), A(AE), B(AE) and C(AE). The specific use for each Class is identified in the Division in which the concrete is used. The symbol (AE) designates air-entrainment. Basic requirements for each class are as follows:

Class of Concrete	Maximum Net Water Content (gallons/bag)	Minimum Cement Content (bags/cu. yd.)	Minimum 28-day Comp. Strength (psi)
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AA(AE)	5	6 1/2	4000
A(AE)	6	6	3500
B(AE)	7	5	2500
C(AE)	8	4	2000

5a.24 COMPOSITION OF CONCRETE:

- A. Aggregates maximum size shall be not larger than one-fifth (1/5) of the narrowest dimension between forms within which the concrete is to be cast, nor larger than three-fourths (3/4) of the minimum clear spacing between reinforcing bars or between reinforcing bars and forms. For unreinforced concrete slabs, the maximum size of aggregates shall not be larger than one-fourth (1/4) the slab thickness.
- B. Water shall be added to the mix to produce concrete with the minimum practicable slump. The slump of mechanically vibrated concrete shall not exceed four-inches (4"). No concrete shall be placed with a slump in excess of five-inches (5").
- C. Air-Content for air-entrained concrete shall comply with the following:

Course Aggregate Size (in.)	Air Content (percent)
1 1/2 to 2 1/2	5 +/- 1
3/4 or 1	6 +/- 1
3/8 or 1/2	7 +/- 1

The air-entraining agent shall be added as liquid to the mixing water by means of mechanical equipment capable of accurate measurement and control.

- D. Water reducing, set retarding admixtures shall not be used except with previous approval from the City Engineer and shall in such a case, conform to the standards of materials set forth in the specification.

5a.25 DESIGN OF THE CONCRETE MIX:

The proportions of the aggregates shall be such as to produce a concrete mixture that will work readily into the corners and angles of the forms and around reinforcement when consolidated, but will not segregate or exude free water during consolidation.

Prior to placement of concrete, the Developer shall furnish the City Engineer or Representative, for approval, a statement of the materials and mix proportions (including admixtures, if any) it intends to use. The statement shall include evidence satisfactory to the City Engineer or Representative that the materials and proportions will produce concrete conforming to this specification. The materials and proportions so stated shall constitute the "job mix." After the

job mix has been reviewed for conformance to specification by the City Engineer, neither the source, character or grading of the aggregates nor the type or brand of cement or admixture shall be changed without prior notice to the City Engineer. If such changes are necessary, no concrete containing such new or altered materials shall be placed until the City Engineer has approved a revised job mix.

5a.26 OBSERVATION AND TESTING:

The City Engineer shall have free entry to the plant and equipment furnishing concrete under the contract. Proper facilities shall be provided for the City Engineer to observe the materials, equipment and processes and to obtain samples of the concrete. All tests and observations will be conducted so as not to interfere unnecessarily with manufacture and delivery of the concrete.

5a.27 HANDLING AND MEASUREMENT OF MATERIALS:

Materials shall be stockpiled and batched by methods that will prevent segregation or contamination of aggregates and insure accurate proportioning of the ingredients of the mix.

Except as otherwise provided in Division 8, cement and aggregates shall be measured as follows:

Cement shall be measured by weight or in bags of 94 pounds each. When cement is measured in bags, no fraction of a bag shall be used unless weighed.

Aggregates shall be measured by weight. Mix proportions shall be based on saturated, surface-dry weights. The batch weight of each aggregate shall be the required saturated, surface-dry weight plus the weight of surface moisture it contains.

Water shall be measured by weight, to an accuracy within one per cent of the total quantity of water required for the batch.

Admixtures shall be measured within a limit of accuracy of 3 percent.

5a.28 MIXERS AND MIXING:

Concrete shall be uniform and thoroughly mixed when delivered to the work. Variations in slump of more than 1 inch within a batch will be considered evidence of inadequate mixing and shall be corrected by increasing mixing time or other means. For stationary mixers, the mixing time after all cement and aggregates are in the mixer drum shall be not less than 1 1/2 minutes. When concrete is mixed in a truck mixer, the number of revolutions of the drum or blades at mixing speed shall be not less than 70 or more than 100.

Unless otherwise specified, volumetric batching and continuous mixing at the construction site will be permitted if approved by City Engineer. The batching and mixing equipment shall conform to the requirements of ASTM C685 and shall be demonstrated prior to placement of concrete, by tests with the job mix, to produce concrete meeting the specified proportioning and

uniformity requirements. Concrete made by this method shall be produced, inspected, and certified in conformance with Sections 6, 7, 8, 13, and 14 of ASTM C685.

No mixing water in excess of the amount called for by the job mix shall be added to the concrete during mixing or hauling or after arrival at the delivery point.

5a.29 FORMS:

Forms shall be of wood, plywood, steel or other approved material and shall be mortar tight. The forms and associated falsework shall be substantial and unyielding and shall be constructed so that the finished concrete will conform to the specified dimensions and contours. Form surfaces shall be smooth and free from holes, dents, sags or other irregularities. Forms shall be coated with a nonstaining form oil before being set into place.

Metal ties or anchorages within the forms shall be equipped with cones, she-bolts or other devices that permit their removal to a depth of at least one inch without injury to the concrete.

All edges that will be exposed to view when the structure is completed shall be chamfered by placing molding in the forms, unless finishing with molding tools.

5a.30 PREPARATION OF FORMS AND SUBGRADE:

Prior to placement of concrete the forms and subgrade shall be free of chips, sawdust, debris, water, ice, snow, extraneous oil, mortar, or other harmful substances or coatings. Any oil on the reinforcing steel or other surfaces required to be bonded to the concrete shall be removed. Rock surfaces shall be cleaned by air-water cutting, wet sandblasting or wire brush scrubbing, as necessary, and shall be wetted immediately prior to placement of concrete. Earth surfaces shall be firm and damp. Placement of concrete on mud, dried earth or uncompacted fill or frozen subgrade will not be permitted.

Unless otherwise specified, when concrete is to be placed over drain fill, the contact surface of the drain fill shall be covered with a layer of asphalt-impregnated building paper or polyvinyl sheeting prior to placement of the concrete. Forms for weepholes shall extend through this layer into the drain fill.

Items to be embedded in the concrete shall be positioned accurately and anchored firmly.

Weepholes in walls or slabs shall be formed with nonferrous materials.

5a.31 CONVEYING:

Concrete shall be delivered to the site and discharged into the forms within 1.5 hours after the introduction of the cement to the aggregates. In temperatures over 90° F or under conditions contributing to quick stiffening of the concrete, the time between the introduction of the cement to the aggregates and discharge shall not exceed 60 minutes. The City Engineer may allow a longer time, provided the setting time of the concrete is increased a corresponding amount by the

addition of an approved set-retarding admixture, in which case, the time increases to 1.5 hours. In any case, concrete shall be conveyed from the mixer to the forms as rapidly as practicable by methods that will prevent segregation of the aggregates or loss of mortar. Concrete shall not be dropped more than five feet vertically unless suitable equipment is used to prevent segregation.

5a.32 PLACING:

Concrete shall not be placed until the subgrade, forms and steel reinforcement have been inspected and approved. No concrete shall be placed except in the presence of the City Engineer or Representative. The Developer shall give 48-hour notice to the City Engineer or Representative each time it intends to place concrete. Such notice will give the City Engineer or Representative adequate time to inspect the subgrade, forms, steel reinforcement and other preparations for compliance with the specifications before concrete is delivered for placing.

The concrete shall be deposited as closely as possible to its final position in the forms and shall be worked into the corners and angles of the forms and around all reinforcements and embedded items in a manner to prevent segregation of aggregates or excessive laitance. Unless otherwise specified, slab concrete shall be placed to design thickness in one continuous layer. Formed concrete shall be placed in horizontal layers not more than 20 inches thick. Hoppers and chutes, pipes or "elephant trunks" shall be used as necessary to prevent splashing of mortar on the forms and reinforcing steel above the layers being placed.

Immediately after the concrete is placed in the forms, it shall be consolidated by spading, hand tramping or vibration as necessary to insure smooth surfaces and dense concrete. Each layer shall be consolidated to insure monolithic bond with the preceding layer. If the surface of a layer of concrete in place sets to the degree that it will not flow and merge with the succeeding layer when spaded or vibrated, the Developer shall discontinue placing concrete and shall make a construction joint according to the procedure specified.

If placing is discontinued when an incomplete horizontal layer is in place, the unfinished end of the layer shall be formed by a vertical bulkhead.

5a.33 CONSTRUCTION JOINTS:

Construction joints shall be made at the locations shown on the Drawings. If construction joints are needed which are not shown on the Drawings, they shall be placed in locations approved by the City Engineer or Representative.

Where a feather edge would be produced at a construction joint, as in the top surface of a sloping wall, an inset form shall be used so that the resulting edge thickness on either side of the joint is not less than six-inches (6").

In walls and columns, as each lift is completed, the top surfaces shall be immediately and carefully protected from any condition that might adversely affect the hardening of the concrete.

Steel tying and form construction adjacent to concrete in place shall not be started until the concrete has cured at least 12 hours. Before new concrete is deposited on or against concrete that has hardened, the forms shall be retightened. New concrete shall not be placed until the hardening concrete has cured at least 12 hours.

Surfaces of construction joints shall be cleaned of all unsatisfactory concrete, laitance, coatings or debris by washing and scrubbing with a wire brush or wire broom or by other means approved by the City Engineer. The surfaces shall be kept moist for at least one hour prior to placement of the new concrete.

5a.34 EXPANSION AND CONTRACTION JOINTS:

Expansion and contraction joints shall be made only at locations shown on the drawings, but on flat work, shall be placed at least every 50 feet.

Exposed concrete edges at expansion and contraction joints shall be carefully tooled or chamfered, and the joints shall be free of mortar and concrete. Joint filler shall be left exposed for its full length with clean and true edges.

Preformed expansion joint filler shall be held firmly in the correct position as the concrete is placed.

When open joints are specified, they shall be constructed by the insertion and subsequent removal of a wooden strip, metal plate or other suitable template in such a manner that the corners of the concrete will not be chipped or broken. The edges of open joints shall be finished with an edging tool prior to removal of the joint strips.

5a.35 WATERSTOPS:

Waterstops shall be held firmly in the correct position as the concrete is placed. Joints in metal waterstops shall be soldered, brazed or welded. Joints in rubber or plastic waterstops shall be cemented, welded or vulcanized as recommended by the manufacturer.

5a.36 REMOVAL OF FORMS:

Forms shall not be removed without the approval of the City Engineer or Representative. Forms shall be removed in such a way as to prevent damage to the concrete. Supports shall be removed in a manner that will permit the concrete to take the stresses due to its own weight uniformly and gradually.

5a.37 FINISHING FORMED SURFACES:

Immediately after the removal of the forms:

- A. All fins and irregular projections shall be removed from exposed surfaces.

B. On all surfaces, the holes produced by the removal of form ties, cone-bolts, and she-bolts shall be cleaned, wetted and filled with a dry-pack mortar consisting of one part Portland cement, three parts sand that will pass a No. 16 sieve, and water just sufficient to produce a consistency such that the filling is at the point of becoming rubbery when the material is solidly packed.

5a.38 FINISHING UNFORMED SURFACES:

All exposed surfaces on the concrete shall be accurately screeded to grade and then float finished, unless specified otherwise.

Excessive floating or troweling of surfaces while the concrete is soft will not be permitted.

The addition of dry cement or water to the surface of the screeded concrete to expedite finishing will not be allowed.

Joints and edges on unformed surfaces that will be exposed to view shall be chamfered or finished with molding tools.

5a.39 CURING AND PROTECTION:

Concrete shall be prevented from drying for a curing period of at least 7 days after it is placed. Exposed surfaces shall be kept continuously moist for the entire period, or until curing compound is applied as specified below. Moisture shall be maintained by sprinkling, flooding or fog spraying or by covering with continuously moistened canvas, cloth mats, straw, sand or other approved material. Wood forms (except plywood) left in place during the curing period shall be kept wet. Formed surfaces shall be thoroughly wetted immediately after forms are removed and shall be kept wet until patching and repairs are completed. Water or covering shall be applied in such a way that the concrete surface is not eroded or otherwise damaged. As soon as the concrete has hardened sufficiently to prevent damage, the finished surface shall be protected for curing in one of the following ways:

1. Ponding of water on the surface or continuous sprinkling.
2. Application of absorptive mats such as three-inches (3") of cured hay, clean straw or fabric kept continuously wet.
3. Application of two-inches (2") of moist earth or sand uniformly distributed on the surface and kept saturated by spraying with water.
4. Application of light colored waterproof plastic materials, conforming to "Specifications for Waterproof Sheet Materials for Curing Concrete" ASTM C171, placed and maintained in contact with the surface of the concrete.
5. Application of a curing compound, conforming to "Specifications for Liquid Membrane - Forming Compounds for Curing Concrete" ASTM C309. The

compound shall be light in color and shall be applied in accordance with the manufacturers recommendations immediately after any water sheen, which may develop after finishing, has disappeared from the concrete surface.

Curing compound shall not be applied to surfaces requiring bond to subsequently placed concrete, such as construction joints, shear plates, reinforcing steel and other embedded items. If the membrane is damaged during the curing period, the damaged area shall be resprayed at the rate of application specified above.

5a.40 REMOVAL OR REPAIR:

When concrete is honey combed, damaged or otherwise defective, the Developer shall remove and replace the structure or structural member containing the defective concrete or, where feasible, correct or repair the defective concrete. Prior to starting repair work the Developer shall obtain the Engineer's approval of its plan for affecting the repair. The Developer shall perform all repair work in the presence of the City Engineer or Representative.

5a.41 CONCRETING IN COLD WEATHER:

Concrete shall not be mixed nor placed when the daily minimum atmospheric temperature is less than 40 degrees unless facilities are provided to prevent the concrete from freezing. The use of accelerators or antifreeze compounds will not be allowed.

5a.42 CONCRETING IN HOT WEATHER:

The Developer shall apply effective means to maintain the temperature of the concrete below 90 degrees during mixing, conveying and placing.

5a.43 ACCEPTANCE CRITERIA:

The following criteria will be used to determine if the Developer has met City standards and proper construction of improvements has taken place:

A. Water Ways

Water ways should be five (5) feet wide. Roadbase depth is six (6) inches and compacted to a minimum of 96% maximum dry density. Reinforcement is typically 5 #4 bars, at 12" centers. If there is ponding of water 1/4" or more, the ponding section, at least, will be replaced. The water way should be replaced if any irregularities are present (spalling, scratches, foot prints, writing, etc.). If cracks are 1/8" or larger, the water way will need to be replaced. If cracks are less than 1/8" wide, then the cracks should be ground and Polyurethane Joint Sealer (Sonoborn or Sika) used to fill, with temperatures between 40° and 100° F at time of placement. For temperatures outside this range, an extended warranty may be accepted for the effected section(s). A water way with more than one crack or spider web cracking will need to be replaced. There will be no lifting of sinking water ways accepted.

B. Curb and Gutter

Curb and gutter width is 30 inches. (See Standard Drawings) Roadbase depth is six (6) inches and compacted to a minimum of 96% maximum dry density. If there is ponding of water $\frac{1}{4}$ " or more, the effected curb section(s) will be replaced. The curb will be replaced if any irregularities are present (spalling, scratches, foot prints, writing, etc.). If cracks are $\frac{1}{8}$ " or larger, the curb will need to be replaced. If cracks are less than $\frac{1}{8}$ " wide, the crack should be ground and use Polyurethane Joint Sealer (Sonoborn or Sika) to fill, with temperatures between 40° and 100° F at time of placement. For temperatures outside this range, an extended warranty may be accepted for the effected section(s). Curb with more than one crack or spider web cracking will be replaced. There will be no lifting of sinking curb accepted. Deflection test required before placement of concrete. Backfill curb and gutter no less than 2" below Top Back of Curb (TBC).

C. Sidewalk

Standard sidewalk width is four (4) feet, unless noted on Drawings and approved by the City Engineer. Roadbase depth should be four (4) inches, and six (6) inches under sections located in driveways. Roadbase compaction should be a minimum of 96% maximum dry density. Sidewalk will be replaced if any irregularities are present (spalling, scratches, foot prints, writing, etc.). If cracks are $\frac{1}{8}$ " or larger, the sidewalk will need to be replaced. If cracks are less than $\frac{1}{8}$ " wide, they will be ground and Polyurethane Joint Sealer (Sonoborn or Sika) used to fill, with temperatures between 40° and 100° F at time of placement. For temperatures outside this range, an extended warranty may be accepted for the effected section(s). Sidewalk with more than one crack or spider web cracking will be replaced. There will be no lifting of sinking sidewalk accepted. Deflection test required before placement of concrete. Backfill sidewalk no less than 1" below top surface.

Sidewalk with horizontal separation of $\frac{1}{8}$ " or more from adjacent concrete will be replaced. If less than $\frac{1}{8}$ ", then it can be sawcut and Polyurethane Joint Sealer (Sonoborn or Sika) used to fill, with temperatures between 40° and 100° F at time of placement. For temperatures outside this range, an extended warranty may be accepted for the effected section(s). Sidewalk with vertical separation of $\frac{1}{16}$ " or more will be replaced. Any sections of sidewalk that have settled more than $\frac{1}{2}$ " from grade will be removed and replaced. Where expansion joints are used, expansion material can not be more than $\frac{1}{16}$ " higher than top of sidewalk or $\frac{1}{16}$ " lower. Standard sidewalks in driveways will need to be removed and replaced with six (6) inches of roadbase and six (6) inches of concrete.

DIVISION 5d

REINFORCING STEEL

5a.44 GENERAL:

All reinforcing bars shall be grade 40. Wire fabric shall conform to ASTM A185.

Before supply of steel, all order lists and bending diagrams shall be provided by the Developer for approval of the City Engineer. The approval of such lists and diagrams shall in no way relieve the Developer of responsibility for the correctness of reinforcing supplied and all expenses incidental to revision of furnished reinforcing steel shall be carried by the Developer.

5a.45 FABRICATION AND PLACING REINFORCEMENT:

- A. Fabrication: Reinforcement shall be cold bent to the shapes shown in accordance with ACI Standard Code, latest edition Chapter 7.
- B. Clearances: All bars shall be of the size specified and shall be placed in the positions shown on the Drawings in such a manner as to be firmly held during the placing of the concrete. Where not otherwise indicated, the following minimum concrete cover shall be provided for reinforcement, as required by the ACI Standard Code, latest edition, Chapter 7.
- C. Support: Bars shall be tied at all intersections except where the spacing is less than twelve inches (12") when alternate intersections shall be tied. Distance from supports shall be by means of ties, hangers, or other approved supports. Metal chairs of approved design shall be used to hold reinforcement from contact with the forms. Metal chairs which are in contact with the exterior surface of the concrete shall be galvanized. Layers of bars or when placing concrete directly on a prepared subgrade, reinforcing shall be separated by precast mortar blocks or by other equally suitable devices. The use of pebbles, pieces of broken stone or brick, metal pipe and wooden blocks shall not be permitted. Reinforcement in any member shall be placed and then inspected and approved by the City Engineer or Representative before the placing of concrete begins. Concrete placed in violation of this provision may be rejected and removal required.

If the fabric reinforcement is shipped in rolls, it shall be straightened into flat sheets before being placed.

- D. Splicing: All splices shall be staggered so that splices in adjacent bars shall be not less than four feet (4') apart, and shall conform to ACI Standard Code, latest edition, Chapter 12.

DIVISION 6

FENCING

6.01 GENERAL:

Fencing six feet (6') in height shall be installed at locations designated by the Planning Commission for the separation of non-compatible uses. Fences shall be chain link, including opaque privacy slats where required by the Planning Commission; solid board; or masonry. Chain link fence and gates shall be constructed as indicated on the Drawings and/or herein specified.

Type "D" Construction fencing may be required where conditions warrant the installation of a temporary fence. Where permanent fencing is required, the temporary fencing may be eliminated if the permanent fencing is installed prior to the start of other construction. The fence shall be protected against damage and, if damaged, it shall be repaired to the satisfaction of the City Engineer or Representative prior to final acceptance.

6.02 CHAIN LINK FENCE:

A. MATERIALS:

The chain link fence and gates shall be USS Cyclone-Type I, Anchor Post Products, Inc., or SS40-Type I, Allied Tube & Conduit, or equivalent. The components shall be as listed and specified below.

Fabric

Height	6' - 0"
Mesh	2-inch
Size Wire	9-gauge
Coating	Zinc coating
Coating specifications	ASTM a-392-Class 1
Tensile strength	80,000 psi minimum

Top Rail

Size	1-5/8" OD - galvanized
Weight	2.27 pounds per LF

Tension Wire

7-gauge galvanized coil spring wire

Line Posts

4.10 pounds "H" section or 2-3/8" OD - 3.65 pounds per LF - galvanized

Terminal, Corner, and Pull Posts

Size
Weight

2-7/8" OD round
5.79 pounds per LF

Except where shown differently on the Drawings, gate posts and concrete foundations for gate posts shall be as determined by the following schedule:

Gate Leaf Width Feet	Size OD Inches	Weight lb/LF	Concrete Foundation	
			Size Dia.	Depth
0 to 6	2-7/8	5.79	12"	4'
Over 6 to 13	4	9.11	18"	4'
Over 13 to 18	6-5/8	18.97	18"	4'
Over 18	8-5/8	24.70	18"	4-1/2'

All posts, rails, and appurtenances shall be hot-dipped zinc coated steel per ASTM A-120, A-121, or A-153, whichever is applicable. Pipe posts shall have tops which exclude moisture. Fence corner, pull, and gate posts shall be braced with the same material as top rail and trussed to line posts with three eighth inch (3/8") rods and tighteners.

The fabric shall be connected to the line posts with 6-gauge hot-dip galvanized wire clips every fourteen inches (14"), to terminal, corner, and gate posts by using 1/4" x 3/4" tension bars tied to posts every fourteen inches (14") with 11-gauge, one-inch (1") wide, hot-dip galvanized steel bands and three eighth inch (3/8") diameter bolts and nuts, and to tension wires with 11-gauge hog rings every twenty-four inches (24").

A 7-gauge, galvanized, coiled spring tension wire shall be installed along the bottom of the fence fabric.

B. CONSTRUCTION:

The chain link fence shall be located as indicated on the Drawings. Finished fence shall be plumb, taut, true to line and grade, and complete in all details. End, corner, slope, and gate posts shall be braced to the mid-point of the nearest line post or posts with horizontal braces used as compression members and the said brace posts trussed from the brace back to the bottom of the end, corner, slope, or gate post with three-eighth inch (3/8") steel truss rods with turnbuckles or other suitable tightening devices used as tension members.

Fence shall be installed with a top rail and a bottom tension wire. Top rail shall provide allowance for expansion and contraction due to temperature differential in the coupling devices.

The fabric shall be placed on the outward facing side of the posts and shall be installed so that the top edge projects over the top rail of the fence. The fabric shall be stretched taut and securely fastened to the posts, the top rail and the bottom tension wire. The tension wire shall be installed parallel to the line of the fabric.

The fence shall follow the general finished grade of the ground and shall have pull posts at all points where required to conform to a change in ground line. The distance between the bottom of the fence and the finished ground line shall not exceed three inches (3"). The ground shall be graded before fence posts are located to permit the grade of the fence to remain constant over any local elevation or depressions in the ground line. The surplus dirt, concrete, etc. shall be cleaned up and the grade dressed up upon completion of the work. Fence posts shall be set in concrete foundations at least three feet (3') into the ground and shall be spaced not over ten feet (10') apart. Concrete shall be a minimum of ten inches (10") in diameter for line posts and twelve inches (12") in diameter for corners and gates. Exposed concrete fence post caps shall be finished off in a workmanlike manner. A minimum of one-inch (1") of concrete shall be above the finished grade and shall be sloped to drain away from the post.

C. SWING GATES:

Except as shown or specified, all chain link fence gates shall be swing gates. Gate frames shall be made of one point nine inch (1.9") galvanized pipe weighing two point seven-two pounds per linear foot (2.72 lbs./lf). Corner fittings shall be heavy pressed steel or malleable castings.

The corners of gate frames shall be fastened together and reinforced with a fitting designed for the purpose or by welding. All welds shall be ground smooth.

Chain link fence fabric shall be attached to the gate frame by the use of tension bars and tie wires as specified for fence construction, and suitable tension connectors spaced at approximately sixteen inch (16") intervals.

Gates shall be provided with a combination steel or malleable iron catch and locking attachment submitted to the City Engineer for review. Stops to hold gates open and a center rest with catch shall be provided where required.

6.03 WOOD FENCE:

A. MATERIALS:

1. Slats – Redwood, cedar, combed spruce or other wood covering acceptable to the City Engineer.
2. Bottom and Top Rail – Minimum 2-inch by 4-inch, 8 foot long cedar stud.
3. Corner, Gate, End, or Line Posts – Minimum size 4-inch by 4-inch cedar wood post.

B. CONSTRUCTION:

All corner, gate, end, or line posts shall be set in concrete. The cedar posts shall be set true to line and grade with concrete bases at least two feet (2') in depth. A minimum of six inches (6") of

concrete shall be provided below the bottom of each post. The minimum diameter for the concrete base for any post shall be twelve inches (12”).

Posts shall be sound and free from decay, splits, multiple cracks, or any other defect which would weaken the posts or otherwise cause them to be structurally unsuitable for the purpose intended. The maximum distance between posts in any section shall not exceed eight feet (8’). The top and bottom railings shall be securely fastened to the posts with galvanized nails or other acceptable means. Changes in line of 30 degrees or more shall be considered as corners.

Fence slats shall be placed on the roadway side of posts unless otherwise approved by City Engineer. The slats shall be placed approximately one inch (1”) above the ground and on a straight grade between posts by excavating the high points as required. Filling depressions will be permitted only upon approval of the City Engineer.

The slats shall be sound and free from all major decay or defects which would weaken or otherwise cause them to be unsuitable for fence slats. Fastening to top and bottom railings shall be done with two galvanized nails at both the top and bottom rail.

6.04 CONSTRUCTION FENCE SPECIFICATIONS – TYPE “D”:

A. MATERIALS:

1. The fabric shall be Class II wire mesh which conforms to ASTM Designation A-116, nominal 0.099-inch Farm Grade with standard six inch (6”) graduated spacing. The wire mesh shall have a Class 1 zinc coating. Polyethylene mesh fabric may be substituted when approved by the City Engineer.
2. Corner, gate, end, or line posts shall be painted metal Tee, U or Y channel, Angular, or other approved shapes 6’6” in length.

B. CONSTRUCTION

Metal fence posts shall be spaced at a maximum of sixteen feet (16’). Post spacing measurements shall be made parallel to the ground slope. All posts shall be placed vertically. Metal posts may be installed by driving, if this can be done without damage to the post. Otherwise, they shall be installed to the specified depth (2’6”) in larger drilled or dug holes and backfilled and compacted.

Corner posts shall be brace in two directions. End and gate posts shall be braced in one direction. Wire mesh fabric shall be drawn tight enough to eliminate all sag without causing the “tension crimps” to fail to function.

Any high points along the ground surface which interfere with the placing of wire mesh shall be excavated to provide at least two inches (2”) of ground clearance. Every alternate lateral wire in the mesh fabric shall be fastened to each post by means of a clamp.

6.05 MASONRY FENCE:

Because of the variable nature of masonry fences, both with regards to materials desired and also with the condition of the foundation soils, no standard specification is given. The Developer, or others desiring to install the masonry fence, shall be responsible to submit engineered drawings for review. No masonry walls will be allowed until the plans have been reviewed and approved by the City Engineer.

DIVISION 7

COMMUNICATION UTILITY SERVICES

7.01 SCOPE OF WORK:

This division defines and covers the requirements and responsibilities for the installation of City owned communication utility systems. For information regarding requirements for communication utility systems not owned by the City, please refer to the standard drawings and specifications of the applicable utility.

The underground conduit installed to provide communication service shall be furnished and installed by the Developer. In the event of a request for relocation of communication facilities, the associated costs shall be the responsibility of the requestor. All new communication utility systems shall be constructed underground, unless otherwise authorized by the City Engineer. No overhead communication lines will be allowed unless authorized by the Power Department Superintendent.

Developer shall furnish and install all communication facilities except for the following, which shall be completed by the Utility:

- A. Pulling underground or overhead cable;
- B. Installing communication cable terminations;
- C. Setting of large communications pedestals which house Nodes, and Fiber Optic Equipment;
- D. Installing communication connections and terminations;
- E. All overhead facilities, including extension of risers as shown in the standard drawings.

7.02 ATTACHING TO EXISTING CITY FACILITIES PROHIBITED:

There shall be no installation on or connection to poles or other equipment owned by the City unless specifically authorized, in writing, by the City. Unauthorized, or incorrect, connections to or installations on City owned poles or equipment shall either be removed or corrected, as directed by the City Engineer.

7.03 PERMITS AND INSPECTIONS:

Service shall not be established until all necessary permits have been obtained and until the wiring installation has been inspected and approved by the City. The City reserves the right to inspect wiring and to refuse service to any installation that is, in the opinion of the City, unsafe or if the operation of the same may be detrimental to the service furnished to other Customers or the City.

7.04 CONSTRUCTION DRAWINGS:

Communication utility plan drawings must be approved by the City Engineer in order to be considered valid for construction and to be authorized to proceed with construction. Revisions, if needed, must also include the date the revision was approved.

7.05 CONDUIT:

All conduit shall be orange 4-way microduct SDR 11 HDPE pipe meeting ASTM-3035 specifications, unless otherwise directed by the City Engineer or their designee. All bends or sweeps in conduit must be made with manufactured parts and fittings; no deformations or alterations shall be allowed to conduit to make such bends or sweeps. The minimum radius for any bend or sweep in the conduit shall be twenty-four (24) inches. The total number of bends in any conduit run shall not exceed 360°, unless otherwise authorized by the City Engineer.

All conduit shall be buried at a minimum depth of twenty-four (24) inches and a maximum depth of thirty (30) inches, unless otherwise approved by the City Engineer, and must have a three (3) foot minimum separation from City Power. All conduit must maintain at least a four (4) inch separation from all concrete and asphalt surfaces. Trenches may not be shared with City Power, unless otherwise approved by the City Power Superintendent.

7.06 HANDHOLES, PULL BOXES AND OTHER ENCLOSURES:

All handholes or pull boxes shall be polymer concrete or HDPE with lids inscribed with “KAYSVILLE FIBER”, and must be level and installed in accordance with the Kaysville City standard drawings. Ground sleeves, pads, handholes, pull boxes and other enclosures shall be installed in such a manner as to avoid movement or settlement; any movement or settlement beyond one-half (1/2) inch, or that adversely impacts the utility or its surroundings, shall require correction by the Developer.

The ends of conduits in handholes or pull boxes shall have bell ends, and enter the box vertically at +/-30°. Conduit ends shall be at least two (2) inches above the bottom of the box, and at least eight (8) inches below the top of the box.

Ground rods shall be required and installed in boxes as called out in the Kaysville City standard drawings. Ground rods shall be 5/8 inch by 8 foot copper clad.

7.07 LOCATING WIRE, TAPE AND LABELS

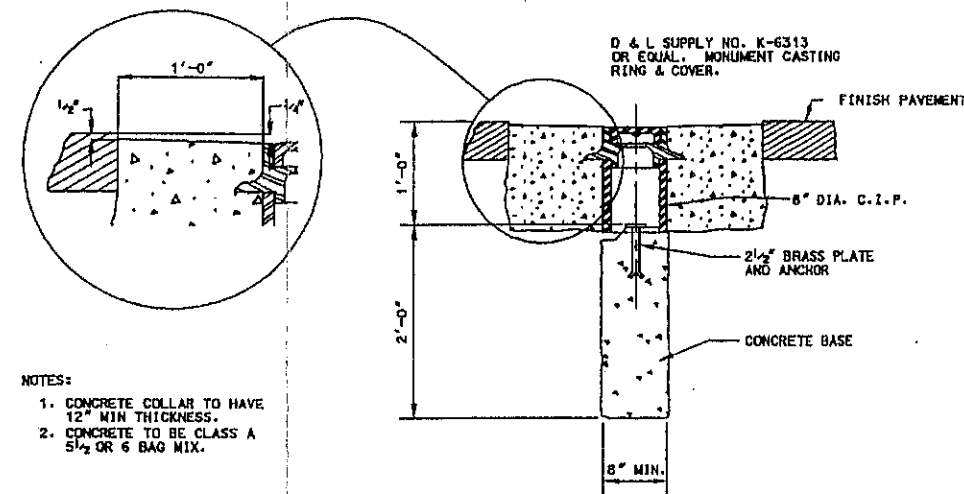
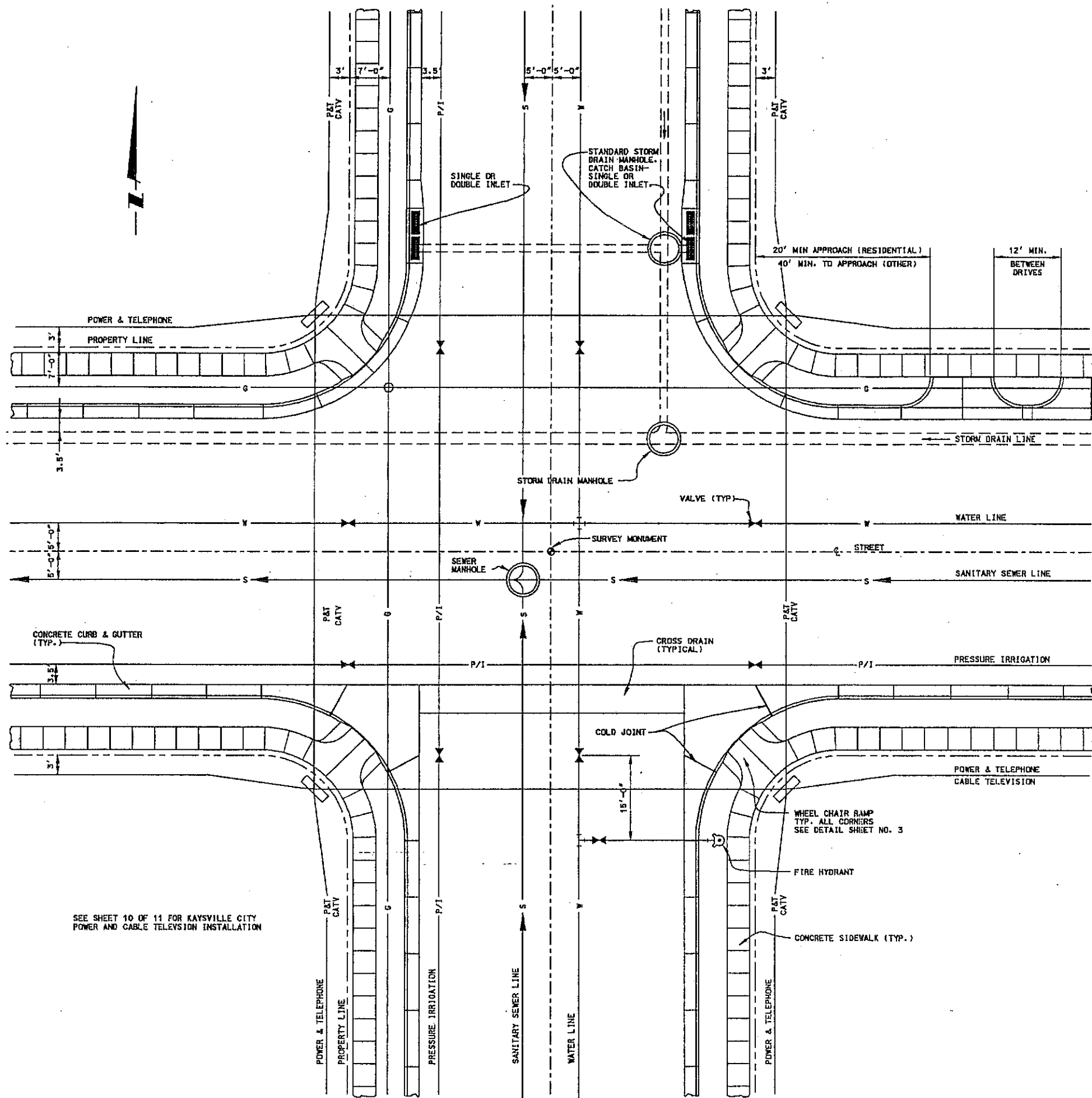
All conduits shall have a six (6) inch tape buried 12 inches above the conduit, reading: “CAUTION: FIBER OPTIC BURIED.” The end of each stubbed conduit, including service laterals, shall be marked to the surface according to the standard drawings.

All conduit shall require a tracer wire (12 gauge) for locating purposes placed on top of the pipe. Where splices are to be made, a water tight splice kit must be used. See the Kaysville City standard drawings for additional detail. All conduits shall have a pull string in the conduit securely tied off in each pad or enclosure.

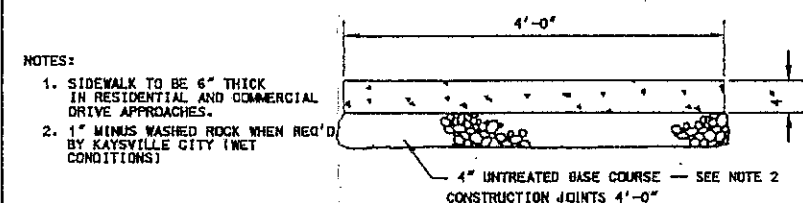
An imprinted, plastic label shall be securely taped to the end of each conduit run. The label shall indicate the location of where the run ends.

7.08 SERVICES

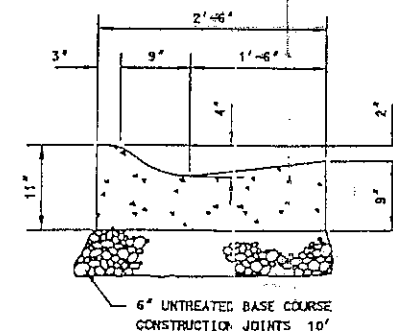
Service conduits shall be one (1) inch PVC or approved equivalent having no bends greater than 90° shall be run from the site being served to a City handhole or pull box. The City Engineer or their designee will determine the point of delivery for all developments and will decide if the multiple buildings, business and residential, or portions of buildings will be serviced using single or multiple distribution unit (MDU) enclosures.



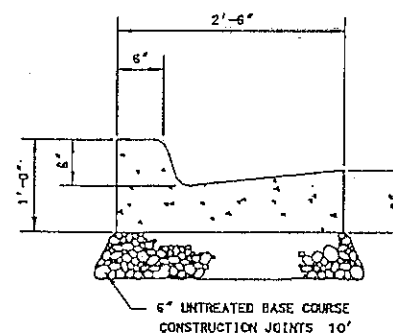
SURVEY MONUMENT SECTION



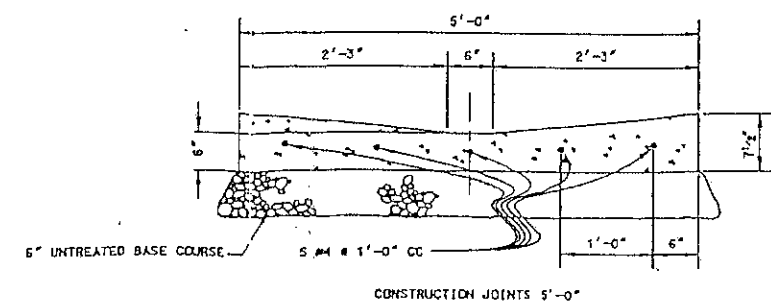
SIDEWALK SECTION



STANDARD ROLLED GUTTER



STANDARD CURB



CROSS DRAIN SECTION

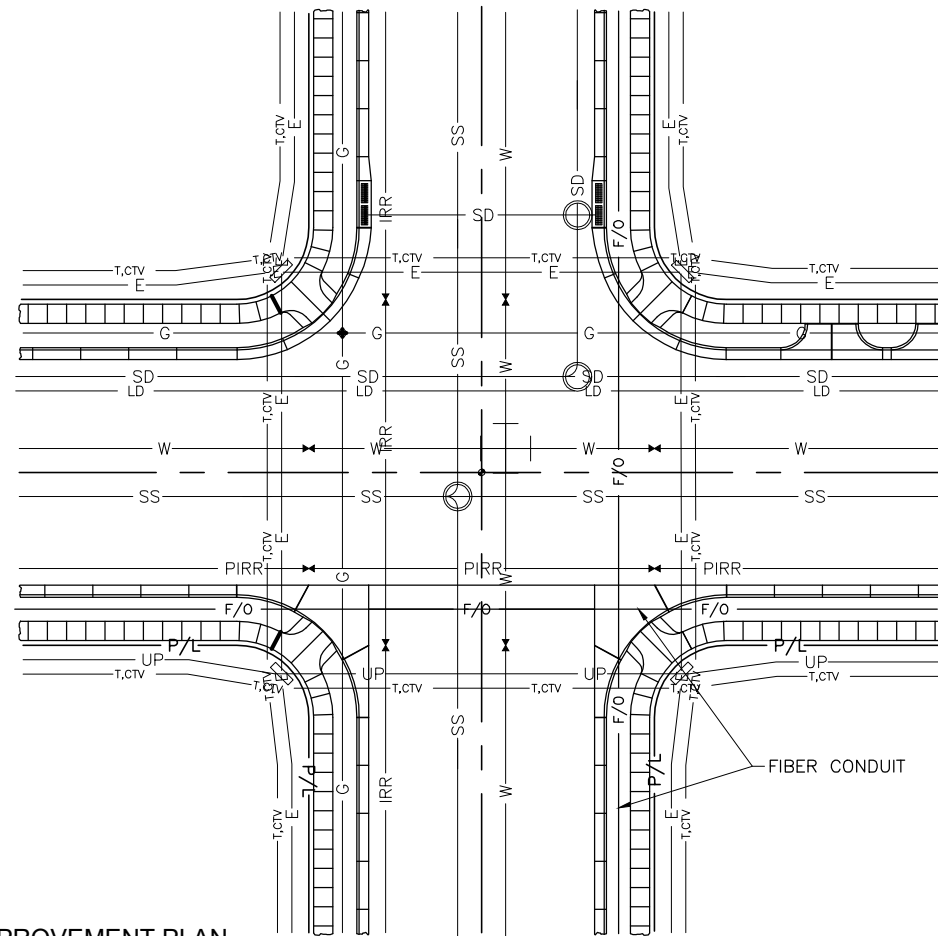
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4			DRAFTSMAN
3			CHECKED
2			DATE 7-19-94
1	12/94	REVISIONS PER KAYSVILLE CITY	
REV.	DATE	APPR.	

KAYSVILLE CITY

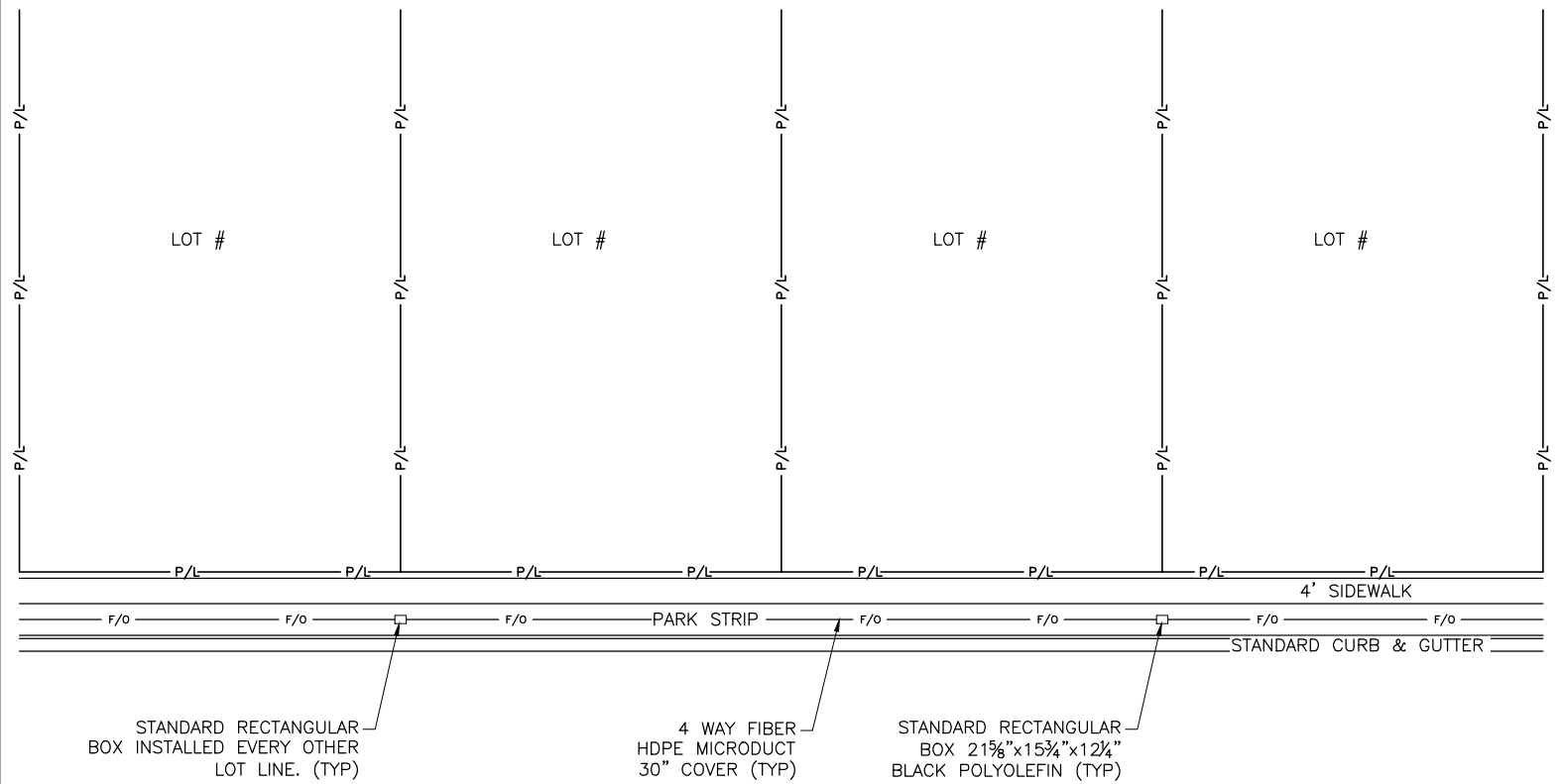
23 EAST CENTER
KAYSVILLE, UTAH

KAYSVILLE CITY CORPORATION
DEVELOPMENT STANDARDS
STANDARD STREET IMPROVEMENTS

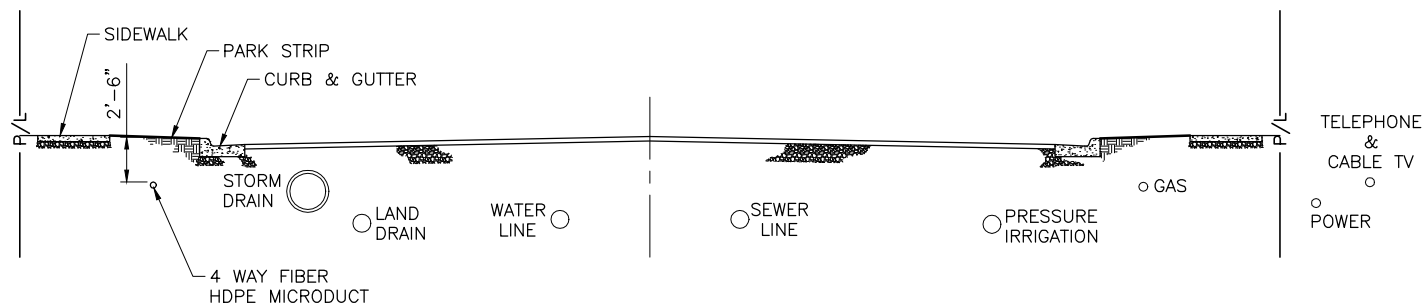
SHEET NO.
1
OF 11 SHEETS



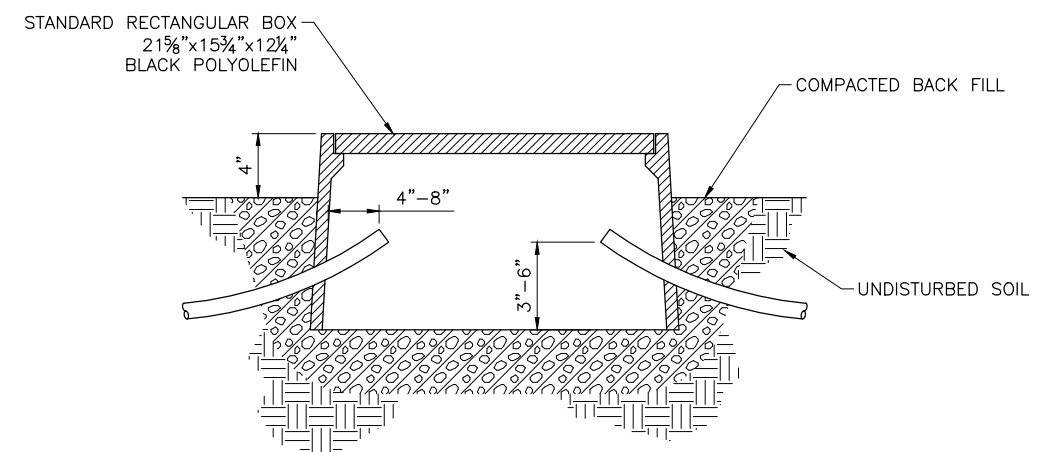
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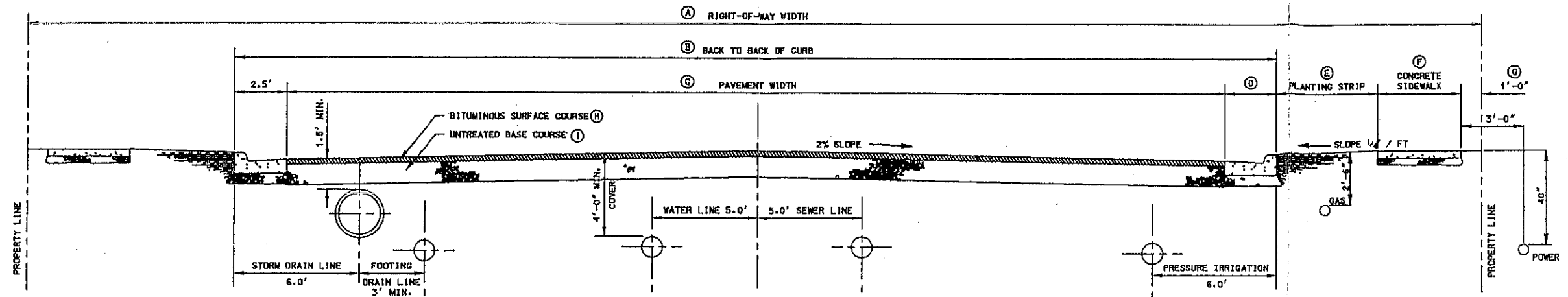
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REUSE OF DRAWINGS THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF J+J-B ENGINEERS, INC. AND IS NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN AUTHORIZATION OF J+J-B ENGINEERS, INC.			FILE: PROJ. #: PLOT DATE: 5/7/2020 LAST UPDATED: 5/7/2020 DRAWN BY: JDM DESIGN BY: SRM CHECKED BY: SRM
NO	REVISION DESCRIPTION	BY	APR. DATE



STANDARD FIBER DETAILS

17



NOTES:

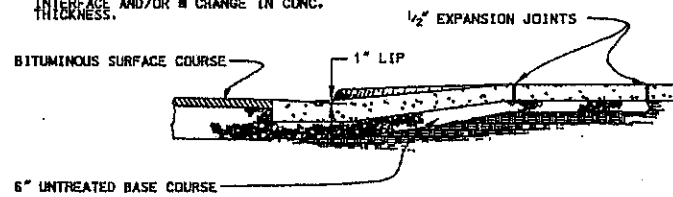
1. TOP BACK OF CURB ON BOTH SIDES OF ROAD TO BE SAME ELEVATIONS.
2. ON MAJOR STREETS THE CITY ENGINEER SHALL APPROVE PAVEMENT DESIGN. (SEE SPECIFICATIONS)
3. ALL UTILITIES STUBBED PAST PROPERTY LINE MUST BE AT 4 FT. MIN DEPTH.
4. POWER LINES TO MAINTAIN MIN. 30" COVER IN STREETS.

STANDARD STREET SECTION

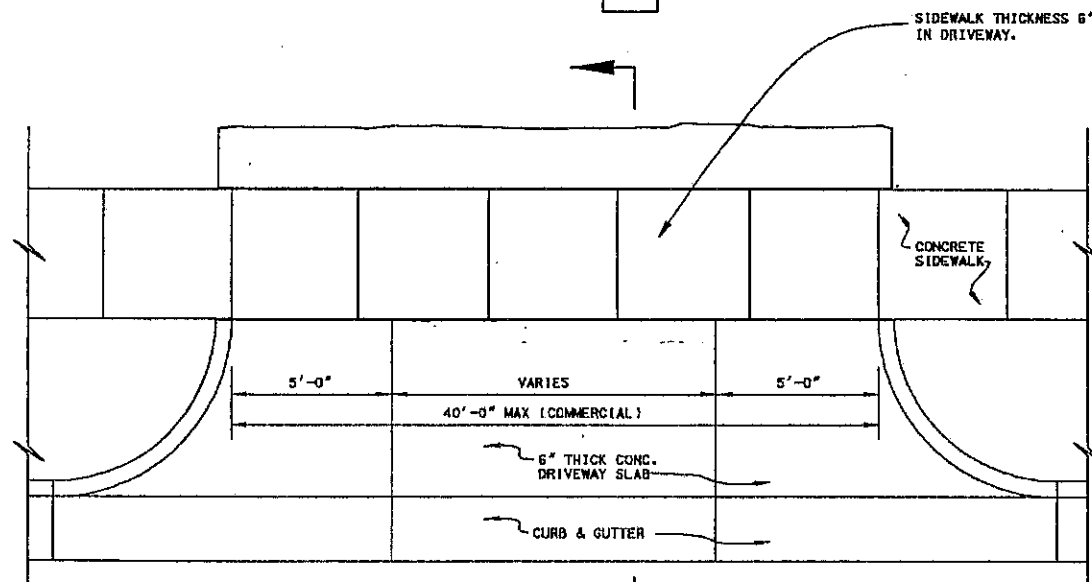
A	B	C	D	E	F	G	H	I
100'	80'	75'	2.5'	5'	4'	1'	NOTE 2	NOTE 2
80'	60'	55'	2.5'	5'	4'	1'	NOTE 2	NOTE 2
70'	50'	45'	2.5'	5'	4'	1'	NOTE 2	NOTE 2
66'	46'	41'	2.5'	5'	4'	1'	3"	12"
60'	40'	35'	2.5'	5'	4'	1'	3"	12"
55'	35'	30'	2.5'	5'	4'	1'	3"	12"

NOTES:

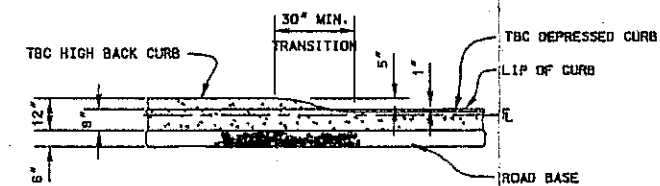
- SCRIBE SIDEWALK 1/2" DEPTH AT EACH 4'-0"
- EXPANSION JOINTS REQ'D. @ NEW & OLD INTERFACES AND/OR @ CHANGE IN CONC. THICKNESS.



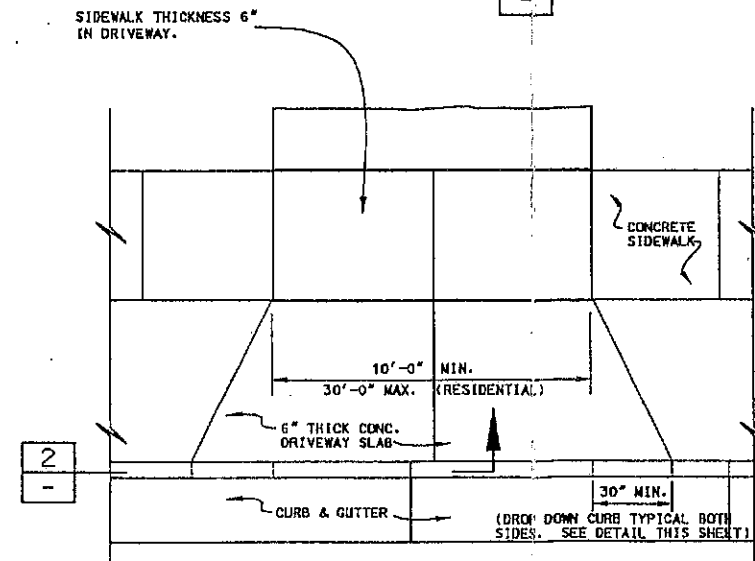
SECTION 1



TYPE 1 DRIVEWAY APPROACH
PREFERRED STYLE FOR COMMERCIAL DEVELOPMENT



SECTION 2



TYPE 2 DRIVEWAY APPROACH
PREFERRED STYLE FOR RESIDENTIAL DEVELOPMENT

DESIGNED	
DRAFTSMAN	
CHECKED	
DATE	7-19-94

KAYSVILLE CITY
23 EAST CENTER
KAYSVILLE, UTAH

KAYSVILLE CITY CORPORATION
DEVELOPMENT STANDARDS
STANDARD STREET SECTIONS
& DRIVEWAY DETAILS

SHEET NO.
2
OF 11 SHEETS

1. 600'-0" MAX. DISTANCE FROM CENTERLINE OF ADJOINING STREET TO RADIUS OF CUL-DE-SAC.
2. CUL-DE-SAC SHOULD BE USED ONLY WHERE UNUSUAL CONDITIONS EXIST.
3. MAX. GRADE IN CUL-DE-SAC AREA IS TO BE 2.5%.



1. LOCATE RAISED TRUNCATED DOMES SO THAT THE EDGE NEAREST THE CURB LINE IS WITHIN 6 TO 8 INCHES FROM THE CURB LINE. PROVIDE 2-FOOT OF TRUNCATED DOME PATTERN AT THE LOWER END OF ALL CURB RAMPS EXTENDING THE FULL WIDTH OF THE CURB RAMP.

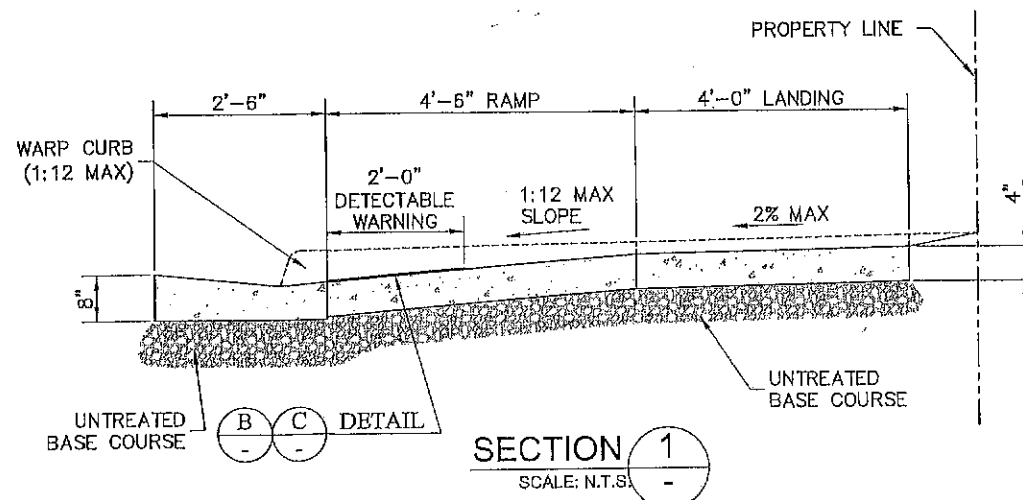
2. CHANGES IN ELEVATION GREATER THAN $\frac{1}{4}$ " SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 1:2 (MAXIMUM $\frac{1}{2}$ INCH).

3. THE DETECTABLE WARNING SURFACE DOMES SHALL BE ORIENTED SUCH THAT THE ROWS ARE PARALLEL WITH THE DIRECTION OF PEDESTRIAN TRAVEL TO THE RAMP ON THE OPPOSITE SIDE OF THE STREET.

4. THE DETECTABLE WARNING SHALL BE A CONTRASTING COLOR.

5. WHEN A DETECTABLE WARNING SURFACE DOME IS CUT, THE REMAINING PORTION OF THE DOME SHALL BE BEVELED TO A MAXIMUM SLOPE OF 1:2 WITH A MAXIMUM OF 1/2 INCH.

6. INSTALLATION SHALL BE DONE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.



DETAIL B
SCALE: N.T.S.



DETECTABLE WARNING SYSTEM DETAIL

SCALE: N.T.S

CURB RAMP DETAIL

SCALE N.T.S.

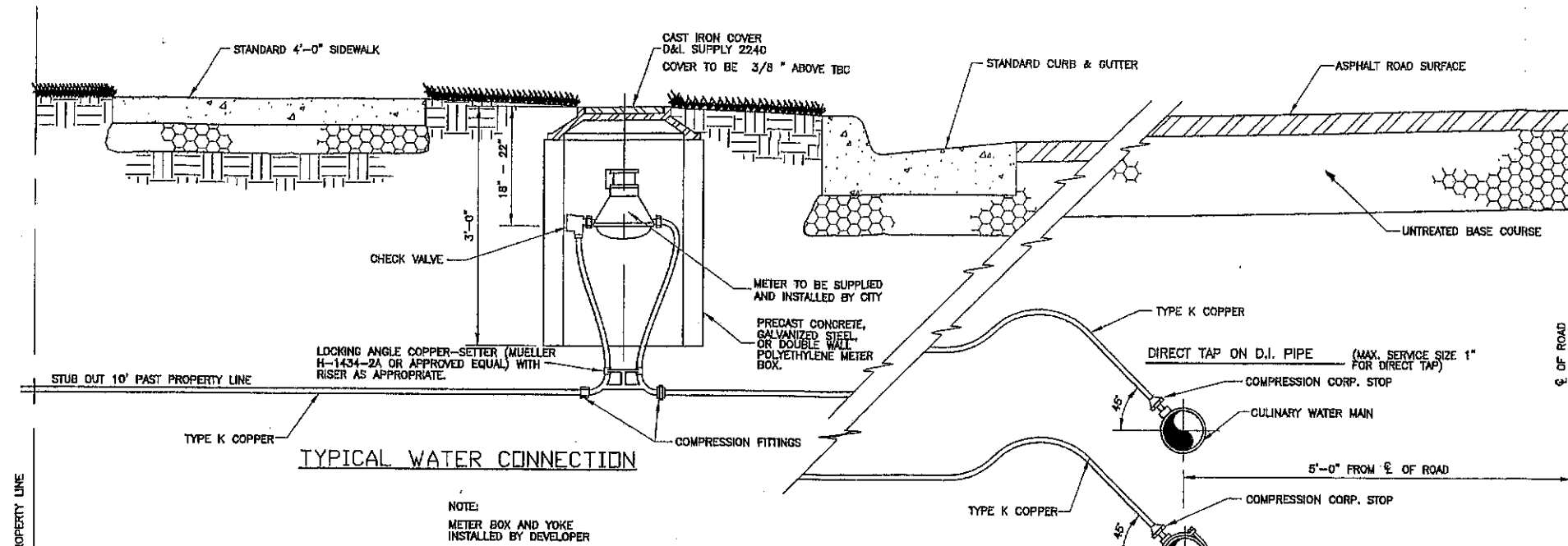
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1	12/94		REVISIONS PER KAYSVILLE CITY	DATE 3-9-06
	REV. DATE	APPR.		

KAYSVILLE CITY
23 EAST CENTER
KAYSVILLE, UTAH

KAYSVILLE CITY CORPORATION
DEVELOPMENT STANDARDS

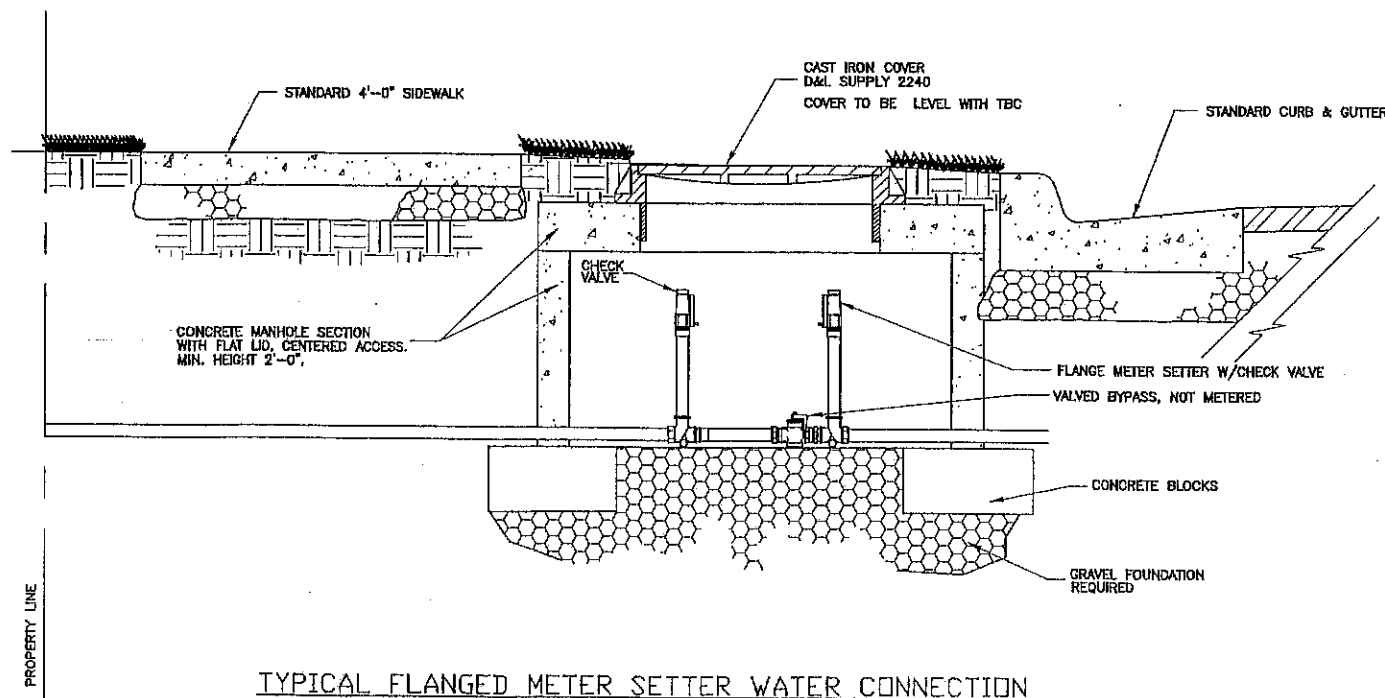
TYPICAL CUL-DE-SAC & WHEELCHAIR RAMP

SHEET NO.
3
OF 11 SHEETS

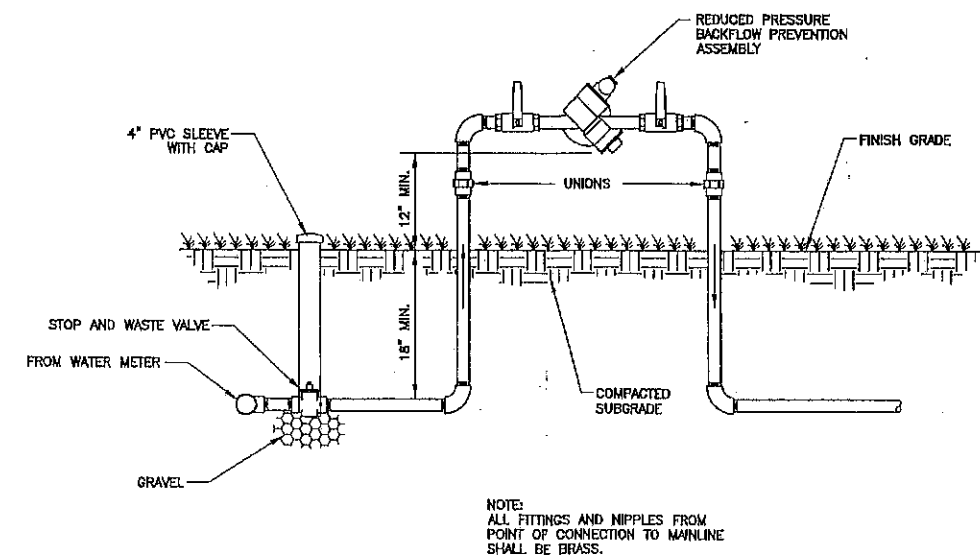


KAYSVILLE CITY CORPORATION WATER SERVICE INFORMATION						
SERVICE SIZE	METER BOX SIZE	TYPE OF MATERIAL FOR METER BOX	WATER METER	CONNECTION TYPE	BYPASS	DIST. BETWEEN FLANGE
3/4"	18" DIA	CONCRETE, GALVANIZED, POLYETHYLENE	BY CITY	NPT	NO	-
1"	24" DIA	CONCRETE, GALVANIZED, POLYETHYLENE	BY CITY	NPT	NO	-
1 1/2"	48" DIA	CONCRETE	BADGER RECORDALL MOD. 120	FLANGE	1"	13 1/4"
2"	48" DIA	CONCRETE	COMPOUND METER	FLANGE	1"	15 1/2"
3"	80" DIA	CONCRETE	COMPOUND METER	FLANGE	1"	*
4"	4'X6' BOX	CONCRETE	COMPOUND METER	FLANGE	2"	*

* CONTACT KAYSVILLE CITY



TYPICAL FLANGED METER SETTER WATER CONNECTION



REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY

5				
4				
3	5/05	RDS	ADDED REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY	
2	7/98	BRD	ADDED CHECK VALVE & STD DIMS (MIKE B.)	
1	12/94		REVISIONS PER KAYSVILLE CITY	
REV.	DATE	APPR.		

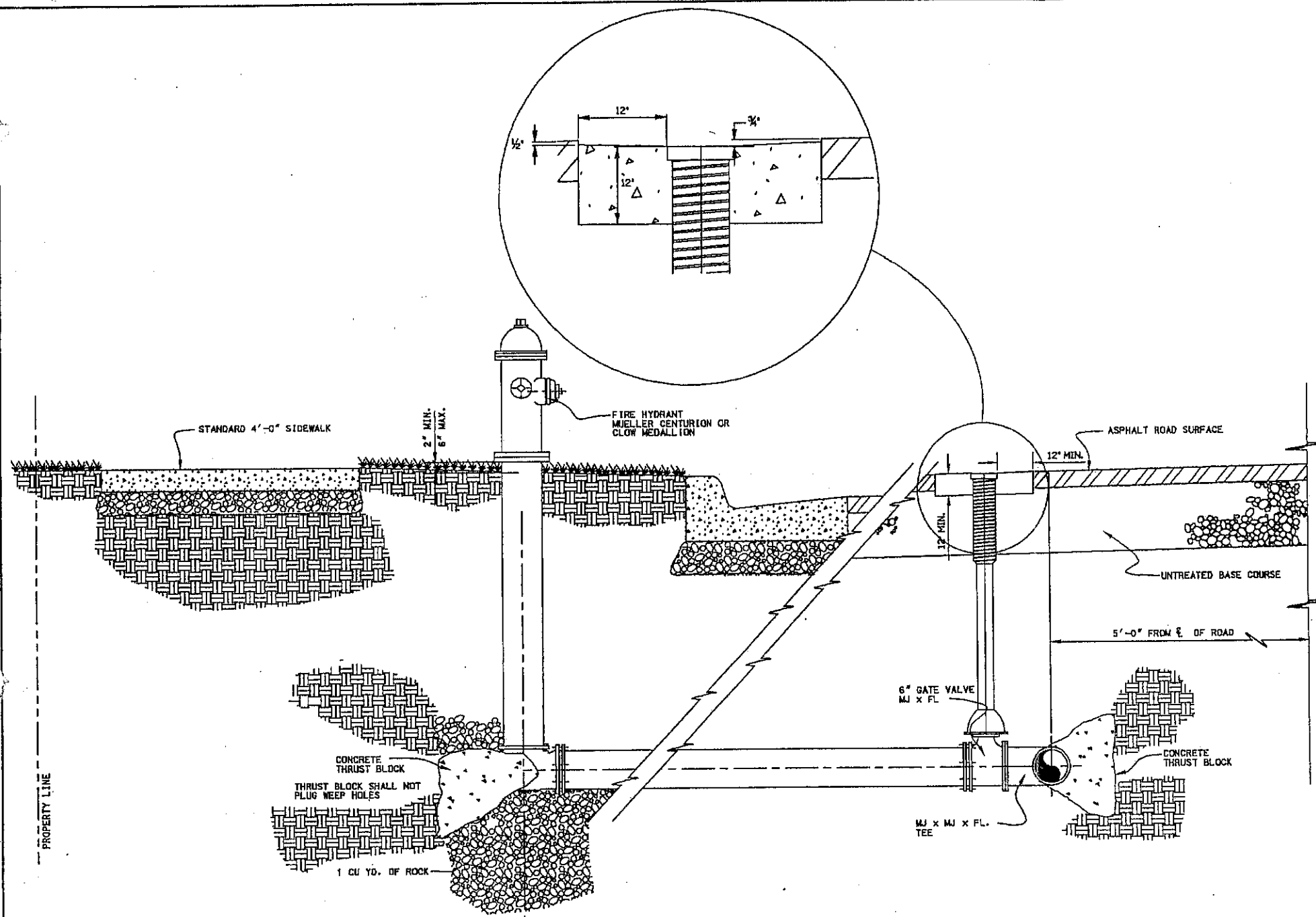
DESIGNED
DRAFTSMAN
CHECKED
DATE 7-21-94

KAYSVILLE CITY

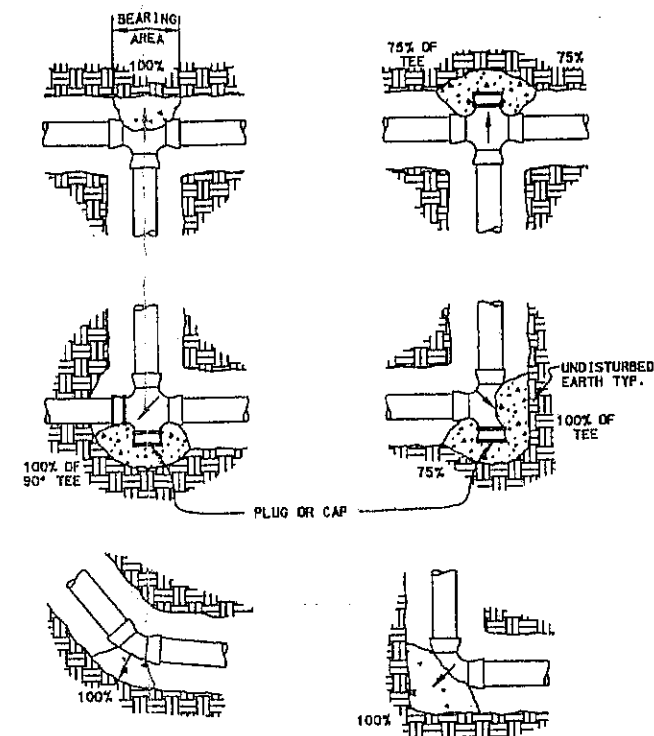
23 EAST CENTER
KAYSVILLE, UTAH

KAYSVILLE CITY CORPORATION
DEVELOPMENT STANDARDS
TYPICAL WATER SERVICE CONNECTION
DETAILS

SHEET NO.
4
of 11 SHEETS



TYPICAL FIRE HYDRANT CONNECTION



NOTE:
ALL MJ AND FLANGED FITTINGS TO BE WRAPPED WITH POLYETHYLENE WRAP PRIOR TO POURING THRUST BLOCK.

DETAIL NOTES:
FIGURE (100%) AT THRUST BLOCK INDICATES PER CENT OF TOTAL THRUST TO BE APPLIED FOR BEARING AREA.
ARROW (—) INDICATES THRUST DIRECTION
CONCRETE FOR THRUST BLOCKS TO BE 2000 P.S.I.

SIDE THRUST PER 100 LB./SQ. IN. PRESSURE PER DEGREE OF DEFLECTION			
PIPE SIZE	SIDE THRUST-lb.	PIPE SIZE	SIDE THRUST-lb.
4	35	14	377
6	72	16	466
8	122	18	665
10	197	20	790
12	278	24	1150

MULTIPLY THRUST BY DEGREE OF DEFLECTION TO OBTAIN TOTAL THRUST

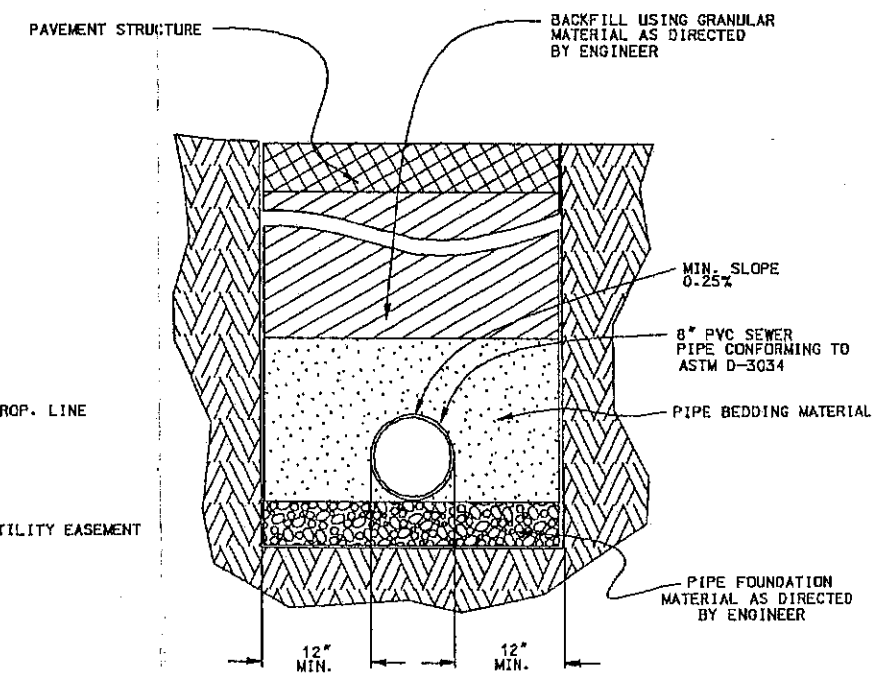
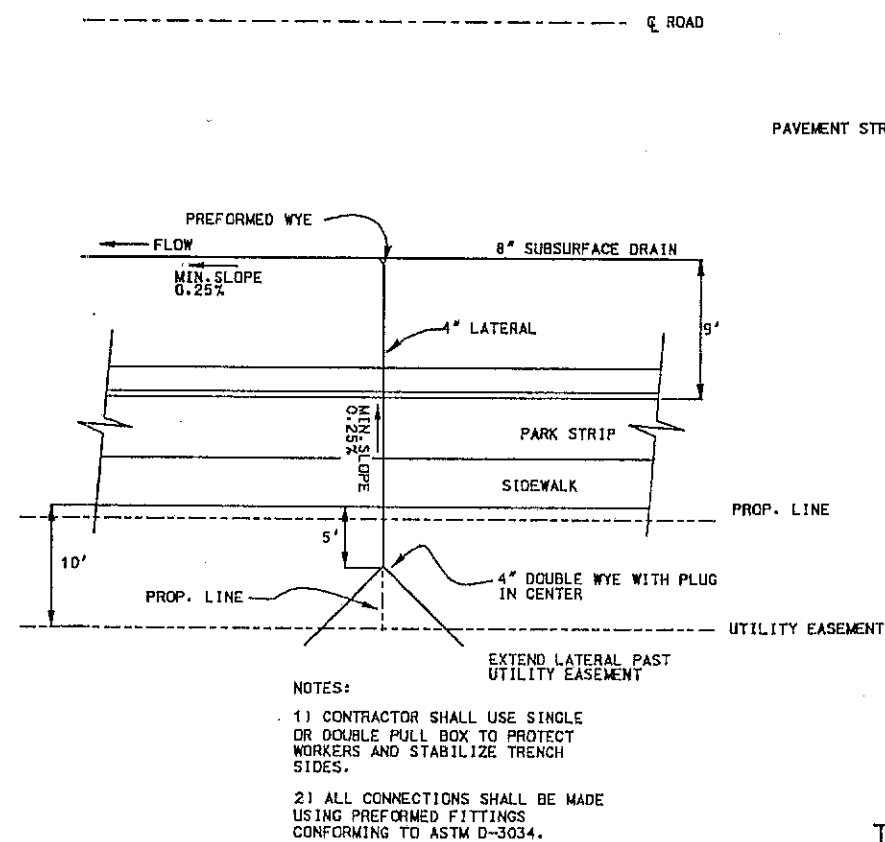
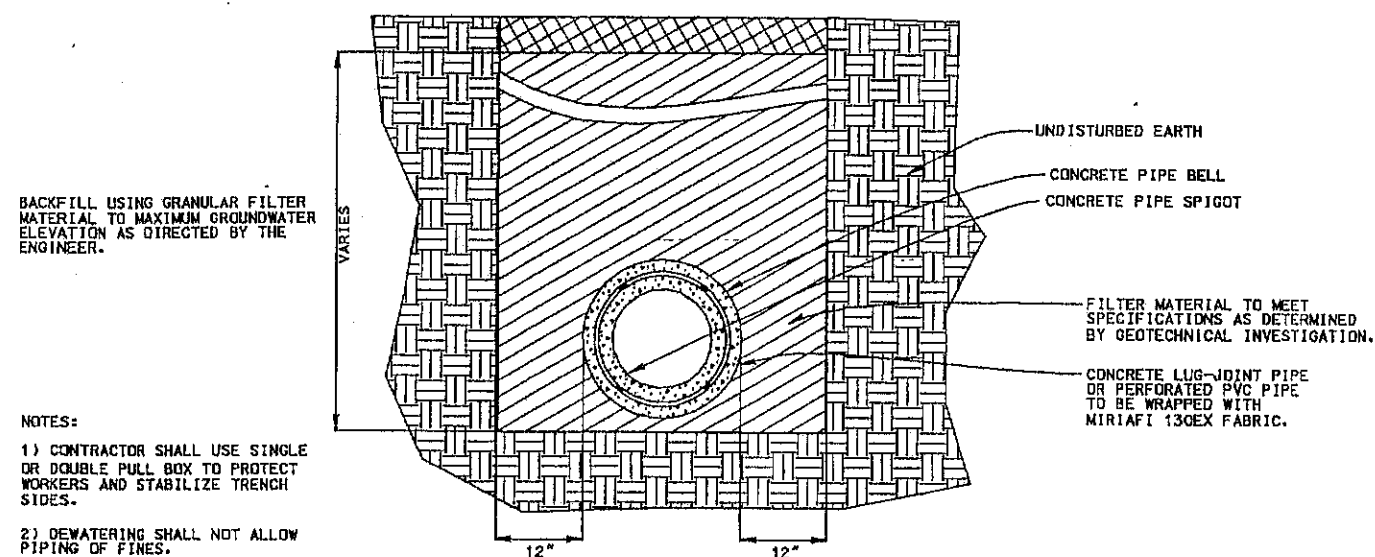
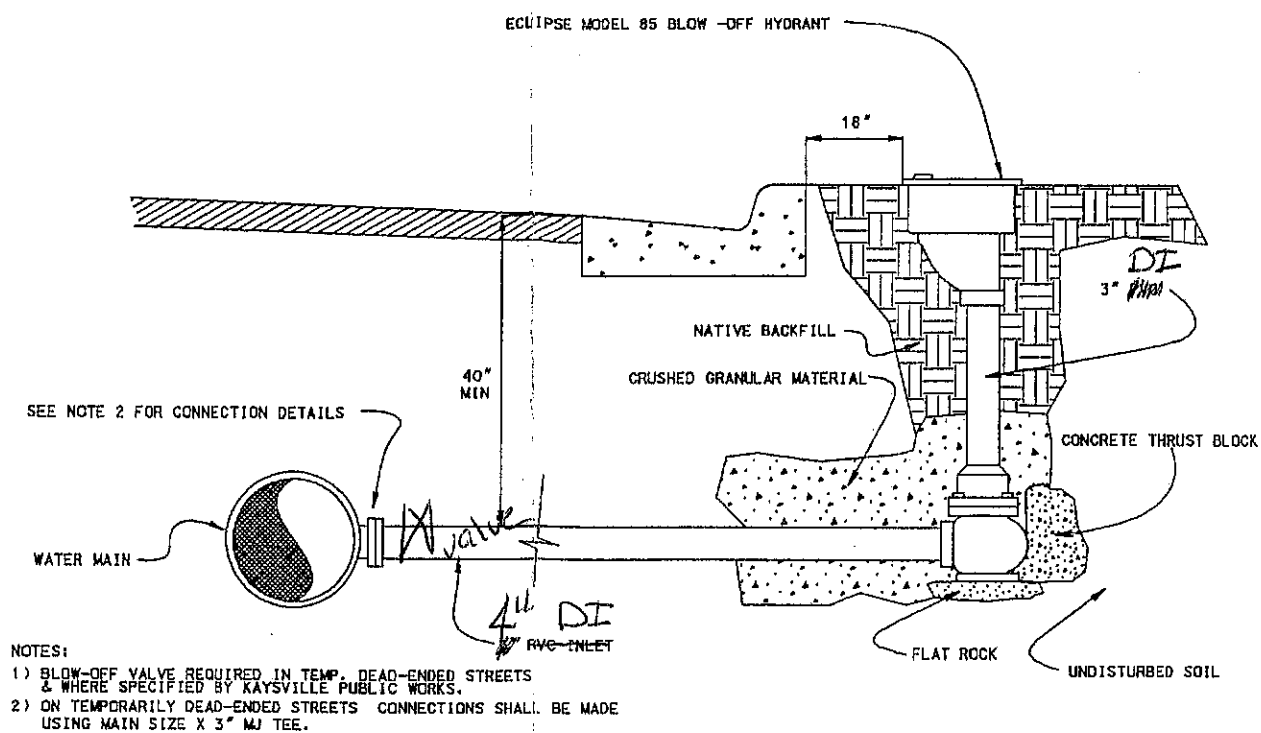
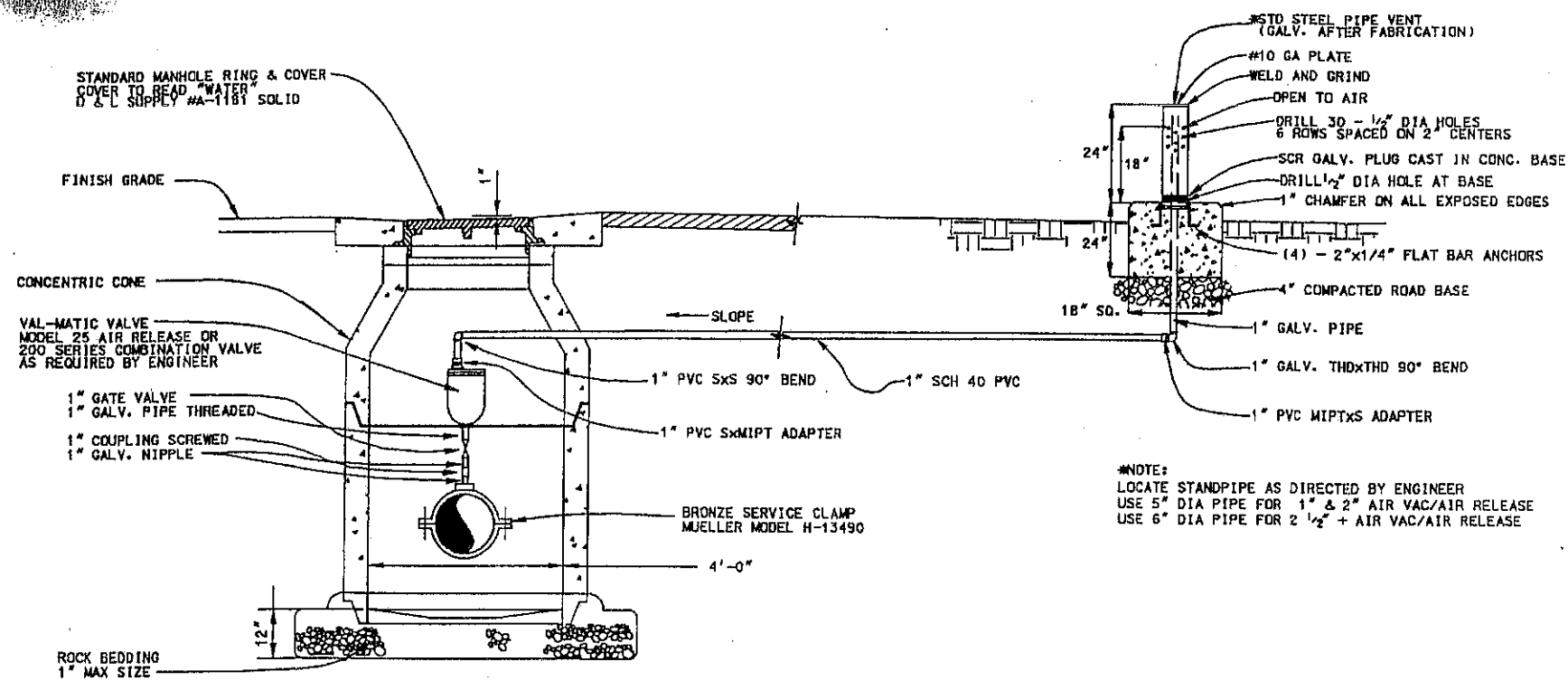
SIDE THRUST PER 100 LB./SQ. IN. PRESSURE PER DEGREE OF DEFLECTION				
PIPE SIZE	DEAD END OR TEE	90° ELBOW	45° ELBOW	22-1/2° ELBOW
4	19	27	15	7
6	39	56	30	15
8	67	94	51	26
10	109	154	84	43
12	155	218	119	61
14	210	296	161	82
16	272	383	209	106
18	351	494	269	137
20	434	611	333	169
24	623	878	478	244

EXAMPLE:
8-INCH 90° ELBOW, PRESSURE = 200 LB. / SQ. IN.
FROM TABLE: THRUST = 94 x 200 = 18,800 LB.
ASSUME BEARING STRENGTH OF SOIL = 2000 LB. / SQ. FT.
18,800 / 2000 = 9.4 SQ. FT. = AREA OF BEARING REQUIRED FOR THRUST BLOCK.

TABLE NOTES:
IN USING THE ABOVE TABLES, USE THE MAXIMUM INTERNAL PRESSURE ANTICIPATED (I.E. HYDROSTATIC TEST PRESSURE, POSSIBLE SURGE PRESSURE DUE TO PUMP SHUT-OFF, ETC.)
SEE SOILS REPORT FOR BEARING STRENGTH OF SOIL IN THE ABSENCE OF A SOILS REPORT, AN AVERAGE SOIL (SPADABLE MEDIUM CLAY) CAN BE ASSUMED TO HAVE A BEARING STRENGTH OF 2000 P.S.F.

THRUST BLOCK DETAILS

LICENSE CITY ENGINEER		DESIGNED DRAFTSMAN CHECKED DATE 7-21-94	KAYSVILLE CITY 23 EAST CENTER KAYSVILLE, UTAH	KAYSVILLE CITY CORPORATION DEVELOPMENT STANDARDS TYPICAL FIRE HYDRANT & THRUST BLOCK DETAILS	SHEET NO. 5 OF 11 SHEETS
REVISIONS PER KAYSVILLE CITY REV. DATE APPR.					



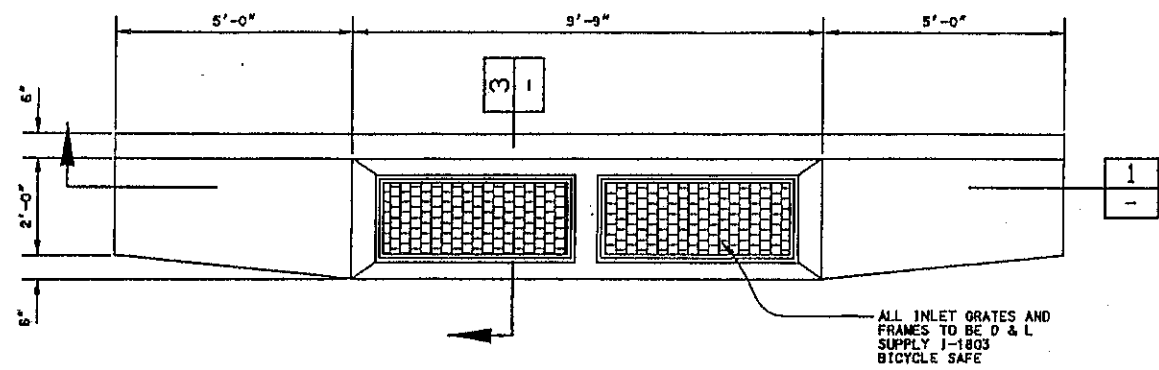
5			DESIGNED
4			DRAFTSMAN 
3			CHECKED
2			DATE 9-21-94
1	12/94	REVISIONS PER KAYSVILLE CITY	
REV.	DATE	APPR.	

KAYSVILLE CITY
23 EAST CENTER
KAYSVILLE, UTAH

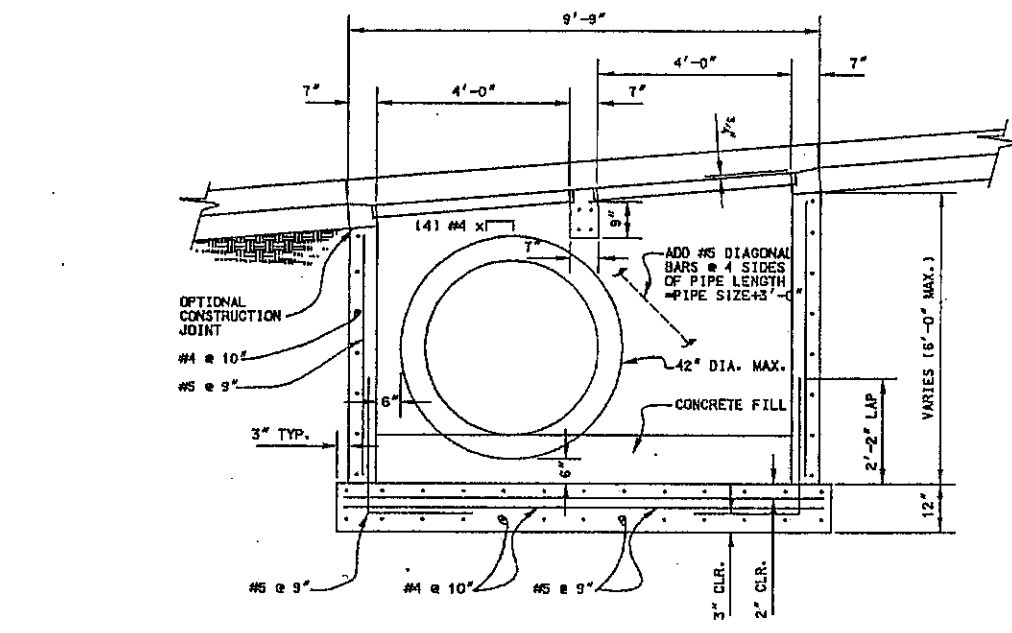
KAYSVILLE CITY CORPORATION
DEVELOPMENT STANDARDS

SUBSURFACE DRAIN & CULINARY DETAILS

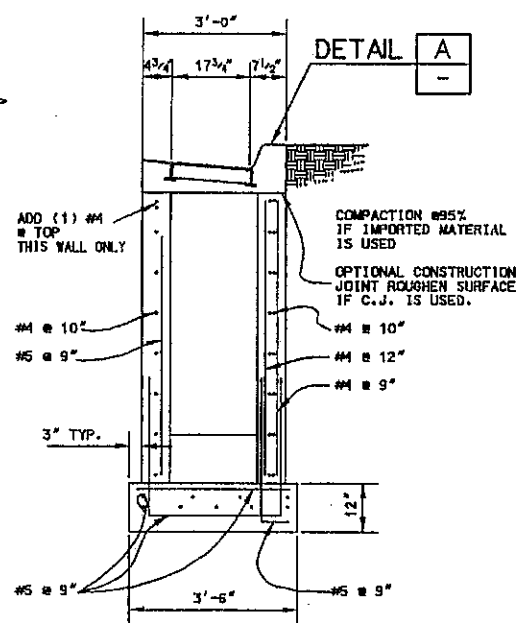
SHEET NO.
6
OF 11 SHEETS



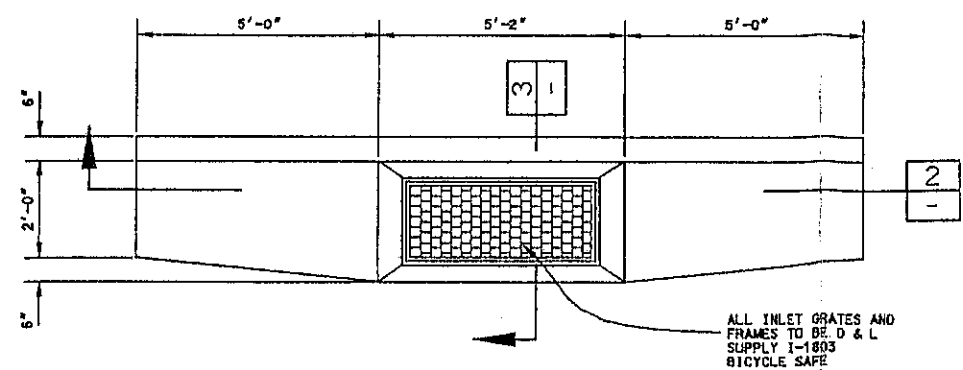
PLAN @ DOUBLE CATCH BASIN



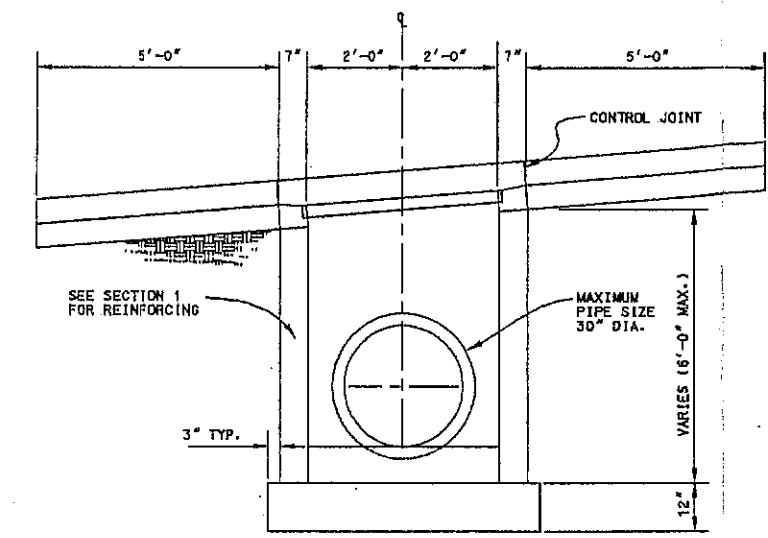
SECTION 1



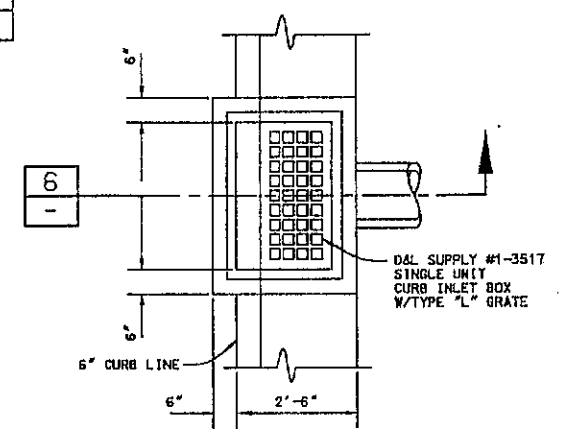
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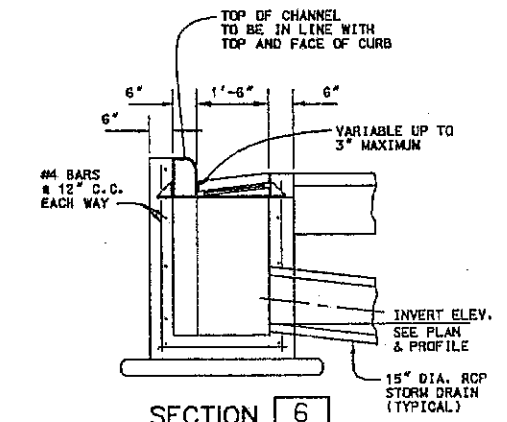
PLAN @ SINGLE CATCH BASIN



SECTION 2

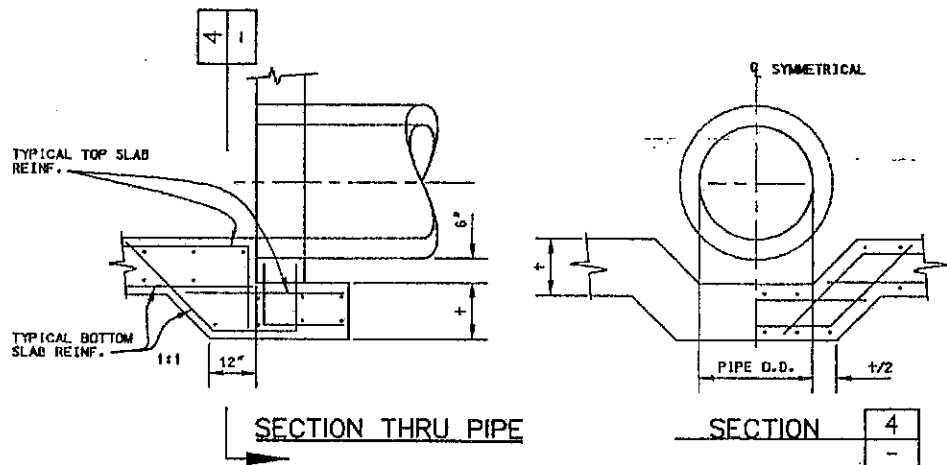


CATCH BASIN PLAN

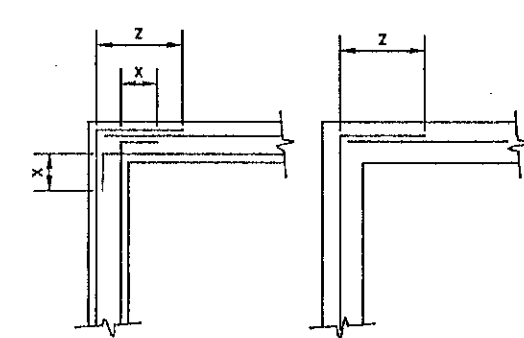


ALTERNATE CATCH BASIN

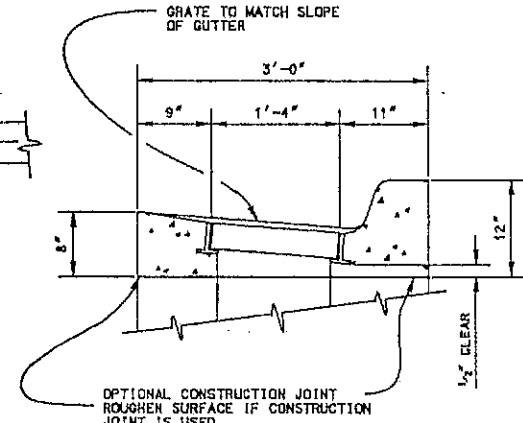
WHERE DIRECTED BY CITY ENGINEER



SECTION THRU PIPE



BAR SIZE	X	Z
#4	8"	1'-8"
#5	10"	2'-2"



DETAIL A

GENERAL NOTES:

- ALL STRUCTURAL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI IN 28 DAYS.
- REINFORCEMENT STEEL SHALL BE DEFORMED BARS CONFORMING IN QUALITY TO THE REQUIREMENTS OF ASTM DESIGNATION A-615, GRADE 60, INCLUDING SUPPLEMENTARY REQUIREMENTS (S1).
- ALL DETAILING, FABRICATION AND PLACING OF REINFORCING BARS SHALL BE IN ACCORDANCE WITH THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" ACI-315, LATEST EDITION.
- TOLERANCES IN PLACING REINFORCEMENT SHALL BE:
 - 3/8 INCH FOR MEMBERS WITH d # 8 INCHES
 - 1/2 INCH FOR MEMBERS WITH d # 8 INCHES
- DOWELS, PIPES, WATERSTOPS AND OTHER INSTALLED MATERIALS AND ACCESSORIES SHALL BE HELD SECURELY IN POSITION WHILE CONCRETE IS BEING PLACED.
- UNLESS OTHERWISE SHOWN, ASIDE FROM NORMAL ACCESSORIES USED TO HOLD REINFORCING BARS FIRMLY IN POSITION, THE FOLLOWING SHALL BE ADDED:
 - A) IN SLABS #5 RISER BARS AT 36 INCHES O.C. MAXIMUM TO SUPPORT TOP REINFORCING BARS.
 - B) IN WALLS WITH 2 CURTAINS #3 U OR Z SHAPE SPACES AT 6 FEET O.C. EACH WAY.
- METAL CLIPS OR SUPPORTS SHALL NOT BE PLACED IN CONTACT WITH THE FORMS OR THE SUBGRADE. CONCRETE BLOCKS (OR DOBBIES) SUPPORTING BARS ON SUBGRADE SHALL BE IN SUFFICIENT NUMBERS TO SUPPORT THE BARS WITHOUT SETTLEMENT, BUT IN NO CASE SHALL SUCH SUPPORT BE CONTINUOUS.
- DOWELS SHALL BE WIRED OR OTHERWISE HELD IN POSITION. THEY SHALL NOT BE SHOWN INTO FRESHLY PLACED CONCRETE.
- REINFORCED BARS AND ACCESSORIES SHALL NOT BE IN CONTACT WITH ANY PIPE, PIPE FLANGE OR METAL PARTS EMBEDDED IN CONCRETE. A MINIMUM OF 2 INCHES CLEARANCE SHALL BE PROVIDED AT ALL TIMES.
- STRUCTURES SHALL BE BACKFILLED WITH GRANULAR SOIL.
- ALL CONSTRUCTION JOINTS SHALL BE ROUGHEN AND CLEANED AND FREE OF LAITANCE.
- STRUCTURES HAVE BEEN DESIGNED FOR THE FOLLOWING: IF CONDITIONS ARE EXCEEDED THE ENGINEER SHALL BE NOTIFIED.
 - A) AASHTO HS-20 TRUCK LOAD
 - B) 1'-6" MAX. SOIL ABOVE THE ROOF OF THE STRUCTURE
 - C) GROUND WATER TO TOP OF STRUCTURE
 - D) "AT-REST" LATERAL SOIL PRESSURE OF 60 PCF FOR DRY SOIL CONDITIONS AND 92.4 PCF WHEN GROUND WATER IS PRESENT.

OPTIONAL FOOTING DETAIL @ WALL PIPE CONNECTION

HORIZONTAL REINFORCEMENT AT WALL INTERSECTIONS

KAYSVILLE CITY
23 EAST CENTER
KAYSVILLE, UTAH

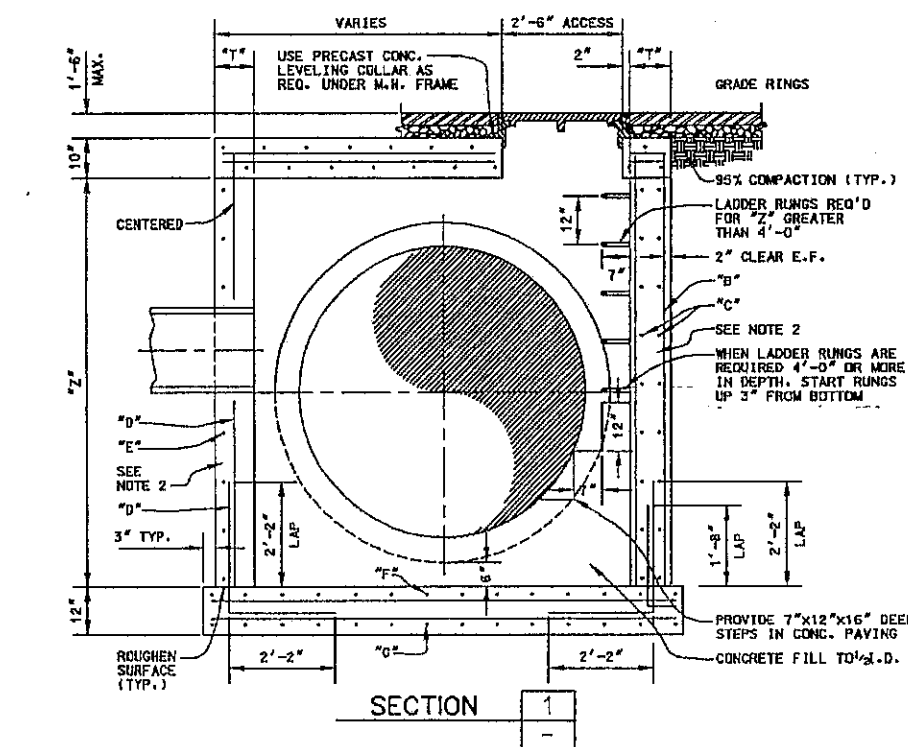
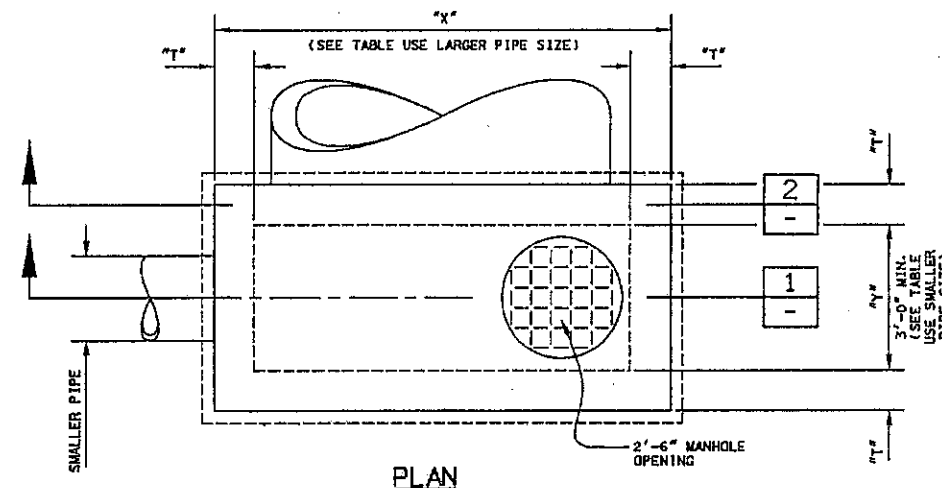
KAYSVILLE CITY CORPORATION
DEVELOPMENT STANDARDS
STANDARD CATCH BASINS

SHEET NO.
7
OF 11 SHEETS

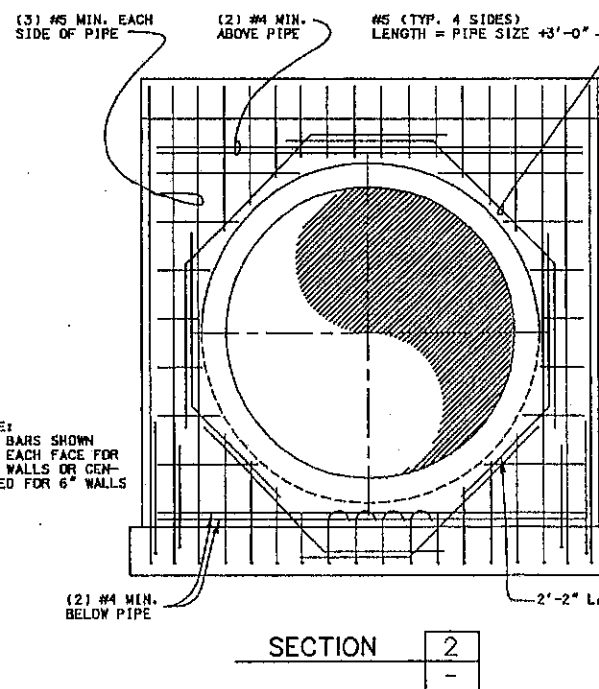
LICENSE	CITY ENGINEER	DESIGNED	DATE	7-21-94
REV.	DATE	APPR.	CHECKED	
1			DRAFTSMAN	
2				
3				
4				
5				

PIPE SIZE (IN.)	USE LARGEST PIPE SIZE FOR THESE DIMENSIONS AND REBAR EXCEPT DIMENSION "Y"									
	"X"	"Z"	"Y"	"A"	"B"	"C"	"D"	"E"	"F"	"G"
18	3'-0"	3'-3"	6"	#4 @ 12"	---	---	#5 @ 9"	#4 @ 12"	#4 @ 12"	#5 @ 9"
21	3'-3"	3'-6"	6"	#4 @ 12"	---	---	#5 @ 9"	#4 @ 12"	#4 @ 12"	#5 @ 9"
24	3'-6"	3'-9"	6"	#4 @ 12"	---	---	#5 @ 9"	#4 @ 12"	#4 @ 12"	#5 @ 9"
27	3'-9"	4'-0"	6"	#4 @ 12"	---	---	#5 @ 9"	#4 @ 12"	#4 @ 12"	#5 @ 9"
30	4'-0"	4'-3"	6"	#4 @ 12"	---	---	#5 @ 9"	#4 @ 12"	#4 @ 12"	#5 @ 9"
33	4'-3"	4'-6"	6"	#4 @ 12"	---	---	#5 @ 9"	#4 @ 12"	#4 @ 12"	#5 @ 9"
36	4'-6"	4'-9"	6"	#4 @ 12"	---	---	#5 @ 9"	#4 @ 12"	#4 @ 12"	#5 @ 9"
42	5'-0"	5'-3"	6"	#4 @ 12"	---	---	#5 @ 9"	#4 @ 12"	#4 @ 12"	#5 @ 9"
48	5'-6"	5'-9"	10"	#4 @ 12"	#5 @ 12"	#4 @ 12"	---	---	#4 @ 12"	#5 @ 12"
60	6'-0"	6'-3"	10"	#4 @ 12"	#5 @ 12"	#4 @ 12"	---	---	#4 @ 12"	#5 @ 12"
64	6'-4"	6'-7"	10"	#4 @ 12"	#5 @ 12"	#4 @ 12"	---	---	#4 @ 12"	#5 @ 12"
72	7'-0"	7'-3"	10"	#4 @ 12"	#5 @ 12"	#4 @ 12"	---	---	#4 @ 9"	#5 @ 12"
72	8'-0"	8'-3"	10"	#4 @ 12"	#5 @ 12"	#4 @ 12"	---	---	#4 @ 9"	#5 @ 12"

- NOTES:
- THE "H" REBAR IS BASED ON THE SMALLER PIPE. WHEN THE SMALLER PIPE IS 18" TO 36" USE #4 @ 6". WHEN THE SMALLER PIPE IS 42" TO 60" USE #5 @ 6". WHEN THE SMALLER PIPE IS 66" OR 72" USE #5 @ 6".
 - WALL THICKNESS IS BASED ON THE LARGEST OF THE PIPES. FOR 10" WALLS, USE 2 LAYERS OF STEEL. FOR 6" WALLS, USE A SINGLE LAYER OF STEEL.
 - WHEN "Z" IS LESS THAN 4'-0", THE VERTICAL REBAR LAP MAY BE ELIMINATED AND DOWELS EXTENDED TO THE TOP OF THE WALL.

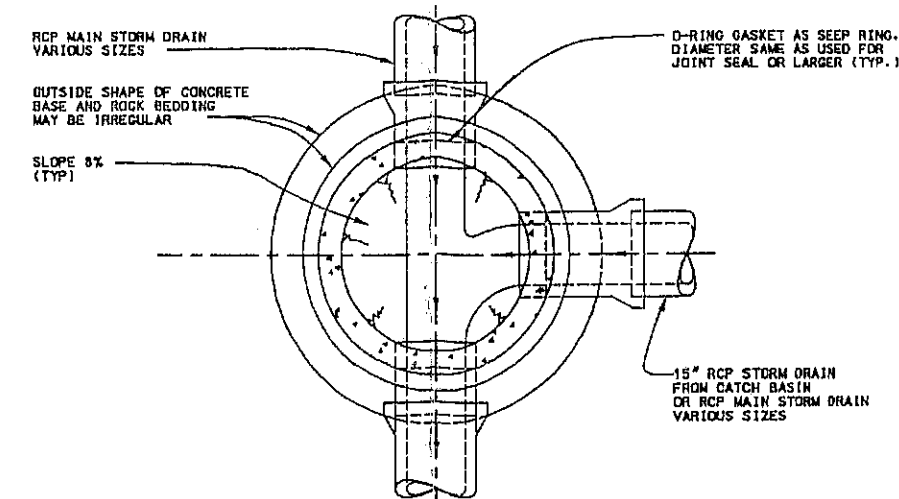


STANDARD CLEANOUT
(TYPE 1)

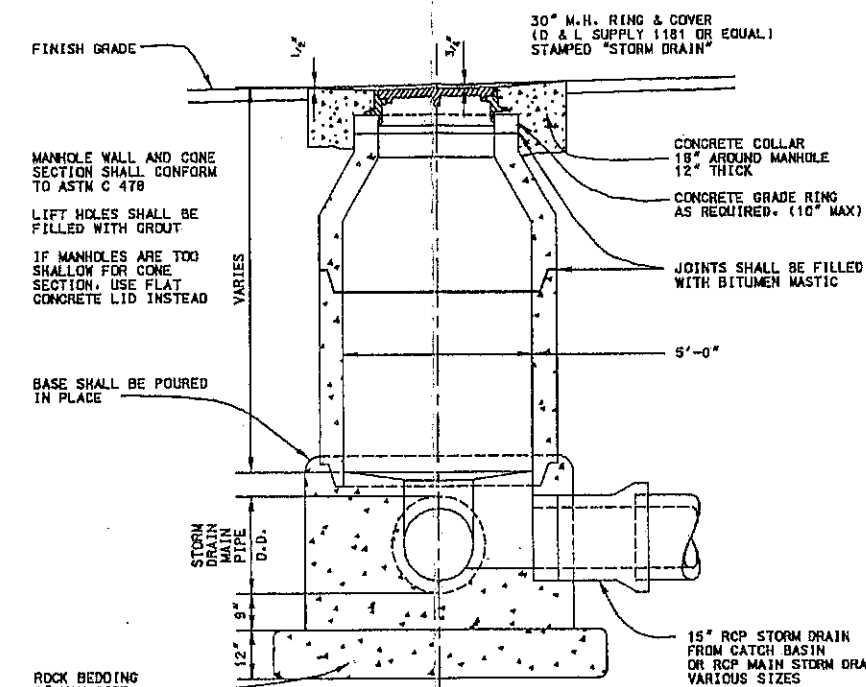


SECTION 2

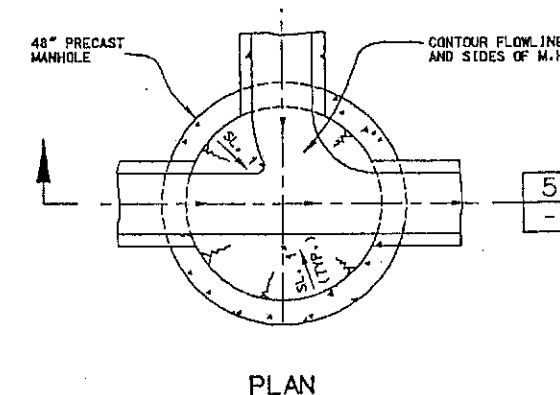
- GENERAL NOTES:
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 - TOLERANCES IN PLACING REINFORCEMENT SHALL BE:
 - $\pm 3/8$ INCH FOR MEMBERS WITH $d \leq 8$ INCHES
 - $\pm 1/2$ INCH FOR MEMBERS WITH $d > 8$ INCHES
 - DOWELS, PIPES, WATERSTOPS AND OTHER INSTALLED MATERIALS AND ACCESSORIES SHALL BE HELD SECURELY IN POSITION WHILE CONCRETE IS BEING PLACED.
 - UNLESS OTHERWISE SHOWN, ASIDE FROM NORMAL ACCESSORIES USED TO HOLD REINFORCING BARS FIRMLY IN POSITION, THE FOLLOWING SHALL BE ADDED:
 - A) IN SLABS #5 RISER BARS AT 36 INCHES O.C. MAXIMUM TO SUPPORT TOP REINFORCING BARS.
 - B) IN WALLS WITH 2 CURTAINS #5 U OR Z SHAPE SPACES AT 6 FEET O.C. EACH WAY.
 - METAL CLIPS OR SUPPORTS SHALL NOT BE PLACED IN CONTACT WITH THE FORMS OR THE SUBGRADE. CONCRETE BLOCKS (OR DOBBIES) SUPPORTING BARS ON SUBGRADE SHALL BE IN SUFFICIENT NUMBERS TO SUPPORT THE BARS WITHOUT SETTLEMENT, BUT IN NO CASE SHALL SUCH SUPPORT BE CONTINUOUS.
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 - STRUCTURES SHALL BE BACKFILLED WITH GRANULAR SOIL.
 - ALL CONSTRUCTION JOINTS SHALL BE ROUGHEN AND CLEANED AND FREE OF LAITANCE.
 - STRUCTURES HAVE BEEN DESIGNED FOR THE FOLLOWING: IF CONDITIONS ARE EXCEEDED THE ENGINEER SHALL BE NOTIFIED.
 - A) AASHTO HS-20 TRUCK LOAD
 - B) 1'-6" MAX. SOIL ABOVE THE ROOF OF THE STRUCTURE
 - C) GROUND WATER TO TOP OF STRUCTURE
 - D) "AT-REST" LATERAL SOIL PRESSURE OF 60 PCF FOR DRY SOIL CONDITIONS AND 92.4 PCF WHEN GROUND WATER IS PRESENT.



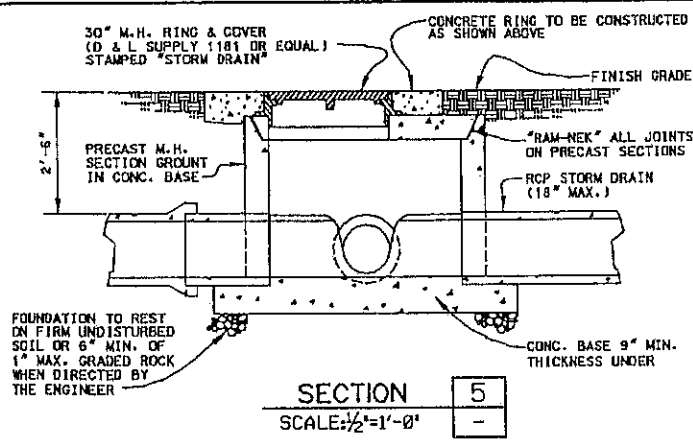
STORM DRAIN MANHOLE PLAN BELOW CONE



TYPICAL STORM DRAIN MANHOLE SECTION



PLAN



SECTION 5
SCALE: 1/2"=1'-0"

STORM DRAIN MANHOLE
FLAT LID

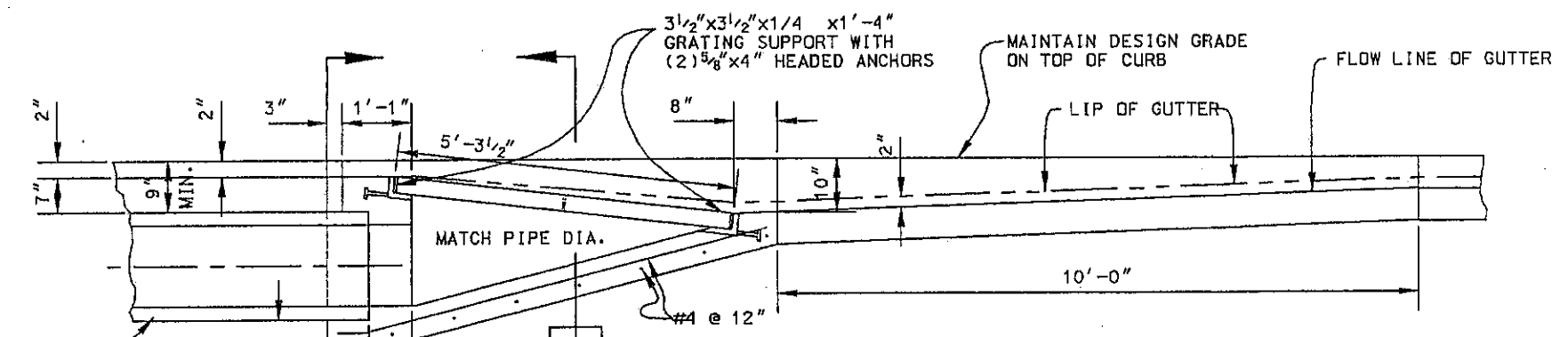
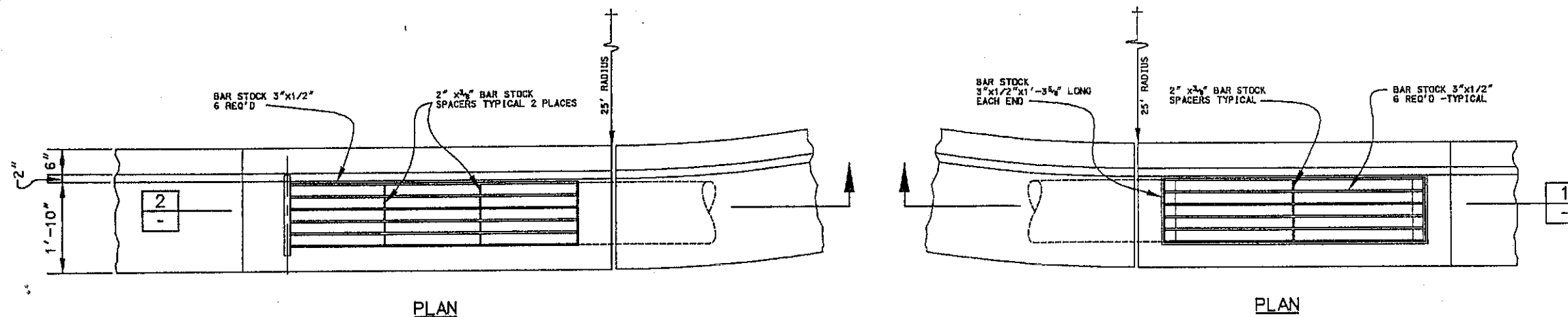
5		
4		
3		
2		
1	12/24	REVISIONS PER KAYSVILLE CITY
REV.	DATE	APPR.

DESIGNED	
DRAFTSMAN	
CHECKED	
DATE	7-21-94

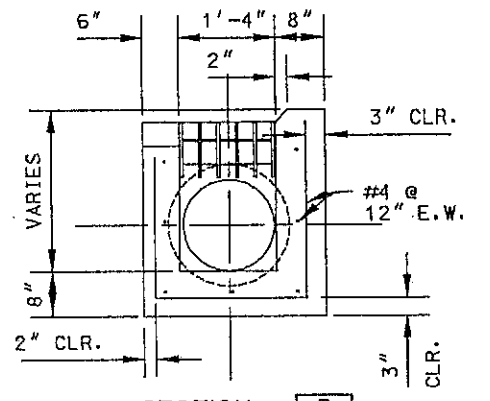
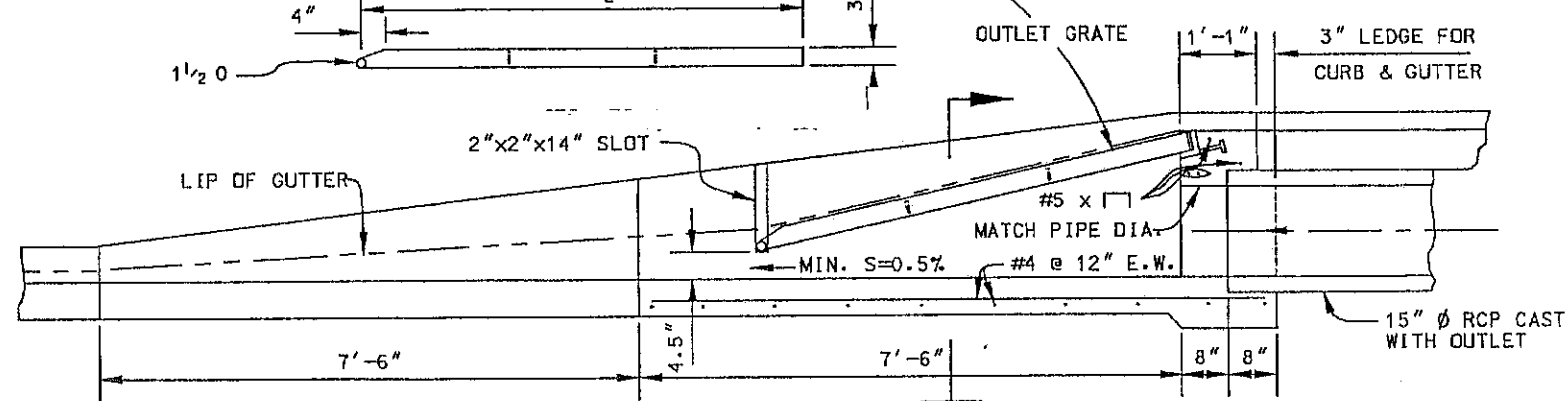
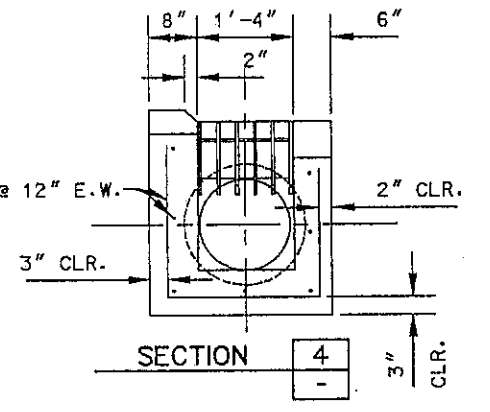
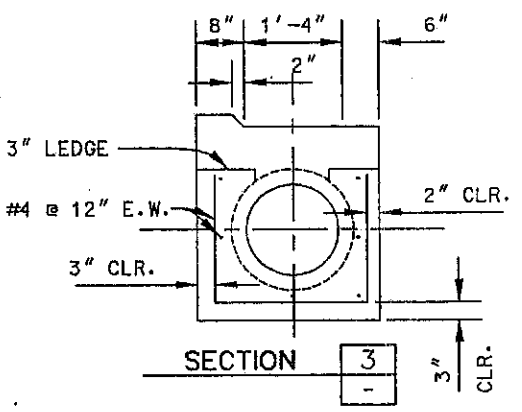
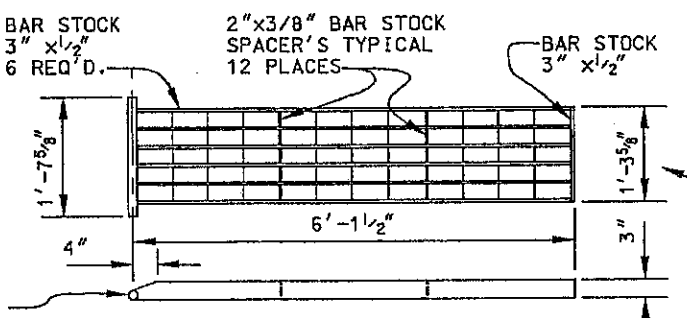
KAYSVILLE CITY
23 EAST CENTER
KAYSVILLE, UTAH

KAYSVILLE CITY CORPORATION
DEVELOPMENT STANDARDS
STANDARD STORM DRAIN MANHOLES

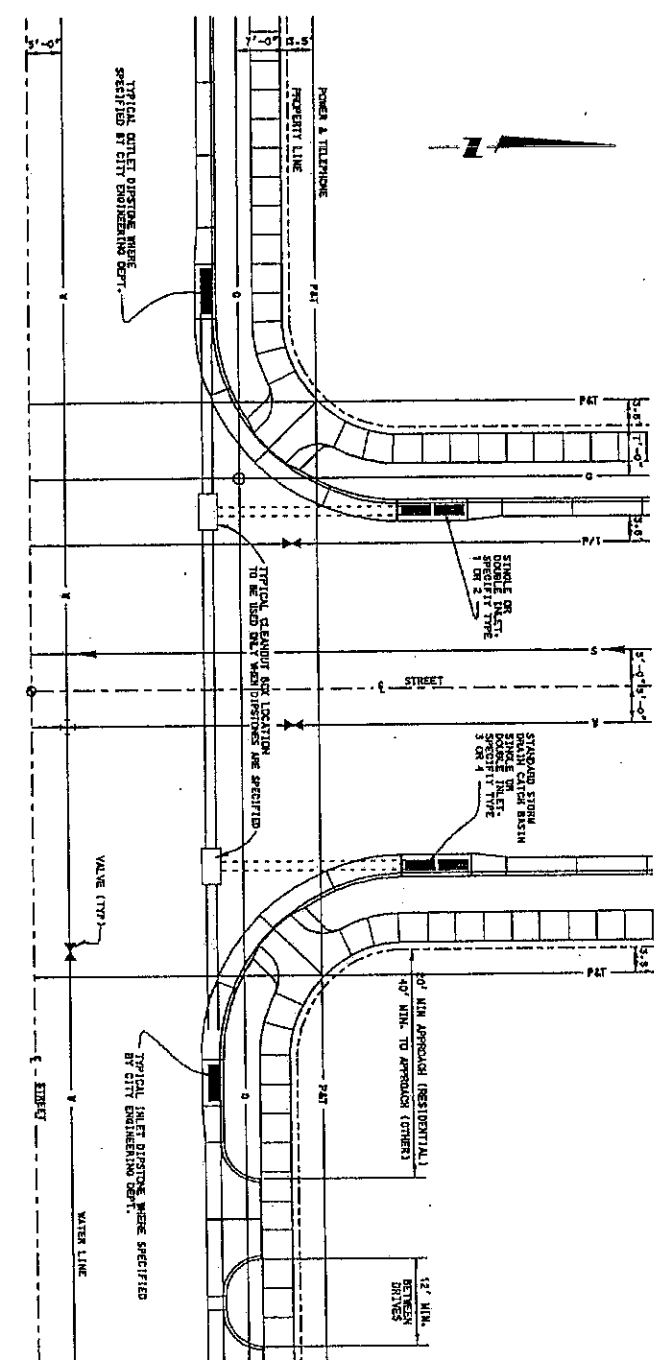
SHEET NO.
8
OF 11 SHEETS



NOTE:
HOT DIP GALVANIZE GRATES
AND FRATING SUPPORTS
AFTER FABRICATION.



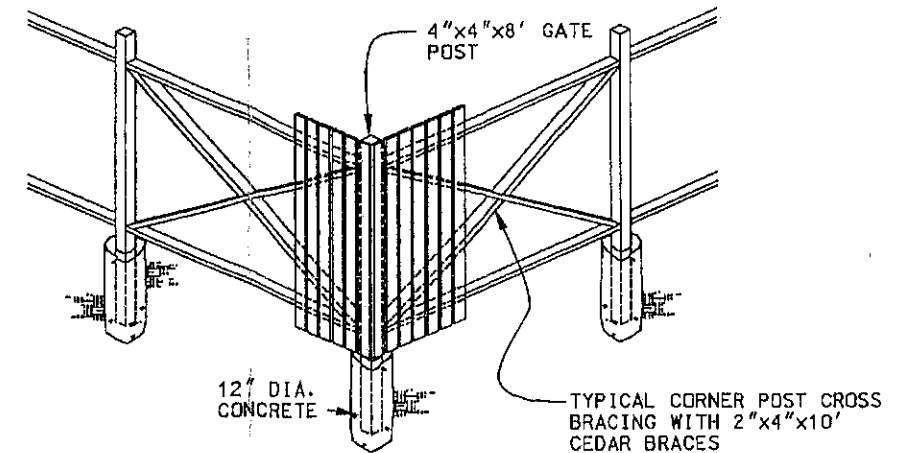
DIPSTONE STYLE DRAINAGE CROSSING



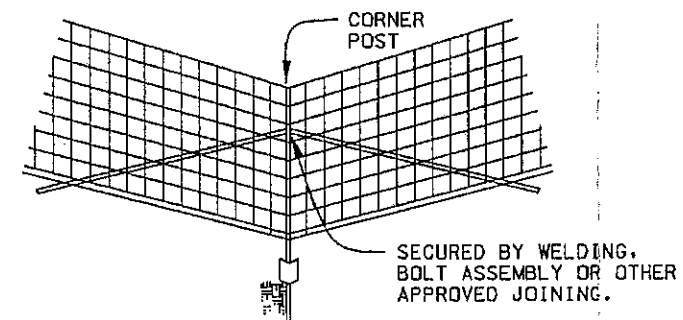
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4			DRAFTSMAN
3			CHECKED
2			DATE
1	12/94	REVISIONS PER KAYSVILLE CITY	7-24-94
REV. DATE APPR.			

KAYSVILLE CITY
23 EAST CENTER
KAYSVILLE, UTAH

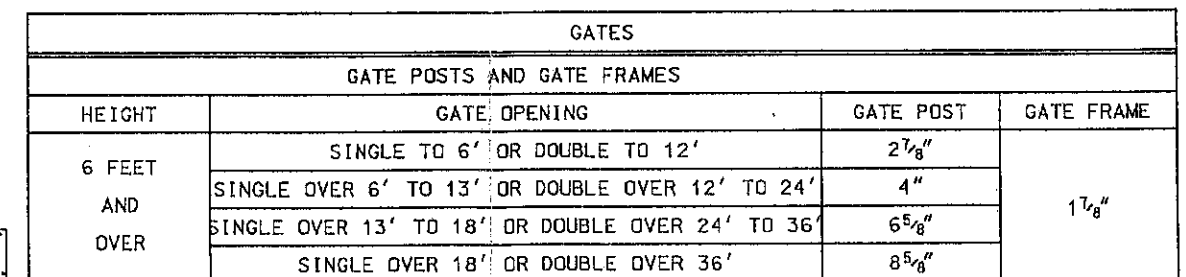
KAYSVILLE CITY CORPORATION
DEVELOPMENT STANDARDS
STANDARD INLET-OUTLET DIPSTONE DETAILS



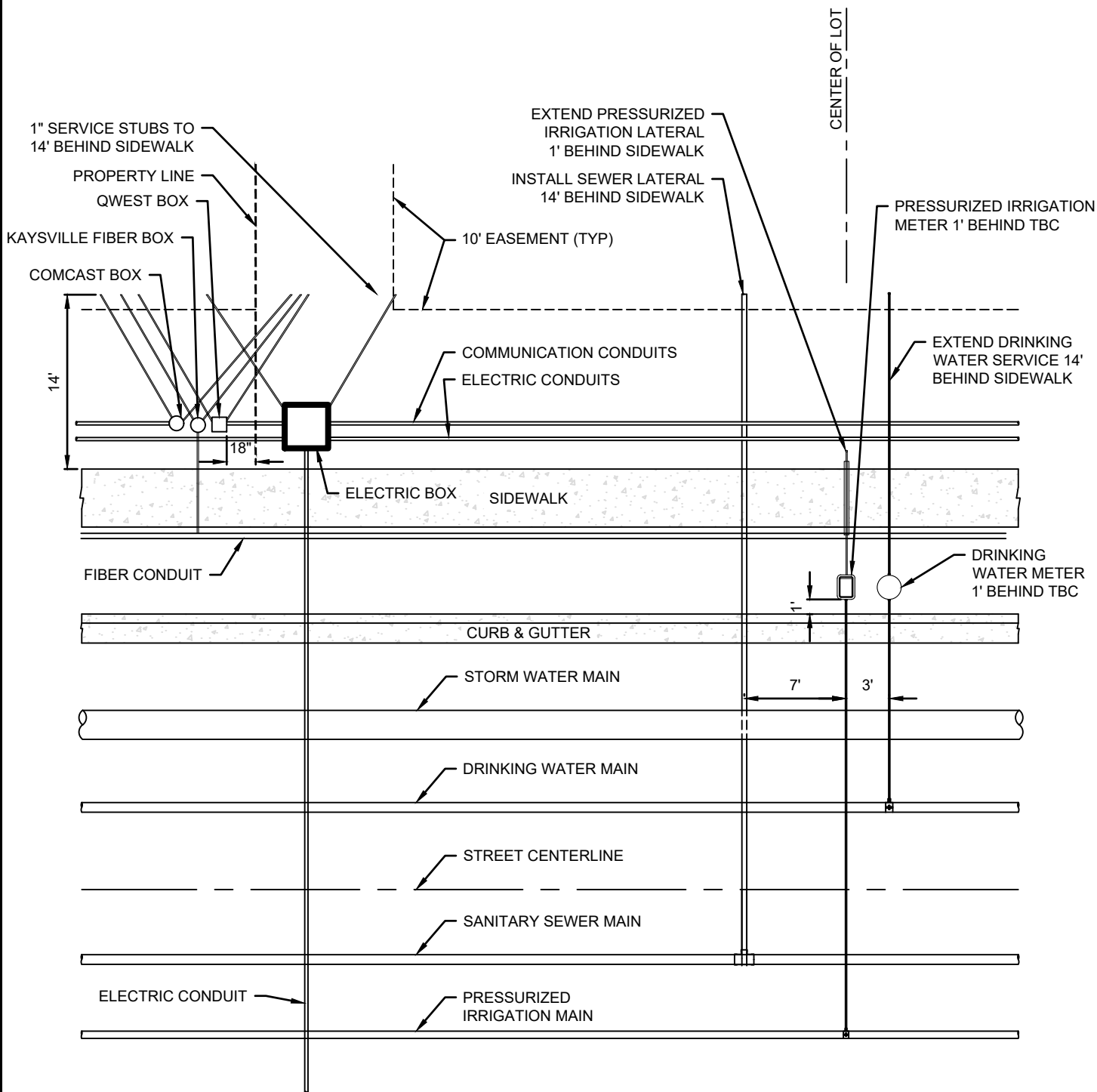
PLAN
SCALE: $\frac{3}{8}" = 1'-0"$



TYPE "D" CONSTRUCTION FENCE



HEIGHT OF FABRIC	DEPTH OF POST	LENGTH OF END, CORNER OR PULL POSTS	LENGTH OF LINE POSTS	SIZE OF POSTS		
				END, CORNER AND PULL PIPE OPTION	LINE POST (MIN. SIZE) PIPE OPTION	GATE POSTS
6'	3'+	9'+	8'-8"	2-7/8"	2-3/8"	4"



STATEMENT OF USE

THIS DOCUMENT AND ANY ILLUSTRATIONS HEREON ARE PROVIDED AS STANDARD CONSTRUCTION DETAILS WITHIN HOOPER CITY. DEVIATION FROM THIS DOCUMENT REQUIRES APPROVAL OF HOOPER CITY. HOOPER CITY CORPORATION CAN NOT BE HELD LIABLE FOR MISUSE OR CHANGES REGARDING THIS DOCUMENT.

REVISION

NO.	DESCRIPTION	BY	APR.	DATE
1				
2				
3				
4				

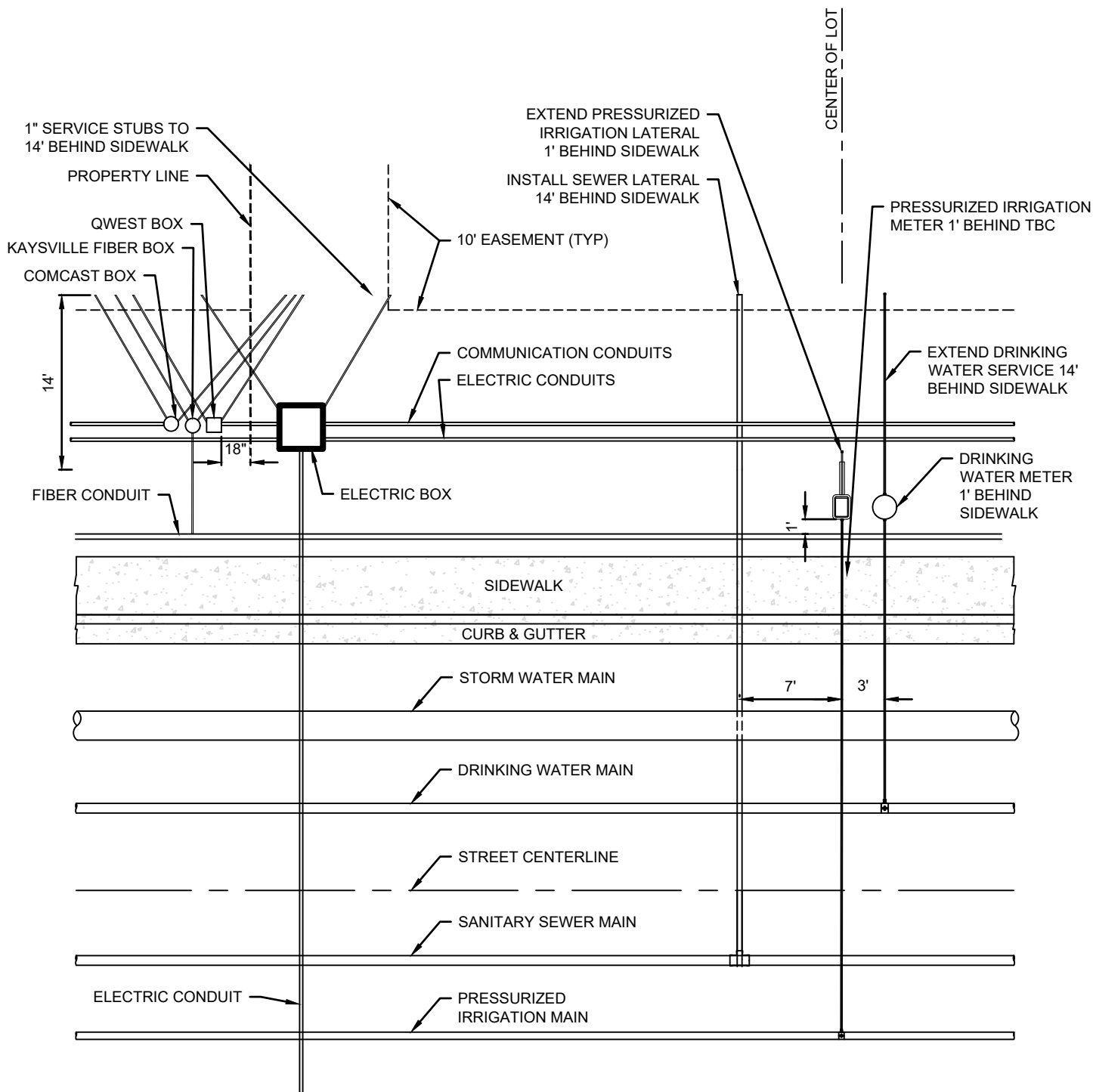


UTILITY LOCATIONS FOR BUILDING LOTS

KAYSVILLE CITY
DEVELOPMENT STANDARDS

STANDARD
DRAWING
NUMBER: **1.1**

CAD DWG:
PLOT SCALE: 1 = 1
DRAWN BY: XX
DESIGN BY: SRM
CHECKED BY: SRM
ADOPTED DATE:



STATEMENT OF USE

THIS DOCUMENT AND ANY ILLUSTRATIONS HEREON ARE PROVIDED AS STANDARD CONSTRUCTION DETAILS WITHIN HOOPER CITY. DEVIATION FROM THIS DOCUMENT REQUIRES APPROVAL OF HOOPER CITY. HOOPER CITY CORPORATION CAN NOT BE HELD LIABLE FOR MISUSE OR CHANGES REGARDING THIS DOCUMENT.

REVISION

NO.	DESCRIPTION	BY	APR.	DATE
1				
2				
3				
4				



UTILITY LOCATIONS FOR BUILDING LOTS

KAYSVILLE CITY
DEVELOPMENT STANDARDS

STANDARD
DRAWING
NUMBER:

1.2

CAD DWG:

PLOT SCALE:

1 = 1

DRAWN BY:

XX

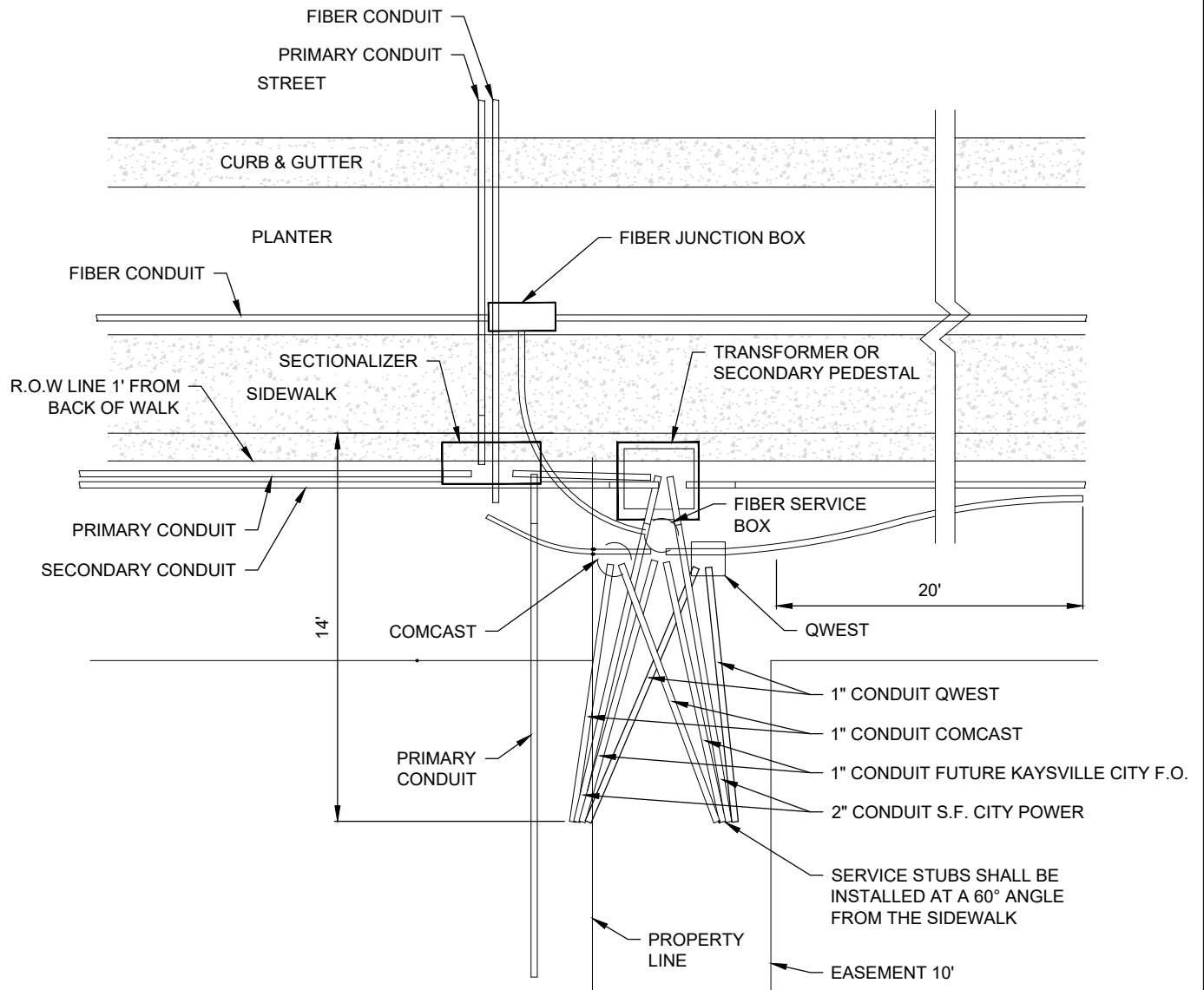
DESIGN BY:

SRM

CHECKED BY:

SRM

ADOPTED DATE:



STATEMENT OF USE

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REVISION

NO.	DESCRIPTION	BY	APR.	DATE
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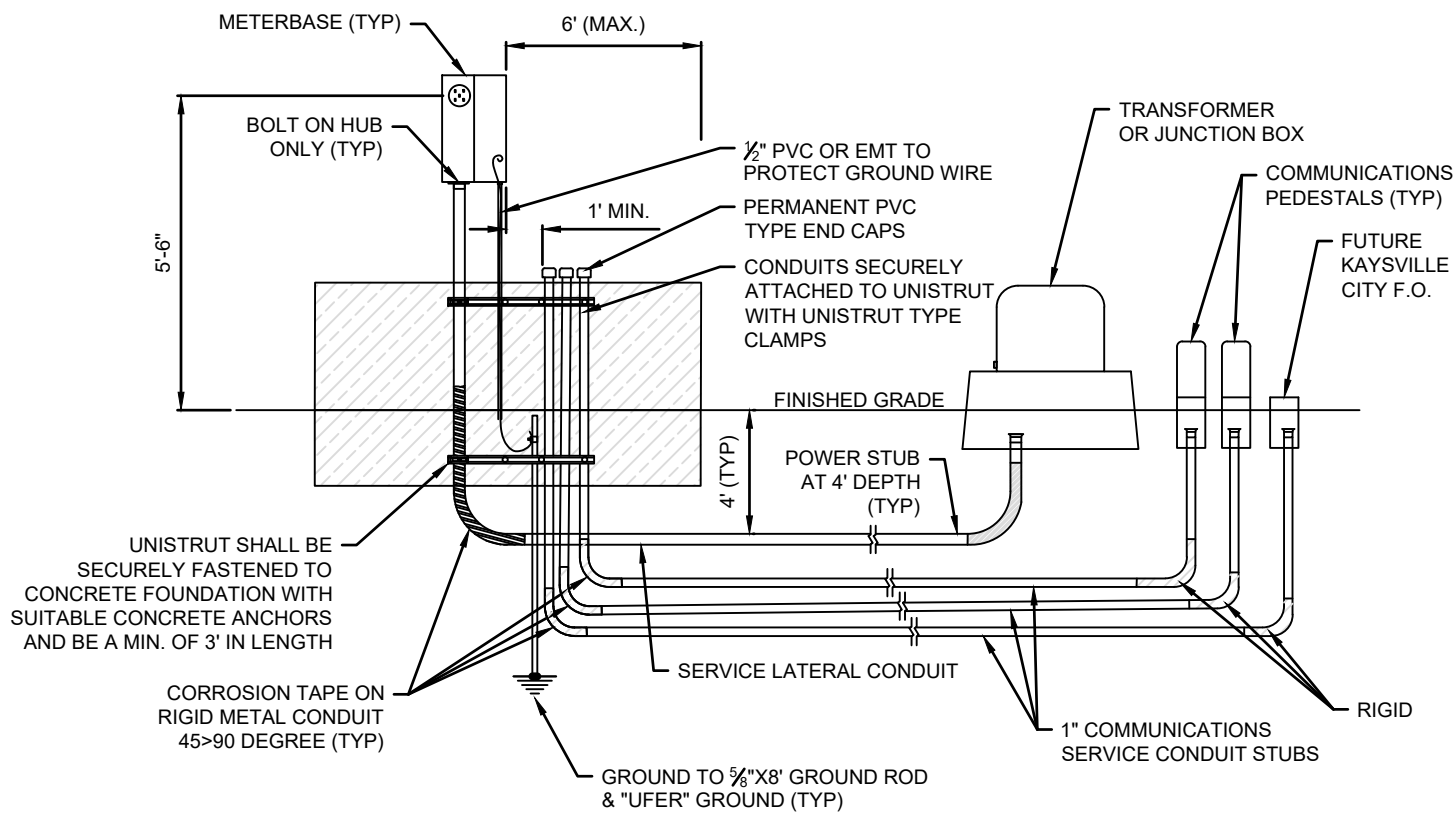


CONDUIT ROUTING

KAYSVILLE CITY
DEVELOPMENT STANDARDS

STANDARD
DRAWING
NUMBER: 2

CAD DWG:
PLOT SCALE: 1 = 1
DRAWN BY: XX
DESIGN BY: SRM
CHECKED BY: SRM
ADOPTED DATE:



SURFACE MOUNT FRONT VIEW

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REVISION

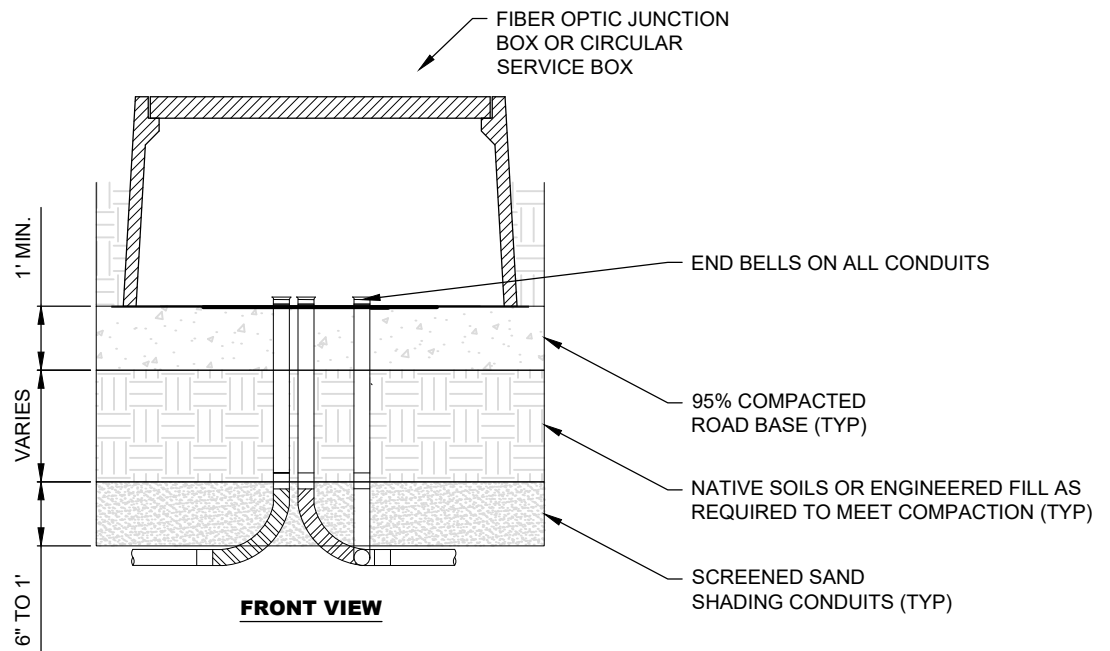
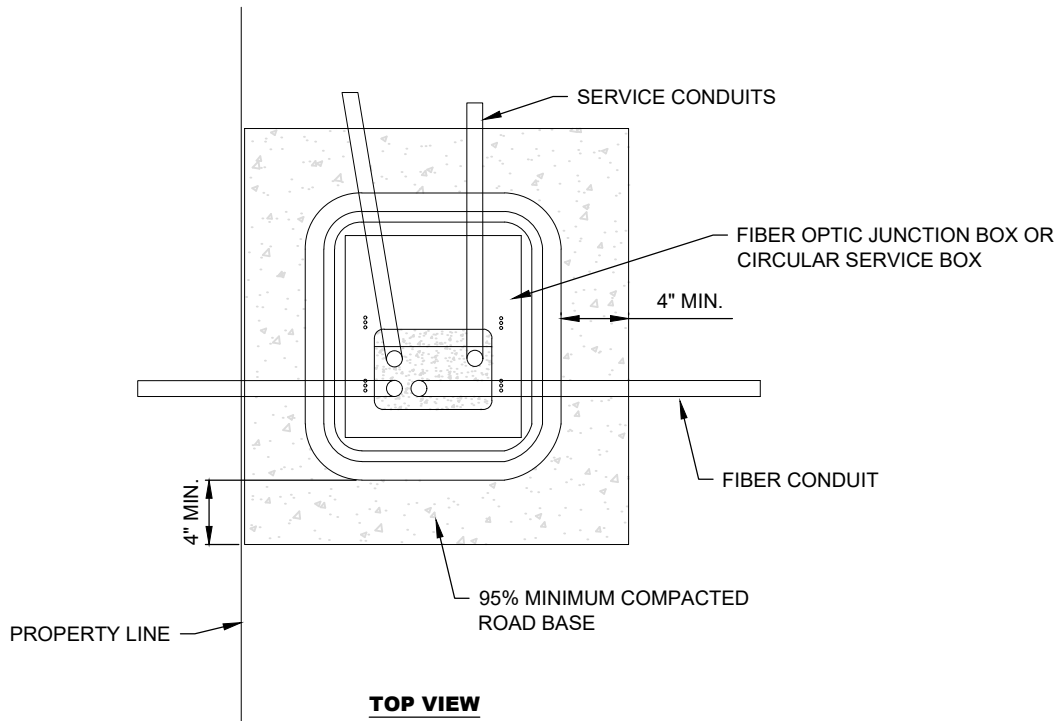
NO.	DESCRIPTION



**RESIDENTIAL UNDERGROUND
SERVICE 200 AMP OR LESS**

KAYSVILLE CITY
DEVELOPMENT STANDARDS

STANDARD DRAWING NUMBER:	3
CAD DWG:	
PLOT SCALE:	1 = 1
DRAWN BY:	XX
DESIGN BY:	SRM
CHECKED BY:	SRM
ADOPTED DATE:	



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REVISION

NO.	DESCRIPTION



ELECTRICAL BOX BACKFILL AND COMPACTION

KAYSVILLE CITY
DEVELOPMENT STANDARDS

STANDARD DRAWING NUMBER:	4
CAD DWG:	
PLOT SCALE:	1 = 1
DRAWN BY:	XX
DESIGN BY:	SRM
CHECKED BY:	SRM
ADOPTED DATE:	



Planning Commission Staff Report

Amendment to the Kaysville City Annexation Policy Plan. June 11, 2020

Description:

Kaysville City has recently gone through an Annexation Process. When so doing, city staff recognized some ways in which our policy could be clearer. The primary way is a requirement in our policy document that annexed property be served by all utilities provided by Kaysville City.

While the City Council may make an exception to this policy at the time of annexation, having this requirement in a policy plan will give both staff and any proposed annexation landowner an expectation of what it means to be in Kaysville.

A public hearing is scheduled with the city council on 6/18/20 to further discuss this item and affected entities have been mailed notice of that meeting. The planning commission is tasked with making a recommendation to the council for their consideration on that date.

No change is proposed to the map of expansion areas.

Recommendation:

Staff recommends the included amendment to the annexation policy plan be recommended for approval to the City Council.

Attachments: Existing Annexation Policy Plan, Map of Expansion Areas, Proposed Annexation Policy Plan

Annexation Policy Plan

Statement of Specific Criteria

The specific criteria that will guide the decision whether or not to grant future annexation petitions are:

1. The area to be annexed is compatible with the character of Kaysville City.
2. Municipal services are needed in the area to be annexed.
3. The plan for extension of municipal services into the area to be annexed is acceptable.
4. How the services in the area to be annexed will be financed is acceptable.
5. The estimated tax consequences to residents both currently within Kaysville City's boundaries and in the area to be annexed are acceptable.
6. The interests of all affected entities have been considered.

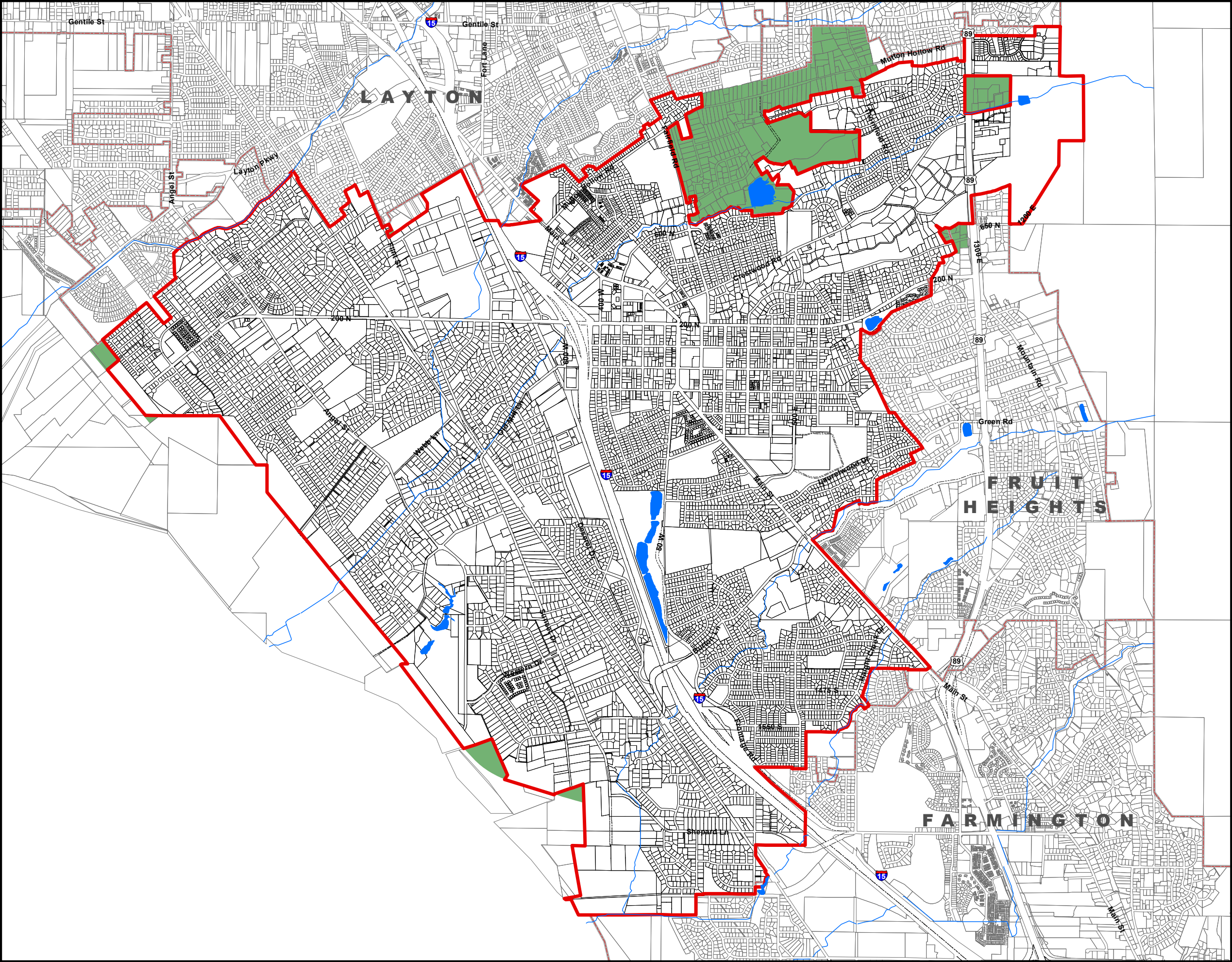
Justification for Excluding Urban Development Within ½ Mile

The areas containing urban development within ½ mile of Kaysville City's boundaries that have been excluded from the Kaysville City Expansion Area are within another city or can be better served by another city.

Statement Addressing any Comments

In consideration of adding an additional 60 acres of potential expansion areas east of Highway 89, there were no concerns expressed by affected entities during the allotted comment period.

The Mutton Hollow Improvement District (District) requested that all of Mutton Hollow Road or none of it be included in the Area Kaysville City Anticipates Annexing. District correspondence highly recommended that the 2005 plan be retained in order to preserve the integrity of the District water system and to comply with the long term wishes of most residents in the area to align with Kaysville City rather than Layton City. The 2005 plans show that Layton City and Kaysville City each anticipate annexing about half of the District and half of the water system. The discrepancy was discussed with District representative who states that the Area shown on the 2005 Plan was preferred over all other configurations, so it was shown on the Map.



Map of Kaysville City Expansion Area

 City Boundary

 Area Kaysville
City Anticipates
Annexing



Miles
0 0.225 0.45



Kaysville
City

August 2019

Proposed

Annexation Policy Plan

Statement of Specific Criteria

The specific criteria that will guide the decision whether or not to grant future annexation petitions are:

1. The area to be annexed is compatible with the character of Kaysville City.
2. Municipal services are needed in the area to be annexed. All properties included in any future annexation shall be served by all Kaysville City utilities.
3. The plan for extension of municipal services into the area to be annexed is acceptable.
4. How the services in the area to be annexed will be financed is acceptable.
5. The estimated tax consequences to residents both currently within Kaysville City's boundaries and in the area to be annexed are acceptable.
6. The interests of all affected entities have been considered.

Justification for Excluding Urban Development Within ½ Mile

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KAYSVILLE CITY PLANNING COMMISSION MEETING MINUTES

May 28, 2020

Planning Commission Members Attended: Chairperson Wilf Sommerkorn, Vice Chairperson Joshua Sundloff, Steve Lyon, Toby Barrus, Quan Nguyen, Jared Doxey, Scott Hess.

Staff Present: Lyle Gibson, Dan Jessop, Heather Nielsen

Public Attendees: Abbigayle Hunt, Russel Lasson, Matt Howes, Matt Hill, Amy Headlee, Marci Preece, Megan Fink, Rose Coleman, Jennifer Ford, Chase Freebairn, Jennifer Spjut, Megan Murray, Christy Barton, Jared Carter, Sam Browning, Cal and Udy, Jared Bagner, Tyler Briggs, Jon Croasmun, Kim Nuttal, Jen Johns, Justin Humphrey, Brigham Yates, Rustin Jessen, Heather Eaton, Tammy Tran, Andre Lortz.

OPENING

The Planning Commission meeting was held on Thursday, May 28, 2020 at 7:00 p.m. via online Zoom Meeting. Chairperson Wilf Sommerkorn opened the meeting by welcoming those present.

The minutes of the May 14, 2020 meeting were presented for approval. Steve Lyon made a motion to approve the minutes. Quan Nguyen seconded the motion and they were unanimously approved.

It was noted at the beginning of the meeting that consideration of final plat for phases 2-4 of the Orchard Ridge Subdivision would be tabled to a future meeting at request of the applicant.

PUBLIC HEARING FOR THE REZONE OF 1.47 ACRES OF PROPERTY LOCATED AT 1413 WEBB LANE FROM THE R-1-20 (SINGLE FAMILY RESIDENTIAL) TO THE R-1-14 (SINGLE FAMILY RESIDENTIAL) ZONING DISTRICT TO INCLUDE THE PRUD OVERLAY ZONE FOR MIKE AND KEESHA HARDIN.

Lyle Gibson explained that several comments have been made regarding this rezone and forwarded to the Planning Commission. Lyle Gibson went on to explain that the subject property exists as a single flag lot currently with one home on nearly 1.5 acres of ground. The applicant is requesting a rezone to the property to give more flexibility with possible future development.

The difference between the R-1-20 and requested R-1-14 is the minimum lot size allowed where the R-1-20 requires lots of at least 20,000 sq. ft. in size and the R-1-14 allows lots to be 14,000 sq. ft. in size or larger. Both the R-1-20 and R-1-14 have the same allowed uses, same height, and same setbacks. R-1 Zoning: (KCC Chapter 17-12)

The PRUD overlay zone is being requested in connection with the R-1-14 to allow for flexibility in developing the property. The concept provided by the applicant indicates a lot on the far south end of the property which would most likely be accommodated as a flag lot subdivision. This would make the existing single flag lot into a double flag lot where the access driveway would be encompassed by two 18 foot wide flag stems to access the lots. If the zoning moves forward and the type of development is desirable the final details of this would be confirmed through the subdivision process. Final application of the PRUD overlay zone would take effect only after approval of an acceptable final plat.

As a rezone, this decision should be looked at based on its compatibility with the City's General Plan and how well the proposed development allowed by the zoning district fits at the specific location.

Chairperson Wilf Sommerkorn invited the applicant Michael Hardin to speak. Mr. Hardin said that he was looking to build a single family home on the lot behind them. Chairperson Wilf Sommerkorn asked Lyle Gibson if they allow the rezone to go through can it allow for more density to be built there. Lyle Gibson said yes, it could accommodate up to four houses.

Chairperson Wilf Sommerkorn opened the public hearing.

Cal and Udy asked why Mr. Hardin has not provided a plan showing what he intends to do with the lot if rezoned. Lyle Gibson said that under a rezone they do not need to submit a plan for development.

Megan Murray, Sam Browning and Jennifer Spjut asked Lyle Gibson how many homes could be built on the property if the Hardin's were to demolish the house and sale the entire property. Lyle Gibson again said that it could only hold four homes due to the flag lot building code restrictions.

Christy Barton is concerned about extra traffic on Webb Lane. She wants a development agreement written up that states only one home would be built on the additional lot. Mrs. Barton asked Lyle Gibson if there was a way they could create the flag lot and have it remain in the R-1-20 zone-scratching the entire rezone. She would like to make sure that the 20 square feet needed to remain in the current zone isn't there with a survey

Jared Carter was concerned because his property butts right up to Mr. Hardin's. He asked the Planning Commission how a home could be built on the lot with the current stream easement. He told the commission that the stream floods every spring and wanted to make them aware.

Megan Murray also wanted to have a development agreement written up stating that they would only build one house on the lot.

Chairperson Wilf Sommerkorn closed the public hearing.

Chairperson Wilf Sommerkorn said he would like to see more detail and an official survey showing the lots dimensions because perhaps this flag lot could be done in an R-1-20 zone.

Quan Nyguen asked if they could set limitations on this lot limiting it to only one single family house. Chairperson Wilf Sommerkorn said that could be something they could do.

Jared Doxey said he would also like to have the measurements verified to see if this could be done in the R-1-20 zone. He said it was better to measure twice and cut once.

Scott Hess made a motion to forward a favorable recommendation to the Kaysville City Council the rezone of 1.47 acres of property located at 1413 Webb Lane from the R-1-20 (Single Family Residential) to the R-1-14 (Single Family Residential) zoning district to include the PRUD overlay zone for Mike and Keesha Hardin. Josh Sundloff seconded the motion. The voting was as follows:

Scott Hess: Aye
Steve Lyon: Aye
Toby Barrus: Aye
Quan Nyguen: Nay
Vice Chairperson Josh Sundloff: Aye
Jared Doxey: Nay
Chairperson Wilf Sommerkorn: Nay

The motion passes with four Aye's to three Nay's.

PUBLIC HEARING FOR THE REZONE OF APPROXIMATELY 10 ACRES OF PROPERTY LOCATED AT APPROXIMATELY 1700 SOUTH 550 WEST, FROM THE R-A (RESIDENTIAL AGRICULTURE) AND A-5 (HEAVY AGRICULTURE) ZONES TO THE R-1-6 (SINGLE FAMILY RESIDENTIAL) ZONING DISTRICT FOR IVORY HOMES.

Lyle Gibson explained that Ivory Homes is interested in a rezone at the subject property to establish a level of confidence for future development such as the concept included with this report.

Roughly 3 acres of the subject property is currently zoned A-5, where the remainder is located in the R-A zoning district. The existing zoning would allow for development of 2 units per acre with some agricultural rights in the R-A zone while the property zoned A-5 could not be further subdivided.

The requested zoning would allow for single family development with lots as small as 6,000 sq. ft. in size. The concept provided by the applicant would ultimately require the approval of the PRUD overlay zone as well in order to create a common open space subdivision on private streets that would also allow for some flexibility in the final lot size.

Kaysville City has for several years indicated to those interested in developing this area that additional access would be needed into and out of the area before development occurs. The applicant is aware of this concern, but with the anticipation of the West Davis Corridor and the

extension of Angel Street in the near future, they hoped to establish the base zone now and expect to come back at a later date once the access is resolved to work through the specific details of the development through the subdivision process and PRUD overlay zone if they receive the green light with the current request.

For now the Planning Commission is considering only the R-1-6 zoning district which is regulated through KCC Chapter 17-12.

As a rezone, this decision should be looked at based on its compatibility with the City's General Plan and how well the proposed development allowed by the zoning district fits at the specific location.

Chairperson Wilf Sommerkorn invited Ivory Homes Chase Freebairn to talk about this development.

Chase Freebairn said this subdivision would be a few years out for development since there are roads that need to be put in before they can develop. Ivory Homes would like to get the zoning in place so that they can start on the planning. They would also add an HOA to the subdivision for snow removal.

Jared Doxey said that he is worried about the density of this development and feels that it is too extreme.

Quan Nyguen asked the developer if Ivory Homes would be willing to change the density of the subdivision to put in less homes since it is such a drastic change from the surrounding subdivisions. Mr. Freebairn said that they would like the commission to vote on the request before them and that they have built these types of subdivisions all over Utah and they have turned out really well.

Chairperson Wilf Sommerkorn said, if they can't move forward with developing this subdivision without the streets being built first why are they trying to rezone this property now. Why don't they wait to make sure that the streets will be developed?

Chairperson Wilf Sommerkorn opened the public hearing.

Russell Lasson said that this rezone seems premature especially with the general plan being amended this year. The roads needed should be at least started before a subdivision and rezoning are considered.

Matt Howes was concerned because the current plan shows the only outlet road going onto Seabiscuit. He said this was too much traffic to add.

Matt Hill, Amy Headlee and Megan Fink said this subdivision was way too dense. They were worried that the traffic would be too much for the side roads to handle.

Rose Coleman said that Kaysville City is not ready for a dense development like this. She was worried about adding 56 more homes to the already tight sewer system.

Jennifer Ford said that they bought her current house under the impression that this area would never be developed due to the sewer land. She also seconded the notion that the increased traffic would be a burden on the neighborhood.

Jason Gagner said that he felt this subdivision would impact home values. It would also increase the overcrowding at the local school.

Tyler Briggs said he was also concerned with the increase in traffic.

Jon Croasmun, Kim Nuttal, Rose Coleman and Jen Johns said that the subdivision plan was too dense and that they were concerned about the increase in traffic as well.

Justin Humphrey and Brigham Yates said that it was too early to approve this development and that the rezone should be denied.

Chairperson Wilf Sommerkorn closed the public hearing.

Jared Doxey said that this area will be developed one day and that he is okay with that however, this subdivision plan is too drastic. The density is too high.

Toby Barrus also agreed that this plan was too dense. He also wants to wait until the roads are built.

Chairperson Wilf Sommerkorn seconded the idea that this project was too dense. He said that higher density does not equate to affordable homes. These homes are smaller but still very expensive.

Vice Chairperson Josh Sundloff said that he would like to wait until the general plan is further along.

Jared Doxey made a motion to recommend denial to the Kaysville City Council the rezone of approximately 10 acres of property located at approximately 1700 South 550 West, from the R-A (Residential Agriculture) and A-5 (Heavy Agriculture) zones to the R-1-6 (Single Family Residential) zoning district for Ivory Homes. Josh Sundloff seconded the motion and it was unanimously passed.

PUBLIC HEARING FOR THE REZONE OF 2 ACRES OF PROPERTY LOCATED AT 711 EAST CRESTWOOD ROAD FROM THE R-1-8 (SINGLE FAMILY RESIDENTIAL) TO THE A-1 (LIGHT AGRICULTURE) ZONING DISTRICT FOR RUSTIN JESSEN.

Lyle Gibson said that the subject property is approximately 2.04 acres and Justin has requested to rezone from R-1-8 to A-1. The rezone is to allow the owner more ability to use the property for agricultural purposes.

The existing R-1-8 zone is primarily for single family residential lots on 8,000 sq. ft. of property or larger. The requested zone still allows for single family residential use, but has more

agricultural allowances and requires a lot of at least 40,000 sq. ft. in size.

Chairperson Wilf Sommerkorn invited the applicant Rustin Jessen to speak. Mr. Jessen said he wants to start producing his own food and perhaps sell the extra produce on his property. He would also like to have a rooster for his chickens.

Scott Hess asked Mr. Jessen if he talked to the neighbors about the rooster. Mr. Jessen said that he had spoken with his neighbors and that they were okay with it.

Chairperson Wilf Sommerkon opened the public hearing.

Heather Eaton, a neighbor to Mr. Jessen said she was concerned about him up keeping the property because in the past he has struggled to upkeep the park strip on his property.

Chairperson Wilf Sommerkon closed the public hearing.

Steve Lyon made a motion to forward a favorable recommendation to the Kaysville City Council the rezone of 2 acres of property located at 711 East Crestwood Road from the R-1-8 (Single Family Residential) to the A-1 (Light Agriculture) zoning district for Rustin Jessen. Quan Nyguen seconded the motion and it passed unanimously.

FINAL PLAT FOR PHASE 1B OF THE ORCHARD RIDGE SUBDIVISION LOCATED AT 1406 HWY 89 FOR OVATION HOMES AND COMPASS DEVELOPMENT.

Lyle Gibson said this property which is located at the far north east corner of Kaysville City was annexed into Kaysville and received preliminary plat approvals in early 2019. Phase 1 of the development has been under construction and the development team is preparing to start development of phase 1B and have requested that consideration of phases 2 – 4 be tabled to a future date.

Phase 1B contains 9 lots which all front Orchard Ridge Lane which is to be extended eastward until reaching the Weber Basin aqueduct. All curb, gutter, and sidewalk improvements around each lot will be completed with this phase and utilities will be stubbed to the south, some of the asphalt improvements will come with phase 2 based on coordinating work around the aqueduct easement.

Quan Nyguen made a motion to approve the Final Plat for Phase 1B of the Orchard Ridge Subdivision located at 1406 HWY 89 for Ovation Homes and Compass Development. Steve Lyon seconded the motion and it passed unanimously.

CALL TO THE PUBLIC

Nothing was brought forward from the public to the Planning Commission.

CALENDAR

The next regularly scheduled Planning Commission meeting will be held on Thursday, June 11, 2020 via Zoom Meeting.

ADJOURNMENT

Scott Hess made a motion to adjourn the meeting. Steve Lyon seconded the motion and it passed unanimously. The meeting adjourned at 10:35pm.