



## MEMORANDUM

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**TO:** Mayor Miller, City Council Members

**FROM:** Tony Ekins, City Planner

**SUBJECT:** Jesse Elsmore, Jardine Builders, LLC – To request site plan approval for two (2) two-story mixed-use buildings located at 139 West Main Street & 127 West Main Street, consisting of 0.96 acres.

**DATE:** April 28, 2025

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**CITY COUNCIL MEETING:** May 1, 2025  
**CITY COUNCIL ROLE:** Administrative  
**APPLICATION TYPE:** Site Plan Approval

**NATURE OF REQUEST:**  
Permitted Use: Mixed Use Commercial.

### OVERVIEW:

On January 28, 2025, Hyrum City received an application for Site Plan Approval for The Market 1860 project which includes two identical mixed-use buildings consisting of first-level commercial space and second-level residential rental units. The footprint of each building is planned at 40-feet by 70-feet. The first-floor commercial space in each building will be divided into two (north and south) units. Parking and landscape areas will be constructed behind the buildings and open patio and outdoor dining areas will wrap the building perimeter. The second level in each building will consist of six and seven short-term hotel style residential units with single and double-bed units. Each building will also include a common laundry facility on the same floor.

On March 27, 2025, the Planning Commission recommended approval of the mixed-use to the City Council for the main level commercial space and second level short-term hotel style residential units, as the *Hotel or Motel* use is specifically defined and permitted in the Commercial Zone C-2:

#### *HCC 17.04.020 Definitions*

***Hotel or motel*** - “Hotel” or “motel” means any building which is designed to offer temporary abiding space to individuals and family. To be classified as a hotel or motel, it shall contain individual guest rooms and provide services such as linens and furnishings.

#### *HCC 17.45.020 Use Regulations*

##### *A. Permitted Uses:*

##### *4. Hotel or motel*



**PLANNING COMMISSION RECOMMENDATION:**

On February 13, 2025, the applicant presented to the Planning Commission a request for site plan approval. The Planning Commission recommended the requestor to respond to staff evaluation first review comments and schedule a second meeting. On March 27, 2025, the Planning Commission held a second meeting and made a motion to recommend approval to the City Council (4-0 Vote) for site improvements, first-level commercial, and second-level short-term hotel based on applicant submittals, staff evaluations, staff comments are addressed, and ADA parking requirements are accommodated. On April 21, 2025, the City received updated documents with responses to Staff Comments, and updated Scope Narrative that redefined second levels in each building as "Hospitality Boutique Units".

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**CITY COUNCIL RESPONSIBILITY:**

1. The City Council should have a thorough discussion of the site plan, staff comments, and specifying conditions and requirements for approval.
2. The City Council may approve, disapprove, approve with additional conditions and requirements, or require the requestor to return to the Planning Commission for significant revisions.

**STAFF RECOMMENDATION:**

1. Hyrum City Code does not describe "Hospitality Boutique Units" and staff recommends the City Council have a thorough discussion to determine if "Hospitality Boutique Units" meets the qualifying Hotel or motel requirements as defined in HCC 17.04 Definitions and HCC 17.45 Commercial Zone C-2.
2. Parcels 01-050-0023 and 01-050-0024 be combined and recorded to the Cache County Recorder's Office as one (1) parcel prior to issuance of building and sign permits.
3. Recommends the new water meters be in a manifold vault design as illustrated in Hyrum City Construction Standards.
4. See City Engineers recommendations in attachments in blue text.

**STIPULATIONS:**

1. Approval of the site plan shall be effective for one (1) year from the date of final approval by the City Council. If construction has not begun during that period, or an extended by the City Council, the site plan approval is void and applicant shall be required to submit a new site plan for review and approval subject to the then existing provisions of this code as regulated by HCC 17.08 Administration and Enforcement.
2. Changes in use from those approved by this Site Plan Approval will require a site plan or site plan waiver as regulated by HCC 17.08 Administration and Enforcement.
3. The applicant will submit and obtain a building permit as regulated by HCC 15.08 Building and Construction.
4. The applicant will submit and obtain a sign permit as regulated by HCC 17.72 Signs.

**FINDINGS OF FACT:**

1. The property is located in the Commercial Zone C-2.
  2. Mixed Commercial Uses are a permitted use in the Commercial Zone C-2.
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**ATTACHMENTS:**

1. Staff Evaluations March 25, 2025/February 13, 2025 with updated Applicant Submittals:
2. Storm Water Calculations: Received April 21, 2025





## PLANNING COMMISSION STAFF EVALUATION – SECOND REVIEW

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**APPLICATION NO:** 25-002A

**APPLICANT:** Jesse Elsmore, Jardine Builders, LLC

**PROPERTY OWNER:** Andrea Nielsen / John Kimball Jr & Virginia Francis

**PROPERTY ADDRESS:** 139 West Main Street & 127 West Main Street

**PARCEL NUMBER:** 01-050-0023 & 01-050-0024

**PARCEL AREA:** 01-050-0023 = .33 Acres / 01-050-0024 = 0.63 Acres (0.96 Acres)

**ZONE:** Commercial Zone C-2

**DATE:** March 25, 2025

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**PLANNING COMMISSION MEETING:**

March 27, 2025 (Special Meeting)

**PLANNING COMMISSION ROLE:**

Recommending Body to City Council

**APPLICATION TYPE:**

Site Plan Approval

### NATURE OF REQUEST:

Permitted Use: Mixed Use Commercial.

### CURRENT ZONING DISTRICT:

**Commercial Zone C-2:** The C-2 Downtown Mixed-Use Zone is designed to preserve the mixed-use nature and feel of downtown Hyrum, providing for office, commercial, and residential uses within a mixed-use setting. A major objective of the C-2 Downtown Mixed-Use Zone is to create aesthetically pleasing streetscapes with landscaping that buffers sidewalks from major vehicular traffic ways, landscape features, recreational amenities, and social gathering areas that promote a walkable community.

### OVERVIEW:

(updated). The applicant would like to develop the property with two identical mixed-use buildings consisting of first-level commercial space and second-level residential rental units. The first-floor commercial space in each building will be divided into two (north and south) units. Parking and landscape areas will be constructed behind the buildings and open patio and outdoor dining areas will wrap the building perimeter. See Applicant's Scope Narrative additional site improvements.

**UTILITIES:** Existing Power, Sewer, Water, Irrigation servicing 127 West Main Street are for a Single-Family Residential Home. Upgrades will need to be built/installed.

### STAFF COMMENTS:

*Requestor responses in red*

#### Planning and Zoning:

1. The Planning Commission recommend site plan approval to the City Council based on the applicants compliance with staff evaluations and staff comments, applicant



submittals, and any additional Planning Commission recommendations. The City Council can require revisions as necessary.

- *Understood*
- 2. The dwelling unit(s) in each building engage the following code requirements to require a separate sewer lateral to each building for a total of two (2) sewer laterals:
  - a. Hyrum City Code 17.04.070 Definitions: "Dwelling unit" means one or more rooms in a dwelling, apartment hotel or apartment motel, designed to be occupied by one family for living and sleeping purposes.
  - b. Hyrum City General Requirements and Specifications for Sanitary Sewer Installations 5.2.1.C. Design Regulations: Each dwelling unit shall be served by an individual lateral.
  - c. *(Reference Sewer Department Comment #1 in Staff Evaluation First Review)*
- *Separate sewer laterals have been provided and a 3rd was added for the first floor commercial units in the East building where potential restaurant spaces may be built-out*

#### **Engineering:**

1. See attached comments contained on Site Plan – Second Review.
  - *Comments and subsequent direction from the City have been incorporated in this update of the Site Plan*
2. Provide stormwater calculations and data. Table A was not provided in the submittal, see Engineering comments on sheet: 2 of 10.
  - *Storm water calculations are included with this Site Plan update*
3. The utility plan is lacking information, see Engineering comments on sheet: 2 of 10.
  - *Utility plan has been updated to include 8-inch water lateral and 4 water meters*
4. Streetscape requirements are not being shown as required by Hyrum City Code 17.45.090 Streetscape Features.
  - *Project consists of a 165-foot street frontage which requires 6 streetscape features (1 for every 30 feet). Site plan includes and calls out the following streetscape features: 2 trees, 2 park benches, and 2 planter areas, 1 existing street lamp*

#### **Sewer Department:**

1. Each dwelling unit shall be served by an individual lateral per Construction Standard 5.2.1.C. Drawings show one shared lateral for two dwellings which is not to standard. *(Reference Sewer Department Comment #1 in Staff Evaluation First Review)*
  - *Separate sewer laterals have been provided and a 3rd was added for the first floor commercial units in the East building where potential restaurant spaces may be built-out.*

#### **Water / Irrigation Department:**

1. If the original water meter and lateral is used as part of the total of four (4) new, the existing water meter and lateral will need to be updated to comply with Hyrum City Code 13.04 Water System; Hyrum City General Requirements and Specifications for Potable Water Mains, Service Lines and Secondary Pressure Irrigation Installations. *(Reference Water / Irrigation Comment #1 in Staff Evaluation First Review)*
  - *Utility plan has been updated to include 4 new water meters, existing meter will be removed and lateral abandoned per city requirements*
2. If the existing water meter and lateral is not used as part of the total of four (4) new, the existing water meter shall be removed, and the existing water lateral will be removed at main line and the main line be capped. *(Reference Water / Irrigation Comment #1 in Staff Evaluation First Review)*
  - *Site plan shows existing water meter will be removed and lateral abandoned per city requirements.*



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## STAFF EVALUATION FIRST REVIEW - Planning Commission: February 13, 2025

Requestor responses in red

### Planning and Zoning:

1. Staff supports a Mixed Use of Commercial and Hotel as permitted in HCC 17.45.020 Use Regulations.
  - Yes!
2. Staff did not receive the required Lighting Plan submittal. HCC 17.45.120 requires that each site plan shall include a lighting plan.
  - Lighting Plan has since been completed and submitted with Site Plan documents
3. Staff does not support the west building crossing the east property line of property parcel: 01-050-0023 as proposed on the site plan and recommends combining the two property parcels. HCC 17.45.050 Yard Regulations – Commercial Use may permit a zero-yard setback at a property line at a qualifying location; however, it does not qualify a building to encroach beyond a property parcel. If the applicant desires to relocate the said building to a conforming location on the parcel, Staff will request the following revisions to the site plan:
  - a. Each property parcel is serviced by separate power, sewer, water and water meters, fire line (if required), and irrigation connections to main lines; and
    - Parcel 0023 and 0024 are owned by individual Market 1860 partners; partners are in process of selling & transferring ownership to the Market 1860 entity which will result in single ownership. Applicant requests that Commission allow Site Plan Approval on condition that this is completed before issue of building permit
  - b. Cross access agreements need to be prepared and recorded to each property parcel for UDOT driveway approach interior parking.
    - Cross access agreement has been addressed with UDOT and per UDOT will not be signed until issue of building permit
4. The site plan proposes parking stalls to be a minimum of eight (8) feet in width and does not identify the proposed parking stall depth. In the C-2 Zone, HCC 17.45.210.C. Off-Street Parking – Special Requirements requires the site plan to provide nine (9) feet by twenty (20) feet parking stalls.
  - Parking stall sizes have been revised to 9 feet wide by 20 feet deep
5. The applicant did not submit a total parking stall count on the site plan. Staff supports the required parking of one (1) space per each unit, room, or guest accommodation as regulated in HCC 17.45.200 Off Street Parking – Specific Requirements which reserves a total of twelve (12) parking spaces for the Hotel Use.
  - Parking totals 54 stalls, includes 1 ADA stall & 1 ADA Van Accessible Stall
6. Without the applicant providing the exact square feet of proposed commercial uses (excluding storage areas, restrooms, office areas, etc.) Staff cannot verify the required off-street parking requirements regulated in HCC 17.45.200 Off-Street Parking – Specific Requirements to conclude parking requirements.
  - Total commercial floor space is 4,050 SF (2,100 SF in West, 1,950 SF in East)
  - Breakdown of estimated commercial use is as follows:
    - Retail / Market = 2,100 SF (requires 1 per 250 SF = 8 stalls)
    - Single Office = 224 SF (requires 1 per employee = 1 stall)
    - Restaurant / Café = 1,275 (requires 1 per 40 SF = 32 stalls)
    - Hotel Space = 13 units (requires 1 per unit = 13 stalls)
  - Total stalls required = 54
7. The site plan shows the cedar fence terminating at the south portion of the paved parking lot. The parking lot is still facing adjoining neighbor properties. HCC 17.45.050 Yard Regulations – Commercial Use requires the fence to continue south on both east and west property line and along the south property line enclosing the development.



- Cedar fence continues along west, south, and east property lines
- 8. The Trash Enclosure requirements in the C-2 Zone, HCC 17.45.055 Trash Enclosure Regulations – Commercial Use requires that enclosures shall be located away from main traffic areas and sheltered from street sight as much as possible. Staff recommends relocating the Trash Enclosure from the current location within the main traffic area and street sight to a conforming location on the site.
  - Trash enclosure relocated to back of parking lot, hidden from street view behind west building, >50' from residential zoning. Have assumed doublesize dumpster enclosure in site plan
- 9. A building permit will be required for building structures as regulated by HCC Section 15.08 Building Permits.
  - Understood
- 10. All construction shall comply with Hyrum City Design Standards and Construction Specifications.
  - Understood

**Engineering:**

1. See comments contained on Site Plan.
  - Site Plan updated per comments

**Fire Department:**

1. Water flow, we need 1750 GPM at the hydrant for 2 hours. If it is less than that the entire building will need to be sprinklered.
  - Fire sprinklers are planned for each building, on both floor levels
2. The upstairs hotel/apartments is a R-1, it is required to have Sprinklers.
  - Fire sprinklers are planned for each building, on both floor levels
3. We need 26' of clearance on driveway and on all sides of parking for fire apparatus access lot see drawings.
  - 26' driveway clearance has been provided and extends to back side of buildings
4. What type of building construction?
  - Wood frame construction with structural steel elements
5. Each unit will need to be reviewed and inspected as built out.
  - Understood

**Parks Department:**

1. No comments or concerns.
  - Yes!

**Power Department:**

1. Staff requests the applicant contact the Power Department to schedule an initial onsite meeting to verify all existing electrical utilities.
  - Understood, this will happen immediately following site plan approval
2. The applicant must complete and submit the required Commercial Structure Load Data Sheet to the Power Department. The Load Data Sheet is available in Section 7 General Requirements and Specifications for Electrical Installations in Hyrum City Design Standards and Construction Specifications.
  - Load data sheet has been completed and will be submitted immediately following site plan approval
3. All construction specific to electrical work shall verify compliance with Section 7 General Requirements and Specifications for Electrical Installations in Hyrum City Design Standards and Construction Specifications.
  - Understood, electrical systems will be designed by Sine Source Engineering
4. Applicant must maintain and clearance of 10 feet around the interior overhead service line on the property. At the applicant's request, the Power Department can provide visual ribbon indicators on the overhead line to help maintain visual clearance.
  - Understood, visual ribbon indicators will be requested during construction



**Road / Stormwater Department:**

1. An NOI is generally not required for disturbances less than one (1) acre that are not part of a larger common plan of development project, however, it is the responsibility of the applicant to confirm any and all exemptions pursuant to HCC 13.18.110 Notice of Intent (NOI) – Exemptions. While an NOI is not typically required, applicant is responsible to control Stormwater and Erosion & Pollution on and from the site.
  - *If required, contractor will file an NOI; regardless; BMPs will be installed and maintain during construction until all permanent landscaping and stormwater systems are completed*
2. All public rights of way permits, construction and improvements, and traffic control on Main Street are the Powers and Duties of Utah Department of Transportation.
  - *Understood, applicant has already engaged in permits and discussions with UDOT regarding this project and will continue to do so*
3. Hyrum City may enforce provisions and all other ordinances relating to the maintenance and use of streets, culverts, drains, ditches, waterways, curbs, gutters, sidewalks and other public ways; and the repair or cause to be repaired, all defects coming to the Hyrum City Department of Streets attention and make reasonable precautions to protect the public from injuries due to such defects pending their repair pursuant to HCC 2.36.030. Powers and Duties.
  - *Understood*

**Sewer Department:**

1. Staff recommends the engineer verify the existing sewer lateral and design a new lateral for peak flow for both buildings, and demonstrate on the plans the material, quality and specifications as regulated by HCC 13.12.200 Service and Other Pipes – Material, Quality and Specifications – Alteration or Inspection.
  - *Understood, sewer line size shown on Site Plan, existing laterals to be abandoned*
2. For any proposed use or future use that will introduce or cause to be introduced into the Publicly Owned Treatment Works (POTW) or any pollutant or wastewater which causes to pass through or interference, the applicant must comply with HCC Section 13.13 Wastewater Pretreatment, whether or not the source is subject to categorical Pretreatment Standards or any other National, State or Local Pretreatment Standards for requirements.
  - *Understood, additionally it is anticipated that a grease trap will be provided for restaurant spaces*
3. All construction specific to sanitary sewer shall verify compliance with Section 5 General Requirements and Specifications for Sanitary Sewer Installations in Hyrum City Design Standards and Construction Specifications.
  - *Understood*

**Water / Irrigation Department:**

1. HCC 13.04.180 Separate Connections Required for Each User regulates that each service user cannot be supplied from the same service pipe, connection or water meter unless special permission for such combination usage has been granted by the governing body. Staff recommends that each user have its own water service (tentatively 2 meters for main level commercial uses, and 1 meter for upper-level hotel uses for each building).
  - *Understood, owner would like to request a single meter for each floor-level in each building (4 meters total)*
2. Staff recommends that all meters be installed in a meter vault for multiple meters for 3/4" to 1-1/2" meters as approved in Section 6 of the Hyrum City General Requirements and Specifications for Potable Water Mains, Service Lines, and Secondary Pressure Irrigation Installations.



- *Understood*
  - 3. *Staff recommends that each service to commercial uses be a minimum of 1-1/2" to ensure adequate future flows.*
    - *Understood*
  - 4. *If the mixed commercial use and hotel use requires a fire sprinkler system required by the International Fire Code and requires an additional fire line connection to the water main, the fire line connections shall comply with Section 6 Hyrum City General Requirements and Specifications for Potable Water Mains, Service Lines, and Secondary Pressure Irrigation Installations.*
    - *Understood*
  - 5. *All construction specific to sanitary sewers shall verify compliance with Section 5 General Requirements and Specifications for Potable Water Mains, Service Lines, and Secondary Pressure Irrigation Installations in Hyrum City Design Standards and Construction Specifications.*
    - *Understood*
- 

#### **PLANNING COMMISSION RESPONSIBILITY:**

1. Site plan approval is a function of the Planning Commission which has a wide latitude in specifying conditions and requirements for approval.
2. The Planning Commission should have a thorough discussion of the site plan, staff comments, and specifying conditions and requirements for approval.
3. The Planning Commission is a recommending body to the City Council and should be specific in their motion to the City Council.

#### **STAFF RECOMMENDATION:**

1. The Planning Commission recommend site plan approval to the City Council based on the applicants compliance with staff evaluations and staff comments, applicant submittals, and any additional Planning Commission recommendations. The City Council can require revisions as necessary.

#### **STIPULATIONS:**

1. The City Council may approve, disapprove, approve with additional conditions and requirements, or require the requestor to return to the Planning Commission with revisions; or require the applicant to return revisions to the City Council.
2. Final Approval must be obtained from the City Council. Following final approval, the requestor will provide final approval documents to staff for the issuance of a permitted use permit, issuance of Hyrum City Approval final approval documents, and issuance of notification to attend a pre-construction meeting.

#### **FINDINGS OF FACT:**

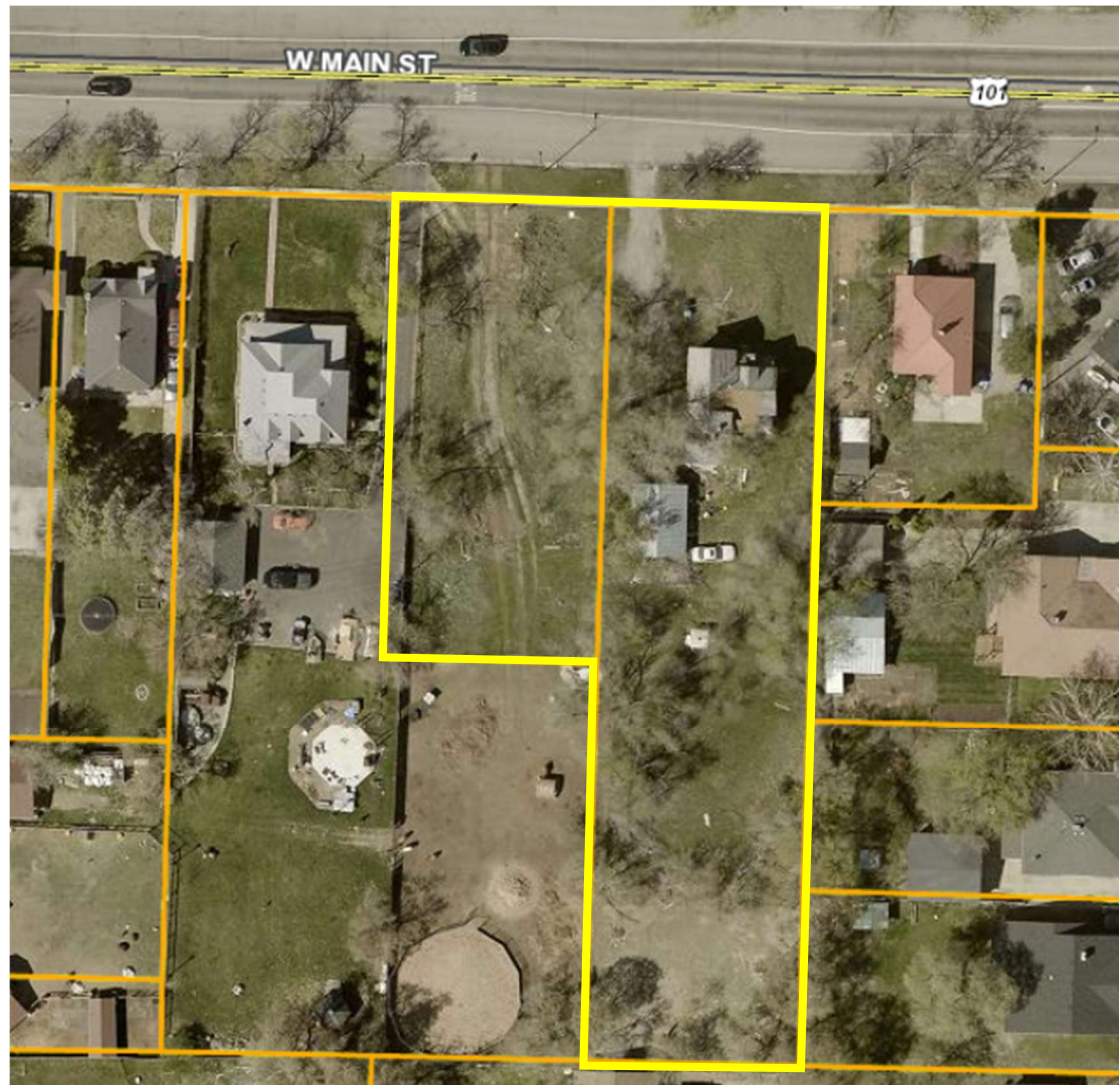
1. The property is located in the Commercial Zone C-2.
  2. Mixed Commercial Uses are a permitted use in the Commercial Zone C-2.
- 

#### **ATTACHMENTS:**

1. Cache County Parcel and Zoning Viewer – Aerial View
2. Hyrum Market 1860 Scope Narrative – Updated
3. Hyrum Market 1860 Conceptual Building Exterior Elevation – Updated
4. Hyrum Market 1860 Site Plan Submittal – Updated
5. Hyrum Market 1860 Lighting Plan – Updated



Cache County Parcel and Zoning Viewer – Aerial Image





Hyrum City  
60 West Main Street  
Hyrum, UT 84319

Subject: Market 1860 Site Plan Approval

Attn: Hyrum City Council Members

### Scope Narrative

The Market 1860 project includes two identical mixed-use buildings consisting of first-level commercial space and second-level residential rental units. The footprint of each building is planned at 40-feet by 70-feet with a conventional peaked roof line down the longitudinal center of the building. The first-floor commercial space in each building will be divided into two (north and south) units. Parking and landscape areas will be constructed behind the buildings and open patio and outdoor dining areas will wrap the building perimeter.

The two commercial spaces in the west building will consist of open classrooms, conference, and market space with a small demonstration kitchen, restrooms, storage and mechanical room. The two units will be constructed with an open hallway so that the spaces can be used simultaneously if needed. One purpose of these units is to provide a place for community events available for rent or use depending on the function or activity. It may be utilized by home-school groups, small training classrooms, farmer's or craft markets, non-profit organizations, and more.

The commercial space in the east building will consist of two café, bakery, or restaurant-type lease units. The owner's intent is to construct the two units as shell-space and allow tenants the opportunity to finish the space according to business needs.

The second level in each building will consist of six and seven (13 total) hospitality boutique units with single and double bed units. Each building will also include a common laundry facility on the same floor. The hospitality units will be accessible by two stairways and secured first-level exterior doors located on the back and shared patio side between buildings. An elevator will be provided in the East Building for ADA access to the second floor.

### Landscaping Plan

Landscaping will include 15-foot-wide green space along the east and west perimeter of the site as well as small landscape areas near the buildings. Vegetation will include trees, lawn, native grass, flowers, and shrubs. Landscaping will be meticulously maintained to attract renters to the short-term rental units and commercial businesses.



Storm water will be managed on site by surface collection to catch basins and dispersed through underground infiltration basins.

Market 1860 -

#### Ownership

Annette Francis (Hyrum, UT)

Andrea Nielsen (Hyrum, UT)

Amy Knight (Park City, UT)

#### Design-Builder

Jardine Builders, LLC (Millville & Centerville, UT)

#### Architect & Engineers

Architect – Gary Hunt Architect, P.C. (Syracuse, UT)

Civil & Structural – Beyler Engineering (Lakewood, WA)

Mechanical – VBFA (Logan, UT)

Electrical – Sine Source Engineering (Logan, UT)

Geotechnical – Civil Solutions Group (Logan, UT)



MARKET 1860  
CONCEPTUAL ELEVATION

DETAILS, COLORS, VEGETATION, ENTRANCE &  
ARCHITECTURAL FEATURES SUBJECT TO CHANGE  
BEFORE BUILDING PERMIT



East Building North Elevation

SCALE: 1/4" = 1'-0"



# HYRUM MARKET 1860

## CIVIL IMPROVEMENT PLANS

PARCEL #'s 01-050-0023 & 01-050-0024



<b>IMPERVIOUS / PERVIOUS SITE AREAS</b>	
<hr/>	
<b><u>EXISTING IMPERVIOUS ONSITE:</u></b>	
GRAVEL (PGHS)	1,060 SF (0.024 Ac)
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<b><u>PROPOSED IMPERVIOUS ONSITE:</u></b>	
BUILDING #1	3,400 SF (0.078 Ac)
BUILDING #2	2,800 SF (0.064 Ac)
ASPHALT ACCESS/PARKING LOT (PGHS)	23,065 SF (0.523 Ac)
CONCRETE (PGHS)	325 SF (0.007 Ac)
CONCRETE	63 SF (0.001 Ac)
<b>TOTAL:</b>	<b>29,653 SF (0.673 Ac)</b>
<hr/>	
<b><u>PROPOSED PERVIOUS ONSITE:</u></b>	
LANDSCAPING	12,410 SF (0.285 Ac)
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<b><u>PROPOSED IMPERVIOUS OFFSITE:</u></b>	
ASPHALT ACCESS (PGHS)	49 SF (0.001 Ac)
CONCRETE DRIVEWAY APPROACH (PGHS)	920 SF (0.021 Ac)
CONCRETE CURBING (PGHS)	176 SF (0.004 Ac)
CONCRETE SIDEWALK	140 SF (0.003 Ac)
CONCRETE FOOT BRIDGES	45 SF (0.001 Ac)
<b>TOTAL:</b>	<b>1,330 SF (0.030 Ac)</b>
<hr/>	
<b>TOTAL PROPOSED IMPERVIOUS:</b>	<b>30,983 SF (0.918 Ac)</b>
<b>TOTAL PROPOSED (PGHS):</b>	<b>24,535 SF (0.563 Ac)</b>

SHEET INDEX	
1-	COVER SHEET / SITE PLAN
2-	STORM DRAINAGE AND UTILITY PLAN
3-	NOTES AND DETAILS SHEET 1
4-	NOTES AND DETAILS SHEET 2
5-	NOTES AND DETAILS SHEET 3
6-	NOTES AND DETAILS SHEET 4
7-	NOTES AND DETAILS SHEET 5
8-	NOTES AND DETAILS SHEET 6
9-	NOTES AND DETAILS SHEET 7
10-	NOTES AND DETAILS SHEET 8

BUILDING INFORMATION
2 - 40'X70' 2-STORY WOOD FRAME STRUCTURES. MAIN FLOOR RETAIL, UPPER FLOOR SHORT TERM RENTAL UNITS
3 - 10'X20' STORAGE SHEDS
34' MAX BUILDING HEIGHT


SITE DATA	
<b><u>PARCEL NUMBER(S):</u></b>	
PIN 01-050-0023	
ANDREA NIELSEN	
3788 ECKER HILL DR.	
PARK CITY, UT 84098	
<b><u>PIN 01-050-0024</u></b>	
JOHN & VIRGINIA FRANCIS	
450 W 2000 N	
MAPLETON, UT 84664	
<b><u>SITE ADDRESS:</u></b>	
127 WEST MAIN STREET, HYRUM, UT	
<b><u>PROPERTY AREA:</u></b>	
0.63 Ac	
<b><u>ZONING:</u></b>	
<b>ZONING – C-2 OVERLAY</b>	
15 FT SIDE SETBACKS REQUIRED	
RESIDENTIAL	
NO SETBACKS REQUIRED.	
<b><u>PARKING:</u></b>	
STANDARD PARKING:	52 STALLS
ADA PARKING:	2 STALLS
TOTAL:	54 STALLS

**CITY ENGINEER APPROVAL**

I CERTIFY THAT I HAVE EXAMINED THIS PLAT AND FIND IT TO BE IN  
GENERAL COMPLIANCE TO THE CITY STANDARDS

\_\_\_\_\_






CITY ENGINEER DATE











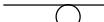




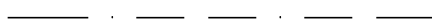

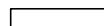


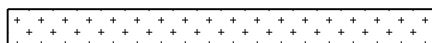












COVER SHEET / SITE PLAN		NO.		DESCRIPTION		INIT		DATE	
<h1>HYRUM MARKET 1860</h1> <h2>CIVIL IMPROVEMENT PLANS</h2> <p>HYRUM CITY WASHINGTON</p>		DESIGNED: LCB/VEJM		DRAWN: EJM		CHECKED: LCB		SCALE: HORIZ: 1"=30' VERT:	
								DATE: 3/19/2025	
 <p>9/19/2025</p>									
JOB NUMBER <h1>24.00160</h1>									
SHEET <h1>1 OF 10</h1>									

**VICINITY MAP**

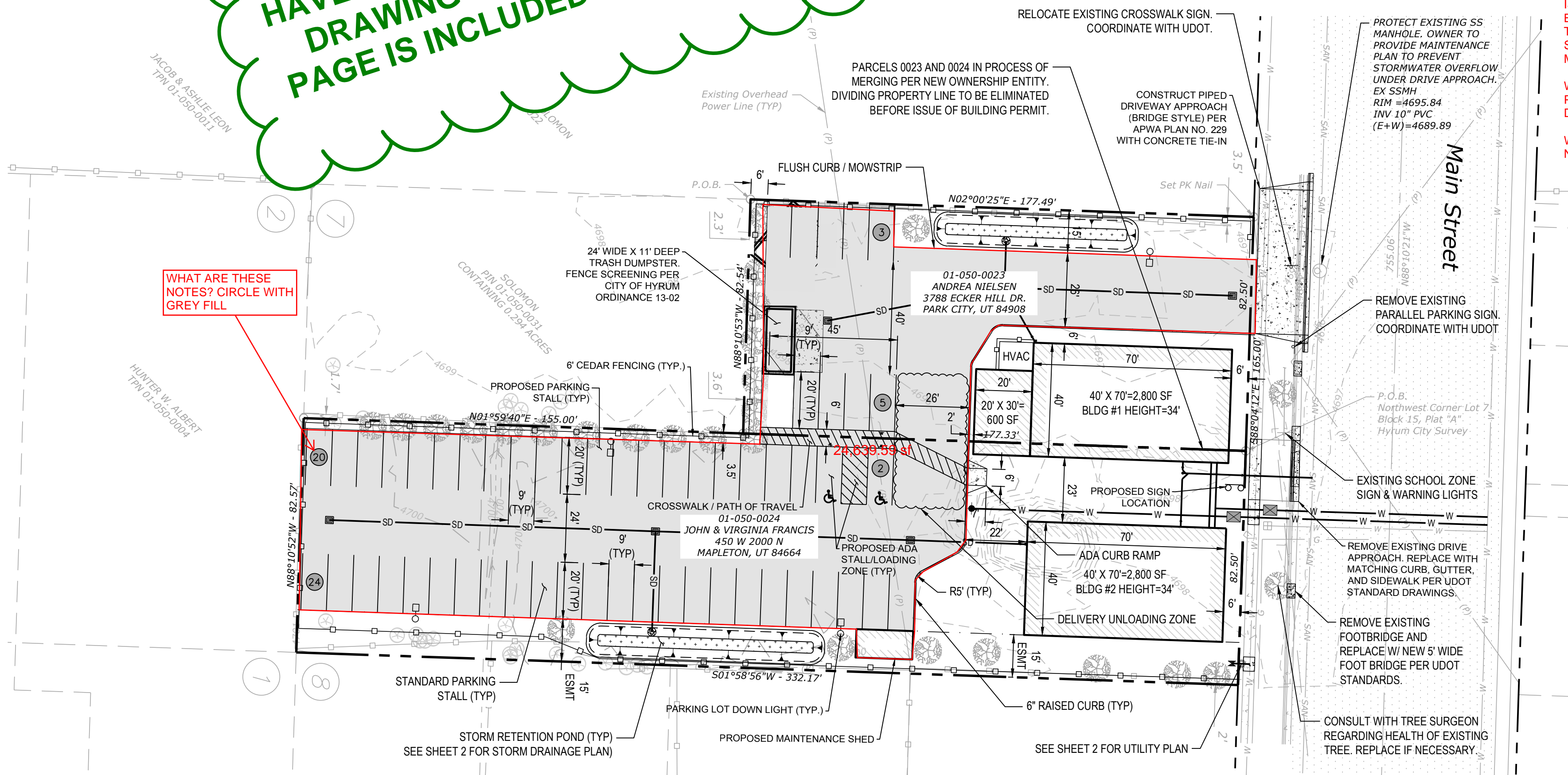
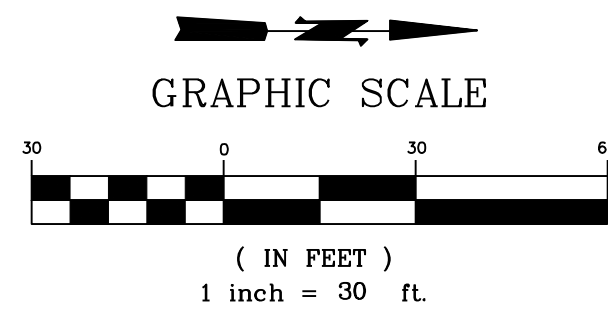
The map shows the project site located at the intersection of Main St and Huron St. The map includes street names, coordinates, and a north arrow. The project site is highlighted with a black box and labeled "PROJECT SITE". The map also shows the Huron River and the N.T.S. (North Township, St. Clair County) area.

CIVIL ABBREVIATIONS	
BSBL	BUILDING SETBACK LINE
CB	CATCH BASIN
CO	CLEAN OUT
CONC	CONCRETE
DI	DUCTILE IRON
FH	FIRE HYDRANT
HP	HIGH POINT
LP	LOW POINT
MH	MANHOLE
PGHS	POLLUTION GENERATING HARD SURFACE
PVC	POLYVINYLCHLORIDE
RPB	REDUCED PRESSURE BACKFLOW PREVENTOR
SD	STORM DRAIN
SSCO	STORM DRAIN CLEAN OUT
SDMH	STORM DRAIN MANHOLE
SS	SANITARY SEWER
SSCO	SANITARY SEWER CLEAN OUT
SSFM	SANITARY SEWER FORCE MAIN
SSMH	SANITARY SEWER MANHOLE
UBC	UNIFORM BUILDING CODE
WM	WATER METER
XFMR	TRANSFORMER
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

EXISTING UTILITIES	
_____ W _____ W _____	EX WATER LINE
	EX METER
_____ G _____	EX GAS LINE
_____ P _____ P _____	EX U/G POWER LINE
_____ (P) _____	EX OVERHEAD POWER LINE
_____ COM _____	EX U/G COMMUNICATION LINE
	EX LIGHT POLE
	EX POWER POLE
_____ SAN _____ SAN _____	EX SEWER PIPE
 	EX SANITARY MH/CO

	EX PROPERTY BOUNDARY
	EX RIGHT-OF-WAY
	EX CENTERLINE
	EX LOT LINE
	EX MAJOR CONTOURS
	EX MINOR CONTOURS
	EX ASPHALT
	EX CONCRETE
	EX CURBING
	EX WOOD FENCE
	EX SIGN
	ASPHALT PAVEMENT
	CONCRETE
	BUILDING
	LANDSCAPING
	BUILDING SETBACK
	WOOD FENCE
	WHEEL STOP
	TREE
	STORM DRAINAGE PIPE
	POND BOTTOM
	RIP RAP PAD
	DS
	SDCO
	AD
	CB
	FLOW ARROW/SLOPE ARROW
	SANITARY SEWER LATERAL
	SANITARY CLEANOUT
	WATER SERVICE / FIRE LINE
	WATER METER
	IRRIGATION CONTROL VALVE
	LIGHT POLE

**CITY COMMENTS SHOWN ON THIS PAGE  
HAVE BEEN ADDRESSED ON THE UPDATED  
DRAWING SHEETS THAT FOLLOW. THIS  
PAGE IS INCLUDED FOR REFERENCE ONLY**



## UDOT UTILITY SPECIFICATIONS & NOTES

1. CONTRACTOR TO USE TRENCHLESS CONSTRUCTION UNLESS SUFFICIENT REASON IS GIVEN FOR OPEN TRENCH CONSTRUCTION.
2. ALL UTILITY CONSTRUCTION MUST BE CUT AT RIGHT ANGLES TO TRAVEL LANES. TEMPORARY PATCHES REQUIRE AT LEAST 2-INCH ROTOMILLING APPROACHING AND LEAVING THE PATCH IN ALL TRAVEL LANES IMPACTED BEFORE FINAL T-PATCH ASPHALT PLACEMENT PER APWA PLAN NO. 255.
3. ALL FINAL PARALLEL SAWCUT LINES OR ROTOMILLING MUST BE LOCATED EITHER AT DESIGNED LANE LINES OR DESIGNED CENTER OF LANE. SAWCUTS MUST BE CLEANED AND TACK-COAT APPLIED BEFORE ASPHALT PLACEMENT
4. ALL TRENCHES FOR LATERALS WITHIN A 100FT DISTANCE MUST HAVE 2 INCH MILL AND REPLACED AS A SINGLE PATCH. SINGLE LATERALS REQUIRE A 2 INCH MILL FOR 20FT EACH DIRECTION
5. ALL ASPHALT CONSTRUCTION WITHIN UDOT RIGHT-OF-WAY TO MATCH EXISTING. HOT MIX ASPHALT (HMA) SHALL BE PG-GRADE 64-34 ASPHALT BINDER, 1/2 INCH NOMINAL MAX, 775-115 IGYATION PER UDOT STANDARD SPECIFICATION 02741; OVER 6 INCHES UNTREATED BASE COURSE (UTBC) PER UDOT SPECIFICATION 02721; OVER 11 INCHES GRANULAR BORROW (GB) PER UDOT SPECIFICATION 02056 (WHICHEVER IS GREATER). PROVIDE DOCUMENTATION OF COMPACTION FROM A UDOT-QUALIFIED LABORATORY.
6. PAVEMENT SEALING - CHIP SEAL TYPE II WITH EMULSION LMCRS-2 PER UDOT STANDARD SPECIFICATION 02785 (ESTIMATED APPLICATION RATE OF 0.45 GAL/SQ YD) IS REQUIRED ON ALL NEW PAVEMENT WITHIN UDOT RIGHT-OF-WAY.

## UDOT RIGHT-OF-WAY (MAIN STREET) NOTES

1. ALL CONSTRUCTION WITHIN THE UDOT RIGHT-OF-WAY SHALL CONFORM TO THE MOST CURRENT UDOT STANDARD (INCLUDING SUPPLEMENTAL) DRAWINGS AND SPECIFICATION. APPLICABLE UDOT STANDARD AND SUPPLEMENTAL DRAWINGS ARE INCLUDED IN THIS PLAN SET.
2. THE CONTRACTOR IS TO OBTAIN AN ENCROACHMENT PERMIT FROM THE APPLICABLE UDOT REGION PERMIT OFFICE PRIOR TO COMMENCING WORK WITHIN THE UDOT RIGHT-OF-WAY. WORKING HOUR LIMITATIONS WILL BE LISTED IN THE LIMITATIONS SECTION OF THE ENCROACHMENT PERMIT.
3. UDOT RESERVES THE RIGHT, AS ITS OPTION, TO INSTALL A RAISED MEDIAN ISLAND OR RESTRICT THE ACCESS TO A RIGHT-IN OR RIGHT-OUT AT ANY TIME.
4. OWNER, DEVELOPER, AND CONTRACTOR ARE RESPONSIBLE FOR ANY DAMAGES DIRECTLY OR INDIRECTLY WITHIN THE UDOT RIGHT-OF-WAY AS A RESULT OF DEVELOPMENT ACTIVITIES.
5. OWNER, DEVELOPER, AND/OR CONTRACTOR IS REQUIRED TO HIRE AN INDEPENDENT COMPANY FOR ALL TESTING WITHIN THE UDOT RIGHT-OF-WAY.
6. ALL SIGNS INSTALLED ON THE UDOT RIGHT-OF-WAY MUST BE HIGH INTENSITY GRADE (TYPE XI SHEETING) WITH A B3 SLIP BASE. INSTALL ALL SIGNS PER UDOT SN SERIES STANDARD DRAWINGS.
7. COMPLY WITH THE REQUIREMENTS OF UTAH CODE 17-23-14 (DISTURBED CORNERS - COUNTY SURVEYOR TO BE NOTIFIED - COORDINATION WITH CERTAIN STATE AGENCIES).

<b>CLIENT:</b> MARKET 1860 LLC	<b>ENGINEER:</b> BEYLER CONSULTING 5920 100TH ST SW, STE 25 LAKEWOOD, WA 98499 CONTACT: LANDON BEYLER, P.E. TEL: 253-984-2900
-----------------------------------	--

<b>UTILITIES</b>
<b>WATER:</b> HYRUM CITY CULINARY WATER AUTHORITY
<b>SEWER:</b> GRAVITY HYRUM CITY SEWER AUTHORITY
<b>POWER:</b> HYRUM CITY POWER

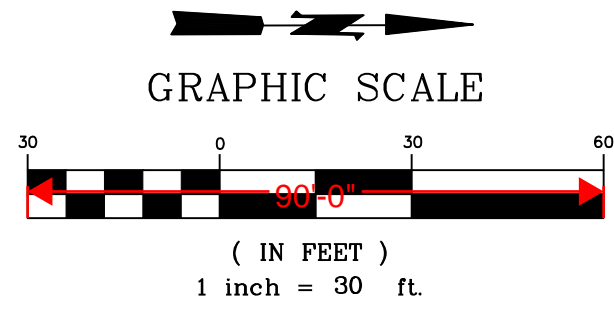


SECTION 03, TOWNSHIP 10 N., RANGE 01 E., S.L.B. & M.

# HYRUM MARKET 1860

## CIVIL IMPROVEMENT PLANS

### PARCEL #'s 01-050-0023 & 01-050-0024



CITY COMMENTS SHOWN ON THIS PAGE HAVE BEEN ADDRESSED ON THE UPDATED DRAWING SHEETS THAT FOLLOW. THIS PAGE IS INCLUDED FOR REFERENCE ONLY

#### EXISTING UTILITIES

W	EX WATER LINE
G	EX GAS LINE
P	EX U/G POWER LINE
(P)	EX OVERHEAD POWER LINE
COM	EX U/G COMMUNICATION LINE
*	EX LIGHT POLE
○	EX POWER POLE
SAN	EX SEWER PIPE
○	EX SANITARY MH/CO

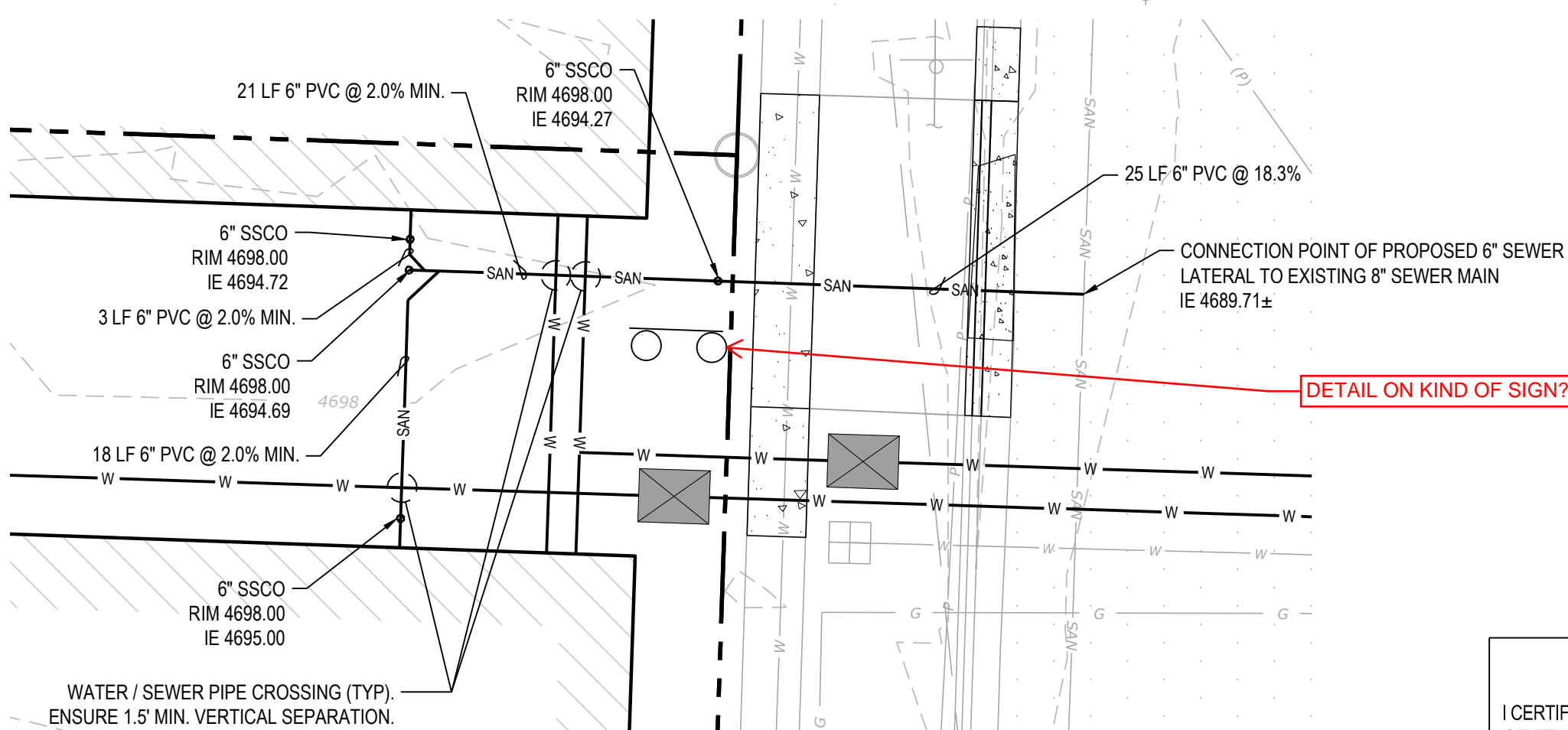
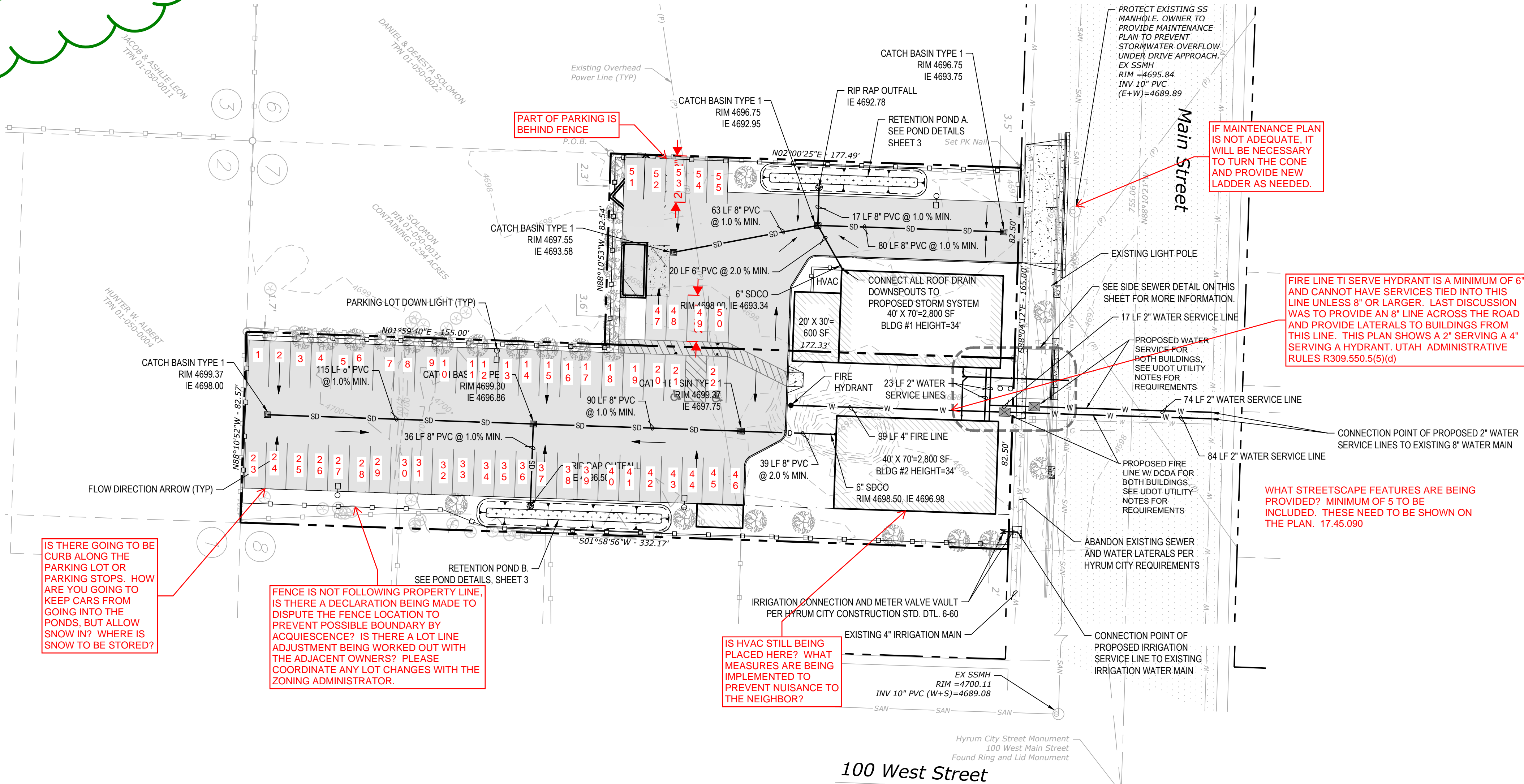
#### LEGEND

---	EX PROPERTY BOUNDARY
---	EX RIGHT-OF-WAY
---	EX CENTERLINE
---	EX LOT LINE
---	EX MAJOR CONTOURS
---	EX MINOR CONTOURS
---	EX ASPHALT
---	EX CONCRETE
---	EX CURBING
---	EX WOOD FENCE
---	EX SIGN
---	ASPHALT PAVEMENT
---	CONCRETE
---	BUILDING
---	LANDSCAPING
---	WOOD FENCE
---	WHEEL STOP
---	TREE
SD	STORM DRAINAGE PIPE
---	POND BOTTOM
---	RIP RAP PAD
DS	ROOF DOWNSPOUT
SDCO	STORM CLEANOUT
AD CB	AREA DRAIN / CATCH BASIN TYPE 1
---	FLOW ARROW/SLOPE ARROW
SSS	SANITARY SEWER LATERAL
---	SANITARY CLEANOUT
W	WATER SERVICE / FIRE LINE
---	WATER METER
---	IRRIGATION CONTROL VALVE
---	LIGHT POLE

#### GENERAL NOTES

- THE EXISTING CONTOURS SHOWN HEREON WERE OBTAINED VIA FIELD SURVEY COMPLETED IN MAY 2022.
- THE SITE GENERALLY SLOPES NORTHWESTERLY TOWARDS THE PROPOSED RETENTION BASIN.
- STORM RUNOFF GENERATED FROM THE PROPOSED DEVELOPMENT WILL BE CONVEYED AND CAPTURED IN THE RETENTION BASIN AS FOLLOWS:
  - DOWNSPOUTS FROM ROOF AREAS WILL BE DIRECTED TO LANDSCAPE AREAS OR STREETS.
  - LANDSCAPE AREAS WILL SHEET FLOW TO SWALES AND COLLECTED BY AREA DRAINS AND CARRIED TO THE RETENTION BASIN THROUGH UNDERGROUND PIPING.
  - FRONT YARDS, DRIVEWAYS, AND PORCHES WILL FLOW TO STREETS WHERE CURB AND GUTTER WILL CHANNEL THE FLOW TO CURB INLETS AT INTERSECTIONS AND LOW POINTS. UNDERGROUND PIPING INTERCONNECTING THE INLETS WILL DISCHARGE RUNOFF INTO THE RETENTION BASIN.
- PIPE AND RETENTION BASIN SIZING WAS PERFORMED USING THE RATIONAL METHOD ( $Q = C \cdot I \cdot A$ ) WHERE:
  - $Q$  = DESIGN FLOW IN CUBIC FEET PER SECOND (CFS)
  - $C$  = RUNOFF COEFFICIENT WHICH REPRESENTS THE PERCENT OF PRECIPITATION THAT WILL CONTRIBUTE AS RUNOFF.
  - $I$  = RAINFALL INTENSITY IN INCHES PER HOUR (IN/HR)
  - $A$  = DRAINAGE AREA IN ACRES
- THE 100 YEAR - 24 HOUR STORM EVENT WAS USED TO SIZE THE RETENTION BASIN AS SHOWN HEREON IN TABLE A. NO INFILTRATION WAS UTILIZED WHEN DETERMINING THE VOLUME REQUIRED TO RETAIN THE DESIGN STORM EVENT.
- STORM INTENSITIES USED IN THIS STUDY AREA ARE TAKEN FROM THE NATIONAL WEATHER SERVICE'S PRECIPITATION FREQUENCY DATA SERVER. INTENSITIES FOR THE 100 YEAR STORM ARE SHOWN IN TABLE A. **WHERE IS TABLE A?**
- A COMPREHENSIVE STORM DRAINAGE STUDY WILL BE PROVIDED AS PART OF THE FINAL PLAT SUBMITTAL.

THERE IS NO FINAL PLAT. THE SITE PLAN IS THE FINAL DOCUMENT FOR THIS DEVELOPMENT.



#### CITY ENGINEER APPROVAL

I CERTIFY THAT I HAVE EXAMINED THIS PLAT AND FIND IT TO BE IN GENERAL COMPLIANCE TO THE CITY STANDARDS

CITY ENGINEER

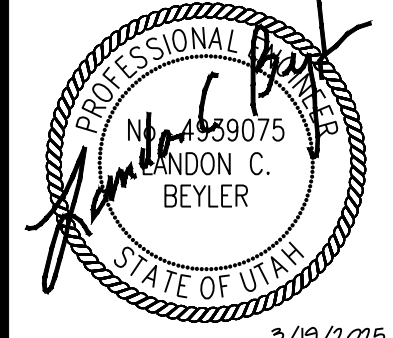
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STORM DRAINAGE AND UTILITY PLAN

HYRUM MARKET 1860

CIVIL IMPROVEMENT PLANS

WASHINGTON  
DATE: 3/19/2025  
SCALE: HORIZ: 1"=30'  
CHECKED: LCB  
DRAWN: EJM  
DESIGNED: LCB/EJM



JOB NUMBER

24.00160

SHEET

2 OF 10



Plan. Design. Manage

BRANDON C. BEYLER  
PROJECT MANAGER | PLANNING & FEASIBILITY  
PERMITTING SERVICES | CONSTRUCTION MANAGEMENT

CORPORATE OFFICE  
5920 10TH ST. SW, Ste #25  
Lakewood, WA 98499  
(253) 984-2900  
beylerconsulting.com

DATE

NO. DESCRIPTION

INIT



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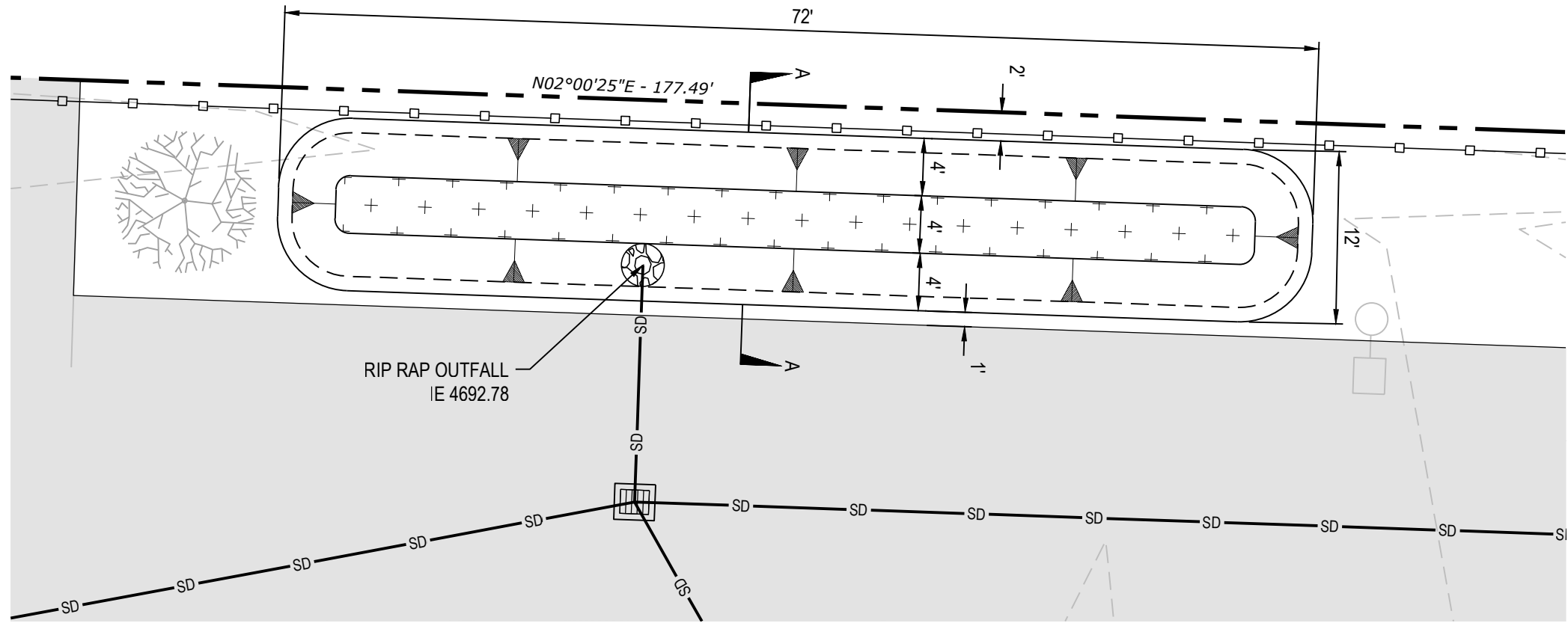
SECTION 03, TOWNSHIP 10 N., RANGE 01 E., S.L.B. & M.

# HYRUM MARKET 1860

## CIVIL IMPROVEMENT PLANS

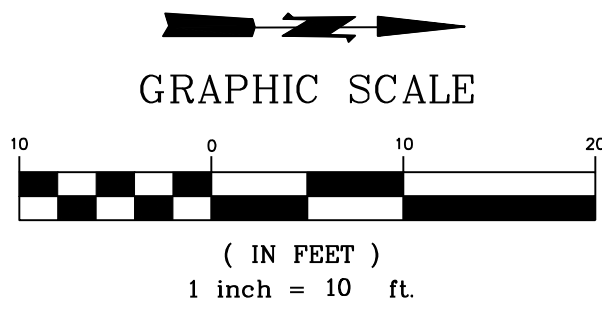
### PARCEL #'s 01-050-0023 & 01-050-0024

LEGEND	
	EX PROPERTY BOUNDARY
	EX MAJOR CONTOURS
	EX MINOR CONTOURS
	ASPHALT PAVEMENT
	WOOD FENCE
	TREE
	STORM DRAINAGE PIPE
	POND BOTTOM
	RIP RAP PAD
	CATCH BASIN TYPE 1



STORMWATER RETENTION POND A

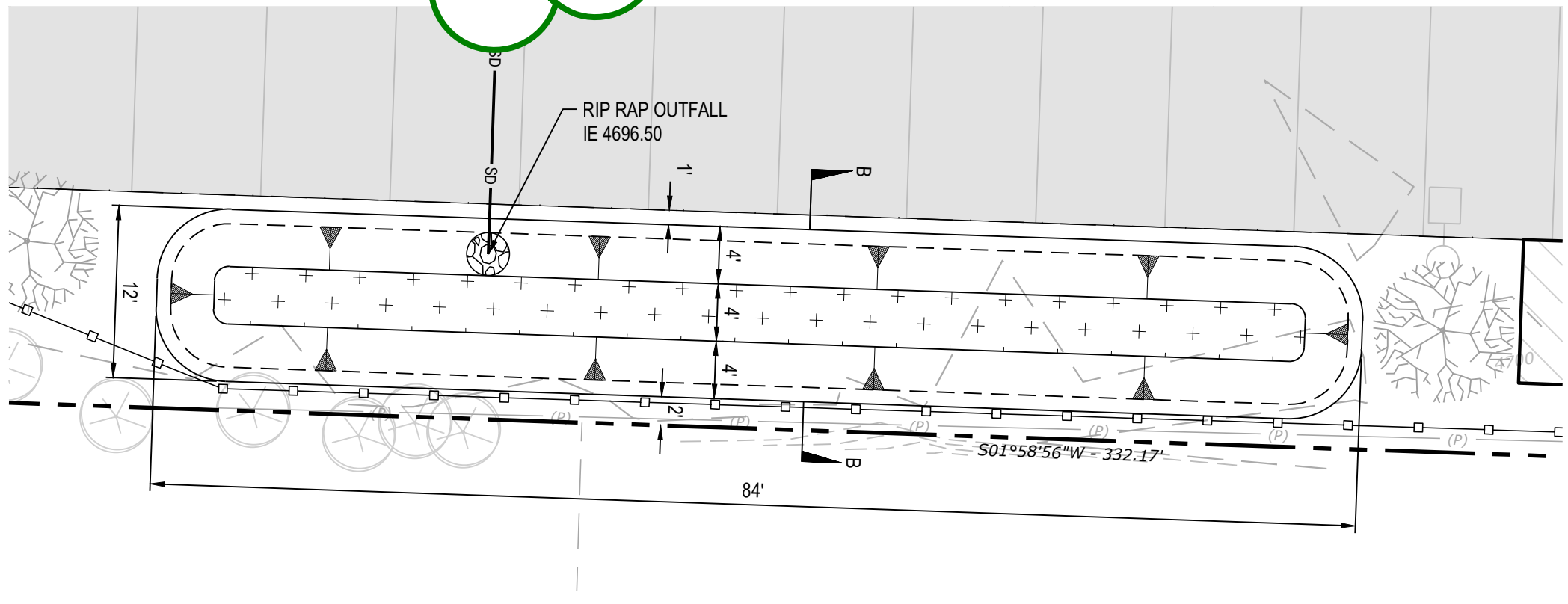
1"=10'



#### POND TABLE

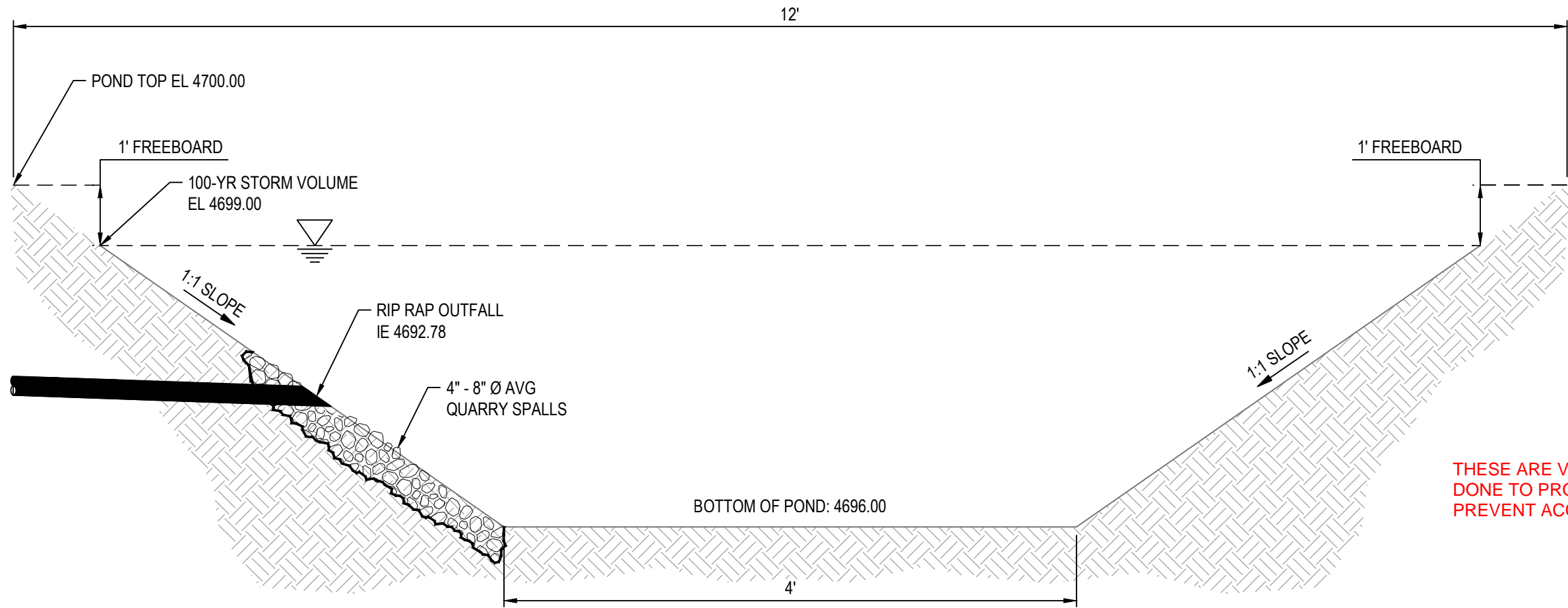
<b>RETENTION POND A:</b>
TOP OF POND = 4700.00
BOTTOM OF POND = 4696.00
REQUIRED VOLUME = (WEST DRAINAGE): 1,034 SF
PROVIDED VOLUME = (WEST DRAINAGE): 1,420 SF
<b>RETENTION POND B:</b>
TOP OF POND = 4697.00
BOTTOM OF POND = 4694.00
REQUIRED VOLUME = (EAST DRAINAGE): 1,667 SF
PROVIDED VOLUME = (EAST DRAINAGE): 1,672 SF

CUBIC FEET?



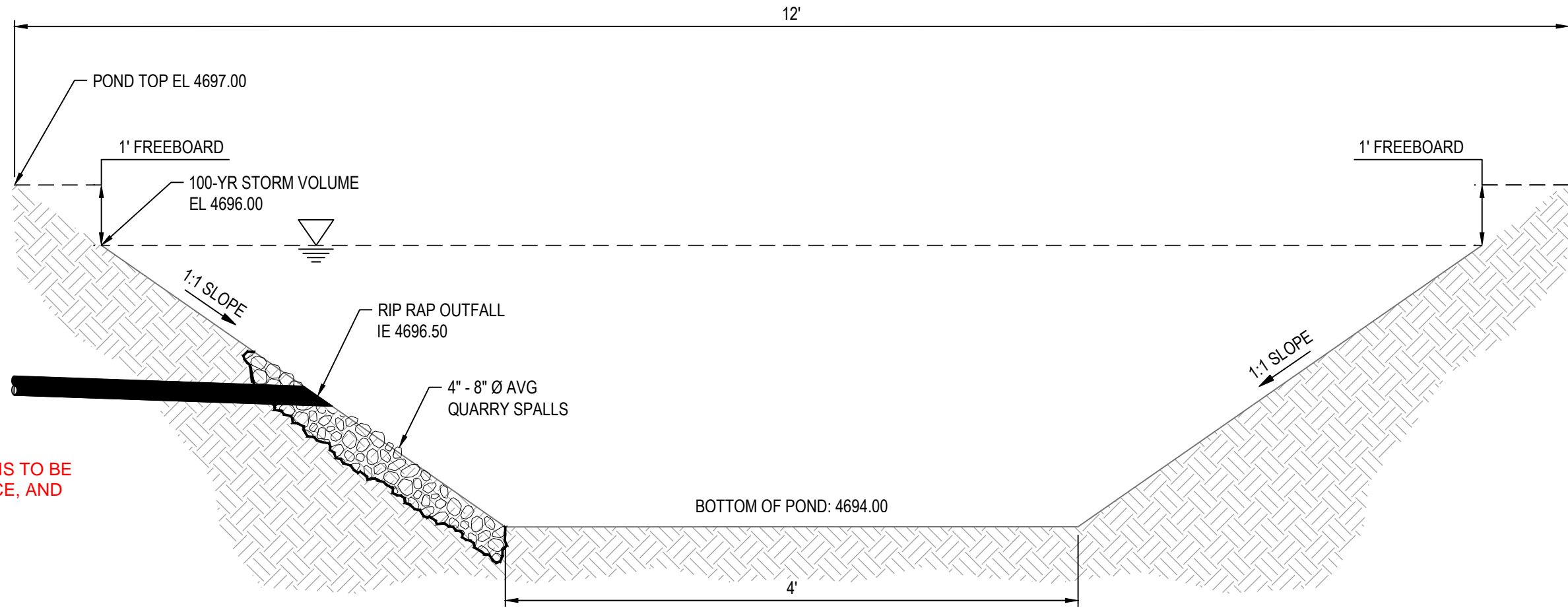
STORMWATER RETENTION POND B

1"=10'



1 STORMWATER RETENTION POND SECTION A-A

NTS



2 STORMWATER RETENTION POND SECTION B-B

NTS

THESE ARE VERY STEEP SIDES FOR PONDS. WHAT IS TO BE DONE TO PROTECT THE SIDES, ALLOW MAINTENANCE, AND PREVENT ACCIDENTAL ENTRY?

CITY COMMENTS SHOWN ON THIS PAGE  
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POND DETAILS & NOTES

HYRUM MARKET 1860

CIVIL IMPROVEMENT PLANS

HYRUM CITY

DESIGNED: LCB/EJM DRAWN: EJM CHECKED: LCB SCALE: HORZ: 1"=10' VERT: DATE: 3/19/2025

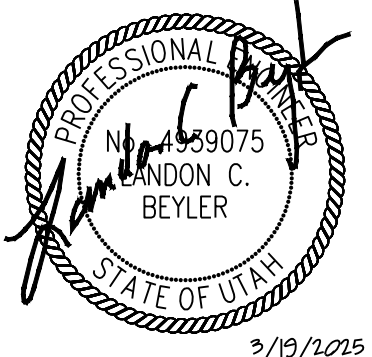
WASHINGTON



BEYLER  
CONSULTING  
Plan. Design. Manage

PROJECT MANAGEMENT | PLANNING & FEASIBILITY  
PERMITTING SERVICES | CONSTRUCTION MANAGEMENT

CORPORATE OFFICE  
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Lakewood, WA 98499  
(253) 984-2900  
beylerconsulting.com



3/19/2025

#### CITY ENGINEER APPROVAL

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GENERAL COMPLIANCE TO THE CITY STANDARDS

CITY ENGINEER

DATE

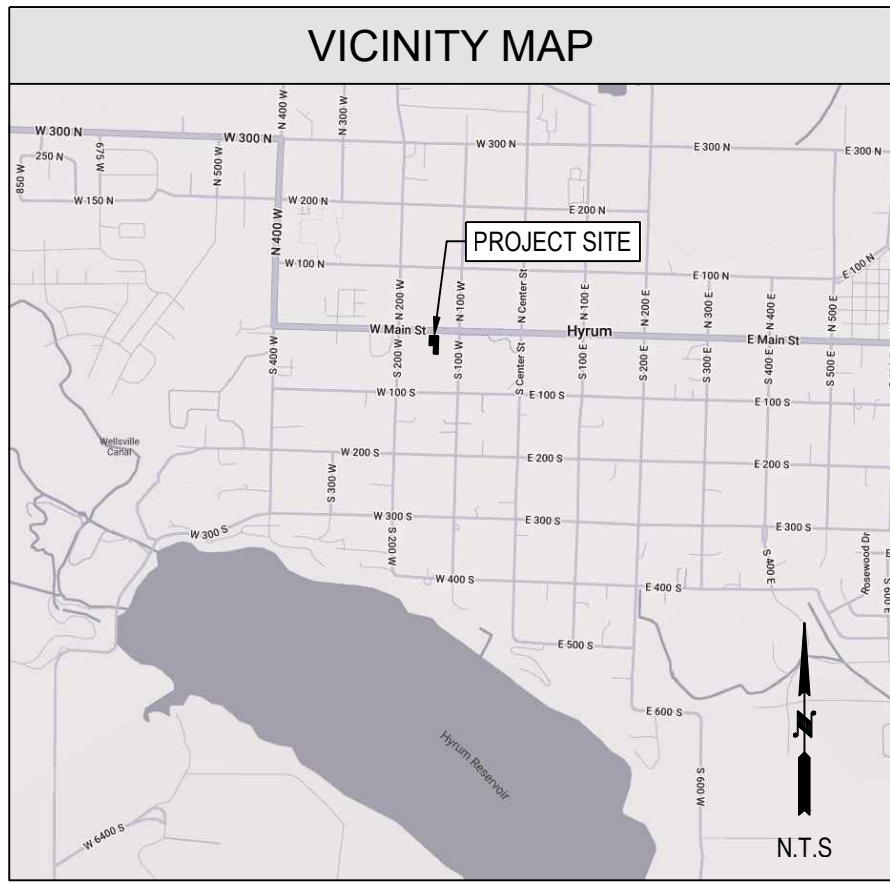
JOB NUMBER

24.00160

SHEET

3 OF 10





#### CIVIL ABBREVIATIONS

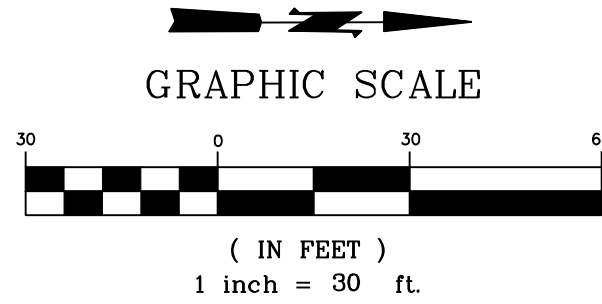
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SECTION 03, TOWNSHIP 10 N., RANGE 01 E., S.L.B. & M.

# HYRUM MARKET 1860

## CIVIL IMPROVEMENT PLANS

### PARCEL #'s 01-050-0023 & 01-050-0024



#### EXISTING UTILITIES

W	W	EX WATER LINE
+		EX METER
G		EX GAS LINE
P	P	EX U/G POWER LINE
(P)		EX OVERHEAD POWER LINE
COM		EX U/G COMMUNICATION LINE
*		EX LIGHT POLE
○		EX POWER POLE
SAN	SAN	EX SEWER PIPE
○		EX SANITARY MH/CO

#### LEGEND

---	EX PROPERTY BOUNDARY
---	EX RIGHT-OF-WAY
---	EX CENTERLINE
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#### PROJECT INFO

<b>CLIENT:</b> MARKET 1860 LLC	<b>ENGINEER:</b> BEYLER CONSULTING 5920 100TH ST SW, STE 25 LAKEWOOD, WA 98499 CONTACT: LANDON BEYLER, P.E. TEL: 253-984-2900
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#### UTILITIES

<b>WATER:</b> HYRUM CITY CULINARY WATER AUTHORITY
<b>SEWER:</b> GRAVITY HYRUM CITY SEWER AUTHORITY
<b>POWER:</b> HYRUM CITY POWER

#### IMPERVIOUS / PERVIOUS SITE AREAS

<b>EXISTING IMPERVIOUS ONSITE:</b> GRAVEL (PGHS)	1,060 SF (0.024 Ac)
<b>PROPOSED IMPERVIOUS ONSITE:</b> BUILDING #1 BUILDING #2 MAINTENANCE SHED TRASH ENCLOSURE ASPHALT ACCESS/PARKING LOT (PGHS) GRAVEL (PGHS) CONCRETE (PGHS) CONCRETE WALKWAY / HARDSCAPE TOTAL:	3,400 SF (0.078 Ac) 2,800 SF (0.064 Ac) 200 SF (0.005 Ac) 264 SF (0.006 Ac) 19,966 SF (0.458 Ac) 1,191 SF (0.027 Ac) 325 SF (0.007 Ac) 3,232 SF (0.074 Ac) 31,370 SF (0.720 Ac)
<b>TOTAL (PGHS) ONSITE:</b>	21,474 SF (0.493 Ac)
<b>PROPOSED PERVIOUS ONSITE:</b> LANDSCAPING	10,693 SF (0.245 Ac)
<b>PROPOSED IMPERVIOUS OFFSITE:</b> ASPHALT ACCESS (PGHS) ASPHALT UTILITY TRENCHING (PGHS) CONCRETE DRIVEWAY APPROACH (PGHS) CONCRETE CURBING (PGHS) CONCRETE SIDEWALK CONCRETE FOOT BRIDGES CONCRETE WALKWAY / HARDSCAPE TOTAL:	37 SF (0.001 Ac) 371 SF (0.008 Ac) 1,056 SF (0.024 Ac) 229 SF (0.005 Ac) 197 SF (0.004 Ac) 60 SF (0.001 Ac) 31 SF (0.001 Ac) 1,981 SF (0.045 Ac)
<b>TOTAL (PGHS) OFFSITE:</b>	1,693 SF (0.039 Ac)
<b>PROPOSED PERVIOUS OFFSITE:</b> PAVERS	212 SF (0.005 Ac)
<b>TOTAL PROPOSED IMPERVIOUS:</b> <b>TOTAL PROPOSED (PGHS):</b>	33,351 SF (0.765 Ac) 23,167 SF (0.532 Ac)

#### SHEET INDEX

- COVER SHEET / SITE PLAN
- STORM DRAINAGE AND UTILITY PLAN
- STORM INFILTRATION TRENCH PLAN, DETAILS/NOTES
- NOTES AND DETAILS SHEET 1
- NOTES AND DETAILS SHEET 2
- NOTES AND DETAILS SHEET 3
- NOTES AND DETAILS SHEET 4
- NOTES AND DETAILS SHEET 5
- NOTES AND DETAILS SHEET 6
- NOTES AND DETAILS SHEET 7

#### BUILDING INFORMATION

2 - 40'X70' 2-STORY WOOD FRAME STRUCTURES.  
MAIN FLOOR RETAIL.  
UPPER FLOOR SHORT TERM RENTAL UNITS  
1 - 10'X20' MAINTENANCE SHEDS  
34' MAX BUILDING HEIGHT

#### SITE DATA

**PARCEL NUMBER(S):**  
PIN 01-050-0023  
ANDREA NIELSEN  
3788 ECKER HILL DR.  
PARK CITY, UT 84098

**PIN 01-050-0024**  
JOHN & VIRGINIA FRANCIS  
450 W 2000 N  
MAPLETON, UT 84664

**SITE ADDRESS:**  
127 WEST MAIN STREET, HYRUM, UT

**PROPERTY AREA:**  
PIN 01-050-0023 = 0.34 Ac (14,640 SF)  
PIN 01-050-0024 = 0.63 Ac (27,423 SF)  
TOTAL: 0.97 Ac (42,063 SF)

**ZONING:**  
C-2 OVERLAY  
15 FT SIDE SETBACKS AGAINST RESIDENTIAL  
NO SETBACKS REQUIRED.

**PARKING:**  
STANDARD PARKING: 46 STALLS  
ADA PARKING: 3 STALLS  
TOTAL: 49 STALLS

#### CITY ENGINEER APPROVAL

I CERTIFY THAT I HAVE EXAMINED THIS PLAT AND FIND IT TO BE IN GENERAL COMPLIANCE TO THE CITY STANDARDS

CITY ENGINEER

DATE

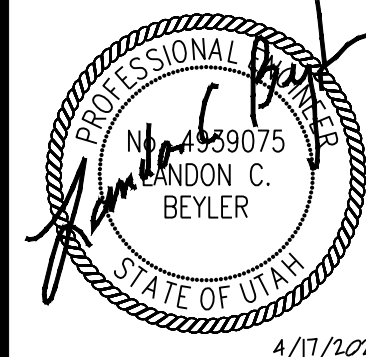
COVER SHEET / SITE PLAN

HYRUM MARKET 1860

CIVIL IMPROVEMENT PLANS

HYRUM CITY

DESIGNED: LCB/EJM DRAWN: EJM CHECKED: LCB SCALE: HORIZ: 1"=30' VERT: 4/17/2025



JOB NUMBER

24.00160

SHEET











1 OF 10

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Plan. Design. Manage  
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Lakewood, WA 98499  
(253) 984-2900  
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## EXISTING UTILITIES

	EX WATER LINE
	EX METER
	EX GAS LINE
	EX U/G POWER LINE
	EX OVERHEAD POWER LINE
	EX U/G COMMUNICATION LINE
	EX LIGHT POLE
	EX POWER POLE
	EX SEWER PIPE
	EX SANITARY MH/CO

	EX PROPERTY BOUNDARY
	EX RIGHT-OF-WAY
	EX CENTERLINE
	EX LOT LINE
	EX MAJOR CONTOURS
	EX MINOR CONTOURS
	EX ASPHALT
	EX CONCRETE
	EX CURBING
	EX WOOD FENCE
	EX SIGN
	ASPHALT PAVEMENT
	CONCRETE
	BUILDING
	LANDSCAPING
	WOOD FENCE
	WHEEL STOP
	TREE
	STORM DRAINAGE PIPE
	ROOF DRAINS
	INFILTRATION TRENCH
	ROOF DOWNSPOUT
	STORM CLEANOUT
	AREA DRAIN / CATCH BASIN TYPE 1
	AREA DRAIN / CATCH BASIN TYPE 2
	FLOW ARROW/SLOPE ARROW
	SANITARY SEWER LATERAL
	SANITARY CLEANOUT
	WATER SERVICE / FIRE LINE
	WATER METER
	IRRIGATION CONTROL VALVE
	LIGHT POLE

1. THE EXISTING CONTOURS SHOWN HEREON WERE OBTAINED VIA FIELD SURVEY COMPLETED IN MAY 2022.
2. THE SITE GENERALLY SLOPES NORTHWESTERLY TOWARDS THE PROPOSED RETENTION BASIN.
3. STORM RUNOFF GENERATED FROM THE PROPOSED DEVELOPMENT WILL BE CONVEYED AND CAPTURED IN THE RETENTION BASIN AS FOLLOWS:

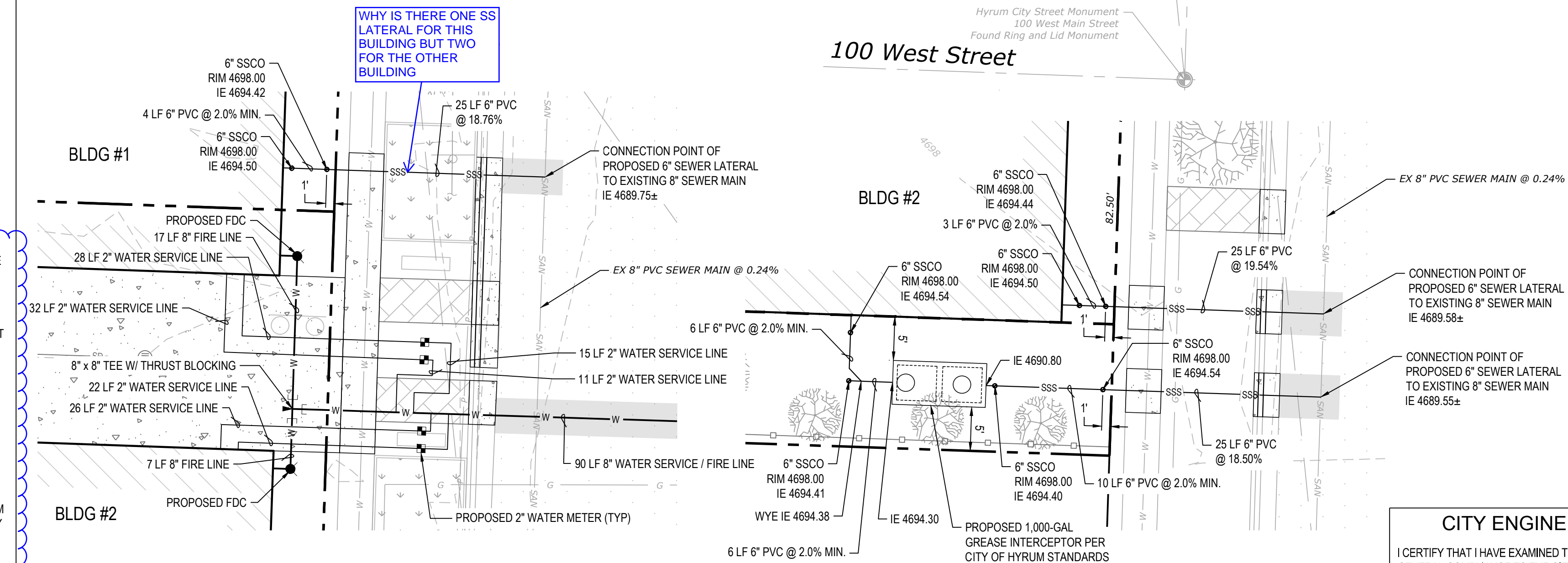
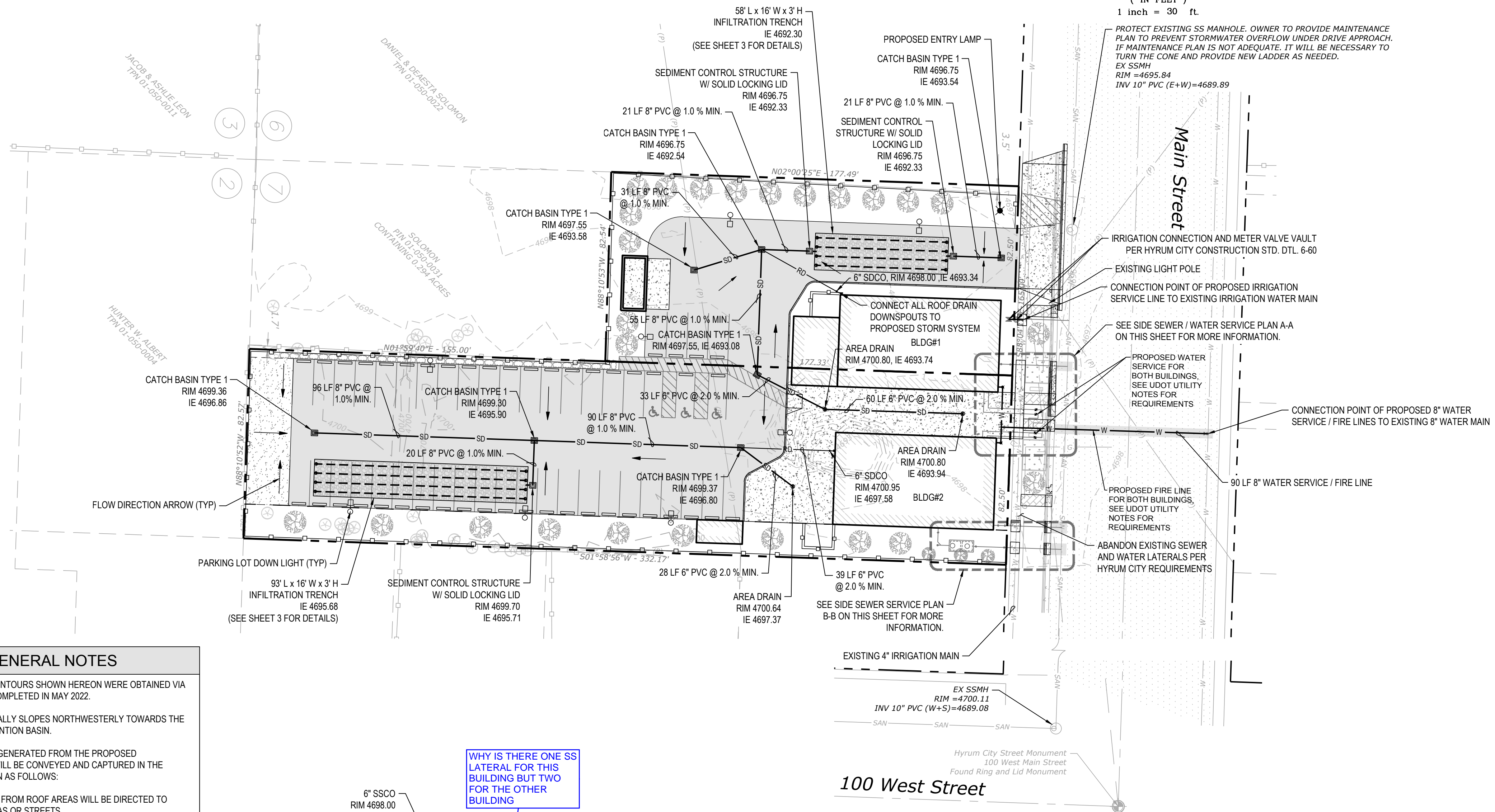
- A. DOWNSPOUTS FROM ROOF AREAS WILL BE DIRECTED TO LANDSCAPE AREAS OR STREETS.
- B. LANDSCAPE AREAS WILL SHEET FLOW TO SWALES AND COLLECTED BY AREA DRAINS AND CARRIED TO THE RETENTION BASIN THROUGH UNDERGROUND PIPING.
- C. FRONT YARDS, DRIVEWAYS, AND PORCHES WILL FLOW TO STREETS WHERE CURB AND GUTTER WILL CHANNEL THE FLOW TO CURB INLETS AT INTERSECTIONS AND LOW POINTS. UNDERGROUND PIPING INTERCONNECTING THE INLETS WILL DISCHARGE RUNOFF INTO THE RETENTION BASIN.

4. PIPE AND RETENTION BASIN SIZING WAS PERFORMED USING THE RATIONAL METHOD ( $Q = C \cdot I \cdot A$ ) WHERE:
- A. Q = DESIGN FLOW IN CUBIC FEET PER SECOND (CFS)
  - B. C = RUNOFF COEFFICIENT WHICH REPRESENTS THE PERCENT OF PRECIPITATION THAT WILL CONTRIBUTE AS RUNOFF.
  - C. I = RAINFALL INTENSITY IN INCHES PER HOUR (IN/HR)
  - D. A = DRAINAGE AREA IN ACRES

5. THE 100 YEAR - 24 HOUR STORM EVENT WAS USED TO SIZE THE RETENTION BASIN AS SHOWN HEREON IN TABLE A. NO INFILTRATION WAS UTILIZED WHEN DETERMINING THE VOLUME REQUIRED TO RETAIN THE DESIGN STORM EVENT.
6. STORM INTENSITIES USED IN THIS STUDY AREA ARE TAKEN FROM THE NATIONAL WEATHER SERVICE'S PRECIPITATION FREQUENCY DATA SERVER. INTENSITIES FOR THE 100 YEAR STORM ARE SHOWN IN THE DRAINAGE REPORT ASSOCIATED WITH THIS PROJECT.

7. A COMPREHENSIVE STORM DRAINAGE STUDY WILL BE PROVIDED AS PART OF THE FINAL SITE PLAN SUBMITTAL.

WHAT INFORMATION DID YOU USE? WHAT INTENSITY WAS DETERMINED? WHAT WAS THE TOTAL VOLUME TO BE RETAINED? WHAT ARE THE INFILTRATION RATES? THIS IS THE FINAL SITE PLAN SUBMITTAL.



I CERTIFY THAT I HAVE EXAMINED THIS PLAT AND FIND IT TO BE IN  
GENERAL COMPLIANCE TO THE CITY STANDARDS

CITY ENGINEER

DATE \_\_\_\_\_

NO.	DESCRIPTION	INIT	DATE

**CORPORATE OFFICE**  
5920 100th St SW, Ste #25  
Lakewood, WA 98499  
(253) 984-2900  
[beylerconsulting.com](http://beylerconsulting.com)



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PROJECT MANAGEMENT | PLANNING & FEASIBILITY  
PERMITTING SERVICES | CONSTRUCTION MANAGEMENT

<p>HYRUM CITY</p> <p>HYRUM MARKET 1860</p> <p>CIVIL IMPROVEMENT PLANS</p>	<p>DESIGNED: LCB/EJM</p> <p>DRAWN: LCB/EJM</p> <p>CHECKED: LCB</p> <p>SCALE: HORIZ. 1"=30'</p>	<p>DATE: 4/17/2025</p>
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JOB NUMBER

24.00160

SHEET

2 OF 10



CAD FILE: C:\AutoCAD\AutoCAD Standards\Box6C Data\Projects\_2024\Projects\01-050-0023\Hyrum Market 1860\Hyrum Market 1860\Hyrum Market 1860.dwg PLOT DATE/TIME: 4/17/2025 6:22 PM

LEGEND

EX PROPERTY BOUNDARY

EX MAJOR CONTOURS

EX MINOR CONTOURS

ASPHALT PAVEMENT

WOOD FENCE

TREE

SD

SD

STORM DRAINAGE PIPE

RD

RD

ROOF DRAINS

INFILTRATION TRENCH

CS

CATCH BASIN TYPE 1

SECTION 03, TOWNSHIP 10 N., RANGE 01 E., S.L.B. & M.

HYRUM MARKET 1860

CIVIL IMPROVEMENT PLANS

PARCEL #'s 01-050-0023 & 01-050-0024

NOTES:

- PERFORATED PVC UNDERDRAIN PIPE SHALL MEET WSDOT SPECIFICATION 9-05.2(6).
- PIPE PERFORATIONS SHALL BE CIRCULAR AND A MINIMUM OF 1/2 INCH IN DIAMETER. THEY SHALL BE CLEANLY CUT AND BE SMOOTH AND UNIFORM. THERE SHALL BE A MINIMUM OF 7 SETS OF PERFORATIONS WITH 2 HOLES PER SET OF PERFORATIONS FOR EACH 3-1/2 FEET OF PIPE LENGTH.

1 STORM INFILTRATION TRENCH SECTION A-A

NTS

ARE THE ENDS CAPPED OR DO THEY CONNECT TO THE INLETS? HOW DOES THE STORM WATER FEED TO THE SUMP? HOW IS SEDIMENT CAPTURED TO PROVIDE LONGEVITY OF THE SYSTEM?

QUICK CALCULATIONS

$$\begin{aligned} 6676 \times 0.4 &= 2,670.4 \\ 6795 - 119 &= 6,676 \\ 151 \times 3 \times 15 &= 6,795 \\ 0.785375 \times 151 &= 118.591625 \\ 0.5 \times 0.5 \times 3.1415 &= 0.785375 \end{aligned}$$

NOTES:

- PERFORATED PVC UNDERDRAIN PIPE SHALL MEET WSDOT SPECIFICATION 9-05.2(6).
- PIPE PERFORATIONS SHALL BE CIRCULAR AND A MINIMUM OF 1/2 INCH IN DIAMETER. THEY SHALL BE CLEANLY CUT AND BE SMOOTH AND UNIFORM. THERE SHALL BE A MINIMUM OF 7 SETS OF PERFORATIONS WITH 2 HOLES PER SET OF PERFORATIONS FOR EACH 3-1/2 FEET OF PIPE LENGTH.

2 STORM INFILTRATION TRENCH SECTION B-B

NTS

CITY ENGINEER APPROVAL

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CITY ENGINEER

DATE

STORM INFILTRATION TRENCH PLAN, DETAILS/NOTES

HYRUM MARKET 1860

CIVIL IMPROVEMENT PLANS

HYRUM CITY

DESIGNED: LCB/EJM

CHECKED: LCB

SCALE: HORIZ: 1"=10' VERT: 1"=10'

DATE: 4/17/2025

UTAH

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3 OF 10



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SECTION 03, TOWNSHIP 10 N., RANGE 01 E., S.L.B. & M.

# HYRUM MARKET 1860

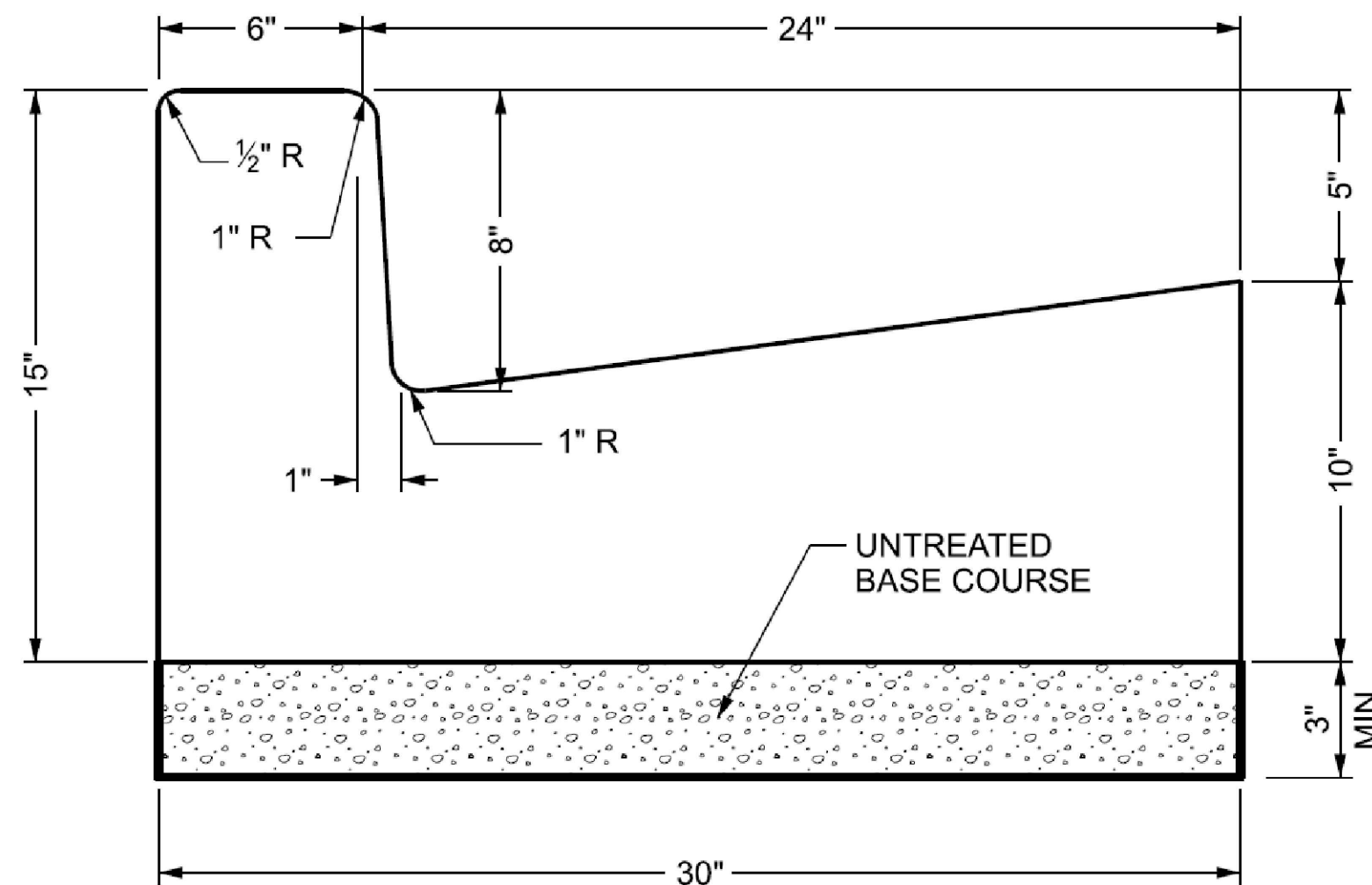
## CIVIL IMPROVEMENT PLANS

### PARCEL #'s 01-050-0023 & 01-050-0024



#### PIPED DRIVEWAY APPROACH

1. UNTREATED BASE COURSE: Provide material specified in APWA Section 32 11 23.  
A. Do not use gravel as a substitute for untreated base course without ENGINEER's permission.  
B. Place material per APWA Section 32 05 10.  
C. Compact per APWA Section 31 23 26 to a modified proctor density of 95 percent or greater. Maximum lift thickness before compaction is 8 inches when using riding compaction equipment or 6 inches when using hand held compaction equipment.
2. CONCRETE: Class 4000 per APWA Section 03 30 04.  
A. If necessary, provide concrete that achieves design strength in less than 7 days. Use caution; however, as concrete crazing (spider cracks) may develop if air temperature exceeds 90 degrees F.  
B. Place concrete per APWA Section 03 30 10.  
C. Provide 1/2 inch radius on concrete edges exposed to public view.  
D. Cure concrete per APWA Section 03 39 00 with type ID Class A or B (clear with fugitive dye) membrane forming compound unless specified otherwise.
3. EXPANSION JOINT: Make expansion joints vertical, full depth 1/2 inch wide with type F1 joint filler material per APWA Section 32 13 73. Set top of filler flush with surface of concrete.
4. CONTRACTION JOINT: Make contraction joints vertical.  
A. 1/8 inch wide and 2 inches deep or 1/4 slab thickness if slab is greater than 8 inches thick.  
B. Maximum length to width ratio for non-square panels is 1.5 to 1.  
C. Maximum panel length (in feet) is .25 times the slab thickness (in inches) to a maximum of 15 feet.
5. REINFORCEMENT: ASTM A 615, grade 60, galvanized or epoxy coated deformed steel. See APWA Section 03 20 00 requirements . Not required if driveway ramp is constructed without a cold joint.
6. FIELD CHANGES TO SLOPE REQUIREMENTS: The following design parameters are to be used as a guide. Specific uses or site conditions may require profile design submittal for review and acceptance.  
A. As a rule, driveway grades may have a 6 percent change in slope over a 11 feet wheel base run for both crest or sag vertical curves.  
B. Where heavy truck use and fire truck access applies, or to improve design speed, design grades should be cut in half.  
C. Grades subject to roadway crown and gutter span to be reviewed by ENGINEER for high centering and vehicle approach speed.
7. FINISH: Broomed.
- 8 PROTECTION AND REPAIR:  
A. Fill flow-line with water. Repair construction that doesn't drain.  
B. Protect concrete from deicing chemicals during cure period.



#### TYPE B2 CURB & GUTTER

AREA = 2.059 SQ FT

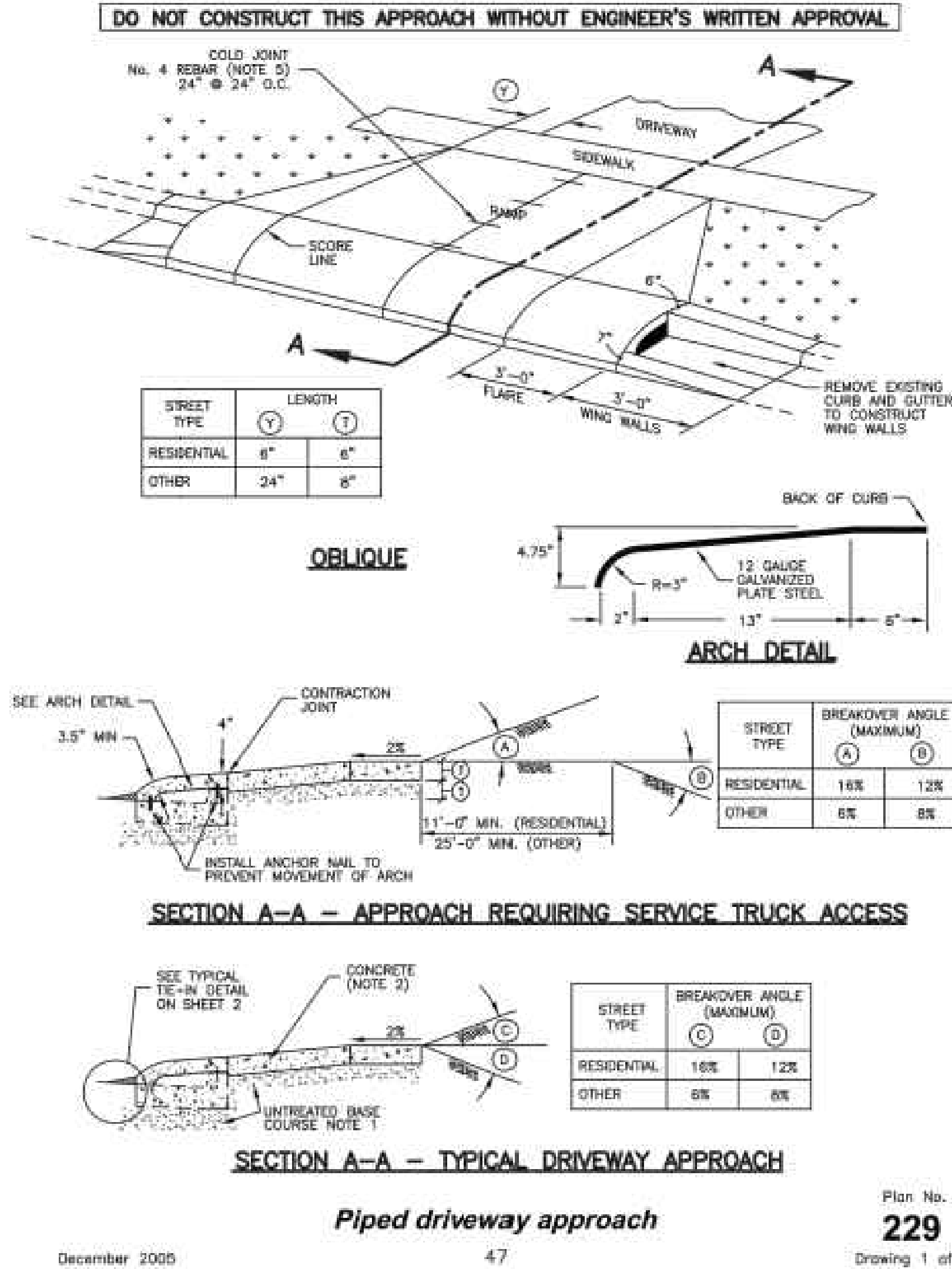
#### NOTES:

1. USE 3/4 INCH DEFORMED DOWELS ON 5 FT MAXIMUM CENTERS.
2. PRECAST CURBS:  
A. MINIMUM OF 10 FT IN LENGTH.  
B. DOWELS AT A MINIMUM OF 3 PER 10 FT LENGTH.  
C. INCLUDE ADEQUATE REINFORCING STEEL TO WITHSTAND HANDLING STRESSES.
3. MEASURE CURB HEIGHT VERTICALLY FROM THE FLOW LINE OF THE GUTTER TO TOP BACK OF CURB.
4. REFER TO STD DWG GW 2B FOR CURB AND GUTTER AT ADA ACCESSSES.

#### PIPED DRIVEWAY APPROACH

1. ASPHALT CONCRETE: As specified in APWA Section 32 12 05. Compaction to be within range of 92 to 96 percent relative to ASTM D 2041 (Rice Method).
2. CONCRETE: Class 4000 per APWA Section 03 30 04.  
A. If necessary, provide concrete that achieves design strength in less than 7 days.  
Use caution; however, as concrete crazing (spider cracks) may develop if air temperature exceeds 90 degrees F.  
B. Place concrete per APWA Section 03 30 10.  
C. Provide 1/2 inch radius on concrete edges exposed to public view.  
D. Cure concrete per APWA Section 03 39 00 with type ID Class A or B (clear with fugitive dye) membrane forming compound unless specified otherwise.
3. REINFORCEMENT: ASTM A 615, grade 60, galvanized or epoxy coated deformed steel. See APWA Section 03 20 00 requirements.

GENERAL NOTES (APPLICABLE TO ALL CIVIL SHEETS)			
1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, CITY OF HYRUM STANDARDS, STATE OF UTAH AND ANY OTHER APPLICABLE STANDARDS ISSUED BY THE CONTROLLING AGENCY. CONTRACTOR AND DEVELOPER ARE TO FAMILIARIZE THEMSELVES WITH THE STANDARDS.	6. CONTRACTOR SHALL PROVIDE ALL NECESSARY AUTOMOBILE AND PEDESTRIAN TRAFFIC CONTROL DEVICES REQUIRED BY LOCAL, STATE AND FEDERAL CODES AND ORDINANCES.	12. CONTRACTOR IS REQUIRED TO HAVE A SET OF PLANS ON THE SITE AT ALL TIMES. ANY WORK COMPLETED WITHOUT A SET PRESENT IS DONE SO AT THE CONTRACTORS RISK AND EXPENSE IF ERRORS OCCUR.	22. CONTRACTOR SHALL PROVIDE ALL NECESSARY FITTINGS, HARDWARE, LABOR, ETC TO CONSTRUCT VERTICAL AND HORIZONTAL BENDS IN PIPE AS NEEDED TO MEET THE REQUIRED GRADES, ALIGNMENTS AND COVER REQUIREMENTS.
2. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS BEFORE CONSTRUCTION. ANY DISCREPANCIES BETWEEN CONSTRUCTION DOCUMENTS AND FIELD CONDITIONS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE OWNER. ANY WORK DONE WITHOUT VERIFICATION IS DONE SO AT THE CONTRACTORS RISK AND EXPENSE IF ERRORS OCCUR.	7. CONTRACTOR SHALL REPLACE SURVEY MONUMENTS DAMAGED DURING CONSTRUCTION. SURVEY MONUMENTS TO BE REPLACED BY A REGISTERED, LICENSED LAND SURVEYOR.	13. CONTRACTOR IS RESPONSIBLE FOR PROVIDING WATER NECESSARY FOR DUST ABATEMENT, COMPACTION, ETC. THIS MAY BE COORDINATED WITH HYRUM WATER DEPARTMENT.	23. THE CONTRACTOR SHALL COORDINATE WITH THE CITY OF HYRUM FOR ALL UTILITY INSPECTIONS PRIOR TO BACKFILLING. NOTICE MUST BE GIVEN TO CITY 48 HOURS PRIOR TO INSPECTION.
3. CONTRACTOR SHALL REPAIR AND/OR REPLACE ANY AREAS AND/OR MATERIALS DAMAGED DURING CONSTRUCTION.	8. CONTRACTOR TO LOCATE ALL EXISTING UTILITIES, INCLUDING FIBER OPTIC. ANY DAMAGES TO EXISTING UTILITIES WILL BE REPAIRED AT CONTRACTORS EXPENSE.	14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING SOURCES FOR GRANULAR MATERIALS, WATER, WASTE SITES, AND ANY OTHER MATERIALS SOURCES AS REQUIRED FOR PROJECT COMPLETION.	24. ALL WATER SYSTEM COMPONENTS SHALL BE INSTALLED, PRESSURE TESTED, AND CHLORINATED PRIOR TO COMPLETING ANY ROADWAY CONSTRUCTION.
4. CONTRACTOR SHALL MAINTAIN ALL ADJACENT PROPERTY (PUBLIC AND PRIVATE) FROM ALL CONSTRUCTION DEBRIS.	9. DIMENSIONS SHOWN ARE TO THE CENTER OF THE PIPELINE UNLESS OTHERWISE NOTED.	15. ANY WORK DONE WITHIN A PUBLIC RIGHT-OF-WAY SHALL BE COORDINATED WITH THE APPROPRIATE TRANSPORTATION AGENCY AND SHALL MEET THAT AGENCY AND THE REQUIREMENTS OF ANY RIGHT-OF-WAY OR SPECIAL USE PERMITS.	25. ONE MYLAR AND ONE PAPER SET OF AS-BUILTS SHALL BE SUBMITTED TO THE CITY UPON COMPLETION OF PUBLIC IMPROVEMENTS. A DIGITAL COPY OF THE DRAWINGS WILL ALSO BE REQUIRED FOR GIS LINEWORK. AS BUILT PLANS WILL BE REQUIRED TO BE SUBMITTED TO THE CITY BEFORE WARRANTY BONDS SHALL BE RELEASED.
5. CONTRACTOR SHALL PROVIDE SMOOTH TRANSITION FROM ALL NEW CONSTRUCTION TO EXISTING CONDITIONS.	10. DISTANCES SHOWN ALONG PIPELINES ARE HORIZONTAL DISTANCE AND NOT ACTUAL PIPE LENGTHS. MORE PIPE MAY BE REQUIRED TO COMPLETE CONSTRUCTION THAN IS DIMENSIONED IN THE PLANS.	16. THE CONTRACTOR SHALL COORDINATE ALL LIVE TAPS AND ANY OTHER WORK OR MANIPULATION OF THE EXISTING WATER SYSTEM WITH THE CITY.	
	11. THRUST BLOCKS SHALL BE PLACED ON WATERLINES AT ALL DIRECTIONAL CHANGES, FITTINGS, BENDS, ELBOWS, FIRE HYDRANTS AND GATE VALVES AS SHOWN IN THE PROJECT PLANS.	17. ON SLOPING AREAS THE CONTRACTOR SHALL TAKE PRECAUTIONS TO MITIGATE ANY POSSIBLE EROSION PROBLEMS IN THE TRENCHES DUE TO STORM WATER THAT MIGHT OCCUR DURING OR AFTER CONSTRUCTION AS DIRECTED OR APPROVED BY ENGINEER.	
		18. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ALL EROSION CONTROL MEASURES AS DETAILED IN THE PROJECT PLANS UNTIL FINAL ACCEPTANCE OF THIS PROJECT.	
		19. THE CONTRACTOR IS REQUIRED TO TAKE ALL PRECAUTIONS NECESSARY TO INSURE THAT NO STORM WATER/SEDIMENT AND/OR CONSTRUCTION DEBRIS ARE RELEASED FROM THE SITE. ANY RELEASES SHALL BE CLEANED AND MITIGATED AT THE CONTRACTOR'S EXPENSE.	
		20. CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACCESS AND RELATED TRAFFIC CONTROL WITH THE COUNTY, CITY AND STATE ROADWAY DEPARTMENTS. THE ENGINEER SHALL REVIEW ALL TRAFFIC CONTROL PLANS.	
		21. ALL GATE VALVES SHALL BE LOCATED NEAR TO TEES OR CROSSES AND THEIR ASSOCIATED REDUCERS AS SHOWN ON THE PROJECT PLANS.	



Piped driveway approach

December 2005

47

Plan No.  
229

Drawing 1 of 2

January 2005

Piped driveway approach

Plan No.  
229

Drawing 2 of 2

#### CITY ENGINEER APPROVAL

I CERTIFY THAT I HAVE EXAMINED THIS PLAT AND FIND IT TO BE IN GENERAL COMPLIANCE TO THE CITY STANDARDS

CITY ENGINEER

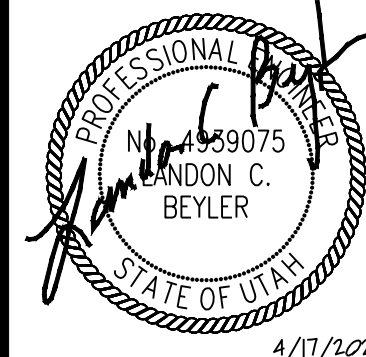
DATE

NOTES AND DETAILS SHEET 1

HYRUM MARKET 1860

CIVIL IMPROVEMENT PLANS

UTAH  
HYRUM CITY  
DESIGNED: LCB/EJM  
DRAWN: EJM  
CHECKED: LCB  
SCALE: LCB  
VERT: VERT  
DATE: 4/17/2025



JOB NUMBER

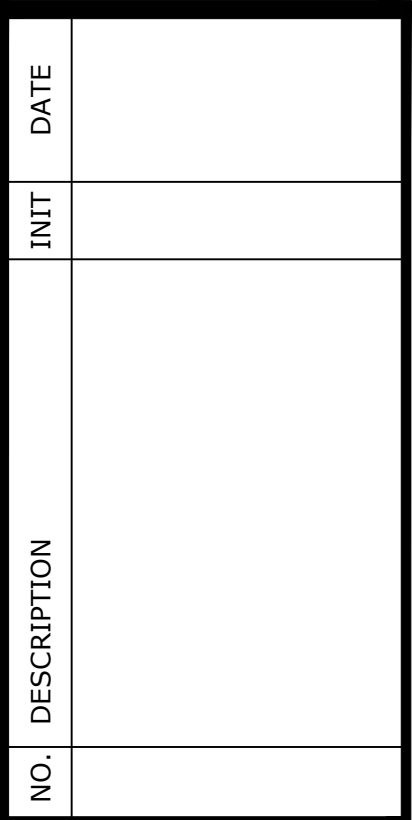
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4 OF 10

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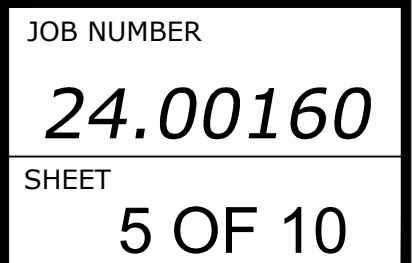
NOTES AND DETAILS SHEET 2

# HYRUM MARKET 1860

CIVIL IMPROVEMENT PLANS

<b>HYRUM CITY</b>	<b>DRAWN:</b> LCB/EJM	<b>CHECKED:</b> LCB	<b>SCALE:</b> <b>HORZ:</b>	<b>VERT:</b>	<b>DATE:</b> 4/17/2025
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UTAH





CAD FILE: C:\AutoCAD\AutoCAD Standards\Box6C Data\Projects\_2024\Projects\01-050\Hyrum Market 1860\Civil Engineering\Drawings\01-050-Hyrum Market 1860.dwg PLOT DATE/TIME: 4/17/2025 6:32 PM

SECTION 03, TOWNSHIP 10 N., RANGE 01 E., S.L.B. & M.

# HYRUM MARKET 1860

## CIVIL IMPROVEMENT PLANS

### PARCEL #'s 01-050-0023 & 01-050-0024



- a. Remove snow and frozen material and furnish specified materials that can be compacted to the specified density.
- 1) Measure removed material and provide quantities to the Engineer.
  - 2) The Department does not pay for removed material or material replacement when it would otherwise meet specification requirements if unfrozen.
2. Do not deliver or use frozen material.
- C. Use appropriate compaction equipment adjacent to pipes, abutments, back walls, approach slabs, wing walls, retaining walls, and other structures.
1. Expand the width of the trench to accommodate necessary compaction equipment.
  2. Compact by hand areas where compaction equipment cannot compact the soil.
- D. Compaction Requirements
1. Borrow, Drainage Pipe Bedding, Embankment Material, Embankment for Bridge, Granular Backfill Borrow and Granular Borrow
    - a. Compact each lift to a minimum average of 96 percent of maximum laboratory density with no single determination lower than 92 percent.
      - 1) Use AASHTO T 180 Method D for A-1 soils and AASHTO T 99 Method D for all other soils to establish maximum laboratory density.
      - 2) Maintain appropriate moisture for compaction during processing.
    2. Drainage Pipe Backfill
      - a. Compact each lift to a minimum average of 92 percent maximum laboratory density with no single determination less than 90 percent.
        - 1) Use AASHTO T 180 Method D for A-1 soils.
        - 2) Maintain appropriate moisture for compaction during processing.
      - b. Meet the pavement section material density requirement for pipes that encroach into the pavement section or use flowable fill.
    3. Material with more than 30 percent retained on the ¾ inch sieve
      - a. Compact each lift to 100 percent of the developed field density.
        - 1) The Department develops a field density compaction curve according to UDOT Materials Manual of Instruction Section 989.

Embankment, Borrow, and Backfill  
02056 – Page 5 of 8  
2025 Standard Specifications  
Latest Revision: [September 14, 2023](#)

#### SECTION 02705

##### CONCRETE AND ASPHALT CUTTING

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Saw or cut existing pavements, curb and gutter, sidewalk, and any appurtenances as required to provide a smooth surface to match.
- B. Does not apply to new Portland cement concrete pavement (PCCP) joint sawing. Refer to Section 02752.

##### 1.2 RELATED SECTIONS

- A. Section 02748: Prime Coat/Tack Coat
- B. Section 02752: Portland Cement Concrete Pavement

##### 1.3 REFERENCES Not Used

##### 1.4 DEFINITIONS Not Used

##### 1.5 SUBMITTALS Not Used

#### PART 2 PRODUCTS Not Used

#### PART 3 EXECUTION

##### 3.1 PROCEDURE – CONCRETE SURFACES

- A. Saw cut vertically in a straight line through the full depth of the surface.
- B. Make cuts so the defective surface can be removed where the edge of the existing surface is cracked, broken, or deteriorated.
  1. Verify that the entire deficient areas are removed and will not propagate.
- C. Do not allow traffic or construction equipment to cross the cut edge.

Concrete and Asphalt Cutting  
02705 – Page 1 of 2  
2025 Standard Specifications  
Latest Revision: [November 18, 2021](#)

4. Free-Draining Granular Backfill
- a. Compact each lift to 100 percent of the developed field density.
    - 1) The Department develops a field density compaction curve according to UDOT Materials Manual of Instruction Section 989.
- E. Place an initial layer of granular material to act as a working platform over soft, wet ground when authorized by the Engineer.
1. Density requirements do not apply to the working platform except as specified in this Section, Paragraph 3.2 B.
  2. Meet density requirements for embankment, borrow, or backfill placed above the working platform.
  3. Do not place initial layer of embankment, borrow, or backfill until the Engineer inspects and verifies the working platform or foundation.

##### 3.2 EMBANKMENT MATERIAL AND BORROW PLACEMENT

- A. Place embankment material or borrow or both in the embankment section with the highest quality material in the top portion of the embankment section.
- B. Scarify and compact the top eight inches of the working platform or foundation to at least 90 percent of maximum laboratory density when the embankment height is 6 ft or less.
- C. Break and scarify all underlying concrete pavement surfaces so that pieces do not exceed 1 ft² before placing material over an existing concrete pavement surface that is outside the limits of removal or excavation shown.
  1. Remove other pavement surfaces that are not portland cement concrete.
- D. Maintain Drainage
1. Grade and maintain the roadway to provide adequate drainage.
  2. Maintain drainage pipes and drainage ditches or provide temporary facilities when interrupting items such as irrigation systems, sewers, and under-drains.

Embankment, Borrow, and Backfill  
02056 – Page 6 of 8  
2025 Standard Specifications  
Latest Revision: [September 14, 2023](#)

##### 3.2 PROCEDURE – ASPHALT SURFACES

- A. Use any method that provides a vertical cut in a straight line through the full depth of the surface.
  1. Saw cut if the method of cutting does not produce a smooth, non-broken vertical edge.
- B. Make cuts so the defective surface can be removed where the edge of the existing surface is cracked, broken, or deteriorated.
  1. Verify that the entire deficient areas are removed and will not propagate.
- C. Do not allow traffic or construction equipment to cross the cut edge.
- D. Apply a tack coat to the cut edge before placing asphalt pavement when appropriate. Refer to Section 02748.

END OF SECTION

Concrete and Asphalt Cutting  
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- E. Spread material uniformly in layers not exceeding 1 ft (uncompacted depth) and compact to the density requirements.
1. Reduce the lift thickness or modify operations if tests show unsatisfactory density.
  2. Distribute larger particles so space exists for placing and compacting remaining material.
  3. Do not place rocks or broken concrete larger than 4 inches within 1 ft of the subgrade surface.
- F. Finish subgrade surface within ±0.2 ft of line and grade.
- G. Do not use compacting equipment that causes shear failure in the constructed fill or backfill.

##### 3.3 GRANULAR BORROW, GRANULAR BACKFILL BORROW, AND BACKFILL PLACEMENT

- A. Compact material in maximum 6 inch layers (uncompacted depth) to the density requirement.
- B. Finish surface with in ± 0.1 ft of line and grade.
- C. Backfill catch basins, cleanout boxes, manholes, drainage boxes, and diversion boxes with Granular Backfill Borrow unless otherwise specified or shown.

##### 3.4 DRAINAGE PIPE FOUNDATION, BEDDING, AND BACKFILL PLACEMENT

- A. Place in 6 inch layers (uncompacted depth) and compact to the density requirement.
- B. Place uniform layers of drainage pipe backfill on both sides of the pipe and compact to the density requirement before placing successive lifts.
- C. Fully compact the haunch areas.

##### 3.5 EMBANKMENT FOR BRIDGE PLACEMENT

- A. Construct bridge approach embankments from the existing ground up with the specified material to the limits defined in this Section and according to GW Series Standard Drawings.
1. Approach Embankments
    - a. Place embankment for bridge beneath the bridge except riprap or other described materials used for MSE walls.

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##### SECTION 02721

##### UNTREATED BASE COURSE (UTBC)

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Production, construction, and compaction of UTBC used for pavements, shoulders, and incidental construction.

##### 1.2 RELATED SECTIONS

- A. Section 01572: Dust Control and Watering

##### 1.3 REFERENCES

- A. AASHTO T 11: Materials Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing
- B. AASHTO T 19: Bulk Density ("Unit Weight") and Voids in Aggregate
- C. AASHTO T 27: Sieve Analysis of Fine and Coarse Aggregates
- D. AASHTO T 89: Determining the Liquid Limit of Soils
- E. AASHTO T 90: Determining the Plastic Limit and Plasticity Index of Soils
- F. AASHTO T 96: Resistance to Degradation of Small-Sized Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
- G. AASHTO T 180: Moisture-Density Relations of Soils Using a 4.54 kg (10 lb) Rammer and 457 mm (18 in) Drop
- H. AASHTO T 193: The California Bearing Ratio
- I. AASHTO T 255: Total Evaporable Moisture Content of Aggregate by Drying
- J. AASHTO T 335: Determining the Percent of Fracture in Coarse Aggregate

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- b. Place embankment for bridge to extend at least 150 ft from the centerline of the bridge abutment as measured along the approach roadway alignment and on the inside of abutments.
- c. Use the described material throughout the length of the walls where retaining walls are located beyond this delineation.
2. Intersecting Roadway Embankments
- a. Place embankment for bridge along the intersecting roadway alignment(s) at least 150 ft from the abutment centerline station as measured along the approach and intersecting alignments.

- B. Spread embankment for bridge uniformly in layers not exceeding 1 ft (uncompacted depth) and compact to the specified density requirements before placing the next layer.
1. Reduce the lift thickness if tests show unsatisfactory density.

- C. Finish surface within ±0.2 ft of line and grade.

##### 3.6 FREE-DRAINING GRANULAR BACKFILL PLACEMENT

- A. Compact material in 1 ft maximum layers.
- B. Finish surface within ±0.2 ft of line and grade.

END OF SECTION

Embankment, Borrow, and Backfill  
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##### 1.4 DEFINITIONS Not Used

##### 1.5 SUBMITTALS

- A. Written report for approval for each aggregate class and source, a minimum of five working days before placement. Include the following:
1. Aggregate suitability. Refer to this Section, Part 2.
  2. Name of supplier and location of source.
  3. Maximum Dry Density and Optimum Moisture Content and associated test result data. Refer to AASHTO T 180, Method D.
  4. Job mix gradation including single values for each sieve size, No. 4 and finer. The target values must be within the gradation limits of Table 2.
- B. Job-mix gradation changes
1. Refer to this Section, Article 3.2.

##### 1.6 ACCEPTANCE

- A. Type I Placement – Pavement Section
1. Use Class A aggregate, Table 1.
  2. The Engineer takes random samples from the grade and tests for moisture, gradation, and laboratory density and performs in-place density determinations.
  3. Meet gradation limits and applicable tolerances of Table 2 for each gradation test.
    - a. Evaluate each subplot separately and do not average with other sublots.
  4. Meet minimum density test average of 97 percent of maximum laboratory density with no test less than 94 percent.
- B. Type II Placement – Incidental includes placement for Curb, Curb and Gutter, Driveways, Pedestrian Access Ramps, Sidewalk, Waterways, Flatwork, and other items of work in the contract to which UTBC is included and not measured or paid for separately.
1. Use Class A aggregate, Table 1.
  2. The Engineer takes random samples from the grade and tests for moisture, gradation, and laboratory density and performs in-place density determinations.
  3. Meet gradation limits and applicable tolerances of Table 2 for each gradation test.
    - a. Each subplot will be evaluated separately and not averaged with other sublots.
  4. Meet minimum density test average of 95 percent of maximum laboratory density with no test less than 92 percent.

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#### CITY ENGINEER APPROVAL

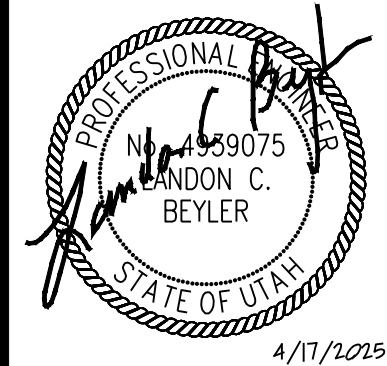
I CERTIFY THAT I HAVE EXAMINED THIS PLAT AND FIND IT TO BE IN GENERAL COMPLIANCE TO THE CITY STANDARDS

CITY ENGINEER

DATE

BEYLER CONSULTING  
Plan. Design. Manage  
CORPORATE OFFICE  
5920 100th St. SW, Ste #25  
Lakewood, WA 98449  
(253) 984-2900  
beylerconsulting.com

NOTES AND DETAILS SHEET 3  
HYRUM MARKET 1860  
CIVIL IMPROVEMENT PLANS  
HYRUM CITY  
UTAH  
DATE: 4/17/2025  
VERT:  
SCALE:  
HORIZ:  
CHECKED: LCB  
DRAWN: EJM  
DESIGNED: EJM



JOB NUMBER

24.00160

SHEET

6 OF 10



CAD FILE: C:\AutoCAD\AutoCAD Standards\Box6C Data\Projects\_2024\Projects\01-050-0023\Hyrum Market 1860\Civil Engineering\Drawings\24-00160-Hyrum Market 1860-Civil Engineering\Drawings\24-00160-Hyrum Market 1860.dwg PLOT DATE/TIME: 4/17/2025 6:22 PM

SECTION 03, TOWNSHIP 10 N., RANGE 01 E., S.L.B. & M.

# HYRUM MARKET 1860

## CIVIL IMPROVEMENT PLANS

### PARCEL #'s 01-050-0023 & 01-050-0024



- C. Type III Placement – Shoulder
- Use Class A or B aggregate, Table 1.
  - Adjust moisture content before compaction.
- D. Material not meeting the gradation requirements may be allowed to remain in-place at the discretion of the Engineer provided density requirements are met.
- Additional lots may not be placed until the deficiencies are addressed and corrected.
- E. Correct material that does not meet the specified criteria by scarifying, placing additional material, re-mixing, reshaping, and re-compacting when determined by the Engineer.
- F. Do not place additional material on any unaccepted layer.

#### PART 2 PRODUCTS

##### 2.1 AGGREGATES

- A. Well-graded, clean, hard, tough, durable, and sound mineral aggregates consisting of crushed stone, crushed gravel, or crushed slag, free of organic matter and contamination from chemical or petroleum products, according to Table 1.

Table 1 Aggregate Properties			
	Aggregate Class		
	A	B	
Dry Rodded Unit Weight	Not less than 75 lb/ft <sup>3</sup>		AASHTO T 19
Liquid Limit/Plastic Index	Non-plastic	PI ≤ 6	AASHTO T 89 AASHTO T 90
Aggregate Wear	Not to exceed 50 percent		AASHTO T 96
Gradation	Table 2		AASHTO T 11 AASHTO T 27
CBR with a 10 lb surcharge measured at 0.20 inch penetration	70% Minimum	N/A	AASHTO T 193
Two Fractured Faces	50% Min	N/A	AASHTO T 335

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- G. AASHTO T 90: Determining the Plastic Limit and Plasticity Index of Soils
- H. AASHTO T 96: Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
- I. AASHTO T 104: Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate
- J. AASHTO T 112: Clay Lumps and Friable Particles in Aggregate
- K. AASHTO T 176: Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test
- L. AASHTO T 195: Determining Degree of Particle Coating of Asphalt Mixtures
- M. AASHTO T 209: Theoretical Maximum Specific Gravity and Density of Asphalt Mixtures
- N. AASHTO T 255: Total Evaporable Moisture Content of Aggregate by Drying
- O. AASHTO T 304: Uncompacted Void Content of Fine Aggregate
- P. AASHTO T 335: Determining the Percentage of Fracture in Coarse Aggregate
- Q. UDOT Materials Manual of Instruction
- R. UDOT Minimum Sampling and Testing Requirements
- S. UDOT Quality Management Plans

##### 1.4 DEFINITIONS

- A. Longitudinal Joint – Any new asphalt lift abutting an existing paving lift. This includes joints created by echelon paving and new asphalt placed against a milled asphalt edge.
- B. Lot – The amount of Asphalt Mix placed in a single Production Day.
- C. Minor Target Change – A change from the verified mix design gradation target on a maximum of two sieves with the following limitations.
- The maximum change from the verified target gradation on the No. 8 or any coarser sieve is limited to 3 percent passing per sieve.

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- B. Establish the job mix (target) gradation for the ¾ inch sieve and finer within the gradation limits.
- The Job Mix Gradation Tolerance is the allowable deviation from the job mix (target) gradation on the applicable sieves.
  - All other percents passing will be within the gradation limits. Refer to AASHTO T 11 and AASHTO T 27.

Sieve Size	Gradation Limits	
	Job Mix Gradation Target Band	Job Mix Gradation Tolerance
1½ inch	100	
1 inch	90 - 100	±9.0
¾ inch	70 - 85	±9.0
½ inch	65 - 80	±9.0
¾ inch	55 - 75	±9.0
No. 4	40 - 65	±7.0
No. 16	25 - 40	±5.0
No. 200	7 - 11	±3.0

Percent passing based on total aggregate (dry weight) and fine and coarse aggregate with approximately the same bulk specific gravities.

#### PART 3 EXECUTION

##### 3.1 PREPARATION

- A. Remove vegetation before Type III placement. Refer to Section 02231.
- Protect existing delineators in place.

##### 3.2 INSTALLATION

- A. Provide moisture content of ± 2 percent of optimum at the time of placement. Refer to AASHTO T 180, Method D and AASHTO T 255.
- B. Procedures for Changing the Job-Mix Gradation
- Submit changes in writing 24 hours before placement for approval by the Engineer.
- C. Place in layers of uniform thickness and compact each layer to a thickness not to exceed a 6 inch depth.
- Do not place on any frozen surface. Refer to Section 01572.

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- The maximum change from the verified target gradation on the No. 16 or No. 50 sieves is 2 percent passing per sieve.
  - The maximum change from the verified target gradation on the No. 200 sieve is 0.5 percent passing.
  - No target change may violate the mix design requirements in this section.
- D. Overband – an 8 inch protective asphalt coating sealing the longitudinal joint of final riding surface, as proposed by the contractor and approved by the Engineer
- E. Production Day – A 24 hour period in which Asphalt Mix is being placed.
- F. RAP – Recycled Asphalt Pavement. Crushed or milled asphalt materials that have been removed from pavements for recycling.
- G. Thin Overlay Pavement – New Asphalt Mix design thickness less than 2 inches.
- H. Lane-Leveling – Variable depth paving to correct minor rutting and longitudinal variations in the roadway. Depth varies from the maximum aggregate size to the depth needed to correct variations.
- I. Profile leveling - Variable depth paving to correct minor profile variations in the roadway. Depth varies from the maximum aggregate size to the depth needed to correct variations.

##### 1.5 SUBMITTALS

- A. Mix design for verification and approval before paving according to UDOT Materials Manual of Instruction Section 960.
- B. Changes in job mix design
- Submit a written request for any proposed change in the job-mix design
    - Allow at least 12 hours for approval before incorporating a minor target change into production.
    - Allow at least six working days for verification and approval of any other change.  - Include documentation supporting correlation between suggested target changes and mix design volumetric requirements.
    - Acceptable documentation may include Department or Contractor testing data.  - Submit samples according to the UDOT Materials Manual of Instruction 960 for a volumetric mix design verification for anything other than approved minor target changes.

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- D. Finish to a uniform line and grade with surface deviations no more than ¾ inch in 10 ft in any direction.
- Correct any profile deviations greater than ¾ inch.
    - Rework minimum of 4 inch lift to achieve homogeneous density.
    - Determine limits of correction based on extent of deviation.
    - Continue finishing until existing deviation is less than ¾ inch.
- E. Maintain optimum moisture content ± 2 percent during compaction.
- Use appropriate compaction equipment adjacent to abutments, backwalls, approach slabs, wing walls, retaining walls, and other structures.
  - Use a minimum of two passes with a roller for Type III placement or as directed by the Engineer.

END OF SECTION

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- C. Corrective action plan for approval according to this Section, Article 3.3, paragraph C2 and Article 3.4, paragraph A4b.
- D. Refer to this Section, Article 3.4 for laboratory correlation submittals for information.
- E. Mat joint layout plan to the Engineer for review before placement.

##### 1.6 ACCEPTANCE

- A. Acceptance sampling and testing of material is according to UDOT Minimum Sampling and Testing Requirements.
- B. Gradation and asphalt binder content
- The Engineer evaluates a lot on the test results of four or more samples, except when only three samples can be taken.
  - Evaluate the lot using the number of tests "n" in Table 3.
  - The Engineer informs the Contractor of the time and place of sampling not more than 15 minutes before sampling.
  - Increase sample sizes to accommodate validation or third-party testing as required.
- C. Density and Thickness
- Obtain cores from the mat and longitudinal joint within two calendar days after the pavement is placed and according to UDOT Materials Manual of Instruction, Section 984.
    - The Engineer marks coring location for in-place mat density and longitudinal joint density cores.
    - Fill core holes with Asphalt Mix, SMA or high-asphalt-content cold mix and compact in thin lifts within 24 hours and before returning to traffic.
    - The Department witnesses the coring operation, takes possession of the cores immediately, and begins testing the cores within 24 hours for density acceptance.

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#### SECTION 02741

#### ASPHALT MIX

##### PART 1 GENERAL

###### 1.1 SECTION INCLUDES

- A. Flexible pavement consisting of one or more layers of an asphalt mixture comprised of aggregate, asphalt binder, hydrated lime, and other additives.
- B. An option to incorporate Reclaimed Asphalt Pavement (RAP) materials into Asphalt Mix.

###### 1.2 RELATED SECTIONS

- A. Section 01456: Materials Dispute Resolution
- B. Section 02701: Pavement Smoothness
- C. Section 02742S: Project Specific Surfacing Requirements
- D. Section 02745: Asphalt Material
- E. Section 02746: Hydrated Lime
- F. Section 02748: Prime Coat/Tack Coat

###### 1.3 REFERENCES

- A. AASHTO M 323: Superpave Volumetric Mix Design
- B. AASHTO R 35: Superpave Volumetric Design for Asphalt Mixtures
- C. AASHTO T 11: Materials Finer Than 75 µm (No. 200) Sieve in Mineral Aggregates by Washing
- D. AASHTO T 19: Bulk Density ("Unit Weight") and Voids in Aggregate
- E. AASHTO T 27: Sieve Analysis of Fine and Coarse Aggregates
- F. AASHTO T 89: Determining the Liquid Limit of Soils

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- Density Requirements

  - The target for in-place density for the mat is 93.5 percent of Theoretical Maximum Specific Gravity except for thin overlay pavements.
  - The target for in-place density for the longitudinal joint is 91.5 percent of the Theoretical Maximum Specific Gravity (G<sub>mm</sub>).
  - The target for in-place density is 92.5 percent of theoretical maximum specific gravity for thin overlay pavements.

    - Do not take longitudinal joint cores for thin overlay pavements.

- Thickness is evaluated with mat density cores. The thickness requirement may be waived when matching up to existing pavement, curb and gutter for Pavement in or next to intersections.

  - The Department accepts a lot for thickness when:

    - The average thickness is not more than ¾ inch greater or ¼ inch less than the total design thickness specified.
    - No individual subplot shows a deficient thickness of more than ¾ inch.

  - Excess Thickness – The Engineer may allow excess thickness to remain in place or may order its removal.

    - The Department pays for 50 percent of the mix for material in excess of the +¾ inch tolerance when excess thickness is allowed to remain in place.

  - Deficient Thickness – Place additional material where lots or sublots are deficient in thickness.

    - The Department pays for material necessary to reach specified thickness.
    - The Department pays for 50 percent of the mix for additional material over specified thickness necessary to achieve minimum lift thickness.
    - Minimum compacted lift is 3 times the nominal maximum aggregate size.

  - Thickness tolerances established above do not apply to leveling courses.

    - Check final surfaces in staged construction.

  - Check thickness regularly with a depth probe during placement and take corrective action as necessary.

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#### CITY ENGINEER APPROVAL

I CERTIFY THAT I HAVE EXAMINED THIS PLAT AND FIND IT TO BE IN GENERAL COMPLIANCE TO THE CITY STANDARDS

CITY ENGINEER

DATE

NOTES AND DETAILS SHEET 4

HYRUM MARKET 1860

CIVIL IMPROVEMENT PLANS

UTAH

DATE: 4/17/2025

VERT:

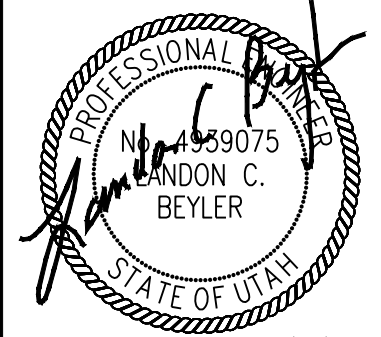
SCALE: HORIZ:

CHECKED: LCB

DRAWN: EJM

DESIGNED: LCB/EJM

HYRUM CITY



4/17/2025

JOB NUMBER

24.00160

SHEET

7 OF 10



CAD FILE: C:\AutoCAD\AutoCAD Standards\Box6C Data\Projects\4\00160\Hyrum Market 1860\Civil Engineering\Drawings\20.00160\_Hyrum Market 1860.dwg PLOT DATE/TIME: 4/17/2025 6:32 PM

SECTION 03, TOWNSHIP 10 N., RANGE 01 E., S.L.B. & M.

# HYRUM MARKET 1860

## CIVIL IMPROVEMENT PLANS

### PARCEL #'s 01-050-0023 & 01-050-0024



4. Longitudinal Joint
- a. The edge of a new asphalt mat may be removed for the purpose of meeting longitudinal joint density requirements.
- 1) The material wasted is still included in the payment.
  - 2) Up to 3 inches for a confined edge is allowed.
  - 3) Up to 6 inches for an unconfined edge is allowed.
- D. The Department applies one Incentive/Disincentive for the lowest dollar value for Gradation/Asphalt Content, one Incentive/Disincentive for In-Place Mat Density, and one Incentive/Disincentive for Longitudinal Joint Density. The Engineer computes Incentives/Disincentives as follows for each lot
1. Compute incentive/disincentive for Gradation/Asphalt Binder and In-place Mat Density and Longitudinal Joint Density according to Table 1.
  2. Base the incentive/disincentive on Percent within Limit (PT) computation using Tables 2, 3, and 4.
  3. Use lowest single PT value combined for gradation (each of the sieves) and asphalt binder content for calculating the gradation/asphalt binder content incentive/disincentive. Use Tables 2, 3, and 4 to determine PT for in-place Mat Density and Longitudinal Joint Density.
  5. Meet PT of 88 or greater for in-place mat density or the Department does not pay incentives on joint density or gradation/asphalt binder content except for lane-leveling material.
  6. The Department pays or assesses the longitudinal joint density incentive/disincentive per ton of Asphalt Mix placed adjacent to, and on the hot side of the longitudinal joint for each lift:
    - a. The incentive/disincentive will be calculated from the core densities taken from all abutting joints if the Asphalt Mix mat has a longitudinal joint on more than one side.
- E. The Department applies incentive/disincentive for smoothness according to Section 02701.
1. Refer to Section 02701 for smoothness requirements.
- F. The Department rejects lots:
1. If the PT for any individual gradation measurement is less than 52 percent as shown in Table 1.
  2. If the PT for asphalt binder content or mat density measurement is less than 60 percent as shown in Table 1.

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Table 3 Use the appropriate "number of tests" column and round down to the nearest value.												
Quality Index Values (QU or QL) for Estimating Percent Within Limits												
PU or PL	n=3	n=4	n=5	n=6	n=7	n=8	n=10	n=12	n=15	n=20		
100	1.16	1.50	1.75	1.91	2.06	2.15	2.29	2.35	2.47	2.56		
99	1.16	1.47	1.68	1.79	1.89	1.95	2.04	2.09	2.14	2.19		
98	1.15	1.44	1.61	1.70	1.77	1.80	1.86	1.89	1.93	1.97		
97	1.15	1.41	1.55	1.62	1.67	1.69	1.74	1.77	1.80	1.82		
96	1.15	1.38	1.49	1.55	1.59	1.61	1.64	1.66	1.69	1.70		
95	1.14	1.35	1.45	1.49	1.52	1.54	1.56	1.57	1.59	1.61		
94	1.13	1.32	1.40	1.44	1.46	1.47	1.49	1.50	1.51	1.53		
93	1.12	1.29	1.36	1.38	1.40	1.41	1.43	1.43	1.44	1.46		
92	1.11	1.26	1.31	1.33	1.35	1.36	1.37	1.37	1.38	1.39		
91	1.10	1.23	1.27	1.29	1.30	1.31	1.32	1.32	1.32	1.33		
90	1.09	1.20	1.23	1.24	1.25	1.25	1.26	1.26	1.27	1.27		
89	1.08	1.17	1.20	1.21	1.21	1.21	1.21	1.21	1.22	1.22		
88	1.07	1.14	1.16	1.17	1.17	1.17	1.17	1.17	1.17	1.17		
87	1.06	1.11	1.12	1.12	1.12	1.13	1.13	1.13	1.13	1.13		
86	1.05	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08		
85	1.03	1.05	1.05	1.05	1.05	1.04	1.04	1.04	1.04	1.04		
84	1.02	1.02	1.02	1.01	1.01	1.01	1.00	1.00	1.00	1.00		
83	1.00	0.99	0.98	0.97	0.97	0.96	0.96	0.96	0.96	0.96		
82	0.98	0.96	0.95	0.94	0.94	0.93	0.93	0.92	0.92	0.92		
81	0.96	0.93	0.92	0.91	0.90	0.90	0.89	0.89	0.89	0.88		
80	0.94	0.90	0.88	0.87	0.86	0.86	0.85	0.85	0.85	0.85		
79	0.92	0.87	0.85	0.84	0.83	0.83	0.82	0.82	0.82	0.81		
78	0.89	0.84	0.82	0.81	0.80	0.79	0.79	0.78	0.78	0.78		
77	0.87	0.81	0.79	0.78	0.77	0.76	0.76	0.75	0.75	0.75		
76	0.84	0.78	0.76	0.75	0.74	0.73	0.72	0.72	0.72	0.72		
75	0.82	0.75	0.73	0.72	0.71	0.70	0.69	0.69	0.69	0.68		
74	0.79	0.72	0.70	0.68	0.67	0.67	0.66	0.66	0.66	0.65		
73	0.77	0.69	0.67	0.65	0.64	0.64	0.62	0.62	0.62	0.62		
72	0.74	0.66	0.64	0.62	0.61	0.61	0.60	0.59	0.59	0.59		
71	0.71	0.63	0.60	0.59	0.58	0.58	0.57	0.56	0.56	0.56		
70	0.68	0.60	0.58	0.56	0.55	0.55	0.54	0.54	0.54	0.53		
69	0.65	0.57	0.55	0.54	0.53	0.52	0.51	0.51	0.51	0.50		
68	0.62	0.54	0.52	0.51	0.50	0.50	0.48	0.48	0.48	0.48		
67	0.59	0.51	0.49	0.48	0.47	0.47	0.46	0.45	0.45	0.45		
66	0.56	0.48	0.46	0.45	0.44	0.44	0.43	0.42	0.42	0.42		
65	0.53	0.45	0.43	0.42	0.41	0.41	0.40	0.40	0.40	0.39		
64	0.49	0.42	0.40	0.39	0.38	0.38	0.37	0.37	0.37	0.37		
63	0.46	0.39	0.37	0.36	0.35	0.35	0.35	0.34	0.34	0.34		
62	0.43	0.36	0.34	0.33	0.33	0.33	0.32	0.31	0.31	0.31		
61	0.39	0.33	0.31	0.30	0.30	0.30	0.29	0.29	0.29	0.28		
60	0.36	0.30	0.28	0.27	0.26	0.26	0.25	0.25	0.25	0.25		
59	0.32	0.27	0.25	0.25	0.24	0.24	0.24	0.23	0.23	0.23		

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3. The Engineer may accept a reject or non-conforming lot. Refer to Section 01456.
- a. A price reduction of 35 percent of the pay item or \$20 per ton, whichever is greater, will be assessed.
- b. The lot will not be eligible for any incentive.
- G. The Engineer may elect to accept material on visual inspection according to the Minimum Sampling and Testing Requirements.
1. Incentives/Disincentives are not applied to material accepted visually.
  2. The Engineer reserves the option of conducting any acceptance tests necessary to determine that the material and workmanship meets the project requirements.
- H. Meet production control requirements of Table 9.
1. Material placed within the Cease Production Limit in Table 9 is not eligible for incentives.
- 1.7 DISPUTE RESOLUTION
- A. Refer to Section 01456 when disputing the validity of the Department's acceptance tests.

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Table 3 Continued												
PU/PL	n=3	n=4	n=5	n=6	n=7	n=8	n=10	n=12	n=15	n=20		
58	0.29	0.24	0.23	0.22	0.21	0.21	0.21	0.21	0.21	0.20		
57	0.25	0.21	0.20	0.19	0.19	0.19	0.18	0.18	0.18	0.18		
56	0.22	0.18	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.15		
55	0.18	0.15	0.14	0.14	0.13	0.13	0.13	0.13	0.13	0.13		
54	0.14	0.12	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10		
53	0.11	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08		
52	0.07	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05		
51	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03		
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

Table 4 Definitions, Abbreviations, and Formulas for Acceptance	
Term	Explanation
Target Value (TV)	The target values for gradation and asphalt binder content are given in the Contractor's volumetric mix design. See this Section, Article 1.6 for density target values.
Average (AVE)	The sum of the lot's test results for a measured characteristic divided by the number of test results—the arithmetic mean.
Standard Deviations (s)	The square root of the value formed by summing the squared difference between the individual test results of a measured characteristic and AVE, divided by the number of test results minus one.
Upper Limit (UL)	The value above the TV of each measured characteristic that defines the upper limit of acceptable production. (Table 2)
Lower Limit (LL)	The value below the TV of each measured characteristic that defines the lower limit of acceptable production. (Table 2)
Upper Quality Index (QU)	QU = (UL - AVE)/s
Lower Quality Index (QL)	QL = (AVE - LL)/s
Percentage of Lot Within UL (PU)	Determined by entering Table 3 with QU.
Percentage of Lot Within LL (PL)	Determined by entering Table 3 with QL.
Total Percentage of Lot Within UL and LL (PT)	PT = (PU + PL) – 100
Incentive/Disincentive	Determined by entering Table 1 with PT or PL.

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Table 1 Incentive/Disincentive for Asphalt Binder Content, and Mat Density	
PT Based on Min. Four Samples	Incentive/Disincentive (Dollars/Ton)
>99	2.00
96-99	1.50
92-95	1.00
88-91	0.00
84-87	-0.26
80-83	-0.60
76-79	-0.93
72-75	-1.27
68-71	-1.60
64-67	-1.93
60-63	-2.27
<60	Reject
Incentive/Disincentive for Gradation	
PT Based on Min. Four Samples	Incentive/Disincentive (Dollars/Ton)
>99	2.00
96-99	1.50
92-95	1.00
88-91	0.00
84-87	-0.26
80-83	-0.60
76-79	-0.93
72-75	-1.27
68-71	-1.60
64-67	-1.93
60-63	-2.27
56-59	-5.00
52-55	-10.00
<52	Reject
Incentive/Disincentive for Longitudinal Joint Density	
PT Based on Min. Four Samples	Incentive/Disincentive (Dollars/Ton)
>99	2.00
96-99	1.50
92-95	1.00
88-91	0.00
84-87	-0.26
80-83	-0.60
76-79	-0.93
72-75	-1.27
68-71	-1.60
64-67	-1.93
60-63	-2.27
56-59	-2.60
52-55	-5.00
<52	Apply \$5 penalty and Overband Longitudinal Joint if Final Surface Lift

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#### PART 2 PRODUCTS

##### 2.1 ASPHALT BINDER

- A. Project Specific Surfacing Requirements – Refer to Section 02742S.
- B. Asphalt Material – Refer to Section 02745 and Quality Management Plan 509: Asphalt Binder.

##### 2.2 AGGREGATE

- A. Crusher produced virgin aggregate material consisting of crushed stone, gravel, or slag.
- B. Refer to Table 5 to determine the suitability of the aggregate.
1. Coarse aggregates
    - a. Retained on No. 4 sieve, AASHTO T 27
  2. Fine aggregates
    - a. Clean, hard grained, and angular
    - b. Passing the No. 4 sieve, AASHTO T 27
- C. Meet the gradation requirements in Table 6. (AASHTO T 11, AASHTO T 27)

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Table 2 Upper and Lower Limit Determination	
Parameter	UL and LL
% inch sieve for ½ inch Asphalt Mix	Target Value ± 6.0%
No. 4 sieve for ¾ inch Asphalt Mix	Target Value ± 5.0%
No.50 sieve	Target Value ± 3.0%
No. 200 sieve	Target Value ± 2.0%
Asphalt Binder Content	Target Value ± 0.35%
Mat Density	Lower Limit Target Value - 2.0% Upper Limit Target Value + 4.0%
Longitudinal Joint Density	Lower Limit Target Value - 2.0% Upper Limit Target Value + 6.0%

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Table 5 Aggregate Properties – Asphalt Mix			
Test Method	Test No.	75 Design Gyration and Greater	Less Than 75 Design Gyration
One Fractured Face	AASHTO T 335	95% minimum	90% minimum
Two Fractured Faces	AASHTO T 335	90% minimum	90% minimum
Fine Aggregate Angularity	AASHTO T 304	45 minimum	45 minimum
Flakiness Index	UDOT MOI 933 (Based on ¾ inch sieve and above)	17% maximum	17% maximum
L.A. Wear	AASHTO T 96	35% maximum	40% maximum
Sand Equivalent	AASHTO T 176, alternate method 2, pre-wet method (test the sample in the wet condition).	60 minimum	45 minimum
Plasticity Index	AASHTO T 89 and T 90	0	0
Unit Weight	AASHTO T 19	minimum 75 lb/ft³	minimum 75 lb/ft³
Soundness (sodium sulfate)	AASHTO T 104	16% maximum loss with five cycles	16% maximum loss with five cycles
Clay Lumps and Friable Particles	AASHTO T 112	2% maximum	2% maximum
Natural Fines	N/A	0%	10% maximum

Table 6 Aggregate Gradations (Percent Passing by Dry Weight of Aggregate)			
Sieve Size		% inch	% inch
Control Sieves	¾ inch	100.0	
	½ inch	90.0 – 100.0	100.0
	¾ inch	< 90	90.0 - 100.0
No. 4	No. 4	< 90	< 90
	No. 8	28.0 - 58.0	32.0 - 67.0
	No. 200	2.0 – 10.0	2.0 – 10.0

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Latest Revision: [November 18, 2021](#)

#### CITY ENGINEER APPROVAL

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CITY ENGINEER

DATE

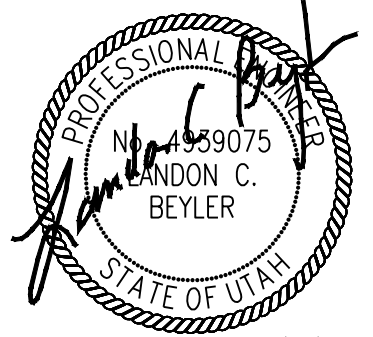
NOTES AND DETAILS SHEET 5

HYRUM MARKET 1860

CIVIL IMPROVEMENT PLANS

UTAH

DATE: 4/17/2025  
VERT: SCALE: HORIZ: CHECKED: LCB  
DRAWN: EJM  
DESIGNED: EJM



4/17/2025

JOB NUMBER

24.00160

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# HYRUM MARKET 1860

## CIVIL IMPROVEMENT PLANS

### PARCEL #'s 01-050-0023 & 01-050-0024



#### 3.8 LIMITATIONS

- A. Do not place Asphalt Mix on frozen base or subbase or during adverse climatic conditions such as precipitation or when roadway surface is icy or wet.
- B. Use a release agent that does not dissolve asphalt and is satisfactory to the Engineer for all equipment and hand tools used to mix, haul, and place the Asphalt Mix.
- C. Place Asphalt Mix from April 15 through October 15, and when the air temperature in the shade and the roadway surface temperature are above 50 degrees F.
- The Department determines if it is feasible to place Asphalt Mix outside these dates and temperature limits.
  - Obtain authorization from the Engineer before paving outside these requirements.

END OF SECTION

Asphalt Mix  
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#### 2.6 EQUIPMENT

- A. Use distributor trucks with the following:
- Tachometer, pressure gauges, accurate volume measuring devices or a calibrated tank, and a thermometer for measuring temperatures of the tank contents.
  - Insulated tanks capable of storing the binder at temperatures that allow the binder to remain consistent with the appropriate viscosity for proper application rates.
    - Use tanks equipped with baffles to prevent pressure surges resulting from the asphalt sloshing in the tank when starting and stopping.
    - Use trucks equipped with devices to provide for accurate control of the amount of bituminous material being applied.
  - Constant volume circulation pumps and heaters to maintain a pressurized system so binder will be uniformly heated.
    - Circulation pump must spray a constant volume for the entire length of the spray bar for each application.
  - Spray bar and nozzles designed to provide an appropriate fan width to provide uniform transverse distribution without corrugation or streaking.
    - Adjust the spray bar height to provide uniform distribution of binder across the application width and triple lapping of the binder on the pavement surface.
    - Use a fully circulating spray bar with a positive shutoff valve.
  - Computerized rate control system allowing the operator to control all distributor operations from the cab to include:
    - Pressure regulation of the material application and automatic rate control adjustment to the unit ground speed.
      - Hydrostatic system capable of maintaining a tolerance of  $\pm 0.03$  gal/yd<sup>2</sup>.
    - Spray bar height and width adjustment and shut off of individual spray bar sections.
- B. Use a self-propelled aggregate (chip) spreader specifically designed and manufactured for chip seal operations, equipped with the following:
- Computerized controls that will apply a uniform, even layer of aggregate across the full width of the binder and adjust output to the unit ground speed.
    - Use gates adjustable to drop the correct amount of aggregate plus or minus 1 lb/yd<sup>2</sup>.
  - Variable width spreader with hydraulic control extension and adjustable discharge gates.
  - Spreading hopper with a minimum capacity to cover a full lane of travel plus 1 ft/pass.
  - Spinner broadcast type of aggregate spreader not allowed.

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#### SECTION 02785

##### CHIP SEAL COAT

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Materials and procedures for applying emulsified asphalt, followed with an application of, either a standard chip seal cover material or lightweight chip seal cover material and bituminous flush coat.

##### 1.2 RELATED SECTIONS

- A. Section 02742S: Project Specific Surfacing Requirements
- B. Section 02745: Asphalt Material
- C. Section 02748: Prime Coat/Tack Coat

##### 1.3 REFERENCES

- A. AASHTO T 11: Materials Finer Than 75  $\mu$ m (No. 200) Sieve in Mineral Aggregates by Washing
- B. AASHTO T 19: Bulk Density (Unit Weight) and Voids in Aggregate
- C. AASHTO T 27: Sieve Analysis of Fine and Coarse Aggregates
- D. AASHTO T 96: Resistance to Degradation of Small Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
- E. AASHTO T 104: Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
- F. AASHTO T 278: Surface Frictional Properties Using the British Pendulum Tester
- G. AASHTO T 279: Accelerated Polishing of Aggregates Using the British Wheel
- H. AASHTO T 335: Determining the Percentage of Fracture in Coarse Aggregate

- C. Use at least three articulating type pneumatic rollers for rolling operations.
- Use rollers weighing between 8 tons minimum and 12 tons maximum with a minimum width of 6 ft.
  - Use rollers with pneumatic tires of equal size diameter and having treads satisfactory to the Engineer.
  - Inflate tires so that the entire roller width area is compacted by the rear-axle tires and the front-axle tires.
    - Inflate tires to 90 lb/in<sup>2</sup>, or lower with permission from the Engineer.
    - Maintain tire pressure within 5 lb/in<sup>2</sup>.
- D. Sweeping Equipment
- Use rotary brooms with nylon or steel bristles or pickup or vacuum brooms for pavement cleaning or brooming operations.
- E. Blotter Material Equipment
- Apply blotter material using a truck mounted spinner broadcast spreader.

#### PART 3 EXECUTION

##### 3.1 PREPARATION

- A. Clean the road surface of all dirt, sand, dust, and other objectionable material to the satisfaction of the Engineer.
- B. Protect structures including but not limited to guardrail, guideposts, concrete barriers, drains, and parapets.
- C. Protect manholes, valve boxes, drop inlets, and other service utility entrances before placing any chip seal coat.
- D. Stockpile blotter material with a quantity of at least 0.25 lb/yd<sup>2</sup> for the production day.
  - Blotter material must be ready to be spread within 20 minutes of a road section being chip sealed.
  - Use blotter material, as needed to cover up oil if it bleeds through the new chip seal.

##### 3.2 LIMITATIONS

- A. Complete all work between May 15, and August 31.
- B. Do not place chip seal coat if surface moisture is present.

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#### I. UDOT Materials Manual of Instruction (MMOI)

##### 1.4 DEFINITIONS Not Used

##### 1.5 SUBMITTALS

- A. Test reports for information that the cover material and emulsion meets requirements of this Section, Part 2.
- B. Equipment Calibration information including verifying asphalt application rates and chip application for information.
- C. Documentation verifying daily asphalt application rates and chip application for information.
- D. Vendor's bill of lading upon delivery for each emulsion used on the project for information.
  - This bill of lading should certify if the emulsion was diluted or not according to this Section, Part 2.

#### PART 2 PRODUCTS

##### 2.1 CATIONIC EMULSIONS

- A. CRS-2A according to Section 02745.
- B. CRS-2P according to Section 02745.
- C. LMCRS-2 according to Section 02745.

##### 2.2 HIGH FLOAT EMULSIONS

- A. HFRS-2P according to Section 02745.
- B. HFMS-2 according to Section 02745.
- C. HFMS-2P according to Section 02745.

##### 2.3 FLUSH COAT

- A. Use the emulsion as specified in Special Provision 02742S, diluted two parts concentrate to one part water by the manufacturer.

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- C. Chip seal coat application:
- Place when the pavement temperature is between 70 and 136 degrees F.
  - Place when the air temperature is between 50 and 110 degrees F.
  - Do not apply after 6:00 pm if the temperature is expected to be below 50 F during the night.
  - Place when the forecasted temperature is not expected to be below 40 degrees F within 3 days after placement.
- E. Do not open to traffic the same day chip seal coat is placed on Interstate routes.
  - Sweep chip seal to remove unbound aggregates prior to opening to traffic.
- F. Allow at least 48 hours after completing application of cover material before applying bituminous flush coat material.
  - Apply bituminous flush coat material when the air temperature in the shade is at least 50 degrees F and the pavement temperature is at least 70 degrees F.
  - Do not apply bituminous flush coat material during fog, rain, or other adverse conditions.

##### 3.3 COVER MATERIAL STOCKPILE

- A. Construct individual 500 ton stockpiles for aggregates.
  - Construct on a clean base to minimize contamination.
  - Construct to facilitate uniform dampening.
  - Avoid excess moisture.
  - Combining, altering, or moving accepted stockpiles may require retesting by the Engineer before use.
- B. Notify the Engineer at least seven calendar days before placement in order for the initial stockpiles to be sampled and tested for acceptance.
- C. Obtain the Engineer's acceptance of a stockpile before use.
- D. Rework or remove material not meeting specifications from the stockpile area. Identify stockpiles that will be reworked.

#### 2.4 COVER MATERIAL

- A. Meet the requirements of Table 1.
- Use crusher processed virgin aggregate consisting of natural stone, gravel, or slag for standard chips.
  - Use crusher-processed rotary-kiln lightweight expanded shale chips for lightweight chips.

Table 1 Chip Seal Cover Material Properties			
Test	Test Method	Standard Chip Seal Type I & II	Lightweight Chip Seal Type I & II
*Unit Weight	AASHTO T 19	100 lb/ft <sup>3</sup> , max	60 lb/ft <sup>3</sup> , max
One Fractured Face	AASHTO T 335	95% minimum	N/A
Two Fractured Faces	AASHTO T 335	90% minimum	N/A
*LA wear	AASHTO T 96	30% maximum	30% maximum
*Soundness	AASHTO T 104	10% maximum	10% maximum
Flakiness Index	Materials MOI 933	17 maximum	25 maximum
*Stripping	Materials MOI 945	10% maximum	10% maximum
*Polishing	AASHTO T 278, T 279	31 minimum	31 minimum

\* This requirement may be waived if the aggregates have proven acceptable through successful past performance as determined by the Engineer.

- B. Meet gradation limits in Table 2. Refer to AASHTO T 27 and T 11.

Table 2 Gradation Limits				
Sieve Size	Percent Passing			
	Standard Aggregate		Lightweight Aggregate	
	Type I	Type II	Type I	Type II
1/2 in	100	100 - 98	100	100 - 90
3/4 in	100	99 - 91	80 - 100	55 - 80
No. 4	0 - 15	0 - 11	5 - 40	0 - 10
No. 8		0 - 6	0 - 20	0 - 3
No. 16			0 - 10	
No. 200	0 - 1	0 - 1.5		0 - 2

#### 2.5 BLOTTER MATERIAL

- A. Refer to Section 02748.

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#### 3.4 ASPHALT MATERIAL/COVER MATERIAL APPLICATION

- A. Apply asphalt material at a rate sufficient to obtain 50 percent chip embedment before the rolling operation and 70 percent chip embedment after rolling operation.
  - Adjust application rates throughout the project depending on existing conditions.
- B. Apply the asphalt emulsion at a minimum temperature of 145 degrees F.
- C. Do not apply asphalt material if material does not spray through the distributor in a uniform way and remain in place on the roadway.
- D. Place building paper adjacent to the transverse construction joint before starting each spraying operation.
  - Maintain the control valve to act instantaneously both at start-up and cut-off.
- E. Locate longitudinal joints within 6 inches of the traffic lane line location.
  - Construct meet lines with no skip or voids between adjacent passes.
  - Do not place a double thickness of cover material.
- F. Calibrate the spreader at the beginning of each day and as often as necessary to comply with Table 3.
  - Maintain a distance of less than 150 ft between the distributor and the chip spreader.
  - Maintain the chip spreader speed so that chips do not bounce or roll during application.

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#### CITY ENGINEER APPROVAL

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CITY ENGINEER

DATE

NOTES AND DETAILS SHEET 6

HYRUM MARKET 1860

CIVIL IMPROVEMENT PLANS

UTAH

DATE: 4/17/2025

VERT:

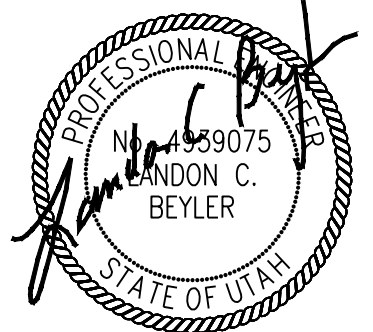
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CHECKED: LCB

DRAWN: EJM

HYRUM CITY

DESIGNED: LCB/EJM



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# HYRUM MARKET 1860

## CIVIL IMPROVEMENT PLANS

### PARCEL #'s 01-050-0023 & 01-050-0024



	Table 3 Approximate Spread Rates	
	Unit Weight lbs/ft <sup>3</sup>	Application Rate lbs/yd <sup>2</sup>
Lightweight Type I Chip Seal	45 - 50	9.6
	50 - 55	10.6
	55 - 60	11.6
Lightweight Type II Chip Seal	45 - 50	11.8
	50 - 55	13.1
	55 - 60	14.3
Standard Chip Seal	60 - 65	17.0
	65 - 70	18.4
	70 - 75	19.8
	75 - 80	20.7
	80 - 85	22.1
	85 - 90	23.5
	90 - 95	24.9
	95 - 100	25.8

#### 3.5 SURFACE ROLLING

- A. Use at least three pneumatic-tire rollers in a longitudinal direction to roll surface after the cover material has been spread.
- B. Roll at least three passes to seat the cover material.  
1. A pass is defined as traveling in one direction only.
- C. Control bleeding with blotter material and as determined by the Engineer.
- D. Set the roller speed to prevent bouncing or skidding.  
1. Do not exceed 5 mph.  
2. Reduce roller speeds during directional changes to prevent surface tearing.
- E. Synchronize the speed of the distributor and chip spreader with that of the rolling operation.  
1. Begin initial rolling, consisting of one complete coverage, immediately behind the chip spreader.  
2. Begin secondary rolling, consisting of second and third coverage, immediately after completing initial rolling.  
3. Synchronize all operations to keep rolling operations within 2,500 feet of the ongoing chip seal application.

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- F. Sweep excess cover material off the roadway after the emulsion has set.  
1. Remove excess cover material to the satisfaction of the Engineer before opening the roadway to traffic.  
2. Keep downward pressure of broom to a minimum.  
3. Use water as requested by the Engineer if excessive dust is generated during sweeping operations.  
4. Use pickup or vacuum sweepers in urban areas where aggregate accumulates in gutters or where removal is required from the edge of the shoulder.  
5. Do not dislodge embedded aggregate when brooming chip sealed roadway.

- G. Repair all damage to the seal coat before opening the roadway to traffic.

#### 3.6 BITUMINOUS FLUSH COAT APPLICATION

- A. Clean the surface of all dirt, sand, dust, loose chips, and other objectionable material to the satisfaction of the Engineer before applying bituminous flush coat.
- B. Apply the bituminous flush coat at a rate of 0.11, ± 0.01 gal/yd<sup>2</sup>.  
1. Keep traffic off the flushed surface until the bituminous material has set sufficiently to prevent tracking or pick-up.

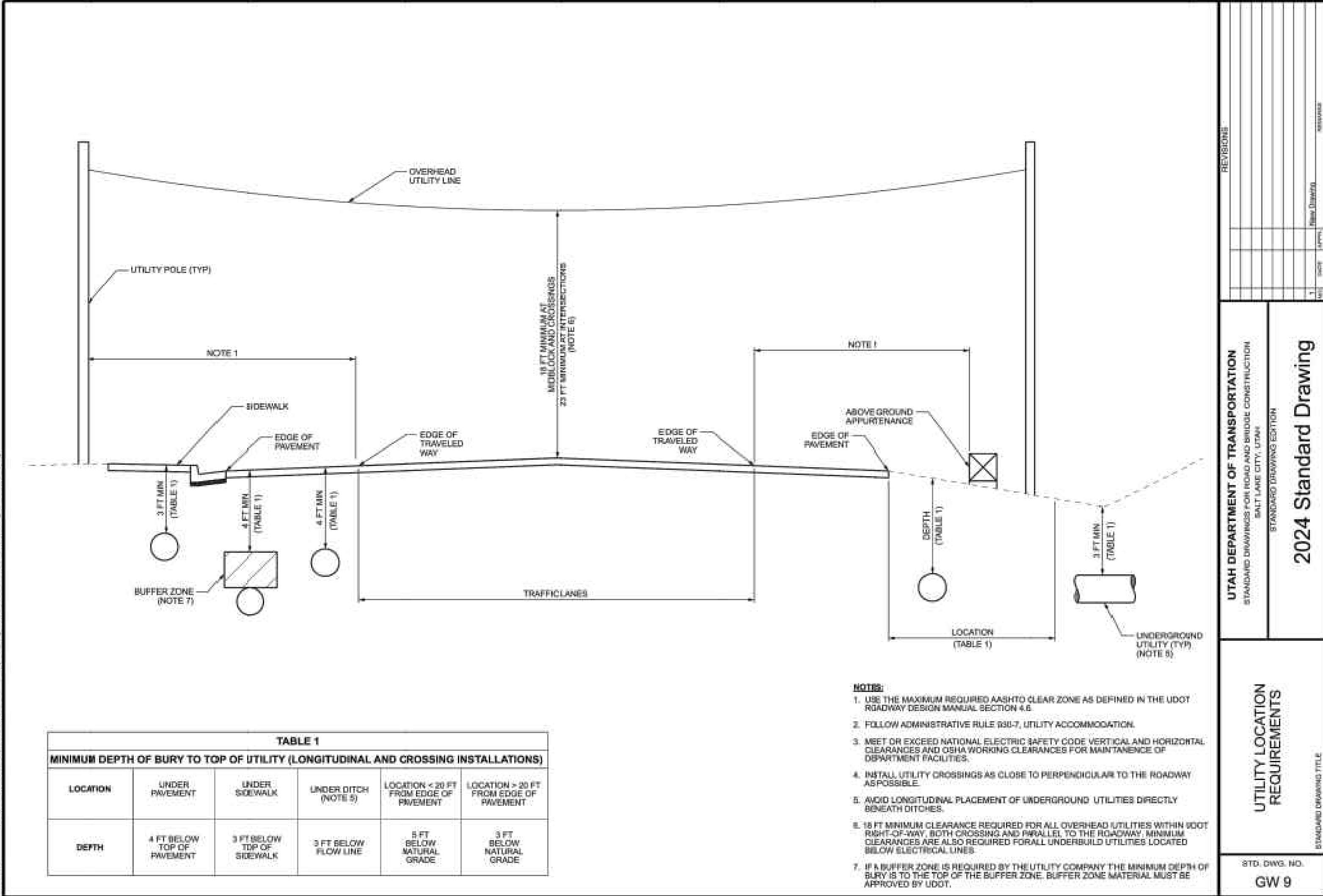
#### 3.7 PAVEMENT MARKING PAINT

- A. Allow at least 24 hours after completing flush coat before applying permanent pavement markings.

END OF SECTION

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2025 Standard Specifications  
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#### CITY ENGINEER APPROVAL

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DATE

NOTES AND DETAILS SHEET 7

HYRUM MARKET 1860

CIVIL IMPROVEMENT PLANS

HYRUM CITY

DESIGNED: LCB/EJM

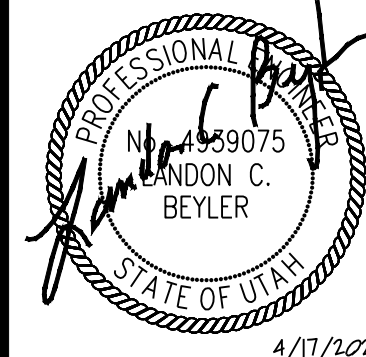
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24.00160

SHEET

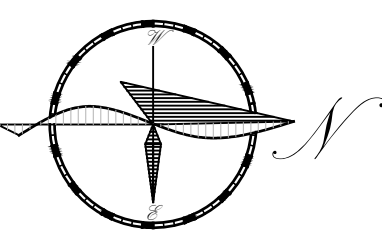
10 OF 10

**BEYLER CONSULTING**  
Plan. Design. Manage  
CORPORATE OFFICE  
5920 100th St. SW, Ste #25  
Lakewood, WA 98499  
(253) 984-2900  
beylerconsulting.com





# ES 101

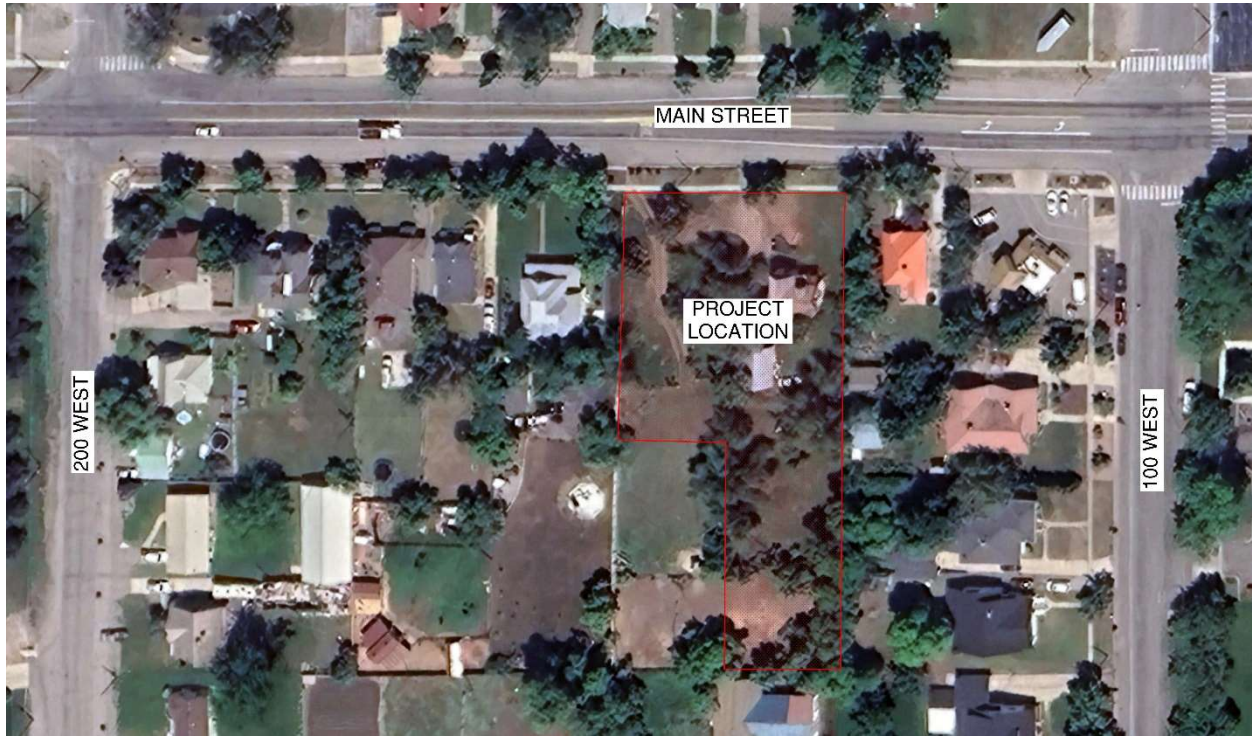




PRELIMINARY DRAINAGE REPORT FOR:

# HYRUM MARKET 1860

HYRUM CITY, UTAH



REVIEWED BY:



**BEYLER**  
CONSULTING

Landon Beyler, PE  
Beyler Consulting  
5920 100<sup>th</sup> St SW, Ste #25  
Lakewood, WA 98799



## Preliminary Drainage Plan

### 1. GENERAL DESCRIPTION

The Hyrum Market 1860 is a 0.965 acre property located in Hyrum, Cache County, Utah and is situated west at 127 West Main Street. This property will be developed into 2 commercial buildings and consist of parking area, buildings, and landscaping.

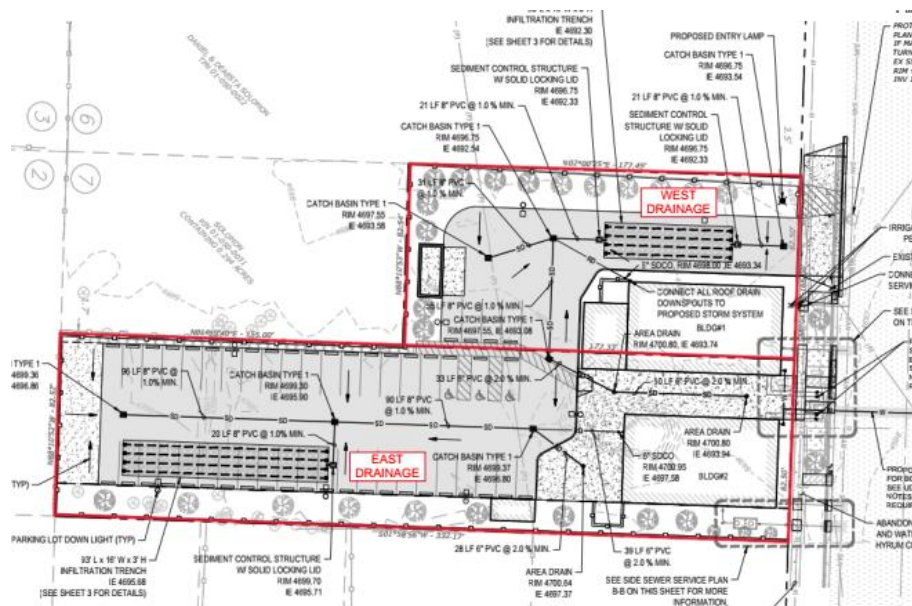
The current parcels consists of houses, detached garage/barn, small sheds, and an unfinished concrete structure. The remaining area appears to be mainly used as pastureland. All building on the site will be demolished as part of this development.

### 2. PROPOSED ON-SITE DRAINAGE

Surface water from precipitation generally drains towards the northwest corner of the property. Due to roadways that border to the north, it is anticipated that upstream flows will be conveyed past the property through the roadways and not impact the project.

Based on a zero release rate from the project, an analysis was performed for this site. The site is divided into two drainage areas, each with their own retention basin, designated as the west drainage and east drainage. The location is based on topography and the layout of the proposed roadways and buildings. The retention facility will capture the 100-year 24-hour storm event with one foot of freeboard.

Storm drain piping will be installed within the Project to capture runoff generated from buildings, roadways, and landscape areas. Water will generally sheet flow to roadways, flow down gutters to inlets and be conveyed in pipes to the retention basin. The proposed development for this site consists of 2 commercial buildings and consist of parking area, buildings, and landscaping. Runoff from this project will be collected within the project by inlet boxes and conveyed through underground piping to a retention basin. The retention basin will be located and described above and as shown on the Drainage Basin Map shown here.





### 3. CALCULATIONS

Runoff calculations are provided below. The 100 year, 24 hour storm event was used for the sizing of the retention basin.

#### 3.1 DESIGN STORM CRITERIA

Storm intensities used in this study area are taken from the NOAA Atlas 14, Volume 1, Version 5 for Latitude 41.6339, Longitude -111.8589, Elevation 4698. Storm intensity and depth tables are attached for reference.

#### 3.2 STORM DRAINAGE GENERATION

The storm drain analysis is completed using the rational method, using the rational formula:

$$Q = C * i * A$$

Where;

Q = Design flow in cubic feet per second (cfs)

C = Runoff coefficient. Represents percent of precipitation that will contribute as runoff.

i = Rainfall intensity in inches per hour (in/hr)

A = Drainage area in acres (Ac)

A unique C value is assigned to each type of land cover such as impervious and pervious surfaces. Examples of impervious surfaces are the asphalt street, concrete driveways and sidewalks. Examples of pervious surfaces are lawns, gardens and open areas. The C value for some land cover types is also affected by the drainage configuration of that cover. For example, house roofs are essentially impervious surfaces, but because of the nature of roof rain gutter systems and because the down spouts from the rain gutters typically drain onto open lawns, the percentage of water contributed to the Subdivision storm drainage system is usually much lower than other impervious surfaces.

For this analysis, the drainage areas are divided into three surface cover types, namely hardscape, buildings, and landscaped areas. The streets include park strips and sidewalks.

The assigned C value for each surface cover is as follows:

Hardscape C = 0.90

Buildings C = 0.85

Landscaping C = 0.15

For each drainage sub-basin the amount of impermeable and permeable surface area is measured to calculate a composite C value. The composite C value is calculated as follows.

$$\text{Composite C} = \text{Sum} (C_i * A_i) / A_t$$

Where;

C<sub>i</sub> = Runoff coefficient for each type of land cover.

A<sub>i</sub> = Drainage area of each type of land cover.

A<sub>t</sub> = Total drainage area of all types of land cover in the sub-basin.

#### 3.3 DRAINAGE BASIN DELINEATION

For the purposes of this preliminary study, areas were calculated for each of the surface cover types in order to calculate the volume of runoff the retention basin should capture. For final design, delineation will be performed so piping can be sized appropriately. The attached Table A shows the volume calculation.



# TABLE 1

## WEST RETENTION BASIN

Rain Fall Intensity from NOAA Website for Hyrum, Utah, 41.6339° N, 111.8589° W

<u>Infiltration</u>		80th Percentile Storm [in]		0.50	<u>Drainage Characteristics</u>	
Design Rate [ft/sec]	8.33E-05	Land Disturbance [ac]		0.33	Contributing Area [ac]	0.33
		Impervious Area [ac]		0.26	C (Weighted Average)	0.73
		Imperviousness		78.79%	C*A	0.24
		R_v		0.697		
		Minimum Retention Volume [cf]		417	Calculated Orifice Diameter [in]	0.00
		LID Depth [ft]		0.92	Rounded Orifice Diameter [in]	0.00

A	B	C	D	E	F	G	H	I	J	K (C - F - I)
Time [min]	100 yr intensity [in/hr]	Storm Volume [cf]	Estimated Max Stage [ft]	Infiltration Area [sf]	Infiltration [cf]	Outlet Time [min]	Outlet Rate [cfs]	Outlet Volume During the Storm [cf]	Outlet Volume After the Storm [cf]	Accumulated Storage [cf]
5	5.78	417	0.89	669.28	16.73	-	-	-	-	400.58
10	4.40	635	1.18	801.33	40.07	-	-	-	-	595.43
15	3.64	788	1.35	878.75	65.91	-	-	-	-	721.97
30	2.44	1,056	1.60	992.59	148.89	-	-	-	-	907.39
60	1.52	1,316	1.60	992.59	297.78	-	-	-	-	1,018.24
120	0.86	1,489	1.60	992.59	595.55	-	-	-	-	893.62
180	0.61	1,576	1.60	992.59	893.33	-	-	-	-	682.43
360	0.36	1,853	1.60	992.59	1,786.66	-	-	-	-	66.15
720	0.22	2,286	1.60	992.59	3,573.32	-	-	-	-	-
1,440	0.13	2,788	1.60	992.59	7,146.64	-	-	-	-	-

### Basin Characteristics

Volume [cf]	1,033.73
Depth [ft]	1.60
Top Area [sf]	1,028.16

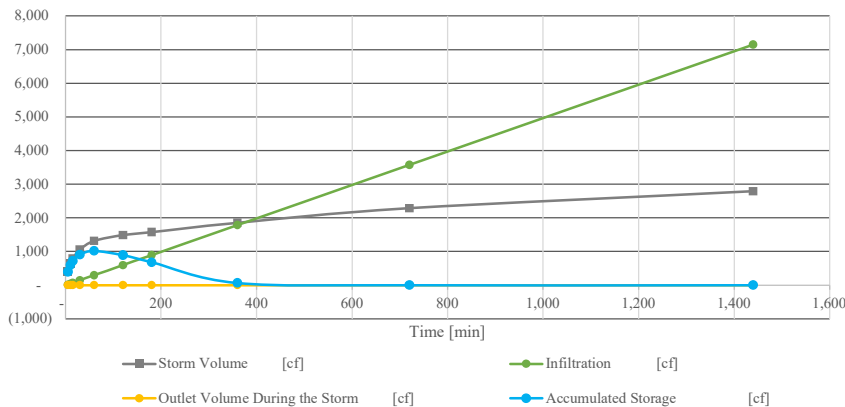
### Emergency Overflow

Rate [cfs]	0.37
Height [ft]	2.00
Length [ft]	0.04

Orifice Diameter [in]	-
Height of Outlet	0' 11"

Volume Provided [ft³]	1,034	102% of required
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Hydrograph





# TABLE 1

## EAST RETENTION BASIN

Rain Fall Intensity from NOAA Website for Hyrum, Utah, 41.6339° N, 111.8589° W

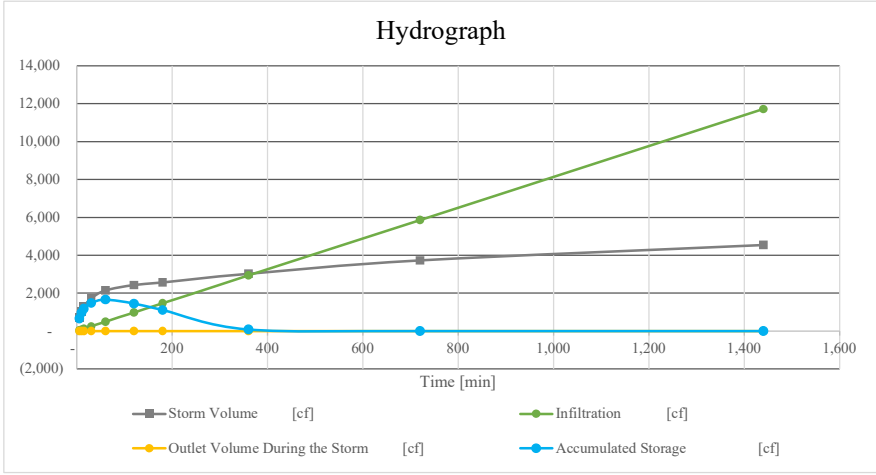
<u>Infiltration</u>		80th Percentile Storm [in]		0.50	<u>Drainage Characteristics</u>	
Design Rate [ft/sec]	8.33E-05	Land Disturbance [ac]		0.63	Contributing Area [ac]	0.63
		Impervious Area [ac]		0.40	C (Weighted Average)	0.62
		Imperviousness		63.49%	C*A	0.39
		R_v		0.557		
		Minimum Retention Volume [cf]		637	Calculated Orifice Diameter [in]	0.00
		LID Depth [ft]		0.92	Rounded Orifice Diameter [in]	0.00

A	B	C	D	E	F	G	H	I	J	K (C - F - I)
Time [min]	100 yr intensity [in/hr]	Storm Volume [cf]	Estimated Max Stage [ft]	Infiltration Area [sf]	Infiltration [cf]	Outlet Time [min]	Outlet Rate [cfs]	Outlet Volume During the Storm [cf]	Outlet Volume After the Storm [cf]	Accumulated Storage [cf]
5	5.78	679	0.88	1,095.18	27.38	-	-	-	-	651.95
10	4.40	1,034	1.18	1,317.17	65.86	-	-	-	-	968.64
15	3.64	1,283	1.35	1,442.96	108.22	-	-	-	-	1,174.33
30	2.44	1,719	1.60	1,627.96	244.19	-	-	-	-	1,475.27
60	1.52	2,142	1.60	1,627.96	488.39	-	-	-	-	1,653.90
120	0.86	2,424	1.60	1,627.96	976.77	-	-	-	-	1,447.39
180	0.61	2,565	1.60	1,627.96	1,465.16	-	-	-	-	1,099.95
360	0.36	3,016	1.60	1,627.96	2,930.32	-	-	-	-	85.79
720	0.22	3,721	1.60	1,627.96	5,860.64	-	-	-	-	-
1,440	0.13	4,538	1.60	1,627.96	11,721.29	-	-	-	-	-

<u>Basin Characteristics</u>		<u>Emergency Overflow</u>	
Volume [cf]	1,667.33	Rate [cfs]	0.60
Depth [ft]	1.60	Height [ft]	2.00
Top Area [sf]	1,640.16	Length [ft]	0.06

Orifice Diameter [in] -  
 Height of Outlet 0' 11"

Volume Provided [ft³] 1,667 101% of required







**NOAA Atlas 14, Volume 1, Version 5**  
**Location name: Hyrum, Utah, USA\***  
**Latitude: 41.6339°, Longitude: -111.8589°**  
**Elevation: 4698 ft\*\***  
 \* source: ESRI Maps  
 \*\* source: USGS



### POINT PRECIPITATION FREQUENCY ESTIMATES

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

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aerals](#)

### PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) <sup>1</sup>										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.114 (0.100-0.130)	0.144 (0.128-0.166)	0.199 (0.175-0.228)	0.248 (0.216-0.284)	0.327 (0.279-0.376)	0.398 (0.330-0.460)	0.482 (0.390-0.563)	0.580 (0.453-0.687)	0.737 (0.549-0.893)	0.877 (0.627-1.08)
10-min	0.173 (0.152-0.197)	0.219 (0.195-0.252)	0.302 (0.265-0.347)	0.377 (0.328-0.432)	0.498 (0.424-0.573)	0.605 (0.503-0.700)	0.734 (0.593-0.857)	0.883 (0.689-1.05)	1.12 (0.835-1.36)	1.34 (0.954-1.65)
15-min	0.215 (0.188-0.244)	0.272 (0.241-0.312)	0.375 (0.329-0.430)	0.468 (0.406-0.535)	0.616 (0.526-0.709)	0.750 (0.624-0.868)	0.910 (0.735-1.06)	1.09 (0.855-1.30)	1.39 (1.04-1.68)	1.66 (1.18-2.05)
30-min	0.289 (0.254-0.329)	0.366 (0.324-0.420)	0.505 (0.443-0.578)	0.630 (0.547-0.721)	0.830 (0.707-0.955)	1.01 (0.840-1.17)	1.22 (0.990-1.43)	1.47 (1.15-1.75)	1.87 (1.39-2.27)	2.23 (1.59-2.76)
60-min	0.357 (0.314-0.407)	0.453 (0.401-0.520)	0.624 (0.548-0.716)	0.779 (0.677-0.892)	1.03 (0.876-1.18)	1.25 (1.04-1.45)	1.52 (1.22-1.77)	1.82 (1.42-2.16)	2.32 (1.73-2.81)	2.76 (1.97-3.41)
2-hr	0.463 (0.415-0.520)	0.581 (0.519-0.651)	0.762 (0.677-0.853)	0.929 (0.817-1.04)	1.20 (1.03-1.35)	1.44 (1.21-1.63)	1.72 (1.41-1.97)	2.05 (1.63-2.39)	2.57 (1.94-3.08)	3.04 (2.21-3.72)
3-hr	0.545 (0.496-0.610)	0.680 (0.618-0.763)	0.864 (0.782-0.965)	1.04 (0.929-1.16)	1.30 (1.15-1.46)	1.54 (1.33-1.74)	1.82 (1.53-2.08)	2.14 (1.75-2.49)	2.66 (2.08-3.17)	3.11 (2.35-3.79)
6-hr	0.746 (0.683-0.822)	0.921 (0.841-1.02)	1.14 (1.04-1.26)	1.34 (1.21-1.48)	1.63 (1.45-1.81)	1.87 (1.64-2.09)	2.14 (1.85-2.41)	2.45 (2.07-2.80)	2.97 (2.44-3.47)	3.44 (2.74-4.08)
12-hr	0.982 (0.900-1.08)	1.21 (1.11-1.34)	1.48 (1.35-1.64)	1.72 (1.56-1.90)	2.07 (1.85-2.29)	2.34 (2.08-2.61)	2.64 (2.30-2.98)	2.96 (2.53-3.37)	3.45 (2.87-3.99)	3.85 (3.12-4.52)
24-hr	1.27 (1.15-1.40)	1.56 (1.42-1.72)	1.90 (1.72-2.10)	2.18 (1.97-2.40)	2.58 (2.32-2.84)	2.89 (2.60-3.18)	3.22 (2.87-3.55)	3.56 (3.16-3.92)	4.03 (3.53-4.45)	4.39 (3.83-4.87)
2-day	1.50 (1.36-1.68)	1.85 (1.67-2.06)	2.24 (2.02-2.50)	2.56 (2.31-2.86)	3.02 (2.70-3.36)	3.38 (3.02-3.76)	3.76 (3.33-4.18)	4.15 (3.66-4.62)	4.68 (4.09-5.23)	5.11 (4.43-5.72)
3-day	1.66 (1.51-1.86)	2.04 (1.85-2.28)	2.48 (2.24-2.76)	2.84 (2.56-3.17)	3.35 (3.00-3.73)	3.75 (3.35-4.18)	4.17 (3.70-4.64)	4.61 (4.06-5.13)	5.21 (4.55-5.81)	5.68 (4.92-6.35)
4-day	1.82 (1.65-2.03)	2.24 (2.03-2.50)	2.72 (2.46-3.03)	3.12 (2.82-3.48)	3.68 (3.31-4.10)	4.12 (3.69-4.59)	4.59 (4.07-5.10)	5.07 (4.46-5.64)	5.73 (5.00-6.38)	6.25 (5.40-6.97)
7-day	2.20 (1.99-2.47)	2.72 (2.46-3.05)	3.30 (2.99-3.71)	3.79 (3.42-4.25)	4.46 (4.01-5.00)	4.99 (4.46-5.59)	5.54 (4.93-6.21)	6.11 (5.40-6.85)	6.88 (6.02-7.74)	7.48 (6.50-8.44)
10-day	2.49 (2.26-2.77)	3.07 (2.79-3.42)	3.73 (3.38-4.15)	4.27 (3.87-4.75)	5.00 (4.51-5.56)	5.56 (5.00-6.18)	6.15 (5.50-6.84)	6.74 (5.99-7.50)	7.53 (6.64-8.41)	8.14 (7.12-9.11)
20-day	3.22 (2.96-3.50)	3.97 (3.65-4.32)	4.77 (4.38-5.18)	5.39 (4.95-5.86)	6.22 (5.69-6.75)	6.82 (6.24-7.41)	7.43 (6.77-8.09)	8.02 (7.27-8.74)	8.78 (7.92-9.60)	9.35 (8.39-10.2)
30-day	3.89 (3.60-4.24)	4.79 (4.43-5.21)	5.73 (5.29-6.23)	6.47 (5.97-7.04)	7.46 (6.87-8.11)	8.20 (7.53-8.92)	8.94 (8.19-9.73)	9.66 (8.81-10.5)	10.6 (9.61-11.6)	11.3 (10.2-12.4)
45-day	4.84 (4.48-5.23)	5.96 (5.50-6.43)	7.06 (6.52-7.61)	7.90 (7.29-8.52)	8.99 (8.28-9.69)	9.78 (8.98-10.5)	10.6 (9.67-11.4)	11.3 (10.3-12.2)	12.2 (11.1-13.2)	12.9 (11.7-14.0)
60-day	5.73 (5.30-6.19)	7.03 (6.50-7.60)	8.26 (7.64-8.93)	9.19 (8.49-9.94)	10.4 (9.56-11.2)	11.2 (10.3-12.1)	12.0 (11.0-13.0)	12.7 (11.7-13.8)	13.6 (12.5-14.9)	14.3 (13.0-15.6)

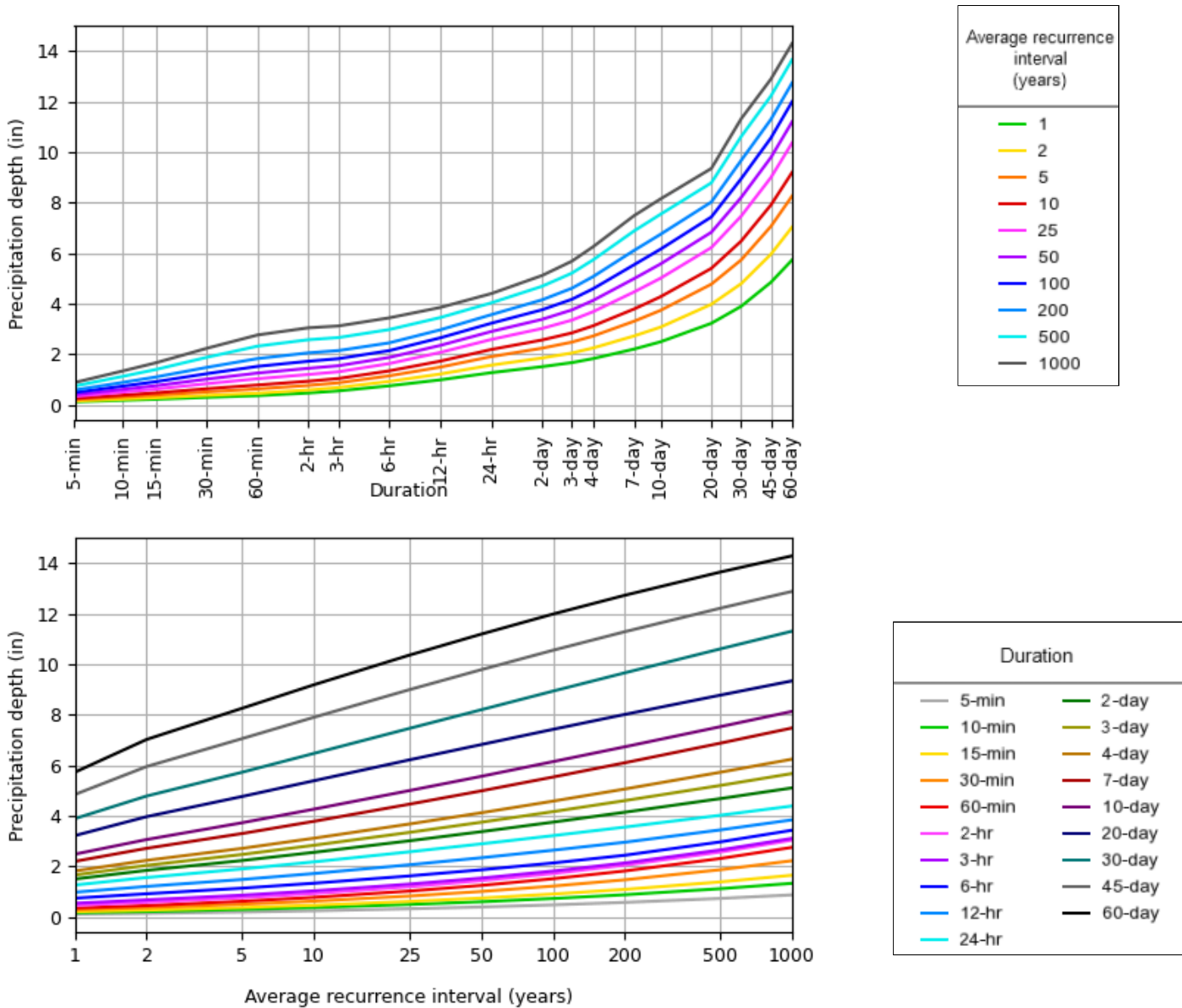
<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).  
 Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.  
 Please refer to NOAA Atlas 14 document for more information.

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### PF graphical



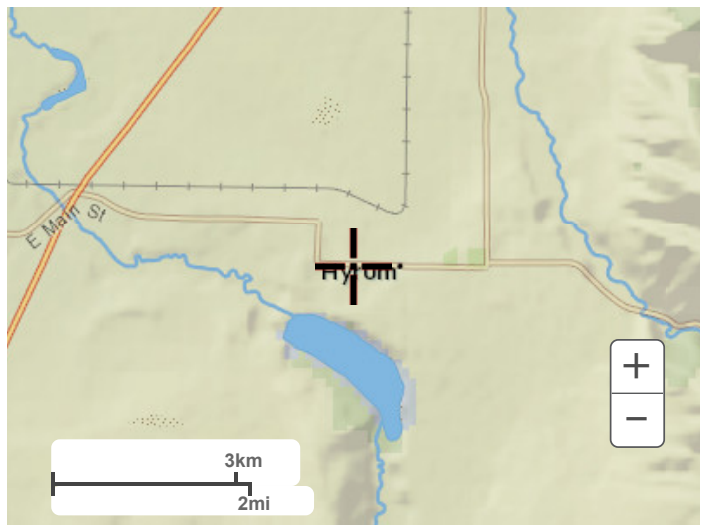
PDS-based depth-duration-frequency (DDF) curves  
Latitude: 41.6339°, Longitude: -111.8589°



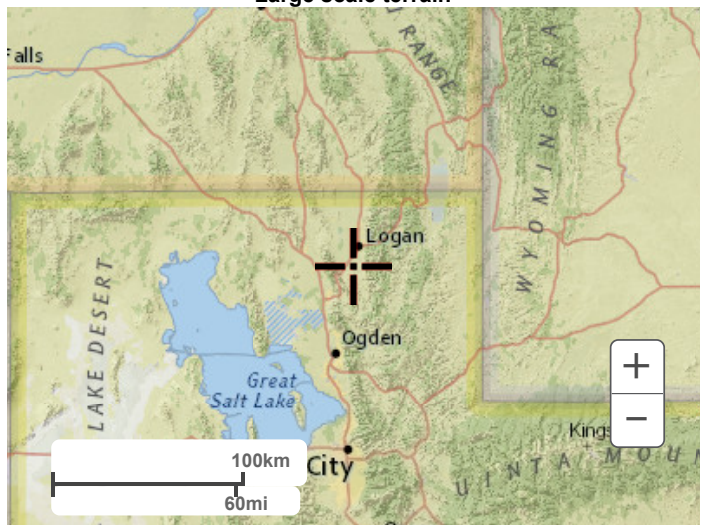
Maps & aerials

Small scale terrain

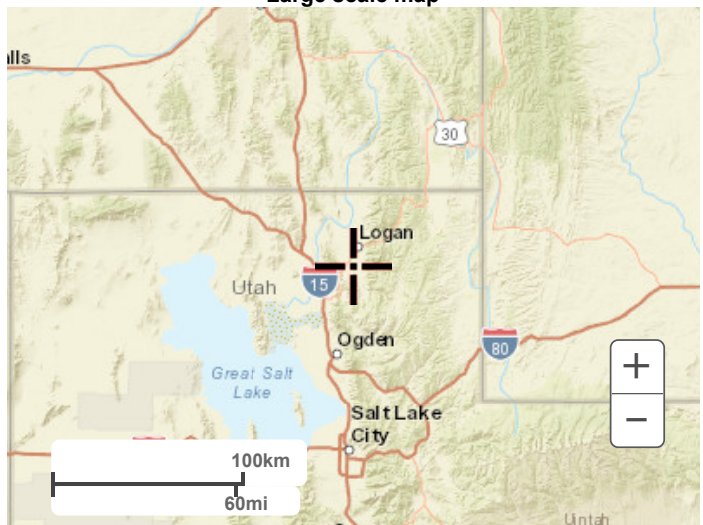




Large scale terrain

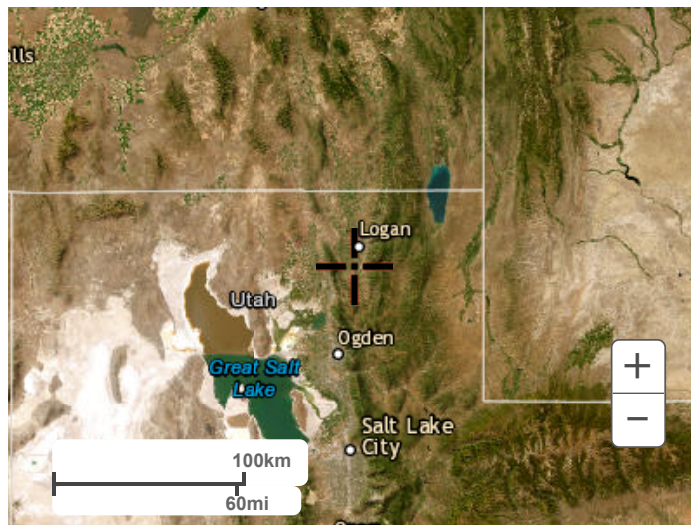


Large scale map



Large scale aerial





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1325 East West Highway  
Silver Spring, MD 20910  
Questions?: [HDSC.Questions@noaa.gov](mailto:HDSC.Questions@noaa.gov)

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