



**PLANNING COMMISSION
STAFF EVALUATION
FIRST REVIEW**

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: February 6, 2025

PLANNING COMMISSION MEETING: February 13, 2025

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:

The applicant would like to develop the 0.96 acres with two (2) identical two-story mixed-use buildings facing the streetscape on Main Street. Each building will be 2,400 sq. ft. on each level. Each main floor level of each building will be divided into two (2) north and south commercial units for a combined four (4) ground level commercial use units. The applicant provided potential uses (see attached Hyrum Market 1860 Scope Narrative) that include a mix of open conference, market space, demonstration kitchen, community events, home-school groups, classrooms and small training classrooms, farmer's or craft markets, non-profit organizations, and more. The upper level of each building will consist of six (6) short-term hotel style residential units in each building with single and double-bed units that will be accessible by a stairway inside each building and secured at main level doors to the exterior of the building.

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:

Planning and Zoning:

1. Staff supports a Mixed Use of Commercial and Hotel as permitted in HCC 17.45.020 Use Regulations.
2. Staff did not receive the required Lighting Plan submittal. HCC 17.45.120 requires that each site plan shall include a lighting plan.
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
 - b. Cross access agreements need to be prepared and recorded to each property parcel for UDOT driveway approach interior parking.
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.
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.
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.
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.
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.
9. A building permit will be required for building structures as regulated by HCC Section 15.08 Building Permits.
10. All construction shall comply with Hyrum City Design Standards and Construction Specifications.

Engineering:

1. See comments contained on Site Plan.

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.
2. The upstairs hotel/apartments is a R-1, it is required to have Sprinklers.
3. We need 26' of clearance on driveway and on all sides of parking for fire apparatus access lot see drawings.
4. What type of building construction?
5. Each unit will need to be reviewed and inspected as built out.

Parks Department:

1. No comments or concerns.

Power Department:

1. Staff requests the applicant contact the Power Department to schedule an initial onsite meeting to verify all existing electrical utilities.
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.
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.
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.

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.
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.
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.

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.
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.
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.

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).
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.
3. Staff recommends that each service to commercial uses be a minimum of 1-1/2" to ensure adequate future flows.
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.
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.

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. Staff recommends the Planning Commission make a motion specifying conditions and requirements, and staff comments to the City Council.

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. If determined by the City Council, the requestor will address conditions, requirements, and staff comments, and return revisions to the City Council.
3. Following City Council Approval, the requestor will submit two (2) printed full-size copies of the approved plan sets which will be submitted to Staff for Staff Signatures. One (1) signed Staff copy will be issued to the requestor, and one (1) copy will be filed for Staff site improvement construction inspection and record keeping.
4. The requestor will schedule a pre-construction meeting with Staff prior to the issuance of a Permitted Use Permit to perform the construction.
5. The applicant understands that by making application accepts all Federal, State, and Local standards and agrees to adhere to them.

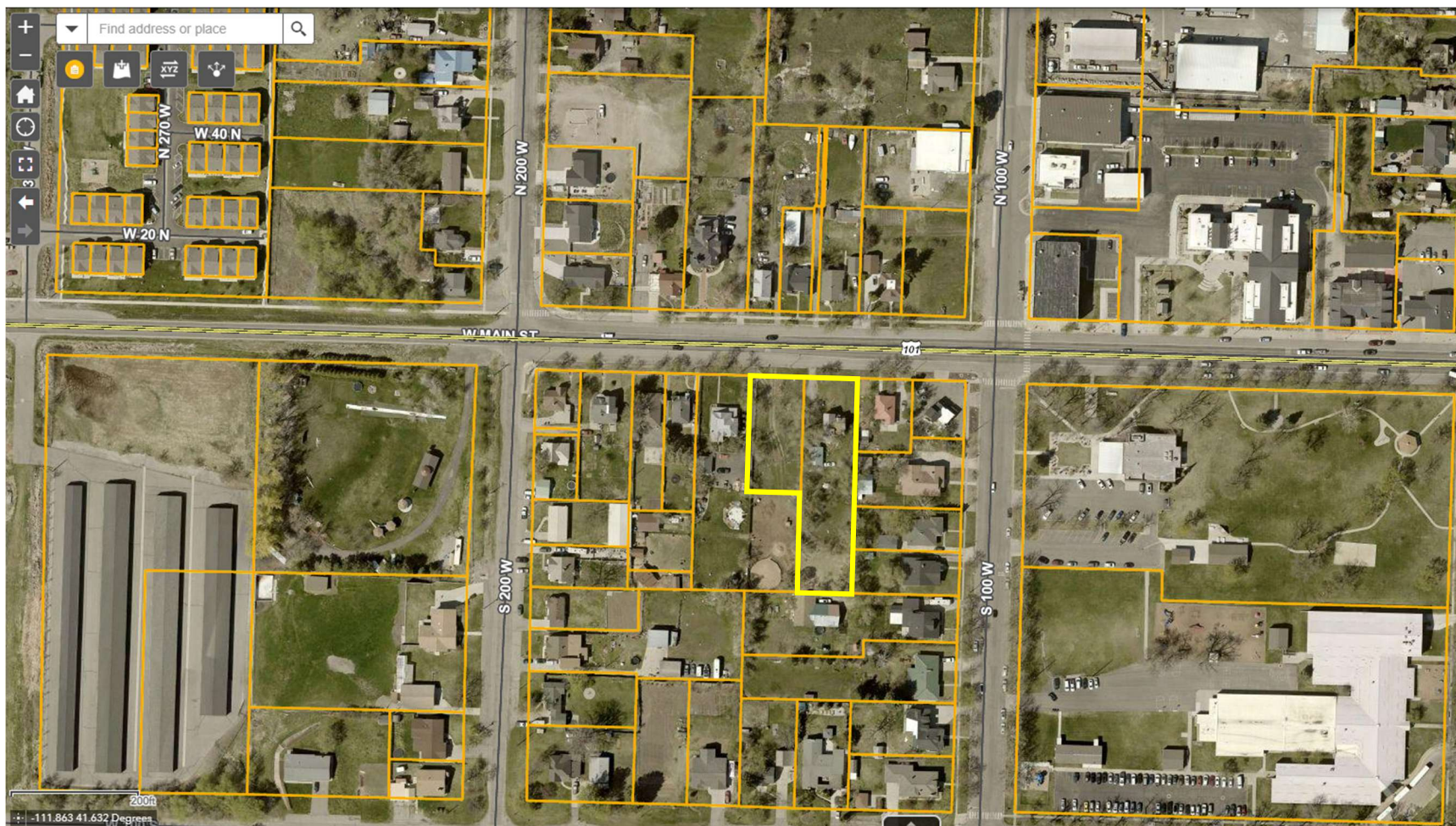
FINDINGS OF FACT:

1. The property is located in the Commercial Zone C-2.
 2. Mixed Commercial Uses is a permitted use in the Commercial Zone C-2.
 3. Final Approval must be obtained from the City Council, which may approve, disapprove, approve with additional conditions and requirements, or require the requester to return to the Planning Commission for significant revisions.
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ATTACHMENTS:

1. Cache County Parcel and Zoning Viewer – Vicinity Map
2. Cache County Parcel and Zoning Viewer – Zoning Map
3. Cache County Parcel and Zoning Viewer – Aerial Image
4. Hyrum Market 1860 Conceptual Buildings Exterior Elevation
5. Hyrum Market 1860 Scope Narrative
6. Hyrum Market 1860 Site Plan Submittal

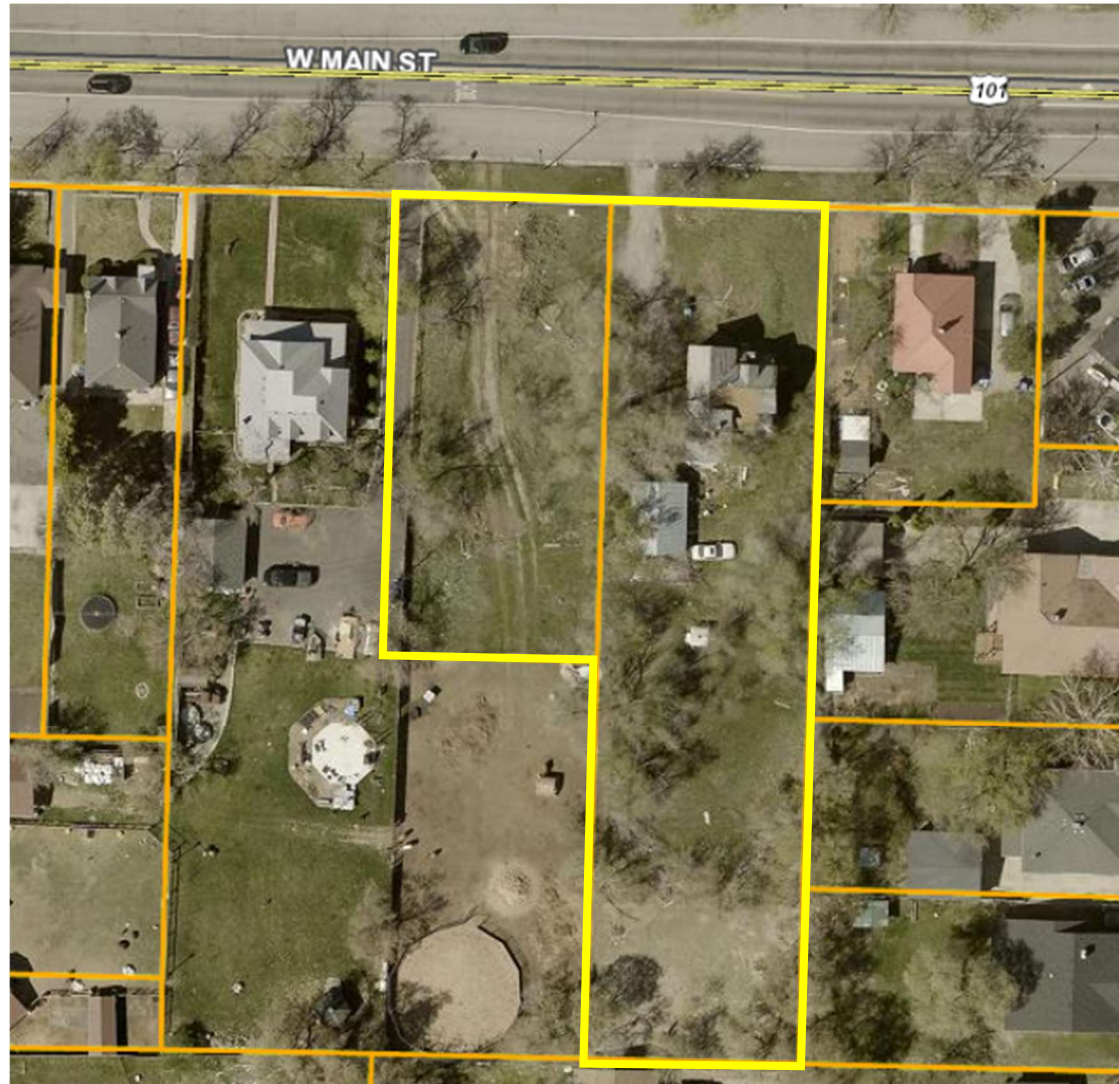
Cache County Parcel and Zoning Viewer – Vicinity Map



Cache County Parcel and Zoning Viewer – Hyrum City Zoning Map



Cache County Parcel and Zoning Viewer – Aerial Image



Hyrum City
60 West Main Street
Hyrum, UT 84319

Subject: Market 1860 Site Plan Approval

Attn: Planning and Zoning Commission

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 60-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 an opportunity to finish the space according to business needs.

The second level in each building will consist of six 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. The residential units will be accessible by stairway and secured first-level exterior door located on the shared patio side between buildings.

Landscaping Plan

Landscaping will include 15-foot-wide green spaces along the east and west edges of the site as well as small landscape islands in the parking lot. Storm water retention ponds will occupy a portion of the landscape area but will be maintained as usable or manicured swales. Vegetation will include trees, lawn, native grass, flowers, and shrubs. Landscaping will be meticulously maintained to attract renters to the short-term rental units.

132.0'
ROOF PEAK

NOT TO SCALE

ASPHALT SHINGLE ROOF

124.0'
CEILING - LEVEL 2

EXTERIOR - HARDIE
BOARD, WHITE

114.0'
LEVEL 2

BLACK WINDOWS
AND STOREFRONT

100.0'
LEVEL 1



MARKET 1860 - EXTERIOR ELEVATION

**DETAILS IN THIS DRAWING ARE CONCEPTUAL. BUILDING TRIM, WINDOW AND DOOR LAYOUT AND OTHER ELEMENTS MAY VARY AT FINAL DESIGN.*

HYRUM MARKET 1860

PROPOSED SITE LAYOUT

SEC. 5, T.10N., R.1E., S.L.B. & M.

ENGINEERING REVIEW 1



VICINITY MAP
N.T.S.

PROJECT SITE

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

- 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.
- 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.
- 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.
- OWNER, DEVELOPER, AND CONTRACTOR ARE RESPONSIBLE FOR ANY DAMAGES DIRECTLY OR INDIRECTLY WITHIN THE UDOT RIGHT-OF-WAY AS A RESULT OF DEVELOPMENT ACTIVITIES.
- OWNER, DEVELOPER, AND/OR CONTRACTOR IS REQUIRED TO HIRE AN INDEPENDENT COMPANY FOR ALL TESTING WITHIN THE UDOT RIGHT-OF-WAY.
- 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.
- COMPLY WITH THE REQUIREMENTS OF UTAH CODE 17-23-14 (DISTURBED CORNERS - COUNTY SURVEYOR TO BE NOTIFIED - COORDINATION WITH CERTAIN STATE AGENCIES).

PLEASE UPDATE LEGAL DESCRIPTIONS. THESE HAVE BEEN COPIED AND PASTED FROM R.O.S. 2024-0070 AND DO NOT DESCRIBE THE LAND SHOWN AND HAVE ERRORS IN THEM. THESE SHOULD REFLECT ONLY THE CURRENT LEGAL DESCRIPTIONS. IF THERE IS A NEW DESCRIPTION, PLEASE REFERENCE THE RECORD OF SURVEY AND THE DEEDS.

RECORD LEGAL DESCRIPTIONS

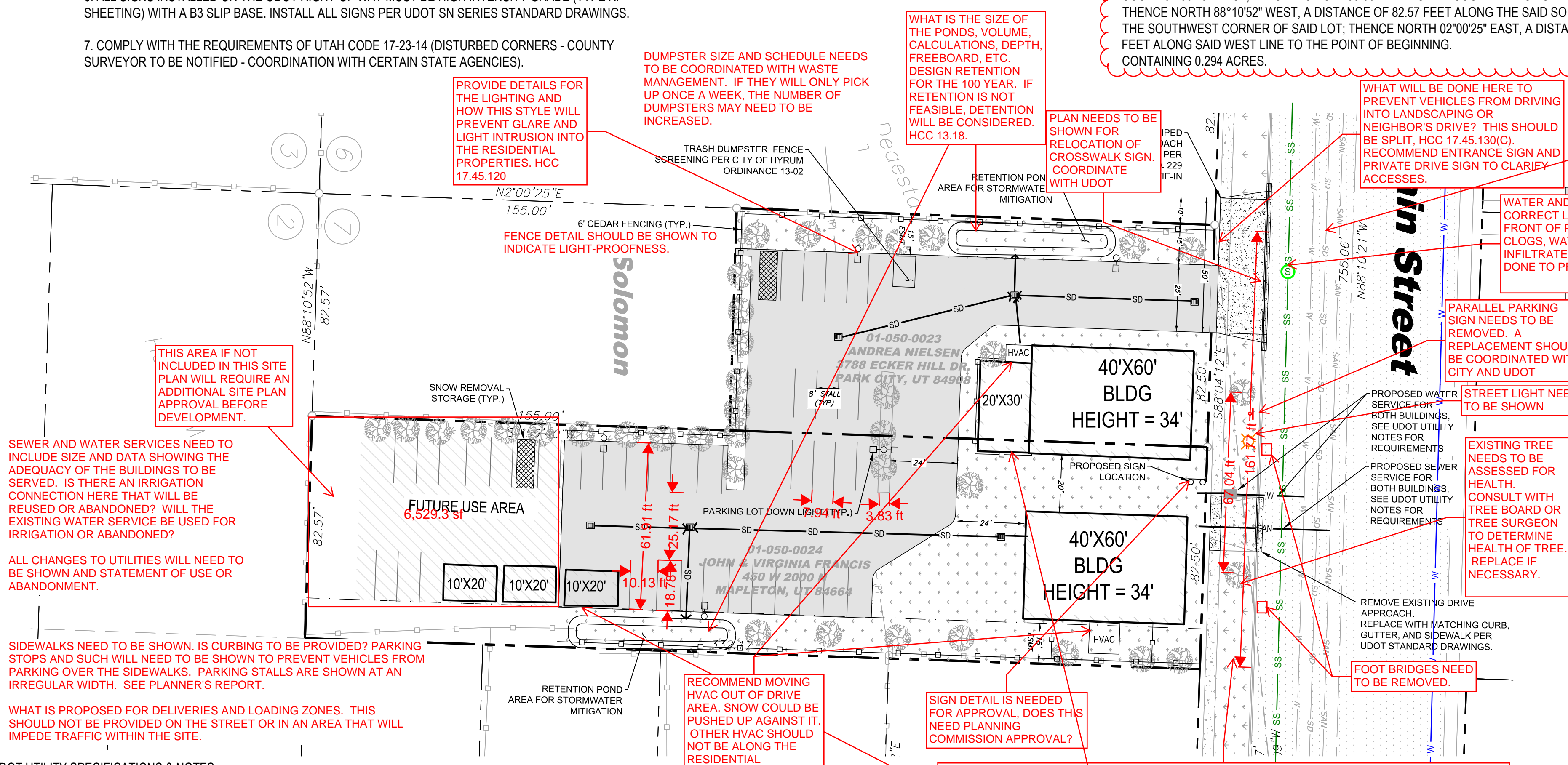
Parcel 01 050 0023
W/2 LOT 7 BLK 15 PLAT A HYRUM CITY SVY SE/4 SEC 5 T 10 N R 1E
LESS: THE SOUTH 155 FEET OF THE WEST HALF OF LOT 7, BLOCK 15, PLAT "A" HYRUM CITY SURVEY
AND FURTHER DESCRIBED AS SITUATED IN THE SOUTHEAST QUARTER OF SECTION 5, TOWNSHIP 10 NORTH, RANGE 1 EAST OF THE SALT LAKE BASE AND MERIDIAN.
Parcel 01-050-0031
THE SOUTH 155 FEET OF THE WEST HALF OF LOT 7, BLOCK 15, PLAT "A" HYRUM CITY SURVEY
AND FURTHER DESCRIBED AS SITUATED IN THE SOUTHEAST QUARTER OF SECTION 5, TOWNSHIP 10 NORTH, RANGE 1 EAST OF THE SALT LAKE BASE AND MERIDIAN.

AS-SURVEYED DESCRIPTIONS

PARCEL 0 1 050 0023
A PART OF THE SOUTHEAST QUARTER OF SECTION 5, TOWNSHIP 10 NORTH, RANGE 1 EAST OF THE SALT LAKE BASE AND MERIDIAN. ALSO BEING A PART OF LOT 7, BLOCK 15, PLAT "A" OF THE HYRUM CITY SURVEY. BEGINNING AT A POINT ON THE SOUTH RIGHT OF WAY LINE OF MAIN STREET SAID POINT BEING THE NORTHWEST CORNER OF SAID LOT 7 AND RUNNING THENCE SOUTH 88°04'12" EAST, A DISTANCE OF 82.50 FEET ALONG SAID SOUTH RIGHT OF WAY LINE; THENCE SOUTH 01°59'40" WEST, A DISTANCE OF 177.33 FEET; THENCE NORTH 88°10'53" WEST, A DISTANCE OF 82.54 FEET TO THE WEST LINE OF SAID LOT 7; THENCE NORTH 02°00'25" EAST, A DISTANCE OF 177.49 FEET ALONG THE SAID WEST LINE TO THE POINT OF BEGINNING. CONTAINING 0.336 ACRES.
PARCEL 01-050-0031
A PART OF THE SOUTHEAST QUARTER OF SECTION 5, TOWNSHIP 10 NORTH, RANGE 1 EAST OF THE SALT LAKE BASE AND MERIDIAN. ALSO BEING A PART OF LOT 7, BLOCK 15, PLAT "A" OF THE HYRUM CITY SURVEY. BEGINNING AT A POINT ON THE WEST LINE OF SAID LOT 7 LOCATED SOUTH 02°00'25" WEST, A DISTANCE OF 177.49 FEET FROM THE NORTHWEST CORNER OF SAID LOT 7 AND RUNNING THENCE SOUTH 88°10'53" EAST, A DISTANCE OF 82.54 FEET; THENCE SOUTH 01°59'40" WEST, A DISTANCE OF 155.00 FEET TO THE SOUTH LINE OF SAID LOT 7; THENCE NORTH 88°10'52" WEST, A DISTANCE OF 82.57 FEET ALONG THE SAID SOUTH LINE TO THE SOUTHWEST CORNER OF SAID LOT; THENCE NORTH 02°00'25" EAST, A DISTANCE OF 155.00 FEET ALONG SAID WEST LINE TO THE POINT OF BEGINNING. CONTAINING 0.294 ACRES.

CLICK ON HYPERLINKS TO ACCESS REFERENCED MATERIAL

| LEGEND | |
|----------|-----------------------|
| [Symbol] | ASPHALT PAVEMENT |
| [Symbol] | ASPHALT FLOWLINE |
| [Symbol] | HEAVY DUTY ASPHALT |
| [Symbol] | ASPHALT OVERLAY |
| [Symbol] | PERMEABLE ASPHALT |
| [Symbol] | CONCRETE |
| [Symbol] | CONCRETE FLOWLINE |
| [Symbol] | PERVIOUS CONCRETE |
| [Symbol] | FLUSH CURB |
| [Symbol] | VERTICAL CURB |
| [Symbol] | CURB AND GUTTER |
| [Symbol] | GRAVEL |
| [Symbol] | BUILDING |
| [Symbol] | BUILDING BELOW |
| [Symbol] | BUILDING OVERHEAD |
| [Symbol] | BUILDING FOOTING |
| [Symbol] | BUILDING SETBACK |
| [Symbol] | GUARDRAIL |
| [Symbol] | CHAIN LINK FENCE |
| [Symbol] | WIRE FENCE |
| [Symbol] | WOOD FENCE |
| [Symbol] | RETAINING WALL |
| [Symbol] | LANDSCAPING |
| [Symbol] | BLOCK WALL |
| [Symbol] | ROCKERY |
| [Symbol] | SIGN |
| [Symbol] | WHEEL STOP |
| [Symbol] | TREE |
| [Symbol] | EX PROPERTY BOUNDARY |
| [Symbol] | PROPOSED CENTERLINE |
| [Symbol] | PROPOSED LOT LINE |
| [Symbol] | EX LOT LINE |
| [Symbol] | EX CENTERLINE |
| [Symbol] | PROPOSED RIGHT-OF-WAY |
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UDOT UTILITY SPECIFICATIONS & NOTES:

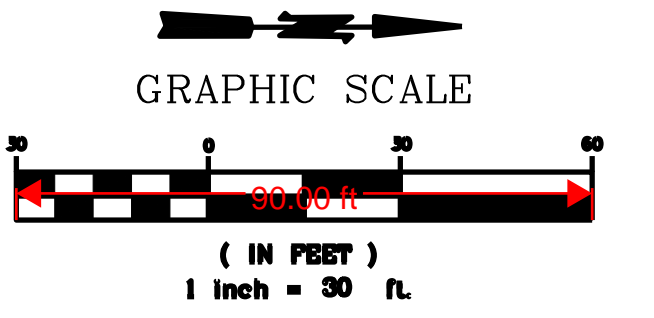
- CONTRACTOR TO USE TRENCHLESS CONSTRUCTION UNLESS SUFFICIENT REASON IS GIVEN FOR OPEN TRENCH CONSTRUCTION.
- ALL UTILITY TRENCHES TO BE CUT AT RIGHT ANGLES TO TRAVEL LANES. TEMPORARY PATCHES REQUIRE AT LEAST 2-INCH ROTOMILING APPROACHING AND LEAVING THE PATCH IN ALL TRAVEL LANES IMPACTED BEFORE FINAL T-PATCH ASPHALT PLACEMENT PER APWA PLAN NO. 255.
- ALL FINAL PARALLEL SAWCUT LINES OR ROTOMILING MUST BE LOCATED EITHER AT DESIGNED LANE LINES OR DESIGNED CENTER OF LANE. SAWCUTS MUST BE CLEANED AND TACK-COAT APPLIED BEFORE ASPHALT PLACEMENT
- 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
- 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, 7-75-115 GYRATION 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.
- 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.

| PROJECT INFO |
|--|
| ENGINEER: BEYLER CONSULTING 5920 100TH ST SW, STE 25 LAKEWOOD, WA 98499 CONTACT: TEL: 253-984-2900 |
| CLIENT: MARKET 1860 LLC |

| UTILITIES |
|---|
| WATER: HYRUM CITY CULINARY WATER AUTHORITY |
| SEWER: GRAVITY-HYRUM CITY SEWER AUTHORITY |
| POWER: HYRUM CITY POWER |

| BUILDING INFORMATION |
|--|
| 2 - 40'X60' STORY BLDGS. MAIN FLOOR RETAIL, UPPER FLOW SHORT TERM RENTAL UNITS |
| 3 - 10'X20' STORAGE 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 WILL THIS BE A SINGLE ADDRESS OR WILL EACH BUILDING KEEP THE PREVIOUS ADDRESSES? PROPERTY AREA: 0.63 Ac |
| ZONING: ZONING - C-2 OVERLAY 15 FT SIDE SETBACKS AGAINST RESIDENTIAL NO SETBACKS REQUIRED. |
| PARKING: DRIVEWAY PARKING: 33 STALLS DRIVEWAY PARKING (FUTURE USE): 12 STALLS TOTAL: 45 STALLS |



| | |
|--|------------------|
| DATE | |
| INIT | |
| DESCRIPTION | |
| NO. | |
| <p>BEYLER CONSULTING Plan, Design, Manage 5920 100th St SW, Ste #25 Lakewood, WA 98499 (253) 984-2900 beylerconsulting.com</p> | |
| UTAH | DATE: 01/24/2025 |
| HYRUM MARKET 1860 | VERT: 01/24/2025 |
| SITE PLAN | SCALE: LCB |
| DESIGNED: ADP | CHECKED: LCB |
| DRAWN: ADP | DRAWN: ADP |
| JOB NUMBER | 24.00160 |
| SHEET | 1 OF 9 |

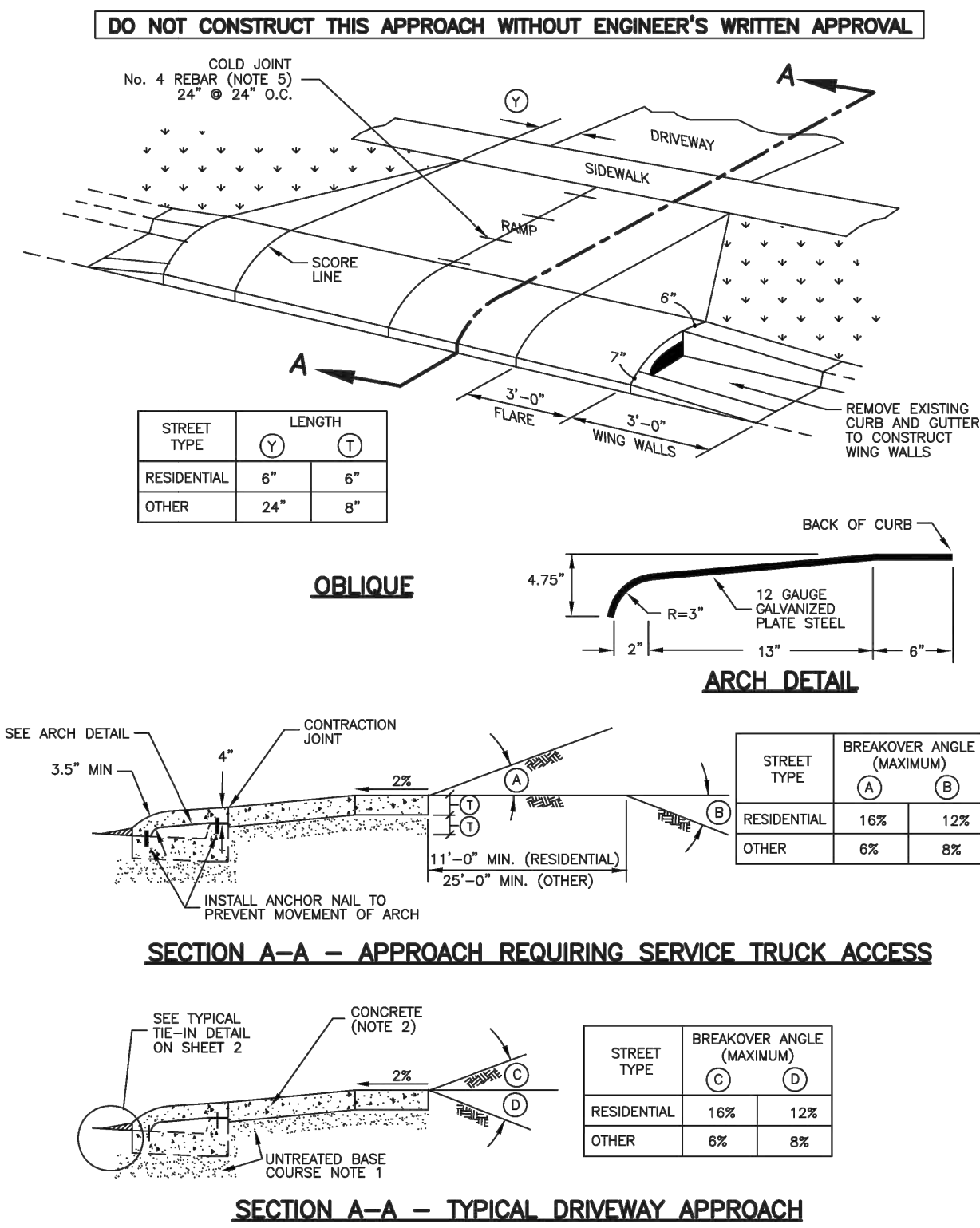
HYRUM MARKET 1860

PROPOSED SITE LAYOUT

SEC. 5, T.10N., R.1E., S.L.B. & M.

PIPED DRIVEWAY APPROACH

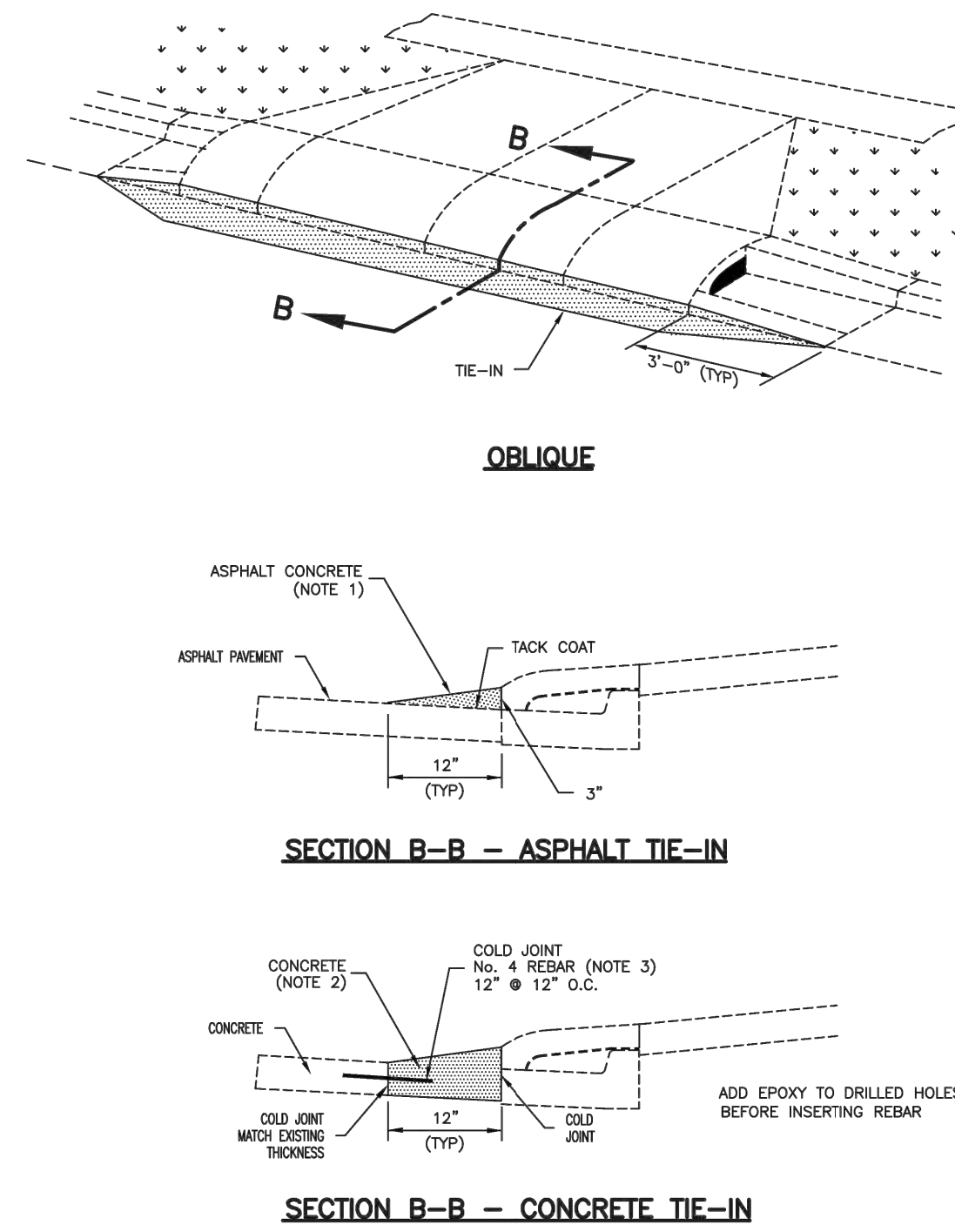
- UNTREATED BASE COURSE: Provide material specified in APWA Section 32 11 23.
 - Do not use gravel as a substitute for untreated base course without ENGINEER'S permission.
 - Place material per APWA Section 32 05 10.
 - Compact per APWA Section 31 23 26 to a modified proctor density of 95 percent or greater. Maximum lift thickness before compaction is 8 inches when using riding compaction equipment or 6 inches when using hand held compaction equipment.
- CONCRETE: Class 4000 per APWA Section 03 30 04.
 - If necessary, provide concrete that achieves design strength in less than 7 days. Use caution; however, as concrete crazing (spider cracks) may develop if air temperature exceeds 90 degrees F.
 - Place concrete per APWA Section 03 30 10.
 - Provide 1/2 inch radius on concrete edges exposed to public view.
 - 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.
- 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.
- CONTRACTION JOINT: Make contraction joints vertical.
 - 1/8 inch wide and 2 inches deep or 1/4 slab thickness if slab is greater than 8 inches thick.
 - Maximum length to width ratio for non-square panels is 1.5 to 1.
 - Maximum panel length (in feet) is 2.5 times the slab thickness (in inches) to a maximum of 15 feet.
- 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.
- 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.
 - 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.
 - Where heavy truck use and fire truck access applies, or to improve design speed, design grades should be cut in half.
 - Grades subject to roadway crown and gutter span to be reviewed by ENGINEER for high centering and vehicle approach speed.
- FINISH: Broomed.
- PROTECTION AND REPAIR:
 - Fill flow-line with water. Repair construction that doesn't drain.
 - Protect concrete from deicing chemicals during cure period.



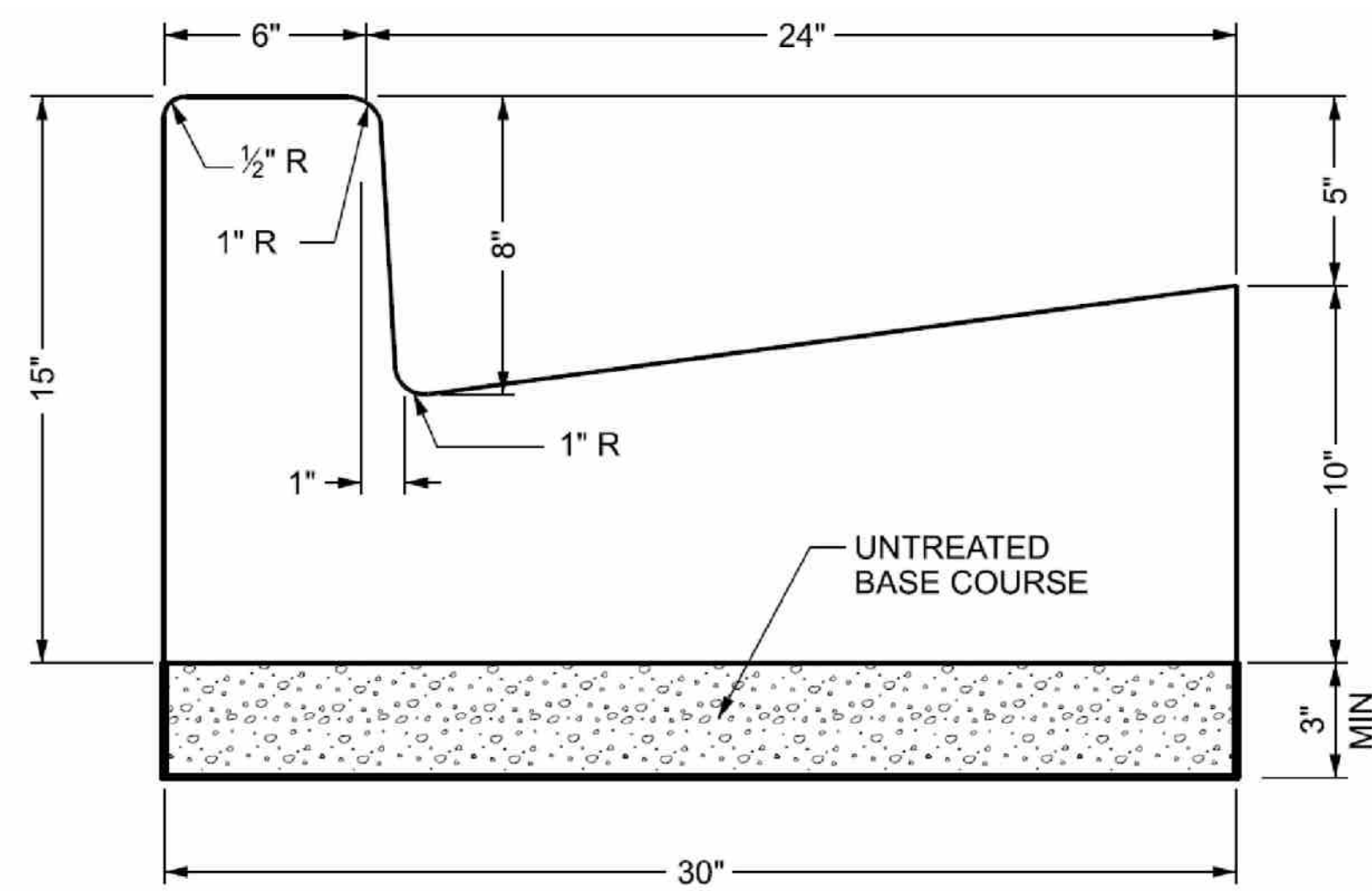
Plan No. **229**
December 2005
Drawing 1 of 2

PIPED DRIVEWAY APPROACH

- 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).
- CONCRETE: Class 4000 per APWA Section 03 30 04.
 - If necessary, provide concrete that achieves design strength in less than 7 days. Use caution; however, as concrete crazing (spider cracks) may develop if air temperature exceeds 90 degrees F.
 - Place concrete per APWA Section 03 30 10.
 - Provide 1/2 inch radius on concrete edges exposed to public view.
 - 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.
- REINFORCEMENT: ASTM A 615, grade 60, galvanized or epoxy coated deformed steel. See APWA Section 03 20 00 requirements.

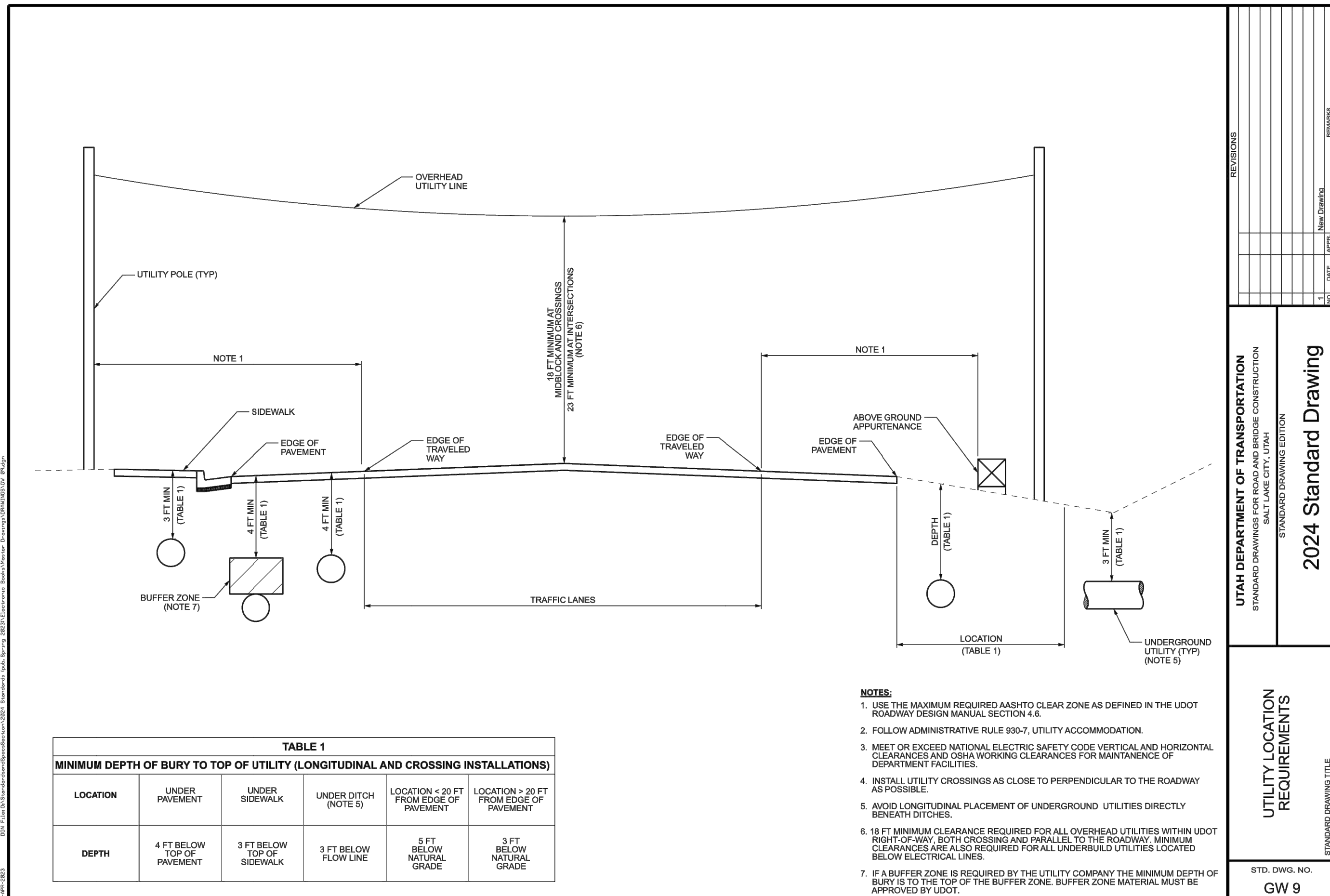


Plan No. **229**
January 2006
Drawing 2 of 2



NOTES:

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



HYRUM MARKET 1860

PROPOSED SITE LAYOUT

SEC. 5, T.10N., R.1E., S.L.B. & M.

ASPHALT CONCRETE T-PATCH

- ADDITIONAL PAVEMENT REMOVAL:** Remove additional pavement to a painted lane stripe, a lip of gutter, a curb, an existing pavement patch, or an edge of the pavement if such street feature is within 2 feet of the second saw-cut.
- UNTREATED BASE COURSE:** Provide material specified in APWA Section 32 11 23.
 - Do not use gravel as a substitute for untreated base course without ENGINEER'S permission.
 - Place material per APWA Section 32 05 10.
 - 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.
- FLOWABLE FILL:** Provide 28 day 60 psi controlled low strength material as specified in APWA Section 31 05 15. Use fill material which flows easily and vibration is not required. Cure to initial set before placing aggregate base or asphalt pavement. Use flowable fill in excavations that are too narrow to receive compaction equipment.
- TACK COAT:** APWA Section 32 12 14. Full tack coat coverage on all vertical surfaces.
- ASPHALT PAVEMENT:** Use asphalt concrete specified in APWA Section 33 05 25.
 - Install in lifts no greater than 3 inches after compaction.
 - Compact to 94 percent of ASTM D 2041 (Rice Method) plus or minus 2 percent.
- REINFORCEMENT:** ASTM A 615, Grade 60, No. 5 galvanized or epoxy coated deformed steel 12 inches on center.
 - Required if existing concrete thickness is 6 inches or greater.
 - Not required if (1) existing concrete is less than 6 inches thick, (2) existing concrete is deteriorating, (3) excavation is less than 3 feet square, (4) asphalt pavement is substituted for concrete substrate.
- CONCRETE SUBSTRATE:** Class 4000 per APWA Section 03 30 04. Place concrete per APWA Section 03 30 10. Cure to initial set before placing new asphalt concrete patch.
- JOINT REPAIR:** If a crack occurs at the "T" patch connection to existing pavement or at any street fixture, seal the crack per APWA Section 32 01 17.
- PATCH REPAIR:** Repair the asphalt pavement patch if any of the following conditions occur within the patch.
 - Pavement surface distortion exceeds 1/4 inch deviation in 10 feet. Repair option: Plane off surface distortions. Coat planed surfaces with a cationic or anionic emulsion that complies with APWA Section 32 12 03 and provide sand blotter.
 - Cracks at least 1-foot long and 1/4 inch wide occur more often than 1 in 10 square feet. Repair option: Crack seal.
 - Asphalt raveling is greater than 1 square foot per 100 square feet. Repair option: Mill and inlay.

ASPHALT CONCRETE T-PATCH

- ADDITIONAL PAVEMENT REMOVAL:** Remove additional pavement to a painted lane stripe, a lip of gutter, a curb, an existing pavement patch, or an edge of the pavement if such street feature is within 2 feet of the second saw-cut.
- UNTREATED BASE COURSE:** Provide material specified in APWA Section 32 11 23.
 - Do not use gravel as a substitute for untreated base course without ENGINEER'S permission.
 - Place material per APWA Section 32 05 10.
 - 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.
- FLOWABLE FILL:** Provide 28 day 60 psi controlled low strength material as specified in APWA Section 31 05 15. Use fill material which flows easily and vibration is not required. Cure to initial set before placing aggregate base or asphalt pavement. Use flowable fill in excavations that are too narrow to receive compaction equipment.
- TACK COAT:** APWA Section 32 12 14. Full tack coat coverage on all vertical surfaces.
- ASPHALT PAVEMENT:** Use asphalt concrete specified in APWA Section 33 05 25.
 - Install in lifts no greater than 3 inches after compaction.
 - Compact to 94 percent of ASTM D 2041 (Rice Method) plus or minus 2 percent.
- REINFORCEMENT:** ASTM A 615, Grade 60, No. 5 galvanized or epoxy coated deformed steel 24 inches on center.
 - Required if existing concrete thickness is 6 inches or greater.
 - Not required if (1) existing concrete is less than 6 inches thick, (2) existing concrete is deteriorating, (3) excavation is less than 3 feet square, (4) asphalt pavement is substituted for concrete substrate.
- CONCRETE SUBSTRATE:** Class 4000 per APWA Section 03 30 04. Place concrete per APWA Section 03 30 10. Cure to initial set before placing new asphalt concrete patch.
- JOINT REPAIR:** If a crack occurs at the "T" patch connection to existing pavement or at any street fixture, seal the crack per APWA Section 32 01 17.
- PATCH REPAIR:** Repair the asphalt pavement patch if any of the following conditions occur within the patch.
 - Pavement surface distortion exceeds 1/4 inch deviation in 10 feet. Repair option: Plane off surface distortions. Coat planed surfaces with a cationic or anionic emulsion that complies with APWA Section 32 12 03 and provide sand blotter.
 - Cracks at least 1-foot long and 1/4 inch wide occur more often than 1 in 10 square feet. Repair option: Crack seal.
 - Asphalt raveling is greater than 1 square foot per 100 square feet. Repair option: Mill and inlay.

SECTION 02056

EMBANKMENT, BORROW, AND BACKFILL

PART 1 GENERAL

1.1 SECTION INCLUDES

- Embankment, backfill, and bridge approach embankments.

1.2 RELATED SECTIONS

- Section 02721: Untreated Base Course (UTBC)
- Section 03575: Flowable Fill

1.3 REFERENCES

- AASHTO M 145: Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes
- AASHTO T 11: Materials Finer than 75 µm (No. 200) Sieve in Mineral Aggregates by Washing
- AASHTO T 27: Sieve Analysis of Fine and Coarse Aggregates
- AASHTO T 99: Moisture-Density Relations of Soils Using a 2.5 kg (5.5-lb) Rammer and a 305 mm (12 inch) Drop
- AASHTO T 180: Moisture-Density Relations of Soils Using a 4.54 kg (10-lb) Rammer and a 457 mm (18 inch) Drop
- UDOT Materials Manual of Instruction
- UDOT Minimum Sampling and Testing Requirements

1.4 DEFINITIONS

- Borrow material – imported material for use in a constructed fill or backfill.
- Embankment material – suitable material from project roadway excavation or other excavation for use in a constructed fill or backfill.

Embankment, Borrow, and Backfill
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- Well-graded material – Material having an even distribution of different particle sizes. This even distribution of particles of different sizes results in a dense mass upon compaction.

1.5 SUBMITTALS

- Provide the following for information before delivering material to the project:
 - Supplier and source of materials.
 - Gradation analysis. Refer to AASHTO T 27 and T 11.
 - Soil classification when applicable. Refer to AASHTO M 145.
 - Maximum Dry Density and Optimum Moisture Determination
 - Use AASHTO T 180 Method D for A-1 soils and AASHTO T 99 Method D for all other soils.
- Requests, for review, to use Untreated Base Course (UTBC) instead of granular borrow.
- Engineering proposals for review for alternate materials or trench configurations for drainage pipe bedding and pipe backfill as outlined in this Section, 2.2 G. Include all of the following:
 - Stamped drawings and specifications signed and sealed by a Professional Engineer licensed in the state of Utah.
 - Evaluation of site specific conditions and surrounding soils, including potential for migration of fines.
 - A structural evaluation of the pipe support system for the proposed pipe that includes the pipe structural capacity and the depth of fill.
 - Complete bedding or backfill source information including gradation, soil classification, and laboratory testing reports.
- Proposals, for review, to place an initial layer of granular material as a working platform.

1.6 ACCEPTANCE

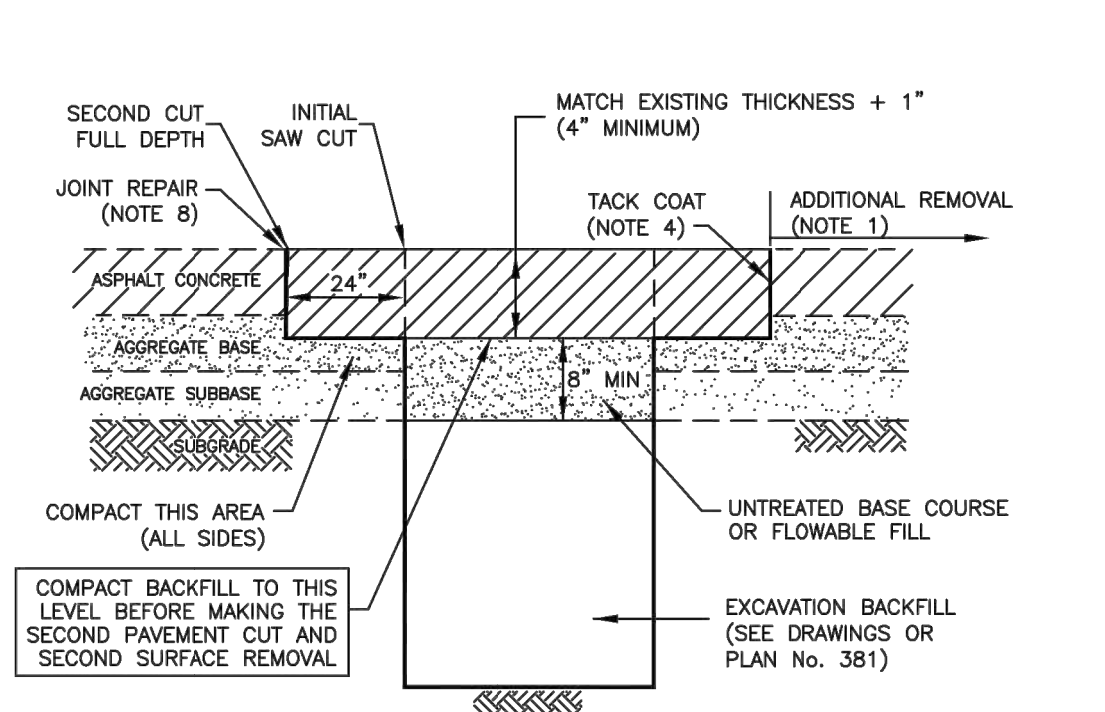
- Acceptance sampling and testing is according to UDOT Minimum Sampling and Testing Requirements.
- The Engineer reserves the right to select and test material from any location at the construction site.
 - The Engineer will establish the limits of nonconforming material sampled non-randomly.
- Remove nonconforming material and replace with acceptable material.

Embankment, Borrow, and Backfill
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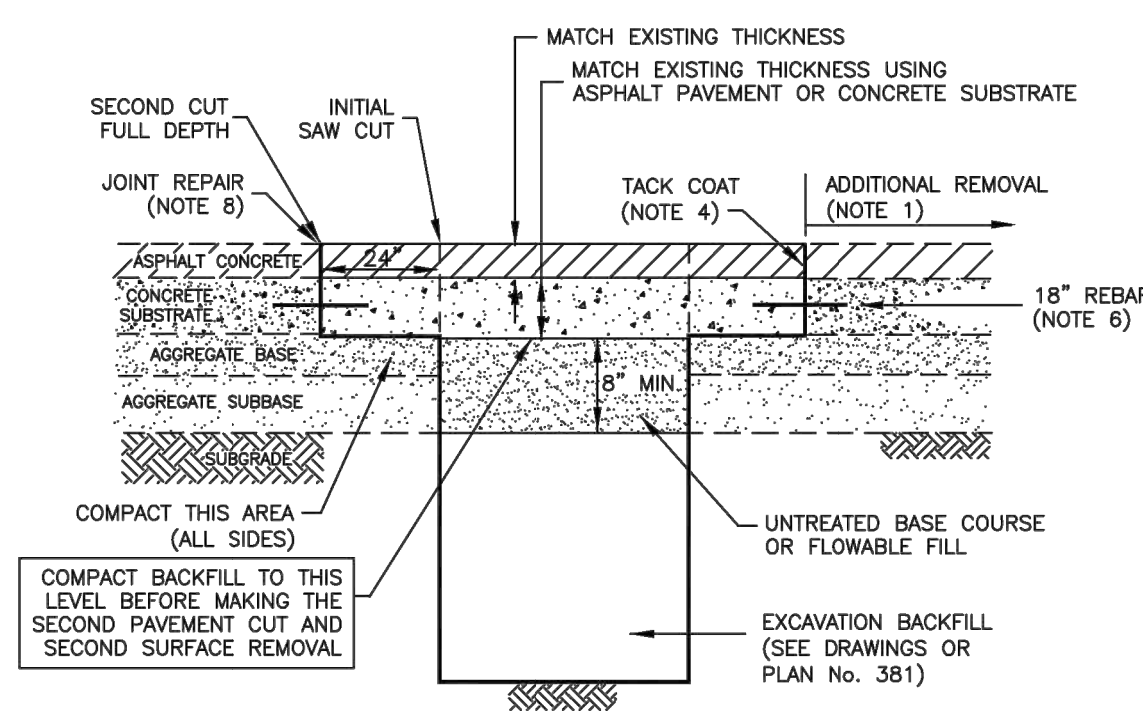
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SHALLOW EXCAVATION

(LESS THAN 48 INCHES FROM PAVEMENT SURFACE TO BOTTOM OF EXCAVATION)



EXAMPLE 1
(ASPHALT RESTORATION)



EXAMPLE 2
(COMPOSITE RESTORATION)

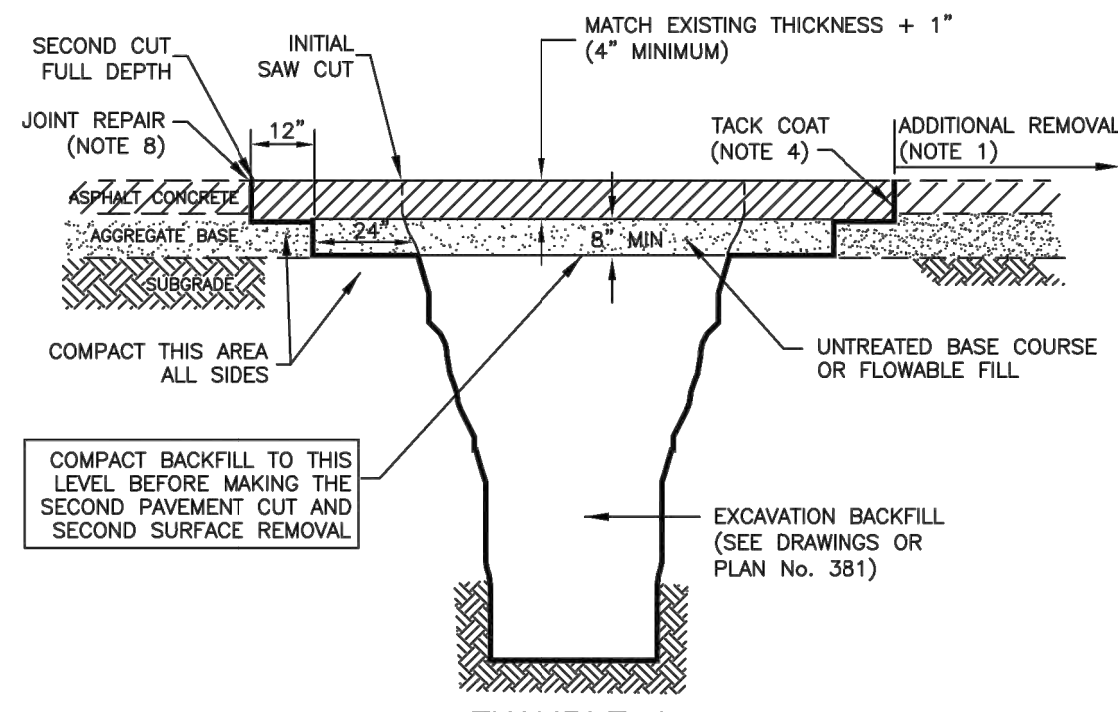
Asphalt concrete "T" patch

Plan No.
255

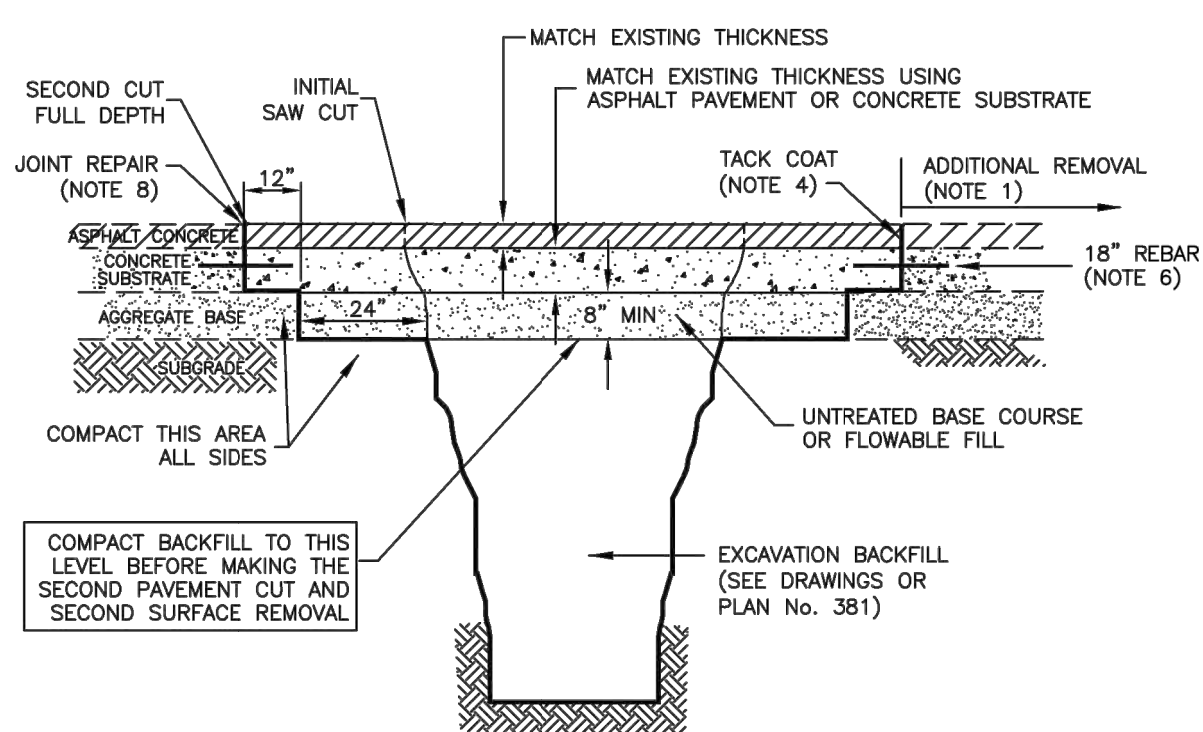
Drawing 1 of 2

DEEP EXCAVATION

(MORE THAN 48 INCHES FROM PAVEMENT SURFACE TO BOTTOM OF EXCAVATION)



EXAMPLE A
(ASPHALT RESTORATION)



EXAMPLE B
(COMPOSITE RESTORATION)

Asphalt concrete "T" patch

Plan No.
255

Drawing 2 of 2

PART 2 PRODUCTS

2.1 GENERAL

- Provide materials free of contamination from chemical or petroleum products for embankment, borrow, and backfill placements.
 - Materials may include recycled Portland Cement Concrete.
 - Do not include asphalt pavement materials.

2.2 MATERIALS

- Borrow
 - Classifications A-1-a through A-4. Refer to AASHTO M 145.
- Granular Borrow
 - Classification A-1-a. Refer to AASHTO M 145.
 - Non-plastic.
 - Meet the gradation requirements of Table 1

| Sieve Size | Percent Passing |
|------------|-----------------|
| 4 inch | 100 |
| 3 inch | 90 - 100 |
| 1 1/2 inch | 60 - 100 |
| 3/4 inch | 30 - 80 |
| No. 4 | 25 - 65 |
| No. 10 | 0 - 50 |
| No. 40 | 0 - 30 |
| No. 200 | 0 - 15 |

- UTBC meeting the requirements of Section 02721, may be used, at no additional cost to the Department, upon authorization of the Engineer.

- Granular Backfill Borrow
 - Classification A-1-a. Refer to AASHTO M 145.
 - Well-graded, 2 inch maximum.

- Free-Draining Granular Backfill
 - Meet the gradation requirements of Table 2:

Embankment, Borrow, and Backfill
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| Sieve Size | Percent Passing |
|------------|-----------------|
| 1 1/2 inch | 90-100 |
| 1 inch | 20-55 |
| 3/4 inch | 0-15 |
| 3/8 inch | 0-5 |

- Embankment for Bridge
 - Classification A-1. Refer to AASHTO M 145.
 - 3 inch maximum.
- Embankment Material
 - Roadway excavation and other excavation material.
 - Do not include unsuitable materials such as organic, frozen, or contaminated soils.
 - Do not use rock or broken concrete materials with any dimension over 1 ft.
 - Borrow may be substituted for embankment material.
- Drainage Pipe Bedding and Drainage Pipe Backfill
 - Classification A-1. Refer to AASHTO M145.
 - Well-graded material.
 - Maximum aggregate size is 1 1/2 inches for plastic pipe, 2 inches for all other pipes.
 - Flowable fill. Refer to Section 03575.
 - Use only for drainage pipe backfill.
 - Other materials or trench configurations for drainage pipe bedding and backfill may be used when authorized.
 - Native materials or uniformly graded materials enclosed in an appropriate drainage geotextile may be proposed.

PART 3 EXECUTION

3.1 GENERAL

- Complete clearing, grubbing, stripping, and stockpiling topsoil, and any necessary excavation before placing material.
- Requirements when placing material during freezing or snowy conditions:
 - Do not place embankment, borrow, or backfill material on frozen or snow-covered areas.

Embankment, Borrow, and Backfill
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| NO. | DESCRIPTION | INIT | DATE |
|-----|-------------|------|------|
| | | | |

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HYRUM MARKET 1860
NOTES AND DETAILS SHEET 2

UTAH
DATE: 01/24/2025
VERT: SCALE: HORIZ: CHECKED: LCB DRAWN: ADP DESIGNED: ADP

JOB NUMBER
24.00160

SHEET
3 OF 9

01/24/2025

CAD FILE: C:\Users\Steve\Desktop\Beyler\24.00160\1860\Hyrum Market 1860.dwg PLOT DATE/TIME: 1/23/2025 9:47 PM

HYRUM MARKET 1860

PROPOSED SITE LAYOUT

SEC. 5, T.10N., R.1E., S.L.B. & M.

- 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.
 - b. 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.
 - 2. 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
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- 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
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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 within ± 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.

Embankment, Borrow, and Backfill
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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.

Embankment, Borrow, and Backfill
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END OF SECTION

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
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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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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

Untreated Base Course (UTBC)
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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 sublot 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 sublot 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.

Untreated Base Course (UTBC)
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HYRUM MARKET 1860

NOTES AND DETAILS SHEET 3

UTAH

DATE: 01/24/2025

VERT: 01/24/2025

CHECKED: LCB

SCALE: HORIZ:

DRAWN: ADP

DESIGNED: ADP

01/24/2025

JOB NUMBER

24.00160

SHEET

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PROPOSED SITE LAYOUT

SEC. 5, T.10N., R.1E., S.L.B. & M.

- 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 ³ | | 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 |

Untreated Base Course (UTBC)
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| Table 2 Gradation Limits | | |
|-----------------------------|-------------------------------|-----------------------------|
| Sieve Size | 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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- 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

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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- 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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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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- 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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2. 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_{mm}).
 - 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.
3. 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 ½ inch greater or ¼ inch less than the total design thickness specified.
 - No individual sublot 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 ½ 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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HYRUM MARKET 1860

NOTES AND DETAILS SHEET 4

UTAH

DATE: 01/24/2025

VERT: 01/24/2025

CHECKED: LCB

SCALE: HORIZ:

DRAWN: ADP

DESIGNED: ADP

01/24/2025

JOB NUMBER

24.00160

SHEET

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PROPOSED SITE LAYOUT

SEC. 5, T.10N., R.1E., S.L.B. & M.

2.3 ADDITIVES / STABILIZERS

- A. Hydrated Lime: Meet the requirements of Section 02746.
- B. Notify the engineer of all warm mix additives used on the project.

2.4 RECLAIMED ASPHALT PAVEMENT (RAP) (OPTIONAL)

- A. Do not adjust the asphalt binder grade if the lower end is already a PG XX-34.
- B. Do not adjust the asphalt binder grade when RAP content is not more than 15 percent by total weight of the asphalt mix and RAP asphalt binder content is not more than 15 percent of the total asphalt binder content by weight.
- C. Adjust asphalt binder grade according to AASHTO M 323 when RAP asphalt binder content is between 15 to 25 percent of the asphalt binder weight.
 - 1. Select one grade softer than the grade specified. Do not adjust the asphalt binder grade if the lower end is already a PG XX-34.
 - 2. Provide test reports indicating that the PG grade and quantity of the recovered asphalt binder is consistent throughout the stockpile.
 - 3. Limit RAP to 25 percent of the total weight of the asphalt mix and RAP binder to 25 percent of the total binder.
- D. RAP aggregate is required to meet Table 5 with exception of Sand Equivalent. Refer to AASHTO T 176.

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2.5 VOLUMETRIC MIX DESIGN

- A. Perform Superpave Volumetric Mix Design according to UDOT Materials Manual of Instruction Section 960 and the following:
 - 1. Incorporate hydrated lime into all designs. Refer to Section 02746.
 - 2. Comply with Table 7 and Table 8.
- B. Obtain Department approval for the mix design. Refer to the UDOT Materials Manual of Instruction Section 960.
 - 1. Submit for verification and approval.
 - 2. Do not begin paving until verification is complete.

| Compaction Parameters | | | Voids Filled with Asphalt (VFA) (%) |
|--|---|--|-------------------------------------|
| N _{min} / % of G _{max} * | N _{design} / % of G _{max} * | N _{max} / % of G _{max} * | |
| 6 / ≤ 91.5 | 50 / 96.5 | 75 / ≤ 98 | 70 – 80 |
| 7 / ≤ 90.5 | 75 / 96.5 | 115 / ≤ 98 | 70 – 80 |

* G_{max}: Theoretical maximum specific gravity of the mix. Refer to AASHTO T 209.

| Asphalt Mix design mixing and compaction temperatures | Provided by the approved mix design |
|--|--|
| Dust Proportion Range | 0.6 - 1.40 |
| Voids in Mineral Aggregate (VMA) at N _{design} AASHTO R 35.9.2 using G _{min} Oven Dry. Equation based on percent of total mix. | 14.0% - 15.0% for 1/2 inch 15.0% - 16.0% for 3/4 inch |
| Air voids at N _{design} | 3.5 % |
| Hamburg Wheel Tracker UDOT MOI 990 | 75 Design Gyration and Greater: < 10.0 mm at 20,000 Cycles Less than 75 Design Gyration: < 10.0 mm at 10,000 Cycles |

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2.6 CONTRACTOR INITIATED CHANGES TO MIX DESIGN

- A. The Department may allow up to two minor target changes to the most current verified mix design per project, per mix design, without penalty to the Contractor.
 - 1. The Department charges \$1,000 for each additional minor target change.
- B. The Department performs up to two volumetric mix design verifications per project, per mix design, at no cost to the Contractor.
 - 1. The Department charges \$3,000 for each additional laboratory or field verification required including all laboratory or field volumetric mix design verifications required due to contractor initiated target changes.
- C. Submit requests in writing to the Engineer at least 12 hours before incorporating changes into production.
 - 1. Include documentation supporting correlation between suggested minor target change and mix design volumetric requirements.
 - 2. Acceptable documentation may include Department or Contractor testing data.
 - 3. The Region Materials Engineer approves the target change if the mix meets the requirements.
- D. Do not make changes to production mix until the request is approved.
- E. Submit a new laboratory volumetric mix design for any change made to mix design properties other than gradation.
 - 1. When adding or modifying an additive/stabilizer to the mix design, only the portions of the verification affected by the addition or modification of the additive/stabilizer need to be verified.
- F. The Engineer may require Hamburg Wheel-Track testing after a target change to evaluate the performance of the mix with the target change.

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2.7 TACK COAT

- A. Refer to Section 02748.

PART 3 EXECUTION

3.1 ASPHALT MIX

- A. Dry aggregate to an average moisture content of not more than 0.2 percent by weight.
 - 1. May be verified by AASHTO T 255.
 - 2. Adjust burners to avoid damage or soot contamination of the aggregate.
- B. Treat aggregate with hydrated lime. Refer to Section 02746.
 - 1. Method A or B
 - 2. The Department applies a deduction for mix produced by a non-certified supplier to cover the costs of inspection.
 - a. The deduction is applied according to the UDOT Quality Management Plan 514.
- C. Coat with asphalt binder 100 percent of the particles passing and 98 percent of the particles retained on the No. 4 sieve.
 - 1. May be verified by AASHTO T 195.
 - 2. Discontinue operation and make necessary corrections if material is not properly coated.
- D. Maintain temperature of the Asphalt Mix between the limits identified on the Volumetric Mix Design Verification Letter for mixing and compacting.
 - 1. The Department rejects materials heated over the identified limits.
 - 2. Remove all material rejected by the Department for overheating.
- E. Minimum compacted lift thickness is 3 times the nominal maximum aggregate size.

3.2 ASPHALT MIX PLANT

- A. Provide the following:
 - 1. Positive means to determine the moisture content of aggregate on a daily basis.
 - 2. Positive means to sample all material components.
 - 3. Sensors to measure the temperature of the Asphalt Mix at discharge.
 - 4. The ability to maintain discharge temperature of the mix according to the mix design.
- B. Asphalt Binder Storage Tanks
 - 1. Provide a positive means for separating and identifying asphalt grades when multiple products are used in mix production.

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- 2. Provide positive means of determining the quantity of material in the tank at any time.
- 3. Provide a positive means of sampling the asphalt binder from the tanks.
 - a. The Engineer determines a common sampling point where multiple products are used in mix production.

3.3 PRODUCTION CONTROL LIMITS

- A. Apply the production control requirements as outlined in Table 9.
- B. Action Limit
 - 1. Take appropriate action when air voids or VMA at N_{des} averaged for each lot are within the Action Limit.
 - 2. Continue paving the next scheduled work day at the Contractors discretion.
 - 3. Enter into the Cease Production Limit after three (3) consecutive production lots within the Action Limit.
- C. Cease Production Limit
 - 1. Take appropriate action when air voids or VMA at N_{des} averaged for each lot are within the cease Production Limit.
 - 2. Submit a letter to the Engineer providing information on production changes to be made along with Contractor volumetric data verifying the results.
 - 3. Suspend paving until Contractor provides test results from a minimum of two samples meeting the gradation and asphalt content requirements in Table 2 and air void and VMA requirements for the proceed limit in Table 9.
 - a. Produce and place material for Cease Production evaluation at a location outside of the project limits.
 - b. Allow UDOT 24 hours to review the volumetric data.
 - c. After to two (2) occurrences per project per year of ceased production, contract time may be added for the necessary days missed to correct the cease production item(s).
 - 1) Submit critical path information for evaluation.
 - 2) Maximum ten (10) calendar days per project.
 - 4. The Engineer may require a new mix design after two (2) cease-production lots.

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| VMA (%) | Air Voids (%) | Action |
|---|---|---|
| Range from Target Value (TV) X = Average Value (Minimum of three Samples) | Range from Target Value (TV) X = Average Value (Minimum of three Samples) | |
| X > TV - 1.3 and X < TV + 1.3 | X > TV - 1.0 and X < TV + 1.3 | Proceed Limit |
| X ≤ TV - 1.3 and X ≥ TV - 1.5 or X ≥ TV + 1.3 and X ≤ TV + 1.5 | X ≤ TV - 1.0 and X > TV - 1.5 or X ≥ TV + 1.3 and X < TV + 1.8 | Action Limit This Section, Article 3.3.B |
| X < TV - 1.5 or X > TV + 1.5 | X ≤ TV - 1.5 or X ≥ TV + 1.8 | Cease Production Limit This Section, Article 3.3.C |

3.4 LABORATORY CORRELATION

- A. Perform split-sample, paired t-testing with the Department based on project quality control testing using Department-qualified lab.
 - 1. Perform split-sample, paired t analysis on all mix acceptance tests and tests related to volumetric properties.
 - 2. Perform paired t analysis as defined in the UDOT Materials Manual of Instruction, Appendix C.
 - 3. Continue paired t testing until at least two consecutive production days meet α = 0.05 for a two tailed distribution.
 - 4. Resolve discrepancies in lab results within the first five production days.
 - a. Cease production if the requirements for two consecutive days of the first five days cannot be met.
 - b. Submit a corrective action plan to the Engineer before production continues indicating the changes in procedures that will be implemented to correct the deficiencies.
 - c. Both Contractor and Department labs must make paired t test results available within 24 hours of sampling.

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3.5 SURFACE PREPARATION

- A. Locate, reference, and protect all utility covers, monuments, curb and gutter, and other components affected by the paving operations.
- B. Remove all moisture, dirt, sand, leaves, and other objectionable material from the prepared surface before placing the tack coat and mix.
- C. Complete spot leveling, lane-leveling or profile leveling before placing pavement courses.
 - 1. Place, spread, and compact leveling mix on portions of the existing surface.
 - 2. Fill and compact any localized potholes more than 1 inch deep.
 - 3. Allow compacted mix to cool sufficiently to below 150 degrees F to provide a stable structural platform before placing additional lifts of Asphalt Mix.
- D. Apply tack coat to all paved surfaces and longitudinal and transverse joints before applying a leveling course or pavement lift as required in Section 02748.
- E. Allow sufficient cure time for prime coat/tack coat before placing Asphalt Mix. Refer to Section 02748.

3.6 SURFACE PLACEMENT

- A. Adjust the production of the mixing plant and material delivery until a steady paver speed is maintained.
- B. Do not allow construction vehicles, general traffic, or rollers to pass over the uncompacted end or edge of freshly placed mix until the mat temperature drops to a point where damage or differential compaction will not occur.
- C. Echelon paving is the preferred method for constructing a longitudinal joint. When full-width or Echelon paving is impractical and more than one pass is required, provide a compactable sloped edge adjacent to the next pass.
 - 1. Coat edge with tack coat according to Section 02748 at the same application rate as the surface placement.
 - a. Angle nozzle to allow for proper application on the vertical or sloped edge.
 - b. Provide a 6 inch overlap of tack coat beyond the longitudinal and transverse joints.

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3.7 COMPACTION

- D. Construct the longitudinal joint to within 6 inches of the roadway centerline, the lane lines or at the center of the lane but never in a wheel path. Offset longitudinal joints 6 to 12 inches in succeeding courses.
 - 1. Core and test all longitudinal joints for compaction according to the specification if the lift is 2 or more inches thick.
 - 2. Verify all edges of the adjacent areas to through lanes have straight and uniform longitudinal lines and neat vertical edges.
 - 3. Fill core holes with Asphalt Mix, SMA, or high-asphalt-content cold mix and compact in thin lifts.
- E. Offset transverse construction joints at least 6 ft longitudinally.
- F. Taper the end of a course subjected to traffic at approximately 50:1 (horizontal to vertical).
 - 1. Make a transverse joint by saw or wheel cutting and remove the portion of the pass that contains the tapered end before placing fresh mix.
 - 2. Tack the contact surfaces before fresh mix is placed against the compacted mix.
- G. Use a motor grader, spreader box, or other approved spreading methods for projects under 180 yd², irregular areas, or for miscellaneous construction such as detours and sidewalks.
- H. Use a laydown machine for all lane-leveling and profile leveling activities.
 - 1. Place and drag the screed of the paving machine along the high portions of the roadway when lane-leveling to correct, rutting, minor variations and covering roadway crack seal material.
 - 2. Use a string line or follow a given profile when profile leveling to establish a best fit profile from high point to high point.

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| NO. | DESCRIPTION | INIT | DATE |
|-----|-------------|------|------|
| | | | |

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HYRUM MARKET 1860

NOTES AND DETAILS SHEET 6

UTAH

DRAWN: ADP
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SCALE: HORIZ:
VERT:
DATE: 01/24/2025

01/24/2025

JOB NUMBER
24.00160

SHEET
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HYRUM MARKET 1860

PROPOSED SITE LAYOUT

SEC. 5, T.10N., R.1E., S.L.B. & M.

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.
 1. The Department determines if it is feasible to place Asphalt Mix outside these dates and temperature limits.
 2. Obtain authorization from the Engineer before paving outside these requirements.

END OF SECTION

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2.6 EQUIPMENT

- A. Use distributor trucks with the following:
 1. Tachometer, pressure gauges, accurate volume measuring devices or a calibrated tank, and a thermometer for measuring temperatures of the tank contents.
 2. Insulated tanks capable of storing the binder at temperatures that allow the binder to remain consistent with the appropriate viscosity for proper application rates.
 - a. Use tanks equipped with baffles to prevent pressure surges resulting from the asphalt sloshing in the tank when starting and stopping.
 - b. Use trucks equipped with devices to provide for accurate control of the amount of bituminous material being applied.
 3. Constant volume circulation pumps and heaters to maintain a pressurized system so binder will be uniformly heated.
 - a. Circulation pump must spray a constant volume for the entire length of the spray bar for each application.
 4. Spray bar and nozzles designed to provide an appropriate fan width to provide uniform transverse distribution without corrugation or streaking.
 - a. 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.
 - b. Use a fully circulating spray bar with a positive shutoff valve.
 5. Computerized rate control system allowing the operator to control all distributor operations from the cab to include:
 - a. Pressure regulation of the material application and automatic rate control adjustment to the unit ground speed.
 - 1) Hydrostatic system capable of maintaining a tolerance of ± 0.03 gal/yd².
 - b. 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:
 1. 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.
 - a. Use gates adjustable to drop the correct amount of aggregate plus or minus 1 lb/yd².
 2. Variable width spreader with hydraulic control extension and adjustable discharge gates.
 3. Spreading hopper with a minimum capacity to cover a full lane of travel plus 1 ft/pass.
 4. 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 μ 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

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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/yd² for the production day.
 1. Blotter material must be ready to be spread within 20 minutes of a road section being chip sealed.
 2. 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.

Chip Seal Coat
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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.
 1. 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-2A 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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2.4 COVER MATERIAL

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

| Test | Test Method | Standard Chip Seal Type I & II | Lightweight Chip Seal Type I & II |
|---------------------|---------------------|--------------------------------|-----------------------------------|
| *Unit Weight | AASHTO T 19 | 100 lb/ft ³ , max | 60 lb/ft ³ , 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.

| Sieve Size | Percent Passing | | | |
|------------|--------------------|---------|-----------------------|---------|
| | Standard Aggregate | | Lightweight Aggregate | |
| | Type I | Type II | Type I | Type II |
| 1/2 in | 100 | 100 | 100 | 100 |
| 3/4 in | 100 | 99 - 91 | 90 - 100 | 95 - 90 |
| 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 - 10 | 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.
 1. 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.
 1. 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.
 1. Construct meet lines with no skip or voids between adjacent passes.
 2. 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.
 1. Maintain a distance of less than 150 ft between the distributor and the chip spreader.
 2. Maintain the chip spreader speed so that chips do not bounce or roll during application.

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HYRUM MARKET 1860
NOTES AND DETAILS SHEET 7

UTAH
DATE: 01/24/2025
VERT: VERT:
SCALE: SCALE:
HORIZ: HORIZ:
CHECKED: LCB
DRAWN: ADP
DESIGNED: ADP

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PROPOSED SITE LAYOUT

SEC. 5, T.10N., R.1E., S.L.B. & M.

Table 3

| | Approximate Spread Rates | |
|-------------------------------|------------------------------------|---|
| | Unit Weight lbs/ft ³ | Application Rate lbs/yd ² |
| Lightweight Type I Chip Seal | 45 - 50 | 9.6 |
| | 50 - 55 | 10.6 |
| | 55 - 60 | 11.6 |
| Lightweight Type II Chip Seal | 45 - 50 | 11.6 |
| | 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/yd².
 - 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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