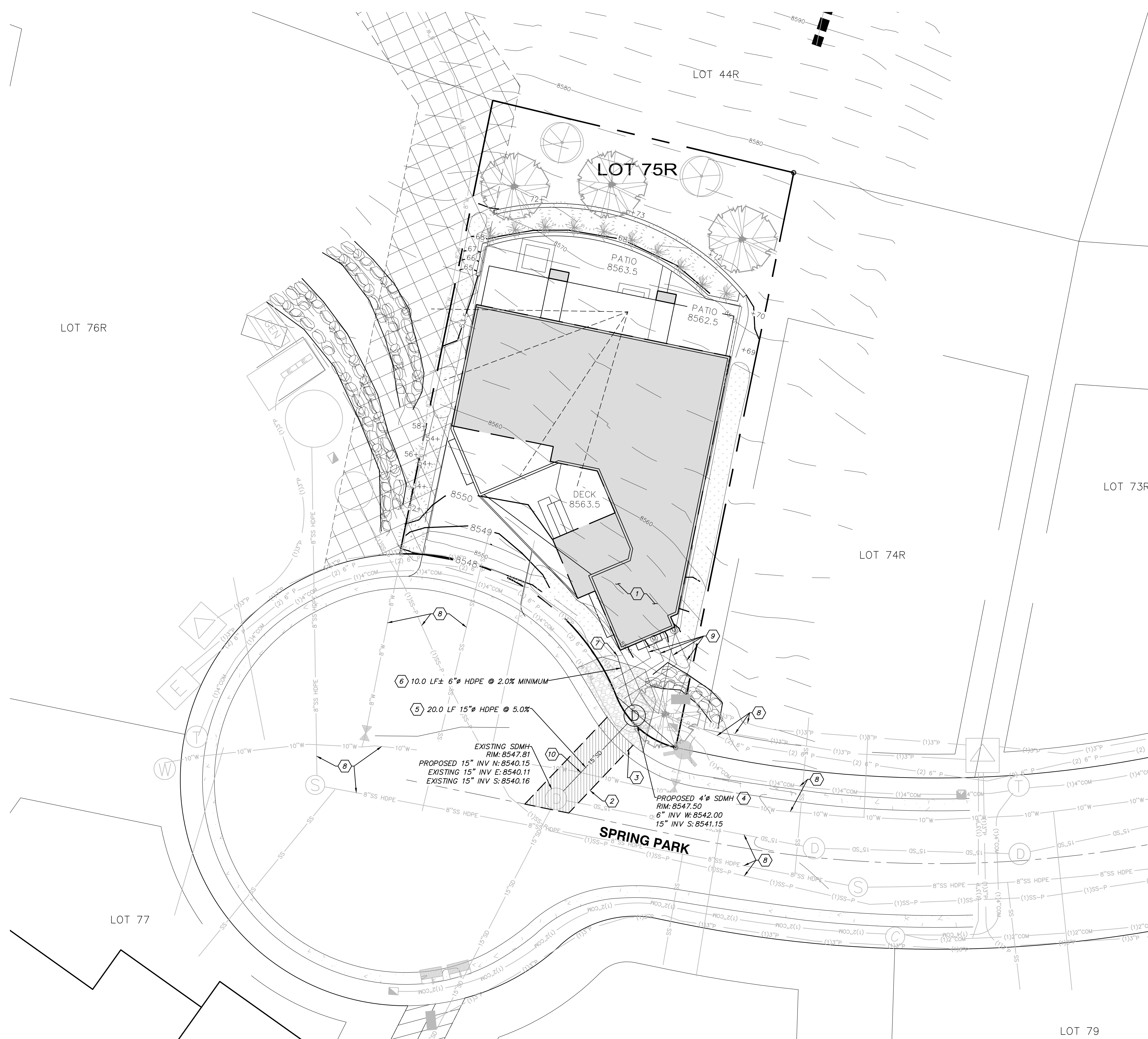


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GENERAL NOTES:

THE CONTRACTOR TO USE BEST MANAGEMENT PRACTICES FOR PROVIDING EROSION CONTROL FOR CONSTRUCTION OF THIS PROJECT. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO WEBER COUNTY ORDINANCES AND ALL WORK SHALL BE SUBJECT TO INSPECTION BY WEBER COUNTY. ALSO, INSPECTORS WILL HAVE THE RIGHT TO REQUEST CHANGES TO THE FACILITIES AS NEEDED.

THE CONTRACTOR SHALL MODIFY EROSION CONTROL MEASURES TO ACCOMMODATE PROJECT PLANNING.

ALL ACCESS TO PROPERTY WILL BE FROM PUBLIC RIGHT-OF-WAYS.

THE CONTRACTOR IS REQUIRED BY STATE AND FEDERAL REGULATIONS TO PREPARE A STORM WATER POLLUTION PREVENTION PLAN AND FILE A "NOTICE OF INTENT" WITH THE UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER QUALITY.

STORM DRAIN NOTES:

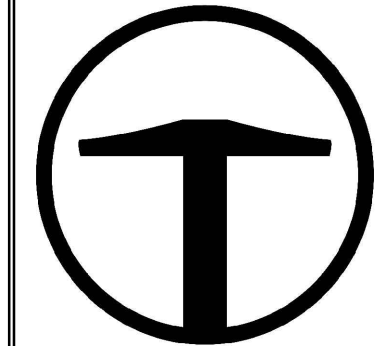
ENSURE 24" MINIMUM BURIED DEPTH FOR ALL HDPE PIPE AS DESIGNED.

IMPROVEMENTS, INCLUDING LANDSCAPING, SHALL NOT INTERFERE WITH THE DRAINAGE CULVERT, RIP RAP, AND DRAINAGE PATTERN ASSOCIATED WITH ANY DRAINAGE EASEMENT.

CONTRACTOR TO FIELD VERIFY LOCATION AND INVERTS OF EXISTING STORM DRAIN MANHOLE PRIOR TO CONSTRUCTION. CONTACT ENGINEER IF ANY DISCREPANCIES ARE FOUND.

KEY NOTES:

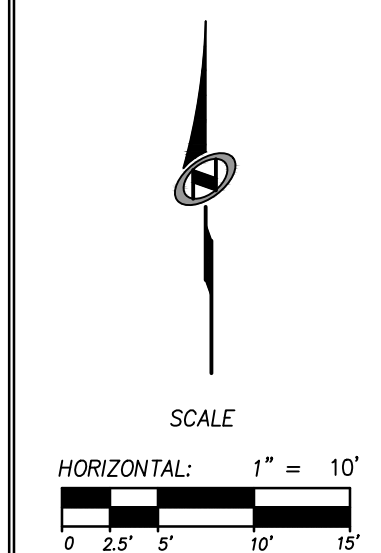
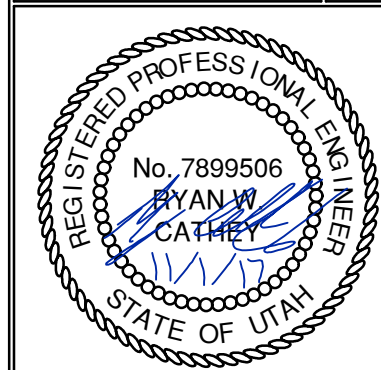
- 1 PROPOSED BUILDING SEE ARCHITECTURAL PLANS.
- 2 SAWCUT, REMOVE AND PROPERLY DISPOSE OF ASPHALT. WHEN TRENCH FOR STORM DRAIN PIPE HAS BEEN PROPERLY BACKFILLED AND COMPACTED PER APWA PLAN 381, PROVIDE ASPHALT CONCRETE T-PATCH PER APWA PLAN 295 WITH A 60" MINIMUM SECOND CUT FROM FIRST CUT.
- 3 SAWCUT, REMOVE AND PROPERLY DISPOSE OF CONCRETE CURB & GUTTER. WHEN TRENCH FOR STORM DRAIN PIPE HAS BEEN PROPERLY BACKFILLED AND COMPACTED PER APWA PLAN 381, REPLACE CONCRETE CURB & GUTTER WITH TYPE F CURB & GUTTER PER APWA PLANS 205 AND 206.
- 4 PROPOSED 48" STORM DRAIN MANHOLE PER APWA PLAN 341 WITH GRATED LID PER APWA PLAN 302. ENSURE LID IS SET AS A LOW POINT AND GRADING FROM BACK OF CURB DRAINS TO GRATED LID.
- 5 PROPOSED 15" HDPE PIPE BACKFILLED PER APWA PLANS 381 & 382.
- 6 PROPOSED 6" HDPE PIPE BACKFILLED PER APWA PLANS 381 & 382.
- 7 CONNECT 6" HDPE PIPE TO FOUNDATION DRAIN WITH A 6" TEE. SEE ARCHITECTURAL PLANS FOR FOUNDATION DRAIN DESIGN.
- 8 PROTECT IN PLACE EXISTING UTILITY.
- 9 PROPOSED UTILITY LATERAL, SEE ARCHITECTURAL PLANS.
- 10 PROVIDE A MINIMUM 18" VERTICAL CLEARANCE BETWEEN WATER LINE AND STORM DRAIN AT CROSSING. CONTACT ENGINEER FOR GUIDANCE IF 18" VERTICAL CLEARANCE IS NOT POSSIBLE.



TALISMAN
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MURRAY, UT 84107
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NO.	DATE	BY	REVISIONS

**LOT 75R POWDER MOUNTAIN
STORM DRAIN TIE IN PLAN**



SHEET NUMBER
C201
1 OF 4

DATE SUBMITTED: 11.01.2017

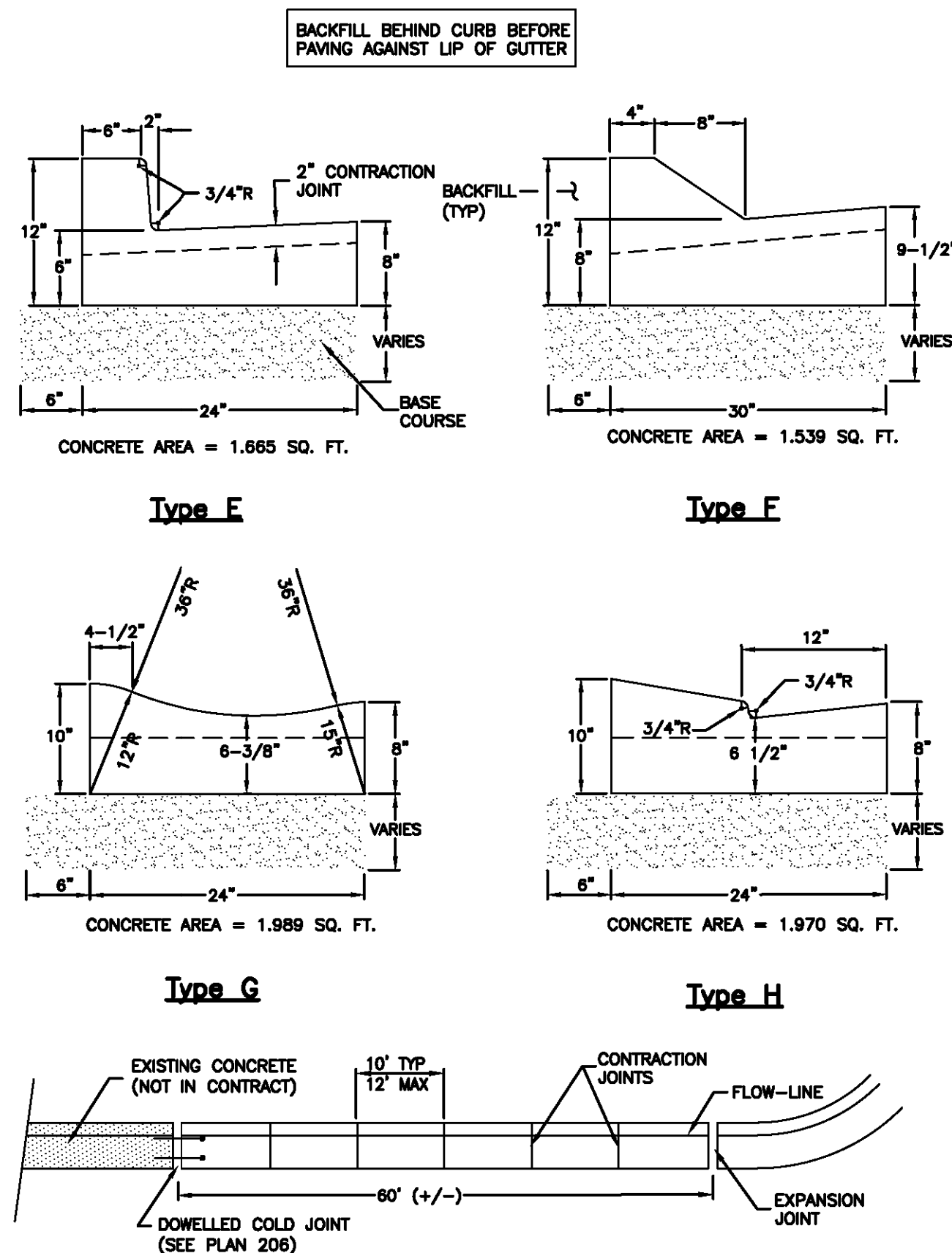
TCC JOB NUMBER: 17-099



Curb and gutter

1. **GENERAL**
 - A. Variance from specified dimensions and slopes must be acceptable to the ENGINEER. System configuration may be changed at ENGINEER'S discretion.
 - B. Additional requirements are specified in APWA Section 32 16 13.
2. **PRODUCTS**
 - A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER'S permission.
 - B. Expansion Joint Filler: 1/2-inch thick type F1 full depth, APWA Section 32 13 73.
 - C. Concrete: Class 4000, APWA Section 03 30 04. If necessary, provide concrete that achieves design strength in less than 7 days. Use caution; however, as concrete crazing (spider cracks) may develop if air temperature exceeds 90 degrees F.
 - D. Concrete Curing Agent: Clear membrane forming compound with fugitive dye (Type ID Class A), APWA Section 03 39 00.
3. **EXECUTION**
 - A. Base Course Placement: APWA Section 32 05 10. Thickness is 6-inches if flow-line grade is 0.5 percent (s=0.005) or greater. If slope is less, provide 8-inches. Maximum lift thickness before compaction is 8-inches when using riding equipment or 6-inches when using hand held equipment. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
 - B. Concrete Placement: APWA Section 03 30 10.
 - 1) Install expansion joints vertical, full depth, with top of filler set flush with concrete surface. Install at the start or end of a street intersection curb return. Expansion joints are not required in concrete placement using slip-form construction.
 - 2) Install contraction joints vertical, 1/8-inch wide or 1/4 slab thickness if the slab is greater than 8-inches thick. Match joint location in adjacent Portland-cement concrete roadway pavement.
 - 3) Provide 1/2-inch radius edges. Apply a broom finish. Apply a curing agent.
 - C. Protection and Repair: Protect concrete from deicing chemicals during cure. Repair construction that does not drain. If necessary, fill flow-line with water to verify.

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April 2011

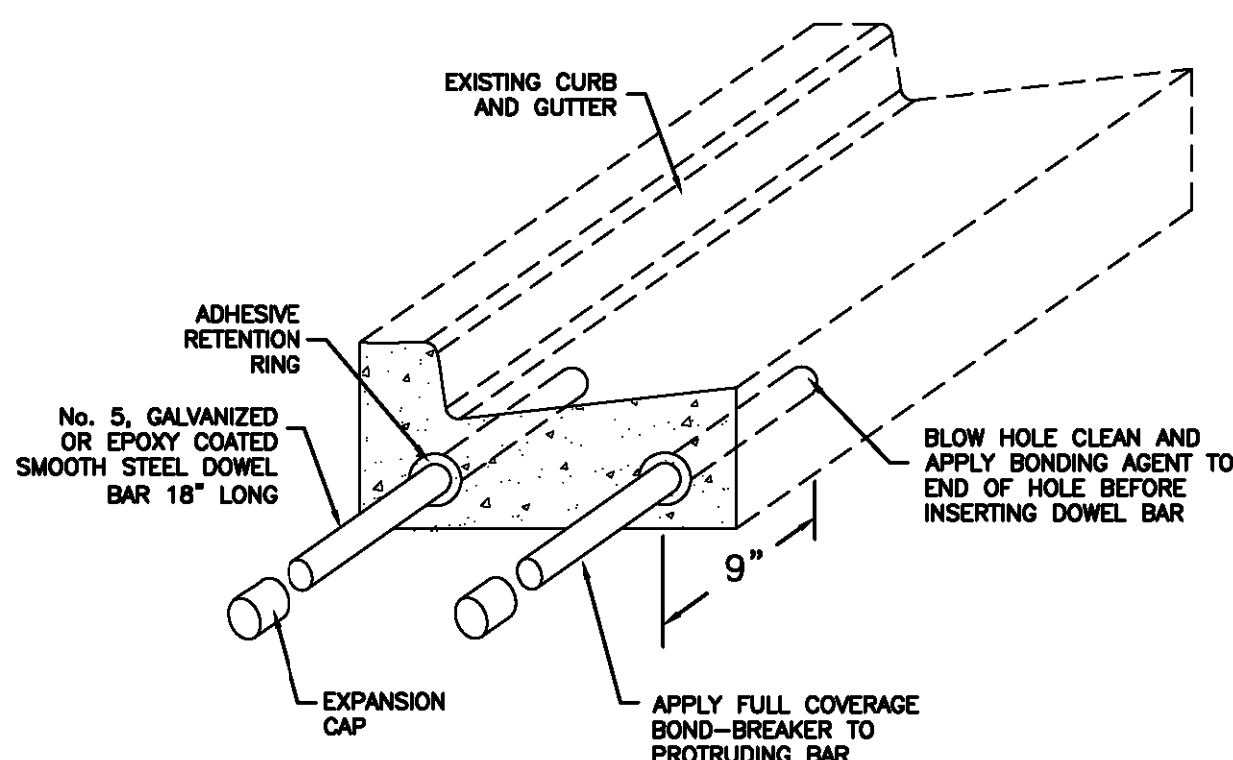
Curb and gutter

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Curb and gutter connection

1. **GENERAL**
 - A. Connect new curb and gutter to existing curb and gutter that has not been placed by CONTRACTOR.
2. **PRODUCTS**
 - A. Reinforcement: Galvanized or epoxy coated, 60 ksi yield grade steel, ASTM A 615.
 - B. Adhesive: Epoxy adhesive grout, APWA Section 03 61 00.
 - C. Bond Breaker: Paraffin wax, lithium grease, or other semi-solid, inert lubricant.
 - D. Expansion Cap: Plastic, with bar movement allowance of 1/2-inch.
3. **EXECUTION**
 - A. Ensure drill rigs (or jigs) are set at mid-depth of the gutter and horizontal to the surface. Make hole size large enough to account for dowel bar and adhesive.
 - B. Clean holes and dowel bars of dirt, dust and particles. Ensure coating on bars have no surface defects.
 - C. Place bonding agent in the back of each hole so adhesive flows out around each bar fully encasing it. DO NOT apply adhesive to end of the bar and then insert the bar into the hole.
 - D. Insert dowels with at least one full turning motion and if necessary, place a grout retention disk on the dowel after insertion to contain adhesive.
 - E. Apply complete coverage of bond-breaker on the protruding end of each dowel.
 - F. Install expansion caps on protruding dowel bar ends.

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June 2009

Curb and gutter connection

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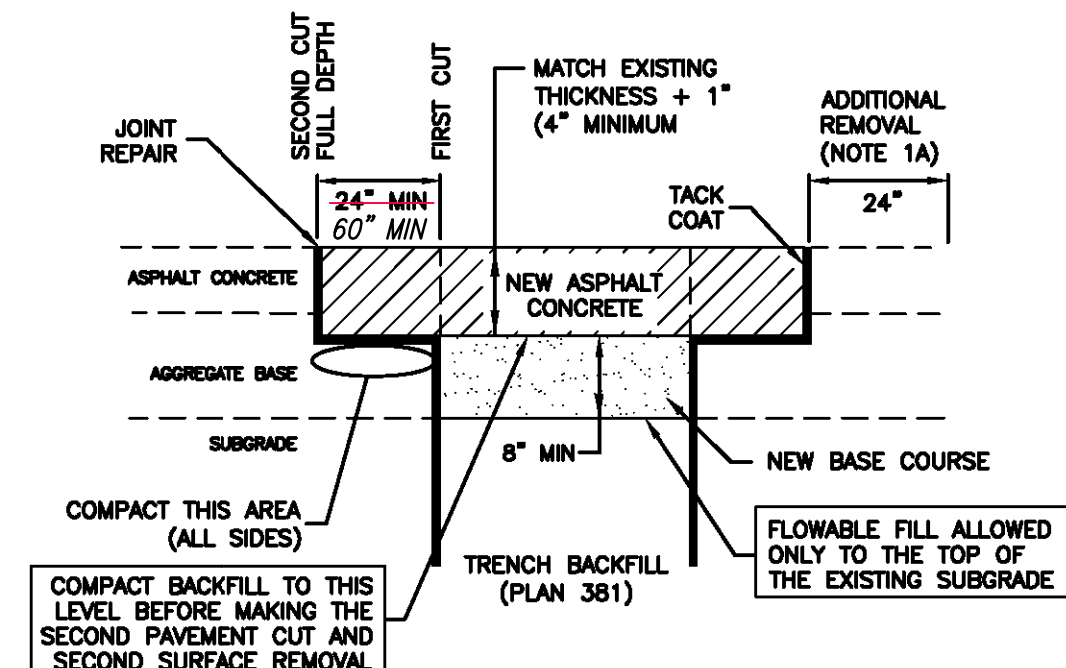
Asphalt concrete T-patch

1. **GENERAL**
 - A. If a saw cut in the direction of vehicular travel is in a wheel path, consult ENGINEER for directions on removing additional pavement other than the amount shown on the drawing.
2. **PRODUCTS**
 - A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER'S permission.
 - B. Flowable Fill: Target is 60 psi in 28 days with 90 psi maximum in 28 days, APWA Section 31 05 15. It must flow easily requiring no vibration for consolidation.
 - C. Reinforcement: No. 5, Galvanized or epoxy coated, deformed, 60 ksi yield grade steel, ASTM A 615.
 - D. Concrete: Class 4000, APWA Section 03 30 04.
 - E. Tack Coat: APWA Section 32 12 13.13.
 - F. Asphalt Concrete: APWA Section 32 12 05.
 - 1) Warm Weather Patch: AC-20-DM-1/2, unless indicated otherwise.
 - 2) Cold Weather Patch: Modified MC-250-FM-1 as indicated in APWA Section 33 05 25.
3. **EXECUTION**
 - A. Base Course Placement: APWA Section 32 05 10. Maximum lift thickness before compaction is 8-inches when using riding equipment or 6-inches when using hand held equipment. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
 - B. Flowable Fill: Cure to initial set before placing aggregate base or asphalt pavement. Use in excavations that are too narrow to receive compaction equipment.
 - C. Tack Coat: Clean all horizontal and vertical surfaces. Apply full coverage.
 - D. Asphalt Pavement: Match existing thickness plus 1 inch but not more than 6-inches in residential thoroughfares or 8-inches non residential thoroughfares. Install in lifts no greater than 3-inches after compaction. Compact to 94 percent of ASTM D 2041 (Rice density) plus or minus 2 percent. If asphalt pavement is substituted for concrete substrate, omit rebar and provide 1.25 inches of pavement for each 1 inch of concrete substrate substituted.
 - E. Reinforcement: Required if thickness of existing Portland-cement concrete substrate is 6-inches or greater. Not required if (1) less than 6-inches thick, (2) if existing concrete is deteriorating, (3) if excavation is less than 3 feet square, or (4) if asphalt pavement is substituted for Portland-cement concrete substrate.
 - F. Concrete Substrate: Cure to initial set before placing new asphalt concrete patch.
 - G. Joint Repair: If a crack occurs at a connection to an existing pavement or at any street fixture, flush seal the crack per Plan 265.
 - H. Patch Repair: Repair patch if any of the following conditions within the patch occur.
 - 1) 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.
 - 2) Cracks at least 1-foot long and 1/4-inch wide occur more often than 1 in 10 square feet. Repair option: Crack seal.
 - 3) Asphalt raveling is greater than 1 square foot per 100 square feet. Repair option: Mill and inlay.

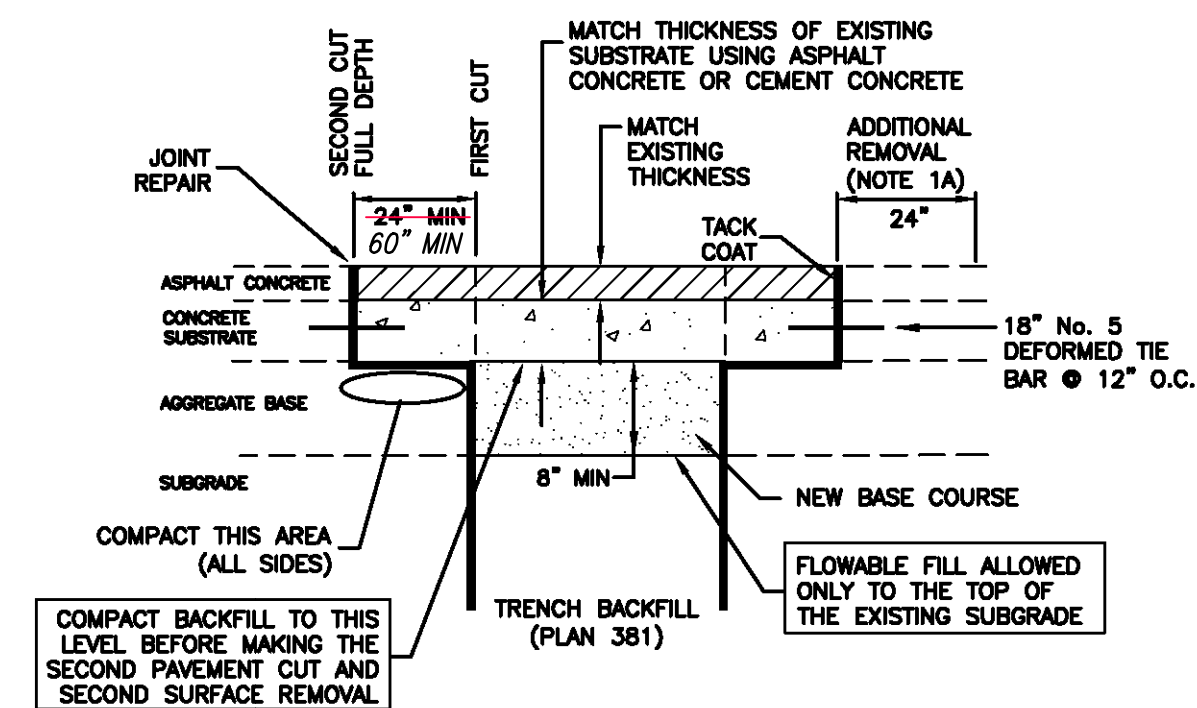
96

SHALLOW EXCAVATION

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



ASPHALT RESTORATION



COMPOSITE RESTORATION

December 2010

Asphalt concrete T-patch

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Plan 205

Sheet 2 of 3

Plan 206

Sheet 1 of 2

Plan 255

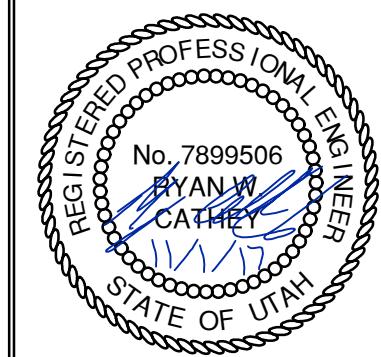
Sheet 1 of 2



LOT 75R POWDER MOUNTAIN
STORM DRAIN TIE IN DETAILS

DATE SUBMITTED: 11.01.2017

TCC JOB NUMBER: 17-099



SHEET NUMBER

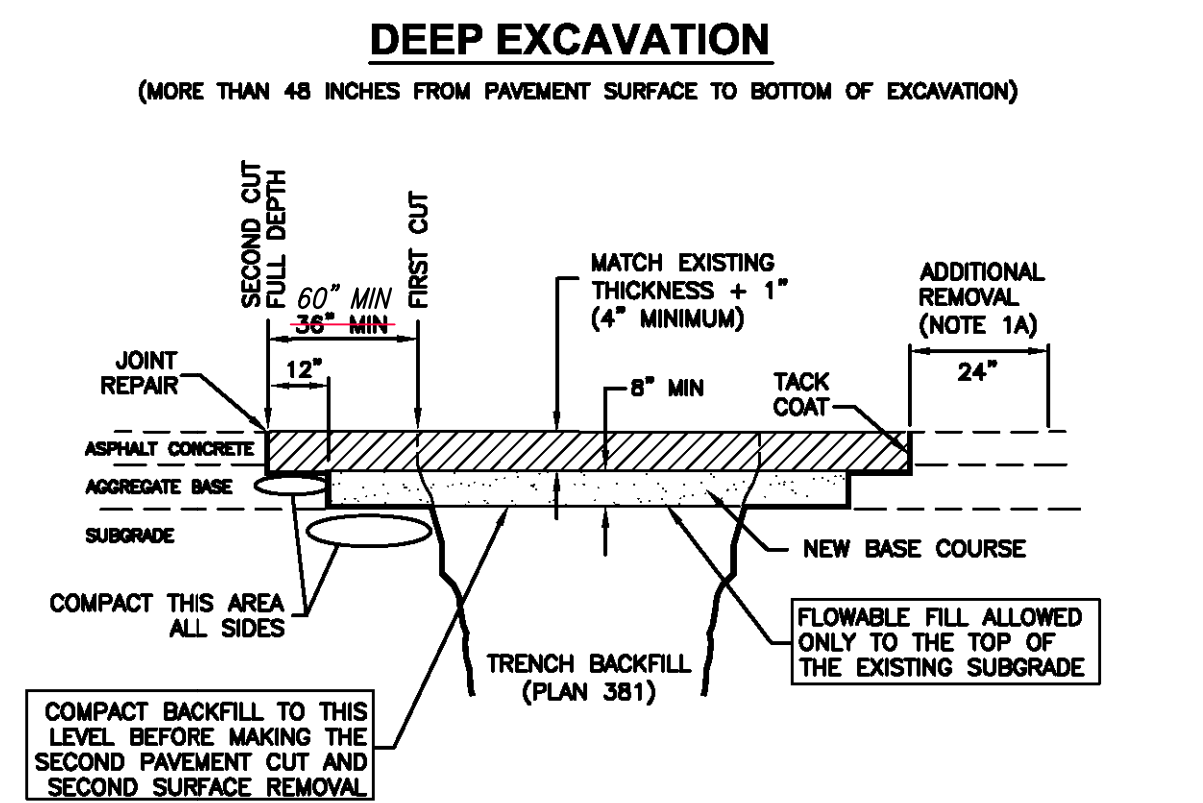
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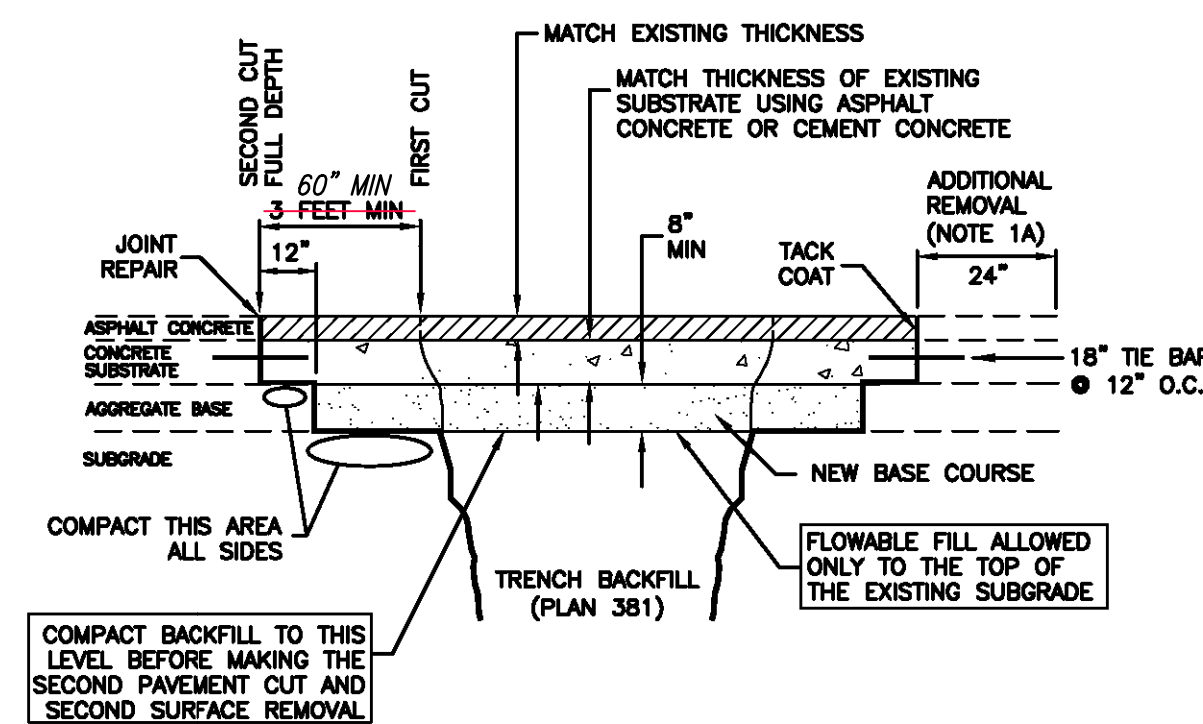
Asphalt concrete T-patch

- GENERAL
 - If a saw cut in the direction of vehicular travel is within a wheel path, ENGINEER may order additional pavement removal so saw cut falls outside of a wheel path.
- PRODUCTS
 - Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
 - Flowable Fill: Target is 60 psi in 28-days and 90 psi maximum in 28 days, APWA Section 31 05 15. It must flow easily requiring no vibration for consolidation.
 - Reinforcement: Galvanized or epoxy coated, 60 ksi yield grade steel, ASTM A 615.
 - Concrete: Class 4000, APWA Section 03 30 04.
 - Tack Coat: APWA Section 32 12 13.13.
 - Asphalt Concrete: APWA Section 32 12 05.
 - Warm weather patch – AC-20-DM-1/2 unless indicated otherwise.
 - Cold weather patch – modified MC-250-FM-1, APWA Section 33 05 25.
- EXECUTION
 - Base Course Placement: APWA Section 32 05 10. Maximum lift thickness before compaction is 8-inches when using riding equipment or 6-inches when using hand held equipment. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
 - Tack Coat: Clean all horizontal and vertical surfaces. Apply full coverage.
 - Asphalt Pavement: Match existing thickness plus 1 inch but not more than 6-inches in residential thoroughfares or 8-inches non residential thoroughfares. Install in lifts no greater than 3-inches after compaction. Compact to 94 percent of ASTM D 2041 (Rice density) plus or minus 2 percent. If asphalt pavement is substituted for concrete substrate, omit rebar and provide 1.25 inches of pavement for each 1 inch of concrete substrate substituted.
 - Reinforcement: Required if thickness of existing Portland-cement concrete substrate is 6-inches or greater. Not required if (1) less than 6-inches thick, (2) if existing concrete is deteriorating, (3) if excavation is less than 3 feet square, or (4) if asphalt pavement is substituted for Portland-cement concrete substrate.
 - Concrete Substrate: Cure to initial set before placing new asphalt concrete patch.
 - Joint Repair: If a crack occurs at a connection to and existing pavement or at any street fixture, flush seal the crack per Plan 265.
 - Patch Repair: Repair patch if any of the following conditions within the patch occur.
 - 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.
 - Cracks at least 1-foot long and 1/4-inch wide occur more often than 1 in 10 square feet. Repair option: Crack seal, APWA Section 32 01 17.
 - Asphalt raveling is greater than 1 square foot per 100 square feet. Repair option: Mill and inlay.

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ASPHALT RESTORATION



COMPOSITE RESTORATION

Asphalt concrete T-patch

December 2010

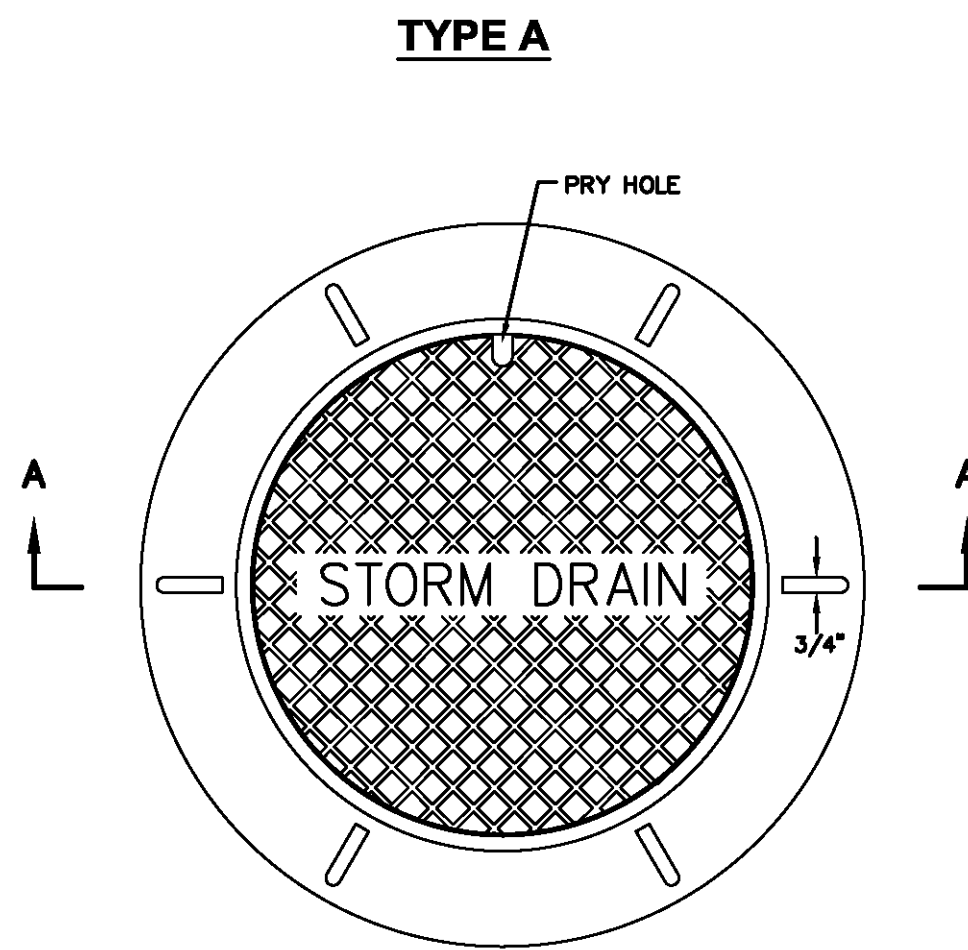
99

Plan 255 Sheet 2 of 2

30" Frame and cover

- GENERAL
 - The frame and cover fits.
 - Cleanout box type B in Plan 331, and
 - Precast manhole in Plan 341.
- PRODUCTS
 - Castings: Grey iron class 35 minimum, ASTM A 48.
 - Coated with asphalt based paint or better (except on machined surfaces).
 - Cast the heat number on the frame and cover.
 - Give the frame and cover a machine finish so the cover will not rock.
 - ∇ designates a machine finished surface.
 - Cast the words "STORM DRAIN" on the cover in upper case flush with the surface finish.
- EXECUTION
 - Except in paved streets, provide locking manhole covers in easements, alleys, parking lots, and all other places. Drill and tap two holes to a depth of 1-inch at 90 degrees to pry hole and install 3/4 x 3/4-inch allen socket set screws.

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SECTION A-A

30" Frame and cover

September 2001

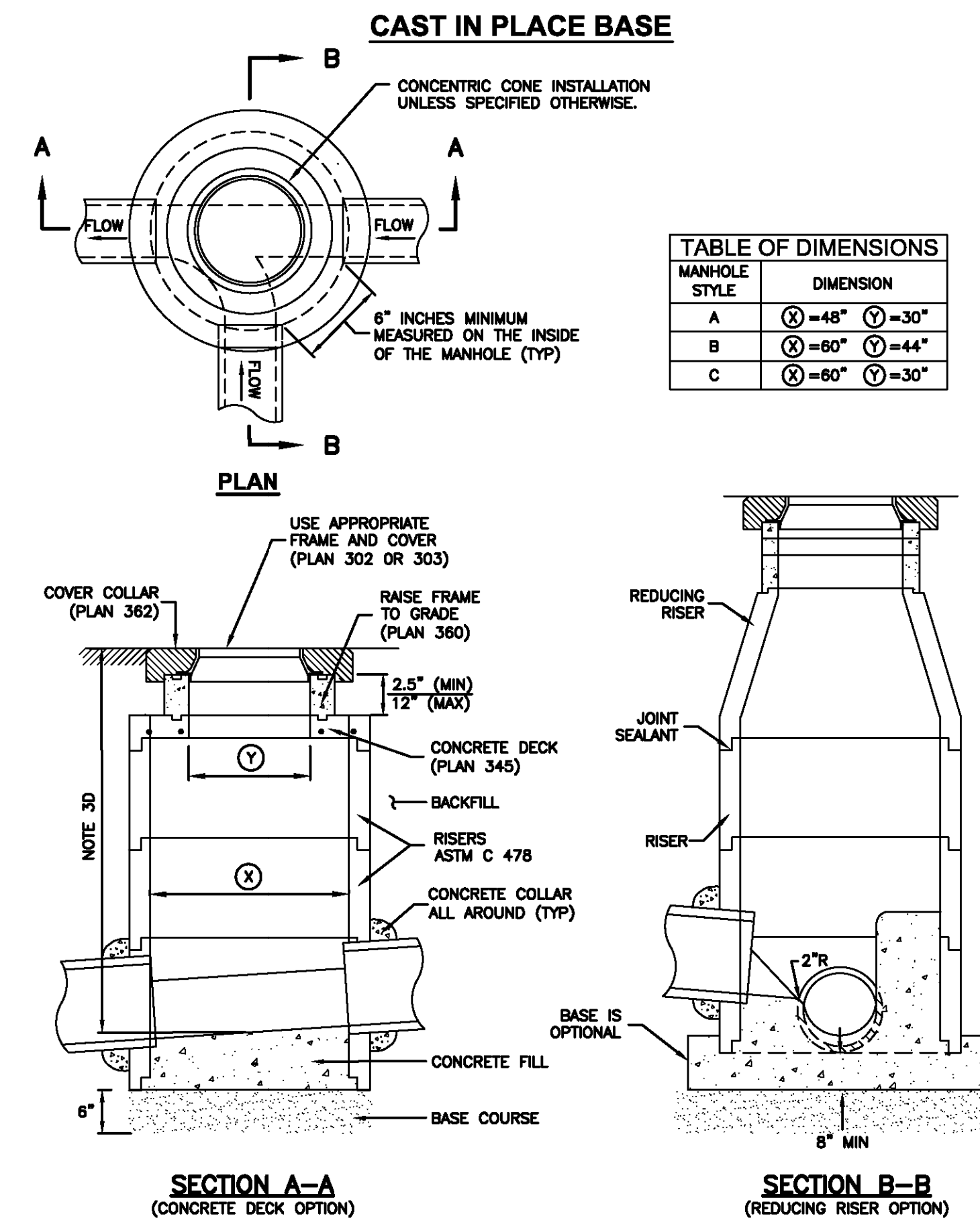
133

Plan 302 Sheet 1 of 2

Precast manhole

- GENERAL
 - The drawing shows typical pipe connections. Refer to construction drawings for connection locations or refer to field location of existing piping when engineering pipe connection to the manhole.
 - Manhole size.
 - Diameter is 4-feet: For pipe under 12" diameter.
 - Diameter is 5-feet: For pipe 12" and larger, or when 3 or more drain pipes intersect the manhole.
 - Wall thickness:
 - Precast reinforced concrete walls 4 3/4" minimum.
 - Cast-in-place concrete to be 8 inches thick minimum.
- PRODUCTS
 - Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
 - Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
 - Concrete: Class 4000, APWA Section 03 30 04.
 - Riser and Reducing Riser: ASTM C 478.
 - Joint Sealant: Rubber based, compressible.
 - Grout: 2 parts sand to 1 part cement mortar, ASTM C 1329.
 - Stabilization-Separation Geotextile: Moderate or high at CONTRACTOR's choice, APWA Section 31 05 19.
- EXECUTION
 - Foundation Stabilization: Get ENGINEER's permission to use a sewer rock or a sewer rock in a geotextile wrap to stabilize an unstable foundation.
 - Base Course Placement: APWA Section 32 11 23. Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
 - Invert cover: During construction, place invert covers over the top of pipe in manholes that currently convey sewerage. See Plan 412.
 - Concrete Deck or Reducing Riser: When depth of manhole from pipe invert to finish grade exceeds 7 feet, use an ASTM C 478 reducing riser.
 - Pipe Connections: Grout around all pipe openings.
 - Pipe Seal: Install rubber-based pipe seals on all plastic pipes when connecting plastic pipes to manholes. Hold water-stop in place with stainless steel bands.
 - Joints: Place flexible sealant in all riser joints. Finish with grout.
 - Adjustment: If the required manhole adjustment is more than 1'-0", remove the cone and grade rings and adjust the manhole elevation with the appropriate manhole section, the cone section, and the grade rings or plastic form to make frame and lid match finish grade.
 - Finish: Provide smooth and neat finishes on interior of cones, shafts, and rings. Imperfect moldings or honeycombs will not be accepted.
 - Backfill: Provide backfill against the manhole shaft. Pea gravel and recycled RAP aggregate is NOT ALLOWED. Water jetting is NOT allowed. Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a standard proctor density, APWA Section 31 23 26.

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SECTION A-A (CONCRETE DECK OPTION)

SECTION B-B (REDUCING RISER OPTION)

Precast manhole

November 2010

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Plan 341 Sheet 1 of 2

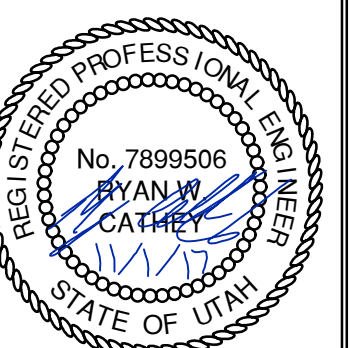


NO.	BY	DATE	REVISIONS

LOT 75R POWDER MOUNTAIN STORM DRAIN TIE IN DETAILS

DATE SUBMITTED: 11.01.2017

TCC JOB NUMBER: 17-099



SHEET NUMBER

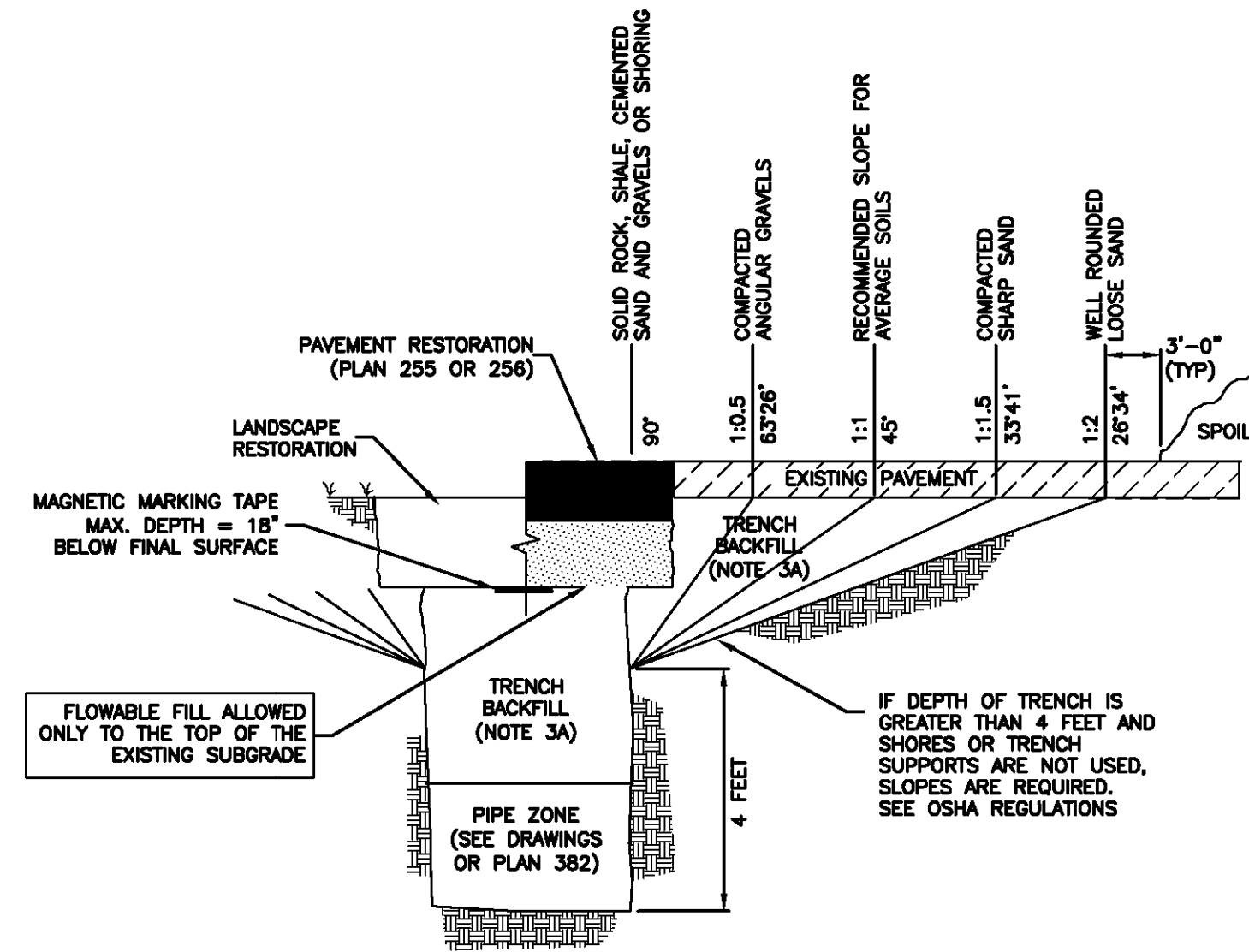
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3 OF 4

Trench backfill

1. GENERAL
 - A. The drawing applies to backfilling the trench above the pipe zone.
2. PRODUCTS
 - A. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 3-inches.
 - B. Flowable Fill: Target is 60 psi in 28 days with 90 psi maximum in 28 days, APWA Section 31 05 15. It must flow easily requiring no vibration for consolidation.
3. EXECUTION
 - A. Trench Backfill:
 - 1) DO NOT USE sewer rock, pea gravel, or recycled RAP aggregate as trench backfill.
 - 2) Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a standard proctor density, APWA Section 31 23 26.
 - 3) Water jetting is NOT allowed.
 - 4) Submission of quality control compaction test result data developed for haunching areas may be requested by ENGINEER at any time. Provide results of tests immediately upon request.
 - B. Flowable Fill: When required, place controlled low strength material in the trench, APWA Section 31 05 15. Cure the fill before placing surface restorations.
 - C. Surface Restoration:
 - 1) Landscaped Surface: Rake to match existing grade. Replace vegetation to match pre-construction conditions. Follow APWA Section 32 92 00 (turf or grass) or APWA Section 32 93 13 (ground cover) requirements.
 - 2) Paved Surface: Do not install asphalt or concrete surfacing until trench compaction is acceptable to ENGINEER. Follow APWA Section 33 05 25 (asphalt surfacing), or APWA Section 33 05 25 (concrete surfacing).

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January 2011

Trench backfill

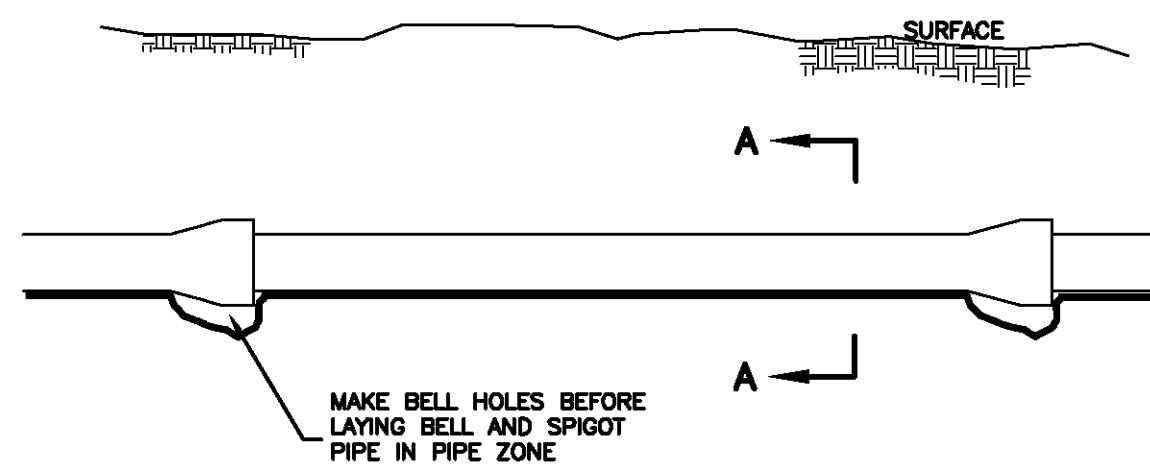
203

Plan 381

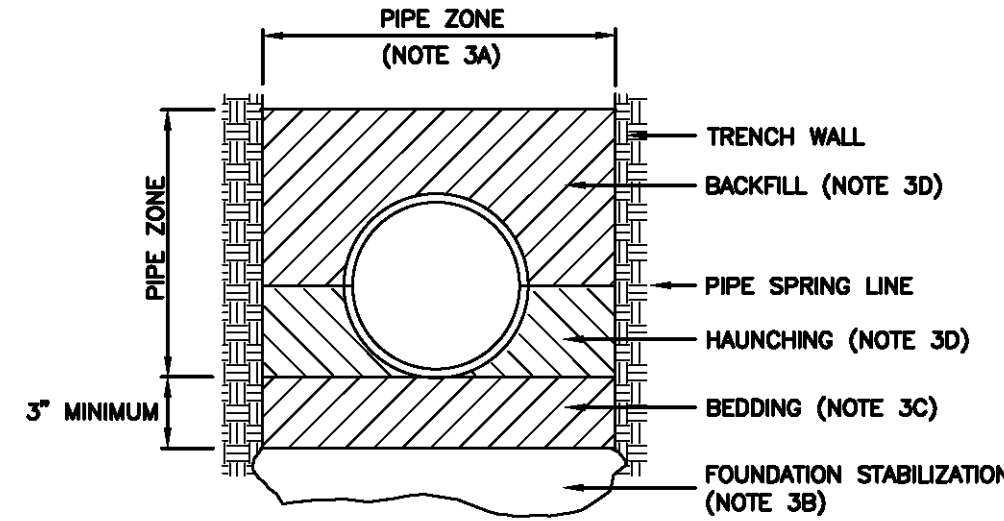
Pipe zone backfill

1. GENERAL
 - A. Install the pipe in the center of the trench or no closer than 6-inches from the wall of the pipe to the wall of the trench.
2. PRODUCTS
 - A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
 - B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
 - C. Concrete: APWA Section 03 30 04.
 - D. Flowable Fill: Target is 60 psi in 28 days with 90 psi maximum in 28 days, APWA Section 31 05 15. It must flow easily requiring no vibration for consolidation.
 - E. Stabilization-Separation Geotextile: Moderate or high at CONTRACTOR's choice, APWA Section 31 05 19.
3. EXECUTION
 - A. Excavate the Pipe Zone: Width is measured at the pipe spring line and includes any necessary sheathing. Provide width recommended by pipe manufacturer. Follow manufacturer's recommendations when using trench boxes.
 - B. Foundation Stabilization: Get ENGINEER's permission before installing common fill. Vibrate to stabilize. Installation of stabilization-separation geotextile will be required to separate backfill material and native subgrade materials if common fill cannot provide a working surface or prevent soils migration.
 - C. Base Course:
 - 1) Furnish untreated base course material unless specified otherwise by pipe manufacturer.
 - 2) Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
 - 3) When using concrete, provide at least Class 2,000 per APWA Section 03 30 04.
 - D. Pipe Zone: DO NOT USE sewer rock, pea gravel, or recycled RAP aggregate in the pipe zone. Water jetting is NOT allowed.
 - 1) Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26 unless pipe manufacturer requires more stringent installation.
 - 2) Submission of quality control compaction test result data developed for the haunch zone may be requested by ENGINEER at any time. CONTRACTOR is to provide results of tests immediately upon request.
 - E. Flowable Fill (when required and if allowed by pipe manufacturer):
 - 1) Place the controlled low strength material, APWA Section 31 05 15.
 - 2) Prevent pipe flotation by installing in lifts and providing pipe restraints as required by pipe manufacturer.
 - 3) Reset pipe to line and grade if pipe "floats" out of position.

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ELEVATION VIEW



SECTION A-A

INSTALLATION

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

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

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

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

January 2011

Pipe zone backfill

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Plan 382

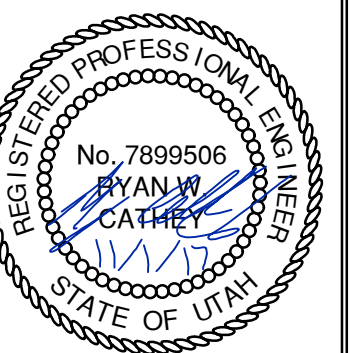


NO.	BY	DATE	REVISIONS

LOT 75R POWDER MOUNTAIN
 STORM DRAIN TIE IN DETAILS

DATE SUBMITTED: 11.01.2017

TCC JOB NUMBER: 17-099



SHEET NUMBER

C703

4 OF 4