



LAKE HAVASU CITY, ARIZONA

ADDENDUM NO. 2

London Bridge Road Pavement Rehabilitation

Project No: PW23-50211-500373

Dated: May 15, 2023

This addendum forms a part of the contract described above. The original documents in full force and effect are modified by the following changes. Addendum No. 2 will take precedence over any conflicting provision in the prior documents.

Each bidder shall acknowledge receipt of this addendum and by affixing its signature on the acknowledgement form attached, by noting this addendum on the Bid Form and by attaching this Addendum and/or acknowledgement to its bid.

The following changes are to be made and become part of the Bid/Contract Documents. The changes are as follows:

By:

Date: 5/15/23

J. Greg Froslic, P.E.



EXPIRES 03-31-26



Questions at Pre-Bid Meeting on 5/11/23

Item No1:

Where do all the asphalt milling be disposed of?

Millings can be disposed of at an agency approved suitable site or the Lake Havasu City Landfill located at 3251 Chenoweth Rd. Lake Havasu City, Arizona 86404. All cost associated with hauling & disposal shall be included in the asphalt milling bid items 1210.5 or 1210.7. The contractor shall approve the Hall Route with the engineer of record prior to mobilization.

Recycled asphaltic materials may be used as crushed miscellaneous base (CMB) in bid item 1210.8A.

Item No 2:

Does bid item 1210.8A – 6 1/2 Inch Non-Reinforced Portland Cement Concrete (PCC) Pavement have roadway base?

3" of roadway base shall be placed under the Portland Cement Concrete (PCC) Pavement roadway section. In general the section will be over-excavated with compacted roadway base prior to the placement of Portland Cement Concrete (PCC). All over-excavation, haul and disposal cost will be included in bid item 1210.8A – 6 1/2 Inch Non-Reinforced Portland Cement Concrete (PCC) Pavement.

Please find revised typical section in Exhibit A.

Item No 3:

Will the contractor be required to match the W section in the location where Portland Cement Concrete (PCC) Pavement is being placed?

The contractor will replace asphalt or concrete pavement section and match existing conditions. The existing typical roadway section shall remain unless approved by the engineer of record.



Item No. 4:

Will the contractor be required to dowel at the location of cold joints?

5/8" Rebar dowels shall be placed at 12" O.C. with 6" embedment at locations where a cold joint occurs.

Item No. 5:

Can Helix Fiber Reinforcement be used as an alternative?

Helix Fiber or equal shall be used as an admixture for bid item 210.8A – 6 1/2 Inch Non-Reinforced Portland Cement Concrete (PCC) Pavement.

Please reference exhibit B for product technical specifications. An approved alternative may be submitted for approval by the engineer or record.

Item No 6:

Will a curing product be required for the concrete paving bid item 210.8A – 6 1/2 Inch Non-Reinforced Portland Cement Concrete (PCC) Pavement?

A suitable and approved concrete curing compound shall be applied to all concrete pavement.

Item No.7

What is recommended for expansion joints for this project?

Joint sealants are listed in LHC 03300-17, section 3.1, sub-section 2 of the project specifications. An approved equal may be submitted by the contractor prior to construction.

Item No 8:

When will the project NTP anticipated?

It is expected that the notice to proceed be anticipated in July, 2023.



Item No. 9:

Will a traffic control plan will be required to be submitted due to the vicinity to highway 95 and potential traffic impacts due to restricted turn movements?

Please find the attached ADOT Encroachment Permit Application in Exhibit C. Complete the Encroachment Permit Application with an attached traffic control plan for ADOT approval.

Your ADOT permit technician for this project is Chris Denney at 928-864-6038 or e-mail: northwestpermit@azdot.gov

Item No. 10:

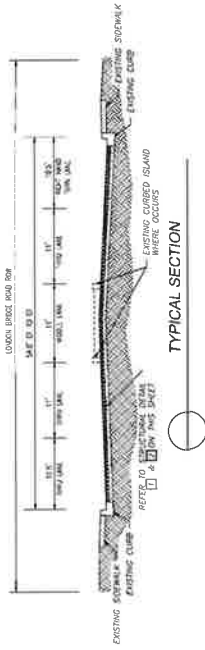
Please find the attached list of attendees to the non-mandatory pre-bid meeting in Exhibit D.



Exhibit A

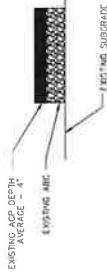
LAKE HAVASU CITY GENERAL NOTES:

1. The Contractor is to verify dimensions and elevations prior to work and notify the Engineer of any discrepancies.
2. The Contractor is to verify locations of all utilities prior to starting work.
3. The Contractor shall exercise extreme care during excavation of existing structures to avoid damage to adjacent structures and existing utilities. Contractor is responsible to provide all means and methods required to facilitate construction of work and ensuring safety, stability and integrity of adjacent structures and facilities.
4. The Engineer shall be notified a minimum of 48 hours prior to beginning any construction.
5. Any work performed without the knowledge and approval by the Engineer and/or work not in conformance with the plans and specifications is subject to removal and replacement at the Contractor's expense.
6. No job will be considered complete until all curbs, pavement and sidewalks have been swept clean.
7. Backfill compaction shall be per MAG 301, unless otherwise noted. Subgrade preparation shall meet the LHC Standard Specification Section 2600.
8. Removal of structures and obstructions as necessary to complete the work, other than specifically scheduled in the bid items are to be incidental to the Contract.
9. The Contractor shall be responsible for all costs of testing and quality assurance/control as delineated in the City's project specifications. The cost of testing is incidental to each item of work.
10. The approval of a portion of the work in progress does not guarantee its final acceptance. Testing and evaluation may continue until written final acceptance of a complete and workable unit.
11. Lake Havasu City may suspend the work by written notice when in its judgement progress is unsatisfactory, work being done is unauthorized or defective, weather conditions are unsuitable or there is a danger to the public health or safety.
12. The Contractor shall obtain any additional temporary easements or use agreements that are deemed necessary for construction at no additional cost to the City. Copies of all Contractors obtained easements and use agreements shall be provided to the City's representative prior to the utilization of the site.
13. The Contractor shall grade and resurface all areas disturbed by construction including landscape rock in accordance with the specifications and to a condition equal to or better than the pre-construction condition.
14. The Contractor shall protect all concrete structures to remain. All concrete placement shall be joint to joint (walls, sidewalks) and shall be replaced with 4000 psi concrete. All damaged concrete panels must be replaced and shall be the responsibility of the contractor.
15. The Contractor shall provide protection to prevent undermining or damaging to the structural integrity of all fences, retaining walls, street signs, other utilities, or other private or public improvements with in the project area. The Contractor shall make arrangements with the owning utility as necessary to provide temporary improvements without undue disruption. The cost of all such protection, removal and replacement required to complete the project shall be subsidiary to other bid items.
16. It is not the intent of the specifications to supersede any Federal, State or Local Laws, Regulations and/or ordinances. They shall govern in all instances. It is the Contractor's responsibility to show good faith effort and to protect all existing utilities and structures and to abide by all Federal, State, Local Laws and ordinances in the respect.
17. The Contractor shall protect all existing improvements on private property. All items damaged or removed shall be restored in accordance with the specification to a condition equal to or better than their condition prior to the start of the project.

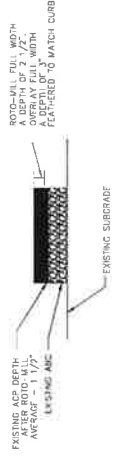


STRUCTURAL PAVEMENT SECTIONS

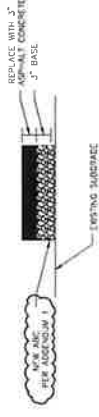
EXISTING PAVEMENT SECTIONS



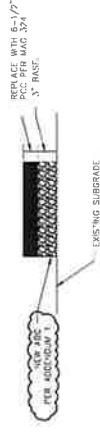
PROPOSED PAVEMENT SECTIONS



2-1/2\"/>



3\"/>



4\"/>



DESIGNED BY: SMC
 DRAWN BY: SC
 CHECKED BY: MM
 DATE: 04/20/23
 Dwg. No.:
 LONDON BRIDGE PAVEMENT REHABILITATION
 #TB PW23-50211-500373
 PALO VERDE BLVD S. TO HWY. 95
 PAVEMENT REHABILITATION

LAKE HAVASU CITY
 ENGINEER
 SHEET NUMBER: C-2
 SHEET 2 OF 6

NO.	REVISIONS / SUBMISSIONS	DATE



Exhibit B



Helix[®] 5-25 Micro Rebar[®]

The unique, twisted design of Helix[®] Micro Rebar[®] allows for efficient tensile stress re-distribution within the concrete prior to concrete cracking. The result is a significant increase in the concrete's strain capacity and pre-crack properties. Unlike rebar and other forms of reinforcement, Helix Micro Rebar provides proactive reinforcement which engages the concrete before large cracks form.

Applications

- Slab on Grade
- Slab on Composite Metal Deck
- Foundation Walls
- Above Grade Walls
- ICF Walls
- Footings
- Insulated Tilt Walls
- Precast
- Pavements

Code Evaluation Reports

- [IAPMO-ES ER 3494](#)
- [ICC-ES 3494](#)
- [ICC-ES EER 3949](#)

Geometry

- 11,500 pieces/lb (25,307 pieces/kg)
- Length: 0.50 in (13 mm)
- Diameter: 0.02 in (0.50 mm)

Properties

- Tensile Strength: 246.5 ksi minimum (1700 Mpa minimum)
- Material: Carbon Steel Wire

Coating

- Coated for erosion protection

Dosing Instructions

Dosage should be done in accordance with ASTM C94 and the mixing instructions on the next page. The dosage of Helix Micro Rebar added to the mix should be noted on the batch documentation in accordance with Uniform Evaluation Service ER 279 Section 5.15 and verified using the procedure in ER 279 Appendix A.

Mix Design Recommendations

Standard mix design practices (ACI 211.1) are recommended for Helix Micro Rebar-reinforced concrete. A test batch is recommended. Here are some tips and best practices for designing mixes with Helix Micro Rebar:

Compressive Strength and Helix Micro Rebar Dosage

The minimum compressive strength and Helix Micro Rebar dosage must comply with the requirements in Uniform Evaluation Service Report 279.

Mix Proportions

Attention should be given to providing adequate paste to coat the Helix Micro Rebar in the mix. This becomes more important as the dosage increases. We recommend submitting your mix to our engineering department (sales@helixsteel.com) prior to your first batch to obtain recommendations for optimizing your mix.

Regarding Slump and Workability

Helix Micro Rebar workability (flow with vibration) is not directly related to slump. Slump should be adjusted with water reducers/plastizers as needed for placement. Water should never be added to adjust slump or workability.





DIVISION: 03 00 00—CONCRETE
Section: 03 31 00—Structural Concrete

REPORT HOLDER:

HELIX® STEEL

EVALUATION SUBJECT:

HELIX® 5-25 MICRO REBAR™ & HELIX® 5-25U MICRO REBAR™ REINFORCEMENTS

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2018 *International Building Code*® (IBC)
- 2018 *International Residential Code*® (IRC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)†

†The ADIBC is based on the 2009 *International Building Code*. 2018 IBC code sections referenced in this report may be considered as equivalent sections under in the ADIBC.

Properties evaluated:

- Durability
- Structural
- Crack control

2.0 USES

Helix® Micro Rebar™ reinforcements (Helix® 5-25 Micro Rebar™ and Helix® 5-25U Micro Rebar™) are used as alternatives to the shrinkage and temperature reinforcement specified in Section 24.4 of ACI 318 for plain concrete footings and for plain concrete slabs (as defined by ACI 360) supported directly on the ground.

Helix® Micro Rebar™ reinforcements are also used to increase the modulus of rupture for the design of structural plain concrete using linear elastic design in applications within the scope of ACI 318 Chapter 14, IBC Section 1906 and ACI 332 Section 8.2.1, IRC Sections R404.1.3 and R608.1, or Tables 8.2.1.3a and 8.2.1.3b of ACI 332.

Helix® Micro Rebar™ reinforcements are also used as an alternative to horizontal temperature and shrinkage reinforcement in structural plain concrete walls as described in IBC Section 1906, IRC Sections R404.1.3 and R608.1, and ACI 332 Sections 8.2.1 and 8.2.7.

Helix® Micro Rebar™ reinforcements also applies to slabs-on-ground applications that are designed in accordance with Chapter 7 or Chapter 11 of ACI 360.

Helix® Micro Rebar™ reinforcements also applies to plain concrete parking lot applications that are designed in accordance with Chapter 3 of ACI 330.

Under the IRC, an engineered design in accordance with IRC Section R301.1.3 must be submitted to the code official for approval, except in the following cases:

1. Below grade walls designed in accordance with the requirements of Table 3 of this report.
2. When Helix 5-25 is used at a dosage rate of 9 lb/yd³ (5.4 kg/m³) to replace temperature and shrinkage reinforcement in footings in Seismic Design Categories A, B and C meeting the requirements of IRC Section R403.1.1.

3.0 DESCRIPTION

Helix® Micro Rebar™ reinforcements are made from minimum 240 ksi (1650 MPa), 0.020 in +/-0.007 in (0.51 mm +/- 0.02 mm) cold drawn steel wire. Each Helix® Micro Rebar™ has a minimum of one 360-degree twist. Helix® Micro Rebar™ reinforcement is used in dosages between 9 lb/yd³ and 34.5 lbs/yd³ (5.4 kg/m³ and 21 kg/m³). Helix® 5-25 is electroplated with zinc; whereas, Helix® 5-25U is uncoated.

3.1 Structural Plain Concrete: Structural normal-weight plain concrete must comply with Section 1906 of the IBC. Concrete design must follow ACI 211.1 and ACI 318 Section 26.12.3.1 with specified compressive strength, f_c , between 3000 psi and 5000 psi (21 MPa and 35 MPa) [minimum 24 MPa is required under ADIBC Appendix L, Section 5.1.1].

4.0 DESIGN & INSTALLATION

4.1 Type N (Temperature and Shrinkage): Helix® Micro Rebar™ reinforcements are used as an alternative to shrinkage and temperature reinforcement specified in Section 24.4 of ACI 318 for plain concrete footings and for plain concrete slabs (as defined by ACI 360) supported directly on the ground for dosage rates between 9 lb/yd³ and 34.5 lbs/yd³ (5.4 kg/m³ and 21 kg/m³).

4.2 Type S (Linear Elastic Design): Type S applications fall within the scope of ACI 318 Chapter 14, IBC Section 1906 and ACI 332 Section 8.2.1, IRC Sections R404.1.3 and R608.1, or Tables 8.2.1.3a and 8.2.1.3b of ACI 332. Design for flexure in accordance with Section 4 of this report must be limited in capacity by the values presented in Table 1 and Equations 1 or 2, and all designs must be verified to meet the criteria of ACI 318 Section 14.1.3 excluding slabs on grade (e.g. slabs designed per ACI 360 Chapter 7.2.1 PCA method where only flexural capacity is required).

ICC-ES Evaluation Reports are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICC Evaluation Service, LLC, express or implied, as to any finding or other matter in this report, or as to any product covered by the report.



a) For pure flexure

$$M_u \leq \lambda_s \phi L_f \sqrt{f'_c} S_m \quad (\text{Equation 1})$$

b) For combined flexure and axial compression

$$\frac{M_u}{S_m} - \frac{P_u}{A_g} \leq \lambda_s \phi L_f \sqrt{f'_c} \quad (\text{Equation 2})$$

Where

$L_f \sqrt{f'_c}$ = Maximum limit for flexural capacity.

M_u = Ultimate moment, lb.-in.

P_u = Ultimate axial load, lb.

S_m = Section modulus, in³.

A_g = Gross section area, in².

f'_c = Specified compressive strength as defined in ACI 318-14 26.12.3.1 and ACI 214R.

ϕ = Strength reduction factor as reported in Table 1 for Type S.

λ_s = Scale-effect adjustment factor per Table 2 of this report, or computed using Equation 3 by a registered design professional (RDP).

$$\lambda_s = \frac{2.5 \left(\frac{h_b}{h_o} \right)^{0.7}}{1 + 1.5 \left(\frac{h_b}{h_o} \right)^{0.7}} \quad (\text{Equation 3})$$

Where:

h_o = depth of member being designed.

h_b = depth of test beam 6.0 in (150 mm).

Axial compression and shear capacity, when required for design, must be based on the requirements of Sections 14.5.3 and 14.5.5 of ACI 318, respectively. Resistance to lateral forces, as part of a lateral force resisting system, must be based on the requirements of ACI 318, Chapter 14. Connections between members must be based on ACI 318, Chapter 16. Provisions of Section 14.6.1 of ACI 318-14, IRC Section R608.8.1, and Section 8.2.7 (g) of ACI 332 must apply.

4.3 Type G (Design Limits for Slabs-on-Ground):

4.3.1 Plain Concrete Method: When the modulus of rupture is required for plain concrete slabs-on-ground design in accordance with ACI 360, Chapter 7, the modulus of rupture (f_r) must be applied using Equation 4 and the values presented in Table 1:

$$f_r = L_f \sqrt{f'_c} \quad (\text{Equation 4})$$

4.3.2 Fiber Reinforced Concrete Slabs-on-Ground:

When the modulus of rupture is required for plain concrete slabs-on-ground design using the Elastic method or Yield Line Method in accordance with ACI 360, Sections 11.3.3.2 and 11.3.3.3, respectively, the modulus of rupture (f_r) must be taken as Equation 4 using the values presented in Table 1.

4.3.3 Factor of Safety: For all plain concrete slabs-on-ground design, a factor of safety must be applied to the loads in accordance with ACI 360 Section 5.9. The resistance factors specified for Type S structures do not apply.

4.4 Type P (Design Limits for Concrete Parking Lots):

4.4.1 Plain Concrete Method: When the modulus of rupture is required for design of plain concrete parking lots in accordance with Chapter 3 of ACI 330, the modulus of

rupture (f_r) must be determined using Equation 5 and the values presented in Table 1. Factor of safety of the pavement design (reliability) must be in accordance with ACI 330 Appendix A provisions.

$$f_r = L_f \sqrt{f'_c} \quad (\text{Equation 5})$$

4.5 Installation: Helix® Micro Rebar™ reinforcements may be added to the concrete at the concrete batch plant or to the ready-mix truck at the jobsite. The manufacturer's published installation instructions and this report must be strictly adhered to for adequate dispersal of fibers throughout the batch mixture. A copy of the manufacturer's published installation instructions must be available at all times at the location of the Helix® Micro Rebar™ installation into the concrete.

4.6 Special Inspection: Periodic special inspection is required in accordance with Sections 1705.1.1 and 1705.3 of the IBC.

5.0 CONDITIONS OF USE

The Helix® Micro Rebar™ reinforcements described in this report comply with, or are suitable alternatives to, what is specified in those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 Helix® Micro Rebar™ reinforcements must be blended into the concrete mixture in accordance with the installation requirements in the ICC-ES evaluation report and the manufacturers published installation instructions.

5.2 When Helix® 5-25 Micro Rebar™ and Helix® 5-25U Micro Rebar™ reinforcements are added at the ready-mix plant, a batch ticket signed by a ready-mix representative shall be available to the code official upon request.

5.3 Type N applications must comply with Section 4.1 of this report. Joints as specified in Chapter 14.3.4 of ACI 318 (IBC and IRC) are required.

5.4 Design for Type S applications must follow Section 4.2 of this report.

5.5 Design for Type G applications must follow Section 4.3 of this report.

5.6 Design for Type P applications must follow Section 4.4 of this report.

5.7 The fire-resistance rating of constructions with Helix® Micro Rebar™ reinforcements have not been evaluated by ICC-ES and is outside the scope of this report. When requested, evidence of the fire-resistance rating of the construction must be submitted to the code official for their approval.

5.8 Special inspection must comply with Section 4.6 of this report.

5.9 Helix® Micro Rebar™ reinforcements are produced by Helix® Steel under an inspection program with inspections by ICC Evaluation Service, LLC.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Use of Twisted Steel Micro-rebar (TSMR) in Concrete (AC470), approved May 2020 (editorially revised July 2020).

7.0 IDENTIFICATION

7.1 Each container of Helix® Micro Rebar™ reinforcement must bear the manufacturer's name, trademark and address; the product name; and the ICC-ES evaluation report number (ESR-3949).

7.2 The report holder's contact information is the following:

HELIX® STEEL
2300 WASHTENAW AVENUE, SUITE 201
ANN ARBOR, MICHIGAN 48104
(734) 322-2114
www.helixsteel.com

TABLE 1—CALCULATED L_f VALUES^{1,2,3,4}

Dosage rate (lbs/yd ³)	Compressive strength (psi)				
	3000	3500	4000	4500	5000
	φ Strength Reduction Factor				
	0.56	0.58	0.59	0.6	0.6
9	8.93	9.25	9.58	9.90	9.90
13.5	9.01	9.43	9.84	10.25	10.25
18.0	9.10	9.60	10.10	10.61	10.61
22.5	9.19	9.78	10.37	10.96	10.96
27.0	9.28	9.96	10.63	11.31	11.31
31.5	9.37	10.13	10.90	11.66	11.66
33.8	9.41	10.22	11.03	11.84	11.84
34.5	9.43	10.25	11.08	11.90	11.90

For SI: 1 psi = 0.0069 MPa. 1 lb/yd³ = 0.59 kg/m³.

¹Interpolation between dosage rates and compressive strengths is permitted. Minimum of 24 MPa compressive strength is required under ADIBC Appendix L, Section 5.1.1.

²Structures assigned to Seismic Design Category D, E or F must be in compliance with Section 14.1.4 of ACI 318, and combined flexure and axial compression must be considered in accordance with Section 14.5.4 of ACI 318.

³RDP must calculate project-specific scale-effect factor (Equation 3) and multiple it with Table 1 values.

⁴To convert L_f from psi to MPa, reported values must be multiplied by 0.083, which is $\sqrt{0.0069}$.

TABLE 2—SCALE-EFFECT ADJUSTMENT FACTOR, λ_s

Member Depth, h_o		λ_s
in	mm	6 in (150 mm)
4	100	1.00
6	150	1.00
8	200	0.92
10	250	0.85
12	300	0.80
18	450	0.68
24	600	0.60

TABLE 3—HELIX® 5-25 MICRO REBAR™ REINFORCEMENT FOR BELOW GRADE WALLS^{1,2,3,4,5,6,7}

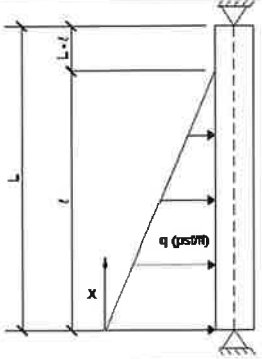
Helix® 5-25 Micro Rebar™ for Below Grade Walls ^{1, 2, 3, 4, 5, 9, 10, 11, 15}					
Wall Height (feet) ¹³	Backfill Height ⁶ (feet)	Minimum Helix 5-25 Dosage Rate (lb/yd ³) ¹²			
		Soil classes ⁷ and design lateral soil load (psf per foot of depth)			
		GM, GC, SM, SM-SC and ML		SC, ML-CL and inorganic CL	
		45 psf/ft		60 psf/ft	
		Nominal ⁸ Wall Thickness (in)		Nominal ⁸ Wall Thickness (in)	
		8	10	8	10
6	4	9	9	9	9
	5	9	9	9	9
7	4	9	9	9	9
	5	9	9	9	9
	6	9	9	9	9
8	4	9	9	9	9
	5	9	9	9	9
	6	9	9	9	9
	7	9	9	13.5	9
9	4	9	9	9	9
	5	9	9	9	9
	6	9	9	9	9
	7	9	9	13.5	9
	8	13.5 †	9	13.5 @f _c 4000 †	9

For SI: 1 inch = 25.4 mm; 1 foot = 305 mm; 1 psf/ft = 0.1571 kPa/m; 1 psi = 6.895 kPa; 1 lb/yd³ = 0.593 kg/m³

Notes:

- Applies to both cast-in-place walls with removable forms and flat ICF walls. Design and installation of Helix® 5-25 Micro-Rebar™ reinforced concrete must be in accordance with ESR-3949. Designs given in above table are Design "Type S", and walls must conform to all applicable provisions of ESR-3949.
- Concrete walls constructed in accordance with this Table must conform to the applicability limits of IRC Section R404.1.3.
- Minimum specified compressive strength is 3000 psi unless compressive strength, f_c is denoted on the table (in psi).
- Deflection criteria: L/240, where L is the height of the basement wall in inches. No soil surcharge allowed. Vertical bearing load is neglected and/or assumed to act at centerline of wall.
- Interpolation is not permitted.
- Backfill height is the difference in height between the exterior ground level and the top of the concrete footing that supports the foundation wall. Helix Steel designs assume a 4" thick slab above the top of footing. Walls must be laterally supported at top and bottom of wall before backfilling.
- Soil classes are in accordance with the Unified Soil Classification System. Refer to IRC Table R405.1.
- See IRC Table R608.3 for tolerance from nominal thickness permitted for flat walls.
- Design under this table is limited to Seismic Design Categories A and B. Design for Seismic Design Categories C through F is outside the scope of this table and if required must be determined by registered design professional.
- Reinforcement around wall openings must be provided in accordance with R404.1.3.3.7.3.
- Dowels connecting footing to wall must be provided in accordance with IRC R404.1.3.3.7.8.
- The Helix® 5-25 with reported dosage rate can be used in lieu of minimum horizontal reinforcement as permitted by Section 2.0 of this report.
- The unsupported wall height is the wall height minus the interior floor slab thickness, assumed to be 4 inches thick.
- † denotes an alternative dosage of 9 lb/yd³ with 3000 psi concrete may be used with wall returns. Returns shall be equal in thickness to the wall, extend minimum 28 inches in length perpendicular to the wall from the footing to 24 inches below grade.
- The table is limited to building with maximum aspect ratio (length-to-width) of 3.6.

Example 1: Basement Wall (Type S Design)

	<p> L=9 ft tall ℓ= 8 ft backfill b=12 in/ft t = 8 in q = 45 lb/ft³ soil pressure f_c = 3000 psi with 9 lb/yd³ Helix® 5-25 Neglect Axial Dead Load Seismic Category A Peak calculated moment: M_u=31,970 in-lb./ft. U = 1.2D +1.6H (governs) </p>
<p>Step 1: Scale Effect Adjustment Factor</p>	<p>$\lambda_s = 0.92$ (Equation 3)</p>
<p>Step 2: Compute Section Modulus</p>	<p>$S_m = \frac{bt^2}{6} = 128 \frac{in^3}{ft}$</p>
<p>Step 3: Compute Flexural Limit</p>	<p>$f'_c = 3000 \text{ psi}$ $\phi L_f = 0.56 \times 8.93 = 5.0$ (Table 1)</p>
<p>Step 4: Compute M_u and Check Capacity</p>	<p> $M_u \leq 0.92 \times 5.0 \sqrt{3000} \times 128 = 32,250 \text{ in-lb/ft}$ (Equation 1) 31,970 in-lb/ft < 32,250 in-lb/ft (OK) </p>

Mixing Instructions

Ready Mix Plants (Dry) - Truck Mixer

To prevent Helix Micro Rebar from clumping, follow the procedures below:

1. Add all Helix Micro Rebar to the truck drum. Typically this is done by conveyor or by hand, placing the entire contents of the box into the drum while it is at idle speed. Dumping boxes by hand can be done from a slump check stand if available.
2. Drive the truck into plant.
3. Once truck is in position under the chute, increase the drum to full charging speed and add a minimum of 50% of the batch water to the truck (more than 50% is okay).
4. Allow the Helix Micro Rebar and water to mix for no less than 45 seconds while delaying the addition of the remaining materials. NOTE: Once the water and Helix Micro Rebar are in the drum and the drum is at charging speed, the drum speed must not decrease until all batching is complete.
5. Add course aggregate, sand, cement and remaining water to the truck and mix in normal matter (60 revolutions minimum).

Ready Mix Plants (Wet) - Central Mix

1. For dosages below 15 lb/yd³ (9 kg/m³) follow dry procedures with 7 gallons (27 liters) of water in the drum (instead of the 50% requirement). NOTE: Once the water and Helix Micro Rebar are in the drum and the drum is at charging speed, the drum speed must not decrease until all batching is complete.
2. For higher dosage please use the Site Batching instructions below.

Site Batching into Ready Mix Trucks (Loaded Truck at Construction Site)

1. Set the drum to charging speed.
2. Sift Helix Micro Rebar through a 2" x 2" (50mm x 50mm) mesh or use a Helix Micro Rebar Dosing Unit (contact Helix Steel to order). The dosing unit breaks up clumps and ensures Helix Micro Rebar goes into the truck at a controlled rate (about one box per minute). When Helix Micro Rebar is added at this stage, it must enter the mixer clump-free.
3. Helix Micro Rebar may collect on residual concrete on the interior surfaces of the hopper. Push the Helix Micro Rebar into the drum avoiding clumps. Rinsing down the hopper or adding a slippery lining, such as PVC sheeting, to the hopper may help avoid these buildups.
4. Mix at charging speed for five minutes (60 revolutions) after Helix Micro Rebar is added.

Pan Mixer / Drum Mixer

1. Set the mixer to the proper speed.
2. Add Helix Micro Rebar at a rate of 45-60 sec per 45 lb (20 kg).
3. Helix Micro Rebar should be added with the aggregates.
4. Mix at maximum speed for five minutes after Helix Micro Rebar is added.

Effects on Slump

A slump of 5" (125mm) or higher will facilitate strike off. A slump of less than 5" is not recommended as this will prevent surface segregation of the cement and fines from the aggregate and Helix Micro Rebar. Slump should be measured on the initial load and adjustments made with a water reducer or plasticizer not water.

Pumping Instructions

Helix Micro Rebar pieces are 1" long and present minimal pumping resistance. A minimum 3" line should be used to pump Helix Micro Rebar-reinforced concrete. Typical slump loss through the pump should be accounted for, but the slump loss is unaffected by the Helix Micro Rebar.

Placing & Finishing Instructions

Finishing of Helix Micro Rebar-reinforced concrete does not require any special equipment. It can be finished according to standard, proper finishing procedures (ACI 302.1R), and can be stained and stamped.

Some best practices for placing and finishing concrete with Helix Micro Rebar are presented below:

Screeding

A vibrating screed is recommended. Allow the concrete to swell above the grade line in front of the screed so it can fully engage the concrete as it levels the concrete back to grade. This helps to segregate the paste from aggregates and force the Helix Micro Rebar and course aggregates below the surface.

Bull Floating

Bull floating eliminates ridges and fills in voids left by screeding. The importance of bull floating cannot be understated as the process aids the separation of the cement and fines from the aggregate.

Floating ^{1 2}

Power floating, using float pans or float shoes is critical as it breaks open the concrete surface: large aggregate and Helix Micro Rebar float downwards while cement and fine aggregates are sucked to the surface. A small raised ridge of paste should be visible around the pans. If power floating is not done sufficiently or if it is started too late, both aggregate and Helix Micro Rebar will remain on the surface or just below as segregation could not occur. The same recommendations apply to hand floating.



Cream ridge in front of float pan

Troweling ¹

The purpose of troweling is to produce a dense, smooth, hard surface. Troweling is done after power floating. No troweling should ever be done on a surface that has not been power or hand floated.

Pavements or Rough Finishes

The floating and troweling operations may be eliminated or replaced with a broom finish.

- (1) Floating and troweling are typically eliminated for pavements; contact Helix Steel for tips on finishing Helix Micro Rebar reinforced pavement.
- (2) If high flatness is a requirement, contact Helix Steel for the floating procedure.



Exhibit C



www.azdot.gov

ARIZONA DEPARTMENT OF TRANSPORTATION

Infrastructure Delivery and Operations Division

ENCROACHMENT PERMIT APPLICATION

FOR ADOT USE:
 ADOT Agreement Number: _____ ECS JPA OTHER:
 PERMIT NUMBER: _____ ROUTE: _____ MILEPOST: _____
 ADOT PROJECT NUMBER: _____ ADOT ENGINEERING STATION: _____

NAME OF ENCROACHMENT OWNER:	NAME OF PRIME CONTRACTOR / FIRM: If other than Encroachment Owner
Mailing Address of Owner: _____	Mailing Address of Prime Contractor / Firm: _____
City: _____	City: _____
State: _____ Zip: _____	State: _____ Zip: _____
Phone: _____	Phone: _____
E-mail Address: _____	E-mail Address: _____
Local Point of Contact Name: _____ Phone Number: _____	Local Point of Contact Name: _____ Phone Number: _____

TRAFFIC CONTROL COMPANY: _____ **CONTACT NAME:** _____ **PHONE NUMBER:** _____

HIGHWAY/ROUTE: _____ **Approximately:** _____ **Feet:** N S E W **of Milepost # or Cross Street:** _____
Side of Highway: (check one) N S E W **City (in or near):** _____
Encroachment Owner's Project or Parcel Number: _____ **Project Duration:** _____

DESCRIPTION OF PROPOSED WORK OR ACTIVITY TO OCCUR IN RIGHT-OF-WAY:

The Encroachment Owner will be the Permittee. By signing this application, the Encroachment Owner and the Prime Contractor / Firm acknowledge that the information given and statements made in this application are true and correct to the best of his/her knowledge. **THE ENCROACHMENT OWNER MUST ALSO SIGN ON PAGE TWO TO AGREE TO ACCEPT THE GENERAL OBLIGATIONS AND RESPONSIBILITIES AS DESCRIBED ON PAGE TWO OF THIS APPLICATION.** By accepting an approved encroachment permit ONCE ISSUED the Permittee agrees to the requirements described in the permit, to be responsible for all permit requirements, and to comply with ADOT's requirements as set out in the permit. An approved permit consists of, but is not limited, to this application and final supporting documentation approved by ADOT, and any requirements set by ADOT. **NO WORK SHALL TAKE PLACE INSIDE THE RIGHT OF WAY WITHOUT AN ADOT APPROVED PERMIT ON SITE.**

Encroachment Owner (Print Name and Sign) **Date** _____

Prime Contractor / Firm: If other than the Encroachment Owner (Print Name and Sign) **Date** _____

Traffic Control Company Representative (Print Name and Sign) **Date** _____

FOR ADOT USE:
PERMIT TO USE STATE HIGHWAY RIGHT-OF-WAY
This application is approved as a permit and a permit is issued to the Permittee. Construction is authorized only for the period indicated below.

Authorized ADOT Name and Signature **Authorized ADOT Name and Signature**

PERMIT ISSUED(Date): _____ **PERMIT WORK TO BE COMPLETED BY (Date):** _____



ENCROACHMENT PERMIT APPLICATION GENERAL OBLIGATIONS AND RESPONSIBILITIES

THE PERMITTEE SHALL:

- 1. Assume all legal liability and financial responsibility for the encroachment activity for the duration of the encroachment, including indemnify, defend, and save harmless ADOT and the State of Arizona and any of its departments, agencies, boards, commissions, universities, officers, officials, agents and employees from and against any and all claims, demands, suits, actions, proceedings, loss, costs, damages of every kind, or expenses, including court costs, reasonable attorney's fees and/or litigation expenses, and costs of claim processing and investigation, arising out of bodily injury or death of any person, or tangible or intangible property damage, caused, or alleged to be caused, in whole or in part, by the negligent or willful acts, or omissions of the Permittee, any of its directors, officers, agents, employees, or volunteers, or its contractor or subcontractors. This indemnity includes any claim or amount arising out of or recovered under the Workers' Compensation Law or arising out of the contractor's failure to conform to any federal, state or local law, statute, ordinance, rule, regulation or court decree. Permittee and Contractor agree to provide ADOT with certificate(s) of insurance (COI) consistent with the requirements stated in the ADOT Permit Insurance Matrix and to provide the State of Arizona/ADOT with endorsements or evidence to satisfy the Additional Insured, Waiver of Subrogation and Primary/Non-Contributory coverage requirements. The required insurance shall be kept in force by the Permittee and its contractors/subcontractors for the term of the permit and shall not expire, be cancelled or materially changed to affect coverage available to the State without thirty (30) days written notice to the State. Automobile and Worker's Compensation coverage requirements are dependent upon the use of employees and autos for the encroachment activity. Permittee agrees to maintain and make available to ADOT all contractors/subcontractors' certificates upon demand. ADOT reserves the right to require an increase or allow a decrease in insurance limits or coverage based on the risks and financial exposure arising out of the event or activity proposed in the permit application.
2. Comply with Environmental Laws.
A. Environmental Laws refer collectively to any and all federal, state, or local statute, law, ordinance, code, rule, regulation, permit, order or decree regulating, relating to, or imposing liability or standards of conduct on a person discharging, releasing or threatening to discharge or release or causing the discharge or release of any hazardous or solid waste or any hazardous substance, pollutant, contaminant, water, wastewater or storm water, and specifically includes, but is not limited to: The Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act; the Comprehensive Environmental Response, Compensation and Liability Act, as amended; the Toxic Substances Control Act; the Clean Water Act (CWA); the Clean Air Act; the Occupational Safety and Health Act; the Arizona Water Quality Act Revolving Fund Act, the Arizona Hazardous Waste Management Act, any applicable National Pollutant Discharge Elimination System (NPDES) or Arizona Pollution Discharge Elimination System (AZPDES) permit, any applicable CWA Section 404 permit, or any local pretreatment or environmental nuisance ordinance.
B. The Permittee (and/or their agent) specifically agree that in the course of performing any activity for which this Permit is necessary:
i. Shall comply with any and all Environmental Laws;
ii. Ensure that no activity under this Permit shall cause ADOT to be in violation of any Environmental Laws;
iii. Indemnify ADOT for any losses, damages, expenses, penalties, liabilities or claims of any nature whatsoever suffered by or asserted against ADOT
C. If the Permittee fails or refuses to comply with any Environmental Laws, or causes ADOT to be in violation of any Environmental Laws; ADOT may at its sole and unreviewable discretion, (1) revoke this Permit; (2) require the Permittee to undertake corrective or remedial action to address any release or threatened release or discharge of the hazardous substance, pollutant or contaminant, water, wastewater or storm water; and (3) expressly consents to entry of injunctive relief to enforce any listed remedies.
3. Be responsible for any repair or maintenance work and repair any aspect or condition of the encroachment that causes danger or hazard to the traveling public, for the duration of the encroachment and must perform such work under the appropriate encroachment permit authorization.
4. Comply with ADOT's traffic control standards with an ADOT approved traffic control plan.
5. In any case and at the Department's discretion; ADOT may require written approval from the abutting property owner prior to issuance of the encroachment permit. If the encroachment encroaches on abutting property owned by someone other than the permittee (and/or on underlying fee land owned by someone other than the permittee where ADOT owns its right of way by easement), the Permittee must obtain written approval from the abutting property owner (and/or underlying fee owner where ADOT owns its right of way by easement).
6. ADOT reserves the right to require the permittee to perform any repairs necessary to address damages caused by the encroachment throughout the life of the encroachment.
7. Remove the encroachment and restore repair the portions of the right-of-way that were damaged as a result of the encroachment to substantially the same condition as existed prior to the damage if ADOT cancels the encroachment permit, and terminates all rights under the permit, or if the project terminates for any reason beyond ADOT's control.
8. Reimburse ADOT for costs incurred or deposit with ADOT money necessary to cover all costs incurred for activities related to the encroachment, such as inspections, restoring and/or repairing portions of the right-of-way damaged by the encroachment to substantially the same condition as existed prior to the damage, removing the encroachment, or repair encroachment to originally permitted condition and comply with ADOT's bond policy as applicable.
9. Notify new owner of property or encroachment to apply for an ADOT encroachment permit, as required by Arizona Administrative Rule R17-3-502(D).
10. Apply for a new encroachment permit if the use of the permitted encroachment or the use of adjoining property changes.
11. Keep a copy of the encroachment permit at the work site or site of encroachment activity.
12. Construct the encroachment according to attached Specifications, Standards and the plans approved by ADOT as part of the final permit; any field changes shall be approved by ADOT prior to implementation.
13. Obtain all required permits from other government agencies or political subdivisions.
14. Remove any defective materials, or materials that fail to pass ADOT's final inspection, and replace with materials ADOT specifies.
15. Have the right to a hearing as prescribed in Arizona Administrative Code, R17-3-509 if the permit application is denied.
16. Understand that once issued, the permit is revocable and subject to modification or abrogation by ADOT at any time, without prejudice.
17. Following the installation or relocation of utilities within ADOT Rights-of-Way, utility companies are required to provide as-built drawings.
18. Certify that the Permittee shall secure overlash approval on existing poles from the utility company pole owner. Initial _____ (If applicable)
19. Certify that the Permittee shall secure approval from the existing utility owner to enter the existing sleeve, conduit, inner duct, cabinets, handholes or manholes to install additional infrastructure as noted on Page 1. Initial _____ (If applicable)
20. Where ADOT holds an easement interest, certify the Permittee has written approval from any underlying fee owner to include government agencies, political subdivisions, and private property owners. I certify I have written approval as necessary or have verified no approvals are required or needed. Initial _____

By accepting an ADOT approved Encroachment permit, the Permittee agrees to the requirements described in the permit, to be responsible for all permit requirements, and to comply with ADOT's requirements as set out in the permit. NO WORK SHALL TAKE PLACE INSIDE THE RIGHT OF WAY WITHOUT AN ADOT APPROVED PERMIT ON SITE.

I have read, understand and shall comply with the requirements as stated above:

Name:

Date:

Signature:



INSTRUCTIONS FOR SUBMITTING AN ENCROACHMENT PERMIT APPLICATION

To use Arizona Department of Transportation Highway Right-of-Way, an Encroachment Permit is required. The following instructions will assist you in the completion of your permit application.

1. **NAME OF ENCROACHMENT OWNER** - Owner of, or person authorized to accept responsibility, during and following construction, of the encroachment.
2. **ADDRESS OF OWNER** - Where owner or authorized agent resides, and can receive correspondence. The permit applicant receives the copy of the permits. If the owner is not also the applicant and prefers to receive a copy of the permit from ADOT please indicate this when submitting your application. Standard distribution is to send the copy to the applicant who has been authorized to work as an agent on behalf of the owner.
3. **CITY, STATE, & ZIP CODE** - Of owners address.
4. **PHONE** - Phone number at which the owner may be contacted during working hours.
If contact only after working hours list times available.
5. **SIGNATURE OF OWNER** - The signature of owner or owners' agent authorized to accept responsibility for owner. If agent signature is used provide documentation of agent authorization signed by owner.
6. **NAME OF APPLICANT** - Name of individual or firm applying for a permit on behalf of the owner. The applicant should be the individual or firm responsible for design and/or construction operations and accountable for the conditions of the permit. The applicant may be the same as the owner. In that case only enter and sign as owner, then write in "SAME AS OWNER" on the name of applicant line.

If the work under the approved permit is to be awarded by contract, the applicant will be responsible to ensure the conditions of the permit are met by the contractor awarded the work.

7. **LEGAL RELATIONSHIP TO OWNER** - Contractor, Engineer, Developer or other.
8. **MAILING ADDRESS** - Applicants address where correspondence is received and/or applicant resides. (Permit, when complete, will be forwarded to the applicant at the address provided.)
9. **CITY, STATE, ZIP CODE** - Of applicant's address.
10. **PHONE** - Phone number where the applicant can be reached during working hours.
11. **SIGNATURE OF APPLICANT** - Authorized agent of the owner, responsible and accountable for the conditions of the permit. Please print name to the right.
12. **CITY** - City, or closest City, where permit work will be constructed.
13. **PROJECT NUMBER** - To be completed by ADOT.
14. **HIGHWAY ROUTE NUMBER** - State Highway Route, example: SR 77, I-10, B- 19.
15. **APPROXIMATE FEET FROM MILE POST AND IN WHAT DIRECTION** -
Milepost markers are located along the sides of every highway. They are green and white sign panels marked with the word mile and a number. Using this as a guide, a distance can be measured in feet from the marker to the proposed site to provide this information. An example might be: 123- feet east of MP 279.

16. **WHICH SIDE OF HIGHWAY (N.S.E.W.)** – Location of the permit work. Is the permit work located on the North, South, East or West side of the Highway? (Please circle)
17. **HIGHWAY STATION – To be completed by ADOT.** (If work is for ADOT construction projects, the Applicant can provide the Stationing.)
18. **PURPOSE** – This section must be a complete description of the work or activity you propose to do or conduct within the State’s Right-of-Way. Examples are: Construct a 30’ Asphalt turnout with 30’ radii including fence and gate; install a commercial driveway for Big Burger Foods, 40’ Asphalt with 40’ radii; install underground utilities, etc.

ADDITIONAL REQUIREMENTS AND POLICIES ARE:

One copy

All permit applications are to be accompanied by one copy of 11"x17" readable sketches, plans, or drawings containing the following information:

- A. Description and plat of property giving property lot measurements.
- B. Show all buildings, etc. on property with distance to highway right-of-way.
- C. Show all dimension measurements, widths, lengths, etc. of proposed construction work, distance between turnouts and driveways. Show distances from side property and right-of-way lines. The location of the facility to be placed in the right of way should be indicated (tied down to an ADOT station).
- D. Show size, material, etc. of all pipe, water, sewer lines, power line, etc. for any underground facilities, whether for utilities or drainage.
- E. All permits which request changing the geometrics of a State Highway as recommended by the traffic analysis must have plans prepared by a registered professional engineer, registered in the State of Arizona. Access requests that do not require a traffic analysis may be drawn by a registered engineer; however, it is not a requirement.
- F. Permit work that may adversely impact the existing drainage patterns may require a Drainage Impact Analysis. If existing drainage patterns will be altered and an impact to the upstream and/or downstream properties or drainage facilities is eminent, at a minimum the drainage study required for the building permit from the local agency shall be submitted for review by ADOT. If a more in-depth Analysis is needed the Permittee will be advised by ADOT and the necessary submittals will be required.
- G. When the geometrics of a state highway are changed, the Permittee will submit to ADOT a certificate of compliance, certifying all materials and all work done under the permit was in compliance with the approved plans and all conditions and requirements of the permit. This certificate of compliance will be signed and sealed by a Registered Professional Engineer registered in the State of Arizona.
- H. Any excavation within ADOT right of way will require compliance with the Arizona State Historic Preservation Act.
- I. The average processing time for a routine encroachment permits (minor utility installations, residential driveways, etc.) is 4 to 6 weeks. Please allow at least three weeks before calling the ADOT office concerning the status of your permit. Permits requiring additional and/or in-depth reviews such as traffic impact assessment, drainage impacts, or right of way as examples, will increase processing time by approximately six to eight weeks.

The time involved in evaluating the permits is in most cases relative to the quality of the documentation submitted by the Permittee.

- J. When submitting your application please indicate the time needed to do the proposed work. Encroachment permits have a life of 90 days, for construction, however if the work is of such size additional time is needed, that can be given consideration. When the permit has reached its expiration date and no work has been started the permit will automatically be canceled. If work has been started but not yet completed, an extension of time will be considered after the Permittee notifies the ADOT office in writing as to the reason for the delay and the amount of time needed for completion of work.

- K. The Permittee agrees by acceptance of a permit to the specifications and conditions of the approved permit. Additionally, the Permittee agrees to properly maintain any encroachment placed within ADOT Right of Way. This responsibility included removal of snow, ice or debris, repair of surfaces and keeping the encroachment in a safe condition for the general public. The owner of the permit is responsible for future maintenance of the encroachment. If work within the right of way is required to maintain or repair the encroachment a permit will be taken out to do so. Utility companies are encouraged to apply for a Blanket Maintenance permit for their facilities. These permits generally have a life of one year, or equal to the life of the company liability insurance certificate.

- L. Mail all copies of application and attachments to the respective Permits Office in the ADOT District where the encroachment will be located:

Northwest District Kingman Permits Office
3660 E. Andy Devine Avenue Kingman, AZ
86401
Phone: 928.681.6010
Fax: 602.239.6205

Northwest District Prescott Permits Office
1109 E. Commerce Drive Prescott, AZ 86305
Phone: 928.777.5861
Fax: Please Call For Information



ENCROACHMENT PERMIT CHECKLIST

Intermodal Transportation

In order to expedite processing, please check your Permit Application Packet to verify the following:

Customer	ADOT	REQUIRED FOR PERMIT APPLICATION PACKET
APPLICATION:		Permit application is completely filled out and signed in accordance with the application instructions provided by ADOT to include:
		Encroachment Owner has legibly printed and signed as the Encroachment Owner
		Initials and date are included on the bottom of page 2 of the application
		Provided a specific description of the proposed work (no abbreviations or acronyms). If available, ADOT stationing was provided.
INSURANCE:		Valid certificates of insurance and endorsement forms for completed operations and ongoing operations (link to Example certificates and requirements): http://azdot.gov/docs/default-source/business/insurance_requirements.pdf?sfvrsn=2
		Certificates of insurance for Encroachment Owner provided at time of application submission
		Certificates of insurance for all parties working in the right-of-way must be provided to ADOT prior to work performed under the approved permit (Customer acknowledges requirement by initial on this checklist, ADOT initials to verify they have reminded customer of requirement).
TRAFFIC CONTROL:		If the requested activity will impact traffic in anyway; a traffic control plan must be submitted (link to Manual of Uniform Traffic Control Devices (MUTCD) and the ADOT Work Zone Safety and Mobility Guidelines): http://azdot.gov/business/engineering-and-construction/traffic/traffic-engineering-references
		Traffic Plans included and are in accordance with the Manual of Uniform Traffic Control Devices (MUTCD) and ADOT Work Zone Safety and Mobility Guidelines.
CONSTRUCTION PLANS*:		Must be provided to show scope of work and location in reference to ADOT roadway and include the following:
		Title block identifying company and project name/number
		Identified access control and/or ADOT right-of-way boundaries on plans
		Location of the planned activity: Must include detail to identify edge of roadway pavement or face of curb and identifiable points to fixed objects so reviewer can identify exactly where work will take place in reference to ADOT facilities (milepost markers, other permanent signs, fixed utility boxes, names of cross streets, etc)
		North arrow. Legend to reference symbols used on plans if applicable.
		Scale is specified or denoted "not to scale"
		Submitted plans are 8.5x 11 or 11x17 format (if sent via email: printable PDF format, no larger than 10MB)

*Schematics and photos may be submitted in addition to, but not in place of construction plans.

Please contact the ADOT District Encroachment Permit Office for questions regarding permits or visit us at <http://azdot.gov/business/Permits/encroachment-permits>.

CHECK LIST FOR APPLICANTS REQUESTING RESIDENTIAL ACCESS PERMITS

- 1 Complete application correctly. If you are the encroachment owner, fill out the owner side of the application, sign/date the application and initial/date bottom of second page. The Route/Highway you are requesting access as well as milepost and/or distance from nearest milepost and direction. Also include your address and the nearest city/town and county.

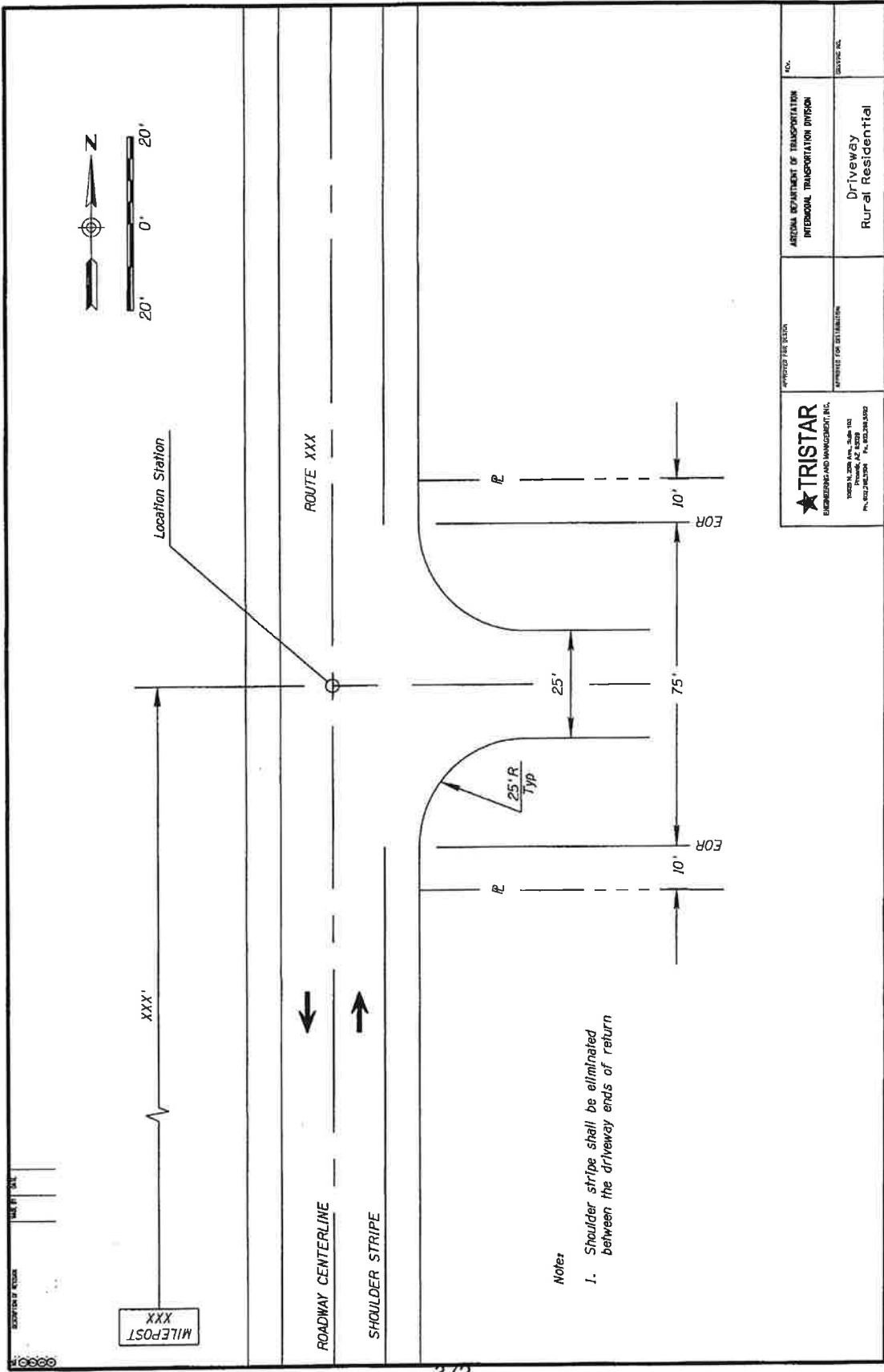
- 2 Provide documentation that you are the abutting property owner by plat map or deed.

- 3 Submit a scalable site plan with the following information: ADOT R/W, ADOT engineering stations (if available), north direction arrow, milepost, fence, drainage structures, proposed access and elevations of access and highway.

- 4 Traffic Control plan prepared by a traffic control company, if access needs to be constructed.

- 5 If access needs to be constructed than the encroachment owner shall have a contractor (if applicable) fill out the applicant part of the application and insurance shall be provided per the insurance matrices.

- 6 Example of a typical Residential access would be a maximum of 25' foot wide with a 25' foot radius with/without gates.

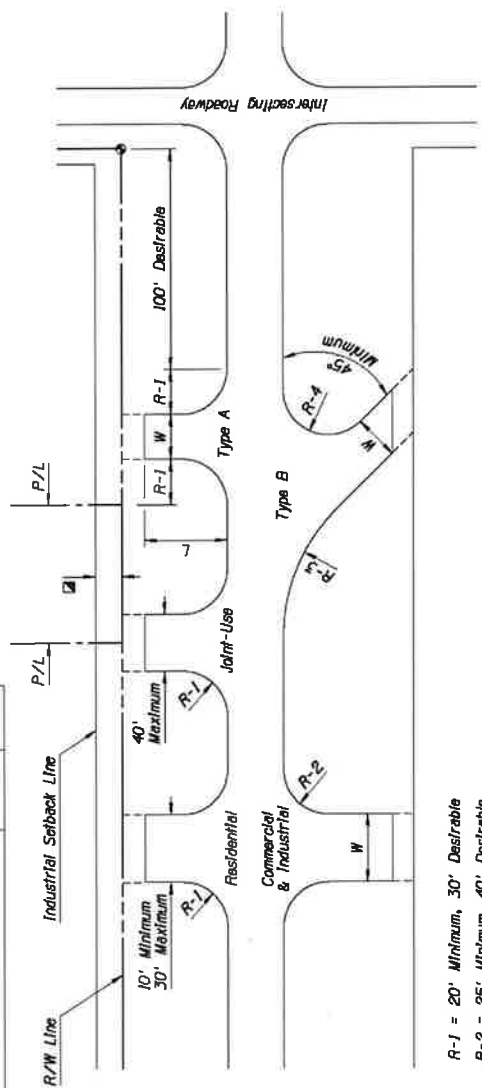


 TRISTRAR ENGINEERING AND MANAGEMENT, INC. <small>1000 N. 20th Ave., Suite 103 Phoenix, AZ 85016 Ph: 602.278.2000 Fax: 602.278.2002</small>	<small>APPROVED FOR DESIGN</small> <small>APPROVED FOR SUBMITTAL</small>	ARIZONA DEPARTMENT OF TRANSPORTATION INTERNAL TRANSPORTATION DIVISION Driveway Rural Residential	<small>NO.</small> <small>DATE</small>
	<small>NO.</small> <small>DATE</small>	<small>NO.</small> <small>DATE</small>	

NO.	DESCRIPTION OF REVISIONS	DATE
1	REVISED NOTE & RELATED FIGURES TYPE B TURNOUT	3/2/84
2		
3		
4		

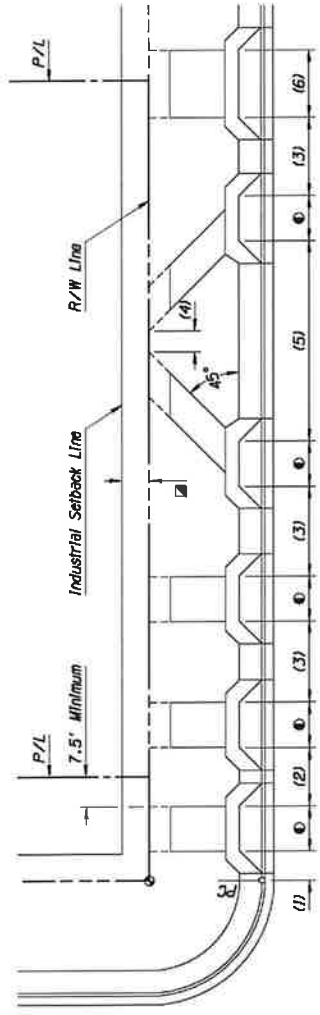
GENERAL NOTES

1. **Driveway types:**
- Residential** - one providing access to a single family residence, to a duplex, or to an apartment building containing five or fewer dwelling units.
 - Commercial** - one providing access to an office, retail or institutional building or to an apartment building having more than five dwelling units.
 - Industrial** - one directly serving a substantial number of truck movements to and from loading docks of an industrial facility, warehouse or truck terminal.
2. Joint-use driveways may become desirable for landowners of adjacent properties to service both properties. If this is the case, only one of the two adjacent landowners need apply for the access permit, but a recorded joint-use easement, signed by all parties involved, must accompany the application form. The property line can be located anywhere, in reference to the driveway, depending on mutual agreement.
3. Driveways for high volume traffic generators shall be approved individually by Regional Traffic Engineering or the Traffic Engineering Group.
4. Driveways with curb returns in urban areas shall be installed only with the approval of Regional Traffic Engineering or the Traffic Engineering Group.
5. Driveways and depressed curbs shall be located as noted on plans or as directed by the Engineer.
6. Drainage structures shall be provided under driveways where necessary.
7. Dimensions indicated as minimum shall be avoided whenever possible in favor of those indicated as desirable.
8. The Type "A" turnout is the preferable turnout design. Type "B" shall only be used when absolutely necessary.
9. Paved turnouts & plan notations will be W x L, surface material, type and standard. Examples: 20' x 30' ACTO, Type A, Std Dwg C-06.10. Show radius (R) graphically.
10. Construction of curb, gutter, sidewalk and drainage facilities in urban areas by the permittee along that portion of the highway frontage under permit application, may be a stipulation of the permit approval if there appears to be reasonable need.
11. Excavation or embankment for turnouts shall be included in quantities for main roadways.
12. Base material shall be the same as that shown for main roadway, unless otherwise noted.
13. Desirable side slope for rural turnouts is 6:1.



- R-1 = 20' Minimum, 30' Desirable
- R-2 = 25' Minimum, 40' Desirable
- R-3 = 80'
- R-4 = 20' Minimum
- W = 25' Minimum, 40' Maximum
- See Proper City or County Regulation

RURAL DEVELOPMENTS



- (1) 10' Minimum, 20' Desirable
- (2) 15' Minimum
- (3) 25' Minimum, 40' Desirable
- (4) 40' Minimum
- (5) One-Way Coupler for Use Only on One-Way Roadways
- (6) Commercial - One-Way: 15' Minimum, 30' Maximum; Two-Way: 25' Minimum, 40' Maximum
- (7) Maximum Joint-Use Driveways
- (8) Industrial - 20' Minimum, 40' Maximum

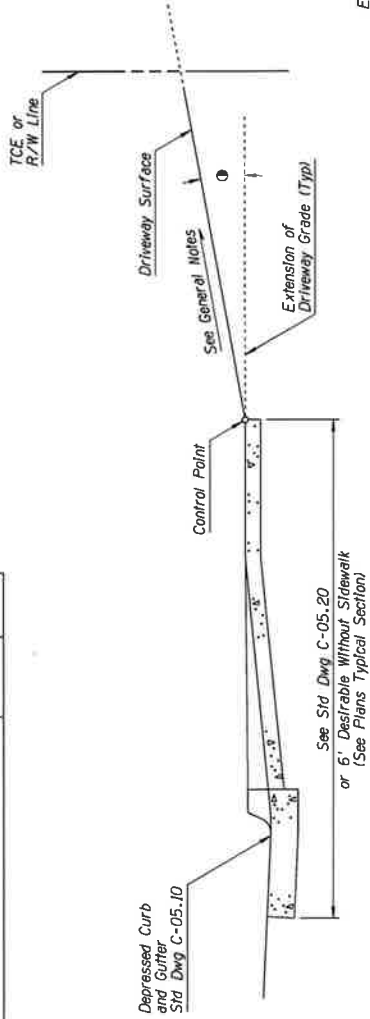
URBAN DEVELOPMENTS

APPROVED FOR SECTION	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	DATE
APPROVED FOR DISTRIBUTION	DRIVEWAY & TURNOUT LAYOUTS	5/12
		C-06.10 Sheet 1 of 2

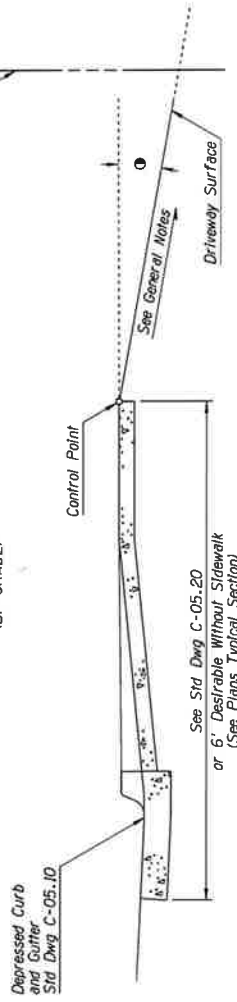
1	REVISIONS OF RECORDS	DATE
2	REVISIONS OF RECORDS	DATE
3	REVISIONS OF RECORDS	DATE
4	REVISIONS OF RECORDS	DATE

GENERAL NOTES

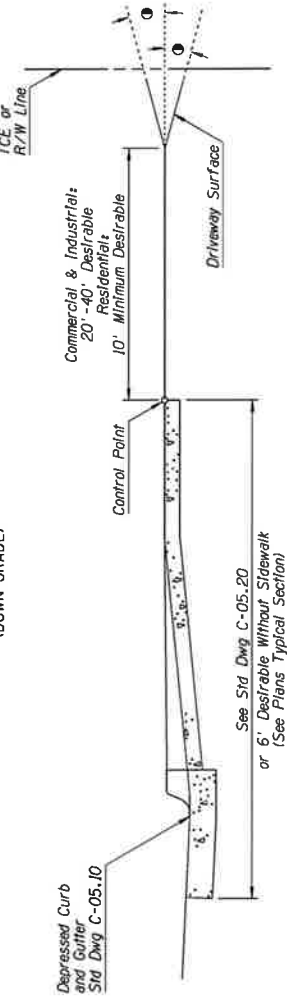
1. Grade as shown on plans or as negotiated between property owner and Engineer.
 2. When field conditions require modifications to plans, contact design engineer for assistance.
 3. See Sheet 1 of 2 for all other General Notes.
- Break angle greater than 6% requires a vertical curve, L=10' minimum. Vertical curve shall not encroach on roadway or sidewalk.



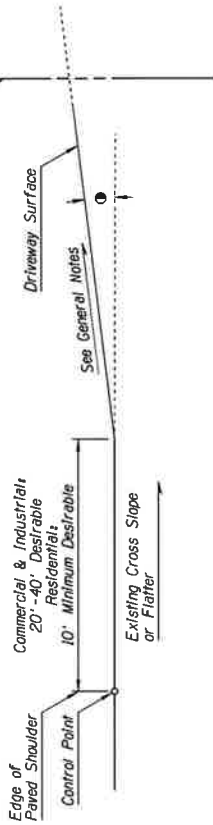
URBAN CROSS SECTION (UP-GRADE)



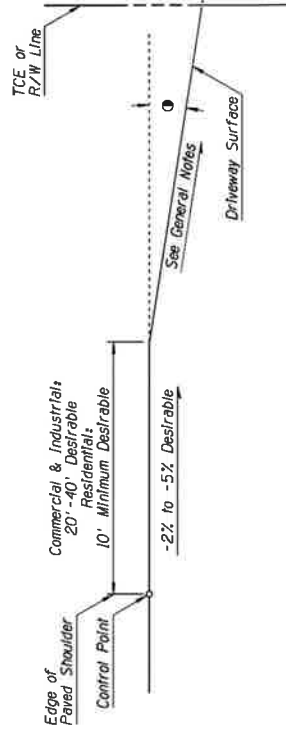
URBAN CROSS SECTION (DOWN-GRADE)



DESIRABLE URBAN CROSS SECTION



RURAL CROSS SECTION (UP-GRADE)



RURAL CROSS SECTION (DOWN-GRADE)

①

APPROVED FOR DESIGN	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	DATE 5/12
APPROVED FOR CONSTRUCTION	DRIVEWAY & TURNOUT LAYOUTS	DRAWING NO. C-06.10
		SHEET 2 OF 2

PERMITS INSURANCE CHECKLIST

INSTRUCTIONS/TIPS/INFORMATION TO EASE THE INSURANCE PROCESS

- Please provide this Checklist and the *ADOT Permits Insurance Matrix* to your insurance broker or agent as soon as possible
- Initial below for each item submitted; print your name and the date at the bottom of the page
- Send this completed checklist, and your Certificate of Insurance with required endorsements, by email to your Permit Office
- Your insurance will be reviewed for compliance only when this completed checklist is submitted with attachments
- **Failure to follow these steps will cause a delay in the processing of your Permit Application**

PERMIT DOCUMENTS

**Please note: Insurance is also required from the contractor performing the actual services*

- | | |
|--|--------------------------|
| <input type="checkbox"/> Permit Application | Applicant Initials _____ |
| <input type="checkbox"/> Questionnaire required If Special Event | Applicant Initials _____ |

CERTIFICATE OF INSURANCE OR EVIDENCE OF SELF-INSURANCE

**Certificate Holder should read: The State of Arizona or ADOT, 1324 N. 22nd Ave., Phoenix, AZ 85009*

**Description of Operations: should state "for any and all work performed in ADOT right of way"*

- | | |
|--|--------------------------|
| <input type="checkbox"/> Certificate of Insurance or Self-insurance Letter | Applicant Initials _____ |
|--|--------------------------|

COMMERCIAL GENERAL LIABILITY

- | | |
|--|--------------------------|
| <input type="checkbox"/> Additional Insured Endorsement Form OR policy for Ongoing Operations | Applicant Initials _____ |
| <input type="checkbox"/> Additional Insured Endorsement Form OR policy for Completed Ops (Construction Only) | Applicant Initials _____ |
| <input type="checkbox"/> Waiver of Subrogation Endorsement Form OR policy | Applicant Initials _____ |
| <input type="checkbox"/> Primary and Noncontributory Endorsement Form OR policy | Applicant Initials _____ |

AUTO LIABILITY

**Requirement only applies if vehicles will operate or park in ADOT right of way to conduct permit activity*

- | | |
|---|--------------------------|
| <input type="checkbox"/> Additional Insured Endorsement Form OR policy | Applicant Initials _____ |
| <input type="checkbox"/> Waiver of Subrogation Endorsement Form OR policy | Applicant Initials _____ |

WORKER'S COMPENSATION

**Required for one or more employees*

- | | |
|---|--------------------------|
| <input type="checkbox"/> Waiver of Subrogation Endorsement Form OR Policy | Applicant Initials _____ |
|---|--------------------------|

OTHER REQUIRED INSURANCE (IF APPLICABLE)

- | | |
|---|--------------------------|
| <input type="checkbox"/> Contractor's Pollution Liability | Applicant Initials _____ |
| <input type="checkbox"/> Aviation/Aircraft Liability | Applicant Initials _____ |
| <input type="checkbox"/> Other _____ | Applicant Initials _____ |

Applicant Name (print): _____ Date: _____

ADOT Permit Insurance Matrix

Encroachment Insurance Requirements

Commercial General Liability	Commercial Auto Liability	Work Comp/Employers' Liability	Aviation Liability*
\$1,000,000 Occurrence	\$1,000,000 Combined Single Limit	\$1,000,000 Each Accident	\$1,000,000 Occurrence
\$2,000,000 Annual Aggregate		\$1,000,000 Each Disease-Employee	\$2,000,000 Annual Aggregate
		\$1,000,000 Each Disease-Policy Limit	
Required Endorsements	Required Endorsements	Required Endorsement	Required Endorsements
Additional Insured	Additional Insured	Waiver of Subrogation	Additional Insured
Waiver of Subrogation	Waiver of Subrogation		Waiver of Subrogation
Primary & Non-contributory			Primary & Non-contributory
Other Endorsements ⁺			
Completed Operations ¹			
Explosion/Collapse/Underground			

Film & Parade Insurance Requirements

Commercial General Liability	Commercial Auto Liability	Work Comp/Employers' Liability	Aviation Liability*
\$1,000,000 Occurrence	\$1,000,000 Combined Single Limit	\$1,000,000 Each Accident	\$1,000,000 Occurrence
\$2,000,000 Annual Aggregate		\$1,000,000 Each Disease-Employee	\$2,000,000 Annual Aggregate
		\$1,000,000 Each Disease-Policy Limit	
Required Endorsements	Required Endorsements	Required Endorsement	Required Endorsements
Additional Insured	Additional Insured	Waiver of Subrogation	Additional Insured
Waiver of Subrogation	Waiver of Subrogation		Waiver of Subrogation
Primary & Non-contributory			Primary & Non-contributory

Special Event Insurance Requirements

Commercial General Liability	Commercial Auto Liability	Work Comp/Employers' Liability	Aviation Liability*
\$5,000,000 Occurrence	\$1,000,000 Combined Single Limit	\$1,000,000 Each Accident	\$1,000,000 Occurrence
\$5,000,000 Annual Aggregate		\$1,000,000 Each Disease-Employee	\$2,000,000 Annual Aggregate
		\$1,000,000 Each Disease-Policy Limit	
Required Endorsements	Required Endorsements	Required Endorsement	Required Endorsements
Additional Insured	Additional Insured	Waiver of Subrogation	Additional Insured
Waiver of Subrogation	Waiver of Subrogation		Waiver of Subrogation
Primary & Non-contributory			Primary & Non-contributory

*Aviation Liability insurance is required when aircraft of any kind, including drones or other unmanned aircraft, will be in our right of way.

+Completed Operations¹ is required for any/all construction, boring, alteration, etc. or as determined by Risk Management. XCU² is required for any boring, digging, use of explosives, as the type of work warrants or as determined by Risk Management.



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
01/12/2015

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Insurance Agency 123 Sample Street Phoenix, AZ 12345	CONTACT NAME: Insurance Agent PHONE (A/C No, Ext): (123) 555-1234 FAX (A/C, No): E-MAIL ADDRESS: agent@insuranceco.com														
INSURED Encroachment Owner 123 Sample Drive Phoenix, AZ 12354	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:80%;">INSURER(S) AFFORDING COVERAGE</th> <th style="width:20%;">NAIC #</th> </tr> <tr> <td>INSURER A: Sample Company</td> <td>123456</td> </tr> <tr> <td>INSURER B:</td> <td></td> </tr> <tr> <td>INSURER C:</td> <td></td> </tr> <tr> <td>INSURER D: (May have multiple</td> <td></td> </tr> <tr> <td>INSURER E: companies listed)</td> <td></td> </tr> <tr> <td>INSURER F:</td> <td></td> </tr> </table>	INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A: Sample Company	123456	INSURER B:		INSURER C:		INSURER D: (May have multiple		INSURER E: companies listed)		INSURER F:	
INSURER(S) AFFORDING COVERAGE	NAIC #														
INSURER A: Sample Company	123456														
INSURER B:															
INSURER C:															
INSURER D: (May have multiple															
INSURER E: companies listed)															
INSURER F:															

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PROJECT <input type="checkbox"/> LOC	Y	Y	Policy #XXXXX	01/12/2015	02/07/2015	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 50,000 MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 1,000,000 \$
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS <input type="checkbox"/> AUTO PHYSICAL DAMAGE	Y	Y	Policy #XXXXX	01/12/2015	02/07/2015	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$	Y	Y	This is an optional coverage and may not be shown; if shown, policy #, wavier and addl insured must be marked.			EACH OCCURRENCE \$ optional AGGREGATE \$ amounts \$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A	Policy #XXXXX	01/12/2015	02/07/2015	WC STATUTORY LIMITS OTH-ER E.L. EACH ACCIDENT \$ 500,000 E.L. DISEASE - EA EMPLOYEE \$ 500,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

State of Arizona, ADOT and its departments, agencies, boards, commissions, universities, officers, officials, agents and employees shall be named as additional insureds with respect to liability arising out of activities performed by or on behalf of the permittee or contractor. Waiver of Subrogation applies.

CERTIFICATE HOLDER The State Of Arizona Arizona Department of Transportation Arizona Department of Public Safety 1324 N. 22nd Ave MD 128A Phoenix, AZ 85009	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE <i>Signature of Representative</i>
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Attachment "A"

Cultural Resources Clearance Notification

Cultural survey specifications and responsibilities:

In accordance with the Arizona State Historic Preservation Act (SHPA), ADOT must consider the effects of its actions, including the issuance of permits, on historic properties. It is the Encroachment Owner's responsibility to obtain documents indicating that the proposed permit activity would not affect those historic properties or, if it would affect such properties, to provide documentation attesting to the mitigation of those effects, prior to beginning excavation work within ADOT Rights of Ways. Such documentation may include concurrence on the effect from the State Historic Preservation Office or a data recovery plan approved by the Arizona State Museum for mitigations of the site. **The permittee must contact ADOT's Historic Preservation Team (HPT) in order to verify compliance with these requirements prior to the issuance of an Encroachment Permit.** ADOT's HPT will provide the permits office with a memorandum that the requirements of the SHPA have been met. Upon completion of the report summarizing the findings of the documentation, the District and EPG HPT will review the report and determine if the requirements of SHPA have been met.

Archaeological Features:

The attention of the Permittee is directed to the Arizona Revised Statutes §41 -841 through 846 and 541 -861 through 865. Violation of A.R.S §41 -841 through 845 is a Class 2 misdemeanor. Violation of A.R.S. §41-861 through 865 can be classified as either a Class 1 misdemeanor or a Class 5 felony.

Section 6(a) of the Federal Archaeological Resources Protection Act of 1979 specifies that no person may excavate, remove, damage or otherwise alter or deface any archaeological resource located on public (Federal) lands or Indian lands unless such activity is pursuant to a permit issued under Section 4 of the Act. Violations of this act are considered a felony, and are punishable by fine and imprisonment.

Although the Encroachment Owner will be responsible to make every effort prior to construction to identify all cultural resources in a permit area, previously unidentified archaeological materials could be found during the construction of the permit. When historic or archaeological features are encountered or discovered during any activity related to construction of the permit, the permit owner shall stop work immediately at that location, and shall take all reasonable steps to secure the preservation of those features.

The permittee shall immediately make arrangements for the proper treatment of such resources. The permittee shall not resume work until he/she is so directed by the Arizona Department of Transportation.

**ADOT Environmental Planning
1611 W. Jackson St., Phoenix, AZ 85007, 602.712.7767**

**ARIZONA DEPARTMENT OF TRANSPORTATION (ADOT)
GUIDELINES
FOR ENCROACHMENT PERMITTEE'S
STATE AND FEDERAL ENVIRONMENTAL REGULATIONS**

The applicant must submit a signed statement from a qualified firm (see Appendix A) certifying that the applicant has complied with the following laws and regulations:

National Historic Preservation Act:

The applicant must certify that area of proposed incursion has been surveyed by a qualified archaeologist (36 CFR 61 – Attached) and that the proposed activity will not impact any historic or prehistoric cultural resource eligible for the National Register of Historic Places.

The applicant must also submit a signed statement from a qualified firm certifying with appropriate and updated training/certifications that the applicant has complied with the following laws and regulations:

Clean Air Act

If the applicant's work will include the demolition of any concrete facilities, the applicant must certify that they have met the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP). NESHAP notification is required 10 working days prior to demolition. In addition, it applies to more than just concrete structures

Clean Water Act:

Section 401/404

The applicant must certify that either:

- a) The proposed work will not involve discharges to Waters of the US
- b) Or that the activity qualifies for a notifying Nationwide Permit from the US Army Corps of Engineers (Corps) and that the applicant has received concurrence from the Corps to proceed with the work and will implement all required project specific mitigation measures, Section 404 General Conditions and State Water Quality 401 conditions.
- c) Or that the activity qualifies for a non-notifying Nationwide Permit and that the work will comply with all Section 404 General Conditions and State Water Quality 401 conditions.
- d) Or that the applicant has received an Individual Permit from the Corps and that the work will comply with all conditions of the Individual Permit.

Section 402

If the proposed work will exceed 1 acre of disturbance then the applicant must prepare a Storm Water Pollution Prevention Plan (SWPPP) for the project and submit a Notice of Intent (NOI) to the Arizona Department of Environmental Quality (ADEQ) and/or the U.S. Environmental Protection Agency (EPA). One copy of the SWPPP is to be submitted for comments by ADOT District Environmental Coordinator. The applicant will address comments in their SWPPP before commencing any construction. Upon project completion the applicant will submit a Notice of Termination (NOT) to the ADEQ and/or the EPA.

The Endangered Species Act:

The applicant must verify that the proposed project will not affect any species listed as Endangered, Threatened, or Candidate by the United States Fish and Wildlife Service under the Endangered Species Act. The applicant must also verify that the proposed project will not affect any species listed as Endangered, Threatened, or Candidate by the Arizona Game & Fish under the Arizona Natural Heritage Program (HDMS).

Arizona Native Plant Law:

If the applicant's project will remove or destroy protected native plants over an area of right-of-way that exceeds one-fourth acre the Permittee shall notify the Arizona Department of Agriculture at least 60 days prior to the start of construction to afford commercial salvagers the opportunity to remove and salvage these plants.

If the Encroachment is for an Industrial Development ADOT reserves the right to request and review the Industrial SWPPPs that discharges into ADOT's drainage facilities or that discharge to an MS4, as per 40 CFR Part 122.26.

An audit may be performed on environmental self certified parties by ADOT. The environmental responsible party will provide all necessary document for compliance upon request.

June 2002
Revised April 2004
Revised March 2007

Appendix A to Part 61--Professional Qualifications Standards

In the following definitions, a year of full-time professional experience need not consist of a continuous year of full-time work but may be made up of discontinuous periods of full-time or part-time work adding up to the equivalent of a year of full-time experience.

(a) History. The minimum professional qualifications in history are a graduate degree in history or closely related field; or a bachelor's degree in history or closely related field plus one of the following:

(1) At least two years of full-time experience in research, writing, teaching, interpretation or other demonstrable professional activity with an academic institution, historical organization or agency, museum, or other professional institution; or

(2) Substantial contribution through research and publication to the body of scholarly knowledge in the field of history.

(b) Archeology. The minimum professional qualifications in archeology are a graduate degree in archeology, anthropology or closely related field plus:

(1) At least one year of full-time professional experience or equivalent specialized training in archeological research, administration or management;

(2) At least four months of supervised field and analytic experience in general North American archeology; and

(3) Demonstrated ability to carry research to completion.

In addition, to these minimum qualifications, a professional in prehistoric archeology shall have at least one year of full-time professional experience at a supervisory level in the study of archeological resources of the prehistoric period. A professional in historic archeology shall have at least one year of full-time professional experience at a supervisory level in the study of archeological resources of the historic period.

(c) Architectural history. The minimum professional qualifications in architectural history are a graduate degree in architectural history, art history, history preservation, or closely related field, with coursework in American architectural history; or a bachelor's degree in architectural history, art history, history preservation, or closely related field plus one of the following:

(1) At least two years of full-time experience in research, writing, or teaching in American architectural history or restoration architecture with an academic institution, historical organization or agency, museum, or other professional institution; or

(2) Substantial contribution through research and publication to the body of scholarly knowledge in the field of American architectural history.

(d) Architecture. The minimum professional qualifications in architecture are a professional degree in architecture plus at least two years of full-time professional experience in architecture; or a State license to practice architecture.

(e) Historic Architecture. The minimum professional qualifications in historic architecture are a professional degree in architecture of State license to practice architecture, plus one of the following:

(1) At least one year of graduate study in architectural preservation, American architectural history, preservation planning, or closely related field; or

(2) At least one year of full-time professional experience on historic preservation projects. Such graduate study or experience shall include detailed investigations of historic structures, preparation of historic structures research reports, and preparation of plans and specification for preservation projects.

Arizona Department of Transportation
STATE AND FEDERAL ENVIRONMENTAL REGULATIONS
Compliance to guidelines
To Be Included With Application Package

Right of Way Dedication

All applicable documentation and information has been included
Not applicable

National Historic Preservation Act

All applicable documentation and information has been included
Not applicable

Clean Water Act

All applicable documentation and information has been included
Not applicable

The Endangered Species Act

All applicable documentation and information has been included
Not applicable

Arizona Native Plant Law

All applicable documentation and information has been included
Not applicable

Drainage Requirements

All applicable documentation and information has been included
Not applicable

Storm Water Pollution Prevention Plan

All applicable documentation and information has been included
Not applicable

Certificate of Liability Insurance

All applicable documentation and information has been included
Not applicable

Clean Air Act

All applicable documentation and information has been included
Not applicable

Company

Representative Signature

Date

Print Name



Exhibit D

London Bridge Road Paving
PW23-502011-500373

Pre-Bid Conference
May 11, 2023 11:00 am

Name	Company	Email	Telephone
Termin White	Protek	^{proteknet.net} Protek Construction	602-451-6302
Ryan Wiefelrich	Paveco, Inc	skend@pavecoaz.com	602-920-7897
SHAWN CLARKE	LHC	clarkes@lucasz.gov	808-439-5505
Tony Jorgensen	PEM	tonyj@pioneer earthmovers.com	928-727-2250
Mike Wolfe P.E.	LHC	wolfem@lucasz.gov	
SUSIE FOX	LHC	foxs@lucasz.gov	928-855-3377