



# **TOWN OF CAREFREE, ARIZONA**

**STREETS & RIGHT-OF-WAY DEPARTMENT**

## **SPECIFICATIONS AND CONTRACT DOCUMENTS**

**Project Number: 2023-03**

### **CAREFREE DRIVE DRAINAGE IMPROVEMENTS at Carefree Terrace Condominiums**

**TOWN ADMINISTRATOR:** Gary S. Neiss  
480-488-1471

**CONTRACT ADMINISTRATOR:** Mark M. Milstone, P.E.  
480-640-6221

**TOWN ENGINEER:** Mark M. Milstone, P.E.  
8 Sundial Circle  
PO Box 740  
Carefree, AZ 85377  
Email: [Mark@carefree.org](mailto:Mark@carefree.org)

**BID OPENING:** Friday  
9/22/23

**TIME:** 9:00 AM MST

**LOCATION:** Town Hall  
8 Sundial Circle  
Carefree, Arizona 85377



# **TOWN OF CAREFREE, ARIZONA**

## **STREETS & RIGHT-OF-WAY DEPARTMENT**

### **PROJECT SPECIFICATIONS AND BID DOCUMENTS**

Project Number: **2023-03**

#### **CAREFREE DRIVE DRAINAGE IMPROVEMENTS at Carefree Terrace Condominiums**

- Storm Drain and Inlet & Outlet Reconstruction
- Pavement Replacement
- Pavement Markings

Mayor John Crane

Vice Mayor Cheryl Kroyer

Council Members:

Sheila Amoroso

Vince D'Aliesio

Clint Miller

Stephen Hatcher

Michael Johnson

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**PROJECT NAME: CAREFREE DRIVE DRAINAGE IMPROVEMENTS  
at Carefree Terrace Condominiums**

**NOTICE INVITING BIDS**

The proposed work is in the Town of Carefree, Arizona and consists of furnishing all labor and materials.

**Overview:**

1. Storm Drain and Inlet & Outlet Reconstruction
2. Pavement Replacement
3. Pavement Markings

**SEALED BIDS WILL BE RECEIVED BY THE TOWN UNTIL BUT NO LATER THAN** 9:00 AM MST on Friday September 22, 2023, at which time the bids will be open. Each bidder must deliver its bid to the Carefree Town Hall located at 8 Sundial Circle, Carefree, AZ 85377. The documents are available on the Town's website: <https://www.carefree.org/employment-rfp-bids> under the Relevant Documents heading. The Town will not be responsible for oral instructions or information. In the event questions are received less than four (4) days before the bid opening, a determination will be made by the Town concerning the sending of a written addendum, which may result in the establishment of a new bid opening date.



## **INFORMATION FOR BIDDERS**

### **1. SUBMITTING BIDS**

- 1.1 No bid will be considered unless it is submitted on the bid forms contained herein, fully completed and presented, sealed, in an opaque envelope.
- 1.2 BIDDERS MUST ENTER THEIR NAME AND ADDRESS IN THE UPPER LEFT CORNER OF THE ENVELOPE AND THE PROJECT NUMBER, WITH THE TIME AND DATE OF THE BID OPENING IN THE LOWER LEFT CORNER OF THE ENVELOPE.
- 1.3 Bids received after the time and date specified above will be returned unopened to the bidder. A bid may be withdrawn prior to the time set for opening bids. No bid may be withdrawn for a period of sixty (60) days after the date set for receipt of bids.
- 1.4 Bids accepted by the Town constitute a legally binding offer to contract with the Town in response to this invitation and on the Town of Carefree construction contract.

### **2. BONDS REQUIRED**

- 2.1 Each bid must be accompanied by a certified check or cashier's check made payable to the order of Town of Carefree in the sum of not less than 10% of the total bid, or a bond with sufficient sureties to be approved by the Town in a sum equal to 10% of the total bid and naming the Town of Carefree as obligee. Such security shall be returned to all except the three lowest responsible bidders within twelve (12) days after the opening of bids, and the three (3) remaining securities returned within three (3) days after the bidder to whom the Town Council has awarded the contract has executed the contract.
- 2.2 Bonds in the following amounts will be required at the time of executing the formal contract:
  - 1) Contract (Performance) Bond - one hundred percent (100%) of the contract price.
  - 2) Labor and Materials (Payment) Bond - one hundred percent (100%) of the contract price.
- 2.3 At the time of approval of any additional work by change order, the contractor may be required to provide an additional amount of Contract (Performance) Bond and/or Labor and Materials (Payment) Bond equal to 100% of any resulting contract price increases deemed appropriate by the Contract Administrator or designee.
- 2.4 Performance and Payment Bonds must be provided on statutory forms included in these documents.

### **3. INTERPRETATIONS, ADDENDA**

- 3.1 The Town of Carefree will not be responsible for oral instructions or information. In the event questions are received less than four (4) days before the bid opening, a determination will be made by the Town concerning the sending of a written addendum, which may result in the establishment of a new bid opening date.
- 3.2 Should a bidder find an ambiguity, inconsistency or error in the drawings or project manual, or should he be in doubt as to their meaning, he shall at once notify the Contract Administrator in writing, who will prepare a written addendum.
- 3.3 Questions or interpretations shall be directed to the Contract Administrator. Each bidder shall designate a specific individual from their organization to communicate with the Contract Administrator.
- 3.4 Any addenda issued by the Town during the time of bidding are to be included in the bid and will become a part of the contract. Bidders must acknowledge receipt of all addenda on the bid form in the space provided, and failure to do so will result in rejection of a bid.
- 3.5 Addenda will be mailed to each person or firm recorded as having received the bidding documents or will be available wherever the bidding documents are kept.

### **4. AWARD/REJECTION OF BIDS**

If the Town Council decides to make a contract award, it shall award the contract to the lowest responsible bidder whose bid is satisfactory to the Town Council and Contract Administrator.

- 4.1 The Town Council and Contract Administrator reserves the right, as the interest of the Town requires, to reject any or all bids, to waive any informality in bids received, to award a contract by accepting or rejecting any alternate bid(s) (additive or subtractive) and reserves the right to reject the bid(s) of any bidder who has previously failed to perform competently in any contract with the Town, or is not a responsible bidder.
- 4.2 If all bids exceed a cost estimate that has been prepared by the Town to complete the Work, instead of rejecting all bids, the Town Council and/or Contract Administrator may, in its sole discretion, negotiate with the apparent low responsible and responsive bidder for a price reduction and the Town may make an award and enter into a contract with the lowest responsible and responsive bidder for such reduced price.

**5. EXECUTION OF CONTRACT**

The Contractor shall execute the standard construction contract with the Town of Carefree within seven (7) days after receiving the Notice of Award.

**6. START AND COMPLETION OF WORK**

Work shall start as specified within the Notice to Proceed and shall be completed within sixty (60) calendar days after such issuance. The 60-day time frame shall not include the cure time for the striping.

**7. MEASUREMENT AND PAYMENT**

Final payment will be made within forty (40) days after approval of the final invoice by the Town Inspector and a CONTRACTOR'S AFFIDAVIT REGARDING SETTLEMENT OF CLAIMS is received. The above affidavit shall be submitted on forms provided in this document.

**8. PLANS AND SPECIFICATIONS TO SUCCESSFUL BIDDER**

The successful bidder may obtain up to five (5) sets of plans and specifications for this project from the Town, or its designee, at no cost. Additional sets will be furnished at cost.

**9. CONTRACTOR'S INSURANCE COVERAGE**

9.1 Compensation Insurance

The Contractor shall secure and maintain during the life of this contract, Workmen's Compensation Insurance for all his employees at the site of the project, and, in case any of the work is sublet, the Contractor shall require each subcontractor similarly to provide Workmen's Compensation Insurance for his employees unless such employees engaged are covered by the Contractor. In the event any class of employees engaged in the work under this contract at the site of the project is not protected by Workmen's compensation Statute, the Contractor shall provide and similarly shall cause such subcontractor to provide special insurance for the protection of each employee not otherwise protected.

9.2 Public Liability and Property Damage Insurance

The Contractor shall secure and maintain, during the life of this Contract, such public liability and property damage insurance, both general and automobile liability, as shall protect him, any subcontractor performing work under this contract, and the Town of Carefree from all claims for bodily injury, including accidental death, and from all claims for property damage arising from operations under this contract, whether such operations are conducted by himself or by any subcontractor or by anyone directly or indirectly employed by either of them. The Contractor agrees to include the Town of Carefree as an additional insured in all the insurance policies required under this contract and such insurance shall be primary.

- 9.3 The minimum limits required are:
- 1) Workmen's Compensation Insurance shall be secured and maintained in accordance with the Workmen's Compensation Laws of Arizona, as revised.
  - 2) Comprehensive General Liability Insurance, including broad form property damage, premises, operations, independent contractors, contractual, and automobile liability, shall be secured and maintained in an amount not less than two million dollars (\$2,000,000) combined single limit.
  - 3) The General Contractor subletting any part of the work awarded to him shall provide a contingent liability policy in the same amount as provided for in his public liability insurance.

- 9.4 Policy coverage shall include, but shall not be limited to coverage for:
- 1) Damage to underground utilities.
  - 2) Liability assumed in construction agreements and other types of contracts or agreements in effect in connection with the subject insured operations.
  - 3) All owned, hired or non-owned automotive equipment used in connection with the insured operation.

9.5 Certificates and Cancellation

The Contractor shall submit a Certificate of Insurance evidencing the required coverage and limits stated above before beginning the Work, but no later than within ten (10) days of receiving the Notice of Award. Failure to maintain the required insurance coverage in continuous force from this date until final completion and acceptance is a material breach of the contract and constitutes grounds for termination.

Insurance evidenced by this Certificate shall not expire, be cancelled, or materially changed without fifteen (15) days prior written notice to the Town and that statement must appear on the Certificate.

If a policy does expire during the life of the contract, a renewal Certificate of the required coverage must be sent to the Town of Carefree no later than fifteen (15) days prior to the expiration date.

9.6 Indemnification

The Contractor shall defend, indemnify, and hold harmless the Town of Carefree and any jurisdiction or agency issuing permits for any work included in the project, their officers, agents and representatives from all damages, claims or liabilities and expenses, (including attorney fees) costs of suit, and legal expenses of any character or nature brought on account of any injuries or damage sustained by any person or property arising out of the work done in fulfillment of the construction of the improvement under the terms of this agreement, on account of any act of omission by the

Contractor or his agents, or from any claims or amounts arising or recovered under Workmen's Compensation Laws or any other law, by-law, ordinance, or order or decree. If the Contractor fails to provide a defense for the Town or if Contractor fails to acknowledge without reservation its duty to indemnify and hold the Town harmless as provided in this paragraph, the Town may settle any such claims, damages, or liabilities and conclusively bind the Contractor to the terms of any judgment stipulated to as part of the settlement. Nothing in this paragraph shall require the Contractor to indemnify or hold harmless the Town against any liability for loss or damage resulting from the sole negligence of the Town or its agents.

## **10. PERMITS**

Construction Permits shall be obtained from the Town of Carefree at no cost to the Contractor.

- 10.1 During the life of the contract, the Contractor shall secure and maintain State of Arizona and Town of Carefree transaction privilege (sales) tax permits.
- 10.2 The CONTRACTOR shall state his Arizona Contractor's License number and classification as evidence that he is qualified to contract the work as indicated in the specifications and shall keep his Contractor's License in good standing during the life of the contract.

## **11. EXAMINATION OF CONTRACT DOCUMENTS AND SITE**

- 11.1 It is the responsibility of each bidder, before submitting a bid, to:
  - a) examine the contract documents thoroughly,
  - b) visit the site to become familiar with local conditions that may affect cost, progress, performance or furnishing of the work,
  - c) consider federal, state and local laws and regulations that may affect cost, progress, performance or furnishing of the work,
  - d) study and carefully correlate bidder's observations with the contract documents, and
  - e) notify the Contract Administrator of all conflicts, errors, or discrepancies in the contract documents.

The successful bidder shall not be allowed any extra compensation by reason of any matter or thing which a reasonably prudent contractor skilled in the trade could have determined by undertaking any of the foregoing actions.

- 11.2 Information and data reflected in the contract documents with respect to underground facilities at, under, or contiguous to the site is based upon information and data furnished to the Town and engineer by owners of such underground facilities or others. The Town disclaims liability and does not assume responsibility for the accuracy or completeness thereof unless it is expressly provided otherwise in the supplementary conditions. The Contractor shall rely solely on his own information and on information

provided to him under the Arizona Blue Stake Statutes, A.R.S. 400360.21 et seq. for determining the presence and location of underground facilities.

- 11.3 Before submitting a bid, each bidder will, at bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the physical conditions (surface, subsurface, and underground facilities) at, under, or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the work and any and all difficulties or restrictions relating to the performance of the work and which bidder deems necessary to determine its bid for performance with the time, price and other terms and conditions of the contract documents.

Failure of the successful bidder to examine the conditions of the work will not relieve the successful bidder of his obligation to furnish all materials and labor necessary to carry out the provisions of the contract documents and to complete the contemplated work for the consideration set forth in his bid.

- 11.4 On request in advance, the Town will provide each bidder access to the sites to conduct such explorations and tests as are reasonable and as each bidder deems necessary for submission of a bid. Bidder shall indemnify and hold the Town harmless against all claims and liability, which may result therefrom. The bidder shall promptly complete all such explorations and tests, and bidder shall fill all holes, clean up and restore every site to its former condition upon completion of such exploration.
- 11.5 The submission of a bid will constitute an incontrovertible representation by bidder that the bidder has complied with every requirement of the bid documents, that he has carefully examined and understands the contract documents, that he has carefully read and understands the bidding documents, that without exception the bid is premised upon performing and furnishing the work required by the contract documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the contract documents, and that the contract documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the work. The failure of any successful bidder to examine the contract documents or to visit the project sites and to acquaint himself with the conditions relating to the work shall not relieve the successful bidder from the obligations as to his bid in any manner.

## **BID FORMS AND BID SCHEDULE**

**BID FORM**

TOWN OF CAREFREE, ARIZONA

**PROJECT NUMBER:** 2023-03  
**PROJECT NAME:** CAREFREE DRIVE DRAINAGE IMPROVEMENTS  
at Carefree Terrace Condominiums

In compliance with the Advertisement for Bids, by the Town of Carefree, the undersigned bidder:

Having examined the contract documents, work site, and being familiar with the conditions to be met, hereby submits the following bid for all labor, materials, equipment, tools, machinery, and services for completion of the work listed and agrees to execute the contract documents and furnish the required bonds and certificates of insurance for the completion of said work, at the locations and for the prices set forth hereinafter.

Understands that construction of this project shall be in accordance with all applicable Standard Specifications, Details, Uniform Codes, Ordinances, and Regulations as otherwise required by the Project Plans, Supplemental Conditions and General Conditions, Special Provisions and other applicable specifications enclosed and made a part of this document.

Understands that the bid shall be submitted with a bid guarantee or cashier's check or surety bond for an amount not less than ten percent (10%) of the amount bid.

Agrees to execute the contract documents upon receipt of Notice of Award from the Town of Carefree.

Understands that work shall be completed within sixty (60) calendar days, beginning with the day following the starting date specified in the Notice to Proceed. The time allowed for completion of the work includes lead time for all mobilization and for obtaining the necessary material and/or equipment.

The bidder hereby acknowledges receipt of and agrees his bid is based on the following Addenda.

- ADDENDUM # \_\_\_\_\_ DATED: \_\_\_\_\_
- ADDENDUM # \_\_\_\_\_ DATED: \_\_\_\_\_
- ADDENDUM # \_\_\_\_\_ DATED: \_\_\_\_\_
- ADDENDUM # \_\_\_\_\_ DATED: \_\_\_\_\_

The undersigned agrees to construct this project at the prices shown on the Bid Schedule as follows:



**BID SCHEDULE & SUMMARY OF QUANTITIES  
TOWN OF CAREFREE, ARIZONA**

**PROJECT #2023-03**

<b>SUMMARY OF QUANTITIES for CAREFREE DRIVE DRAINAGE IMPROVEMENTS at Carefree Terrace Condominiums</b>					
<b>Bid Item</b>	<b>Item Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Cost</b>	<b>Extension</b>
105.10000	Construction Survey, Staking & Record Drawings	Allow	1		
107.01000	Permitting	Allow	1		
109.09000	Mobilization/Demobilization	LS	1		
109.11000	Allowance for Bituminous Price Adjustment	Allow	1		
109.12000	Allowance for Fuel Price Adjustment	Allow	1		
109.21000	Allowance for Unforeseen Work	Allow	1		
201.10000	Clearing & Grubbing	LS	1		
220.10075	Riprap, D50=3 in	CY	7		
220.10300	Riprap, D50=12 in	CY	20		
301.01000	Subgrade Preparation	SY	215		
310.03001	Aggregate Base Course	SY	215		
321.00200	Asphalt Concrete Pavement (Marshall 1/2 in Mix)	Ton	55		
340.01150	Single Curb, Type A, MAG Det 222	LF	51		
340.01610	Concrete Valley Gutter (Detail B)	SF	18		
340.02110	Concrete Spillway (Detail DF)	SF	520		
345.01200	Adjust Valve Box & Cover, MAG Det 391-1-A	Each	1		
350.01300	Remove Pipe	LF	66		
350.01500	Remove Headwall	Each	1		
350.01501	Remove Drop Inlet	Each	2		
350.01702	Remove Concrete Channel Lining	SY	37		
350.01710	Remove Riprap	CY	77		
350.01711	Remove Grouted Riprap	CY	61		
350.01850	Remove Concrete Single Curb	LF	89		
350.02250	Remove Concrete Slab	SF	345		

**BID SCHEDULE & SUMMARY OF QUANTITIES  
TOWN OF CAREFREE, ARIZONA**

**PROJECT #2023-03**

<b>SUMMARY OF QUANTITIES for CAREFREE DRIVE DRAINAGE IMPROVEMENTS at Carefree Terrace Condominiums</b>					
<b>Bid Item</b>	<b>Item Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Cost</b>	<b>Extension</b>
350.07501	Removal of Pavement	SY	219		
350.30030	Remove Safety Rail	LF	33		
401.01000	Traffic Control	LS	1		
461.01200	4 in Yellow Traffic Paint Stripe	LF	122		
461.01610	Paint Curb (Red)	LF	36		
477.90000	Miscellaneous Electrical Work	Allow	1		
505.14001	Drop Inlet (Detail DB)	Each	1		
505.15000	Trench Drain (Detail DC)	LF	26		
505.40515	Concrete U-Channel (Detail DD)	SF	364		
520.01050	Safety Rail, MAG Std Det 145	LF	107		
523.15240	Headwall (Inlet) (Detail DA)	Each	1		
523.15241	Headwall (Detail DE)	Each	1		
618.20342	42 in RGRCP, Class III	LF	124		
621.10300	30 in CMP, 18 Gauge, 0.052 in thickness, Galvanized	LF	4		
				<b>Total</b>	

**TOTAL BID OF:**

\_\_\_\_\_ Dollars (\$ x,xxx,xxx.xx).

Amounts shall be shown in both words and figures. In case of discrepancy, the amount shown in words shall govern. Include summation of all three base bid tabs given above.

Only bids responding to all items contained in the proposal will be considered. The contract will be awarded to the responsible bidder with the lowest base bid as per Section 4, INFORMATION FOR BIDDERS.

Contractor's License Number and Classification:

\_\_\_\_\_  
\_\_\_\_\_

**BID SUBMITTAL**  
TOWN OF CAREFREE, ARIZONA

**PROJECT NUMBER:** 2023-03  
**PROJECT NAME:** CAREFREE DRIVE DRAINAGE IMPROVEMENTS  
at Carefree Terrace Condominiums

THIS BID IS SUBMITTED BY \_\_\_\_\_ a corporation organized under the laws of the State of Arizona **or** a partnership consisting of \_\_\_\_\_ **or** an individual trading as \_\_\_\_\_ of the City of \_\_\_\_\_.

By submitting this bid, I/we hereby agree to enter into the Contract included in the bid documents and I/we further agree that this bid incorporates by reference to the same extent as if set forth herein in full all of the terms and conditions contained in said bid documents identified as including the Plans, Project Manuals, General Conditions, Supplemental Conditions, and Addenda, if any.

Respectfully submitted:

FIRM: \_\_\_\_\_

ADDRESS: \_\_\_\_\_  
\_\_\_\_\_

PHONE: \_\_\_\_\_

BY: \_\_\_\_\_  
Officer and Title

IF BIDDER IS AN INDIVIDUAL: \_\_\_\_\_ (SEAL)

Witness: \_\_\_\_\_

\_\_\_\_\_  
Witness' Address

**BID BOND**

KNOW ALL MEN BY THESE PRESENTS: That we \_\_\_\_\_, as Principal, and \_\_\_\_\_, as Surety, are held and firmly bound unto the Town of Carefree in the penal sum of Ten Percent (10%) of Bid Amount, Dollars (\$\_\_\_\_\_) lawful money of the United States of America, to be paid to the order of the Town of Carefree, for which payment, well and truly to be made, we bind ourselves, our successors and assigns, signed with our seals and dated \_\_\_\_\_, 2023. The conditions of the above obligation are such that whereas the Town Council of the Town of Carefree, on the \_\_\_\_ day of \_\_\_\_\_, 2023 did order the following works to be done, to wit:

**PROJECT NUMBER: 2023-03  
CAREFREE DRIVE DRAINAGE IMPROVEMENTS at Carefree Terrace Condominiums**

WHEREAS \_\_\_\_\_, the principal herein in answer to the Notice Inviting Proposals or Bids issued by the Town of Carefree, put in its bid for the making of said improvements.

NOW THEREFORE, if the Obligee accepts the proposal of the Principal and the Principal enters into a contract with the Obligee in accordance with the terms of the proposal and gives the Bonds and Certificates of Insurance as specified in the Standard Specifications with good and sufficient surety for the faithful performance of the contract and for the prompt payment of labor and materials furnished in the prosecution of the contract, or in the event of the failure of the Principal to enter into the contract and give the Bonds and Certificates of Insurance, if the Principal pays to the Obligee the difference not to exceed the penalty of the Bond between the amount specified in the proposal and such larger amount for which the Obligee may in good faith contract with another party to perform the work covered by the proposal then this obligation is void. Otherwise it remains in full force and effect provided, however, that this Bond is executed pursuant to the provisions of Section 34-201, Arizona Revised Statutes, and all liabilities on this Bond shall be determined in accordance with the provisions of the section to the extent as if it were copied at length herein.

ATTEST: \_\_\_\_\_  
PRINCIPAL

BY: \_\_\_\_\_  
ATTORNEY IN FACT

(SEAL)

SURETY AGENCY OF RECORD \_\_\_\_\_

AGENCY ADDRESS \_\_\_\_\_

**CONTRACT FORMS**

**NOTICE OF AWARD**

**PROJECT NUMBER:** 2023-03

**PROJECT NAME:** CAREFREE DRIVE DRAINAGE IMPROVEMENTS at  
Carefree Terrace Condominiums

TO \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The Town of Carefree has considered the Bid submitted by you for the above-described Work in response to the Advertisement for Bids dated \_\_\_\_\_, 2023.

You are hereby notified that you were awarded the Contract by the Carefree Town Council on \_\_\_\_\_, 2023 in the amount of \$\_\_\_\_\_.

You are required by the Terms and Conditions of this bid to execute the Construction Contract and to furnish Contractor's Performance and Payment Bonds and submit the appropriate Certificate(s) of Insurance within seven (7) days from the date of this Notice.

If you fail to execute the Construction Contract, furnish the required bonds, and submit Insurance Certificate(s) within seven (7) days from the date of this Notice, the Town will consider this as a forfeiture of your Bid Bond. The Town will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the Town of Carefree.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 2023.

**TOWN OF CAREFREE**

By: \_\_\_\_\_

Title: \_\_\_\_\_

**ACCEPTANCE OF NOTICE:**

**PROJECT NUMBER:** 2023-03

**PROJECT NAME:** CAREFREE DRIVE DRAINAGE IMPROVEMENTS at  
Carefree Terrace Condominiums

Receipt of the above NOTICE OF AWARD is hereby acknowledged.

BY: \_\_\_\_\_

Title: \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_ 2023.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires:



**TOWN OF CAREFREE  
CONTRACTOR AGREEMENT**

**PROJECT NUMBER:** 2023-03

**PROJECT NAME:** CAREFREE DRIVE DRAINAGE IMPROVEMENTS at  
Carefree Terrace Condominiums

THIS CONTRACTOR AGREEMENT (hereinafter "the Agreement"), is made and entered into effective this \_\_\_\_\_ day of \_\_\_\_\_, 2023, between \_\_\_\_\_, (hereinafter "CONTRACTOR") and the Town of Carefree, Arizona (hereinafter "TOWN"), an Arizona municipal corporation. (CONTRACTOR and TOWN hereinafter designated "the PARTIES").

1. **Project:** Installation of CAREFREE DRIVE DRAINAGE IMPROVEMENTS at Carefree Terrace Condominiums in Carefree, Arizona, being project number 2023-03 (hereinafter "the Project").
2. **Scope of Services:** TOWN requests CONTRACTOR to perform Project services ("the Work") described on the bid schedule and as follows:

**Overview:**

1. Cape Seal (Slurry Seal over Chip Seal)
2. Adjust water valves, other utility structures and monuments
3. Crack seal
4. Striping

Work shall be performed in accordance with the contract documents, which consist of the plans and specifications therein, MAG Uniform Standard Specifications for Public Works Construction (2012 Edition) where applicable, Supplemental Conditions, if any, General Conditions, the Town of Carefree Town Code, industry accepted quality workmanship, and other specifications and details contained within the contract documents and the Contractor's bid, as accepted (to the extent not inconsistent with the foregoing.) Performance Bond, Payment Bond, Certificates of Insurance and Change Orders, if any, are by this reference made a part of the Agreement to the same extent as if set forth herein in full.

Contractor agrees to perform the Work in consideration for and subject to the terms and conditions hereinafter set forth, and in accordance with all federal, state, county and Town laws, statutes, ordinances, rules and regulations applicable to the Project and the Work. Contractor represents and warrants that its work, findings, designs, plans and specifications, recommendations and professional advice are or will be done, made or prepared in a good and workmanlike manner and in accordance with generally accepted contracting practices. Contractor further covenants and agrees, at its own cost and expense, to do the Work and install the required material as called for by the Agreement, free and clear of all claims, liens and charges whatsoever in the manner and under the conditions specified within the time, or times, stated in the bid form.

3. **Payment:** TOWN shall pay CONTRACTOR as compensation for the Work the sum of \$\_\_\_\_\_.
4. **Method of Payment:** Each month, CONTRACTOR shall furnish to TOWN a statement of the Work performed for compensation during the preceding month, as authorized by the Agreement. TOWN shall pay statement within 30 days of receipt. Final payment shall be made within forty (40) days after final inspection and acceptance of the Work.

CONTRACTOR shall be solely responsible for all costs incurred in connection with the accomplishment of the Work for the Project. In addition to any other right and remedy it may have, TOWN may deduct from any amount due or to become due to CONTRACTOR, any amount necessary to protect TOWN, in TOWN's reasonable opinion, from any loss arising from CONTRACTOR's breach of the Agreement.

5. **Additional Services:** It is agreed that any changes in the scope of the Work requested by TOWN or TOWN's representatives or by reason of revisions or changes in any applicable law, regulation, policy standard or personnel of any governmental agency, district or utility company having jurisdiction over all or any part of the Work or Project after the date of the Agreement, shall constitute extra work, and CONTRACTOR shall be compensated for said extra work as agreed between CONTRACTOR and TOWN or on a time-and-expense basis, subject to and conditioned upon a written change order signed by TOWN for any such extra work. CONTRACTOR agrees that it will make no claim for additional fees or expenses other than those specifically set forth in the Agreement and in written change orders signed by TOWN. In the absence of a written change order signed by TOWN, CONTRACTOR agrees that it will have no claim for compensation for extra work and hereby releases TOWN from any such claim.
6. **Intent of Independent Contractor Relationship:** The PARTIES intend that the relationship created by the Agreement shall be that of service recipient and independent contractor and not that of employer and employee. In this regard, CONTRACTOR shall retain the exclusive right to control and direct all details of the Work.

For all purposes, including but not limited to the Federal Insurance Contributions Act ("FICA"), the Social Security Act, the Federal Unemployment Tax Act ("FUTA"), income tax withholding requirements, and all other federal, state and local laws, rules and regulations, CONTRACTOR (and CONTRACTOR's respective employees, if any) shall be treated as an independent contractor and not as an employee with respect to the TOWN.

- 7. No Benefits:** None of the benefits, if any, which are provided by TOWN to its employees, shall be available to CONTRACTOR (or CONTRACTOR's employees, if any, which for purposes of this Paragraph 7 shall be included in the term "CONTRACTOR"). CONTRACTOR's exclusion from benefit programs maintained by TOWN is a material term of the terms of compensation negotiated by the PARTIES and is not premised on CONTRACTOR's status as a non-employee with respect to TOWN. To the extent that CONTRACTOR may become eligible for any benefit programs maintained by TOWN (regardless of the timing of or reason for eligibility), CONTRACTOR hereby waives CONTRACTOR's right to participate in these programs. CONTRACTOR's waiver is not conditioned on any representation or assumption concerning CONTRACTOR's status under the common law test. CONTRACTOR agrees that consistent with CONTRACTOR's independent contractor status, CONTRACTOR will not apply for any government-sponsored benefits that are intended to apply to employees.
- 8. Workers' Compensation Coverage:** CONTRACTOR acknowledges that as an independent contractor, CONTRACTOR and CONTRACTOR'S employees, if any, shall not be entitled to workers' compensation benefits from TOWN.
- 9. Equipment and Tools:** CONTRACTOR shall provide and be responsible for maintaining any equipment and tools that CONTRACTOR uses, or determines is necessary, to accomplish the Work.
- 10. Manner, Time and Location:** The PARTIES agree that time is of the essence as it relates to completion of the Work under the Agreement. CONTRACTOR shall have the right to perform the Work in such manner, at such times, and at such locations as CONTRACTOR deems appropriate. TOWN shall have no right to interfere with CONTRACTOR's judgment with respect to manner, time, and place of performance of the Work, so long as any performance deadlines that may be established by TOWN are satisfied. CONTRACTOR agrees that any damages incurred under this provision of the Agreement shall be defined pursuant to §108.9, Failure to Complete on Time of the MAG General Conditions.
- 11. Right to Engage Assistants:** CONTRACTOR shall have the right to engage others to assist in the accomplishment of the Work. CONTRACTOR shall be solely responsible for paying all compensation owed to any assistants CONTRACTOR engages and for paying, and/or withholding and remitting to the appropriate government agency, any applicable employment taxes that might be owed with respect to this compensation. CONTRACTOR also shall indemnify and hold TOWN harmless for, from and against any and all liabilities attributable to the obligations imposed on CONTRACTOR under the Agreement. The PARTIES acknowledge that CONTRACTOR shall retain the exclusive right to determine which workers CONTRACTOR shall engage for these purposes.
- 12. Performing Services for Others:** TOWN agrees that CONTRACTOR may perform services for others, so long as the performance of these services does not interfere with the completion of the Work.

- 13. Warranties:** CONTRACTOR warrants all services and materials CONTRACTOR provides as part of the Work against defects to the services and materials so provided for in the workmanship according to MAG §108.8.
- 14. Default:** CONTRACTOR understands and agrees that stopping work including withholding delivery of documents, applications or other work product to TOWN, any agency or other person, other than for nonpayment of amounts due under the Agreement, shall constitute a default under the Agreement and shall result in liability on the part of CONTRACTOR for damages including liability by reason of work stoppage. Upon any default under the Agreement by CONTRACTOR, including but not limited to any stoppage other than for non-payment of amounts due under the Agreement, TOWN shall have no further obligation to pay any amounts due under the Agreement to CONTRACTOR.
- 15. Documents:** TOWN shall receive and may retain any and all work product of CONTRACTOR, including all documents, plans, drawings, specifications, analyses, designs, models, ideas, reports, charts and computer programs prepared by or on behalf of CONTRACTOR or otherwise utilized by CONTRACTOR (collectively "Work Product") in the discharge of its responsibilities under the Agreement, which Work Product shall immediately thereafter become the sole and exclusive property of TOWN.

TOWN is also granted a royalty-free, perpetual license to use, reproduce, copy and distribute the Work Product for itself and for its other contractors, subcontractors and consultants either as needed in connection with the Project contemplated under the Agreement or as needed for reference and information related to the use, occupancy or maintenance of the completed Project.

- 16. Termination:** TOWN may terminate the Agreement with or without cause by giving thirty (30) days' written notice to CONTRACTOR. In such event, TOWN shall forthwith pay CONTRACTOR in full for all work previously authorized in writing and satisfactorily performed prior to the effective date of termination.
- 17. Indemnification:** CONTRACTOR agrees to indemnify and save harmless TOWN and its elected and appointed officers, agents, boards, commissions, employees, attorneys and representatives from all suits, including attorneys' fees and costs of litigation, actions, laws damage, expense, cost or claims, of any character or of any nature arising out of or in connection with any act or omission of CONTRACTOR, its agents and employees, and of any subcontractor, its agents and employees, in the course of the performance of the Work or in connection with the Project or the Agreement which results directly or indirectly in the injury to or death of any person or persons, or the damage of any property of any person or persons, or on account of act, claim or amount arising or recovered under workers' compensation law, or arising out of any failure of CONTRACTOR or those acting under CONTRACTOR to conform to any statutes, ordinances, regulations, laws or court decrees, or which results in a claim, lien or charge (in which event CONTRACTOR shall pay and take all steps necessary to remove the claim, lien or charge at no cost to TOWN). It is the

intent of the PARTIES that TOWN shall, in all instances, be indemnified and held harmless by CONTRACTOR against any liability, losses and damages of any nature whatsoever for or on account of any injuries to or death of persons or damages to or destruction of property belonging to any person arising out of or in any way connected with the Agreement or the performance of the Work, whether the liability, losses and damages are caused by or alleged to be caused in whole or in part by the negligence, gross negligence or fault of TOWN or any of its officers, agents, attorneys or employees.

Prior to commencing any work under the Agreement, CONTRACTOR will procure and maintain a certificate of insurance covering liability and property damage issued by an insurance company authorized to transact business in the State of Arizona, as shall protect CONTRACTOR and its employees, agents and any other person or entity responsible for performing the Work under the Agreement, from claims for damages for personal injury, including death, as well as from claims for property damage which may arise from or be related to the Work, the Project or the Agreement. The certificate of insurance shall name TOWN as an additional insured and shall be delivered to TOWN prior to commencing any work under the Agreement. Such insurance shall be primary and shall provide coverage for all liability under the Agreement. The policy limits of such liability and property damage insurance shall contain not less than the following limits of coverage: (1) \$1 million for death or bodily injury or loss sustained by any one person per occurrence; (2) \$2 million for death or bodily injury or loss sustained by more than one person per occurrence; and (3) \$1 million for loss sustained for damage to property occasioned per occurrence. Such insurance shall be maintained in full force and effect until all work under the Agreement is complete.

- 18. Notices:** Any notice under the Agreement must be in writing and shall be effective upon delivery by hand or three (3) business days after deposit in the United States mail, postage prepaid, certified or registered, and addressed to TOWN or to CONTRACTOR at the corresponding address below. CONTRACTOR shall be obligated to notify TOWN in writing of any change in his address. Notices of change of address shall be effective only when done in accordance with this paragraph.

**To TOWN:** Gary S. Neiss  
Town Administrator  
Town of Carefree  
8 Sundial Circle  
P. O. Box 740  
Carefree, Arizona 85377

**With a copy to:** Michael Wright  
Town Attorney  
Sherman & Howard LLC  
7047 E. Greenway Parkway, Suite 155  
Scottsdale, AZ 85254-8113

**To CONTRACTOR:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- 19. **Integration:** The Agreement is intended to be the final, complete, and exclusive statement of the terms of CONTRACTOR'S engagement by TOWN. The Agreement supersedes all other prior and contemporaneous agreements and statements, whether written or oral, express or implied, pertaining in any manner to the engagement of CONTRACTOR, and it may not be contradicted by evidence of any prior or contemporaneous statements or agreements. To the extent that the practices, policies, or procedures of TOWN, now or in the future, apply to CONTRACTOR and are inconsistent with the terms of the Agreement, the provisions of the Agreement shall control.
- 20. **Amendments; Waivers:** The Agreement may not be amended except by an instrument in writing, signed by each of the PARTIES. Failure to exercise any right under the Agreement shall not constitute a waiver of such right.
- 21. **Assignment; Successors and Assigns:** Neither TOWN nor CONTRACTOR shall assign any rights or obligations under the Agreement. The Agreement shall be binding upon the PARTIES, their heirs, successors, transferees and assigns.
- 22. **Attorneys' Fees:** In any legal action, arbitration, or other proceeding brought to enforce or interpret the terms of the Agreement, the prevailing PARTY shall be entitled to recover reasonable attorneys' fees and costs.
- 23. **Governing Law:** The Agreement shall be governed by and construed in accordance with the law of the State of Arizona.
- 24. **Interpretation:** The Agreement shall be construed as a whole, according to its fair meaning, and not in favor of or against any party. By way of example, and not in limitation, the Agreement shall not be construed in favor of the party receiving a benefit or against the party responsible for any particular language in the Agreement. Captions are used for reference purposes only and should be ignored in the interpretation of the Agreement.

- 25. **Severability:** If any one or more of the provisions of the Agreement shall be held or found to be invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.
- 26. **Contractor Acknowledgment:** CONTRACTOR acknowledges that CONTRACTOR has had the opportunity to consult legal counsel in regard to the Agreement, that CONTRACTOR has read and understands the Agreement, that CONTRACTOR is fully aware of its legal effect, and that CONTRACTOR has entered into it freely and voluntarily and based on Contractor's own judgment and not on any representations or promises other than those contained in the Agreement.
- 27. **Certification:** I, \_\_\_\_\_, the \_\_\_\_\_ of CONTRACTOR, hereby certify that I have read and understood and agree to the above provisions of the Agreement and have had an opportunity to seek advice regarding the provisions that I found to be ambiguous.

The PARTIES have duly executed the Agreement as of the date first written above.

**“The TOWN”**

TOWN OF CAREFREE, ARIZONA,  
an Arizona municipal corporation

By \_\_\_\_\_

Its \_\_\_\_\_

**“CONTRACTOR”**

\_\_\_\_\_

By \_\_\_\_\_

Its \_\_\_\_\_

Social Security Number or  
Employer Identification Number:

\_\_\_\_\_

IN WITNESS WHEREOF, three (3) identical counterparts of this contract, each of which shall for all purposes be deemed an original thereof, have been duly executed by the PARTIES herein above named, on the date and year first above written.

**CONTRACTOR:**

**TOWN OF CAREFREE**

\_\_\_\_\_  
Company Name

By: \_\_\_\_\_  
John Crane, Mayor

BY: \_\_\_\_\_  
Signature

**ATTEST:**

\_\_\_\_\_  
Individual Name/Title

By: \_\_\_\_\_  
Kandace French, Town Clerk

ADDRESS: \_\_\_\_\_  
\_\_\_\_\_

**CORPORATE SEAL:**

**APPROVED AS TO FORM:**

\_\_\_\_\_  
Michael Wright, Town Attorney



**CONTRACT BOND**

**STATUTORY PERFORMANCE BOND  
PURSUANT TO  
TITLE 34, CHAPTER 2, ARTICLE 2,  
OF THE  
ARIZONA REVISED STATUTES**

(Penalty of this bond must be 100% of the Contract Amount)

**KNOW ALL MEN BY THESE PRESENTS:**

That, \_\_\_\_\_ (hereinafter called the Principal) as Principal, and \_\_\_\_\_, a corporation organized and existing under the laws of the State of \_\_\_\_\_ with its principal office in the City of \_\_\_\_\_, (hereinafter called the Surety), as Surety, are held and firmly bound unto the Town of Carefree, County of Maricopa, State of Arizona in the amount of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_), for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors successors and assigns, jointly and severally, firmly by these presents.

**WHEREAS**, the Principal has entered into a certain written contract with the Town of Carefree, dated the \_\_\_\_\_ day of \_\_\_\_\_, 2023 for Project Number 2023-03, which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

**NOW THEREFORE**, the condition of this obligation is such, that if the Principal faithfully performs and fulfills all of the undertakings, covenants, terms, conditions and agreements of the contract during the original term of the contract and any extension of the contract, with or without notice to the surety, and during the life of any guaranty required under the contract, and also performs and fulfills all of the undertakings, covenants, terms, conditions and agreements of all duly authorized modifications of the contract that may hereafter be made, notice of which modifications to the surety being hereby waived, the above obligation is void. Otherwise, it remains in full force and effect.

PROVIDED HOWEVER, that this Bond is executed pursuant to the provisions of A.R.S.34-222 and A.R.S.34-223 and all liabilities on this Bond shall be determined in accordance with these sections to the extent as if they were copied at length in this agreement. If the provisions of this bond conflict with the terms of these sections, the latter control.

The prevailing party in a suit on this bond shall be entitled to such reasonable attorney's fees as may be fixed by a Judge of the Court.

WITNESS our hands the \_\_\_\_\_ day of \_\_\_\_\_, 2023.

\_\_\_\_\_  
PRINCIPAL

\_\_\_\_\_  
BY:

\_\_\_\_\_  
SURETY (SEAL)

\_\_\_\_\_  
AGENCY OF RECORD

AGENCY ADDRESS

\_\_\_\_\_  
\_\_\_\_\_

**LABOR AND MATERIALS BOND  
STATUTORY PAYMENT BOND  
PURSUANT TO  
TITLE 34, CHAPTER 2, ARTICLE 2,  
OF THE  
ARIZONA REVISED STATUTES**

(Penalty of this bond must be 100% of the Contract Amount)

**KNOW ALL MEN BY THESE PRESENTS:**

That, \_\_\_\_\_ (hereinafter called the Principal), as Principal, and \_\_\_\_\_ a corporation organized and existing under the laws of the State of \_\_\_\_\_, with its principal office in the City of \_\_\_\_\_ (hereinafter called the Surety), as Surety, are held and firmly bound unto the Town of Carefree, County of Maricopa, State of Arizona (hereinafter called the Obligee), in the amount of \_\_\_\_\_ Dollars (\$\_\_\_\_\_), for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

**WHEREAS**, the Principal has entered into a certain written contract with the Town of Carefree dated the \_\_\_\_\_ day of \_\_\_\_\_, 2023 for Project No. 2023-03, which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

**NOW, THEREFORE**, the condition of this obligation is such, that if the said Principal shall promptly pay all monies due to all persons supplying labor or materials to the Principal or the Principal's subcontractors in the prosecution of the work provided for in said contract, this obligation is void. Otherwise, it remains in full force and effect.

**PROVIDED, HOWEVER**, that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, of the Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions, conditions and limitations of Title 34,

Chapter 2, Article 2, Arizona Revised Statutes, to the same extent as if they were copied at length in herein.

The prevailing party in a suit on this bond shall be entitled to such reasonable attorney fees as may be fixed by a Judge of the Court.

WITNESS our hands the \_\_\_\_\_ day of \_\_\_\_\_, 2023.

\_\_\_\_\_  
PRINCIPAL

\_\_\_\_\_  
BY:

\_\_\_\_\_  
SURETY

(SEAL)

\_\_\_\_\_  
AGENCY OF RECORD

\_\_\_\_\_  
AGENCY ADDRESS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## TOWN OF CAREFREE CERTIFICATE OF INSURANCE

Town Dept: PUBLIC WORKS	Project Title: CAREFREE DRIVE DRAINAGE IMPROVEMENTS at Carefree Terrace Condominiums	PROJECT #2023-03			
Companies Affording Coverage		Current State of Arizona License	Current A.M. Best Rating		
Producer:	A. _____ B. _____ C. _____ D. _____ E. _____	Yes	NO		
Insured:					
This is to certify that the insurance policies listed below have been issued to the insured named above for the policy period indicated					
Co Ltr	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (mm/dd/yy)	POLICY EFFECTIVE DATE (mm/dd/yy)	LIMITS (,000)
	General Liability <input type="checkbox"/> Commercial General Liability <input type="checkbox"/> Occurrence <input type="checkbox"/> Claims Made <input type="checkbox"/> Owner's & Contractors Prot. <input type="checkbox"/> Per Project Product/Completed Operations				General Aggregate \$ _____ Products-Comp/op Agg. \$ _____ Personal & Adv. Injury Each Occurrence \$ _____ Fire Damage (any one fire) \$ _____ Med. Exp. (any one person) \$ _____
	Automobile Liability <input type="checkbox"/> Any Auto <input type="checkbox"/> All Owned Autos <input type="checkbox"/> Scheduled Autos <input type="checkbox"/> Hired Autos <input type="checkbox"/> NonOwned Autos <input type="checkbox"/> Garage Liability				Combined Single Limit Bodily Injury (per person) \$ _____ Bodily Injury (per accident) \$ _____ Property Damage \$ _____
	Professional Liability <input type="checkbox"/> Type _____ <input type="checkbox"/> Claims Made <input type="checkbox"/> Occurrence				Each Claim \$ _____ All Claims \$ _____
	Excess Liability <input type="checkbox"/> Umbrella Form <input type="checkbox"/> Other than umbrella form <input type="checkbox"/> Claims Made <input type="checkbox"/> Occurrence				Each Occurrence \$ _____ Aggregate \$ _____
	Builders Risk				
	Other				
Description of Operations/Locations/Vehicles/Special Items: Town of Carefree, its representatives, agents and employees, is an Additional Insured under Commercial General Liability ISO Form CG 20 10 11 85 or equivalent, Auto Liability ISO Form CA 20 48 or equivalent, and Excess Liability follow form to underlying coverage. All cited insurance shall be primary coverage and waive rights to recovery (subrogation), including Workers Compensation, against Town of Carefree. No policy shall be canceled or materially changed without 30 days advance written notice. Certificate not valid unless signed by authorized representative of Insurance Company.					
CERTIFICATE HOLDER/ADDITIONAL INSURED Town of Carefree 8 Sundial Circle PO Box 740 Carefree, AZ 85377				Authorized Representative of the insurance company(ies) Signature: _____ Date: _____	

**NOTICE TO PROCEED**

PROJECT No: 2023-03

DESCRIPTION: CAREFREE DRIVE DRAINAGE IMPROVEMENTS at Carefree Terrace Condominiums

In accordance with the Contract dated \_\_\_\_\_, you are hereby notified to commence work on \_\_\_\_\_ and you are to complete the WORK within ninety (90) consecutive calendar days thereafter. The date of completion of all WORK is therefore \_\_\_\_\_. Official time extensions thereto shall be considered and authorized in strict conformance with General Conditions or M.A.G. Standard Specifications.

TOWN OF CAREFREE

BY: \_\_\_\_\_

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged.

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 2023.

\_\_\_\_\_  
NOTARY PUBLIC My Commission Expires

CONTRACTOR'S NOTICE OF FINAL PAY ESTIMATE

PROJECT #: 2023-03

DESCRIPTION: CAREFREE DRIVE DRAINAGE IMPROVEMENTS at Carefree Terrace Condominiums

To the Town of Carefree, Arizona:

The final pay estimate of \_\_\_\_\_ Dollars (\$\_\_\_\_\_) which represents total and complete payment under the terms of the contract, fully and completely reflects the actual quantities of work performed. Said final quantities were mutually measured and agreed upon by authorized representatives of the undersigned and the Town of Carefree. Upon acceptance by the CONTRACTOR of the Final Payment under the Final Pay Estimate, the CONTRACTOR releases and waives all claims arising out of the Contract.

Signed and dated this \_\_\_\_\_ day of \_\_\_\_\_ 2023.

BY: \_\_\_\_\_

Title: \_\_\_\_\_

For: \_\_\_\_\_

STATE OF ARIZONA            )  
) ss  
COUNTY OF MARICOPA        )

The foregoing instrument was subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 2023.

\_\_\_\_\_  
Notary Public

My Commission expires:

**CONTRACTOR'S NOTICE OF FINAL ACCEPTANCE**

PROJECT #: 2023-03

DESCRIPTION: CAREFREE DRIVE DRAINAGE IMPROVEMENTS at Carefree Terrace  
Condominiums

TO: \_\_\_\_\_

DATE: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Construction on the above project was completed on \_\_\_\_\_, 2023 and on \_\_\_\_\_, 2023 a final inspection was made of the subject improvements by this office. The work substantially conforms to the approved plans and specifications. We, therefore, accept the work.

Approved By:

\_\_\_\_\_

Contract Administrator

cc: Town Clerk  
Accounting Director  
Other:



**AFFIDAVIT REGARDING SETTLEMENT OF CLAIMS**

PROJECT # :       **2023-03**

DESCRIPTION :   **CAREFREE DRIVE DRAINAGE IMPROVEMENTS at Carefree Terrace  
Condominiums**

To the Town of Carefree, Arizona

Gentlemen:

This is to certify that all lawful claims for materials, rental of equipment, tools machinery, services and labor used in connection with the construction of the above project, whether by subcontractor or claimant in person, have been duly discharged.

The undersigned, for the total consideration of \_\_\_\_\_Dollars (\$\_\_\_\_\_) as set out in the final pay estimate, as full and complete payment under the terms of the contract, hereby waives and relinquishes any and all further claims or right of lien under, in connection with, or as a result of the above described project. The undersigned further agrees to indemnify and save harmless the Town of Carefree against any and all liens, claims of liens, suits, action, damages, charges and expenses whatsoever, which said TOWN may suffer arising out of the failure of the undersigned to pay for all labor performances and materials furnished for the performance of said project construction items and/or services.

Signed and dated this \_\_\_\_\_ day of \_\_\_\_\_ 2023.

\_\_\_\_\_  
CONTRACTOR

\_\_\_\_\_  
BY:

STATE OF ARIZONA                    )  
) ss

COUNTY OF MARICOPA )

The foregoing instrument was subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 2023.

\_\_\_\_\_  
Notary Public

My Commission expires:

# PROJECT TECHNICAL SPECIFICATIONS

# CAREFREE DRIVE DRAINAGE IMPROVEMENTS at Carefree Terrace Condominiums

PROJECT NO. 2023-03



PREPARED BY:



August 2023



EXPIRES 03/31/2026

## TECHNICAL SPECIFICATIONS

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**PART 100 – GENERAL CONDITIONS**

The "Uniform Standard Specifications for Public Works Construction" which are sponsored and distributed by the Maricopa Association of Governments (MAG), and which are hereinafter referred to as the "MAG Standard Specifications," are hereby adopted and a part of these contract documents. Copies of these documents, with revisions, may be obtained at the Maricopa Association of Governments, 302 North 1<sup>st</sup> Avenue, Phoenix, AZ, 85003 and on the internet at <https://www.azmag.gov/Newsroom/Publications>. Version 2020 with 2023 updates/revisions will be utilized.

Designated sections the Maricopa County Department of Transportation 2023 Supplement to the MAG Standard Specifications are also adopted as part of these contract documents. Copies of these documents may be obtained at: [https://www.mcdot.maricopa.gov/DocumentCenter/View/80457/MCDOT\\_2023\\_Supplement\\_MAG\\_Specs](https://www.mcdot.maricopa.gov/DocumentCenter/View/80457/MCDOT_2023_Supplement_MAG_Specs).

**Geotechnical Investigations:**

A copy of the Geotechnical Evaluation is in Appendix A of these Technical Specifications. The report was prepared by Ethos Engineering, LLC. dated March 3, 2023. It is the Contractor's responsibility to review this document during preparation of their bidding documents to be cognizant of existing soil conditions discovered at those locations. The Contractor shall also make any other arrangements they deem necessary to become familiar with underground soils conditions prior to bidding. After an award of contract by the Town of Carefree, the Contractor shall assume all responsibility for extra work due to the discovery of changed soil conditions.

**SECTION 101 ABBREVIATIONS AND DEFINITIONS**

**101.1 ABBREVIATIONS:** *of the MAG Standard Specifications is modified to add:*

Carefree or Town                      Town of Carefree, Arizona

**101.2 DEFINITIONS AND TERMS:** *of the MAG Standard Specifications is modified to add:*

Whenever in the specifications or in other contract documents the following pronouns are used, the meaning shall be interpreted as follows:

Contracting Agency:	Town of Carefree, Arizona
Consulting Engineer:	Stanley Consultants, Inc.
Inspector:	Town of Carefree or Designee
Owner:	Town of Carefree, Arizona
Engineer:	Town of Carefree Engineer or Designee
Town Representative:	Town of Carefree Engineer or Designee
Town Traffic Engineer:	Town of Carefree Engineer or Designee

**SECTION 104 SCOPE OF WORK**

**104.1 WORK TO BE DONE:** *of the MAG Standard Specifications is modified to add:*

This project is located in Section 35, Township 6 North, Range 4 East. More specifically, approximately 300 feet east of the intersection of Cave Creek Road and Carefree Drive at the Carefree Terrace Condominiums.

Town of Carefree Capital Improvement Project (CIP) No. 2023-03 will include drainage improvements within the Carefree Drive right-of-way and temporary construction easements obtained from private properties.

**104.1.1 General:** *of the MAG Standard Specifications is modified to add:*

The work shall be as shown on the project plans, specified herein, and in compliance with permit requirements. The work consists of removal and replacement of existing drainage pipes, inlets, and concrete channels and headwalls.

The work shall conform to the MAG Standard Specifications and Details, latest edition, and other referenced documents. Any section or subsection of any Standard Specification included within these Contract Documents by reference only is understood to be made part of these Contract Documents. The Contractor shall have at least one copy of all referenced specifications and details at the job site, at all times.

All work mentioned or indicated within the Contract Documents shall be performed by the Contractor as part of this Contract unless it is specifically indicated in the Contract Documents that such construction is to be excluded or modified.

**104.1.6 Pre-Construction Video:** The Contractor shall record and provide a copy of a pre-construction video along the project to the Town of Carefree prior to commencing work and retain a copy for their records. At a minimum, this video shall show the existing condition of the roads and surrounding features and improvements within the project limits, condition of landscaping and fences in proximity of the work, and similar physical condition features. The video shall be supplied to the Town on DVD disc in .wmv, flv, .mp4 or .mpg format. There will be no separate measurement or payment for this video as it is considered included in the cost of the Contractor's mobilization.

**SECTION 105 CONTROL OF WORK**

**105.2 PLANS AND SHOP DRAWINGS:** *of the MAG Standard Specifications is modified to add:*

All project materials and equipment not provided by Town of Carefree shall be approved by the Town or Engineer prior to purchase and installation. Any work in which materials or equipment not previously approved by the Engineer are used shall be performed at the Contractor's risk and may be considered as unauthorized and unacceptable and are not subject to the payment provisions of the contract. Such materials or equipment may be subject to removal at the discretion of the Town.

Before ordering or installing any material or equipment, the Contractor shall submit two printed copies or one electronic copy of each proposed material and/or equipment package, including shop drawings, manufacturer's details or drawings, material and performance information and specification compliance to the Town for approval by the Town or Engineer. To be acceptable, the submittal package shall be complete and contain all items supplied on the project by the Contractor, including pre-approved items. The Town of Carefree reserves the right to reject an incomplete or unclear material submittal. All items shall be identified by manufacturer's part number, model, specification, or other pertinent catalogue information. The materials from any catalog cuts shall be clearly indicated by the Contractor. One reviewed copy will be returned to the Contractor for further action.

**105.5 COOPERATION OF CONTRACTOR:** *the first paragraph of the MAG Standard Specifications is revised to read:*

The Contractor shall be furnished with the approved plans and contract book containing the specifications in an electronic publishing file format (.pdf). The Contractor shall reproduce and furnish to their subcontractor(s) and crews the appropriate number of plan sets and contract books to allow successful execution of the project. The Contractor and all subcontractors personnel shall have available on site at least one set of project plans, referenced standard specifications and details, and specifications at all times when performing work. This task is not a separate pay item and shall be considered included in project work. The contractor and all subcontractors shall produce such documents when requested on-site by the Town inspector or project management staff.

**105.5 COOPERATION OF CONTRACTOR:** *of the MAG Standard Specifications is modified to add:*

The Contractor shall plan to conduct and attend weekly project progress update meetings throughout the duration of the project. These meetings shall be held at the Town offices and a meeting room will be furnished free of charge. The attendees shall include the Contractor's Project Manager or Engineer, Project Superintendent, any Subcontractor's representative whose attendance may be important and add to the discussion that is expected to occur at the meeting, the Town's Project Manager, the Town's Inspector, the Town's Traffic Engineering representative, the Town's Public Outreach representative, and other Town staff or consultants as may be desirable due to the expected content of the meeting. The Contractor shall prepare and furnish an agenda and follow-up summary meeting notes reporting on the actions and discussion occurring at the meeting by agenda item. The agenda shall include at a minimum discussion of schedule and upcoming three week look-ahead work forecast; traffic control issues and needs; specific upcoming work tasks that may need coordination or discussion; dust and erosion control measures performance and adequacy; specific issues that arose during the previous week that required



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discussion, action, and/or resolution; outstanding past issues; contractual issues that have arisen or are outstanding; utility coordination issues that may exist; and public outreach needs and updates. Additional agenda items may be added or removed as the project and project progress dictates. These meetings and related administrative efforts are not a separate pay item and shall be considered incidental to the project work. A format for such agendas and meeting notes can be furnished if desired and so requested.

**105.5.1 Special Construction and Schedule Considerations:** The Contractor is expected to perform certain work at a time and in a manner that minimizes service interruption. The Contractor shall work closely with the Town Utilities Department and Town Project Manager to develop a plan for work execution that minimizes service interruptions during operation hours, weekends, or nights. Work that interrupts electrical, sewer, or water service shall be performed in a manner that allows the respective service to be restored as rapidly as possible and interrupts service for no longer than 8 hours.

A work plan shall be presented for concurrence to the Engineer at the Contractor's earliest convenience but no later than at least seven days prior to actual work efforts in area. Adequate work planning to coordinate required operations, inspections, installation progress and completion testing shall be performed.

Alternative construction approaches for this work effort may be proposed by the Contractor for consideration at the Town's sole discretion.

Adequate pre-warning and traffic control devices shall be used to clearly mark any roadway restriction or closure. Adequate safety offsets, barriers and shoring shall be used to permit traffic to pass near the construction work areas.

**105.6 COOPERATION WITH UTILITIES:** *of the MAG Standard Specifications is modified to add:*

The locations of existing underground utilities have been shown on the plans to the best of the Design Engineer's knowledge. However, it shall be the Contractor's responsibility to field verify all utility locations and to coordinate in a timely manner with the pertinent utility companies so that any obstructing utility installation may be adjusted without delay to the Contractor's project schedule. The Contractor shall be responsible for potholing all utilities within the limits of construction. Delay claims due to utility relocation for which the Contractor failed to verify the location in a timely manner shall not be considered or approved.

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The following is a list of utility companies and contact information that have facilities within the project limits. Utility companies have been identified in table below as having facilities within the project limits and if they are anticipated to be in conflict.

UTILITY COMPANY	CONTACT INFORMATION	NO ANTICIPATED CONFLICT	RELOCATION PRIOR TO CONSTRUCTION	RELOCATION DURING CONSTRUCTION BY UTILITY
<b>Arizona Public Service (APS)</b>	Keith Ochsner 602.320.0565 <a href="mailto:Keith.ochsner@aps.com">Keith.ochsner@aps.com</a>	X		
<b>Black Mountain Sewer Corp (dba Liberty Utilities)</b>	Ken Kalyta 623.826.8841 <a href="mailto:Ken.kalyta@libertyutilities.com">Ken.kalyta@libertyutilities.com</a>	X		
<b>Carefree Water Co. Inc.</b>	Greg Crossman 602.722.8753 <a href="mailto:greg@carefreewaterco.com">greg@carefreewaterco.com</a>	X		
<b>Cox Communications</b>	Jeff Bigar 602.743.6719 <a href="mailto:Jeff.bigar@cox.com">Jeff.bigar@cox.com</a>			①
<b>Lumen (CenturyLink)</b>	Dan Padilla 480.298.5087 <a href="mailto:Daniel.padilla@lumen.com">Daniel.padilla@lumen.com</a> Danny Young 602.574.3844 <a href="mailto:Danny.young@lumen.com">Danny.young@lumen.com</a>			①
<b>Southwest Gas</b>	Andy Saks 480.730.3857 <a href="mailto:Andrew.saks@swgas.com">Andrew.saks@swgas.com</a>	X		
<b>Town of Cave Creek Sewer, Water, Reclaimed Water</b>	Shawn Kreuzwiesner 480.488.6618 <a href="mailto:skreuzwiesner@cavecreekaz.gov">skreuzwiesner@cavecreekaz.gov</a>	X		

① Mitigation required, see below.

Test hole data is included in Appendix B.

**POWER LINES:**

The project has a network of underground and overhead power lines. All work at or in close proximity to said lines shall be performed in accordance with all Federal, State, and local laws and regulations, including but not limited to:

- (1) Arizona law regarding "Underground Facilities" (A.R.S. 40-360.21, .22, .24, .26 and .28).
- (2) Arizona law regarding "High Voltage Power Lines and Safety Restrictions" (A.R.S. 40-360.41-.45).
- (3) The Occupational Safety and Health Administration.
- (4) The National Electric Safety Code.

The contractor shall comply with all applicable laws regarding safe approach distances and protection of electrical facilities. For additional information, reference Arizona Public Service Construction Services website at <https://www.aps.com/en/About/Construction-and-Power-Line-Siting/Construction-Services>.

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**UTILITY COORDINATION:**

Coordination with the pertinent utility companies has been a part of the development of this project. Construction activities shall be coordinated and scheduled to incorporate the following applicable utility construction activities.

**Arizona Public Service (APS):** The contractor will be required to coordinate with APS during construction. APS has underground facilities within the project vicinity; no conflicts are anticipated with APS facilities.

**Black Mountain Sewer Corp. (dba Liberty Utilities):** The contractor will be required to coordinate with Liberty Utilities during construction. Liberty Utilities has underground sewer force main facilities within the project limits; no conflicts are anticipated with the force main. The contractor shall contact Ken Kalyata at 623.826.8841, a minimum of 14 calendar days in advance of CLSM backfill at new culvert crossing (Carefree Drive), to arrange for Liberty Utilities inspectors to be present during CLSM backfill placement.

**Carefree Water Company, Inc.:** The contractor will be required to coordinate with Carefree Water Co. during construction. Carefree Water Co. has an underground 4-in asbestos cement concrete pipe within Carefree Drive and a service line within the project limits; no conflicts are anticipated with Carefree Water Co. facilities. The service lateral water valve frame and cover will be removed and reset in accordance with the details shown on the project plans and as specified herein.

**Cox Communications:** The contractor will be required to coordinate with Cox during construction. Cox Communications has underground conduits within Carefree Drive and are in conflict with the proposed drainage pipe.

The contractor shall contact Gary Pike with Hylan West at 480.270.9113 ([gpik@hylandwest.com](mailto:gpik@hylandwest.com)) a minimum of 30 calendar days in advance of excavation at the culvert pipe within Carefree Drive excavation to coordinate removal of concrete encasement and mitigation of utility conflict.

After installation of the new pipes, the contractor shall place ½ sack CSLM in accordance with MAG Standard Specifications Section 604. The CSLM shall be provided along the entire length of the exposed conduits and shall be to the minimum width specified by Cox Communications and Hylan West. CSLM shall not extend into the pavement structural section. No measurement or payment shall be made for the CSLM, the cost considered included in the cost of contract items.

Cox Communications will relocate the facilities that are in conflict with the improvements as shown in the table below:

Station	Description	Conflict	Utility Action Plan
Rt Carefree Drive Cst CL Sta 7+57	RELOCATE: Existing 2-TV	New 2-42-inch storm drain pipes	Hylan West will remove existing concrete encasement, expose conduits, and raise the existing conduits to mitigate conflicts with new pipe. This work will require 2 to 4 days to complete the mitigation plan.

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**Lumen (formerly CenturyLink):** The contractor will be required to coordinate with Lumen during construction. Lumen has underground direct buried cable within Carefree Drive in the project limits.

The contractor shall relocate the facilities that are in conflict with the improvements as shown in the table below:

Station	Description	Conflict	Utility Action Plan
Rt Carefree Drive Cst CL Sta 7+60	MITIGATE: Direct Buried Cable	New 2-42-inch storm drain pipes	Contractor shall protect in place the existing direct buried cable. During pipe removal and installation, the contractor shall support the cable to maintain adequate clearance for construction operations.

After pipe installation, the direct buried cable shall be encased in ½ sack CSLM in accordance with MAG Standard Specifications Section 604. The contractor shall place CSLM around the existing direct buried cable after pipe installation and prior to completion of trench backfill. The CSLM shall be a minimum of six inches wide and shall be provided along the entire length of the exposed cable. CSLM shall not extend into the pavement structural section. No measurement or payment shall be made for the CSLM, the cost considered included in the cost of contract items.

**Southwest Gas:** The contractor will be required to coordinate with Southwest Gas during construction. Southwest Gas has no identified underground facilities within the project limits; however, there may be abandoned steel gas lines within project limits that are potentially coated or wrapped with unidentified materials.

Southwest Gas treats its steel gas pipe with unidentified coating/wrapping materials as potentially containing asbestos. Extreme care must be taken when working near and exposing these lines, additionally, whenever such pipe is in direct conflict and requires removal, it must only be done so by a Southwest Gas NESHAP certified contractor. The contractor shall contact Andy Saks at (480) 730-3857 to arrange for the utility to remove the abandoned pipes. Southwest Gas requires a minimum of seven calendar days to arrange for the removal of the abandoned facilities. All related costs associated with the removal of identified direct conflicts will be covered by Southwest Gas.

**Town of Cave Creek – Sewer, Water & Reclaimed Water:** The contractor will be required to coordinate with the Town of Cave Creek during construction. Town of Cave Creek has underground facilities within the project vicinity; no conflicts are anticipated with these facilities.

**ARIZONA811:** All utilities shall be blue staked by the Contractor prior to the start of construction. If a utility is hit or discovered during construction activities, whether it is damaged or not, the Contractor or subcontractor shall immediately contact the Town Project Manager or Inspector or Arizona 811 Center and the utility company so the utility can be inspected. Failure to notify all of the parties listed shall be cause for rejection of claims for delay or extra work by the Contractor or subcontractor.

**Protection:** The contractor shall endeavor to protect existing utility facilities present within the project limits but not anticipated to be in conflict with the improvements. To this end, the Contractor is expected to contact the respective utility when performing work near their facility that could impact it to provide the utility the opportunity to be present and re-identify their facility location and to present suggestions regarding protection if they have a concern. All such facilities shall be exposed or potholed if requested by the utility or town to verify clearance at no additional charge.

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**105.7 COOPERATION BETWEEN CONTRACTORS:** *of the MAG Standard Specifications is modified to add:*

The Contractor is advised that there may be construction activity adjacent to the project site. The Contractor shall contact the Town to verify all projects in the vicinity of this project. The Contractor is advised that it shall schedule and coordinate all work activities so as not to adversely conflict with this work.

**105.8 CONSTRUCTION STAKES, LINES AND GRADES:** *of the MAG Standard Specifications is revised to read:*

The Contractor shall furnish all materials, personnel, and equipment necessary to perform all surveying, staking, laying out of control lines and verifications of the accuracy of all existing control points which are delineated in the Contract Documents. The work shall be done under the direction of a Registered Land Surveyor licensed to practice in the State of Arizona.

**Staking Outline:** Prior to beginning any survey operations, the Contractor shall furnish to the Town of Carefree Project Manager, for approval, a written outline detailing the method of staking, interval of stakes, marking of stakes, grade control for various courses of materials, referencing, structure control, and any other procedures and controls necessary for survey completion. A part of this outline shall also be a schedule which will show the sequencing of the survey and layout work, throughout the course of the contract, listing a percentage of completion for each month.

**Field Books:** The Contractor shall furnish field books to be used for recording survey data and field notes. These books shall be available for inspection by the Town at any time and shall become the property of the Town upon completion of the work.

**Survey Control Verification:** The Contractor shall be responsible to stake construction elevations tied to the primary benchmark. Coordinate and elevation information for other monuments and benchmarks have been provided in the plans. If a discrepancy is discovered with respect to project elevations, the project's prime benchmark will override all other monuments and/or benchmarks.

- a. Control Points (horizontal and vertical) – The existence and location of all survey monuments, benchmarks and control points shall be verified prior to demolition or construction activity. Immediately notify the Town of Carefree Project Manager when location discrepancies greater than two-hundredths (0.02) foot horizontal or one-hundredth (0.01) foot vertical are found. All datum shall be Town of Carefree. Control benchmarks may be disturbed by the construction performed. The Contractor's surveyor shall provide adequate temporary benchmarks to re-establish control benchmarks that are disturbed or destroyed.
- b. Control Lines – Construction control lines with grade breaks, transition points, horizontal and vertical curves, etc., shall be established and referenced prior to construction.
- c. Temporary Benchmarks – Temporary benchmarks shall be established and referenced.

**Pre-Construction Location Survey:** All existing features which are located prior to construction shall be referenced to survey monuments along control lines by stationing in accordance with the construction documents and by offset distance from the control lines. All features shall be relocatable after construction. Distances measured shall be within one-hundredth (0.01) foot.

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- a. Survey monuments – All survey monuments that lie within the construction area that may be disturbed shall be referenced to a specific point on at least four (4) stable objects by distance measurement. Reference objects shall be located no greater than three-hundred (300) feet from the survey monument being referenced.
- b. Water and Sewer line appurtenances – Water and sewer line surface appurtenances such as manholes, valves and cleanouts that lie within the construction area shall be located and noted on the Contractor's approved construction documents prior to any demolition or excavation.
- c. Match Points and Removals – Verify the location (horizontal and vertical) of existing facilities to which the project connects. Immediately notify the Town of Carefree Project manager when location discrepancies of connecting facilities greater than one-tenth (0.10) foot horizontal or two-hundredths (0.02) foot vertical are found.

**Construction Stakes:** The Contractor shall set construction stakes and marks establishing lines and grades for road work, curbs, gutters, path, structures, buildings, centerlines for utilities and necessary appurtenances and other work as indicated in the Contract Documents and shall be responsible for their conformance with the plans and specifications.

The stakes shall be established in accordance with the following guidelines which represent the minimum standard, and the Contractor shall provide additional stakes and controls necessary to perform the work. The Contractor shall be held responsible for the preservation of all stakes and marks and will replace, at no additional cost to the Town; any construction stakes or marks which have been carelessly or willfully destroyed by acts of nature or other parties.

### **A. Curbs, Curb and Gutter, Valley Gutter:**

1. Curb and gutter shall be staked and installed prior to sidewalk, driveway, and corner ramp construction.
2. Cut/fill stakes for rough grade shall be set at one hundred (100) feet intervals with cuts to the top of curb.
3. Finish grade stakes shall be set to curb grade at 25-foot intervals, at grade brakes, angle points, transitions, returns, driveways, alley entrances, sidewalk ramps and other curb control points. The stakes shall be tacked for line on a two-foot offset to the back of curb.
4. Face of curb forms shall be checked for grade at flow line prior to placing concrete where longitudinal grades are two-tenth percent (0.20%) or less.
5. Face of curb forms shall be checked for grade at gutter line prior to placing concrete for transitions at 30-foot intervals.
6. Valley gutter stakes shall be set offset five feet from the centerline of the valley gutter at 25-foot intervals, marked with cuts to the flowline of the valley gutter.



## PART 100 – GENERAL CONDITIONS

**B. Storm Sewer and Drainage:** All cuts will be to the invert of the pipe, given to the nearest one-hundredth (0.01) of a foot.

1. Stakes for storm sewer will be driven flush with the existing ground, set on an offset at 50-foot intervals. Stakes will be marked with the offset and indicated cut.
2. Wyes for laterals will be marked with a line only stake.
3. Manholes shall be marked with the offset and indicated cut on top of manhole grade and inverts.
4. Stakes for storm water inlets, two per inlet, will be set on a line normal to the roadway at the center line of the inlet five and ten feet from the face of curb. The stakes will be marked with the offset to the face of curb and the cut or fill on the top of curb and inverts.
5. Cut sheets shall be supplied to the Contractor and Town of Carefree Inspector.

**C. Roadway:** Subgrade stakes shall be set to subgrade elevation at fifty (50) feet intervals on straight sections, 25-foot intervals through vertical curves, on horizontal curves with radius of 600 feet, or less, and/or slopes of less than four-tenths of one percent (0.4%) and the beginning and end of horizontal and vertical curves and grade breaks. Stakes shall be set at crown lines, at grade break lines and at edges of pavement which do not abut concrete curb and gutter or at the edge of pavement abutting vertical curbs or other structures whose surface grade will not be flush with the finished pavement grade. Quarter lines will be staked where the distance between the crown line stakes, and the curb and gutter face exceeds 20 feet. Select shall be staked the same as subgrade.

Aggregate base stakes shall be set to aggregate base course elevation at 33-foot intervals on straight sections, 25-foot intervals through vertical curves, on horizontal curves with radius of 600 feet, or less, and/or slopes of less than four-tenths of one percent (0.4%) and the beginning and end of horizontal and vertical curves and grade breaks. Stakes shall be set at crown lines, at grade breaks and at edges of pavement which do not abut concrete curb and gutter or at the edge of pavement abutting vertical curbs or other structures whose surface grade will not be flush with the finished pavement grade. Quarter lines will be staked where the distance between the crown line stakes and the curb and gutter face exceeds 20 feet.

Pavement edges shall be controlled by utilizing a wire control mechanism or screeding along a concrete gutter or other structure whose surface grade is flush with the finished pavement grade. Stakes shall be set to finished elevation at 33-foot intervals on straight sections, 25-foot intervals on curves with radius of 600 feet, or less, and/or slopes of less than four-tenths of one percent (0.4%) and the beginning and end of horizontal and vertical curves and grade breaks.

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- D. Sidewalks:** Stakes are not required for sidewalks five feet or less in width which are adjoining existing curb and gutter.

Sidewalk stakes shall be set to grade on an offset and tacked for line at 25-foot intervals at the beginning and end of horizontal and vertical curves and grade breaks. Where sidewalk grade and elevation differs from adjacent curb grade, sidewalk shall be staked at all grade breaks and elevation control points provided.

- E. Traffic Signing and Pavement Markings:** The Contractor shall delineate the procedures and controls to be utilized in the Staking Outline.

- F. Landscaping:** The Contractor shall delineate the procedures and controls to be utilized in the project plans.

**Re-establishment Survey:** Monument locations will be marked with "straddlers" (four nails with metal "shiners") driven into the pavement and placed in pairs, approximately six feet apart and opposite to each other. Lines connecting opposing pairs shall form a ninety-degree cross with three-foot legs. The center of the cross will signify the exact location of the center of the monument to be set. Monuments will be drilled or punched after they have been set.

Manhole, valve box, and cleanout locations shall be painted on the new pavement for rim adjustment.

**Inspection and Acceptance of Work:** The Town reserves the right to make inspections and random checks of any portion of the staking and layout work. Checks by the Town or his representative shall in no way relieve the Contractor of his/her responsibility to construct the project in accordance with the Contract requirements. If, in the Town's opinion, the work is not being performed in a manner that will assure proper control and accuracy of the work, the Town will order any or all of the staking and layout work redone at no additional cost.

**Record Drawings (As-Builts):** A full-size set of project drawings shall be kept on-site and updated on a weekly basis or more frequent as necessary with a red pencil or red ink to reflect any field adjustments, changes, omissions, additions, etc. as they occur on the project. The Town Inspector will check site record drawings (as-builts) on a weekly basis to ensure all modified project elements have been properly recorded on the field plan set. Record drawings reviews at progress meetings shall occur monthly.

The Contractor shall provide plan sheets for use in preparing final record drawings (as-builts). Information shall be shown on these plans in red opaque ink, depicting the constructed dimensions, elevations, grades, and materials including locations of existing underground utilities found during construction. Changed values shall be stricken out.

The Contractor shall exercise extreme care in handling any provided originals and will return them to the Town in like condition. In the event the originals are damaged or determined by the Town to be unacceptable, the contractor shall replace the originals by contacting the Design Engineer of record and have new drawings produced. All costs incurred, as the result of replacing the originals shall be borne by the contractor. The Town will be the sole judge in determining whether the record drawings (as-builts) are acceptable in either condition or detail.



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All work included in the contract documents as well as changes to the contract shall be noted as correct or modified by either checking off the information if it is correct, or by drawing a neat line through the original data and writing in the correct information in opaque ink if the information is incorrect. Unless noted otherwise below in the minimum as-built requirement section, station/offset measurements will be from construction centerline/monument line both parallel and transverse to roadway; added items or location changes shall be physically drawn at revised or new locations on the record drawings (as-builts); and all measurements and stations should be to the nearest tenth of a foot.

The minimum requirements for record drawings (as-builts) acceptance is as follows:

1. **Project Drawing Quantity Notations:** Any project drawing or quantity summary sheet that shows a quantity on it that is incorrect shall be corrected by drawing a neat line through the original quantity and writing in the correct information. When space on the drawing does not allow room to indicate the corrections, a separate table may be drawn on a separate sheet with reference on both plan sheets to the plan sheet that the table refers to or to the sheet where the table is located.
2. **Existing/New Utilities:** All underground infrastructure utilities, whether depicted on the project plans or not, shall be verified, corrected, or added to the record drawings (as-builts) noting the beginning and ending station/offset location and elevation of utility relative to finished roadway grade or other identifiable ground or permanent roadway/project feature. Any electrical installation work for street lighting or power connection shall be located relative to construction centerline/monument line or relative to back of curb and gutter (whichever is closer) including the depth of the facility.
3. **Removals:** Dimensions and/or other volumetric descriptions and station/offset location of all removed items.
4. **Curb/Gutter/Valley Gutter:** Beginning and ending station offset location of straight curb/gutter/valley gutter runs relative to construction centerline monument lone; flow line elevation; and station offset location of PC's and PT's.
5. **Driveway/Alley Entrances:** Beginning and ending station/offset including driveway wings.
6. **Roadway Pavement:** Beginning/ending station and measured completed roadway width from edge of pavement to edge of pavement in straight roadway sections; measured completed roadway width perpendicular to construction centerline/monument line from both edges of pavement to construction centerline/monument line in curved roadway sections; and actual sawcut removal/tie-in to existing pavement locations.
7. **Pipelines:** When pipeline parallels the construction centerline/monument line, verify or correct the perpendicular distance between the two. When pipeline angles relative to the construction centerline/monument line or is in a curved roadway section, as-built measured straight pipe run distances, angle points, changes in size, fitting/tee locations tied-in with practical known construction centerline/monument line location or other easily verifiable permanent point. Distances between fittings are from fitting centerline. Fire hydrant and catch basin branch lines are to be shown in profile including pipeline bends and collars. All project drawing pipeline cross-sections and profiles are to be corrected to reflect modified pipeline locations/alignments. Station and offset locations for sewer line laterals are from main line to ROW line with beginning/ending line location tied to a monument or to a

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property corner. Locations where waterlines cross curb and gutter are to be noted by station. Where waterlines run parallel to curb and gutter, note locations relative to back of curb or construction centerline/monument line (whichever is closer) including angle points and elevation.

8. **Manhole/Catch Basin/Box Culvert/Valve/Cleanout/Tee:** Beginning/ending station and offset. Stationing is to commence at the downstream manhole/head wall (or as depicted on drawings) with location of tap/wye/tee/lateral/head wall locations clearly noted.
9. **Bridges, Box Culverts, and Other Structures:** Station/offset distances/centerline-bearing line/finished elevations of all bridge or structure elements. Bridge deck and girder elevations must reflect before and after concrete placement elevations. Inverts for all culvert barrel inlets and outlets and resulting culvert length(s) and slope(s).
10. **Landscaping and Irrigation:** Note beginning and ending station offset elevation including size of PVC, sleeve pull-box/electrical-valve/water-service/tap/meter/bubbler/drip-line locations.
11. **Traffic Signal:** Signal pole station/offset; electrical conduit, sleeve, controller, meter pedestal and pull box station/offset with distances of electrical conduit runs noted and tied in with known point.
12. **Roadway Striping/Signage:** Any new/relocated sign shall be located by station and offset from construction centerline/monument line. Any change in roadway marking is to be noted on record drawings (as-builts).
13. **Linear Items:** Fences, walls, ditches, etc. should be located by station/offset and tied in with a permanent point.

The record drawings (as-builts) shall be certified by an Arizona Registered Land Surveyor. Record drawings (As-builts) shall be delivered to the Town Project Manager within 30 calendar days from the date of final inspection and acceptance by the Town of the work substantially completed under this contract. Work under this bid item includes transfer of all information noted by the Contractor on the on-site record drawings (as-builts) set described above.

**Measurement and Payment:** Construction Surveying and Record Drawings (As-Builts) will be measured as a single complete item of work together with construction surveying and paid at the Lump Sum price complete item of work as indicated on the Bid Schedule, which amount shall be considered full compensation for the work as described herein and required to clearly indicate all specific record drawings (as-builts) information.

Final payment for survey work under this bid item will be made when the Town accepts the final record drawings (as-builts). Should the Contractor fail to submit acceptable record drawings (as-builts) within the maximum 30 calendar day period noted above, the Town will execute a deduct change order for 10 percent of the bid item total from the contract (or \$2,500.00, whichever is greater) for every five working day period that the Contractor fails to provide acceptable record drawings (as-builts) (not including Town review time). If the Contractor fails to submit acceptable record drawings (as-builts) after the 3rd submittal, the Town will deduct 50% from the bid item total from the contract (or \$10,000.00, whichever is greater) and execute a final change order noting the Town's justification for penalizing the Contractor for unacceptable record drawings (as-builts) preparation.

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**105.10 INSPECTION OF WORK:** *of the MAG Standard Specifications is modified to add:*

The Contractor shall hire an independent third-party Material Testing firm to perform Quality Control testing for the project. No measurement or payment will be made for this work, the cost shall be included in the cost of contract items. The Town reserves the right to complete the Quality Assurance testing.

**ITEM 105.80000 CONSTRUCTION SURVEY, STAKING AND RECORD DRAWINGS LS**

**SECTION 106 CONTROL OF MATERIALS**

**106.1 SOURCE OF MATERIAL AND QUALITY:** *of the MAG Standard Specifications is modified to add:*

In order to expedite the inspection and testing of materials, the Contractor shall furnish complete shop drawings and submittals to the Town as to the origin, composition and manufacture of material to be used in the Work. Such submittals shall be furnished promptly after execution of the Contract but, in all cases, prior to delivery of such materials.

**106.2 SAMPLES AND TESTS OF MATERIALS:** *of the MAG Standard Specifications is modified to add:*

The Contractor shall hire an independent third-party Material Testing Firm to perform Quality Control testing for the project and pay all cost required. The Material Testing Firm shall establish, provide and maintain an effective quality control program that details the methods and procedures that will be taken to assure that all materials and completed construction required by this Contract conform to Contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors. Although guidelines are established and certain minimum requirements are specified herein and elsewhere in the Contract technical specifications, the Contractor shall assume full responsibility for accomplishing the stated purpose.

The Contractor shall maintain current quality control records of all inspections and tests performed. These records shall include factual evidence that the required inspections or tests have been performed, including types and number of inspections or tests involved; results of inspections or tests; nature of defects, deviations, causes for rejections, etc; proposal remedial action and corrective actions taken if required. These records must cover both conforming and defective features and must include a statement that all supplies and materials incorporated in the work are in full compliance with the terms of the Contract.

Legible copies of all test results shall be furnished to the Town's Project Manager in a Weekly Summary Report submitted in a timely manner to address any potential issues quickly. Before final completion, the Contractor shall submit a final testing report summary containing all testing results which certifies that the work complies with the Contract Documents. This testing report shall be sealed by a Professional Civil Engineer, registered in the state of Arizona who was responsible for overseeing the testing and sampling for said company. There will be no separate pay item for this work; the cost should be incorporated into the applicable bid items' unit prices.

The Town reserves the right to perform Quality Assurance testing required to certify the quality of materials for this project through its designated agent for professional materials testing services. The purpose of assurance testing will be to verify the quality of the finished project for the Town. The testing will, in no way, relieve the Contractor of his/her responsibility for his own quality control, assurance, and furnishing materials and finished products that meet the project specifications. A pre-construction meeting to coordinate testing services shall be scheduled and held at the Town offices by the Contractor.

**SECTION 107 LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC**

**107.1 COMPLIANCE WITH LAWS:** *of the MAG Standard Specifications is modified to add:*

The Town will endeavor to ensure that small, minority and woman-owned business enterprises shall have every opportunity to participate in providing professional services, purchased goods and contractual services to the Town without fear of discrimination based on race, religion, sex, age, disability or national origin. A Small Business, Minority and Woman-Owned Business Enterprise goal has not been established for this contract. However, participation by such firms is encouraged.

The Contractor shall take all necessary measures to assure compliance by their employees and subcontractors with the adopted and applicable federal, state and local laws, ordinances, statutes, rules and regulations pertaining to stormwater discharge as well as air, groundwater and surface water quality.

**107.2 PERMITS:** *of the MAG Standard Specifications is revised to read:*

It is Contractor's responsibility to obtain all permits and licenses; pay all fees, charges, bonds, and taxes; and prepare all required notices for the lawful execution of the work. Furnishing permits, licenses, and required notices is not a separate pay item and shall be considered included in the cost of contract items.

**107.2 PERMITS:** *of the MAG Standard Specifications is modified to add:*

**107.2.1 Town Encroachment Permit:** Town of Carefree permits for the improvements within the right-of-way are available from the Town at no cost to the Contractor and subcontractors for Town Capital Improvement Projects. All permit requests must be filed by the Contractor or subcontractor performing the work, not the General or Prime Contractor. A copy of all Town issued permits shall be provided to the Town's Project Manager by the Contractor or subcontractor to whom issued.

**107.2.2 AZPDES Permit:** This project is subject to the Arizona Pollutant Discharge Elimination System (AZPDES) program's permit requirements for construction sites. The Contractor is responsible for obtaining applicable permits and complying with permit requirements.

This project is anticipated to disturb less than one acre; therefore, it does not require a construction stormwater discharge permit. If the Contractor's operations will cause the disturbed area to become an acre or more, the Contractor shall be responsible for obtaining applicable permits. The Contractor shall comply with permit requirements.

**107.2.3 Air Quality Permit:** The Contractor shall comply with the Maricopa County Air Pollution Control Regulations, as revised July 6, 1993, governing construction activities. Under provisions of this regulation, the Contractor shall be designated as permittee and shall be responsible for providing the necessary labor and materials, and for taking the appropriate measures, to assure compliance with the regulations. As the permittee, the Contractor is responsible for completing all documentation required by the regulation, including the following:

- (1) Application for Earth Moving Equipment Permits and Permits to Operate required by Rule 200 and Rule 310 of the above regulations.
- (2) Control Plan to prevent or minimize fugitive dust will be submitted with the completed Application for Permit.

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Copies of permit applications and sample control plan formats may be obtained from the Maricopa County Air Quality Department by typing “*Maricopa County Air Quality Dust Control Permit*” into an internet search engine.

It is the Contractor's responsibility to apply Reasonably Available Control Measures (RACM) to all phases of construction activities to prevent or minimize the generation, emission, entrainment, suspension and/or airborne transport of fugitive dust. Typical RACM are identified in the Regulations.

No measurement or direct payment will be made for the work needed to obtain permit and adhere to the requirements of the permit, the cost is considered included in the cost of contract items.

**107.2.3.1 Haul Trucks:** The following requirements shall apply to the use and operation of any haul truck:

- (1) The cargo compartment of a haul truck shall be constructed and maintained so that no spillage or loss of bulk materials can occur from holes or other openings in the cargo compartment.
- (2) Any haul truck carrying bulk materials shall be properly loaded so that the freeboard is not less than three inches and be effectively covered with a tarp or other suitable enclosure in such a manner to prevent or minimize fugitive dust.
- (3) Any haul truck shall be cleaned or kept covered once emptied and/or between cargoes when the residual particulate matter remaining in the cargo space is capable of becoming fugitive dust.

**107.2.3.2 Submittals:** Preliminary copies of the Contractor's permit application and control plan shall be submitted to the Engineer at the time of the pre-construction conference. Any necessary revisions recommended by the Engineer will be made prior to submission to the County. The Contractor shall submit the completed application and control plan to the County at least 48 hours prior to the projected start of construction. Failure of the Contractor to obtain a signed Earth Moving Air Quality Permit from the County may result in delay of the start of construction. The Contractor shall submit a signed copy of the permit, with the control plan, to the Engineer and maintain a copy in a conspicuous location at the construction site.

If the Engineer or Town determines during construction activities that the initial control plan is inadequate, revisions to the plan will be made by the Contractor and submitted to the Engineer for approval.

### **ITEM 107.01000 PERMITTING**

**LS**

**107.12 FURNISHING RIGHT-OF-WAY:** *of the MAG Standard Specifications is modified to add:*

Before utilizing any TCE, the Contractor shall provide written notice of intent to utilize the TCE to the residents living or business operating on the property a minimum of 48 hours in advance. This notice shall include a brief “work to be performed” description and the expected work duration. This notice shall also include a Contractor’s staff contact name and phone number for the convenience of the residents, in case of emergency or complaints. This requirement is in addition to any public outreach efforts utilized or performed by the Town. Names dates and times of who the notice was provided to shall be recorded and provided to the Town project manager.



**SECTION 108 COMMENCEMENT, PROSECUTION AND PROGRESS**

**108.1 NOTICE TO PROCEED:** *of the MAG Standard Specifications is modified to add:*

The Town shall issue a notice to proceed (NTP) for the improvements related to Project No. A2025 to the Contractor once all contractual documents are obtained and appropriately executed. Utilities with facilities located in the project vicinity, particularly SRP and QCID are aware of the project schedule and are expected to have their relocation work completed prior to the anticipated start of the project.

The Contractor may be provided with a letter approving the authorization to perform limited work that will benefit the project completion schedule and Contractor's progress if any utilities fail to complete their facility relocation prior to the anticipated start of the project. This may also occur if other construction by others within the project limits is not completed and conflicts with the Contractor's proposed work schedule.

**108.4 CONTRACTOR'S CONSTRUCTION SCHEDULE:** *of the MAG Standard Specifications is modified to add:*

The Contractor shall plan to begin work as early as possible. All project work shall be substantially complete within 120 calendar days of the Notice to Proceed and Final Completion shall occur a year later.

The Contractor shall submit an overall project schedule at the commencement of the project as noted above. The schedule shall be presented to the Engineer in both electronic publishing (.pdf) and hard copy format.

During the execution of the project, The Contractor shall submit a three-week look-ahead forecast schedule updated weekly. These schedules shall be presented as a subset of the overall schedule or in a format such as an Excel spreadsheet and shall depict the upcoming work tasks and associated durations by days. Special actions or tasks for certain subsets of the work may be requested to be presented separately by the Town and shall be furnished if so requested.

The look-ahead schedule shall identify upcoming traffic control and public outreach needs, monitor anticipated progress and upcoming tasks, and allow the project team to discuss and coordinate project needs. These look-ahead forecast schedules shall be presented to the Town in both electronic publishing (.pdf) and hardcopy format.

No measurement or direct payment will be made for development and updates of the project schedule, the cost is considered included in the cost of contract items.

The Contractor shall review and assess all materials availability and delivery timeframes very early in the project and plan their activities for shop submittals, ordering and construction means and methods accordingly. If the Contractor discovers or encounters any potential schedule issues in this assessment process that will materially impact, restrict or prohibit work commencement and completion in accordance with the proposed contract dates noted above, they shall promptly notify the Engineer to discuss the issues and develop a mutually acceptable course of action.

**108.4.1 Work Hours:** The Contractor shall plan construction activities between normal work hours; 7 a.m. to 5 p.m., Monday through Friday excluding national holidays.

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Work outside these hours is permissible provided a construction schedule has been prepared, submitted to, and found acceptable to the Engineer. The schedule shall identify the work to be performed, including the duration of planned activities. Submittal of the schedule shall be made a minimum of seven days prior to the planned work to allow sufficient time for the Engineer to review the request and schedule any necessary inspections. The Contractor shall be responsible for payment for all overtime and off-hours inspection and testing services that occur outside the normal and excepted working hours indicated above.

All underground work must be completed to the satisfaction of the Engineer prior to the start of any roadwork, unless the Contractor can provide a sequence of work schedule and traffic control plan which will demonstrate, to the satisfaction of the Town, that neither traffic safety nor Contractor operations will be adversely impacted. The Engineer shall have total discretion and authority to accept or reject the Contractor's proposed sequence of work schedule and traffic control plan.

**108.5 LIMITATIONS OF OPERATIONS:** *of the MAG Standard Specifications is modified to add:*

**108.5.1 Fugitive Dust Control Operations and Pollution Prevention Management Plan:** The Contractor shall create, develop, publish and have a plan in place to control fugitive dust and track off soils. The plan shall indicate what best management practices (BMPs), measures, actions and procedures are to be implemented and executed by the Contractor to accomplish the pollution prevention (including fugitive dust control) goals. The Contractor shall apply for, pay for and secure the required permits for the project as appropriate. All required permit signage shall be created and erected as required by law, promulgated regulations, project specifications, special provisions, plan notes and permit requirements. If performing work extended under an approved and issued general or blanket-type permit, all permit requirements issued in conjunction with the permit shall be met.

**108.5.1.1 Mechanical Sweeping:** Mechanical sweeping shall be included as a part of the project's fugitive dust control and Stormwater Pollution Prevention or Management Plan to control track out of earthen and other materials from the project site. The limits of sweeping shall include all adjacent, pass-through and nearby paved street areas where construction related vehicles and/or vehicles hauling and/or delivering materials to or from the project site for a minimum distance of ¼ mile or further as field observations indicate are necessary. Sweeping operations frequency and duration shall be as necessary to remove any such debris or materials that have been tracked out of the project site. When such sweeping operations extend across railroad tracks, the mechanical sweeping equipment shall be raised prior to and when crossing the tracks to prevent damage to the rails or crossing surface and to prevent false signals from being generated due to low voltage electrical short circuiting.

**108.5.1.2 Watering:** Watering operations shall be included as a part of the project's fugitive dust control and Stormwater Pollution Prevention or Management Plan to control track out of earthen and other materials from the project site. Watering operations shall take place on all earthen surfaces within the project limits subject to vehicular or construction equipment traffic or surfaces or friable materials that have been or are being disturbed by construction operations. Water shall be applied by means of, but not limited to, tanks, sprayers, pipes, hoses, nozzles or sprinklers. The limits of watering may extend to and include adjacent, pass-through and nearby paved street areas where construction related vehicles and/or vehicles hauling and/or delivering materials to or from the project site as field observations indicate are necessary to remove and control fugitive dust and material track out. Watering operations frequency and duration shall be as necessary to minimize or prevent creation of fugitive dust from the construction activities on the project site and to facilitate removal of significant debris or materials that may have been tracked out of the project site. When



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such watering operations extend across railroad tracks, the watering equipment and operations shall be placed and performed in such a manner as to not damage the railroad tracks and railroad subgrade; and to prevent damage to the rails, ties or crossing surface; and to prevent false signals from being generated due to low voltage electrical short circuiting.

All such dust control work and related efforts shall be considered incidental and part of the overall work with no separate payment made for such efforts.

**SECTION 109 MEASUREMENTS AND PAYMENTS**

**109.07(B) Final Payment:** *of the MAG Standard Specifications is modified to add:*

The final acceptance date for this project will begin at completion of:

- a. All punch list items
- b. Resolution of claims
- c. Final Quantity Agreement and Verifications

**109.10 PAYMENT FOR MOBILIZATION/DEMOBILIZATION:** *of the MAG Standard Specifications is modified to add:*

**109.10.1 Mobilization:** The Town will compensate Contractor for one-time, round-trip mobilization/demobilization of Contractor’s personnel, equipment, supplies, establishment of offices, buildings and other facilities required for the performance of the work on the project, as well as preparatory work and operations prior to the commencement of the work on the project site.

**109.10.2 Measurement:** Measurement of all work completed under the contract will be measured by the Town according to United States standard measures. The methods of measurement and computation to be used in determination of quantities of materials furnished and of work performed under the contract will be those methods generally recognized as conforming to good engineering practice. Mobilization/demobilization will be measured for payment by the lump sum as a single complete unit of work.

**109.10.3 Payment:** Payment for mobilization/demobilization, measured as provided above, will be made at the contract lump sum price. Payment shall be made in equal one-third portions. The first payment will be paid with Contractor’s initial billing. The second payment will be made when the total payments to Contractor for the bid items, exclusive of payments for mobilization/demobilization, equals one-half of the total bid by Contractor, exclusive of mobilization/demobilization. The remaining one-third will be paid as part of the second to last progress payment. Final payment due Contractor will be for retention.

When other contract items are adjusted as provided in Section 109, and if the costs applicable to such items of work include mobilization costs, such mobilization costs will be considered as recovered by Contractor in the lump sum price paid for mobilization and will be excluded from consideration in determining compensation under Section 109.

If the Contractor performs a second mobilization/demobilization of personnel, material and/or equipment at the Town Project Manager’s express written request, the Town will compensate the Contractor for such expenses at the Contractor’s actual costs. The Contractor shall provide all documentation for these costs at the request of the Town Project Manager.

**ITEM 109.09000 MOBILIZATION/DEMOBILIZATION AL**

**SECTION 109 MEASUREMENT AND PAYMENT:** *of the MAG Standard Specifications is modified to add:*

**109.11 BITUMINOUS MATERIAL PRICE ADJUSTMENT:**

An adjustment to the unit price of the bituminous material, of any type, incorporated into the material used on the project, will be made by the Town when increases or decreases in the price of

PART 100 – GENERAL CONDITIONS

bituminous material occur after bid opening.

The price of bituminous material used will be determined monthly by the Town based on sales cost data for the specified grade or type of bituminous material, as published, in memorandum form, by the Arizona Department of Transportation’s Contracts and Specifications Section.

The “initial cost” of bituminous material, of the type or grade specified for a project, will be the cost, as determined by the Town and based on the above Arizona Department of Transportation memorandum, for the month during which bids are opened for the project. An adjustment in compensation will be made for either an increase or decrease in the cost of bituminous material based on the difference in sales cost using data from the Arizona Department of Transportation memorandum, current as of the date(s) of placement on the project, as compared to the “initial cost.”

Adjustments to the cost of bituminous material shall conform to the following calculation:

$$\text{BITUMINOUS MATERIAL COST (Date of Use) minus BITUMINOUS MATERIAL COST (INITIAL)}$$

Multiply the above cost difference by the percentage of bituminous material in the material mix design. The resulting value is the cost adjustment amount to be applied for each ton of material incorporated into the work.

EXAMPLE:                   “Initial” cost at bid opening = \$100.00/Ton  
Date of use cost = \$120.00/Ton  
Percent bituminous material per mix design = 5.2  
Asphaltic Concrete Price Adjustment =  
(\$120.00/Ton-\$100.00/Ton) x 0.052 = \$1.04/Ton

The tons of material which are paid for on an invoice basis and for which an adjustment is applicable are the tons which have been delivered to the project and incorporated into the work. The adjustment will be applicable for each date of material use. No adjustment will be made for waste, rejected or unused material. No further compensation, beyond that computed herein, will be made for any increased or additional charges, costs, expenses, taxes, etc., which the contractor may have incurred since the time of bid opening, and which may have resulted from an increase in the “initial” cost of bituminous material. Upon expiration of the contract time stipulated in the contract documents or as may have been extended in conformance with the provisions of Subsection 108.7, any adjustment in the price of bituminous material shall use as its basis the cost determination from the Arizona Department of Transportation memorandum for the month in which the contract time, or approved extension thereto, expired.

**ITEM 109.1100 ALLOWANCE FOR BITUMINOUS PRICE ADJUSTMENT AL**

**109.12 FUEL COST ADJUSTMENT:**

The Town will adjust monthly progress payments up or down as appropriate for cost fluctuations in diesel fuel as determined in accordance with the Specifications and specified herein.

A fuel cost adjustment will be made when fluctuations in the price of diesel fuel, in excess of 15 percent, occur throughout this contract. The Town will not provide such adjustments for fluctuations

PART 100 – GENERAL CONDITIONS

in the price of diesel fuel of 15 percent or less.

No adjustments will be made for fluctuations in the price of fuels other than diesel.

The base index price of fuel will be determined by the Arizona Department of Transportation (ADOT) from the selling prices of diesel fuel published by OPIS (Oil Price Information Service). The base index price to be used will be the price for Diesel fuel No. 2, Ultra Low Sulfur, PAD 5, City of Phoenix Rack. The reported average value for the Phoenix area will be used.

The base index price for each month will be the arithmetic average of the selling price for diesel fuel, as specified above, shown in the last four reports received prior to the last Wednesday of the month.

This price will be effective as of the last Wednesday of each month, and will be posted on the ADOT's website, at <http://www.azdot.gov/Highways/cns/bitmat.asp>, on or shortly after the last Wednesday of the month.

This price will be deemed to be the "initial cost" (IC) for diesel fuel on projects for which bids are opened during the following month. The current index price for diesel fuel in subsequent months will be the base index price, determined as specified above, for the current month. For example; an adjustment for diesel fuel used in May, if applicable, will be based on the "current price" (CP) for May as posted on the last Wednesday of May. The amount of adjustment per gallon will be the net difference between the "initial cost," adjusted by 15 percent, and the current index price. The monthly adjustment will be determined by the Engineer and included in the payment estimate as a fuel adjustment. For fluctuations in excess of 15 percent, fuel cost adjustments will only be made for current price index increases greater than 1.15 times the "initial cost" or for decreases less than 0.85 times the "initial cost." No calculation will be made for fluctuations in the current index price of 15 percent or less when compared to the "initial cost."

The number of gallons of diesel fuel used per month will be considered to equal 1.5 percent of the dollar amount of work reported by the contractor for each month. Such dollar amount will not include accrued in the previous month for bituminous material cost fluctuations or diesel fuel price adjustments.

A monthly adjustment, if applicable, will be made on this quantity, as shown below:

$$S = \frac{0.015(Q)}{IC} \times (CP - AC)$$

Where; S = Monetary amount of the adjustment (plus or minus) in dollars  
Q = Dollar amount of work completed for the month  
CP = Current index price in dollars per gallon  
AC = Adjusted "initial cost" (1.15- or 0.85-times IC) in dollars per gallon  
IC = "Initial cost" as determined above, dollars per gallon

If adjustments are made in the contract quantities, the contractor shall accept any fuel adjustment as full compensation for increases or decreases in the price of fuel regardless of the amounts of overrun or underrun.

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No additional compensation will be made for any additional charges, costs, expenses, etc., which the contractor may have incurred since the time of bidding, and which may be the result of any fluctuation in the base index price of diesel fuel.

No adjustments will be made for work performed after Acceptance, as defined in Subsection 105.15 of the Specifications, has been achieved.

***ITEM 109.12000 ALLOWANCE FOR FUEL PRICE ADJUSTMENT***

***AL***

*PART 100 – GENERAL CONDITIONS*

**109.12 EXTRA WORK:**

An Allowance for Unforeseen Work bid item is included in the bid schedule for work elements discovered during construction or directed work determined desired by the Town and adjacent to or within the project limits or work zone. Extra work involving unit bid items already included in the Bid Schedule shall be paid for at such unit rates. Work items not provided in the Bid Schedule shall be negotiated with the Contractor to determine total prices for extra work. Only actual extra work items may be invoiced against this bid item per MAG Standard Specifications Subsections 109.4 and 109.5.

***ITEM 109.21000 ALLOWANCE FOR UNFORSEEN WORK***

***AL***

PART 300 – EARTHWORK

PART 200 – EARTHWORK

**SECTION 201 CLEARING AND GRUBBING**

**201.1 DESCRIPTION:** *of the MAG Standard Specifications is modified to add:*

Trees that are to be removed shall be completely unearthed, including the root structure. The resultant void shall be filled with soil and compacted to required levels based on the location within the project.

**201.5 PAYMENT, CLEARING AND GRUBBING:** *of the MAG Standard Specifications is modified to add:*

Payment for clearing and grubbing will be made at the contract lump sum price, and shall constitute full compensation for furnishing all material, labor, tools, and equipment and accomplishing all work associated with clearing and grubbing as described in this specification, the special provisions and on the construction plans.

***ITEM 201.50000 CLEARING & GRUBBING***

***LS***

**SECTION 220 RIPRAP CONSTRUCTION**

**220.1 DESCRIPTION:** *of the MAG Standard Specifications is modified to add:*

Loose riprap over non-woven, geosynthetic filter fabric is to be placed at all scupper spillway terminations at temporary retention basins. Riprap is to be installed at the bottom of the spillway, up and across the opposite basin side slope to the high-water elevation; width of riprap area to match scupper spillway width as shown in the project plans.

**220.2 MATERIALS:** *of the MAG Standard Specifications is modified to add:*

Riprap aggregate shall be stone and cobbles angular and irregular in shape and be of similar color to adjacent landscape aggregate (decomposed granite, gravel mulch or blanket as described) unless otherwise noted in the plans. Rounded, river run materials may be furnished if they have been crushed and processed to produce angular, irregular shaped, unrounded particles meeting the specified particle size distribution / gradation to the satisfaction of the Town's project representative.

Samples of the proposed processed materials shall be furnished for review, or the Contractor shall arrange a visit to the aggregate supplier's processing facility and proposed processed material stockpile for the Town Representative to view and approve the proposed material prior to use.

If the material proposed is rejected by the Town for any reason, the Contractor shall locate an alternative source of material meeting the requirements and acceptable to the Town at no additional cost to the Town.

**220.2.1 Erosion Control Geosynthetic Fabric and High Survivability Filter Fabric:** Erosion control geosynthetic fabric shall conform to the requirements of MAG Standard Specifications Section 796 and Table 796-3 Class B.

The identification, packaging, handling, and storage of the geotextile fabric shall conform to the requirements of with ASTM D 4873.

Fabric rolls shall be furnished with suitable wrapping for protection against moisture and extended ultraviolet exposure prior to placement. Each roll shall be labeled or tagged to provide product identification sufficient to determine the product type, manufacturer, quantity, lot number, roll number, date of manufacture, shipping date, and the project number and name to which it is assigned.

Rolls will be stored on site or at another identified storage location in a manner which protects them from the elements. If stored outdoors, they shall be elevated and protected with a waterproof, light colored, opaque cover. At no time shall the fabric be exposed to sunlight for a period exceeding 14 days.

**220.5 RIPRAP PLACEMENT:** *of the MAG Standard Specifications is modified to add:*

The top of rock riprap shall not extend above the finish grades shown on the plans or the existing adjacent grades. Over excavation shall be provided matching the full riprap thickness called for on the plans prior to placement of riprap.



PART 300 – EARTHWORK

**220.8 PAYMENT:** *of the MAG Standard Specifications is modified to add:*

Payment for geosynthetic fabric will be made at the contract unit price per square yard and the payment for riprap will be made at the contract unit price per cubic feet. Payment shall be full compensation for furnishing all work involved with the dumped riprap, complete in-place.

No measurement or direct payment will be made for the erosion control geosynthetic fabric and High Survivability Filter Fabric, the cost considered included in the cost of contract items.

**ITEM 220.10075 RIPRAP,  $D_{50}=3''$**  **CY**  
**ITEM 220.10300 RIPRAP,  $D_{50}=12''$**  **CY**

**PART 300 – STREETS AND RELATED WORK**

**SECTION 301 SUBGRADE PREPARATION**

**301.1 DESCRIPTION:** *of the MAG Standard Specifications is modified to add:*

This work will include all pavement removal, excavation, embankment, placing, hauling, conditioning, compacting, subgrade preparation and all hauling and placing of import or disposing of excess material.

**301.2 PREPARATION OF SUBGRADE:** *of the MAG Standard Specifications is modified to add:*

Subgrade preparation shall include all required excavation, embankment, and other grading detailed or implied by the project plans within and outside the roadway prism, except as noted herein to be paid for separately.

Contractor shall include the cost of roadway earthwork as part of the subgrade preparation for construction of the street, excluding drainage excavation. This work includes all grading which is required to obtain the proper subgrade and finished elevations of the roadway and other areas depicted on the plans except as noted. The grading work will extend beyond the centerline or back of curb as necessary to construct the complete street cross-section and to provide finished grades along the roadway prism as shown on the project plans.

Excess earth material shall become the property of the Contractor and disposed of properly in a legal manner off-site or may be stockpiled at a designated site on Town-owned property.

**301.3 RELATIVE COMPACTION:** *of the MAG Standard Specifications is modified to add:*

Exposed native soils that will receive fill, pavement areas, and exterior slabs including sidewalks, once properly cleared, should be prepared in accordance with the project geotechnical report. In absence of such report, such soils shall be scarified to a minimum depth of six inches, conditioned, to near optimum moisture content, and compacted to 95 percent of the maximum dry density as determined by the applicable ASTM test methods.

**301.4 SUBGRADE TOLERANCES:** *of the MAG Standard Specifications is modified to add:*

**301.4.1 Required Inspections:** Roadway subgrade shall be inspected during grading operations and prior to placing aggregate base course. The minimum number of density tests required is one for each 1000 square yards, or as otherwise recommended or required by these specifications or the geotechnical report.

**301.7 MEASUREMENT:** *of the MAG Standard Specifications is modified to add:*

Subgrade Preparation will be measured by the square yard of area of new asphalt concrete pavement and chip seal pavement per budgeted project.

Prior to bidding the work, the Contractor shall thoroughly satisfy himself as to the actual conditions and earthwork quantities involved. No claim shall be made for any earthwork excess or deficiency thereof after the beginning of grading unless soil conditions require additional processing to attain subgrade sufficiency.

PART 300 – STREETS AND RELATED WORK

**301.8 PAYMENT:** *of the MAG Standard Specifications is modified to add:*

Payment for roadway excavation and fill is included in the subgrade preparation item and shall include excavating, hauling, sloping, rounding tops and ends of excavation, loading, depositing, conditioning, spreading, and compacting the material complete in-place and includes any import of material and as required disposal of surplus material.

Payment for subgrade preparation will be made at the contract unit price per square yard based on the pavement areas defined above. Such payment shall constitute full compensation for all of the work required to prepare the subgrade, complete in place.

**ITEM 301.01000 SUBGRADE PREPARATION**

**SY**

No measurement or direct payment will be made for drainage excavation and embankments such as channels, riprap, storm drain, or retention basins, the cost is considered included in their respective contract items.

**SECTION 310 PLACEMENT AND CONSTRUCTION OF AGGREGATE BASE COURSE**

**310.3 COMPACTION:** *of the MAG Standard Specifications is modified to add:*

Compaction of existing base shall be accomplished by scarifying the full depth of the base course and recompact to the requirements of the Specifications. The scarified and compacted base shall be true, even, and uniform conforming to the grade as shown in the project plans.

**310.5 PAYMENT:** *of the MAG Standard Specifications is revised to read:*

Payment for aggregate base course will be made at the unit bid price per cubic yard. Such payment shall constitute full compensation for supplying, placing, and compacting the base course complete in place.

***ITEM 310.03001 AGGREGATE BASE COURSE***

**CY**

**SECTION 326 PLACEMENT AND CONSTRUCTION OF POLYMER MODIFIED ASPHALT CONCRETE**

**326.10.2 Gradation, Binder Content and Air Voids:** *the first paragraph of the MAG Standard Specifications is revised to read:*

The acceptance laboratory will take a sample of the asphalt concrete in accordance with the requirements of Section 2 or 4 of Arizona Test Methods 104 or AASHTO T-168 from each subplot. The minimum weight of the sample shall be 45 pounds. Asphalt binder content and gradation shall be determined in accordance with AASHTO T-308 using the ignition furnace for each subplot. The acceptance laboratory is responsible for obtaining the necessary materials and performing an ignition furnace calibration as outlined in AASHTO T-308 for each asphalt concrete mixture utilized on the project. The correction factor used for each test shall be clearly indicated on the report. Reports that do not include the correction factor, performed as stated in the previous sentences, shall be considered invalid and not allowed to be used for acceptance. The bulk density for Marshall Mix designs shall be tested in accordance with AASHTO T-245. The bulk density for Gyratory mix designs shall be determined in accordance with AASHTO T-312. Effective voids of the laboratory compacted specimens will be determined at a minimum of once per lot in accordance with the requirements of AASHTO T-269. Should the testing for effective air voids not meet the “Full Payment” or “No Corrective Action” requirements of Table 326-5, additional testing for laboratory air voids on the remaining sublots will be performed as necessary to determine the extent of the deficiency. Acceptance testing results will be furnished to the Contractor and the supplier within five working days of receipt of samples by the acceptance laboratory.

**326.10.2 Gradation, Binder Content and Air Voids:** *Table 326.4 of the MAG Standard Specifications is hereby deleted.*

**326.10.2 Gradation, Binder Content and Air Voids:** *of the MAG Standard Specifications is modified to add:*

The penalties associated with Laboratory Voids in production of EVAC approved mix designs are not applicable to Project Asphalt Mixes and shall only apply to unmodified Miscellaneous Asphalt Mixes.

**SECTION 329 TACK COAT**

**329.3 APPLICATION:** *of the MAG Standard Specifications is revised to read:*

Tack coat shall be diluted in the proportion of 50 percent water and 50 percent emulsion and applied at the rate of 0.08 gallons per square yard. Application shall be made in advance of subsequent construction as ordered by the Engineer.

**329.7 PAYMENT:** *of the MAG Standard Specifications is modified to add:*

Payment for the application of tack coat will be made at the unit bid price per ton. Such payment shall constitute full compensation for performing all work complete in place.

***ITEM 329.01000 TACK COAT***

***TON***

**SECTION 345 ADJUSTING FRAMES, COVERS, VALVE BOXES AND WATER METER BOXES**

**345.5 ADJUSTING MANHOLE AND VALVE COVERS WITH ADJUSTMENT RINGS:** *of the MAG Standard Specifications is modified to add:*

Adjustment rings for polymer manholes shall be polymer.

**345.6 PAYMENT:** *of the MAG Standard Specifications is modified to add:*

Payment for manhole, water or gas valve frame and cover; and pull box grade adjustments will be made at the contract unit price per each. Such payment shall constitute full compensation for performing all work complete in place.

***ITEM 345.01200 ADJUST VALVE BOX & COVER, MAG DET 391-1-A***

***EA***

**SECTION 350 REMOVAL OF EXISTING IMPROVEMENTS**

**350.1 DESCRIPTION:** *of the MAG Standard Specifications is modified to add:*

Where the items are identified to be salvaged, the Contractor shall deliver the item to a location to be determined by the Engineer. The location for salvaged item delivery shall not be located more than 5 miles from the project site. Where salvage items are to be re-installed on site, they shall remain on site.

**350.3 MISCELLANEOUS REMOVAL AND OTHER WORK:** *of the MAG Standard Specifications is modified to add:*

- (I) Remove vertical curb or curb and gutter; replacement shall be made per Section 340 of the MAG Standard Specifications and to the nearest joint.
- (J) Remove and replace valley gutter; replacement shall be made per Section 340 and to the nearest joint.
- (K) Remove and replace sidewalk; replacement shall be made per Section 340 and to the nearest joint.
- (L) Other items identified for removal and replacement that are not specifically identified above shall be replaced in accordance with the associated specification section(s) for new construction.
- (M) Sign removal includes sign panels, post, foundation, and associated hardware within the right of way. Signs designated to be relocated shall be carefully stockpiled or stored by the Contractor.
- (N) Holes, cavities, and depressions resulting from the removal of posts and post bases shall be backfilled with suitable earthen material which shall be compacted to a density of not less than 95 percent.

**350.4 PAYMENT:** *of the MAG Standard Specifications is modified to add:*

Payment for the removal items will be made at the unit bid price per the bid schedule. Such payment shall be compensation in full for constructing these items complete in place.

<b>ITEM 350.01300 REMOVE PIPE</b>	<b>LF</b>
<b>ITEM 350.01500 REMOVE HEADWALL</b>	<b>EA</b>
<b>ITEM 350.01501 REMOVE DROP INLET</b>	<b>EA</b>
<b>ITEM 350.01702 REMOVE CONCRETE CHANNEL LINING</b>	<b>SY</b>
<b>ITEM 350.01710 REMOVE RIPRAP</b>	<b>EA</b>
<b>ITEM 350.01711 REMOVE GROUTED RIPRAP</b>	<b>SY</b>
<b>ITEM 350.01850 REMOVE CONCRETE SINGLE CURB</b>	<b>LF</b>
<b>ITEM 350.02250 REMOVE CONCRETE SLAB</b>	<b>SF</b>
<b>ITEM 350.07501 REMOVAL OF PAVEMENT</b>	<b>SY</b>
<b>ITEM 350.30030 REMOVE SAFETY RAIL</b>	<b>LF</b>

No measurement or direct payment will be made for saw cutting existing pavement, sidewalk, curb and gutter, or other removal items, the cost is considered included in the cost of contract items.



**PART 400 – RIGHT-OF-WAY AND TRAFFIC CONTROL**

**SECTION 401 TRAFFIC CONTROL**

**401.2 TRAFFIC CONTROL DEVICES:** *of the MAG Standard Specifications is modified to add:*

All traffic control devices and their application shall conform to the Manual on Uniform Traffic Control Devices (MUTCD) handbook and current revisions (United States Department of Transportation, Federal Highway Administration), the Specifications, and any field modifications made by the Town Traffic Engineer or designee.

All traffic control devices shall meet the guidelines of NCHRP 350.

**401.2.1 Temporary Traffic Control Devices:** It shall be the responsibility of the Contractor to provide, erect, maintain all temporary traffic control devices, and remove and/or relocate existing traffic control devices necessary to properly mark and control the construction area(s) for the safe and efficient movement of all roadway users.

The Contractor shall provide additional devices as determined by the Engineer or designee, to safely control traffic.

The Engineer, or designee, reserves the right to contact the traffic control subcontractor at any time to request any materials or services deemed necessary for the safety of the public or workers.

The Contractor shall install temporary traffic control warning signs and devices prior to the start of any work in accordance with the approved Traffic Control Plan (TCP). Each 600 feet point of the project shall be signed with construction speed limit signs, placed at locations where the need for relocation during construction is minimized.

The mounting height for embedded post mounted signs shall be a minimum of seven feet, and the mounting height for portable stand (rigid and spring) mounted signs shall be a minimum of five feet, measured from the bottom of the sign to the near edge of pavement elevation.

For signs installed on embedded posts, the nearest edge or corner of a sign should be seven feet from the nearest edge of pavement.

The Contractor shall mount all temporary traffic control devices on wind resistant, spring-type bases, ballasted with sandbags, or other approved ballast to resist windblown overturning. The Contractor shall place two orange construction flags and Type A warning lights above all temporary construction signs, except “End Road Work Thank You” sign.

The Contractor shall mount Type B high intensity flashing warning lights on all advanced warning signs within the work zone.

The Contractor shall use an arrow board for all stationary or moving lane closures.

Portable concrete barrier (PCB) installations shall be in accordance with Chapter 9 of the AASHTO Roadside Design Guide. The PCB shall use F-shape faces. Each section shall be properly connected to the adjacent section to provide barrier continuity to resist movement, snagging, and/or instability of impacting vehicle. PCB panels and connections shall meet NCHRP 350 Test Level 3.

PART 400 – RIGHT-OF-WAY AND TRAFFIC CONTROL

Except for advance construction zone signing, when traffic control devices are not in use, they shall be moved at least 10 feet from the roadway and turned away from traffic, so the legend is not visible to the public. This includes sign supports without sign panels. Any signs which are not in use but which cannot be moved at least 10 feet from the roadway shall be covered or turned away so the public cannot read the legends.

All existing signs in conflict with the construction signs shall be covered in place, as directed by the Engineer. Any existing sign that conflicts with construction activities shall be removed, stored, and reinstalled after construction in a manner approved by the Engineer.

Construction signs and changeable message boards, except advance construction zone signing, shall not be displayed to traffic more than 72 hours prior to the start of construction, except as required by the Town. These signs may be installed sooner but, they shall be covered or turned away from traffic. These signs shall be removed within 24 hours after the completion of the construction activities.

Advance construction zone signs shall be displayed a minimum of three (3) days prior to the start of construction activities.

Vertical panels or Type II barricades shall be placed on all taper and tangent sections of the traffic control during construction. A Type C steady-burning yellow light shall be mounted on every vertical panel or Type II barricade during nighttime activities to delineate the edge of traveled way.

The retroreflective sheeting on all traffic control signs, barricades, vertical panels, and other work zone traffic control devices except orange signs shall meet the criteria established for Type IV, Type VIII, Type IX, or Type XI sheeting in ASTM D4956-07. All orange signs shall have fluorescent reflective sheeting and shall meet the criteria established for Type VIII, Type IX, or Type XI sheeting in ASTM D4956-07. All sign panels and their supports shall be installed to meet the current crash testing requirements.

**401.2.2 Pavement Markings:** Pavement markings used as an integral part of the traffic control plan shall be kept distinct and visible during their use. Temporary pavement markings shall match and meet the markings in place at both ends of their usage. Conflicting existing pavement markings or prior temporary markings shall be obliterated.

**401.3 FLAGMEN OR PILOT CARS:** *of the MAG Standard Specifications is revised to read:*

All flaggers shall be properly trained and certified by either the International Municipal Signal Association (IMSA), or American Traffic Safety Services Association (ATSSA) and shall always carry proof of training. Flaggers shall use "STOP/ SLOW" paddles to control traffic; orange construction flags are not permitted.

Pilot cars are not permitted to be used.

**401.4 TRAFFIC CONTROL MEASURES:** *of the MAG Standard Specifications is modified to add:*

**401.4.1 Traffic Control Plan:** Construction shall not commence without an approved Traffic Control Plan (TCP). At the time of the pre-construction meeting, the Contractor shall submit a proposed TCP for each phase of the work to the Town for approval and permit according to the Town established procedure.

*PART 400 – RIGHT-OF-WAY AND TRAFFIC CONTROL*

The Contractor shall design the TCP using the posted speed limit existing prior to work starting as the design speed. The TCP shall show all striping, signing, barricading and distances for all devices for all movements of roadway users during each phase of construction. The signing shall show both existing and temporary construction signs, identify conflicting signs to be covered/removed or relocated, and identify other features that may conflict with the placement of temporary signage. The TCP shall show the duration with the start and end date of each phase, including requests of lane closures or restrictions and the respective durations.

TCP shall be of an appropriate size and legible. Plans found to be deficient by the Engineer shall be returned for correction and re-submittal.

**401.4.2 Traffic Control Technician:** No Traffic Control Technician is required for this project.

**401.4.3 Construction Staging Areas:** All construction access and staging areas shall be located within the existing right-of-way or easement for the length of the project.

**401.4.4 Failure To Provide Adequate Traffic Control Measures:** If the Contractor fails to provide adequate traffic control measures, the Town may have the work accomplished by other sources. The cost of having this work accomplished by other sources will be computed in accordance with Section 109.5 of the Specifications. The total cost will be deducted from monies due or to become due to the Contractor.

**401.5 GENERAL TRAFFIC REGULATIONS:** *of the MAG Standard Specifications is modified to add:*

**401.5.1 Road Closure and Road Restrictions:** No roadway closures or lane closures will be allowed during holidays or special event periods, unless otherwise approved by the Engineer.

The Contractor shall notify and coordinate with the Engineer at least 10 working days prior to any lane closures. Coordination may consist of obtaining permits, approval of work zone limits, duration of construction, special events or other concerns presented by the Engineer. The Contractor is responsible to obtain all necessary permits prior to commencing work.

**401.5.2 Portable Concrete Barriers/Steel Plating:** Open excavations and trenches within 10 feet of an active traffic lane shall be protected at night and during non-working days from vehicle traffic by steel plating or the use of portable concrete barriers. Open excavations as may occur with drainage construction and other work shall require portable concrete barriers to separate vehicle traffic from the work site. The Contractor shall use Portable Concrete Barrier when construction hazards warrant, or as requested by the Engineer. Impact attenuation devices shall be provided by the Contractor commensurate with concrete barrier requirements.

**401.5.3 Temporary Fencing:** The Contractor shall provide and install temporary chain link fencing along any reaches of fencing being relocated or re-installed to provide security. Such fencing may be provided in short reaches as needed and moved along with the work as work progresses. Gate sections shall be provided as needed for access and coordinated with the Town.

The Contractor shall install temporary fencing along excavation or work zones where pedestrian traffic is expected or observed to pass or as directed by the Town. All sidewalks affected by the project shall be marked as closed until passage is available.

**401.5.4 Residential Access and Driveways:** The Alta Vista Apartments driveway shall remain open and not impacted by any construction activities, vehicles, or materials. The Carefree Terrace Condominium driveway is directly impacted by the work and shall remain open throughout the project's duration with the following requirements:

- A minimum of 14-foot width drive lane shall remain accessible to all drivers during work hours.
- Steel plates shall be placed over all excavation when contractor is not working within the driveways to maintain full width access.
- Full width driveway access shall be maintained during non-working hours.

A maximum of five single-day temporary full closures for the Carefree Terrace Condominium driveway is allowed for the project. For each single day, temporary full closure of the Carefree Terrace Condominium driveway requested, the contractor shall submit a work plan to the Engineer, a minimum of 7 calendar days prior to the planned day closure for review and approval. The plan shall include work zone limits, drive lane width, how the contractor will inform the residents of the driveway closure, and a sample of the closure flyer for distribution. Written correspondence shall be distributed for each closure to the residents. A maximum of two consecutive single-day closures is allowed.

Written correspondence to residents on temporary full closure shall be distributed a minimum of three calendar days prior to the closure. The written correspondence shall include the time the full closure will be in effect, an alternate location for parking including a map, and contractor's contact name and phone number for any questions.

**401.6 MEASUREMENT:** *of the MAG Standard Specifications is revised to read:*

Measurement for Traffic Control shall be made on an Allowance basis and shall include all materials, equipment, and labor necessary to facilitate the Contractor's approved TCP.

Items of Traffic Control shall include the obliteration of existing and temporary pavement markings or markers; removal or covering of existing and temporary signs; flagmen; barricades; sign panels; sign stands; warning lights/flags; temporary pavement; fencing; steel plating, and changeable message boards.

No measurement will be made for individual traffic control elements except for the following:

- Portable concrete barrier will be measured on a linear foot basis.
- Changeable message board will be measured on a per each basis.

**401.7 PAYMENT:** *of the MAG Standard Specifications is revised to read:*

Payment for Traffic Control shall include all elements of work necessary to maintain and protect traffic shall be reimbursed as a single, complete item of work, which price shall be considered full compensation for the work, complete in place, including furnishing, setting up, relocating, maintaining, removing, and storing the individual devices.

No measurement or payment will be made for the work plan and written communication development and flyer distribution for single-day temporary closure of driveway, the cost considered as included in the cost of contract items.

**ITEM 401.01000 TRAFFIC CONTROL**

**LS**

**SECTION 430 LANDSCAPING AND PLANTING**

**430.4 DECOMPOSED GRANITE AREA:** *of the MAG Standard Specifications is revised to read:*

Decomposed granite shall be native, local, desert, decomposed granite stone at the size and color specified on the plans. The decomposed granite shall be from a single source, free from coating, clay, caliche or organic matter. Contractor shall provide Town Inspector with a sample of material for approval before installation. Multiple samples may be required.

The Contractor must examine the subgrade, verify the elevations, and observe the conditions under which the work is to be performed. The existing grade shall be fine graded and raked free of organic matter and other debris 1-inch diameter and larger. Contractor shall apply one application of pre-emergent herbicide as per manufacturer's directions prior to installing granite, one application after granite has been installed, compacted and raked level and one application 30 days prior to the end of the maintenance period. The Town Inspector is to be notified prior to all pre-emergent applications.

Installed granite shall be raked to remove any irregularities. Installation shall provide a minimum two-inch depth of decomposed granite after compacting. Methods of compacting such as rolling, etc., shall be approved by the Town Inspector. Unless otherwise specified in the drawings, granite finish grade shall be one (1) inch below top of curb or adjacent sidewalk surfaces.

All disturbed (non-seed) areas shall be treated with a pre-emergent weed spray "Gallery", or an approved equal. In addition, any existing weeds or Bermuda grass shall be treated with a post-emergent spray, such as "Round-up", or an approved equal. Any existing or new trees, vegetation or adjacent crops shall be protected from the spray drift. There will be no separate payment for the weed spraying. Bermuda grass or weeds must be completely eradicated where designated by the Engineer from landscape, sand or decomposed granite areas.

**430.4.1 Salvage and Replace Existing Granite:** The Contractor shall salvage and replace decomposed granite in areas the fill slope overlaps existing landscaped areas. Granite shall be installed so that the finish grade of the top of the granite is 1" below the top of adjacent walks, driveways and ramps. Granite shall be installed as specified herein.

**430.10 PAYMENT:** *of the MAG Standard Specifications is revised to read:*

No measurement or direct payment will be made for the salvage and replacement of existing granite, the cost considered included in the cost of contract items.

**SECTION 461 PAINTED PAVEMENT MARKINGS**

*This section shall conform to the requirements of Section 461 of the MCDOT Supplement to the MAG Standard Specifications and as specified herein.*

**461.1 DESCRIPTION:** *of the MCDOT Supplement to the MAG Standard Specifications is revised to read:*

The work under this section shall consist of cleaning and preparing the pavement surface and applying white or yellow, water-borne, lead-free, rapid-dry traffic paint and reflective glass beads at the locations shown on the project plans, MUTCD, or where determined by the Engineer, and specified herein.

**461.2.1 (A) General:** *of the MCDOT Supplement to the MAG Standard Specifications is revised to read:*

All material used in the formulation of the pavement marking paint shall meet the requirements specified herein. Any materials not specifically covered shall meet the approval of the Engineer.

Certificates of Compliance conforming to the requirements Subsection 106.05 of ADOT Standard Specifications, current edition, shall be submitted to the Engineer for each lot or batch of paint prior to its use.

**461.3.2 Application:** *of the MCDOT Supplement to the MAG Standard Specifications is revised to read:*

The pavement surface shall be applied when the pavement surface is dry and the weather is not foggy, rainy, or otherwise adverse to the applications of markings. The surface shall be free from excess asphalt or other deleterious substances before traffic paint, beads or primer are applied. The Contractor shall remove dirt, debris, grease, oil, rocks or chips from the pavement surface prior to applying the markings. Any area that cannot otherwise be satisfactorily cleaned shall be scrubbed with a biodegradable chemical. The method of cleaning the pavement surface and removal of detrimental material is subject to approval by the Engineer and shall include sweeping and the use of high-pressure air spray.

Painting shall not be applied when the atmospheric temperature is below 50° F.

**461.4 MEASUREMENT:** *of the MCDOT Supplement to the MAG Standard Specifications is revised to read:*

Pavement marking paint will be measured by the linear foot along the centerline of the pavement stripe. Skips in dashed lines will not be included in the measurement. Length of pavement markings will be based on a 4-inch wide stripe. Measurement for striping with a plan width greater or less than the basic 4 inches as shown on the plans or requested by the Engineer will be made by the following method:

$$\frac{\text{Plan Width of Striping (inches)} \times \text{Linear Feet}}{4.0 \text{ inches}}$$

Painted temporary striping installed in compliance with Subsection 462.3.2 (B) will be measured and included in the striping quantities.

PART 400 – RIGHT-OF-WAY AND TRAFFIC CONTROL

No separate measurement will be made for cleaning and preparing the pavement surface, including abrasive sweeping and high-pressure air spray. The cost of disposal of excess materials, cleaning fluids, and empty material containers, will be considered as included in contract items.

No measurement or direct payment will be made for cleaning and preparing the pavement surface, including abrasive sweeping and high-pressure air spray, the cost considered included in the cost of contract items.

No measurement or direct payment will be made for the disposal of excess materials, cleaning fluids, and empty material containers, will be considered included in the cost of contract items.

**461.7**            **PAYMENT:** *of the MCDOT Supplement to the MAG Standard Specifications is revised to read:*

Pavement striping of the type specified, measured as provided above, will be paid for at the contract price per linear foot for the total length of painted line applied to the nearest foot, which price shall be full compensation for the work complete, including cleaning and preparing the pavement surface and glass beads, as described, and specified herein and on the project plans.

***ITEM 461.01200 4 IN YELLOW TRAFFIC PAINT STRIPE***

***LF***



PART 500 – STRUCTURES

**SECTION 520 STEEL AND ALUMINUM HANDRAILS**

**520.1 DESCRIPTION:** *of the MAG Standard Specifications is modified to add:*

The project plans identify handrails to be constructed at headwall locations. Handrails shall be painted, color to be approved by the Town of Carefree. The paint shall conform to the section below.

**520.2 Fabrication and 530.9.1 Structural Steel:** *of the MAG Standard Specifications is modified to add:*

Steel handrail or safety rail per MAG Standard Detail 145, where not specified in the plans to be galvanized, shall be painted. The paint system shall be a three-paint coating system in accordance with Arizona Department of Transportation (ADOT) Standard Specification Section 1002 and shall be listed on the ADOT Approved Product List in Category T-1 or T-2 or shall be an equal to the products so approved and listed.

The paint system shall consist of a primer coat, intermediate coat and topcoat. The primer shall not be applied over a galvanized metal surface. All surface preparation shall be per specification and manufacturer's recommendations.

The topcoat paint shall have a semi-gloss or gloss finish. The topcoat color shall be Federal Standard 595 Color FS 13578. When matching newly painted surfaces to existing painted surfaces, a physical sample of the colored new paint system on a sample of the new substrate shall be provided to the Town Project Manager for comparison to the existing paint color to be matched.

Existing painted surfaces may have faded since application and may be lighter in color and less glossy than expected. If an "equal to" paint system product is proposed, it shall be the responsibility of the Contractor and/or their vendor to supply sufficient product literature and technical data that shows the comparison to the approved product and specification with highlights, arrows, underlining or similar annotation for review by the Town Project Manager.

**520.5 PAYMENT:** *of the MAG Standard Specifications is modified to add:*

Payment for safety rail will be made at the contract unit price per linear foot. Such payment shall constitute full compensation for all the work associated with constructing said items complete in place.

**ITEM 520.01050 SAFETY RAIL, MAG STD. DET. 145**

**LF**

No measurement or direct payment shall be made for painting of the handrail, the cost considered included in the cost of the handrail.



**PART 600 – WATER, SEWER, STORM DRAIN AND IRRIGATION**

**SECTION 601 TRENCH EXCAVATION, BACKFILLING AND COMPACTION**

**601.4 FOUNDATION, BEDDING, HAUNCHING, BACKFILLING AND COMPACTION:**

**601.4.6 Compaction Densities:** *of the MAG Standard Specifications is modified to add:*

Compaction densities for storm drain shall be in accordance with Table 601-2. The testing and samples of backfill material compaction densities shall be in accordance with Subsection 106.2.1.

**601.7 PAYMENT** *of the MAG Standard Specifications is modified to add:*

No measurement, direct payment, or additional contract time will be authorized for soil conditions differ from those anticipated or those indicated by soil logs and/or reports. It is the Contractor's responsibility to make his own determination as to actual existing conditions.

**SECTION 618 STORM DRAIN CONSTRUCTION**

**618.2 MATERIALS:** *of the MAG Standard Specifications is modified to add:*

The allowable pipe material for storm drain pipe is rubber gasket reinforced concrete pipe. For pipe classes, see the project plans.

**618.6 PAYMENT:** *of the MAG Standard Specifications is modified to add:*

Payment for rubber gasket reinforced concrete pipe (RGRCP) will be made at the contract unit price per lineal foot, and shall constitute full compensation for furnishing all material, labor, tools and equipment and accomplishing all work to install the storm drain, complete in place.

Payment for storm drain pipe shall include concrete pipe collars (MAG Standard Detail 505) and lateral pipe connections (MAG Standard Detail 524) as specified on the project plans.

No measurement or direct payment will be made for concrete pipe collars and lateral connections, the cost considered included in the cost of contract items.

***ITEM 618.20542 42 IN. RGRCP, CLASS II***

***LF***

**CAREFREE DRIVE  
DRAINAGE IMPROVEMENTS  
at Carefree Terrace Condominiums**

**APPENDIX A**

**GEOTECHNICAL AND PAVEMENT  
ENGINEERING REPORT**

**MARCH 2023**

March 3, 2023

Stanley Consultants, Inc.  
3133 East Camelback Road, Suite 100  
Phoenix, AZ 85016

Attn: Karen Hobbs, P.E.

**Re: Geotechnical Evaluation  
Town of Carefree  
East Carefree Drive at East Cave Creek Road Drainage Improvements  
Carefree, Arizona**

Dear Karen:

Our geotechnical evaluation of a drainage conveyance, which parallels the north side of the Carefree Terrace Condominiums, located at the northeast corner of East Cave Creek Road and East Carefree Drive in Carefree, Arizona is presented herein. Included is a project description, discussions regarding our field observations and subsurface sampling, and recommendations for pavement, excavations, slopes and foundation support for new drainage elements.

## **1.0 PROJECT INFORMATION**

Stanley Consultants, Inc. (Stanley) has been tasked by the Town of Carefree (Town) to evaluate the overall drainage conditions which are present within a portion of an un-named wash located just north of East Cave Creek Road at East Carefree. The un-named wash flows generally from the southeast to northwest and is a tributary to Galloway Wash. The unnamed wash drains to a shotcrete lined, trapezoidal shaped channel which carries flows to a drop inlet headwall structure and into a single, 42-inch diameter storm drainpipe beneath Carefree Drive. The pipe is undersized and sediment often backs up within the shotcrete lined channel, the drop structure and within the pipe. The 42-inch pipe outlets into a riprap-lined basin which is drained by a larger diameter pipe with inlet headwall that flows to a retention basin located to the north. The backup within the 42-inch pipe causes localized flooding within the parking lot of the Carefree Terrace Condominiums located just east of Carefree Drive and immediately south of the channel.

The purpose of the project is to improve drainage at this location. Though paved, Carefree Drive currently overtops due to flooding. It is intended that the improvements will reduce the potential for future overtopping of the roadway.

Ethos has been retained by Stanley to provide an evaluation of the site soils and to provide recommendations for re-stabilization of the channel where excessive erosion has occurred.

## 2.0 FIELD OBSERVATIONS & SAMPLING

### 2.1 Site Visit Observations

A February 27, 2023, site visit was made by Keith Dahlen, PE, with Ethos to observe/map the site conditions and sample the site soils for laboratory testing. An existing shotcrete lined drainage channel parallels the north side of the parking lot for the Terrace Condominiums. The site generally flows from southeast to northwest and the channel is located on the low side of undeveloped, moderately to heavily vegetated desert collecting surface flows from the site. The channel drains to a concrete drop inlet structure which is the headwall for the 42-inch pipe that carries flows beneath Carefree Drive. Photo 1 shows the channel (with sediment buildup) and Photo 2 shows the drop inlet headwall on the east side of Carefree Drive.



**Photo 1 – Trapezoidal Shotcrete Lined Channel  
(Looking Northwest)**



**Photo 2 – Drop Inlet Structure to 42-inch Storm Drain  
(Looking Southeast)**

Based on site observations, it appears that surficial sediment (mainly poorly graded sand and silt) derived from erosion of materials present within the watershed, enters into the drainage channel during storm events and that this material is either carried through the drain system or deposits within the lower end of the channel and within the inlet structure and the pipe. It further appears (based on lack of sediment) that the larger pipe which drains the riprap lined basin to the retention basin is generally able to accommodate the incoming flows which include; the 42-inch pipe, two smaller pipes which drain the Terrace Condominiums parking lot and surface water which flows in the ditch adjacent to the west side of Carefree Drive.

The visible site soils consist primarily of a thin (few inches to up to 1 foot thick) mantle of generally finer-grained soil consisting of loose to medium dense non-plastic to low plasticity silty sand (SM) to clayey sand with silt (SC-SM) with minor gravel that overlies older alluvium. The older (Late and Middle Pleistocene Age) deposits consist primarily of alluvial and terrace deposits of poorly sorted, moderated bedded gravel and sand, which have been in-place a sufficient amount of geologic time to become partially cemented and relatively hard from an engineering standpoint. Photo 3 shows the general watershed conditions which feed the shotcrete lined channel.



**Photo 3 – Typical Site Conditions within Watershed Which Drains to Lined Channel (Looking Northwest)**

## 2.2 Subsurface Sampling & Laboratory Testing

Mr. Dahlen collected four hand-dug bulk surface samples (HD-1 through HD-4) of the existing site soils to deliver for laboratory testing. The approximate hand sampling locations are shown on the attached site plan. The samples were delivered to ACS Services, LLC in Mesa. Assigned testing including grain-size analysis and Atterberg Limits (plasticity index). The results of the laboratory testing are attached. The depths of sampling were limited to less than 1-foot due to the presence of the hard, underlying soils. Photo 4 shows an exposure of the relatively hard old alluvial/terrace deposits in a cut just above the shotcrete-lined channel.





**Photo 4 – Old Terrace Deposit Adjacent to Lined Channel  
(Looking Northwest)**

### **3.0 DISCUSSION & RECOMMENDATIONS**

#### **3.1 Drainage Improvements**

The following discussion is based on our review of the site conditions and the results of laboratory testing. Our opinions regarding drainage conditions are based solely on visual observations and we assume that all drainage will be confirmed by hydraulic analyses.

In general, the younger age site surficial soils are low in plasticity to non-plastic and are considered susceptible to erosion during flooding. These soils are thin (typically 4 to 9 inches) and overlie much more resistant old alluvium and terrace deposits which are much less susceptible to erosion and are relatively difficult to excavate. When exposed and wetted for longer periods or subjected to higher velocity flows these harder soils do typically lose some strength and become more easily eroded, however, these are generally considered to be erosion resistant.

It appears, from site observations, the shotcrete lined channel has performed as designed. However, sediment currently backs up within the channel and drop-inlet due to the inadequate size and slope of the 42-inch pipe. Though not confirmed, it appears there may be a slope break in the pipe which causes sediment buildup in the flatter upstream section and an evacuation of sediment in the more steeply inclined outlet section. Replacement of this pipe with a larger diameter pipe or culvert on a steeper slope would appear to improve the cleaning capacity of this system.

It appears that much of the roadway and the existing pipe were previously excavated into the harder soil unit as it is exposed in the cut on the east and is present at a depth of less than 0.5 feet to the west. Temporary excavations in the native materials can be made at 0.5H:1V. This slope should be flattened to 1.5H:1V where fill (pipe backfill) is encountered. Steeper slopes will likely be appropriate if the existing pipe was backfilled with cement-stabilized materials. The foundation for this pipe should be hard and well suited for support

of new pipes or box culvert structures. All loose materials present should be removed from the excavation prior to the placement of compacted fill or slurry.

If multiple pipes or box culvert sections are deemed needed to accommodate design flows, it may be necessary to upsize the shotcrete-lined channel. Temporary excavations to increase the size of the channel (to the north) can be completed safely at a slope of 0.5H:1V. Flatter permanent slopes may be considered for safety, long-term erosion or other considerations. However, if relined with shotcrete, concrete or other non-erosive materials, a finished slope of 0.5H:1V could be utilized. The soils are sufficiently indurated and cemented to form the sides and bottom of any planned channel improvements. It appears the soils can be excavated with normal earth excavating equipment with localized ripping necessary to cut through more cemented soil layers. Embankment fills, if constructed, should be made no steeper than 2H:1V.

### 3.2 Pavement Design

It is intended that new pavement required after installation of new drainage elements beneath Carefree Drive would at least match that of the existing section. Our investigation did not include coring for the determination of the existing pavement section. Carefree Drive is classified as a Collector based on the Town of Carefree (TOCF) General Plan 2030. Based on discussions with the TOCF Project Manager, Mark Milstone, PE, the Town utilizes City of Scottsdale (COS) design standards as needed.

It appears, based on COS criteria, which indicates an average daily traffic (ADT) of 5,000 to 15,000 vehicles per day for Minor Collectors, that this would be the appropriate COS classification for Carefree Drive. The 2018 City of Scottsdale Design Standards & Policies Manual (Figure 5-10.3) indicates a minimum 6-inch base course thickness for minor collectors with a subgrade design R-value of greater than 50. An R-value of greater than 50 is considered appropriate for the low plasticity to non-plastic sandy terrace deposit materials. Correlated R-values, based on Table 202.02-3 of the ADOT Preliminary Engineering & Design Manual (1989) indicates correlated R-values ranging from 78 to 85 for the samples tested from test locations HD-3 and HD-4.

Table 1 provides the recommended COS pavement section and a recommended alternate pavement section considered appropriate for this limited area of intended pavement replacement.

**Table 1 – Alternative Pavement Sections**

Item	Mix Type	Rubberized Asphalt	R-1/2"	Aggregate Base	Total Thickness
COS Section	Marshall	1.0	3.0	6.0	10.0
Alternate	Marshall	--	4.5	6.0	10.5

### 3.3 Grading for Pavement Construction

Grading for new pavement should consist of moisture conditioning, scarification and compaction of any exposed surfaces following the removal of any loose or disturbed soils. Self-compacting controlled low strength material (CLSM), in accordance with Section 604 of the Maricopa Association of Governments (MAG) requirements, may be utilized as pipe backfill to minimize the need for compaction.



All fills required to bring the site up to pavement subgrade elevation should consist of soils which are non-expansive, have no more than 50% minus 200 fines and have a plasticity index of no more than 10. Fills placed as roadway embankment should be moisture conditioned to within 2 percent of the ASTM D698 optimum moisture content and be compacted to a minimum of 95 percent of the ASTM D698 maximum dry density. The top 6-inch lift of soils placed directly beneath the pavement section should be compacted to a minimum of 100 percent of the ASTM D698 dry density.

#### 4.0 LIMITATIONS

Our geotechnical services were performed in a manner consistent with that level of care and skill ordinarily exercised by other members of the geotechnical profession practicing in the same locality, under similar conditions and at the date the services are provided. Our conclusions, opinions and recommendations are based on information collected by Ethos and by others. It is possible that conditions could vary between or beyond the data evaluated. Ethos makes no guarantee or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

We appreciate the opportunity to work with Stanley on this project. If you have any questions or require additional information pertaining to this report, please contact us.

Sincerely,

**ETHOS ENGINEERING LLC**



Keith Dahlen, PE  
Senior Geotechnical Engineer

**Reviewed by:**



Francisco Garza, PE  
Senior Geotechnical Engineer

\\10.1.1.51\projects\2022085 - stanley - tocf - carefree drive drainage\engineering\reports\draft\stanley - tocf e carefree drainage improvements ltr report\_draft\_3-3-2023.docx

**SITE PLAN SHOWING SAMPLE LOCATIONS &  
LABORATORY TEST RESULTS**



# TOCF - East Carefree Drive Drainage

Site Plan Showing Locations of Hand-Dug Test Pits

Aila Vista Apartments

## Legend

Hand Dug Test Pit

HD4

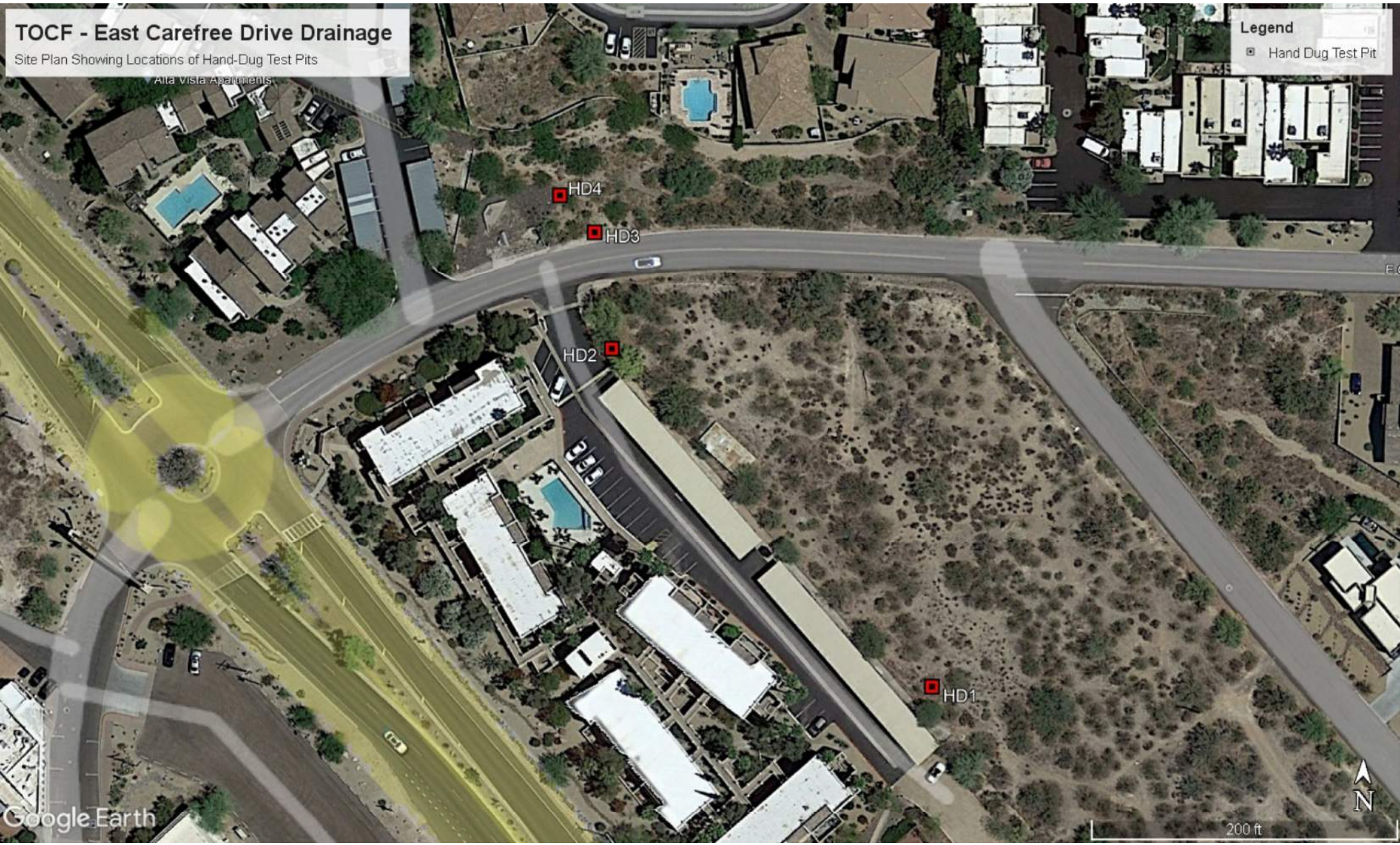
HD3

HD2

HD1

Google Earth

200 ft



**ACS PROJECT #** 2301226  
**ACS Lab #** 23-1766-1  
**Client:** Ethos Engineering, LLC  
**Project Name:** TOCF - Carefree Drive Drainage  
**Project Address:** -  
**Project City** Carefree  
**Sample Location:** HD-1 @ 0 - 9"

**Material Type:** Soil  
**Supplier:** -  
**Sample Date:** 2/28/2023  
**Sampled By:** Client  
**Test Date:** 2/28/2023  
**Tested By:** Fernando Montero  
**Reviewed By:** Dylan Ward

Sieve Analysis (ASTM C-136 / AASHTO T 27 / ARIZ 201)			
Sieve Size	% Retained	% Passed	Specs
6"	0	100	
3"	0	100	
2 1/2"	0	100	
2"	0	100	
1 1/2"	0	100	
1"	0	100	
3/4"	0	100	
1/2"	1	99	
3/8"	1	98	
1/4"	5	93	
#4	5	88	
#8	11	77	
#10	3	75	
#16	8	67	
#30	8	59	
#40	4	55	
#50	4	51	
#100	9	41	
#200	9	33	

<b>Liquid Limit (ASTM D4318)</b>	26
----------------------------------	----

<b>Plastic Limit (ASTM D4318)</b>	19
-----------------------------------	----

<b>Plasticity Index (ASTM D4318)</b>	7
--------------------------------------	---

<b>Moisture Content (ASTM D2216)</b>	14.0
--------------------------------------	------

<b>USCS Soil Classification</b>	SC-SM
---------------------------------	-------

<b>Group Name (ASTM D2487)</b>
Silty, clayey SAND

Dylan Ward  
 Laboratory Manager

Dylan Ward  
 Signature



**ACS PROJECT #** 2301226  
**ACS Lab #** 23-1766-2  
**Client:** Ethos Engineering, LLC  
**Project Name:** TOCF - Carefree Drive Drainage  
**Project Address:** -  
**Project City** Carefree  
**Sample Location:** HD-2 @ 0 - 6"

**Material Type:** Soil  
**Supplier:** -  
**Sample Date:** 2/28/2023  
**Sampled By:** Client  
**Test Date:** 2/28/2023  
**Tested By:** Fernando Montero  
**Reviewed By:** Dylan Ward

Sieve Analysis (ASTM C-136 / AASHTO T 27 / ARIZ 201)			
Sieve Size	% Retained	% Passed	Specs
6"	0	100	
3"	0	100	
2 1/2"	0	100	
2"	0	100	
1 1/2"	0	100	
1"	1	99	
3/4"	3	96	
1/2"	1	95	
3/8"	3	92	
1/4"	5	88	
#4	5	83	
#8	11	71	
#10	2	69	
#16	9	60	
#30	10	51	
#40	5	46	
#50	6	40	
#100	10	30	
#200	7	23	

<b>Liquid Limit (ASTM D4318)</b>	
----------------------------------	--

<b>Plastic Limit (ASTM D4318)</b>	
-----------------------------------	--

<b>Plasticity Index (ASTM D4318)</b>	NP
--------------------------------------	----

<b>Moisture Content (ASTM D2216)</b>	14.8
--------------------------------------	------

<b>USCS Soil Classification</b>	SM
---------------------------------	----

<b>Group Name (ASTM D2487)</b>
Silty SAND with gravel

Dylan Ward  
 Laboratory Manager

Dylan Ward  
 Signature

**ACS PROJECT #** 2301226  
**ACS Lab #** 23-1766-3  
**Client:** Ethos Engineering, LLC  
**Project Name:** TOCF - Carefree Drive Drainage  
**Project Address:** -  
**Project City** Carefree  
**Sample Location:** HD-3 @ 0 - 4"

**Material Type:** Soil  
**Supplier:** -  
**Sample Date:** 2/28/2023  
**Sampled By:** Client  
**Test Date:** 2/28/2023  
**Tested By:** Fernando Montero  
**Reviewed By:** Dylan Ward

Sieve Analysis (ASTM C-136 / AASHTO T 27 / ARIZ 201)			
Sieve Size	% Retained	% Passed	Specs
6"	0	100	
3"	0	100	
2 1/2"	0	100	
2"	0	100	
1 1/2"	6	94	
1"	0	94	
3/4"	1	93	
1/2"	3	90	
3/8"	3	87	
1/4"	7	80	
#4	5	75	
#8	7	69	
#10	1	67	
#16	4	63	
#30	6	57	
#40	5	52	
#50	7	45	
#100	17	27	
#200	10	18	

<b>Liquid Limit (ASTM D4318)</b>	
----------------------------------	--

<b>Plastic Limit (ASTM D4318)</b>	
-----------------------------------	--

<b>Plasticity Index (ASTM D4318)</b>	NP
--------------------------------------	----

<b>Moisture Content (ASTM D2216)</b>	12.0
--------------------------------------	------

<b>USCS Soil Classification</b>	SM
---------------------------------	----

<b>Group Name (ASTM D2487)</b>
Silty SAND with gravel

Dylan Ward  
 Laboratory Manager

*Dylan Ward*  
 Signature

**ACS PROJECT #** 2301226  
**ACS Lab #** 23-1766-4  
**Client:** Ethos Engineering, LLC  
**Project Name:** TOCF - Carefree Drive Drainage  
**Project Address:** -  
**Project City** Carefree  
**Sample Location:** HD-4 @ 0 - 4"

**Material Type:** Soil  
**Supplier:** -  
**Sample Date:** 2/28/2023  
**Sampled By:** Client  
**Test Date:** 2/28/2023  
**Tested By:** Fernando Montero  
**Reviewed By:** Dylan Ward

Sieve Analysis (ASTM C-136 / AASHTO T 27 / ARIZ 201)			
Sieve Size	% Retained	% Passed	Specs
6"	0	100	
3"	0	100	
2 1/2"	0	100	
2"	0	100	
1 1/2"	3	97	
1"	0	97	
3/4"	0	97	
1/2"	1	96	
3/8"	2	94	
1/4"	4	90	
#4	5	85	
#8	14	72	
#10	3	69	
#16	9	60	
#30	10	49	
#40	5	44	
#50	8	36	
#100	16	20	
#200	8	12	

<b>Liquid Limit (ASTM D4318)</b>	
----------------------------------	--

<b>Plastic Limit (ASTM D4318)</b>	
-----------------------------------	--

<b>Plasticity Index (ASTM D4318)</b>	NP
--------------------------------------	----

<b>Moisture Content (ASTM D2216)</b>	7.5
--------------------------------------	-----

<b>USCS Soil Classification</b>	SM
---------------------------------	----

<b>Group Name (ASTM D2487)</b>
Silty SAND

Dylan Ward  
 Laboratory Manager

Dylan Ward  
 Signature

**CAREFREE DRIVE  
DRAINAGE IMPROVEMENTS  
at Carefree Terrace Condominiums**

**APPENDIX B**

**UTILITY TEST HOLE DATA REPORT**

**MAY 2023**



# TEST HOLE DATA SUMMARY



19621 N. 23rd Drive Suite 150  
Phoenix, Arizona 85027  
TEL: (602) 977-8000  
www.T2ue.com

PROJECT NO: AZ00602600  
CLIENT: STANLEY  
PROJECT: CAREFREE DRIVE  
SUE CREW/TRUCK NO: MF, BO, CR, DJ, CR, DJ/550616, 550615, 550581  
CITY/COUNTY: CAREFREE/MARICOPA  
LOCATION/INTERSECTION: CAREFREE DR AND CAVE CREEK RD

SURFACE TYPE				REFERENCE MARKER (RM)				UTILITY TYPE											
ASPHALT	A	OTHER	O	CUT X	X	ROD & CAP	RC	BURIED ELECTRIC	BE	EXPLORATORY	EXP	GAS SERVICE	GS	STREET LIGHT	SL	WATER MAIN	WM		
CONCRETE	C	ASPHALT/CONCRETE	AC	LATHE	L	SLEEVE	S	BURIED TELECOM	BT	FIBER OPTIC CABLE	FOC	OTHER	O	TRAFFIC SIGNAL	TS	RECLAIMED WATER	RW		
INTERLOCK BRICK	I			NAIL & DISK	ND	WOODEN STAKE	W	CABLE TV	CATV	FORCE MAIN	FM	SANITARY SEWER	SAN	UNKNOWN	UNK	FUEL LINE	FL		
NATURAL GROUND	NG			OTHER	O	PK NAIL	PK	COMBINED SEWER	COMB	GAS MAIN/PIPELINE	GM	STORM SEWER	STM	WATER SERVICE	WS	PIPELINE	PL		

UTILITY MATERIAL																							
ASBESTOS	AC	CORRUGATED METAL PIPE	CMP	PLASTIC (PVC, PE, HDPE)	PL	CONCRETE	CONC	OTHER	O	WOOD	WD	CLAY	CL	DIRECT BURIED CABLE	DBC	METALLIC (IRON, STEEL, COATED)	MET	COPPER	CU	UNKNOWN	UNK	FIBERGLASS	FIBG

TH NO	TH DATE	UTILITY TYPE	UTILITY MATERIAL	UTILITY DIRECTION	UTILITY WIDTH (FIELD)	APPARENT UTILITY OWNER	RM NORTHING	RM EASTING	RM ELEVATION	DEPTH RM TO TOP OF UTILITY	DEPTH RM TO BTM OF UTILITY	ELEV. TOP OF UTILITY	ELEV. BOTTOM OF UTILITY	SURFACE TYPE	REMARKS
1	4/27/2023	WM	CONC	EAST - WEST	-	CAREFREE	1028230.23'	698940.86'	2361.57'	10.22'	-	2351.35'	-	A	ENCOUNTERED CONCRETE CAP AT A DEPTH OF 10.22 FT. UNABLE TO DETERMINE WIDTH OF CAP DUE TO DEPTH AND HARD SOIL CONDITIONS. SPOKE WITH THE WATER INSPECTOR AND HE CONFIRMED THAT THIS IS THE CAP IS ABOVE WATER.
2	4/27/2023	FM	CONC	EAST - WEST	-	LIBERTY	1028214.84'	698956.05'	2361.79'	10.11'	-	2351.68'	-	A	ENCOUNTERED CONCRETE CAP AT A DEPTH OF 10.11 FT. UNABLE TO DETERMINE WIDTH OF CAP DUE TO DEPTH AND HARD SOIL CONDITIONS. LIBERTY INSPECTOR CONFIRMED THAT THIS CAP IS ABOVE THE SEWER FORCE MAIN
3	4/27/2023	FM	CONC	EAST - WEST	-	LIBERTY	1028212.76'	698961.83'	2361.75'	9.98'	-	2351.77'	-	A	ENCOUNTERED CONCRETE CAP AT A DEPTH OF 9.98 FT. UNABLE TO DETERMINE WIDTH OF CAP DUE TO DEPTH AND HARD SOIL CONDITIONS. LIBERTY INSPECTOR CONFIRMED THAT THIS CAP IS ABOVE THE SEWER FORCE MAIN
4	4/27/2023	TEL	CONC	EAST - WEST	12.00"	COX	1028215.63'	698955.90'	2361.80'	1.13'	2.98'	2360.67'	2358.82'	A	CONFIRMED LOCATION OF COX COMMS JOINT TRENCH WITH TH-5 IN A 12 INCH WIDE CONCRETE CAP AT A DEPTH OF 1.13FT TO THE TOP AND 2.98FT TO THE BOTTOM
5	4/27/2023	TEL	CONC	EAST - WEST	12.00"	COX	1028215.63'	698955.90'	2361.80'	1.13'	2.98'	2360.67'	2358.82'	A	SEE TH-4 FORM FOR INFORMATION
6	4/27/2023	TEL	DBC	EAST - WEST	1.00"	CTL	1028212.76'	698961.83'	2361.75'	2.48'	9.98'	2359.27'	2351.77'	A	CONFIRMED LOCATION OF 1 INCH PLASTIC DIRECT BURIED CABLE AT 2.48FT. SEE TH-3 FOR INFORMATION REGARDING SEWER FORCE MAIN ENCOUNTERED BELOW TELECOM

REMARKS:

REVISION NOTES:

# TEST HOLE DATA REPORT

TEST HOLE NO: 1  
 TEST HOLE DATE: 4/27/2023  
 PROJECT NO: AZ00602600  
 CLIENT: STANLEY  
 PROJECT: CAREFREE DRIVE



CLIENT TEST HOLE NO: 1  
 SUE CREW/TRUCK NO: MF BO/550616  
 CITY,COUNTY: CAREFREE/MARICOPA  
 LOCATION/INTERSECTION: CAREFREE DRIVE

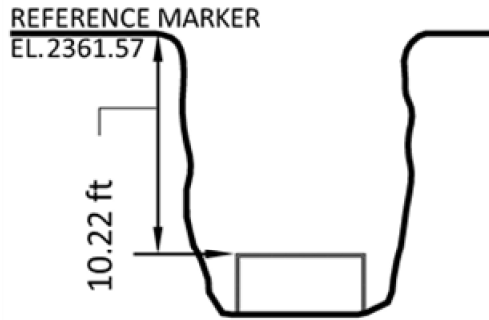
**MAP**



**SITE PHOTO - FACING WEST**



**CROSS SECTION - NOT TO SCALE**



**TEST HOLE - UTILITY - FACING WEST**



DISCLAIMER: ADDITIONAL MATERIAL AND/OR UTILITIES MAY EXIST BELOW APPARENT BOTTOM

**UTILITY DESCRIPTION**

UTILITY TYPE: WATER MAIN  
 UTILITY MATERIAL: CONCRETE  
 UTILITY DIRECTION: EAST - WEST  
 UTILITY WIDTH (FIELD): -  
 UTILITY WIDTH (RECORD): 4"  
 APPARENT UTILITY OWNER: CAREFREE

**REFERENCE MARKER**

NORTHING: 1028230.23'  
 EASTING: 698940.86'  
 ELEVATION: 2361.57'  
 LOCATION: CENTER OF UTILITY  
 MARKED BY: PK NAIL  
 STATION: -  
 OFFSET: -  
 OFFSET FROM: -

**DEPTH FROM REFERENCE MARKER**

TOP OF UTILITY: 10.22'  
 BOTTOM OF UTILITY: -

**ELEVATION OF UTILITY**

TOP OF UTILITY: 2351.35'  
 APPARENT BOTTOM OF UTILITY: -

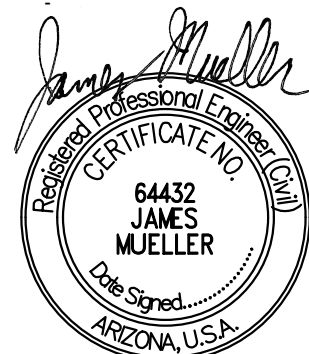
**SURFACE**

TYPE: ASPHALT  
 THICKNESS: 6.00"

**REMARKS:**

ENCOUNTERED CONCRETE CAP AT A DEPTH OF 10.22-FT. UNABLE TO DETERMINE WIDTH OF CAP DUE TO DEPTH AND HARD SOIL CONDITIONS. SPOKE WITH THE WATER INSPECTOR AND HE CONFIRMED THAT THIS IS THE CAP IS ABOVE WATER.

**REVISION NOTES:**



05/08/2023

REVIEWED DATE:

CHECKED DATE: 05/08/2023

REVISION DATE:

REVIEWED BY:

CHECKED BY: JM

# TEST HOLE DATA REPORT

TEST HOLE NO: 2  
 TEST HOLE DATE: 4/27/2023  
 PROJECT NO: AZ00602600  
 CLIENT: STANLEY  
 PROJECT: CAREFREE DRIVE



CLIENT TEST HOLE NO: 2  
 SUE CREW/TRUCK NO: MF BO/550615  
 CITY,COUNTY: CAREFREE/MARICOPA  
 LOCATION/INTERSECTION: CAREFREE DRIVE

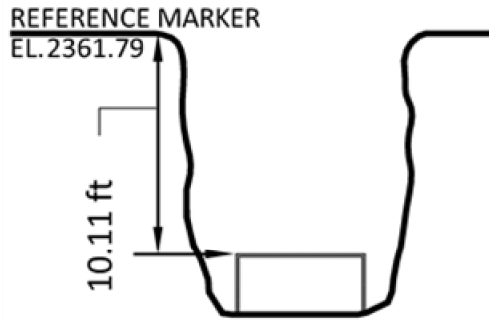
**MAP**



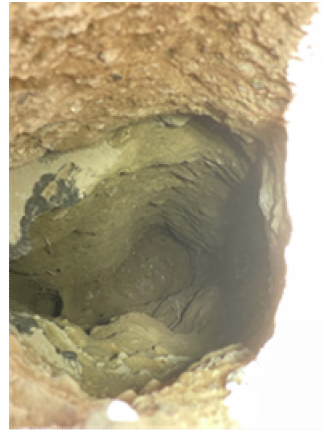
**SITE PHOTO - FACING EAST**



**CROSS SECTION - NOT TO SCALE**



**TEST HOLE - UTILITY - FACING EAST**



DISCLAIMER: ADDITIONAL MATERIAL AND/OR UTILITIES MAY EXIST BELOW APPARENT BOTTOM

**UTILITY DESCRIPTION**

UTILITY TYPE: SEWER FORCE MAIN  
 UTILITY MATERIAL: CONCRETE  
 UTILITY DIRECTION: EAST - WEST  
 UTILITY WIDTH (FIELD): -  
 UTILITY WIDTH (RECORD): 6"  
 APPARENT UTILITY OWNER: LIBERTY

**REFERENCE MARKER**

NORTHING: 1028214.84'  
 EASTING: 698956.05'  
 ELEVATION: 2361.79'  
 LOCATION: CENTER OF UTILITY  
 MARKED BY: PK NAIL  
 STATION: -  
 OFFSET: -  
 OFFSET FROM: -

**DEPTH FROM REFERENCE MARKER**

TOP OF UTILITY: 10.11'  
 BOTTOM OF UTILITY: -

**ELEVATION OF UTILITY**

TOP OF UTILITY: 2351.68'  
 APPARENT BOTTOM OF UTILITY: -

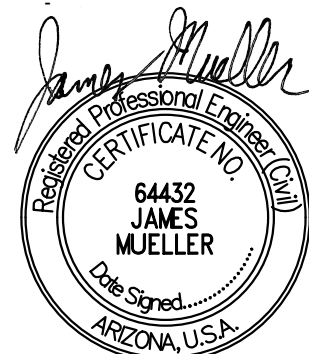
**SURFACE**

TYPE: ASPHALT  
 THICKNESS: 4.00"

**REMARKS:**

ENCOUNTERED CONCRETE CAP AT A DEPTH OF 10.11-FT. UNABLE TO DETERMINE WIDTH OF CAP DUE TO DEPTH AND HARD SOIL CONDITIONS. LIBERTY INSPECTOR CONFIRMED THAT THIS CAP IS ABOVE THE SEWER FORCE MAIN

**REVISION NOTES:**



05/08/2023

REVIEWED DATE:

CHECKED DATE: 05/08/2023

REVISION DATE:

REVIEWED BY:

CHECKED BY: JM



# TEST HOLE DATA REPORT

TEST HOLE NO: 3  
 TEST HOLE DATE: 4/27/2023  
 PROJECT NO: AZ00602600  
 CLIENT: STANLEY  
 PROJECT: CAREFREE DRIVE

**T2utility engineers**  
 19621 N. 23rd Drive Suite 150  
 Phoenix, Arizona 85027  
 TEL: (602) 977-8000  
 www.T2ue.com

CLIENT TEST HOLE NO: 3  
 SUE CREW/TRUCK NO: CR DJ/550581  
 CITY,COUNTY: CAREFREE/MARICOPA  
 LOCATION/INTERSECTION: CAREFREE DRIVE

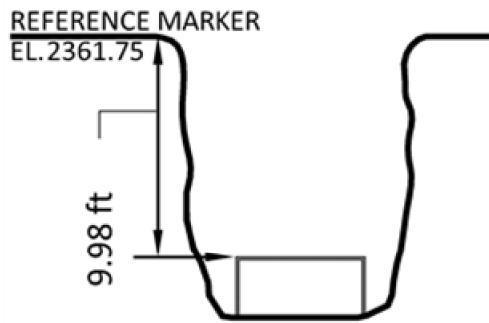
**MAP**



**SITE PHOTO - FACING NORTH**



**CROSS SECTION - NOT TO SCALE**



**TEST HOLE - UTILITY - FACING WEST**



DISCLAIMER: ADDITIONAL MATERIAL AND/OR UTILITIES MAY EXIST BELOW APPARENT BOTTOM

**UTILITY DESCRIPTION**

UTILITY TYPE: SEWER FORCE MAIN  
 UTILITY MATERIAL: CONCRETE  
 UTILITY DIRECTION: EAST - WEST  
 UTILITY WIDTH (FIELD): -  
 UTILITY WIDTH (RECORD): 4"  
 APPARENT UTILITY OWNER: LIBERTY

**REFERENCE MARKER**

NORTHING: 1028212.76'  
 EASTING: 698961.83'  
 ELEVATION: 2361.75'  
 LOCATION: CENTER OF UTILITY  
 MARKED BY: NAIL & DISK  
 STATION: -  
 OFFSET: -  
 OFFSET FROM: -

**DEPTH FROM REFERENCE MARKER**

TOP OF UTILITY: 9.98'  
 BOTTOM OF UTILITY: -

**ELEVATION OF UTILITY**

TOP OF UTILITY: 2351.77'  
 APPARENT BOTTOM OF UTILITY: -

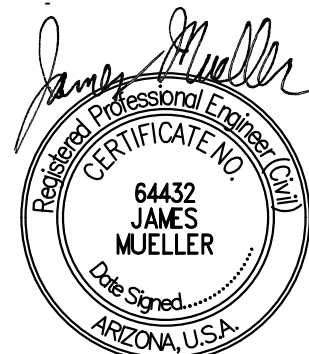
**SURFACE**

TYPE: ASPHALT  
 THICKNESS: 6.00"

**REMARKS:**

ENCOUNTERED CONCRETE CAP AT A DEPTH OF 9.98-FT. UNABLE TO DETERMINE WIDTH OF CAP DUE TO DEPTH AND HARD SOIL CONDITIONS. LIBERTY INSPECTOR CONFIRMED THAT THIS CAP IS ABOVE THE SEWER FORCE MAIN

**REVISION NOTES:**



05/08/2023

REVIEWED DATE:

CHECKED DATE: 05/08/2023

REVISION DATE:

REVIEWED BY:

CHECKED BY: JM

# TEST HOLE DATA REPORT

TEST HOLE NO: 4  
 TEST HOLE DATE: 4/27/2023  
 PROJECT NO: AZ00602600  
 CLIENT: STANLEY  
 PROJECT: CAREFREE DRIVE



CLIENT TEST HOLE NO: 4  
 SUE CREW/TRUCK NO: MF BO/550615  
 CITY,COUNTY: CAREFREE/MARICOPA  
 LOCATION/INTERSECTION: CAREFREE DRIVE

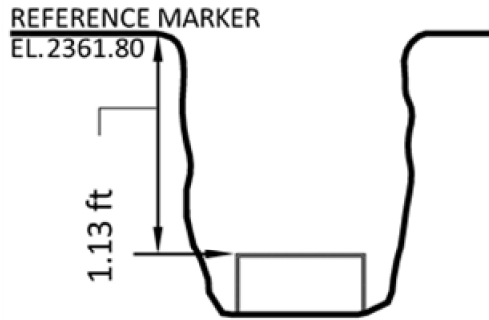
**MAP**



**SITE PHOTO - FACING NORTH**



**CROSS SECTION - NOT TO SCALE**



**TEST HOLE - UTILITY - FACING SOUTH**



DISCLAIMER: ADDITIONAL MATERIAL AND/OR UTILITIES MAY EXIST BELOW APPARENT BOTTOM

**UTILITY DESCRIPTION**

UTILITY TYPE: TELECOM  
 UTILITY MATERIAL: CONCRETE  
 UTILITY DIRECTION: EAST - WEST  
 UTILITY WIDTH (FIELD): 12.00"  
 UTILITY WIDTH (RECORD): -  
 APPARENT UTILITY OWNER: COX

**REFERENCE MARKER**

NORTHING: 1028215.63'  
 EASTING: 698955.90'  
 ELEVATION: 2361.80'  
 LOCATION: CENTER OF UTILITY  
 MARKED BY: PK NAIL  
 STATION: -  
 OFFSET: -  
 OFFSET FROM: -

**DEPTH FROM REFERENCE MARKER**

TOP OF UTILITY: 1.13'  
 BOTTOM OF UTILITY: 2.98'

**ELEVATION OF UTILITY**

TOP OF UTILITY: 2360.67'  
 APPARENT BOTTOM OF UTILITY: 2358.82'

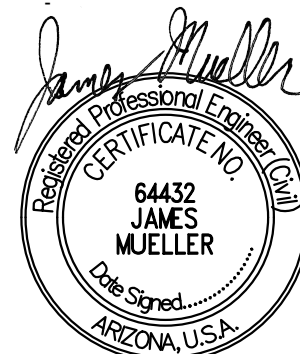
**SURFACE**

TYPE: ASPHALT  
 THICKNESS: 4.00"

**REMARKS:**

CONFIRMED LOCATION OF COX COMMS JOINT TRENCH WITH TH-5 IN A 12 INCH WIDE CONCRETE CAP AT A DEPTH OF 1.13FT TO THE TOP AND 2.98FT TO THE BOTTOM

**REVISION NOTES:**



05/08/2023

REVIEWED DATE:

CHECKED DATE: 05/08/2023

REVISION DATE:

REVIEWED BY:

CHECKED BY: JM



# TEST HOLE DATA REPORT

TEST HOLE NO: 5  
 TEST HOLE DATE: 4/27/2023  
 PROJECT NO: AZ00602600  
 CLIENT: STANLEY  
 PROJECT: CAREFREE DRIVE



CLIENT TEST HOLE NO: 5  
 SUE CREW/TRUCK NO: MF BO/550615  
 CITY,COUNTY: CAREFREE/MARICOPA  
 LOCATION/INTERSECTION: CAREFREE DRIVE

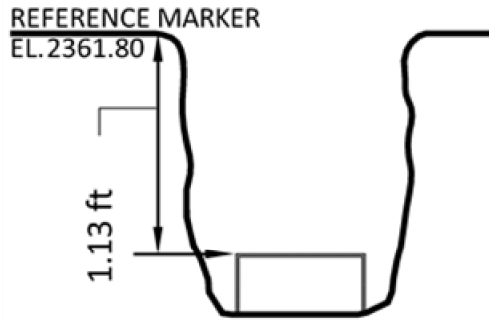
**MAP**



**SITE PHOTO - FACING EAST**



**CROSS SECTION - NOT TO SCALE**



**TEST HOLE - UTILITY - FACING NORTH**



DISCLAIMER: ADDITIONAL MATERIAL AND/OR UTILITIES MAY EXIST BELOW APPARENT BOTTOM

**UTILITY DESCRIPTION**

UTILITY TYPE: TELECOM  
 UTILITY MATERIAL: CONCRETE  
 UTILITY DIRECTION: EAST - WEST  
 UTILITY WIDTH (FIELD): 12.00"  
 UTILITY WIDTH (RECORD): -  
 APPARENT UTILITY OWNER: COX

**REFERENCE MARKER**

NORTHING: 1028215.63'  
 EASTING: 698955.90'  
 ELEVATION: 2361.80'  
 LOCATION: CENTER OF UTILITY  
 MARKED BY: PK NAIL  
 STATION:  
 OFFSET:  
 OFFSET FROM:

**DEPTH FROM REFERENCE MARKER**

TOP OF UTILITY: 1.13'  
 BOTTOM OF UTILITY: 2.98'

**ELEVATION OF UTILITY**

TOP OF UTILITY: 2360.67'  
 APPARENT BOTTOM OF UTILITY: 2358.82'

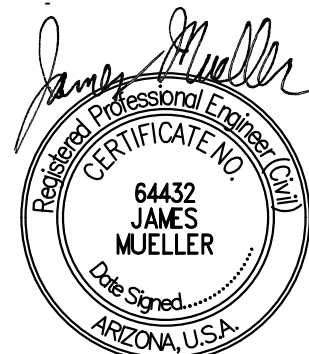
**SURFACE**

TYPE: ASPHALT  
 THICKNESS: 4.00"

**REMARKS:**

SEE TH-4 FORM FOR INFORMATION

**REVISION NOTES:**



Date Signed: 05/08/2023

REVIEWED DATE:

CHECKED DATE: 05/08/2023

REVISION DATE:

REVIEWED BY:

CHECKED BY: JM

# TEST HOLE DATA REPORT

TEST HOLE NO: 6  
 TEST HOLE DATE: 4/27/2023  
 PROJECT NO: AZ00602600  
 CLIENT: STANLEY  
 PROJECT: CAREFREE DRIVE

**T2utility engineers**  
 19621 N. 23rd Drive Suite 150  
 Phoenix, Arizona 85027  
 TEL: (602) 977-8000  
 www.T2ue.com

CLIENT TEST HOLE NO: 6  
 SUE CREW/TRUCK NO: CR DJ/550581  
 CITY,COUNTY: CAREFREE/MARICOPA  
 LOCATION/INTERSECTION: CAREFREE DRIVE

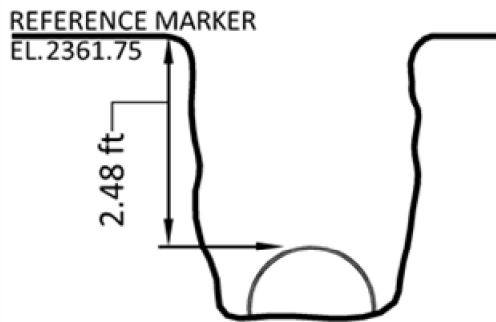
**MAP**



**SITE PHOTO - FACING NORTH**



**CROSS SECTION - NOT TO SCALE**



**TEST HOLE - UTILITY - FACING EAST**



DISCLAIMER: ADDITIONAL MATERIAL AND/OR UTILITIES MAY EXIST BELOW APPARENT BOTTOM

**UTILITY DESCRIPTION**

UTILITY TYPE: TELECOM  
 UTILITY MATERIAL: DIRECT BURIED CABLE  
 UTILITY DIRECTION: EAST - WEST  
 UTILITY WIDTH (FIELD): 1.00"  
 UTILITY WIDTH (RECORD): -  
 APPARENT UTILITY OWNER: CTL

**REFERENCE MARKER**

NORTHING: 1028212.76'  
 EASTING: 698961.83'  
 ELEVATION: 2361.75'  
 LOCATION: CENTER OF UTILITY  
 MARKED BY: PK NAIL  
 STATION: -  
 OFFSET: -  
 OFFSET FROM: -

**DEPTH FROM REFERENCE MARKER**

TOP OF UTILITY: 2.48'  
 BOTTOM OF UTILITY: -

**ELEVATION OF UTILITY**

TOP OF UTILITY: 2359.27'  
 APPARENT BOTTOM OF UTILITY: -

**SURFACE**

TYPE: ASPHALT  
 THICKNESS: 6.00"

**REMARKS:**

CONFIRMED LOCATION OF 1 INCH PLASTIC DIRECT BURIED CABLE AT 2.48FT. SEE TH-3 FOR INFORMATION REGARDING SEWER FORCE MAIN ENCOUNTERED BELOW TELECOM

**REVISION NOTES:**



05/08/2023

REVIEWED DATE:

CHECKED DATE: 05/08/2023

REVISION DATE:

REVIEWED BY:

CHECKED BY: JM

**CAREFREE DRIVE  
DRAINAGE IMPROVEMENTS  
at Carefree Terrace Condominiums**

**APPENDIX B**

**UTILITY TEST HOLE DATA REPORT**

**MAY 2023**



# TEST HOLE DATA SUMMARY



19621 N. 23rd Drive Suite 150  
Phoenix, Arizona 85027  
TEL: (602) 977-8000  
www.T2ue.com

PROJECT NO: AZ00602600  
CLIENT: STANLEY  
PROJECT: CAREFREE DRIVE  
SUE CREW/TRUCK NO: MF, BO, CR, DJ, CR, DJ/550616, 550615, 550581  
CITY/COUNTY: CAREFREE/MARICOPA  
LOCATION/INTERSECTION: CAREFREE DR AND CAVE CREEK RD

SURFACE TYPE				REFERENCE MARKER (RM)				UTILITY TYPE																																							
ASPHALT	A	OTHER	O	CUT X	X	ROD & CAP	RC	BURIED ELECTRIC	BE	EXPLORATORY	EXP	GAS SERVICE	GS	STREET LIGHT	SL	WATER MAIN	WM	BURIED TELECOM	BT	FIBER OPTIC CABLE	FOC	OTHER	O	TRAFFIC SIGNAL	TS	RECLAIMED WATER	RW	CABLE TV	CATV	FORCE MAIN	FM	SANITARY SEWER	SAN	UNKNOWN	UNK	FUEL LINE	FL	COMBINED SEWER	COMB	GAS MAIN/PIPELINE	GM	STORM SEWER	STM	WATER SERVICE	WS	PIPELINE	PL
CONCRETE	C	ASPHALT/CONCRETE	AC	LATHE	L	SLEEVE	S																																								
INTERLOCK BRICK	I			NAIL & DISK	ND	WOODEN STAKE	W																																								
NATURAL GROUND	NG			OTHER	O	PK NAIL	PK																																								

UTILITY MATERIAL																							
ASBESTOS	AC	CORRUGATED METAL PIPE	CMP	PLASTIC (PVC, PE, HDPE)	PL	CONCRETE	CONC	OTHER	O	WOOD	WD	CLAY	CL	DIRECT BURIED CABLE	DBC	METALLIC (IRON, STEEL, COATED)	MET	COPPER	CU	UNKNOWN	UNK	FIBERGLASS	FIBG

TH NO	TH DATE	UTILITY TYPE	UTILITY MATERIAL	UTILITY DIRECTION	UTILITY WIDTH (FIELD)	APPARENT UTILITY OWNER	RM NORTHING	RM EASTING	RM ELEVATION	DEPTH RM TO TOP OF UTILITY	DEPTH RM TO BTM OF UTILITY	ELEV. TOP OF UTILITY	ELEV. BOTTOM OF UTILITY	SURFACE TYPE	REMARKS
1	4/27/2023	WM	CONC	EAST - WEST	-	CAREFREE	1028230.23'	698940.86'	2361.57'	10.22'	-	2351.35'	-	A	ENCOUNTERED CONCRETE CAP AT A DEPTH OF 10.22 FT. UNABLE TO DETERMINE WIDTH OF CAP DUE TO DEPTH AND HARD SOIL CONDITIONS. SPOKE WITH THE WATER INSPECTOR AND HE CONFIRMED THAT THIS IS THE CAP IS ABOVE WATER.
2	4/27/2023	FM	CONC	EAST - WEST	-	LIBERTY	1028214.84'	698956.05'	2361.79'	10.11'	-	2351.68'	-	A	ENCOUNTERED CONCRETE CAP AT A DEPTH OF 10.11 FT. UNABLE TO DETERMINE WIDTH OF CAP DUE TO DEPTH AND HARD SOIL CONDITIONS. LIBERTY INSPECTOR CONFIRMED THAT THIS CAP IS ABOVE THE SEWER FORCE MAIN
3	4/27/2023	FM	CONC	EAST - WEST	-	LIBERTY	1028212.76'	698961.83'	2361.75'	9.98'	-	2351.77'	-	A	ENCOUNTERED CONCRETE CAP AT A DEPTH OF 9.98 FT. UNABLE TO DETERMINE WIDTH OF CAP DUE TO DEPTH AND HARD SOIL CONDITIONS. LIBERTY INSPECTOR CONFIRMED THAT THIS CAP IS ABOVE THE SEWER FORCE MAIN
4	4/27/2023	TEL	CONC	EAST - WEST	12.00"	COX	1028215.63'	698955.90'	2361.80'	1.13'	2.98'	2360.67'	2358.82'	A	CONFIRMED LOCATION OF COX COMMS JOINT TRENCH WITH TH-5 IN A 12 INCH WIDE CONCRETE CAP AT A DEPTH OF 1.13FT TO THE TOP AND 2.98FT TO THE BOTTOM
5	4/27/2023	TEL	CONC	EAST - WEST	12.00"	COX	1028215.63'	698955.90'	2361.80'	1.13'	2.98'	2360.67'	2358.82'	A	SEE TH-4 FORM FOR INFORMATION
6	4/27/2023	TEL	DBC	EAST - WEST	1.00"	CTL	1028212.76'	698961.83'	2361.75'	2.48'	9.98'	2359.27'	2351.77'	A	CONFIRMED LOCATION OF 1 INCH PLASTIC DIRECT BURIED CABLE AT 2.48FT. SEE TH-3 FOR INFORMATION REGARDING SEWER FORCE MAIN ENCOUNTERED BELOW TELECOM

REMARKS:

REVISION NOTES:

# TEST HOLE DATA REPORT

TEST HOLE NO: 1  
 TEST HOLE DATE: 4/27/2023  
 PROJECT NO: AZ00602600  
 CLIENT: STANLEY  
 PROJECT: CAREFREE DRIVE



CLIENT TEST HOLE NO: 1  
 SUE CREW/TRUCK NO: MF BO/550616  
 CITY,COUNTY: CAREFREE/MARICOPA  
 LOCATION/INTERSECTION: CAREFREE DRIVE

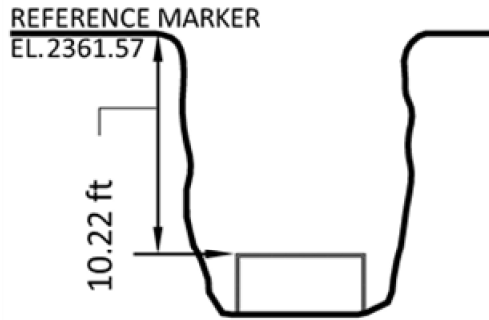
**MAP**



**SITE PHOTO - FACING WEST**



**CROSS SECTION - NOT TO SCALE**



**TEST HOLE - UTILITY - FACING WEST**



DISCLAIMER: ADDITIONAL MATERIAL AND/OR UTILITIES MAY EXIST BELOW APPARENT BOTTOM

**UTILITY DESCRIPTION**

UTILITY TYPE: WATER MAIN  
 UTILITY MATERIAL: CONCRETE  
 UTILITY DIRECTION: EAST - WEST  
 UTILITY WIDTH (FIELD): -  
 UTILITY WIDTH (RECORD): 4"  
 APPARENT UTILITY OWNER: CAREFREE

**REFERENCE MARKER**

NORTHING: 1028230.23'  
 EASTING: 698940.86'  
 ELEVATION: 2361.57'  
 LOCATION: CENTER OF UTILITY  
 MARKED BY: PK NAIL  
 STATION: -  
 OFFSET: -  
 OFFSET FROM: -

**DEPTH FROM REFERENCE MARKER**

TOP OF UTILITY: 10.22'  
 BOTTOM OF UTILITY: -

**ELEVATION OF UTILITY**

TOP OF UTILITY: 2351.35'  
 APPARENT BOTTOM OF UTILITY: -

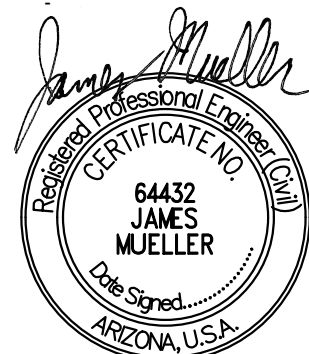
**SURFACE**

TYPE: ASPHALT  
 THICKNESS: 6.00"

**REMARKS:**

ENCOUNTERED CONCRETE CAP AT A DEPTH OF 10.22-FT. UNABLE TO DETERMINE WIDTH OF CAP DUE TO DEPTH AND HARD SOIL CONDITIONS. SPOKE WITH THE WATER INSPECTOR AND HE CONFIRMED THAT THIS IS THE CAP IS ABOVE WATER.

**REVISION NOTES:**



05/08/2023

REVIEWED DATE:

CHECKED DATE: 05/08/2023

REVISION DATE:

REVIEWED BY:

CHECKED BY: JM

# TEST HOLE DATA REPORT

TEST HOLE NO: 2  
 TEST HOLE DATE: 4/27/2023  
 PROJECT NO: AZ00602600  
 CLIENT: STANLEY  
 PROJECT: CAREFREE DRIVE



CLIENT TEST HOLE NO: 2  
 SUE CREW/TRUCK NO: MF BO/550615  
 CITY,COUNTY: CAREFREE/MARICOPA  
 LOCATION/INTERSECTION: CAREFREE DRIVE

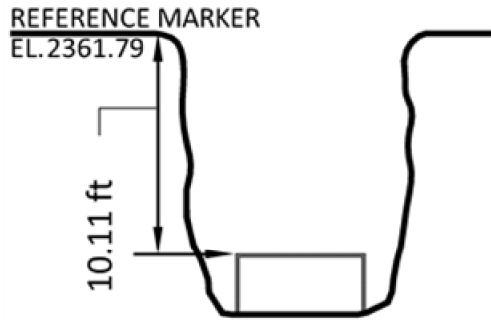
**MAP**



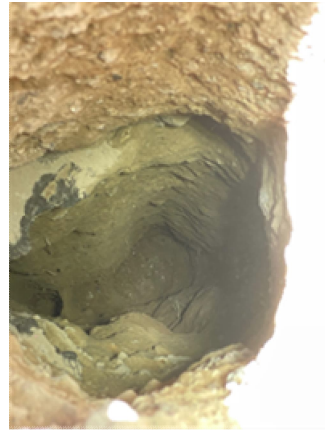
**SITE PHOTO - FACING EAST**



**CROSS SECTION - NOT TO SCALE**



**TEST HOLE - UTILITY - FACING EAST**



DISCLAIMER: ADDITIONAL MATERIAL AND/OR UTILITIES MAY EXIST BELOW APPARENT BOTTOM

**UTILITY DESCRIPTION**

UTILITY TYPE: SEWER FORCE MAIN  
 UTILITY MATERIAL: CONCRETE  
 UTILITY DIRECTION: EAST - WEST  
 UTILITY WIDTH (FIELD): -  
 UTILITY WIDTH (RECORD): 6"  
 APPARENT UTILITY OWNER: LIBERTY

**REFERENCE MARKER**

NORTHING: 1028214.84'  
 EASTING: 698956.05'  
 ELEVATION: 2361.79'  
 LOCATION: CENTER OF UTILITY  
 MARKED BY: PK NAIL  
 STATION: -  
 OFFSET: -  
 OFFSET FROM: -

**DEPTH FROM REFERENCE MARKER**

TOP OF UTILITY: 10.11'  
 BOTTOM OF UTILITY: -

**ELEVATION OF UTILITY**

TOP OF UTILITY: 2351.68'  
 APPARENT BOTTOM OF UTILITY: -

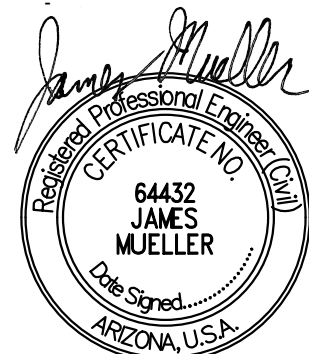
**SURFACE**

TYPE: ASPHALT  
 THICKNESS: 4.00"

**REMARKS:**

ENCOUNTERED CONCRETE CAP AT A DEPTH OF 10.11-FT. UNABLE TO DETERMINE WIDTH OF CAP DUE TO DEPTH AND HARD SOIL CONDITIONS. LIBERTY INSPECTOR CONFIRMED THAT THIS CAP IS ABOVE THE SEWER FORCE MAIN

**REVISION NOTES:**



05/08/2023

REVIEWED DATE:

CHECKED DATE: 05/08/2023

REVISION DATE:

REVIEWED BY:

CHECKED BY: JM



# TEST HOLE DATA REPORT

TEST HOLE NO: 3  
 TEST HOLE DATE: 4/27/2023  
 PROJECT NO: AZ00602600  
 CLIENT: STANLEY  
 PROJECT: CAREFREE DRIVE

**T2utility engineers**  
 19621 N. 23rd Drive Suite 150  
 Phoenix, Arizona 85027  
 TEL: (602) 977-8000  
 www.T2ue.com

CLIENT TEST HOLE NO: 3  
 SUE CREW/TRUCK NO: CR DJ/550581  
 CITY,COUNTY: CAREFREE/MARICOPA  
 LOCATION/INTERSECTION: CAREFREE DRIVE

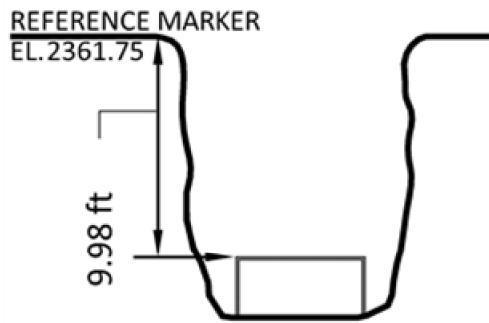
**MAP**



**SITE PHOTO - FACING NORTH**



**CROSS SECTION - NOT TO SCALE**



**TEST HOLE - UTILITY - FACING WEST**



DISCLAIMER: ADDITIONAL MATERIAL AND/OR UTILITIES MAY EXIST BELOW APPARENT BOTTOM

**UTILITY DESCRIPTION**

UTILITY TYPE	SEWER FORCE MAIN
UTILITY MATERIAL	CONCRETE
UTILITY DIRECTION	EAST - WEST
UTILITY WIDTH (FIELD)	-
UTILITY WIDTH (RECORD)	4"
APPARENT UTILITY OWNER	LIBERTY

**REFERENCE MARKER**

NORTHING	1028212.76'
EASTING	698961.83'
ELEVATION	2361.75'
LOCATION	CENTER OF UTILITY
MARKED BY	NAIL & DISK
STATION	-
OFFSET	-
OFFSET FROM	-

**DEPTH FROM REFERENCE MARKER**

TOP OF UTILITY	9.98'
BOTTOM OF UTILITY	-

**ELEVATION OF UTILITY**

TOP OF UTILITY	2351.77'
APPARENT BOTTOM OF UTILITY	-

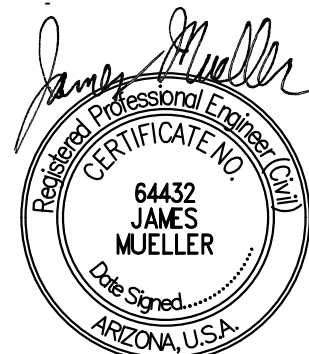
**SURFACE**

TYPE	ASPHALT
THICKNESS	6.00"

**REMARKS:**

ENCOUNTERED CONCRETE CAP AT A DEPTH OF 9.98-FT. UNABLE TO DETERMINE WIDTH OF CAP DUE TO DEPTH AND HARD SOIL CONDITIONS. LIBERTY INSPECTOR CONFIRMED THAT THIS CAP IS ABOVE THE SEWER FORCE MAIN

**REVISION NOTES:**



05/08/2023

REVIEWED DATE:

CHECKED DATE: 05/08/2023

REVISION DATE:

REVIEWED BY:

CHECKED BY: JM

# TEST HOLE DATA REPORT

TEST HOLE NO: 4  
 TEST HOLE DATE: 4/27/2023  
 PROJECT NO: AZ00602600  
 CLIENT: STANLEY  
 PROJECT: CAREFREE DRIVE



CLIENT TEST HOLE NO: 4  
 SUE CREW/TRUCK NO: MF BO/550615  
 CITY,COUNTY: CAREFREE/MARICOPA  
 LOCATION/INTERSECTION: CAREFREE DRIVE

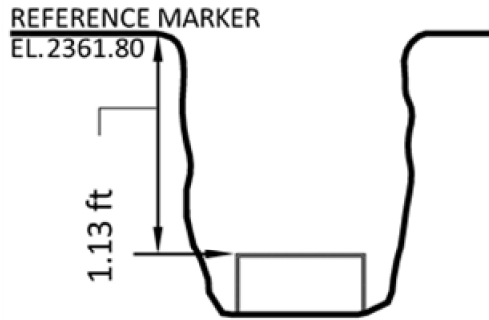
**MAP**



**SITE PHOTO - FACING NORTH**



**CROSS SECTION - NOT TO SCALE**



**TEST HOLE - UTILITY - FACING SOUTH**



DISCLAIMER: ADDITIONAL MATERIAL AND/OR UTILITIES MAY EXIST BELOW APPARENT BOTTOM

**UTILITY DESCRIPTION**

UTILITY TYPE: TELECOM  
 UTILITY MATERIAL: CONCRETE  
 UTILITY DIRECTION: EAST - WEST  
 UTILITY WIDTH (FIELD): 12.00"  
 UTILITY WIDTH (RECORD): -  
 APPARENT UTILITY OWNER: COX

**REFERENCE MARKER**

NORTHING: 1028215.63'  
 EASTING: 698955.90'  
 ELEVATION: 2361.80'  
 LOCATION: CENTER OF UTILITY  
 MARKED BY: PK NAIL  
 STATION: -  
 OFFSET: -  
 OFFSET FROM: -

**DEPTH FROM REFERENCE MARKER**

TOP OF UTILITY: 1.13'  
 BOTTOM OF UTILITY: 2.98'

**ELEVATION OF UTILITY**

TOP OF UTILITY: 2360.67'  
 APPARENT BOTTOM OF UTILITY: 2358.82'

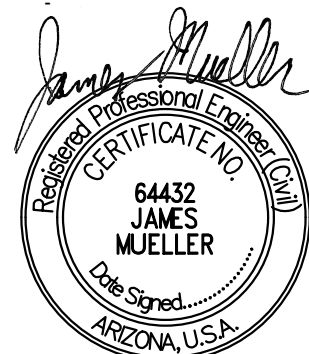
**SURFACE**

TYPE: ASPHALT  
 THICKNESS: 4.00"

**REMARKS:**

CONFIRMED LOCATION OF COX COMMS JOINT TRENCH WITH TH-5 IN A 12 INCH WIDE CONCRETE CAP AT A DEPTH OF 1.13FT TO THE TOP AND 2.98FT TO THE BOTTOM

**REVISION NOTES:**



05/08/2023

REVIEWED DATE:

CHECKED DATE: 05/08/2023

REVISION DATE:

REVIEWED BY:

CHECKED BY: JM



# TEST HOLE DATA REPORT

TEST HOLE NO: 5  
 TEST HOLE DATE: 4/27/2023  
 PROJECT NO: AZ00602600  
 CLIENT: STANLEY  
 PROJECT: CAREFREE DRIVE



CLIENT TEST HOLE NO: 5  
 SUE CREW/TRUCK NO: MF BO/550615  
 CITY,COUNTY: CAREFREE/MARICOPA  
 LOCATION/INTERSECTION: CAREFREE DRIVE

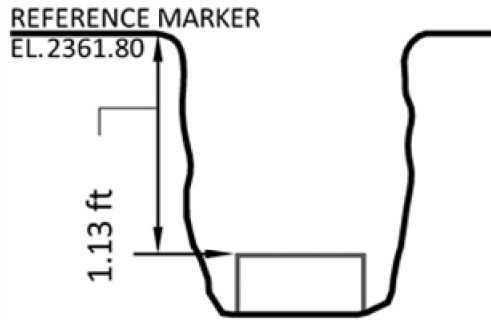
**MAP**



**SITE PHOTO - FACING EAST**



**CROSS SECTION - NOT TO SCALE**



**TEST HOLE - UTILITY - FACING NORTH**



DISCLAIMER: ADDITIONAL MATERIAL AND/OR UTILITIES MAY EXIST BELOW APPARENT BOTTOM

**UTILITY DESCRIPTION**

UTILITY TYPE: TELECOM  
 UTILITY MATERIAL: CONCRETE  
 UTILITY DIRECTION: EAST - WEST  
 UTILITY WIDTH (FIELD): 12.00"  
 UTILITY WIDTH (RECORD): -  
 APPARENT UTILITY OWNER: COX

**REFERENCE MARKER**

NORTHING: 1028215.63'  
 EASTING: 698955.90'  
 ELEVATION: 2361.80'  
 LOCATION: CENTER OF UTILITY  
 MARKED BY: PK NAIL  
 STATION:  
 OFFSET:  
 OFFSET FROM:

**DEPTH FROM REFERENCE MARKER**

TOP OF UTILITY: 1.13'  
 BOTTOM OF UTILITY: 2.98'

**ELEVATION OF UTILITY**

TOP OF UTILITY: 2360.67'  
 APPARENT BOTTOM OF UTILITY: 2358.82'

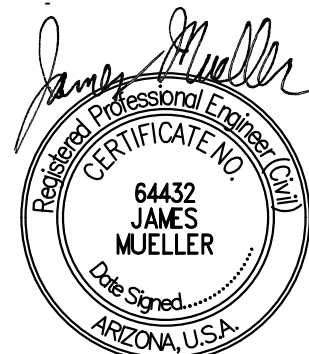
**SURFACE**

TYPE: ASPHALT  
 THICKNESS: 4.00"

**REMARKS:**

SEE TH-4 FORM FOR INFORMATION

**REVISION NOTES:**



Date Signed: 05/08/2023

REVIEWED DATE:

CHECKED DATE: 05/08/2023

REVISION DATE:

REVIEWED BY:

CHECKED BY: JM

# TEST HOLE DATA REPORT

TEST HOLE NO: 6  
 TEST HOLE DATE: 4/27/2023  
 PROJECT NO: AZ00602600  
 CLIENT: STANLEY  
 PROJECT: CAREFREE DRIVE

**T2utility engineers**  
 19621 N. 23rd Drive Suite 150  
 Phoenix, Arizona 85027  
 TEL: (602) 977-8000  
 www.T2ue.com

CLIENT TEST HOLE NO: 6  
 SUE CREW/TRUCK NO: CR DJ/550581  
 CITY, COUNTY: CAREFREE/MARICOPA  
 LOCATION/INTERSECTION: CAREFREE DRIVE

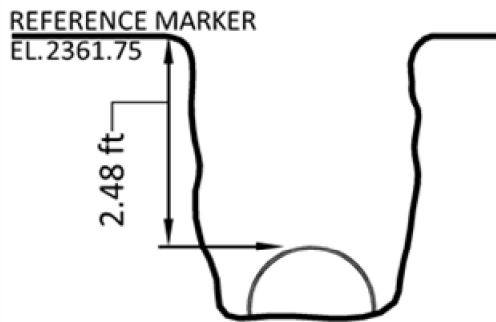
**MAP**



**SITE PHOTO - FACING NORTH**



**CROSS SECTION - NOT TO SCALE**



**TEST HOLE - UTILITY - FACING EAST**



DISCLAIMER: ADDITIONAL MATERIAL AND/OR UTILITIES MAY EXIST BELOW APPARENT BOTTOM

**UTILITY DESCRIPTION**

UTILITY TYPE: TELECOM  
 UTILITY MATERIAL: DIRECT BURIED CABLE  
 UTILITY DIRECTION: EAST - WEST  
 UTILITY WIDTH (FIELD): 1.00"  
 UTILITY WIDTH (RECORD): -  
 APPARENT UTILITY OWNER: CTL

**REFERENCE MARKER**

NORTHING: 1028212.76'  
 EASTING: 698961.83'  
 ELEVATION: 2361.75'  
 LOCATION: CENTER OF UTILITY  
 MARKED BY: PK NAIL  
 STATION: -  
 OFFSET: -  
 OFFSET FROM: -

**DEPTH FROM REFERENCE MARKER**

TOP OF UTILITY: 2.48'  
 BOTTOM OF UTILITY: -

**ELEVATION OF UTILITY**

TOP OF UTILITY: 2359.27'  
 APPARENT BOTTOM OF UTILITY: -

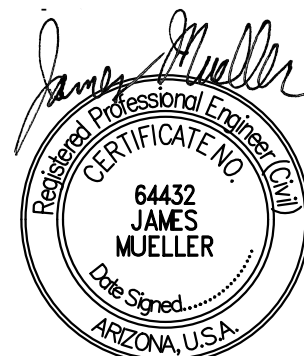
**SURFACE**

TYPE: ASPHALT  
 THICKNESS: 6.00"

**REMARKS:**

CONFIRMED LOCATION OF 1 INCH PLASTIC DIRECT BURIED CABLE AT 2.48FT. SEE TH-3 FOR INFORMATION REGARDING SEWER FORCE MAIN ENCOUNTERED BELOW TELECOM

**REVISION NOTES:**



05/08/2023

REVIEWED DATE:

CHECKED DATE: 05/08/2023

REVISION DATE:

REVIEWED BY:

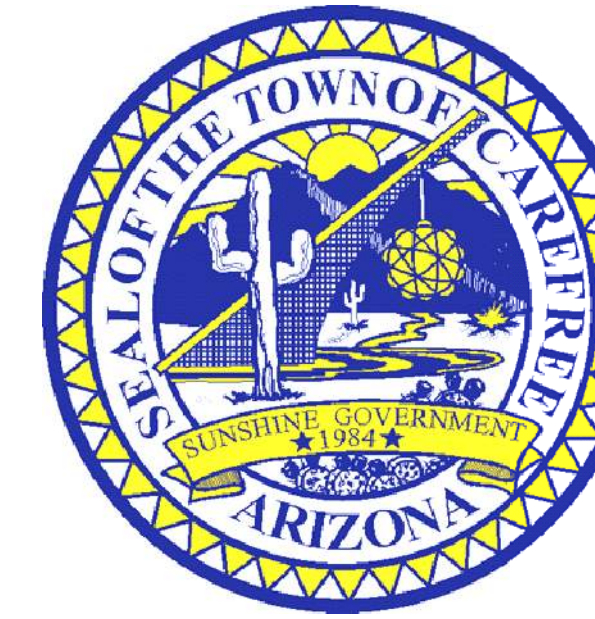
CHECKED BY: JM





# TOWN OF CAREFREE

## CAREFREE DRIVE DRAINAGE IMPROVEMENTS AT CAREFREE TERRACE CONDOMINIUMS PROJECT NO. 2023-03



**TOWN COUNCIL**  
MAYOR JOHN CRANE  
VICE MAYOR CHERYL KROYER

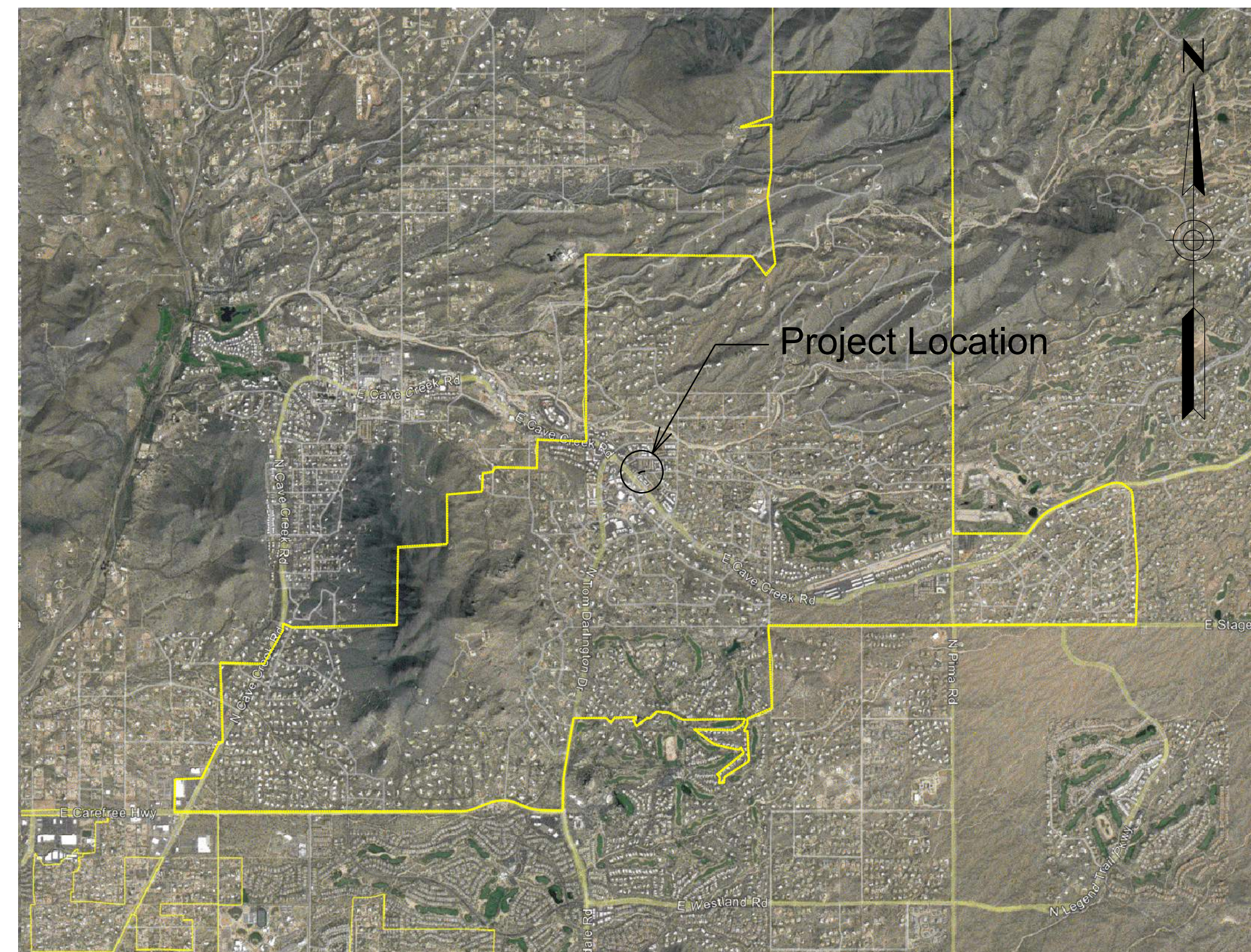
**COUNCIL MEMBERS**  
SHEILA AMOROSO  
VINCENZO D'ALIESIO  
CLINT MILLER  
STEPHEN HATCHER  
MICHAEL JOHNSON

**TOWN OF CAREFREE**

8 SUNDIAL CIRCLE  
CAREFREE, AZ 85377  
TELEPHONE (480) 488-3686  
CONTACT: MARK MILSTONE, PE  
E-MAIL: MARK@CAREFREE.ORG

**ENGINEER**

STANLEY CONSULTANTS, INC.  
3133 E. CAMELBACK ROAD, SUITE #100  
PHOENIX, AZ 85016  
TELEPHONE (602) 333-2200  
CONTACT: KAREN HOBBS, PE  
E-MAIL: HOBBSKAREN@STANLEYGROUP.COM



**UTILITY COORDINATION AND CONTACT LIST**

THESE PLANS HAVE BEEN SUBMITTED TO THE FOLLOWING UTILITY COMPANIES AND THE WORK SHOWN HEREIN HAS BEEN REVIEWED FOR POTENTIAL CONFLICTS AND CLEARED OF KNOWN CONFLICTS WITH THEIR FACILITIES. THE UTILITY SIZES AND LOCATIONS SHOWN HEREIN IS IN AGREEMENT WITH PROVIDED UTILITY COMPANY RECORDS. IDENTIFIED CONFLICTS SHALL BE RESOLVED AS NOTED IN THE PLANS AND / OR SPECIAL PROVISIONS OR CONFLICTING UTILITY FACILITIES HAVE BEEN MOVED AND NO LONGER CONFLICT. UNFORESEEN OR UNIDENTIFIED CONFLICTS DISCOVERED IN THE FIELD SHALL BE REPORTED IMMEDIATELY TO THE APPROPRIATE UTILITY COMPANY REPRESENTATIVE AND BLUE STAKE CENTER. ALL SUCH UNKNOWN CONFLICTS SHALL BE RESOLVED BY THE DESIGN TEAM AND UTILITY PRIOR TO CONSTRUCTION CONTINUING IN THE LOCATION.

UTILITY	REPRESENTATIVE	PHONE	E-MAIL	RESPONSE DATE
ARIZONA PUBLIC SERVICE (APS)	KEITH OCHSNER	602.320.0565	KEITH.OCHSNER@APS.COM	04/06/2023
BLACK MOUNTAIN SEWER CORP. (DBA LIBERTY UTILITIES)	KEN KALYTA	623.826.8841	KEN.KALYTA@LIBERTYUTILITIES.COM	08/01/2023
CAREFREE WATER CO, INC.	GREG CROSSMAN	602.722.8753	GREG@CAREFREEWATERCO.COM	06/14/2023
COX COMMUNICATIONS (MARICOPA)	JEFF BIGAR	602.743.6719	JEFF.BIGAR@COX.COM	06/02/2023
LUMEN (LEGACY CENTURYLINK)	DAN PADILLA	480.298.5087	DANIEL.PADILLA@LUMEN.COM	05/09/2023
SOUTHWEST GAS	ANDY SAKS	480.730.3857	ANDREW.SAKS@SWGAS.COM	04/17/2023
TOWN OF CAVE CREEK - SEWER, WATER, RECLAIMED WATER	SHAWN KREUZWIESNER	480.488.6618	SKREUZWIESNER@CAVECREEKAZ.GOV	04/05/2023

**APPROVALS**

THE AUTHORIZED REPRESENTATIVES OF THE FOLLOWING AGENCIES HEREBY ACKNOWLEDGE OR HAVE ACKNOWLEDGED THAT THEY HAVE REVIEWED AND APPROVED THE DESIGN SHOWN HEREIN. CONSTRUCTION MAY BEGIN AFTER ALL APPROPRIATE PERMITS HAVE BEEN OBTAINED.

TOWN OF CAREFREE - TOWN ENGINEER

**UNDERGROUND UTILITIES**

- THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY OR STRUCTURE DEPICTED HEREIN IS BASED UPON THE BEST AVAILABLE INFORMATION FURNISHED BY THE UTILITY OR STRUCTURE OWNER AT THE TIME OF THE SURVEY.
- TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO OTHER EXISTING UTILITIES WITHIN THE PROJECT LIMITS EXCEPT AS SHOWN ON THESE DRAWINGS.
- THE ENGINEER AND TOWN ASSUME NO RESPONSIBILITY FOR THE ACCURACY OF THE UTILITY LOCATIONS DEPICTED IN THESE DRAWINGS.
- THE CONTRACTOR SHALL CALL BLUE STAKE AT (602) 263-1100 OR 811 AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL INVOLVED UTILITIES AND FIELD VERIFY THE LOCATION(S) OF ALL UTILITIES.
- IF DISCREPANCIES IN UTILITY LOCATIONS ARE FOUND, THE CONTRACTOR SHALL NOTIFY THE TOWN'S PROJECT REPRESENTATIVE IMMEDIATELY.



**"AS-BUILT" CERTIFICATION**

I HEREBY CERTIFY THAT THE "AS-BUILT" INFORMATION AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION OR AS NOTED, AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

ARIZONA REGISTERED LAND SURVEYOR \_\_\_\_\_ DATE \_\_\_\_\_

ARIZONA REGISTRATION NUMBER \_\_\_\_\_ TELEPHONE NUMBER \_\_\_\_\_

		TOWN OF CAREFREE	
CAREFREE DR DRAINAGE IMPROVEMENTS AT CAREFREE TERRACE CONDOMINIUMS			
		BY	DATE
DESIGNED	DBK		07/2023
DRAWN	DBK		07/2023
CHECKED	KCH		07/2023
		3133 East Camelback Road, Suite 100 Phoenix, Arizona 85016 Phone: (602) 333-2200	
COVER SHEET			SHEET --



**GENERAL NOTES:**

1. All improvement construction shall comply with the latest Maricopa County Association of Governments Standard Specifications and Details for Public Works Construction, 2023 Revisions to the 2020 Edition.
2. The engineering designs on these plans are approved by the Town in scope and not in detail. If construction quantities are shown on these plans, they are not verified by the city and are provided for information only.
3. A Town Inspector will inspect all work within the Town rights of way, easements and facilities. Any Special Inspection required shall be in addition to any routine inspection by the Town.
4. Private improvements in the right of way and building permits are required for work in public rights of way, easements granted for public purposes and facilities. Permits will be issued by the Town. Copies of all permits shall be retained on-site and shall be available for inspection at all times. Failure to produce the required permits will result in immediate work stoppage until the proper permit documentation is obtained.
5. The contractor shall be responsible for obtaining all necessary permits for salvaging protected native plants prior to the start of construction.
6. Wherever excavation is done contact the Blue Stake Center at (602) 263-1100 two working days before excavation is to begin. The Center will see that the location of the underground utility lines is identified for the project.
7. The contractor shall be responsible to remove and replace, at no additional cost to the Town, all pavement, sidewalk, curb and gutter, drainage structures, etc. outside the pay limit that are damaged due to their activities on the project. This includes, but is not limited to, the removal and replacement of newly cracked roadway infrastructure, the removal and replacement of existing cracked roadway infrastructure where the cracks have been enlarged due to the Contractor's operations, the removal and replacement of deformed roadway infrastructure. All saw cuts used for the removal of these items shall be perpendicular and parallel to the centerline controlling that item, or at the direction of the town's Inspector.
8. All riprap shall be placed in accordance with Section 220 of the Specifications. Riprap gradations shall conform to the requirement shown in Design Gradations for Riprap Table on this sheet. Geosynthetic fabric shall be placed on prepared subgrade prior to riprap placement. All riprap shall have a minimum thickness of 2 x D<sub>50</sub>.

**STRUCTURAL NOTES:**

1. All concrete materials, means and methods shall conform to MAG Standard Specifications for Public Works Construction, 2023 Revision to the 2020 Edition.
2. Exposed concrete corner chamfer: 3/4" Unless Shown Otherwise.
3. Concrete shall not be loaded until it has attained sufficient strength to safely withstand loading and until required shoring and bracing have been installed.
4. Concrete Compressive Strength: 3000 psi at 28 days (MAG A).
5. All reinforcing steel shall be ASTM A615, Grade 60 deformed bars and conform to MAG Section 505 and 727.
6. Reinforcing shall be continuous around all corners unless shown otherwise.
7. Reinforcing shall be continuous through construction joints unless shown otherwise.
8. Tack welding to reinforcing bars is not permitted.
9. Reinforcing concrete cover unless otherwise shown: 2" for concrete exposed to earth or weather; 3" when deposited against earth.
10. Shift reinforcing bars to clear anchor bolts and embedded items; Obtain Engineer's Approval and add extra reinforcing bar if requested by Engineer. Cutting of reinforcing bars is not permitted unless shown otherwise.
11. All welding shall be in accordance with the American Welding Society, ANSI/AASHTO, AWS 1.5 Bridge Welding Code Latest Edition.
12. Structural Steel shall conform to MAG Section 770 and galvanizing shall conform to MAG Section 771.
13. Subgrade preparation shall be in accordance with MAG Section 601 and the Project Geotechnical Evaluation, Town of Carefree, East Carefree Drive at East Cave Creek Road Drainage Improvements by Ethos Engineering dated March 3, 2023.




**INDEX OF SHEETS:**

1		Cover Sheet
2	GN1	General Notes and Index
3	C1	Survey Control Sheet
4	C2	Carefree Drive Plan Sheet
5-6	C3-C4	Detail Sheets
7	D1	Channel Plan & Profile Sheet
8-13	D2-D7	Detail Sheets
14	T1	Maintenance of Traffic

**DESIGN DATA:**

Carefree Drive - Collector Road  
 Posted Speed = 25 mph  
 ADT (2023) = 4,840 vpd  
 ADT (2050) = 5,270 vpd

DESIGN GRADATIONS FOR RIPRAP			
Gradation		Riprap Classifications (D <sub>50</sub> )	
% Passing	Size	D <sub>50</sub> = 3"	D <sub>50</sub> = 12"
100-90	2.0D <sub>50</sub>	6	24
85-70	1.5D <sub>50</sub>	4.24	18
50-30	1.0D <sub>50</sub>	3	12
15-5	0.67D <sub>50</sub>	2	8
5-0	0.33D <sub>50</sub>	1	4

NO.	REVISION	BY	DATE
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DESIGNED	DBK	BY	DATE
DRAWN	DBK		07/2023
CHECKED	KCH		07/2023
			
4187 KAREN C. HOBBS REGISTERED PROFESSIONAL ENGINEER ARIZONA, U.S.A. EXPIRES 03/31/2026		3133 East Camelback Road, Suite 100 Phoenix, Arizona 85016 Phone: (602) 333-2200	
<b>GENERAL NOTES &amp; INDEX</b>			SHEET <b>GN1</b>







**SURVEY CONTROL**

**UNITS OF MEASURE:**

All values reported in international feet.

**COORDINATE SYSTEM:**

Arizona State Plane, NAD83 (1992 epoch) AZ Central Zone scaled to ground by 1.00021 about the Cartesian origin N=0.0, E=0.0

**BASIS OF BEARINGS:**

Arizona State Plane Central Zone Grid North as determined by GPS observation of geodetic north on WGS84 and converted to NAD83 datum.

**BASIS OF HORIZONTAL CONTROL:**

MCDOT control station 1K13 was used solely:

LATITUDE	LONGITUDE	ELLIP HT	DESC.
N33°48'46.02742"	W111°53'13.40912"	2486.880	SS ROD w/DATUM CAP IN HH STAMPED "1K13"

Station 1LH3 was checked and found to agree at 0.04' both HZ and VT.

**BASIS OF VERTICAL CONTROL:**

MCDOT control station 1K13 was used solely at a computed elevation of 2580.992'. All other point elevations were modeled using NGS Geoid 18.

**CONSTRUCTION SURVEY CONTROL:**

14 aerial control points were established on the project site as follows.

No.	Northing	Easting	Elev	Description
703	1026955.634	699706.432	2390.175	MAGNAIL FL IN AC "AT08"
704	1027284.704	699909.458	2394.678	MAGNAIL FL IN AC "AT07"
705	1027678.785	699986.379	2392.938	PK NAIL FL IN AC "AT06"
706	1027728.381	699687.896	2381.767	PK NAIL FL IN AC "AT05"
707	1028023.869	699416.182	2376.390	PK NAIL FL IN AC "AT04"
708	1028336.924	698814.538	2355.138	PK NAIL FL IN AC "AT02"
709	1027241.715	699438.408	2388.705	PK NAIL FL IN AC "AT09"
710	1027561.294	699196.760	2384.451	PK NAIL FL IN AC "AT10"
711	1027873.091	698952.891	2376.062	MAGNAIL FL IN AC "AT11"
712	1027494.773	699608.088	2385.011	MAGNAIL FL IN AC "AT12"
719	1027824.943	699367.816	2370.424	5/8"RB w/GCG CAP FL "AT13"
720	1028043.397	699126.155	2364.665	5/8"RB w/GCG CAP FL "AT14"
721	1028310.842	699143.869	2361.378	5/8"RB w/GCG CAP FL "AT03"
722	1028143.671	698754.349	2363.855	5/8"RB w/GCG CAP FL "AT01"

NO.	REVISION	BY	DATE
TOWN OF CAREFREE			
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	DESIGNED	DBK	07/2023
	DRAWN	DBK	07/2023
	CHECKED	GCG	07/2023
		1745 W. Deer Valley Rd., Ste. 118 Phx., Az. 85027 623.580.6861	
SURVEY CONTROL			SHEET C1

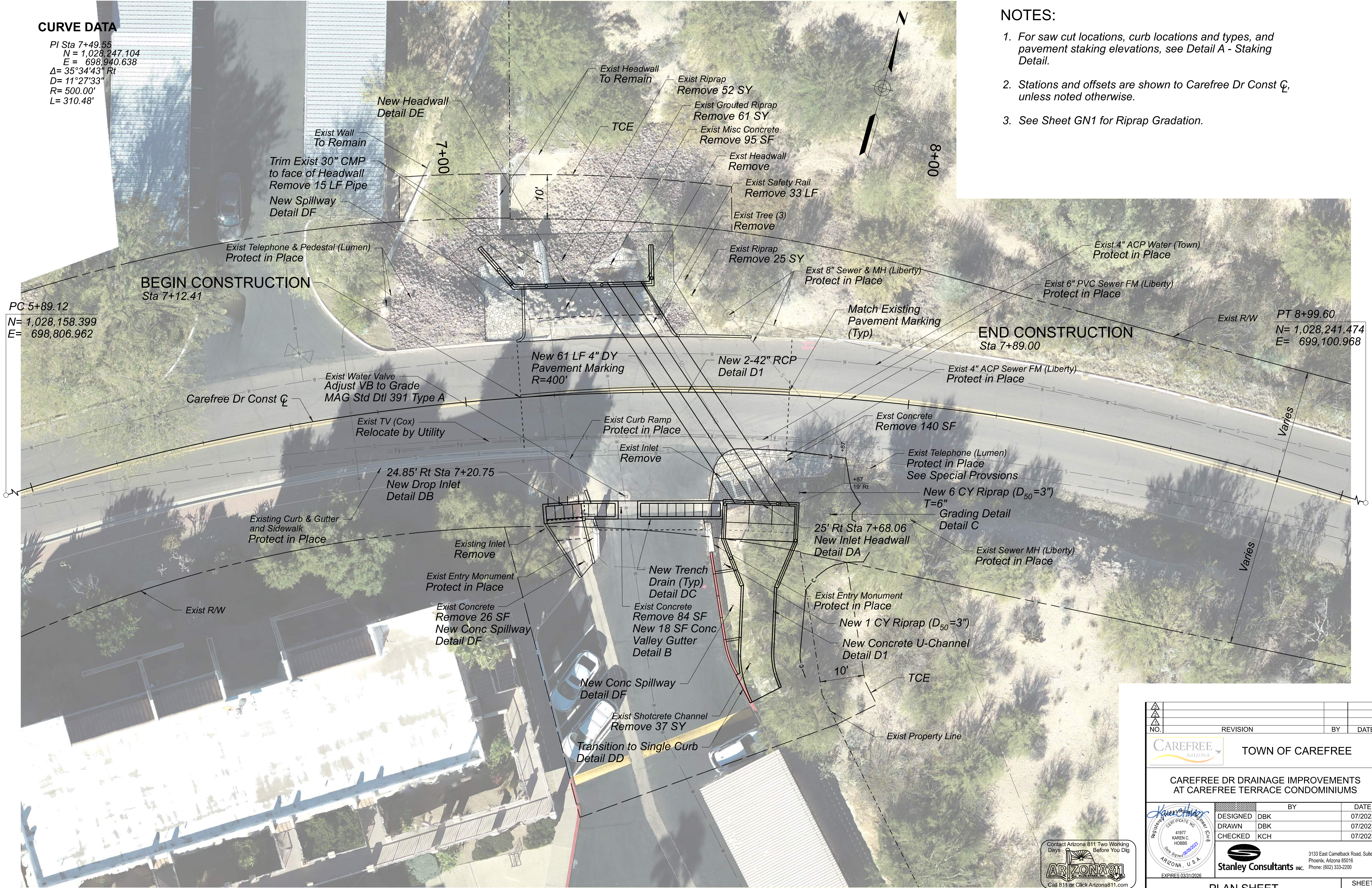


**CURVE DATA**

PI Sta 7+49.55  
 N = 1,028,247.104  
 E = 698,940.638  
 Δ = 35°34'43" Rt  
 D = 11°27'33"  
 R = 500.00'  
 L = 310.48'

**NOTES:**

1. For saw cut locations, curb locations and types, and pavement staking elevations, see Detail A - Staking Detail.
2. Stations and offsets are shown to Carefree Dr Const CL unless noted otherwise.
3. See Sheet GN1 for Riprap Gradation.



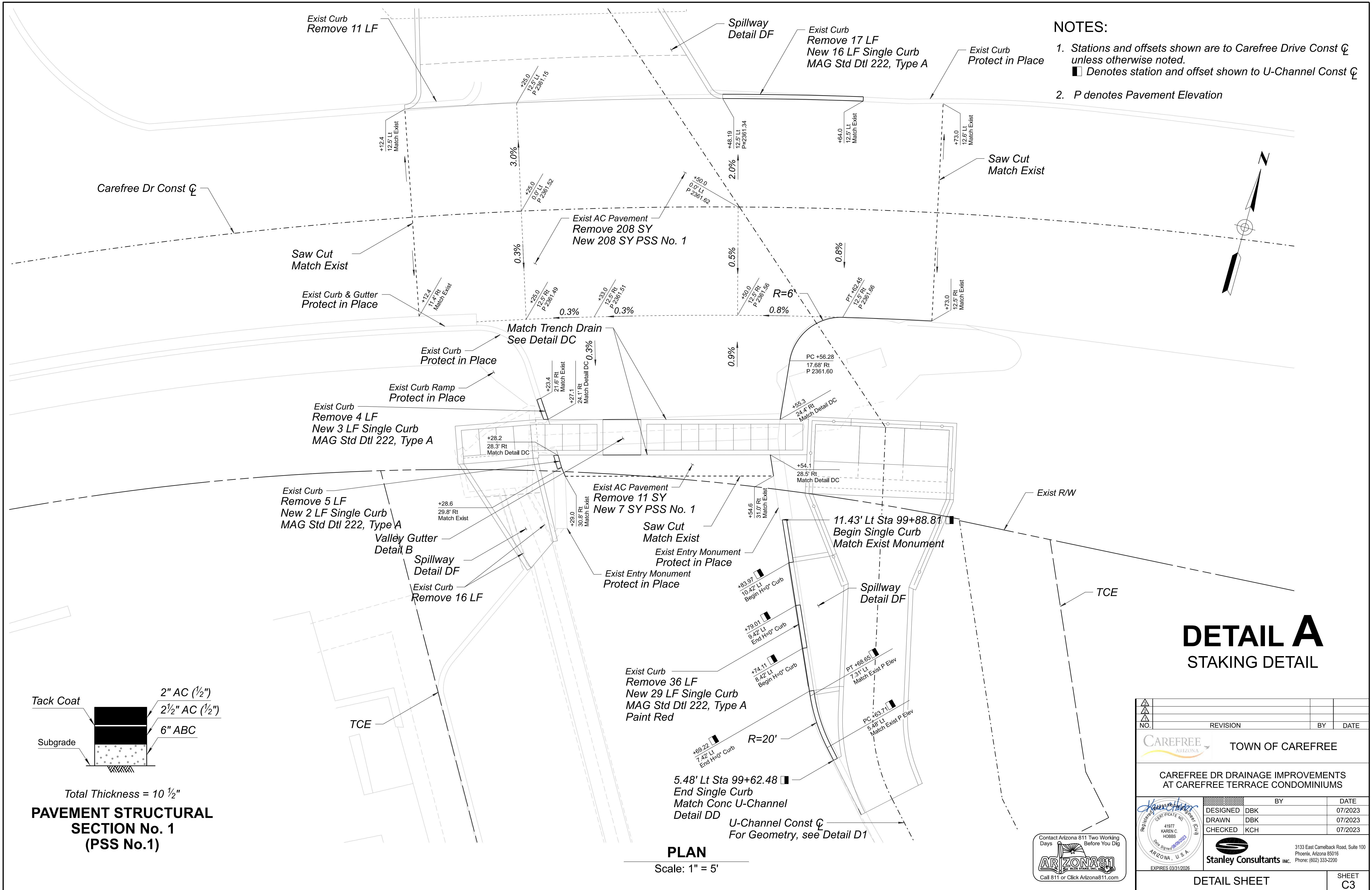
PC 5+89.12  
 N = 1,028,158.399  
 E = 698,806.962

PT 8+99.60  
 N = 1,028,241.474  
 E = 699,100.968

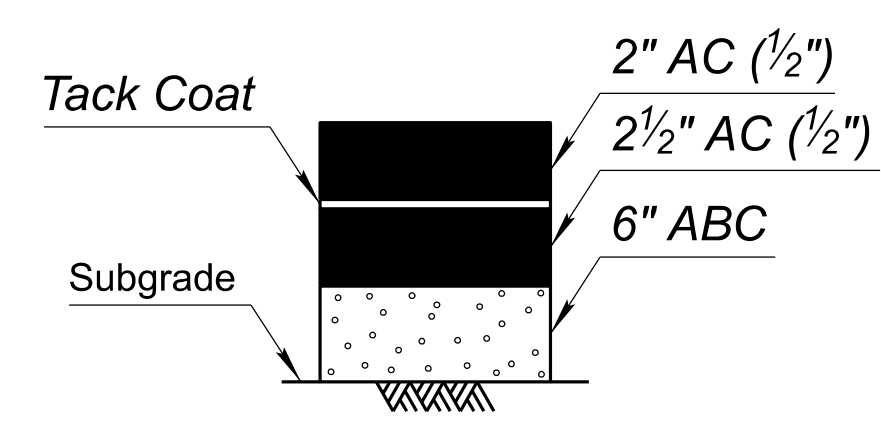
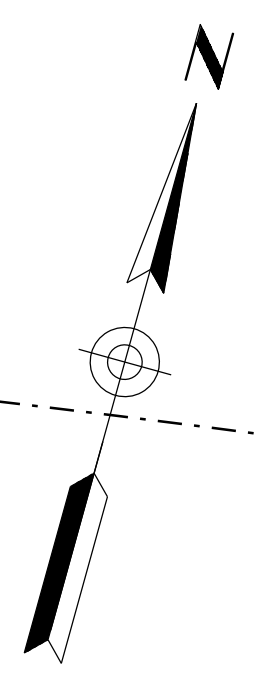


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PLAN SHEET			SHEET C2





- NOTES:**
- Stations and offsets shown are to Carefree Drive Const C unless otherwise noted.  
 Denotes station and offset shown to U-Channel Const C
  - P denotes Pavement Elevation



Total Thickness = 10 1/2"

**PLAN**  
 Scale: 1" = 5'

# DETAIL A

## STAKING DETAIL

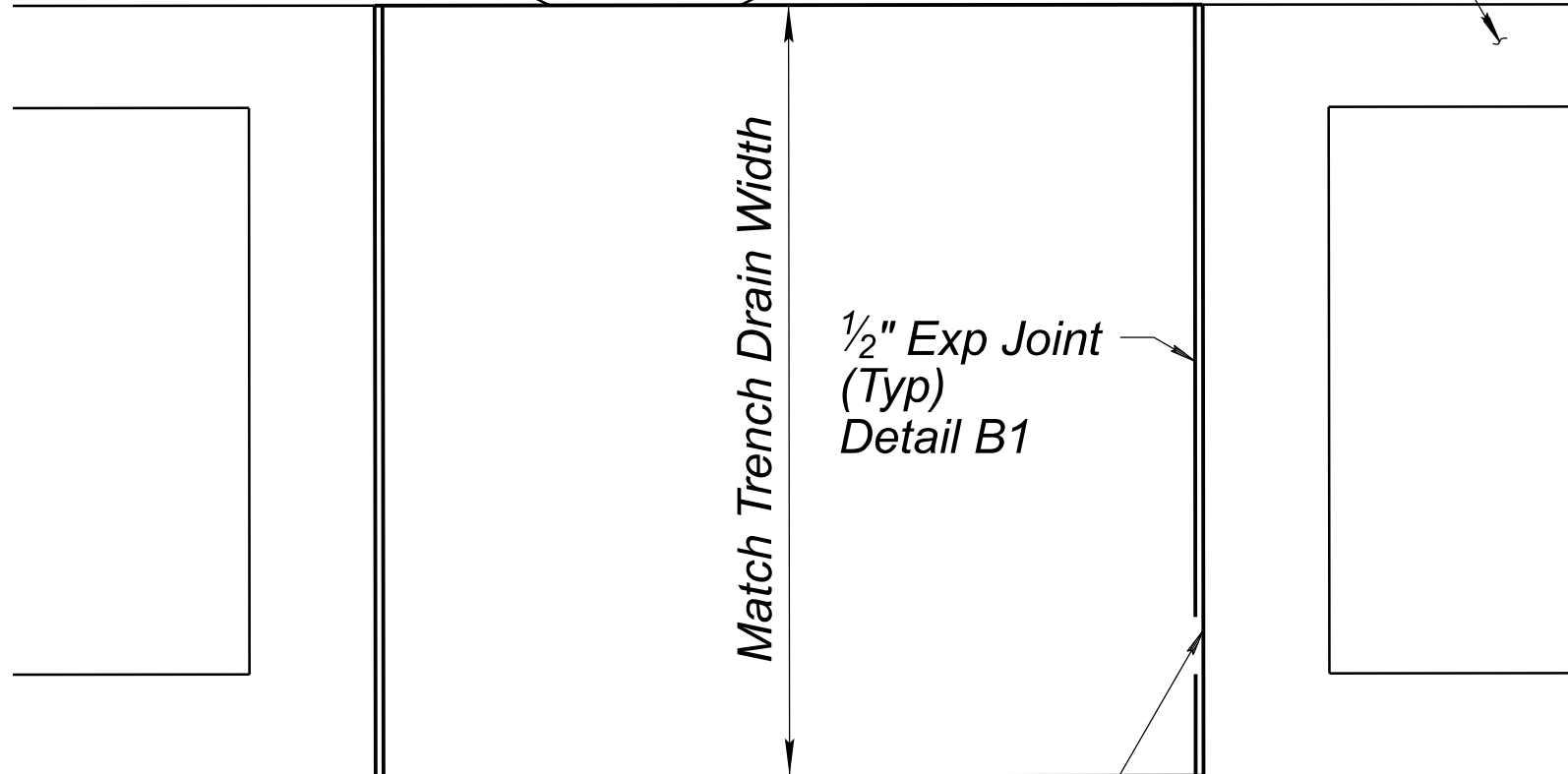
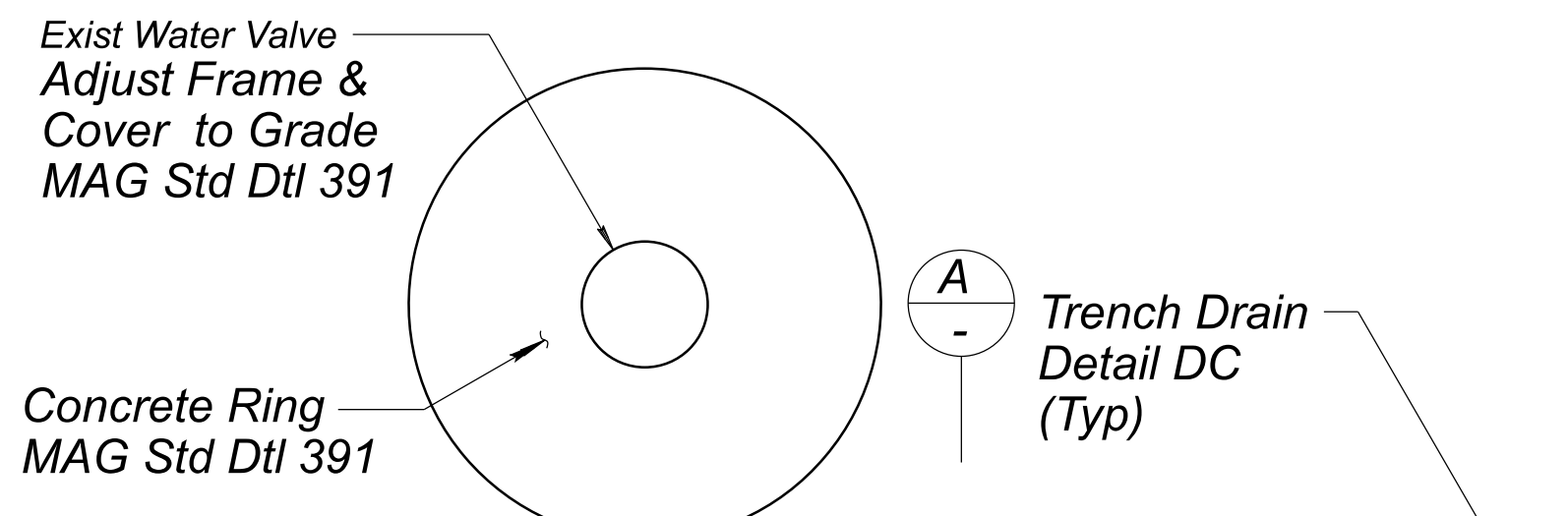


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DETAIL SHEET			SHEET C3



**NOTES:**

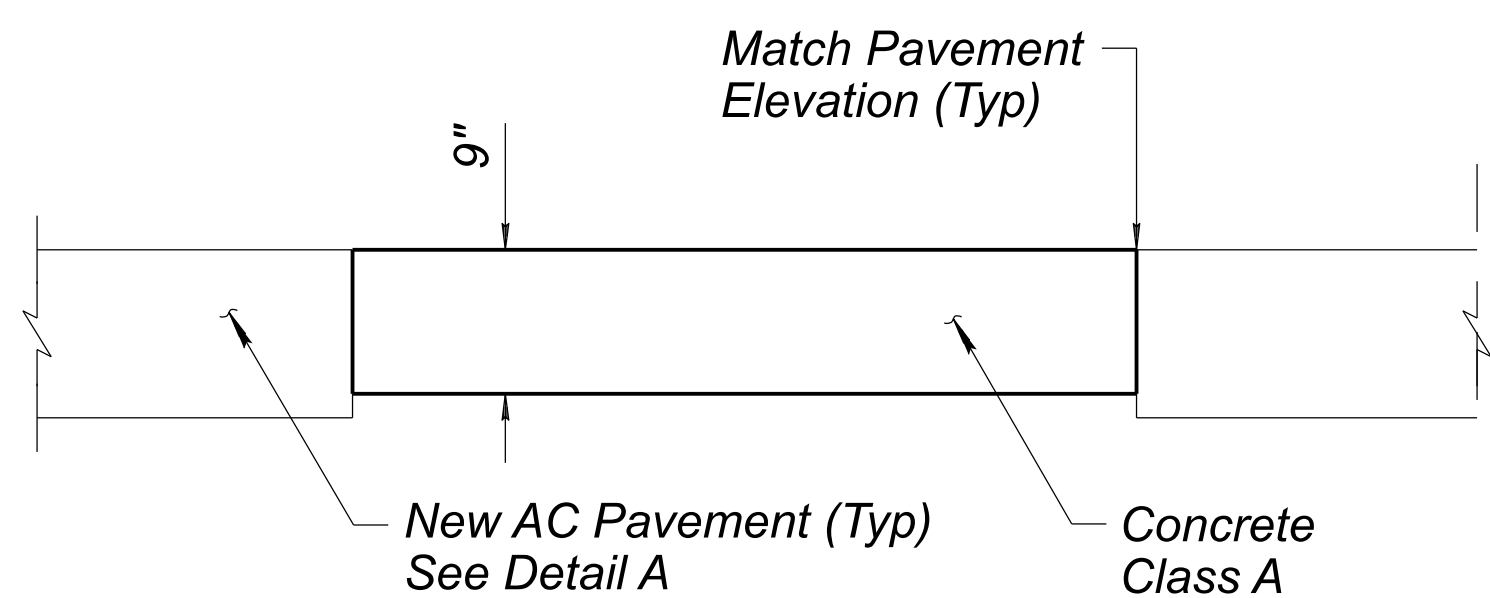
1. See MAG Standard Detail No. 240 for Notes and Details not shown.
2. Recess Silicone Sealane 1/4" from Top of Trench Drain and Valley Gutter.



Match Trench Drain (Typ)

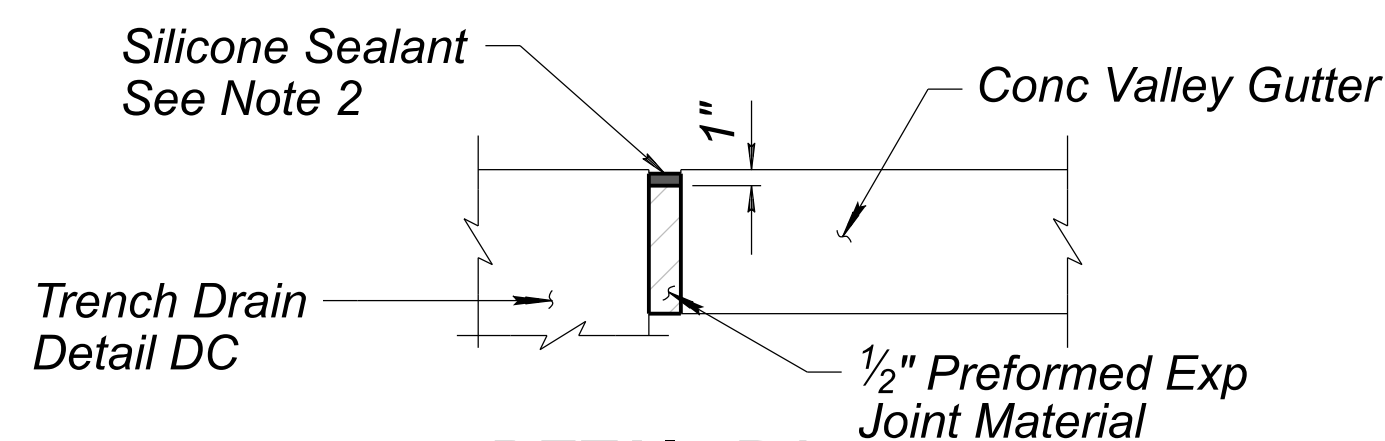
**PLAN**

Scale: 1" = 1'



**SECTION A**

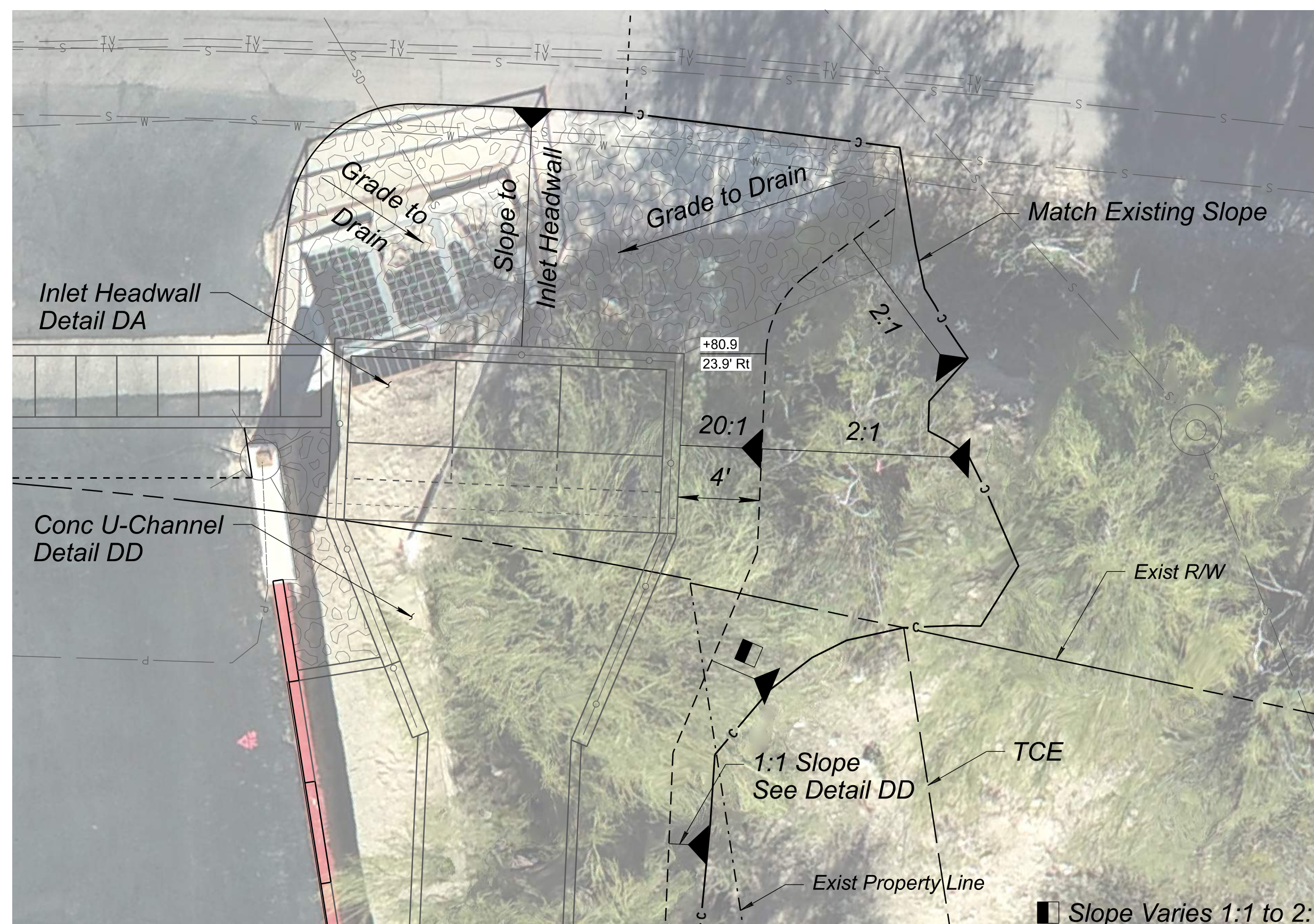
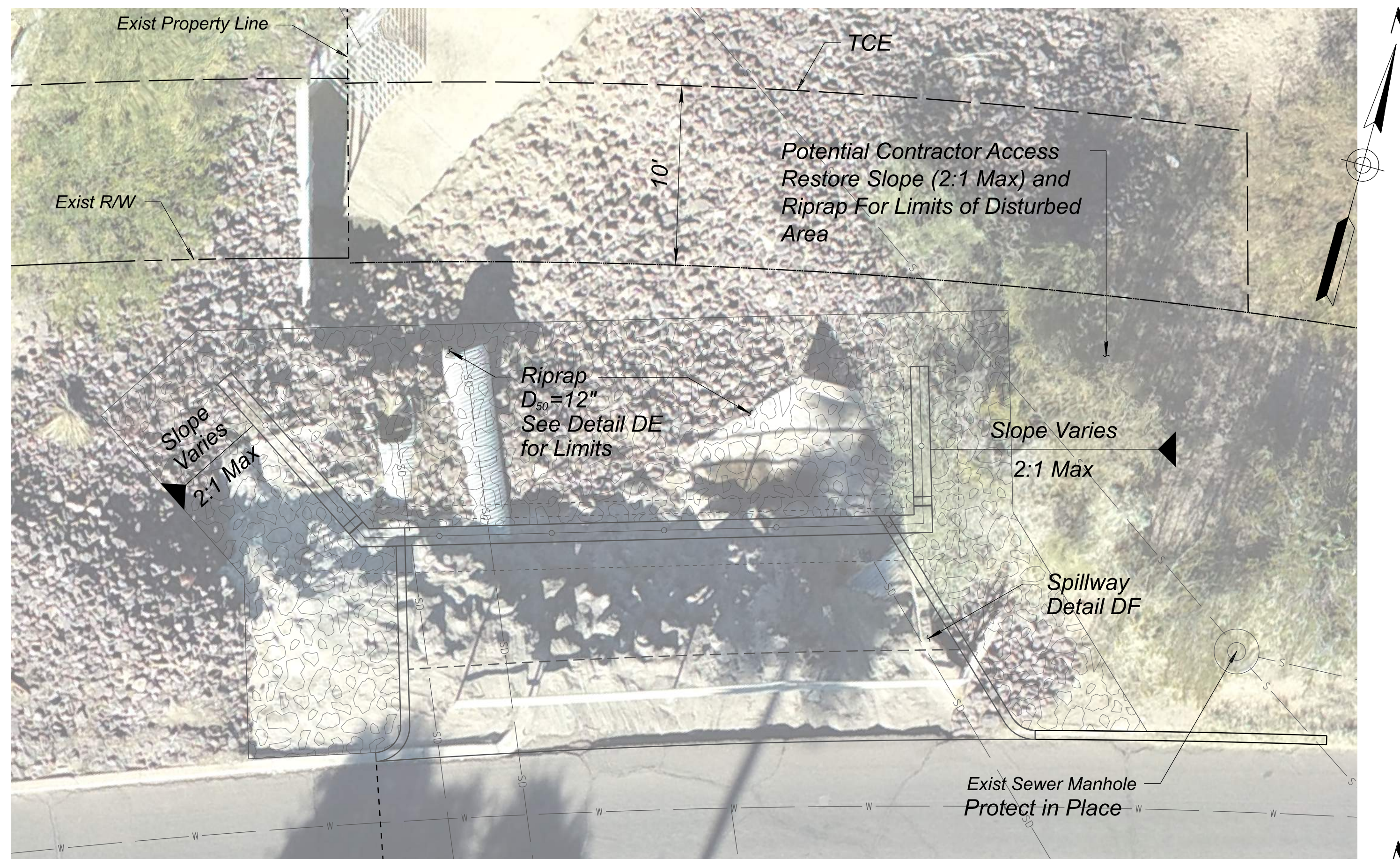
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**DETAIL B1**

Not to Scale

**DETAIL B**  
CONCRETE VALLEY GUTTER



**PLAN**

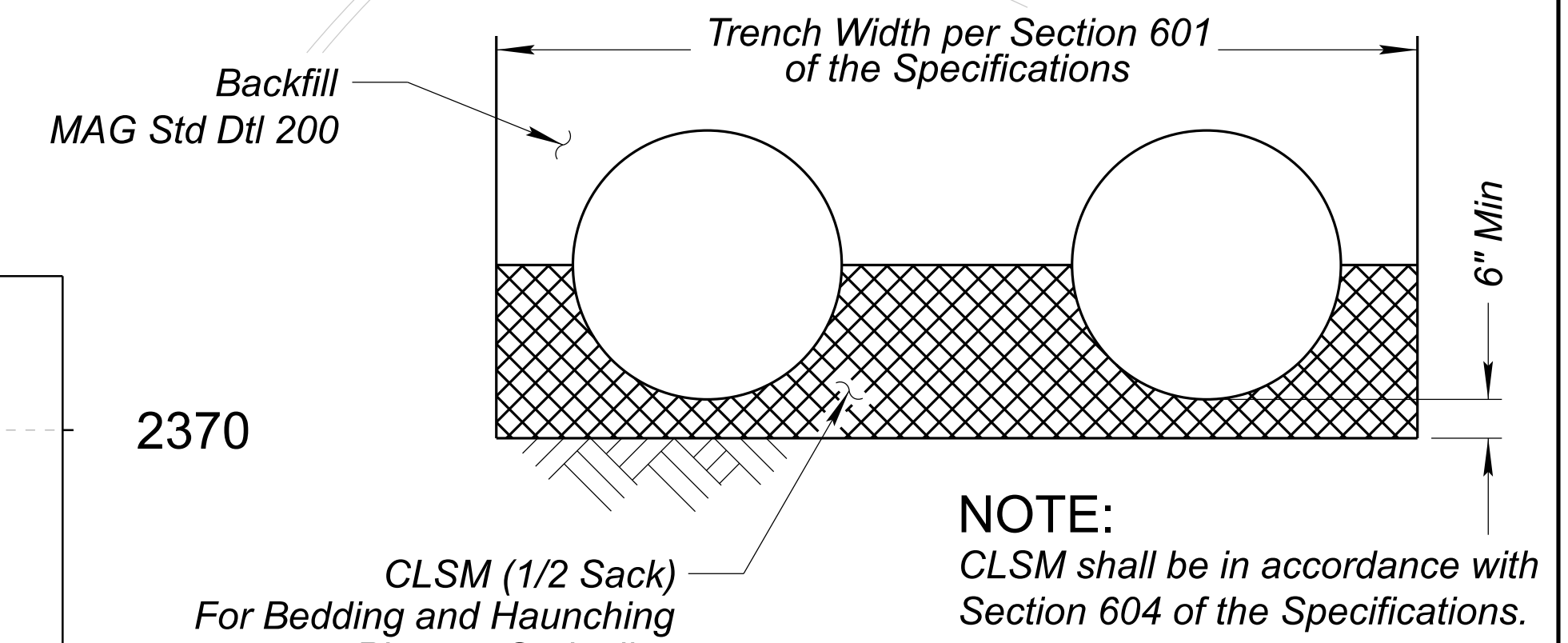
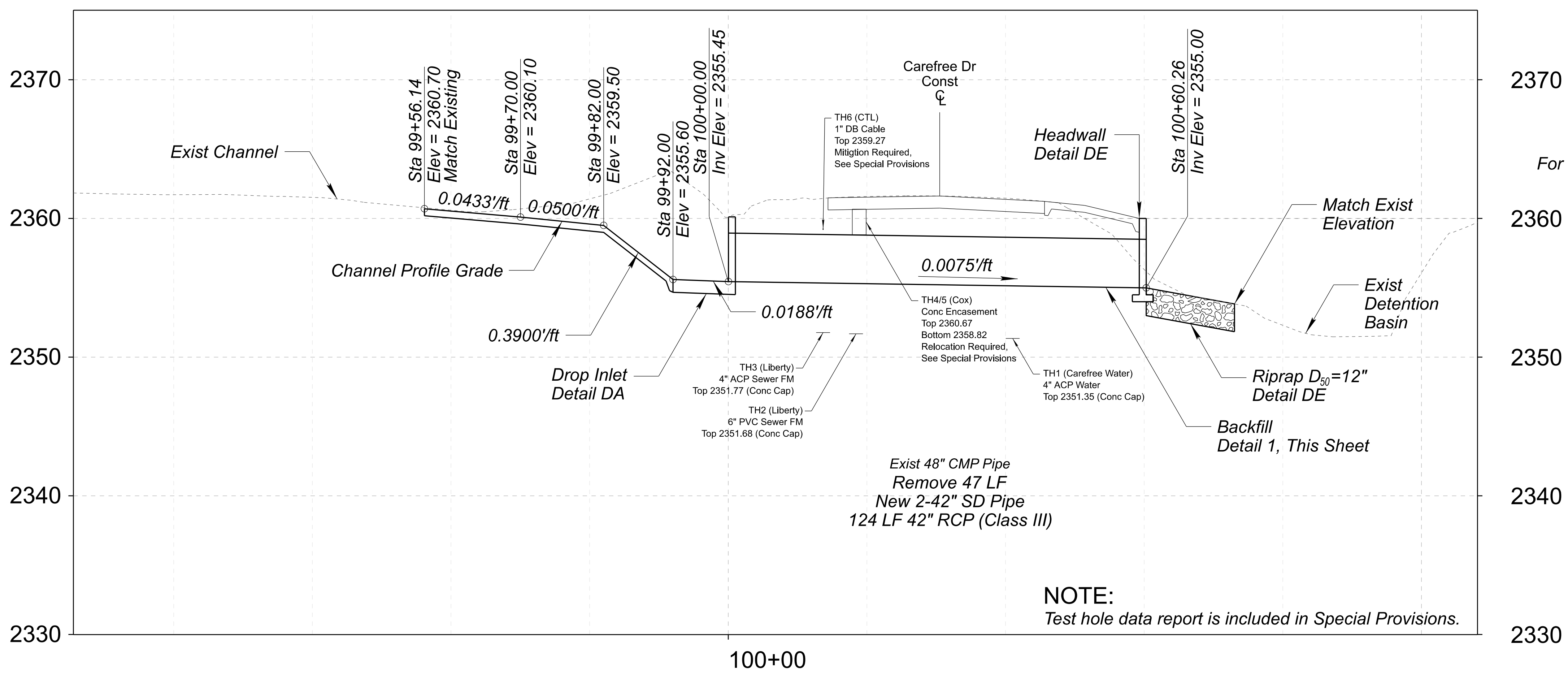
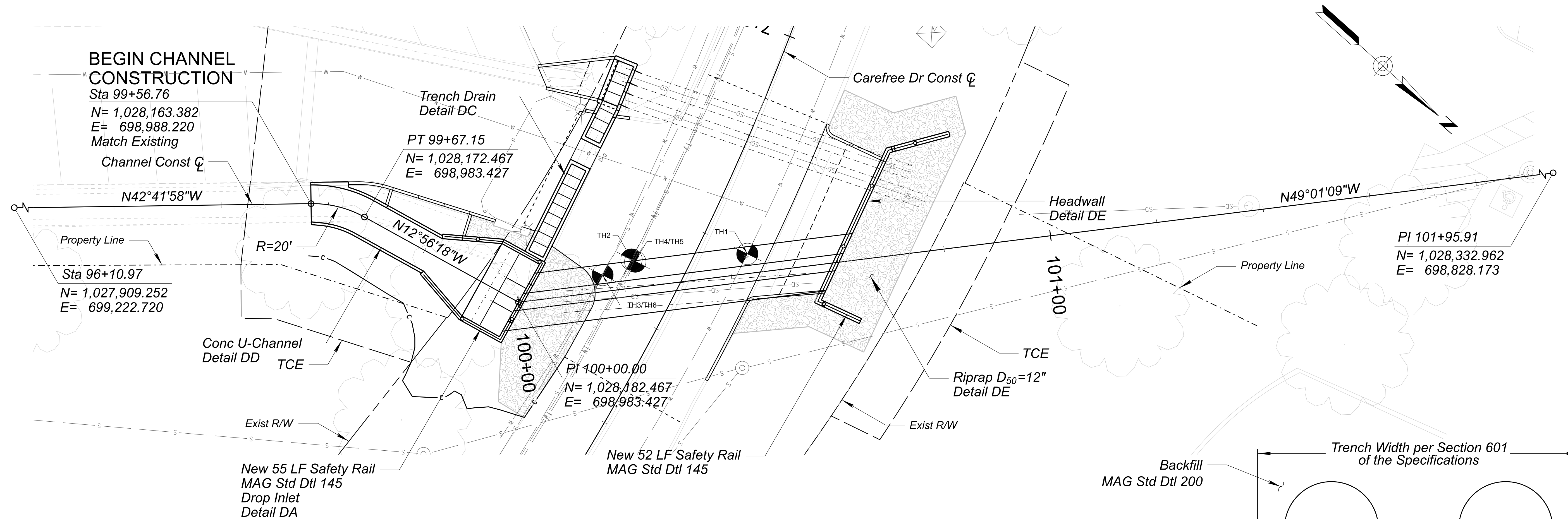
Scale: 1" = 5'

**DETAIL C**  
GRADING DETAIL

NO.	REVISION	BY	DATE
TOWN OF CAREFREE			
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		BY	DATE
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DRAWN		DBK	07/2023
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		3133 East Camelback Road, Suite 100 Phoenix, Arizona 85016 Phone: (602) 333-2200	
DETAIL SHEET			SHEET C4







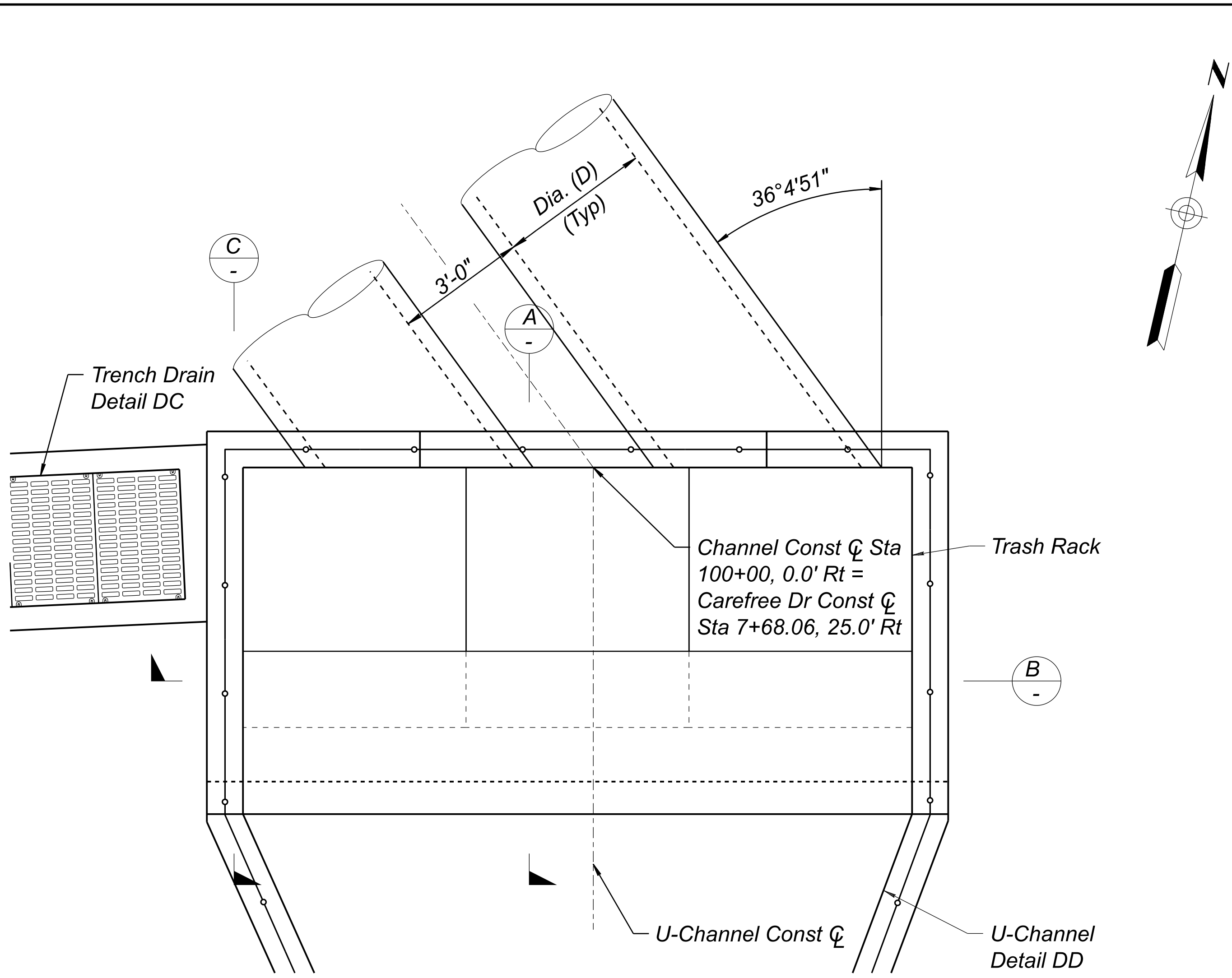
**DETAIL 1**  
CLSM DETAIL

**DETAIL D1**  
CHANNEL & CULVERT  
PLAN & PROFILE

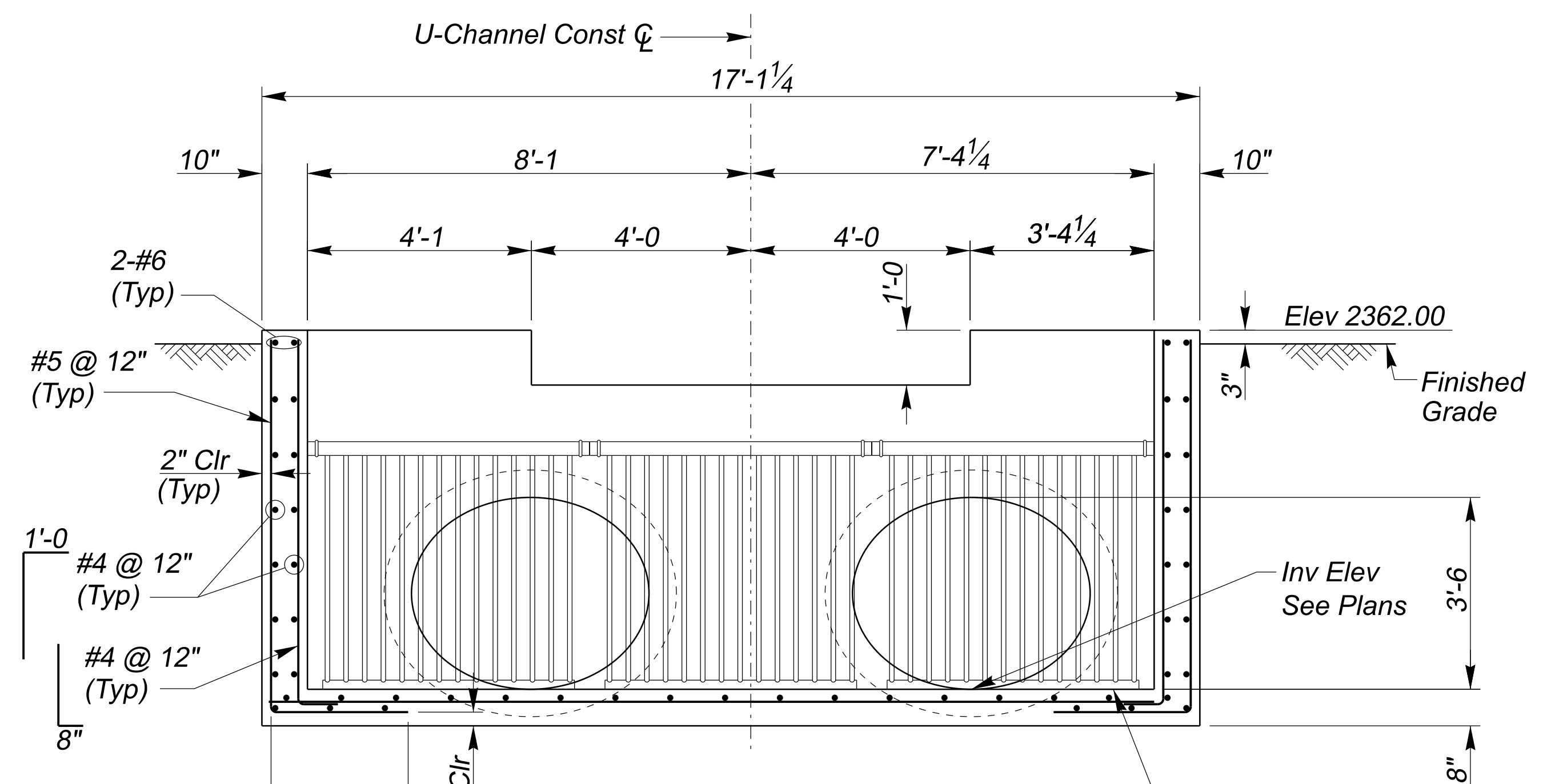
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CHANNEL PLAN & PROFILE SHEET			SHEET D1





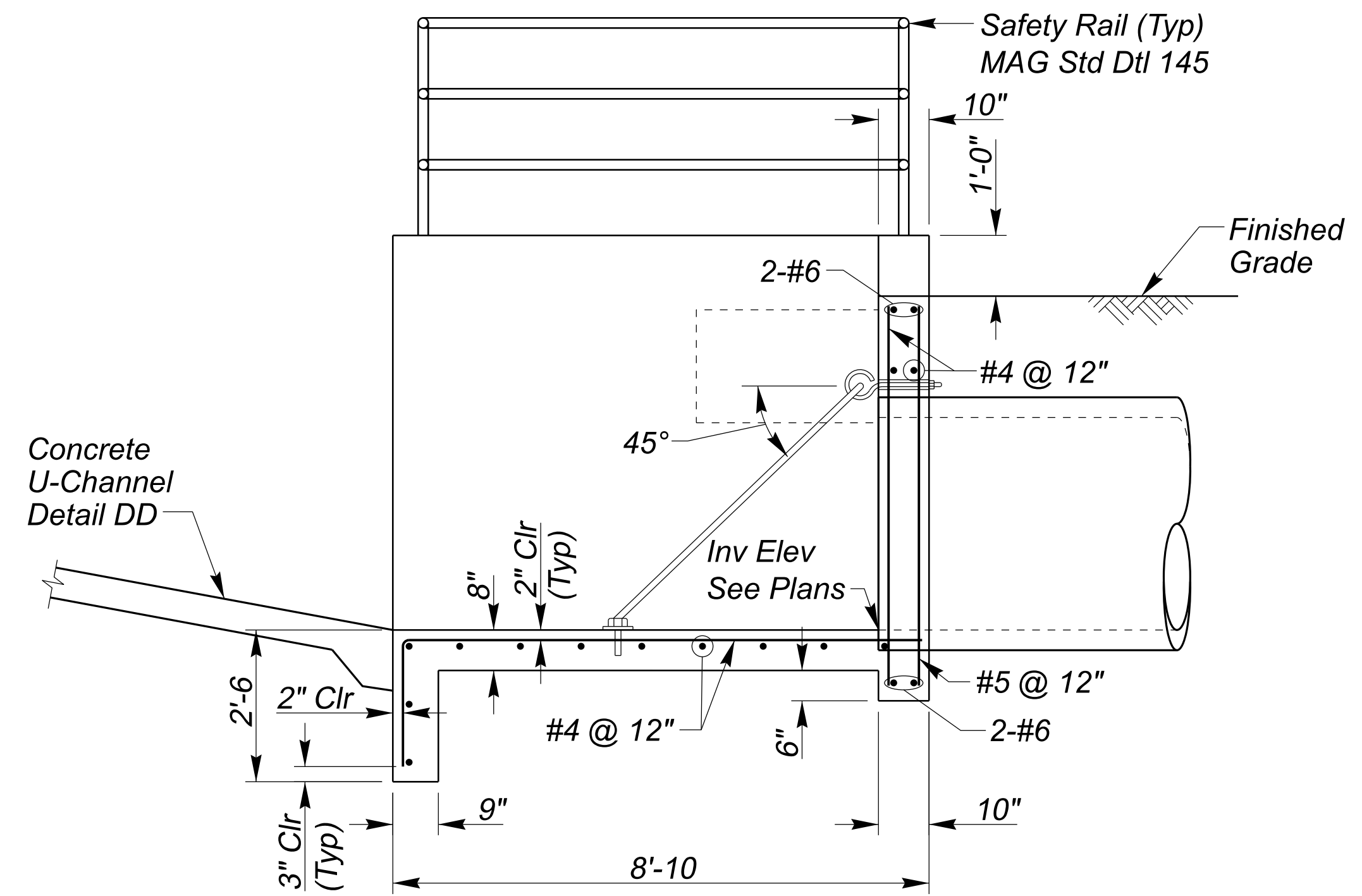


**PLAN**  
Scale: 1/2" = 1'-0"

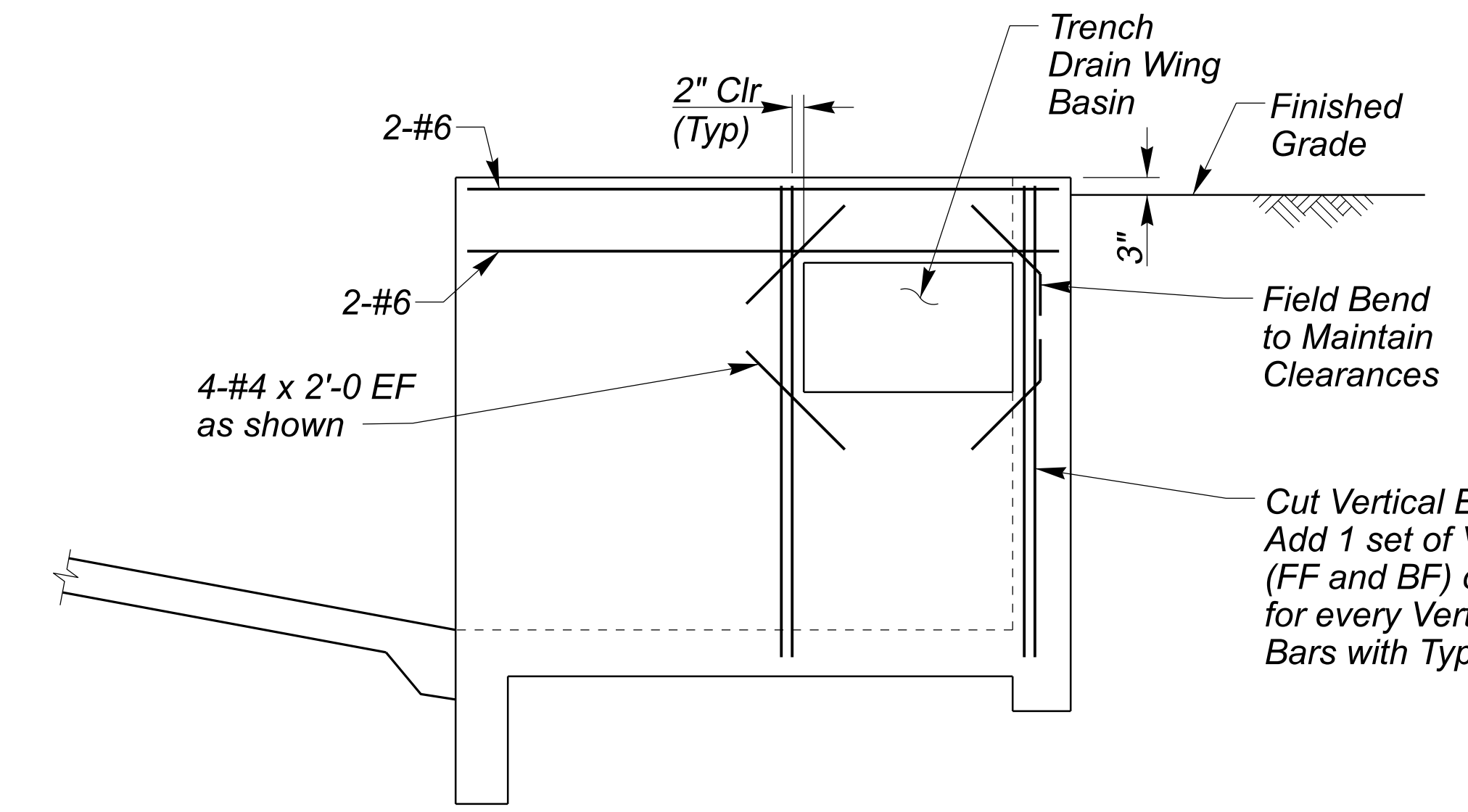


**SECTION B**  
Scale: 1/2" = 1'-0"

Trash Rack per MAG Std Dtl 502-2 except as modified



**SECTION A**  
Scale: 1/2" = 1'-0"



**SECTION C**  
Scale: 1/2" = 1'-0"

**NOTES:**  
1. Cut horizontal bars (not shown for clarity) to clear blockout.

Cut Vertical Bars to Clear Blockout  
Add 1 set of Vertical Reinforcing (FF and BF) on Each Side of Blockout for every Vertical Bar cut. Alternate Added Bars with Typical Reinforcing

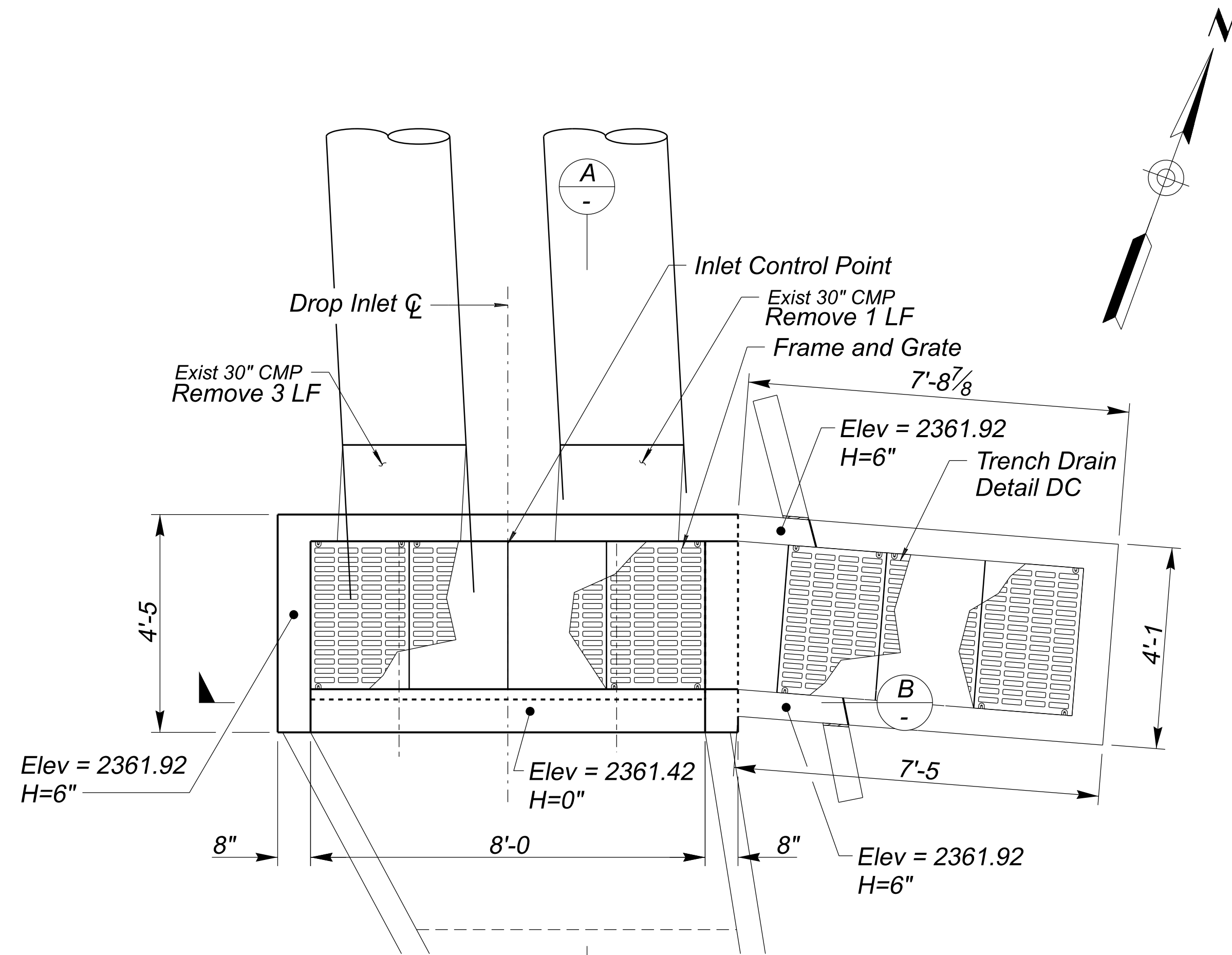
# DETAIL DA

## INLET HEADWALL

Trash Rack Bar Dimensions						
Type	Pipe Size	No. of Bars	Length of Bars	Dimensions		
				X	Y	Z
D	42"	14	5'-10 5/8"	4'-5"	5'-1"	4'-0 1/2"

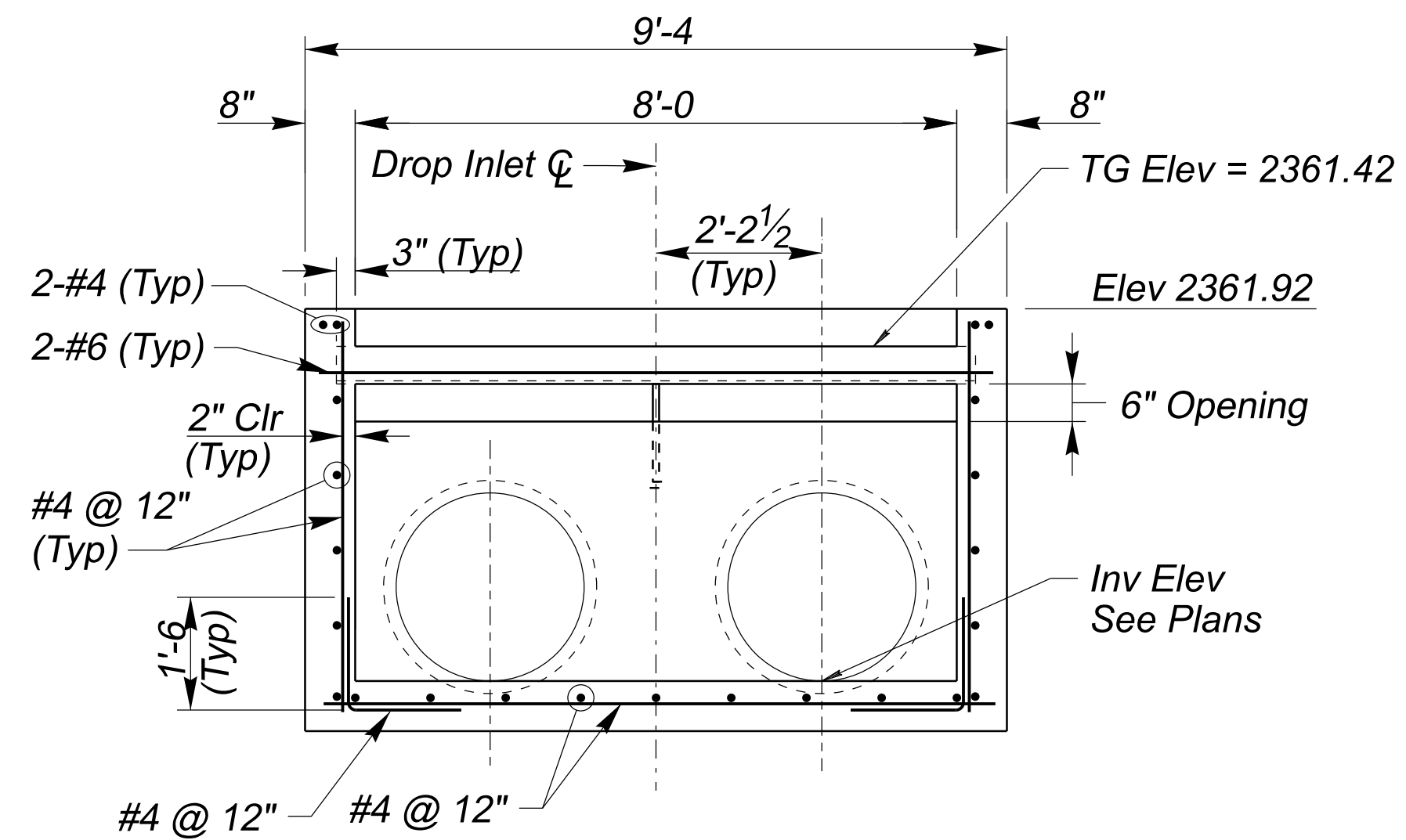


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DESIGNED	BAT	BY	DATE
DRAWN	NRD		07/2023
CHECKED	JML		07/2023
3133 East Camelback Road, Suite 100 Phoenix, Arizona 85016 Phone: (602) 333-2200		SHEET <b>D2</b>	



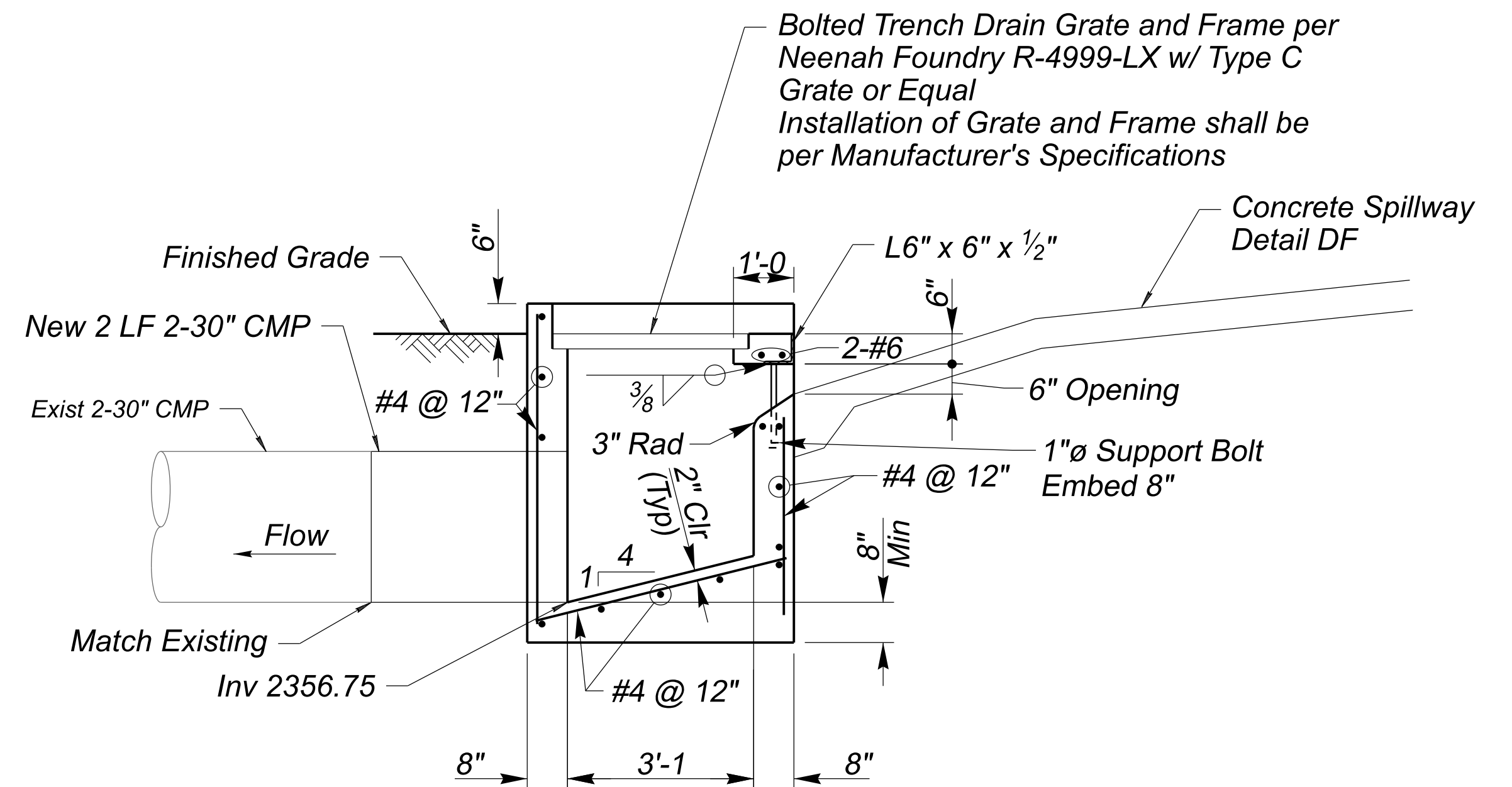
**PLAN**

Scale: 1/2" = 1'-0"



**SECTION B**

Scale: 1/2" = 1'-0"



**SECTION A**

Scale: 1/2" = 1'-0"

**NOTES:**

1. Steel Angle shall be ASTM A36, Fy=36 ksi. Galvanize per ASTM A123.
2. Support Bolt shall be ASTM A307. Galvanize per ASTM A153.
3. CMP connection per manufacturer's recommendations.

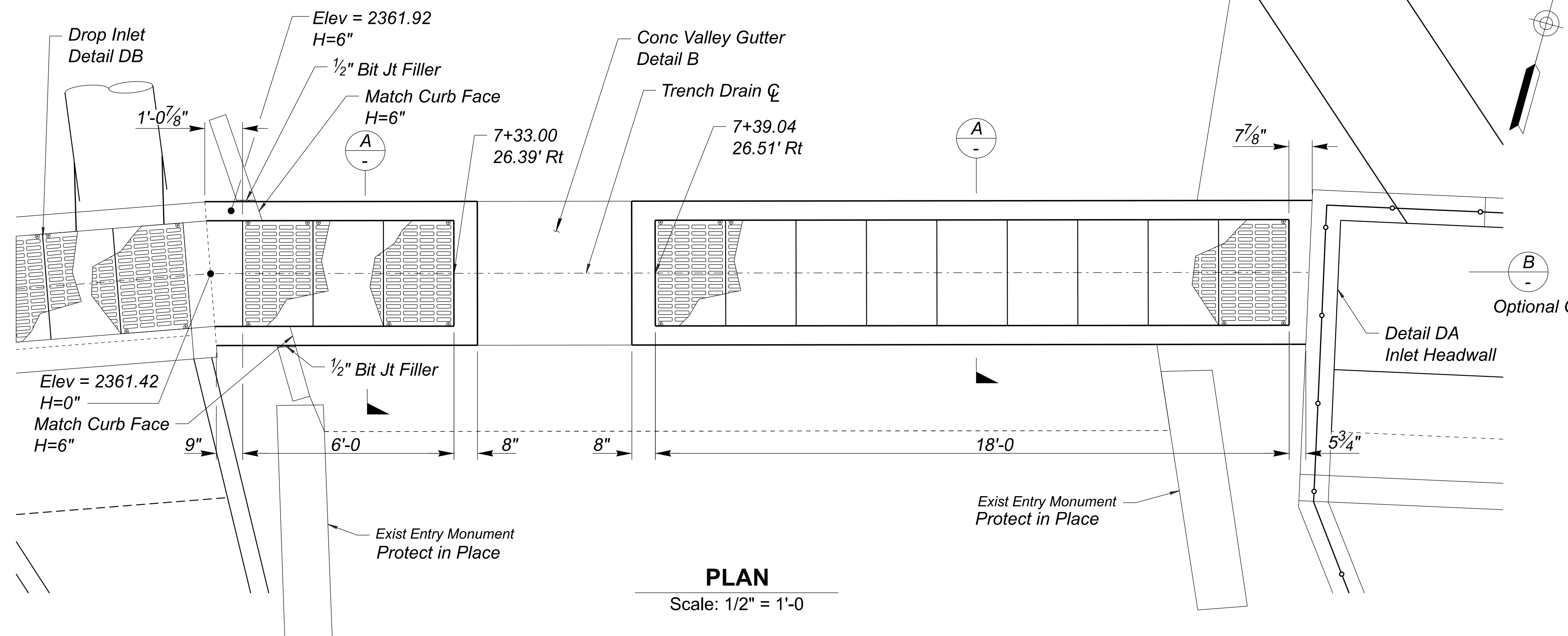
# DETAIL DB

## DROP INLET

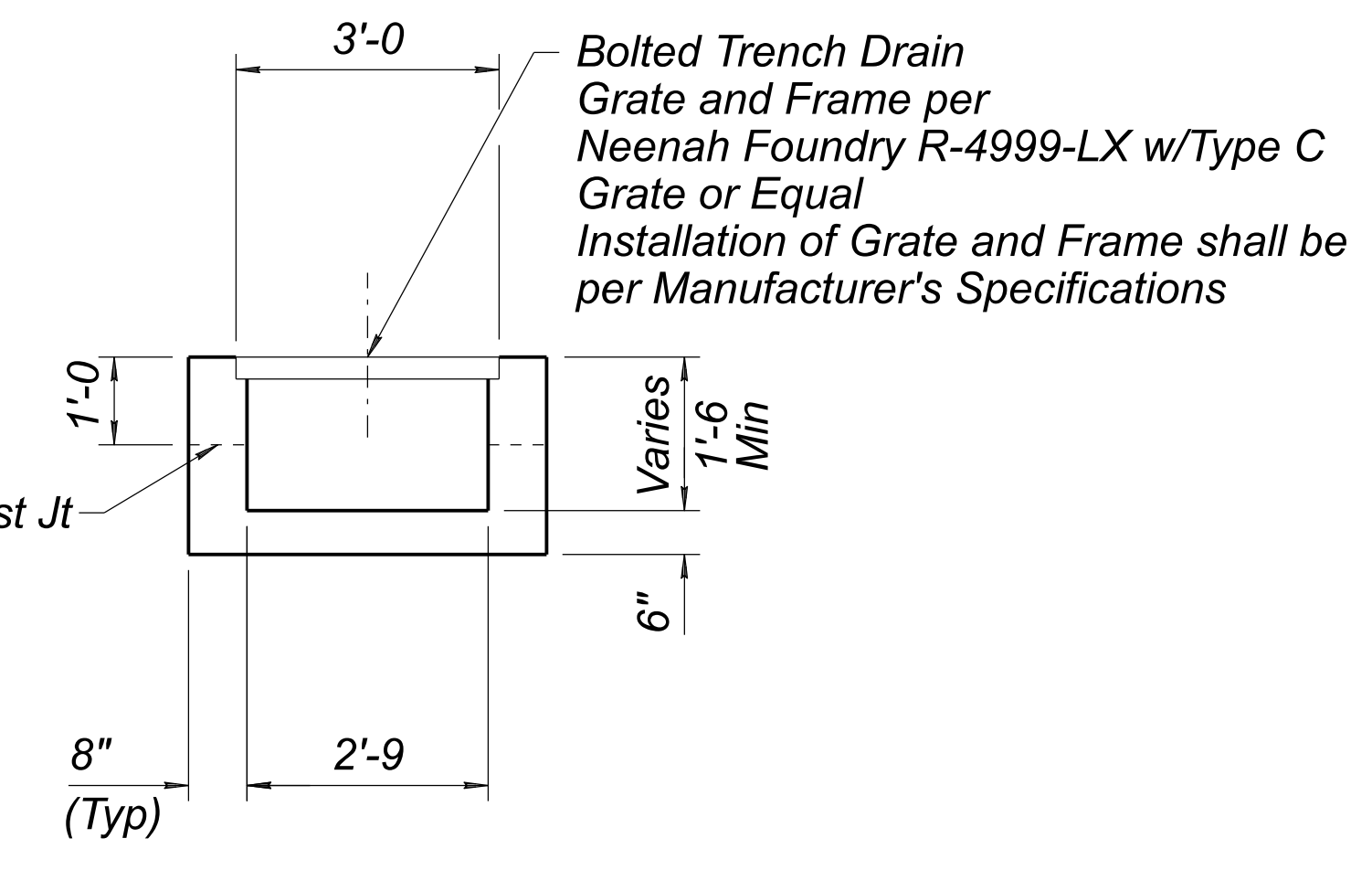
NO.	REVISION	BY	DATE
<b>CAREFREE ARIZONA</b> TOWN OF CAREFREE			
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DESIGNED	BAT	BY	DATE
DRAWN	NRD		07/2023
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3133 East Camelback Road, Suite 100 Phoenix, Arizona 85016 Phone: (602) 333-2200		<b>DETAIL SHEET</b>	
			<b>SHEET D3</b>



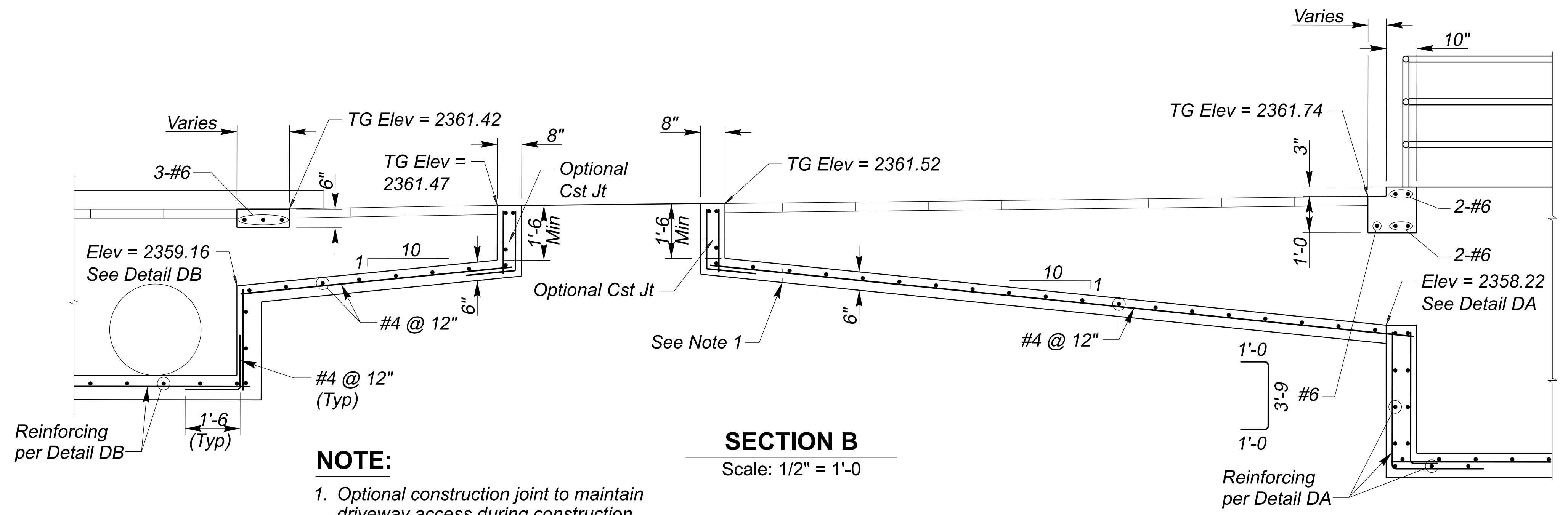




**PLAN**  
Scale: 1/2" = 1'-0"



**SECTION A**  
Scale: 1/2" = 1'-0"



**SECTION B**  
Scale: 1/2" = 1'-0"

**NOTE:**  
1. Optional construction joint to maintain driveway access during construction. Align with trench grate and frame segment.

# DETAIL DC

## TRENCH DRAIN

NO.	REVISION	BY	DATE

CAREFREE ARIZONA TOWN OF CAREFREE

CAREFREE DR DRAINAGE IMPROVEMENTS AT CAREFREE TERRACE CONDOMINIUMS

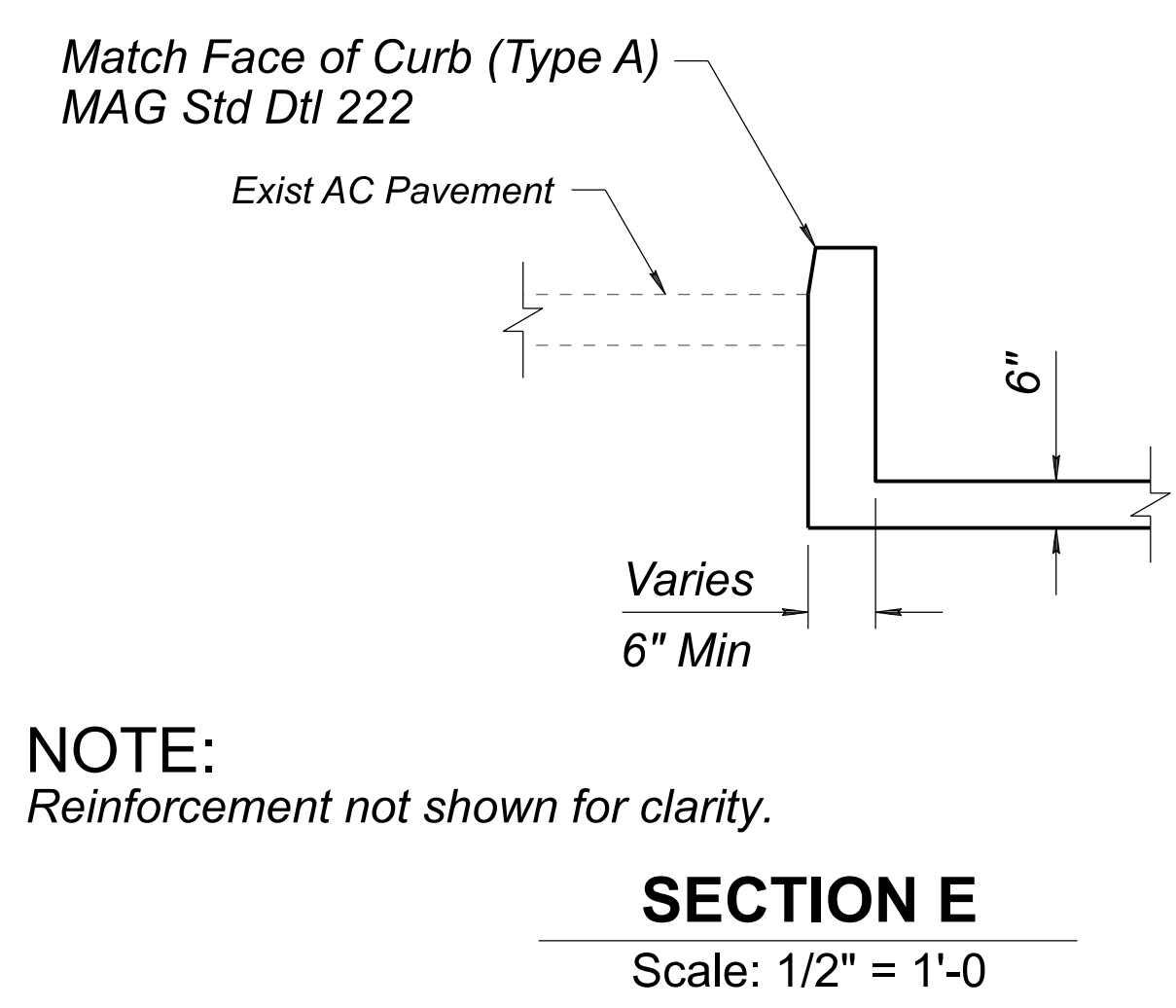
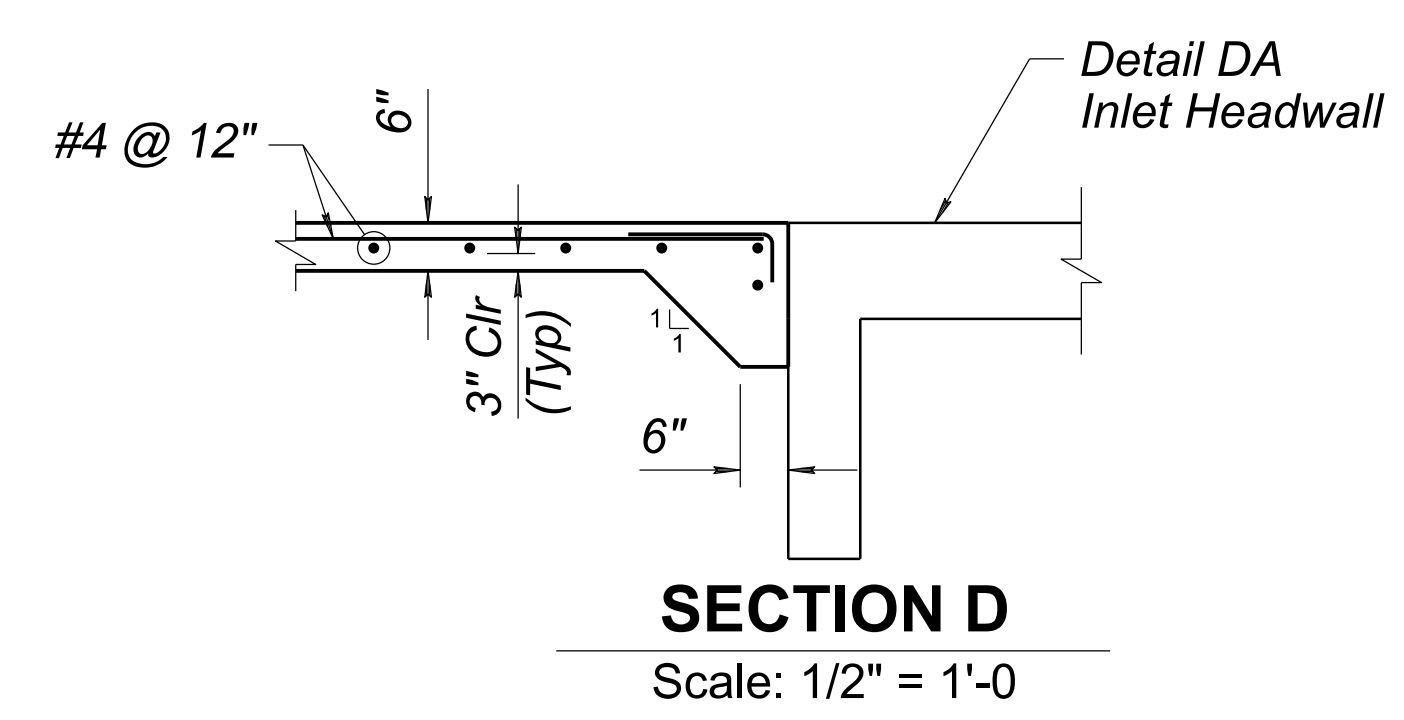
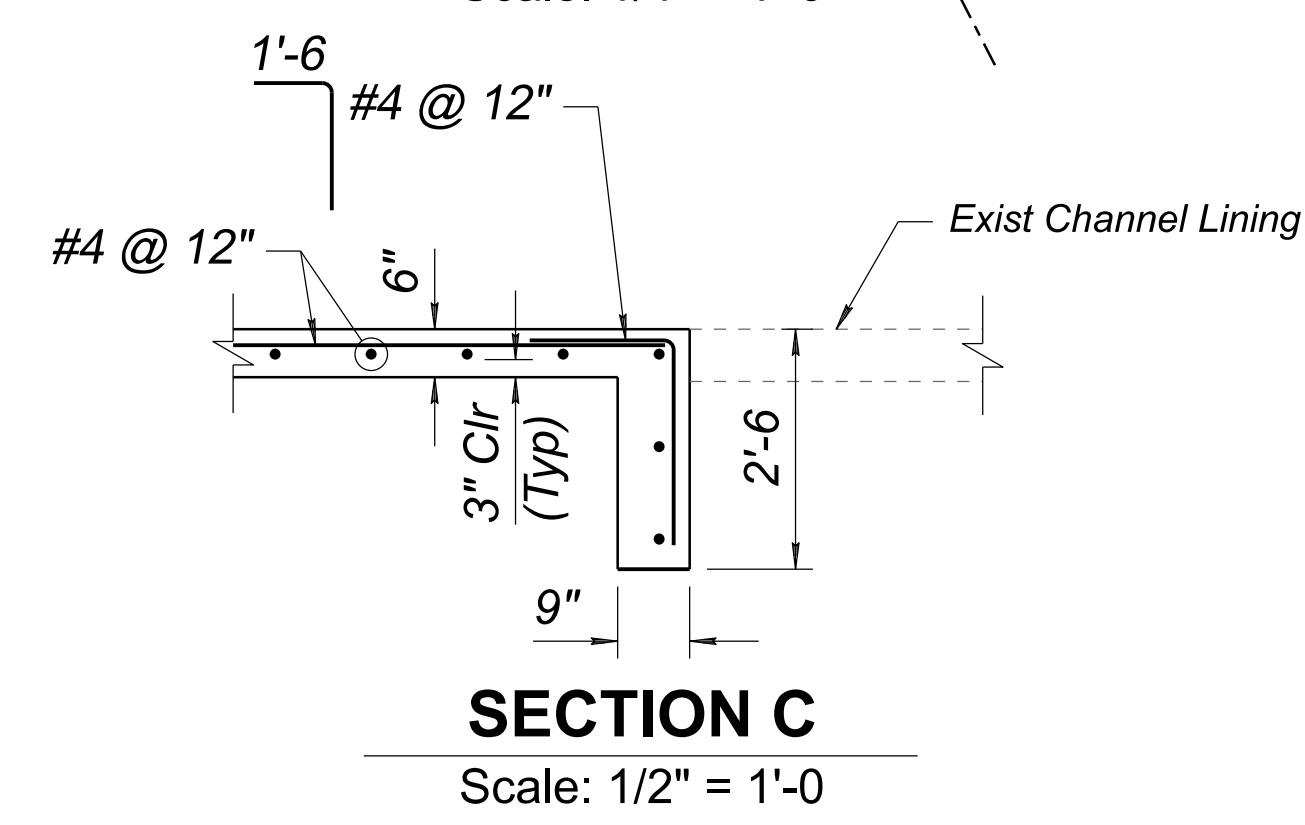
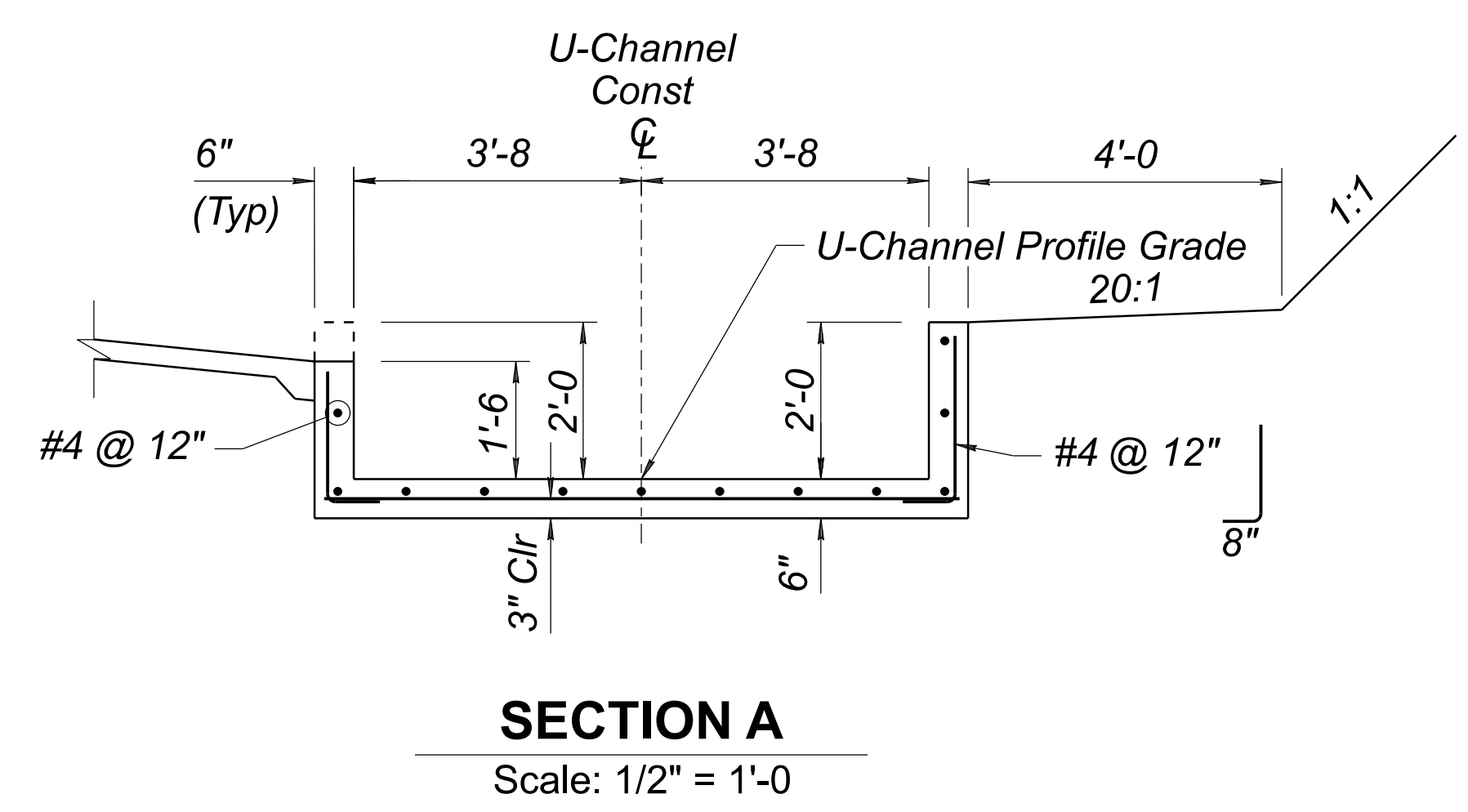
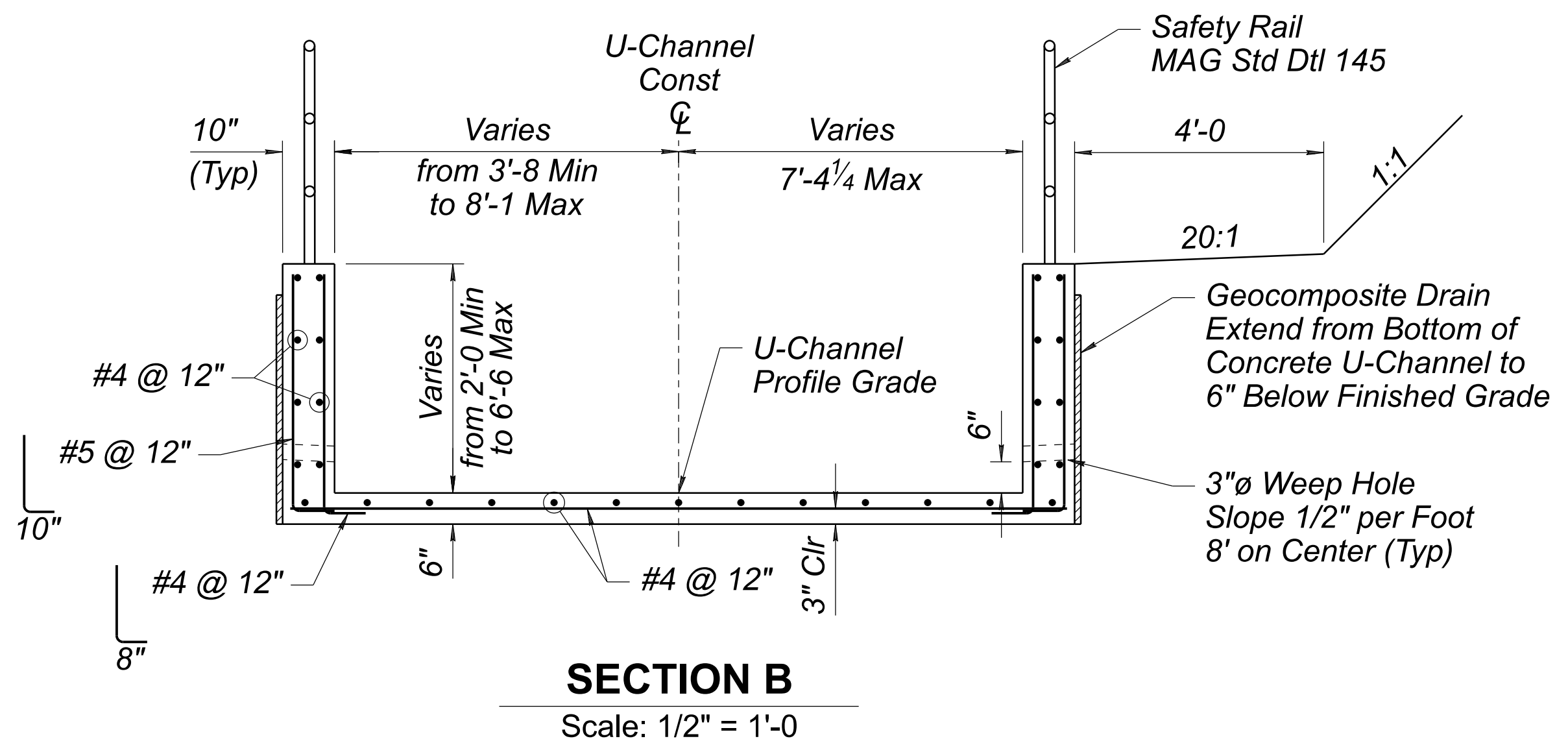
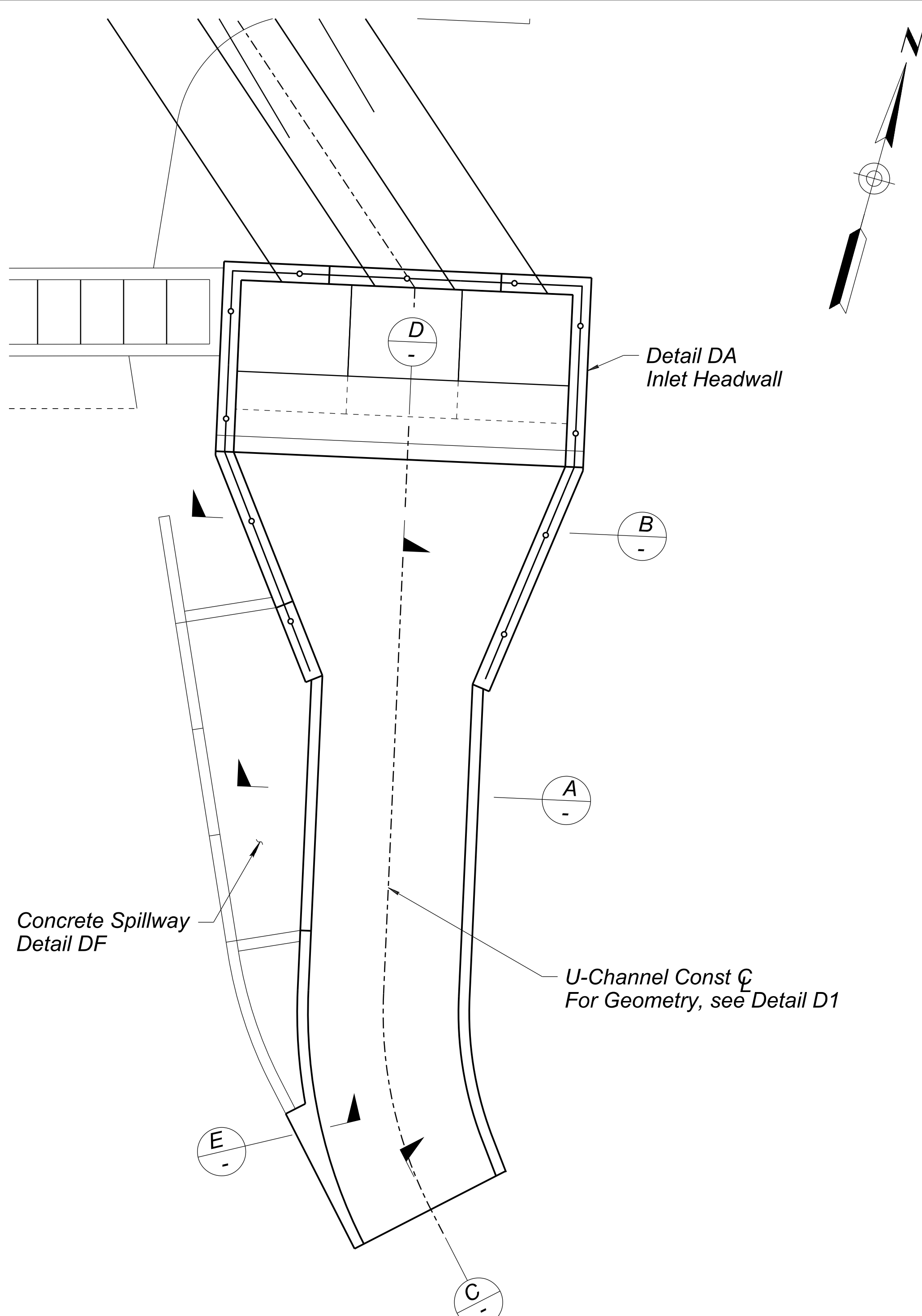
	BY	DATE
DESIGNED	BAT	07/2023
DRAWN	NRD	07/2023
CHECKED	JML	07/2023

3133 East Camelback Road, Suite 100  
Phoenix, Arizona 85016  
Phone: (602) 333-2200

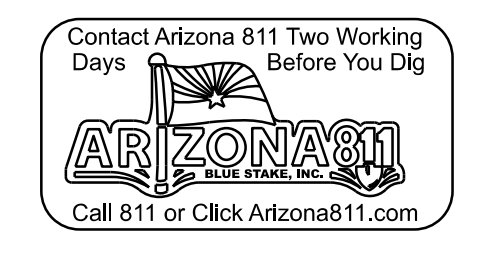
**Stanley Consultants INC.**

DETAIL SHEET SHEET D4





NOTE:  
Reinforcement not shown for clarity.

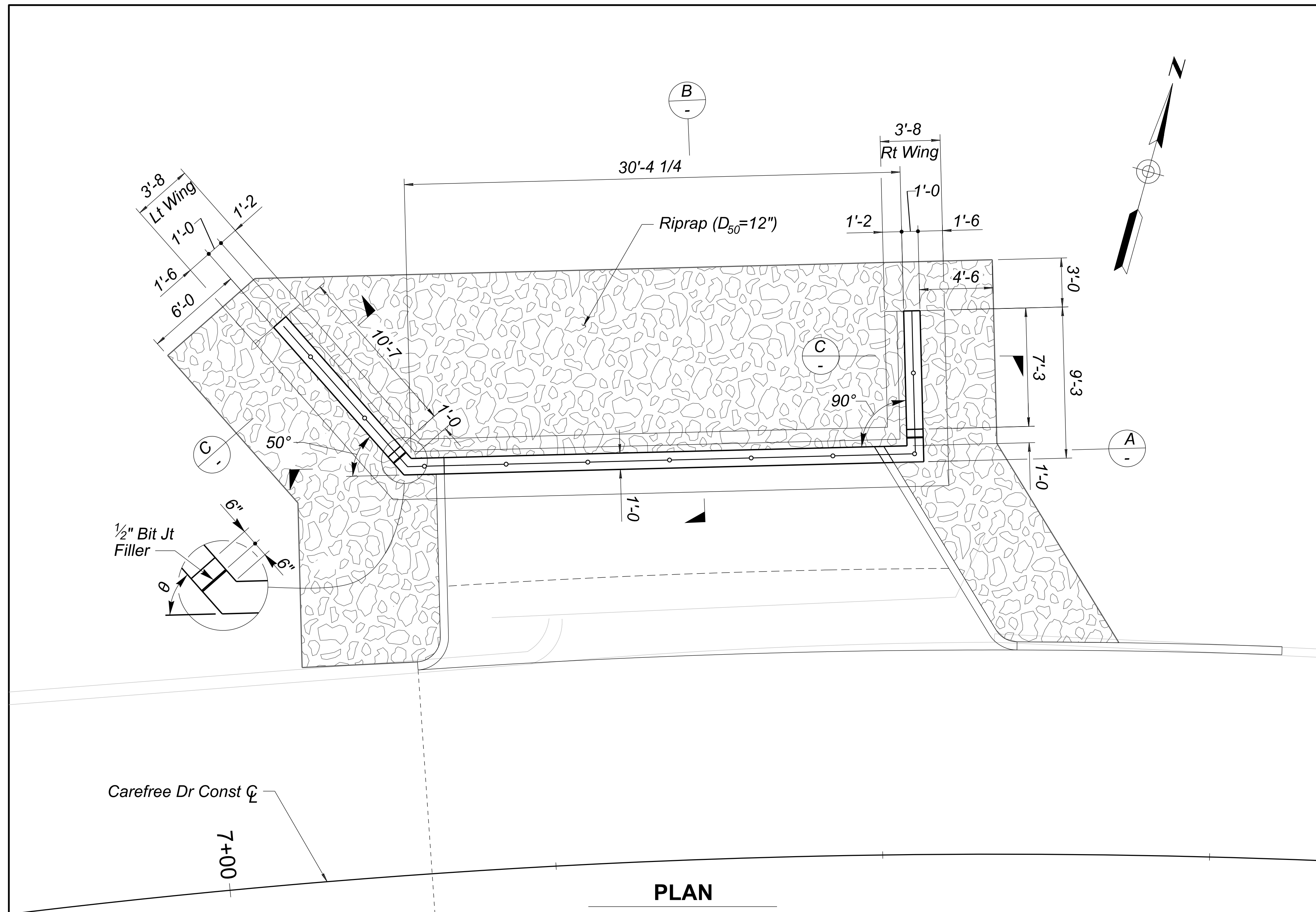


# DETAIL DD

## CONCRETE U-CHANNEL

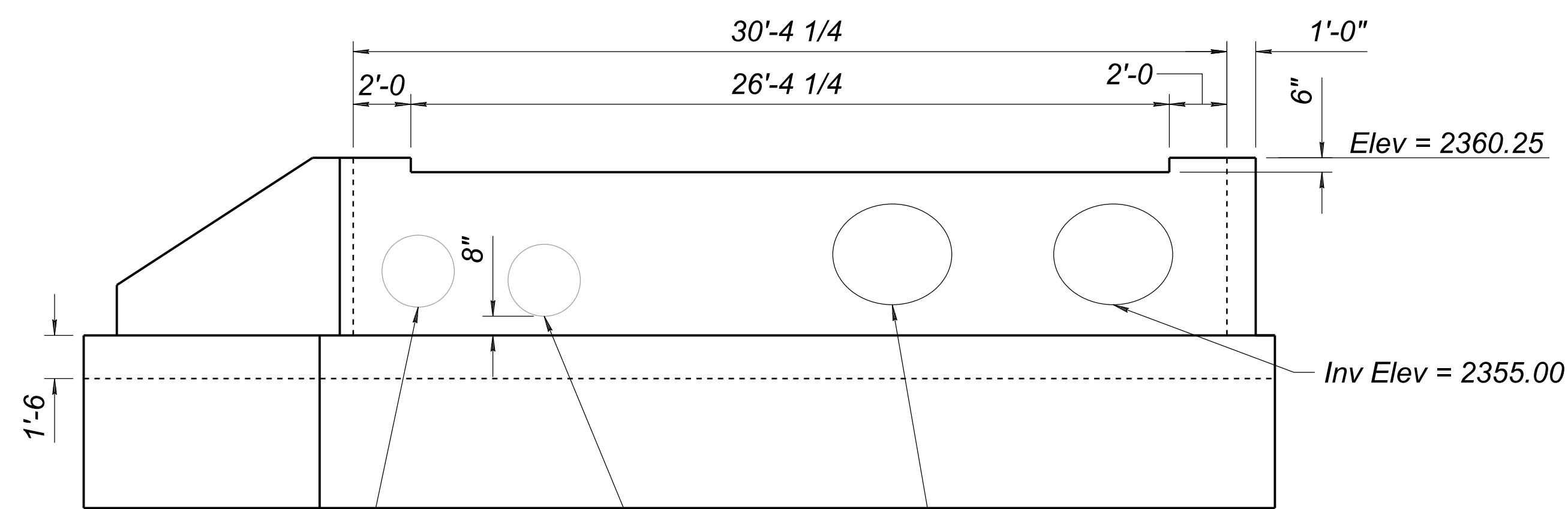
NO.	REVISION	BY	DATE
TOWN OF CAREFREE			
CAREFREE DR DRAINAGE IMPROVEMENTS AT CAREFREE TERRACE CONDOMINIUMS			
	DESIGNED	BAT	07/2023
	DRAWN	NRD	07/2023
	CHECKED	JML	07/2023
3133 East Camelback Road, Suite 100 Phoenix, Arizona 85016 Phone: (602) 333-2200			SHEET D5





**PLAN**

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



**SECTION A**

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

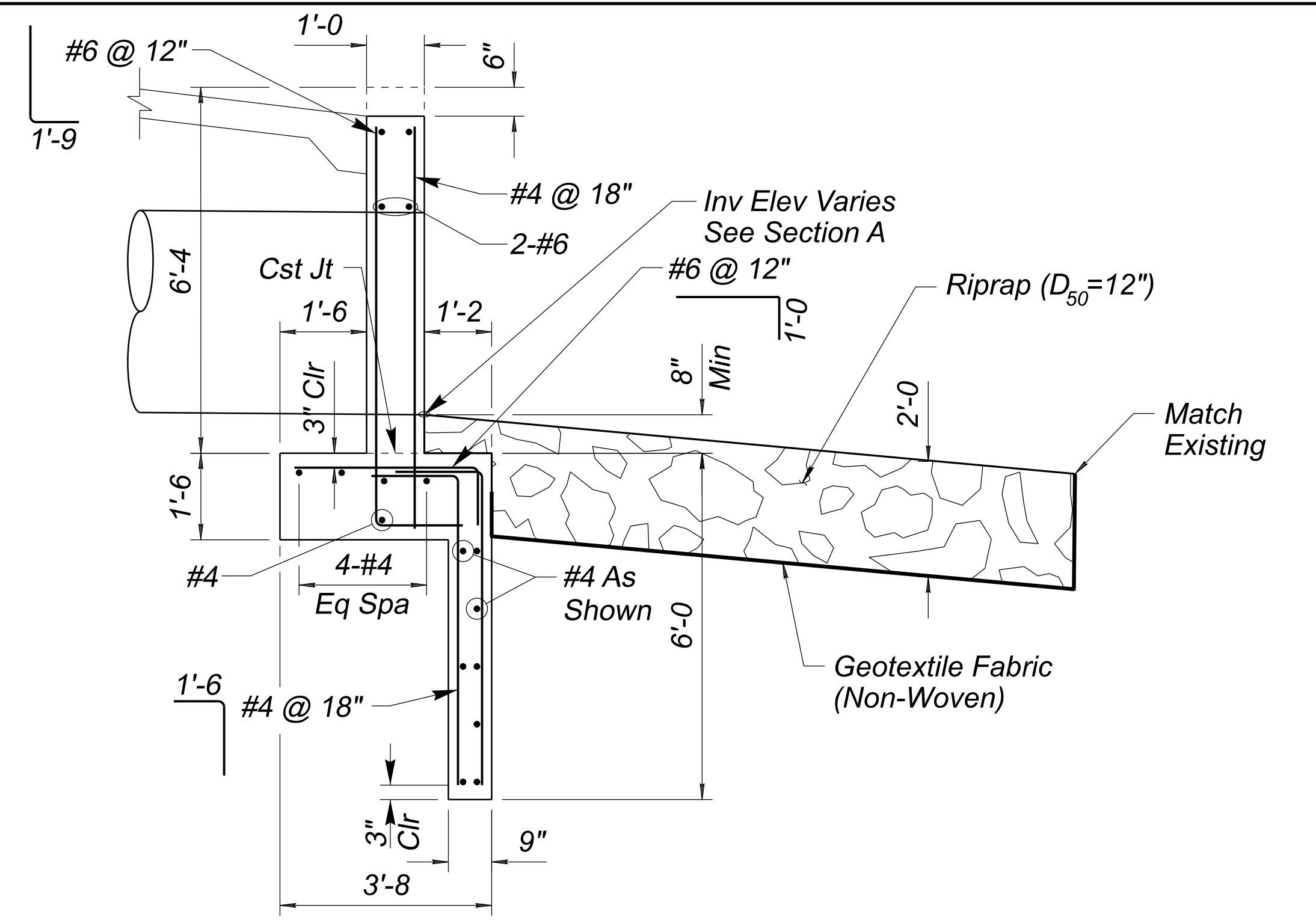
Exist 30" CMP  
Inv Elev = 2354.92

Exist 30" CMP  
Inv Elev = 2354.60

Inv Elev = 2355.00

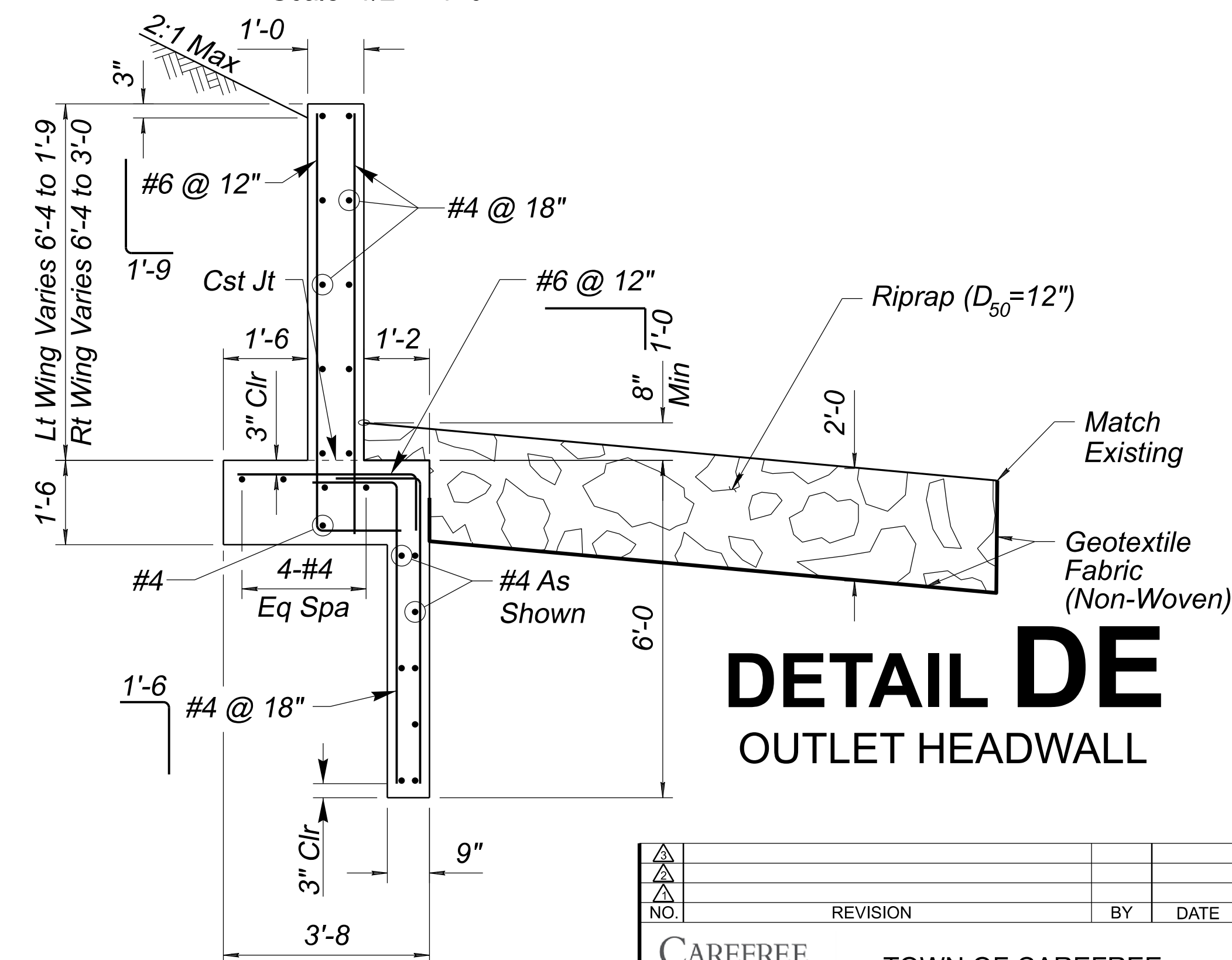
**NOTE:**

1. See Sheet GN1 for Riprap Gradation.



**SECTION B**

Scale: 1/2" = 1'-0"



**SECTION C**

Scale: 1/2" = 1'-0"

**DETAIL DE**  
OUTLET HEADWALL

NO.	REVISION	BY	DATE

CAREFREE ARIZONA TOWN OF CAREFREE

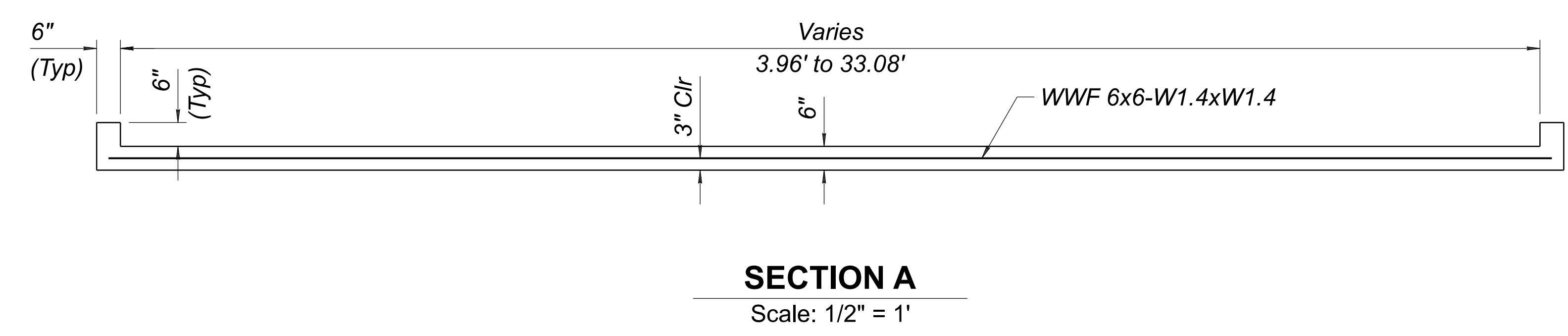
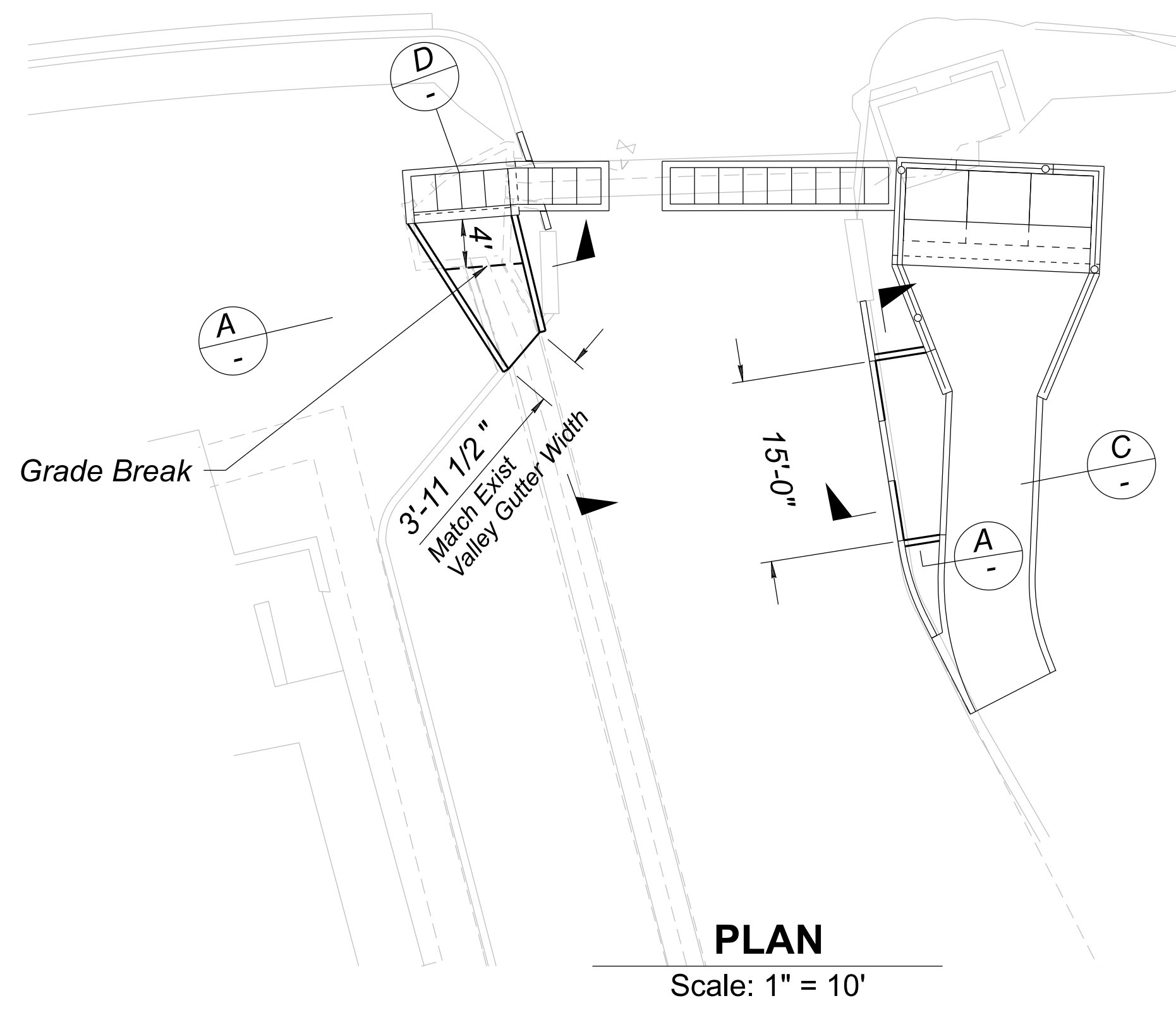
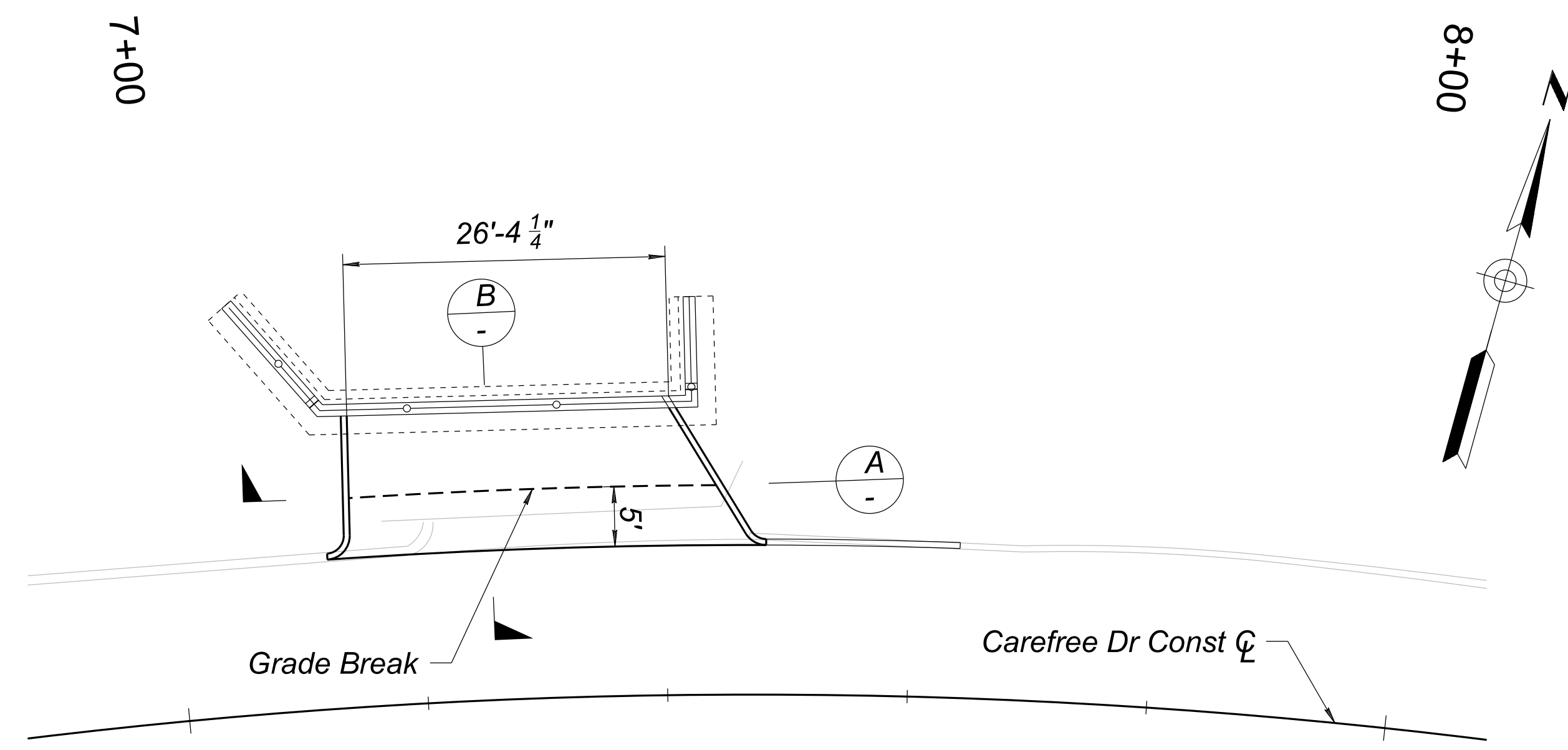
CAREFREE DR DRAINAGE IMPROVEMENTS AT CAREFREE TERRACE CONDOMINIUMS

	BY	DATE
DESIGNED	BAT	07/2023
DRAWN	NRD	07/2023
CHECKED	JML	07/2023

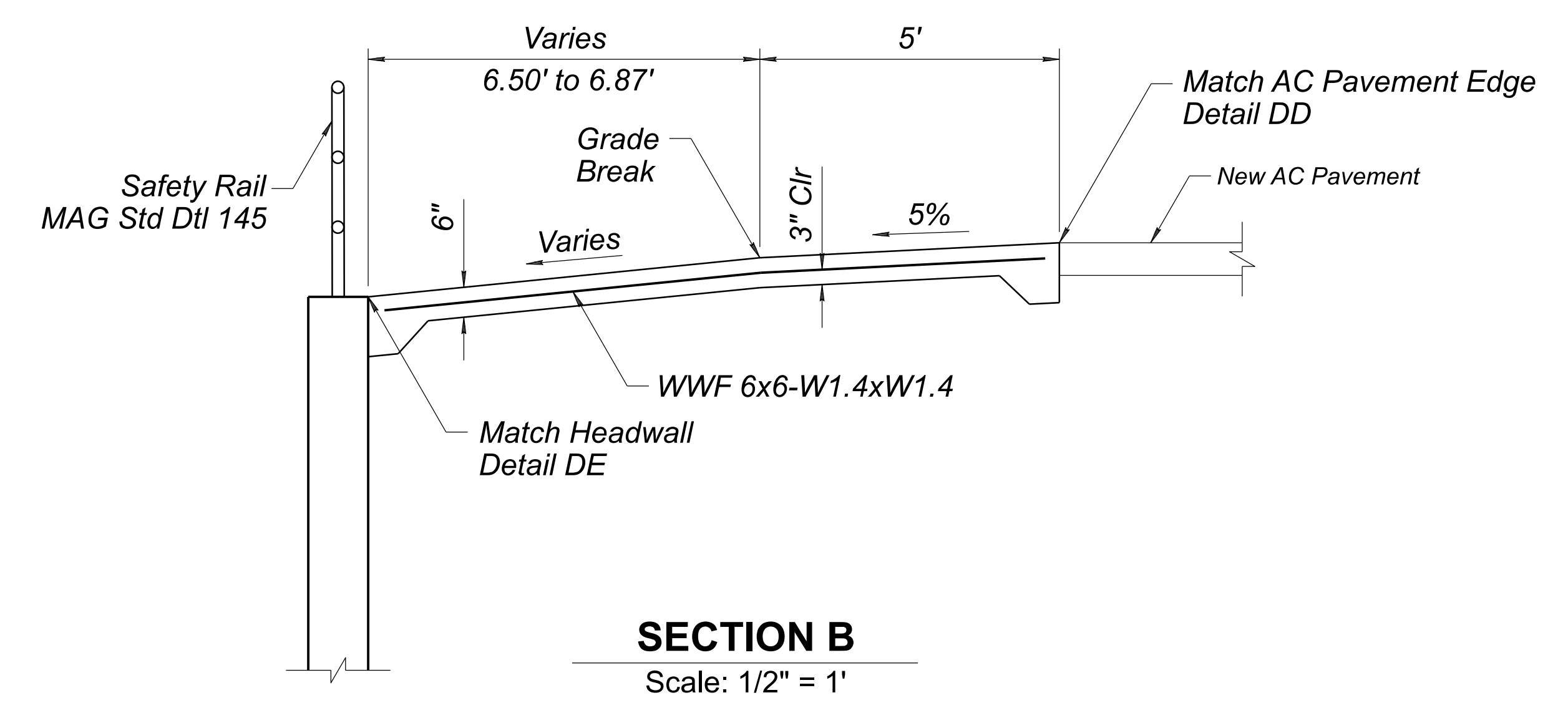
Professional Engineer  
66981  
BERNARD  
TJERINDO  
ARIZONA

Stanley Consultants INC. 3133 East Camelback Road, Suite 100  
Phoenix, Arizona 85016  
Phone: (602) 333-2200

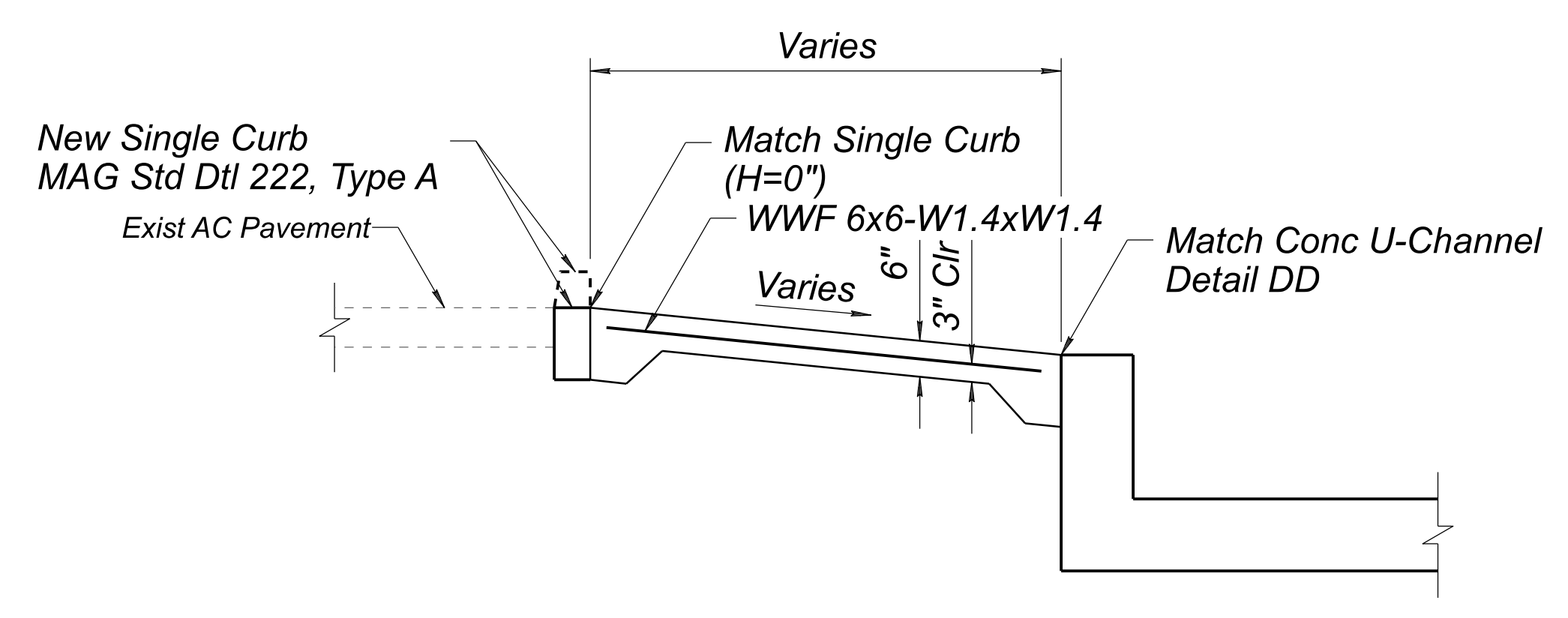




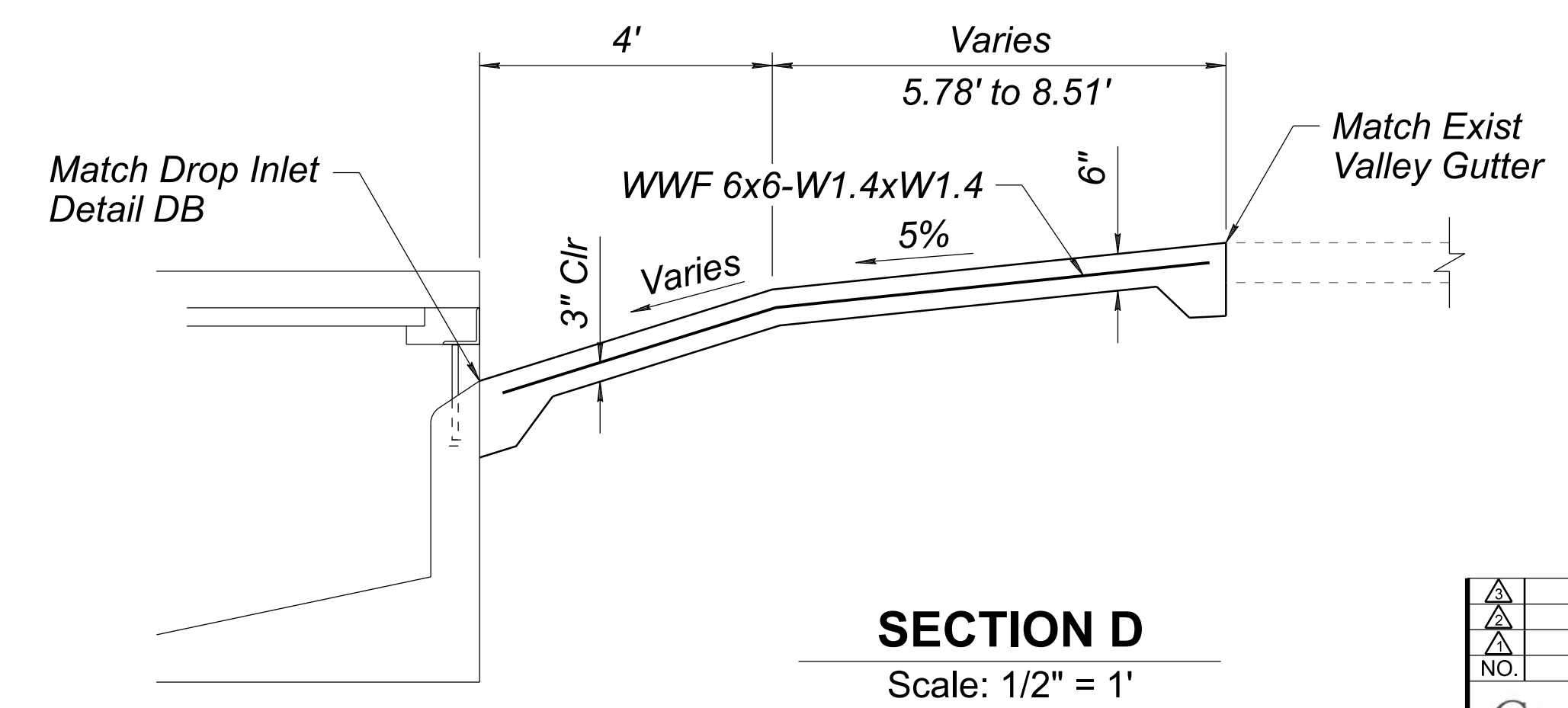
**SECTION A**  
Scale: 1/2" = 1'



**SECTION B**  
Scale: 1/2" = 1'



**SECTION C**  
Scale: 1/2" = 1'



**SECTION D**  
Scale: 1/2" = 1'

# DETAIL DF

## CONCRETE SPILLWAY



NO.	REVISION	BY	DATE

CAREFREE ARIZONA TOWN OF CAREFREE

CAREFREE DR DRAINAGE IMPROVEMENTS AT CAREFREE TERRACE CONDOMINIUMS

	BY	DATE
DESIGNED DBK		07/2023
DRAWN DBK		07/2023
CHECKED KCH		07/2023

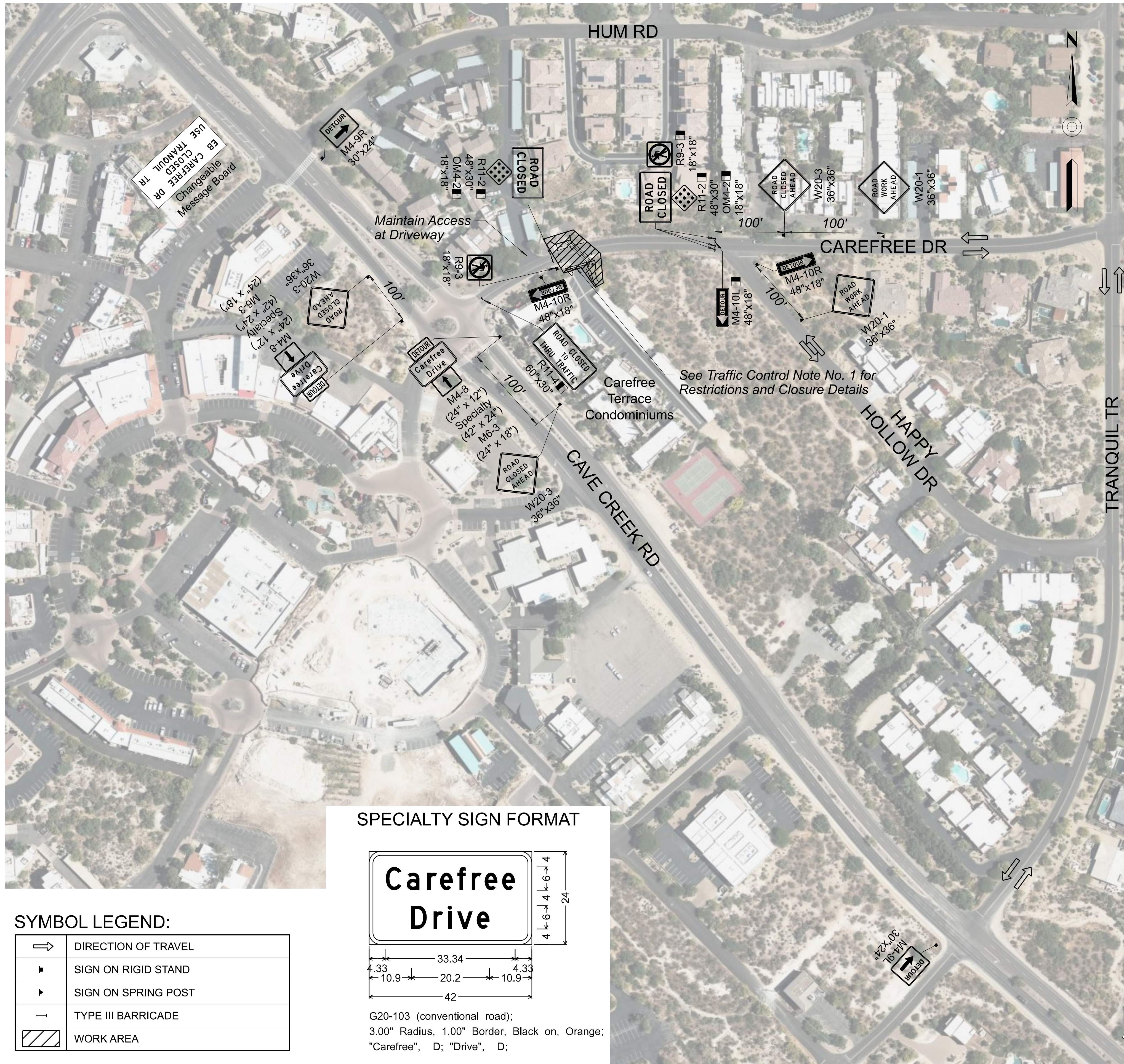
4197 KAREN C. HOBBS  
REGISTERED PROFESSIONAL ENGINEER  
ARIZONA, U.S.A.  
EXPIRES 03/31/2026

3133 East Camelback Road, Suite 100  
Phoenix, Arizona 85016  
Phone: (602) 333-2200

**Stanley Consultants inc.**

DETAIL SHEET SHEET D7





**MAINTENANCE OF TRAFFIC**

**GENERAL NOTES:**

1. A Traffic Control Plan needs to be submitted prior to (with plans) or accompanied by the permit application for all proposed work in or on a road. The Traffic Control Plan is subject to all town review processes and must be reviewed and subject to approval by the town prior to permit issuance. Additional information and stipulations may be required on a case-by-case basis.
2. All required traffic control devices and temporary fencing shall be included on the Traffic Control Plans and shall be placed in accordance with the City of Phoenix Barricade Manual and the Manual of Uniform Traffic Control Devices (MUTCD).
3. All existing signs in conflict with the construction signs shall be modified, removed, relocated, or covered in place, as directed by the Town representative. The contractor shall store and reinstall items which have been removed in a manner approved by the Town Engineer, at no additional cost to the Town.
4. All construction signs shall have black letters on a fluorescent retroreflective orange background, unless noted otherwise.
5. The retroreflective sheeting shall meet the minimum criteria established in Section 608 and Section 1007 of the ADOT Standard Specification.
6. A Type "C" warning light shall be mounted on every Type II barricade and vertical panel used for channelization during night time activities.
7. An adequate number of Type III barricades shall be placed in order to close a roadway. A Type "A" warning light shall be mounted on both ends of each barricade during nighttime activities.
8. Traffic Control Plans shall be prepared by a person certified by the American Traffic Safety Services Association (ATSSA).
9. Temporary fencing to be erected in the public right-of-way, private roads, and/or across public access sidewalks shall be provided in accordance with the City of Phoenix Barricade Manual and the Manual on Uniform Traffic Control Devices, and shall be subject to the approval of the Town.
10. Temporary fencing proposed to enclose or prohibit access to a public transit stop, shall be subject to the approval of the Town.
11. Locations of traffic control identification attached to the temporary fencing shall be subject to the approval of the Town.

**TRAFFIC CONTROL NOTES:**

1. The contractor shall maintain a minimum of one lane driveway access to the Carefree Terrace Condominium complex, except during approved full driveway closures. See Subsection 401.5.4 Special Provisions for additional requirements for residential access and driveways.
2. The contractor shall provide detour signing for residents to use Tranquil Trail for access to Carefree Drive on Cave Creek Rd.
3. The above plan shows the general overall road closure for work on Carefree Drive and within the driveway for Carefree Terrace Condos. Additional traffic control devices are required to maintain access to driveway through the work zone based on the contractor's construction sequencing. The contractor shall submit Traffic Control Plans for each phase of work to the Town for approval prior to modifications to the traffic control devices.

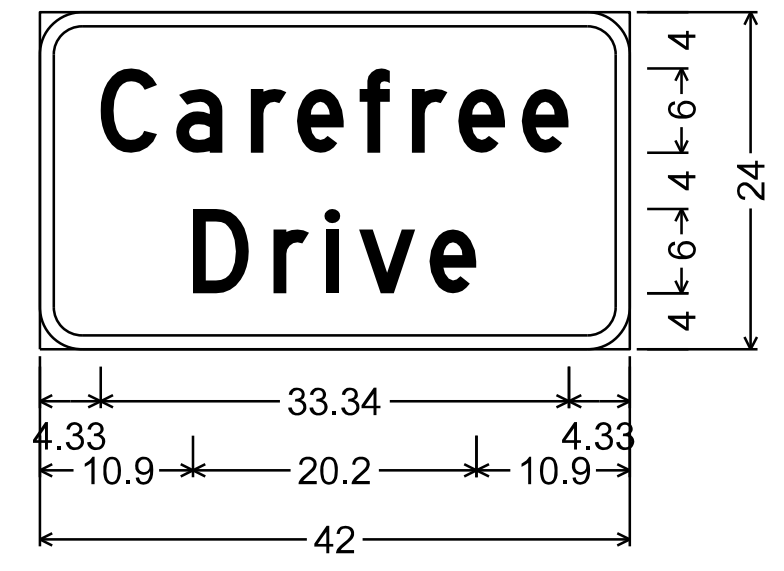
**LEGEND:**

- On Type III Barricade

**SYMBOL LEGEND:**

→	DIRECTION OF TRAVEL
■	SIGN ON RIGID STAND
▶	SIGN ON SPRING POST
⊥	TYPE III BARRICADE
▨	WORK AREA

**SPECIALTY SIGN FORMAT**



G20-103 (conventional road);  
 3.00" Radius, 1.00" Border, Black on, Orange;  
 "Carefree", D; "Drive", D;

		<b>TOWN OF CAREFREE</b>	
<b>CAREFREE DR DRAINAGE IMPROVEMENTS AT CAREFREE TERRACE CONDOMINIUMS</b>			
		BY DBK	DATE 07/2023
DESIGNED DBK	DRAWN DBK	CHECKED KCH	DATE 07/2023
		3133 East Camelback Road, Suite 100 Phoenix, Arizona 85016 Phone: (602) 333-2200	
<b>MAINTENANCE OF TRAFFIC</b>			SHEET <b>T1</b>