

**ADDENDUM No. 3**

Date September 02, 2014

City of Austin

Project Name Shoal Creek Greenbelt Trail Improvements

C.I.P. No. 6051.005

This Addendum forms a part of Contract and clarifies, corrects or modifies original Bid Documents, dated July 14, 2014. Acknowledge receipt of this addendum in space provided on bid form. Failure to do so may subject bidder to disqualification.

A. Project Manual Revisions:

**Replace Section 00300U with the attached Section 00300U.**

**Replace Section 01300 with the attached Section 01300.**

**Replace Special Specification SS180000 "Limestone Block Retaining Wall" with the attached Special Specification SS180000 "Limestone Block Retaining Wall".**

B. Drawing Revisions:

**Replace Sheet 1 with the attached Sheet 1.**

**Replace Sheet 2 with the attached Sheet 2.**

**Replace Sheet 3 with the attached Sheet 3.**

**Replace Sheet 5 with the attached Sheet 5.**

**Replace Sheet 6 with the attached Sheet 6.**

**Replace Sheet 7 with the attached Sheet 7.**

**Replace Sheet 10 with the attached Sheet 10.**

**Replace Sheet 11 with the attached Sheet 11.**

**Replace Sheet 12 with the attached Sheet 12.**

**Replace Sheet 13 with the attached Sheet 13.**

**Replace Sheet 14 with the attached Sheet 14.**

**Replace Sheet 19 with the attached Sheet 19.**

**Replace Sheet 20 with the attached Sheet 20.**

**Replace Sheet 21 with the attached Sheet 21.**

**Replace Sheet 22 with the attached Sheet 22.**

**Replace Sheet 24 with the attached Sheet 24.**

**Replace Sheet 25 with the attached Sheet 25.**

- Insert Sheet 25A into the plan set.**
- Replace Sheet 26 with the attached Sheet 26.**
- Replace Sheet 31 with the attached Sheet 31.**
- Replace Sheet 32 with the attached Sheet 32.**
- Replace Sheet 34 with the attached Sheet 34.**
- Replace Sheet 35 with the attached Sheet 35.**
- Replace Sheet 52 with the attached Sheet 52.**
- Replace Sheet 54 with the attached Sheet 54.**
- Insert Sheet 54A into the plan set.**
- Replace Sheet 57 with the attached Sheet 57.**
- Replace Sheet 60 with the attached Sheet 60.**
- Replace Sheet 61 with the attached Sheet 61.**
- Insert Sheet 61A into the plan set.**
- Insert Sheet 61B into the plan set.**
- Insert Sheet 61C into the plan set.**

This addendum consists of 28 pages and 32 plan sheets.

  
\_\_\_\_\_  
Approved by OWNER

  
\_\_\_\_\_  
Approved by ENGINEER/ARCHITECT



**END**

**Bidding Requirements, Contract Forms and Conditions of the Contract**  
**UNIT PRICE BID FORM**  
Section 00300U

The undersigned, in compliance with the Invitation for Bids for construction of the following Project: Shoal Creek Trail Greenbelt Improvements

(CIP ID# 6051.005) (IFB# CLMC504) for the City of Austin, Texas, having examined the Project Manual, Drawings and Addenda, the site of the proposed Work and being familiar with all of the conditions surrounding construction of the proposed Project, having conducted all inquiries, tests and investigations deemed necessary and proper; hereby proposes to furnish all labor, permits, material, machinery, tools, supplies and equipment, and incidentals, and to perform all Work required for construction of the Project in accordance with the Project Manual, Drawings and Addenda within the time indicated for the following prices of:

Note: The Bidder will enter the line item subtotal in the "Amount" column below, which is the product of the estimated "Quantity" multiplied by the "Unit Price". Any mathematical errors will be corrected for the purpose of determining the correct Amount to be entered in the Bid Form. The Amounts, including any corrected Amounts, will then be totaled to determine the actual amount of the Bid.

**Parks and Recreation Department**

<b>Bid Item</b>	<b>Quantity</b>	<b>Unit</b>	<b>Item Description</b>	<b>Unit Price</b>	<b>Amount</b>
<u>101S-B</u>	<u>10.5</u>	<u>STA</u>	<u>Preparing Right-of-Way</u> _____ _____	<u>\$</u> _____	<u>\$</u> _____
<u>120S-A</u>	<u>438</u>	<u>CY</u>	<u>Channel Excavation</u> _____ _____	<u>\$</u> _____	<u>\$</u> _____
<u>201S</u>	<u>1,212</u>	<u>SY</u>	<u>Subgrade Preparation</u> _____ _____	<u>\$</u> _____	<u>\$</u> _____
<u>210S-A</u>	<u>222</u>	<u>CY</u>	<u>Flexible Base</u> _____ _____	<u>\$</u> _____	<u>\$</u> _____
<u>403S-CY-1</u>	<u>5.0</u>	<u>CY</u>	<u>Cast-in-place Portland Cement Concrete Flumes, Including Reinforcement – Complete in place</u> _____	<u>\$</u> _____	<u>\$</u> _____

<u>Bid Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Item Description</u>	<u>Unit Price</u>	<u>Amount</u>
414S-C-1	31.5	CY	Cast-in-place Portland Cement Concrete Retaining Wall, Including Reinforcement (Wall No. 1)	\$	\$
414S-C-2	702.1	CY	Cast-in-place Portland Cement Concrete Retaining Wall, Including Reinforcement (Wall No. 2)	\$	\$
414S-C-3	128.6	CY	Cast-in-place Portland Cement Concrete Retaining Wall, Including Reinforcement (Wall No. 3)	\$	\$
414S-C-4	84.7	CY	Cast-in-place Portland Cement Concrete Retaining Wall, Including Reinforcement (Wall No. 4)	\$	\$
414S-C-PW	18.0	CY	Cast-in-place Portland Cement Concrete Retaining Wall, Including Reinforcement (Planter Wall)	\$	\$
432S-4-1	8,080	SF	New P.C. Concrete Sidewalks, 4 Inch thickness	\$	\$
432S-6	1,218	SF	New P.C. Concrete Sidewalks, 6 Inch thickness	\$	\$
432S-PRC-2-1	141	LF	Pedestrian ADA Railing – Option 1 (Standard 707S-2)	\$	\$
506S-CNSW	1	EA	Connection To Existing Storm Sewer	\$	\$

<u>Bid Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Item Description</u>	<u>Unit Price</u>	<u>Amount</u>
510- ASD4Dia.	<u>736</u>	<u>LF</u>	Pipe, 4 Inch Dia. SHD 80 PVC (all depths), including excavation and backfill	\$ _____	\$ _____
510- ASD18Dia.	<u>7</u>	<u>LF</u>	Pipe, 18 Inch Dia. (all depths), including excavation and backfill	\$ _____	\$ _____
510- ASD24Dia.	<u>10</u>	<u>LF</u>	Pipe, 24 Inch Dia. (all depths), including excavation and backfill	\$ _____	\$ _____
604S-C	<u>1,177</u>	<u>SY</u>	Native Seeding for Erosion Control Method, Fiber Mulch	\$ _____	\$ _____
604S-E	<u>1,177</u>	<u>SY</u>	Mulch, Fiber	\$ _____	\$ _____
605S-A-1	<u>611</u>	<u>SY</u>	Soil Retention Blanket Class 2; Type F	\$ _____	\$ _____
605S-A-2	<u>2,333</u>	<u>SY</u>	Soil Retention Blanket Class 2; Type H	\$ _____	\$ _____
608S-2	<u>1</u>	<u>LS</u>	Irrigation System	\$ _____	\$ _____
609S-A	<u>530</u>	<u>SY</u>	Topsoil and Seedbed Preparation	\$ _____	\$ _____

<u>Bid Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Item Description</u>	<u>Unit Price</u>	<u>Amount</u>
609S-C	530	SY	Native Grassland Seeding and Planting	\$	\$
609S-E	530	SY	Watering	\$	\$
609S-G	530	SY	Management Practices	\$	\$
610S-B	3	LF	Protective Fencing Type B Wood Fence (Typical Application-high damage potential)	\$	\$
639S	50	LF	Rock Berm	\$	\$
641S	1	EA	Stabilized Construction Entrance	\$	\$
648S	1,770	LF	Mulch Sock	\$	\$
700S-TM	1	LS	"Total Mobilization Payment"	\$	\$
802S-B C.I.P.	2	EA	C.I.P. Project Signs	\$	\$

<u>Bid Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Item Description</u>	<u>Unit Price</u>	<u>Amount</u>
803S-MO	8	MO	Barricades, Signs, and Traffic Handling	\$ _____	\$ _____
SP608S-1B1	4	EA	Planting Type Bicolor Iris, 3 Gal	\$ _____	\$ _____
SP608S-1S	126	EA	Planting Type Island Sea Oats, 3 Gal	\$ _____	\$ _____
SP608S-1FV	70	EA	Planting Type Fig Vine, 3 Gal	\$ _____	\$ _____
SP608S-1GM	32	EA	Planting Type Gulf Coast Muhly, 3 Gal	\$ _____	\$ _____
SP608S-1RS	50	EA	Planting Type Big Red Sage, 3 Gal	\$ _____	\$ _____
SP608S-1TC	70	EA	Planting Type Turk's Cap, 3 Gal	\$ _____	\$ _____
SP608S-1TR	50	EA	Planting Type Trailing Rosemary, 3 Gal	\$ _____	\$ _____
SP608S-1YC	12	EA	Planting Type Yellow Columbine, 3 Gal	\$ _____	\$ _____
SP608S-1Z	20	EA	Planting Type Zexmenia, 3 Gal	\$ _____	\$ _____
SS1001	1	LS	Coffer Dam Dewatering System	\$ _____	\$ _____

<u>Bid Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Item Description</u>	<u>Unit Price</u>	<u>Amount</u>
SS4003-1-1	9,150	SF	Temporary Special Shoring	\$	\$
SS6000-A	1	YR	Landscape Maintenance 1 <sup>st</sup> Year	\$	\$
SS6000-B	1	YR	Landscape Maintenance 2 <sup>nd</sup> Year	\$	\$
SS6000-C	1	YR	Landscape Maintenance 3 <sup>rd</sup> Year	\$	\$
SS130000-2-1	2,684	SF	Limestone Block Toe Wall, Plan Quantity, Complete in Place	\$	\$
SS130000-3-1	2,740	SF	Dry Stack Trail Wall, Plan Quantity, Complete in Place	\$	\$

**PARKS AND RECREATION DEPARTMENT SUBTOTAL BID: .....\$**

**AUSTIN ENERGY**

<u>Bid Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Item Description</u>	<u>Unit Price</u>	<u>Amount</u>
SP510-SOIL-12	206	LF	Open trench, up to 18 feet cover depth (above pipes), Type A or B soil conditions, 12" Pre-Insulated CHS and CHR pipes, two 4" conduits, excavation & backfill.	\$ _____	\$ _____
SS230523-AIR	2	EA	Air Release Assembly Per Standard AE Detail #M16, 12 Inch Diameter	\$ _____	\$ _____

**AUSTIN ENERGY SUBTOTAL BID:** .....\$ \_\_\_\_\_

**WATERSHED**

<u>Bid Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Item Description</u>	<u>Unit Price</u>	<u>Amount</u>
591S-B-1	43	CY	Dry Rock Riprap	\$ _____	\$ _____
SS4003-1-2	7,700	SF	Temporary Special Shoring	\$ _____	\$ _____
SS130000-1	4,322	SF	Mechanical Stabilized Earth (MSE) Slopes, Plan Quantity, Complete in Place	\$ _____	\$ _____
SS130000-2-2	630	SF	Limestone Block Toe Wall, Plan Quantity, Complete in Place (MSE Wall)	\$ _____	\$ _____
SS130000-3-2	1,080	SF	Dry Stack Trail Wall, Plan Quantity, Complete in Place (MSE Wall)	\$ _____	\$ _____

<u>Bid Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Item Description</u>	<u>Unit Price</u>	<u>Amount</u>
SS180000-1	1	LS	Limestone Block Retaining Wall (Wall No. 5)	\$	\$

WATERSHED SUBTOTAL BID: .....\$

**PUBLIC WORKS DEPARTMENT**

<u>Bid Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Item Description</u>	<u>Unit Price</u>	<u>Amount</u>
403S-CY-2	41	CY	Class "C" Concrete Abutment, Including Reinforcing	\$	\$
403S-CY-3	8	CY	Class "C" Concrete Pipe Enclosure, Including Reinforcing	\$	\$
403S-CY-4	19	CY	Structural Approach Slab	\$	\$
403S-SY	105	SY	6 Inch Concrete Deck Slab, Class S, Including Reinforcing	\$	\$
420S-A-1	216	LF	Drilled Shaft, 42 Inch Dia.	\$	\$
420S-A-2	80	LF	Drilled Shaft, 18 Inch Dia.	\$	\$
432S-4-2	869	SF	New P.C. Concrete Sidewalks, 4 Inch thickness	\$	\$
432S-PRC- 2-2	93	LF	Pedestrian ADA Railing – Option 1 (Standard 707S-2), (Bridge Approach)	\$	\$

<u>Bid Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Item Description</u>	<u>Unit Price</u>	<u>Amount</u>
SP594S	<u>675</u>	<u>SF</u>	Replace Rock Gabion Wall, all types	\$ _____	\$ _____
SS1000-1	<u>1</u>	<u>EA</u>	Prefab Steel Truss Span, 75 FT.	\$ _____	\$ _____
SS4003-1-3	<u>1,750</u>	<u>SF</u>	Temporary Special Shoring	\$ _____	\$ _____

PUBLIC WORKS DEPARTMENT SUBTOTAL BID: .....\$ \_\_\_\_\_

**AUSTIN WATER UTILITY**

<u>Bid Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Item Description</u>	<u>Unit Price</u>	<u>Amount</u>
505S-A	<u>58</u>	<u>LF</u>	Concrete Encasement for 24 Inch Dia. Pipe	\$ _____	\$ _____
506S-JWW	<u>2</u>	<u>EA</u>	Junction Box, 6 Ft. x 6 Ft.	\$ _____	\$ _____
506S-M1WW	<u>2</u>	<u>EA</u>	Standard Pre-Cast Manhole w/CIP Base, 5 Foot Dia.	\$ _____	\$ _____
506S-MWW	<u>8</u>	<u>EA</u>	Standard Pre-cast Manhole w/ Pre-cast Base, 5 Foot Dia.	\$ _____	\$ _____
509S-1	<u>959</u>	<u>LF</u>	Trench Excavation Safety Protective Systems, (all depths)	\$ _____	\$ _____

<u>Bid Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Item Description</u>	<u>Unit Price</u>	<u>Amount</u>
510-AWW21Dia.	420	LF	Pipe, 21 Inch Dia., PVC Type (all depths), Including Excavation and Backfill	\$ _____	\$ _____
510-AWW24Dia.	539	LF	Pipe, 24 Inch Dia., PVC Type (all depths), Including Excavation and Backfill	\$ _____	\$ _____
591S-B-2	466	CY	Dry Rock Riprap	\$ _____	\$ _____

**AUSTIN WATER UTILITY SUBTOTAL BID:** ..... \$ \_\_\_\_\_

Allowance #1 (Trail and Bridge Lighting) ..... \$ 500,000.00

Allowance #2 (Miscellaneous Bridge Construction) ..... \$ 250,000.00

**BASE BID (INCLUDING ALLOWANCE(S))** ..... \$ \_\_\_\_\_

In the event of a mathematical error, the correct product, determined by using the "Unit Price" and "Quantity", and the correct sum, determined by totaling the correct line item Amounts, will prevail over the amount entered by the Bidder. The unit prices shown above will be the unit prices used to tabulate the Bid and used in the Contract, if awarded by the City.

Notes:

- For a more detailed explanation of Bid allowances, see Section 1020.

Optional Information on Bid Prices Submitted by Computer Printout

In lieu of handwritten unit prices in figures in ink on the Bid forms above, Bidders, at their option, may submit an original computer printout sheet bearing certification by, and signature for, the Bidding firm. The unit prices shown on acceptable printouts will be the unit prices used to tabulate the Bid and used in the Contract if awarded by the City. As a minimum, computer printouts must contain all information and in the format shown on the attached page: "Example of Bid Prices Submitted by Computer Printout" form.

If a computer printout is used, the Bidder must still execute that portion of the unit price Bid form which acknowledges the Bid Guaranty, Time of Completion, Liquidated Damages, and all addenda that may have been issued.

Bids with unit prices by computer printout may be rejected, if:

1. The computer printout does not include the required certification, set forth in the attached "Example".
2. The computer printout is not signed in the name of the firm to whom the Project Manual was issued.
3. The computer printout is non-responsive or otherwise omits required Bid items or includes items not shown on the Bid forms in the Project Manual.
4. The other required Bid documents issued by the City are not fully executed as provided above.
5. The signed Section 00300U is not returned with the signed computer printout.

If the Bid submitted by the Bidder contains both the form furnished by the City, completed according to the instructions, and also a computer printout, completed according to the instructions, unit prices of only one will be considered. In this situation, the unit Bid prices shown on the computer printout will be used to determine the Bid.

**BID GUARANTY:** A Bid guaranty must be enclosed with this Bid, as required in Section 00020 or Section 00020S, in the amount of not less than five percent (5%) of the total Bid. Following the Bid opening, submitted Bids may not be withdrawn for a period of 90 Calendar Days. Award of Contract will occur within this period, unless mutually agreed between the parties. The Bid guaranty may become the property of the OWNER, or the OWNER may pursue any other action allowed by law, if:

- Bidder withdraws a submitted Bid within the period stated above;
- Bidder fails to submit the required post Bid information within the period specified in Section 00020S or 00100, or any mutually agreed extension of that period;
- or Bidder fails to execute the Contract and furnish the prescribed documentation (bonds, insurance, etc.) needed to complete execution of the Contract within five (5) Working Days after notice of award, or any mutually agreed extension of that period.

**TIME OF COMPLETION:** The undersigned Bidder agrees to commence work on the date specified in the written "Notice to Proceed" to be issued by the OWNER and to **finally** complete construction of the improvements, as required by the Project Manual, Drawings and Addenda for the Work within four-hundred-twenty (420) **Calendar Days**. The Bidder further agrees that should the Bidder fail to **finally** complete the Work within the number of days indicated in the Bid or as subsequently adjusted, Bidder shall pay the liquidated damages for each consecutive day thereafter as provided below; unless the OWNER elects to pursue any other action allowed by law.

**WAIVER OF ATTORNEY FEES:** In submitting its bid, in consideration for the waiver of its right to attorney's fees by the OWNER, the Bidder knowingly and intentionally agrees to and shall waive the right to attorney's fees under Section 271.153 of the Texas Local Government Code in any administrative proceeding, alternative dispute resolution proceeding, or litigation arising out of or connected to any Contract awarded pursuant to this solicitation process.

**LIQUIDATED DAMAGES:** The Bidder understands and agrees that the timely completion of the described Work is of the essence. The Bidder and OWNER further agree that the OWNER's actual damages for delay caused by failure to timely complete the Project are difficult, if not impossible to measure. However, with respect to the additional administrative and consultant costs to be incurred by OWNER, the reasonable estimate of such damages has been calculated and agreed to by OWNER and Bidder. Therefore, the Bidder and the OWNER agree that for each and every **Calendar Day** the Work or any portion thereof, remains incomplete after the **Final Completion** dates as established by the above paragraph, "Time of Completion", payment will be due to the Owner in the amount of two-hundred-fifty dollars (\$750) per **Calendar Day** as liquidated damages, not as a penalty, but for delay damages to the OWNER. Such amount shall be deducted

by the OWNER from any Contract payment due. In the event of a default or breach by the CONTRACTOR and demand is made upon the surety to complete the project, in accordance with the Contract Documents, the surety shall be liable for liquidated damages pursuant to the Contract Documents in the same manner as the CONTRACTOR would have been.

OWNER reserves the right to reject any or all Bids and to waive any minor informality in any Bid or solicitation procedure (a minor informality is one that does not affect the competitiveness of the Bids).

The undersigned acknowledges receipt of the following addenda:

- Addendum No. 1 dated \_\_\_\_\_ Received \_\_\_\_\_
- Addendum No. 2 dated \_\_\_\_\_ Received \_\_\_\_\_
- Addendum No. 3 dated \_\_\_\_\_ Received \_\_\_\_\_
- Addendum No. 4 dated \_\_\_\_\_ Received \_\_\_\_\_
- Addendum No. 5 dated \_\_\_\_\_ Received \_\_\_\_\_

\_\_\_\_\_  
Secretary, \*if Bidder is a Corporation

\_\_\_\_\_  
Bidder

(Seal)

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
Address

\_\_\_\_\_  
Telephone Number / FAX Number

\_\_\_\_\_  
Email Address for Person Signing Bid

\_\_\_\_\_  
Email Address for Bidder's Primary Contact Person

\* Copy of Corporate Resolution and minutes with certificate of officer of Bidder as to authority of signatory to bind Bidder is to be signed and dated no earlier than one week before Bid date, and attached to this document.

EXAMPLE: BID PRICES SUBMITTED BY COMPUTER PRINTOUT

<b>Project Name: Shoal Creek Greenbelt Trail Improvements</b>
<b>CIP ID #: 6051.005</b>
<b>IFB #: CLMC504</b>

<b>Bid Item #</b>	<b>Bid Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Unit Bid Price</b>	<b>Total Amount</b>
<b>Total Bid:</b>					

(YOUR FIRM'S NAME) certifies that the unit prices shown on this completed computer printout for all of the bid items and the alternates contained in this proposal are the unit prices intended and that its Bid will be tabulated using these unit prices and no other information from this printout. (YOUR FIRM'S NAME) acknowledges and agrees that the total bid amount shown will be read as its total bid. *In the event of a mathematical error*, the correct product, determined by using the "Unit Price" and "Quantity", and the correct sum, determined by totaling the correct line item Amounts, will prevail over the amount entered by the Bidder.

Signed: \_\_\_\_\_

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

Date: \_\_\_\_\_

End

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS:**

The Contractor prepares submittals. Drawings and general provisions of Contract, including Section 00700, "General Conditions"; Section 00810, "Supplemental General Conditions"; Division 1 requirements and City of Austin Technical Specifications and Special Provisions thereto, should be used as the related documents for this requirement. Attachment 1 lists the submittals that have been identified for this project.

**1.2 SUMMARY**

- A. This Section includes administrative and procedural requirements for submittals required for performance of the Work, including the following:
  - 1. Security plan.
  - 2. Contractor's construction schedule.
  - 3. Submittal schedule.
  - 4. Shop drawings.
  - 5. Design calculations.
  - 6. Product data.
  - 7. Samples.
  - 8. Quality assurance and quality control submittals, including calculations, mix designs and substantiating test results.
  
- B. Administrative Submittals: Refer to other Division 1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to, the following:
  - 1. Permits.
  - 2. Applications for Payment.
  - 3. Performance and Payment bonds.
  - 4. Insurance certificates.
  - 5. Monthly Subcontractors expense report.
  - 6. Non-use of asbestos affidavits
  
- C. Related Sections: The following Sections contain requirements that relate to this Section:
  - 1. Section 00700, "General Conditions"; Section 00810, "Supplemental General Conditions"; and/or Division 1, Section 01025, "Measurement and Payment" specifies requirements for submittal of the Schedule of Values.
  - 2. Division 1, Section 01200, "Project Meetings" specifies requirements for submittal and distribution of meeting and conference minutes.
  - 3. Section 00700, "General Conditions"; Section 00810, "Supplemental General Conditions"; and/or Division 1, Section 01700, "Contract Close-out" specifies requirements for submittal of Project Record Documents and warranties at project close-out.
  - 4. Section 00700, "General Conditions" Article 6.2.4 specifies requirements for Substitutes and "Approved Equal" Items.

**PART 2 - PRODUCTS - not used**

**PART 3 - EXECUTION**

**3.1 SUBMITTAL PROCEDURES**

Contractor shall be responsible for the following:

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  - 2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals or resubmittals concurrently.
    - a. The E/A reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.
  - 3. Processing: To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for resubmittals.
    - a. Allow fourteen (14) calendar days for initial review. Allow additional time if the Engineer must delay processing to permit coordination with subsequent submittals.
    - b. If an intermediate submittal is necessary, process the same as the initial submittal.
    - c. Allow fourteen (14) calendar days for processing each resubmittal.
    - d. No extension of Contract Time will be authorized because of failure to transmit submittals to the E/A sufficiently in advance of the Work to permit processing.
    - e. Refer to "Special Specification 180000: Limestone Block Retaining Wall" for submittal requirements and Engineer processing durations for wall number 5.
- B. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
  - 1. Provide a space approximately 4 inches by 5 inches (100 by 125 mm) on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
  - 2. Include the following information on the label for processing and recording action taken.
    - a. Project name.
    - b. Date.
    - c. Name and address of the Contractor's Engineer.
    - d. Name and address of the Contractor.
    - e. Name and address of the subcontractor.
    - f. Name and address of the supplier.
    - g. Name of the manufacturer.
    - h. Number and title of appropriate Specification Section.
    - i. Drawing number and detail references, as appropriate.
- C. Number of Copies:
  - 1. Two (2) copies of the proposed Construction schedule and subsequent revision are required.

2. Two (2) copies of the proposed Submittal schedule and subsequent revision are required.
  3. Nine (9) copies of Shop Drawings, Design Calculations, Product, Product Samples, Quality Assurance and Quality Control submittals are required.
- D. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the E/A through the Owner's Representative using a transmittal form (An example Transmittal Form is provided at the end of this section). The E/A will not accept submittals received from sources other than the Contractor.
1. On the transmittal, record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.
  2. Number transmittals in sequence for each Series of the Specifications thus: x-xxx. The number after the dash indicates the Section of the Specifications, and the number before the dash is the sequence number of the transmittal. For example, the first item submitted related to Specification Item No. 506, "Manholes" would be labeled **1-506**, the second item submitted would be labeled **2-506**, etc. If the submittal item relates to a Special Provision or Special Specification, use **SP506** or **SS5061**, for example, to indicate the applicable Specification Section. Identify resubmittals with a letter of the alphabet following the original sequence number, using "A" for the first resubmittal, "B" for the second resubmittal, etc. For example, the first resubmittal of the second item submitted for Specification SP506 would be labeled **2A-SP506**.

### **3.2 CONTRACTOR'S CONSTRUCTION SCHEDULE**

- A. Construction Schedule: As described in Section 2.4.2 of Section 00700 "General Conditions", prepare a fully developed Contractor's construction schedule ("Baseline Schedule") using Microsoft Project<sup>®</sup> software unless otherwise approved by Owner's Representative. Submit Baseline Schedule prior to or at the preconstruction conference, and submit updated schedules as specified by the E/A, usually at each regularly scheduled Project Meeting and with each pay application.
1. Detail each significant construction activity and use a weekly timeframe for the schedule. Use the same breakdown of units of the Work as indicated in the "Schedule of Values."
  2. With each update, revise task completion percentage and mark completed tasks.
  3. Prepare the schedule on a sheet, or series of sheets, of stable transparency, or other reproducible media, of sufficient width to show data for the entire construction period.
  4. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the Work. Show each activity in proper sequence. Indicate graphically the critical path items and the sequences necessary for completion of related portions of the Work.
  5. Indicate the phases of work in which subcontractors will be participating. Subcontractors shall be indicated by name.
  6. Coordinate the Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittal Schedule, progress reports, payment requests, and other schedules.

7. Indicate substantial completion in advance of the date established for Final Completion to allow time for the E/A's procedures necessary for certification of Substantial and Final Completion.
- B. Work Stages: Indicate important stages of construction for each major portion of the Work, including submittal review, testing, and installation.
  - C. Cost Correlation: Within the Baseline Schedule, provide cost information indicating planned and actual costs. On the appropriate task line(s), show dollar volume of Work performed as of the dates used for preparation of applications for payment. Refer to Section 00700, "General Conditions", Article 14 Payment to Contractor and Completion for cost reporting and payment procedures.
  - D. Distribution: Following response to the Baseline Schedule submittal, distribute electronic copies to the E/A, subcontractors, suppliers, and other parties required to comply with scheduled dates. Keep a copy at the Project Site at all times.
    1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
  - E. Schedule Updating: Revise the schedule after each meeting, event, or activity where revisions have been recognized or made and as requested by the E/A. Issue the updated schedule concurrently with the report of each meeting, or as requested by the E/A.

### **3.3 SUBMITTAL SCHEDULE**

- A. Concurrently with the development of the Contractor's Construction Schedule, prepare a complete schedule of submittals. Submit the initial Submittal Schedule along with the Construction Schedule, at, or prior to, the Pre-construction Conference.
  1. Coordinate Submittal Schedule with the list of subcontractors, Schedule of Values, and the list of products as well as the Contractor's Construction Schedule.
  2. Prepare the schedule in chronological order. Provide the following information:
    - a. Scheduled date for the first submittal.
    - b. Related Section number or Specification number.
    - c. Submittal category (Shop Drawings, Product Data, Calculations, Test Results, or Samples).
    - d. Name of the subcontractor.
    - e. Description of the part of the Work covered.
    - f. Scheduled date for resubmittal.
    - g. Scheduled date for completion of the E/A's review.
- B. Distribution: Following Owner's response to the initial submittal, print and distribute copies to the Owner's Representative, E/A, Owner, subcontractors, suppliers, and other parties required to comply with submittal dates indicated. Keep copies at the Project Site at all times.
  1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
- C. Schedule Updating: Revise the schedule after each meeting or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting, or as requested by the E/A.

### **3.4 CONSTRUCTION SEQUENCE PLANS**

The Contractor is required to submit construction sequence plans to the City at, or prior to, the pre-construction conference for approval. The Project shall be divided into phases according to the sequence of construction given in the Drawings and traffic control plans.

The Contractor shall arrange his/her work schedule to complete all Work on each phase, including street repair, any valve casting or manhole adjustments, and street overlay before moving on to the next work area.

### 3.5 SHOP DRAWINGS

- A. Submit newly prepared information drawn accurately to scale. Highlight, circle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not a Shop Drawing.
- B. Shop Drawings include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates and similar Drawings. Include the following information:
  - 1. Dimensions;
  - 2. Identification of products and materials included by sheet and detail number;
  - 3. Compliance with specified standards;
  - 4. Notation of coordination requirements; and
  - 5. Notation of dimensions established by field measurement.
  - 6. Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 inches by 11 inches but no larger than 24 inches by 36 inches.
  - 7. Do not use Shop Drawings without an appropriate stamp indicating action taken.

### 3.6 PRODUCT DATA

- A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, applicable certifications and performance curves.
  - 1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products that are not required, mark copies to indicate the applicable information. Include the following information:
    - a. Manufacturer's printed recommendations;
    - b. Compliance with trade association standards;
    - c. Compliance with recognized testing agency standards;
    - d. Application of testing agency labels and seals;
    - e. Notation of dimensions verified by field measurement; and
    - f. Notation of coordination requirements.
  - 2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
  - 3. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.
    - a. Do not proceed with installation until a copy of the final submission of Product Data is in the Installer's possession.
    - b. Do not permit use of unmarked copies of Product Data in connection with construction.
  - 4. Potable Water, Reclaimed Water, and Wastewater Items or Projects: The Contractor shall submit descriptive information and evidence that the materials and equipment the Contractor proposes for incorporation into the Work is of the kind and quality that satisfies the specified functions and quality. **Austin Water Utility Standard Products Lists (SPL)** are a part of the Specifications. Contractors shall use products specified in the Contract Documents, listed on the SPLs, or approved by AWU through the process in Section 2.4.0 of the Utilities Criteria Manual. Products contained in the SPL cannot be substituted for items shown on the Drawings, or

called for in the specifications, unless approved by the E/A in conjunction with the Austin Water Utility Standards Committee. **Unless otherwise specified**, products current at the time of solicitation shall be installed except where an updated List has been issued to remove a product because of quality or performance issues.

### 3.7 SAMPLES

- A. Submit full-size, fully fabricated Samples cured and finished when specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.
1. Mount or display Samples in the manner to facilitate review of qualities indicated. Include the following:
    - a. Specification Section number and reference;
    - b. Generic description of the Sample;
    - c. Sample source;
    - d. Product name or name of the manufacturer;
    - e. Compliance with recognized standards; and
    - f. Availability and delivery time.
  2. Submit Samples for review of size, kind, color, pattern, and texture. Submit Samples for a final check of these characteristics with other elements and a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
    - a. Where variation in color, pattern, texture, or other characteristic is inherent in the material or product represented, submit at least 3 multiple units that show approximate limits of the variations.
    - b. Refer to other Specification Sections for requirements of Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.
    - c. Refer to other Sections for Samples to be returned to the Contractor for incorporation in the Work. Such Samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of Sample submittals.
    - d. Samples not incorporated into the Work, or otherwise designated as the Owner's property, are the property of the Contractor and shall be removed from the site prior to Substantial Completion.
  3. Maintain sets of Samples, as returned, at the Project Site, for quality comparisons throughout the course of construction.
    - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
    - b. Sample sets may be used by Owner for final acceptance of the construction associated with each set.
- B. Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.

### 3.8 QUALITY ASSURANCE AND QUALITY CONTROL SUBMITTALS

- A. Submit quality assurance and quality control submittals, including design data, certifications, manufacturer's instructions, manufacturer's field reports, materials test results, field testing and inspection reports, and other quality-control submittals as required under other Sections of the Specifications.

- B. Certifications: Where other Sections of the Specifications require certification that a product, material, or installation complies with specified requirements, submit a certification from the manufacturer or responsible Engineer certifying compliance with specified requirements.
  - 1. Signature: Certification shall be signed by an officer of the corporation or other individual authorized to sign documents on behalf of the company.
- C. Calculations: When required in the technical specification, calculations shall be prepared and stamped by a Professional Engineer registered in the State of Texas.
- D. Concrete, Controlled Low Strength Material, Asphalt Stabilized Base and Hot Mix Asphaltic Concrete Mix Designs and Substantiating Test Data: Requirements for submittal of mix designs and substantiating test data are specified in the applicable Technical Specification Section. Each separate batch plant supplying ASB, HMAC and/or concrete shall submit mix designs to the Owner's Representative for review.

### 3.9 TECHNICAL SUBMITTALS REQUIRED

- A. Technical submittals required include, but are not limited to, the following list. This list is provided as an aid to the Contractor, but is not intended to be all inclusive. The Contractor shall refer to the Technical Specifications for additional requirements.

<u>Specification</u>	<u>Type of Submittal</u>
101S – Preparing Right of Way	Removal and Deposition Plan
102S – Clearing and Grubbing	Removal and Deposition Plan
104S – Removing Portland Cement Concrete	Removal and Deposition Plan
110S – Street Excavation	Removal and Deposition Plan
111S – Excavation	Removal and Deposition Plan
120S – Channel Excavation	Removal and Deposition Plan
130S - Borrow	Material Data
132S - Embankment	Material Data, Test Results
201S – Subgrade Preparation	Material Data, Test Results
210S - Flexible Base	Material Data, Test Results
220S – Sprinkling for Dust Control	Equipment Information and Sprinkling Plan
236S – Proof Rolling	Equipment Information
360S - Concrete Pavement	Material Data, Mix Designs, Test Results
401S – Structural Excavation and Backfill	Material Data, Mix Designs, Test Results
402S - Controlled Low Strength Material	Material Data, Mix Designs, Test Results
403S - Concrete for Structures	Material Data, Mix Designs, Test Results
405S - Concrete Admixtures	Product Data
406S – Reinforcing Steel	Product Data
407S – Fibrous Concrete	Product Data
408S - Concrete Joint Materials	Product Data
409S - Membrane Curing	Product Data
410S - Concrete Structures	Material Data, Mix Designs, Test Results
411S – Surface Finishes and Concrete	Product Data
413S – Cleaning and/or Sealing Joints and Cracks (Portland Cement Concrete)	Product Data
414S – Concrete Retaining Walls	Product Data
416S – Waterstops	Product Data
420S – Drilled Shaft Foundations	Material Data, Mix Designs, Test Results
432S – Portland Cement Concrete Sidewalks	Material Data, Mix Designs, Test Results
503S - Frames, Grates, Rings and Covers	Product Data
504S - Adjusting Structures	Material Data
505S – Concrete Encasement and Encasement Pipe	Material Data, Product Data

506S - Manholes	Shop Drawings, Material Data, Product Data
509S - Excavation Safety Systems	Excavation Safety Systems Plan, Calculations
510 - Pipe	Material Data, Product Data
551S – Pipe Underdrains	Product Data
591S – Riprap for Slope Protection	Material Data, Mix Designs, Test Results
594S – Gabions and Revet Mattresses	Material Data, Product Data
601S – Salvaging and Placing Topsoil	Material Data, Test Results
604S – Seeding and Erosion Control	Product Data
605S – Soil Retention Blanket	Product Data
606S – Fertilizer	Product Data
607S – Slope Stabilization Applications for Erosion Control	Product Data
608S - Planting	Product Data
609S – Native Grasslands Seeding and Planting	Product Data
610S - Preservation of Trees and Other Vegetation	Product Data
620S – Filter Fabric	Product Data
706S – Bridge and Culvert Railing	Material Data, Test Results
722S – Protective Coatings	Product Data
803S – Barricades, Signs, and Traffic Handling	Product Data
824S – Traffic Signs	Product Data
835S – Traffic Signal Conduit	Product Data
SS1000 – Pedestrian Bridge	Shop Drawings, Product Data, Design Calculations, Warranty
SS6000 – Landscape Maintenance	Product Data, Watering Schedule, Reports
SS130000 – Stream Bank and Trail Slope Systems	Material Data, Product Data, Test Results, Samples
SS180000 – Limestone Block Retaining Wall	Design Drawings, Material Data, Design Calculations, Product Data, Test Results, Samples
SS230523 – General Duty Valves for HVAC Piping	Product Data
SS232113 – Hydronic Piping	Product Data
SS232114 – Pre-Insulated Chilled Water Piping	Product Data

### 3.10 ENGINEER/ARCHITECT'S ACTION

- A. Except for submittals, for the record, or for information where action and return is not required, the E/A will review each submittal, mark to indicate action taken, and return within the time frame specified in Paragraph 3.1.A.3.
1. Compliance with specified characteristics is the Contractor's responsibility.
- B. Action Stamp: The E/A will stamp each submittal with a uniform, action stamp. The E/A will mark the stamp appropriately to indicate the action taken, as follows:
1. "Reviewed": the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents. Final payment depends on that compliance.
  2. "Reviewed with Comments": the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents. Final payment depends on that compliance.

3. "Revise and Resubmit" or "Rejected": do not proceed with Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the notations and resubmit without delay. Repeat if necessary to obtain different action mark.
    - a. Do not use, or allow others to use, submittals marked "Revise and Resubmit" or "Rejected" at the Project Site or elsewhere where Work is in progress.
  4. Other Action: Where a submittal is for information, or for record purposes, or for special processing, or for other activity, the E/A will return the submittal marked "Record Copy", "Action Not Required" or "No Action Taken."
- C. Unsolicited Submittals: The E/A will return unsolicited submittals to the sender without action.

### **3.11 PREPARATION AND SUBMITTAL OF CONSTRUCTION RECORD DRAWINGS**

The Owner's Representative and the Contractor's Superintendent will each maintain a set of bluelines noting any changes in ink during construction of the Project. The Owner's Representative and the Contractor's Superintendent will compare bluelines at least weekly (at a time mutually acceptable to both) to exchange information and compare notes to ensure all items installed and changes are documented. The following is a recommended minimum of items to be noted:

#### GENERAL

1. Notes should be sufficiently clear to allow a draftsman to easily make the necessary changes without the need for field checks and interpretation.
2. One complete set of Construction Record bluelines will be submitted prior to the final pay request and forwarded to the Owner.

#### STREET RECONSTRUCTION AND OVERLAY PROJECTS

1. Location, type, and quantity of all work added or deleted from the Project including repair areas, milled areas, sidewalk, ramps, curb and gutter, etc.
2. Deviations in street, sidewalk, curb and gutter location and grades from Drawings.

#### WATER/WASTEWATER PROJECTS

1. Type, name and model numbers of all valves (with # of turns to open/close), air release valves, drain and fire hydrants noted at locations installed.
2. Installed locations of all assignments, appurtenances and elevations which differ from those indicated on the Drawings.
3. Pipe manufacturer type and classification noted in sufficient detail to determine location and extent of each type or classification installed.
4. Modification to any standard or special details noted.
5. Location and description of pipe closures.
6. Thrust blocking locations and restrained pipe lengths, approximate dimensions and quantities noted.
7. Location, type and quantity of all addition and deletions.
8. Changes in grade.

The above list is not intended to be complete. Any information noted which could be used for future maintenance, location and construction projects is encouraged to be noted on the bluelines.

### **3.12 CONSTRUCTION DIARIES**

The Contractor shall prepare a daily construction diary recording as a minimum the following information concerning events at the site and submit duplicate copies to the Owner's Representative at weekly intervals. The copies are to be signed by the project Superintendent as defined in Section 00700, Article 6.1.2.

1. Work performed;
2. Approximate count of Contractor's personnel, by classification, on the site;

3. List by classification, of all Subcontractors, personnel and any professionals on the site that day;
4. List of all equipment on the site by make and model;
5. High and low temperatures together with general weather conditions;
6. Start time and finish time of day's work;
7. Accidents and / or unusual events;
8. Meetings and significant decisions made;
9. Stoppages, delays, shortages and / or losses;
10. Meter readings and / or similar recordings;
11. Emergencies procedures that may have been needed;
12. Orders and requests of governing authorities;
13. Change Orders received and implemented;
14. Services connected and / or disconnected;
15. Installed equipment and / or system tests and / or startups and results;
16. Partial completions and / or occupancies; and
17. Date of substantial completion certified.

# Shop Drawing Transmittal

Month XX, 2008

Transmittal No. \_\_\_\_\_  
Previous Transmittal No. \_\_\_\_\_  
Previous Submittal Date \_\_\_\_\_

City of Austin  
Construction Inspection Division  
Public Works Department  
P.O. Box 1088  
Austin, Texas 78767

Project Name: Austin Lakeside Drive

Attention: Owner's Representative

Enclosed are nine (9) copies of the following items for your review:

<u>Item No.</u>	<u>Description</u>	<u>Submittal Type</u>	<u>Specification Section</u>	<u>Subcontractor/Supplier</u>
1.	6" DI Pipe	Product Data	510	ABC Company
2.	8" Resilient Seat Gate Valve	Product Data	511	DEF Company

**NOTE: Item 1 above contains a deviation from the Specifications as indicated on the item**

Submitted by: \_\_\_\_\_  
XYZ Company  
101 Ranch Road 2974  
Austin, Texas 78759

**END**

**SPECIAL SPECIFICATION  
ITEM 180000  
LIMESTONE BLOCK RETAINING WALL**

**180000.1 DESCRIPTION.**

This work shall consist of designing and constructing a permanent limestone block retaining wall in accordance with the Contract Documents. Retaining wall will be designed and constructed in a manner that will not encroach into the half-critical root zones of adjacent trees. The Contractor shall provide all preliminary and final design, materials, products, accessories, tools, and equipment required to test and install the structure, anchors, drainage features, bearing plates, and all associated features according to the Contract Documents.

**180000.2 DESIGN CRITERIA.**

Design the wall using the Allowable Stress Design (ASD) method.

Design the wall to meet or exceed the requirements outlined Section 11 (Structures in the Right Of Way and in Easements) of the Austin, Texas, Transportation Criteria Manual.

**180000.3 SUBMITTALS.**

The submittal requirements of this specification shall include the requirements outlined in Section 11 (Structures in the Right Of Way and in Easements) of the Austin, Texas, Transportation Criteria Manual and the requirements listed below. Six (6) copies of Design Drawings, Working Drawings, Construction Plans, Design Calculations, Product, Product Samples, Quality Assurance and Quality Control submittals are required.

**a. Design Drawing Requirements.**

The Contractor shall retain a Texas-licensed Professional Engineer to provide preliminary and final design and to prepare the appropriate design drawings. The Contractor must follow qualifications-based procedures to procure the required Professional Engineering services, according to Chapter 2254 of the Texas Government Code.

At least 45 days before the planned start of the wall excavation, submit design drawings according to the Engineer for review and approval.

Include complete design calculations, all details, dimensions, quantities, ground profiles and cross-sections necessary to construct the wall. Verify the limits of the wall and ground survey data before preparing the drawings. Include global stability analysis, anchor design, sliding analysis, drawdown analysis due to 100-year water level, and overturning analysis. Provide evaluation of footing depth due to potential 100 year scour.

Include in the design of the anchorage system the excavation, drilling, and installation methods as well as the projected diameter of the drillholes, if required.

Sign and seal the drawings and calculations by a Professional Engineer licensed in the State of Texas. The Engineer will approve or reject the Contractor's submittals within 30 calendar days after the receipt of the complete submission. Do not begin construction or incorporate materials in the work until the submittals are approved by the Engineer.

**b. Working Drawings.**

At least 45 days before the planned start of the wall excavation, submit working drawings to the Engineer for review and approval.

Develop a work plan detailing the following:

- excavation stages,
- anchor details,
- drilling of drillholes, if required, to the diameter and length required to develop the specified capacity;
- providing and installing the specified drainage features;
- providing and installing bearing plates, if required;
- miscellaneous materials including; washers, nuts, and other incidentals and
- constructing the final structural facing.

c. **Construction Plans.**

At least 30 days before starting work, submit a construction plan that includes the following:

- The start date and proposed detailed wall construction sequence.
- The installation of anchorage or drilling and grouting methods if soil nails are required for long-term stability.

The Engineer will approve or reject the Contractor's Construction Plan within 30 working days after the submission. Approval of the plan does not relieve the Contractor of his responsibility for the successful completion for the work.

d. **Contractor Qualifications.** Submit to the Engineer a list of at least 3 projects of 2,000 square feet wall face area each.

Provide the following information for each project:

- a brief description of each project;
- location of project,
- project contract value,
- scheduled completion date and actual completion date for the project
- an owner/professional reference
- the individual's name, company/agency, and current phone number.
- owning agency's name, address, and current phone number

Provide an experienced installation crew including anchor installers, drill operators, on-site supervisors, skilled labor and a project engineer. The project engineer will be present on site (and will be materially involved) with at least 3 years of experience in the design and construction of retaining walls and have completed at least 3 retaining wall projects. Do not use consultants or manufacturer's representatives in order to meet the requirements of this section.

Submit at least 60 calendar days before starting retaining wall work a summary of each individual's experience for the project engineer, on-site supervisors, anchor installers, and drill operators, if required.

The Engineer will approve or reject the Contractor qualification and staff within 15 working days after receipt of the submission. Do not substitute any of these individuals without written approval from the Engineer.

Do not start work on any wall nor materials ordered until the Contractor's qualifications have been approved.

e. **Materials/Source/Gradation/Product Data:** Submit material sources and manufacturer specifications and installation requirements on items proposed for use and as specified herein.

f. **Test Results:** Submit data sheets and test results from compliance testing of materials supplied by Contractor to Owner for review and approval.

- g. **Samples:** For limestone block and river rock, submit samples along with source identification, source contact information, and gradation results for approval, quality assurance and color. These samples will establish the standard by which materials provided will be judged.

**180000.4 WORK INCLUDED.**

- a. Perform the necessary design for the limestone block retaining wall, limestone toe wall and dry stack trail wall shown in the construction drawings.
- b. Develop required working and construction plans.
- c. Final grading as required for the placement of the limestone block retaining wall, limestone toe wall and dry stack trail wall.
- d. Furnishing and placement of required wall anchoring system.
- e. Furnishing, placement, and compaction of select backfill materials specified herein.
- f. Furnishing and placing reinforcing steel dowels as specified herein and shown on the construction drawings.
- g. Furnishing and constructing wall footings as specified herein and shown on the construction drawings.

**180000.5 RELATED WORK.**

- a. 101S Preparing Right of Way
- b. 102S Clearing and Grubbing;
- c. 111S Excavation;
- d. 120S Channel Excavation;
- e. 132S Embankment;
- f. 402S Controlled Low Strength Material;
- g. 406S Reinforcing Steel
- h. SS130000 Stream Bank and Trail Slope Systems;

**180000.6 DEFINITIONS.**

- a. Refer to SS130000 Stream Bank and Trail Slope Systems

**180000.7 MATERIALS.**

- a. Provide materials that comply with TxDOT Item 423.
- b. Refer to SS130000 Stream Bank and Trail Slope Systems

**180000.8 CONSTRUCTION REQUIREMENTS.**

- a. **General.** Store and handle retaining wall materials in a manner to avoid damage or corrosion. Provide the necessary survey and alignment control during the excavation for each lift of retaining wall.
- b. **Wall Drainage Network.** Install and secure all elements of the wall drainage network. The drainage networks consists of installing geocomposite drain strips, geotextile, PVC connection pipes, wall footing drains, and weepholes.

Install geocomposite drain strips or geotextile as shown in the approved design drawings. Secure the strips to the excavation face. Repair damage to the geocomposite drain strip which may interrupt the flow of water.

Install footing drains at the bottom of each wall as shown in the approved design drawings. Replace or repair damaged or defective drainage geotextile.

- c. **Anchor or Nail Testing.** Perform verification of at least two designated test anchors or nails. Perform verification tests on sacrificial test anchors or nails at locations provided in the approved design drawings. Perform anchor or nail verification testing prior to installation of production nails to

confirm the appropriateness of Contractor’s installation methods and verify the required anchor or nail pullout resistance.

Anchor or Test Nail Rejection. The Engineer will evaluate the results of each verification test. The installation methods that do not satisfy the anchor or nail testing requirements will be rejected. Propose alternative methods and install replacement verification test anchors or nails along with testing at no additional cost.

- d. **Backfilling.** Compact backfill within 3 feet behind the wall facing upper cantilever using light mechanical tampers and aggregate.

**180000.9 MEASUREMENT AND PAYMENT.**

The Engineer will measure the retaining wall by the square foot and use the neat lines to compute the quantities. Payment for Limestone Block Retaining Wall is full compensation for the specified work. Verification test anchors or nails will be subsidiary to the cost of retaining wall. Failed verification test anchors or nails or additional verification test anchors or nails installed to verify alternative nail installation methods proposed by the Contractor will not be measured.

The Engineer will not measure for payment, additional materials needed to fill voids created by excavation over-breakage, or inadvertent excavation beyond the plan final wall face excavation line, or failure to construct the facing to the specified line and grade and tolerances.

<b>Pay Item No. SS180000-1</b>	Limestone Block Retaining Wall, Plan Quantity, Complete in Place	per Square Foot (SF)
--------------------------------	---	----------------------

Scale: 40.0000 ft / in.  
Plotted on: 8/29/2014

Pen Tab le:M:\47728\*COA\*Gen\Civil\\*2008\Techprod\Plot\47728\*cvd\*pentab\leco.tb1  
Design File name: \\ausw00\pmwor\k\jobs\47728\*COA\*Gen\Civil\\*2008\Techprod\General\Title.dgn

**SHEET INDEX**

1	TITLE SHEET
2	PROJECT INFORMATION
3	GENERAL NOTES
4	PROJECT LAYOUT & SURVEY CONTROL DATA
5-6	TRAIL TYPICAL SECTIONS
7-8	DEMOLITION SHEET
9	TRAIL PLAN
10-12	TRAIL PLAN AND PROFILE
13-24	TRAIL STRUCTURAL PLANS
25	C&I IN PLACE RETAINING WALL 4
25A	LIMESTONE BLOCK RETAINING WALL 5
26	BRIDGE LAYOUT - 75 FT TRUSS
27	ABUTMENT DETAILS
28	WEB WALL AND WINGWALL DETAILS
29	BORING LOGS
30	APPROACH SLAB AND ROCK GABION RECONSTRUCTION DETAILS
31	PIPE SUPPORT DETAILS
32	CHILLED WATERLINE PLAN & PROFILE
33	WASTEWATER ALIGNMENT DATA
34-35	WASTEWATER PLAN AND PROFILE
36	WASTEWATER RIP RAP DETAILS
37	OVERALL LANDSCAPE PLAN
38-41	PLANTING LAYOUT
42-45	IRRIGATION LAYOUT
46	WALL FORMLINER NOTES AND DETAILS
47-48	PLANTING NOTES AND DETAILS
49-51	IRRIGATION NOTES AND DETAILS
52	ILLUMINATION LAYOUT
53-54A	TRAFFIC CONTROL PLAN
55-56	EROSION CONTROL AND TREE PROTECTION PLANS
57	EROSION/SEDIMENTATION CONTROL STANDARD SHEET
58	TREE PROTECTION AND ENVIRONMENTAL NOTES STANDARD SHEET
59-61B	CITY OF AUSTIN STANDARD CONSTRUCTION DETAILS
61C-63	TXDOT STANDARDS ED(3)-3, RW 1 (L)A & RW 2

**NOTES:**

- CONTRACTOR SHALL NOTIFY THE PUBLIC WORKS DEPARTMENT 24 HOURS PRIOR TO STARTING CONSTRUCTION OR CLEARING OPERATIONS.
- CONTRACTOR SHALL CALL "ONE CALL" AT 1-800-344-8377 FOR UTILITY LOCATIONS AT LEAST 48 HOURS PRIOR TO ANY WORK IN CITY EASEMENTS OR STREET RIGHT OF WAYS.
- THIS PROJECT IS LOCATED WITHIN THE SHOAL CREEK WATERSHED (CLASSIFIED AS URBAN) AND SHALL BE DEVELOPED, CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH CHAPTER 25 OF THE CODE OF THE CITY OF AUSTIN.
- A PORTION OF THIS SITE IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN, PER CITY OF AUSTIN AND FEMA FIRM 48453C0445H (SEPTEMBER 26, 2008).
- THIS PROJECT IS NOT WITHIN THE EDWARDS AQUIFER RECHARGE ZONE AS DEFINED BY THE CITY OF AUSTIN. THIS PROJECT IS NOT WITHIN THE EDWARDS AQUIFER RECHARGE ZONE AS REGULATED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ).
- THERE ARE NO CRITICAL ENVIRONMENTAL FEATURES WITHIN 150' OF ANY PORTION OF THIS PROJECT. A FIELD INVESTIGATION HAS NOT BEEN PERFORMED AS A PART OF THIS PROJECT AND IS NOT REQUIRED.
- THE STANDARD SHEETS INCLUDED IN THIS PLAN SET WERE PROVIDED BY THE GENERAL PERMIT PROGRAM OFFICE FOR USE ON GENERAL PERMIT PROJECTS ONLY. IF ANY MODIFICATIONS TO THE SHEETS WERE MADE, THEY ARE CLEARLY INDICATED ON THE SHEET ITSELF AND IN THE COVER SHEET INDEX.
- PROJECT SCHEDULE MUST BE APPROVED BY THE GENERAL PERMIT PROGRAM (GPP) COORDINATOR. INSTALLATION AND REMOVAL OF TEMPORARY AND PERMANENT EROSION/SEDIMENTATION CONTROLS MUST BE REFLECTED IN THE SCHEDULE, BY STATION NUMBER. GPP INSPECTOR MUST BE NOTIFIED A MINIMUM OF 48 HOURS IN ADVANCE OF TRANSITION BETWEEN PHASES.
- APPROPRIATE EASEMENTS/APPROVALS MUST BE SECURED AND DOCUMENTED FOR PROJECT AREAS LOCATED OUTSIDE OF RIGHT OF WAYS. NO WORK SHALL BE PERFORMED WITHIN THESE AREAS UNTIL ASSOCIATED RIGHT OF ENTRY HAS BEEN SECURED. ADDITIONALLY, THIS PROJECT WILL NOT BE CONSIDERED COMPLETE UNTIL ALL RECORDED EASEMENT DOCUMENT NUMBERS HAVE BEEN OBTAINED AND SHOWN ON THE PLANS.
- CONTRACTOR SHALL STAKE ALL PROPOSED SERVICE CONNECTIONS LOCATED WITHIN THE CRITICAL ROOT ZONE OF TREES 8" IN CALIPER AND LARGER AT LEAST 21 CALENDAR DAYS PRIOR TO CONSTRUCTION OF SUCH SERVICES. STAKING SHALL CONSIST OF A LATH WITH NAIL AND PAINT MARKINGS. IN CASES WHERE A STAKE CANNOT BE PLACED WITHOUT DAMAGING PROPERTY, CONTRACTOR MAY USE PAINT ONLY. ONCE STAKING IS COMPLETED, IT IS THE CONTRACTOR'S RESPONSIBILITY TO INFORM THE CITY OF AUSTIN'S CONSTRUCTION INSPECTOR WITHIN TWENTY-FOUR HOURS. THE CITY OF AUSTIN'S CONSTRUCTION INSPECTOR WILL THEN COORDINATE A FIELD REVIEW OF THE SERVICE LOCATIONS WITH THE GENERAL PERMIT PROGRAM COORDINATOR AND PROPERTY OWNERS. ALL SERVICE LINE LOCATIONS ARE AT NO ADDITIONAL COST TO THE CONTRACT. ALL SERVICE LINE STAKING SHALL BE MAINTAINED UNTIL THE SERVICE IS INSTALLED.

**GENERAL PERMIT PROGRAM CORRECTIONS RECORD**

No.	DESCRIPTION	BY	CORRECT (C) ADD (A) VOID (V) SHEET Nos.	TOTAL No. SHEETS IN CORRECTION PLAN SET	CITY OF AUSTIN APPROVAL/DATE	DATE IMAGED
1	REVISED SHEET INDEX FOR ADDED SHEETS	SBS				8/29/2014

# CITY OF AUSTIN, TEXAS

## DEPARTMENT OF PARKS RECREATION

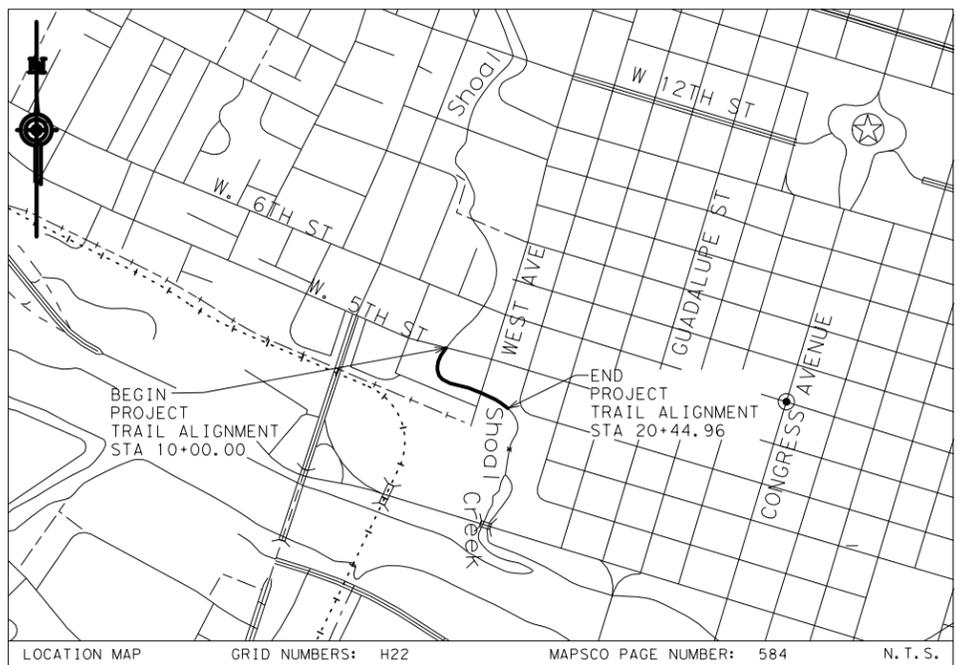


### PLANS OF GENERAL CIVIL ENGINEERING SERVICE ROTATION LIST 2009-2011

### SHOAL CREEK GREENBELT - TRAIL IMPROVEMENTS

### FROM W. 5TH STREET TO W. 4TH STREET

### C. I. P. PROJECT ID NO. 6051.005



LOCATION MAP      GRID NUMBERS: H22      MAPSCO PAGE NUMBER: 584      N. T. S.

**PROJECT INFORMATION:**

**STREET ADDRESS:**  
SHOAL CREEK - FROM W. 5TH STREET TO W. 4TH STREET.

**OWNER:**  
CITY OF AUSTIN

**CONTACT:**  
MR. DARRYL HABA, PROJECT MANAGER  
PUBLIC WORKS  
505 BARTON SPRINGS ROAD, SUITE 900  
AUSTIN, TEXAS 78704  
PH : (512)-974-7205

**CONTACT:**  
MR. ROBERT BRENNES, PROJECT SPONSOR  
PARKS AND RECREATION DEPARTMENT  
919 W. 28 1/2 STREET  
AUSTIN, TEXAS 78705  
PH : (512)-974-9472

**SUBMITTAL PREPARED BY:**

**HNTB** The HNTB Companies  
Engineers Architects Planners  
701 BRAZOS, SUITE 450  
AUSTIN, TEXAS 78701 (512) 447-5590  
TBPE NO. 420

**CONTACT:**  
SHAWN B. STOVER, P.E.  
**PHONE:**  
(512) 691-2281



**APPROVALS:**

**SUBMITTED FOR APPROVAL BY:**  
*Shawn B. Stover*      8/29/2014  
ENGINEER OF RECORD      DATE

**APPROVED BY GENERAL PERMIT HOLDER:**

AUSTIN WATER UTILITY	DATE
GP-14-0000.AMU, EXPIRES 3/29/15	
ANNUAL GENERAL DEVELOPMENT NUMBER	
AUSTIN ENERGY	DATE
GP-13-0000.AEU, EXPIRES 3/13/15	
ANNUAL GENERAL DEVELOPMENT NUMBER	
WATERSHED PROTECTION	DATE
GP-14-0000.WPD, EXPIRES 3/16/16	
ANNUAL GENERAL DEVELOPMENT NUMBER	
PARKS AND RECREATION	DATE
GP-14-0000.PAR, EXPIRES 3/13/16	
ANNUAL GENERAL DEVELOPMENT NUMBER	

**APPROVED BY:**

GENERAL PERMIT PROGRAM COORDINATOR      DATE  
WATERSHED PROTECTION AND DEVELOPMENT REVIEW DEPARTMENT

GP-2014-0007.PAR  
DEVELOPMENT PERMIT NUMBER

SUBMITTAL DATE      SET NO. \_\_\_\_\_

The HNTB Companies  
**HNTB** Engineers Architects Planners  
 701 BRAZOS, SUITE 450  
 AUSTIN, TEXAS 78701 (512) 447-5590  
 TBPE FIRM REGISTRATION NO. F420  
**GENERAL PERMIT PROGRAM**  
 JOB NO. 47728  
 SHEET 1 OF 63

PROJECT INFORMATION:

STREET ADDRESS: SHOAL CREEK TRAIL - FROM W. 5TH ST. AVE TO W. 4TH ST.

OWNER: CITY OF AUSTIN PARK AND RECREATION DEPARTMENT

CONTACT: MR. DARRYL HABA, PROJECT MANAGER PUBLIC WORKS 505 BARTON SPRINGS ROAD, SUITE 900 AUSTIN, TEXAS 78704 PH: (512) 974-7205

SURVEY LEGEND

- BENCHMARK
IRON PIPE FOUND
IRON ROD FOUND (SIZE NOTED)
CHISELED "X" FOUND
COTTON SPINDLE FOUND
NAIL FOUND
ELECTRIC PEDESTAL
ELECTRIC MANHOLE
ELECTRIC METER
GAS METER
GAS VALVE
WATER METER
WATER VALVE
SANITARY SEWER CLEAN-OUT
SANITARY SEWER MANHOLE
STORM SEWER MANHOLE
POLE
SIGN POST OF SINGLE-POST
POWERPOLE
GUY WIRE ANCHOR
LIGHT POLE, STREET LAMP (OVERHEAD)
SPOT LIGHT (GROUND LIGHT)
TRASH DISPOSAL CONTAINER
MONITOR WELL
DRAINAGE INLET
OVERHEAD UTILITY LINE
CHAIN-LINK FENCE
WOODEN FENCE
WROUGHT IRON FENCE
GUARDRAIL

ABBREVIATIONS LIST

- SD STORM DRAIN
W WATER LINE
WW WASTE WATER LINE
AC ASBESTOS CONCRETE
CI CAST IRON
CONC CONCRETE
DI DUCTILE IRON

PLAN LEGEND

- PLANTING BED
LIMESTONE BLOCK WALL
STAMPED CONCRETE
CONCRETE TRAIL
CONCRETE RETAINING WALL
PROPERTY LINES
WW MANHOLE

UTILITY LEGEND

- PROPOSED 21" & 24"
WASTEWATER
MANHOLE

TREES TO BE PRESERVED

Table with columns: TAG No., TRUNK DIA DIA., TREE TYPE, DRIPLINE. Lists 100 trees to be preserved with their respective details.

TREES TO BE REMOVED

Table with columns: TAG No., TRUNK DIA DIA., TREE TYPE, DRIPLINE, MITIGATION VALUE RATE, MITIGATION VALUE. Lists 30 trees to be removed with their respective details.

Submittal Prepared By: HNTB CORPORATION 701 BRAZOS, SUITE 450 AUSTIN, TEXAS 78701 TBPE FIRM REGISTRATION NO. 420
CONTACT: SHAWN B. STOVER, P.E. P: (512) 691-2281 F: (512) 447-5329 email: sstover@hntb.com
GEO TECHNICAL: HVJ ASSOCIATES, INC. 4201 FREIDRICH LANE #100 AUSTIN, TX 78744
CONTACT: JASON SCHWARTZ, P.E. P: (512) 447-9081 F: (512) 443-3342 email: jschwartz@hvj.com
SWPPP: CRESPO CONSULTING SERVICES, INC. 4131 SPICEWOOD SPRINGS RD SUITE B-2 AUSTIN, TX 78759
CONTACT: L. STEPHEN STECHER, PE P: (512) 343-6404 EXT. 101 F: (512) 343-8120 email: sstecher@crespoinc.com
SURVEY: McGRAY & McGRAY LAND SURVEYORS 3301 HANCOCK DRIVE SUITE 6 AUSTIN, TX 78731
CONTACT: CHRIS CONRAD, RPLS P: (512) 451-8591 F: (512) 451-8791 email: chrisc@mcgray.com
STRUCTURAL: JOSE I GUERRA, INC. 2401 SOUTH IH-35 SUITE 210 AUSTIN, TX 78741
CONTACT: CESAR CALDERON, P.E. P: (512) 445-2090 ext 241 F: (512) 445-2099 email: calderon@guerra.com
ENVIRONMENTAL: BAER ENGINEERING & ENVIRONMENTAL CONSULTING 7756 NORTHCROSS DRIVE SUITE 211 AUSTIN, TX 78757
CONTACT: ROSEMARY WYMAN, PG, CHMM, CPESC P: (512) 453-3733 F: (512) 453-3316 email: rwyman@baereng.com
HYDRAULIC MODELING: CAS CONSULTING AND SERVICES, INC. 6633 HWY 290 EAST SUITE 104 AUSTIN, TX 78723
CONTACT: DOUG NICHOLS, P.E. P: (512) 836-2388 F: (512) 836-4515 email: Doug.nichols@casengineers.com

REVISION DESCRIPTION TABLE
DATE
REV BY
DATE
REV BY
STATE OF TEXAS
SHAWN B. STOVER
109251
LICENSED
PROFESSIONAL ENGINEER
Shawn B. Stover
8/25/2014

701 BRAZOS, SUITE 450
AUSTIN, TX 78701
P: (512) 447-5590
PROJECT INFORMATION
SHOAL CREEK GREENBELT - TRAIL IMPROVEMENTS
W. 5TH STREET TO W. 4TH STREET

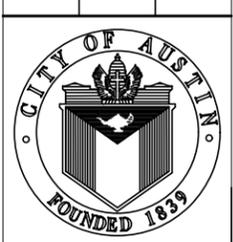


Table with columns: NOTES, NAME, DATE. Includes entries for SURVEY BY, DRAWN BY, CHECKED BY, DESIGNED BY, REVIEWED BY, SCALE, CADD REF. NO., CADD DIR., SHEET NUMBER (2 OF 63).

GENERAL NOTES

- 1. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. REVIEW AND APPROVAL OF THESE PLANS BY THE CITY DOES NOT REMOVE THESE RESPONSIBILITIES.
- 2. THIS PROJECT CONSISTS OF, BUT IS NOT NECESSARILY LIMITED TO THE FOLLOWING: TRAIL CONSTRUCTION FROM W. 5TH AVENUE TO 500' SOUTH OF WEST AVENUE.
- 3. THE CURRENT CITY OF AUSTIN STANDARD SPECIFICATIONS AT THE TIME OF ADVERTISEMENT FOR BIDS SHALL GOVERN MATERIALS AND METHODS USED TO PERFORM THIS WORK. ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE STATE STATUTES AND U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (O.S.H.A.) REGULATIONS. COPIES OF O.S.H.A. STANDARDS MAY BE PURCHASED FROM THE U.S. GOVERNMENT PRINTING OFFICE. INFORMATION AND RELATED REFERENCE MATERIALS MAY BE OBTAINED FROM O.S.H.A. AT 903 SAN JACINTO BOULEVARD, SUITE 319, AUSTIN, TEXAS 78701 TEL. (512) 916-5783.
- 4. THE CONTRACTOR MUST BE LICENSED AND MUST OBTAIN A STREET CUT PERMIT FROM THE DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION PRIOR TO THE START OF CONSTRUCTION WITHIN THE RIGHT-OF-WAY OF A PUBLIC STREET OR ALLEY.
- 5. THE ESTIMATED QUANTITIES PUBLISHED WITH THESE CONSTRUCTION DOCUMENTS ARE FURNISHED AS AN AID IN THE BIDDING PROCESS AND ARE NOT TO BE SUBSTITUTED FOR THE CONTRACTOR'S QUANTITY TAKE-OFFS.
- 6. GEOTECHNICAL INFORMATION (I.E. SOIL BORINGS) WAS PREPARED FOR USE IN ESTABLISHING DESIGN CONTROLS FOR THIS PROJECT. GEOTECHNICAL INFORMATION INCLUDED IN THESE DOCUMENTS IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TO BE CONSTRUED AS BEING AN ACCURATE REPRESENTATION OF SUB SOIL CONDITIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL SUBSURFACE CONDITIONS.
- 7. THE BIDDER (CONTRACTOR AFTER AWARD) SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY OBSTACLES THAT MAY IMPEDE OR PREVENT THE PROPER PROSECUTION OF THIS PROJECT.
- 8. THE CONTRACTOR SHALL ARRANGE THE CONSTRUCTION OPERATIONS IN SUCH A MANNER AS TO AVOID UNNECESSARY INCONVENIENCE TO THE PUBLIC IN CONSTRUCTION AREAS.
- 9. ACCESS TO ALL SIDE STREETS AND DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES AT THE SOLE EXPENSE OF THE CONTRACTOR UNLESS OTHERWISE DIRECTED BY THE OWNER.
- 10. PORTIONS OF THE CONSTRUCTION OF THIS PROJECT AUTHORIZED BY PERMIT OR LICENSE AGREEMENT WILL BE SUBJECT TO SUCH INSPECTION AND TESTS AS MAY BE DEEMED NECESSARY BY THE PERMIT GRANTING AUTHORITIES. CONTRACTOR SHALL ALSO FURNISH INCIDENTAL LABOR AND EQUIPMENT TO ALL LOW TESTING PERSONNEL TO ACCESS THE WORK AND COOPERATE FULLY WITH THESE AUTHORITIES IN CONDUCTING THE TESTING AND INSPECTION PROGRAM. UNLESS STATED OTHERWISE IN THE PLANS OR PROJECT MANUAL, COSTS OF TESTING WILL BE AS SPECIFIED IN SECTION 00700 OF THE STANDARD SPECIFICATIONS.
- 11. THE CONSTRUCTION INSPECTION DIVISION OF THE PUBLIC WORKS DEPARTMENT SHALL ARRANGE A PRE-CONSTRUCTION MEETING NOT LESS THAN FOURTEEN (14) DAYS PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL NOTIFY INSPECTOR FORTY-EIGHT (48) HOURS IN ADVANCE OF BEGINNING ANY CONSTRUCTION IN THE R.O.W. OR IN EASEMENTS. CONTRACTOR SHALL NOTIFY INSPECTOR TWENTY-FOUR (24) HOURS IN ADVANCE OF MAKING ANY SUPPLEMENTARY CONNECTION OR CLOSING OFF ANY WATER OR WASTEWATER SERVICE TO PROPERTY OWNERS.
- 12. CONTRACTOR SHALL NOTIFY PRINCIPALS OF EACH OF THE FOLLOWING ENTITIES OF THE CONSTRUCTION SCHEDULE AT LEAST TWO WEEKS IN ADVANCE OF PROPOSED CONSTRUCTION OPERATIONS. CONTRACTOR SHALL PROVIDE PERTINENT INFORMATION ABOUT LANE CLOSURE AND DETOURS AND ANY OTHER CONSTRUCTION RELATED ACTIVITY, WHICH MAY INTERFERE WITH NORMAL SERVICES.
 

A)	AUSTIN FIRE DEPARTMENT	512-974-0130
B)	AUSTIN POLICE DEPARTMENT	512-974-5283
C)	EMERGENCY MEDICAL SERVICES (EMS)	512-972-7200
D)	TRANSPORTATION DIVISION	512-974-7024
E)	SIGNAL ENGINEERING	512-457-4869
F)	TRAFFIC SIGNAL	512-457-4862
G)	CITY OF AUSTIN DISPATCHER	512-322-9500
- 13. CONTRACTOR SHALL MAINTAIN THE JOB SITE IN A SAFE, NEAT, AND WORKMAN-LIKE MANNER AT ALL TIMES. JOB SITE SAFETY SHALL NOT BE COMPROMISED. ANY UNATTRACTIVE MATERIAL SHALL BE REMOVED OR CAMOUFLAGED BY CONTRACTOR WHEN DIRECTED BY THE OWNER OR ENGINEER. CONTRACTOR SHALL REMOVE OR CAMOUFLAGE ANY CHILD ATTRACTIVE NUISANCE.
- 14. THE ATTENTION OF ALL PROSPECTIVE BIDDERS IS DIRECTED TO SECTION 00700, PARAGRAPHS 6.1, 6.7 AND 6.11 OF THE GENERAL CONDITIONS OF THE AGREEMENT, CITY OF AUSTIN STANDARD SPECIFICATIONS, THE STATE LAW (VERNON'S ANNOTATED TEXAS STATUTES, ARTICLE 1436 (C)), AND THE NEED FOR EFFECTIVE PRECAUTIONARY MEASURES WHEN OPERATING IN THE VICINITY OF ELECTRICAL LINES. IF THE CONTRACTOR CHOOSES TO USE EQUIPMENT WITH THE POTENTIAL OF COMING WITHIN THE DISTANCES PRESCRIBED BY THE STATUTE, THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF THE WORK WITH THE APPROPRIATE ELECTRIC/UTILITY COMPANY.
- 15. ALL CONSTRUCTION EQUIPMENT INVOLVED IN ROADWAY WORK SHALL BE EQUIPPED WITH A PERMANENTLY-MOUNTED, 360-DEGREE REVOLVING OR STROBE WARNING LIGHT WITH AMBER LENS IN WORKING ORDER. THIS LIGHT SHALL HAVE A MINIMUM LENS HEIGHT OF 5" AND A DIAMETER OF 5". THIS LIGHT SHALL HAVE A MOUNTING HEIGHT OF NOT LESS THAN 6 FEET ABOVE THE ROADWAY SURFACE AND SHALL BE VISIBLE FROM ALL SIDES. THIS EQUIPMENT SHALL ALSO HAVE ATTACHED TO EACH SIDE OF THE REAR END OF THE VEHICLE AN APPROVED ORANGE WARNING FLAG MOUNTED NOT LESS THAN 6 FEET ABOVE THE ROADWAY SURFACE.
- 16. THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN BARRICADES, WORKING SIGNS, FLASHERS AND OTHER DEVICES OF THE TYPE AND SIZE AS INDICATED IN THE LATEST EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES OR AS DIRECTED BY THE ENGINEER.
- 17. IF CULTURAL RESOURCES ARE ENCOUNTERED DURING CONSTRUCTION (ARCHAEOLOGICAL FINDINGS UNearthed), CONTRACTOR SHALL STOP WORK IN THAT AREA AND IMMEDIATELY CONTACT THE TEXAS HISTORICAL COMMISSION AT (512) 463-6100.
- 18. ALL DAMAGE CAUSED DIRECTLY OR INDIRECTLY TO THE TRAIL SURFACE OR SUBSURFACE OUTSIDE THE TRAIL CUT AREA SHALL BE REGARDED AS PART OF THE TRAIL CUT REPAIR. THIS INCLUDES ANY SCRAPES, GOUGES, CUTS, AND/OR OTHER DAMAGE CAUSED BY THE CONTRACTOR'S EQUIPMENT. THESE AREAS WILL BE INCLUDED IN THE TOTAL AREA OF REPAIR. ALL REPAIRS SHALL BE AT THE CONTRACTOR'S EXPENSE.
- 19. ALL EXISTING SIDEWALKS, CURB AND GUTTER, DRIVEWAY, LANDSCAPING, OR DRAINAGE FACILITIES DISTURBED OR DAMAGED BY THE CONTRACTOR SHALL BE REMOVED AND RESTORED WITH MATERIALS EQUAL TO OR BETTER THAN THE ORIGINAL AND SHALL BE AT THE CONTRACTOR'S EXPENSE.
- 20. BLASTING WITHIN THE PROJECT AREA WILL NOT BE ALLOWED.
- 21. CONTRACTOR SHALL MINIMIZE USE OF STREET PARKING BY HIS/ HER EMPLOYEES IN THE VICINITY OF THE CONSTRUCTION AREA.

- 22. CONTRACTOR SHALL MAINTAIN PEDESTRIAN ACCESS ACROSS ALL INTERSECTIONS WITH EXISTING PEDESTRIAN ACCESS. MAINTENANCE OF PEDESTRIAN ACCESS WILL BE CONSIDERED SUBSIDIARY TO TRAFFIC CONTROL ITEMS.
- 23. CONTRACTOR SHALL PROVIDE AND MAINTAIN SAFETY FENCING ALONG THE RIGHT-OF-WAY LINES BETWEEN ALL DRIVEWAYS ADJACENT TO THE CONSTRUCTION AREA. SAFETY FENCING IS REQUIRED ALONG ANY EXCAVATION AREAS, ANY CONSTRUCTION AREAS SPECIFICALLY IDENTIFIED ON THE PLANS, AND AREAS IDENTIFIED BY THE ENGINEER BASED ON SITE-SPECIFIC CONDITIONS. IF SIDEWALK IS PRESENT IN AN AREA REQUIRING SAFETY FENCING, A TEMPORARY FENCE MOUNTING SYSTEM SHALL BE USED TO PLACE SAFETY FENCING BETWEEN THE CONSTRUCTION AREA AND THE PEDESTRIAN PATHWAY ON THE SIDEWALK.
- 24. ALL SITE WORK MUST COMPLY WITH ENVIRONMENTAL REQUIREMENTS.
- 25. ALL VEGETATION OUTSIDE THE LIMIT OF CONSTRUCTION IN APPROVED PROJECT PLANS IS TO REMAIN.
- 26. ALL MATERIAL, EQUIPMENT, STAGING AND TEMPORARY SPOILS STORAGE IS TO BE WITHIN THE LIMITS OF CONSTRUCTION SHOWN ON THE APPROVED PLANS. ANY AREAS OUTSIDE THE LIMITS OF CONSTRUCTION SHOWN, PROPOSED FOR THESE ACTIVITIES, MUST BE SUBMITTED VIA A GENERAL PERMIT CORRECTION REQUEST TO BE REVIEWED AND APPROVED PRIOR TO USE BY THE WATERSHED PROTECTION AND DEVELOPMENT REVIEW DEPARTMENT GENERAL PERMIT OFFICE. ALLOW A ONE WEEK COMMENT PERIOD FOR EACH SUBMITTAL. CONTACT THE GENERAL PERMIT OFFICE AT 974-6330 TO OBTAIN THE CORRECTION REQUEST FORM AND INSTRUCTIONS.
- 27. THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN BARRICADES, WARNING SIGNS, FLASHERS, AND OTHER DEVICES OF THE TYPE AND SIZE AS INDICATED IN THE LATEST EDITION OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" OR AS DIRECTED BY THE ENGINEER.
- 28. ACQUISITION OF RIGHT-OF-WAY AND/OR EASEMENTS IS THE RESPONSIBILITY OF THE CITY OF AUSTIN.
- 29. CONTRACTOR TO VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION.

CONSTRUCTION NOTES

- 1. WHERE REMOVAL OF BASE AND PAVEMENT IS NECESSARY FOR THIS PROJECT ALL BASE AND PAVEMENT SHALL BE REPLACED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENT. CITY OF AUSTIN STANDARD SPECIFICATIONS FOR CUTS IN PUBLIC RIGHT-OF-WAY AND ALL PAVEMENT CUTS SHALL BE SAW-CUT PRIOR TO PLACEMENT OF HMA/PC.
- 2. PLACEMENT WIDTHS SHALL BE A MAXIMUM OF 15 FEET. THE LONGITUDINAL JOINTS SHALL BE LOCATED UNDER THE LANE LINE WHENEVER POSSIBLE. TRUCKS DELIVERING HMA/PC MATERIAL TO THE ROADWAY SHALL BE OF SUFFICIENT NUMBER TO ENSURE A CONTINUOUS OPERATION.
- 3. LAYDOWN OPERATIONS SHALL BE PERFORMED IN A SEQUENCE SUCH THAT THE LONGITUDINAL JOINT WILL BE CARRIED ALONG WITHOUT EXCESS DISTANCE OF LAMB BACK, NOT TO EXCEED ONE DAY'S OPERATION, UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.
- 4. FOR THE SURFACE COURSE, AN AUTOMATIC SCREED SHALL BE USED WITH OUTRIGGERS. DENSITY TESTS SHALL BE TAKEN PRIOR TO OPENING TO TRAFFIC.
- 5. CONTRACTOR SHALL SAW-CUT OR USE ENGINEER APPROVED ALTERNATIVE METHOD TO REMOVE CONCRETE PAVEMENTS, TO RECONSTRUCT CURBS, TO DELINEATE MILLING EDGES, AND TO TIE TO EXISTING PAVEMENT. WHERE CUTTING INTO BASE MATERIALS, SAW-CUT OR APPROVED ALTERNATIVE METHOD SHALL BE OF SUFFICIENT DEPTH TO ACHIEVE A SMOOTH VERTICAL FACE DURING EXCAVATION IN THE BASE.
- 6. ALL LOOSE MATERIAL SHALL BE COMPLETELY REMOVED FROM THE TRAIL BY MECHANICAL SWEEPER PRIOR TO OPENING TO PEDESTRIAN AND FOR THE DURATION OF THE PROJECT. ALL LOOSE MATERIAL SHALL BE COMPLETELY REMOVED FROM THE ADJACENT SIDEWALK AREAS FOR THE DURATION OF THE PROJECT AND SIDEWALKS SHALL BE COMPLETELY CLEAR OF ANY CONSTRUCTION DEBRIS PRIOR TO FINAL COMPLETION OF THE PROJECT. LOOSE AND SURPLUS AGGREGATE SHALL BE BROOMED OFF THE SURFACE AS DIRECTED BY THE ENGINEERS. BROOMING WILL NOT BE PAID FOR DIRECTLY, BUT THIS ITEM WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM OF CONSTRUCTION IN WHICH THIS ITEM IS USED.
- 7. THE CONTRACTOR SHALL SHAPE THE UNDERLYING FLEXIBLE BASE OR SUBGRADE MATERIALS EXPOSED AFTER EXCAVATION AND PROOFROLL ACCORDING TO ITEM 236 ROLLING (PROOF). ANY SOFT AREAS REVEALED BY PROOFROLLING WILL BE CORRECTED AND PROOFROLLED AGAIN UNTIL APPROVED BY THE OWNER'S REPRESENTATIVE. CORRECTIVE MEASURES TAKEN SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE AND WILL BE PAID BY THE CITY PER ITEM NO. 2015-R REWORK SUBGRADE. PROOFROLLING WILL NOT BE PAID FOR, BUT THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM OF CONSTRUCTION IN WHICH THIS ITEM IS USED.
- 8. IF APPLICABLE EXPOSED BASE, UNDERLAY AND OVERLAY SHALL BE PLACED IMMEDIATELY UPON COMPLETION OF EDGE MILLING OPERATION IN ORDER TO MINIMIZE EXPOSURE OF THE WEAKENED SECTION TO RAIN AND TRAFFIC.
- 9. THE CONTRACTOR SHALL SCHEDULE HIS WORK TO MINIMIZED EXPOSURE OF SUBGRADE TO RAIN. IF SUBGRADE IS EXPOSED, CONTRACTOR SHALL UNDERTAKE EXTRA MEASURE TO ACCELERATE DRYING OF THE SUBGRADE INCLUDING PUMPING OF EXCESS WATER, AND REWORKING OF THE SUBGRADE AT HIS OWN EXPENSE TO ALLOW THE WORK TO CONTINUE.
- 10. ALL RECONSTRUCTION, PREPARATION WORK AND PAVING SHALL BE COMPLETED IN A MANNER SO AS TO PROVIDE A SMOOTH RIDING SURFACE FREE OF BUMPS, DIPS, AND RIPPLES AND A SMOOTH, UNIFORM APPEARANCE. THE FINISHED SURFACE SHALL APPROXIMATE THE EXISTING PROFILE UNLESS A PROFILE IS PROVIDED. DIPS AND RISES MAY EXIST DUE TO SUBSURFACE OR OTHER CONDITIONS. THE CONTRACTOR SHALL ATTEMPT TO SMOOTH OUT THE PROFILE DURING MILLING AND OVERLAY OPERATIONS TO IMPROVE RIDABILITY.
- 11. CONSTRUCTION AND PHASING SHALL BE IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS. ANY CHANGES TO THE SEQUENCE OF WORK FOR CONSTRUCTING THE LONGITUDINAL PHASES SHOWN ON THE APPROVED PLANS WILL REQUIRE APPROVAL OF THE CITY AND ENGINEER. NO EXTRA PAYMENT WILL BE PROVIDED FOR THESE CHANGES.

ENVIRONMENTAL PROTECTION NOTES

- IMPORTANT NOTE !!! NO ENVIRONMENT DEVICES SHALL BE REMOVED DURING CONSTRUCTION AT ANY TIME PRIOR TO APPROVAL BY A WATERSHED PROTECTION AND ENVIRONMENTAL REVIEW DEPARTMENT'S REPRESENTATIVE. CONTACT O.B. MCKOWN AT 974-6330.
- SITE DISPOSAL
  - 1. THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT ALL LOCATIONS USED FOR STORING CONSTRUCTION EQUIPMENT, MATERIALS, AND STOCKPILES OF ANY TYPE WITHIN THE CONSTRUCTION LIMITS SHALL BE APPROVED BY THE ENGINEER. USE OF THE AREA WITHIN THE CONSTRUCTION LIMITS FOR THESE PURPOSES WILL BE RESTRICTED TO THOSE LOCATIONS WHERE DRIVER SIGHT DISTANCE TO BUSINESSES AND SIDE STREET INTERSECTIONS IS NOT OBSTRUCTED AND AT OTHER LOCATIONS WHERE AN UNSIGHTLY APPEARANCE, AS DETERMINED BY THE ENGINEER, WILL NOT EXIST.
  - 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSING OF ALL SPOIL MATERIAL FROM THE CONSTRUCTION SITE. ALL SPOILS MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR AT AN APPROVED SPOIL SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND SECURING A PERMIT FOR THE SITE, AND SHALL NOTIFY THE INSPECTOR AND THE GENERAL PERMIT OFFICE AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO DISPOSAL OF THE MATERIAL. THIS NOTIFICATION SHALL INCLUDE THE DISPOSAL LOCATION AND A COPY OF THE PERMIT ISSUED TO RECEIVE THE MATERIAL.
- STAGING AREA FOR CONSTRUCTION
  - 1. ALL CONSTRUCTION ACTIVITIES SHALL BE WITHIN THE CONSTRUCTION LIMITS INDICATED ON THE DRAWINGS. THE CONTRACTOR IS TO DETERMINE MATERIAL/EQUIPMENT STORAGE AND STAGING AREAS AND OBTAIN APPROVAL PRIOR TO CONSTRUCTION. ANY ADDITIONAL AREAS REQUIRED FOR CONSTRUCTION OF THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE APPROVED BY THE WATERSHED PROTECTION AND ENVIRONMENTAL REVIEW DEPARTMENT PRIOR TO USE.

PERMANENT EROSION CONTROL

- ALL DISTURBED AREAS SHALL BE RESTORED AS NOTED BELOW (FOR SPECIFICS REFERENCE TO THE CITY OF AUSTIN STANDARD SPECIFICATIONS: SERIES 600 - ENVIRONMENTAL ENHANCEMENT AND THE PROJECT MANUAL).
- 1. A MINIMUM OF FOUR INCHES OF TOPSOIL SHALL BE PLACED IN ALL DRAINAGE CHANNELS (EXCEPT ROCK) AND BETWEEN THE CURB AND RIGHT-OF-WAY.
- 2. THE CONTRACTOR SHALL HYDROMULCH OR SOD ALL EXPOSED CUTS AND FILLS UPON COMPLETION OF CONSTRUCTION, EXCEPT WHERE CUTS ARE MADE IN SOLID ROCK.
- 3. THE SEEDING FOR PERMANENT EROSION CONTROL SHALL BE APPLIED OVER AREAS DISTURBED BY CONSTRUCTION AS FOLLOWS:
  - A. FROM SEPTEMBER 15 TO MARCH 1, SEEDING SHALL BE WITH A COMBINATION OF 1 POUND OF UNHULLED BERMUDA AND 7 POUNDS OF WINTER RYE PER 1000 SQUARE FEET WITH A PURITY OF 95% WITH 90% GERMINATION.
  - B. FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF 1 POUND PER 1,000 SQUARE FEET WITH A PURITY OF 95% WITH 85% GERMINATION.
- 4. FERTILIZER SHALL HAVE AN ANALYSIS OF 15-15-15 AND SHALL BE APPLIED AT THE RATE OF 653 POUNDS PER ACRE.
- 5. THE PLANTED AREA SHALL BE IRRIGATED OR SPRINKLED IN A MANNER THAT WILL NOT ERODE THE TOPSOIL, BUT WILL SUFFICIENTLY SOAK THE SOIL TO A DEPTH OF SIX INCHES. THE IRRIGATION SHALL OCCUR AT TEN DAY INTERVALS DURING THE FIRST TWO MONTHS. RAINFALL OCCURRENCES OF 1/2 INCH OR GREATER SHALL POSTPONE THE WATERING SCHEDULE ONE WEEK.
- 6. MULCH TYPE USED SHALL BE EITHER CELLULOSE FIBER MULCH APPLIED AT A RATE OF 45 POUNDS PER 1000 SQUARE FEET, OR WOOD FIBER MULCH APPLIED AT A RATE OF 60 POUNDS PER 1000 SQUARE FEET.
- 7. RESTORATION SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1-1/2" HIGH WITH 95% COVERAGE PROVIDED THAT NO BARE SPOTS LARGER THAN 16 SQUARE FEET EXIST (SEE ITEM 604.7 OF THE CITY OF AUSTIN STANDARD SPECIFICATIONS).
- 8. WHEN REQUIRED, NATIVE GRASS SEEDING SHALL COMPLY WITH ITEM 604.6 OF THE CITY OF AUSTIN STANDARD SPECIFICATIONS.

SEQUENCE OF CONSTRUCTION

- 1. TRAIL CONSTRUCTION FROM W. 5TH AVE TO 500' SOUTH OF WEST AVENUE
  - A. CONSTRUCT TRAIL FROM W. 5TH AVE TO WEST AVENUE
  - B. CONSTRUCT TRAIL FROM WEST AVE TO 500' SOUTH OF WEST AVENUE

UTILITIES / WATER AND WASTEWATER

- 1. UTILITIES SHOWN REFLECT THE BEST INFORMATION AVAILABLE AT THE TIME THAT PROJECT WAS DESIGNED/ SURVEYED. THE CONTRACTOR SHALL CONTACT THE AUSTIN AREA "ONE CALL" SYSTEM AT 1-800-344-8377 48 HOURS PRIOR TO ANY EXCAVATION FOR EXISTING UTILITY LOCATIONS. IN ADVANCE OF CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES TO BE EXTENDED, TIED TO, OR ALTERED, OR SUBJECT TO DAMAGE/INCONVENIENCE BY THE CONSTRUCTION OPERATIONS. THE CITY OF AUSTIN WATER AND WASTEWATER MAINTENANCE RESPONSIBILITY ENDS AT ROW/EASEMENT LINES.
- 2. UTILITY RELOCATION WORK MAY HAVE BEEN OR MAY BE ACCOMPLISHED TO CLEAR THE WORKSPACE. THESE RELOCATIONS MAY OR MAY NOT BE REFLECTED IN THESE DRAWINGS.
- 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION BETWEEN HIMSELF AND OTHER CONTRACTORS AND UTILITIES IN THE VICINITY OF THIS PROJECT. THIS INCLUDES, BUT IS NOT LIMITED TO, GAS, WATER, WASTEWATER, ELECTRICAL, TELEPHONE, COMMUNICATIONS NETWORKS, CABLE TELEVISION, THE TEXAS STATE SCHOOL FOR THE BLIND, PETROLEUM PIPELINES, AND STREET AND DRAINAGE WORK. ONCE THE CONTRACTOR BECOMES AWARE OF A POSSIBLE CONFLICT, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE CONSTRUCTION INSPECTOR WITHIN TWENTY-FOUR (24) HOURS.
- 4. CASTINGS SPECIFIED FOR ADJUSTMENT BY THE CONTRACTOR SHALL BE ADJUSTED PRIOR TO THE OVERLAY OR RESURFACING. IF THE OWNER DESIGNATES THAT ANY CASTINGS MAY BE ADJUSTED AFTER OVERLAY, THEY SHALL BE ADJUSTED TO MATCH THE PROPOSED PAVEMENT SURFACE USING THE CONCRETE DIAMOND IN ACCORDANCE WITH THE APPLICABLE STANDARD ADJUSTMENT DETAILS. ALL CASTINGS ON THE RELOCATED WATER LINES SHALL BE ADJUSTED TO MATCH THE PROPOSED PAVEMENT SURFACE, MANHOLES, VAULTS, ETC. FOR SBC, ELECTRIC CABLE TV AND OTHER TELECOMMUNICATION COMPANIES SHALL BE ADJUSTED BY OTHERS.
- 5. THE CITY SPECIFICATION ITEM 609 WILL BE REQUIRED AS A MINIMUM TRENCH SAFETY MEASURE. CONTROL DOCUMENTS WHICH INCLUDE TRENCH SAFETY MEASURES, IN COMPLIANCE WITH TEXAS HOUSE BILL 1569, MUST BE RECEIVED BY CONTRACT ADMINISTRATION OFFICE BEFORE BEGINNING WORK ON THE PROJECT.
- 6. ALL MATERIAL USED ON THIS PROJECT MUST BE LISTED ON THE STANDARD PRODUCTS LISTING. ANY MATERIAL NOT LISTED MAY GO THROUGH THE REVIEW OF THE STANDARDS COMMITTEE FOR REVIEW AND APPROVAL. TESTING AND EVALUATION OF PRODUCTS ARE REQUIRED BEFORE APPROVAL WILL BE GIVEN ANY CONSIDERATION.

WATER PLAN AND PROFILE NOTES

- 1. UTILITIES SHOWN REFLECT THE BEST INFORMATION AVAILABLE AT THE TIME THE PROJECT WAS DESIGNED. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES THAT ARE TO BE EXTENDED, TIED TO, CROSSED, ALTERED, OR SUBJECT TO DAMAGE/INCONVENIENCE BY THE CONSTRUCTION OPERATIONS.
- 2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD LOCATE AND RECONNECT ALL WATER AND WASTE WATER SERVICES DISRUPTED BY CONSTRUCTION OF THIS PROJECT WITH NEW PIPE FROM THE MAIN TO THE METER OR HOUSE CONNECTION.
- 3. FIELD LOCATIONS, BOTH HORIZONTAL AND VERTICAL, SHALL BE PERFORMED AT LEAST 300 FEET IN ADVANCE OF THE PROPOSED CONSTRUCTION.
- 4. BACKFLOW PREVENTORS FOR FIRE LINES SHALL BE PROVIDED BY THE UTILITY CUSTOMER.
- 5. FIRE HYDRANT LOCATIONS MAY BE FIELD ADJUSTED, IF NECESSARY, TO AVOID CONFLICTS WITH FUTURE DRIVEWAYS, POWER POLES, AND OTHER UTILITY MANHOLES.
- 6. CONTRACTOR SHALL FOLLOW ALL CITY OF AUSTIN GUIDELINES AND REQUIREMENTS CONCERNING THE USE, HANDLING, AND DISPOSAL OF ASBESTOS CONTAINING MATERIALS INCLUDING A.C. PIPE. ANY CONNECTION MADE TO AN A.C. WATER LINE FOR RELOCATION PURPOSES SHALL BEGIN AND END AT AN EXISTING A.C. JOINT.
- 7. UNLESS NOTED OTHERWISE, ALL WATER LINE P.I.'S SHALL BE ACHIEVED USING THE PIPE MANUFACTURER'S ALLOWABLE JOINT DEFLECTION.
- 8. ALL THE WORK WILL COMPLY WITH THE CITY OF AUSTIN STANDARD SPECIFICATION AND DETAILS.
- 9. ALL WATER LINES WILL BE INSTALLED WITH AT LEAST 48" OF COVER BELOW FINISHED GRADE.
- 10. CONSTRUCTION IS LIMITED TO WITHIN THE ROAD RIGHT-OF-WAY ANY STAGING AND STORAGE AREAS OUTSIDE OF APPROVED LIMITS OF CONSTRUCTION REQUIRE AN APPROVED REQUEST PRIOR TO USE.
- 11. ALL DAMAGE CAUSED DIRECTLY OR INDIRECTLY TO THE STREET SURFACE, SIDEWALK, DRIVEWAY, CURB & GUTTER, OR SUB-SURFACE OUTSIDE OF THE PAVEMENT CUT AREA SHALL BE REGARDED AS PART OF THE STREET CUT REPAIR. THIS INCLUDES ANY OTHER DAMAGE CAUSED BY THE CONTRACTOR DURING THE EXECUTION OF THE WORK. THESE REPAIR AREAS WILL BE INCLUDED IN THE TOTAL AREA OF RESTORATION. DAMAGED AREAS SHALL BE SAW CUT IN STRAIGHT, NEAT LINES PARALLEL TO THE EXCAVATION OR UTILITY TRENCH AND TO THE NEXT EXISTING JOINT FOR SIDEWALKS AND CURB & GUTTER. ALL SUCH REPAIRS SHALL BE AT THE CONTRACTOR'S EXPENSE AND SHALL MEET ALL CITY TESTING REQUIREMENTS, STANDARDS, AND SPECIFICATIONS.



Shawn B. Stover  
8/25/2014

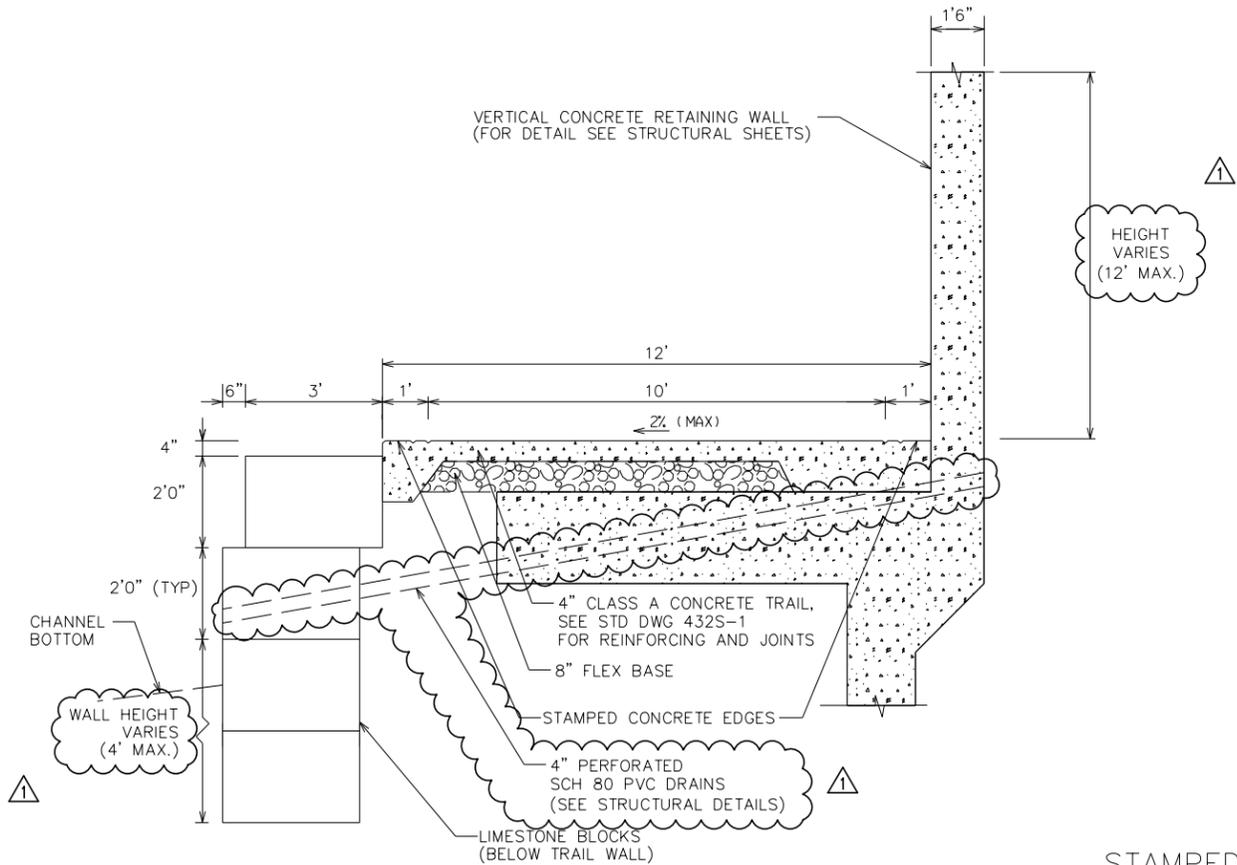
701 BRAZOS, SUITE 450  
AUSTIN, TX 78701  
P: (512) 447-5590  
SHOAL CREEK GREENBELT - TRAIL IMPROVEMENTS  
W. 5TH STREET TO W. 4TH STREET

HNTB  
The HNTB Companies  
Engineers, Architects Planners  
TYPE FIRM REGISTRATION NO. F420

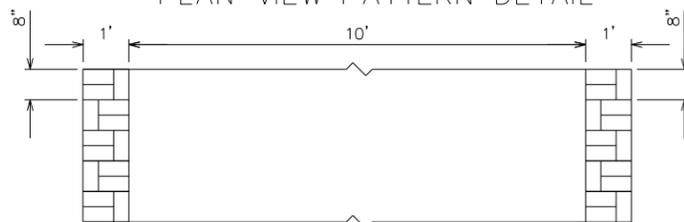


NOTES	NAME	DATE
SURVEY BY	McGRAY	2/19/11
DRAWN BY	DDL	8/1/12
CHECKED BY	DE	8/2/12
DESIGNED BY	BK	7/2/12
REVIEWED BY	WB	
SCALE:		
CADD REF. NO.:		
CADD DIR.:		
SHEET NUMBER		
3 OF 63		

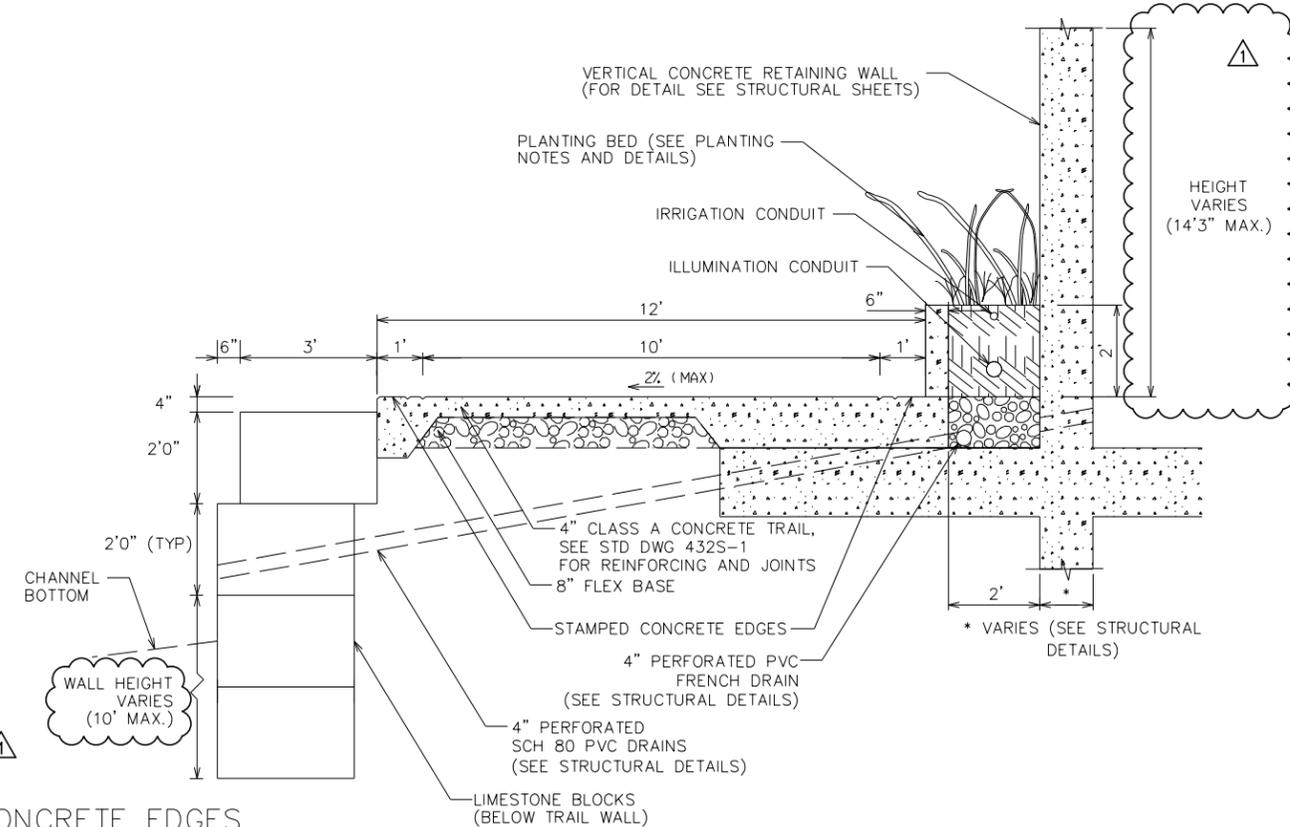
TRAIL TYPICAL SECTION  
FROM STA 10+01.94 TO 10+25.00



STAMPED CONCRETE EDGES  
PLAN VIEW PATTERN DETAIL



TRAIL TYPICAL SECTION  
FROM STA 10+25.00 TO 15+32.58



NOTE: SEE STRUCTURAL PLANS FOR DETAILED INFORMATION ON RETAINING WALLS AND LIMESTONE BLOCK WALLS.

REV. NO.	DATE	REVISION DESCRIPTION
1	8/25/2014	REVISED NOTES AND TRAIL STATION



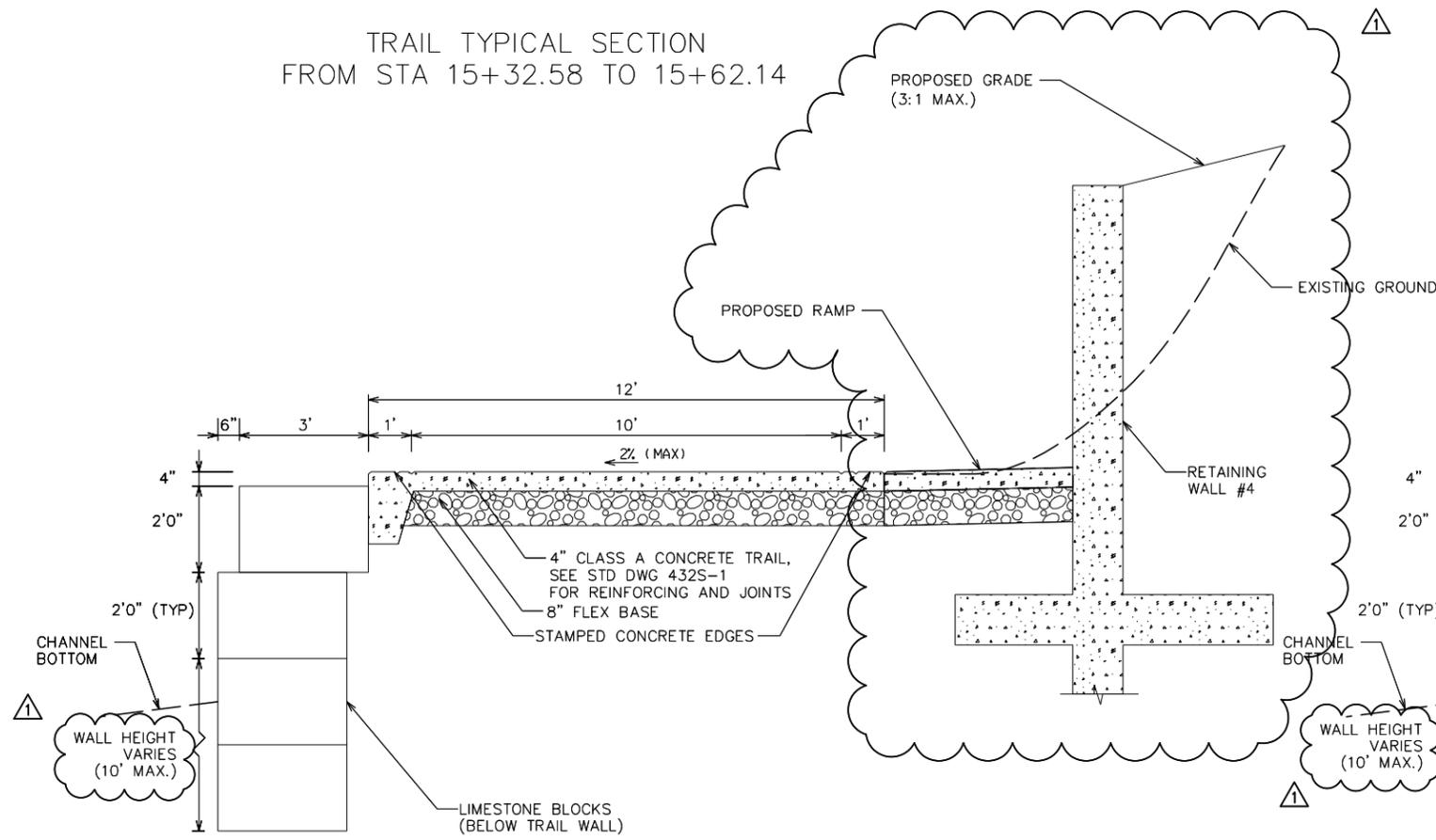
Shawn B. Stover  
8/25/2014

701 BRAZOS, SUITE 450  
AUSTIN, TX 78701  
P: (512) 447-5590  
HNTB  
The HNTB Companies  
Engineers, Architects, Planners  
TYPE FIRM REGISTRATION NO. F420  
SHOAL CREEK GREENBELT - TRAIL IMPROVEMENTS  
W. 5TH STREET TO W. 4TH STREET  
TRAIL TYPICAL SECTIONS  
(SHEET 1 OF 2)

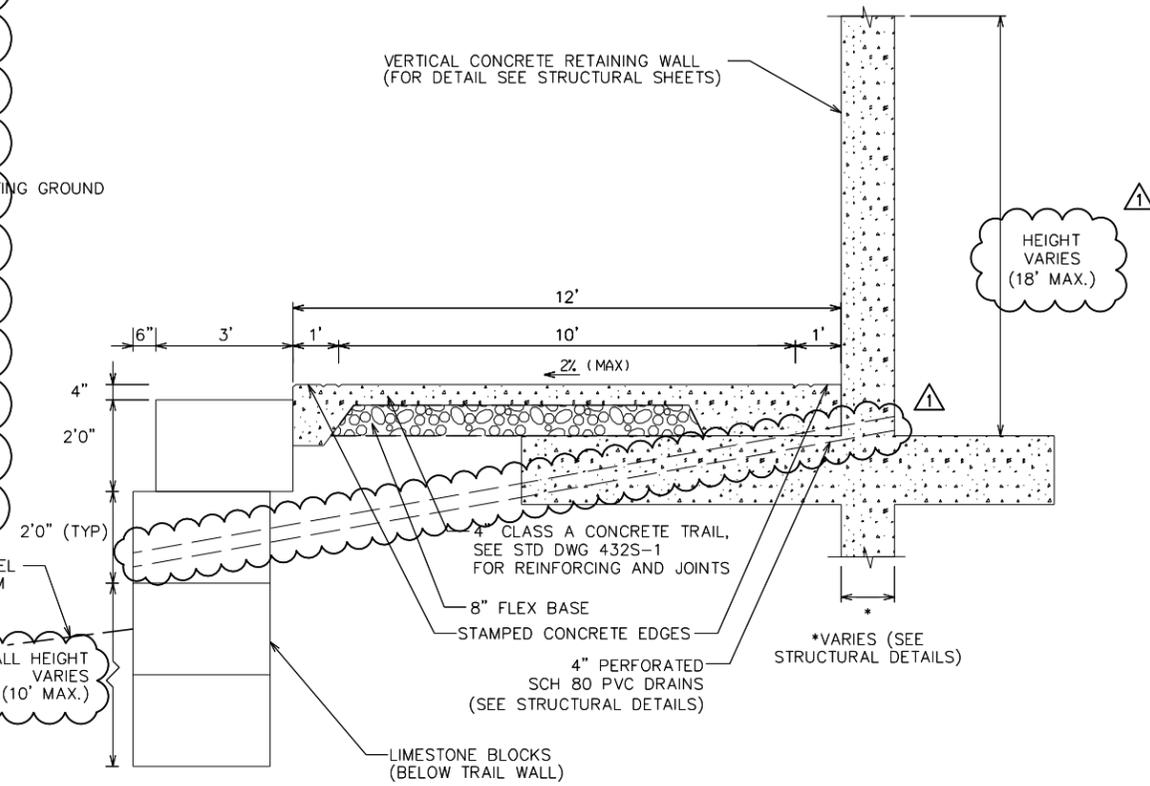


NOTES	NAME	DATE
SURVEY BY	McGRAY	2/19/11
DRAWN BY	DDL	8/1/12
CHECKED BY	DE	8/2/12
DESIGNED BY	BK	7/2/12
REVIEWED BY	WB	
SCALE:	N. T. S.	
CADD REF. NO.:		
CADD DIR.:		
SHEET NUMBER	5	OF 63

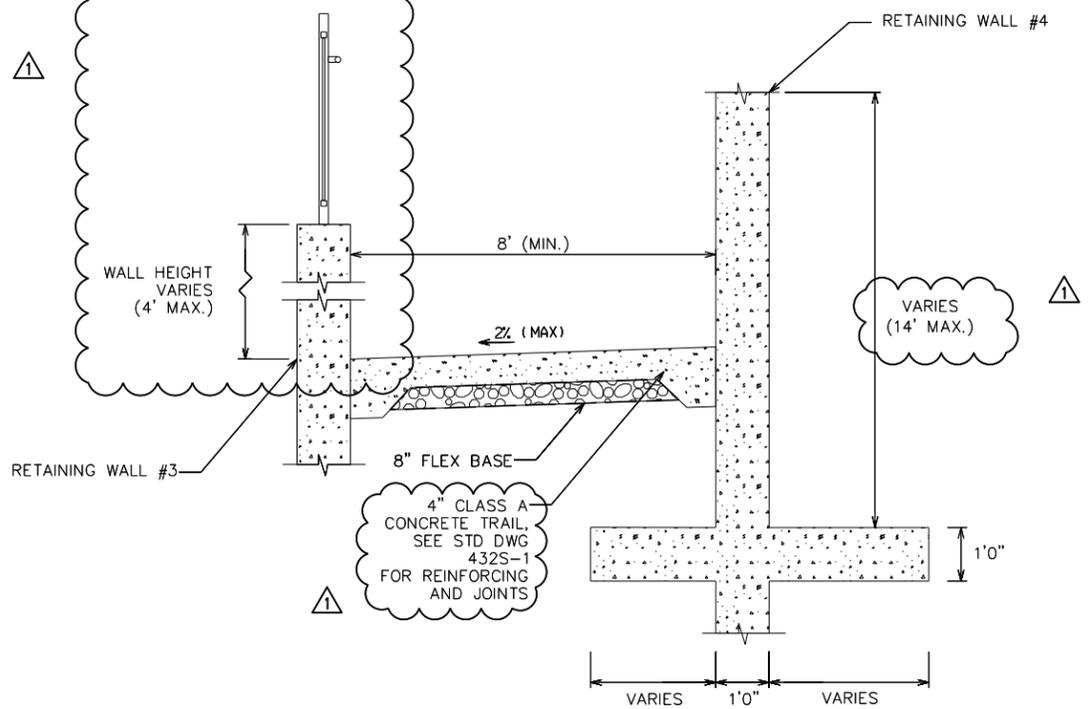
### TRAIL TYPICAL SECTION FROM STA 15+32.58 TO 15+62.14



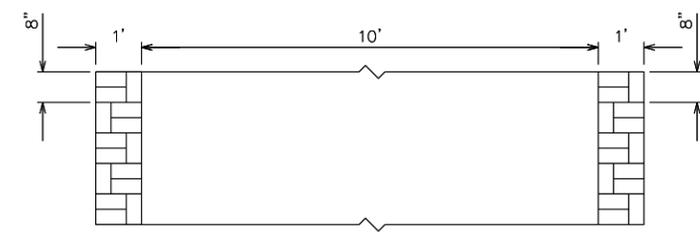
### TRAIL TYPICAL SECTION FROM STA 15+62.14 TO 16+85.12



### RETAINING WALL #4 TYPICAL SECTION



### STAMPED CONCRETE EDGES PLAN VIEW PATTERN DETAIL



REV. NO.	DATE	REVISION DESCRIPTION
1	8/25/2014	REVISED TO REFLECT APPROVED WALL MAX. HEIGHT



**HNTB**  
The HNTB Companies  
Engineers, Architects, Planners  
TYPE FIRM REGISTRATION NO. F420

701 BRAZOS, SUITE 450  
AUSTIN, TX 78701  
P: (512) 447-5590

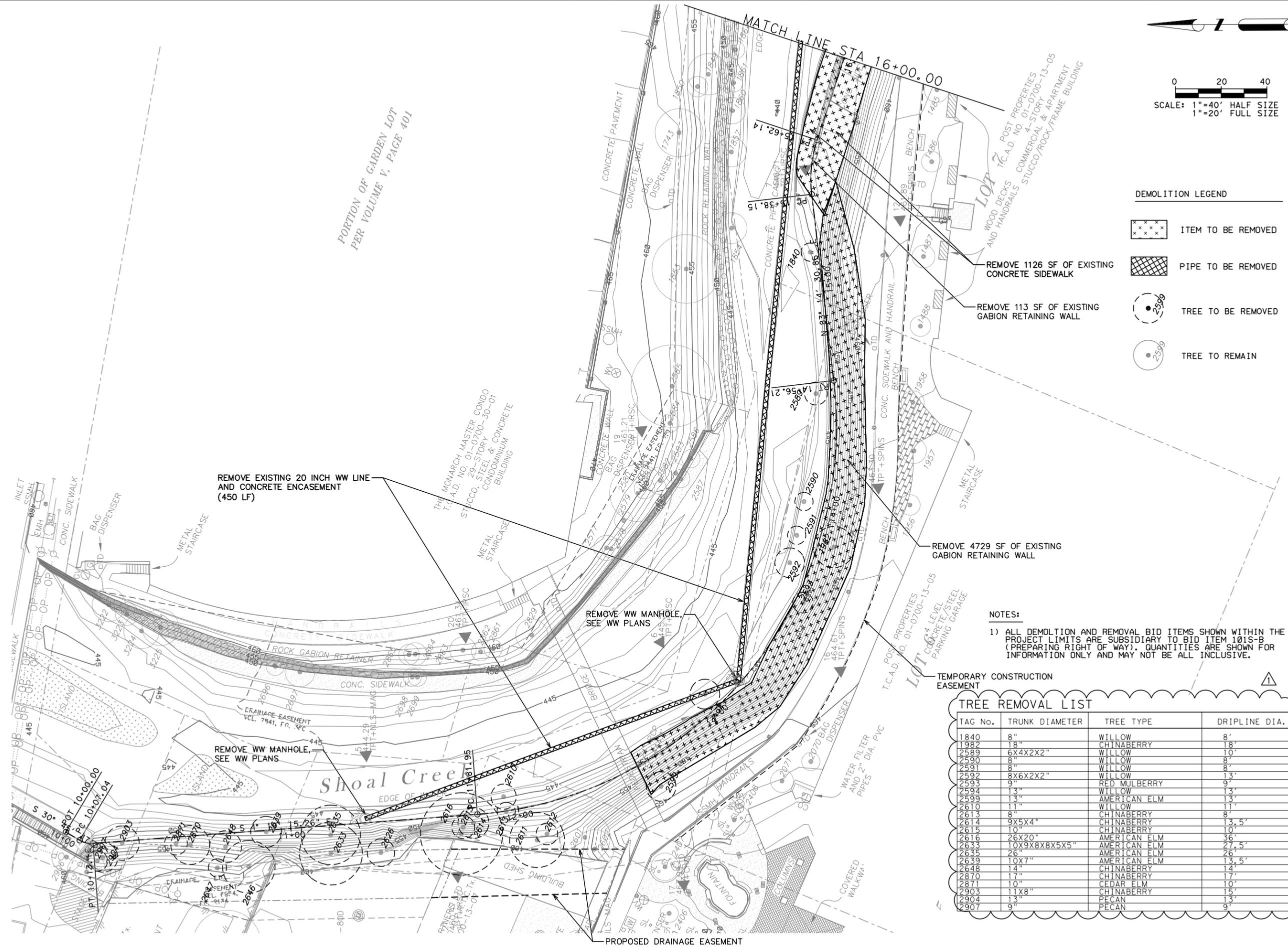
SHOAL CREEK GREENBELT - TRAIL IMPROVEMENTS  
W. 5TH STREET TO W. 4TH STREET

TRAIL TYPICAL SECTIONS  
(SHEET 2 OF 2)

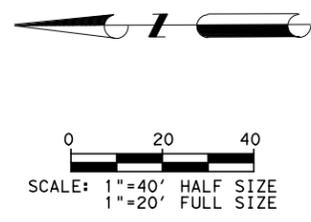


NOTES	NAME	DATE
SURVEY BY	McGRAY	2/19/11
DRAWN BY	DDL	8/1/12
CHECKED BY	DE	8/2/12
DESIGNED BY	BK	7/2/12
REVIEWED BY	WB	

SCALE:  
CADD REF. NO.:  
CADD DIR.:



PORTION OF GARDEN LOT  
PER VOLUME V, PAGE 401



DEMOLITION LEGEND

-  ITEM TO BE REMOVED
-  PIPE TO BE REMOVED
-  TREE TO BE REMOVED
-  TREE TO REMAIN

NOTES:

1) ALL DEMOLITION AND REMOVAL BID ITEMS SHOWN WITHIN THE PROJECT LIMITS ARE SUBSIDIARY TO BID ITEM 101S-B (PREPARING RIGHT OF WAY). QUANTITIES ARE SHOWN FOR INFORMATION ONLY AND MAY NOT BE ALL INCLUSIVE.

TREE REMOVAL LIST

TAG No.	TRUNK DIAMETER	TREE TYPE	DRIPLINE DIA.
1840	8"	WILLOW	8'
1982	18"	CHINABERRY	18'
2589	6X4X2X2"	WILLOW	10'
2590	8"	WILLOW	8'
2591	8"	WILLOW	8'
2592	8X6X2X2"	WILLOW	13'
2593	9"	RED MULBERRY	9'
2594	13"	WILLOW	13'
2599	13"	AMERICAN ELM	13'
2610	11"	WILLOW	11'
2613	8"	CHINABERRY	8'
2614	9X5X4"	CHINABERRY	13.5'
2615	10"	CHINABERRY	10'
2616	26X20"	AMERICAN ELM	36'
2633	10X9X8X8X5X5"	AMERICAN ELM	27.5'
2635	26"	AMERICAN ELM	26'
2639	10X7"	AMERICAN ELM	13.5'
2648	14"	CHINABERRY	14'
2870	17"	CHINABERRY	17'
2871	10"	CEDAR ELM	10'
2903	11X8"	CHINABERRY	15'
2904	13"	PECAN	13'
2907	9"	PECAN	9'

REV. NO.	DATE	REVISION DESCRIPTION
1	8/25/2014	REVISED PER REMOVAL LIST



**Shawn B. Stover**  
8/25/2014

<p><b>HNTB</b> The HNTB Companies Engineers, Architects Planners TYPE FIRM REGISTRATION NO. F420</p>	<p>701 BRAZOS, SUITE 450 AUSTIN, TX 78701 P: (512) 447-5590</p>	<p>DEMOLITION SHEET SHEET 1 OF 2</p>
--	---	--

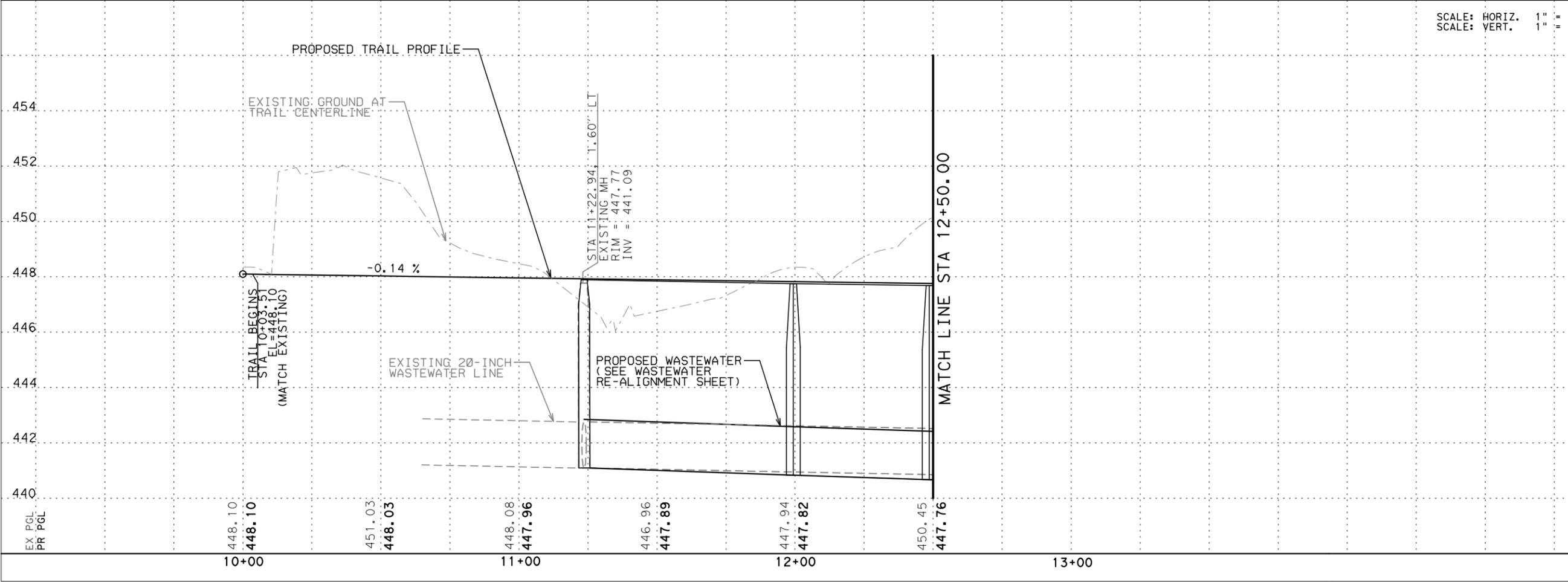
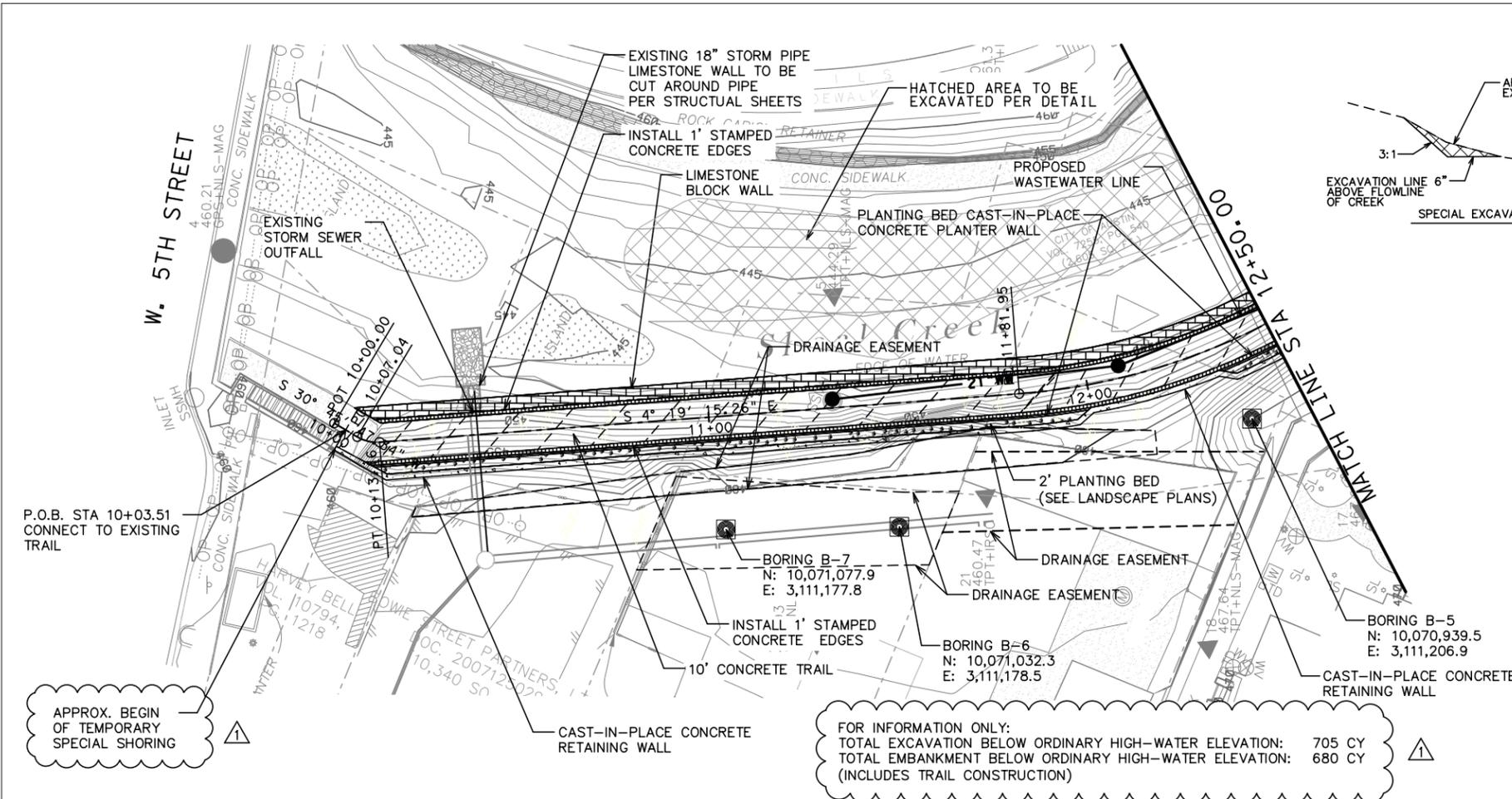


**CITY OF AUSTIN**  
FOUNDED 1839

NOTES	NAME	DATE
SURVEY BY	McGRAY	2/19/11
DRAWN BY	DDL	8/1/12
CHECKED BY	DE	8/2/12
DESIGNED BY	BK	7/2/12
REVIEWED BY	WB	

SCALE:	CADD REF. NO.:
CADD DIR.:	

SHEET NUMBER	7 OF 63
--------------	---------



REVISION DESCRIPTION

REV. NO.	DATE	DESCRIPTION
1	8/25/2014	ADD BARTHOLOMEOTT & TRIP, P&E, BOOKING

SHAWN B. STOVER  
109251  
LICENSED PROFESSIONAL ENGINEER

Shawn B. Stover  
8/25/2014

701 BRAZOS, SUITE 450  
AUSTIN, TX 78701  
P: (512) 447-5590

HNTB  
The HNTB Companies  
Engineers, Architects, Planners  
TYPE FIRM REGISTRATION NO. F420

SHOAL CREEK GREENBELT - TRAIL IMPROVEMENTS  
W. 5TH STREET TO W. 4TH STREET

TRAIL PLAN AND PROFILE  
SHEET 1 OF 3

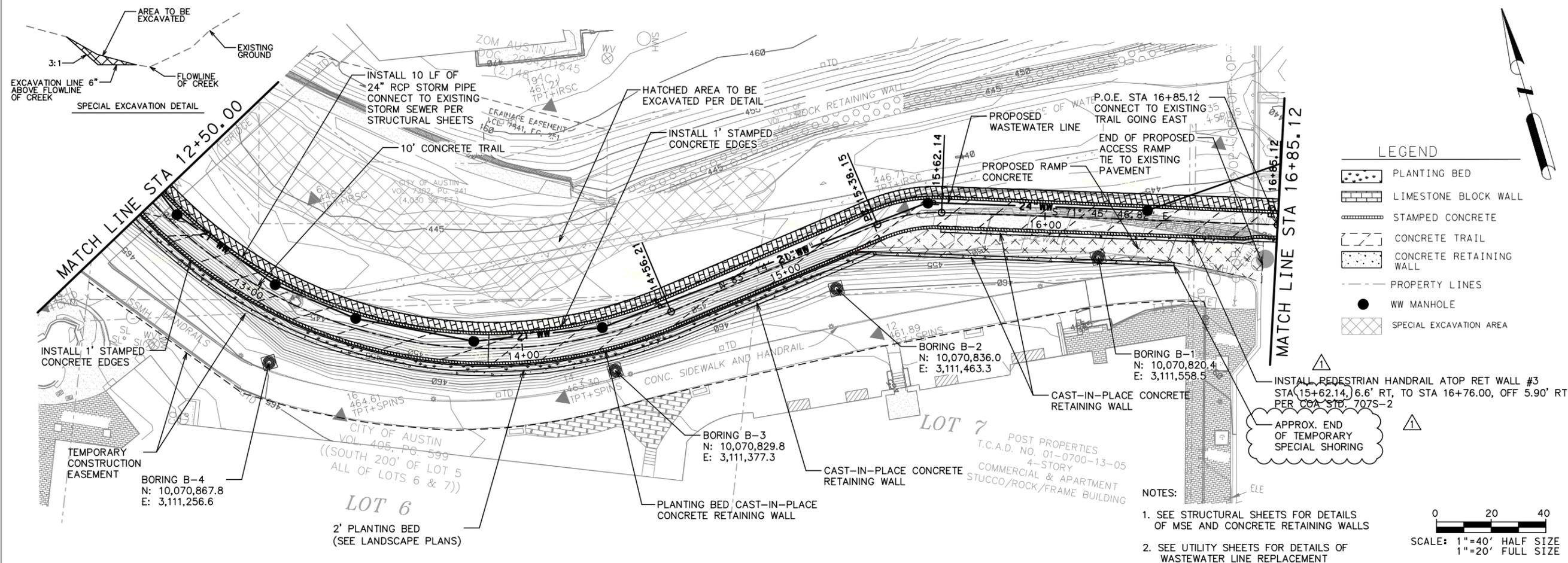
CITY OF AUSTIN  
FOUNDED 1839

NOTES	NAME	DATE
SURVEY BY	McGRAY	2/19/11
DRAWN BY	DDL	8/1/12
CHECKED BY	DE	8/2/12
DESIGNED BY	BK	7/2/12
REVIEWED BY	WB	

SCALE:  
CADD REF. NO.:  
CADD DIR.:

SHEET NUMBER 10 OF 63

8/25/2014



REV. NO.	DATE	REVISION DESCRIPTION
1	8/25/2014	ADD BARRIERS QTY & TEMP. SPECIAL BORING.



Shawn B. Stover  
8/25/2014

701 BRAZOS, SUITE 450  
 AUSTIN, TX 78701  
 P: (512) 447-5590

**HNTB**  
 The HNTB Companies  
 Engineers, Architects Planners  
 TYPE FIRM REGISTRATION NO. F420

SHOAL CREEK GREENBELT - TRAIL IMPROVEMENTS  
 W. 5TH STREET TO W. 4TH STREET

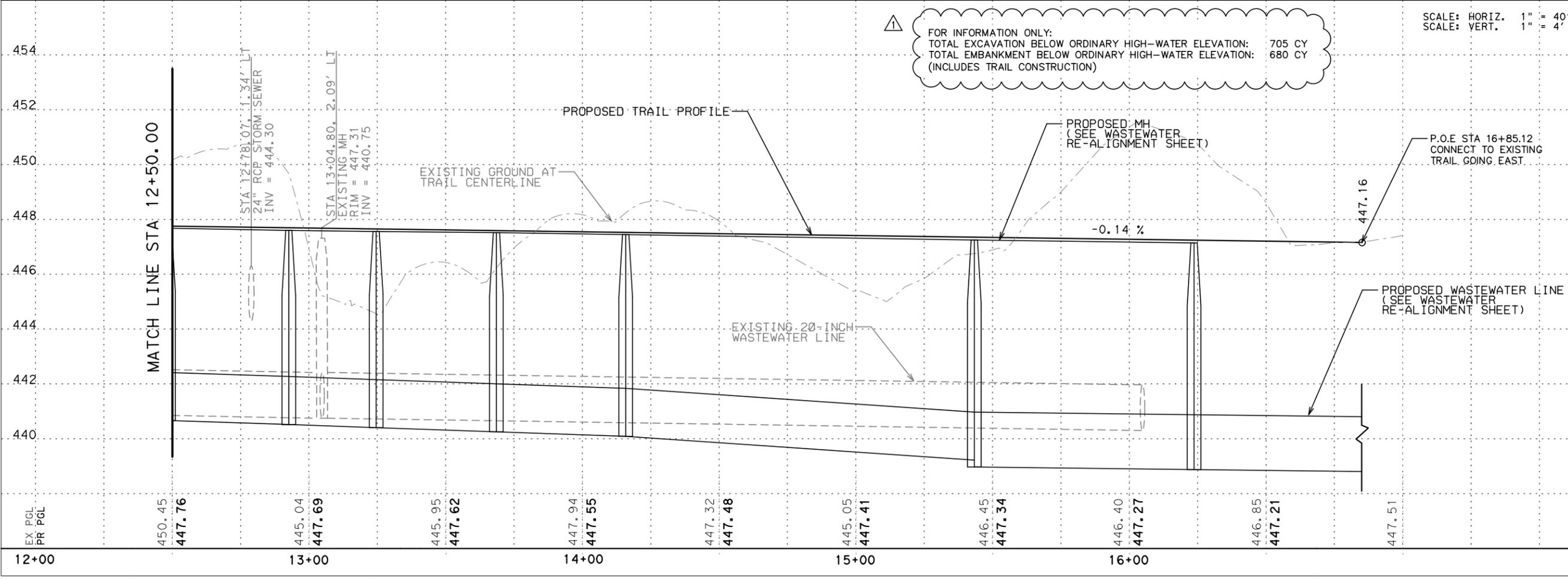
TRAIL PLAN AND PROFILE  
 SHEET 2 OF 3



NOTES	NAME	DATE
SURVEY BY	McGRAY	2/19/11
DRAWN BY	DDL	8/1/12
CHECKED BY	DE	8/2/12
DESIGNED BY	BK	7/2/12
REVIEWED BY	WB	

SCALE:  
 CADD REF. NO.:  
 CADD DIR.:

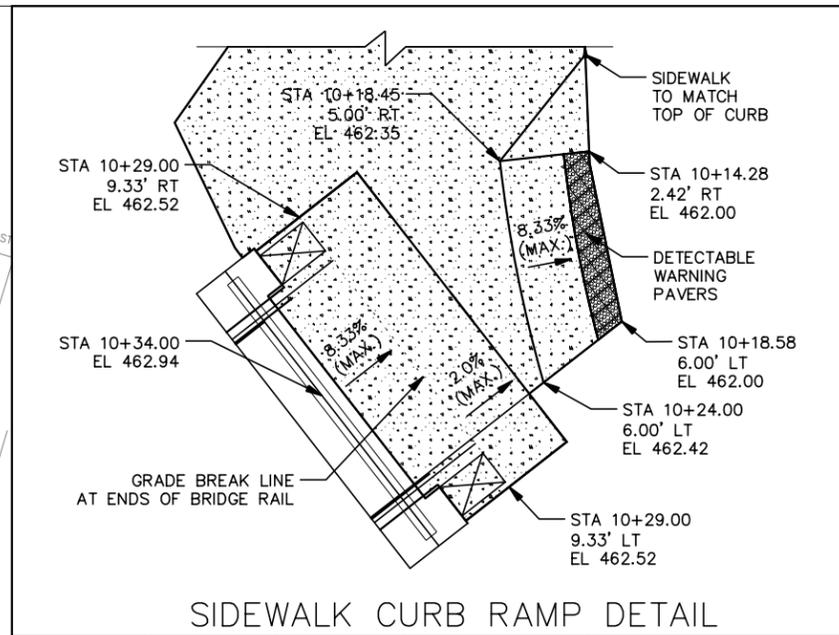
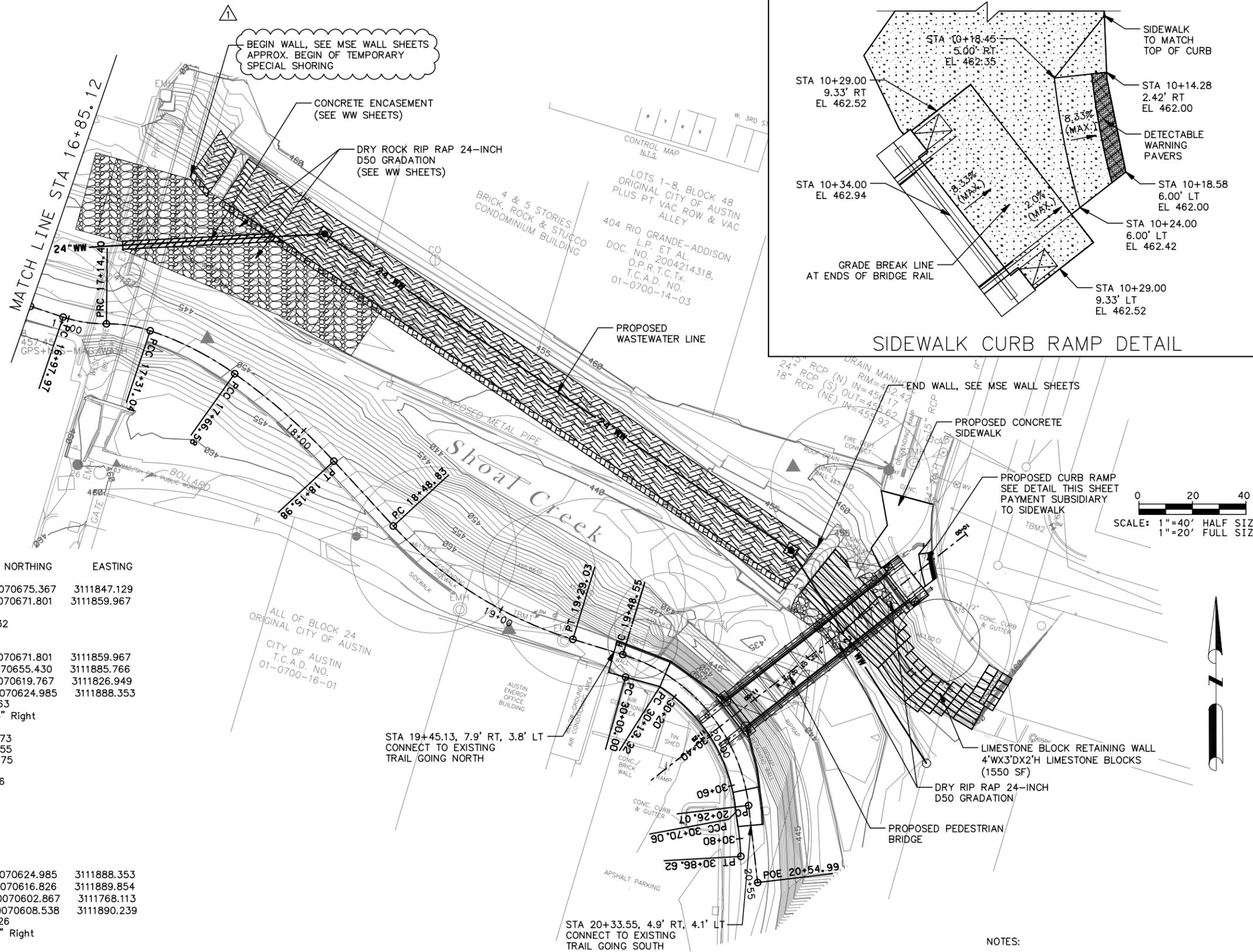
SHEET NUMBER: 11 OF 63



\\aus001\pwwork\Jobs\47728\COA\Gen\Civil\2008\Techprod\Roadway\DWG\Trail\\*P&P2.dgn

**LEGEND**

	PLANTING BED
	LIMESTONE BLOCK WALL
	STAMPED CONCRETE
	CONCRETE TRAIL
	CONCRETE RETAINING WALL
	PROPERTY LINES
	WW MANHOLE
	DRY ROCK RIP RAP



**RAMP ALIGNMENT**

Horizontal Alignment Name: Ramp Alignment

Element:	Station	NORTHING	EASTING
Linear			
POB (1)	30+00.00	10070675.367	3111847.129
PC (2)	30+13.32	10070671.801	3111859.967
Tangent Direction:	S 74°28'32" E		
Tangent Length:	13.32		
Circular			
PC (2)	30+13.32	10070671.801	3111859.967
PI ( )	30+43.88	10070655.430	3111885.766
CC (3)	10070619.767	3111826.949	
PCC (4)	30+70.06	10070624.985	3111888.353
Radius:	61.63		
Delta:	52°44'44" Right		
Degree of Curvature(Arc):	92°58'26"		
Length:	56.73		
Tangent:	30.55		
Chord:	54.75		
Middle Ordinate:	6.41		
External:	7.16		
Tangent Direction:	S 57°36'10" E		
Radial Direction:	S 32°23'50" W		
Chord Direction:	S 31°13'48" E		
Radial Direction:	S 85°08'34" W		
Tangent Direction:	S 4°51'26" E		
Circular			
PCC (5)	30+70.06	10070624.985	3111888.353
PI ( )	30+78.35	10070616.826	3111889.854
CC (10)	10070602.867	3111768.113	
PT (11)	30+86.62	10070608.538	3111890.239
Radius:	122.26		
Delta:	7°45'51" Right		
Degree of Curvature(Arc):	46°51'54"		
Length:	16.57		
Tangent:	8.30		
Chord:	16.55		
Middle Ordinate:	0.28		
External:	0.28		
Tangent Direction:	S 10°25'22" E		
Radial Direction:	S 79°34'38" W		
Chord Direction:	S 6°32'27" E		
Radial Direction:	S 87°20'29" W		
Tangent Direction:	S 2°39'31" E		

**ALIGNMENT LEGEND:**  
 POB = POINT OF BEGINNING  
 PC = POINT OF CURVATURE  
 PI = POINT OF INTERSECTION  
 CC = CENTER OF CURVATURE  
 PCC = POINT OF COMPOUND CURVATURE  
 PT = POINT OF TANGENCY

FOR INFORMATION ONLY:  
 TOTAL EXCAVATION BELOW ORDINARY HIGH-WATER ELEVATION: 705 CY  
 TOTAL EMBANKMENT BELOW ORDINARY HIGH-WATER ELEVATION: 680 CY  
 (INCLUDES TRAIL CONSTRUCTION)

**REVISION DESCRIPTION**

NO.	DATE	DESCRIPTION
1	8/19/11	ADD BARTONVILLE QTY. & TRIP PFC BOOKING.

REV. BY: **DB**  
 DATE: **8/19/11**

**SHAWN B. STOVER**  
 109251  
 LICENSED PROFESSIONAL ENGINEER

Shawn B. Stover  
 8/25/2014

701 BRAZOS, SUITE 450  
 AUSTIN, TX 78701  
 P: (512) 447-5590

**HNTB**  
 The HNTB Companies  
 Engineers, Architects, Planners  
 TYPE FIRM REGISTRATION NO. F420

SHOAL CREEK GREENBELT - TRAIL IMPROVEMENTS  
 W. 5TH STREET TO W. 4TH STREET

TRAIL PLAN AND PROFILE  
 SHEET 3 OF 3

**CITY OF AUSTIN**  
 FOUNDED 1839

NOTES	NAME	DATE
SURVEY BY	McGRAY	2/19/11
DRAWN BY	DDL	8/1/12
CHECKED BY	DE	8/2/12
DESIGNED BY	BK	7/2/12
REVIEWED BY	WB	

SCALE:  
 CADD REF. NO.:  
 CADD DIR.:

SHEET NUMBER: 12 OF 63

474  
473  
472  
471  
470  
469  
468  
467  
466  
465  
464  
463  
462  
461  
460  
459  
458  
457  
456  
455  
454  
453  
452  
451  
450  
449  
448  
447  
446  
445  
444  
443  
442  
441  
440  
439  
438  
437  
436  
435  
434  
433  
432  
431  
430  
429  
428  
427  
426

EXISTING GROUND AT  
PROP. EDGE OF LIMESTONE  
BLOCKS WITH STATIONS @  
TRAIL CENTERLINE

SCALE  
1" = 30' H  
1" = 3' V

REV. NO.	BY	DATE	REVISION DESCRIPTION
1	CC	08/13/14	ADDED RETAINING WALL #4

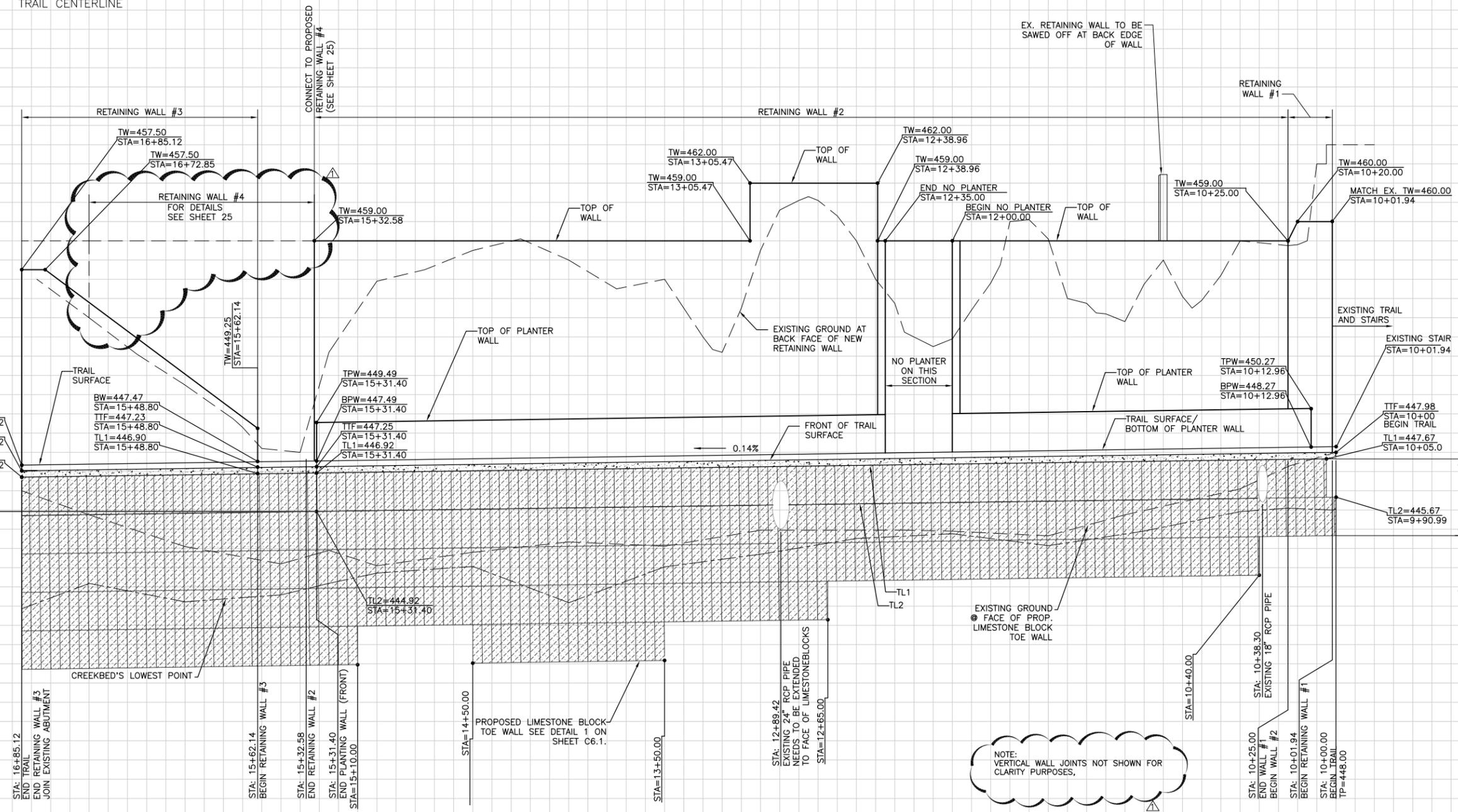


**Jose I. Guerra, Inc.**  
Consulting Engineers  
Registration No.: F-3  
2401 South IH-35  
Austin, Texas 78744  
(512) 445-2090



NOTES	NAME	DATE
SURVEY BY		
DRAWN BY	FS	04/24/14
CHECKED BY	CC	04/24/14
DESIGNED BY	CC	04/24/14
REVIEWED BY	JL	04/24/14

SCALE:  
CADD REF. NO.:  
CADD DIR.:  
SHEET NAME: C1.1  
SHEET NUMBER: 13 OF 63

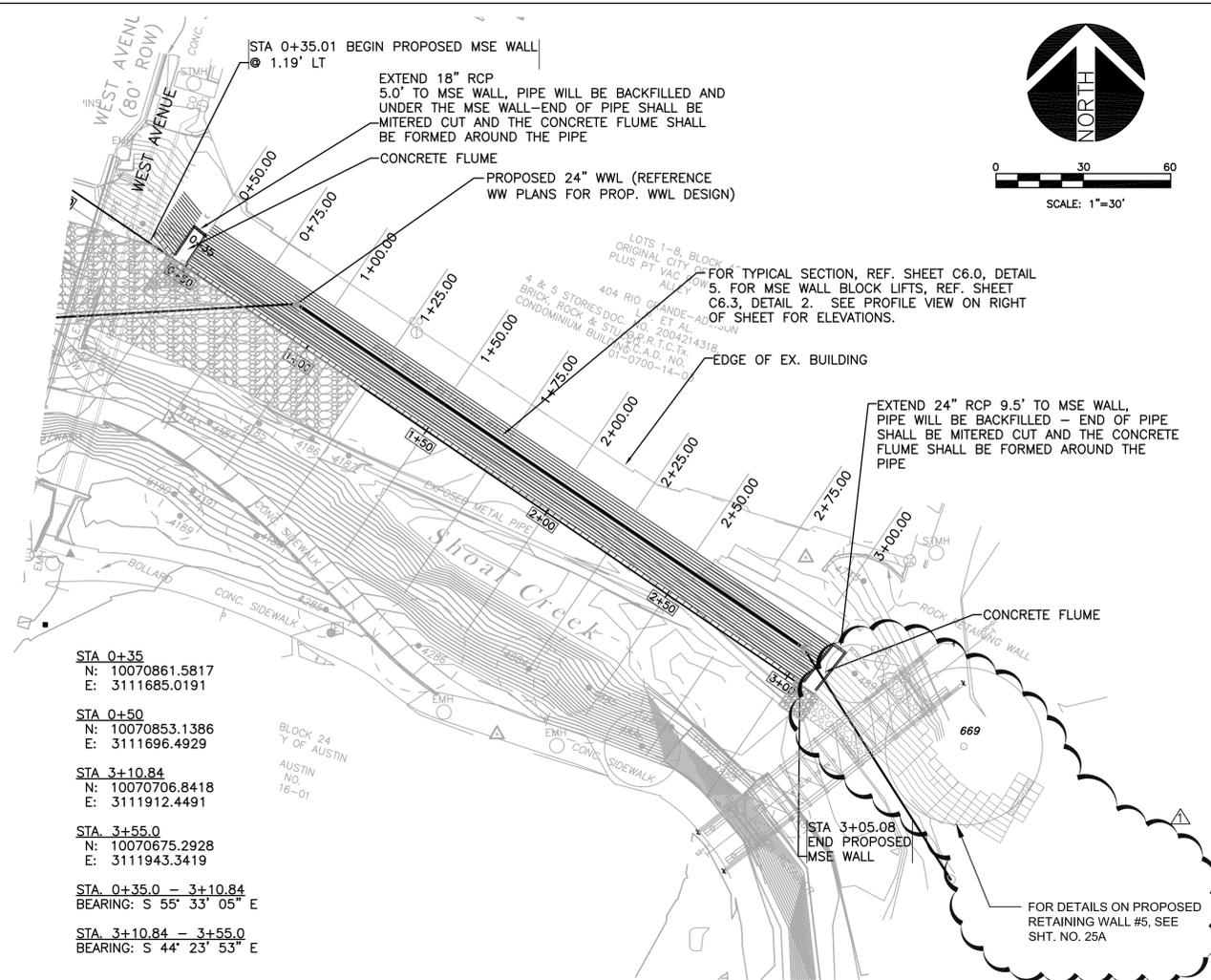


NOTE:  
VERTICAL WALL JOINTS NOT SHOWN FOR  
CLARITY PURPOSES.

LEGEND:  
TW = TOP OF WALL  
TPW = TOP OF PLANTER WALL  
BPW = BOTTOM OF PLANTER WALL  
TTF = TOP OF TRAIL (FRONT)  
AT LIMESTONE EDGE.  
TL1 = TOP OF LIMESTONE, 1st ROW  
TL2 = TOP OF LIMESTONE, 2nd ROW  
BW = BOTTOM OF RETAINING WALL

TRAIL PROFILE  
10+00 - 16+85.12

CITY OF AUSTIN  
SHOAL CREEK TRAIL PROJECT



STA 0+35  
N: 10070861.5817  
E: 3111685.0191

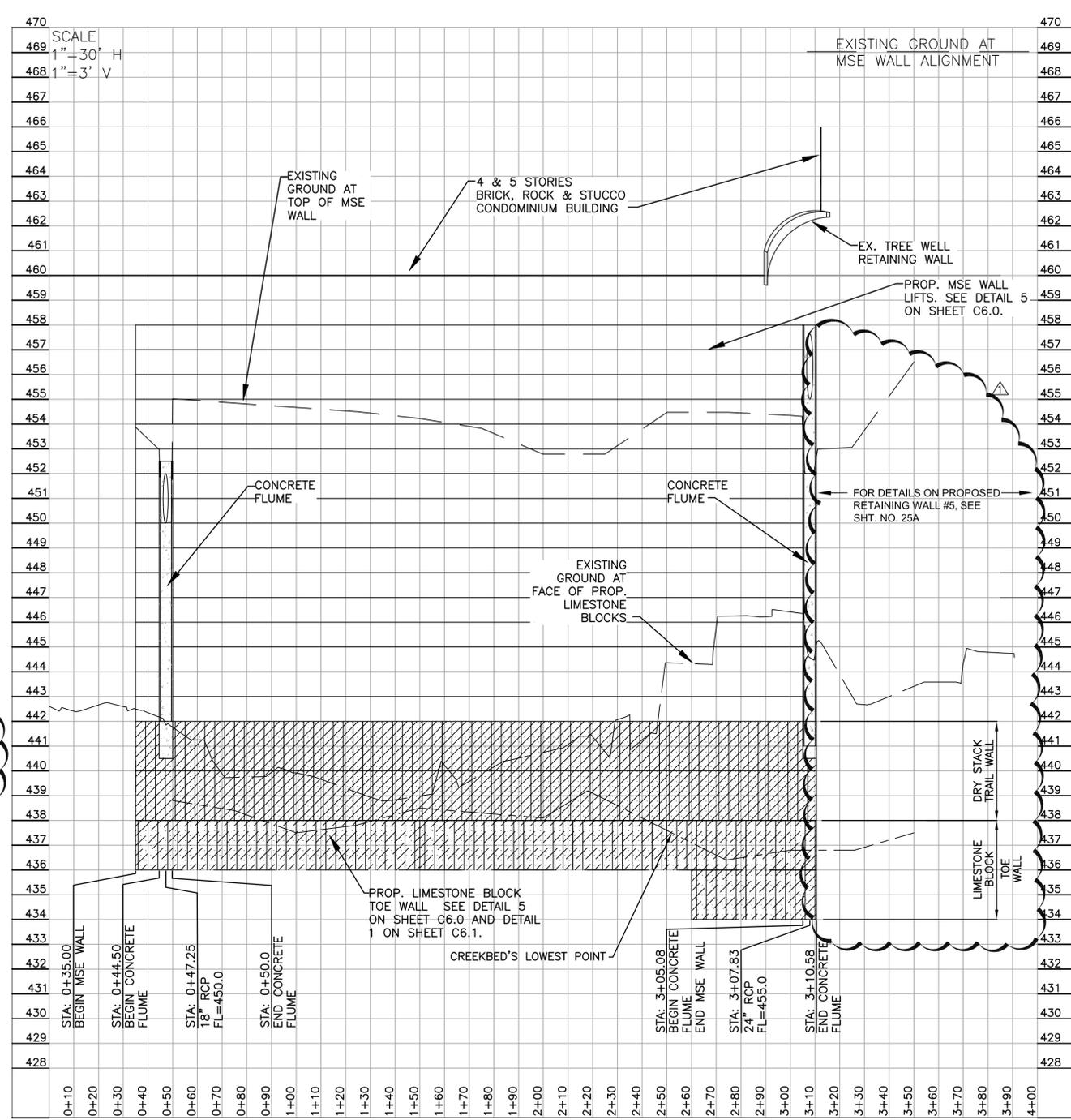
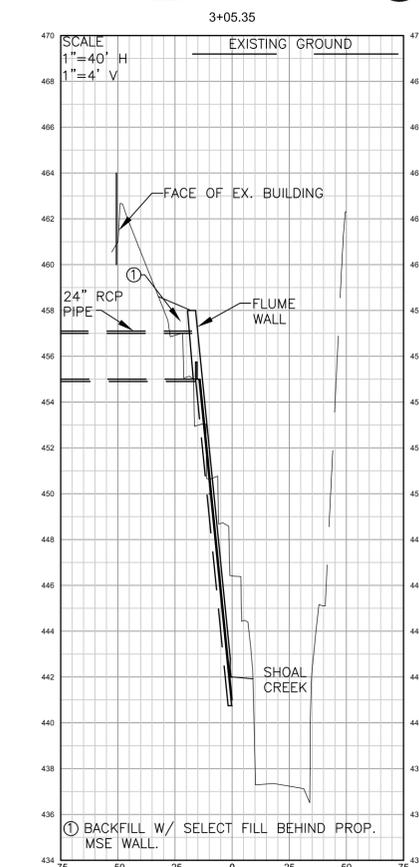
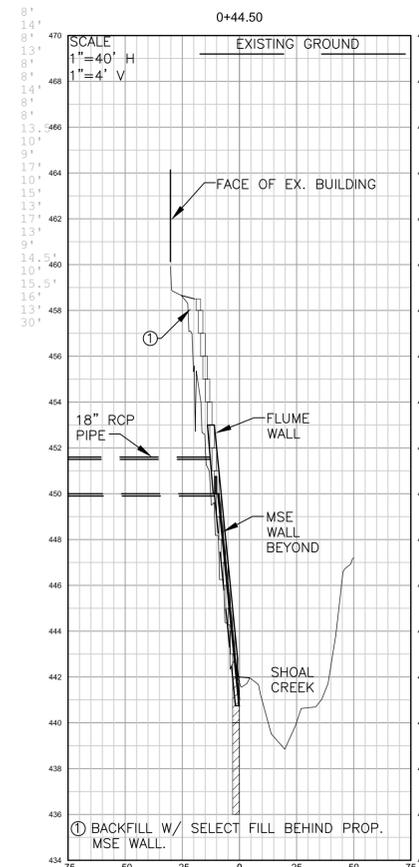
STA 0+50  
N: 10070853.1386  
E: 3111696.4929

STA 3+10.84  
N: 10070706.8418  
E: 3111912.4491

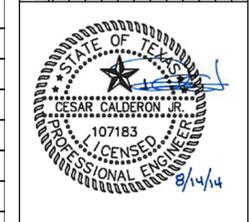
STA 3+55.0  
N: 10070675.2928  
E: 3111943.3419

STA 0+35.0 - 3+10.84  
BEARING: S 55° 33' 05" E

STA 3+10.84 - 3+55.0  
BEARING: S 44° 23' 53" E



REV. NO.	REV. BY	DATE	REVISION DESCRIPTION
1	CC	08/13/14	REMOVED MSE WALL & ADDED REFERENCE TO WALL 5

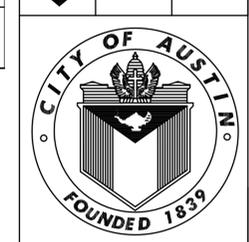


**Jose I. Guerra, Inc.**  
Consulting Engineers  
Registration No.: F-3

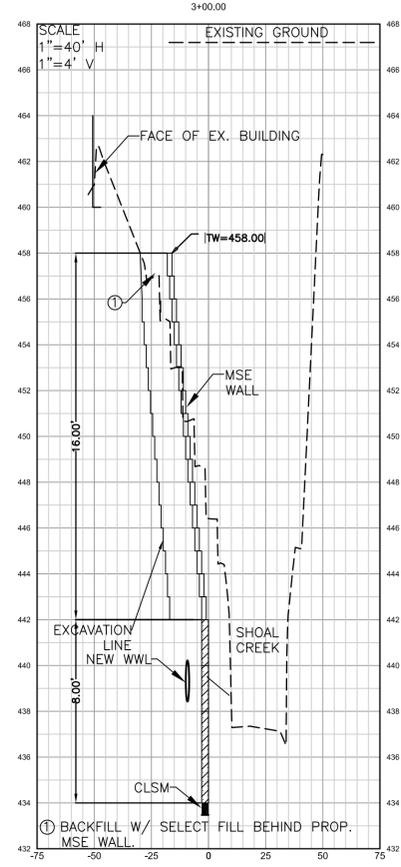
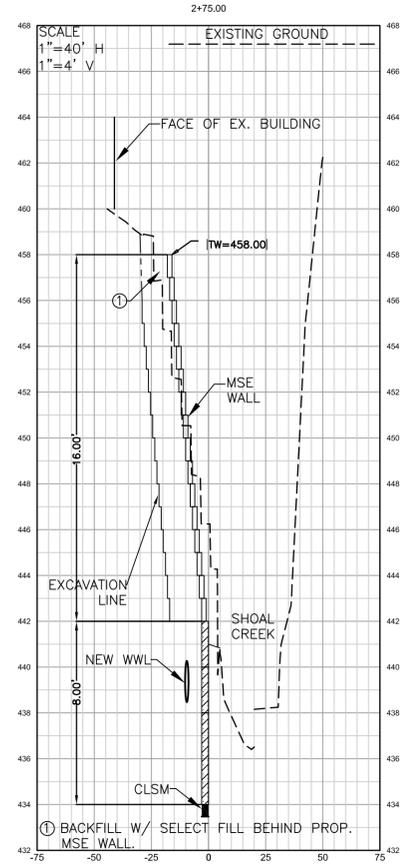
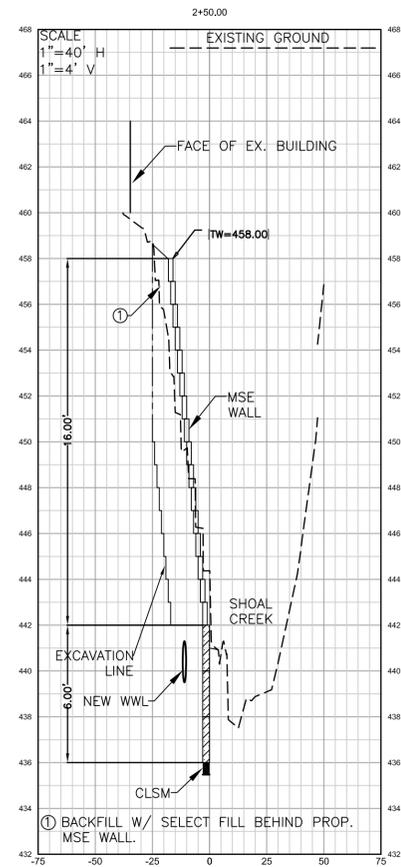
2401 South IH-35  
Austin, Texas 78744  
(512) 445-2090

CITY OF AUSTIN  
SHOAL CREEK TRAIL PROJECT

**MSE WALL REPLACEMENT PLAN  
EAST OF WEST AVENUE**



NOTES	NAME	DATE
SURVEY BY		
DRAWN BY	FS	04/24/14
CHECKED BY	CC	04/24/14
DESIGNED BY	CC	04/24/14
REVIEWED BY	JL	04/24/14
SCALE:		
CADD REF. NO.:		
CADD DIR.:		
SHEET NAME: C2.0		
SHEET NUMBER	14	OF 63



REV. NO.	BY	DATE	DESCRIPTION
1	CC	08/13/14	REMOVED CROSS SECTIONS



**Jose I. Guerra, Inc.**  
 Consulting Engineers  
 Registration No.: F-3

2401 South IH-35  
 Austin, Texas 78744  
 (512) 445-2090

CITY OF AUSTIN  
 SHOAL CREEK TRAIL PROJECT

MSE WALL REPLACEMENT SECTIONS  
 EAST OF WEST AVE., 2+50.00 - 3+00.00



NOTES	NAME	DATE
SURVEY BY		
DRAWN BY	FS	04/24/14
CHECKED BY		04/24/14
DESIGNED BY		04/24/14
REVIEWED BY	JL	04/24/14

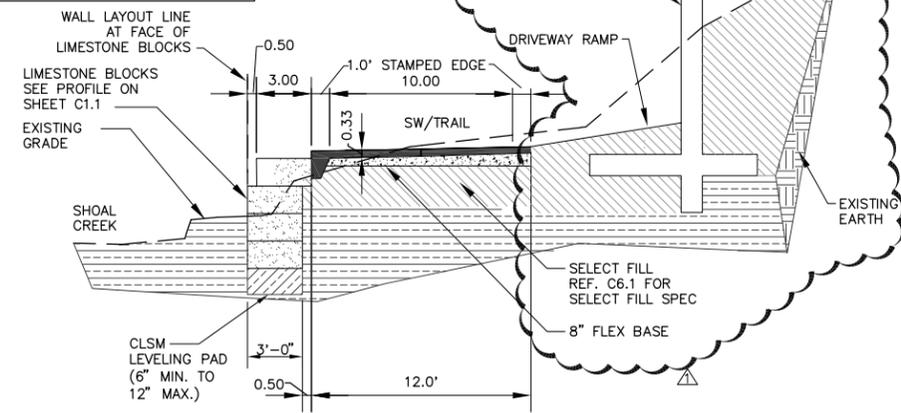
SCALE:  
 CADD REF. NO.:  
 CADD DIR.:  
 SHEET NAME: C5.2

SHEET NUMBER 19 OF 63

NOT USED

NOT USED

NOTE:  
THE TRAIL IS 12' WIDE WITH A 1.0'  
STAMPED EDGE ON BOTH SIDES.  
(TYPICAL)  
SEE DETAIL OF STAMPED CONCRETE  
EDGE ON SHEET 5 & 6.

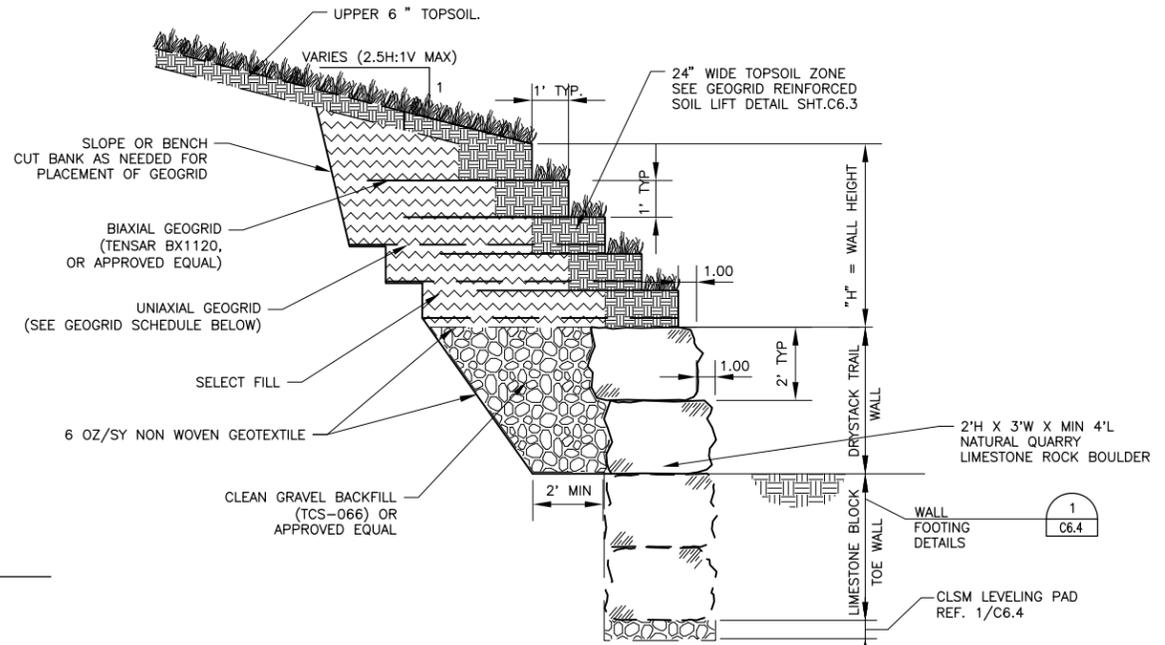


STATION 15+32.58 - 15+62.14

3 TYPICAL TRAIL SECTION  
SCALE: 1" = 5'

1

2



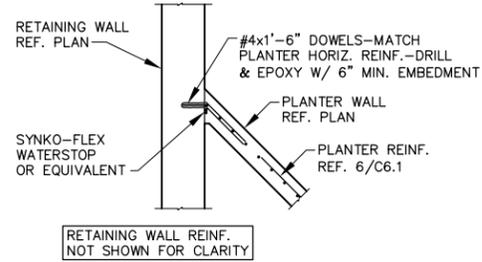
NOT USED

4

SHEET NOTES:  
1. SEE STRUCTURAL WALL DETAILS ON SHEET C6.1  
FOR DIMENSIONS ON STRUCTURAL WALL SECTIONS.

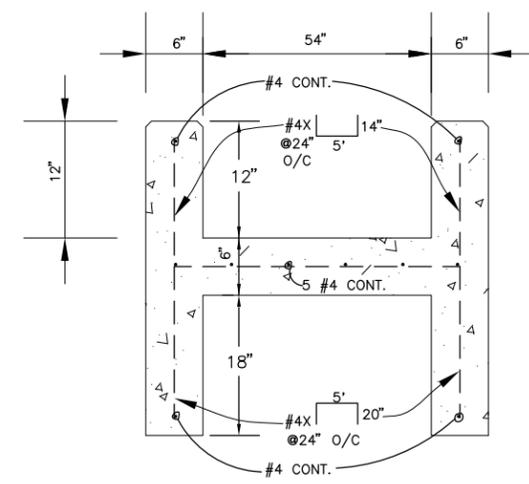
UNIAXIAL GEOGRID SCHEDULE				
WALL HEIGHT "H"	NO. OF SOIL LIFTS	NO. OF GEOGRID LAYERS	MIN. EMBEDMENT LENGTH	GEOGRID TYPE
16'-0"	16	14	14'	TENSAR UX1400HS

NOTES:  
1. STEP TOP OF WALL TO CORRESPOND WITH SLOPE BEHIND WALL.  
2. GEOGRID SPACING AS SHOWN ON TYPICAL SECTION UNLESS NOTED OTHERWISE.  
3. SEE DETAIL 2, SHEET C6.4 FOR UNIAXIAL GEOGRID ORIENTATION.  
4. SEE SHEET C6.1 FOR FOS VALUES.



7 PLANTER TO RETAINING WALL CONNECTION DETAIL  
NO SCALE

5 MSE BLOCKS W/ LIMESTONE BASE BLOCKS SOUTH OF WEST AVENUE  
SCALE: 1" = 5'



NOTES:  
1. CONCRETE TO BE CLASS A, PER COA STD. SPEC. #403S.  
2. USE JITTERBUG OR HEAVY BROOM CONCRETE FINISH PARALLEL TO GRADE.  
3. TOP EDGES TO BE 3/8\"/>

6 CONCRETE FLUME CROSS SECTION  
NTS

REV. NO.	BY	DATE	REVISION DESCRIPTION
1	CC	08/13/14	RENAMED SHEET AND ADDED ADDITIONAL INFORMATION FOR MSE WALL

2401 South IH-35  
Austin, Texas 78744  
(512) 445-2090

Jose I. Guerra, Inc.  
Consulting Engineers  
Registration No.: F-3

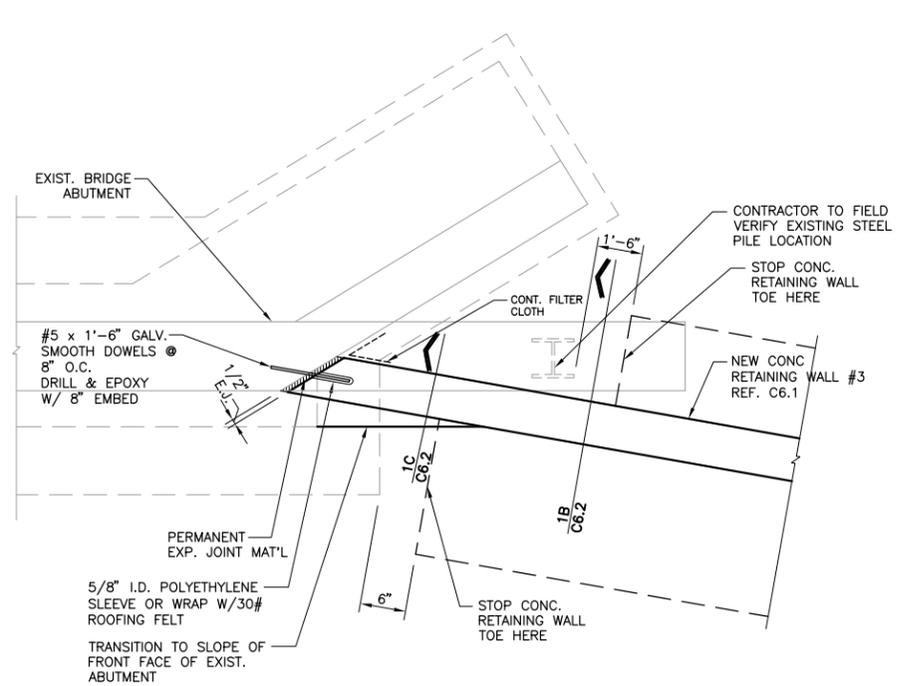
CITY OF AUSTIN  
SHOAL CREEK TRAIL PROJECT

SHOAL CREEK  
CIVIL DETAILS

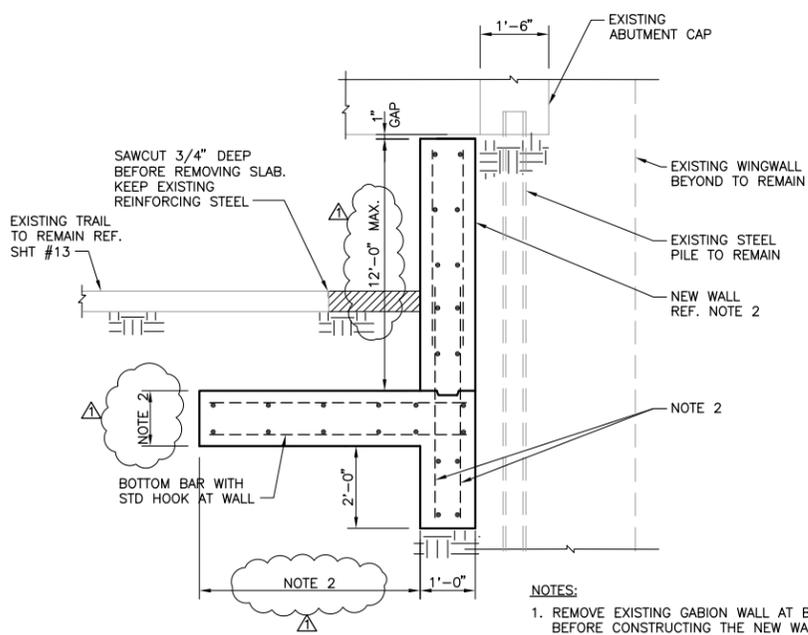


NOTES	NAME	DATE
SURVEY BY		
DRAWN BY	FS	04/24/14
CHECKED BY	CC	04/24/14
DESIGNED BY	CC	04/24/14
REVIEWED BY	JL	04/24/14
SCALE:		
CADD REF. NO.:		
CADD DIR.:		
SHEET NAME: C6.0		
SHEET NUMBER	20	OF 63

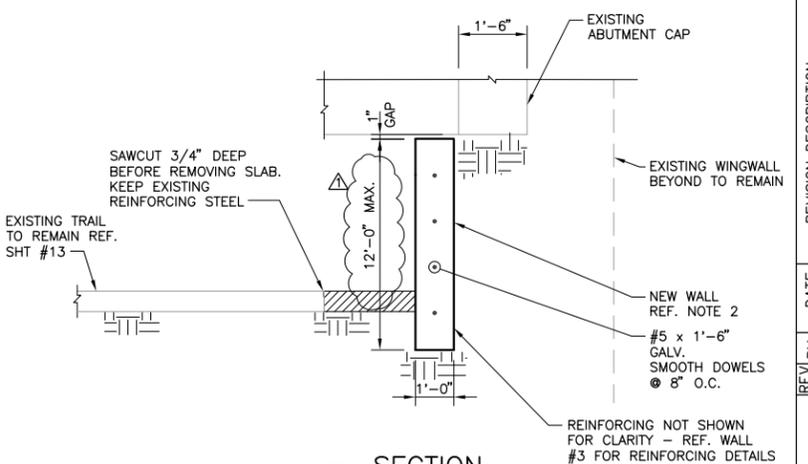




**1A RET. WALL AND EXIST. BRIDGE ABUTMENT CONNECTION PLAN**  
NTS



**1B SECTION**  
NTS



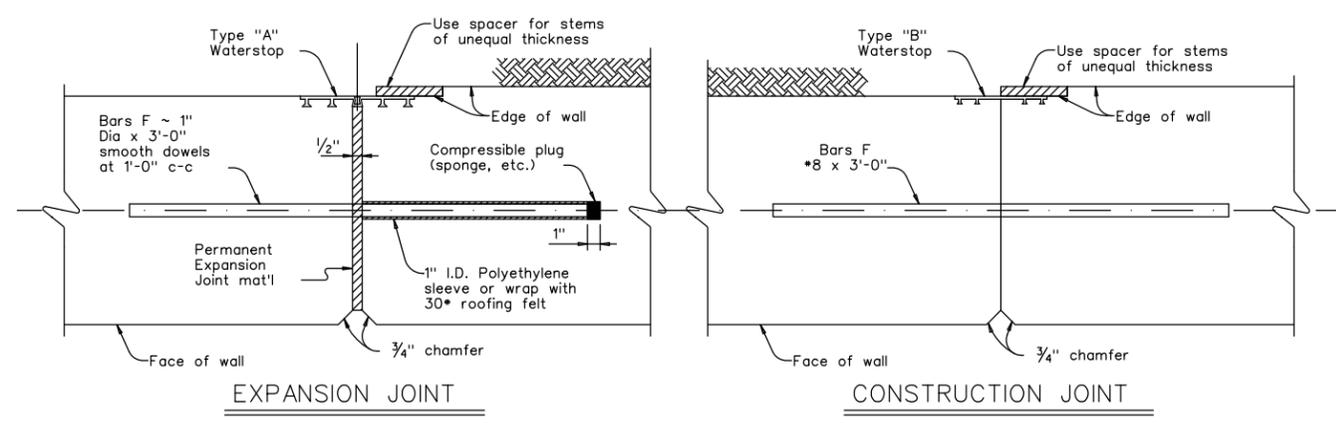
**1C SECTION**  
NTS

- NOTES:**
- REMOVE EXISTING GABION WALL AT BRIDGE BEFORE CONSTRUCTING THE NEW WALL. CONTRACTOR SHALL PROVIDE TEMPORARY SHORING TO MAINTAIN THE STABILITY OF THE EXISTING EMBANKMENTS DURING CONSTRUCTION.
  - USE SAME WALL REINFORCING & DIMENSION AS ADJACENT WALL. U.N.O.
  - BACKFILL WITH SELECT FILL.
  - CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS.

BAR SIZE	BAR POSITION	
	CASE 1	CASE 2
#3	18"	24"
#4	24"	32"
#5	30"	40"
#6	36"	48"
#7	54"	70"
#8	62"	80"
#9	70"	90"
#10	80"	102"
#11	88"	114"

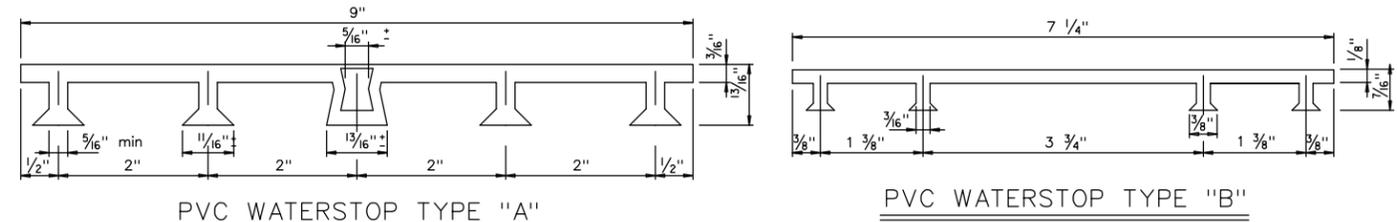
**CASE 1:** HORIZONTAL BARS WITH LESS THAN 12" OF CONC. BELOW BARS, AND ALL VERTICAL BARS.

**CASE 2:** HORIZONTAL BARS W/ 12" OF MORE CONC. BELOW BARS.



**EXPANSION JOINT**

**CONSTRUCTION JOINT**

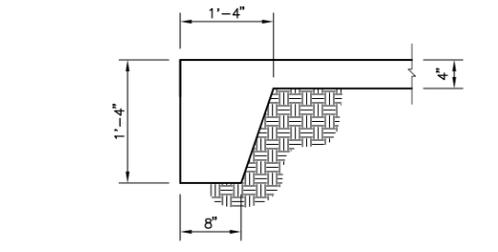


**PVC WATERSTOP TYPE "A"**

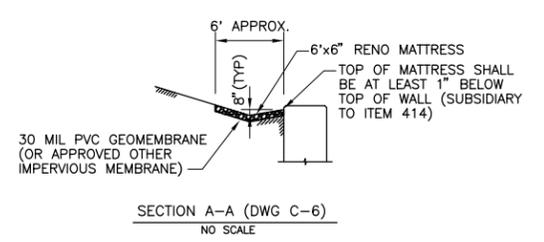
**PVC WATERSTOP TYPE "B"**

- Notes:**
- Dimensions and shapes may vary slightly depending on manufacturer.
  - Ref. Retaining Wall note 3 for joint spacing requirements.

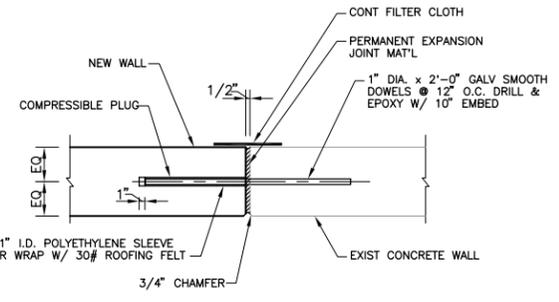
**2 TYPICAL CONCRETE RETAINING WALL JOINT DETAILS**  
NTS



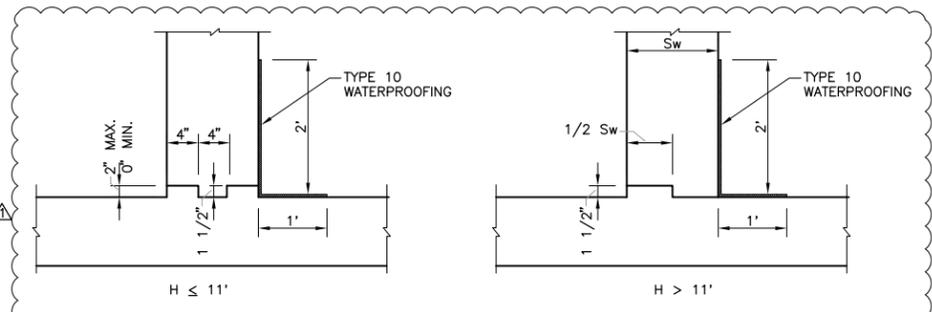
**3 THICKENED SLAB EDGE DETAIL**  
NO SCALE



**4 SWALE DETAIL**  
NO SCALE



**6 NEW & EXISTING WALL CONNECTION DETAILS**  
NO SCALE



**7 KEYWAY DETAILS**  
NO SCALE

**NOTE:** "H" IS WALL HEIGHT FROM BOTTOM OF FOOTING TO TOP OF WALL

REV. NO.	DATE	REVISION DESCRIPTION
1	JUL 08/13/14	REVISIONS

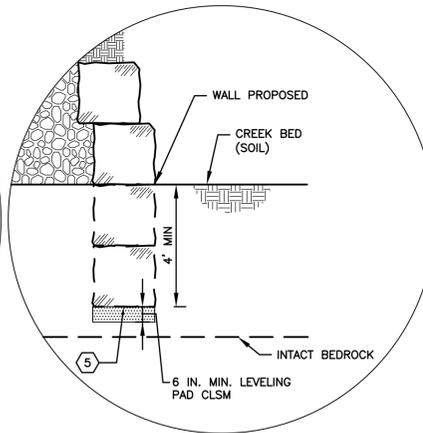
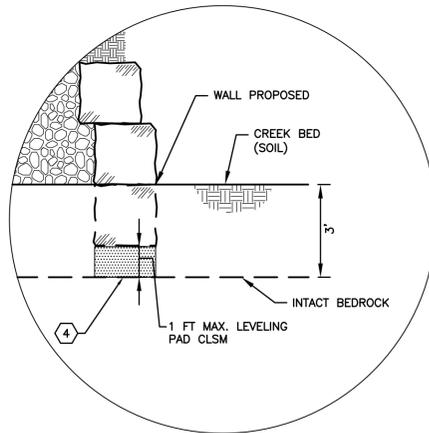
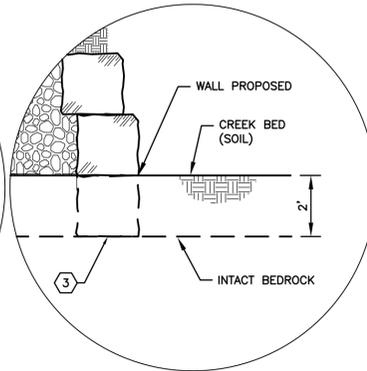
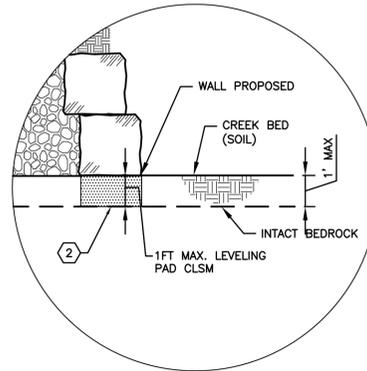
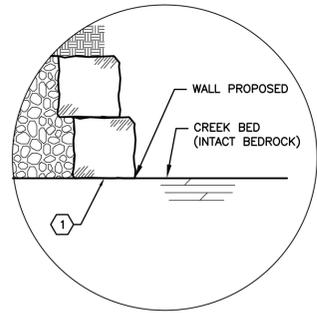


**Jose I. Guerra, Inc.**  
Consulting Engineers  
Registration No.: F-3  
2401 South IH-35  
Austin, Texas 78744  
(512) 445-2090

CITY OF AUSTIN  
SHOAL CREEK TRAIL PROJECT  
SHOAL CREEK  
STRUCTURAL DETAILS



NOTES	NAME	DATE
SURVEY BY		
DRAWN BY	FS	04/24/14
CHECKED BY	CC	04/24/14
DESIGNED BY	CC	04/24/14
REVIEWED BY	JL	04/24/14
SCALE:		
CADD REF. NO.:		
CADD DIR.:		
SHEET NAME: C6.2		
SHEET NUMBER	22	OF 63



FOR CASE 1, 2 AND 3, WIDTH OF TRENCH SHOULD BE MINIMIZED FOR PLACEMENT OF TOE WALL. CONTRACTOR SHALL BACKFILL ANY VOIDS ON BOTH SIDES OF FOOTING WITH IN-SITU OR IMPORTED FILL CONSISTING OF CLEAN, NON-ORGANIC SOIL WITH A MAXIMUM PARTICLE SIZE NO GREATER THAN 50% THE GAP WIDTH OF THE VOID BETWEEN FOOTING AND EDGE OF EXCAVATION. FILL SHALL BE COMPACTED IN LIFTS WITH HAND EQUIPMENT.

**1 WALL FOOTING DETAIL**  
NTS

**CASE 1:** CREEK BED AT PROPOSED WALL ELEVATION CONSISTS OF INTACT BEDROCK. INTACT BEDROCK IS FREE OF SOILS, FRACTURED OR SOFT LIMESTONE, AND WEATHERED SHALE. UNWEATHERED ROCK WILL RING FROM A HAMMER BLOW AND CANNOT BE DUG BY THE POINT OF A ROCK HAMMER.

1 IF CREEK BED IS INTACT BEDROCK, CONSTRUCT FIRST COURSE OF LIMESTONE BOULDERS AT BEDROCK. CONTRACTOR SHALL PROVIDE LEVEL SUBGRADE SURFACE TO ACHIEVE PROPOSED WALL ALIGNMENT/PROFILE. LEVELING MAY CONSIST OF EXCAVATION OR CONSTRUCTION OF LEVELING PAD (1 FT THICKNESS MAX) COMPRISED OF CONTROLLED LOW STRENGTH MATERIAL (CLSM) PER COA 402S.

**CASE 2:** CREEK BED AT PROPOSED WALL ELEVATION IS SOIL, SOFT OR FRACTURED LIMESTONE, AND/OR WEATHERED SHALE TO A DEPTH 2FT OR LESS.

2 IF INTACT BEDROCK IS ENCOUNTERED AT OR BEFORE 1 FT BELOW PROPOSED WALL TOE ELEVATION, CONTRACTOR SHALL BACKFILL EXCAVATION TO REQUIRED MSE WALL ELEVATION (1 FT THICKNESS MAX) USING NORMAL SET CLSM PER COA 402S.

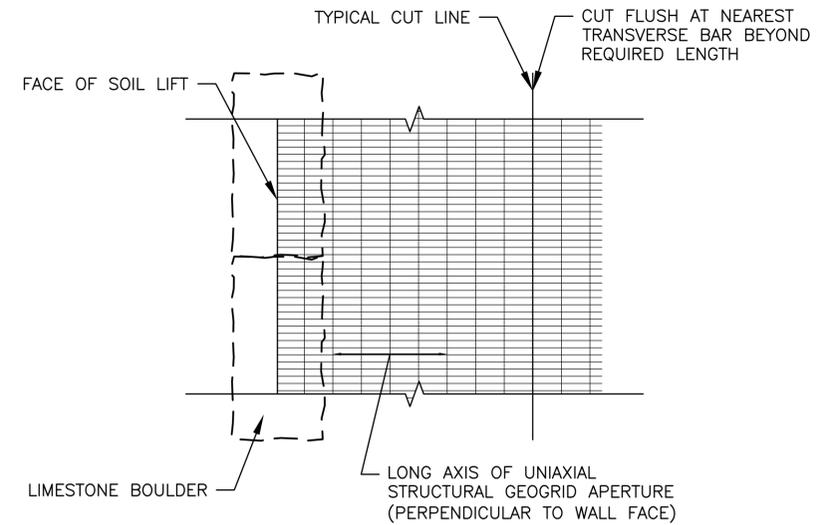
3 IF INTACT BEDROCK IS DEEPER THAN 1 FT, CONTINUE EXCAVATION TO TOTAL DEPTH OF 2FT. IF INTACT BEDROCK EXISTS AT DEPTH OF 2FT BELOW WALL, INSTALL ONE ROW OF LIMESTONE BOULDERS (2' X 3'W X MIN 4'L) TO SERVE AS TOE WALL. CONTRACTOR SHALL PROVIDE LEVEL SUBGRADE SURFACE TO ACHIEVE PROPOSED WALL ALIGNMENT/PROFILE. LEVELING MAY CONSIST OF EXCAVATION OR CONSTRUCTION OF LEVELING PAD (1 FT THICKNESS MAX) COMPRISED OF CONTROLLED LOW STRENGTH MATERIAL (CLSM) PER COA 402S.

IF SOIL, FRACTURED OR SOFT LIMESTONE, OR WEATHERED SHALE EXISTS AT DEPTH OF 2FT, CONTINUE ADDITIONAL EXCAVATION. SEE CASE 3.

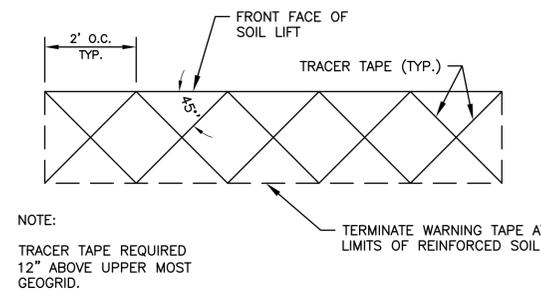
**CASE 3:** CREEK BED AT PROPOSED WALL ELEVATION IS SOIL, SOFT OR FRACTURED LIMESTONE, AND/OR WEATHERED SHALE TO A DEPTH GREATER THAN 2 FT.

4 IF INTACT BEDROCK IS ENCOUNTERED BETWEEN 2FT AND 3FT BELOW PROPOSED WALL ELEVATION, CONTRACTOR SHALL BACKFILL EXCAVATION TO REQUIRED TOE WALL ELEVATION USING ONE ROW OF LIMESTONE BOULDERS (2' X 3'W X MIN 4'L) AND UP TO 1 FT THICKNESS OF CLSM BELOW LOWEST BOULDER ROW.

5 IF INTACT BEDROCK IS DEEPER THAN 3 FT BELOW PROPOSED WALL ELEVATION, CONTINUE EXCAVATION TO ACHIEVE TOTAL DEPTH OF 4FT. INSTALL TWO ROWS OF LIMESTONE BOULDERS (2'X 3'W X MIN 4'L) TO SERVE AS TOE WALL. CONTRACTOR SHALL PROVIDE LEVEL SUBGRADE SURFACE TO ACHIEVE PROPOSED WALL ALIGNMENT/PROFILE. LEVELING MAY CONSIST OF EXCAVATION OR CONSTRUCTION OF LEVELING PAD (6 INCHES MIN.) OF CLSM BELOW LOWEST BOULDER ROW.

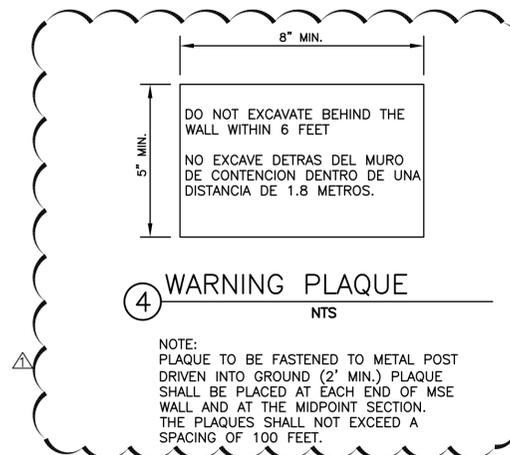


**2 GEOGRID ORIENTATION**  
NTS



NOTE:  
TRACER TAPE REQUIRED  
12" ABOVE UPPER MOST  
GEOGRID.

**3 METALLIC TRACER TAPE PARTIAL PLAN**  
NTS



**4 WARNING PLAQUE**  
NTS

NOTE:  
PLAQUE TO BE FASTENED TO METAL POST  
DRIVEN INTO GROUND (2' MIN.) PLAQUE  
SHALL BE PLACED AT EACH END OF MSE  
WALL AND AT THE MIDPOINT SECTION.  
THE PLAQUES SHALL NOT EXCEED A  
SPACING OF 100 FEET.

REV. NO.	BY	DATE	REVISION DESCRIPTION
1	CC	08/13/14	ADDED WARNING PLAQUE DETAIL



**Jose I. Guerra, Inc.**  
Consulting Engineers  
Registration No.: F-3

2401 South IH-35  
Austin, Texas 78744  
(512) 445-2090

CITY OF AUSTIN  
SHOAL CREEK TRAIL PROJECT

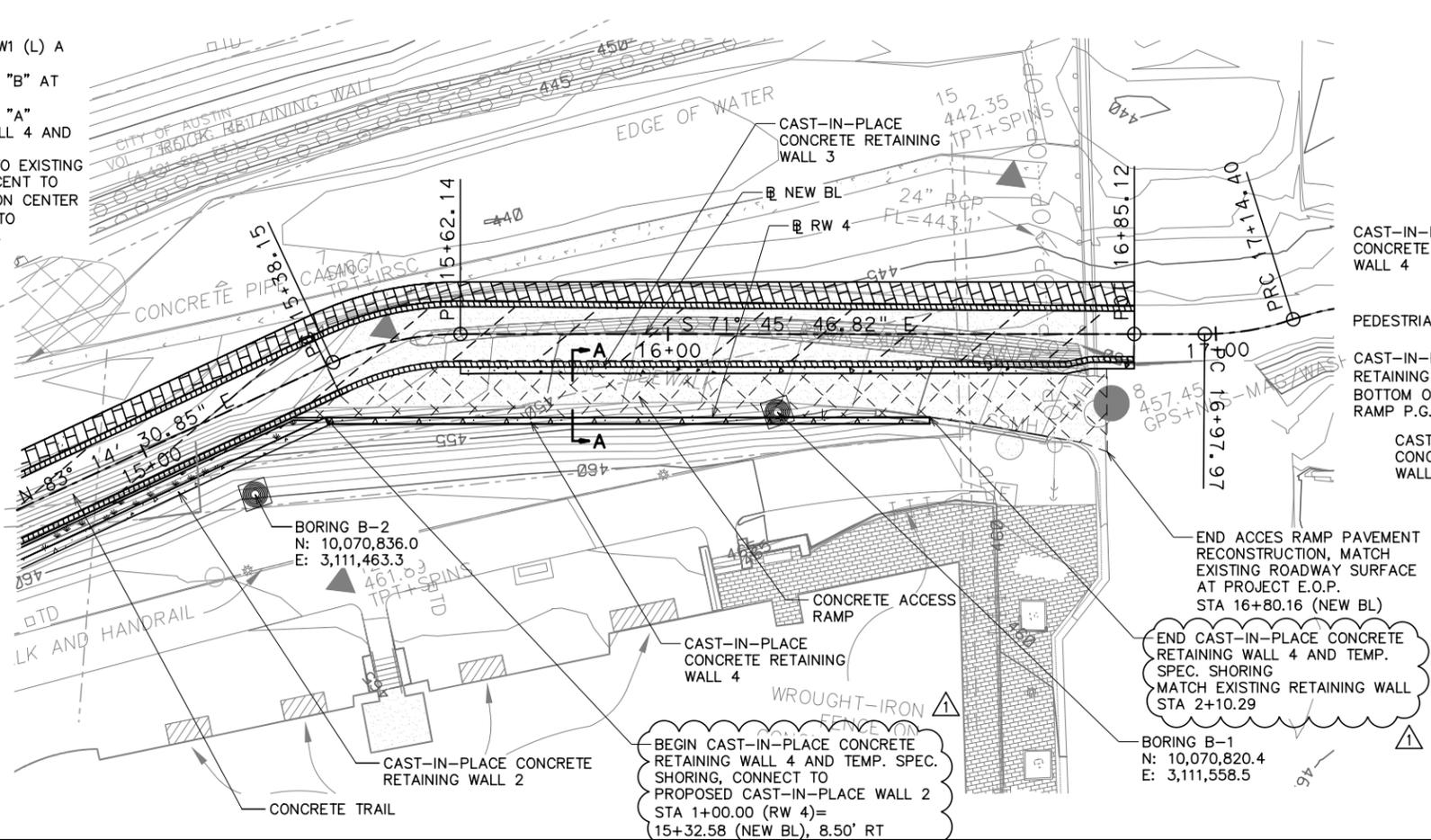
SHOAL CREEK  
TYPICAL DETAILS



NOTES	NAME	DATE
SURVEY BY		
DRAWN BY	FS	04/24/14
CHECKED BY	CC	04/24/14
DESIGNED BY	CC	04/24/14
REVIEWED BY	JL	04/24/14
SCALE:		
CADD REF. NO.:		
CADD DIR.:		
SHEET NAME: C6.4		
SHEET NUMBER	24	OF 63

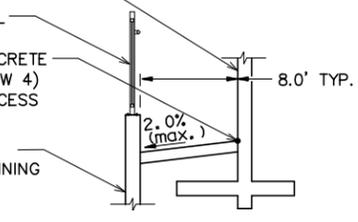
NOTES:

1. USE WITH TXDOT STANDARD RW1 (L) A AND RW2.
2. PROVIDE PVC WATERSTOP TYPE "B" AT EACH PANEL JOINT.
3. PROVIDE PVC WATERSTOP TYPE "A" EXPANSION JOINT BETWEEN WALL 4 AND WALL 2.
4. DRILL AND GROUT #5 BARS INTO EXISTING WALL AT TOP OF SLOPE ADJACENT TO PANEL LA-8-14, 1'-0" MAX. ON CENTER VERTICALLY. PROJECT 1'-0" INTO EXISTING AND PROPOSED WALL.



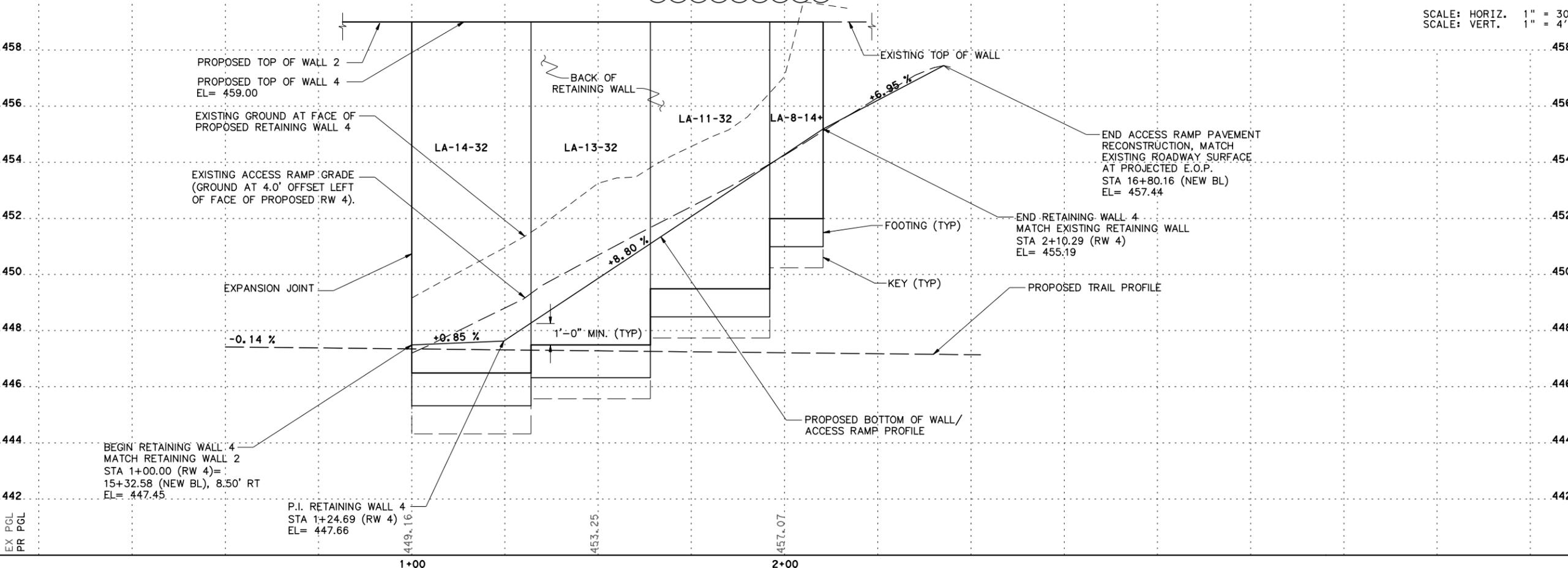
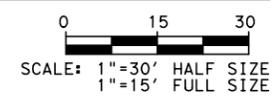
**LEGEND**

[Symbol]	CONCRETE ACCESS RAMP
[Symbol]	PLANTING BED
[Symbol]	LIMESTONE BLOCK WALL
[Symbol]	STAMPED CONCRETE
[Symbol]	CONCRETE TRAIL
[Symbol]	CONCRETE RETAINING WALL
[Symbol]	PROPERTY LINES
[Symbol]	WW MANHOLE



**HORIZONTAL ALIGNMENT CONTROL DATA:**

Horizontal Alignment Name:	STATION	NORTHING	EASTING
Element: Linear			
POB (1)	1+00.00	10070845.299	3111479.807
POE (2)	2+10.29	10070810.793	3111584.563
Tangent Direction:		S 64° 07' 27" E	
Tangent Length:		110.29'	



REVISION DESCRIPTION	DATE	REV. BY	NO.
ADD THERMAL BRIDGE	8/25/14	DD	1

**FOR STRUCTURAL DESIGN**

STATE OF TEXAS  
 IAN A. FRASER  
 88483  
 LICENSED PROFESSIONAL ENGINEER

STATE OF TEXAS  
 SHAWN B. STOVER  
 109251  
 LICENSED PROFESSIONAL ENGINEER

8/25/2014

701 BRAZOS, SUITE 450  
 AUSTIN, TX 78701  
 P: (512) 447-5590

SHOAL CREEK GREENBELT - TRAIL IMPROVEMENTS  
 W. 5TH STREET TO W. 4TH STREET

CAST-IN-PLACE RETAINING WALL 4  
 SHEET 1 OF 1

**HNTB**  
 The HNTB Companies  
 Engineers, Architects, Planners  
 TYPE FIRM REGISTRATION NO. F420

**CITY OF AUSTIN**  
 FOUNDED 1839

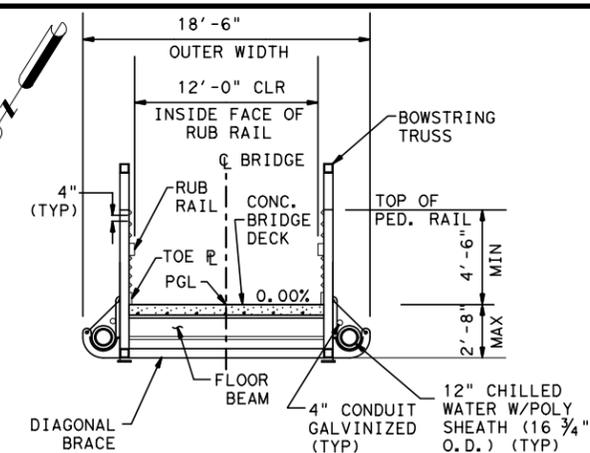
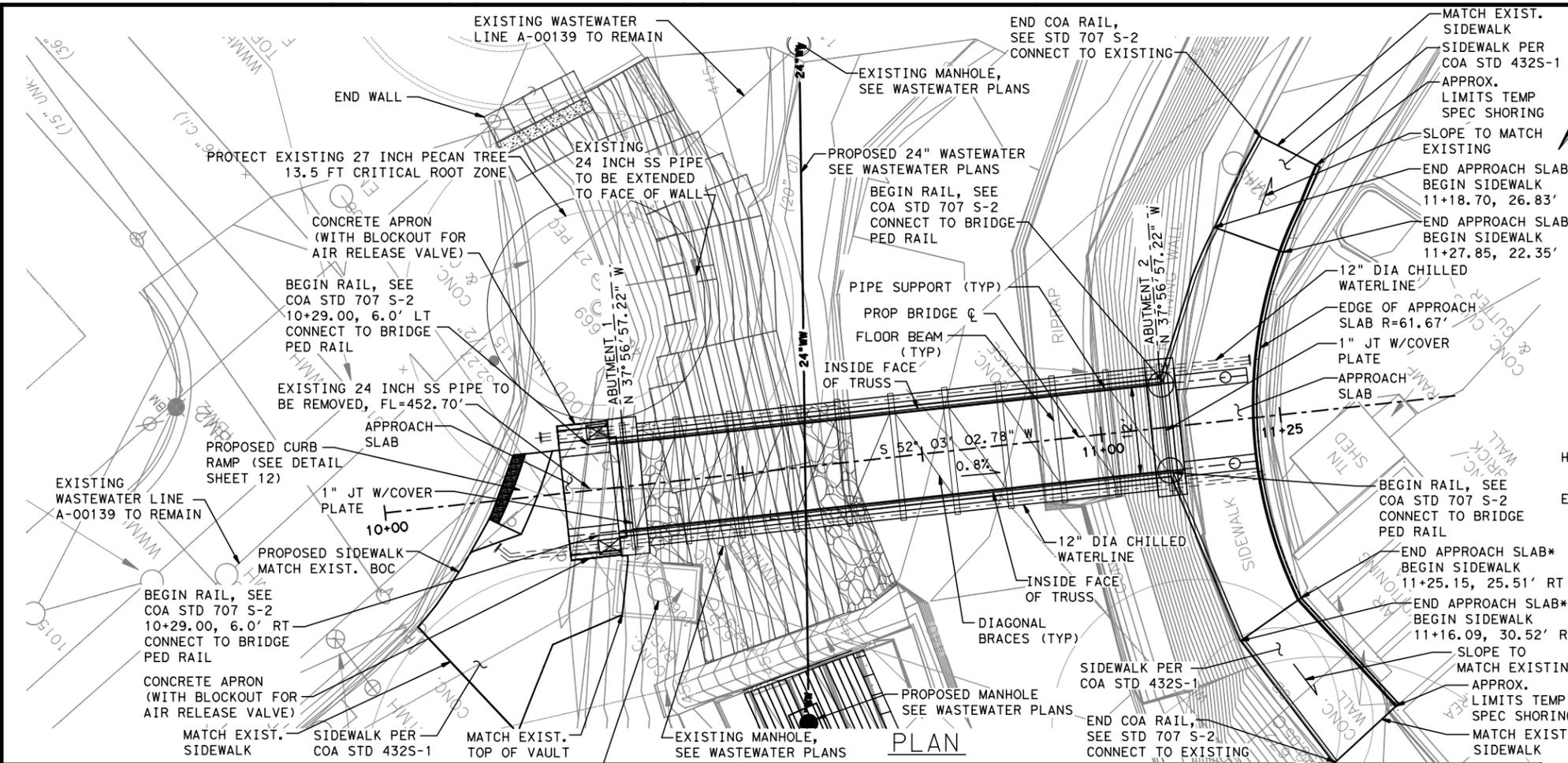
NOTES	NAME	DATE
SURVEY BY	McGRAY	2/19/11
DRAWN BY	DDL	8/1/12
CHECKED BY	DE	8/2/12
DESIGNED BY	BK	7/2/12
REVIEWED BY	WB	

SCALE:  
 CADD REF. NO.:  
 CADD DIR.:

SHEET NUMBER: 25 OF 63



\\ausw001\pwwork\Jobs\47728\COA\Gen\Civil\2008\Techprod\Bridges\SHOAL\*CR\*BRIDGE.rvt.dgn

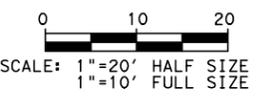


**HORIZONTAL ALIGNMENT CONTROL DATA:**

Horizontal Alignment Name: PED BRIDGE STATION NORTHING EASTING

Element: Linear

POB (1)	10+00.00	10070728.641	3111974.342
POE (2)	11+50.00	10070636.397	3111856.058
Tangent Direction:	S 52°03'02.78" W		
Tangent Length:	150.00'		



**GENERAL NOTES**

BRIDGE SHALL BE DESIGNED IN ACCORDANCE WITH AASHTO LRFD SPECIFICATIONS FOR DESIGN OF PEDESTRIAN BRIDGES.

PROPOSED BRIDGE: BOWSTRING TRUSS  
 BRIDGE LENGTH: 75.00' LIVE LOAD: 90 PSF  
 INSIDE BRIDGE WIDTH: 12.00' VEHICLE LOAD: 10,000 LBS  
 CHORD HEIGHT: 54" (ABOVE PGL) WIND LOAD: 35 PSF

BRIDGE SHALL BE FROM APPROVED MANUFACTURER'S LIST OR AN EQUAL APPROVED IN ADVANCE.

SUBMIT SHOP DRAWINGS PRIOR TO TRUSS FABRICATION.

ALL BRIDGE DESIGN CALCULATIONS AND SHOP DRAWINGS SHALL BE SUBMITTED UNDER THE SEAL OF A REGISTERED TEXAS PROFESSIONAL ENGINEER.

BRIDGE SHALL BE PROPERLY BRACED/SUPPORTED DURING ERECTION.

BRIDGE ERECTOR/INSTALLER SHALL FOLLOW ALL OSHA, STATE, COUNTY AND CITY GUIDELINES RELATIVE TO ERECTION OF STEEL STRUCTURES.

CONTRACTOR SHALL VERIFY ANCHOR BOLT SPACING, BACKWALL HEIGHT AND ALL OTHER DISTANCES & DIMENSIONS WITH BRIDGE MANUFACTURER AGAINST BRIDGE SHOP DRAWINGS & ACTUAL FIELD CONDITIONS PRIOR TO INSTALLATION.

BRIDGE MANUFACTURER SHALL PROVIDE ATTACHED PLAQUES EACH END OF BRIDGE FOR BRIDGE LOAD CAPACITY.

ABUTMENTS WERE DESIGNED USING LOADS NOTED. IF THE FINAL LOADS FROM THE BRIDGE MANUFACTURER ARE DIFFERENT THAN LISTED ON ABUTMENT DETAILS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO CONSTRUCTION TO REEVALUATE THE DESIGN OF THE ABUTMENTS.

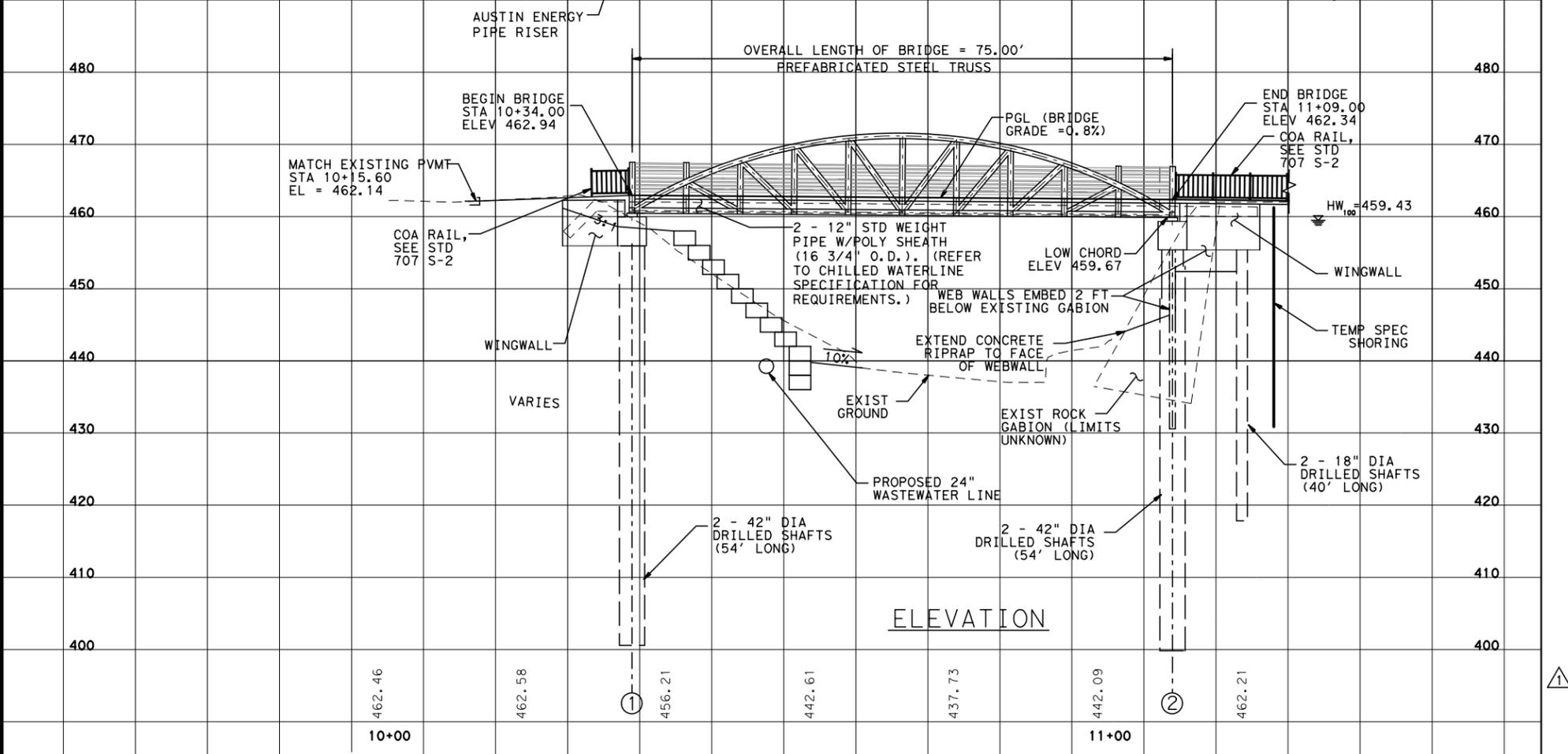
A STRAIGHT LINE DECK PROFILE IS REQUIRED. CAMBER SHALL BE PROVIDED TO OFFSET DEAD LOAD DEFLECTION.

SHAFTS SHALL BE FOUNDED AT THE ELEVATIONS SHOWN OR DEEPER AS NECESSARY TO PENETRATE 10 FEET MINIMUM INTO EAGLE FORD LIMESTONE.

EXPANSION JOINT COVER PLATES SHALL BE SUBSIDIARY TO TRUSS FABRICATION. DETAILS SHALL BE INCLUDED WITH SHOP DRAWINGS FOR TRUSS.

**MAXIMUM PANEL POINT SPACING 7'6" ON BRIDGE FOR PIPE SUPPORT ACCOMMODATION.**

\*TERMINATE AT LOCATION WITH NO OVERHANG



REV. NO.	DATE	BY	REVISION DESCRIPTION

701 BRAZOS, SUITE 450  
 AUSTIN, TX 78701  
 PHONE: (512) 447-5590

HNTB  
 The HNTB Companies  
 Engineers, Architects, Planners  
 TYPE FIRM REGISTRATION NO. F420

SHOAL CREEK GREENBELT - TRAIL IMPROVEMENTS  
 W. 5TH STREET TO W. 4TH STREET

BRIDGE LAYOUT - 75-FT BOWSTRING TRUSS

NOTES	NAME	DATE
SURVEY BY	----	----
DRAWN BY	MM	7/30/13
CHECKED BY	SS	7/30/13
DESIGNED BY	IF	7/30/13
REVIEWED BY	SS	10/XX/12

SCALE:

CADD REF. NO.:

CADD DIR.:

SHEET NUMBER	26	OF	63
--------------	----	----	----

\\ausw001\pwwork\Jobs\47728\COA\*Gen\*Ci\1\2008\Techprod\Bridg\Pipe Support Detail.s.dgn

ESTIMATED QUANTITIES		
CLASS "C" CONC (PIPE ENCLOSURES)	CY	6.5
CLASS "C" CONC (8" SLAB)	CY	27.5
REINFORCING STEEL	Lb (4)	2936

REV	NO	DATE	DESCRIPTION
1		8/25/2014	REVISED SUPPORT DIM. & BRACING. REVISED NOTEL.



**HNTB**  
The HNTB Companies  
Engineers, Architects, Planners  
TYPE FIRM REGISTRATION NO. F420

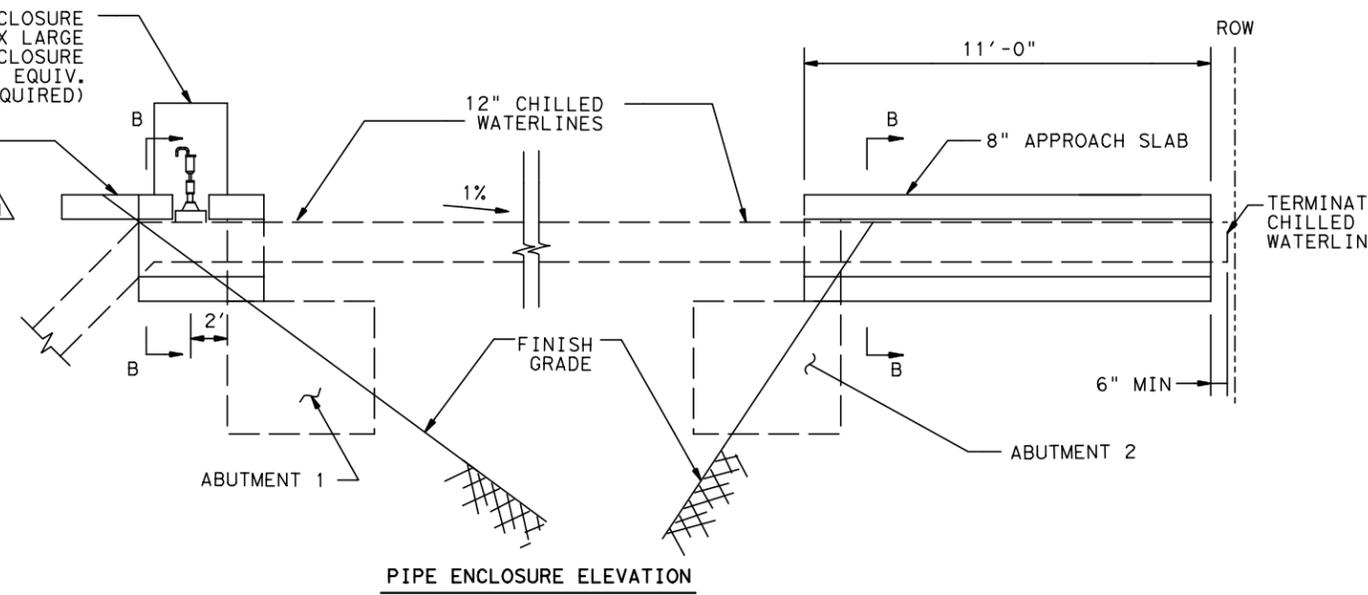
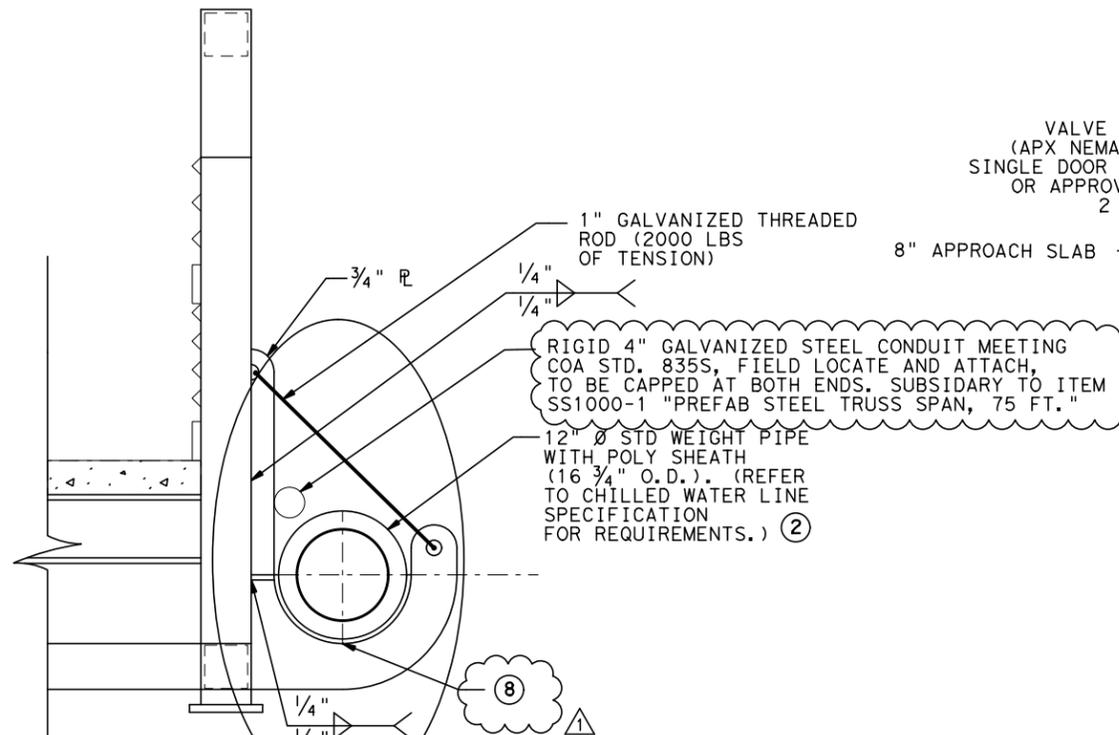
701 BRAZOS, SUITE 450  
AUSTIN, TX 78701  
P: (512) 447-5590

SHOAL CREEK GREENBELT - TRAIL IMPROVEMENTS  
W. 5TH STREET TO W. 4TH STREET

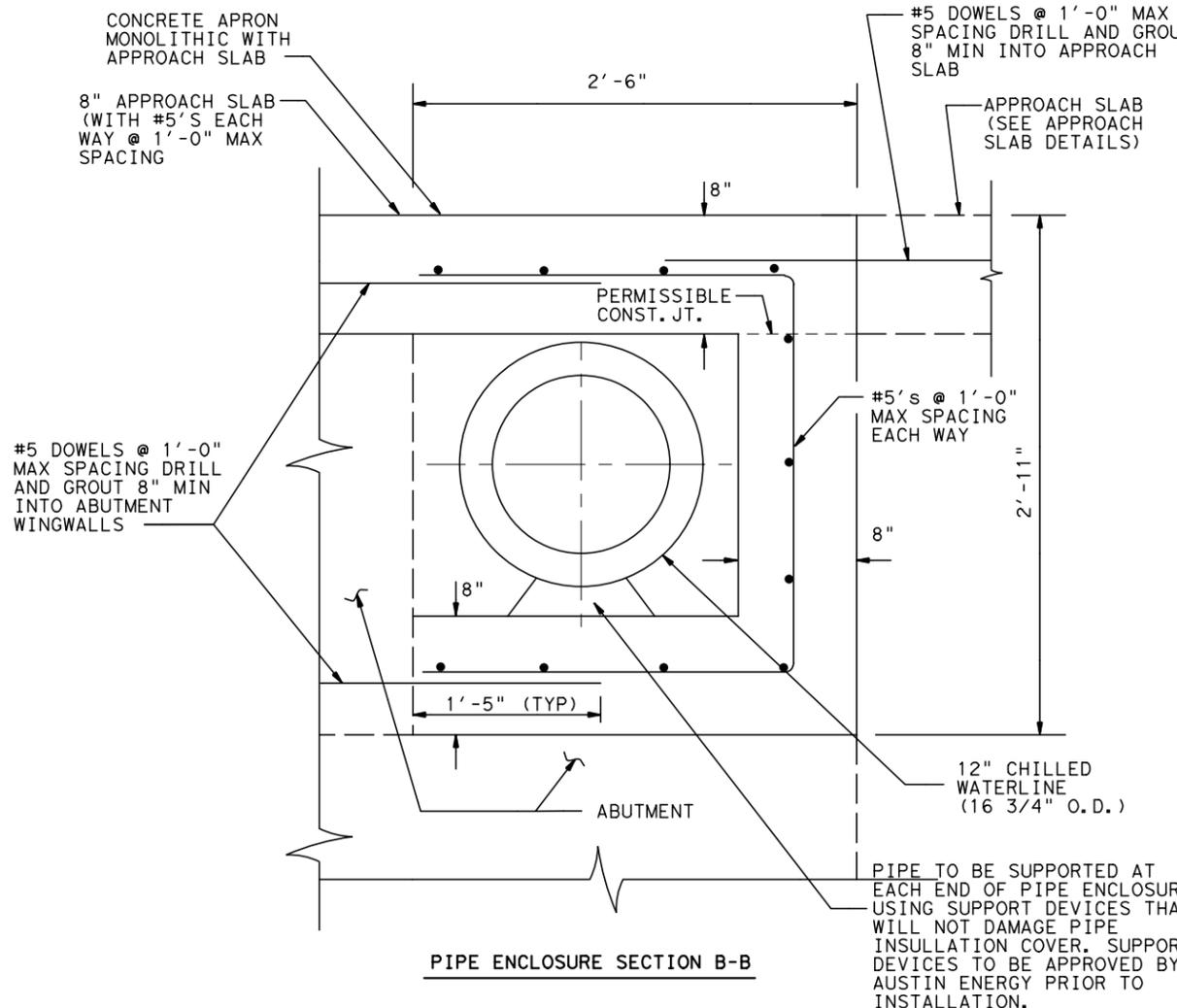
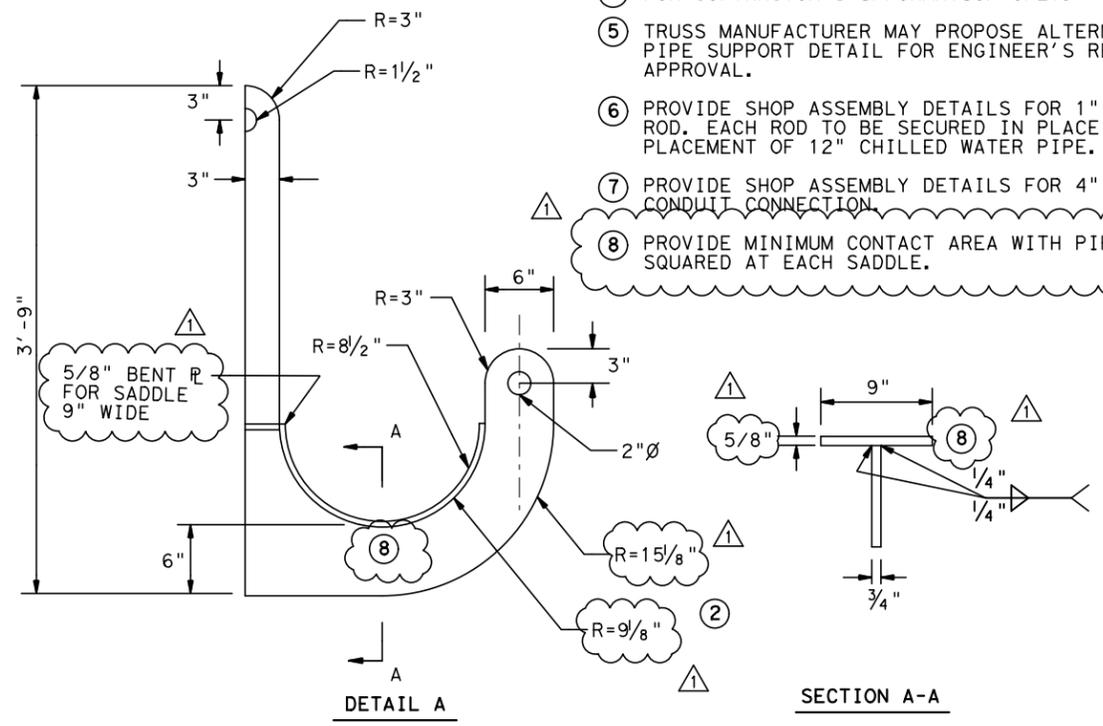
PIPE SUPPORT DETAILS



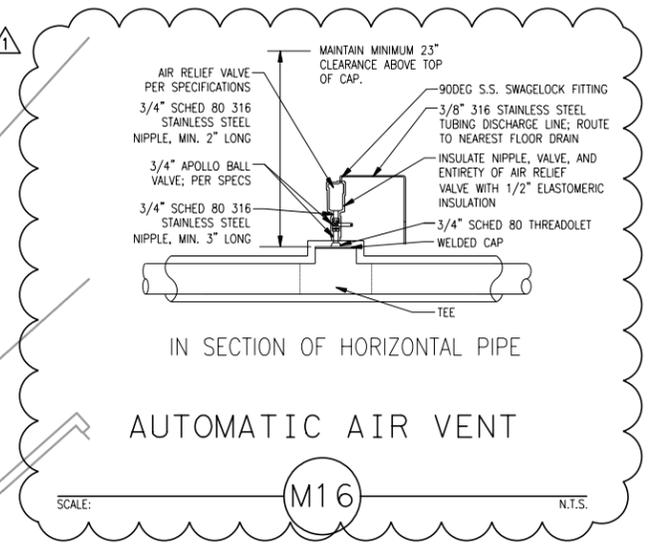
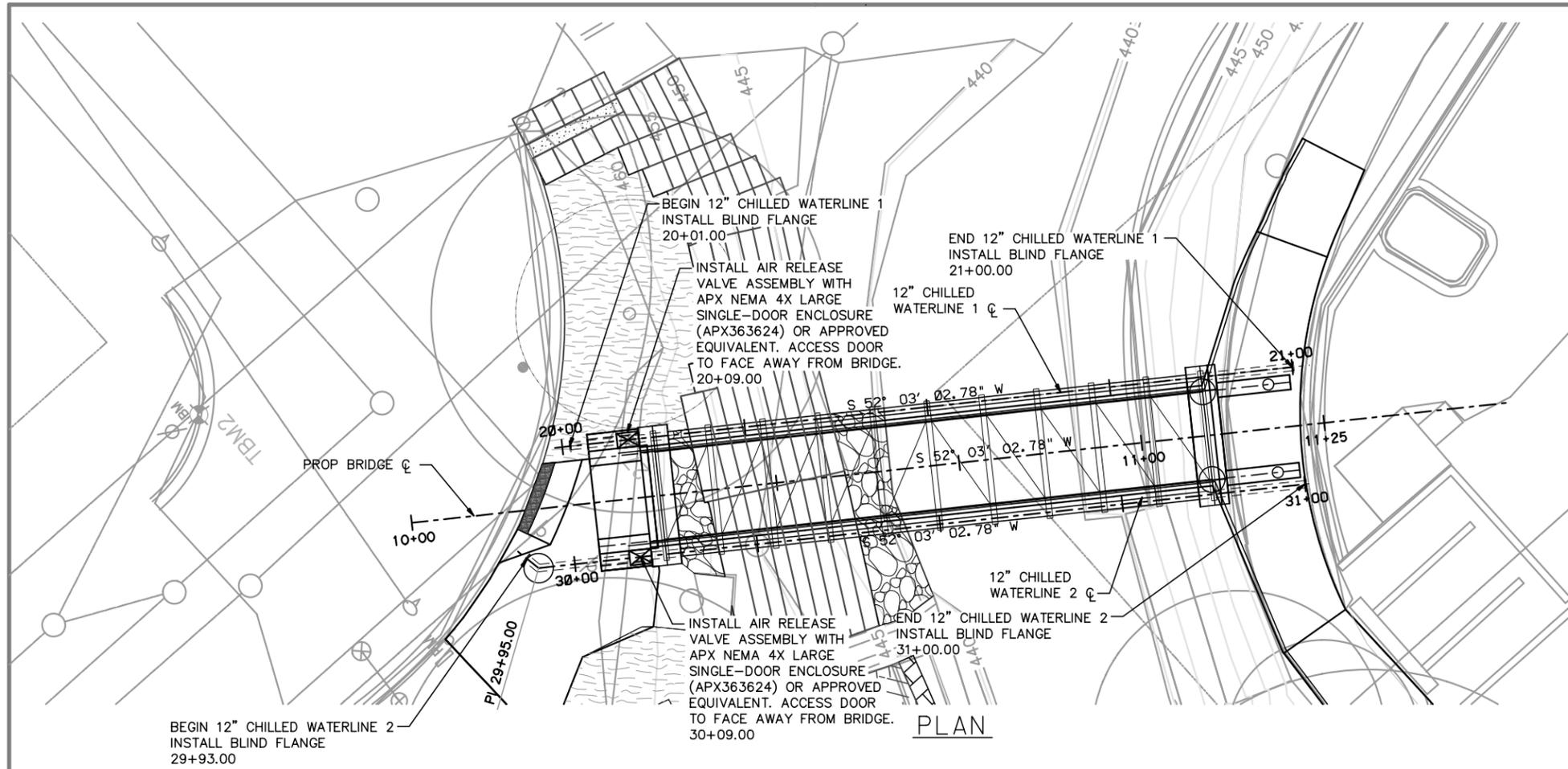
NOTES	NAME	DATE
SURVEY BY	----	----
DRAWN BY	MM	10/18/12
CHECKED BY	IF	8/13/14
DESIGNED BY	IF	8/12/14
REVIEWED BY	SS	8/14/14
SCALE:		
CADD REF. NO.:		
CADD DIR.:		
SHEET NUMBER	31	OF 63



- 1 PROVIDE PIPE SUPPORTS AT EACH PANEL POINT WITH 7'-6" MAXIMUM SPACING. EACH SUPPORT SUITABLE FOR 2000 LB SERVICE LOAD.
- 2 VERIFY RADIUS AND SADDLE DIMENSIONS WITH SHOP DRAWINGS FOR CHILLED WATERLINE (INCLUDING SHEATHING). ADJUST SADDLE DIMENSION TO MATCH SADDLE INNER DIAMETER TO PIPE OUTER DIAMETER AS CLOSELY AS POSSIBLE.
- 3 PIPE SUPPORT INCIDENTAL TO PREFABRICATED STEEL BOWSTRING TRUSS.
- 4 FOR CONTRACTOR'S INFORMATION ONLY.
- 5 TRUSS MANUFACTURER MAY PROPOSE ALTERNATIVE PIPE SUPPORT DETAIL FOR ENGINEER'S REVIEW AND APPROVAL.
- 6 PROVIDE SHOP ASSEMBLY DETAILS FOR 1" GALVANIZED ROD. EACH ROD TO BE SECURED IN PLACE AFTER PLACEMENT OF 12" CHILLED WATER PIPE.
- 7 PROVIDE SHOP ASSEMBLY DETAILS FOR 4" GALVANIZED CONDUIT CONNECTION.
- 8 PROVIDE MINIMUM CONTACT AREA WITH PIPE OF 72 IN. SQUARED AT EACH SADDLE.



PIPE TO BE SUPPORTED AT EACH END OF PIPE ENCLOSURE USING SUPPORT DEVICES THAT WILL NOT DAMAGE PIPE INSULATION COVER. SUPPORT DEVICES TO BE APPROVED BY AUSTIN ENERGY PRIOR TO INSTALLATION.

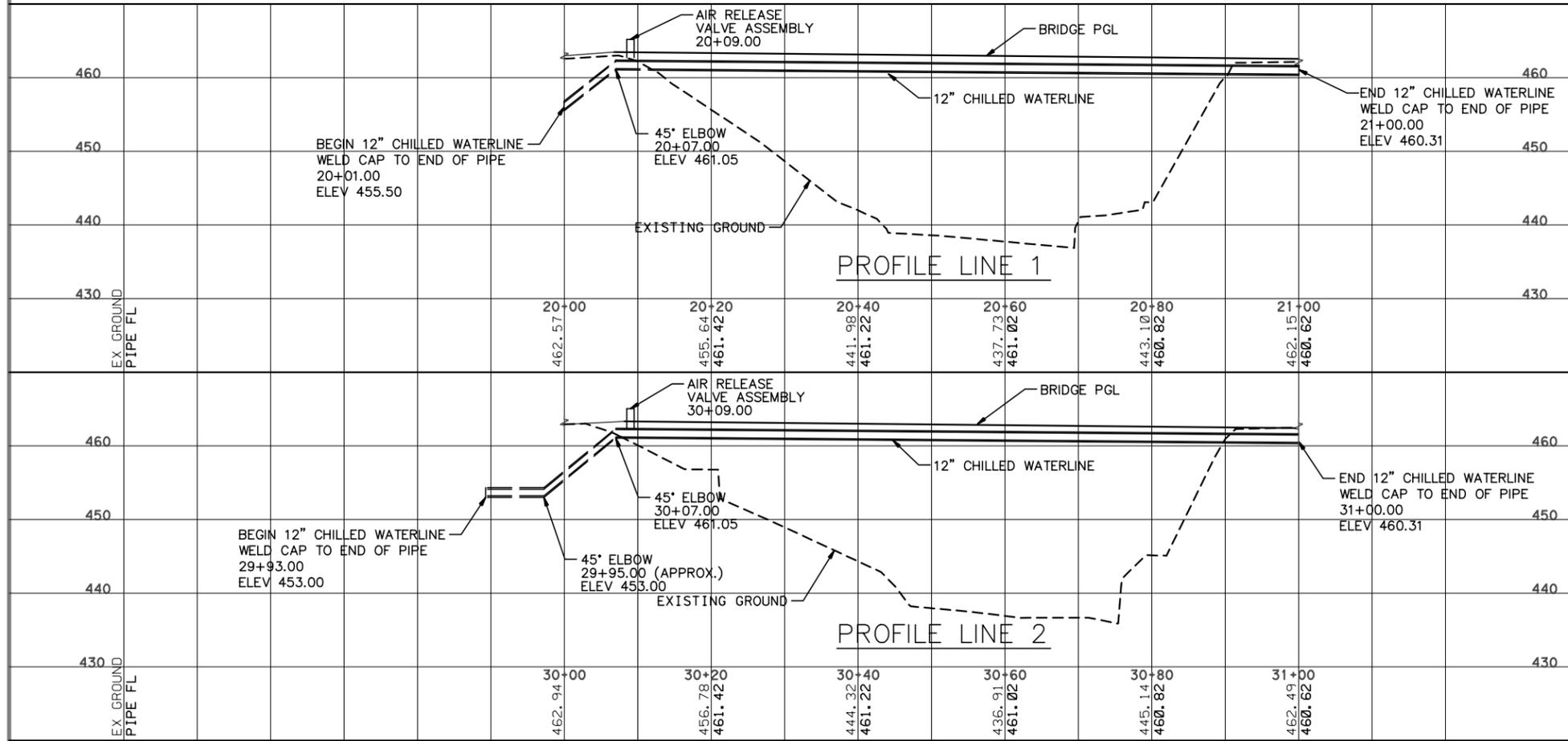


AUTOMATIC AIR VENT

M16

SCALE:

N.T.S.



NOTES:

1. SEE BRIDGE SHEETS FOR DIMENSIONS AND ADDITIONAL INFORMATION.

HORIZONTAL ALIGNMENT CONTROL DATA:

		Horizontal Alignment Name: CWL1	
STATION	NORTHING	EASTING	
Element: Linear			
POB (1)	19+99.00	10070709.726	3111963.096
		Tangent Direction:	S 52°03'03" W
		Tangent Length:	101.00
POE (2)	21+00.00	10070647.615	3111883.452
		Horizontal Alignment Name: CWL2	
STATION	NORTHING	EASTING	
Element: Linear			
POB (1)	29+91.00	10070724.309	3111960.376
		Tangent Direction:	N 82°56'57" W
		Tangent Length:	4.00
PI (2)	29+95.00	10070724.800	3111956.407
		Tangent Direction:	S 52°03'03" W
		Tangent Length:	105.00
POE (3)	31+00.00	10070660.232	3111873.612

REV	BY	DATE	REVISION DESCRIPTION
1	SH	8/25/2014	ISSUE FOR AIR RELEASE VALVE DETAIL

Shawn B. Stover  
8/25/2014

701 BRAZOS, SUITE 450  
AUSTIN, TX 78701  
P: (512) 447-5590

SHOAL CREEK GREENBELT - TRAIL IMPROVEMENTS  
W. 5TH STREET TO W. 4TH STREET

CHILLED WATERLINE PLAN & PROFILE

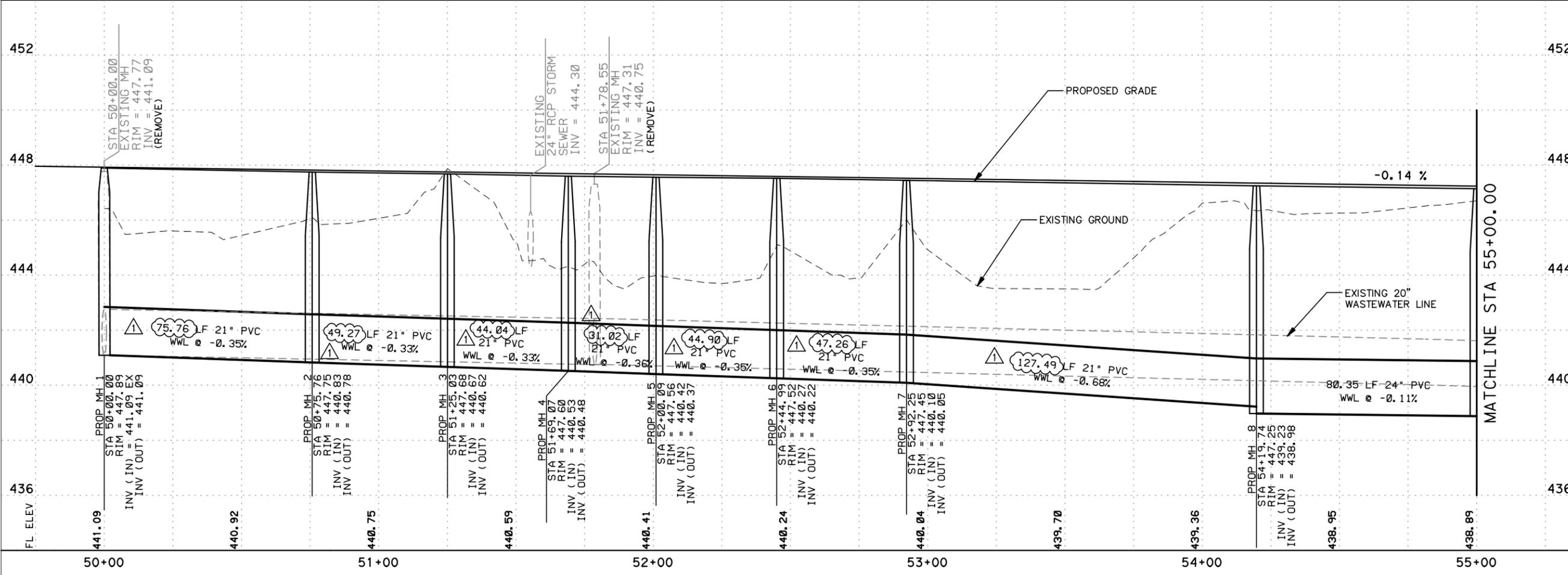
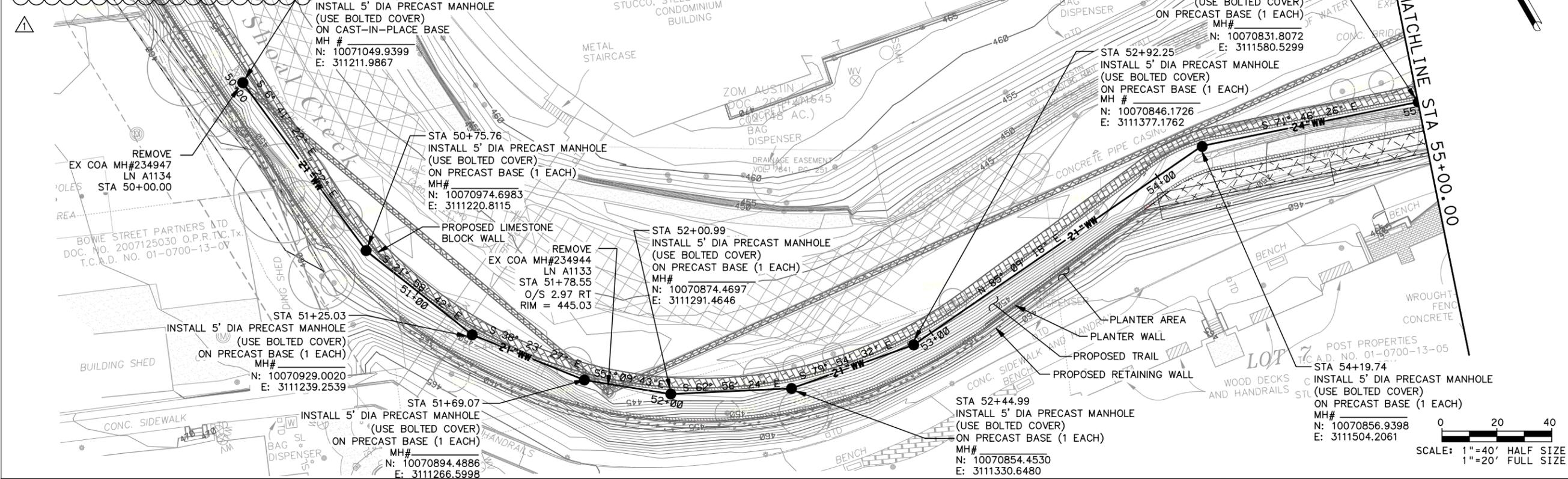


NOTES	NAME	DATE
SURVEY BY	McGRAY	2/19/11
DRAWN BY	DDL	8/11/12
CHECKED BY	DE	8/2/12
DESIGNED BY	BK	7/2/12
REVIEWED BY	WB	

SCALE:  
CADD REF. NO.:  
CADD DIR.:

8/25/2014

NOTES:  
 1. WASTEWATER TRENCH OF EXISTING AND PROPOSED WASTEWATER LINES TO BE BACKFILLED WITH CLASS B CONCRETE.  
 2. FOR 60 INCH DIAMETER AND GREATER WASTEWATER MANHOLES, WASTEWATER MANHOLE CUT-SHEETS MUST BE SUBMITTED BY THE CONTRACTOR FOR AWU APPROVAL PRIOR TO CONSTRUCTION.



REV. NO.	DATE	REVISION DESCRIPTION
1	8/25/2014	ISSUED NOTES AND PIPE LENGTHS

Shawn B. Stover  
 8/25/2014

701 BRAZOS, SUITE 450  
 AUSTIN, TX 78701  
 P: (512) 447-5590

SHOAL CREEK GREENBELT - TRAIL IMPROVEMENTS  
 W. 5TH STREET TO W. 4TH STREET  
 WASTEWATER PLAN AND PROFILE  
 SHEET 1 OF 2

NOTES	NAME	DATE
SURVEY BY	McGRAY	2/19/11
DRAWN BY	DDL	8/1/12
CHECKED BY	DE	8/2/12
DESIGNED BY	BK	7/2/12
REVIEWED BY	WB	

SCALE:  
 CADD REF. NO.:  
 CADD DIR.:

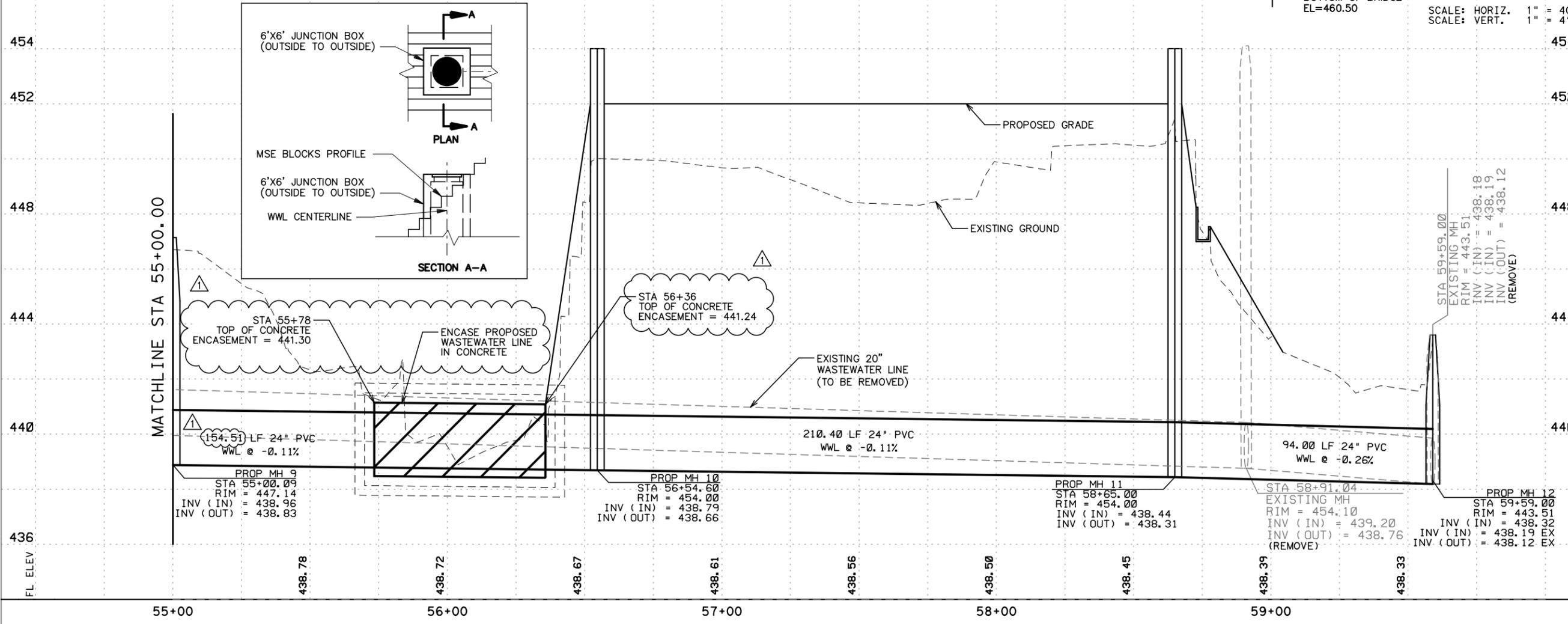
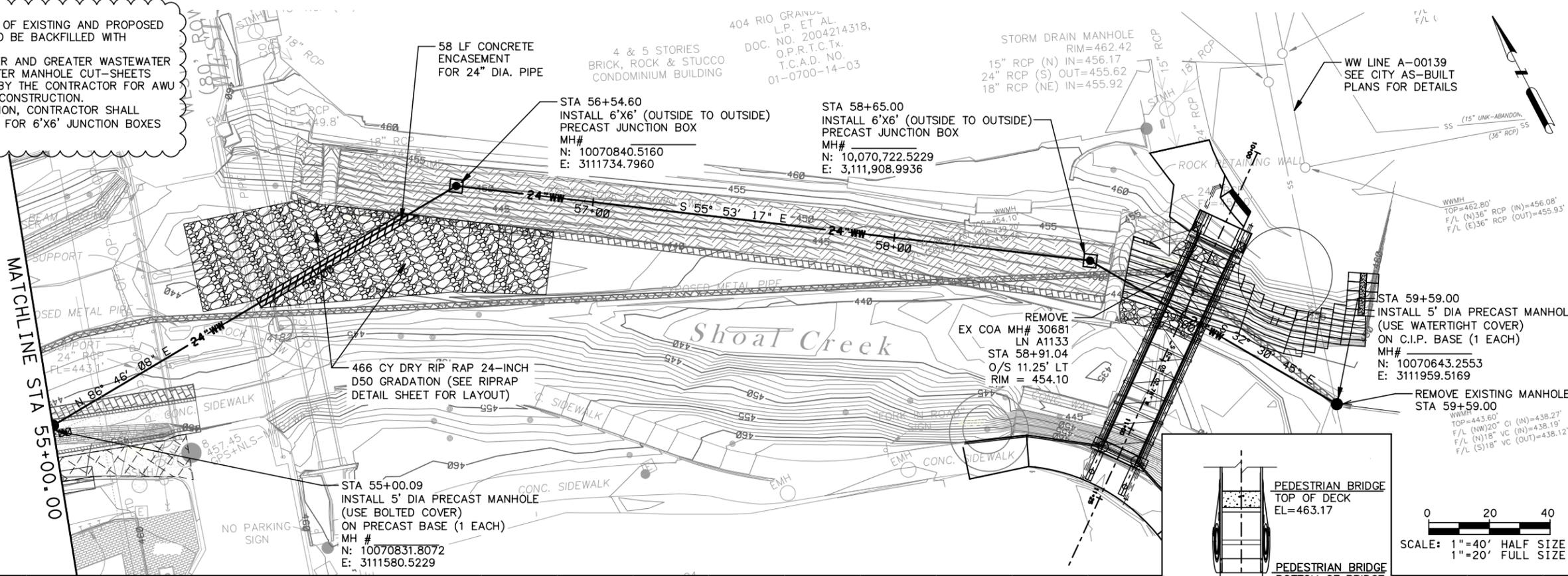
SHEET NUMBER: 34 OF 63

STA 11+22.94, 1.60' LT  
EXISTING MH  
RIM = 441.09  
INV = 441.09

\\aus001\pwwork\Jobs\47728\COA\Gen\Civil\2008\Techprod\Utility\DWG\WM\FandP.dgn

8/25/2014

NOTES:  
 1. WASTEWATER TRENCH OF EXISTING AND PROPOSED WASTEWATER LINES TO BE BACKFILLED WITH CLASS B CONCRETE.  
 2. FOR 60 INCH DIAMETER AND GREATER WASTEWATER MANHOLES, WASTEWATER MANHOLE CUT-SHEETS MUST BE SUBMITTED BY THE CONTRACTOR FOR AWU APPROVAL PRIOR TO CONSTRUCTION.  
 3. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL PROVIDE CUT-SHEETS FOR 6'X6' JUNCTION BOXES FOR APPROVAL.



REV. NO.	DATE	REVISION DESCRIPTION
1	8/25/2014	ADD ENGINEERING HAYWARD, LAYED NOTES AND REVISED PIPE LENGTHS

**Shawn B. Stover**  
8/25/2014

701 BRAZOS, SUITE 450  
 AUSTIN, TX 78701  
 P: (512) 447-5590

**HNTB**  
 The HNTB Companies  
 Engineers, Architects Planners  
 TYPE FIRM REGISTRATION NO. F420

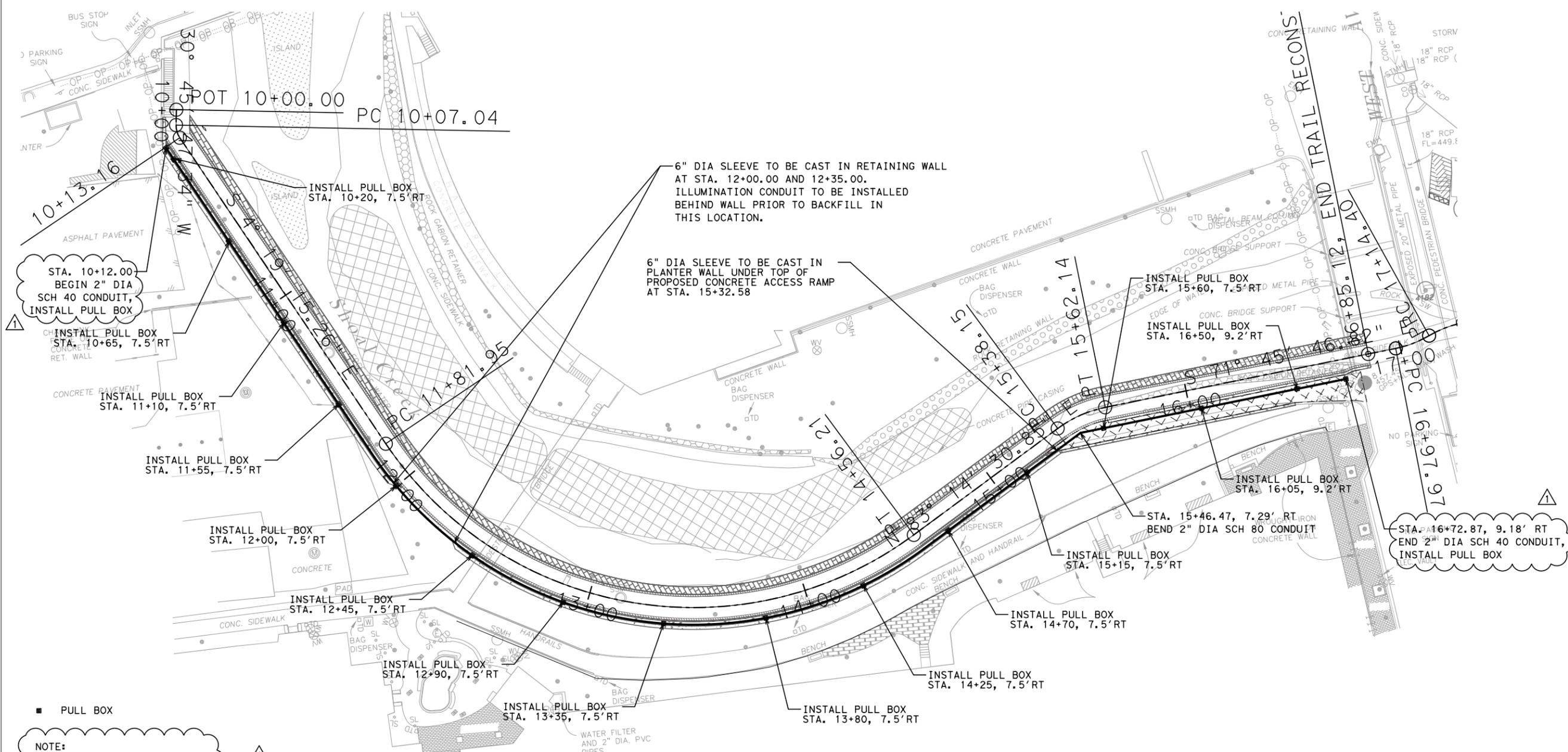
SHOAL CREEK GREENBELT - TRAIL IMPROVEMENTS  
 W. 5TH STREET TO W. 4TH STREET  
 WASTEWATER PLAN AND PROFILE  
 SHEET 2 OF 2

NOTES	NAME	DATE
SURVEY BY	McGRAY	2/19/11
DRAWN BY	DDL	8/1/12
CHECKED BY	DE	8/2/12
DESIGNED BY	BK	7/2/12
REVIEWED BY	WB	

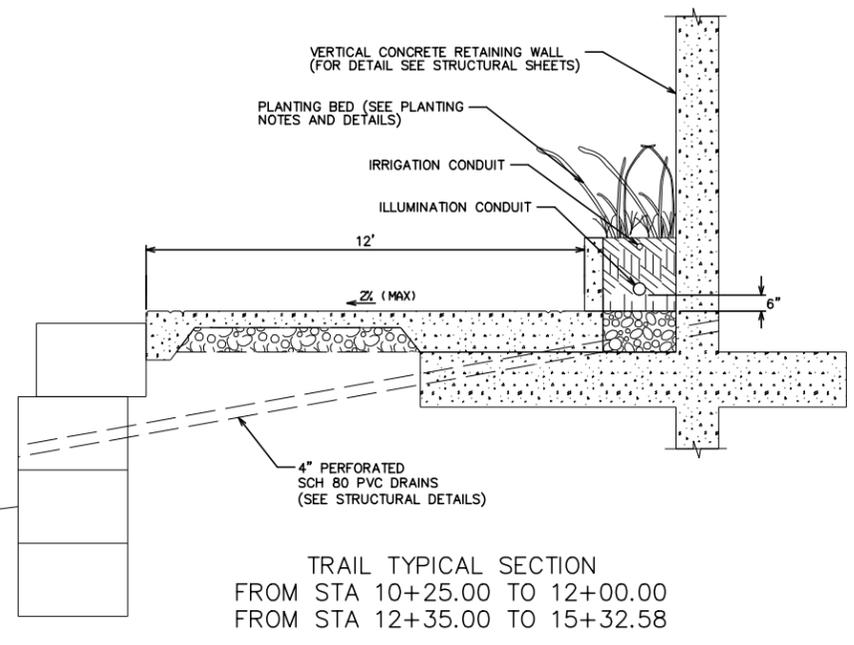
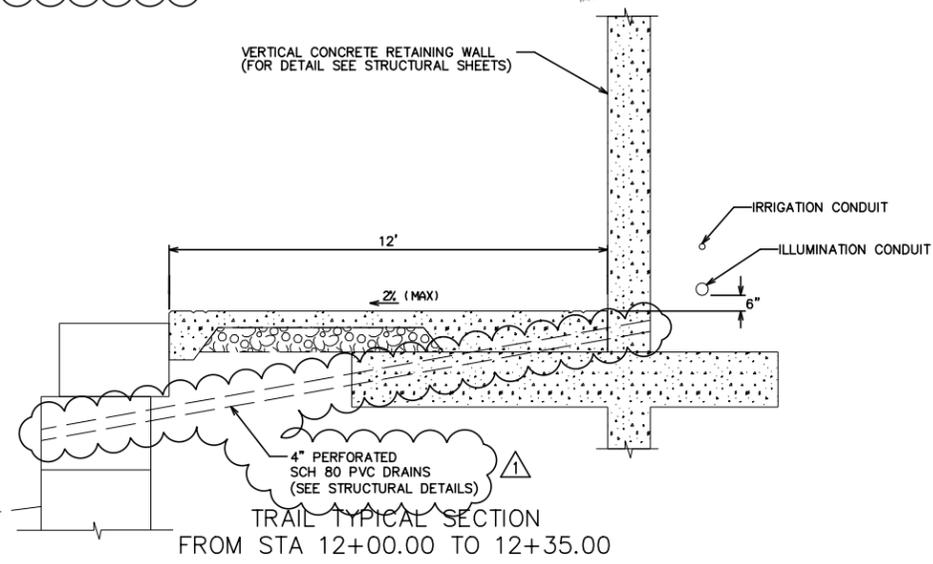
SCALE:  
 CADD REF. NO.:  
 CADD DIR.:

SHEET NUMBER	35	OF 63
--------------	----	-------

\\ausv001\pwwork\Jobs\47728\COA\Gen\Civil\2008\Techprod\Utility\DWG\WM\FandP.dgn



NOTE:  
PULL BOXES TO BE TXDOT ITEM NO. 624-2008 (TYPE A) OR APPROVED EQUAL.



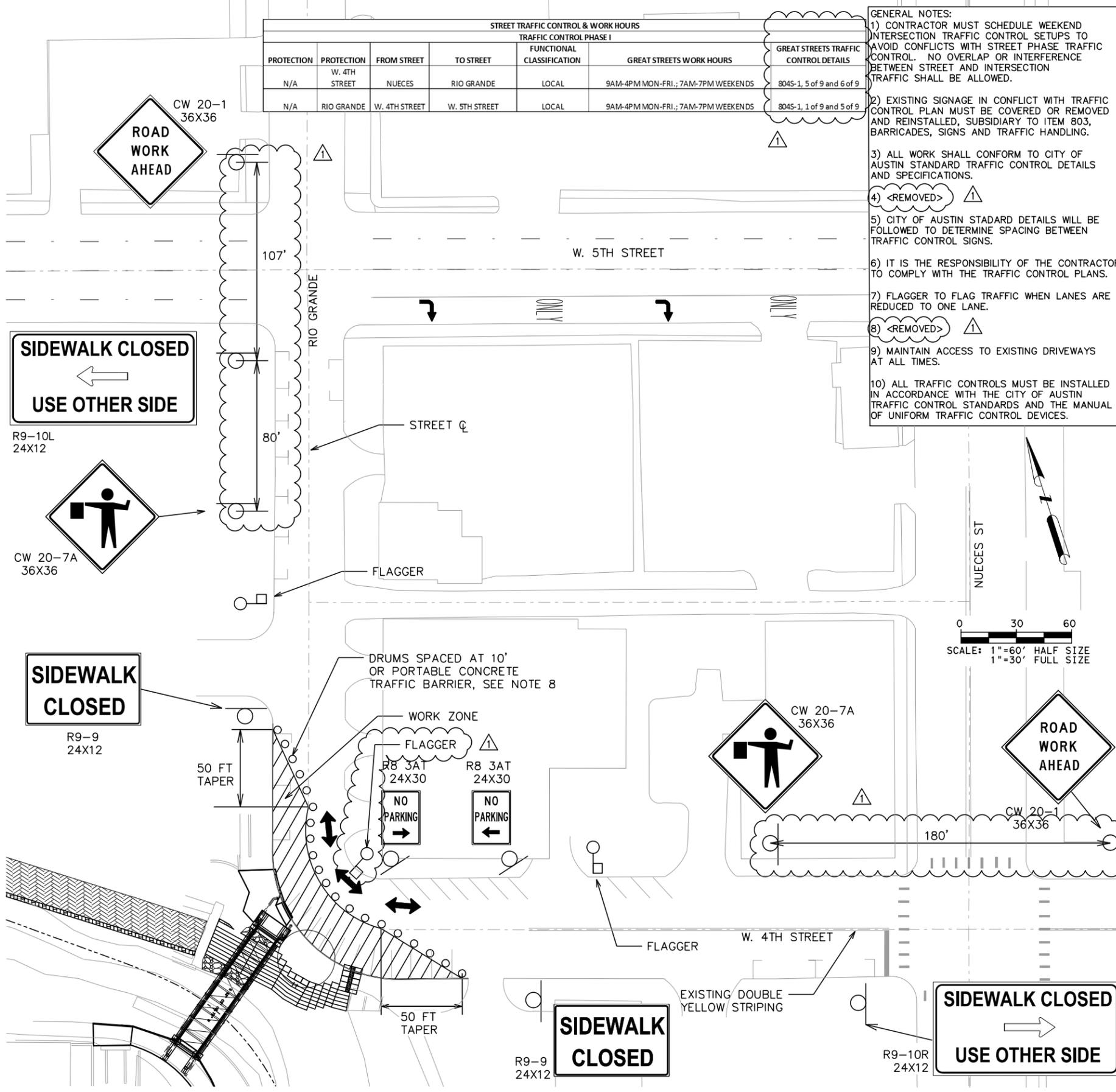
REV. NO.	DATE	REVISION DESCRIPTION
1	8/25/2014	ISSUED FOR CONSTRUCTION

STATE OF TEXAS  
 SHAWN B. STOVER  
 109251  
 LICENSED PROFESSIONAL ENGINEER  
 Shawn B. Stover  
 8/25/2014

HNTB  
 The HNTB Companies  
 Engineers, Architects, Planners  
 TYPE FIRM REGISTRATION NO. F420  
 707 BRAZOS, SUITE 450  
 AUSTIN, TX 78701  
 P: (512) 447-5590  
 SHOAL CREEK GREENBELT - TRAIL IMPROVEMENTS  
 W. 5TH STREET TO W. 4TH STREET  
 ILLUMINATION LAYOUT



NOTES	NAME	DATE
SURVEY BY	McGRAY	2/19/11
DRAWN BY	DDL	8/1/12
CHECKED BY	DE	8/2/12
DESIGNED BY	BK	7/2/12
REVIEWED BY	WB	
SCALE:		
CADD REF. NO.:		
CADD DIR.:		



STREET TRAFFIC CONTROL & WORK HOURS					
TRAFFIC CONTROL PHASE I					
PROTECTION	PROTECTION	FROM STREET	TO STREET	FUNCTIONAL CLASSIFICATION	GREAT STREETS WORK HOURS
N/A	W. 4TH STREET	NUECES	RIO GRANDE	LOCAL	9AM-4PM MON-FRI.; 7AM-7PM WEEKENDS
N/A	RIO GRANDE	W. 4TH STREET	W. 5TH STREET	LOCAL	9AM-4PM MON-FRI.; 7AM-7PM WEEKENDS

**GENERAL NOTES:**

- 1) CONTRACTOR MUST SCHEDULE WEEKEND INTERSECTION TRAFFIC CONTROL SETUPS TO AVOID CONFLICTS WITH STREET PHASE TRAFFIC CONTROL. NO OVERLAP OR INTERFERENCE BETWEEN STREET AND INTERSECTION TRAFFIC SHALL BE ALLOWED.
- 2) EXISTING SIGNAGE IN CONFLICT WITH TRAFFIC CONTROL PLAN MUST BE COVERED OR REMOVED AND REINSTALLED, SUBSIDIARY TO ITEM 803, BARRICADES, SIGNS AND TRAFFIC HANDLING.
- 3) ALL WORK SHALL CONFORM TO CITY OF AUSTIN STANDARD TRAFFIC CONTROL DETAILS AND SPECIFICATIONS.
- 4) <REMOVED>
- 5) CITY OF AUSTIN STANDARD DETAILS WILL BE FOLLOWED TO DETERMINE SPACING BETWEEN TRAFFIC CONTROL SIGNS.
- 6) IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH THE TRAFFIC CONTROL PLANS.
- 7) FLAGGER TO FLAG TRAFFIC WHEN LANES ARE REDUCED TO ONE LANE.
- 8) <REMOVED>
- 9) MAINTAIN ACCESS TO EXISTING DRIVEWAYS AT ALL TIMES.
- 10) ALL TRAFFIC CONTROLS MUST BE INSTALLED IN ACCORDANCE WITH THE CITY OF AUSTIN TRAFFIC CONTROL STANDARDS AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

### STANDARD RIGHT OF WAY NOTES

- 1) FOR RIGHT OF WAY VIOLATIONS INCLUDING BUT NOT LIMITED TO WORKING WITHOUT A PERMIT OR AN EXPIRED PERMIT WITHIN THE CITY OF AUSTIN ROW AN INVESTIGATION FEE WILL BE ASSESSED FOR EACH OFFENSE, UNTIL THE VIOLATION IS CORRECTED. FOLLOWING IS THE INVESTIGATION FEE SCHEDULE FOR VIOLATIONS OF PUBLIC SAFETY.
  - a. NO OR EXPIRED PERMIT - EQUAL TO THE COST OF THE PERMIT
  - b. VIOLATION OF PERMIT CONDITIONS, RESTRICTION LIMITS, TIMES AND LOCATIONS ON ROW PERMIT - \$250
  - c. IMPROPER ADVANCE WARNING SIGN - \$250
  - d. IMPROPER USE OF DEVICE - \$250
  - e. FAILURE TO CORRECT DEFICIENCY - \$500
  - f. RESTRICTING TRAFFIC DURING PEAK HOURS - EQUAL TO THE COST OF THE PERMIT UP TO A FOUR DAY SUSPENSION OF WORK
  - g. VIOLATION OF PEAK HOUR RESTRICTIONS -
- 2) CONTRACTORS AND THEIR SUBCONTRACTORS MUST BE LICENSED BY THE CITY OF AUSTIN FOR CONDUCTING WORK WITHIN THE STREET RIGHT OF WAY.
- 3) CONTRACTOR MUST OBTAIN RIGHT OF WAY EXCAVATION PERMITS FROM RIGHT OF WAY MANAGEMENT DIVISION 512-974-1150, FOR EACH STREET RIGHT OF WAY, PRIOR TO COMMENCEMENT OF WORK.
- 4) AT SIGNALIZED INTERSECTIONS THE CONTRACTOR MUST COORDINATE AND GAIN APPROVAL FROM TRAFFIC SIGNALS GROUP A MINIMUM OF 1 WEEK PRIOR TO CHANGE OF PROJECT LOCATION OR PHASE. PLEASE CONTACT TRAFFIC MANAGEMENT AT 512-974-4076 OR JONATHAN LAMMERT AT 512-974-4088.
- 5) CONTRACTOR SHALL HAVE AN APPROVED RIGHT-OF-WAY PERMIT ON SITE AT ALL TIMES WHEN WORKING IN COA ROW.
- 6) NOTIFY CITY OF AUSTIN, RIGHT OF WAY MANAGEMENT (6) DAYS PRIOR TO STARTING WORK IN THE RIGHT OF WAY.
- 7) PROVIDE TRAINING CERTIFICATION OF COMPETENT PERSON THAT WILL BE RESPONSIBLE FOR THE TRAFFIC CONTROL PLACEMENT, TO RIGHT OF WAY MANAGEMENT 512-974-1150, PRIOR TO START OF WORK.
- 8) NO STORAGE OF EQUIPMENT OR MATERIAL IN COA ROW.
- 9) ROADWAY MUST BE RETURNED TO FULL USE AT THE END OF DAILY APPROVED WORK HOURS.
- 10) NO MORE THAN ONE WORK ZONE LOCATION MAY BE SET AT ONE TIME.
- 11) WORK HOURS ARE 9AM TO 4PM MONDAY THROUGH FRIDAY AND 7AM TO 7PM SATURDAY AND SUNDAY FOR SITE DEVELOPMENT PROJECTS, 9AM TO 4PM MONDAY THROUGH FRIDAY AND 7AM TO 6PM SATURDAY AND SUNDAY FOR CIP PROJECTS.
- 12) PEAK HOURS FOR ARTERIAL AND COLLECTOR STREETS ARE 6AM TO 9AM AND 4PM TO 6PM MONDAY THROUGH FRIDAY. NO WORK ACTIVITY, REDUCTIONS IN ROADWAY CAPACITY OR PEDESTRIAN ROUTES SHALL OCCUR DURING THESE TIMES.
- 13) ANY EXCAVATION WHICH EXCEEDS A TRANSVERSE WIDTH OF 5 FEET SHALL BE BACKFILLED. THE CONTRACTOR MAY PROVIDE AN ENGINEERED PLATING PLAN TO THE COA, RIGHT OF WAY MANAGEMENT DIVISION FOR REVIEW AND APPROVAL PRIOR TO THE START OF WORK FOR EXCAVATIONS EXCEEDING THAT WIDTH.
- 14) EXISTING SIDEWALKS AND BEATEN PATHS SHALL BE MAINTAINED AS ADA COMPLIANT THROUGHOUT THE PROJECT DURATION WITH THE EXCEPTION OF FINAL FLATWORK AND UTILITY TIE-INS. ANY WORK OVERHEAD WITHIN 25 FEET OF EXISTING PEDESTRIAN PATHWAYS WILL REQUIRE PEDESTRIAN COVERED WALKWAYS. SIDEWALK CLOSURES FOR MAJOR SIDEWALK IMPROVEMENTS HAVE A 14-DAY MAXIMUM PERIOD AND SHALL BE COMPLETED IN PHASES AS TO NOT CLOSE MORE THAN ONE BLOCK AT A TIME.
- 15) ALL UTILITY WORK IN THE CITY RIGHT-OF-WAY SHALL BE COMPLETED BEFORE PLACEMENT OF PEDESTRIAN WALKWAY. WALKWAY TO BE PLACED PRIOR TO BUILDING GOING 1 FLOOR VERTICAL.
- 16) PLACE "ROAD WORK AHEAD" AND "CONSTRUCTION ENTRANCE AHEAD" SIGNS AT ALL APPROACHES TO STABILIZED CONSTRUCTION ENTRANCE. SEE THE CITY OF AUSTIN STANDARD DETAILS FOR SIGN SPACING.
- 17) ROAD CLOSURE CONSISTING OF A RII-2 "ROAD CLOSED" SIGN AND TYPE-III BARRICADES, SHALL BE LOCATED ACROSS ANY NEW SECTION OF ROADWAY AT ITS TIE-IN TO THE EXISTING ROADWAY SECTION ONCE THE CROSS SECTION OF THE NEW ROAD IS ESTABLISHED AND/OR THE EXISTING CURB AND GUTTER ARE REMOVED.
- 18) DRIVEWAYS AND SMALL SECTIONS OF SIDEWALK WORK SHALL NOT BE CLOSED FOR MORE THAN THREE CONSECUTIVE CALENDAR DAYS.
- 19) ADA COMPLIANCE SHALL BE MAINTAINED THROUGH STABILIZED CONSTRUCTION ENTRANCE.
- 20) BARRIER SHALL BE PLACED WITHIN GUIDELINES SET FORTH BY THE TMUTCD CRASH TESTING REQUIREMENTS (NCHRP 350) FOR THAT PARTICULAR BARRIER USED. ANY MODIFICATIONS TO THAT TESTING APPLICATION SHALL BE APPROVED BY THE ENGINEER OF RECORD.
- 21) FOR OVERNIGHT PROTECTION OF WORK ZONES IN COA ROW, REFER TO COA STANDARD DETAIL 804S-4, 1 THROUGH 4 OF 9. IF PLATING IS NEEDED, REFER TO STANDARD 804S-4, 7 OF 9.
- 22) ALL TEMPORARY PAVING SHALL CONFORM TO CITY STANDARD DETAIL 1100S-4.
- 23) INITIAL AND PHASE CHANGE TRAFFIC CONTROL CHANGES SHALL BE INSTALLED ON WEEKENDS.

REV. NO.	DATE	BY	REVISION DESCRIPTION
1	8/25/2014	SH	ADD FLAGGER AND DIRECTIONAL.

**Shawn B. Stover**  
8/25/2014

701 BRAZOS, SUITE 450  
AUSTIN, TX 78701  
P: (512) 447-5590

The HNTB Companies  
Engineers, Architects, Planners  
TYPE FIRM REGISTRATION NO. F420

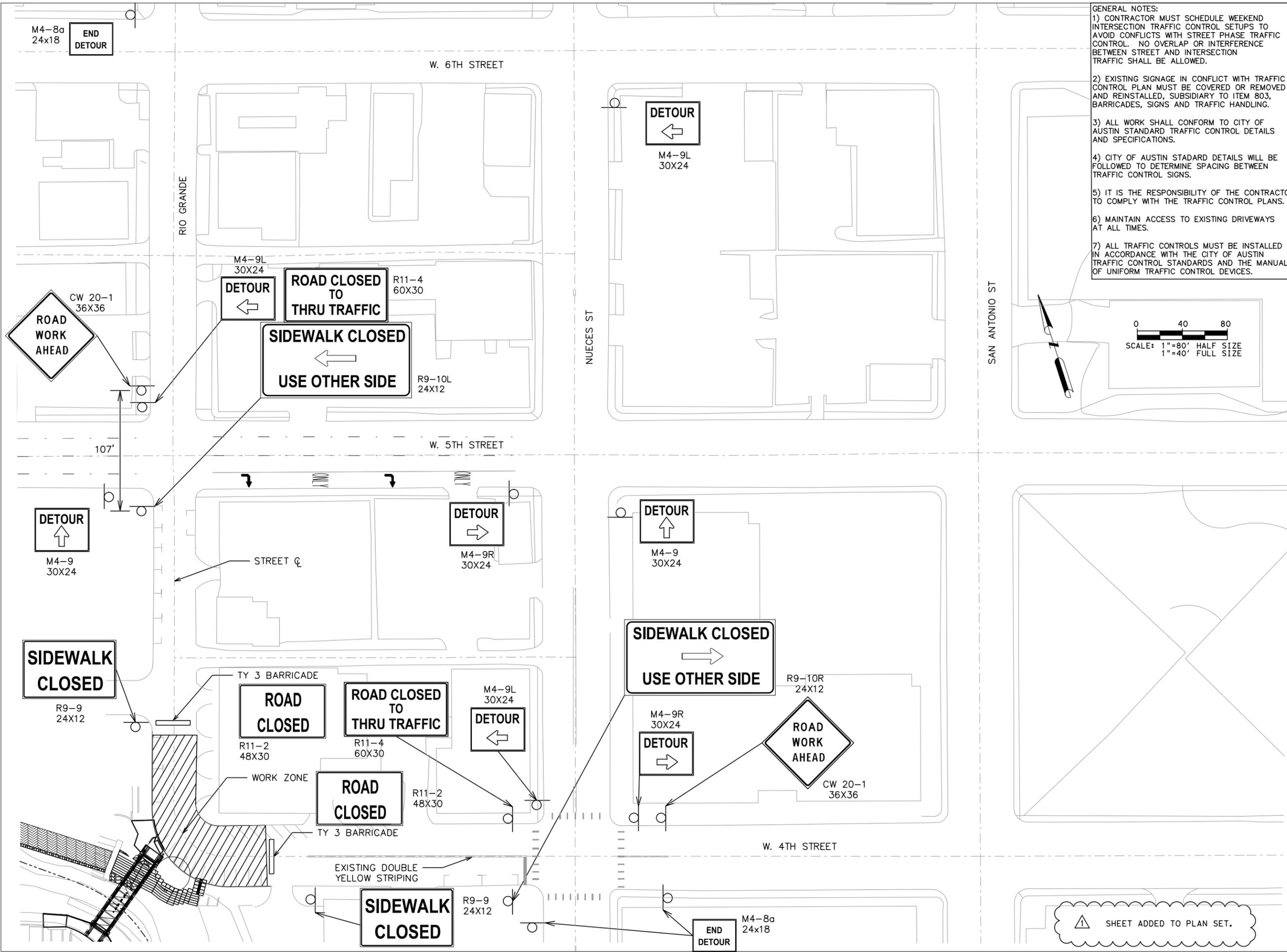
**HNTB**

SHOAL CREEK GREENBELT - TRAIL IMPROVEMENTS  
W. 5TH STREET TO W. 4TH STREET  
TRAFFIC CONTROL PLAN & DETOUR  
W. 4TH STREET / RIO GRANDE  
ONE LANE CLOSURE

NOTES	NAME	DATE
SURVEY BY	McGRAY	2/19/11
DRAWN BY	DDL	8/1/12
CHECKED BY	DE	8/2/12
DESIGNED BY	BK	7/2/12
REVIEWED BY	WB	

SCALE:  
CADD REF. NO.:  
CADD DIR.:

SHEET NUMBER 54 OF 63



- GENERAL NOTES:**
- 1) CONTRACTOR MUST SCHEDULE WEEKEND INTERSECTION TRAFFIC CONTROL SETUPS TO AVOID CONFLICTS WITH STREET PHASE TRAFFIC CONTROL. NO OVERLAP OR INTERFERENCE BETWEEN STREET AND INTERSECTION TRAFFIC SHALL BE ALLOWED.
  - 2) EXISTING SIGNAGE IN CONFLICT WITH TRAFFIC CONTROL PLAN MUST BE COVERED OR REMOVED AND REINSTALLED, SUBSIDIARY TO ITEM 803, BARRICADES, SIGNS AND TRAFFIC HANDLING.
  - 3) ALL WORK SHALL CONFORM TO CITY OF AUSTIN STANDARD TRAFFIC CONTROL DETAILS AND SPECIFICATIONS.
  - 4) CITY OF AUSTIN STANDARD DETAILS WILL BE FOLLOWED TO DETERMINE SPACING BETWEEN TRAFFIC CONTROL SIGNS.
  - 5) IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH THE TRAFFIC CONTROL PLANS.
  - 6) MAINTAIN ACCESS TO EXISTING DRIVEWAYS AT ALL TIMES.
  - 7) ALL TRAFFIC CONTROLS MUST BE INSTALLED IN ACCORDANCE WITH THE CITY OF AUSTIN TRAFFIC CONTROL STANDARDS AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

REV. NO.	DATE	REVISION DESCRIPTION
1	8/25/2014	ADD THIS SHEET TO PLAN



Shawn B. Stover  
8/25/2014

701 BRAZOS, SUITE 450  
AUSTIN, TX 78701  
P: (512) 447-5590

**HNTB**  
The HNTB Companies  
Engineers, Architects, Planners  
TYPE FIRM REGISTRATION NO. F420

SHOAL CREEK GREENBELT - TRAIL IMPROVEMENTS  
W. 5TH STREET TO W. 4TH STREET  
TRAFFIC CONTROL PLAN & DETOUR  
W. 4TH STREET / RIO GRANDE  
FULL ROAD CLOSURE



NOTES	NAME	DATE
SURVEY BY	McGRAY	2/19/11
DRAWN BY	DDL	8/1/12
CHECKED BY	DE	8/2/12
DESIGNED BY	BK	7/2/12
REVIEWED BY	WB	

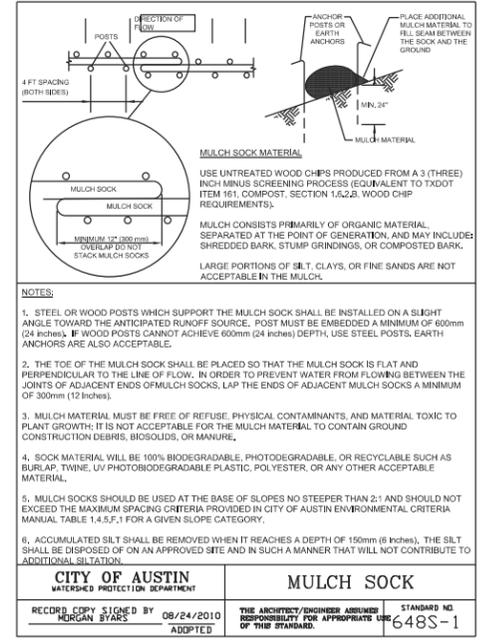
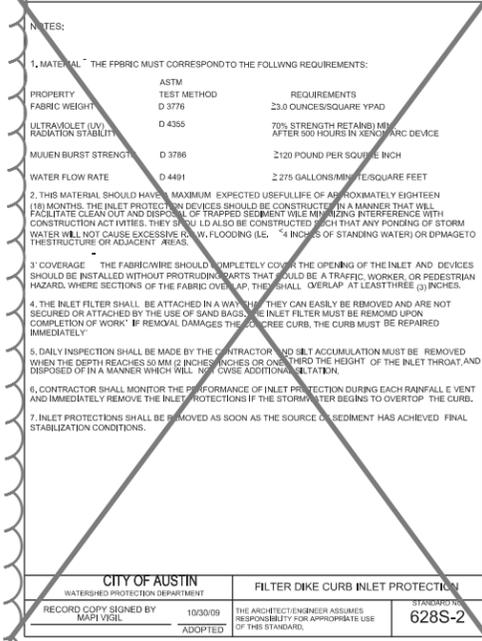
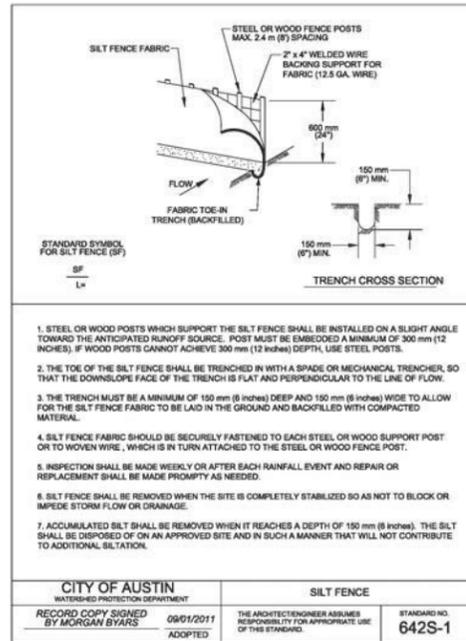
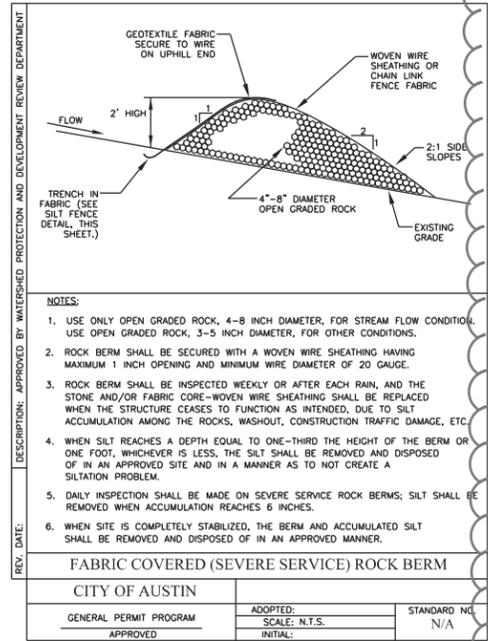
SCALE:  
CADD REF. NO.:  
CADD DIR.:

SHEET NUMBER	54A OF 63
--------------	-----------

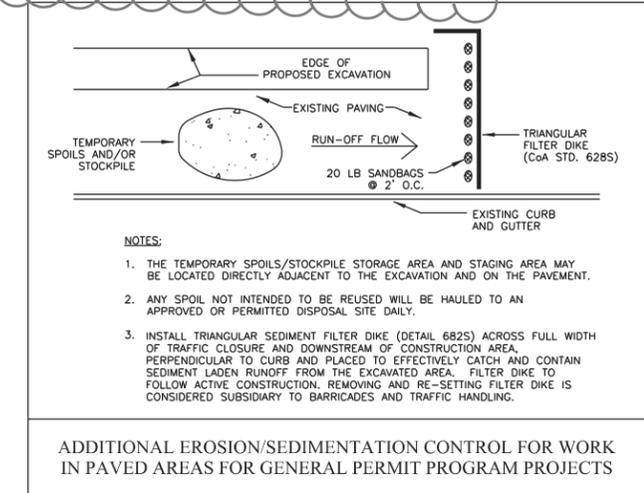
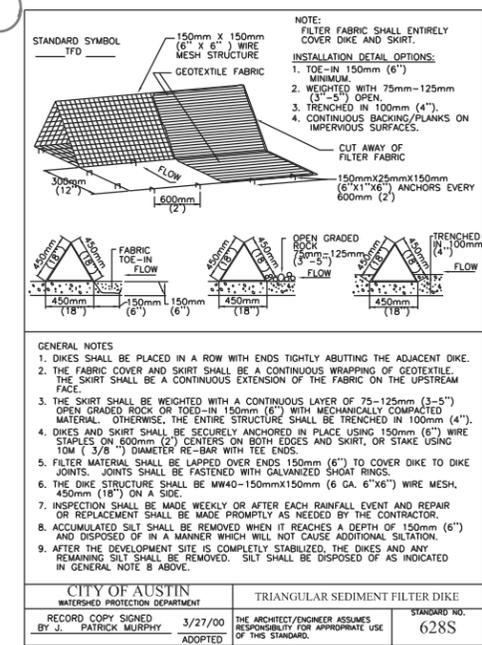
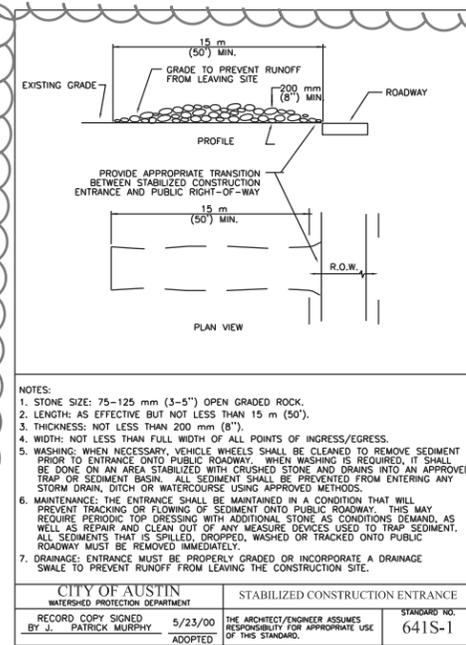
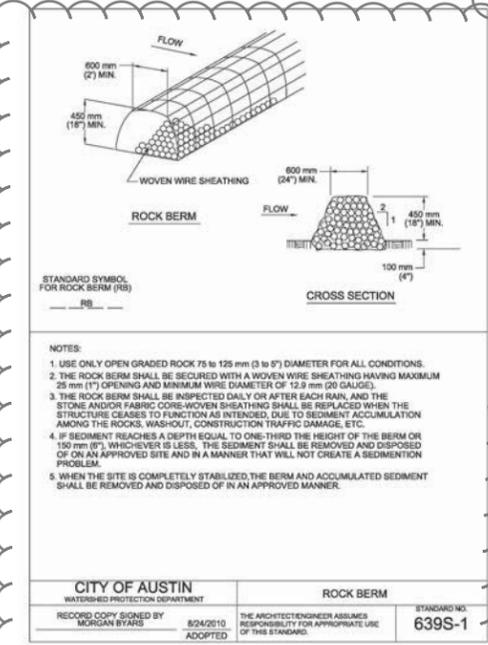
1 SHEET ADDED TO PLAN SET.

CITY OF AUSTIN – STANDARD NOTES  
 EROSION AND SEDIMENTATION CONTROL  
 (MODIFIED FOR USE ON GENERAL PERMIT PROJECTS)

- THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTIVE FENCING PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING, OR EXCAVATION).
- THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE ENVIRONMENTAL CRITERIA MANUAL AND THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN.
- THE PLACEMENT OF TREE/NATURAL AREA PROTECTIVE FENCING SHALL BE IN ACCORDANCE WITH THE CITY OF AUSTIN STANDARD NOTES FOR TREE AND NATURAL AREA PROTECTION AND THE APPROVED GRADING/TREE AND NATURAL AREA PLAN.
- A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD ON-SITE WITH THE CONTRACTOR, DESIGN ENGINEER, PERMIT APPLICANT, AND GENERAL PERMIT PROGRAM REPRESENTATIVE AFTER INSTALLATION OF THE EROSION/SEDIMENTATION CONTROLS AND THE TREE/NATURAL AREA PROTECTION MEASURES AND PRIOR TO BEGINNING ANY SITE PREPARATION WORK. THE CONTRACTOR SHALL NOTIFY THE GENERAL PERMIT PROGRAM OFFICE AT 512/974-6330, AT LEAST 3 DAYS PRIOR TO THE MEETING DATE.
- ANY SIGNIFICANT VARIATION IN MATERIALS OR LOCATIONS OF CONTROLS OR FENCES FROM THOSE SHOWN ON THE APPROVED PLANS MUST BE APPROVED BY THE REVIEWING ENGINEER AND THE GENERAL PERMIT PROGRAM REPRESENTATIVE.
- THE CONTRACTOR IS REQUIRED TO INSPECT THE CONTROLS AND FENCES AT DAILY INTERVALS AND AFTER SIGNIFICANT RAINFALL EVENTS TO INSURE THAT THEY ARE FUNCTIONING PROPERLY. THE PERSON(S) RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES SIX (6) INCHES. SILT ACCUMULATION AT INLET DEVICES SHOULD BE REMOVED WHEN THE DEPTH REACHES TWO (2) INCHES.



- PRIOR TO FINAL ACCEPTANCE BY THE CITY, HAUL ROADS AND WATERWAY CROSSINGS CONSTRUCTED FOR TEMPORARY CONTRACTOR ACCESS MUST BE REMOVED, ACCUMULATED SEDIMENT REMOVED FROM THE WATERWAY AND THE AREA RESTORED TO THE ORIGINAL GRADE AND REVEGETATED. ALL LAND CLEARING DEBRIS SHALL BE DISPOSED OF IN APPROVED SPOIL DISPOSAL SITES.
- ALL WORK MUST STOP IF A VOID IN THE ROCK SUBSTRATE IS DISCOVERED WHICH IS ONE SQUARE FOOT OR LARGER IN TOTAL AREA, BLOWS AIR FROM WITHIN THE SUBSTRATE, AND/OR CONSISTENTLY RECEIVES WATER DURING ANY RAIN EVENT. AT THIS TIME, IT IS THE RESPONSIBILITY OF THE PROJECT MANAGER TO IMMEDIATELY CONTACT THE GENERAL PERMIT PROGRAM REPRESENTATIVE FOR FURTHER INVESTIGATION.
- FIELD REVISIONS TO THE EROSION/SEDIMENTATION CONTROL PLAN MAY BE REQUIRED BY THE GENERAL PERMIT PROGRAM REPRESENTATIVE DURING THE COURSE OF CONSTRUCTION TO CORRECT CONTROL INADEQUACIES. ANY REVISIONS TO THE PERMITTED PLAN MUST BE APPROVED BY THE GENERAL PERMIT PROGRAM OFFICE OF THE PLANNING AND DEVELOPMENT REVIEW DEPARTMENT.
- PERMANENT EROSION/SEDIMENTATION CONTROL: ALL DISTURBED AREAS SHALL BE RESTORED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. WHERE THE CRITERIA MANUAL AND CONTRACT DOCUMENTS DIFFER THE MOST ENVIRONMENTALLY BENEFICIAL MATERIALS/METHOD SHALL BE REQUIRED UNLESS OTHERWISE APPROVED BY THE GENERAL PERMIT PROGRAM REPRESENTATIVE.



DEVELOPER INFORMATION:

OWNER: COMPANY: CITY OF AUSTIN

CONTACT: MR. ROBERT BRENNES, PROJECT MANAGER

ADDRESS: 919 W. 28 1/2 STREET  
 Austin, TX 78705

PHONE: (512) 974-9472

EMAIL:

OWNER'S REPRESENTATIVE RESPONSIBLE FOR PLAN ALTERATIONS:

COMPANY: HNTB CORPORATION, SHAWN B. STOVER, P.E.

ADDRESS: 701 BRAZOS STREET, SUITE 405  
 AUSTIN, TX 78701

PHONE: (512) 447-5590

EMAIL: SSTOVER@HNTB.COM

PARTY RESPONSIBLE FOR EROSION/SEDIMENTATION CONTROL MAINTENANCE:

COMPANY: CONTRACTOR

PARTY RESPONSIBLE FOR TREE/NATURAL AREA PROTECTION MAINTENANCE:

COMPANY: CONTRACTOR

- THE CONTRACTOR SHALL NOT DISPOSE OF SURPLUS EXCAVATED MATERIAL FROM THE SITE WITHOUT NOTIFYING THE GENERAL PERMIT PROGRAM REPRESENTATIVE, AT 974-6330, AT LEAST 48 HOURS PRIOR TO THE SPOILS REMOVAL. THIS NOTIFICATION SHALL INCLUDE THE DISPOSAL LOCATION AND A COPY OF THE PERMIT ISSUED TO RECEIVE THE MATERIAL.
- INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY PRIOR TO STREET WORK, AND WILL BE REMOVED AS SOON AS THE GENERAL PERMIT PROGRAM REPRESENTATIVE AGREES THAT THERE IS NO POTENTIAL FOR SEDIMENTATION.

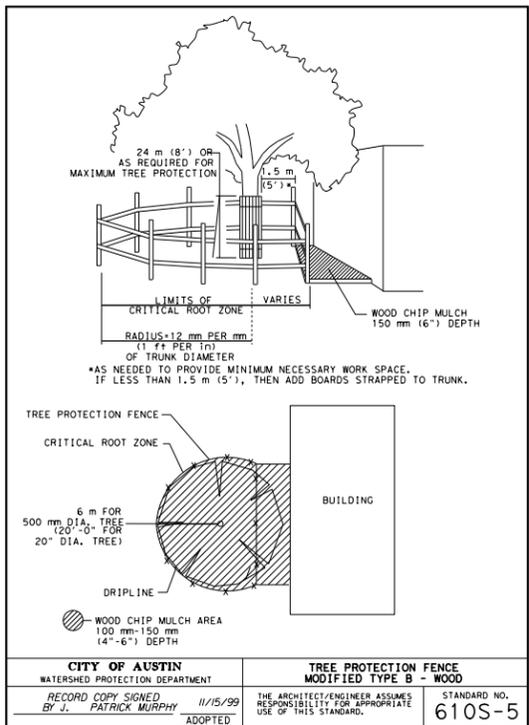
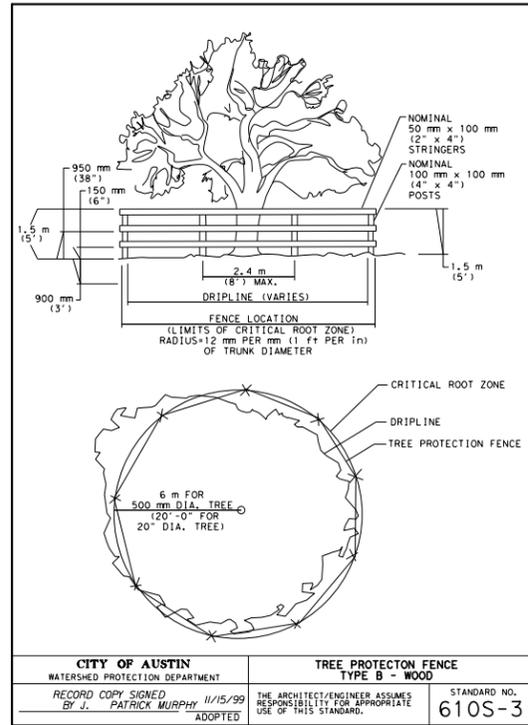
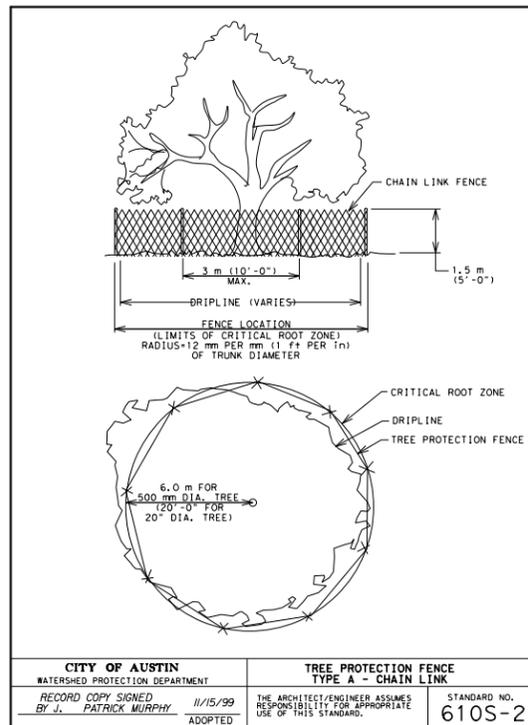
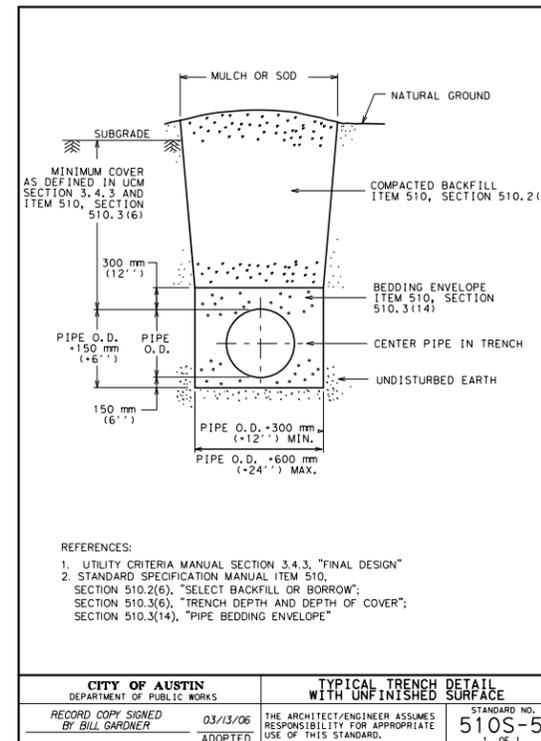
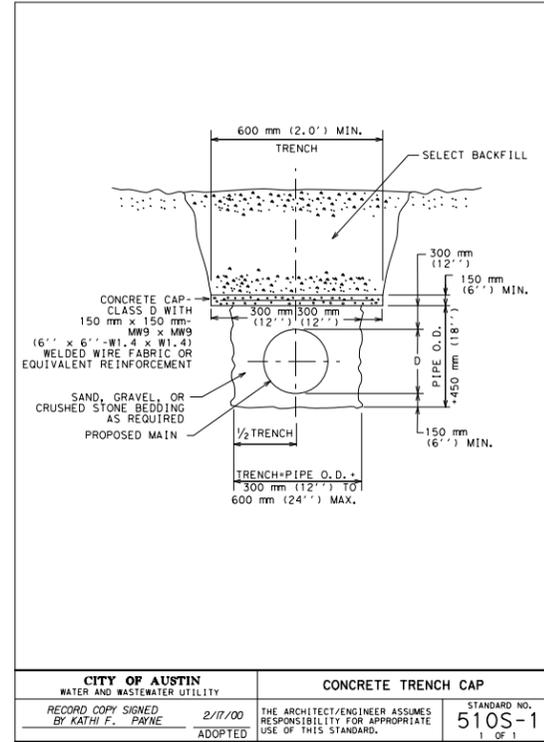
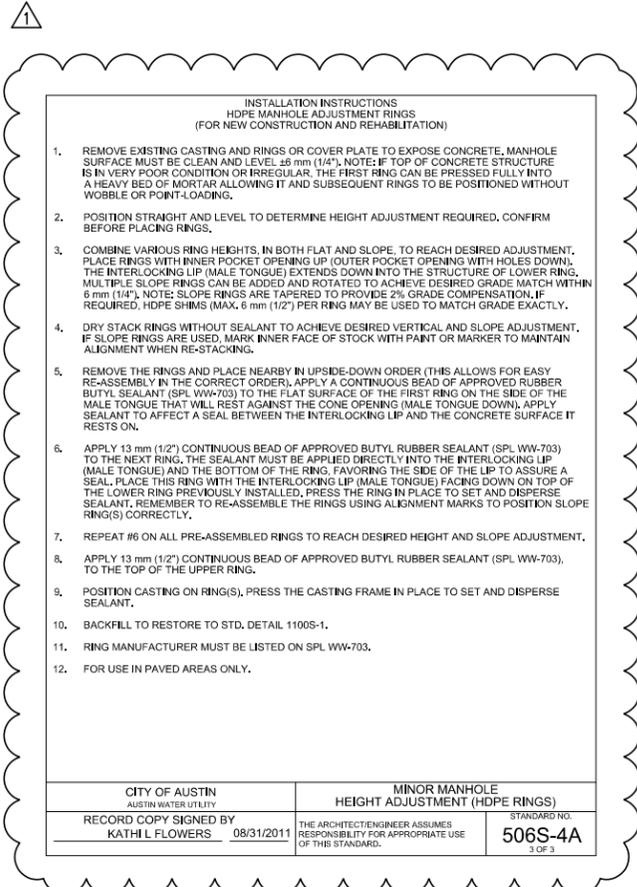
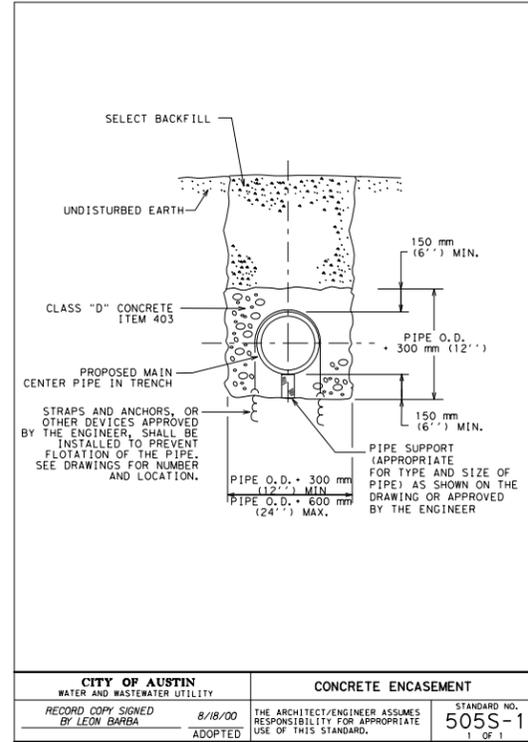
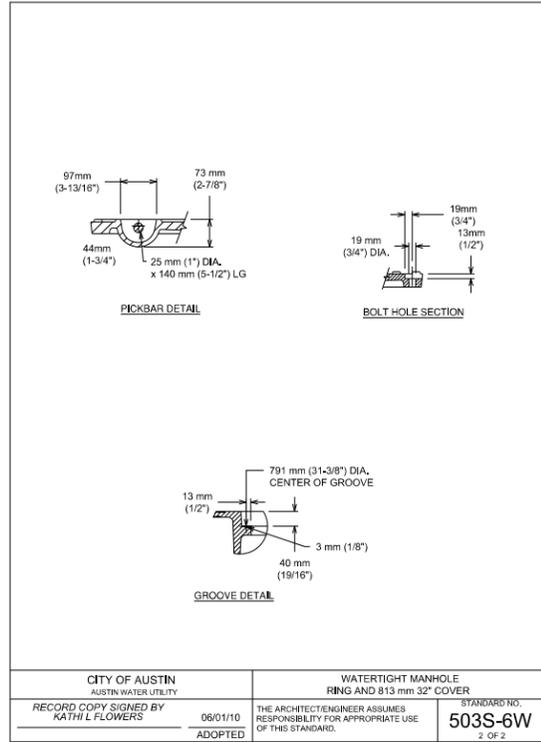


GENERAL PERMIT OFFICE  
 EROSION/SEDIMENTATION  
 CONTROL  
 CITY OF AUSTIN STANDARD NOTES AND DETAILS

NO.	DATE	BY	REVISIONS
1	APRIL 25, 2011	SS	Updated Standards

SHEET INFORMATION  
 APRIL 25, 2011  
 SHEET OF  
 CAD REF. NO. E-91DWG

GENERAL PERMIT PROGRAM



REV. NO.	DATE	REVISION DESCRIPTION
1	8/25/2014	UPDATED STANDARDS

**Shawn B. Stover**  
8/25/2014

701 BRAZOS, SUITE 450  
AUSTIN, TX 78701  
P: (512) 447-5590

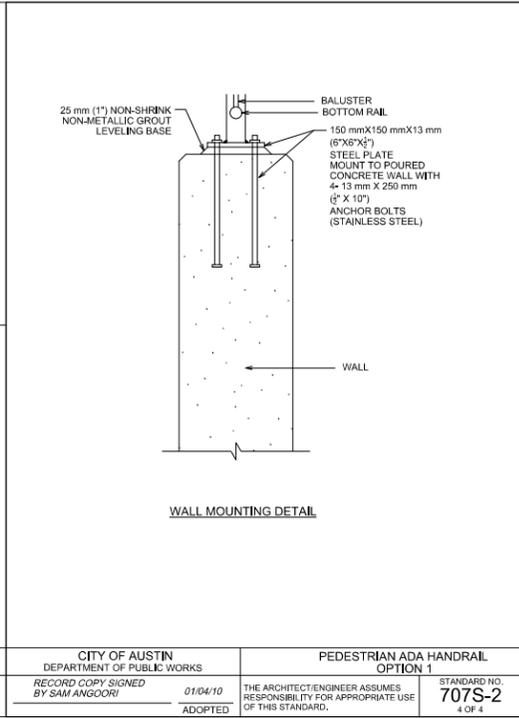
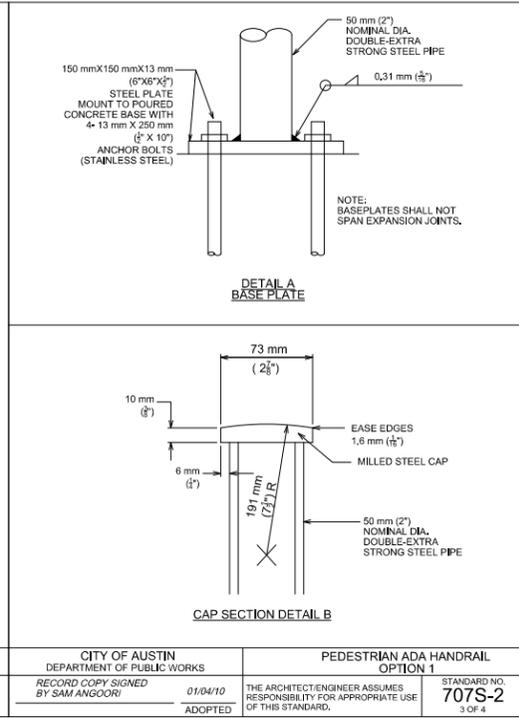
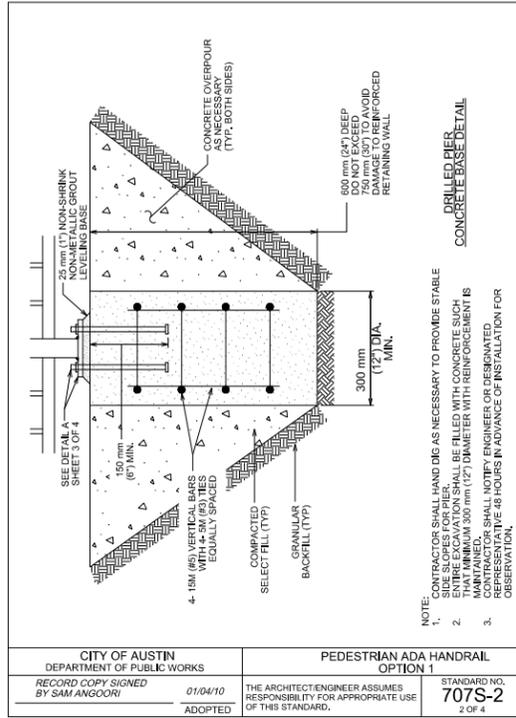
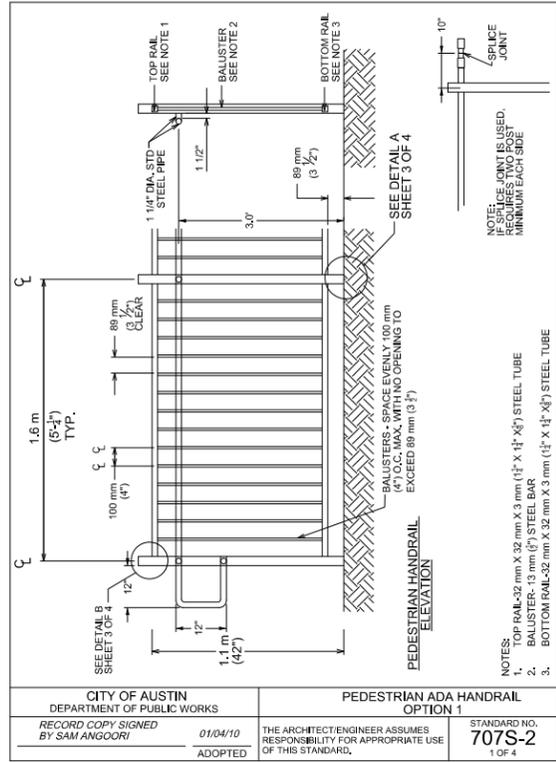
SHOAL CREEK GREENBELT - TRAIL IMPROVEMENTS  
W. 5TH STREET TO W. 4TH STREET

CITY OF AUSTIN STANDARD CONSTRUCTION DETAILS  
SHEET 2 OF 5

NOTES	NAME	DATE
SURVEY BY	McGRAY	2/19/11
DRAWN BY	DDL	8/1/12
CHECKED BY	DE	8/2/12
DESIGNED BY	BK	7/2/12
REVIEWED BY	WB	

SCALE: N.T.S.  
CADD REF. NO.:  
CADD DIR.:

SHEET NUMBER	60 OF 63
--------------	----------

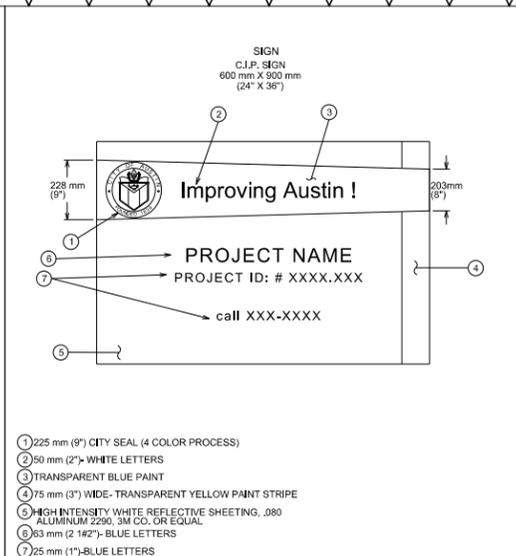
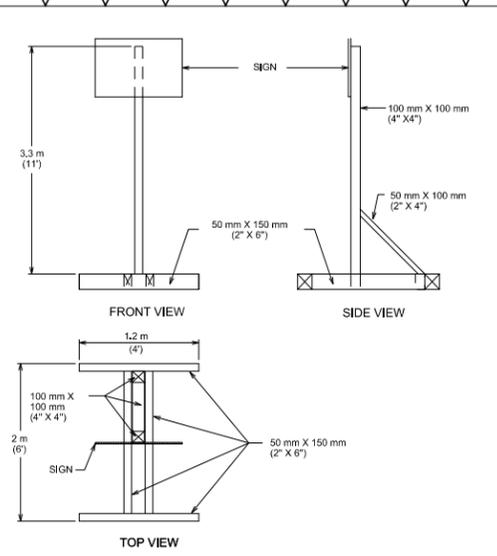


CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	PEDESTRIAN ADA HANDRAIL OPTION 1	STANDARD NO. <b>707S-2</b> 1 OF 4
RECORD COPY SIGNED BY SAM ANGOORI	01/04/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	PEDESTRIAN ADA HANDRAIL OPTION 1	STANDARD NO. <b>707S-2</b> 2 OF 4
RECORD COPY SIGNED BY SAM ANGOORI	01/04/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	PEDESTRIAN ADA HANDRAIL OPTION 1	STANDARD NO. <b>707S-2</b> 3 OF 4
RECORD COPY SIGNED BY SAM ANGOORI	01/04/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

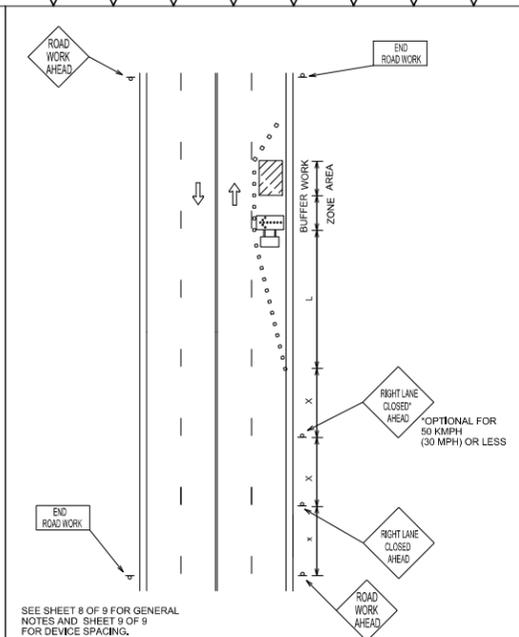
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	PEDESTRIAN ADA HANDRAIL OPTION 1	STANDARD NO. <b>707S-2</b> 4 OF 4
RECORD COPY SIGNED BY SAM ANGOORI	01/04/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.



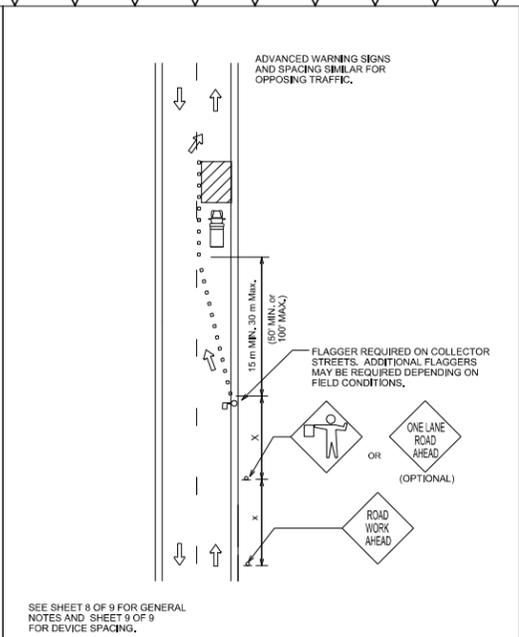
- 225 mm (9") CITY SEAL (4 COLOR PROCESS)
- 50 mm (2") WHITE LETTERS
- TRANSPARENT BLUE PAINT
- 75 mm (3") WIDE-TRANSPARENT YELLOW PAINT STRIPE
- HIGH INTENSITY WHITE REFLECTIVE SHEETING, .080 ALUMINUM 2290, 3M CO, OR EQUAL
- 63 mm (2 1/2") BLUE LETTERS
- 25 mm (1") BLUE LETTERS

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	600mmx900mm (24"x36") C.I.P.MOVABLE SIGN TYPE II	STANDARD NO. <b>802S-2</b> 1 OF 2
RECORD COPY SIGNED BY KERI JUAREZ	01/04/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

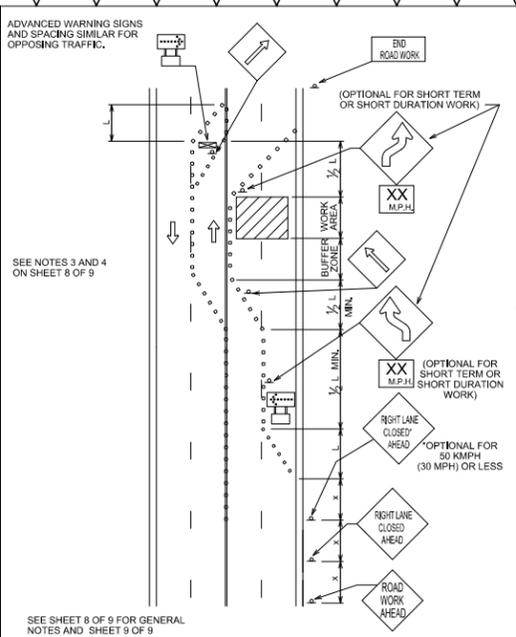
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	600mmx900mm (24"x36") C.I.P.MOVABLE SIGN TYPE II	STANDARD NO. <b>802S-2</b> 2 OF 2
RECORD COPY SIGNED BY KERI JUAREZ	01/04/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	ARTERIAL ONE LANE CLOSURE	STANDARD NO. <b>804S-1</b> 1 OF 9
RECORD COPY SIGNED BY KERI JUAREZ	01/04/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	COLLECTOR/RESIDENTIAL LANE CLOSURES	STANDARD NO. <b>804S-1</b> 5 OF 9
RECORD COPY SIGNED BY KERI JUAREZ	01/04/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPICAL TRAFFIC CONTROL PLAN FOR SHIFTING TRAFFIC	STANDARD NO. <b>804S-1</b> 6 OF 9
RECORD COPY SIGNED BY KERI JUAREZ	01/04/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

REV. NO.	DATE	REVISION DESCRIPTION
1	8/25/2014	ADD SHEET 1 & SHEET 2.



701 BRAZOS, SUITE 450  
AUSTIN, TX 78701  
P: (512) 447-5590

SHOAL CREEK GREENBELT - TRAIL IMPROVEMENTS  
W. 5TH STREET TO W. 4TH STREET

CITY OF AUSTIN STANDARD CONSTRUCTION DETAILS  
SHEET 3 OF 5

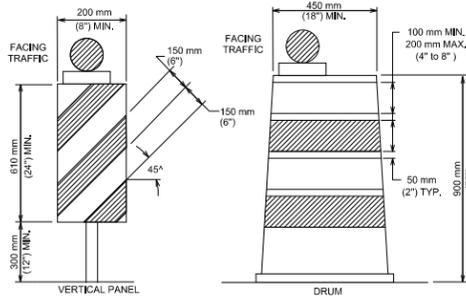
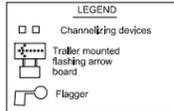


NOTES	NAME	DATE
SURVEY BY	McGRAY	2/19/11
DRAWN BY	DDL	8/1/12
CHECKED BY	DE	8/2/12
DESIGNED BY	BK	7/2/12
REVIEWED BY	WB	
SCALE: N.T.S		
CADD REF. NO.:		
CADD DIR.:		

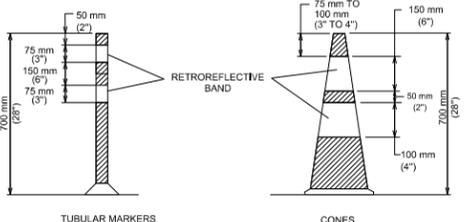
- ALL SETUPS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND THE CITY OF AUSTIN TRANSPORTATION CRITERIA MANUAL.
- TO DETERMINE APPROPRIATE DEVICES AND SIGN SIZES TO BE USED, REFER TO STANDARD 804S-5, SHEETS 5, 6 AND 7 OF 11.
- FOR INTERMEDIATE-TERM SITUATIONS, WHEN IT IS NOT FEASIBLE TO REMOVE AND RESTORE PAVEMENT MARKINGS, THE CHANNELIZATION MUST BE MADE DOMINANT BY USING A VERY CLOSE DEVICE SPACING. THIS IS ESPECIALLY IMPORTANT IN LOCATIONS OF CONFLICTING INFORMATION, SUCH AS WHERE TRAFFIC IS DIRECTED OVER A DOUBLE YELLOW CENTERLINE. IN SUCH LOCATIONS, A MAXIMUM CHANNELIZING DEVICE SPACING OF 3 m (10') IS REQUIRED.
- FOR LONG TERM STATIONARY WORK, ALL CONFLICTING PAVEMENT MARKINGS MUST BE REMOVED AND CENTERLINE STRIPING PROVIDED WHERE TWO WAY TRAFFIC IS IN ADJACENT LANES.
- FOR TEMPORARY PAVEMENT MARKING REQUIREMENTS SEE STANDARD 804S-3.
- FOR ONE-WAY AND MULTI-LANE ROADWAYS THE "LANE BLOCKED" SIGN MAY BE USED IN LIEU OF THE "LANE CLOSED AHEAD" SIGN. THE NUMBER OF DIGITS ON THE SIGN SHALL NOT BE GREATER THAN THE NUMBER OF LANES PRESENT ON THE ROADWAY. THE "X" SHALL BE PLACED UNDER THE NUMBER OF LANE(S) BLOCKED.
- FOR FLAGGING OPERATION REQUIREMENTS SEE STANDARD 804S-2.
- CONTRACTOR SHALL PROVIDE SIDEWALK CLOSURES, CROSSWALK CLOSURES OR WALKWAY BYPASS WHEREVER PEDESTRIAN MOVEMENTS ARE AFFECTED BY CONSTRUCTION ACTIVITIES. ALL SIDEWALKS AND CROSSWALKS SHALL BE ACCESSIBLE WHEN CONTRACTOR IS NOT WORKING UNLESS APPROVED BY THE TRANSPORTATION DIVISION.
- FOR EXCAVATION PROTECTION AND SAFETY FENCE REQUIREMENTS SEE STANDARD 804S-4.
- THE USE OF ARROW DISPLAYS ARE REQUIRED ON ALL LANE CLOSURES. THE CONTRACTOR SHALL PROVIDE ONE (1) STAND-BY UNIT IN GOOD WORKING CONDITION AT THE JOB SITE. READY FOR USE IF THE OPERATION REQUIRES 24-HOUR A DAY LANE CLOSURE SET-UPS.

Typical Transition Lengths and Suggested Maximum Spacing of Devices

Speed KMPH	Posted Speed MPH	Formula	Minimum Desirable Taper Lengths (L) Meters (Feet)	Suggested Max. Device Spacing Meters (Feet)	Suggested Sign Spacing Meters (Feet)
50	30	L=WS <sup>2</sup> /60	3.0(10) Offset (150)	3.3(11) Offset (165)	3.6(12) Offset (180)
55	35		45 (205)	50 (225)	55 (245)
65	40		80 (285)	90 (325)	100 (365)
70	45	L=WS	135 (450)	150 (495)	165 (540)
80	50		150 (500)	165 (550)	180 (600)
90	55		180 (600)	200 (660)	220 (720)
95	60	L=WS	195 (650)	215 (715)	235 (780)
105	65		215 (700)	235 (770)	255 (840)
115	70		215 (700)	235 (770)	255 (840)



LONG TERM AND INTERMEDIATE TERM STATIONARY WORK



TUBULAR MARKERS SHORT TERM AND SHORT DURATION WORK

SEE STANDARD 804S-5 SHEET 12 OF 13 AND SHEET 13 OF 13 FOR GENERAL NOTES AND DEVICE SPACING.

CHANNELIZING DEVICES

- ALL CHANNELIZING DEVICES SHALL HAVE WARNING LIGHTS OR LARGE REFLECTORS WHEN USED AT NIGHT. FLASHING WARNING LIGHTS MAY BE PLACED ON CHANNELIZING DEVICES USED SINGULARLY OR IN GROUPS TO MARK A SPOT CONDITION. WARNING LIGHTS ON CHANNELIZING DEVICES USED IN A SERIES SHALL BE STEADY-BURN. CHANNELIZING DEVICES IN TAPERS AT NIGHT SHALL HAVE TYPE C WARNING LIGHTS.
- THE RETROREFLECTIVE MATERIAL USED ON CHANNELIZING DEVICES SHALL HAVE A SMOOTH, SEPALED OUTER SURFACE.
- THE NAME AND TELEPHONE NUMBER OF THE AGENCY, CONTRACTOR OR SUPPLIER SHALL BE SHOWN ON THE NON-RETROREFLECTIVE SURFACE OF ALL CHANNELIZING DEVICES. THE LETTERS AND NUMBERS SHALL BE A NON-RETROREFLECTIVE COLOR AND NOT OVER 50 mm (2") IN HEIGHT.
- PARTICULAR ATTENTION SHOULD BE GIVEN TO ASSURE THAT CHANNELIZING DEVICES ARE MAINTAINED AND KEPT CLEAN, VISIBLE AND PROPERLY POSITIONED AT ALL TIMES. DEVICES SHALL BE REPLACED THAT ARE DAMAGED AND HAVE LOST A SIGNIFICANT AMOUNT OF THEIR RETROREFLECTIVITY AND EFFECTIVENESS.

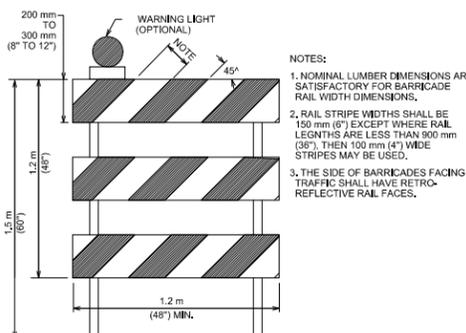
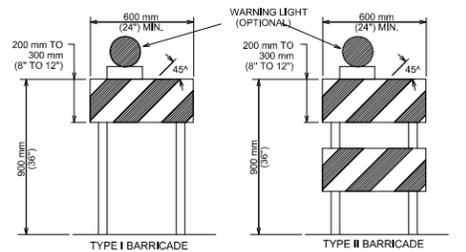
- CONES
- CONES SHALL PREDOMINANTLY BE ORANGE, FLUORESCENT RED-ORANGE, OR FLUORESCENT YELLOW-ORANGE IN COLOR. NOT LESS THAN 70 mm (28") IN HEIGHT, AND SHALL BE MADE OF A MATERIAL THAT CAN BE STRUCK WITHOUT DAMAGING VEHICLES. FOR NIGHT TIME USE, TUBULAR MARKERS SHALL BE RETROREFLECTIVE PROVIDED BY TWO (2) 75 mm (3") WIDE WHITE BANDS PLACED A MAXIMUM OF 50 mm (2") FROM THE TOP, WITH A MAXIMUM OF 150 mm (6") BETWEEN BANDS. BAND MARKERS ARE NORMALLY USED FOR SHORT-TERM STATIONARY AND SHORT DURATION WORK. HOWEVER, TUBULAR MARKERS MAY BE USED FOR INTERMEDIATE-TERM STATIONARY WORK AT NIGHT, IF THE SITE IS CONTINUOUSLY MANNED.

- TUBULAR MARKERS
- TUBULAR MARKERS SHALL PREDOMINANTLY BE ORANGE IN COLOR. NOT LESS THAN 700 mm (28") IN HEIGHT. A MINIMUM 50 mm (2") WIDE WHEN FACING TRAFFIC AND MADE OF A MATERIAL THAT CAN BE STRUCK WITHOUT DAMAGING VEHICLES. FOR NIGHT TIME USE, TUBULAR MARKERS SHALL BE RETROREFLECTIVE PROVIDED BY TWO (2) 75 mm (3") WIDE WHITE BANDS PLACED A MAXIMUM OF 50 mm (2") FROM THE TOP, WITH A MAXIMUM OF 150 mm (6") BETWEEN BANDS. BAND MARKERS ARE NORMALLY USED FOR SHORT-TERM STATIONARY AND SHORT DURATION WORK. HOWEVER, TUBULAR MARKERS MAY BE USED FOR INTERMEDIATE-TERM STATIONARY WORK AT NIGHT, IF THE SITE IS CONTINUOUSLY MANNED.

- VERTICAL PANELS
- VERTICAL PANELS SHALL BE 200 TO 300 mm (8 TO 12") WIDE AND AT LEAST 600 mm (24") IN HEIGHT. THEY SHALL HAVE ORANGE AND WHITE STRIPES. AND BE RETROREFLECTIVE. PANEL STRIPE WIDTHS SHALL BE 150 mm (6") EXCEPT WHERE PANEL HEIGHTS ARE LESS THAN 900 mm (36"). WHEN 100 mm (4") STRIPES MAY BE USED. IF USED FOR TWO-WAY TRAFFIC, BACK-TO-BACK PANELS SHALL BE USED.

- DRUMS
- DRUMS USED FOR TRAFFIC WARNING OR CHANNELIZATION SHALL BE CONSTRUCTED OF LIGHT-WEIGHT FLEXIBLE AND DEFORMABLE MATERIALS AND BE A MINIMUM OF 600 mm (24") IN HEIGHT, AND HAVE AT LEAST 450 mm (18") MINIMUM WIDTH, REGARDLESS OF ORIENTATION. STEEL DRUMS SHALL NOT BE USED. THE MARKINGS ON DRUMS SHALL BE HORIZONTAL, CIRCUMFERENTIAL, ALTERNATING ORANGE AND WHITE RETROREFLECTIVE STRIPES 100 TO 200 mm (4 TO 8") WIDE. EACH DRUM SHALL HAVE A MINIMUM OF TWO (2) ORANGE AND TWO (2) WHITE STRIPES. ANY NON-RETROREFLECTIVE SPACES BETWEEN THE HORIZONTAL ORANGE AND WHITE STRIPES, SHALL NOT EXCEED 50 mm (2") WIDE. DRUMS SHALL HAVE CLOSED TOPS THAT WILL NOT ALLOW COLLECTION OF ROADWORK OR OTHER DEBRIS.

- DRUMS SHOULD NOT BE WEIGHTED WITH SAND, WATER OR ANY MATERIAL TO AN EXTENT THAT WOULD MAKE THE HAZARDOUS TO MOTORISTS, PEDESTRIANS OR WORKERS, WHEN THEY ARE USED IN REGIONS SUSCEPTIBLE TO FREEZING. THEY SHOULD HAVE DRAINAGE HOLES IN THE BOTTOM SO WATER WILL NOT ACCUMULATE AND FREEZE CAUSING A HAZARD IF STRUCK BY A MOTORIST. BALLAST SHALL NOT BE PLACED ON TOP OF THE DRUM.



- NOTES:
- NOMINAL LUMBER DIMENSIONS ARE SATISFACTORY FOR BARRICADE RAIL WIDTH DIMENSIONS.
  - RAIL STRIPE WIDTHS SHALL BE 150 mm (6") EXCEPT WHERE RAIL LENGTHS ARE LESS THAN 900 mm (36"). THEN 100 mm (4") WIDE STRIPES MAY BE USED.
  - THE SIDE OF BARRICADES FACING TRAFFIC SHALL HAVE RETROREFLECTIVE RAIL FACES.

SEE STANDARD 804S-5 SHEET 13 OF 13 AND SHEET 13 OF 13 FOR GENERAL NOTES AND DEVICE SPACING.

**CITY OF AUSTIN**  
DEPARTMENT OF PUBLIC WORKS

RECORD COPY SIGNED BY KERI JUAREZ 01/04/11 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-1 8 OF 9

**CITY OF AUSTIN**  
DEPARTMENT OF PUBLIC WORKS

RECORD COPY SIGNED BY KERI JUAREZ 01/04/11 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-1 9 OF 9

**CITY OF AUSTIN**  
DEPARTMENT OF PUBLIC WORKS

RECORD COPY SIGNED BY SAM ANGOORI 01/04/10 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-5 1 OF 13

**CITY OF AUSTIN**  
DEPARTMENT OF PUBLIC WORKS

RECORD COPY SIGNED BY SAM ANGOORI 01/04/10 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-5 2 OF 13

**CITY OF AUSTIN**  
DEPARTMENT OF PUBLIC WORKS

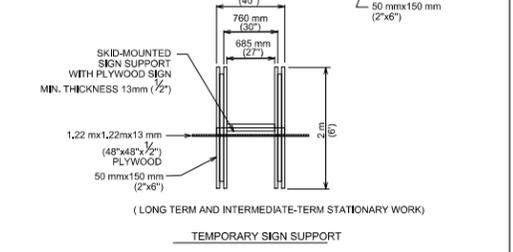
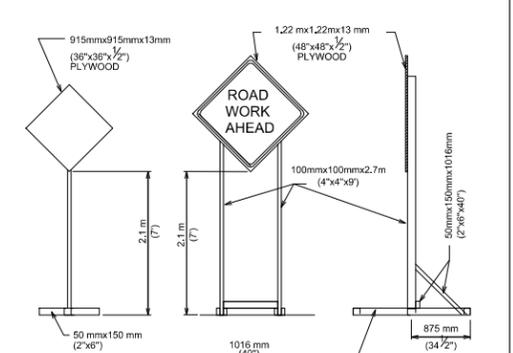
RECORD COPY SIGNED BY SAM ANGOORI 01/04/10 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

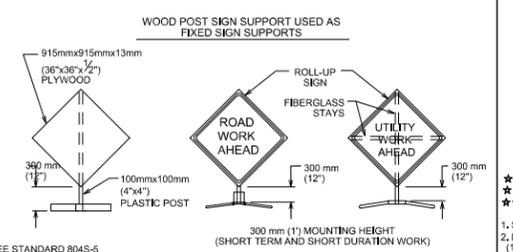
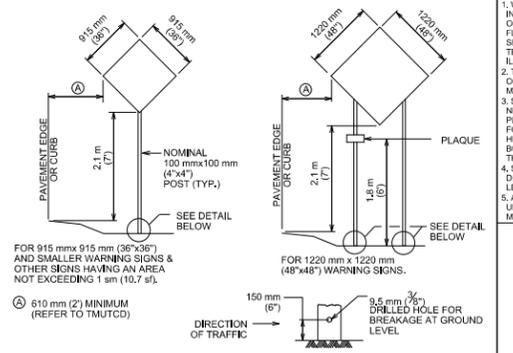
STANDARD NO. 804S-5 3 OF 13

ADDED THIS SHEET TO PLANS.

- BARRICADES**
- BARRICADES SHALL BE OF THREE TYPES: TYPE I, TYPE II OR TYPE III.
  - STRIPES ON BARRICADE RAILS SHALL BE ALTERNATING ORANGE AND WHITE RETROREFLECTIVE STRIPES (SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES IN THE DIRECTION TRAFFIC IS TO PASS). THE STRIPES SHALL BE 150 mm (6") WIDE, EXCEPT WHERE RAIL LENGTHS ARE LESS THAN 900 mm (36"). WHEN 100 mm (4") WIDE STRIPES MAY BE USED.
  - WHERE A BARRICADE EXTENDS ENTIRELY ACROSS A ROADWAY, THE SURFACE STRIPES SHOULD SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN, WHERE BOTH RIGHT AND LEFT TURNS ARE PROVIDED. THE STRIPES MAY SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE OR BARRICADES, WHERE NO TURNS ARE INTENDED. THE STRIPES SHOULD SLOPE DOWNWARD TOWARD THE CENTER OF THE BARRICADE OR BARRICADES.
  - BARRICADE RAILS SHOULD BE SUPPORTED IN A MANNER THAT WILL ALLOW THEM TO BE SEEN BY THE MOTORIST AND PROVIDE A STABLE SUPPORT NOT EASILY BLOWN OVER BY THE WIND OR TRAFFIC. FOR TYPE I BARRICADES, THE SUPPORT MAY INCLUDE OTHER UNSTRIPED HORIZONTAL PANELS NECESSARY TO PROVIDE STABILITY.
  - BARRICADES ARE LOCATED ADJACENT TO TRAFFIC AND ARE THEREFORE SUBJECT TO IMPACT WITH ERRANT VEHICLES. BECAUSE OF THEIR VULNERABLE POSITION AND THE HAZARD THEY COULD CREATE, THEY SHOULD BE CONSTRUCTED OF LIGHTWEIGHT MATERIALS AND HAVE NO RIGID STAY BRACING FOR A-FRAME DESIGNS. ALL BARRICADE SYSTEMS SHOULD BE CRASHWORTHY.
  - ON HIGH-SPEED EXPRESSWAYS OR IN OTHER SITUATION WHERE BARRICADES MAY BE SUSCEPTIBLE TO OVERTURNING IN THE WIND, SANDBAGS SHOULD BE USED FOR BALLASTING. SANDBAGS MAY BE PLACED ON PARTS OF THE FRAME OR STAYS TO PROVIDE THE REQUIRED BALLAST BUT SHALL NOT BE PLACED ON TOP OF ANY STRIPED RAIL. BARRICADES SHALL NOT BE BALLASTED BY HEAVY OBJECTS SUCH AS ROCKS OR CHUNKS OF CONCRETE.



SEE STANDARD 804S-5 SHEET 12 OF 13 AND SHEET 13 OF 13 FOR GENERAL NOTES AND DEVICE SPACING.



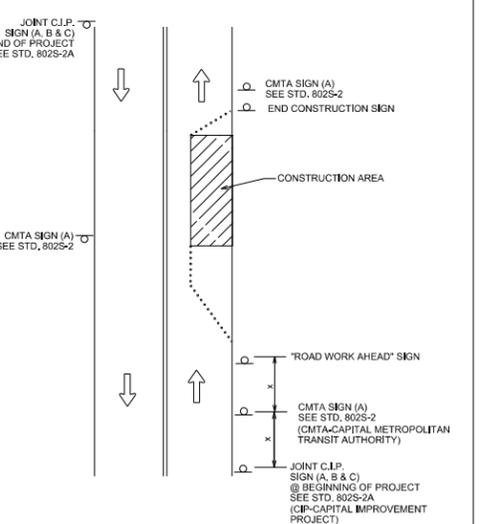
SEE STANDARD 804S-5 SHEET 12 OF 13 AND SHEET 13 OF 13 FOR GENERAL NOTES AND DEVICE SPACING.

- WARNING SIGNS SHALL BE ORANGE, FLUORESCENT RED-ORANGE OR FLUORESCENT YELLOW-ORANGE IN COLOR. THE FLUORESCENT VARIANTS OF ORANGE PROVIDE HIGHER CONSPICUITY THAN STANDARD ORANGE, ESPECIALLY DURING TWILIGHT. ALL SIGNS USED AT NIGHT SHALL BE EITHER RETROREFLECTIVE, WITH A MATERIAL THAT HAS A SMOOTH, SEPALED OUTER SURFACE, OR ILLUMINATED TO SHOW SIMILAR SHAPE AND COLOR BOTH DAY AND NIGHT. SIGN ILLUMINATION MAY BE EITHER INTERNAL OR EXTERNAL. ROADWAY LIGHTING DOES NOT MEET THE REQUIREMENTS FOR SIGN ILLUMINATION.
- A FLASHING WARNING LIGHTS MAY BE USED IN CONJUNCTION WITH SIGNS AT NIGHT. STANDARD ORANGE FLAGS MAY BE USED FOR DAY TIME OPERATIONS. HOWEVER, NEITHER LIGHTS NOR FLAGS MAY BLOCK THE SIGN LEGEND.
- SIGNS SHOULD BE LOCATED ON THE RIGHT-HAND SIDE OF THE ROADWAY. WHEN SPECIAL EMPHASIS IS REQUIRED, SIGNS MAY BE PLACED ON BOTH SIDES OF ONE-WAY OR DIVIDED ROADWAYS. SIGNS USED FOR LONG-TERM STATIONARY AND INTERMEDIATE-TERM STATIONARY WORK SHALL BE MOUNTED AT A HEIGHT OF AT LEAST 2.1 m (7'). MOUNTED FROM THE BOTTOM OF THE SIGN. THE HEIGHT TO THE BOTTOM OF A SECONDARY SIGN MOUNTED BELOW ANOTHER SIGN MAY BE 0.3 m (1') LESS THAN THE APPROPRIATE HEIGHT. SIGN MOUNTS SHALL BLOCK OR IMPED SIDEWALKS UNLESS NO OTHER OPTION IS AVAILABLE. ONLY SANDBAGS SHOULD BE USED FOR BALLASTING SIGN MOUNTS.
- SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, MOBILE CONDITIONS AND EMERGENCIES. SIGNS MOUNTED ON PORTABLE SUPPORTS SHALL BE AT A HEIGHT OF AT LEAST 0.3 m (1') FROM THE BOTTOM OF THE SIGN.
- ALL SIGN SYSTEMS SHOULD BE CRASHWORTHY. NO SIGN MOUNTS SHALL BLOCK OR IMPED SIDEWALKS UNLESS NO OTHER OPTION IS AVAILABLE. ONLY SANDBAGS SHOULD BE USED FOR BALLASTING SIGN MOUNTS.

TABLE VI-3 TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING

Roadway Classification	Posted Speed (MPH)	Sign Spacing (meters)	Long-Term Stationary or Intermediate-Term Stationary Approaching Warning Signs (CIVIL Series And CIVIL-1 Sign)		Short-Term Stationary Sign (CIVIL Series)		Other Warning Signs
			Standard	Minimum	Standard	Minimum	
Concur.	50	1220x1220 (40x40)	915x915 (36x36)	915x915 (36x36)	915x915 (36x36)	915x915 (36x36)	
	60	1220x1220 (40x40)	915x915 (36x36)	915x915 (36x36)	915x915 (36x36)	915x915 (36x36)	
Div.	55	1000x1000 (33x33)	762x762 (30x30)	762x762 (30x30)	762x762 (30x30)	762x762 (30x30)	
	70	1000x1000 (33x33)	762x762 (30x30)	762x762 (30x30)	762x762 (30x30)	762x762 (30x30)	
Urban	80	1000x1000 (33x33)	762x762 (30x30)	762x762 (30x30)	762x762 (30x30)	762x762 (30x30)	
	100	1000x1000 (33x33)	762x762 (30x30)	762x762 (30x30)	762x762 (30x30)	762x762 (30x30)	
Rural	100	1500x1500 (50x50)	1220x1220 (40x40)	1220x1220 (40x40)	1220x1220 (40x40)	1220x1220 (40x40)	
	115	1500x1500 (50x50)	1220x1220 (40x40)	1220x1220 (40x40)	1220x1220 (40x40)	1220x1220 (40x40)	

- NOTES:
- OTHER REQUIRED SIGNS NOT SHOWN FOR CLARITY.
  - "X" DISTANCES SAME AS STANDARD TABLE SHOWN ON SHEET 13 OF 13.



- NOTES:
- OTHER REQUIRED SIGNS NOT SHOWN FOR CLARITY.
  - "X" DISTANCES SAME AS STANDARD TABLE SHOWN ON SHEET 13 OF 13 FOR GENERAL NOTES AND DEVICE SPACING.

**CITY OF AUSTIN**  
DEPARTMENT OF PUBLIC WORKS

RECORD COPY SIGNED BY SAM ANGOORI 01/04/10 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-5 4 OF 13

**CITY OF AUSTIN**  
DEPARTMENT OF PUBLIC WORKS

RECORD COPY SIGNED BY SAM ANGOORI 01/04/10 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-5 5 OF 13

**CITY OF AUSTIN**  
DEPARTMENT OF PUBLIC WORKS

RECORD COPY SIGNED BY SAM ANGOORI 01/04/10 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-5 6 OF 13

**CITY OF AUSTIN**  
DEPARTMENT OF PUBLIC WORKS

RECORD COPY SIGNED BY SAM ANGOORI 01/04/10 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-5 7 OF 13

**CITY OF AUSTIN**  
DEPARTMENT OF PUBLIC WORKS

RECORD COPY SIGNED BY SAM ANGOORI 01/04/10 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-5 8 OF 13



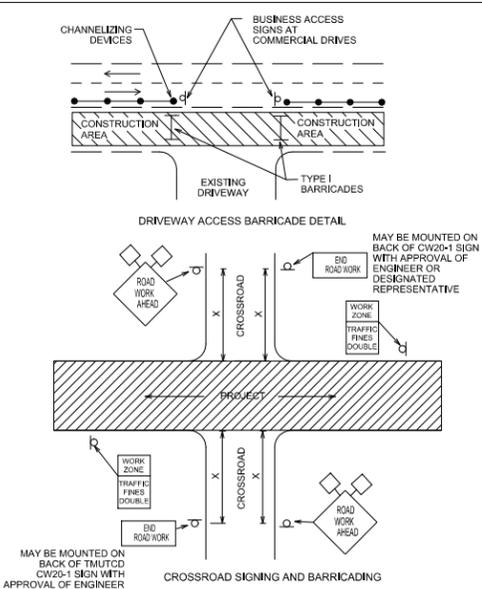
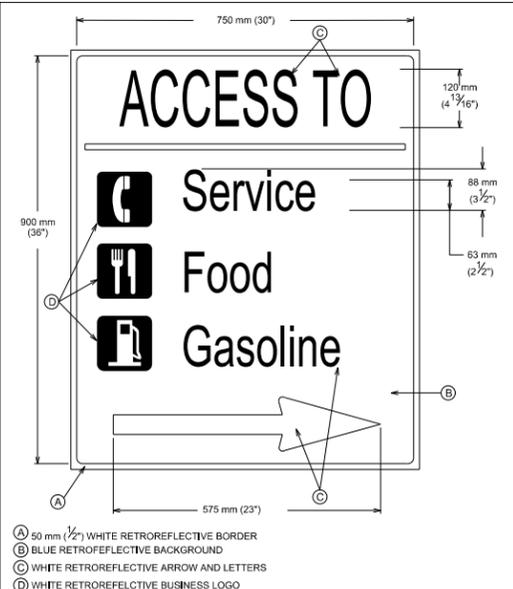
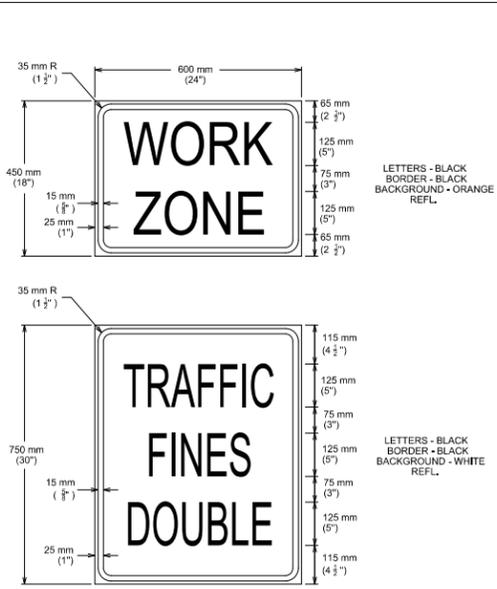
Shawn B. Stover 8/25/2014

701 BRAZOS, SUITE 450  
AUSTIN, TX 78701  
P: (512) 447-5590

HNTB  
The HNTB Companies  
Engineers, Architects Planners  
TYPE FIRM REGISTRATION NO. F420



NOTES	NAME	DATE
SURVEY BY	McGRAY	2/19/11
DRAWN BY	DDL	8/1/12
CHECKED BY	DE	8/2/12
DESIGNED BY	BK	7/2/12
REVIEWED BY	WB	
SCALE:	N. T. S.	
CADD REF. NO.:		
CADD DIR.:		
SHEET NUMBER	61A	OF 63



1. ALL TRAFFIC CONTROL DEVICES, SIGNS, BARRICADES AND WARNING SIGNS SHALL BE FURNISHED, PLACED, CONSTRUCTED AND MAINTAINED IN THE APPROPRIATE TYPES AND SIZES AND FLAGGER OPERATIONS EXPERTISE IN ACCORDANCE WITH THE CURRENT EDITION OF THE TEXAS MANUAL ON UNIFORM CONTROL DEVICES (TMUCD), THE CITY OF AUSTIN STANDARD SPECIFICATIONS SERIES 800 AND THE CITY OF AUSTIN TRANSPORTATION CRITERIA MANUAL OR AS DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE, IF A CONFLICT ARISES THEN THE CITY OF AUSTIN TRANSPORTATION CRITERIA MANUAL SHALL CONTROL UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.

2. THE CONTRACTOR SHALL NOTIFY THE TRANSPORTATION DIVISION OF THE DEPARTMENT OF PUBLIC WORKS AT 974-0294 NO LATER THAN THE MONDAY OF THE WEEK DURING WHICH THE CONTRACTOR INTENDS TO SET UP BARRICADES TO START CONSTRUCTION.

3. PROPOSED CONSTRUCTION TRAFFIC MOVEMENTS MAY REQUIRE EXISTING SIGNAL HEADS TO BE RELOCATED. THE CITY OF AUSTIN WILL REVIEW SIGNAL HEAD LOCATIONS DURING CONSTRUCTION AND PERFORM THE REQUIRED ADJUSTMENTS. THE CONTRACTOR SHALL CONTACT THE TRANSPORTATION DIVISION OF THE DEPARTMENT OF PUBLIC WORKS AT 974-0294, THREE (3) DAYS PRIOR TO PLACEMENT ANY TRAFFIC CONTROLS WHICH MAY REQUIRE SIGNAL HEAD ADJUSTMENTS/RELOCATION.

4. THE CONTRACTOR SHALL PROVIDE ONE (1) FULL-TIME OFF-DUTY, UNIFORMED AUSTIN POLICE DEPARTMENT CERTIFIED PEACE OFFICER AND ONE (1) VEHICLE OF THE TYPE APPROVED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE FOR TEMPORARY LANE CLOSURES WHEN UNDERSEALING, MILLING, PAVING AND WHEN WORKING IN INTERSECTIONS AS PART OF THE TRAFFIC CONTROL OPERATIONS. THE PEACE OFFICER SHALL BE ABLE TO SHOW PROOF OF CERTIFICATION BY THE TEXAS COMMISSION ON LAW ENFORCEMENT OFFICER STANDARDS.

5. THE CONTRACTOR SHALL NOTIFY ALL OTHER GOVERNMENTAL AGENCIES WHOSE RIGHTS-OF-WAY ARE AFFECTED BY HIS WORK ACTIVITIES. THE CONTRACTOR SHALL PROVIDE ANY ADDITIONAL TRAFFIC CONTROL DEVICES THAT THEY MAY NEED.

6. THE CONTRACTOR SHALL MAINTAIN ONE (1) DUST-FREE LANE OF TRAFFIC IN EACH DIRECTION AT ALL TIMES, UNLESS OTHERWISE NOTED IN THE DRAWINGS OR APPROVED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.

7. THERE SHALL BE A MINIMUM OF THREE (3) METERS (10 FEET) CLEAR WIDTH FOR EACH LANE OF TRAFFIC IN CHANNELIZED AREAS, UNLESS OTHERWISE NOTED ON THE DRAWINGS OR APPROVED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.

8. THE CONTRACTOR SHALL MAINTAIN DRIVEWAY ACCESS AT ALL TIMES. IF ACCESS CANNOT BE MAINTAINED, THE CONTRACTOR WITH THE APPROVAL OF THE ENGINEER OR DESIGNATED REPRESENTATIVE SHALL PROVIDE AT LEAST 24 HOUR WRITTEN NOTICE OF LIMITED ACCESS TO AFFECTED PROPERTY OWNERS. THE CONTRACTOR SHALL PROVIDE BUSINESS ACCESS SIGNS AS NEEDED TO INFORM DRIVERS OF THE LOCATIONS OF ALL DRIVEWAYS.

9. TEMPORARY LANE CLOSURES IN THE CENTRAL BUSINESS DISTRICT (CBD) OR ON ARTERIAL STREETS SHALL NOT BE PERMITTED DURING THE HOURS OF 7 AM TO 9 AM AND 4 PM TO 8 PM MONDAY THROUGH FRIDAY UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE TRANSPORTATION DIVISION.

10. TRAFFIC CONTROL SHOWN ON STANDARD DETAILS IS TYPICAL. ADDITIONAL SIGNING AND/OR BARRICADING, AS WELL AS TEMPORARY PAVEMENT MARKINGS AND OBLITERATION/RESTORATION OF EXISTING PAVEMENT MARKINGS, MAY BE REQUIRED DEPENDING ON FIELD CONDITIONS. FIELD ADJUSTMENTS TO TRAFFIC CONTROLS WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO ITEM NO. 803S "BARRICADES, SIGNS AND TRAFFIC HANDLING".

11. THE CONTRACTOR SHALL DESIGNATE A COMPETENT PERSON FOR TRAFFIC CONTROL. THE COMPETENT PERSON SHALL MAKE INSPECTIONS OF THE TRAFFIC CONTROL DEVICES AT LEAST TWO (2) TIMES A DAY (ONCE AT THE BEGINNING OF THE DAY AND ONCE AT THE END OF THE DAY), INCLUDING NON-WORKING DAYS, ENSURING THAT ALL DEVICES ARE IN THEIR PROPER PLACE AND ARE IN WORKING ORDER.

12. ALL DEVICES SHALL BE MADE USING MATERIALS LISTED ON THE TxDOT APPROVED PRODUCTS LIST.

13. ALL PERSONS WORKING WITHIN THE RIGHT-OF-WAY SHALL WEAR A BRIGHTLY COLORED SAFETY VEST. FOR NIGHTTIME WORK THE VEST SHALL BE RETROREFLECTIVE.

14. WHEN AN INTERSECTION IS CLOSED FOR CONSTRUCTION, THE CONTRACTOR SHALL PROCEED WITH CONSTRUCTION IN SUCH A MANNER THAT THE CLOSURE TIME IS MINIMIZED.

15. THE CONTRACTOR SHALL NOTIFY THE CAPITAL METRO DISPATCHER AT 385-4295 ONE (1) WEEK PRIOR TO LANE CLOSURES ADJACENT TO BUS STOPS.

DURATION OF WORK  
WORK DURATION IS A MAJOR FACTOR IN DETERMINING THE NUMBER AND TYPES OF DEVICES USED IN TEMPORARY TRAFFIC ZONES. THE FIVE (5) CATEGORIES OF WORK DURATION AND THEIR TIME AT A LOCATION ARE AS FOLLOWS:

- LONG-TERM STATIONARY-WORK THAT OCCUPIES A LOCATION FOR MORE THAN 3 DAYS.
- INTERMEDIATE-TERM STATIONARY-WORK THAT OCCUPIES A LOCATION FROM OVERNIGHT TO 3 DAYS.
- SHORT-TERM STATIONARY-DAYTIME WORK THAT OCCUPIES A LOCATION FROM 1 TO 12 HOURS.
- SHORT-DURATION WORK THAT OCCUPIES A LOCATION UP TO 1 HOUR.
- MOBILE-WORK THAT MOVES INTERMITTENTLY OR CONTINUOUSLY.

Typical Transition Lengths and Suggested Maximum Spacing of Devices

Posted Speed KPH (MPH)	Formula	Minimum Desirable Taper Lengths (L) Meters (Feet)			Suggested Max. Device Spacing Meters (Feet)	Suggested Sign Spacing Meters (Feet)
		Offset Meters (feet)	Offset Meters (feet)	Offset Meters (feet)		
50 (30)	L=WS/60	45 (150)	50 (165)	55 (180)	9 (30)	15-20 (50-75)
55 (35)		65 (205)	70 (225)	75 (245)	10 (35)	25-25 (70-90)
65 (40)		80 (265)	90 (295)	100 (320)	12 (40)	25-30 (80-100)
70 (45)		135 (450)	145 (485)	155 (510)	13 (45)	25-30 (80-110)
80 (50)		150 (500)	165 (550)	180 (600)	15 (50)	30-35 (100-125)
90 (55)	L=WS	165 (550)	185 (605)	200 (660)	16 (55)	35-40 (110-140)
100 (60)		200 (660)	220 (720)	240 (780)	18 (60)	40-45 (120-150)
105 (65)		195 (650)	215 (715)	235 (780)	19 (65)	40-50 (130-165)
115 (70)		215 (700)	235 (770)	255 (840)	21 (70)	45-55 (140-175)

SEE STANDARD DETAIL 804S-5 SHEET 5 OF 13 FOR SKID-MOUNTED SIGN SUPPORT.																				
<b>CITY OF AUSTIN</b> DEPARTMENT OF PUBLIC WORKS	<b>SPECIAL WORK ZONE SIGNS</b>	<b>CITY OF AUSTIN</b> DEPARTMENT OF PUBLIC WORKS	<b>SPECIAL WORK ZONE SIGNS</b>	<b>CITY OF AUSTIN</b> DEPARTMENT OF PUBLIC WORKS	<b>SIGNING AND BARRICADING CROSSROAD &amp; DRIVEWAY</b>	<b>CITY OF AUSTIN</b> DEPARTMENT OF PUBLIC WORKS	<b>GENERAL TRAFFIC CONTROL NOTES</b>	<b>CITY OF AUSTIN</b> DEPARTMENT OF PUBLIC WORKS	<b>GENERAL TRAFFIC CONTROL NOTES</b>											
RECORD COPY SIGNED BY SAM ANGOORI 01/04/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	RECORD COPY SIGNED BY SAM ANGOORI 01/04/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	RECORD COPY SIGNED BY SAM ANGOORI 01/04/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	RECORD COPY SIGNED BY SAM ANGOORI 01/04/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	RECORD COPY SIGNED BY SAM ANGOORI 01/04/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.											
STANDARD NO. 804S-5 9 OF 13		STANDARD NO. 804S-5 10 OF 13		STANDARD NO. 804S-5 11 OF 13		STANDARD NO. 804S-5 12 OF 13		STANDARD NO. 804S-5 13 OF 13												

ADDED THIS SHEET TO PLANS.

701 BRAZOS, SUITE 450  
AUSTIN, TX 78701  
P: (512) 447-5590

SHOAL CREEK GREENBELT - TRAIL IMPROVEMENTS  
W. 5TH STREET TO W. 4TH STREET

CITY OF AUSTIN STANDARD CONSTRUCTION DETAILS  
SHEET 5 OF 5

**HNTB**  
The HNTB Companies  
Engineers, Architects Planners  
TYPE FIRM REGISTRATION NO. F420

**SHAWN B. STOVER**  
109251  
LICENSED PROFESSIONAL ENGINEER  
8/25/2014

NOTES	NAME	DATE
SURVEY BY	McGRAY	2/19/11
DRAWN BY	DDL	8/1/12
CHECKED BY	DE	8/2/12
DESIGNED BY	BK	7/2/12
REVIEWED BY	WB	

SCALE: N.T.S  
CADD REF. NO.:  
CADD DIR.:

SHEET NUMBER 61B OF 63

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

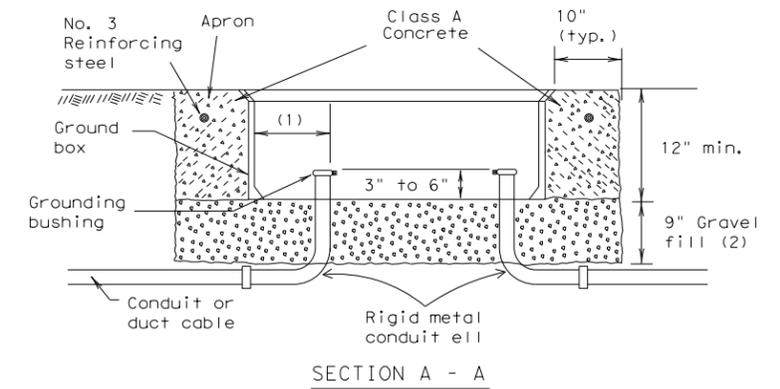
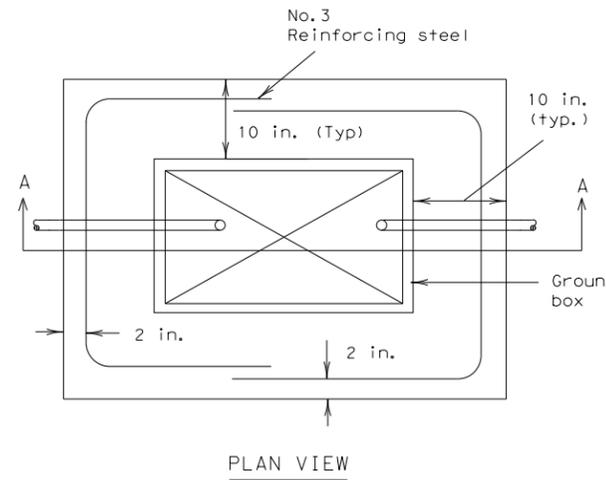
**II. GROUND RODS**

**A. MATERIALS**

- All ground rods installed at electrical services, including supplemental lightning protection ground rods specified by the plans in other locations such as pole bases, shall be copper clad and UL listed. Rods shall be a minimum diameter of 5/8 inch. The length shall be a minimum of 8 feet. Larger diameter or longer length rods may be called for in some specific locations, see the individual plans sheets.
- Ground rod clamps shall be listed to be in direct contact with the soil. Where concrete encasement is required, the clamp shall be listed for concrete encasement.

**B. CONSTRUCTION METHODS**

- Ground rods installed in locations such as pole bases, to provide supplemental lightning protection need not be totally in contact with the soil. Where called for in the plans, rods may be encased in soil or concrete or any combination of soil and concrete. When concrete encased, the connection of the conductor to the rod shall be readily accessible for inspection or repairs. When driven into the soil the upper end shall be between 2 to 4 inches below finished grade. Ground rods shall not be placed in the same drilled hole as a timber pole.
- Ground rods shall be installed such that the end imprinted with the rod's part number is installed as being the upper end.
- Non-conductive coatings such as concrete splatter shall be removed from the rod at the clamp location.
- Routing of lightning protection ground rod wires shall be run as short and straight as possible. Where bends are required they shall have a minimum radius of four inches.
- Unless specifically called for by the plans, conduits used for ground rod wires shall be non-metallic. Where metal conduits are specified, a grounding bushing and properly sized bonding jumper shall be provided and properly installed on each end.
- Where rocky soil or a solid rock bottom is encountered when driving a ground rod and the horizontal trench placement method is the only viable solution, written authorization from the Engineer must be obtained.



**APRON FOR GROUND BOXES**

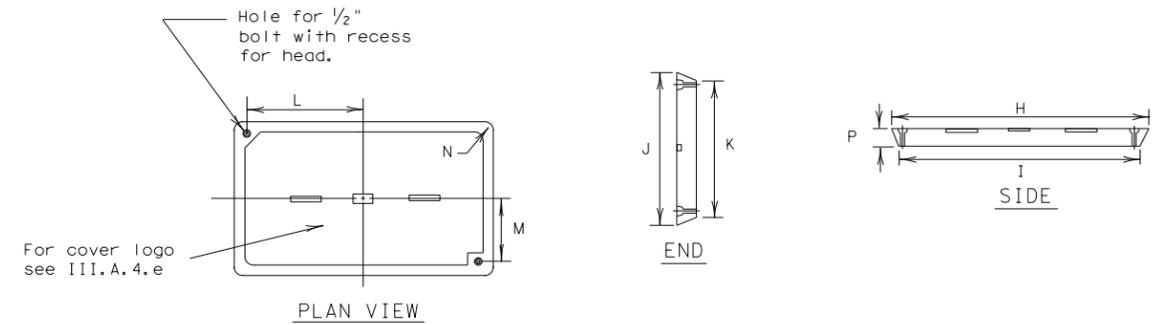
(Where required)

**III. GROUND BOX**

**A. MATERIALS**

- Ground boxes 16x30x24 inches (WxLxD) or smaller shall be polymer concrete of the type required by the descriptive code shown elsewhere. Larger ground boxes shall be as shown elsewhere in the plans.
- All ground boxes and covers shall be permanently marked either by impress or by permanent ink, with manufacturer's model number and manufacturer's name or logo.
- Covers shall be bolted down, and bolt holes in the box shall be arranged to drain dirt.
- Ground box Types A, B, C, D & E shall meet the following requirements:
  - Ground boxes and covers be manufactured from polymer concrete reinforced with continuous strands of woven or stitched borosilicate fiberglass cloth. The polymer concrete shall be made from catalyzed polyester resin, sand and aggregate, and shall have a minimum compressive strength of 11,000 psi. Polymer concrete containing chopped fiberglass or fiber-glass reinforced plastic is not acceptable.
  - Minimum inside dimensions shall be as follows (width x length x depth):
    - Type A shall be 11.5 inches x 21 inches x 10 inches, (122311)
    - Type B shall be 11.5 inches x 21 inches x 20 inches, (122322)
    - Type C shall be 15.25 inches x 28.25 inches x 10 inches, (162911)
    - Type D shall be 15.25 inches x 28.25 inches x 20 inches, (162922)
    - Type E shall be 11.5 inches x 21 inches x 16 inches, (122317)
  - Bottom edge of box or extension shall be footed with a minimum 1 1/4 inch flange.
  - Ground boxes shall withstand 600 lbs. per sq. ft. applied over the entire sidewall with less than 1/4 inch deflection per foot length of box. Ground boxes and covers shall withstand a test loading of 20,000 lbs. over a 10 inch by 10 inch area centered on the cover with less than 1/2 inch deflection. Ground boxes and covers shall meet Western Underground Standards 3.6. Manufacturer shall supply certification by an independent laboratory or sealed by a Texas-Licensed Professional Engineer.
  - Covers shall be 2 inch (nominal) thick polymer concrete. All hardware shall be stainless steel. Cover shall be secured with two 1/2 inch stainless steel bolts. Bolts shall be self-retaining and shall withstand a minimum of 70 ft-lbs. torque and shall have a minimum 750 lbs. straight pull out strength. Nuts shall be floating and shall provide a minimum of 1/2 inch movement from the center of the nut. Covers shall be skid resistant, minimum 0.5 coefficient of friction. Covers shall be interchangeable between manufacturers and shall conform to the dimensions shown herein. Unless otherwise approved by the Engineer, cover shall be legibly imprinted with the following words in minimum 1 inch letters:
    - Ground Boxes containing wiring for traffic signals shall be labeled, Danger High Voltage Traffic Signal.
    - Ground boxes containing wiring for illumination systems shall be labeled, Danger High Voltage Illumination.
    - Ground boxes containing wiring for traffic management systems shall be labeled, Danger High Voltage Traffic Management.
    - Ground boxes containing wiring for sign illumination systems shall be labeled, Danger High Voltage Sign Illumination.
    - Ground boxes containing wiring for traffic signals that also contain illumination, powered by the signal electrical service, shall be labeled, Danger High Voltage Traffic Signal.

- Final position of end of conduit shall not exceed one-half the distance to the side of box opposite the conduit entry.
- Place gravel "under" the box, not "in" the box. Gravel should not encroach on the interior volume of the box.
- Install bushing on the upper end of all ells.
- Where a ground rod is present in the ground box, connect it to any and all equipment grounding conductors using a listed connector.
- Maintain sufficient space between all conduits so as to allow for proper installation of bushings.
- All conduits shall be installed in a neat and workmanlike manner.
- All conduits installed in the ground box shall be sealed after completion of conductor installation and any required pull tests. Silicone shall not be used as sealant.



**GROUND BOX COVER**

GROUND BOX COVER DIMENSIONS								
BOX	DIMENSIONS (INCHES)							
SIZE	H	I	J	K	L	M	N	P
A, B & E	23 1/4	23	13 3/4	13 1/2	9 7/8	5 1/8	1 3/8	2
C & D	30 1/2	30 1/4	17 1/2	17 1/4	13 1/4	6 3/4	1 3/8	2

**B. CONSTRUCTION METHODS**

- Ground boxes shall be set on a 9 inch (minimum) bed of aggregate from 3/4 " up to 2" in size. Aggregate shall be in place prior to setting box and conduits shall be capped. Any gravel or dirt in conduit shall be removed.
- When required by Item descriptive code, construction of an apron encasing a ground box including concrete and reinforcing steel shall not be paid for directly but shall be subsidiary to the ground box. Reinforcing steel may be field bent. Concrete for aprons shall be considered miscellaneous concrete for testing purposes. Aprons shall be cast in place.
- Conduit holes may be cut in the walls of type B & D boxes at least 18 inches beneath the cover.
- If, within the limits of this project, the Contractor must utilize an existing ground box equipped with a metal cover, the Contractor shall bond the cover to the grounding conductor with a 3 foot long flexible stranded jumper the same size as the grounding conductor. Connection of bonding jumper to metal ground cover shall not be paid for directly but shall be subsidiary to various bid items. The box(es) must be clearly shown on the plans with plan notes fully describing the work required.
- If there are other ground boxes with metal Covers within the project limits but not involved in the contract, the Engineer may direct the Contractor to ground the covers, designating and identifying the specific boxes in writing. This work will be paid for separately.
- Termination to metal ground box covers shall be made using a tank ground type lug.

1 8/25/2014 - ADDED SHEET TO PLAN SET.

5/03 Revision  
 Revised notes.

Texas Department of Transportation  
 Traffic Operations Division

**ELECTRICAL DETAILS-  
 GROUND BOXES**

**ED(3)-03**

© TxDOT January 1992		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
4-98 12-00 3-03 5-03	REVISIONS		CONTRACT	SECTION	JOB
			DISTRICT	COUNTY	
					SHEET NO. <b>61C</b>

71C

DATE:  
FILE: