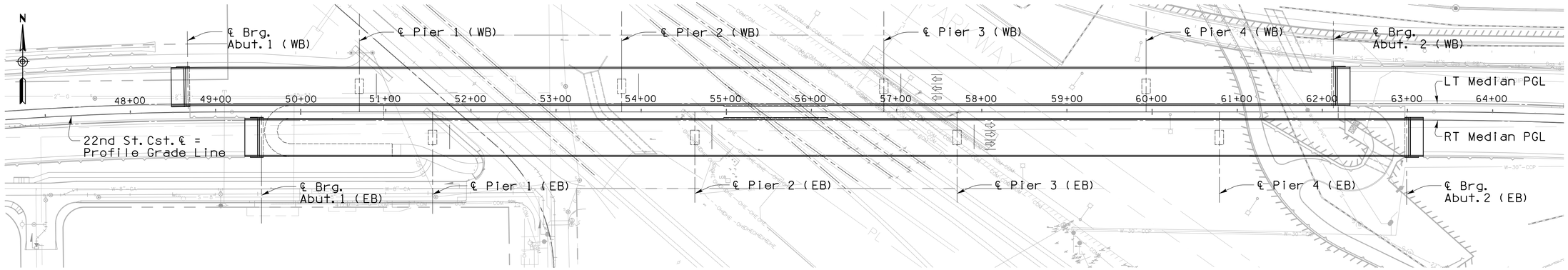

PLAN
1" = 60'
New Twin 5 Span Cast-in-Place Concrete Post-Tensioned Segmental Bridge
No Skew

INDEX OF DRAWINGS

ADOT STANDARD DRAWINGS

SD 1.01	F-Shape Bridge Concrete Barrier & Transition (34")
SD 1.04	Combination Pedestrian-Traffic Bridge Railing
SD 2.01	Approach Slab Details
SD 5.01	Structural Excav. Payment Limits
SD 5.02	Structure Backfill Payment Limits

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Plan & Index of Drawings S-1.01 of S-1.78

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION
22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

208 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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GENERAL NOTES

A. SPECIFICATIONS

A1. Construction in accordance with the American Association Of State And Highway Transportation Officials (AASHTO) LRFD Bridge Construction Specifications, 3rd Edition, Pima Association of Governments (PAG) Standard Specifications and Special Provisions.

A2. Design in accordance with the American Association of State Highway and Transportation Officials (AASHTO). LRFD Bridge Design Specifications, 6th Edition.

A3. Bridge removal in accordance with Guidelines for Preparation of a Bridge Demolition and Removal Plan for Structures over Railroad and Special Provisions.

B. LOADINGS

B1. Permanent Loads:

B1.1 Concrete dead load: 0.150 kcf (includes weight of the reinforcing and prestressing steels).

B1.2 Superimposed dead load:
Barrier and railing 0.5 k/ft each side.
Overlay and future wearing surface: 0.040 ksf

B2. Live Loads: AASHTO loading class HL-93.

B3. Thermal: The forces included from a temperature rise of 30°F and a temperature fall of 40°F from a mean temperature of 70°F are accounted for in the superstructure. The coefficient of thermal expansion used is 0.000006 in/in/°F. The effect of temperature gradients per NCHRP Report 276 "Thermal Effects in Concrete Bride Superstructures." The Temperature gradients assumed for design are per Zone 1, for plain concrete surface.

B4. Creep and Shrinkage: Per the CEB-FIP Model Code 1990. The ambient relative humidity has been assumed to be 40%.

B5. Earthquake: Earthquake: Seismic Zone 1, Site Class D, PGA=0.074G

B6. Earth: Weight of soil: 0.130 kcf
Equivalent fluid pressure (Active): 0.035 kcf

B7. Differential Settlement limited to 1 inch.

B8. Wind: Base wind velocity of 100 mph.

C. MATERIALS

C1. Concrete:

C1.1 Concrete minimum 28 days compressive strength:
Superstructure box girder ..... f'c = 6.0 ksi
Piers, Barriers and Drilled Shaft Caps ..... f'c = 4.0 ksi
Drilled Shafts, Abutments, Wingwalls
and all other concrete ..... f'c = 3.5 ksi

C1.2 Superstructure concrete stresses (service limit state)

Allowable tension $0.095\sqrt{f'c}$ (ksi)
Allowable compression per AASHTO LRFD.

C1.3 Segment construction and casting:
Minimum concrete strength prior to stressing transverse, and longitudinal post-tensioning, releasing formwork and advancing travelers: 3.5 ksi., see also Post-Tensioning Notes.

C1.4 All concrete shall be class "S".

C1.5 All exposed corners shall be chamfered 3/4" unless shown otherwise on the plans.

C1.6 Construction Joints (Cst.Jt.) shall be made where shown on the plans. Additional joints shall be made only with the approval of the Engineer.

C2. Reinforcing Steel:

C2.1 Reinforcing steel shall conform to ASTM A615.
All reinforcing bars shall be furnished as Grade 60.

C2.2 All reinforcing steel shall have 2" clear cover for primary reinforcement and 1½" for stirrups, ties, and spirals unless otherwise noted.

C2.3 All bend dimensions for reinforcing steel shall be out-to-out of bars. All placement dimensions shall be to center of bars unless noted otherwise.

C2.4 Field adjustments shall be made only with the approval of the Engineer. Cut bars must have accompanying bars of the same size with the appropriate lap across the cut location. The shop drawings shall include any additions or rearrangement of reinforcing steel from that shown on the plans.

C2.5 Bar laps, hooks and bends shall have a minimum length in accordance with AASHTO, or as shown on the plans.

C3. Prestressing Steel:

C3.1 Prestressing steel strands shall conform to ASTM 416 (AASHTO M203), Grade 270, low relax strands.

D. DRAINAGE

D1. No drain inlets or pipes required in this structure.

E. RATING

E1. Inventory and operating ratings are in accordance with AASHTO Manual for Bridge Evaluation, 1st Edition 2008. In accordance with the Load and Resistance Factor Rating Method.
Inventory Rating - 1.16
Operating Rating - 1.50

F. CONSTRUCTION CLEARANCES

F1. Union Pacific Railroad (UPRR) Tracks:
12'-0" horizontal from centerline of track
21'-6" vertical from top of rail

F2. Vehicular Roads:
16'-0" vertical

G. MISCELLANEOUS NOTES

G1. The Contractor shall verify the locations of all utility lines and notify the respective owners before commencing excavation.

G2. Existing Bridge - The Contractor shall completely remove/demolish the existing 22nd Street Bridge (Structure #9011) in accordance with Project Special Provisions, Item 2020002 - Removal of Bridge.

G3. Contractor is required to obtain proper permits from UPRR prior to working in the UPRR right-of-way.

G4. Contractor is responsible for stability of structure during construction.

G5. All dimensions shown on the plans are measured horizontally or vertically unless noted otherwise. Dimensions shall not be scaled from plans.

G6. Profile grade elevations shown on the plans are finished elevations at the top of concrete deck.

G7. Barriers shall be constructed after all post-tensioning is complete, but prior to overlay placement. Barrier shall not be slip formed.

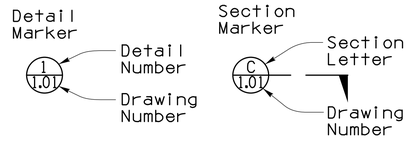
G8. Permanent deck forms are not allowed.

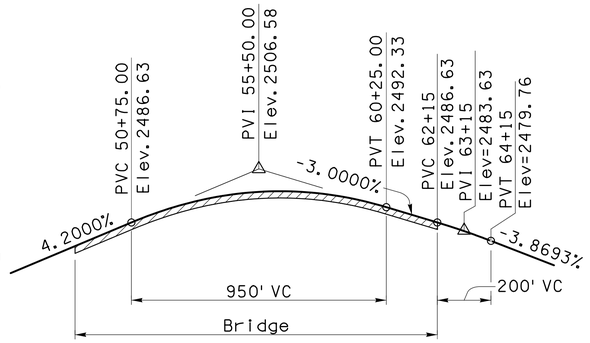
G9. Bearings shall be pot, disc or spherical and meet the requirements of the Special Provisions.

G10. Provisions have been made for the jacking of superstructure for replacement of bearings.

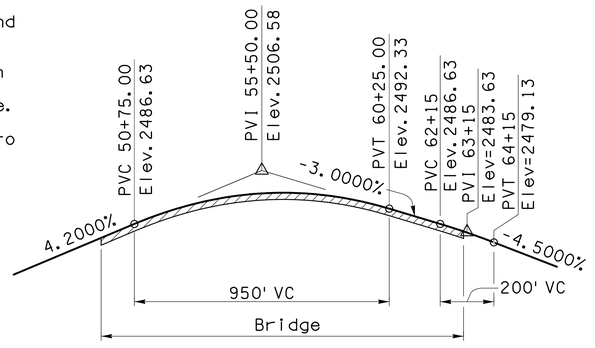
G11. Contractor shall take care in placement of the concrete under the joint support to ensure that proper consolidation is achieved. After placement the Engineer shall inspect the joint for voids. All voids shall be repaired by the Contractor by epoxy injection.

LEGEND:





LT. MEDIAN PROFILE GRADE (WB BRIDGE)
No Scale



RT. MEDIAN PROFILE GRADE (EB BRIDGE)
No Scale

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General Notes & Profile Grades — S-1.02 of S-1.78

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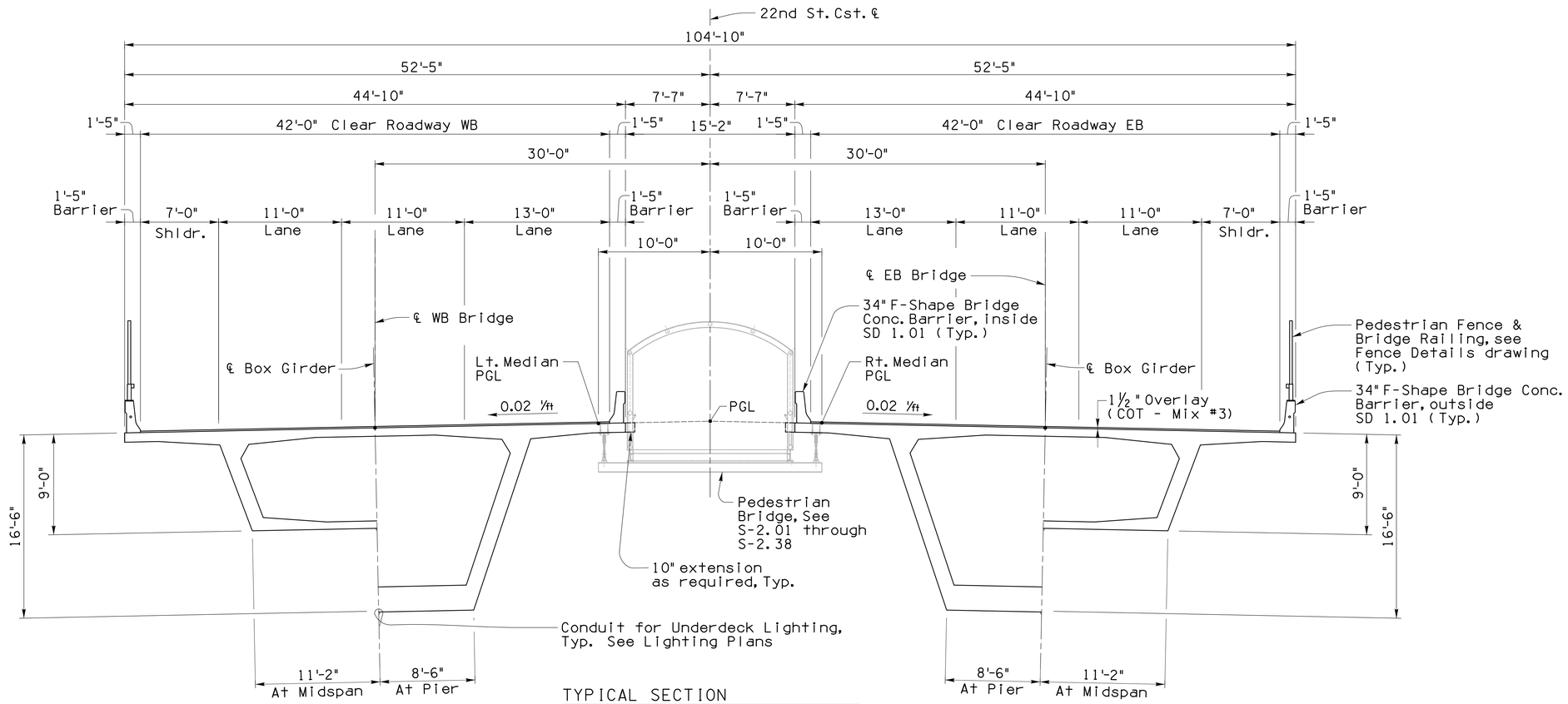
22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

209 of 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.	SCALE: N/A
DSGN. BY AO	06-18		
CHKD. BY CGP	06-18	PLAN NO.	1-2010-012



TYPICAL SECTION

3/16" = 1'-0"

APPROXIMATE BRIDGE QUANTITIES			EB BRIDGE									WB BRIDGE								
ITEM NO.	ITEM DESCRIPTION	UNIT	ABUT. 1	ABUT. 2	PIER 1	PIER 2	PIER 3	PIER 4	SUPER-STRUCTURE	TOTALS	AS-BUILT	ABUT. 1	ABUT. 2	PIER 1	PIER 2	PIER 3	PIER 4	SUPER-STRUCTURE	TOTALS	AS-BUILT
2020002	Remove Bridge	LS	-	-	-	-	-	-	-	1		-	-	-	-	-	-	-	-	
6010003	Struct. Conc. (Class S) (f'c=3,500 psi)	CY	469	422	-	-	-	-	-	891		385	527	-	-	-	-	-	912	
6010004	Struct. Conc. (Class S) (f'c=4,000 psi)	CY	-	-	290	296	298	317	-	1201		-	-	284	298	298	324	-	1,204	
6010008	Struct. Conc. (Class S) (f'c=6,000 psi)	CY	-	-	-	-	-	-	5,066	5,066		-	-	-	-	-	-	5,066	5,066	
6011133	Pedestrian Fence & Bridge Railing	LF	-	-	-	-	-	-	1,337	1,337		-	-	-	-	-	-	1,337	1,337	
6011140	F-Shape Bridge Conc. Barrier & Trans. (34")	LF	-	-	-	-	-	-	2,768	2,768		-	-	-	-	-	-	2,768	2,768	
6011355	Deck Joint Assembly (Modular Expansion Joint)	LF	-	-	-	-	-	-	90	90		-	-	-	-	-	-	90	90	
6011371	Approach Slab (SD 2.01)	SF	673	673	-	-	-	-	-	1,346		673	673	-	-	-	-	-	1,346	
6015201	High Load Multi-rotational Brgs. (Non-Guided)	EA	2	2	-	-	-	1	-	5		2	2	-	-	-	1	-	5	
6015202	High Load Multi-rotational Brgs. (Guided)	EA	-	-	-	-	-	1	-	1		-	-	-	-	-	1	-	1	
6020001	Prestressing C. I. P. Conc.	LS	-	-	-	-	-	-	1	1		-	-	-	-	-	-	1	1	
6050002	Reinforcing Steel	LBS	42,420	38,645	41,650	44,715	46,270	39,595	917,540	1,170,835		34,050	47,680	39,660	46,490	46,745	41,795	917,610	1,174,030	
6090120	Drilled Shaft Foundation (120")	LF	-	-	184	192	186	182	-	744		-	-	184	192	182	182	-	740	

Notes:

1. The cost of structural excavation & structure backfill is incidental to the abutment and pier concrete.
2. For information only: Approx. Weight of Longitudinal Prestressing Steel Strand (EB) = 302,915 lbs.
   Approx. Weight of Longitudinal Prestressing Steel Strands (WB) = 302,915 lbs.
   Approx. Weight of Transverse Prestressing Steel strand (EB) = 67,410 lbs.
   Approx. Weight of Transverse Prestressing Steel strand (WB) = 67,410 lbs.

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Typical Section & Quantities

S-1.03 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

210 OF 474

CITY OF TUCSON

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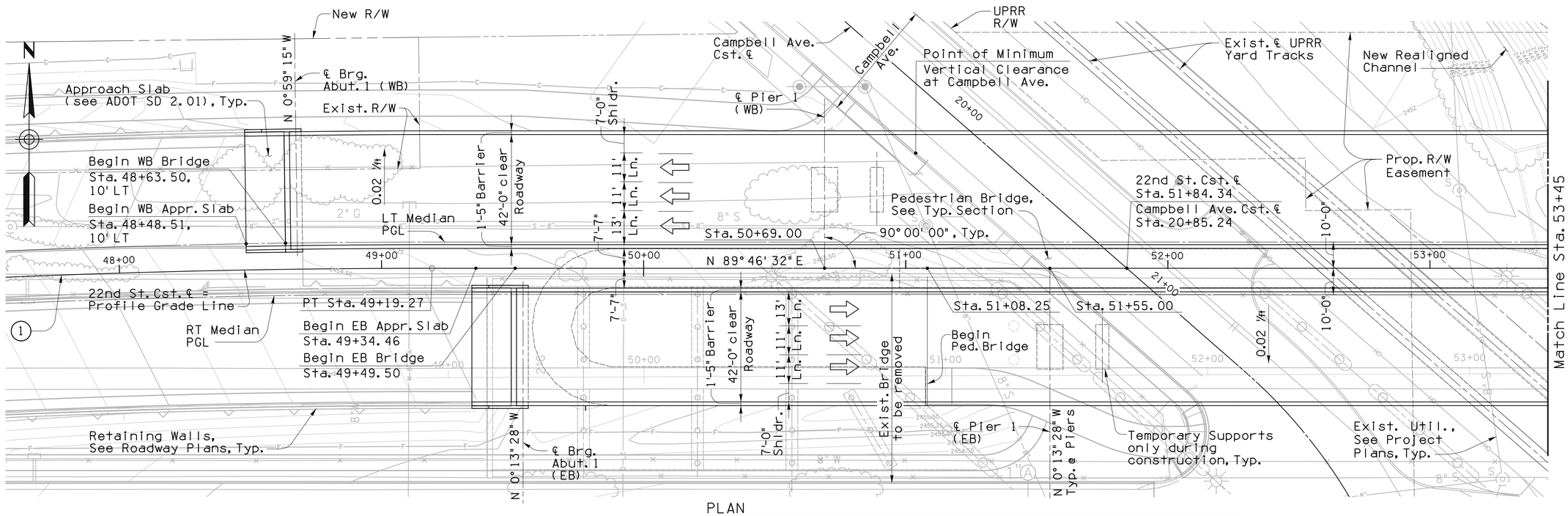
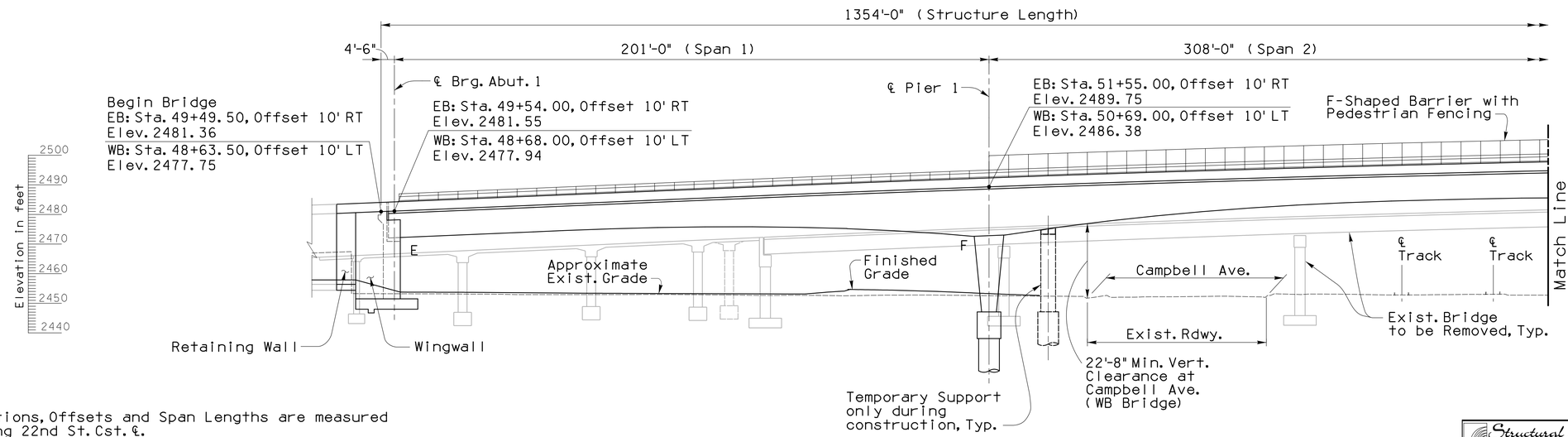


PLAN
1" = 20'
New 5 Span Cast-in-Place Concrete Post-Tensioned Segmental Bridge
Contour Interval = 1 ft.

Curve Data (1)
R = 3,850.00'
△ = 4° 58' 11"
L = 333.95'
T = 167.08'



ELEVATION (EASTBOUND SHOWN, WESTBOUND SIMILAR)
1" = 20'

Notes:

1. Stations, Offsets and Span Lengths are measured along 22nd St. Cst. ℄.
2. Elevations are measured along the Right Median PGL for the Eastbound Bridge.
3. Elevations are measured along the Left Median PGL for the Westbound Bridge.
4. See Sheet S-1.13 for track alignment and spacing.

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Plan & Elevation - 1 S-1.04 of S-1.78

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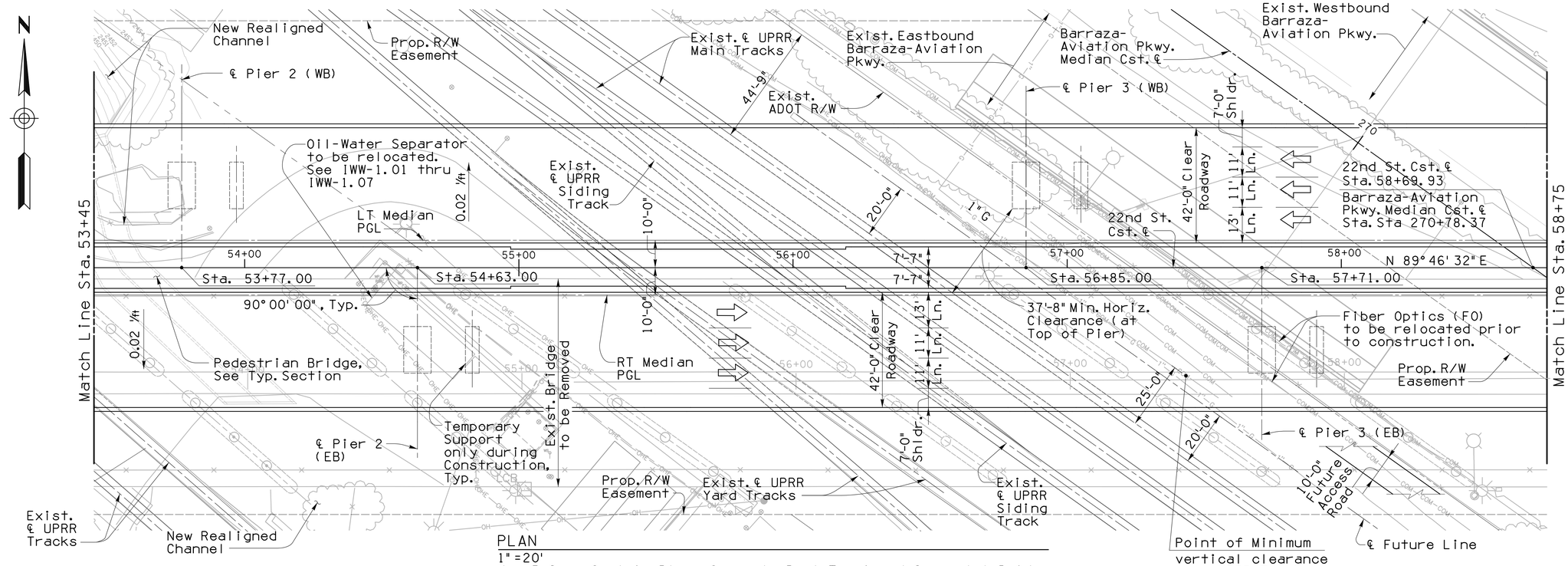
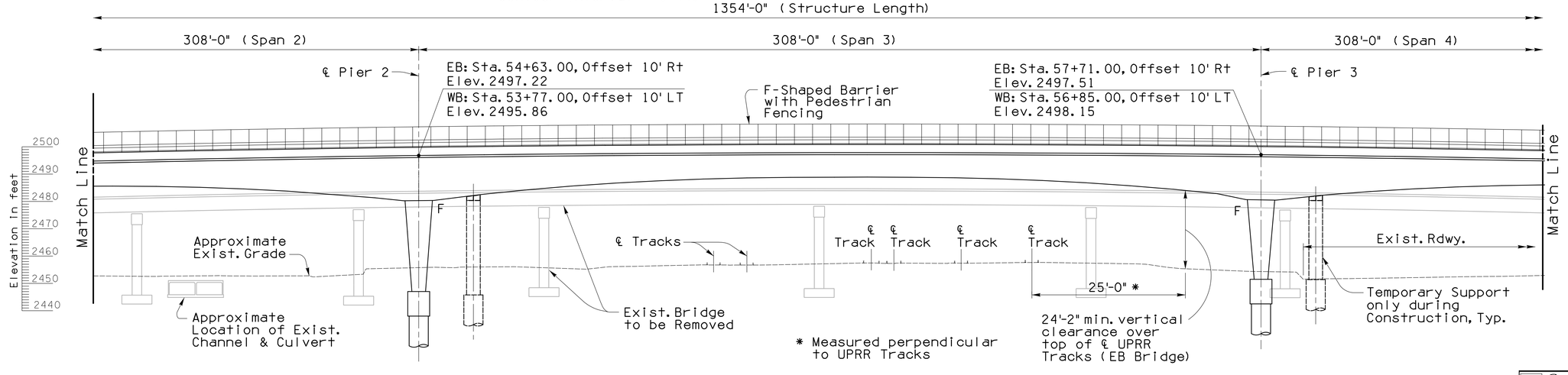


PLAN
1" = 20'
New 5 Span Cast-in-Place Concrete Post-Tensioned Segmental Bridge
Contour Interval = 1 ft.



* Measured perpendicular to UPRR Tracks

ELEVATION (EASTBOUND SHOWN, WESTBOUND SIMILAR)
1" = 20'

Notes:

1. Stations and Offsets are measured along 22nd St. Cst. ℄.
2. Elevations are measured along the Right Median PGL for the Eastbound Bridge.
3. Elevations are measured along the Left Median PGL for the Westbound Bridge.

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Plan & Elevation - 2 S-1.05 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

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CITY OF TUCSON

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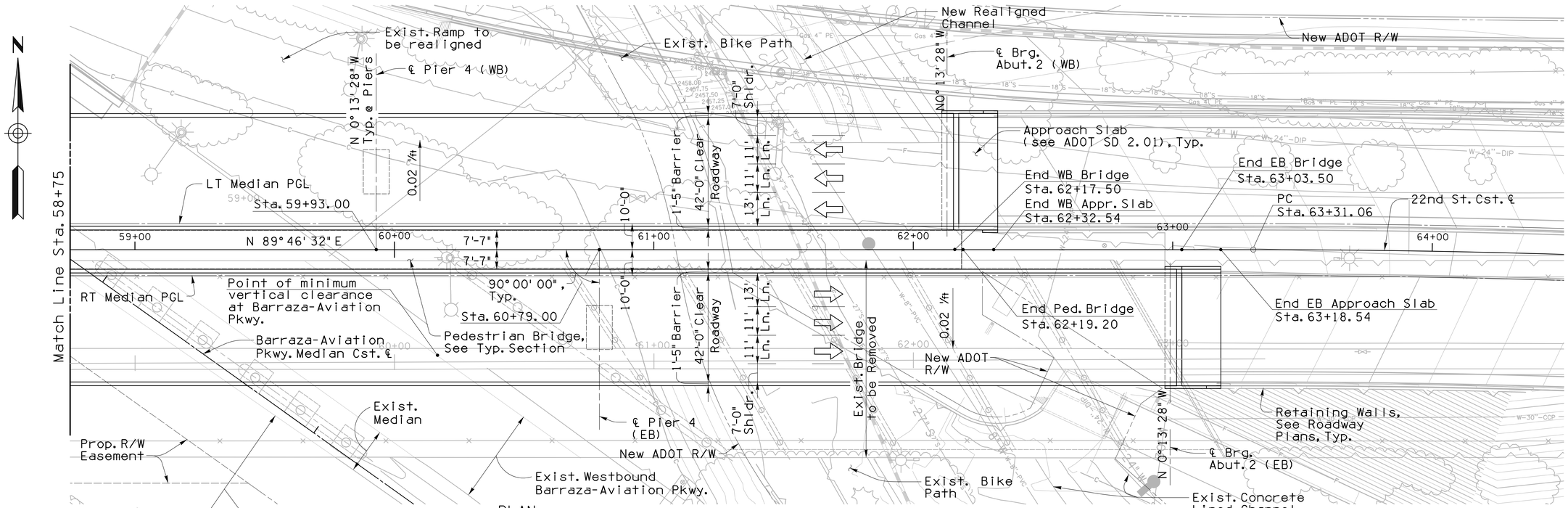
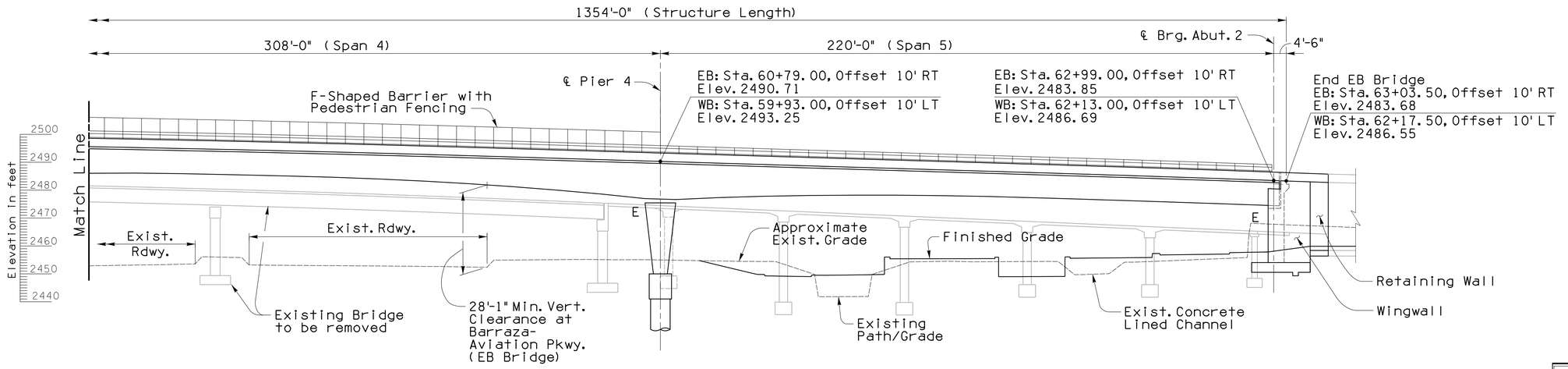


PLAN
1" = 20'
New 5 Span Cast-in-Place Concrete Post-Tensioned Segmental Bridge
Contour Intervals = 1 ft.



ELEVATION (EASTBOUND SHOWN, WESTBOUND SIMILAR)
1" = 20'

Notes:

1. Stations and Offsets are measured along 22nd St. Cst. ℄.
2. Elevations are measured along the Right Median PGL for the Eastbound Bridge.
3. Elevations are measured along the Left Median PGL for the Westbound Bridge.

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Plan & Elevation - 3 S-1.06 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

213 OF 474

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POST-TENSIONING NOTES

1. See the General Notes.
2. Post-Tensioning characteristics assumed for design are:
   Friction Coefficient = 0.25 Low Relaxation Strand
   Wobble Coefficient: k = 0.0002/ft
   Anchor Set - ¼ in for longitudinal multi-strand tendon
   ¼ in for transverse mono strand tendon
   Modulus of Elasticity, Es = 28,500 ksi
   Area of Strand, As = 0.217 sq.in.
3. Jacking Stress assumed for design = 75% of the guaranteed ultimate tensile strength (guts) of the strands.
4. Alternative sizes and types of tendon will be permitted per the Special Provisions; except that loop tendons will not be permitted.
5. The Contractor shall design the tendon anchorage hardware, and supplementary reinforcement included in this local zone, including spirals for confinement of concrete, if required, subject to the approval of the Engineer. The Contractor shall submit test data demonstrating the suitability of the proposed hardware to the Engineer for review.
6. The Contractor shall assume responsibility for the cutting or replacement of reinforcement which interferes with stressing and/or placing of tendons, subject to the approval of the Engineer. All cut bars must have an accompanying bar lapped across the cut.
7. Ducts for longitudinal tendons shall be galvanized corrugated metal of 24 gauge thickness, if greater than 2⅝ in. in diameter, and of 26 gauge thickness otherwise. Ducts for transverse tendons may be galvanized corrugated metal or high density polyethylene conforming to ASTM D3350, with spiral corrugations and walls 0.04 - 0.06 in. thick. Future post-tensioning ducts shall be of size and type indicated on Future Post-Tensioning Details drawings.
8. Ducts shall be installed with mandrels and thoroughly tied to the reinforcement cages to prevent misalignment during concreting. Longitudinal ducts shall be supported at not less than 4' intervals and transverse ducts shall be supported at not less than 2' intervals.
9. Concrete must attain a minimum strength (f'ci) of 3.5 ksi before tendons are stressed, increase if required by post-tensioning supplier.
10. Transverse tendons in any segment shall be stressed before the longitudinal tendons in that segment. Except for the tendon closest to the leading bulkhead which will be stressed to 50%. This tendon will be stressed the additional 50% with the adjacent segment.
11. The sequence of stressing of bottom slab tendons shall be as shown on the construction sequence drawings.
12. Each pair of tendons to either side of the centerline of box girder shall be stressed prior to moving to the next pair of tendons.
13. Forms and falsework shall not interfere with stressing, but shall permit the superstructure to lift and shorten.
14. Tendons shall be grouted per the Special Provisions.
15. Duct vents shall be provided at anchorages, and high and low points of tendon profiles where applicable.
16. Construction personnel shall not stand directly behind or above jacks or dead end anchors during stressing.
17. All anchorages and tendons shall be permanently protected from corrosion in accordance with project requirements.

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Post-Tensioning Notes S-1.07 of S-1.78

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SUPERSTRUCTURE CONSTRUCTION NOTES:

1. The notes on this drawing are applicable to the assumed Construction Sequence - 1, and Assumed Construction Sequence - 2 drawings that follow. Additional information regarding maintenance of traffic during construction can be found on Traffic Control Plans and Construction Phasing Plans.

2. The information shown on the assumed Construction Sequence 1 & 2 drawings illustrate the assumptions made by the Engineer of Record during design of the structure and is valid for EB & WB structures. Information shown is for information only. The Contractor is responsible for selecting the means and methods of construction, and shall submit details of these means and method to the Engineer for review. This shall include details of the construction sequence as well as supporting calculations showing the influence of the selected sequence, loads, and details on the structure, in accordance with the contract Plans and Special Provisions.

3. The Contractor shall be responsible for stability of the structure during construction with due consideration of the construction sequence assumed in design and his selected means and methods.

4. The Contractor shall be responsible for the design of falsework, formwork, and other temporary works in conformance with AASHTO and the requirements of the Standard Specifications and Special Provisions. Falsework removal for construction of the CIP superstructure shall be in accordance with the approved Construction Sequencing Contract plans and Special Provisions. Where applicable, falsework design and details shall also be in accordance with railroad requirements and shall provide at least the minimum temporary railroad clearances required during construction, as specified by the railroads. All other temporary clearances shall be met, and the Contractor is responsible for providing all specified clearances of the affected railroads, OSHA, ADOT, City of Tucson, and other governing agencies during construction. Erection over the Railroad's right-of-way shall be designed to not interrupt railroad operations and shall be developed to enable track(s) to remain open for Railroad traffic per Railroad requirements. Temporary tower foundations shall be removed to the limits specified in Foundation Notes, S-118. The quantity and characteristics of drainage flow in the yard shall be maintained in such a way as to avoid detrimental drainage impacts to the yard. The Contractor shall include the cost of meeting all requirements in the contract bid price.

5. Falsework shall span the Westbound Barraza Aviation Parkway and maintain a 2-lane configuration with a minimum vertical clearance of 16'-0", as per the Traffic Control Plans and Construction Phasing Plans, and in accordance with the contract plans and Special Provisions. Falsework shall be protected from vehicle impact through the use of temporary barriers in accordance with AASHTO requirements.

6. The bridge piers have NOT been designed to resist the out-of-balance loads during cantilever construction. Therefore, a stability support(s)(temporary tower support) and counterweights are required to maintain stability of the cantilevers during cantilever construction. The Contractor is responsible for determining the location and loads acting on the support(s) based on his selected means and methods, and for the design of these supports and their foundations, for additional reinforcing needed in the superstructure at the support(s) location(s) and all other details associated with use of the support(s) in construction. In addition, the Contractor is responsible for determination of counter-weight needs based on his selected means and methods, and for determination of the size and locations of the counterweights on the structure at all stages and phases of construction.

7. The Contractor is responsible for checking the adequacy of the structure and providing any additional reinforcing and/or other modifications needed to resist construction loads. Additional strengthening of the superstructure at the location of the temporary tower may be required and is the responsibility of the Contractor. No additional payment will be made for this additional reinforcing and/or other modifications to the structure. The cost of any additional reinforcing and/or other modifications to the structure to accommodate the Contractor's selected means and methods shall be included in the contract bid price.

8. Prior to any closure pour the tip of each cantilever each side of closure must be prevented from any relative displacement or rotation by utilizing strongback.

9. All transverse tendons shall be stressed prior to removing any formwork.

10. For existing clearances to railroad tracks, see Railroad Clearances, S-1.13.

11. For additional information related to the construction near railroad tracks, see Superstructure Construction - UPRR Clearances drawing, S-1.11.

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Superstructure Construction Notes

S-1.08 of S-1.78

Structural Grace, Inc
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Tucson, AZ 85719 (520) 320-0156

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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

215 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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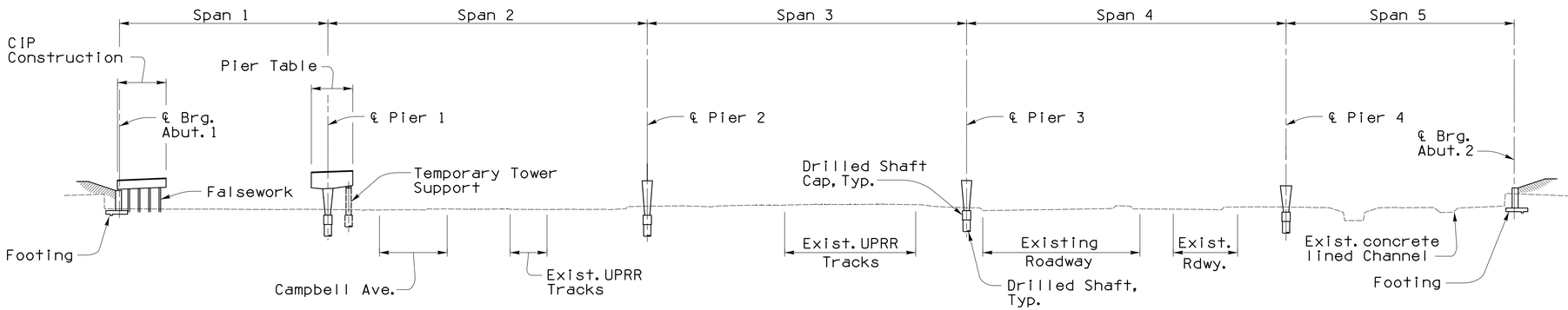
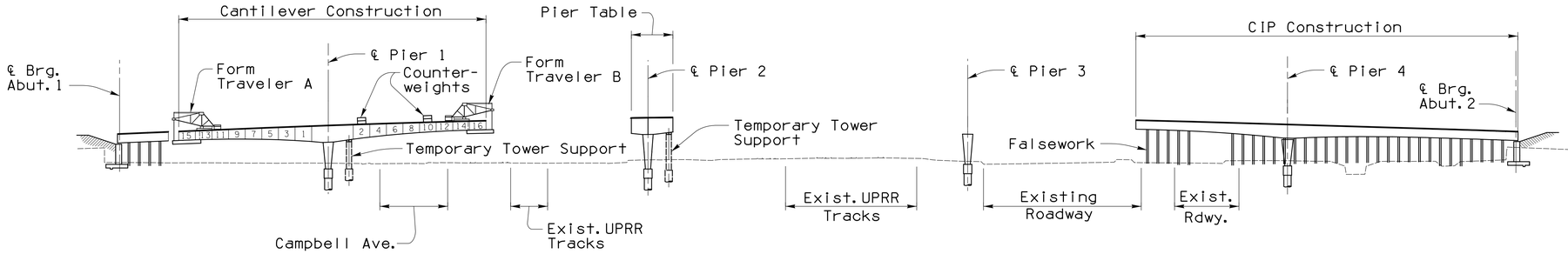
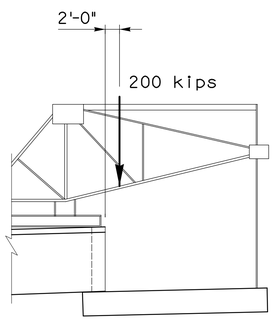


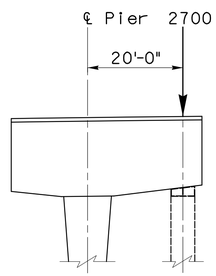
STAGE I
No Scale



STAGE II
No Scale



FORM TRAVELER WEIGHT
(ASSUMED FOR DESIGN)
No Scale



APPROX. MAX. TEMPORARY TOWER SUPPORT REACTION
No Scale

* For bidding purposes only, See Note 6, S-1.08.

STAGE I

1. Construct Drilled Shafts.
2. Construct Footings for Abutments and Drilled Shaft Caps for Piers.
3. Construct Piers and Pier Table Pier 1 and erect Temporary Tower Support.
4. Construct Abutments. See Backfill requirements, S-1.22.
5. Stress Transverse Tendons and Top Slab Tendons in Pier Table Pier 1 per Post-Tensioning Notes and Top Slab Tendon Layout dwgs.
6. Erect Falsework in Span 1. Work on falsework is independent from the cantilever construction.
7. Cast portion of Span 1 on falsework. CIP on falsework is assumed to be constructed such that the closure at Span 1 commences after segment 15 of Pier 1 is cast.

STAGE II

1. Erect form traveler A and B at Pier 1.
2. Cast Cantilever Segment 1.
3. Stress Transverse Tendons and Top Slab Tendon when concrete has reached required strength.
4. Advance form traveler A.
5. Cast Cantilever Segment 2.
6. Stress Transverse Tendons and Top Slab Tendon when concrete has reached required strength.
7. Advance form traveler B.
8. Continue casting segments in sequence shown and stressing Transverse Tendons and Top Slab Tendons when concrete has reached required strength. Apply Counterweight as needed (See Note on S-1.08).
9. Erect falsework and cast Span 5 and portion of Span 4 on falsework. CIP on falsework is independent from the cantilever construction. However, it must be completed at the time that Pier 3 cantilever construction is completed such that Span 4 closure can commence immediately after segment 16 is cast.
10. Construct Pier Table Pier 2 and erect Temporary Tower Support.
11. Stress Transverse Tendons and Top Slab Tendons in Pier Table Pier 2 per Post-Tensioning Notes and Top Slab Tendon Layout dwgs.

Assumed
Construction Sequence - 1 S-1.09 of S-1.78

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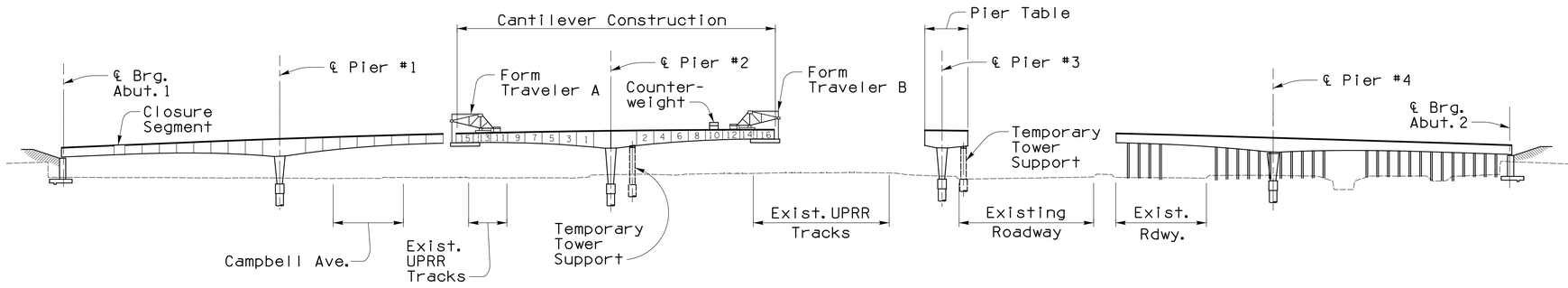
DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION
22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

216 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012



STAGE III
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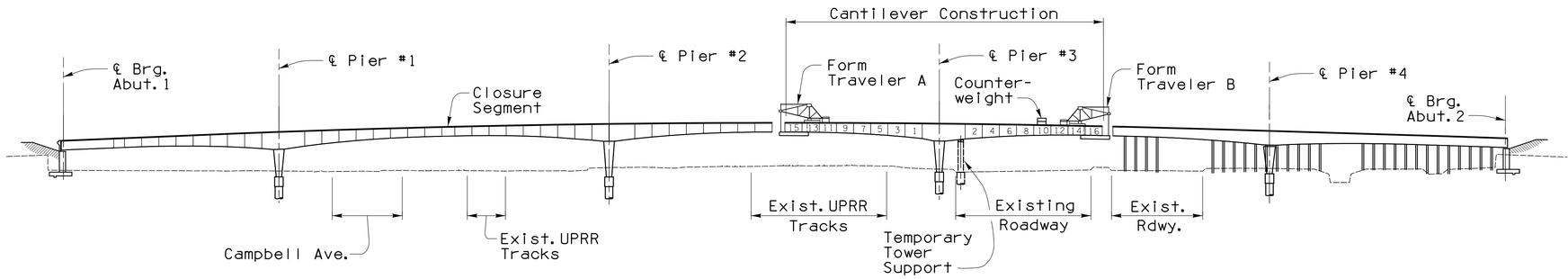
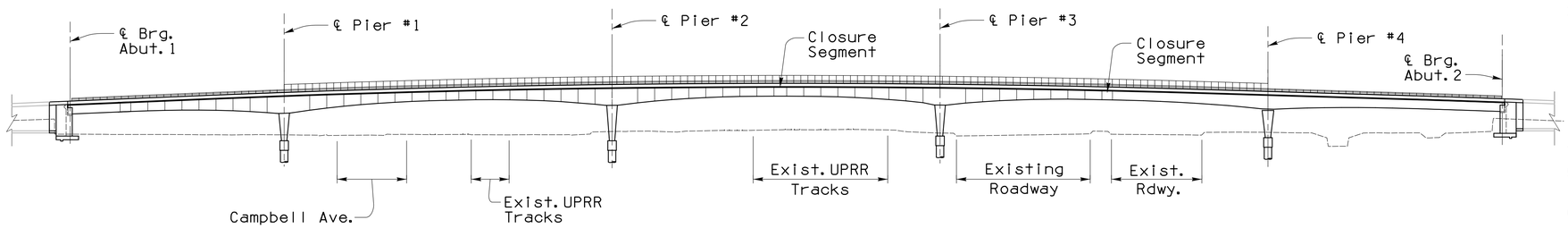


STAGE IV
No Scale



STAGE V
No Scale

STAGE III

1. Cast Closure Segment in Span 1. Stress transverse tendon in closure segment. Remove Counterweights and remove Form Traveler A and B from Pier 1 cantilevers. Stress Bottom Slab Tendons in Span 1 per Post-Tensioning Notes & Bottom Slab Tendon Layout dwgs. Remove temporary tower support after the first set of bottom slab tendons has been stressed. Remove falsework in Span 1 after all bottom slab tendons have been stressed.
2. Erect form traveler A and B at Pier 2.
3. Cast Cantilever Segment 1.
4. Stress Transverse Tendons and Top Slab Tendon when concrete has reached required strength.
5. Advance form traveler A.
6. Cast Cantilever Segments in sequence similar to construction of cantilevers for Pier 1.
7. Construct Pier Table Pier 3 and erect Temporary Tower Support.
8. Stress Transverse Tendons and Top Slab Tendons in Pier Table Pier 3 per Post-Tensioning Notes & Top Slab Tendon Layout dwgs.

STAGE IV

1. Cast Closure Segment in Span 2. Stress transverse tendons in closure segment. Remove Counterweights and remove form traveler A and B from Pier 2 cantilevers. Stress Bottom Slab Tendons in Span 2 per Post-Tensioning Notes & Bottom Slab Tendon Layout dwgs. Remove temporary tower support after the first set of bottom slab tendons has been stressed.
2. Erect form traveler A and B at Pier 3.
3. Cast Cantilever Segment in sequence similar to construction of cantilevers for Pier 2.

STAGE V

1. Stress Transverse Tendons and Top Slab Tendons over Pier 4 and Bottom Slab Tendons in Span 5. Remove falsework in Span 5 and portion of Span 4 after all bottom slab tendons have been stressed.
2. Cast Closure Segment in Span 4. Stress transverse tendons in closure segment. Remove Counterweights and Form Traveler B at Pier 3. Stress Bottom Slab Tendons in Span 4 per Post-Tensioning Notes & Bottom Slab Tendon Layout dwgs.
3. Cast Closure Segment in Span 3. Stress transverse tendons in closure segment. Remove Form Traveler A at Pier 3. Stress Transverse Tendons in closure segment and Bottom Slab Tendons in Span 3 per Post-Tensioning Notes & Bottom Slab Tendon Layout Dwgs. Remove temporary tower support after the first set of bottom slab tendons has been stressed.
4. Cast Barriers and Railings.
5. Erect steel pedestrian bridge between EB & WB Bridges. See S-2.01 through S-2.38.
6. Place overlay.

Assumed Construction Sequence - 2 S-1.10 of S-1.78

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

217 OF 474

CITY OF TUCSON

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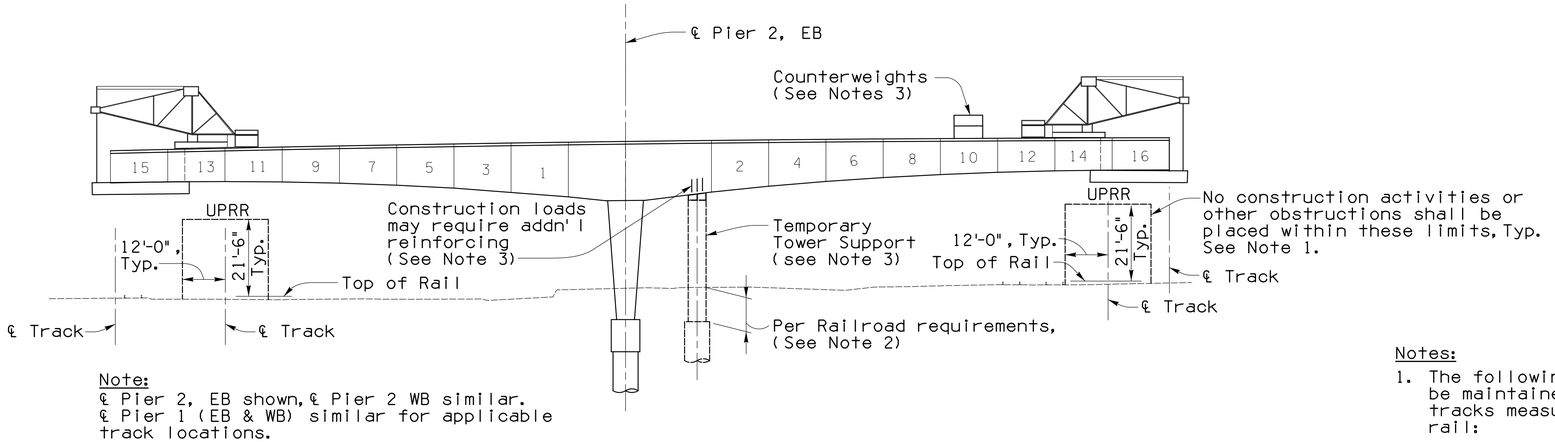
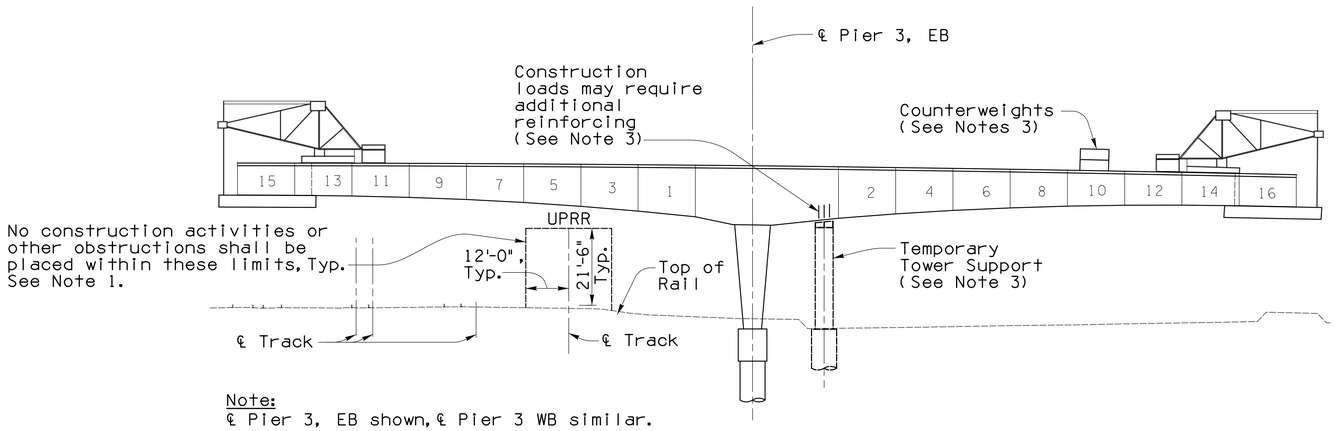


Note:
℄ Pier 2, EB shown, ℄ Pier 2 WB similar.
℄ Pier 1 (EB & WB) similar for applicable track locations.

MINIMUM CONSTRUCTION CLEARANCE ENVELOPE AT PIER 2, EB (NORMAL TO RAILROAD)
No Scale



Note:
℄ Pier 3, EB shown, ℄ Pier 3 WB similar.

MINIMUM CONSTRUCTION CLEARANCE ENVELOPE AT PIER 3, EB (NORMAL TO RAILROAD)
No Scale

Notes:

1. The following minimum railroad clearances shall be maintained at all times and for all UPRR tracks measured from centerline track and top of rail:

   Vertical clearance: 21'-6"
   Horizontal clearance: 12'-0"

   If Work within these limits requires temporary track closure or a variance from the affected railroad, the granting of such a variance shall be dependent on submittal of details and shall be at the sole discretion of the railroad.

   The Yard Road shall be maintained as directed by the Railroad Yard Masters.

2. See Construction over Railroad Notes S-1.12.
3. See Assumed Construction Sequence - 1 & 2, S-1.09 & S-1.10.

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Superstructure
Construction
UPRR Clearances

S-1.11 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

218 OF 474

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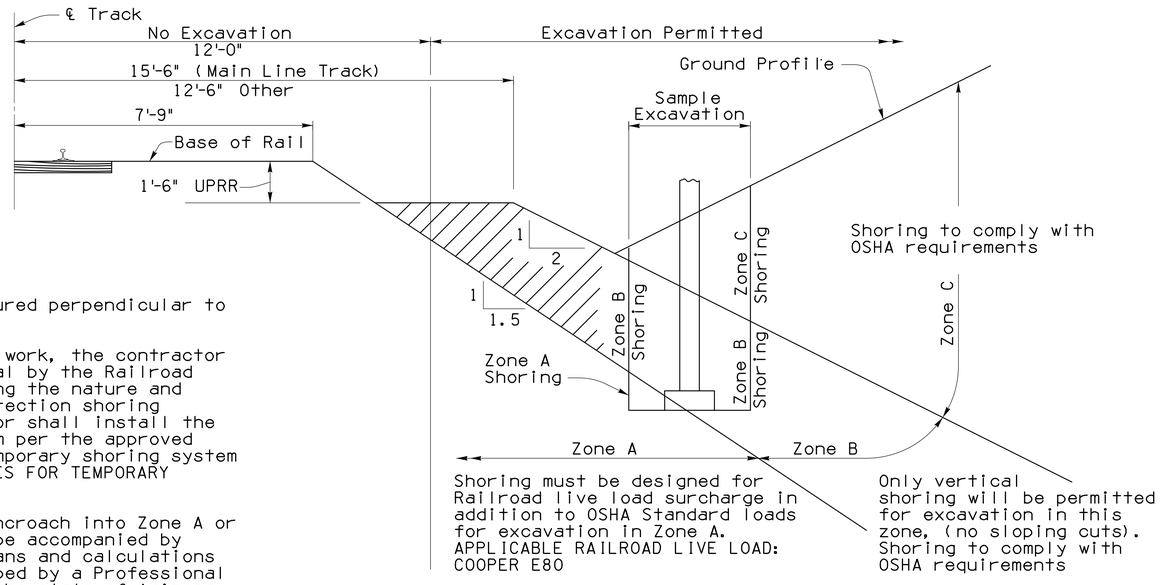

GENERAL EXCAVATION ZONES
No Scale

GENERAL SHORING NOTES:

1. All dimensions are measured perpendicular to ℄ Track.
2. Prior to commencing any work, the contractor shall submit for approval by the Railroad detailed plans indicating the nature and extent of the track protection shoring proposed. The contractor shall install the temporary shoring system per the approved plans. Design of the temporary shoring system to comply with GUIDELINES FOR TEMPORARY SHORING.
3. For excavations which encroach into Zone A or B, shoring plans shall be accompanied by design calculations. Plans and calculations must be signed and stamped by a Professional Engineer registered in the state of Arizona.

The requirements shown on this drawing depict some of the UPRR requirements for construction on, near, and over railroad property, tracks, and facilities. The Contractor is responsible for meeting all Railroad requirements as well as conforming to any and all safety or other requirements from other governing agencies, including, but not limited to OSHA, EPA, and others.

Construction impacts resulting from operations on, near, and over Railroad property, tracks, and facilities shall be considered by the Contractor and included in the contract bid price. Considerations shall include, but are not limited to, means and methods of construction, safety, Railroad coordination, temporary clearances, track closure requests, falsework (design, installation, and removal), shoring, access, staging, work time restrictions, maintenance of the Yard traffic, flagging, demolition, and others. The Contractor shall plan his work to be in accordance with the construction schedule given railroad requirements and construction on, near, and over Railroad property, tracks, and facilities.

RAILROAD GENERAL NOTES:

1. This drawing is a schematic depicting some of the UPRR requirements for construction within the railroad yard. See Assumed Construction Sequence - 1 & 2 & Superstructure Construction UPRR Clearances drawings and the project special provisions for additional requirements.
2. The Contractor shall follow all requirements for constructing within the railroad yard on railroad property, as shown on the contract drawings, contained in the Project Special Provisions, and in all manner communicated to the Contractor by the Railroad.
3. Top of rail elevations shall be verified by survey PRIOR TO BEGINNING CONSTRUCTION OF ANY PORTION OF THE STRUCTURE. This survey information shall be supplied to the Engineer and any discrepancies between the top-of-rail profile shown in the Contract Plans and as determined from the Contractor's survey resolved prior to beginning construction. The Contractor shall allow for a 30-day review period of the Contractor's top-of-rail survey information before beginning any bridge construction.
4. Railroad review and approval of shoring, erection, demolition, and falsework is required. Allow a minimum of four weeks for the review and approval of each submittal.
5. The proposed grade separation project shall not increase the quantity and/or characteristics of the flow in the Railroad's ditches and/or drainage structures.
6. The contractor must submit a proposed method of erosion and sediment control and have the method approved by the Railroad.
7. All shoring systems that impact the Railroad's operations and/or support the Railroad's embankment shall be designed and constructed per current Railroad Guidelines for Temporary Shoring.
8. All demolitions within the Railroad's right-of-way and/or demolition that may impact the Railroad's tracks or operations shall be in compliance with the Railroad's Demolition Guidelines.
9. Erection over the Railroad's right-of-way shall be designed to cause no interruption to the Railroad's operation, enabling the track(s) to remain open to traffic per the Railroad's requirements.
10. All construction phasing that may impact the Railroad operations shall be designed to cause no interruption to the Railroad's operation, enabling the track(s) to remain open to traffic per the Railroad's requirements.
11. Falsework required to construct the superstructure adjacent to and above tracks shall be in accordance with Railroad requirements, shall comply with minimum construction clearances and shall be submitted to the Railroad for review and approval prior to installation of falsework.
12. Top of temporary tower support foundation shall be constructed to an elevation a minimum of 6'-0" below final grade in accordance with railroad requirements.
13. Contractor shall coordinate construction of Piers and temporary tower supports with the Railroad. The yard road shall be maintained per the direction of the Yard Masters.
14. Minimum construction clearances shall be maintained at all times. See Superstructure Construction UPRR Clearances drawing. All permanent clearances shall be verified before project closeout.
15. Flaggers supplied by the Railroad shall be present at any time construction personnel or equipment are scheduled to be within 25'-0" of the centerline of a track. Under no circumstances shall construction personnel or equipment approach closer than 25'-0" to the centerline of a track without flaggers present.
16. Additional information for construction within the railroad yard is included in the Project Specifications and can be obtained from:
    UPRR/BNSF - Guidelines for Temporary Shoring
    Guidelines for Preparation of a Bridge Demolition and Removal Plan for Structures over Railroad.
    BNSF/UPRR - Guidelines for Railroad Grade Separation Projects
17. Any additional excavation and shoring required at the Piers to facilitate construction of temporary tower supports shall be considered incidental to Structural Excavation, Structure Backfill, and Shoring. Upon removal of temporary tower support, shoring shall be removed and excavation shall be backfilled properly with material matching that removed.
18. The Contractor shall provide a minimum of one foot-candle (or better) for temporary lighting to any yard area shaded by the construction. Temporary lighting shall remain in place as required until such time as permanent lighting is installed.
19. See the Project Special Provisions for Railroad coord. requirements. Call the following number at least 48 hours prior to commencing work: UPRR "Call before you dig" 1-800-336-9193.

Two working days before you dig CALL FOR THE BLUE STAKES 1-800-STAKE-IT Blue Stake Center CALL COLLECT

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Construction over Railroad Notes S-1.12 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

219 OF 474

CITY OF TUCSON

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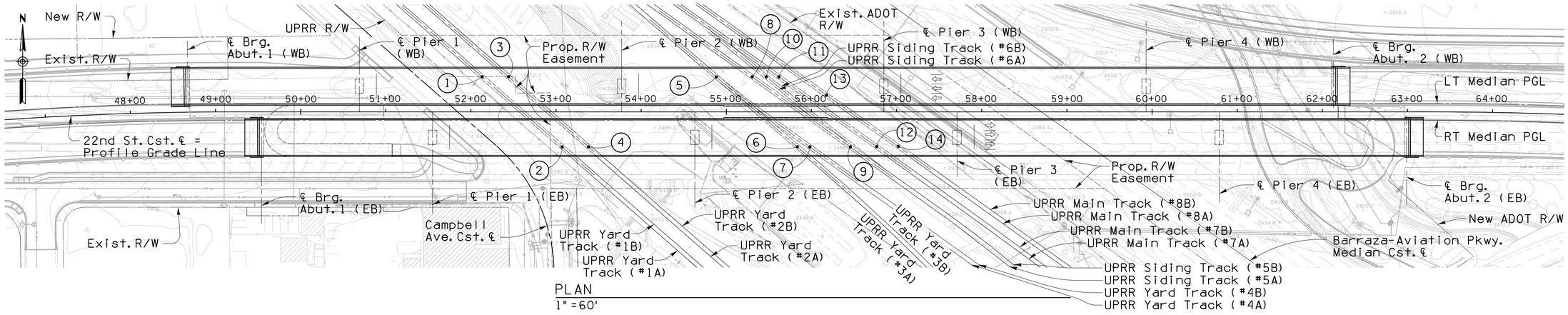
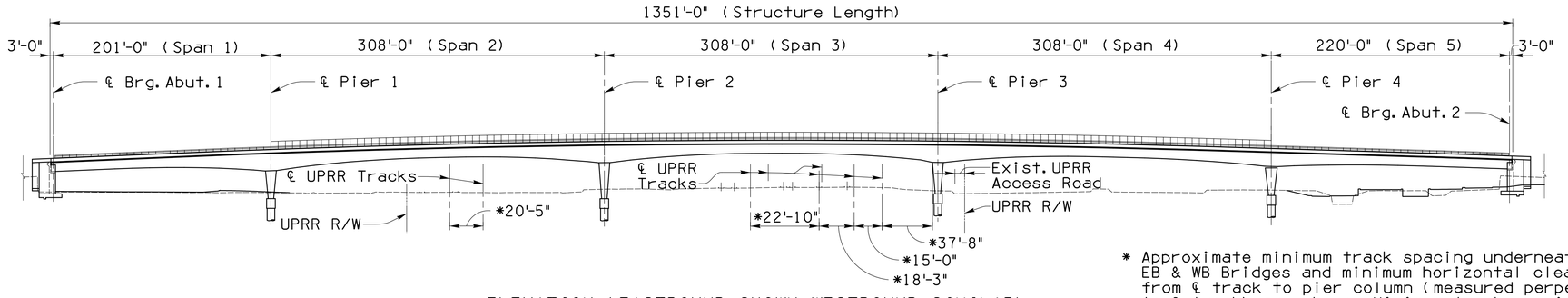


PLAN
1" = 60'



ELEVATION (EASTBOUND SHOWN, WESTBOUND SIMILAR)
1" = 60'

* Approximate minimum track spacing underneath EB & WB Bridges and minimum horizontal clearance from ℄ track to pier column (measured perpendicular to ℄ track) are shown. Minimum track spacing shown does not include tracks #4 or #6.

TOP OF RAIL ELEVATIONS AT CRITICAL POINTS

EXISTING UPRR TRACK NO.	DWG. PT. ID	ALIGNMENT: LEFT RAIL (B)		ALIGNMENT: RIGHT RAIL (A)		MIN. VERT. CLR. FROM TOP OF RAIL
		STATION	ELEVATION	STATION	ELEVATION	
TRACK #1	(1)	8+49.23	2453.23	9+03.55	2453.28	28'-8"
	(2)	9+74.20	2453.45	10+28.52	2453.43	31'-1"
TRACK #2	(3)	9+61.08	2453.44	8+72.88	2453.12	29'-5"
	(4)	9+97.73	2453.69	10+52.25	2453.68	31'-6"
TRACK #3	(5)	2+97.87	2456.62	2+97.42	2456.59	30'-9"
	(6)	4+23.67	2457.41	4+23.21	2457.46	30'-9"
TRACK #4	(7)	1+25.35	2457.35	1+34.57	2457.39	31'-0"
TRACK #5	(8)	10+90.51	2457.16	11+42.40	2457.21	29'-5"
	(9)	12+31.18	2458.01	12+84.07	2458.22	30'-2"
TRACK #6	(10)	1+27.50	2456.85	1+37.78	2457.06	31'-1"
TRACK #7	(11)	11+17.45	2457.02	11+67.81	2457.15	31'-0"
	(12)	12+58.60	2458.09	13+08.96	2458.12	29'-6"
TRACK #8	(13)	11+76.00	2457.50	12+25.42	2457.53	29'-5"
	(14)	12+79.43	2458.38	13+28.86	2458.40	27'-11"

STATIONING AT INTERSECTION OF 22ND ST. CST. ℄ & UPRR RAIL ℄

EXISTING UPRR TRACK NO.	LEFT RAIL		RIGHT RAIL	
	STATION AT 22ND CST. ℄	STATION ALONG RAIL	STATION AT 22ND CST. ℄	STATION ALONG RAIL
TRACK #1	52+63.97	9+14.54	52+56.41	9+63.17
TRACK #2	52+95.07	9+38.22	52+87.51	9+87.06
TRACK #3	55+39.80	3+63.79	55+32.26	3+57.63
TRACK #4	55+44.9	0+58.16	55+36.80	0+60.72
TRACK #5	55+92.19	11+64.81	55+83.68	12+09.76
TRACK #6	56+00.91	1+95.34	55+92.75	1+99.31
TRACK #7	56+23.62	11+91.73	56+15.08	12+35.14
TRACK #8	56+49.46	12+13.19	56+40.86	12+55.62

Notes:

1. Horizontal and vertical clearances are from ℄ track and top of rail, respectively. For temporary clearances required during construction, see Superstructure Construction UPRR Clearances and Construction Over Railroad Notes drawings.
2. Top of rail elevations shown shall be field verified. Any discrepancies shall be brought to the attention of the Railroad.
3. Railroad Milepost = 985.70 Gila Subdivision.

Drainage Note:
No drainage from the Structure will be discharged onto UPRR Right-of-way.

Two working days before you dig, CALL FOR THE BLUE STAKES 1-800-STAKE-IT Blue Stake Center CALL COLLECT

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Railroad Clearances S-1.13 of S-1.78

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220 OF 474

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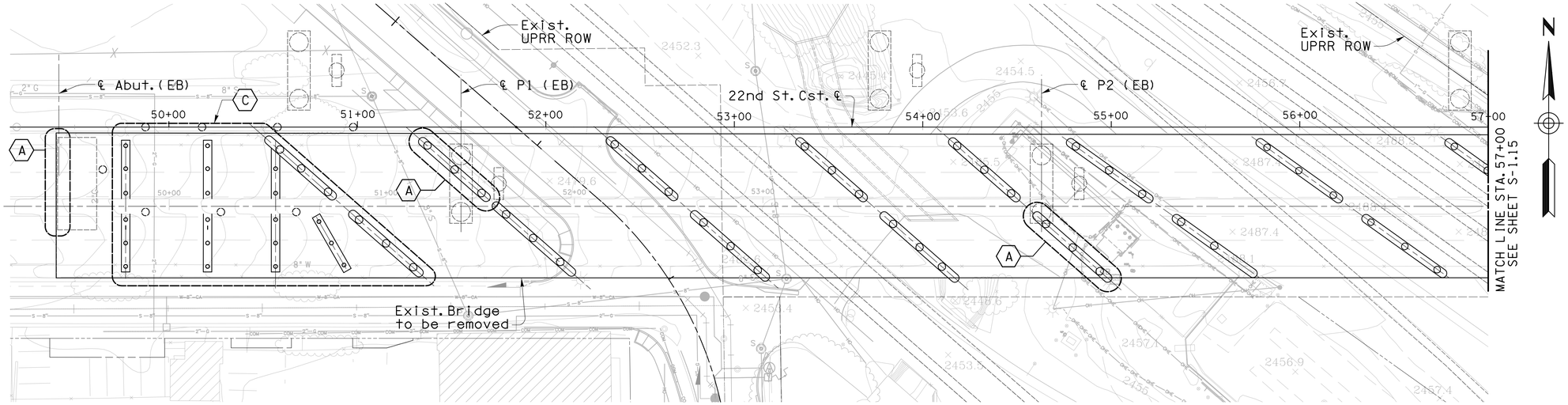


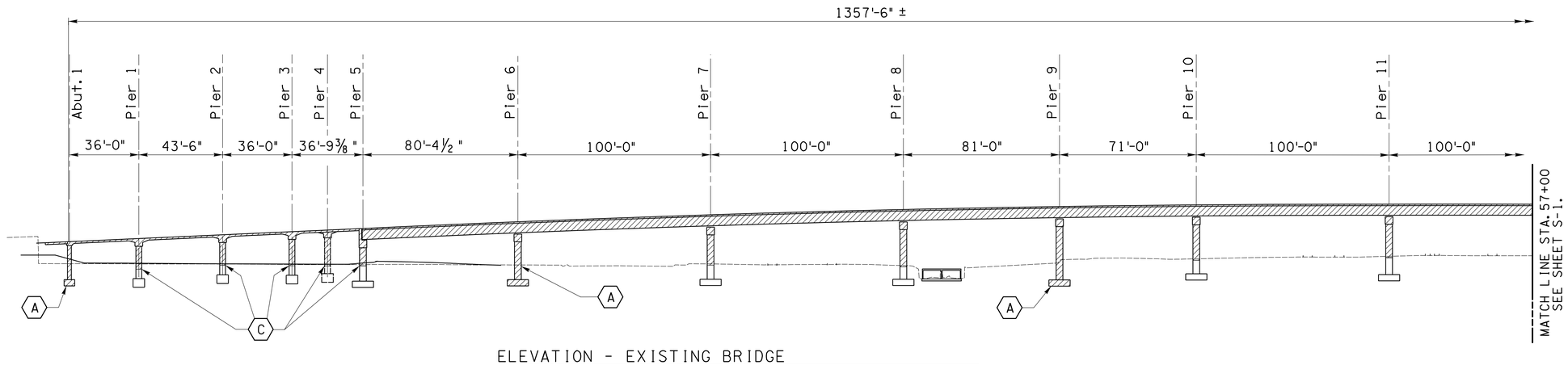
PLAN - EXISTING BRIDGE
Existing 21-Span Steel Girder & R.C. Slab Overpass
1"=30'

⬡ SUBSTRUCTURE REMOVAL KEYNOTES:

See S-1.15

BRIDGE REMOVAL NOTES:

See S-1.15



ELEVATION - EXISTING BRIDGE
1"=30'

Bridge Removal - 1 S-1.14 of S-1.78

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VEHICULAR BRIDGES

221 OF 474

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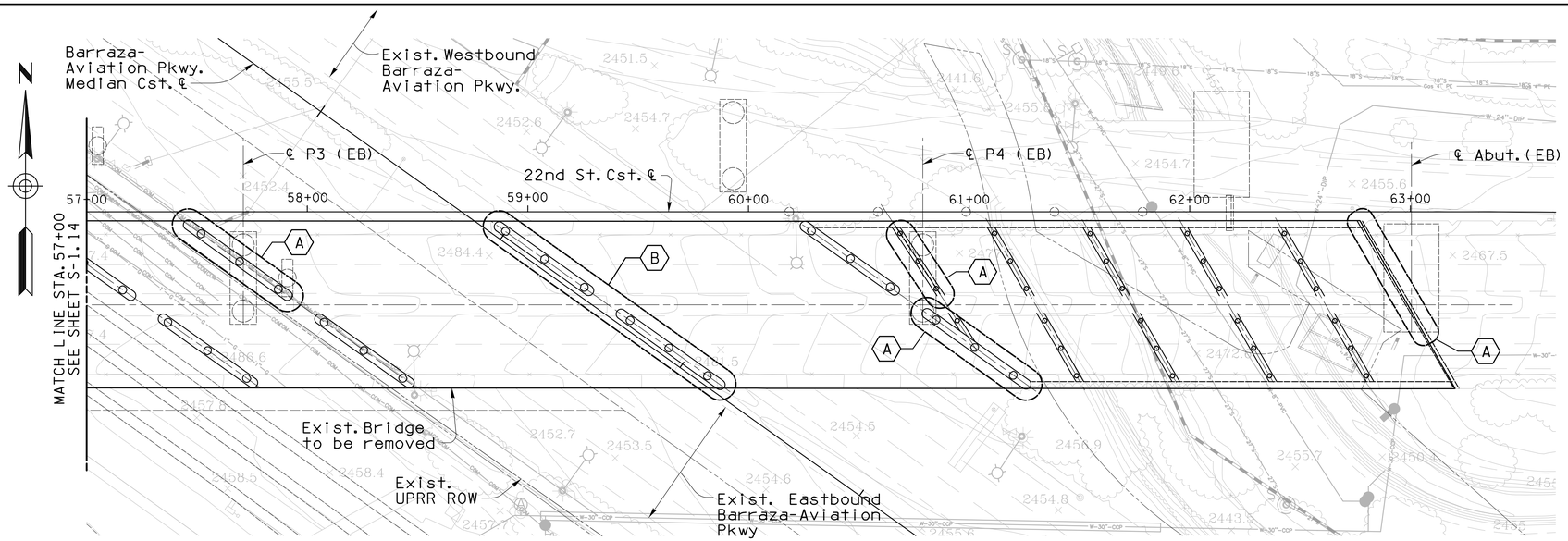
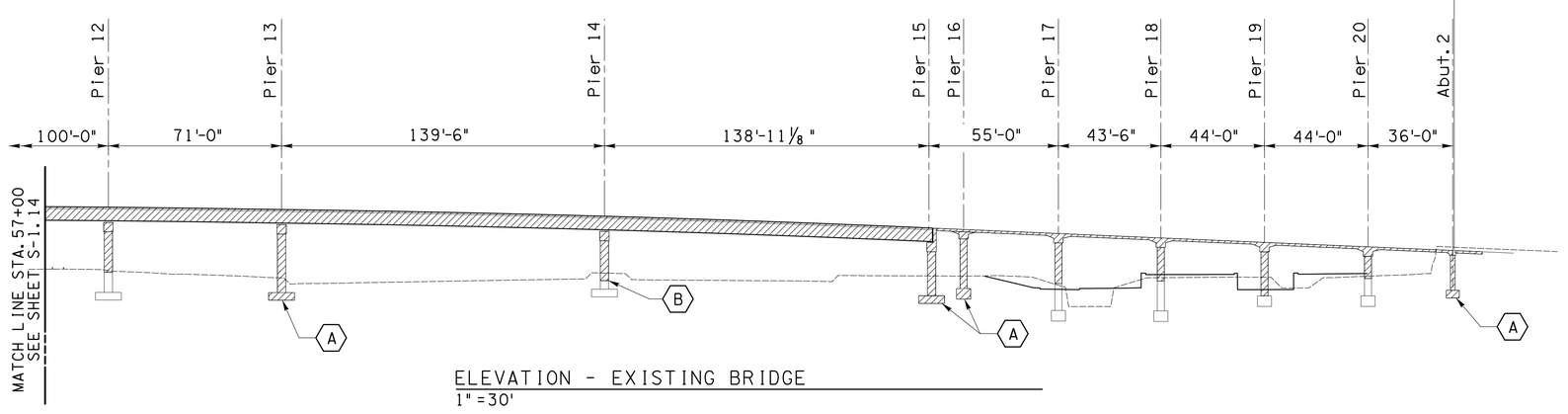


PLAN - EXISTING BRIDGE

Existing 21-Span Steel Girder & R.C. Slab Overpass

1" =30'



ELEVATION - EXISTING BRIDGE

1" =30'

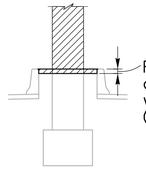
BRIDGE REMOVAL NOTES:

1. The Contractor shall verify the existing conditions prior to beginning the project. Utility information shown on the plans may not accurately depict all facilities or the location of the facilities shown. The Contractor shall coordinate the location of all existing and abandoned utilities with the project plans and notify respective owners before commencing the work of excavation. Conflicts shall be brought to the attention of the Engineer and resolved prior to proceeding with the work. See Foundation Plan S-1.18 & S-1.19 for approximate utility locations.
2. The Contractor shall submit a plan showing the proposed method and sequence of removal for review and approval by the Engineer prior to demolition. See Special Provisions, Item 2020002 for removal of Bridge requirements.
3. The Contractor shall review existing As-Builts for bridge details. See Special Provisions, Attachment C. Existing Bridge is City of Tucson East 22nd St. Overpass, Structure #9011 and is comprised of a separate EB and WB Structure.
4. Dimensions and elevations of existing structure are based on As-Built Plans.
5. The Contractor shall be responsible for verifying all existing dimensions, locations of conflicts with new structure foundations, etc., Stations and Elevations prior to proceeding with the work.
6. Demolition must comply with UPRR Guidelines and no demolition shall take place over the railroad tracks without approval of UPRR.
7. See Construction Phasing Plans and Traffic Plans for maintenance of traffic.
8. Contractor shall be responsible for temporary shoring as required. See temporary shoring notes on S-1.18.
9. For backfill requirements see Special Provisions.

⬡ SUBSTRUCTURE REMOVAL KEYNOTES:

A. Remove substructure entirely for existing piers that conflict with new substructure.

B. Existing Pier at BAP Median.



C. Remove existing pier to 1'-0" below finished grade and replace with D.G.

All other existing bridge foundation to be removed as follows:

a) Within UPRR right-of-way: At least 3 feet below finished grade or at least 2 feet below base of rail, whichever is greater, unless otherwise specified by the Railroad.

b) Outside UPRR right-of-way: At least 2 ft below existing grade or 3 feet below finished grade, whichever is greater, unless otherwise specified in the Project Special Provisions.

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Bridge Removal - 2 S-1.15 of S-1.78

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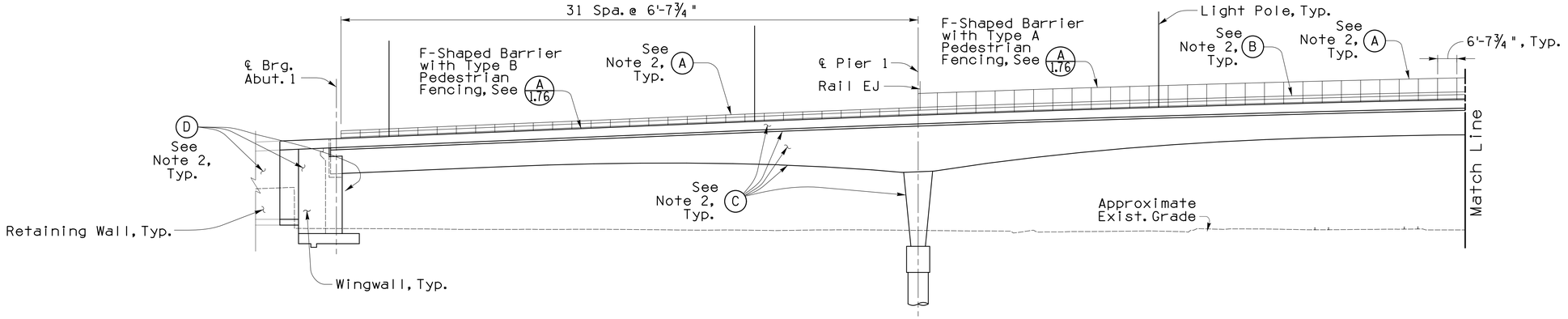
DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

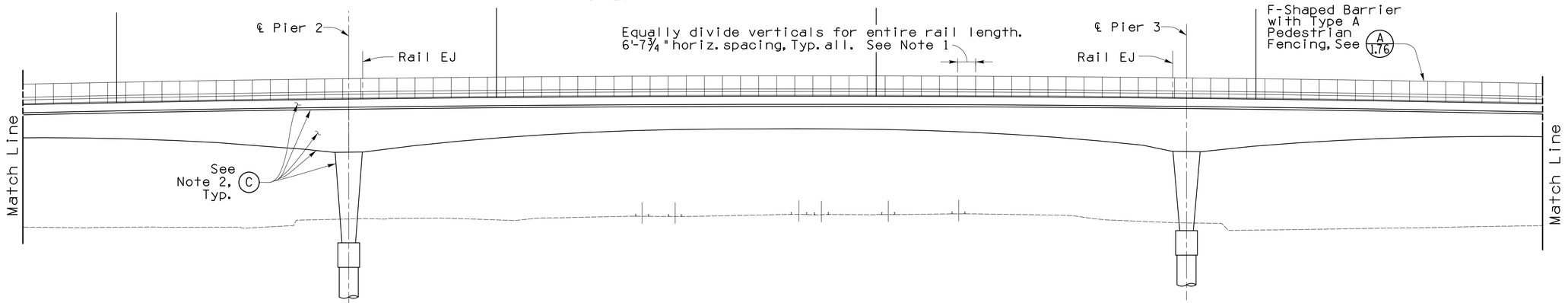
222 OF 474

CITY OF TUCSON

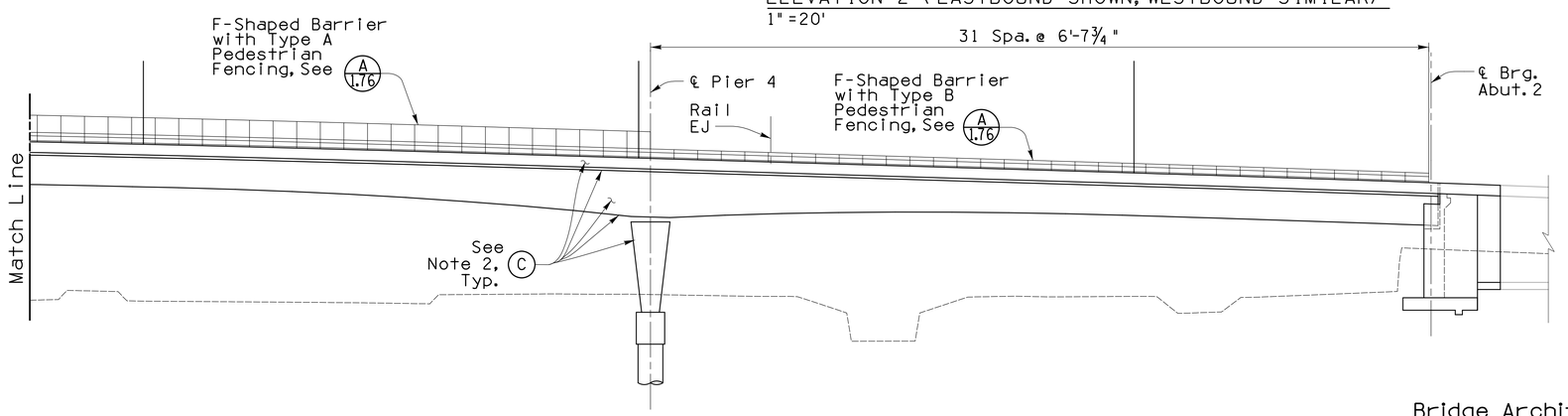
DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012



ELEVATION 1 (EASTBOUND SHOWN, WESTBOUND SIMILAR)
1"=20'



ELEVATION 2 (EASTBOUND SHOWN, WESTBOUND SIMILAR)
1"=20'



ELEVATION 3 (EASTBOUND SHOWN, WESTBOUND SIMILAR)
1"=20'

Notes:

1. Field verify pedestrian fence and bridge railing length after bridge construction and prior to final shop drawings approval.
2. See Finish Schedule on Sheet S-1.17. Finishes similar all 3 Elevation views EB & WB.

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Bridge Architecture - 1 S-1.16 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

223 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
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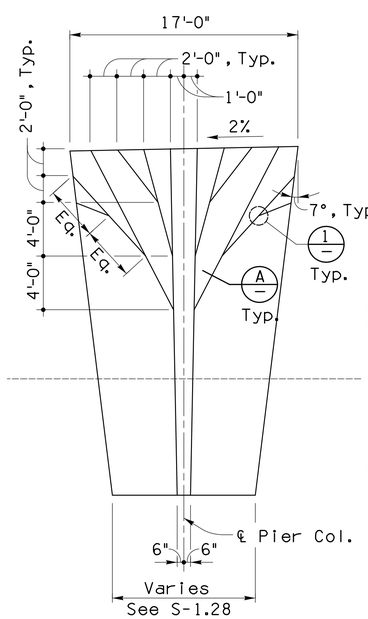
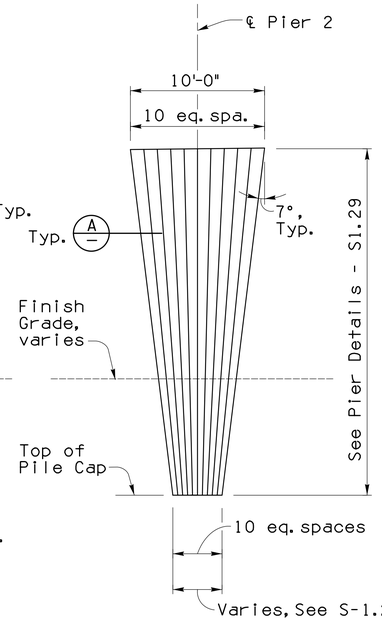
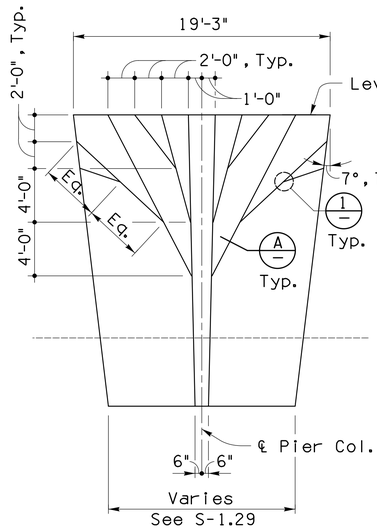
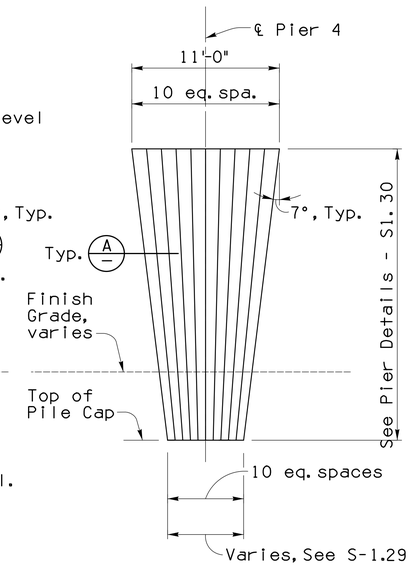




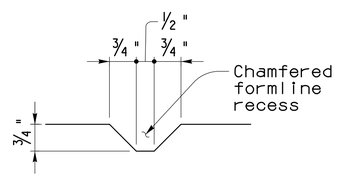




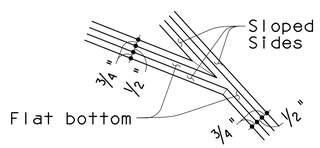
FORMLINES - EB PIERS 1,2 & 3 (PIER 2 SHOWN)(WB SIM.)
3/16" = 1'-0"

FORMLINES - EB PIER 4 (WB SIM.)
3/16" = 1'-0"

COLOR/MATERIAL PALETTE		
	FINISH SCHEDULE	NOTES
A	Steel Tube - Prime and Paint to match TMS Manufacturing - WC Richards Co. aluminum zinc rich 70% primer with final coat Pittsburgh Paints PPG 90-477/05 or approved equal.	
B	1-½" Expanded metal - Flatten, Prime and Paint to match TMS Manufacturing - WC Richards Co. aluminum zinc rich 70% primer with final coat Pittsburgh Paints PPG 90-477/05 or approved equal.	
C	Painted C.I.P. Concrete Box and C.I.P. Piers with Form-lines - Paint to match Pittsburgh Paints PPG 505-5 Birch Forest or approved equal	All surfaces except traffic side of Barrier and top of Bridge Deck
D	Painted C.I.P. Concrete Abutment Walls, Wingwalls, Roadway Retaining Walls and Traffic Barrier - Paint to match Pittsburgh Paints PPG 505-6 English Ivy or approved equal	All surfaces except traffic side of Barrier



CHAMFER FORMLINE (A)
No Scale



TYPICAL INTERSECTION DETAIL (1)
No Scale

Bridge Architecture - 2 S-1.17 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

224 OF 474

CITY OF TUCSON

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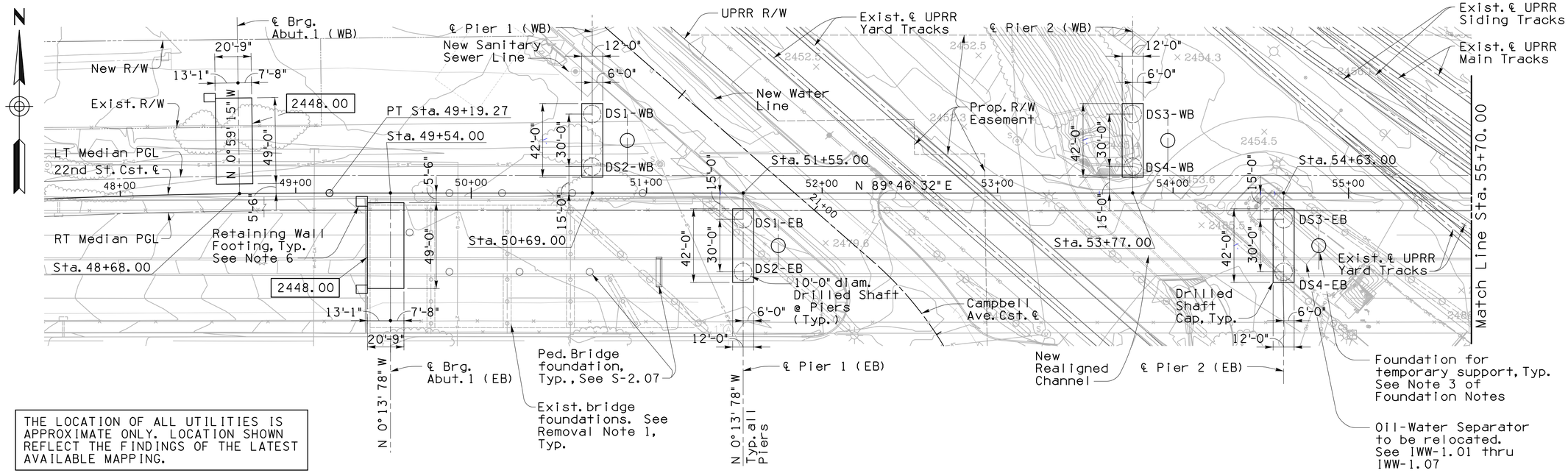

THE LOCATION OF ALL UTILITIES IS APPROXIMATE ONLY. LOCATION SHOWN REFLECT THE FINDINGS OF THE LATEST AVAILABLE MAPPING.

FOUNDATION PLAN
1" = 30'

REMOVAL NOTES:

1. Existing bridge foundations to be completely removed where conflict occurs between the new spread footing or drilled shafts or drilled shaft caps and the existing foundations. See Bridge Removal S-1.14 & S-1.15 for details.
2. See applicable plans for information on existing and new utilities.
3. Contractor shall be responsible for temporary shoring as required. See temporary shoring notes.

FOUNDATION NOTES:

1. XXXX.XX Indicates bottom of footing elevation.
2. The factored net bearing resistance at Abutment 1 is 6.13 ksf and at Abutment 2 is 5.48 ksf. See Project Geotech Report prepared by SCE Engineering, dated August 4, 2017 for subgrade preparation.
3. Contractor is responsible for the design of the temporary support foundations. See Superstructure Construction Notes and Construction Sequence drawings. Temporary support foundation to be removed as follows:
   a) within UPRR right-of-way: At least 3 feet below finished grade or at least 2 feet below base of rail, whichever is greater, unless otherwise specified by the Railroad.
   b) Outside UPRR right-of-way: At least 2 ft below existing grade or 3 feet below finished grade, whichever is greater, unless otherwise specified in the Project Special Provisions.
4. See S-1.19 for Drilled Shaft Schedule.
5. See S-1.21 for Drilled Shaft Cap details.
6. See S-1.27 for Retaining Wall Footing details.

TEMPORARY SHORING NOTES:

1. The Contractor shall be responsible for providing temporary shoring as required to maintain traffic, to protect utilities, for protection of workers, or as otherwise needed to accomplish the work. Shoring shall conform to the design and construction specifications in the General Notes and in accordance with current Railroad Guidelines for temporary shoring. For shoring systems that impact the Railroad operations and/or support the Railroads embankment, see also S-1.12.
2. Contractor to submit plan outlining construction procedures and shoring requirements and design to the Engineer for review and approval prior to proceeding with the work. See Standard Specifications and Special Provisions for additional information.
3. Payment for temporary shoring shall be incidental to the structural excavation.

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Foundation Layout - 1 S-1.18 of S-1.78

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CITY OF TUCSON

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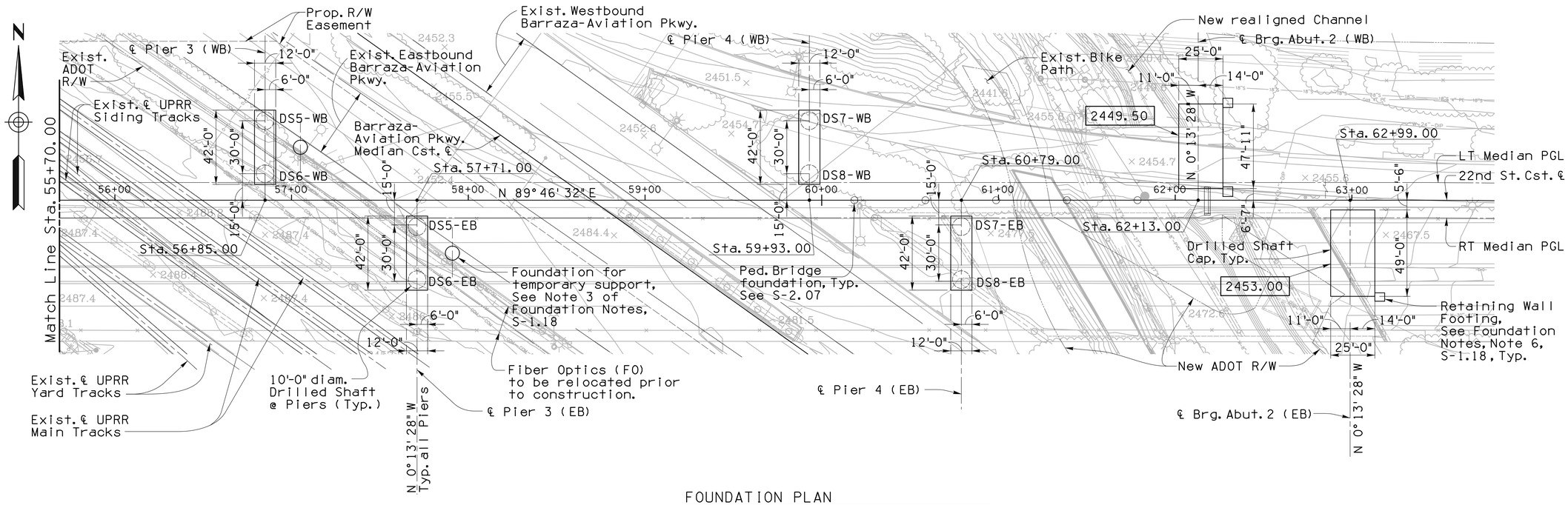

FOUNDATION PLAN
1" = 30'

DRILLED SHAFT SCHEDULE							
Bridge	Mark	Drilled Shaft Diameter (ft.)	Drilled Shaft Length (ft.)	Top Elev. (ft.)	Tip Elev. (ft.)	Factored Vertical Force (kips)	
						Load	Resistance
WB	DS1-WB	10'-0"	92	2440	2348	5700	5900
	DS2-WB	10'-0"	92	2440	2348	5700	5900
	DS3-WB	10'-0"	96	2443	2347	5890	6000
	DS4-WB	10'-0"	96	2443	2347	5890	6000
	DS5-WB	10'-0"	91	2438	2347	5820	6000
	DS6-WB	10'-0"	91	2438	2347	5820	6000
	DS7-WB	10'-0"	91	2441	2350	5630	6000
	DS8-WB	10'-0"	91	2441	2350	5630	6000
EB	DS1-EB	10'-0"	92	2441	2349	5700	5900
	DS2-EB	10'-0"	92	2441	2349	5700	5900
	DS3-EB	10'-0"	96	2443.5	2347.5	5890	6000
	DS4-EB	10'-0"	96	2443.5	2347.5	5890	6000
	DS5-EB	10'-0"	93	2439	2346	5820	6000
	DS6-EB	10'-0"	93	2439	2346	5820	6000
	DS7-EB	10'-0"	91	2444	2353	5610	5800
	DS8-EB	10'-0"	91	2444	2353	5610	5800

THE LOCATION OF ALL UTILITIES IS APPROXIMATE ONLY. LOCATION SHOWN REFLECT THE FINDINGS OF THE LATEST AVAILABLE MAPPING.

Note:
1. See Notes on Drawing S-1.18.

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Foundation Layout - 2 S-1.19 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

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CITY OF TUCSON

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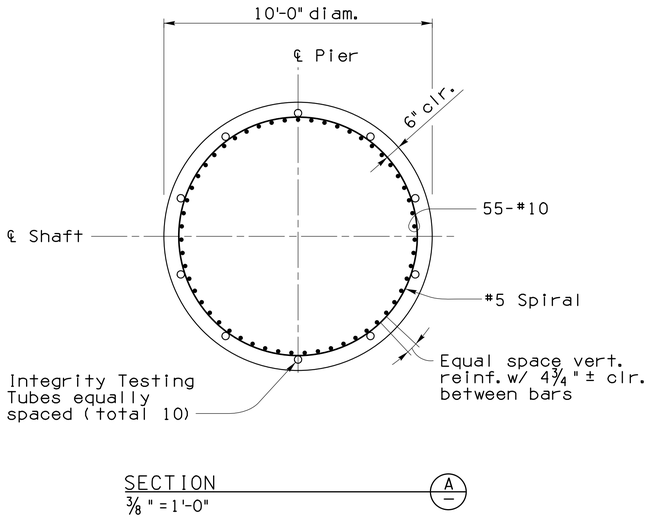
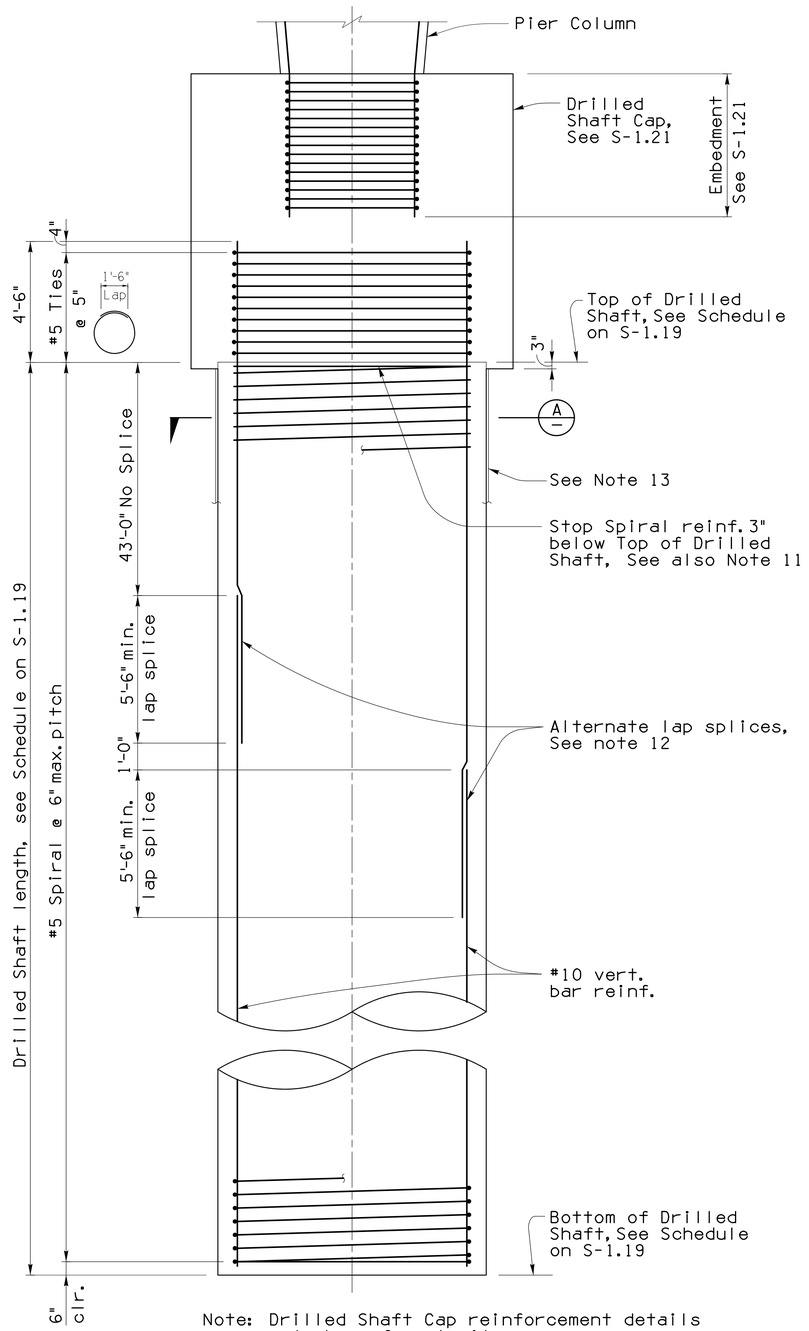


SECTION
⅜" = 1'-0"



Note: Drilled Shaft Cap reinforcement details not shown for clarity.

DRILLED SHAFT AT PIERS
⅜" = 1'-0"

DRILLED SHAFT NOTES

1. The geotechnical and foundation designs are based on Project Geotechnical Report, prepared by SCE Engineering, dated 08/04/2017.
2. The installation of the drilled shaft Foundations shall be in accordance with Section 609 of the Standard Specifications and Special Provisions.
3. Placement of reinforcing cage shall be placed in the drilled shaft within 2 hours after the shaft bottom has been cleaned. Placement of drilled shaft concrete shall commence within 2 hours after placement of the reinforcing cage.
4. There shall be at least 48 hours between concrete placement of adjacent drilled shaft.
5. The Contractor may select any one of the drilled shafts as the required confirmation shaft.
6. Construction joints not shown on the project plans will require the approval of the Engineer prior to construction.
7. Contractor shall provide temporary steel casing as required to stabilize foundation materials during construction, surface sloughing or raveling, aid in alignment of shafts, and ensure personnel safety. See Project Geotechnical Report for additional requirements.
8. For integrity testing, inspection tube quantity, size, type, and detail shall be per Section 609 of the Standard Specifications and Special Provisions.
9. Tubes for integrity testing of drilled shafts shall be placed as shown from 4'-0" above shaft to within 6" of bottom shaft. Tubes to have threaded cap at top end and bottom end and be securely attached to spirals (do not attach to vertical reinforcing). See Standard Specifications and Project Special Provisions.
10. The grouting of the test tubes, after integrity testing, shall be done only after receiving Engineer approval.
11. Provide 1.5 extra turns of spiral bar at each end of the spiral unit.
12. Stagger lap splices such that no more than one half of vertical bars are lap spliced at any location. Stagger splices 1'-0" min., see Drilled Shaft details for lap splice length. Modifications to lap splice shall be approved by the Engineer.

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Drilled Shaft Details - 1 S-1.20 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES
227 OF 474

CITY OF TUCSON

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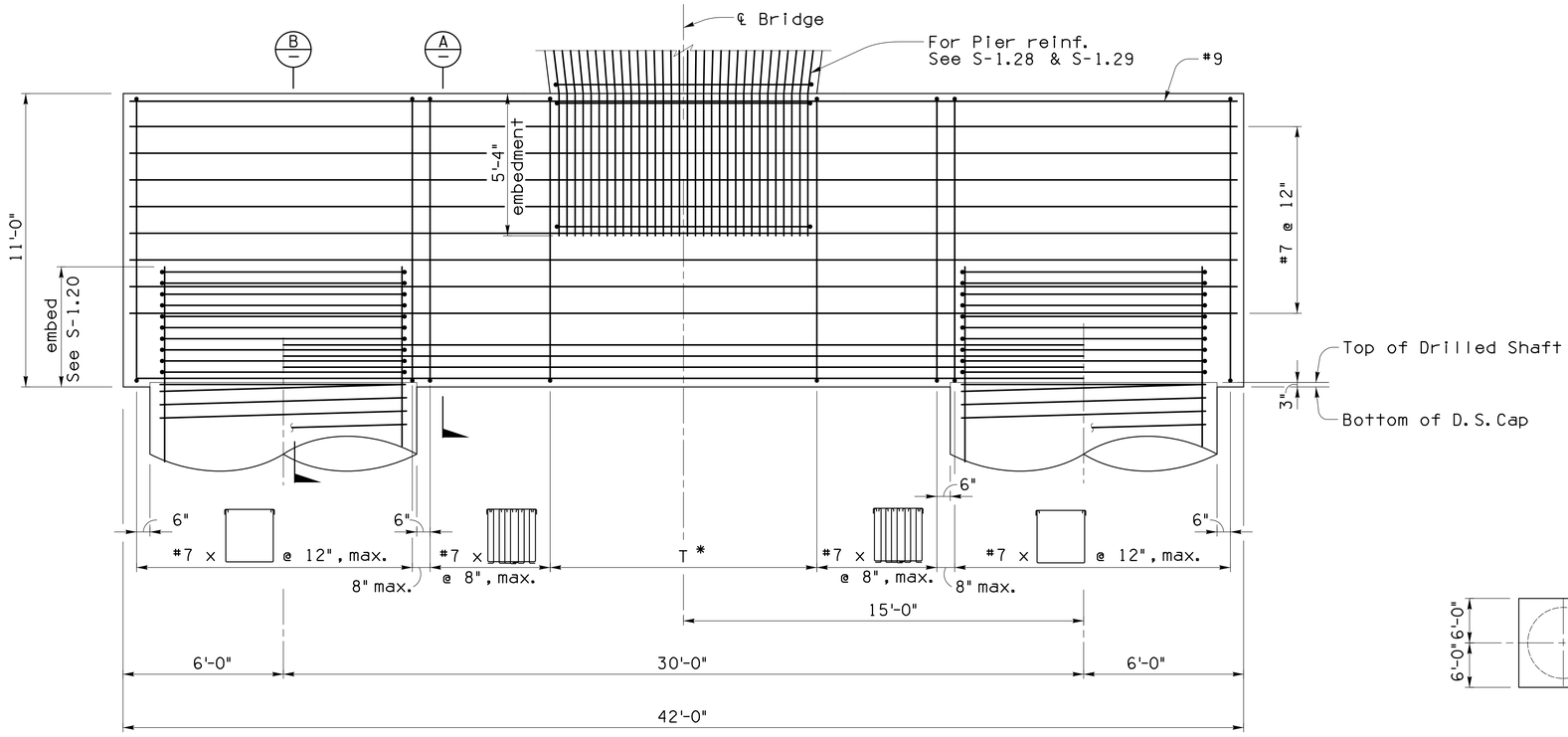
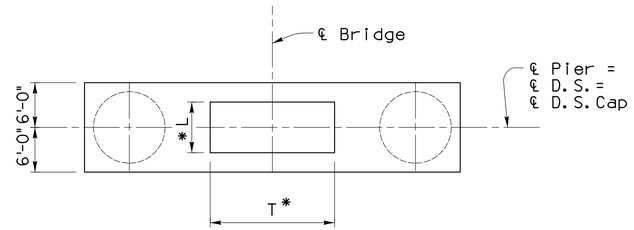
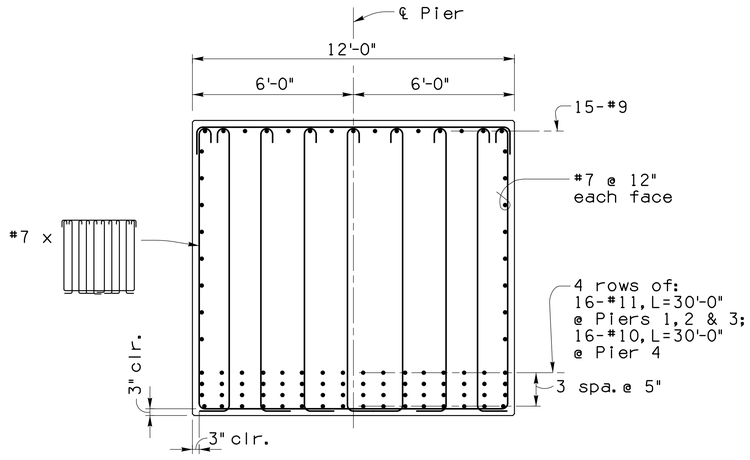


DRILLED SHAFT CAP
3/8" = 1'-0"

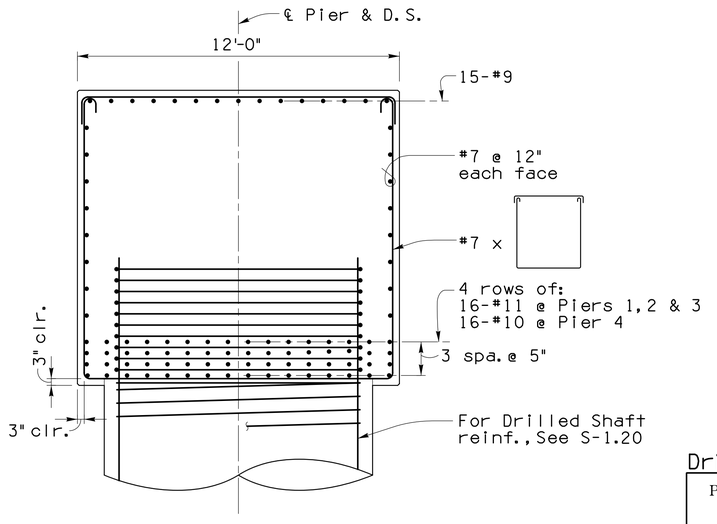


* See Sheets S-1.28 & S-1.29

PLAN VIEW
No Scale



SECTION A
3/8" = 1'-0"



SECTION B
3/8" = 1'-0"

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Drilled Shaft Cap Details S-1.21 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

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CITY OF TUCSON

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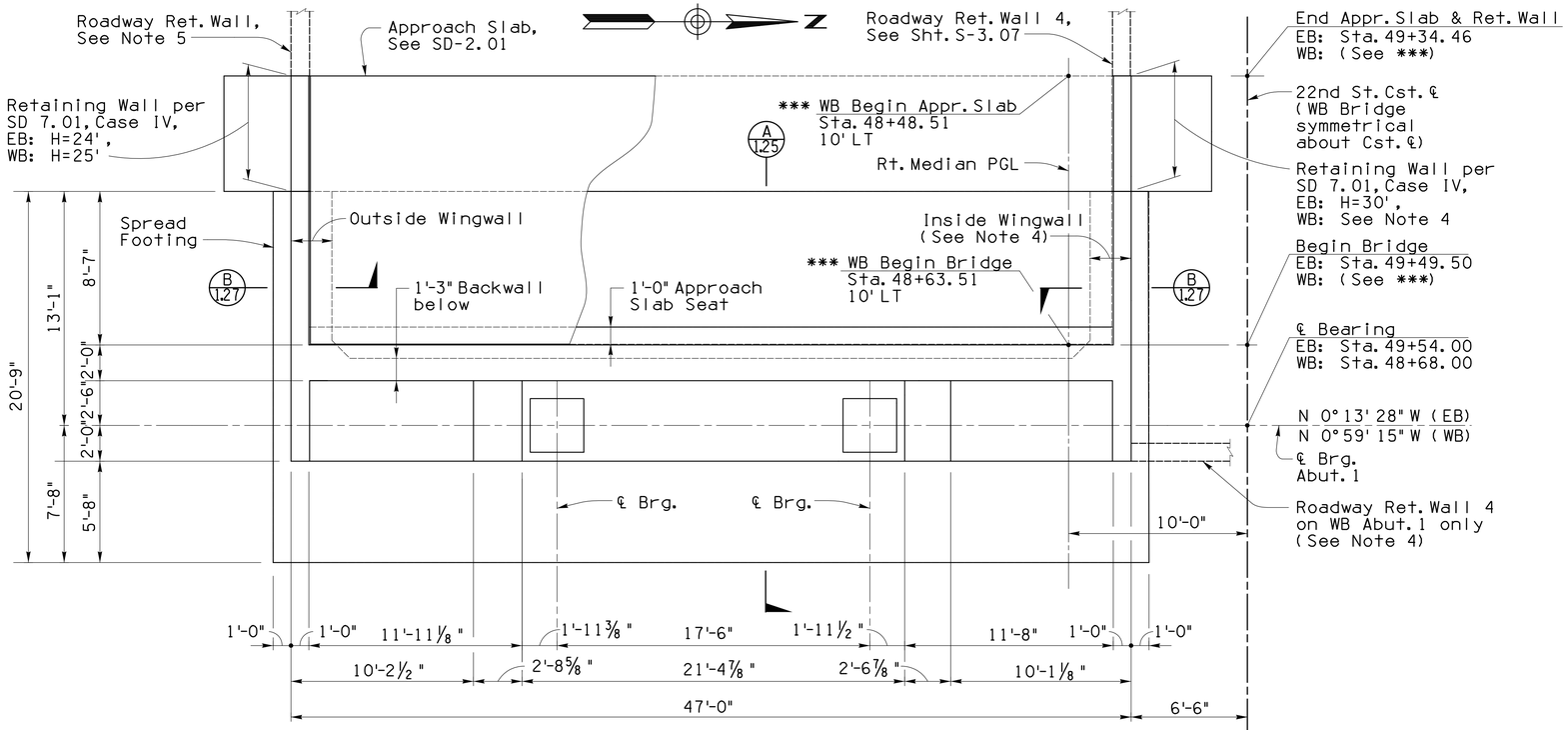
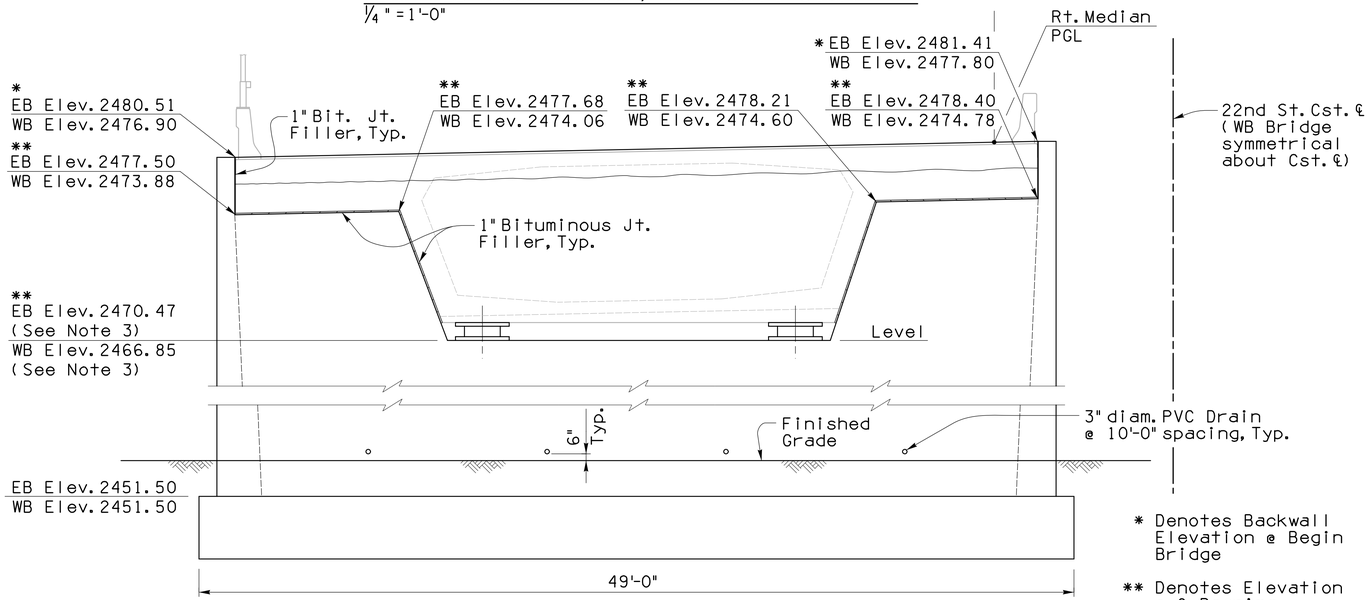


PLAN (EB ABUT. 1 SHOWN, WB ABUT. 1 SIM.)
¼" = 1'-0"



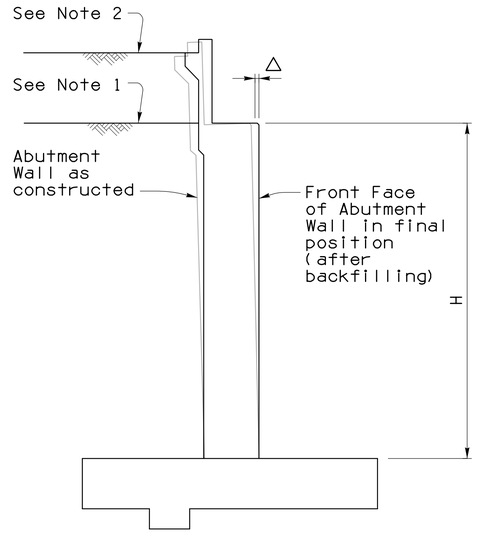
ELEVATION (EB ABUT. 1 SHOWN, WB ABUT. 1 SIM.)
(Looking Downstation)
¼" = 1'-0"

* Denotes Backwall Elevation @ Begin Bridge

** Denotes Elevation @ ℄ Bearing

Notes:

1. Backfill shall be placed and compacted up to the top of the abutment seat elevation for a minimum distance of 20 feet behind the abutment wall prior to constructing the superstructure on falsework (CIP construction).
2. Backwall shall be constucted and backfill shall be placed and compacted up to the bottom of the approach slab for a minimum distance of 20 feet behind the abutment wall prior to removing the superstructure falsework.
3. Bearing Seat Elevations allow 12" between the bottom of girder and bearing seat at ℄ bearing. Abutment Seat Elevations shall be adjusted to account for actual bearing assembly thickness.
4. Inside wingwall and retaining wall not required on WB Abutment 1.
5. Retaining Wall 3 (S-3.06) adjacent to Abutment 1 EB, Retaining Wall 2 (S-3.05) adjacent to Abutment 1 WB.



Offset (△) = ⅛"/ft of Wall height (H)

ABUTMENT WALL OFFSET DETAIL 1/—
No Scale

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Abutment 1
Plan and Elevation S-1.22 of S-1.78

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CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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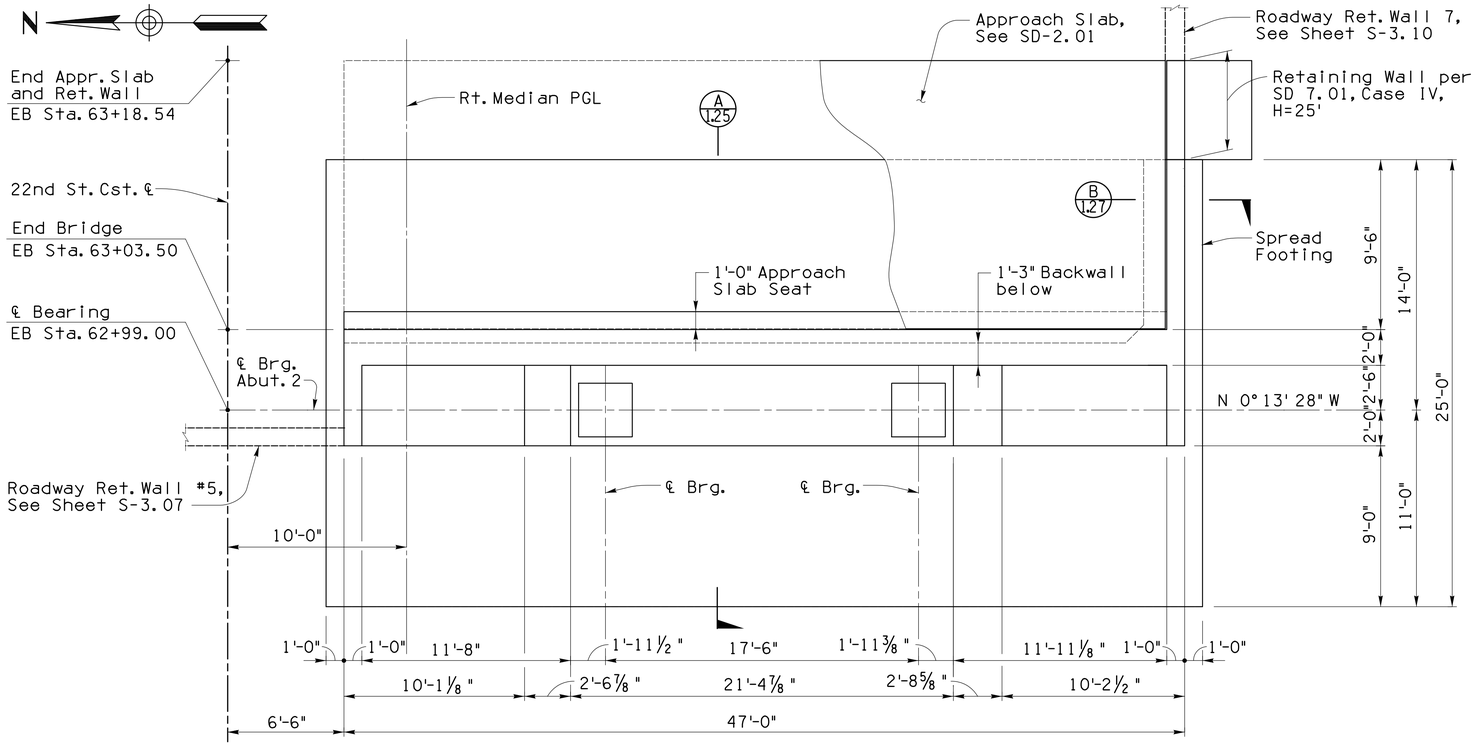
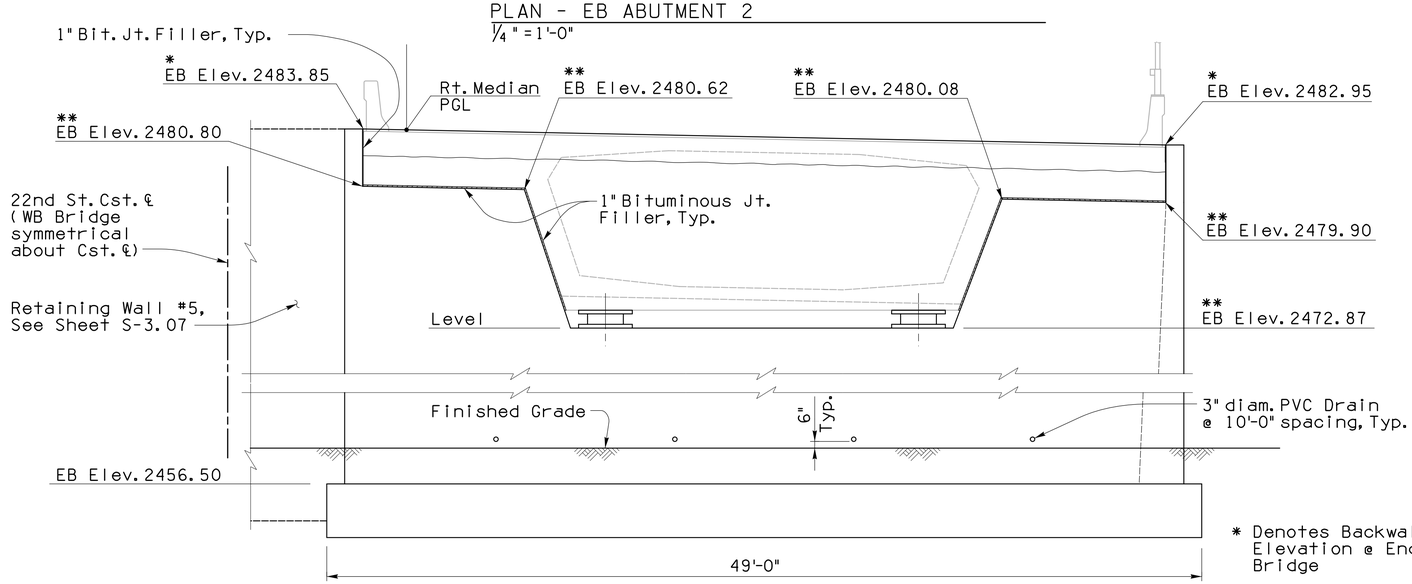


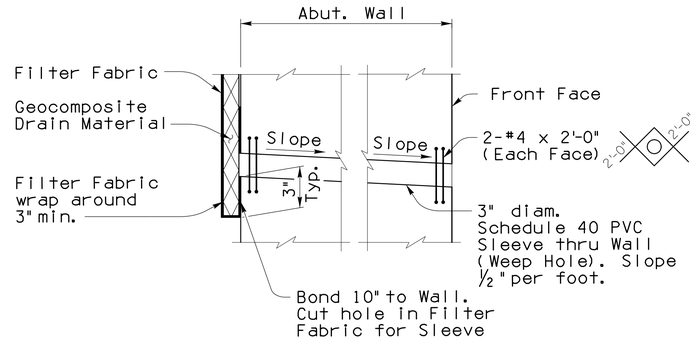
PLAN - EB ABUTMENT 2
¼" = 1'-0"



ELEVATION - EB ABUTMENT 2
(Looking Upstation)
¼" = 1'-0"

* Denotes Backwall Elevation @ End Bridge

** Denotes Elevation @ ℄ Bearing



WEEP HOLE DETAIL
No Scale

Notes:
1. For Abutment Notes, See Sheet S-1.22.

Two working days before you dig. CALL FOR THE BLUE STAKES 1-800-STAKE-IT Blue Stake Center CALL COLLECT

NO.	DATE	REVISION	BY	CHKD.	APPR.

EB Abutment 2
Plan and Elevation
S-1.23 of S-1.78

Structural Grace, Inc
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Preliminary 100% Review
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June 2018

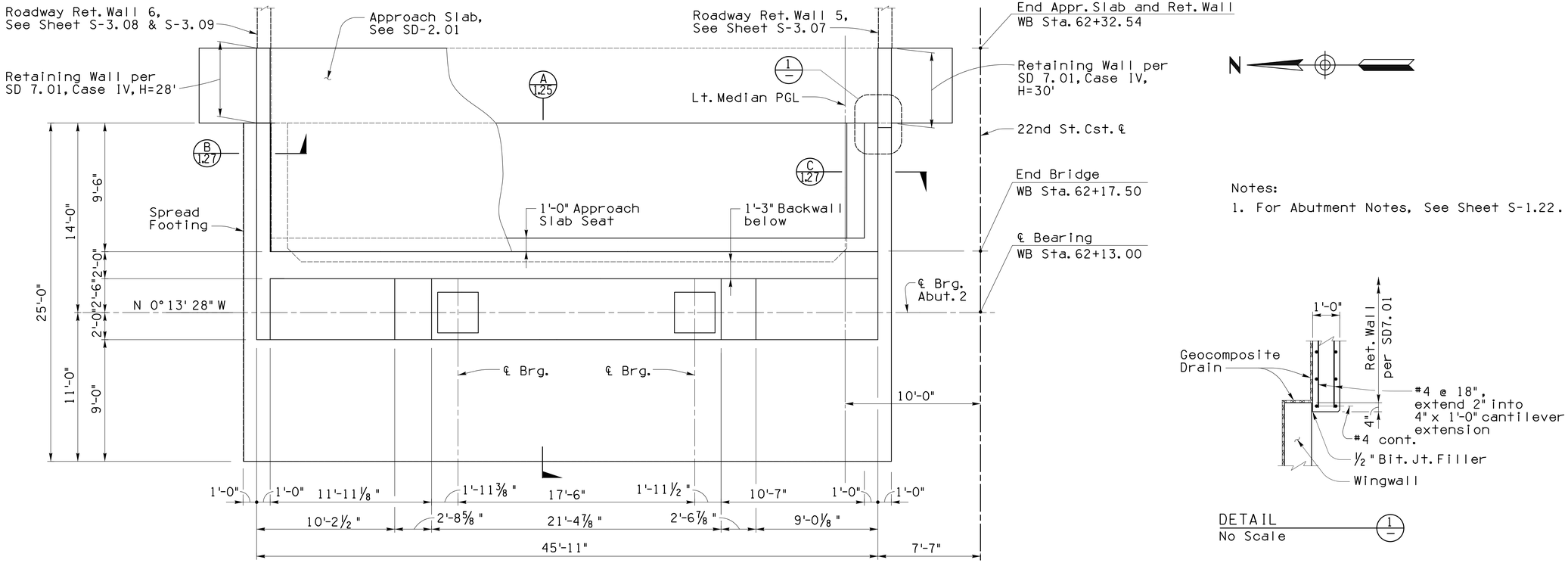
DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

230 OF 474

CITY OF TUCSON

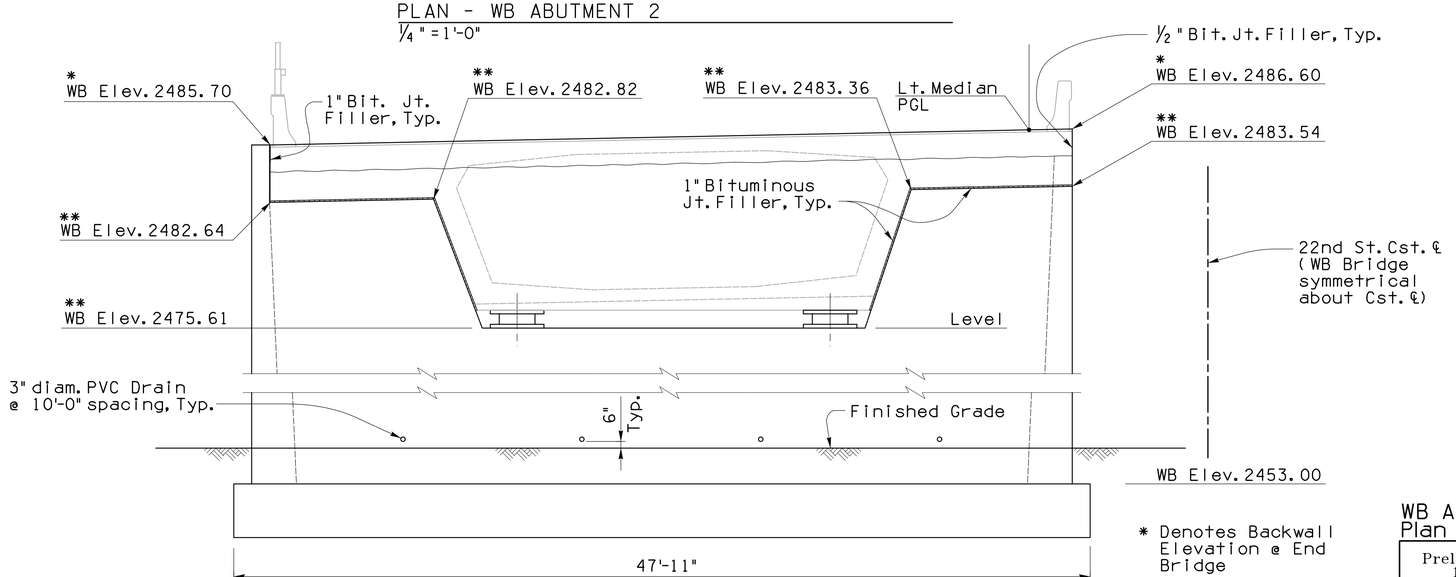
DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012



PLAN - WB ABUTMENT 2
¼" = 1'-0"

Notes:
1. For Abutment Notes, See Sheet S-1.22.

DETAIL 1/—
No Scale



ELEVATION - WB ABUTMENT 2
(Looking Upstation)
¼" = 1'-0"

* Denotes Backwall Elevation @ End Bridge

** Denotes Elevation @ ℄ Bearing

WB Abutment 2
Plan and Elevation

S-1.24 of S-1.78

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

231 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.

Two working days before you dig. CALL FOR THE BLUE STAKES
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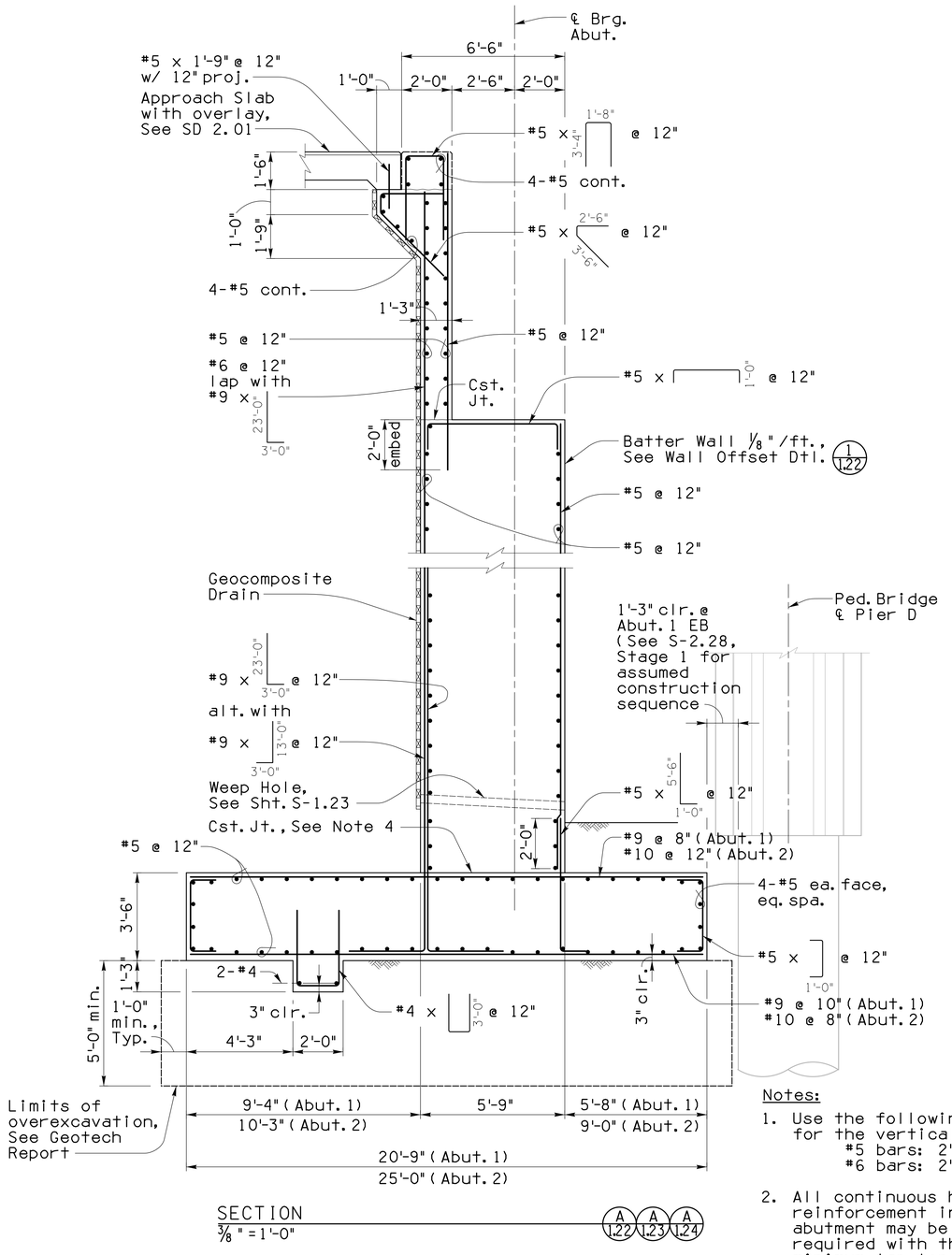
Blue Stake Center CALL COLLECT



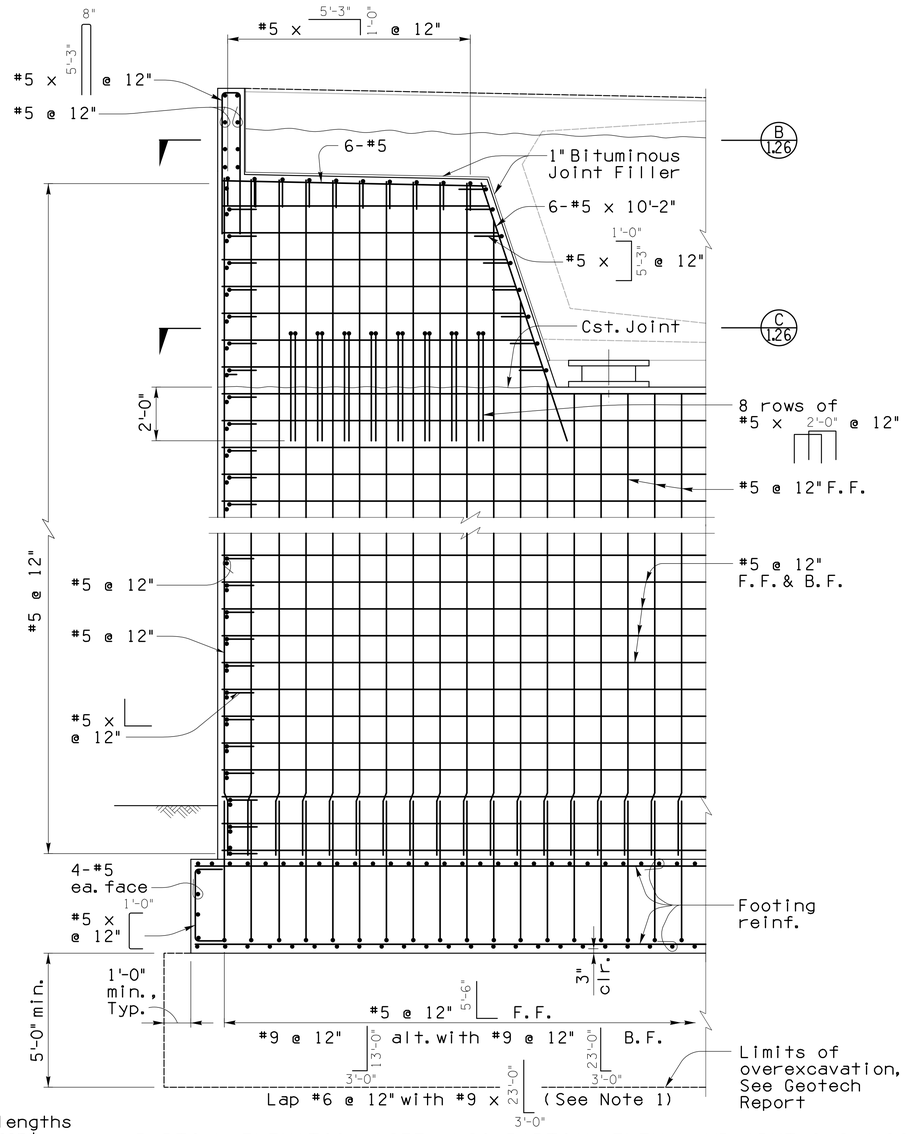
SECTION
3/8" = 1'-0"

A/1.22 A/1.23 A/1.24

Notes:

1. Use the following min. lap lengths for the vertical reinforcement:
   #5 bars: 2'-0"
   #6 bars: 2'-6"

2. All continuous horizontal reinforcement in backwall and abutment may be spliced as required with the following minimum lap lengths:
   #4 bars: 1'-2"
   #5 bars: 1'-10"



PARTIAL ELEVATION (SEE ALSO PARTIAL ELEV. @ WB ABUT. 2, S-1.26)
3/8" = 1'-0"

Two working days before you dig,
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Blue Stake Center
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Abutment Details - 1 S-1.25 of S-1.78

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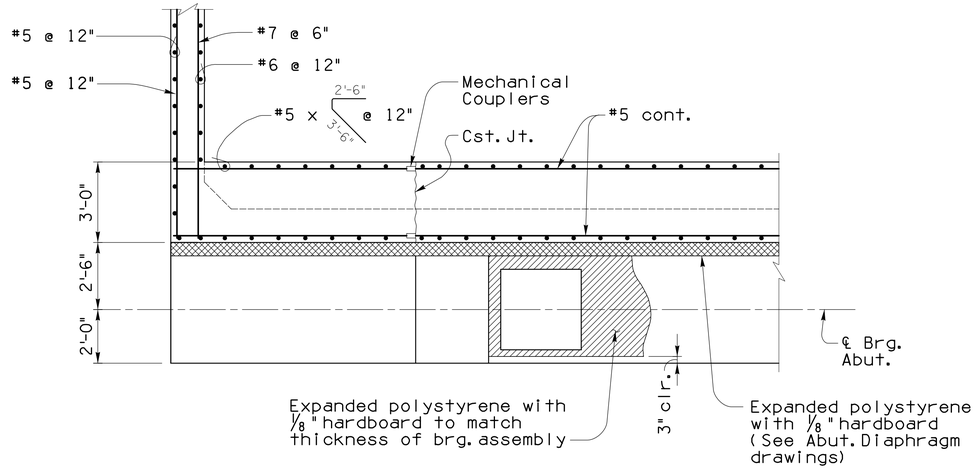
22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

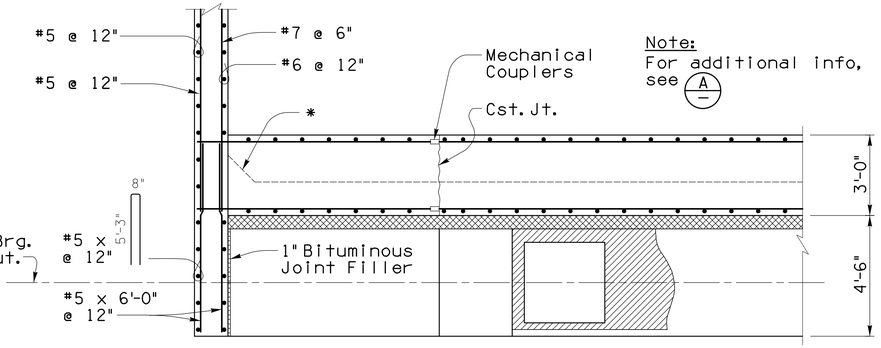
232 OF 474

CITY OF TUCSON

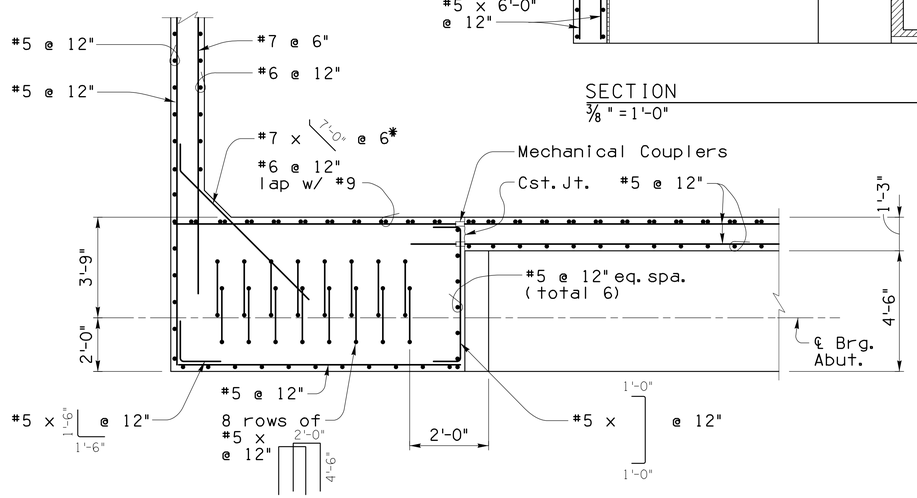
DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012



SECTION
3/8" = 1'-0"
A



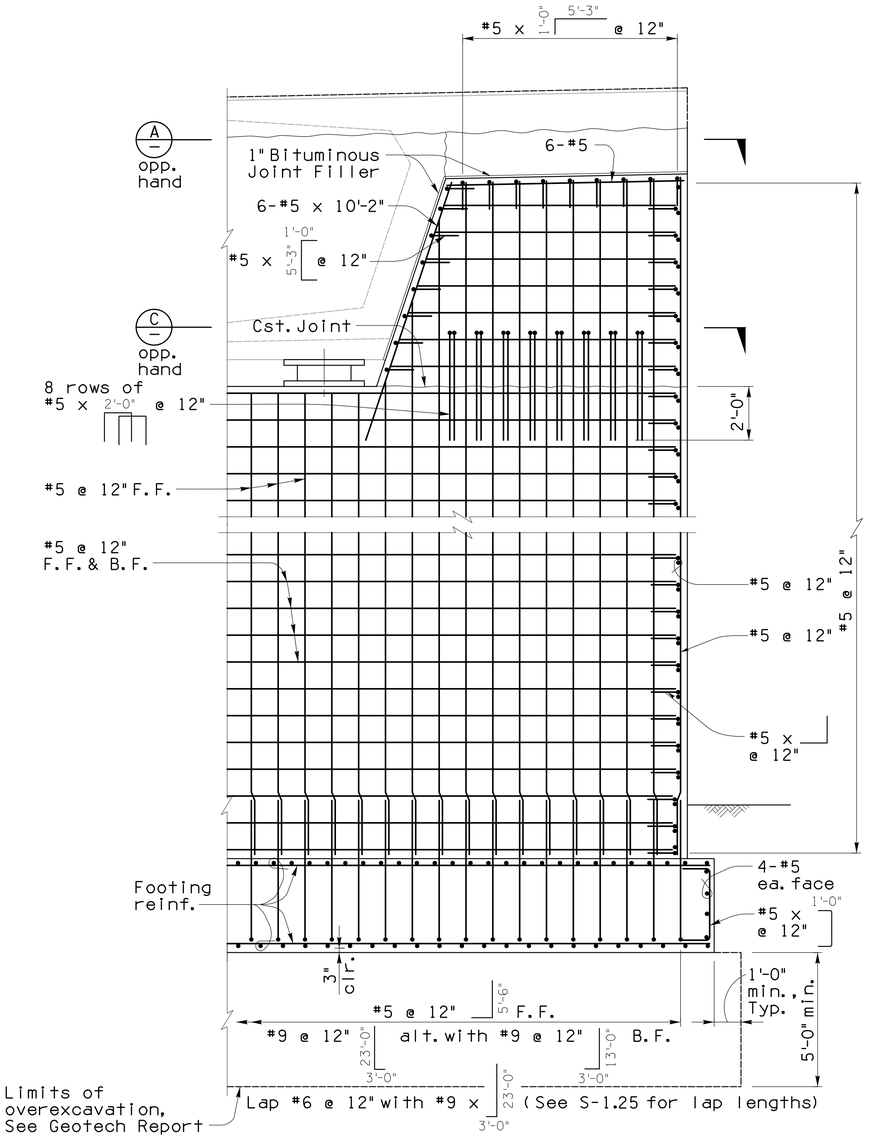
SECTION
3/8" = 1'-0"
B 1.25



SECTION
3/8" = 1'-0"
C C 1.25

Note:
For additional info, see A

* 1'-0" chamfer. #7 x not required at locations with no wingwall.



PARTIAL ELEVATION AT WB ABUT. 2 (SOUTH SIDE)
3/8" = 1'-0"

Two working days before you dig. CALL FOR THE BLUE STAKES
1-800-STAKE-IT
Blue Stake Center
CALL COLLECT

Abutment Details - 2 S-1.26 of S-1.78

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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

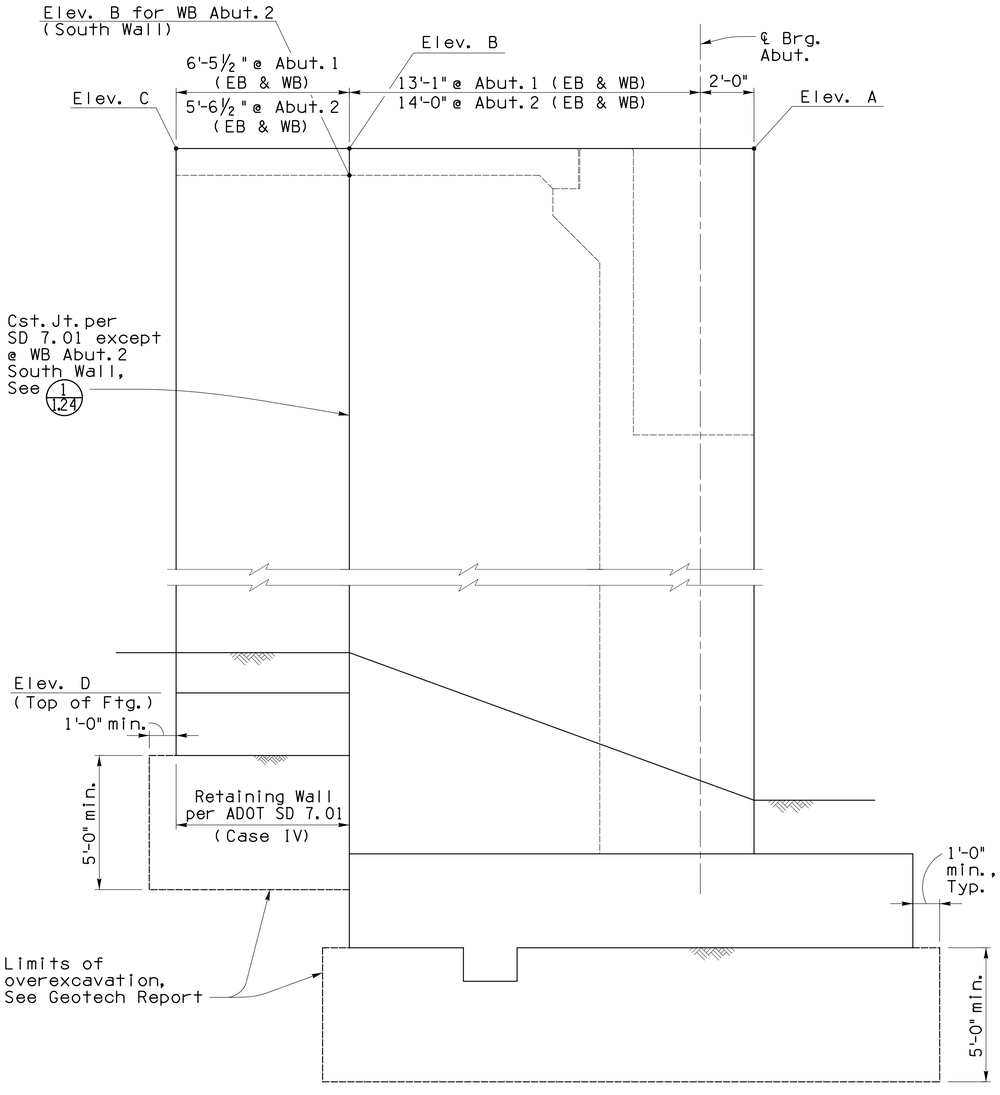
22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

233 OF 474

CITY OF TUCSON

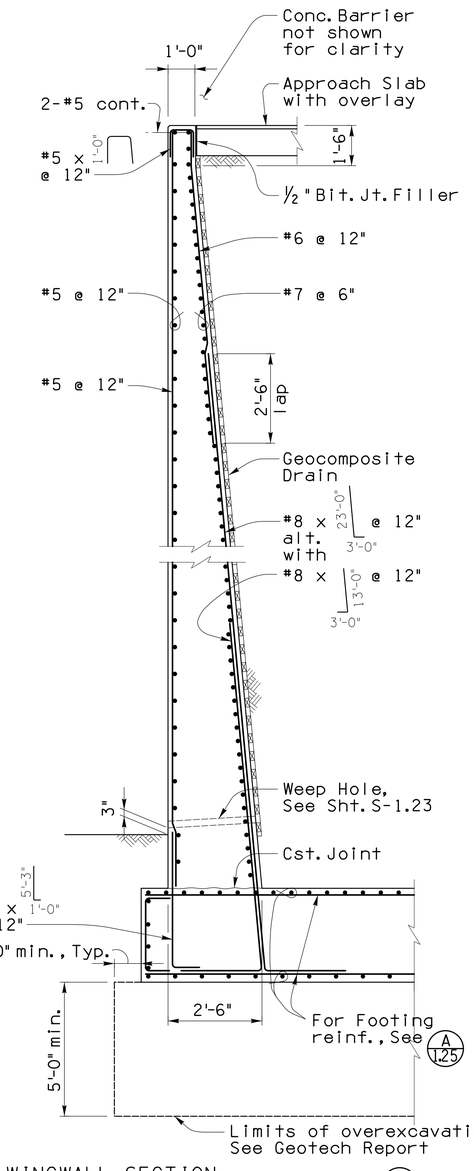
DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. I-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.

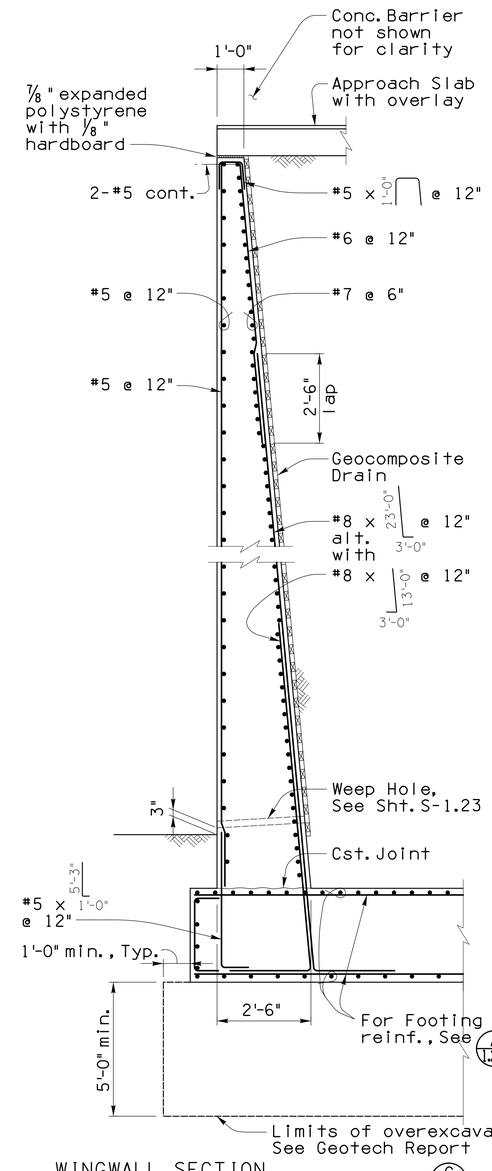


WINGWALL/RETAINING WALL ELEVATION
⅜" = 1'-0"

WINGWALL/RETAINING WALL ELEVATIONS				
Location	Elev. A	Elev. B	Elev. C	Elev. D
EB Abut. 1 North Wall	2481.69	2481.06	2480.79	2451.00
EB Abut. 1 South Wall	2480.77	2480.14	2479.87	2456.00
WB Abut. 1 North Wall	2477.16	2476.53	2476.72	2452.00
WB Abut. 1 South Wall	2478.08	N/A	N/A	N/A
EB Abut. 2 North Wall	2484.08	N/A	N/A	N/A
EB Abut. 2 South Wall	2483.16	2482.62	2482.43	2458.00
WB Abut. 2 North Wall	2485.89	2485.41	2485.24	2458.00
WB Abut. 2 South Wall	N/A	2485.10	2486.16	2456.25



WINGWALL SECTION
⅜" = 1'-0"
B/1.24



WINGWALL SECTION
⅜" = 1'-0"
C/1.24

Two working days before you dig.
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NO.	DATE	REVISION	BY	CHKD.	APPR.

Wingwall and
Retaining Wall Details

S-1.27 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

234 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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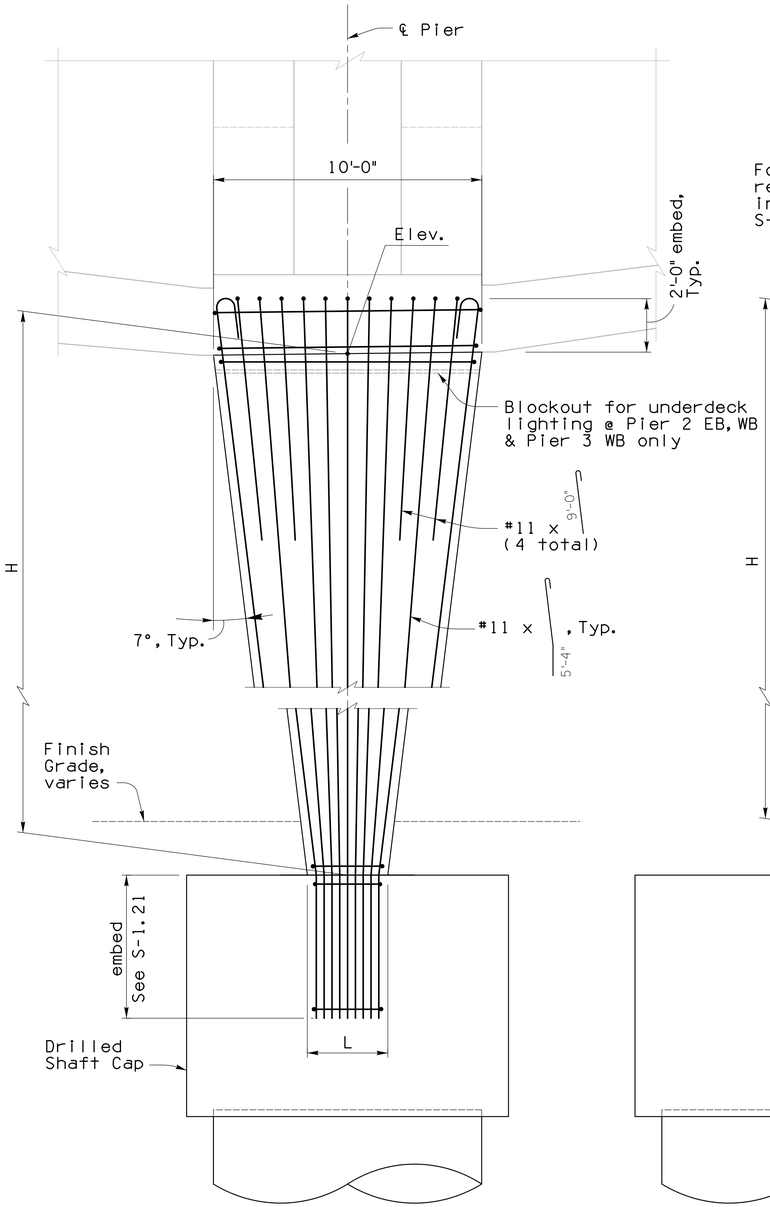
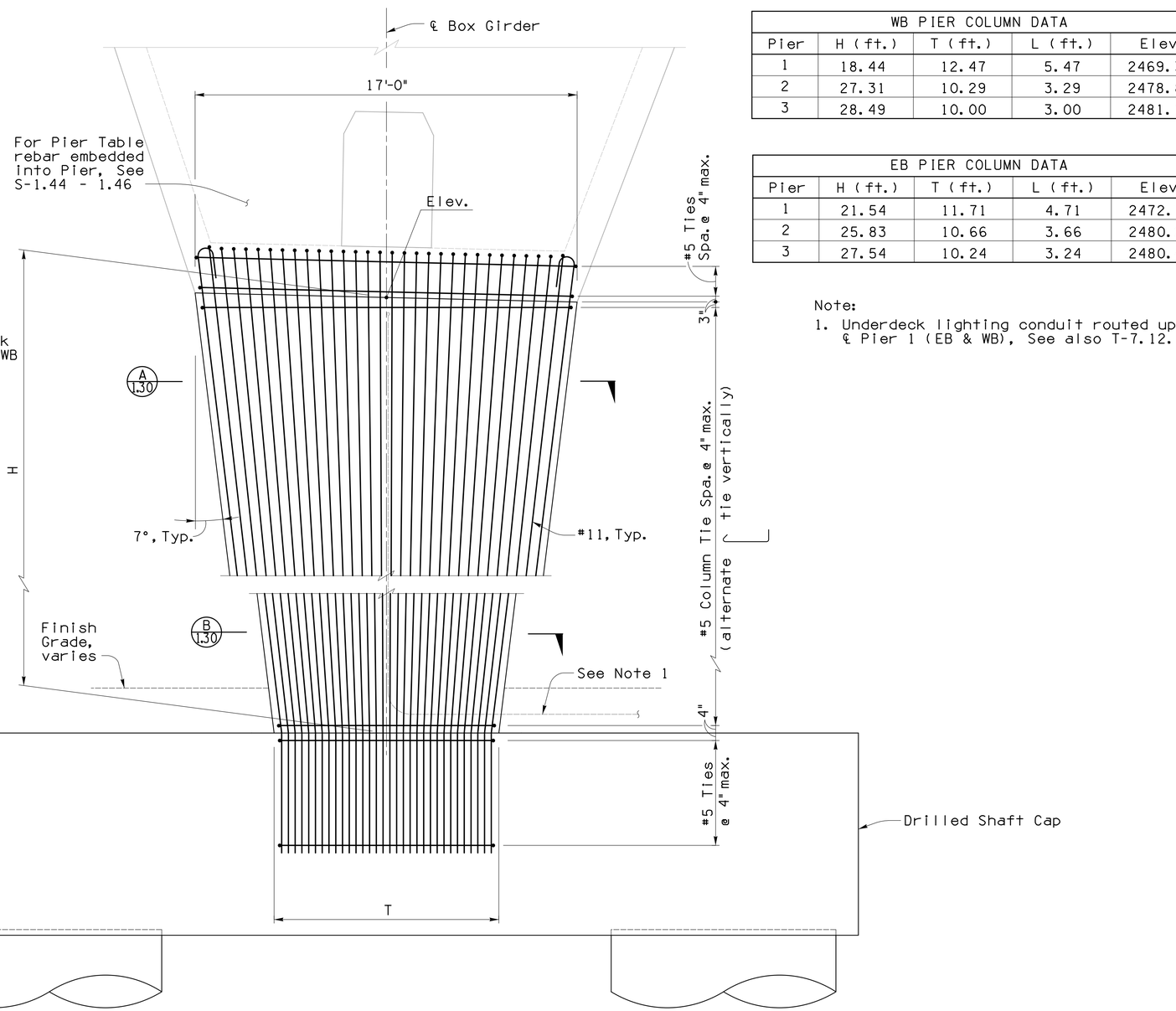


LONGITUDINAL



TRANSVERSE

WB PIER COLUMN DATA				
Pier	H (ft.)	T (ft.)	L (ft.)	Elev.
1	18.44	12.47	5.47	2469.35
2	27.31	10.29	3.29	2478.83
3	28.49	10.00	3.00	2481.12

EB PIER COLUMN DATA				
Pier	H (ft.)	T (ft.)	L (ft.)	Elev.
1	21.54	11.71	4.71	2472.72
2	25.83	10.66	3.66	2480.20
3	27.54	10.24	3.24	2480.48

Note:
1. Underdeck lighting conduit routed up ℄ Pier 1 (EB & WB), See also T-7.12.

TYPICAL PIER REINFORCEMENT AT PIERS 1, 2 & 3 (EB SHOWN, WB SIM.)
3/8" = 1'-0"

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NO.	DATE	REVISION	BY	CHKD.	APPR.

Pier Details - Piers 1 thru 3

S-1.28 of S-1.78

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

235 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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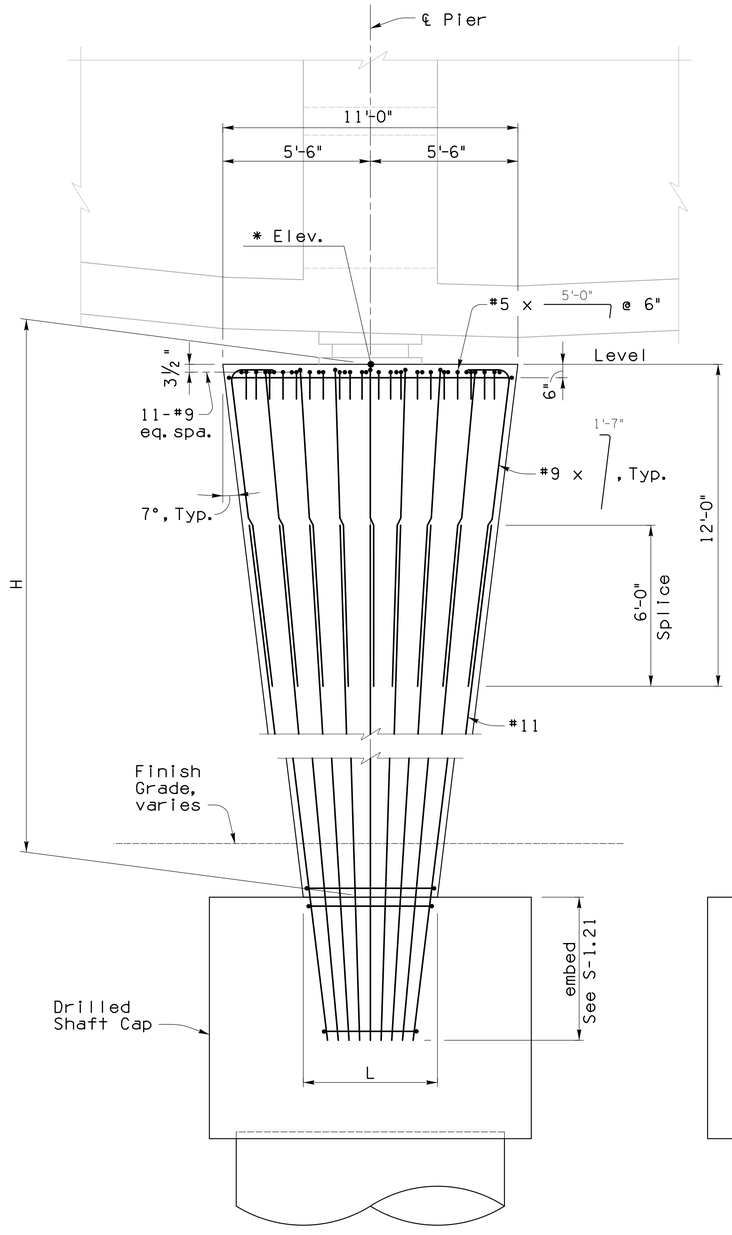

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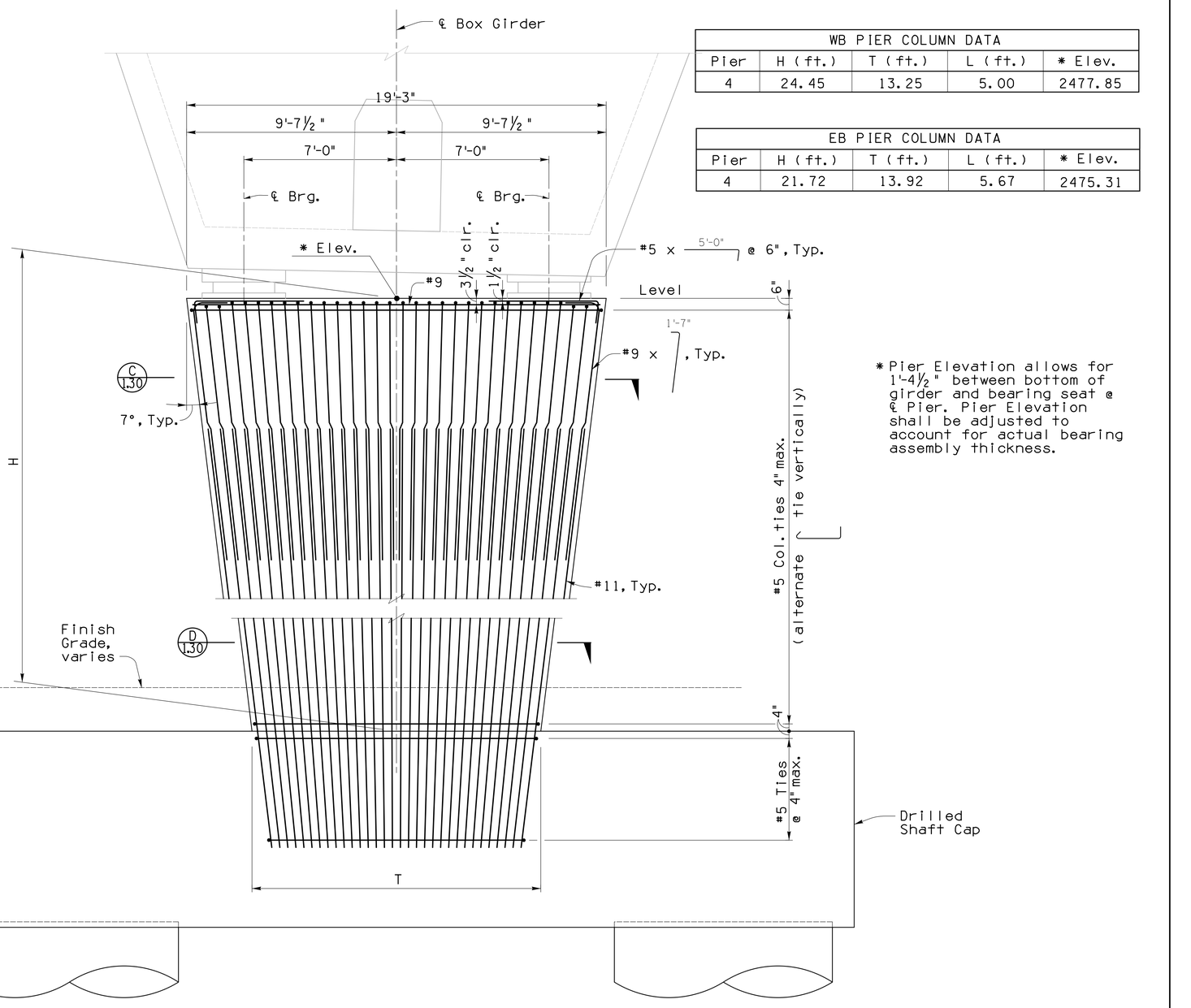

TRANSVERSE

WB PIER COLUMN DATA				
Pier	H (ft.)	T (ft.)	L (ft.)	* Elev.
4	24.45	13.25	5.00	2477.85

EB PIER COLUMN DATA				
Pier	H (ft.)	T (ft.)	L (ft.)	* Elev.
4	21.72	13.92	5.67	2475.31

* Pier Elevation allows for 1'-4½" between bottom of girder and bearing seat @ ℄ Pier. Pier Elevation shall be adjusted to account for actual bearing assembly thickness.

TYPICAL PIER REINFORCEMENT AT PIER 4 (EB SHOWN, WB SIM.)

3/8" = 1'-0"

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NO.	DATE	REVISION	BY	CHKD.	APPR.

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Pier Details - Pier 4 S-1.29 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

236 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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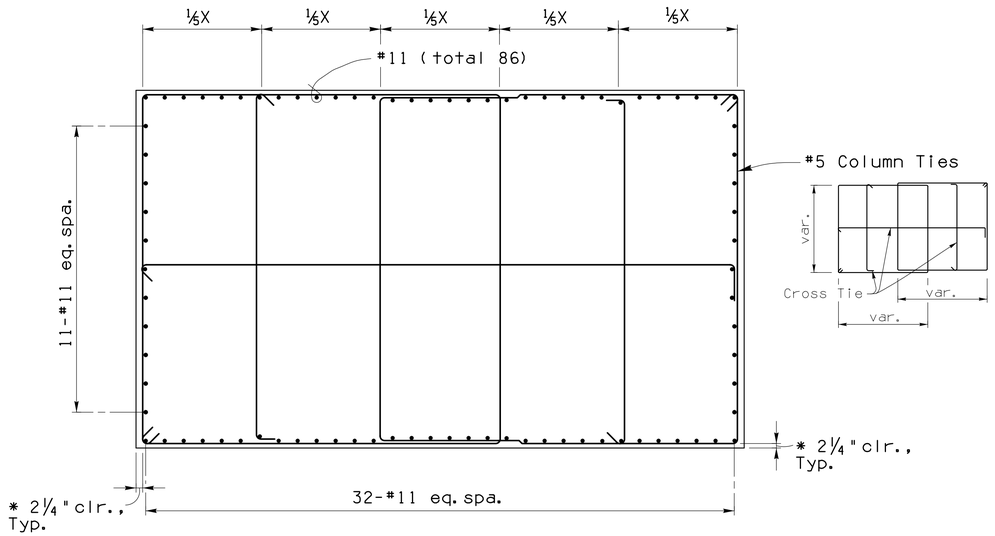
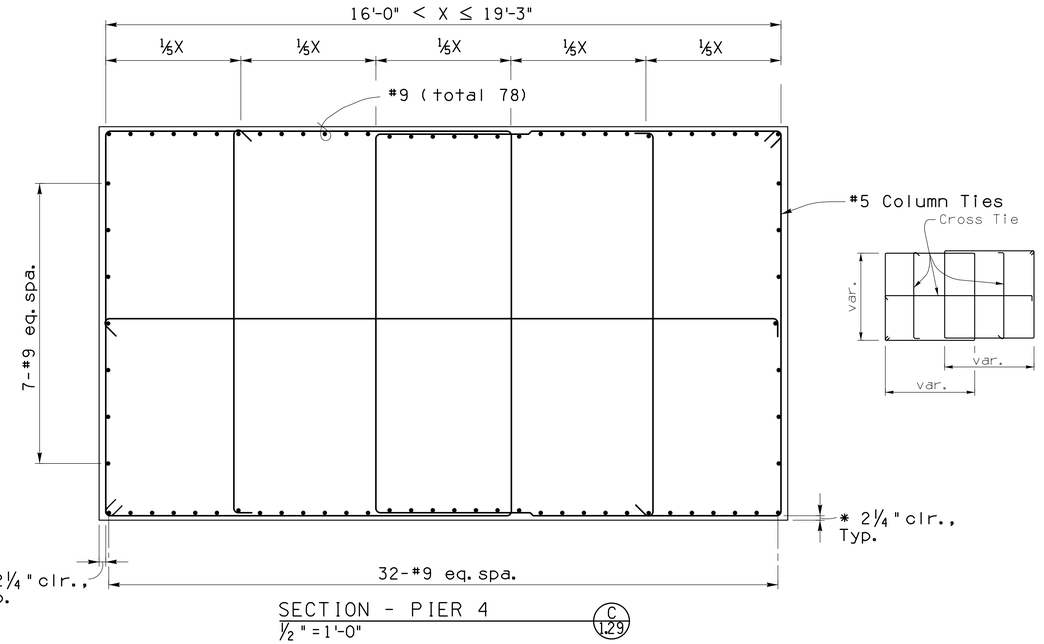
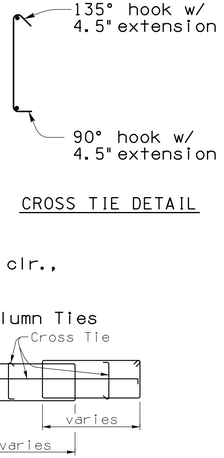


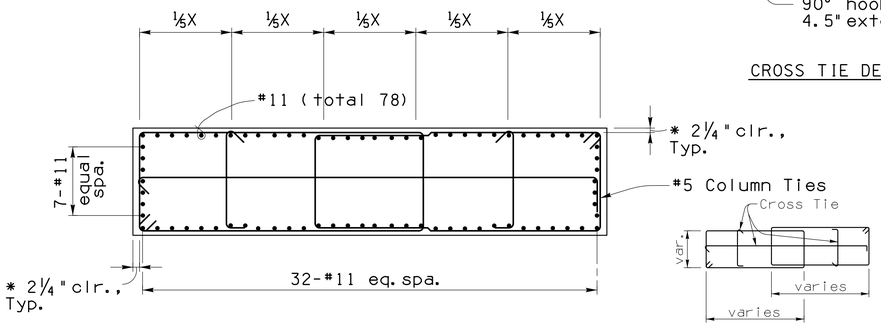
SECTION - PIERS 1, 2 & 3 (A 1.28)
½" = 1'-0"



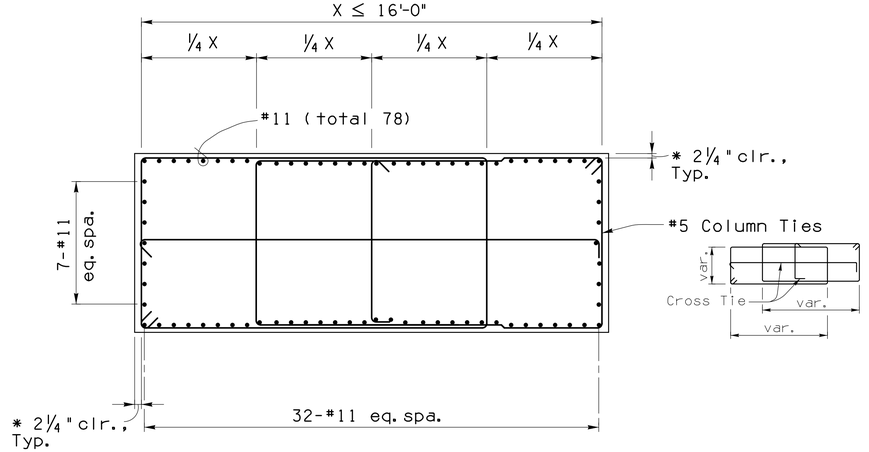
SECTION - PIER 4 (C 1.29)
½" = 1'-0"



CROSS TIE DETAIL



SECTION - PIERS 1, 2 & 3 (B 1.28)
½" = 1'-0"



SECTION - PIER 4 (D 1.29)
½" = 1'-0"

* 2¼" clr. is needed to account for formliner, see S-1.17

Pier Sections

S-1.30 of S-1.78

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

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CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.

Two working days before you dig, CALL FOR THE BLUE STAKES
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Blue Stake Center
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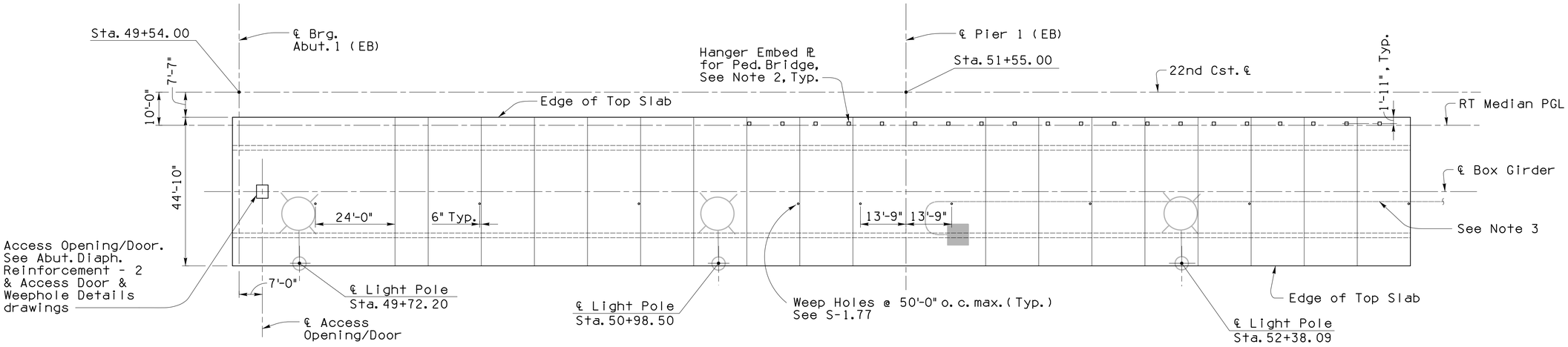
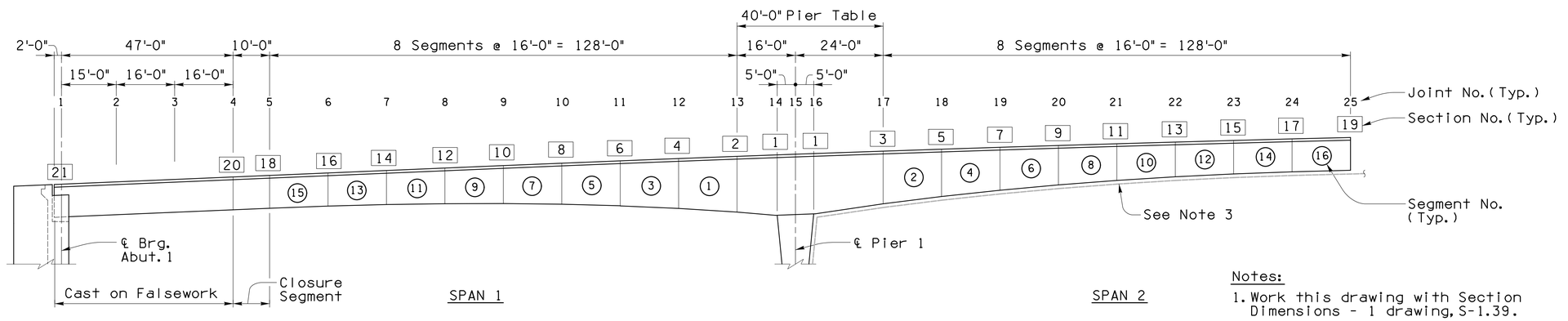


PLAN
1/16" = 1'-0'



ELEVATION
1/16" = 1'-0'

Notes:

1. Work this drawing with Section Dimensions - 1 drawing, S-1.39.
2. For location of Hanger Embed ℄, See Sheets S-2.14 & S-2.15.
3. For size and location of conduit and underdeck lighting, See T-7.12.

Joint No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
RT Med. PGL Elev	2481.55	2482.18	2482.85	2483.52	2483.94	2484.61	2485.29	2485.96	2486.63	2487.29	2487.94	2488.56	2489.16	2489.57	2489.75	2489.93	2490.59	2491.12	2491.64	2492.14	2492.62	2493.08	2493.51	2493.93	2494.33
Elev @ ℄ Box	2481.15	2481.78	2482.45	2483.12	2483.54	2484.21	2484.89	2485.56	2486.23	2486.89	2487.54	2488.16	2488.76	2489.17	2489.35	2489.53	2490.19	2490.72	2491.24	2491.74	2492.22	2492.68	2493.11	2493.53	2493.93

Note: Elevations are at top of overlay.

Span & Segment Layout 1 (EB)

S-1.31 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

238 OF 474

CITY OF TUCSON

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CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.

Two working days before you dig, CALL FOR THE BLUE STAKES
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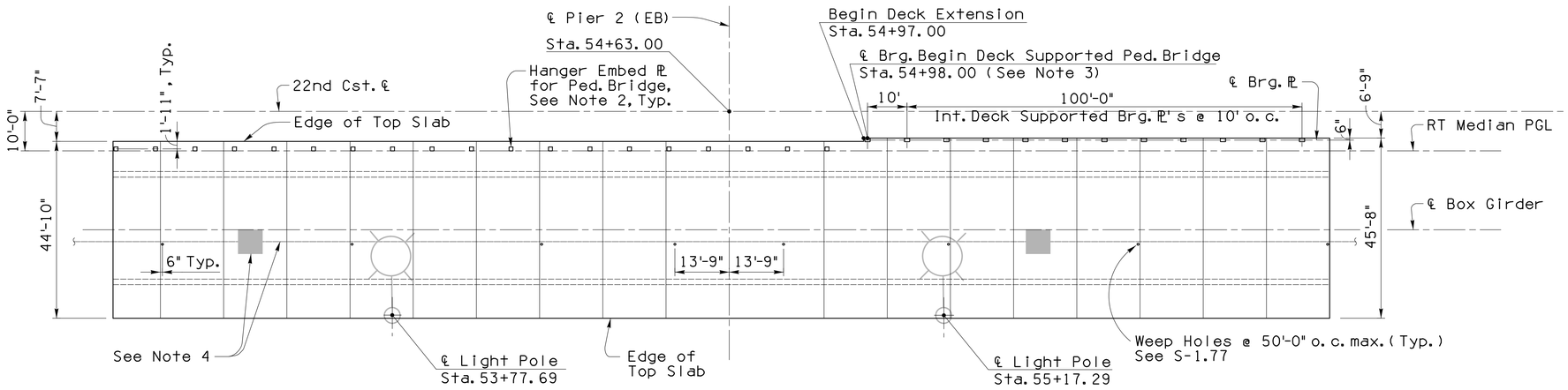
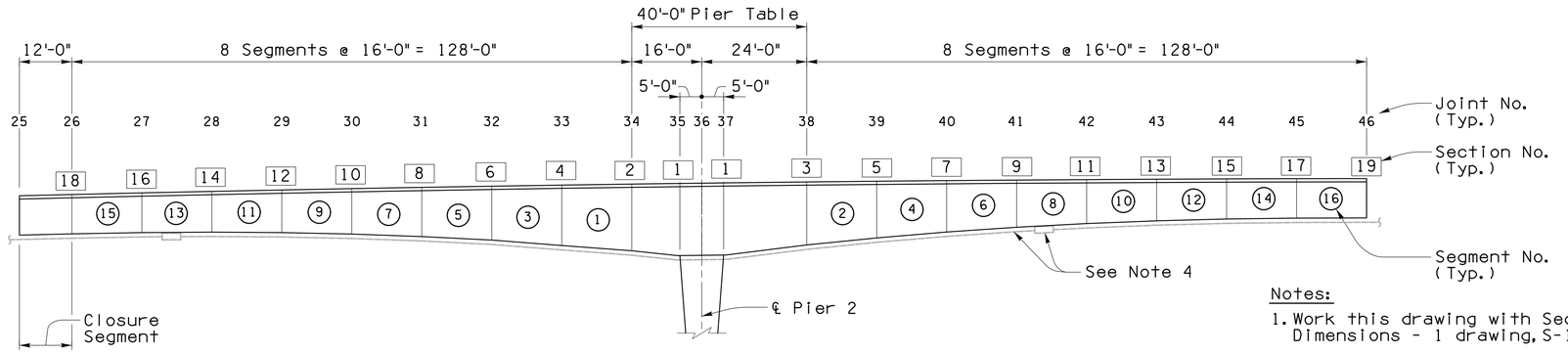
Blue Stake Center
CALL COLLECT



PLAN
1/16" = 1'-0'



SPAN 2 SPAN 3

ELEVATION
1/16" = 1'-0'

Notes:

1. Work this drawing with Section Dimensions - 1 drawing, S-1.39.
2. For location of Hanger Embed ℙ, See Sheets S-2.14 & S-2.15.
3. For location of ℄ Brg. Begin Deck Supported Brg. ℙ's, See S-1.66.
4. For size and location of conduit and underdeck lighting, See T-7.12.

Joint No.	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
RT Median PGL Elev		2494.62	2494.99	2495.34	2495.66	2495.97	2496.26	2496.53	2496.78	2497.01	2497.16	2497.22	2497.28	2497.50	2497.66	2497.81	2497.93	2498.04	2498.12	2498.19	2498.23	2498.26
Elev @ ℄ Box		2494.22	2494.59	2494.94	2495.26	2495.57	2495.86	2496.13	2496.38	2496.61	2496.76	2496.82	2496.88	2497.10	2497.26	2497.41	2497.53	2497.64	2497.72	2497.79	2497.83	2497.86

See S-1.31

Note: Elevations are at top of overlay.

Span & Segment Layout 2 (EB)

S-1.32 of S-1.78

Structural Grace, Inc
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Tucson, AZ 85719 (520) 320-0156

Preliminary 100% Review

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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

239 OF 474

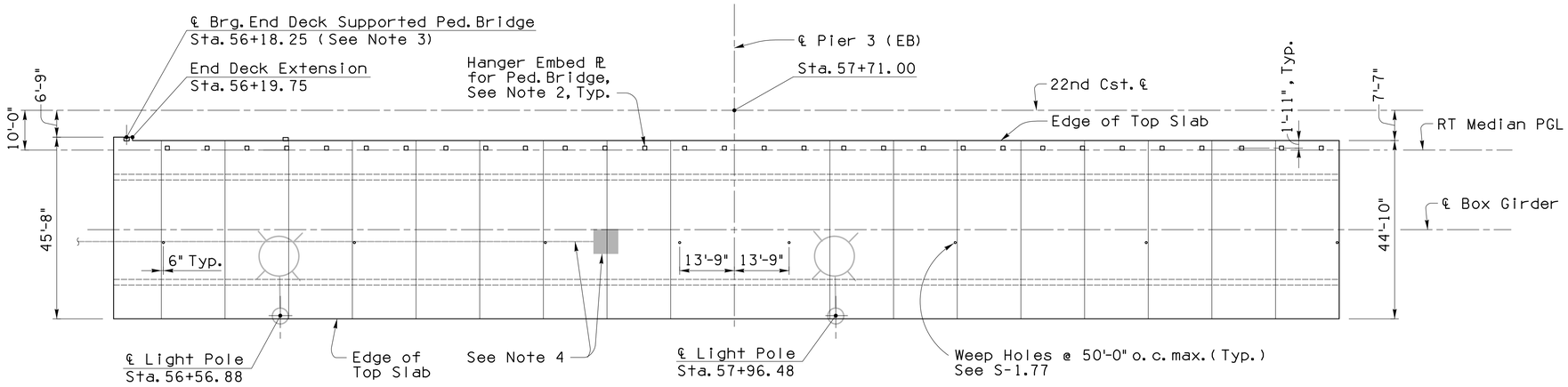
CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

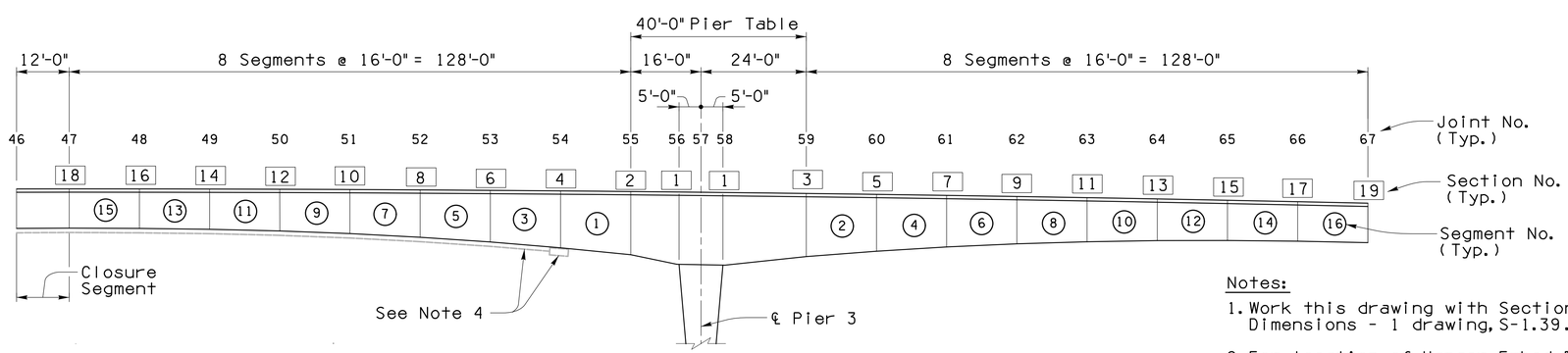
NO.	DATE	REVISION	BY	CHKD.	APPR.

Two working days before you dig. CALL FOR THE BLUE STAKES
1-800-STAKE-IT
Blue Stake Center
CALL COLLECT

W:\Jobs\2010\1010_22nd over UPRR\1010_Working\1010_22nd_32_SL02.dgn 6/15/2018 10:35:57 AM



PLAN
1/16" = 1'-0'



SPAN 3 SPAN 4

ELEVATION
1/16" = 1'-0'

Notes:

1. Work this drawing with Section Dimensions - 1 drawing, S-1.39.
2. For location of Hanger Embed PL, See Sheets S-2.14 & S-2.15.
3. For location of ℄ Brg. End Deck Supported Brg. PL, See S-1.66.
4. For size and location of conduit and underdeck lighting, See T-7.12.

Joint No.	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67
RT Median PGL Elev		2498.27	2498.26	2498.23	2498.19	2498.12	2498.04	2497.93	2497.81	2497.67	2497.56	2497.51	2497.45	2497.23	2497.01	2496.78	2496.53	2496.27	2495.98	2495.67	2495.34	2495.00
Elev @ ℄ Box		2497.87	2497.86	2497.83	2497.79	2497.72	2497.64	2497.53	2497.41	2497.27	2497.16	2497.11	2497.05	2496.83	2496.61	2496.38	2496.13	2495.87	2495.58	2495.27	2494.94	2494.60

See S-1.32

Note: Elevations are at top of overlay.

Span & Segment Layout 3 (EB)

S-1.33 of S-1.78

Structural Grace, Inc
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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

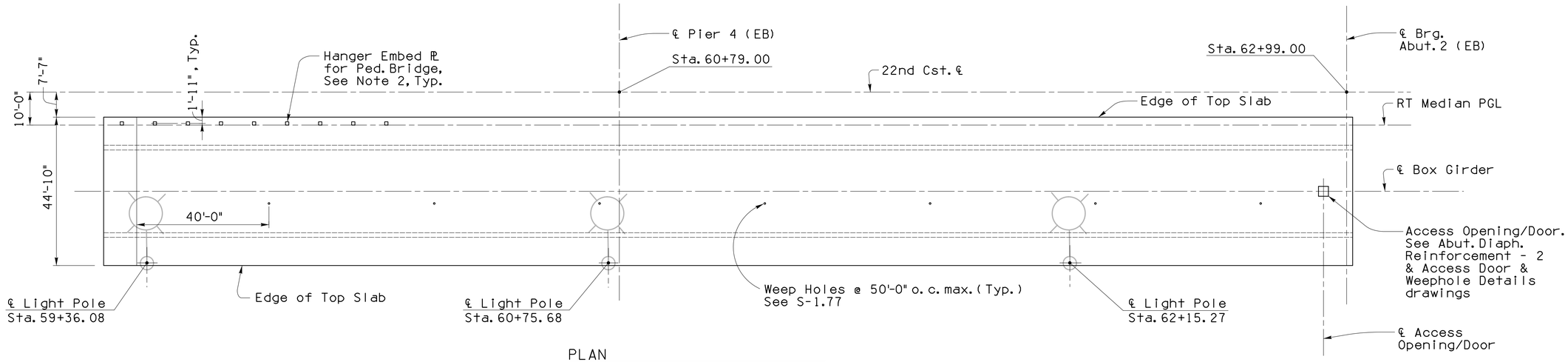
240 OF 474

CITY OF TUCSON

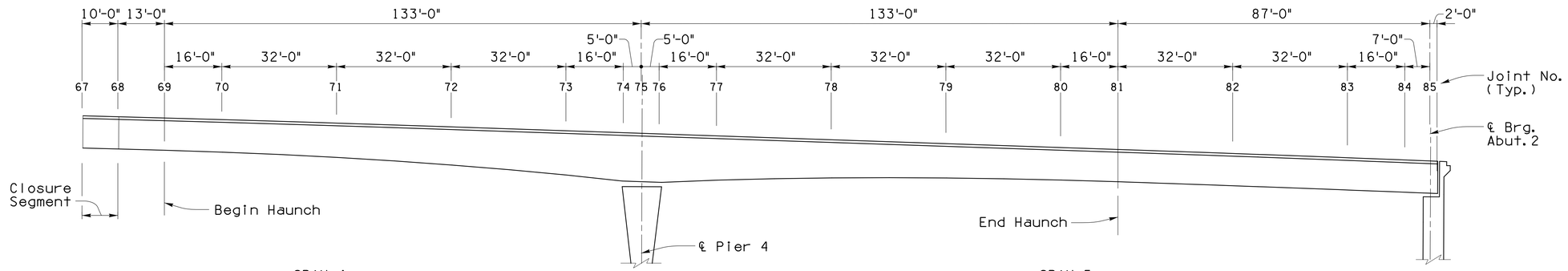
DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.

Two working days before you dig, CALL FOR THE BLUE STAKES
1-800-STAKE-IT
Blue Stake Center
CALL COLLECT



PLAN
1/16" = 1'-0'



SPAN 4
Cast on Falsework

SPAN 5
Cast on Falsework

ELEVATION
1/16" = 1'-0'

Notes:

1. Work this drawing with Section Dimensions - 1 drawing, S-1.40.
2. For location of Hanger Embed PL, See Sheets S-2.14 & S-2.15.
3. For size and location of conduit and underdeck lighting, See T-7.12.

Joint No.	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85
RT PGL Elev Median		2494.77	2494.46	2494.07	2493.22	2492.30	2491.34	2490.86	2490.71	2490.56	2490.08	2489.12	2488.16	2487.20	2486.72	2485.73	2484.66	2484.10	2483.85
Elev @ ℄ Box		2494.37	2494.06	2493.67	2492.82	2491.90	2490.94	2490.46	2490.31	2490.16	2489.68	2488.72	2487.76	2486.80	2486.32	2485.33	2484.26	2483.70	2483.45

See S-1.33

Note: Elevations are at top of overlay.

Span & Segment Layout 4 (EB)

S-1.34 of S-1.78

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

241 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.

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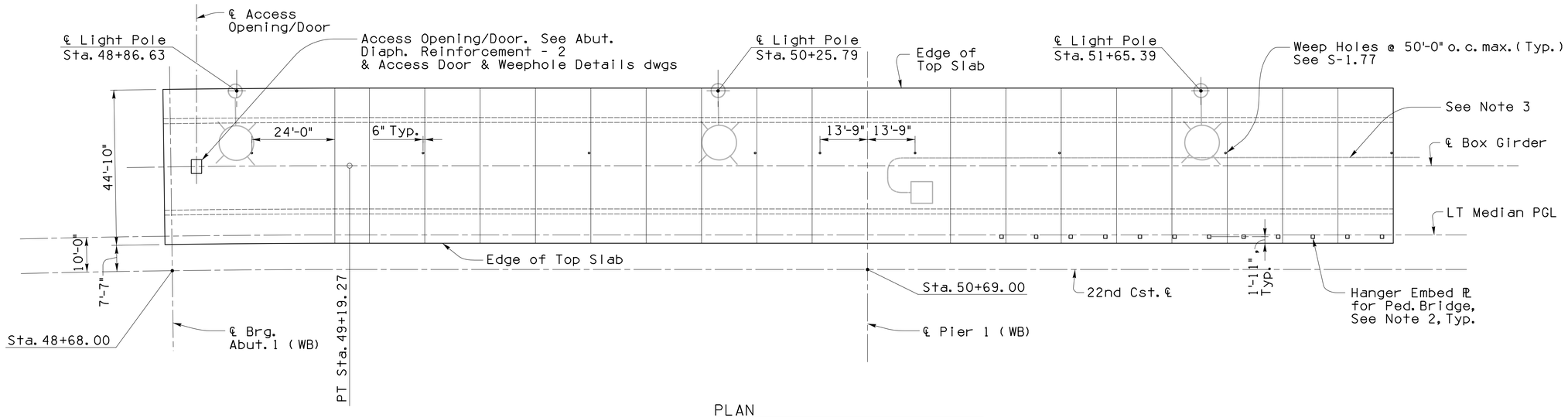
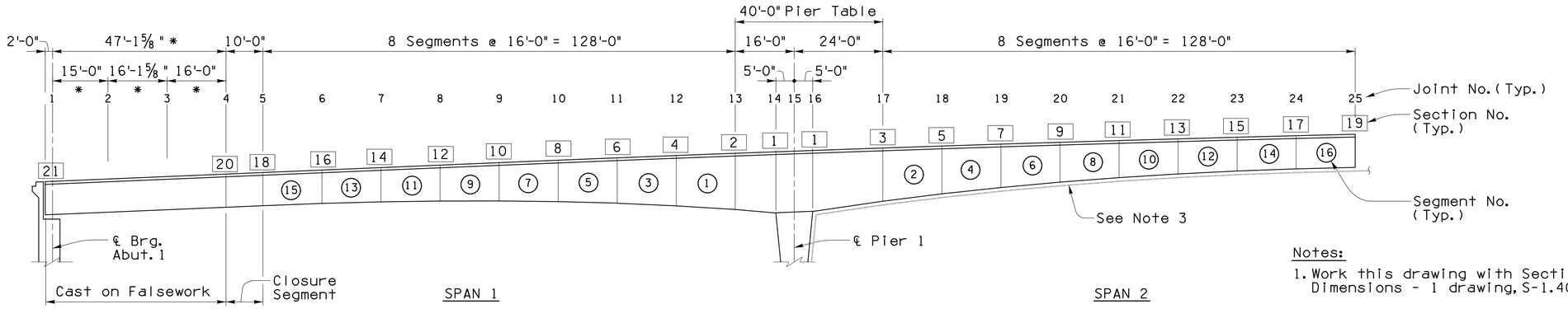
Blue Stake Center
CALL COLLECT



PLAN
1/16" = 1'-0'



ELEVATION
1/16" = 1'-0'

Joint No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LT Med. PGL Elev	2477.94	2478.57	2479.24	2479.91	2480.33	2481.00	2481.67	2482.35	2483.02	2483.69	2484.36	2485.03	2485.71	2486.17	2486.38	2486.59	2487.37	2488.01	2488.64	2489.24	2489.82	2490.38	2490.93	2491.45	2491.95
Elev @ ℄ Box	2477.54	2478.17	2478.84	2479.51	2479.93	2480.60	2481.27	2481.95	2482.62	2483.29	2483.96	2484.63	2485.31	2485.77	2485.98	2486.19	2486.97	2487.61	2488.24	2488.84	2489.42	2489.98	2490.53	2491.05	2491.55

Note: Elevations are at top of overlay.

* Measured along LT Median PGL

Notes:

1. Work this drawing with Section Dimensions - 1 drawing, S-1.40.
2. For location of Hanger Embed ℙ, See Sheets S-2.14 & S-2.15.
3. For size and location of conduit and underdeck lighting, See T-7.12.

Span & Segment Layout 1 (WB)

S-1.35 of S-1.78

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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

242 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.

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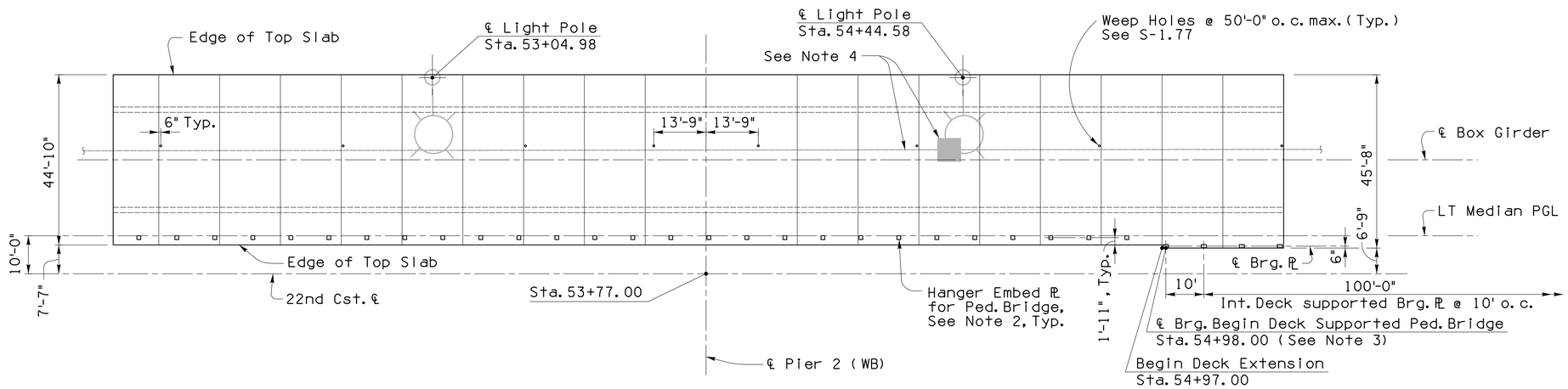
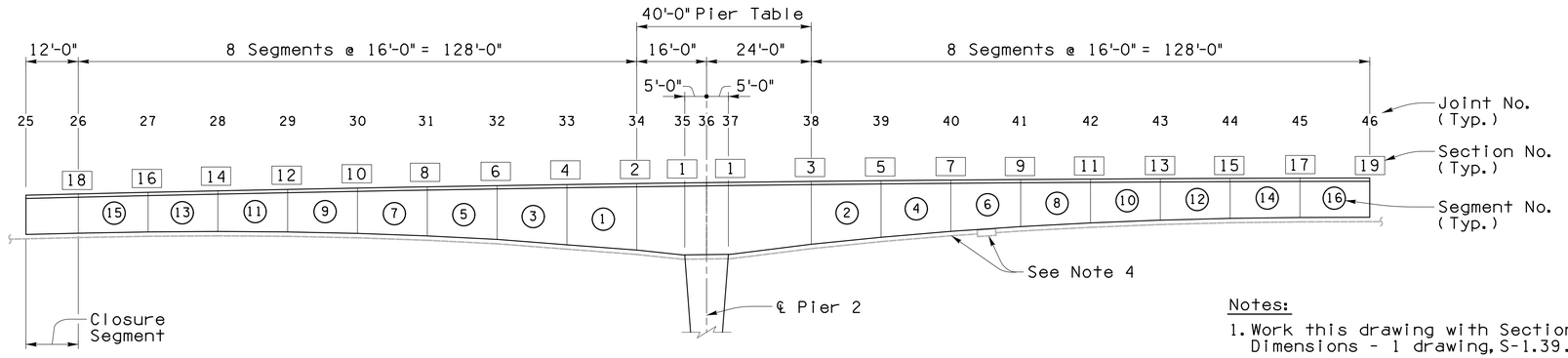


PLAN
1/16" = 1'-0"



SPAN 2

ELEVATION
1/16" = 1'-0"

SPAN 3

Notes:

1. Work this drawing with Section Dimensions - 1 drawing, S-1.39.
2. For location of Hanger Embed ℙ, See Sheets S-2.14 & S-2.15.
3. For location of ℄ Brg. End Deck Supported Brg. ℙ's, See S-1.67.
4. For size and location of conduit and underdeck lighting, See T-7.12.

Joint No.	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
LT PGL Elev		2492.32	2492.79	2493.24	2493.67	2494.09	2494.48	2494.85	2495.21	2495.54	2495.76	2495.86	2495.95	2496.29	2496.56	2496.81	2497.04	2497.25	2497.44	2497.61	2497.76	2497.89
Elev @ ℄ Box		2491.92	2492.39	2492.84	2493.27	2493.69	2494.08	2494.45	2494.81	2495.14	2495.36	2495.46	2495.55	2495.89	2496.16	2496.41	2496.64	2496.85	2497.04	2497.21	2497.36	2497.49

See S-1.35

Note: Elevations are at top of overlay.

Span & Segment Layout 2 (WB)

S-1.36 of S-1.78

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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

243 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.

Two working days before you dig, CALL FOR THE BLUE STAKES
1-800-STAKE-IT
Blue Stake Center
CALL COLLECT

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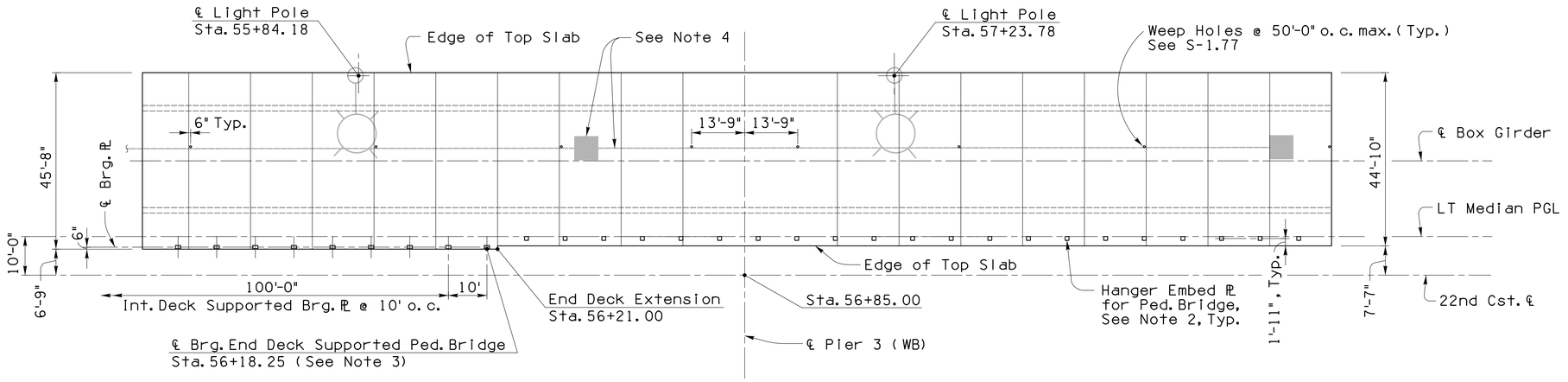
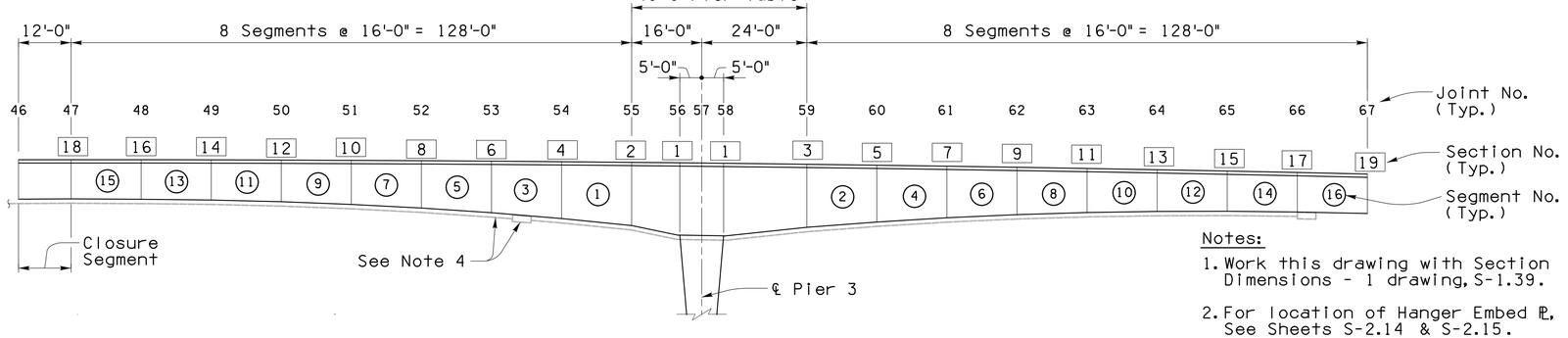


PLAN
1/16" = 1'-0'



SPAN 3 SPAN 4

ELEVATION
1/16" = 1'-0'

Notes:

1. Work this drawing with Section Dimensions - 1 drawing, S-1.39.
2. For location of Hanger Embed ℙ, See Sheets S-2.14 & S-2.15.
3. For location of ℄ Brg. End Deck Supported Brg. ℙ, See S-1.67.
4. For size and location of conduit and underdeck lighting, See T-7.12.

Joint No.	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67
LT Median PGL Elev		2497.97	2498.07	2498.15	2498.21	2498.25	2498.26	2498.27	2498.25	2498.21	2498.17	2498.15	2498.13	2498.03	2497.92	2497.79	2497.65	2497.48	2497.30	2497.10	2496.87	2496.63
Elev @ ℄ Box		2497.57	2497.67	2497.75	2497.81	2497.85	2497.86	2497.87	2497.85	2497.81	2497.77	2497.75	2497.73	2497.63	2497.52	2497.39	2497.25	2497.08	2496.90	2496.70	2496.47	2496.23

See S-1.36

Note: Elevations are at top of overlay.

Span & Segment Layout 3 (WB)

S-1.37 of S-1.78

Structural Grace, Inc
1430 E. Fort Lowell Rd., Ste. 200
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Preliminary 100% Review

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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

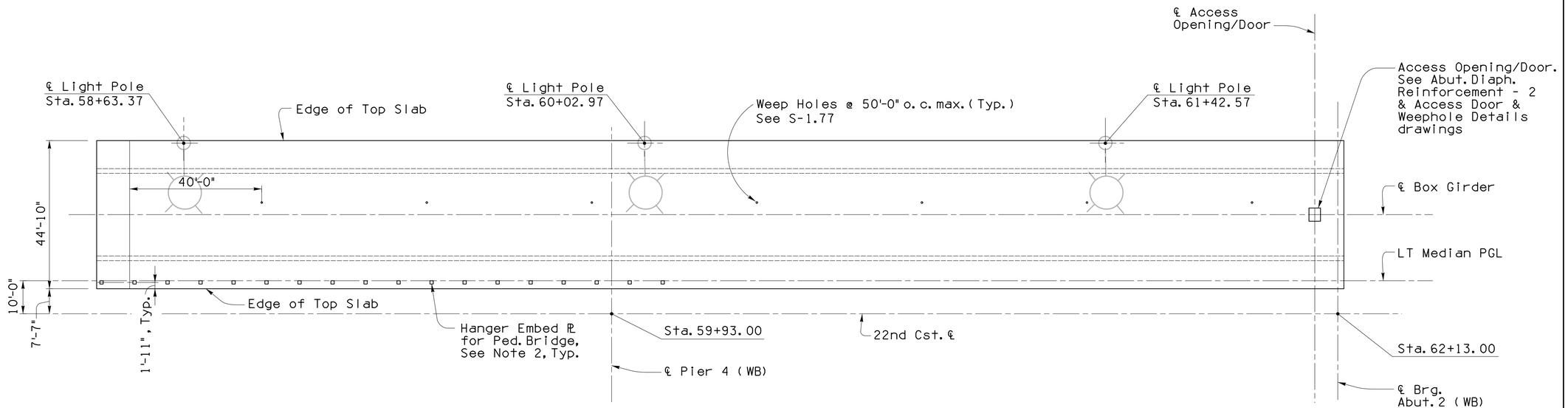
244 OF 474

CITY OF TUCSON

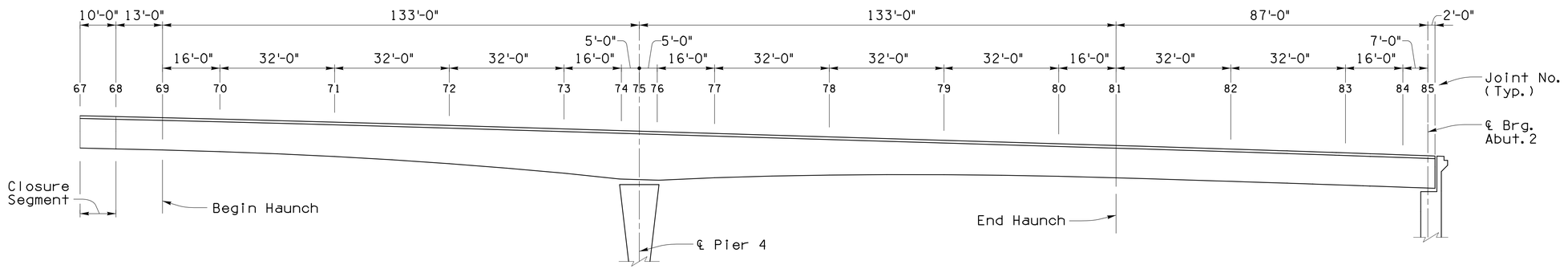
DRWN. BY JHS, MJL	06-18	REF. SCALE: N/A
DSGN. BY AO	06-18	
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.

Two working days before you dig. CALL FOR THE BLUE STAKES 1-800-STAKE-IT Blue Stake Center CALL COLLECT



PLAN
1/16" = 1'-0'



SPAN 4
Cast on Falsework

SPAN 5
Cast on Falsework

ELEVATION
1/16" = 1'-0'

Notes:

1. Work this drawing with Section Dimensions - 2 drawing, S-1.40.
2. For location of Hanger Embed ℄, See Sheets S-2.14 & S-2.15.

Joint No.	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85
LT Median PGL Elev		2496.47	2496.25	2495.96	2495.32	2494.61	2493.81	2493.39	2493.25	2493.11	2492.66	2491.70	2490.74	2489.78	2489.30	2488.34	2487.38	2486.90	2486.69
Elev @ ℄ Box		2496.07	2495.85	2495.56	2494.92	2494.21	2493.41	2492.99	2492.85	2492.71	2492.26	2491.30	2490.34	2489.38	2488.90	2487.94	2486.98	2486.50	2486.29

See S-1.37

Note: Elevations are at top of overlay.

Span & Segment
Layout 4 (WB)

S-1.38 of S-1.78

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

245
OF
474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.

Two working days before you dig,
CALL FOR THE BLUE STAKES
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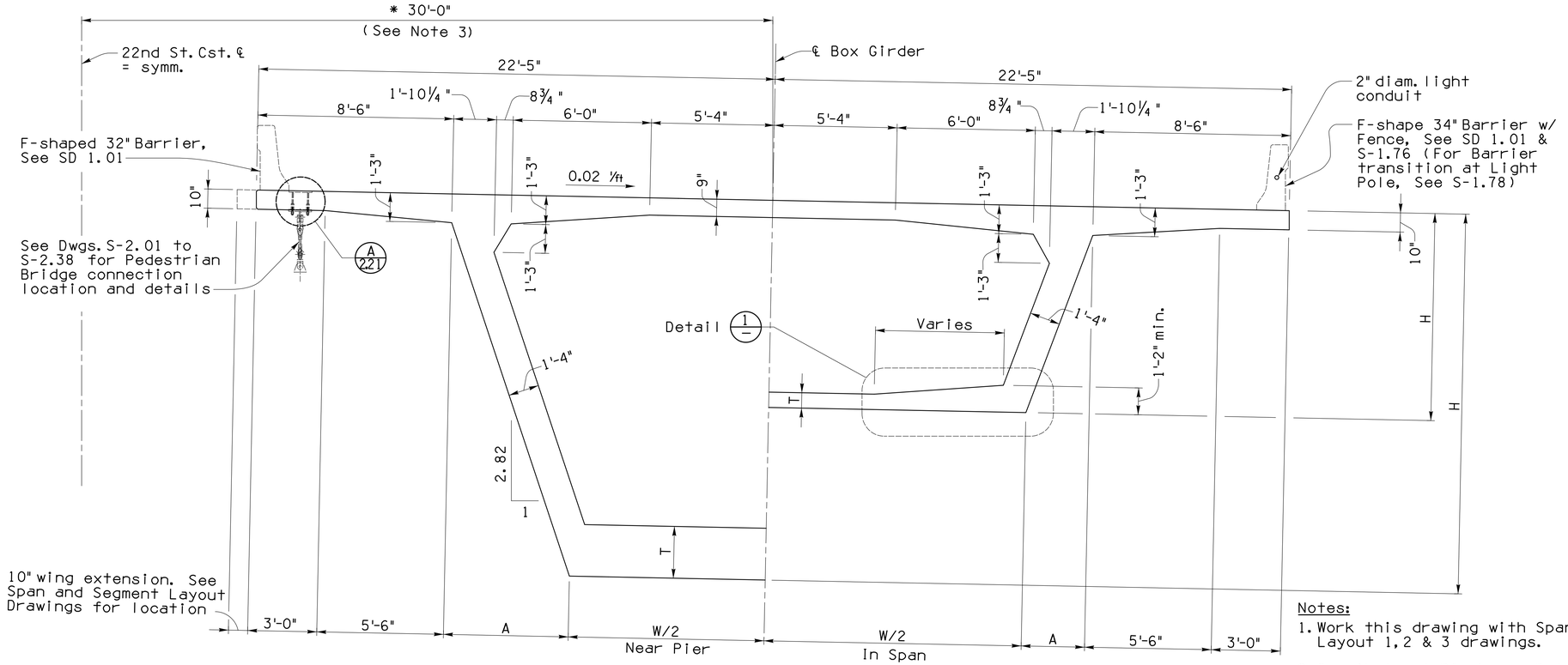
Blue Stake Center
CALL COLLECT



TYPICAL SECTION

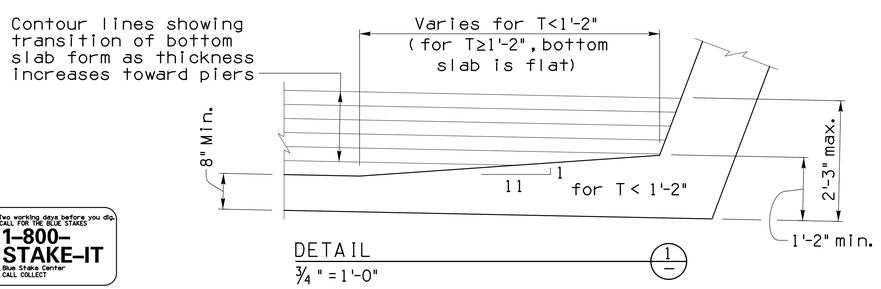
3/8" = 1'-0"

Notes:

1. Work this drawing with Span & Segment Layout 1, 2 & 3 drawings.
2. See Abutment Diaphragm Details drawing for additional dimensions at the abutment diaphragm.
3. * measured along true horizontal.
4. Eastbound Bridge shown, Westbound Bridge similar.

TABLE OF VARIABLE DIMENSIONS

Section No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
H	16'-6"	15'-3⅛"	14'-5"	13'-8"	12'-11⅝"	12'-4"	11'-9¼"	11'-3"	10'-9⅝"	10'-4⅞"	10'-0⅝"	9'-9⅛"	9'-6⅛"	9'-3¾"	9'-2"	9'-0¾"	9'-0⅛"	9'-0"	9'-0"	9'-0"	9'-0"
W	17'-0"	17'-10½"	18'-5¾"	19'-0¼"	19'-6⅛"	19'-11½"	20'-4⅜"	20'-8¾"	21'-0⅝"	21'-4"	21'-7"	21'-9½"	21'-11⅝"	22'-1¼"	22'-2½"	22'-3⅜"	22'-3⅞"	22'-4"	22'-4"	22'-4"	22'-4"
A	5'-5"	4'-11¾"	4'-8⅛"	4'-4⅞"	4'-2"	3'-11¼"	3'-8⅞"	3'-6⅝"	3'-4¾"	3'-3"	3'-1½"	3'-0¼"	2'-11¼"	2'-10⅜"	2'-9¾"	2'-9¼"	2'-9⅛"	2'-9"	2'-9"	2'-9"	2'-9"
T	2'-3"	1'-11⅞"	1'-9¾"	1'-7⅞"	1'-6"	1'-4½"	1'-3"	1'-1¾"	1'-0⅝"	11½"	10⅝"	9⅞"	9¼"	8¾"	8⅜"	8⅛"	8"	8"	8"	8"	-



DETAIL

¾" = 1'-0"

1 1

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NO.	DATE	REVISION	BY	CHKD.	APPR.

Section Dimensions - 1 S-1.39 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

246 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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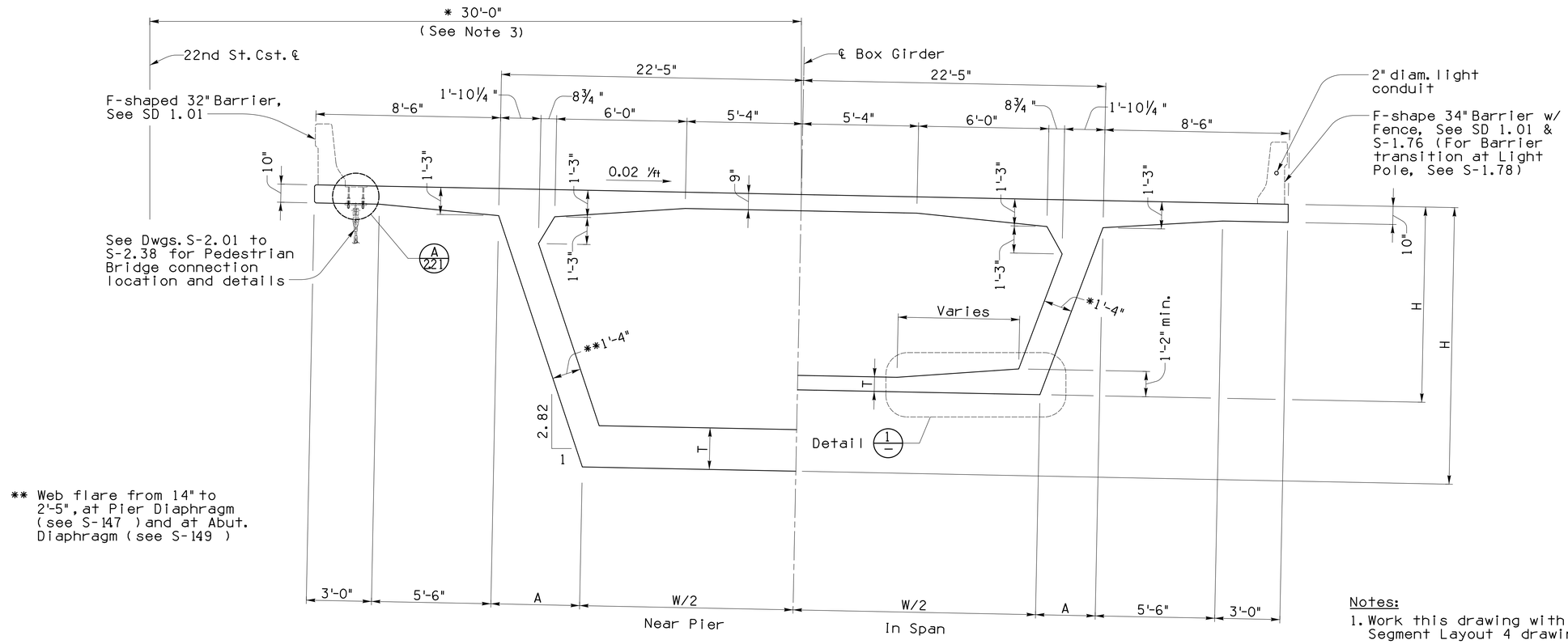
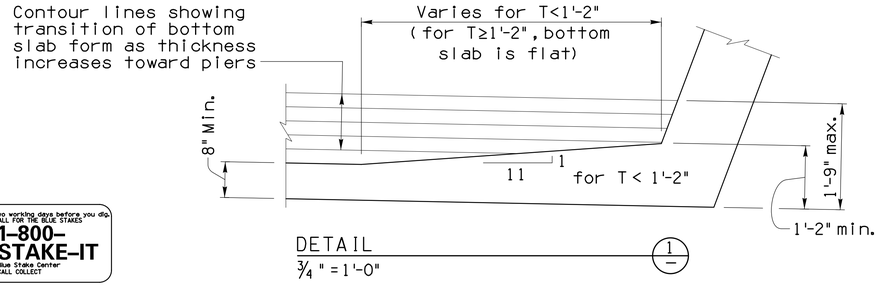


** Web flare from 14" to 2'-5", at Pier Diaphragm (see S-147) and at Abut. Diaphragm (see S-149)

TYPICAL SECTION

⅜" = 1'-0"

TABLE OF VARIABLE DIMENSIONS													
Distance from ℄ Pier 4	0	2'-6"	5'-0"	21'-0"	37'-0"	53'-0"	69'-0"	85'-0"	101'-0"	117'-0"	133'-0"	146'-0"	Span 5 146'-0" to Abut. 2
H	13'-6"	13'-6"	13'-6"	12'-4⅛"	11'-4⅞"	10'-7¾"	10'-0⅜"	9'-6⅞"	9'-3"	9'-0¾"	9'-0"	9'-0"	9'-0"
W	19'-1⅝"	19'-1⅝"	19'-1⅝"	19'-11⅜"	20'-7⅜"	21'-2"	21'-7⅛"	21'-11"	22'-1¾"	22'-3⅜"	22'-4"	22'-4"	22'-4"
A	4'-4¼"	4'-4¼"	4'-4¼"	3'-11¼"	3'-7¼"	3'-4"	3'-1½"	2'-11½"	2'-10⅛"	2'-9¼"	2'-9"	2'-9"	2'-9"
T	1'-9" (see Note 5)	1'-9"	1'-9"	1'-5⅝"	1'-3"	1'-0¾"	11"	9⅝"	8¾"	8⅛"	8"	8"	8" (see Note 2)



DETAIL 1

¾" = 1'-0"

Notes:

1. Work this drawing with Span & Segment Layout 4 drawing.
2. See Abutment Diaphragm Details S-1.49 for additional dimensions at the abutment diaphragm.
3. * measured along true horizontal.
4. Eastbound Bridge shown, Westbound Bridge similar.
5. See Pier 4 Diaphragm Details, S-1.48 for additional dimensions at the pier 4 diaphragm.

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Section Dimensions - 2 S-1.40 of S-1.78

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

247 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
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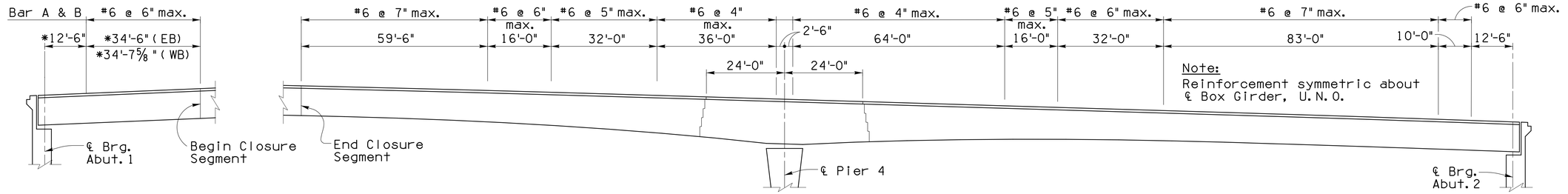


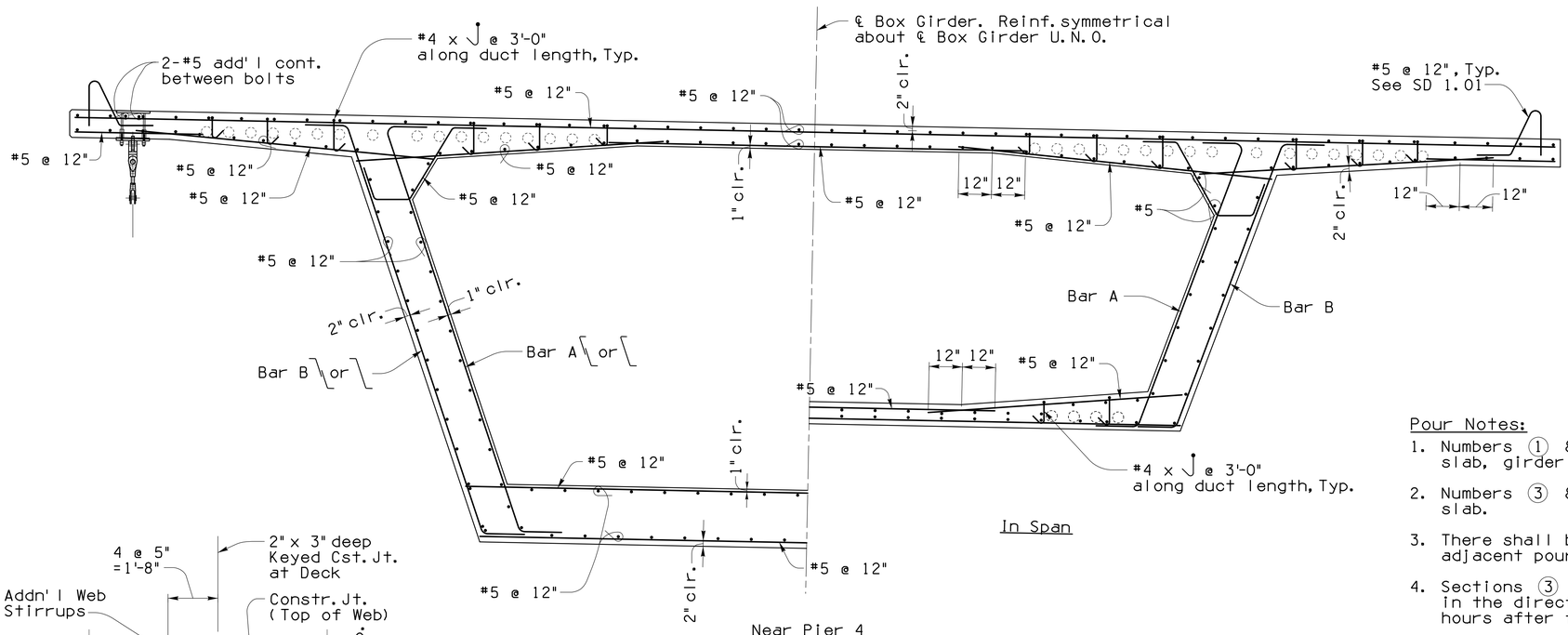
SPAN 1
Cast on Falsework

SPAN 4
Cast on Falsework

SPAN 5
Cast on Falsework

* measure along LT/RT Median Cst. ℄

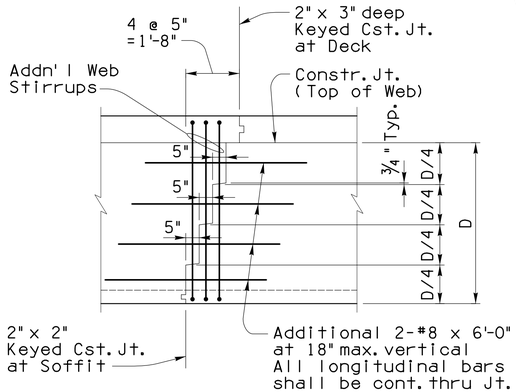
ELEVATION - LAYOUT OF BAR A & BAR B
1/16" = 1'-0"



In Span

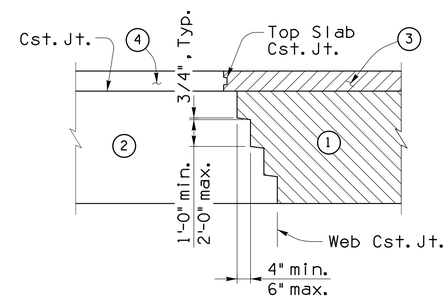
Near Pier 4

TYPICAL SECTION - CAST-ON-FALSEWORK
1/2" = 1'-0"



Note:
Web Stirrups shown in adjacent detail are in addition to Bar A & Bar B. Adjust spacing as required to maintain minimum clearances for concrete placement and vibration.

WEB CONSTRUCTION JOINT DETAIL
No Scale



CAST-ON-FALSEWORK POUR SCHEDULE
No Scale

Pour Notes:

1. Numbers ① & ② indicates placing sequence of bottom slab, girder web and diaphragm concrete.
2. Numbers ③ & ④ indicate placing sequence of top slab.
3. There shall be a 12 hour minimum interval between adjacent pours.
4. Sections ③ & ④ may be poured consecutively but only in the direction from ③ to ④ and a minimum of 12 hours after the adjecent section ③ has been poured.
5. Transverse deck prestressing to be completed before any formwork removal for that portion.
6. Longitudinal prestressing only after all transverse prestressing is complete and before main falsework is removed.
7. The Contractor shall submit a Pour Schedule to the Engineer for approval prior to placing concrete.

Reinforcement Spans Cast on Falsework S-1.41 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

248 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
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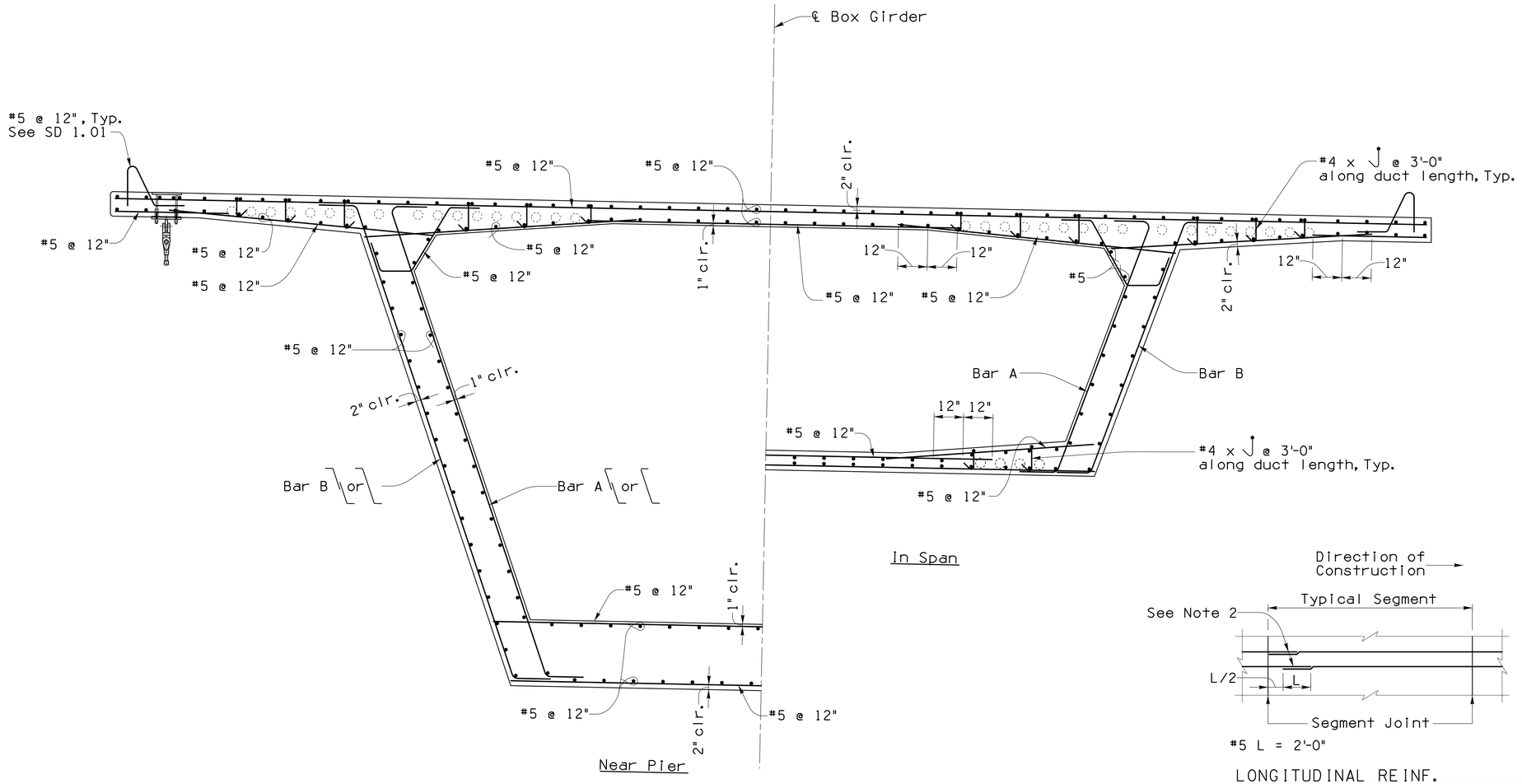

TYPICAL SECTION
½" = 1'-0"

LONGITUDINAL REINF.
No Scale

Segment No.	*Pier Table	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Closure Segments
Bar A	#6 @ 5"	#6 @ 5"	#6 @ 5"	#6 @ 5"	#6 @ 5"	#6 @ 5"	#6 @ 5"	#6 @ 5"	#6 @ 5"	#6 @ 5"	#6 @ 5"	#6 @ 6"	#6 @ 6"	#6 @ 6"	#6 @ 6"	#6 @ 7"	#6 @ 7"	#6 @ 7"
Bar B	#6 @ 5"	#6 @ 5"	#6 @ 5"	#6 @ 5"	#6 @ 5"	#6 @ 5"	#6 @ 5"	#6 @ 5"	#6 @ 5"	#6 @ 5"	#6 @ 5"	#6 @ 6"	#6 @ 6"	#6 @ 6"	#6 @ 6"	#6 @ 7"	#6 @ 7"	#6 @ 7"

Note: For Segment Nos, see S-1.31 through S-1.37, Span & Segment Layout 1,2 & 3.

*See also S-1.44 to S-1.46 for Pier Table Reinf.

Notes:

1. Reinforcement symmetric about ℄ Box Girder U.N.O.
2. Stagger laps by half a lap length on alternate longitudinal reinforcement.

Segment Reinforcement S-1.42 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
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249 OF 474

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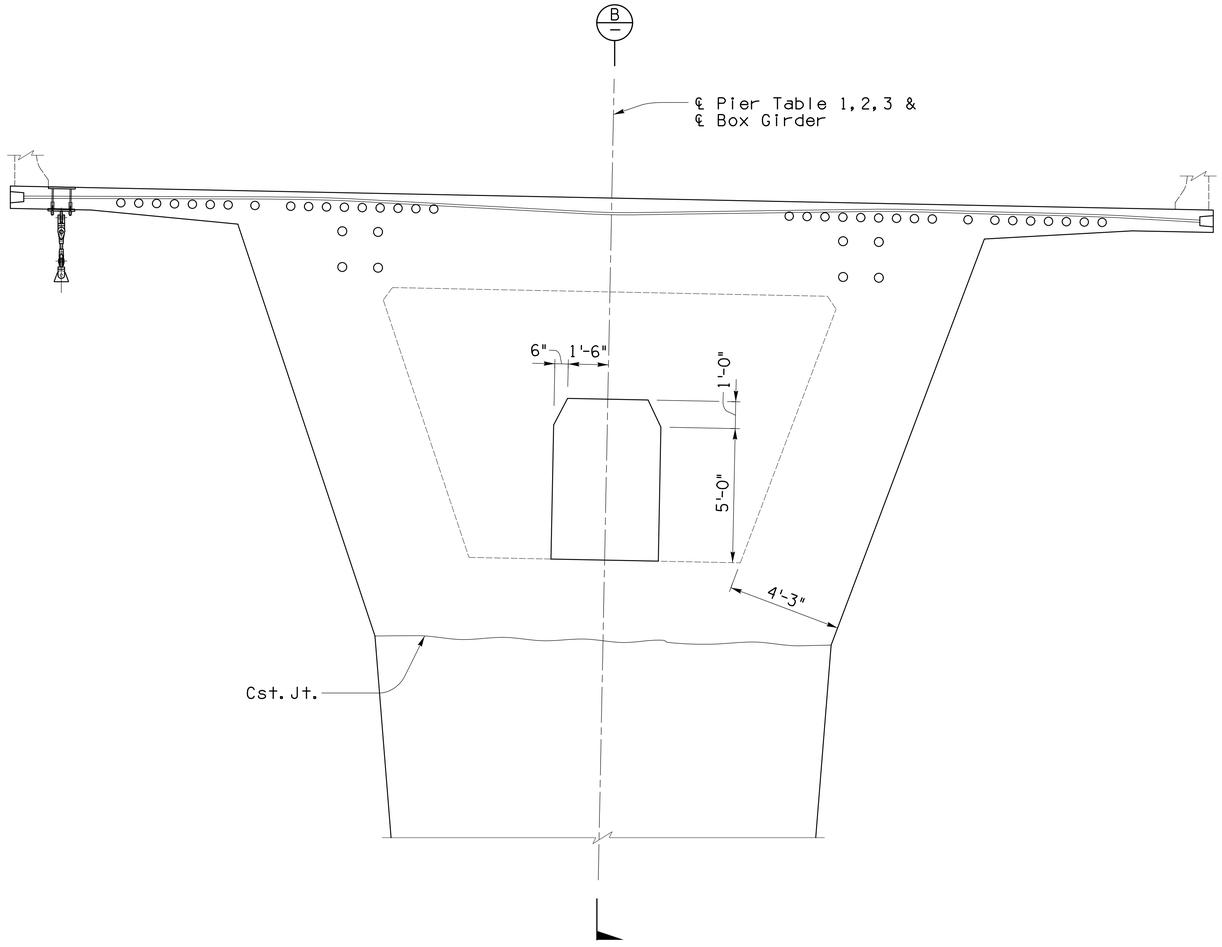
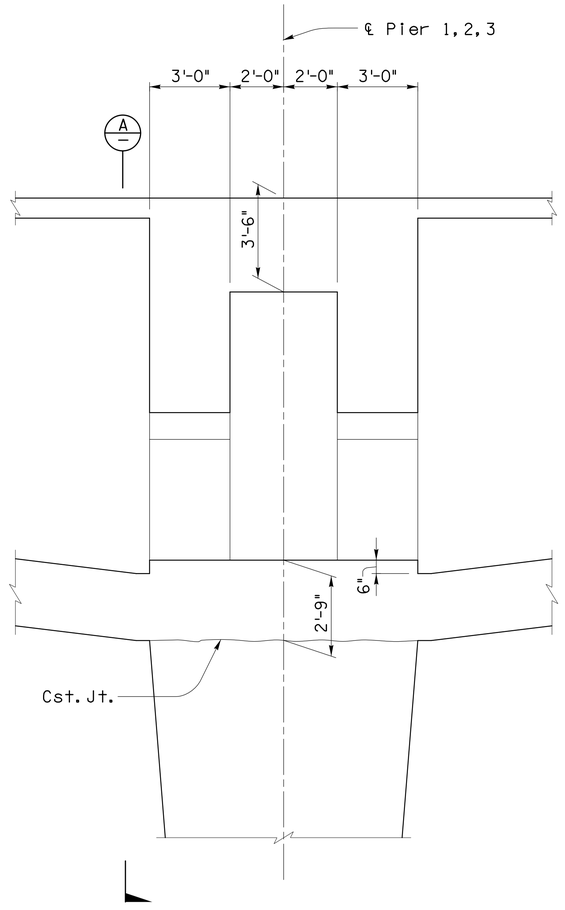


SECTION
3/8" = 1'-0"
A



SECTION
3/8" = 1'-0"
B

Pier Table Details

S-1.43 of S-1.78

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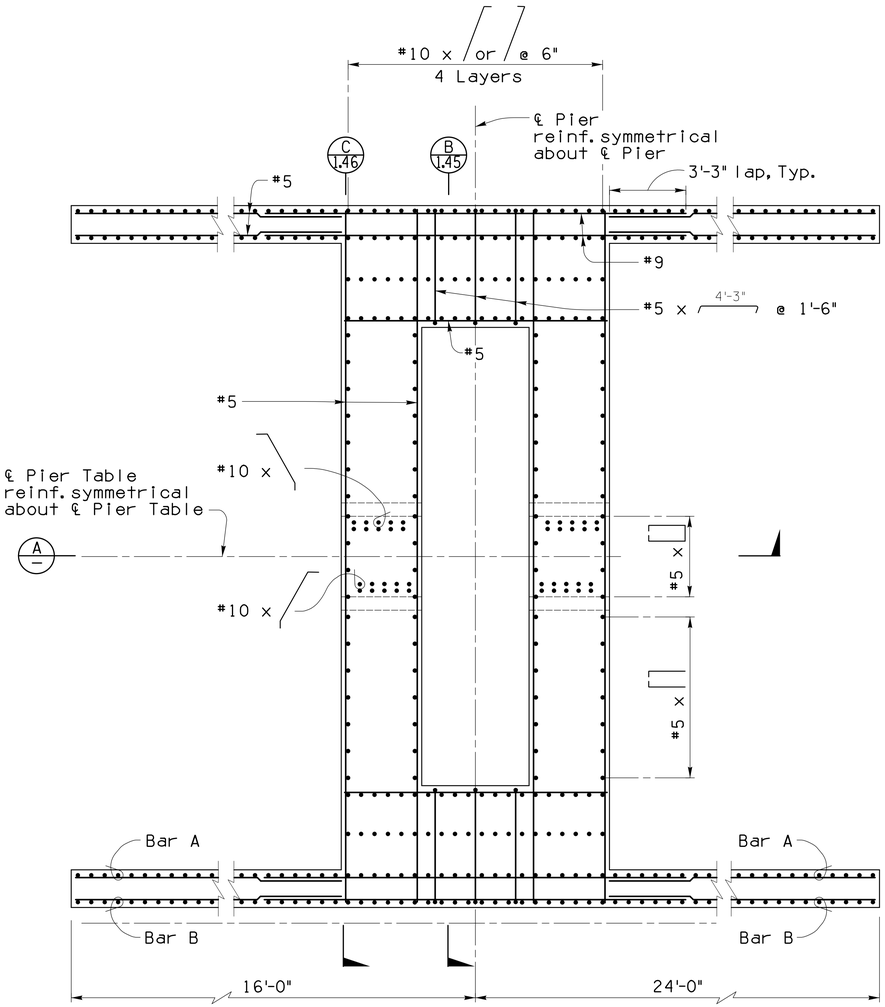
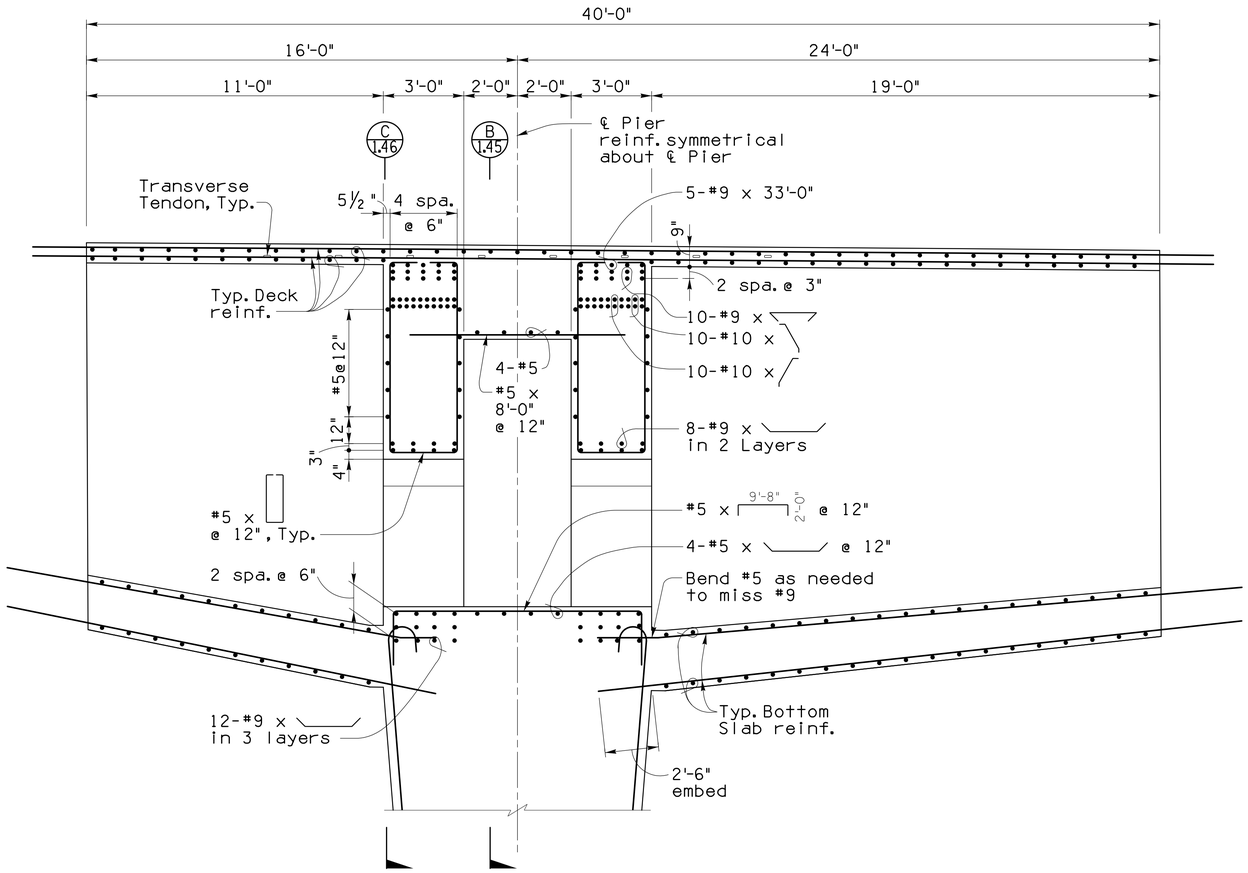


SECTION
3/8" = 1'-0"
D 1.45 / D 1.46

Note:
For Bar A and Bar B see Segment Reinforcement drawing.



SECTION
3/8" = 1'-0"
A

Note:
For typical Deck and Bottom Slab reinf. see Segment Reinforcement drawing.

Pier Table Reinf. - 1 S-1.44 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
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251 OF 474

CITY OF TUCSON

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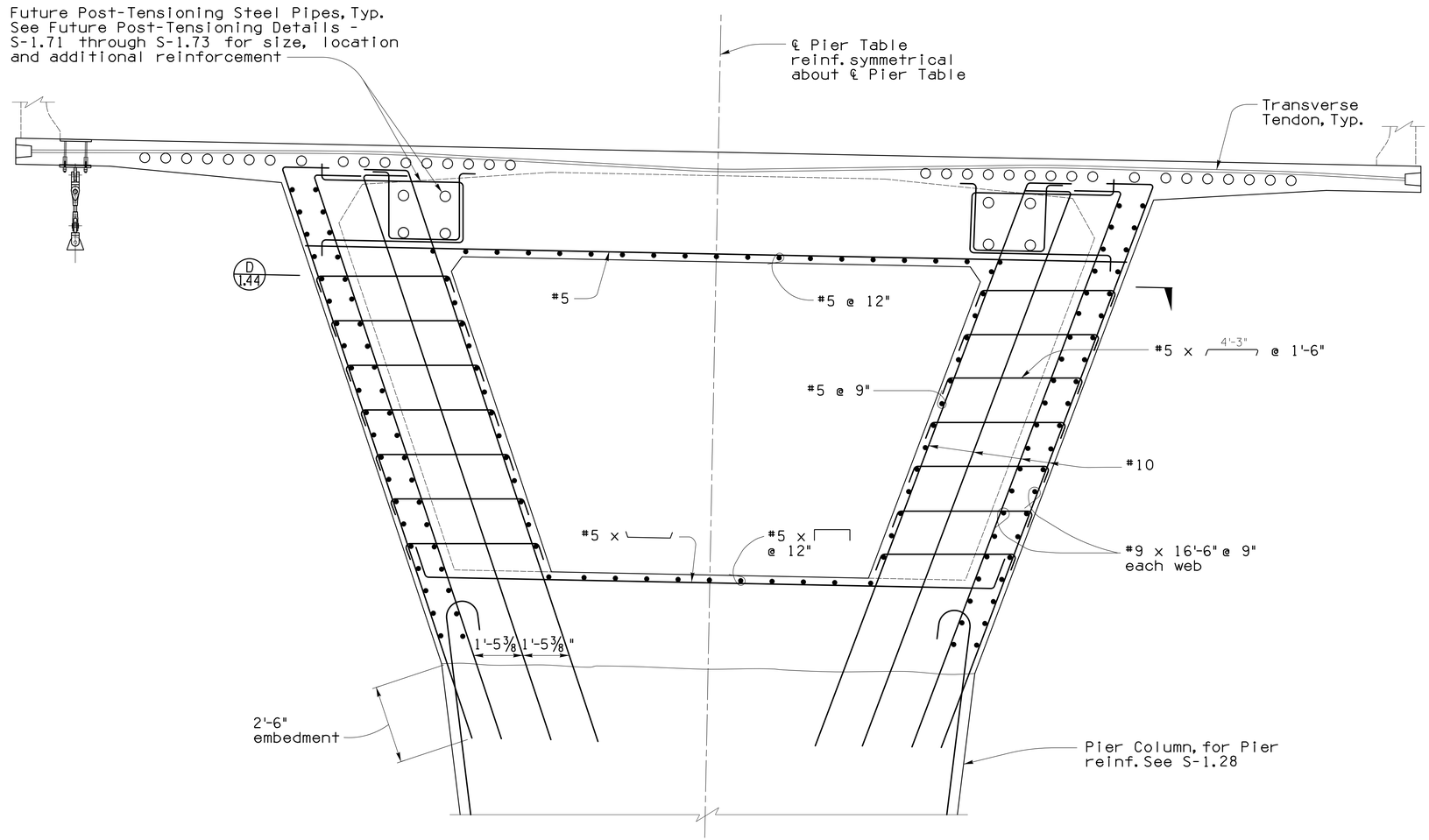

Note: Typ. Deck reinf. not shown.

SECTION
½" = 1'-0"
B
1.44

Pier Table Reinf. - 2

S-1.45 of S-1.78

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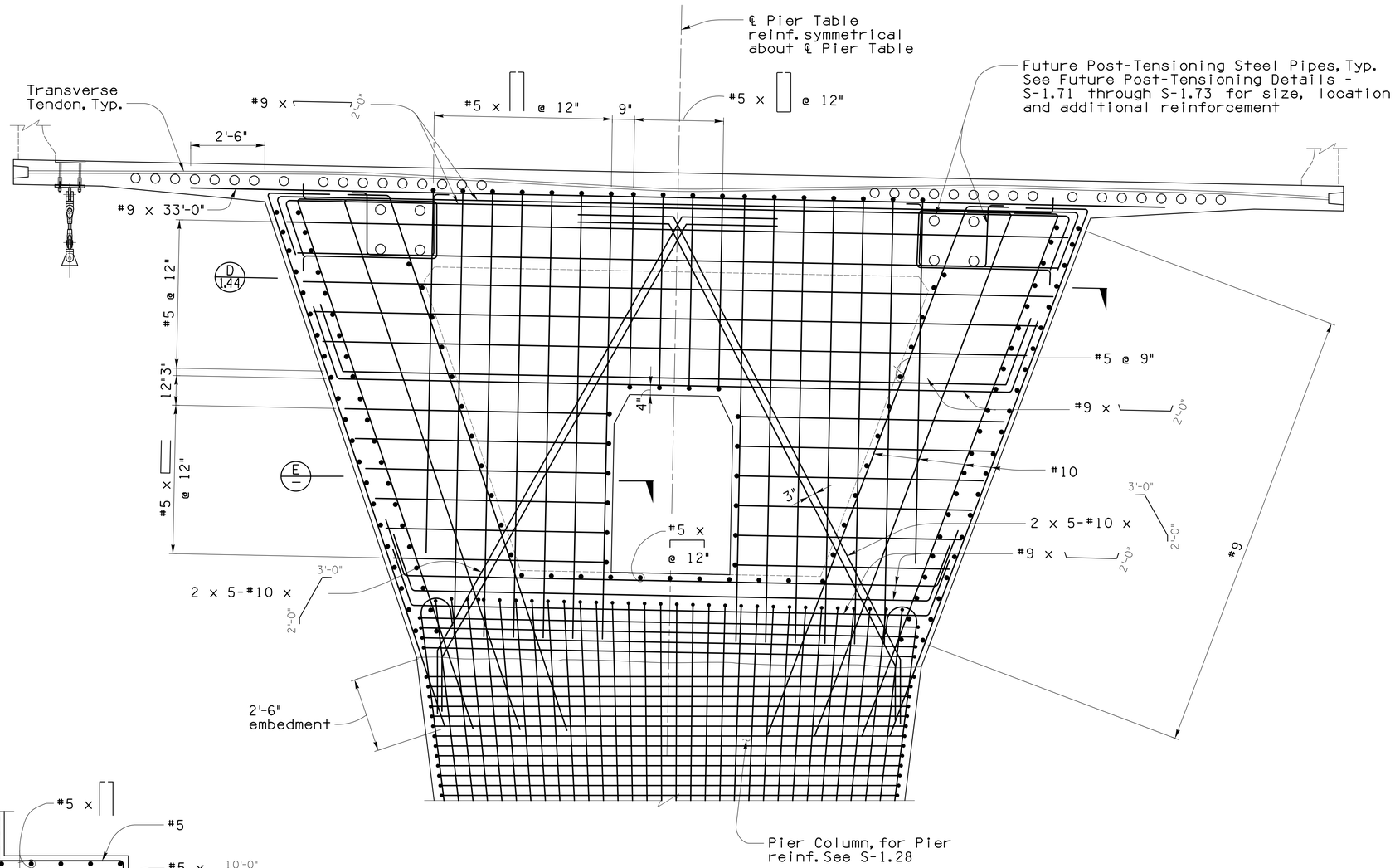
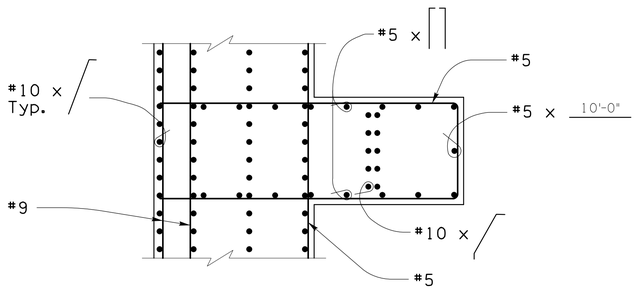


Note: Typ. Deck reinf. not shown.



SECTION
3/8" = 1'-0"
E
-

SECTION
1/2" = 1'-0"
C
1.44

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Pier Table Reinf. - 3 S-1.46 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
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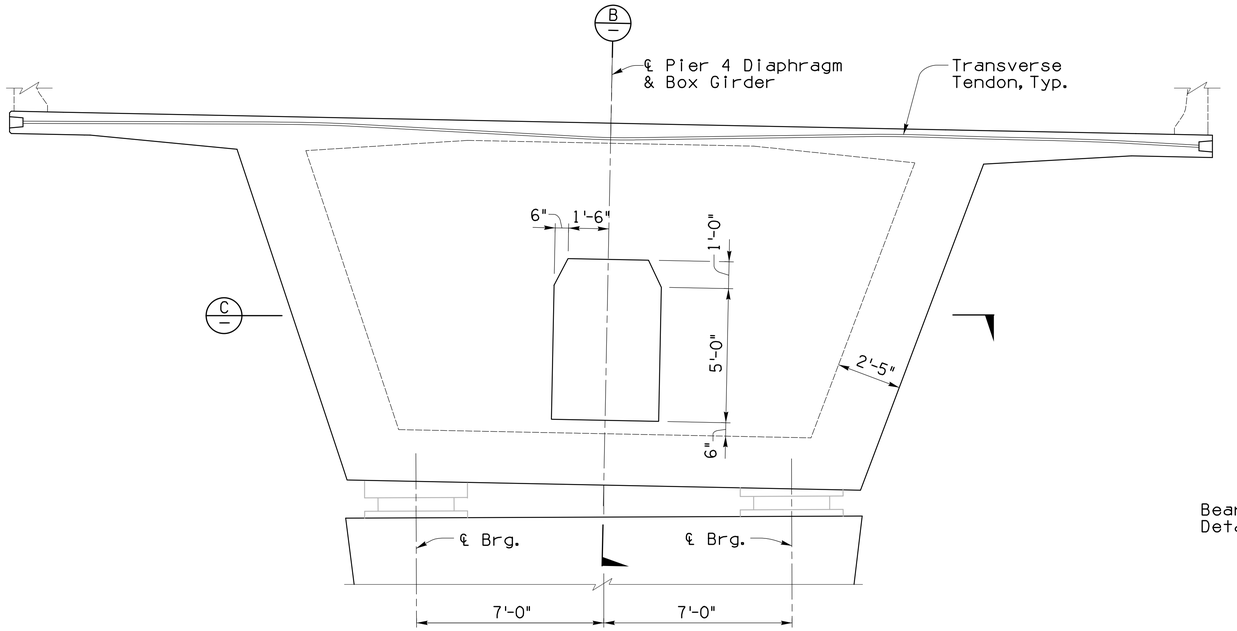
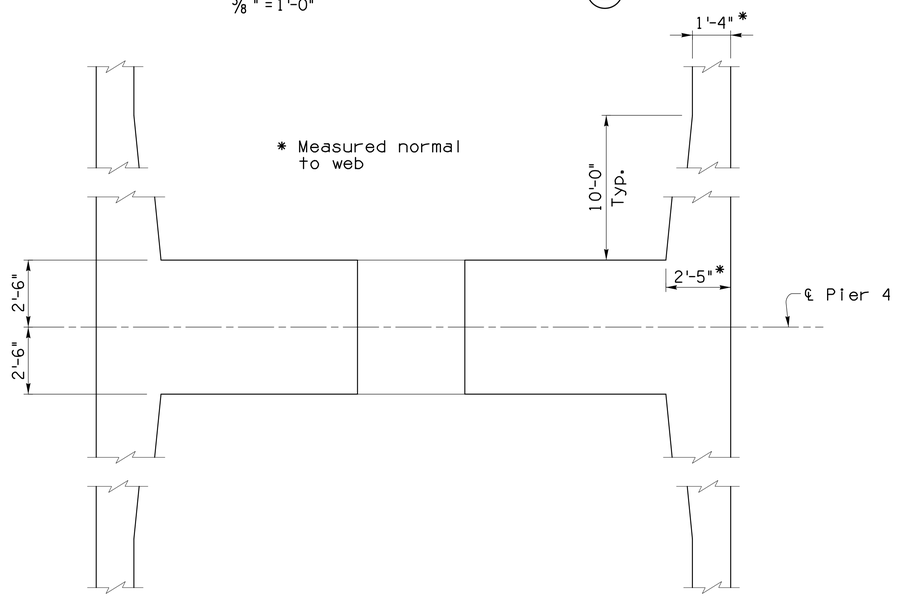
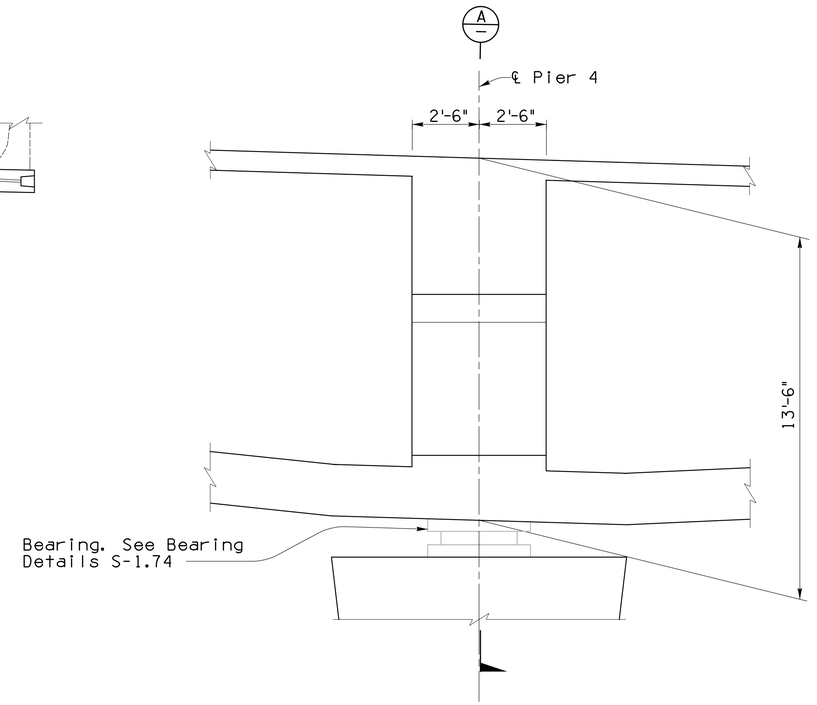


SECTION
3/8" = 1'-0"
A



SECTION
3/8" = 1'-0"
C



SECTION
3/8" = 1'-0"
B

Note:
For Pedestrian Bridge connection details and location at Pier 4, WB Bridge, see Pedestrian Bridge Plans (Typ.)

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Pier 4 Diaphragm Details S-1.47 of S-1.78

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VEHICULAR BRIDGES

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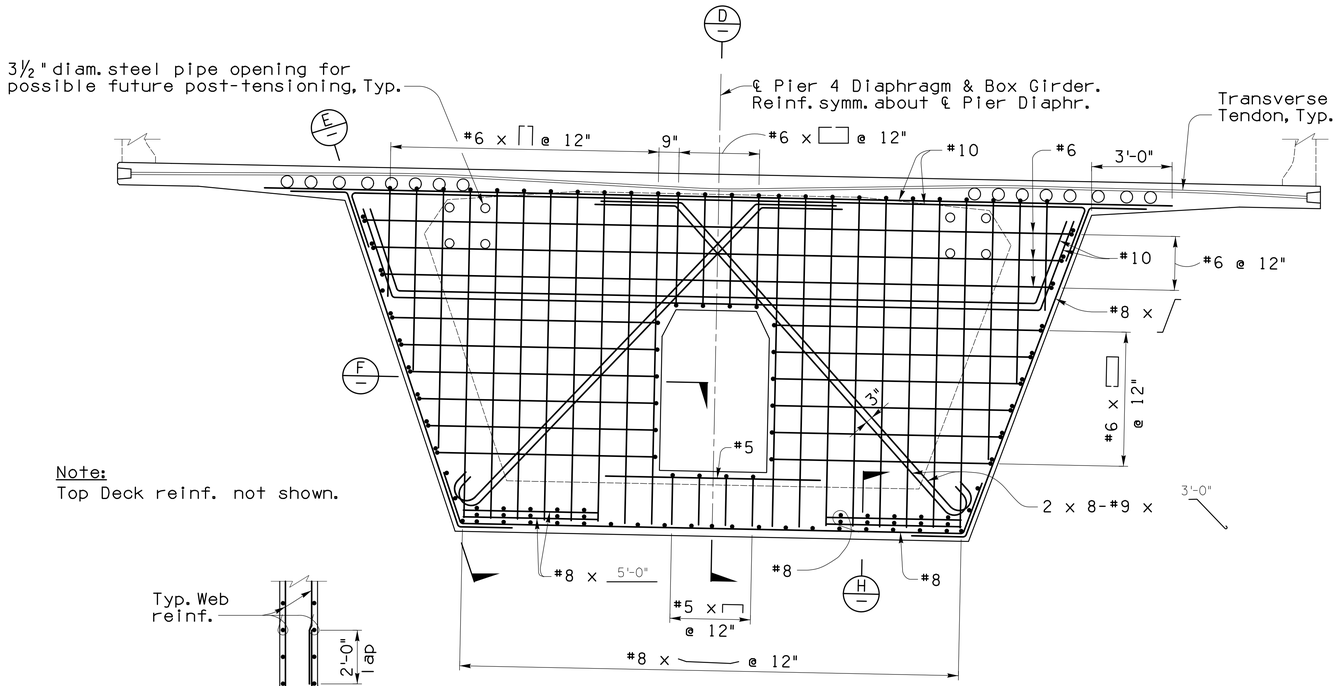
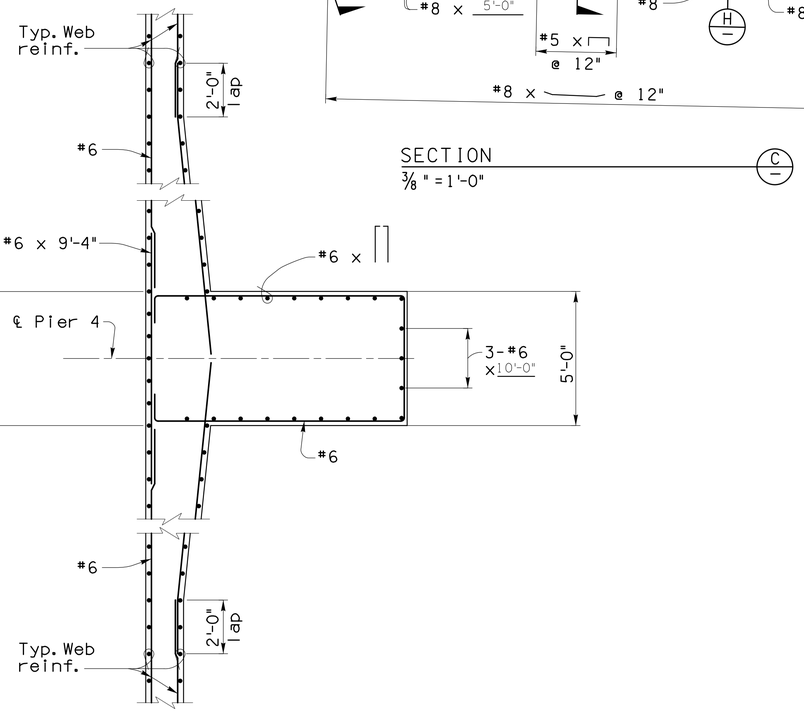
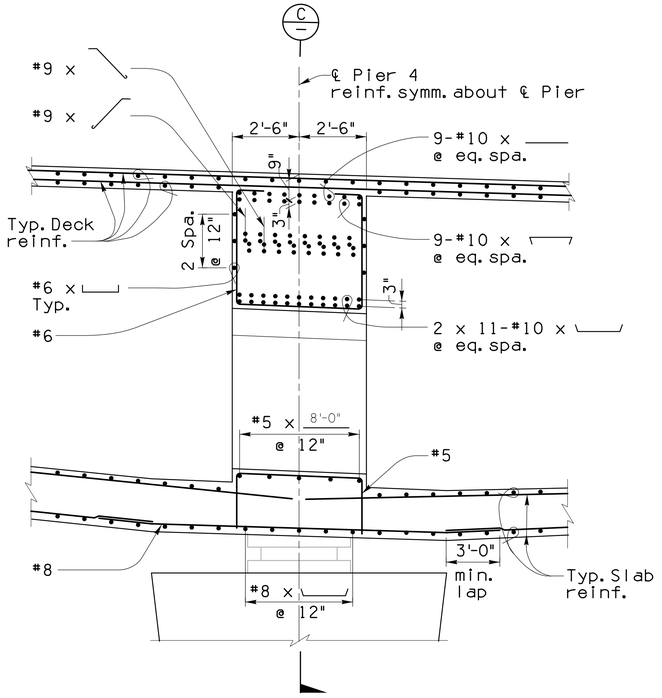


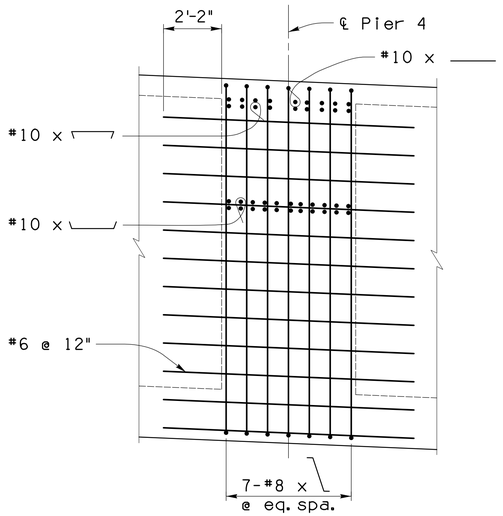
SECTION
3/8" = 1'-0"
C



SECTION
3/8" = 1'-0"
F

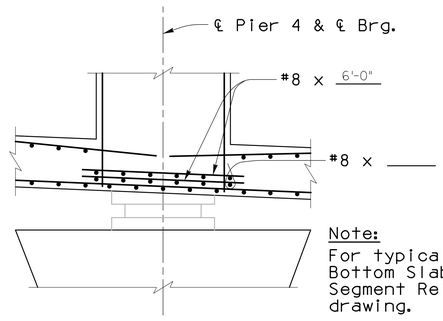


SECTION
3/8" = 1'-0"
D



Note: Typ. Web reinf. not shown.

SECTION
3/8" = 1'-0"
E



Note:
For typical Deck and Bottom Slab reinf., see Segment Reinforcement drawing.

SECTION
3/8" = 1'-0"
H

Pier 4 Diaphragm Reinforcement

S-1.48 of S-1.78

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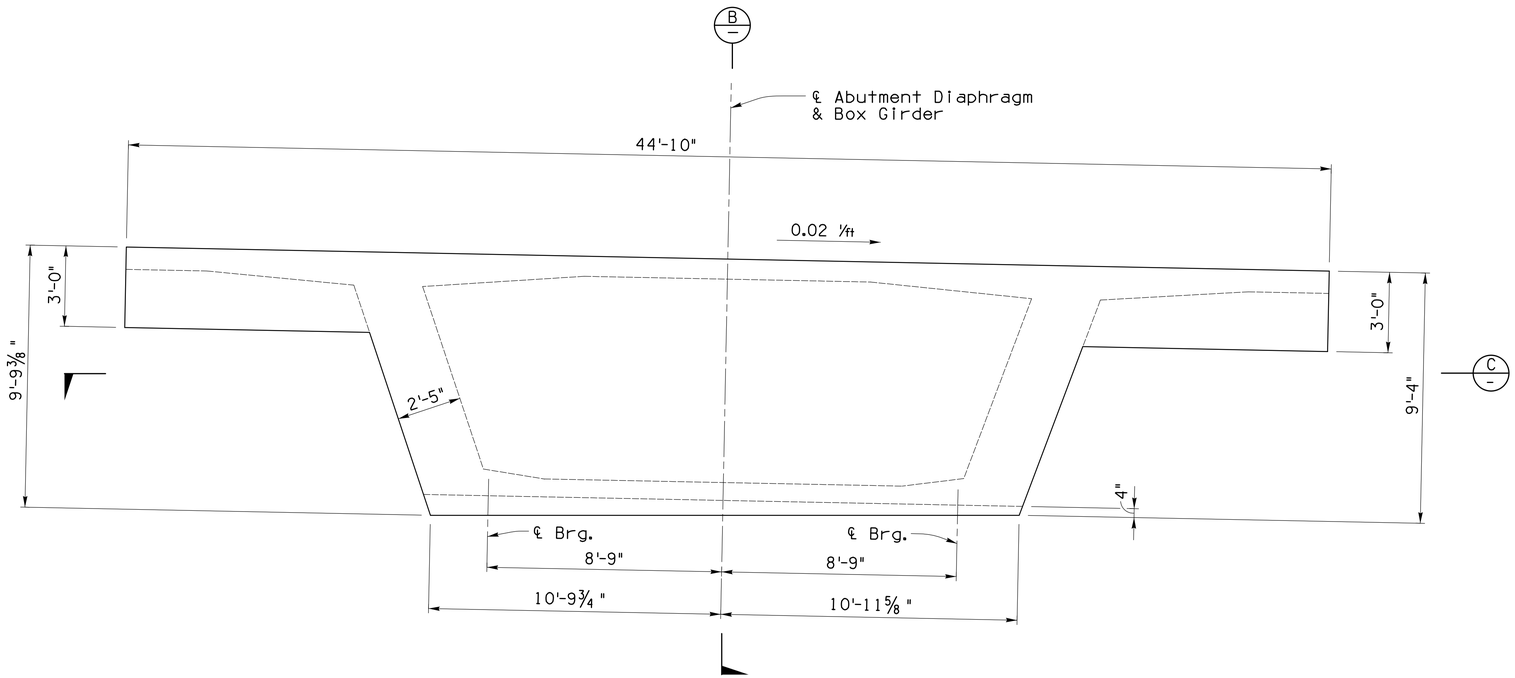
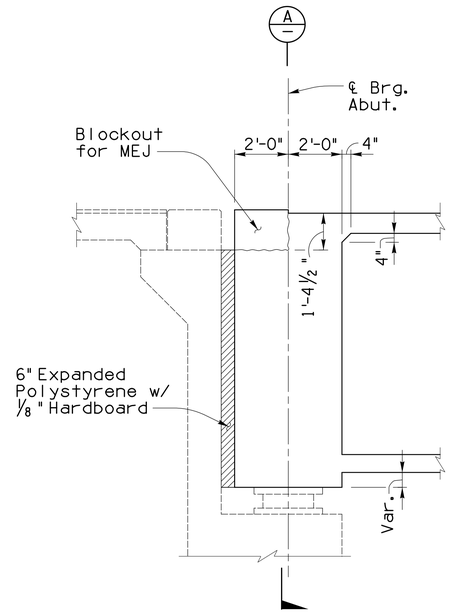


SECTION
⅜" = 1'-0"
A



SECTION
⅜" = 1'-0"
B

* measured normal
to sloped web

SECTION
⅜" = 1'-0"
C

Abutment
Diaphragm Details

S-1.49 of S-1.78

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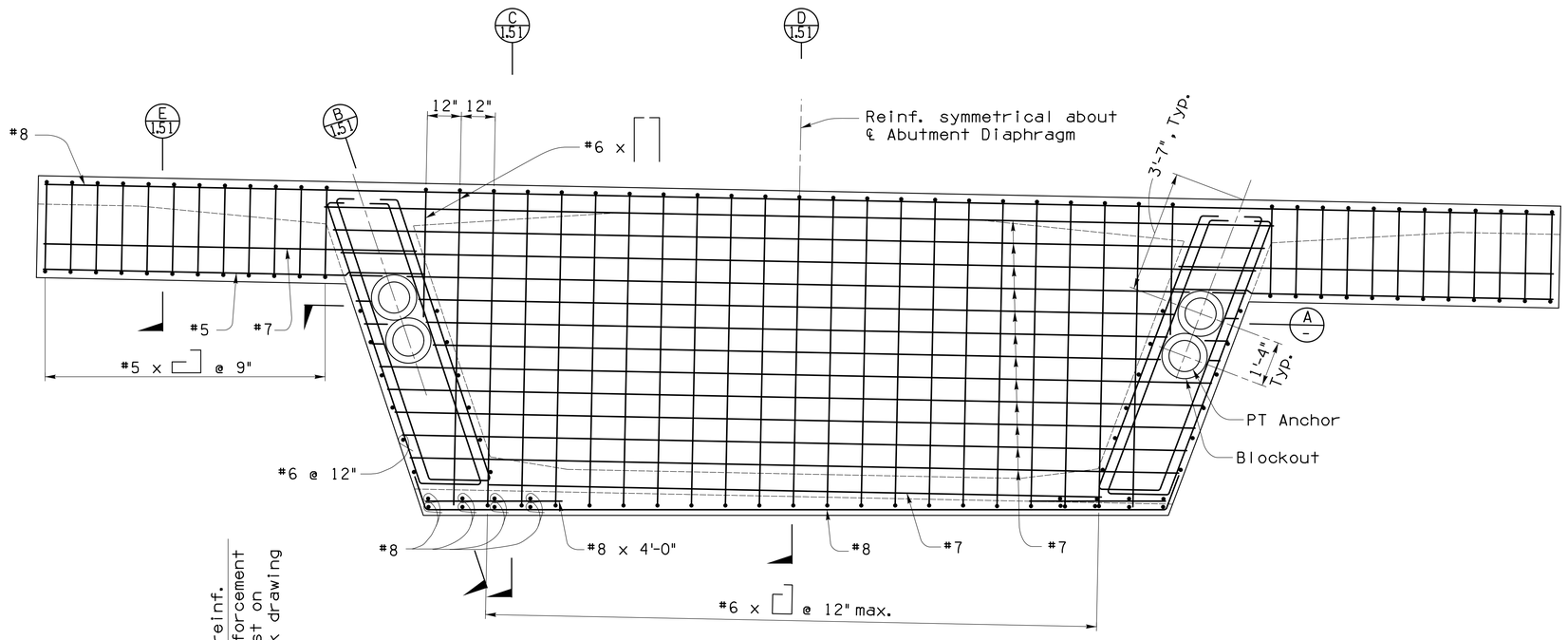
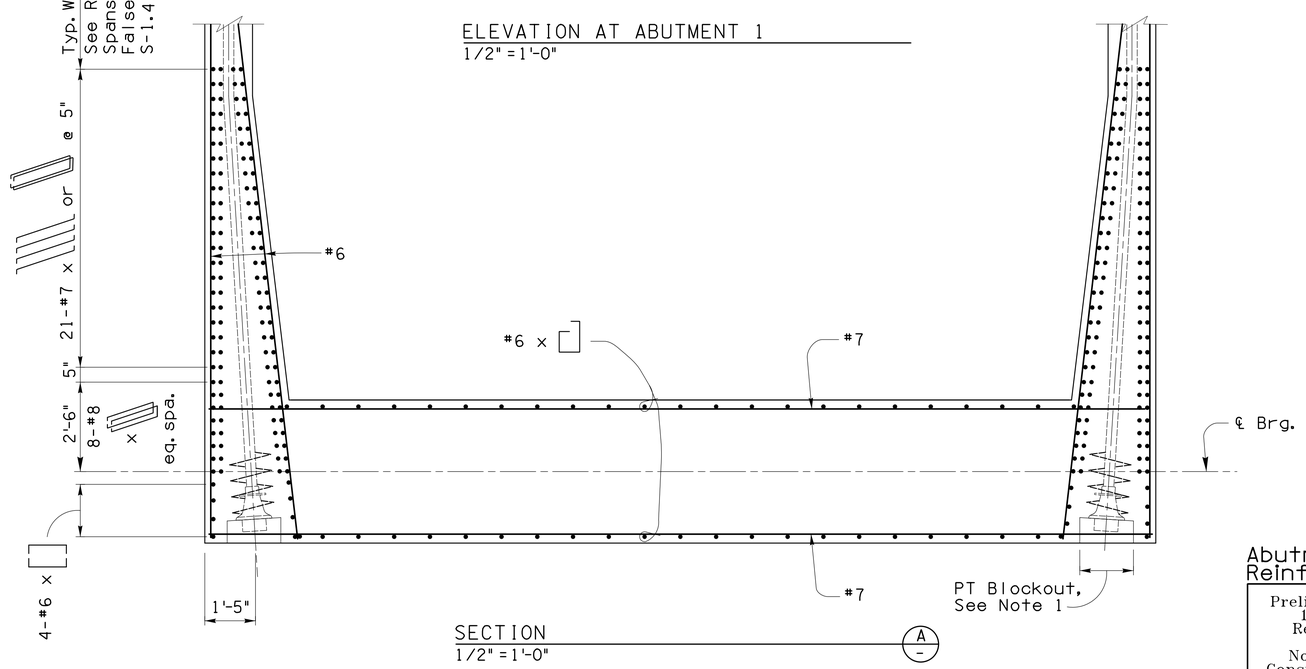


Note: Transverse tendons not shown.

ELEVATION AT ABUTMENT 1
1/2" = 1'-0"



SECTION
1/2" = 1'-0"

Notes:

1. Blockout dimensions for post-tensioning shall be determined by the Contractor and subject to the approval of the Engineer.
2. Reinforcement in area ahead of anchorage ("local zone") is the responsibility of the anchorage device supplier.
3. Reinforcement may be moved if in conflict with anchorage device or post-tensioning ducts subject to approval of the Engineer.

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Abutment Diaphragm Reinforcement - 1

S-1.50 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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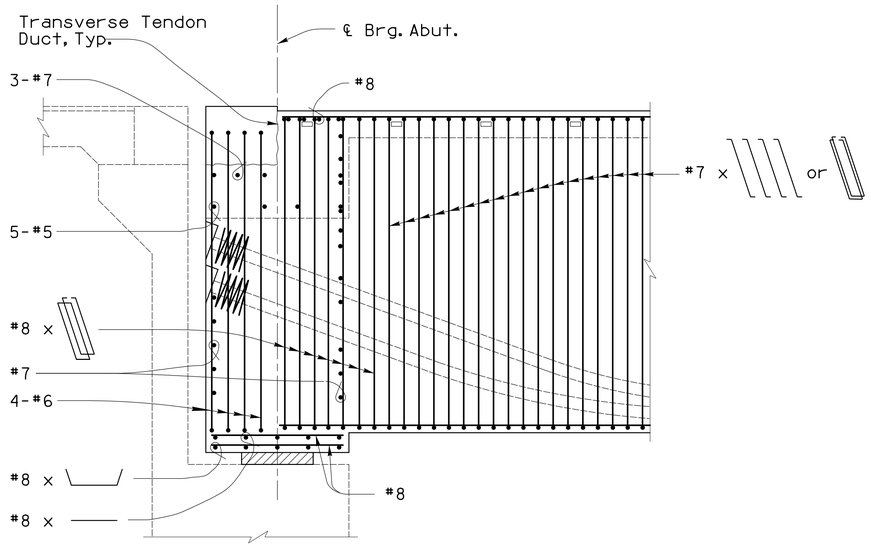
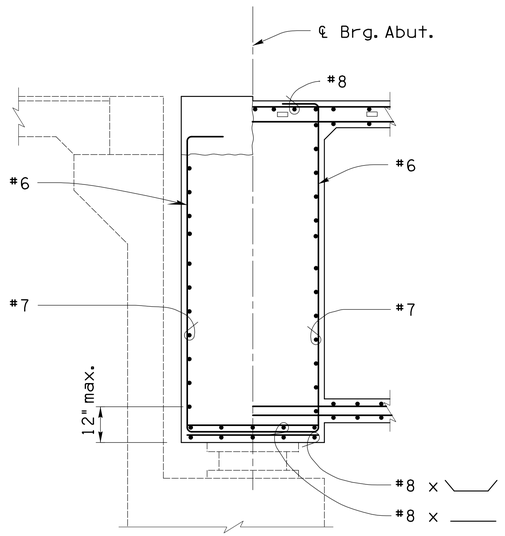
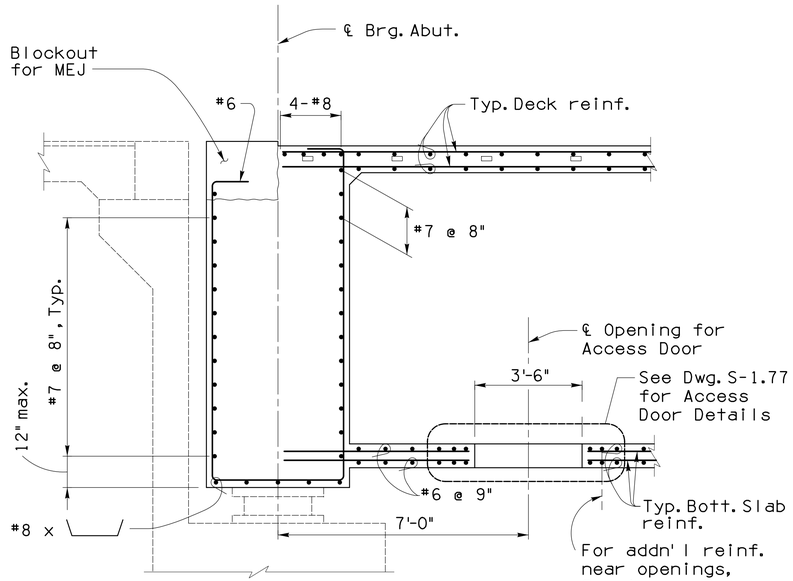


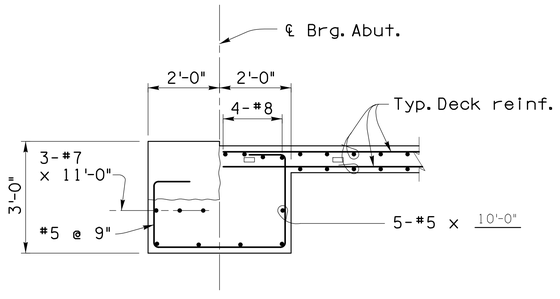
SECTION
½" = 1'-0"
B 1.50



SECTION
½" = 1'-0"
C 1.50



SECTION
½" = 1'-0"
D 1.50



SECTION
½" = 1'-0"
E 1.50

Note:
For Notes see Abutment Diaphragm Reinforcement - 1, S-1.50.

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Abutment Diaphragm Reinforcement - 2

S-1.51 of S-1.78

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

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CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
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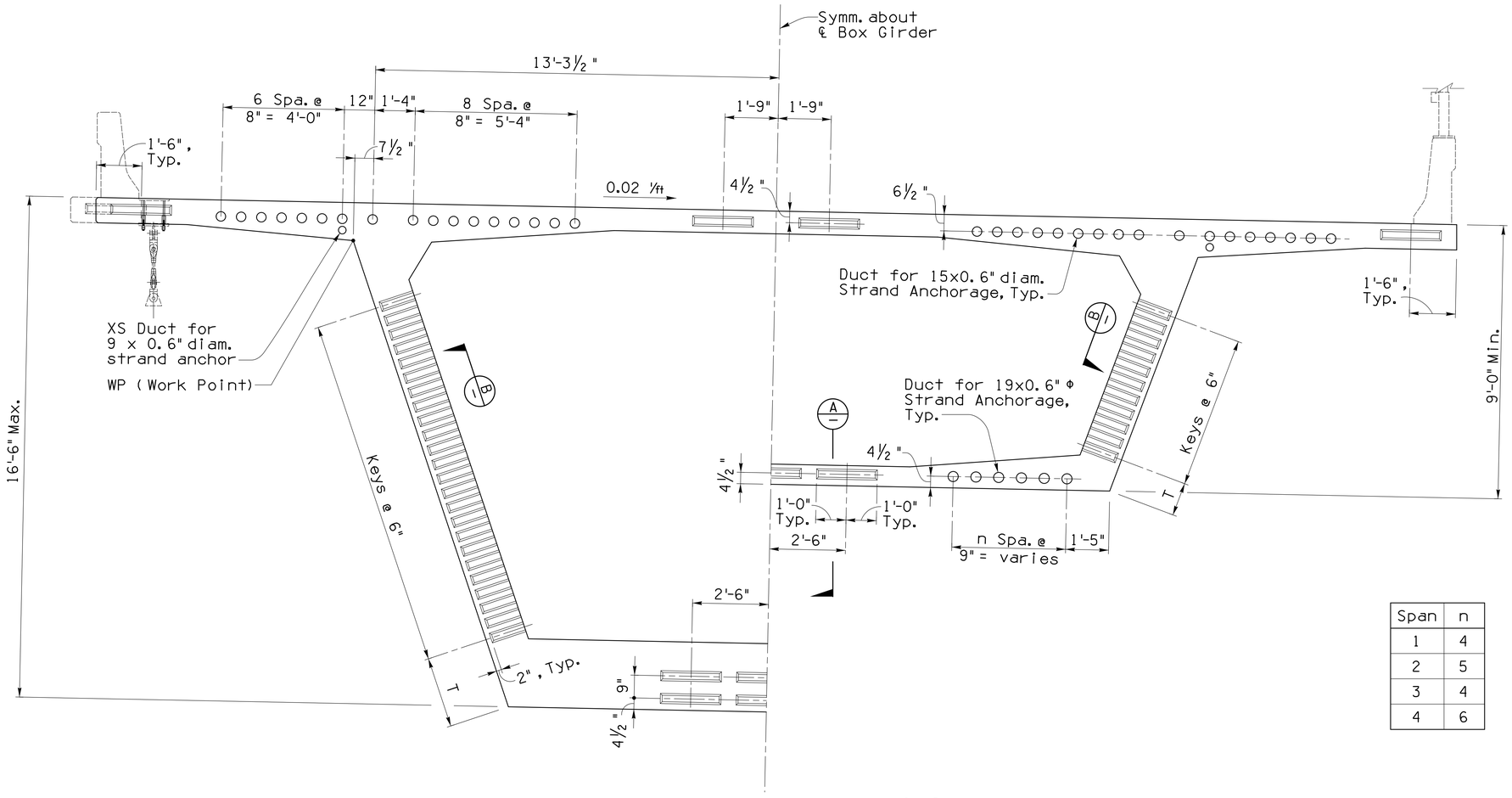
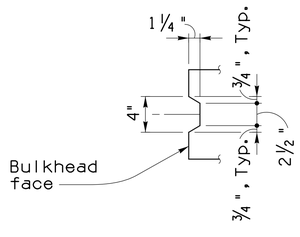


Span	n
1	4
2	5
3	4
4	6

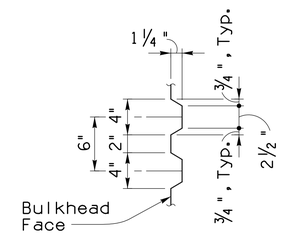
Near Pier

In Span

TYPICAL SECTION
½" = 1'-0"



SECTION A/—
No Scale



SECTION B/—
No Scale

Notes:

1. Typical Section shown is looking upstation EB Bridge. WB Bridge opposite hand.
2. Work this drawing with Top Slab Tendon Details and Bottom Slab Tendon Layout.
3. Dimensions shown are parallel to slope of box.
4. For T dimension, See S-1.39 & S-1.40.

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Bulkhead Details S-1.52 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

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NO.	DATE	REVISION	BY	CHKD.	APPR.

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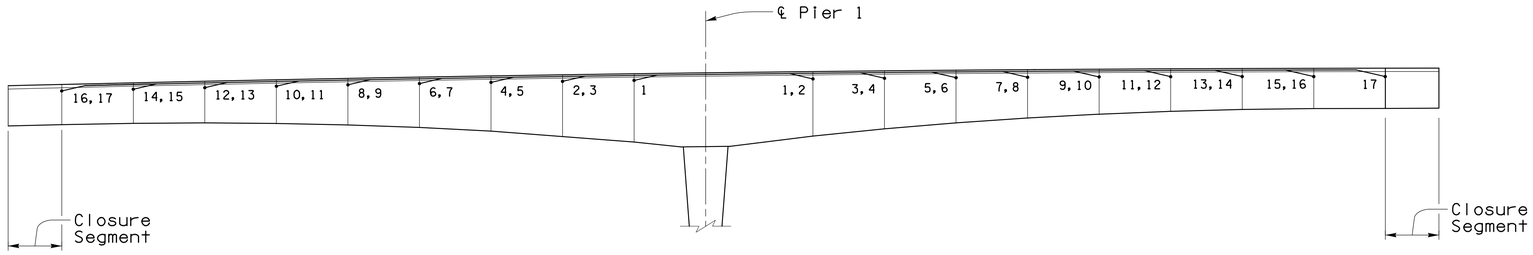
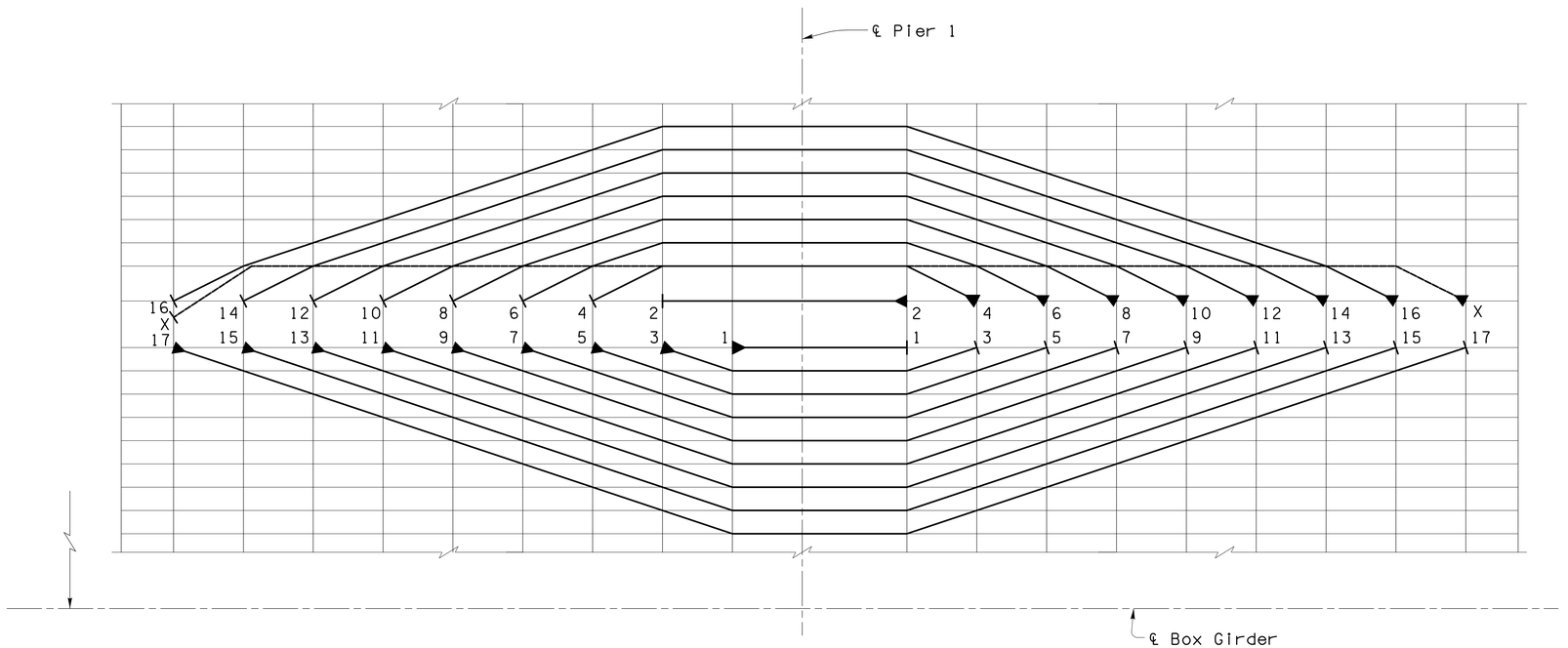


ELEVATION
1/16" = 1'-0"



PLAN
1/16" = 1'-0" Longitudinal
1/2" = 1'-0" Transverse

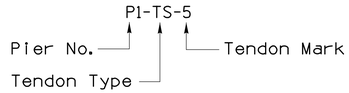
Legend:

Jacking End

Dead End

Tendon	No. of Strands
P1-TS-1	14
P1-TS-2	14
P1-TS-3	14
P1-TS-4	14
P1-TS-5	14
P1-TS-6	14
P1-TS-7	14
P1-TS-8	14
P1-TS-9	14
P1-TS-10	14
P1-TS-11	14
P1-TS-12	14
P1-TS-13	14
P1-TS-14	14
P1-TS-15	14
P1-TS-16	14
P1-TS-17	14

Legend:



Notes:

1. For spacing of tendons and Work Point (WP), see Bulkhead Details drawing.
2. Tendons are symmetrical about ℄ Box Girder.
3. Minimum horizontal radius shall be 30'-0".
4. Work this drawing with Tob Slab Tendon Details drawing.

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Top Slab
Tendon Layout 1

S-1.53 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

260 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
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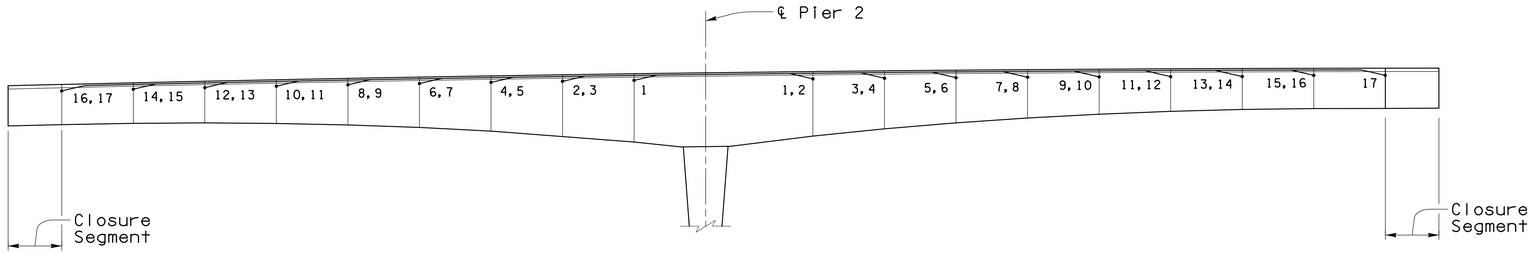
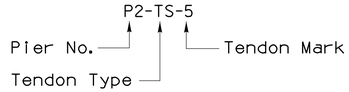


ELEVATION
1/16" = 1'-0"

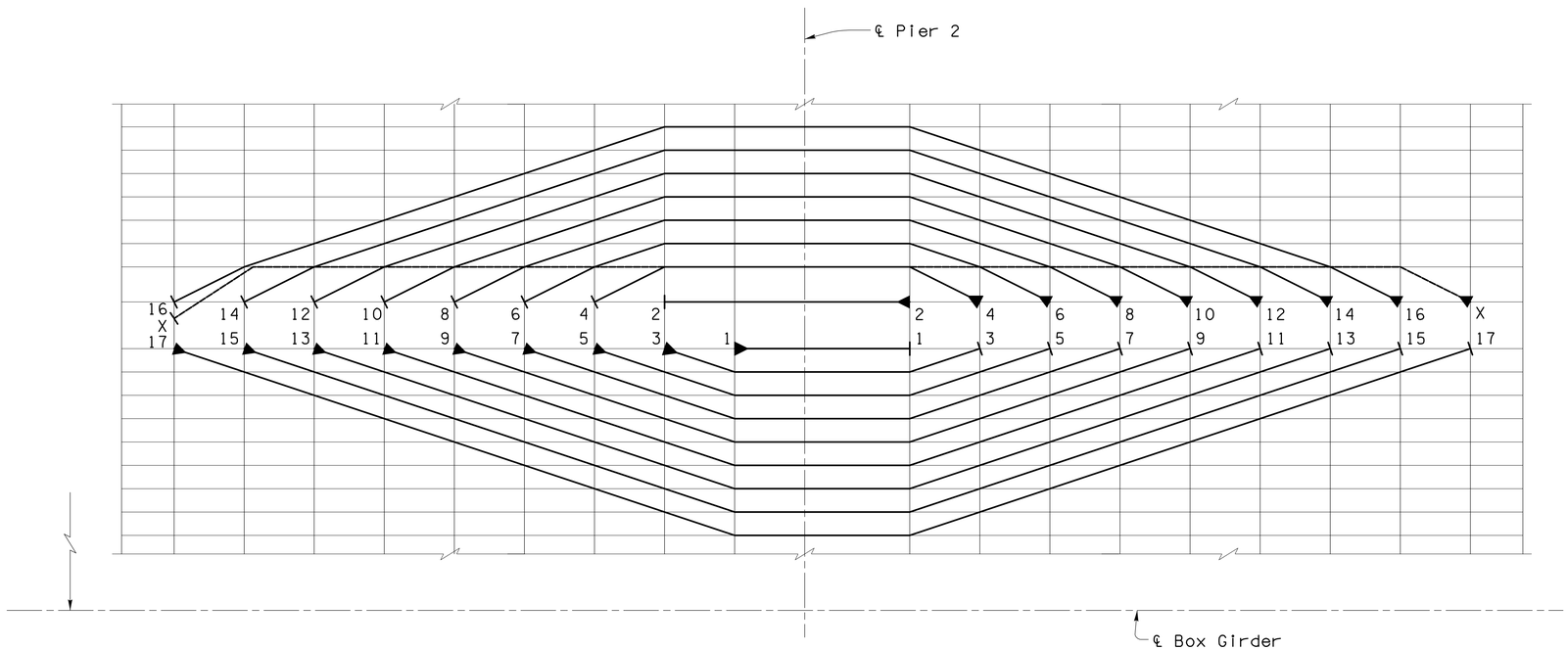
Tendon	No. of Strands
P2-TS-1	14
P2-TS-2	14
P2-TS-3	14
P2-TS-4	14
P2-TS-5	14
P2-TS-6	14
P2-TS-7	14
P2-TS-8	14
P2-TS-9	14
P2-TS-10	14
P2-TS-11	14
P2-TS-12	14
P2-TS-13	14
P2-TS-14	14
P2-TS-15	14
P2-TS-16	14
P2-TS-17	14

Legend:



Notes:

1. For spacing of tendons and Work Point (WP), see Bulkhead Details drawing.
2. Tendons are symmetrical about ℄ Box Girder.
3. Minimum horizontal radius shall be 30'-0".
4. Work this drawing with Tob Slab Tendon Details drawing.



PLAN
1/16" = 1'-0" Longitudinal
1/2" = 1'-0" Transverse

Legend:

Jacking End

Dead End

Top Slab
Tendon Layout 2

S-1.54 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

261 OF 474

CITY OF TUCSON

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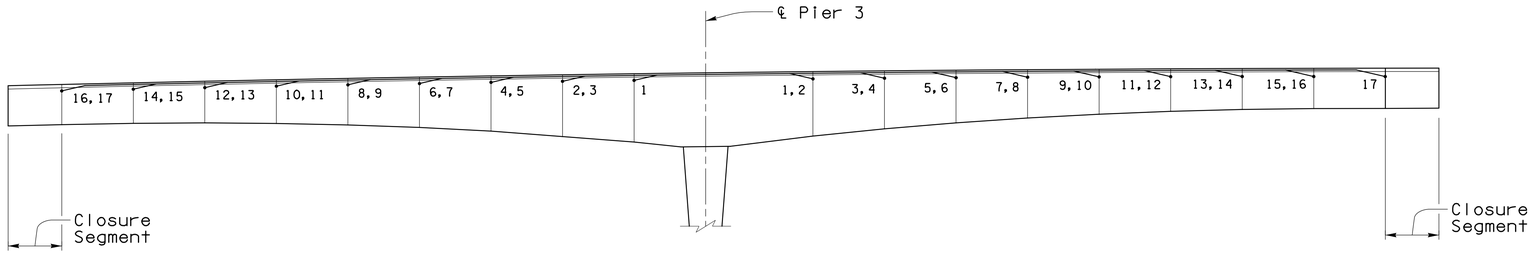
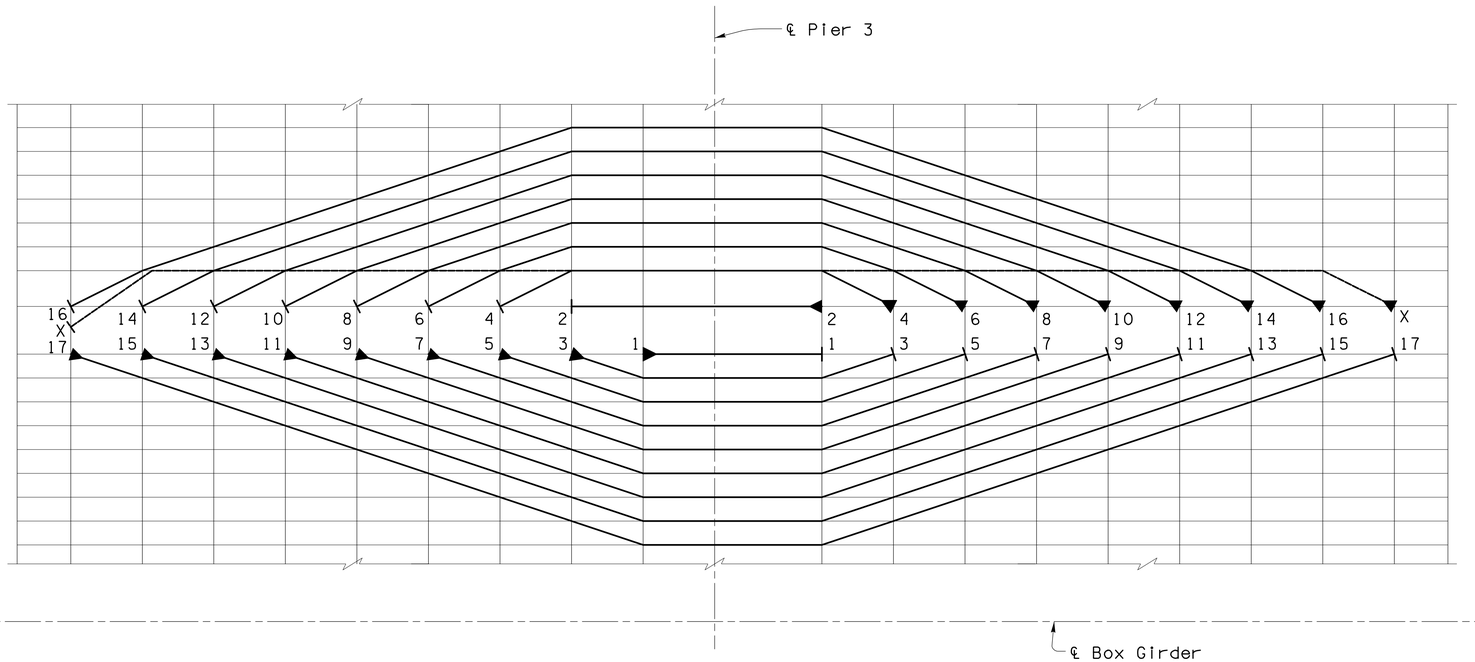


ELEVATION
1/16" = 1'-0"



PLAN
1/16" = 1'-0" Longitudinal
1/2" = 1'-0" Transverse

Legend:

Jacking End

Dead End

Tendon	No. of Strands
P3-TS-1	14
P3-TS-2	14
P3-TS-3	14
P3-TS-4	14
P3-TS-5	14
P3-TS-6	14
P3-TS-7	14
P3-TS-8	14
P3-TS-9	14
P3-TS-10	14
P3-TS-11	14
P3-TS-12	14
P3-TS-13	14
P3-TS-14	14
P3-TS-15	14
P3-TS-16	14
P3-TS-17	14

Legend:

P3-TS-5
Pier No.
Tendon Type
Tendon Mark

Notes:

1. For spacing of tendons and Work Point (WP), see Bulkhead Details drawing.
2. Tendons are symmetrical about ℄ Box Girder.
3. Minimum horizontal radius shall be 30'-0".
4. Work this drawing with Tob Slab Tendon Details drawing.

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Top Slab
Tendon Layout 3

S-1.55 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

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CITY OF TUCSON

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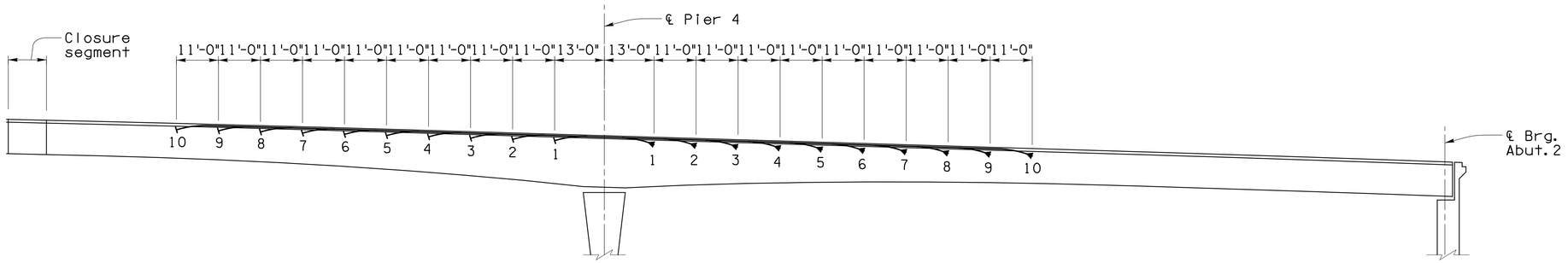
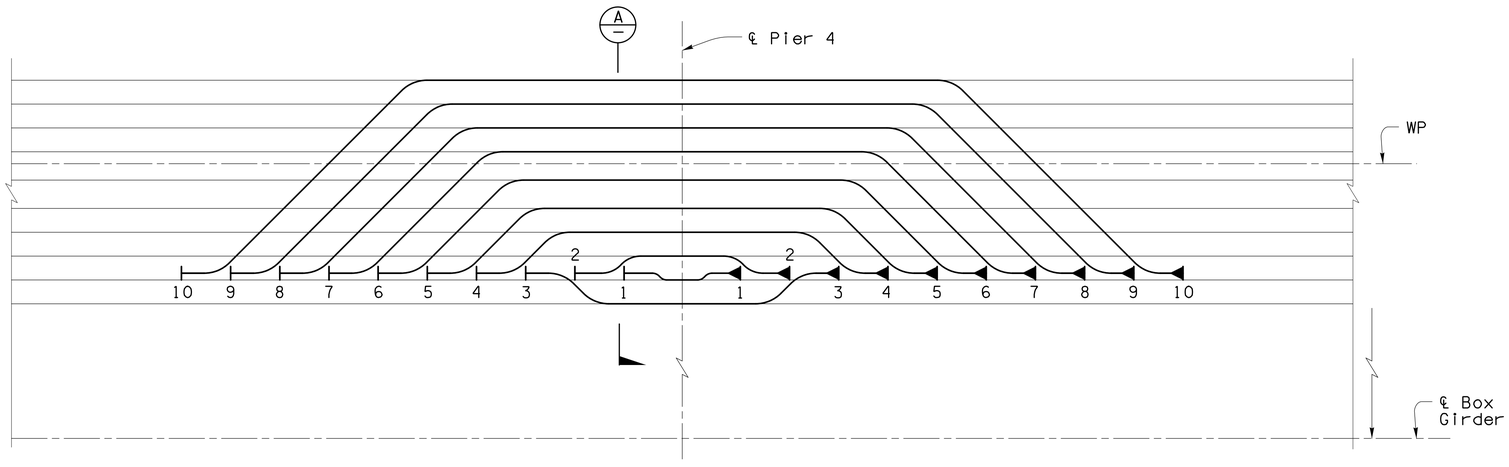


ELEVATION
1/16" = 1'-0"

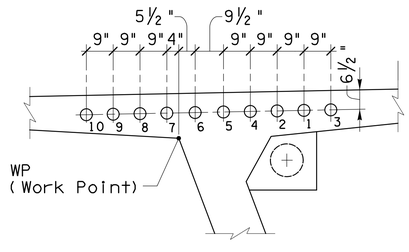
Legend:

Jacking End

Dead End



PLAN
1/16" = 1'-0" Longitudinal
1/2" = 1'-0" Transverse



SECTION
1/2" = 1'-0"

Tendon	No. of Strands
P4-TS-1	19
P4-TS-2	19
P4-TS-3	19
P4-TS-4	19
P4-TS-5	19
P4-TS-6	19
P4-TS-7	19
P4-TS-8	19
P4-TS-9	19
P4-TS-10	19

Legend:

P4-TS-5
Span No.
Tendon Type
Tendon Mark

Notes:

1. Tendons are symmetric about ℄ Box Girder.
2. Minimum horizontal radius shall be 30'-0".
3. For Anchorage Block details see Top Slab Anchorage Block Details (CIP Falsework - Spans 4 & 5) drawing.

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Top Slab
Tendon Layout - 4

S-1.56 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

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CITY OF TUCSON

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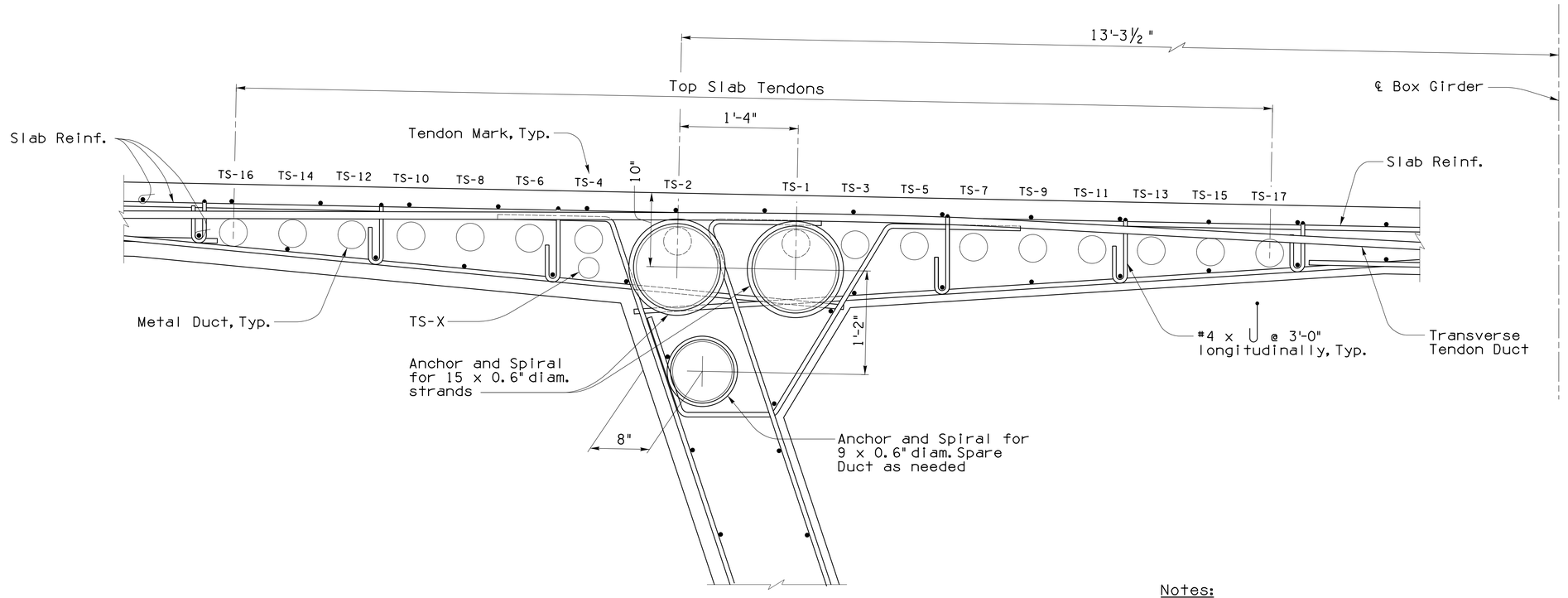
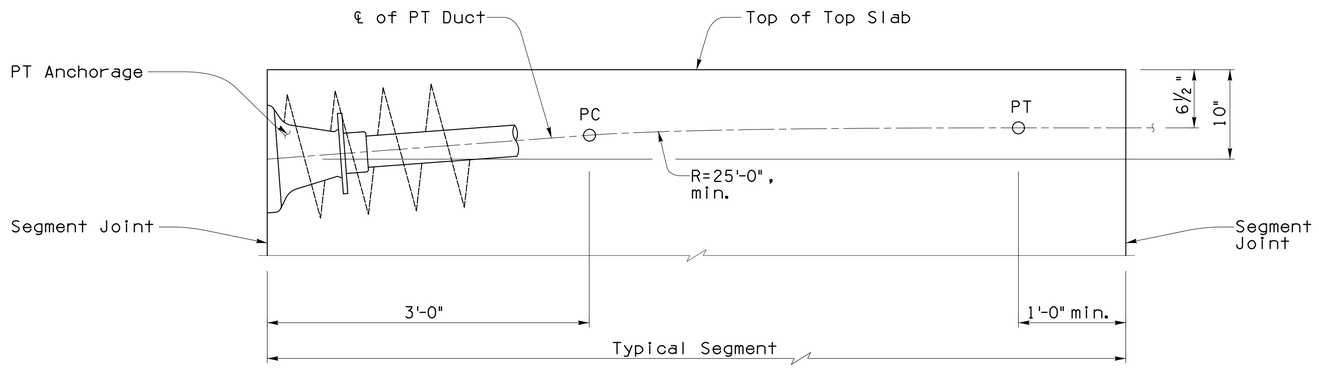


SECTION NEAR PIERS 1, 2 & 3
1½" = 1'-0"



ELEV. - TENDON DEVIATION PROFILE
No Scale

Note: Typical Top Slab reinf. not shown.

Notes:

1. Work this drawing with Bulkhead Details drawing, S-1.52.
2. For typical reinf. see Segment Reinforcement drawing.
3. For transverse post-tensioning details see Transverse Tendon Layout & Details drawing.
4. Dimensions shown are parallel to Top Slab.

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Top Slab Tendon Details S-1.57 of S-1.78

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VEHICULAR BRIDGES

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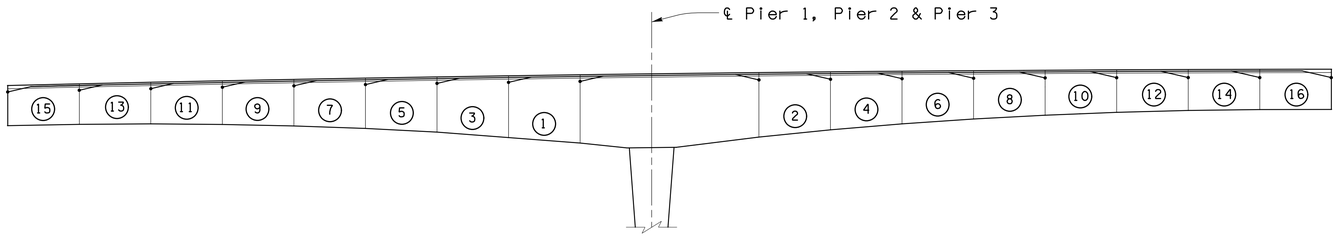
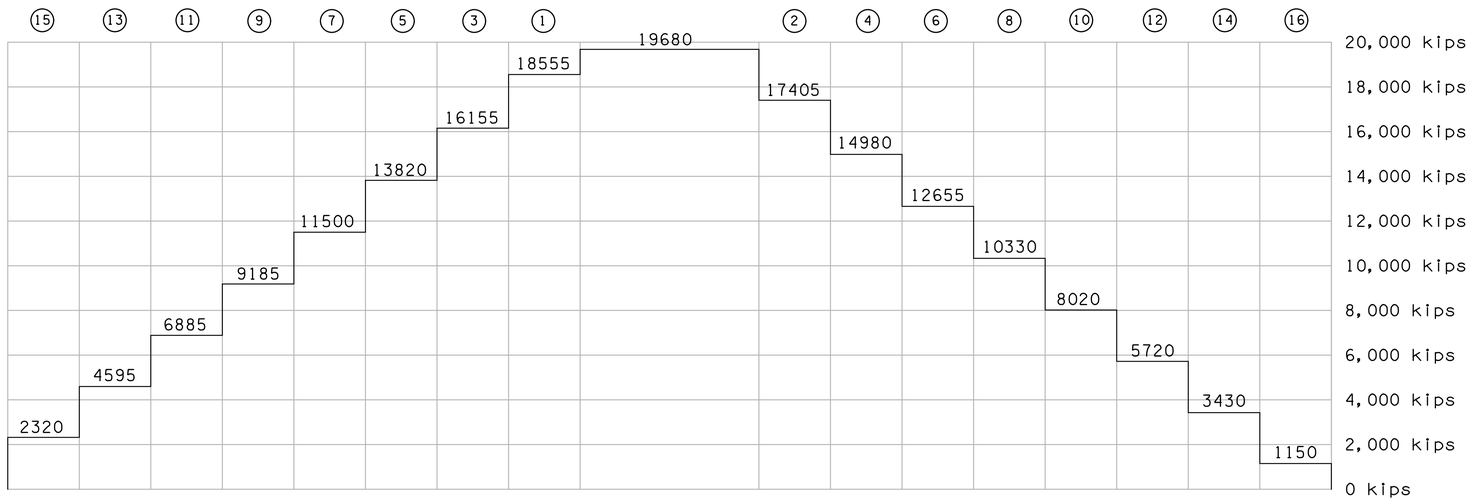


ELEVATION
No Scale

Notes:

1. Force diagrams shown are for total force applied to whole box section.
2. Force diagrams show forces that include losses due to friction, anchor set and elastic shortening. Creep, shrinkage and relaxation losses are not included.



FORCE DIAGRAM
No Scale

Force Diagram
Top Slab Tendons

S-1.58 of S-1.78

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VEHICULAR BRIDGES

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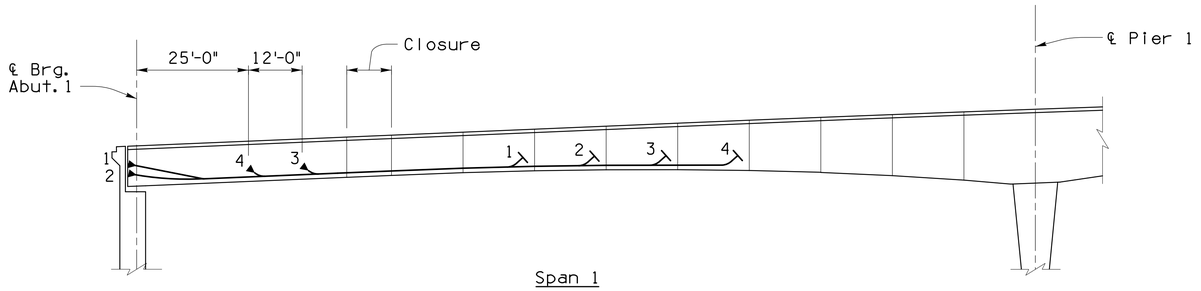


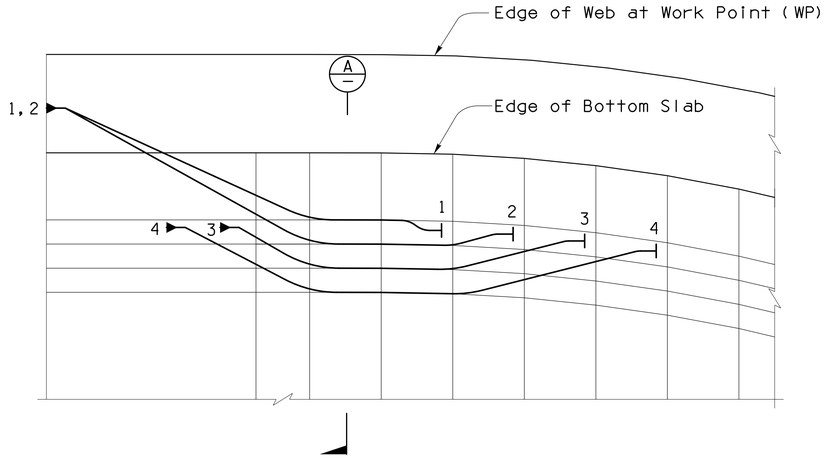
Span 1

ELEVATION
1/16" = 1'-0"

Tendon	No. of Strands
S1-BS-1	12
S1-BS-2	12
S1-BS-3	15
S1-BS-4	15

Legend:

S1-BS-3
Span No.
Tendon Type
Tendon Mark

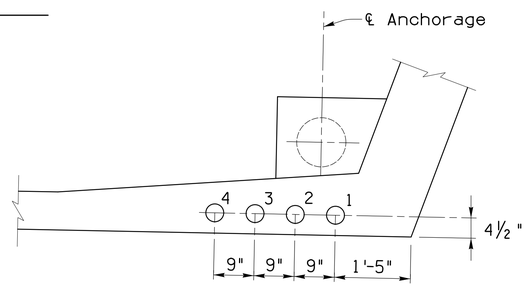


Legend:

Jacking End

Dead End

PLAN
1/16" = 1'-0" Longitudinal
1/2" = 1'-0" Transverse



SECTION
3/4" = 1'-0"
A

Notes:

1. For spacing of tendons and Work Point (WP) see Bulkhead Details, S-1.52.
2. Tendons are symmetric about ℄ Box Girder.
3. Minimum horizontal radius shall be 30'-0".
4. For Anchorage Block details see Bottom Slab Anchorage Block Details, S-1.69. For anchorage in Abutment Diaphragm, see Abut. Diaphragm Reinforcement, S-1.50 & S-1.51.

Bottom Slab
Tendon Layout - 1

S-1.59 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

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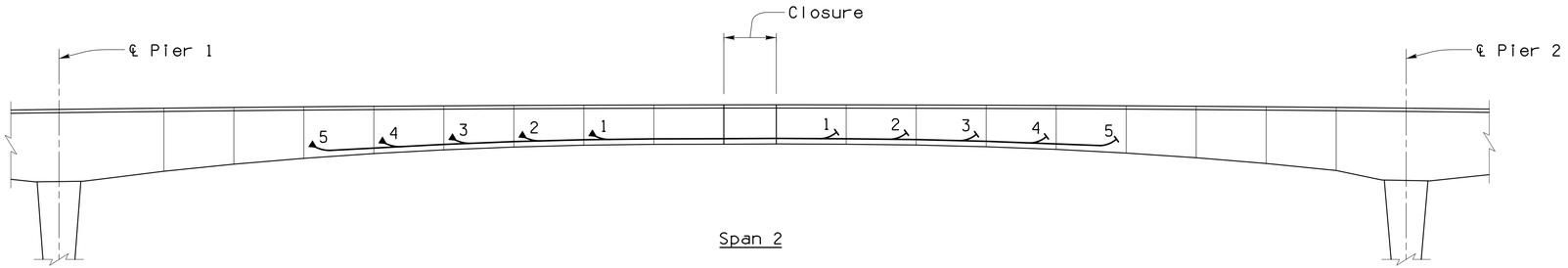


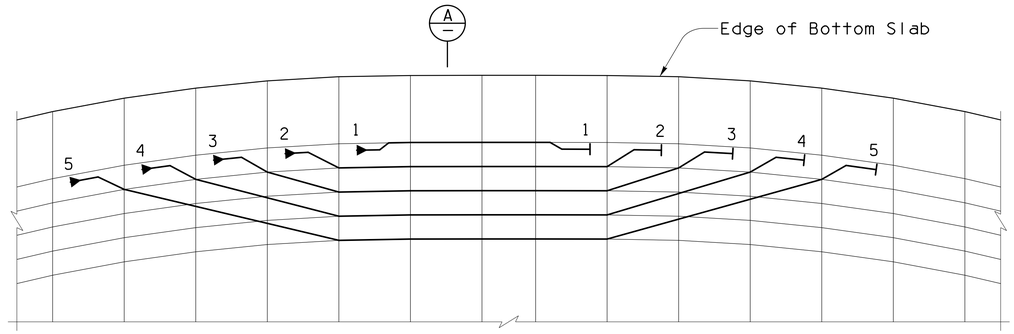
Span 2

Tendon	No. of Strands
S2-BS-1	12
S2-BS-2	19
S2-BS-3	19
S2-BS-4	18
S2-BS-5	19

Legend:

S2-BS-3
Span No. — Tendon Type — Tendon Mark

ELEVATION
1/16" = 1'-0"

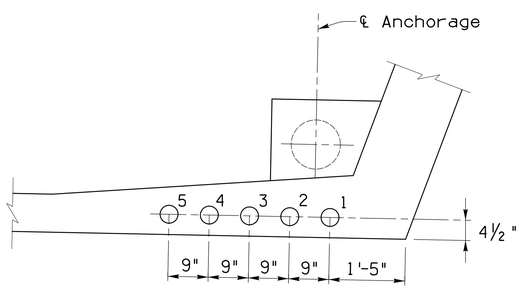


Legend:

Jacking End

Dead End

PLAN
1/16" = 1'-0" Longitudinal
1/2" = 1'-0" Transverse



SECTION
3/4" = 1'-0"
A

Notes:

1. For spacing of tendons see Bulkhead Details, S-1.52.
2. Tendons are symmetric about ℄ Box Girder.
3. Minimum horizontal radius shall be 30'-0".
4. For Anchorage Block details see Bottom Slab Anchorage Block Details, S-1.69.

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Bottom Slab
Tendon Layout - 2

S-1.60 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

267
OF
474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
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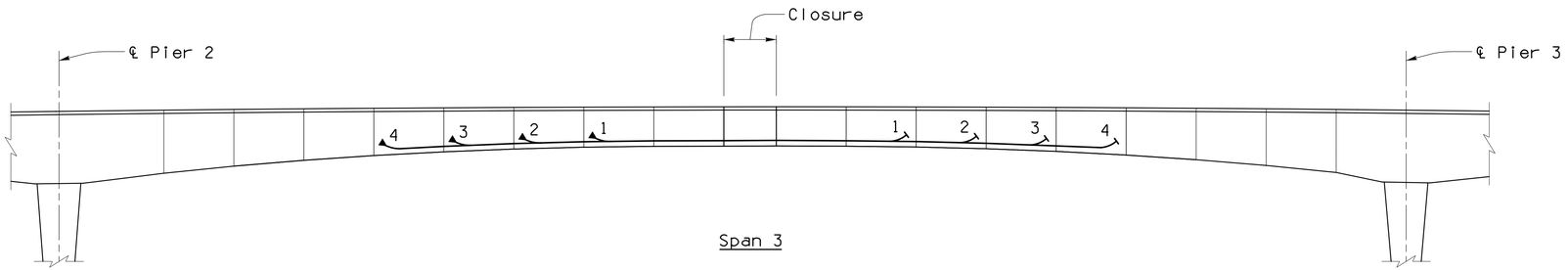


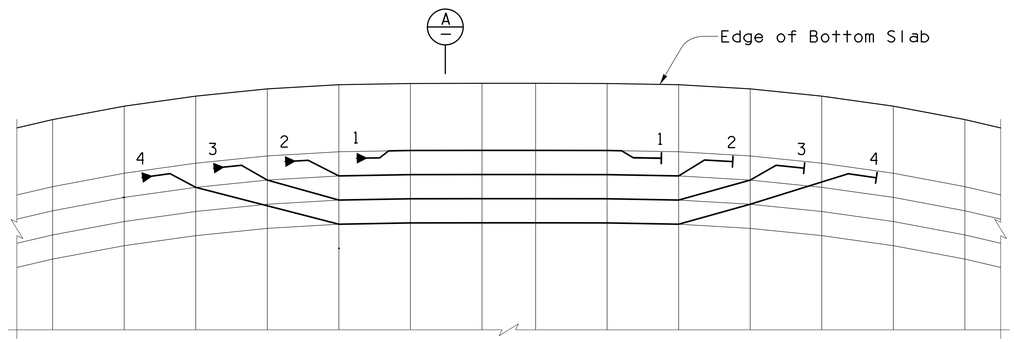
Span 3

ELEVATION
1/16" = 1'-0'

Tendon	No. of Strands
S3-BS-1	16
S3-BS-2	19
S3-BS-3	18
S3-BS-4	16

Legend:

S3-BS-3
Span No. — Tendon Mark
Tendon Type



Legend:

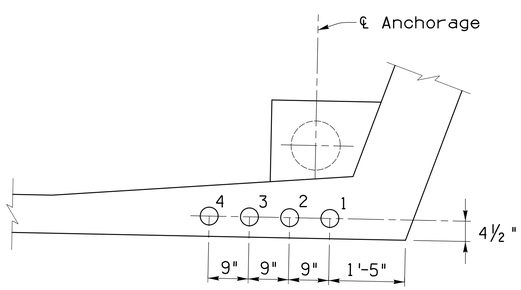
Jacking End

Dead End

PLAN
1/16" = 1'-0' Longitudinal
1/2" = 1'-0" Transverse

Notes:

1. For spacing of tendons see Bulkhead Details, S-1.52.
2. Tendons are symmetric about ℄ Box Girder.
3. Minimum horizontal radius shall be 30'-0".
4. For Anchorage Block details see Bottom Slab Anchorage Block Details, S-1.69.



SECTION
3/4" = 1'-0"
A

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Bottom Slab
Tendon Layout - 3

S-1.61 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

268 OF 474

CITY OF TUCSON

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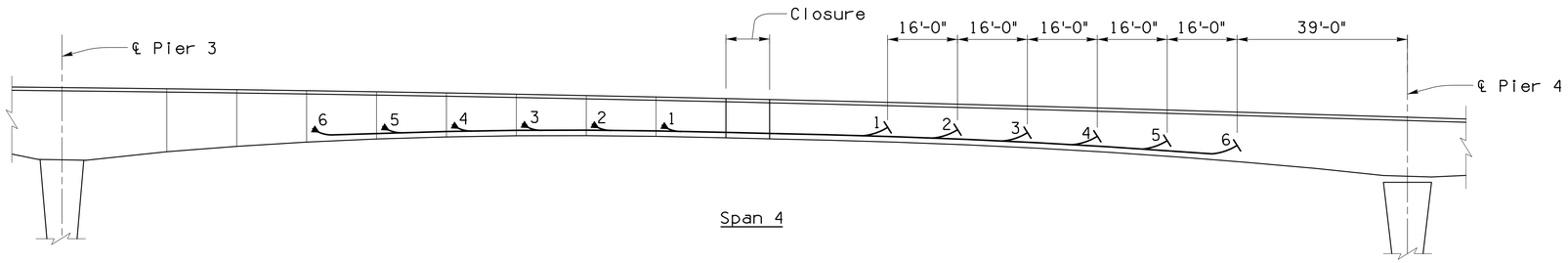


Span 4

Tendon	No. of Strands
S3-BS-1	12
S3-BS-2	18
S3-BS-3	19
S3-BS-4	18
S3-BS-5	18
S3-BS-6	18

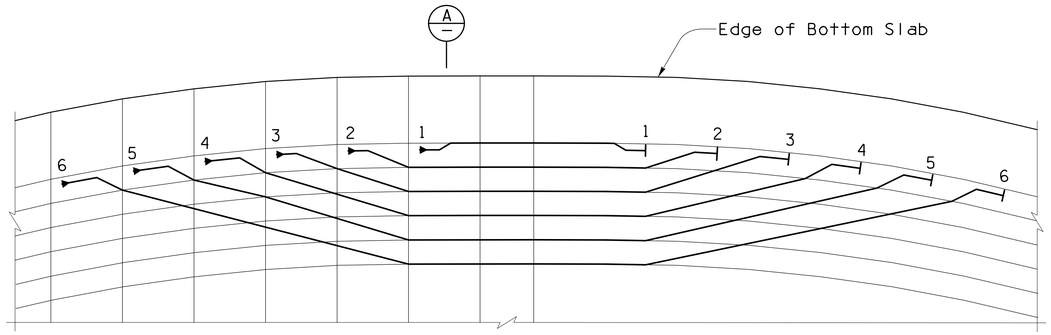
Legend:

S4-BS-3

Span No. — Tendon Mark

Tendon Type

ELEVATION
1/16" = 1'-0"

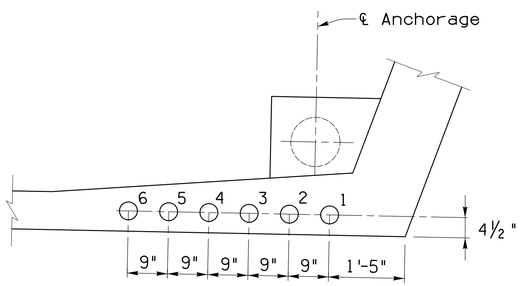


Legend:

Jacking End

Dead End

PLAN
1/16" = 1'-0" Longitudinal
1/2" = 1'-0" Transverse



SECTION
3/4" = 1'-0"
A

Notes:

1. For spacing of tendons see Bulkhead Details, S-1.52.
2. Tendons are symmetric about ℄ Box Girder.
3. Minimum horizontal radius shall be 30'-0".
4. For Anchorage Block details see Bottom Slab Anchorage Block Details, S-1.69.

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Bottom Slab
Tendon Layout - 4

S-1.62 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

269 OF 474

CITY OF TUCSON

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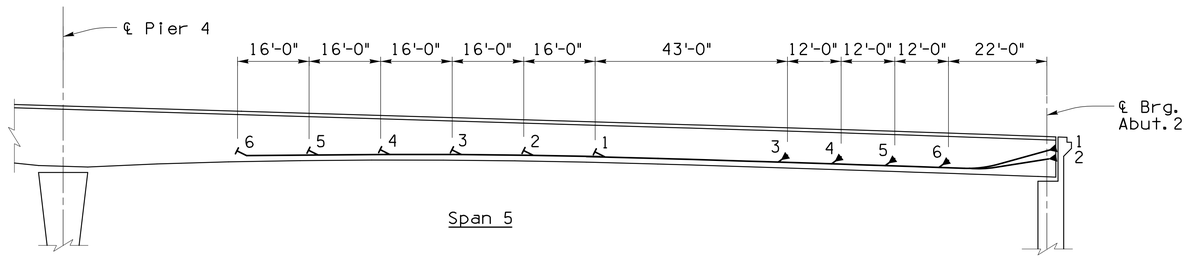
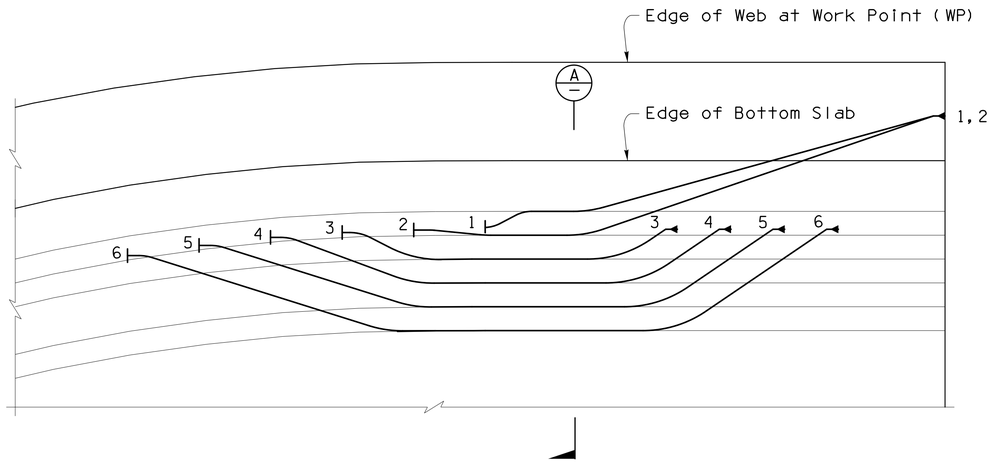


ELEVATION
1/16" = 1'-0"

Tendon	No. of Strands
S5-BS-1	19
S5-BS-2	19
S5-BS-3	18
S5-BS-4	18
S5-BS-5	19
S5-BS-6	19

Legend:

S1-BS-3
Span No.
Tendon Mark
Tendon Type



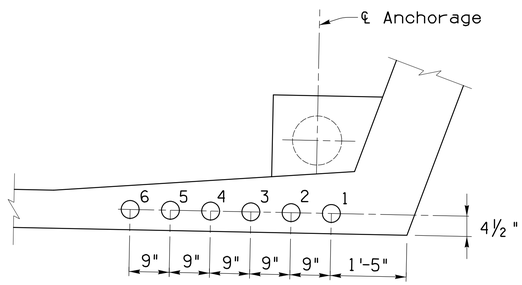
PLAN
1/16" = 1'-0" Longitudinal
1/2" = 1'-0" Transverse

Legend:

Jacking End
Dead End

Notes:

1. For spacing of tendons and Work Point (WP), see Bulkhead Details, S-1.52 .
2. Tendons are symetric about ℄ Box Girder.
3. Minimum horizontal radius shall be 30'-0".
4. For Anchorage Block details see Bottom Slab Anchorage Block Details, S-1.69. For anchorage in Abutment Diaphragm, see Abutment Diaphragm Reinforcement, S-1.50 & S-1.51.



SECTION
3/4" = 1'-0"
A

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Bottom Slab
Tendon Layout - 5

S-1.63 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

270 OF 474

CITY OF TUCSON

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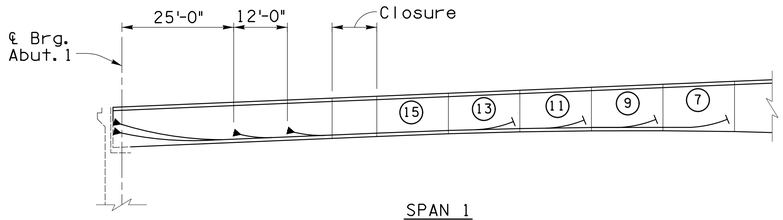
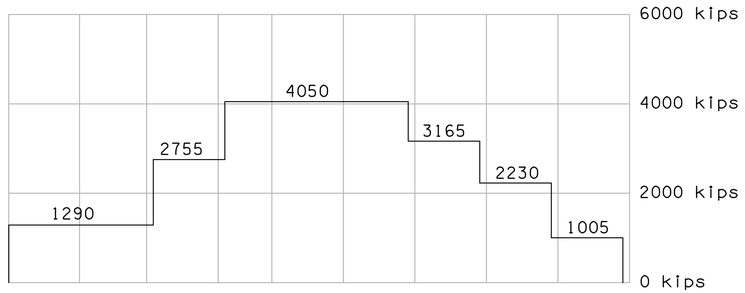
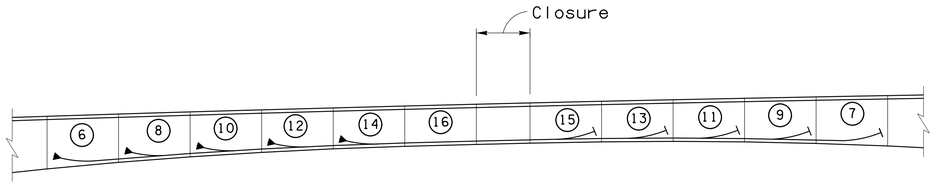
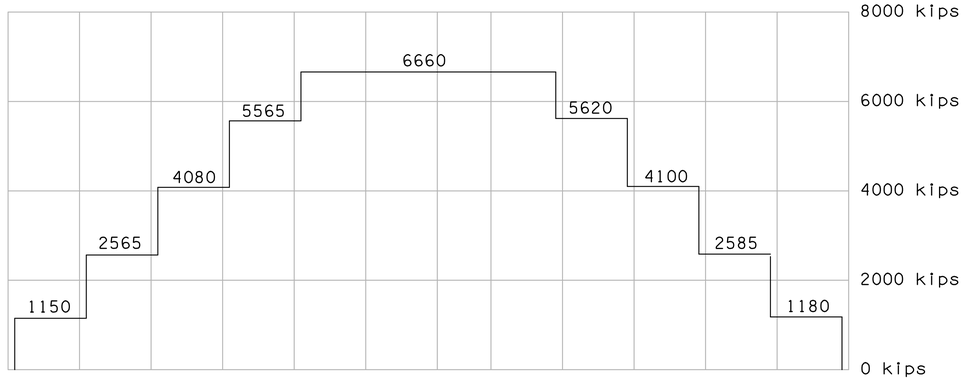


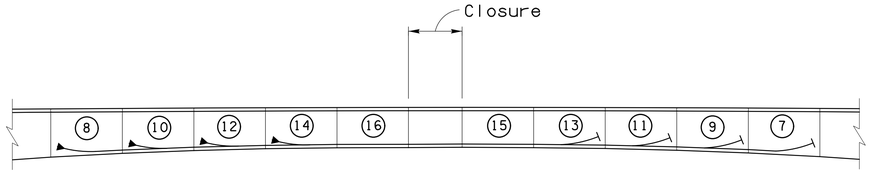
SPAN 1



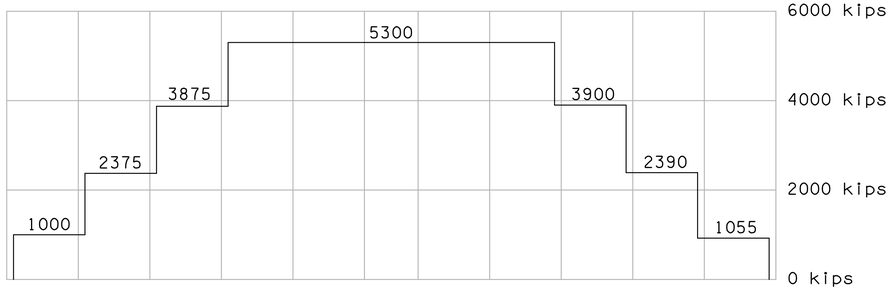


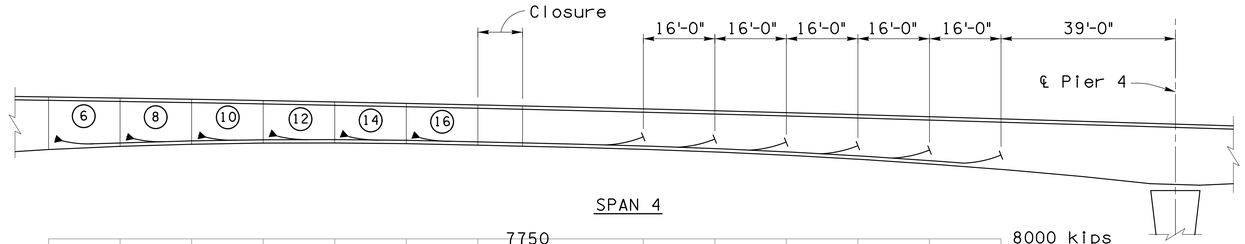
SPAN 2



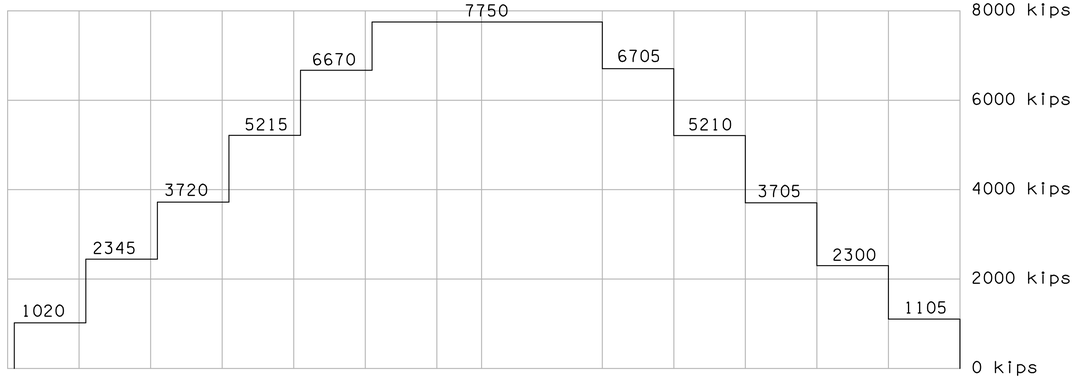


SPAN 3





SPAN 4



Notes:

1. Force diagrams shown are for total force applied to whole box section.
2. Force diagrams show forces that include losses due to friction, anchor set and elastic shortening. Creep, shrinkage and relaxation losses are not included.

FORCE DIAGRAMS
No Scale

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Force Diagram
Bottom Slab Tendons

S-1.64 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

271 OF 474

CITY OF TUCSON

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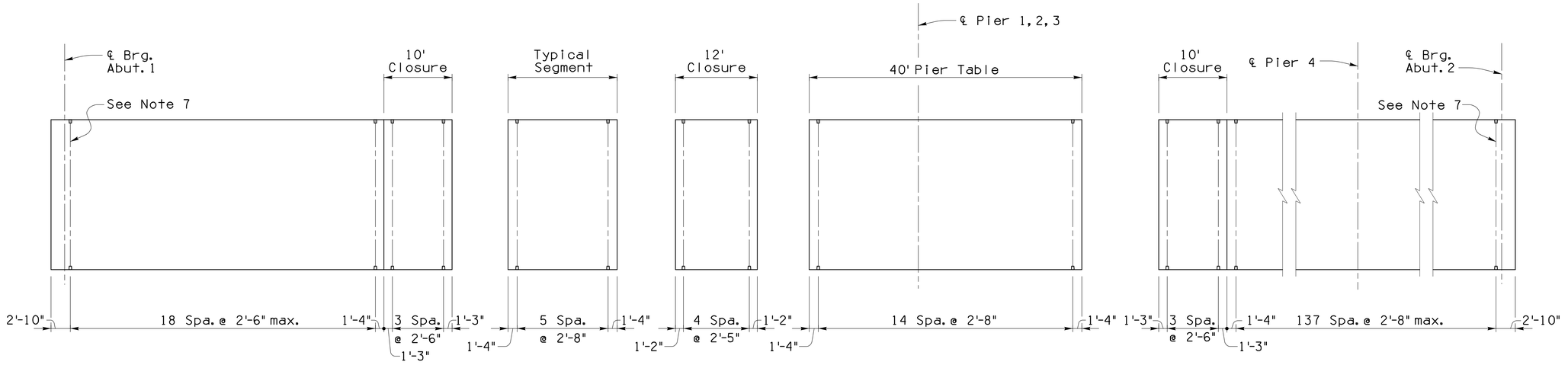
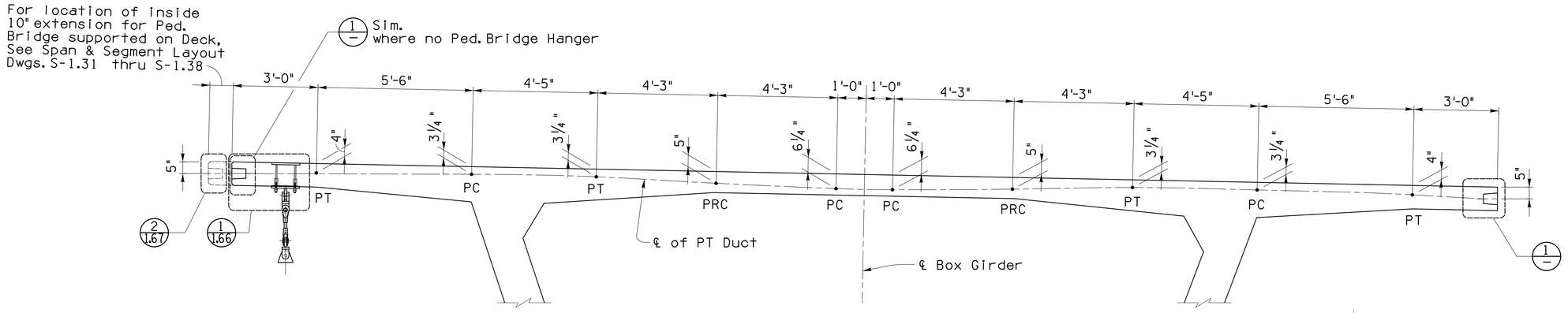


SPACING OF TRANSVERSE TENDONS
1/8" = 1'-0"



SECTION
1/2" = 1'-0"

Notes:

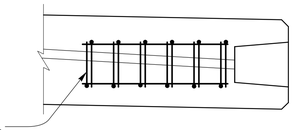
1. All tendons are 4 x 0.6" diam. strand tendons.
2. Tendons shall be stressed after concrete has reached a strength of 3.5 ksi or greater if required by PT supplier.
3. Jacking force per Tendon = 176 K.
4. Tendons shall be single end jacked.
5. The jacking ends shall be alternated.
6. Tendons shall be placed perpendicular to ℄ Box Girder.
7. Tendons adjacent to ℄ Brg. Abut. shall be stressed initially to 50% and to 100% after expansion joint is set.

Segment Stressing Sequence:

A. Stress transverse tendons to 100% of total jacking force except for tendon adjacent to free edge. Stress tendon adjacent to free edge to 50% of total jacking force.

B. Stress longitudinal tendons.

C. Complete stressing of tendon adjacent to free edge after casting of next segment with minimum concrete strength of 3.5 ksi or greater if required by PT supplier.



Note:
Typ. Top Slab reinf. not shown.

SECTION
1 1/2" = 1'-0"
1/—

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Transverse Tendon Layout & Details — S-1.65 of S-1.78

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272 OF 474

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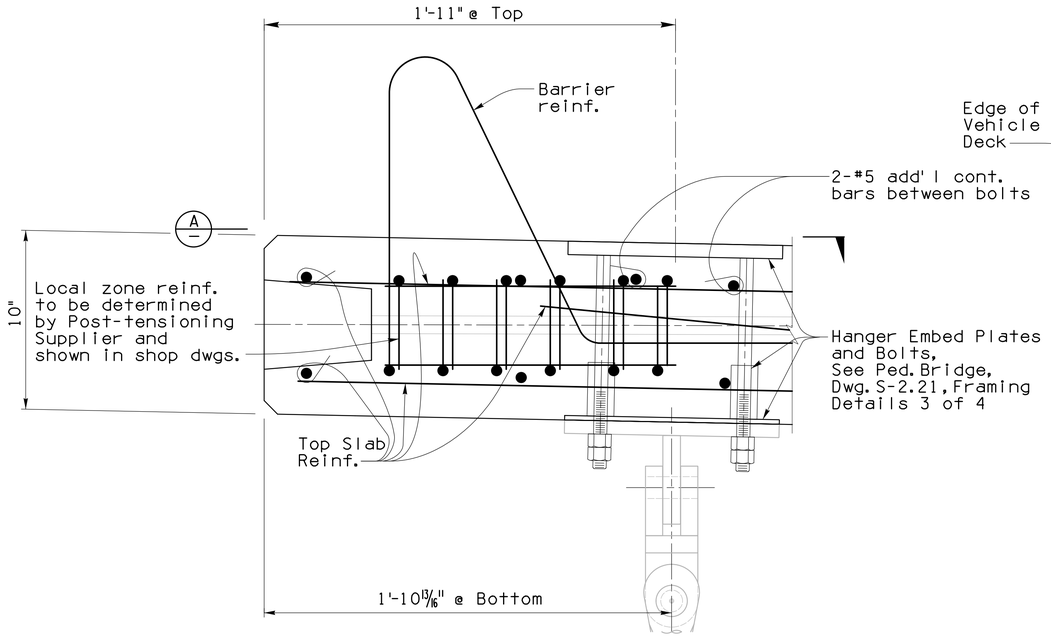
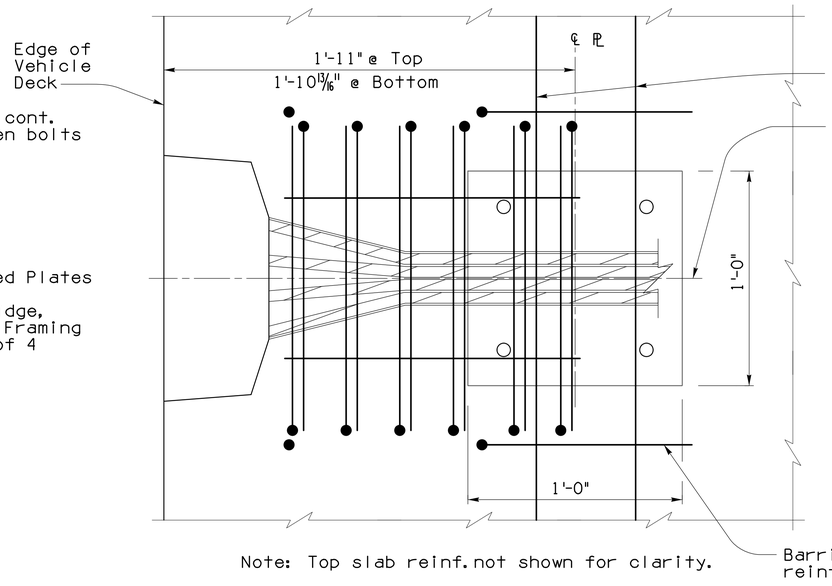


EMBED PLATE FOR PED. BRIDGE HANGER
3" = 1'-0"
1 / 1.65



Note: Top slab reinf. not shown for clarity.

SECTION
3" = 1'-0"
A

Embed Plate for Ped. Bridge Hanger Notes:

1. Location of embed plate shall be as shown in pedestrian bridge drawings.
2. Embed Plate can be moved ±1" to clear tendon and local zone reinforcing.
3. Transverse Tendon location can be moved ±1" to clear bolts for embed plate.

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Transverse Tendon & Ped. Bridge Hanger Details S-1.66 of S-1.78

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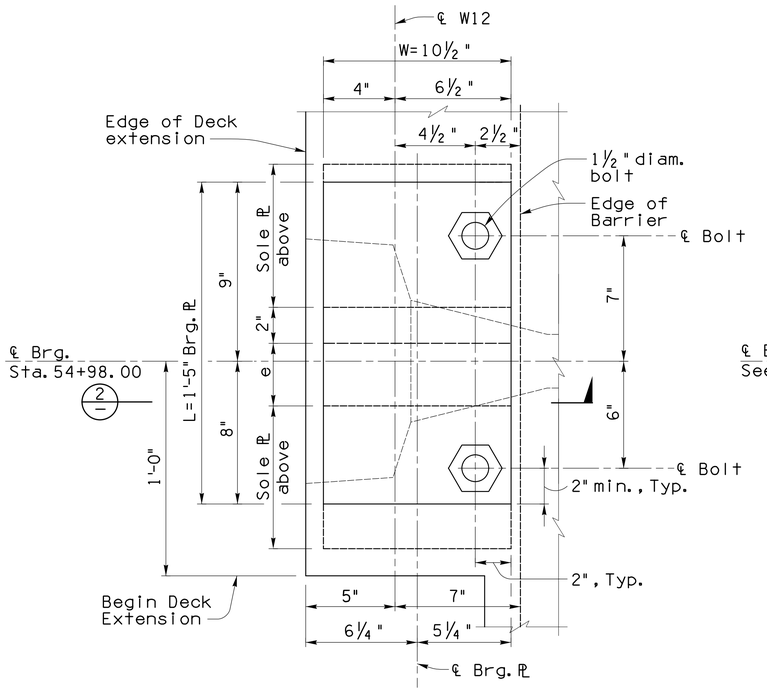
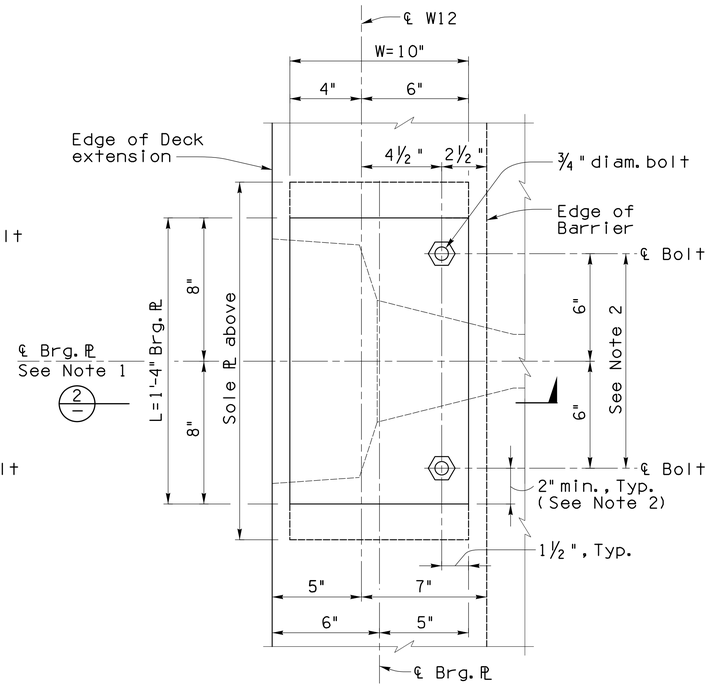
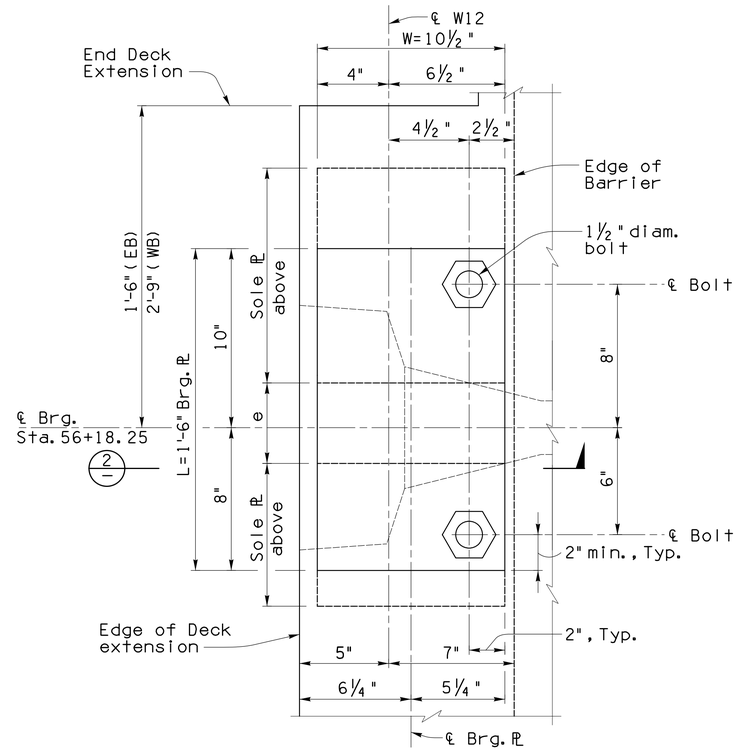


AT BEGIN DECK SUPPORT (WEST)

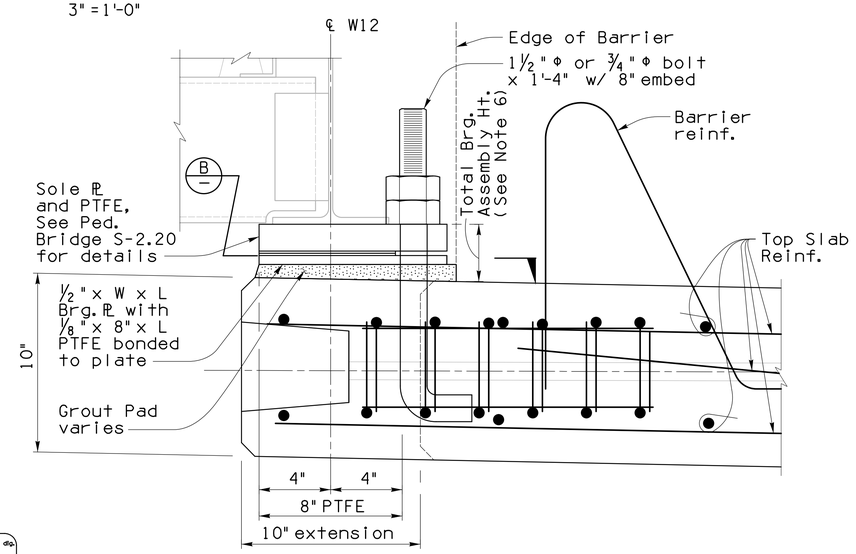


AT INTERMEDIATE SUPPORTS



AT END DECK SUPPORT (EAST)

SECTION
3" = 1'-0"



BRG. PLATE FOR DECK SUPPORTED PED. BRIDGE
3" = 1'-0"
2 / 1.65

B / 1

Bearing Plate for Ped. Bridge Notes:

1. For additional information on location of bearing plates, See also Dwgs. S-1.31 to S-1.38.
2. Bearing plate bolts at intermediate support only can move 1" towards ℄ Brg. Pl to clear transvers tendons.
3. Transverse tendon location can be moved ±1" to clear bolts.
4. Anchor bolts shall be L-shaped and conform to the requirements of ASTM F1554, Grade 55. Galvanized per ASTM F2329.
5. The cost of bearing assembly per S-2.01.
6. Contractor shall survey vehicle bridge to determine elevations at location of pedestrian bridge bearings and submit to Engineer prior to determining total bearing assembly height.
7. PTFE (Polytetrafluorethylene) Sheets shall be made from pure virgin PTFE resin satisfying the requirements of ASTM D4894 and D4895 and shall be fabricated as unfilled sheet and meet the requirements as specified in AASHTO LRFD Bridge Construction Specs Section 18.8.2.1.

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Transverse Tendon & Ped. Bridge Brg. Pl Details S-1.67 of S-1.78

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274 OF 474

CITY OF TUCSON

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DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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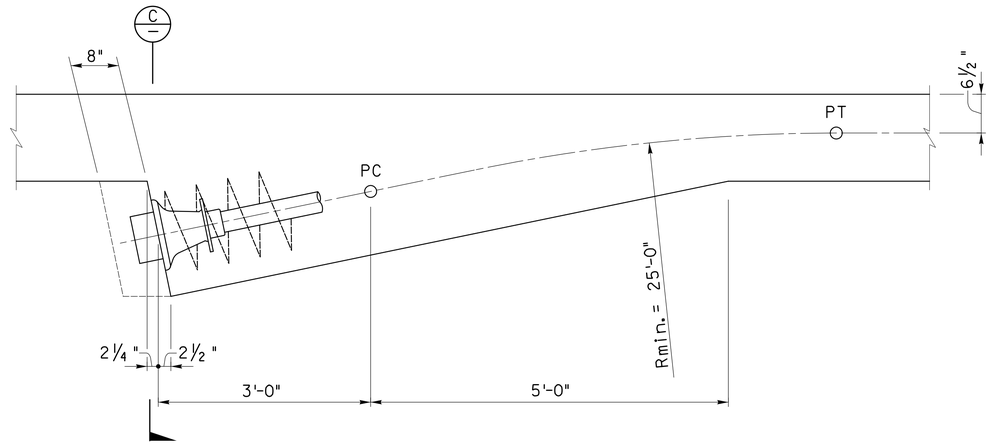
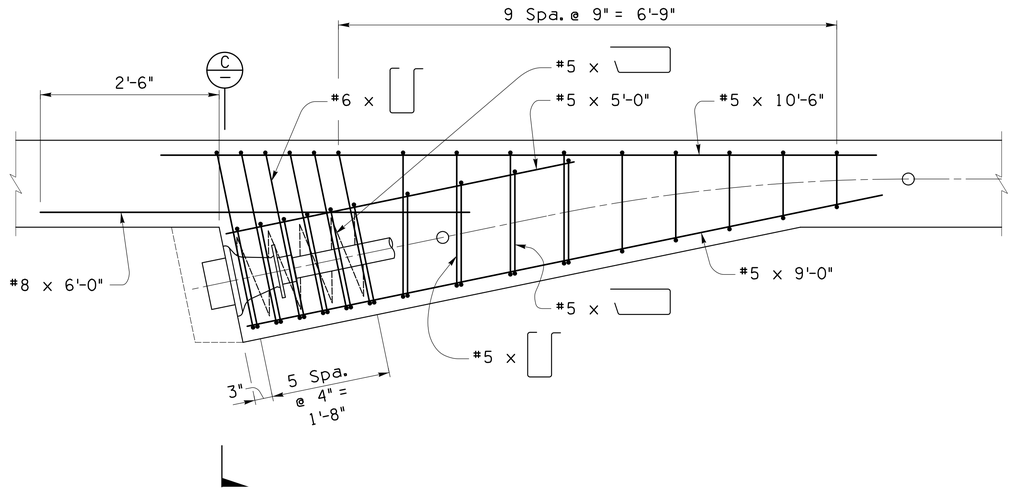


SECTION - FORM
1" = 1'-0"
A



SECTION - REINF.
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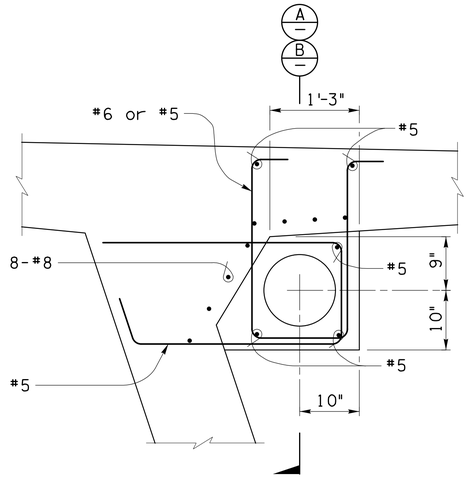

SECTION
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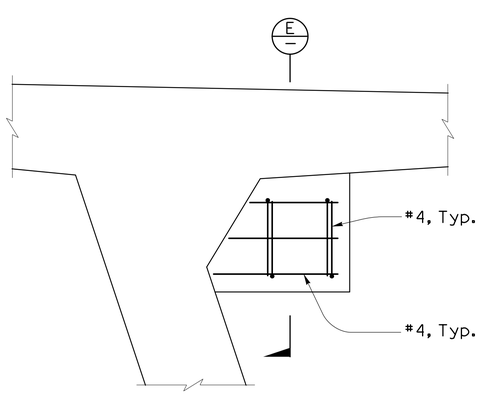
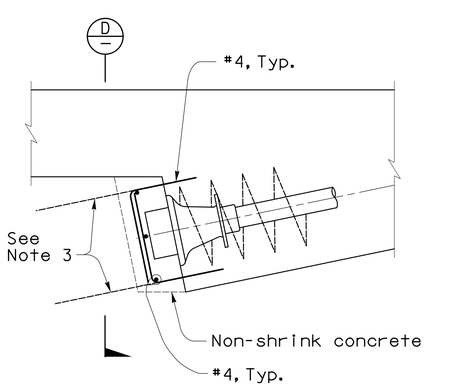
C



PARTIAL SECTION
1" = 1'-0"
D



PARTIAL SECTION
1" = 1'-0"
E

Notes:

1. Typical slab and web reinforcement not shown.
2. For Tendon layout see Dwgs. S-1.53 to S-1.56.
3. Bend rebar after stressing operations are completed.

Two working days before you dig, CALL FOR THE BLUE STAKES
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Top Slab Anchorage Block Details (C.I.P. Falsework - Spans 4 & 5)

S-1.68 of S-1.78

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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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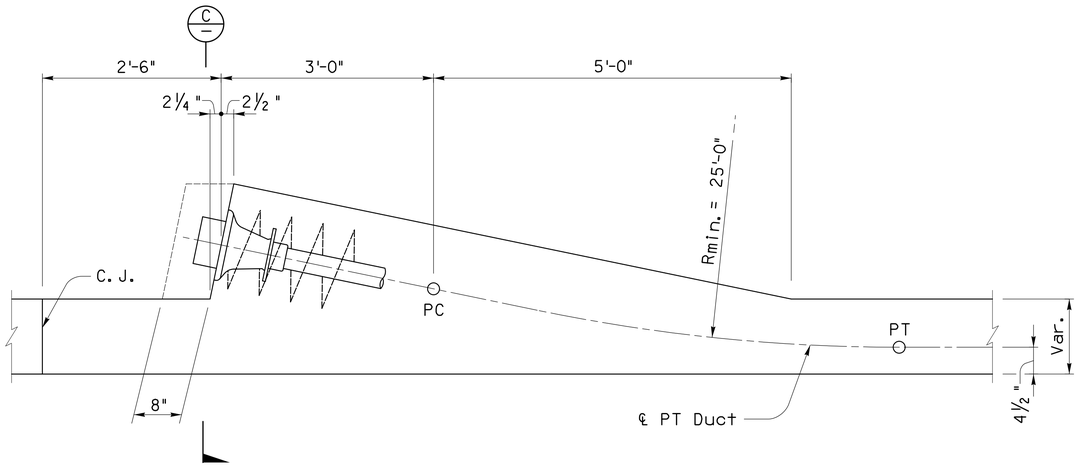
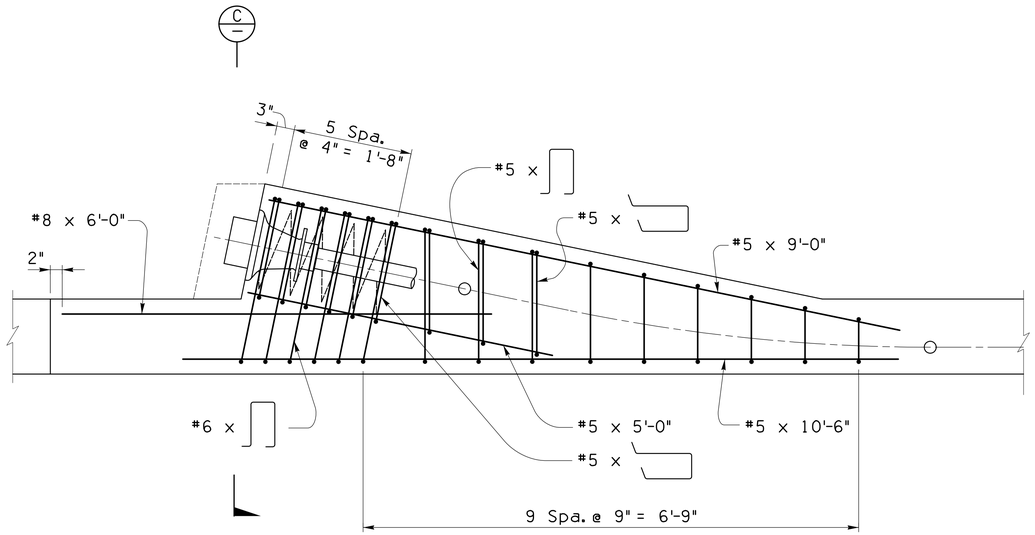
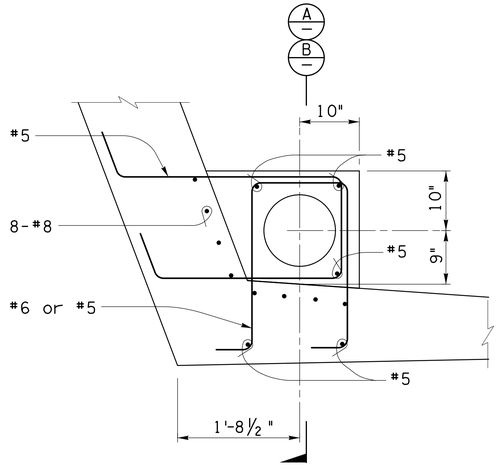


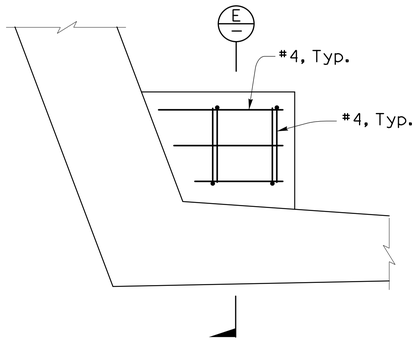
SECTION - FORM
1" = 1'-0"



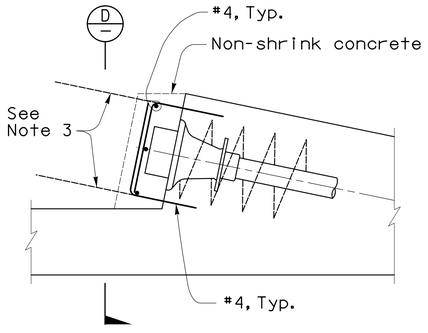
SECTION - REINF.
1" = 1'-0"



SECTION
1" = 1'-0"



PARTIAL SECTION
1" = 1'-0"



PARTIAL SECTION
1" = 1'-0"

Notes:

1. Typical slab and web reinforcement not shown.
2. For Tendon layout see Dwgs. S-1.59 thru S-1.63.
3. Bend rebar after stressing operations are completed.
4. Anchor and spiral for 19 x 0.6" diam. strands.

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Bottom Slab Anchorage Block Details

S-1.69 of S-1.78

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

276 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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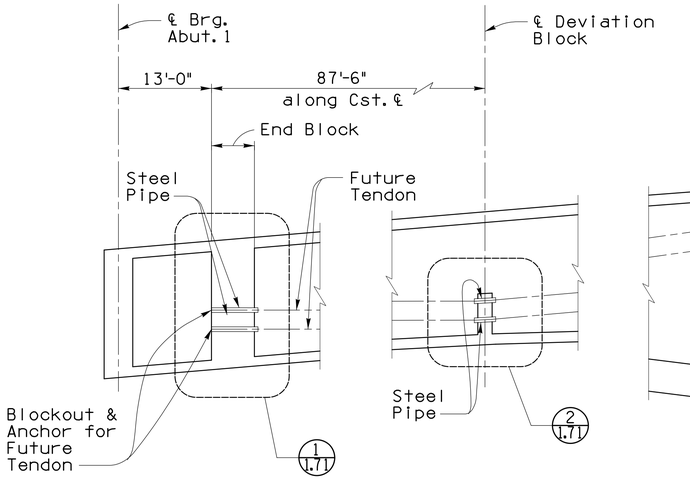
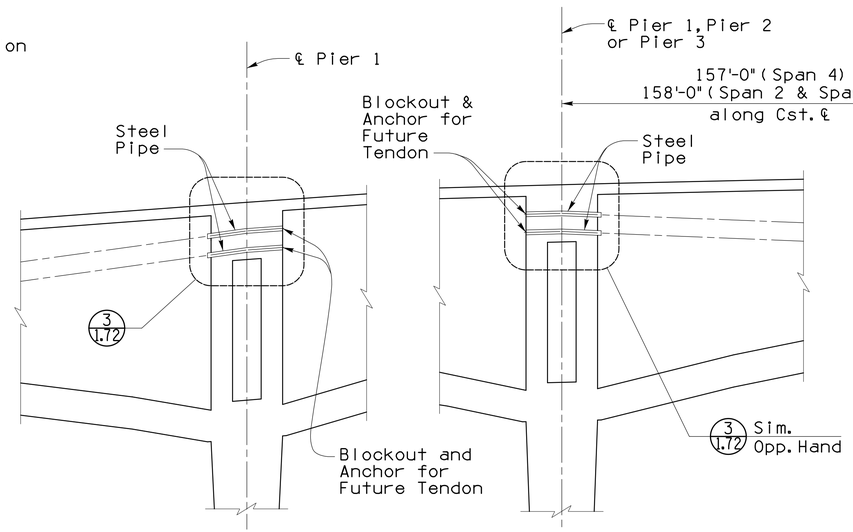
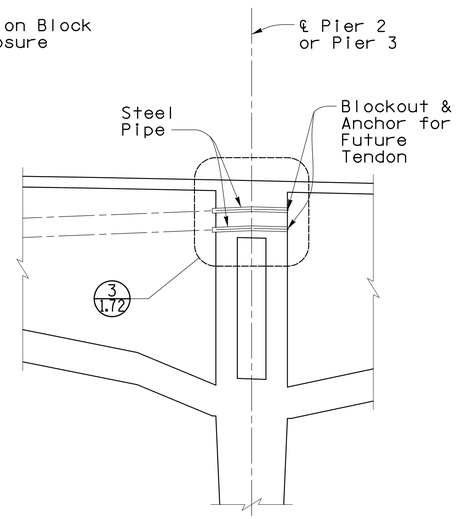
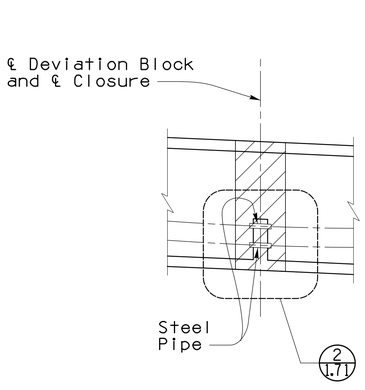


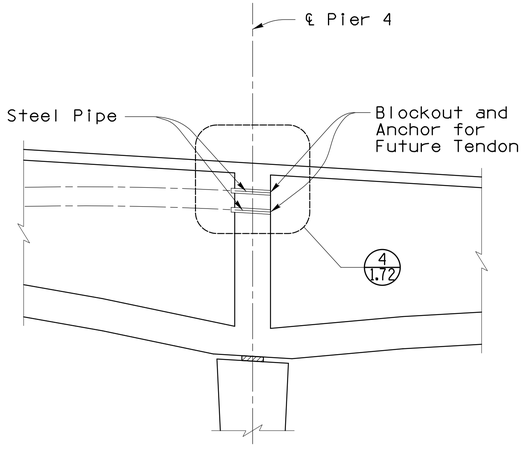
PARTIAL ELEVATION - SPAN 1
1"=10' Horiz.
1"=5' Vert.



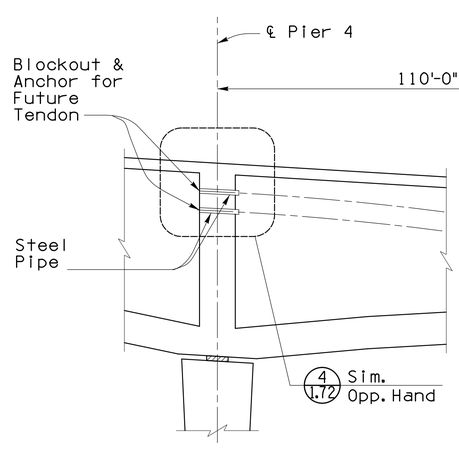


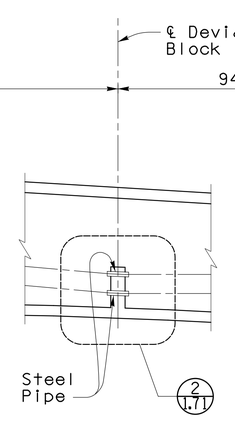
PARTIAL ELEVATION - SPAN 2, SPAN 3 & SPAN 4
1"=10' Horiz.
1"=5' Vert.

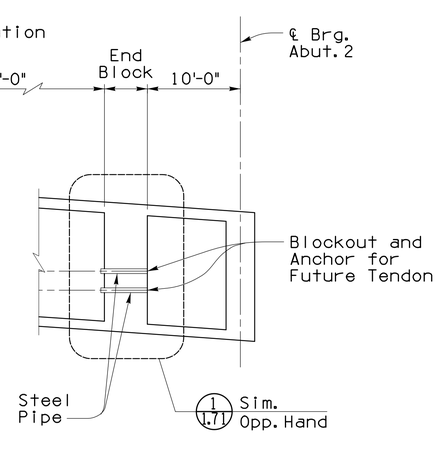




PARTIAL ELEVATION - SPAN 4
1"=10' Horiz.
1"=5' Vert.







PARTIAL ELEVATION - SPAN 5
1"=10' Horiz.
1"=5' Vert.

Future
Post-Tensioning Layout S-1.70 of S-1.78

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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

277
OF
474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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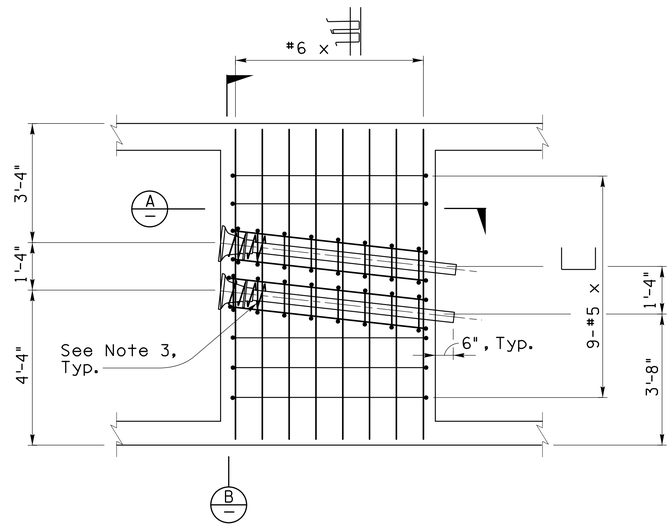
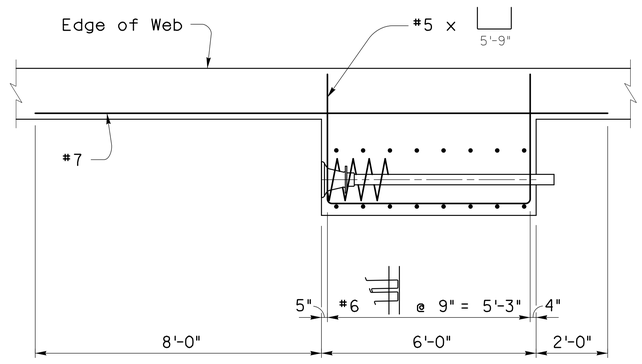
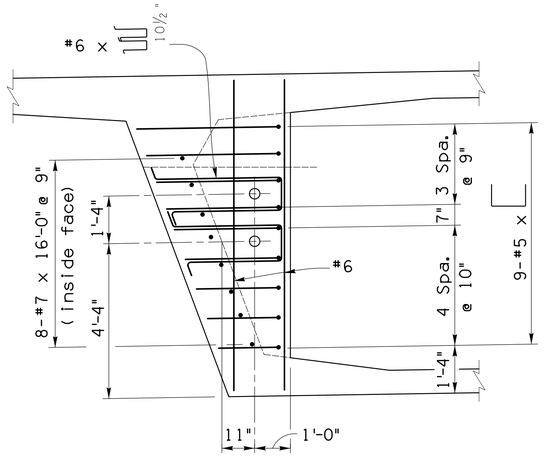


DETAIL
1/2" = 1'-0"
1 / 1.70

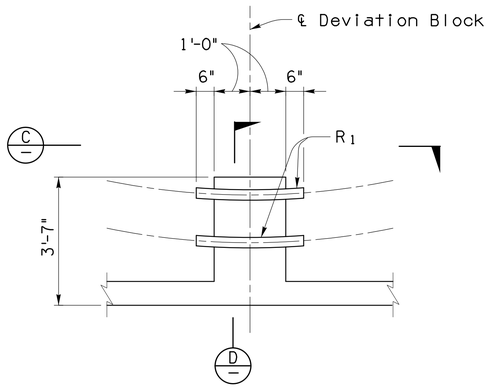


SECTION
1/2" = 1'-0"
A
—

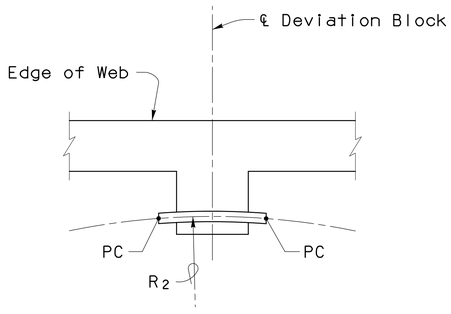


SECTION
1/2" = 1'-0"
B
—

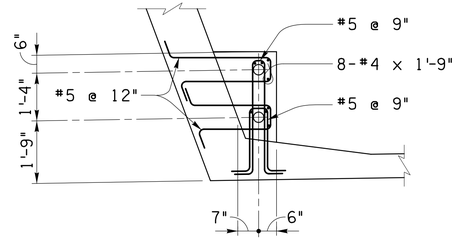
DEVIATION BLOCK DIMENSIONS		
SPAN	R_1	R_2
1	21'	235'
2	20'	400'
3	20'	400'
4	23'	410'
5	36'	260'



DETAIL
1/2" = 1'-0"
2 / 1.70



DETAIL
1/2" = 1'-0"
C
—



DETAIL
1/2" = 1'-0"
D
—

Notes:

1. All future post-tensioning ducts shall be 3½" O.D. standard weight galvanized steel pipe, conforming to the requirements of ASTM A53, Type E, Grade B.
2. All future post-tensioning anchorages shall accommodate 12-0.6" diam. strands.
3. Local zone reinforcement to be determined by Contractor and included in shop drawings.

Future
Post-Tensioning Details - 1 S-1.71 of S-1.78

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

278 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. I-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.

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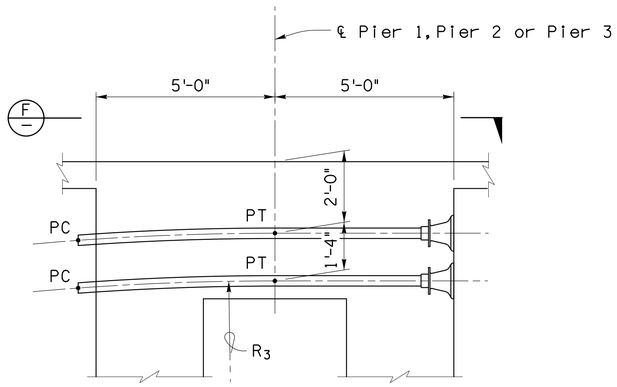
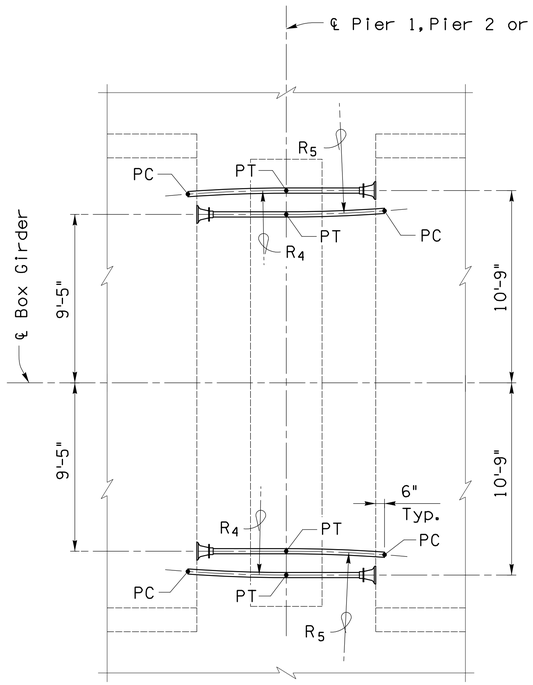
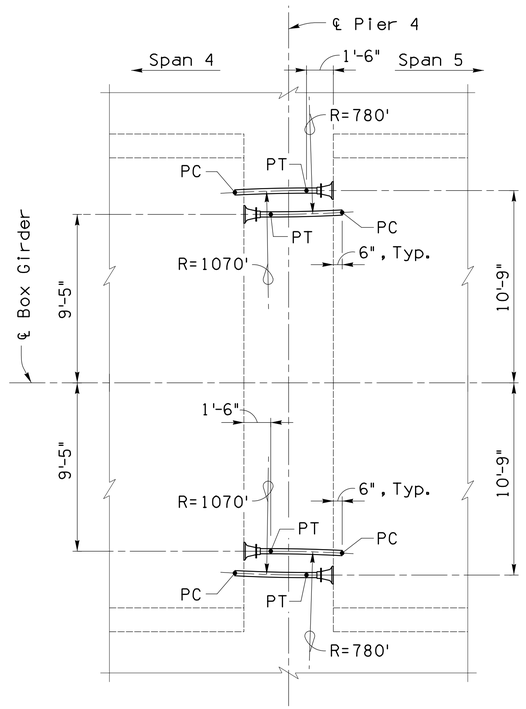


DETAIL
1/2" = 1'-0"
3 / 1.70

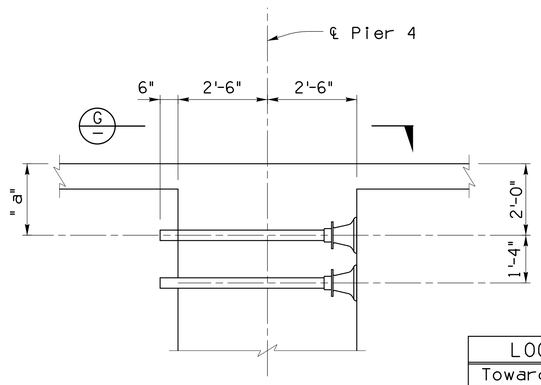
LOCATION	R_3	R_4	R_5
Pier 1 towards Span 1	48'	980'	-
Pier 2 towards Span 2	48'	980'	-
Pier 3 towards Span 3	48'	980'	-
Pier 1 towards Span 2	76'	-	1540'
Pier 2 towards Span 3	76'	-	1540'
Pier 3 towards Span 4	76'	-	1540'



SECTION
1/4" = 1'-0"
F



SECTION
1/4" = 1'-0"
G



LOCATION	" a"
Towards Span 4	1'-8½ "
Towards Span 5	1'-7"

DETAIL
1/2" = 1'-0"
4 / 1.70

Notes:

1. For reinforcement see Future Post-Tensioning Details - 3 drawing.

Future
Post-Tensioning Details - 2 S-1.72 of S-1.78

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

279 OF 474

NO.	DATE	REVISION	BY	CHKD.	APPR.

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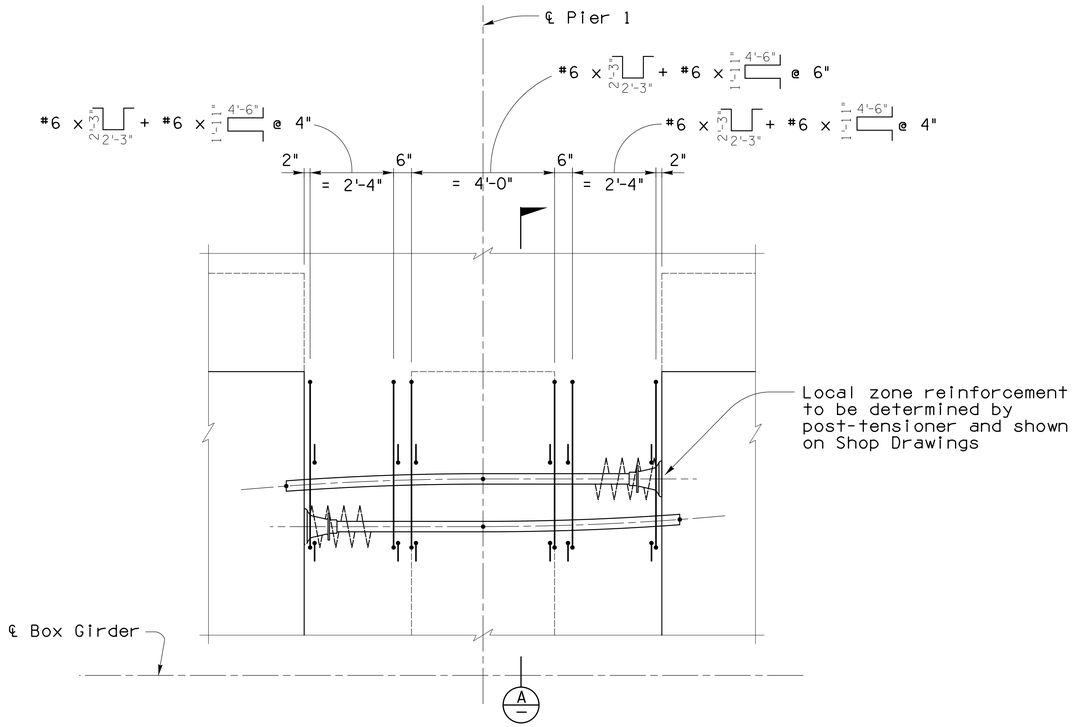
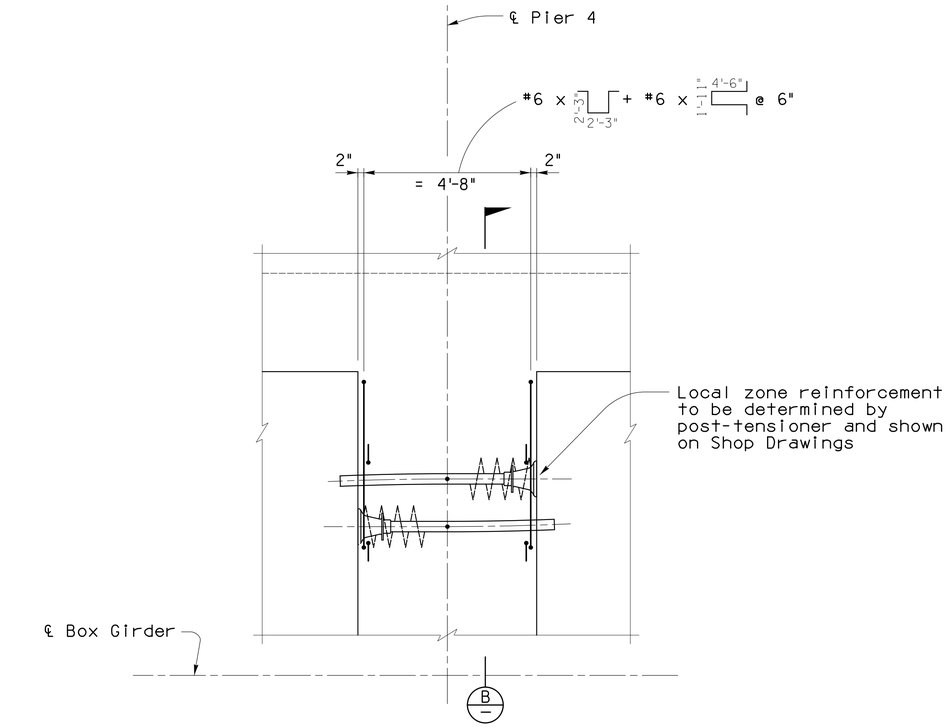
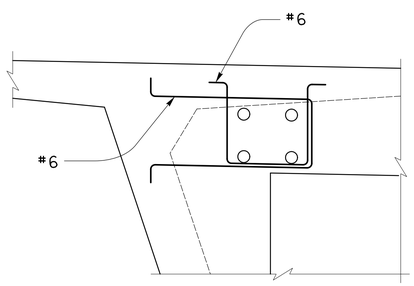


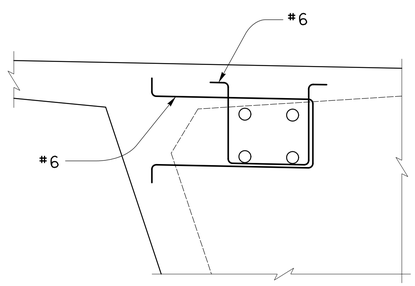
PARTIAL PLAN OF REINFORCEMENT AT PIER 1 (PIER 2 AND PIER 3 SIMILAR)
1/2" = 1'-0"



PARTIAL PLAN OF REINFORCEMENT AT PIER 4
1/2" = 1'-0"



SECTION A
1/2" = 1'-0"



SECTION B
1/2" = 1'-0"

Notes:

1. For additional reinforcement in Pier Table Pier 1, Pier 2 and Pier 3, see Pier Table Reinf.- 1 and Pier Table Reinf.- 2 drawings. For additional reinforcement in Pier 4 Diaphragm, see Pier 4 Diaphragm Reinf. drawing.

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NO.	DATE	REVISION	BY	CHKD.	APPR.

Future
Post-Tensioning Details - 3 S-1.73 of S-1.78

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
VEHICULAR BRIDGES

280 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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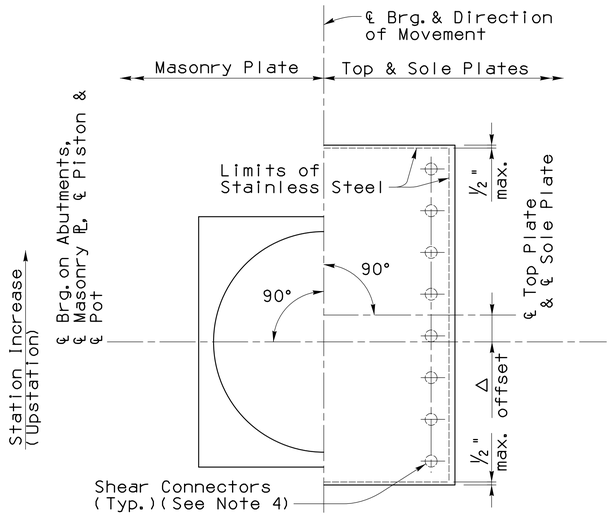
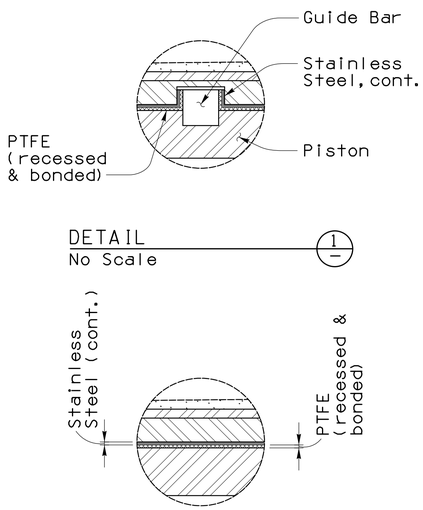
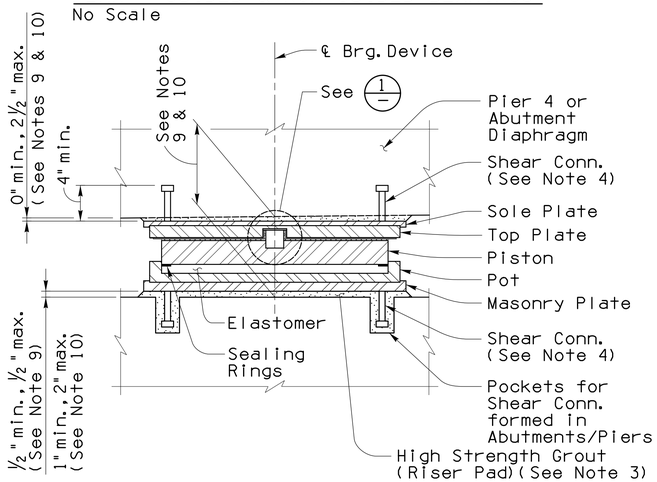
Location	Bearing Type (Looking Upstation		Service Load Combinations (See Note 6)			Factored Load Combinations (See Note 6)			Longitudinal Range of Structure Movement (in) (+ Denotes Upstation Movement)					Initial Offset, △ (in) (+ Denotes Upstation Offset, See Note 8)		
	Left	Right	Min. Vert. Load Per Bearing (Kips)	Max. Vert. Load Per Bearing (Kips)	Max. Lateral Load Per Guided Brg. (Kips)	Min. Vert. Load Per Bearing (Kips)	Max. Vert. Load Per Bearing (Kips)	Max. Lateral Load Per Guided Brg. (Kips)	Creep & Shrinkage	40° F Temp. Fall	Total Cotraction (See Note 7)	30° F Temp. Rise	Total Expansion (See Note 7)	@ 75° F	10° F Temp. Rise	10° F Temp. Fall
Abut. 1 EB	NG	NG	180	740	-	120	1060	-	+2.53	+1.28	+4.58	-0.96	-1.15	-3.04	-0.38	+0.38
Abut. 1 WB	NG	NG	180	740	-	120	1060	-	+2.53	+1.28	+4.58	-0.96	-1.15	-3.04	-0.38	+0.38
Abut. 2 EB	NG	NG	420	920	-	410	1290	-	-4.13	-2.39	-7.82	+1.79	+2.15	+5.00	+0.72	-0.72
Abut. 2 WB	NG	NG	420	920	-	410	1290	-	-4.13	-2.39	-7.82	+1.79	+2.15	+5.00	+0.72	-0.72
Pier 4 EB	GD	NG	2120	3630	1444	2360	4970	1444	-3.00	-1.78	-5.73	+1.32	+1.58	+3.60	+0.53	-0.53
Pier 4 WB	GD	NG	2120	3630	1444	2360	4970	1444	-3.00	-1.78	-5.73	+1.32	+1.58	+3.60	+0.53	-0.53



PLAN - GUIDED & NON-GUIDED BEARINGS
No Scale

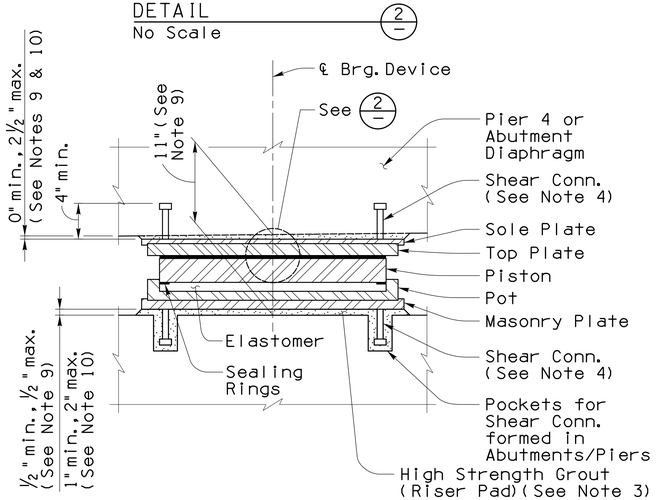


DETAIL ① —
No Scale



TYP. SECTION - GUIDED BEARING
No Scale

DETAIL ② —
No Scale



TYP. SECTION - NON-GUIDED BEARING
No Scale

Notes:

1. This drawing is a schematic of required bearing devices. Manufacturer is responsible for the design of the bearing devices. Shop drawings shall be submitted to the Engineer for review.
2. Bearing assemblies shall be constructed to permit removal for repair or replacement by vertically jacking the bridge from the abutments and pier 4 by ½" maximum.
3. Grout shall be comprised of portland cement and silica sand. Minimum compressive strength shall be 6,000 psi at 28 days.
4. Number, size and spacing of shear connectors shall be determined by the bearing manufacturer.
5. PTFE - Polytetrafluoroethylene
   GD - Guided Expansion Bearing
   NG - Non-Guided Expansion Bearing
   DS - Downstation
   US - Upstation
6. Loads are from AASHTO LRFD load combinations.
7. Total contraction and total expansion movements include 1.2 factor per AASHTO LRFD Bridge Design Specifications.
8. The top plate, sole plate, and stainless steal sliding plate shall accommodate the contraction and expansion shown. The shop drawings shall show the proper installed position of these plates with respect to the pot and piston.
9. A 12" dimension has been assumed between the top of the abutment seats and the bottom of the abutment diaphragms at ℄ bearing. Top of abutment seat elevations and related details shall be adjusted to account for actual bearing and riser pad thicknesses while maintaining dimensions to limits shown.
10. An 16½" dimension has been assumed between the top of Pier 4 seats and the bottom of Pier 4 diaphragms at ℄ bearing. Top of Pier 4 seat elevations and related details shall be adjusted to account for actual bearing and riser pad thicknesses while maintaining dimensions to limits shown.
11. Bearings are to be set level.
12. Bearings shall provide a total rotational capacity of 0.017 radians. This capacity requirement includes the factored bearing rotation plus a fabrication and installation tolerance (0.005 Radians) and an uncertainty tolerance (0.005 radians).
13. Bearings shall conform to the Project Specifications.
14. Design of all bearing elements shall be the responsibility of the manufacturer. See Special Provisions for acceptable manufacturers.

Bearing Details — S-1.74 of S-1.78

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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

281 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.	SCALE: N/A
DSGN. BY AO	06-18		
CHKD. BY CGP	06-18	PLAN NO.	1-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.

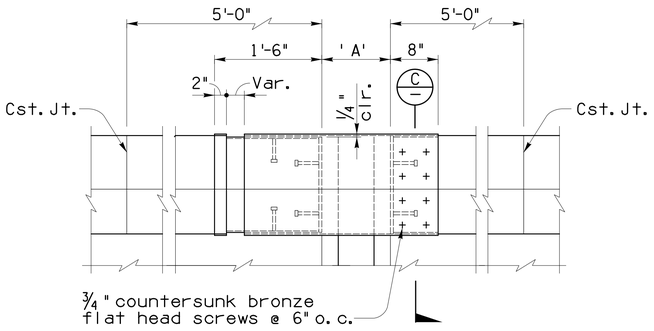
W:\Jobs\2010\1010_22nd over UPRR\1010_Working\1010_22nd_74_BD01.dgn 6/15/2018 10:36:22 AM

JOINT	"A" (IN)			
	75° F INITIAL SET	10° F INCREMENT	MIN	MAX
Abut. 1	A	3/8"	A-1 1/8"	A+4 5/8"
Abut. 2	A	3/4"	A-2 1/8"	A+7 7/8"

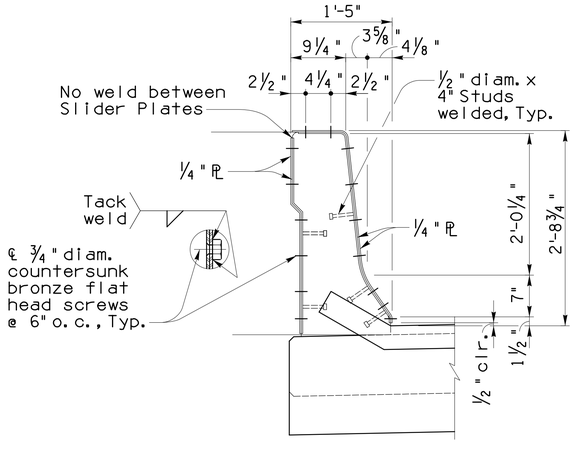
"A" Depends on manufacturer
Min. = Minimum joint opening
Max. = Maximum joint opening

Notes:

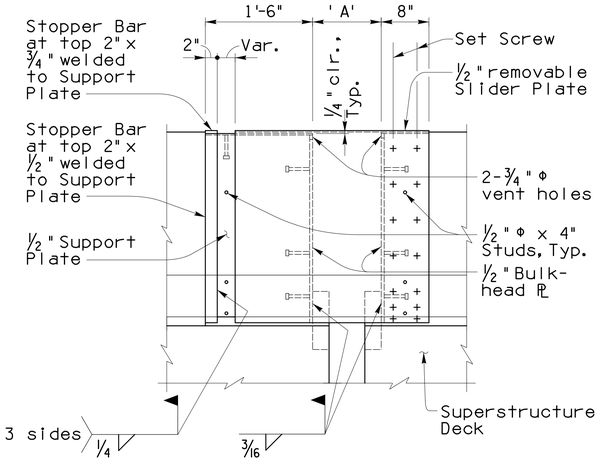
1. Design of expansion joints shall be the responsibility of the Contractor.
2. Expansion joints shall conform to the Special Provision "Modular Expansion Joints."
3. Expansion joints may not be installed until the entire superstructure is completed except that the railings and overlay shall not be in place.
4. The joint opening shall be set in accordance with the table. The opening shall be adjusted in accordance with the temperature difference from 75° F (mean temperature).
5. Fill blockout with Class S concrete, F'c = 6000 psi.
6. See abutment and abutment diaphragm reinforcing drawings for the reinforcing to be placed in the primary element pours that extend into the expansion joint blockout.
7. The Contractor shall modify the expansion joint blockout to suit the manufacturer's requirements, if required, with the approval of the Engineer.



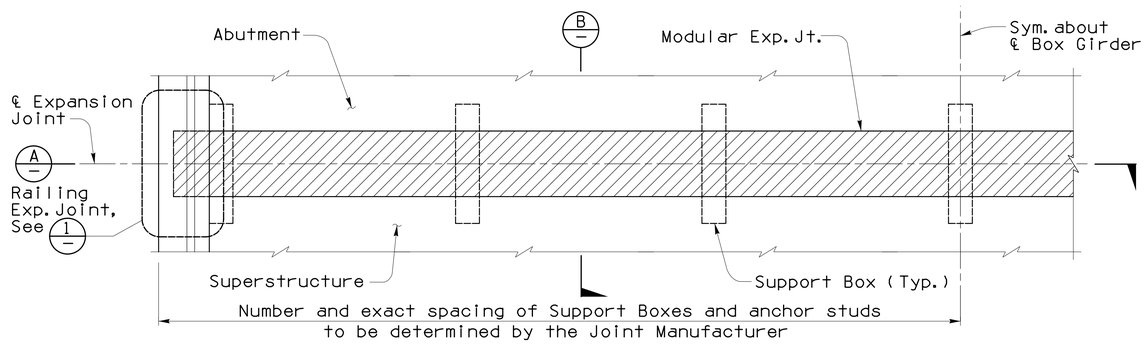
PLAN - SLIDER PLATES (1)
1" = 1'-0"



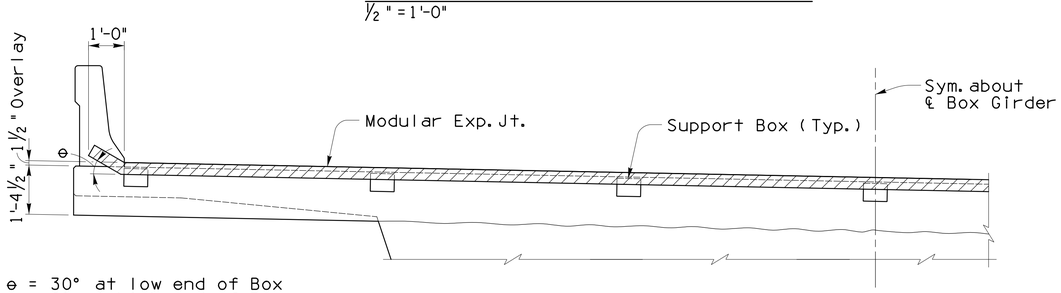
SECTION (C)
1" = 1'-0"



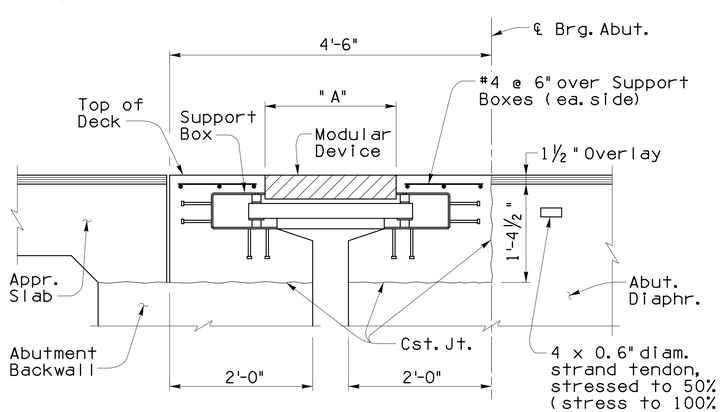
ELEVATION
1" = 1'-0"



PLAN
1/2" = 1'-0"



SECTION (A)
1/2" = 1'-0"



SECTION (B)
No Scale

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Expansion Joint Details S-1.75 of S-1.78

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Preliminary 100% Review

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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

282 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.

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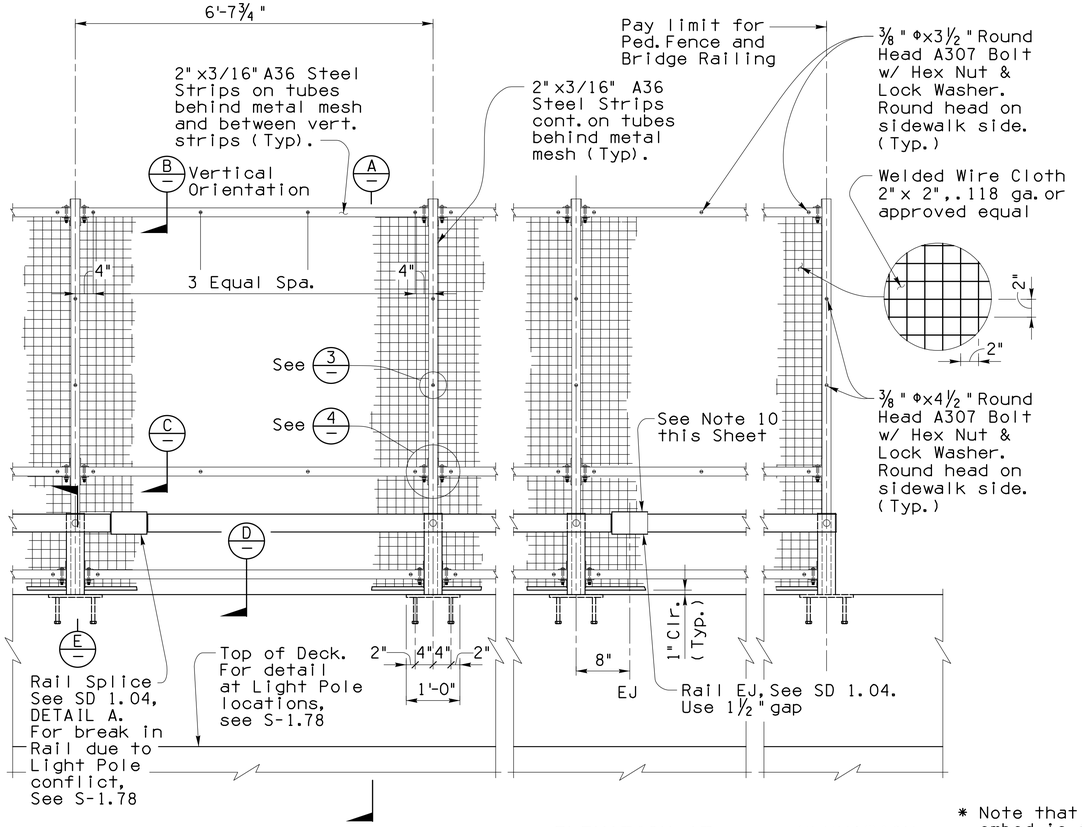
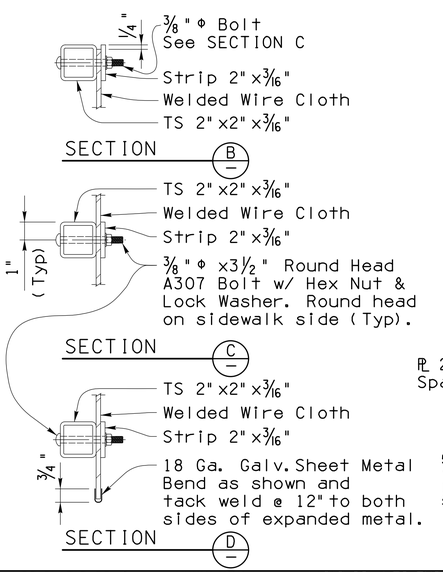
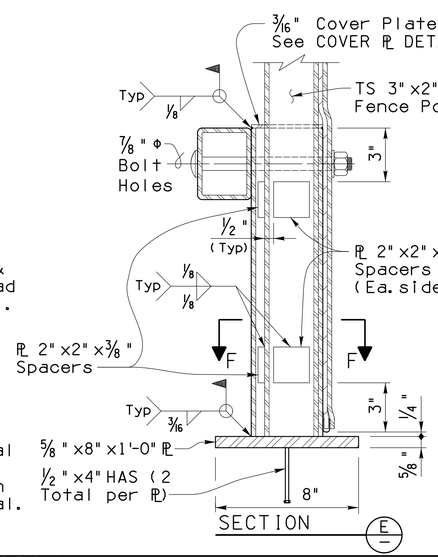


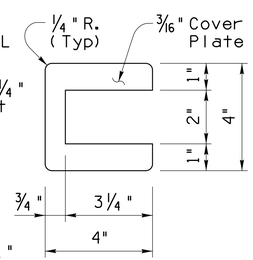
TYPICAL PANEL ELEVATION



ELEVATION AT EXPANSION JOINT

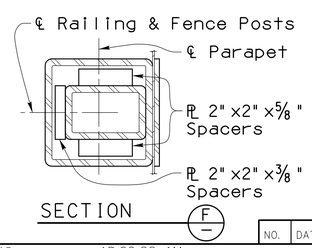


ELEVATION AT END POST

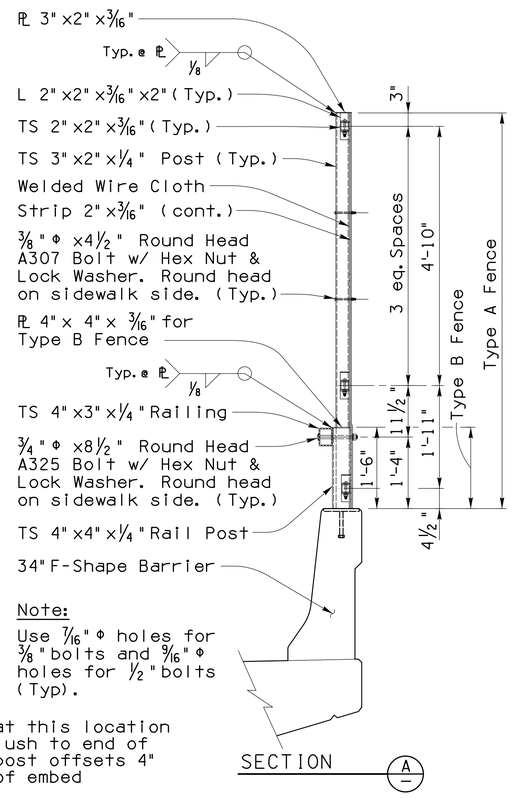


Note:
Weld cover plate to top of rail post after installing fence post.

COVER PL DETAIL



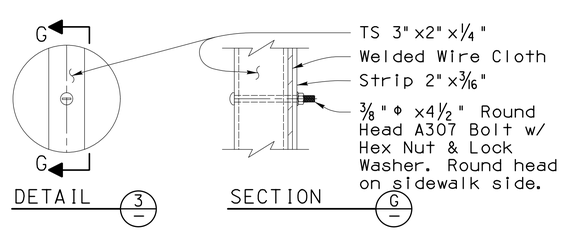
* Note that at this location embed is flush to end of barrier & post offsets 4" from edge of embed

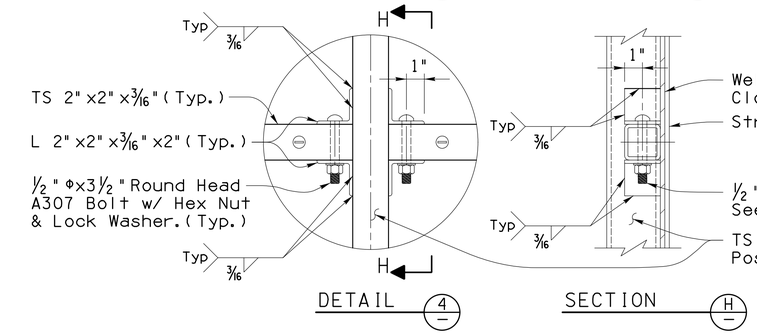


Note:
Use 7/16"Φ holes for ⅜" bolts and 9/16"Φ holes for ½" bolts (Typ).

FENCE NOTES:

1. Construction Specification - Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, latest Edition.
2. Design Specifications - AASHTO LRFD Bridge Design Specifications, 6th Edition 2012.
3. Structural tubing (TS) shall be ASTM A500 Grade B. All other structural steel shall conform to ASTM A36 unless noted otherwise. All fence components and hardware shall be prepped and primed for paint.
4. All welding shall conform to the requirements of the American Welding Society, ANSI/AASHTO/AWS D1.5 Bridge Welding Code, latest Edition.
5. See Bridge Architecture -1, S-1.16, for location and length of pedestrian fence.
6. Dimensions shall not be scaled from drawings.
7. Payment for fence is included in the pay item for PEDESTRIAN FENCE AND BRIDGE RAILING (Item No. 6011133), payment includes anchor plate & connection.
8. 34" F-shape Barrier is included in the pay item for F-shape Bridge Concrete Barrier & Transition (34") (Item No. 6011140).
9. Field verify fence/rail length after bridge construction and prior to final shop drawings.
10. For location of Rail EJ see S-1.16.





Pedestrian Fence & Bridge Railing Details — S-1.76 of S-1.78

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

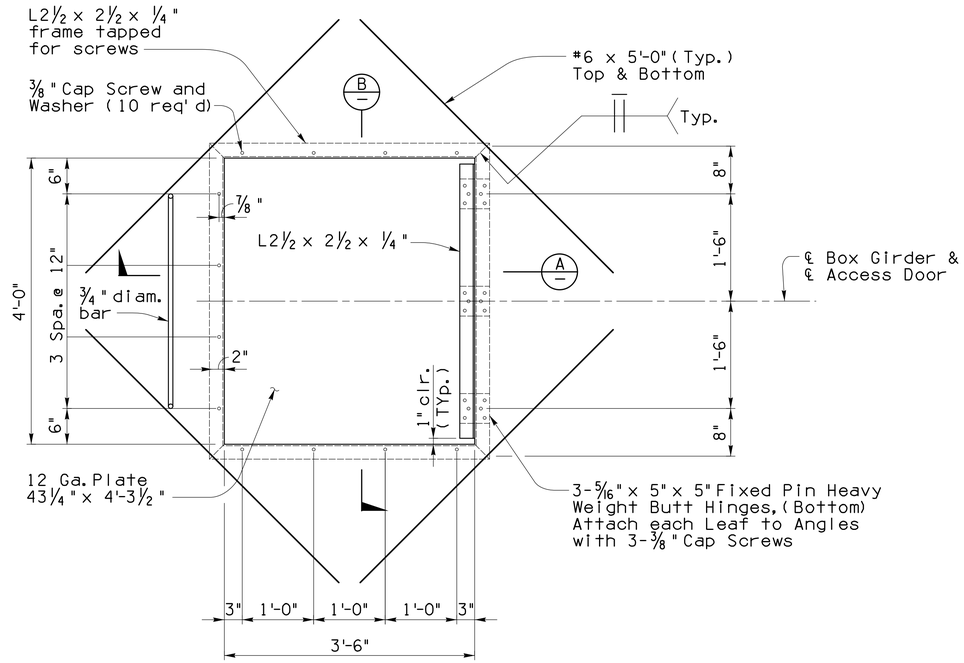
22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

283 OF 474

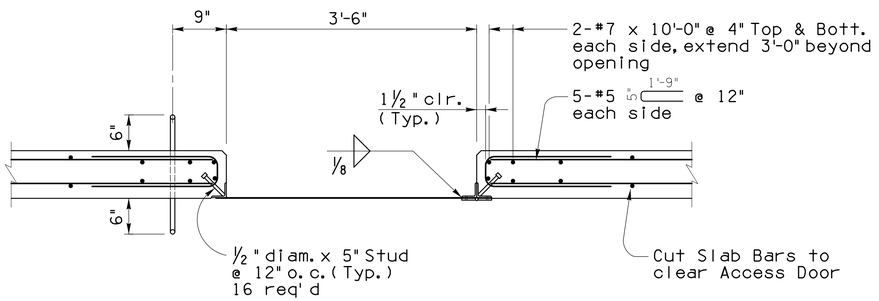
CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.



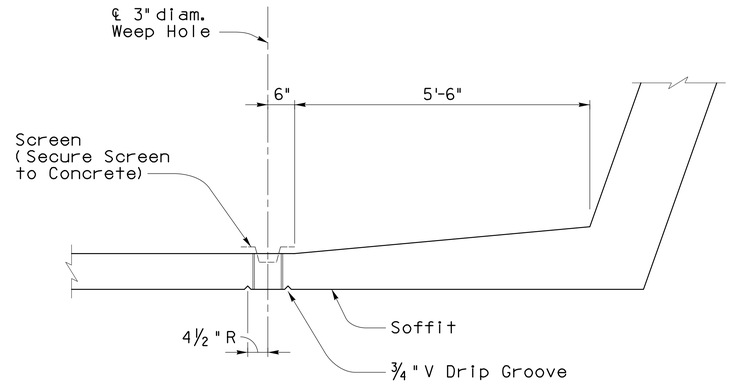
ACCESS DOOR PLAN
1" = 1'-0"



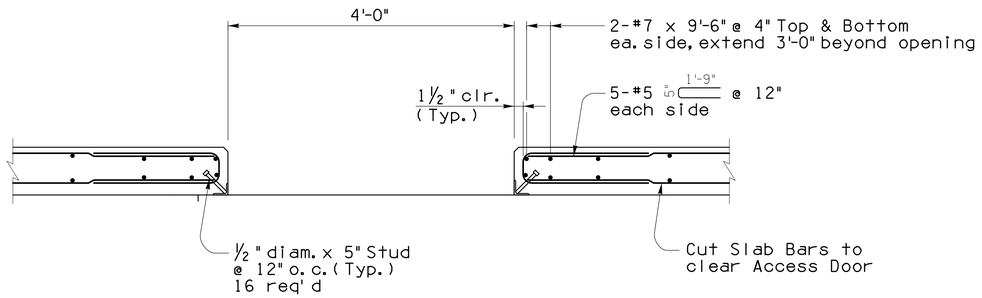
SECTION
1" = 1'-0"

Notes:

1. Structural steel shall be per ASTM A36.
2. Exposed surfaces shall be painted per Section 1002 of the Standard Specifications after fabrication. Color shall be selected and approved by the Engineer.
3. All items, including material and labor associated with segment access details, shall be incidental to the cost of the superstructure concrete.



WEEP HOLE DETAIL
¾" = 1'-0"



SECTION
1" = 1'-0"

Access Door & Weep Hole Details — S-1.77 of S-1.78

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

284 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
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NO.	DATE	REVISION	BY	CHKD.	APPR.

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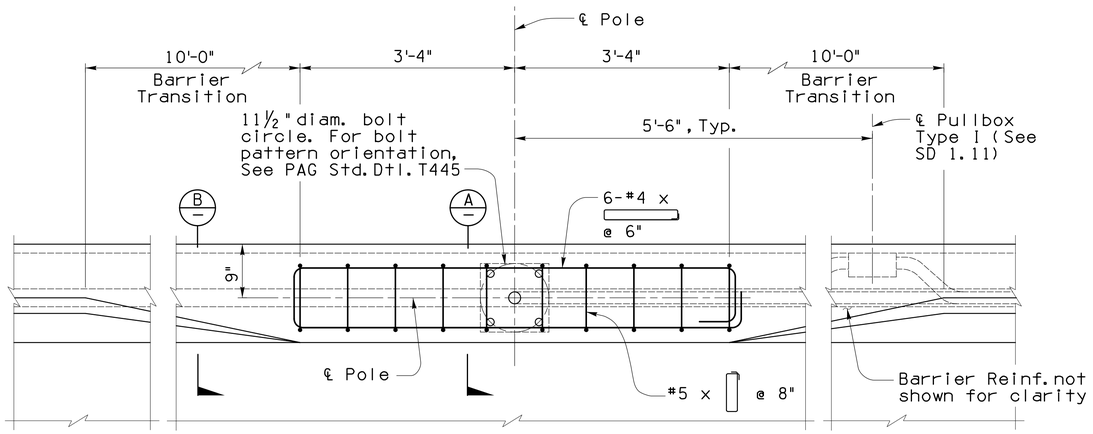
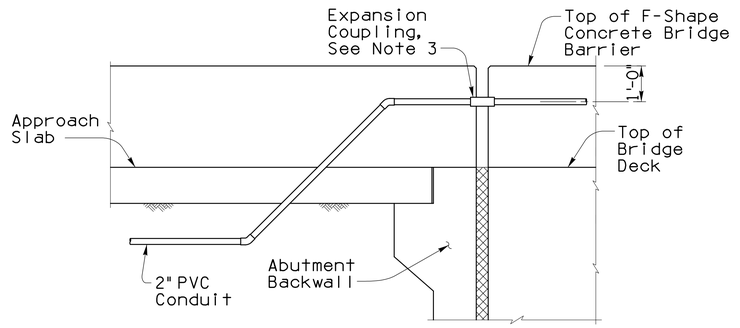
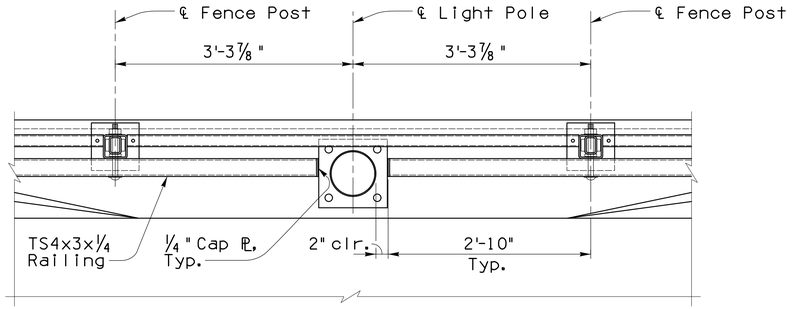


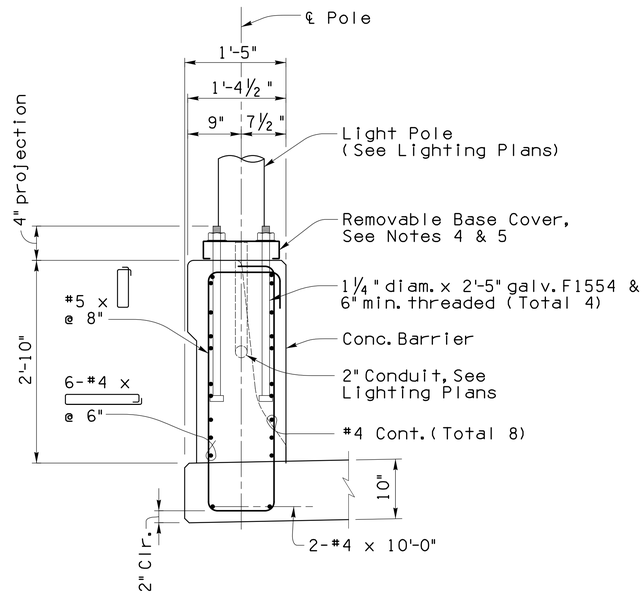
PLAN - BARRIER AT LIGHT POLE
1" = 1'-0"



ELECTRICAL CONDUIT SWEEP DETAIL
½" = 1'-0"

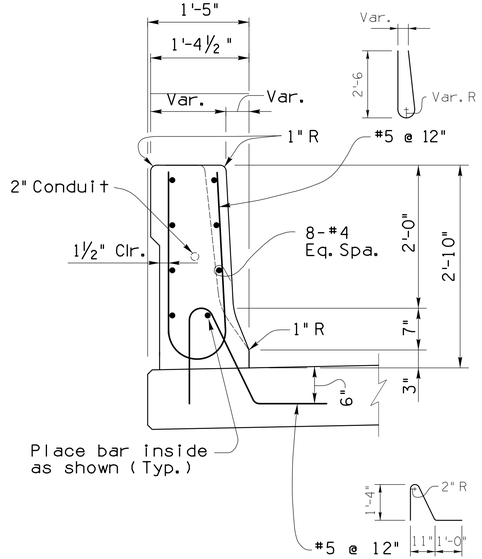


PLAN - FENCE AT LIGHT POLE
¾" = 1'-0"



Note:
Verify bolt projection will fit inside base cover per luminaire manufacturer requirements.

SECTION (A)
1" = 1'-0"



SECTION (B)
1" = 1'-0"

Notes:

1. The upper 6" of the anchor bolts shall be treated.
2. Light pole Concrete Barrier Blister shall not be paid separately. Additional concrete and steel are considered incidental to the concrete barrier construction. No additional payment will be made for anchor bolts and associated hardware, their cost considered included in the cost of LF F-Shape Bridge Concrete Barrier and Transition (34").
3. Provide expansion coupling at all bridge expansion joints.
4. All bolts, nuts, washers and removable cover plate shall be galvanized in accordance with the requirements of ASTM A153.
5. Contractor to submit removable base cover detail for protection of anchor bolts & 2" conduit to City of Tucson for review before construction. Cost of removable base cover, material required for installation and labor to install shall be incidental to Item No. 6011140 F-Shape Bridge Concrete Barrier and Transition (34") paid by LF.

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Miscellaneous Details S-1.78 of S-1.78

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD VEHICULAR BRIDGES

285 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY AO	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

GENERAL NOTES

1. General soil and rock (where encountered) strata descriptions and indicated boundaries are based on engineering interpretation of available subsurface information by the geotechnical engineer and may not reflect actual variation in subsurface conditions between borings and samples. The location of contacts between strata may be gradual rather than abrupt. Classification of soil material is in general accordance with ASTM D 2488-93 and is presented in the Geotechnical Report.

2. The observed water levels and/or moisture conditions indicated on the boring logs are as recorded at the time of field investigation. These water levels and/or moisture conditions may vary considerably with time according to the prevailing climate, rainfall or other factors and are otherwise dependent upon the duration of and methods used in the field investigation program.

3. Sound engineering judgment was exercised in preparing the subsurface information presented on these sheets. This information was prepared and is intended for design and estimating purposes. Its presentation on the plans or elsewhere is for the purpose of providing intended users with access to the same information as was provided to the City of Tucson and its designers. Interpretations of subsurface information are presented in good faith and are not intended as a substitute for personal investigation, independent interpretations or judgment of the contractor.

4. A 140 lb. hammer, 30-inch free-fall, was used to drive both the Standard Penetration Test (SPT) split-spoon sampler and the ring-lined sampler in general conformance with ASTM D 1586-96 and D 3550-01, respectively.

5. For further information, refer to SCE reports "Final Geotechnical Report - 22nd Street: Kino Parkway to Tucson Boulevard" submitted to AECOM and any Addenda.

6. Reaction to dilute HCl (as per ASTM D 2488) does not necessarily correlate to the degree of carbonate cementation. For example, a "strong" reaction to HCl and a low SPT-N value may indicate that the soil particles are coated with calcium carbonate or lime but the voids are mostly clear, i.e. the particles are not significantly cemented to each other; therefore, the density is loose. In other cases, soil may exhibit "no" to "weak" reaction to HCl but appear to be strongly cemented due to induration. Thus, the user should consider the reported reaction to HCl and SPT-N values in conjunction with other relevant factors to evaluate the degree of cementation and its effect on construction activities.

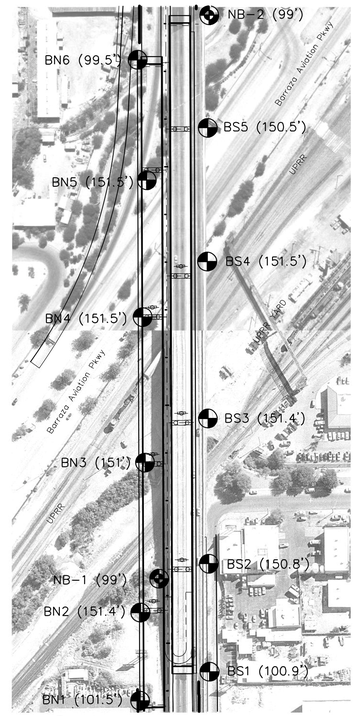
7. Refusal SPT-N values may be indicative of the presence of cobbles or boulders whose size cannot be determined by the investigative techniques used for this project. Cobbles and boulders will likely be encountered during the construction of the drilled shafts. Additionally, cemented layers may form cobble or boulder size pieces when broken up. The contractor should mobilize the appropriate equipment for removing this material.

8. The site soils contain random zones of poorly graded and well graded sands and gravels. These soils may be prone to caving. Therefore, localized caving should be anticipated during drilled shaft construction. These local zones may be up to 20-ft thick and can occur at various depths.

9. The site soils contain random zones of gravels, cobbles and boulders. These materials experience large fluid loss during slurry-assisted drilled shaft construction.

BORING PLAN

SCALE 1"=150' (at 22" x 34")



OTHER TERMINOLOGY

Quantity:		Reaction to HCl:	
Trace	< 5%	No reaction	No visible reaction
Few	5-10%	Weak reaction	Some reaction, with bubbles forming slowly
Little	15-25%	Strong reaction	Violent reaction, with bubbles forming immediately
Some	30-45%		
Mostly	> 50%		

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Blue Stake Center

NO.	DATE	REVISION	BY	CHKD.	APPR.

FOUNDATION DATA
(VEHICULAR BRIDGE) SF - 1.01 of SF - 1.14

SCE ENGINEERING
510 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

Preliminary
100% Review

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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22nd Street: KINO PARKWAY TO TUCSON BOULEVARD

286 OF 474

CITY OF TUCSON

DRWN. K. WATTS	06-18	REF.
DSGN. K. WATTS	06-18	SCALE: As Shown
CHKD. J. HARRIS	06-18	PLAN NO. I - 2010 -012

Date Plotted: 6/7/2018 Time Plotted: 11:01:27 PM Filename: ...\FDS_22nd_bridge_01.dgn

SCE BORING LOG: BN1 (1 of 2)

48+81, 60 Lt. (Ref. Al. 22nd St)
NORTHING: 40,457 EASTING: 100,520
ELEV.: 2,453.6 TOTAL DEPTH: 101.5

STARTED: 10/25/2010 07:55 AM
FINISHED: 10/25/2010 02:15 PM

CONTRACTOR: GSI
DRILLER: Chuck
INSPECTOR: JBH
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S	☒	Split Spoon	1.375"	2"	18"
	R	■	Ring Sampler	2.5"	3"	18"
	U	▯	Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
						4" of Asphaltic Concrete.
5	2450		R		7-14	CLAYEY SAND (native), loose, dry, tan, fine to coarse SAND, some low plasticity fines, few fine to coarse subrounded to subangular gravel, weak cementation, strong reaction with HCl, max. particle size 1". (SC)
			CU			
10	2445		S		12-24-30	Becomes very dense, some medium plasticity fines, trace fine subangular to angular gravel, moderate cementation, max. particle size 0.25".
15	2440		S		9-26-32	Becomes brown, few fine to coarse subangular to angular gravel, strong cementation, weak reaction with HCl, max. particle size 1".
20	2435		R		34-50/3	Becomes some low plasticity fines, trace fine subangular to angular gravel, weak cementation, strong reaction with HCl, max. particle size 0.5".
25	2430		S		23-50/3	SANDY LEAN CLAY, hard, dry, tan, low plasticity CLAY, some fine to medium sand, weak cementation, strong reaction with HCl, strong cemented nodules. (CL)
30	2425		S		50/2	Slow auger advance from 31' to 45'.
35	2420		S		50/5	CLAYEY SAND, very dense, dry, light brown, fine to coarse SAND, some low plasticity fines, strong cementation, strong reaction with HCl, caliche. (SC)
40	2415		S		50/1	
45	2410		S		18-50/6	Becomes brown, little low plasticity fines, few fine to coarse subangular to angular gravel, weak cementation, max. particle size 1", strong cemented nodules.
50	2405		S		15-22-26	WELL-GRADED SAND WITH SILT, dense, dry, brown, fine to coarse SAND, few fine to coarse angular gravel, few nonplastic fines, no cementation, no reaction with HCl, max. particle size 1.25". (SW-SM)
55	2400		S		18-22-28	SILTY SAND, dense, dry, brown, fine to coarse SAND, little nonplastic fines, few fine angular gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SM)
60	2395		S		11-17-22	Becomes few fine subangular to angular gravel.
65	2390		S		13-22-22	Becomes few fine to coarse subangular to angular gravel, max. particle size 1".
70	2385		S		23-22-35	Becomes very dense. Added water to boring at 70'.
75	2380		S		11-22-23	Becomes dense, max. particle size 1.25". Added water to boring at 75'.
80	2375					

SCE BORING LOG: BN1 (2 of 2)

48+81, 60 Lt. (Ref. Al. 22nd St)
NORTHING: 40,457 EASTING: 100,520
ELEV.: 2,453.6 TOTAL DEPTH: 101.5

STARTED: 10/25/2010 07:55 AM
FINISHED: 10/25/2010 02:15 PM

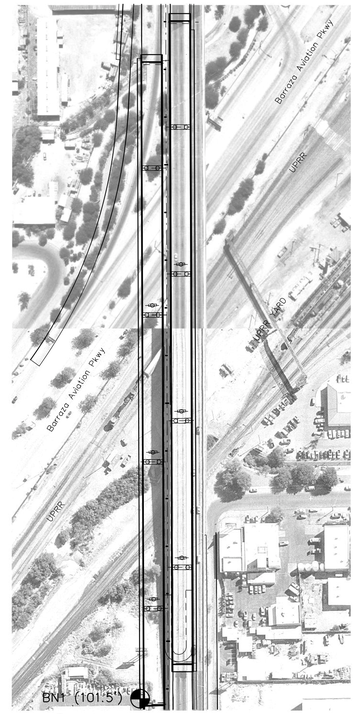
CONTRACTOR: GSI
DRILLER: Chuck
INSPECTOR: JBH
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S	☒	Split Spoon	1.375"	2"	18"
	R	■	Ring Sampler	2.5"	3"	18"
	U	▯	Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
85	2370		S		18-20-50/2	Becomes SILTY SAND WITH GRAVEL, very dense, little fine to coarse subangular to angular gravel. Rig chatter from 81' to 84'.
90	2365		S		17-32-46	CLAYEY SAND, very dense, dry to moist, brown, fine to coarse SAND, little low plasticity fines, few fine to coarse subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 1". (SC) Added water to boring at 86'. Slow auger advance from 86' to 100'.
95	2360		S		21-50/3	SILTY SAND WITH GRAVEL, very dense, dry to moist, brown, fine to coarse SAND, little fine to coarse subangular to angular gravel, little nonplastic fines, no cementation, no reaction with HCl, max. particle size 1.25". (SM) Rig chatter from 91' to 93'.
100	2355		S		28-27-43	Becomes SILTY SAND, little low plasticity fines, few fine to coarse subangular to angular gravel, max. particle size 1".
105	2350		S		10-24-35	CLAYEY SAND, very dense, moist, dark brown, fine to coarse SAND, little medium plasticity fines, few fine subrounded to subangular gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SC) End of boring at 100'. Stopped sampler at 101.5'. No groundwater encountered. Backfilled with grout. Applied cold patch.
110	2345					
115	2340					
120	2335					
125	2330					
130	2325					
135	2320					
140	2315					
145	2310					
150	2305					
155	2300					
160	2295					

BORING PLAN

SCALE 1"=150' (at 22" x 34")



BORING LOCATION

150' 0 150' 300'

SCALE: 1"=150'
(at 22" x 34")

FOUNDATION DATA
(VEHICULAR BRIDGE) SF - 1.02 of SF - 1.14

SCE ENGINEERING
510 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

Preliminary
100%
Review

Not for
Construction
or Recording

June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22nd Street: KINO PARKWAY TO TUCSON BOULEVARD

CITY OF TUCSON

DRWN. K. WATTS	06-18	REF.
DSGN. K. WATTS	06-18	SCALE: As Shown
CHKD. J. HARRIS	06-18	PLAN NO. I - 2010 -012

287 OF 474

NO.	DATE	REVISION	BY	CHKD.	APPR.

Two working days before you dig.
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Blue Stake Center

Date Plotted: 6/7/2018 Time Plotted: 10:55:58 PM Filename: ...\FDS_22nd_bridge_02.dgn

SCE BORING LOG: BN2 (1 of 2)

50+65, 58 Lt. (Ref. Al. 22nd St)
NORTHING: 40,456 EASTING: 100,705
ELEV.: 2,453.0 TOTAL DEPTH: 151.4

STARTED: 11/12/2010 07:30 AM
FINISHED: 11/15/2010 02:30 PM

CONTRACTOR: GSI
DRILLER: Chuck
INSPECTOR: JBH
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES

Type	Symbol	Description	I.D.	O.D.	Length
S	⊠	Split Spoon	1.375"	2"	18"
R	◧	Ring Sampler	2.5"	3"	18"
U	▯	Shelby Tube			

DEPTH (FT) 5–80; ELEV. (FT) 2450–2375

SAMPLE TYPE	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
R	18-29	CLAYEY SAND WITH GRAVEL (native), medium dense, dry, brown, fine to coarse SAND, little fine to coarse subrounded to subangular gravel, little low plasticity fines, weak cementation, strong reaction with HCl, max. particle size 1.5", strong cemented nodules. (SC)
S	22-50/5	SANDY LEAN CLAY, hard, dry, light brown, medium plasticity CLAY, some fine to medium sand, strong cementation, strong reaction with HCl, caliche. (CL)
S	34-50/5	Becomes brown, trace fine gravel, moderate cementation, strong cemented nodules, max. particle size 0.25".
S	24-38-50	CLAYEY SAND, very dense, dry, brown, fine to coarse SAND, some low plasticity fines, moderate cementation, weak reaction with HCl. (SC)
S	50/5	SANDY LEAN CLAY, hard, dry, tan, medium plasticity CLAY, some fine sand, weak cementation, strong reaction with HCl, moderate cemented nodules. (CL)
S	50/4	Becomes low plasticity CLAY, some fine to coarse sand. Slow auger advance from 33' to 43'.
S	50/4	CLAYEY SAND, very dense, dry, light brown, fine to coarse SAND, some low plasticity fines, strong cementation, strong reaction with HCl, caliche. (SC)
S	50/2	Rig chatter from 41' to 44'.
S	39-50/4	Becomes brown, little low plasticity fines, trace fine subrounded to subangular gravel, moderate cementation, weak reaction with HCl, max. particle size 0.25".
R	22-33	WELL-GRADED SAND, medium dense, dry, brown, fine to coarse SAND, few fine to coarse subrounded to subangular gravel, trace nonplastic fines, no cementation, no reaction with HCl, max. particle size 1". (SW)
S	25-28-50	SILTY SAND, very dense, dry, brown, fine to coarse SAND, little nonplastic fines, few fine to coarse subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 1". (SM)
S	12-19-39	Becomes little low plasticity fines, trace fine subangular to angular gravel, max. particle size 0.75".
S	14-19-29	WELL-GRADED SAND WITH SILT, dense, dry, brown, fine to coarse SAND, few nonplastic fines, trace fine subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SW-SM)
S	13-21-30	SILTY SAND, very dense, dry, brown, fine to coarse SAND, little nonplastic fines, few fine to coarse subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 1.5". (SM)
S	11-23-30	Becomes SILTY SAND WITH GRAVEL, little fine to coarse subangular to angular gravel. Added 5 gallons of water to boring at 77'.
		SILTY, CLAYEY SAND, very dense, dry to moist, dark brown, fine to

REPORT sce fds boring log - PROJECT 22nd - kino to tucson.gpj - LIBRARY sce gintlib v2.1.glb - LAST MOD 07/08/15 03:59 pm - EXPORTED 07/30/16 10:05 am

SCE BORING LOG: BN2 (2 of 2)

50+65, 58 Lt. (Ref. Al. 22nd St)
NORTHING: 40,456 EASTING: 100,705
ELEV.: 2,453.0 TOTAL DEPTH: 151.4

STARTED: 11/12/2010 07:30 AM
FINISHED: 11/15/2010 02:30 PM

CONTRACTOR: GSI
DRILLER: Chuck
INSPECTOR: JBH
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES

Type	Symbol	Description	I.D.	O.D.	Length
S	⊠	Split Spoon	1.375"	2"	18"
R	◧	Ring Sampler	2.5"	3"	18"
U	▯	Shelby Tube			

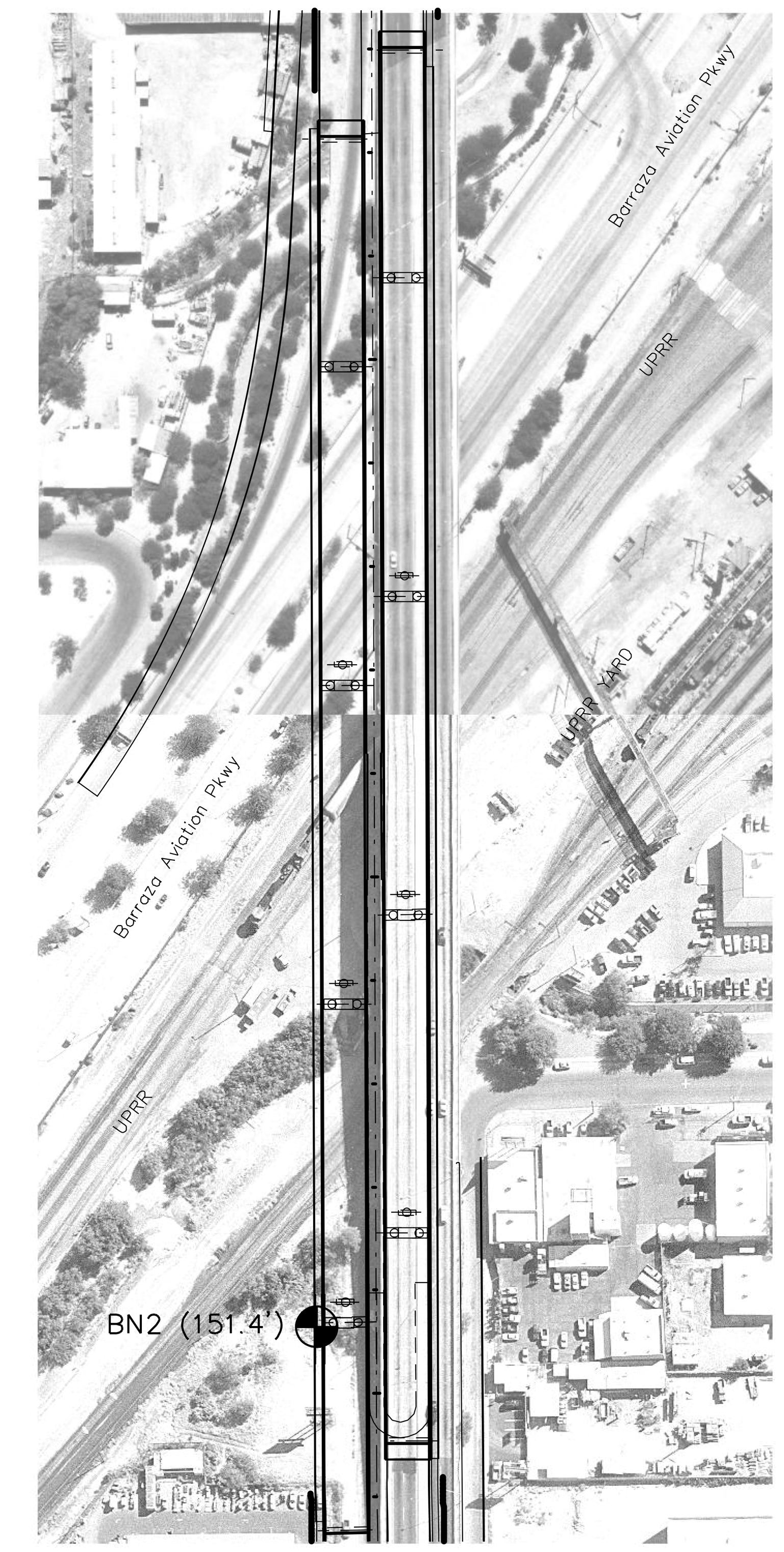
DEPTH (FT) 85–160; ELEV. (FT) 2370–2295

SAMPLE TYPE	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
S	14-40-50/3	coarse SAND, little low plasticity fines, few fine to coarse subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 1.5". (SC-SM) Rock in sampler tip. Added 5 gallons of water to boring at 80'.
S	38-50/5	CLAYEY SAND WITH GRAVEL, very dense, dry to moist, dark brown, fine to coarse SAND, some fine to coarse subangular to angular gravel, little low plasticity fines, no cementation, no reaction with HCl, max. particle size 1.5". (SC)
S	20-28-37	Added 5 gallons of water to boring at 85'. Becomes CLAYEY SAND, brown, few fine subangular to angular gravel, max. particle size 0.5". Added 5 gallons of water to boring at 90'.
S	20-43-50	Added 5 gallons of water to boring at 95'.
S	16-20-24	SILTY SAND, dense, dry to moist, brown, fine to coarse SAND, little nonplastic fines, few fine subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SM) Added 5 gallons of water to boring at 100'.
S	22-31-40	CLAYEY SAND, dense, dry to moist, dark brown, fine to coarse SAND, some medium plasticity fines, no cementation, no reaction with HCl. (SC) SILTY SAND, very dense, dry, brown, fine to coarse SAND, little low plasticity fines, no cementation, no reaction with HCl. (SM) Added 5 gallons of water to boring at 105'.
S	20-24-27	Becomes tan, little nonplastic fines, trace fine to coarse subangular to angular gravel, max. particle size 1".
S	21-34-35	SANDY LEAN CLAY, hard, dry to moist, dark brown, medium plasticity CLAY, some fine to medium sand, moderate cementation, strong reaction with HCl, strong cemented nodules. (CL) Added 5 gallons of water to boring at 115'.
S	15-29-34	Becomes LEAN CLAY, few fine to coarse sand, trace fine gravel, max. particle size 0.5". ∇
S	8-11-15	SANDY FAT CLAY, very stiff, moist, brown, high plasticity CLAY, some fine sand, moderate cementation, strong reaction with HCl, strong cemented nodules. (CH)
S	9-15-22	Becomes hard, light brown, some fine to medium sand, weak reaction with HCl.
R	12-15	Becomes FAT CLAY WITH SAND, stiff, dark brown, little fine sand, weak cementation, strong cemented nodules.
S	6-9-12	CLAYEY SAND, medium dense, moist, light brown, fine to medium SAND, some low plasticity fines, weak cementation, strong reaction with HCl, moderate cemented nodules. (SC)
S	17-15-26	Becomes dense, dry to moist, tan. Becomes brown, fine to coarse SAND, weak reaction with HCl.
S	14-31-50/5	SILTY SAND, very dense, dry to moist, brown, fine to coarse SAND, little low plasticity fines, trace fine subangular gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SM)
		End of boring at 150'. Stopped sampler at 151.4'. Perched groundwater encountered at 123'. Backfilled with grout.

REPORT sce fds boring log - PROJECT 22nd - kino to tucson.gpj - LIBRARY sce gintlib v2.1.glb - LAST MOD 07/08/15 03:59 pm - EXPORTED 07/30/16 10:05 am

BORING PLAN

SCALE 1"=150' (at 22" x 34")



BORING LOCATION

150' 0 150' 300'
SCALE: 1"=150'
(at 22" x 34")

GROUNDWATER DATA FOR BN2					
Date	Time	Water Depth (ft)	Casing Depth (ft)	Hole Depth (ft)	Symbol
11/15/10	08:30 AM	123.0	125.0	125.0	∇

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Blue Stake Center

FOUNDATION DATA (VEHICULAR BRIDGE)

SF - 1.03 of SF - 1.14

SCE ENGINEERING 510 E 4TH STREET TUCSON, AZ 85705 520-405-7353

NO.	DATE	REVISION	BY	CHKD.	APPR.

Preliminary 100% Review
Not for Construction or Recording
June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22nd Street: KINO PARKWAY TO TUCSON BOULEVARD

288 OF 474

CITY OF TUCSON

DRWN. K. WATTS 06-18
DSGN. K. WATTS 06-18
CHKD. J. HARRIS 06-18

REF. ______ SCALE: As Shown

PLAN NO. I - 2010 -012

SCE BORING LOG: BN3 (1 of 2)

53+80, 47 Lt. (Ref. Al. 22nd St)
NORTHING: 40,446 EASTING: 101,020
ELEV.: 2,454.4 TOTAL DEPTH: 151
STARTED: 11/02/2010 07:30 AM
FINISHED: 11/05/2010 09:30 AM

CONTRACTOR: GSI
DRILLER: Chuck / Steve
INSPECTOR: JBH/NAB
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES

Type	Symbol	Description	I.D.	O.D.	Length
S	⊠	Split Spoon	1.375"	2"	18"
R	◧	Ring Sampler	2.5"	3"	18"
U	▯	Shelby Tube			

DEPTH (FT) / ELEV. (FT): 5 / 2450, 10 / 2445, 15 / 2440, 20 / 2435, 25 / 2430, 30 / 2425, 35 / 2420, 40 / 2415, 45 / 2410, 50 / 2405, 55 / 2400, 60 / 2395, 65 / 2390, 70 / 2385, 75 / 2380, 80 / 2375

SAMPLE TYPE	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
CU		CLAYEY SAND WITH GRAVEL (native), medium dense, dry, dark brown, fine to coarse SAND, little fine to coarse subrounded gravel, little low plasticity fines, weak cementation, strong reaction with HCl, max. particle size 1", strong cemented nodules. (SC)
S	5-9-12	No recovery.
R	40-50/4	Becomes CLAYEY SAND, very dense, light brown, some medium plasticity fines, few fine gravel, moderate cementation, max. particle size 0.75".
S	26-50/3	SANDY LEAN CLAY, hard, dry, light brown, low plasticity CLAY, some fine to coarse sand, moderate cementation, strong reaction with HCl. (CL)
S	50/3	Slow auger advance from 19' to 22'. Becomes strong cementation, caliche.
S	6-50/5	CLAYEY SAND, very dense, dry, light brown, fine to coarse SAND, some low plasticity fines, few fine to coarse subangular to angular gravel, moderate cementation, strong reaction with HCl, max. particle size 1". (SC) Rock in sampler tip.
S	50/3	Becomes no gravel.
S	50/3	Becomes strong cemented nodules. Slow auger advance from 35' to 40'.
S	9-50/5	Becomes CLAYEY SAND WITH GRAVEL, brown, little fine subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 0.75".
S	12-18-20	SILTY SAND, dense, dry, brown, fine to coarse SAND, little nonplastic fines, few fine subrounded to subangular gravel, no cementation, weak reaction with HCl, max. particle size 0.75". (SM)
S	16-20-26	Becomes little low plasticity fines, few fine to coarse subangular to angular gravel, weak cementation, max. particle size 1".
S	6-15-22	Becomes dark brown, trace fine subangular to angular gravel, max. particle size 0.25".
S	8-14-17	Becomes dry to moist, brown, little nonplastic fines, few fine to coarse subangular to angular gravel, max. particle size 1".
S	6-22-30	Becomes SILTY SAND WITH GRAVEL, very dense, little fine to coarse subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 1.5".
S	26-20-34	Becomes little low plasticity fines.
S	16-27-32	Becomes max. particle size 1".

REPORT sce fds boring log - PROJECT 22nd - kino to tucson.gpj - LIBRARY sce gintlib v2.1.glb - LAST MOD 11/01/12 11:02 am - EXPORTED 07/30/16 10:05 am

SCE BORING LOG: BN3 (2 of 2)

53+80, 47 Lt. (Ref. Al. 22nd St)
NORTHING: 40,446 EASTING: 101,020
ELEV.: 2,454.4 TOTAL DEPTH: 151
STARTED: 11/02/2010 07:30 AM
FINISHED: 11/05/2010 09:30 AM

CONTRACTOR: GSI
DRILLER: Chuck / Steve
INSPECTOR: JBH/NAB
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES

Type	Symbol	Description	I.D.	O.D.	Length
S	⊠	Split Spoon	1.375"	2"	18"
R	◧	Ring Sampler	2.5"	3"	18"
U	▯	Shelby Tube			

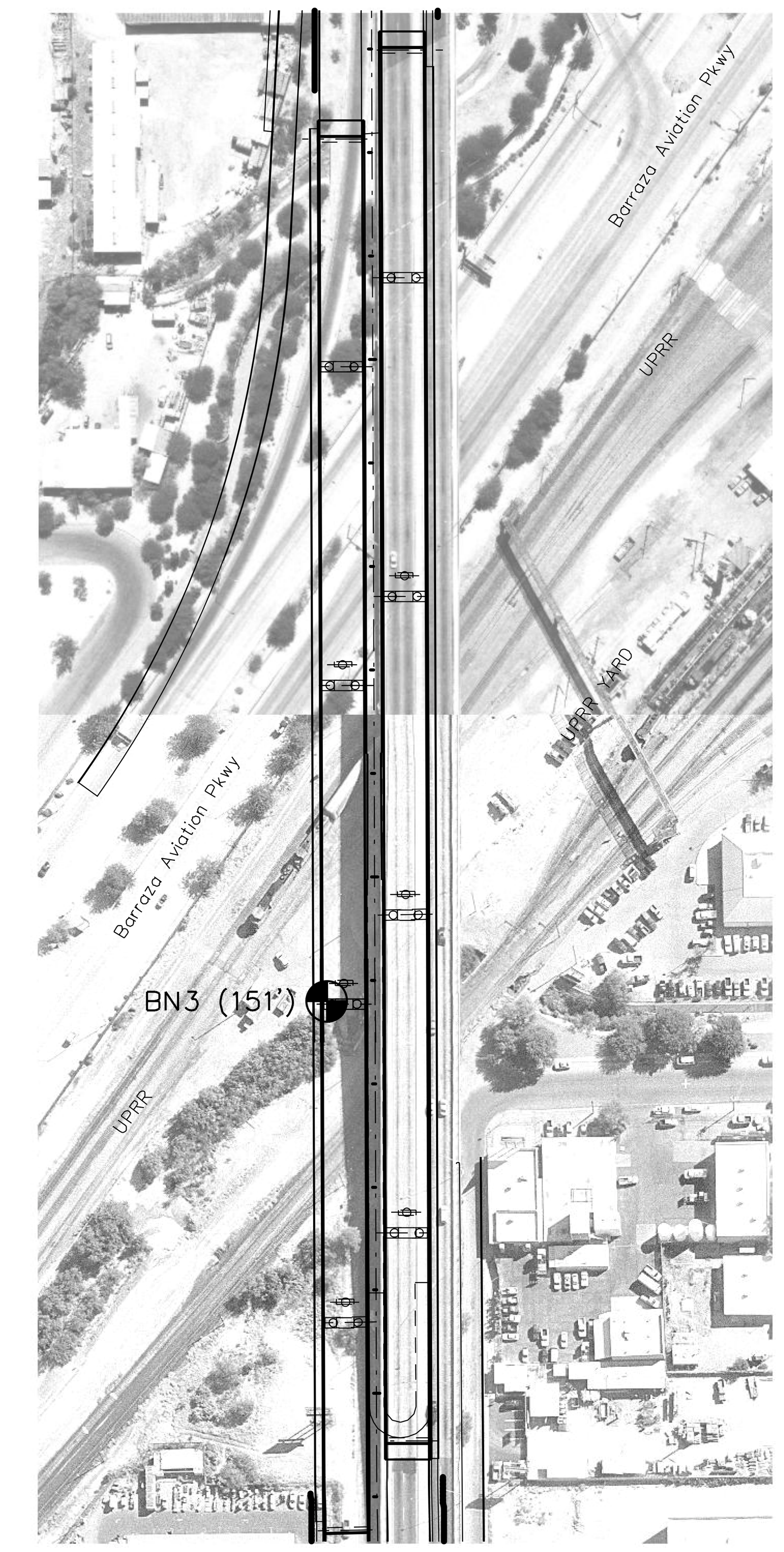
DEPTH (FT) / ELEV. (FT): 85 / 2370, 90 / 2365, 95 / 2360, 100 / 2355, 105 / 2350, 110 / 2345, 115 / 2340, 120 / 2335, 125 / 2330, 130 / 2325, 135 / 2320, 140 / 2315, 145 / 2310, 150 / 2305, 155 / 2300, 160 / 2295

SAMPLE TYPE	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
S	25-38-32	Becomes very dense, little nonplastic fines, max. particle size 1.25". Added 5 gallons of water to boring at 80'. Rig chatter from 81' to 82'.
S	27-31-50/4	Added 5 gallons of water to boring at 85'.
S	13-18-31	Becomes dense, little fine to coarse angular gravel, little low plasticity fines, max. particle size 1". Added 5 gallons of water to boring at 90'.
S	13-22-27	Becomes SILTY SAND, few fine to coarse subangular to angular gravel. Added 5 gallons of water to boring at 95'.
S	15-16-31	CLAYEY SAND, dense, moist, dark brown, fine to coarse SAND, little medium plasticity fines, few fine subangular gravel, no cementation, no reaction with HCl, max. particle size 0.75". (SC)
S	22-24-50/5	Becomes very dense, some medium plasticity fines.
		SILTY SAND, very dense, dry to moist, tan to white, fine to coarse SAND, little low plasticity fines, few fine subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SM)
S	14-25-33	SANDY SILT, hard, moist, dark brown, low plasticity SILT, some fine to medium sand, weak cementation, strong reaction with HCl, strong cemented nodules. (ML)
S	16-24-34	Becomes trace fine gravel, weak reaction with HCl, max. particle size 0.5".
S	14-25-50	SANDY LEAN CLAY, hard, moist to wet, brown, medium plasticity CLAY, some fine sand, weak cementation, strong reaction with HCl. (CL)
		▽
R	10-14	Becomes stiff, wet, little fine to coarse sand, few fine gravel, max. particle size 0.75".
S	10-16-22	FAT CLAY WITH SAND, hard, moist, light brown, high plasticity CLAY, little fine sand, moderate cementation, strong reaction with HCl. (CH)
S	6-9-15	SANDY LEAN CLAY, very stiff, moist, brown, medium plasticity CLAY, some fine to medium sand, no cementation, no reaction with HCl. (CL)
R	7-32	Becomes some fine to coarse sand, moderate cementation, strong reaction with HCl, strong cemented nodules.
S	19-26-27	CLAYEY SAND, very dense, moist, brown, fine to medium SAND, some medium plasticity fines, trace fine gravel, no cementation, no reaction with HCl, max. particle size 0.25". (SC)
S	25-50/6	WELL-GRADED SAND WITH CLAY, very dense, moist, tan, fine to coarse SAND, few low plasticity fines, trace fine to coarse gravel, no cementation, no reaction with HCl, max. particle size 1.5". (SW-SC) Rock in sampler tip.
		End of boring at 150'. Stopped sampler at 151'. Perched groundwater encountered at 123'. Backfilled with grout.

REPORT sce fds boring log - PROJECT 22nd - kino to tucson.gpj - LIBRARY sce gintlib v2.1.glb - LAST MOD 11/01/12 11:02 am - EXPORTED 07/30/16 10:05 am

BORING PLAN

SCALE 1"=150' (at 22" x 34")



BORING LOCATION

150' 0 150' 300'
SCALE: 1"=150'
(at 22" x 34")

GROUNDWATER DATA FOR BN3					
Date	Time	Water Depth (ft)	Casing Depth (ft)	Hole Depth (ft)	Symbol
11/05/10	07:00 AM	123.0	125.0	125.0	▽

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FOUNDATION DATA (VEHICULAR BRIDGE)

SF - 1.04 of SF - 1.14

SCE ENGINEERING 510 E 4TH STREET TUCSON, AZ 85705 520-405-7353

NO.	DATE	REVISION	BY	CHKD.	APPR.

Preliminary 100% Review
Not for Construction or Recording
June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22nd Street: KINO PARKWAY TO TUCSON BOULEVARD

289 OF 474

CITY OF TUCSON

DRWN. K. WATTS 06-18
DSGN. K. WATTS 06-18
CHKD. J. HARRIS 06-18

REF. SCALE: As Shown

PLAN NO. I - 2010 -012

Date Plotted: 6/7/2018 Time Plotted: 11:06:22 PM Filename: ...\FDS_22nd_bridge_04.dgn

SCE BORING LOG: BN4 (1 of 2)

56+85, 51 Lt. (Ref. Al. 22nd St)
NORTHING: 40,452 EASTING: 101,325
ELEV.: 2,451.3 TOTAL DEPTH: 151.5

STARTED: 12/06/2010 09:15 AM
FINISHED: 12/07/2010 02:30 PM

CONTRACTOR: GSI
DRILLER: Steve
INSPECTOR: JBH
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0	2450					11" of Portland Cement Concrete Pavement on 4" of Asphaltic Concrete Base.
5	2445		R		50/6	CLAYEY SAND (native), very dense, dry, light brown, fine to coarse SAND, some low plasticity fines, trace fine subrounded to subangular gravel, weak cementation, strong reaction with HCl, max. particle size 0.5". (SC)
10	2440		S		50/6	Becomes brown, fine to medium SAND, moderate cementation.
15	2435		S		50/5	SILTY, CLAYEY SAND, very dense, dry, light brown, fine to medium SAND, some low plasticity fines, weak cementation, strong reaction with HCl, moderate cemented nodules. (SC-SM)
20	2430		S		50/3	CLAYEY SAND, very dense, dry, tan, fine SAND, some low plasticity fines, moderate cementation, strong reaction with HCl. (SC)
25	2425		S		50/3	Slow auger advance from 22' to 33'. Becomes strong cementation, caliche.
30	2420		S		5-50/3	Becomes moderate cementation, strong cemented nodules, caliche.
35	2415		S		50/5	SILTY SAND, very dense, dry, brown, fine to coarse SAND, little nonplastic fines, few fine subrounded to subangular gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SM) No recovery.
40	2410		S		50/6	
45	2405		S		10-20-25	Becomes dense, strong cementation, strong reaction with HCl.
50	2400		R		26-50/3	WELL-GRADED SAND WITH SILT, dense, dry, brown, fine to coarse SAND, few fine to coarse subrounded to subangular gravel, few nonplastic fines, no cementation, no reaction with HCl, max. particle size 1". (SW-SM)
55	2395		S		16-20-25	SILTY SAND, very dense, dry, brown, fine to coarse SAND, little nonplastic fines, few fine subrounded to subangular gravel, no cementation, no reaction with HCl, max. particle size 0.75". (SM) POORLY-GRADED SAND WITH SILT, dense, dry, brown, fine to medium SAND, few nonplastic fines, no cementation, no reaction with HCl. (SP-SM)
60	2390		S		26-50/6	SILTY SAND, very dense, dry, brown, fine to coarse SAND, little nonplastic fines, few fine angular gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SM)
65	2385		S		28-28-34	Becomes few fine subrounded to subangular gravel, max. particle size 0.75".
70	2380		S		25-50/5	
75	2375		S		50/4	Becomes SILTY SAND WITH GRAVEL, some fine to coarse subangular to angular gravel, max. particle size 1.5". Rock in sampler tip. Rig chatter from 75' to 79'.
80						

SCE BORING LOG: BN4 (2 of 2)

56+85, 51 Lt. (Ref. Al. 22nd St)
NORTHING: 40,452 EASTING: 101,325
ELEV.: 2,451.3 TOTAL DEPTH: 151.5

STARTED: 12/06/2010 09:15 AM
FINISHED: 12/07/2010 02:30 PM

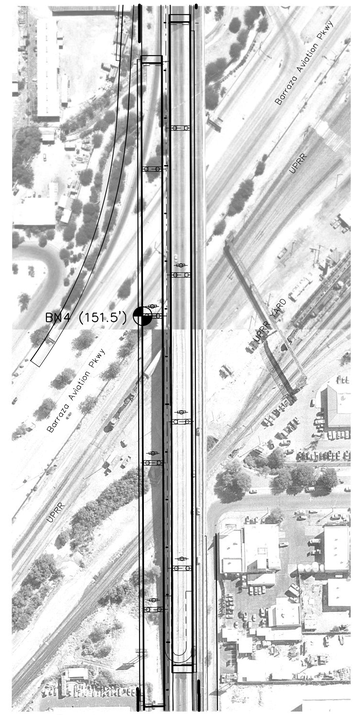
CONTRACTOR: GSI
DRILLER: Steve
INSPECTOR: JBH
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
80	2370		S		18-50/4	Becomes SILTY SAND, few fine subangular to angular gravel, max. particle size 0.75".
85	2365		S		23-50/6	Becomes few fine to coarse subangular to angular gravel, max. particle size 1.25".
90	2360		S		50/4	Added 5 gallons of water to boring at 90'.
95	2355		S		23-50/6	Becomes dry to moist, trace fine subangular to angular gravel, max. particle size 0.25".
100	2350		S		33-28-42	WELL-GRADED SAND WITH SILT, very dense, dry, brown, fine to medium SAND, few nonplastic fines, trace fine subrounded to subangular gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SW-SM)
105	2345		R		25-50/5	SILTY SAND, very dense, dry to moist, brown, fine to coarse SAND, little nonplastic fines, trace fine subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SM) Added 5 gallons of water to boring at 105'.
110	2340		S		28-37-50/4	CLAYEY SAND, very dense, dry to moist, dark brown, fine to coarse SAND, little low plasticity fines, weak cementation, weak reaction with HCl, strong cemented nodules. (SC) Added 5 gallons of water to boring at 110'.
115	2335		S		14-29-27	SILTY SAND, very dense, dry to moist, brown, fine to coarse SAND, little nonplastic fines, trace fine subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 0.75", faint hydrocarbon odor. (SM)
120	2330		S		9-12-25	SANDY LEAN CLAY, hard, dry to moist, dark brown, low plasticity CLAY, some fine to medium sand, weak cementation, strong reaction with HCl, strong cemented nodules. (CL) Added 5 gallons of water to boring at 115'. Becomes medium plasticity CLAY, some fine sand, weak reaction with HCl. Added 5 gallons of water to boring at 120'.
125	2325		S		10-11-20	Becomes moist, light brown, some fine to coarse sand, trace fine gravel, moderate cementation, strong reaction with HCl, max. particle size 0.5", strong cemented nodules.
130	2320		S		5-10-20	Becomes LEAN CLAY WITH SAND, dry to moist, dark brown, little fine to medium sand, no cementation, no reaction with HCl.
135	2315		S		25-25-30	CLAYEY SAND, very dense, dry to moist, light brown, fine to coarse SAND, some medium plasticity fines, weak cementation, strong reaction with HCl. (SC)
140	2310		S		30-50/5	SILTY SAND, very dense, dry to moist, light brown, fine to coarse SAND, little nonplastic fines, no cementation, no reaction with HCl. (SM)
145	2305		S		32-50/5	Becomes trace fine subangular to angular gravel, max. particle size 0.75".
150	2300		S		21-26-46	Becomes fine to medium SAND, some medium plasticity fines, weak cementation, strong reaction with HCl, max. particle size 0.5", strong cemented nodules.
155	2295					End of boring at 150'. Stopped sampler at 151.5'. No groundwater encountered. Backfilled with grout. Applied quickset concrete patch.
160						

BORING PLAN

SCALE 1"=150' (at 22" x 34")



BORING LOCATION

150' 0 150' 300'

SCALE: 1"=150'
(at 22" x 34")

FOUNDATION DATA
(VEHICULAR BRIDGE) SF - 1.05 of SF - 1.14

SCE ENGINEERING
510 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

Preliminary
100% Review

Not for Construction or Recording

June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22nd Street: KINO PARKWAY TO TUCSON BOULEVARD

290 OF 474

CITY OF TUCSON

DRWN. K. WATTS	06-18	REF.
DSGN. K. WATTS	06-18	SCALE: As Shown
CHKD. J. HARRIS	06-18	PLAN NO. I - 2010 -012

NO.	DATE	REVISION	BY	CHKD.	APPR.

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Date Plotted: 6/7/2018 Time Plotted: 11:08:44 PM Filename: ...\FDS_22nd_bridge_05.dgn

SCE BORING LOG: BN5 (1 of 2)

59+72, 41 Lt. (Ref. Al. 22nd St)
NORTHING: 40,443 EASTING: 101,612
ELEV.: 2,454.9 TOTAL DEPTH: 151.5

STARTED: 11/30/2010 09:05 AM
FINISHED: 12/01/2010 12:00 PM

CONTRACTOR: GSI
DRILLER: Tim
INSPECTOR: JBH
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
			CU			CLAYEY SAND (fill), dry, brown, fine to coarse SAND, little low plasticity fines, trace fine subrounded to subangular gravel, no cementation, strong reaction with HCl, max. particle size 0.75", strong cemented nodules. (SC)
5	2450		S		?-?-50/3	CLAYEY SAND (native), very dense, dry, light brown, fine to coarse SAND, some low plasticity fines, moderate cementation, strong reaction with HCl. (SC) Rig chatter from 7' to 9'.
10	2445		S		18-35-50/4	SILTY SAND, very dense, dry, dark brown, fine to medium SAND, some nonplastic fines, trace fine gravel, moderate cementation, weak reaction with HCl, max. particle size 0.5", strong cemented nodules. (SM)
15	2440		S		18-50/5	Becomes light brown, fine to coarse SAND, strong reaction with HCl, max. particle size 0.25".
20	2435		R		50/6	Becomes brown, fine SAND, some low plasticity fines, no cementation, no reaction with HCl.
25	2430		S		25-50/2	CLAYEY SAND, very dense, dry, tan, fine to medium SAND, some low plasticity fines, strong cementation, strong reaction with HCl. (SC) Slow auger advance from 24' to 37'.
30	2425		S		6-50/4	Becomes brown, weak cementation, weak reaction with HCl.
35	2420		S		50/2	Becomes light brown, strong cementation, strong reaction with HCl.
40	2415		S		25-37-39	SILTY SAND WITH GRAVEL, very dense, dry, brown, fine to coarse SAND, little fine to coarse subrounded to subangular gravel, little medium plasticity fines, weak cementation, weak reaction with HCl, max. particle size 1.5". (SM)
45	2410		S		12-26-33	Becomes SILTY SAND, little nonplastic fines, few fine subrounded to subangular gravel, no cementation, no reaction with HCl, max. particle size 0.75".
50	2405		S		8-13-25	Becomes dense, little low plasticity fines, trace fine subangular to angular gravel, max. particle size 0.25".
55	2400		S		16-19-22	Becomes little nonplastic fines, max. particle size 0.75".
60	2395		S		13-16-25	WELL-GRADED SAND WITH SILT, dense, dry, brown, fine to coarse SAND, few fine to coarse subangular to angular gravel, few nonplastic fines, no cementation, no reaction with HCl, max. particle size 1". (SW-SM)
65	2390		S		40-23-25	Becomes few fine subangular to angular gravel, max. particle size 0.75".
70	2385		S		19-20-24	
75	2380		S		14-50/6	SILTY, CLAYEY SAND, very dense, dry to moist, dark brown, fine to coarse SAND, little low plasticity fines, trace fine subangular to angular gravel, weak cementation, weak reaction with HCl, max. particle size 0.5". (SC-SM)
80	2375					

REPORT see tdp boring log - PROJECT 22nd - data to basemap - LIBRARY see geotds v2.1.glb - LAST MOD: 10/12/12 09:18 am - EXPIRED: 07/30/15 10:05 am

SCE BORING LOG: BN5 (2 of 2)

59+72, 41 Lt. (Ref. Al. 22nd St)
NORTHING: 40,443 EASTING: 101,612
ELEV.: 2,454.9 TOTAL DEPTH: 151.5

STARTED: 11/30/2010 09:05 AM
FINISHED: 12/01/2010 12:00 PM

CONTRACTOR: GSI
DRILLER: Tim
INSPECTOR: JBH
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

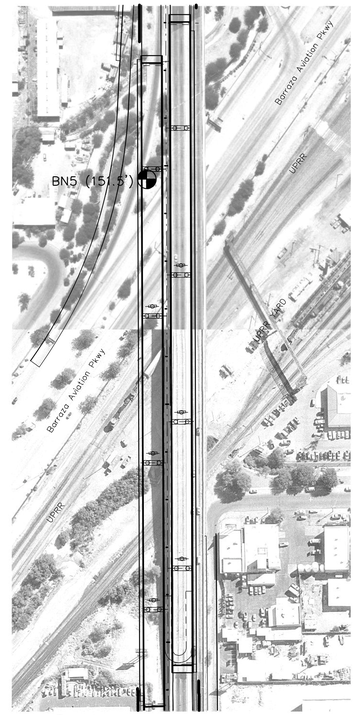
SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
			S		19-31-50/4	Becomes brown, strong reaction with HCl, strong cemented nodules.
85	2370		S		15-34-50/5	SILTY SAND WITH GRAVEL, very dense, dry, brown, fine to coarse SAND, little fine to coarse subangular to angular gravel, little nonplastic fines, no cementation, no reaction with HCl, max. particle size 1". (SM)
90	2365		S		13-19-27	Becomes SILTY SAND, dense, dry to moist, fine to medium SAND, little low plasticity fines, no gravel. Added 5 gallons of water to boring at 90'.
95	2360		R		23-49	Becomes light brown, fine to coarse SAND, little nonplastic fines, few fine to coarse subangular to angular gravel, max. particle size 1".
100	2355		S		21-15-17	Added 5 gallons of water to boring at 100'.
105	2350		S		22-32-36	SILTY, CLAYEY SAND, dense, dry to moist, dark brown, fine to coarse SAND, some low plasticity fines, weak cementation, weak reaction with HCl. (SC-SM)
110	2345		S		19-24-43	SILTY SAND, very dense, dry to moist, dark brown, fine to medium SAND, some medium plasticity fines, trace fine gravel, moderate cementation, strong reaction with HCl, max. particle size 0.5", strong cemented nodules. (SM) Added 5 gallons of water to boring at 105'.
115	2340		S		21-40-50/4	CLAYEY SAND, very dense, dry to moist, dark brown, fine to medium SAND, some low plasticity fines, weak cementation, weak reaction with HCl, strong cemented nodules. (SC)
120	2335		S		14-23-26	SANDY LEAN CLAY, hard, dry to moist, dark brown, medium plasticity CLAY, some fine to medium sand, moderate cementation, strong reaction with HCl, strong cemented nodules. (CL)
125	2330		S		11-14-18	Becomes moist, gray brown, little fine to coarse sand, few fine gravel, weak cementation, max. particle size 0.75".
130	2325		S		13-18-15	CLAYEY SAND, dense, moist, gray brown, fine to medium SAND, some medium plasticity fines, trace fine gravel, weak cementation, strong reaction with HCl, max. particle size 0.25", strong cemented nodules. (SC)
135	2320		R		27-50/4	Becomes no cementation.
140	2315		S		20-39-50/5	Becomes very dense, light brown, fine to coarse SAND, weak cementation.
145	2310		S		20-29-50	Becomes some low plasticity fines, no cementation, no reaction with HCl, max. particle size 0.5".
150	2305		S		15-19-28	SILTY SAND, very dense, moist to wet, light brown, fine to medium SAND, little nonplastic fines, trace fine gravel, no cementation, no reaction with HCl, max. particle size 0.25". (SM)
155	2300					Becomes dense, moist, brown, weak cementation, weak reaction with HCl, strong cemented nodules. End of boring at 150'. Stopped sampler at 151.5'. Perched groundwater encountered at 121'. Backfilled with grout.
160	2295					

REPORT see tdp boring log - PROJECT 22nd - data to basemap - LIBRARY see geotds v2.1.glb - LAST MOD: 10/12/12 09:18 am - EXPIRED: 07/30/15 10:05 am

BORING PLAN

SCALE 1"=150' (at 22" x 34")



BORING LOCATION

150' 0 150' 300'

SCALE: 1"=150' (at 22" x 34")

GROUNDWATER DATA FOR BN5

Date	Time	Water Depth (ft)	Casing Depth (ft)	Hole Depth (ft)	Symbol
12/01/10	07:30 AM	121.0	130.0	130.0	▽

FOUNDATION DATA
(VEHICULAR BRIDGE)

SF - 1.06 of SF - 1.14

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NO.	DATE	REVISION	BY	CHKD.	APPR.

Preliminary
100%
Review

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Construction
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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22nd Street: KINO PARKWAY TO TUCSON BOULEVARD

291 OF 474

CITY OF TUCSON

DRWN. K. WATTS	06-18	REF.
DSGN. K. WATTS	06-18	SCALE: As Shown
CHKD. J. HARRIS	06-18	PLAN NO. I - 2010 -012

Date Plotted: 6/7/2018 Time Plotted: 11:10:33 PM Filename: ...\FDS_22nd_bridge_06.dgn

SCE BORING LOG: BN6 (1 of 2)

62+24, 59 Lt. (Ref. Al. 22nd St)
NORTHING: 40,462 EASTING: 101,864
ELEV.: 2,455.7 TOTAL DEPTH: 99.5

STARTED: 11/22/2010 07:30 AM
FINISHED: 11/22/2010 01:30 PM

CONTRACTOR: GSI
DRILLER: Chuck
INSPECTOR: JBH
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 6" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
	2455					CLAYEY SAND (native), medium dense, dry, brown, fine to coarse SAND, some medium plasticity fines, weak cementation, strong reaction with HCl, strong cemented nodules. (SC)
			S		6-8-9	
5	2450		S		5-4-4	Becomes loose, trace fine gravel, max. particle size 0.25".
			CU			
10	2445		R		50/5	Becomes very dense, fine to medium SAND, moderate cementation.
15	2440		S		33-50/2	
20	2435		S		43-50/2	Becomes tan. Slow auger advance from 20' to 35'.
25	2430		S		50/1	Becomes strong cementation, caliche.
30	2425		S		50/3	Rig chatter from 31' to 33'.
35	2420		S		29-50/3	Becomes dark brown, fine to coarse SAND, little low plasticity fines, moderate cementation, weak reaction with HCl, max. particle size 0.5".
40	2415		S		26-30-27	SILTY SAND, very dense, dry, light brown, fine to coarse SAND, little nonplastic fines, few fine to coarse subrounded to subangular gravel, weak cementation, weak reaction with HCl, max. particle size 1". (SM)
45	2410		S		21-25-28	Becomes brown, trace fine subrounded to subangular gravel, no cementation, no reaction with HCl, max. particle size 0.75".
50	2405		S		20-50/6	Becomes weak reaction with HCl.
						SILTY, CLAYEY SAND, very dense, dry, brown, fine to coarse SAND, little low plasticity fines, trace fine angular gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SC-SM)
55	2400		S		16-26-36	SILTY SAND, very dense, dry, brown, fine to coarse SAND, little nonplastic fines, few fine to coarse subrounded to subangular gravel, no cementation, no reaction with HCl, max. particle size 1". (SM)
60	2395		S		16-26-28	
65	2390		S		19-23-39	Becomes SILTY SAND WITH GRAVEL, little fine to coarse subrounded to subangular gravel.
70	2385		R		20-42	WELL-GRADED SAND WITH SILT, medium dense, dry, brown, fine to coarse SAND, few fine to coarse subangular to angular gravel, few nonplastic fines, no cementation, no reaction with HCl, max. particle size 1". (SW-SM)
75	2380		S		23-30-26	SILTY SAND, very dense, dry, brown, fine to coarse SAND, little nonplastic fines, trace fine subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SM)
80						CLAYEY SAND, very dense, dry, dark brown, fine to medium SAND, some low plasticity fines, weak cementation, weak reaction with HCl. (SC)

SCE BORING LOG: BN6 (2 of 2)

62+24, 59 Lt. (Ref. Al. 22nd St)
NORTHING: 40,462 EASTING: 101,864
ELEV.: 2,455.7 TOTAL DEPTH: 99.5

STARTED: 11/22/2010 07:30 AM
FINISHED: 11/22/2010 01:30 PM

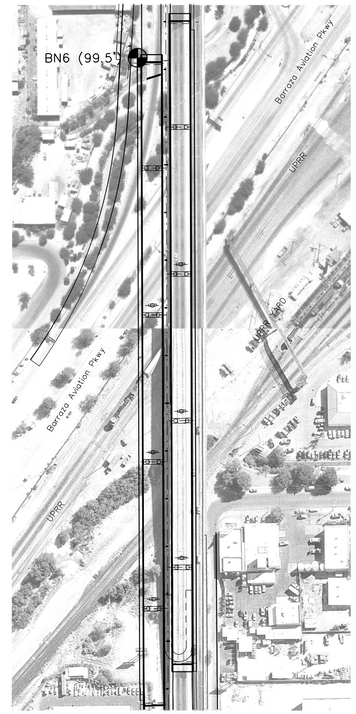
CONTRACTOR: GSI
DRILLER: Chuck
INSPECTOR: JBH
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 6" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
	2375		S		15-32-50	Becomes strong reaction with HCl, strong cemented nodules. Added 5 gallons of water to boring at 80'.
85	2370		S		22-30-50/5	SILTY SAND, very dense, dry, brown, fine to coarse SAND, little low plasticity fines, weak cementation, strong reaction with HCl. (SM) Added 5 gallons of water to boring at 85'. Becomes few fine subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 0.75".
90	2365		S		16-20-31	Becomes light brown, trace fine subrounded gravel, max. particle size 0.5".
95	2360		S		20-25-28	Becomes brown.
100	2355		S		19-30-27	Becomes SILTY SAND WITH GRAVEL, little fine to coarse subangular to angular gravel, little nonplastic fines, max. particle size 1.5". End of boring at 98'. Stopped sampler at 99.5'. No groundwater encountered. Backfilled with cuttings.
105	2350					
110	2345					
115	2340					
120	2335					
125	2330					
130	2325					
135	2320					
140	2315					
145	2310					
150	2305					
155	2300					
160						

BORING PLAN

SCALE 1"=150' (at 22" x 34")



BORING LOCATION

150' 0 150' 300'

SCALE: 1"=150'
(at 22" x 34")

FOUNDATION DATA
(VEHICULAR BRIDGE)

SF - 1.07 of SF - 1.14

SCE ENGINEERING
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520-405-7353

Preliminary
100%
Review

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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22nd Street: KINO PARKWAY TO TUCSON BOULEVARD

292 OF 474

CITY OF TUCSON

DRWN. K. WATTS	06-18	REF.
DSGN. K. WATTS	06-18	SCALE: As Shown
CHKD. J. HARRIS	06-18	PLAN NO. I - 2010 -012

NO.	DATE	REVISION	BY	CHKD.	APPR.

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Date Plotted: 6/7/2018 Time Plotted: 11:13:54 PM Filename: ...\FDS_22nd_bridge_07.dgn

SCE BORING LOG: BS1 (1 of 2)

49+40, 87 Rt. (Ref. Al. 22nd St)
NORTHING: 40,311 EASTING: 100,581
ELEV.: 2,454.2 TOTAL DEPTH: 100.9

STARTED: 10/21/2010 02:00 PM
FINISHED: 10/22/2010 12:30 PM

CONTRACTOR: GSI
DRILLER: Chuck
INSPECTOR: JBH/NAB
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
						5" of Asphaltic Concrete.
5	2450		S		5-10-10	CLAYEY SAND (native), medium dense, dry, light brown, fine to coarse SAND, some low plasticity fines, few fine to coarse subangular to angular gravel, weak cementation, strong reaction with HCl, max. particle size 1", strong cemented nodules. (SC)
			CU			Rock in sampler tip.
10	2445		R		29-50/4	Becomes very dense, fine to medium SAND, some medium plasticity fines, moderate cementation.
15	2440		S		24-50/4	Becomes brown, trace fine angular gravel, strong cementation, max. particle size 0.5".
20	2435		S		50/6	Becomes tan, fine to coarse SAND, some low plasticity fines, few fine subangular to angular gravel, weak cementation, strong cemented nodules.
25	2430		S		35-50/2	Becomes few fine subangular gravel, weak reaction with HCl.
30	2425		S		50/4	Becomes fine to medium subrounded SAND, strong cementation, strong reaction with HCl, caliche.
35	2420		S		50/4	Becomes fine to coarse SAND.
						Slow auger advance from 37' to 44'.
40	2415		S		5-50/6	SANDY LEAN CLAY, hard, dry, tan, medium plasticity CLAY, some fine to coarse subangular sand, strong cementation, strong reaction with HCl, caliche. (CL)
45	2410		S		50/6	CLAYEY SAND, very dense, dry, tan, fine to coarse subrounded to subangular SAND, some low plasticity fines, strong cementation, strong reaction with HCl, caliche present. (SC)
50	2405		S		15-28-32	SILTY SAND, very dense, dry, tan, fine to coarse subrounded SAND, little nonplastic fines, no cementation, weak reaction with HCl. (SM)
55	2400		R		27-42	WELL-GRADED SAND, dense, dry, tan, fine to coarse SAND, few fine to coarse gravel, trace nonplastic fines, no cementation, no reaction with HCl, max. particle size 2". (SW)
60	2395		S		14-15-20	SILTY SAND, dense, dry to moist, light brown, fine to coarse SAND, little nonplastic fines, trace fine subangular gravel, no cementation, no reaction with HCl. (SM)
65	2390		S		15-17-17	CLAYEY SAND, dense, moist, brown, fine to coarse subrounded SAND, little low plasticity fines, no cementation, no reaction with HCl. (SC)
70	2385		S		18-21-33	SILTY SAND, very dense, moist, brown, fine to coarse subrounded SAND, little nonplastic fines, trace fine gravel, no cementation, no reaction with HCl, max. particle size 0.25". (SM)
75	2380		S		23-29-50	CLAYEY SAND, very dense, moist, brown, fine to coarse SAND, some low plasticity fines, trace fine gravel, no cementation, no reaction with HCl. (SC)
80	2375					

REPORT xxx dg_boring log - PROJECT 22nd - Kino to Tucson.gpj - LIBRARY xxx gintlib v2.glb - LAST MOD: 10/11/12 04:15 pm - EXPORTED: 07/30/18 10:05 am

SCE BORING LOG: BS1 (2 of 2)

49+40, 87 Rt. (Ref. Al. 22nd St)
NORTHING: 40,311 EASTING: 100,581
ELEV.: 2,454.2 TOTAL DEPTH: 100.9

STARTED: 10/21/2010 02:00 PM
FINISHED: 10/22/2010 12:30 PM

CONTRACTOR: GSI
DRILLER: Chuck
INSPECTOR: JBH/NAB
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

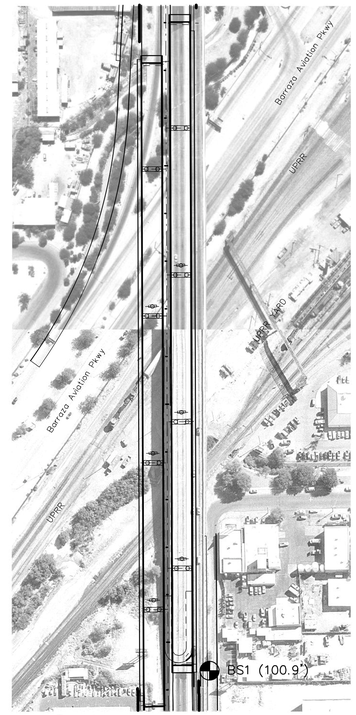
SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
			S		13-37-45	Becomes fine to coarse subrounded SAND, little low plasticity fines, trace fine to coarse subrounded gravel, max. particle size 1".
85	2370		S		14-30-45	SILTY SAND WITH GRAVEL, very dense, dry to moist, light brown, fine to coarse subrounded SAND, little fine to coarse subrounded gravel, little nonplastic fines, no cementation, no reaction with HCl, max. particle size 1". (SM)
90	2365		S		40-50/5	Becomes some fine to coarse subrounded gravel.
95	2360		S		50/6	WELL-GRADED GRAVEL WITH SAND, very dense, dry, gray, fine to coarse subangular GRAVEL, some fine to coarse subangular sand, trace nonplastic fines, no cementation, no reaction with HCl, max. particle size 1". (GW) Slow auger advance from 91' to 100'.
100	2355		S		19-50/5	CLAYEY SAND, very dense, moist, buff, fine to coarse SAND, some medium plasticity fines, few fine subangular gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SC)
105	2350					End of boring at 100'. Stopped sampler at 100.9'. No groundwater encountered. Backfilled with grout. Applied cold patch.
110	2345					
115	2340					
120	2335					
125	2330					
130	2325					
135	2320					
140	2315					
145	2310					
150	2305					
155	2300					
160	2295					

REPORT xxx dg_boring log - PROJECT 22nd - Kino to Tucson.gpj - LIBRARY xxx gintlib v2.glb - LAST MOD: 10/11/12 04:15 pm - EXPORTED: 07/30/18 10:05 am

BORING PLAN

SCALE 1"=150' (at 22" x 34")



BORING LOCATION

150' 0 150' 300'
SCALE: 1"=150'
(at 22" x 34")

FOUNDATION DATA
(VEHICULAR BRIDGE)

SF - 1.08 of SF - 1.14

SCE ENGINEERING
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NO.	DATE	REVISION	BY	CHKD.	APPR.

Preliminary
100%
Review

Not for
Construction
or Recording

June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22nd Street: KINO PARKWAY TO TUCSON BOULEVARD

CITY OF TUCSON

DRWN. K. WATTS	06-18	REF.
DSGN. K. WATTS	06-18	SCALE: As Shown
CHKD. J. HARRIS	06-18	PLAN NO. I - 2010 -012

Date Plotted: 6/7/2018 Time Plotted: 11:15:37 PM Filename: ...\FDS_22nd_bridge_08.dgn

SCE BORING LOG: BS2 (1 of 2)

51+67, 86 Rt. (Ref. Al. 22nd St)
NORTHING: 40,313 EASTING: 100,807
ELEV.: 2,453.4 TOTAL DEPTH: 150.8

STARTED: 10/26/2010 08:40 AM
FINISHED: 10/28/2010 12:00 PM

CONTRACTOR: GSI
DRILLER: Drew
INSPECTOR: JBH
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0	2455					5" of Asphaltic Concrete.
						CLAYEY SAND (native), medium dense, dry, tan, fine to medium SAND, little medium plasticity fines, few fine subrounded to subangular gravel, weak cementation, strong reaction with HCl, max. particle size 0.75", moderate cemented nodules. (SC)
5	2450		S		4-4-7	
10	2445		S		9-19-32	Becomes very dense, light brown, some low plasticity fines, moderate cementation.
15	2440		R		50/5	Becomes trace fine subangular to angular gravel, strong cemented nodules.
20	2435		S		11-50/4	Becomes CLAYEY SAND WITH GRAVEL, some fine to coarse subangular to angular gravel, little low plasticity fines, weak cementation, max. particle size 1".
25	2430		S		19-35-50	SANDY LEAN CLAY, hard, dry, tan, medium plasticity CLAY, some fine sand, strong cementation, strong reaction with HCl. (CL) Slow auger advance from 21' to 26'. Rig chatter from 21' to 22'.
30	2425		S		33-50/6	CLAYEY SAND, very dense, dry, tan, fine to medium SAND, some low plasticity fines, moderate cementation, strong reaction with HCl, strong cemented nodules. (SC)
35	2420		S		50/6	Becomes light brown, fine to coarse SAND.
40	2415		S		50/5	Slow auger advance from 37' to 43'. Becomes strong cementation. Rig chatter from 42' to 43'.
45	2410		S		20-37-50/5	WELL-GRADED SAND WITH SILT, very dense, dry, brown, fine to coarse SAND, few fine subangular gravel, few nonplastic fines, no cementation, weak reaction with HCl, max. particle size 0.75", moderate cemented nodules. (SW-SM)
50	2405		S		17-26-31	Becomes no reaction with HCl.
55	2400		S		14-24-28	SILTY, CLAYEY SAND, very dense, dry to moist, brown, fine to coarse SAND, little low plasticity fines, few fine to coarse subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 1". (SC-SM)
60	2395		S		12-23-40	SILTY SAND, very dense, dry, brown, fine to coarse SAND, little nonplastic fines, few fine to coarse subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 1". (SM) Becomes SILTY SAND WITH GRAVEL, dark brown, little fine to coarse subangular to angular gravel, little low plasticity fines.
65	2390		S		18-19-22	Becomes SILTY SAND, dense, brown, little nonplastic fines, few fine subangular to angular gravel, max. particle size 0.75".
70	2385		R		28-50	WELL-GRADED SAND, dense, dry, brown, fine to coarse SAND, few fine to coarse subangular to angular gravel, trace nonplastic fines, no cementation, no reaction with HCl, max. particle size 1". (SW) Added 5 gallons of water to boring at 72'.
75	2380		S		17-26-28	SILTY SAND, very dense, dry, brown, fine to coarse SAND, little nonplastic fines, few fine to coarse subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 1". (SM)
80	2375					CLAYEY SAND WITH GRAVEL, very dense, dry, brown, fine to coarse

SCE BORING LOG: BS2 (2 of 2)

51+67, 86 Rt. (Ref. Al. 22nd St)
NORTHING: 40,313 EASTING: 100,807
ELEV.: 2,453.4 TOTAL DEPTH: 150.8

STARTED: 10/26/2010 08:40 AM
FINISHED: 10/28/2010 12:00 PM

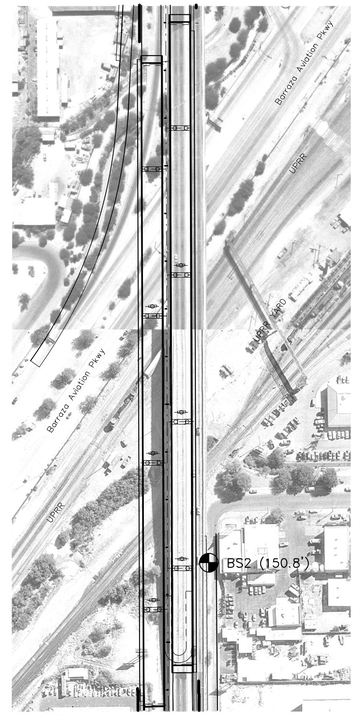
CONTRACTOR: GSI
DRILLER: Drew
INSPECTOR: JBH
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
85	2370		S		31-50/6	SAND, little fine to coarse subangular to angular gravel, little low plasticity fines, no cementation, no reaction with HCl, max. particle size 1". (SC) Rig chatter from 81' to 86'. Added 5 gallons of water to boring at 82'.
	2365		S		50/3	Rock in sampler tip. Added 5 gallons of water to boring at 86'.
90	2360		S		17-39-50/3	Becomes dry to moist, dark brown, max. particle size 1.5". Rock in sampler tip. Added 5 gallons of water to boring at 91'.
95	2355		S		13-27-50/5	Becomes CLAYEY SAND, moist, little low plasticity fines, few fine subangular to angular gravel, max. particle size 0.75". Added 5 gallons of water to boring at 96'.
100	2350		S		28-24-33	Becomes little medium plasticity fines, weak cementation, strong reaction with HCl, strong cemented nodules.
105	2345		S		13-14-24	SILTY SAND, dense, dry to moist, dark brown, fine to coarse SAND, some medium plasticity fines, trace fine subangular gravel, weak cementation, weak reaction with HCl, max. particle size 0.75". (SM) Added 5 gallons of water to boring at 105'.
110	2340		S		19-22-26	Becomes SILTY SAND WITH GRAVEL, tan to white, little fine to coarse subangular to angular gravel, little nonplastic fines, no cementation, no reaction with HCl, max. particle size 1", faint hydrocarbon odor. Added 5 gallons of water to boring at 110'.
115	2335		S		34-45-50/5	SANDY LEAN CLAY WITH GRAVEL, hard, moist, dark brown, medium plasticity CLAY, some fine to medium sand, little fine to coarse angular gravel, weak cementation, weak reaction with HCl, max. particle size 1", faint hydro carbon odor. (CL) Added 5 gallons of water to boring at 115'.
120	2330		S		9-17-42	CLAYEY SAND, very dense, moist, dark brown, fine to coarse SAND, some medium plasticity fines, weak cementation, strong reaction with HCl, strong cemented nodules, no hydrocarbon odor. (SC) Added 5 gallons of water to boring at 120'. Becomes dense, trace fine gravel, max. particle size 0.5".
125	2325		S		8-17-24	
130	2320		S		11-22-44	Becomes very dense, dry to moist, brown.
135	2315		S		6-8-14	LEAN CLAY WITH SAND, very stiff, dry to moist, brown, medium plasticity CLAY, little fine to medium sand, trace fine gravel, weak cementation, strong reaction with HCl, max. particle size 0.5", strong cemented nodules. (CL)
140	2310		S		3-2-5	Becomes SANDY LEAN CLAY, medium, moist, tan, some fine to coarse sand.
145	2305		R		8-20	CLAYEY SAND, medium dense, dry to moist, light brown, fine to coarse SAND, some low plasticity fines, moderate cementation, strong reaction with HCl, strong cemented nodules. (SC)
150	2300		S		31-50/4	SILTY, CLAYEY SAND, very dense, dry to moist, light brown, fine to coarse SAND, little low plasticity fines, few fine to coarse subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 1". (SC-SM) End of boring at 150'. Stopped sampler at 150.8'. Perched groundwater encountered at 120'. Backfilled with ADWR compliant grout. Applied cold patch.
160	2295					

BORING PLAN

SCALE 1"=150' (at 22" x 34")



BORING LOCATION

150' 0 150' 300'

SCALE: 1"=150'
(at 22" x 34")

GROUNDWATER DATA FOR BS2

Date	Time	Water Depth (ft)	Casing Depth (ft)	Hole Depth (ft)	Symbol
10/27/10	10:00 AM	120.0	125.0	125.0	▽

FOUNDATION DATA
(VEHICULAR BRIDGE)

SF - 1.09 of SF - 1.14

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Preliminary 100% Review

Not for Construction or Recording

June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22nd Street: KINO PARKWAY TO TUCSON BOULEVARD

294 OF 474

CITY OF TUCSON

DRWN. K. WATTS	06-18	REF.	SCALE: As Shown
DSGN. K. WATTS	06-18		
CHKD. J. HARRIS	06-18	PLAN NO.	I - 2010 -012

NO.	DATE	REVISION	BY	CHKD.	APPR.

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Date Plotted: 6/7/2018 Time Plotted: 11:17:19 PM Filename: ...\FDS_22nd_bridge_09.dgn

SCE BORING LOG: BS3 (1 of 2)

54+72, 85 Rt. (Ref. Al. 22nd St)
NORTHING: 40,315 EASTING: 101,112
ELEV.: 2,454.4 TOTAL DEPTH: 151.4

STARTED: 11/10/2010 07:30 AM
FINISHED: 11/11/2010 03:00 PM

CONTRACTOR: GSI
DRILLER: Chuck
INSPECTOR: JBH
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S	☒	Split Spoon	1.375"	2"	18"
	R	■	Ring Sampler	2.5"	3"	18"
	U	▯	Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0	2455		CU			CLAYEY SAND, medium dense, dry, light brown, fine to coarse SAND, some low plasticity fines, trace fine subangular to angular gravel, moderate cementation, strong reaction with HCl, max. particle size 0.75". (SC)
5	2450		S	☒	6-12-12	
10	2445		R	■	14-50/3	Becomes very dense, brown, few fine to coarse subangular to angular gravel, weak cementation, max. particle size 2".
15	2440		S	☒	8-13-20	SANDY LEAN CLAY, hard, dry, tan, low plasticity CLAY, some fine to coarse sand, moderate cementation, strong reaction with HCl. (CL) SILTY, CLAYEY SAND, dense, dry, brown, fine to coarse SAND, some low plasticity fines, moderate cementation, weak reaction with HCl. (SC-SM)
20	2435		S	☒	8-24-18	Becomes tan, fine to medium SAND, few fine gravel, weak cementation, strong reaction with HCl, max. particle size 0.75", strong cemented nodules.
25	2430		S	☒	25-50/6	SANDY LEAN CLAY, hard, dry, tan, low plasticity CLAY, some fine to medium sand, moderate cementation, strong reaction with HCl, faint hydrocarbon odor. (CL) Slow auger advance from 28' to 41'.
30	2425		S	☒	50/3	CLAYEY SAND, very dense, dry, tan to gray, fine to medium SAND, some low plasticity fines, moderate cementation, strong reaction with HCl, very strong hydrocarbon odor. (SC)
35	2420		S	☒	50/3	Becomes strong hydrocarbon odor, caliche. No recovery.
40	2415		S	☒	50/4	Becomes tan, fine to coarse SAND, strong cementation.
45	2410		S	☒	19-22-27	SILTY SAND, dense, dry to moist, brown, fine to coarse SAND, little nonplastic fines, trace fine subrounded to subangular gravel, no cementation, no reaction with HCl, max. particle size 0.5", strong hydrocarbon odor. (SM)
50	2405		S	☒	13-15-19	Becomes few fine subangular to angular gravel, max. particle size 0.75".
55	2400		S	☒	21-15-15	
60	2395		R	■	24-38	Becomes medium dense, moderate cementation, weak reaction with HCl.
65	2390		S	☒	14-22-26	Becomes dense, few fine to coarse subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 1".
70	2385		S	☒	33-50/4	Becomes SILTY SAND WITH GRAVEL, very dense, dry, light brown, little fine to coarse subangular to angular gravel, max. particle size 1.5", strong hydrocarbon and sewage-like odors. Added 5 gallons of water to boring at 70'.
75	2380		S	☒	19-24-40	Becomes SILTY SAND, dry to moist, few fine to coarse subangular to angular gravel, max. particle size 1". Added 5 gallons of water to boring at 75'.
80	2375					

SCE BORING LOG: BS3 (2 of 2)

54+72, 85 Rt. (Ref. Al. 22nd St)
NORTHING: 40,315 EASTING: 101,112
ELEV.: 2,454.4 TOTAL DEPTH: 151.4

STARTED: 11/10/2010 07:30 AM
FINISHED: 11/11/2010 03:00 PM

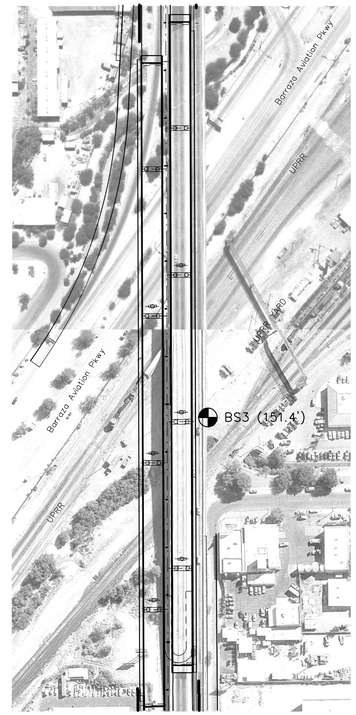
CONTRACTOR: GSI
DRILLER: Chuck
INSPECTOR: JBH
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S	☒	Split Spoon	1.375"	2"	18"
	R	■	Ring Sampler	2.5"	3"	18"
	U	▯	Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
80	2375		S	☒	20-50/6	Becomes SILTY SAND WITH GRAVEL, brown, little fine to coarse subangular to angular gravel.
85	2370		S	☒	13-19-29	SILTY, CLAYEY SAND, dense, dry to moist, dark brown, fine to coarse SAND, little low plasticity fines, trace fine subangular gravel, no cementation, no reaction with HCl, max. particle size 0.75", strong hydrocarbon odor. (SC-SM) Added 5 gallons of water to boring at 85'.
90	2365		S	☒	21-50/6	Becomes very dense, brown, few fine to coarse subrounded to subangular gravel, max. particle size 1". Added 5 gallons of water to boring at 90'.
95	2360		S	☒	15-24-38	SILTY SAND, very dense, dry to moist, brown, fine to medium SAND, little medium plasticity fines, trace fine subangular gravel, no cementation, no reaction with HCl, max. particle size 0.5", strong hydrocarbon odor. (SM)
100	2355		S	☒	21-40-29	Becomes little low plasticity fines.
105	2350		S	☒	15-24-33	CLAYEY SAND, very dense, dry to moist, dark brown, fine to coarse SAND, some low plasticity fines, no cementation, no reaction with HCl, strong hydrocarbon odor. (SC) Added 5 gallons of water to boring at 105'.
110	2345		S	☒	13-23-46	SILTY SAND, very dense, wet, brown, fine to coarse SAND, little nonplastic fines, few fine subrounded gravel, no cementation, no reaction with HCl, max. particle size 0.75", strong hydrocarbon odor. (SM)
115	2340		S	☒	15-30-50	SANDY LEAN CLAY, hard, dry to moist, brown, medium plasticity CLAY, some fine to medium sand, moderate cementation, strong reaction with HCl, strong cemented nodules, faint hydrocarbon odor. (CL)
120	2335		S	☒	16-25-28	CLAYEY SAND, very dense, dry to moist, brown, fine to coarse SAND, some medium plasticity fines, moderate cementation, weak reaction with HCl, faint hydrocarbon odor. (SC)
125	2330		S	☒	15-19-24	LEAN CLAY WITH SAND, hard, dry to moist, brown, medium plasticity CLAY, little fine to coarse sand, few fine gravel, moderate cementation, strong reaction with HCl, max. particle size 0.75", strong cemented nodules, no hydrocarbon odor. (CL) Becomes SANDY LEAN CLAY, some fine to medium sand.
130	2325		S	☒	7-12-19	SANDY FAT CLAY, hard, dry to moist, brown, high plasticity CLAY, some fine to medium sand, moderate cementation, strong reaction with HCl, strong cemented nodules. (CH)
135	2320		S	☒	5-11-19	Becomes dark brown.
140	2315		R	■	50/5	SANDY LEAN CLAY, hard, dry to moist, tan, medium plasticity CLAY, some fine to coarse sand, moderate cementation, strong reaction with HCl. (CL)
145	2310		S	☒	19-40-50/5	CLAYEY SAND, very dense, dry to moist, brown, fine to coarse SAND, some medium plasticity fines, few fine to coarse angular gravel, no cementation, no reaction with HCl, max. particle size 1". (SC)
150	2305		S	☒	12-34-50/5	SILTY SAND, very dense, dry to moist, light brown, fine to coarse SAND, little nonplastic fines, trace fine angular gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SM)
155	2300					End of boring at 150'. Stopped sampler at 151.4'. Perched groundwater encountered at 123'. Backfilled with grout.
160	2295					

BORING PLAN

SCALE 1"=150' (at 22" x 34")



BORING LOCATION

150' 0 150' 300'

SCALE: 1"=150'
(at 22" x 34")

GROUNDWATER DATA FOR BS3

Date	Time	Water Depth (ft)	Casing Depth (ft)	Hole Depth (ft)	Symbol
11/11/10	09:00 AM	123.0	125.0	125.0	▽

FOUNDATION DATA
(VEHICULAR BRIDGE)

SF - 1.10 of SF - 1.14

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NO.	DATE	REVISION	BY	CHKD.	APPR.

Preliminary
100%
Review

Not for
Construction
or Recording

June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22nd Street: KINO PARKWAY TO TUCSON BOULEVARD

295 OF 474

CITY OF TUCSON

DRWN. K. WATTS	06-18	REF.
DSGN. K. WATTS	06-18	SCALE: As Shown
CHKD. J. HARRIS	06-18	PLAN NO. I - 2010 -012

Date Plotted: 6/7/2018 Time Plotted: 11:18:49 PM Filename: ...\FDS_22nd_bridge_10.dgn

SCE BORING LOG: BS4 (1 of 2)

58+01, 85 Rt. (Ref. Al. 22nd St)
NORTHING: 40,316 EASTING: 101,441
ELEV.: 2,457.9 TOTAL DEPTH: 151.5

STARTED: 11/08/2010 08:00 AM
FINISHED: 11/09/2010 04:00 PM

CONTRACTOR: GSI
DRILLER: Chuck
INSPECTOR: JBH
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S	☒	Split Spoon	1.375"	2"	18"
	R	■	Ring Sampler	2.5"	3"	18"
	U	▯	Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0	2455					CLAYEY SAND (native), loose, dry, light brown, fine to coarse SAND, some low plasticity fines, few fine subrounded to subangular gravel, weak cementation, strong reaction with HCl, max. particle size 0.75". (SC)
5			S	☒	3-3-7	
10	2450		R	■	16-44	Becomes medium dense, some medium plasticity fines, few fine angular gravel, moderate cementation.
15	2445		S	☒	13-33-50/4	Becomes very dense.
20	2440		S	☒	17-24-40	WELL-GRADED SAND WITH CLAY, very dense, dry, brown, fine to medium SAND, few medium plasticity fines, trace fine subangular gravel, no cementation, no reaction with HCl, max. particle size 0.75". (SW-SC)
25	2435		S	☒	34-50/2	CLAYEY SAND, very dense, dry, tan, fine to medium SAND, some medium plasticity fines, moderate cementation, strong reaction with HCl, strong cemented nodules. (SC)
30	2430		S	═	50/3	Slow auger advance from 28' to 39'. Becomes strong cementation, caliche.
35	2425		S	☒	50/6	
40	2420		S	☒	28-50/3	SILTY, CLAYEY SAND, very dense, dry, brown, fine to coarse SAND, little low plasticity fines, trace fine subangular to angular gravel, weak cementation, weak reaction with HCl, max. particle size 0.5". (SC-SM) Rig chatter from 41' to 42'.
45	2415		S	☒	10-35-50/5	SILTY SAND WITH GRAVEL, very dense, dry, light brown, fine to coarse SAND, little fine to coarse subangular to angular gravel, little low plasticity fines, no cementation, no reaction with HCl, max. particle size 1". (SM)
50	2410		S	☒	9-16-21	Becomes SILTY SAND, dense, little nonplastic fines, trace fine to coarse subangular to angular gravel, max. particle size 1.5".
55	2405		S	☒	5-12-21	Becomes fine to medium SAND, trace fine angular gravel, max. particle size 0.5".
60	2400		S	☒	16-22-19	Becomes fine to coarse SAND, little low plasticity fines, few fine angular gravel, max. particle size 0.75".
65	2395		S	☒	13-19-21	WELL-GRADED SAND WITH SILT, dense, dry, brown, fine to coarse SAND, few nonplastic fines, no cementation, no reaction with HCl. (SW-SM)
70	2390		S	☒	18-25-50	SILTY SAND WITH GRAVEL, very dense, dry, brown, fine to coarse SAND, little fine to coarse subangular to angular gravel, little nonplastic fines, no cementation, no reaction with HCl, max. particle size 1.5". (SM) Added 5 gallons of water to boring at 70'.
75	2385		S	☒	14-12-32	Added 5 gallons of water to boring at 75'. Becomes dense. SANDY LEAN CLAY, hard, dry to moist, dark brown, medium plasticity CLAY, some fine to coarse sand, no cementation, no reaction with HCl. (CL)
80	2380					

SCE BORING LOG: BS4 (2 of 2)

58+01, 85 Rt. (Ref. Al. 22nd St)
NORTHING: 40,316 EASTING: 101,441
ELEV.: 2,457.9 TOTAL DEPTH: 151.5

STARTED: 11/08/2010 08:00 AM
FINISHED: 11/09/2010 04:00 PM

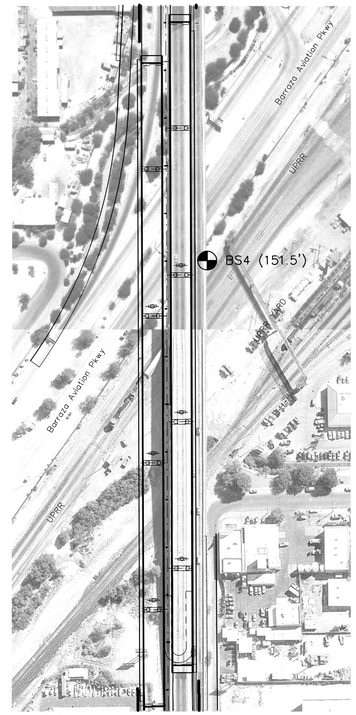
CONTRACTOR: GSI
DRILLER: Chuck
INSPECTOR: JBH
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S	☒	Split Spoon	1.375"	2"	18"
	R	■	Ring Sampler	2.5"	3"	18"
	U	▯	Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
80	2375		S	☒	17-42-50/5	SILTY SAND, dense, dry, brown, fine to coarse SAND, little nonplastic fines, few fine to coarse subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 1". (SM)
85	2370		S	☒	27-25-40	CLAYEY SAND, very dense, dry, brown, fine to coarse SAND, some medium plasticity fines, few fine gravel, moderate cementation, strong reaction with HCl, max. particle size 0.75", strong cemented nodules. (SC) Becomes weak cementation, weak reaction with HCl. Added 5 gallons of water to boring at 85'.
90	2365		S	☒	15-42-50/5	Becomes little low plasticity fines, trace fine subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 0.75".
95	2360		S	☒	21-28-25	SILTY SAND WITH GRAVEL, very dense, dry, light brown, fine to coarse SAND, little fine to coarse subangular to angular gravel, little nonplastic fines, no cementation, no reaction with HCl, max. particle size 1". (SM) Added 5 gallons of water to boring at 95'.
100	2355		S	☒	12-20-25	Becomes SILTY SAND, dense, few fine subangular to angular gravel, max. particle size 0.75". Added 5 gallons of water to boring at 100'.
105	2350		S	☒	8-14-19	SANDY SILTY CLAY, hard, dry to moist, dark brown, low plasticity SILTY-CLAY, some fine to medium sand, weak cementation, weak reaction with HCl, strong cemented nodules. (CL-ML) Added 5 gallons of water to boring at 105'.
110	2345		S	☒	15-22-23	SILTY SAND, dense, moist, light brown, fine to coarse SAND, little nonplastic fines, trace fine subrounded gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SM) Added 5 gallons of water to boring at 110'.
115	2340		S	☒	12-20-24	CLAYEY SAND, dense, moist, dark brown, fine to coarse SAND, some low plasticity fines, trace fine angular gravel, weak cementation, strong reaction with HCl, max. particle size 0.5", strong cemented nodules. (SC)
120	2335		S	☒	8-26-40	Becomes very dense, strong hydrocarbon odor.
125	2330		S	☒	12-16-27	▽ LEAN CLAY WITH SAND, hard, moist, dark brown, medium plasticity CLAY, little fine to coarse sand, few fine gravel, moderate cementation, strong reaction with HCl, max. particle size 0.75", strong cemented nodules, no hydrocarbon odor. (CL) Becomes dry to moist.
130	2325		R	■	16-26	Becomes SANDY LEAN CLAY, very stiff, some fine to medium sand.
135	2320		S	☒	9-15-13	Becomes brown, low plasticity CLAY, no cementation, no reaction with HCl.
140	2315		S	☒	9-16-24	CLAYEY SAND, dense, dry to moist, tan, fine to medium SAND, some medium plasticity fines, trace fine gravel, moderate cementation, strong reaction with HCl, max. particle size 0.5", strong cemented nodules. (SC)
145	2310		S	☒	21-50/6	SILTY SAND, very dense, dry to moist, tan, fine to coarse SAND, little low plasticity fines, trace fine angular gravel, no cementation, no reaction with HCl, max. particle size 0.25". (SM)
150	2305		S	☒	21-33-50	Becomes little nonplastic fines, max. particle size 0.5".
155	2300					End of boring at 150'. Stopped sampler at 151.5'. Perched groundwater encountered at 122'. Backfilled with grout.
160						

BORING PLAN

SCALE 1"=150' (at 22" x 34")



BORING LOCATION

150' 0 150' 300'
SCALE: 1"=150'
(at 22" x 34")

GROUNDWATER DATA FOR BS4

Date	Time	Water Depth (ft)	Casing Depth (ft)	Hole Depth (ft)	Symbol
11/09/10	09:00 AM	122.0	125.0	125.0	▽

FOUNDATION DATA
(VEHICULAR BRIDGE)

SF - 1.11 of SF - 1.14

SCE ENGINEERING
510 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

Preliminary
100%
Review

Not for
Construction
or Recording

June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22nd Street: KINO PARKWAY TO TUCSON BOULEVARD

296 OF 474

CITY OF TUCSON

DRWN. K. WATTS	06-18	REF.	SCALE: As Shown
DSGN. K. WATTS	06-18		
CHKD. J. HARRIS	06-18	PLAN NO. I - 2010 -012	

NO.	DATE	REVISION	BY	CHKD.	APPR.

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Date Plotted: 6/7/2018 Time Plotted: 11:20:40 PM Filename: ...\FDS_22nd_bridge_11.dgn

SCE BORING LOG: BS5 (1 of 2)

60+81, 87 Rt. (Ref. Al. 22nd St)
NORTHING: 40,315 EASTING: 101,722
ELEV.: 2,454.2 TOTAL DEPTH: 150.5

STARTED: 12/02/2010 09:30 AM
FINISHED: 12/03/2010 02:30 PM

CONTRACTOR: GSI
DRILLER: Steve
INSPECTOR: JBH
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S	☒	Split Spoon	1.375"	2"	18"
	R	■	Ring Sampler	2.5"	3"	18"
	U	▯	Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
						11" of Portland Cement Concrete Pavement on 4" of Asphaltic Concrete Base.
5	2450		S	☒	6-7-8	CLAYEY SAND (native), medium dense, dry, light brown, fine to coarse SAND, some low plasticity fines, trace fine subangular to angular gravel, moderate cementation, strong reaction with HCl, max. particle size 0.5". (SC)
10	2445		R	■	9-7	Becomes loose, max. particle size 2". No recovery. Rock in sampler lip.
15	2440		S	☒	2-12-15	POORLY-GRADED SAND WITH SILT, medium dense, dry, brown, medium to coarse SAND, few nonplastic fines, no cementation, strong reaction with HCl. (SP-SM)
20	2435		S	═	50/4	CLAYEY SAND, medium dense, dry, light brown, fine to medium SAND, some low plasticity fines, moderate cementation, strong reaction with HCl. (SC) Becomes very dense, strong cementation. Slow auger advance from 20' to 33'.
25	2430		S	═	50/2	
30	2425		S	═	50/3	
35	2420		S	☒	12-35-50/3	SILTY, CLAYEY SAND, very dense, dry, brown, fine to coarse SAND, some low plasticity fines, weak cementation, weak reaction with HCl. (SC-SM)
40	2415		S	☒	21-50/5	CLAYEY SAND, very dense, dry, light brown, fine to coarse SAND, some low plasticity fines, trace fine subangular to angular gravel, moderate cementation, strong reaction with HCl, max. particle size 0.5". (SC)
45	2410		R	■	23-40	WELL-GRADED SAND, medium dense, dry, brown, fine to coarse SAND, trace fine subrounded to subangular gravel, trace nonplastic fines, no cementation, no reaction with HCl, max. particle size 0.5". (SW)
50	2405		S	☒	10-16-23	SILTY SAND, dense, dry, brown, fine to coarse SAND, little nonplastic fines, trace fine subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SM)
55	2400		S	═	50/6	Becomes very dense, little low plasticity fines, few fine subangular to angular gravel, max. particle size 0.75".
60	2395		S	═	50/6	Becomes few fine to coarse subangular to angular gravel, max. particle size 1.5".
65	2390		S	☒	19-32-30	Becomes dark brown, little nonplastic fines, few fine subrounded to subangular gravel, max. particle size 0.5".
70	2385		S	☒	40-50/4	Becomes little low plasticity fines, few fine to coarse subrounded to subangular gravel, max. particle size 1.5".
75	2380		S	☒	21-24-36	Becomes dry to moist, fine to medium SAND, some medium plasticity fines, weak cementation, weak reaction with HCl, strong cemented nodules.
80	2375					CLAYEY SAND, very dense, dry, light brown, fine to medium SAND,

SCE BORING LOG: BS5 (2 of 2)

60+81, 87 Rt. (Ref. Al. 22nd St)
NORTHING: 40,315 EASTING: 101,722
ELEV.: 2,454.2 TOTAL DEPTH: 150.5

STARTED: 12/02/2010 09:30 AM
FINISHED: 12/03/2010 02:30 PM

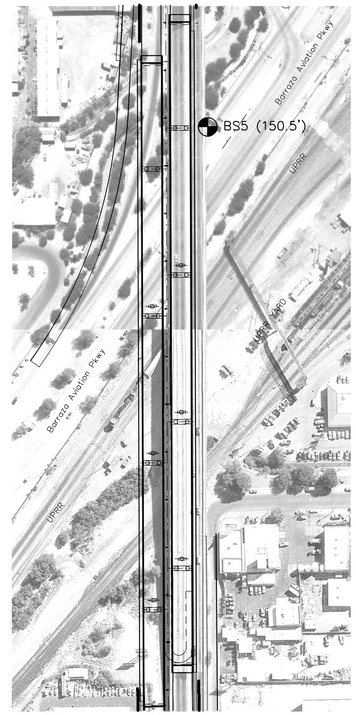
CONTRACTOR: GSI
DRILLER: Steve
INSPECTOR: JBH
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S	☒	Split Spoon	1.375"	2"	18"
	R	■	Ring Sampler	2.5"	3"	18"
	U	▯	Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
			S	═	50/2	some low plasticity fines, moderate cementation, strong reaction with HCl. (SC) Added 5 gallons of water to boring at 80'.
85	2370		S	☒	15-17-50/4	SILTY SAND, very dense, dry, light brown, fine to coarse SAND, little low plasticity fines, few fine to coarse subrounded to subangular gravel, no cementation, no reaction with HCl, max. particle size 1.5". (SM) Rock in sampler tip. Added 5 gallons of water to boring at 85'.
90	2365		S	☒	22-28-32	Added 5 gallons of water to boring at 90'.
95	2360		S	☒	17-32-50/4	Becomes little nonplastic fines, max. particle size 1".
100	2355		S	☒	16-32-50/3	Becomes dry to moist, dark brown, little low plasticity fines, few fine to coarse subangular to angular gravel, weak cementation, weak reaction with HCl.
105	2350		S	☒	17-23-40	SANDY LEAN CLAY, hard, dry to moist, dark brown, medium plasticity CLAY, some fine to medium sand, weak cementation, weak reaction with HCl, strong cemented nodules. (CL)
110	2345		S	☒	14-31-50/4	CLAYEY SAND, very dense, dry to moist, dark brown, fine to coarse SAND, some low plasticity fines, no cementation, weak reaction with HCl, strong cemented nodules. (SC)
115	2340		S	☒	17-32-50/3	Becomes brown, fine SAND, some medium plasticity fines, few fine to coarse gravel, weak cementation, max. particle size 1.25".
120	2335		S	☒	9-16-24	Becomes dense.
125	2330		R	■	15-30	FAT CLAY WITH SAND, hard, moist, light brown, high plasticity CLAY, little fine to medium sand, moderate cementation, strong reaction with HCl, strong cemented nodules. (CH) Becomes SANDY FAT CLAY, very stiff, some fine to medium sand.
130	2325		S	☒	9-17-24	CLAYEY SAND, dense, moist, dark brown, fine to medium SAND, some low plasticity fines, weak cementation, weak reaction with HCl. (SC)
135	2320		S	═	50/3	Becomes very dense, dry, tan, fine to coarse SAND, strong reaction with HCl.
140	2315		S	☒	24-50/4	SILTY SAND, very dense, dry to moist, light brown, fine to medium SAND, little low plasticity fines, trace fine subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 0.75". (SM)
145	2310		S	☒	28-50/6	Becomes little nonplastic fines.
150	2305		S	═	50/6	Becomes little low plasticity fines.
155	2300					End of boring at 150'. Stopped sampler at 150.5'. Perched groundwater encountered at 120'. Backfilled with grout. Applied quickset concrete patch.
160	2295					

BORING PLAN

SCALE 1"=150' (at 22" x 34")



BORING LOCATION

150' 0 150' 300'
SCALE: 1"=150'
(at 22" x 34")

GROUNDWATER DATA FOR BS5

Date	Time	Water Depth (ft)	Casing Depth (ft)	Hole Depth (ft)	Symbol
12/03/10	12:00 PM	120.0	125.0	125.0	▽

FOUNDATION DATA
(VEHICULAR BRIDGE)

SF - 1.12 of SF - 1.14

SCE ENGINEERING
510 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

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Blue Stake Center

NO.	DATE	REVISION	BY	CHKD.	APPR.

Preliminary
100%
Review

Not for
Construction
or Recording

June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22nd Street: KINO PARKWAY TO TUCSON BOULEVARD

297 OF 474

CITY OF TUCSON

DRWN. K. WATTS	06-18	REF.
DSGN. K. WATTS	06-18	SCALE: As Shown
CHKD. J. HARRIS	06-18	PLAN NO. I - 2010 -012

Date Plotted: 6/7/2018 Time Plotted: 11:22:15 PM Filename: ...\FDS_22nd_bridge_12.dgn

SCE BORING LOG: NB-1 (1 of 2)

51+36, 18 Lt. (Ref. Al. 22nd St)
NORTHING: 40,417 EASTING: 100,776
ELEV.: 2,453.0 TOTAL DEPTH: 99

STARTED: 08/31/2007 07:00 AM
FINISHED: 09/06/2007 01:30 PM

CONTRACTOR: GSI
DRILLER: Chuck
INSPECTOR: WUF
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S	☒	Split Spoon	1.375"	2"	18"
	R	◧	Ring Sampler	2.5"	3"	18"
	U	▯	Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
5	2450		S	☒	6-13-22	CLAYEY SAND, dense, dry, brown, fine to coarse SAND, little low plastic fines, few fine gravel, weak cementation, strong reaction with HCl. (SC)
10	2445		S	☒	20-43-50/5"	Becomes very dense, strong cementation.
15	2440		S	☒	27-50/4"	Becomes some low to medium plastic fines.
20	2435		S	☒	5-50/5"	WELL-GRADED SAND WITH CLAY, very dense, dry, brown, fine to coarse SAND, few low plastic fines, weak cementation, no reaction with HCl. (SW-SC)
25	2430		S	▬	50/4"	LEAN CLAY, hard, dry, whitish brown, medium plastic CLAY, few fine sand, strong cementation, strong reaction with HCl. (CL)
30	2425		S	▬	50/3"	
35	2420		S	▬	50/2"	CLAYEY SAND, very dense, dry, whitish brown, fine to coarse SAND, some medium plastic fines, few to little fine to coarse gravel, strong cementation, strong reaction with HCl, max. particle size 1.5". (SC)
40	2415		S	▬	50/4"	Becomes some low plastic fines, few fine to coarse gravel, max. particle size 1". Strongly cemented soil between 38' and 43'.
45	2410		S	☒	18-32-36	WELL-GRADED SAND WITH GRAVEL, very dense, dry, light brown, fine to coarse SAND, little fine gravel, trace nonplastic fines, weak cementation, no reaction with HCl. (SW)
50	2405		S	☒	13-19-23	Becomes dense.
55	2400		S	☒	9-11-18	CLAYEY SAND, medium dense, dry, brown, fine to coarse SAND, little medium plastic fines, trace fine gravel, no cementation, no reaction with HCl. (SC)
60	2395		S	☒	11-21-25	WELL-GRADED SAND WITH CLAY, dense, dry, brown, fine to coarse SAND, few fine gravel, few low plastic fines, no cementation, no reaction with HCl, max. particle size 1". (SW-SC)
65	2390		S	☒	23-32-37	SILTY SAND, very dense, dry, whitish, fine to coarse SAND, little nonplastic fines, trace fine to coarse gravel, no cementation, no reaction with HCl, max. particle size 1.25". (SM)
70	2385		S	☒	15-28-38	Becomes brown, max. particle size 0.75".
75	2380		S	☒	27-35-34	CLAYEY SAND, very dense, dry, brown, fine to coarse SAND, little low plastic fines trace fine gravel, no cementation, no reaction with HCl. (SC)
80	2375					

SCE BORING LOG: NB-1 (2 of 2)

51+36, 18 Lt. (Ref. Al. 22nd St)
NORTHING: 40,417 EASTING: 100,776
ELEV.: 2,453.0 TOTAL DEPTH: 99

STARTED: 08/31/2007 07:00 AM
FINISHED: 09/06/2007 01:30 PM

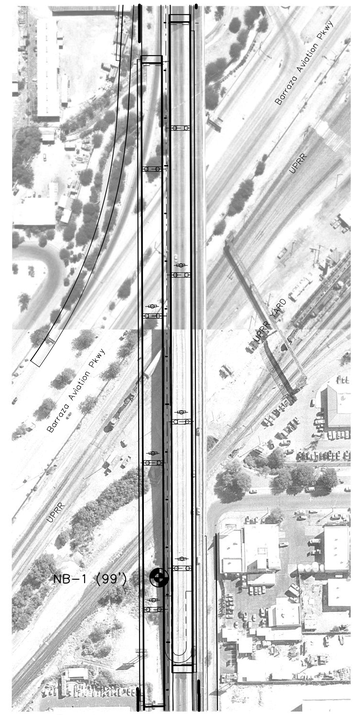
CONTRACTOR: GSI
DRILLER: Chuck
INSPECTOR: WUF
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S	☒	Split Spoon	1.375"	2"	18"
	R	◧	Ring Sampler	2.5"	3"	18"
	U	▯	Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
85	2370		S	☒	33-50/2"	Becomes few fine to coarse gravel, max. particle size 1.5".
90	2365		S	▬	50/5"	POORLY GRADED GRAVEL, very dense, dry, white, fine to coarse GRAVEL, little fine to coarse sand, trace low plasticity fines, no cementation, no reaction with HCl, max. particle size 1.5". (GP)
95	2360		S	☒	43-50/3"	CLAYEY SAND WITH GRAVEL, very dense, dry, whitish brown, fine to coarse SAND, little fine to coarse gravel, little low plastic fines, no cementation, no reaction with HCl, max. particle size 1.5". (SC)
100	2355		S	☒	17-50/5"	POORLY GRADED GRAVEL WITH SILT AND SAND, very dense, dry, whitish, fine to coarse GRAVEL, little to some fine to coarse sand, few nonplastic fines, no cementation, no reaction with HCl, max. particle size 1.5". (GP-GM)
105	2350		S	☒	12-13-21	SILTY SAND, dense, moist, brown, fine to coarse SAND, some medium plastic fines, trace fine gravel, no cementation, no reaction with HCl. (SM)
110	2345					End of boring at 97.5'. Stopped sampler at 99'. No groundwater encountered. Backfilled hole with 1-sack slurry.
115	2340					
120	2335					
125	2330					
130	2325					
135	2320					
140	2315					
145	2310					
150	2305					
155	2300					
160	2295					

BORING PLAN

SCALE 1"=150' (at 22" x 34")



BORING LOCATION

150' 0 150' 300'
SCALE: 1"=150'
(at 22" x 34")

FOUNDATION DATA
(VEHICULAR BRIDGE) SF - 1.13 of SF - 1.14

SCE ENGINEERING
510 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

Preliminary 100% Review
Not for Construction or Recording
June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION
22nd Street: KINO PARKWAY TO TUCSON BOULEVARD

298 OF 474

CITY OF TUCSON

DRWN. K. WATTS	06-18	REF.	SCALE: As Shown
DSGN. K. WATTS	06-18		
CHKD. J. HARRIS	06-18	PLAN NO.	I - 2010 -012

NO.	DATE	REVISION	BY	CHKD.	APPR.

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Date Plotted: 6/7/2018 Time Plotted: 11:23:55 PM Filename: ...\FDS_22nd_bridge_13.dgn

SCE BORING LOG: NB-2 (1 of 2)

63+18, 91 Rt. (Ref. Al. 22nd St)
NORTHING: 40,312 EASTING: 101,958
ELEV.: 2,456.5 TOTAL DEPTH: 99

STARTED: 08/14/2007 08:30 AM
FINISHED: 08/14/2007 02:30 PM

CONTRACTOR: GSI
DRILLER: Gilbert
INSPECTOR: RMP
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
	2455				CLAYEY SAND (Fill), moist, brown, fine to coarse SAND, some medium plastic fines, few fine gravel.
5	2450	S		9-15-11	FAT CLAY (Native), very stiff, moist, tan, high plastic CLAY, strong cementation, strong reaction with HCl. (CH)
10	2445	S		24-50/4"	Becomes SANDY FAT CLAY, hard, some fine to coarse sand, strong cementation, strong reaction with HCl.
15	2440	S		50/5"	Becomes SANDY FAT CLAY WITH GRAVEL, little fine gravel.
20	2435	S		50/5"	
25	2430	S		50/3"	
30	2425	S		50/4"	CLAYEY SAND WITH GRAVEL, very dense, moist, brown, fine to coarse SAND, some medium plastic fines, little fine gravel, strong cementation, strong reaction with HCl. (SC)
35	2420	S		19-22-30	WELL-GRADED SAND WITH SILT, very dense, moist, brown, fine to coarse SAND (subrounded), few nonplastic fines, trace fine gravel, weak cementation, no reaction with HCl. (SW-SM)
40	2415	S		19-16-19	CLAYEY SAND, dense, brown, moist, fine to coarse SAND, some medium plastic fines, moderate cementation, no reaction with HCl. (SC)
45	2410	S		22-28-21	Becomes strong cementation, weak reaction with HCl.
50	2405	S		36-25-24	WELL-GRADED SAND, dense, moist, brown, fine to coarse SAND, trace nonplastic fines, weak cementation, no reaction with HCl. (SW)
55	2400	S		12-17-23	
60	2395	S		20-35-35	Becomes very dense.
65	2390	S		19-27-22	WELL-GRADED SAND WITH CLAY, dense, moist, brown, fine to coarse SAND, few low to medium plastic fines, weak cementation, no reaction with HCl. (SW-SC)
70	2385	S		26-35-43	WELL-GRADED SAND, very dense, moist, brown, fine to coarse SAND, trace nonplastic fines, weak cementation, no reaction with HCl. (SW)
75	2380	S		19-50/5"	CLAYEY SAND, very dense, moist, brown, fine to coarse SAND, some medium plastic fines, trace fine gravel, moderate to strong cementation, weak reaction with HCl. (SC)
80					WELL-GRADED SAND, very dense, brown, moist, fine to coarse

SCE BORING LOG: NB-2 (2 of 2)

63+18, 91 Rt. (Ref. Al. 22nd St)
NORTHING: 40,312 EASTING: 101,958
ELEV.: 2,456.5 TOTAL DEPTH: 99

STARTED: 08/14/2007 08:30 AM
FINISHED: 08/14/2007 02:30 PM

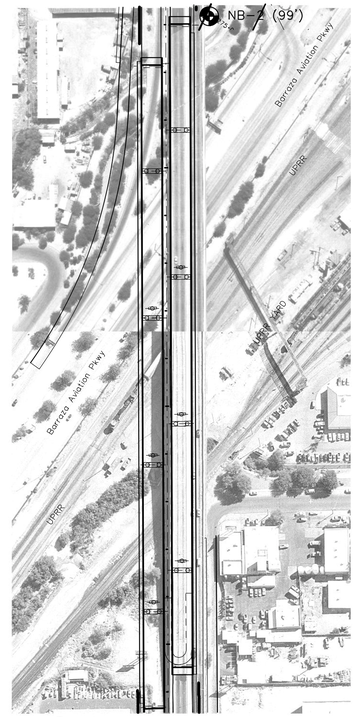
CONTRACTOR: GSI
DRILLER: Gilbert
INSPECTOR: RMP
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
80	2375	S		20-27-29	SAND, trace low to medium plastic fines, weak cementation, no reaction with HCl. (SW)
85	2370	S		50/3"	WELL-GRADED SAND WITH CLAY AND GRAVEL, very dense, moist, brown, fine to coarse SAND, little fine gravel, few low to medium plastic fines, moderate cementation, no reaction with HCl. (SW-SC)
90	2365	S		20-50/5"	SILTY SAND, very dense, moist, brown, fine to coarse SAND, some low plastic fines, moderate to strong cementation, no reaction with HCl. (SM)
95	2360	S		21-34-32	WELL-GRADED SAND, very dense, gray to tan, moist, fine to coarse SAND, trace fine gravel, trace nonplastic fines, weak cementation, no reaction with HCl. (SW)
100	2355	S		18-20-33	
105	2350				End of boring at 97.5'. Stopped sampler at 99'. No groundwater encountered. Backfilled hole with 1-sack slurry.
110	2345				
115	2340				
120	2335				
125	2330				
130	2325				
135	2320				
140	2315				
145	2310				
150	2305				
155	2300				
160					

BORING PLAN

SCALE 1"=150' (at 22" x 34")



BORING LOCATION

150' 0 150' 300'

SCALE: 1"=150'
(at 22" x 34")

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1-800-782-5348
Blue Stake Center

FOUNDATION DATA
(VEHICULAR BRIDGE)

SF - 1.14 of SF - 1.14

SCE ENGINEERING 510 E 4TH STREET TUCSON, AZ 85705 520-405-7353

Preliminary 100% Review

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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22nd Street: KINO PARKWAY TO TUCSON BOULEVARD

299 OF 474

CITY OF TUCSON

DRWN. K. WATTS	06-18	REF.
DSGN. K. WATTS	06-18	SCALE: As Shown
CHKD. J. HARRIS	06-18	PLAN NO. I - 2010 -012

NO.	DATE	REVISION	BY	CHKD.	APPR.

Date Plotted: 6/7/2018 Time Plotted: 11:25:28 PM Filename: ...\FDS_22nd_bridge_14.dgn

APPROXIMATE QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	ABUT. 1	ABUT. 2	PIER A	PIER B	PIER C	PIER D	PIER E	PIER F	PIER G	PIER H	PIER I	PIER J	PIER K	PIER L	PIER M	SUPER-STRUCTURE	TOTALS	AS-BUILT
6010003	Struct. Conc. (Class S) f'c=3500 psi	CY	7	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	
6010004	Struct. Conc. (Class S) f'c=4000 psi	CY	-	-	7	8	10	8	11	12	14	24	21	12	14	9	7	255	412	
6040011	Structural Steel	LBS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	634,465	634,465	
6040012	Structural Hanger Rods	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156	156	
6040013	Perforated Steel Plate	SF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27,247	27,247	
6050002	Reinforcing Steel	LBS	770	700	1210	1455	2085	1235	2185	2000	2240	6660	5755	2025	2235	1565	1315	56,750	90,185	
6090048	Drilled Shaft (48")	LF	-	-	25	25	25	30	25	25	25	-	-	25	30	30	30	-	295	
6090060	Drilled Shaft (60")	LF	-	-	-	-	-	-	-	-	-	30	30	-	-	-	-	-	60	
9020037	Welded Wire Fabric	SF	-		-	-	-	-	-	-	-	-	-	-	-	-	-	14,449	14,449	

1. The cost of structural excavation & structure backfill is incidental to the cost of abut. & pier concrete.
2. The cost of SIP forms is incidental to the cost of superstructure concrete. Additional concrete in the forms is included in superstructure CY quantities.
3. The cost of bearings and expansion joints is incidental to the cost of the structural steel.
4. Approximate LF of structural hanger rods is 1,466 and for the Contractor's information only

GENERAL NOTES

A. SPECIFICATIONS:

A1. Construction in accordance with the American Association Of State And Highway Transportation Officials (AASHTO) LRFD Bridge Construction Specifications, 3rd Edition, Pima Association of Governments (PAG), Standard Specifications and Special Provisions.
A2. Design Specifications - AASHTO LRFD Standard Specifications for Highway Bridges, 6th Edition, 2012, and AASHTO LRFD Guide Specifications for Design of Pedestrian Bridges, Edition 2009.

B. LOADINGS:

B1. Permanent Loads:
B1.1 Concrete dead load: 0.150 kcf (includes weight of the reinforcing steel).
B1.2 Structural steel dead load 490#/ft³
B2. Live Loads:
B2.1 Pedestrian live load - 90 psf
B2.2 Vehicle live load - H-5 truck
B3. Thermal: The forces included from a temperature rise of 60° F and a temperature fall of 60° F from a mean temperature of 75° F are accounted for in the superstructure. The coefficient of thermal expansion used is 0.0000065 in/in/°F.
B4. Earthquake: Seismic Zone 1, Site Class D, PGA = 0.074G
B5. Earth: Weight of Soil: 0.130 kcf Equivalent fluid pressure (Active): 0.035 kcf
B6. Wind: Base wind velocity of 70 mph.

C. MATERIALS:

C1. Structural Steel
C1.1 Structural steel plates shall conform to the requirements of ASTM Grade A36.
C1.2 Structural steel shapes shall conform to the requirements of ASTM A992, Grade A50.
C1.3 Hollow Structural Sections (HSS) shall conform to the requirements of ASTM A500, Grade B.
C1.4 Pipe shall be standard weight and conform to ASTM A53, Grade B.
C1.5 Welding of Hollow Structural Section shall conform to the requirements of the American Welding Society (AWS), Structural Welding Code, D1.1 latest edition. All other welding shall conform to the requirements of ANSI/AASHTO/AWS D1.5 Bridge Welding code, latest edition.
C1.6 Anchor bolts embedded in concrete shall conform to the requirements of ASTM F1554, Grade 55. Galvanized per ASTM F2329.
C1.7 High Strength bolts shall conform to the requirements of ASTM A325 and ASTM A490 where noted. Nuts and washers shall meet the requirements of ASTM A563 and ASTM F436. All bolted connections shall be Type N (Bolt Threads included in the shear plane).
C1.8 All Fracture Critical Members (FCM) as noted in these project plans shall be fabricated in accordance with Chapter 12 of the AWS D1.5 Bridge Welding Code, latest edition.
C1.9 Structural rods shall be M30 (1.102" diameter), galvanized carbon steel with a minimum breaking load of 81,900 pounds, as manufactured by Ronstan International, product number ARS4-CSM30 or approved equal by Engineer. Connection hardware and connection plates as manufactured by Ronstan or approved equal by Engineer shall have equal capacity to that of the rods and shall be galvanized.
C1.10 Structural Steel Yield Stress:
Sq/Rect HSS ..... fy = 46,000 psi
Shape Steel ..... fy = 50,000 psi
Structural Steel Plates ..... fy = 36,000 psi
Structural Rods ..... fy = 75,400 psi
Pipe ..... fy = 35,000 psi

C2. Reinforcing Steel:

C2.1 Reinforcing steel shall conform to ASTM Specification A615/A615M. Reinforcing shall be furnished as Grade 60.
C2.2 All bends and hooks for reinforcing steel shall meet the requirements of AASHTO Article 5.10.2.
C2.3 All bend dimensions for reinforcing steel shall be out-to-out of bars. All placement dimensions for reinforcing steel shall be to center of bars unless noted otherwise.
C2.4 All reinforcing shall have 2 inches clear cover unless noted otherwise.

C3. Concrete (minimum 28 day strength):

All concrete shall be Class "S" unless noted otherwise.
Concrete Deck, Circular Deck,
Piers and Drilled Shafts ..... f'c = 4,000 psi
All other concrete ..... f'c = 3,500 psi

D. MISCELLANEOUS NOTES:

D1. Dimensions shall not be scaled from drawings.
D2. All dimensions are shown in feet-inches and all elevations are shown in feet unless noted otherwise.
D3. Dimensions shown on plans assume the ambient temperature of the structural steel members to be 75°F.
D4. Profile grade elevations shown on the plans are finished elevations at the top of concrete deck.
D5. Painting: Pedestrian bridge shall be painted in accordance with Project Special Provisions.

E. TEMPORARY CONSTRUCTION CLEARANCES:

E1. Union Pacific Railroad (UPRR) Tracks: 12'-0" horiz. from centerline of track 21'-0" vertical from top of rail.
E2. Vehicular Roads: 16'-0" vertical.
E3. See also Dwg. S-1.12 for Construction over Railroad requirements.
E4. Contractor is required to obtain proper permits from UPRR prior to working in the UPRR right-of-way.

INDEX OF DRAWINGS

NO.	DATE	REVISION	BY	CHKD.	APPR.

General Notes, Quantities & Index of Drawings S-2.01 of S-2.38

Structural Grace, Inc
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Tucson, AZ 85719 (520) 320-0156

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June 2018

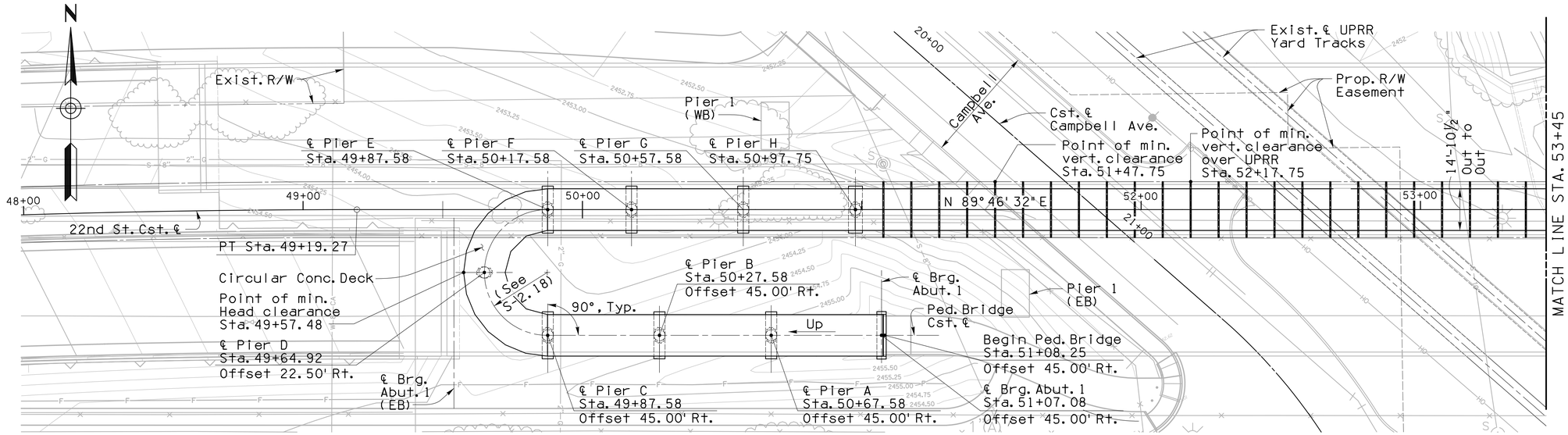
DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE

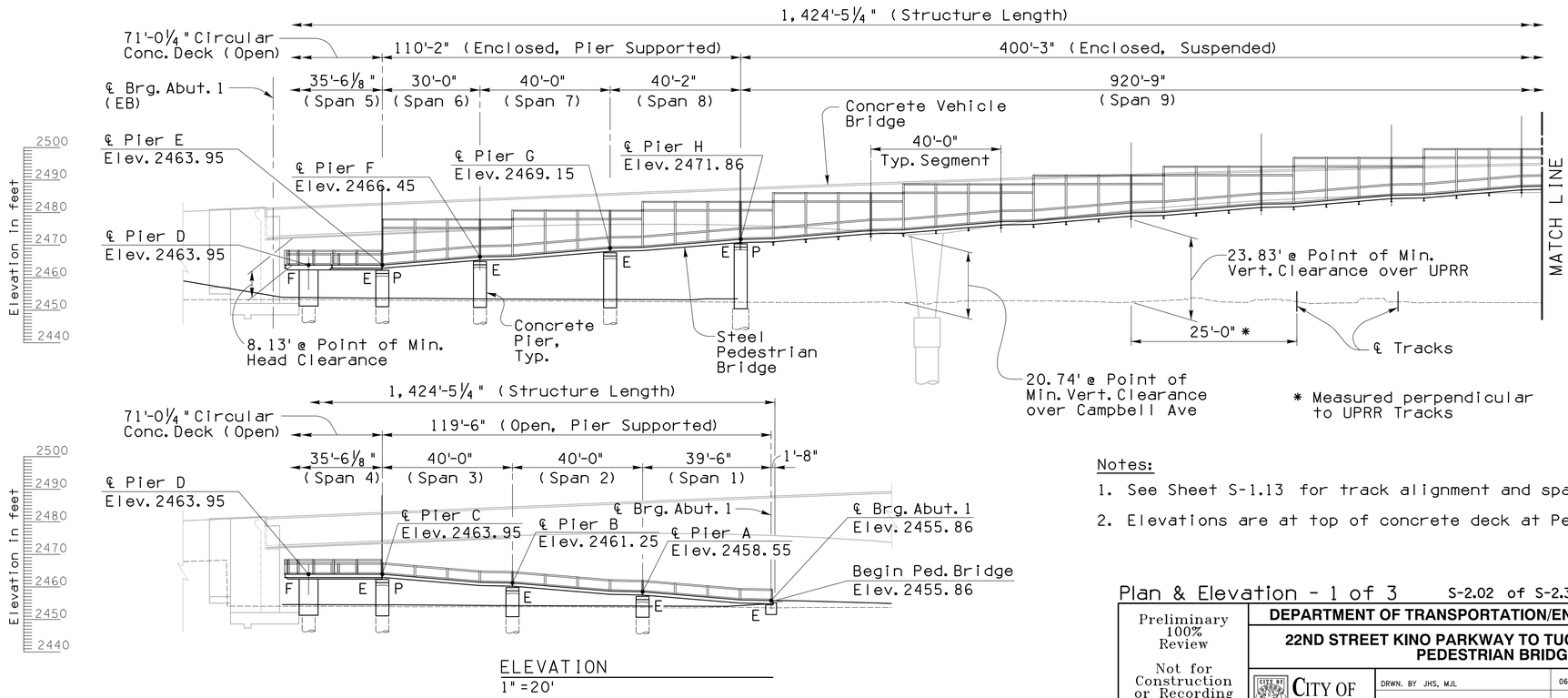
300 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY LS	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012



PLAN
1" = 20'
New 14-Span Steel Pedestrian Bridge



ELEVATION
1" = 20'

Notes:

1. See Sheet S-1.13 for track alignment and spacing.
2. Elevations are at top of concrete deck at Ped. Bridge Cst. ℄.

Plan & Elevation - 1 of 3 S-2.02 of S-2.38

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
PEDESTRIAN BRIDGE

301 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
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CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.

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Blue Stake Center
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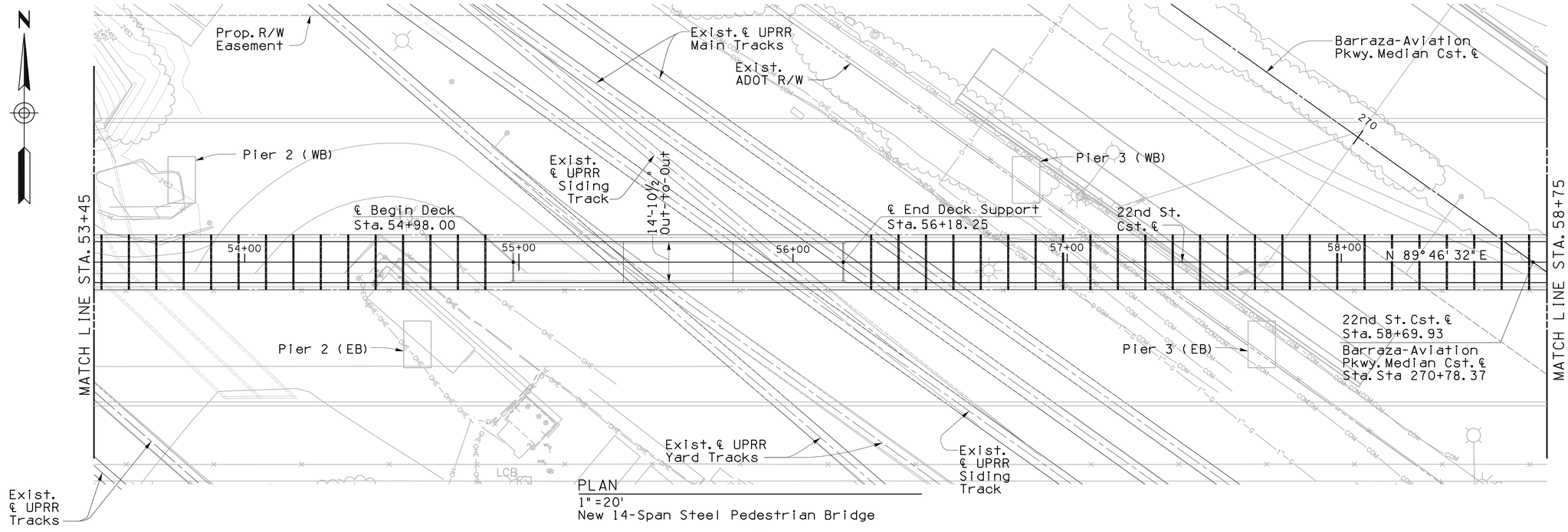
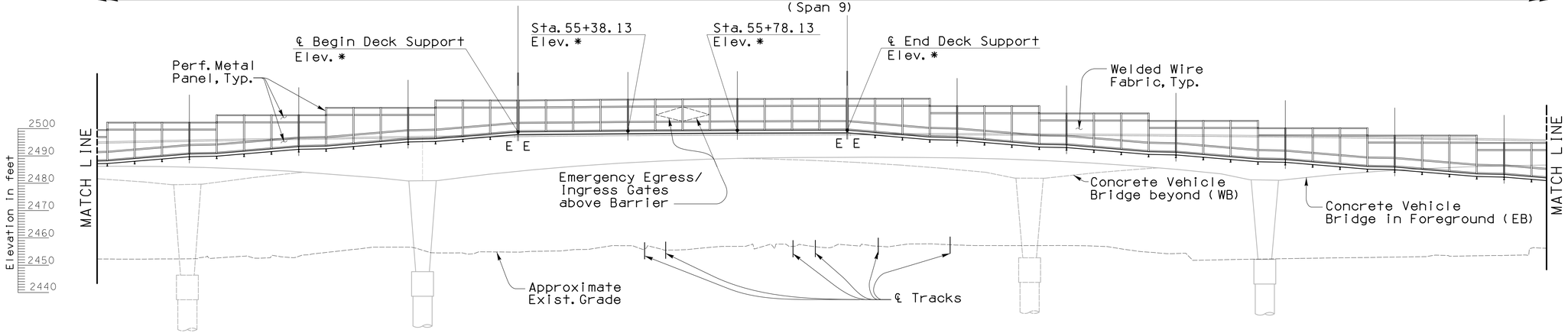


PLAN
1"=20'
New 14-Span Steel Pedestrian Bridge

1,424'-5¼" (Structure Length)

400'-3" (Enclosed, Suspended) | 120'-3" (Enclosed, Deck Supported) | 400'-3" (Enclosed, Suspended)

920'-9"
(Span 9)



* See S-1.67, Transverse Tendon & Ped. Bridge Bearing ℄ Details

ELEVATION
1"=20'

Note:
See Sheet S-1.13 for track alignment and spacing.

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Plan & Elevation - 2 of 3 S-2.03 of S-2.38

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE

302 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY LS	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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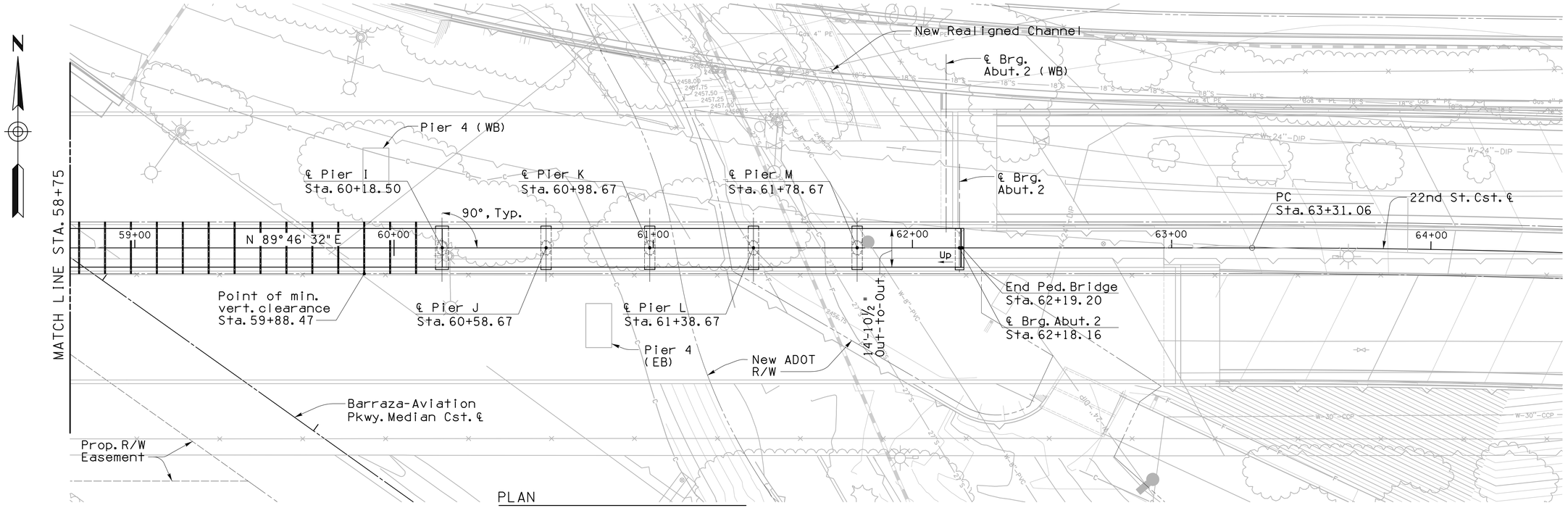
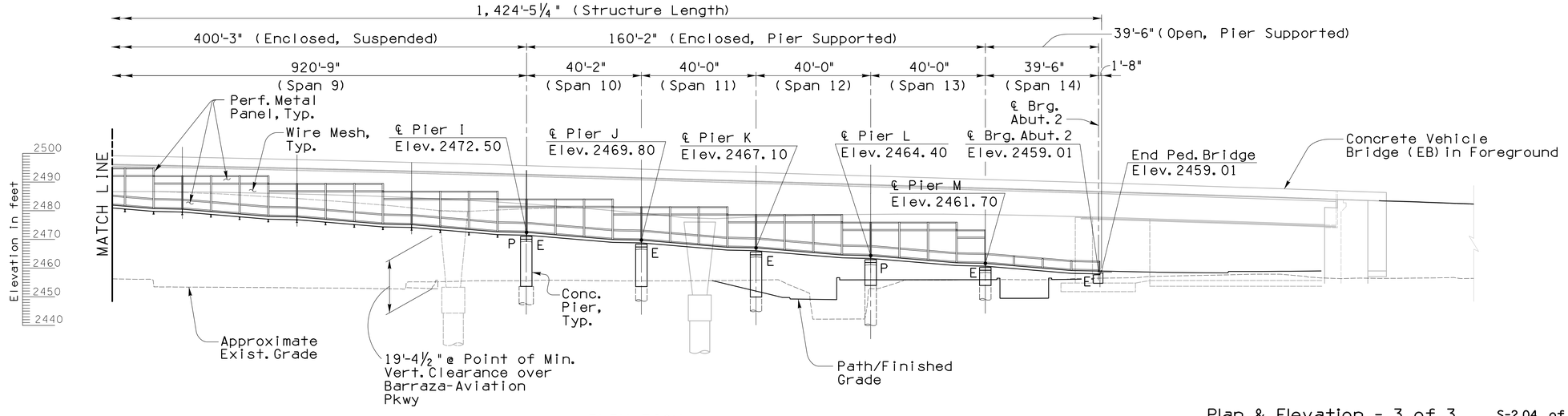


PLAN
1" = 20'
New 14-Span Steel Pedestrian Bridge



ELEVATION
1" = 20'

Plan & Elevation - 3 of 3 S-2.04 of S-2.38

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
PEDESTRIAN BRIDGE

303 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
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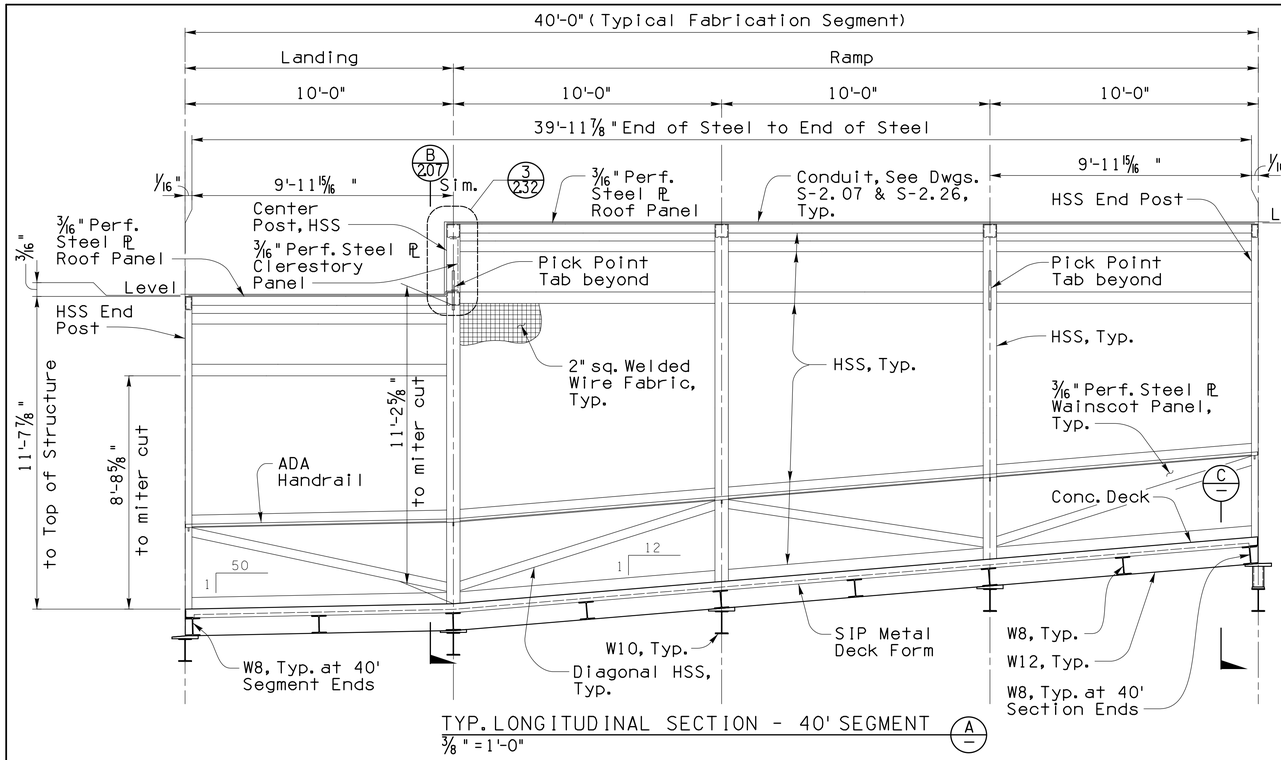
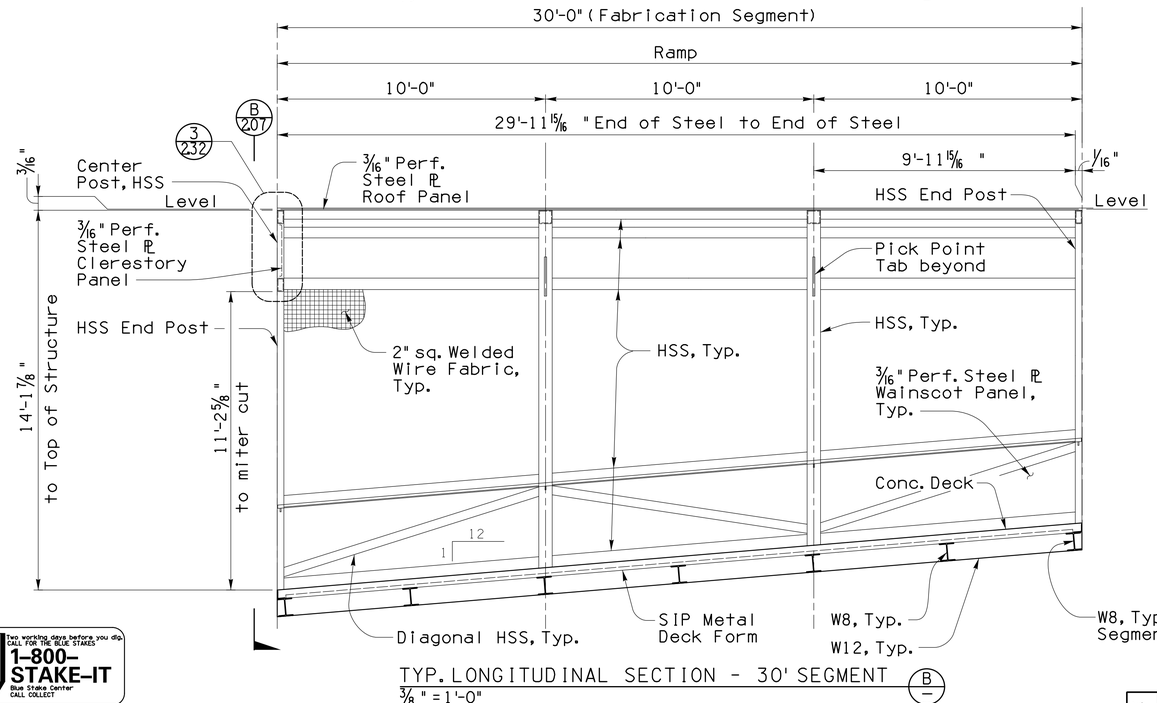
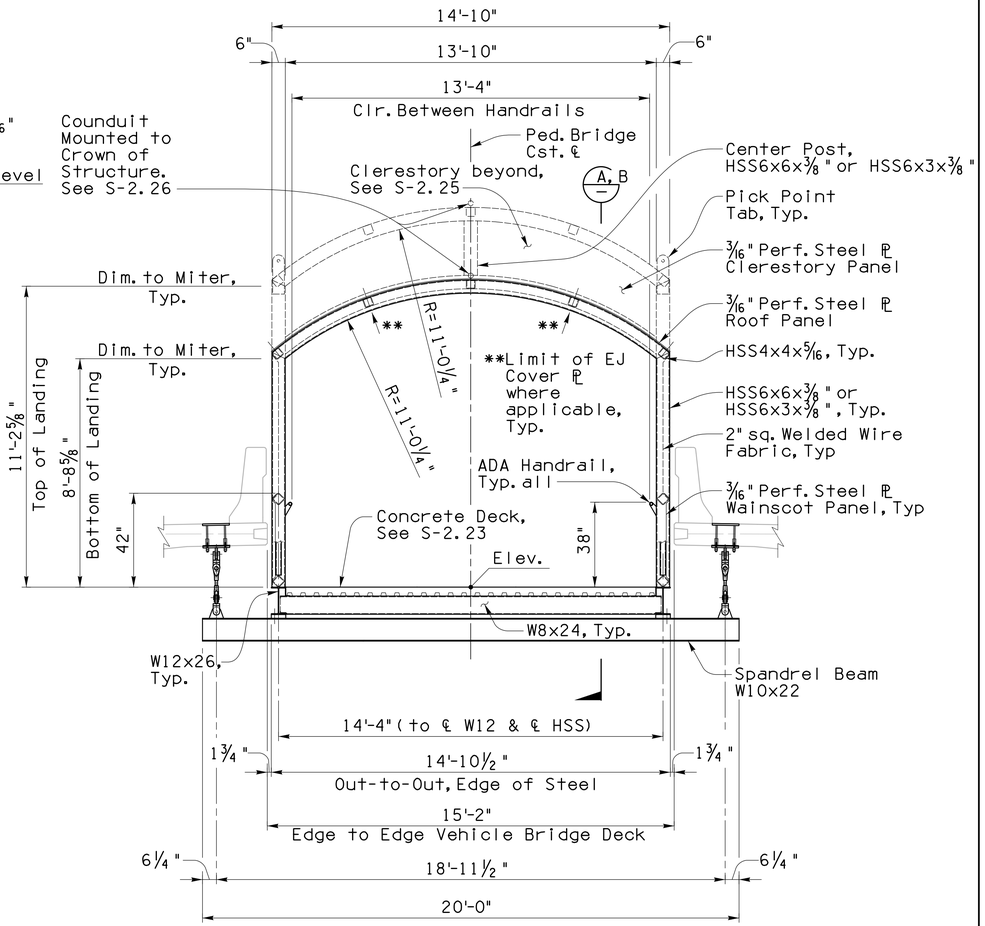


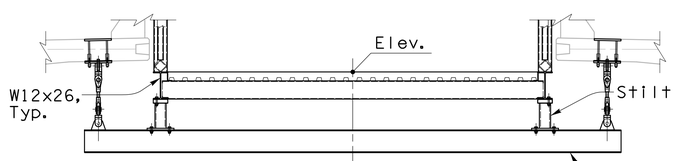
TYP. LONGITUDINAL SECTION - 40' SEGMENT (A/—)
3/8" = 1'-0"



TYP. LONGITUDINAL SECTION - 30' SEGMENT (B/—)
3/8" = 1'-0"



SUSPENDED SECTION
3/8" = 1'-0"



SUSPENDED SECTION ON STILTS (C/—)
3/8" = 1'-0"

Note: See S-2.14 & S-2.15 for locations and heights of stilts.

Typical Sections - 1 of 3 S-2.05 of S-2.38

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION
22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE

304 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY LS	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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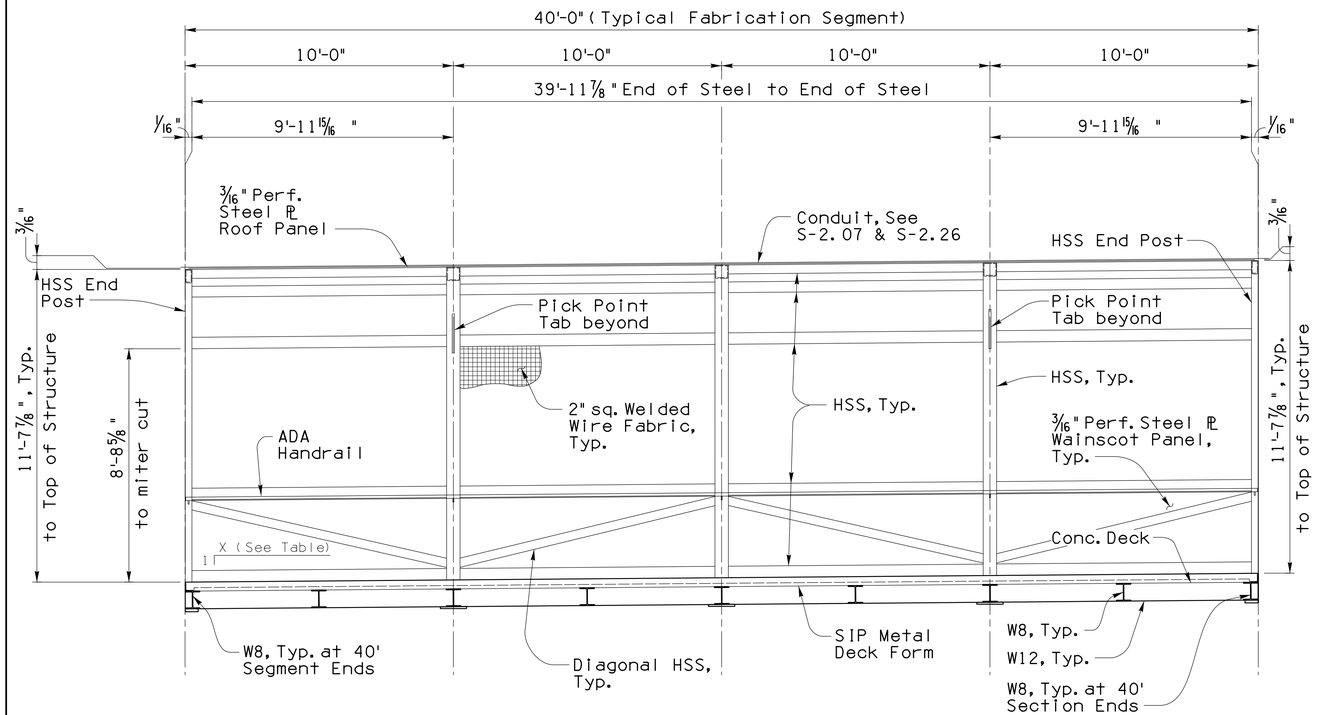
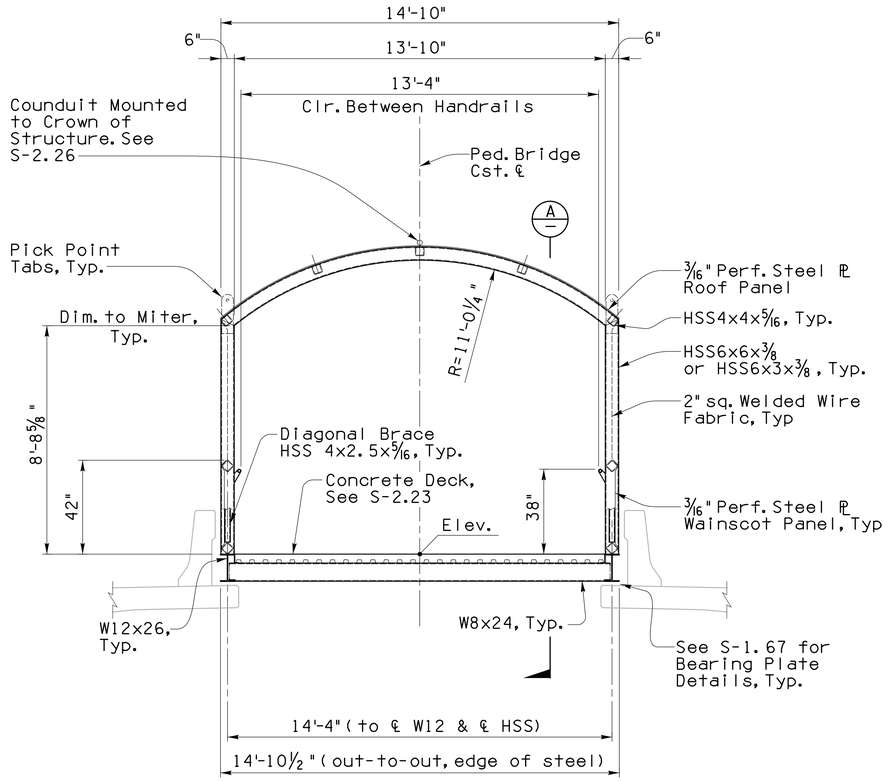


TYP. LONGITUDINAL SECTION - 40' SEGMENT - DECK SUPPORTED (A—)

3/8" = 1'-0"



DECK SUPPORTED SECTION

3/8" = 1'-0"

Slope of 40' Segment	X (see note)
West Segment	110
Center Segment	200
East Segment	500

Note:
Contractor to survey vehicle bridge to verify X (i.e. slope) and submit to the Engineer prior to fabrication of 40' Segment - Deck Supported. See also bearing assembly heights on S-1.67.

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Typical Sections - 2 of 3 S-2.06 of S-2.38

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE

CITY OF TUCSON

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DSGN. BY LS	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

305 OF 474

NO.	DATE	REVISION	BY	CHKD.	APPR.

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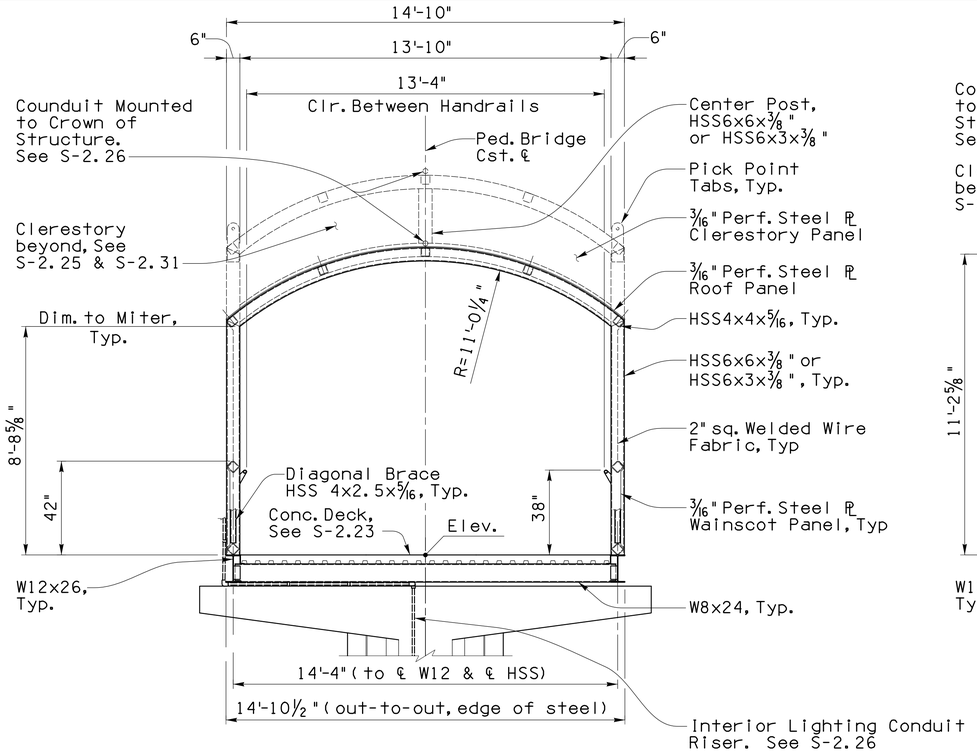
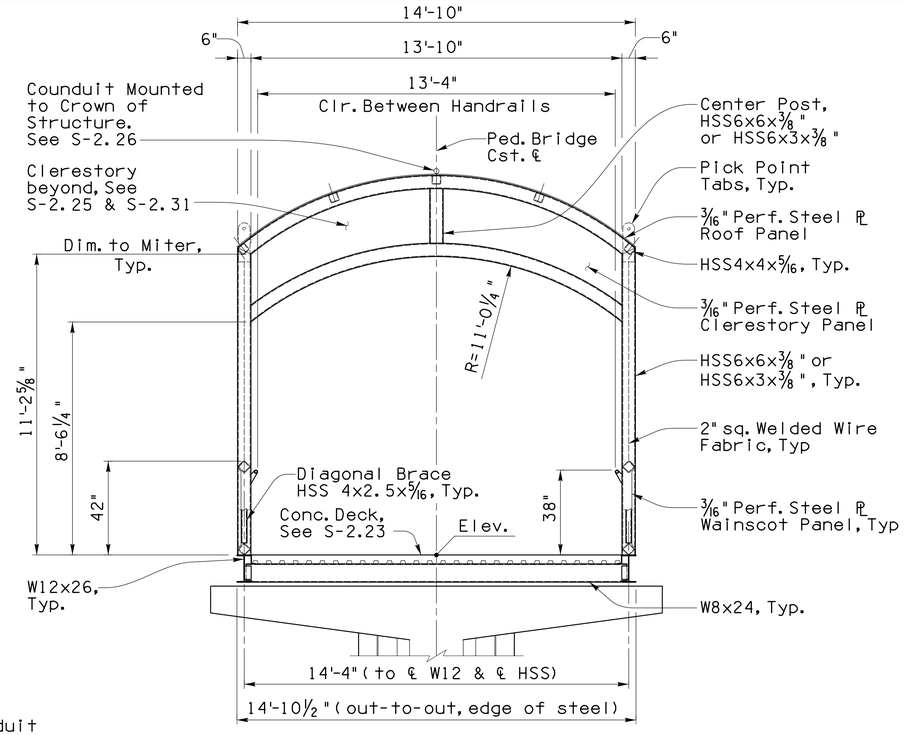
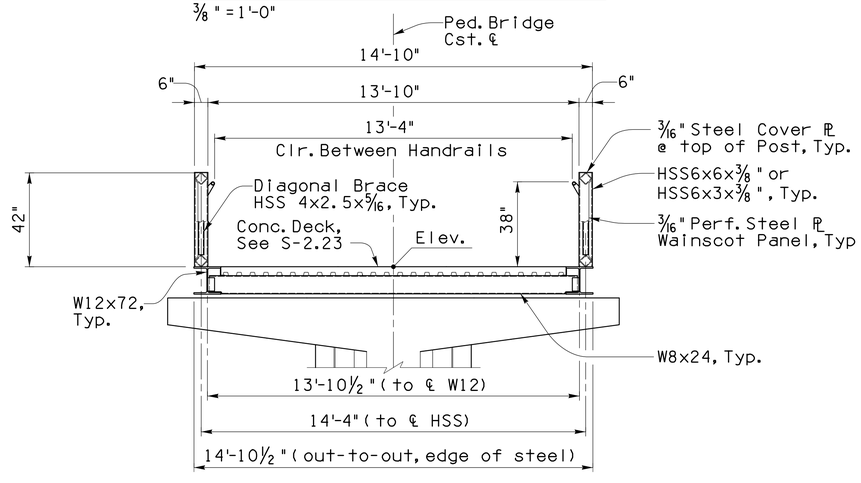




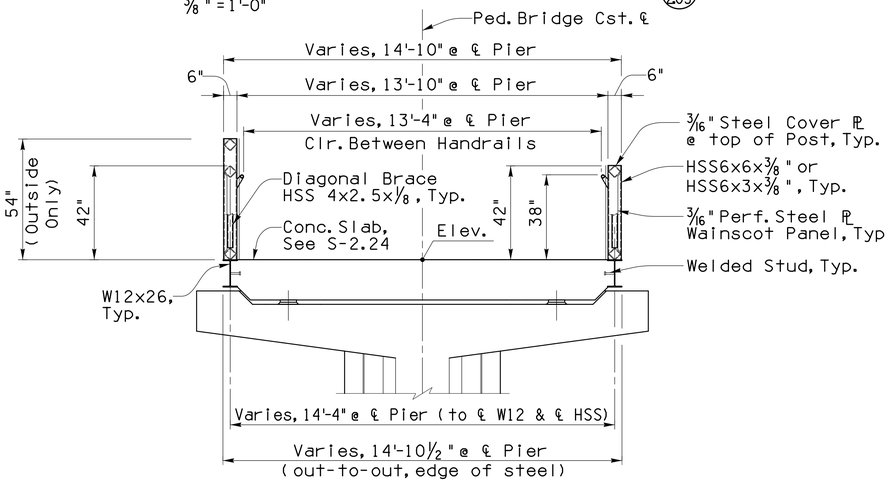
PIER SUPPORTED, ENCLOSED SECTION

3/8" = 1'-0"



PIER SUPPORTED, ENCLOSED 30'-0" SECTION (B 2.05)

3/8" = 1'-0"



PIER SUPPORTED, OPEN SECTION

3/8" = 1'-0"

CIRCULAR CONCRETE SECTION

3/8" = 1'-0"
Sta. 49+87.58 to 49+87.58

Typical Sections - 3 of 3 S-2.07 of S-2.38

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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE

306 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY LS	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.

Two working days before you dig, CALL FOR THE BLUE STAKES 1-800-STAKE-IT Blue Stake Center CALL COLLECT

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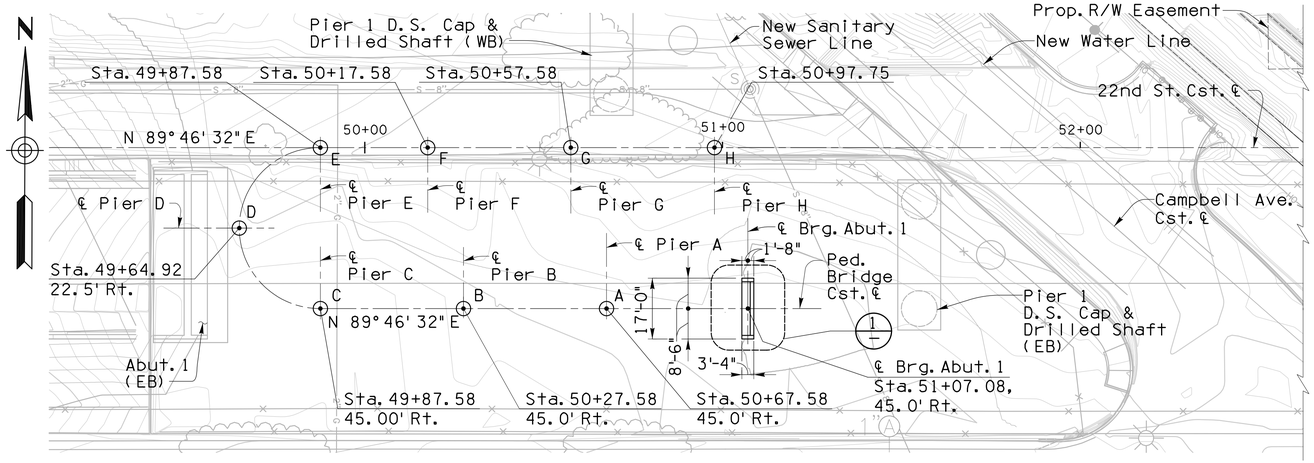
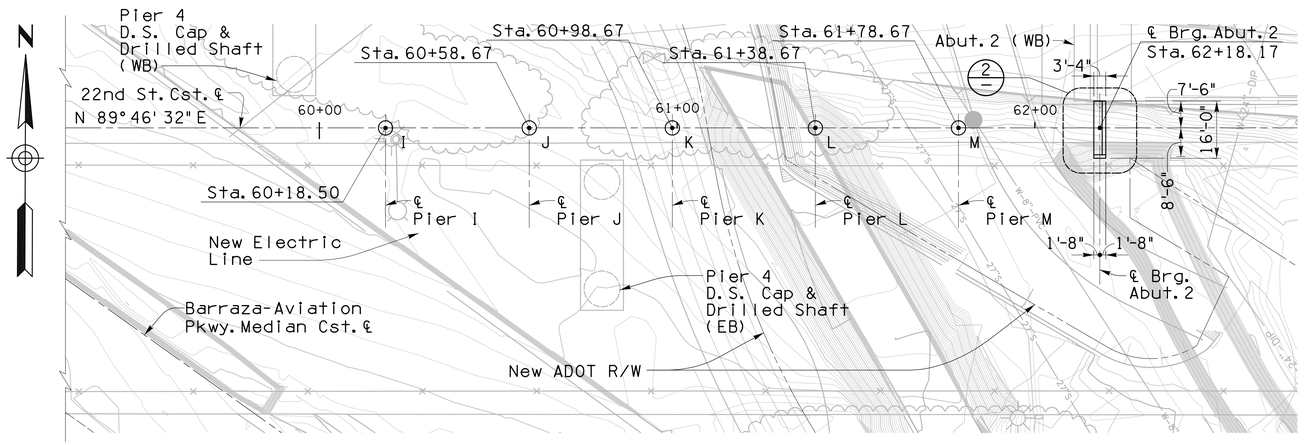


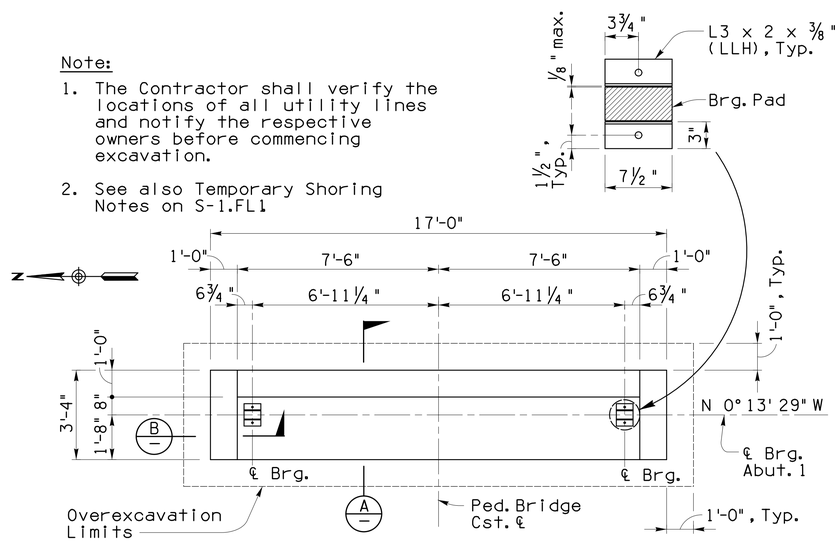
FOUNDATION PLAN - WEST
1" = 20'-0"



FOUNDATION PLAN - EAST
1" = 20'-0"

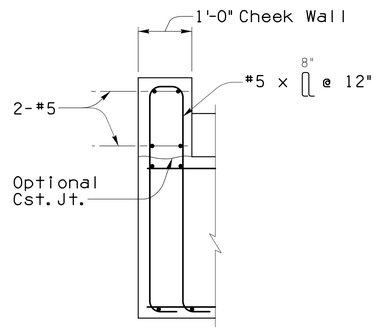
Note:

1. The Contractor shall verify the locations of all utility lines and notify the respective owners before commencing excavation.
2. See also Temporary Shoring Notes on S-1.FL1

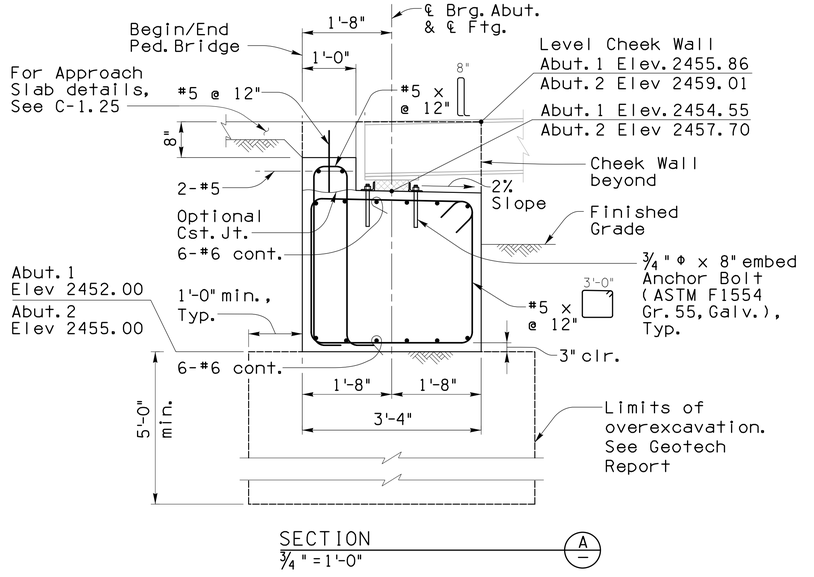


PLAN - ABUTMENT 1
⅜" = 1'-0"

PLAN - ABUTMENT 2
⅜" = 1'-0"



SECTION - CHEEK WALL
¾" = 1'-0"



SECTION
¾" = 1'-0"

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NO.	DATE	REVISION	BY	CHKD.	APPR.

Preliminary 100% Review

Not for Construction or Recording

June 2018

Foundation Plan & Details - 1 of 2

S-2.08 of S-2.38

Structural Grace, Inc
1430 E. Fort Lowell Rd., Ste. 200
Tucson, AZ 85719 (520) 320-0156

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE

307 OF 474

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CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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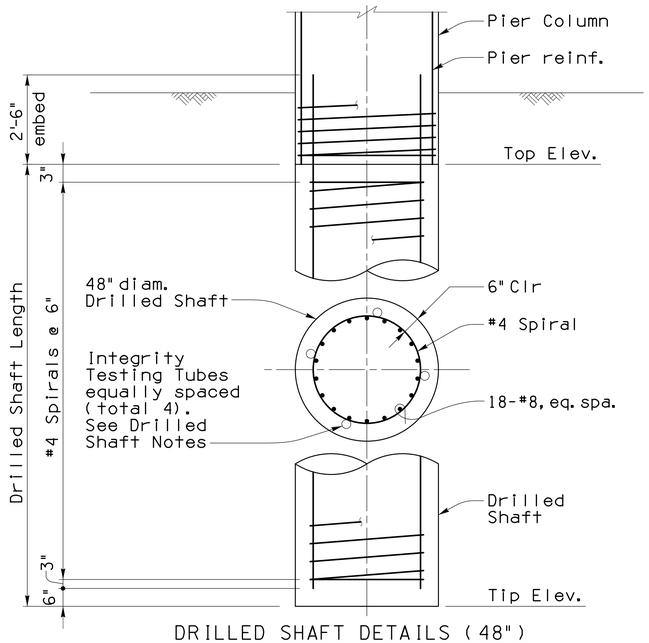
TABLE 1 - DRILLED SHAFT SCHEDULE						
Drilled Shaft	Drilled Shaft Diam. (in.)	Drilled Shaft Length (ft.)	Top Elev. (ft.)	Tip Elev. (ft.)	Factored Vert. Force (kips)	
					Load	Resistance
A	48	25	2452.00	2427.00	227	375
B	48	25	2452.00	2427.00	227	375
C	48	25	2452.00	2427.00	207	375
D	48	30	2451.00	2421.00	285	450
E	48	25	2451.00	2426.00	207	375
F	48	25	2451.00	2426.00	227	375
G	48	25	2451.00	2426.00	227	375
H	60	30	2450.00	2420.00	300	650
I	60	30	2454.00	2424.00	300	650
J	48	25	2454.00	2429.00	227	375
K	48	30	2449.00	2419.00	227	450
L*	48	30	2454.00	2424.00	227	450
M*	48	30	2454.00	2424.00	227	450

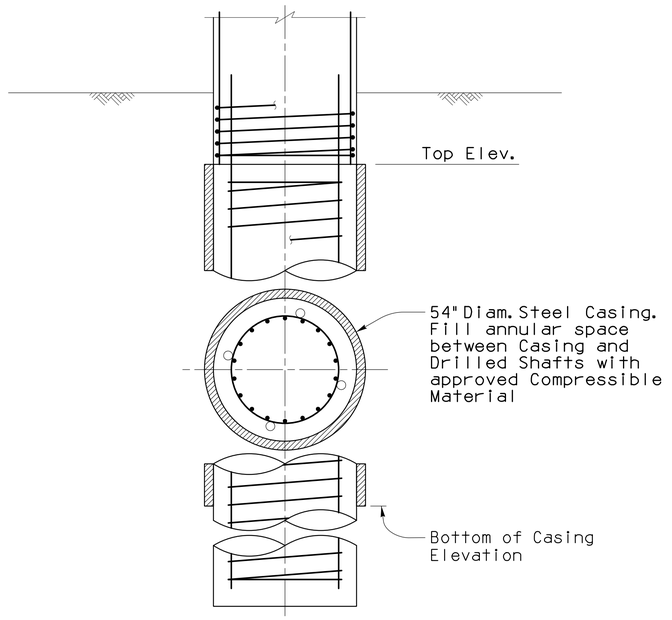
* See Table 2

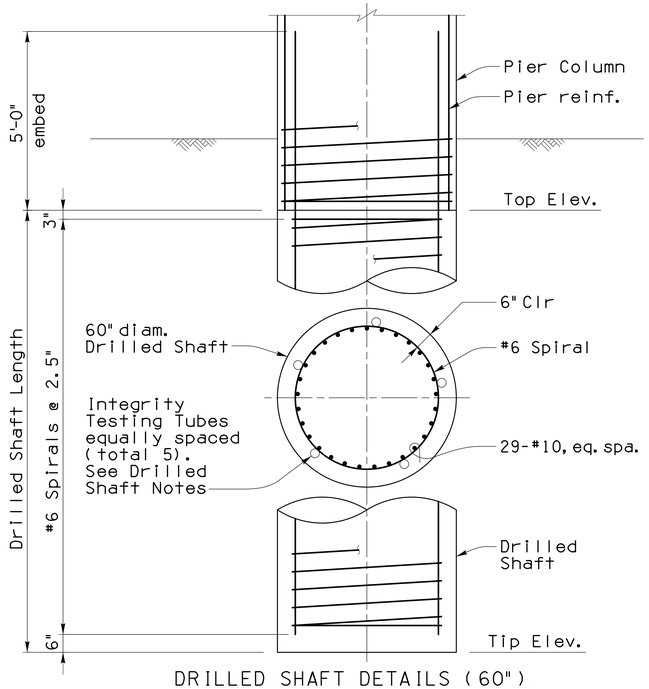
DRILLED SHAFT NOTES

1. The Geotechnical and Foundation Designs are based on Final Geotechnical Report, dated 8/4/2018, prepared by SCE Engineering, and Addendum #1 dated 1/24/2018.
2. The Installation of the Drilled Shaft Foundations shall be in accordance with Section 609 of the Standard Specifications & Special Provisions.
3. The reinforcing cage shall be placed in the drilled shaft within one hour after the drilled shaft bottom has been cleaned. The drilled shaft bottom shall be inspected immediately prior to lifting the cage and re-cleaned if deemed necessary by the Engineer.
4. Placement of drilled shaft concrete shall commence within 1 hour after placement of the reinforcing cage.
5. Construction joints not shown on the project plans will require the approval of the Engineer prior to construction.
6. A temporary surface casing is recommended to aid in the alignment of drilled shafts, to ensure personal safety and to prevent sloughing or raveling. A minimum 15-foot-long temporary surface casing extending at least 2 feet above the ground surface is recommended. The diameter of the surface casing shall not be more than 12 inches larger than the nominal diameter of the shaft.
7. For integrity testing, inspection tube quantity, size, type, and detail shall be per Section 609 of the Standard Specifications & Special Provisions.
8. Tubes for integrity testing of drilled shafts shall be placed as shown from 4'-0" above shaft to within 6" of bottom shaft. Tubes to have threaded cap at top end and bottom end and be securely attached to alternate ties (do not attach to vertical reinforcing). See Standard Specifications & Project Special Provisions.
9. The grouting of the test tubes, after integrity testing, shall be done only after receiving Engineer approval.
10. Provide 1.5 extra turns of spiral bar at each end of the spiral unit where applicable.
11. For additional construction considerations for drilled shaft, see Final Geotechnical Report.
12. Splicing of vertical reinforcement shall only be allowed if approved by the Engineer.



DRILLED SHAFT DETAILS (48")
1/2" = 1'-0"





DRILLED SHAFT DETAILS (60")
1/2" = 1'-0"

TABLE 2 BOTTOM OF CASING ELEV.	
Drilled Shaft	Bottom of Casing Elev (ft.)
L[1]	2449.00
M[2]	2449.40

Notes:

1. Bottom of casing elevation is equal to adjacent multi-use path elevation. If change in multi-use path elevation occurs, notify the Engineer.
2. Bottom of casing elevation is equal to adjacent channel elevation. If changes in channel elevation occurs, notify the Engineer.

DRILLED SHAFT CASING DETAILS (FOR D.S. K, L & M)
1/2" = 1'-0"

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Foundation Plan & Details - 2 of 2

S-2.09 of S-2.38

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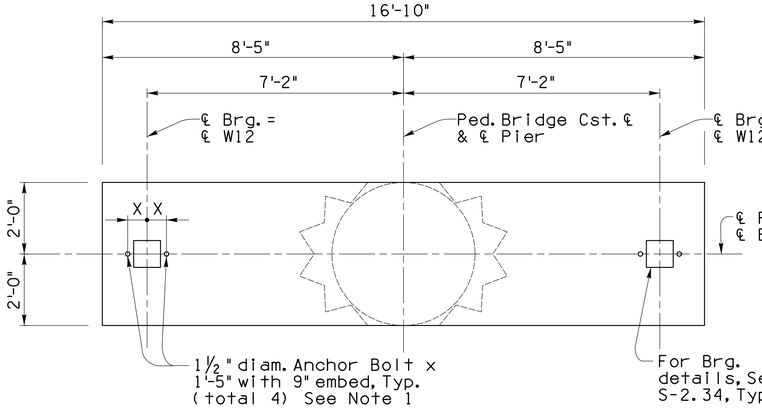
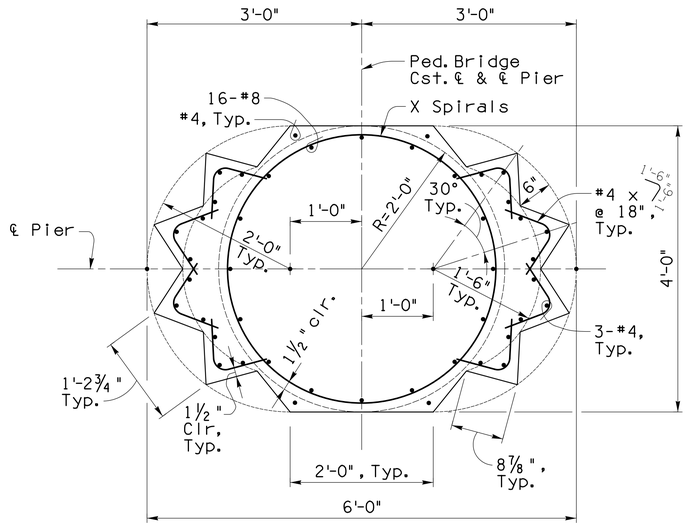
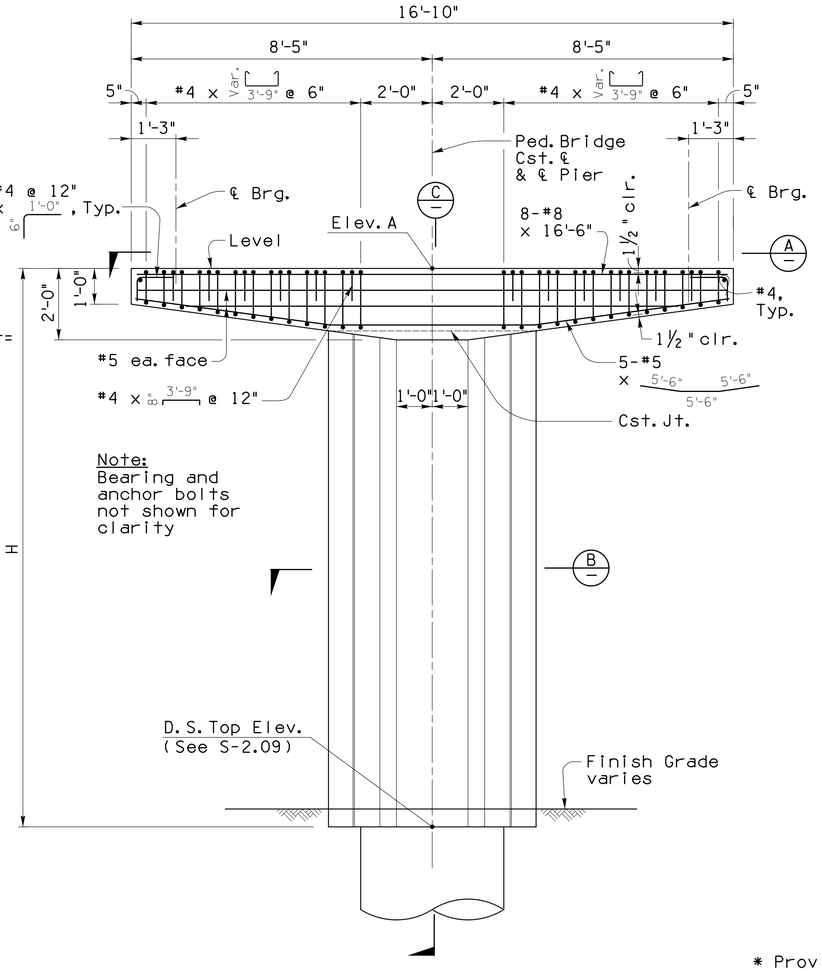


PIER	A	B	F	G	J	K	L	M
X	8"	8"	6½"	6½"	6½"	6½"	6½"	8"

PLAN - PIERS A, B, F, G, J, K, L, M (A)
½" = 1'-0"

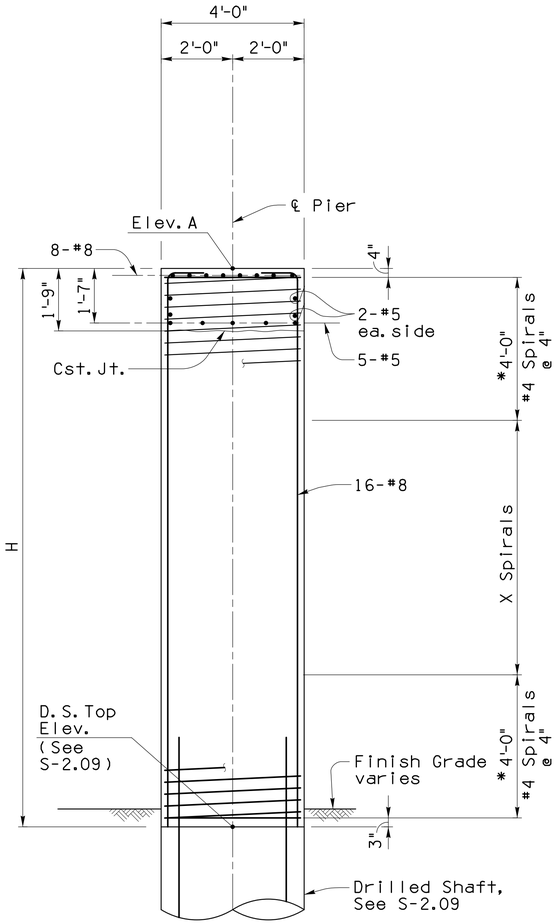


SECTION (B) (B/212)
1" = 1'-0"



ELEVATION - PIERS A, B, F, G, J, K, L, M
½" = 1'-0"

PIER SCHEDULE			
PIER	H	ELEV. A	X SPIRALS
A	5.16	2457.16	#4 @ 4"
B	7.86	2459.86	#4 @ 4"
F	14.06	2465.06	#4 @ 6"
G	16.76	2467.76	#4 @ 6"
J	14.41	2468.41	#4 @ 6"
K	16.71	2465.71	#4 @ 6"
L	9.01	2463.01	#4 @ 4"
M	6.30	2460.30	#4 @ 4"



* Provide 1.5 extra turns of spiral bar at each end of the spiral unit.

SECTION (C)
½" = 1'-0"

Note:
1. Anchor bolts shall be L-shaped and conform to the requirements of ASTM F1554, Grade 55. Galvanized per ASTM F2329.

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Pier Plan & Elev. - 1 of 3 S-2.10 of S-2.38

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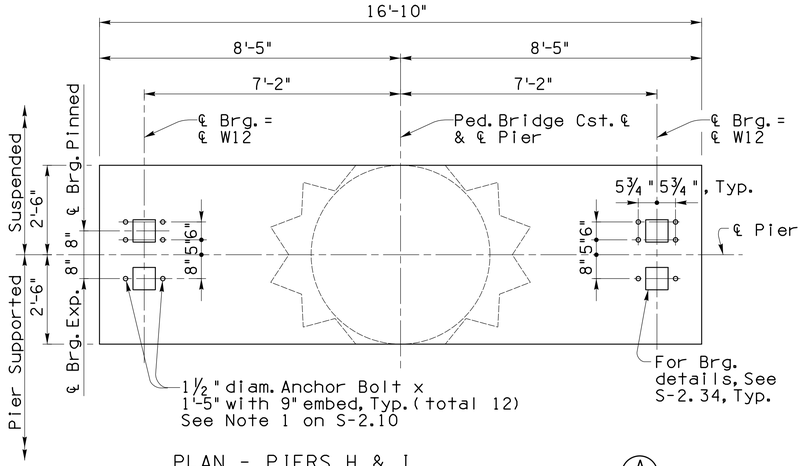
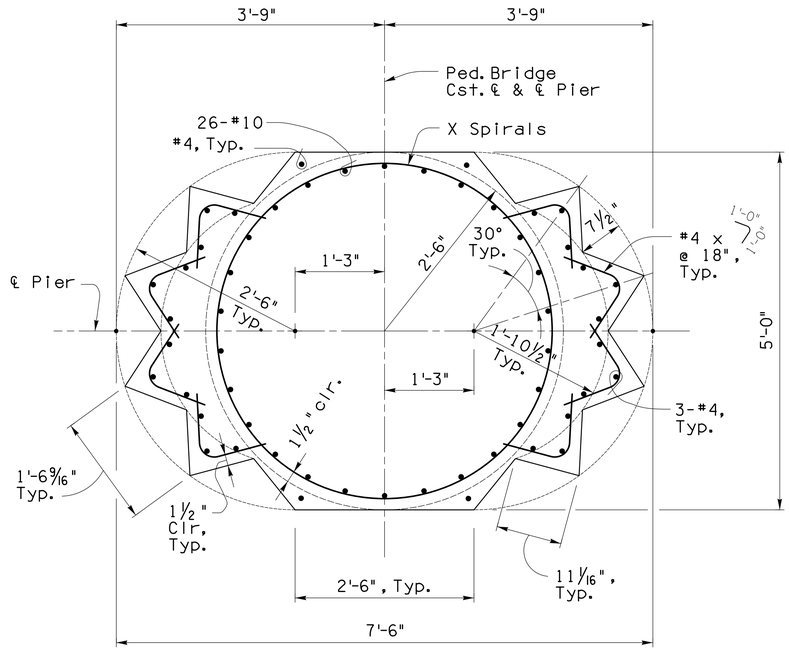
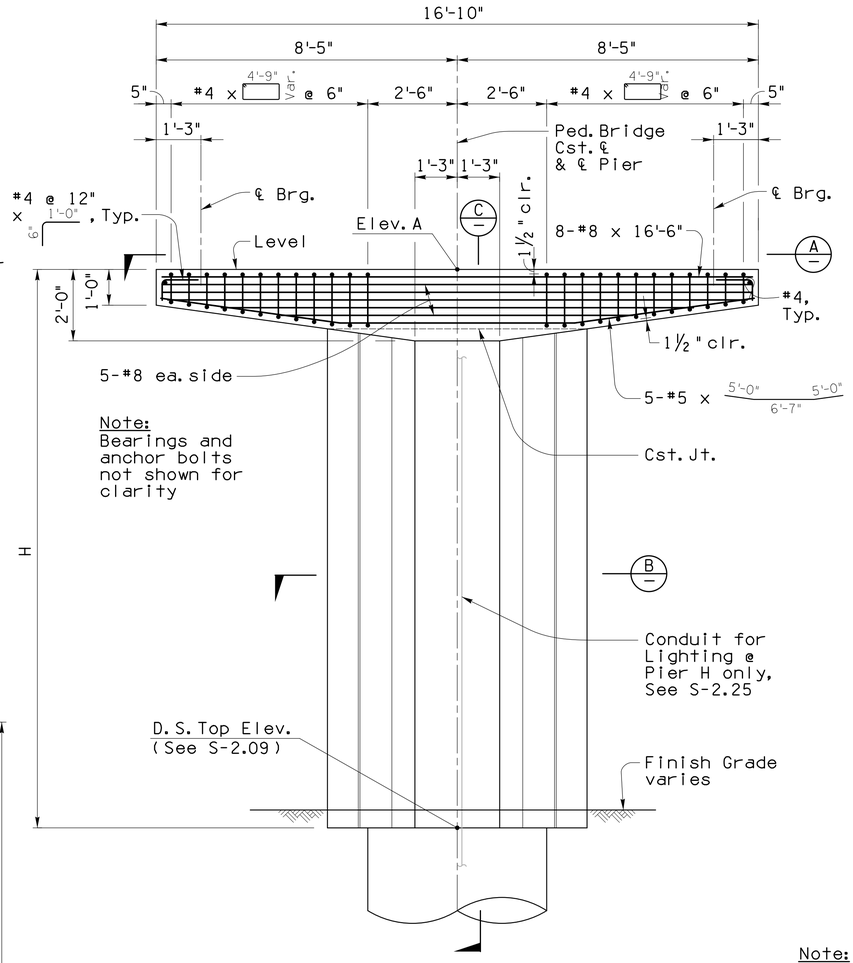


PLAN - PIERS H & I
½" = 1'-0"

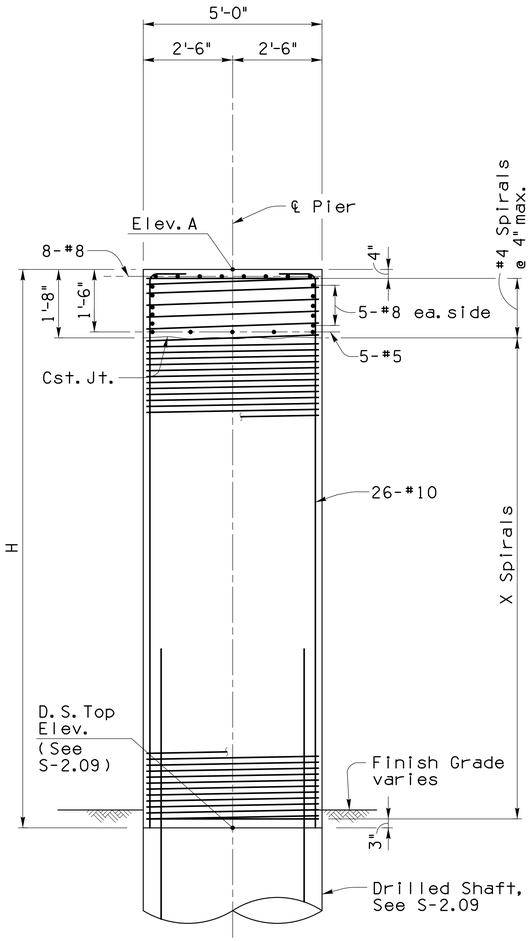


SECTION
1" = 1'-0"



ELEVATION - PIERS H & I
½" = 1'-0"

PIER SCHEDULE			
PIER	H	ELEV. A	X SPIRALS
H	20.50	2470.50	#6 @ 2"
I	17.14	2471.14	#6 @ 2"



Note:
Provide 1.5 extra turns of spiral bar at each end of the spiral unit.

SECTION
½" = 1'-0"

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Pier Plan & Elev. - 2 of 3 S-2.11 of S-2.38

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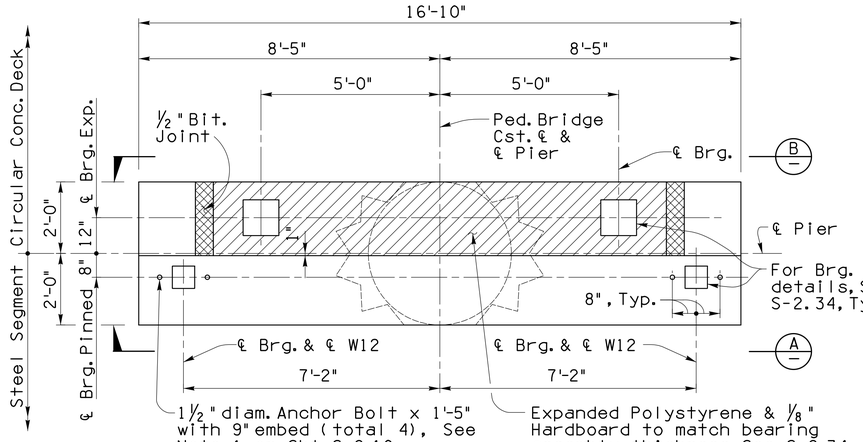
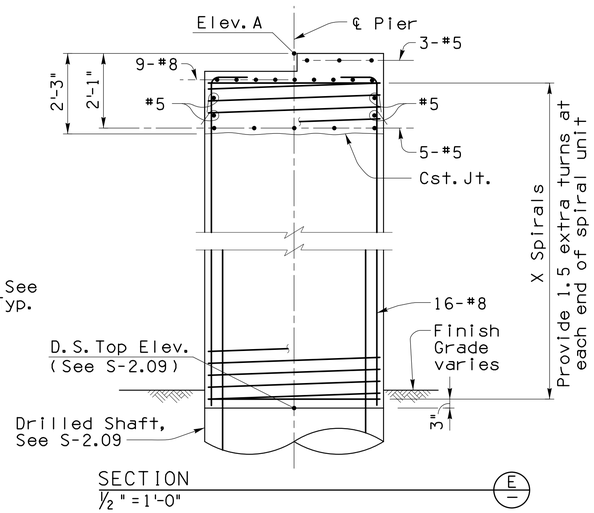
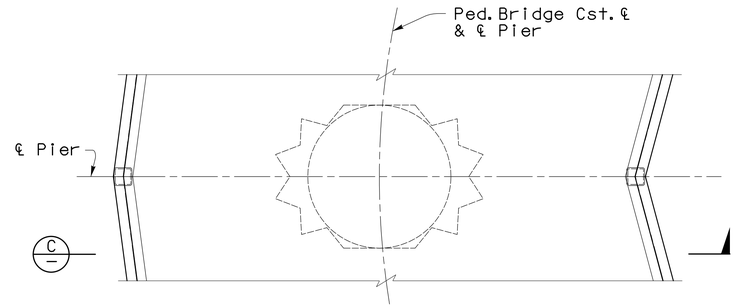


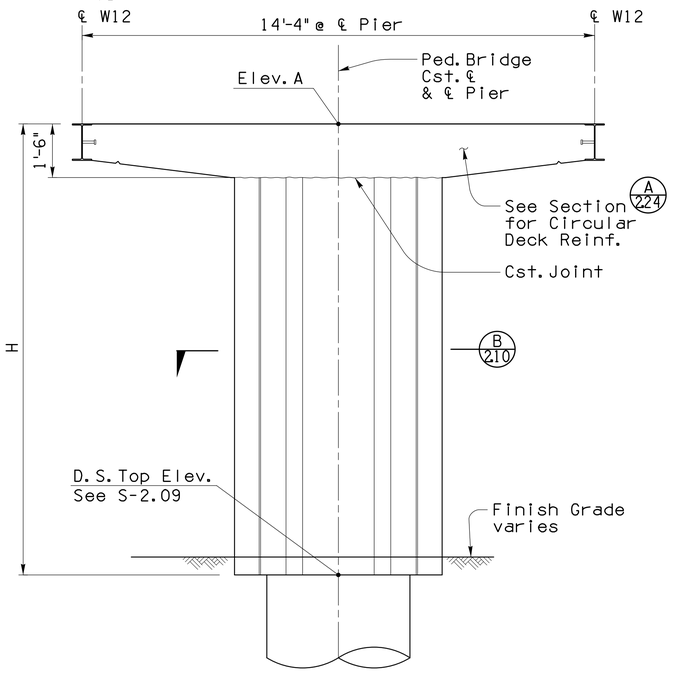
PLAN - PIERS C & E
½" = 1'-0"



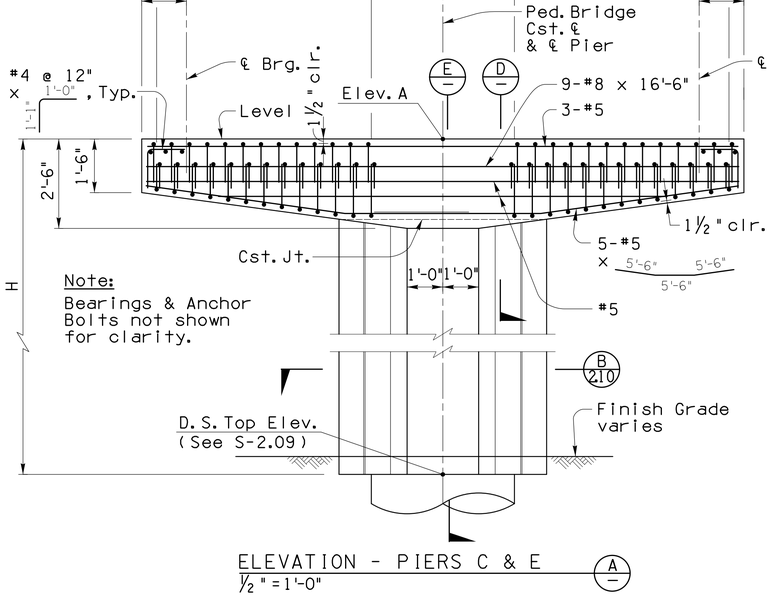
SECTION
½" = 1'-0"



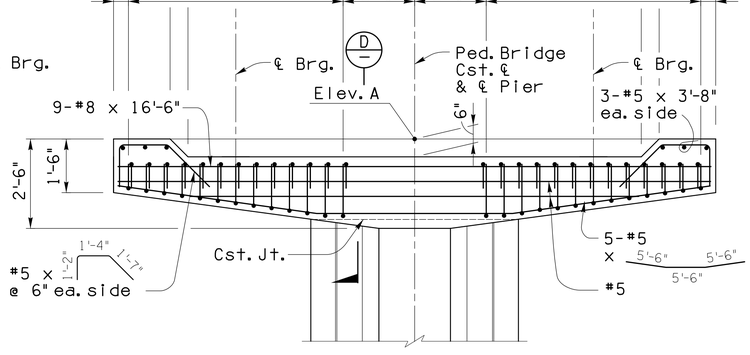
PLAN - PIER D
½" = 1'-0"



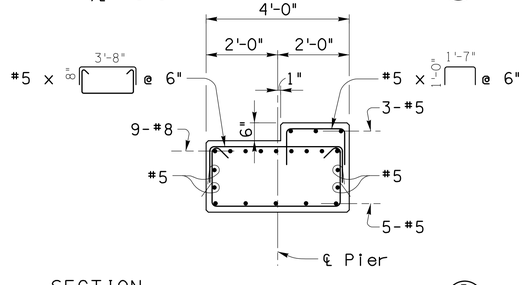
ELEVATION - PIER D
½" = 1'-0"



ELEVATION - PIERS C & E
½" = 1'-0"



ELEVATION - PIERS C & E
½" = 1'-0"



SECTION
½" = 1'-0"

PIER SCHEDULE			
PIER	H	ELEV. A	X SPIRALS
C	10.64	2462.64	#4 @ 4"
D	12.96	2463.96	#4 @ 4"
E	11.65	2462.65	#4 @ 4"

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Pier Plan & Elev. - 3 of 3 S-2.12 of S-2.38

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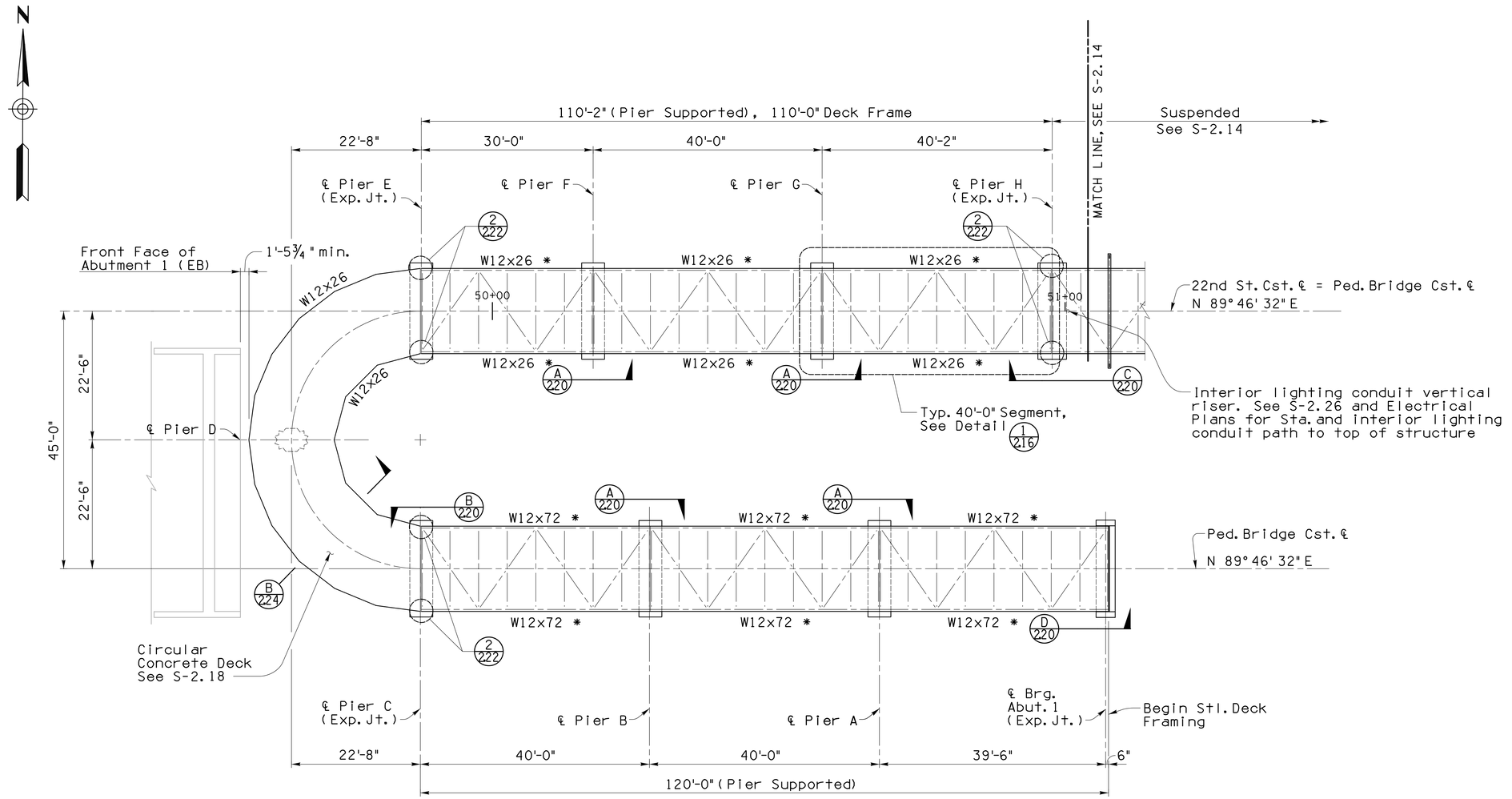

PARTIAL DECK FRAMING PLAN (PIER SUPPORTED RAMP, WEST END)
1" = 10'-0"

* Fracture Critical Members (FCM). Refer also to Typical Deck Segment Framing - Plan & Elevation for location of other Fracture Critical Members.

Deck Framing Plan - 1 of 3 S-2.13 of S-2.38

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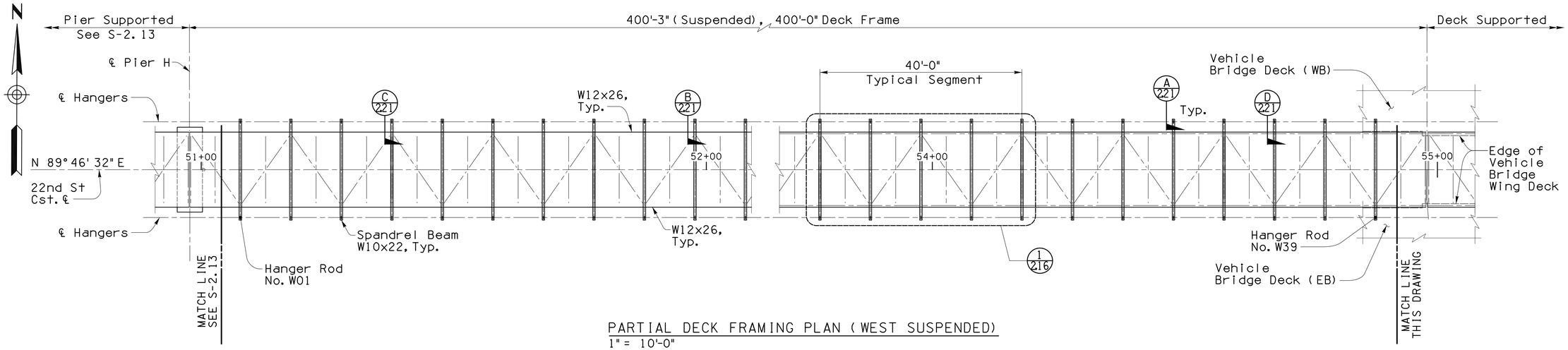
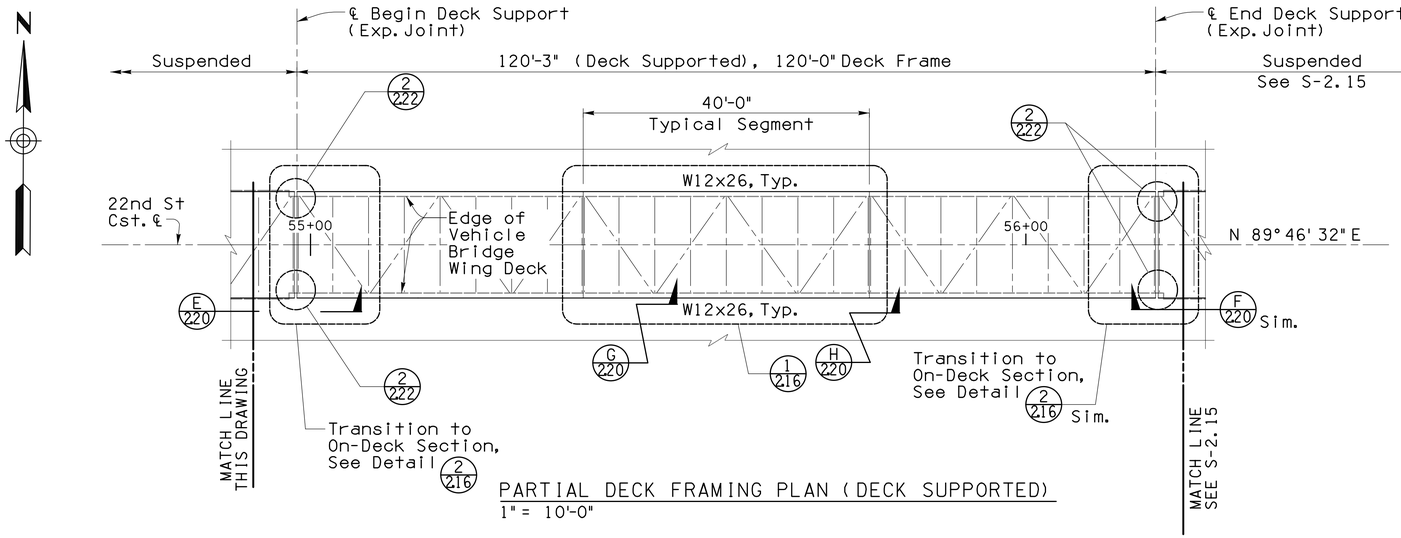


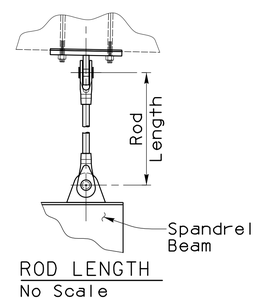
PARTIAL DECK FRAMING PLAN (WEST SUSPENDED)
1" = 10'-0"



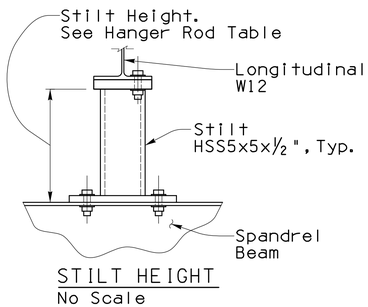
PARTIAL DECK FRAMING PLAN (DECK SUPPORTED)
1" = 10'-0"

HANGER ROD TABLE (Each station requires a matched pair of rods)

Rod No.	Sta.	Length (Ft.)	Rod No.	Sta.	Length (Ft.)	Rod No.	Sta.	Length (Ft.)	Rod No.	Sta.	Length (Ft.)	Stilt Ht. (Ft.)
W01	51+07.74	15.43	W11	52+07.74	11.93	W21	53+07.74	8.32	W31	54+07.74	3.31	-
W02	51+17.74	14.99	W12	52+17.74	11.42	W22	53+17.74	7.72	W32	54+17.74	2.64	-
W03	51+27.74	14.54	W13	52+27.74	11.52	W23	53+27.74	7.12	W33	54+27.74	2.59	-
W04	51+37.74	14.08	W14	52+37.74	10.99	W24	53+37.74	6.51	W34	54+37.74	2.50	0.59
W05	51+47.74	14.25	W15	52+47.74	10.45	W25	53+47.74	6.53	W35	54+47.74	2.50	1.28
W06	51+57.74	13.78	W16	52+57.74	9.90	W26	53+57.74	5.91	W36	54+57.74	2.50	1.98
W07	51+67.74	13.30	W17	52+67.74	9.98	W27	53+67.74	5.27	W37	54+67.74	2.50	2.06
W08	51+77.74	12.81	W18	52+77.74	9.42	W28	53+77.74	4.64	W38	54+77.74	2.50	2.77
W09	51+87.74	12.95	W19	52+87.74	8.85	W29	53+87.74	4.62	W39	54+87.74	2.50	3.49
W10	51+97.74	12.44	W20	52+97.74	8.27	W30	53+97.74	3.97				



ROD LENGTH
No Scale



STILT HEIGHT
No Scale

Two working days before you dig,
CALL FOR THE BLUE STAKES
1-800-STAKE-IT
Blue Stake Center
CALL COLLECT

Deck Framing Plan - 2 of 3 S-2.14 of S-2.38

Structural Grace, Inc
1430 E. Fort Lowell Rd., Ste. 200
Tucson, AZ 85719 (520) 320-0156

Preliminary
100%
Review

Not for
Construction
or Recording

June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
PEDESTRIAN BRIDGE

313 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY LS	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.

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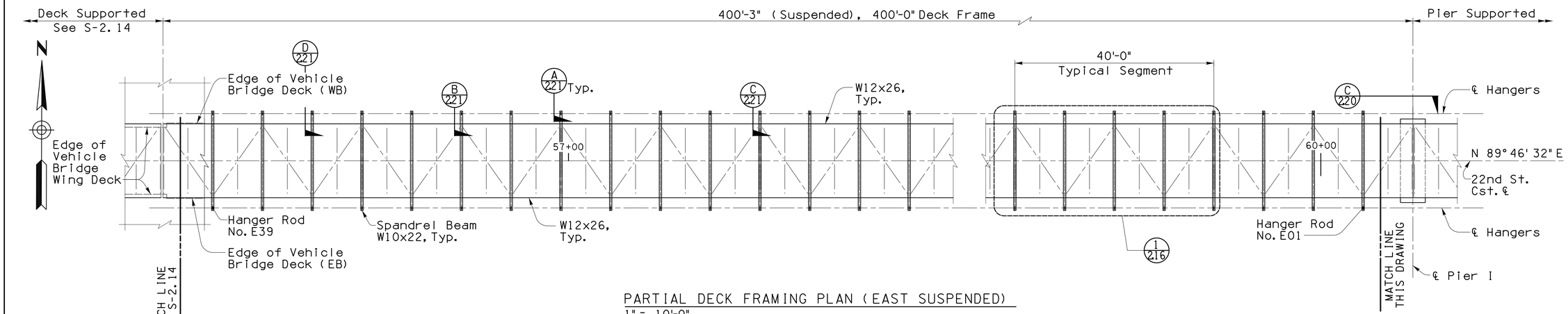
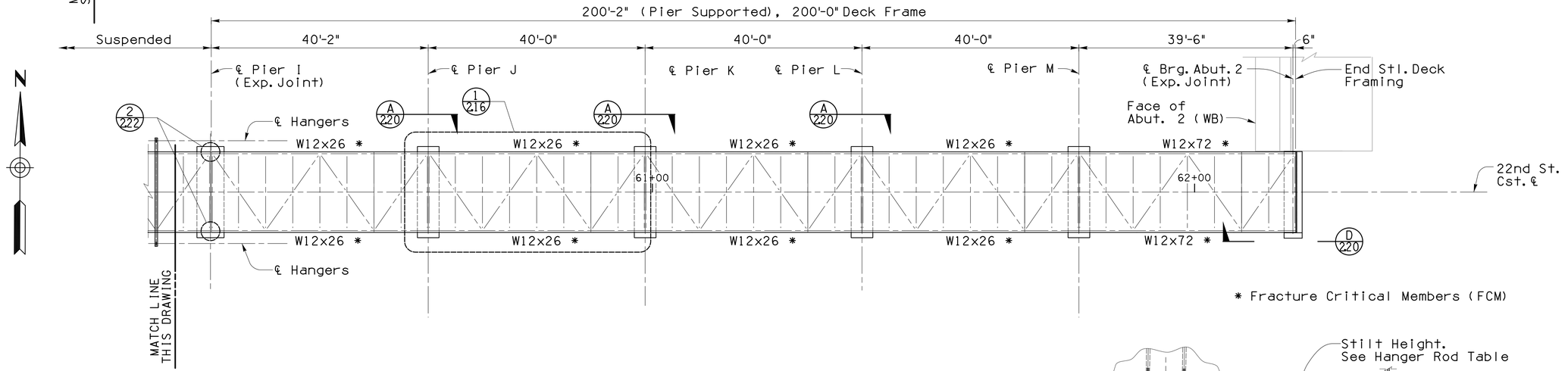
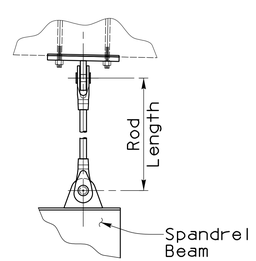


PARTIAL DECK FRAMING PLAN (EAST SUSPENDED)
1" = 10'-0"

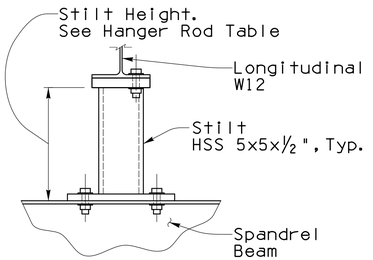


* Fracture Critical Members (FCM)

PARTIAL DECK FRAMING PLAN (PIER SUPPORTED RAMP EAST END)
1" = 10'-0"



ROD LENGTH
No Scale



STILT HEIGHT
No Scale

HANGER ROD TABLE (Each station requires a matched pair of rods)

Rod No.	Sta.	Length (Ft.)	Rod No.	Sta.	Length (Ft.)	Rod No.	Sta.	Length (Ft.)	Rod No.	Sta.	Length (Ft.)	Stilt Ht. (Ft.)
E01	60+08.47	19.63	E11	59+08.47	15.06	E21	58+08.47	10.36	E31	57+08.47	4.28	-
E02	59+98.47	19.08	E12	58+98.47	14.43	E22	57+98.47	9.66	E32	56+98.47	3.50	-
E03	59+88.47	18.52	E13	58+88.47	14.44	E23	57+88.47	8.95	E33	56+88.47	3.35	-
E04	59+78.47	17.96	E14	58+78.47	13.79	E24	57+78.47	8.24	E34	56+78.47	2.56	-
E05	59+68.47	18.02	E15	58+68.47	13.15	E25	57+68.47	8.15	E35	56+68.47	2.50	0.74
E06	59+58.47	17.44	E16	58+58.47	12.49	E26	57+58.47	7.42	E36	56+58.47	2.50	1.55
E07	59+48.47	16.85	E17	58+48.47	12.46	E27	57+48.47	6.68	E37	56+48.47	2.50	1.73
E08	59+38.47	16.26	E18	58+38.47	11.79	E28	57+38.47	5.93	E38	56+38.47	2.50	2.55
E09	59+28.47	16.29	E19	58+28.47	11.11	E29	57+28.47	5.81	E39	56+28.47	2.50	3.38
E10	59+18.47	15.69	E20	58+18.47	10.43	E30	57+18.47	5.05				

NO.	DATE	REVISION	BY	CHKD.	APPR.

Deck Framing Plan - 3 of 3 S-2.15 of S-2.38

Structural Grace, Inc
1430 E. Fort Lowell Rd., Ste. 200
Tucson, AZ 85719 (520) 320-0156

Preliminary 100% Review

Not for Construction or Recording

June 2018

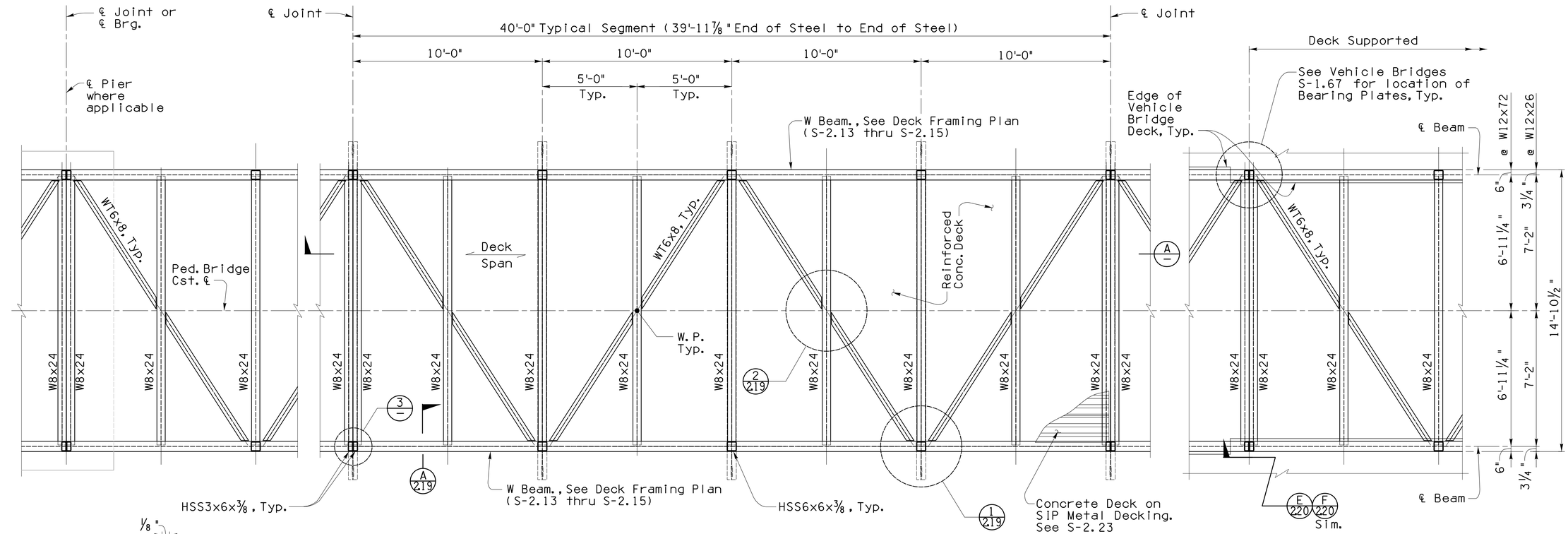
DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE

314 OF 474

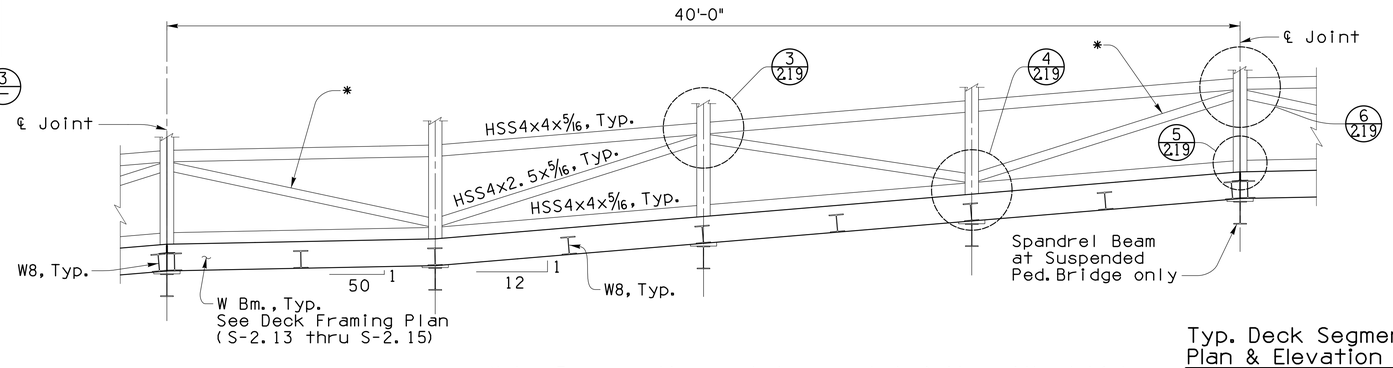
CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY LS	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. I-2010-012



PLAN - TYP. DECK SEGMENT FRAMING

⅜" = 1'-0"



ELEVATION - TYP. DECK SEGMENT FRAMING (A —)

⅜" = 1'-0"

Note: Frame section on deck supported, similar without kink

* Fracture Critical Members (FCM) for Spans 1, 2, 3, 6, 7, 8, 10, 11, 12, 13 & 14 only. Refer also to Deck Framing Plans 1 thru 3 for location of other Fracture Critical Members.

Typ. Deck Segment Framing - Plan & Elevation S-2.16 of S-2.38

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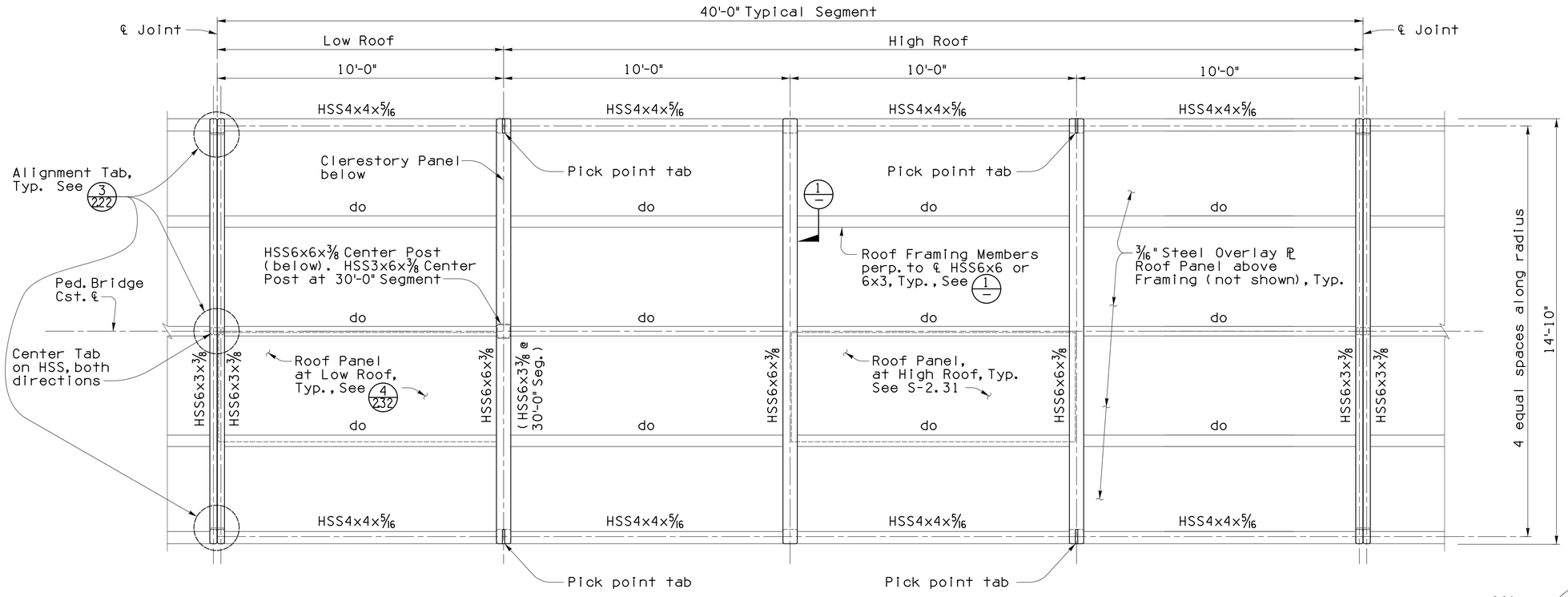
DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE

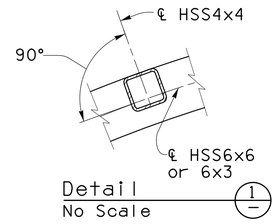
CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY LS	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

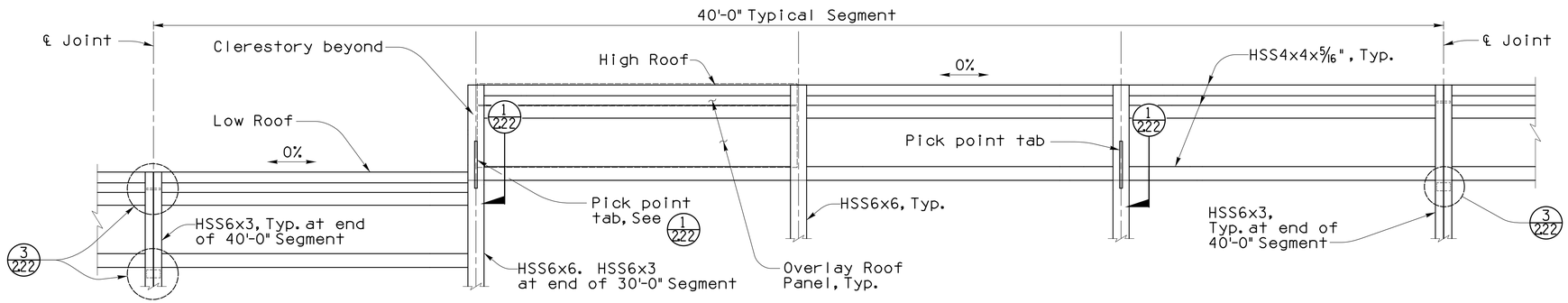
315 OF 474



PLAN - TYP. ROOF SEGMENT FRAMING
1/2" = 1'-0"



Detail 1/—
No Scale



ELEVATION - TYP. ROOF SEGMENT FRAMING
1/2" = 1'-0"

Note: Roof framing for typical deck supported segments is similar without clerestory/low roof

Typ. Roof Segment Framing - Plan & Elevation S-2.17 of S-2.38

Structural Grace, Inc
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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION
22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE
316 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY LS	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.

Two working days before you dig, CALL FOR THE BLUE STAKES 1-800-STAKE-IT Blue Stake Center CALL COLLECT

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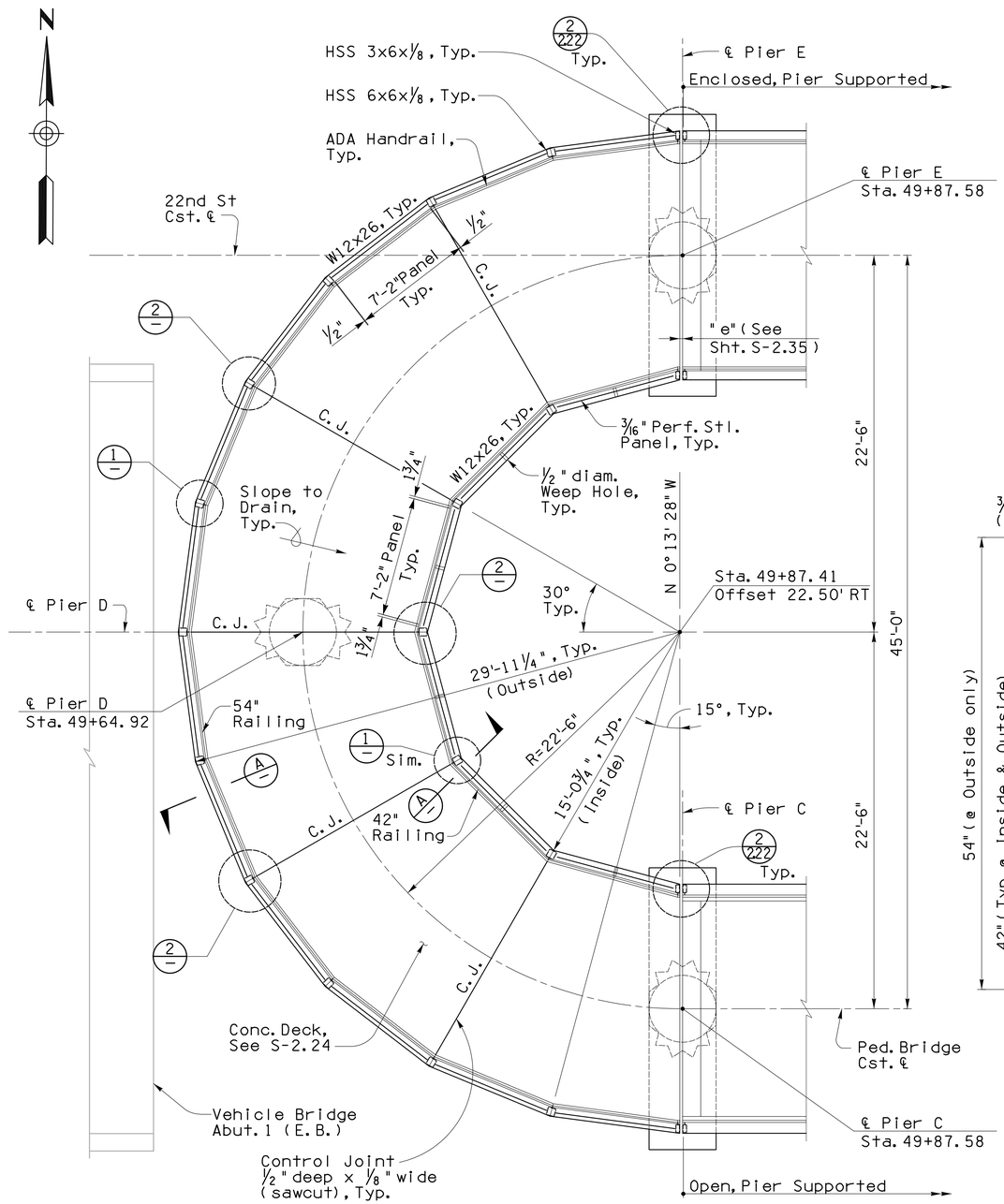
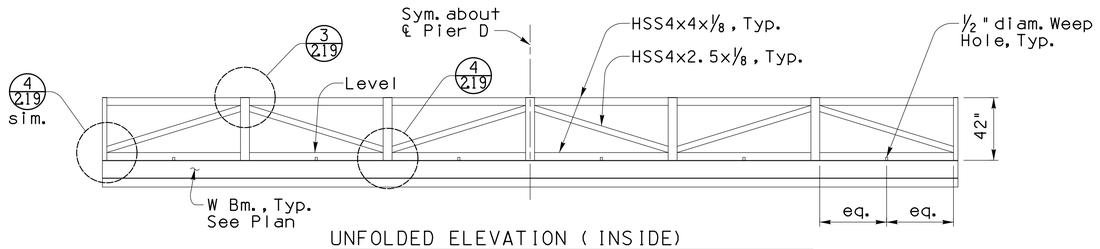
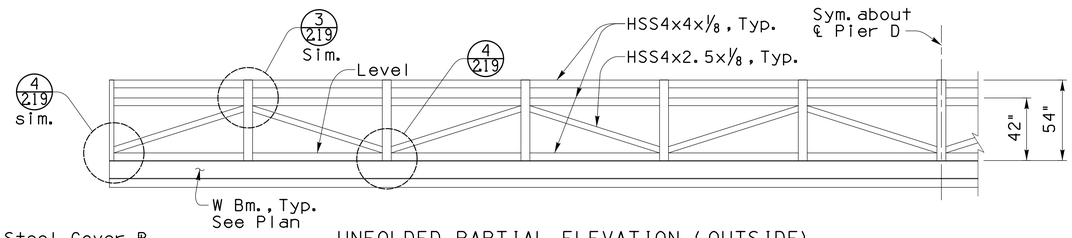


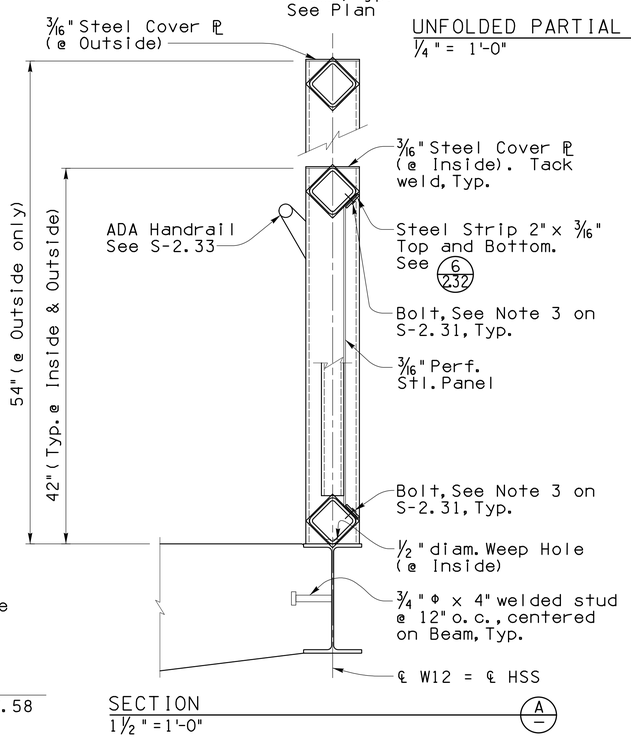
PLAN - CIRCULAR CONCRETE DECK
¼" = 1'-0"



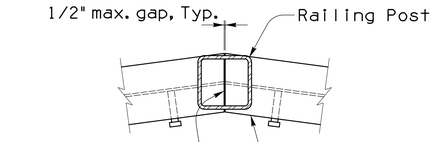
UNFOLDED ELEVATION (INSIDE)
¼" = 1'-0"



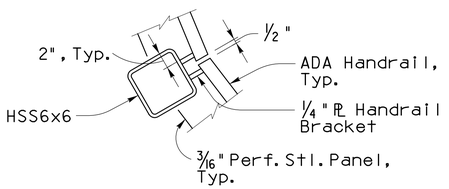
UNFOLDED PARTIAL ELEVATION (OUTSIDE)
¼" = 1'-0"



SECTION
1½" = 1'-0"



DETAIL - CONC. DECK EDGE BM. 1/—
No Scale



DETAIL - HANDRAIL EXPANSION 2/—
1½" = 1'-0" (3 Locations Only)

Two working days before you dig, CALL FOR THE BLUE STAKES
1-800-STAKE-IT
Blue Stake Center
CALL COLLECT

NO.	DATE	REVISION	BY	CHKD.	APPR.

Circular Deck
Framing Plan & Details
S-2.18 of S-2.38

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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION
22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE
317 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY LS	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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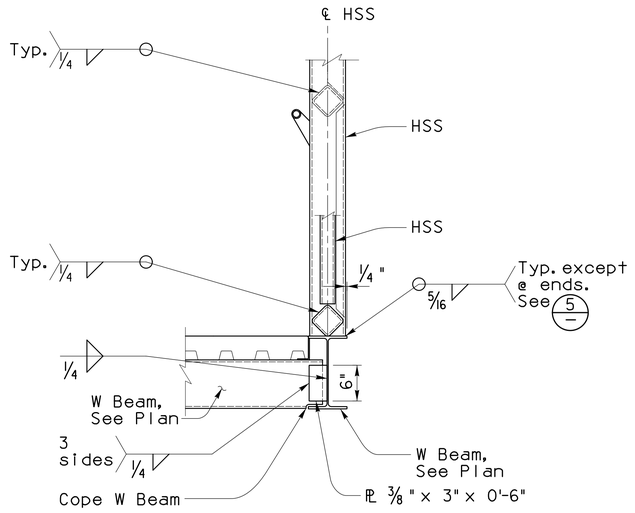
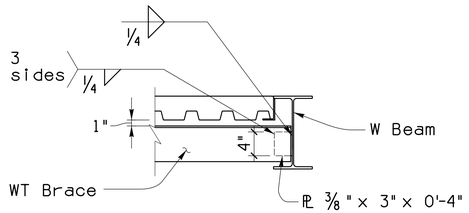
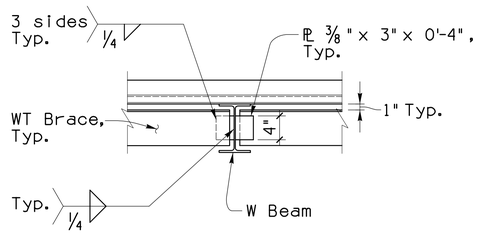


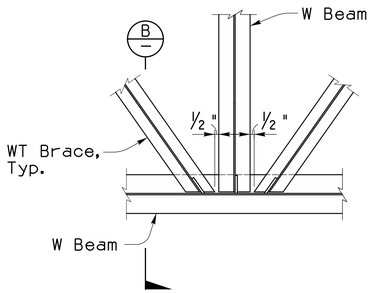
SECTION
1" = 1'-0"
A / 2.16



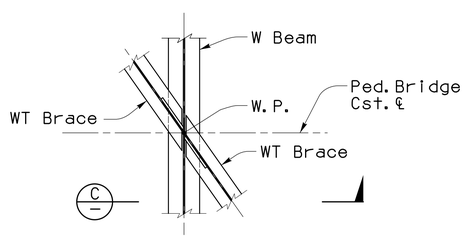
SECTION
1" = 1'-0"
B / —



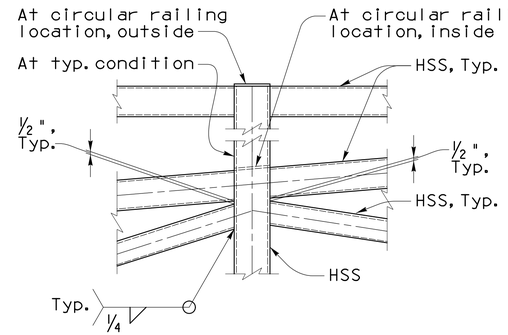
SECTION
1" = 1'-0"
C / —



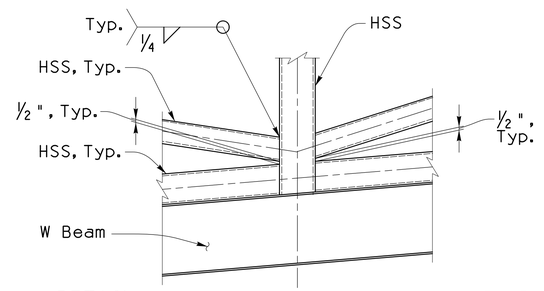
DETAIL
1" = 1'-0"
1 / 2.16



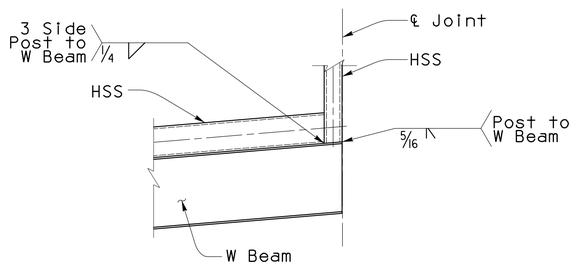
DETAIL
1" = 1'-0"
2 / 2.16



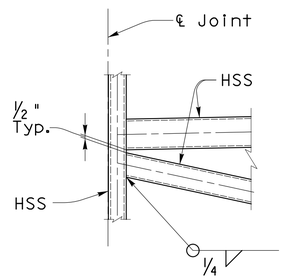
DETAIL
1" = 1'-0"
3 / 2.16 3 / 2.18



DETAIL
1" = 1'-0"
4 / 2.16 4 / 2.18



DETAIL
1" = 1'-0"
5 / — 5 / 2.16 5 / 2.18



DETAIL
1" = 1'-0"
6 / 2.16

Note:
For HSS sizes see 2.16 & 2.17.
For W Beams and WT Bracing, see S-2.13 thru S-2.15.

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Blue Stake Center
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Framing Details - 1 of 4 S-2.19 of S-2.38

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE

318 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY LS	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.

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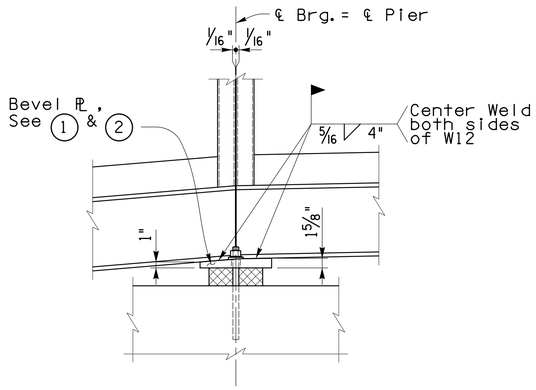
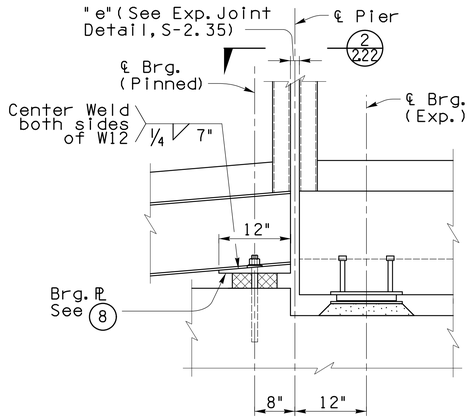


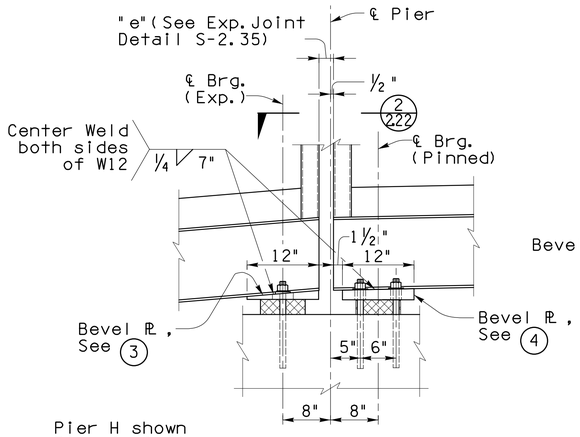
Pier F and G shown
Pier A, B, J, K, L and M similar

SECTION A 2.13 A 2.15
1" = 1'-0"



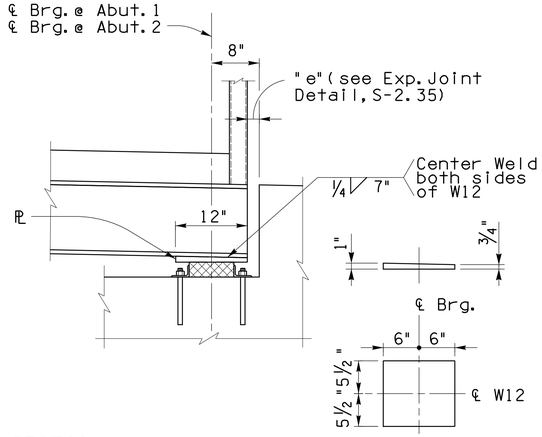
Pier C shown
Pier E similar

SECTION B 2.13
1" = 1'-0"

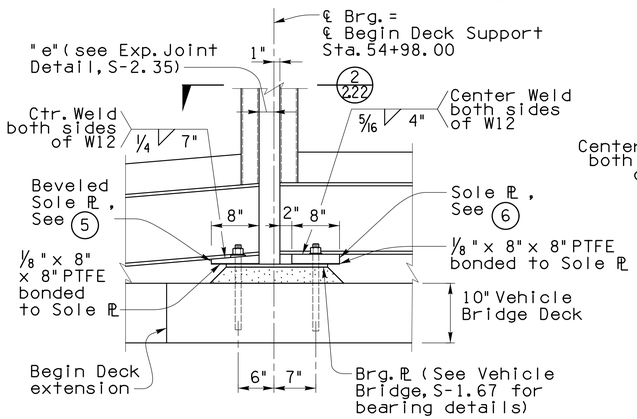


Pier H shown
Pier I similar

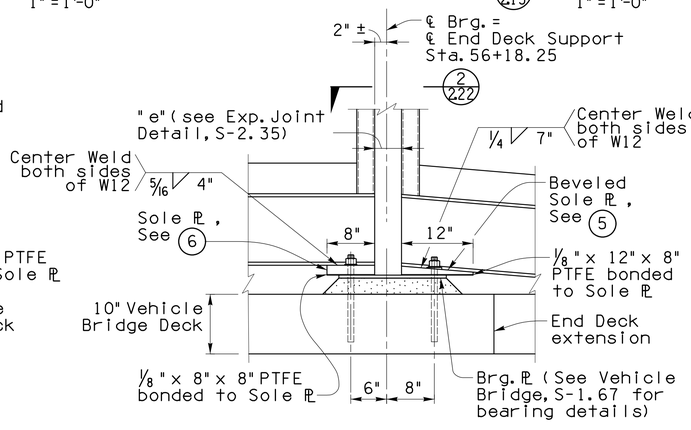
SECTION C 2.13 C 2.15
1" = 1'-0"



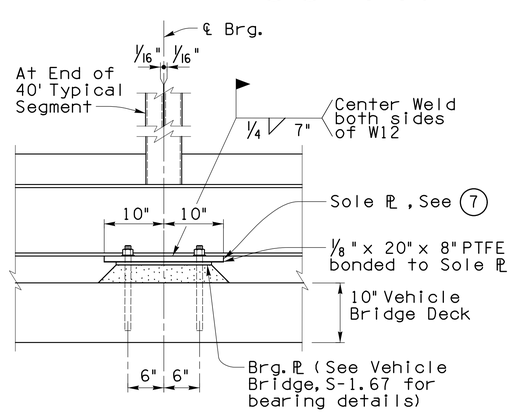
SECTION D 2.13 D 2.15
1" = 1'-0"



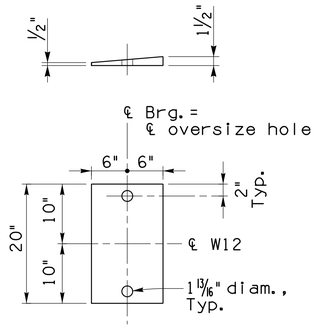
Deck Supported @ West End



Deck Supported @ East End

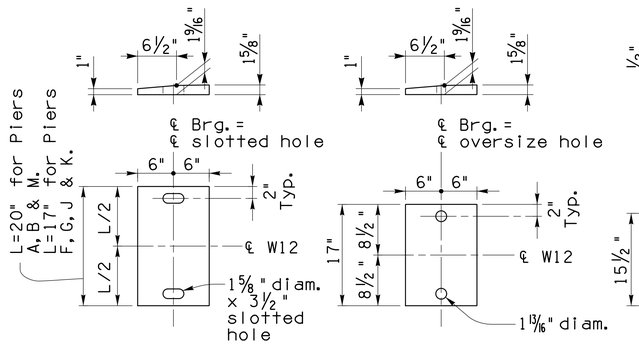


Intermediate Deck Supported
Spaced @ 10'-0" o. c.



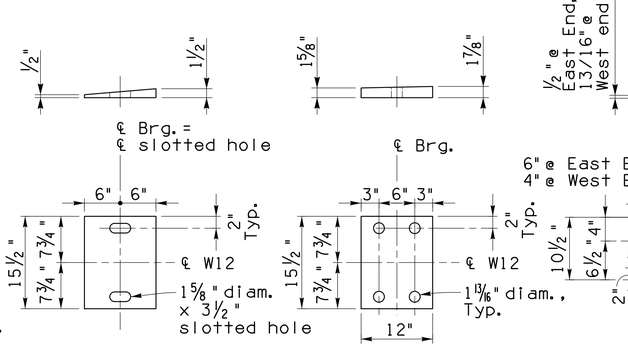
Bevel PL at Pinned Brg. 8
Pier C and E

SECTION E 2.14 E 2.16
1" = 1'-0"



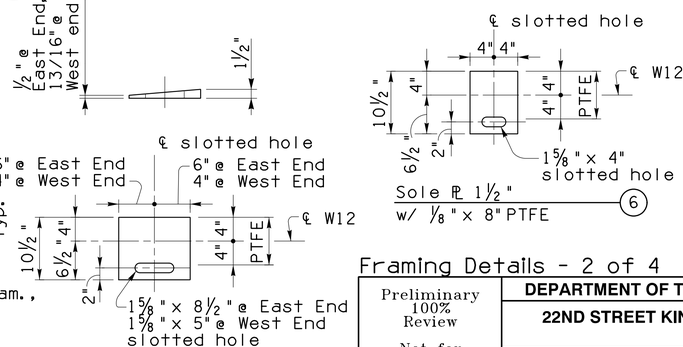
Bevel PL w/ Slotted Hole — Pier A, B, F, G, J, K and M — 1
Bevel PL w/ Oversize Hole — Pier L — 2

SECTION F 2.14 F 2.16
1" = 1'-0"



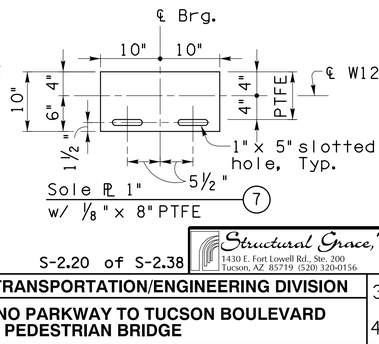
Bevel PL at Exp. Brg. — Pier H and I — 3
Bevel PL at Pinned Brg. — Pier H and I — 4

SECTION G 2.14 H 2.14
1" = 1'-0"



Beveled Sole PL w/ 1/8" x 8" PTFE — 5

Sole PL 1 1/2" w/ 1/8" x 8" PTFE — 6



Sole PL 1" w/ 1/8" x 8" PTFE — 7

Framing Details - 2 of 4 — S-2.20 of S-2.38

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION
22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE
319 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY LS	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.

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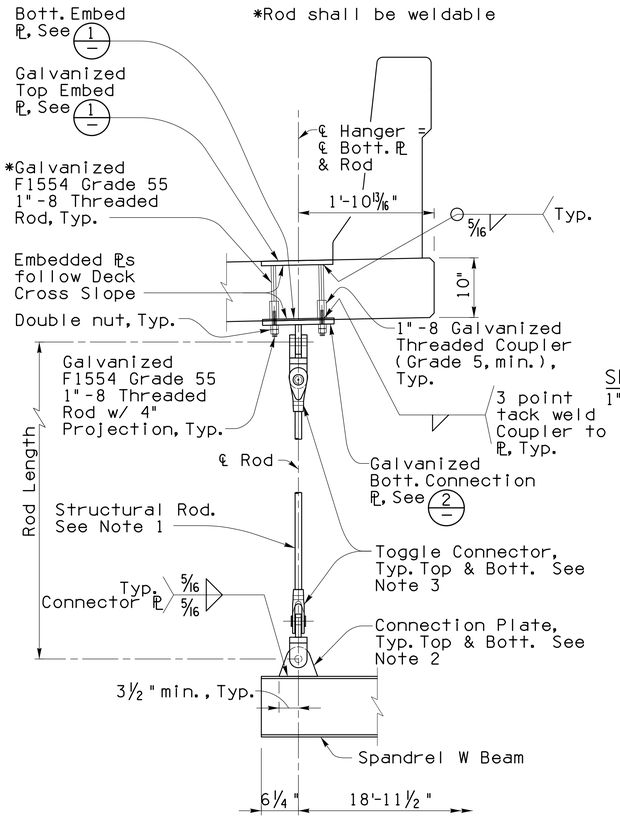
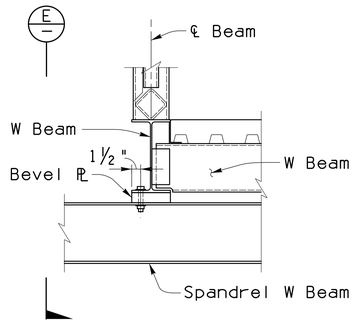
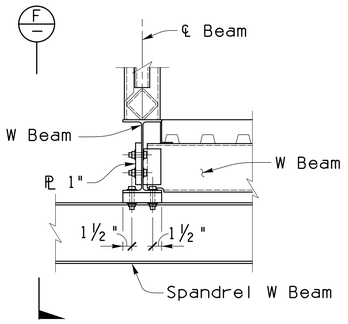


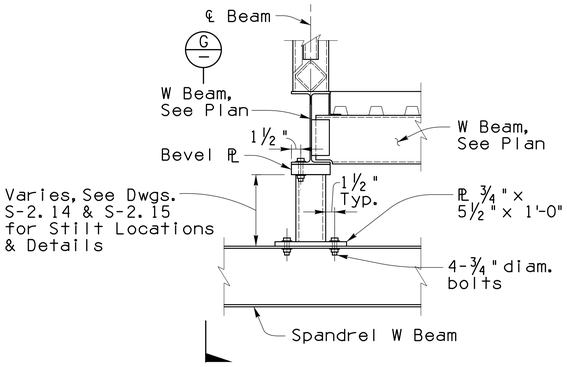
SECTION
1" = 1'-0"
A 2.14 A 2.15



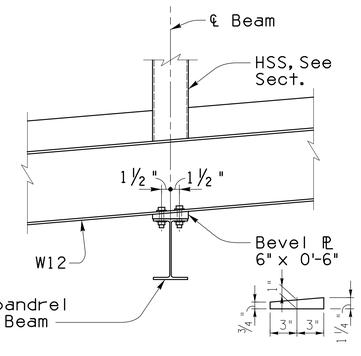
SECTION
1" = 1'-0"
B 2.14 B 2.15



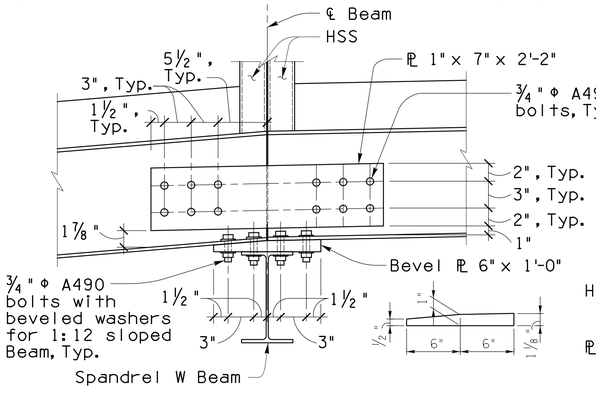
SECTION
1" = 1'-0"
C 2.14 C 2.15



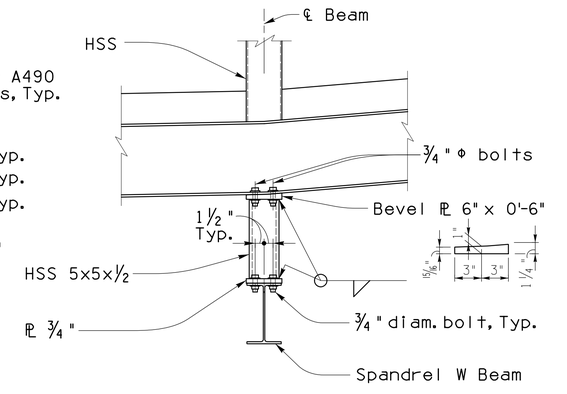
DETAIL
1" = 1'-0"
D 2.14 D 2.15



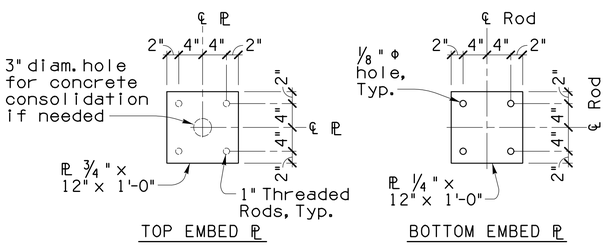
SECTION
1" = 1'-0"
E



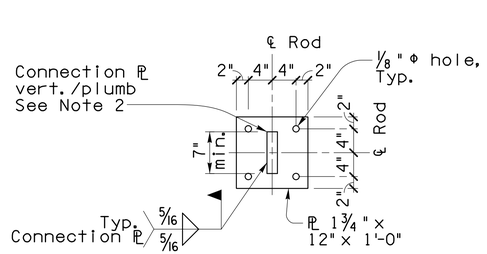
SECTION
1 1/2" = 1'-0"
F



SECTION
1" = 1'-0"
G



HANGER EMBED PLATES
1" = 1'-0"
1



BOTTOM CONNECTION PLATE
1" = 1'-0"
2

Notes:

1. Ronstan Structural Rod Part No. ARS4-CSM30 or approved equal.
2. Ronstan Connection Plate to match Rod Part No. ARS4-CSM30 or approved equal.
3. Ronstan Toggle Connector Part No. S5156-M30 or approved equal.
4. All Connector Pins, Connection Hardware and Accessories by Ronstan to match Part Nos. ARS4-CSM30 components and S5156-M30 Components or approved equal.
5. For W Beam Details, see S-2.13 thru S-2.15.
6. Galvanizing for Anchor Rods per ASTM F2329. Galvanizing for Plates per ASTM A123.

Framing Details - 3 of 4 S-2.21 of S-2.38

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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE

320 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY LS	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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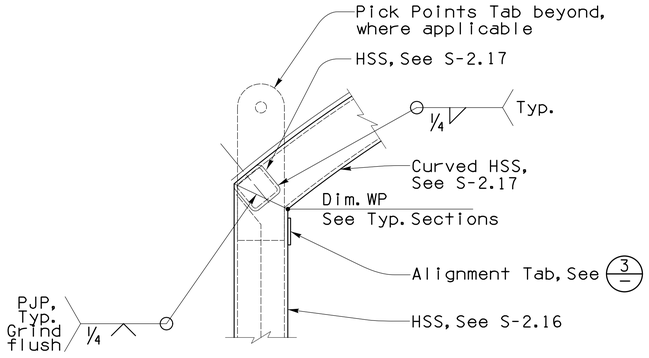
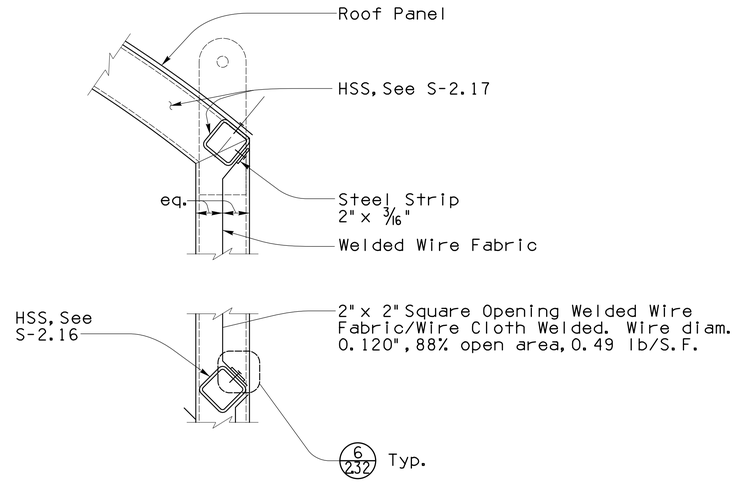
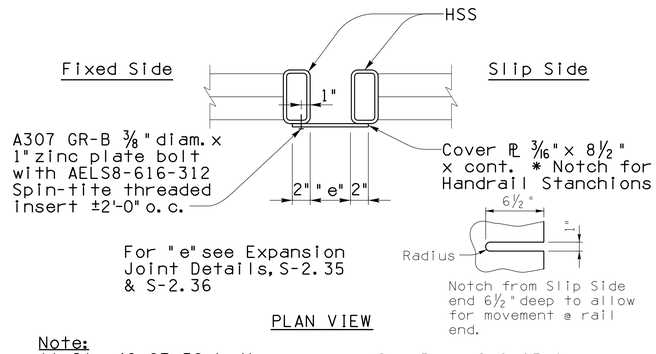


HSS TO CURVED HSS
1½" = 1'-0"



WELDED WIRE ATTACHMENT
1½" = 1'-0"

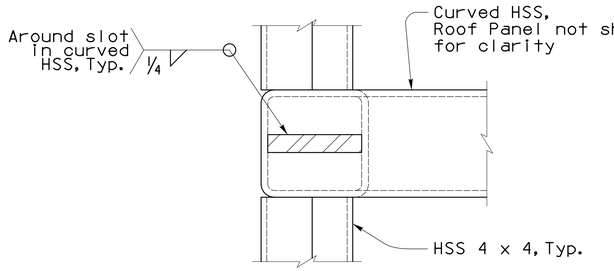


PLAN VIEW

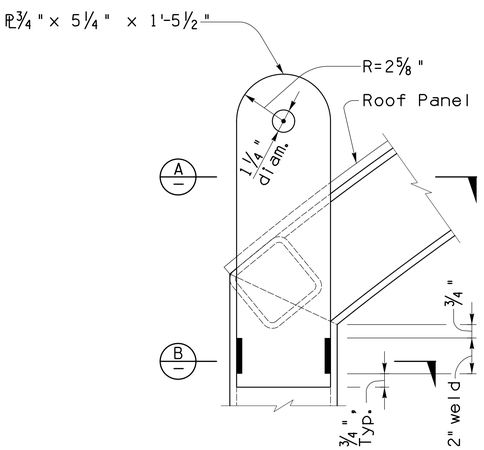
Note:
At Sta. 49+87.58, both joints at circular deck, extend Cover PL to top of railing.

*See Dwgs. S-2.05 & S-2.07 sections for limits of Cover PL

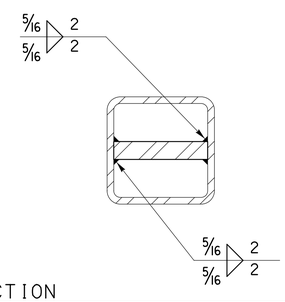
VERTICAL COVER PLATE
1½" = 1'-0"
2/— 2/2.13 2/2.14 2/2.15 2/2.18 2/2.20



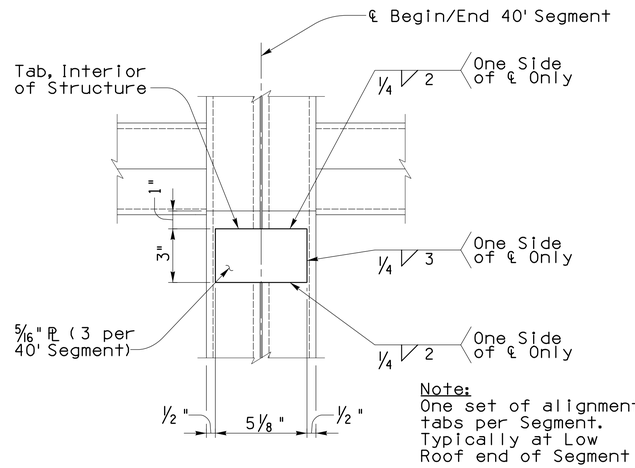
SECTION
3" = 1'-0"
A/—



PICK POINT TAB DETAIL
3" = 1'-0"
1/2.17



SECTION
3" = 1'-0"
B/—



Note:
One set of alignment tabs per Segment. Typically at Low Roof end of Segment

ALIGNMENT TAB
3" = 1'-0"
3/— 3/2.17

Framing Details - 4 of 4 S-2.22 of S-2.38

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION
22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE
321 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY LS	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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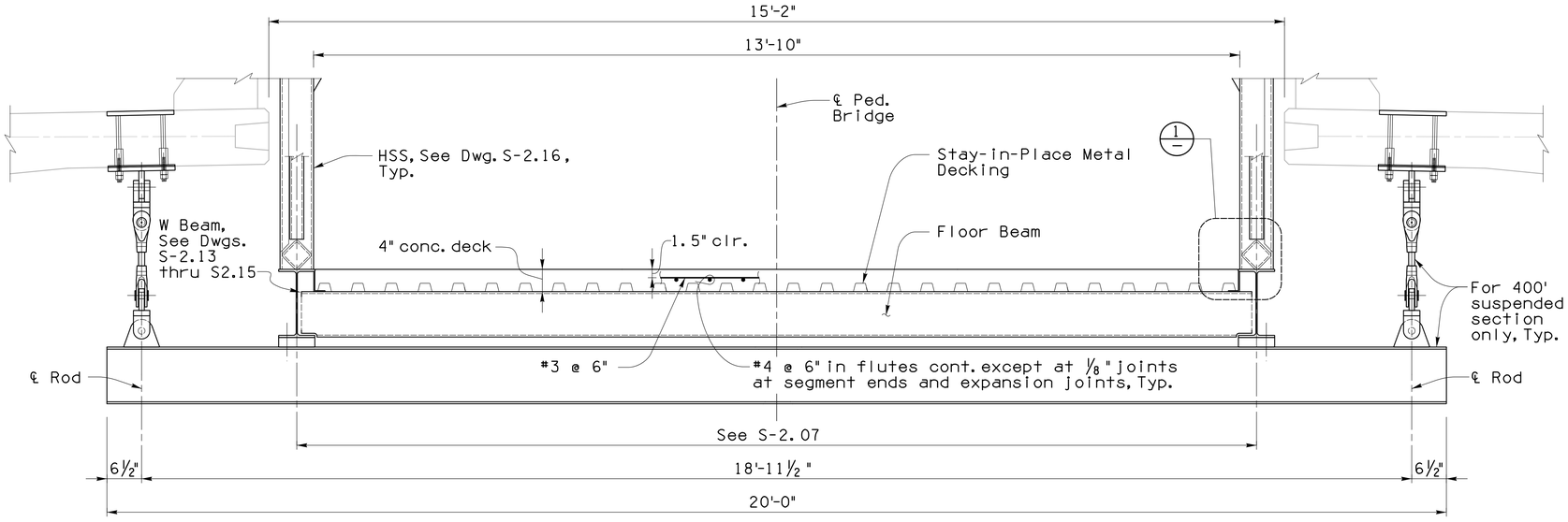
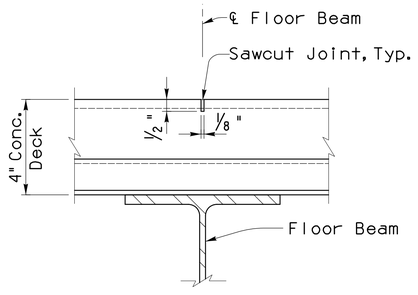
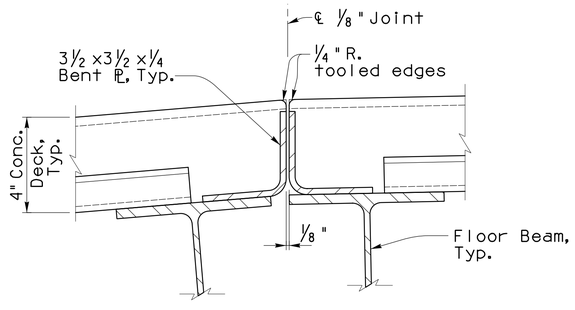


TYPICAL DECK SECTION
1" = 1'-0"



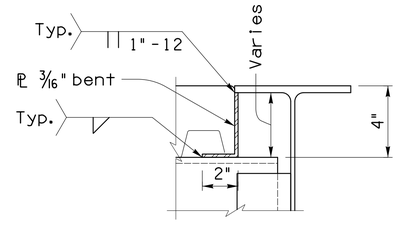
TYP. CONTROL JT. AT ℄ FLOOR BEAM



TYP. 1/8" JOINT @ SEGMENT ENDS

Notes:

1. Stay-in-Place (SIP) metal decking shall conform to ASTM A653 (G90) galvanizing and shall be of a hot-dip process only.
2. Stay-in-Place metal decking shall conform to Vulcraft 1.5C22 with Sp=0.179 in^3/ft, Sn=0.169 in^3/ft or approved equal. At seams button punch @ 24" o.c. or top seam weld @ 24" o.c. Attach decking to floor beam with ¾" Φ puddle welds @ 6" o.c.
3. Place control joints at ℄ floor beam. See Detail 2/—



DETAIL
3" = 1'-0"
1/—

DECK JOINTS
No Scale
2/—

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Deck Section & Details S-2.23 of S-2.38

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE

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CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

322 OF 474

NO.	DATE	REVISION	BY	CHKD.	APPR.

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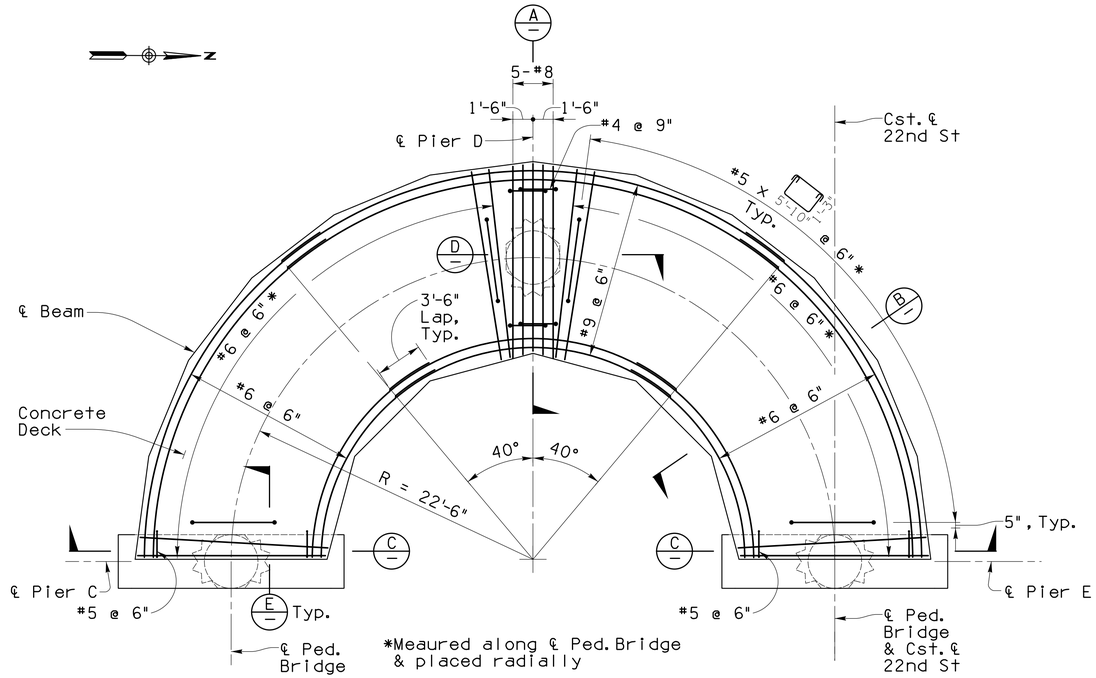
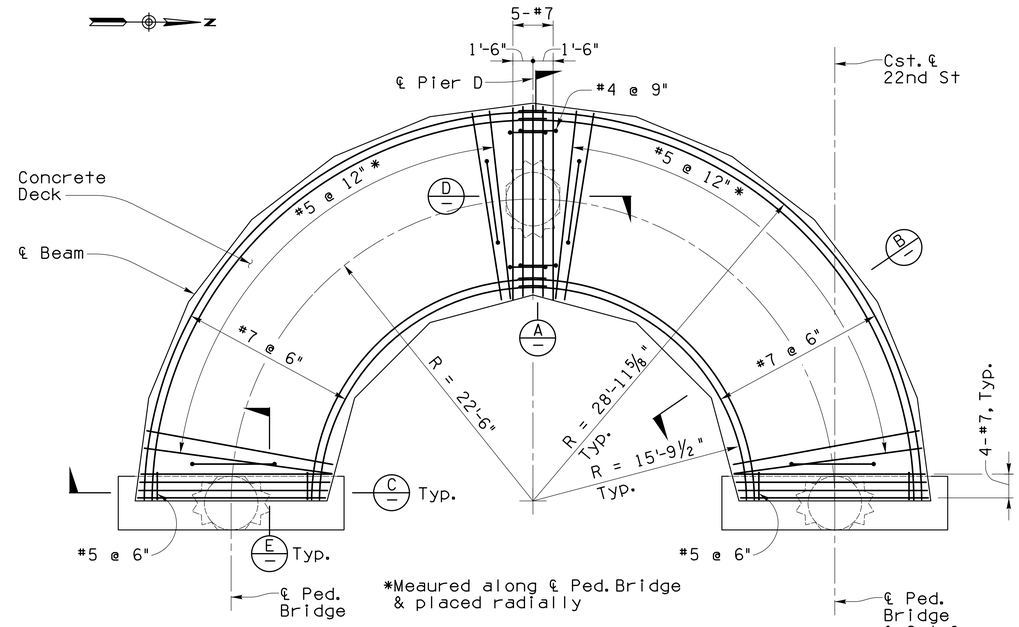


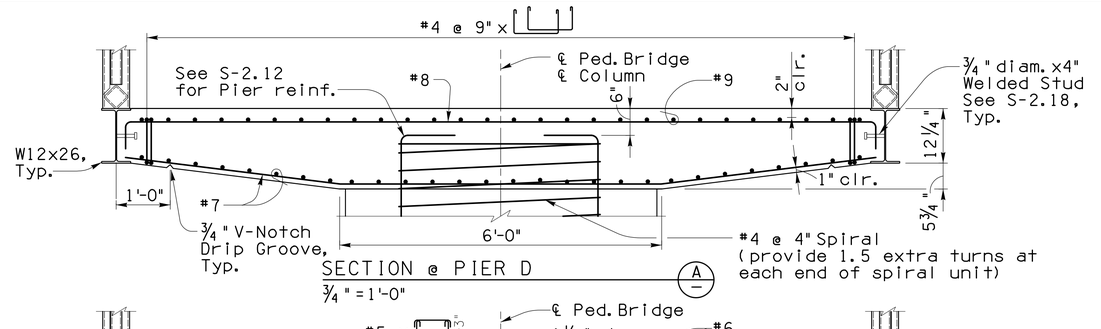
PLAN - DECK TOP REINFORCEMENT

3/16" = 1'-0"



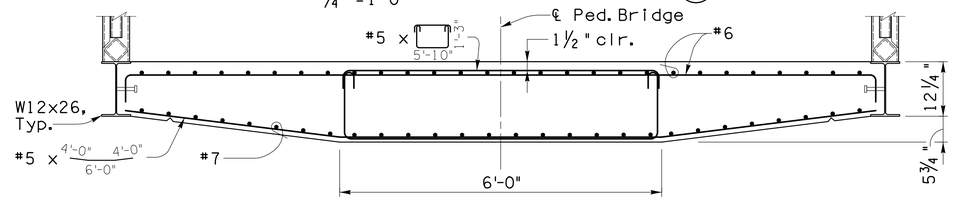
PLAN - DECK BOTTOM REINFORCEMENT

3/16" = 1'-0"



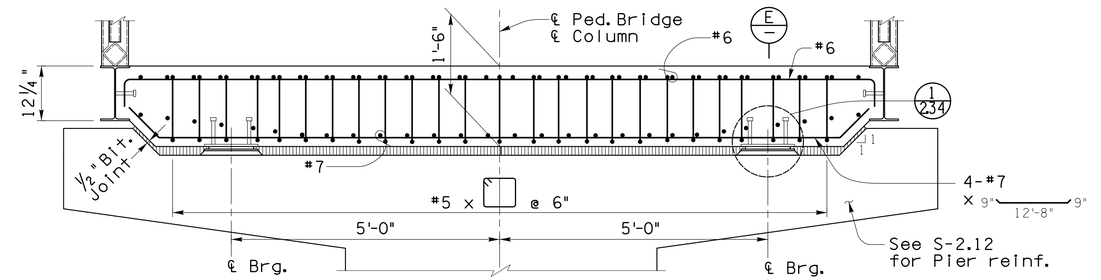
SECTION @ PIER D

¾" = 1'-0"



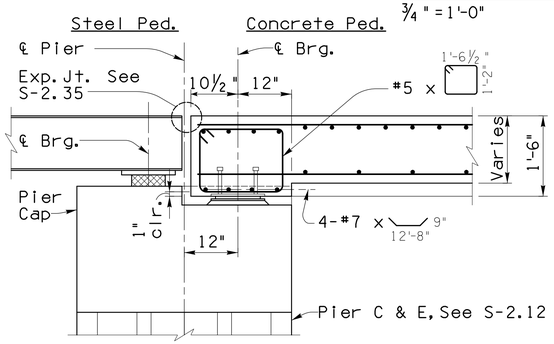
SECTION IN SPAN

¾" = 1'-0"



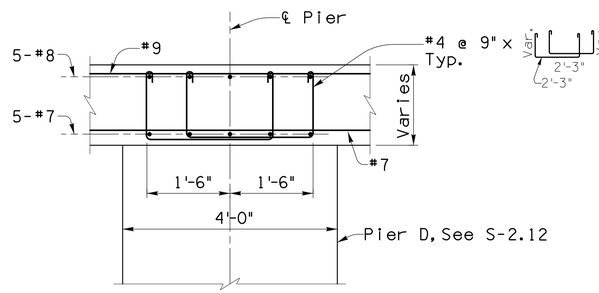
SECTION @ PIERS C & E

¾" = 1'-0"



SECTION

¾" = 1'-0"



¾" = 1'-0"

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Circular Deck Reinf. Details

S-2.24 of S-2.38

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE

323 OF 474

CITY OF TUCSON

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DSGN. BY LS	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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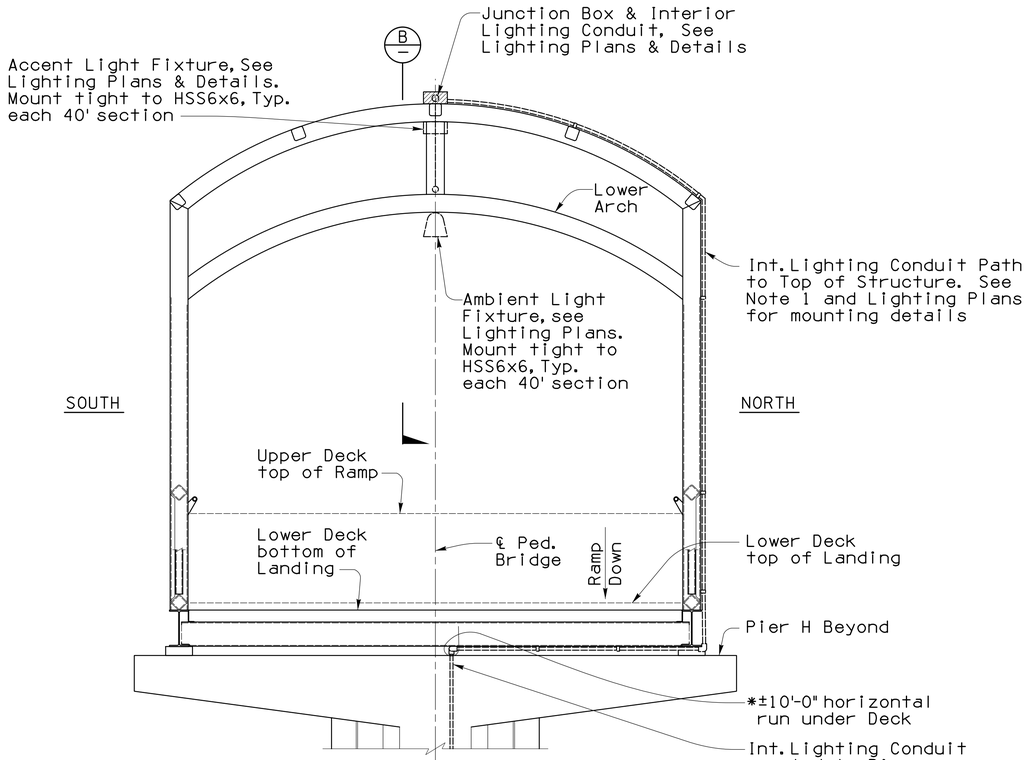
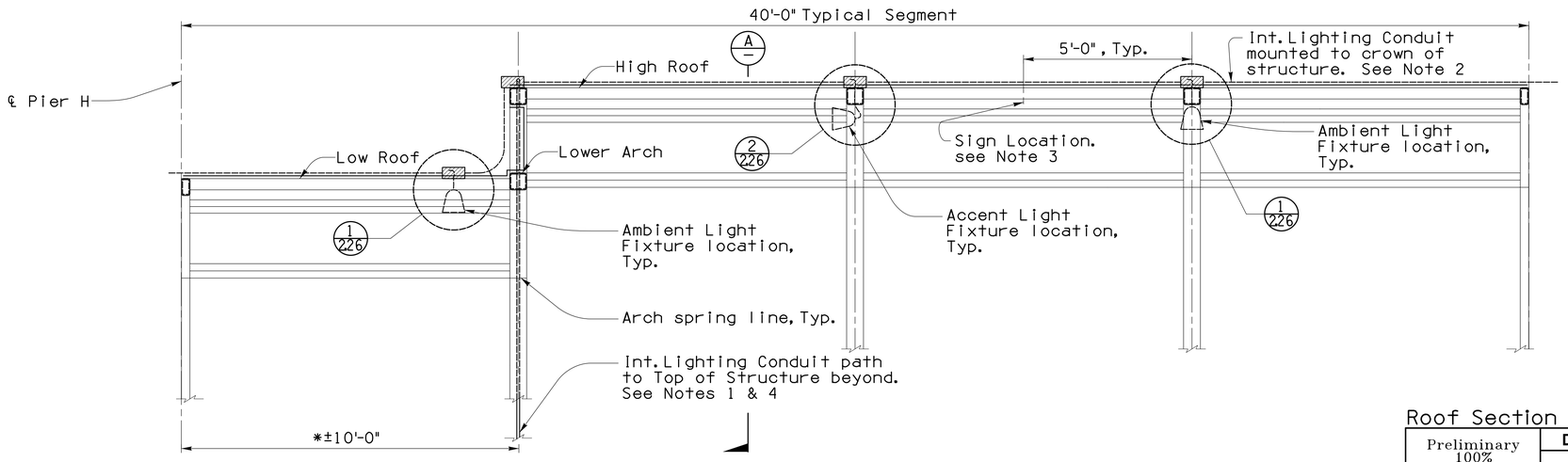


TRANSVERSE ROOF SECTION - PIER H (A/—)

½" = 1'-0"



LONGITUDINAL ROOF SECTION (B/— B/226)

½" = 1'-0"

Notes:

1. Interior Lighting Conduit to top of structure must be field installed after structure is in place.
2. See S-2.05, S-2.07, S-2.26 and Lighting Plans and Details, T-7.01 through 7.13 for conduit size & mounting details.
3. Sign locations at approximately
   Sta. 50+42.58
   Sta. 52+43.00
   Sta. 59+53.50
   Sta. 61+13.67
   Sta. 61+53.67.
   See Civil Plans for Type & mounting details.
4. Interior lighting conduit runs vertically up ℄ of HSS6x6 on North side of structure.

Two working days before you dig, CALL FOR THE BLUE STAKES 1-800-STAKE-IT Blue Stake Center CALL COLLECT

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Roof Section & Details S-2.25 of S-2.38

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324 OF 474

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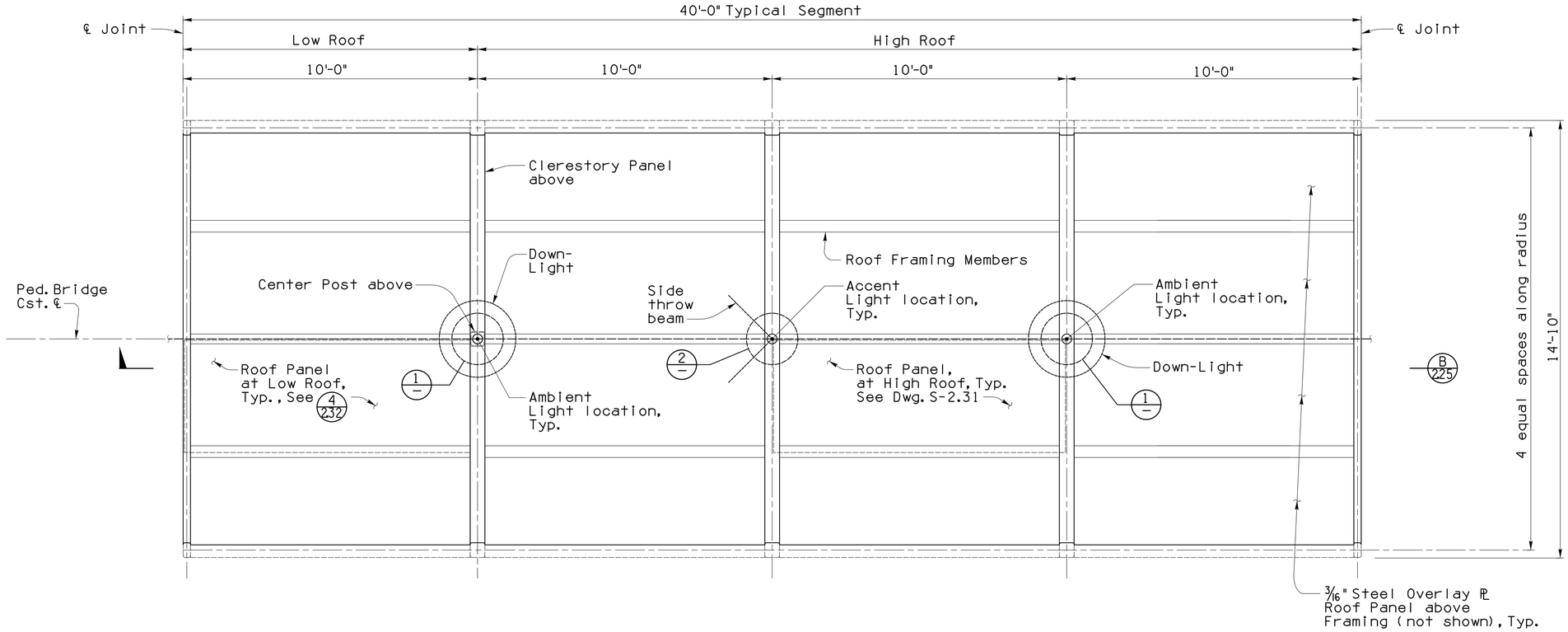
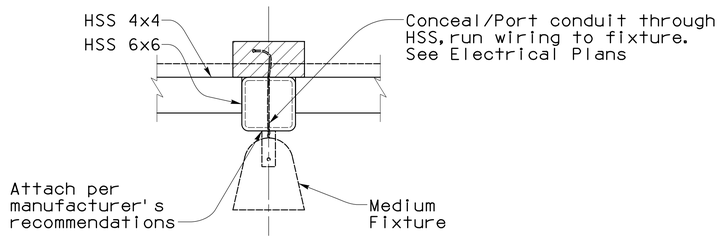
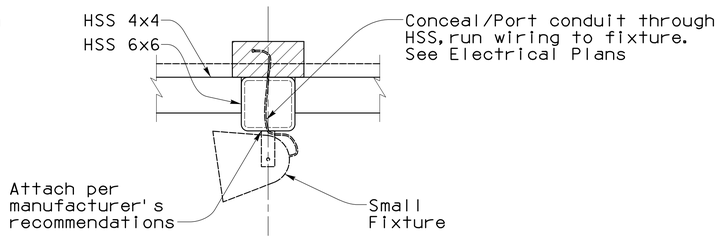
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012



REFLECTED CEILING PLAN - TYP. ROOF SEGMENT
1/2" = 1'-0"





Note:
For Lighting Plans and Details, See T-7.01 through T-7.13.

AMBIENT LIGHT MOUNT (1/— 1/225)
No Scale

ACCENT LIGHT MOUNT (2/— 2/225)
No Scale

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Reflected Ceiling Plan - 1 of 2

S-2.26 of S-2.38

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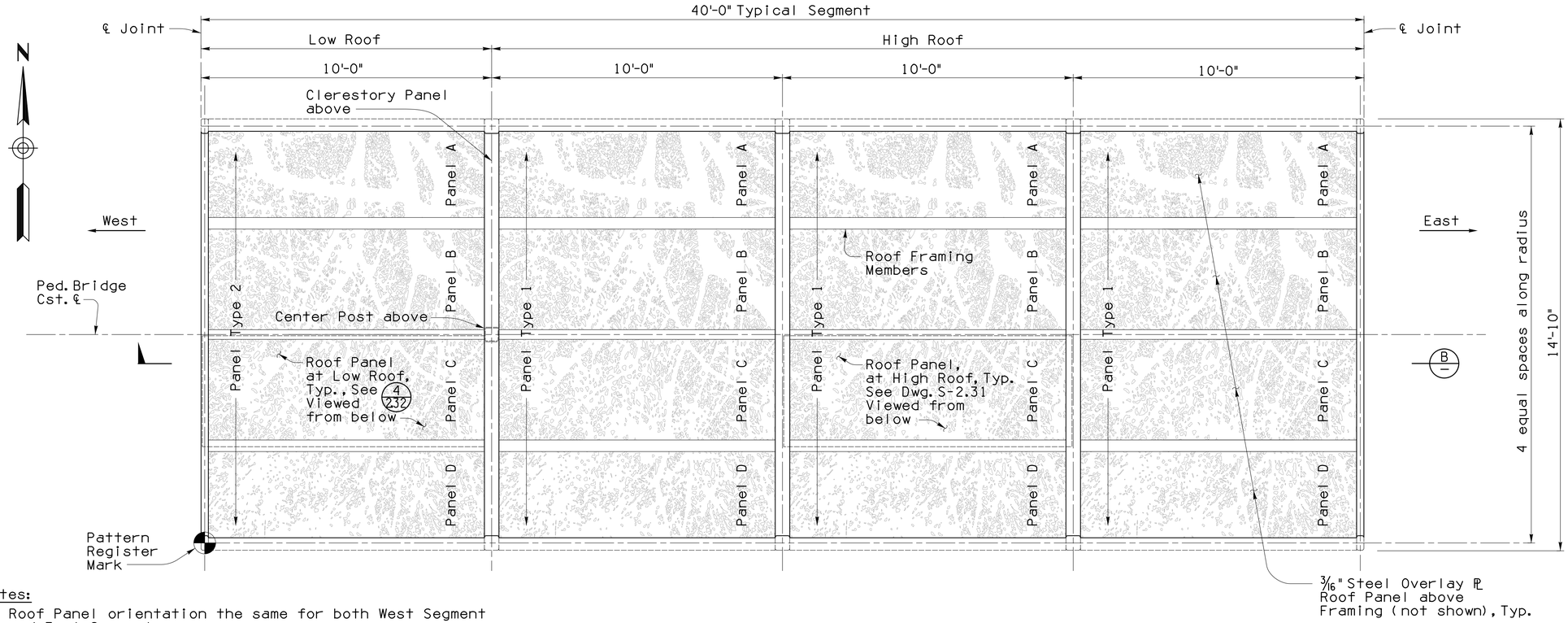
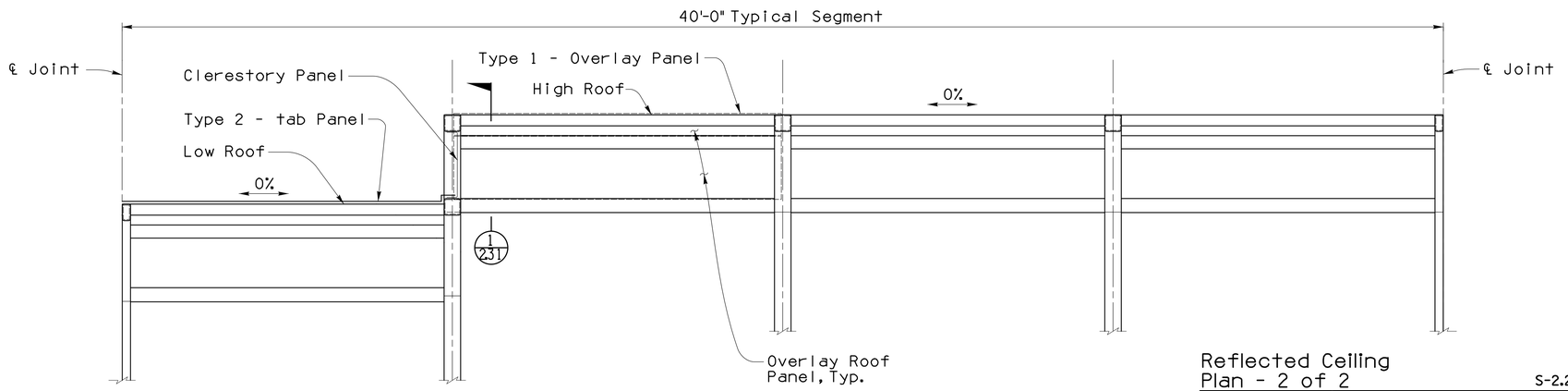


Notes:

1. Roof Panel orientation the same for both West Segment and East Segment.
2. Clerestory Panel orientation opposite hand for West Segment and East Segment. "Broken Clouds" always to the South.

REFLECTED CEILING PLAN - TYP. WEST SEGMENT
1/2" = 1'-0"



INTERIOR ELEVATION - TYP. WEST SEGMENT
1/2" = 1'-0"
B/—

Reflected Ceiling Plan - 2 of 2

S-2.27 of S-2.38

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE

326 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF. ____ SCALE: N/A
DSGN. BY DDD	06-18	
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

NO.	DATE	REVISION	BY	CHKD.	APPR.

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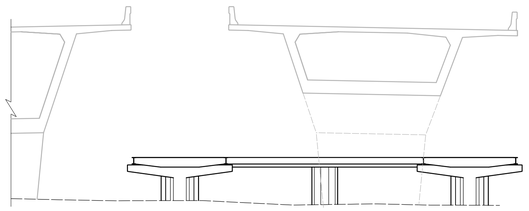
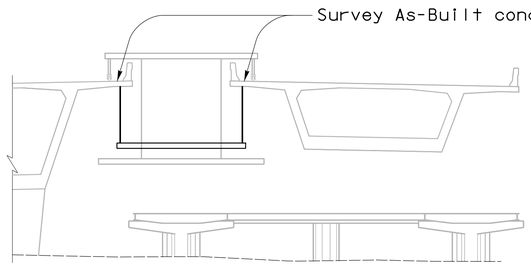
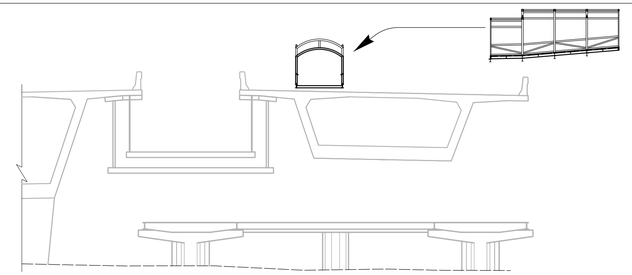


STAGE 1



STAGE 2



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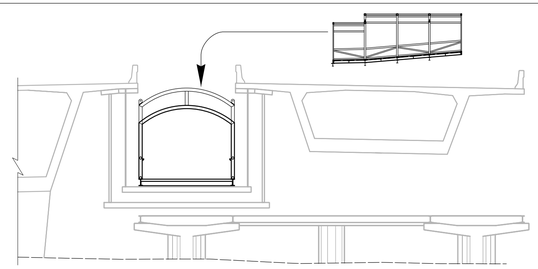

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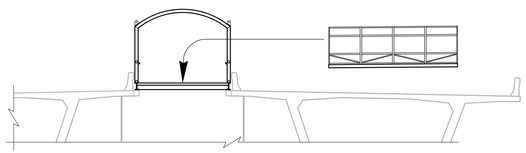
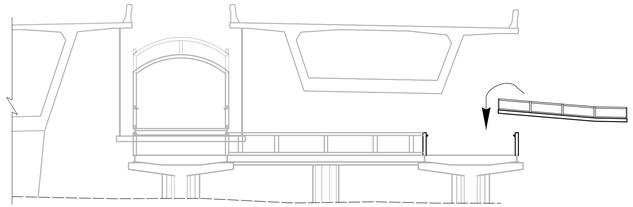
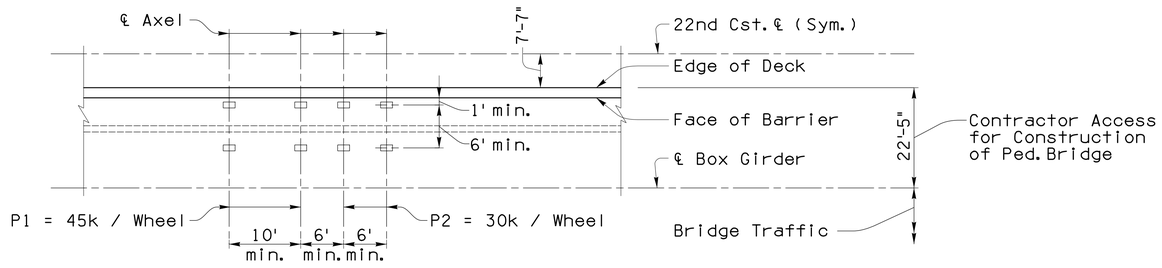


STAGE 5



STAGE 6



PLAN - APPROX. ALLOWABLE CRANE LOADS (1)

No Scale
(Contractor to submit proposed crane loading to Engineer, see Special Provisions)

* ASSUMED CONSTRUCTION SEQUENCE

STAGE 1

1. Construct Drilled Shafts.
2. Construct Piers
3. Construct Circular Deck Section.

   (Stage 1 can take place concurrent with Construction of Vehicular Bridges with the exception that Abutment 1 EB and applicable backfill (See S-1.22. Note 1) must be constructed prior to Drilled Shaft at Pier D).**

STAGE 2

1. Survey inside cantilever wing (Spans 1-5) of Vehicle Bridge and submit elevations to Engineer prior to Step 2.
2. Install W10 Spandrel Beams & Hangers.

   (Stage 2 can take place concurrently with Stage 3).

STAGE 3

1. Ship and Deliver Ped. Bridge Segments.
2. Stage 40' Ped. Bridge Segments on Vehicular Bridge for Suspended & Deck Supported Sections.
3. Stage 40' & 30' Ped. Bridge Segments on Site for Pier Supported Sections.
4. Place Ped. Bridge Concrete Deck in Staged Ped. Bridge Segments with Supports @ ±40' o.c. (See Camber Details S-2.37)

STAGE 4

1. Erect all Suspended 40' Ped. Bridge Segments after Ped. Bridge Concrete Deck has achieved 3000 psi strength. Care shall be taken to distribute 40' Ped. Bridge Segment load evenly to 4 Spandrels.
   See Detail 1 for allowable crane loads.

STAGE 5

1. Erect Deck Supported 40' Bridge Segments after Ped. Bridge Concrete Deck has achieved 3000 psi strength.

STAGE 6

1. Erect Pier Supported 30' & 40' Ped. Bridge Segments after Ped. Bridge Concrete Deck has achieved 3000 psi strength.

   (The Sequence of Stage 4, 5 & 6 may be interchanged or constructed concurrently)

STAGE 7

1. Install Landing Railings on Circular Deck Section at east end.
2. Fit up entire Structure with Electrical, Lights, etc.
3. Install Expansion Joints/Cover Plates.

* The assumed construction sequence shown does not form part of the contract and is only included for the information of the Contractor. The Contractor is solely responsible for the design and safety of his own preferred construction sequence. The Contractor shall submit their construction sequence/erection plans and applicable calculations to Engineer for review prior to pedestrian bridge construction.

**See also S-1.09 & S-1.10 for Phasing of Ped. Bridge with respect to completion of Vehicle Bridge.

Assumed Construction Sequence S-2.28 of S-2.38

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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

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CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
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CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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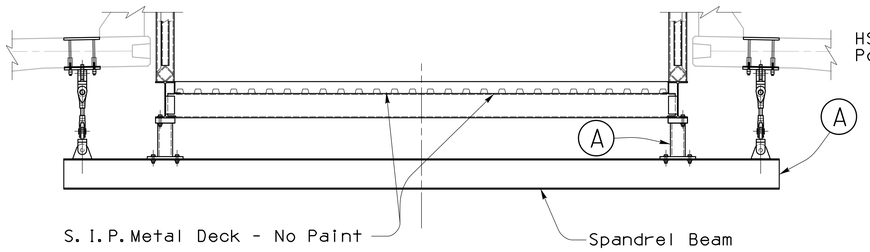
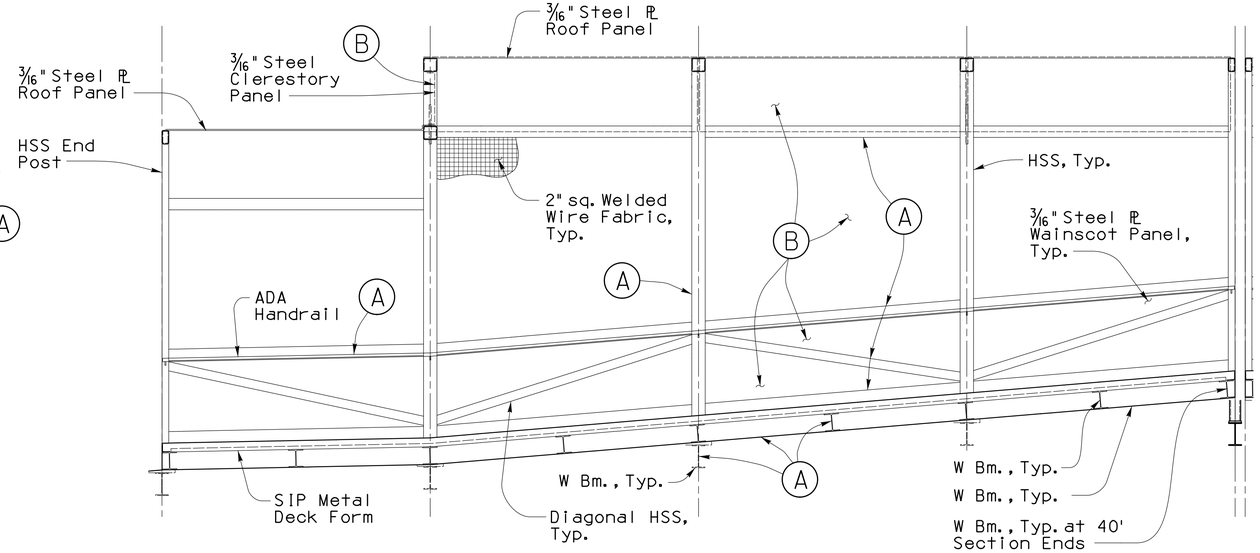
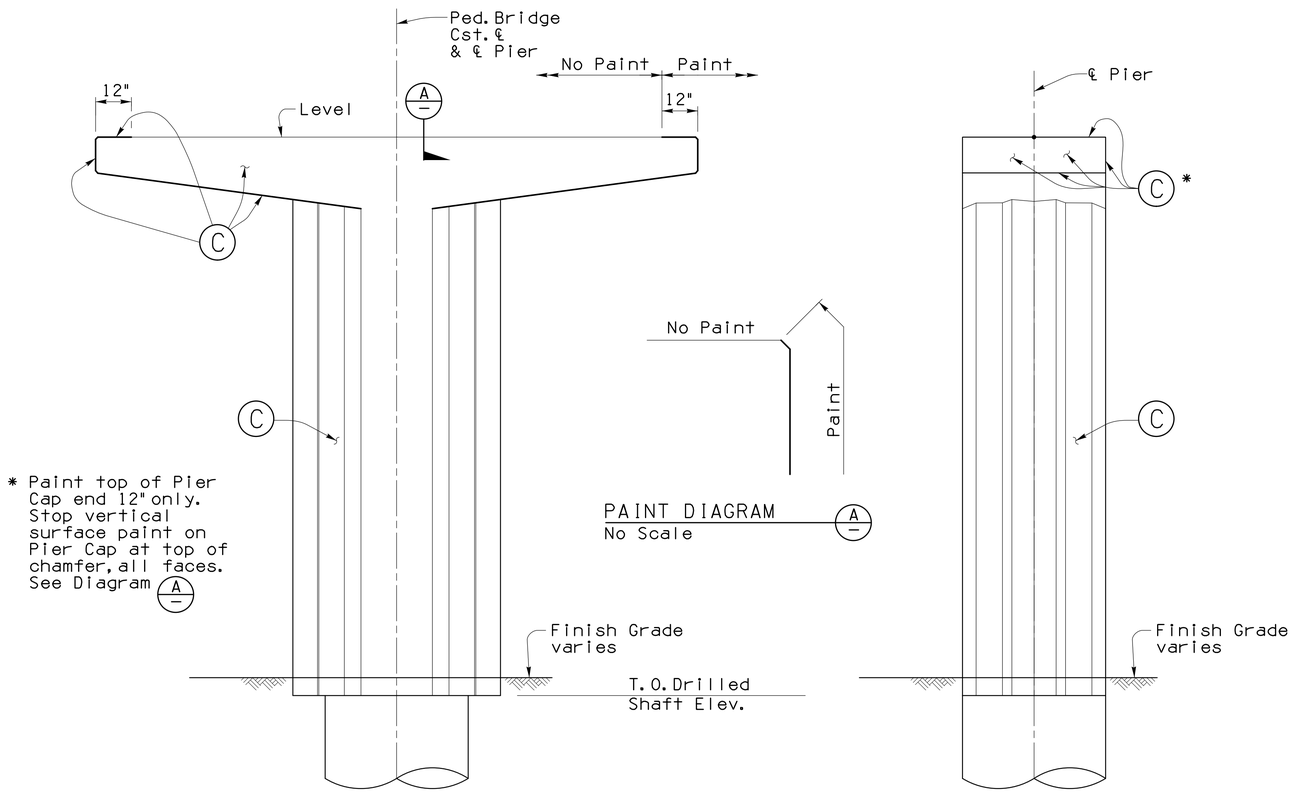


FINISHES - SPANDREL BEAMS & HANGERS
1/4" = 1'-0"





FINISHES - PIERS & PIER CAPS
1/2" = 1'-0"

FINISHES - TYPICAL SEGMENT/ALL ENCLOSURE
3/16" = 1'-0"

	FINISH SCHEDULE	NOTES
(A)	All HSS, W, Angle, and misc. Steel per Special Provisions - Prime and Paint to match TMS Manufacturing - W. C. Richards Co. Aluminum zinc rich 70% primer with final coat Pittsburgh Paints PPG 90-477 or approved equal.	All Structural Steel per Plans and Special Provisions.
(B)	Welded Wire Fabric and Steel Enclosure Panels - Prime and Paint to match TMS Manufacturing - W. C. Richards Co. Aluminum zinc rich 70% primer with final coat Pittsburgh Paints PPG 90-477 or approved equal.	All Enclosure Panels, Wire and Steel.
(C)	Painted C. I. P. Concrete Pier at Pier Cap. Paint to match Pittsburgh Paints PPG 505-5 Birch Forest or approved equal.	All Pier Concrete per this Schedule and Finishes Drawing.

Note: S. I. P. Metal Deck Form shall not be painted.

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Architecture Details S-2.29 of S-2.38

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328 OF 474

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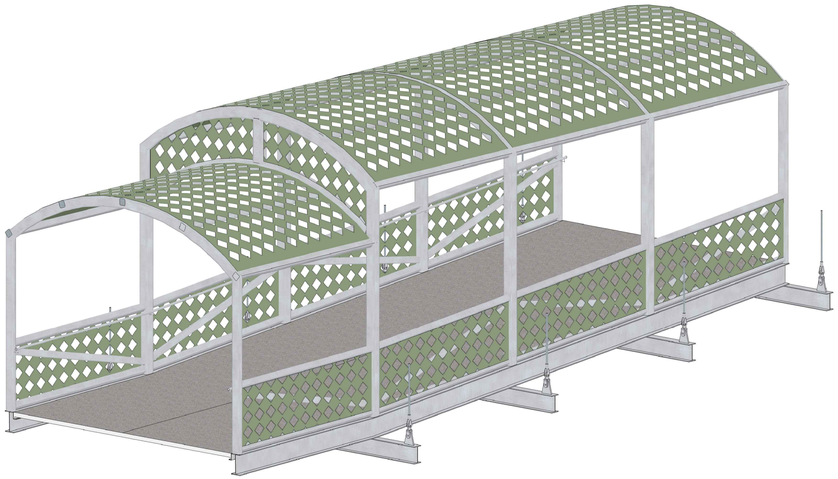
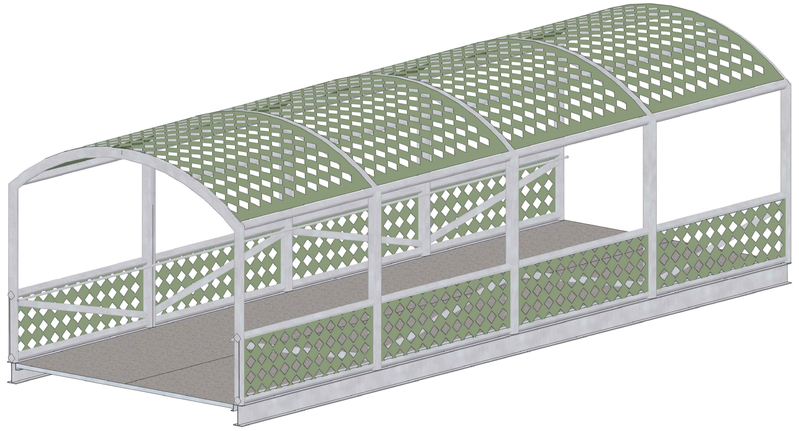


SUSPENDED SECTION
(PIER SUPPORTED SECTION, ENCLOSED SECTION SIM.)
No Scale



DECK SUPPORTED SECTION
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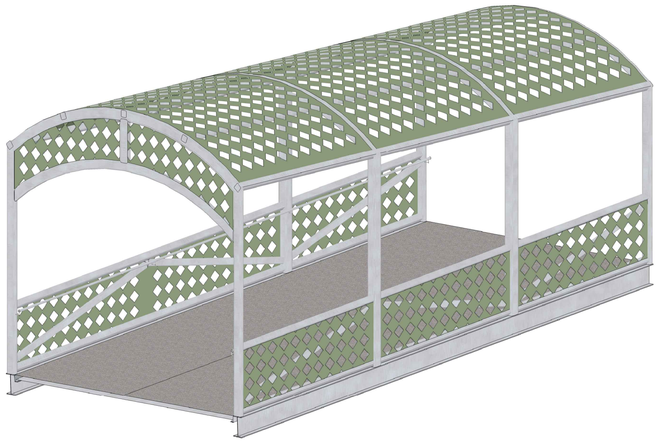

PIER SUPPORTED, ENCLOSED 30'-0" SECTION
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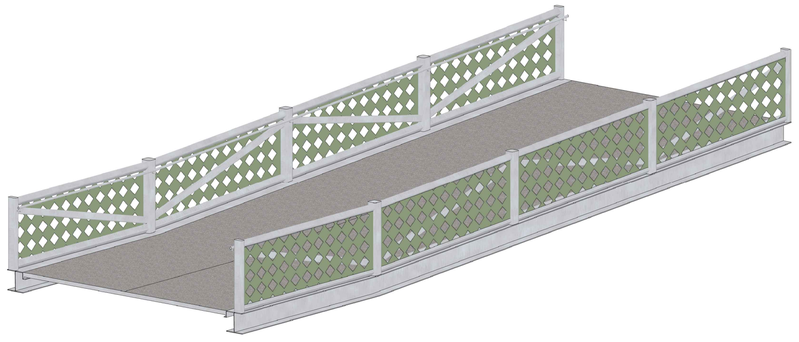

PIER SUPPORTED, OPEN SECTION
No Scale

Note:
Enclosure design pattern per S-2.31.

Isometrics of Segment Frames

S-2.30 of S-2.38

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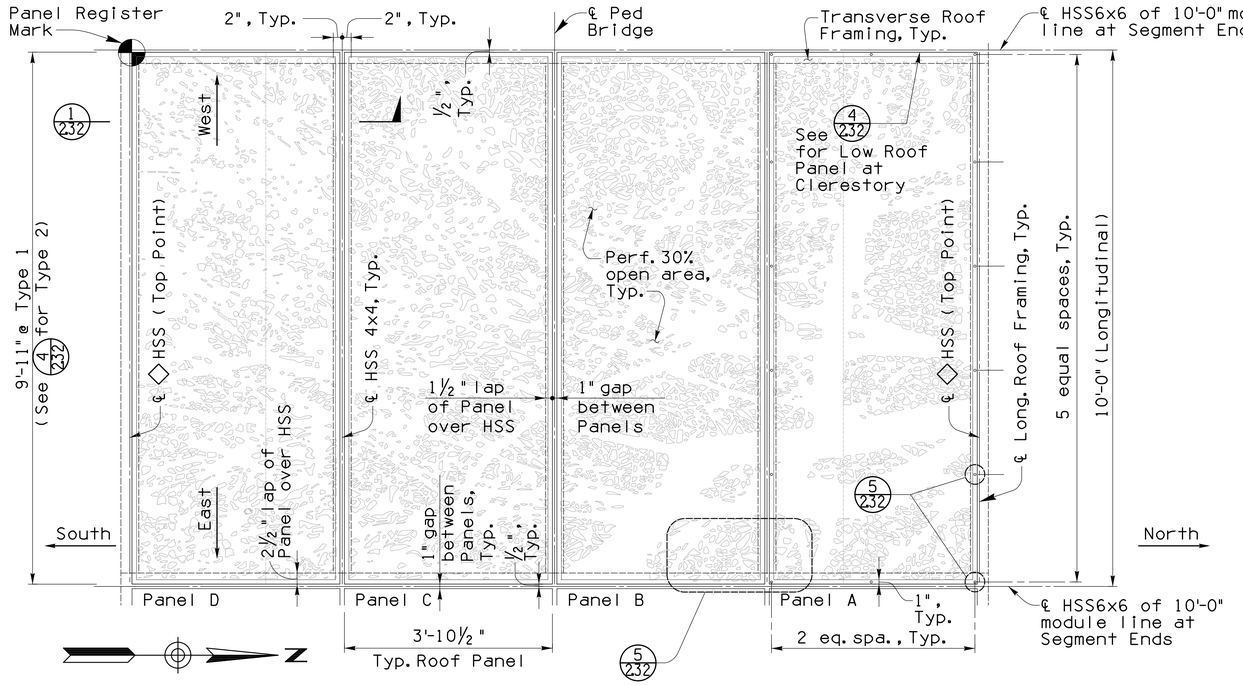
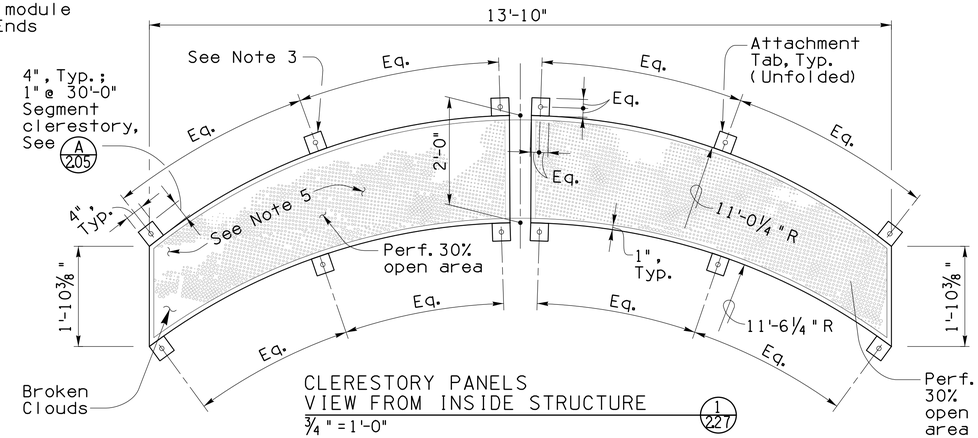
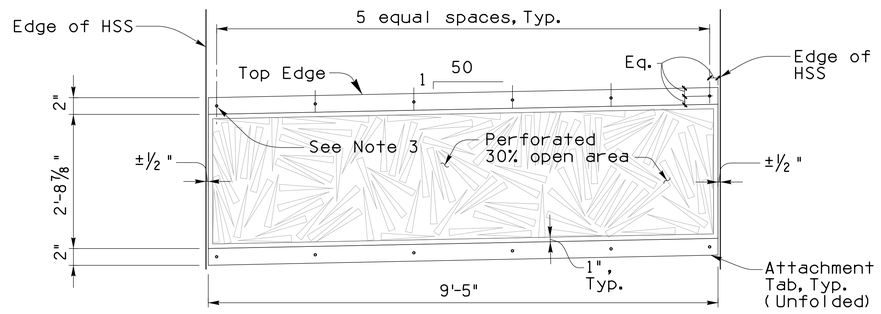


See S-2.27 for Orientation

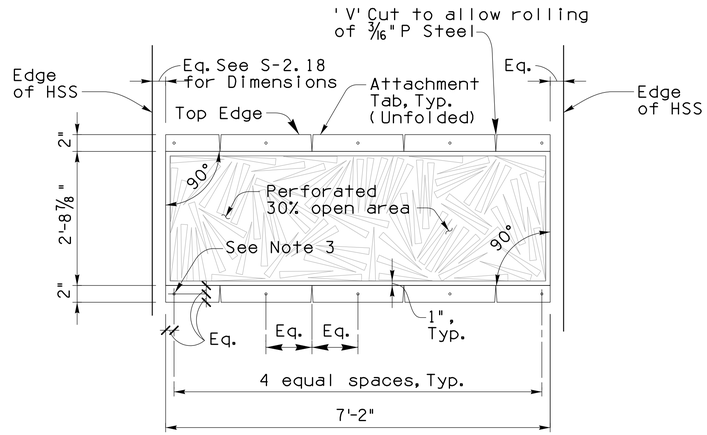
TYPICAL ROOF PANEL - VIEWED FROM ABOVE
¾" = 1'-0"
High Roof Panel, Type 1 - Overlay shown



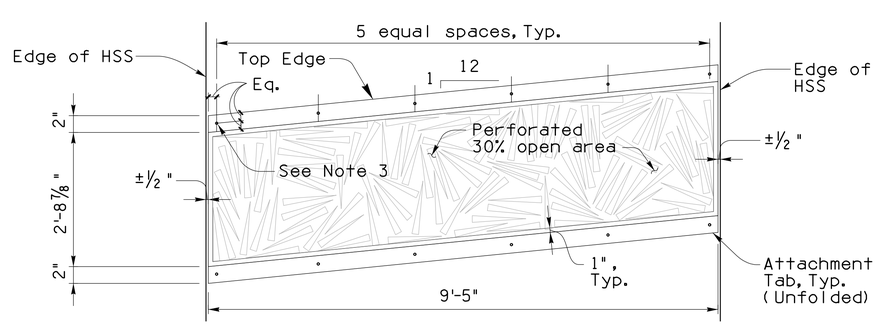
CLERESTORY PANELS
VIEW FROM INSIDE STRUCTURE
¾" = 1'-0"
1/227



LANDING WAINSCOT PANELS
¾" = 1'-0"



CIRCULAR DECK WAINSCOT PANEL (18 TOTAL)
¾" = 1'-0"



RAMP WAINSCOT PANEL
¾" = 1'-0"

Notes:

1. Type 1 Roof panels are overlay panels. Type 2 are 'tab' panels.
2. Clerestory & wainscot panels are inset panels.
3. A307 GR-B ⅜" diam. x 1" zinc plate bolt with AELS8-616-312 Spin-tite threaded insert, or approved equal ±2'-0" o. c.
4. Clerestory and wainscot steel panel to be 3/16" plate.
5. All Roof Panels are rolled/curved, with 3/16" min. thickness (see S-2.05 thru S-2.07 for radius to match) and shall be designed or load tested by Contractor in accordance with Special Provisions.
6. Confirm all dimensions to ensure tight fit and fastening; ⅛" tolerance maximum unless otherwise noted.
7. Pattern design per Special Provisions item 6040013 and SB-1.01 & SB-1.02.
8. All dimensions shown are unfolded.

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Panel Details - 1 of 2 S-2.31 of S-2.38

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330 OF 474

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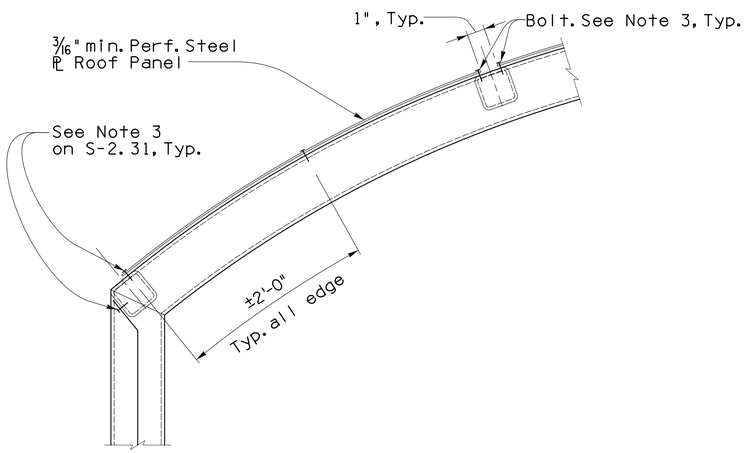
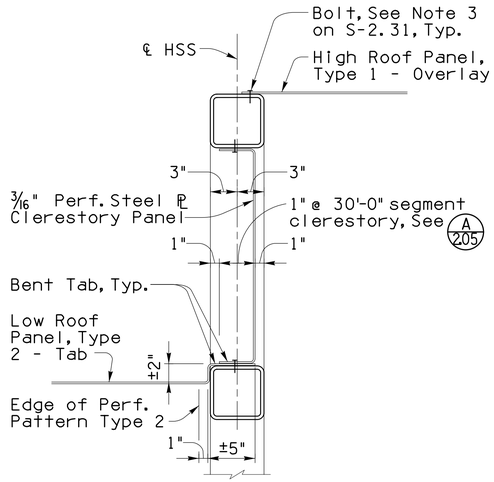
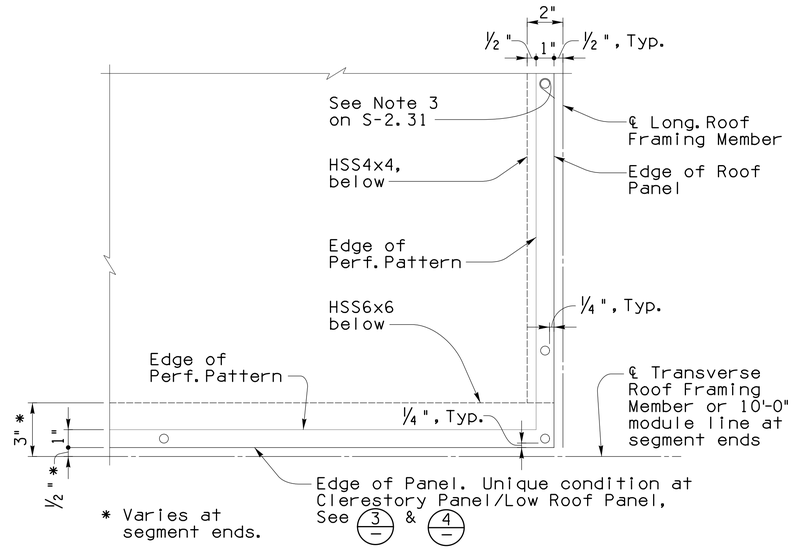


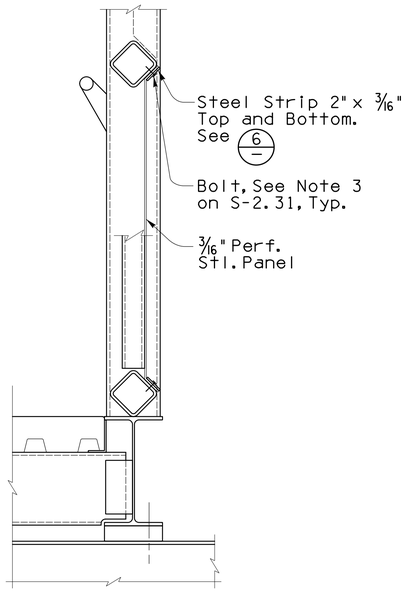
ROOF PANEL ATTACHMENT
1½" = 1'-0"
(1/231)



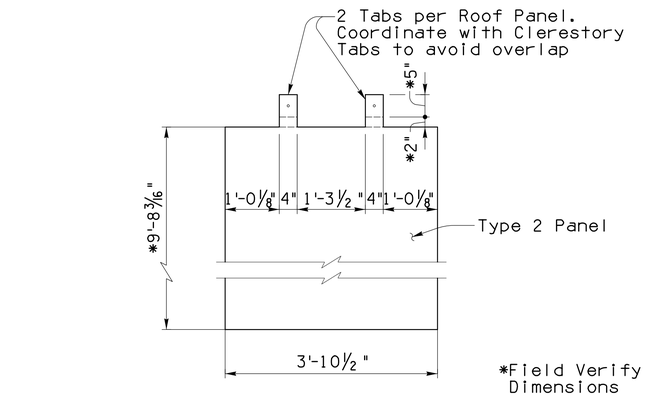
LOW ROOF PANEL/
CLERESTORY PANEL ATTACHMENT
1½" = 1'-0"
(3/— 3/205)



DETAIL - TYP. ROOF PANEL EDGE DISTANCE
3" = 1'-0"
(5/231)

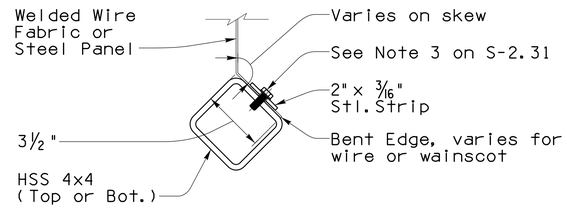


WAINSCOT PANEL ATTACHMENT
1½" = 1'-0"
(2/—)



Adjust Pattern for Type 2 Roof Panels to allow 1" non-perforated edge distance (i.e. pattern perforations will need to be "filled in" for ±2¾" along 'tab' edge).

LOW ROOF PANEL AT CLERESTORY, TYPE 2 - TAB
¾" = 1'-0"
(4/— 4/217 4/231)



TYP. WIRE/PANEL EDGE
3" = 1'-0"
(6/— 6/218 6/222)

Note:
See Panel Details 1 of 2, S-2.31 for notes.

Panel Details - 2 of 2 S-2.32 of S-2.38

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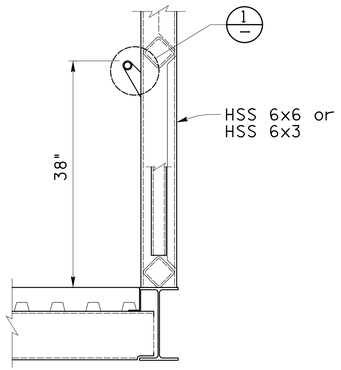
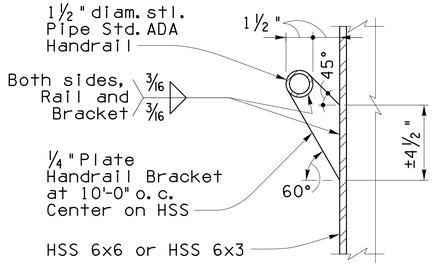
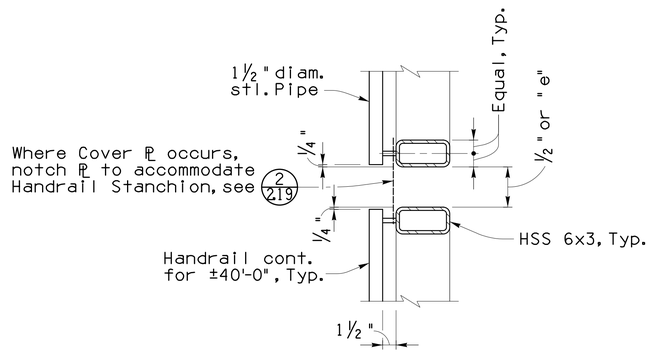


SECTION
1" = 1'-0"



HANDRAIL DETAIL
3" = 1'-0"
1
—



PLAN - HANDRAIL ENDS & EXPANSION LOCATION DETAIL
1½" = 1'-0"

Two working days before you dig.
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STAKE-IT
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Handrail Details

S-2.33 of S-2.38

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22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
PEDESTRIAN BRIDGE

332
OF
474

CITY OF TUCSON

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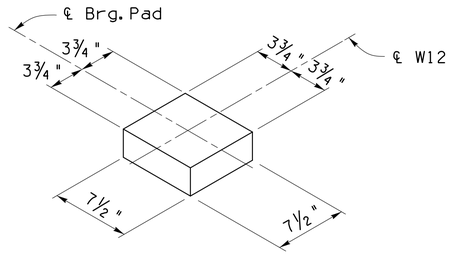
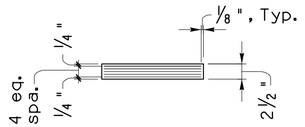
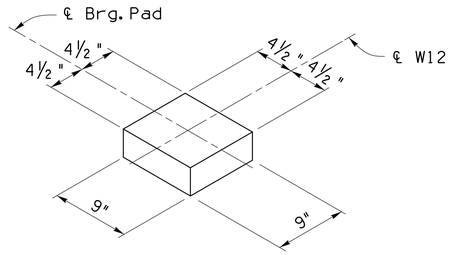
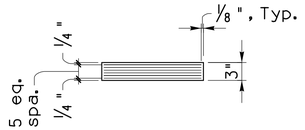




ABUTMENT 1 & 2 AND PIERS C, E, H & I ELASTOMERIC BEARING PAD DETAIL (TOTAL 16)
No Scale





PIERS A, B, F, G, J, K, L, M ELASTOMERIC BEARING PAD DETAIL (TOTAL 16)
No Scale

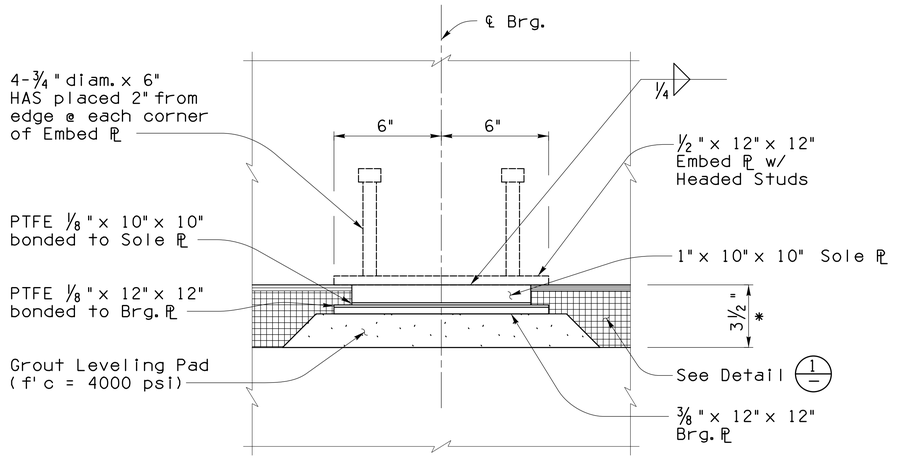
ELASTOMERIC BEARING PAD DATA			
Location	Piers C & E and Abut. 1 & 2	Piers A, B, F, G, J, K, L, M	Piers H & I
Dead Load (Service)	10.5K	25K	12.5K
Dead Load + Live Loads (Service)	23.5K	55K	27.5K

Elastomeric Bearing Pad Notes:

1. Elastomeric Brg. Pad shall conform to the current edition of the AASHTO LRFD Bridge Construction Specifications, Section 18.
2. Internal Steel Laminates shall be 14 ga. rolled mild steel per ASTM A570, Grade 36 where Steel Laminates are indicated.
3. Elastomeric Bearing Pad Design Criteria:

   Design Method: A
   Low Temperature Zone: A
   Elastomer Grade: 0
   Shear Modulus: 130 psi
   Durometer Hardness: 55

4. The cost of Elastomeric Bearing Pads & Bearing Plate assemblies is incidental to cost of structural steel.

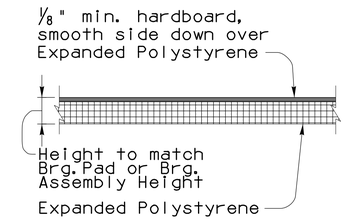


* Assumed bearing assembly height, if modified, top of Pier Elev. to be adjusted.

Notes:

1. The cost of Sliding Bearing Assembly is incidental to the cost of Structural Steel.
2. PTFE (Polytetrafluoroethylene) Sheets shall be made from pure virgin PTFE resin satisfying the requirements of ASTM D4894 and D4895 and shall be fabricated as unfilled sheet and meet the requirements as specified in AASHTO LRFD Bridge Construction Specs Section 18.8.2.1.

SLIDING BEARING ASSEMBLY @ PIERS C & E (1/224)
3" = 1'-0"



Note:
Hardboard to be used on any polystyrene face against which concrete is to be placed.

POLYSTYRENE PROTECTION DETAIL (1/—)
No Scale

Bearing Details

S-2.34 of S-2.38

Structural Grace, Inc
1430 E. Fort Lowell Rd., Ste. 200
Tucson, AZ 85719 (520) 320-0156

Preliminary 100% Review

Not for Construction or Recording

June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE

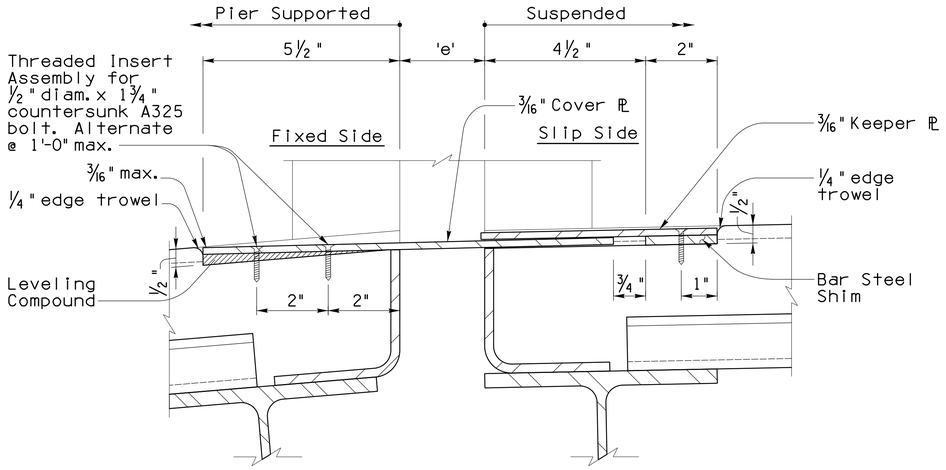
333 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY LS	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

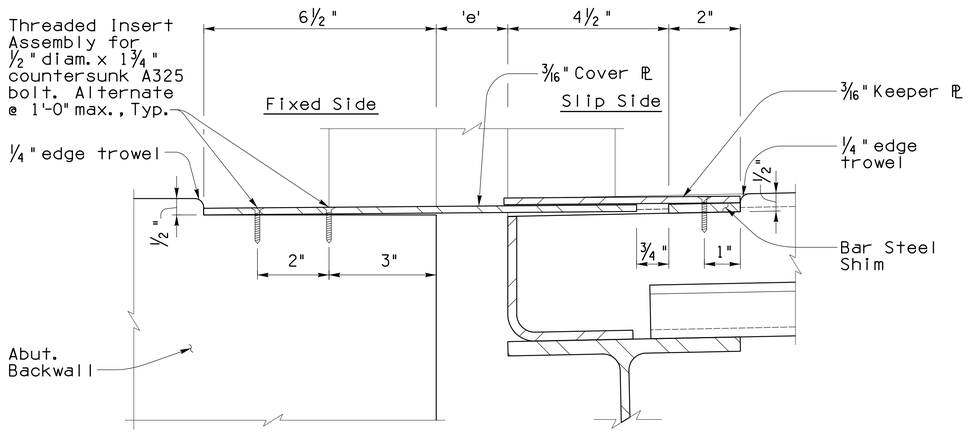
NO.	DATE	REVISION	BY	CHKD.	APPR.

Two working days before you dig. CALL FOR THE BLUE STAKES 1-800-STAKE-IT Blue Stake Center CALL COLLECT



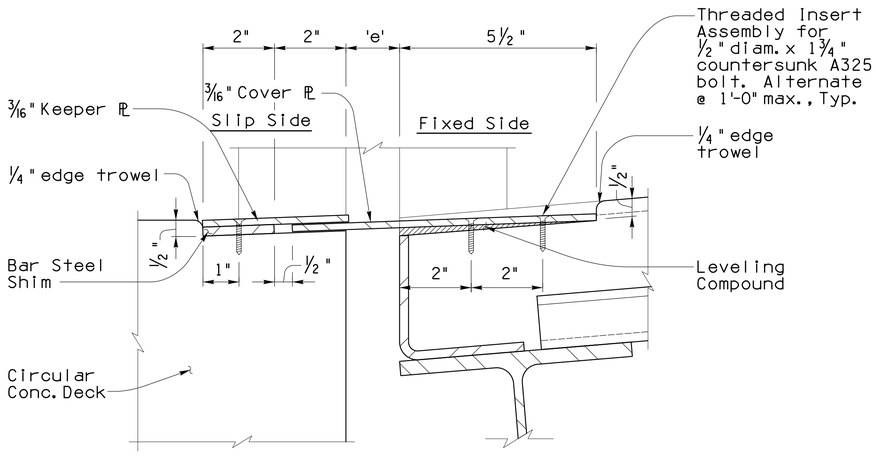
Joint	e (in) 75° F	min.	max.	Δ (in) +10° F	-10° F
Pier H	2.38"	1.76	3.00	-.10	+.10
Pier I	2.38"	1.70	3.06	-.11	+.11

EXPANSION JOINT AT PIER H & PIER I
No Scale



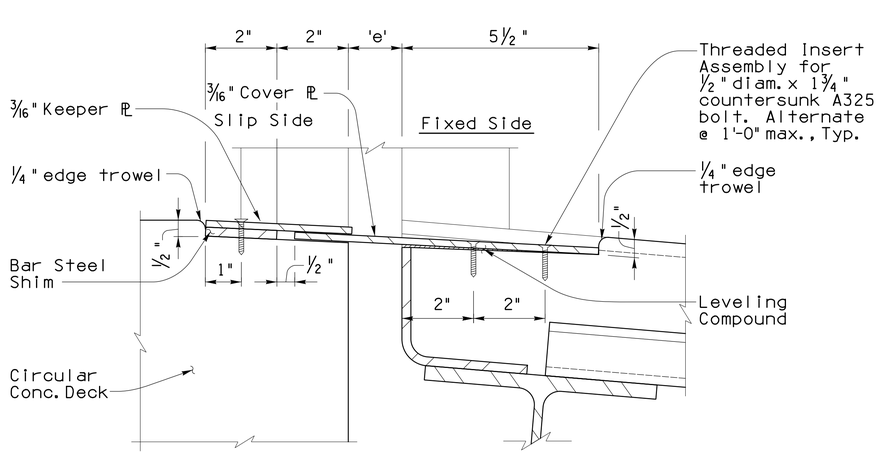
Joint	e (in) 75° F	min.	max.	Δ (in) +10° F	-10° F
Abut. 1	2.00	1.33	2.68	-.113	+.113
Abut. 2	2.00	1.55	2.45	-.075	+.075

EXPANSION JOINT AT ABUTMENTS
No Scale



Joint	e (in) 75° F	min.	max.	Δ (in) +10° F	-10° F
Pier C/E	1.50	1.38	1.66	-.04	+.04

EXPANSION JOINT AT PIER E
No Scale



EXPANSION JOINT AT PIER C
No Scale

Notes:

1. Sidewalk cover PL and keeper PL shall be A36 galvanized steel with non-slip (deformed) surface.
2. Shim steel shall be A36 galvanized.
3. All cover PL and keeper PL bolts shall be A325 galvanized.

Two working days before you dig. CALL FOR THE BLUE STAKES 1-800-STAKE-IT Blue Stake Center CALL COLLECT

NO.	DATE	REVISION	BY	CHKD.	APPR.

Expansion Joint Details - 1 S-2.35 of S-2.38

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Tucson, AZ 85719 (520) 320-0156

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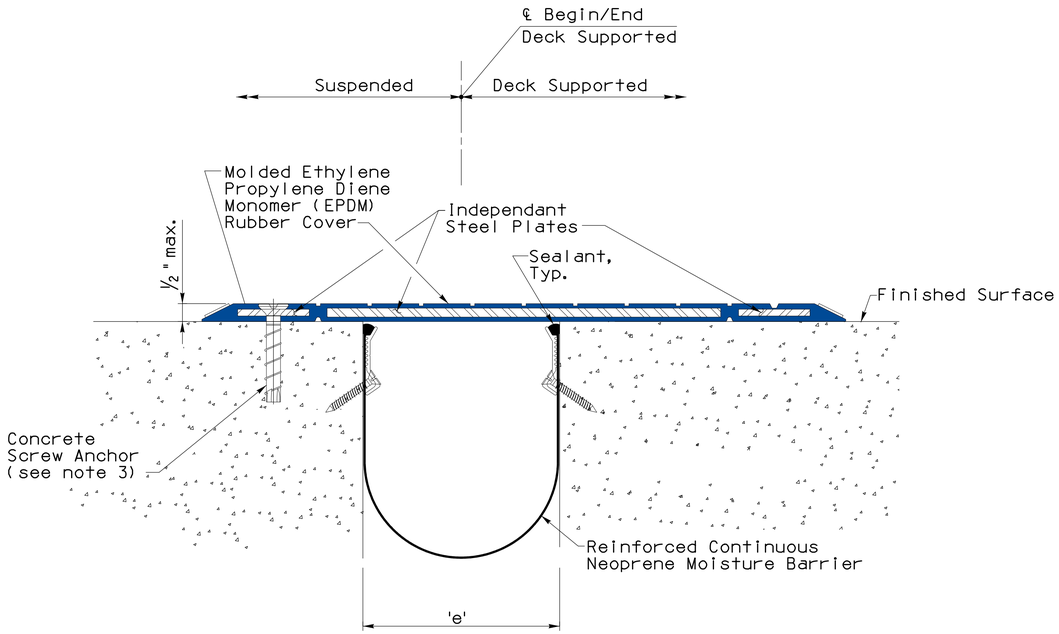
June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION
22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE

334 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF. SCALE: N/A
DSGN. BY LS	06-18	
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012



	e (in)			△ (in)	
Joint	75° F	min.	max.	+10° F	-10° F
West End	3.50	1.08	5.54	-0.28	+0.28
East End	4.50	1.27	9.02	-0.67	+0.67

EXPANSION JOINT AT WEST/EAST END DECK SUPPORTED
No Scale

Notes:

1. The installed expansion device shall conform to the grades and as-built super elevation (if any) at the joint locations and provide a smooth surface.
2. Design of expansion joint at West/East End Deck Supported shall be responsibility of Contractor and shall be designed for pedestrian foot traffic and slow speed non-commercial vehicle traffic per loading criteria shown on General Notes, S-2.01.
3. Size and location of anchors per manufacturer.

Expansion Joint Details - 2 S-2.36 of S-2.38

Structural Grace, Inc
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Blue Stake Center
CALL COLLECT

NO.	DATE	REVISION	BY	CHKD.	APPR.

Preliminary 100% Review

Not for Construction or Recording

June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE

335 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY LS	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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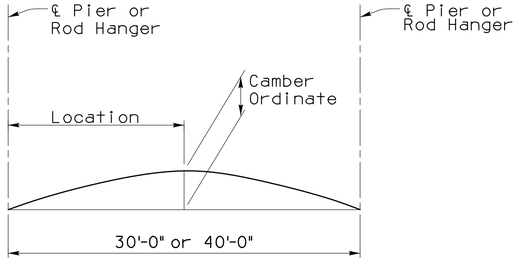
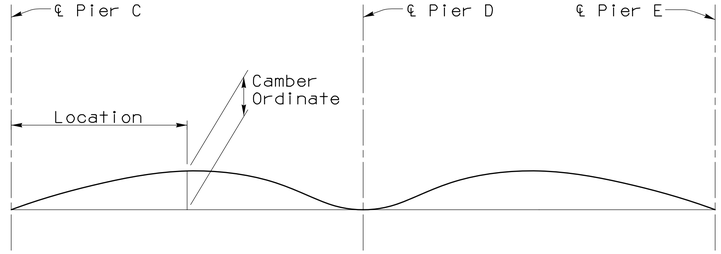


CAMBER DIAGRAM - 30' OR 40' SEGMENT (ENCLOSED)
No Scale

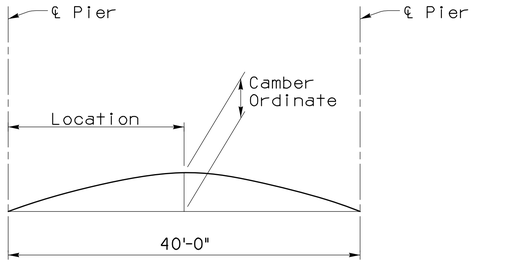
CAMBER ORDINATES AT 10TH POINTS (in.)											
LOCATION	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Span	0	0.06	0.12	0.18	0.24	0.31	0.24	0.18	0.12	0.06	0

Camber based on supports located at 0' & 40' when placing C.I.P. concrete deck for suspended section.



CAMBER DIAGRAM - CIRCULAR CONCRETE DECK
No Scale

CAMBER ORDINATES AT 10TH POINTS (in.)											
LOCATION	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Span C-D	0	0.29	0.55	0.72	0.78	0.78	0.64	0.47	0.27	0.12	0
Span D-E	0	0.12	0.27	0.47	0.64	0.78	0.78	0.72	0.55	0.29	0



CAMBER DIAGRAM - 40' SEGMENT (OPEN)
No Scale

CAMBER ORDINATES AT 10TH POINTS (in.)											
LOCATION	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Span	0	0.05	0.10	0.15	0.21	0.26	0.21	0.15	0.10	0.05	0

Notes:

Camber ordinates represent the required upward construction to offset the net downward deflection due to the effects of dead loads (Future Wearing Surface Excluded), long-term deflections but do not include an allowance for falsework deflection or settlement.

NO.	DATE	REVISION	BY	CHKD.	APPR.

Camber Details

S-2.37 of S-2.38

Structural Grace, Inc
1430 E. Fort Lowell Rd., Ste. 200
Tucson, AZ 85719 (520) 320-0156

Preliminary
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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD
PEDESTRIAN BRIDGE

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY LS	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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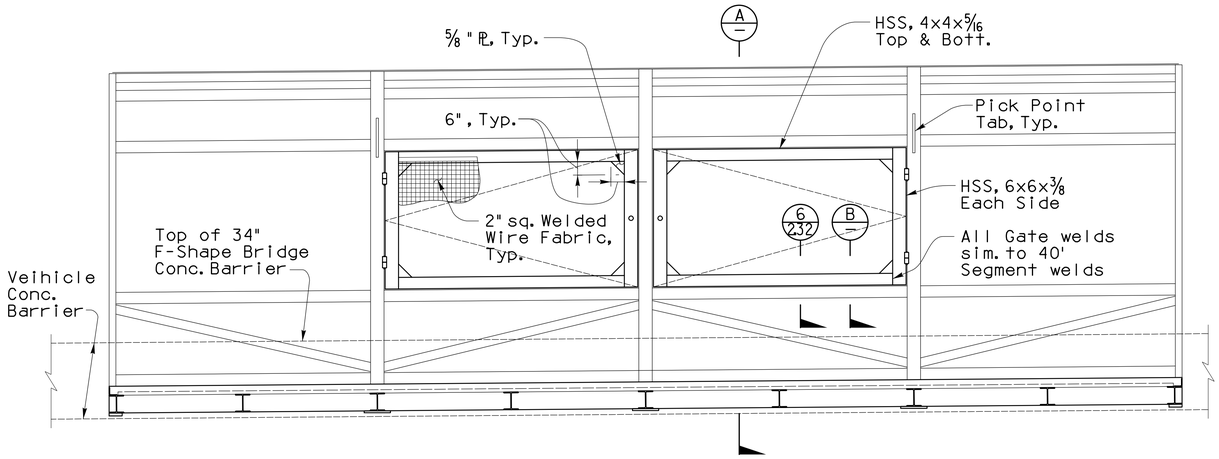
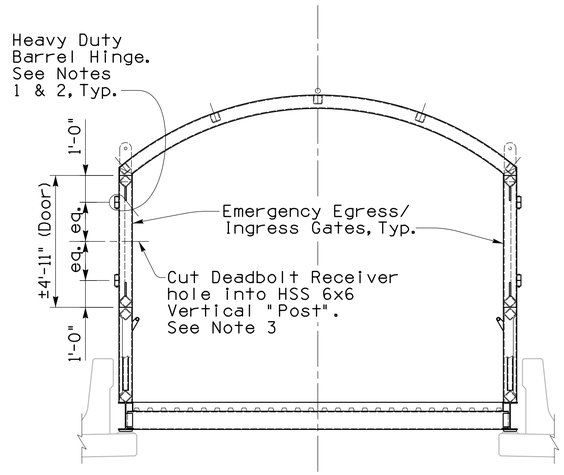


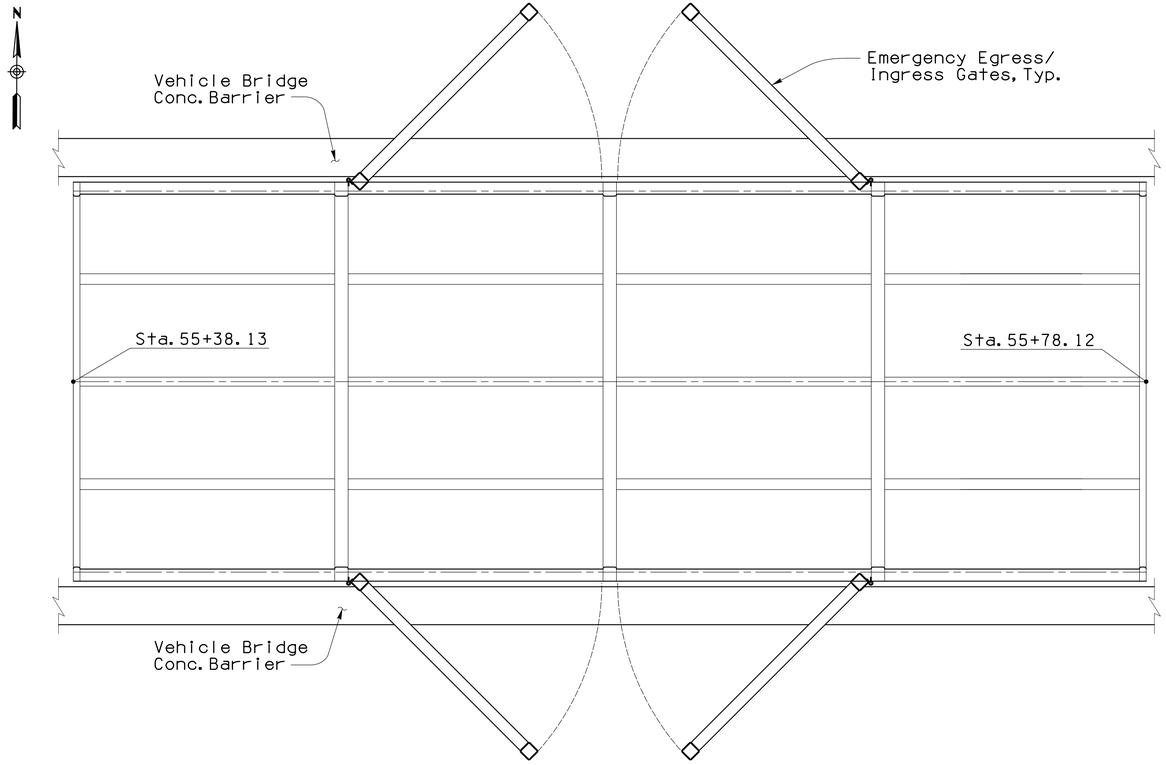
ENLARGED ELEVATION - EXIT GATES
3/8" = 1'-0"



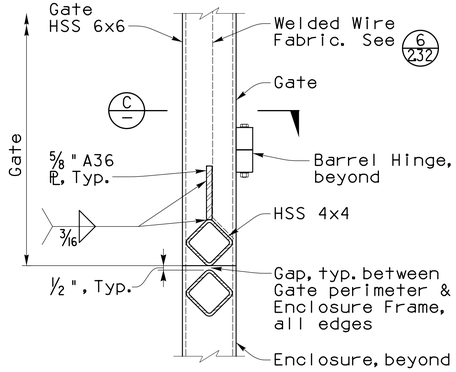
Notes:

1. Heavy duty barrel hinge - Weld on. Hardwaresource.com Zinc Chromate SKU 980030 3,000lb rating per pair of hinges or approved alt.
2. Gates and hinges set flush outboard to swing 180° fully open.
3. Double Dead Bolt keyed to TPD/TFD Schlage Heavy Duty or approved alt. by TPF/TFD.
4. Egress/Ingress Gate and hardware cost incidental to cost of Item 6040011 Structural Steel

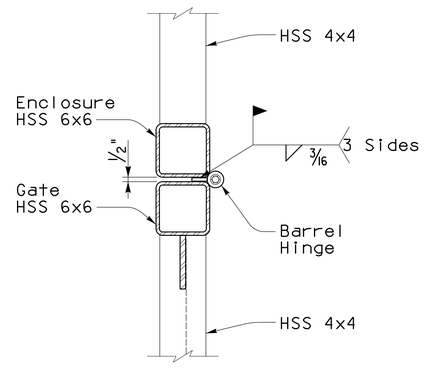
SECTION - EXIT GATES
3/8" = 1'-0"
A



PLAN - EXIT GATES
3/8" = 1'-0"



SECTION
1 1/2" = 1'-0"
B



SECTION
1 1/2" = 1'-0"
C

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Blue Stake Center
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NO.	DATE	REVISION	BY	CHKD.	APPR.

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June 2018

Egress/Ingress Gates S-2.38 of S-2.38

Structural Grace, Inc
1430 E. Fort Lowell Rd., Ste. 200
Tucson, AZ 85719 (520) 320-0156

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET KINO PARKWAY TO TUCSON BOULEVARD PEDESTRIAN BRIDGE

337 OF 474

CITY OF TUCSON

DRWN. BY JHS, MJL	06-18	REF.
DSGN. BY LS	06-18	SCALE: N/A
CHKD. BY CGP	06-18	PLAN NO. 1-2010-012

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GENERAL NOTES

1. General soil and rock (where encountered) strata descriptions and indicated boundaries are based on engineering interpretation of available subsurface information by the geotechnical engineer and may not reflect actual variation in subsurface conditions between borings and samples. The location of contacts between strata may be gradual rather than abrupt. Classification of soil material is in general accordance with ASTM D 2488-93 and is presented in the Geotechnical Report.

2. The observed water levels and/or moisture conditions indicated on the boring logs are as recorded at the time of field investigation. These water levels and/or moisture conditions may vary considerably with time according to the prevailing climate, rainfall or other factors and are otherwise dependent upon the duration of and methods used in the field investigation program.

3. Sound engineering judgment was exercised in preparing the subsurface information presented on these sheets. This information was prepared and is intended for design and estimating purposes. Its presentation on the plans or elsewhere is for the purpose of providing intended users with access to the same information as was provided to the City of Tucson and its designers. Interpretations of subsurface information are presented in good faith and are not intended as a substitute for personal investigation, independent interpretations or judgment of the contractor.

4. A 140 lb. hammer, 30-inch free-fall, was used to drive both the Standard Penetration Test (SPT) split-spoon sampler and the ring-lined sampler in general conformance with ASTM D 1586-96 and D 3550-01, respectively.

5. For further information, refer to SCE reports "Final Geotechnical Report - 22nd Street: Kino Parkway to Tucson Boulevard" submitted to AECOM and any Addenda.

6. Reaction to dilute HCl (as per ASTM D 2488) does not necessarily correlate to the degree of carbonate cementation. For example, a "strong" reaction to HCl and a low SPT-N value may indicate that the soil particles are coated with calcium carbonate or lime but the voids are mostly clear, i.e. the particles are not significantly cemented to each other; therefore, the density is loose. In other cases, soil may exhibit "no" to "weak" reaction to HCl but appear to be strongly cemented due to induration. Thus, the user should consider the reported reaction to HCl and SPT-N values in conjunction with other relevant factors to evaluate the degree of cementation and its effect on construction activities.

7. Refusal SPT-N values may be indicative of the presence of cobbles or boulders whose size cannot be determined by the investigative techniques used for this project. Cobbles and boulders will likely be encountered during the construction of the drilled shafts. Additionally, cemented layers may form cobble or boulder size pieces when broken up. The contractor should mobilize the appropriate equipment for removing this material.

8. The site soils contain random zones of poorly graded and well graded sands and gravels. These soils may be prone to caving. Therefore, localized caving should be anticipated during drilled shaft construction. These local zones may be up to 20-ft thick and can occur at various depths.

9. The site soils contain random zones of gravels, cobbles and boulders. These materials experience large fluid loss during slurry-assisted drilled shaft construction.

OTHER TERMINOLOGY

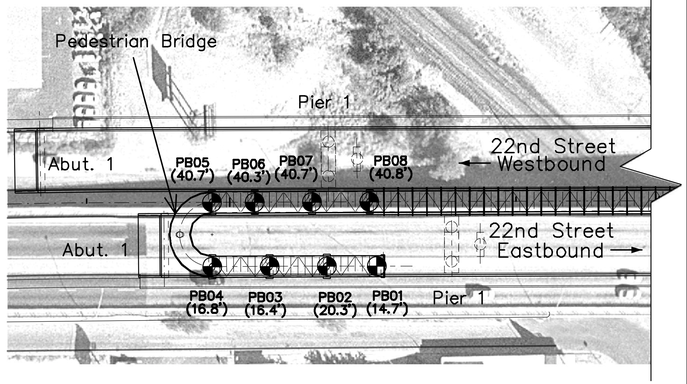
Quantity:		Reaction to HCl:	
Trace	< 5%	No reaction	No visible reaction
Few	5-10%	Weak reaction	Some reaction, with bubbles forming slowly
Little	15-25%	Strong reaction	Violent reaction, with bubbles forming immediately
Some	30-45%		
Mostly	> 50%		

BORING PLAN

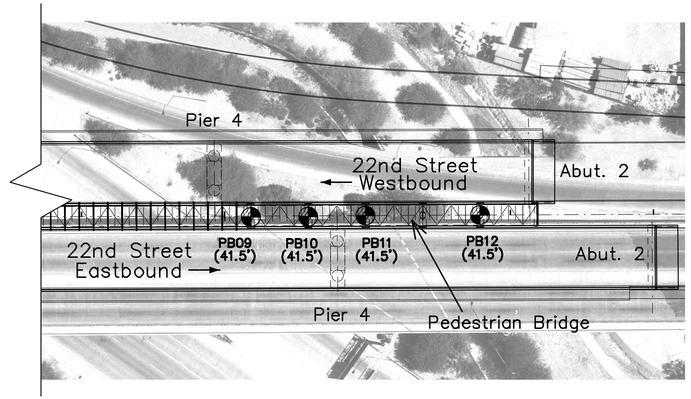
SCALE 1"= 50' (at 22" x 34")

N

WEST AREA PLAN VIEW



EAST AREA PLAN VIEW



BORING LOCATION

50' 0 50' 100'

SCALE: 1"= 50' (at 22" x 34")

FOUNDATION DATA (PEDESTRIAN BRIDGE) SF - 2.01 of SF- 2.07

SCE ENGINEERING
510 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

Preliminary 100% Review

Not for Construction or Recording

June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22nd Street: KINO PARKWAY TO TUCSON BOULEVARD

338 OF 474

CITY OF TUCSON

DRWN. K. WATTS	06-18	REF.	SCALE: As Shown
DSGN. K. WATTS	06-18		
CHKD. J. HARRIS	06-18	PLAN NO.	I - 2010 -012

NO.	DATE	REVISION	BY	CHKD.	APPR.

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Date Plotted: 6/7/2018 Time Plotted: 11:45:13 PM Filename: ...\FDS_22nd_ped_bridge_01.dgn

SCE BORING LOG: PB01

51+07, 47 Rt. (Ref. Al. 22nd St)
NORTHING: 40,352 EASTING: 100,747
ELEV.: 2,454.0 TOTAL DEPTH: 14.7

STARTED: 07/13/2015 01:40 PM
FINISHED: 07/13/2015 02:55 PM

CONTRACTOR: GSI
DRILLER: C. Fiesler
INSPECTOR: K. Watts
RIG TYPE: Bobcat mt. Beaver 650
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Cathead
SCE PROJECT #: 15028

SAMPLER TYPES

Type	Symbol	Description	I.D.	O.D.	Length
S	⊠	Split Spoon	1.375"	2"	18"
R	◧	Ring Sampler	2.5"	3"	18"
U	▯	Shelby Tube			

DEPTH (FT)	ELEV. (FT)	SAMPLE TYPE	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0–6				SANDY LEAN CLAY WITH GRAVEL (fill), hard, dry to moist, light brown, medium plasticity CLAY, some fine to coarse sand, little fine subrounded to subangular gravel, weak cementation, strong reaction with HCl, max. particle size 0.25". (CL) Noted 2" gravel in cuttings.
5	2450	S	5-16-29	
6–14				CLAYEY SAND (native), very dense, dry to moist, light brown, fine to medium SAND, some high plasticity fines, trace fine subrounded to subangular gravel, moderate cementation, strong reaction with HCl, max. particle size 0.5", caliche. (SC)
10	2445	S	11-24-36	
		S	32-50/4	
15	2440	S	40-50/2	Auger refusal at 14' on caliche/dense material. End of boring at 14'. Stopped sampler at 14.7'. No groundwater encountered. Backfilled with cuttings.

Depth scale: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50
Elevation scale: 2450, 2445, 2440, 2435, 2430, 2425, 2420, 2415, 2410, 2405

REPORT: sce fds boring log - PROJECT: 22nd - kino to tucson.gpj - LIBRARY: sce gintlib v2.1.glb - LAST MOD: 08/07/15 11:31 am - EXPORTED: 07/30/16 10:08 am

SCE BORING LOG: PB02

50+68, 47 Rt. (Ref. Al. 22nd St)
NORTHING: 40,352 EASTING: 100,708
ELEV.: 2,454.0 TOTAL DEPTH: 20.3

STARTED: 07/13/2015 11:40 AM
FINISHED: 07/13/2015 01:15 PM

CONTRACTOR: GSI
DRILLER: C. Fiesler
INSPECTOR: K. Watts
RIG TYPE: Bobcat mt. Beaver 650
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Cathead
SCE PROJECT #: 15028

SAMPLER TYPES

Type	Symbol	Description	I.D.	O.D.	Length
S	⊠	Split Spoon	1.375"	2"	18"
R	◧	Ring Sampler	2.5"	3"	18"
U	▯	Shelby Tube			

DEPTH (FT)	ELEV. (FT)	SAMPLE TYPE	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0–6				CLAYEY SAND WITH GRAVEL (fill), medium dense, dry, gray-brown, fine to coarse SAND, some fine to coarse subrounded to subangular gravel, little medium plasticity fines, no cementation, strong reaction with HCl, max. particle size 2.5". (SC)
5	2450	CU R	19-27	
6–20				SANDY FAT CLAY (native), hard, dry, light brown, high plasticity CLAY, some fine to medium sand, few fine subrounded to subangular gravel, moderate cementation, strong reaction with HCl, max. particle size 0.25", caliche. (CH)
10	2445	S	29-41-40	
		S	41-50/4	
15	2440	S	50/5	
20	2435	S	50/4	No recovery. Auger refusal at 20' on caliche/dense material. End of boring at 20'. Stopped sampler at 20.3'. No groundwater encountered. Backfilled with cuttings.

Depth scale: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50
Elevation scale: 2450, 2445, 2440, 2435, 2430, 2425, 2420, 2415, 2410, 2405

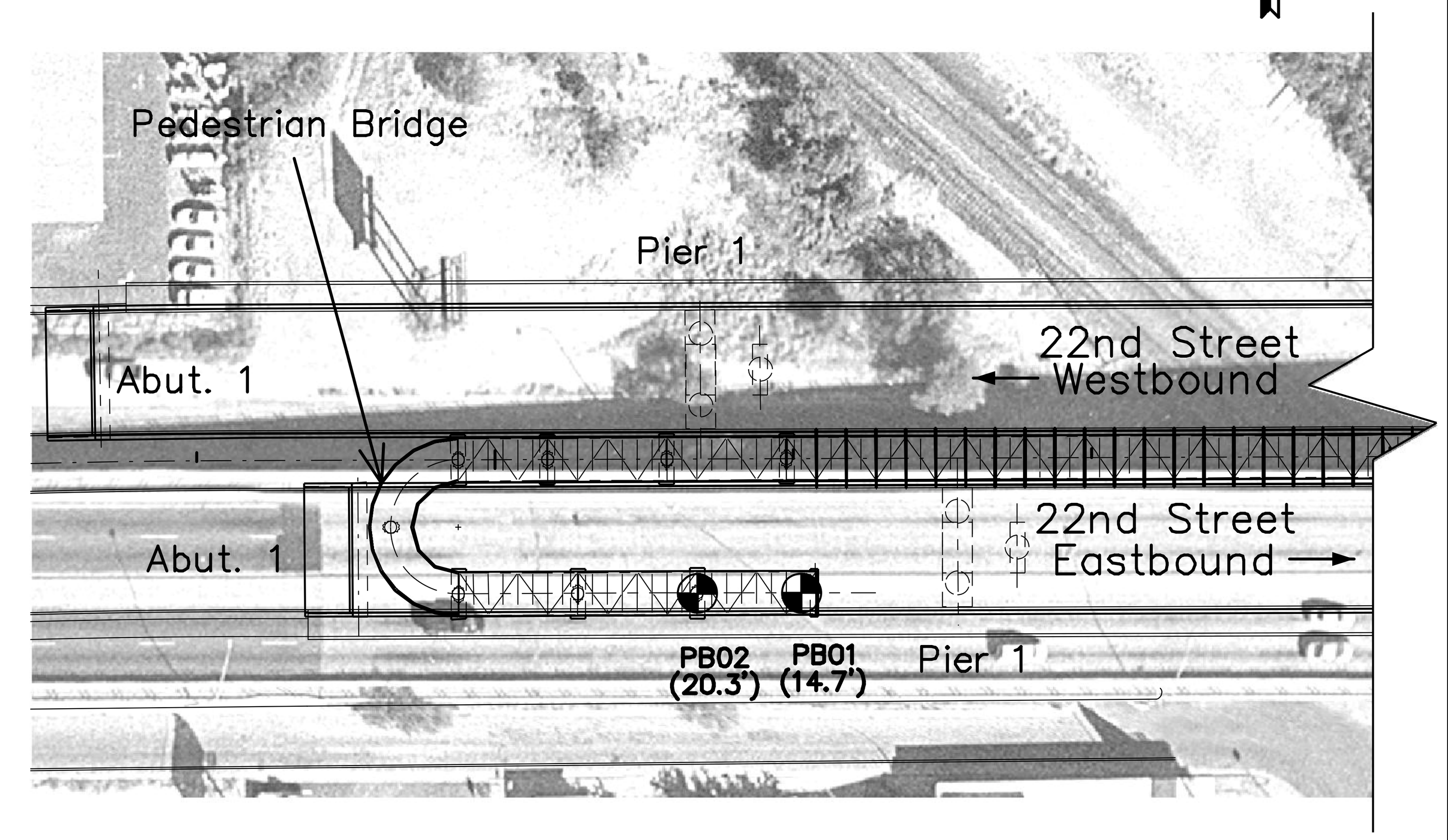
REPORT: sce fds boring log - PROJECT: 22nd - kino to tucson.gpj - LIBRARY: sce gintlib v2.1.glb - LAST MOD: 08/07/15 11:31 am - EXPORTED: 07/30/16 10:08 am

BORING PLAN

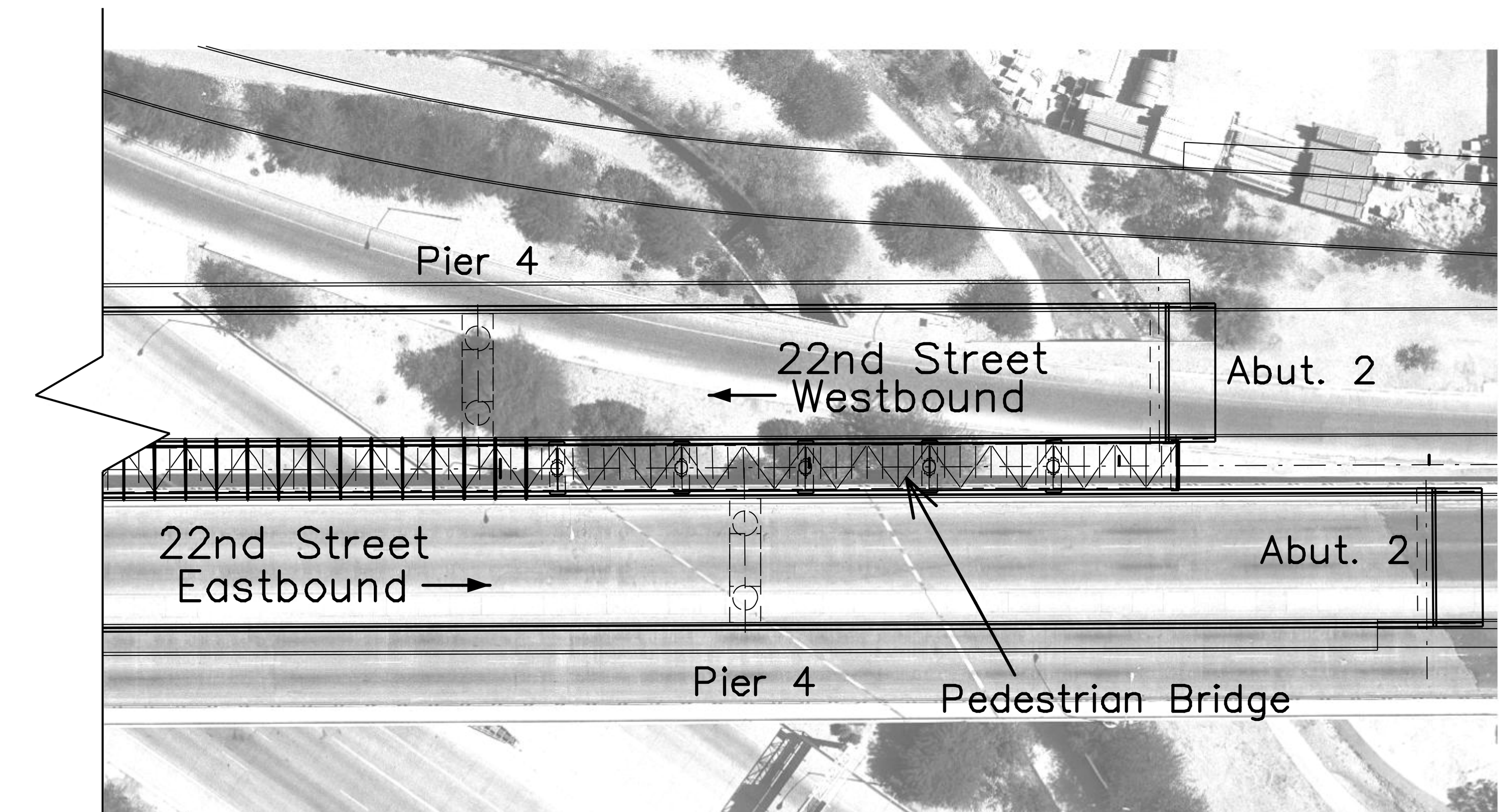
SCALE 1"= 50' (at 22" x 34")

N

WEST AREA PLAN VIEW



EAST AREA PLAN VIEW



BORING LOCATION

50' 0 50' 100'
SCALE: 1"= 50' (at 22" x 34")

FOUNDATION DATA (PEDESTRIAN BRIDGE) SF - 2.02 of SF- 2.07

SCE ENGINEERING 510 E 4TH STREET TUCSON, AZ 85705 520-405-7353

Preliminary 100% Review
Not for Construction or Recording
June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION
22nd Street: KINO PARKWAY TO TUCSON BOULEVARD
CITY OF TUCSON

NO.	DATE	REVISION	BY	CHKD.	APPR.

DRWN. K. WATTS 06-18
DSGN. K. WATTS 06-18
CHKD. J. HARRIS 06-18
REF.
SCALE: As Shown
PLAN NO. I - 2010 -012

Date Plotted: 6/7/2018 Time Plotted: 11:41:10 PM Filename: ...\FDS_22nd_ped_bridge_02.dgn

SCE BORING LOG: PB03

50+29, 46 Rt. (Ref. Al. 22nd St)
NORTHING: 40,352 EASTING: 100,669
ELEV.: 2,454.0 TOTAL DEPTH: 16.4

STARTED: 07/13/2015 09:20 AM
FINISHED: 07/13/2015 10:35 AM

CONTRACTOR: GSI
DRILLER: C. Fiesler
INSPECTOR: K. Watts
RIG TYPE: Bobcat mt. Beaver 650
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Cathead
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0	2450		S		21-38-43	CLAYEY SAND (fill), very dense, dry, light brown, fine to coarse SAND, some medium plasticity fines, trace fine subrounded to subangular gravel, weak cementation, strong reaction with HCl, max. particle size 0.5". (SC) Noted 2" gravel in cuttings.
5						
10	2445		S		6-9-42	SANDY LEAN CLAY (native), hard, dry to moist, light brown, medium plasticity CLAY, some fine to medium sand, few fine subrounded to subangular gravel, moderate cementation, strong reaction with HCl, max. particle size 0.25", caliche. (CL)
			S		31-50/5	
15	2440		S		50/5	Auger refusal at 16' on caliche/dense material. End of boring at 16'. Stopped sampler at 16.4'. No groundwater encountered. Backfilled with cuttings.
20	2435					
25	2430					
30	2425					
35	2420					
40	2415					
45	2410					
50	2405					

SCE BORING LOG: PB04

49+85, 45 Rt. (Ref. Al. 22nd St)
NORTHING: 40,353 EASTING: 100,625
ELEV.: 2,454.7 TOTAL DEPTH: 16.8

STARTED: 07/13/2015 07:20 AM
FINISHED: 07/13/2015 08:50 AM

CONTRACTOR: GSI
DRILLER: C. Fiesler
INSPECTOR: K. Watts
RIG TYPE: Bobcat mt. Beaver 650
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Cathead
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

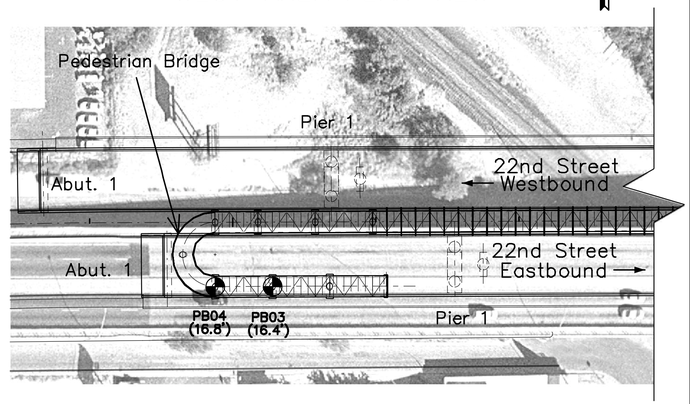
DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0	2450		CU			CLAYEY SAND WITH GRAVEL (fill), medium dense, dry to moist, brown, fine to coarse SAND, some fine subrounded to subangular gravel, little low plasticity fines, no cementation, strong reaction with HCl, max. particle size 0.75", some pockets and nodules of calcium carbonates. (SC) Noted 2" gravel in cuttings.
			R		21-14	
5						
10	2445		S		24-42-50	SANDY FAT CLAY (native), hard, dry to moist, brown, high plasticity CLAY, some fine to medium sand, trace fine subrounded to subangular gravel, moderate cementation, strong reaction with HCl, max. particle size 0.5", caliche. (CH)
			S		19-50/5	
15	2440		S		28-50/3	Auger refusal at 16.5' on caliche/dense material. End of boring at 16.5'. Stopped sampler at 16.8'. No groundwater encountered. Backfilled with cuttings.
20	2435					
25	2430					
30	2425					
35	2420					
40	2415					
45	2410					
50	2405					

BORING PLAN

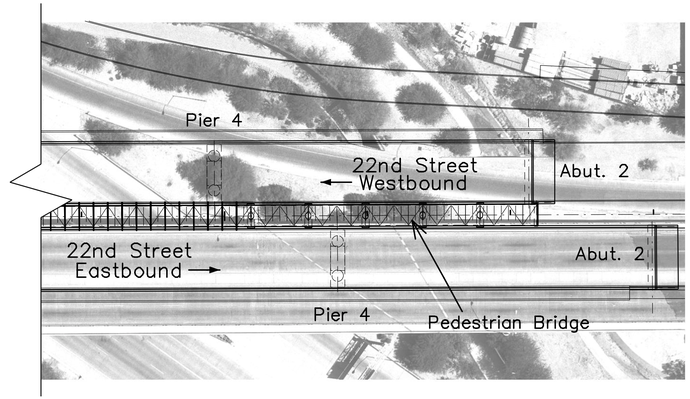
SCALE 1"= 50' (at 22" x 34")

N

WEST AREA PLAN VIEW



EAST AREA PLAN VIEW



BORING LOCATION

50' 0 50' 100'

SCALE: 1" = 50'
(at 22" x 34")

FOUNDATION DATA
(PEDESTRIAN BRIDGE) SF - 2.03 of SF- 2.07

SCE ENGINEERING
510 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

Preliminary
100%
Review

Not for
Construction
or Recording

June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22nd Street: KINO PARKWAY TO TUCSON BOULEVARD

340 OF 474

CITY OF TUCSON

DRWN. K. WATTS	06-18	REF.	SCALE: As Shown
DSGN. K. WATTS	06-18		
CHKD. J. HARRIS	06-18	PLAN NO.	I - 2010 -012

NO.	DATE	REVISION	BY	CHKD.	APPR.

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Date Plotted: 6/7/2018 Time Plotted: 11:48:27 PM Filename: ...\FDS_22nd_ped_bridge_03.dgn

SCE BORING LOG: PB05

49+80, 1 Lt. (Ref. Al. 22nd St)
NORTHING: 40,399 EASTING: 100,620
ELEV.: 2,453.4 TOTAL DEPTH: 40.7

STARTED: 07/10/2015 06:40 AM
FINISHED: 07/10/2015 07:45 AM

CONTRACTOR: GSI
DRILLER: R. Thornburg
INSPECTOR: K. Watts
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S	☒	Split Spoon	1.375"	2"	18"
	R	■	Ring Sampler	2.5"	3"	18"
	U	▯	Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0	2453.4		S	☒	4-8-11	SANDY FAT CLAY (native), very stiff, dry to moist, gray, high plasticity CLAY, some fine to medium sand, weak cementation, strong reaction with HCl. (CH)
5	2450					
10	2445		S	☒	19-19-18	SANDY LEAN CLAY WITH GRAVEL, hard, dry to moist, light brown, medium plasticity CLAY, little fine subrounded to subangular gravel, little fine to coarse sand, weak cementation, weak reaction with HCl, max. particle size 0.5". (CL)
15	2440					Slow auger advancement from 13' to end of boring.
			S	☒	50/5	CLAYEY SAND, very dense, dry to moist, light brown, fine to medium SAND, little low to medium plasticity fines, few fine subrounded to subangular gravel, moderate cementation, strong reaction with HCl, max. particle size 0.25", caliche. (SC)
20	2435		S	☒	29-50/4	SANDY LEAN CLAY, hard, dry to moist, brown, medium plasticity CLAY, some fine to medium sand, moderate cementation, strong reaction with HCl, caliche. (CL)
25	2430		S	☒	18-50/3	Becomes gray, some fine to coarse sand.
30	2425		S	☒	50/4	CLAYEY SAND WITH GRAVEL, very dense, dry to moist, light brown, fine to coarse SAND, little fine subrounded to subangular gravel, little low plasticity fines, weak cementation, weak reaction with HCl, max. particle size 0.5". (SC)
35	2420		S	☒	50/2	SANDY LEAN CLAY, hard, dry, gray, medium plasticity CLAY, some fine to medium sand, few fine subrounded to subangular gravel, moderate cementation, strong reaction with HCl, max. particle size 0.25", caliche. (CL)
40	2415		S	☒	14-50/2	
45	2410					End of boring at 40'. Stopped sampler at 40.7'. No groundwater encountered. Backfilled with cuttings.
50	2405					

SCE BORING LOG: PB06

50+22, 3 Lt. (Ref. Al. 22nd St)
NORTHING: 40,401 EASTING: 100,663
ELEV.: 2,452.7 TOTAL DEPTH: 40.3

STARTED: 07/10/2015 08:15 AM
FINISHED: 07/10/2015 09:25 AM

CONTRACTOR: GSI
DRILLER: R. Thornburg
INSPECTOR: K. Watts
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S	☒	Split Spoon	1.375"	2"	18"
	R	■	Ring Sampler	2.5"	3"	18"
	U	▯	Shelby Tube			

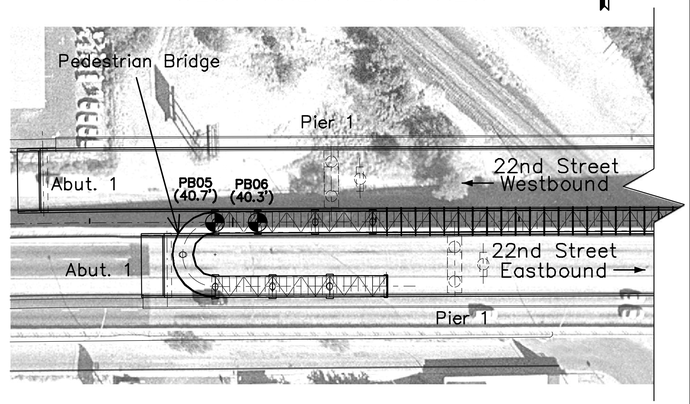
DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0	2452.7		CU R	■	18-43	CLAYEY SAND (native), medium dense, dry to moist, light brown, fine to coarse SAND, little fine to coarse subrounded to subangular gravel, little medium plasticity fines, weak cementation, strong reaction with HCl, max. particle size 1.5". (SC)
5	2450					
10	2445		S	☒	6-25-50	SANDY FAT CLAY, hard, dry to moist, brown, high plasticity CLAY, some fine to medium sand, little fine subrounded to subangular gravel, moderate cementation, strong reaction with HCl, max. particle size 0.25", caliche. (CH)
15	2440		S	☒	50/4	
20	2435		S	☒	27-11-10	Becomes very stiff.
25	2430		S	☒	50/4	SILTY SAND WITH GRAVEL, medium dense, dry to moist, reddish brown, fine to coarse SAND, little fine subrounded to subangular gravel, little nonplastic fines, no cementation, no reaction with HCl, max. particle size 0.5". (SM)
30	2425		S	☒	50/2	CLAYEY SAND, very dense, dry, gray, fine to medium SAND, some low to medium plasticity fines, moderate cementation, strong reaction with HCl, caliche. (SC)
35	2420		S	☒	25-50/1	No recovery. Sampler bounced on rock/dense material.
40	2415		S	☒	50/4	Becomes CLAYEY SAND WITH GRAVEL, light brown, fine to coarse SAND, little fine to coarse subrounded to subangular gravel, little low plasticity fines, max. particle size 1".
45	2410					Becomes max. particle size 1.5".
50	2405					End of boring at 40'. Stopped sampler at 40.3'. No groundwater encountered. Backfilled with cuttings.

BORING PLAN

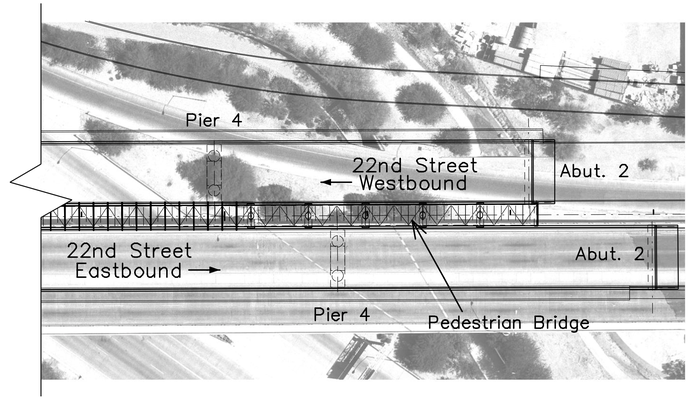
SCALE 1"= 50' (at 22" x 34")

N

WEST AREA PLAN VIEW



EAST AREA PLAN VIEW



BORING LOCATION

50' 0 50' 100'

SCALE: 1" = 50'
(at 22" x 34")

FOUNDATION DATA (PEDESTRIAN BRIDGE) SF - 2.04 of SF- 2.07

SCE ENGINEERING
510 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

Preliminary 100% Review

Not for Construction or Recording

June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22nd Street: KINO PARKWAY TO TUCSON BOULEVARD

341 OF 474

CITY OF TUCSON

DRWN. K. WATTS	06-18	REF.
DSGN. K. WATTS	06-18	SCALE: As Shown
CHKD. J. HARRIS	06-18	PLAN NO. I - 2010 -012

NO.	DATE	REVISION	BY	CHKD.	APPR.

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Blue Stake Center

Date Plotted: 6/7/2018 Time Plotted: 11:51:00 PM Filename: ...\FDS_22nd_ped.bridge_04.dgn

SCE BORING LOG: PB07

50+60, 4 Lt. (Ref. Al. 22nd St)
NORTHING: 40,402 EASTING: 100,701
ELEV.: 2,452.3 TOTAL DEPTH: 40.7

STARTED: 07/10/2015 10:00 AM
FINISHED: 07/10/2015 11:30 AM

CONTRACTOR: GSI
DRILLER: R. Thornburg
INSPECTOR: K. Watts
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S	☒	Split Spoon	1.375"	2"	18"
	R	■	Ring Sampler	2.5"	3"	18"
	U	▯	Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0	2450					SANDY FAT CLAY (native), hard, dry to moist, gray-brown, high plasticity CLAY, some fine to medium sand, weak cementation, strong reaction with HCl. (CH)
5	2445		S	☒	9-16-17	
10	2440		S	☒	11-24-24	Becomes brown, few fine subrounded to subangular gravel, moderate cementation, max. particle size 0.25", caliche.
15	2435		S	☒	11-50/5	CLAYEY SAND, very dense, dry to moist, brown, fine to medium SAND, some medium plasticity fines, trace fine subrounded to subangular gravel, moderate cementation, strong reaction with HCl, max. particle size 0.5", caliche. (SC)
20	2430		S	☒	18-50/4	Becomes some low to medium plasticity fines.
25	2425		S	☒	25-50/3	SANDY FAT CLAY, hard, dry, gray, high plasticity CLAY, some fine to medium sand, few fine subrounded to subangular gravel, moderate cementation, strong reaction with HCl, max. particle size 0.25", caliche. (CH)
30	2420		S	☒	24-50/1	
35	2415		S	☒	50/2	
40	2410		S	☒	23-50/2	Auger chatter from 37' to end of boring. CLAYEY GRAVEL WITH SAND, very dense, dry, gray, fine to coarse subrounded to subangular GRAVEL, some fine to coarse sand, little low plasticity fines, moderate cementation, strong reaction with HCl, max. particle size 1.5", caliche. (GC) End of boring at 40'. Stopped sampler at 40.7'. No groundwater encountered. Backfilled with cuttings.
45	2405					
50						

SCE BORING LOG: PB08

50+98, 0 Lt. (Ref. Al. 22nd St)
NORTHING: 40,399 EASTING: 100,738
ELEV.: 2,452.5 TOTAL DEPTH: 40.8

STARTED: 07/10/2015 12:00 PM
FINISHED: 07/10/2015 01:10 PM

CONTRACTOR: GSI
DRILLER: R. Thornburg
INSPECTOR: K. Watts
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S	☒	Split Spoon	1.375"	2"	18"
	R	■	Ring Sampler	2.5"	3"	18"
	U	▯	Shelby Tube			

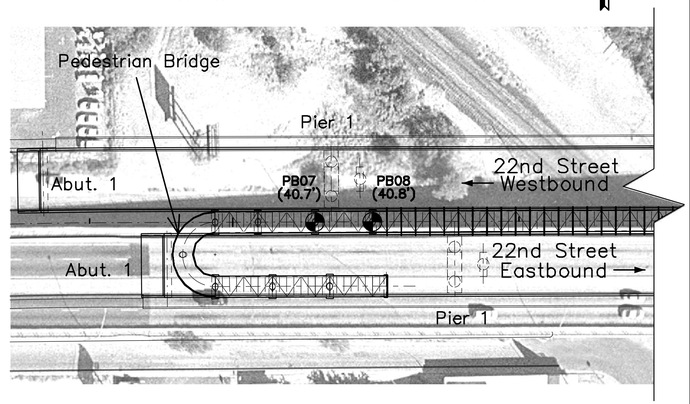
DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0	2450		CU R	☒ ■	8-30	CLAYEY SAND (native), medium dense, dry to moist, redish brown, fine to coarse SAND, little medium plasticity fines, few fine to coarse subrounded to subangular gravel, weak cementation, strong reaction with HCl, max. particle size 1.5". (SC)
5	2445					
10	2440		S	☒	21-50/5	SANDY LEAN CLAY, hard, dry to moist, brown, medium plasticity CLAY, some fine to medium sand, few fine subrounded to subangular gravel, weak cementation, strong reaction with HCl, max. particle size 0.25". (CL)
15	2435		S	☒	8-31-50	
20	2430		S	☒	15-19-24	CLAYEY SAND WITH GRAVEL, dense, moist, brown, fine to medium SAND, little fine subrounded to subangular gravel, little low plasticity fines, weak cementation, weak reaction with HCl, max. particle size 0.5". (SC)
25	2425		S	☒	42-28-50/2	SANDY FAT CLAY, hard, moist, brown, high plasticity CLAY, some fine to medium sand, moderate cementation, strong reaction with HCl, caliche. (CH)
30	2420		S	☒	50/5	SILTY SAND, very dense, dry, gray, fine to coarse SAND, little medium plasticity fines, few fine subrounded to subangular gravel, moderate cementation, strong reaction with HCl, max. particle size 0.5", caliche. (SM)
35	2415		S	☒	12-50/4	Becomes SILTY SAND WITH GRAVEL, little fine to coarse subrounded to subangular gravel, max. particle size 1.5". Auger chatter from 37' to end of boring.
40	2410		S	☒	12-50/4	Becomes moist, redish brown, little fine subrounded to subangular gravel, no cementation, weak reaction with HCl, max. particle size 0.75". End of boring at 40'. Stopped sampler at 40.8'. No groundwater encountered. Backfilled with cuttings.
45	2405					
50						

BORING PLAN

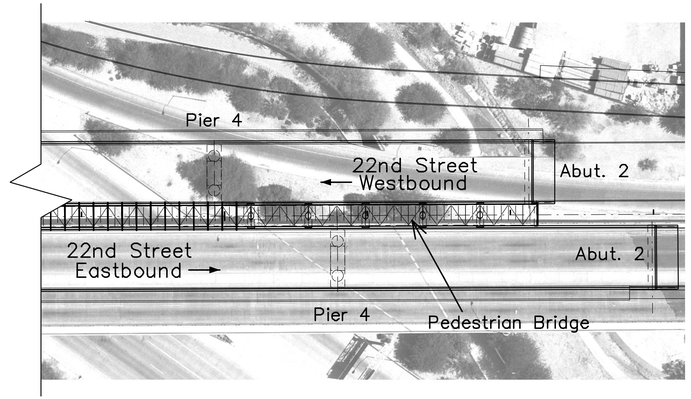
SCALE 1"= 50' (at 22" x 34")

N

WEST AREA PLAN VIEW



EAST AREA PLAN VIEW



BORING LOCATION

50' 0 50' 100'

SCALE: 1"= 50'
(at 22" x 34")

FOUNDATION DATA
(PEDESTRIAN BRIDGE) SF - 2.05 of SF- 2.07

SCE ENGINEERING
510 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

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Review

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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22nd Street: KINO PARKWAY TO TUCSON BOULEVARD

342 OF 474

CITY OF TUCSON

DRWN. K. WATTS	06-18	REF.
DSGN. K. WATTS	06-18	SCALE: As Shown
CHKD. J. HARRIS	06-18	PLAN NO. I - 2010 -012

NO.	DATE	REVISION	BY	CHKD.	APPR.

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Date Plotted: 6/7/2018 Time Plotted: 11:53:00 PM Filename: ...\FDS_22nd_ped_bridge_05.dgn

SCE BORING LOG: PB09

60+19, 1 Lt. (Ref. Al. 22nd St)
NORTHING: 40,404 EASTING: 101,659
ELEV.: 2,455.9 TOTAL DEPTH: 41.5

STARTED: 07/09/2015 01:45 PM
FINISHED: 07/09/2015 03:10 PM

CONTRACTOR: GSI
DRILLER: C. Fiesler
INSPECTOR: K. Watts
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S	☒	Split Spoon	1.375"	2"	18"
	R	■	Ring Sampler	2.5"	3"	18"
	U	▯	Shelby Tube			

DEPTH (FT)	ELEV. (FT)	SAMPLE TYPE	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0	2455			CLAYEY SAND (fill), medium dense, moist, brown, fine to coarse SAND, some medium plasticity fines, few fine subrounded to subangular gravel, weak cementation, strong reaction with HCl, max. particle size 0.75". (SC)
5	2450	S	4-7-6	
10	2445	S	6-8-11	
				Slow auger advancement from 12' to 35'.
15	2440	S	23-50/4	CLAYEY SAND (native), very dense, dry to moist, gray-brown, fine to medium SAND, some medium plasticity fines, few fine subrounded to subangular gravel, moderate cementation, strong reaction with HCl, max. particle size 0.5", caliche. (SC)
20	2435	S	50/5	SANDY FAT CLAY, hard, dry, gray, high plasticity CLAY, some fine to medium sand, moderate cementation, strong reaction with HCl, caliche. (CH)
25	2430	S	50/4	CLAYEY SAND, very dense, dry, gray, fine to medium SAND, some medium to high plasticity fines, few fine subrounded to subangular gravel, moderate cementation, strong reaction with HCl, max. particle size 0.25", caliche. (SC)
30	2425	S	50/5	Becomes CLAYEY SAND WITH GRAVEL, little fine subrounded to subangular gravel, little low plasticity fines, max. particle size 0.5".
35	2420	S	10-50/5	Becomes fine to coarse SAND, little medium plasticity fines, max. particle size 0.25".
40	2415	S	26-36-31	SILTY SAND, very dense, dry to moist, light pink, fine to coarse SAND, little nonplastic fines, few fine subrounded to subangular gravel, no cementation, weak reaction with HCl, max. particle size 0.5". (SM)
45	2410			End of boring at 40'. Stopped sampler at 41.5'. No groundwater encountered. Backfilled with cuttings.
50				

SCE BORING LOG: PB10

60+59, 1 Lt. (Ref. Al. 22nd St)
NORTHING: 40,404 EASTING: 101,699
ELEV.: 2,455.5 TOTAL DEPTH: 41.5

STARTED: 07/09/2015 11:55 AM
FINISHED: 07/09/2015 01:10 PM

CONTRACTOR: GSI
DRILLER: C. Fiesler
INSPECTOR: K. Watts
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S	☒	Split Spoon	1.375"	2"	18"
	R	■	Ring Sampler	2.5"	3"	18"
	U	▯	Shelby Tube			

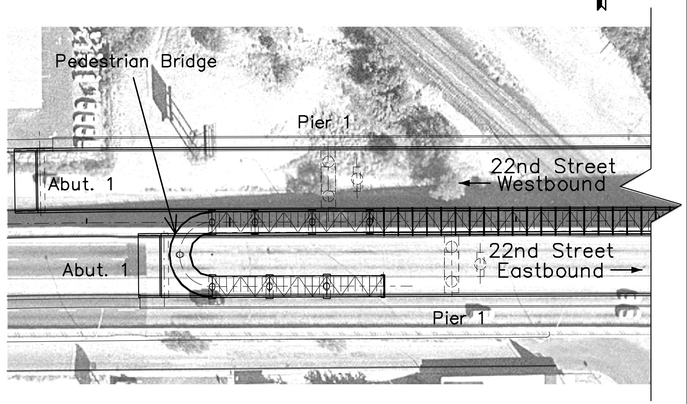
DEPTH (FT)	ELEV. (FT)	SAMPLE TYPE	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0	2455			CLAYEY SAND WITH GRAVEL (fill), moist, brown, fine to coarse SAND, little fine to coarse subrounded to subangular gravel, little medium plasticity fines, weak cementation, strong reaction with HCl, max. particle size 1.5". (SC)
5	2450	CU R	4-6	CLAYEY SAND WITH GRAVEL (native), loose, moist, brown, fine to coarse SAND, little fine to coarse subrounded to subangular gravel, little medium plasticity fines, weak cementation, strong reaction with HCl, max. particle size 1.5". (SC)
				Slow auger advancement from 8' to 34'.
10	2445	S	24-50/3	SANDY LEAN CLAY, hard, dry to moist, light brown, medium plasticity CLAY, some fine to medium sand, few fine subrounded to subangular gravel, moderate cementation, strong reaction with HCl, max. particle size 0.25", caliche. (CL)
15	2440	S	42-43-50/1	CLAYEY SAND WITH GRAVEL, very dense, dry to moist, redish brown, fine to coarse SAND, little fine subrounded to subangular gravel, little medium plasticity fines, moderate cementation, strong reaction with HCl, max. particle size 0.25", caliche. (SC)
20	2435	S	50/3	Becomes CLAYEY SAND, dry, gray, few fine subrounded to subangular gravel.
25	2430	S	50/5	
30	2425	S	20-50/2	Becomes some medium plasticity fines, trace fine subrounded to subangular gravel, max. particle size 0.5".
35	2420	S	50/3	Becomes redish brown, little low plasticity fines, few fine subrounded to subangular gravel, weak cementation, max. particle size 0.25", some strongly cemented nodules.
40	2415	S	30-39-37	SILTY SAND WITH GRAVEL, very dense, dry to moist, light pink, fine to coarse SAND, little fine subrounded to subangular gravel, little nonplastic fines, no cementation, no reaction with HCl, max. particle size 0.5". (SM)
45	2410			End of boring at 40'. Stopped sampler at 41.5'. No groundwater encountered. Backfilled with cuttings.
50				

BORING PLAN

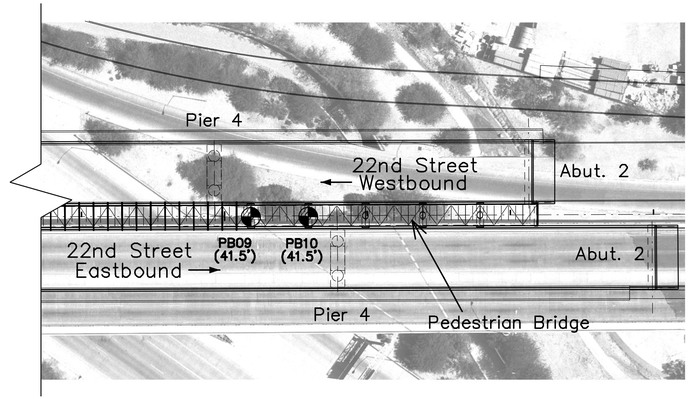
SCALE 1"= 50' (at 22" x 34")

N

WEST AREA PLAN VIEW



EAST AREA PLAN VIEW



BORING LOCATION

50' 0 50' 100'

SCALE: 1"= 50'
(at 22" x 34")

FOUNDATION DATA
(PEDESTRIAN BRIDGE) SF - 2.06 of SF- 2.07

SCE ENGINEERING
510 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

Preliminary
100%
Review

Not for
Construction
or Recording

June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22nd Street: KINO PARKWAY TO TUCSON BOULEVARD

343 OF 474

CITY OF TUCSON

DRWN. K. WATTS	06-18	REF.	SCALE: As Shown
DSGN. K. WATTS	06-18		
CHKD. J. HARRIS	06-18	PLAN NO.	I - 2010 -012

NO.	DATE	REVISION	BY	CHKD.	APPR.

Two working days before you dig.
CALL FOR THE BLUE STAKES
1-800-782-5348
Blue Stake Center

Date Plotted: 6/7/2018 Time Plotted: 11:54:51 PM Filename: ...\FDS_22nd_ped_bridge_06.dgn

SCE BORING LOG: PB11

60+98, 1 Lt. (Ref. Al. 22nd St)
NORTHING: 40,404 EASTING: 101,738
ELEV.: 2,455.9 TOTAL DEPTH: 41.5

STARTED: 07/09/2015 09:40 AM
FINISHED: 07/09/2015 11:00 AM

CONTRACTOR: GSI
DRILLER: C. Fiesler
INSPECTOR: K. Watts
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S	☒	Split Spoon	1.375"	2"	18"
	R	■	Ring Sampler	2.5"	3"	18"
	U	▯	Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
	2455					CLAYEY SAND (fill), moist, light brown, fine to medium SAND, little medium plasticity fines, few fine subrounded gravel, weak cementation, strong reaction with HCl, max. particle size 0.25". (SC)
5	2450		S	☒	4-6-7	CLAYEY SAND (native), medium dense, moist, light brown, fine to medium SAND, little medium plasticity fines, few fine subrounded gravel, weak cementation, strong reaction with HCl, max. particle size 0.25". (SC)
						Slow auger advancement from 8' to 34'.
10	2445		S	☒	21-50/5	SANDY FAT CLAY, hard, dry to moist, light brown, high plasticity CLAY, some fine to medium sand, moderate cementation, strong reaction with HCl, caliche. (CH)
15	2440		S	☒	50/5	CLAYEY SAND WITH GRAVEL, very dense, dry to moist, brown, fine to coarse SAND, little fine subrounded gravel, little medium plasticity fines, weak cementation, weak reaction with HCl, max. particle size 0.25". (SC)
20	2435		S	☒	9-50/3	SANDY LEAN CLAY, hard, dry to moist, light brown, medium plasticity CLAY, some fine to medium sand, moderate cementation, strong reaction with HCl, caliche. (CL)
25	2430		S	☒	30-50/2	CLAYEY SAND, very dense, dry, gray, fine to medium SAND, some medium to high plasticity fines, moderate cementation, strong reaction with HCl, caliche. (SC)
30	2425		S	☒	50/5	Becomes CLAYEY SAND WITH GRAVEL, fine to coarse SAND, little fine to coarse subrounded to subangular gravel, little medium plasticity fines, strong cementation, max. particle size 1.5".
35	2420		S	☒	40-50/3	Becomes dry to moist, redish brown, little fine subrounded to subangular gravel, little low plasticity fines, no cementation, weak reaction with HCl, max. particle size 0.5".
40	2415		S	☒	21-24-25	SILTY SAND WITH GRAVEL, dense, dry to moist, light pink, fine to coarse SAND, little fine subrounded to subangular gravel, little nonplastic fines, no cementation, no reaction with HCl, max. particle size 0.5". (SM)
45	2410					End of boring at 40'. Stopped sampler at 41.5'. No groundwater encountered. Backfilled with cuttings.
50						

SCE BORING LOG: PB12

61+73, 3 Lt. (Ref. Al. 22nd St)
NORTHING: 40,406 EASTING: 101,813
ELEV.: 2,455.9 TOTAL DEPTH: 41.5

STARTED: 07/09/2015 07:05 AM
FINISHED: 07/09/2015 08:30 AM

CONTRACTOR: GSI
DRILLER: C. Fiesler
INSPECTOR: K. Watts
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: 15028

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S	☒	Split Spoon	1.375"	2"	18"
	R	■	Ring Sampler	2.5"	3"	18"
	U	▯	Shelby Tube			

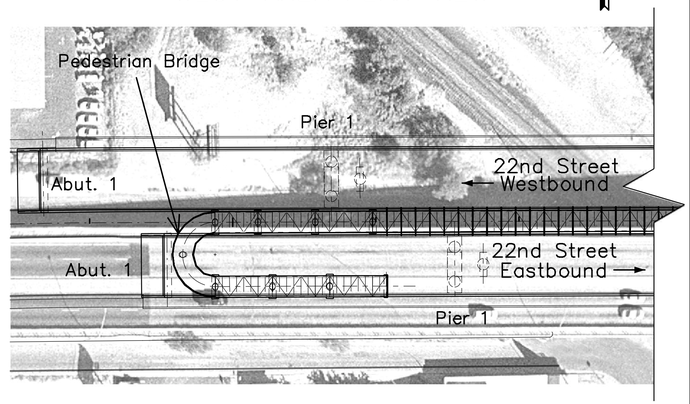
DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
	2455					CLAYEY SAND WITH GRAVEL (fill), dry to moist, light brown, fine to coarse SAND, little fine to coarse subrounded to subangular gravel, little medium plasticity fines, weak cementation, strong reaction with HCl, max. particle size 1.5". (SC)
5	2450		CU R	■	12-14	CLAYEY SAND WITH GRAVEL (native), medium dense, dry to moist, light brown, fine to coarse SAND, little fine to coarse subrounded to subangular gravel, little medium plasticity fines, weak cementation, strong reaction with HCl, max. particle size 1.5". (SC)
						Slow auger advancement from 8' to 34'.
10	2445		S	☒	11-19-37	SANDY FAT CLAY, hard, dry to moist, brown, high plasticity CLAY, some fine to medium sand, moderate cementation, strong reaction with HCl, some nodules of calcium carbonates, caliche. (CH)
15	2440		S	☒	50/5	Becomes light brown.
20	2435		S	☒	50/4	CLAYEY SAND, very dense, dry, gray-brown, fine to medium SAND, little low to medium plasticity fines, moderate cementation, strong reaction with HCl, caliche. (SC)
25	2430		S	☒	50/5	Becomes some medium plasticity fines, few fine subangular gravel, max. particle size 0.5".
30	2425		S	☒	50/3	
35	2420		S	☒	16-50/3	Becomes dry to moist, brown, fine to coarse SAND, little low plasticity fines, few fine subrounded to subangular gravel, no cementation, max. particle size 0.5".
40	2415		S	☒	23-28-29	SILTY SAND WITH GRAVEL, very dense, dry to moist, gray-brown, fine to coarse SAND, little fine subrounded to subangular gravel, little nonplastic fines, no cementation, no reaction with HCl, max. particle size 0.5". (SM)
45	2410					End of boring at 40'. Stopped sampler at 41.5'. No groundwater encountered. Backfilled with cuttings.
50						

BORING PLAN

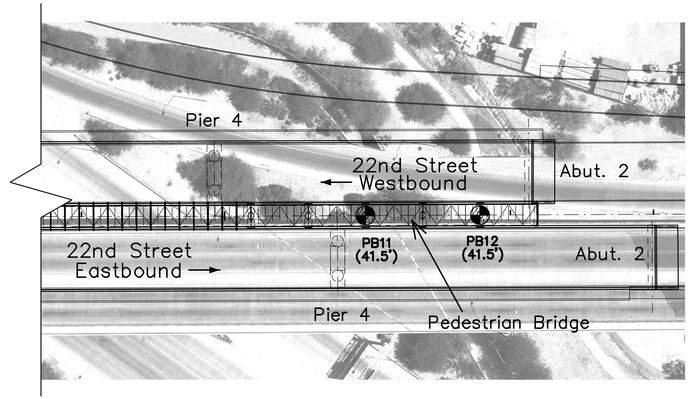
SCALE 1"= 50' (at 22" x 34")

N

WEST AREA PLAN VIEW



EAST AREA PLAN VIEW



BORING LOCATION

50' 0 50' 100'

SCALE: 1" = 50'
(at 22" x 34")

FOUNDATION DATA
(PEDESTRIAN BRIDGE) SF - 2.07 of SF- 2.07

SCE ENGINEERING
510 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

Preliminary
100%
Review

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Construction
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June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22nd Street: KINO PARKWAY TO TUCSON BOULEVARD

344 OF 474

CITY OF TUCSON

DRWN. K. WATTS	06-18	REF.	SCALE: As Shown
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CHKD. J. HARRIS	06-18	PLAN NO.	I - 2010 -012

NO.	DATE	REVISION	BY	CHKD.	APPR.

Two working days before you dig.
CALL FOR THE BLUE STAKES
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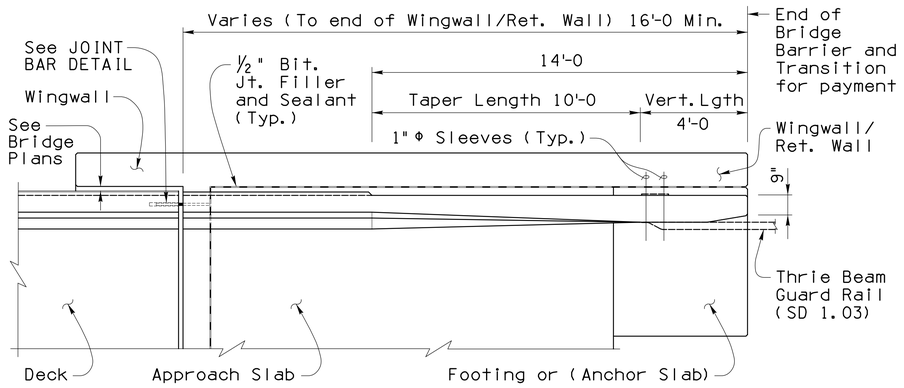
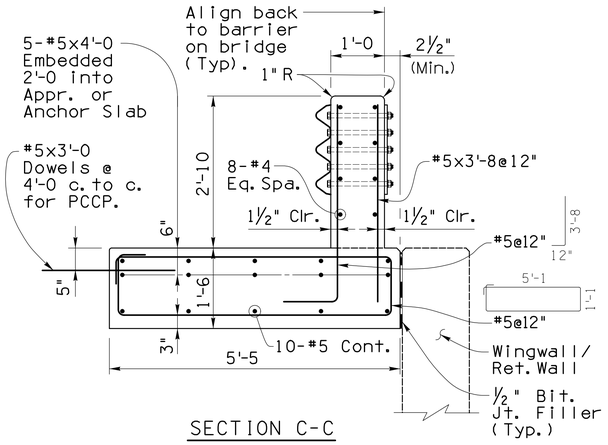
Blue Stake Center

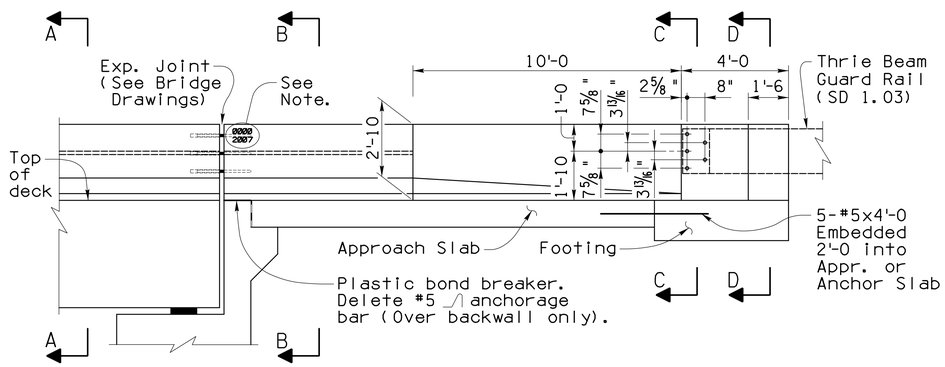
Date Plotted: 6/7/2018 Time Plotted: 11:56:53 PM Filename: ...\FDS_22nd_ped_bridge_07.dgn



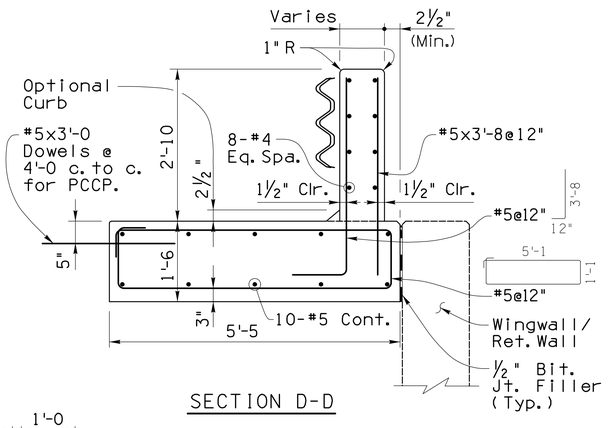
PLAN



SECTION C-C



ELEVATION



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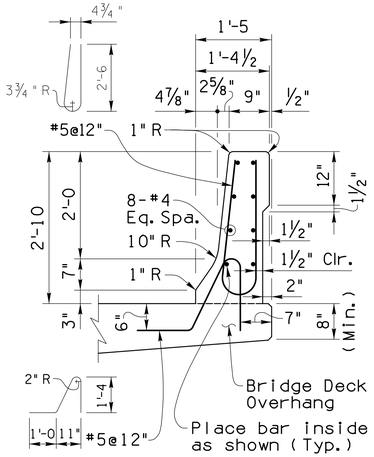
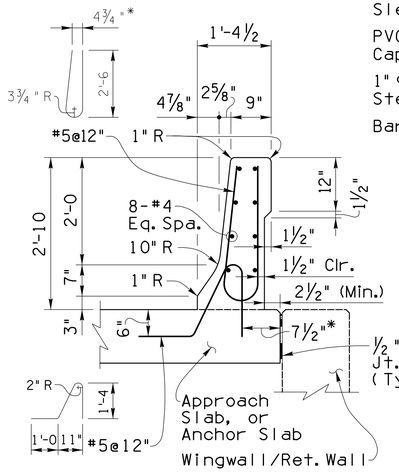
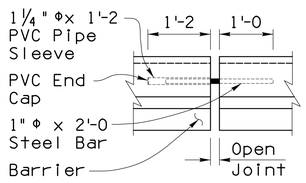


SECTION A-A

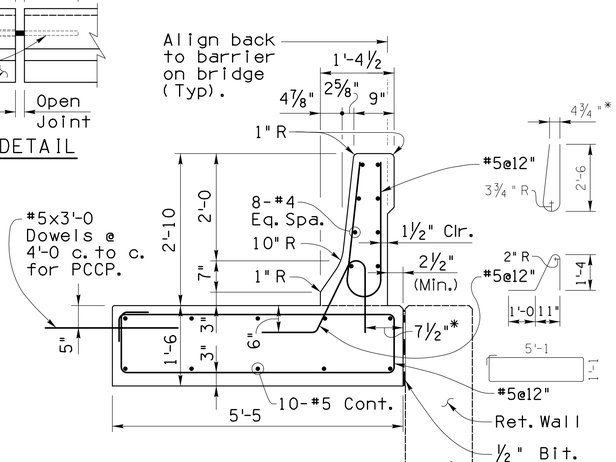


SECTION B-B

*Varies at taper length



JOINT BAR DETAIL



SECTION
Continuous Barrier With Footing

GENERAL NOTES:

Construction Specification - Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, latest Edition.

Design Specifications - AASHTO LRFD Bridge Design Specifications, 6th Edition 2012.

This barrier has been successfully crash tested and is structurally evaluated as meeting the requirements of NCHRP Report 350 Test Level 4.

All Concrete shall be Class "S" (f'c = 4000 psi).

Reinforcing steel shall conform to ASTM Specification A615. All reinforcing shall be furnished as Grade 60. All reinforcing shall be epoxy coated at locations above EL. 4000 ft.

All bends and hooks shall meet the requirements of AASHTO LRFD Article 5.10. All bend dimensions for reinforcing steel shall be out-to-out of bars. All placement dimensions for reinforcing steel shall be to center of bars unless noted otherwise.

All reinforcing steel shall have 2 inch clear cover unless noted otherwise.

Concrete barriers on continuous superstructures shall have ½" bituminous joint filler in open joints over piers. See bridge drawings for details.

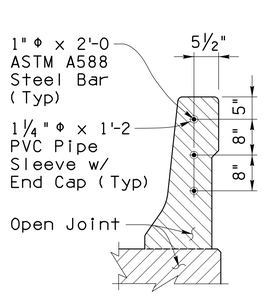
Imbed ½", Bridge Number and Year Built, using 1½"w x 2"h number impressions in concrete, located as shown at the approach end of the outside lane.

⌒ Anchorage bars are included in the pay item for barrier (Item No. 6011140).

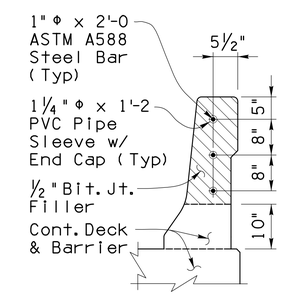
Omit bridge barrier transition when concrete barrier is continuous beyond bridge.

Dimensions shall not be scaled from drawings.

Item No. 6011140 F-SHAPE BRIDGE CONCRETE BARRIER AND TRANSITION (34")
Measure: Linear Foot



OPEN JOINT DETAIL
At Expansion Joints



OPEN JOINT DETAIL
Over Continuous Piers

DESIGN APPROVED: Shafi U. Hasan

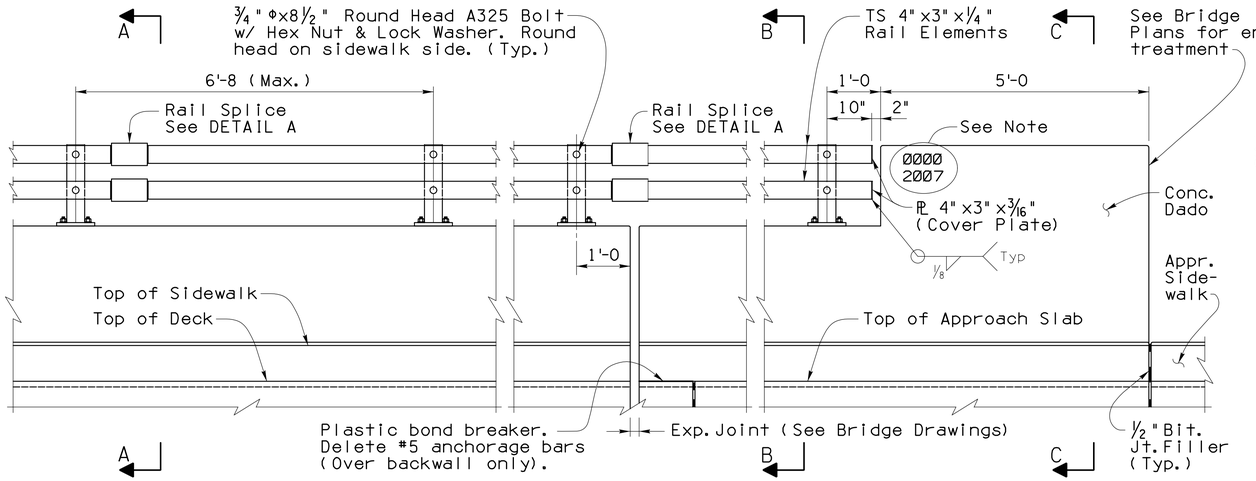
APPROVED FOR DISTRIBUTION: Jean A. Nehme

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP STRUCTURE DETAIL

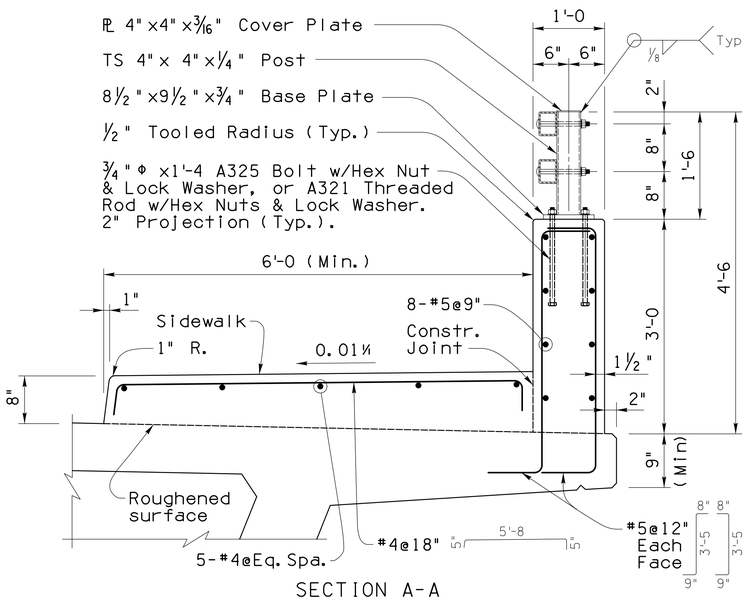
F-SHAPE BRIDGE CONCRETE BARRIER AND TRANSITION (34")

ROUTE	PROJECT NO.	F.A. NO.	DRAWING NO.
			SD 1.01
LOCATION			SHEET NO. 345 OF 474

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	Original Issue	S.U.H.	8-99
5	General Update	S.U.H.	11-07
6	General Update, Title Block	S.U.H.	3-09
7	Title Block, Item No. and Description	S.U.H.	6-12

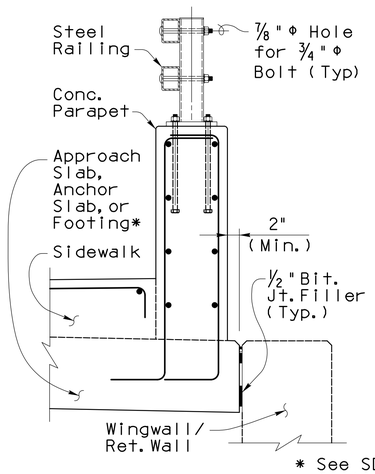


TYPICAL PANEL ELEVATION



SECTION A-A

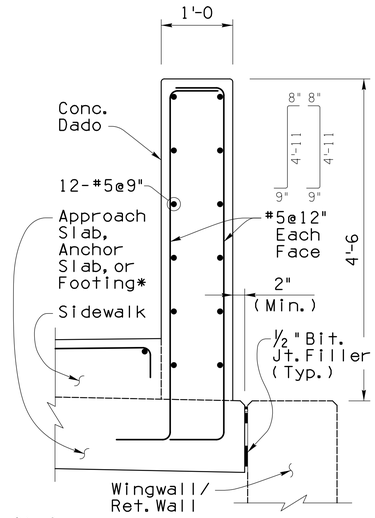
ELEVATION AT EXP. JT.



SECTION B-B

* See SD 1.01 for footing details.

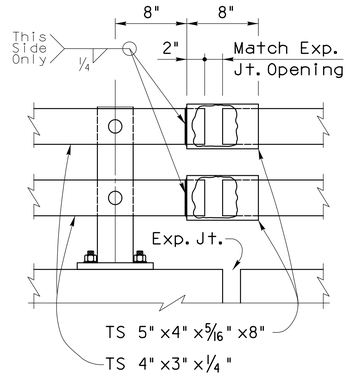
ELEVATION AT END POST



SECTION C-C

DETAIL A

(Exp. Splice Shown)



NOTE:

For rail splices not at expansion joints, provide 1 inch gap and weld both ends of splice tube.

GENERAL NOTES:

Construction Specification - Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, latest Edition.

Design Specifications - AASHTO LRFD Bridge Design Specifications, 4th Edition 2007.

This barrier is structurally evaluated as meeting the requirements of NCHRP Report 350 Test Level 4.

All Concrete shall be Class "S" (f'c = 4000 psi).

Reinforcing steel shall conform to ASTM Specification A615. All reinforcing shall be furnished as Grade 60. All reinforcing shall be epoxy coated at locations above EL. 4000 ft.

All bends and hooks shall meet the requirements of AASHTO LRFD Article 5.10. All bend dimensions for reinforcing steel shall be out-to-out of bars. All placement dimensions for reinforcing steel shall be to center of bars unless noted otherwise.

All reinforcing steel shall have 1½ inch clear cover unless noted otherwise.

Structural tubing (TS) shall be ASTM A500 Grade B. All other structural steel shall conform to ASTM A36 unless noted otherwise.

All welding shall conform to the requirements of the American Welding Society, ANSI/AASHTO/ AWS D1.5 Bridge Welding Code, latest Edition.

Concrete parapets on continuous superstructures shall have ½" bituminous joint filler in open joints over piers. See bridge drawings for details.

Imbed ½", Bridge Number and Year Built, using 1½"w x 2"h number impressions in concrete, located as shown at the approach end of the outside lane.

Labor and materials for railing, parapet, dado, anchorage bars, sidewalk and PEDESTRIAN FENCE (SD 1.05) are included in the pay item (Item No. 6011132).

Dimensions shall not be scaled from drawings.

Item No. 6011132 COMBINATION PEDESTRIAN-TRAFFIC BRIDGE RAILING
Measure: Linear Foot

RAILING NOTES:

See Bridge Plans for rail layout, elevation, joint locations and rail end treatments.

All exposed steel edges shall be ground smooth. All structural steel rail assembly components shall be galvanized after fabrication in accordance with ASTM A123. All galvanizing that has been damaged in handling, transportation or welding shall be repaired by the application of a paste compound of an approved zinc powder and flux.

All post bolt heads shall be on sidewalk side. All bolts, nuts and washers shall be galvanized in accordance with the requirements of ASTM A153.

For fence attachment details, see Structure Detail SD 1.05. (Lower rail tube is not required with fence.)

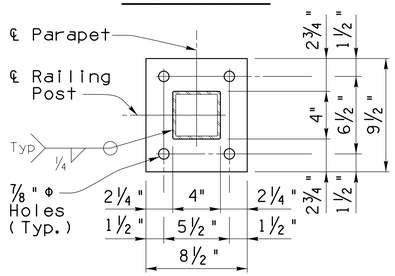


PLATE DETAIL

Note to Designer:
The information presented in this Standard Detail has been prepared in accordance with recognized engineering principles and is for general use. It should not be used for specific application without competent professional examination and verification of its suitability and applicability by a licensed professional engineer. Contents within the inner border line shall not be altered.

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	Original Issue	S.W.H.	8-99
2	Bid Item No. Note	S.W.H.	9-99
3	General Update. Revised width of parapet and sidewalk.	S.W.H.	3-09
4			

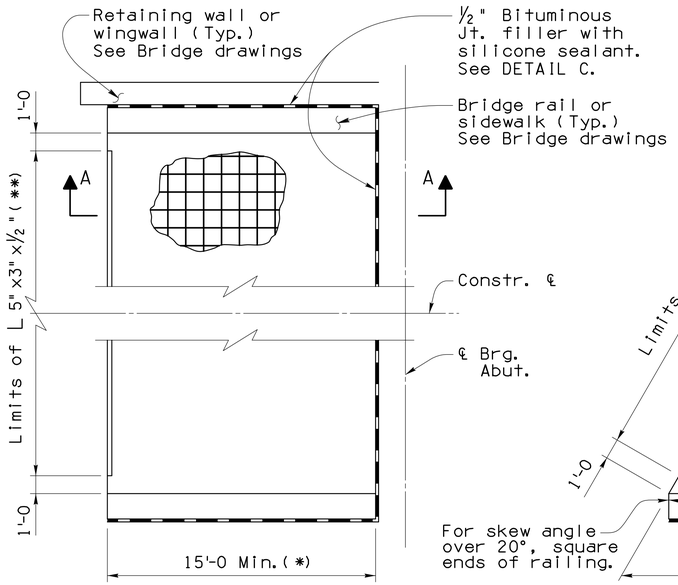
Shafi M. Hasan
STRUCTURE ENGINEER
Jean A. Nehme
ENGINEER FOR DISTRIBUTION

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP STRUCTURE DETAIL

COMBINATION PEDESTRIAN-TRAFFIC BRIDGE RAILING

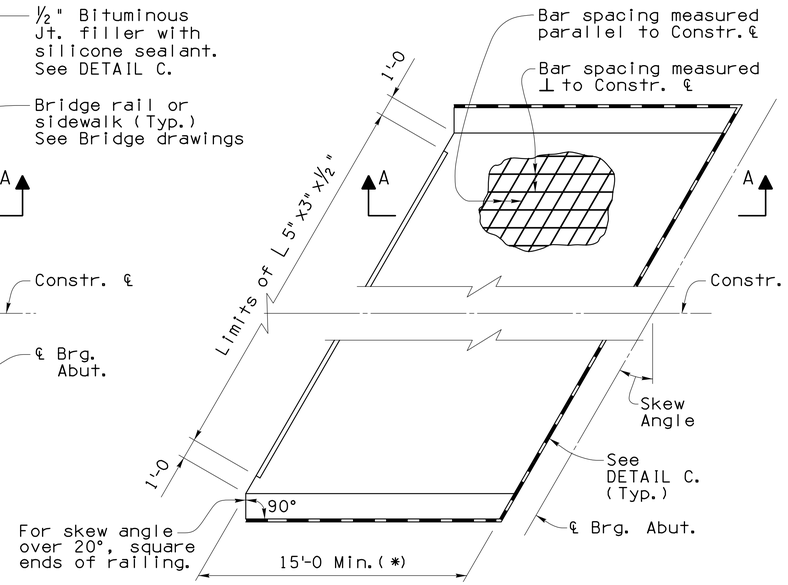
ROUTE	PROJECT NO.	FA NO.	DRAWING NO.
			SD 1.04
LOCATION			SHEET NO. 346 OF 474

6/15/2018 W:\Jobs\2010\1010_22nd over UPRR\1010_Working\1010_sd104_1619.dgn



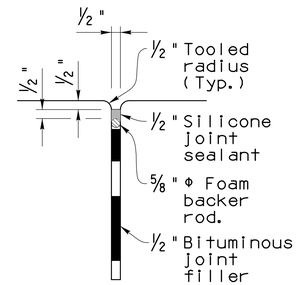
PLAN A

Rt. Angle Bridge

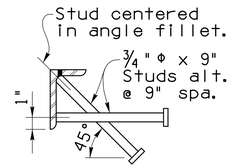


PLAN B

Skewed Bridge Without Anchor Slab
Skew Angle ≤ 45°



DETAIL C



ALT. ANCHOR DETAIL

GENERAL NOTES:

Construction Specification - Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, latest Edition.

Design Specifications - AASHTO LRFD Bridge Design Specifications, 4th Edition 2007.

All Concrete shall be Class "S" (f'c = 4000 psi).

Reinforcing steel shall conform to ASTM Specification A615. All reinforcing shall be furnished as Grade 60. All reinforcing shall be epoxy coated at locations above EL. 4000 ft.

All bends and hooks shall meet the requirements of AASHTO Article 5.10. All bend dimensions for reinforcing steel shall be out-to-out of bars. All placement dimensions for reinforcing steel shall be to center of bars unless noted otherwise.

All reinforcing steel shall have 2 inch clear cover unless noted otherwise.

Structural steel shall conform to ASTM specification A588 Grade 50 or A709 Grade 50W.

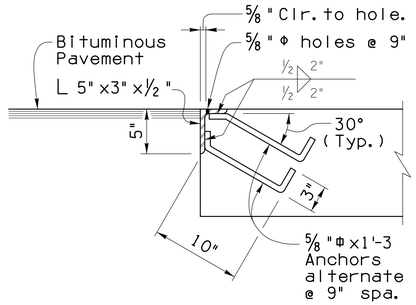
All welding shall conform to the requirements of the American Welding Society, ANSI/AASHTO/AWS D1.5 Bridge Welding Code, latest Edition.

Dimensions shall not be scaled from drawings.

Item No. 6011371 APPROACH SLAB
Measure: Square Foot

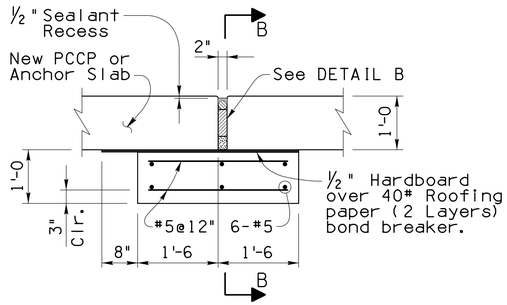
JOINT NOTE:

½" Silicone Joint sealant shall be ASTM D5893 Type NS. 2" Silicone joint sealant shall be rapid-cure, self leveling, two-part silicone rubber sealant designed for expansion joints. Prime coat concrete sides of joint. Do not prime coat the backer rod. Backer rod shall be closed cell polyethylene foam.



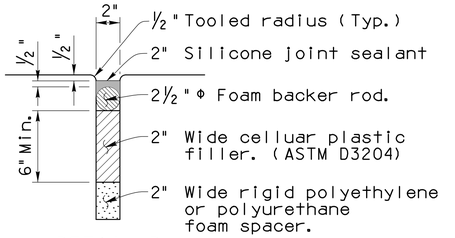
DETAIL A

Bituminous Pavement Alternate

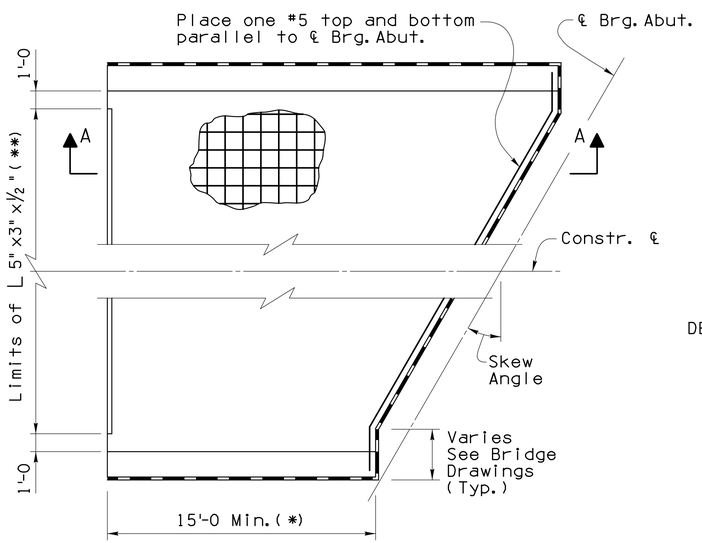


DETAIL A

Concrete Pavement Alternate



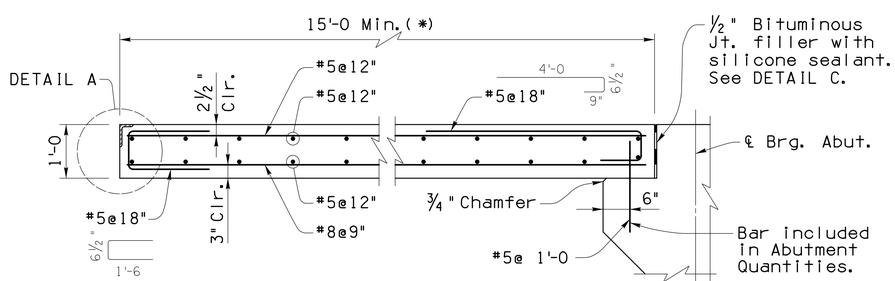
DETAIL B



PLAN C

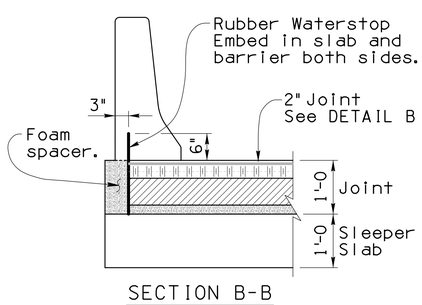
Skewed Bridge
Skew Angle > 45°

(**) Omit total guard angle for concrete pavement alternate.



SECTION A-A

(*) See Bridge drawings for length.



SECTION B-B

Note to Designer:
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NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	Original Issue	J.R.P.	11-05
2	General Update	S.U.H.	12-07
3			
4			

STATE ENGINEER: Shafi U. Hasan

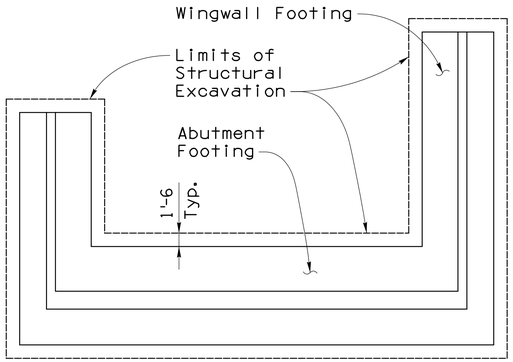
APPROVED FOR DISTRIBUTION: Jean A. Nehme

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP STRUCTURE DETAIL

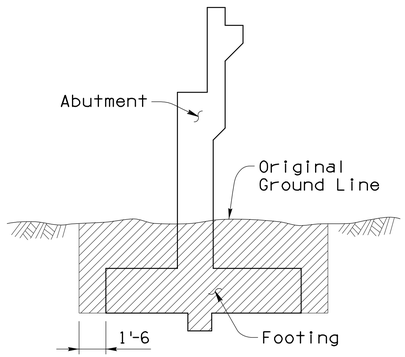
APPROACH SLAB DETAILS

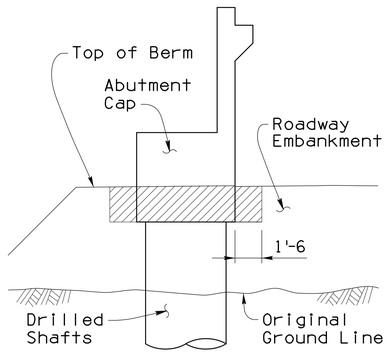
ROUTE	PROJECT NO.	FA NO.	DRAWING NO.
			SD 2.01
LOCATION			SHEET NO. 347 OF 474

6/15/2018 W:\Jobs\2010\1010_22nd over UPRR\1010_Working\1010_sd201_1916.dgn

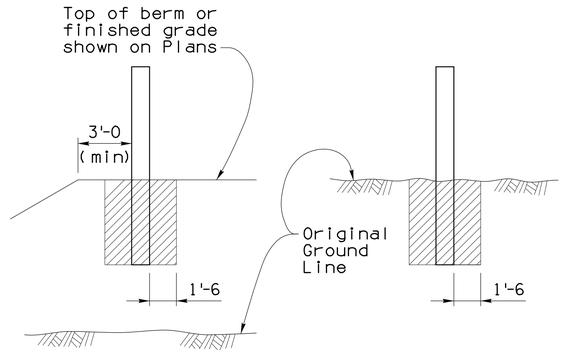


TYPICAL ABUTMENT FOOTING PLAN

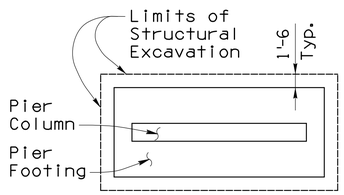




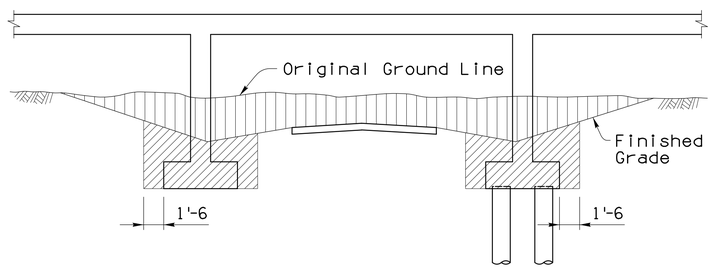
TYPICAL ABUTMENT SECTIONS

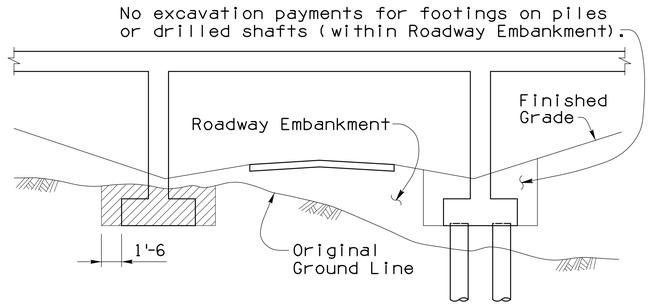


WINGWALLS



TYPICAL PIER FOOTING PLAN





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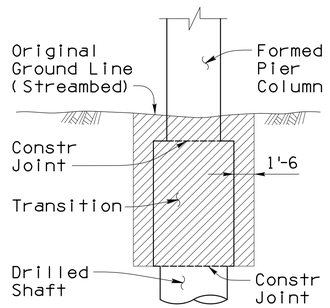
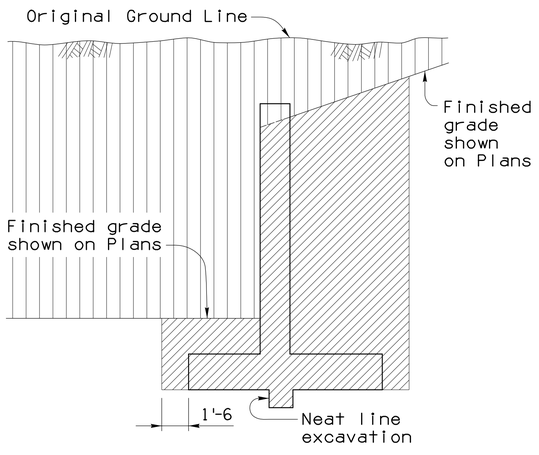
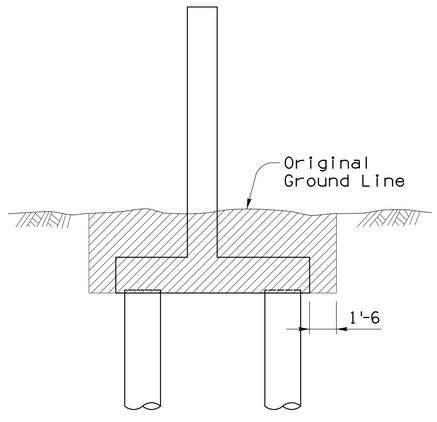
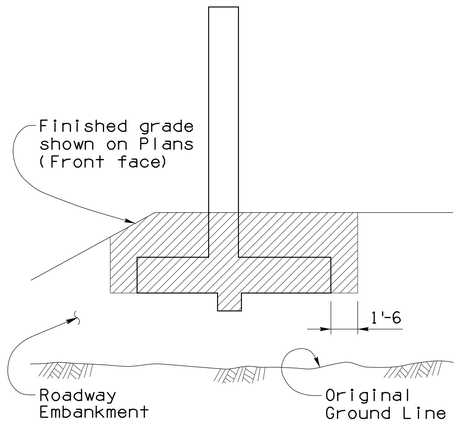


PIER SECTION







TYPICAL RETAINING WALL SECTIONS

LEGEND

Structural Excavation

Roadway Excavation

NOTES:

For structure foundations above original ground line, construct roadway embankment to top of berm or finished grade before strucural excavation is made.

If no roadway excavation or embankment is involved, structural excavation shall be measured from the original ground line.

Note to Designer:
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NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	Original Issue	S.U.H.	11-12
2			
3			
4			

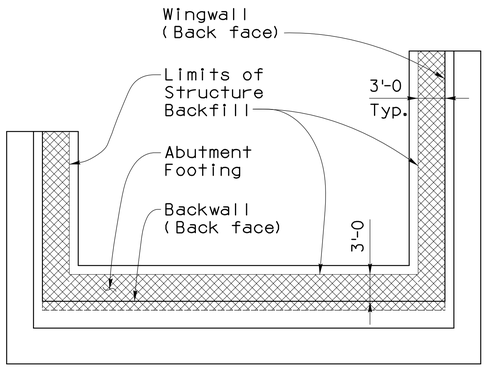
DESIGN APPROVED
Shafi U. Hasan

APPROVED FOR DISTRIBUTION
Jean A. Nehme

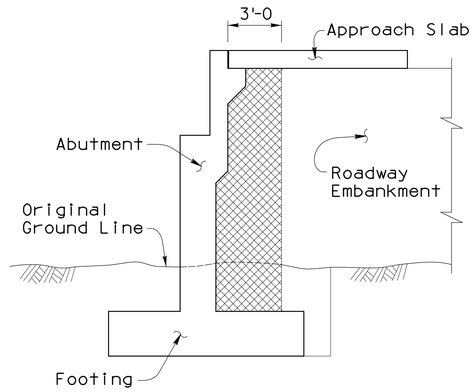
ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP STRUCTURE DETAIL

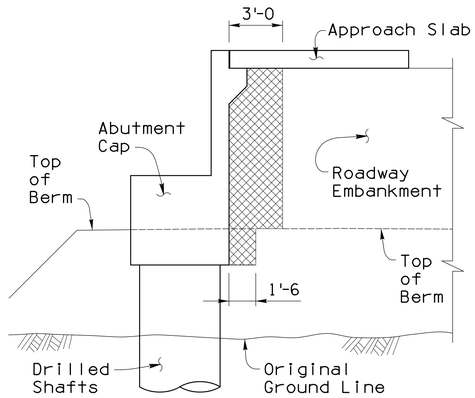
STRUCTURAL EXCAVATION PAYMENT LIMITS

ROUTE	PROJECT NO.	FA NO.	DRAWING NO.
			SD 5.01
LOCATION			SHEET NO. 348 OF 474



TYPICAL ABUTMENT FOOTING PLAN





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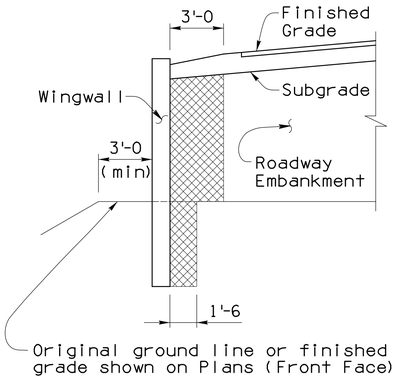
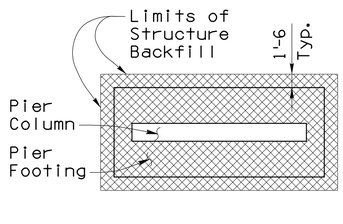
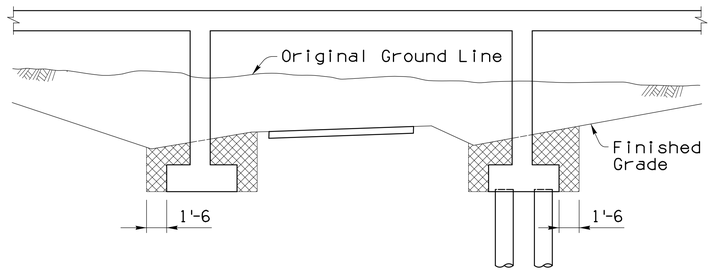
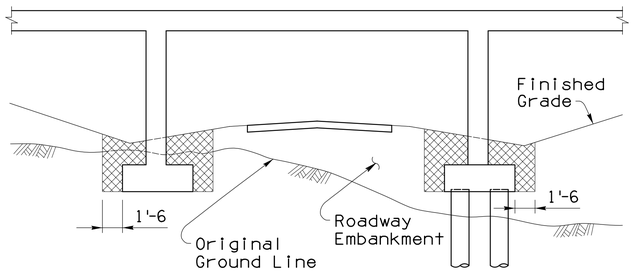


WINGWALL

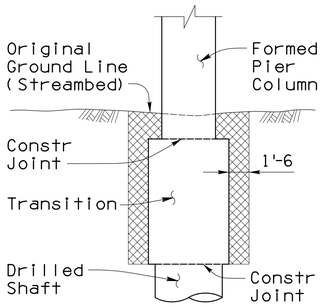


TYPICAL PIER FOOTING PLAN





TYPICAL PIER ELEVATIONS



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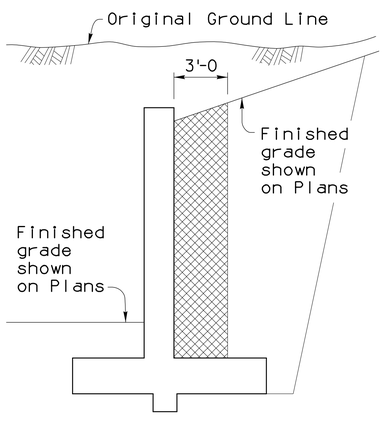
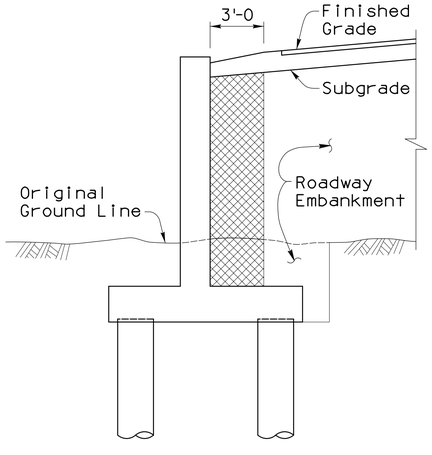
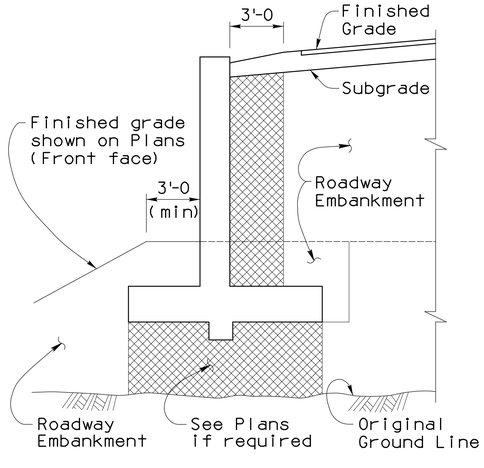






TYPICAL RETAINING WALL SECTIONS

LEGEND

Structure Backfill

NOTES:

Structure backfill shall be compacted to a minimum of 100% of the maximum density (ASTM D698).

Note to Designer:
The information presented in this Standard Detail has been prepared in accordance with recognized engineering principles and is for general use. It should not be used for specific application without competent professional examination and verification of its suitability and applicability by a licensed professional engineer. Contents within the inner border line shall not be altered.

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	Original Issue	S.U.H.	11-12
2			
3			
4			

DESIGN APPROVED: Shafi U. Hasan

APPROVED FOR DISTRIBUTION: Jean A. Nehme

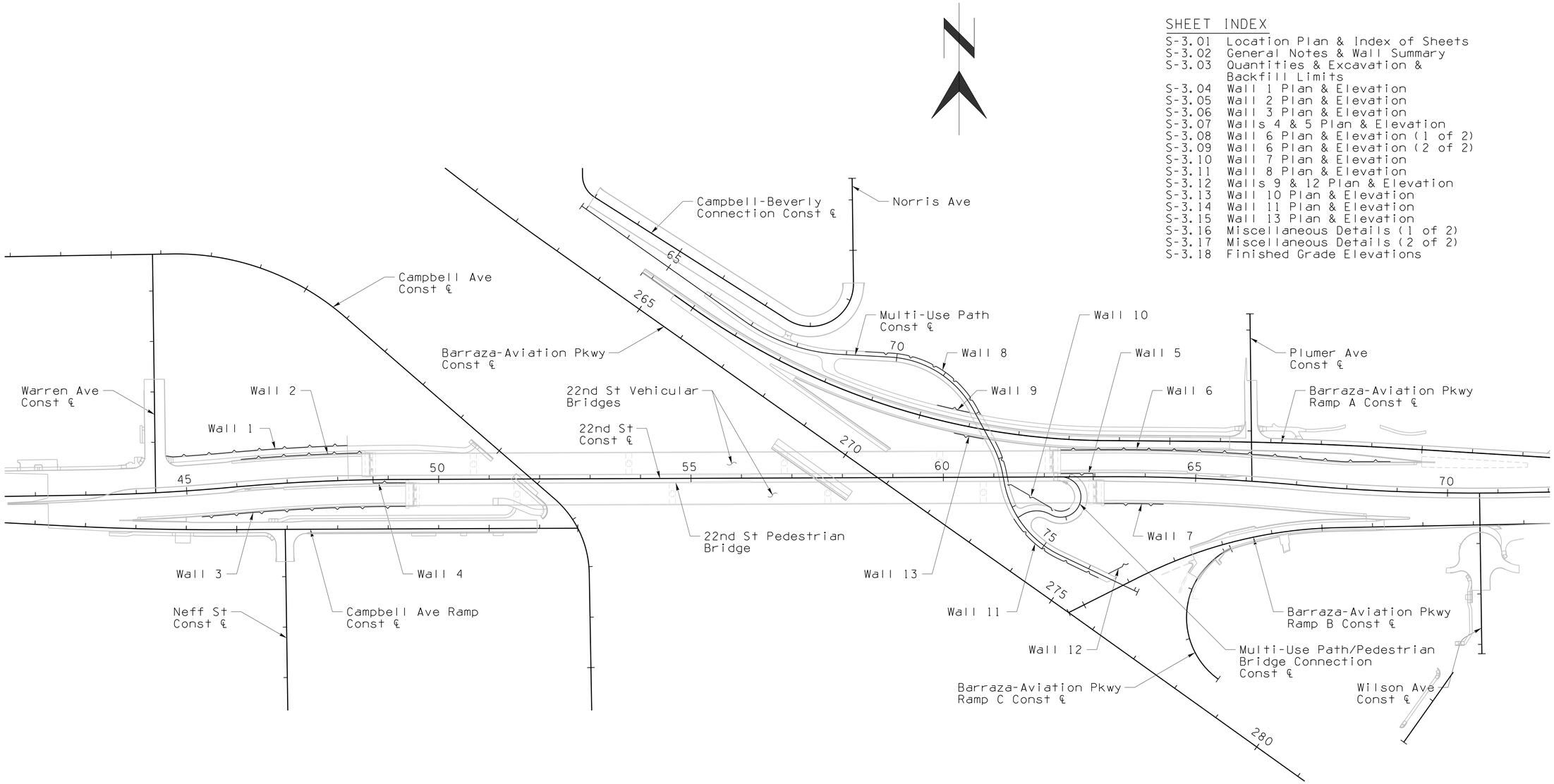
ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP STRUCTURE DETAIL

STRUCTURE BACKFILL
PAYMENT LIMITS

ROUTE	PROJECT NO.	FA NO.	DRAWING NO.
			SD 5.02
LOCATION			SHEET NO. 349 OF 474

6/15/2018 W:\Jobs\2010\1010_22nd over UPRR\1010_Working\1010_sd502_1916.dgn

SHEET INDEX



S-3.01 OF S-3.18

TRANSPORTATION
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AECOM
www.aecom.com

RETAINING WALL LOCATION
PLAN & INDEX OF SHEETS

NO.	DATE	REVISION	BY	CHKD.	APPR.

Preliminary
100% Review
Not for Construction or Recording
June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION
22ND STREET
KINO PARKWAY TO TUCSON BOULEVARD

CITY OF TUCSON

DRWN. TST	06-18	REF.
DSGN. BCA	06-18	SCALE:
CHKD. CAL	06-18	PLAN NO. I-2010-012

350 OF 474

Call at least two full working days before you being excavation.
ARIZONA 811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800- STAKE-IT (782-5348)
In Maricopa County: (602)263-1100

PLOTTED BY: kershnerm
Date Plotted: 6/20/2018
Time Plotted: 9:52:35 AM
Filename: T:\60269301 22nd St_Kino to Tucson Design_TUC\000_CAD\008.Structural\Sheets\s9301wpl.dgn

GENERAL NOTES:

Construction Specifications - Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, Edition of 2008.

Design Specifications - AASHTO LRFD Bridge Design Specifications, 6th Edition, 2012.

Walls shall be constructed in accordance with the Standards and/or Special Details indicated, unless noted otherwise.

Use of ADOT Standard Wall Drawings - Where Standard Drawings are used, wall cross section dimensions and reinforcing shall be per 'H' indicated on the project plans. Top of wall and top of footing elevations shall be as shown on the Project Plans regardless of the value of "H'.

ADOT Standard SD 7.01 wall footings shall not be poured continuously. See Joint Details.

Chamfer all exposed corners ¾" unless noted otherwise.

Dimensions shall not be scaled from drawings.

Seismic Zone 1, Site Class D, PGA = 0.07g.

Stresses:

Concrete (Cast-In-Place Walls)	f'_c = 3000 psi
All other Class 'S' Concrete (unless noted otherwise)	f'_c = 3000 psi
Grade 60 reinforcing steel (unless noted otherwise)	fy = 60,000 psi

Temporary Shoring - Temporary shoring may be required for excavation and construction of walls to accomplish the work without adversly affecting existing facilities/utilities. The contractor shall be responsible for providing temporary shoring as required to maintain traffic, to protect utilities, for protection of workers or as otherwise needed to accomplish the work. The contractor shall submit a plan outlining construction procedures, shoring requirements and design to the Engineer for review and approval prior to proceeding with the work. For additional information, see the Special Provisions. No additional payment will be made for temporary shoring.

Walls shall be painted in accordance with the Special Provisions and Standard Specifications. See Drawing S-1.17 for paint color and material.

GENERAL NOTES (CONT):

Retaining wall geometry refers to the exposed face of wall, unless noted otherwise.

Where retaining walls support roadways, the top of wall shall follow the profile of the adjacent roadway. The contractor shall verify the top of wall elevations shown on the Project Plans prior to fabricating rebar.

For soil boring logs and geotechnical information, refer to the DRAFT Final Geotechnical Report (dated August 11, 2015) by NCS Consultants, LLC.

All utilities shown in the Project Plans are provided for the contractor's general information only. The locations are approximate. It shall be the contractor's responsibility to determine and coordinate the actual location of utilities in the vicinity of wall construction. Existing utility locations shown reflect the findings of the latest available mapping. Refer to existing condition plans for status of existing utilities. Refer to relevant design plans for new utility information. In some locations wall construction must be phased with utility construction. It shall be the contractor's responsibility to identify and coordinate construction in these locations.

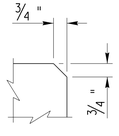
The wall height changes linearly between joints. Linear interpolation shall be used to calculate the top of wall where not shown in the plans.

Finished grade elevations along the front face (FF) of the walls are provided for the contractor's use in locating wall drainage. The contractor shall verify the finished grade elevation prior to installing wall drainage.

ADOT STANDARD DRAWING LIST

Bridge Group SD Drawings - SD 7.01.

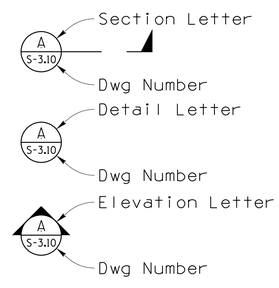
WALL SUMMARY			
Wall No.	Description	ADOT Std Wall Detail	Allowable Alternative Wall Type
1	Retaining Wall	SD 7.01 (Case II)	None
2	Retaining Wall	SD 7.01 (Case IV)	None
3	Retaining Wall	SD 7.01 (Case IV)	None
4	Retaining Wall	SD 7.01 (Case II/IV)	None
5	Retaining Wall	SD 7.01 (Case II/IV)	None
6	Retaining Wall	SD 7.01 (Case IV)	None
7	Retaining Wall	SD 7.01 (Case IV)	None
8	Retaining Wall	SD 7.01 (Case II/III)	None
9	Retaining Wall	SD 7.01 (Case II)	None
10	Retaining Wall	SD 7.01 (Case II/III)	None
11	Retaining Wall	SD 7.01 (Case III)	None
12	Retaining Wall	SD 7.01 (Case III)	None
13	Retaining Wall	SD 7.01 (Case IV)	None



NOTE:
Chamfer all exposed corners unless otherwise noted. This note applicable to all Retaining Wall sheets.

CHAMFER DETAIL
NTS

LEGEND:



NOTE:
A line (—) in place of the Drawing Number indicates that the SECTION or DETAIL is located on the same drawing that the SECTION or DETAIL is cut.

EL = Elevation
TOW = Top of Wall
TOF = Top of Footing
EF = Each Face
C = Construction Joint
E = Expansion Joint

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S-3.02 OF S-3.18

RETAINING WALL
GENERAL NOTES & WALL SUMMARY

NO.	DATE	REVISION	BY	CHKD.	APPR.

Preliminary
100%
Review

Not for
Construction
or Recording

June 2018

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION
22ND STREET
KINO PARKWAY TO TUCSON BOULEVARD

351 OF 474

CITY OF TUCSON

DRWN. TST	06-18	REF.	SCALE:
DSGN. BCA	06-18		
CHKD. CAL	06-18	PLAN NO.	I-2010-012

PLOTTED BY: kershnerm
Date Plotted: 6/20/2018
Time Plotted: 9:52:35 AM
Filename: T:\60269301 22nd St_Kino to Tucson Design_TUC\000_CAD\008_Structural\Sheets\s9301wsum.dgn

APPROXIMATE WALL QUANTITIES								
Wall No.	Retaining Wall ADOT SD 7.01 (Case II) SF	Retaining Wall ADOT SD 7.01 (Case III) SF	Retaining Wall ADOT SD 7.01 (Case IV) SF	Structural Excavation CY	Structure Backfill CY	Class 'S' Concrete (f'c = 3000 psi) CY	Reinforcing Steel LBS	Handrail LF
1	2311			755	725	197	17430	361
2			3351	560	920	333	34695	
3			5506	2105	1505	528	55180	
4	350		1826	1235	620	338	29365	12
5	372		1874	495	635	346	29895	12
6			10981	2515	2965	1146	120950	
7			1776	470	480	177	18975	
8	1961	1384		2295	985	310	30110	276
9	564			295	165	44	4225	64
10	1647	589		850	640	176	16215	223
11		2043		1085	645	179	16690	208
12		390		260	120	34	3210	44
13			532	120	155	47	3960	
Total	7205	4406	25846	13040	10560	3855	380900	1200
As Built								

NOTES:

1. Walls shall be paid for at the contract unit price per square foot which shall be considered full compensation for the wall complete in place including all necessary excavation, over excavation, backfill, structure backfill, proof rolling, concrete, reinforcing, shoring & painting as shown in the Project Plans.

2. Approximate quantities for wall structural excavation, structure backfill, Class 'S' concrete & reinforcing steel are provided for the contractor's information only & will not be paid for separately. The costs for these items shall be included in the square foot cost of the walls.

3. Approximate quantities of structural excavation & structure backfill have been estimated in accordance with the details shown on this drawing.

4. Handrail shall be paid for under Bid Item No. 9330008 at the contract unit price per LF.

LEGEND

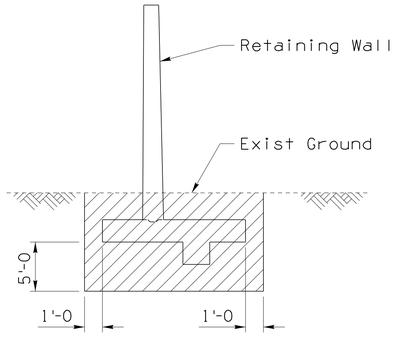
Indicates Structural Excavation

Indicates Structure Backfill

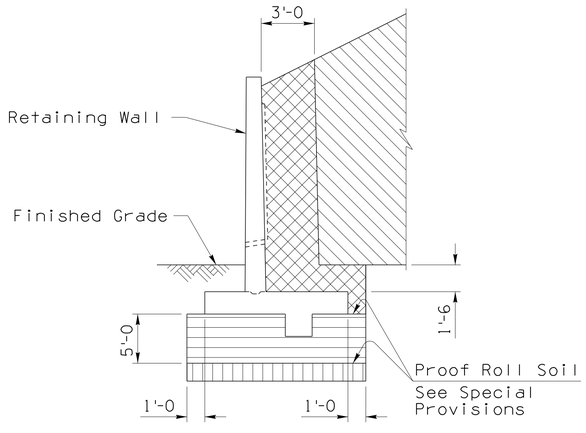
Indicates Roadway Embankment

Indicates Structure Backfill Compacted to Maximum Dry Density Corresponding to 100% of the Standard Proctor Effort According to ASTM D698, Moisture Content ±2% of Optimum.

Indicates Subgrade Proof-Rolled In Accordance With the Requirements of Section 203-5 of the Special Provisions.



STRUCTURAL EXCAVATION LIMITS
NTS



STRUCTURE BACKFILL LIMITS
NTS

RETAINING WALL QUANTITIES & EXCAVATION & BACKFILL LIMITS

NO.	DATE	REVISION	BY	CHKD.	APPR.

Preliminary 100% Review

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June 2018

S-3.03 OF S-3.18

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET
KINO PARKWAY TO TUCSON BOULEVARD

352 OF 474

CITY OF TUCSON

DRWN. TST	06-18	REF.	SCALE:
DSGN. BCA	06-18		
CHKD. CAL	06-18	PLAN NO.	I-2010-012

PLOTTED BY: kershnerm
Date Plotted: 6/20/2018
Time Plotted: 9:52:36 AM
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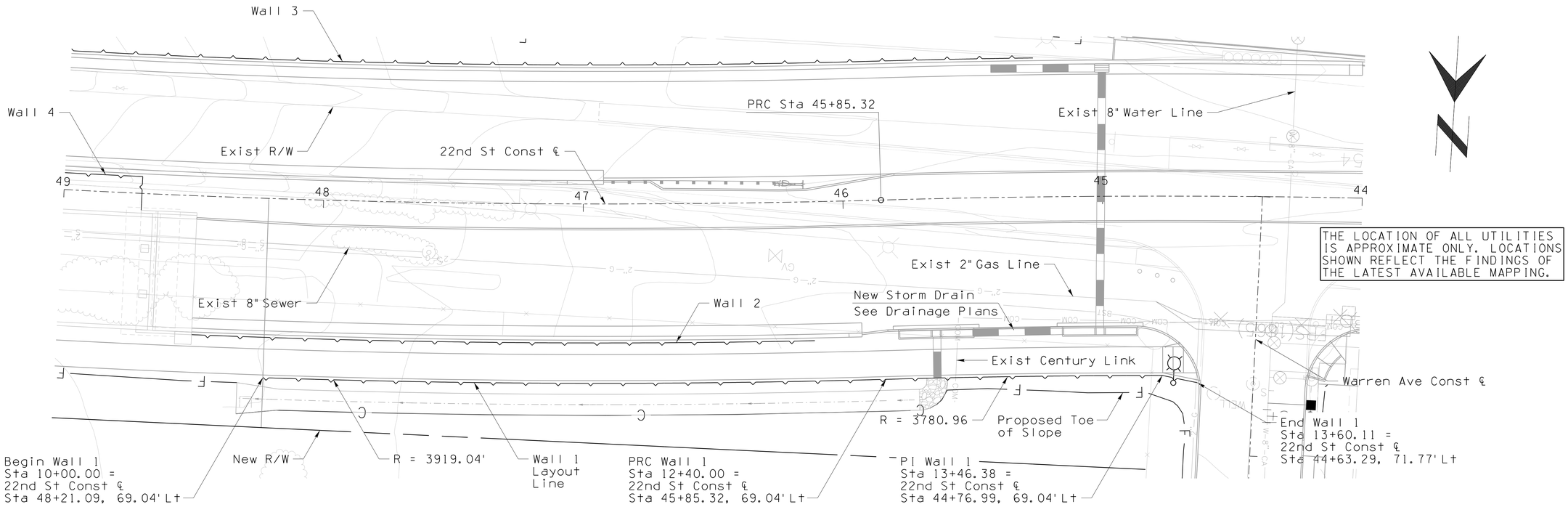

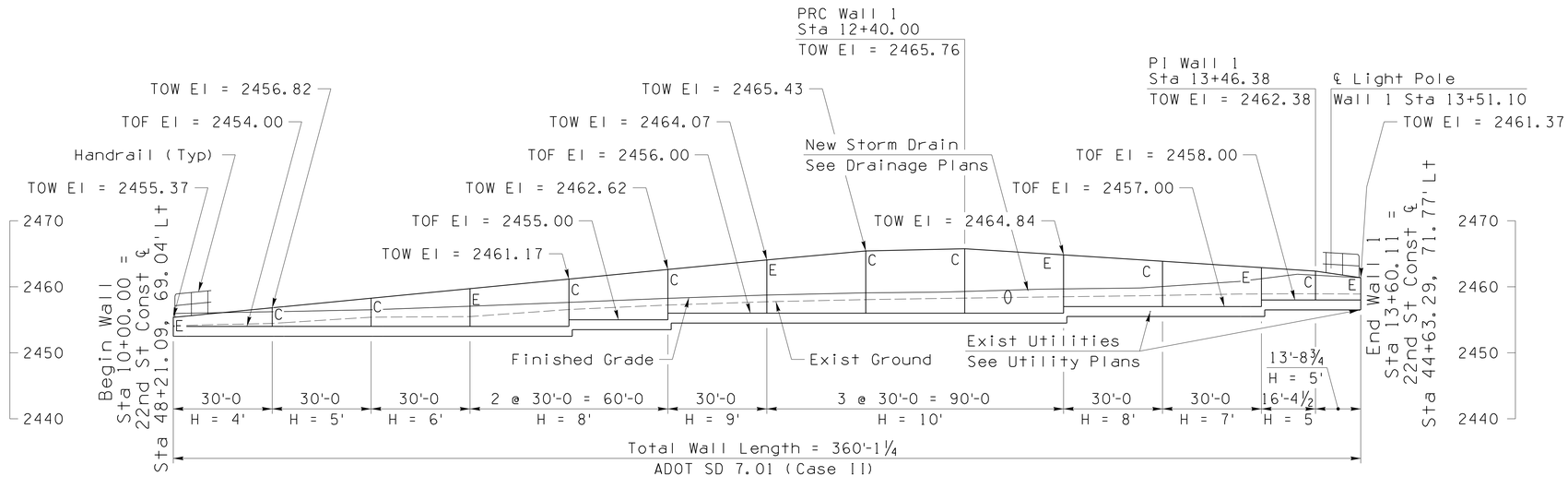

WALL 1 ELEVATION
Vertical Scale: 1" = 10'-0
Horizontal Scale: 1" = 20'-0

See Dwg S-3.16 for Pipe Penetration Details.

See Dwg S-3.16 for Handrail Details.

See Dwg S-3.17 for Light Pole Details.

RETAINING WALL 1
PLAN & ELEVATION

NO.	DATE	REVISION	BY	CHKD.	APPR.

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S-3.04 OF S-3.18

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION
22ND STREET
KINO PARKWAY TO TUCSON BOULEVARD
353 OF 474

CITY OF TUCSON

DRWN. TST	06-18	REF.	SCALE:
DSGN. BCA	06-18		
CHKD. CAL	06-18	PLAN NO.	I-2010-012

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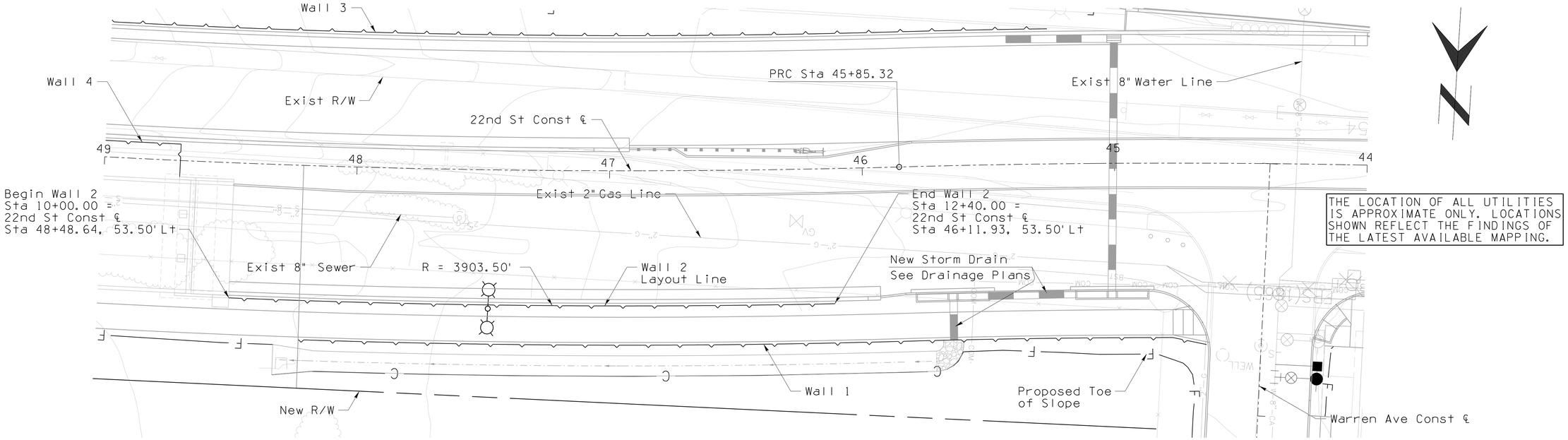

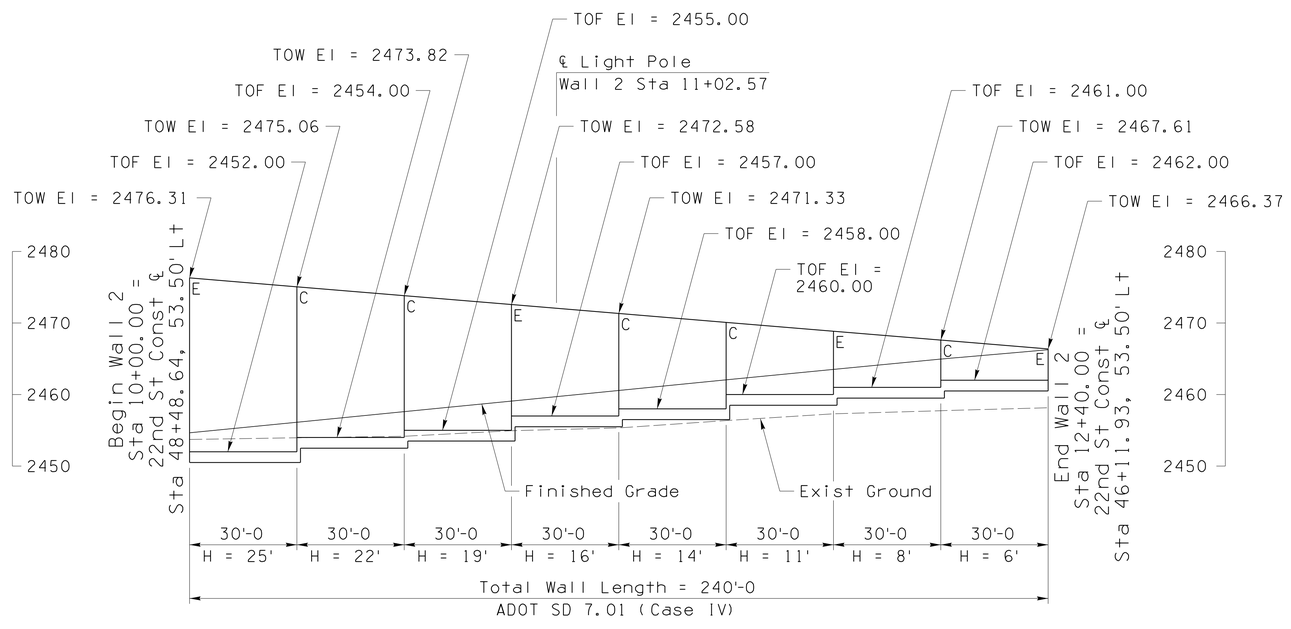

WALL 2 ELEVATION

Vertical Scale: 1" = 10'-0
Horizontal Scale: 1" = 20'-0

See Dwg S-3.17 for Light Pole Details.

RETAINING WALL 2
PLAN & ELEVATION

NO.	DATE	REVISION	BY	CHKD.	APPR.

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET
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354 OF 474

CITY OF TUCSON

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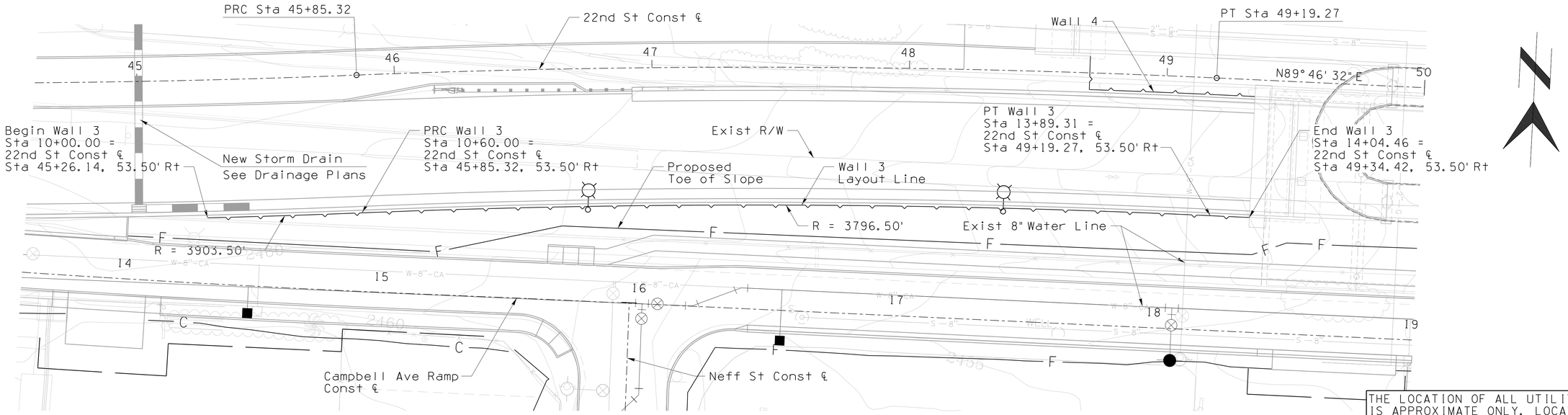

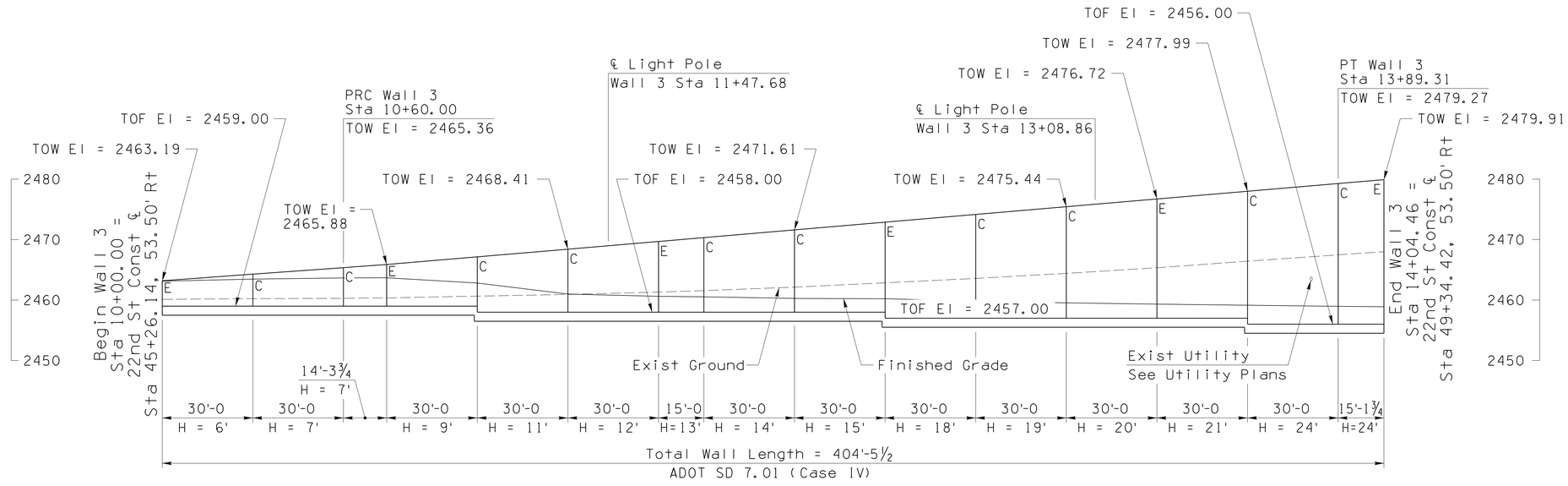

WALL 3 ELEVATION

Vertical Scale: 1" = 10'-0
Horizontal Scale: 1" = 20'-0

See Dwg S-3.17 for Light Pole Details.

RETAINING WALL 3
PLAN & ELEVATION

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET
KINO PARKWAY TO TUCSON BOULEVARD

355 OF 474

CITY OF TUCSON

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Time Plotted: 9:52:39 AM
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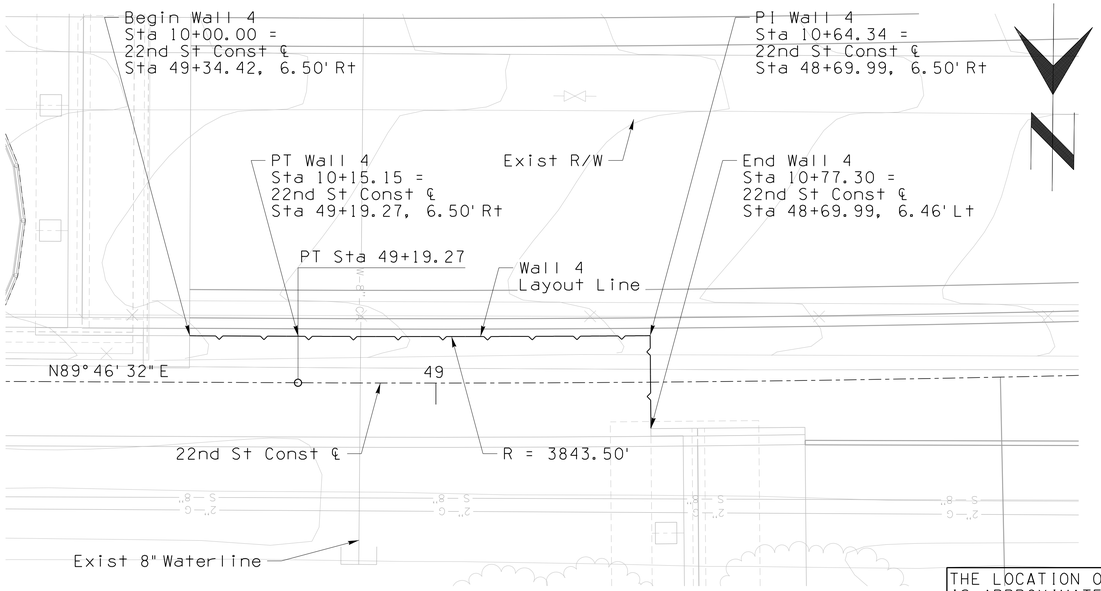

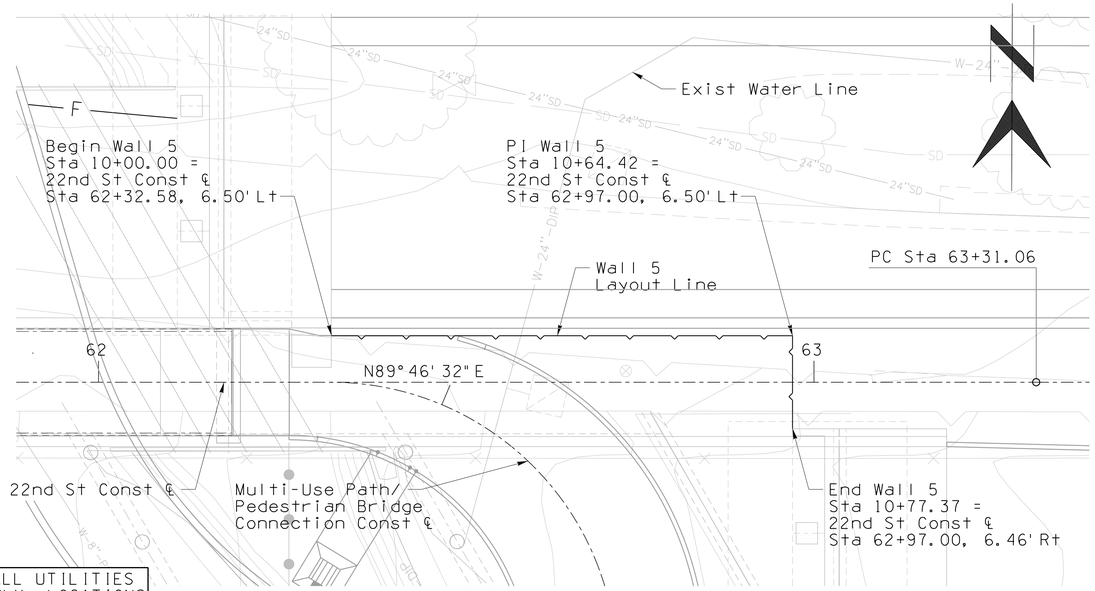

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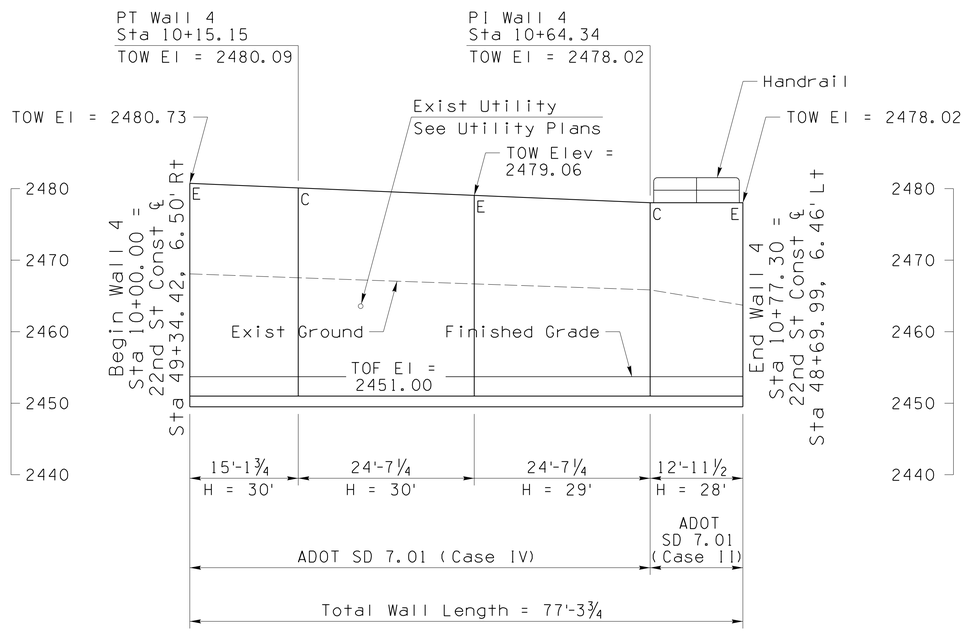
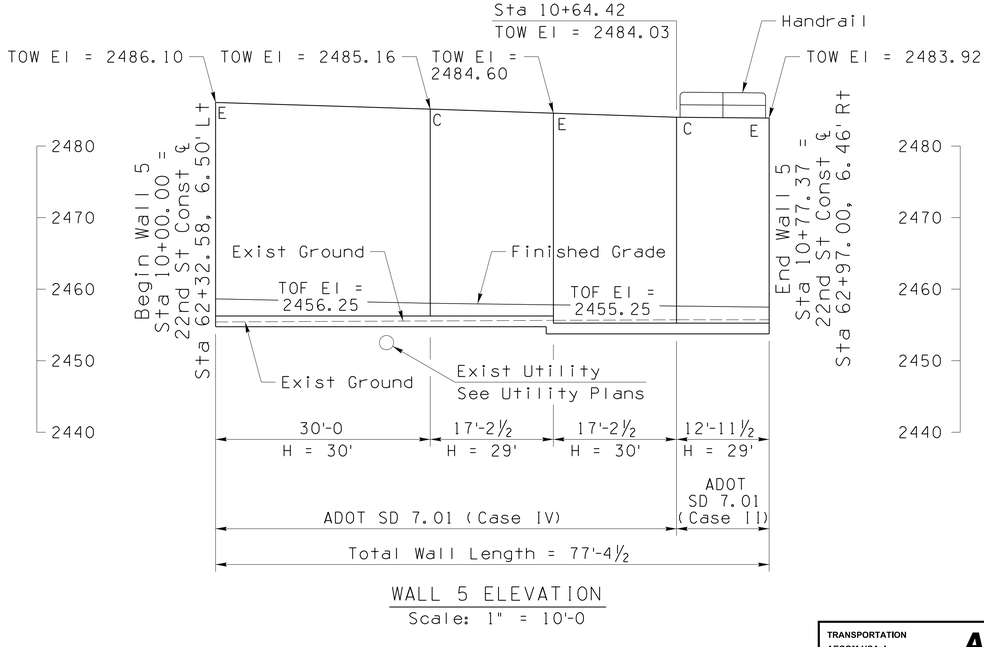


WALL 4 ELEVATION
Scale: 1" = 10'-0



WALL 5 ELEVATION
Scale: 1" = 10'-0

See Dwg S-3.16 for Handrail Details.

See Dwg S-3.16 for Handrail Details.

RETAINING WALLS 4 & 5
PLAN & ELEVATION

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION
22ND STREET
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356 OF 474

CITY OF TUCSON

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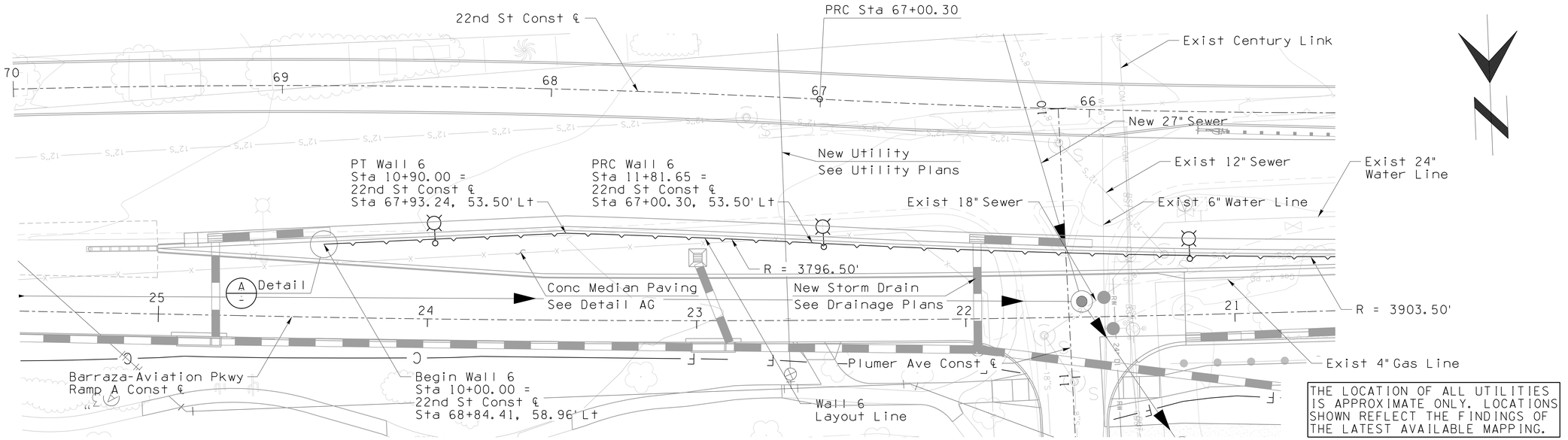
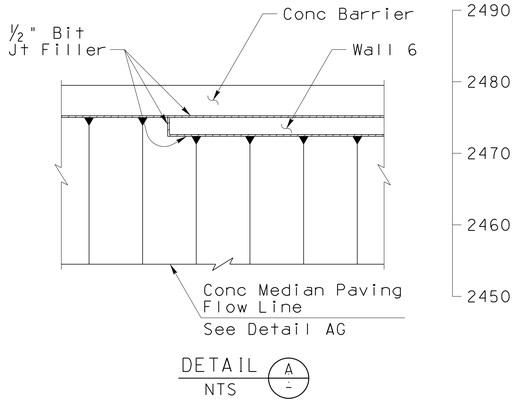
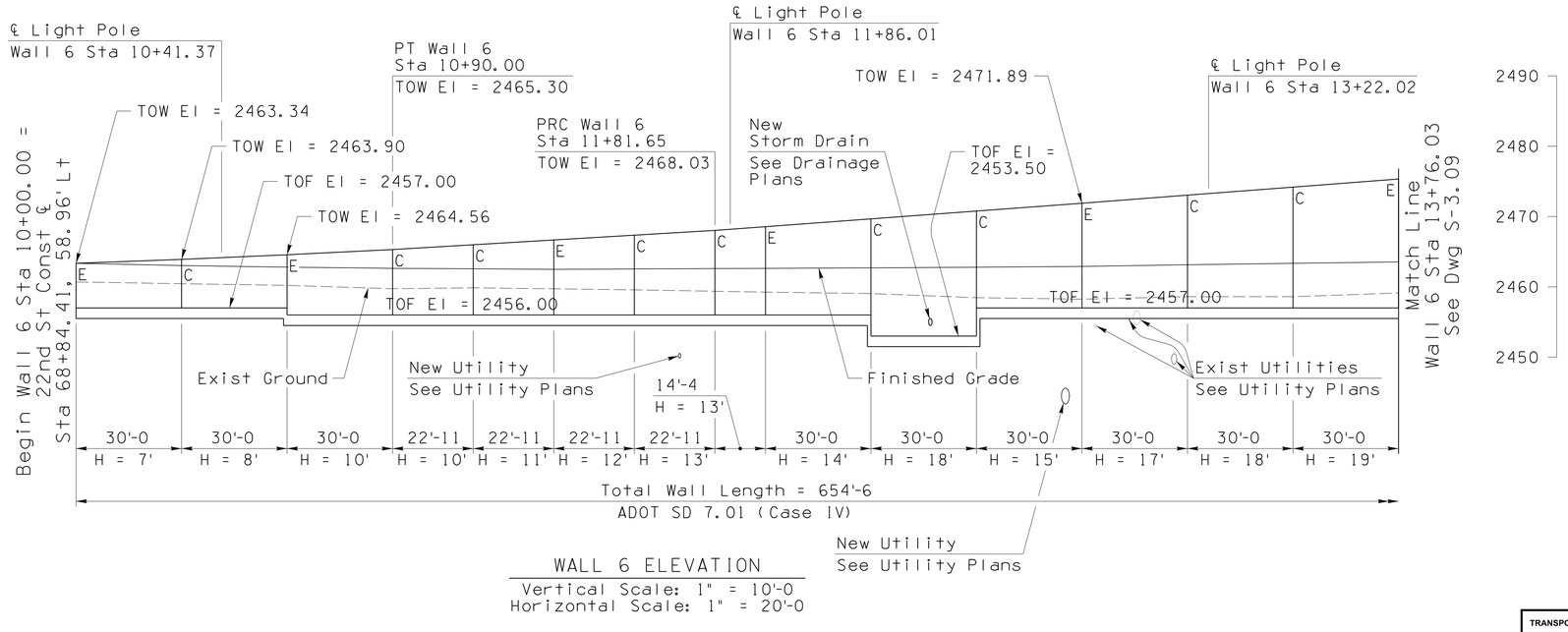




DETAIL A
NTS



WALL 6 ELEVATION
Vertical Scale: 1" = 10'-0
Horizontal Scale: 1" = 20'-0

See Dwg S-3.16 for Pipe Penetration Details.
See Dwg S-3.17 for Light Pole Details.

RETAINING WALL 6
PLAN & ELEVATION (1 OF 2)

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CITY OF TUCSON

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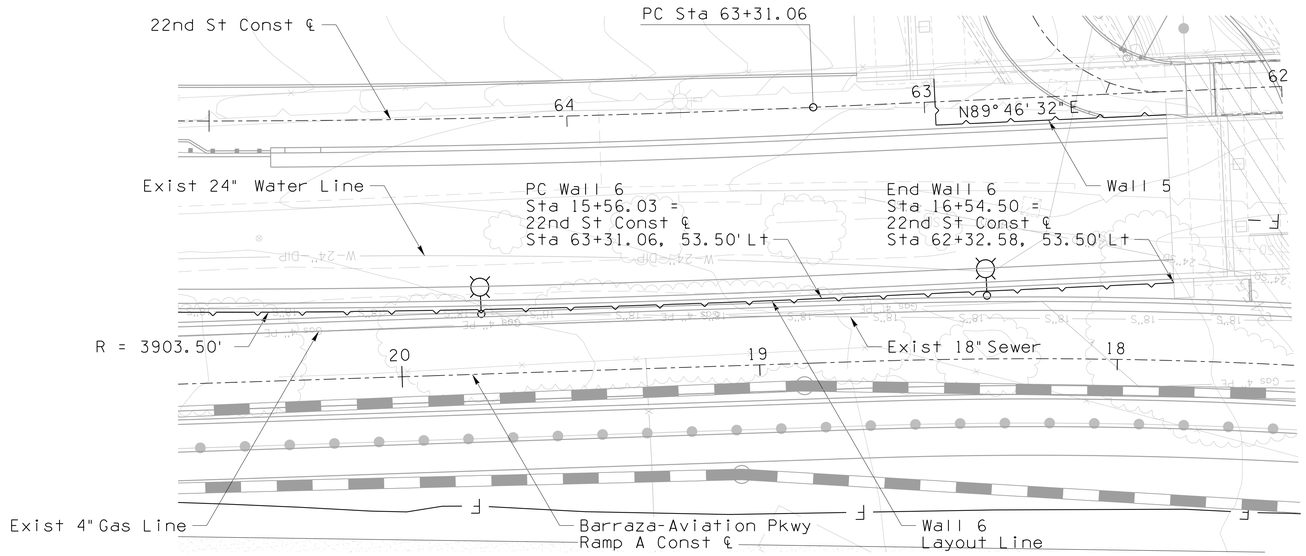

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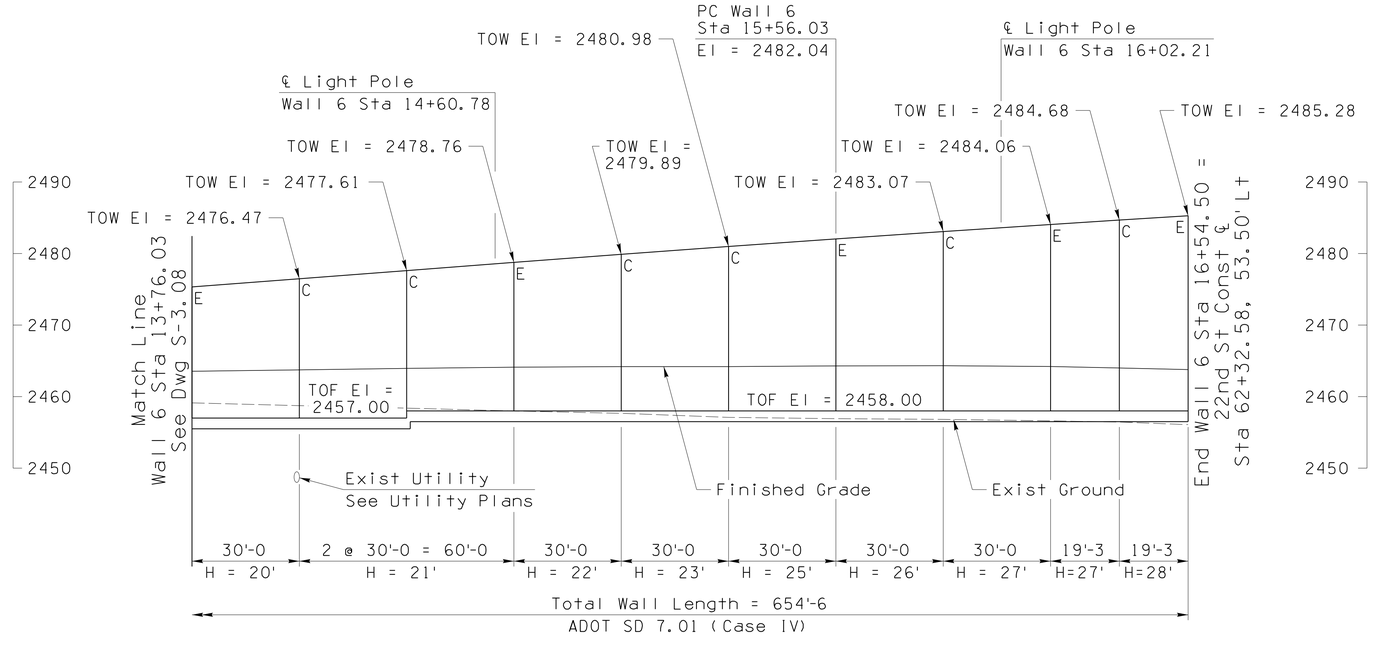

WALL 6 ELEVATION

Vertical Scale: 1" = 10'-0
Horizontal Scale: 1" = 20'-0

See Dwg S-3.17 for Light Pole Details.

RETAINING WALL 6
PLAN & ELEVATION (2 OF 2)

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358 OF 474

CITY OF TUCSON

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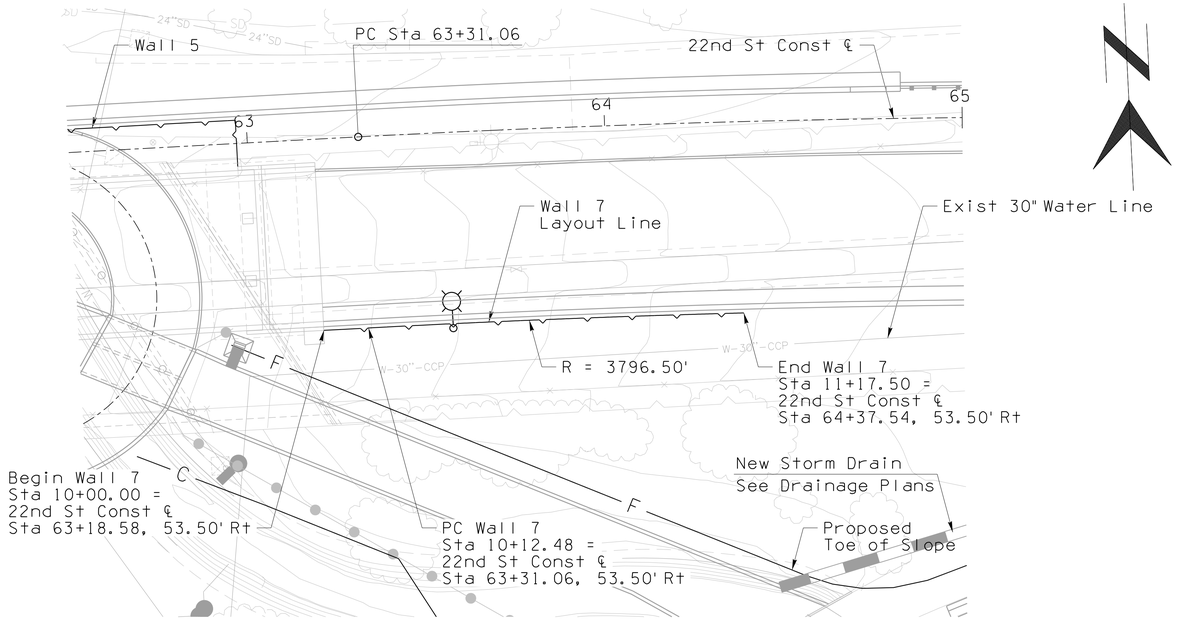

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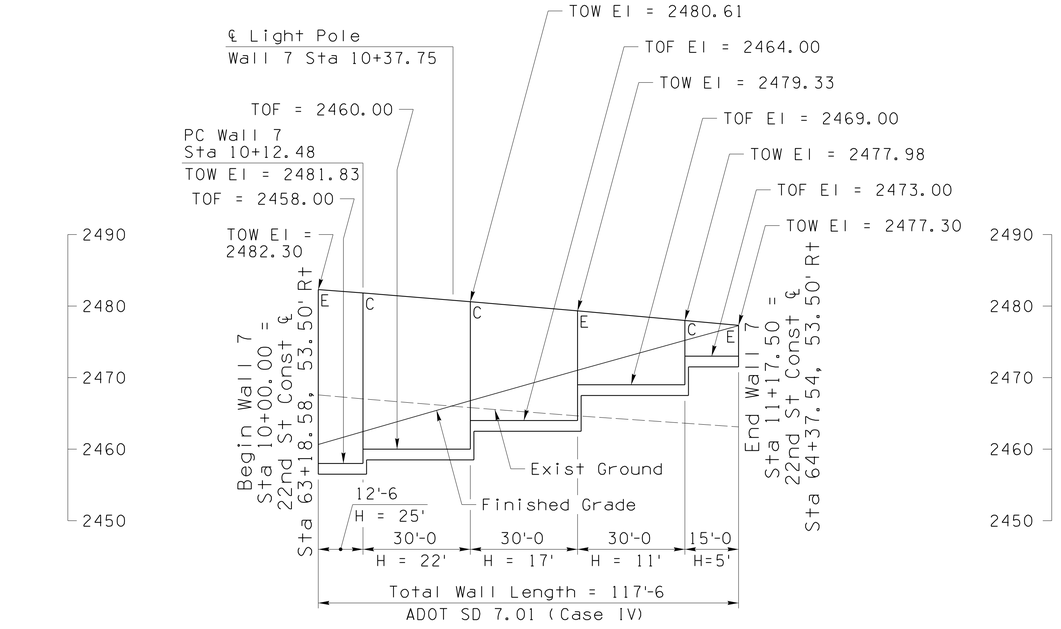

WALL 7 ELEVATION

Vertical Scale: 1" = 10'-0
Horizontal Scale: 1" = 20'-0

See Dwg S-3.17 for Light Pole Details.

RETAINING WALL 7
PLAN & ELEVATION

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

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359 OF 474

CITY OF TUCSON

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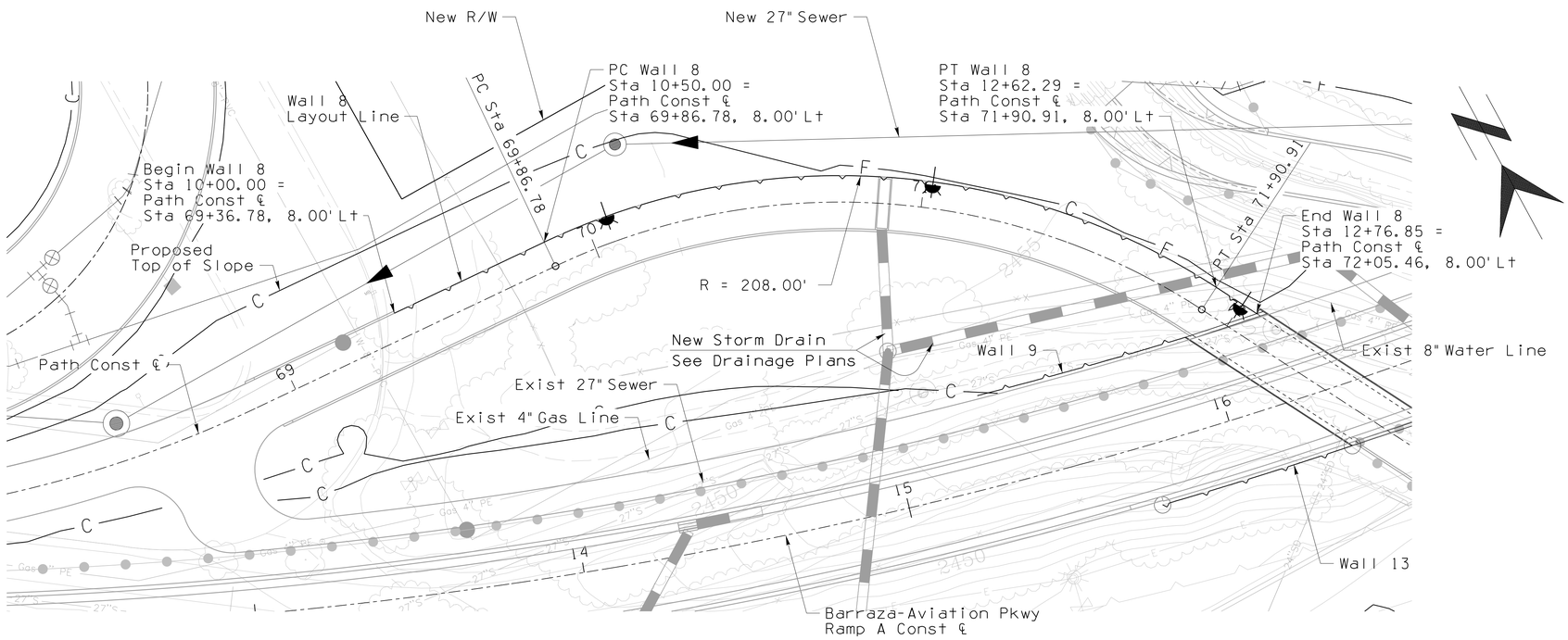

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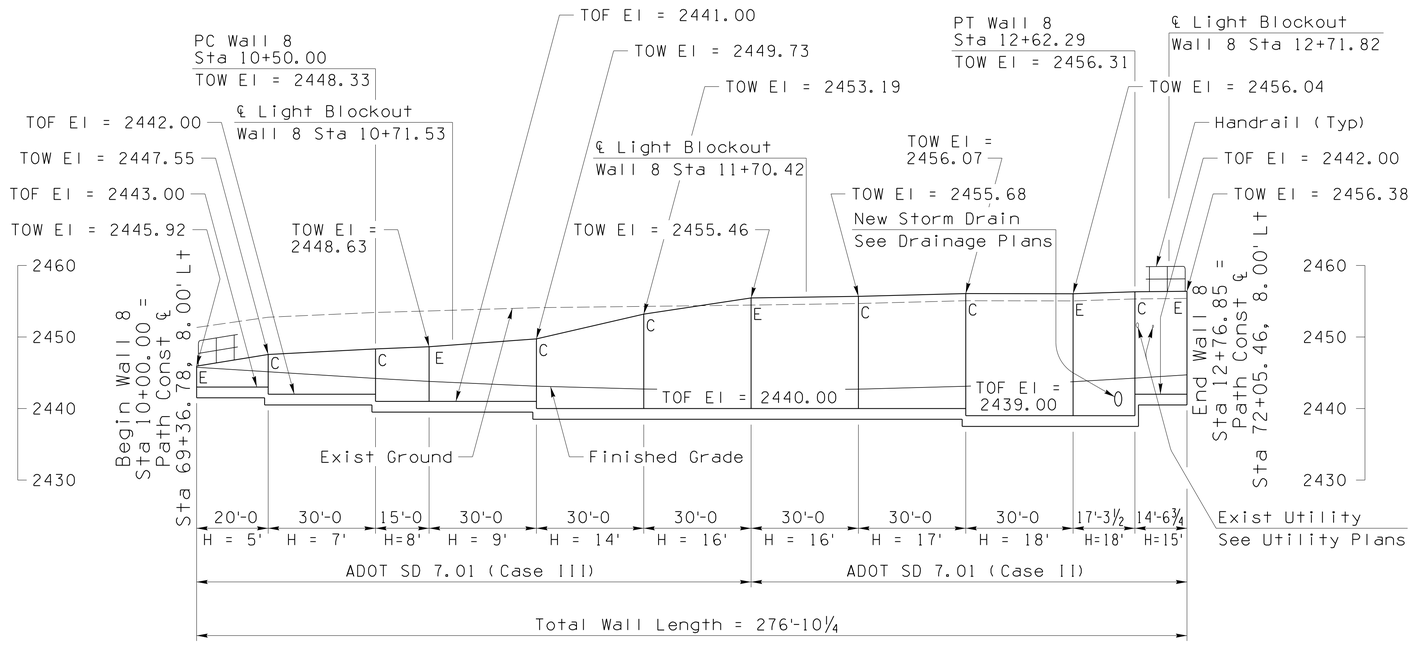

WALL 8 ELEVATION
Vertical Scale: 1" = 10'-0
Horizontal Scale: 1" = 20'-0

See Dwg S-3.16 for Pipe Penetration Details.

See Dwg S-3.16 for Light Blockout Details.

RETAINING WALL 8
PLAN & ELEVATION

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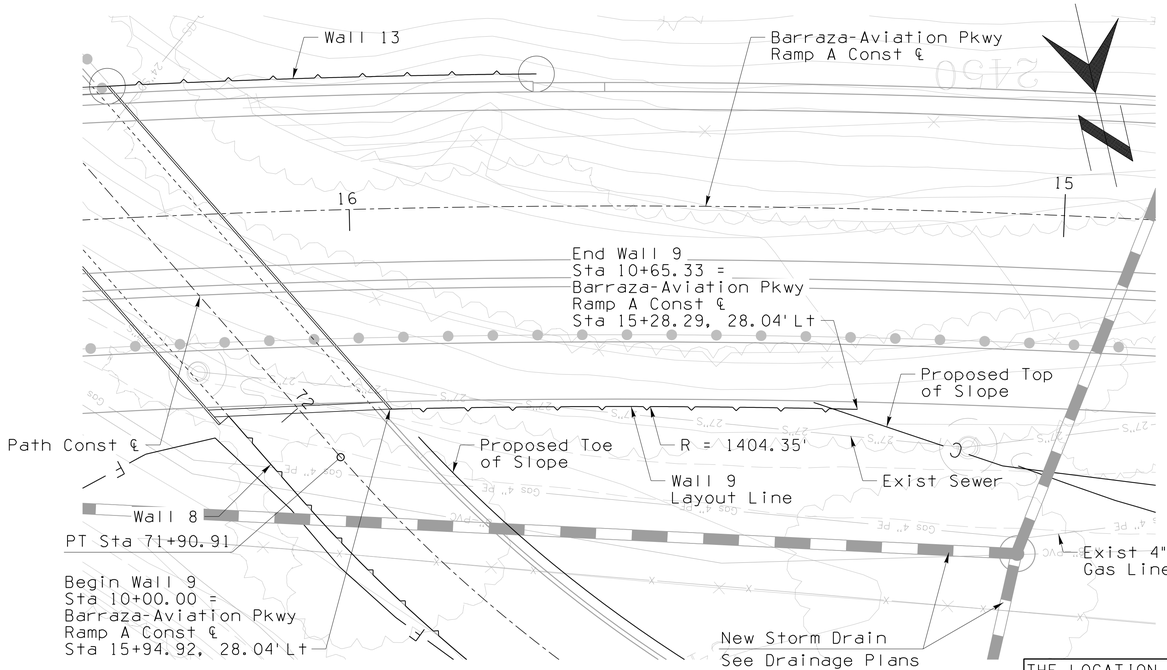

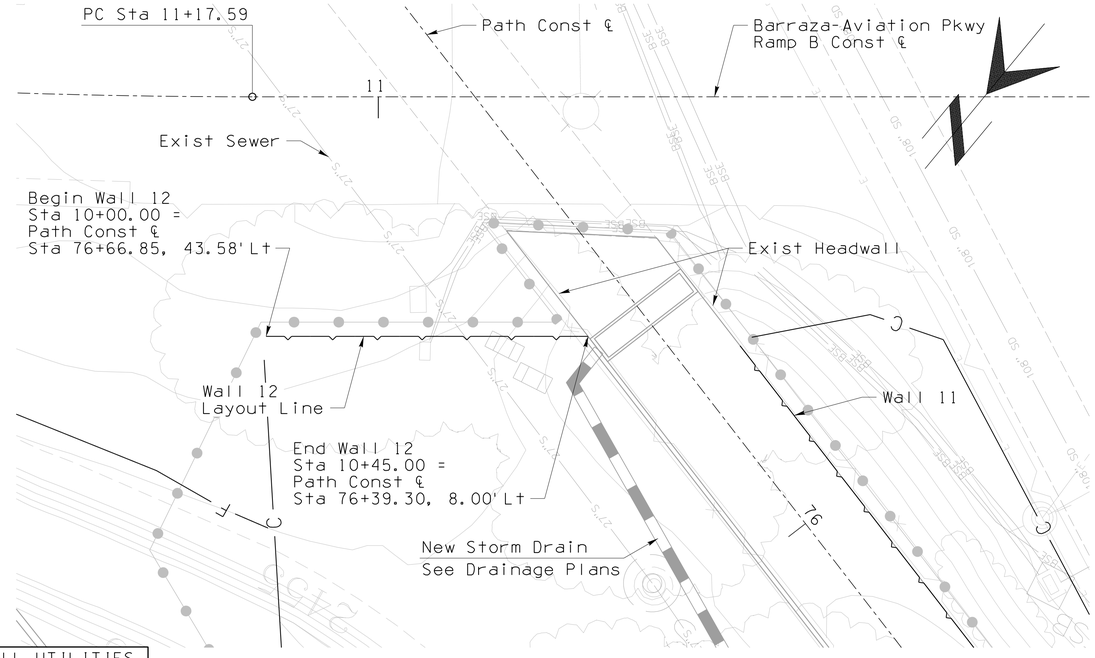

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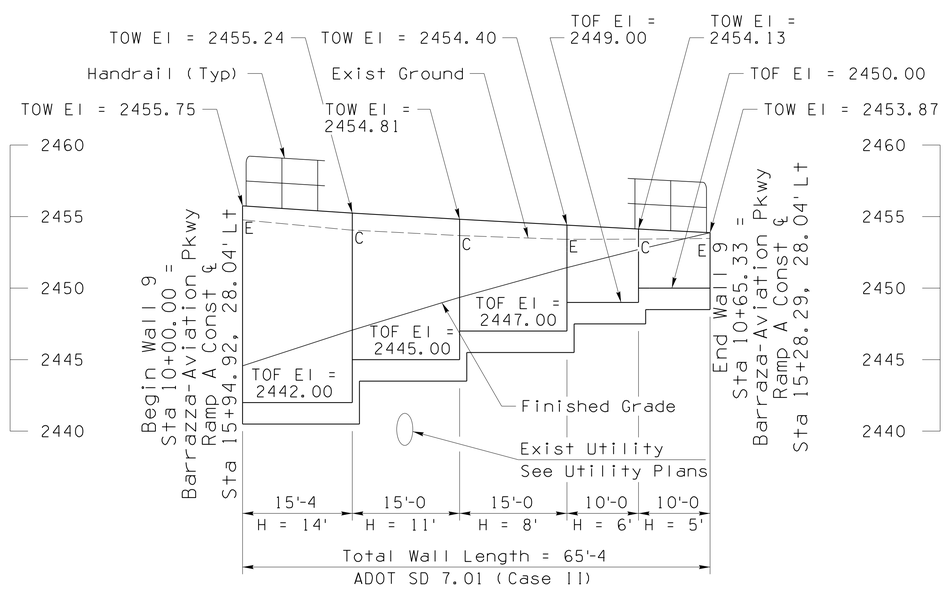
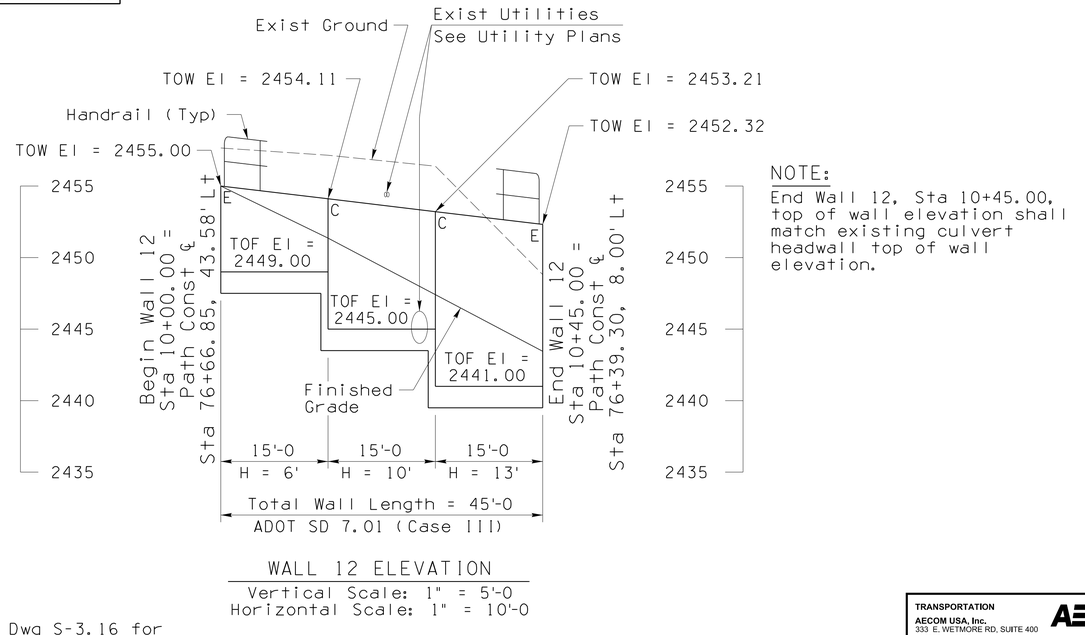


WALL 9 ELEVATION
Vertical Scale: 1" = 5'-0
Horizontal Scale: 1" = 10'-0

See Dwg S-3.16 for Handrail Details.



WALL 12 ELEVATION
Vertical Scale: 1" = 5'-0
Horizontal Scale: 1" = 10'-0

NOTE:
End Wall 12, Sta 10+45.00, top of wall elevation shall match existing culvert headwall top of wall elevation.

See Dwg S-3.16 for Handrail Details.

RETAINING WALLS 9 & 12
PLAN & ELEVATION

NO.	DATE	REVISION	BY	CHKD.	APPR.

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361 of 474

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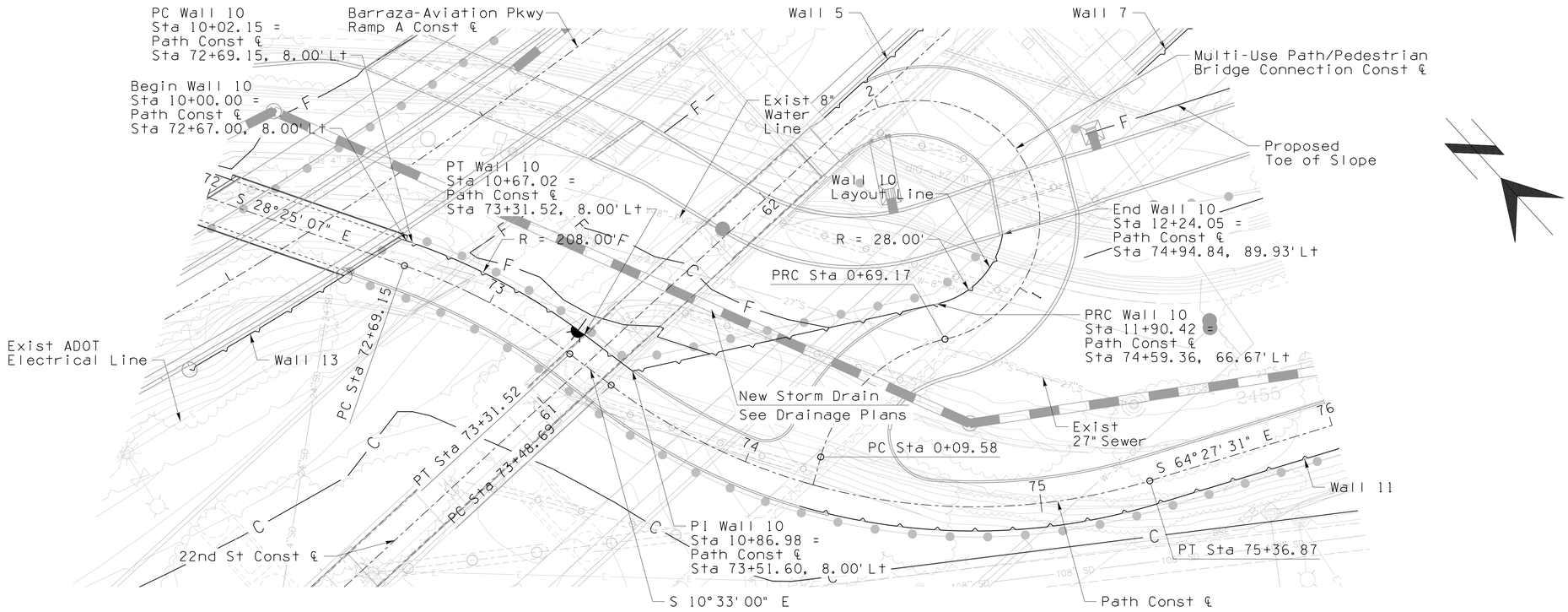

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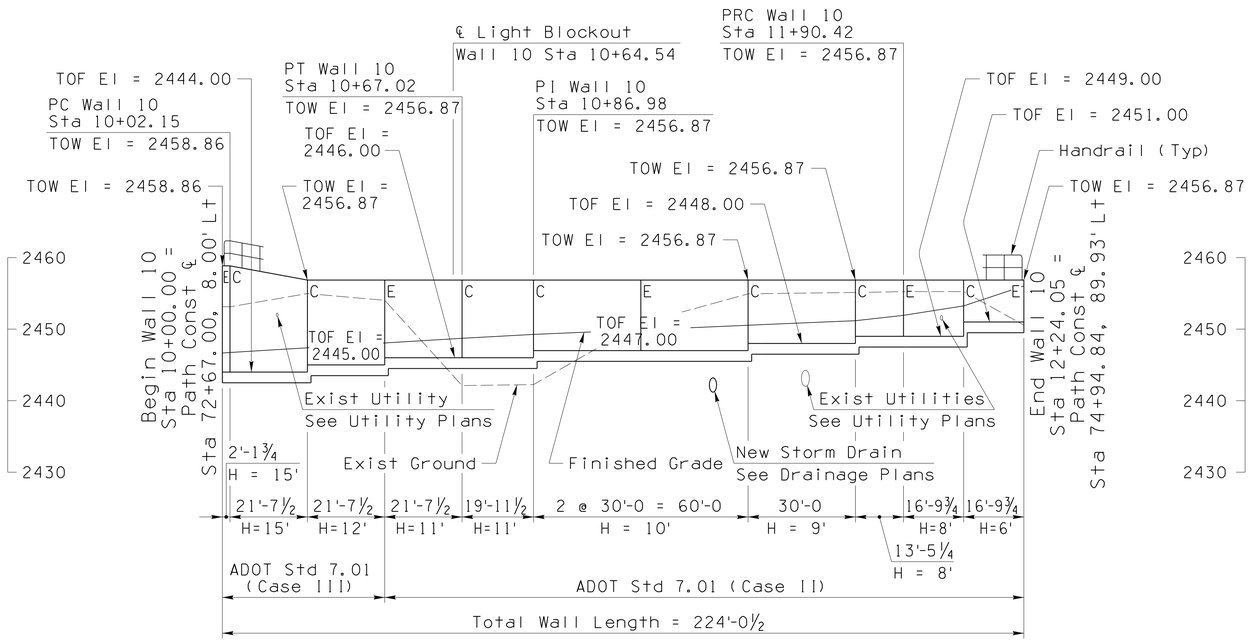

WALL 10 ELEVATION
Vertical Scale: 1" = 10'-0
Horizontal Scale: 1" = 20'-0

See Dwg S-3.16 for Light Blockout Details.

RETAINING WALL 10
PLAN & ELEVATION

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Date Plotted: 6/20/2018
Time Plotted: 9:52:45 AM
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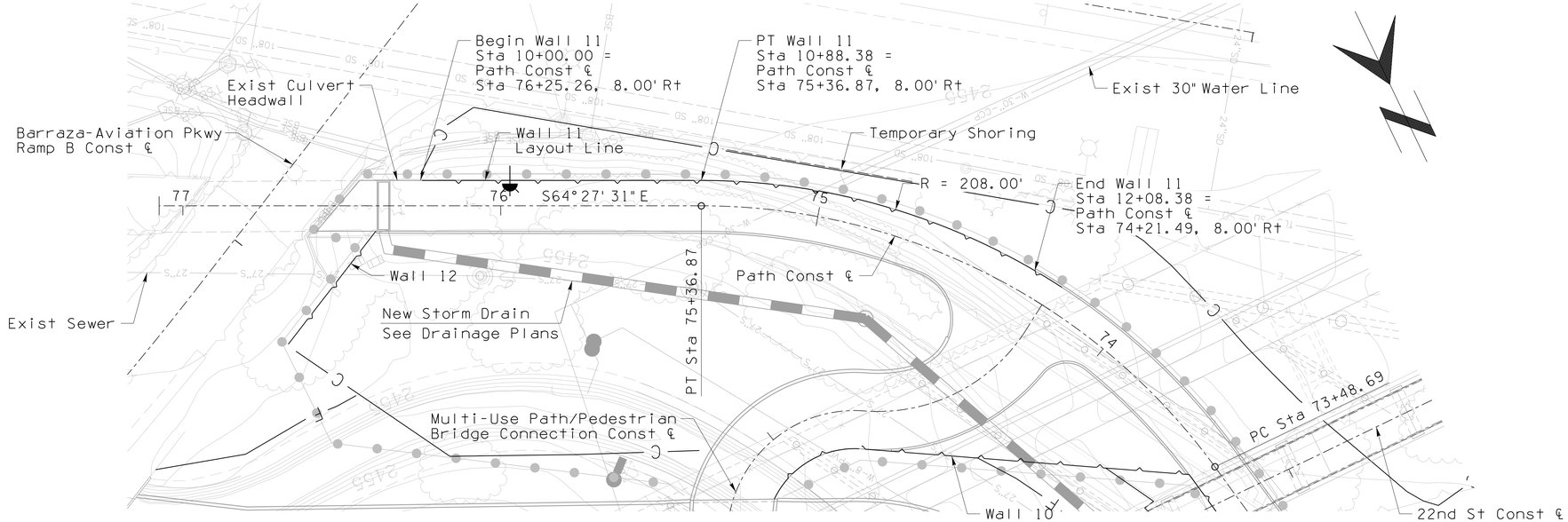
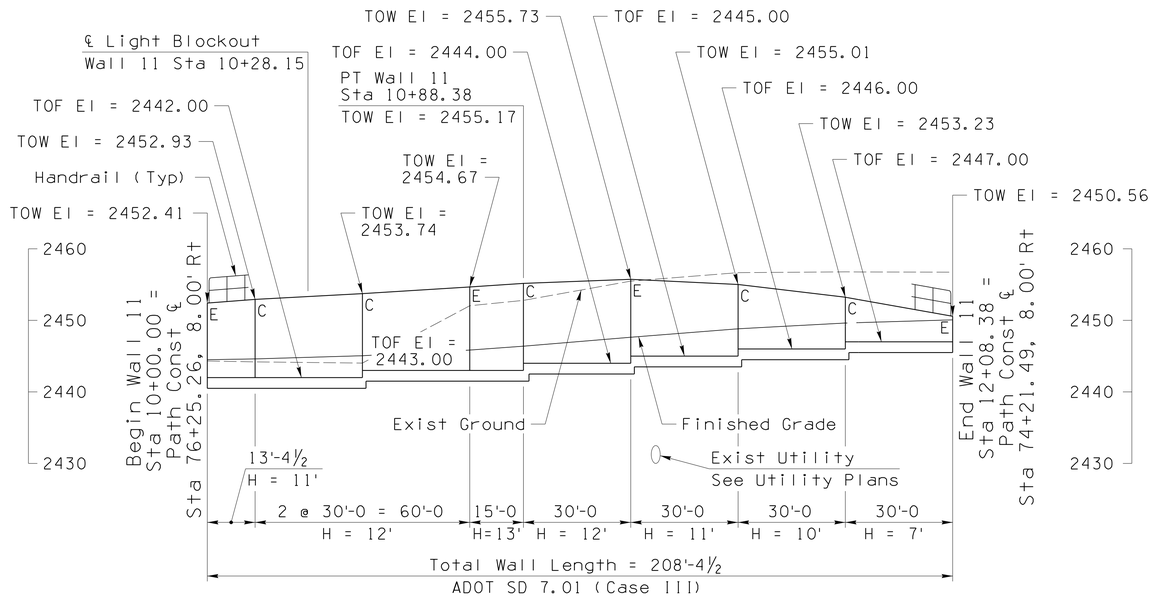


THE LOCATION OF ALL UTILITIES IS APPROXIMATE ONLY. LOCATIONS SHOWN REFLECT THE FINDINGS OF THE LATEST AVAILABLE MAPPING.



WALL 11 ELEVATION

Vertical Scale: 1" = 10'-0
Horizontal Scale: 1" = 20'-0

NOTE:

Begin Wall 11, Sta 10+00.00, top of wall elevation shall match existing culvert headwall top of wall elevation.

See Dwg S-3.16 for Light Blockout Details.

Call at least two full working days before you being excavation.
ARIZONA 811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800- STAKE-IT (782-5348)
In Maricopa County: (602)263-1100

PLOTTED BY: kershnerm
Date Plotted: 6/20/2018
Time Plotted: 9:52:46 AM
Filename: T:\60269301 22nd St_Kino to Tucson Design_TUC\000_CAD\008_Structural\Sheets\s9301wp111.dgn

RETAINING WALL 11
PLAN & ELEVATION

NO.	DATE	REVISION	BY	CHKD.	APPR.

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S-3.14 OF S-3.18

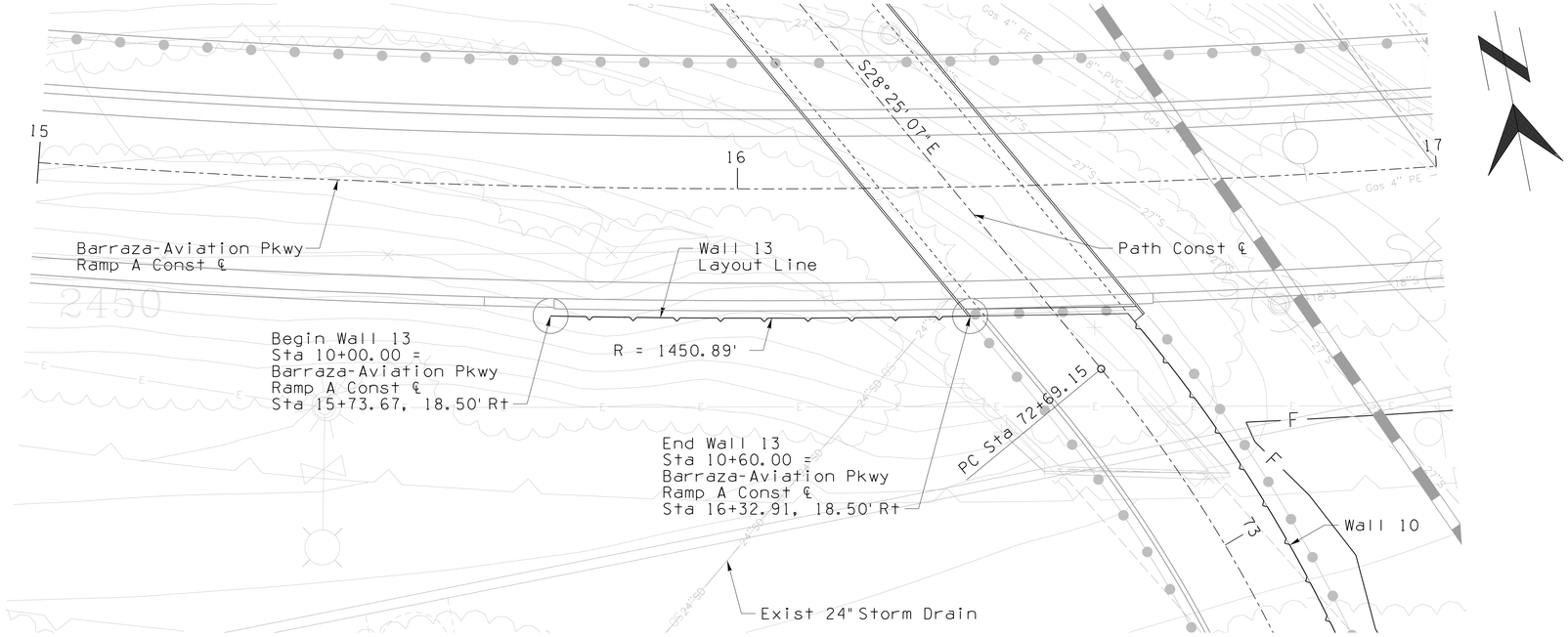
DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET
KINO PARKWAY TO TUCSON BOULEVARD

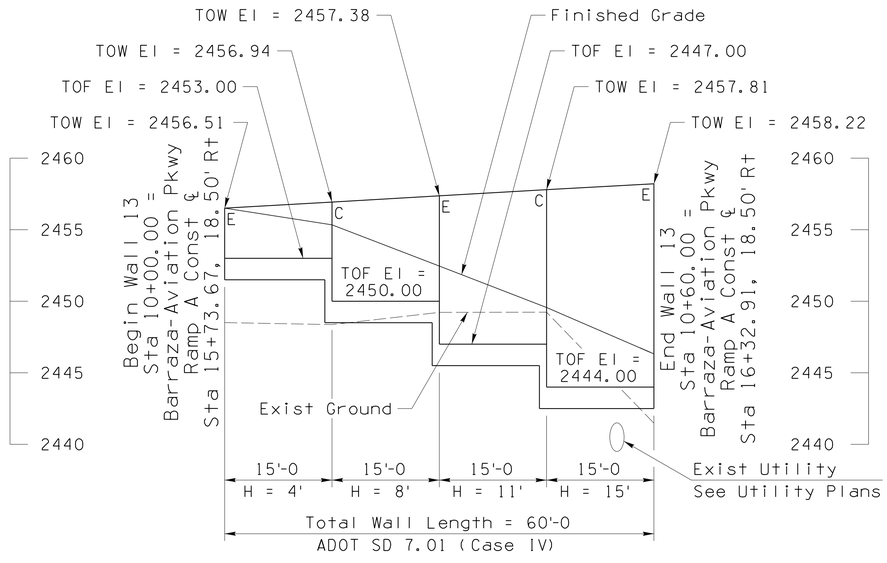
363 OF 474

CITY OF TUCSON

DRWN. TST	06-18	REF.	SCALE:
DSGN. BCA	06-18		
CHKD. CAL	06-18	PLAN NO.	I-2010-012



THE LOCATION OF ALL UTILITIES IS APPROXIMATE ONLY. LOCATIONS SHOWN REFLECT THE FINDINGS OF THE LATEST AVAILABLE MAPPING.



WALL 13 ELEVATION

Vertical Scale: 1" = 5'-0
Horizontal Scale: 1" = 10'-0

RETAINING WALL 13
PLAN & ELEVATION

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22ND STREET
KINO PARKWAY TO TUCSON BOULEVARD

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CITY OF TUCSON

DRWN. TST	06-18	REF.	SCALE:
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CHKD. CAL	06-18	PLAN NO.	I-2010-012

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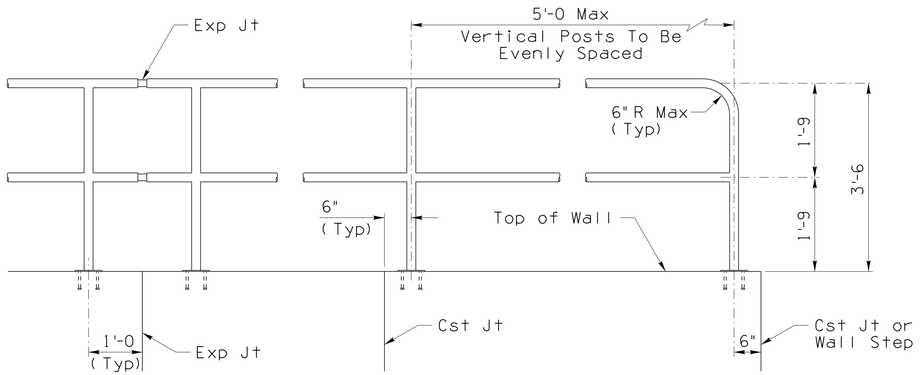
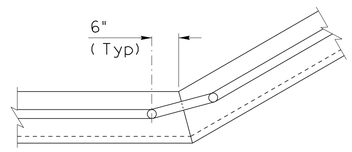


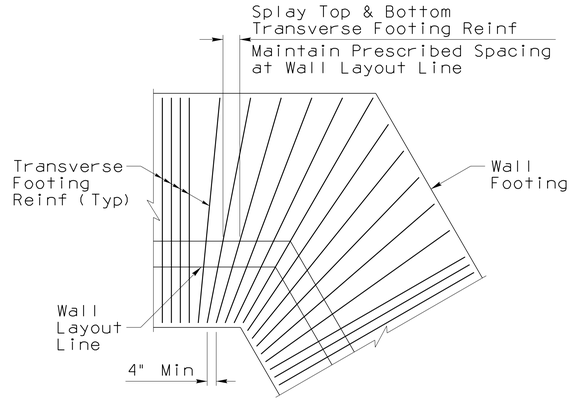
TYPICAL HANDRAIL
Scale: 3/4" = 1'-0

HANDRAIL NOTES:

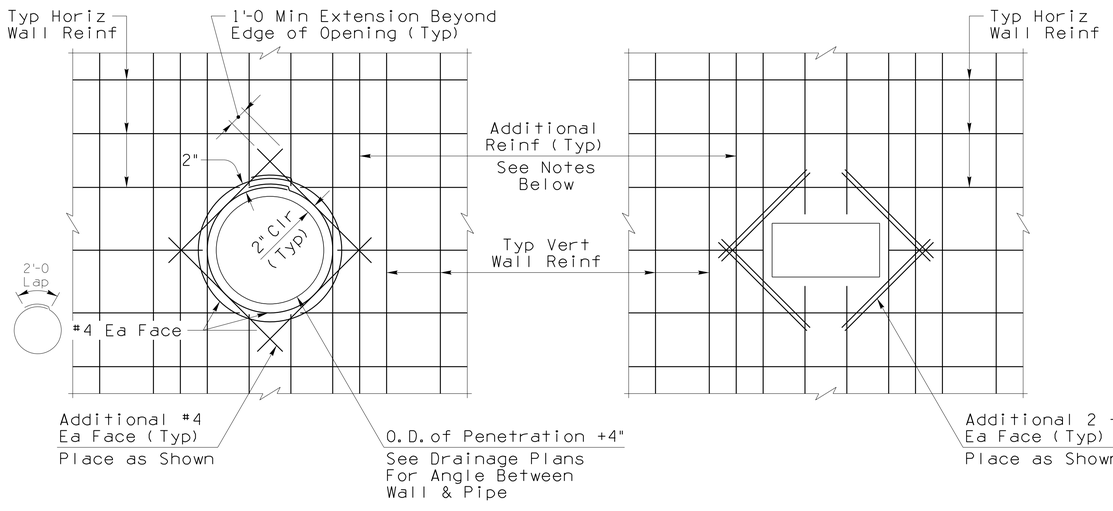
1. Handrail shall be constructed per PAG Standard Detail 105 - Latest Revision.
2. For information not shown, see PAG Standard Detail 105 - Latest Revision.



PLAN OF METAL HANDRAIL AT PI
Scale: 3/4" = 1'-0



FOOTING REINFORCEMENT DETAIL AT ANGLE POINT
(Inside Corner Shown, Outside Corner Similar)
Scale: 3/8" = 1'-0



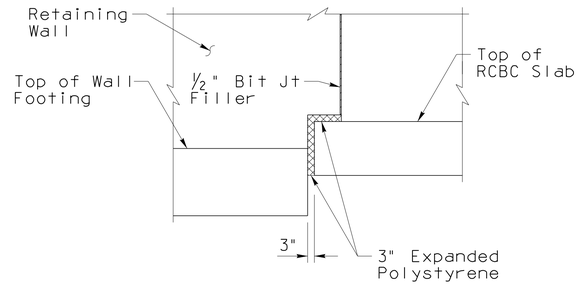
TYPICAL PIPE PENETRATION DETAIL

TYPICAL LIGHT BLOCKOUT DETAIL

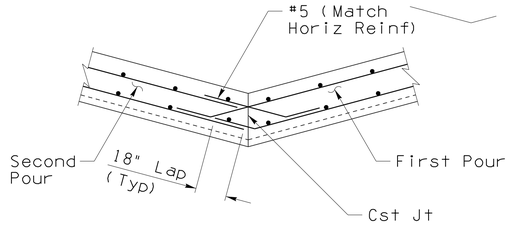
WALL PENETRATION DETAILS
Scale: 3/4" = 1'-0

WALL PENETRATION NOTES:

1. Typical wall penetrations shall not be paid for separately. Costs shall be considered incidental to wall construction.
2. Fill annular space between pipe or light fixture & blockout with non-shrink grout.
3. Terminate interrupted reinforcing 2 inches clear of opening.
4. Vertical wall reinforcing interrupted by the opening shall be replaced by additional bars of the same size on each side of the opening at one half the specified vertical wall spacing. These additional bars shall extend full height of the wall. Back face reinforcing shall be anchored into the footing per the ADOT SD 7.01. Front face reinforcing shall be lapped to additional #4 x 2'-0 dowels into footing.
5. Back face is soil side of wall.
6. See lighting plan sheet T-7.07 for luminaire mounting height.



EXPANSION JOINT AT BOX CULVERT
Scale: 3/8" = 1'-0



WALL STEM CONSTRUCTION JOINT DETAIL AT ANGLE POINT
NTS

RETAINING WALL MISCELLANEOUS DETAILS (1 OF 2)

NO.	DATE	REVISION	BY	CHKD.	APPR.

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S-3.16 OF S-3.18

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22ND STREET
KINO PARKWAY TO TUCSON BOULEVARD

365 OF 474

CITY OF TUCSON

DRWN. TST	06-18	REF.	SCALE:
DSGN. BCA	06-18		
CHKD. CAL	06-18	PLAN NO.	I-2010-012

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Time Plotted: 9:52:48 AM
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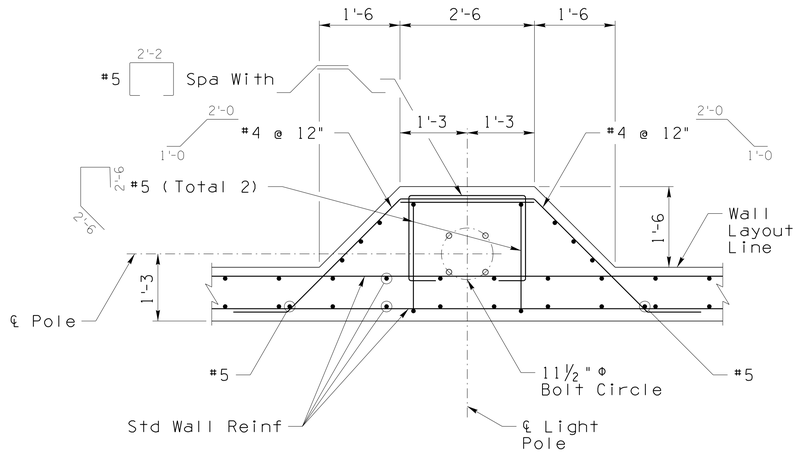
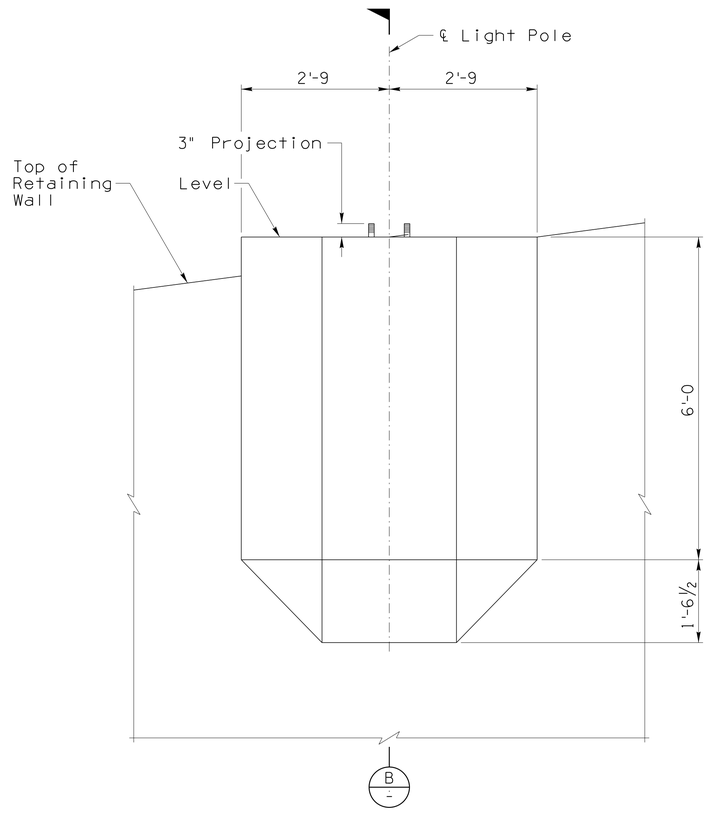


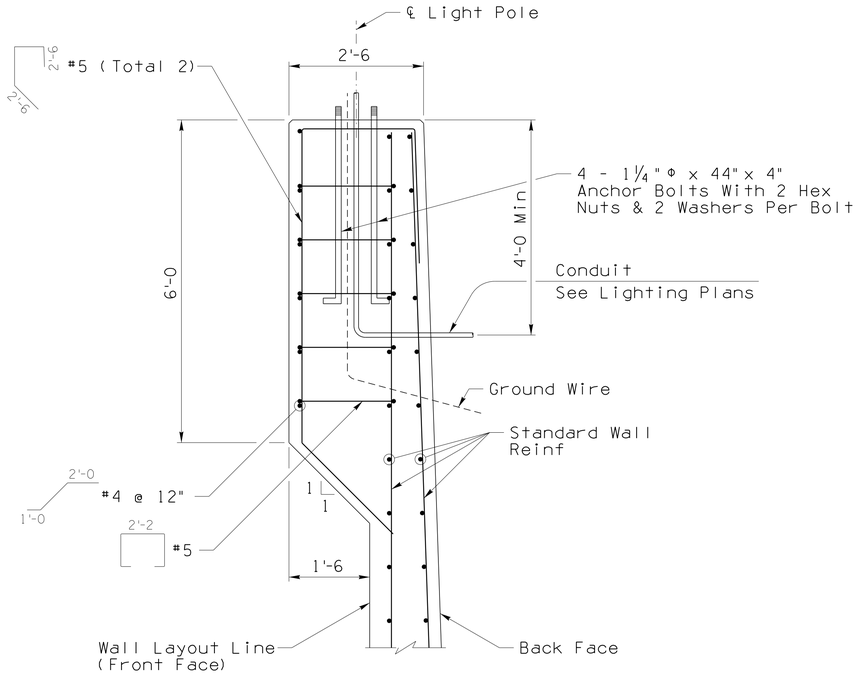
LIGHT POLE BLISTER PLAN

Scale: ¾" = 1'-0



ELEVATION

Scale: ¾" = 1'-0



SECTION B

Scale: ¾" = 1'-0

NOTES:

1. Construction Specifications - Arizona Department of Transportation Standard Specifications for Road & Bridge Construction, 2008.
2. Design Specifications - AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires & Traffic Signals, 4th Edition, 2001.
3. The upper 3" of the anchor bolts shall be threaded.
4. Anchor bolts shall be fabricated in accordance with the requirements of ASTM A307.
5. All bolts, nuts & washers shall be galvanized in accordance with the requirements of ASTM A153.
6. For conduit & electrical details, see Lighting Plans.
7. Light pole blisters shall not be paid for separately. Additional concrete & steel are considered incidental to the cost of the wall construction. No additional payment will be made for anchor bolts & associated hardware, their cost shall be considered incidental to the cost of the retaining wall.

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RETAINING WALL
MISCELLANEOUS
DETAILS (2 OF 2)

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DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

22ND STREET
KINO PARKWAY TO TUCSON BOULEVARD

366 OF 474

CITY OF TUCSON

DRWN. TST	06-18	REF.	SCALE:
DSGN. BCA	06-18		
CHKD. CAL	06-18	PLAN NO.	I-2010-012

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FINISHED GRADE ELEVATION DATA TABLE		
Wall No.	Wall Station	Finished Grade (FF) Elevation
1	10+00.00	2455.93
	10+30.00	2456.12
	10+60.00	2456.41
	10+90.00	2456.88
	11+20.00	2457.46
	11+50.00	2458.07
	11+80.00	2458.63
	12+10.00	2458.97
	12+40.00	2459.15
	12+70.00	2459.52
	13+00.00	2459.94
	13+30.00	2460.46
	13+46.38	2460.87
	13+60.11	2461.66
2	10+00.00	2454.65
	10+30.00	2456.13
	10+60.00	2457.61
	10+90.00	2459.09
	11+20.00	2460.57
	11+50.00	2462.05
	11+80.00	2463.52
	12+10.00	2464.96
	12+40.00	2466.26
3	10+00.00	2463.12
	10+30.00	2463.47
	10+60.00	2463.66
	10+74.31	2463.69
	11+04.31	2462.81
	11+34.31	2460.99
	11+64.31	2460.62
	11+79.31	2460.54
	12+09.31	2460.27
	12+39.31	2460.21
	12+69.31	2459.82
	12+99.31	2459.54
	13+29.31	2459.33
	13+59.31	2459.14
	13+89.31	2458.97
	14+04.46	2458.90
4	10+00.00	2453.70
	10+15.15	2453.70
	10+39.75	2453.70
	10+64.34	2453.70
	10+77.30	2453.70
5	10+00.00	2458.64
	10+30.00	2458.03
	10+47.21	2457.80
	10+64.42	2457.63
	10+77.37	2457.48

FINISHED GRADE ELEVATION DATA TABLE		
Wall No.	Wall Station	Finished Grade (FF) Elevation
6	10+00.00	2463.37
	10+30.00	2463.02
	10+60.00	2462.80
	10+90.00	2462.63
	11+12.91	2462.57
	11+35.83	2462.49
	11+58.74	2462.54
	11+81.65	2462.59
	11+96.03	2462.62
	12+26.03	2462.70
	12+56.03	2462.79
	12+86.03	2462.90
	13+16.03	2463.14
	13+46.03	2463.34
	13+76.03	2463.54
	14+06.03	2463.74
	14+36.03	2463.94
	14+66.03	2464.11
	14+96.03	2464.19
	15+26.03	2464.19
	15+56.03	2464.29
	15+86.03	2464.32
	16+16.03	2464.20
	16+35.26	2464.00
	16+54.50	2463.77
7	10+00.00	2460.65
	10+12.48	2462.46
	10+42.48	2466.78
	10+72.48	2471.03
	11+02.48	2475.21
	11+17.48	2477.27
8	10+00.00	2445.76
	10+20.00	2445.14
	10+50.00	2444.21
	10+65.00	2443.78
	10+95.00	2443.12
	11+25.00	2442.72
	11+55.00	2442.58
	11+85.00	2442.71
	12+15.00	2443.10
	12+45.00	2443.74
	12+62.29	2444.24
	12+76.85	2444.70
9	10+00.00	2444.57
	10+15.00	2447.01
	10+30.00	2449.30
	10+45.00	2451.39
	10+55.00	2452.66
	10+65.00	2453.83

FINISHED GRADE ELEVATION DATA TABLE		
Wall No.	Wall Station	Finished Grade (FF) Elevation
10	10+00.00	2446.67
	10+02.15	2446.74
	10+23.78	2447.40
	10+45.40	2448.07
	10+67.02	2448.73
	10+86.98	2449.27
	11+16.98	2449.91
	11+46.98	2450.55
	11+76.98	2451.19
	11+90.42	2451.93
	12+07.24	2453.26
	12+24.05	2456.04
11	10+00.00	2444.50
	10+13.38	2444.60
	10+43.38	2445.05
	10+73.38	2445.85
	10+88.38	2446.38
	11+18.38	2447.63
	11+48.38	2448.81
	11+78.38	2449.62
	12+08.38	2450.06
12	10+00.00	2455.31
	10+15.00	2451.36
	10+30.00	2447.41
	10+45.00	2443.45
13	10+00.00	2458.19
	10+15.00	2455.34
	10+30.00	2452.46
	10+45.00	2449.56
	10+60.00	2446.32

NOTE:
Linear interpolation shall be used to calculate the finished grade elevations where not shown in the plans.

RETAINING WALL
FINISHED GRADE ELEVATIONS

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