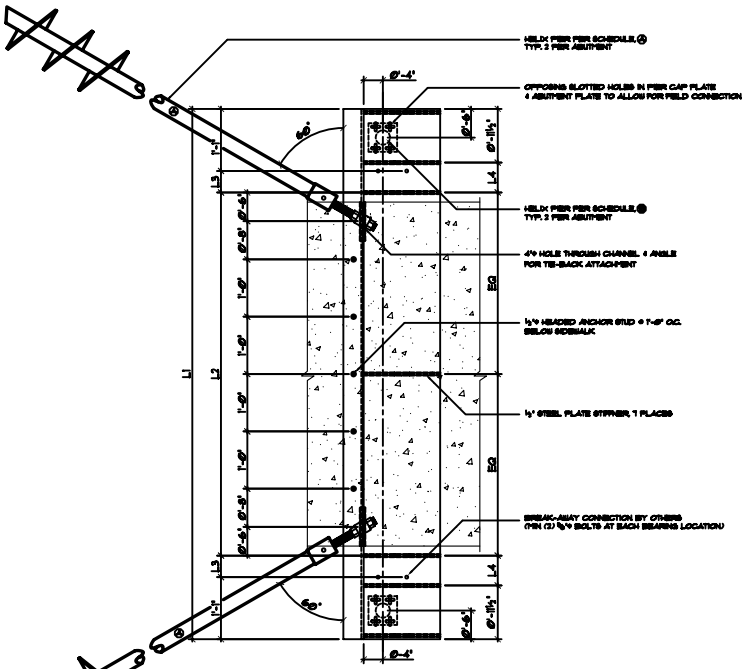
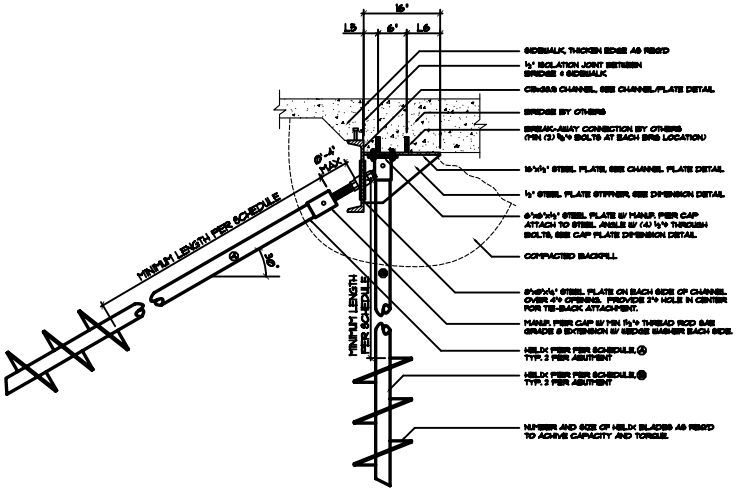


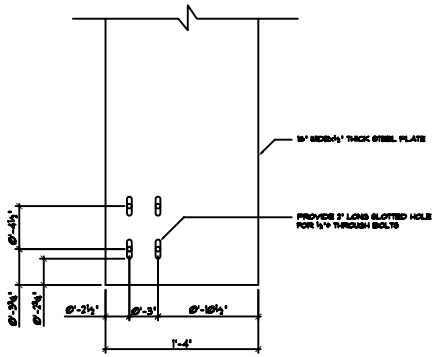
ABUTMENT DETAIL - PLAN VIEW

NOT TO SCALE



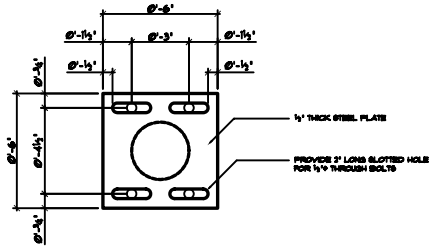
ABUTMENT DETAIL - PROFILE VIEW

NOT TO SCALE



ABUTMENT PLATE DIMENSION DETAIL

NOT TO SCALE



CAP PLATE DIMENSION DETAIL

NOT TO SCALE

BEAM ADJUSTMENT DIMENSION SCHEDULE			
ADJUSTMENT DIMENSION		ADJUSTMENT DIMENSION	
L1	0'-9"	L1	1'-9"
L2	0'-4"	L2	0'-9"
L3	0'-4½"	L3	0'-9"
L4	0'-9"	L4	0'-9½"
L5	0'-9"	L5	0'-9"
L6	0'-7"	L6	0'-9"

HELIX PIER SCHEDULE			
PIER TYPE	ALLOWABLE LOAD	MINIMUM LENGTH	OTHER NOTES
Ⓐ	6 KIPS	8'-0"	HOLD SAME TIER TOP TO HOLD TORSION ANCHOR
Ⓑ	11 KIPS	12'-0"	

THE LOADS SHOWN ARE SERVICE ALLOWABLE LOADS. A MINIMUM FACTOR OF SAFETY OF 2.0 SHOULD BE USED TO DETERMINE THE REQUIRED ULTIMATE CAPACITY OF THE HELIX PIERS WITH REGARD TO THEIR INTERACTION WITH SOIL AND BEDROCK.

General Notes:

1. Codes.

This plan set prepared based on the 2021 Uniform Building Code with local amendments and portions of the most recent versions of ACI 318, ACI 350R, AISC Allowable Stress Design with addition.

2. Loads.

This plan is based upon the following load parameters:

Bridge Reactions. Loads provided by Continental Bridge for Half-Through Pony Sprian Bridge:

Soils report by: CTL THOMPSON PC-3559, DATED 05-23-04 & PC-3561, DATED 05-23-04

Recommended allowable bearing pressure:

Max load: psf

Min dome equalized: psf

3. Materials.

This plan is based upon the following material properties:

Steel: All steel (helix plate, beams, channels, plates, connectors(nuts) shall be protected from corrosion by hot-dip galvanizing per ASTM A53. Structural Steel shall conform to ASTM A992 (fy=50 ksi).

Bolts: All bolts shall conform to ASTM A307 or G45 Grade 1.

Helix: All welding shall be in accordance with the "Structural Welding Code - Steel" of the American Welding Society. Welding of galvanized steel can produce toxic gases and should be done in adequate ventilation and with adequate gas elevation, breathing gear, and other safety equipment. All welds shall be to E70 stick.

4. Helix Piers.

All helix piers and pier caps shall be as manufactured by Hagnan Piering, Inc. or equivalent. Helix pier installation should be observed by a representative from Secure Foundation and Structures, Inc. (970) 472-6255 or other geotechnical engineer to verify installation torques and helix depth. Provide a minimum of 24 hours notice prior to installation work. The loads shown on the plan are design allowable loads. A minimum factor of safety of 2.0 should be used to determine the required ultimate capacity of the helix piers with regard to their interaction with soil and bedrock. The manufacturer's recommendations should be followed regarding the bridge and bearing capacity relationship for the particular helix pier size used. The ratio of required allowable helix pier capacity to the total area of the helix blades shall not exceed the allowable subsurface material bearing capacity provided by the geotechnical engineer.

5. Tolerances.

The construction tolerances for the abutment piers are as follows:

Angle of helix pier tie-back - ± 5°

Location of helix piers - ± 1"

Top of piers - ± 1"

Movement of abutment during post-tensioning - ½"

6. Soils.

SECURE recommends an open-hole inspection be performed by a qualified geotechnical engineer. Open-hole inspections are to verify that the soil conditions are consistent with those described in the above referenced soils report. Soils information contained in the soils report may require additional evaluation or a foundation redesign, and should be brought to the attention of SECURE. All footings, slabs, or piers shall be a minimum of 30" (in) below grade, or per local codes, and should bear upon undisturbed natural soils or structural fill acceptable to the geotechnical engineer. All other recommendations contained in the soils report pertaining to backfill, drainage, etc. should be incorporated into the design of the project.

7. Backfill.

Backfill should be adequately compacted and graded to provide adequate drainage away from the foundation. Backfill adjacent to the foundation may settle over time. The backfill must be maintained and remoisted to provide adequate drainage away from the foundation.

8. Drainage.

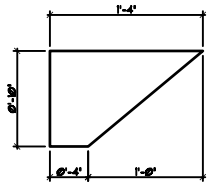
Adequate drainage shall be provided around the structure. This drainage should be maintained and remoisted throughout the life of the structure.

9. Limitations.

This plan is only a foundation design. However, it may include exterior elev as requested. It is the contractor/owners responsibility to verify and reconcile all dimensions prior to construction. The foundation plan is based on the contractor/owner furnished plans and the above referenced specification. Any discrepancies or changes should be brought to the attention of SECURE.

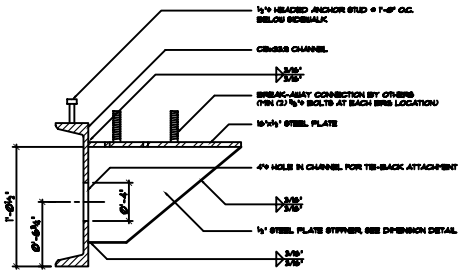
10. Construction Sequence.

1. Install helix piers.
2. Set steel bridge abutment.
3. Connect tie-back plate and steel bridge abutment, hand snug nuts.
4. Connect vertical plate and steel bridge abutment.
5. Attach bridge.



STIFFNER PLATE DIMENSION DETAIL

NOT TO SCALE



CHANNEL/PLATE DETAIL

NOT TO SCALE

SECURE
FOUNDATIONS & STRUCTURES, INC
211 W. Magnolia, Suite B
Fort Collins, CO 80521
P: (970) 472-6255
F: (970) 472-6256
E: info@secureengineer.com

PROJECT LOCATION:
LAPORTE AVE & NEW MERCER CANAL, #2
WEST MULBERRY & LARIMER CO CANAL
PEDESTRIAN BRIDGE'S, FORT COLLINS, CO.

FOUNDATION DETAIL

NO.	DATE	REVISION/ISSUE

CLIENT:
CTL|THOMPSON
375 Horsetooth Rd, Bldg #3
Fort Collins, CO 80526
CONTACT: Tom Chapel
PH: 970-206-9452

DRAWN	CKL/MAP
CHK	CKL
JOB #	SF03-324
DATE	06-22-04
SCALE	AS SHOWN
SHEET	S1
OF	S1