

RediStair® Specifications

GENERAL REQUIREMENTS

GOVERNING CODE: The design and construction of this project is governed by the "International Building Code (IBC)", 2015 Edition, hereafter referred to as the IBC.

REFERENCE STANDARDS: Refer to Chapter 35 of 2015 IBC. Where other Standards are noted in the drawings, use the latest edition of the standard unless a specific date is indicated. Reference to a specific section in a code does not relieve the contractor from compliance with the entire standard.

SPECIFICATIONS: Refer to the project specifications issued as part of the contract documents for information supplemental to these drawings.

OTHER DRAWINGS: Refer to the architectural, mechanical, electrical, civil and plumbing drawings for additional information including but not limited to: dimensions, elevations, slopes, door and window openings, non-bearing walls, stairs, finishes, drains, waterproofing, railings, curtain walls, elevators, curbs, depressions, mechanical unit locations, and other nonstructural items.

STRUCTURAL DETAILS: The structural drawings are intended to show the general character and extent of the project and are not intended to show all details of the work.

STRUCTURAL RESPONSIBILITIES: The structural engineer (SER) is responsible for the strength and stability of the primary structure in its completed form.

COORDINATION: The Contractor is responsible for coordinating details and accuracy of the work; for confirming and correlating all quantities and dimensions; for selecting fabrication processes; for techniques of assembly; and for performing work in a safe and secure manner.

MEANS, METHODS and SAFETY REQUIREMENTS: The contractor is responsible for the means and methods of construction and all job-related safety standards such as OSHA and DOSH (Department of Occupational Safety and Health). The contractor shall verify that all structural connections are in place and inspected as required prior to removing any temporary shoring or bracing. This includes but is not limited to lap splice connections, adhesive anchor connections, mechanical connections, vertical dowel connections and weld connections. The contractor is responsible for all hoisting, forming and shoring means, methods and safety requirements.

BRACING/SHORING DESIGN ENGINEER: The contractor shall at his discretion employ an SSE, a registered professional engineer for the design of any temporary bracing and shoring.

TEMPORARY SHORING, BRACING: The contractor is responsible for the strength and stability of the structure during construction and shall provide temporary shoring, bracing and other elements required to maintain stability until the structure is complete. It is the contractor's responsibility to be familiar with the work required in the construction documents and the requirements for executing it properly.

CONSTRUCTION LOADS: Loads on the structure during construction shall not exceed the design loads as noted in DESIGN CRITERIA & LOADS below or the capacity of partially completed construction as determined by the Contractor's SSE for Bracing/Shoring.

CHANGES IN LOADING: The contractor has the responsibility to notify the SER of any architectural, mechanical, electrical, or plumbing load imposed onto the structure that differs from, or that is not documented on the original Contract Documents (architectural / structural / mechanical / electrical or plumbing drawings). Provide documentation of location, load, size and anchorage of all undocumented loads in excess of 400 pounds. Provide marked-up structural plan indicating locations of any new equipment or loads. Submit plans to the Architect/Engineer for review prior to installation.

NOTE PRIORITIES: Plan and detail notes and specific loading data provided on individual plans and detail drawings supplements information in the Structural General Notes.

DISCREPANCIES: In case of discrepancies between the General Notes, Specifications Plan/details or Reference Standards, the Architect/Engineer shall determine which shall govern. Discrepancies shall be brought to the attention of the Architect/Engineer before proceeding with the work. Should any discrepancy be found in the Contract Documents, the Contractor will be deemed to have included in the price the most expensive way of completing the work, unless prior to the submission of the price, the Contractor asks for a decision from the Architect as to which shall govern. Accordingly, any conflict in or between the Contract Documents shall not be a basis for adjustment in the Contract Price.

SITE VERIFICATION: The contractor shall verify all dimensions and conditions at the site. Conflicts between the drawings and actual site conditions shall be brought to the attention of the Architect/Engineer before proceeding with the work.

ALTERNATES: Alternate products of similar strength, nature and form for specified items may be submitted with adequate technical documentation to the Architect/Engineer for review. Alternate materials that are submitted without adequate technical documentation or that significantly deviate from the design intent of materials specified may be returned without review. Alternates that require substantial effort to review will not be reviewed unless authorized by the Owner.

DESIGN CRITERIA AND LOADS

OCCUPANCY:	Risk Category of Building per 2015 IBC Table 1604.5 =	II
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SEISMIC DESIGN:	Seismic Design Category:	SDC =	B
	Site Classification per IBC 1613.3.2 & ASCE 7-10, Ch. 20		
	Site Class =		E
	Seismic Importance Factor per ASCE 7-10 Table 1.5-2	I_e =	1.0
	Spectral Design Response Coefficient (Short Period)	S_{DS} =	0.12 g

DESIGN LIVE LOADS	AREA	LIVE LOADS (PSF) UNO	REMARKS & FOOTNOTES
	Stairs & Landings	100	(1)

- (1) Stair treads designed for 300 lb concentrated load placed to produce maximum stress.

TESTS AND INSPECTIONS

INSPECTIONS: Special Inspections shall be done in accordance the STATEMENT OF SPECIAL INSPECTIONS per 1704 and 1705. Foundations, footings, underslab systems and framing are subject to inspection by the Building Official in accordance with IBC 110.3. Contractor shall coordinate all required inspections with the Building Official.

SPECIAL INSPECTORS: Special Inspectors shall be employed by the Contractor to provide Special Inspections for the project. Special Inspectors shall be qualified persons who are registered with an approved agency.

STATEMENT OF SPECIAL INSPECTIONS per 1704 and 1705: Special Inspections and Testing are required by 1704, 1706, 1707 and 1708 for the following:

CONCRETE CONSTRUCTION per IBC Section 1704.4 and Table 1704.4 including:

- Periodic inspection required for:
 - Size & placement of all reinforcing steel prior to the pour
 - Shape, location & dimensions of members formed
 - Use of the required design concrete mix
 - Maintenance of specified curing temperature and techniques
 - Verification of in-situ concrete strength prior to removal of shores and forms from stairs, landings, and structural slabs
- Continuous inspection required during the:
 - Placing of reinforced concrete for proper application techniques
 - Placing & size of cast-in-place bolts and embedded fabrications prior to the pour
 - Placing of concrete around cast-in-place bolts and embeds
 - Sampling of fresh concrete
 - Grouting operation of post-installed bolts or rebar dowels

POST-INSTALLED ANCHORS TO CONCRETE AND MASONRY: shall comply with IBC Section 1703. Inspections shall be in accordance with the requirements set forth in the approved ICC Evaluation Report and as indicated by the design requirements specified on the drawings. Refer to the POST INSTALLED ANCHORS section of these notes for anchors that are the basis of the design. Special inspector shall verify anchors are as specified in the POST INSTALLED ANCHORS section of these notes or as otherwise specified on the drawings. Substitutions require approval by the SER and require substantiating calculations and current 2015 IBC recognized ICC Evaluation Services (ES) Report. Special Inspector shall document in their Special Inspection Report compliance with each of the elements required within the applicable ICC Evaluation Services (ES) Report.

INSPECTION SUBMITTALS: Special inspection reports shall be provided on a weekly basis. Final special inspection reports will be required by each special inspection firm per IBC 1704.1.2. Submit copies of all inspection reports to the Architect/Engineer and the Authority Having Jurisdiction for review.

PLANT PRE-CAST CONCRETE

FABRICATION AND QUALITY CONTROL: Comply with NPCA and/or PCI requirements.

CAST-IN-PLACE CONCRETE

REFERENCE STANDARDS: Conform to:

- (1) ACI 301-05 "Standard Specifications for Structural Concrete",
- (2) IBC Chapter 19-Concrete,
- (3) ACI 318-14/318R-14

FIELD REFERENCE: The contractor shall keep a copy of ACI Field Reference manual, SP-15, "Standard Specifications for Structural Concrete (ACI 301) with Selected ACI and ASTM References."

CONCRETE MIXTURES: Conform to ACI 301 Sec. 4 "Concrete Mixtures."

MATERIALS: Conform to ACI 301 Sec. 4.2.1 "Materials" for requirements for cementitious materials, aggregates, mixing water and admixtures.

SUBMITTALS: Provide all submittals required by ACI 301 Sec. 4.1.2. Submit mix designs for each mix in the table below.

TABLE OF MIX DESIGN REQUIREMENTS

Member Type/Location	Strength (psi)	Test Age (days)	Maximum Aggregate	Maximum W/C Ratio	Air Content
Precast Stair Stringers					
• Stair Stringers	4000	28	¾"	—	—
• Intermediate Landings	4000	28	¾"	—	—
• Pourbacks	Same as Structural Slab	28	¾"	—	—

Mix Design Notes:

- (1) W/C Ratio: Water-cementitious material ratios shall be based on the total weight of cementitious materials. Ratios not shown in the table above are controlled by strength requirements.
- (2) Cementitious Content:
 - a. The use of fly ash, other pozzolans, silica fume, or slag shall conform to ACI 318 Sections 4.3.1 and 4.4.2. Maximum amount of fly ash shall be 25% of total cementitious content unless reviewed and approved otherwise by SER.
 - b. For concrete used in elevated floors, minimum cementitious-materials content shall conform to ACI 301 Table 4.2.2.1. Acceptance of lower cement content is contingent on providing supporting data to the SER for review and acceptance.

FORMWORK: Conform to ACI 301 Sec. 2 "Formwork and Form Accessories." Removal of Forms shall conform to Sec. 2.3.2 except strength indicated in Sec. 2.3.2.5 shall be 0.75 f c. Reshoring shall conform to Sec. 2.3.3.

EMBEDDED ITEMS: Position and secure in place expansion joint material, anchors and other structural and non-structural embedded items before placing concrete. Contractor shall refer to mechanical, electrical, plumbing and architectural drawings and coordinate other embedded items.

POST-INSTALLED ANCHORS TO CONCRETE: Anchor location, type, diameter and embedment shall be as indicated on drawings. Reference the POST INSTALLED ANCHORS section for applicable Post-Installed Anchor Adhesives. Anchors shall be installed and inspected in strict accordance with the applicable ICC-Evaluation Service Report (ESR). Special inspection shall be per the TESTS and INSPECTIONS section.

TESTING AND ACCEPTANCE:

Testing: Obtain samples and conduct tests in accordance with ACI 301 Sec. 1.6.4.2. Additional samples may be required to obtain concrete strengths at alternate intervals than shown below.

- Cure 4 cylinders for 28-day test age. Test 1 cylinder at 7 days, test 2 cylinders at 28 days, and hold 1 cylinder in reserve for use as the Engineer directs. After 56 days, unless notified by the Engineer to the contrary, the reserve cylinder may be discarded without being tested for specimens meeting 28-day strength requirements.

Acceptance: Strength is satisfactory when:

- (1) The averages of all sets of 3 consecutive tests equal or exceed the specified strength.
 - (2) No individual test falls below the specified strength by more than 500 psi.
- A "test" for acceptance is the average strength of the two cylinders tested at the specified test age.

CONTRACTOR TO VERIFY
 ----SLAB ELEVATIONS
 ----LANDING SIZES
 ----DOOR LOCATIONS / INTERFERENCES
 ----HEAD HEIGHT ADEQUACY
 ----STAIR RISE & RUN

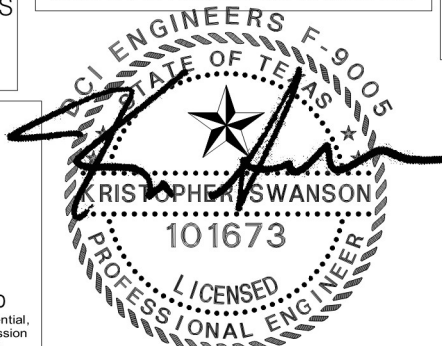
GUARDRAIL EMBED LOCATIONS, DRAWINGS AND ATTACHMENT DETAILS AT ALL LANDINGS BY OTHERS. GENERAL CONTRACTOR TO COORDINATE

ALL TREADS HAVE 11" RUN AND 1" BACKSET

LOADS SHOWN (DEAD+LIVE) UNFACTORED LOADS

ALL SHORING TO REMAIN IN PLACE UNTIL CONCRETE STRENGTH REACHES 3000PSI

Redistair
 GC SOLUTIONS, LLC



PROJECT NAME:
 SAMPLE PROJECT

DESCRIPTION:
 SPECIFICATIONS

PROJECT NO:
 23011-0047

DATE:

BY: SB CHKD BY: GB, SB, JS

DRAWING NO: SPEC1 REVISION:

CONCRETE REINFORCEMENT

REFERENCE STANDARDS: Conform to:

- (1) ACI 301-05 "Standard Specifications for Structural Concrete", Section 3 "Reinforcement and Reinforcement Supports."
- (2) ACI SP-66-04 "ACI Detailing Manual" including ACI 315-99 "Details and Detailing of Concrete Reinforcement."
- (3) CRSI MSP-09, 28th Edition, "Manual of Standard Practice."
- (4) ANSII/AWS D1.4 "Structural Welding Code - Reinforcing Steel."
- (5) IBC Chapter 19-Concrete.
- (6) ACI 318-14.
- (7) ACI 117-10

LIFTING REQUIREMENTS for Precast Stair Stringers: The contractor is responsible for rigging and lifting insert locations and for temporarily bracing the stringers against forces that may occur during construction until connections to the permanent structural system are completed.

MATERIALS:

- Reinforcing Bars.....ASTM A615, Grade 60, deformed bars.
- Deformed Welded Wire Fabric.....ASTM A497
- Bar SupportsCRSI MSP-09, Chapter 3 "Bar Supports."
- Tie Wire.....16 gage or heavier, black annealed.

FABRICATION: Conform to ACI 301, Sec 3.2.2. "Fabrication", and ACI SP-66 "ACI Detailing Manual."

PLACING: Conform to ACI 301, Sec. 3.3.2 "Placement." Placing tolerances shall conform to Sec. 3.3.2.1 "Tolerances."

CONCRETE COVER: Conform to the following cover requirements from ACI 301, Table 3.3.2.3:
Bars in slabs and walls 1"

FIELD BENDING: Conform to ACI 301 Sec. 3.3.2.8. "Field Bending or Straightening." Bar sizes #3 through #5 may be field bent cold the first time. Other bars require preheating. Do not twist bars.

POST-INSTALLED ANCHORS (INTO CONCRETE AND MASONRY)

REFERENCE STANDARDS: Conform to:

- 1) IBC Chapter 19 "Concrete"
- 2) ACI 318-14 "Building Code Requirements for Structural Concrete"
- 3) IBC Chapter 21 "Masonry"
- 4) TMS402-16 "Building Code Requirements for Masonry Structures"

POST-INSTALLED ANCHORS: Install only where specifically shown in the details or allowed by SER. All post-installed anchors types and locations shall be approved by the SER and shall have a current ICC-Evaluation Service Report that provides relevant design values necessary to validate the available strength exceeds the required strength. Submit current manufacturer's data and ICC ESR report to SER for approval regardless of whether or not it is a pre-approved anchor. Anchors shall be installed in strict accordance to ICC-ESR and the manufacturer's printed installation instructions (MPII) in conjunction with edge distance, spacing and embedment depth as indicated on the drawings. The contractor shall arrange for a manufacturer's field representative to provide installation training for all products to be used, prior to the commencement of work. Only trained installer shall perform post installed anchor installation. A record of training shall be kept on site and be made available to the SER as requested. Adhesive anchors installed in horizontally or upwardly inclined orientation shall be performed by a certified adhesive anchor installer (AAI) as certified through ACI/CRSI or approved equivalent. Proof of current certification shall be submitted to the engineer for approval prior to commencement of installation. No reinforcing bars shall be damaged during installation of post-installed anchors. Special inspection shall be per the TESTS and INSPECTIONS section. Anchor type, diameter and embedment shall be as indicated on drawings.

1. **ADHESIVE ANCHORS:** The following Adhesive-type anchoring systems have been used in the design and shall be used for anchorage to CONCRETE and MASONRY, as applicable and in accordance with corresponding current ICC ESR report. Reference the corresponding ICC ESR report for required minimum age of concrete, concrete temperature range, moisture condition, light weight concrete, and hole drilling and preparation requirements. Drilled-in anchor embedment lengths shall be as shown on drawings, or not less than 7 times the anchor nominal diameter (7D). Adhesive anchors are to be installed in concrete aged a minimum of 21 days, unless otherwise specified in the ICC ESR report.
 - a. HILTI "HIT-HY 200" – ICC ESR-3187 for anchorage to CONCRETE with embedment depth less than or equal to 20 bar diameters
 - b. HILTI "HIT-RE 500 V3" – ICC ESR-3814 for anchorage to CONCRETE with any embedment depth
 - c. HILTI "HIT-HY 270" – ICC ESR-4143 for anchorage to MASONRY Only
2. **EXPANSION ANCHORS:** The following Expansion type anchors are pre-approved for anchorage to CONCRETE or MASONRY in accordance with corresponding current ICC ESR report:
 - a. HILTI "KWIK BOLT TZ" – ICC ESR-1917 for anchorage to CONCRETE Only
 - b. HILTI "KWIK BOLT 3" – ICC ESR-1385 for anchorage to MASONRY Only

STRUCTURAL STEEL

DESIGN STANDARDS:

Structural Steel for this project is designed in accordance with American Institute of Steel Construction (AISC) Specifications.

Structural Steel for this project is designed per:

- AISC – "Manual of Steel Construction, Thirteenth Edition (2005).

REFERENCE STANDARDS:

- 1) IBC 2015, Chapter 22 – Steel, hereafter referenced as IBC.
- 2) ANSII/AISC 303-05 – Code of Standard Practice for Steel Buildings & Bridges, hereafter referenced as AISC 303.
- 3) ANSII/AISC 360-05 – Specification for Structural Steel Buildings, hereafter referenced as AISC 360.
- 4) AISC348-04/RCSC – Specification for Structural Joints using ASTM A325 or A490 Bolts, prepared by "Research Council on Structural Connections (RCSC), hereafter referenced as RCSC.
- 5) AWS D1.1 -04 – Structural Welding Code - Steel, hereafter referenced as AWS D1.1.

SUBMITTALS:

- (1) Submit welder's certificates verifying qualification within past 12 months.

MATERIALS:

- Channel (C) & Angle (L) ShapesASTM A36, Fy = 36 ksi
- Structural Bars & Plates (PL).....ASTM A36, Fy = 36 ksi
- Hollow Structural Section – Square/Rect (HSS)..ASTM A500, Grade B Fy = 46 ksi
- High-Strength Bolts.....ASTM A325/F1852, Type 1, Plain
- Nuts.....ASTM A563
- Washers (flat or beveled).....ASTM F436–required @ slotted & oversize holes
- Anchor Rods (Anchor Bolts)ASTM F1554, Gr. 36
- Welding Electrodes.....E70XX

WELDING:

- 1) Welding shall conform to AWS D1.1 and visually conform to AWS Section 6 and Table 6.1. Fabrication/erection inspections by the Contractor per AWS D1.1 Sec. 6, shall be by associate/certified inspectors (AWI/CWI) per AWS QC1 or AWS B5.1. Special Inspections (verification inspections) shall be by a certified Welding Inspector (WI) or Senior Welding Inspector (SWI) per AWS B5.1.
- 2) Welders shall be qualified for the specific prequalified joints required by the design and certified in accordance with WABO and AWS requirements.
- 3) Welding shall be done in accordance with appropriate Weld Procedure Specifications (WPS's). Welders shall be familiar with the applicable WPS's.
- 4) Welding shall be done with AWS Prequalified Welding Processes unless otherwise approved.
- 5) Welder qualifications and WPS's shall be maintained at the site of the work and shall be readily available for inspection upon request, both in the shop and in the field.
- 6) Use E70 or E71T, 70 ksi strength electrodes appropriate for the process selected.
- 7) Prior to the start of work, Special Inspector or, if "AISC Certified" or otherwise "Approved" Shop, a shop Certified Weld Inspector (CWI) certified in accordance with provisions of AWS QC1, shall inspect and document compliance with the following:
 - Confirm welder qualifications prior to the start of work.
 - Review all WPS prior to the start of work.
 - Confirm materials in fabrications conform to the specifications.
 - Periodically observe joint preparation, fit-up and welder techniques.
 - Identify on plans all multi-pass fillet welds, single pass fillet welds greater than 5/16", and Complete- and Partial- Joint Penetration (CJP or PJP) groove welded butt joints that require Continuous (Special) Inspection.
 - Visually inspect all welds per Special Inspection Requirements for Steel and AWS Section 6.5 and Table 6.1.

ANCHORAGE TO CONCRETE:

- 1) **COLUMN ANCHOR RODS and BASE PLATES:** All columns (vertical member assemblies weighing over 300 pounds) shall be provided with a minimum of four ¾" diameter anchor rods. Column base plates shall be at least ¾" thick, unless noted otherwise. Cast-in-place anchor rods shall be provided unless otherwise approved by the Engineer. Unless noted otherwise, embedment of cast-in-place anchor rods shall be 12 times the anchor diameter (12D).
- 2) **POST-TENSION CONCRETE ANCHORAGE:** Anchors installed in post-tensioned slabs after the concrete is cast shall not be installed without verification of tendon location and approval from the SER.

FABRICATION:

- Conform to AISC 303, Sec. 8 and AISC 360 Sec. M2 and M5.
- Structural Welding and qualifications shall conform to the AWS D1.1.
- The fabricator shall maintain detailed fabrication & erection quality control procedures per IBC Sec 1704.2.1 that provides the basis for inspection control of the workmanship and ensures that the work is performed in accordance with Code of Standard Practice, the AISC Specification, and the Contract Documents. Fabricators certified by the AISC Quality Certification Program with the following level of certification: Sbd – Conventional Steel Building Structures are deemed to comply with this provision.

ERECTION:

- 1) Conform to AISC 303, Section 7 "Erection", Section 8 "Quality Assurance." and AISC 360, Section M4.
- 2) The Erector shall maintain detailed fabrication & erection quality control procedures that ensure that the work is performed in accordance with AISC 360 Sec. M, AISC 303, and the Contract Documents.
- 3) Steel work shall be carried up true and plumb within the limits defined in AISC 303 Sec. 7.11.
- 4) Structural Welding to conform to the AWS D1.1 and applicable WELDING notes above.
- 5) Special Inspector shall inspect the steel framing to verify compliance with the details shown on the Contract Documents including member size, location, bracing and the application of proper joint details at each connection.

BRACING and SAFETY PROTECTION: The contractor shall provide temporary bracing and safety protection required by AISC 360 Sec. M4.2 and AISC 303 Sec. 7.10 and 7.11.

PROTECTIVE COATING REQUIREMENTS:

- 1) Steel need not be primed or painted unless noted otherwise on the drawings or in the project specifications. Conform to AISC 360 Sec. M3 and AISC 303 Sec. 6.5 unless a multi-coat system is required per the project specifications.

ARCHITECTURALLY EXPOSED STRUCTURAL STEEL: Steel identified by the Architect on the architectural drawings as Architecturally Exposed Structural Steel, (AESS) shall conform to AISC 303 Sec. 10.

CONTRACTOR TO VERIFY
 ----SLAB ELEVATIONS
 ----LANDING SIZES
 ----DOOR LOCATIONS / INTERFERENCES
 ----HEAD HEIGHT ADEQUACY
 ----STAIR RISE & RUN

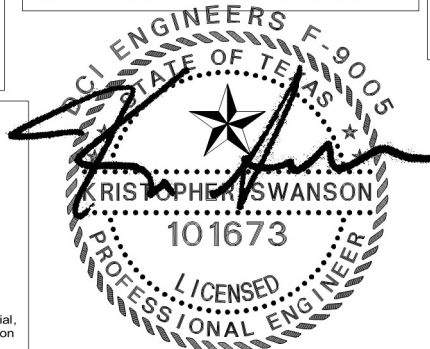
GUARDRAIL EMBED LOCATIONS,
 DRAWINGS AND ATTACHMENT
 DETAILS AT ALL LANDINGS
 BY OTHERS. GENERAL
 CONTRACTOR TO COORDINATE

ALL TREADS HAVE 1" RUN AND 1" BACKSET

LOADS SHOWN (DEAD+LIVE)
 UNFACTORED LOADS

ALL SHORING TO REMAIN IN PLACE
 UNTIL CONCRETE STRENGTH
 REACHES 3000PSI

Redistair
 GC SOLUTIONS, LLC



PROJECT NAME:
SAMPLE PROJECT

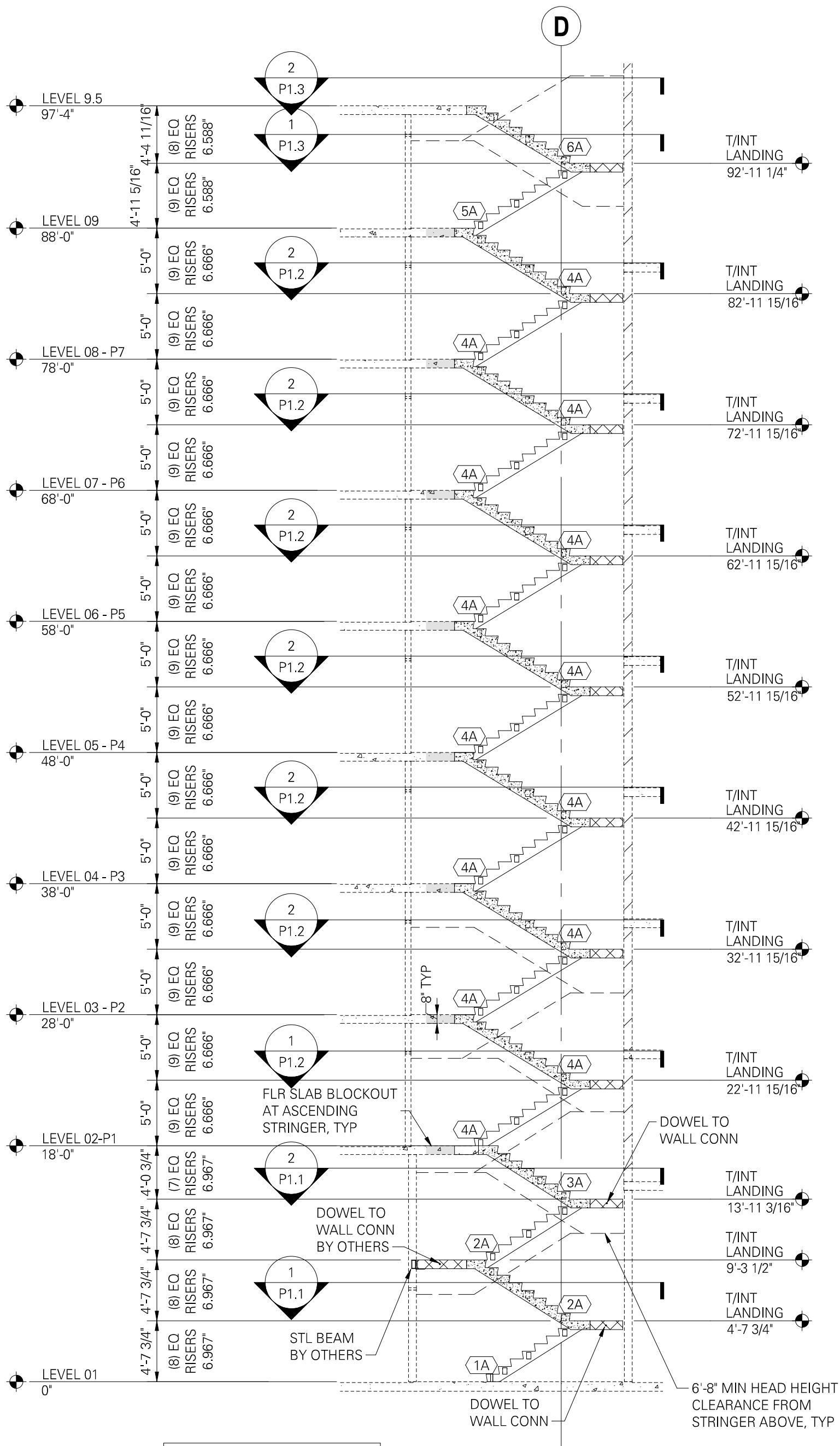
DESCRIPTION:
SPECIFICATIONS

PROJECT NO:
 23011-0047

DATE:

BY: SB CHKD BY: GB, SB, JS

DRAWING NO: **SPEC2** REVISION:



CONTRACTOR TO VERIFY
 ----SLAB ELEVATIONS
 ----LANDING SIZES
 ----DOOR LOCATIONS / INTERFERENCES
 ----HEAD HEIGHT ADEQUACY
 ----STAIR RISE & RUN

GUARDRAIL EMBED LOCATIONS,
 DRAWINGS AND ATTACHMENT
 DETAILS AT ALL LANDINGS
 BY OTHERS. GENERAL
 CONTRACTOR TO COORDINATE

ALL TREADS HAVE 11"
 RUN AND 1" BACKSET

LOADS SHOWN (DEAD+LIVE)
 UNFACTORED LOADS

ALL SHORING TO REMAIN IN PLACE
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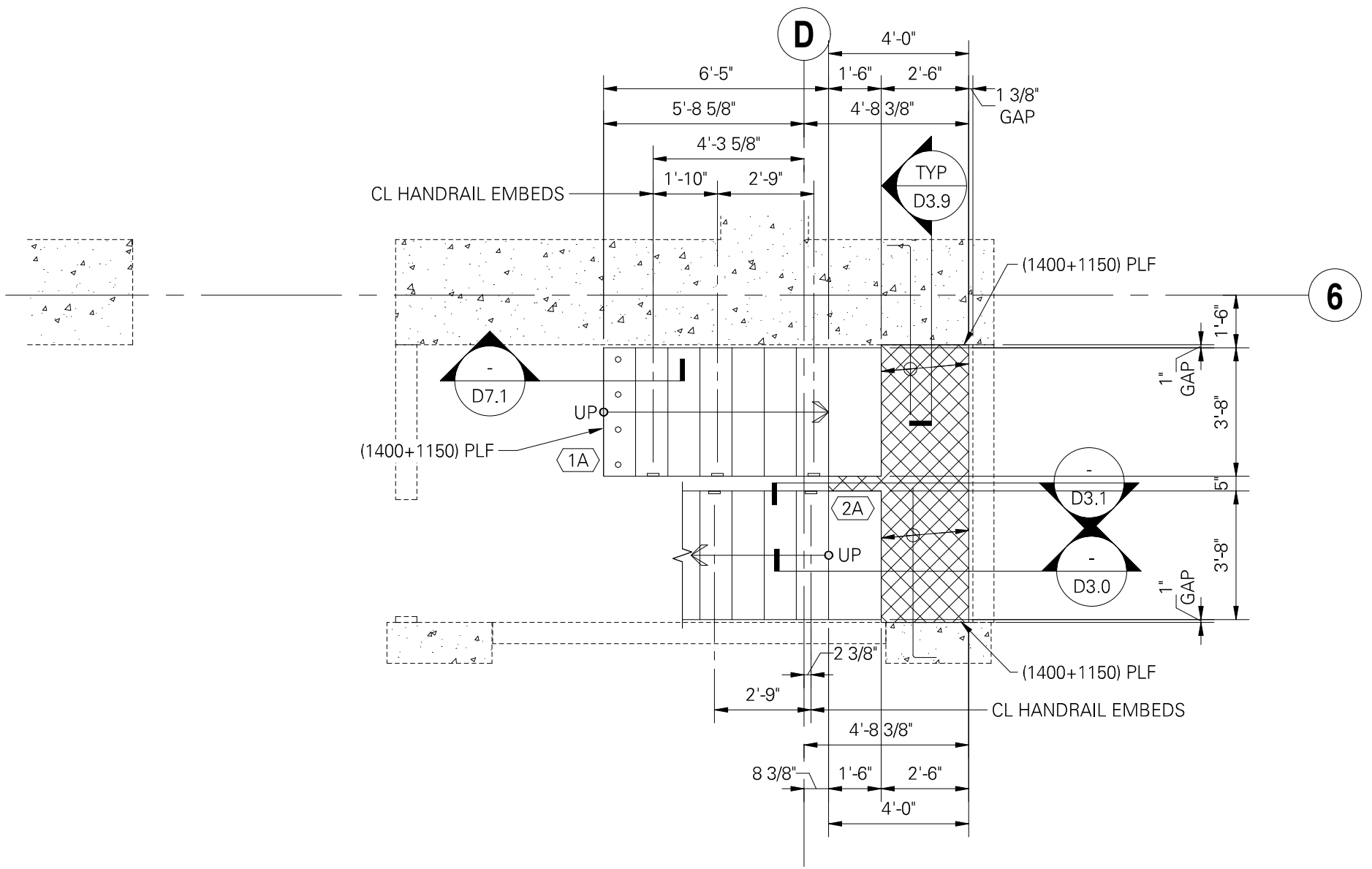
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SAMPLE PROJECT

PROJECT NO:
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DESCRIPTION:
 ELEVATION STAIR B LEVEL 01-09

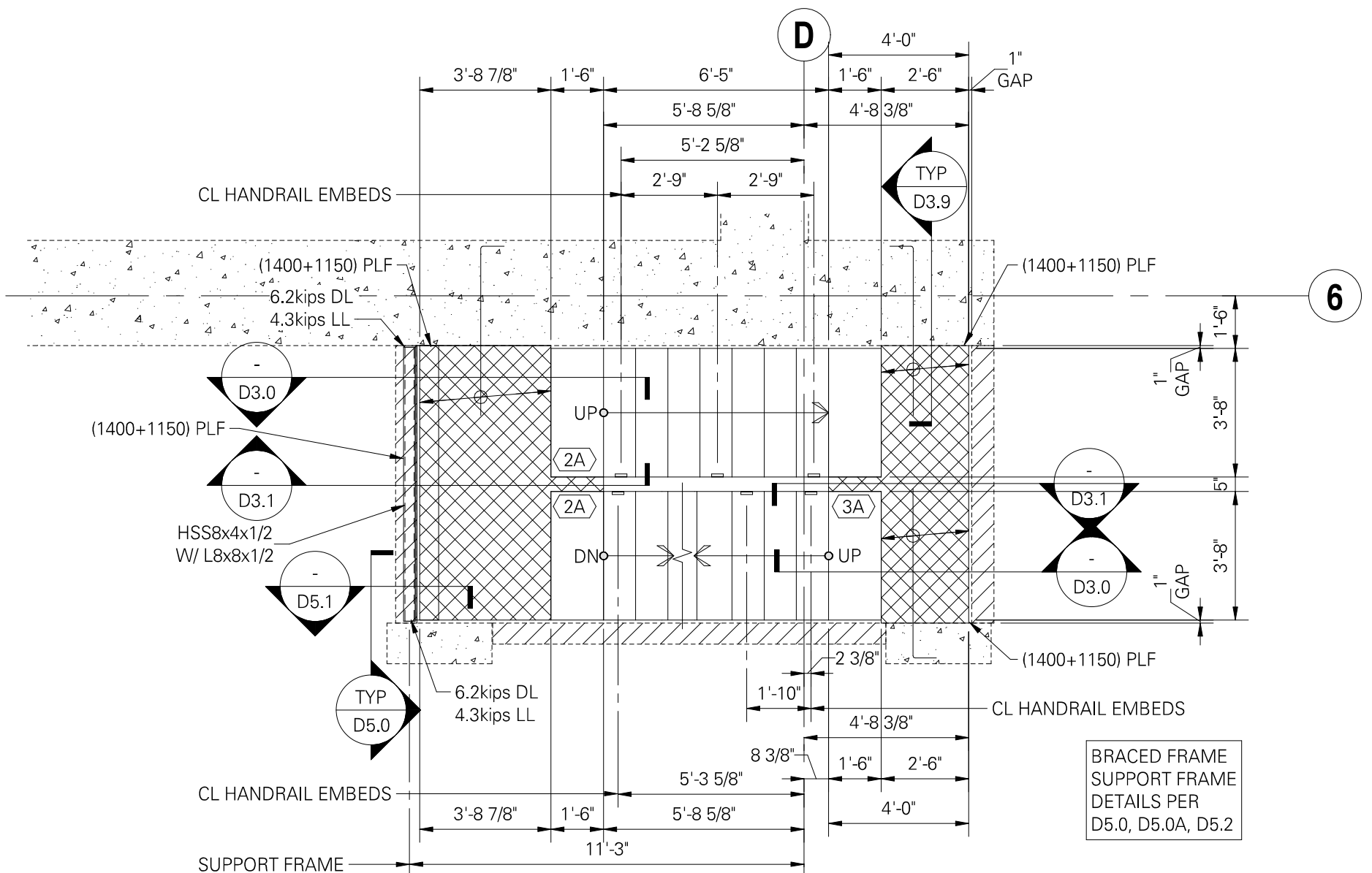
DATE:
 BY: SB
 CHKD BY: GB, SB, JS
 DRAWING NO: **S1.1**
 REVISION:

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 or written license, in any manner detrimental to interests of GC Solutions, LLC.



1 STAIR B PARTIAL PLAN AT LEVEL 01

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



2 STAIR B PARTIAL PLAN AT LEVEL 01 INTERMEDIATE LANDINGS

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

CONTRACTOR TO VERIFY
 ----SLAB ELEVATIONS
 ----LANDING SIZES
 ----DOOR LOCATIONS / INTERFERENCES
 ----HEAD HEIGHT ADEQUACY
 ----STAIR RISE & RUN

GUARDRAIL EMBED LOCATIONS,
 DRAWINGS AND ATTACHMENT
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 BY OTHERS. GENERAL
 CONTRACTOR TO COORDINATE

ALL TREADS HAVE 11"
 RUN AND 1" BACKSET

LOADS SHOWN (DEAD+LIVE)
 UNFACTORED LOADS

ALL SHORING TO REMAIN IN PLACE
 UNTIL CONCRETE STRENGTH
 REACHES 3000PSI

Redistair
 GC SOLUTIONS, LLC



PROJECT NAME:
SAMPLE PROJECT

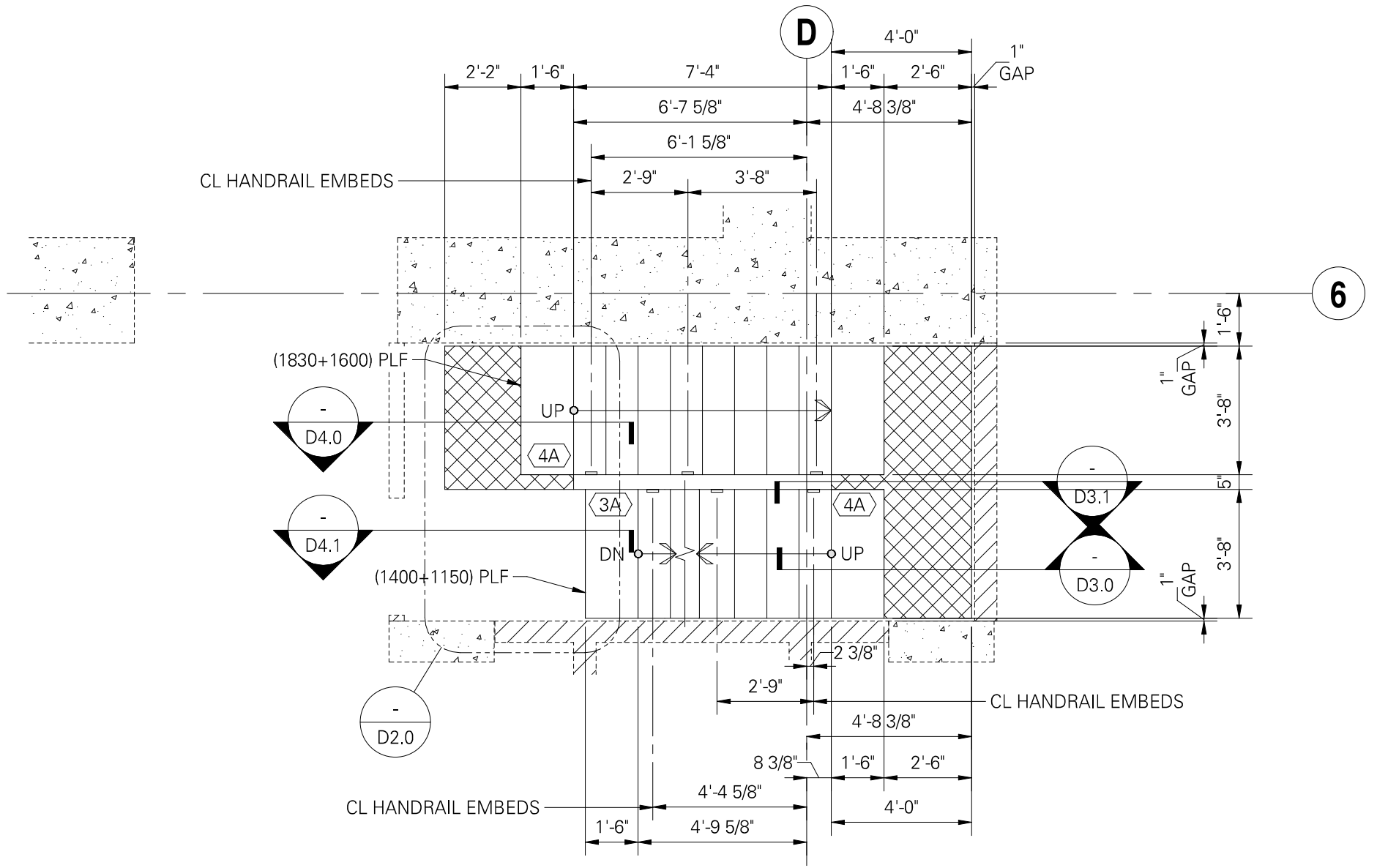
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DATE:

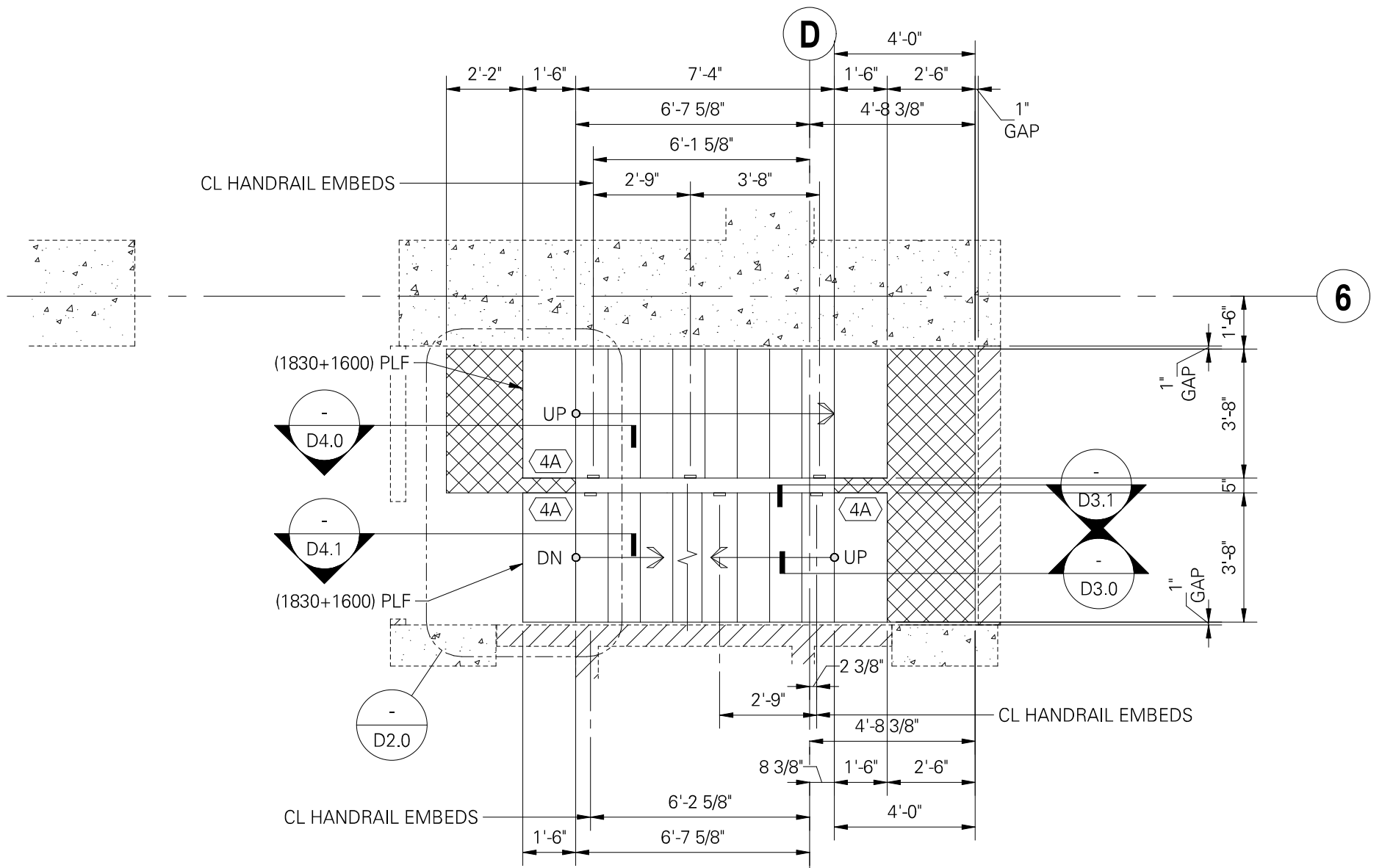
BY: SB CHKD BY: GB, SB, JS

DESCRIPTION:
 STAIR B PARTIAL PLANS

DRAWING NO:
P1.1



1 STAIR B PARTIAL PLAN AT LEVEL 02
SCALE: 1/4" = 1'-0"



2 STAIR B PARTIAL PLAN AT LEVEL 03-08
SCALE: 1/4" = 1'-0"

CONTRACTOR TO VERIFY
 ----SLAB ELEVATIONS
 ----LANDING SIZES
 ----DOOR LOCATIONS / INTERFERENCES
 ----HEAD HEIGHT ADEQUACY
 ----STAIR RISE & RUN

GUARDRAIL EMBED LOCATIONS,
 DRAWINGS AND ATTACHMENT
 DETAILS AT ALL LANDINGS
 BY OTHERS. GENERAL
 CONTRACTOR TO COORDINATE

ALL TREADS HAVE 11"
 RUN AND 1" BACKSET

LOADS SHOWN (DEAD+LIVE)
 UNFACTORED LOADS

ALL SHORING TO REMAIN IN PLACE
 UNTIL CONCRETE STRENGTH
 REACHES 3000PSI

Redistair
 GC SOLUTIONS, LLC



PROJECT NAME:
SAMPLE PROJECT

PROJECT NO:
 23011-0047

DATE:

BY: SB CHKD BY: GB, SB, JS

DESCRIPTION:
STAIR B PARTIAL PLANS

DRAWING NO:
P1.2

REINFORCING AND DETAILS
NOT SHOWN PER TYPICAL
DETAIL SHEET D1.1

"A" STRINGER BARS - (7) #5T
"B" STRINGER BARS - (7) #5 T&B
"C" STRINGER BARS - (7) #5 T&B
"D" STRINGER BARS - (7) #5B

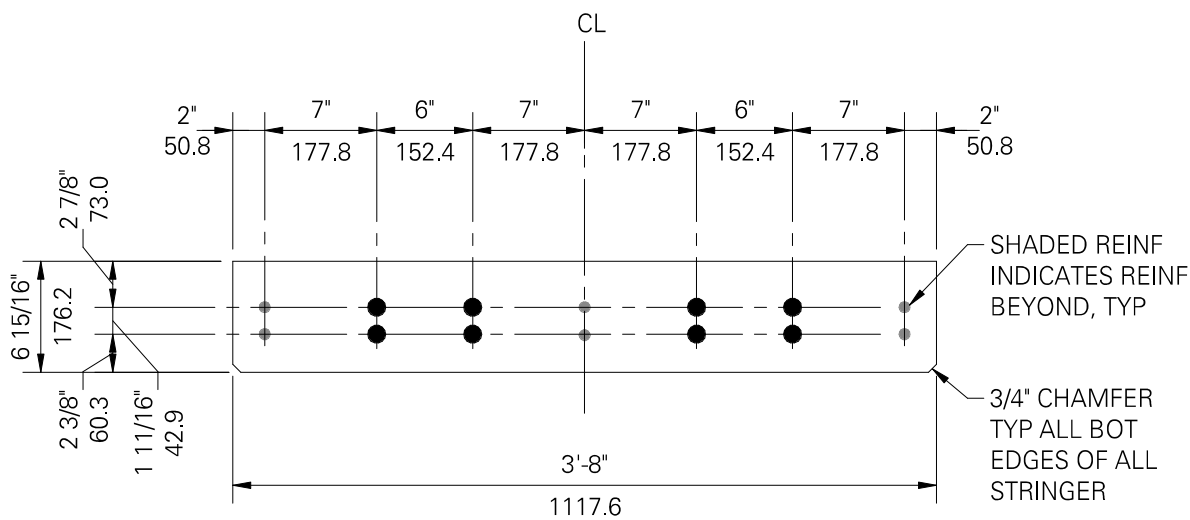
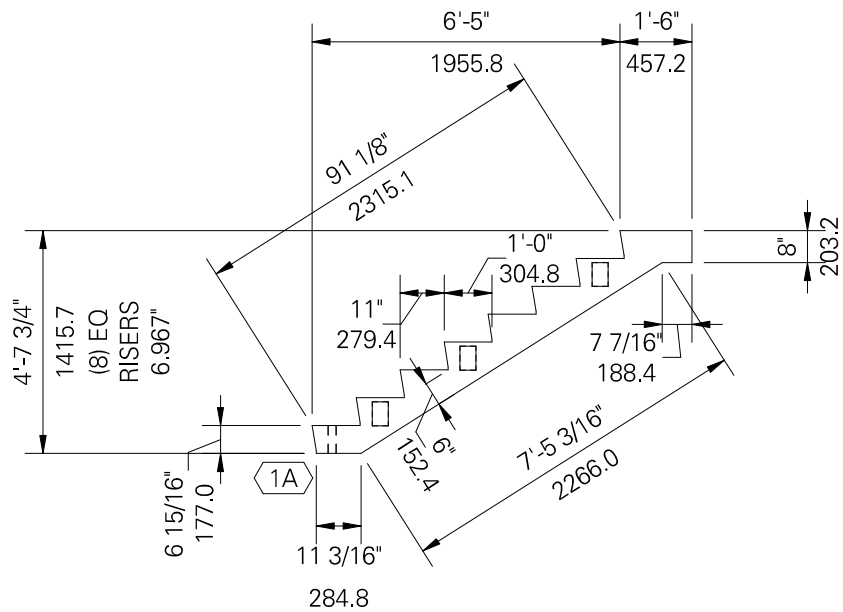
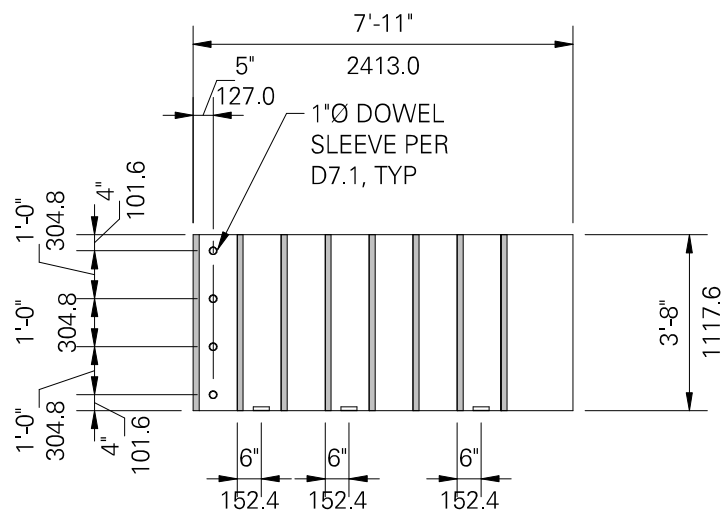
NOSING - NYSTROM STSM-P3E-ECO
STAIR FINISH - STANDARD
BAR EXTENSIONS - OFF

WEIGHT #3,820

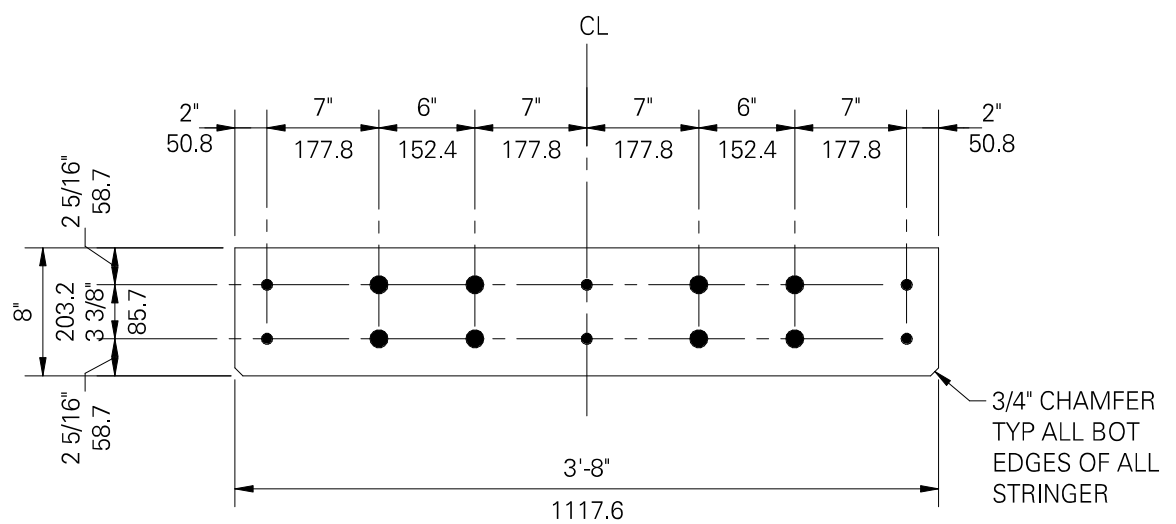
CONCRETE @ 150 PCF

(1) REQUIRED

NOTE:
HANDRAIL EMBED LOCATIONS
PER PARTIAL PLANS.



END SECTION BOTTOM



END SECTION TOP

CONTRACTOR TO VERIFY
----SLAB ELEVATIONS
----LANDING SIZES
----DOOR LOCATIONS / INTERFERENCES
----HEAD HEIGHT ADEQUACY
----STAIR RISE & RUN

GUARDRAIL EMBED LOCATIONS,
DRAWINGS AND ATTACHMENT
DETAILS AT ALL LANDINGS
BY OTHERS. GENERAL
CONTRACTOR TO COORDINATE

ALL TREADS HAVE 11"
RUN AND 1" BACKSET

LOADS SHOWN (DEAD+LIVE)
UNFACTORED LOADS

ALL SHORING TO REMAIN IN PLACE
UNTIL CONCRETE STRENGTH
REACHES 3000PSI

Redistair
GC SOLUTIONS, LLC



PROJECT NAME:
SAMPLE PROJECT

PROJECT NO:
23011-0047

DATE:

BY: Author
CHKD BY: Checker

DESCRIPTION:
STAIR B STRINGER DETAIL SHEET

DRAWING NO:
1A

REINFORCING AND DETAILS
NOT SHOWN PER TYPICAL
DETAIL SHEET D1.0

"A" STRINGER BARS - (7) #5T
"B" STRINGER BARS - (7) #5 T&B
"C" STRINGER BARS - (7) #5 T&B
"D" STRINGER BARS - (7) #5B

NOSING - NYSTROM STSM-P3E-ECO
STAIR FINISH - STANDARD
BAR EXTENSIONS - OFF

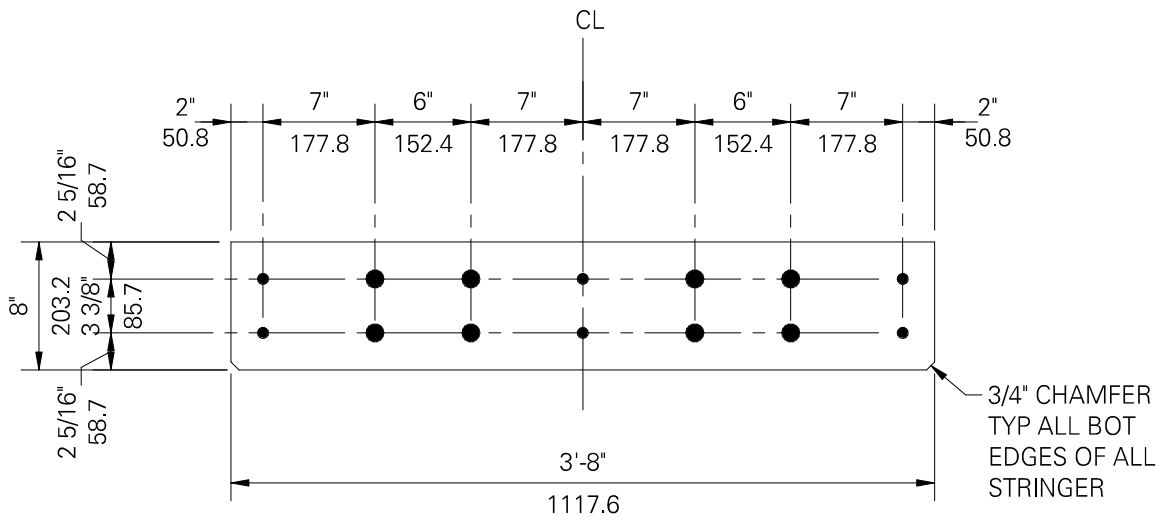
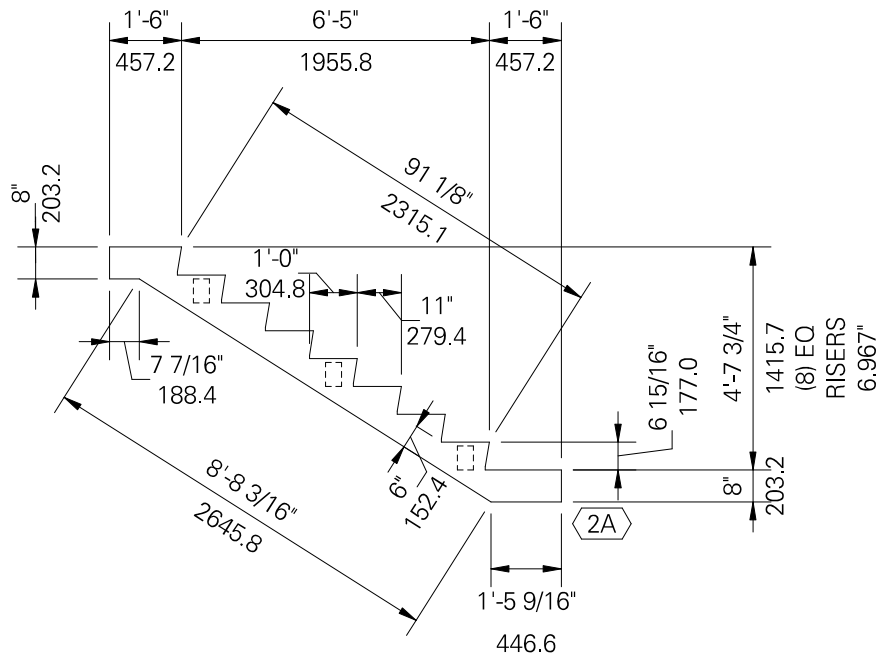
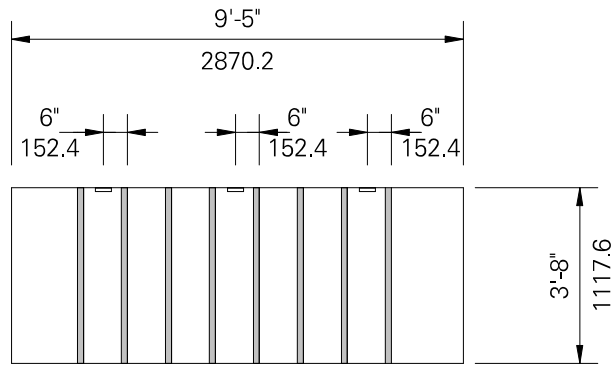
WEIGHT #4,572

CONCRETE @ 150 PCF

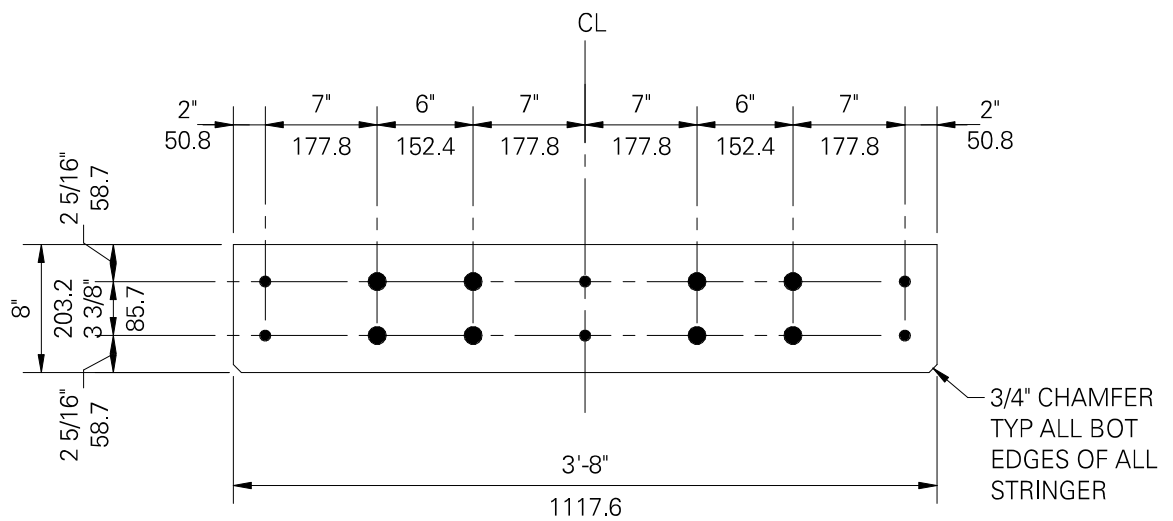
(2) REQUIRED

NOTE:

HANDRAIL EMBED LOCATIONS
PER PARTIAL PLANS.



END SECTION TOP



END SECTION BOTTOM

CONTRACTOR TO VERIFY

- SLAB ELEVATIONS
- LANDING SIZES
- DOOR LOCATIONS / INTERFERENCES
- HEAD HEIGHT ADEQUACY
- STAIR RISE & RUN

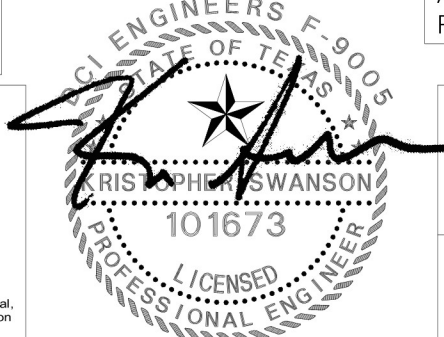
GUARDRAIL EMBED LOCATIONS,
DRAWINGS AND ATTACHMENT
DETAILS AT ALL LANDINGS
BY OTHERS. GENERAL
CONTRACTOR TO COORDINATE

ALL TREADS HAVE 11"
RUN AND 1" BACKSET

LOADS SHOWN (DEAD+LIVE)
UNFACTORED LOADS

ALL SHORING TO REMAIN IN PLACE
UNTIL CONCRETE STRENGTH
REACHES 3000PSI

Redistair
GC SOLUTIONS, LLC



PROJECT NAME:
SAMPLE PROJECT

PROJECT NO:
23011-0047

DATE:

BY:
Author

CHKD BY:
Checker

DRAWING NO:
2A

REVISION:

DESCRIPTION:
STAIR B STRINGER DETAIL SHEET

REINFORCING AND DETAILS
NOT SHOWN PER TYPICAL
DETAIL SHEET D1.0

"A" STRINGER BARS - (7) #5T
"B" STRINGER BARS - (7) #5 T&B
"C" STRINGER BARS - (7) #5 T&B
"D" STRINGER BARS - (7) #5B

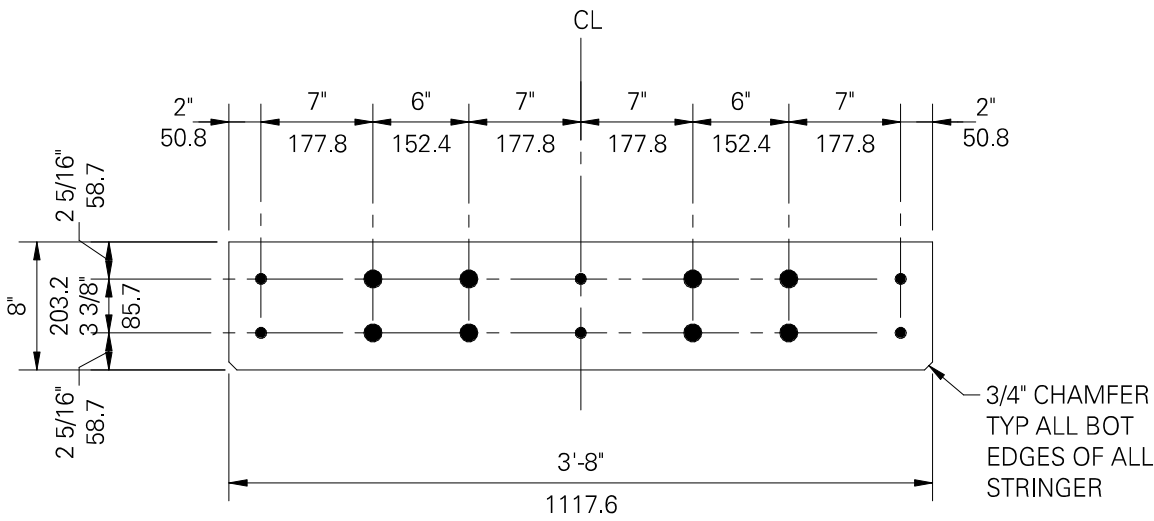
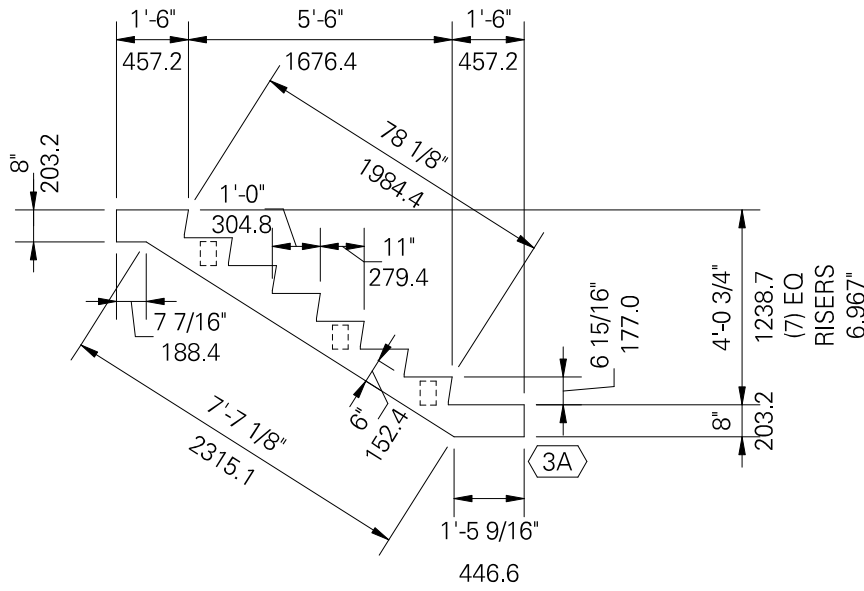
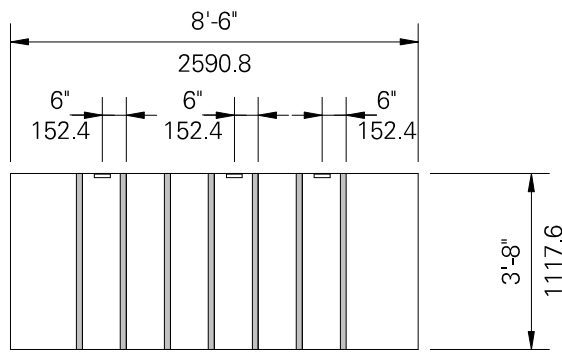
NOSING - NYSTROM STSM-P3E-ECO
STAIR FINISH - STANDARD
BAR EXTENSIONS - OFF

WEIGHT #4,101

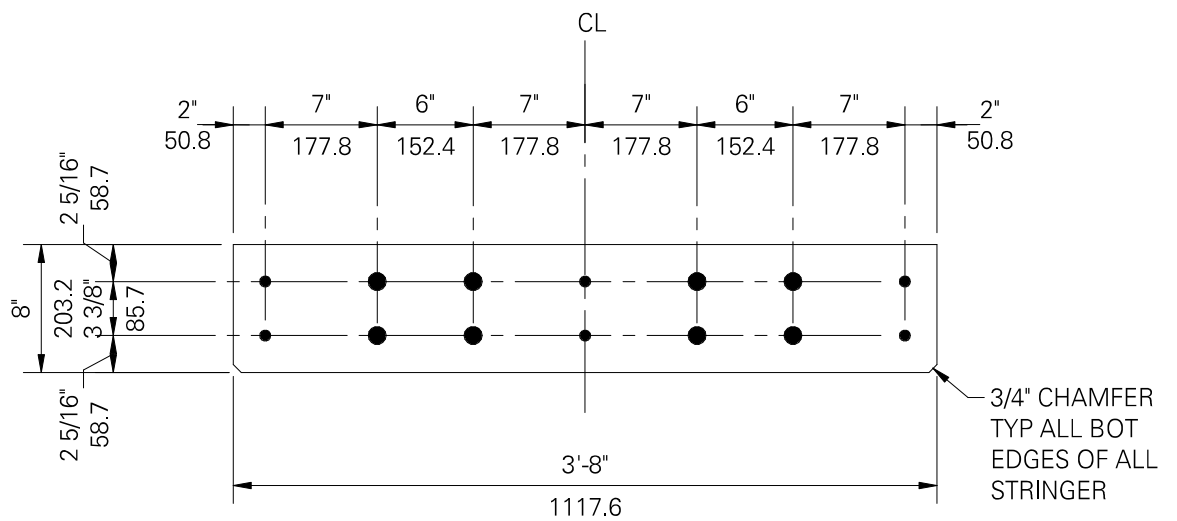
CONCRETE @ 150 PCF

(1) REQUIRED

NOTE:
HANDRAIL EMBED LOCATIONS
PER PARTIAL PLANS.



END SECTION TOP



END SECTION BOTTOM

CONTRACTOR TO VERIFY
----SLAB ELEVATIONS
----LANDING SIZES
----DOOR LOCATIONS / INTERFERENCES
----HEAD HEIGHT ADEQUACY
----STAIR RISE & RUN

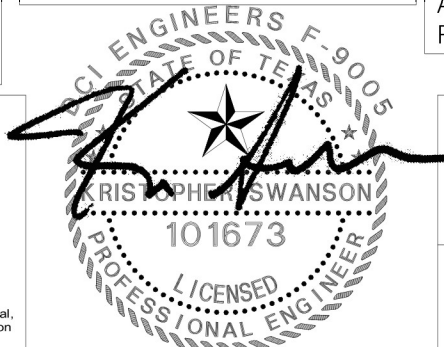
GUARDRAIL EMBED LOCATIONS,
DRAWINGS AND ATTACHMENT
DETAILS AT ALL LANDINGS
BY OTHERS. GENERAL
CONTRACTOR TO COORDINATE

ALL TREADS HAVE 11"
RUN AND 1" BACKSET

LOADS SHOWN (DEAD+LIVE)
UNFACTORED LOADS

ALL SHORING TO REMAIN IN PLACE
UNTIL CONCRETE STRENGTH
REACHES 3000PSI

Redistair
GC SOLUTIONS, LLC



PROJECT NAME:
SAMPLE PROJECT

PROJECT NO:
23011-0047

DATE:

BY: Author
CHKD BY: Checker

DESCRIPTION:
STAIR B STRINGER DETAIL SHEET

DRAWING NO:
3A

REINFORCING AND DETAILS
NOT SHOWN PER TYPICAL
DETAIL SHEET D1.0

"A" STRINGER BARS - (7) #5T
"B" STRINGER BARS - (7) #5 T&B
"C" STRINGER BARS - (7) #5 T&B
"D" STRINGER BARS - (7) #5B

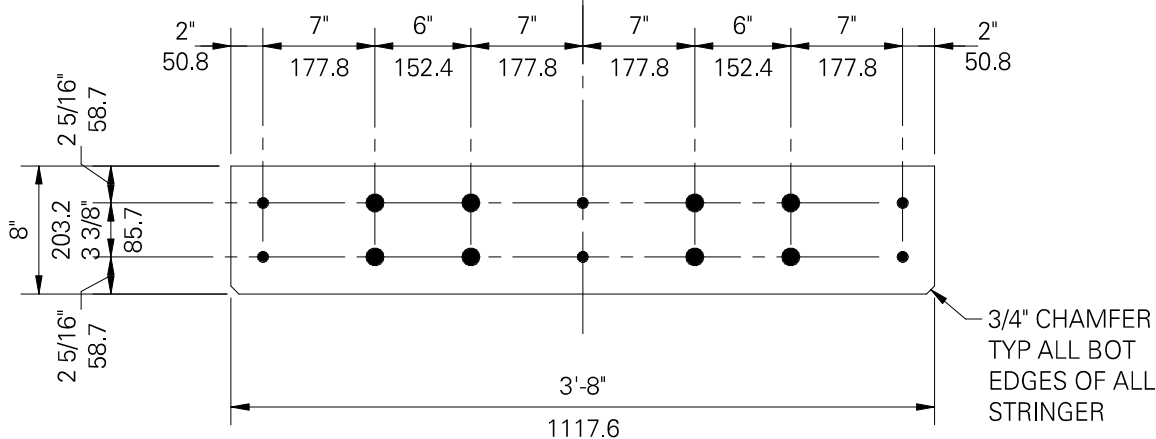
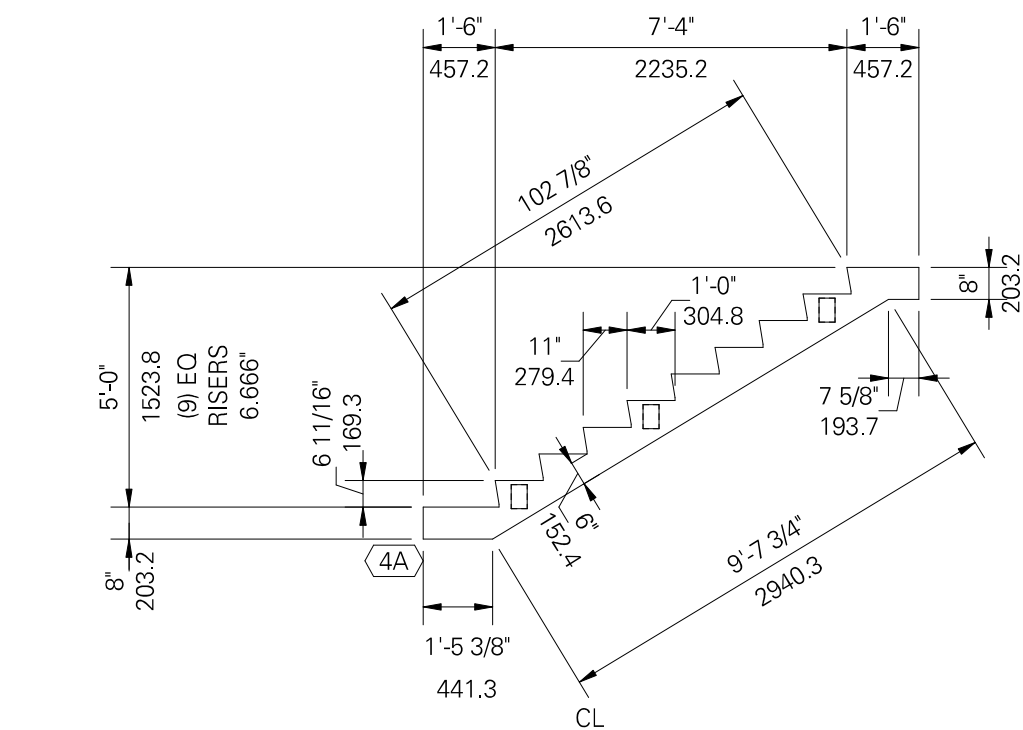
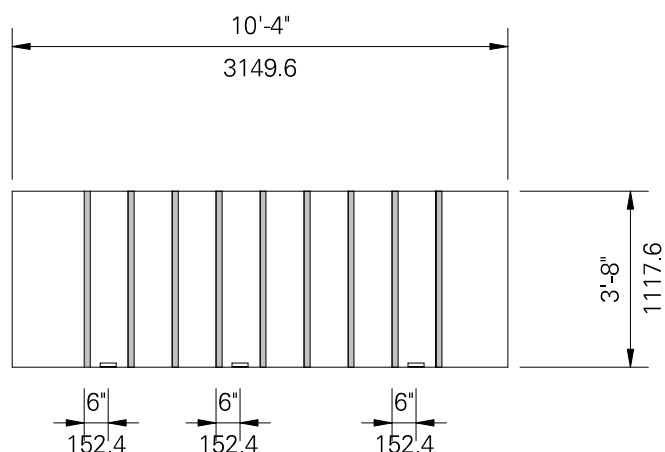
NOSING - NYSTROM STSM-P3E-ECO
STAIR FINISH - STANDARD
BAR EXTENSIONS - OFF

WEIGHT #4,946

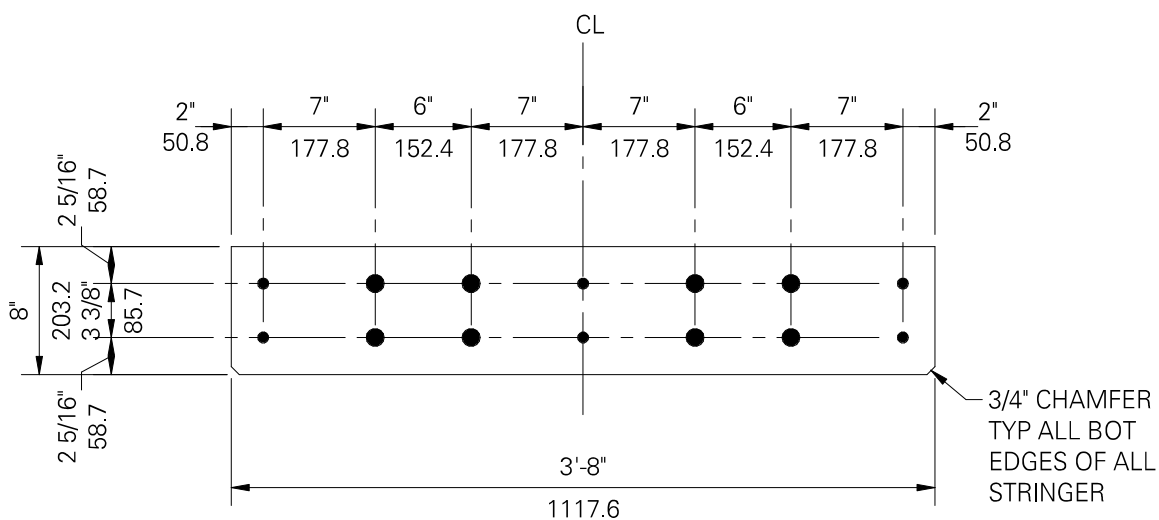
CONCRETE @ 150 PCF

(14) REQUIRED

NOTE:
HANDRAIL EMBED LOCATIONS
PER PARTIAL PLANS.



END SECTION BOTTOM



END SECTION TOP

CONTRACTOR TO VERIFY

- SLAB ELEVATIONS
- LANDING SIZES
- DOOR LOCATIONS / INTERFERENCES
- HEAD HEIGHT ADEQUACY
- STAIR RISE & RUN

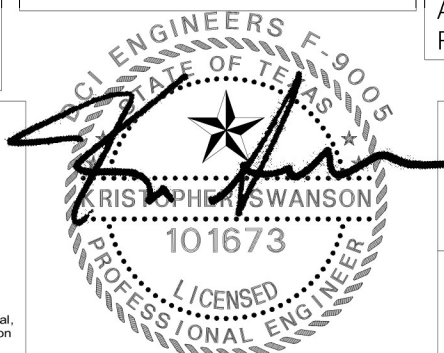
GUARDRAIL EMBED LOCATIONS,
DRAWINGS AND ATTACHMENT
DETAILS AT ALL LANDINGS
BY OTHERS. GENERAL
CONTRACTOR TO COORDINATE

ALL TREADS HAVE 11"
RUN AND 1" BACKSET

LOADS SHOWN (DEAD+LIVE)
UNFACTORED LOADS

ALL SHORING TO REMAIN IN PLACE
UNTIL CONCRETE STRENGTH
REACHES 3000PSI

Redistair
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PROJECT NAME:
SAMPLE PROJECT

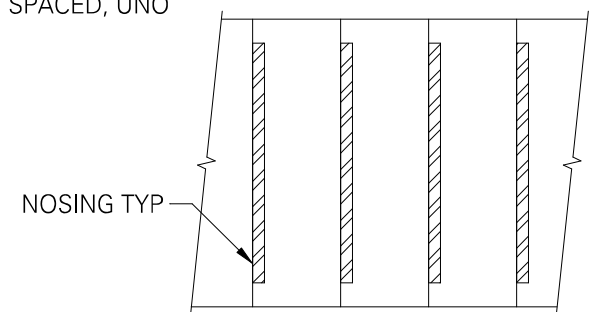
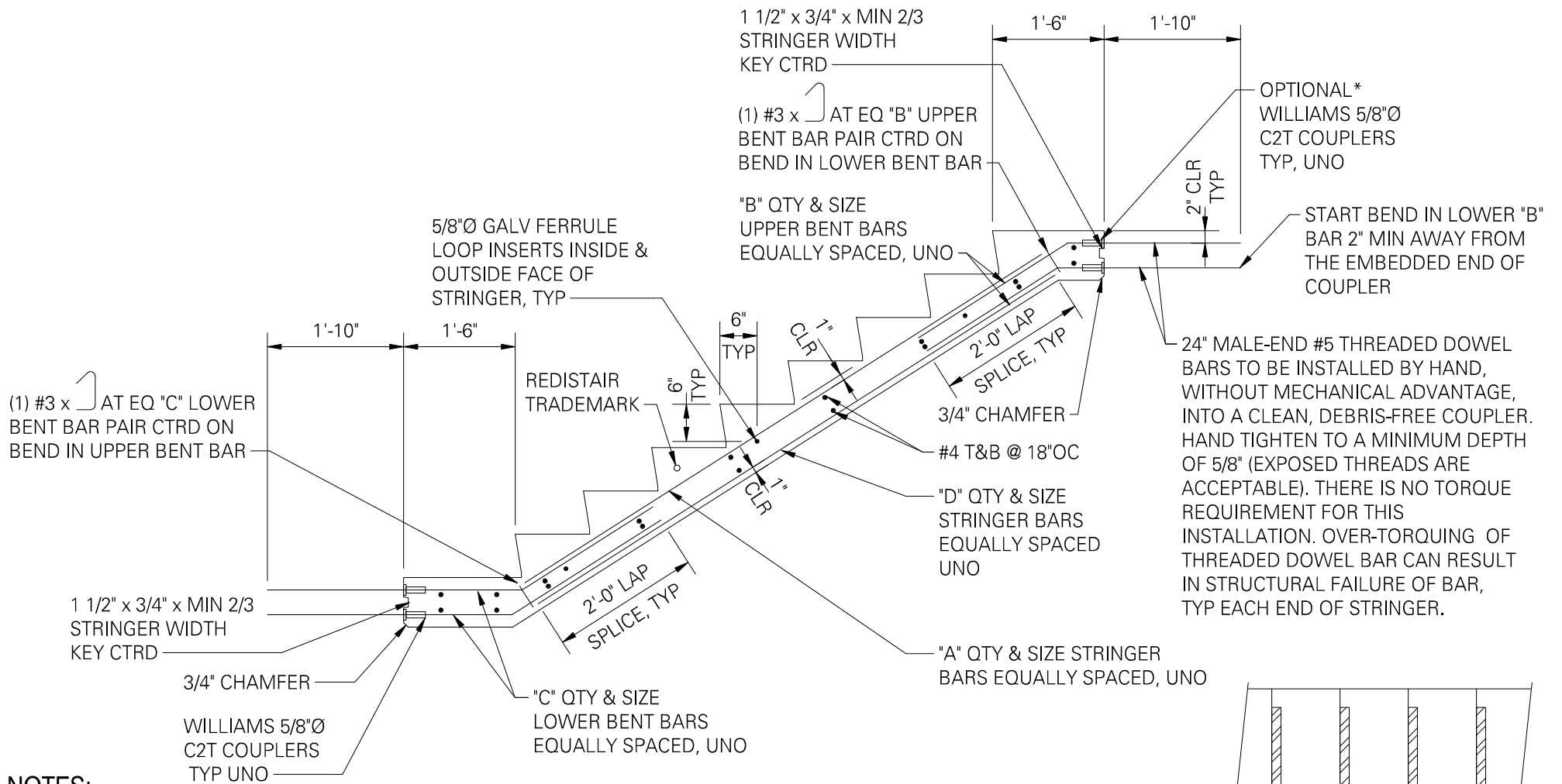
PROJECT NO:
23011-0047

DATE:

BY: Author
CHKD BY: Checker

DESCRIPTION:
STAIR B STRINGER DETAIL SHEET

DRAWING NO:
4A



NOTES:

- * SEE SECTIONS FOR FORM SAVER LOCATIONS
- * CONTACT GCS PROJECT MANAGEMENT PRIOR TO PLACING CIP SLAB CONNECTIONS IF ANY THREADED DOWEL BAR ISSUES OR COUPLER ISSUES ARE DISCOVERED.

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PROJECT NAME: SAMPLE PROJECT		PROJECT NO: 23011-0047	
DATE:			
BY: SB	CHKD BY: GB, SB, JS		
DESCRIPTION: TYPICAL INTERIOR STRINGER DETAIL		DRAWING NO: D1.0	REVISION:

TABLE A		
INFILL WIDTH	REINFORCING	NOTES
≤ 1'-0"	ADDL #5 T&B	EXTEND 36" MIN INTO BUILDING SLAB NO STD HOOK REQUIRED FOR MAIN LANDING INFILL
> 1'-0"	ADDL #5 T&B @ 12"OC MAX	EXTEND 36" MIN INTO BUILDING SLAB NO STD HOOK REQUIRED FOR MAIN LANDING INFILL

REINFORCING AT CAST-IN-PLACE (CIP) INFILL BETWEEN PRECAST STRINGERS, UNO

NOTES:

1. REINFORCING NOT SHOWN REFERENCE STRUCTURAL BUILDING DRAWINGS.
2. THREADED DOWEL REQUIREMENTS/INFORMATION PER D1.0.
3. CONTACT GCS REPRESENTATIVE FOR CLARIFICATION AS REQUIRED.

**ADDL #5 T&B @ 12"OC MAX
SPACING ACROSS WIDTH OF
EA INDIVIDUAL STRINGER.
5'-1" MIN LENGTH EA.**

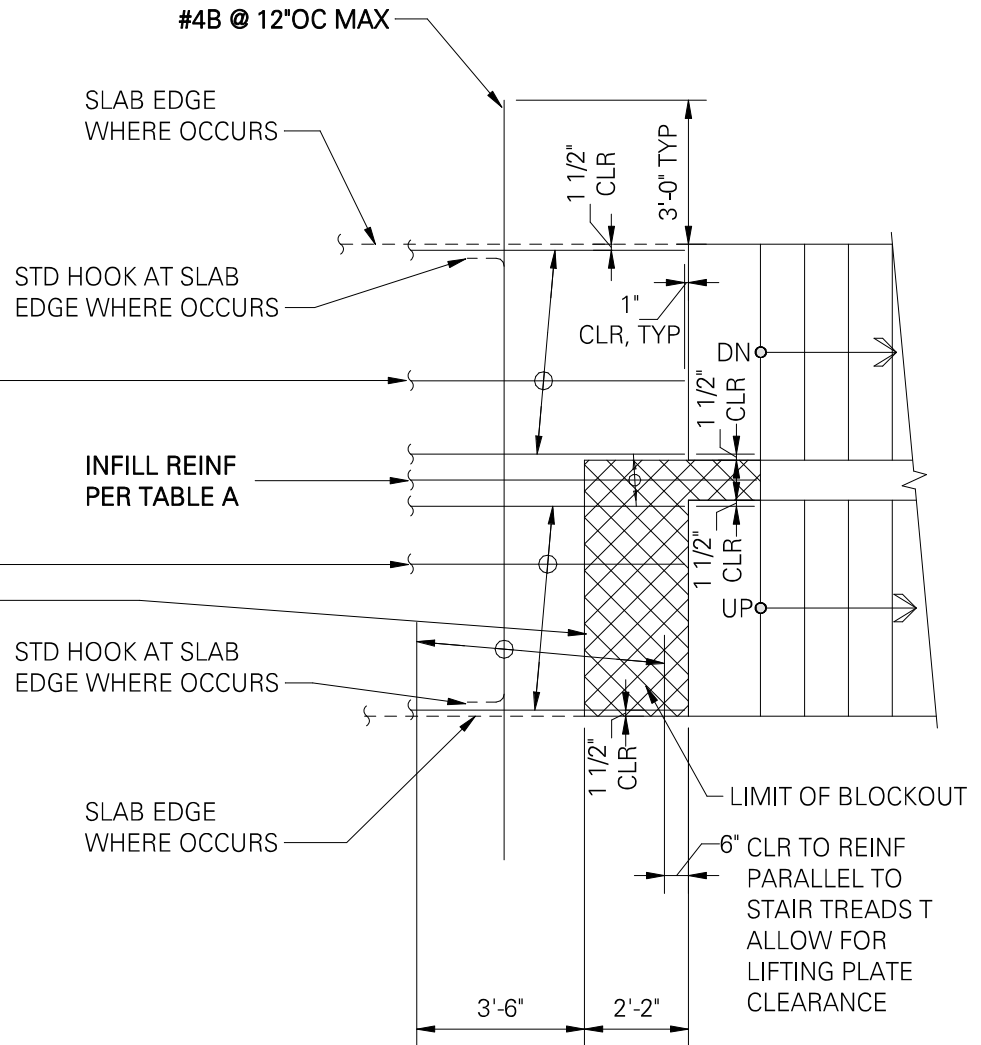
**BARS MUST EXTEND 36" MIN
INTO BLDG SLAB AT ALL
LOCATIONS.**

BAR QUANTITY PER TABLE B.

TABLE B (ADDITIONAL SLAB REINFORCING REQUIRED, UNO)
MIN QTY of Longitudinal #5 T&B WITHIN SINGLE STRINGER WIDTH
36" TO 40" SINGLE STRINGER WIDTH = (4) SETS OF #5 T&B (8 TOTAL BARS)
41" TO 52" SINGLE STRINGER WIDTH = (5) SETS OF #5 T&B (10 TOTAL BARS)
53" TO 64" SINGLE STRINGER WIDTH = (6) SETS OF #5 T&B (12 TOTAL BARS)
65" TO 76" SINGLE STRINGER WIDTH = (7) SETS OF #5 T&B (14 TOTAL BARS)
77" TO 88" SINGLE STRINGER WIDTH = (8) SETS OF #5 T&B (16 TOTAL BARS)

CIP INFILL REINFORCING PER TABLE A

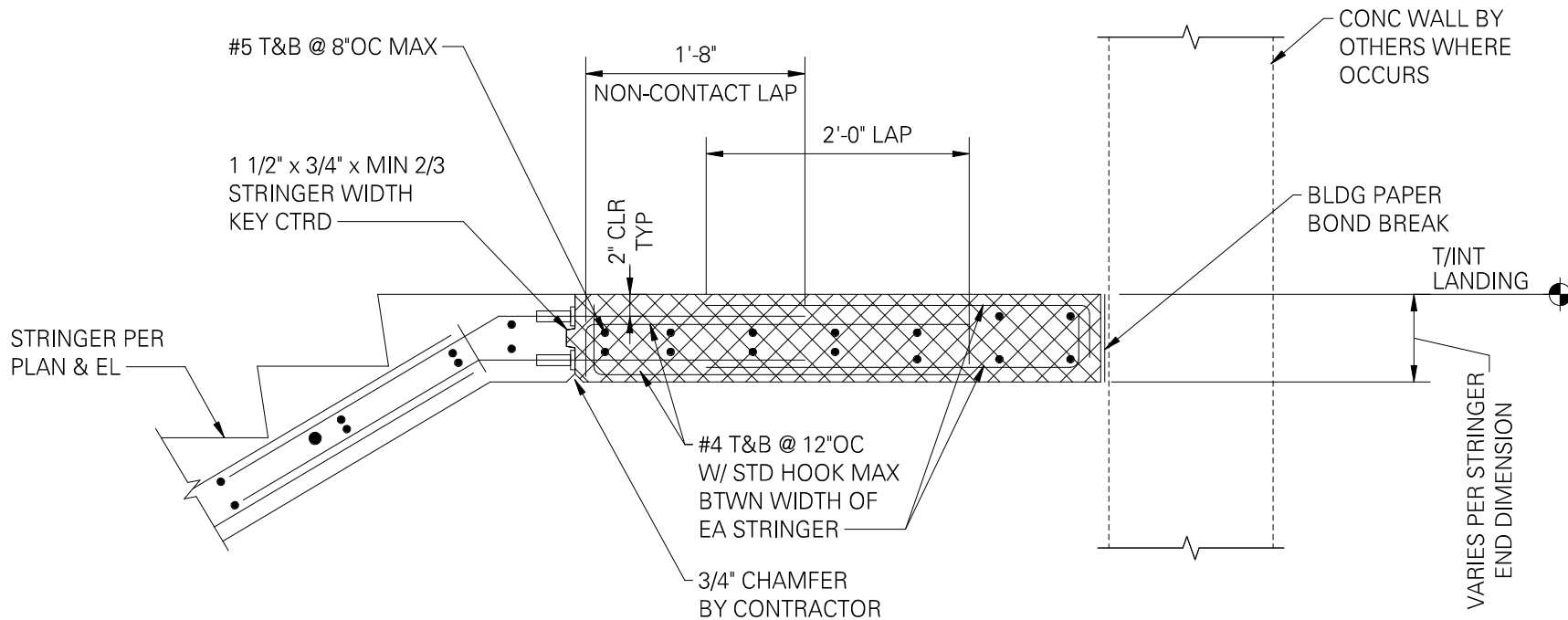
KEYWAY INFO:
1 1/2" x 3/4" x MIN 2/3
STRINGER WIDTH,
CNTRD, TYP AT ALL
BLOCKOUT LOCATIONS



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or written license, in any manner detrimental to interests of GC Solutions, LLC.

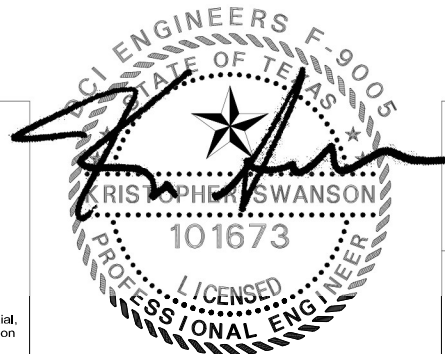
PROJECT NAME: SAMPLE PROJECT	PROJECT NO: 23011-0047
DESCRIPTION: MAIN LANDING DETAIL	DATE:
BY: SB	CHKD BY: GB, SB, JS
DRAWING NO: D2.0	REVISION:



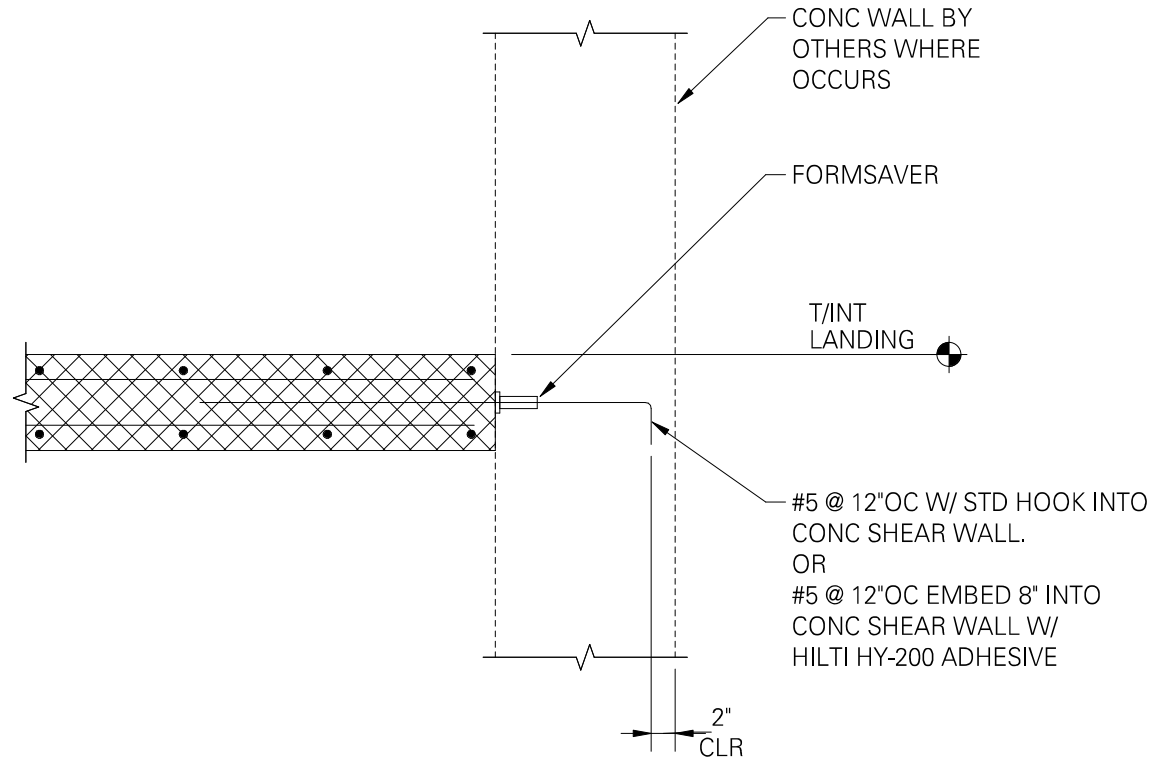
NOTE:

INFILL REINFORCING NOT SHOWN PER D3.1.

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PROJECT NAME: SAMPLE PROJECT	PROJECT NO: 23011-0047
DESCRIPTION: INTERMEDIATE LANDING DETAIL	DATE:
BY: SB	CHKD BY: GB, SB, JS
DRAWING NO: D3.0	REVISION:



NOTE:

ADDITIONAL INFORMATION PER D3.2

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PROJECT NAME:
SAMPLE PROJECT

DESCRIPTION:
INTERMEDIATE LANDING DETAIL

PROJECT NO:
23011-0047

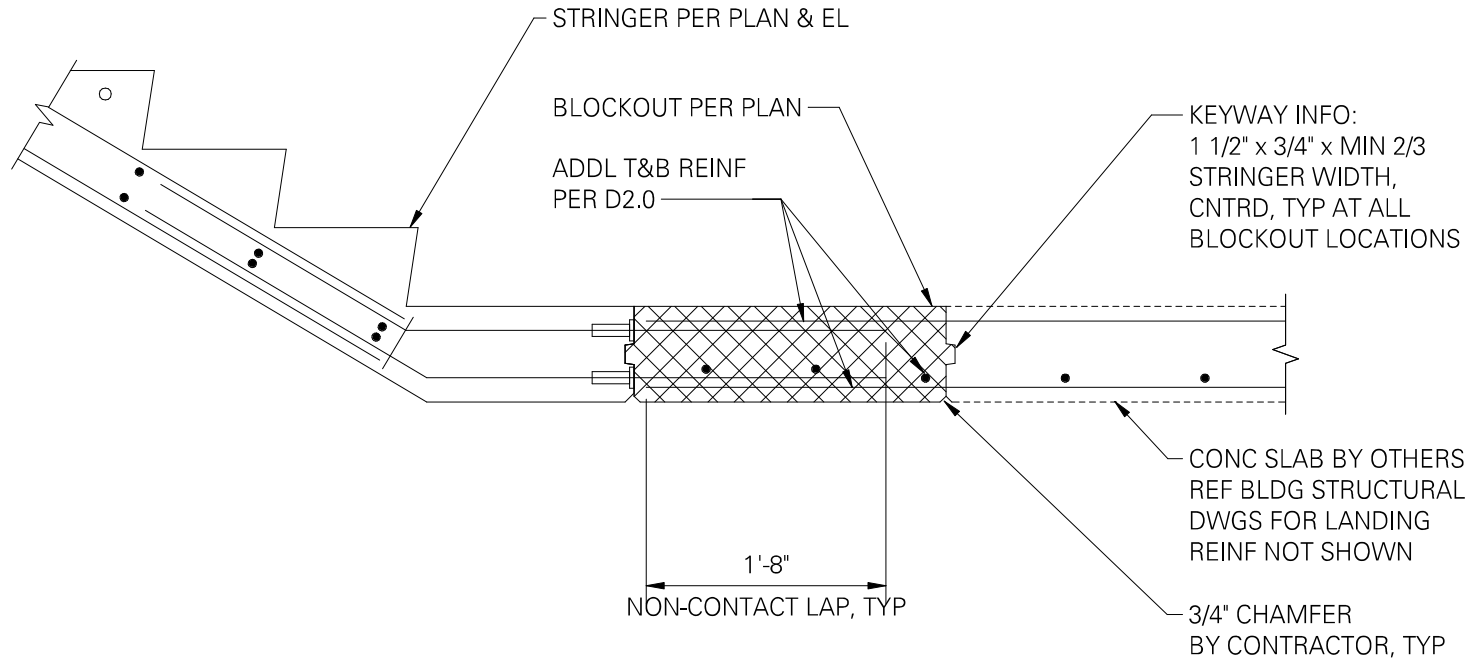
DATE:

BY:
SB

CHKD BY:
GB, SB, JS

DRAWING NO:
D3.9

REVISION:



STAIR TO SLAB CONNECTION

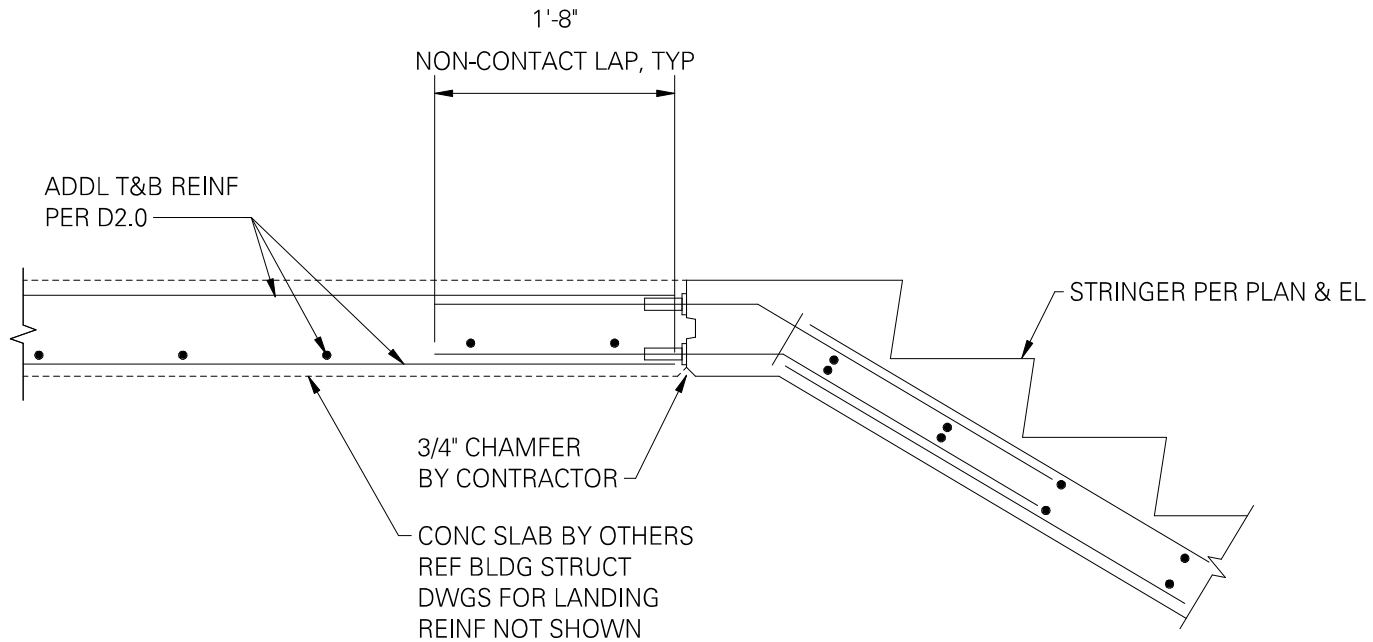
NOTE:

CONTACT GCS REPRESENTATIVE FOR CLARIFICATION AS REQUIRED.

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PROJECT NAME: SAMPLE PROJECT	PROJECT NO: 23011-0047	
	DATE:	
DESCRIPTION: MAIN LANDING DETAIL	BY: SB	CHKD BY: GB, SB, JS
	DRAWING NO: D4.0	REVISION:



STAIR TO SLAB CONNECTION

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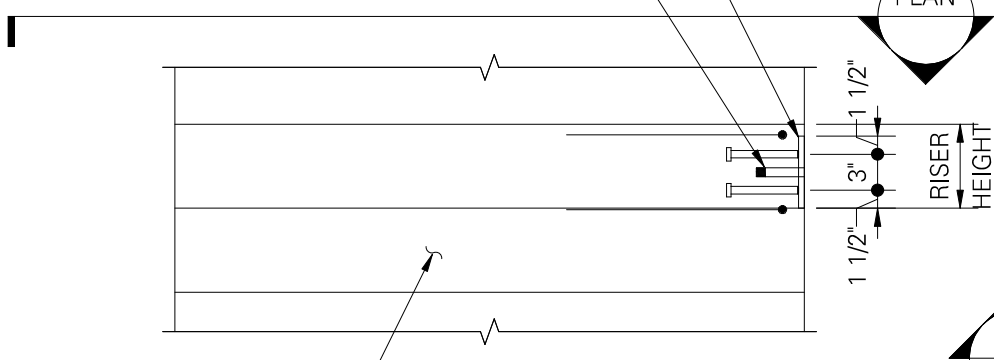


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PROJECT NAME: SAMPLE PROJECT		PROJECT NO: 23011-0047	
DATE:			
BY: SB	CHKD BY: GB, SB, JS		
DESCRIPTION: MAIN LANDING DETAIL		DRAWING NO: D4.1	REVISION:

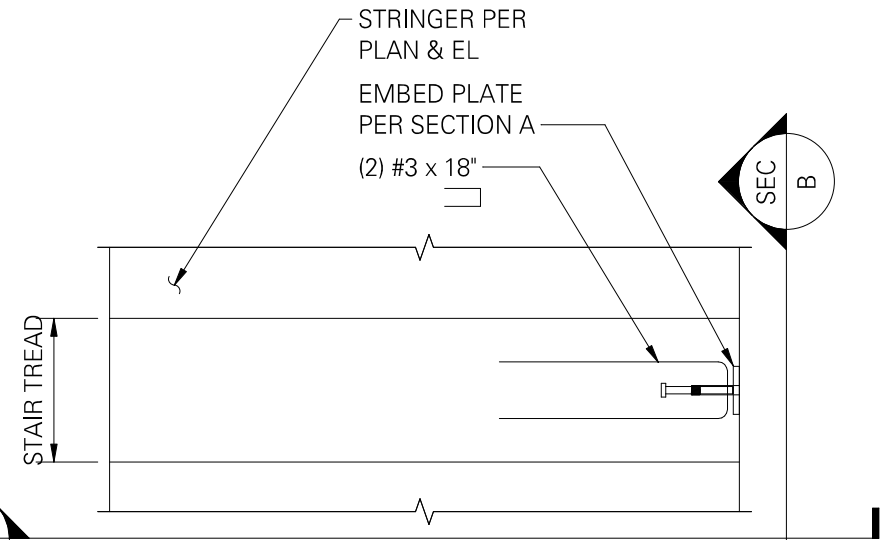
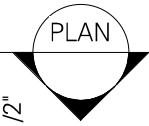
EMBED PL 5/16x4x0'-6"
W/ (2) 1/2"Ø x 6" WHS

MEADOW BURKE FX-5 FERRULE
LOOP INSERT 5/8"Ø X 3 1/2"
CTRD ON EMBED PLATE
W/ 13/16"Ø HOLE IN EMBED PLATE



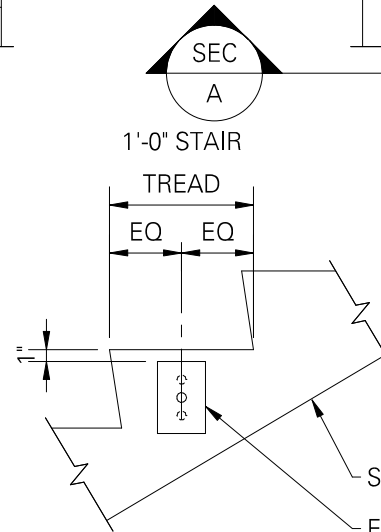
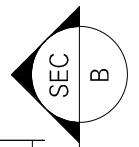
STRINGER PER
PLAN & EL

SECTION A



STRINGER PER
PLAN & EL
EMBED PLATE
PER SECTION A
(2) #3 x 18"

PLAN



1'-0" STAIR
TREAD

TREAD

EQ EQ

STRINGER PER PLAN & EL

EMBED PLATE PER SECTION A

SECTION B

TYPICAL HANDRAIL EMBED DETAIL

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PROJECT NAME:
SAMPLE PROJECT

DESCRIPTION:
HANDRAIL EMBED DETAIL

PROJECT NO:
23011-0047

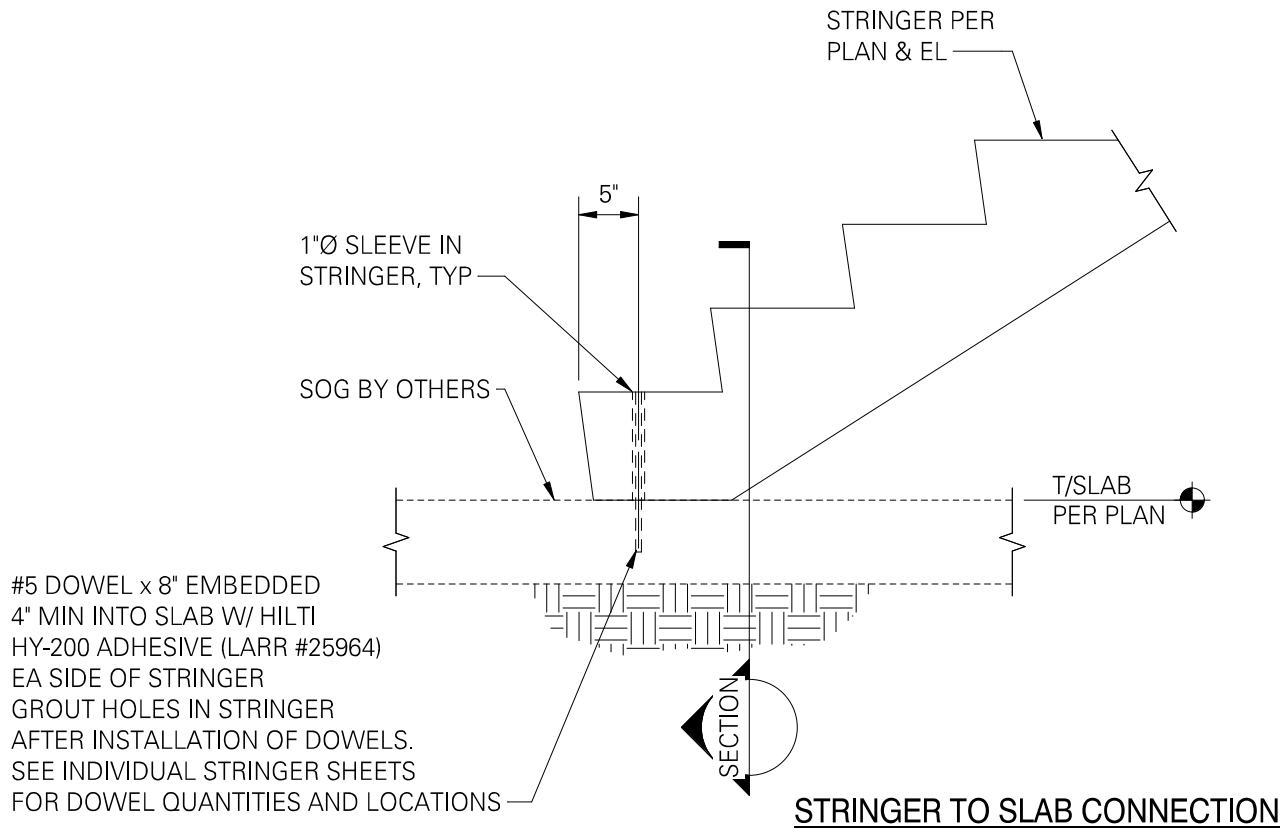
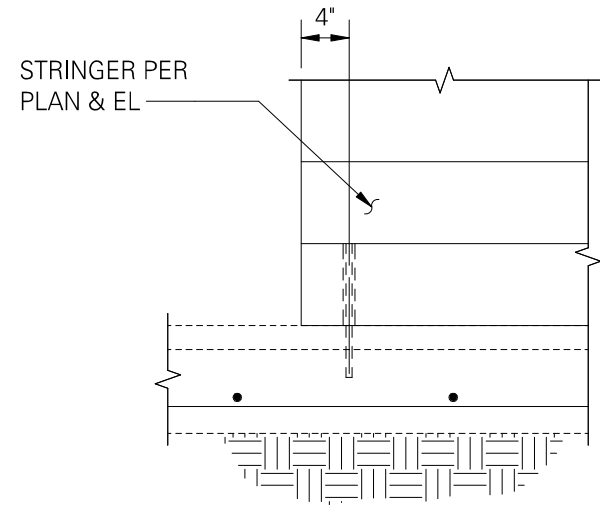
DATE:

BY:
SB

CHKD BY:
GB, SB, JS

DRAWING NO:
D6.0

REVISION:



#5 DOWEL x 8" EMBEDDED
 4" MIN INTO SLAB W/ HILTI
 HY-200 ADHESIVE (LARR #25964)
 EA SIDE OF STRINGER
 GROUT HOLES IN STRINGER
 AFTER INSTALLATION OF DOWELS.
 SEE INDIVIDUAL STRINGER SHEETS
 FOR DOWEL QUANTITIES AND LOCATIONS

DO NOT REMOVE SHORING UNTIL
 DOWELS AND GROUT HAVE BEEN
 INSTALLED AND INSPECTED AND
 CONCRETE HAS REACHED 3000PSI

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 GC SOLUTIONS, LLC



PROJECT NAME:
SAMPLE PROJECT

DESCRIPTION:
STAIR TO SOG CONNECTION

PROJECT NO:
 23011-0047

DATE:

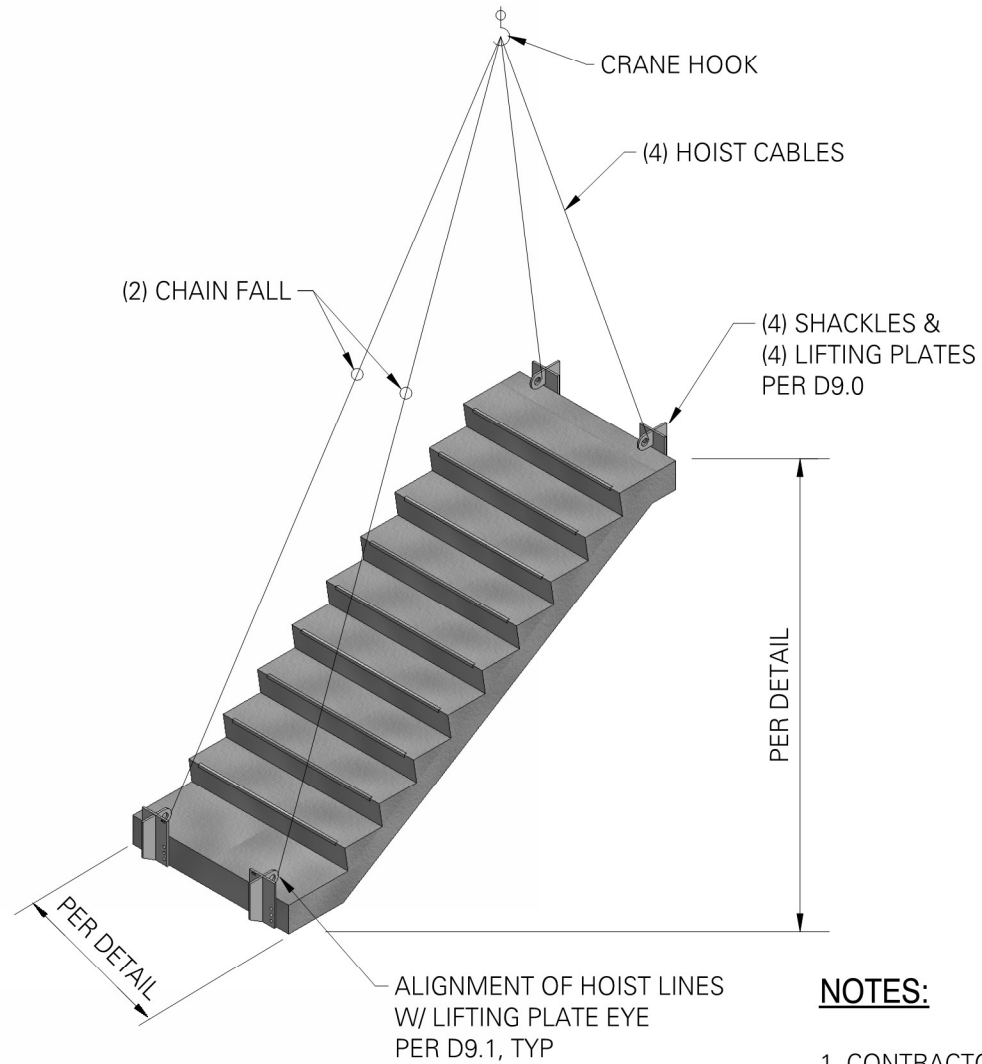
BY:
 SB

CHKD BY:
 GB, SB, JS

DRAWING NO:
D7.1

REVISION:

CLIENT TO VERIFY CEILING HEIGHT AND ALL RELEVANT DIMENSIONS



NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR LIFTING.
2. USE A MINIMUM SAFETY FACTOR OF (4).

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PROJECT NAME:
SAMPLE PROJECT

DESCRIPTION:
LIFTING DIAGRAM

PROJECT NO:
23011-0047

DATE:

BY:
SB

CHKD BY:
GB, SB, JS

DRAWING NO:
D8.0

REVISION:

LOAD LIMIT = 22,500 POUNDS

"MEADOW BURKE 1"Ø LP-20"
OR EQUAL DBL SWIVEL LIFT PLATE
W/ 4:1 SAFETY FACTOR

1"Ø A193 B7 THRU ROD
IN MAX 1 1/4" ID PVC SLEEVE
W/ 4:1 SAFETY FACTOR.
A36 AND A307 OR LOWER
GRADE STEEL IS NOT
ACCEPTABLE

LIFT PLATE DETAIL
PER D9.0, TYP

HOIST LINES TO PROJECT FROM
CENTERLINE (CL) OF BOLT PATTERN
THROUGH CL OF LIFTING PLATE EYE.
USE APPROPRIATE CHAIN FALLS AND
SPREADER BARS AS NECESSARY

HOIST LINES TO
PROJECT FROM
CENTERLINE (CL)
OF BOLT PATTERN
THROUGH CL OF
LIFTING PLATE EYE.
USE APPROPRIATE
CHAIN FALLS AND
SPREADER BARS
AS NECESSARY

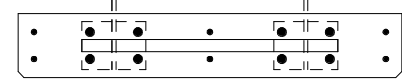
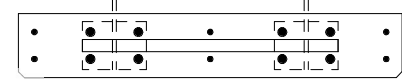
(2) EA #3 x] EA SIDE OF
THRU ROD & EA SIDE
OF STRINGER. PREFERRED
PLACEMENT ON
OUTERMOST #5 BAR

2/3 (L) +/- 12"
LENGTH (L)

1/3 (L) +/- 12"

LIFT PLATE DETAIL
PER D9.0, TYP

LIFT PLATE DETAIL
PER D9.0



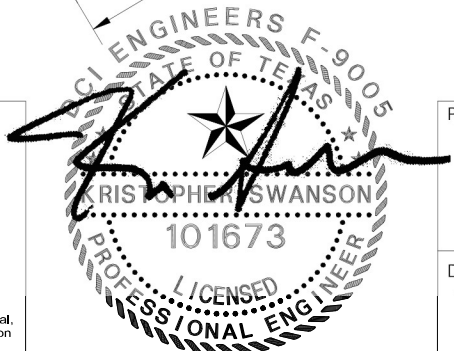
END SECTION TYP TOP

END SECTION TYP BOT

NOTE:

THRU ROD ONLY REQUIRED FOR
STRINGERS WITH 10 OR MORE RISERS

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GC SOLUTIONS, LLC



PROJECT NAME:
SAMPLE PROJECT

PROJECT NO:
23011-0047

DESCRIPTION:
STRINGER LIFTING DETAIL

DATE:

BY:
SB

CHKD BY:
GB, SB, JS

DRAWING NO:
D9.1

REVISION:

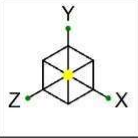
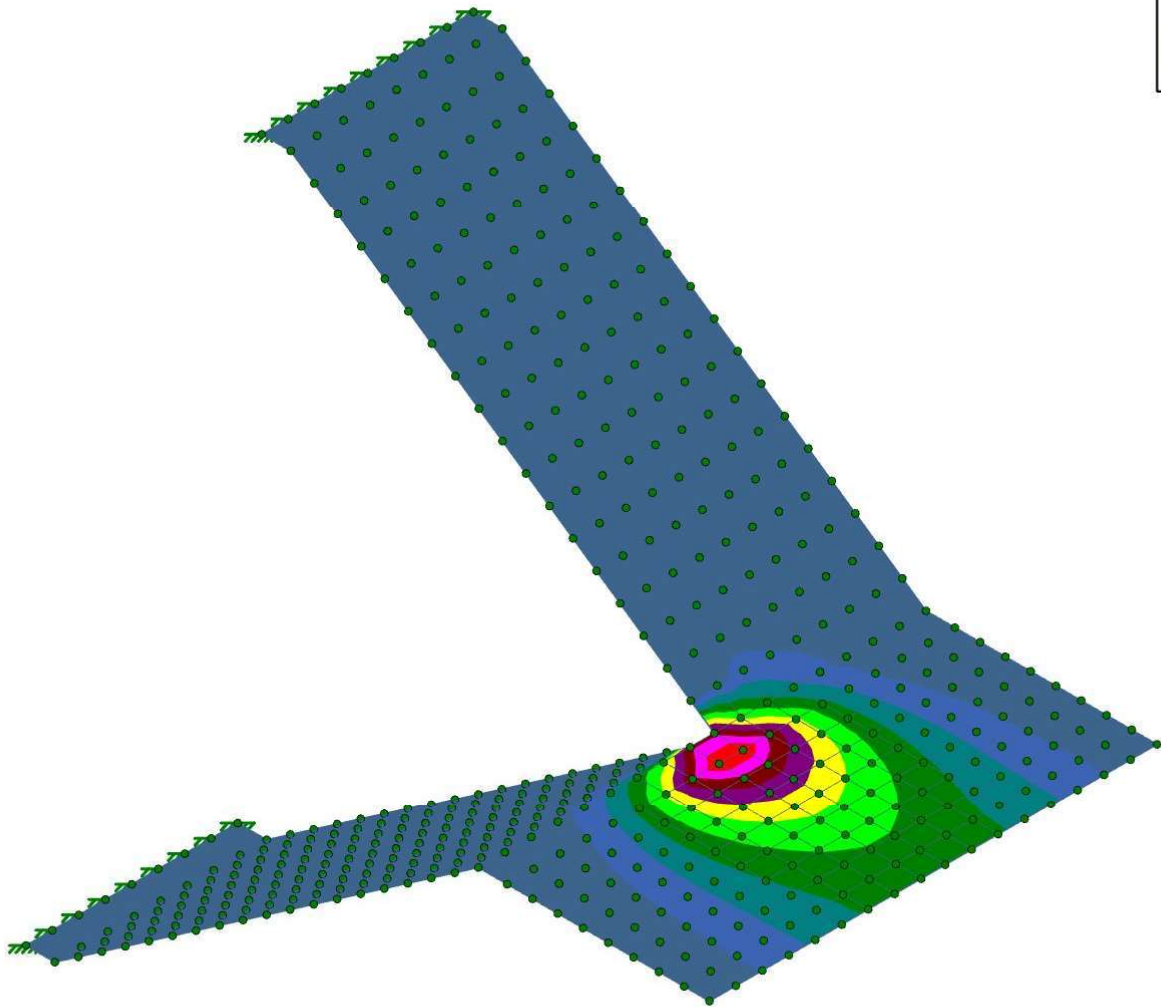
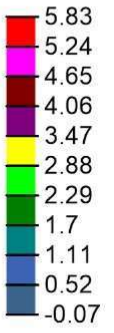


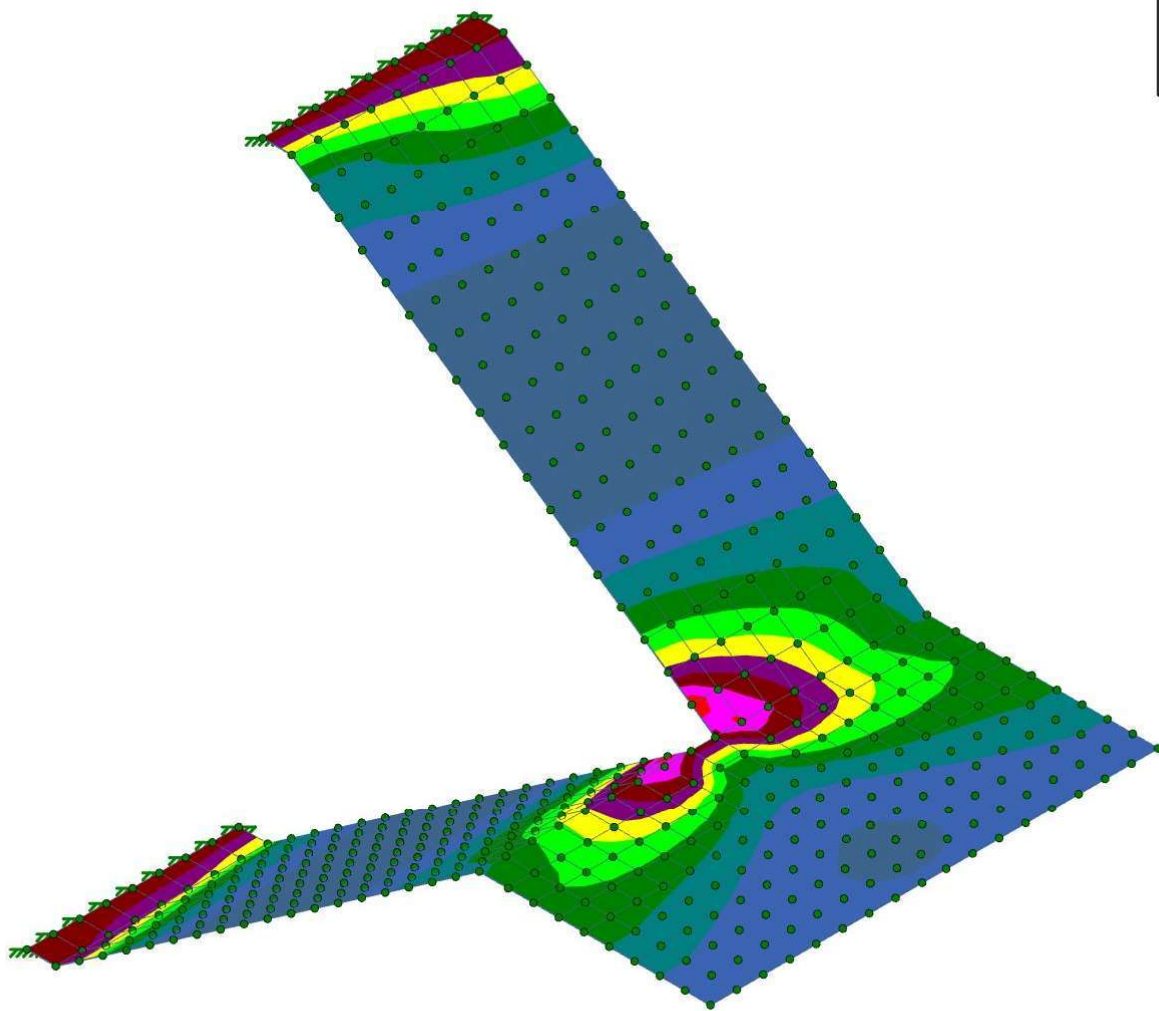
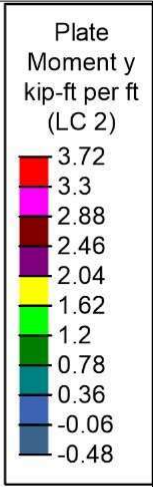
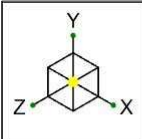
Plate
Moment x
kip-ft per ft
(LC 2)



Results for LC 2, 1.2D + 1.6L

DCI
GCB

SK-4
Mesh Model 18 Riser - 6 Inch Th...



Results for LC 2, 1.2D + 1.6L

DCI
GCB

SK-3
Mesh Model 18 Riser - 6 Inch Th...