

Plot Date: 7-DEC-2023 3:14:14 PM

User: svcPW

Plot Scale: 1:1

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo\_Sig\_Pen\_v0905.pen

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# WTP NO. 2 FLOCCULATION TRAIN STRUCTURAL IMPROVEMENTS

## BID NO. B018-24 DECEMBER 2023

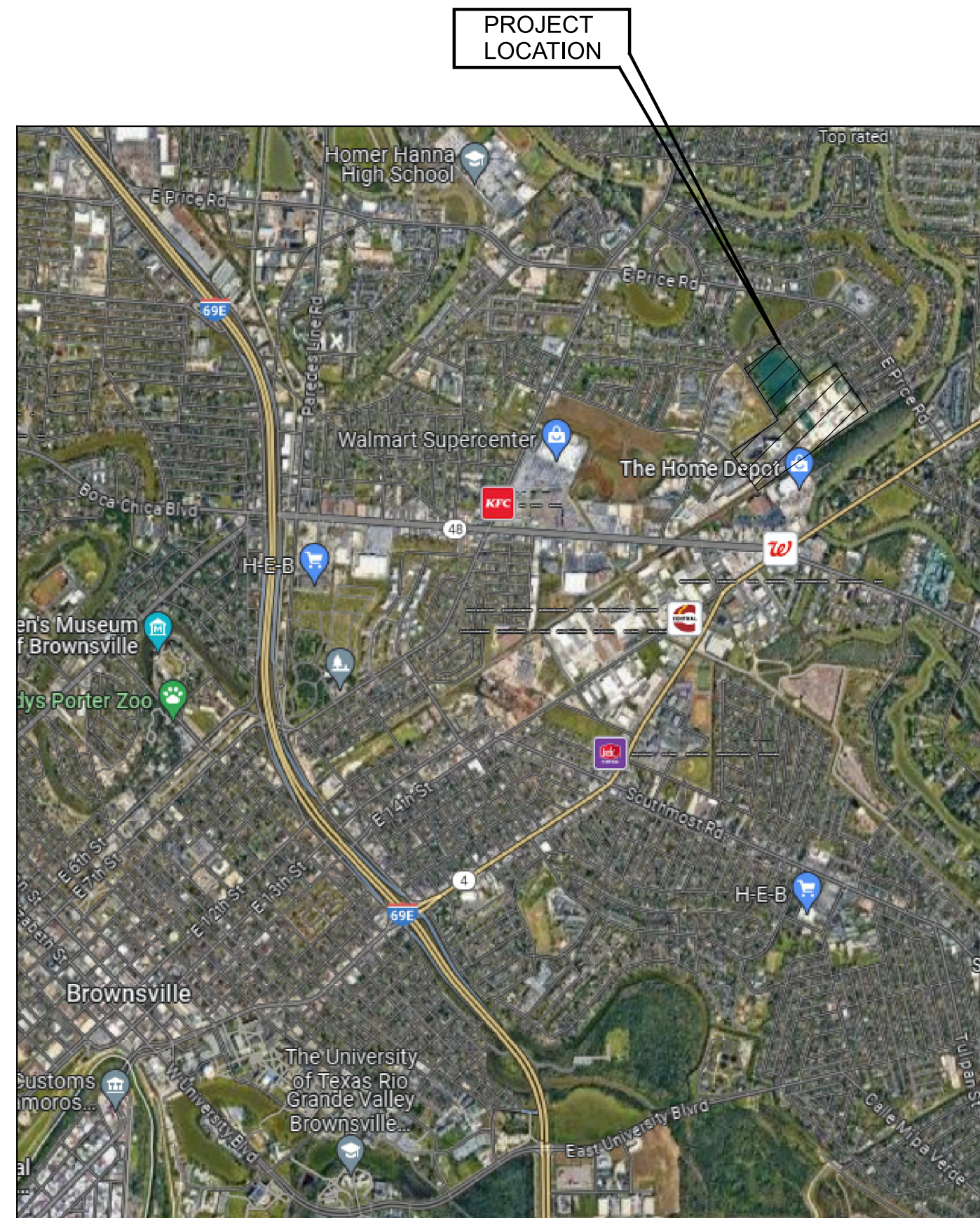
### BOARD MEMBERS

ARTHUR "ART" RENDON	PATRICIO SAMPAYO
JOSEPH L. HOLLMANN, Ph.D.	GERARDO MARTINEZ
DAISY ZAMORA, Ph.D.	ALEJANDRO "ALEX" NAJERA
MAYOR JOHN F. COWEN, JR.	

## ISSUED FOR BID DOCUMENTS



TBPELS No. F-882



VICINITY MAP  
NO SCALE



LOCATION MAP  
NO SCALE

1425 ROBINHOOD DR.  
BROWNSVILLE, TX. 78521



JOB NO.	202284
DRAWING NO.	00G01
SHEET NO.	1 OF 14

Plot Date: 5-DEC-2023 4:06:40 PM

User: svcPW

Plot Scale: 1:1

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo\_Sig\_Pen\_v0905.pen

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SHEET NO.	DRAWING NO.	DESCRIPTION
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(G) - GENERAL

1	00G01	PROJECT COVER SHEET
2	00G02	DRAWING INDEX
3	00G03	GENERAL NOTES, LEGENDS AND SYMBOLS
4	00G04	GENERAL ABBREVIATIONS

(D) - DEMOLITION

5	00DS01	DEMOLITION PLAN
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(S) - STRUCTURAL

6	00GS01	GENERAL STRUCTURAL NOTES
7	00S01	MODIFICATION PLAN AND SECTION
8	00S02	EQUIPMENT AND RAILING REMOVAL PHOTO
9	00S03	MODIFICATION PHOTOS 1
10	00S04	MODIFICATION PHOTOS 2
11	00S05	MODIFICATION PHOTOS 3
12	00S06	MODIFICATION SECTIONS AND DETAILS

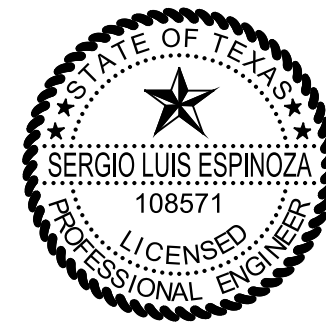
(T) - TYPICAL DETAILS

13	00TS01	STRUCTURAL 1
14	00TS02	STRUCTURAL 2

X - INDICATES DRAWINGS NOT CONTAINED IN THIS SUBMITTAL

REV	DATE	BY	DESCRIPTION

DESIGNED	CE
DRAWN	CE
CHECKED	SLE
DATE	DECEMBER 2023



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 Contact Info: Carollo Engineers, Inc.  
 Date: 2023.12.07 16:02:00 -0500



BROWNSVILLE PUBLIC UTILITIES BOARD  
 FLOCCULATION TRAIN STRUCTURAL IMPROVEMENTS  
 GENERAL  
 DRAWING INDEX

VERIFY SCALES  
 BAR IS ONE INCH ON ORIGINAL DRAWING  
 0 1"  
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.	202284
DRAWING NO.	00G02
SHEET NO.	2 OF 14

Plot Date: 5-DEC-2023 4:07:04 PM

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Model: Layout1

ColorTable: gshade.ctb DesignScript: Carollo\_Sig\_Pen\_v0905.pen PlotScale: 1:1

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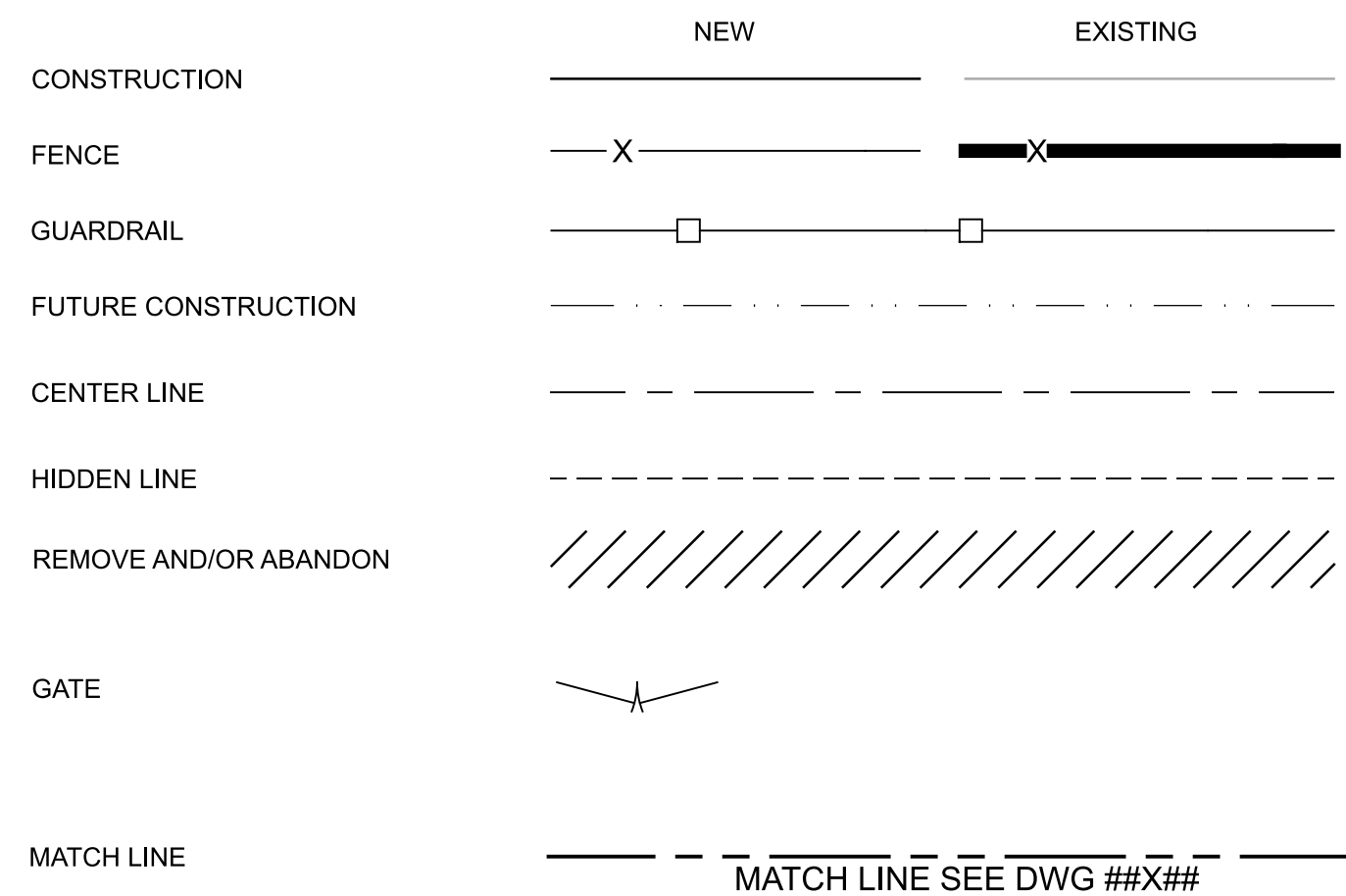
### GENERAL NOTES

### LINE WORK

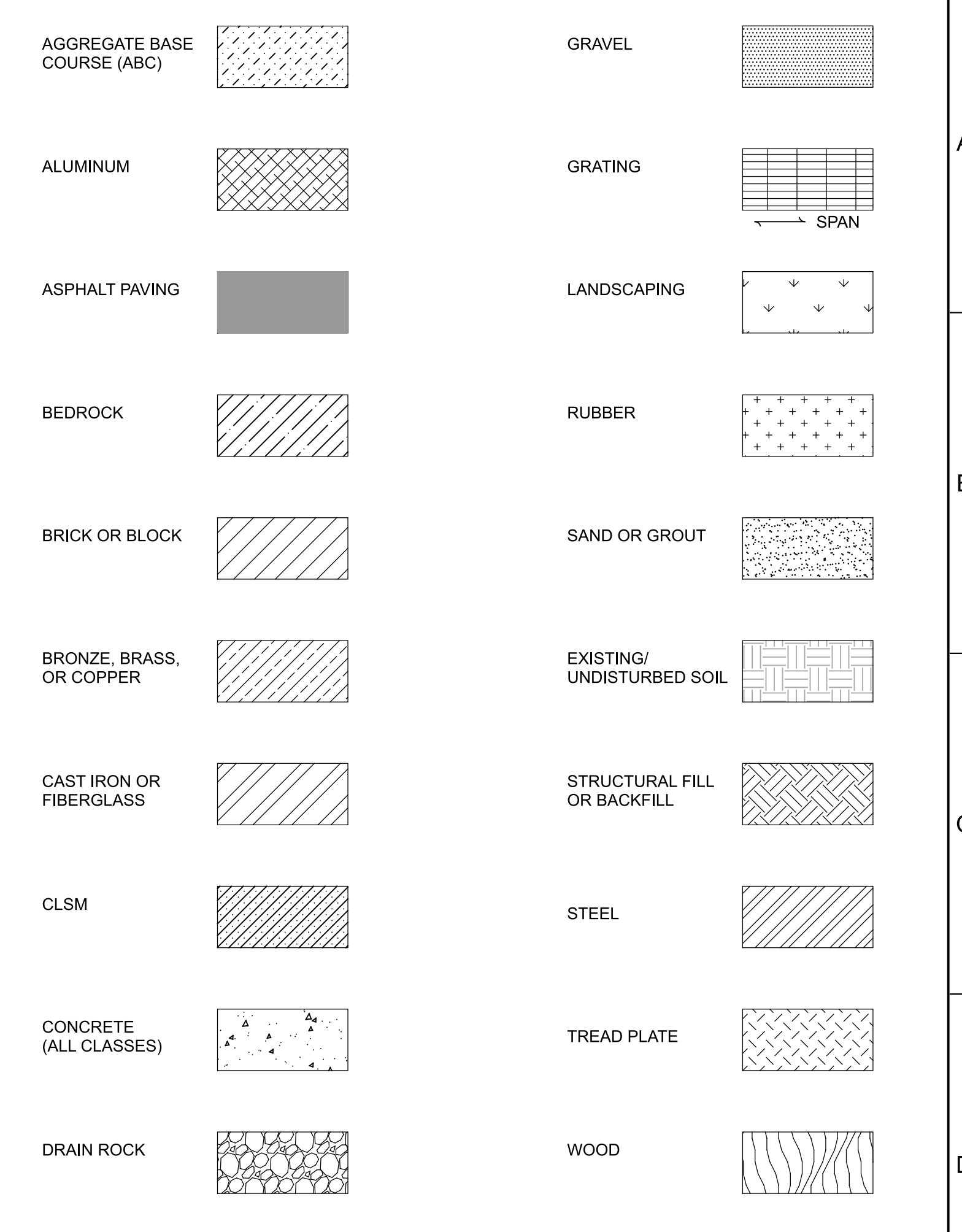
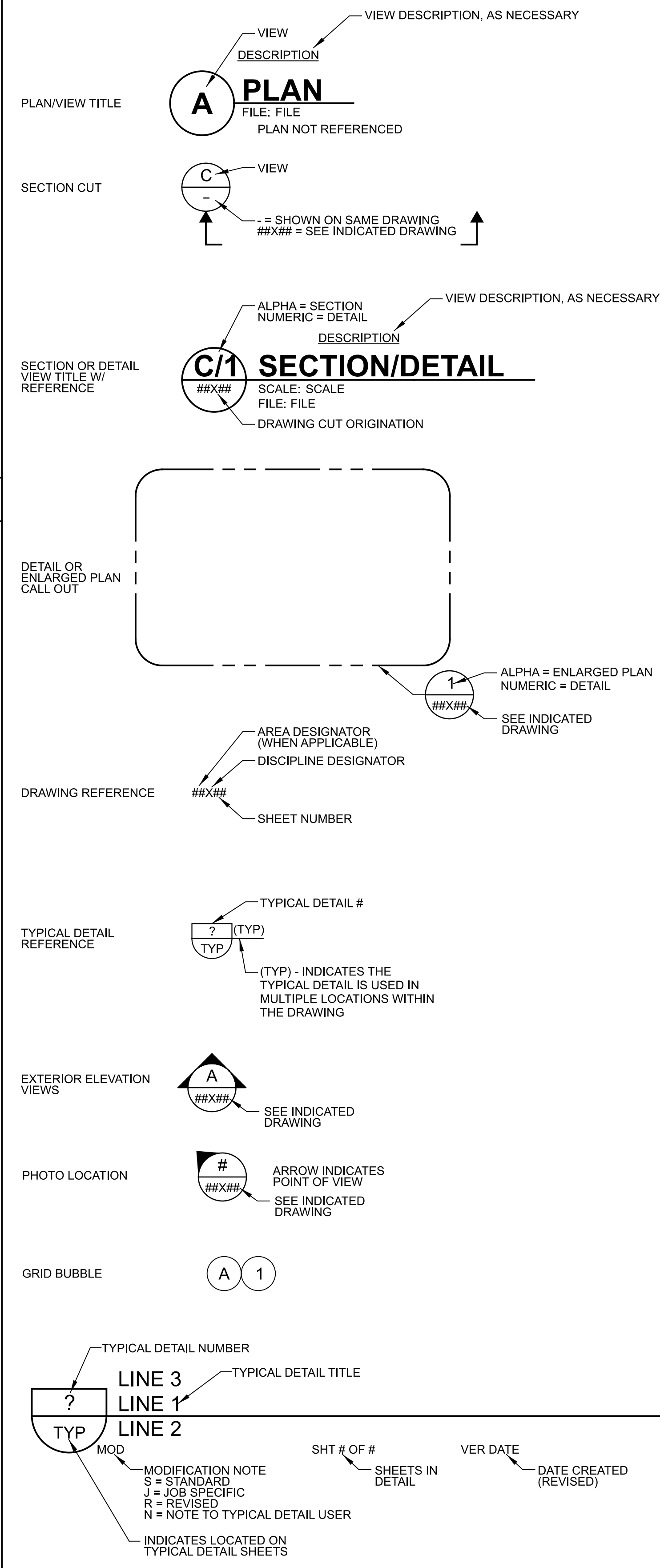
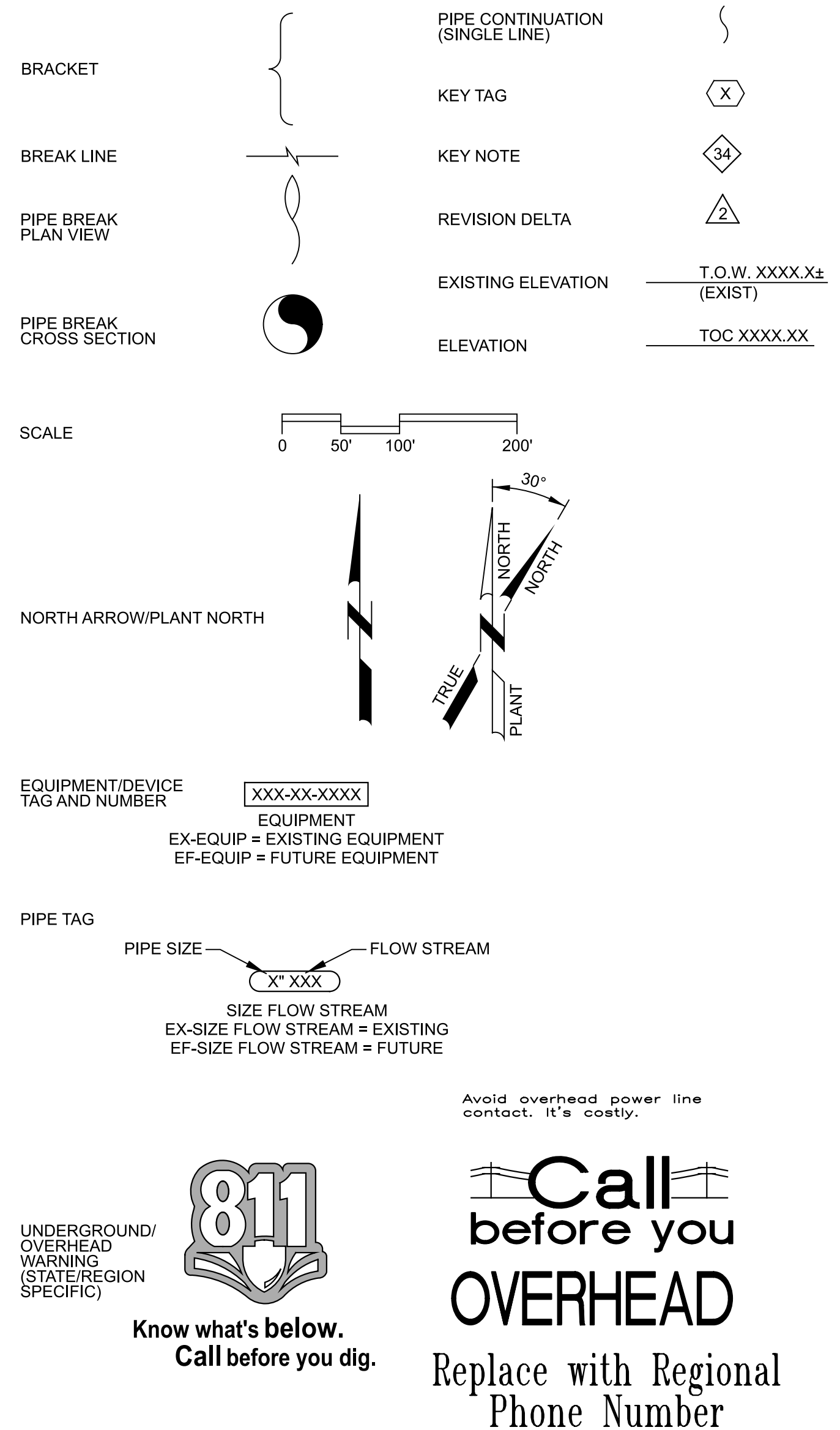
### DETAIL REFERENCES

### HATCH PATTERNS

- FOLLOWING NOTES ARE GENERAL AND APPLY TO ALL SHEETS OF THESE CONTRACT DOCUMENTS AS IF THEY WERE WRITTEN IN THEIR ENTIRETY ON EACH SHEET.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE STARTING WORK AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING CONDITIONS INCLUDING LOCATION AND DIMENSIONS OF ALL EXISTING CONSTRUCTION AND UTILITIES. CONTRACTOR SHALL NOTIFY ENGINEER IF THERE IS A CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND EXISTING CONSTRUCTION BEFORE PROCEEDING WITH WORK.
- UNLESS DETAILED, SPECIFIED, OR OTHERWISE INDICATED ON THE DRAWINGS, CONSTRUCTION SHALL BE AS INDICATED IN THE APPLICABLE TYPICAL DETAILS AND GENERAL NOTES. TYPICAL DETAILS SHALL APPLY EVEN THOUGH NOT REFERENCED AT SPECIFIC LOCATIONS ON DRAWINGS.
- WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF WORK, DETAILS SHALL BE IN THE SAME AS FOR OTHER SIMILAR WORK.
- CONTRACTOR SHALL COMPLY WITH LOCAL CONSTRUCTION STORM WATER DISCHARGE REGULATIONS AND REQUIREMENTS.
- EXISTING FACILITY AND UTILITY INFORMATION SHOWN ON THE DRAWINGS WAS OBTAINED FROM AVAILABLE RECORDS OR ELECTRONIC FILES. NEITHER THE OWNER NOR ENGINEER ASSUMES ANY RESPONSIBILITY FOR FACILITIES AND UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN. THE CONTRACTOR SHALL FIELD VERIFY ALL LOCATIONS, SIZES, MATERIAL TYPES, AND ELEVATIONS SHOWN AROUND OR NEAR AREAS OF NEW CONSTRUCTION PRIOR TO START OF CONSTRUCTION.
- THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT FROM DAMAGE EXISTING FACILITIES AND UTILITIES SHOWN OR NOT SHOWN THAT ARE TO REMAIN IN PLACE. ALL FACILITIES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE EXPEDITIOUSLY REPAIRED OR RECONSTRUCTED TO THE ORIGINAL OR BETTER CONDITION AT THE CONTRACTOR'S EXPENSE WITHOUT ADDITIONAL COMPENSATION.
- CONTRACTOR SHALL MAKE CONNECTIONS TO EXISTING PIPE, EQUIPMENT, ETC. AS REQUIRED AND SHALL PROVIDE ALL FITTINGS, ADAPTERS, AND APPURTENANCES REQUIRED TO MAKE THE CONNECTIONS. PROVIDE ALL SUPPORTS REQUIRED FOR A RIGIDLY SUPPORTED COMPLETE AND WORKING SYSTEM.
- ADJUST ALL VALVE BOXES, VAULTS, PULL BOXES, AND MANHOLES TO FINISHED GRADE UNLESS OTHERWISE SHOWN OR DIRECTED. MANHOLES IN OPEN FIELDS SHALL BE SET TWELVE INCHES ABOVE FINISHED GRADE AND VAULTS SHALL BE SIX INCHES ABOVE FINISHED GRADE.
- THE CONTRACTOR SHALL CONTACT THE PROPER UTILITY REPRESENTATIVE AS FOLLOWS FOR QUESTIONS OR COORDINATION OF CONSTRUCTION RELATED TO EXISTING UTILITIES.  
STATE/REGION/MUNICIPALITY SPECIFIC: 1-800-XXX-XXXX
- ALL EXISTING PIPES THAT ARE TO BE ABANDONED IN PLACE OR REMOVED MAY NOT BE SHOWN. WHERE PIPING IS TO BE ABANDONED AND MUST REMAIN IN SERVICE UNTIL COMPLETION OF OTHER PHASES OF WORK, AND IT CONFLICTS WITH NEW PIPING, TEMPORARILY RELOCATE PIPING AS REQUIRED TO MAINTAIN SERVICE BY THE PLANT.
- CONTRACTOR SHALL REROUTE THE EXISTING PIPING IF REQUIRED TO MISS THE PROPOSED STRUCTURES. THE EXISTING PIPE SHALL REMAIN IN SERVICE UNTIL NEW PIPING IS READY TO BE PLACED INTO SERVICE. DOWNTIME SHALL BE A MAXIMUM OF 2 HOURS, UNLESS SPECIFIED OR SHOWN OTHERWISE.
- THE CONTRACTOR SHALL TAKE SPECIAL PRECAUTIONS IN THE VICINITY OF ANY OVERHEAD ELECTRIC LINES. CONTRACTOR SHALL ABIDE BY THE NATIONAL ELECTRIC CODE AND ANY REQUIREMENT BY THE OWNER OF THE ELECTRIC LINES.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL ARCHITECTURAL, MECHANICAL, AND ELECTRICAL ITEMS BEFORE PLACING ANY STRUCTURAL STEEL OR CONCRETE. ALSO, STRUCTURAL DIMENSIONS AND OPENINGS CONTROLLED BY ARCHITECTURAL, MECHANICAL, OR ELECTRICAL EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
- MECHANICAL AND ELECTRICAL EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES, AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS, THAT ARE REQUIRED BY OTHER CONTRACT DRAWINGS, SHALL BE PROVIDED PRIOR TO CASTING CONCRETE.



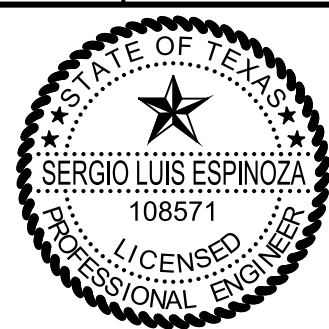
### SYMBOLS



### MISCELLANEOUS

REV	DATE	BY	DESCRIPTION

DESIGNED	CE
DRAWN	CE
CHECKED	SLE
DATE	DECEMBER 2023



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 Date: 2023.12.27 16:02:02 -0500



TBPELS No. F-882

BROWNSVILLE PUBLIC UTILITIES BOARD  
 FLOCCULATION TRAIN STRUCTURAL IMPROVEMENTS  
 GENERAL  
 GENERAL NOTES, LEGEND, AND SYMBOLS

VERIFY SCALES	JOB NO. 202284
BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO. 00G03
0 1"	SHEET NO. 3 OF 14
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	

Plot Date: 5-DEC-2023 4:07:13 PM User: svcPW Model: Layout1 ColorTable: gshade.ctb DesignScript: Carroll\_Sig\_Pen\_v0905.pen PlotScale: 1:1 LAST SAVED BY: aralcliff

Table of general abbreviations organized in columns 1-13 and rows A-F. Each cell contains a symbol or code followed by its corresponding full name. Columns 1-3 cover A through F, columns 4-6 cover G through M, and columns 7-13 cover N through Y.

Revision table with columns: REV, DATE, BY, DESCRIPTION. Includes a row for 'DESIGNED CE' dated 'DECEMBER 2023'.

Professional Engineer seal for Sergio Luis Espinoza, License No. 108571, State of Texas. Includes a signature.

Carroll logo with text 'TBPELS No. F-882'.

Brownsville Public Utilities Board logo.

Project title: BROWNSVILLE PUBLIC UTILITIES BOARD FLOCCULATION TRAIN STRUCTURAL IMPROVEMENTS GENERAL GENERAL ABBREVIATIONS

VERIFY SCALES section. Includes a graphic scale bar from 0 to 1 inch and text: 'BAR IS ONE INCH ON ORIGINAL DRAWING', 'IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY'. Also includes 'JOB NO. 202284', 'DRAWING NO. 00G04', and 'SHEET NO. 4 OF 14'.

Plot Date: 5-DEC-2023 2:55:28 PM

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Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo\_Sig\_Pen\_v0905.pen

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1 2 3 4 5 6 7 8 9 10 11 12 13

A

B

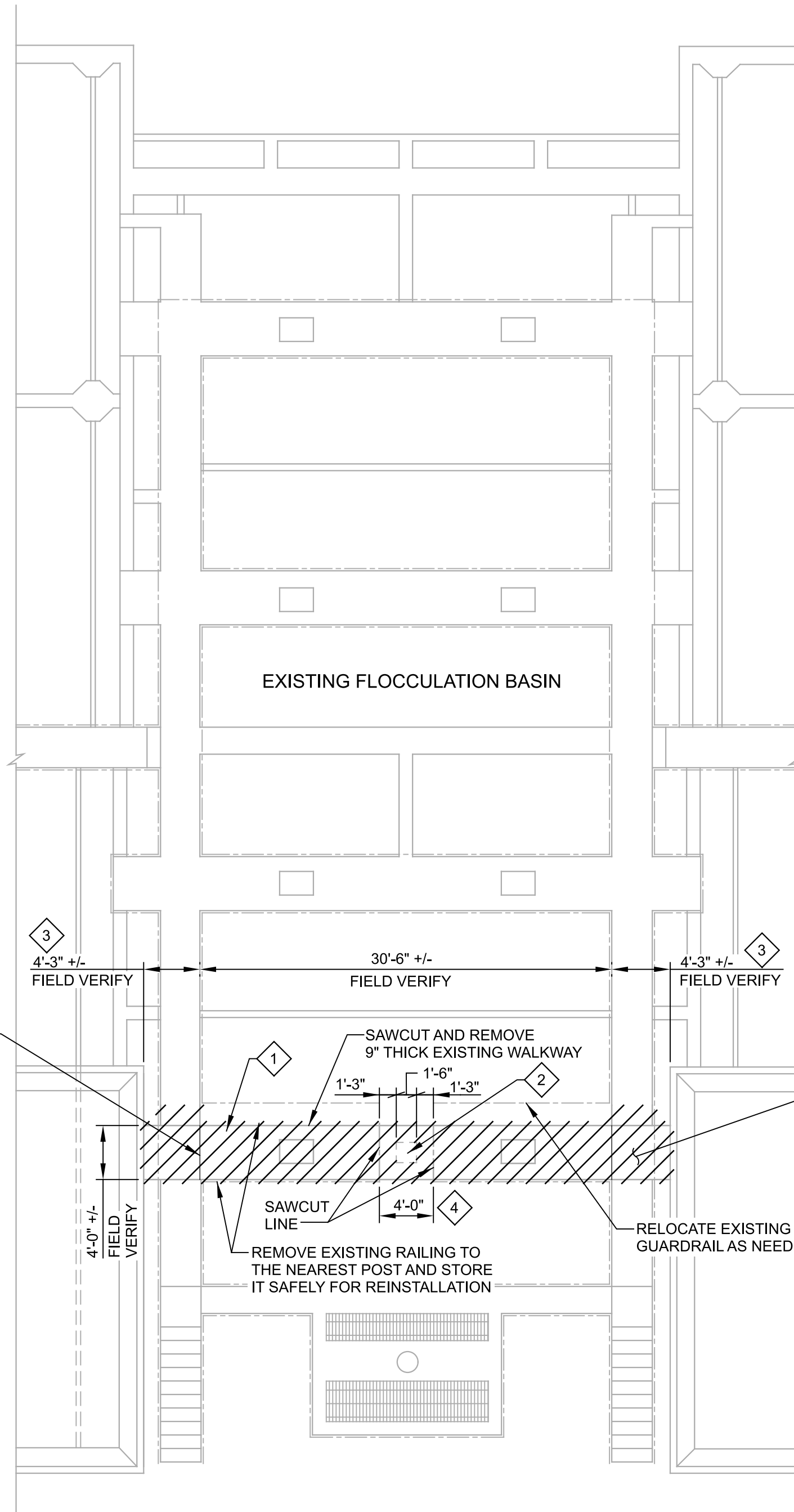
C

D

E

F

G



**GENERAL NOTES:**

1. FOR STRUCTURAL GENERAL NOTES SEE DWG 00GS01.
2. ALL EXISTING CONDITIONS SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK. NOTIFY THE OWNER AND ENGINEER OF ANY DIFFERING CONDITIONS IN ACCORDANCE WITH REQUIREMENT OF CONTRACT DOCUMENTS.
3. SEQUENCE THE WORK IN ACCORDANCE WITH REQUIREMENTS OF CONTRACT DOCUMENTS.
4. REMOVE EXISTING PUMPS, INSTRUMENTATION PANELS, RAILING, CABLES AND MUD VALVE UNIT AND STORE IT SAFELY FOR REINSTALLATION.
5. SUBMIT DEMOLITION PLAN TO OWNER AND ENGINEER AND OBTAIN APPROVAL FROM OWNER AND ENGINEER BEFORE ANY DEMOLITION ACTIVITIES.
6. THE CONTRACTOR SHALL NOTIFY THE TEXAS DEPARTMENT OF HEALTH (TDH) PRIOR DEMOLITION OF ANY FACILITY. NOTIFICATION SHALL BE MADE TO THE DEPARTMENT NO LESS THAN TEN WORKING DAYS (NOT CALENDAR DAYS) PRIOR TO COMMENCEMENT OF THE ACTIVITY AND SHALL BE SUBMITTED ON THE FORM SPECIFIED BY THE DEPARTMENT. IT IS A REQUIREMENT THAT THE DEPARTMENT NOTIFICATION FORM BE FILLED OUT COMPLETELY AND PROPERLY.

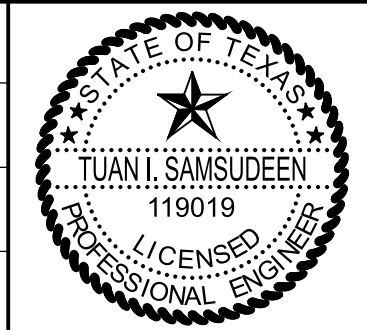
**# KEY NOTES:**

1. DEMOLISH EXISTING WALKWAY BRIDGE. SEE DRAWING FOR ADDITIONAL DEMOLITION NOTES AND REQUIREMENTS.
2. DEMOLISH TOP 15 INCH OF COLUMN WITH HANDHELD JACK HAMMER. DO NOT CUT OR DAMAGE THE EXISTING COLUMN REBARS.
3. DEMOLISH THIS PORTION OF THE WALKWAY SLAB WITH HAND HELD JACK HAMMER. NO SAW CUT ALLOWED. DO NOT DAMAGE THE EXISTING REBAR DURING THE DEMOLITION PROCESS AND PRESERVE THE EXISTING WALL, BEAM REBARS.
4. DEMOLITION WITHIN THIS AREA IS PERMITTED EXCLUSIVELY THROUGH THE USE OF A HANDHELD JACKHAMMER. PRESERVE THE COLUMN VERTICAL REBARS.

**A PLAN**  
 SCALE: 1/8"=1'-0"  
 FILE: 20028400DS101

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KMD  
 DATE  
DECEMBER 2023



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 Contact Info: Carollo Engineers, Inc.  
 Date: 2023.12.06 14:52:54 -0500  
*Tuani Samsudeen*



BROWNSVILLE PUBLIC UTILITIES BOARD  
 FLOCCULATION TRAIN STRUCTURAL IMPROVEMENTS  
 DEMOLITION  
 DEMOLITION PLAN

VERIFY SCALES  
 BAR IS ONE INCH ON ORIGINAL DRAWING  
 0 1"  
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.  
202284  
 DRAWING NO.  
00DS01  
 SHEET NO.  
5 OF 14

Plot Date: 5-DEC-2023 2:53:03 PM

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PlotScale: 1:1

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo\_Sig\_Pen\_v0905.pen

LAST SAVED BY: eraciff

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**GENERAL NOTES:**

- USE STRUCTURAL DRAWINGS IN CONJUNCTION WITH PROJECT DRAWINGS BY OTHER DISCIPLINES AND WITH THE SPECIFICATIONS.
- UNLESS DETAILED, SPECIFIED, OR INDICATED OTHERWISE, CONSTRUCTION SHALL BE AS INDICATED IN THE GENERAL NOTES AND TYPICAL DETAILS.
- PRESENTATION CONVENTIONS FOR STRUCTURAL DRAWINGS:
  - SCREENED LINE WORK INDICATES EXISTING CONDITIONS.
  - WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED SIZES.
  - PLANS ARE TREATED AS HORIZONTAL SECTIONS. (I.E.: "PLAN AT ELEVATION 110" SHOWS CONSTRUCTION AT AND BELOW ELEVATION 110.)
- VERIFY DIMENSIONS AND CONDITIONS BEFORE BEGINNING WORK. ADVISE ENGINEER IMMEDIATELY OF DISCREPANCIES BETWEEN EXISTING CONDITIONS AND DIMENSIONS, AND INFORMATION SHOWN ON THESE DRAWINGS. CONFIRM THE FOLLOWING BEFORE PREPARATION AND SUBMITTAL OF SHOP DRAWINGS:
  - DIMENSIONS AND WEIGHTS FOR EQUIPMENT SELECTED.
  - SIZES AND LOCATIONS OF EQUIPMENT PADS FOR EQUIPMENT SELECTED.
- TYPICAL DETAILS ARE INCLUDED ON THE "TS" DRAWINGS.
  - TYPICAL DETAILS ARE INTENDED TO APPLY AT LOCATIONS DESCRIBED BY THEIR TITLES, EVEN WHEN NOT SPECIFICALLY REFERENCED ON THE DRAWINGS.
  - IN STRUCTURAL TYPICAL DETAILS, ORIENTATION OF BARS IN EACH MAT OF REINFORCEMENT (WHETHER "LINES" OR "DOTS" ARE CLOSER TO THE FACE OF THE CONCRETE) IS GENERALLY ARBITRARY. SEE DRAWINGS OF EACH STRUCTURE FOR ORIENTATION REQUIRED AT THAT STRUCTURE.
- SEE CIVIL DRAWINGS FOR STRUCTURE COORDINATES. POINTS ON THE STRUCTURES TO WHICH SITE COORDINATES REFER ARE SHOWN ON THE STRUCTURAL PLANS.
- DRAWINGS PREPARED BY OTHER DISCIPLINES INCLUDE OPENINGS, ANCHORS, PIPES, CONDUITS, AND OTHER ITEMS THAT ARE EMBEDDED INTO OR PASS THROUGH STRUCTURES.
  - CONFIRM SIZE AND LOCATIONS OF OPENINGS, PENETRATIONS AND EMBEDMENT FOR ITEMS AND EQUIPMENT FURNISHED.
  - IN GENERAL, OPENINGS, EMBEDMENTS, AND PENETRATIONS LESS THAN 12 INCHES IN DIAMETER ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS.
  - SEE MECHANICAL DRAWINGS FOR DETAILS OF PIPE PENETRATIONS, PIPE SUPPORTS, AND ASSOCIATED STRUCTURAL REQUIREMENTS.
  - SEE MECHANICAL DRAWINGS FOR EQUIPMENT PADS AND PIPE SUPPORTS.
- SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND SIZES OF DOOR AND WINDOW OPENINGS.

**STRUCTURAL DESIGN CRITERIA - GENERAL:**

SEE DRAWINGS OF INDIVIDUAL STRUCTURES FOR SPECIFIC DESIGN CRITERIA BASED ON THESE OVERALL CRITERIA FOR THE SITE.

- BUILDING CODE:**
  - 2018 INTERNATIONAL BUILDING CODE ("IBC 2018") WITH ASCE 7-16.
- STRUCTURE RISK CATEGORY: SEE PLANS FOR EACH STRUCTURE.
- DEAD LOADS:** CALCULATED FOR STRUCTURE SELF-WEIGHT.
- LIVE LOADS: (REDUCTIONS NOT USED)**
  - FLOOR LIVE LOAD: SEE PLANS.
  - GRATING AND CHECKERED PLATE: 100 PSF (UNO).
  - ROOF LIVE LOAD: SEE PLANS (20 PSF MINIMUM).
- FLUID PRESSURE LOADS:** 63 PSF/FT (UNO).
- SNOW LOAD DATA:** NOT APPLICABLE
- WIND DESIGN DATA:**
  - SPECIAL WIND REGION: YES - HURRICANE
  - WIND-BORNE DEBRIS REGION: YES
  - BASIC WIND SPEED (3 SEC GUST, 33 FEET ABOVE GROUND): 161 MPH.
- EARTHQUAKE DESIGN DATA:**

A. SITE CLASS: D	0.2 SECOND	*1.0 SECOND
B. MAPPED SPECTRAL RESPONSE ACCELERATIONS:	S <sub>s</sub> = 0.043 g	S <sub>1</sub> = 0.011 g
C. SITE COEFFICIENTS:	F <sub>a</sub> = 1.6	F <sub>v</sub> = 2.4
D. MAXIMUM CONSIDERED ACCELERATIONS:*	S <sub>ms</sub> = 0.058 g	S <sub>m1</sub> = 0.023 g
E. DESIGN SPECTRAL RESPONSE ACCELERATIONS:*	S <sub>ds</sub> = 0.038 g	S <sub>d1</sub> = 0.015 g
	(* 5% DAMPED)	
- RAIN LOADS:**
  - DESIGN RAINFALL INTENSITY: i = 11.1 INCHES / HOUR. (100 YEAR/1 HOUR EVENT)
- ICE LOADS:**
  - NOMINAL UNIFORM ICE THICKNESS W/ 3-SECOND WIND GUST: 0.60 INCHES / 30 MPH.
  - ICE DENSITY FOR CALCULATING ICE WEIGHT: 56 PCF (MIN)
- CONSTRUCTION LOADS:** STRUCTURES HAVE BEEN DESIGNED FOR OPERATING LOADS ON COMPLETED FACILITIES. UNTIL CONSTRUCTION IS COMPLETE AND MEMBERS HAVE ACHIEVED THEIR DESIGN STRENGTH, PROTECT STRUCTURES AS REQUIRED BY SHORING, BRACING, AND BALANCING.

**GEOTECHNICAL REPORT / FOUNDATION DESIGN CRITERIA:**

- GEOTECHNICAL INVESTIGATION REPORT: NOT APPLICABLE
- TYPICAL STRUCTURAL MATERIALS:**
  - MATERIALS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
  - SEE PROJECT SPECIFICATIONS AND NOTES ON DRAWINGS OF SPECIFIC STRUCTURES FOR DETAILED AND LOCATION-SPECIFIC REQUIREMENTS.
- REINFORCING STEEL (FOR CONCRETE AND MASONRY):**
  - DEFORMED BARS:
    - TYPICAL: ASTM A 615, GRADE 60.
    - WHERE INDICATED ON THE DRAWINGS: ASTM A 706.
  - WELDED WIRE FABRIC: ASTM A 1064.
- CONCRETE:**
  - NORMAL DENSITY.
  - MINIMUM SPECIFIED CONCRETE COMPRESSIVE STRENGTH, f<sub>c</sub> (AT 28 DAYS UNO).
    - STRUCTURES: "CLASS A" = 4500 PSI.
- STRUCTURAL STEEL:**
  - SECTIONS
    - SHAPES W, WT: ASTM A 992 (F<sub>y</sub> = 50 KSI)
    - SHAPES S, ST, M, MT, HP, C, MC, L: ASTM A 36 (F<sub>y</sub> = 36 KSI)
    - PLATES AND BARS: ASTM A 36 (F<sub>y</sub> = 36 KSI)
    - PIPES: ASTM A 53, GRADE B (F<sub>y</sub> = 35 KSI)
    - HOLLOW STRUCTURAL SECTIONS:
      - ROUND: ASTM A 500, GRADE B (F<sub>y</sub> = 42 KSI)
      - SQUARE AND RECTANGULAR: ASTM A 500, GRADE B (F<sub>y</sub> = 46 KSI)
  - CONNECTIONS:
    - BOLTS - STEEL TO-STEEL:
      - ASTM F 3125 GRADE A325 HIGH-STRENGTH BOLTS, WITH LOAD INDICATOR WASHERS.
    - BOLTS - STEEL TO CONCRETE OR MASONRY:
      - ANCHOR BOLTS WITH HEX FORGED HEAD. ASTM F 593, STAINLESS TYPE 316 (304)
      - ASTM F 1554, GRADE 36 GALVANIZED.
    - WELDS - SHIELDED METAL ARC PROCESS USING E70-XX ELECTRODES.
  - STAINLESS STEEL:
    - ANSI TYPE 316/316L EXCEPT WHERE TYPE 304/304L IS INDICATED ON THE DRAWINGS.
    - SECTIONS: SHAPES AND BARS: ASTM A 276.
    - BOLTED CONNECTIONS - BOLTS AND ANCHOR BOLTS:
      - MATCH ALLOY OF THE STRUCTURAL MEMBERS CONNECTED.
      - TYPE 316/316L: ASTM F 593, GRADE B8M, CLASS 1, HEAVY HEX.
      - TYPE 304/304L: ASTM F 593, GRADE B8, CLASS 1, HEAVY HEX.
    - WELDED CONNECTIONS:
      - TYPE 316L: E316L-15 ELECTRODES.
      - TYPE 304L: E304L-15 ELECTRODES.
  - STRUCTURAL ALUMINUM:
    - SECTIONS
      - SHAPES: ASTM B 308, ALLOY 6061-T6.
      - SHEET AND PLATE: ASTM B 209, ALLOY 6061-T6.
    - BOLTED CONNECTIONS - BOLTS AND ANCHOR BOLTS:
      - STAINLESS STEEL - TYPE 316, ASTM F 593, GRADE B8M, CLASS 1, HEAVY HEX.
    - WELDED CONNECTIONS:
      - GAS METAL ARC (MIG) OR GAS TUNGSTEN ARC (TIG) PROCESS USING FILLER ALLOY 4043 ELECTRODES.

**CONSTRUCTION:**

- CONFORM TO THE FOLLOWING REQUIREMENTS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- EXCAVATION AND BACKFILLING:** NOT APPLICABLE
- CONCRETE:**
- SEE S101/TYP FOR CONCRETE NOTES, INCLUDING CLEAR COVER AND LAP SPlice LENGTH REQUIREMENTS FOR REINFORCING.
  - SUBMIT LOCATIONS OF CONSTRUCTION JOINTS NOT SHOWN ON THE DRAWINGS FOR ACCEPTANCE BY THE ENGINEER BEFORE FORM LAYOUT.
  - PROVIDE CHAMFER AT EXPOSED EDGES OF CAST-IN-PLACE CONCRETE. SEE SPECIFICATION 03102 FOR CHAMFERS.
  - PROVIDE REINFORCING:
    - AT CORNERS AND JUNCTIONS - AS INDICATED IN S144/TYP, SUPPLEMENT WITH ADDED BARS WHERE INDICATED ON THE DRAWINGS.
    - AT OPENINGS - AS INDICATED IN S180/TYP.
  - WELDING OF REINFORCING IS NOT PERMITTED UNLESS DETAILED ON THE DRAWINGS OR ACCEPTED IN ADVANCE BY THE ENGINEER.
  - MAINTAIN MINIMUM 3 INCHES CLEAR CONCRETE COVER BETWEEN REINFORCING AND EMBEDMENTS.
  - FINISH CONCRETE AS SPECIFIED IN SECTION 03366.
  - CONCRETE PADS
    - EQUIPMENT PAD SEE S302/TYP.
- STEEL, STAINLESS STEEL, AND ALUMINUM - CONNECTIONS:**
- BOLTED:
    - MADE USING 3/4-INCH DIAMETER BOLTS.
    - HAVING A MINIMUM OF 2 BOLTS, SPACED NOT CLOSER THAN 3 INCHES ON CENTER.
    - WITH A DISTANCE OF AT LEAST 1 1/2 INCHES FROM CENTER OF BOLT TO ANY EDGE OF A PLATE OR STRUCTURAL ELEMENT.
  - WELDED:
    - FILLET WELDS: PER AWS CODE BASED ON THE THICKNESS OF THE MATERIALS BEING JOINED, AND FULL LENGTH OF THE JOINT.
  - INTERFACE BETWEEN MATERIALS:
    - AT BOLTED CONNECTIONS THAT INCLUDE DIFFERENT METALS (E.G.: STEEL AND STAINLESS STEEL, OR ALUMINUM AND STEEL) PROVIDE ISOLATING SLEEVES AND WASHERS AS SPECIFIED IN SECTION 05190.
    - WHERE ALUMINUM IS IN CONTACT WITH MASONRY OR CONCRETE, COAT ALUMINUM SURFACES AS SPECIFIED IN SECTION 09960.
  - POST-INSTALLED ANCHORS IN CONCRETE:
    - INSTALL IN FULL COMPLIANCE WITH ACCEPTED BUILDING CODE EVALUATION REPORT AND MANUFACTURER'S INSTRUCTIONS.
    - DO NOT CUT, DAMAGE, OR INTERRUPT EXISTING REINFORCEMENT TO INSTALL ANCHORS. USE NON-DESTRUCTIVE TESTING EQUIPMENT TO IDENTIFY LOCATIONS OF REINFORCEMENT IN MEMBERS BEFORE DRILLING HOLES FOR ANCHORS.

**METAL FABRICATIONS:**

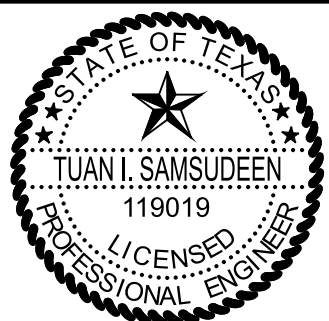
- HANDRAILS AND GUARDRAILS:
    - ALUMINUM, EXCEPT WHERE OTHER MATERIALS ARE NOTED.
  - GRATING:
    - ALUMINUM WITH TYPE 316 STAINLESS STEEL FASTENERS, UNLESS OTHERWISE NOTED.
    - GRATING AND ITS SEATS OR SUPPORTS SHALL BE OF THE SAME MATERIAL.
    - UNLESS INDICATED ON THE DRAWINGS AS "REMOVABLE GRATING", SECURELY FASTEN GRATING TO SUPPORTS AS INDICATED IN S559/TYP.
- SPECIAL INSPECTION:**
- SPECIAL INSPECTION IS REQUIRED FOR THE FOLLOWING STRUCTURAL MATERIALS AND CONSTRUCTION. SEE SPECIFICATION SECTION 01455 FOR DETAILS.
  - DIVISION 3 CONCRETE:
    - LOCATIONS.
    - FORMWORK AND MEMBER SIZES.
    - REINFORCING STEEL.
    - ANCHORS: CAST-IN AND POST-INSTALLED.
    - CONCRETE MIX AND PLACEMENT.
    - PROTECTION AND CURING PROCEDURES.
  - DIVISION 5 METALS
    - GENERAL ALL METALS:
      - MEMBER LOCATIONS.
      - MEMBER SIZES/TYPES.
      - ANCHORS - CAST-IN AND BUILT-IN ANCHOR BOLTS.
      - ANCHORS - POST-INSTALLED MECHANICAL AND ADHESIVE.
    - STRUCTURAL STEEL (CARBON AND STAINLESS).
      - HIGH-STRENGTH BOLTING.
      - WELDING.
    - STRUCTURAL ALUMINUM.
      - BOLTING.
      - WELDING.
- STRUCTURAL OBSERVATION:**
- STRUCTURAL OBSERVATION IS REQUIRED DURING AND AT SPECIFIC STAGES OF CONSTRUCTION. SEE SPECIFICATION SECTION 01455 (01\_45\_24) FOR DETAILS.

**STRUCTURAL SYMBOLS:**

- SEE DRAWING 00G03 FOR KEY TO DRAWING TITLES AND SECTION CUTS, AND FOR DEFINITION OF MATERIALS SHADING PATTERNS.
  - WELDING: SYMBOLS: IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS) A2.4.
- STRUCTURAL ABBREVIATIONS:**
- SEE DRAWING 00G04 FOR GENERAL LIST OF ABBREVIATIONS USED ON DRAWINGS.
  - ABBREVIATIONS FOR NAMES OF TECHNICAL GROUPS MAY BE FOUND IN THE PROJECT SPECIFICATIONS.
  - STRUCTURAL MEMBERS:
    - STEEL: ABBREVIATIONS AND DESIGNATIONS ARE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION'S STEEL CONSTRUCTION MANUAL, CURRENT EDITION.
    - ALUMINUM: ABBREVIATIONS AND DESIGNATIONS ARE IN ACCORDANCE WITH THE ALUMINUM ASSOCIATION'S ALUMINUM DESIGN MANUAL, CURRENT EDITION.
- DEFERRED DESIGN SUBMITTALS**
- AS DEFINED IN THE BUILDING CODE, DEFERRED DESIGN SUBMITTALS ARE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION, AND THAT ARE TO BE REVIEWED BY THE REGISTERED DESIGN PROFESSIONAL AND SUBSEQUENTLY SUBMITTED TO THE BUILDING OFFICIAL.
- DEFERRED DESIGN SUBMITTALS FOR THIS PROJECT INCLUDE:
- DIVISION 3 CONCRETE.
    - 03300 PARAGRAPH 2.06
  - DIVISION 5 METALS.
    - 05500 HANDRAILS AND GUARDRAILS.
  - LIFTING EYES: SUBMIT DETAILS WITH CALCULATIONS DEMONSTRATING THE SPECIFIED LOAD CAPACITY TO ENGINEER. DELIVER REMOVABLE EYES TO OWNER AFTER INSTALLATION OF REMOVABLE PANELS.

REV	DATE	BY	DESCRIPTION

DESIGNED	CE
DRAWN	CE
CHECKED	KMD
DATE	DECEMBER 2023



Digitally signed by Tuani I. Samsudeen  
 Contact Info: Carollo Engineers, Inc.  
 Date: 2023.12.16 14:31:14 -0500  
*Tuani Samsudeen*



TBPELS No. F-882



BROWNSVILLE PUBLIC UTILITIES BOARD  
 FLOCCULATION TRAIN STRUCTURAL IMPROVEMENTS  
 STRUCTURAL  
 GENERAL STRUCTURAL NOTES

VERIFY SCALES	JOB NO. 202284
BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO. 00GS01
0 1" SCALE	SHEET NO. 6 OF 14
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	