

CITY OF HOUSTON MAYOR:
SYLVESTER TURNER

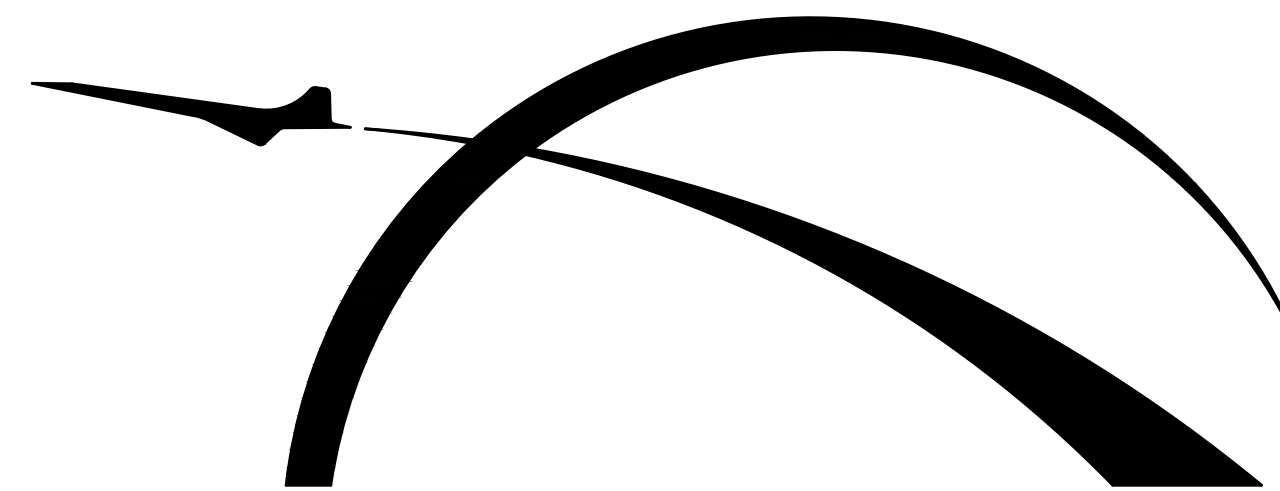
CITY OF HOUSTON CONTROLLER:
CHRIS B. BROWN

CITY COUNCIL MEMBERS:

- DISTRICT A - AMY PECK
- DISTRICT B - TARSHA JACKSON
- DISTRICT C - ABBIE KAMIN
- DISTRICT D - CAROLYN EVANS SHABAZZ
- DISTRICT E - DAVE MARTIN
- DISTRICT F - TIFFANY D. THOMAS
- DISTRICT G - MARY NAN HUFFMAN
- DISTRICT H - KARLA CISNEROS
- DISTRICT I - ROBERT GALLEGOS
- DISTRICT J - EDWARD POLLARD
- DISTRICT K - MARTHA CASTER-TATUM

CITY COUNCIL MEMBERS AT LARGE:

- AT LARGE POSITION 1 - MIKE KNOX
- AT LARGE POSITION 2 - DAVID ROBINSON
- AT LARGE POSITION 3- MICHAEL KUBOSH
- AT LARGE POSITION 4 - LATITIA PLUMMER
- AT LARGE POSITION 5 - SALLIE ALCORN



HOUSTON AIRPORT SYSTEM

PLANS FOR CONSTRUCTION
OF

IAH TERMINAL C HELIX RAMP BEARING AND MISC REPAIRS

AT

GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON

ISSUED FOR CONSTRUCTION 05/08/2023

HAS PROJECT NO: PN235A

TIP-20-187-IAH BSG-2020-181-IAH

LOA 925A-002

MWA 19-21


HOUSTON AIRPORT SYSTEM
DIRECTOR - MARIO C DIAZ



TERMINAL C AT IAH - 2800 N TERMINAL RD
HOUSTON, TX 77032

**IAH TERMINAL C HELIX RAMP BEARING
AND MISC REPAIRS**

C.I.P. No.	A.I.P. No.
C.O.H. No.	D.O.A No.



MWA ARCHITECTS

11767 KATY FREEWAY, SUITE 430
HOUSTON, TEXAS 77024-2338

ISSUED FOR CONSTRUCTION 05/08/2023

DESIGNER PROJECT No.: 19-21
PROJECT STATUS: ISSUED FOR CONSTRUCTION

REVISIONS

No.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW 11/16/2022		J TOHILL
B	ISSUED FOR PERMIT 12/15/2022		J TOHILL
C	ISSUED FOR BID 01/20/2023		J TOHILL
D	ISSUED FOR CONSTRUCTION 03/28/2023		J TOHILL

DESIGNER: J TOHILL
 DRAWN BY: J TOHILL
 CHECKED BY: TBD
 ISSUE DATE: 05/08/2023
 APPROVED BY:
 APPROVAL DATE:

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category

IFR

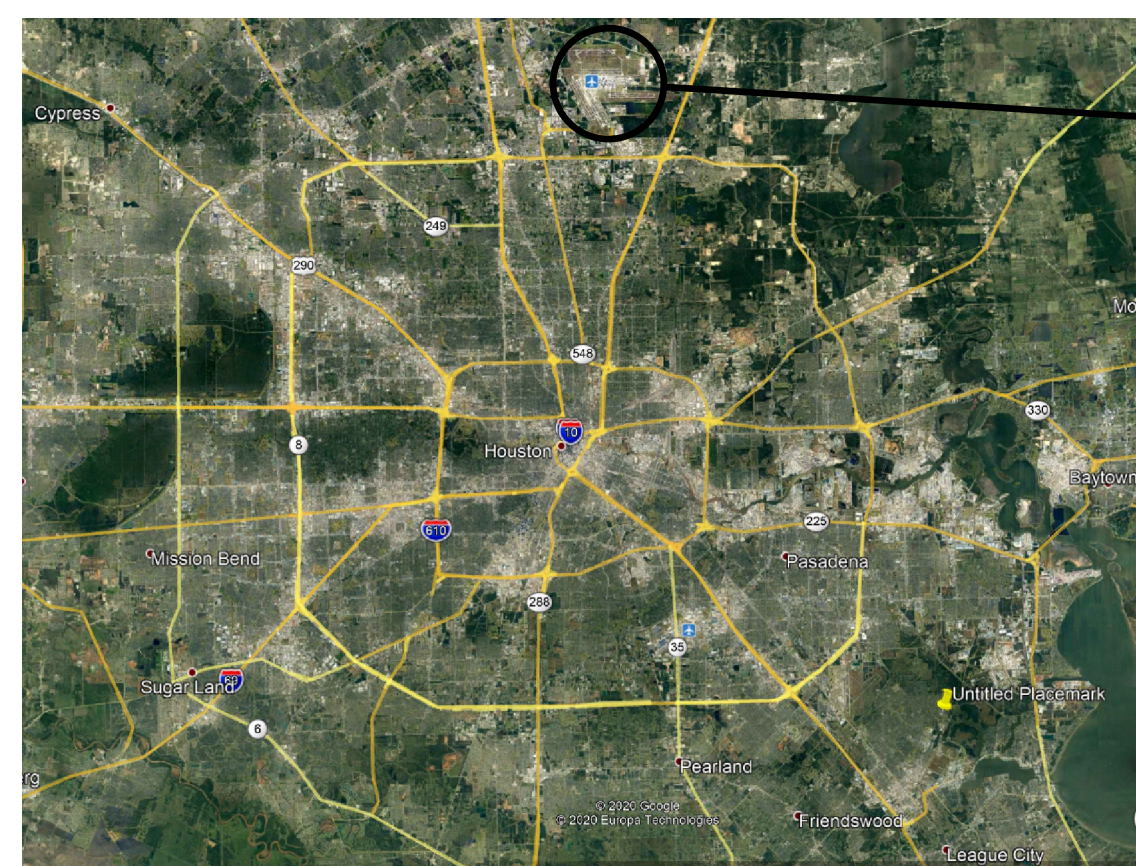
ISSUED FOR REVIEW

Noe Almaguer
Tx. REG. NO. 22651
DATE: May 9, 2023

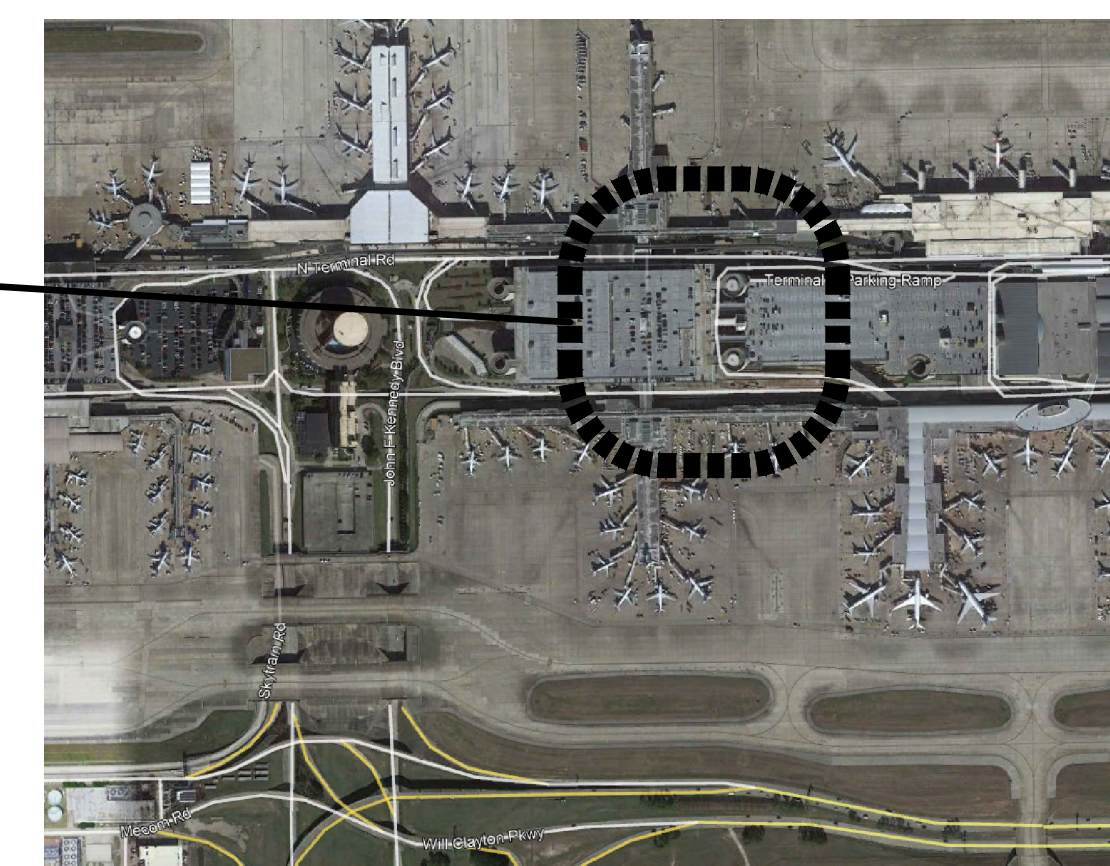
FOR
INTERIM REVIEW
AND NOT INTENDED
FOR CONSTRUCTION,
BIDDING OR PERMIT
PURPOSES.

SHEET NAME: COVERSHEET

SHEET No. **G0-100** SCALE:



AREA MAP



VICINITY MAP

ARCHITECT:
MWA ARCHITECTS

11767 KATY FREEWAY, STE. 430
HOUSTON, TX 77079
713.482.2329

STRUCTURAL ENGINEER:
HENDERSON RODGERS
ENGINEERS, L.P.

5599 SAN FELIPE, SUITE 1425.
HOUSTON, TX 77056
713.430.5800

PLUMBING ENGINEER:
JONES ENGINEERS, L.P.

9820 WHITHORN DR.
HOUSTON, TX 77095
713.222.7766

TRAFFIC ENGINEER:
SP ENGINEERS, INC.

4418 BLUEBONNET DR SUITE 406.
STAFFORD, TX 77477
832.8672522

SHEET SIZE: 22"x34" ANSI-D

F:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\G0-100 COVERSHEET.DWG

FILE NAME:

PLOT DATE: 24 July 2023 8:01:59 PM
OLD DWA No. :
DOA DWG FILE:

REVISIONS			
No.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW 11/16/2022		J TOHILL
1	ISSUED FOR BID 01/20/2023		J TOHILL

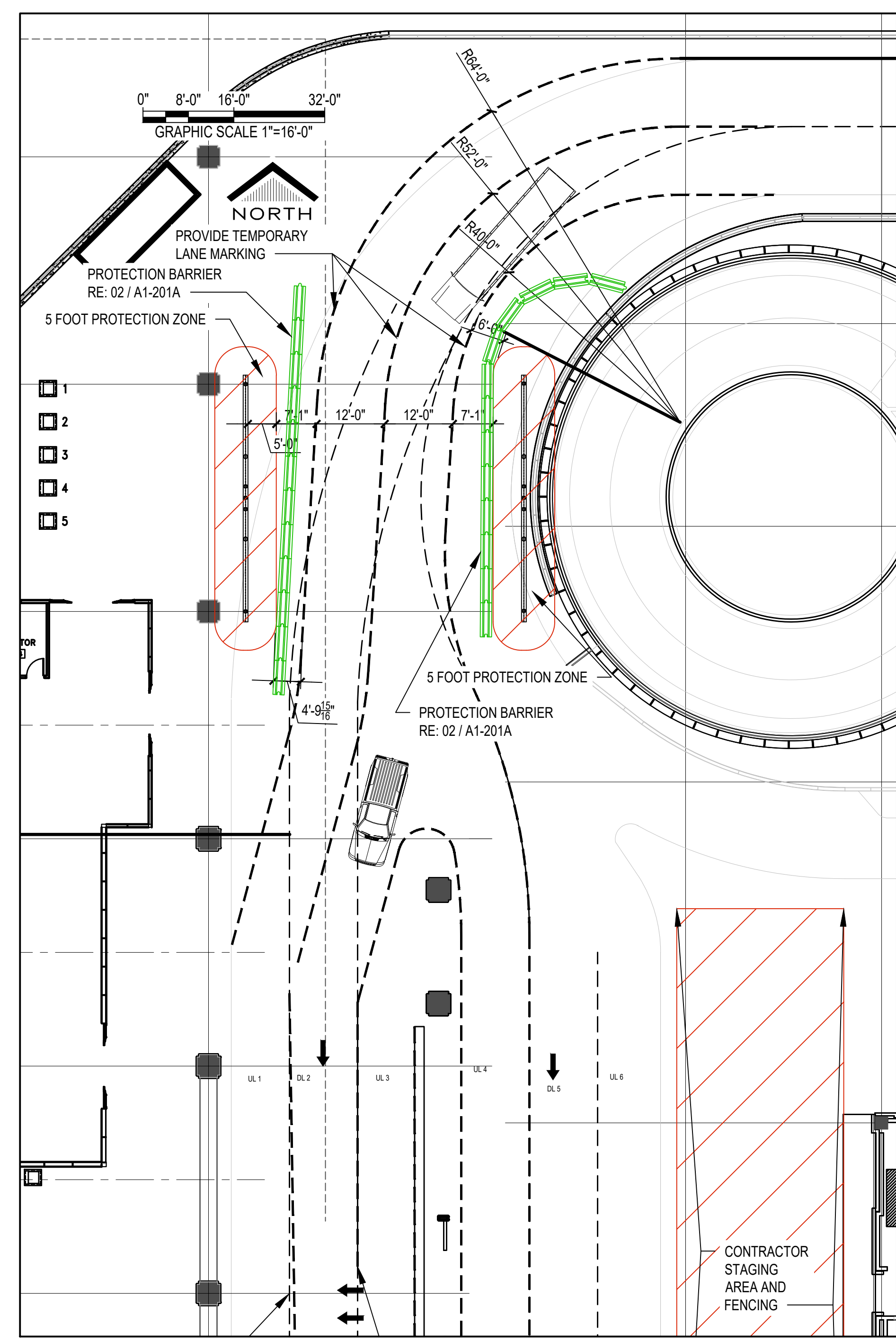
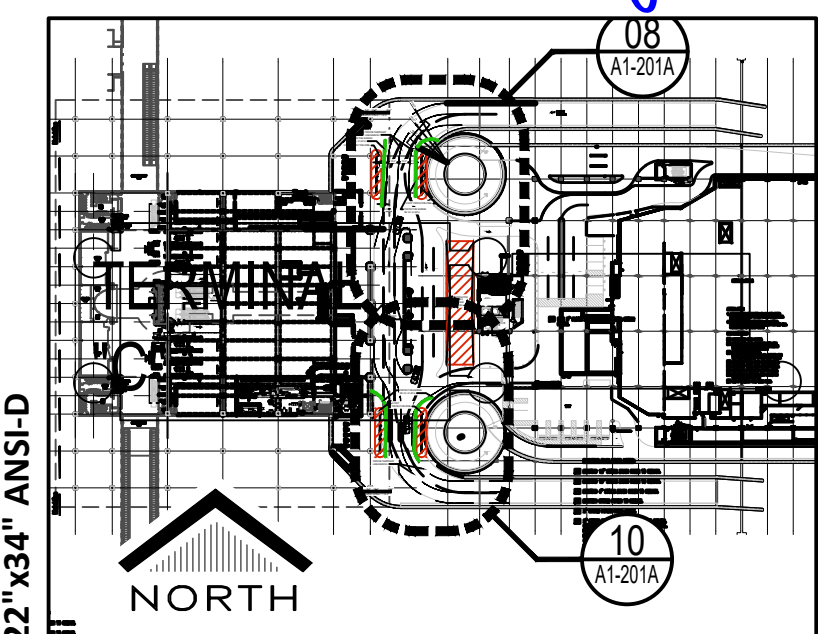
DESIGNER:	J TOHILL
DRAWN BY:	J TOHILL
CHECKED BY:	TBD
ISSUE DATE:	01/20/2023
APPROVED BY:	
APPROVAL DATE:	

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

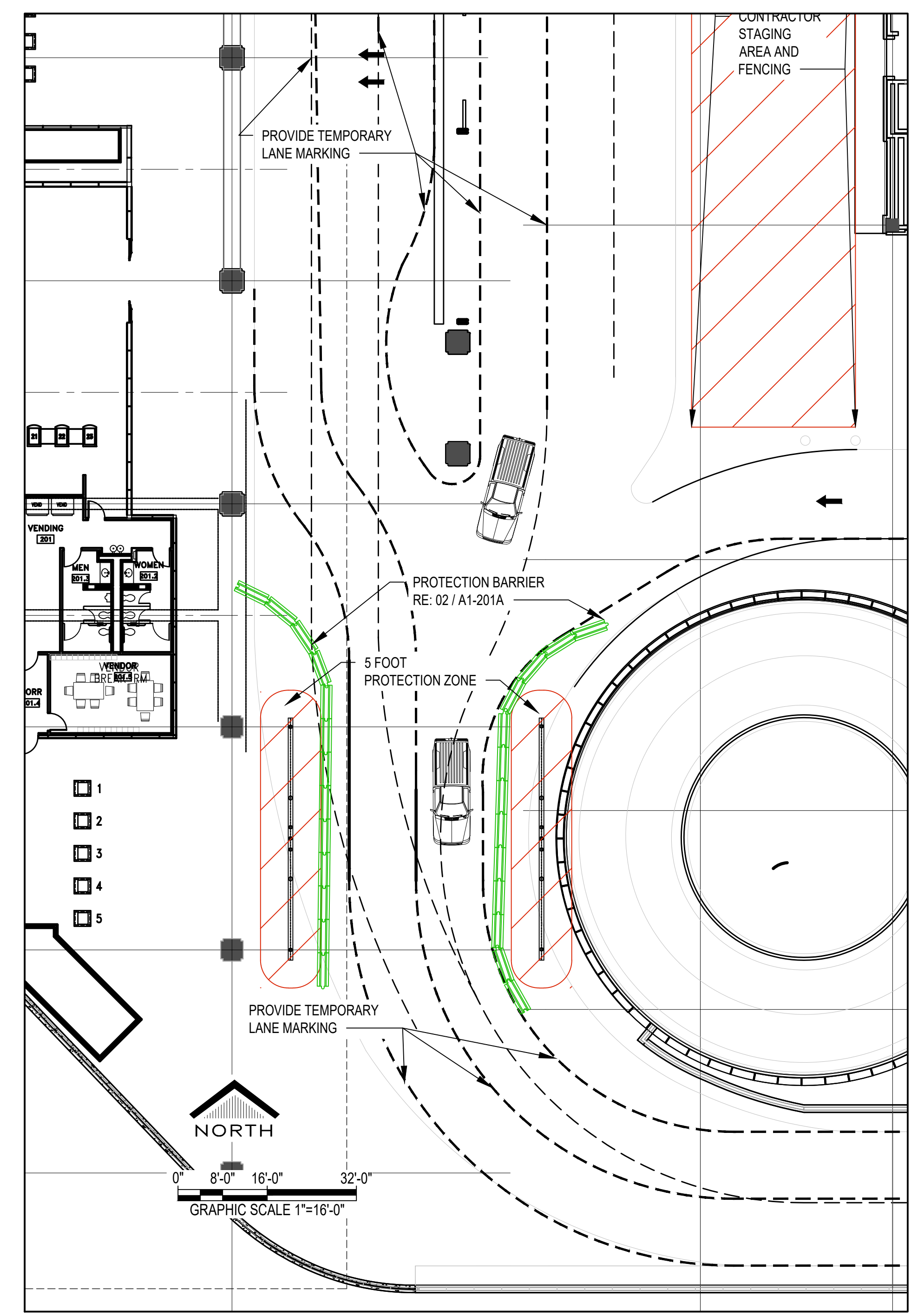
Review/ Approval Category

IFB

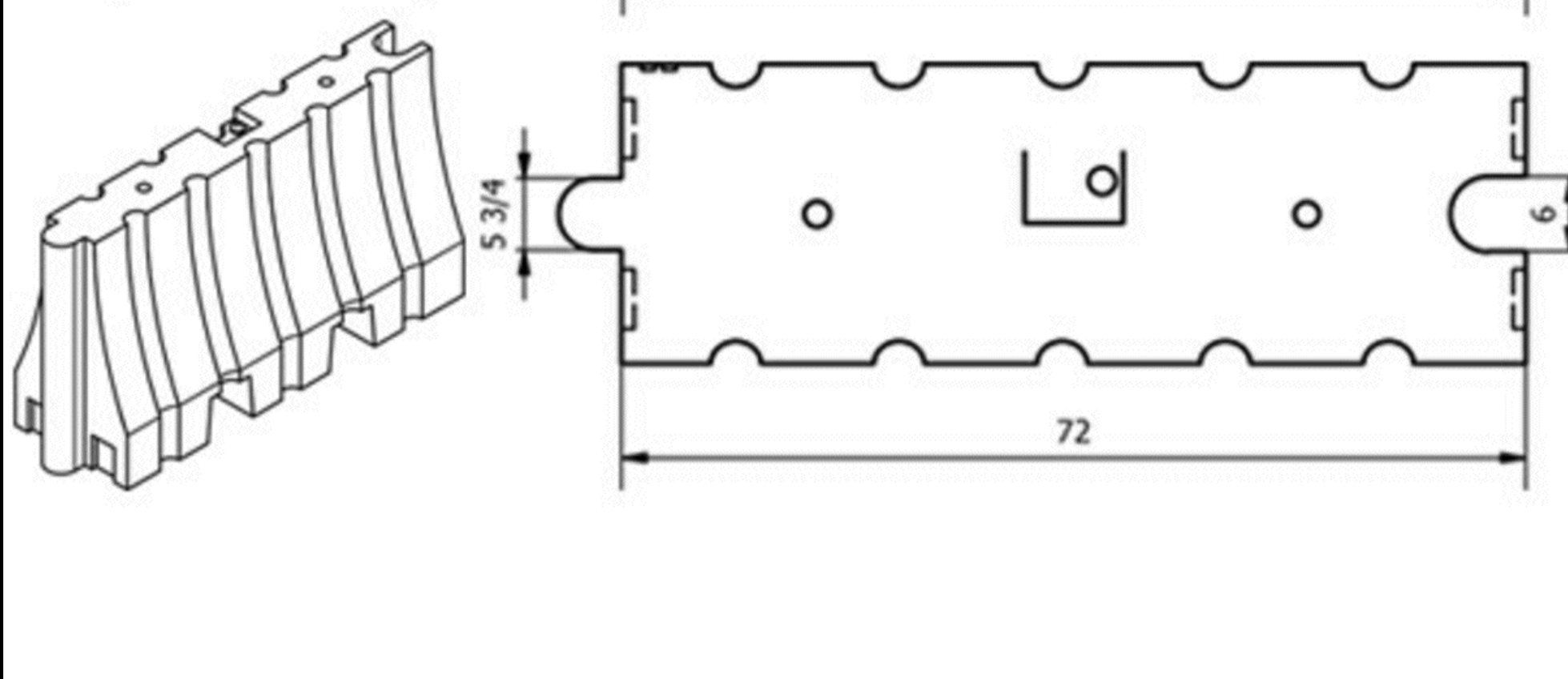
ISSUED FOR BID



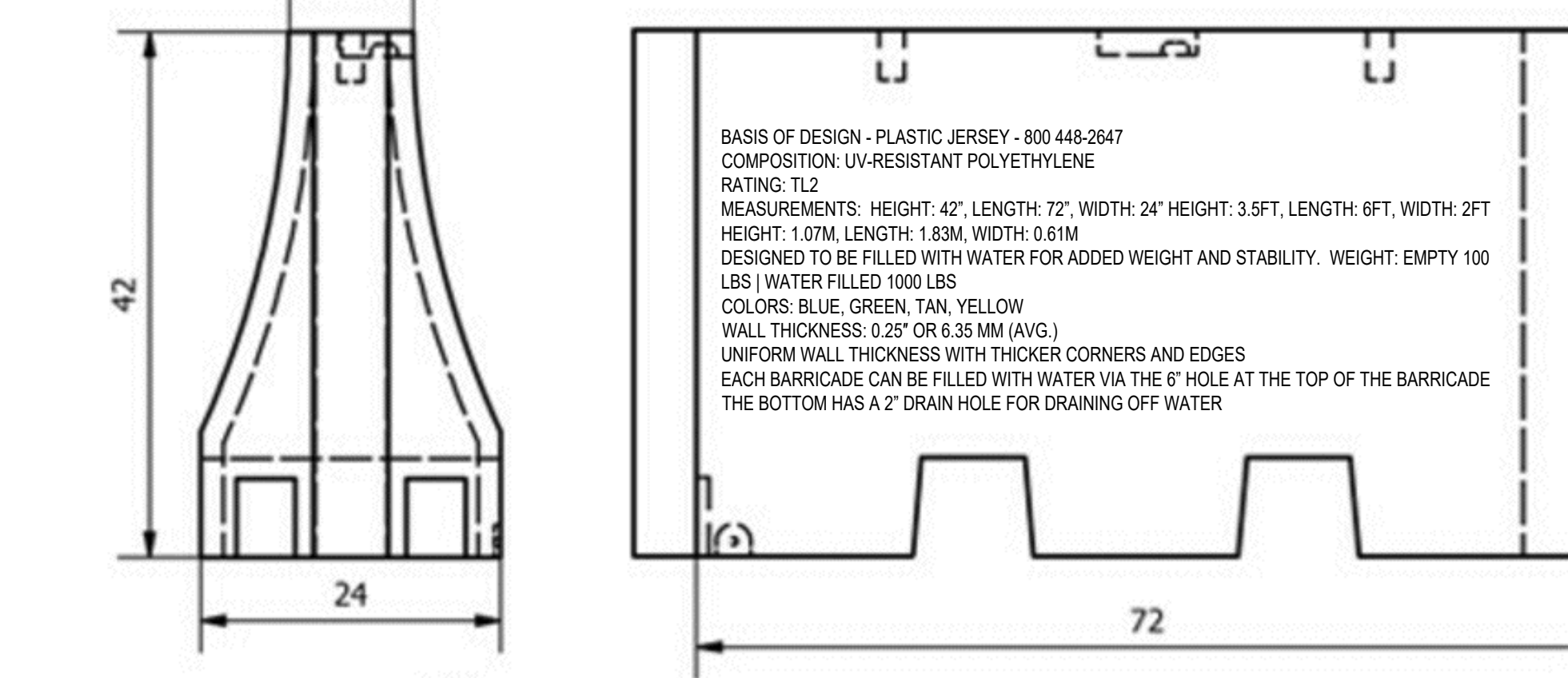
08 LEVEL 2 NORTHEAST RAMP PHASE 1
1/16" = 1'-0" XREF



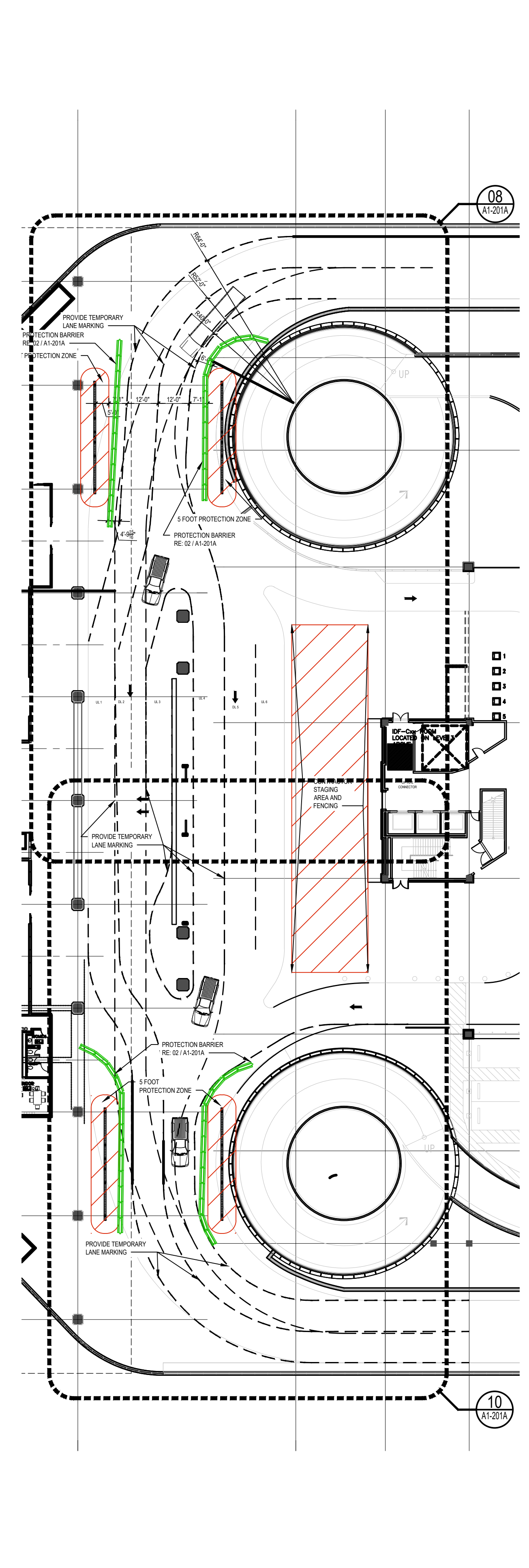
10 LEVEL 2 SOUTHEAST RAMP PHASE 2
1/16" = 1'-0" XREF



02 RRM SAFETY BARRICADES 72 IN X 42 IN WATER-FILLED BARRIER
1" = 1'-0"



BASIS OF DESIGN - PLASTIC JERSEY - 800 448-2647
COMPOSITION: UV-RESISTANT POLYETHYLENE
RATING: TL2
MEASUREMENTS: HEIGHT: 42", LENGTH: 72", WIDTH: 24" HEIGHT: 3.5FT, LENGTH: 6FT, WIDTH: 2FT
HEIGHT: 1.07M, LENGTH: 1.83M, WIDTH: 0.61M
DESIGNED TO BE FILLED WITH WATER FOR ADDED WEIGHT AND STABILITY. WEIGHT: EMPTY 100 LBS | WATER FILLED 1000 LBS
COLORS: BLUE, GREEN, TAN, YELLOW
WALL THICKNESS: 0.25" (OR 6.35 MM (AVG.))
UNIFORM WALL THICKNESS WITH THICKER CORNERS AND EDGES
EACH BARRICADE CAN BE FILLED WITH WATER VIA THE 6" HOLE AT THE TOP OF THE BARRICADE
THE BOTTOM HAS A 2" DRAIN HOLE FOR DRAINING OFF WATER



01 LEVEL 2
1" = 30"

E:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A1-201A LEVEL 2 CONSTRUCTION LAYDOWN AREA.DWG
 PLOT DATE: 25 January 2023 5:29:22 PM
 OLD DOA No.:
 DOA DWG FILE:

REVISIONS

No.	DESCRIPTION	DATE	BY
0	ISSUED FOR PERMIT	12/15/2022	J TOHILL
1	ISSUED FOR BID	01/20/2023	J TOHILL

DESIGNER: J TOHILL
DRAWN BY: J TOHILL
CHECKED BY: TBD
ISSUE DATE: 01/20/2023
APPROVED BY:
APPROVAL DATE:

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

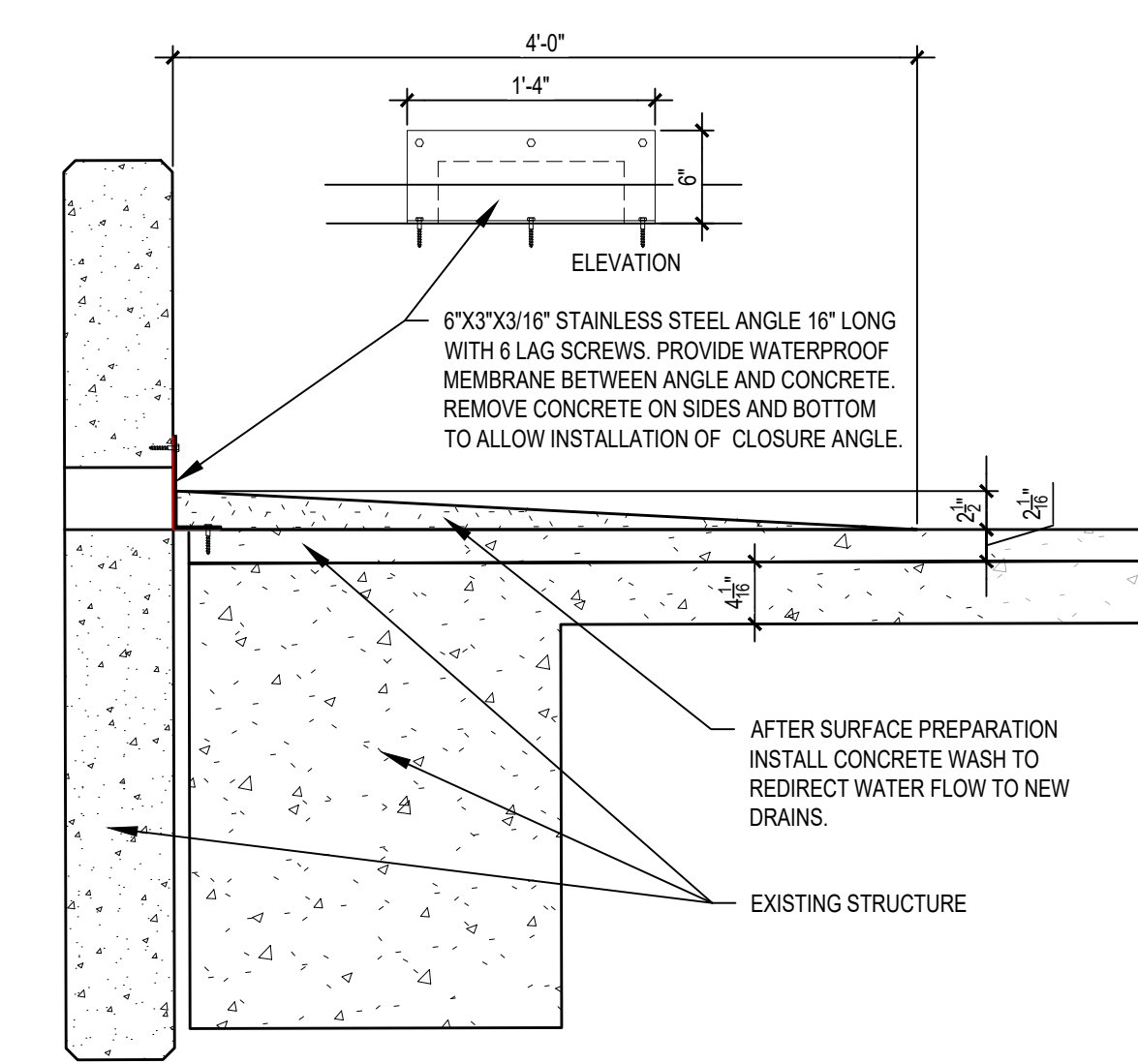
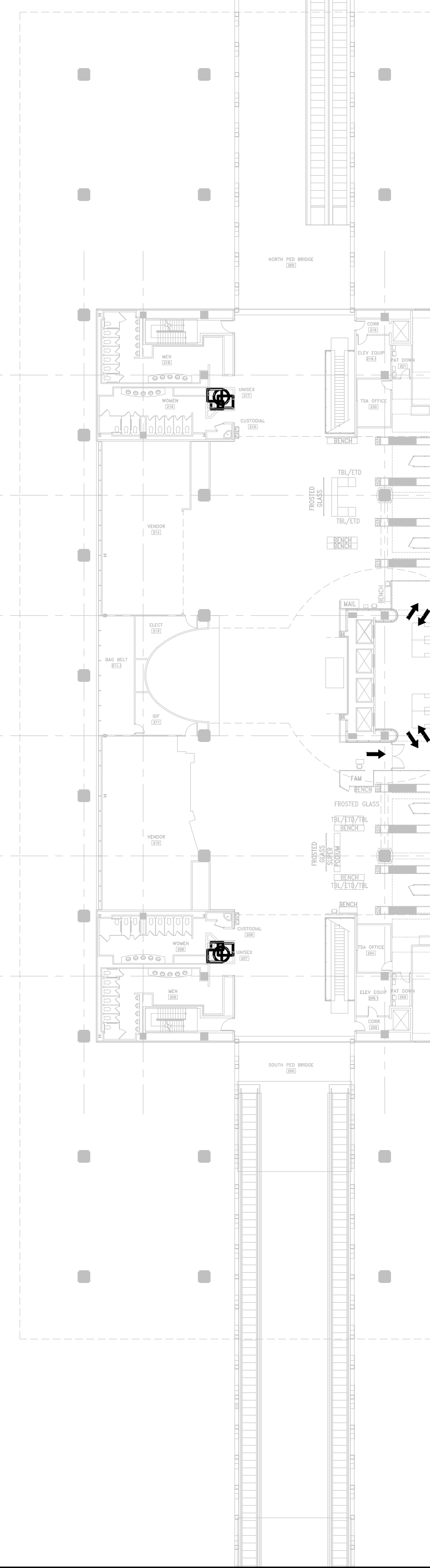
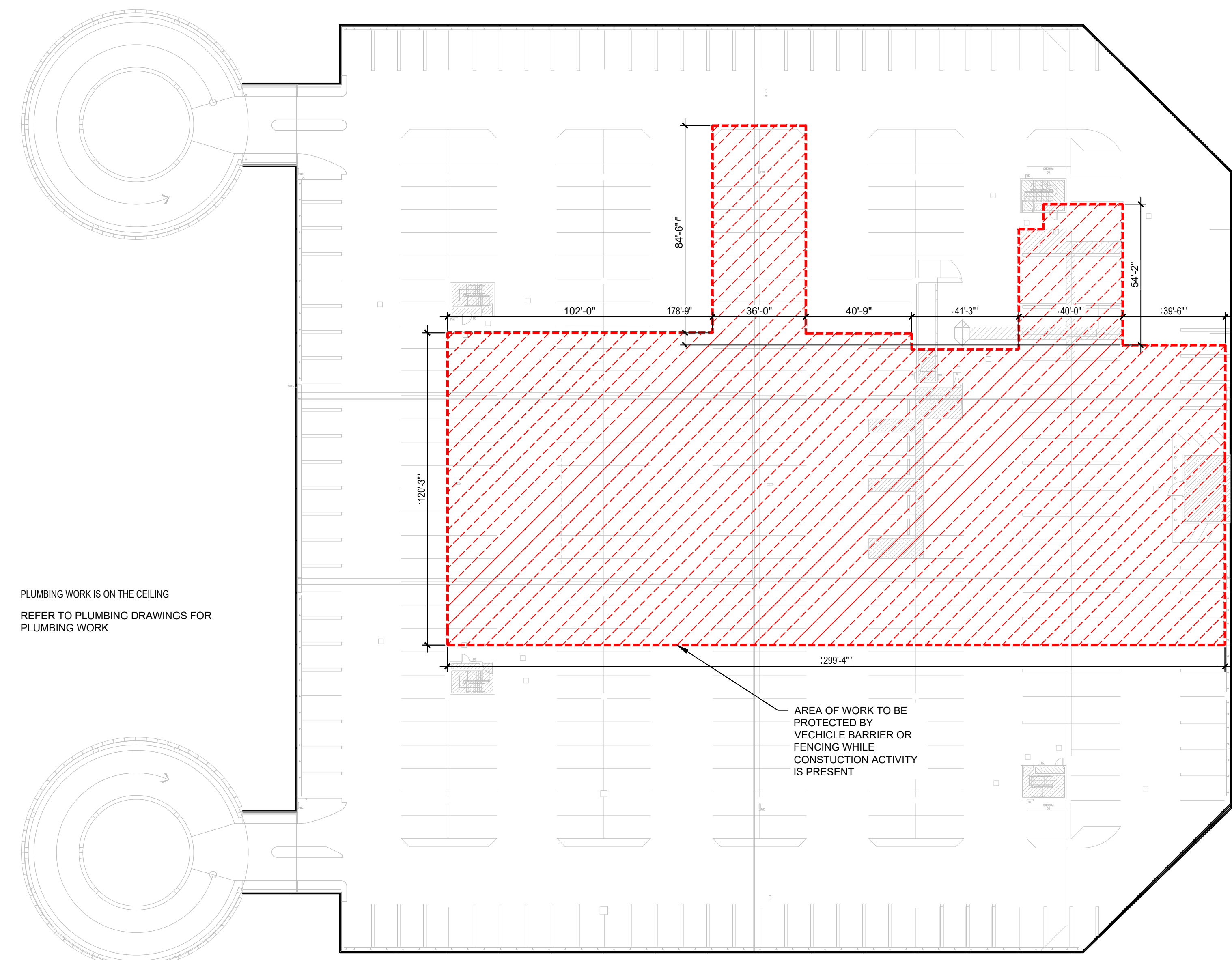
Review/ Approval Category

IFB

ISSUED FOR BID

TERMINAL "C"

SHEET NAME: IAH TERMINAL C GARAGE LEVEL 2 WEST SIDE FLOOR PLAN
SHEET No. A1-201B
SCALE: #####



E:\2019\19-21 HAS- IAH TC STRUCTURAL & PONDING\DWGS\A1-2018 IAH TERMINAL C GARAGE LEVEL 2 WEST SIDE FLOOR PLAN.DWG DT DATE: 25 January 2023 5:29:37 PM
 OLD DWA No.:
 DOA DWG FILE:

01 GARAGE TERMINAL C LEVEL 02 WEST SIDE FLOOR PLAN
1" = 30'-0"

02 CLOSURE OF EXISTING SCUPPER
1" = 1'-0"

SHEET SIZE: 22" X 34" ANSI-D

REVISIONS

No.	DESCRIPTION	DATE	BY
0	ISSUED FOR PERMIT 12/15/2022		J TOHILL
1	ISSUED FOR BID 01/20/2023		J TOHILL

DESIGNER: J TOHILL
DRAWN BY: J TOHILL
CHECKED BY: TBD
ISSUE DATE: 01/20/2023
APPROVED BY:
APPROVAL DATE:

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/Approval Category

IFB

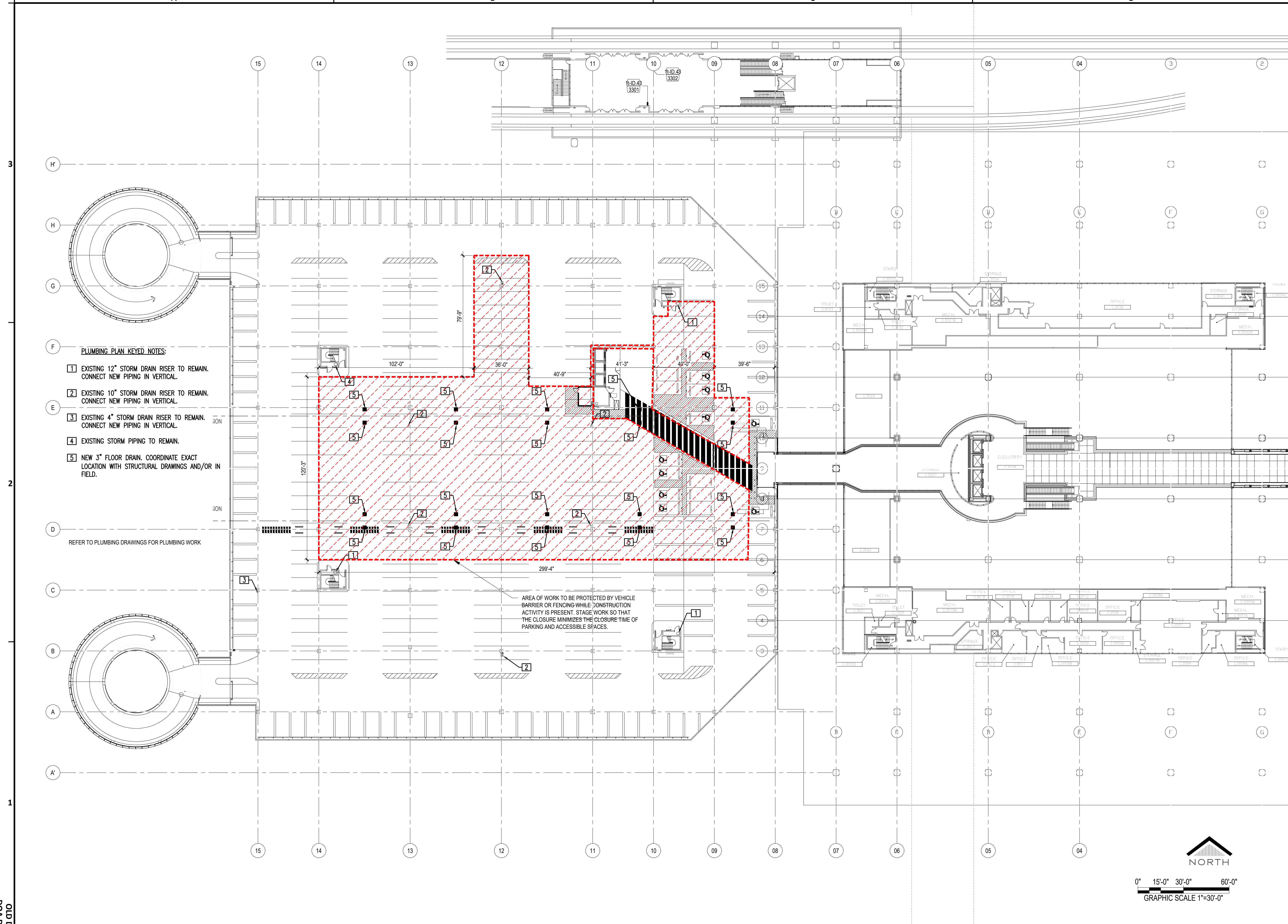
ISSUED FOR BID

TERMINAL "C"

SHEET NAME:
IAH TER C GARAGE LEVEL 3 WEST SIDE FLOOR PLAN

SHEET No. A1-301B

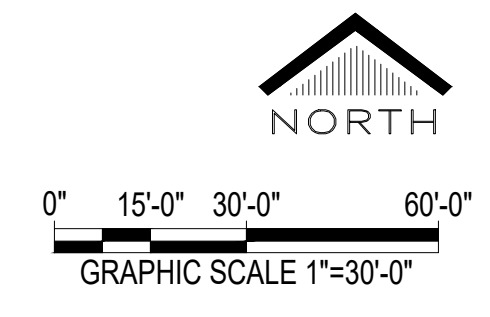
SCALE:



- PLUMBING PLAN KEYED NOTES:**
- EXISTING 12" STORM DRAIN RISER TO REMAIN. CONNECT NEW PIPING IN VERTICAL.
 - EXISTING 10" STORM DRAIN RISER TO REMAIN. CONNECT NEW PIPING IN VERTICAL.
 - EXISTING 4" STORM DRAIN RISER TO REMAIN. CONNECT NEW PIPING IN VERTICAL.
 - EXISTING STORM PIPING TO REMAIN.
 - NEW 3" FLOOR DRAIN. COORDINATE EXACT LOCATION WITH STRUCTURAL DRAWINGS AND/OR IN FIELD.

REFER TO PLUMBING DRAWINGS FOR PLUMBING WORK

AREA OF WORK TO BE PROTECTED BY VEHICLE BARRIER OR FENCING WHILE CONSTRUCTION ACTIVITY IS PRESENT. STAGE WORK SO THAT THE CLOSURE MINIMIZES THE CLOSURE TIME OF PARKING AND ACCESSIBLE SPACES.



E:\2019\19-21 HAS- IAH TC STRUCTURAL & PONDING\DWGS\A1-301B IAH TER C GARAGE LEVEL 3 WEST SIDE FLOOR PLAN.DWG PLOT DATE: 25 January 2023 5:29:49 PM
 OLD DWA No.:
 DWA DWG FILE:

SHEET SIZE: 22"x34" ANSI-D

REVISIONS

No.	DESCRIPTION	DATE	BY
0	ISSUED FOR PERMIT 12/15/2022		J TOHILL
1	ISSUED FOR BID 01/20/2023		J TOHILL

DESIGNER: J TOHILL
DRAWN BY: J TOHILL
CHECKED BY: TBD
ISSUE DATE: 01/20/2023
APPROVED BY:
APPROVAL DATE:

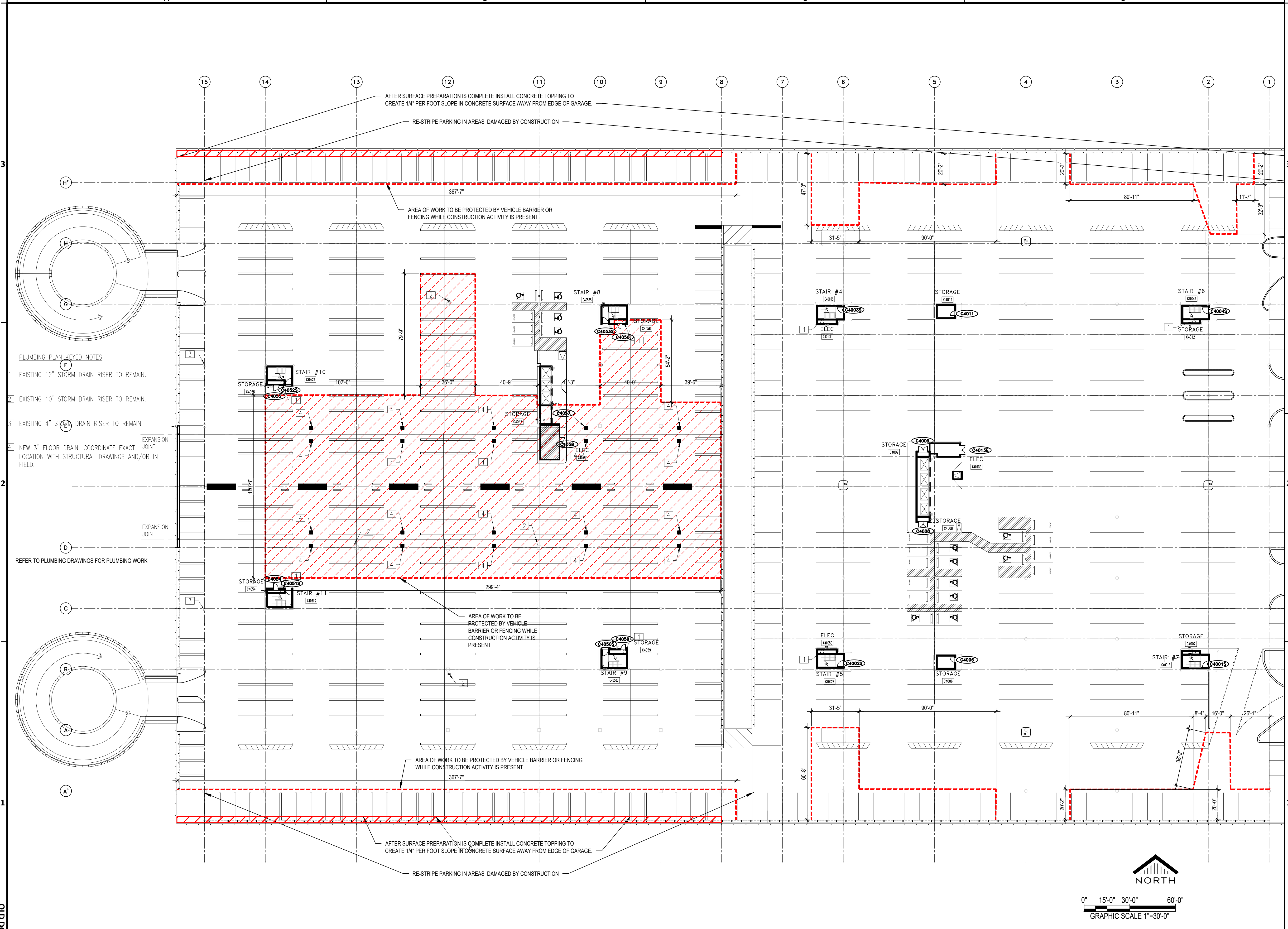
DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/Approval Category

IFB
ISSUED FOR BID

TERMINAL "C"

SHEET NAME:
IAH TER C GARAGE LEVEL 4 WEST SIDE
FLOOR PLAN
SHEET No. A1-401B
SCALE:



E:\2019\19-21 HAS- IAH TC STRUCTURAL & PONDING\DWGS\A1-401B IAH TER C GARAGE LEVEL 4 WEST SIDE FLOOR PLAN.DWG PLOT DATE: 25 January 2023 5:30:00 PM
 OLD DWA No.:
 DOA DWG FILE:

SHEET SIZE: 22"x34" ANSI-D

REVISIONS			
No.	DESCRIPTION	DATE	BY
0	ISSUED FOR PERMIT 12/15/2022		J TOHILL
1	ISSUED FOR BID 01/20/2023		J TOHILL

DESIGNER:	J TOHILL
DRAWN BY:	J TOHILL
CHECKED BY:	TBD
ISSUE DATE:	01/20/2023
APPROVED BY:	
APPROVAL DATE:	

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category

IFB

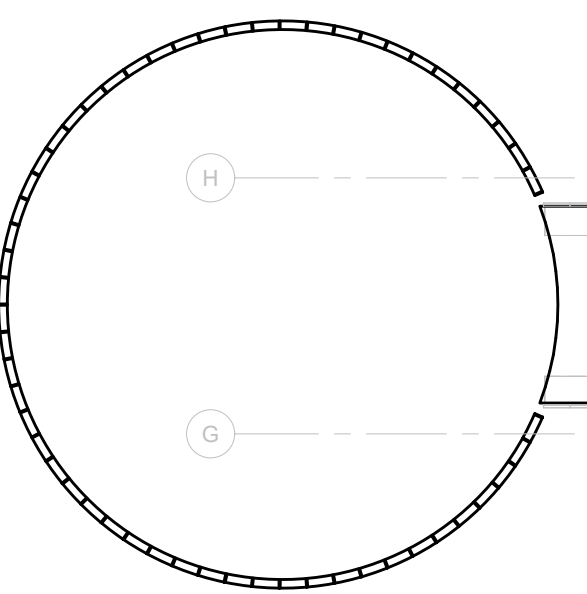
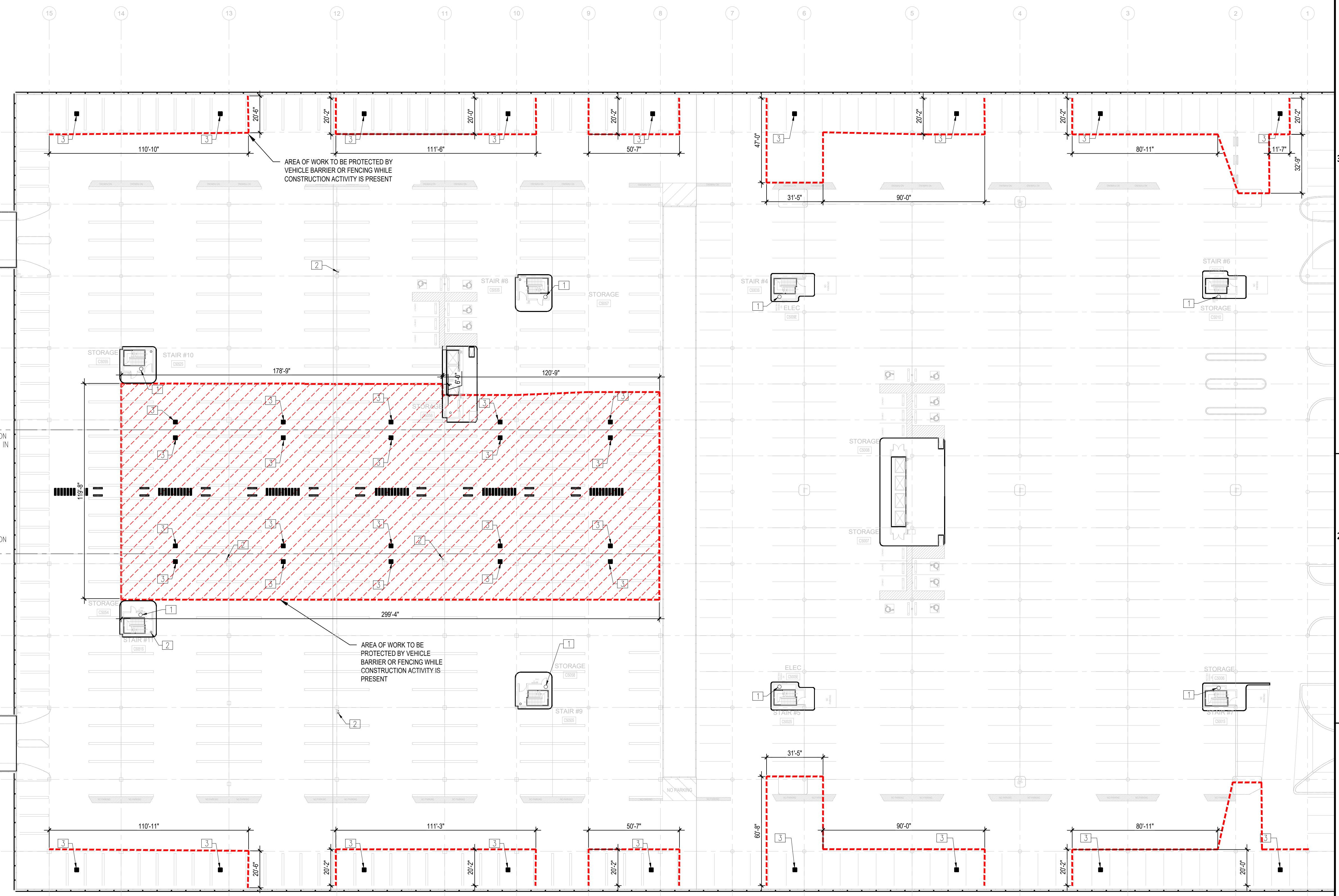
ISSUED FOR BID

TERMINAL
"C"

SHEET NAME:
IAH TER C GARAGE LEVEL 5 WEST SIDE
FLOOR PLAN

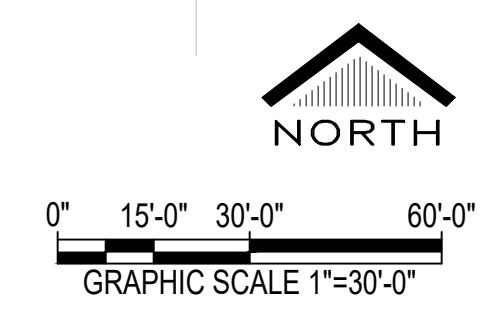
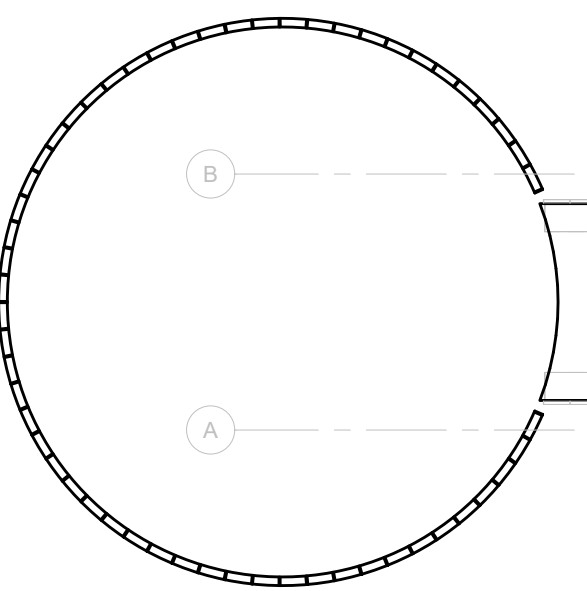
SHEET No. A1-501B

SCALE:



- PLUMBING PLAN KEYED NOTES:
- EXISTING 12" STORM DRAIN RISER TO REMAIN. CONNECT NEW PIPING IN VERTICAL.
 - EXISTING 10" STORM DRAIN RISER TO REMAIN. CONNECT NEW PIPING IN VERTICAL.
 - NEW 3" FLOOR DRAIN. COORDINATE EXPANSION LOCATION WITH STRUCTURAL DRAWINGS AND/OR IN FIELD.
 - CLEAN OUT DRAIN AREA.

REFER TO PLUMBING DRAWINGS FOR PLUMBING WORK



E:\2019\19-21 HAS- IAH TC STRUCTURAL & PONDING\DWGS\A1-501B IAH TER C GARAGE LEVEL 5 WEST SIDE FLOOR PLAN.DWG PLOT DATE: 25 January 2023 5:30:16 PM
 OLD DWA No.:
 DOA DWG FILE:

SHEET SIZE: 22"x34" ANSI-D

REVISIONS

No.	DESCRIPTION	DATE	BY
0	ISSUED FOR PERMIT 12/15/2022		J TOHILL
1	ISSUED FOR BID 01/20/2023		J TOHILL

DESIGNER:	J TOHILL
DRAWN BY:	J TOHILL
CHECKED BY:	TBD
ISSUE DATE:	01/20/2023
APPROVED BY:	
APPROVAL DATE:	

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

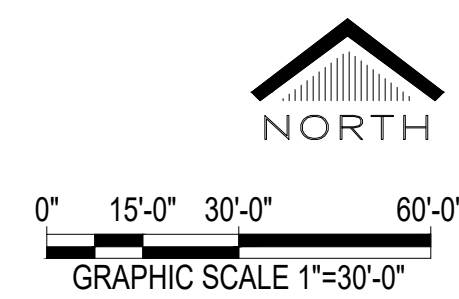
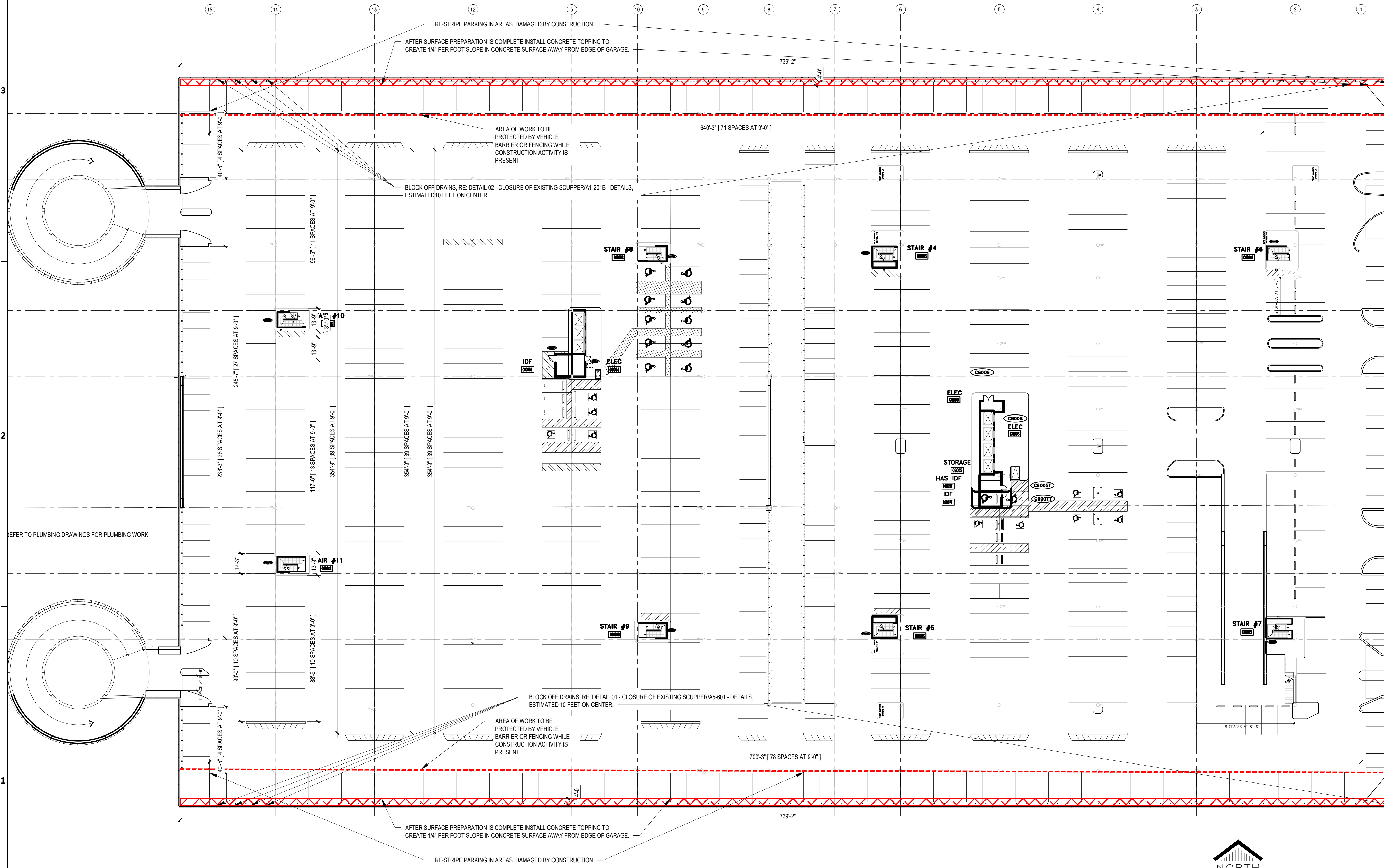
Review/Approval Category

IFB

ISSUED FOR BID

TERMINAL "C"

SHEET NAME:
IAH TER C GARAGE LEVEL 6 WEST SIDE
FLOOR PLAN
SHEET No. A1-601B
SCALE:



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 OLD DWA No. :
 DWA DWG FILE:

SHEET SIZE: 22"x34" ANSI-D

REVISIONS

No.	DESCRIPTION	DATE	BY
0	ISSUED FOR PERMIT 12/15/2022		J TOHILL
1	ISSUED FOR BID 01/20/2023		J TOHILL
2			
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DESIGNER: J TOHILL
DRAWN BY: J TOHILL
CHECKED BY: TBD
ISSUE DATE: 01/20/2023
APPROVED BY:
APPROVAL DATE:

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

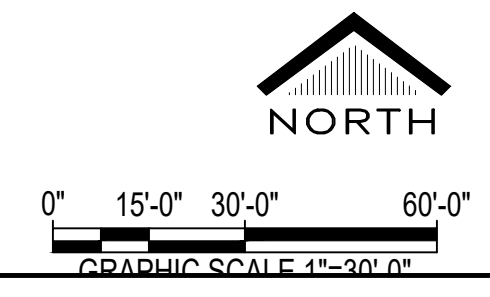
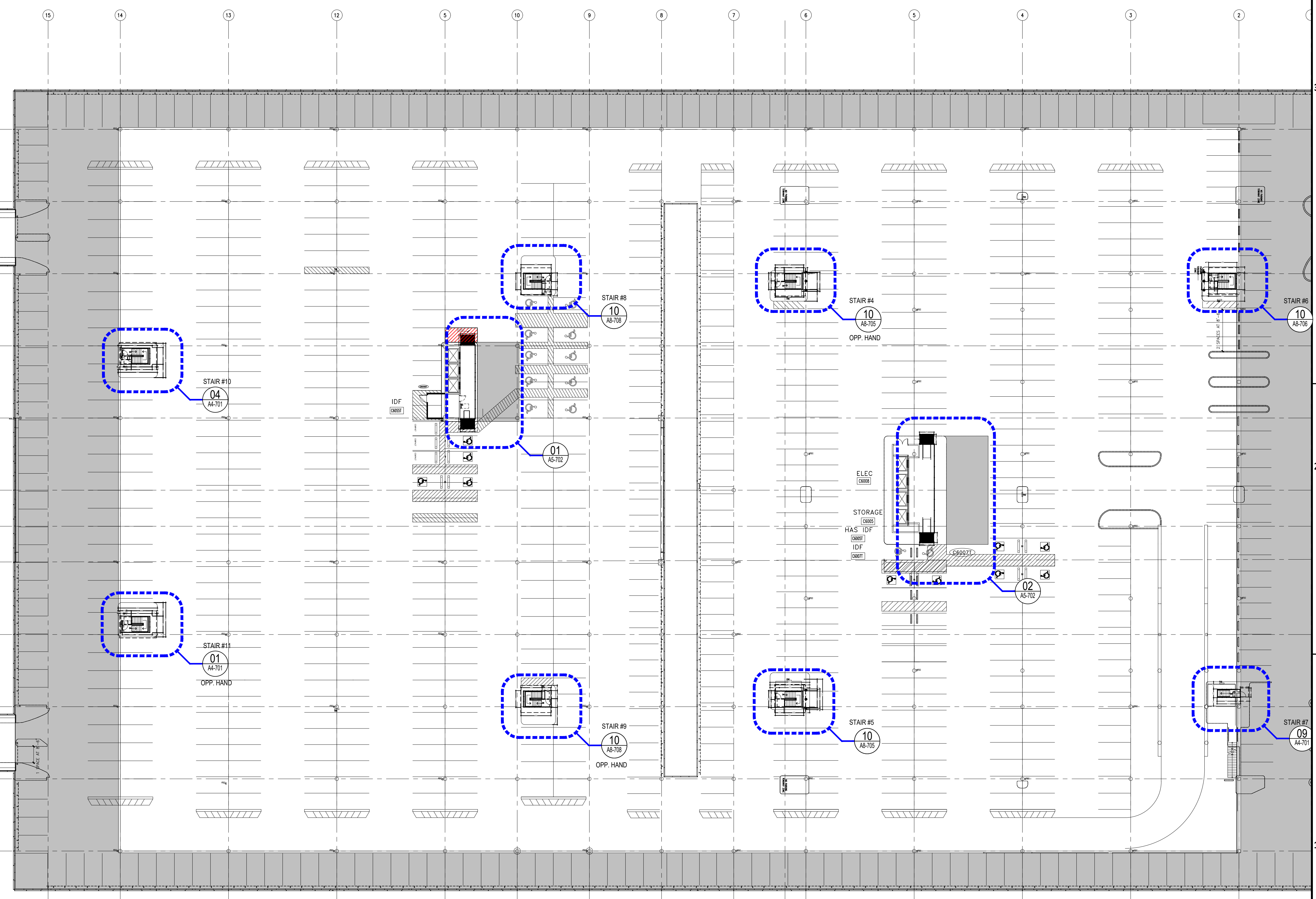
Review/ Approval Category

IFB

ISSUED FOR BID

TERMINAL
"C"

SHEET NAME:
IAH TER C GARAGE LEVEL 7 WEST SIDE
FLOOR PLAN
SHEET No. A1-701B
SCALE:



E:\2019\19-21 HAS- IAH TC STRUCTURAL & PONDING\DWGS\A1-701B IAH TER C GARAGE LEVEL 7 WEST SIDE FLOOR PLAN.DWG PLOT DATE: 25 January 2023 5:30:46 PM
 OLD DWA No.:
 DWA DWG FILE:
 FILE NAME:

01 TERMINAL C 7TH LEVEL FLOOR PLAN
1" = 30'-0"

SHEET SIZE: 22"x34" ANSI-D

REVISIONS			
No.	DESCRIPTION	DATE	BY
0	ISSUED FOR PERMIT 12/15/2022		J TOHILL
1	ISSUED FOR BID 01/20/2023		J TOHILL
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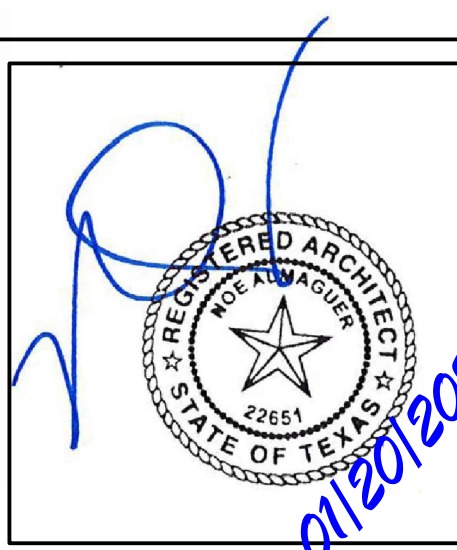
DESIGNER:	J TOHILL
DRAWN BY:	J TOHILL
CHECKED BY:	TBD
ISSUE DATE:	01/20/2023
APPROVED BY:	
APPROVAL DATE:	

DIRECTOR
of
HOUSTON AIRPORT SYSTEM


Review/ Approval Category

IFB

ISSUED FOR BID

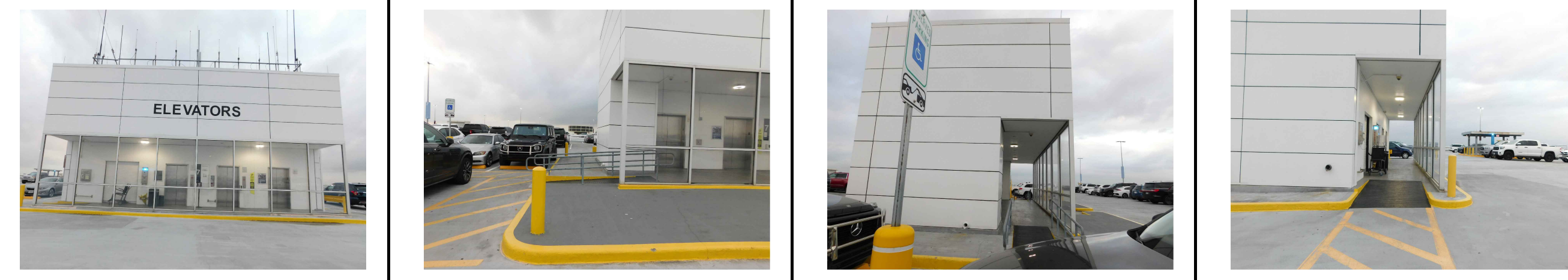


TERMINAL
"C"



SHEET NAME:
CANOPY DETAILS

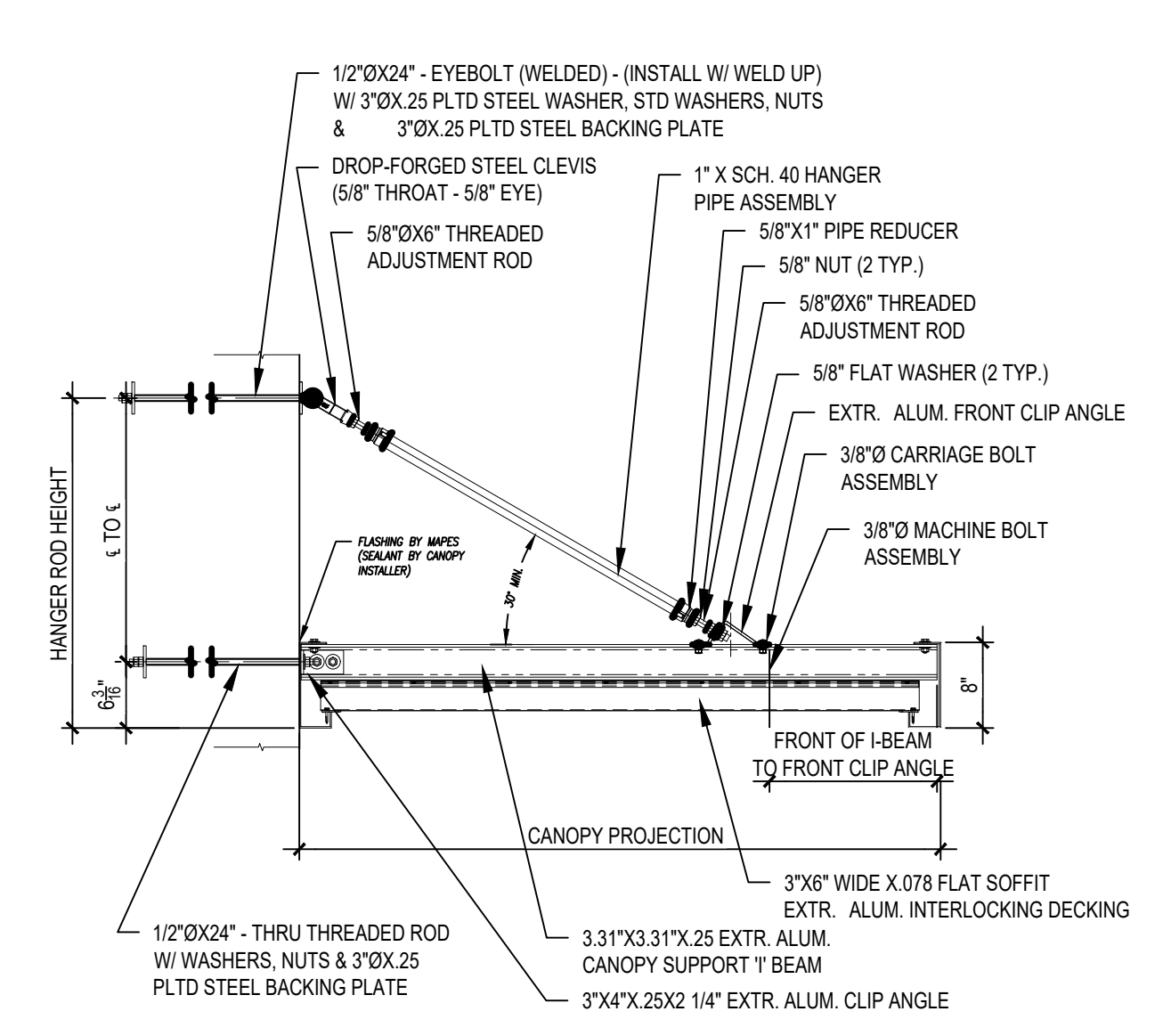
SHEET No. A5-702 SCALE:



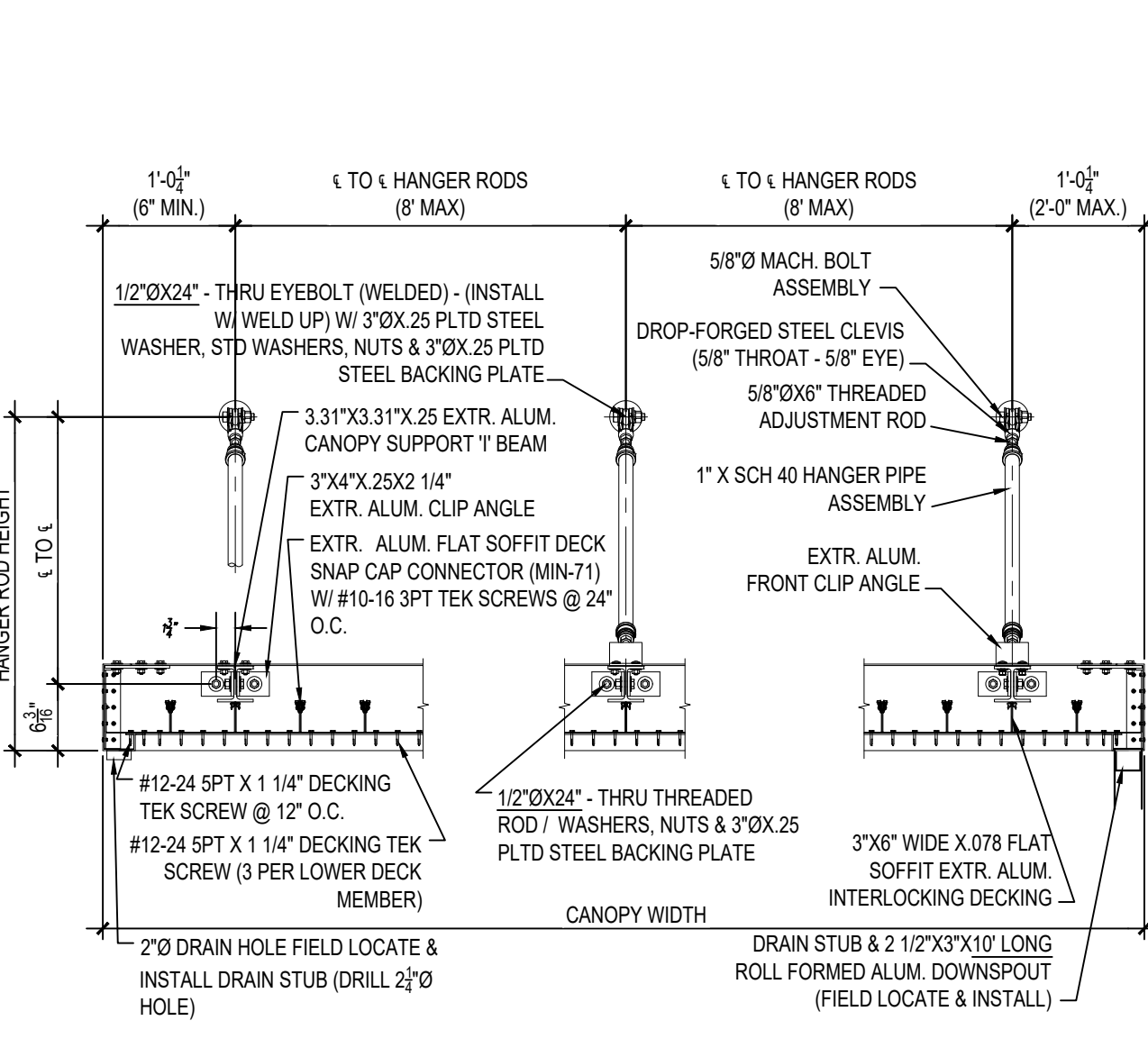
12 PHOTO 13 PHOTO 14 PHOTO 15 PHOTO



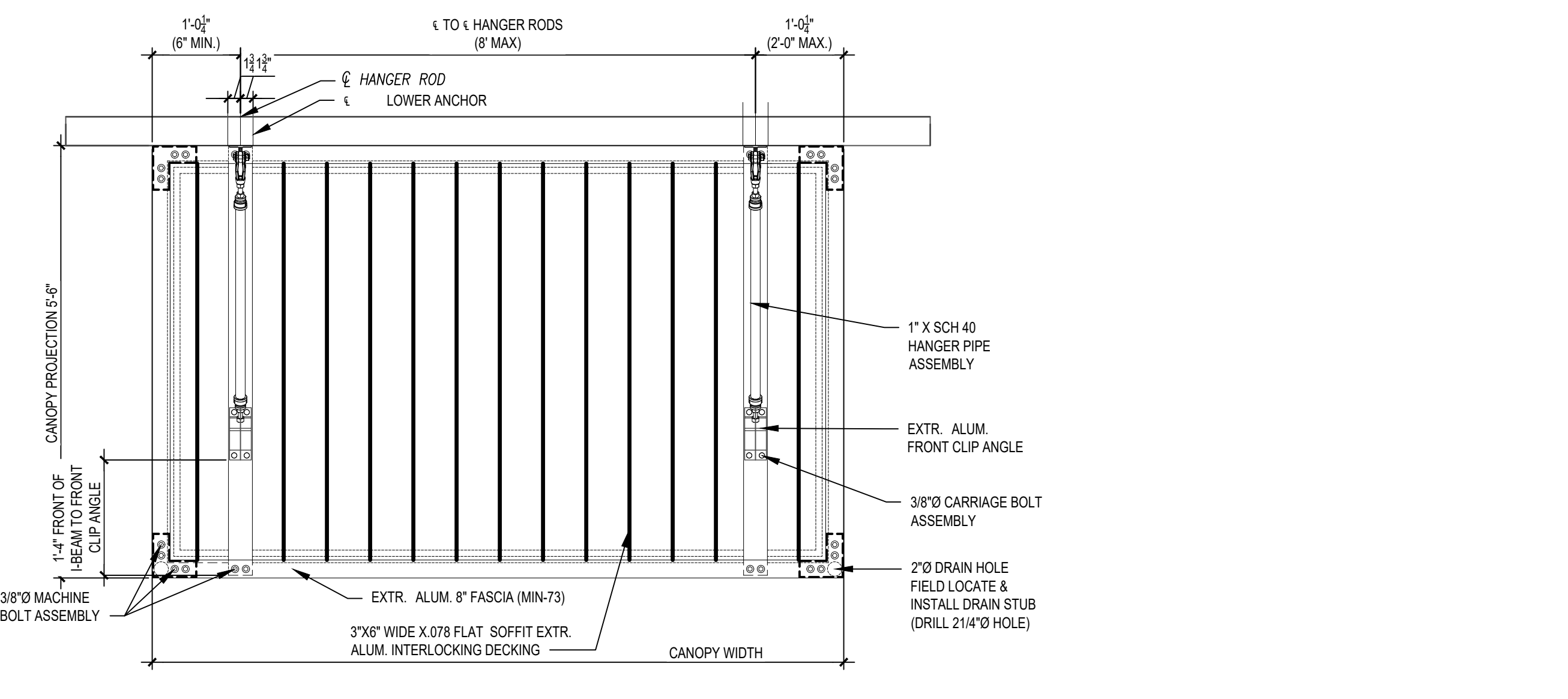
08 PHOTO 09 PHOTO 10 PHOTO 11 PHOTO



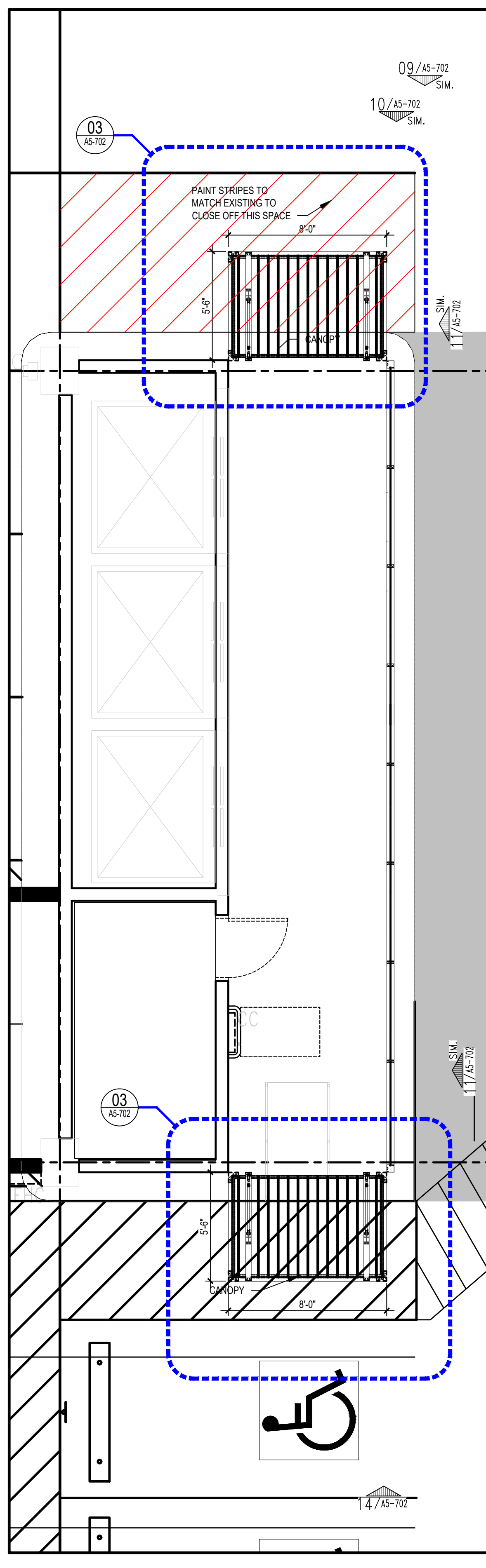
04 CANOPY SECTION
3/4" = 1'-0"



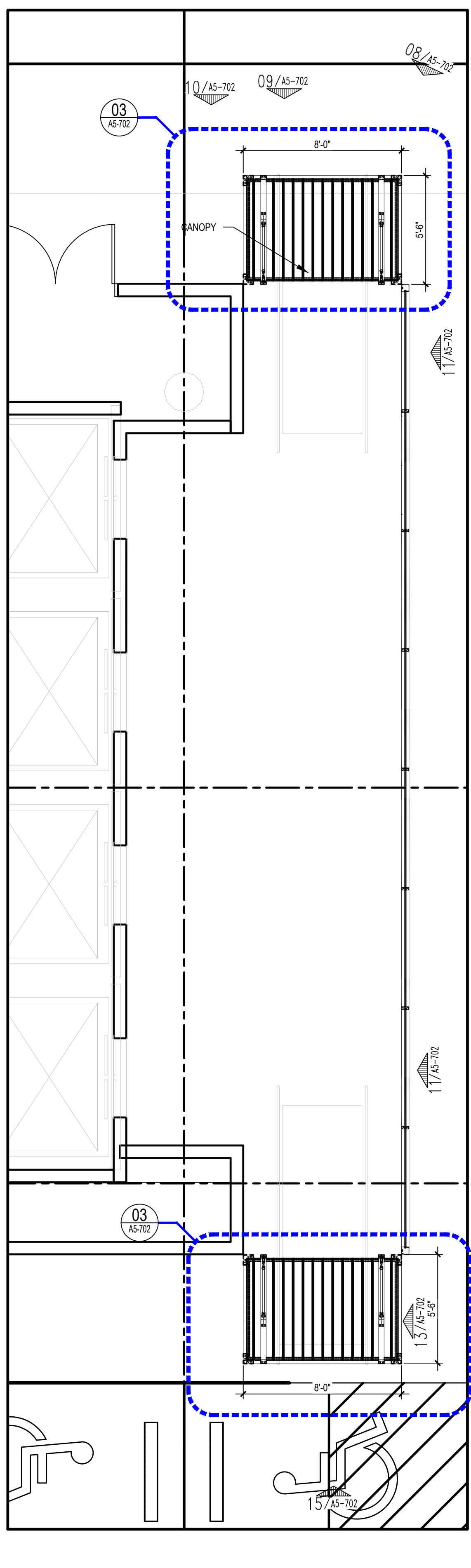
05 CANOPY DETAILS
3/4" = 1'-0"



03 CANOPY PLAN
3/4" = 1'-0"



01 SOUTHWEST ELEVATOR CANOPY
1/4" = 1'-0"



02 SOUTHEAST ELEVATOR CANOPY
1/4" = 1'-0"

E:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A5-702 CANOPY DETAILS.DWG
 FILE NAME:
 OLD DDA No. :
 DDA DWG FILE:
 PLOT DATE: 25 January 2023 5:31:20 PM

REVISIONS			
No.	DESCRIPTION	DATE	BY
0	ISSUED FOR PERMIT 12/15/2022		J TOHILL
1	ISSUED FOR BID 01/20/2023		J TOHILL

DESIGNER:	J TOHILL
DRAWN BY:	J TOHILL
CHECKED BY:	TBD
ISSUE DATE:	01/20/2023
APPROVED BY:	
APPROVAL DATE:	

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category

IFB

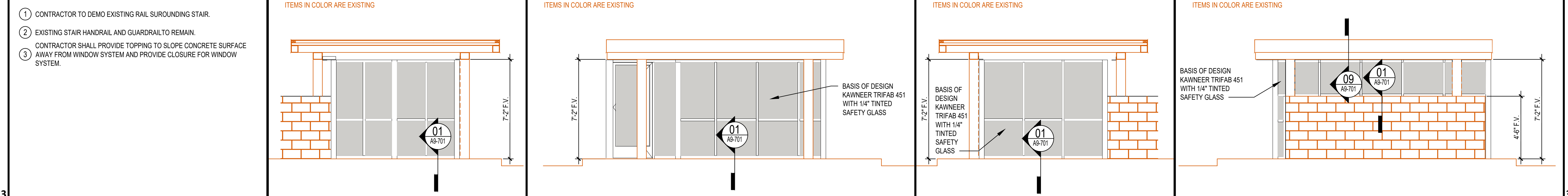
ISSUED FOR BID

TERMINAL "C"

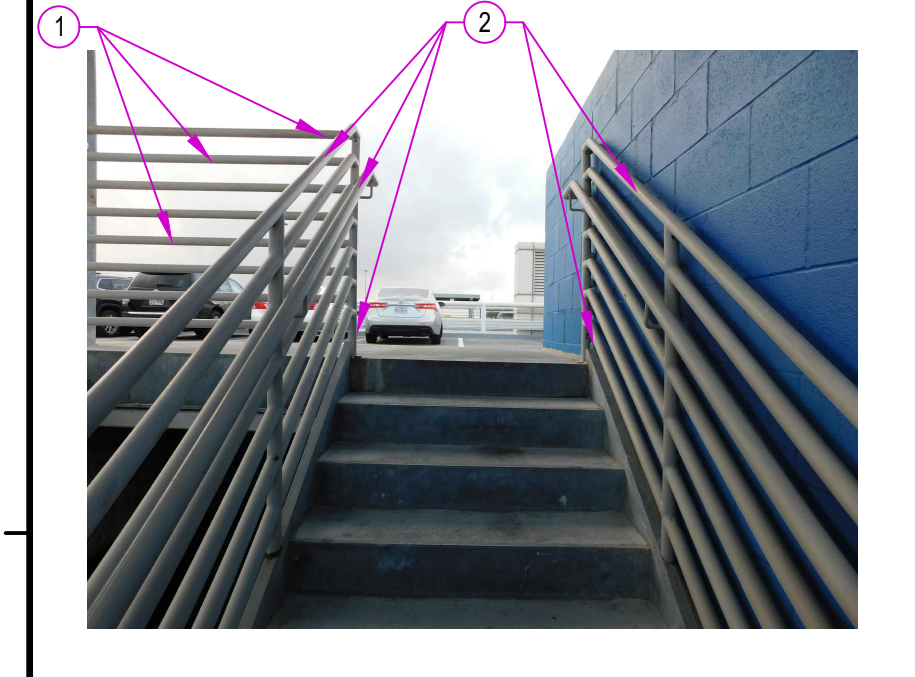
SHEET NAME:
SECTION - ELEVATION - PLAN AT
STAIR 05 & 04 O.H.

SHEET No. A8-705 SCALE:

SHEET SIZE: 22" X 34" ANSI-D



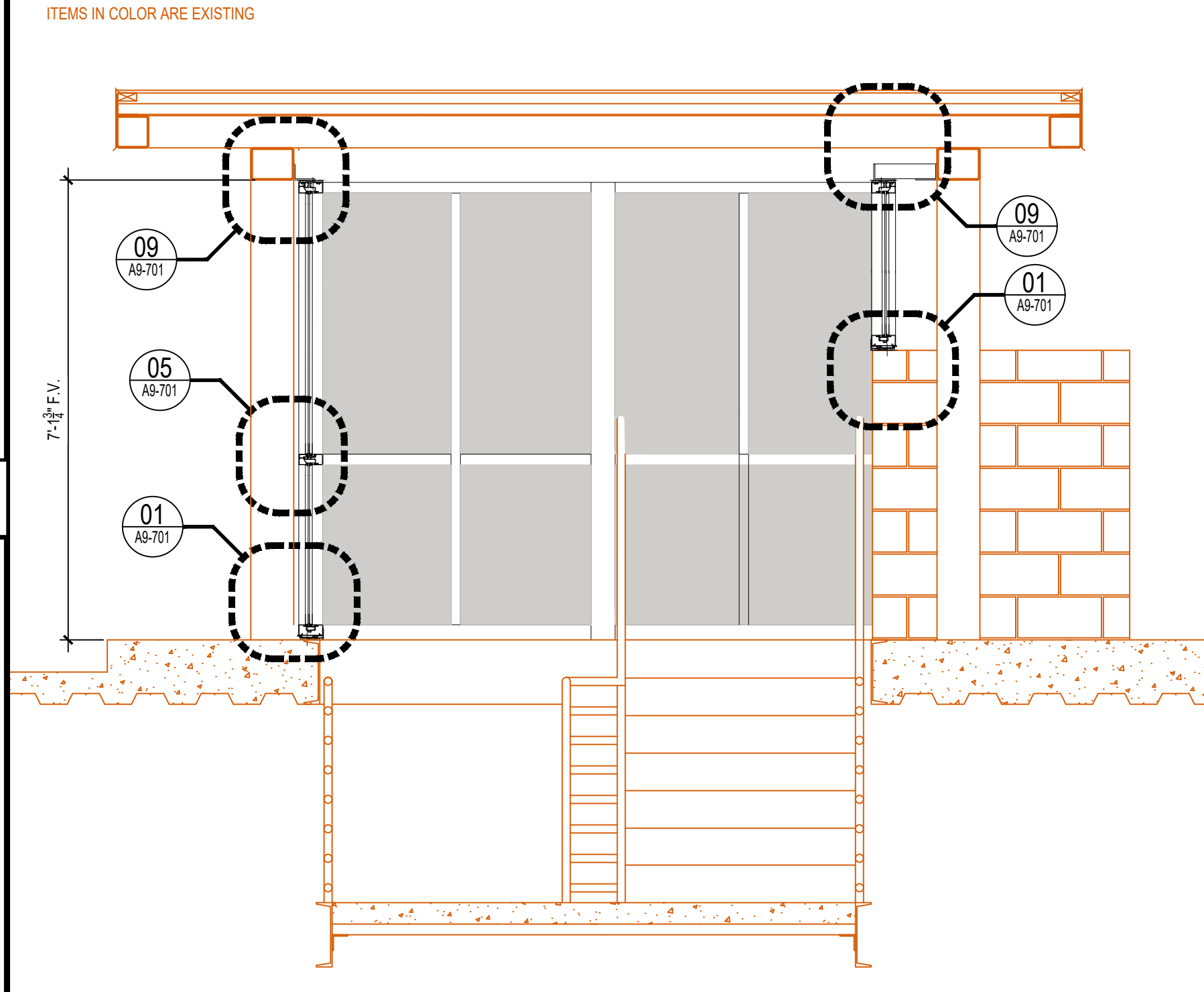
16 KEYNOTES 1/8" = 1'-0"
17 ELEVATION WEST STAIR 5 1/4" = 1'-0"
18 ELEVATION SOUTH 1/4" = 1'-0"
19 ELEVATION EAST 1/4" = 1'-0"
20 ELEVATION NORTH 1/4" = 1'-0"



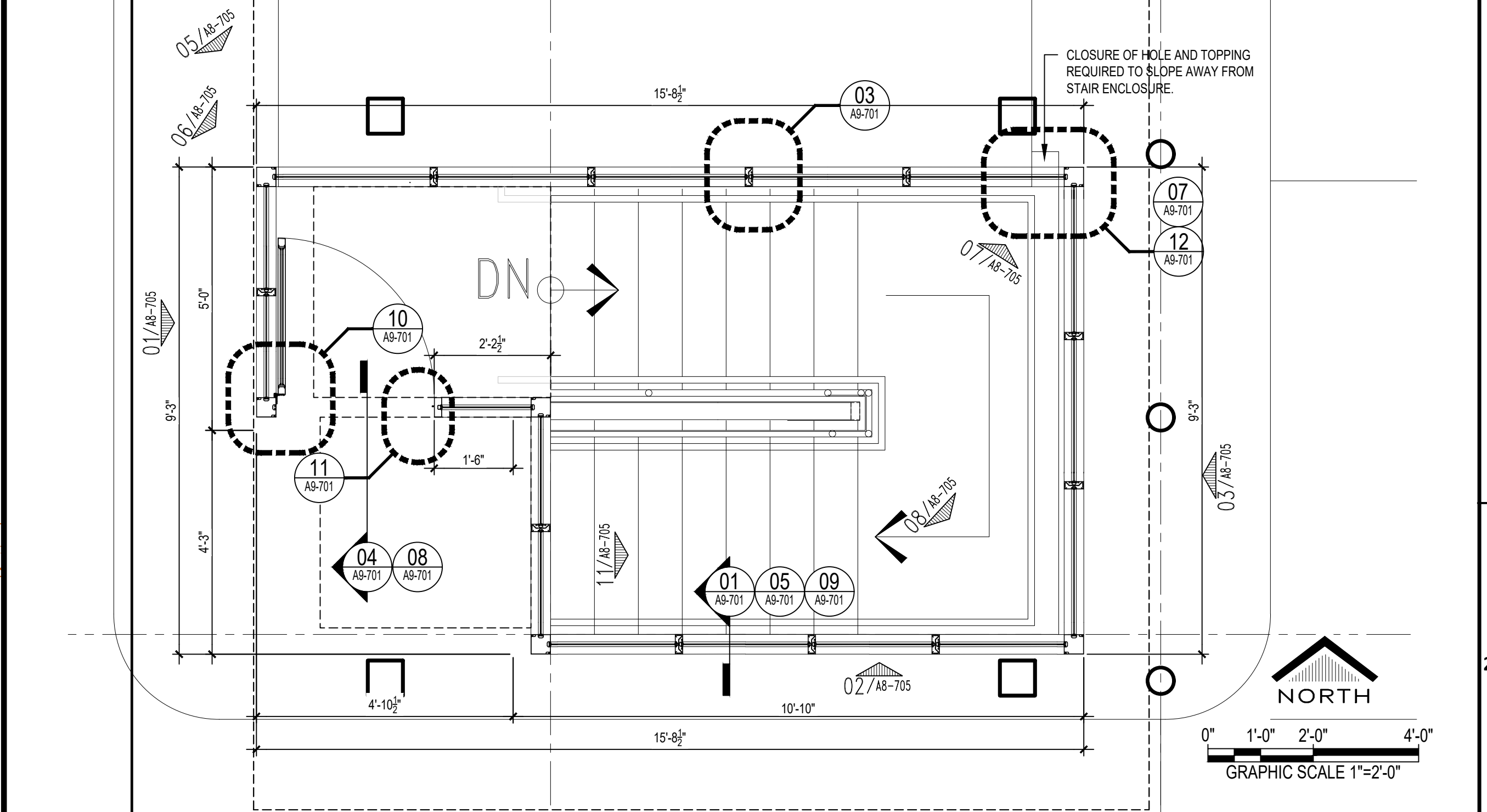
11 PHOTO 09 - STAIR 5 1/8" = 1'-0"



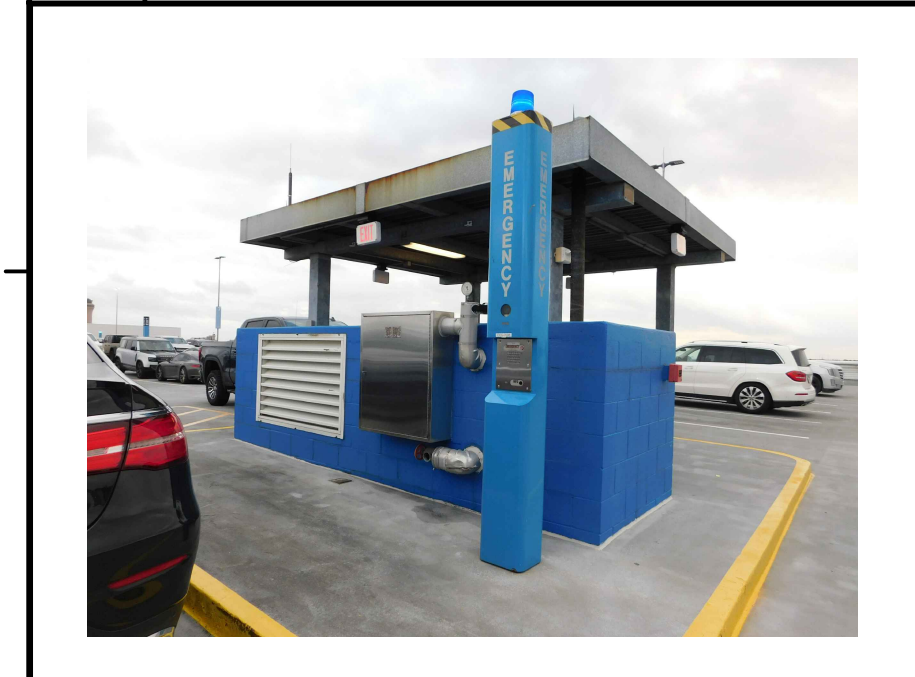
08 PHOTO 07 - STAIR 5 1/8" = 1'-0"



09 SECTION AT STAIR 5 1/2" = 1'-0"



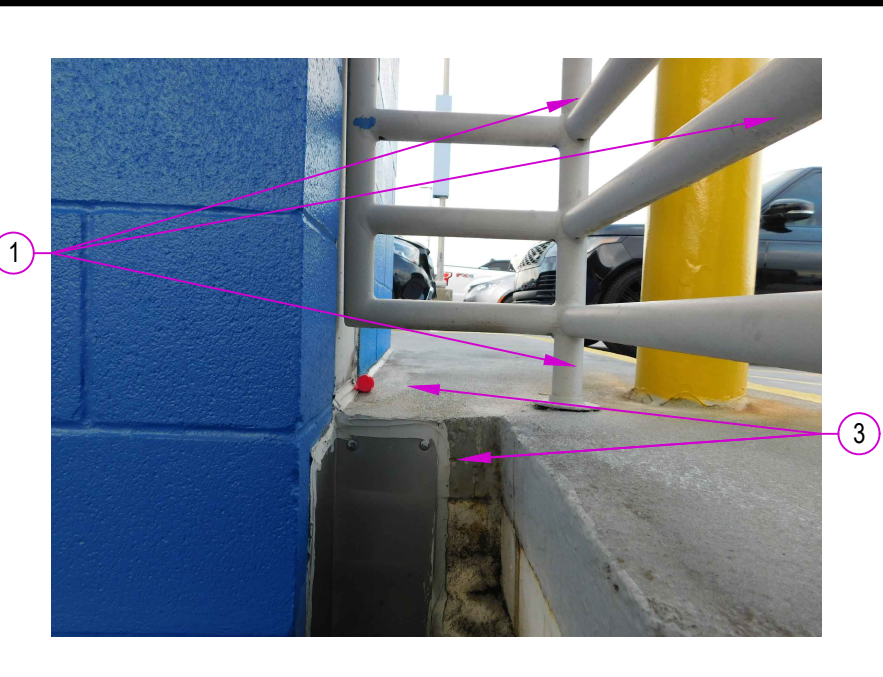
10 PLAN AT STAIR 5 1/2" = 1'-0"



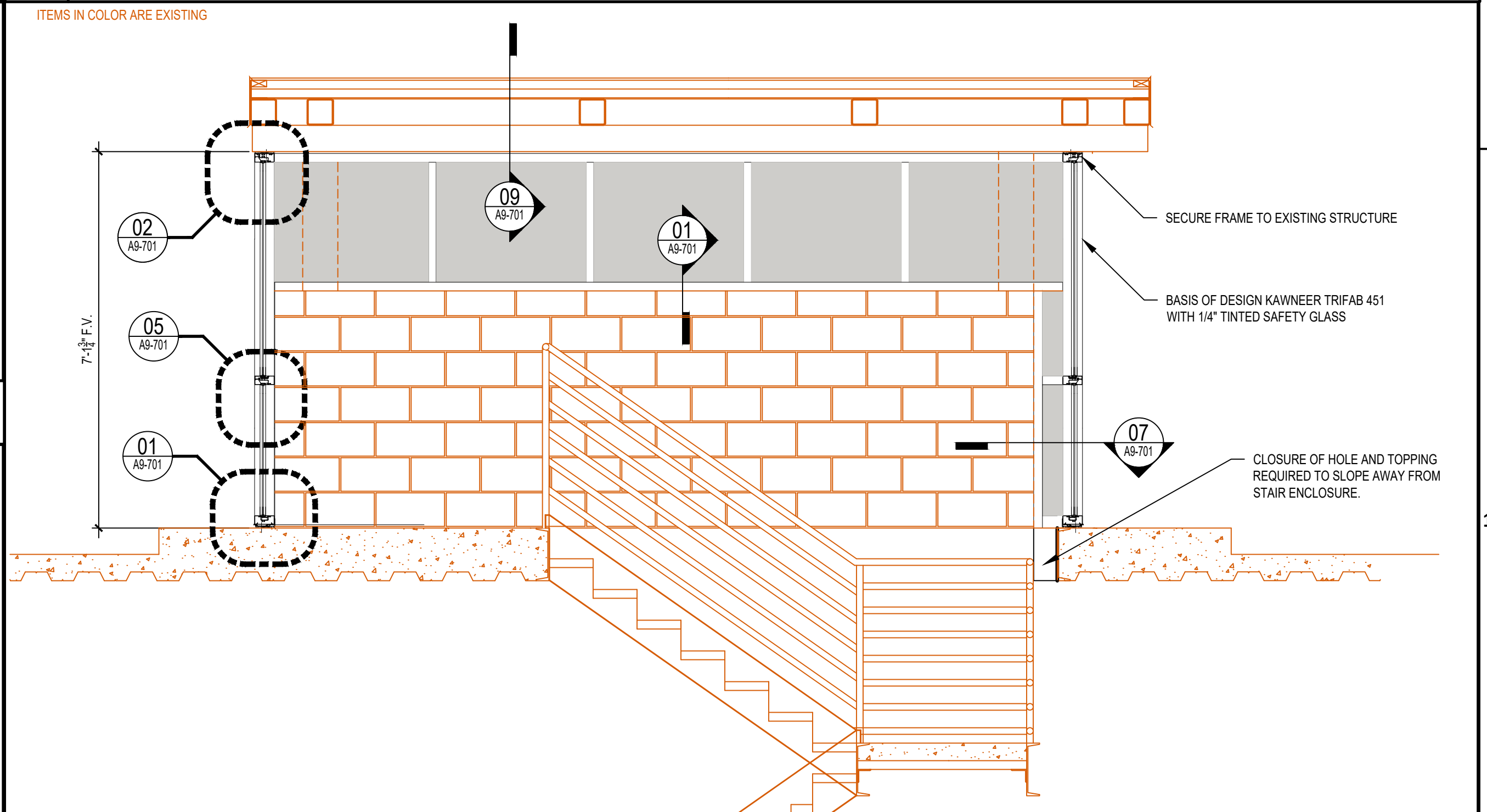
05 PHOTO 04 - STAIR 5 1/8" = 1'-0"



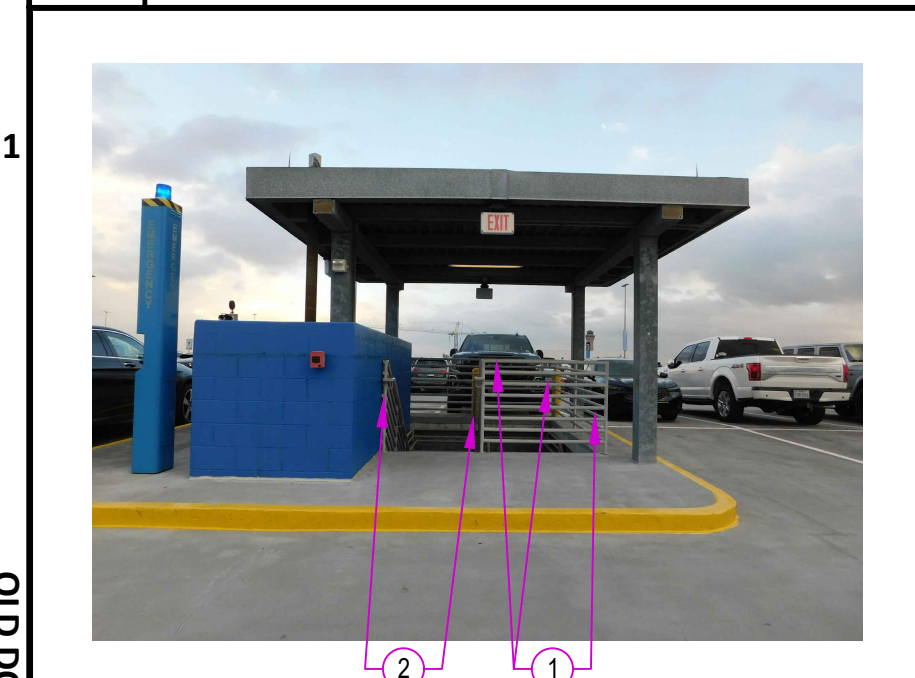
06 PHOTO 05 - STAIR 5 1/8" = 1'-0"



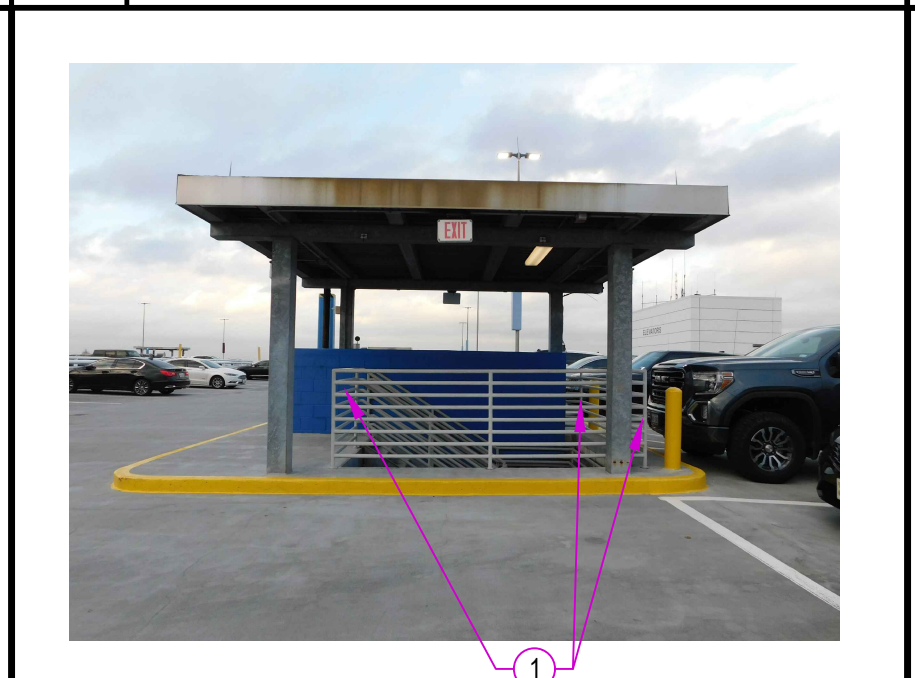
07 PHOTO 08 - STAIR 5 1/8" = 1'-0"



04 SECTION THRU STAIR 05 1/2" = 1'-0"



01 PHOTO 01 - STAIR 5 1/8" = 1'-0"



02 PHOTO 02 - STAIR 5 1/8" = 1'-0"



03 PHOTO 03 - STAIR 5 1/8" = 1'-0"

F:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A8-705 SECTION - ELEVATION - PLAN AT STAIR 05 & 04 O.H.DWG PLOT DATE: 25 January 2023 5:32:09 PM

REVISIONS			
No.	DESCRIPTION	DATE	BY
0	ISSUED FOR PERMIT 12/15/2022		J TOHILL
1	ISSUED FOR BID 01/20/2023		J TOHILL

DESIGNER:	J TOHILL
DRAWN BY:	J TOHILL
CHECKED BY:	TBD
ISSUE DATE:	01/20/2023
APPROVED BY:	
APPROVAL DATE:	

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category

IFB

ISSUED FOR BID

TERMINAL "C"

SHEET NAME:
SECTION - ELEVATION - PLAN AT
STAIR 06

SHEET No. A8-706

SCALE:

ITEMS IN COLOR ARE EXISTING

17 ELEVATION WEST
1/4" = 1'-0"

18 ELEVATION SOUTH
1/4" = 1'-0"

19 ELEVATION EAST
1/4" = 1'-0"

20 ELEVATION NORTH
1/4" = 1'-0"

ITEMS IN COLOR ARE EXISTING

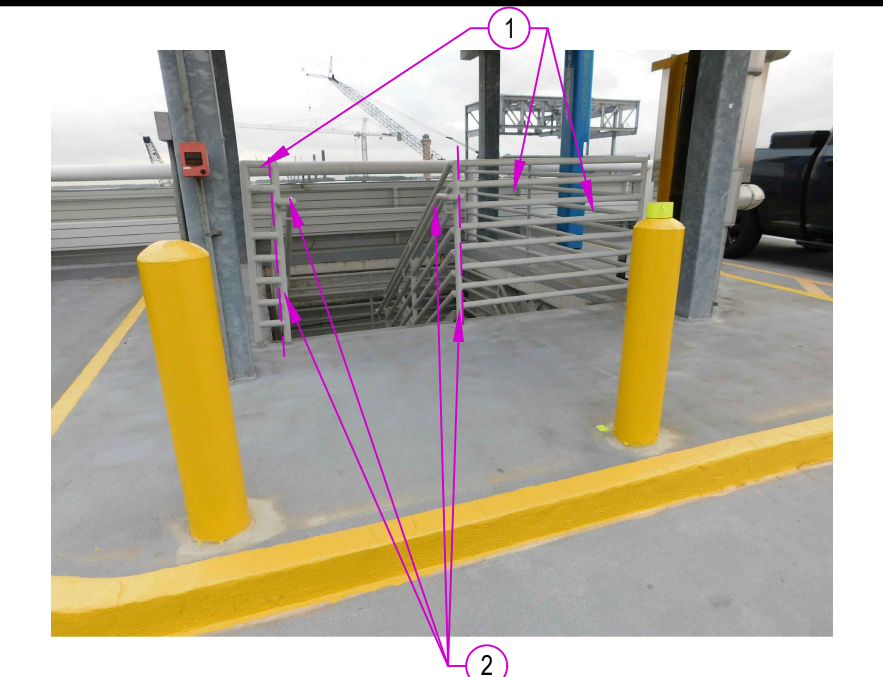
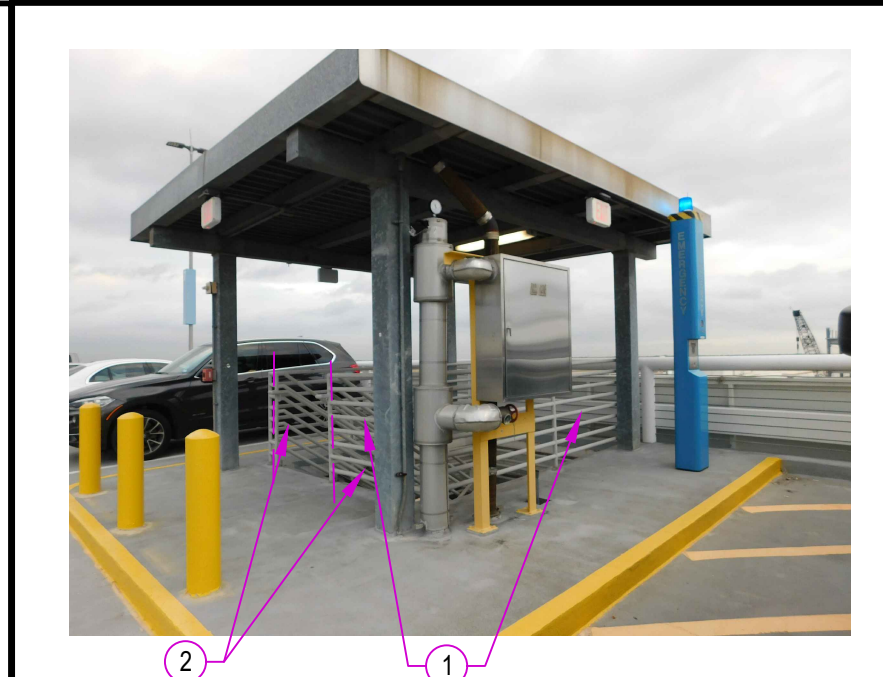
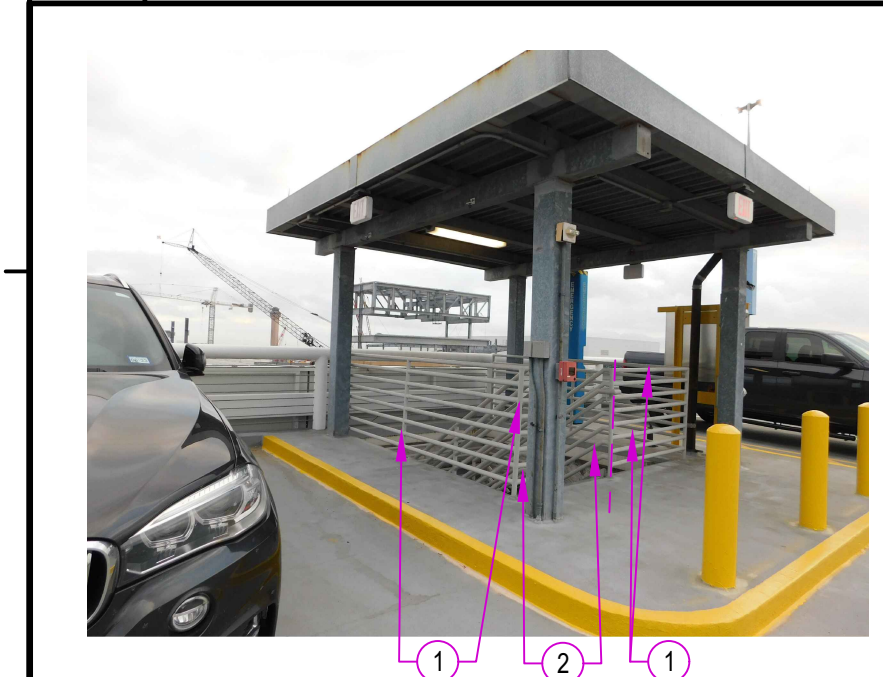
09 SECTION AT STAIR
1/2" = 1'-0"

10 PLAN AT STAIR
1/2" = 1'-0"

11 NOT USED

- 1 CONTRACTOR TO DEMO EXISTING RAIL SURROUNDING STAIR.
- 2 EXISTING STAIR HANDRAIL AND GUARDRAIL TO REMAIN.
- 3 CONTRACTOR SHALL PROVIDE TOPPING TO SLOPE CONCRETE SURFACE AWAY FROM WINDOW SYSTEM AND PROVIDE CLOSURE FOR WINDOW SYSTEM.

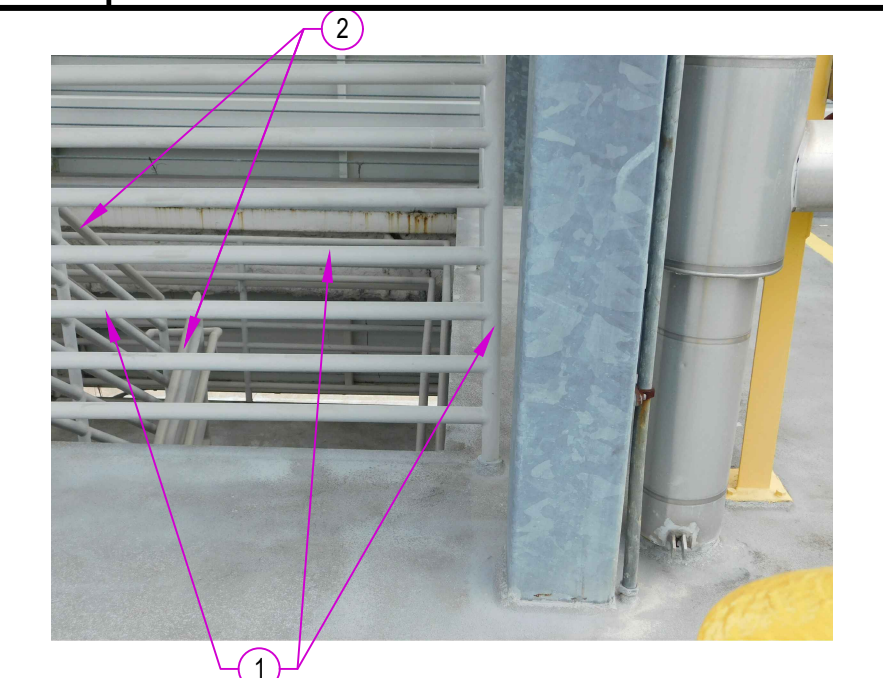
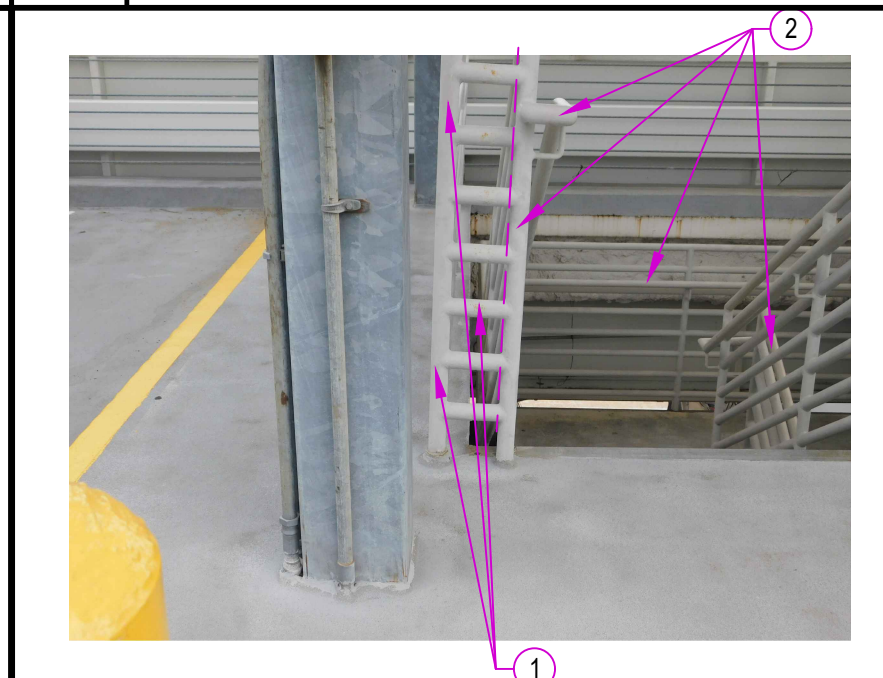
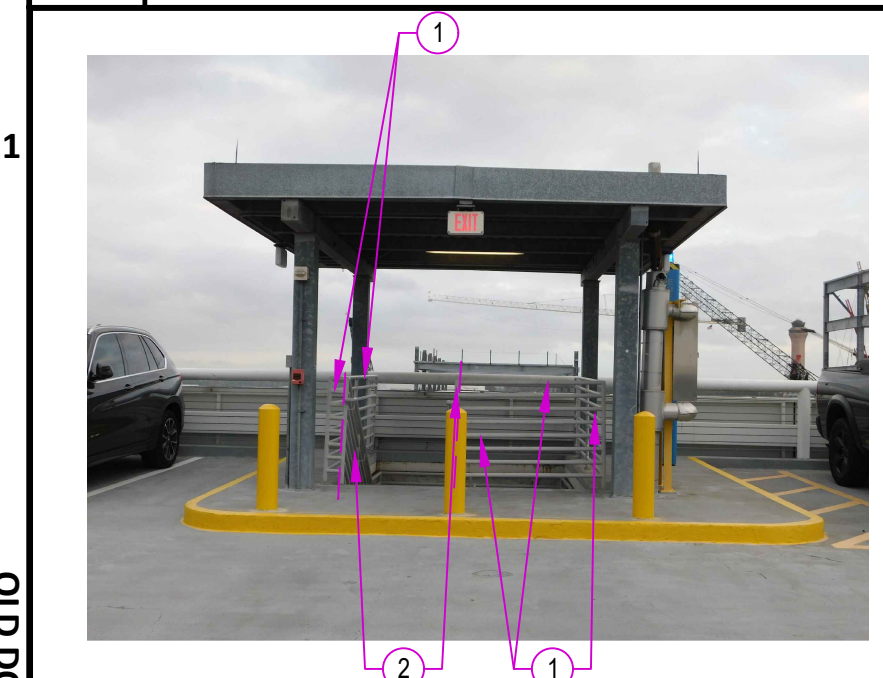
08 KEYNOTES
1/8" = 1'-0"



05 PHOTO 04 - STAIR 6
1/8" = 1'-0"

06 PHOTO 05 - STAIR 6
1/8" = 1'-0"

07 PHOTO 06 - STAIR 6
1/8" = 1'-0"



01 PHOTO 01 - STAIR 6
1/8" = 1'-0"

02 PHOTO 02 - STAIR 6
1/8" = 1'-0"

03 PHOTO 03 - STAIR 6
1/8" = 1'-0"

ITEMS IN COLOR ARE EXISTING

04 SECTION THRU STAIR 06
1/2" = 1'-0"

F:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A8-706 SECTION - ELEVATION - PLAN AT STAIR 06.DWG

PLOT DATE: 25 January 2023 5:32:54 PM
OLD DWA No. :
DOA DWG FILE:

SHEET SIZE: 22"x34" ANSI-D

REVISIONS

No.	DESCRIPTION	DATE	BY
0	ISSUED FOR PERMIT 12/15/2022		J TOHILL
1	ISSUED FOR BID 01/20/2023		J TOHILL

DESIGNER: J TOHILL
DRAWN BY: J TOHILL
CHECKED BY: TBD
ISSUE DATE: 01/20/2023
APPROVED BY:
APPROVAL DATE:

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category

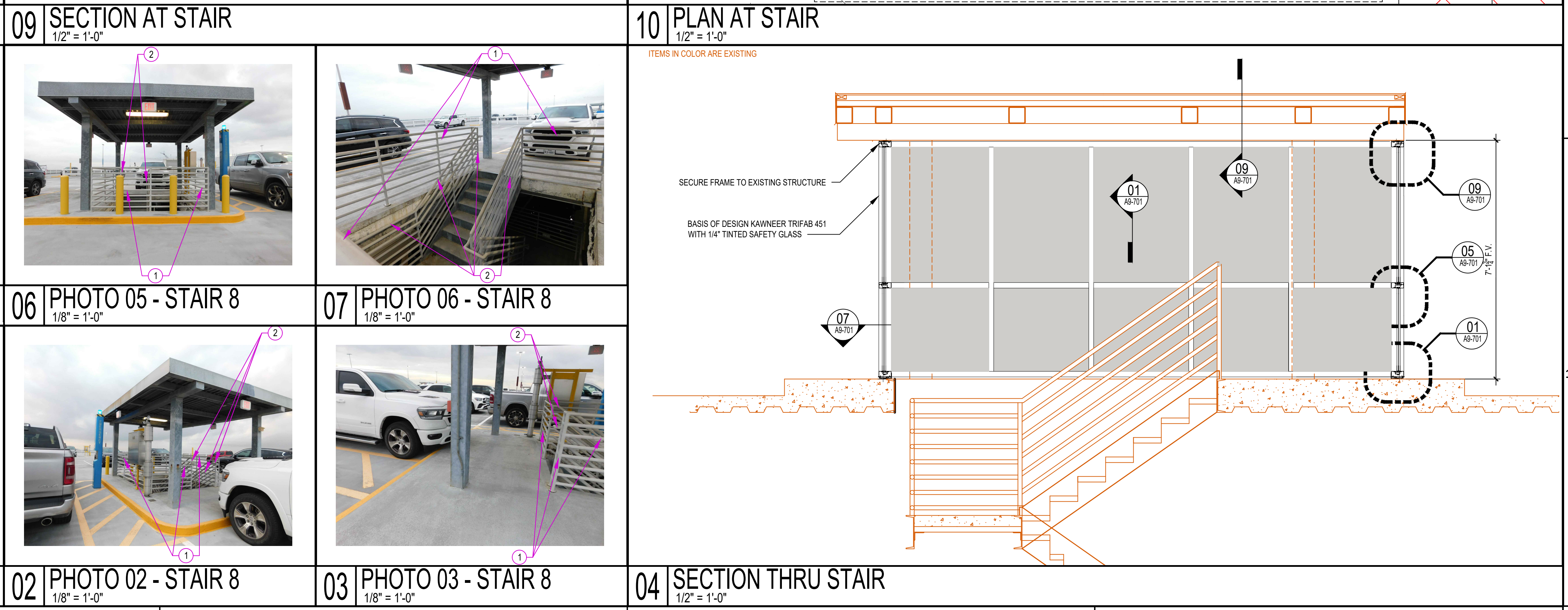
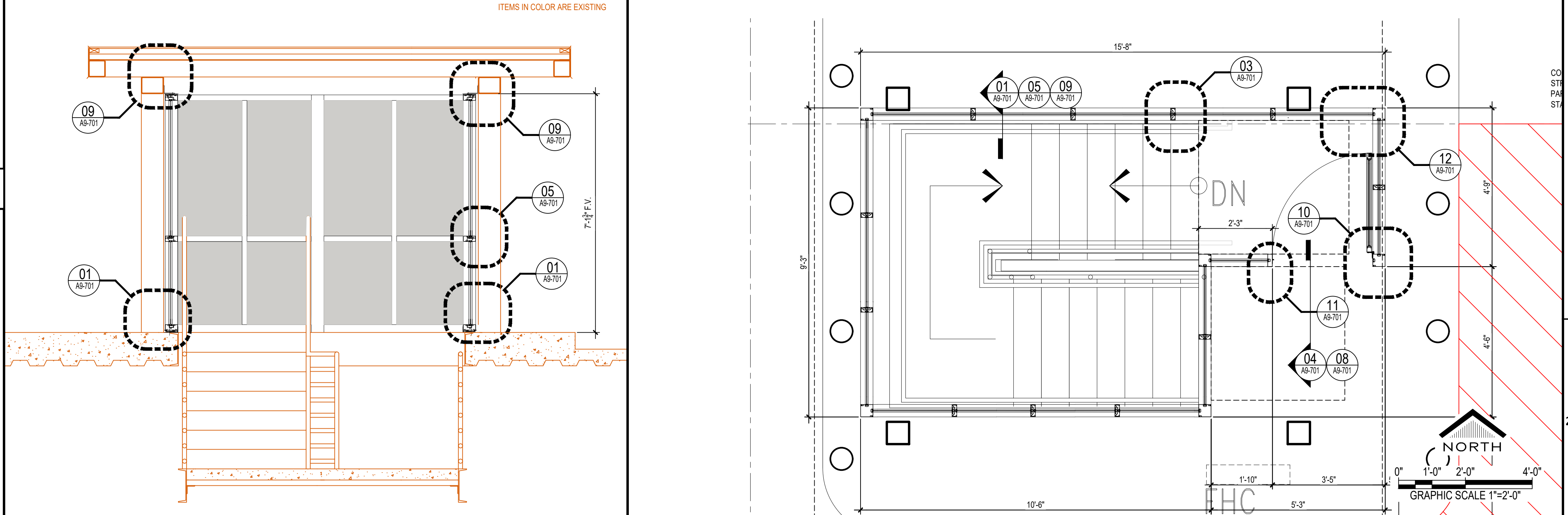
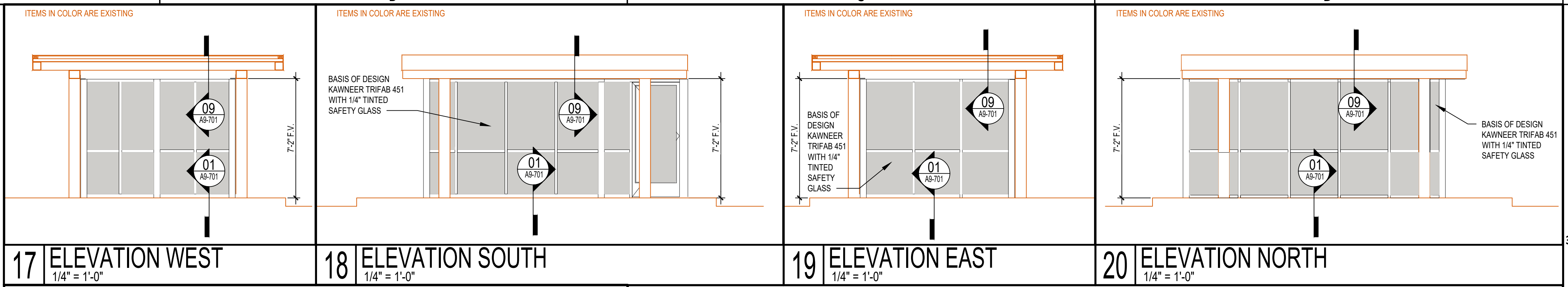
IFB

ISSUED FOR BID

TERMINAL "C"

SECTION - ELEVATION - PLAN AT
STAIR 08 & 09 O.H.

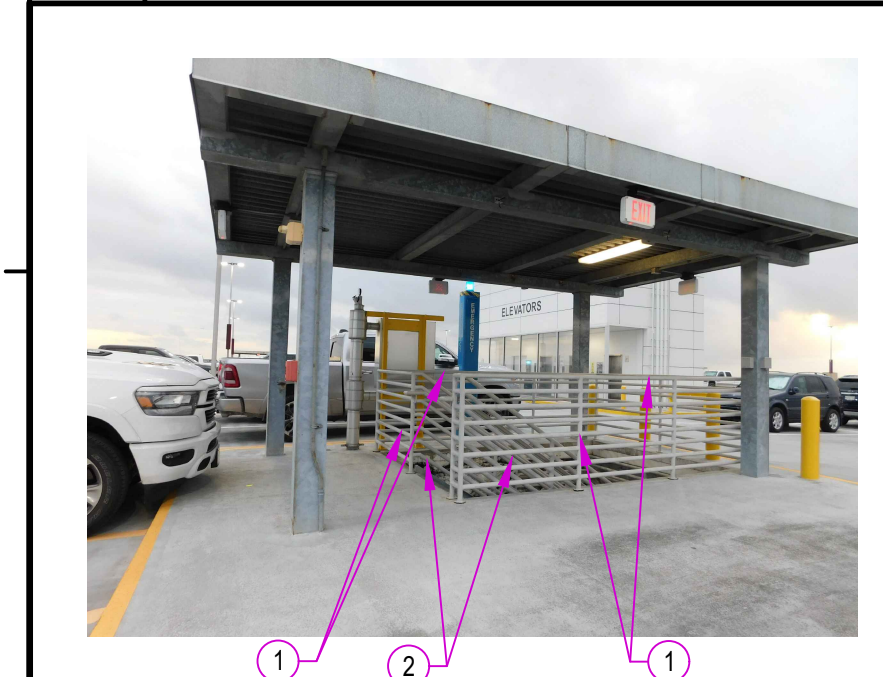
SHEET No. A8-708 SCALE:



11 NOT USED

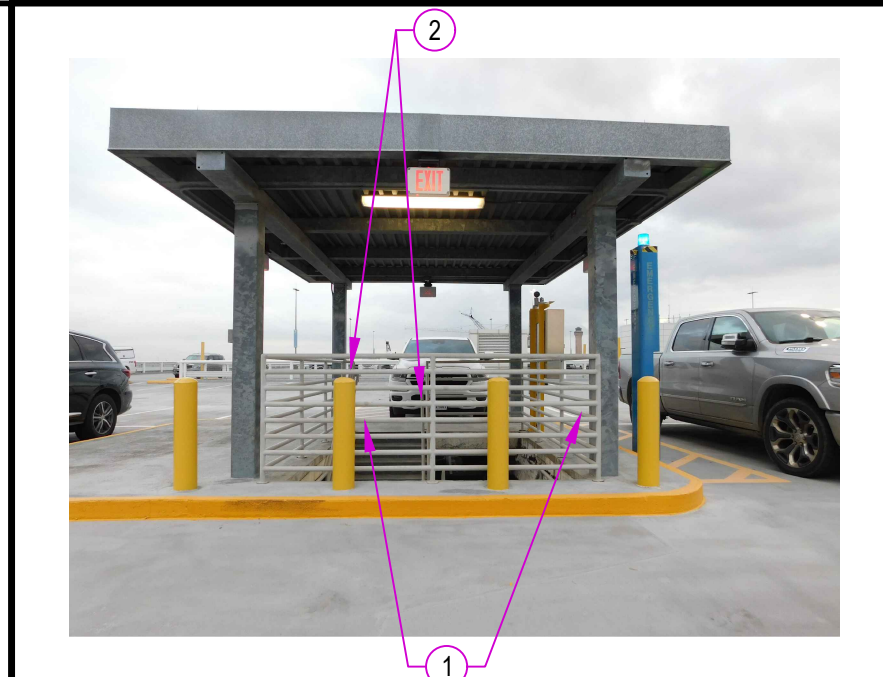
- CONTRACTOR TO DEMO EXISTING RAIL SURROUNDING STAIR.
- EXISTING STAIR HANDRAIL AND GUARDRAIL TO REMAIN.
- CONTRACTOR SHALL PROVIDE TOPPING TO SLOPE CONCRETE SURFACE AWAY FROM WINDOW SYSTEM AND PROVIDE CLOSURE FOR WINDOW SYSTEM.

08 KEYNOTES
1/8" = 1'-0"



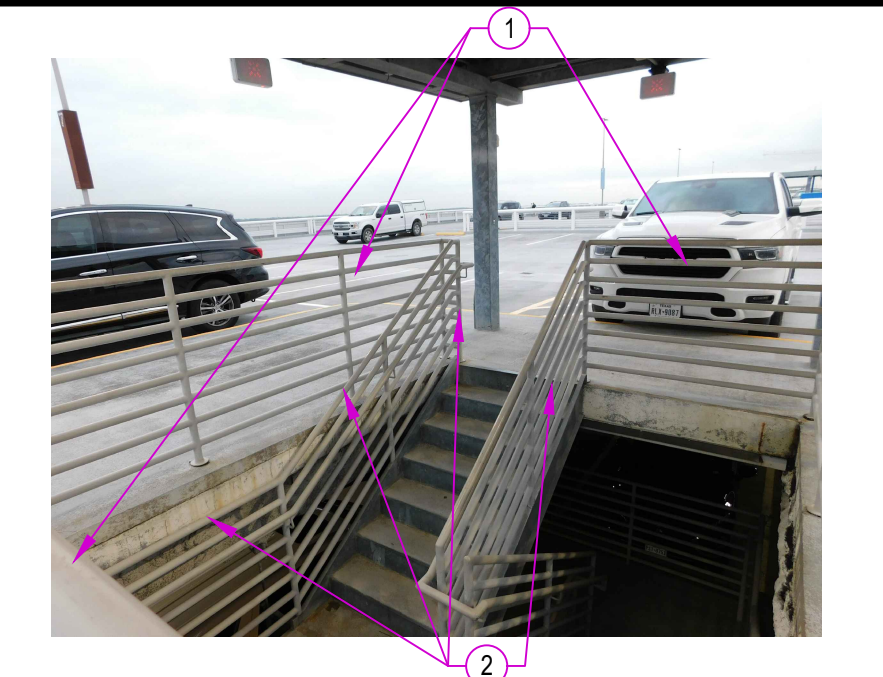
05 PHOTO 04 - STAIR 8
1/8" = 1'-0"

09 SECTION AT STAIR
1/2" = 1'-0"

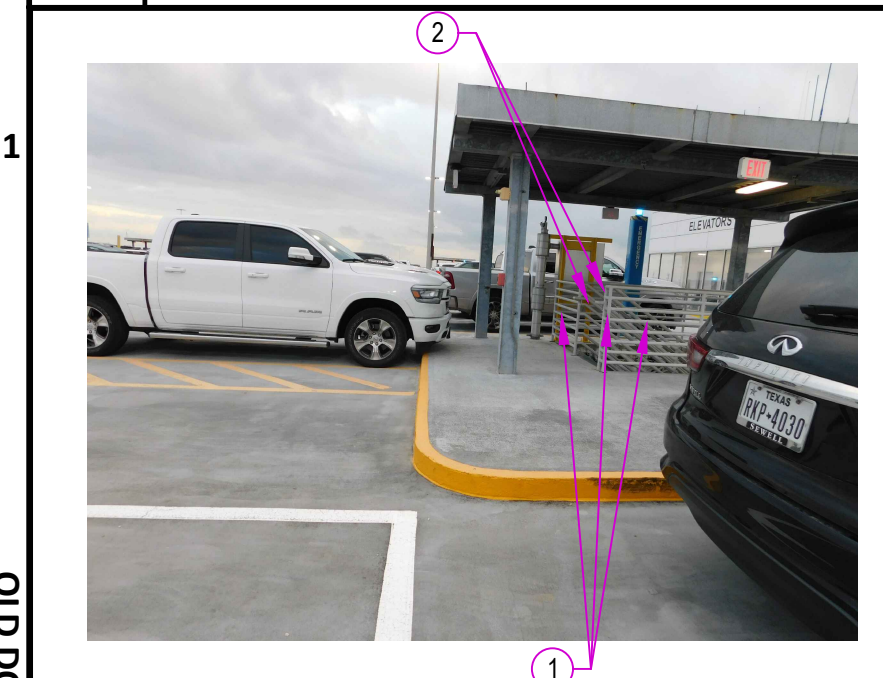


06 PHOTO 05 - STAIR 8
1/8" = 1'-0"

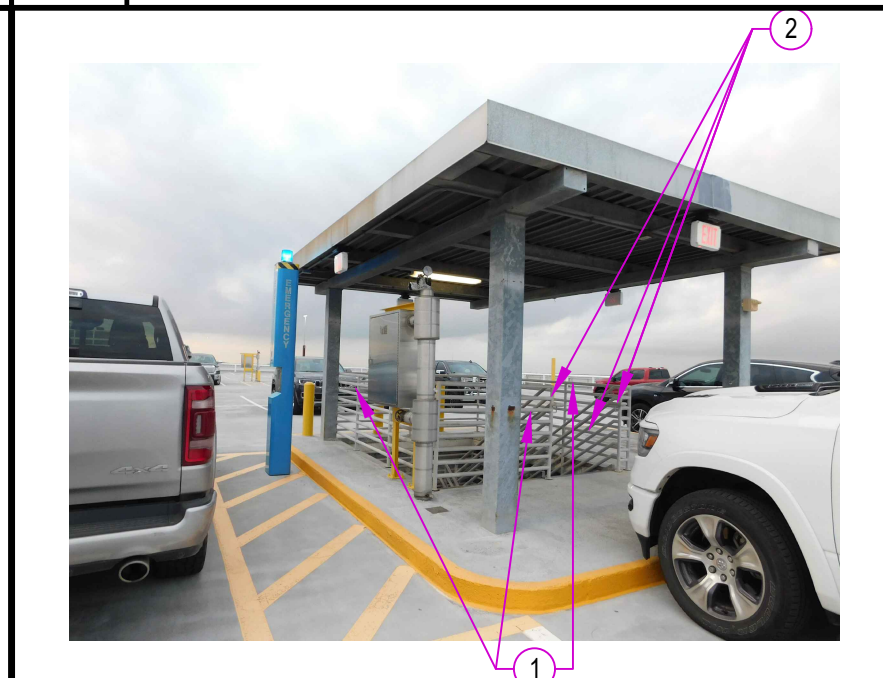
10 PLAN AT STAIR
1/2" = 1'-0"



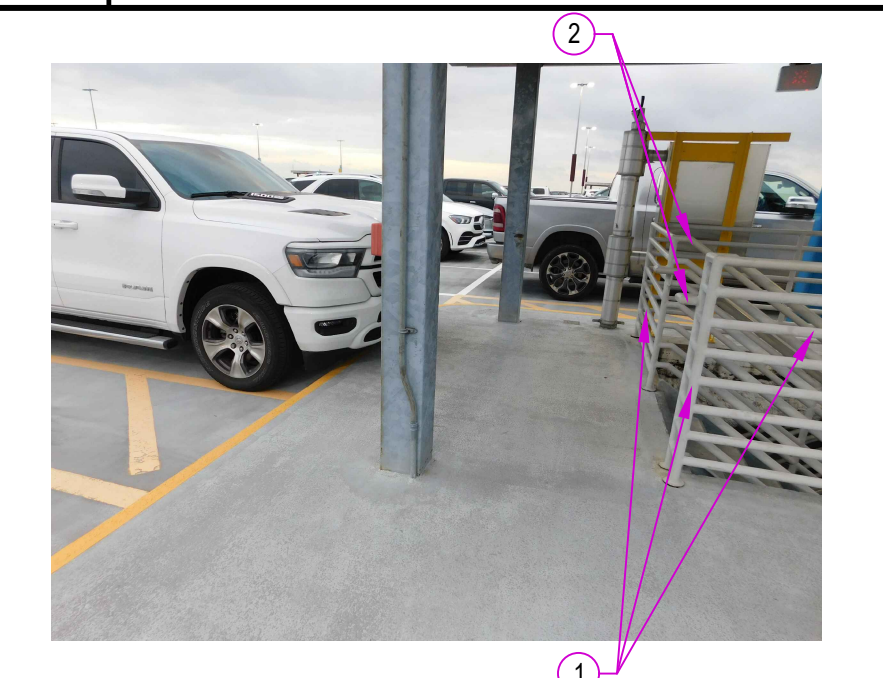
07 PHOTO 06 - STAIR 8
1/8" = 1'-0"



01 PHOTO 01 - STAIR 8
1/8" = 1'-0"

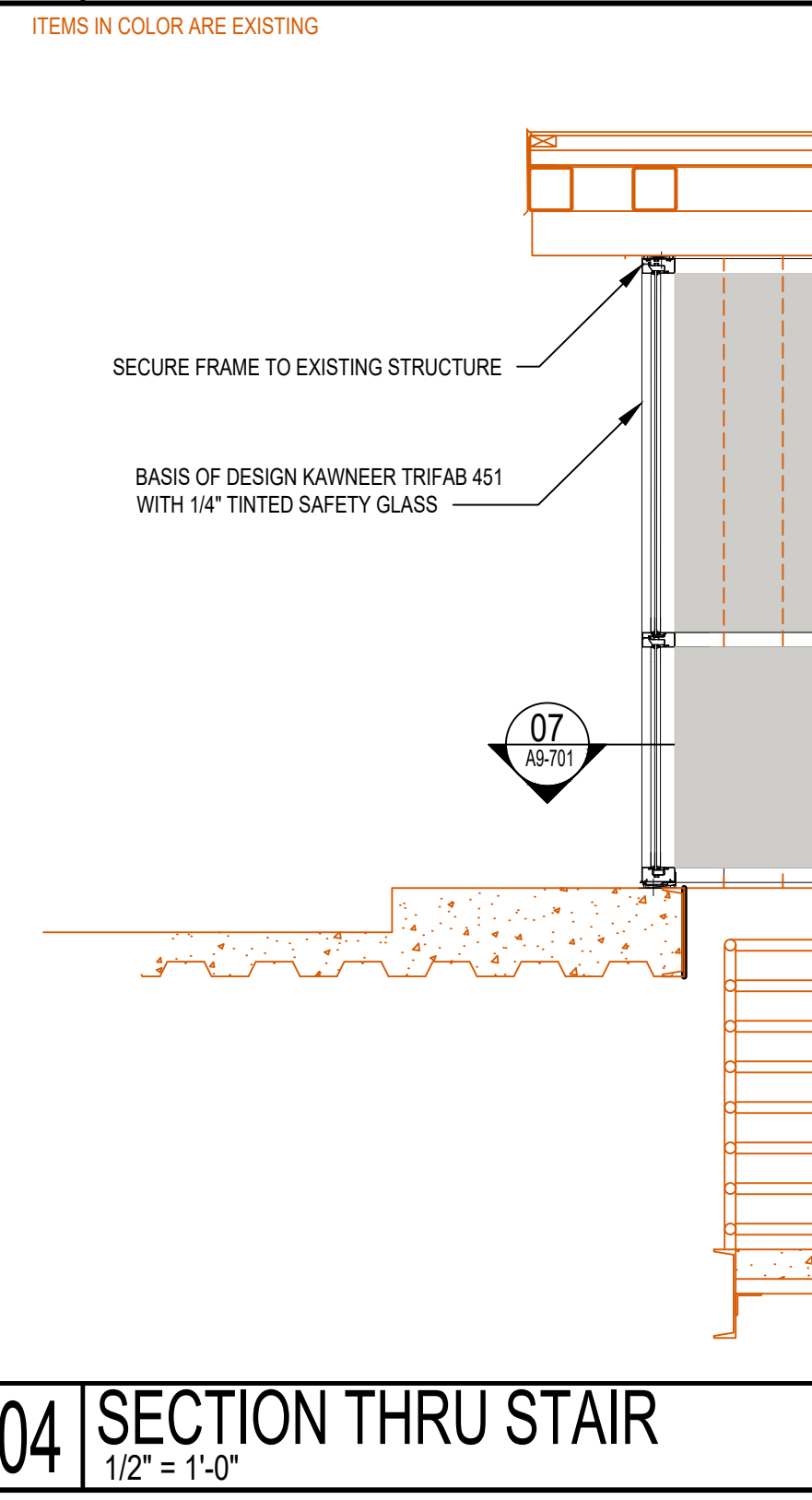


02 PHOTO 02 - STAIR 8
1/8" = 1'-0"



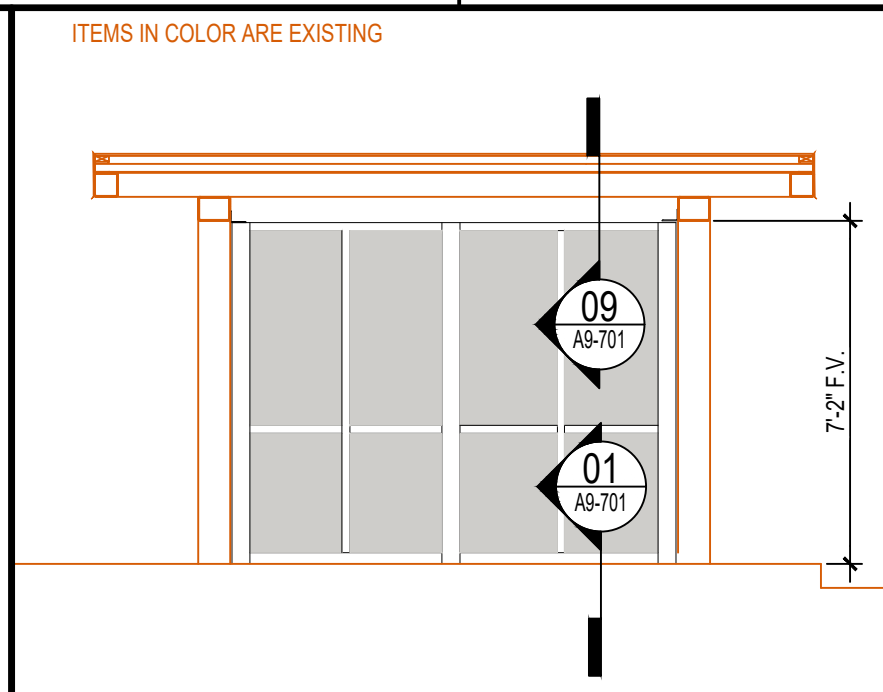
03 PHOTO 03 - STAIR 8
1/8" = 1'-0"

04 SECTION THRU STAIR
1/2" = 1'-0"

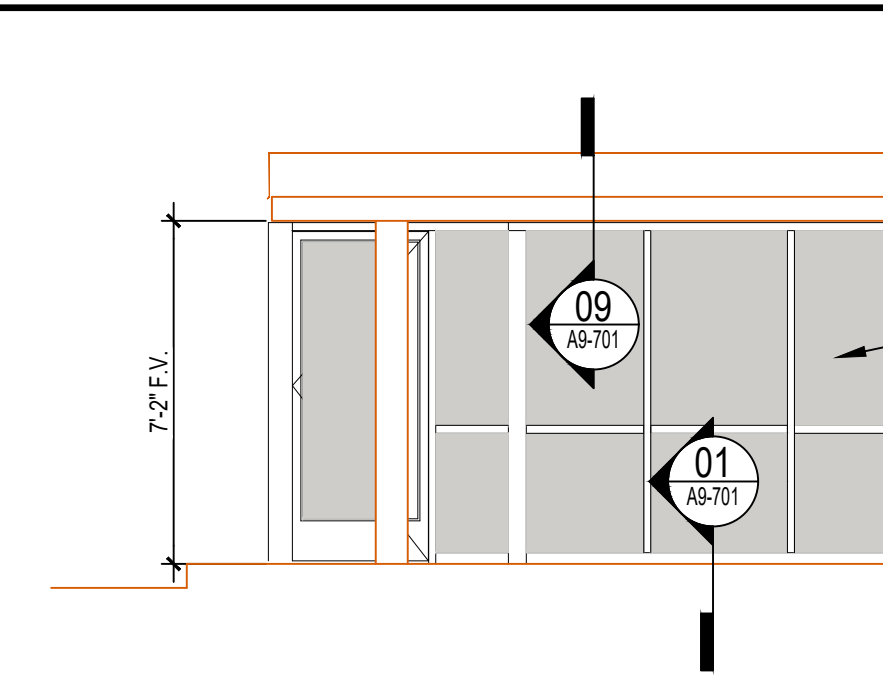


E:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A8-708 SECTION - ELEVATION - PLAN AT STAIR 08 & 09 O.H.DWG
 PLOT DATE: 25 January 2023 5:33:37 PM
 OLD DWA No.:
 DOA DWG FILE:

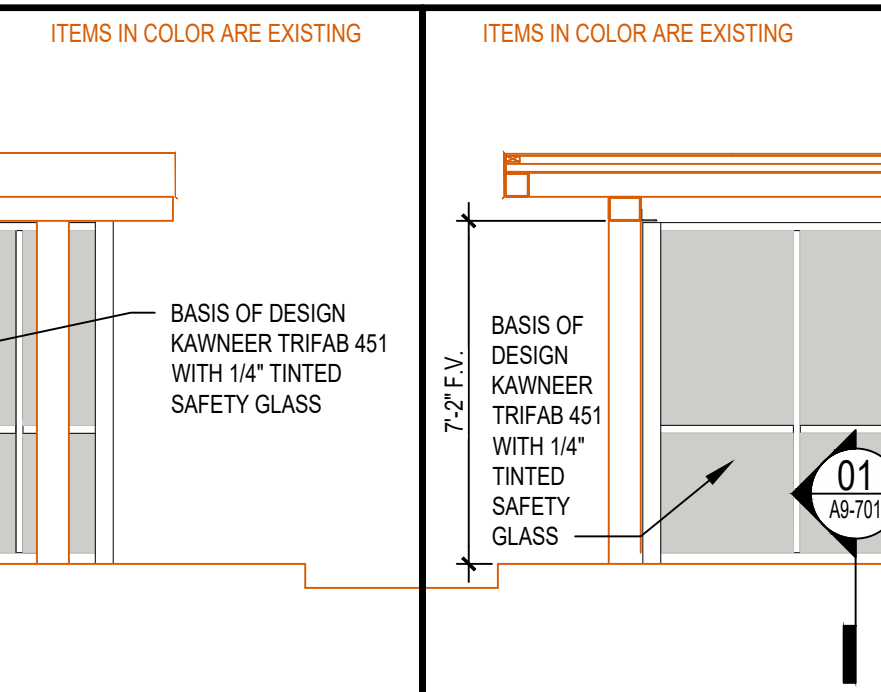
- ① CONTRACTOR TO DEMO EXISTING RAIL SURROUNDING STAIR.
- ② EXISTING STAIR HANDRAIL AND GUARDRAIL TO REMAIN.
- ③ CONTRACTOR SHALL PROVIDE TOPPING TO SLOPE CONCRETE SURFACE AWAY FROM WINDOW SYSTEM AND PROVIDE CLOSURE FOR WINDOW SYSTEM.



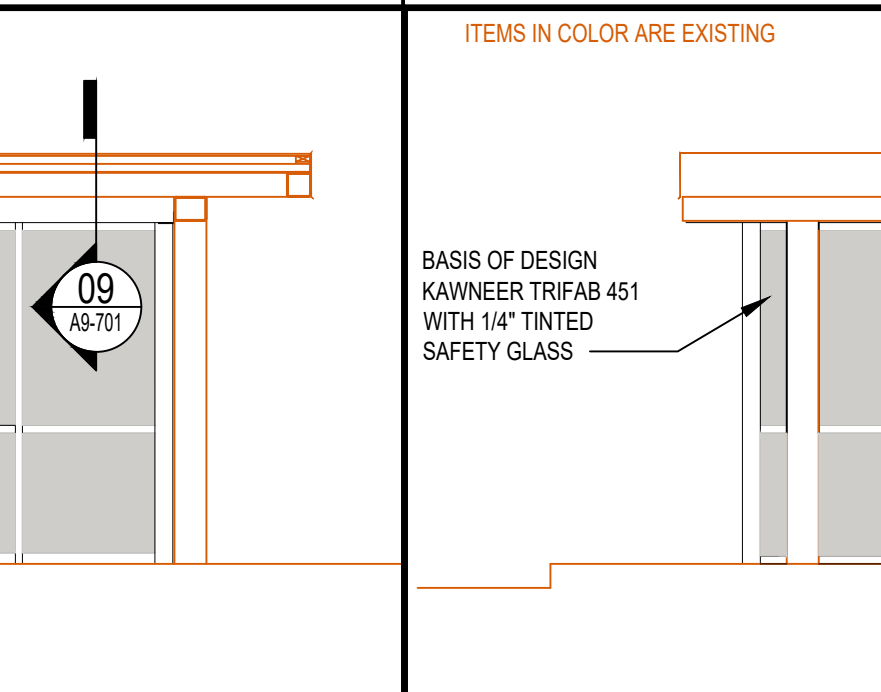
12 ELEVATION WEST STAIR 10 & 11 O.H.
1/4" = 1'-0"



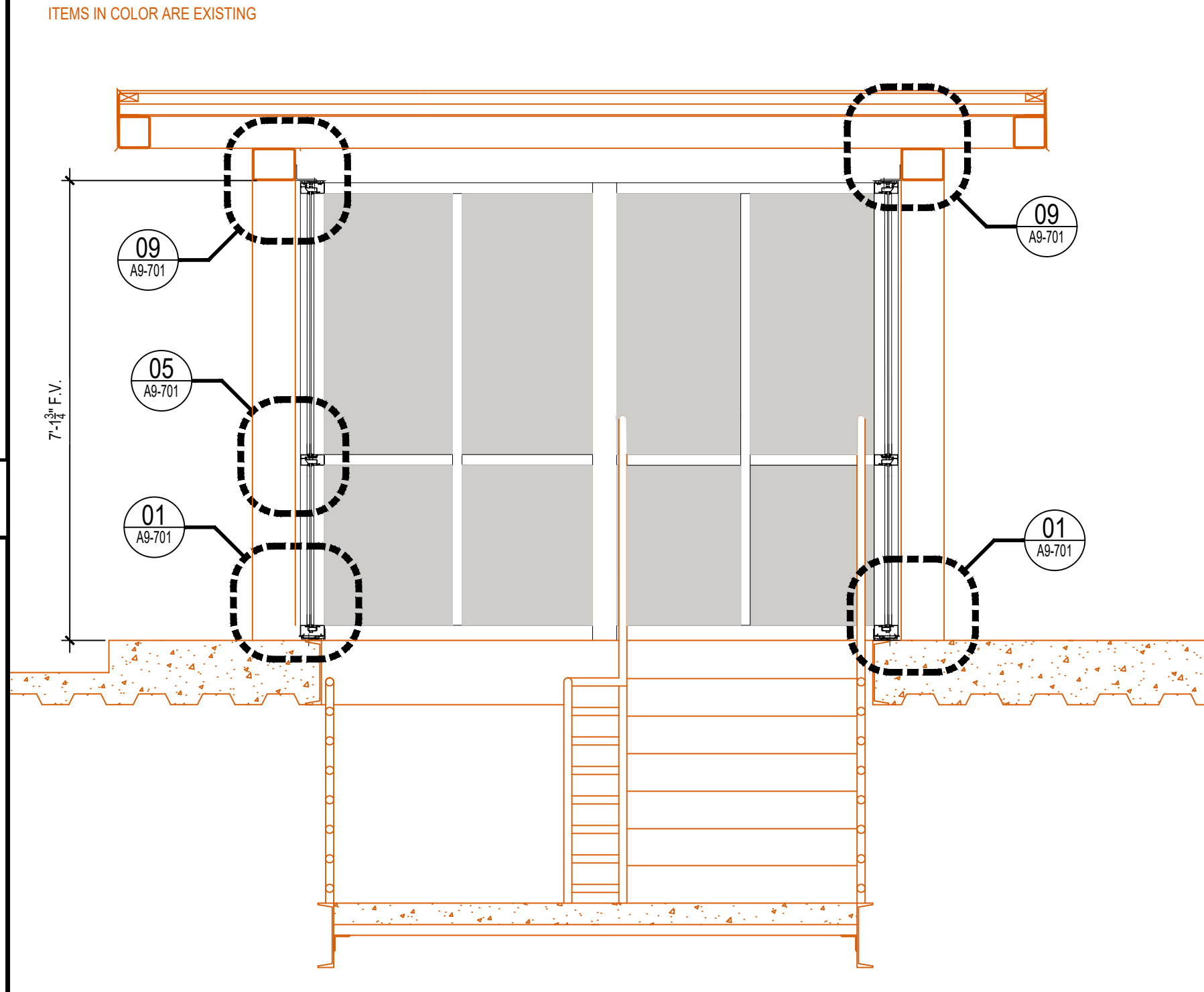
13 ELEVATION SOUTH STAIR 10 & 11 O.H.
1/4" = 1'-0"



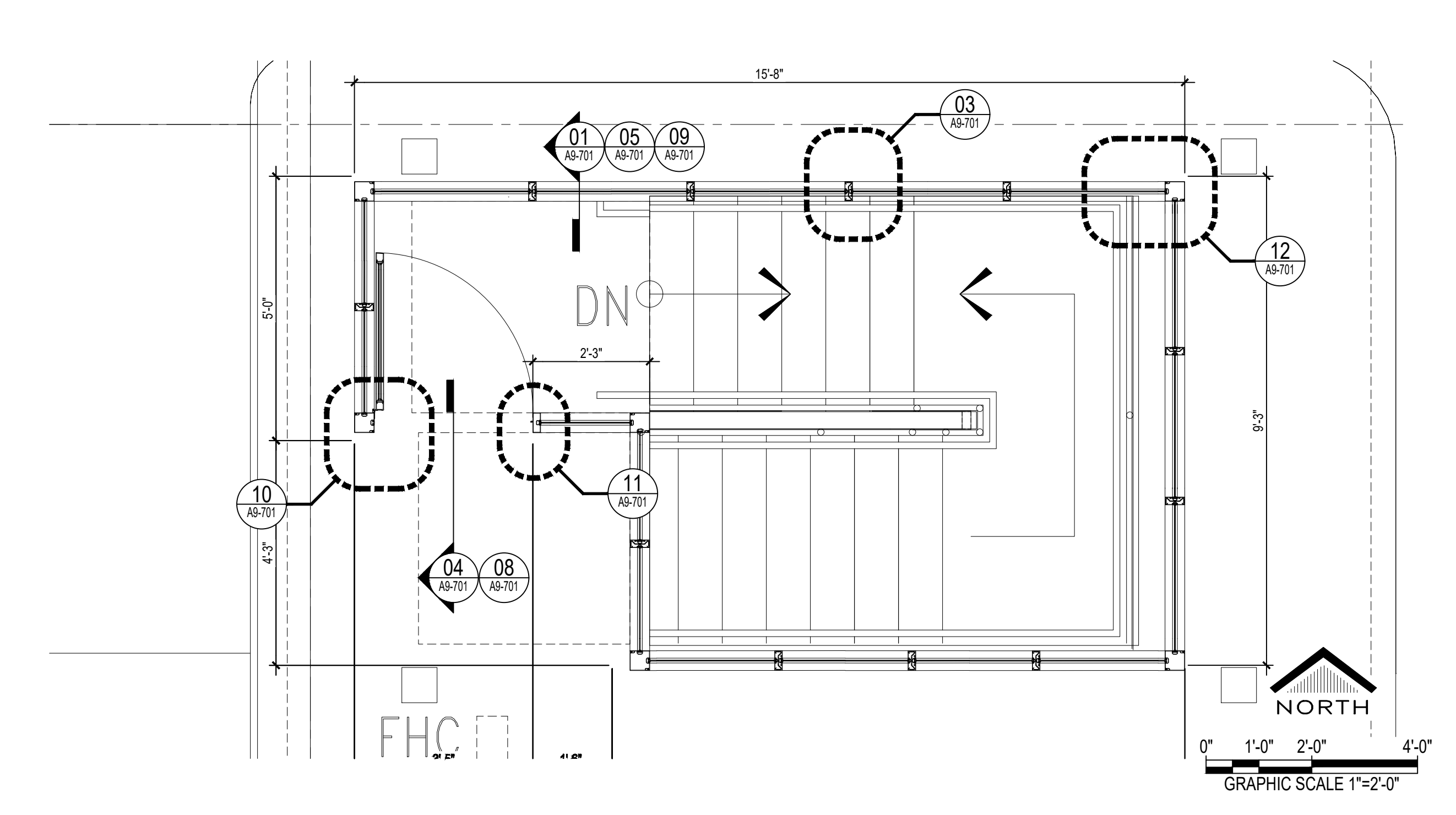
14 ELEVATION EAST STAIR 10 & 11 O.H.
1/4" = 1'-0"



15 ELEVATION NORTH STAIR 10 & 11 O.H.
1/4" = 1'-0"

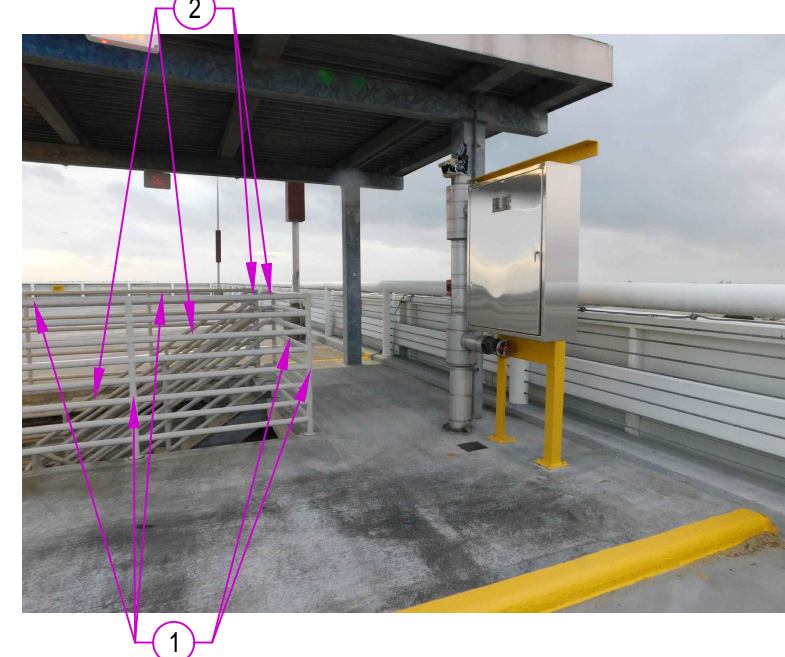


08 SECTION AT STAIR 10 & 11 O.H.
1/2" = 1'-0"



10 PLAN AT STAIR 10 & 11 O.H.
1/2" = 1'-0"

11 KEYNOTES
1/8" = 1'-0"



08 PHOTO 07 - STAIR 11
1/8" = 1'-0"



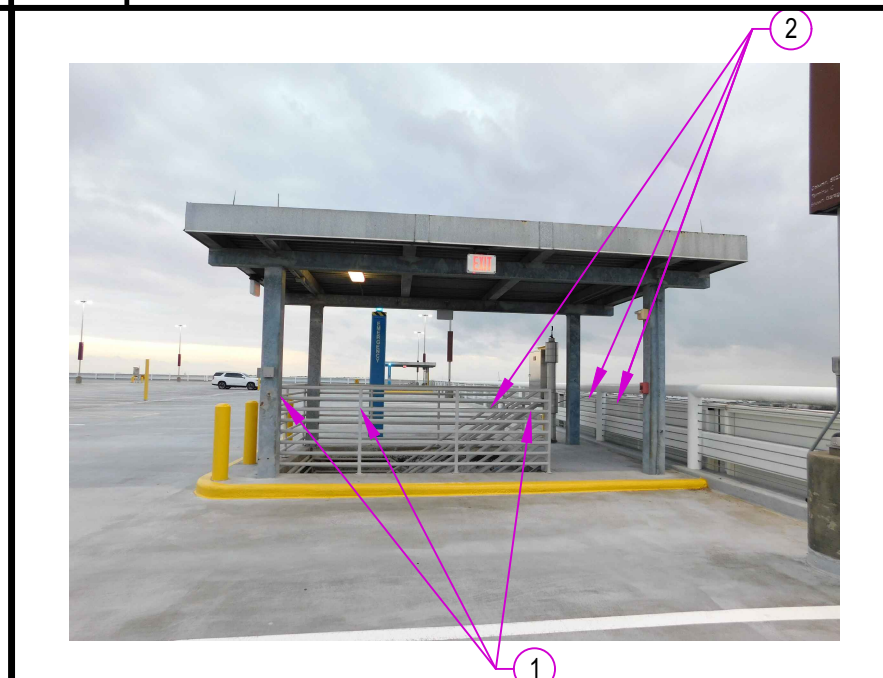
05 PHOTO 04 - STAIR 10
1/8" = 1'-0"



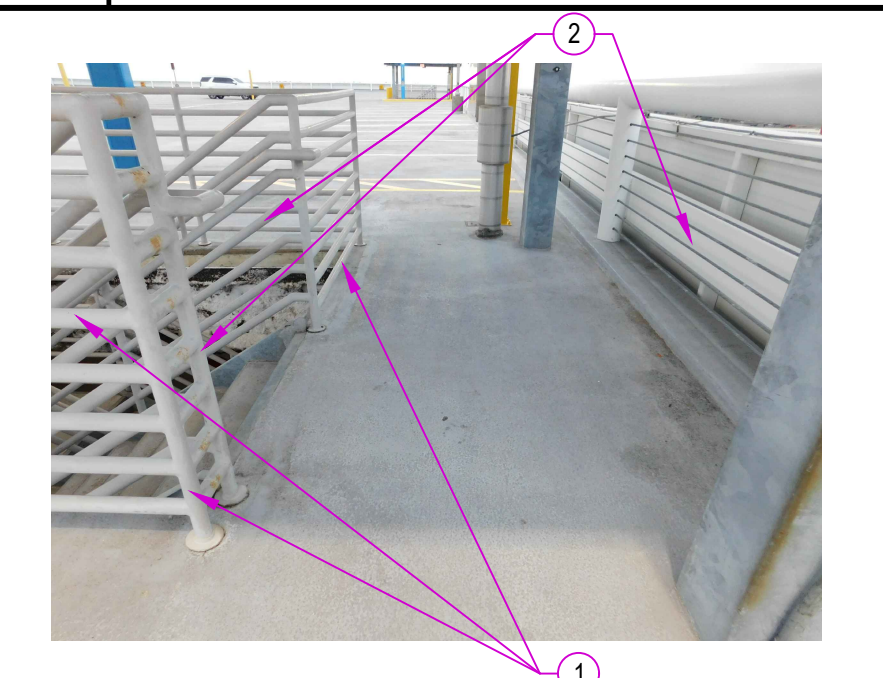
06 PHOTO 05 - STAIR 10
1/8" = 1'-0"



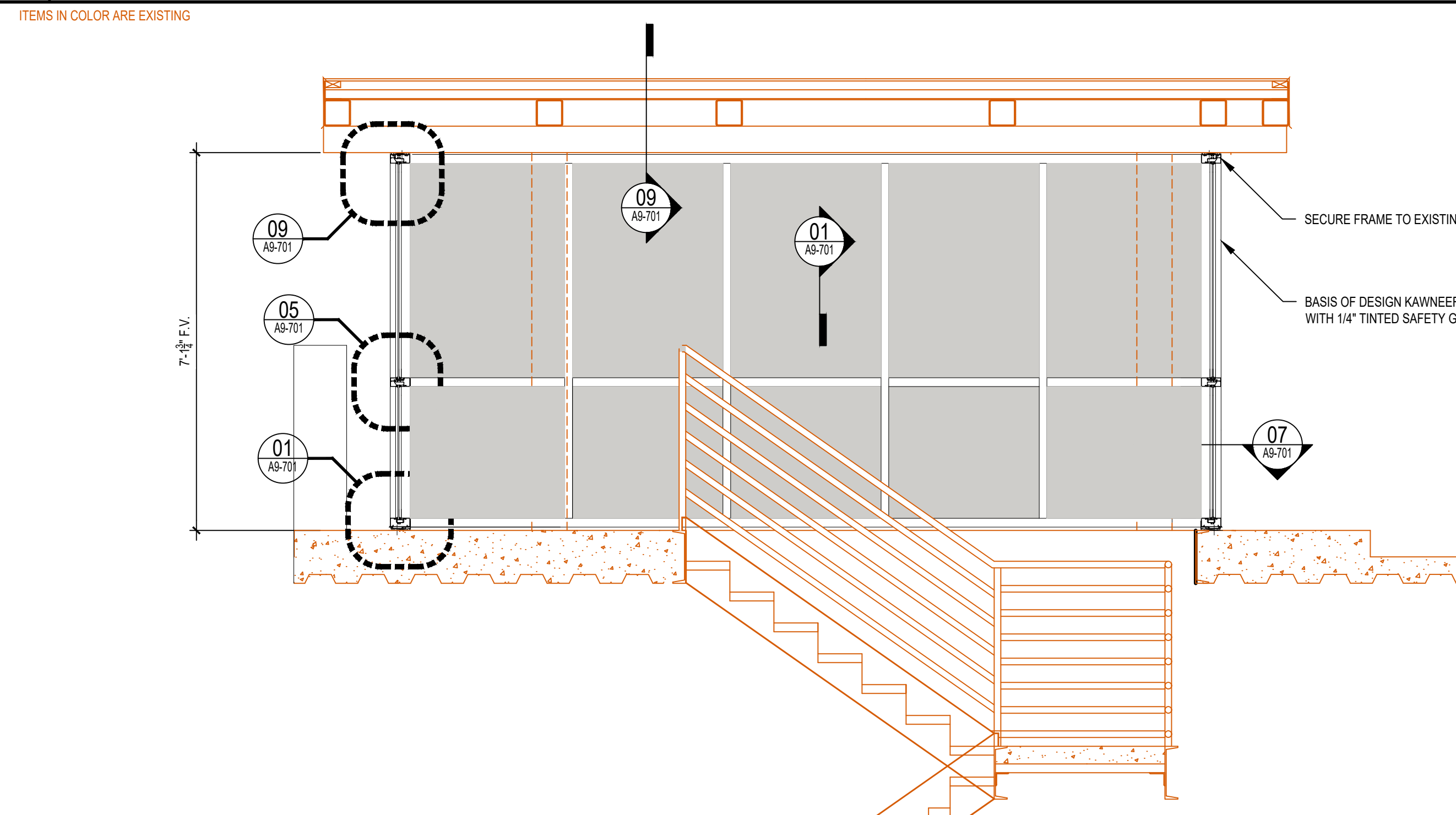
07 PHOTO 06 - STAIR 11
1/8" = 1'-0"



01 PHOTO 02 - STAIR 10
1/8" = 1'-0"



03 PHOTO 03 - STAIR 10
1/8" = 1'-0"



04 SECTION THRU STAIR 10
1/2" = 1'-0"

HOUSTON AIRPORTS
 TERMINAL C AT IAH - 2800 N TERMINAL RD
 HOUSTON, TX 77032
AH TERMINAL C HELIX RAMP BEARING AND MISC REPAIRS
 C.I.P. No. A.I.P. No.
 C.O.H. No. D.O.A. No.

MWA ARCHITECTS
 11767 KATY FREEWAY SUITE 430
 HOUSTON, TEXAS 77079 - 713-482-2338

DESIGNER PROJECT No.: 19-21
 PROJECT STATUS: CONSTRUCTION DOCUMENTS

REVISIONS

No.	DESCRIPTION	DATE	BY
0	ISSUED FOR PERMIT 12/15/2022		J TOHILL
1	ISSUED FOR BID 01/20/2023		J TOHILL

DESIGNER: J TOHILL
 DRAWN BY: J TOHILL
 CHECKED BY: TBD
 ISSUE DATE: 01/20/2023
 APPROVED BY:
 APPROVAL DATE:

DIRECTOR
 of
 HOUSTON AIRPORT SYSTEM

Review/Approval Category
IFB
 ISSUED FOR BID

[Signature]
 REGISTERED ARCHITECT
 STATE OF TEXAS
 #2651
 01/20/2023

8

TERMINAL "C"

SECTION - ELEVATION - PLAN AT STAIR 10 & 11 O.H.
 SHEET No. A8-710
 SCALE:

F:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A8-710 SECTION - ELEVATION - PLAN AT STAIR 10 & 11 O.H.;DWG
 PLOT DATE: 25 January 2023 5:34:31 PM
 OLD DOW No.:
 DOA DWG FILE:

REVISIONS			
No.	DESCRIPTION	DATE	BY
0	ISSUED FOR PERMIT 12/15/2022		J TOHILL
1	ISSUED FOR BID 01/20/2023		J TOHILL

DESIGNER:	J TOHILL
DRAWN BY:	J TOHILL
CHECKED BY:	TBD
ISSUE DATE:	01/20/2023
APPROVED BY:	
APPROVAL DATE:	

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category	
IFB	
ISSUED FOR BID	

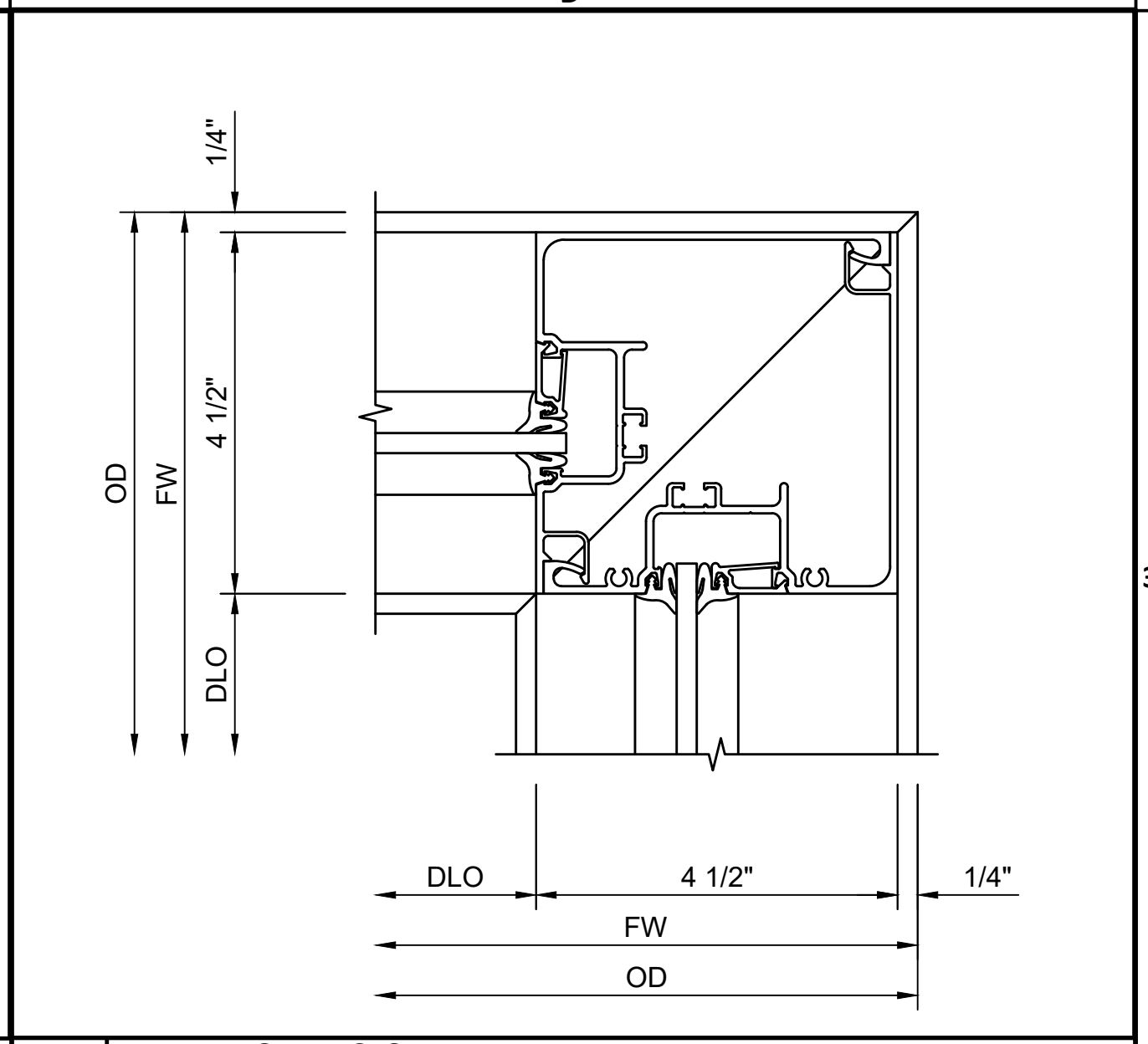
01/20/2023

TERMINAL "C"

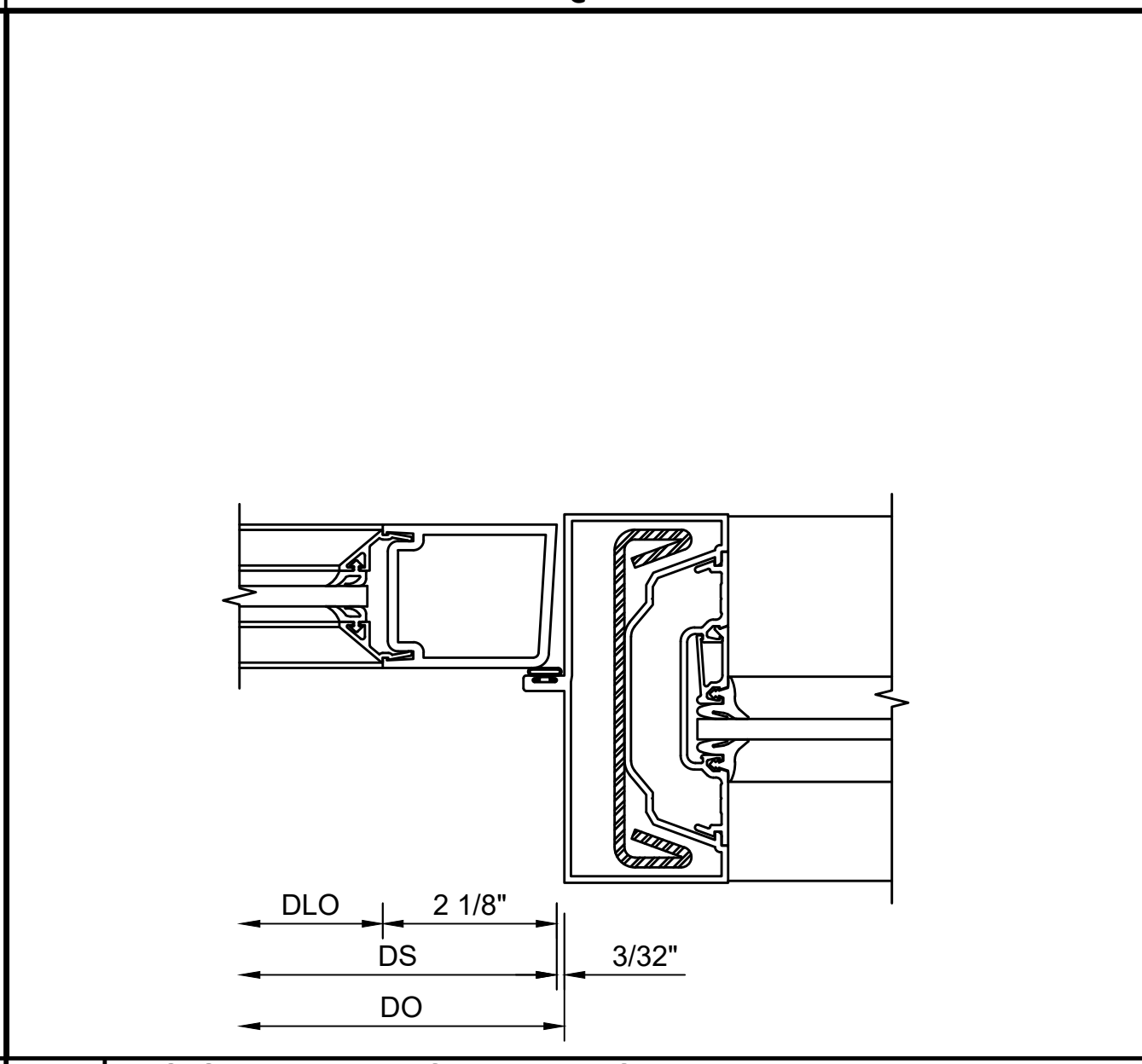
SHEET NAME:
WINDOW AND DOOR DETAILS

SHEET No. A9-701 SCALE:

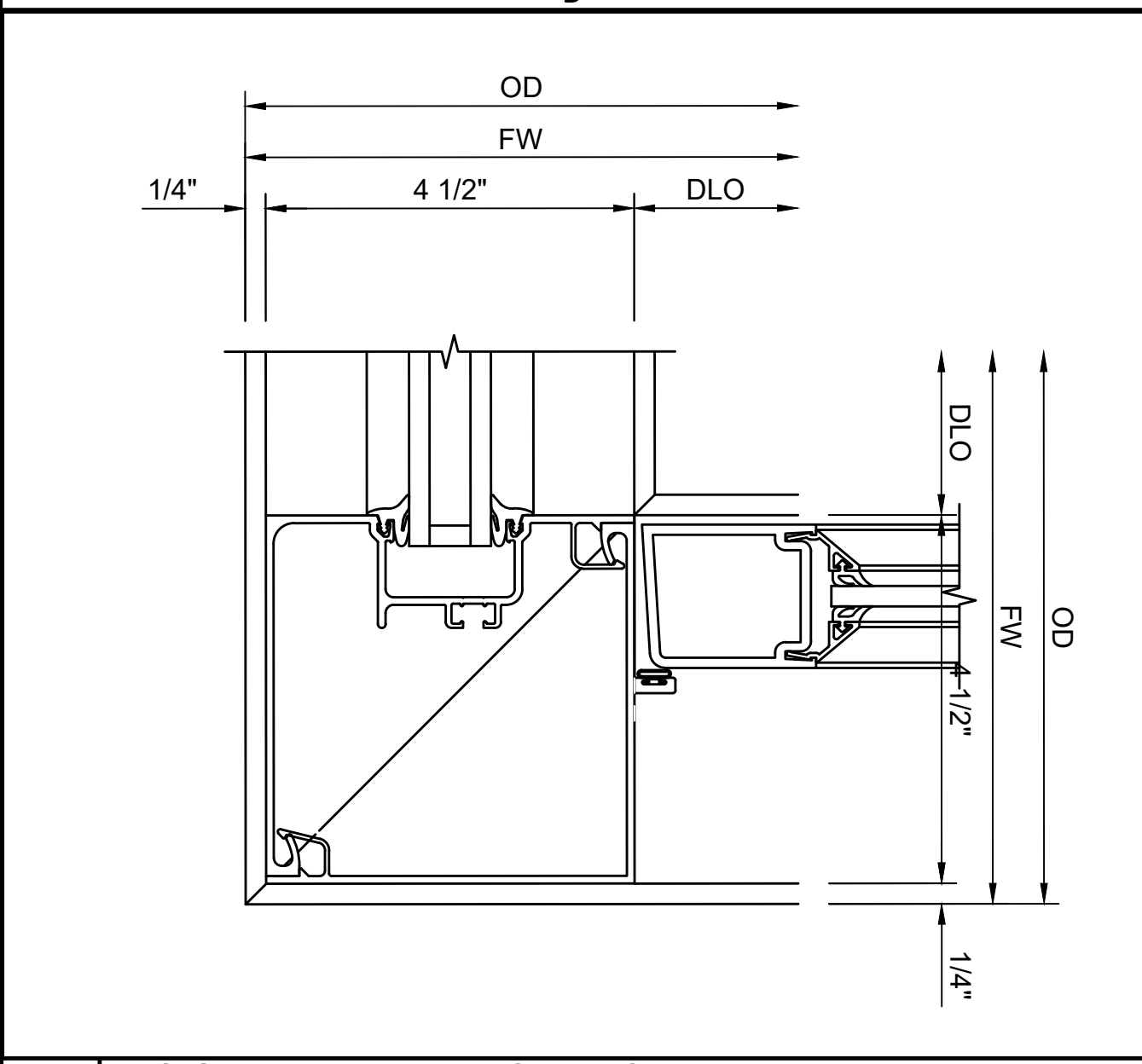
SHEET SIZE: 22"x34" ANSI-D



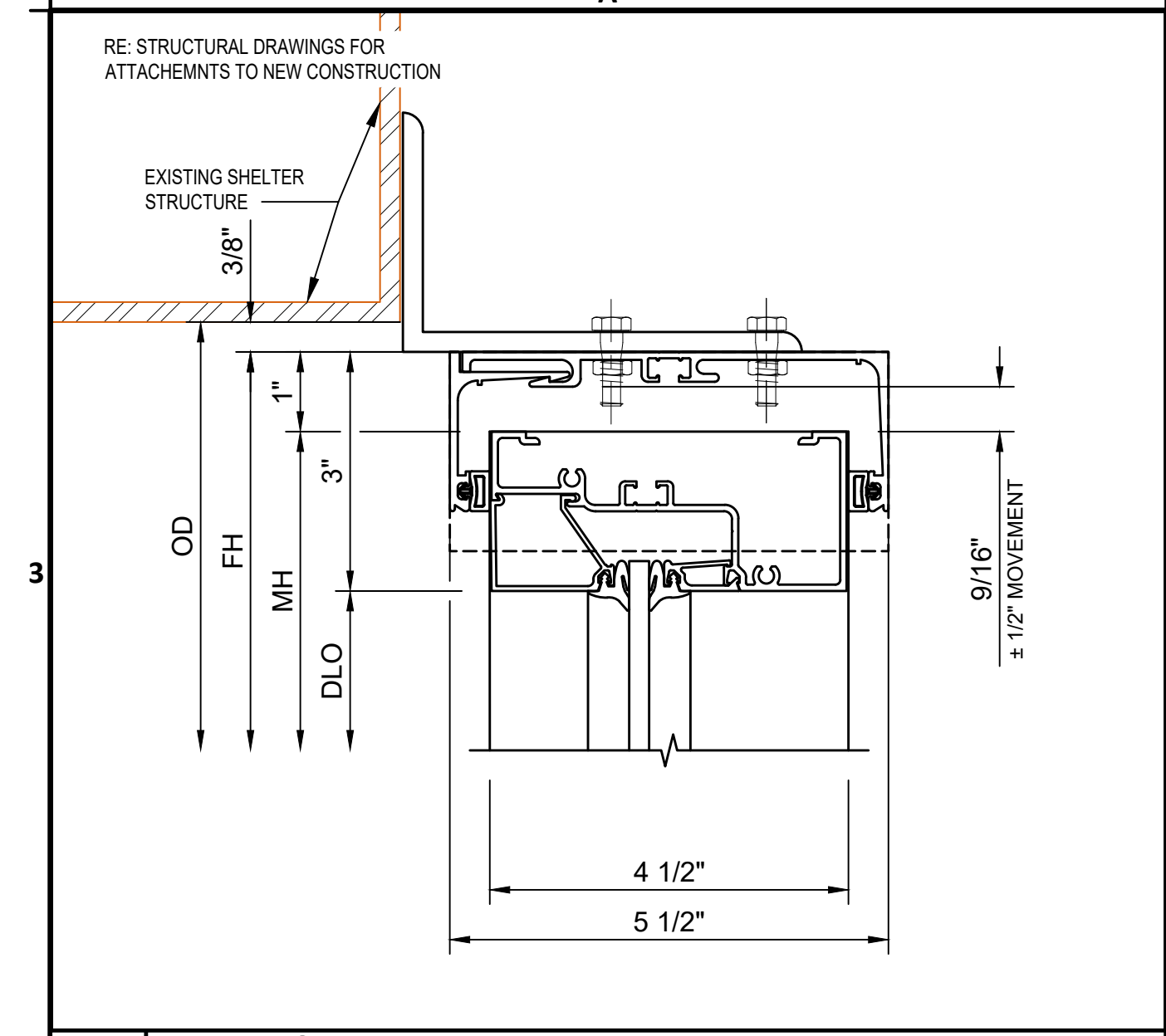
12 WINDOW CORNER
6" = 1'-0"



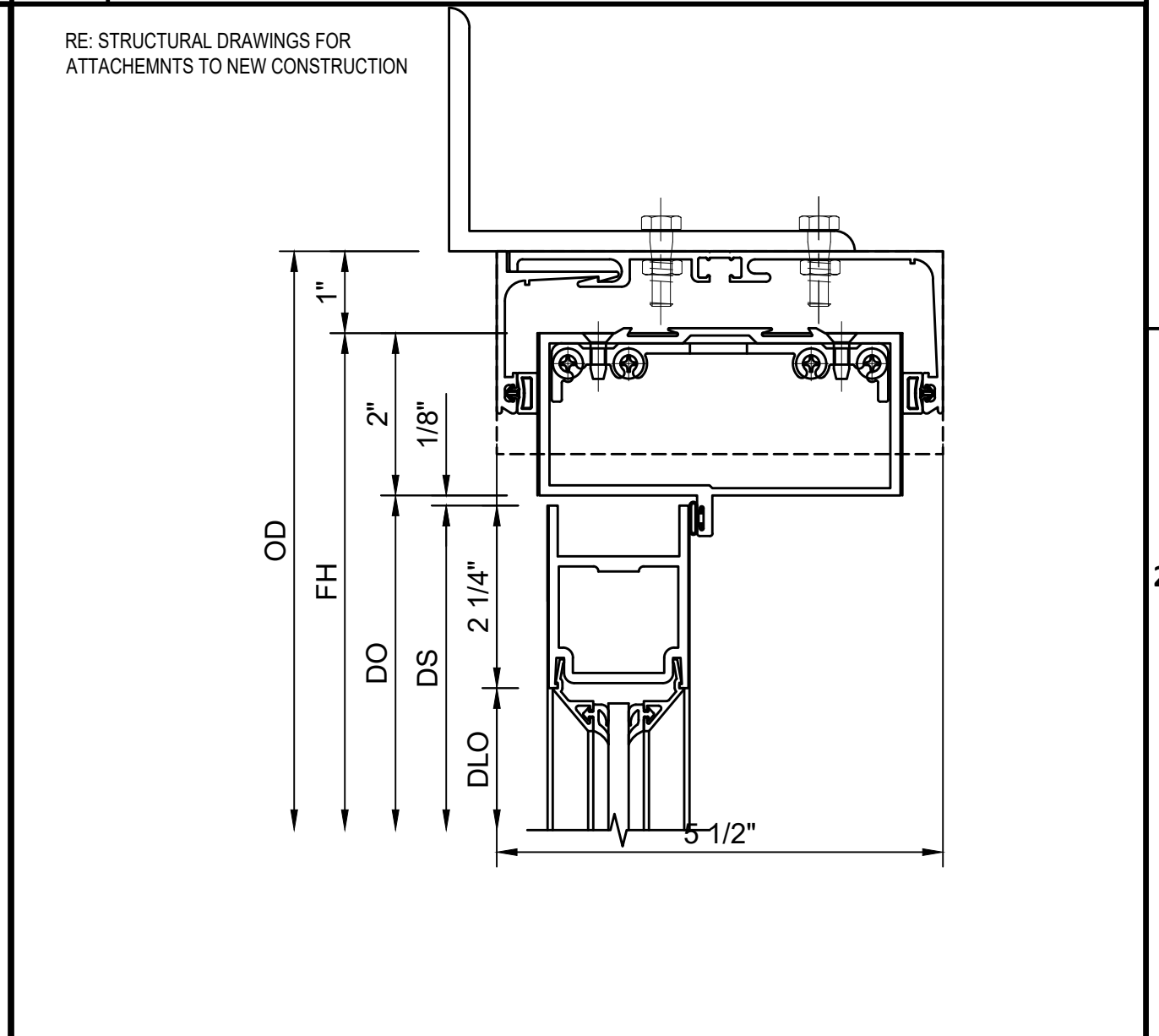
11 DOOR JAMB STRIKE SIDE
6" = 1'-0"



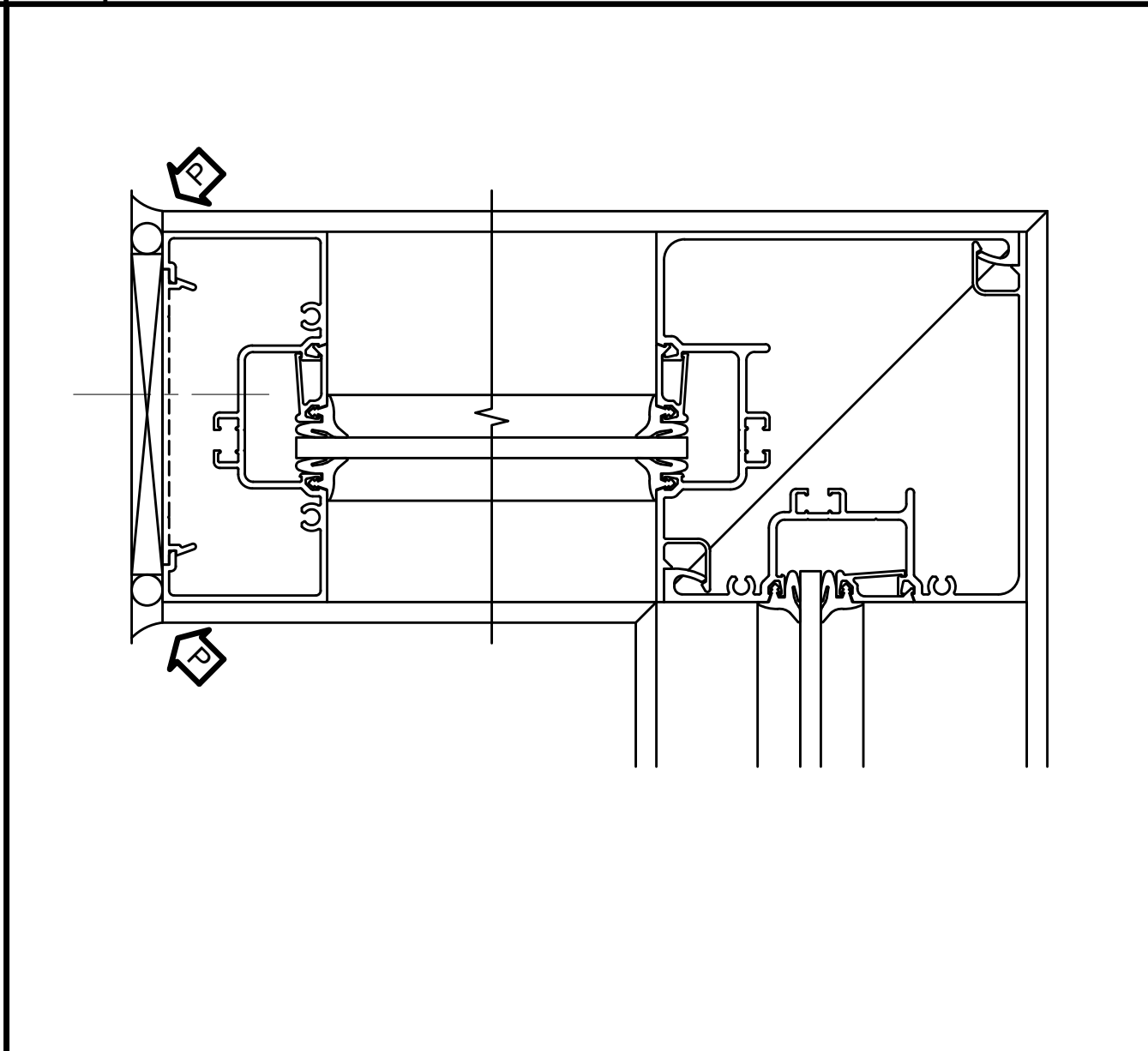
10 DOOR JAMB HINGED SIDE
6" = 1'-0"



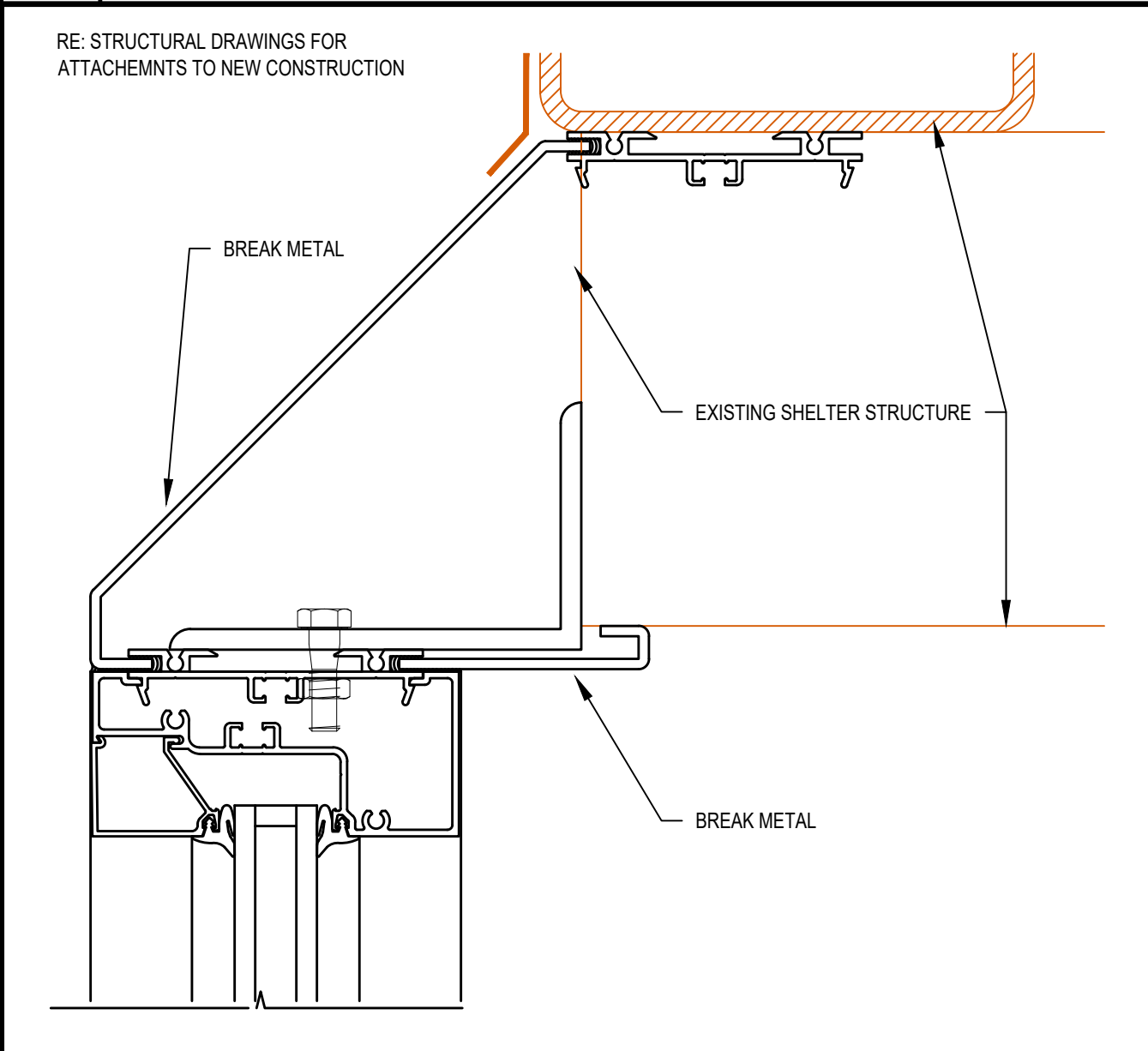
09 WINDOW HEAD
6" = 1'-0"



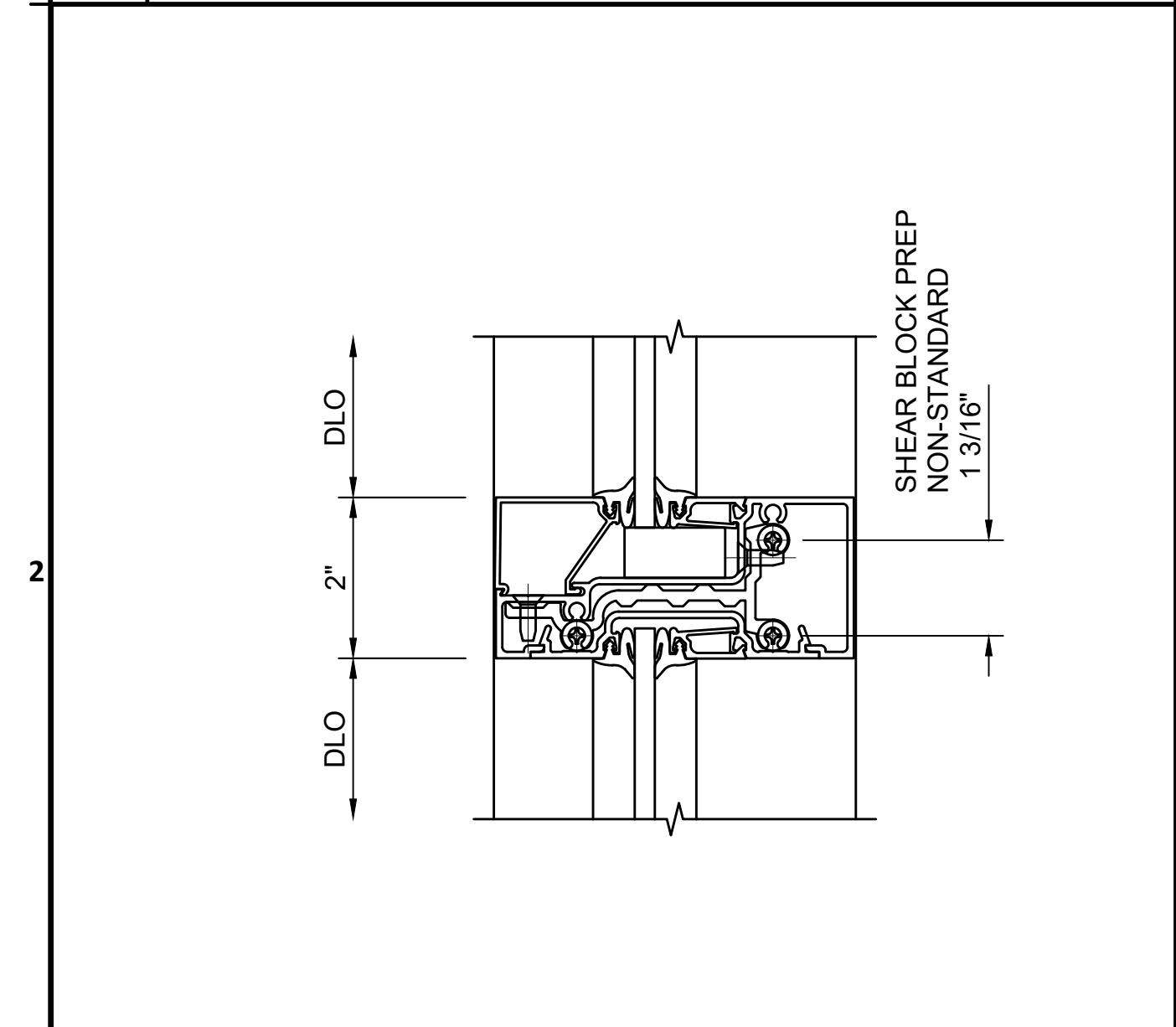
08 DOOR HEAD
6" = 1'-0"



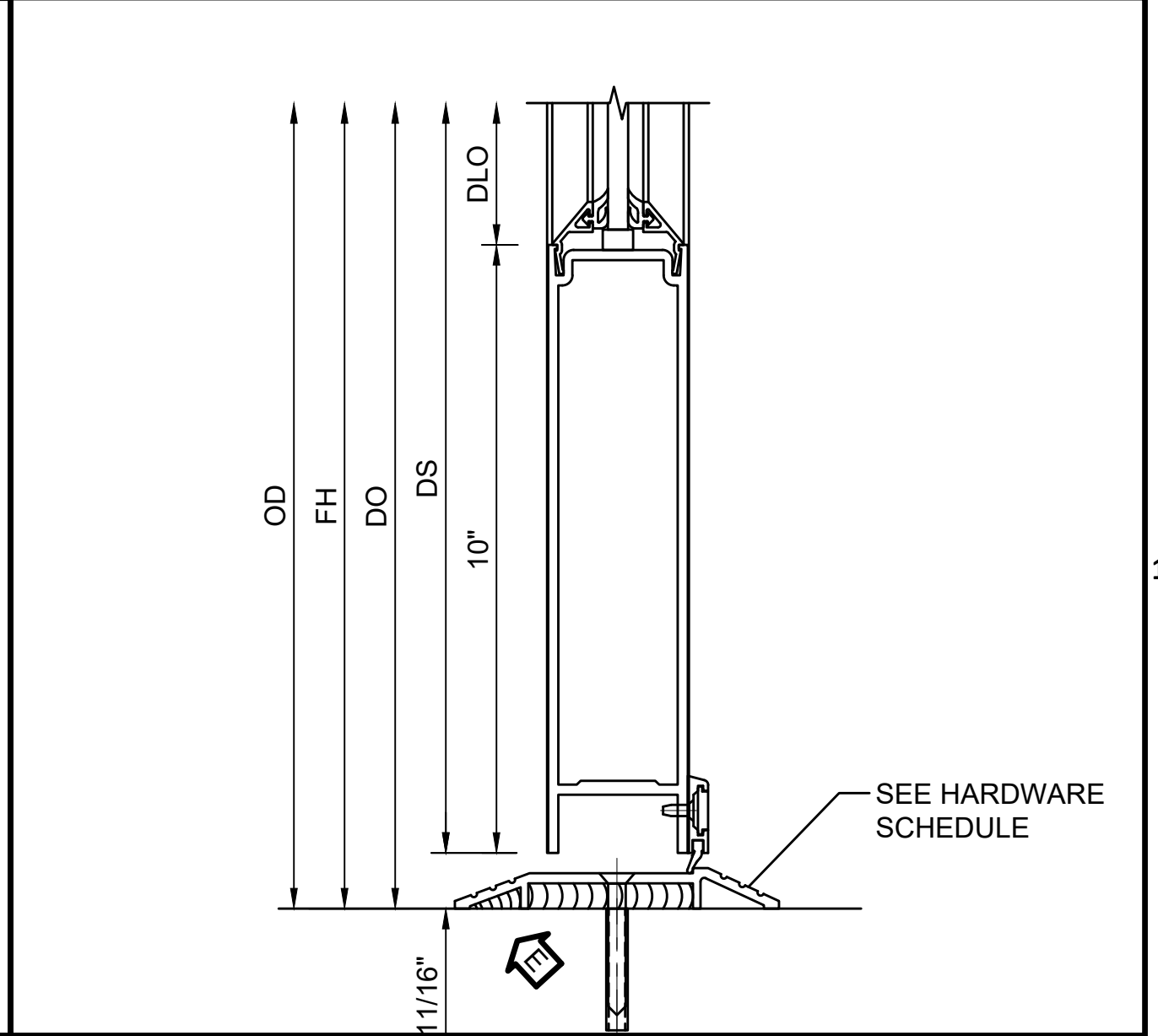
07 WINDOW CORNER AND JAMB
6" = 1'-0"



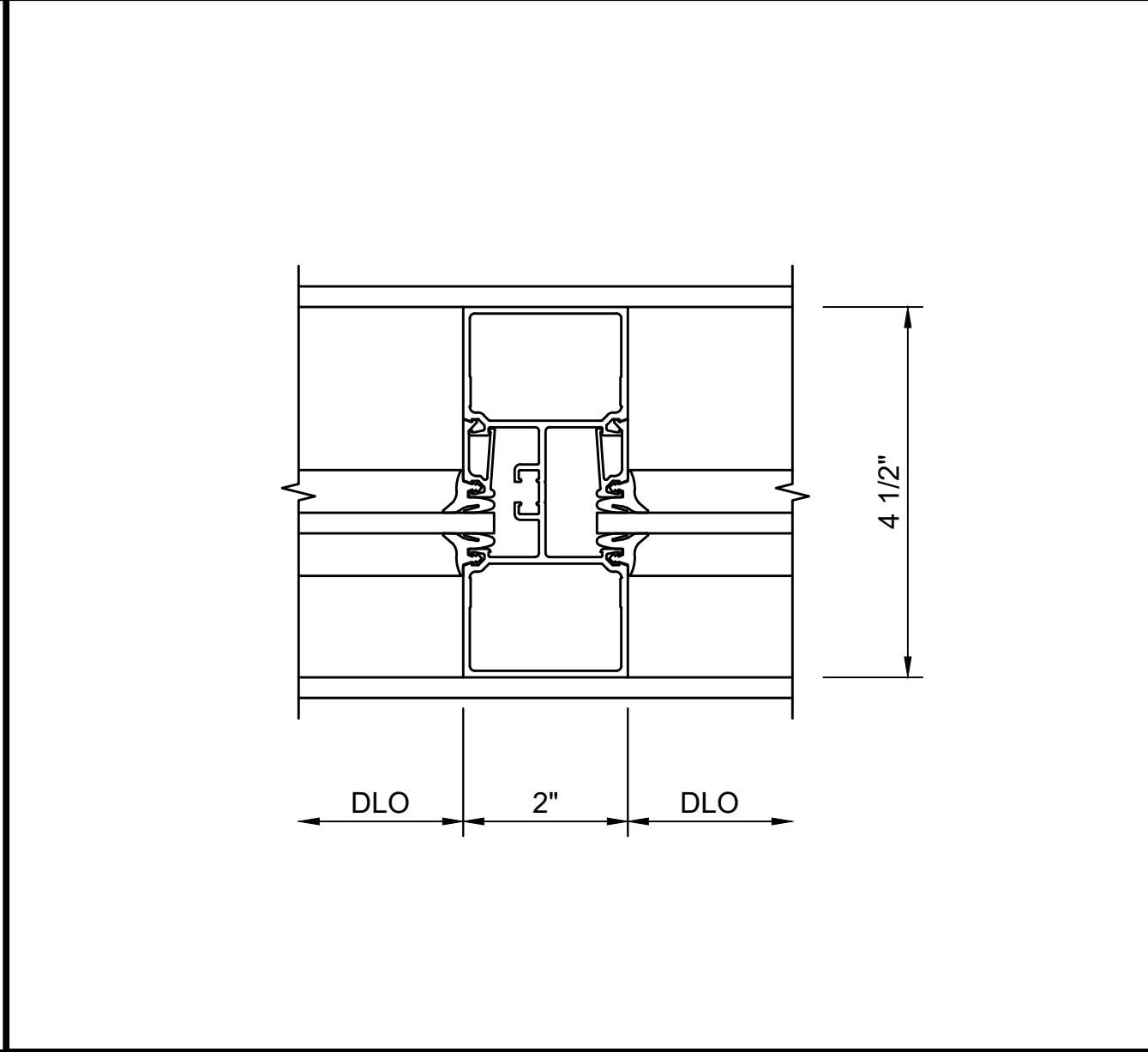
06 WINDOW HEAD BEYOND ROOF COVER
6" = 1'-0"



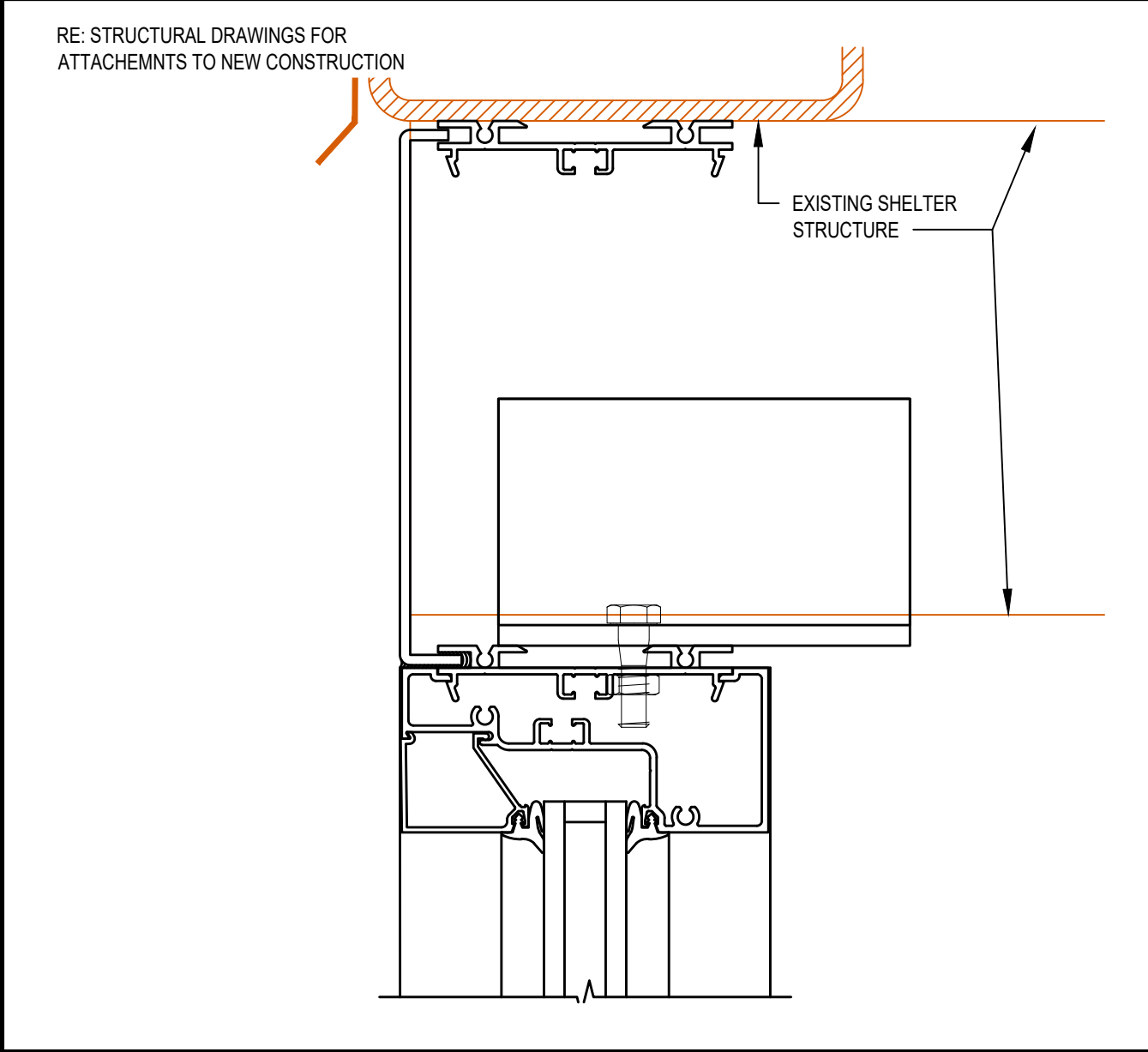
05 WINDOW MULL HOR
6" = 1'-0"



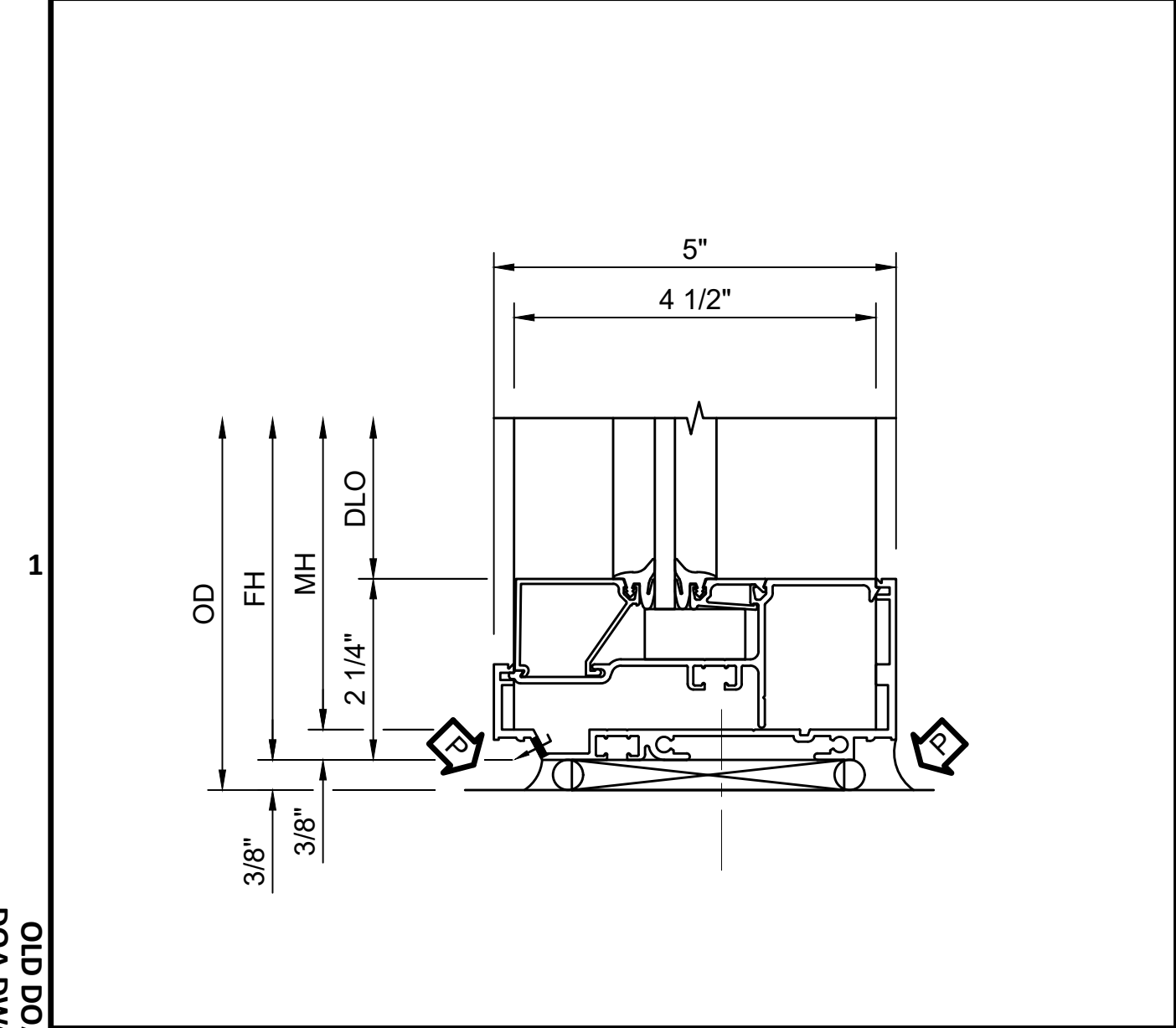
04 DOOR SILL
6" = 1'-0"



03 WINDOW MULL VER
6" = 1'-0"



02 WINDOW HEAD AT EDGE OF ROOF
6" = 1'-0"



01 WINDOW SILL
6" = 1'-0"

E:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A9-701 WINDOW AND DOOR DETAILS.DWG
 PLOT DATE: 25 January 2023 5:34:42 PM
 OLD DOA No.:
 DOA DWG FILE:



11767 KATY FREEWAY SUITE 430
HOUSTON, TEXAS 77079 - 713-482-2338

DESIGNER PROJECT No.: 19-21
PROJECT STATUS: ISSUED FOR CONSTRUCTION

REVISIONS

No.	DESCRIPTION	DATE	BY

DESIGNER: J TOHILL
DRAWN BY: J TOHILL
CHECKED BY: TBD
ISSUE DATE: 12/15/2022
APPROVED BY:
APPROVAL DATE:

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

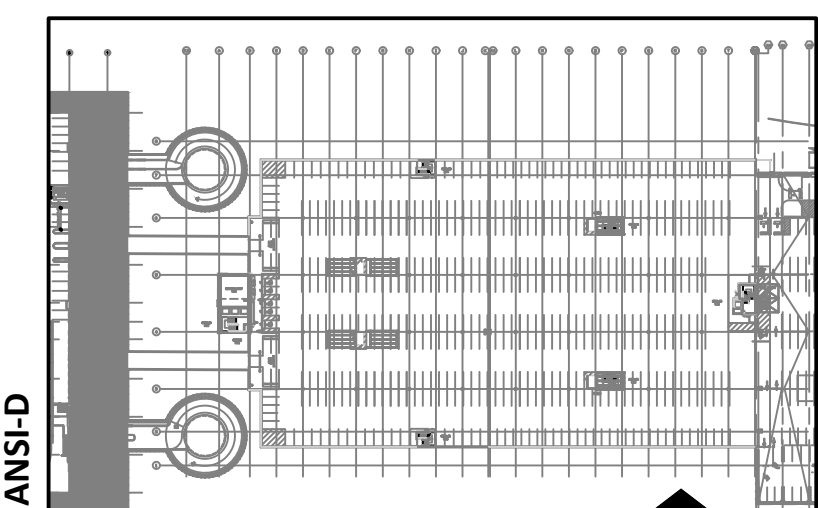
Review/ Approval Category

IFR

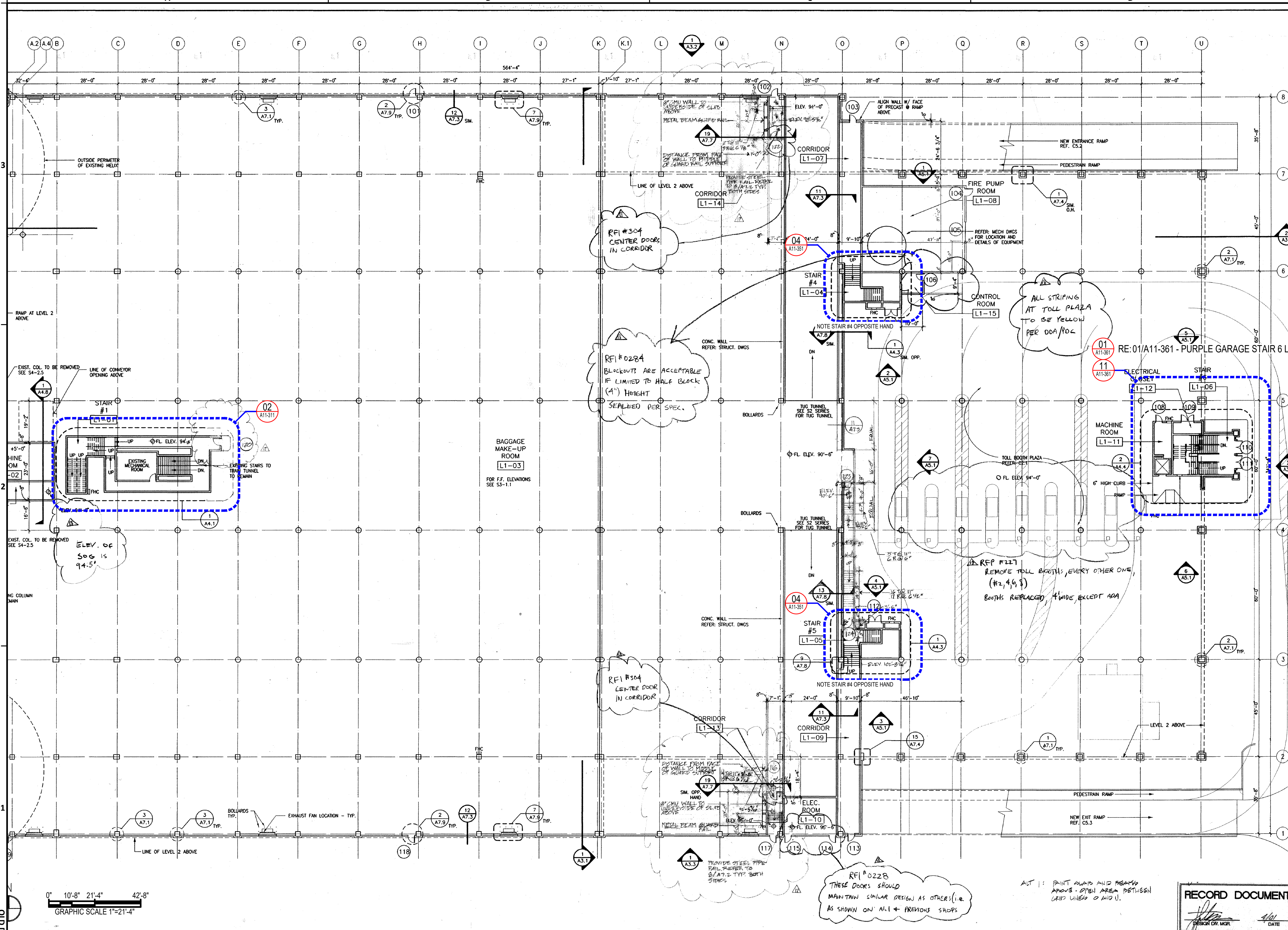
ISSUED FOR REVIEW

Noe Almaguer
Tx. REG. NO. 22651
DATE: July 24, 2023

FOR
INTERIM REVIEW
AND NOT INTENDED
FOR CONSTRUCTION,
BIDDING OR PERMIT
PURPOSES.



TERMINAL "C"
SHEET NAME:
LEVEL 1 PURPLE GARAGE
SHEET No. A10-01
SCALE:



RECORD DOCUMENT
DATE

PLOT DATE: 24 JULY 2023 8:07:08 PM
OLD DOW No. :
DOA DWG FILE:
FILE: 19-21 HAS - IAH TC STRUCTURAL & PONDING DWGS A10-01 LEVEL 1 PURPLE GARAGE DWG
FILE: 19-21 HAS - IAH TC STRUCTURAL & PONDING DWGS A10-01 LEVEL 1 PURPLE GARAGE DWG

REVISIONS		
No.	DESCRIPTION	DATE

DESIGNER:	J TOHILL
DRAWN BY:	J TOHILL
CHECKED BY:	TBD
ISSUE DATE:	12/15/2022
APPROVED BY:	
APPROVAL DATE:	

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/Approval Category

IFR

ISSUED FOR REVIEW

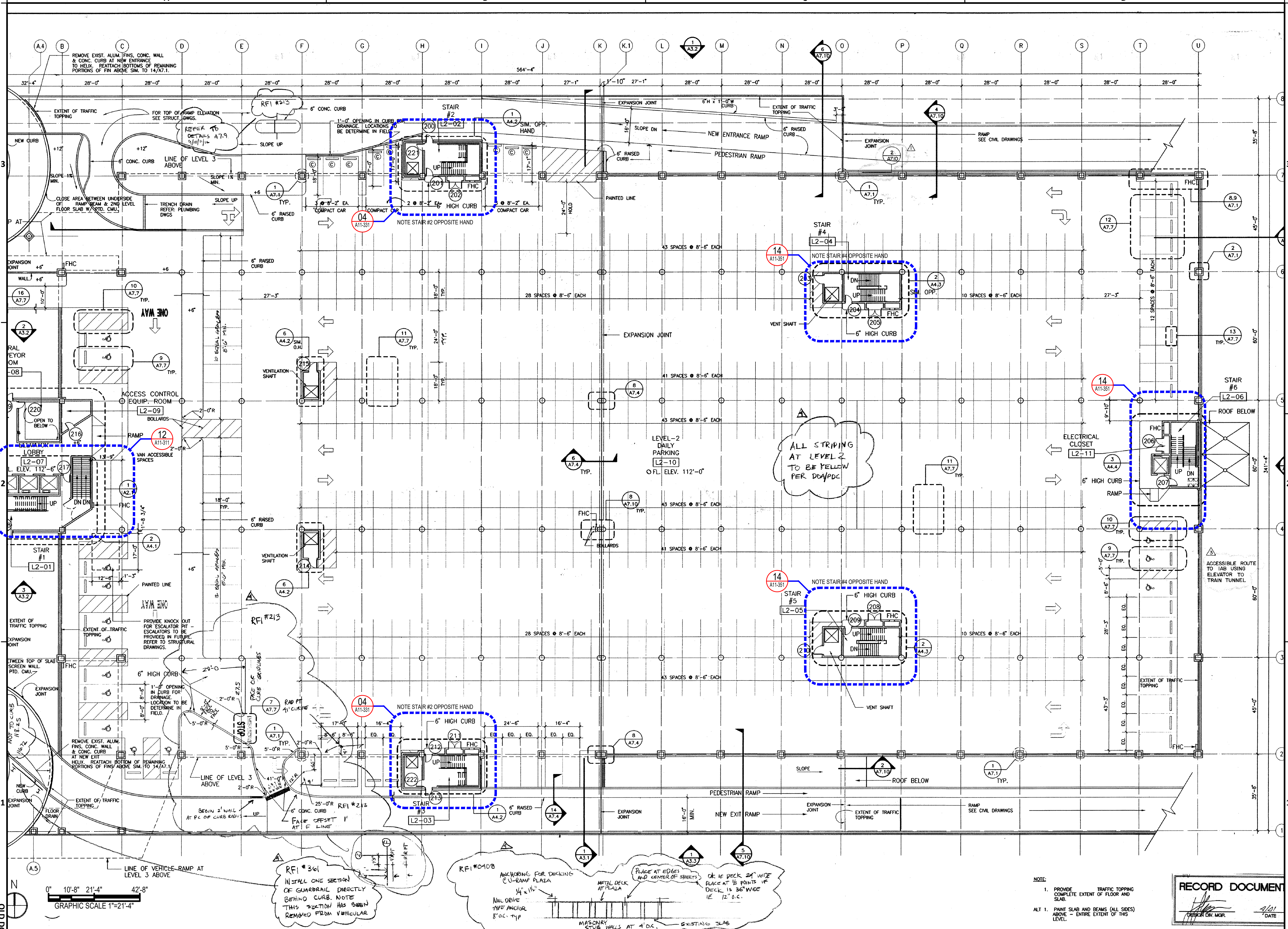
Noe Almaguer
Tx. REG. NO. 22651
DATE: July 24, 2023

FOR
INTERIM REVIEW
AND NOT INTENDED
FOR CONSTRUCTION,
BIDDING OR PERMIT
PURPOSES.

TERMINAL "C"

SHEET NAME:
LEVEL 2 PURPLE GARAGE

SHEET No. A10-02 SCALE: 1/8" = 1'-0"



NOTE:
1. PROVIDE TRAFFIC TOPPING COMPLETE EXTENT OF FLOOR AND SLAB.
ALT 1. PAINT SLAB AND BEAMS (ALL SIDES) ABOVE - ENTIRE EXTENT OF THIS LEVEL.

RECORD DOCUMENT

DESIGNER: J. TOHILL
DATE: 1/11/23

E:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A10-02 LEVEL 2 PURPLE GARAGE.DWG
 PLOT DATE: 24 JULY 2023 8:07:19 PM
 OLD DWA No.:
 DOA DWG FILE:

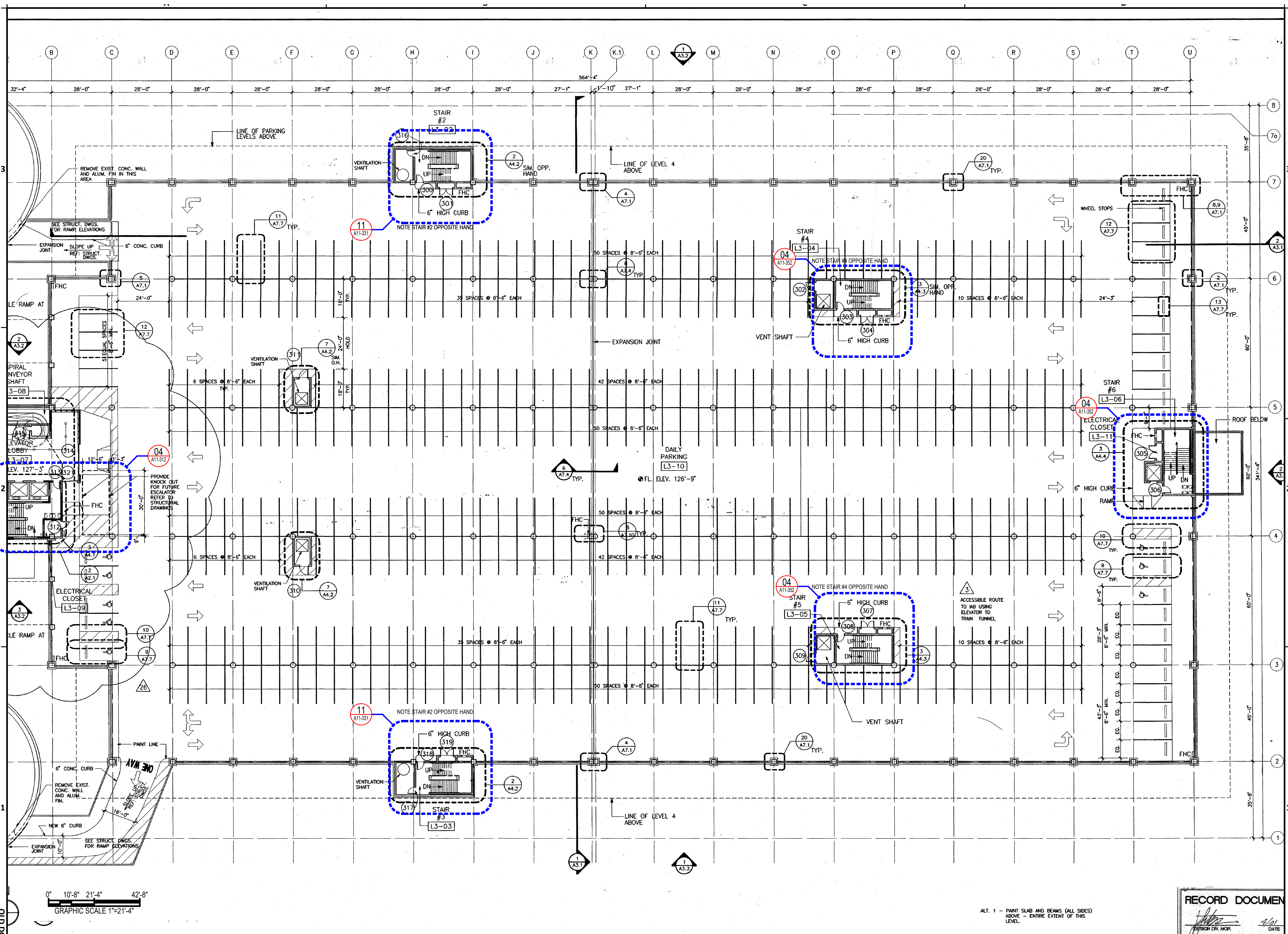
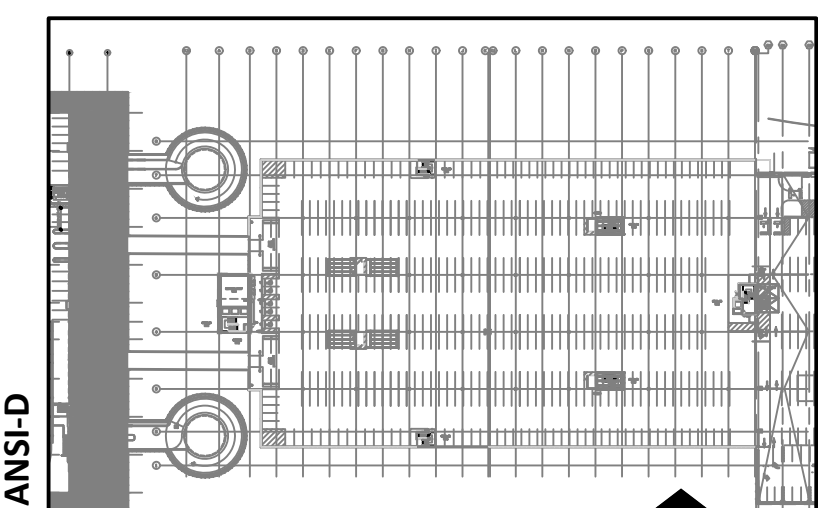
SHEET SIZE: 22" x 34" ANSI-D

REVISIONS		
No.	DESCRIPTION	DATE

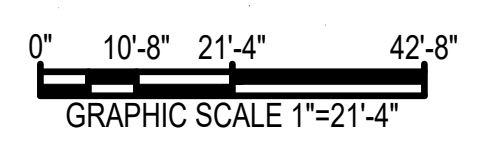
DESIGNER:	J TOHILL
DRAWN BY:	J TOHILL
CHECKED BY:	TBD
ISSUE DATE:	12/15/2022
APPROVED BY:	
APPROVAL DATE:	

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

<p>ISSUED FOR REVIEW</p>	<p>Noe Almaguer Tx. REG. NO. 22651 DATE: July 24, 2023</p>
	<p>FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>



F:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING DWGS\A10-03 LEVEL 3 PURPLE GARAGE.DWG
 PLOT DATE: 24 July 2023 8:07:30 PM
 OLD DOW No.:
 DOA DWG FILE:

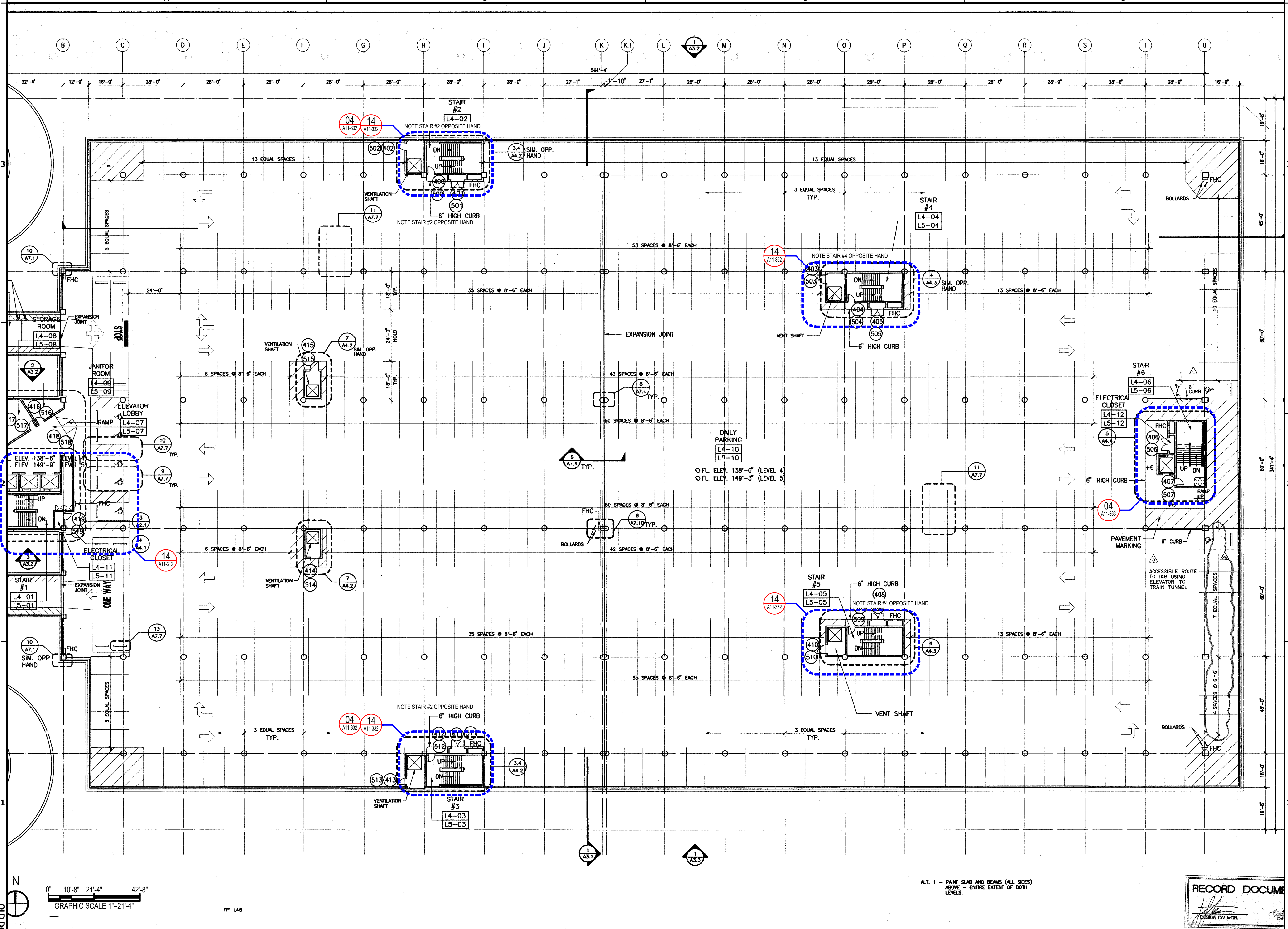


ALT. 1 - PAINT SLAB AND BEAMS (ALL SIDES)
ABOVE - ENTIRE EXTENT OF THIS
LEVEL.

RECORD DOCUMENT

DESIGN DW. MGR. DATE

SHEET SIZE: 22" x 34" ANSI-D



F:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A10-04 LEVEL 4-5 PURPLE GARAGE.DWG

PLOT DATE: 24 JULY 2023 8:07:41 PM

REVISIONS		
No.	DESCRIPTION	DATE

DESIGNER:	J TOHILL
DRAWN BY:	J TOHILL
CHECKED BY:	TBD
ISSUE DATE:	12/15/2022
APPROVED BY:	
APPROVAL DATE:	

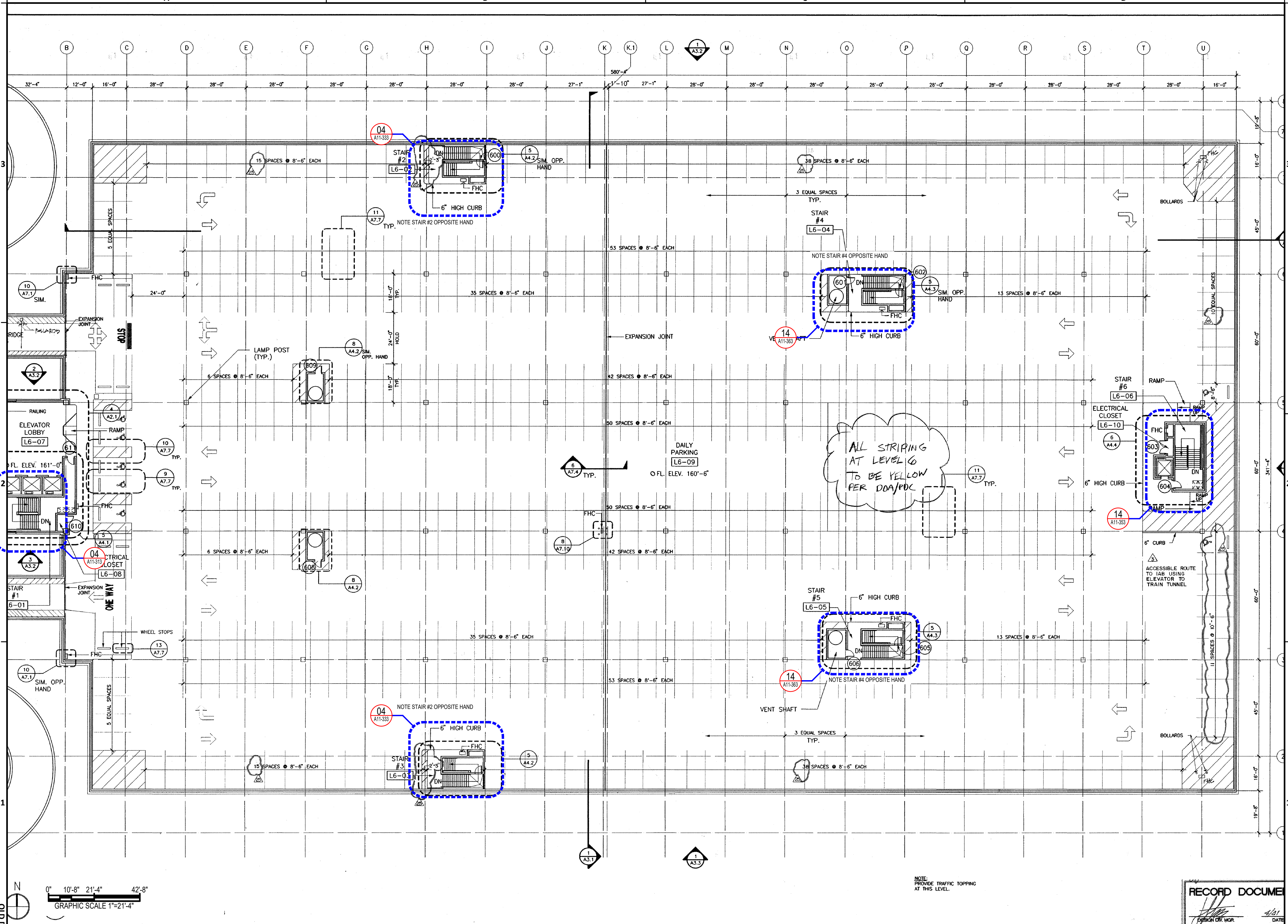
DIRECTOR
of
HOUSTON AIRPORT SYSTEM

	Noe Almaguer Tx. REG. NO. 22651 DATE: July 24, 2023
	FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.

TERMINAL "C"

SHEET NAME:
LEVEL 6 PURPLE GARAGE

SHEET No. A10-06 SCALE: 1/8" = 1'-0"



F:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A10-06 LEVEL 6 PURPLE GARAGE.DWG
 PLOT DATE: 24 July 2023 8:07:52 PM
 OLD DOA No.:
 DOA DWG FILE:

RECORD DOCUMENT

SHEET SIZE: 22"x34" ANSI-D

REVISIONS			
No.	DESCRIPTION	DATE	BY

DESIGNER:	J TOHILL
DRAWN BY:	J TOHILL
CHECKED BY:	TBD
ISSUE DATE:	12/15/2022
APPROVED BY:	
APPROVAL DATE:	

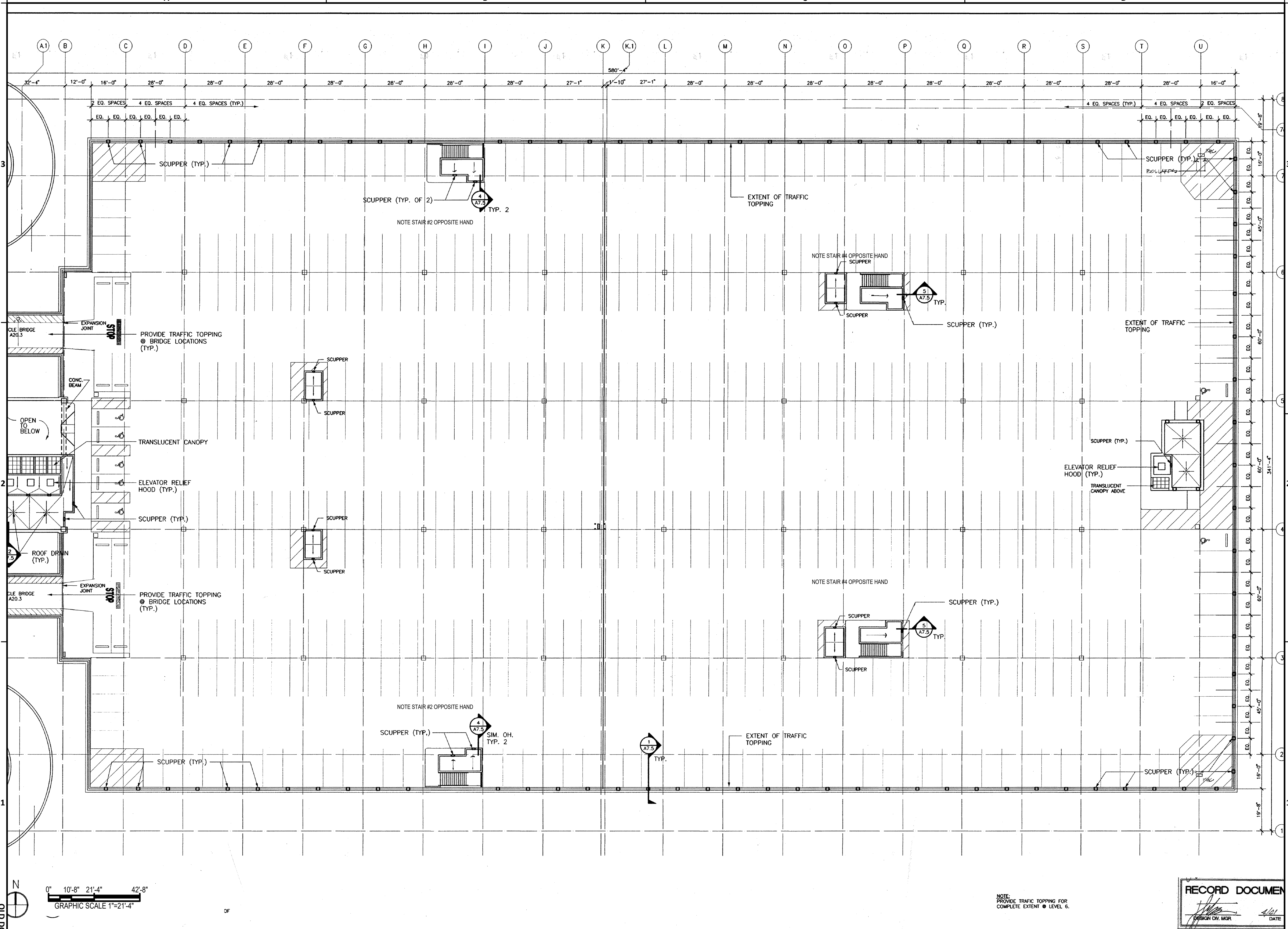
DIRECTOR
of
HOUSTON AIRPORT SYSTEM

<p>Review/ Approval Category</p> <p>IFR</p> <p>ISSUED FOR REVIEW</p>	<p>Noe Almaguer Tx. REG. NO. 22651 DATE: July 24, 2023</p>
	<p>FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>

TERMINAL "C"

SHEET NAME:
LEVEL 7 PURPLE GARAGE

SHEET No. A10-07 SCALE:



NOTE:
PROVIDE TRAFFIC TOPPING FOR
COMPLETE EXTENT @ LEVEL 6.

RECORD DOCUMENT

DESIGNER: MGR DATE: 4/6

E:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A10-07 LEVEL 7 PURPLE GARAGE.DWG
 FILE NAME:
 PLOT DATE: 24 July 2023 8:08:02 PM
 OLD DWA No.:
 DWA DWG FILE:

SHEET SIZE: 22"x34" ANSI-D

REVISIONS			
No.	DESCRIPTION	DATE	BY

DESIGNER:	J TOHILL
DRAWN BY:	J TOHILL
CHECKED BY:	TBD
ISSUE DATE:	12/15/2022
APPROVED BY:	
APPROVAL DATE:	

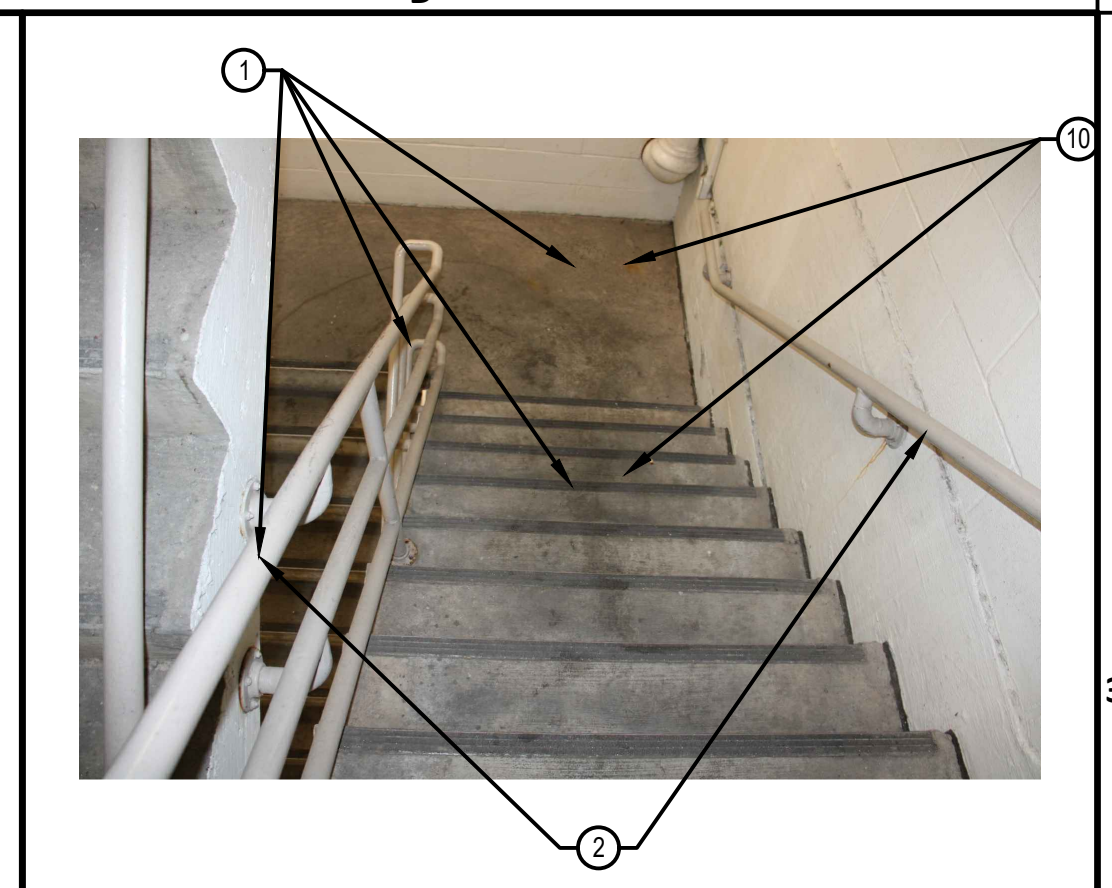
DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category	<p>Noe Almaguer Tx. REG. NO. 22651 DATE: July 24, 2023</p> <p>FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>
IFR	
ISSUED FOR REVIEW	

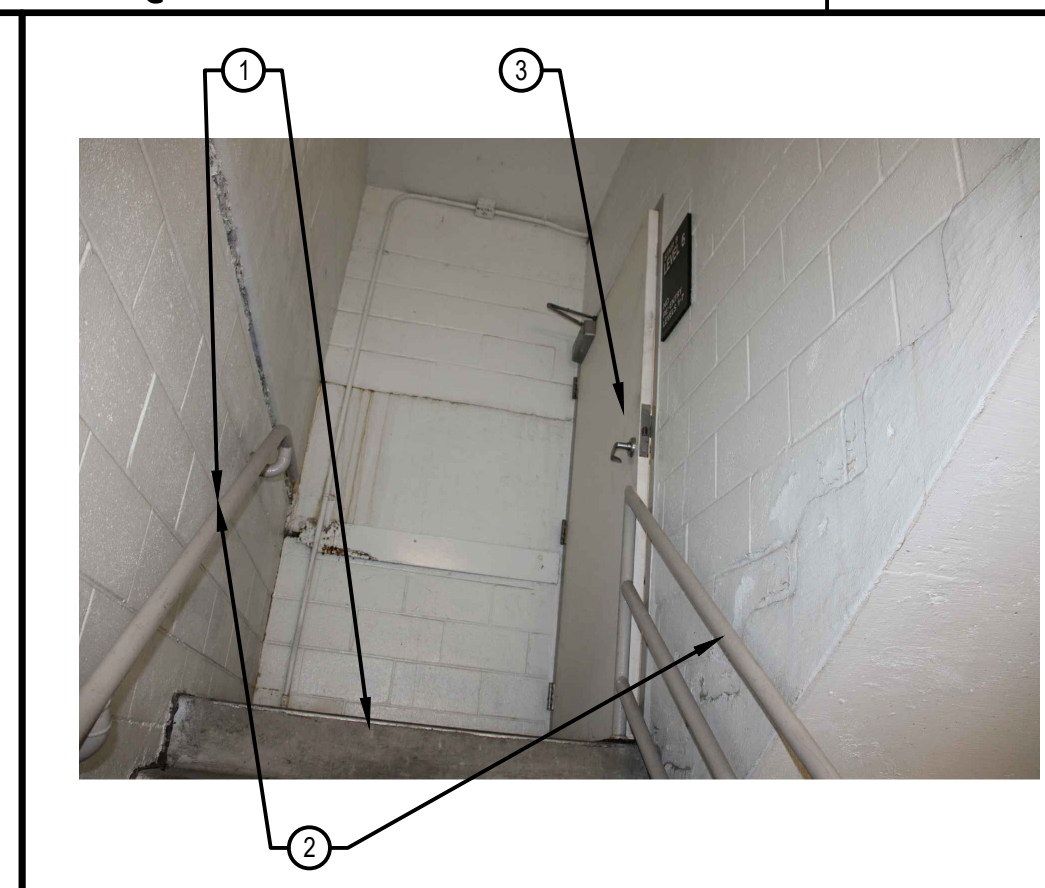
TERMINAL "C"

SHEET NAME:
PHOTOS - BROWN GARAGE STAIR 8-9
LEVEL 1-6
SHEET No. A11-211

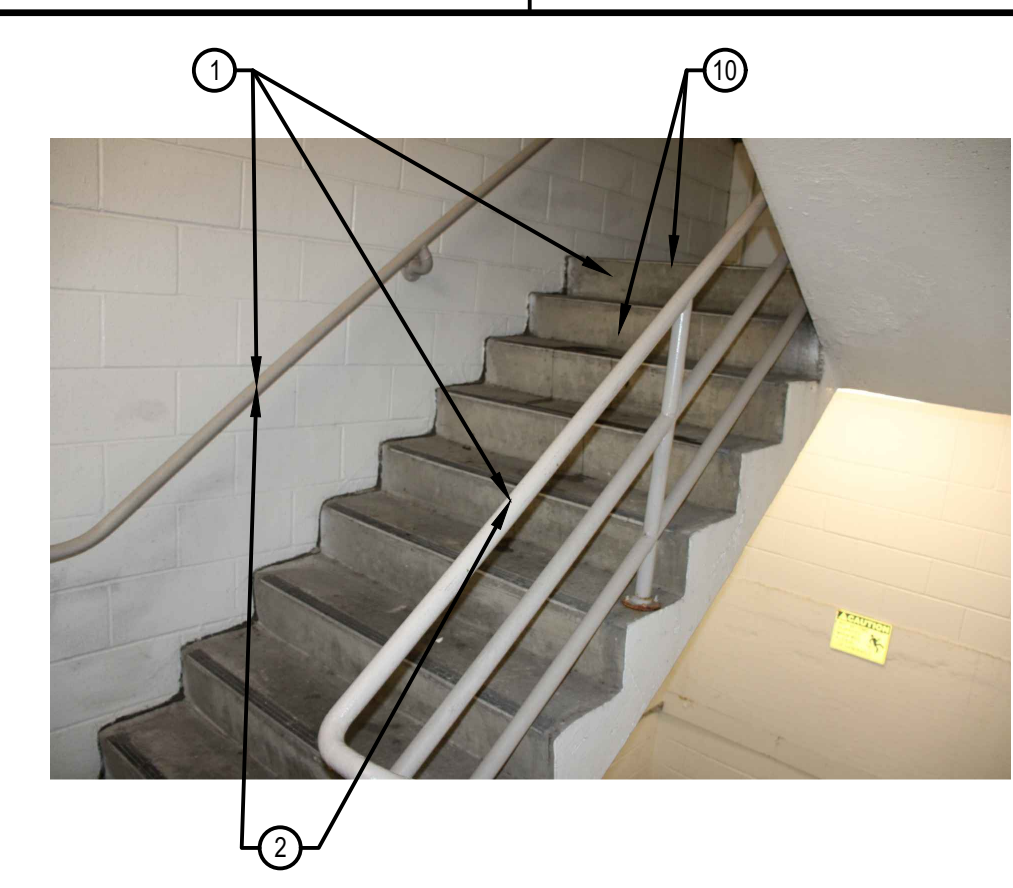
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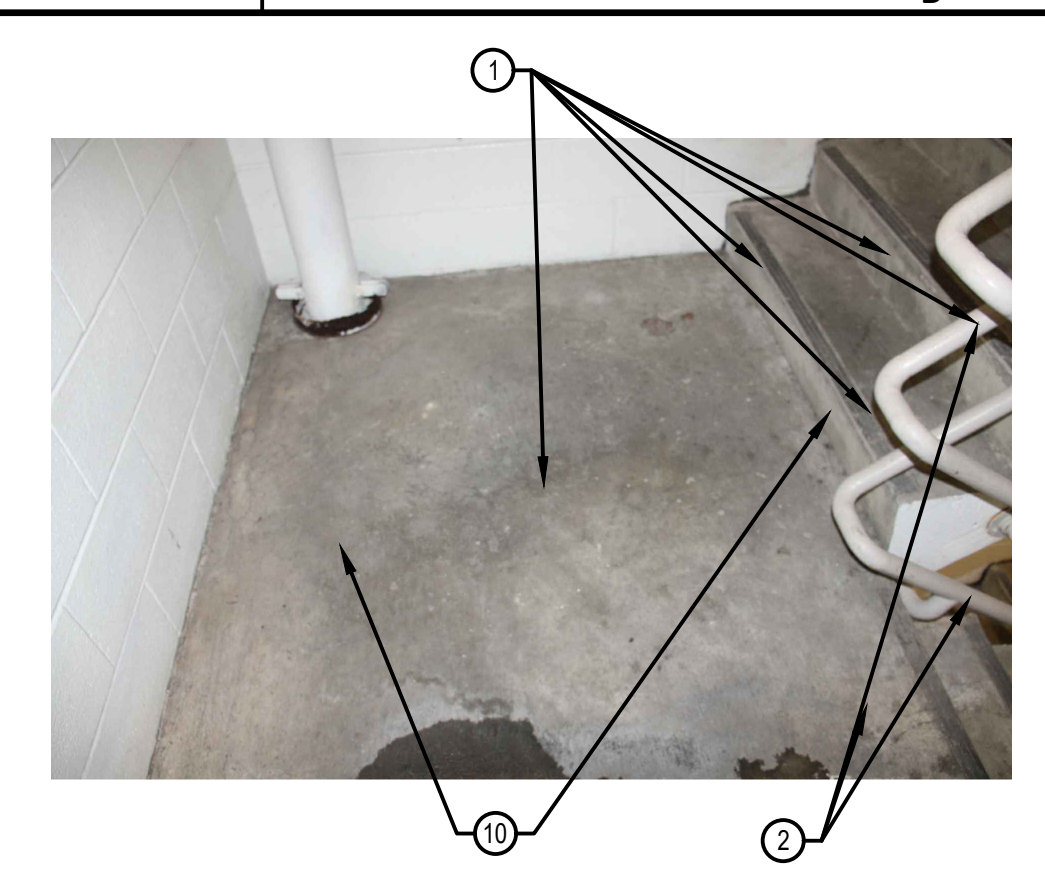
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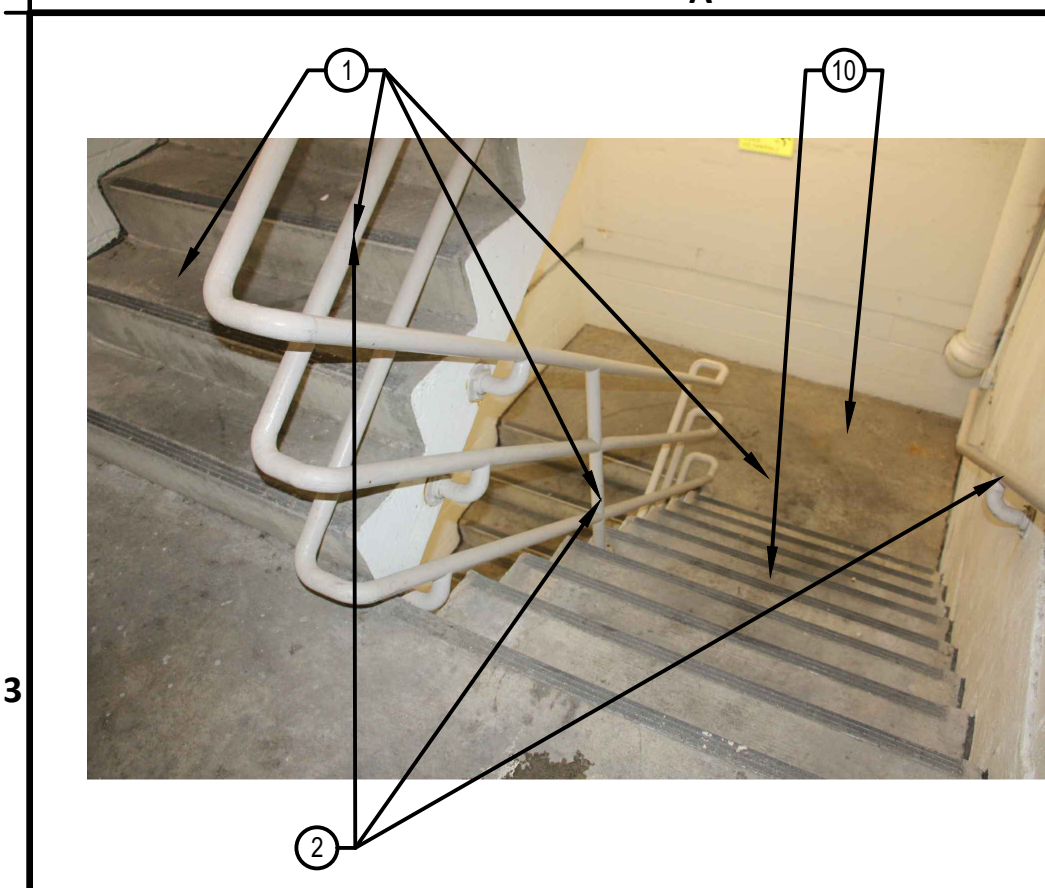
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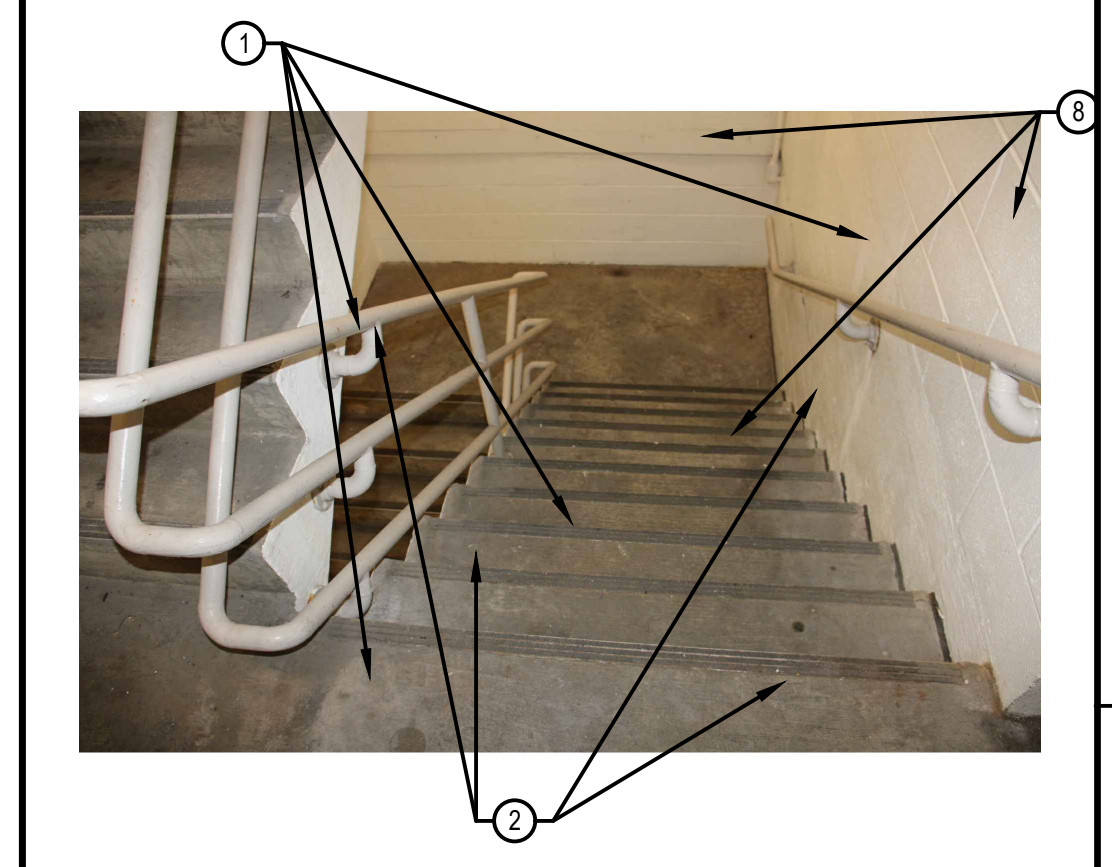
18 STAIR 2 - 18
1' = 1'-0"



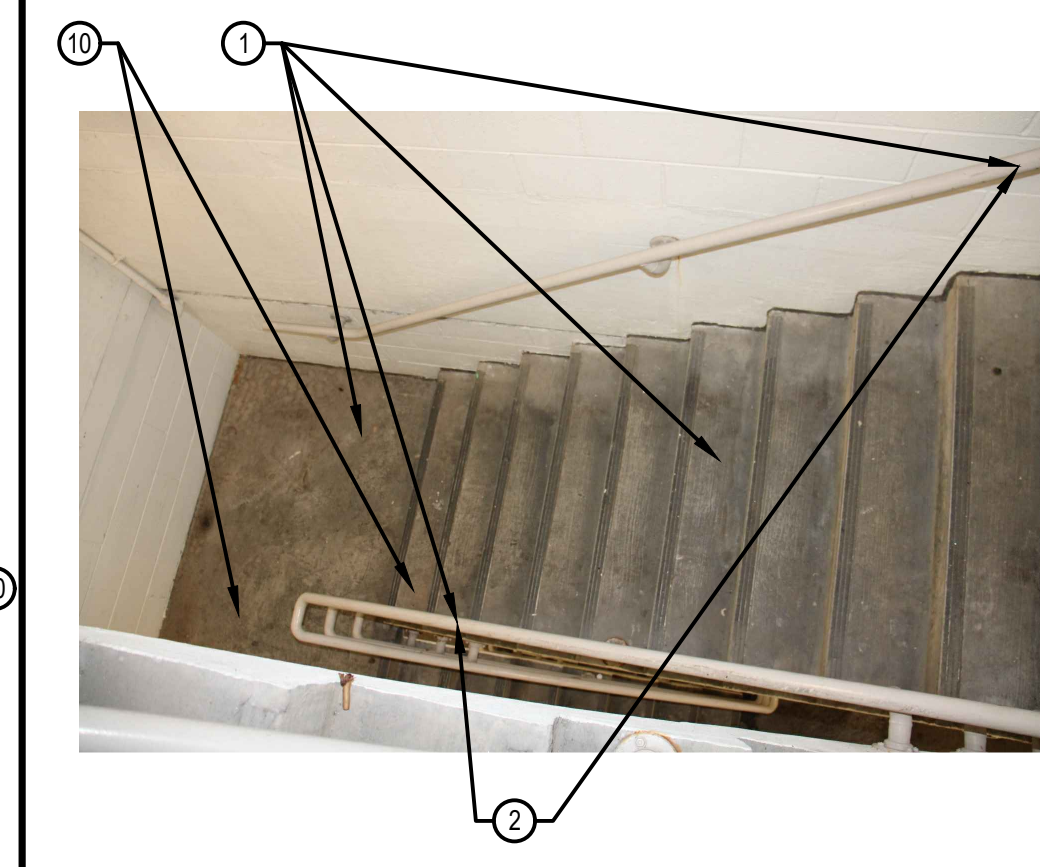
17 STAIR 2 - 17
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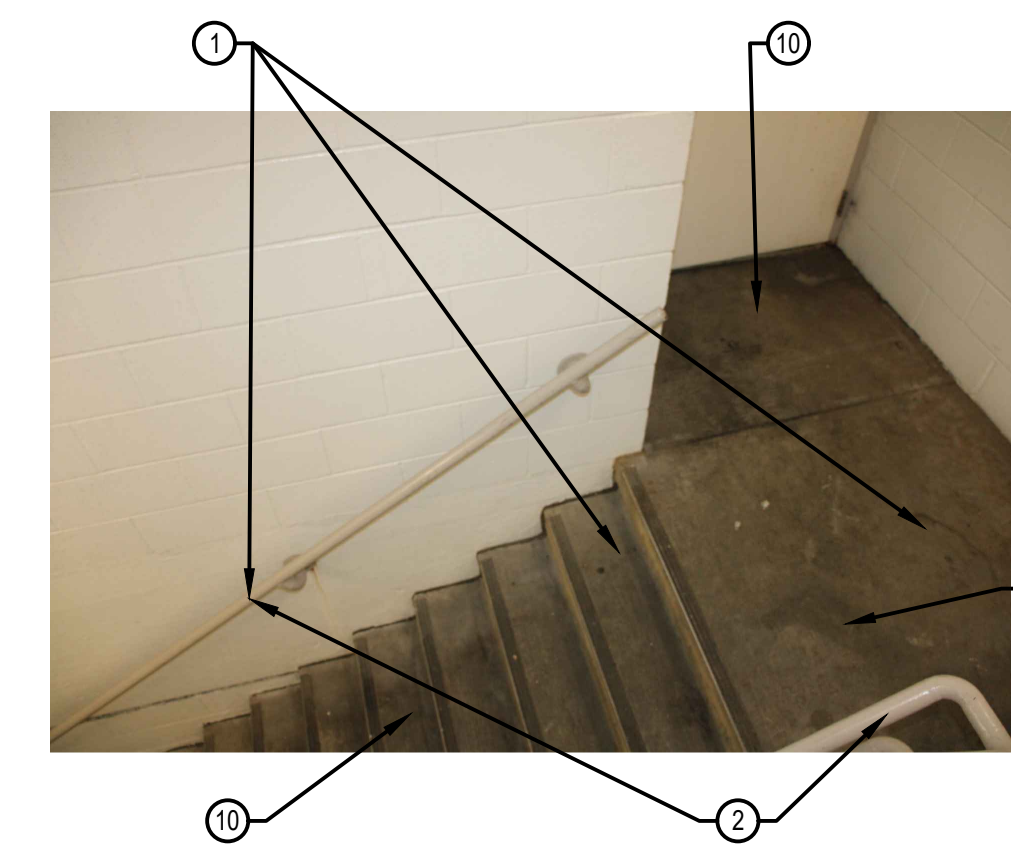
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1' = 1'-0"



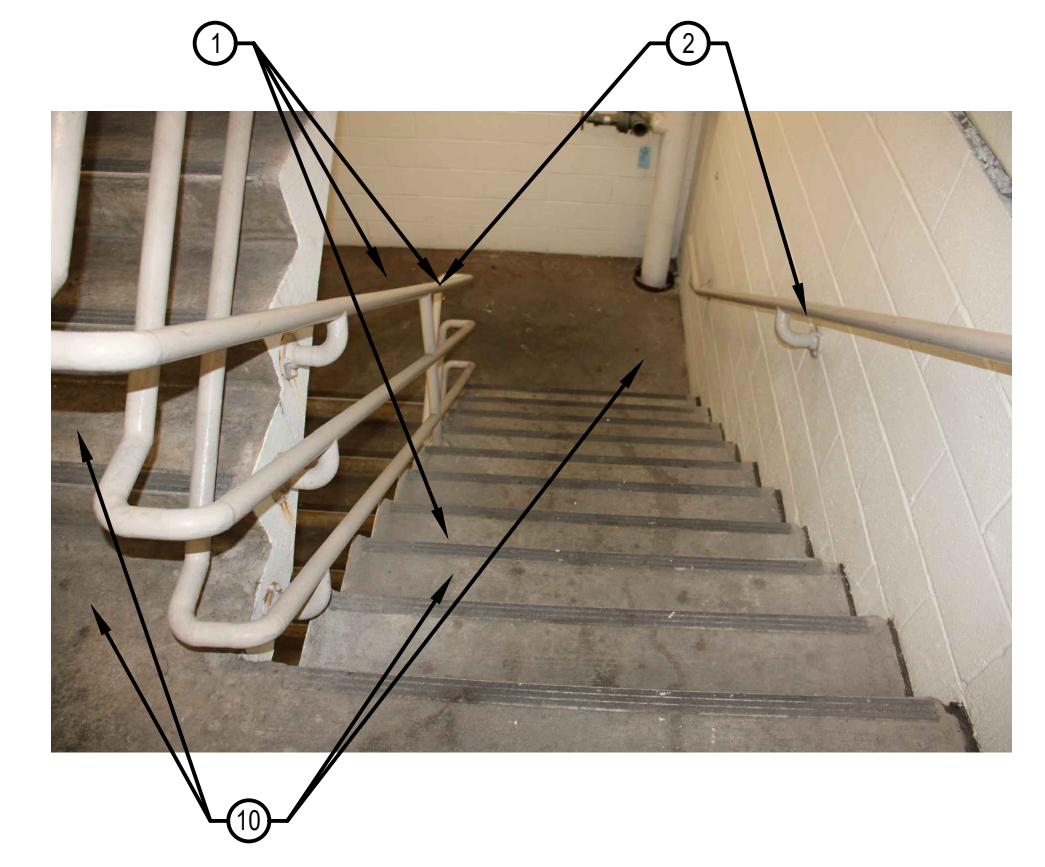
15 STAIR 2 - 15
1' = 1'-0"



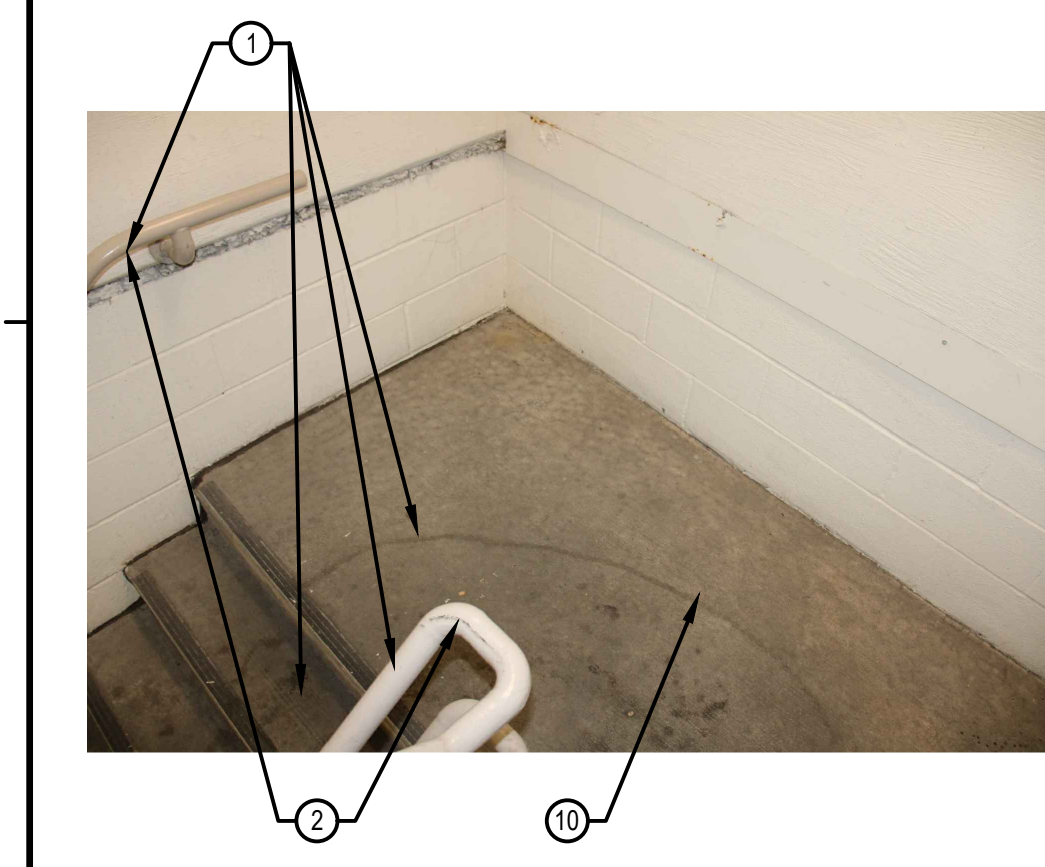
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1' = 1'-0"



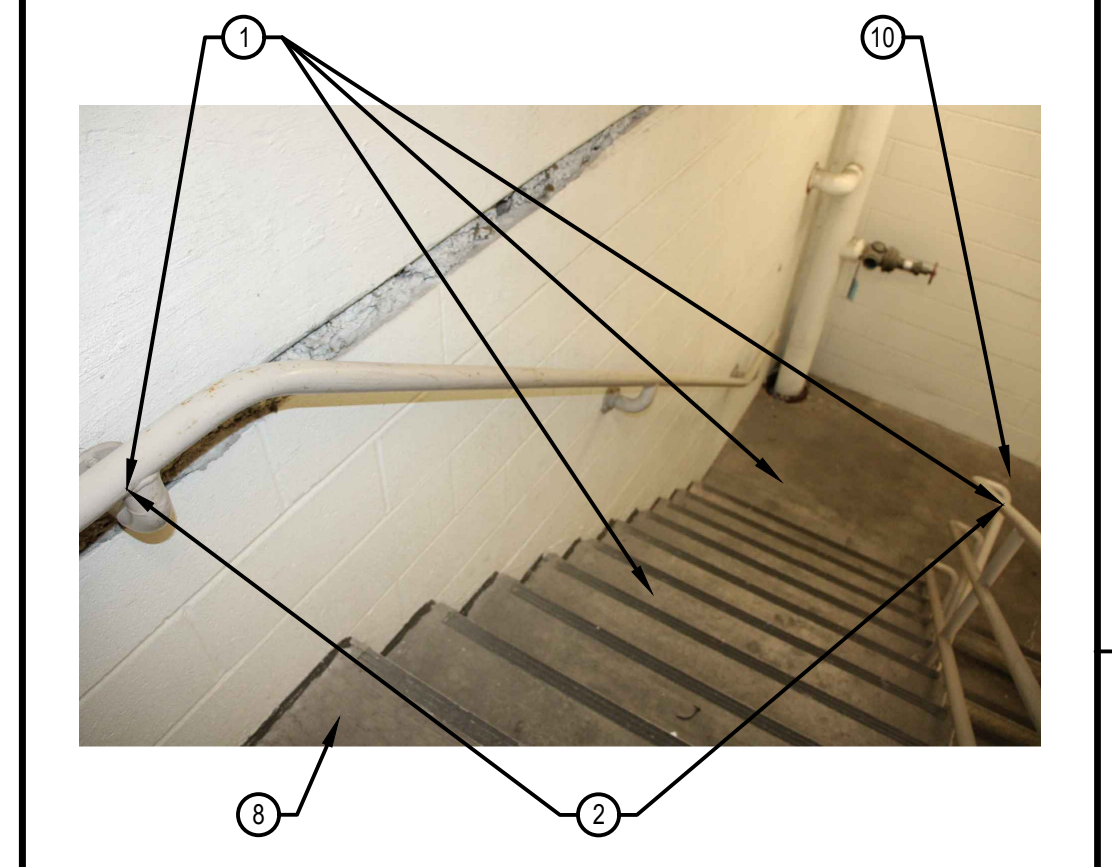
13 STAIR 2 - 13
1' = 1'-0"



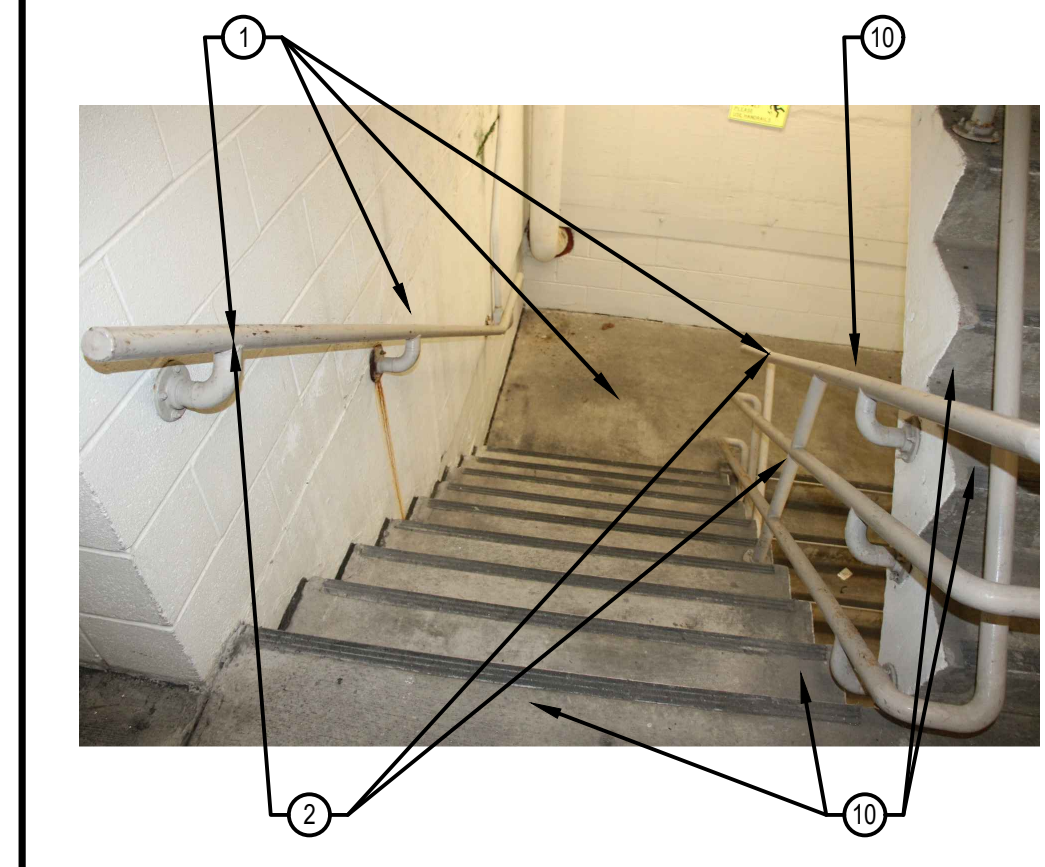
12 STAIR 2 - 12
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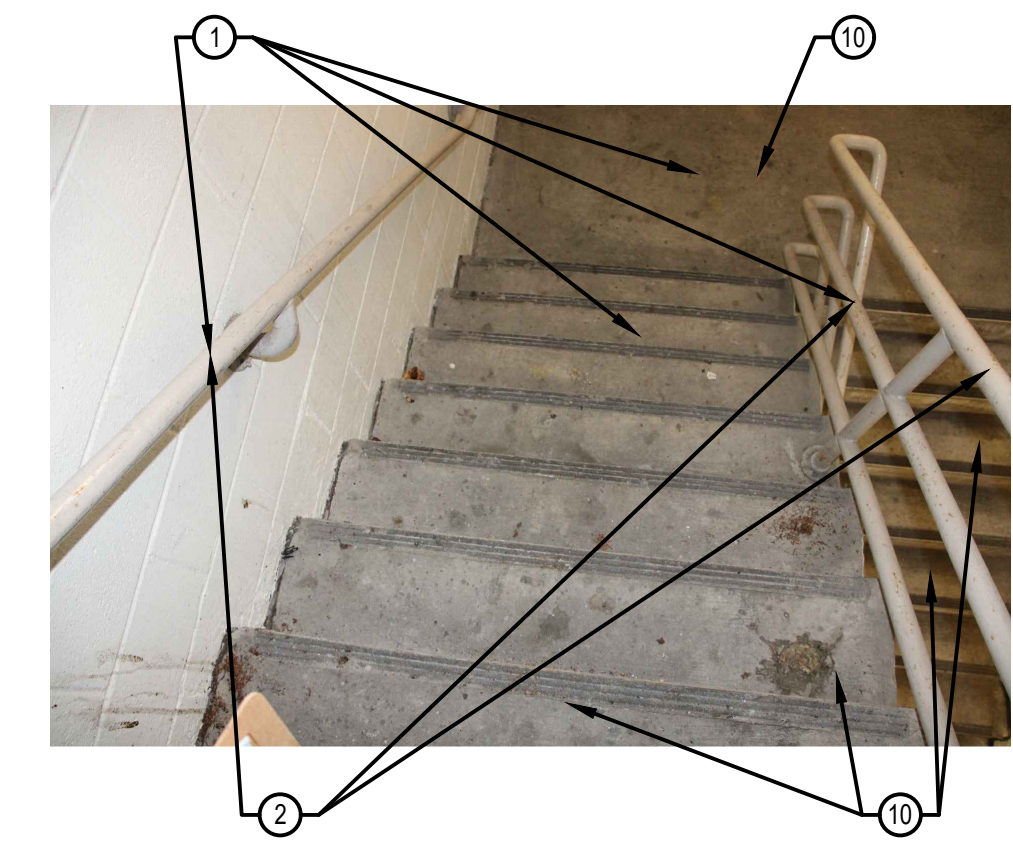
11 STAIR 2 - 11
1' = 1'-0"



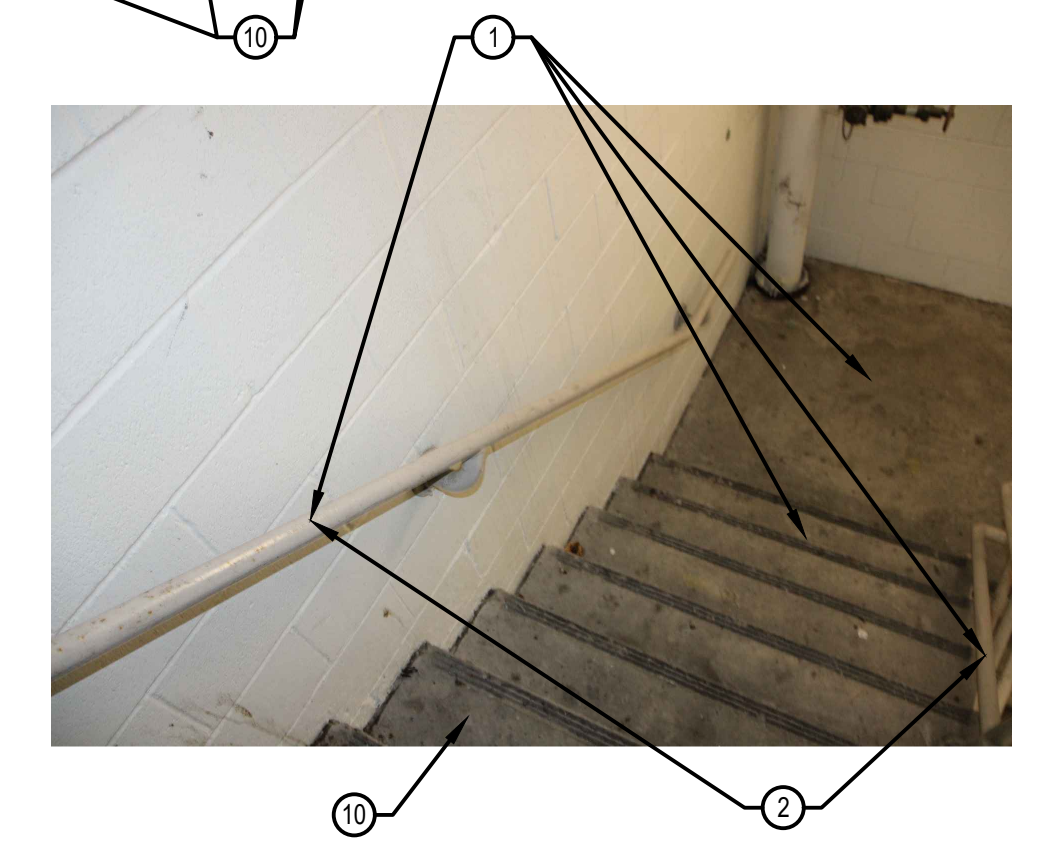
10 STAIR 2 - 10
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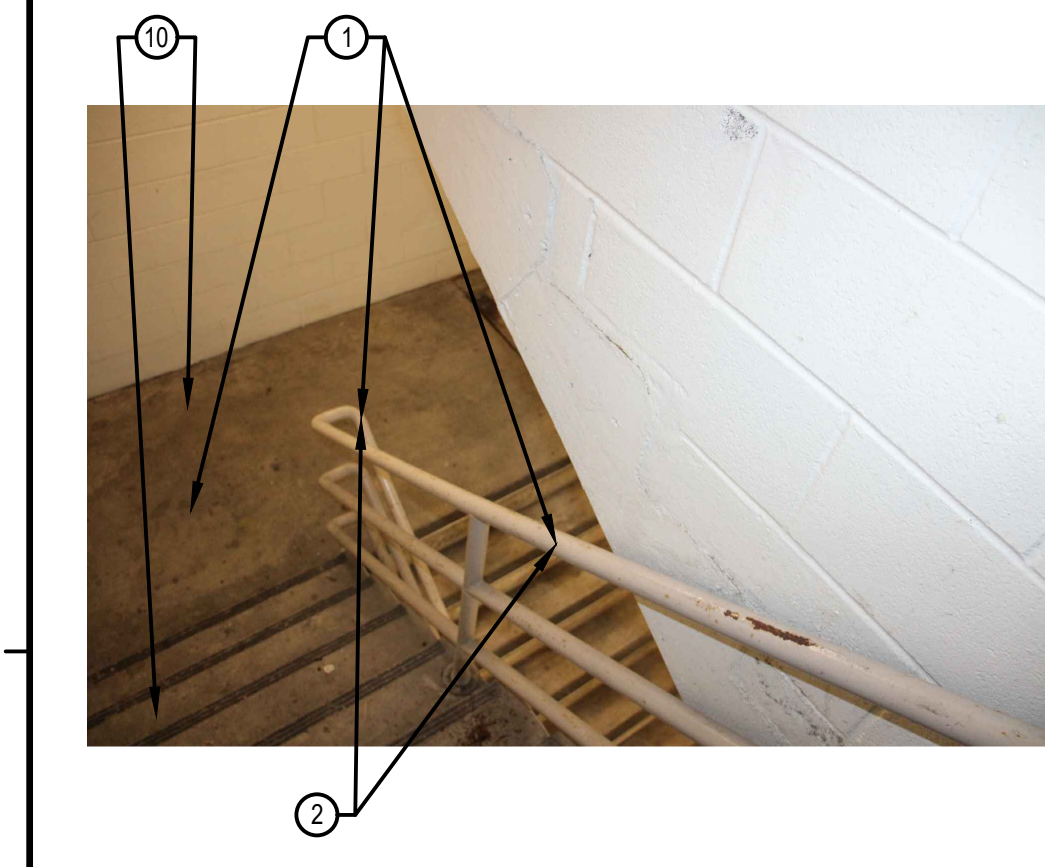
09 STAIR 2 - 09
1' = 1'-0"



08 STAIR 2 - 08
1' = 1'-0"



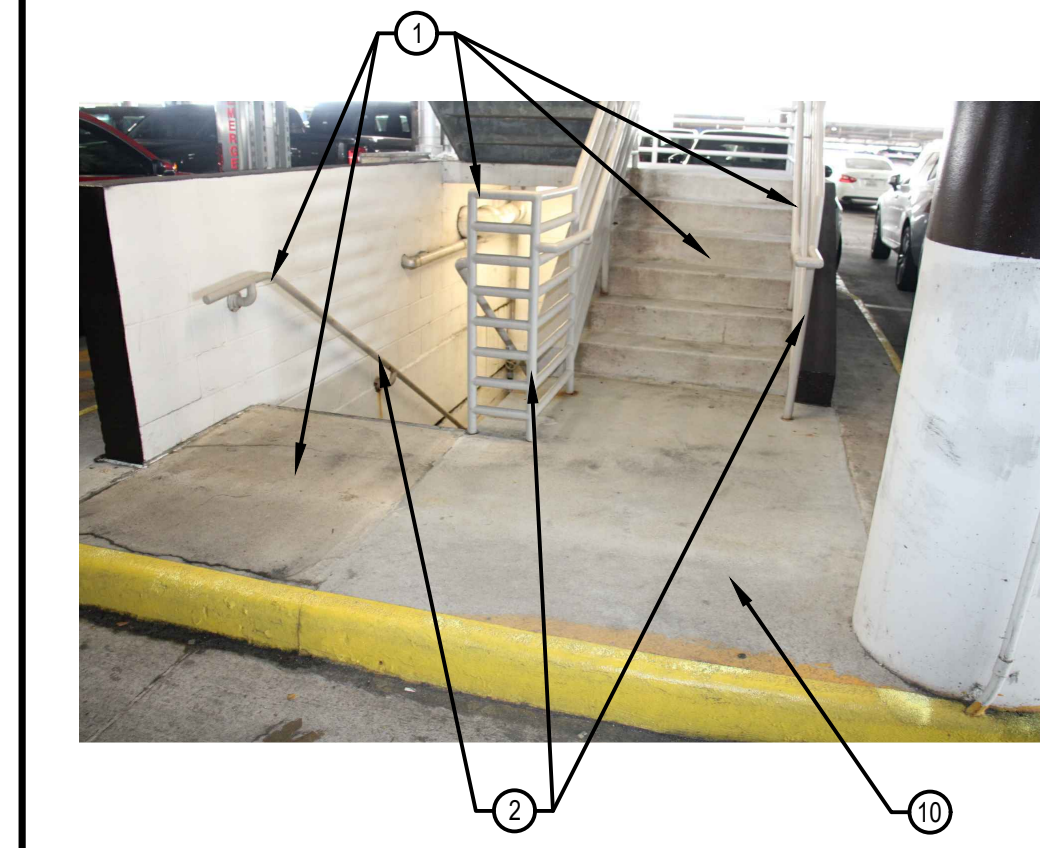
07 STAIR 2 - 07
1' = 1'-0"



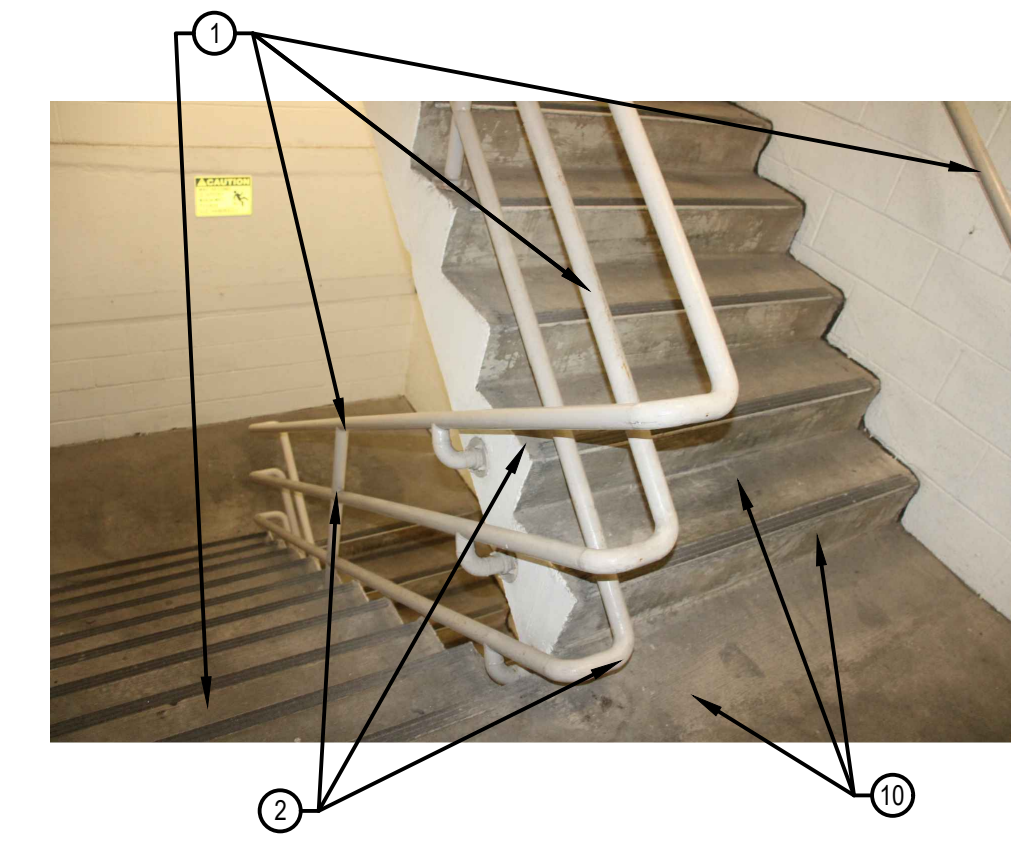
06 STAIR 2 - 06
1' = 1'-0"

- HIGH PRESSURE WASHING AND ABRASIVE BLASTING OF TREADS, RISERS, LANDINGS, UNDERSIDE OF STAIRS, GUARDRAILS AND HANDRAILS. SURFACE PREPARATION OF SUBSTRATES AS REQUIRED FOR ACCEPTANCE OF PAINT, INCLUDING CLEANING, SMALL CRACK REPAIR, PATCHING, CAULKING, AND MAKING GOOD SURFACES AND AREAS. SEALING / PRIMING SURFACES FOR REPAINTING.
- 1 PAINT METAL RAILS, UNDERSIDE OF STAIR PANS, STRINGERS AND RISERS AS SHOWN BELOW.
FERROUS METAL - MISCELLANEOUS METALS PAINT WITH SEMI-GLOSS FINISH
PRIMER: PRO INDUSTRIAL™ PRO-CRYL® UNIVERSAL PRIMER, B66-310 SERIES
1ST COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
2ND COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
- 2 REPAIR DOOR FROM BINDING CONDITION.
- 3 REPLACE DOOR WITH LIKE KIND.
- 4 REPAIR OR PATCH HOLE IN METAL RISER, REPAINT.
- 5 REPAIR OR PATCH CRACK IN CONCRETE LANDING.
- 6 REPAIR OR PATCH CRACK IN CONCRETE MASONRY UNIT.
- 7 AREA OF EXCESSIVE RUSTING, REMOVE RUST AND PREPARE FOR PAINTING.
- 8 AREA UNDER CONSTRUCTION, WORK IS UNDER DIFFERENT CONTRACT. COMPLETE THE WORK OF THIS CONTRACT AND NOTIFY "HAS" AND THE ARCHITECT IF THERE IS ANYTHING STOPPING YOU FROM COMPLETING THE WORK.
- 9 INSTALL FOUNDATION ARMOR SX5000 PENETRATING SEALER CLEAR MATTE TRANSPARENT CONCRETE SEALER READY-TO-USE ON TREADS AND LANDINGS AFTER HP WASHING
- 10

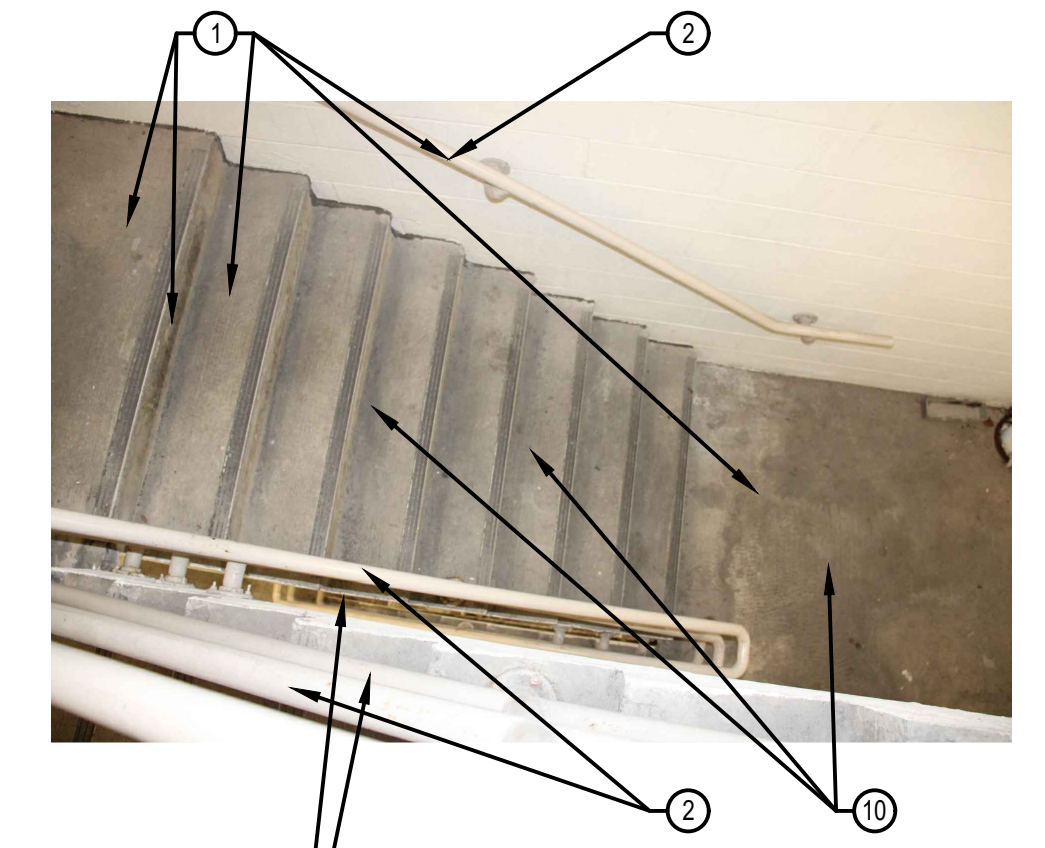
05 KEYNOTES
1' = 1'-0"



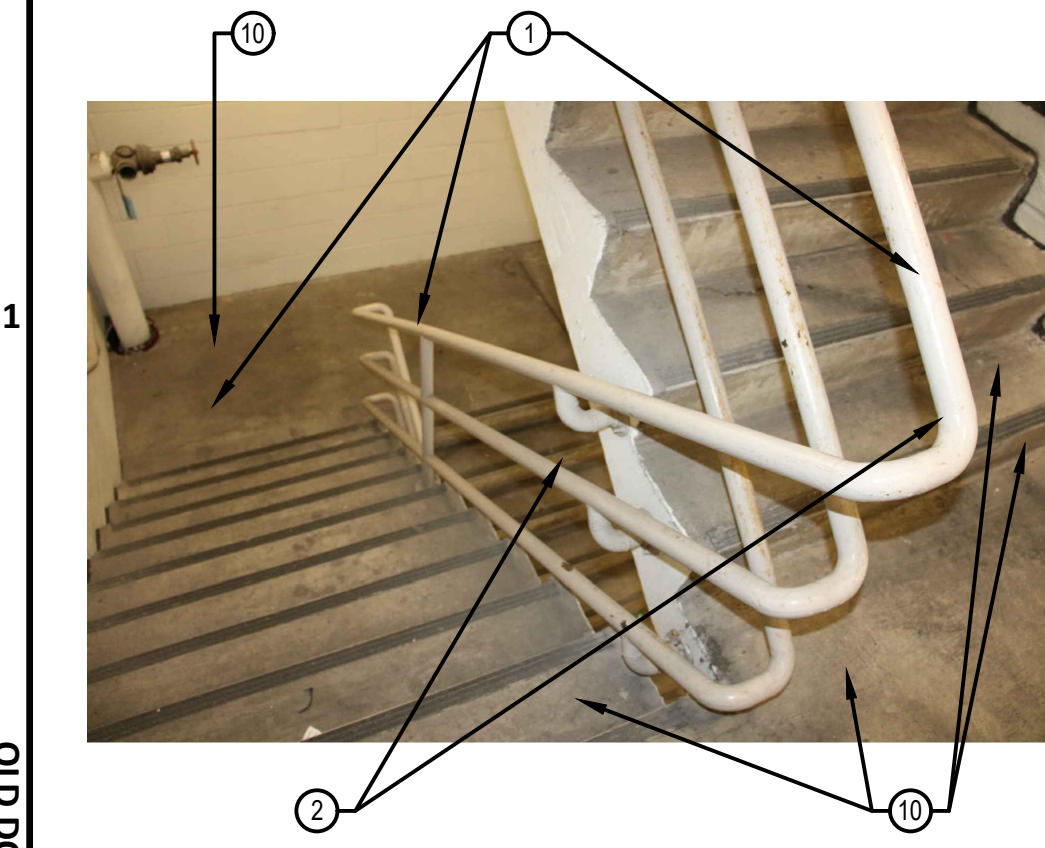
04 STAIR 2 - 04
1' = 1'-0"



03 STAIR 2 - 03
1' = 1'-0"

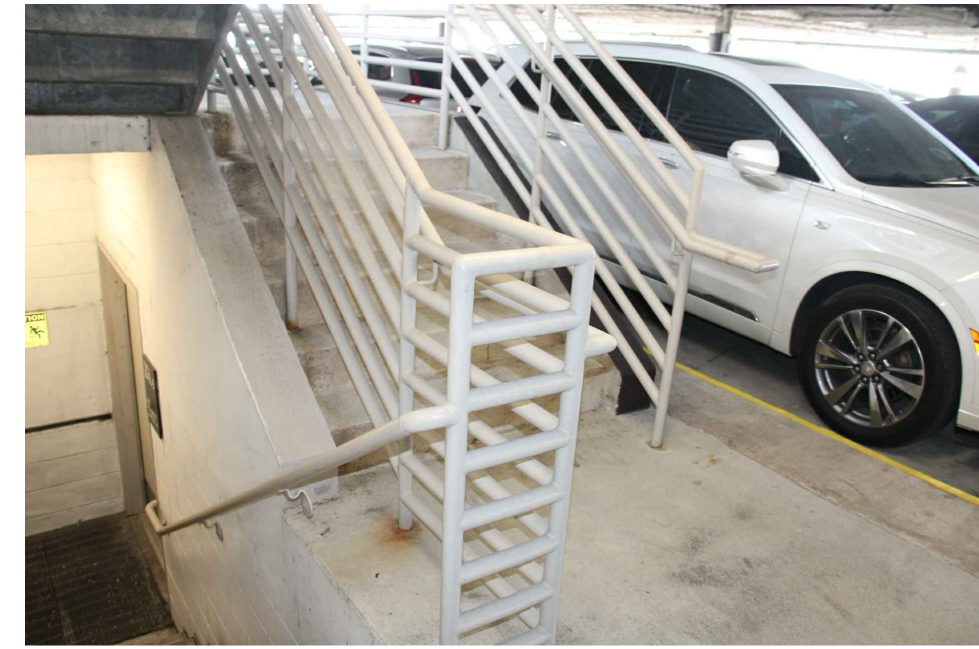
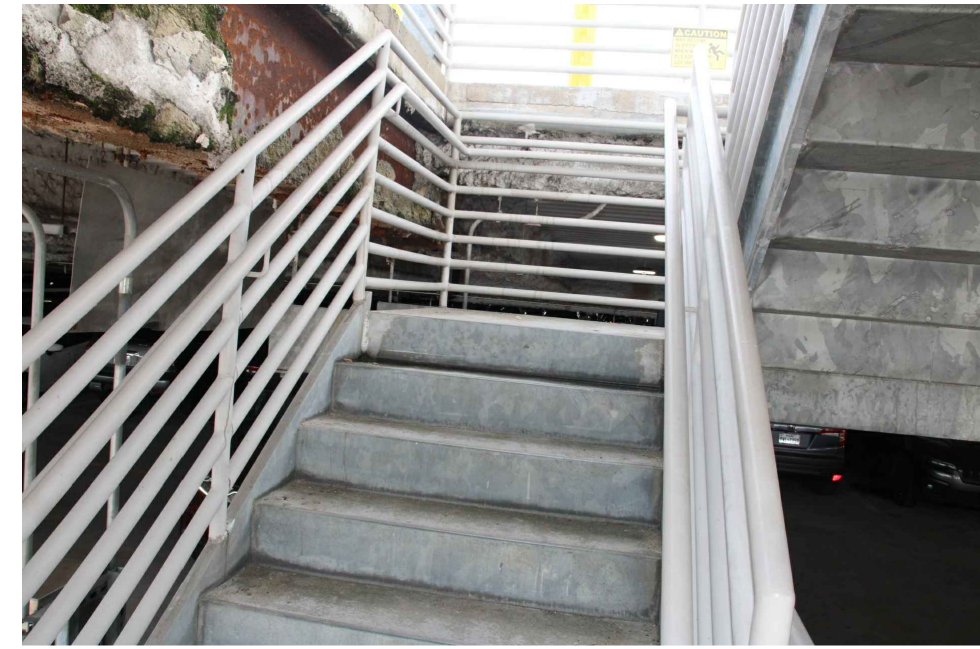


02 STAIR 2 - 02
1' = 1'-0"



01 STAIR 2 - 01
1' = 1'-0"

E:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A11-211 PHOTOS - BROWN GARAGE STAIR 8-9 LEVEL 1-6.DWG
 FILED IN: A11-211
 OLD DWA No.:
 DWA DWG FILE:
 PLOT DATE: 24 July 2023 8:08:17 PM



- ① HIGH PRESSURE WASHING AND ABRASIVE BLASTING OF TREADS, RISERS, LANDINGS, UNDERSIDE OF STAIRS, GUARDRAILS AND HANDRAILS. SURFACE PREPARATION OF SUBSTRATES AS REQUIRED FOR ACCEPTANCE OF PAINT, INCLUDING CLEANING, SMALL CRACK REPAIR, PATCHING, CAULKING, AND MAKING GOOD SURFACES AND AREAS. SEALING / PRIMING SURFACES FOR REPAINTING.
- ② PAINT METAL RAILS, UNDERSIDE OF STAIR PANS, STRINGERS AND RISERS AS SHOWN BELOW.
FERROUS METAL - MISCELLANEOUS METALS PAINT WITH SEMI-GLOSS FINISH
PRIMER: PRO INDUSTRIAL™ PRO-CRYL® UNIVERSAL PRIMER, B66-310 SERIES
1ST COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
2ND COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
- ③ REPAIR DOOR FROM BINDING CONDITION.
- ④ REPLACE DOOR WITH LIKE KIND.
- ⑤ REPAIR OR PATCH HOLE IN METAL RISER, REPAINT.
- ⑥ REPAIR OR PATCH CRACK IN CONCRETE LANDING.
- ⑦ REPAIR OR PATCH CRACK IN CONCRETE MASONRY UNIT.
- ⑧ AREA OF EXCESSIVE RUSTING, REMOVE RUST AND PREPARE FOR PAINTING.
- ⑨ AREA UNDER CONSTRUCTION, WORK IS UNDER DIFFERENT CONTRACT. COMPLETE THE WORK OF THIS CONTRACT AND NOTIFY "HAS" AND THE ARCHITECT IF THERE IS ANYTHING STOPPING YOU FROM COMPLETING THE WORK.
- ⑩ INSTALL FOUNDATION ARMOR SX5000 PENETRATING SEALER CLEAR MATTE TRANSPARENT CONCRETE SEALER READY-TO-USE ON TREADS AND LANDINGS AFTER HP WASHING

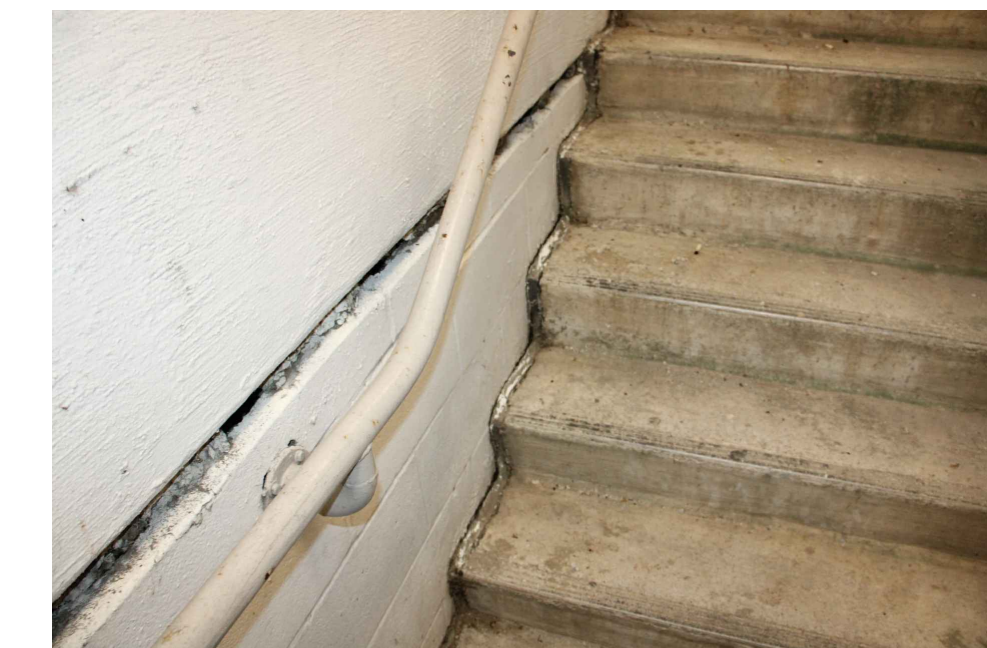
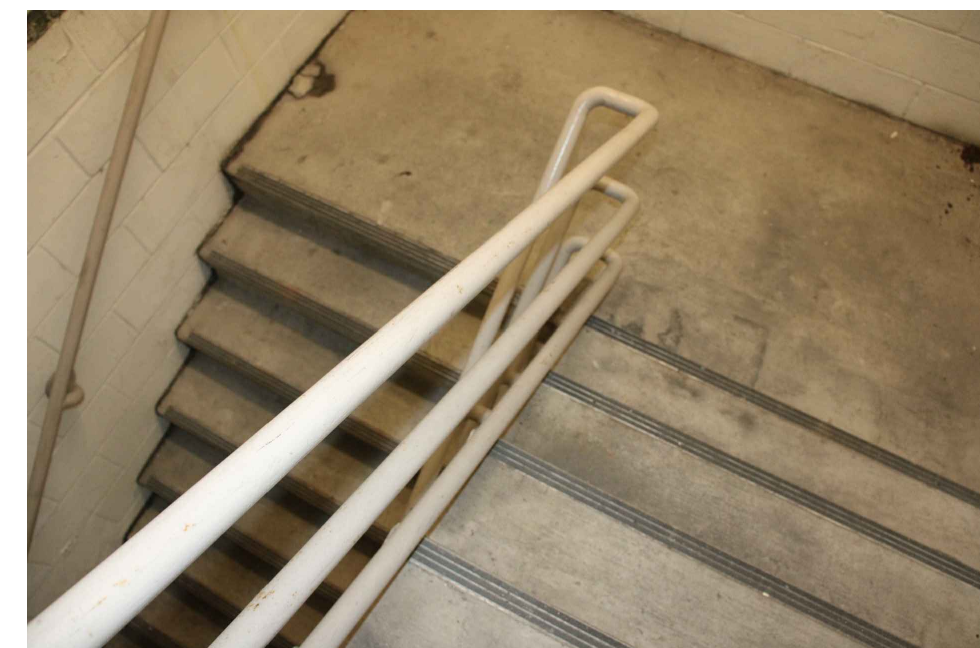
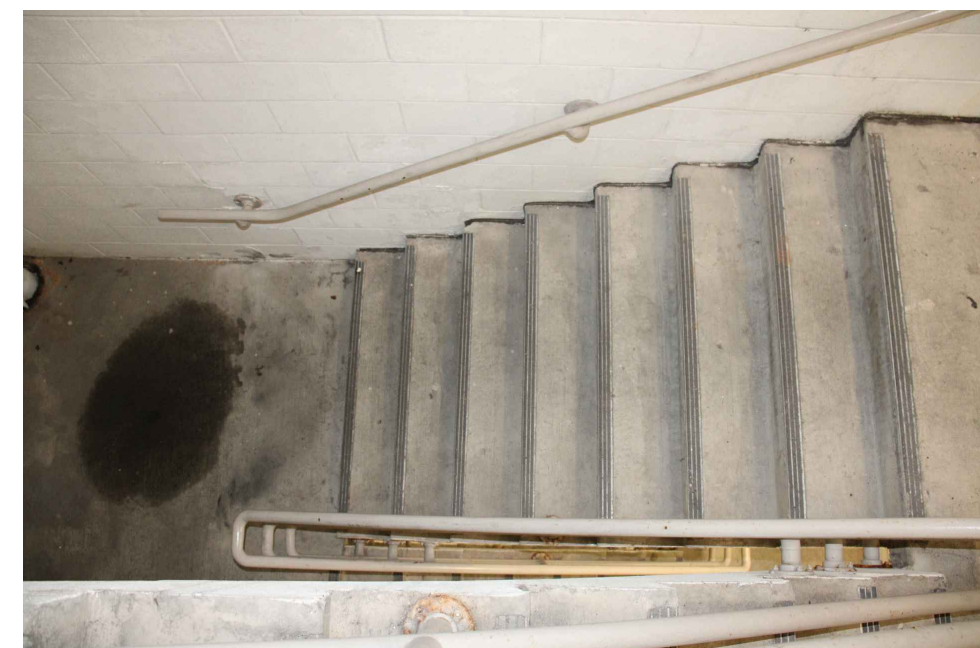
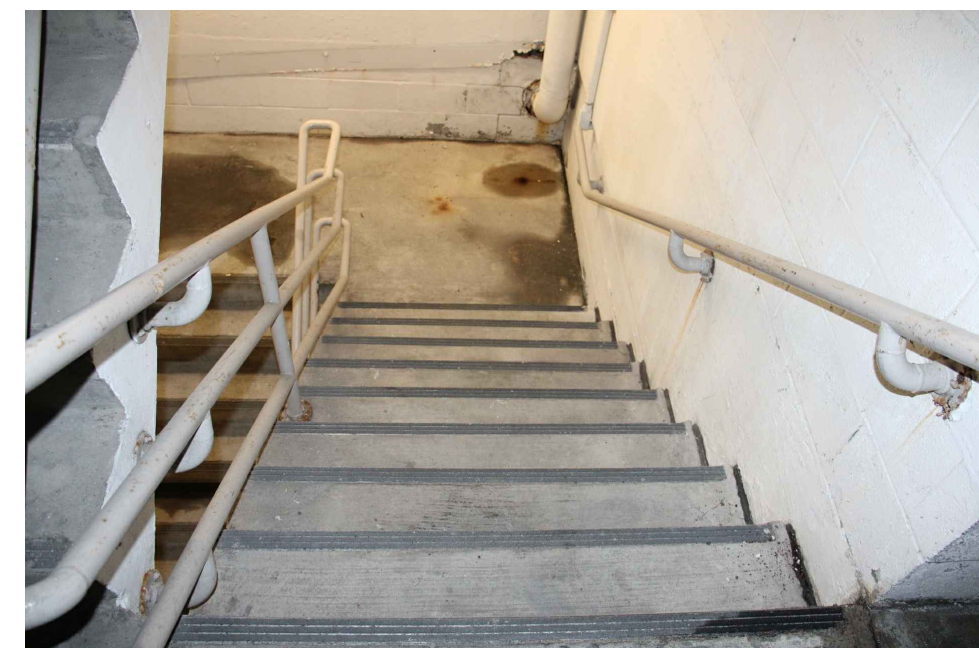
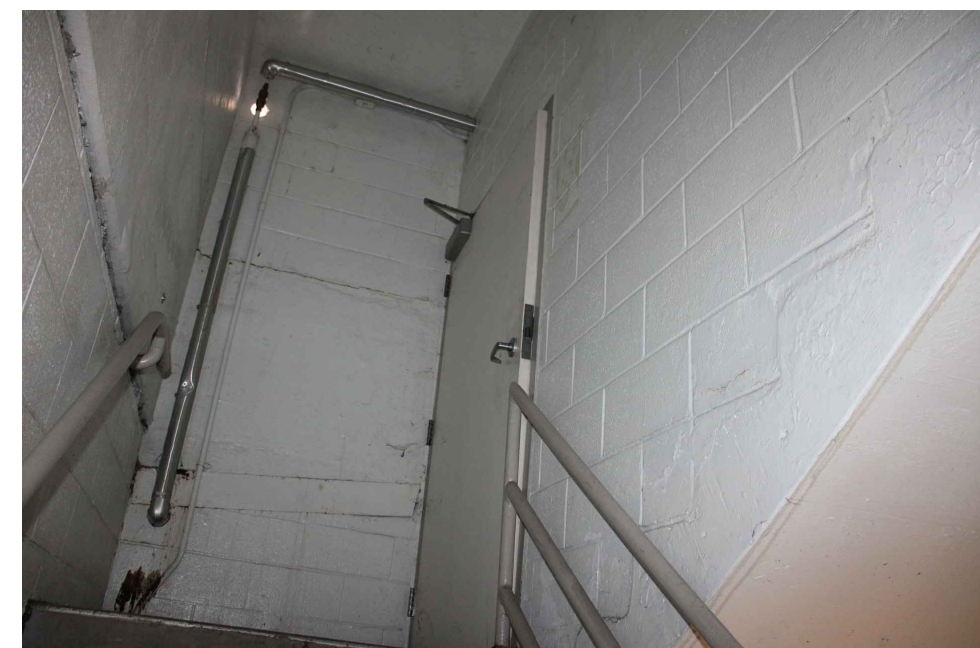
16 STAIR 11 PHOTO 16
1' = 1'-0"

17 STAIR 11 PHOTO 17
1' = 1'-0"

18 STAIR 11 PHOTO 18
1' = 1'-0"

19 STAIR 11 PHOTO 19
1' = 1'-0"

20 KEYNOTES
1' = 1'-0"



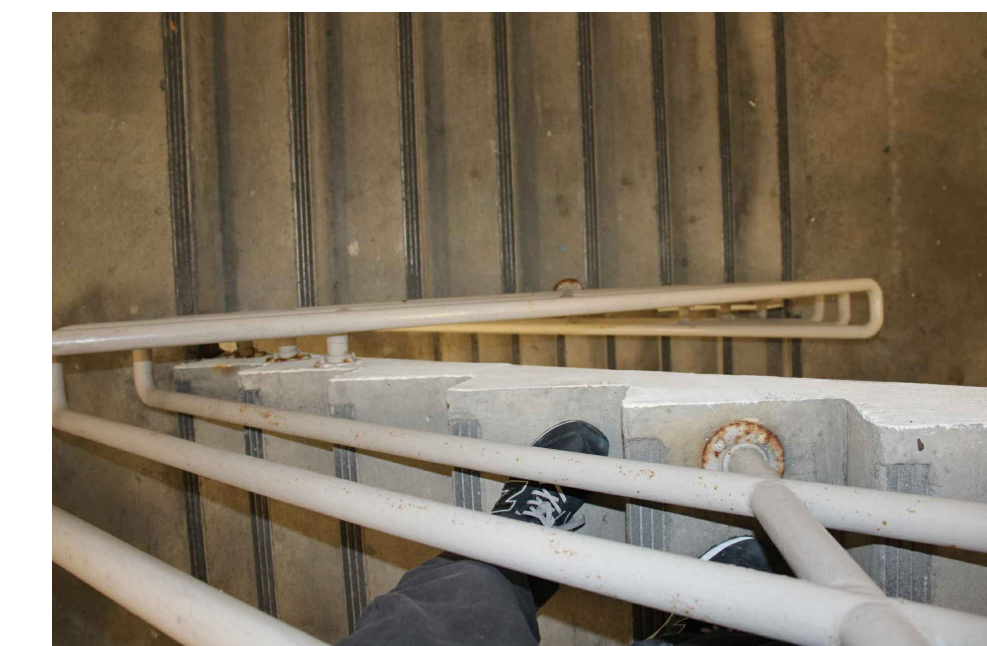
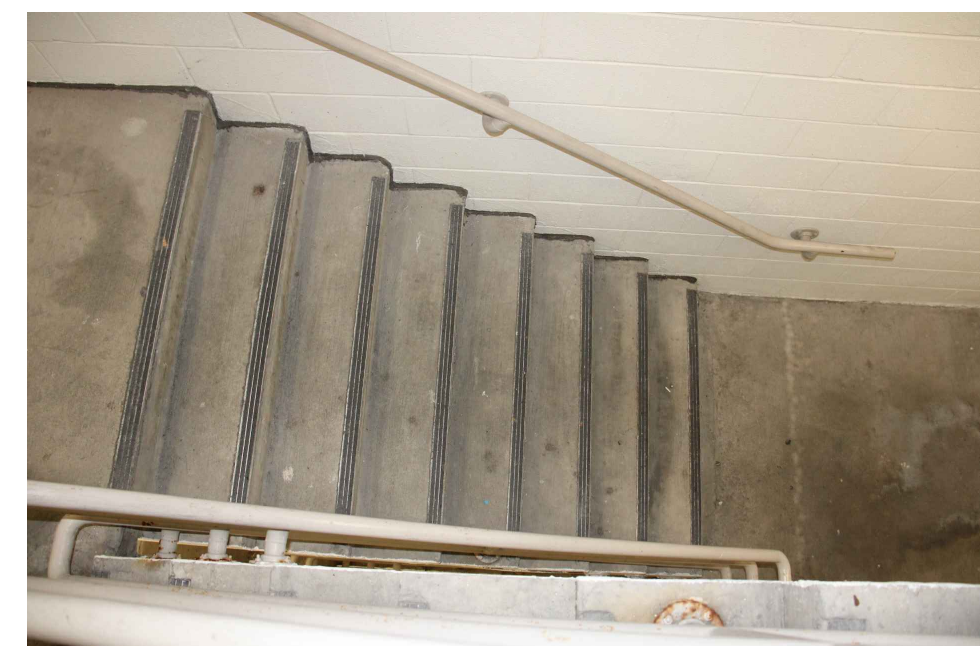
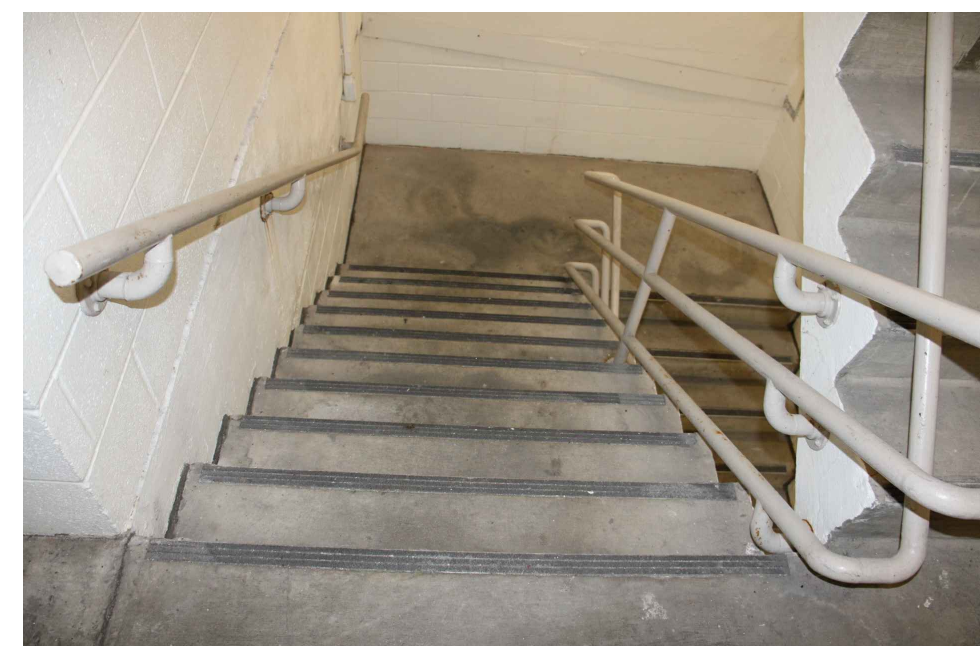
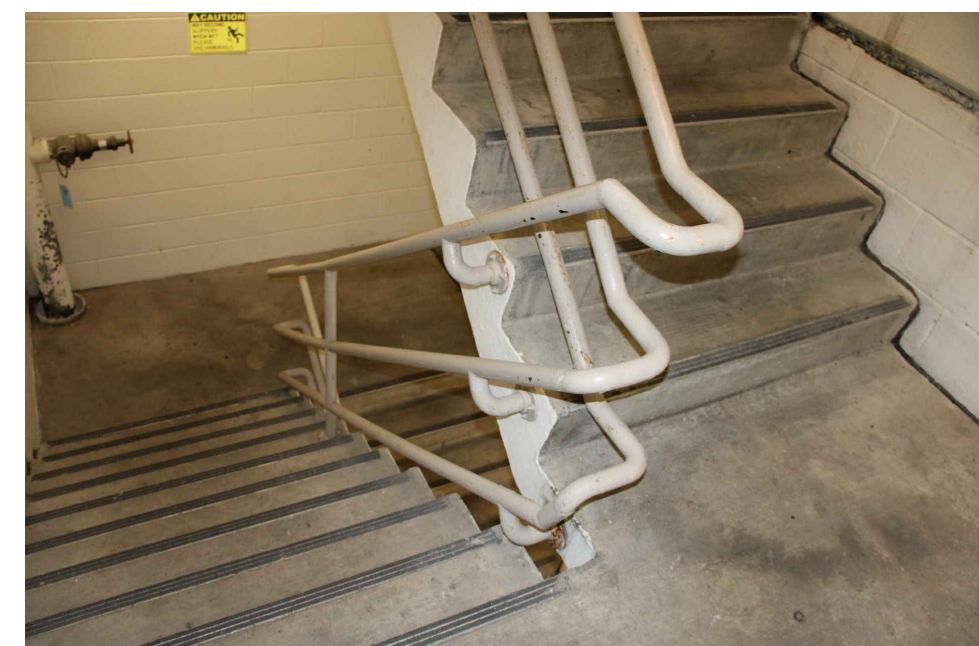
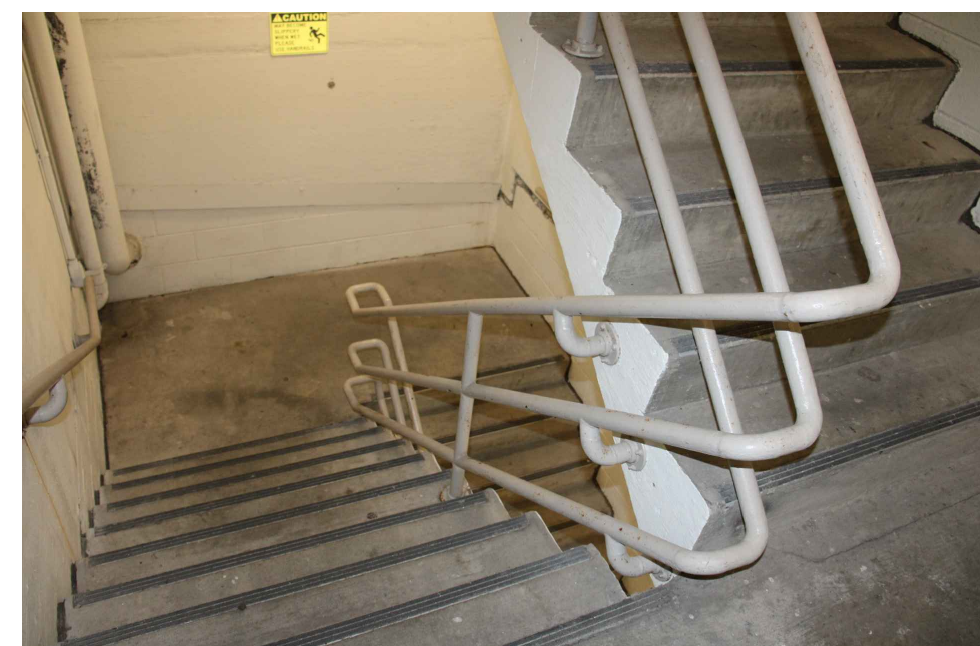
11 STAIR 11 PHOTO 11
1' = 1'-0"

12 STAIR 11 PHOTO 12
1' = 1'-0"

13 STAIR 11 PHOTO 13
1' = 1'-0"

14 STAIR 11 PHOTO 14
1' = 1'-0"

15 STAIR 11 PHOTO 15
1' = 1'-0"



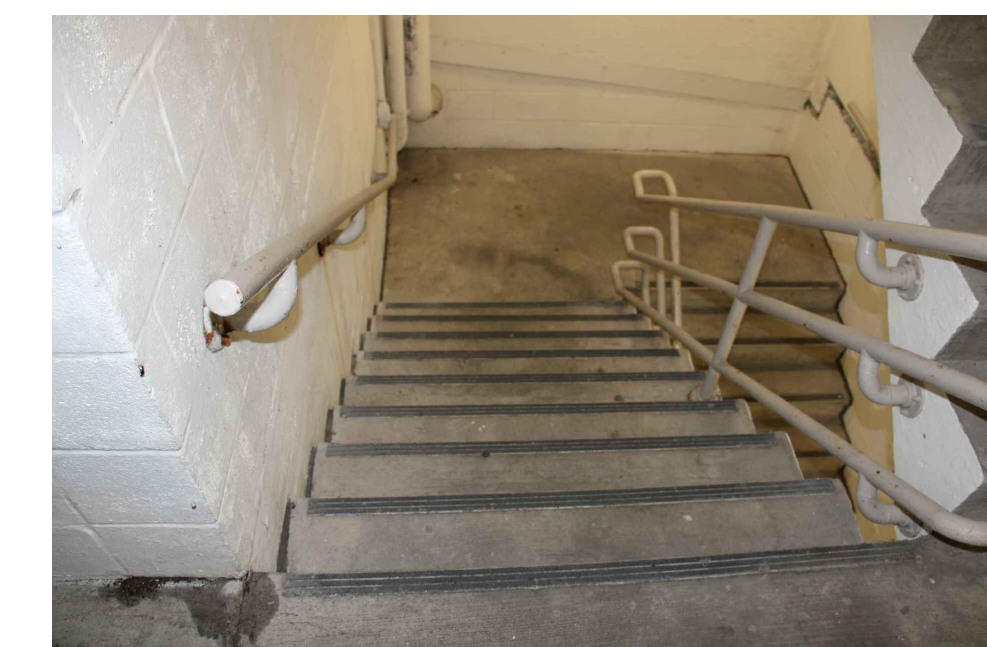
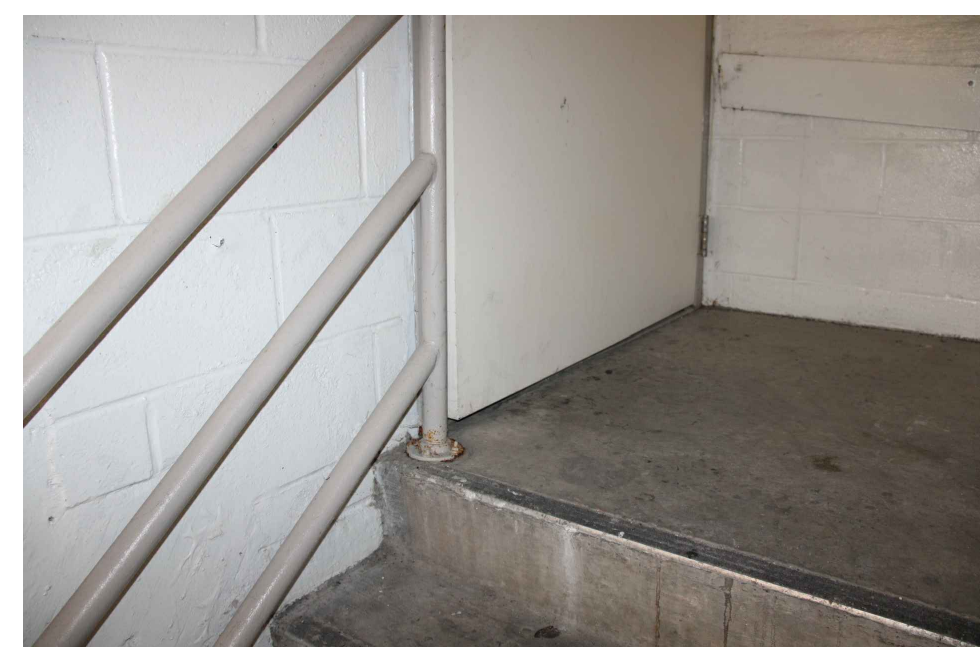
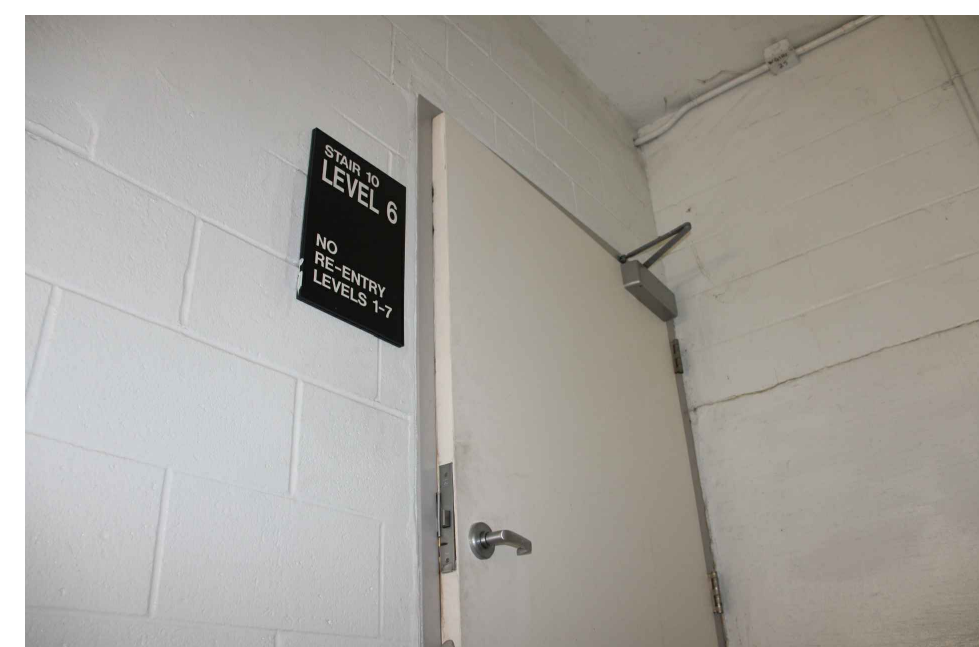
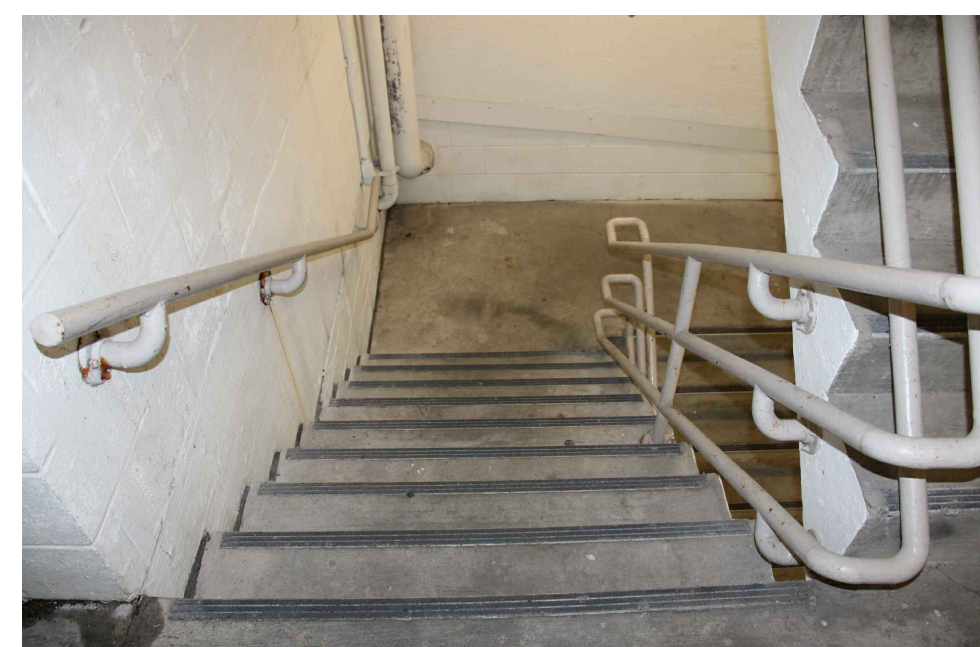
06 STAIR 10 PHOTO 06
1' = 1'-0"

07 STAIR 10 PHOTO 07
1' = 1'-0"

08 STAIR 10 PHOTO 08
1' = 1'-0"

09 STAIR 10 PHOTO 09
1' = 1'-0"

09 STAIR 10 PHOTO 09
1' = 1'-0"



01 STAIR 10 PHOTO 01
1' = 1'-0"

02 STAIR 10 PHOTO 02
1' = 1'-0"

03 STAIR 10 PHOTO 03
1' = 1'-0"

04 STAIR 10 PHOTO 04
1' = 1'-0"

05 STAIR 10 PHOTO 05
1' = 1'-0"



TERMINAL C AT IAH - 2800 N TERMINAL RD
HOUSTON, TX 77032

AH TERMINAL C HELIX RAMP BEARING AND MISC REPAIRS

C.I.P. No.	A.I.P. No.
C.O.H. No.	D.O.A No.



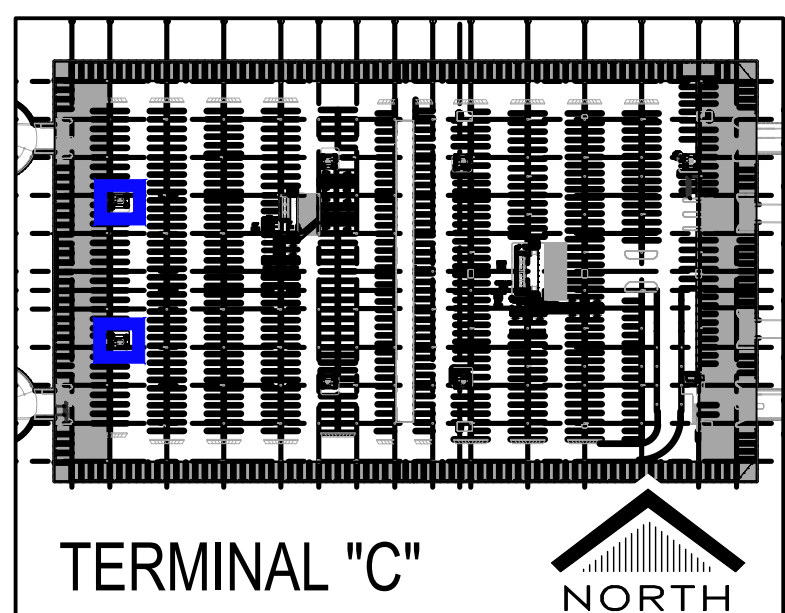
DESIGNER PROJECT No.: 19-21
PROJECT STATUS: ISSUED FOR CONSTRUCTION

REVISIONS			
No.	DESCRIPTION	DATE	BY

DESIGNER: J TOHILL
DRAWN BY: J TOHILL
CHECKED BY: TBD
ISSUE DATE: 12/15/2022
APPROVED BY:
APPROVAL DATE:

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

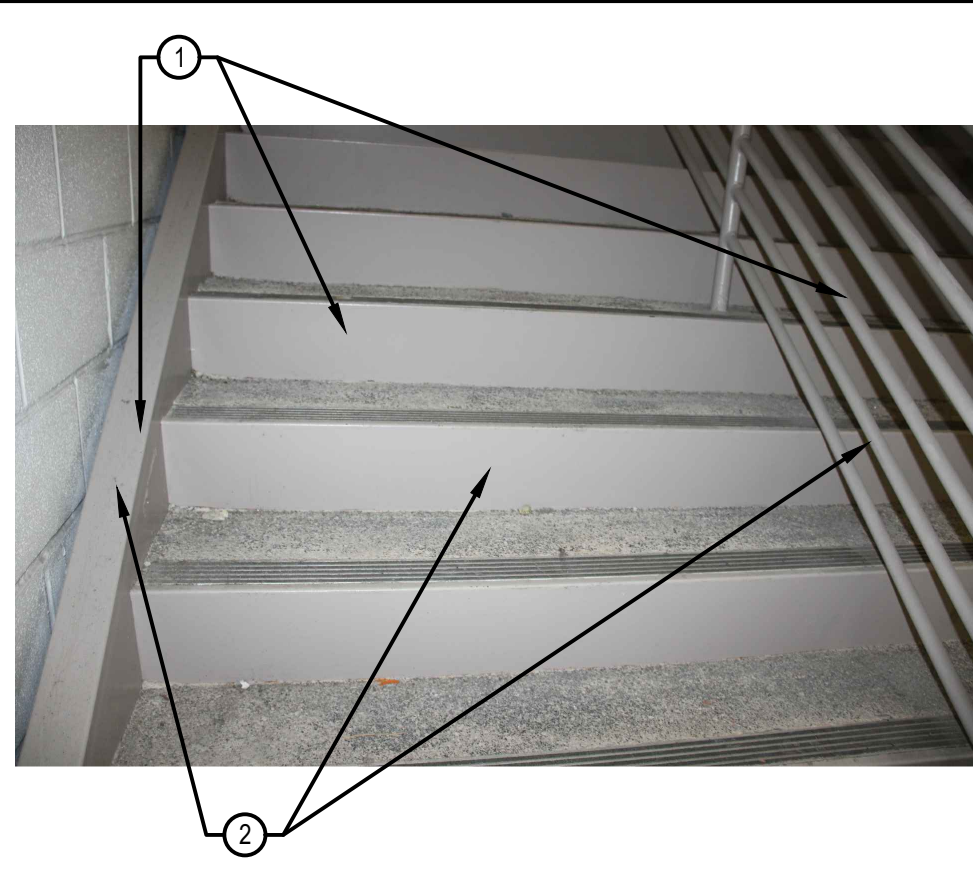
Review/ Approval Category	<p>Noe Almaguer Tx. REG. NO. 22651 DATE: July 24, 2023</p> <p>FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>
IFR	
ISSUED FOR REVIEW	



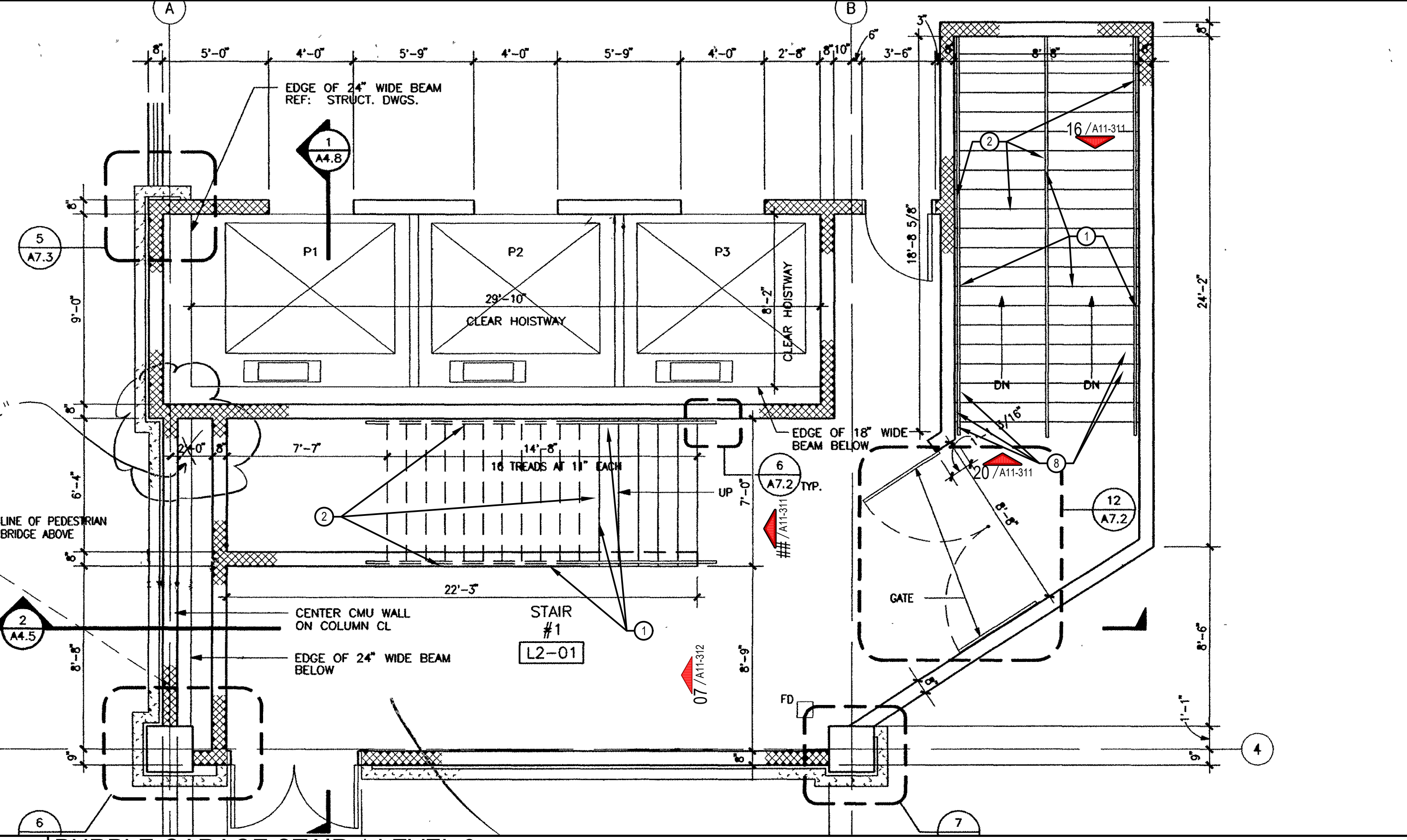
SHEET NAME: PHOTOS - BROWN GARAGE STAIR 10-11 LEVEL 1-6
SHEET No.: A11-212
SCALE:

SHEET SIZE: 22"x34" ANSI-D

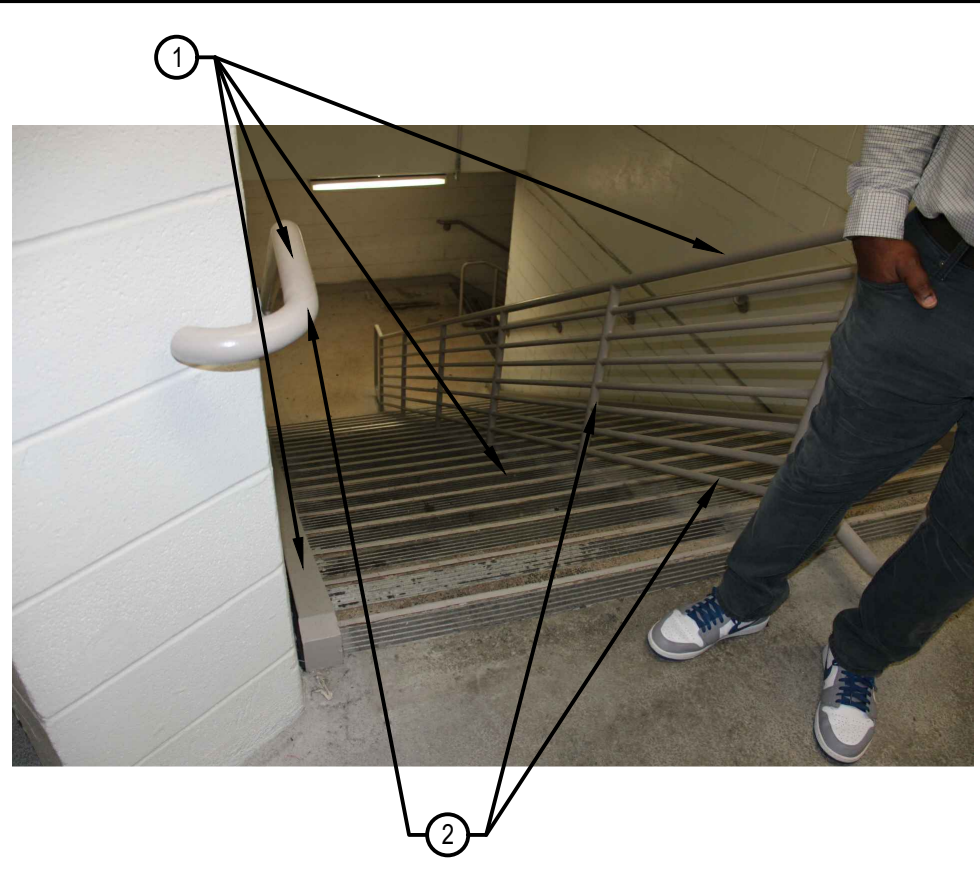
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 PLOT DATE: 24 July 2023 8:08:33 PM
 OLD DOA No.:
 DOA DWG FILE:



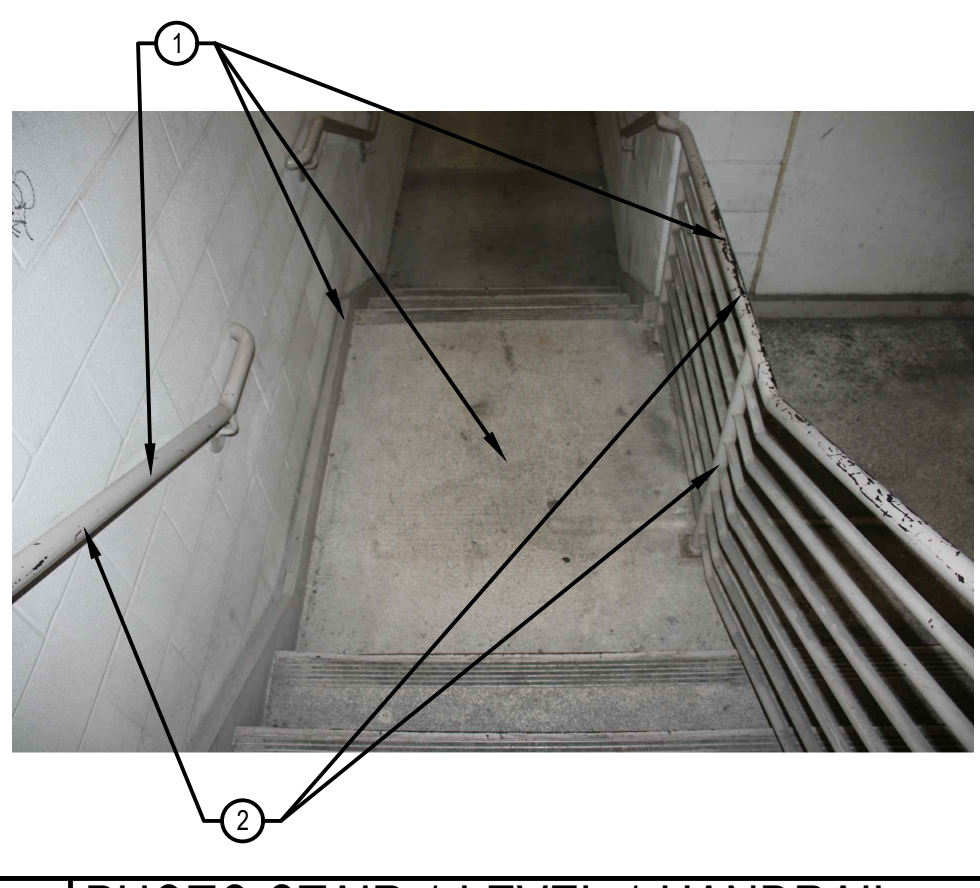
16 PHOTO STAIR 1 LEVEL 1 TYPICAL TREADS
1" = 1'-0"



12 PURPLE GARAGE STAIR 1 LEVEL 2
1/4" = 1'-0"



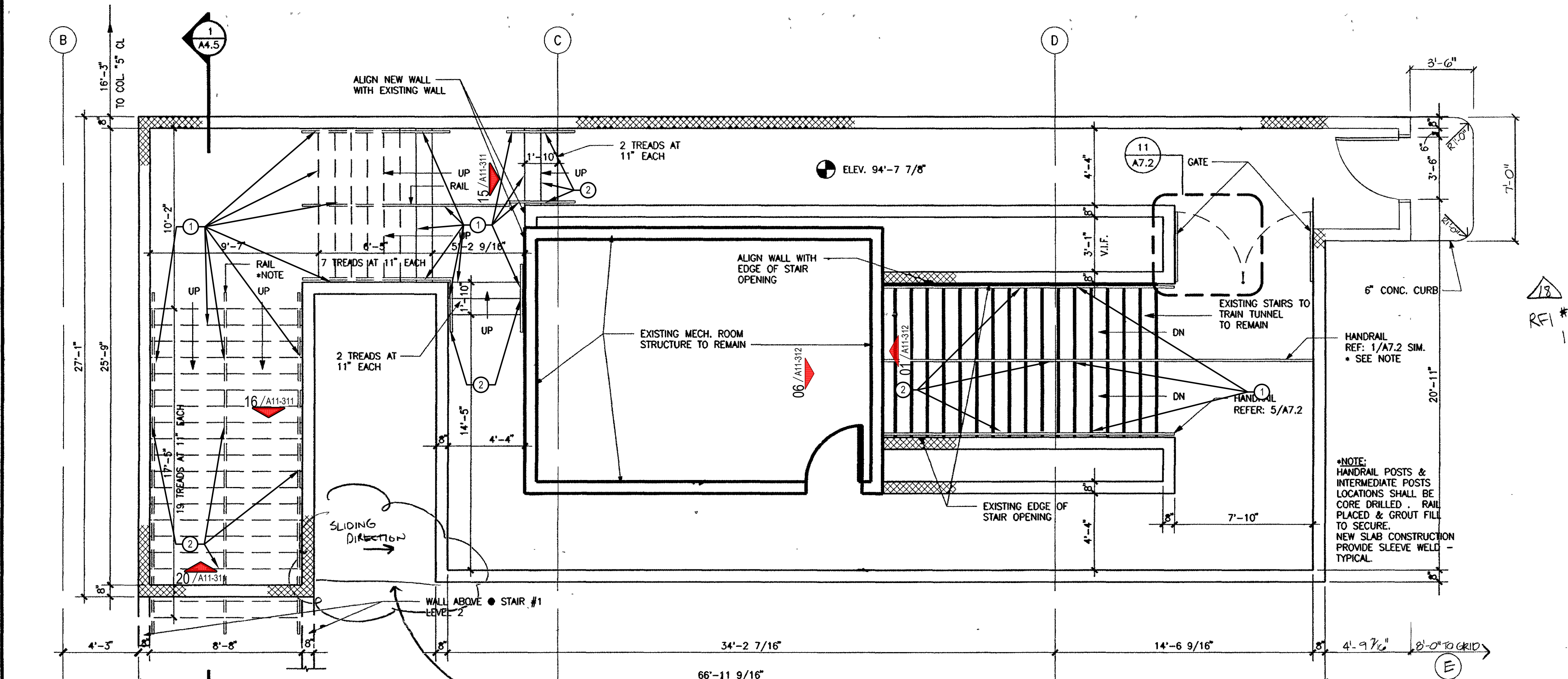
20 PHOTO STAIR 1 LEVEL 2 - DOWN TO LEVEL 1
1" = 1'-0"



15 PHOTO STAIR 1 LEVEL 1 HANDRAIL
1" = 1'-0"

- 06 GENERAL NOTES**
1" = 1'-0"
- HIGH PRESSURE WASHING AND ABRASIVE BLASTING OF TREADS, RISERS, LANDINGS, UNDERSIDE OF STAIRS, GUARDRAILS AND HANDRAILS, SURFACE PREPARATION OF SUBSTRATES AS REQUIRED FOR ACCEPTANCE OF PAINT, INCLUDING CLEANING, SMALL CRACK REPAIR, PATCHING, CAULKING, AND MAKING GOOD SURFACES AND AREAS. SEALING / PRIMING SURFACES FOR REPAINTING.
 - PAINT METAL RAILS, UNDERSIDE OF STAIR PANS, STRINGERS AND RISERS AS SHOWN BELOW. FERROUS METAL - MISCELLANEOUS METALS PAINT WITH SEMI-GLOSS FINISH
 - PRIMER: PRO INDUSTRIAL™ PRO-CRYL® UNIVERSAL PRIMER, B66-310 SERIES
 - 1ST COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
 - 2ND COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
 - REPAIR DOOR FROM BINDING CONDITION.
 - REPLACE DOOR WITH LIKE KIND.
 - REPAIR OR PATCH HOLE IN METAL RISER, REPAINT.
 - REPAIR OR PATCH CRACK IN CONCRETE LANDING.
 - REPAIR OR PATCH CRACK IN CONCRETE MASONRY UNIT.
 - AREA OF EXCESSIVE RUSTING, REMOVE RUST AND PREPARE FOR PAINTING.
 - AREA UNDER CONSTRUCTION, WORK IS UNDER DIFFERENT CONTRACT. COMPLETE THE WORK OF THIS CONTRACT AND NOTIFY "HAS" AND THE ARCHITECT IF THERE IS ANYTHING STOPPING YOU FROM COMPLETING THE WORK.
 - INSTALL FOUNDATION ARMOR SX5000 PENETRATING SEALER CLEAR MATTE TRANSPARENT CONCRETE SEALER READY-TO-USE ON TREADS AND LANDINGS AFTER HP WASHING

06 GENERAL NOTES
1" = 1'-0"



02 PURPLE GARAGE STAIR 1 LEVEL 1
1/4" = 1'-0"

01 NOTES AND KEYNOTES
1" = 1'-0"

AH TERMINAL C HELIX RAMP BEARING AND MISC REPAIRS

C.I.P. No.	A.I.P. No.
C.O.H. No.	D.O.A. No.



DESIGNER PROJECT No.: 19-21
PROJECT STATUS: ISSUED FOR CONSTRUCTION

REVISIONS

No.	DESCRIPTION	DATE	BY

DESIGNER: J TOHILL
DRAWN BY: J TOHILL
CHECKED BY: TBD
ISSUE DATE: 12/15/2022
APPROVED BY:
APPROVAL DATE:

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/Approval Category

IFR

ISSUED FOR REVIEW

Noe Almaguer
Tx. REG. NO. 22651
DATE: July 20, 2023

FOR
INTERIM REVIEW
AND NOT INTENDED
FOR CONSTRUCTION,
BIDDING OR PERMIT
PURPOSES.

TERMINAL "C"

SHEET NAME:
PURPLE GARAGE STAIR 1 LEVEL 1
AND 2

SHEET No. A11-311

SCALE:

ANSI-D
SHEET SIZE: 22" x 34"

E:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A11-311 PURPLE GARAGE STAIR 1 LEVEL 1 AND 2.DWG
 OLD DWA No.:
 DOA DWG FILE:
 PLOT DATE: 24 July 2023 8:08:49 PM

REVISIONS			
No.	DESCRIPTION	DATE	BY

DESIGNER:	J TOHILL
DRAWN BY:	J TOHILL
CHECKED BY:	TBD
ISSUE DATE:	12/15/2022
APPROVED BY:	
APPROVAL DATE:	

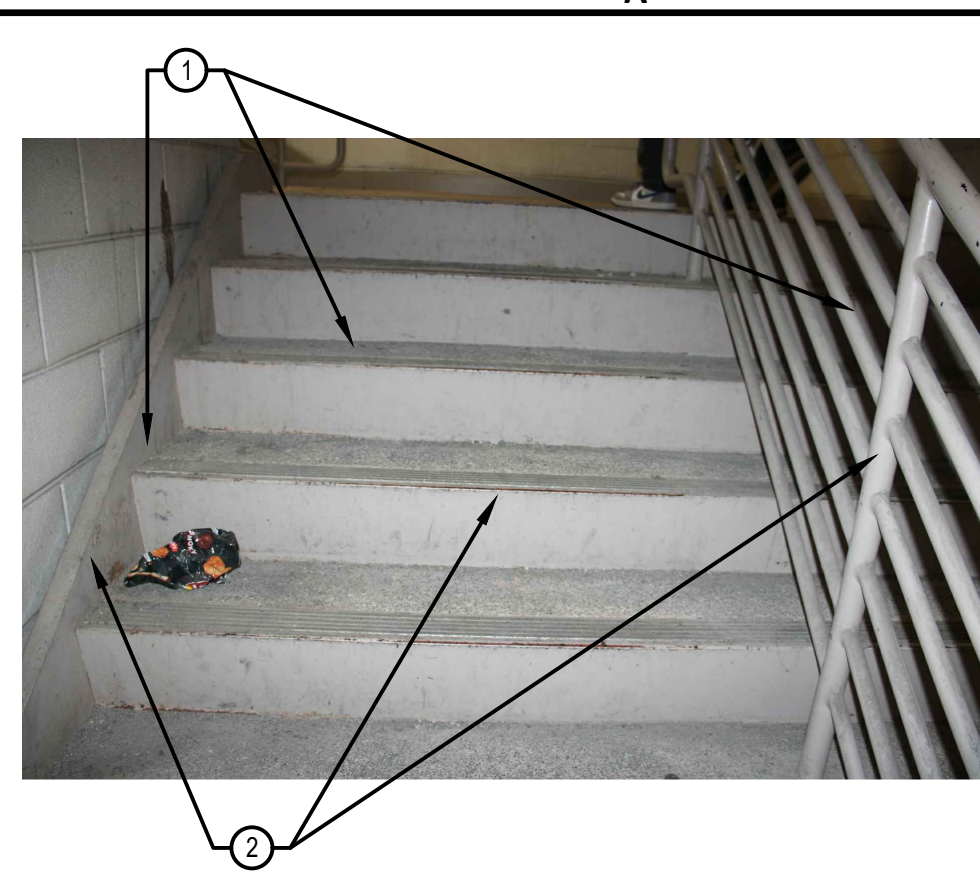
DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/Approval Category	Noe Almaguer Tx. REG. NO. 22651 DATE: July 20, 2023
IFR	FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.
ISSUED FOR REVIEW	

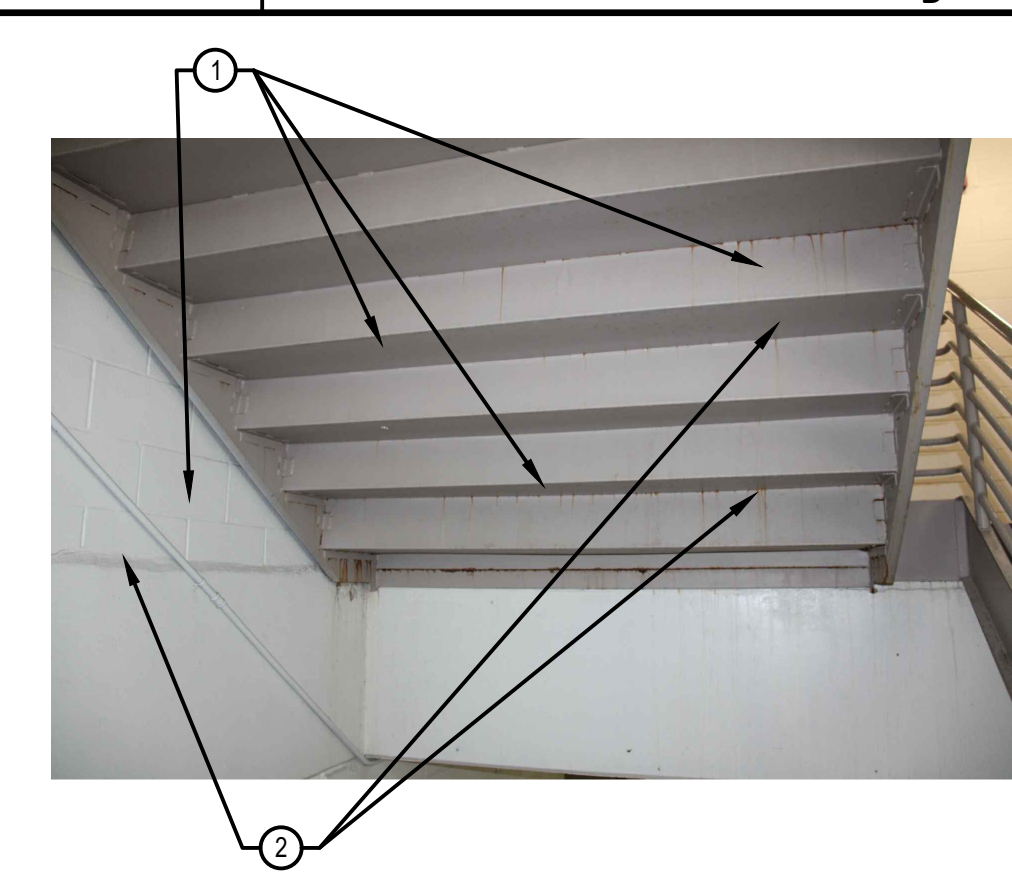
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SHEET NAME:
PURPLE GARAGE STAIR 1 LEVEL 3 4 AND 5
SHEET No. A11-312

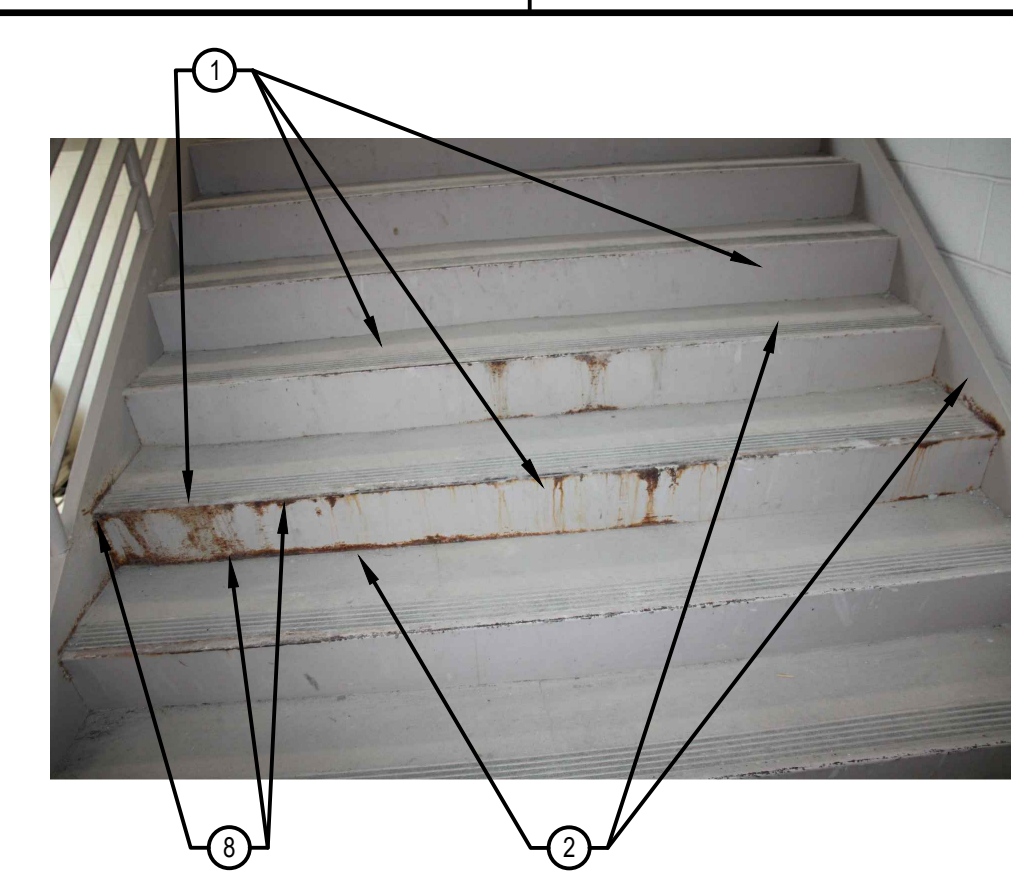
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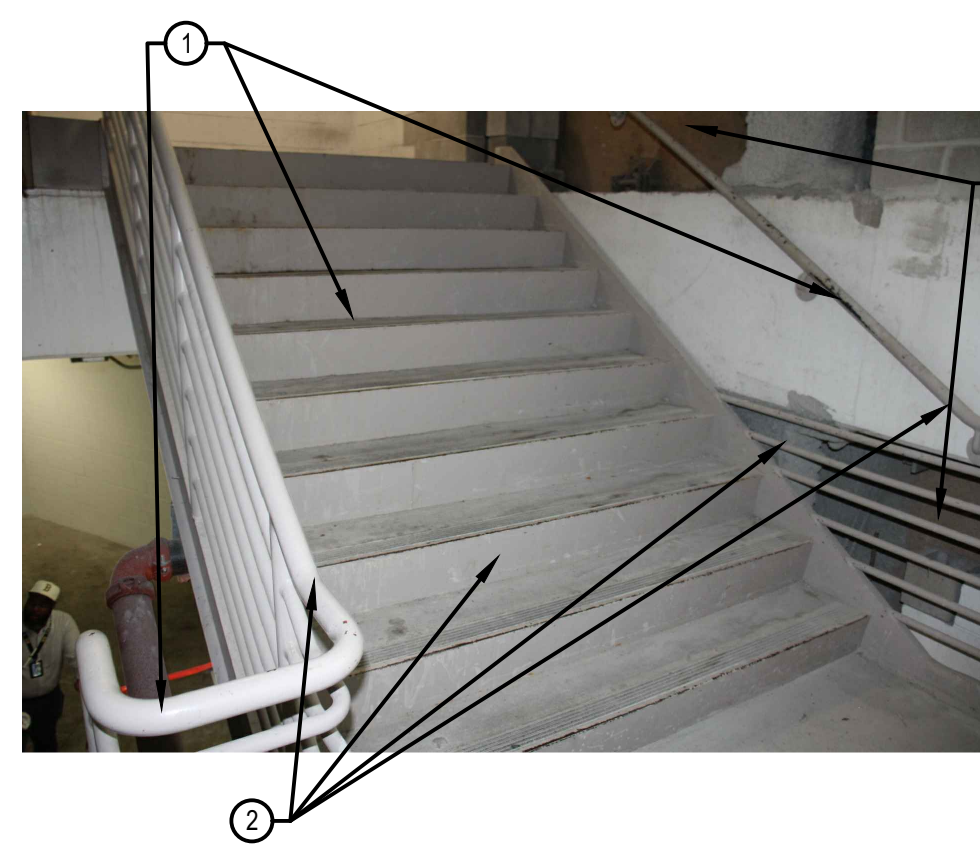
16 PHOTO STAIR 1 TYPICAL TREADS
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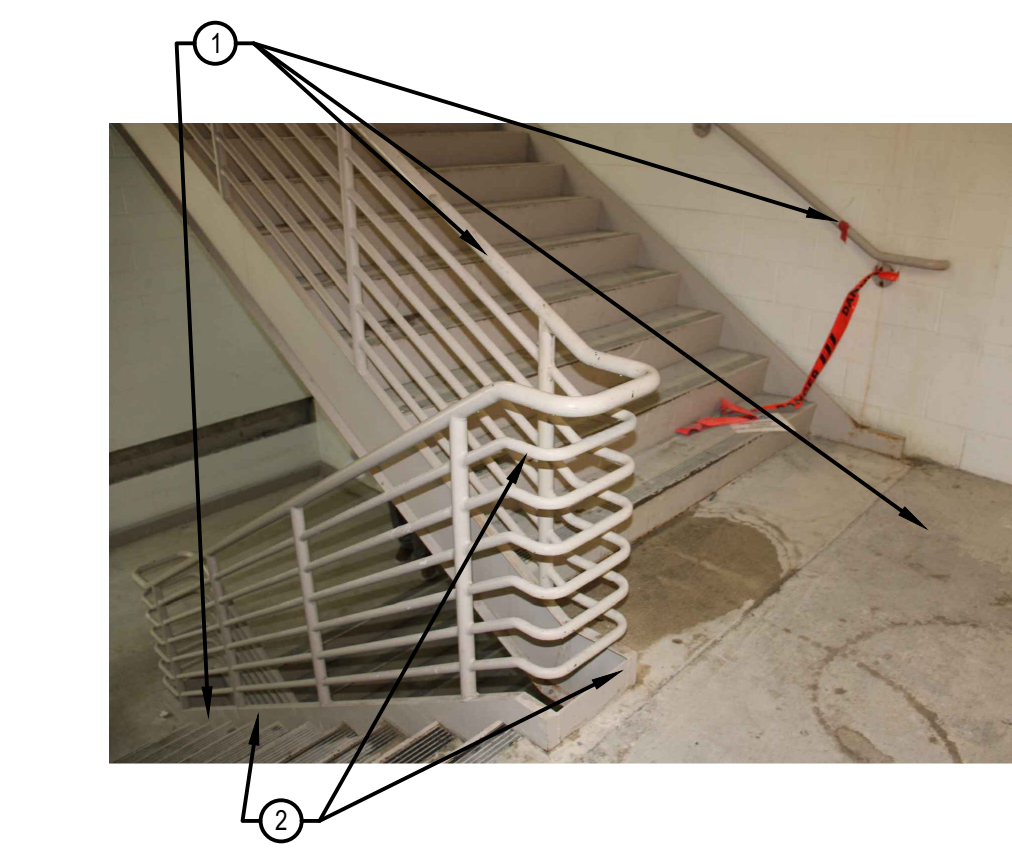
17 PHOTO STAIR 1 TYPICAL STAIR UNDERSIDE
1' = 1'-0"



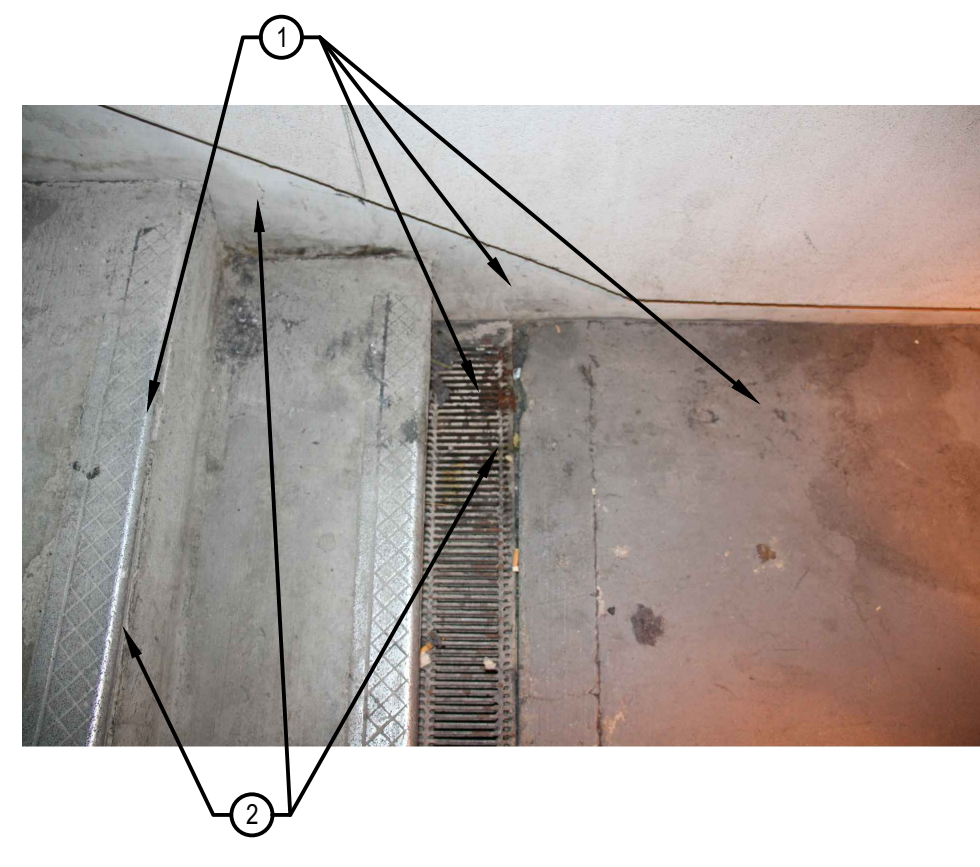
18 PHOTO STAIR 1 TYPICAL TREADS WITH RUST
1' = 1'-0"



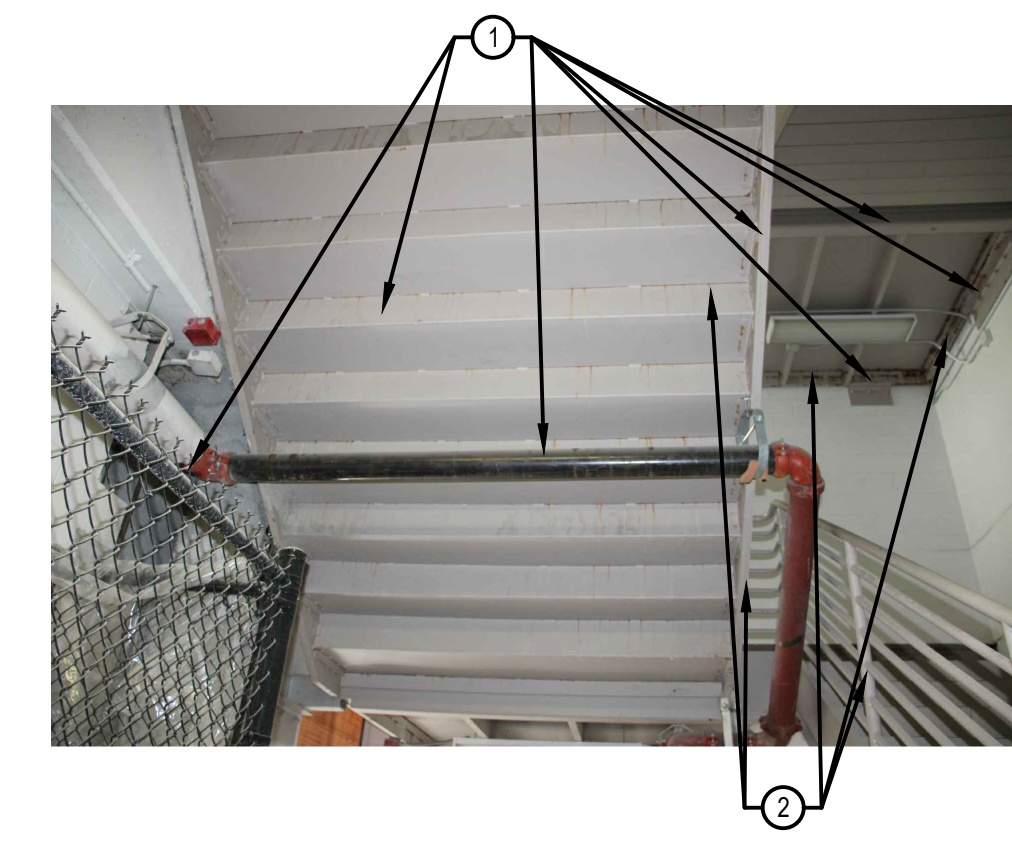
11 PHOTO STAIR 1 LEVEL 3 CONSTRUCTION ACTIVITY
1' = 1'-0"



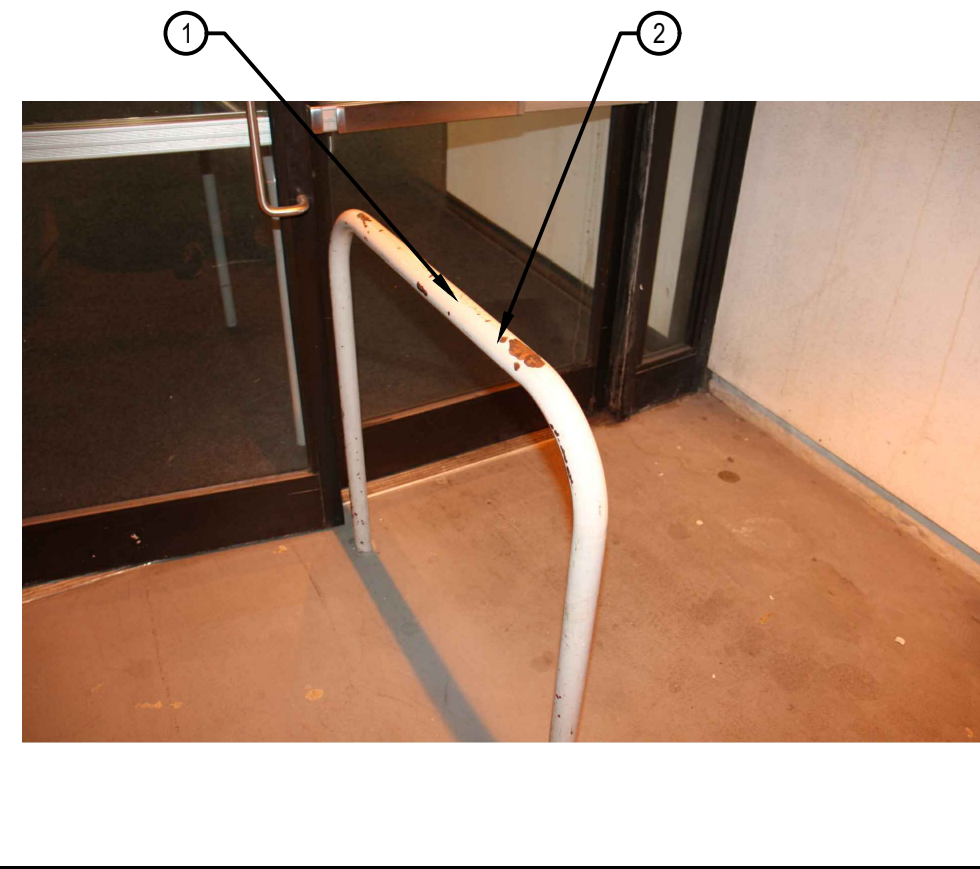
12 PHOTO STAIR 1 TYPICAL LANDING
1' = 1'-0"



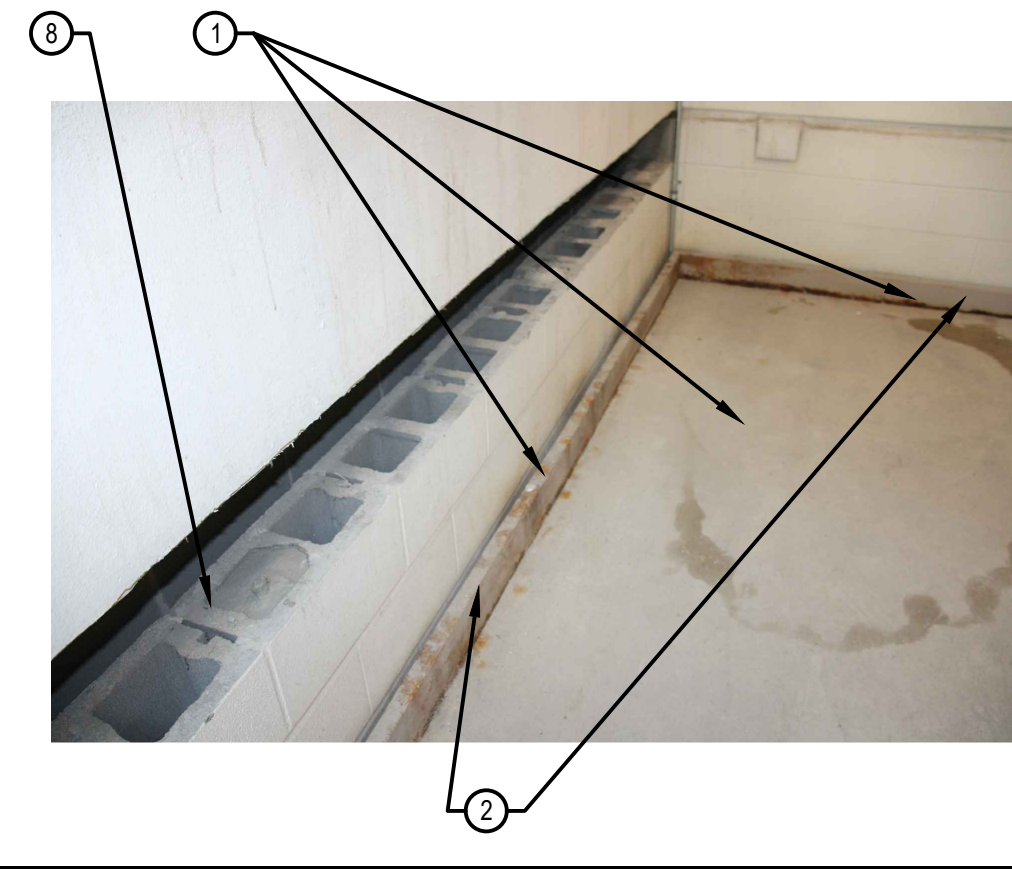
06 PHOTO STAIR 1 LEVEL 1 DRAIN
1' = 1'-0"



07 PHOTO STAIR 1 LEVEL 3 - STAIR UNDERSIDE
1' = 1'-0"



01 PHOTO STAIR 1 LEVEL 0 RAIL AT DOOR
1' = 1'-0"



02 PHOTO STAIR 1 LANDING
1' = 1'-0"

A. WHERE REQUIRED, PRESSURE WASH EXTERIOR SURFACES PRIOR TO REPAINTING IN ACCORDANCE WITH MPI STANDARDS FOR TYPE OF SURFACES AND RECOMMENDED PRESSURES TO ENSURE COMPLETE REMOVAL OF ALL LOOSE PAINT, STAINS, DIRT, AND OTHER FOREIGN MATTER. THIS WORK SHALL BE CARRIED OUT ONLY BY QUALIFIED TRADESMAN EXPERIENCED IN PRESSURE WATER CLEANING. THE USE OF WATER HOSE CLEANING WILL NOT BE CONSIDERED SATISFACTORY, UNLESS SPECIFICALLY SPECIFIED. ALLOW SUFFICIENT DRYING TIME AND TEST ALL SURFACES USING AN ELECTRONIC MOISTURE METER BEFORE COMMENCING WORK.

B. SAND, CLEAN, DRY, ETCH, NEUTRALIZE AND/OR TEST ALL SURFACES UNDER ADEQUATE ILLUMINATION, VENTILATION AND TEMPERATURE REQUIREMENTS.

C. REMOVE AND SECURELY STORE ALL MISCELLANEOUS HARDWARE AND SURFACE FITTINGS / FASTENINGS (E.G. ELECTRICAL LIGHTS, MECHANICAL LOUVERS, DOOR AND WINDOW HARDWARE (E.G. HINGES, KNOBS, LOCKS, TRIM, FRAME STOPS) AND REMOVABLE HAZARD / INSTRUCTION LABELS, FROM WALL AND SOFFIT SURFACES, DOORS AND FRAMES, PRIOR TO REPAINTING AND REPLACE UPON COMPLETION. CAREFULLY CLEAN AND REPLACE ALL SUCH ITEMS UPON COMPLETION OF REPAINTING WORK IN EACH AREA. DO NOT USE SOLVENT OR REACTIVE CLEANING AGENTS ON ITEMS THAT WILL MAR OR REMOVE FINISHES (E.G. LACQUER FINISHES). DOORS SHALL BE REMOVED BEFORE REPAINTING TO PAINT BOTTOM AND TOP EDGES AND THEN RE-HUNG.

D. PROTECT ALL EXTERIOR SURFACES AND AREAS, INCLUDING LANDSCAPING, WALKS, DRIVES, ALL ADJACENT BUILDING SURFACES (INCLUDING GLASS, ALUMINUM SURFACES, ETC.) AND EQUIPMENT AND ANY LABELS AND SIGNAGE FROM REPAINTING OPERATIONS AND DAMAGE BY DROP CLOTHS, SHIELDS, MASKING, TEMPLATES, OR OTHER SUITABLE PROTECTIVE MEANS AND MAKE GOOD ANY DAMAGE CAUSED BY FAILURE TO PROVIDE SUCH PROTECTION.

E. APPLY PRIMER, PAINT OR STAIN WITHIN AN APPROPRIATE TIME FRAME AFTER CLEANING AND PREPARATION TO PREVENT WEATHERING OR WATER STAINING OF SUBSTRATE OR BEFORE ENVIRONMENTAL CONDITIONS ENCOURAGE FLASH-RUSTING, RUSTING, CONTAMINATION OR WHEN THE MANUFACTURER'S PAINT SPECIFICATIONS REQUIRE EARLIER APPLICATIONS.

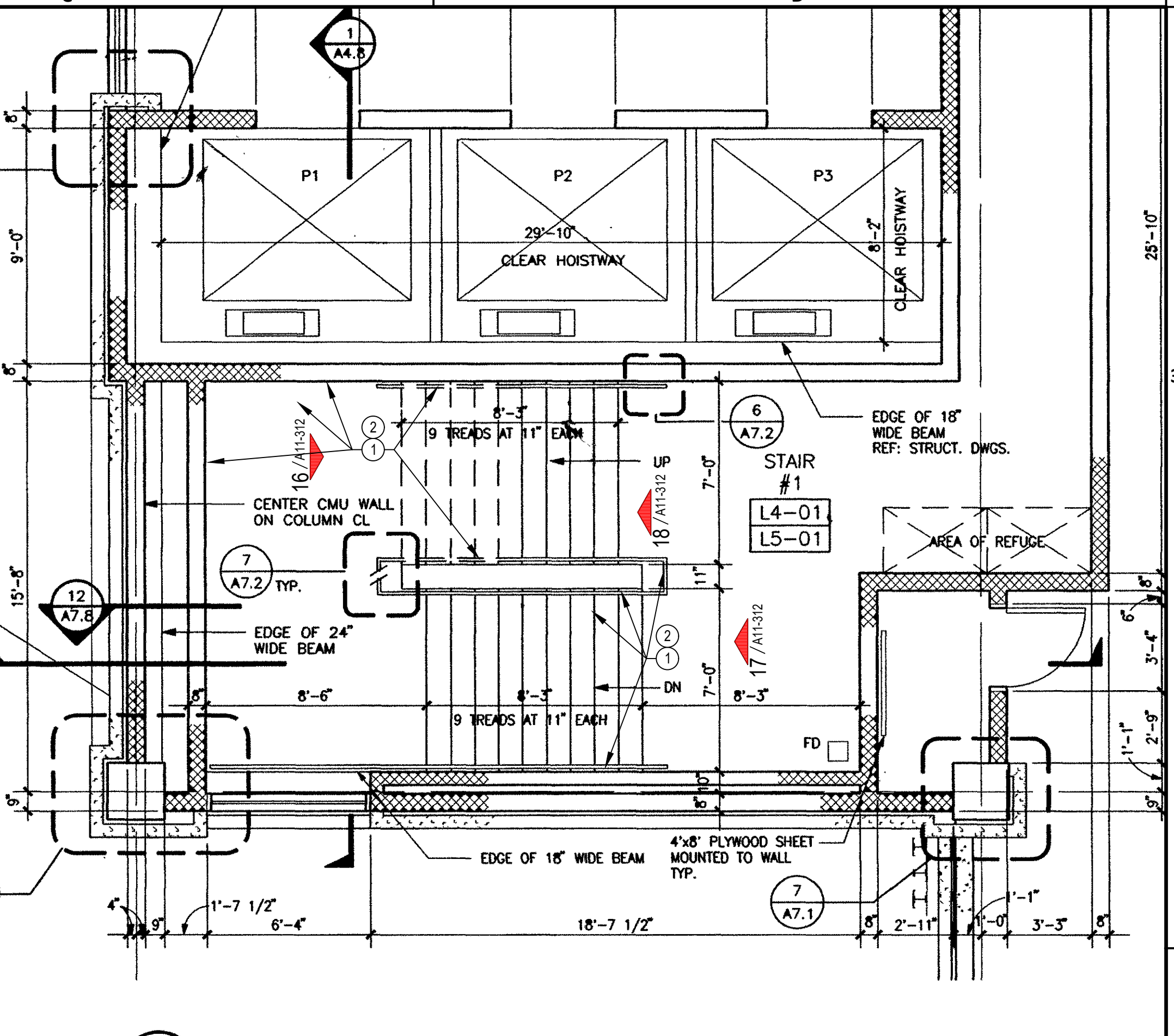
F. PRIMER, PAINT OR STAIN COATS SPECIFIED ARE INTENDED TO COVER SURFACES SATISFACTORILY WHEN APPLIED AT PROPER CONSISTENCY AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

G. PREVIOUSLY COATED SURFACES: MAINTENANCE PAINTING WILL FREQUENTLY NOT PERMIT OR REQUIRE COMPLETE REMOVAL OF ALL OLD COATINGS PRIOR TO REPAINTING. HOWEVER, ALL SURFACE CONTAMINATION SUCH AS OIL, GREASE, LOOSE PAINT, MILL SCALE, DIRT, FOREIGN MATTER, RUST, MOLD, MILDEW, MORTAR, EFFLORESCENCE, AND SEALERS MUST BE REMOVED TO ASSURE SOUND BONDING TO THE TIGHTLY ADHERING OLD PAINT. GLOSSY SURFACES OF OLD PAINT FILMS MUST BE CLEAN AND DULL BEFORE REPAINTING. THOROUGH WASHING WITH AN ABRASIVE CLEANSER WILL CLEAN AND DULL IN ONE OPERATION, OR, WASH THOROUGHLY AND DULL BY SANDING. SPOT PRIME ANY BARE AREAS WITH AN APPROPRIATE PRIMER. RECOGNIZE THAT ANY SURFACE PREPARATION SHORT OF TOTAL REMOVAL OF THE OLD COATING MAY COMPROMISE THE SERVICE LENGTH OF THE SYSTEM. CHECK FOR COMPATIBILITY BY APPLYING A TEST PATCH OF THE RECOMMENDED COATING SYSTEM, COVERING AT LEAST 2 TO 3 SQUARE FEET. ALLOW TO DRY ONE WEEK BEFORE TESTING ADHESION PER ASTM D3359. IF THE COATING SYSTEM IS INCOMPATIBLE, COMPLETE REMOVAL IS REQUIRED PER ASTM D4259

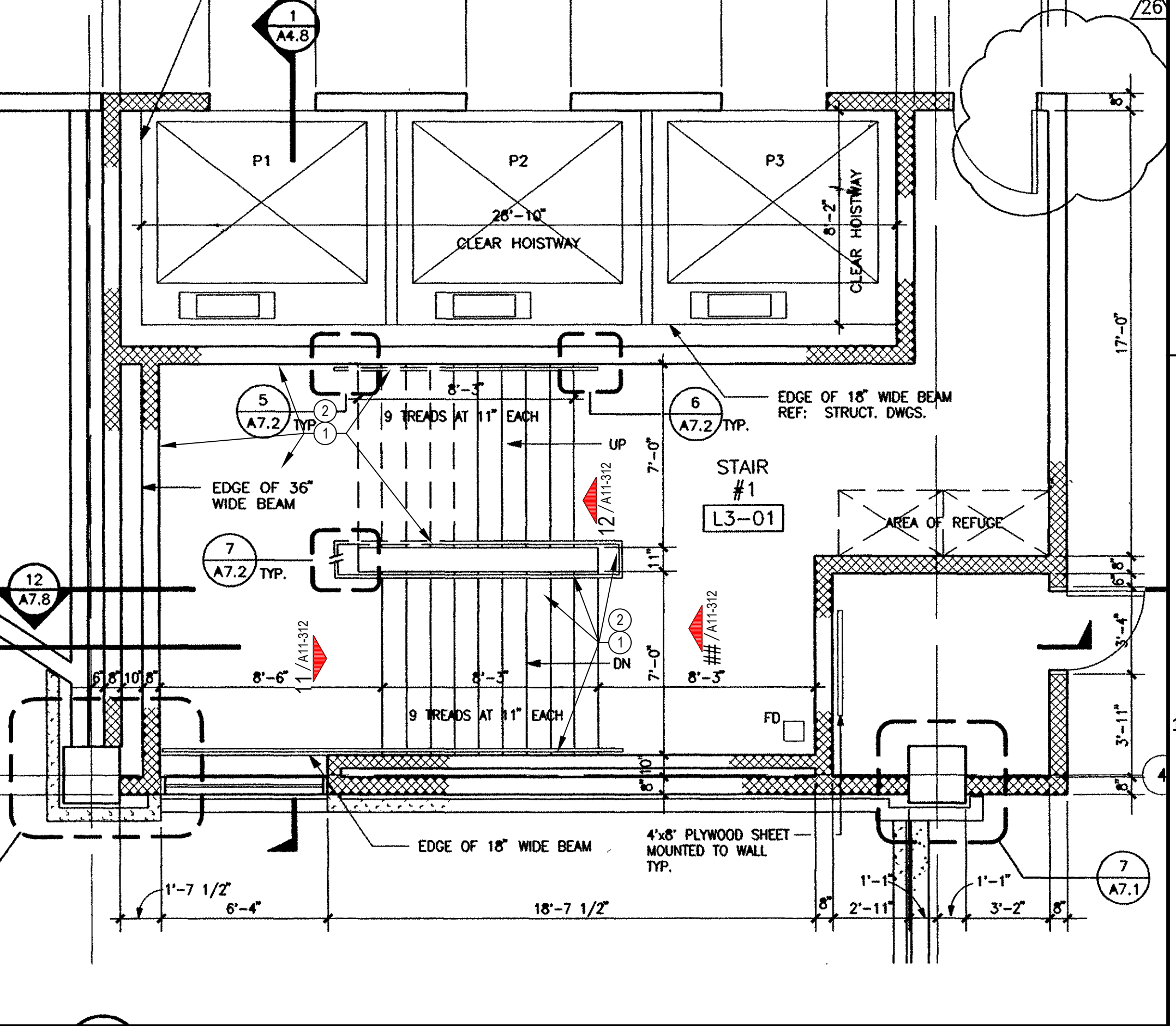
08 GENERAL NOTES
1' = 1'-0"

- HIGH PRESSURE WASHING AND ABRASIVE BLASTING OF TREADS, RISERS, LANDINGS, UNDERSIDE OF STAIRS, GUARDRAILS AND HANDRAILS. SURFACE PREPARATION OF SUBSTRATES AS REQUIRED FOR ACCEPTANCE OF PAINT, INCLUDING CLEANING, SMALL CRACK REPAIR, PATCHING, CAULKING, AND MAKING GOOD SURFACES AND AREAS. SEALING / PRIMING SURFACES FOR REPAINTING.
- PAINT METAL RAILS, UNDERSIDE OF STAIR PANS, STRINGERS AND RISERS AS SHOWN BELOW.
FERROUS METAL - MISCELLANEOUS METALS PAINT WITH SEMI-GLOSS FINISH
PRIMER: PRO INDUSTRIAL™ PRO-CRYL® UNIVERSAL PRIMER, B66-310 SERIES
1ST COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
2ND COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
- REPAIR DOOR FROM BINDING CONDITION.
- REPLACE DOOR WITH LIKE KIND.
- REPAIR OR PATCH HOLE IN METAL RISER, REPAINT.
- REPAIR OR PATCH CRACK IN CONCRETE LANDING.
- REPAIR OR PATCH CRACK IN CONCRETE MASONRY UNIT.
- AREA OF EXCESSIVE RUSTING, REMOVE RUST AND PREPARE FOR PAINTING.
- AREA UNDER CONSTRUCTION, WORK IS UNDER DIFFERENT CONTRACT. COMPLETE THE WORK OF THIS CONTRACT AND NOTIFY "HAS" AND THE ARCHITECT IF THERE IS ANYTHING STOPPING YOU FROM COMPLETING THE WORK.
- INSTALL FOUNDATION ARMOR SX5000 PENETRATING SEALER CLEAR MATTE TRANSPARENT CONCRETE SEALER READY-TO-USE ON TREADS AND LANDINGS AFTER HP WASHING

03 NOTES AND KEYNOTES
1' = 1'-0"



14 PURPLE GARAGE STAIR 1 LEVEL 4 & 5
1/4" = 1'-0"



04 PURPLE GARAGE STAIR 1 LEVEL 3
1/4" = 1'-0"

E:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A11-312 PURPLE GARAGE STAIR 1 LEVEL 3 4 AND 5.DWG
 FILE NAME:
 OLD DWA No. :
 DOA DWG FILE:
 PLOT DATE: 24 July 2023 8:09:03 PM

REVISIONS			
No.	DESCRIPTION	DATE	BY

DESIGNER:	J TOHILL
DRAWN BY:	J TOHILL
CHECKED BY:	TBD
ISSUE DATE:	12/15/2022
APPROVED BY:	
APPROVAL DATE:	

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/Approval Category

IFR

ISSUED FOR REVIEW

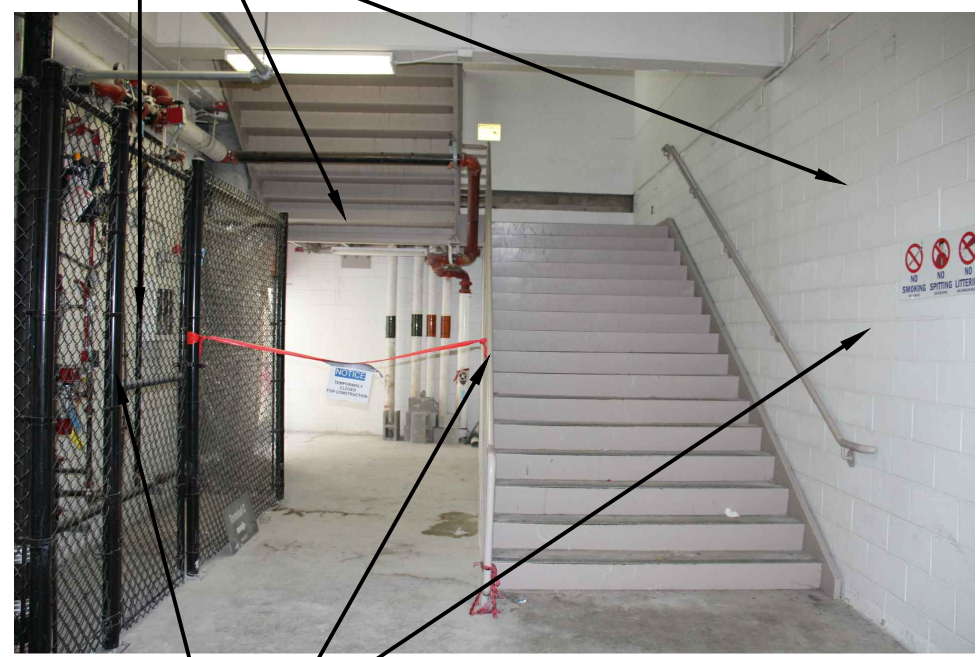
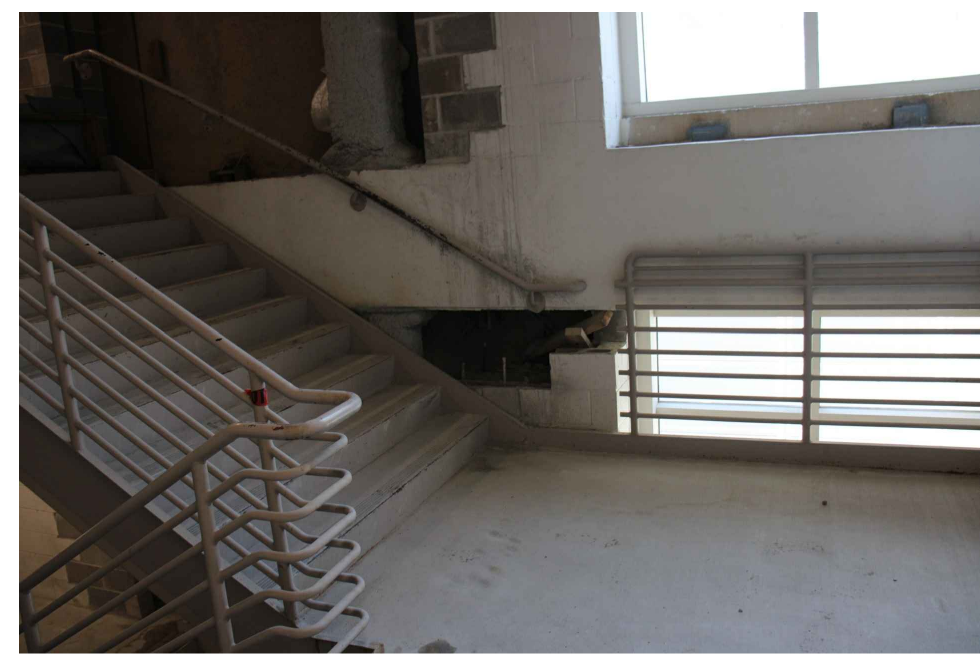
Noe Almaguer
Tx. REG. NO. 22651
DATE: July 24, 2023

FOR
INTERIM REVIEW
AND NOT INTENDED
FOR CONSTRUCTION,
BIDDING OR PERMIT
PURPOSES.

TERMINAL "C"

SHEET NAME:
PURPLE GARAGE STAIR 1 LEVEL 6

SHEET No. A11-313 SCALE: 1/4" = 1'-0"

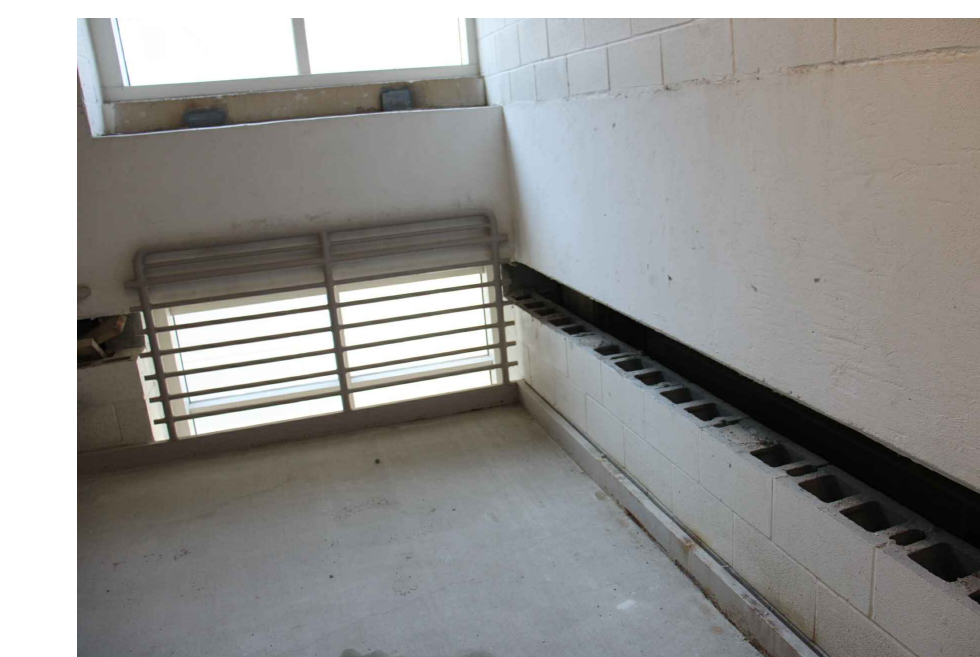
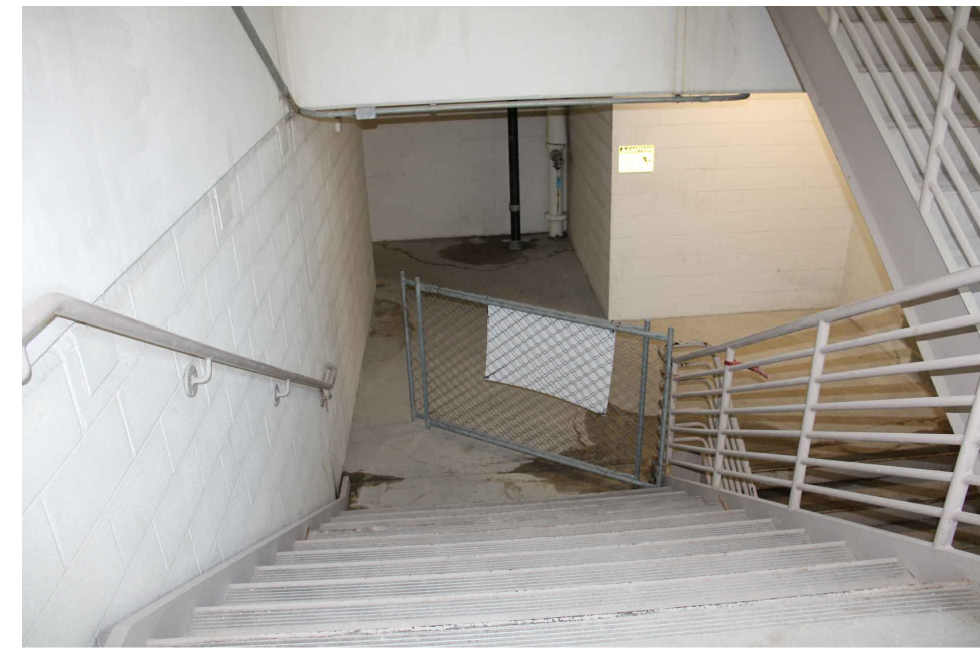


16 STAIR 1 TYPICAL TREADS
1' = 1'-0"

17 STAIR 1 LEVEL 5 UNDER CONSTRUCTION
1' = 1'-0"

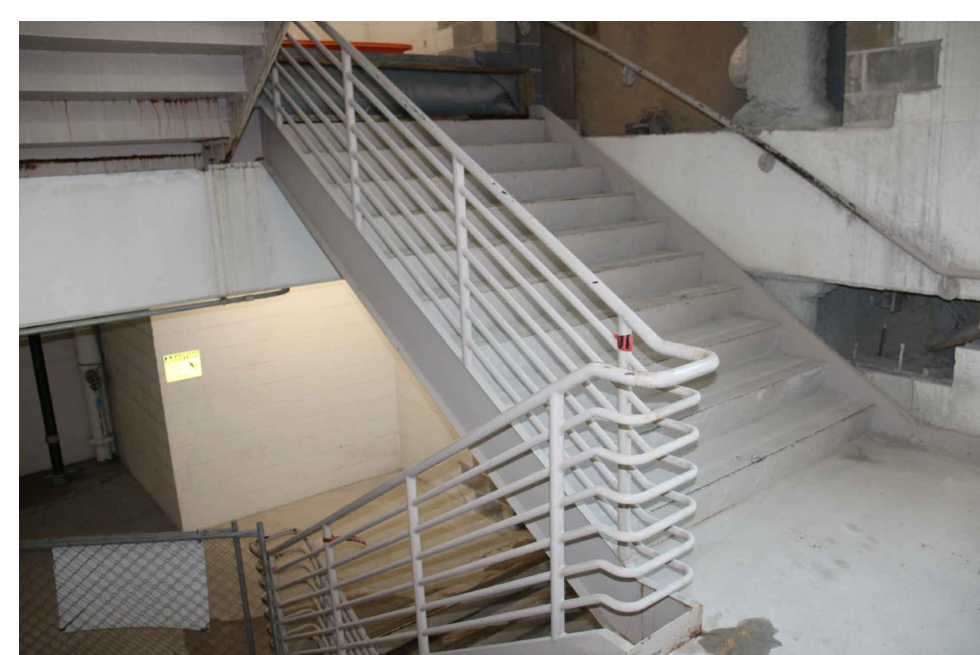
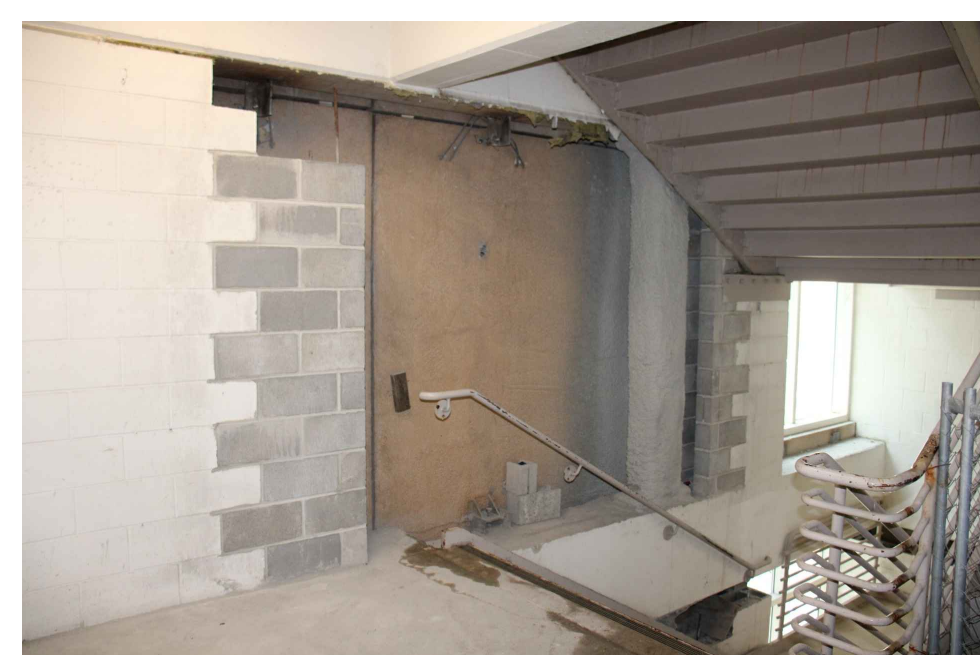
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1' = 1'-0"

19 STAIR 1 LANDING LEVEL 2
1' = 1'-0"



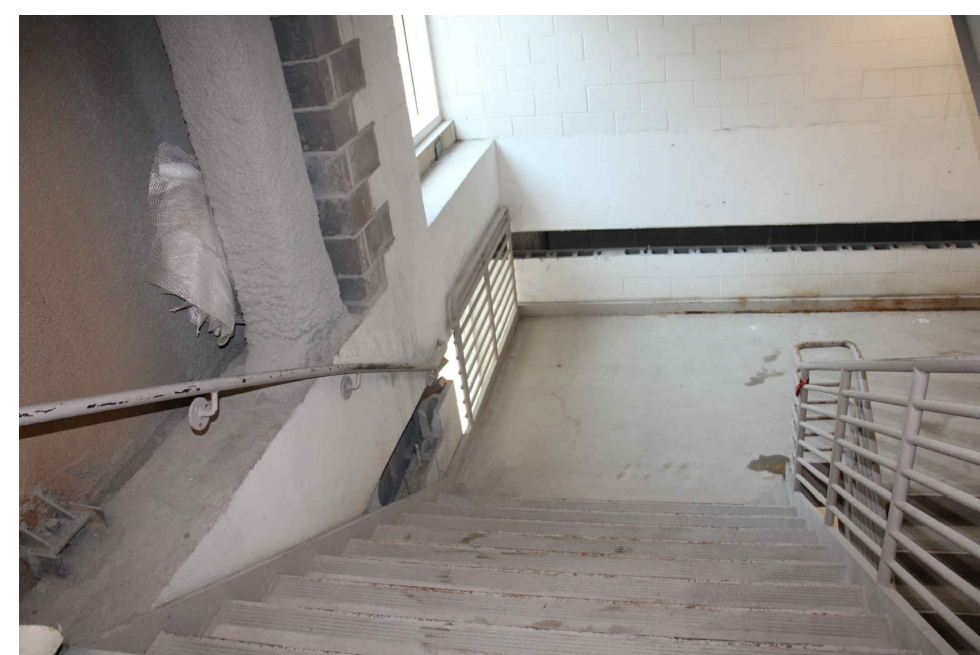
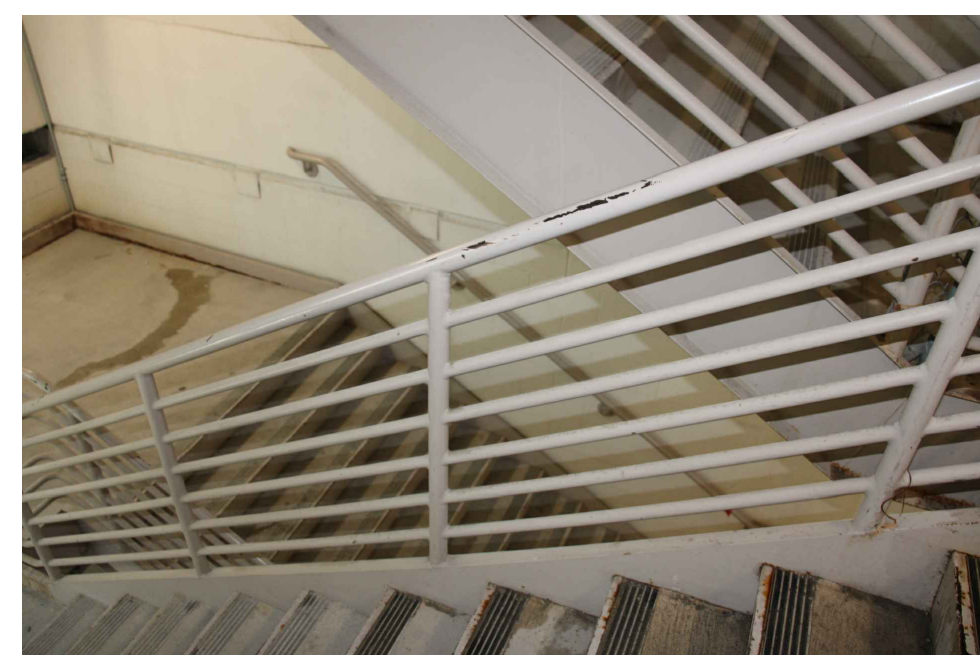
11 STAIR 1 LEVEL 5 CONSTRUCTION ACTIVITY
1' = 1'-0"

12 STAIR 1 LANDING UNDER CONSTRUCTION
1' = 1'-0"



06 STAIR 1 LEVEL 5 UNDER CONSTRUCTION
1' = 1'-0"

07 STAIR 1 LEVEL 6 - STAIR GUARDRAIL
1' = 1'-0"



01 STAIR 1 LEVEL 5 RAIL
1' = 1'-0"

NUMBER TITLE

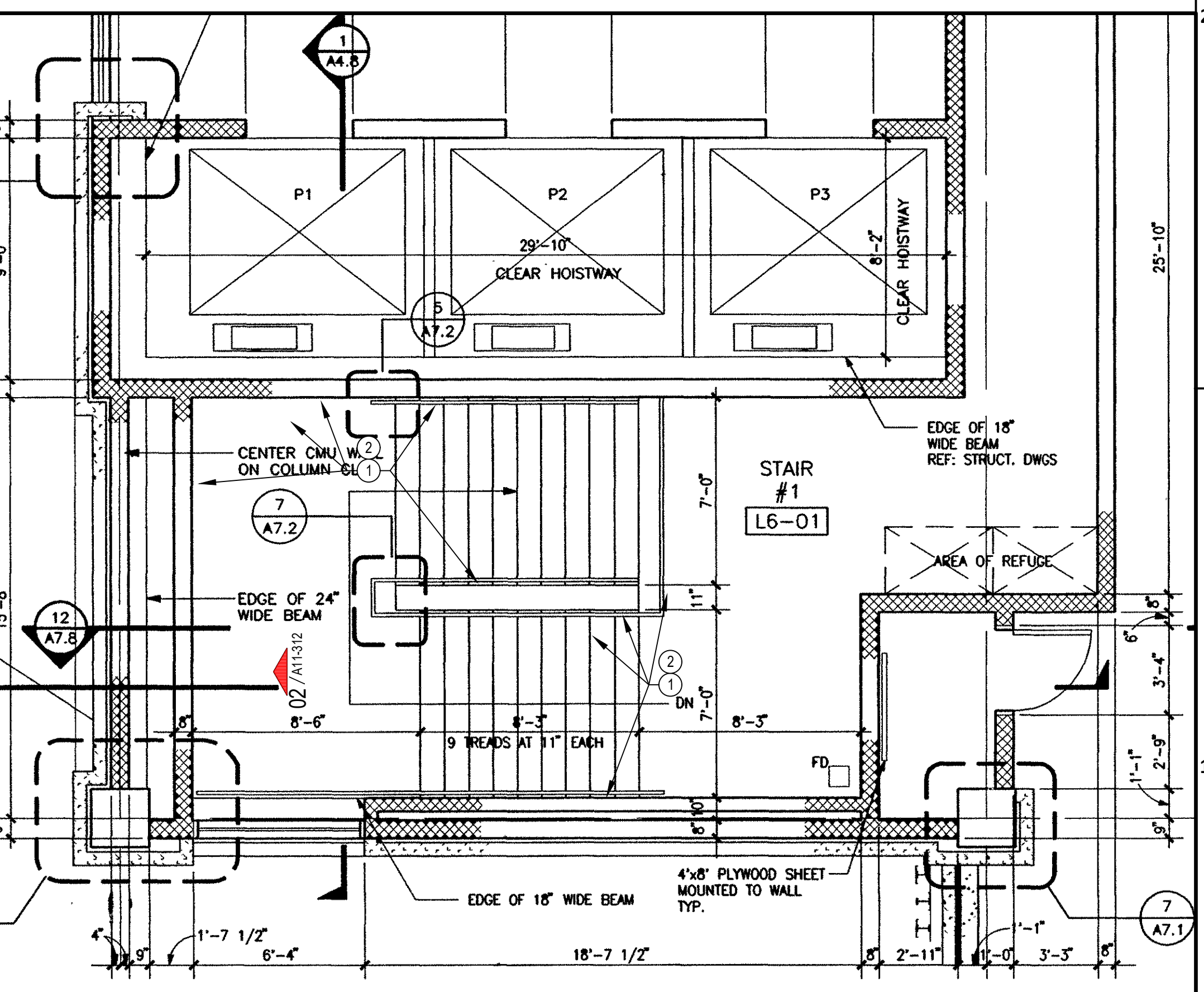
VIEW 03 KEYNOTES
1' = 1'-0"

04 PURPLE GARAGE STAIR 1 LEVEL 6
1/4" = 1'-0"

- A. WHERE REQUIRED, PRESSURE WASH EXTERIOR SURFACES PRIOR TO REPAINTING IN ACCORDANCE WITH MPI STANDARDS FOR TYPE OF SURFACES AND RECOMMENDED PRESSURES TO ENSURE COMPLETE REMOVAL OF ALL LOOSE PAINT, STAINS, DIRT, AND OTHER FOREIGN MATTER. THIS WORK SHALL BE CARRIED OUT ONLY BY QUALIFIED TRADESMAN EXPERIENCED IN PRESSURE WATER CLEANING. THE USE OF WATER HOSE CLEANING WILL NOT BE CONSIDERED SATISFACTORY, UNLESS SPECIFICALLY SPECIFIED. ALLOW SUFFICIENT DRYING TIME AND TEST ALL SURFACES USING AN ELECTRONIC MOISTURE METER BEFORE COMMENCING WORK.
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- E. APPLY PRIMER, PAINT OR STAIN WITHIN AN APPROPRIATE TIME FRAME AFTER CLEANING AND PREPARATION TO PREVENT WEATHERING OR WATER STAINING OF SUBSTRATE OR BEFORE ENVIRONMENTAL CONDITIONS ENCOURAGE FLASH-RUSTING, RUSTING, CONTAMINATION OR WHEN THE MANUFACTURER'S PAINT SPECIFICATIONS REQUIRE EARLIER APPLICATIONS.
- F. PRIMER, PAINT OR STAIN COATS SPECIFIED ARE INTENDED TO COVER SURFACES SATISFACTORILY WHEN APPLIED AT PROPER CONSISTENCY AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- G. PREVIOUSLY COATED SURFACES: MAINTENANCE PAINTING WILL FREQUENTLY NOT PERMIT OR REQUIRE COMPLETE REMOVAL OF ALL OLD COATINGS PRIOR TO REPAINTING. HOWEVER, ALL SURFACE CONTAMINATION SUCH AS OIL, GREASE, LOOSE PAINT, MILL SCALE, DIRT, FOREIGN MATTER, RUST, MOLD, MILDEW, MORTAR, EFFLORESCENCE, AND SEALERS MUST BE REMOVED TO ASSURE SOUND BONDING TO THE TIGHTLY ADHERING OLD PAINT. GLOSSY SURFACES OF OLD PAINT FILMS MUST BE CLEAN AND DULL BEFORE REPAINTING. THOROUGH WASHING WITH AN ABRASIVE CLEANSER WILL CLEAN AND DULL IN ONE OPERATION, OR, WASH THOROUGHLY AND DULL BY SANDING. SPOT PRIME ANY BARE AREAS WITH AN APPROPRIATE PRIMER. RECOGNIZE THAT ANY SURFACE PREPARATION SHORT OF TOTAL REMOVAL OF THE OLD COATING MAY COMPROMISE THE SERVICE LENGTH OF THE SYSTEM. CHECK FOR COMPATIBILITY BY APPLYING A TEST PATCH OF THE RECOMMENDED COATING SYSTEM, COVERING AT LEAST 2 TO 3 SQUARE FEET. ALLOW TO DRY ONE WEEK BEFORE TESTING ADHESION PER ASTM D3359. IF THE COATING SYSTEM IS INCOMPATIBLE, COMPLETE REMOVAL IS REQUIRED PER ASTM D4259.

08 GENERAL NOTES
1' = 1'-0"

- HIGH PRESSURE WASHING AND ABRASIVE BLASTING OF TREADS, RISERS, LANDINGS, UNDERSIDE OF STAIRS, GUARDRAILS AND HANDRAILS. SURFACE PREPARATION OF SUBSTRATES AS REQUIRED FOR ACCEPTANCE OF PAINT, INCLUDING CLEANING, SMALL CRACK REPAIR, PATCHING, CAULKING, AND MAKING GOOD SURFACES AND AREAS. SEALING / PRIMING SURFACES FOR REPAINTING.
- 1 PAINT METAL RAILS, UNDERSIDE OF STAIR PANS, STRINGERS AND RISERS AS SHOWN BELOW. FERROUS METAL - MISCELLANEOUS METALS PAINT WITH SEMI-GLOSS FINISH
PRIMER: PRO INDUSTRIAL™ PRO-CRYL® UNIVERSAL PRIMER, B66-310 SERIES
1ST COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
2ND COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
- 2 REPAIR DOOR FROM BINDING CONDITION.
- 3 REPLACE DOOR WITH LIKE KIND.
- 4 REPAIR OR PATCH HOLE IN METAL RISER, REPAINT.
- 5 REPAIR OR PATCH CRACK IN CONCRETE LANDING.
- 6 REPAIR OR PATCH CRACK IN CONCRETE MASONRY UNIT.
- 7 AREA OF EXCESSIVE RUSTING, REMOVE RUST AND PREPARE FOR PAINTING.
- 8 AREA UNDER CONSTRUCTION, WORK IS UNDER DIFFERENT CONTRACT. COMPLETE THE WORK OF THIS CONTRACT AND NOTIFY "HAS" AND THE ARCHITECT IF THERE IS ANYTHING STOPPING YOU FROM COMPLETING THE WORK.
- 9 INSTALL FOUNDATION ARMOR SX5000 PENETRATING SEALER CLEAR MATTE TRANSPARENT CONCRETE SEALER READY-TO-USE ON TREADS AND LANDINGS AFTER HP WASHING



E:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A11-313 PURPLE GARAGE STAIR 1 LEVEL 6.DWG

PLOT DATE: 24 July 2023 8:09:20 PM
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DWA DWG FILE:

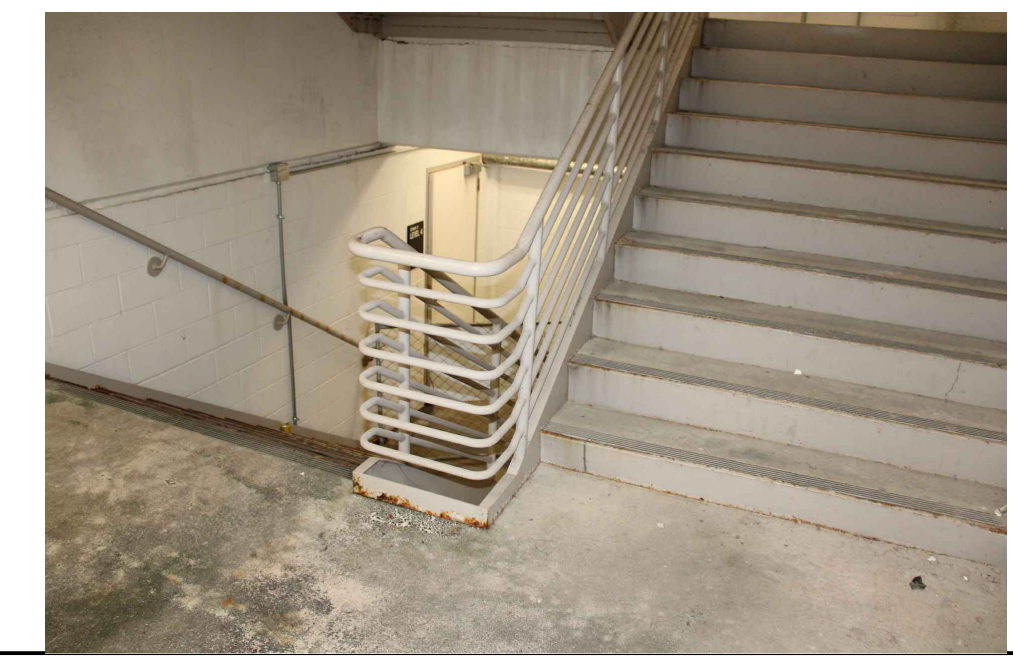
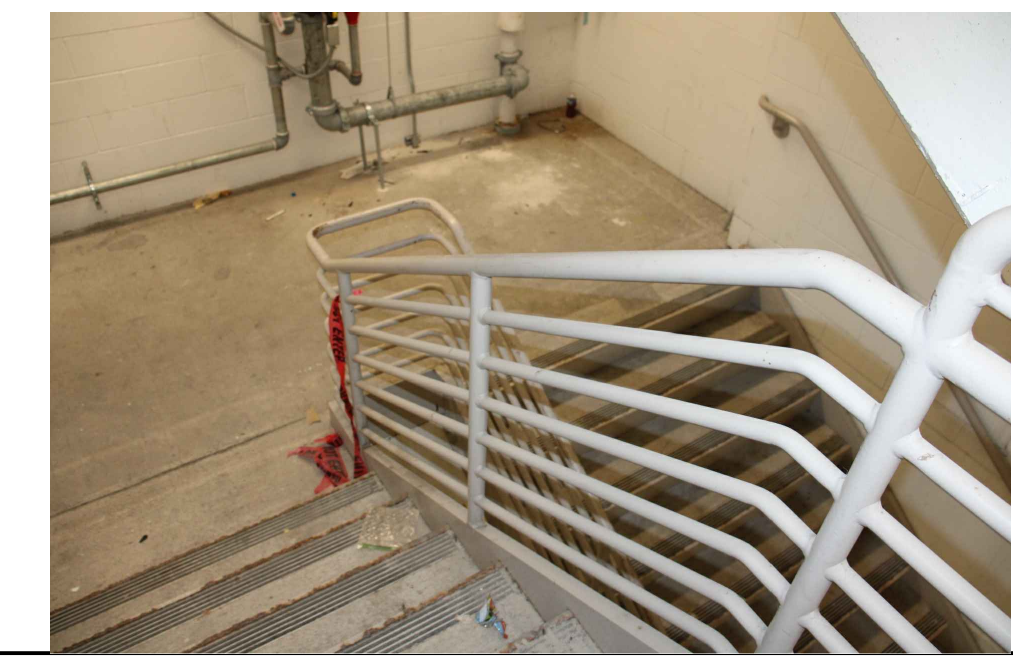
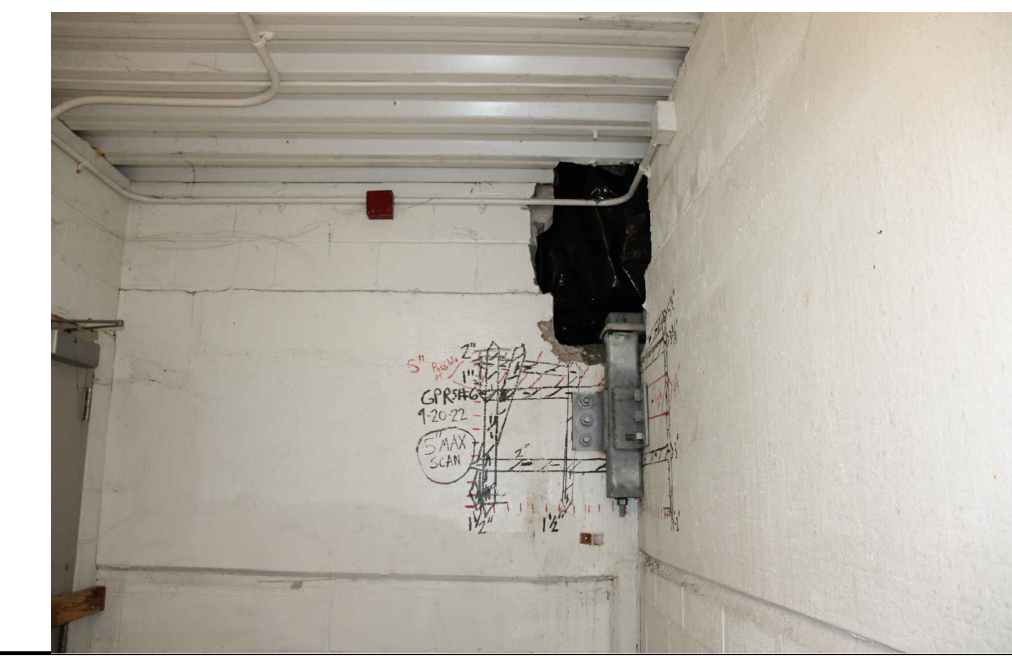
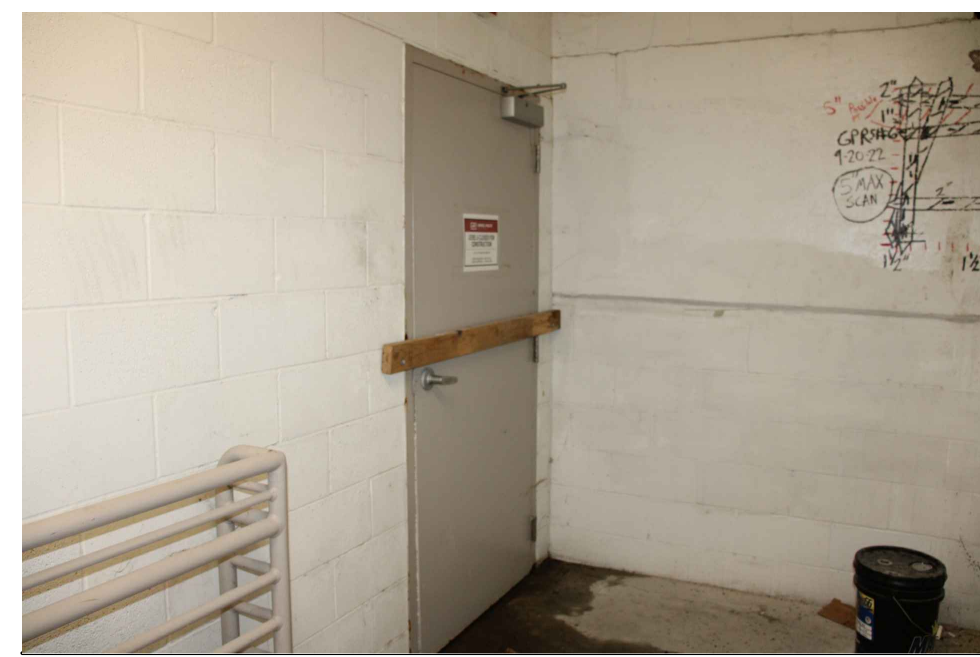
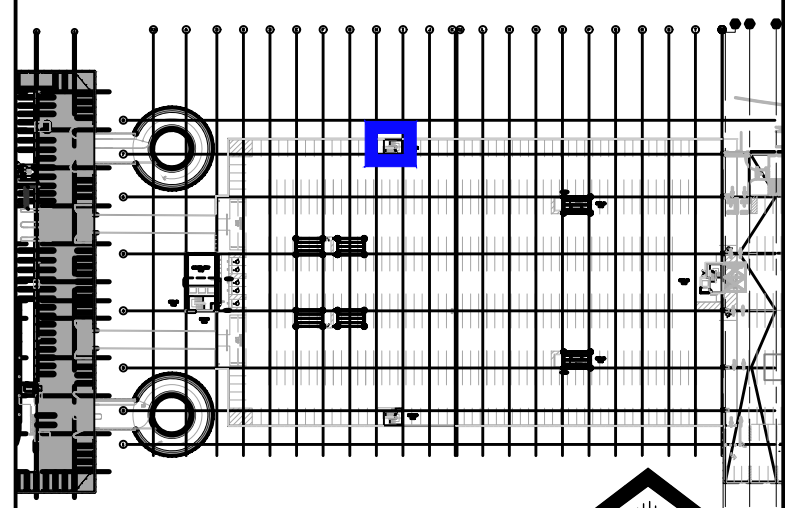
SHEET SIZE: 22"x34" ANSI-D

REVISIONS			
No.	DESCRIPTION	DATE	BY

DESIGNER:	J TOHILL
DRAWN BY:	J TOHILL
CHECKED BY:	TBD
ISSUE DATE:	12/15/2022
APPROVED BY:	
APPROVAL DATE:	

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category	<p>Noe Almaguer Tx. REG. NO. 22651 DATE: July 20, 2023</p> <p>FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>
IFR	
ISSUED FOR REVIEW	



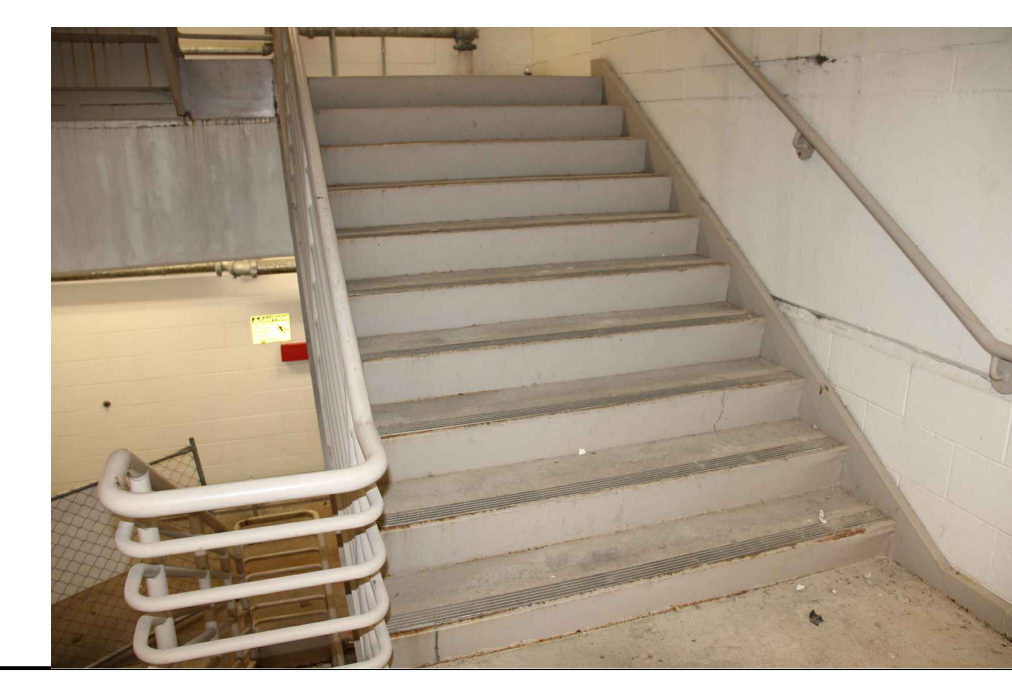
16 STAIR 2 - 16
1' = 1'-0"

17 STAIR 2 - 17
1' = 1'-0"

18 STAIR 2 - 18
1' = 1'-0"

19 STAIR 2 - 19
1' = 1'-0"

20 STAIR 2 - 20
1' = 1'-0"



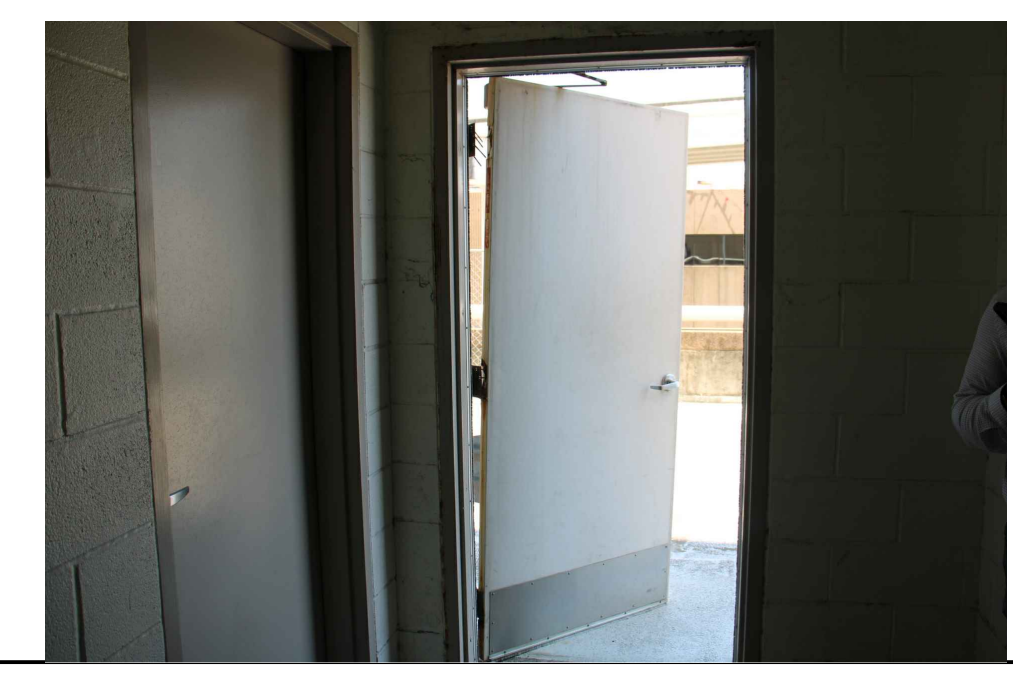
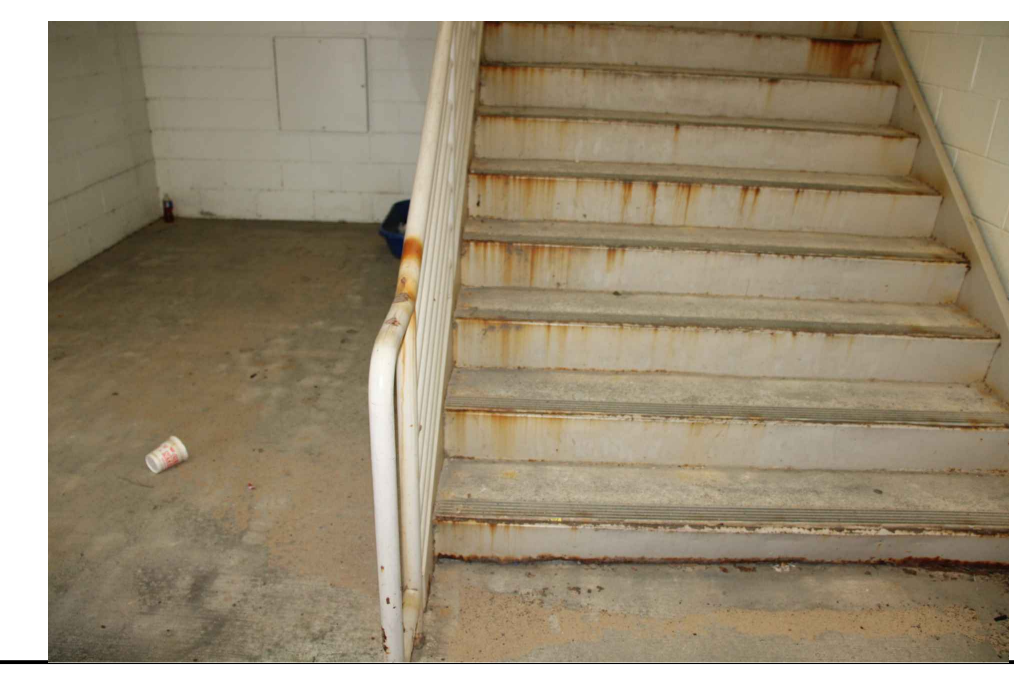
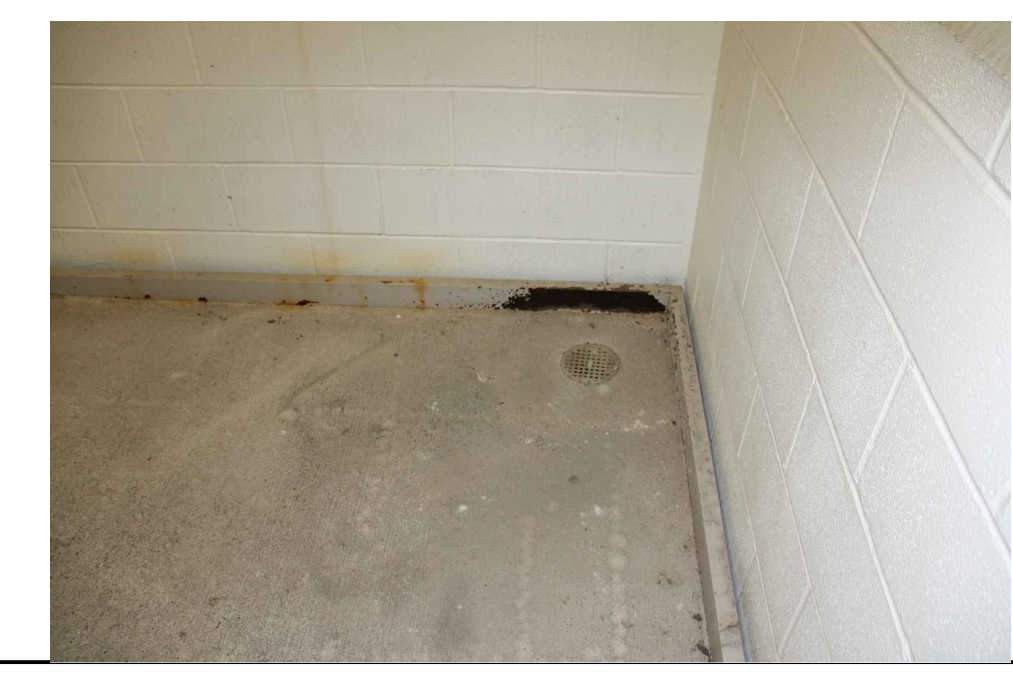
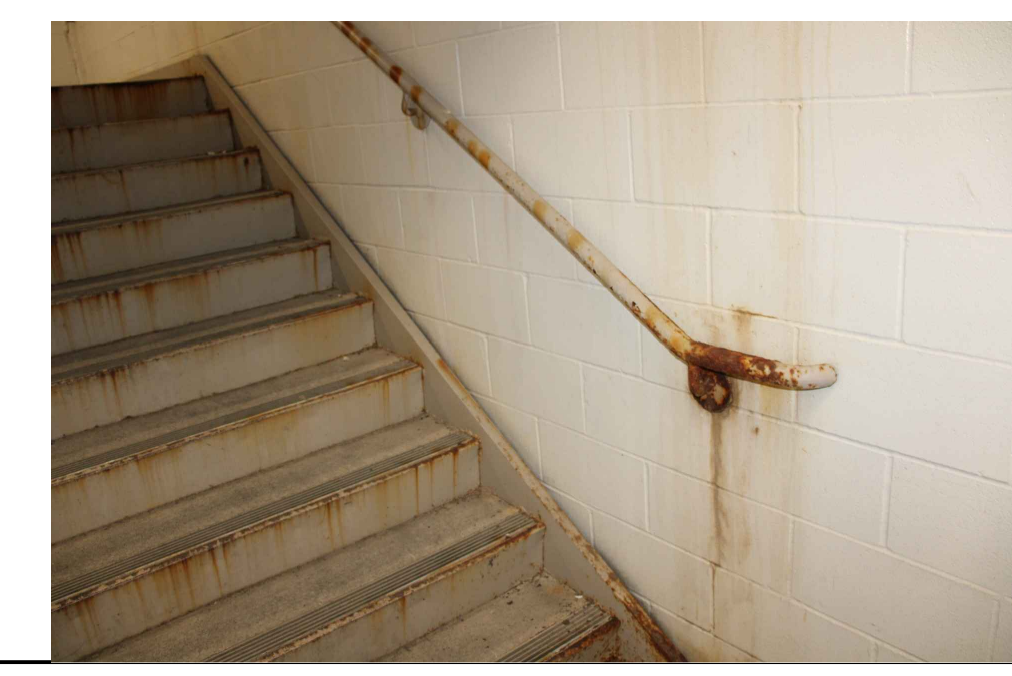
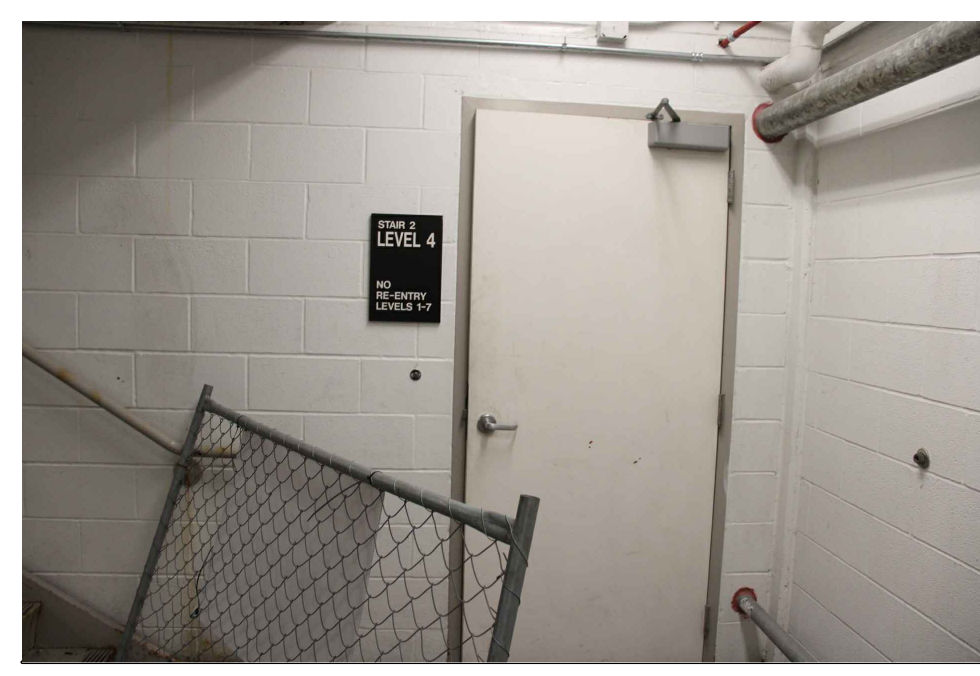
11 STAIR 2 - 11
1' = 1'-0"

12 STAIR 2 - 12
1' = 1'-0"

13 STAIR 2 - 13
1' = 1'-0"

14 STAIR 2 - 14
1' = 1'-0"

15 STAIR 2 - 15
1' = 1'-0"



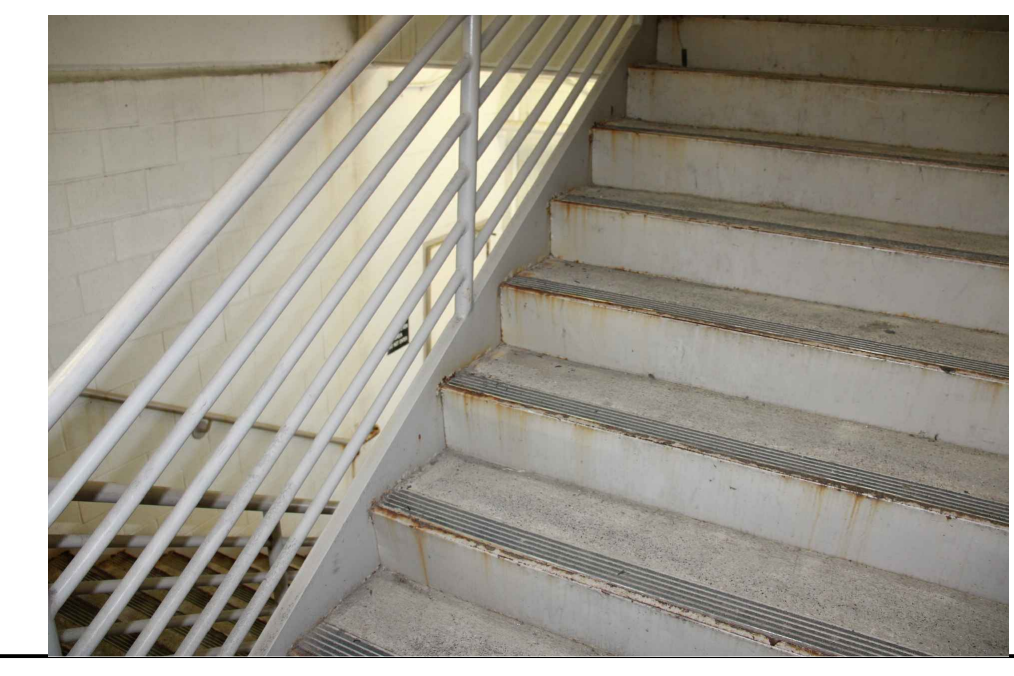
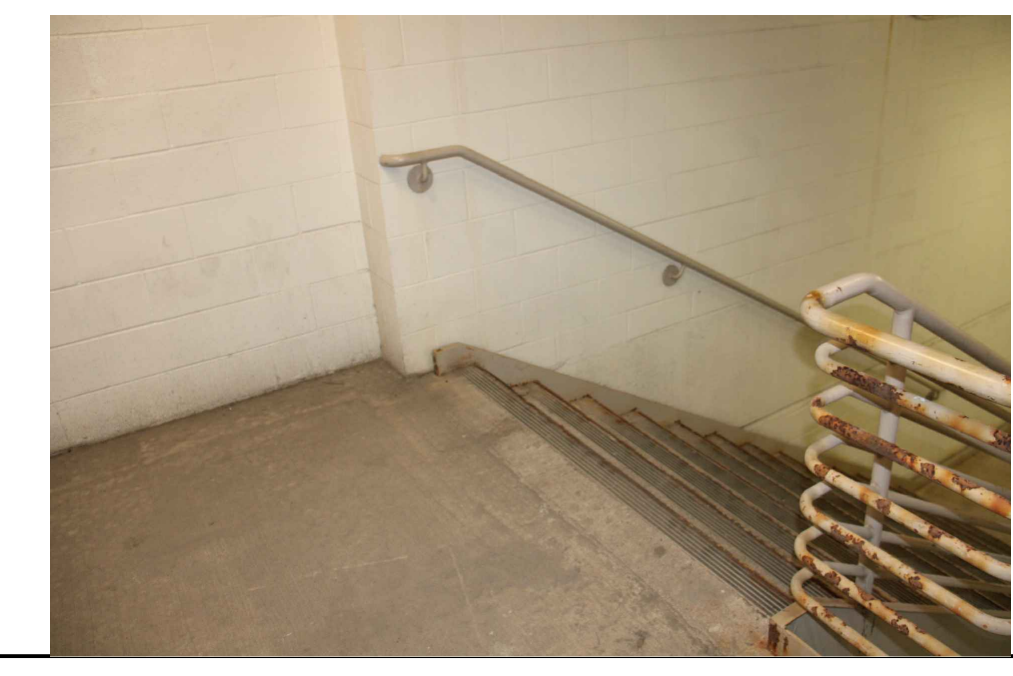
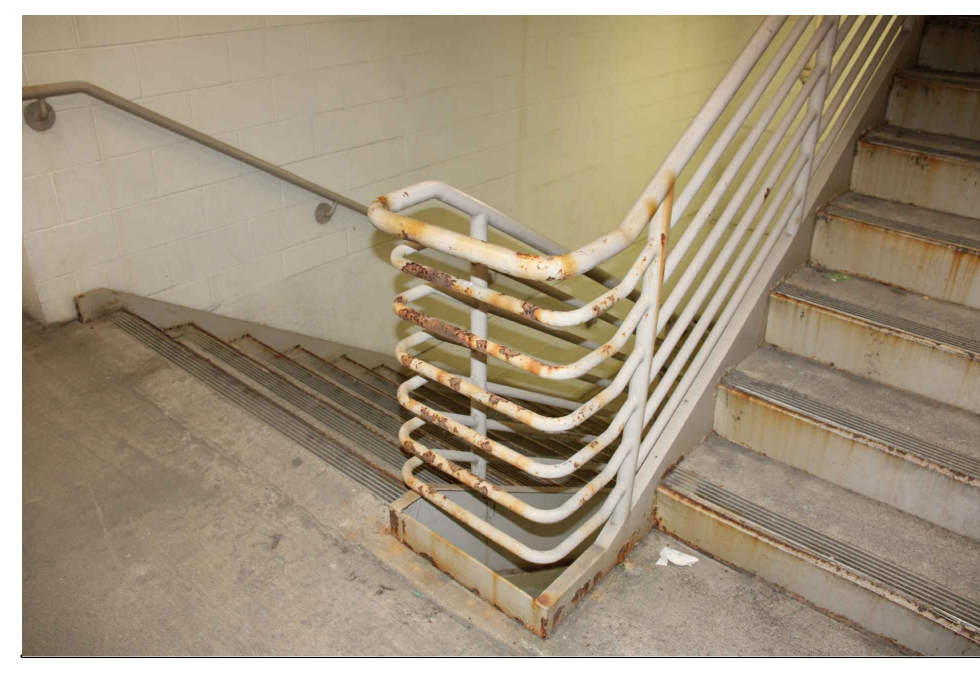
06 STAIR 2 - 06
1' = 1'-0"

07 STAIR 2 - 07
1' = 1'-0"

08 STAIR 2 - 08
1' = 1'-0"

09 STAIR 2 - 09
1' = 1'-0"

10 STAIR 2 - 10
1' = 1'-0"



01 STAIR 2 - 01
1' = 1'-0"

02 STAIR 2 - 02
1' = 1'-0"

03 STAIR 2 - 03
1' = 1'-0"

04 STAIR 2 - 04
1' = 1'-0"

05 KEYNOTES
1' = 1'-0"

- 1 HIGH PRESSURE WASHING AND ABRASIVE BLASTING OF TREADS, RISERS, LANDINGS, UNDERSIDE OF STAIRS, GUARDRAILS AND HANDRAILS. SURFACE PREPARATION OF SUBSTRATES AS REQUIRED FOR ACCEPTANCE OF PAINT, INCLUDING CLEANING, SMALL CRACK REPAIR, PATCHING, CAULKING, AND MAKING GOOD SURFACES AND AREAS. SEALING / PRIMING SURFACES FOR REPAINTING.
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PRIMER: PRO INDUSTRIAL™ PRO-CRYL® UNIVERSAL PRIMER, B66-310 SERIES
1ST COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
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- 5 REPAIR OR PATCH HOLE IN METAL RISER, REPAINT.
- 6 REPAIR OR PATCH CRACK IN CONCRETE LANDING.
- 7 REPAIR OR PATCH CRACK IN CONCRETE MASONRY UNIT.
- 8 AREA OF EXCESSIVE RUSTING, REMOVE RUST AND PREPARE FOR PAINTING.
- 9 AREA UNDER CONSTRUCTION, WORK IS UNDER DIFFERENT CONTRACT. COMPLETE THE WORK OF THIS CONTRACT AND NOTIFY "HAS" AND THE ARCHITECT IF THERE IS ANYTHING STOPPING YOU FROM COMPLETING THE WORK.
- 10 INSTALL FOUNDATION ARMOR SX5000 PENETRATING SEALER CLEAR MATTE TRANSPARENT CONCRETE SEALER READY-TO-USE ON TREADS AND LANDINGS AFTER HP WASHING

E:\2019\19-21 HAS- IAH TC STRUCTURAL & PONDING\DWGS\A11-321 PHOTOS - PURPLE GARAGE STAIR 2 LEVEL 1-6.DWG
 FILED
 PLOT DATE: 24 July 2023 8:09:36 PM
 OLD DOW No.:
 DOW DWG FILE:

REVISIONS			
No.	DESCRIPTION	DATE	BY

DESIGNER:	J TOHILL
DRAWN BY:	J TOHILL
CHECKED BY:	TBD
ISSUE DATE:	12/15/2022
APPROVED BY:	
APPROVAL DATE:	

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

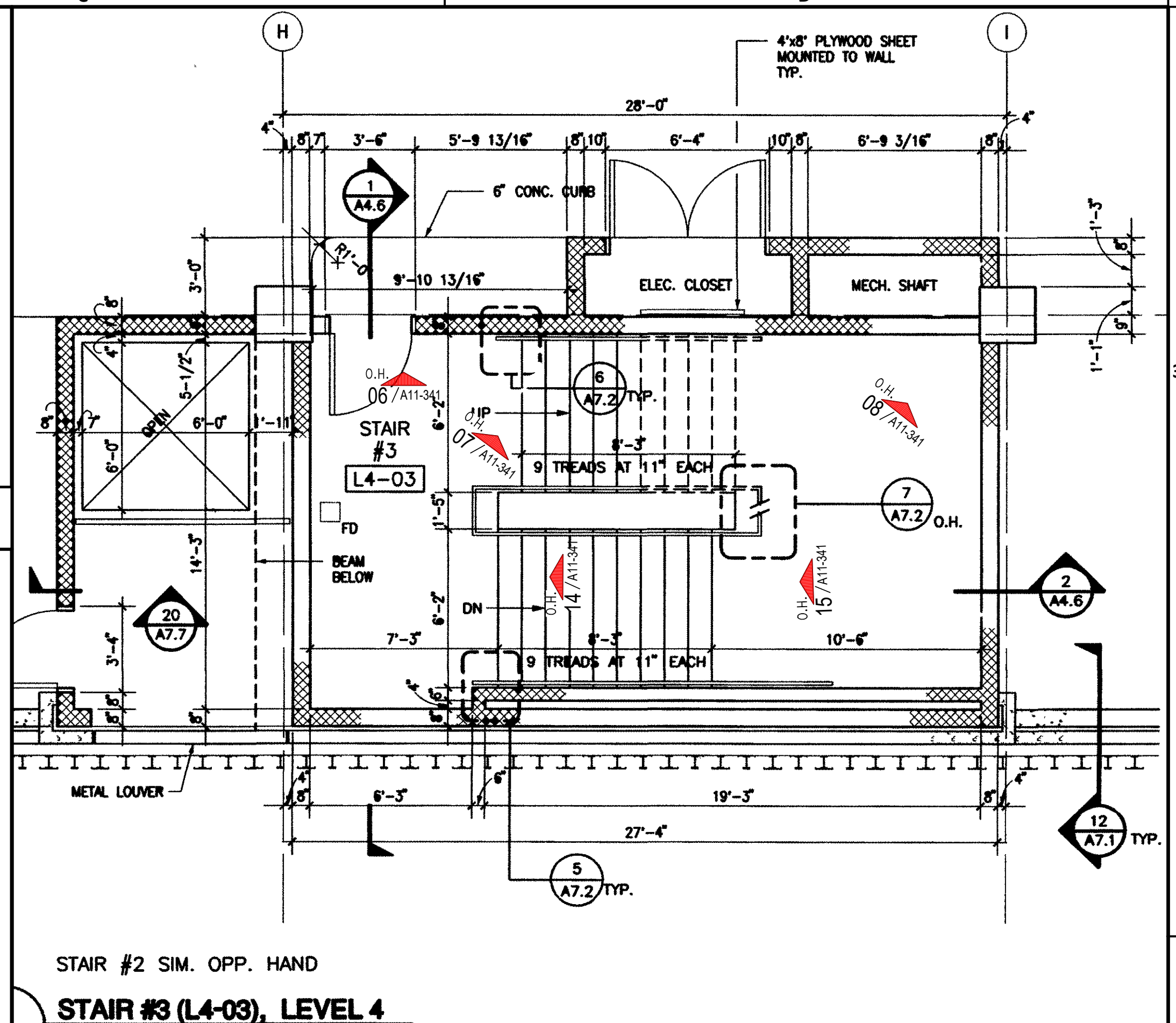
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	FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.

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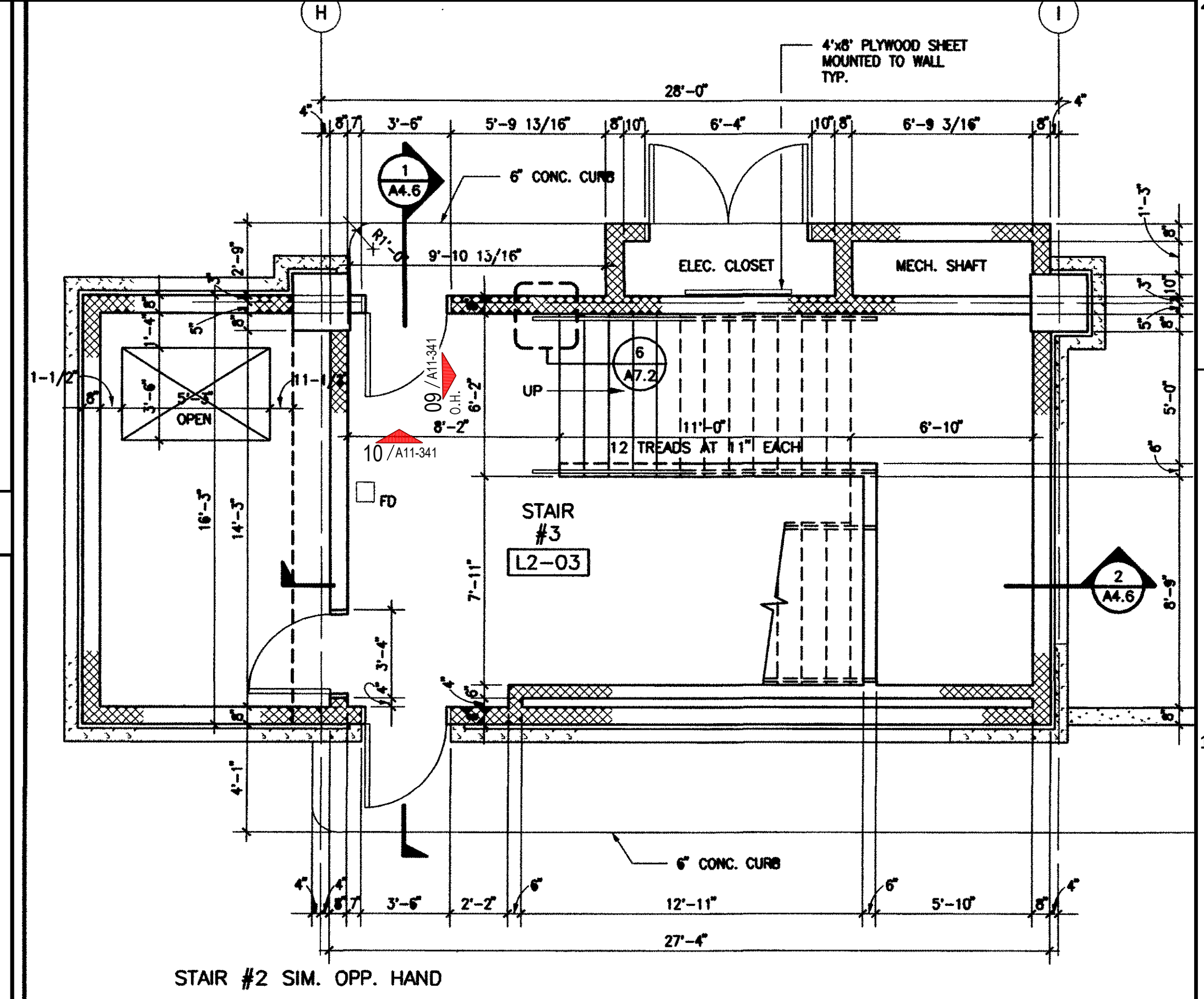
SHEET NAME:
PURPLE GARAGE STAIR 3 LEVEL 2
AND 3

SHEET No. A11-331

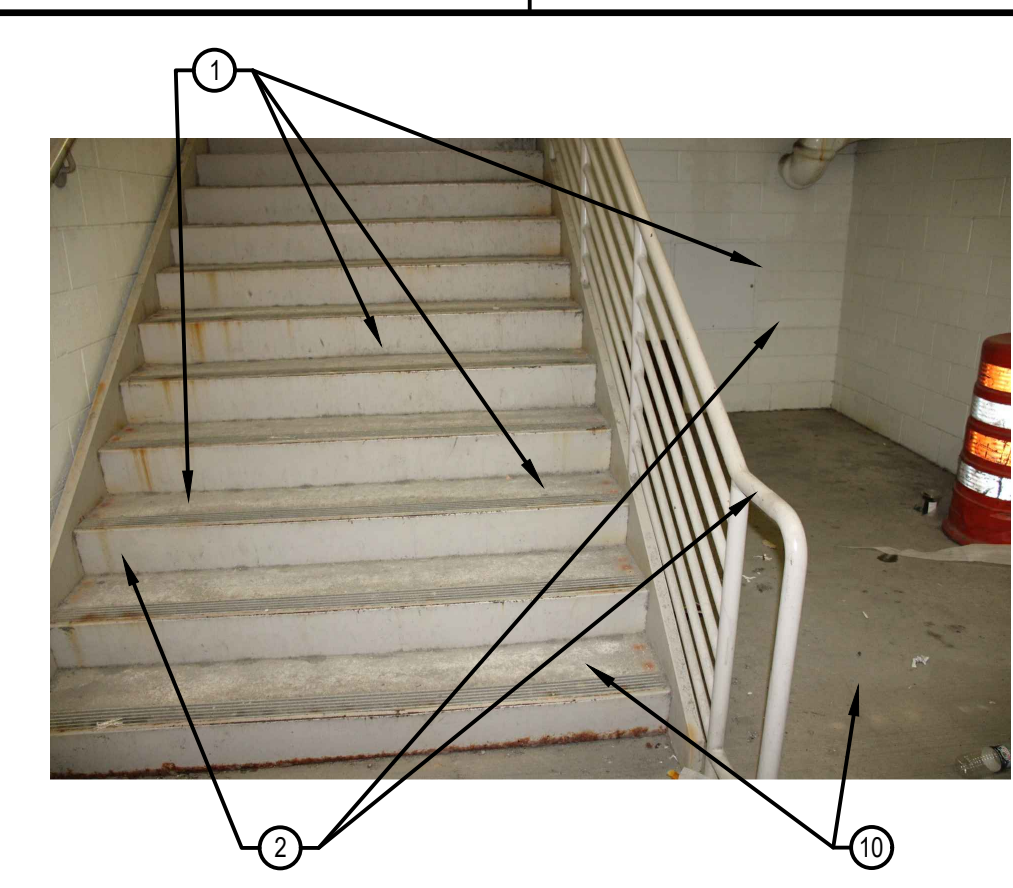
SCALE: 1" = 1'-0"



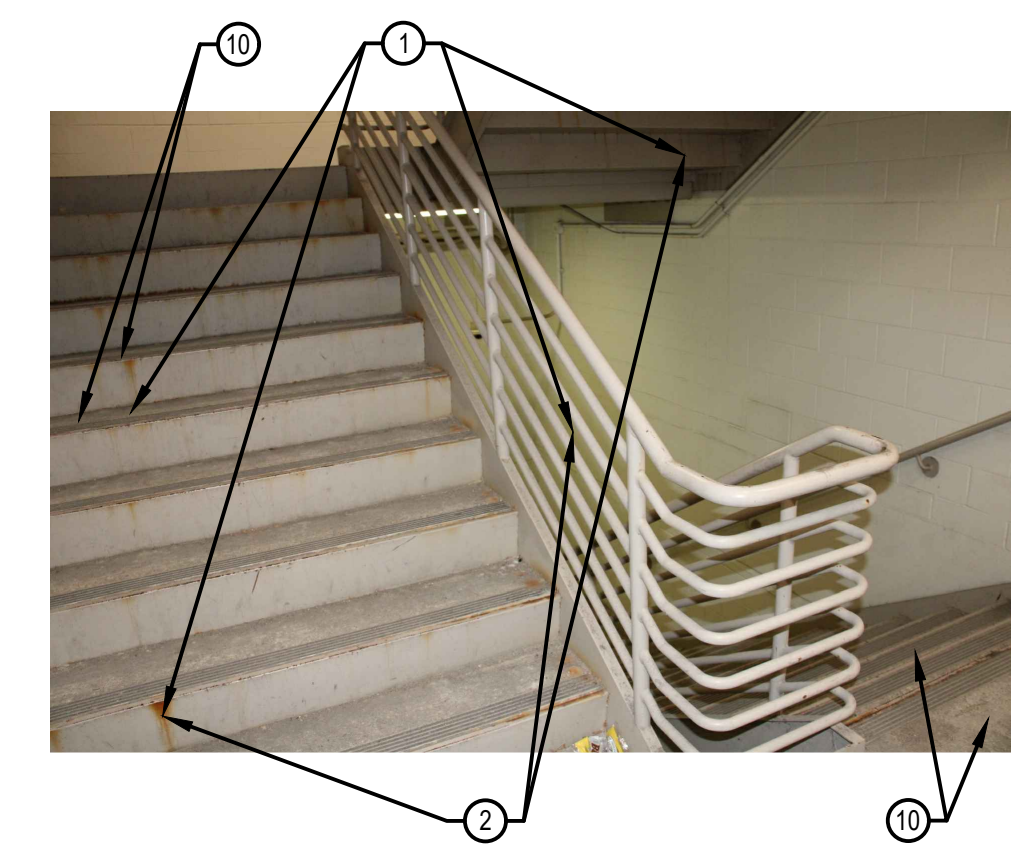
STAIR #2 SIM. OPP. HAND
STAIR #3 (L4-03), LEVEL 4
1/4" = 1'-0"



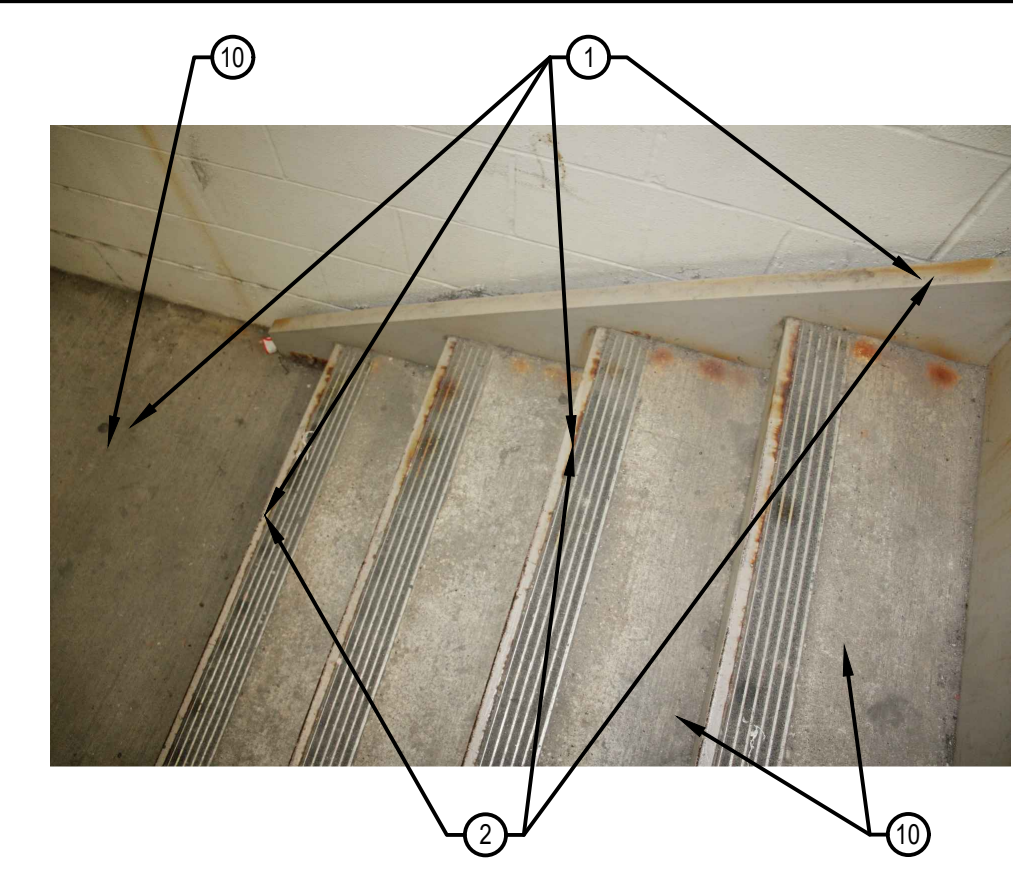
STAIR #2 SIM. OPP. HAND
STAIR #3 (L2-03), LEVEL 2
1/4" = 1'-0"



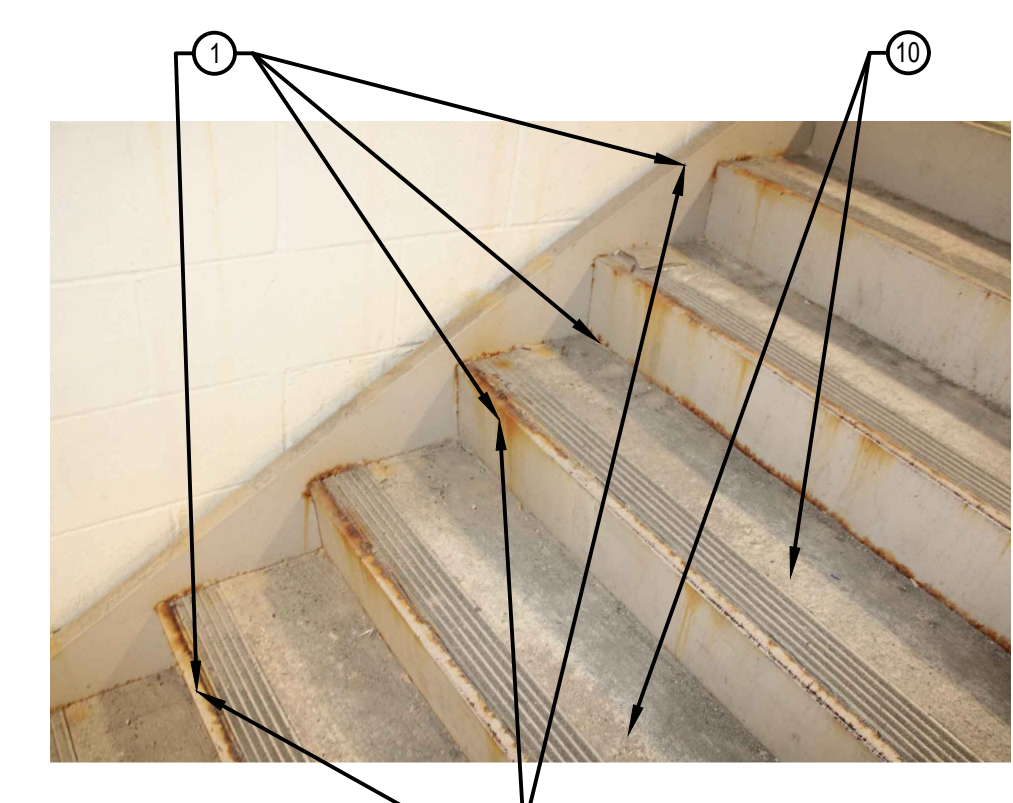
18 STAIR 3 LEVEL 2 GUARDRAIL
1' = 1'-0"



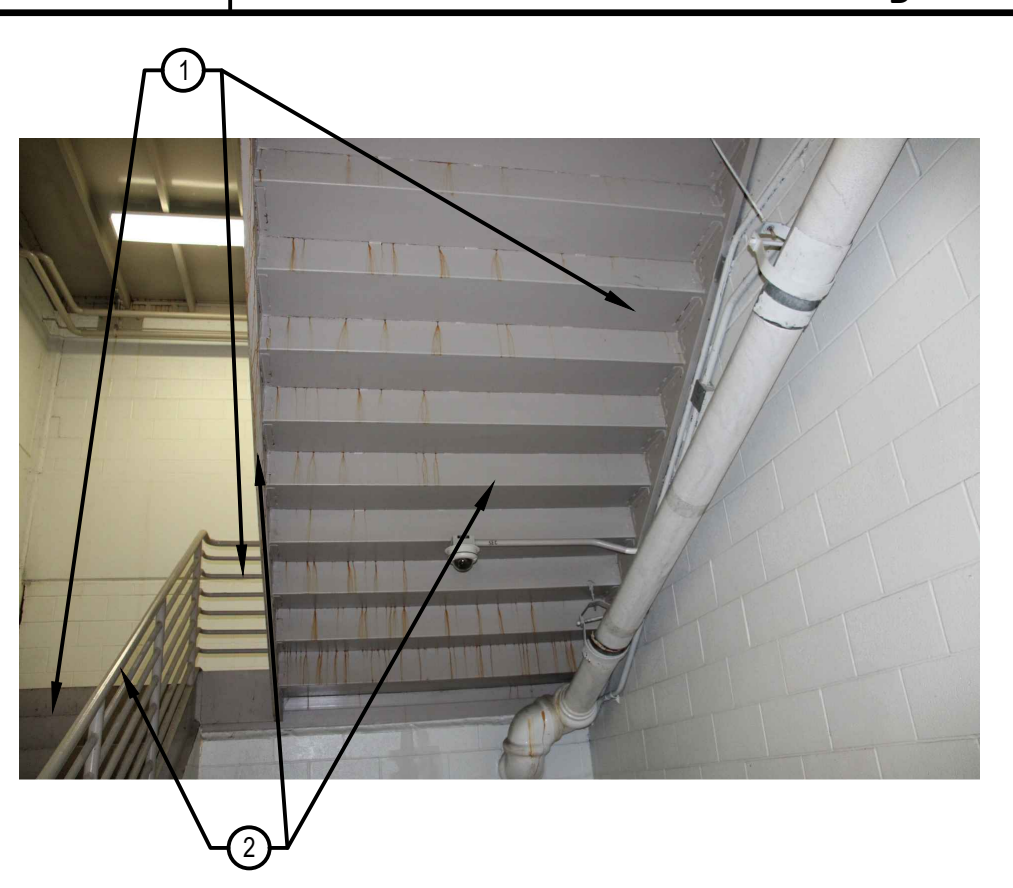
13 STAIR 3 LEVEL 2 - TYPICAL TREADS & GUARDRAIL
1' = 1'-0"



08 STAIR 3 LEVEL 2 - TYPICAL RISERS & HANDRAIL
1' = 1'-0"



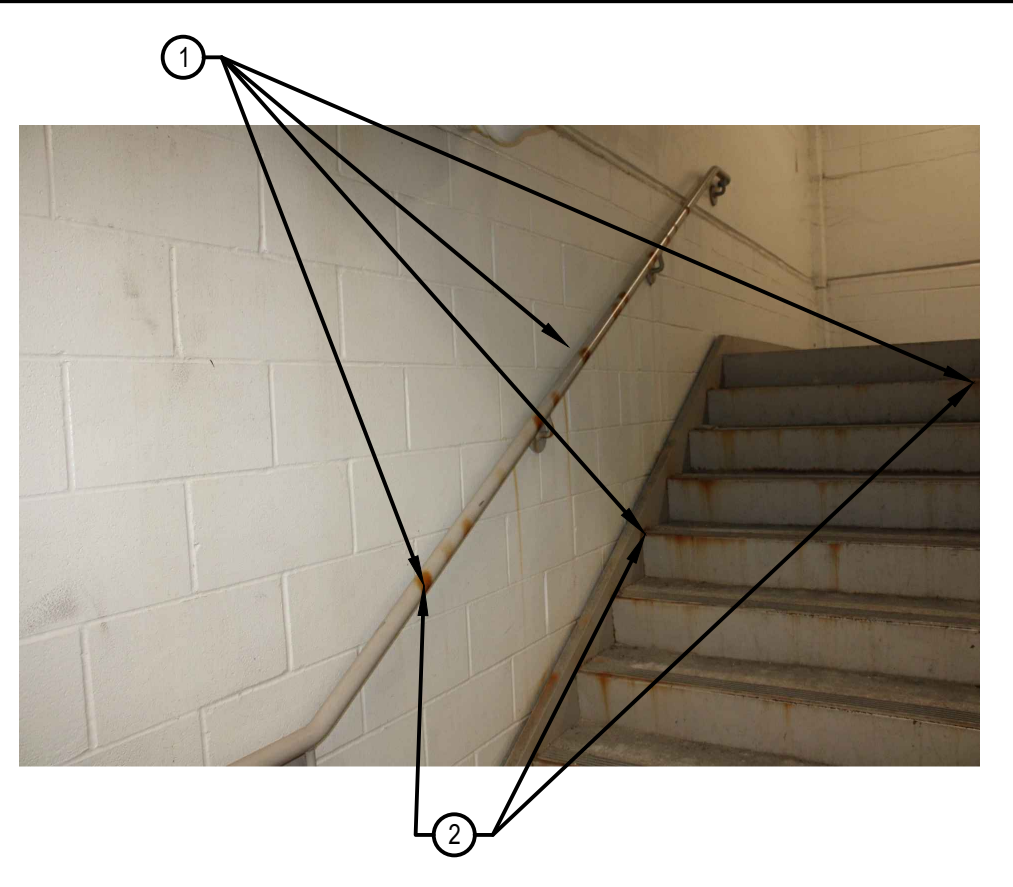
03 STAIR 3 LEVEL 2 - TYPICAL RISERS
1' = 1'-0"



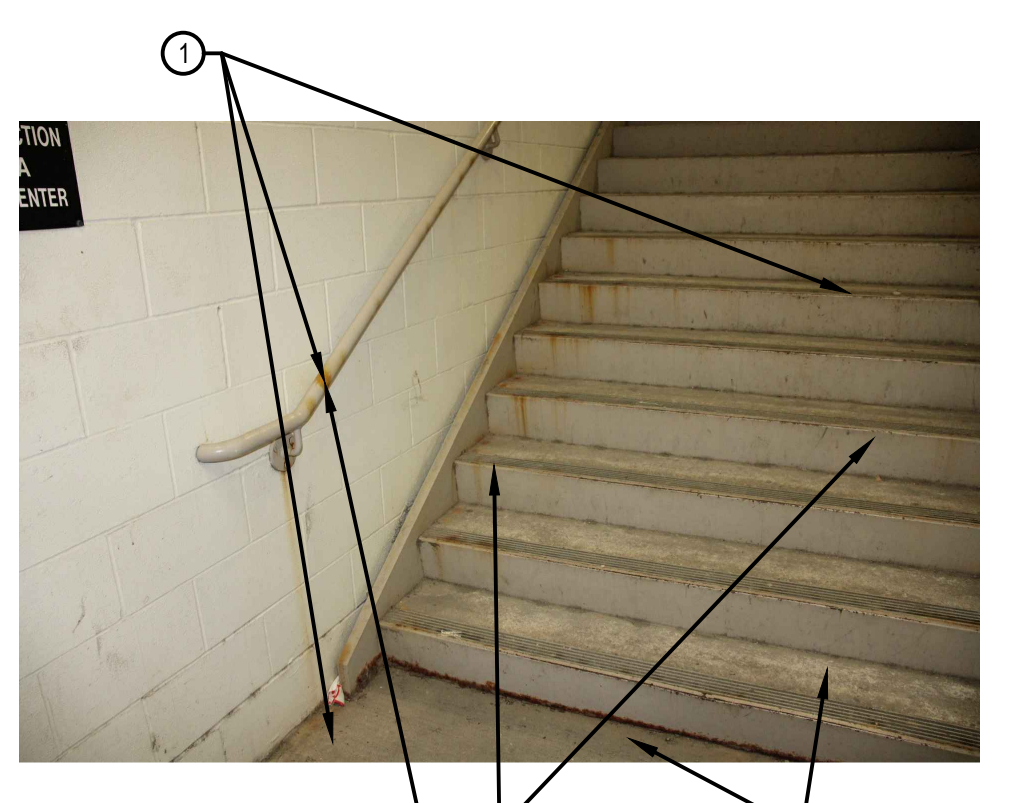
17 STAIR 3 LEVEL 2 UNDERSIDE OF STAIR
1' = 1'-0"



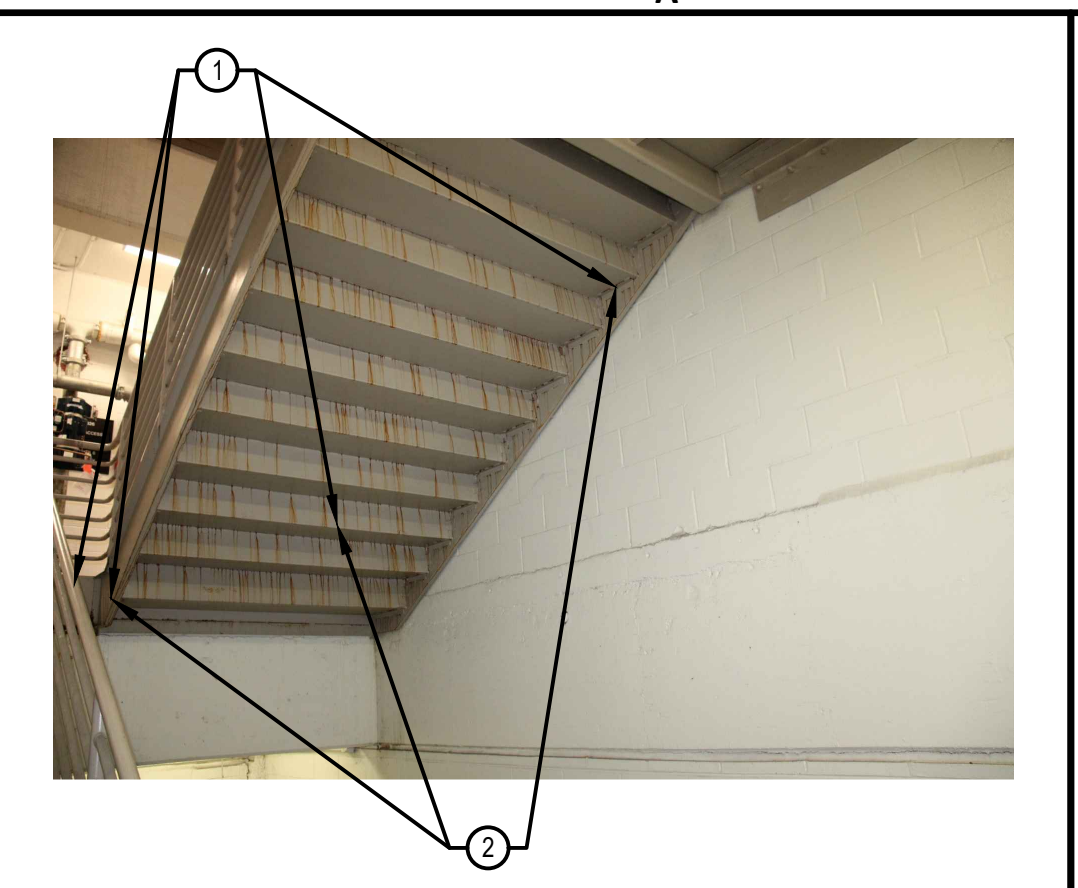
12 STAIR 3 LEVEL 2 ENTRANCE DOOR
1' = 1'-0"



07 STAIR 3 LEVEL 2 - TYPICAL RISER & HANDRAIL
1' = 1'-0"



02 STAIR 3 LEVEL 2 - BOTTOM OF STAIR
1' = 1'-0"



16 STAIR 3 LEVEL 3 UNDERSIDE OF STAIR
1' = 1'-0"

11 GENERAL NOTES
1' = 1'-0"

HIGH PRESSURE WASHING AND ABRASIVE BLASTING OF TREADS, RISERS, LANDINGS, UNDERSIDE OF STAIRS, GUARDRAILS AND HANDRAILS. SURFACE PREPARATION OF SUBSTRATES AS REQUIRED FOR ACCEPTANCE OF PAINT, INCLUDING CLEANING, SMALL CRACK REPAIR, PATCHING, CAULKING, AND MAKING GOOD SURFACES AND AREAS. SEALING / PRIMING SURFACES FOR REPAINTING.

PAINT METAL RAILS, UNDERSIDE OF STAIR PANS, STRINGERS AND RISERS AS SHOWN BELOW. FERROUS METAL - MISCELLANEOUS METALS PAINT WITH SEMI-GLOSS FINISH

PRIMER: PRO INDUSTRIAL™ PRO-CRYL® UNIVERSAL PRIMER, B66-310 SERIES
1ST COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
2ND COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES

REPAIR DOOR FROM BINDING CONDITION.

REPLACE DOOR WITH LIKE KIND.

REPAIR OR PATCH HOLE IN METAL RISER, REPAINT.

REPAIR OR PATCH CRACK IN CONCRETE LANDING.

REPAIR OR PATCH CRACK IN CONCRETE MASONRY UNIT.

AREA OF EXCESSIVE RUSTING, REMOVE RUST AND PREPARE FOR PAINTING.

AREA UNDER CONSTRUCTION, WORK IS UNDER DIFFERENT CONTRACT. COMPLETE THE WORK OF THIS CONTRACT AND NOTIFY "HAS" AND THE ARCHITECT IF THERE IS ANYTHING STOPPING YOU FROM COMPLETING THE WORK.

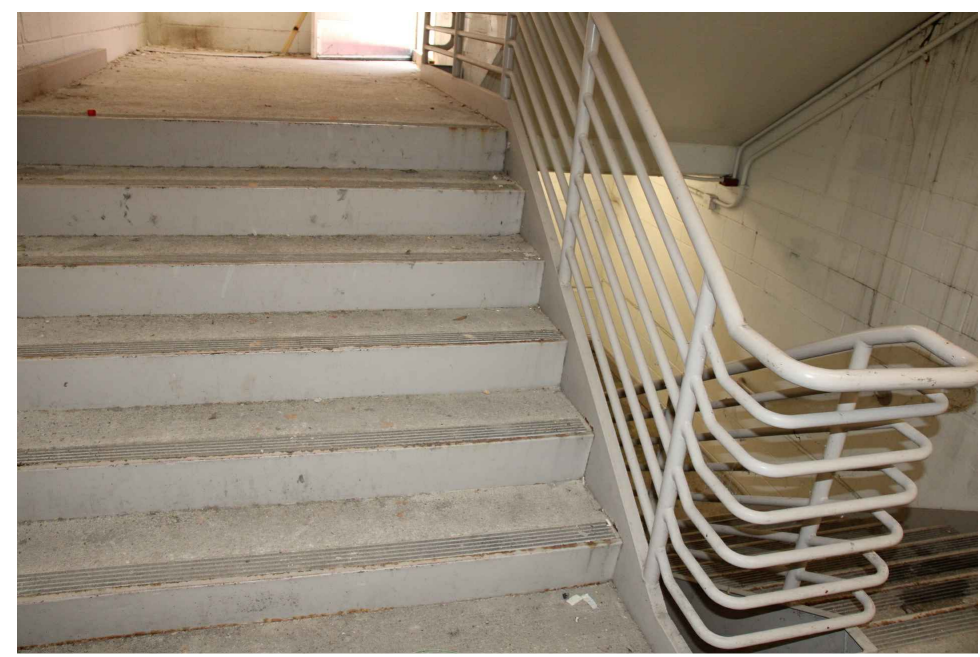
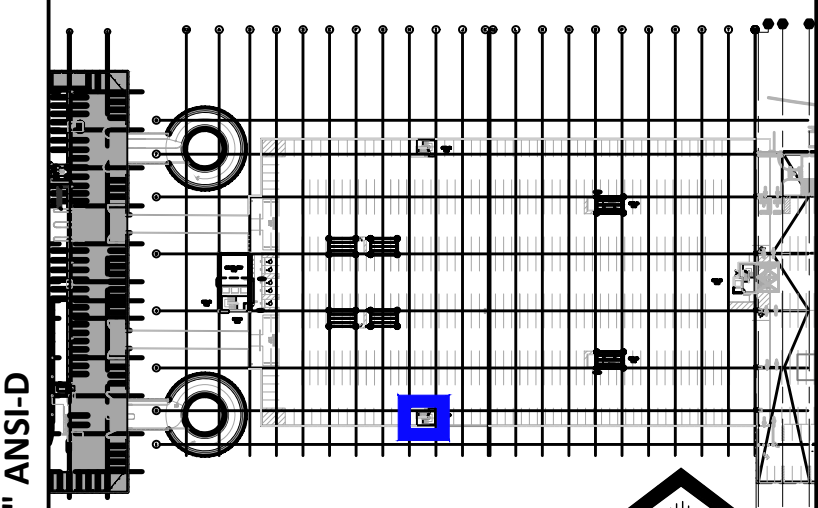
INSTALL FOUNDATION ARMOR SX5000 PENETRATING SEALER CLEAR MATTE TRANSPARENT CONCRETE SEALER READY-TO-USE ON TREADS AND LANDINGS AFTER HP WASHING

01 KEYNOTES
1' = 1'-0"

01 KEYNOTES
1' = 1'-0"

E:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A11-331 PURPLE GARAGE STAIR 3 LEVEL 2 AND 3.DWG
 PLOT DATE: 24 JULY 2023 8:09:53 PM
 OLD DWA No.:
 DOA DWG FILE:

No.	DESCRIPTION	DATE	BY



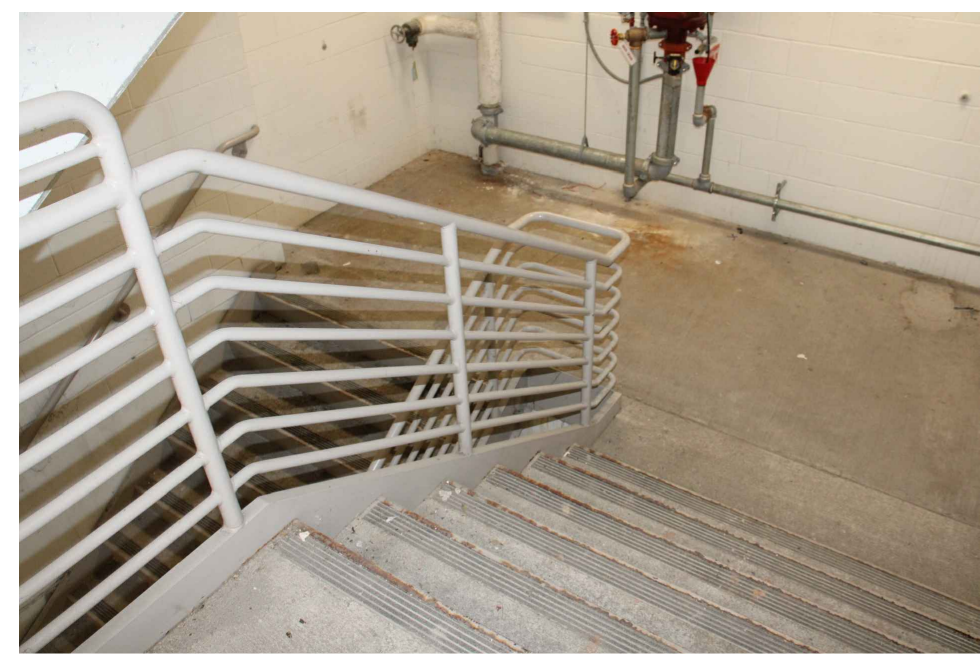
18 STAIR 3 LEVEL 4 UNDERSIDE OF STAIR
1' = 1'-0"

- A. WHERE REQUIRED, PRESSURE WASH EXTERIOR SURFACES PRIOR TO REPAINTING IN ACCORDANCE WITH MPI STANDARDS FOR TYPE OF SURFACES AND RECOMMENDED PRESSURES TO ENSURE COMPLETE REMOVAL OF ALL LOOSE PAINT, STAINS, DIRT, AND OTHER FOREIGN MATTER. THIS WORK SHALL BE CARRIED OUT ONLY BY QUALIFIED TRADESMAN EXPERIENCED IN PRESSURE WATER CLEANING. THE USE OF WATER HOSE CLEANING WILL NOT BE CONSIDERED SATISFACTORY, UNLESS SPECIFICALLY SPECIFIED. ALLOW SUFFICIENT DRYING TIME AND TEST ALL SURFACES USING AN ELECTRONIC MOISTURE METER BEFORE COMMENCING WORK.
- B. SAND, CLEAN, DRY, ETCH, NEUTRALIZE AND/OR TEST ALL SURFACES UNDER ADEQUATE ILLUMINATION, VENTILATION AND TEMPERATURE REQUIREMENTS.
- C. REMOVE AND SECURELY STORE ALL MISCELLANEOUS HARDWARE AND SURFACE FITTINGS / FASTENINGS (E.G. ELECTRICAL LIGHTS, MECHANICAL LOUVERS, DOOR AND WINDOW HARDWARE (E.G. HINGES, KNOBS, LOCKS, TRIM, FRAME STOPS) AND, REMOVABLE HAZARD / INSTRUCTION LABELS, FROM WALL AND SOFFIT SURFACES, DOORS AND FRAMES, PRIOR TO REPAINTING AND REPLACE UPON COMPLETION. CAREFULLY CLEAN AND REPLACE ALL SUCH ITEMS UPON COMPLETION OF REPAINTING WORK IN EACH AREA. DO NOT USE SOLVENT OR REACTIVE CLEANING AGENTS ON ITEMS THAT WILL MAR OR REMOVE FINISHES (E.G. LACQUER FINISHES). DOORS SHALL BE REMOVED BEFORE REPAINTING TO PAINT BOTTOM AND TOP EDGES AND THEN RE-HUNG.
- D. PROTECT ALL EXTERIOR SURFACES AND AREAS, INCLUDING LANDSCAPING, WALKS, DRIVES, ALL ADJACENT BUILDING SURFACES (INCLUDING GLASS, ALUMINUM SURFACES, ETC.) AND EQUIPMENT AND ANY LABELS AND SIGNAGE FROM REPAINTING OPERATIONS AND DAMAGE BY DROP CLOTHS, SHIELDS, MASKING, TEMPLATES, OR OTHER SUITABLE PROTECTIVE MEANS AND MAKE GOOD ANY DAMAGE CAUSED BY FAILURE TO PROVIDE SUCH PROTECTION.
- E. APPLY PRIMER, PAINT OR STAIN WITHIN AN APPROPRIATE TIME FRAME AFTER CLEANING AND PREPARATION TO PREVENT WEATHERING OR WATER STAINING OR BEFORE ENVIRONMENTAL CONDITIONS ENCOURAGE FLASH-RUSTING, RUSTING, CONTAMINATION OR WHEN THE MANUFACTURER'S PAINT SPECIFICATIONS REQUIRE EARLIER APPLICATIONS.
- F. PRIMER, PAINT OR STAIN COATS SPECIFIED ARE INTENDED TO COVER SURFACES SATISFACTORILY WHEN APPLIED AT PROPER CONSISTENCY AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- G. PREVIOUSLY COATED SURFACES: MAINTENANCE PAINTING WILL FREQUENTLY NOT PERMIT OR REQUIRE COMPLETE REMOVAL OF ALL OLD COATINGS PRIOR TO REPAINTING. HOWEVER, ALL SURFACE CONTAMINATION SUCH AS OIL, GREASE, LOOSE PAINT, MILL SCALE, DIRT, FOREIGN MATTER, RUST, MOLD, MILDEW, MORTAR, EFFLORESCENCE, AND SEALERS MUST BE REMOVED TO ASSURE SOUND BONDING TO THE TIGHTLY ADHERING OLD PAINT. GLOSSY SURFACES OF OLD PAINT FILMS MUST BE CLEAN AND DULL BEFORE REPAINTING. THOROUGH WASHING WITH AN ABRASIVE CLEANSER WILL CLEAN AND DULL IN ONE OPERATION, OR, WASH THOROUGHLY AND DULL BY SANDING. SPOT PRIME ANY BARE AREAS WITH AN APPROPRIATE PRIMER. RECOGNIZE THAT ANY SURFACE PREPARATION SHORT OF TOTAL REMOVAL OF THE OLD COATING MAY COMPROMISE THE SERVICE LENGTH OF THE SYSTEM. CHECK FOR COMPATIBILITY BY APPLYING A TEST PATCH OF THE RECOMMENDED COATING SYSTEM, COVERING AT LEAST 2 TO 3 SQUARE FEET. ALLOW TO DRY ONE WEEK BEFORE TESTING ADHESION PER ASTM D3359. IF THE COATING SYSTEM IS INCOMPATIBLE, COMPLETE REMOVAL IS REQUIRED PER ASTM D4259

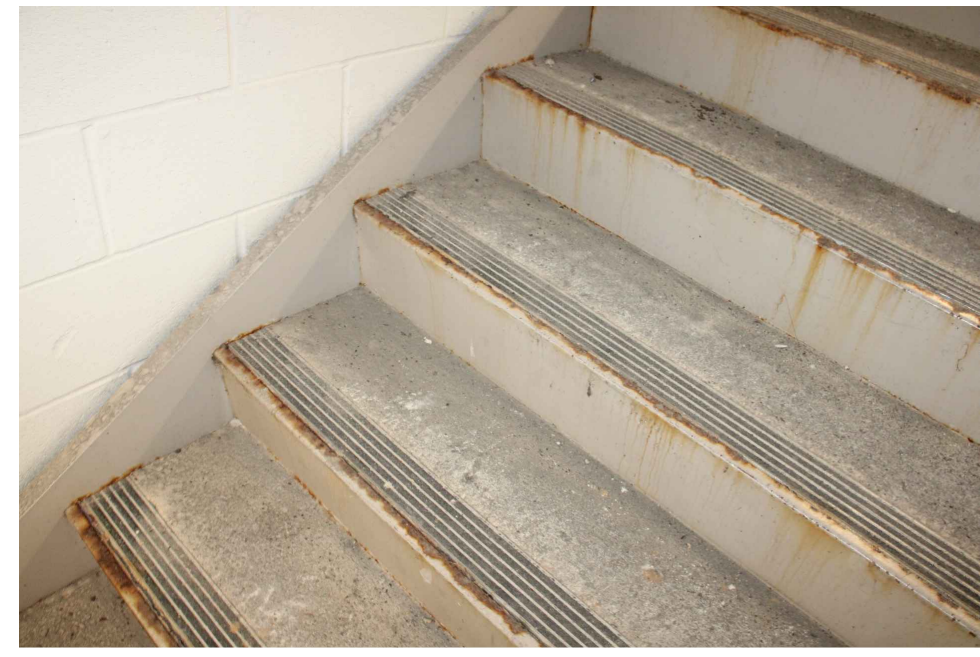
13 GENERAL NOTES
1' = 1'-0"

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FERROUS METAL - MISCELLANEOUS METALS PAINT WITH SEMI-GLOSS FINISH
PRIMER: PRO INDUSTRIAL™ PRO-CRYL® UNIVERSAL PRIMER, B66-310 SERIES
1ST COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
2ND COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
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 - INSTALL FOUNDATION ARMOR SK5000 PENETRATING SEALER CLEAR MATTE TRANSPARENT CONCRETE SEALER READY-TO-USE ON TREADS AND LANDINGS AFTER HP WASHING

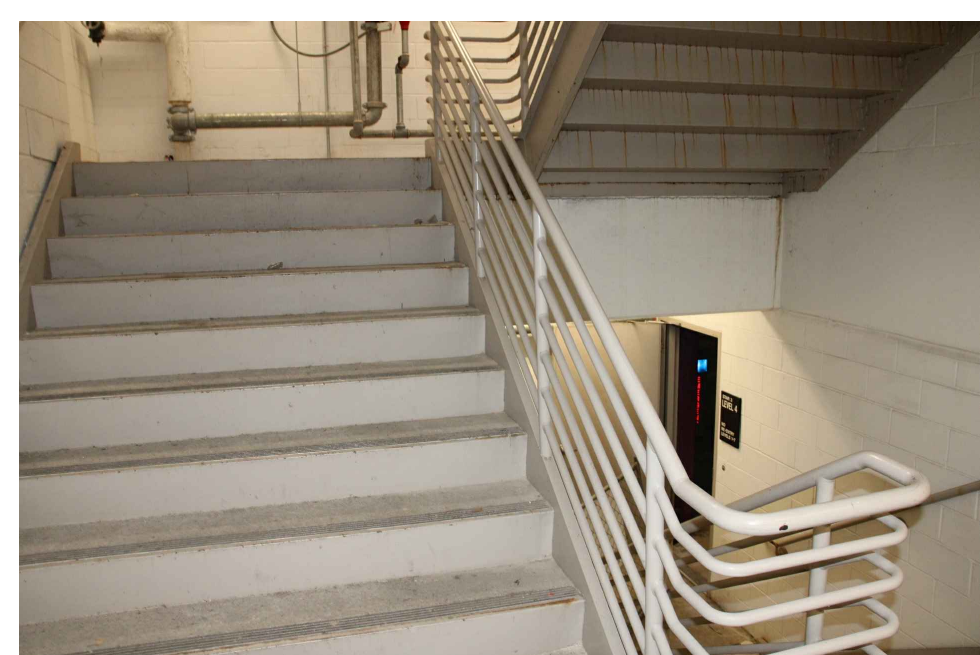
03 KEYNOTES
1' = 1'-0"



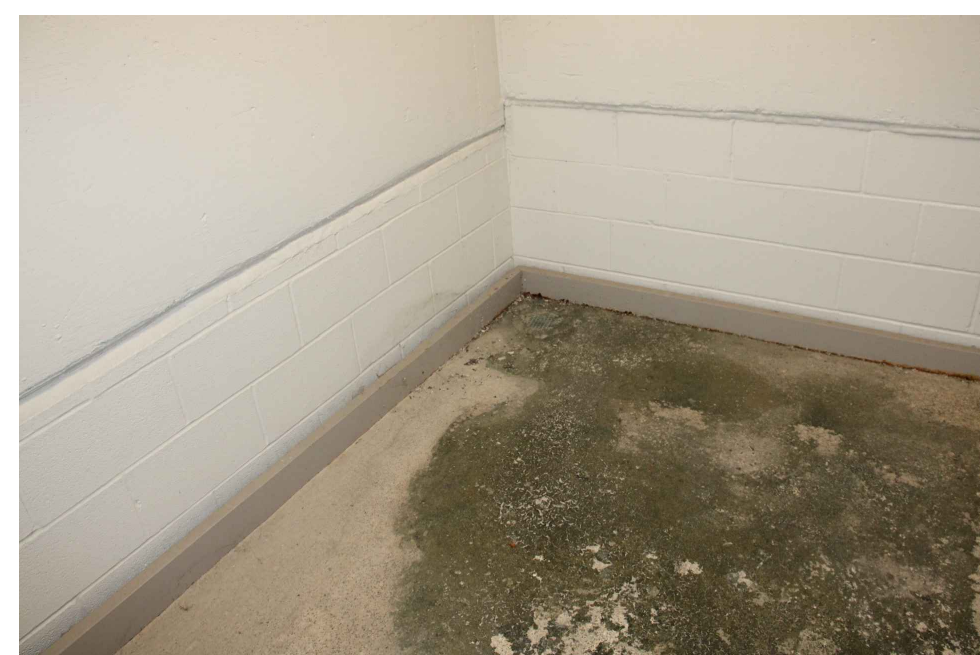
17 STAIR 3 LEVEL 4 LANDING & GUARDRAIL
1' = 1'-0"



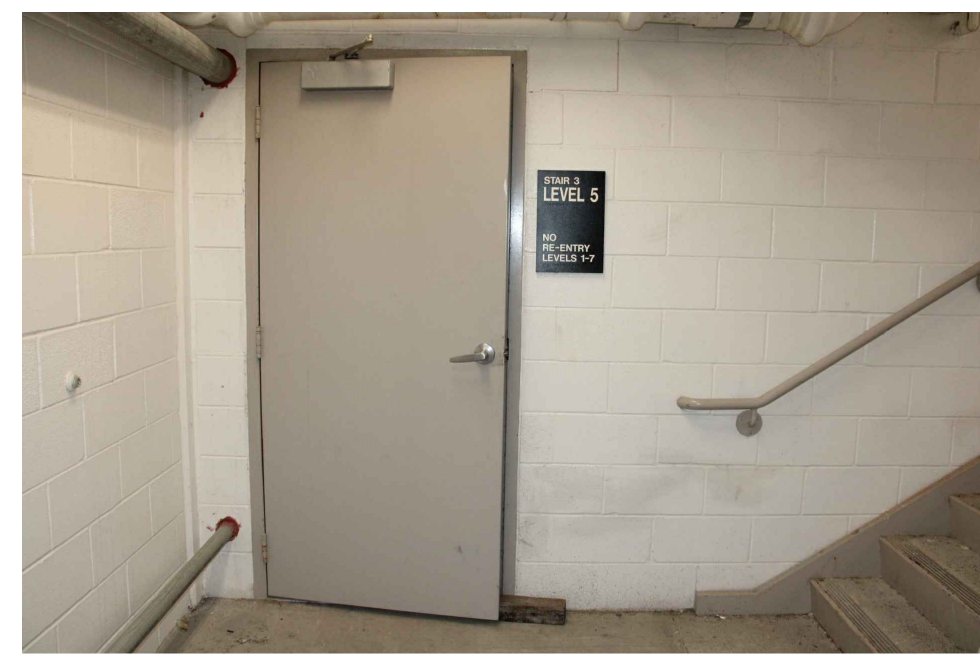
12 STAIR 3 LEVEL 4 - TYPICAL RISERS
1' = 1'-0"



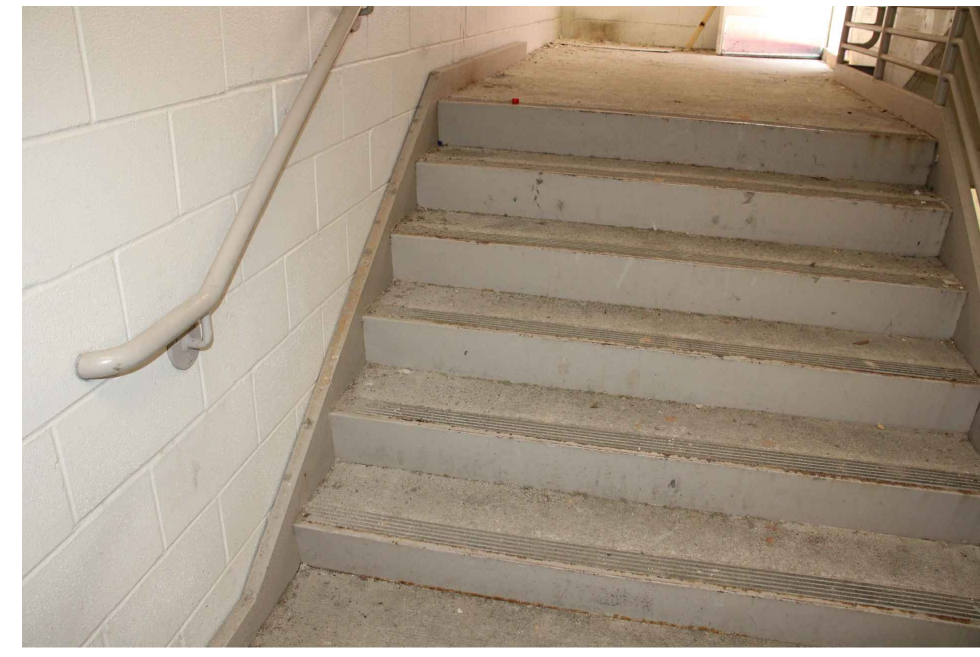
07 STAIR 3 LEVEL 3 RISERS & UNDERSIDE OF STAIR
1' = 1'-0"



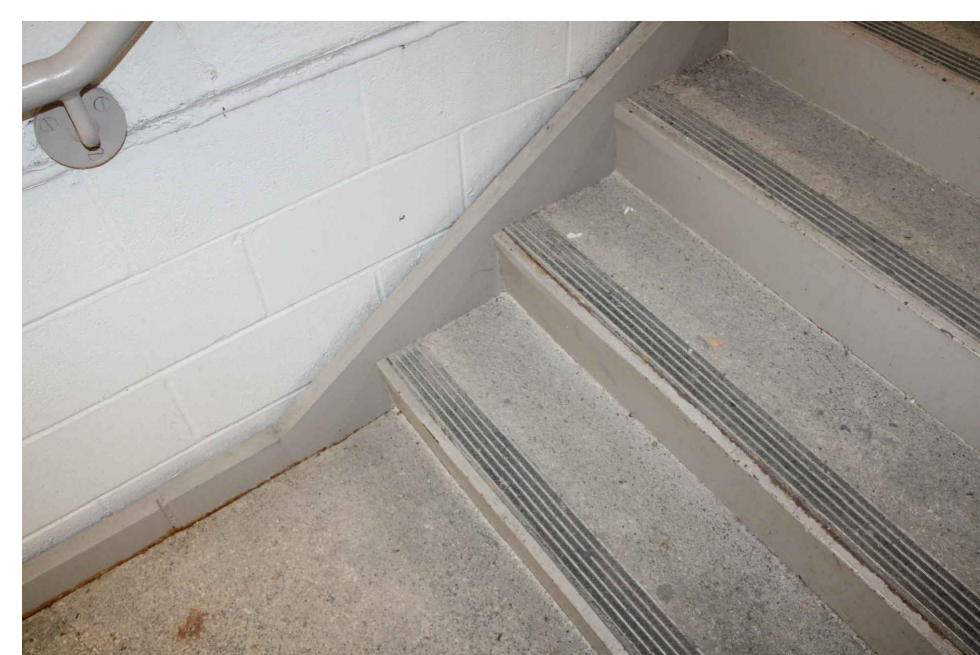
02 STAIR 3 LEVEL 2 - TYPICAL LANDING
1' = 1'-0"



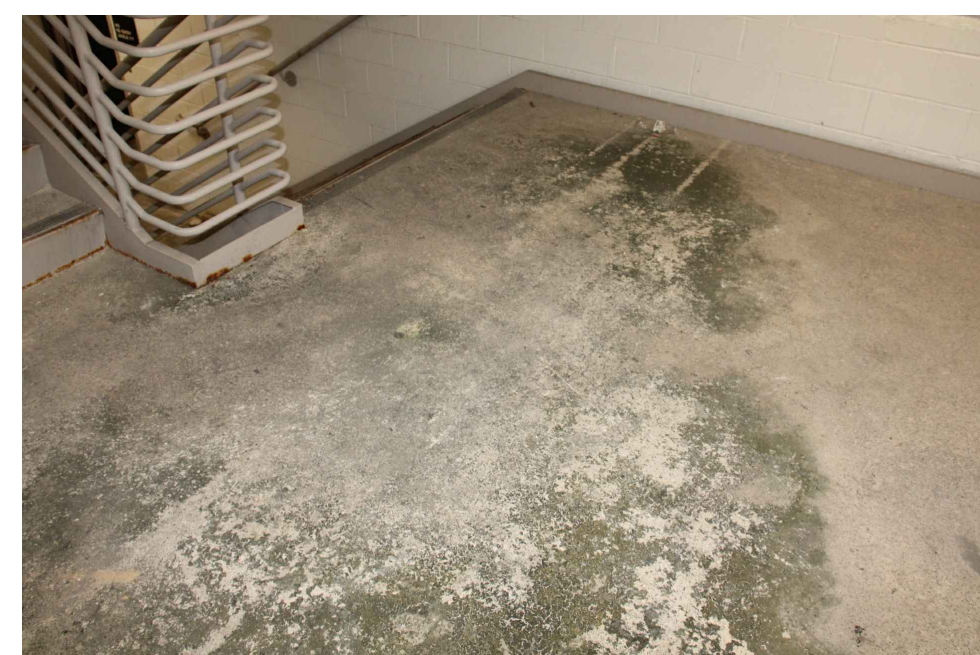
16 STAIR 3 LEVEL 4 HANDRAIL
1' = 1'-0"



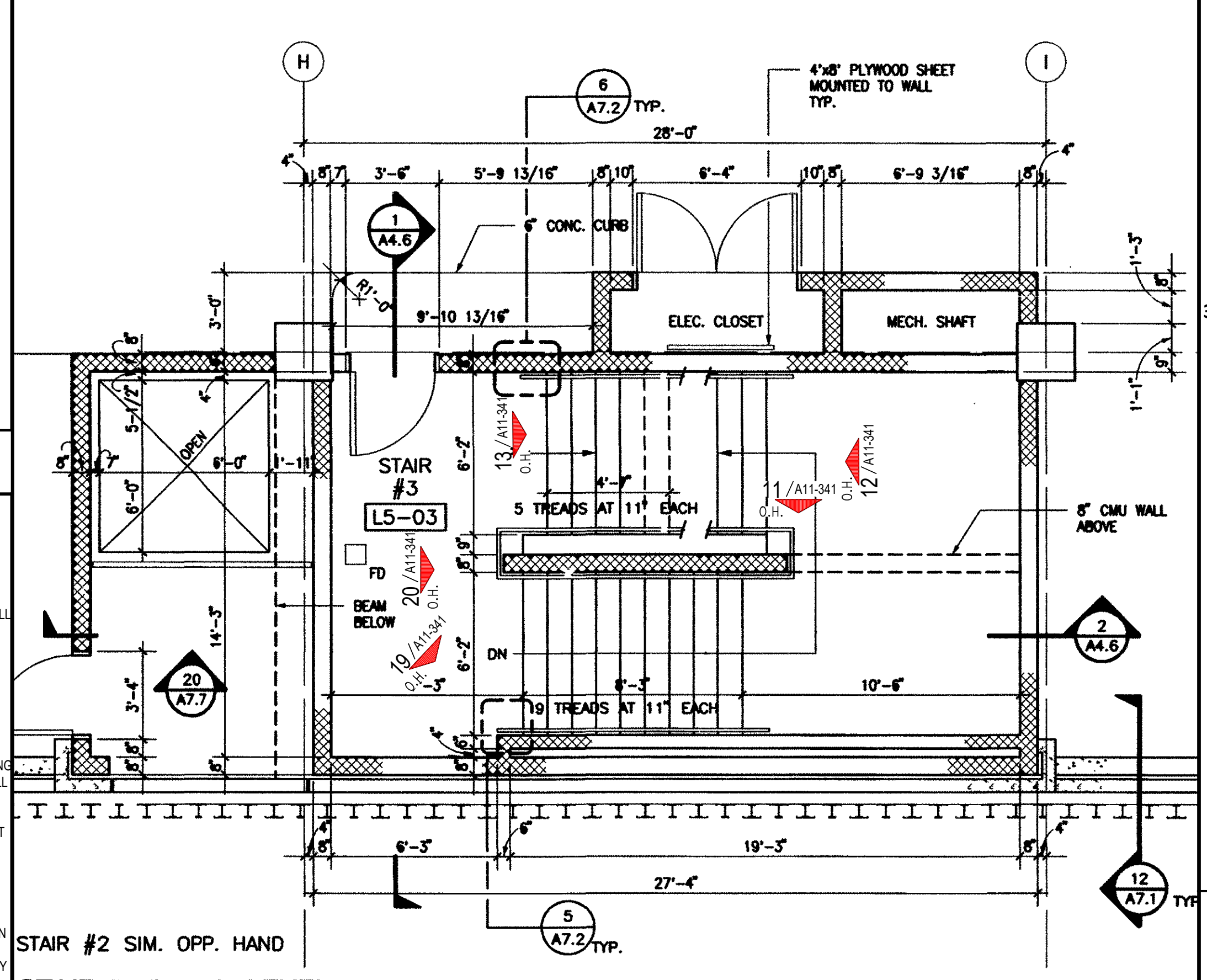
11 STAIR 3 LEVEL 4 - RISERS & HANDRAIL
1' = 1'-0"



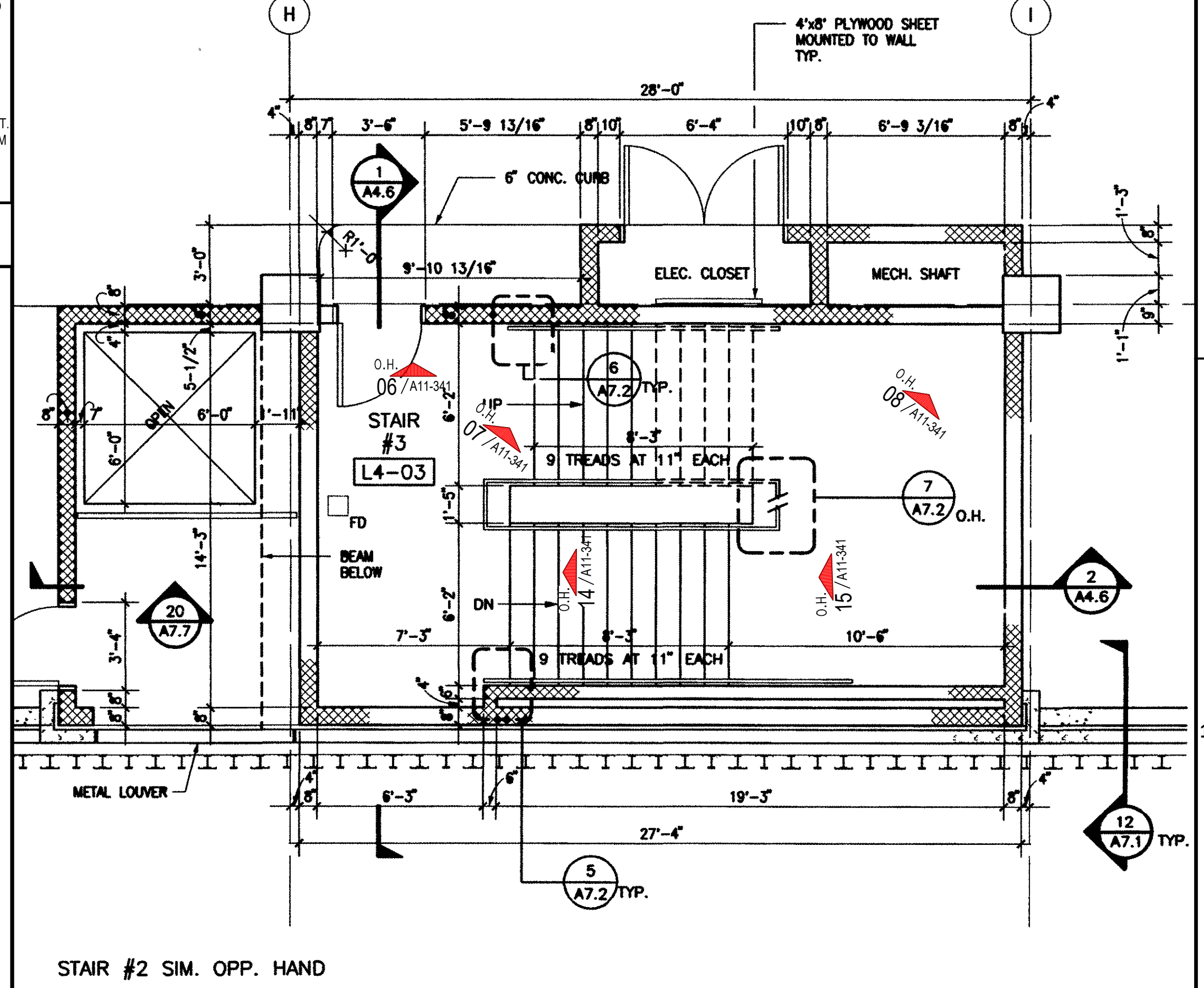
06 STAIR 3 LEVEL 4 - TYPICAL TREADS
1' = 1'-0"



01 STAIR 3 LEVEL 2 - TYPICAL INTERMEDIATE LANDING
1' = 1'-0"



14 PURPLE GARAGE STAIR 3 LEVEL 5
1/4" = 1'-0"



04 PURPLE GARAGE STAIR 3 LEVEL 4
1/4" = 1'-0"

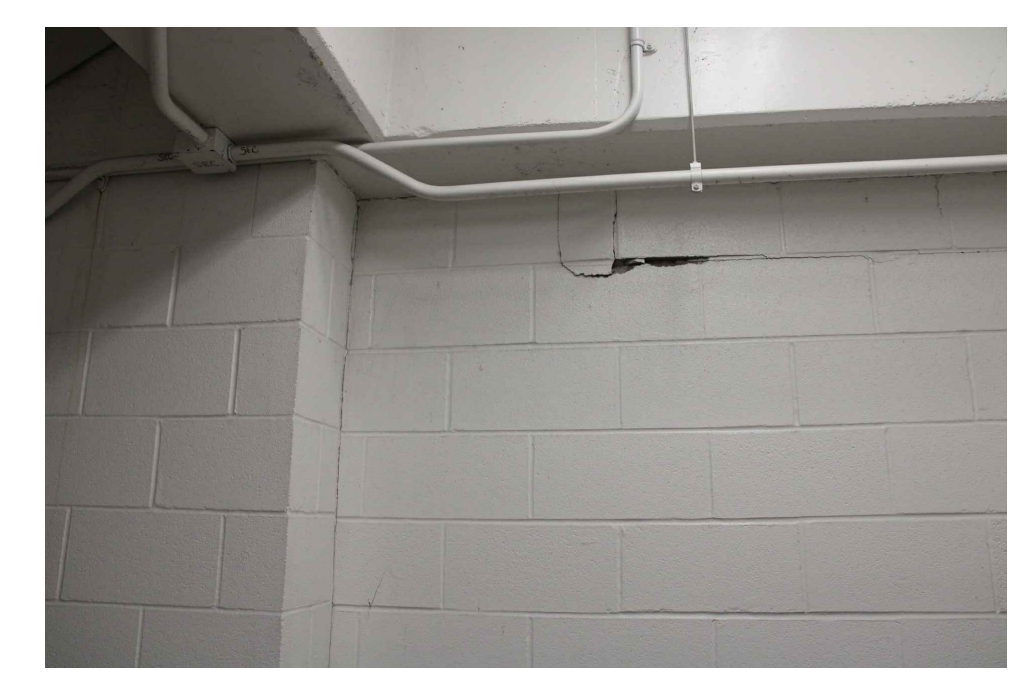
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 PLOT DATE: 24 July 2023 8:10:11 PM
 OLD DWA No.:
 DOA DWG FILE:



15 STAIR 3 LEVEL 5 CONSTRUCTION ACTIVITY
1' = 1'-0"



14 STAIR 3 LEVEL 7 OUTSIDE ENTRANCE
1' = 1'-0"



20 STAIR 3 LEVEL 6 - CONSTRUCTION ACTIVITY
1' = 1'-0"

A. WHERE REQUIRED, PRESSURE WASH EXTERIOR SURFACES PRIOR TO REPAINTING IN ACCORDANCE WITH MPI STANDARDS FOR TYPE OF SURFACES AND RECOMMENDED PRESSURES TO ENSURE COMPLETE REMOVAL OF ALL LOOSE PAINT, STAINS, DIRT, AND OTHER FOREIGN MATTER. THIS WORK SHALL BE CARRIED OUT ONLY BY QUALIFIED TRADESMAN EXPERIENCED IN PRESSURE WATER CLEANING. THE USE OF WATER HOSE CLEANING WILL NOT BE CONSIDERED SATISFACTORY, UNLESS SPECIFICALLY SPECIFIED. ALLOW SUFFICIENT DRYING TIME AND TEST ALL SURFACES USING AN ELECTRONIC MOISTURE METER BEFORE COMMENCING WORK.

B. SAND, CLEAN, DRY, ETCH, NEUTRALIZE AND/OR TEST ALL SURFACES UNDER ADEQUATE ILLUMINATION, VENTILATION AND TEMPERATURE REQUIREMENTS.

C. REMOVE AND SECURELY STORE ALL MISCELLANEOUS HARDWARE AND SURFACE FITTINGS / FASTENINGS (E.G. ELECTRICAL LIGHTS, MECHANICAL LOUVERS, DOOR AND WINDOW HARDWARE (E.G. HINGES, KNOBS, LOCKS, TRIM, FRAME STOPS) AND, REMOVABLE HAZARD / INSTRUCTION LABELS, FROM WALL AND SOFFIT SURFACES, DOORS AND FRAMES, PRIOR TO REPAINTING AND REPLACE UPON COMPLETION. CAREFULLY CLEAN AND REPLACE ALL SUCH ITEMS UPON COMPLETION OF REPAINTING WORK IN EACH AREA. DO NOT USE SOLVENT OR REACTIVE CLEANING AGENTS ON ITEMS THAT WILL MAR OR REMOVE FINISHES (E.G. LACQUER FINISHES). DOORS SHALL BE REMOVED BEFORE REPAINTING TO PAINT BOTTOM AND TOP EDGES AND THEN RE-HUNG.

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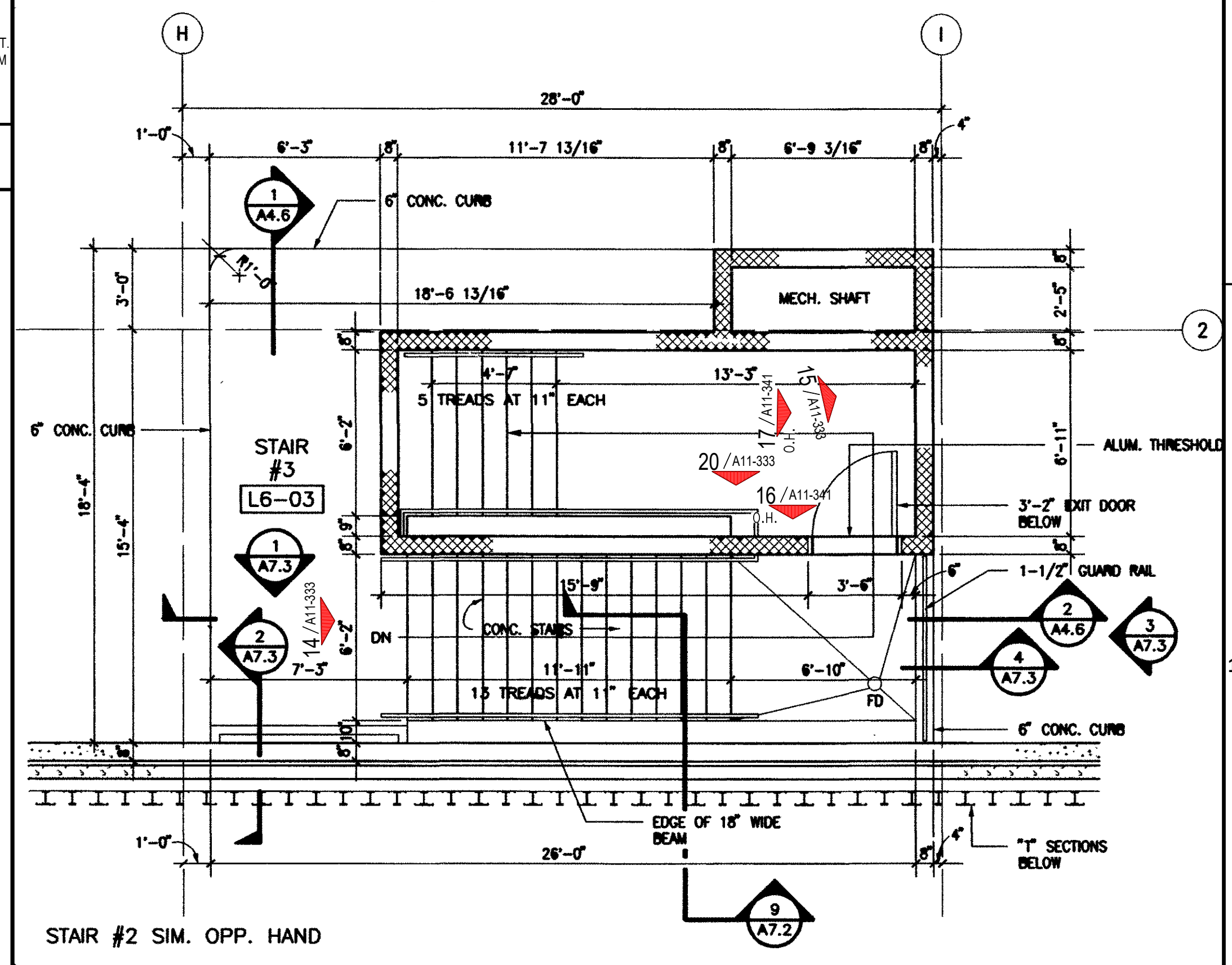
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03 KEYNOTES
1' = 1'-0"



04 PURPLE GARAGE STAIR 3 LEVEL 6
1/4" = 1'-0"

REVISIONS

No.	DESCRIPTION	DATE	BY

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

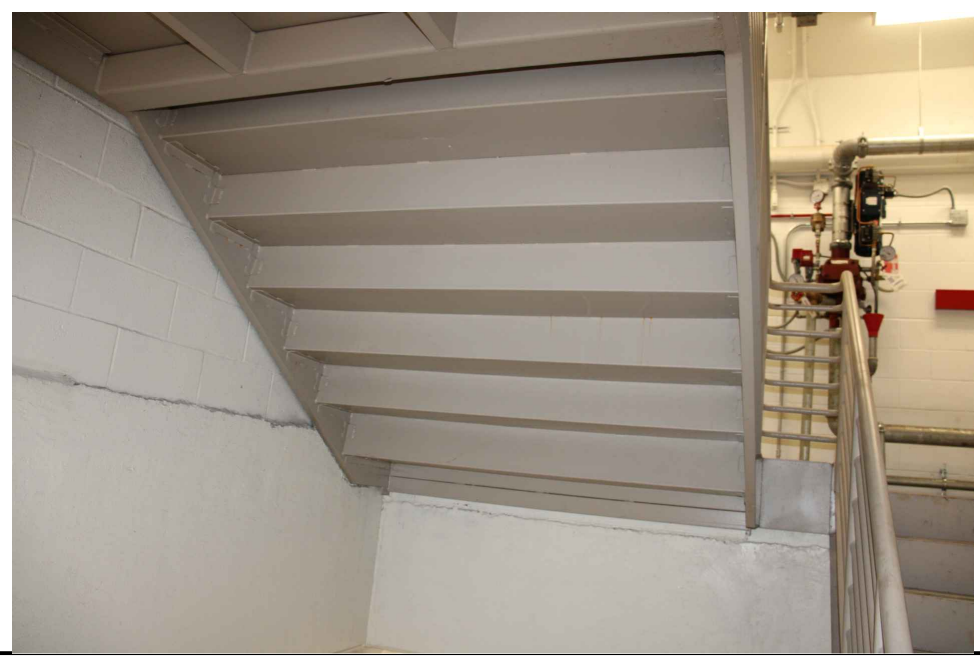
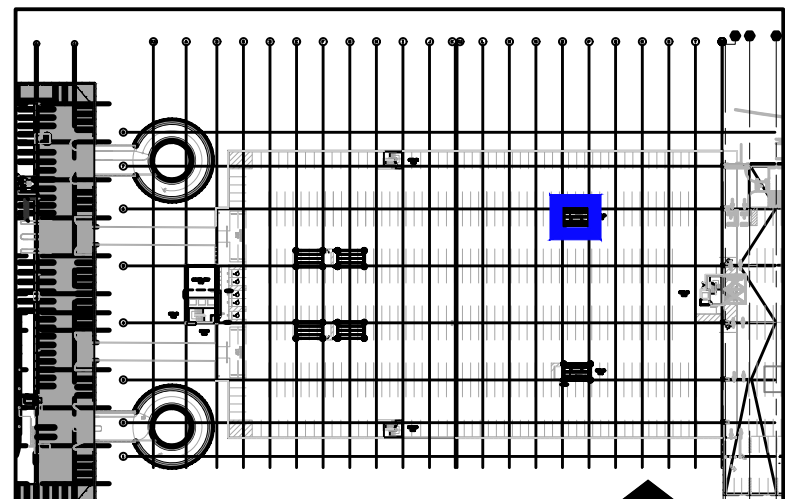
Review/ Approval Category

IFR

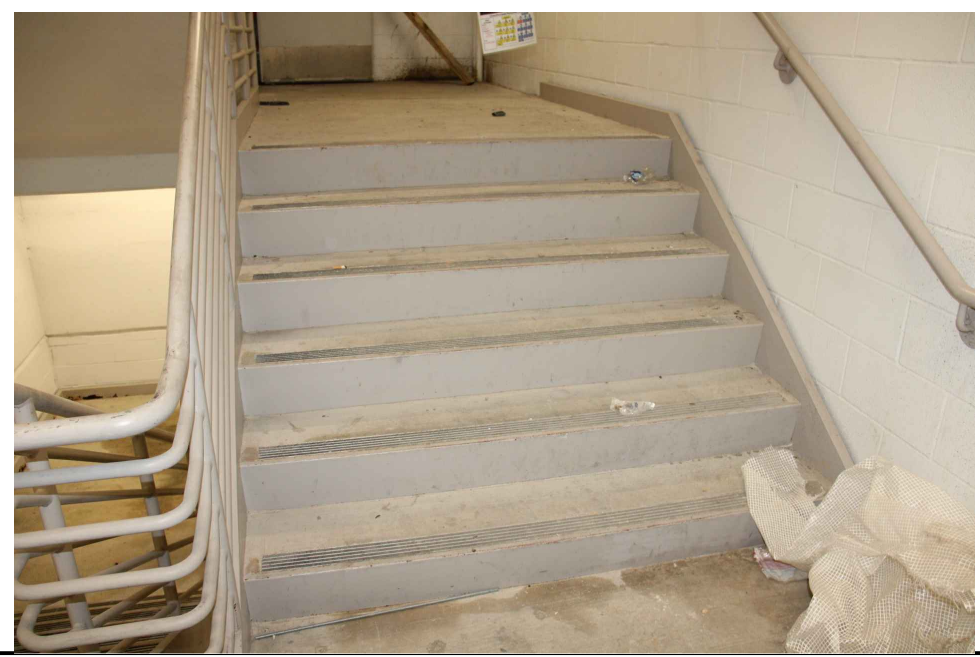
ISSUED FOR REVIEW

Noe Almaguer
Tx. REG. NO. 22651
DATE: July 24, 2023

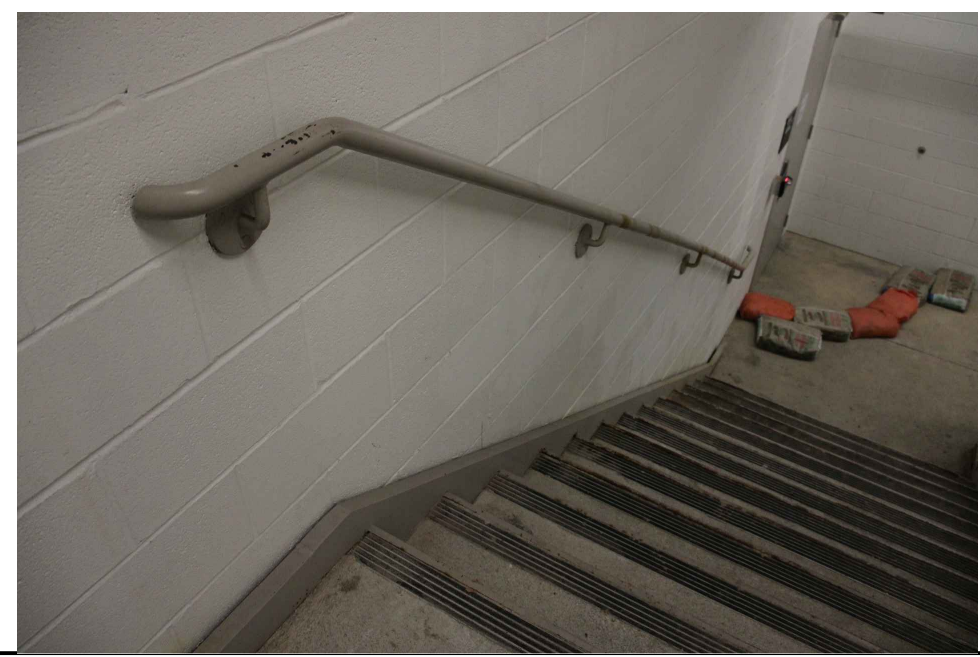
FOR
INTERIM REVIEW
AND NOT INTENDED
FOR CONSTRUCTION,
BIDDING OR PERMIT
PURPOSES.



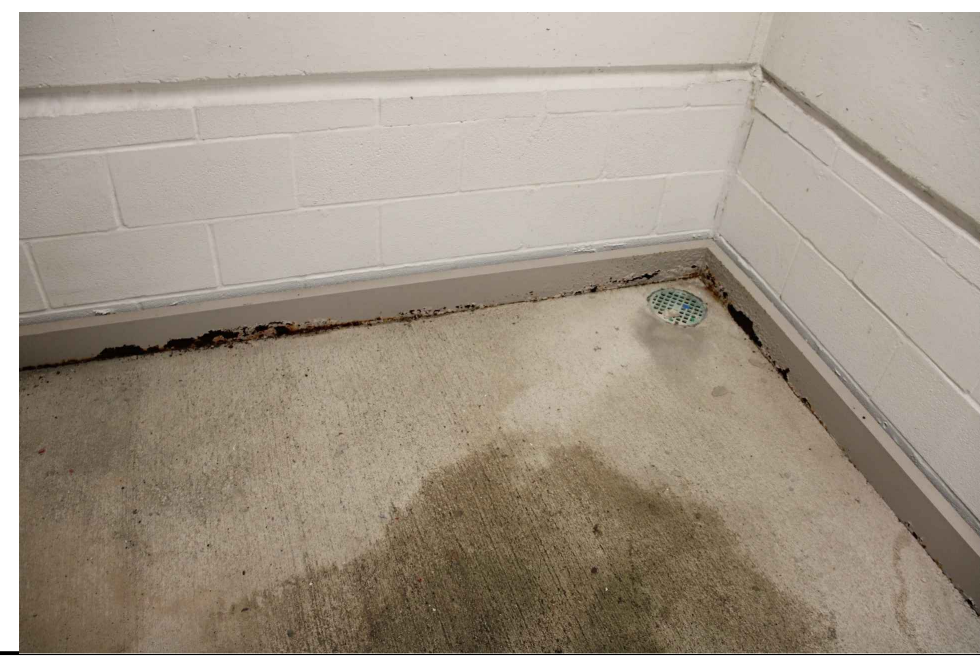
20 STAIR 2 - 20
1' = 1'-0"



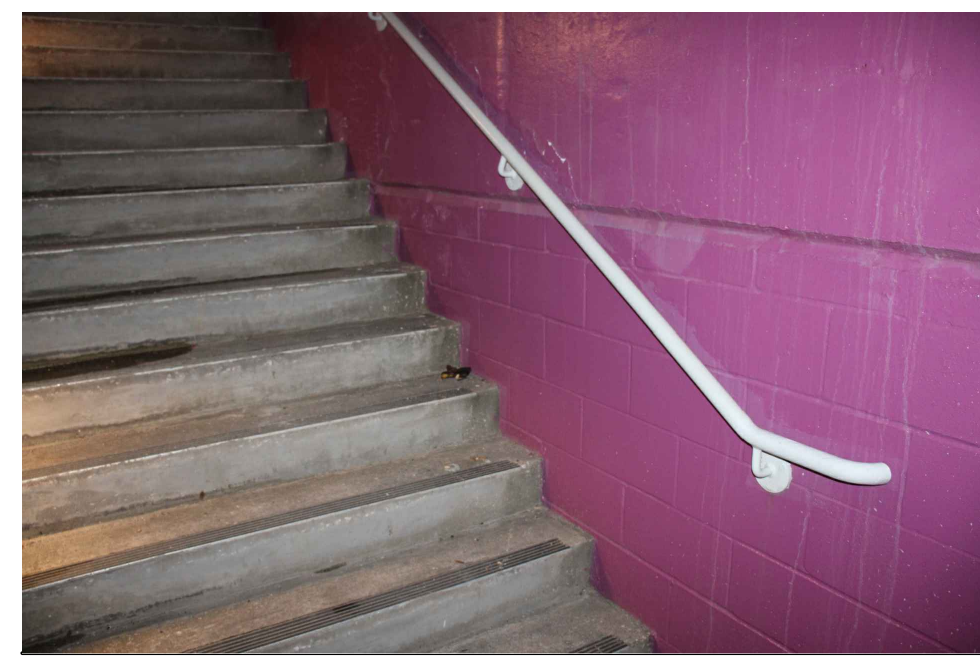
19 STAIR 2 - 19
1' = 1'-0"



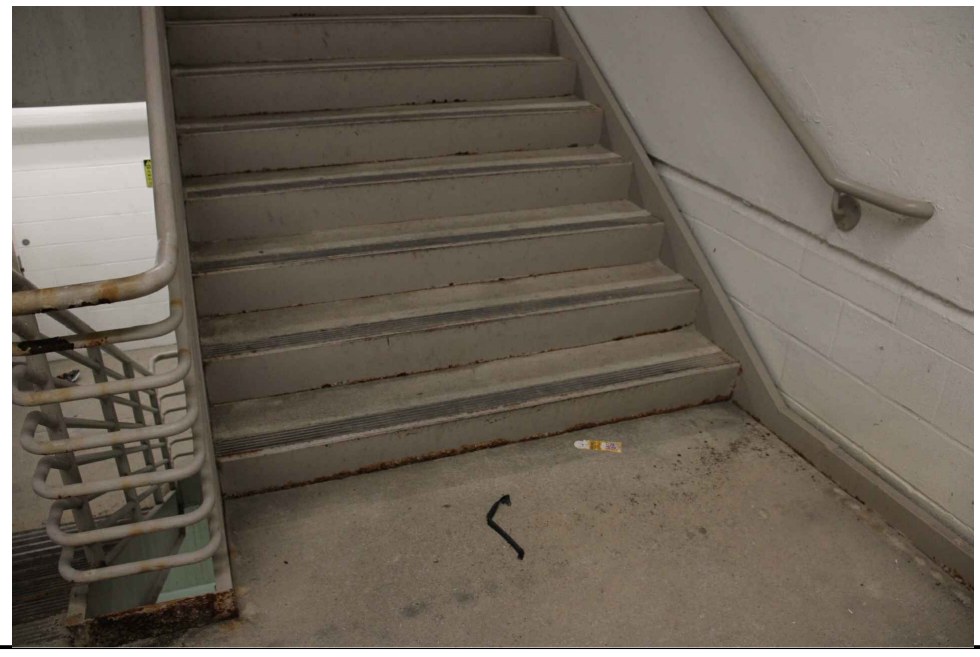
18 STAIR 2 - 18
1' = 1'-0"



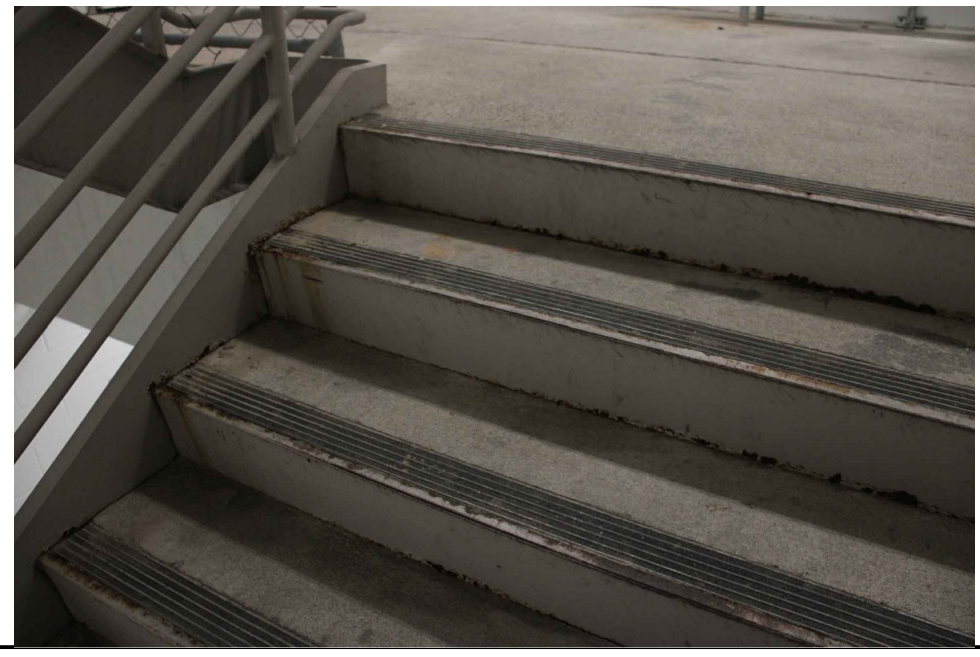
17 STAIR 2 - 17
1' = 1'-0"



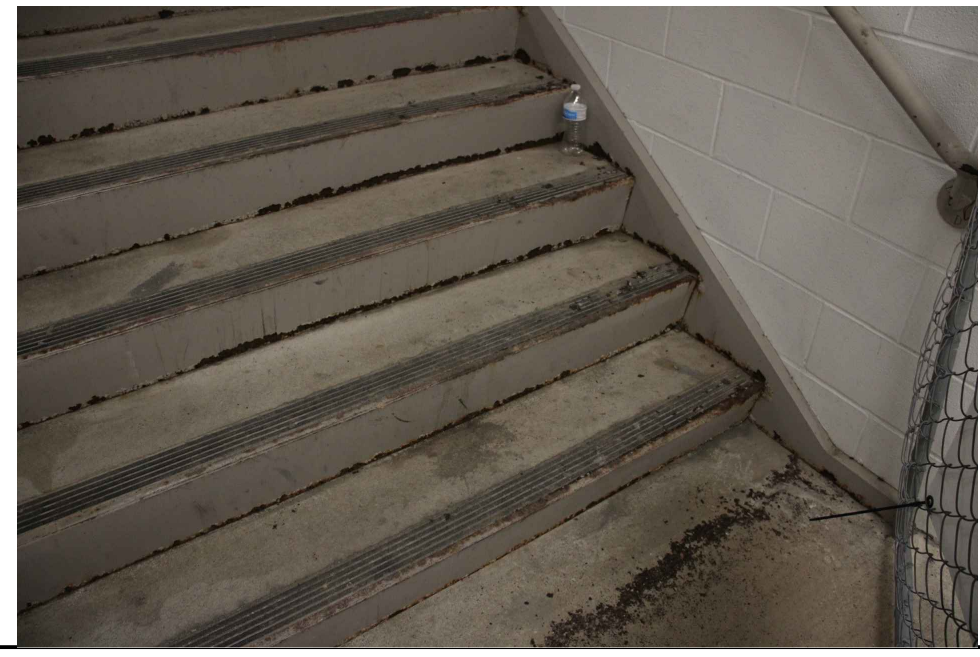
16 STAIR 2 - 16
1' = 1'-0"



15 STAIR 2 - 15
1' = 1'-0"



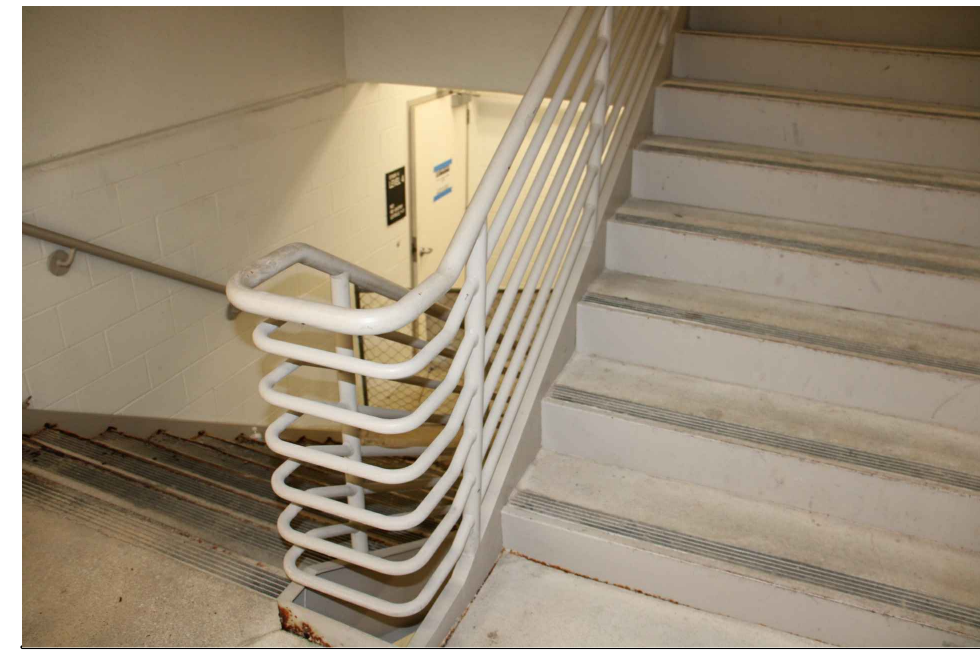
14 STAIR 2 - 14
1' = 1'-0"



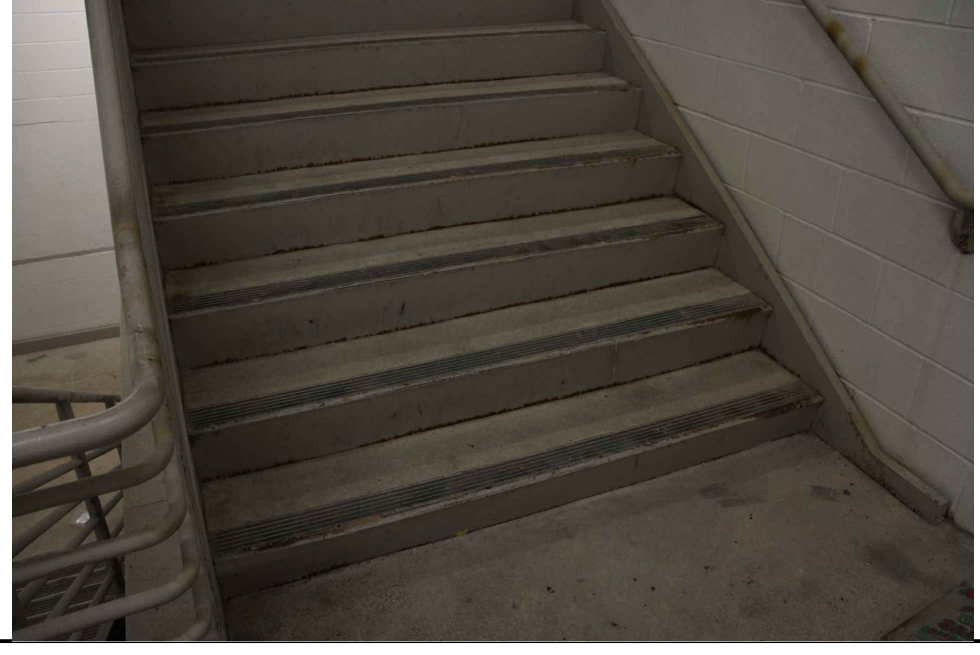
13 STAIR 2 - 13
1' = 1'-0"



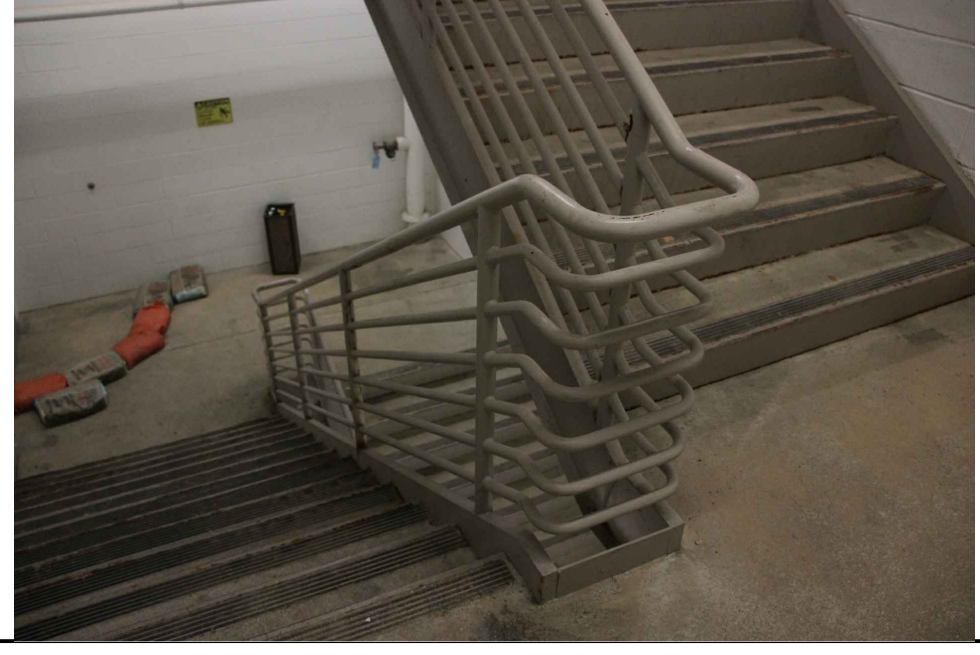
12 STAIR 2 - 12
1' = 1'-0"



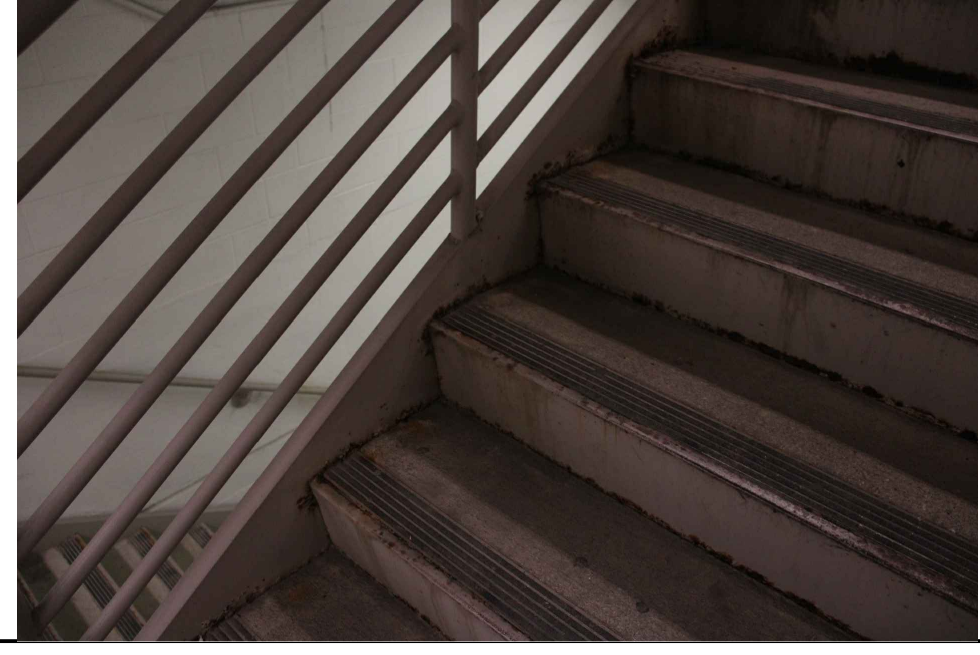
11 STAIR 2 - 11
1' = 1'-0"



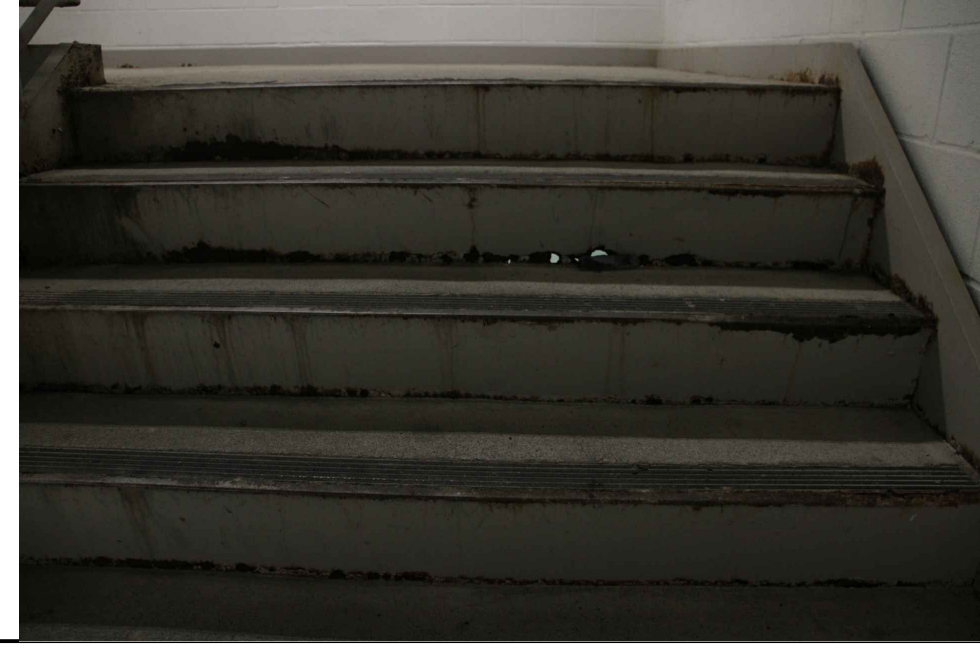
10 STAIR 2 - 10
1' = 1'-0"



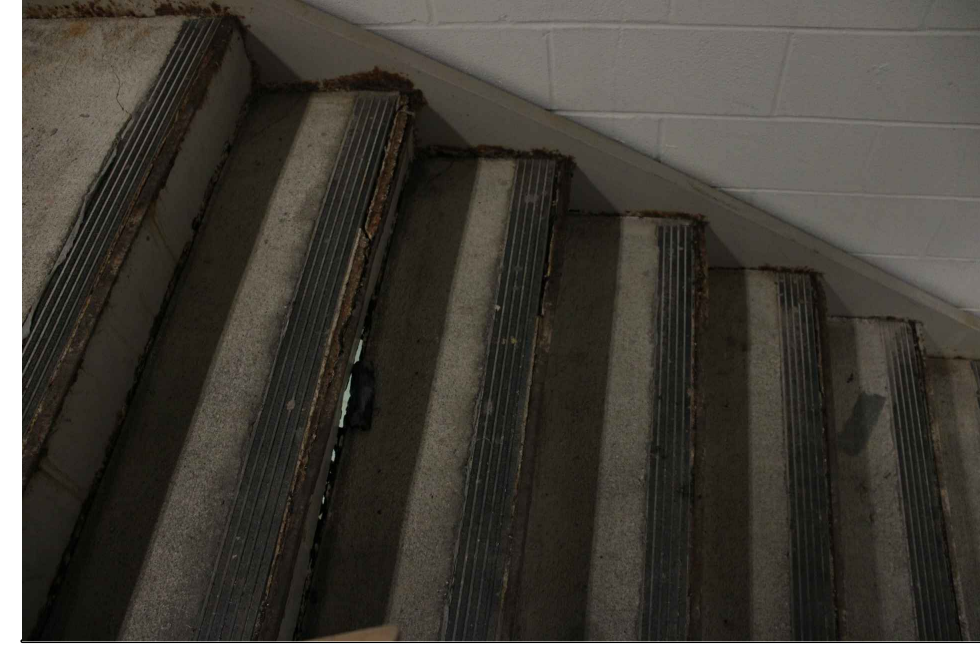
09 STAIR 2 - 09
1' = 1'-0"



08 STAIR 2 - 08
1' = 1'-0"



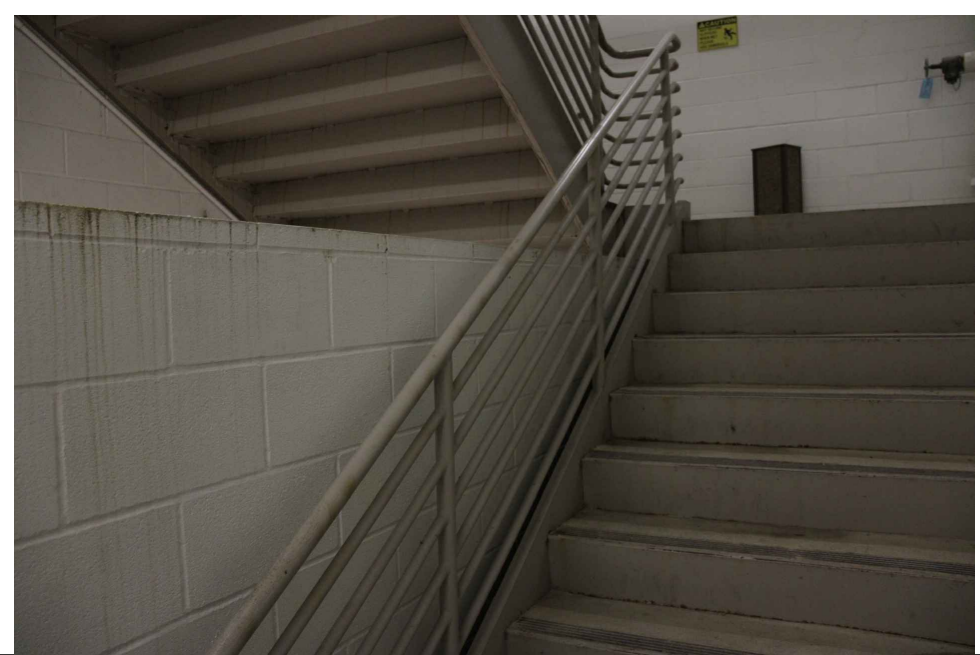
07 STAIR 2 - 07
1' = 1'-0"



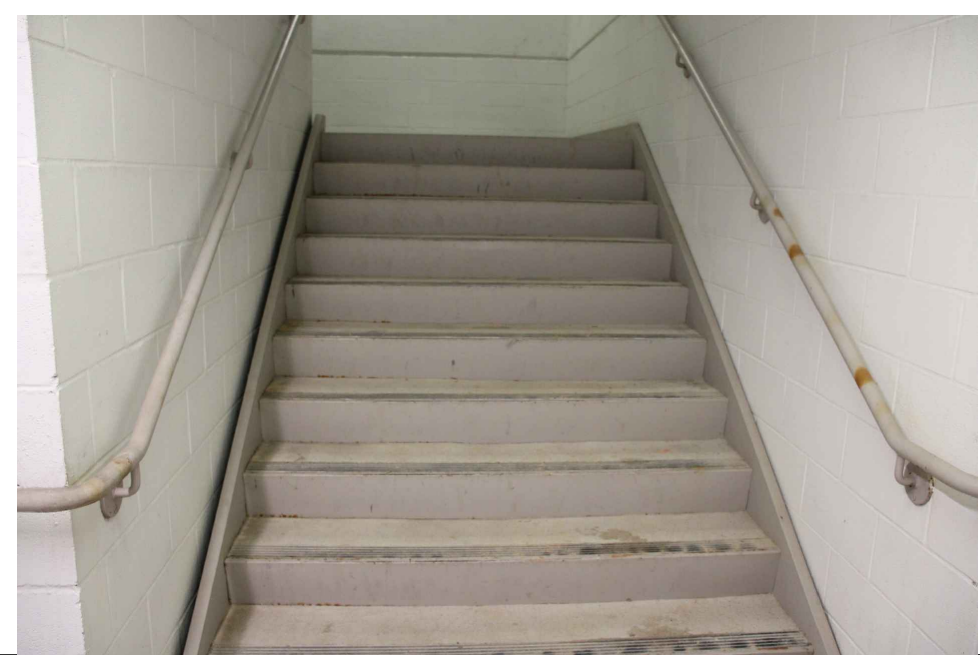
06 STAIR 2 - 06
1' = 1'-0"

- HIGH PRESSURE WASHING AND ABRASIVE BLASTING OF TREADS, RISERS, LANDINGS, UNDERSIDE OF STAIRS, GUARDRAILS AND HANDRAILS. SURFACE PREPARATION OF SUBSTRATES AS REQUIRED FOR ACCEPTANCE OF PAINT, INCLUDING CLEANING, SMALL CRACK REPAIR, PATCHING, CAULKING, AND MAKING GOOD SURFACES AND AREAS. SEALING / PRIMING SURFACES FOR REPAINTING.
- PAINT METAL RAILS, UNDERSIDE OF STAIR PANS, STRINGERS AND RISERS AS SHOWN BELOW.
FERROUS METAL - MISCELLANEOUS METALS PAINT WITH SEMI-GLOSS FINISH
PRIMER: PRO INDUSTRIAL™ PRO-CRYL® UNIVERSAL PRIMER, B66-310 SERIES
1ST COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
2ND COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
- REPAIR DOOR FROM BINDING CONDITION.
 - REPLACE DOOR WITH LIKE KIND.
 - REPAIR OR PATCH HOLE IN METAL RISER, REPAINT.
 - REPAIR OR PATCH CRACK IN CONCRETE LANDING.
 - REPAIR OR PATCH CRACK IN CONCRETE MASONRY UNIT.
 - AREA OF EXCESSIVE RUSTING, REMOVE RUST AND PREPARE FOR PAINTING.
 - AREA UNDER CONSTRUCTION, WORK IS UNDER DIFFERENT CONTRACT. COMPLETE THE WORK OF THIS CONTRACT AND NOTIFY "HAS" AND THE ARCHITECT IF THERE IS ANYTHING STOPPING YOU FROM COMPLETING THE WORK.
 - INSTALL FOUNDATION ARMOR SX5000 PENETRATING SEALER CLEAR MATTE TRANSPARENT CONCRETE SEALER READY-TO-USE ON TREADS AND LANDINGS AFTER HP WASHING

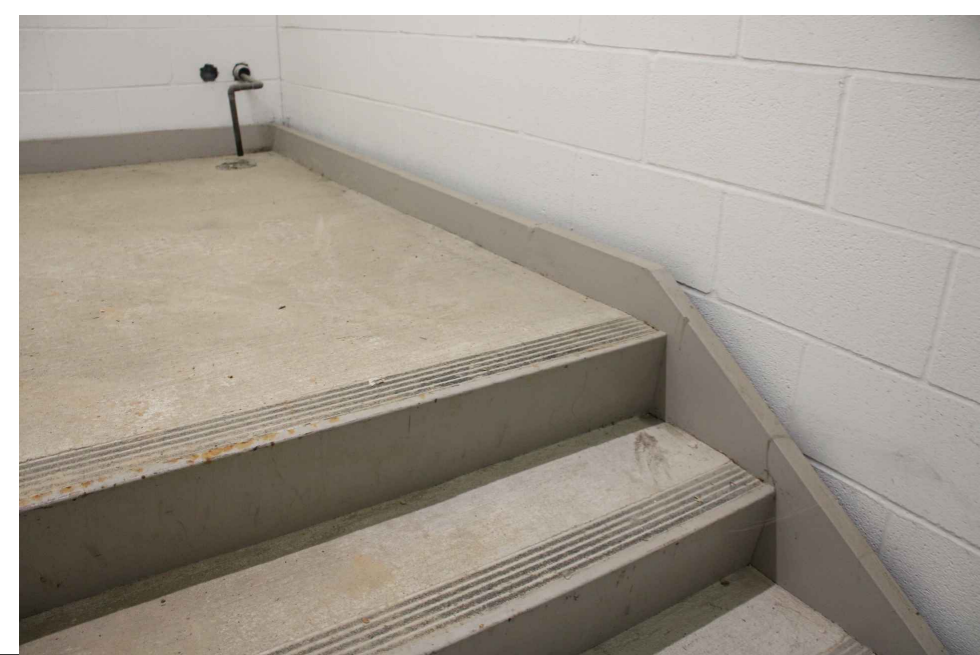
05 KEYNOTES
1' = 1'-0"



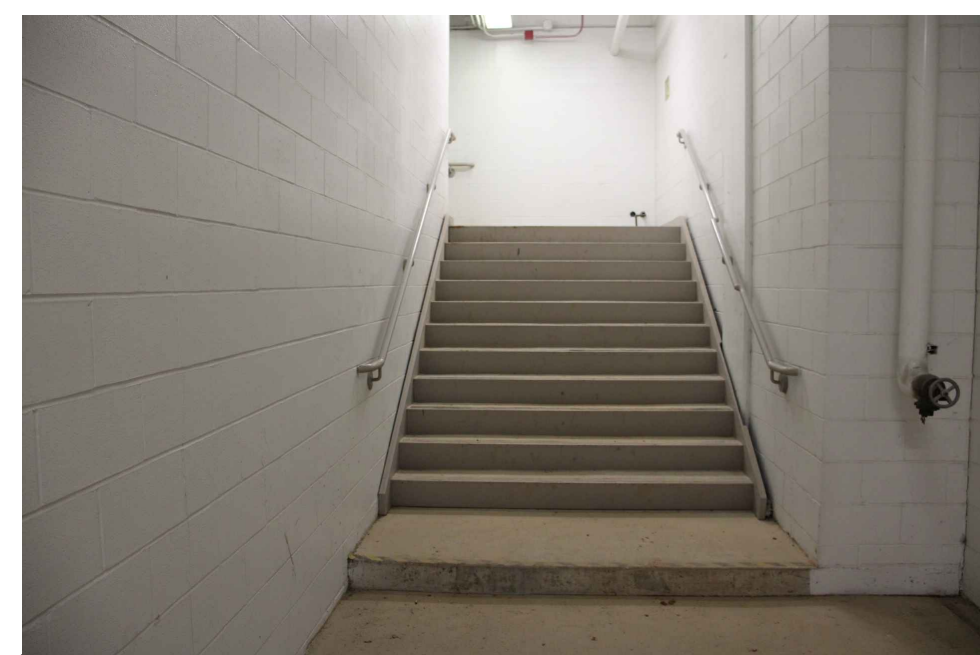
04 STAIR 2 - 04
1' = 1'-0"



03 STAIR 2 - 03
1' = 1'-0"



02 STAIR 2 - 02
1' = 1'-0"



01 STAIR 2 - 01
1' = 1'-0"

SHEET SIZE: 22" X 34" ANSI-D

E:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A11-341 PHOTOS - PURPLE GARAGE STAIR 4 LEVEL 1-6.DWG

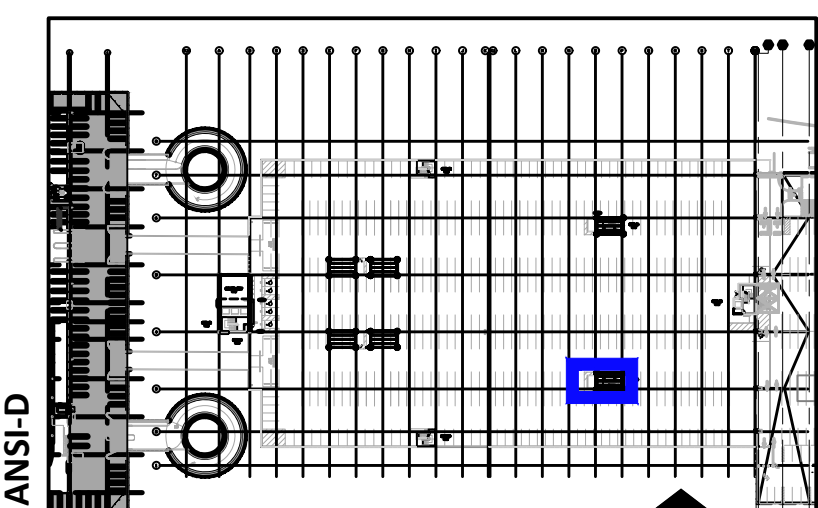
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OLD DCA No. :
DCA DWG FILE:

REVISIONS			
No.	DESCRIPTION	DATE	BY

DESIGNER:	J TOHILL
DRAWN BY:	J TOHILL
CHECKED BY:	TBD
ISSUE DATE:	12/15/2022
APPROVED BY:	
APPROVAL DATE:	

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

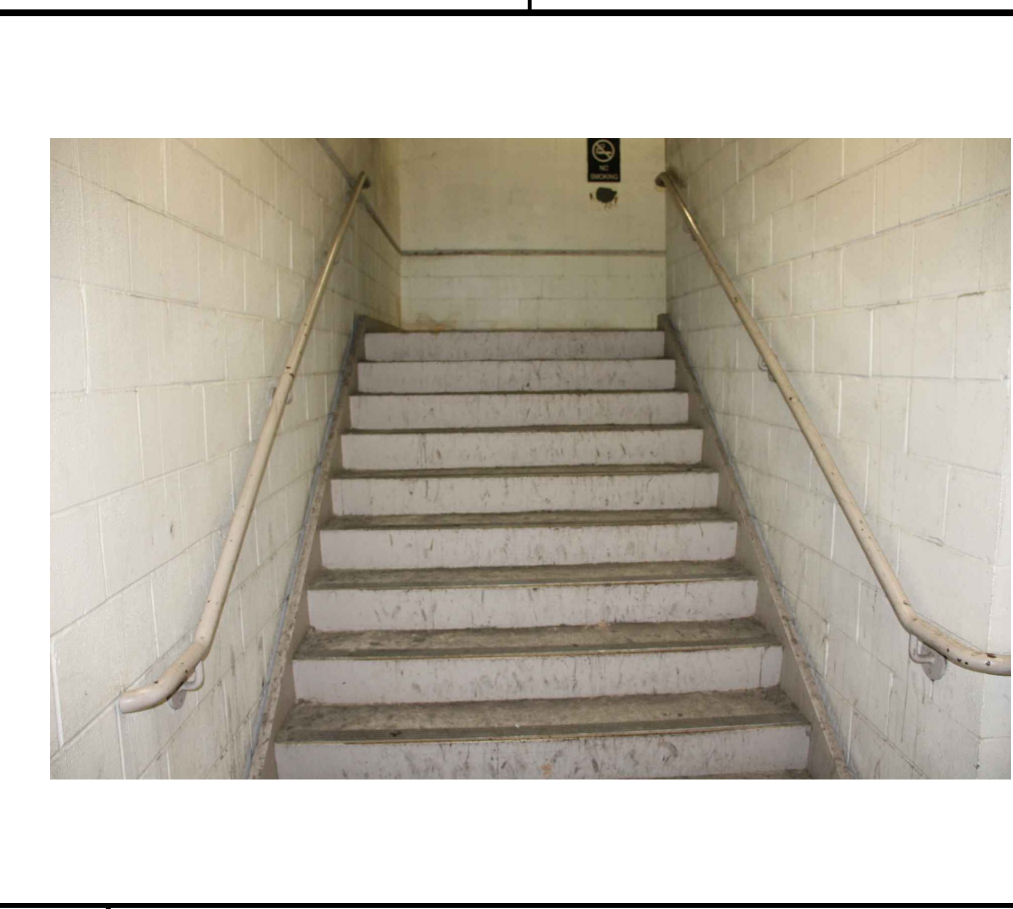
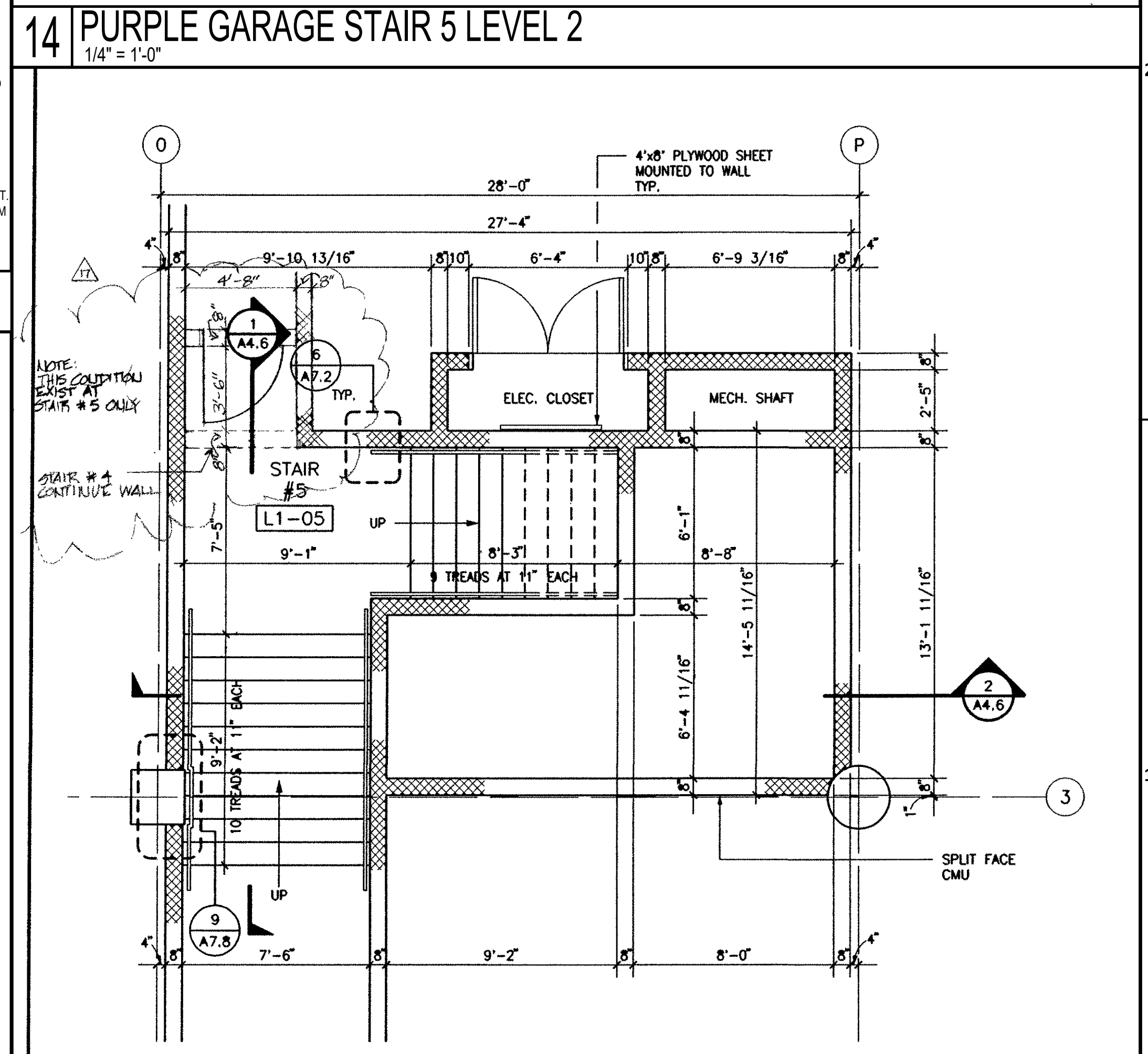
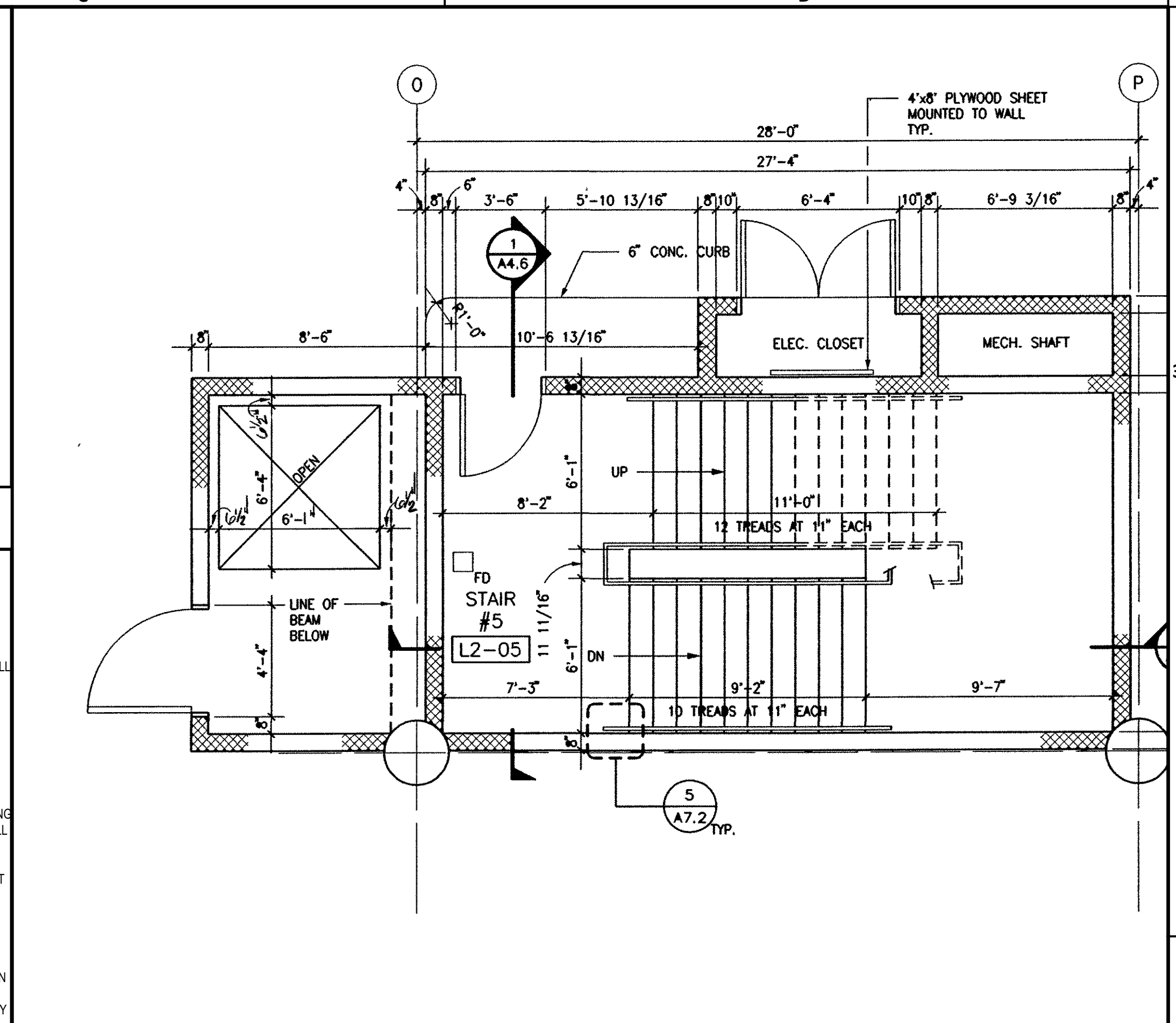
	Noe Almaguer Tx. REG. NO. 22651 DATE: July 21, 2023
	FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.



TERMINAL "C"

SHEET NAME:
PURPLE GARAGE STAIR 5 LEVEL 1-2

SHEET No. A11-351 SCALE: 1/4" = 1'-0"



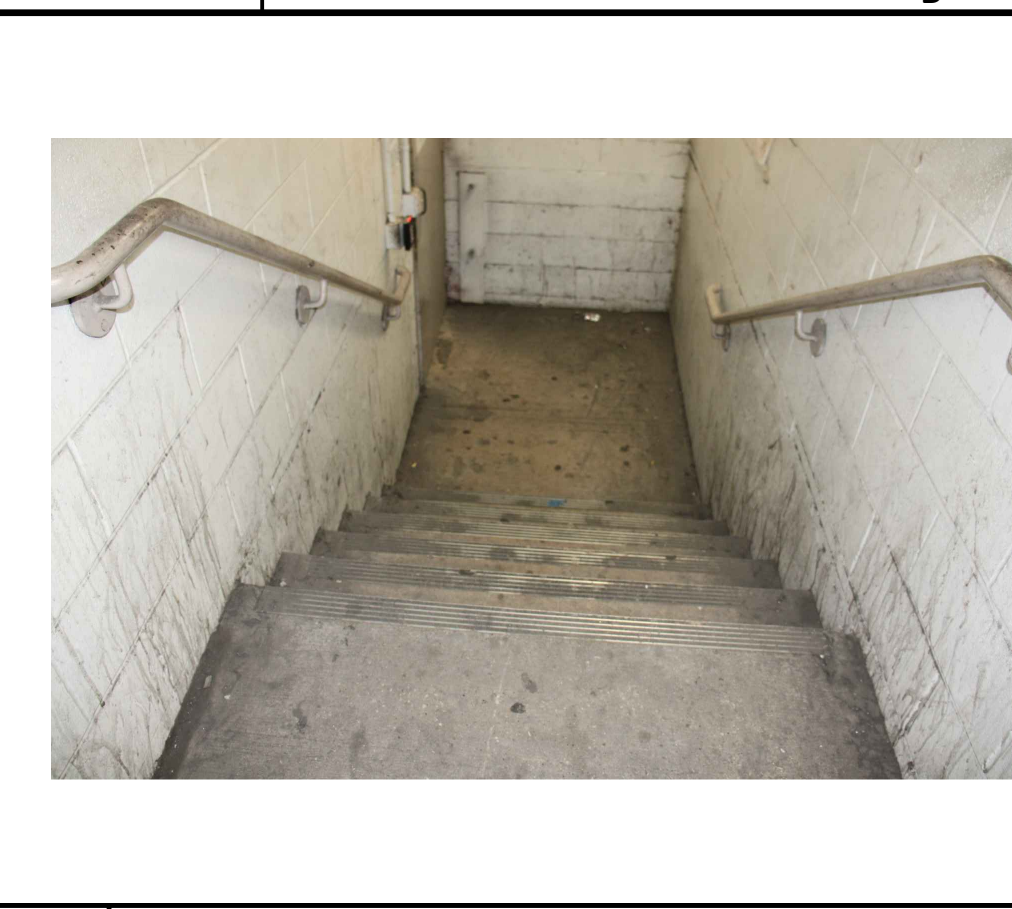
18 STAIR 5 - 9
1' = 1'-0"

- WHERE REQUIRED, PRESSURE WASH EXTERIOR SURFACES PRIOR TO REPAINTING IN ACCORDANCE WITH MPI STANDARDS FOR TYPE OF SURFACES AND RECOMMENDED PRESSURES TO ENSURE COMPLETE REMOVAL OF ALL LOOSE PAINT, STAINS, DIRT, AND OTHER FOREIGN MATTER. THIS WORK SHALL BE CARRIED OUT ONLY BY QUALIFIED TRADESMAN EXPERIENCED IN PRESSURE WATER CLEANING. THE USE OF WATER HOSE CLEANING WILL NOT BE CONSIDERED SATISFACTORY, UNLESS SPECIFICALLY SPECIFIED. ALLOW SUFFICIENT DRYING TIME AND TEST ALL SURFACES USING AN ELECTRONIC MOISTURE METER BEFORE COMMENCING WORK.
- SAND, CLEAN, DRY, ETCH, NEUTRALIZE AND/OR TEST ALL SURFACES UNDER ADEQUATE ILLUMINATION, VENTILATION AND TEMPERATURE REQUIREMENTS.
- REMOVE AND SECURELY STORE ALL MISCELLANEOUS HARDWARE AND SURFACE FITTINGS / FASTENINGS (E.G. ELECTRICAL LIGHTS, MECHANICAL COVERS, DOOR AND WINDOW HARDWARE (E.G. HINGES, KNOBS, LOCKS, TRIM, FRAME STOPS) AND, REMOVABLE HAZARD / INSTRUCTION LABELS, FROM WALL AND SOFFIT SURFACES, DOORS AND FRAMES, PRIOR TO REPAINTING AND REPLACE UPON COMPLETION. CAREFULLY CLEAN AND REPLACE ALL SUCH ITEMS UPON COMPLETION OF REPAINTING WORK IN EACH AREA. DO NOT USE SOLVENT OR REACTIVE CLEANING AGENTS ON ITEMS THAT WILL MAR OR REMOVE FINISHES (E.G. LACQUER FINISHES). DOORS SHALL BE REMOVED BEFORE REPAINTING TO PAINT BOTTOM AND TOP EDGES AND THEN RE-HUNG.
- PROTECT ALL EXTERIOR SURFACES AND AREAS, INCLUDING LANDSCAPING, WALKS, DRIVES, ALL ADJACENT BUILDING SURFACES (INCLUDING GLASS, ALUMINUM SURFACES, ETC.) AND EQUIPMENT AND ANY LABELS AND SIGNAGE FROM REPAINTING OPERATIONS AND DAMAGE BY DROP CLOTHS, SHIELDS, MASKING, TEMPLATES, OR OTHER SUITABLE PROTECTIVE MEANS AND MAKE GOOD ANY DAMAGE CAUSED BY FAILURE TO PROVIDE SUCH PROTECTION.
- APPLY PRIMER, PAINT OR STAIN WITHIN AN APPROPRIATE TIME FRAME AFTER CLEANING AND PREPARATION TO PREVENT WEATHERING OR WATER STAINING OF SUBSTRATE OR BEFORE ENVIRONMENTAL CONDITIONS ENCOURAGE FLASH-RUSTING, RUSTING, CONTAMINATION OR WHEN THE MANUFACTURER'S PAINT SPECIFICATIONS REQUIRE EARLIER APPLICATIONS.
- PRIMER, PAINT OR STAIN COATS SPECIFIED ARE INTENDED TO COVER SURFACES SATISFACTORILY WHEN APPLIED AT PROPER CONSISTENCY AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- PREVIOUSLY COATED SURFACES: MAINTENANCE PAINTING WILL FREQUENTLY NOT PERMIT OR REQUIRE COMPLETE REMOVAL OF ALL OLD COATINGS PRIOR TO REPAINTING. HOWEVER, ALL SURFACE CONTAMINATION SUCH AS OIL, GREASE, LOOSE PAINT, MILL SCALE, DIRT, FOREIGN MATTER, RUST, MOLD, MILDEW, MORTAR, EFFLORESCENCE, AND SEALERS MUST BE REMOVED TO ASSURE SOUND BONDING TO THE TIGHTLY ADHERING OLD PAINT. GLOSSY SURFACES OF OLD PAINT FILMS MUST BE CLEAN AND DULL BEFORE REPAINTING. THOROUGH WASHING WITH AN ABRASIVE CLEANSER WILL CLEAN AND DULL IN ONE OPERATION, OR, WASH THOROUGHLY AND DULL BY SANDING. SPOT PRIME ANY BARE AREAS WITH AN APPROPRIATE PRIMER. RECOGNIZE THAT ANY SURFACE PREPARATION SHORT OF TOTAL REMOVAL OF THE OLD COATING MAY COMPROMISE THE SERVICE LENGTH OF THE SYSTEM. CHECK FOR COMPATIBILITY BY APPLYING A TEST PATCH OF THE RECOMMENDED COATING SYSTEM, COVERING AT LEAST 2 TO 3 SQUARE FEET. ALLOW TO DRY ONE WEEK BEFORE TESTING ADHESION PER ASTM D3359. IF THE COATING SYSTEM IS INCOMPATIBLE, COMPLETE REMOVAL IS REQUIRED PER ASTM D4259.

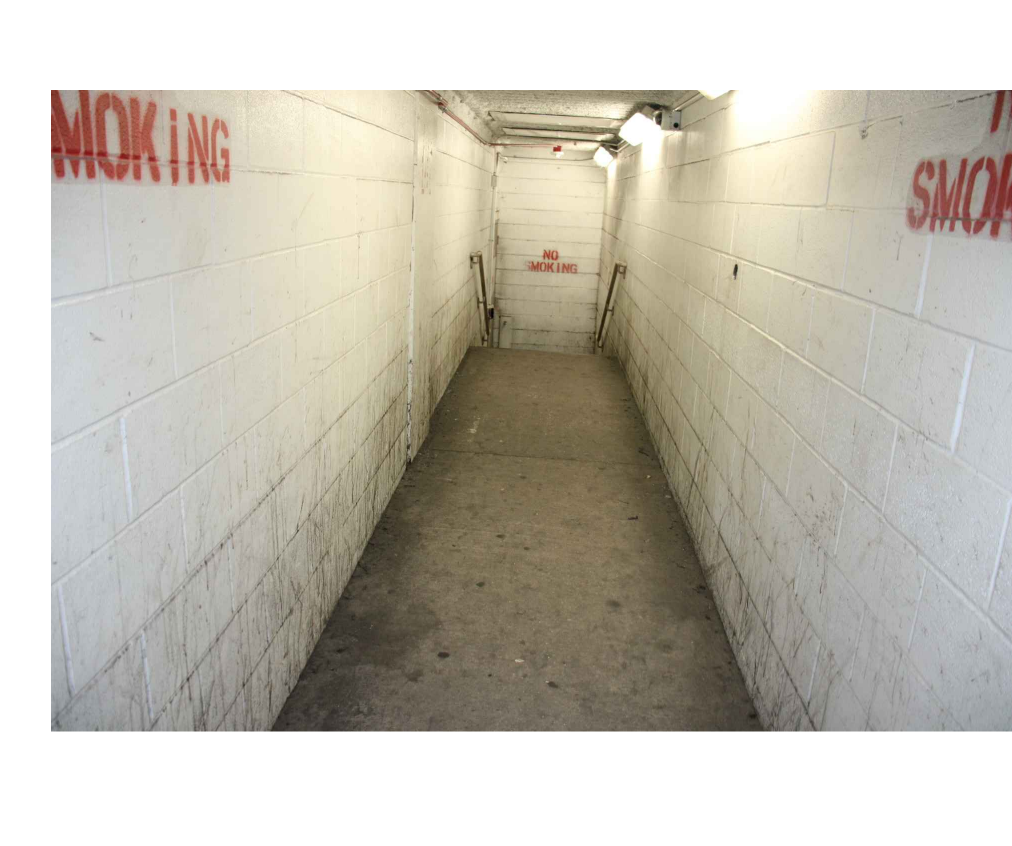
13 GENERAL NOTES
1' = 1'-0"

- HIGH PRESSURE WASHING AND ABRASIVE BLASTING OF TREADS, RISERS, LANDINGS, UNDERSIDE OF STAIRS, GUARDRAILS AND HANDRAILS, SURFACE PREPARATION OF SUBSTRATES AS REQUIRED FOR ACCEPTANCE OF PAINT, INCLUDING CLEANING, SMALL CRACK REPAIR, PATCHING, CAULKING, AND MAKING GOOD SURFACES AND AREAS. SEALING / PRIMING SURFACES FOR REPAINTING.
- PAINT METAL RAILS, UNDERSIDE OF STAIR PANS, STRINGERS AND RISERS AS SHOWN BELOW.
FERROUS METAL - MISCELLANEOUS METALS PAINT WITH SEMI-GLOSS FINISH
PRIMER: PRO INDUSTRIAL™ PRO-CRYL® UNIVERSAL PRIMER, B66-310 SERIES
1ST COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
2ND COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
- REPAIR DOOR FROM BINDING CONDITION.
- REPLACE DOOR WITH LIKE KIND.
- REPAIR OR PATCH HOLE IN METAL RISER, REPAINT.
- REPAIR OR PATCH CRACK IN CONCRETE LANDING.
- REPAIR OR PATCH CRACK IN CONCRETE MASONRY UNIT.
- AREA OF EXCESSIVE RUSTING, REMOVE RUST AND PREPARE FOR PAINTING.
- AREA UNDER CONSTRUCTION, WORK IS UNDER DIFFERENT CONTRACT. COMPLETE THE WORK OF THIS CONTRACT AND NOTIFY "HAS" AND THE ARCHITECT IF THERE IS ANYTHING STOPPING YOU FROM COMPLETING THE WORK.
- INSTALL FOUNDATION ARMOR SX5000 PENETRATING SEALER CLEAR MATTE TRANSPARENT CONCRETE SEALER READY-TO-USE ON TREADS AND LANDINGS AFTER HP WASHING

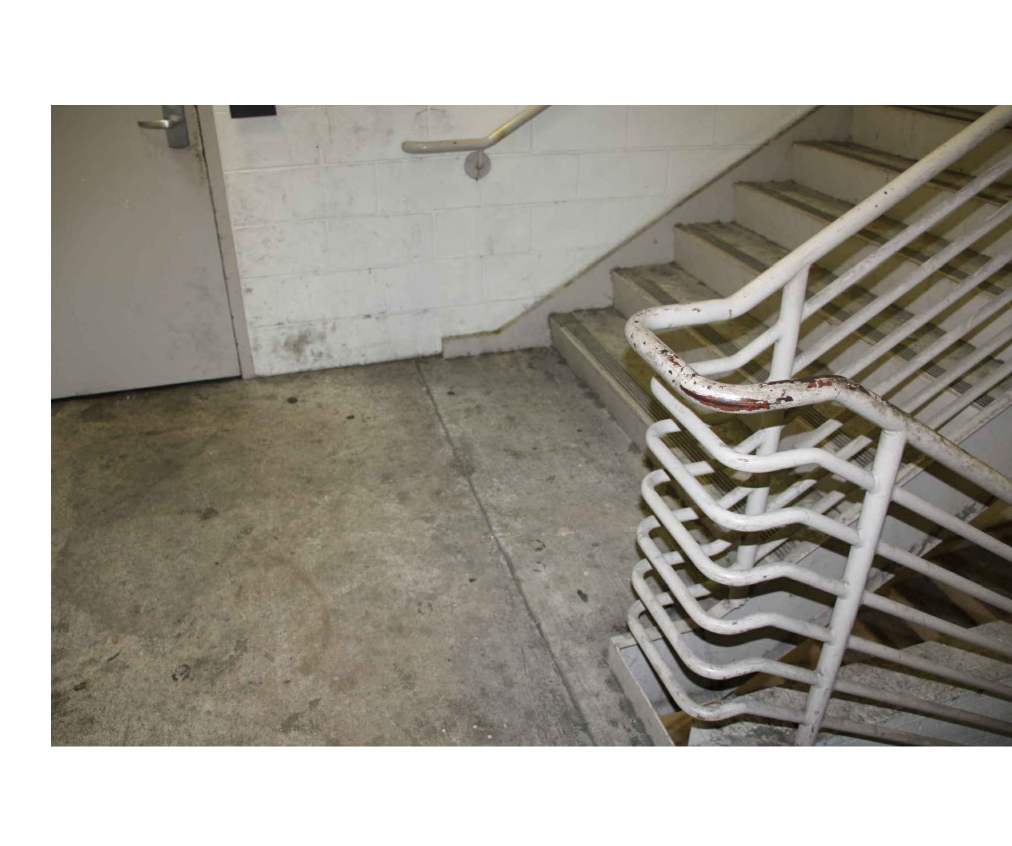
03 KEYNOTES
1' = 1'-0"



17 STAIR 5 - 8
1' = 1'-0"



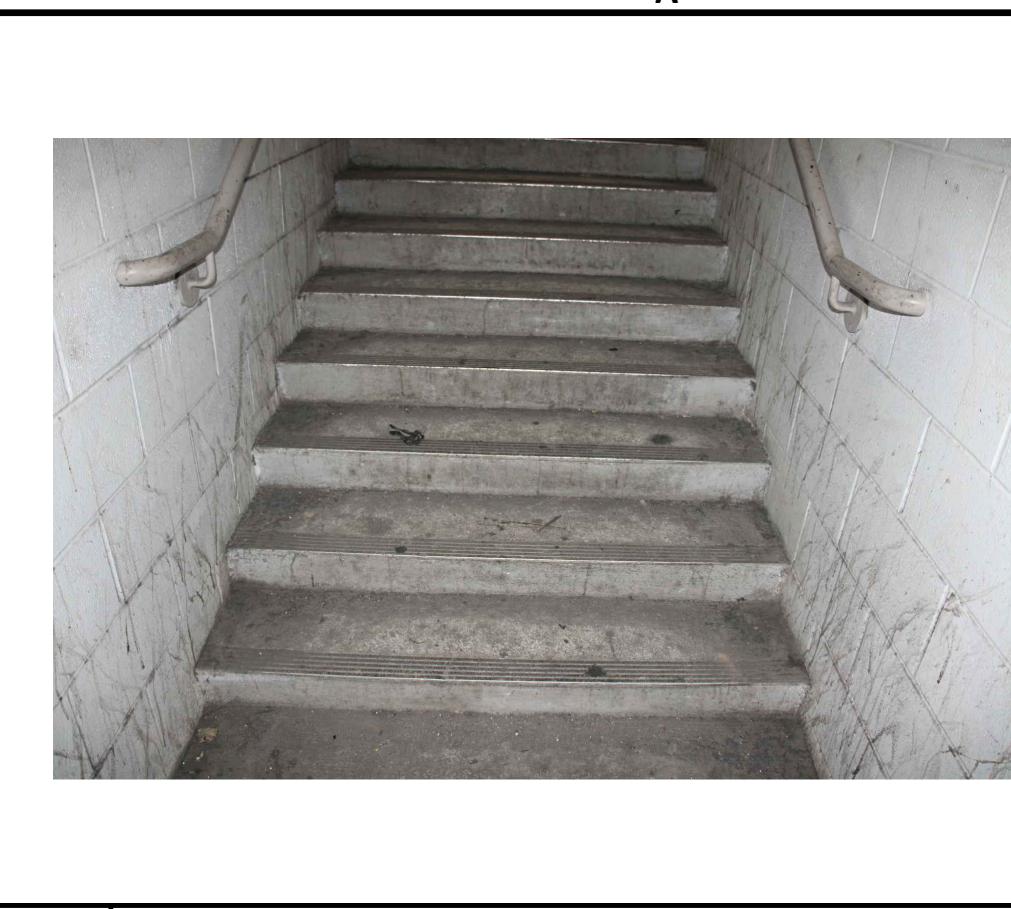
12 STAIR 5 - 6
1' = 1'-0"



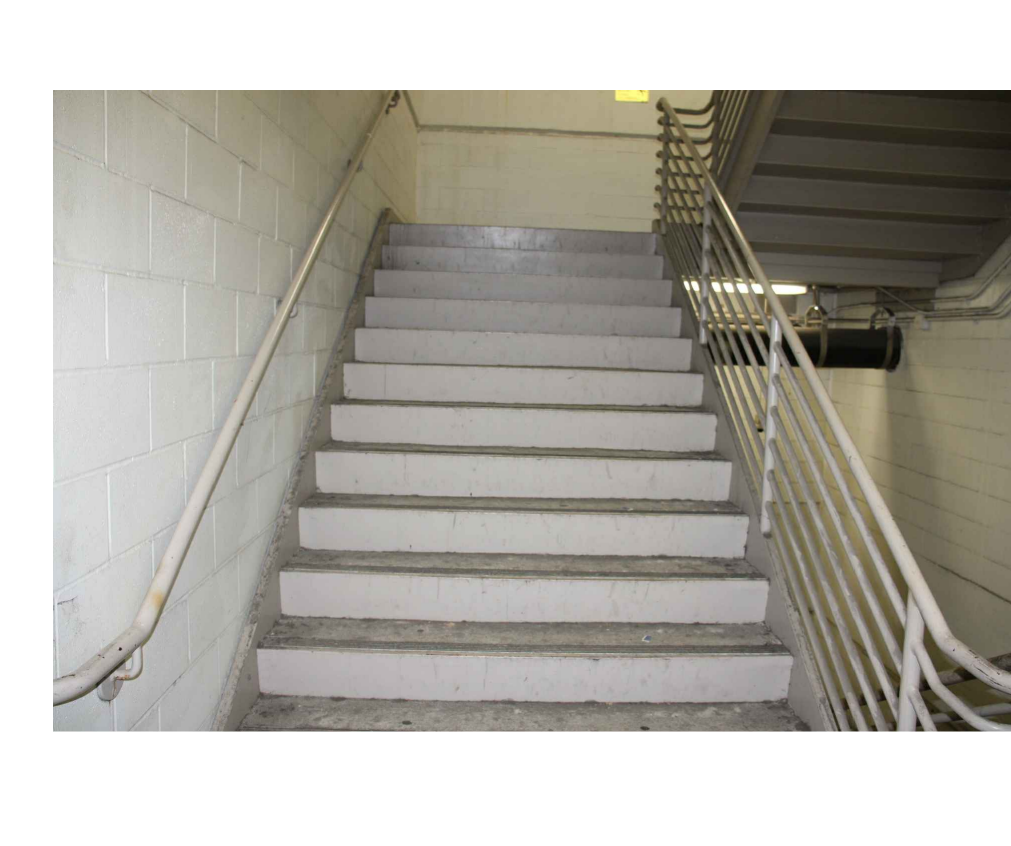
07 STAIR 5 - 4
1' = 1'-0"



02 STAIR 5 - 2
1' = 1'-0"



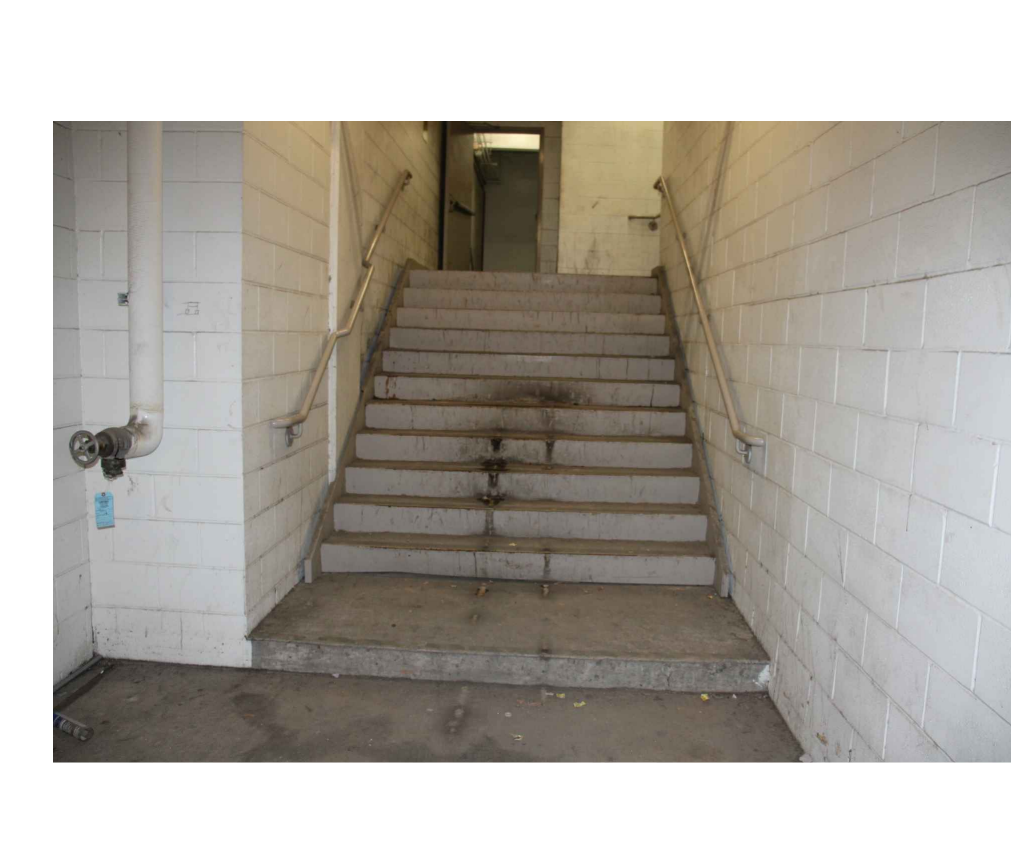
16 STAIR 5 - 7
1' = 1'-0"



11 STAIR 5 - 5
1' = 1'-0"



06 STAIR 5 - 3
1' = 1'-0"



01 STAIR 5 - 1
1' = 1'-0"

E:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A11-351 PURPLE GARAGE STAIR 5 LEVEL 1-2.DWG
 PLOT DATE: 24 July 2023 8:10:50 PM
 OLD DDA No.:
 DDA DWG FILE:



DESIGNER PROJECT No.: 19-21
PROJECT STATUS: ISSUED FOR CONSTRUCTION

REVISIONS

No.	DESCRIPTION	DATE	BY

DESIGNER: J TOHILL
DRAWN BY: J TOHILL
CHECKED BY: TBD
ISSUE DATE: 12/15/2022
APPROVED BY:
APPROVAL DATE:

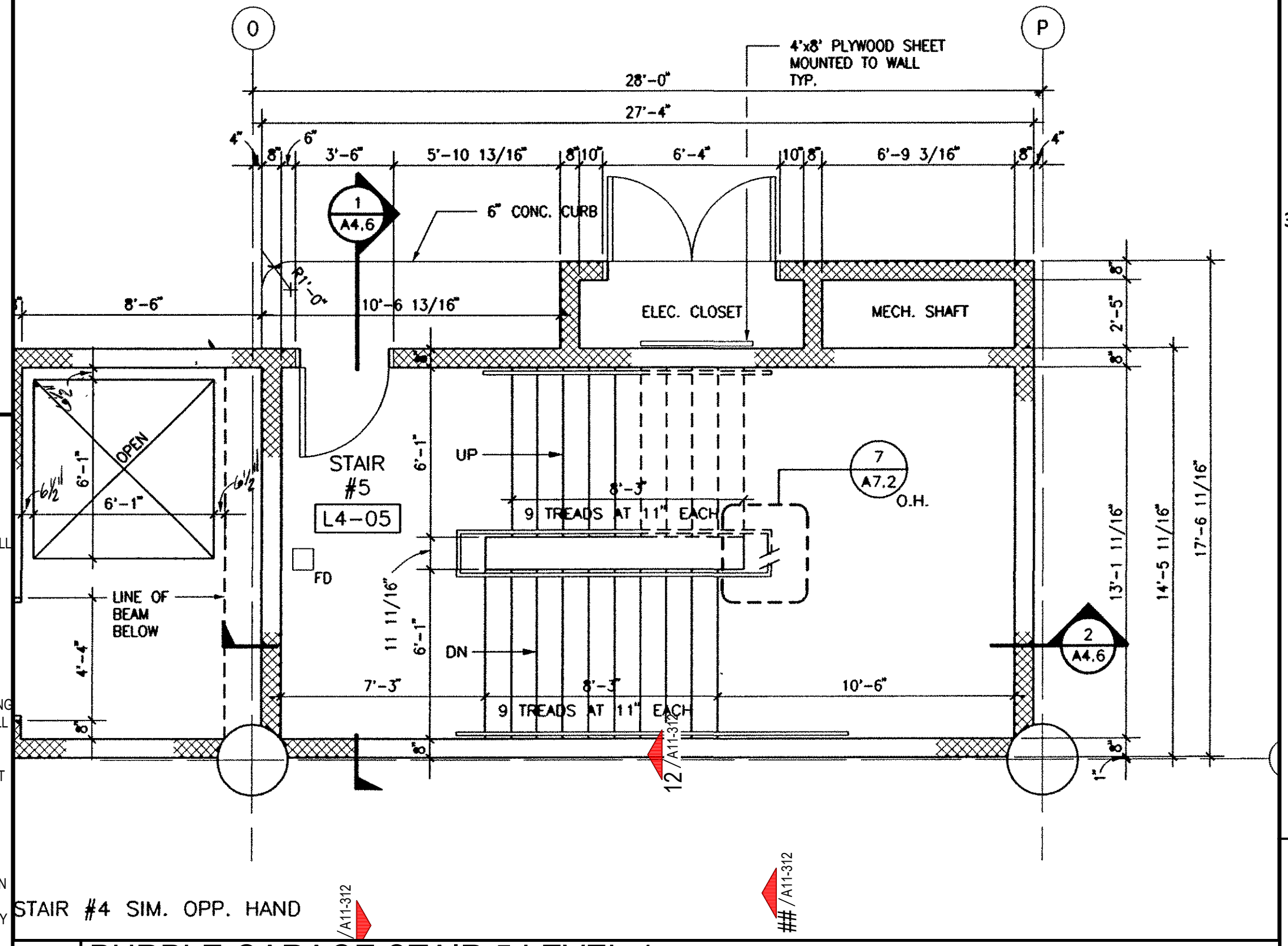
DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category	Noe Almaguer Tx. REG. NO. 22651 DATE: July 24, 2023
IFR	FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.
ISSUED FOR REVIEW	

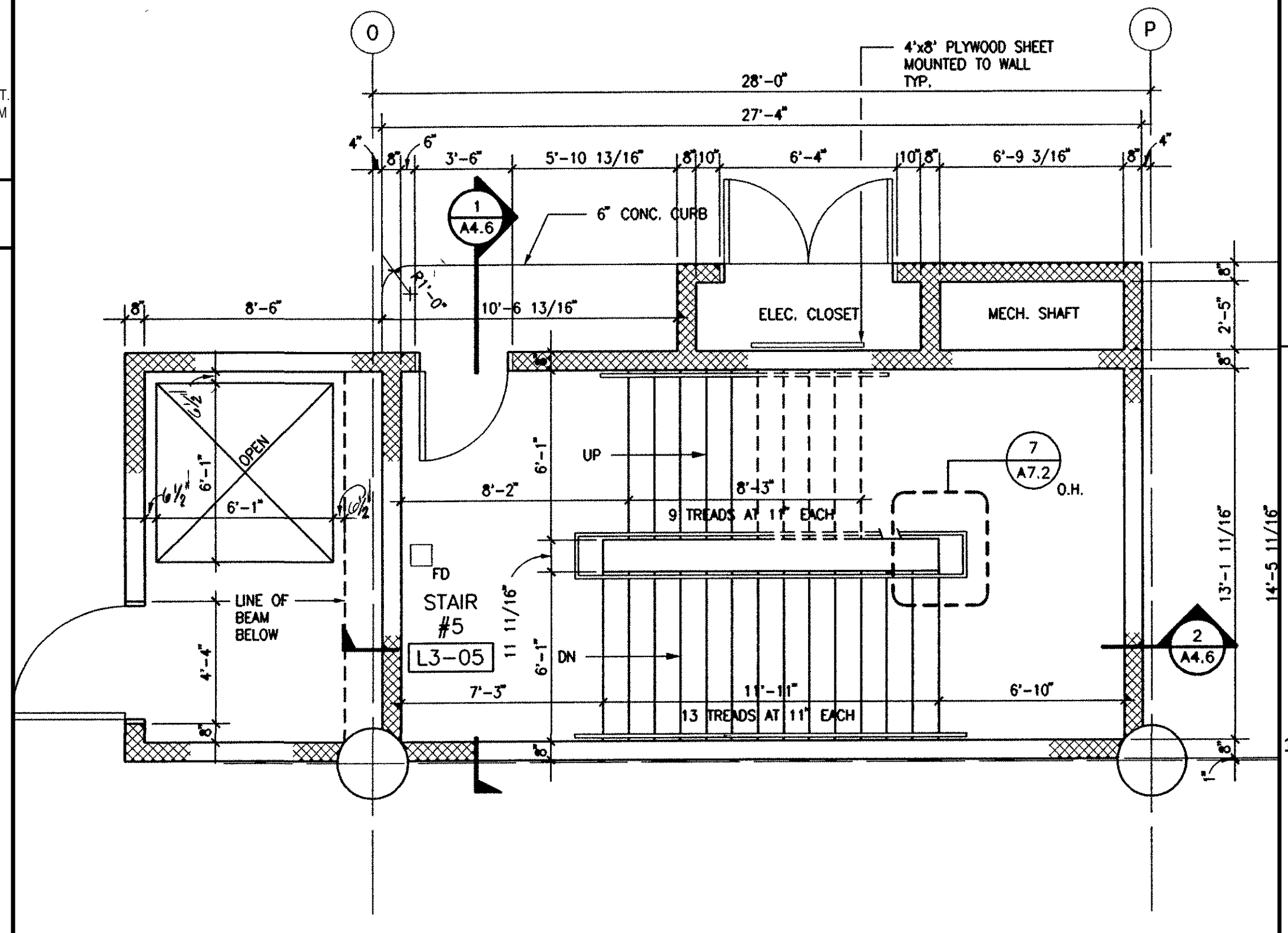
TERMINAL "C"

SHEET NAME:
PURPLE GARAGE STAIR 5 LEVEL 3-4

SHEET No. A11-352 SCALE:



14 PURPLE GARAGE STAIR 5 LEVEL 4
1/4" = 1'-0"



04 PURPLE GARAGE STAIR 5 LEVEL 3
1/4" = 1'-0"

- 13 GENERAL NOTES**
1' = 1'-0"
- HIGH PRESSURE WASHING AND ABRASIVE BLASTING OF TREADS, RISERS, LANDINGS, UNDERSIDE OF STAIRS, GUARDRAILS AND HANDRAILS, SURFACE PREPARATION OF SUBSTRATES AS REQUIRED FOR ACCEPTANCE OF PAINT, INCLUDING CLEANING, SMALL CRACK REPAIR, PATCHING, CAULKING, AND MAKING GOOD SURFACES AND AREAS. SEALING / PRIMING SURFACES FOR REPAINTING.
 - PAINT METAL RAILS, UNDERSIDE OF STAIR PANS, STRINGERS AND RISERS AS SHOWN BELOW. FERROUS METAL - MISCELLANEOUS METALS PAINT WITH SEMI-GLOSS FINISH
PRIMER: PRO INDUSTRIAL™ PRO-CRYL® UNIVERSAL PRIMER, B66-310 SERIES
1ST COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
2ND COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
 - REPAIR DOOR FROM BINDING CONDITION.
 - REPLACE DOOR WITH LIKE KIND.
 - REPAIR OR PATCH HOLE IN METAL RISER, REPAINT.
 - REPAIR OR PATCH CRACK IN CONCRETE LANDING.
 - REPAIR OR PATCH CRACK IN CONCRETE MASONRY UNIT.
 - AREA OF EXCESSIVE RUSTING, REMOVE RUST AND PREPARE FOR PAINTING.
 - AREA UNDER CONSTRUCTION, WORK IS UNDER DIFFERENT CONTRACT. COMPLETE THE WORK OF THIS CONTRACT AND NOTIFY "HAS" AND THE ARCHITECT IF THERE IS ANYTHING STOPPING YOU FROM COMPLETING THE WORK.
 - INSTALL FOUNDATION ARMOR SX5000 PENETRATING SEALER CLEAR MATTE TRANSPARENT CONCRETE SEALER READY-TO-USE ON TREADS AND LANDINGS AFTER HP WASHING

- 03 KEYNOTES**
1' = 1'-0"
- 04 KEYNOTES**
1' = 1'-0"

A. WHERE REQUIRED, PRESSURE WASH EXTERIOR SURFACES PRIOR TO REPAINTING IN ACCORDANCE WITH MPI STANDARDS FOR TYPE OF SURFACES AND RECOMMENDED PRESSURES TO ENSURE COMPLETE REMOVAL OF ALL LOOSE PAINT, STAINS, DIRT, AND OTHER FOREIGN MATTER. THIS WORK SHALL BE CARRIED OUT ONLY BY QUALIFIED TRADESMAN EXPERIENCED IN PRESSURE WATER CLEANING. THE USE OF WATER HOSE CLEANING WILL NOT BE CONSIDERED SATISFACTORY, UNLESS SPECIFICALLY SPECIFIED. ALLOW SUFFICIENT DRYING TIME AND TEST ALL SURFACES USING AN ELECTRONIC MOISTURE METER BEFORE COMMENCING WORK.

B. SAND, CLEAN, DRY, ETCH, NEUTRALIZE AND/OR TEST ALL SURFACES UNDER ADEQUATE ILLUMINATION, VENTILATION AND TEMPERATURE REQUIREMENTS.

C. REMOVE AND SECURELY STORE ALL MISCELLANEOUS HARDWARE AND SURFACE FITTINGS / FASTENINGS (E.G. ELECTRICAL LIGHTS, MECHANICAL COVERS, DOOR AND WINDOW HARDWARE (E.G. HINGES, KNOBS, LOCKS, TRIM, FRAME STOPS) AND, REMOVABLE HAZARD / INSTRUCTION LABELS, FROM WALL AND SOFFIT SURFACES, DOORS AND FRAMES, PRIOR TO REPAINTING AND REPLACE UPON COMPLETION. CAREFULLY CLEAN AND REPLACE ALL SUCH ITEMS UPON COMPLETION OF REPAINTING WORK IN EACH AREA. DO NOT USE SOLVENT OR REACTIVE CLEANING AGENTS ON ITEMS THAT WILL MAR OR REMOVE FINISHES (E.G. LACQUER FINISHES). DOORS SHALL BE REMOVED BEFORE REPAINTING TO PAINT BOTTOM AND TOP EDGES AND THEN RE-HUNG.

D. PROTECT ALL EXTERIOR SURFACES AND AREAS, INCLUDING LANDSCAPING, WALKS, DRIVES, ALL ADJACENT BUILDING SURFACES (INCLUDING GLASS, ALUMINUM SURFACES, ETC.) AND EQUIPMENT AND ANY LABELS AND SIGNAGE FROM REPAINTING OPERATIONS AND DAMAGE BY DROP CLOTHS, SHIELDS, MASKING, TEMPLATES, OR OTHER SUITABLE PROTECTIVE MEANS AND MAKE GOOD ANY DAMAGE CAUSED BY FAILURE TO PROVIDE SUCH PROTECTION.

E. APPLY PRIMER, PAINT OR STAIN WITHIN AN APPROPRIATE TIME FRAME AFTER CLEANING AND PREPARATION TO PREVENT WEATHERING OR WATER STAINING OF SUBSTRATE OR BEFORE ENVIRONMENTAL CONDITIONS ENCOURAGE FLASH-RUSTING, RUSTING, CONTAMINATION OR WHEN THE MANUFACTURER'S PAINT SPECIFICATIONS REQUIRE EARLIER APPLICATIONS.

F. PRIMER, PAINT OR STAIN COATS SPECIFIED ARE INTENDED TO COVER SURFACES SATISFACTORILY WHEN APPLIED AT PROPER CONSISTENCY AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

G. PREVIOUSLY COATED SURFACES: MAINTENANCE PAINTING WILL FREQUENTLY NOT PERMIT OR REQUIRE COMPLETE REMOVAL OF ALL OLD COATINGS PRIOR TO REPAINTING. HOWEVER, ALL SURFACE CONTAMINATION SUCH AS OIL, GREASE, LOOSE PAINT, MILL SCALE, DIRT, FOREIGN MATTER, RUST, MOLD, MILDEW, MORTAR, EFFLORESCENCE, AND SEALERS MUST BE REMOVED TO ASSURE SOUND BONDING TO THE TIGHTLY ADHERING OLD PAINT. GLOSSY SURFACES OF OLD PAINT FILMS MUST BE CLEAN AND DULL BEFORE REPAINTING. THOROUGH WASHING WITH AN ABRASIVE CLEANSER WILL CLEAN AND DULL IN ONE OPERATION, OR, WASH THOROUGHLY AND DULL BY SANDING. SPOT PRIME ANY BARE AREAS WITH AN APPROPRIATE PRIMER. RECOGNIZE THAT ANY SURFACE PREPARATION SHORT OF TOTAL REMOVAL OF THE OLD COATING MAY COMPROMISE THE SERVICE LENGTH OF THE SYSTEM. CHECK FOR COMPATIBILITY BY APPLYING A TEST PATCH OF THE RECOMMENDED COATING SYSTEM, COVERING AT LEAST 2 TO 3 SQUARE FEET. ALLOW TO DRY ONE WEEK BEFORE TESTING ADHESION PER ASTM D3359. IF THE COATING SYSTEM IS INCOMPATIBLE, COMPLETE REMOVAL IS REQUIRED PER ASTM D4259.

REVISIONS			
No.	DESCRIPTION	DATE	BY

DESIGNER:	J TOHILL
DRAWN BY:	J TOHILL
CHECKED BY:	TBD
ISSUE DATE:	12/15/2022
APPROVED BY:	
APPROVAL DATE:	

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category

IFR

ISSUED FOR REVIEW

Noe Almaguer
Tx. REG. NO. 22651
DATE: July 21, 2023

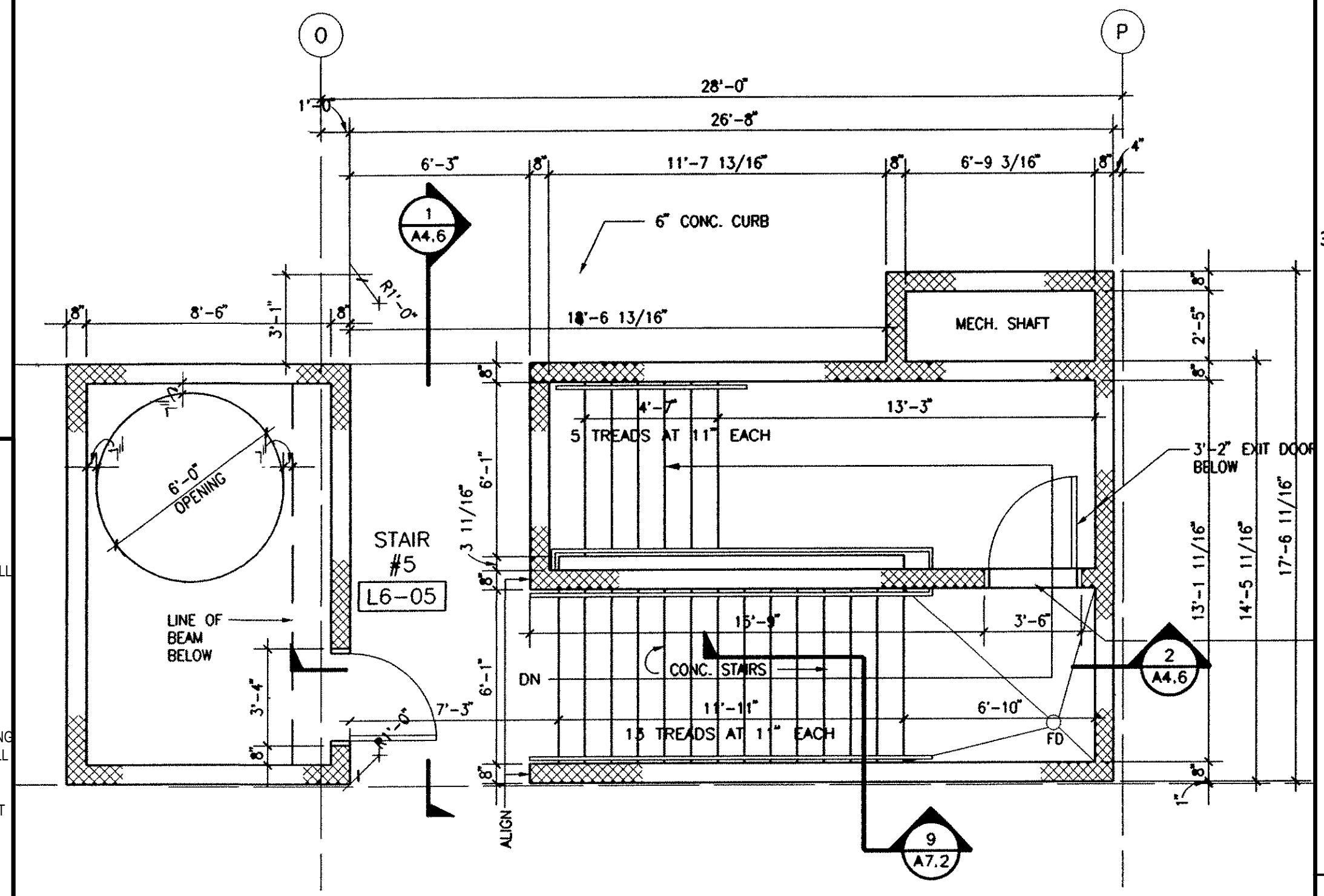
FOR
INTERIM REVIEW
AND NOT INTENDED
FOR CONSTRUCTION,
BIDDING OR PERMIT
PURPOSES.

TERMINAL "C"

SHEET NAME:
PURPLE GARAGE STAIR 5 LEVEL 5-6

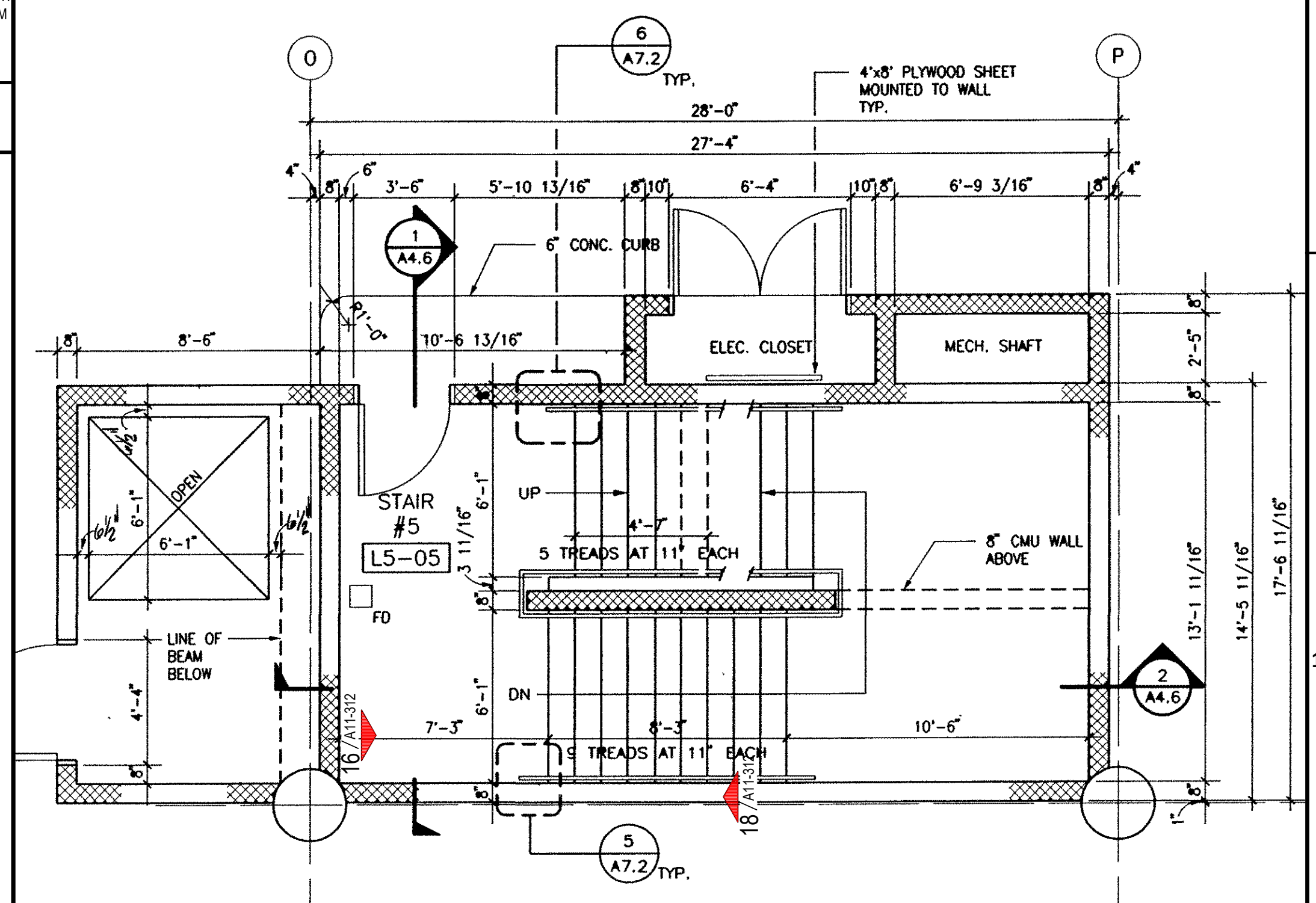
SHEET No. A11-353 SCALE:

SHEET SIZE: 22"x34" ANSI-D



STAIR #4 SIM. OPP. HAND

14 PURPLE GARAGE STAIR 5 LEVEL 6
1/4" = 1'-0"



STAIR #4 SIM. OPP. HAND

04 PURPLE GARAGE STAIR 5 LEVEL 5
1/4" = 1'-0"

- A. WHERE REQUIRED, PRESSURE WASH EXTERIOR SURFACES PRIOR TO REPAINTING IN ACCORDANCE WITH MPI STANDARDS FOR TYPE OF SURFACES AND RECOMMENDED PRESSURES TO ENSURE COMPLETE REMOVAL OF ALL LOOSE PAINT, STAINS, DIRT, AND OTHER FOREIGN MATTER. THIS WORK SHALL BE CARRIED OUT ONLY BY QUALIFIED TRADESMAN EXPERIENCED IN PRESSURE WATER CLEANING. THE USE OF WATER HOSE CLEANING WILL NOT BE CONSIDERED SATISFACTORY, UNLESS SPECIFICALLY SPECIFIED. ALLOW SUFFICIENT DRYING TIME AND TEST ALL SURFACES USING AN ELECTRONIC MOISTURE METER BEFORE COMMENCING WORK.
- B. SAND, CLEAN, DRY, ETCH, NEUTRALIZE AND/OR TEST ALL SURFACES UNDER ADEQUATE ILLUMINATION, VENTILATION AND TEMPERATURE REQUIREMENTS.
- C. REMOVE AND SECURELY STORE ALL MISCELLANEOUS HARDWARE AND SURFACE FITTINGS / FASTENINGS (E.G. ELECTRICAL LIGHTS, MECHANICAL LOUVERS, DOOR AND WINDOW HARDWARE (E.G. HINGES, KNOBS, LOCKS, TRIM, FRAME STOPS) AND, REMOVABLE HAZARD / INSTRUCTION LABELS, FROM WALL AND SOFFIT SURFACES, DOORS AND FRAMES, PRIOR TO REPAINTING AND REPLACE UPON COMPLETION. CAREFULLY CLEAN AND REPLACE ALL SUCH ITEMS UPON COMPLETION OF REPAINTING WORK IN EACH AREA. DO NOT USE SOLVENT OR REACTIVE CLEANING AGENTS ON ITEMS THAT WILL MAR OR REMOVE FINISHES (E.G. LACQUER FINISHES). DOORS SHALL BE REMOVED BEFORE REPAINTING TO PAINT BOTTOM AND TOP EDGES AND THEN RE-HUNG.
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1' = 1'-0"
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PRIMER: PRO INDUSTRIAL™ PRO-CRYL® UNIVERSAL PRIMER, B66-310 SERIES
1ST COAT: PRO INDUSTRIAL™ ACRYLIC SEMI-GLOSS, B66-650 SERIES
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- 8 AREA UNDER CONSTRUCTION, WORK IS UNDER DIFFERENT CONTRACT. COMPLETE THE WORK OF THIS CONTRACT AND NOTIFY "HAS" AND THE ARCHITECT IF THERE IS ANYTHING STOPPING YOU FROM COMPLETING THE WORK.
- 9 INSTALL FOUNDATION ARMOR SX5000 PENETRATING SEALER CLEAR MATTE TRANSPARENT CONCRETE SEALER READY-TO-USE ON TREADS AND LANDINGS AFTER HP WASHING

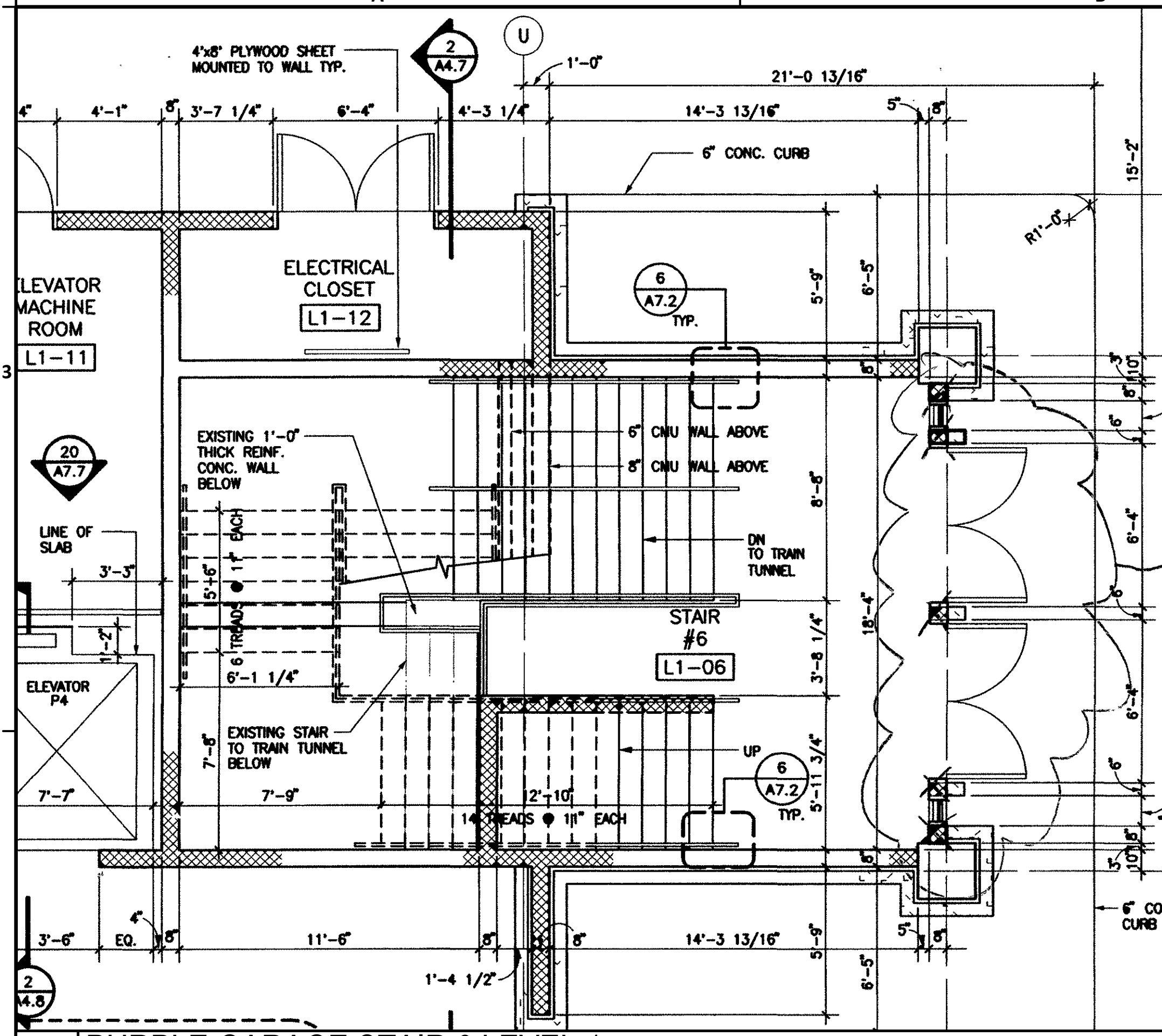
- 03 KEYNOTES**
1' = 1'-0"

REVISIONS			
No.	DESCRIPTION	DATE	BY

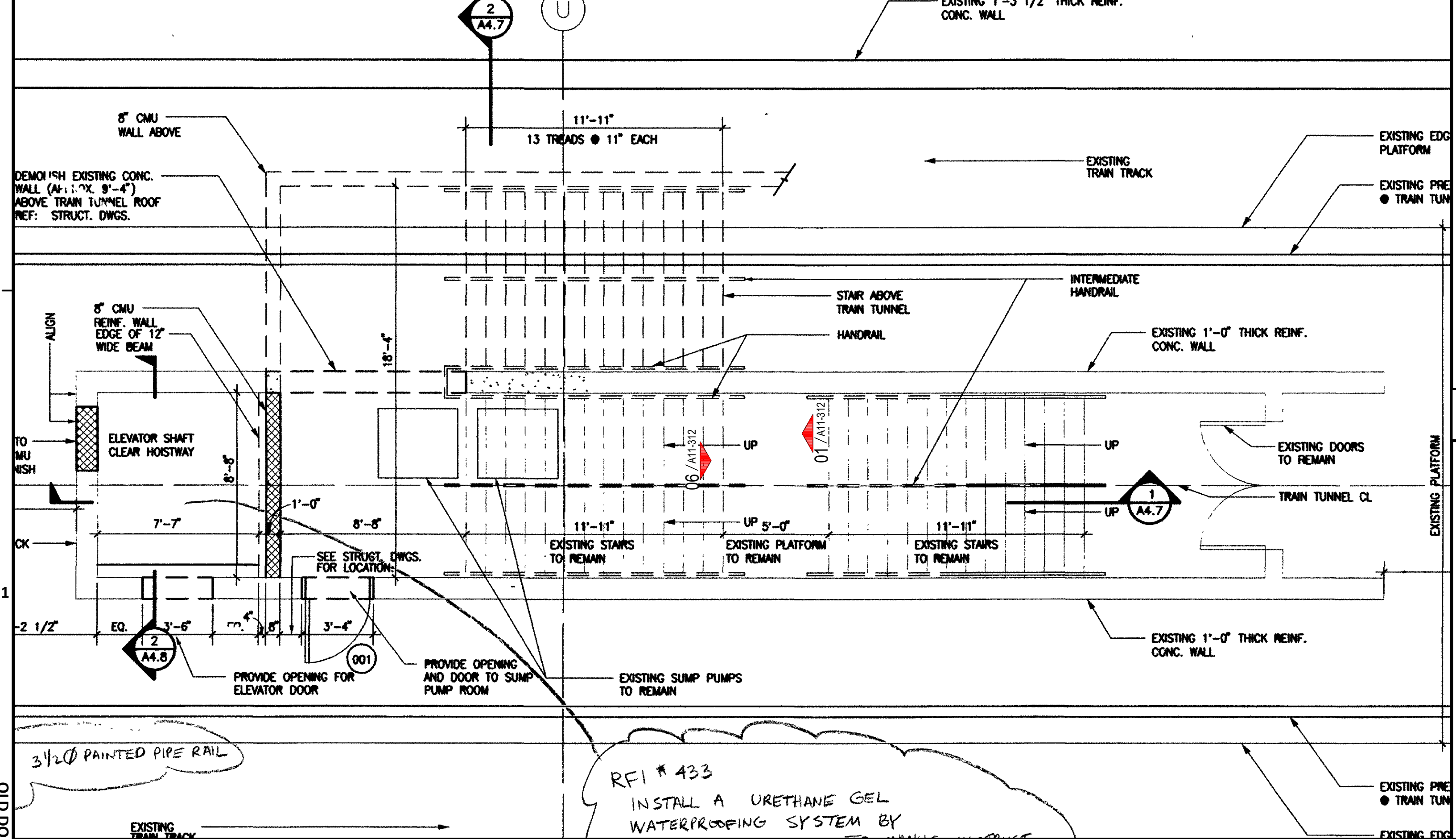
DESIGNER:	J TOHILL
DRAWN BY:	J TOHILL
CHECKED BY:	TBD
ISSUE DATE:	12/15/2022
APPROVED BY:	
APPROVAL DATE:	

DIRECTOR of HOUSTON AIRPORT SYSTEM	
Review/Approval Category	Noe Almaguer Tx. REG. NO. 22651 DATE: July 21, 2023
IFR	FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.

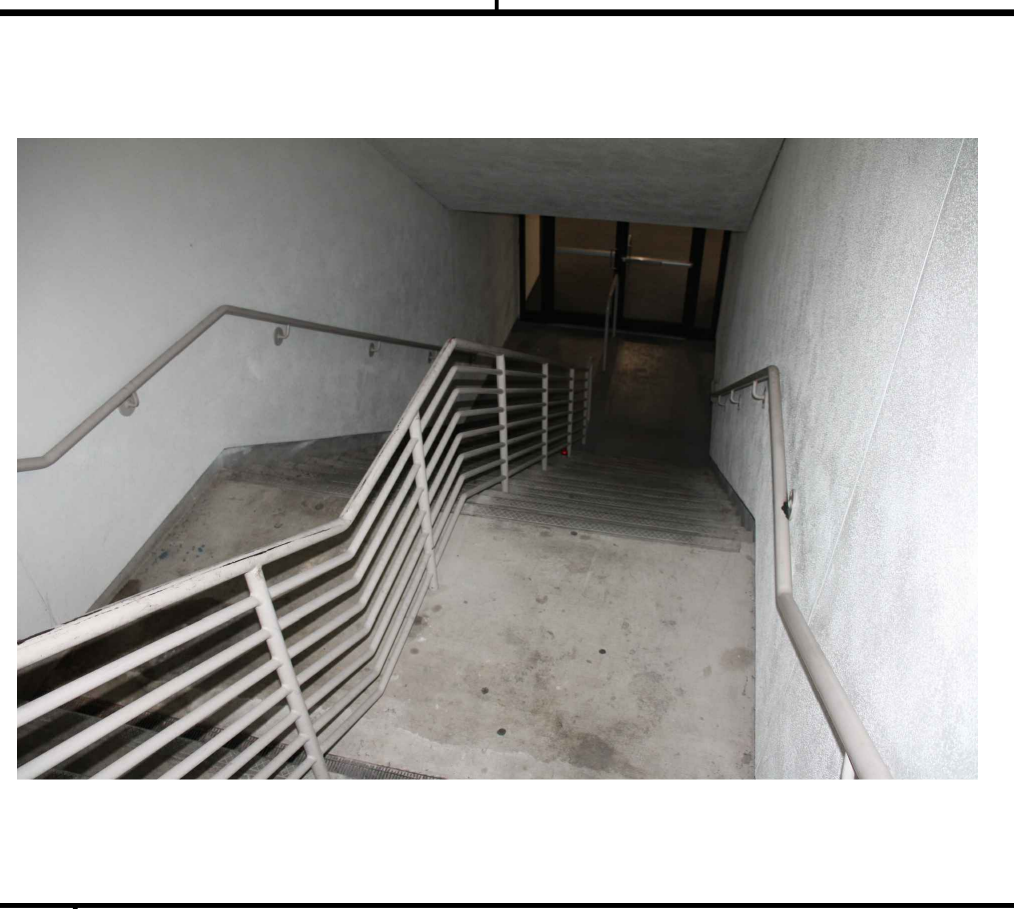
TERMINAL "C"
SHEET NAME:
PURPLE GARAGE STAIR 6 LEVEL 0-1
SHEET No. A11-361 SCALE: 1"=1'-0"



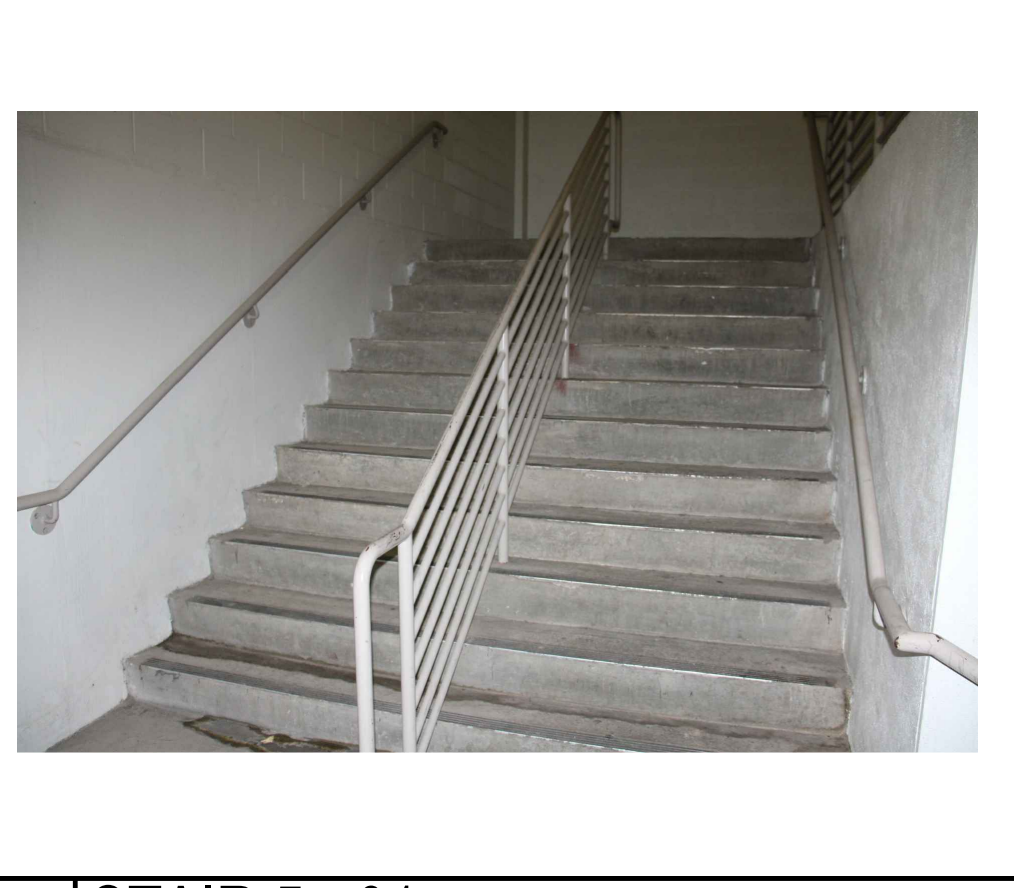
11 PURPLE GARAGE STAIR 6 LEVEL 1
1/4" = 1'-0"



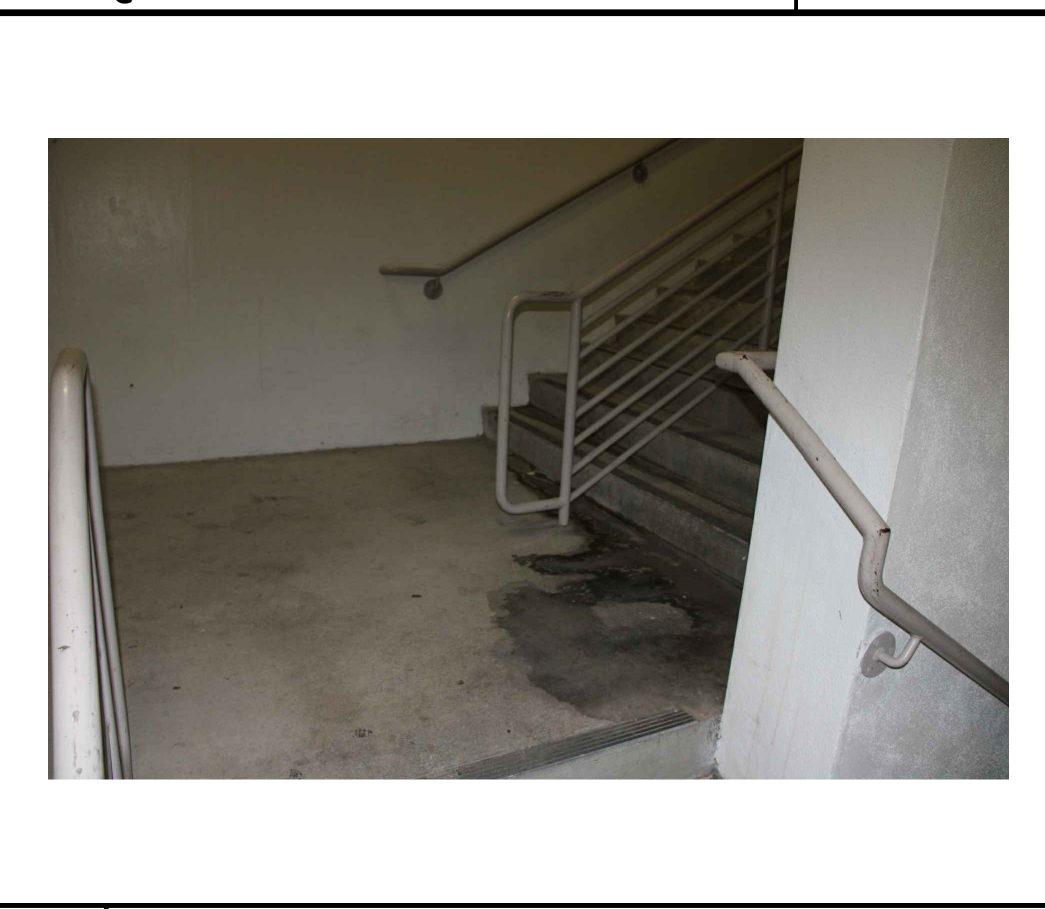
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1/4" = 1'-0"



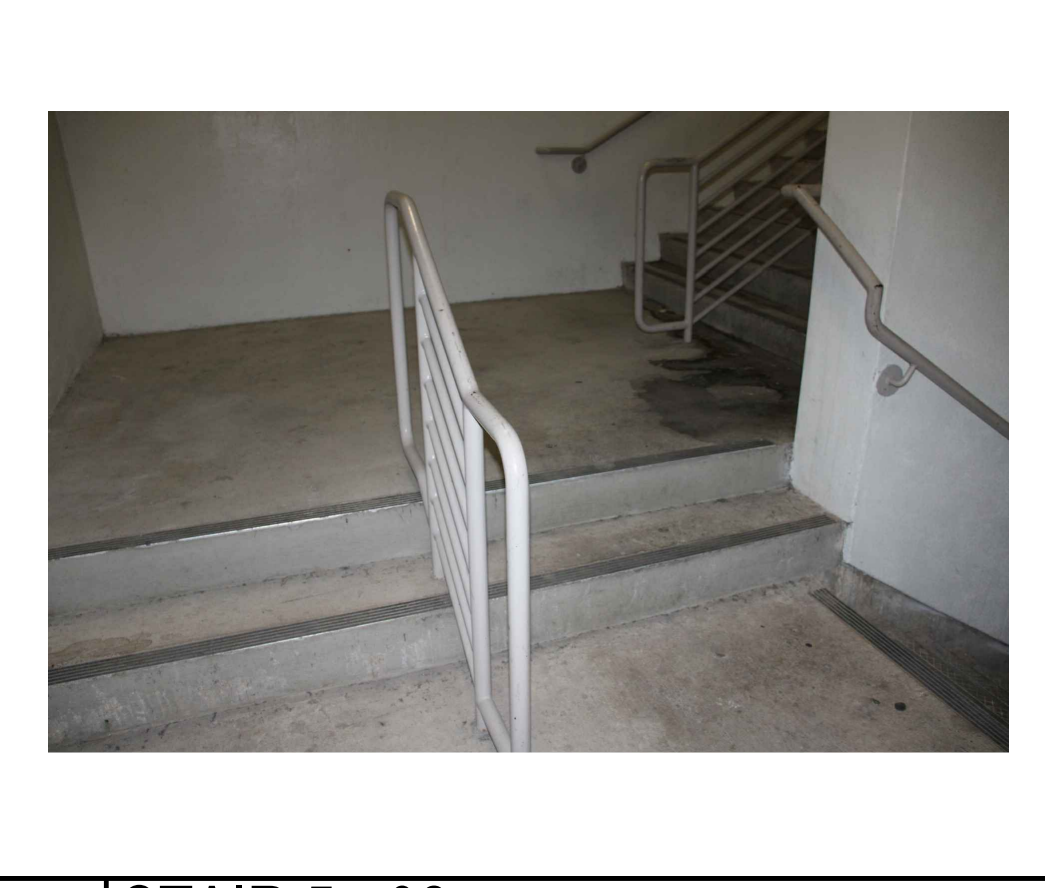
18 STAIR 5 - 04
1' = 1'-0"



13 STAIR 5 - 01
1' = 1'-0"



19 STAIR 5 - 06
1' = 1'-0"



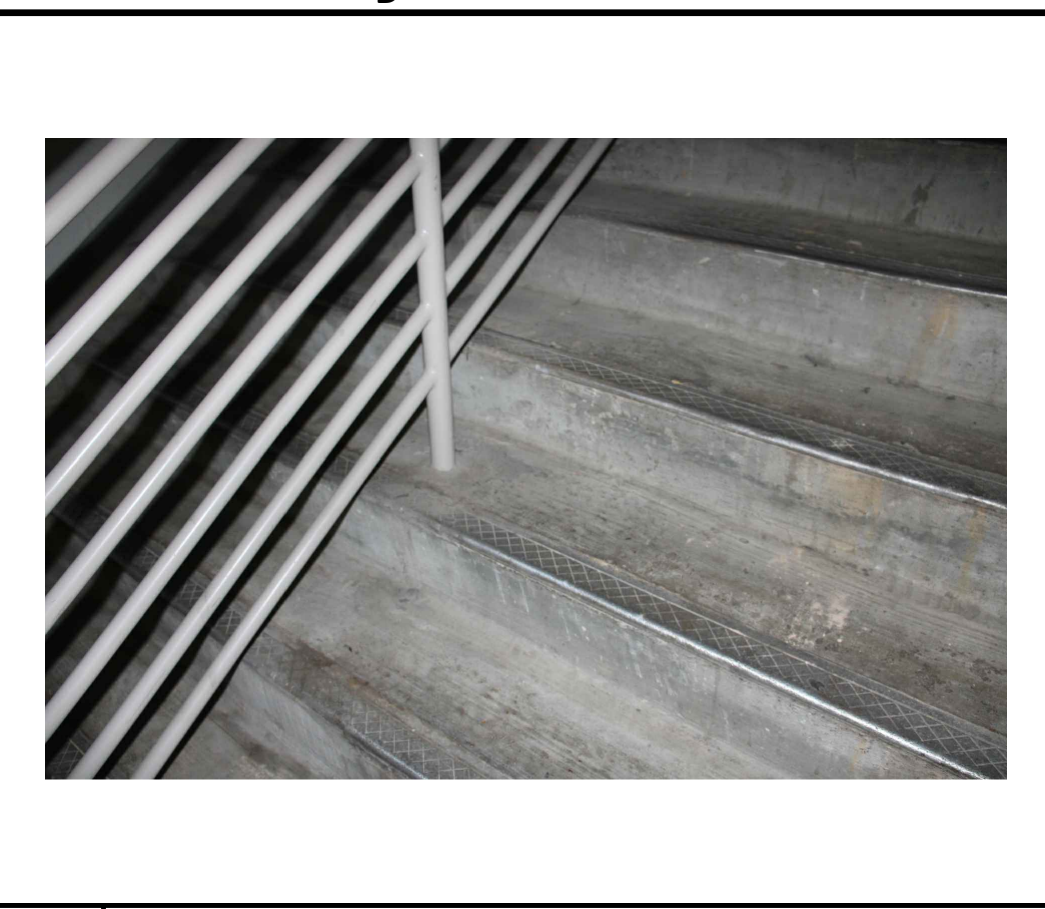
14 STAIR 5 - 02
1' = 1'-0"



09 STAIR 5 - 03
1' = 1'-0"



04 STAIR 5 - 05
1' = 1'-0"



20 STAIR 5 - 08
1' = 1'-0"

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05 KEYNOTES
1' = 1'-0"

E:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A11-361 PURPLE GARAGE STAIR 6 LEVEL 0-1.DWG
 PLOT DATE: 24 JULY 2023 8:11:27 PM
 OLD DOW No.:
 DOA DWG FILE:

REVISIONS			
No.	DESCRIPTION	DATE	BY

DESIGNER:	J TOHILL
DRAWN BY:	J TOHILL
CHECKED BY:	TBD
ISSUE DATE:	12/15/2022
APPROVED BY:	
APPROVAL DATE:	

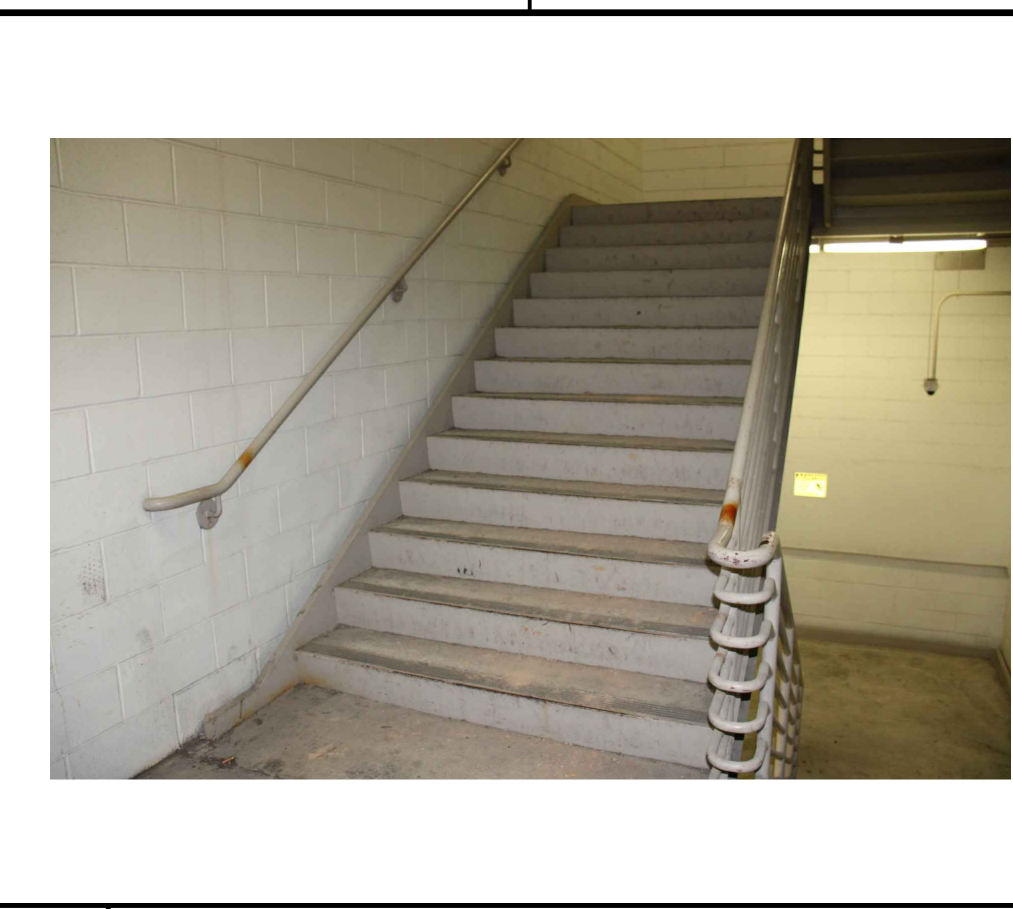
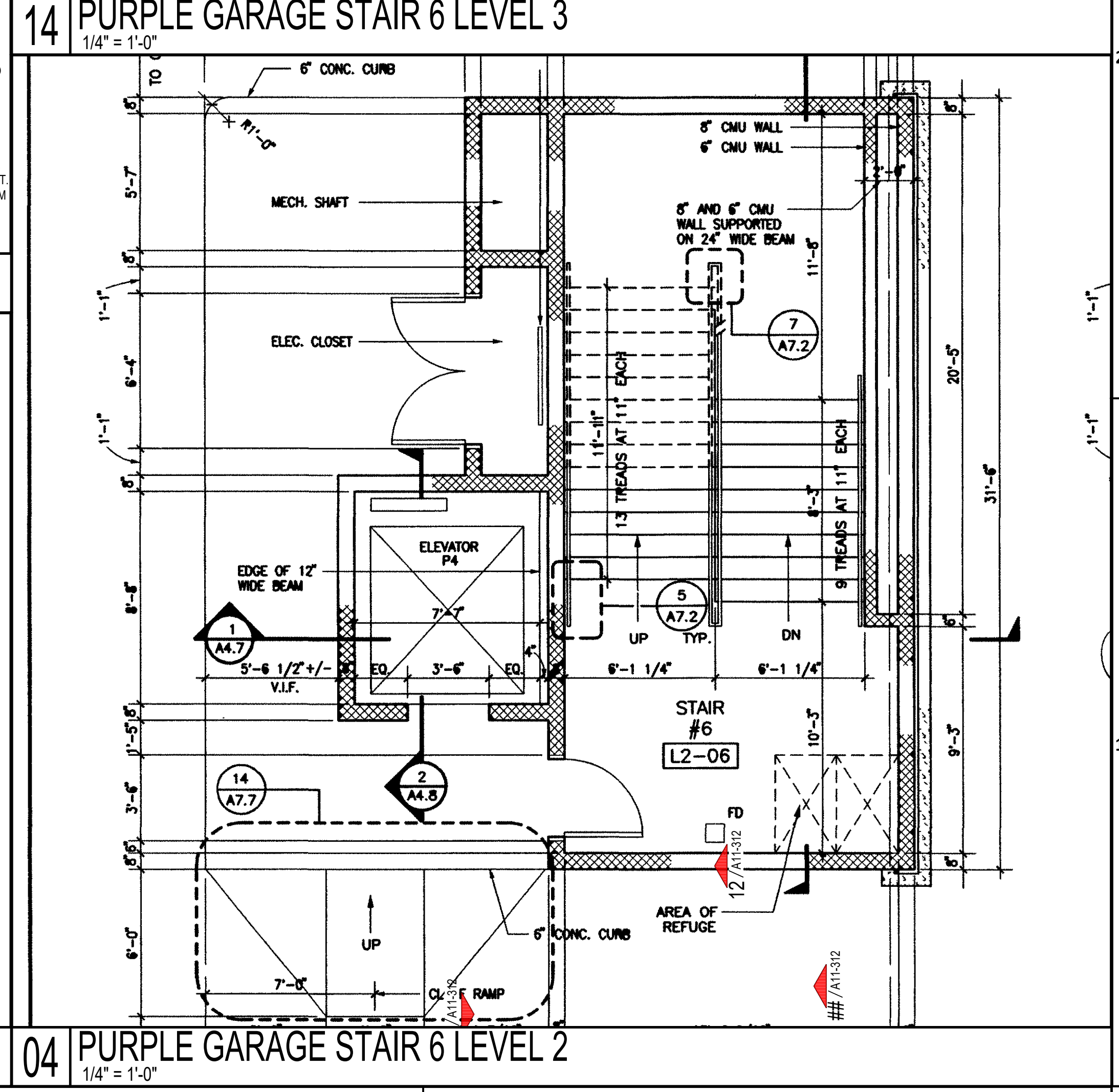
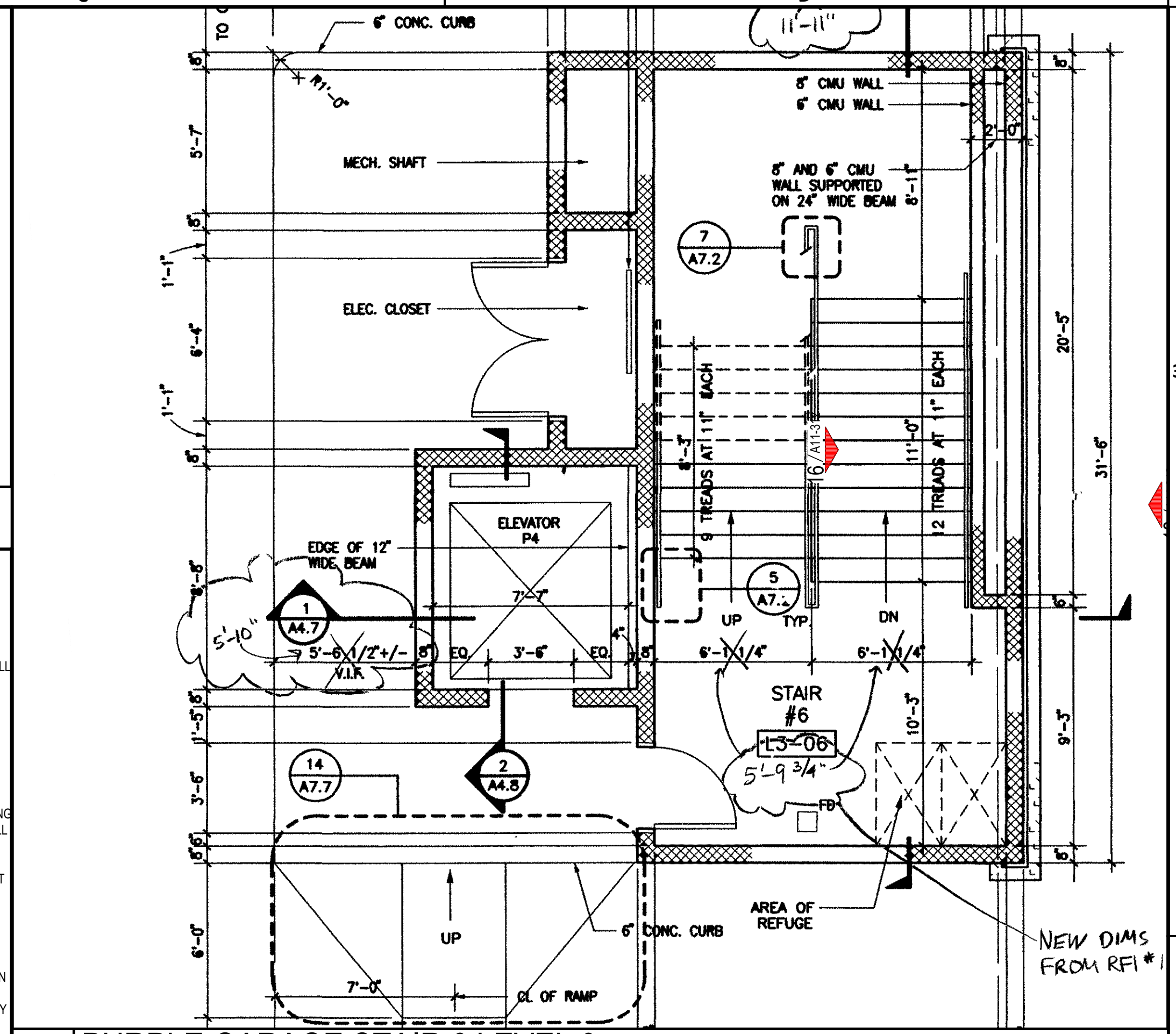
DIRECTOR
of
HOUSTON AIRPORT SYSTEM

	Noe Almaguer Tx. REG. NO. 22651 DATE: July 21, 2023
	FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.

TERMINAL "C" NORTH

SHEET NAME:
PURPLE GARAGE STAIR 6 LEVEL 2-3

SHEET No. A11-362 SCALE: 1/4" = 1'-0"



18 STAIR 5 - 05
1' = 1'-0"

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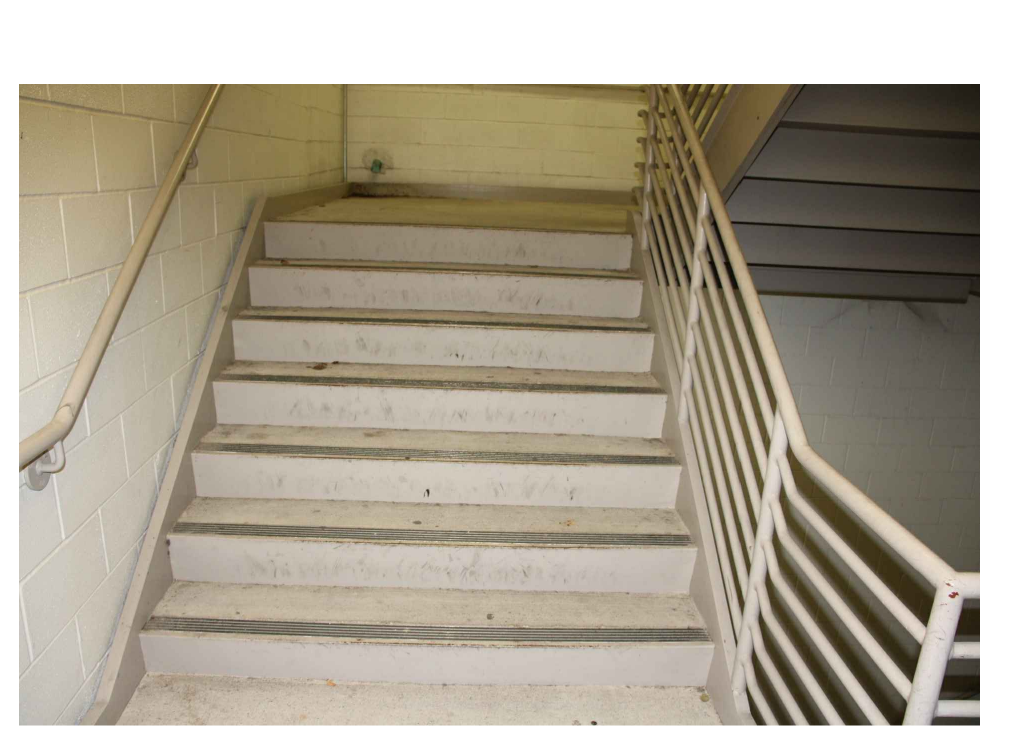
03 KEYNOTES
1' = 1'-0"



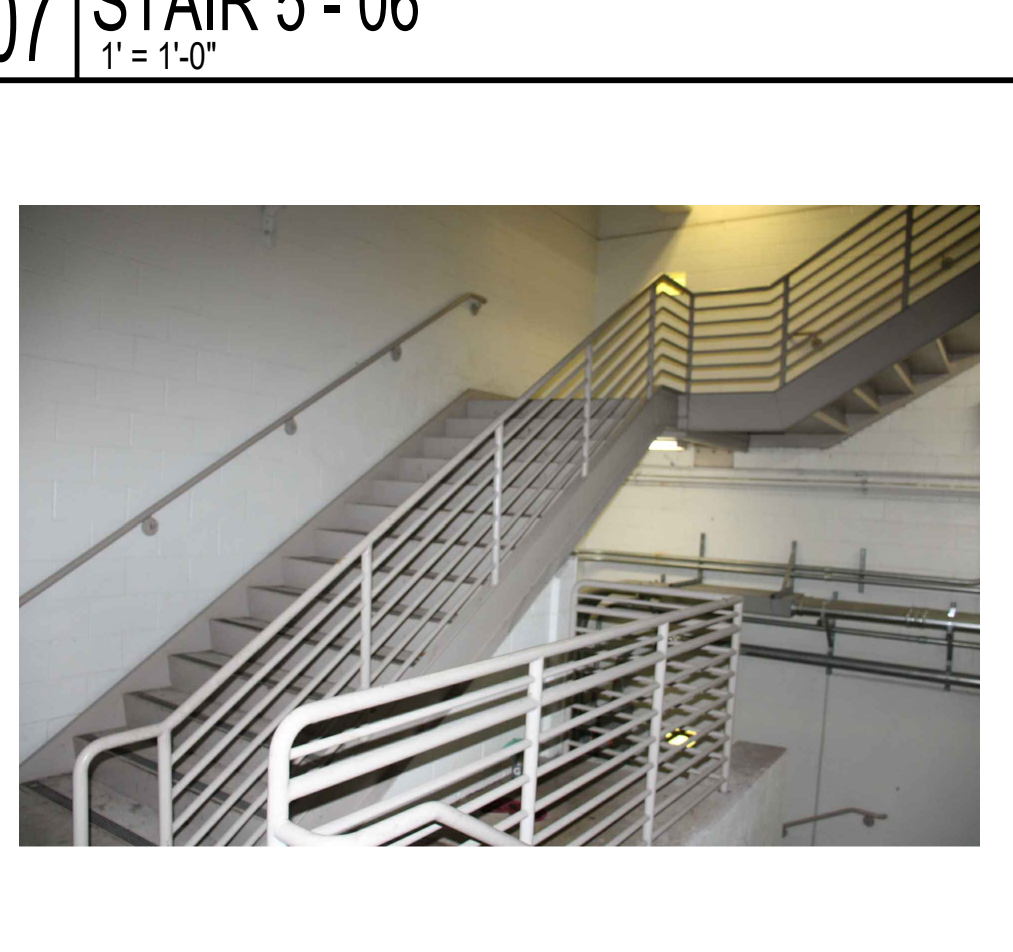
17 STAIR 5 - 04
1' = 1'-0"



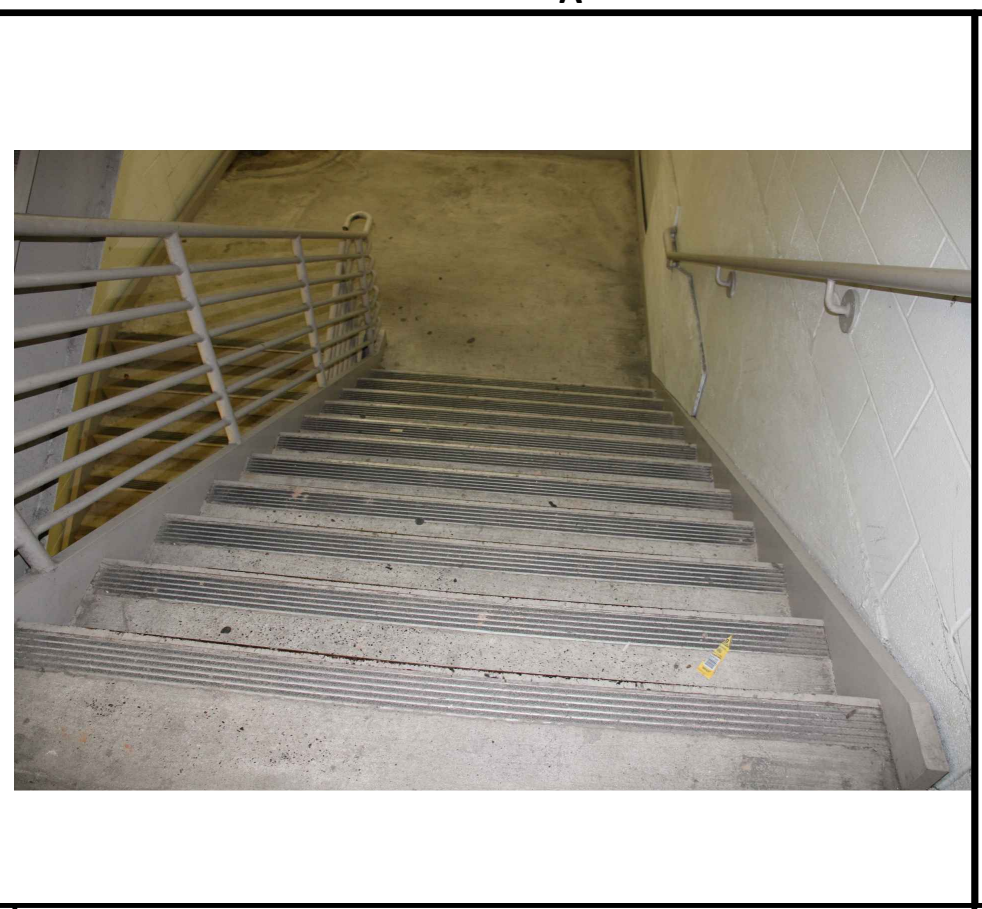
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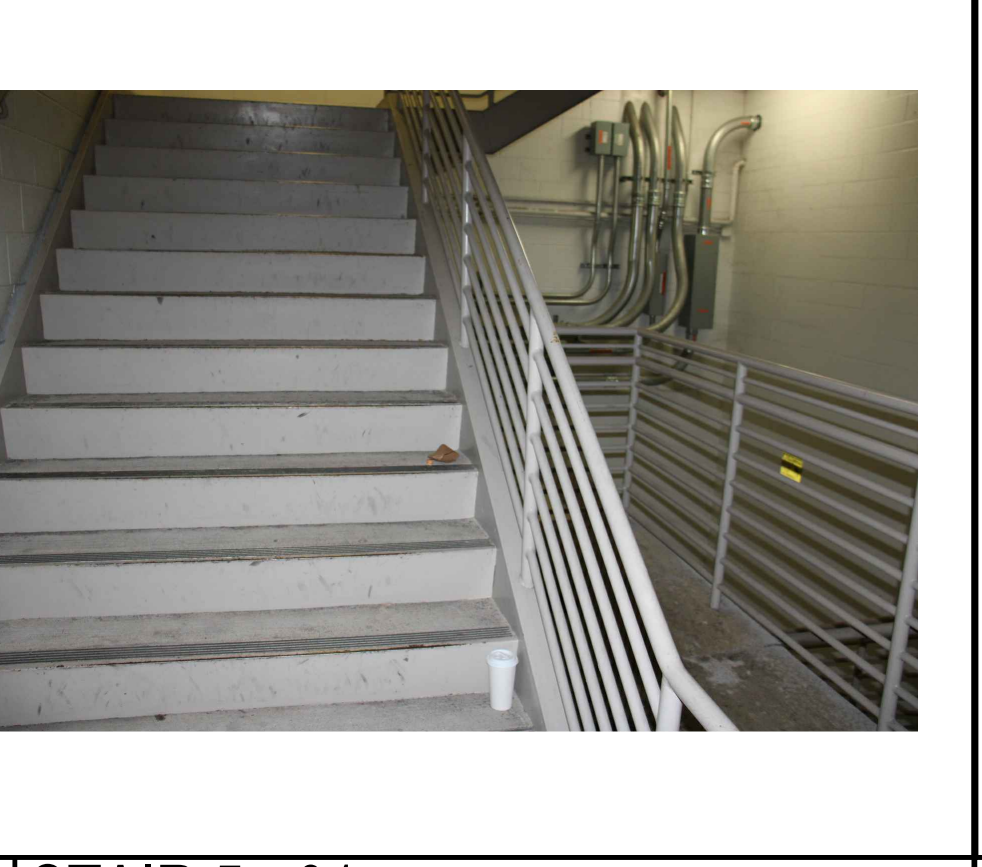
07 STAIR 5 - 06
1' = 1'-0"



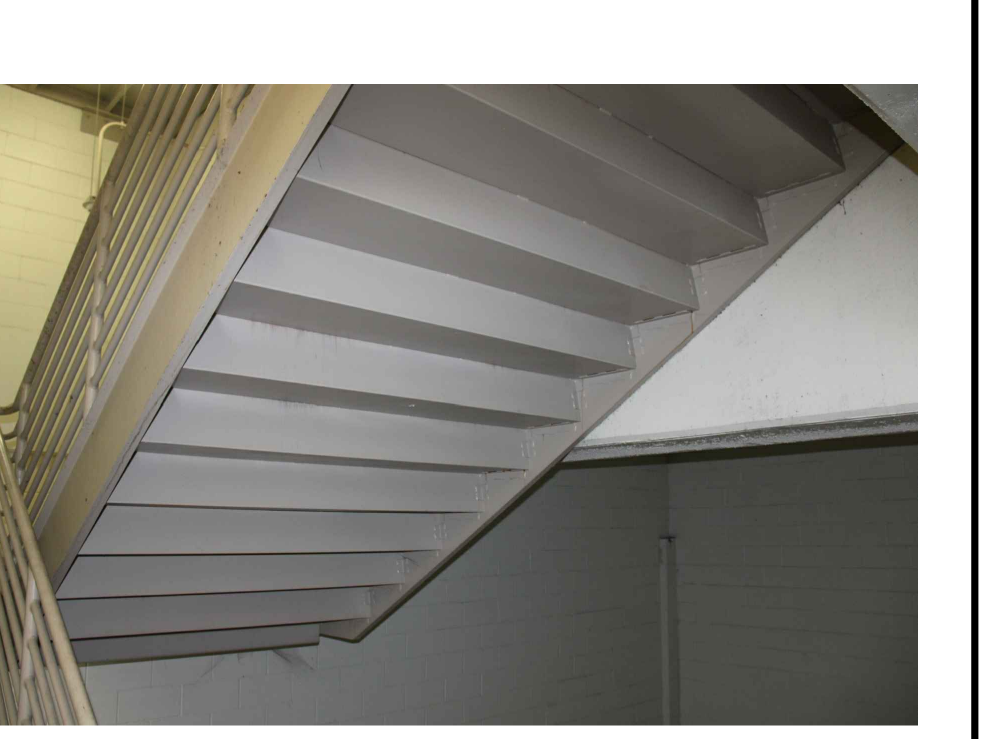
02 STAIR 5 - 11
1' = 1'-0"



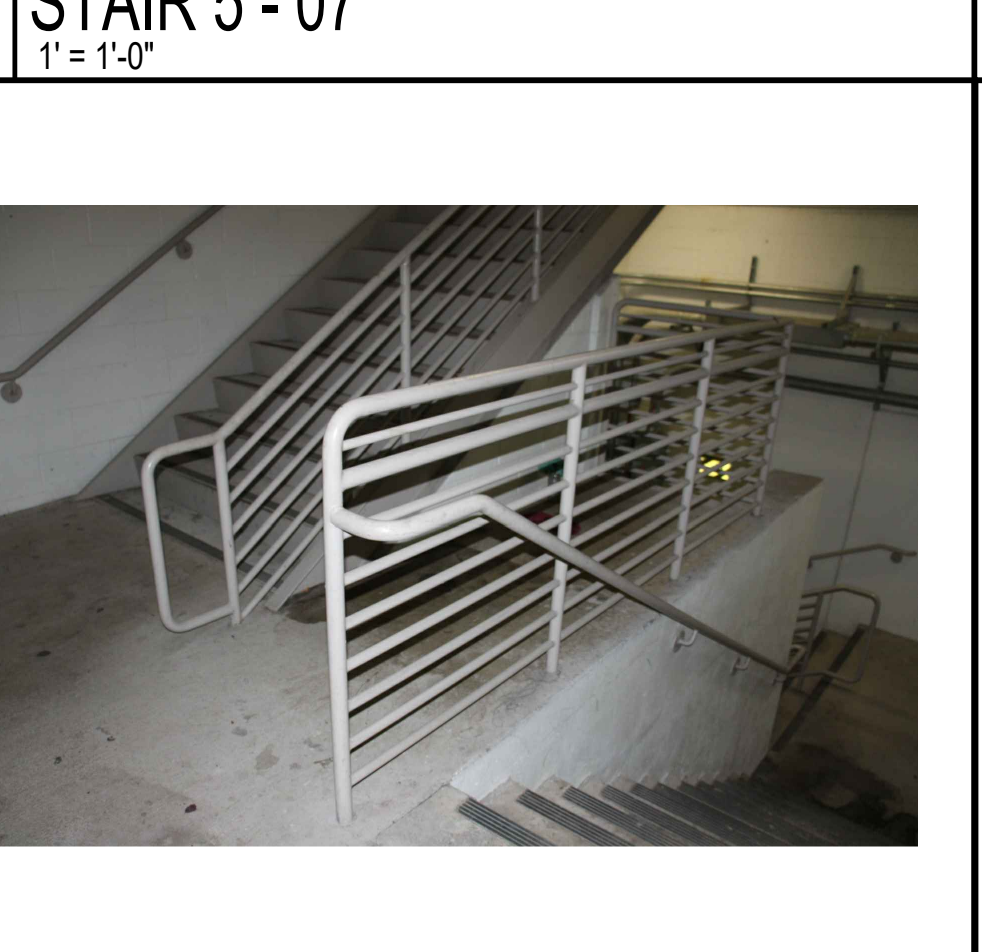
16 STAIR 5 - 03
1' = 1'-0"



11 STAIR 5 - 01
1' = 1'-0"



06 STAIR 5 - 07
1' = 1'-0"



01 STAIR 5 - 10
1' = 1'-0"

E:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A11-362 PURPLE GARAGE STAIR 6 LEVEL 2-3.DWG
 PLOT DATE: 24 July 2023 8:11:42 PM
 OLD DCA No.:
 DCA DWG FILE:
 FILE NAME:

REVISIONS

No.	DESCRIPTION	DATE	BY

DESIGNER: J TOHILL
DRAWN BY: J TOHILL
CHECKED BY: TBD
ISSUE DATE: 12/15/2022
APPROVED BY:
APPROVAL DATE:

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/Approval Category

IFR

ISSUED FOR REVIEW

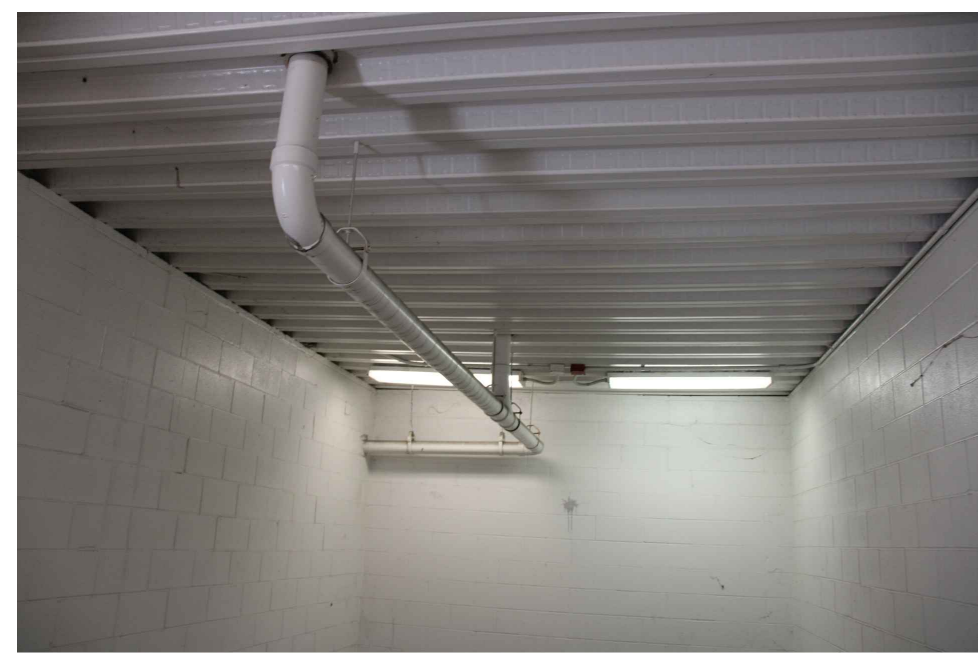
Noe Almaguer
Tx. REG. NO. 22651
DATE: July 21, 2023

FOR
INTERIM REVIEW
AND NOT INTENDED
FOR CONSTRUCTION,
BIDDING OR PERMIT
PURPOSES.

TERMINAL "C"

SHEET NAME:
PURPLE GARAGE STAIR 6 LEVEL 4-5

SHEET No. A11-363 SCALE:



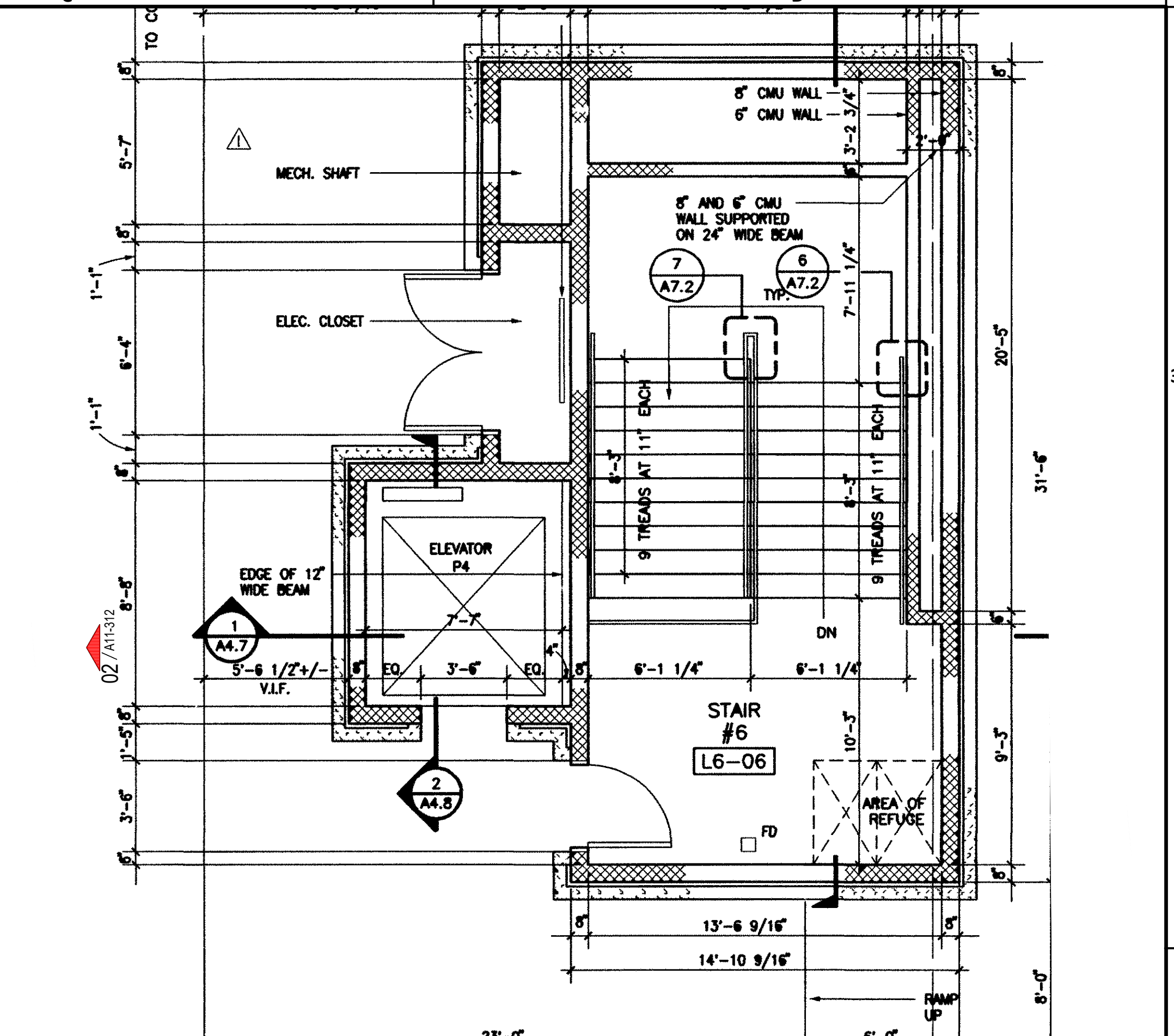
18 STAIR 5 - 02
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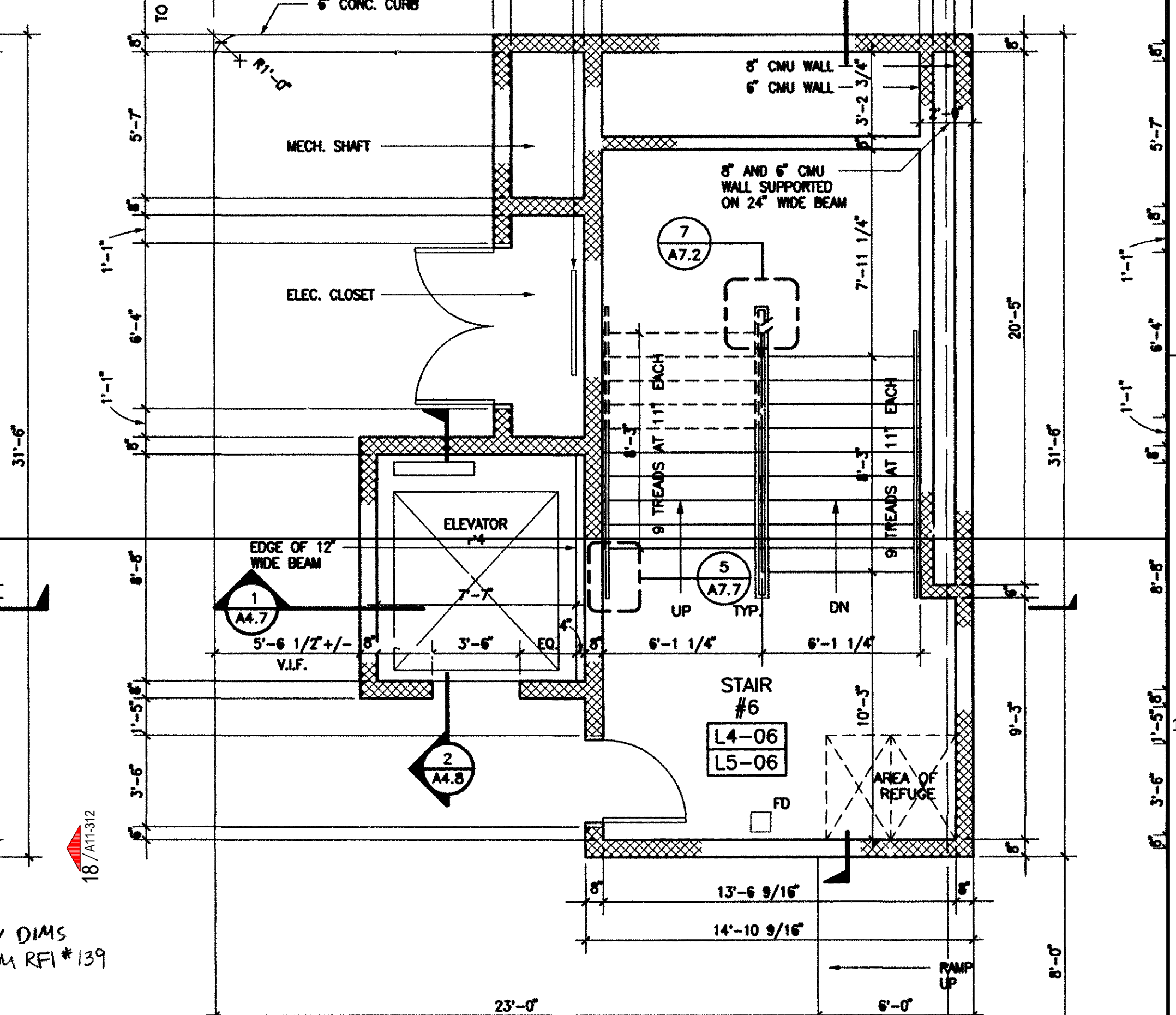
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- 6 REPAIR OR PATCH CRACK IN CONCRETE MASONRY UNIT.
- 7 AREA OF EXCESSIVE RUSTING, REMOVE RUST AND PREPARE FOR PAINTING.
- 8 AREA UNDER CONSTRUCTION, WORK IS UNDER DIFFERENT CONTRACT. COMPLETE THE WORK OF THIS CONTRACT AND NOTIFY "HAS" AND THE ARCHITECT IF THERE IS ANYTHING STOPPING YOU FROM COMPLETING THE WORK.
- 9 INSTALL FOUNDATION ARMOR SX5000 PENETRATING SEALER CLEAR MATTE TRANSPARENT CONCRETE SEALER READY-TO-USE ON TREADS AND LANDINGS AFTER HP WASHING

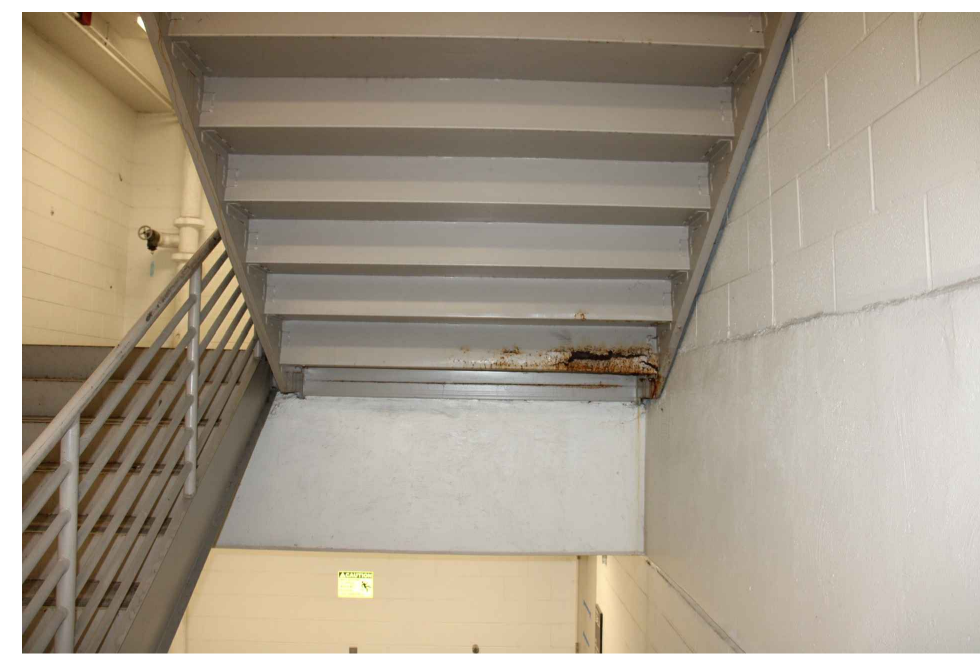
03 KEYNOTES
1" = 1'-0"



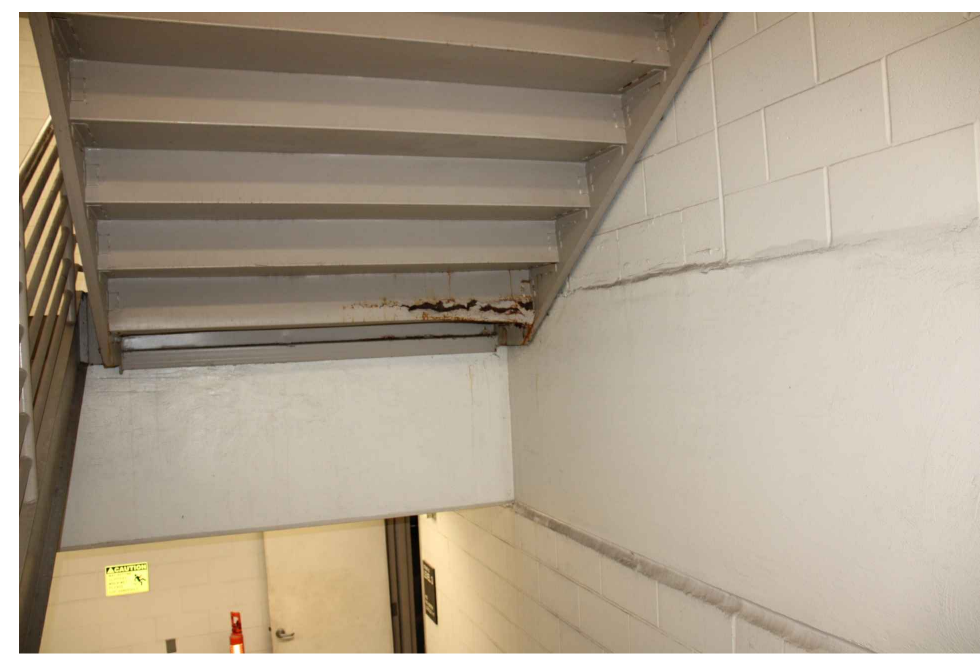
14 PURPLE GARAGE STAIR 6 LEVEL 6
1/4" = 1'-0"



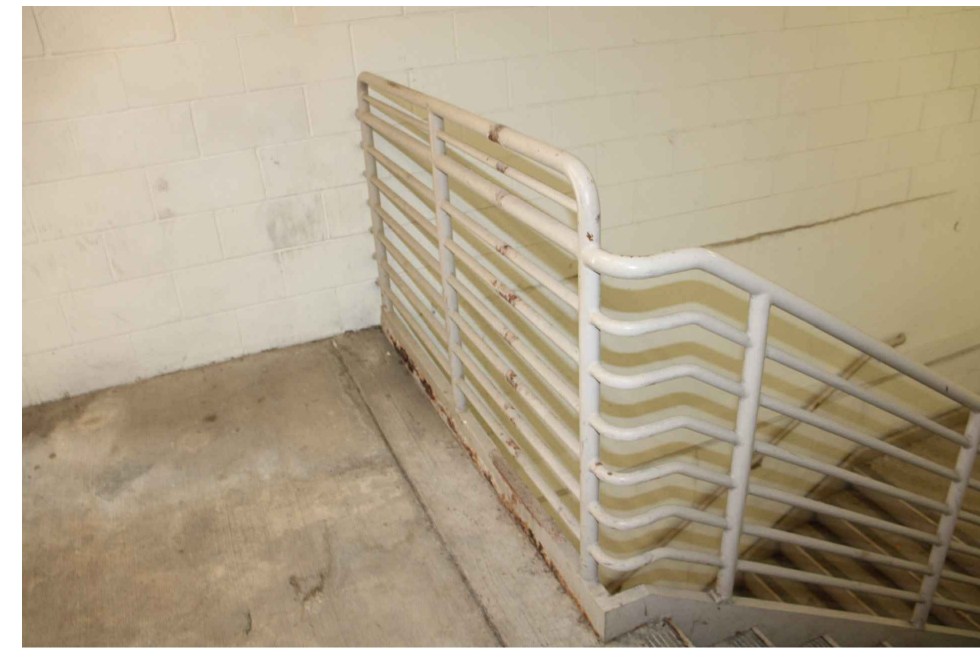
04 PURPLE GARAGE STAIR 6 LEVEL 4-5
1/4" = 1'-0"



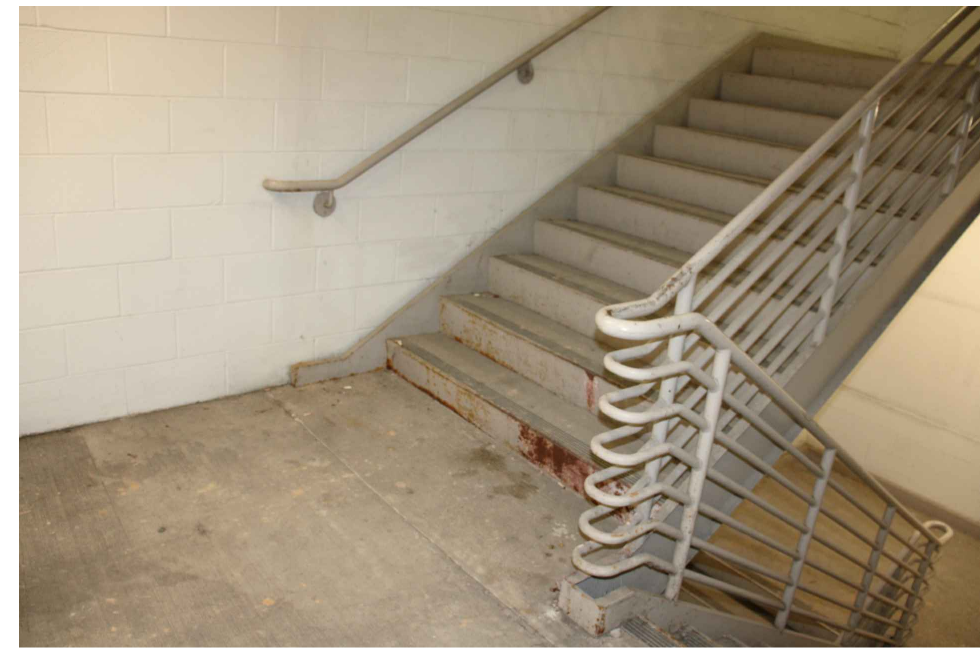
16 STAIR 5 - 08
1" = 1'-0"



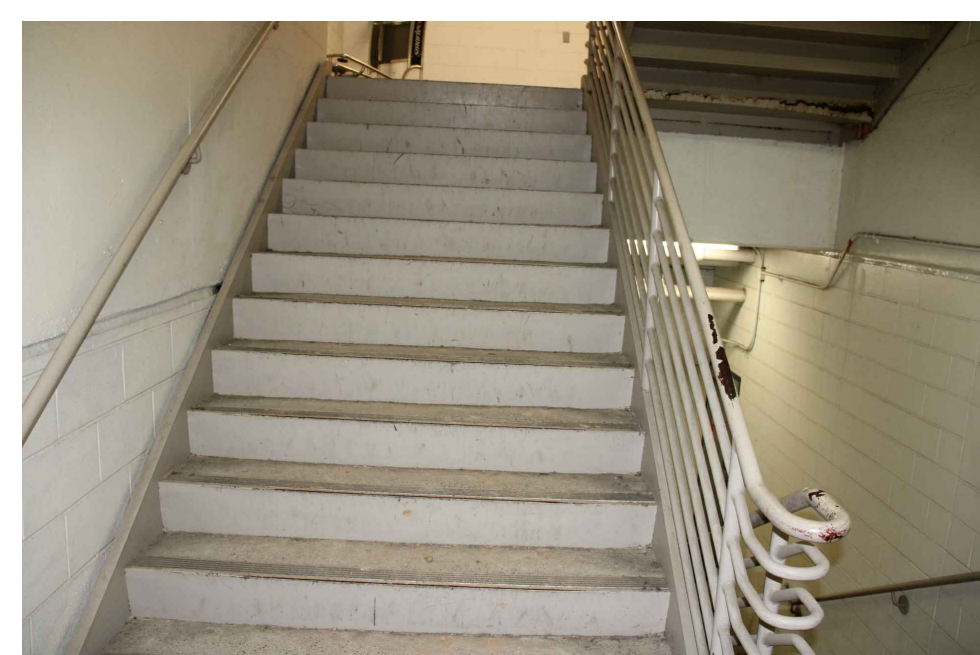
17 STAIR 5 - 09
1" = 1'-0"



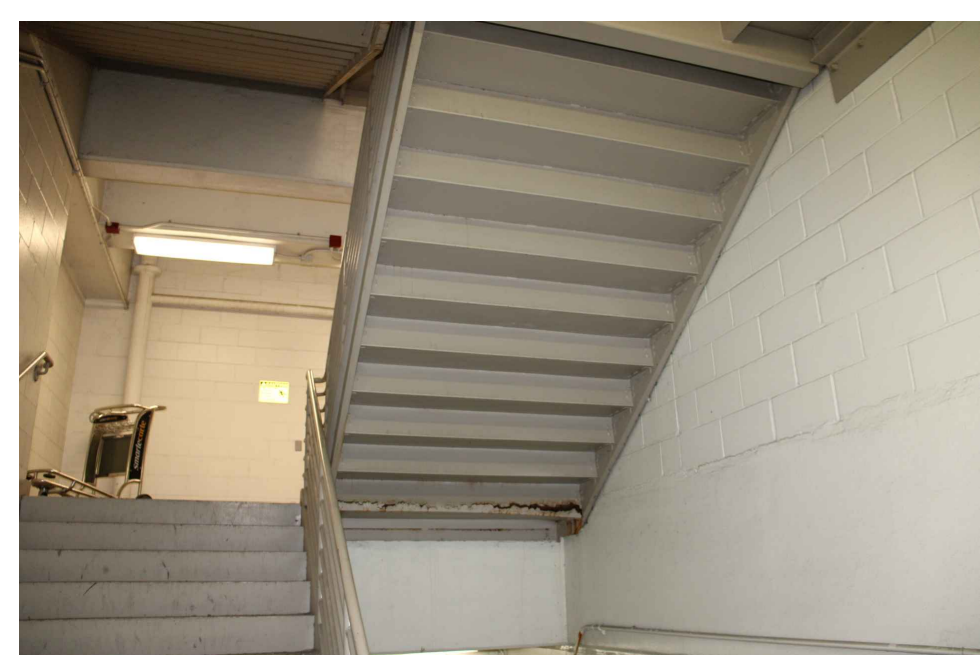
11 STAIR 5 - 06
1" = 1'-0"



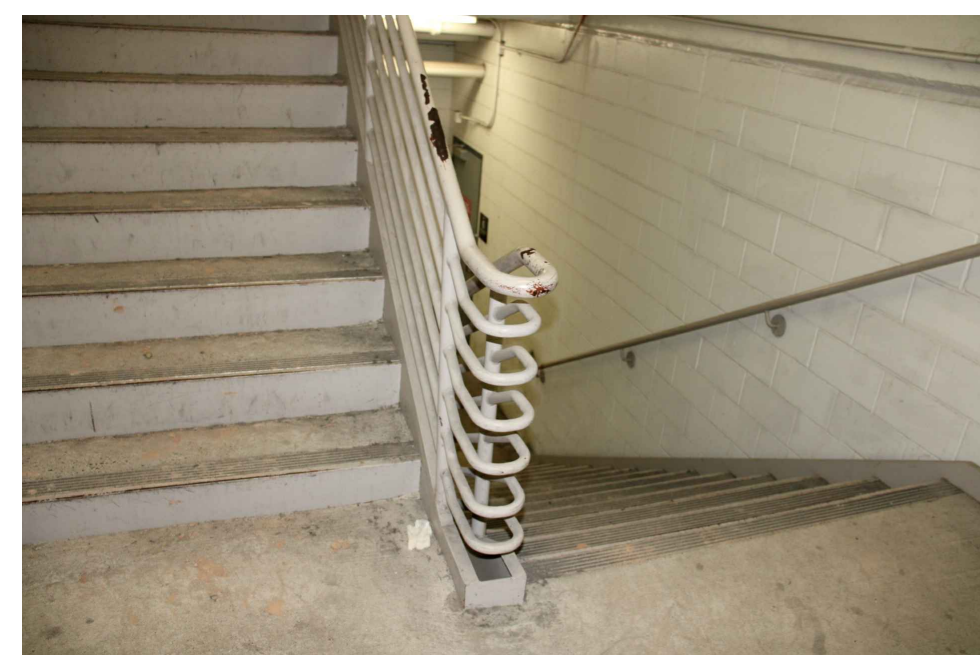
12 STAIR 5 - 07
1" = 1'-0"



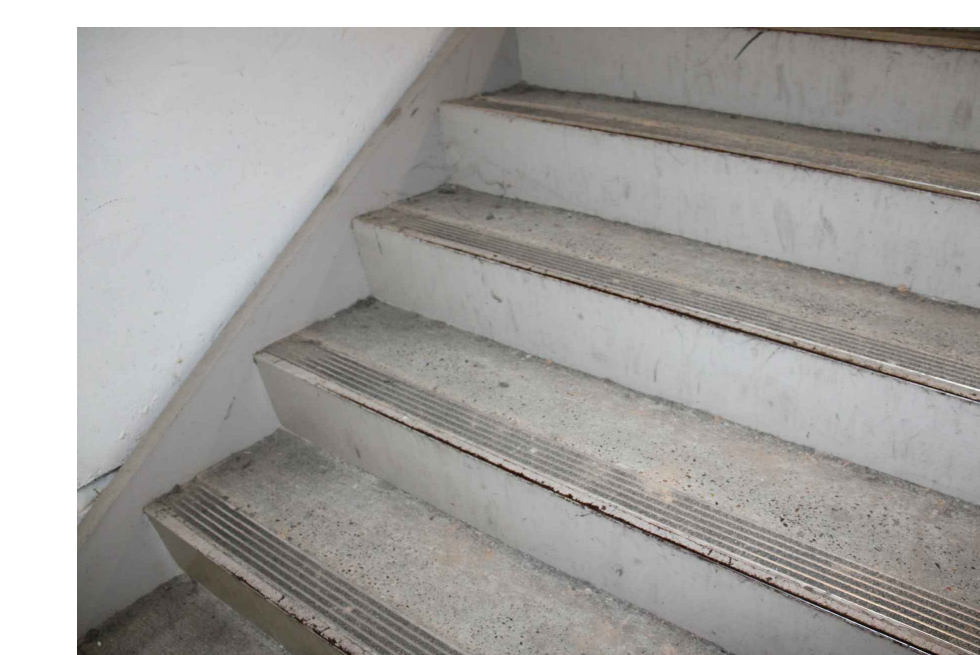
06 STAIR 5 - 04
1" = 1'-0"



07 STAIR 5 - 05
1" = 1'-0"



01 STAIR 5 - 01
1" = 1'-0"



02 STAIR 5 - 03
1" = 1'-0"

E:\2019\19-21 HAS - IAH TC STRUCTURAL & PONDING\DWGS\A11-363 PURPLE GARAGE STAIR 6 LEVEL 4-6-DWG.PLT

PLOT DATE: 24 July 2023 8:11:59 PM
OLD DOA No.:
DOA DWG FILE:

SHEET SIZE: 22" X 34" ANSI-D

REVISIONS

No.	DESCRIPTION	DATE	BY
	Issue for 60% Review	04/16/2021	
	Issue for 90% Review	05/19/2021	

DESIGNER:	RH
DRAWN BY:	SP
CHECKED BY:	RH
ISSUE DATE:	
APPROVED BY:	CJ
APPROVAL DATE:	

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category

IFR

ISSUED FOR REVIEW

TERMINAL
"C"

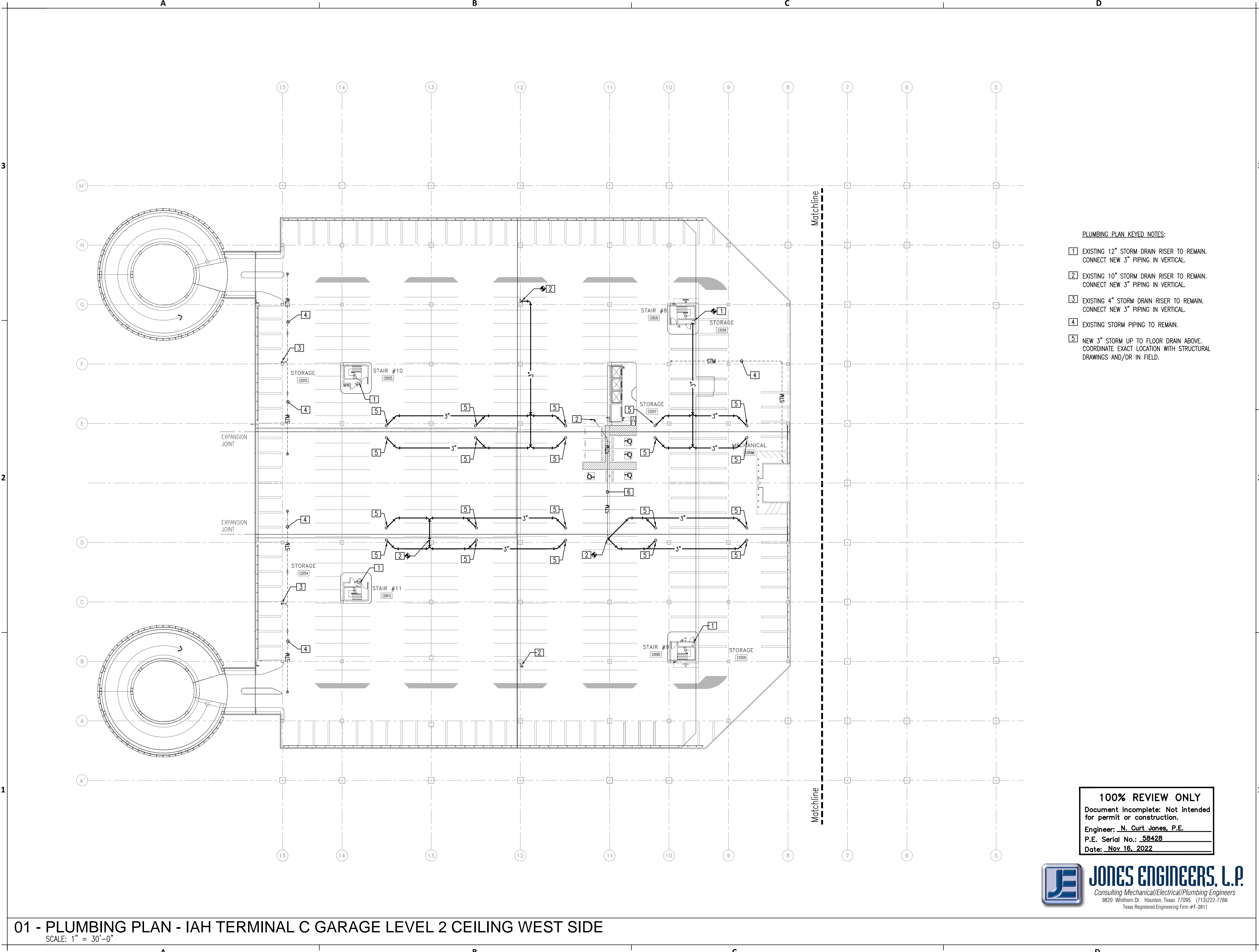
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SHEET NAME:
PLUMBING PLAN - IAH TERMINAL C GARAGE
LEVEL 2 CEILING WEST SIDE

SHEET No. P.102 SCALE: 1" = 30' - 0"

- PLUMBING PLAN KEYED NOTES:**
- EXISTING 12" STORM DRAIN RISER TO REMAIN. CONNECT NEW 3" PIPING IN VERTICAL.
 - EXISTING 10" STORM DRAIN RISER TO REMAIN. CONNECT NEW 3" PIPING IN VERTICAL.
 - EXISTING 4" STORM DRAIN RISER TO REMAIN. CONNECT NEW 3" PIPING IN VERTICAL.
 - EXISTING STORM PIPING TO REMAIN.
 - NEW 3" STORM UP TO FLOOR DRAIN ABOVE. COORDINATE EXACT LOCATION WITH STRUCTURAL DRAWINGS AND/OR IN FIELD.

100% REVIEW ONLY
Document Incomplete: Not intended for permit or construction.
Engineer: N. Curt Jones, P.E.
P.E. Serial No.: 58428
Date: Nov 16, 2022



SHEET SIZE: 22" x 34" ANSI-D



TERMINAL C AT IAH - 2800 N TERMINAL RD
HOUSTON, TX 77032

**IAH TERMINAL C HELIX RAMP BEARING
AND MISC REPAIRS**

C.I.P. No. A.I.P. No.
C.O.H. No. D.O.A. No.



DESIGNER PROJECT No.: 19-21
PROJECT STATUS: CONSTRUCTION DOCUMENTS

REVISIONS			
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HOUSTON AIRPORT SYSTEM

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TERMINAL
"C"

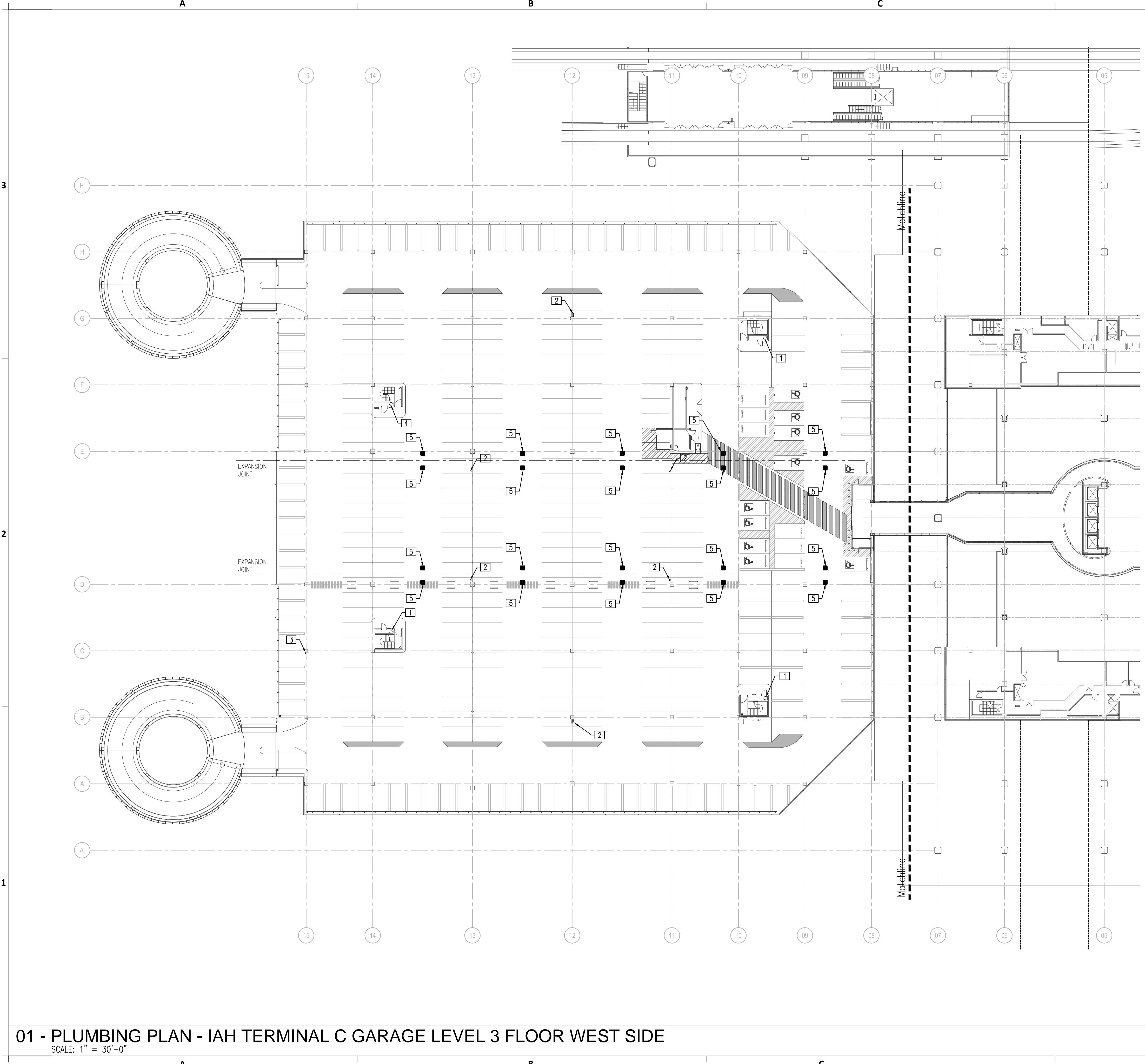
NORTH

SHEET NAME:
PLUMBING PLAN - IAH TERMINAL C GARAGE
LEVEL 3 FLOOR WEST SIDE

SHEET No. P1.03-AF SCALE: 1" = 30' - 0"

- PLUMBING PLAN KEYED NOTES:
- EXISTING 12" STORM DRAIN RISER TO REMAIN. CONNECT NEW PIPING IN VERTICAL.
 - EXISTING 10" STORM DRAIN RISER TO REMAIN. CONNECT NEW PIPING IN VERTICAL.
 - EXISTING 4" STORM DRAIN RISER TO REMAIN. CONNECT NEW PIPING IN VERTICAL.
 - EXISTING STORM PIPING TO REMAIN.
 - NEW 3" FLOOR DRAIN. COORDINATE EXACT LOCATION WITH STRUCTURAL DRAWINGS AND/OR IN FIELD.

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Engineer: N. Curt Jones, P.E.
P.E. Serial No.: 58428
Date: Nov 16, 2022



01 - PLUMBING PLAN - IAH TERMINAL C GARAGE LEVEL 3 FLOOR WEST SIDE
SCALE: 1" = 30'-0"

SHEET SIZE: 22"x34" ANSI-D

REVISIONS

No.	DESCRIPTION	DATE	BY
	Issue for 60% Review	04/16/2021	
	Issue for 90% Review	05/19/2021	

DESIGNER:	RH
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of
HOUSTON AIRPORT SYSTEM

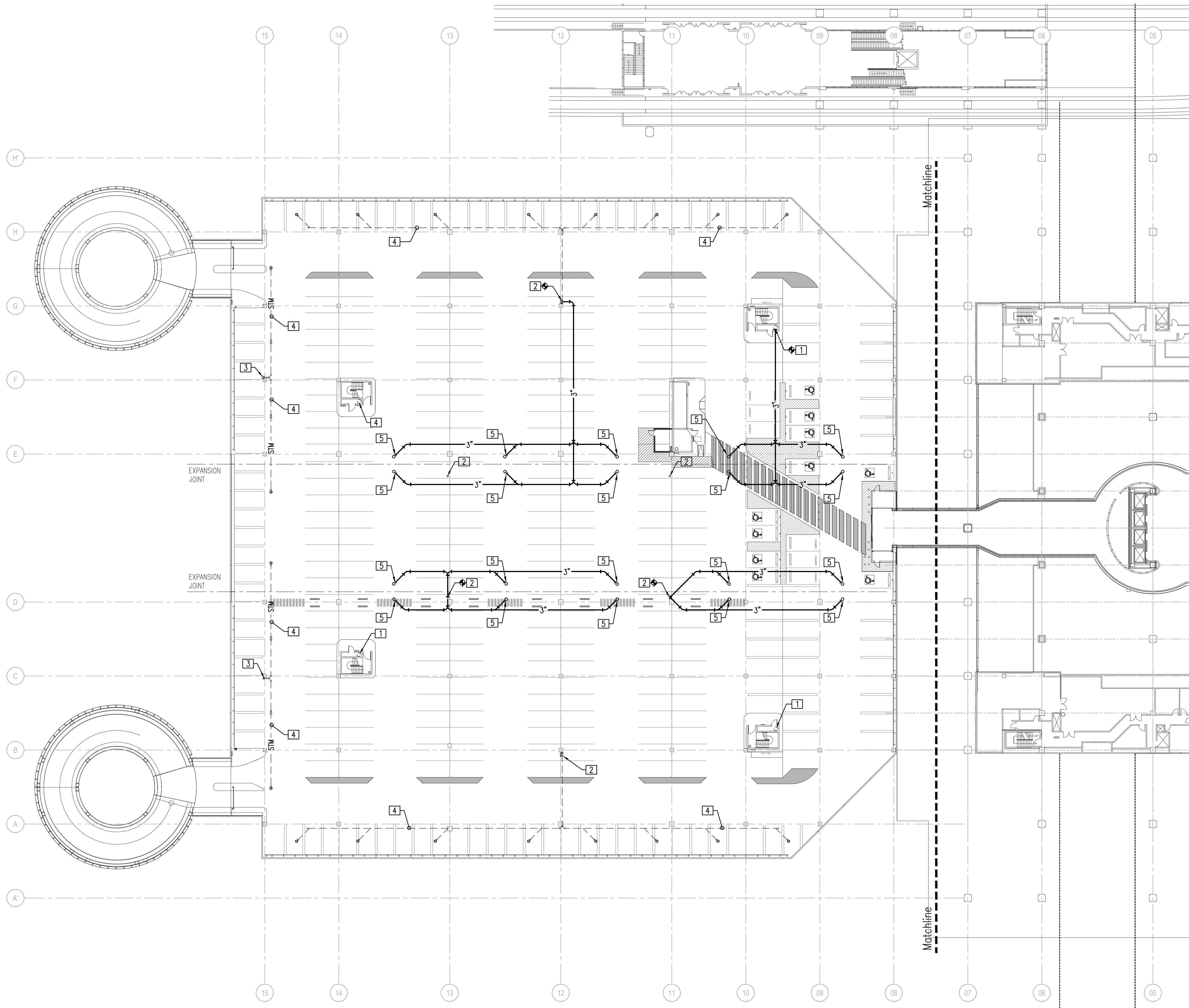
Review/ Approval Category	IFR
ISSUED FOR REVIEW	

TERMINAL
"C"

SHEET NAME:
PLUMBING PLAN - IAH TERMINAL C GARAGE
LEVEL 3 CEILING WEST SIDE
SHEET No. P.103-AC SCALE: 1" = 30' - 0"

PLUMBING PLAN KEYED NOTES:

- 1 EXISTING 12" STORM DRAIN RISER TO REMAIN. CONNECT NEW 3" PIPING IN VERTICAL.
- 2 EXISTING 10" STORM DRAIN RISER TO REMAIN. CONNECT NEW 3" PIPING IN VERTICAL.
- 3 EXISTING 4" STORM DRAIN RISER TO REMAIN. CONNECT NEW PIPING IN VERTICAL.
- 4 EXISTING STORM PIPING TO REMAIN.
- 5 NEW 3" STORM UP TO FLOOR DRAIN ABOVE. COORDINATE EXACT LOCATION WITH STRUCTURAL DRAWINGS AND/OR IN FIELD.



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Engineer: N. Curt Jones, P.E.
P.E. Serial No.: 58428
Date: Nov 16, 2022

SHEET SIZE: 22"x34" ANSI-D

REVISIONS			
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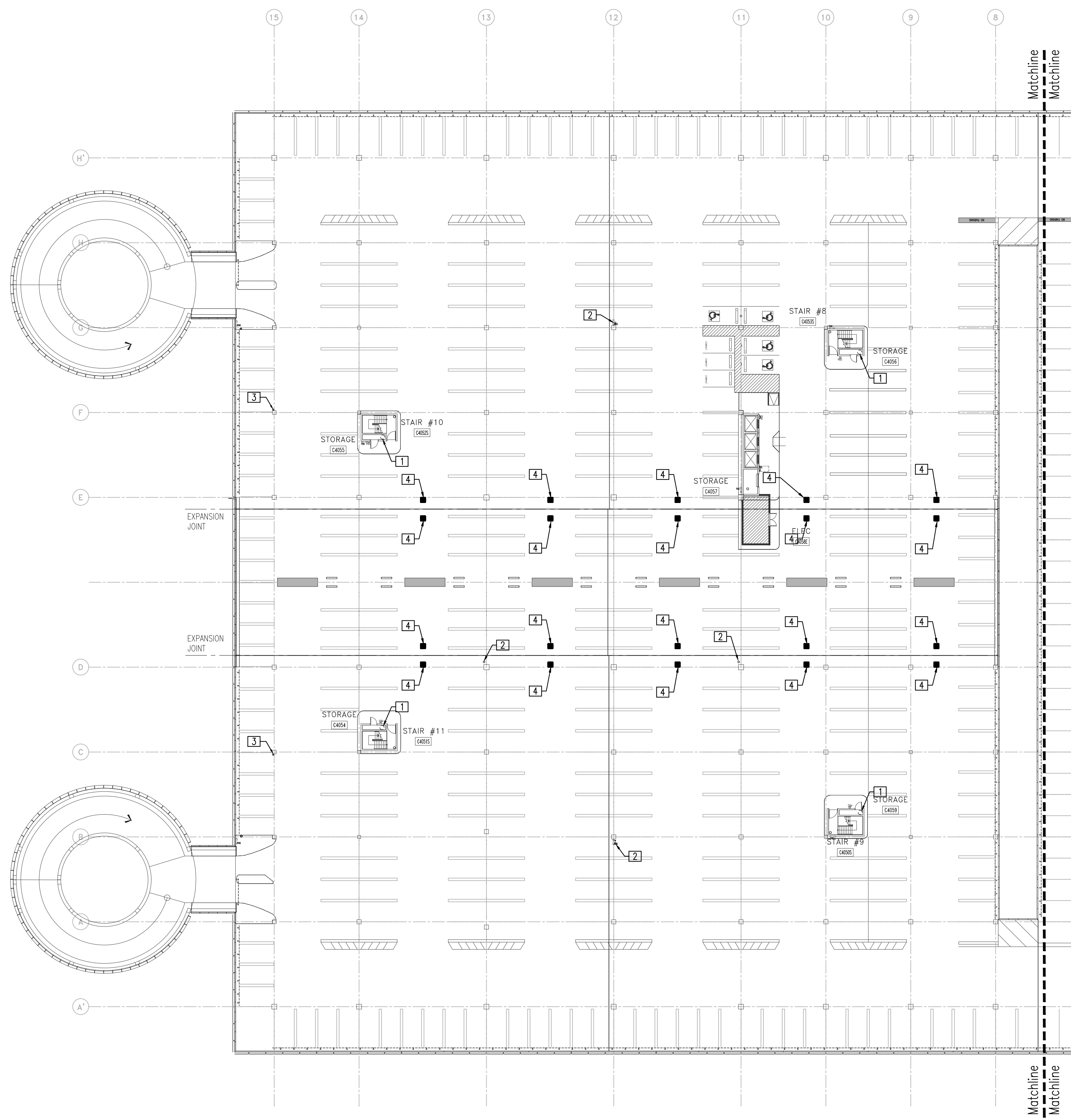
ISSUED FOR REVIEW

TERMINAL
"C"

SHIELD NAME:
PLUMBING PLAN - IAH TERMINAL C GARAGE
LEVEL 4 FLOOR WEST SIDE

SHEET No. P1.04-AF SCALE: 1" = 30' - 0"

- PLUMBING PLAN KEYED NOTES:
- EXISTING 12" STORM DRAIN RISER TO REMAIN.
 - EXISTING 10" STORM DRAIN RISER TO REMAIN.
 - EXISTING 4" STORM DRAIN RISER TO REMAIN.
 - NEW 3" FLOOR DRAIN. COORDINATE EXACT LOCATION WITH STRUCTURAL DRAWINGS AND/OR IN FIELD.



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Engineer: N. Curt Jones, P.E.
P.E. Serial No.: 58428
Date: Nov 16, 2022

SHEET SIZE: 22" x 34" ANSI-D

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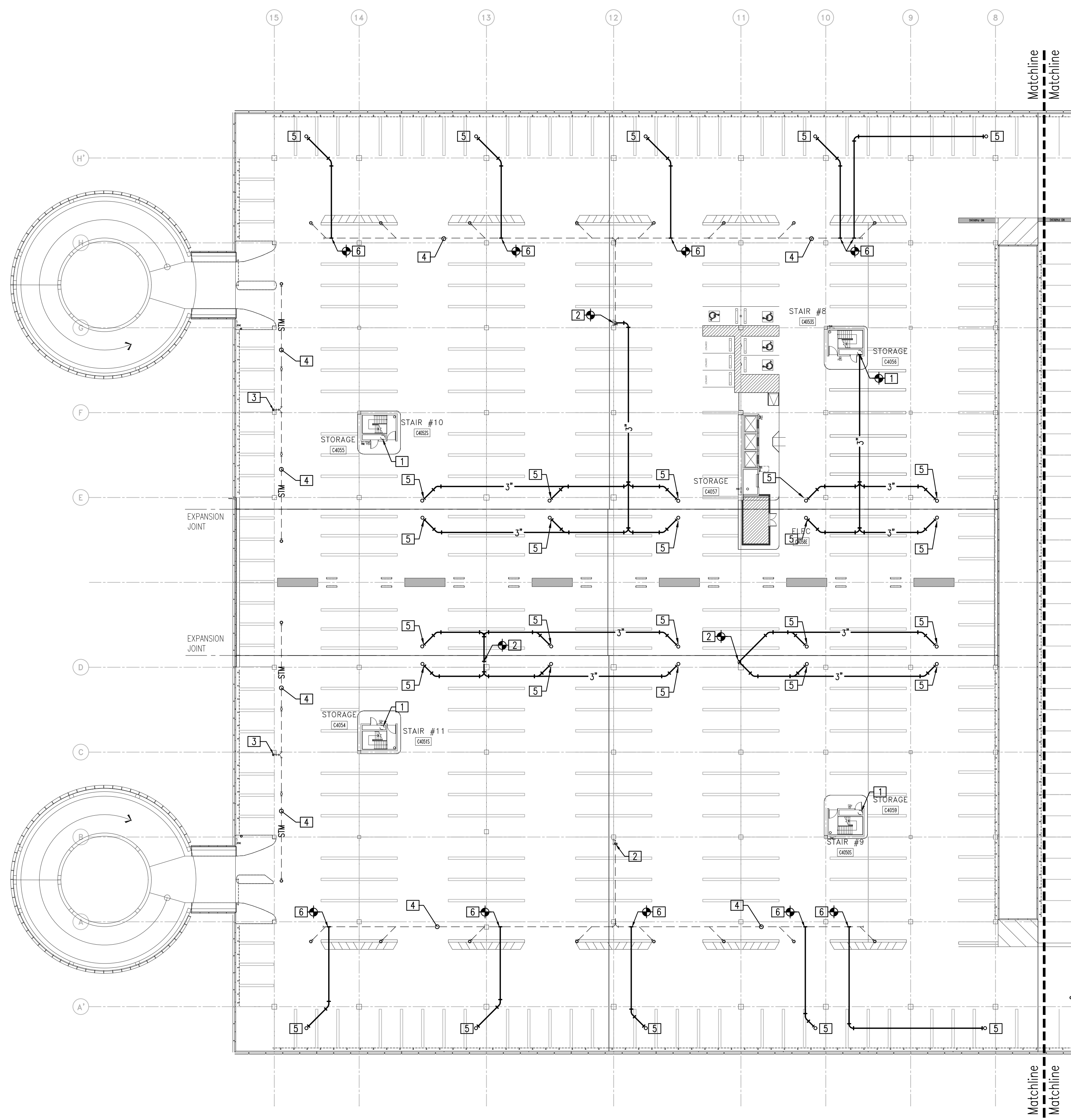
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SHEET NAME:
PLUMBING PLAN - IAH TERMINAL C GARAGE
LEVEL 4 CEILING WEST SIDE

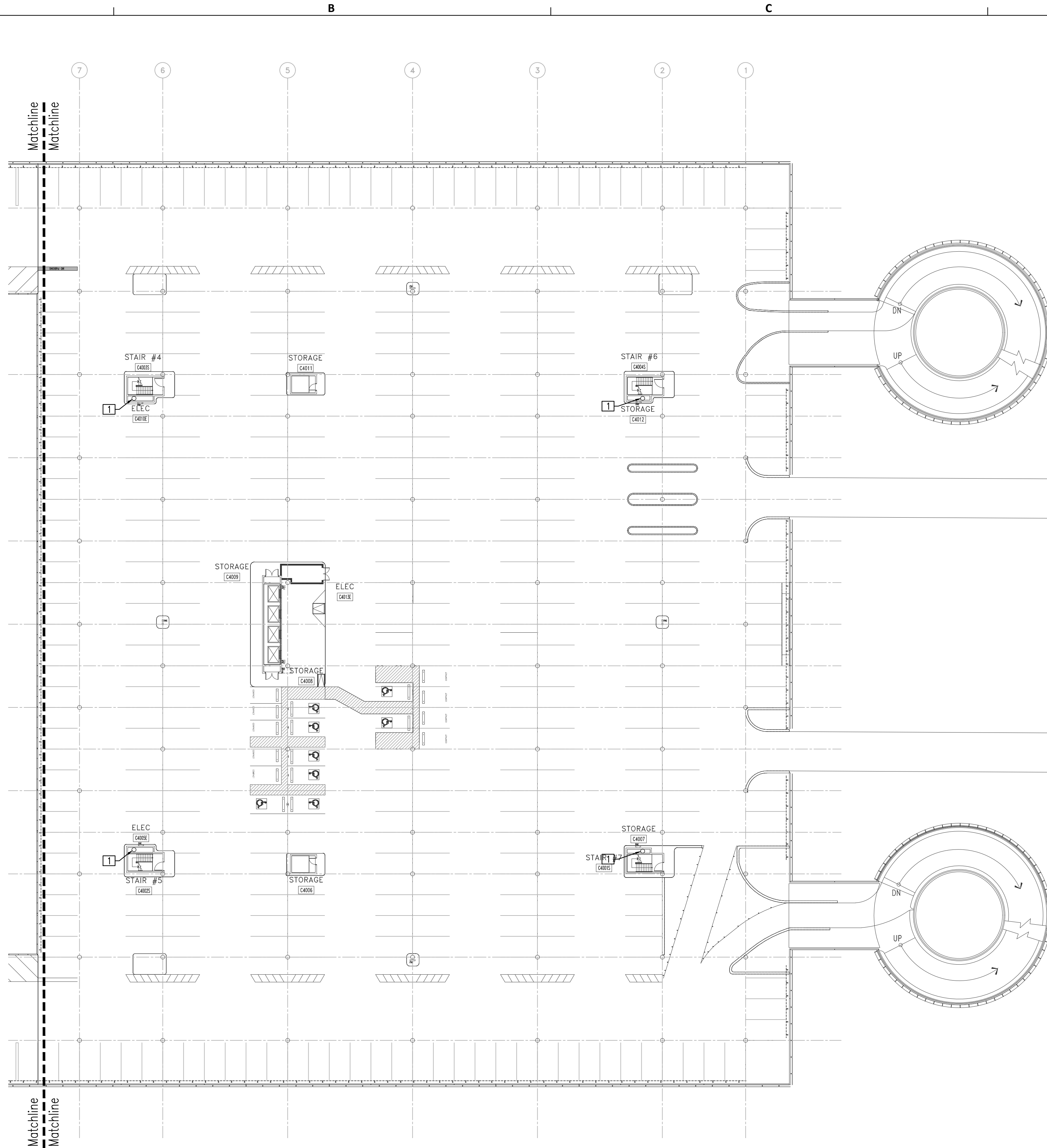
SHEET No. P1.04-AC SCALE: 1" = 30' - 0"

- PLUMBING PLAN KEYED NOTES:
- EXISTING 12" STORM DRAIN RISER TO REMAIN. CONNECT NEW 3" PIPING IN VERTICAL.
 - EXISTING 10" STORM DRAIN RISER TO REMAIN. CONNECT NEW 3" PIPING IN VERTICAL.
 - EXISTING 4" STORM DRAIN RISER TO REMAIN. CONNECT NEW 3" PIPING IN VERTICAL.
 - EXISTING STORM PIPING TO REMAIN.
 - NEW 3" STORM UP TO FLOOR DRAIN ABOVE. COORDINATE EXACT LOCATION WITH STRUCTURAL DRAWINGS AND/OR IN FIELD.
 - CONNECT NEW 3" STORM PIPING TO EXISTING.

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Engineer: N. Curt Jones, P.E.
P.E. Serial No.: 58428
Date: Nov 16, 2022



SHEET SIZE: 22" x 34" ANSI-D



PLUMBING PLAN KEYED NOTES:
 1 EXISTING 12" STORM DRAIN RISER TO REMAIN.

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 Engineer: N. Curt Jones, P.E.
 P.E. Serial No.: 58428
 Date: Nov 16, 2022



TERMINAL C AT IAH - 2800 N TERMINAL RD
 HOUSTON, TX 77032
IAH TERMINAL C HELIX RAMP BEARING AND MISC REPAIRS
 C.I.P. No. A.I.P. No.
 C.O.H. No. D.O.A No.



DESIGNER PROJECT No.: 19-21
 PROJECT STATUS: CONSTRUCTION DOCUMENTS

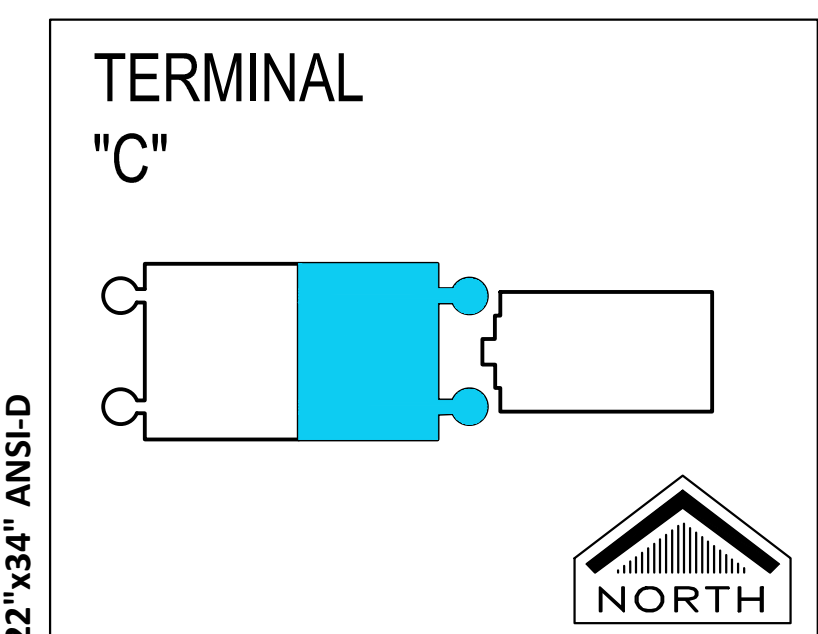
REVISIONS

No.	DESCRIPTION	DATE	BY
	Issue for 60% Review	04/16/2021	
	Issue for 90% Review	05/19/2021	

DESIGNER: RH
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 APPROVAL DATE:

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IFR
 ISSUED FOR REVIEW



SHEET NAME:
 PLUMBING PLAN - IAH TERMINAL C GARAGE LEVEL 4 FLOOR EAST SIDE
 SHEET No. P1.04-BF SCALE: 1" = 30' - 0"

SHEET SIZE: 22" x 34" ANSI-D



TERMINAL C AT IAH - 2800 N TERMINAL RD
HOUSTON, TX 77032

IAH TERMINAL C HELIX RAMP BEARING AND MISC REPAIRS

C.I.P. No. A.I.P. No.
C.O.H. No. D.O.A No.



DESIGNER PROJECT No.: 19-21
PROJECT STATUS: CONSTRUCTION DOCUMENTS

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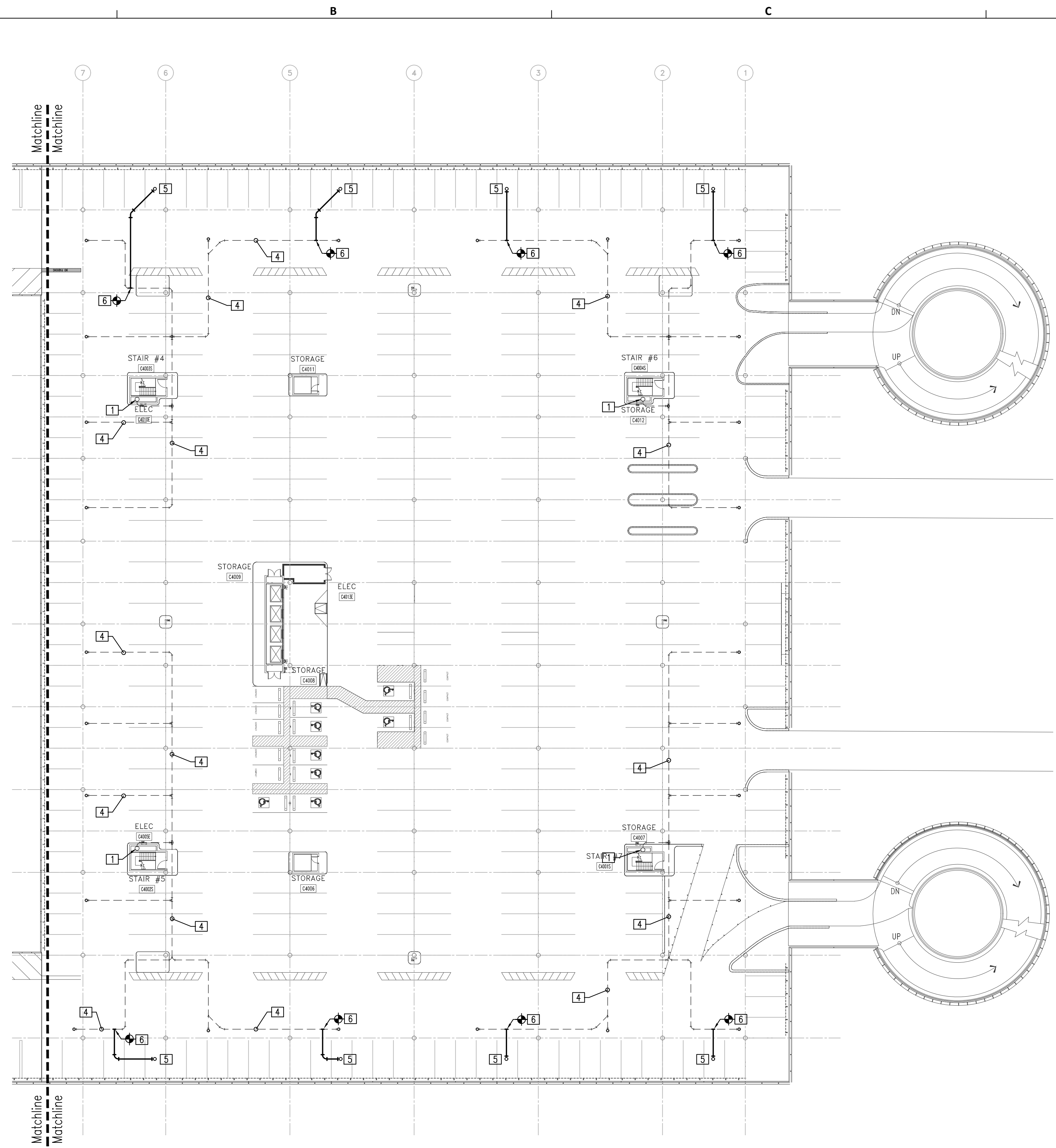
TERMINAL
"C"

NORTH

SHEET NAME:
 PLUMBING PLAN - IAH TERMINAL C GARAGE
 LEVEL 4 CEILING EAST SIDE
 SHEET No. P1.04-BC SCALE: 1" = 30' - 0"

- PLUMBING PLAN KEYED NOTES:
- EXISTING 12" STORM DRAIN RISER TO REMAIN.
 - EXISTING 10" STORM DRAIN RISER TO REMAIN.
 - EXISTING 4" STORM DRAIN RISER TO REMAIN.
 - EXISTING STORM PIPING TO REMAIN. (TYPICAL).
 - NEW 3" STORM UP TO FLOOR DRAIN ABOVE. COORDINATE EXACT LOCATION WITH STRUCTURAL DRAWINGS AND/OR IN FIELD.
 - CONNECT NEW 3" STORM PIPING TO EXISTING.

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 Engineer: N. Curt Jones, P.E.
 P.E. Serial No.: 58428
 Date: Nov 16, 2022



01 - PLUMBING PLAN - IAH TERMINAL C GARAGE LEVEL 4 CEILING EAST SIDE

SCALE: 1" = 30'-0"

SHEET SIZE: 22" x 34" ANSI-D

REVISIONS

No.	DESCRIPTION	DATE	BY
	Issue for 60% Review	04/16/2021	
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DIRECTOR
of
HOUSTON AIRPORT SYSTEM

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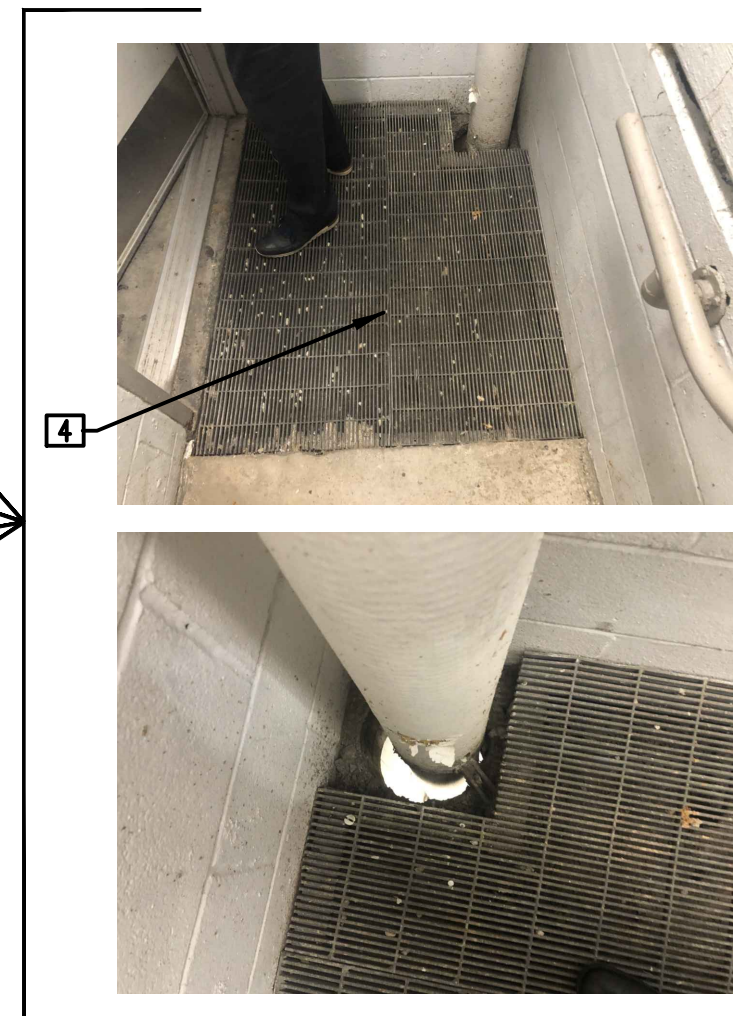
TERMINAL
"C"

NORTH

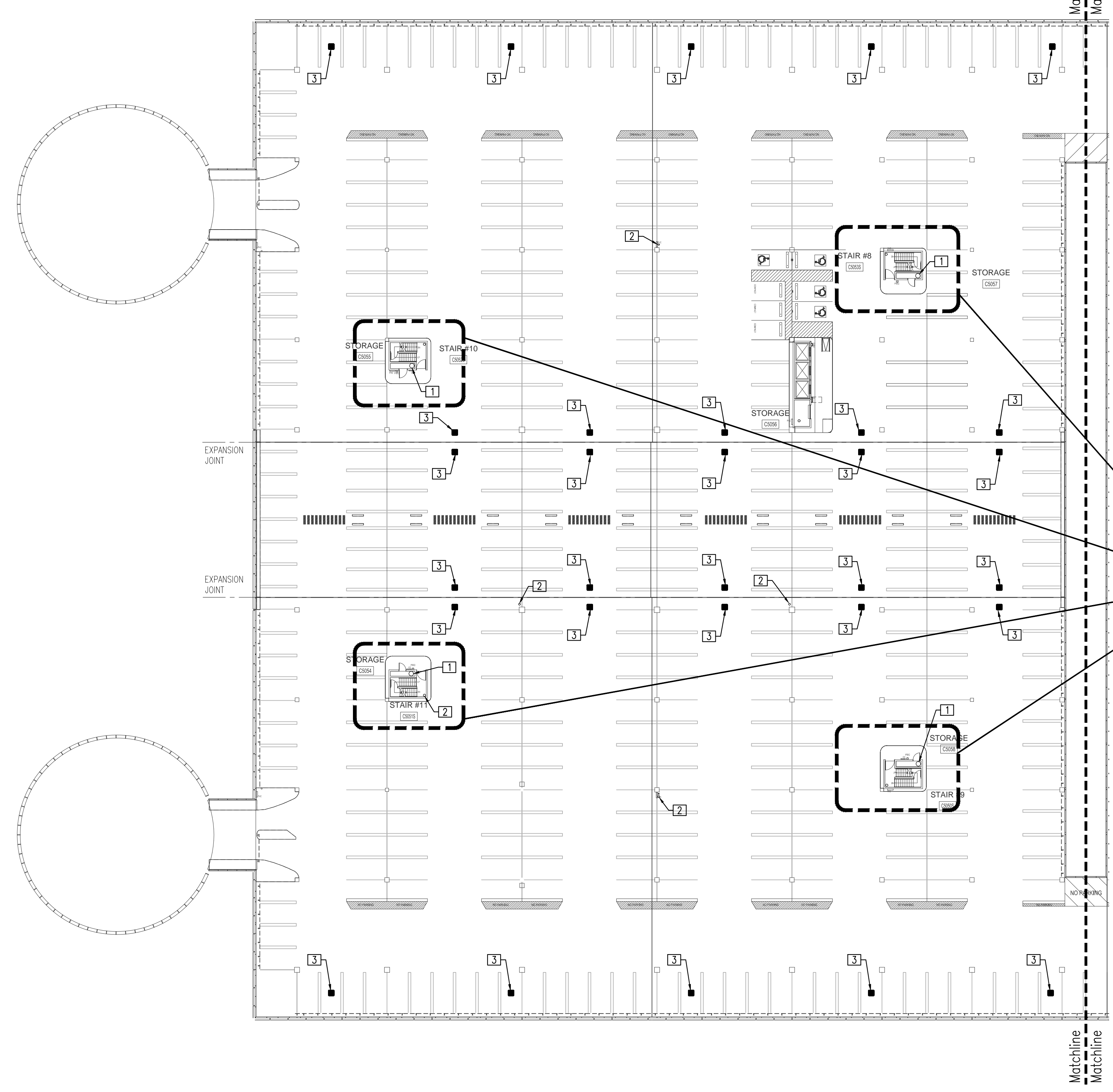
SHEET NAME:
PLUMBING PLAN - IAH TERMINAL C GARAGE
LEVEL 5 FLOOR WEST SIDE

SHEET No. P1.05-AF SCALE: 1" = 30' - 0"

- PLUMBING PLAN KEYED NOTES:**
- EXISTING 12" STORM DRAIN RISER TO REMAIN. CONNECT NEW PIPING IN VERTICAL.
 - EXISTING 10" STORM DRAIN RISER TO REMAIN. CONNECT NEW PIPING IN VERTICAL.
 - NEW 3" FLOOR DRAIN. COORDINATE EXACT LOCATION WITH STRUCTURAL DRAWINGS AND/OR IN FIELD.
 - CLEAN OUT DRAIN AREA.



100% REVIEW ONLY
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Engineer: N. Curt Jones, P.E.
P.E. Serial No.: 58428
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SHEET SIZE: 22" x 34" ANSI-D

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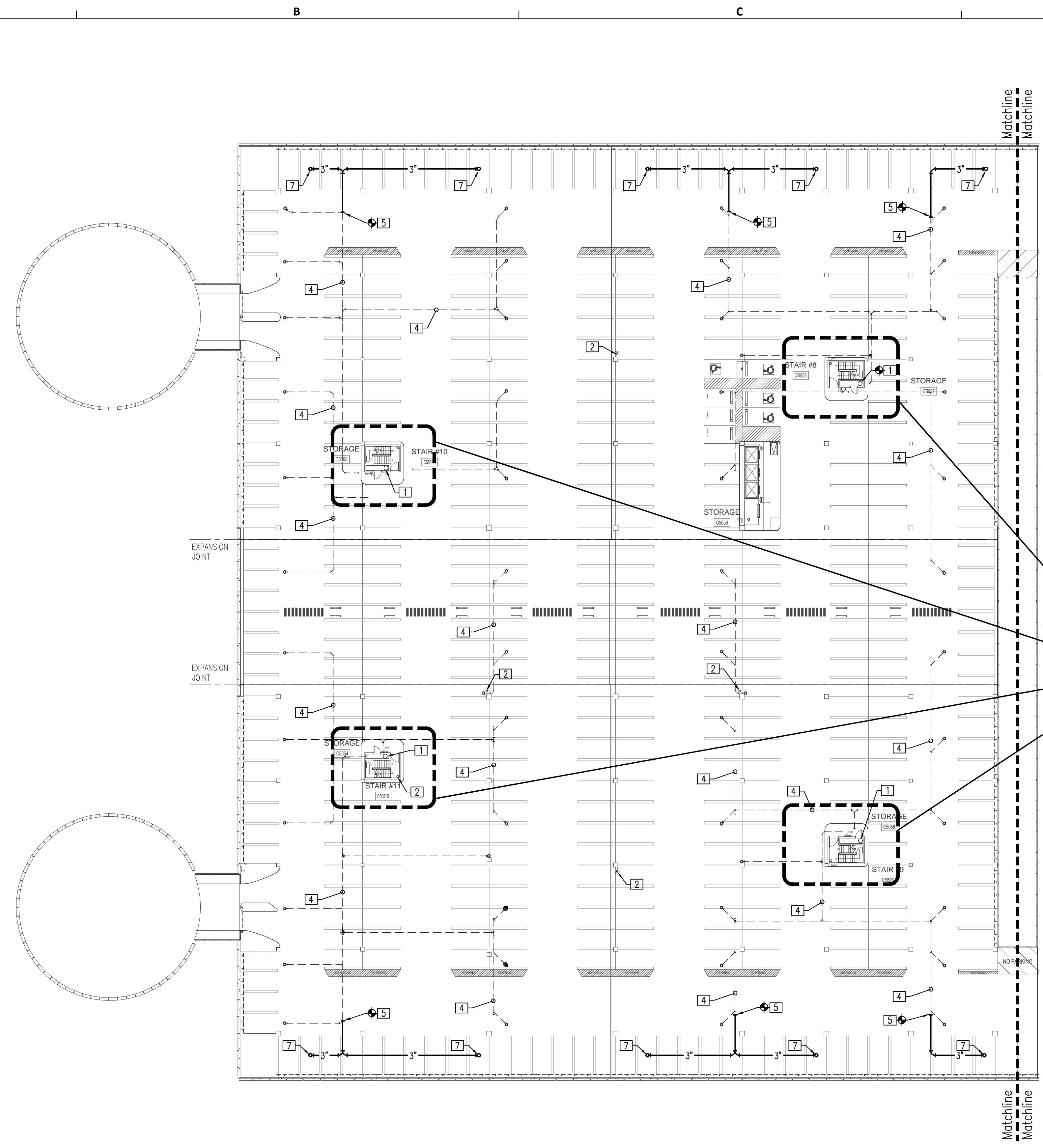
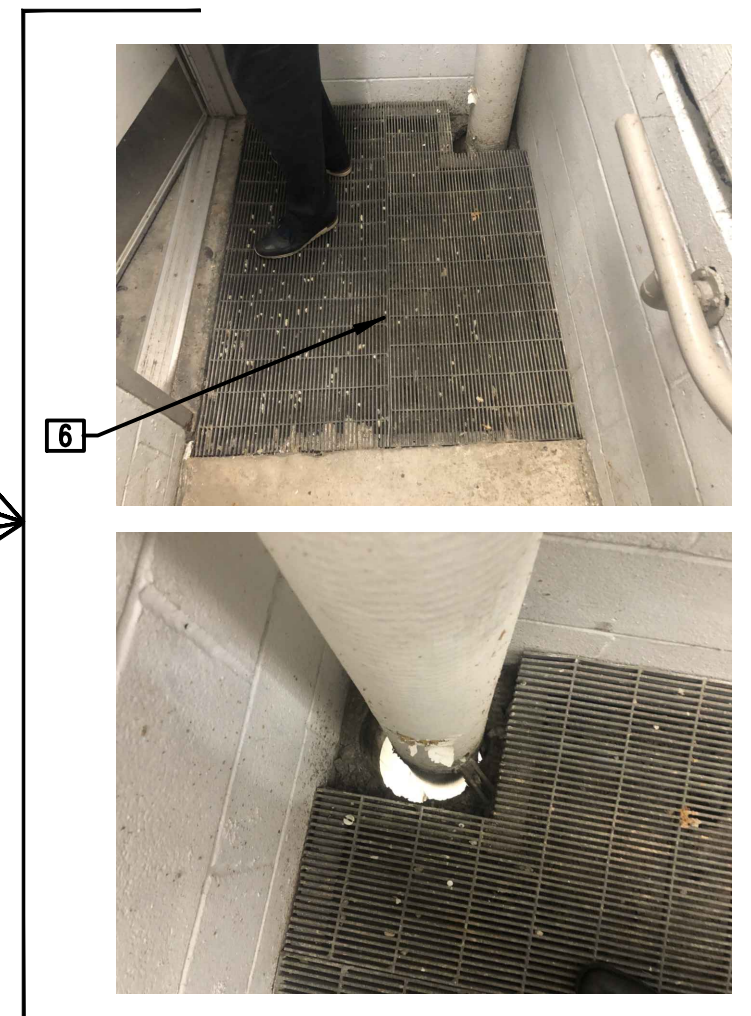
DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category	
ISSUED FOR REVIEW	

TERMINAL
"C"

SHEET NAME:
PLUMBING PLAN - IAH TERMINAL C GARAGE
LEVEL 5 CEILING WEST SIDE
SHEET No. P1.05-AC SCALE: 1" = 30' - 0"

- PLUMBING PLAN KEYED NOTES:**
- EXISTING 12" STORM DRAIN RISER TO REMAIN.
 - EXISTING 10" STORM DRAIN RISER TO REMAIN.
 - EXISTING 4" STORM DRAIN RISER TO REMAIN.
 - EXISTING STORM PIPING TO REMAIN.
 - CONNECT NEW 3" STORM PIPING TO EXISTING.
 - CLEAN OUT DRAIN AREA.
 - NEW 3" STORM UP TO FLOOR DRAIN ABOVE.
COORDINATE EXACT LOCATION WITH STRUCTURAL
DRAWINGS AND/OR IN FIELD.



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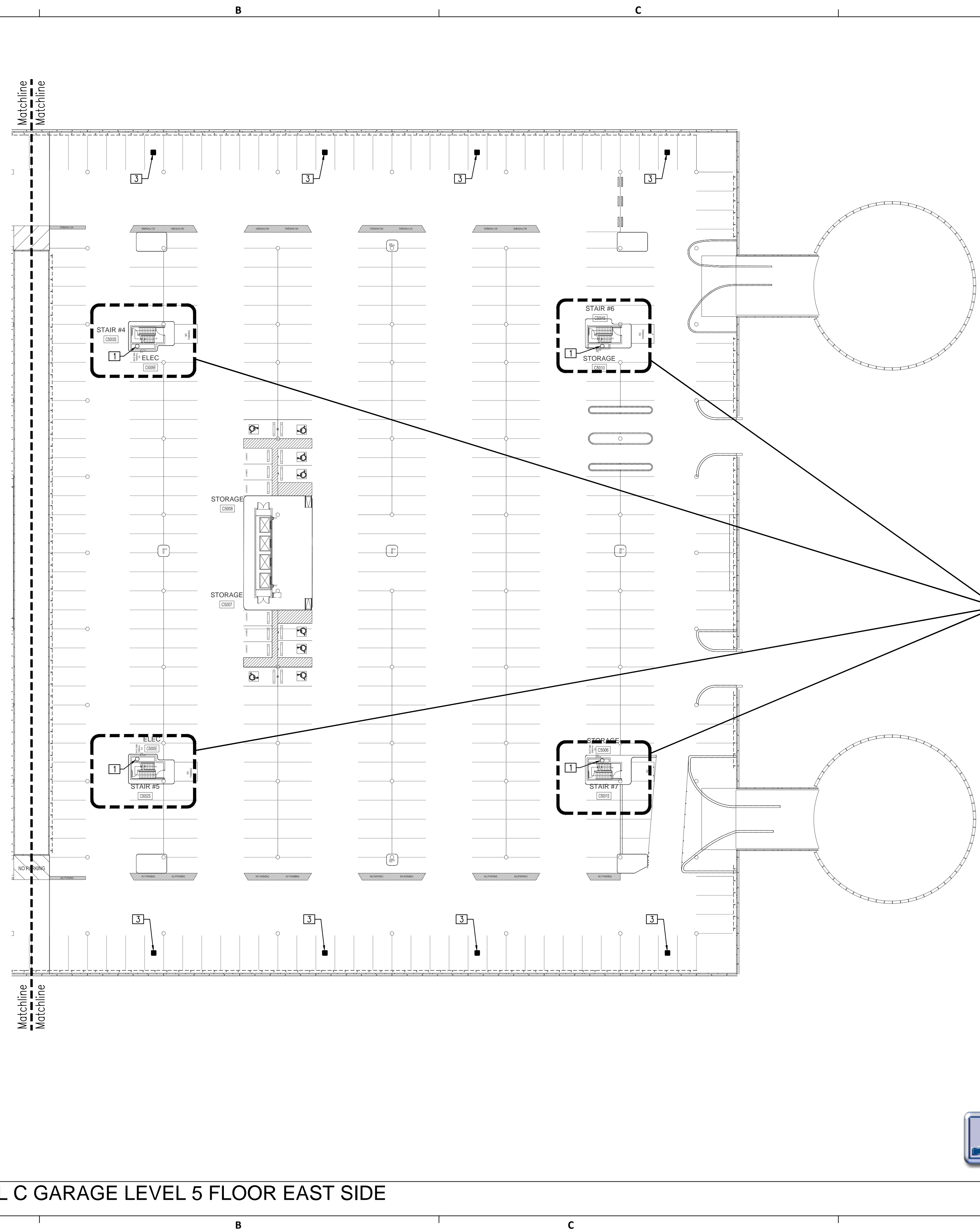
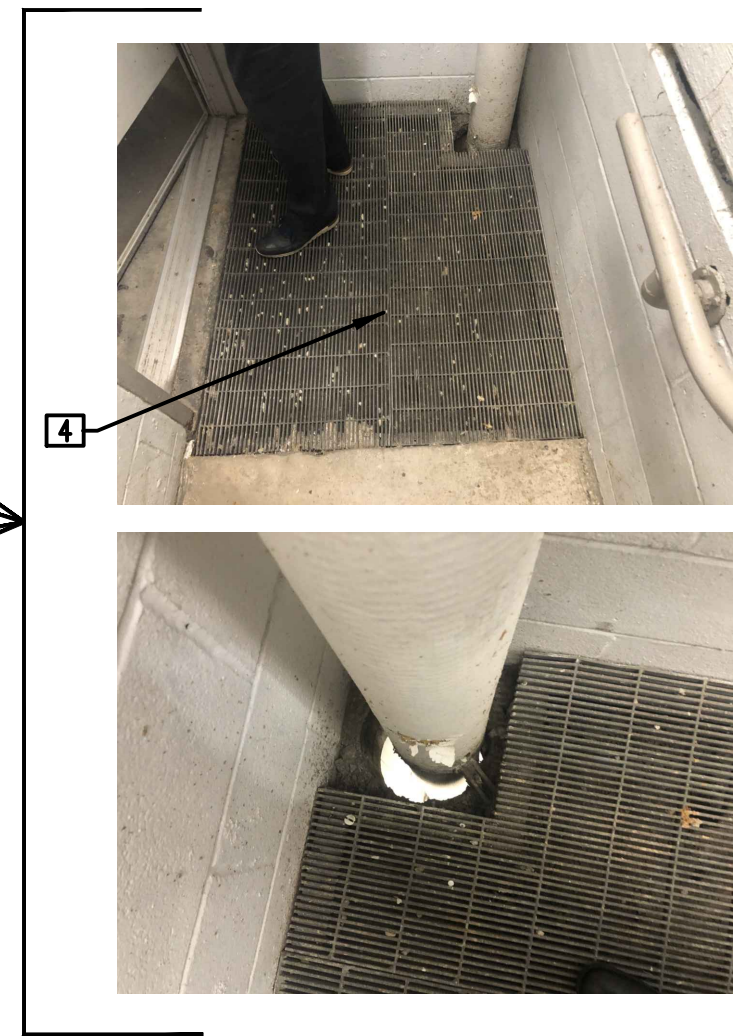
Review/ Approval Category
IFR
ISSUED FOR REVIEW

TERMINAL
"C"

NORTH

SHEET NAME:
PLUMBING PLAN - IAH TERMINAL C GARAGE
LEVEL 5 FLOOR EAST SIDE
SHEET No. P1.05-BF SCALE: 1" = 30' - 0"

- PLUMBING PLAN KEYED NOTES:**
- EXISTING 12" STORM DRAIN RISER TO REMAIN.
 - EXISTING 10" STORM DRAIN RISER TO REMAIN. CONNECT NEW PIPING IN VERTICAL.
 - NEW 3" FLOOR DRAIN. COORDINATE EXACT LOCATION WITH STRUCTURAL DRAWINGS AND/OR IN FIELD.
 - CLEAN OUT DRAIN AREA.



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SHEET SIZE: 22" x 34" ANSI-D

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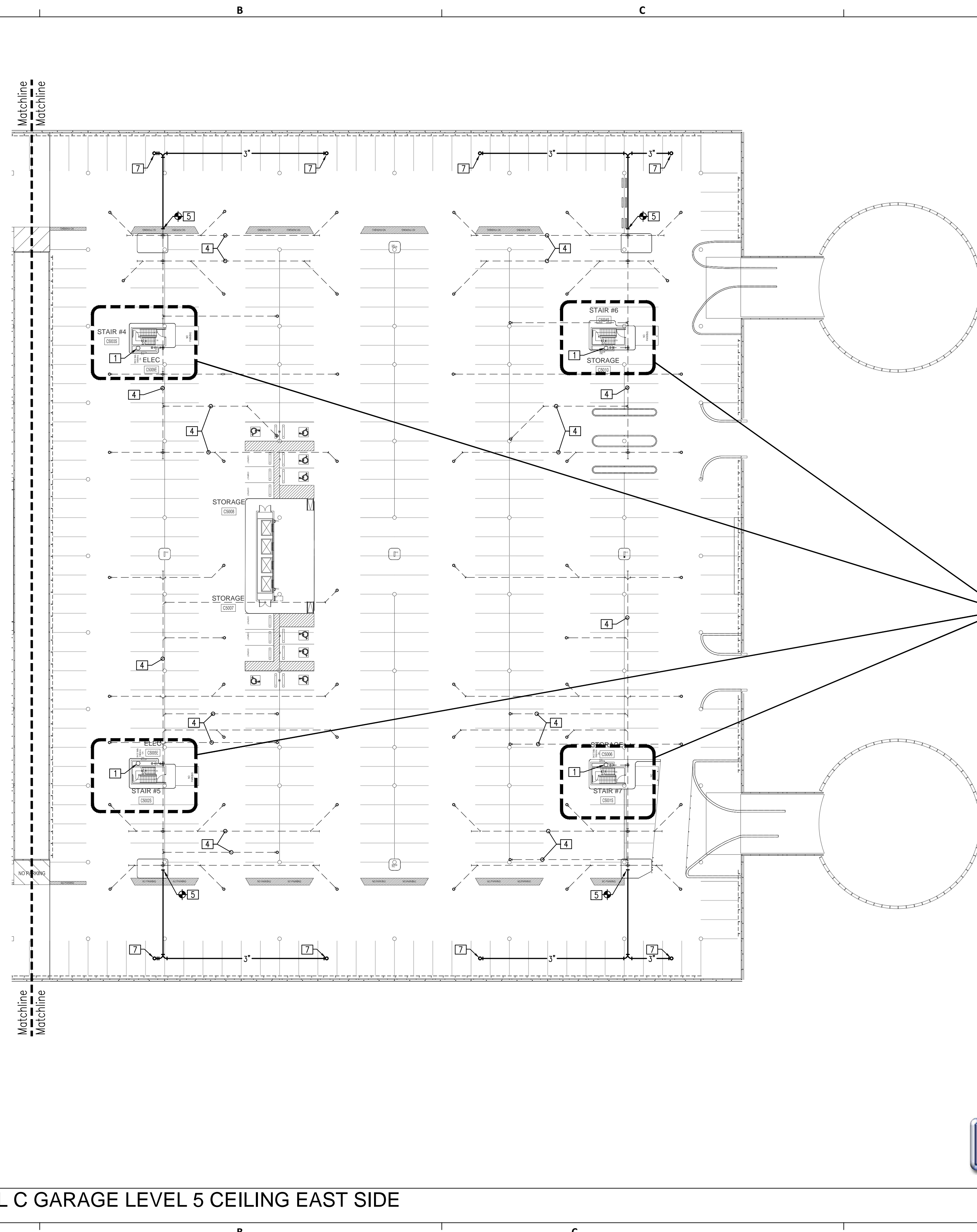
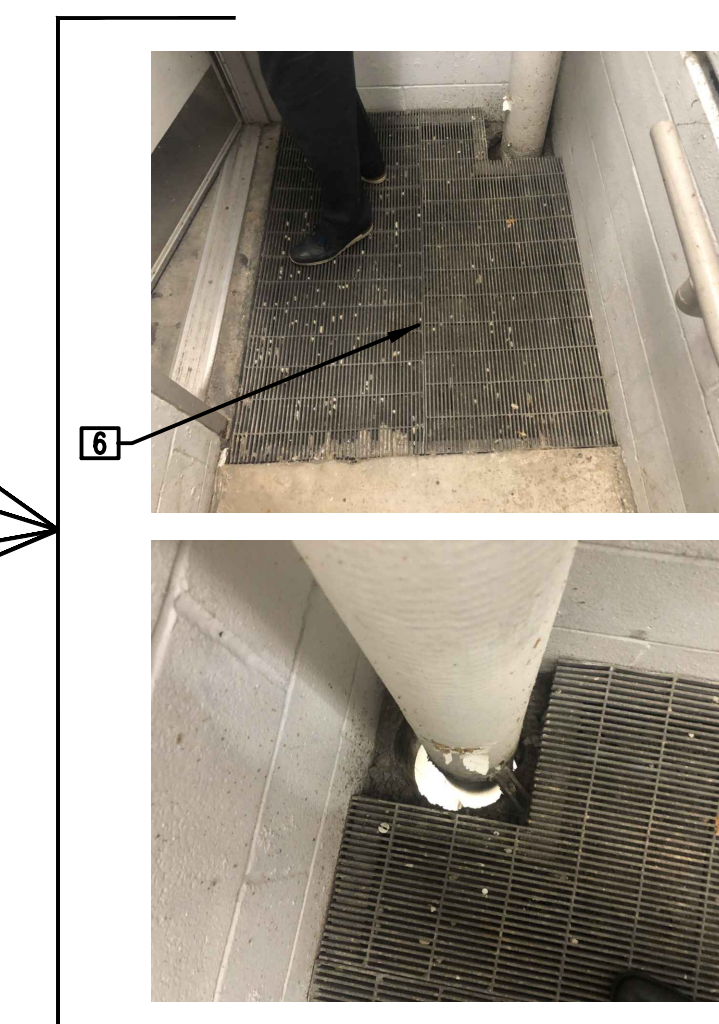
ISSUED FOR REVIEW

TERMINAL
"C"

NORTH

SHEET NAME:
PLUMBING PLAN - IAH TERMINAL C GARAGE
LEVEL 5 CEILING EAST SIDE
SHEET No. P.105-BC SCALE: 1" = 30' - 0"

- PLUMBING PLAN KEYED NOTES:**
- EXISTING 12" STORM DRAIN RISER TO REMAIN.
 - EXISTING 10" STORM DRAIN RISER TO REMAIN.
 - EXISTING 4" STORM DRAIN RISER TO REMAIN.
 - EXISTING STORM PIPING TO REMAIN. (TYPICAL).
 - CONNECT NEW 3" STORM PIPING TO EXISTING.
 - CLEAN OUT DRAIN AREA.
 - NEW 3" STORM UP TO FLOOR DRAIN ABOVE.
COORDINATE EXACT LOCATION WITH STRUCTURAL
DRAWINGS AND/OR IN FIELD.



100% REVIEW ONLY
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Engineer: N. Curt Jones, P.E.
P.E. Serial No.: 58428
Date: Nov 16, 2022

SHEET SIZE: 22" x 34" ANSI-D

A

B

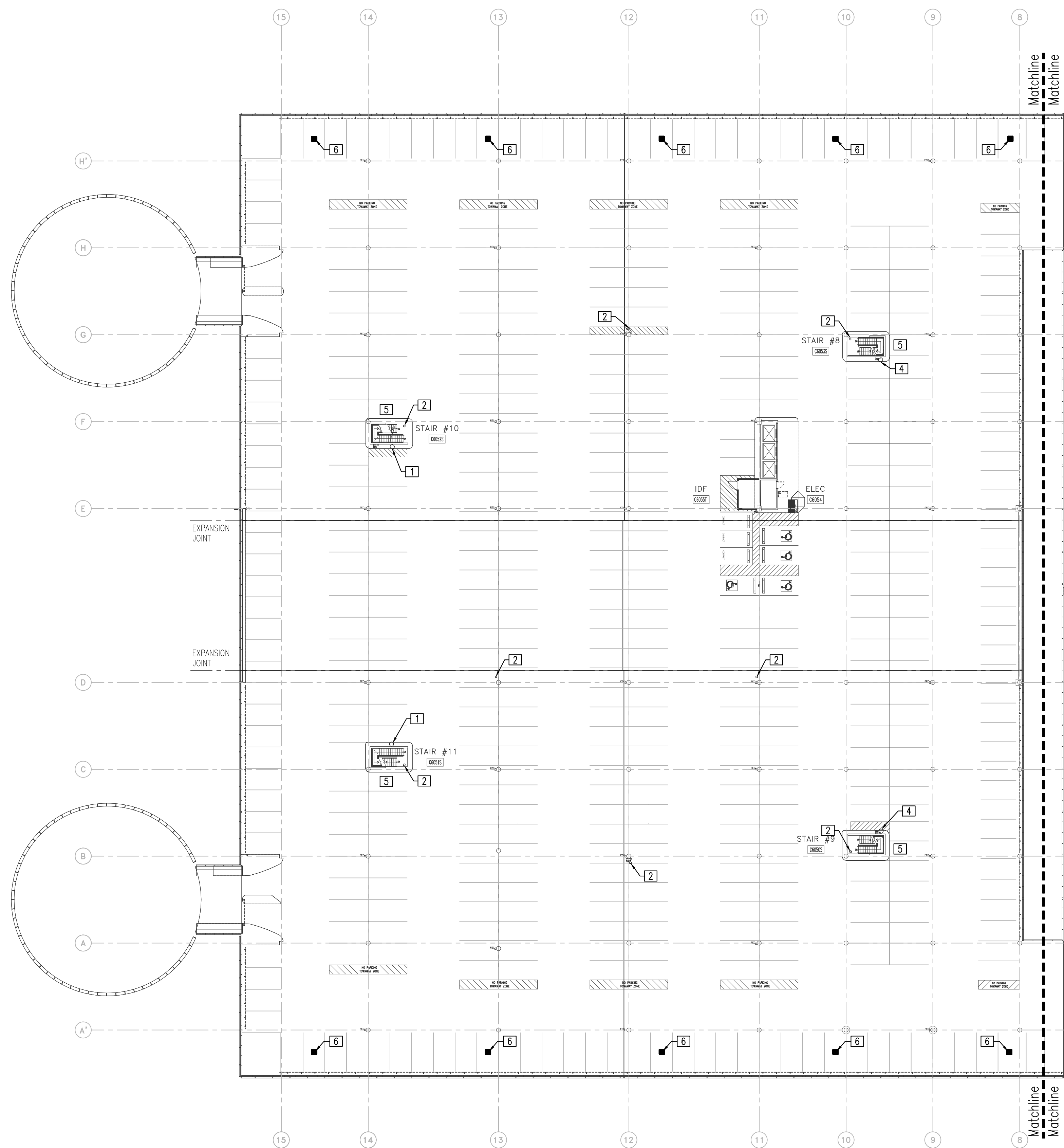
C

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2

1



- PLUMBING PLAN KEYED NOTES:
- 1 EXISTING 12" STORM DRAIN RISER TO REMAIN.
 - 2 EXISTING 10" STORM DRAIN RISER TO REMAIN.
 - 3 EXISTING 4" STORM DRAIN RISER TO REMAIN.
 - 4 EXISTING STORM PIPING TO REMAIN. (TYPICAL).
 - 5 CLEANOUT DRAINS IN STAIRWELL.
 - 6 NEW 3" FLOOR DRAIN.



TERMINAL C AT IAH - 2800 N TERMINAL RD
HOUSTON, TX 77032

**IAH TERMINAL C HELIX RAMP BEARING
AND MISC REPAIRS**

C.I.P. No. A.I.P. No.
C.O.H. No. D.O.A No.



DESIGNER PROJECT No.: 19-21
PROJECT STATUS: CONSTRUCTION DOCUMENTS

REVISIONS			
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	Issue for 90% Review	05/19/2021	

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Engineer: N. Curt Jones, P.E.
P.E. Serial No.: 58428
Date: Nov 16, 2022



TERMINAL
"C"

NORTH

SHEET NAME:
PLUMBING PLAN - IAH TERMINAL C GARAGE
LEVEL 6 WEST SIDE
SHEET No. P1.06-A SCALE: 1" = 30' - 0"

01 - PLUMBING PLAN - IAH TERMINAL C GARAGE LEVEL 6 WEST SIDE
SCALE: 1" = 30'-0"

A

B

C

D

SHEET SIZE: 22" x 34" ANSI-D

REVISIONS

No.	DESCRIPTION	DATE	BY
	Issue for 60% Review	04/16/2021	
	Issue for 90% Review	05/19/2021	

DESIGNER: RH
DRAWN BY: SP
CHECKED BY: RH
ISSUE DATE:
APPROVED BY: CJ
APPROVAL DATE:

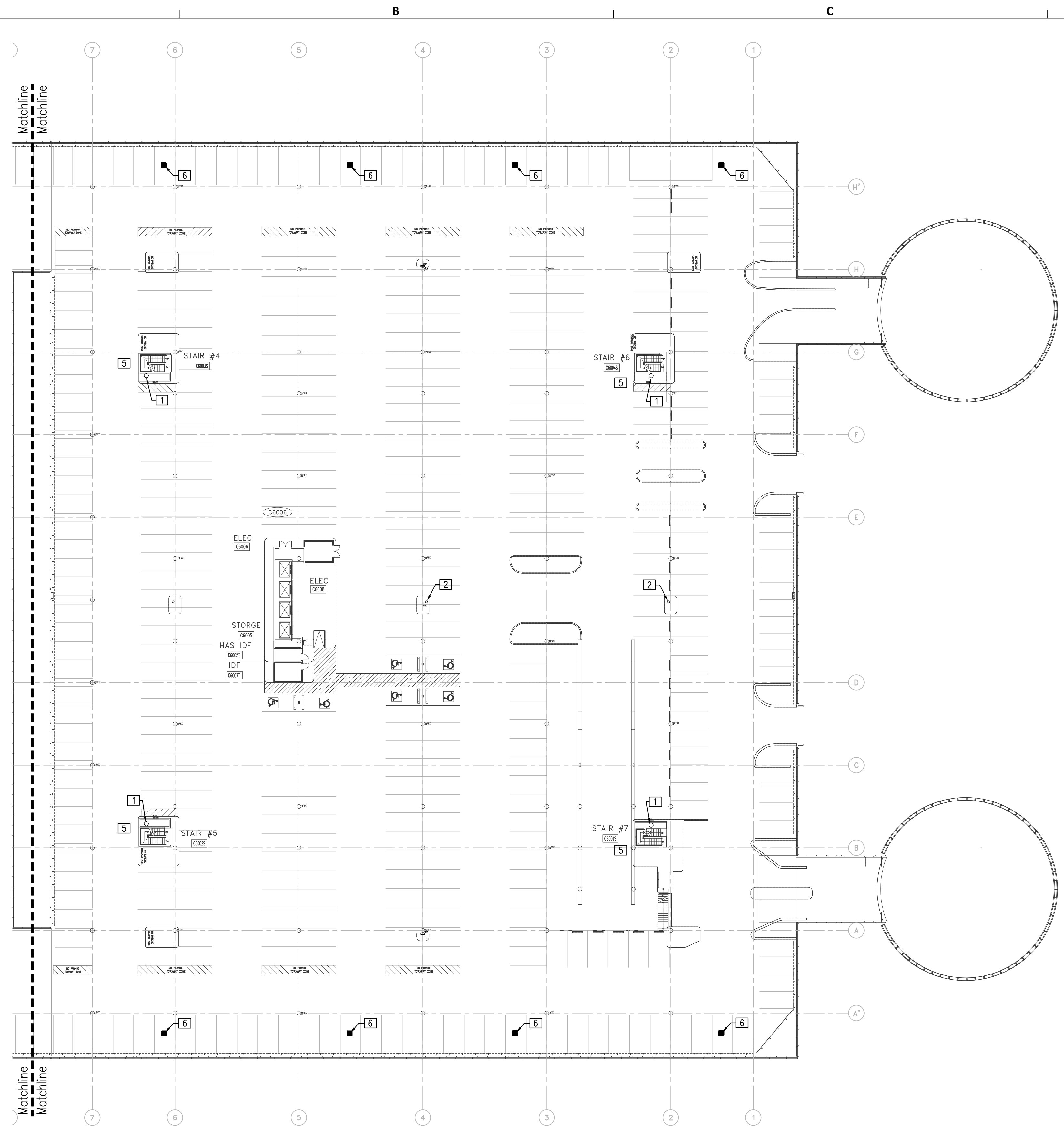
DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category
IFR
ISSUED FOR REVIEW

TERMINAL
"C"

SHIELD NAME:
PLUMBING PLAN - IAH TERMINAL C GARAGE
LEVEL 6 EAST SIDE
SHEET No. P1.06-B SCALE: 1" = 30' - 0"

- PLUMBING PLAN KEYED NOTES:
- 1 EXISTING 12" STORM DRAIN RISER TO REMAIN.
 - 2 EXISTING 10" STORM DRAIN RISER TO REMAIN.
 - 3 EXISTING 4" STORM DRAIN RISER TO REMAIN.
 - 4 EXISTING STORM PIPING TO REMAIN. (TYPICAL).
 - 5 CLEANOUT DRAINS IN STAIRWELL.
 - 6 NEW 3" FLOOR DRAIN.



100% REVIEW ONLY
Document Incomplete: Not intended
for permit or construction.
Engineer: N. Curt Jones, P.E.
P.E. Serial No.: 58428
Date: Nov 16, 2022

SHEET SIZE: 22" x 34" ANSI-D



TERMINAL C AT IAH - 2800 N TERMINAL RD
HOUSTON, TX 77032

IAH TERMINAL C HELIX RAMP BEARING AND MISC REPAIRS

C.I.P. No. A.I.P. No.
C.O.H. No. D.O.A No.



DESIGNER PROJECT No.: 19-21
PROJECT STATUS: CONSTRUCTION DOCUMENTS

REVISIONS

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	Issue for 90% Review	05/19/2021	

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APPROVAL DATE:

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TERMINAL "C"

SHEET NAME:
PLUMBING STORM RISER

SHEET No. P3.01 SCALE: NOT APPLICABLE

WEST GARAGE

EAST GARAGE

LEVEL 7

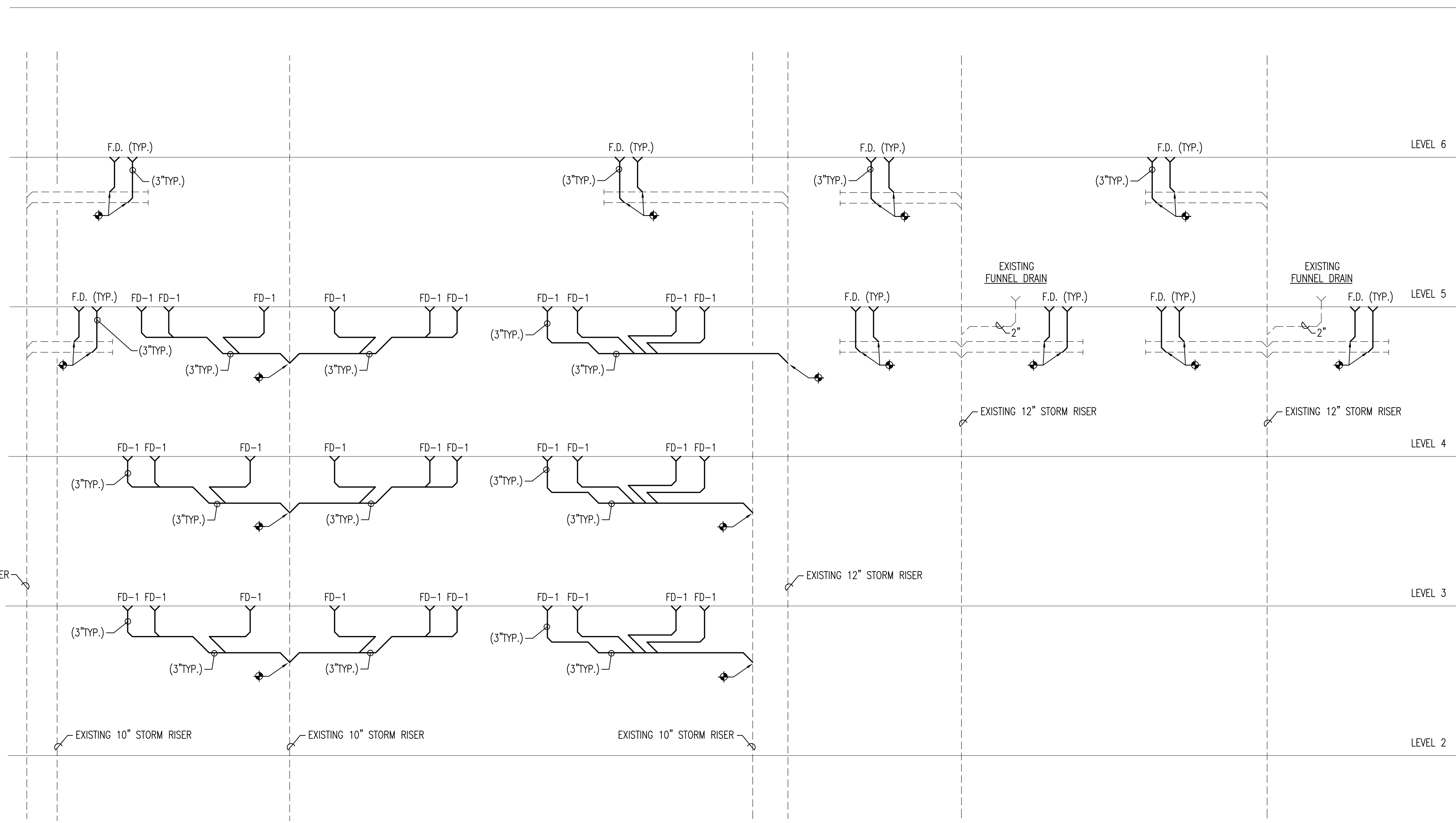
LEVEL 6

LEVEL 5

LEVEL 4

LEVEL 3

LEVEL 2



01 - GARAGE STORM RISER
SCALE: NONE

100% REVIEW ONLY
Document Incomplete: Not intended for permit or construction.
Engineer: N. Curt Jones, P.E.
P.E. Serial No.: 58428
Date: Nov 16, 2022



SHEET SIZE: 22"x34" ANSI-D

REVISIONS			
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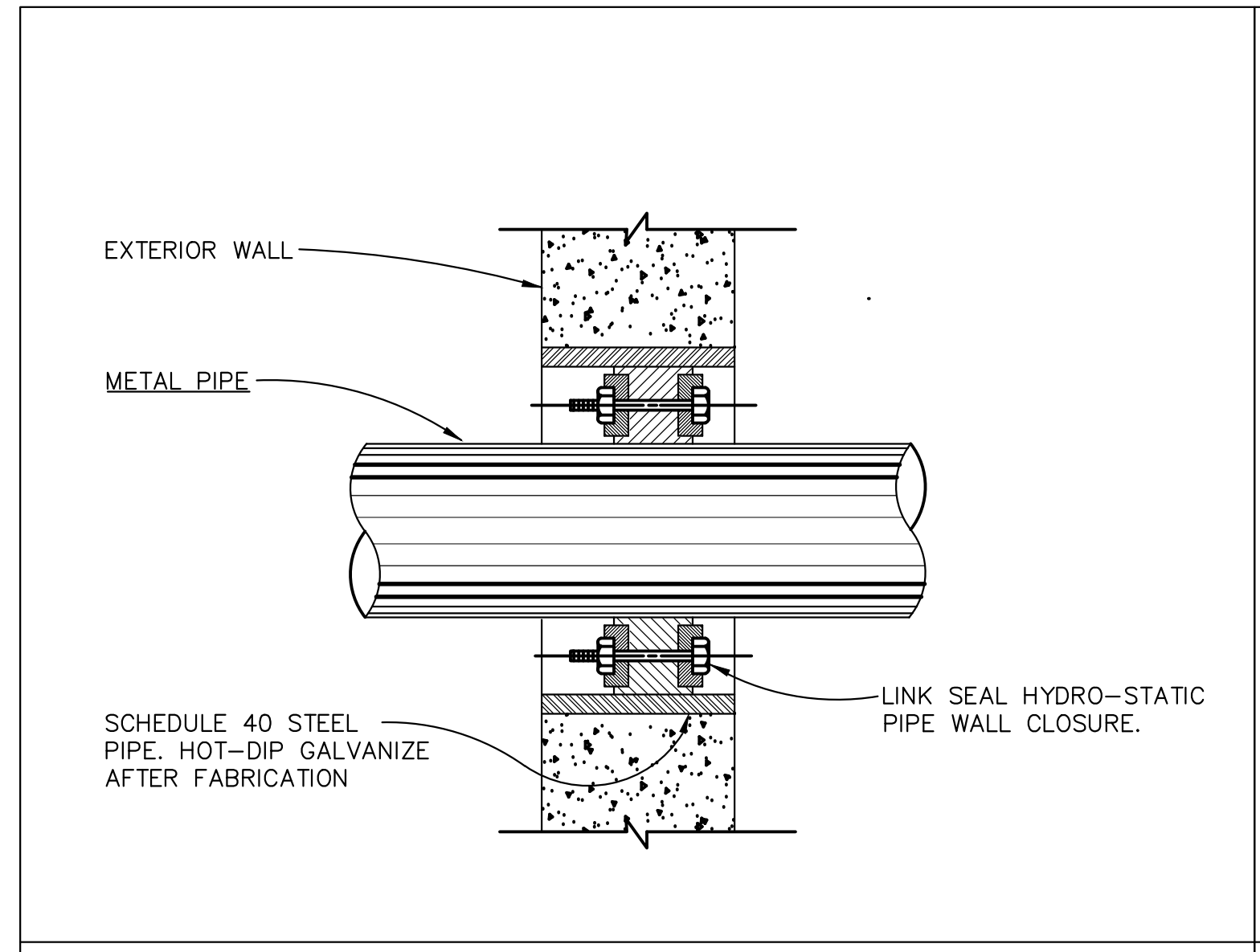
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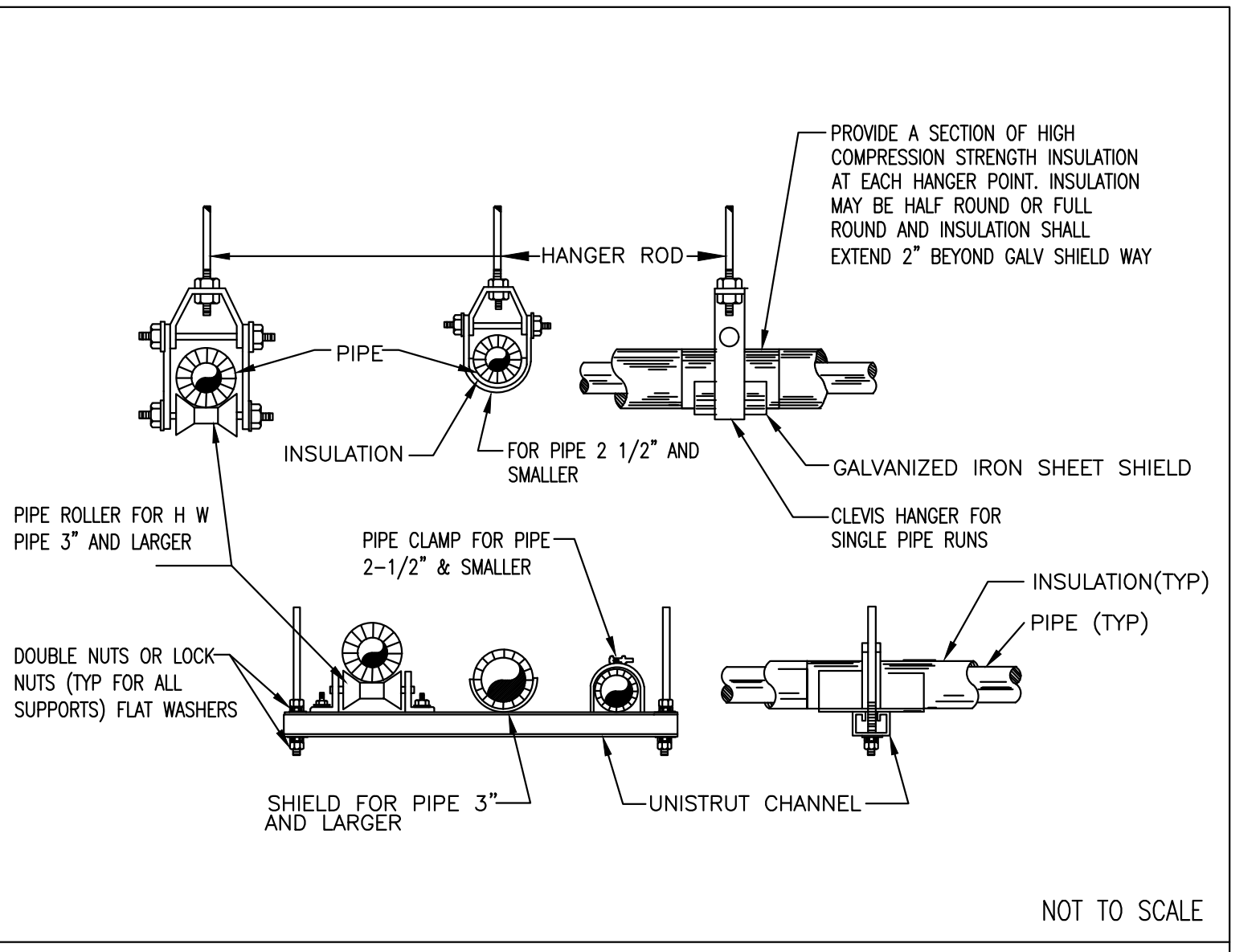
TERMINAL
"C"

SHEET NAME:
PLUMBING DETAILS

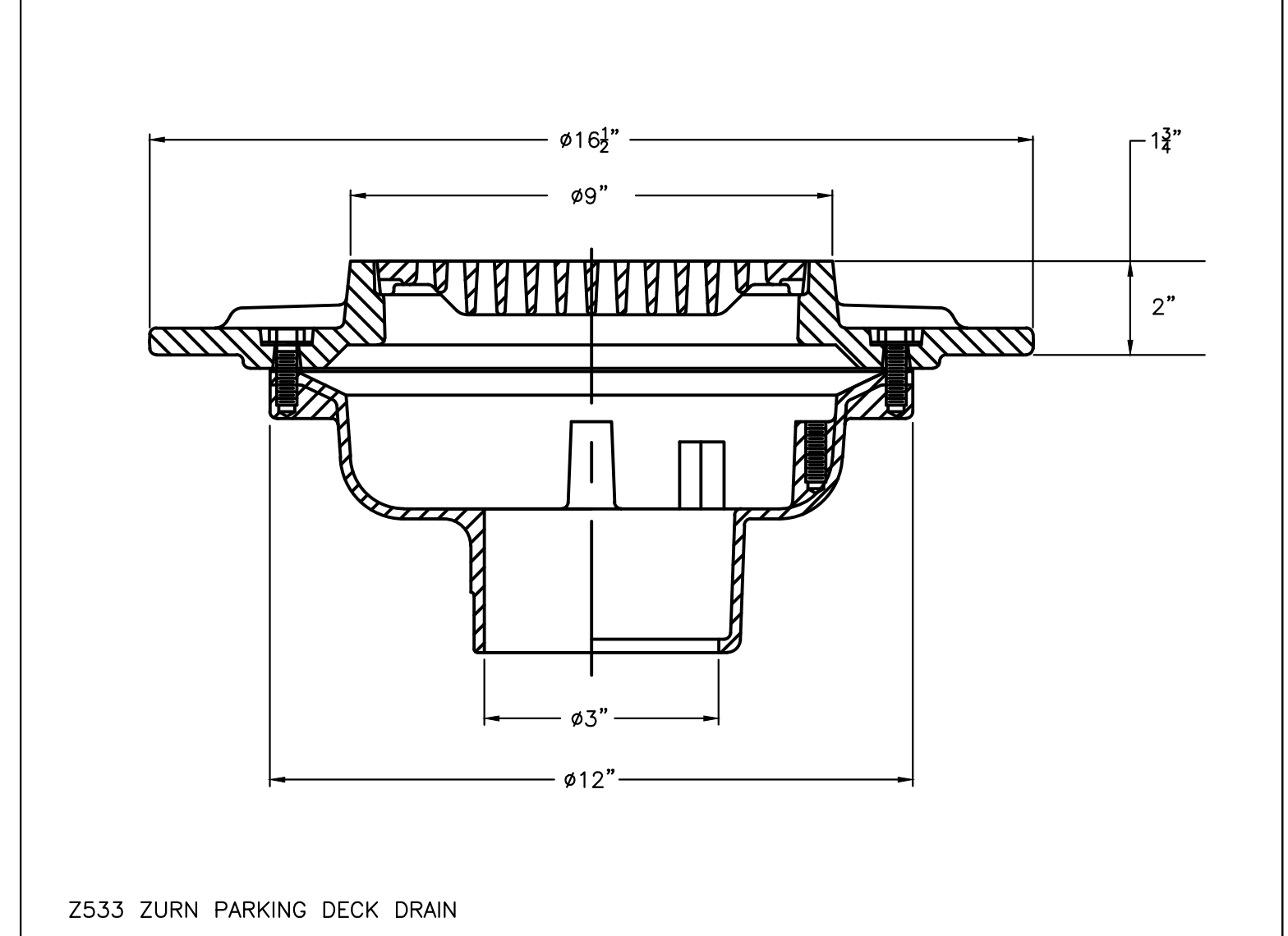
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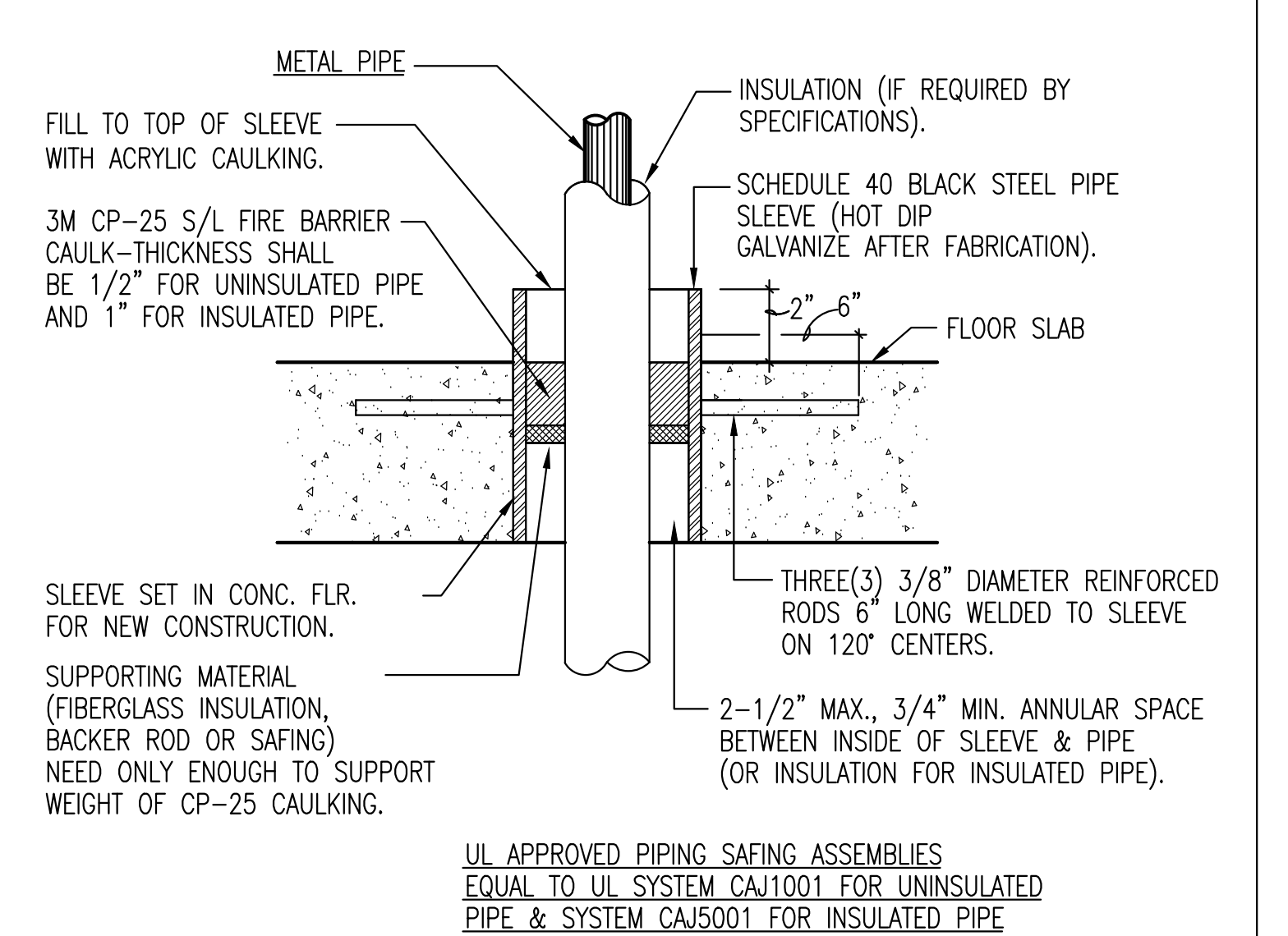
03 - WALL SLEEVE DETAIL NOT TO SCALE



01 - WATER PIPING HANGERS AND SUPPORTS DETAIL NOT TO SCALE



04 - 3" ROUND DRAIN NOT TO SCALE



02 - FLOOR SLEEVE DETAIL NOT TO SCALE

100% REVIEW ONLY
Document Incomplete: Not intended for permit or construction.
Engineer: N. Curt Jones, P.E.
P.E. Serial No.: 58428
Date: Nov 16, 2022

SHEET SIZE: 22"x34" ANSI-D

GENERAL STRUCTURAL NOTES - TERMINAL C GARAGE MISC REPAIRS

PART I - DESIGN CRITERIA

PART V - MISCELLANEOUS

PART V - MISCELLANEOUS (CONTINUED)

- A. GENERAL BUILDING CODE
- THE REPAIR TO EXISTING STRUCTURE ARE BASED ON THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE 2015, WITH CITY OF HOUSTON AMENDMENTS.
 - BUILDING OCCUPANCY CATEGORY: II (PER IBC TABLE 1604A.5).
- B. DEAD LOADS
- SELF WEIGHT OF STRUCTURE AND 10 PSF SUPERIMPOSED DEAD LOAD.
- C. LIVE LOADS
- DESIGN LIVE LOAD USED FOR ANALYSIS: DESIGN LIVE LOADS ARE BASED ON THE MORE RESTRICTIVE OF THE UNIFORM LOAD LISTED BELOW OR THE CONCENTRATED LOAD LISTED ACTING OVER AN AREA 20 SQUARE INCHES.
 - 40 PSF OR 2,000 LBS
- D. WIND LOADS
- WIND PRESSURES (FOR DESIGN OF SHORING SYSTEMS) SHALL BE BASED ON THE PROVISIONS OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, ASCE 7-16 AND THE FOLLOWING CRITERIA.
 - ULTIMATE DESIGN WIND SPEED (VULT): 139 MPH (3-SECOND GUST)
 - BUILDING RISK CATEGORY: II
 - WIND EXPOSURE CATEGORY: B

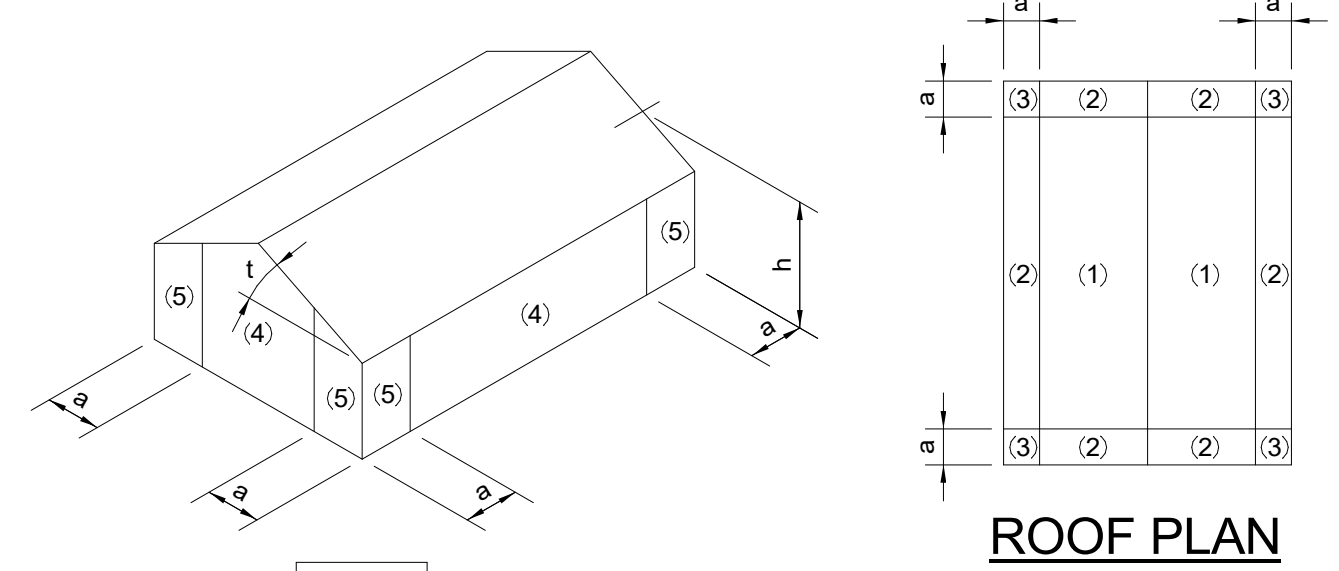
- A. CONTRACT DOCUMENTS
- IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN ALL CONTRACT DOCUMENTS AND LATEST ADDENDA AND TO SUBMIT SUCH DOCUMENTS TO ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS, FABRICATION OF ANY STRUCTURAL MEMBERS, AND ERECTION IN THE FIELD.
 - CONTRACTOR SHALL FULLY AND PROPERLY IMPLEMENT THE ENGINEERING CONTROLS, WORK PRACTICES, AND RESPIRATORY PROTECTION AGAINST TOXIC AND HAZARDOUS SUBSTANCES INCLUDING RESPIRABLE CRYSTALLINE SILICA ACCORDING TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, OSHA 1926.1153. HENDERSON ROGERS DOES NOT HAVE CONTROL OVER, CHARGE OF, OR RESPONSIBILITY FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, NOR SHALL HENDERSON ROGERS BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
 - THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE REPAIRED STRUCTURE, AND EXCEPT WHERE SPECIFICALLY SHOWN, DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, AND SEQUENCE.
 - REFER TO DRAWINGS OTHER THAN STRUCTURAL FOR COMPLETE INFORMATION INCLUDING: FLOOR SLAB DEPRESSIONS AND CURBS, EXPANSION JOINT SYSTEMS, PREVIOUS REPAIRS PERFORMED IN THE FACILITY, PRESENCE OF POST-TENSIONING, LOCATION AND SIZE OF STRUCTURAL MEMBERS (BEAMS, CORBELS, COLUMNS, WALLS, ETC.), SLAB THICKNESS, AND OTHER INFORMATION RELEVANT TO THE PROJECT.
 - WHERE MEMBER LOCATIONS ARE NOT SPECIFICALLY DIMENSIONED, MEMBERS ARE EITHER LOCATED ON COLUMNS LINES OR ARE EQUALLY SPACED BETWEEN LOCATED MEMBERS.
 - IF CERTAIN FEATURES ARE NOT FULLY SHOWN OR SPECIFIED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS SHOWN OR SPECIFIED IN SIMILAR CONDITIONS. COORDINATE BELOW WITH ARCHITECT'S SPECIFICATIONS.

- SUBMITTALS NOT SATISFYING THE ABOVE CRITERIA WILL NOT BE CONSIDERED. IN THE CHOICES BELOW.
- G. THE STRUCTURAL ENGINEER'S ROLE DURING CONSTRUCTION
- THE ENGINEER SHALL NOT HAVE CONTROL NOR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSION OF THE CONTRACTOR, SUBCONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
 - PERIODIC SITE OBSERVATION BY FIELD REPRESENTATIVES OF HENDERSON ROGERS IS SOLELY FOR THE PURPOSE OF BECOMING GENERALLY FAMILIAR WITH THE PROGRESS AND QUALITY OF THE WORK COMPLETED, AND DETERMINING, IN GENERAL, IF THE WORK OBSERVED IS BEING PERFORMED IN A MANNER INDICATING THAT THE WORK, WHEN FULLY COMPLETED, WILL BE IN ACCORDANCE WITH THE REPAIR CONTRACT DOCUMENTS. THIS LIMITED SITE OBSERVATION SHOULD NOT BE CONSTRUED AS EXHAUSTIVE OR CONTINUOUS TO CHECK THE QUALITY OR QUANTITY OF THE WORK, BUT RATHER PERIODIC IN AN EFFORT TO GUARD THE OWNER AGAINST DEFECTS OR DEFICIENCIES IN THE WORK OF THE CONTRACTOR.
- H. MAINTENANCE STATEMENT
- ALL STRUCTURES REQUIRE PERIODIC MAINTENANCE TO EXTEND LIFESPAN AND TO ENSURE STRUCTURAL INTEGRITY FROM EXPOSURE TO THE ENVIRONMENT. A PLANNED PROGRAM OF MAINTENANCE SHALL BE ESTABLISHED BY THE BUILDING OWNER. THIS PROGRAM SHALL INCLUDE ITEMS SUCH AS, BUT NOT LIMITED TO, PAINTING OF STRUCTURAL STEEL, PROTECTIVE COATINGS FOR CONCRETE, REPLACEMENT OF FAILED SEALANTS, CAULKED JOINTS, EXPANSION JOINTS, CONTROL JOINTS, REPAIR OF SPALLS AND CRACKS IN CONCRETE, AND PRESSURE WASHING OF EXPOSED STRUCTURAL ELEMENTS.

PART II - REPAIRS

- B. DRAWING CONFLICTS
- THE GENERAL CONTRACTOR SHALL COMPARE THE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND REPORT ANY DISCREPANCY BETWEEN EACH SET OF DRAWINGS AND WITHIN EACH SET OF DRAWINGS TO THE ARCHITECT AND ENGINEER PRIOR TO THE FABRICATION AND INSTALLATION OF ANY REPLACEMENT ELEMENTS.
- C. CONFLICTS IN STRUCTURAL REQUIREMENTS
- WHERE CONFLICT EXISTS AMONG THE VARIOUS PARTS OF THE STRUCTURAL CONTRACT DOCUMENTS, STRUCTURAL DRAWINGS, GENERAL NOTES, AND SPECIFICATIONS, THE STRICTEST REQUIREMENTS, AS INDICATED BY THE ENGINEER, SHALL GOVERN.
- D. EXISTING CONDITIONS
- THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS OF THE EXISTING BUILDING AT THE JOB SITE AND REPORT ANY DISCREPANCIES FROM ASSUMED CONDITIONS SHOWN ON THE DRAWINGS TO THE ARCHITECT AND ENGINEER PRIOR TO THE FABRICATION AND ERECTION OF ANY MEMBERS.
 - EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS WAS OBTAINED FROM EXISTING CONSTRUCTION DOCUMENTS AND LIMITED SITE OBSERVATION. THESE DRAWINGS OF EXISTING CONSTRUCTION ARE AVAILABLE FOR CONTRACTOR USE. HOWEVER, THE AVAILABLE DRAWINGS OF EXISTING CONSTRUCTION ARE NOT NECESSARILY COMPLETE. THE CONTRACTOR SHALL FIELD VERIFY ALL PERTINENT INFORMATION.
 - DEMOLITION, CUTTING, DRILLING, ETC. OF EXISTING WORK SHALL BE PERFORMED WITH GREAT CARE SO AS NOT TO JEOPARDIZE THE STRUCTURAL INTEGRITY OF THE EXISTING BUILDING. IF ANY ARCHITECTURAL, STRUCTURAL, OR MEP MEMBERS NOT DESIGNATED FOR REMOVAL INTERFERE WITH THE NEW WORK, THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY AND APPROVAL OBTAINED PRIOR TO REMOVAL OF THOSE MEMBERS.
 - THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION AND TAKE CARE TO PROTECT EXISTING UTILITIES THAT ARE TO REMAIN IN SERVICE.
 - THE CONTRACTOR SHALL PROVIDE DUST, ODOR AND NOISE PROTECTION, AND SAFETY MEASURES AS NECESSARY FOR THE DURATION OF REPAIRS. PROVIDE ALL MEASURES NECESSARY TO PROTECT THE EXISTING STRUCTURE, BUILDING INTERIOR, VEHICLES, FACILITY PATRONS AND OTHER PERSONS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, TEMPORARY BRACING, SHORING, FORMWORK, PROTECTIVE ENCLOSURES AND TRAFFIC CONTROLS.
 - THE CONTRACTOR SHALL REPAIR ALL DAMAGE CAUSED DURING CONSTRUCTION WITH SIMILAR MATERIALS AND WORKMANSHIP TO RESTORE CONDITIONS TO LEVELS ACCEPTABLE TO THE ARCHITECT.

PART VI - WIND COMPONENTS AND CLADDING LOADS



DESIGN LOAD (psf)

ZONE	0-10 sq ft	>100 sq ft
1	+16, -66	+16, -54
2	+16, -103	+16, -86
3	+16, -141	+16, -120
2(OH)	+16, -103	+16, -86
3(OH)	+16, -141	+16, -120
LOW PARAPET	+133, -75	+110, -65
HIGH PARAPET	+171, -113	+143, -90
ZONE	0-10 sq ft	>500 sq ft
4	+45, -45	+33, -37
5	+45, -83	+33, -50

- NOTES:**
- (0-10 sq ft) EXAMPLE DENOTES EFFECTIVE WIND AREA.
 - + AND - SIGNS SIGNIFY PRESSURES ACTING TOWARD OR AWAY FROM THE SURFACES, RESPECTIVELY.
 - WIND PRESSURES MAY BE INTERPOLATED FOR EFFECTIVE WIND AREAS BETWEEN THE SPECIFIED RANGES.
 - (OH) REFERS TO ROOF OVERHANGS.
 - WIND PRESSURES NOTED ARE GROSS WIND UPLIFT PRESSURES.

PART III - SPECIAL INSPECTIONS

- A. THE OWNER'S TESTING LABORATORY SHALL PROVIDE SPECIAL INSPECTION SERVICES IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE FOR THE FOLLOWING ITEMS.
- CONCRETE CONSTRUCTION:
 - CONCRETE REPAIRS

PART IV - SUBMITTALS

- A. SUBMITTAL LIST AND SCHEDULE
- THE GENERAL CONTRACTOR SHALL PREPARE A DETAILED LIST AND SCHEDULE OF ALL SUBMITTAL ITEMS TO BE SENT TO THE STRUCTURAL ENGINEER PRIOR TO THE START OF CONSTRUCTION. THIS LIST SHALL BE UPDATED AND REVISED AND KEPT CURRENT AS THE JOB PROGRESSES. THE SUBMITTAL LIST SHALL BE ORGANIZED AS SHOWN BELOW:
 - SHOP DRAWINGS
 - DESIGN CALCULATIONS
 - PRODUCT DATA, CERTIFICATES, REPORTS, AND OTHER LITERATURE
- B. SUBMITTALS TO BE PROVIDED TO STRUCTURAL ENGINEER
- STRUCTURAL SUBMITTALS: IN ADDITION TO THE SUBMITTALS REQUIRED BY THE STRUCTURAL SPECIFICATIONS, THE FOLLOWING SUBMITTALS SHALL BE PROVIDED:
 - SUPPLEMENTAL STEEL REINFORCEMENT (IF REQUIRED)
 - CONCRETE REPAIR MATERIALS
 - EPOXY-MODIFIED CEMENTITIOUS COATING
 - FINAL SCAFFOLDING LAYOUT, MATERIAL DATA, CALCULATIONS, ETC. ARE TO BE STAMPED BY A LICENSED ENGINEER IN TEXAS.
 - SUBMITTAL REQUIREMENTS:
 - ALL SHOP DRAWINGS MUST BE REVIEWED AND ELECTRONICALLY STAMPED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTAL. SELECT ONE OF THE TWO OPTIONS BELOW.
 - CONTRACTOR SHALL PROVIDE THE SUBMITTAL IN ELECTRONIC PORTABLE DOCUMENT FORMAT (PDF) PER THE SPECIFICATIONS.
 - THE OMISSION FROM THE SHOP DRAWINGS OF ANY MATERIALS REQUIRED BY THE CONTRACT DOCUMENTS TO BE FURNISHED SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF FURNISHING AND INSTALLING SUCH MATERIALS, REGARDLESS OF WHETHER THE SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED.
- C. REPRODUCTION
- THE USE OF ELECTRONIC FILES OR REPRODUCTIONS OF THESE CONTRACT DOCUMENTS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES THEIR ACCEPTANCE OF ALL INFORMATION SHOWN HEREON AS CORRECT, AND OBLIGATES THEMSELVES TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS THAT MAY OCCUR HEREON.

TERMINAL C AT IAH - 2800 N TERMINAL RD
HOUSTON, TX 77032

**IAH TERMINAL C HELIX RAMP
BEARING AND MISC REPAIRS**

C.I.P. No.	A.I.P. No.
C.O.H. No.	D.O.A. No.

11767 KATY FREEWAY SUITE 430
HOUSTON, TEXAS 77079 - 713-482-2338

DESIGNER PROJECT No.: 19-21
PROJECT STATUS: CONSTRUCTION DOCUMENTS

REVISIONS

No.	DESCRIPTION	DATE	BY
	ISSUE FOR BID	01/19/2023	

DESIGNER:	ER
DRAWN BY:	HT
CHECKED BY:	ER
ISSUE DATE:	01/19/2023
APPROVED BY:	ER
APPROVAL DATE:	01/19/2023

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Review/Approval Category	Henderson Rogers Structural Engineers, LLC TBPE Firm Registration No. 8755
IFB	
ISSUED FOR BID	

**TERMINAL
"C"**

SHEET NAME:	GENERAL NOTES TERMINAL C GARAGE REPAIRS
SHEET No.	5001
SCALE:	NO SCALE

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OLD DOA No. :
DOA DWG FILE:

SHEET SIZE: 22"x34" ANSI-D

REVISIONS

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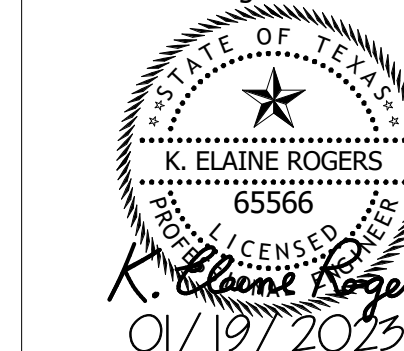
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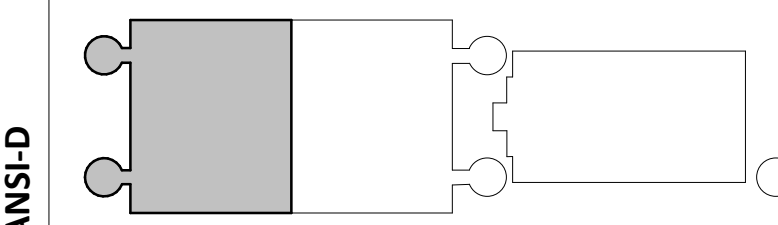
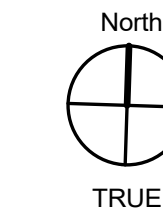
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Structural Engineers, LLC
TBPE Firm Registration No. 8755



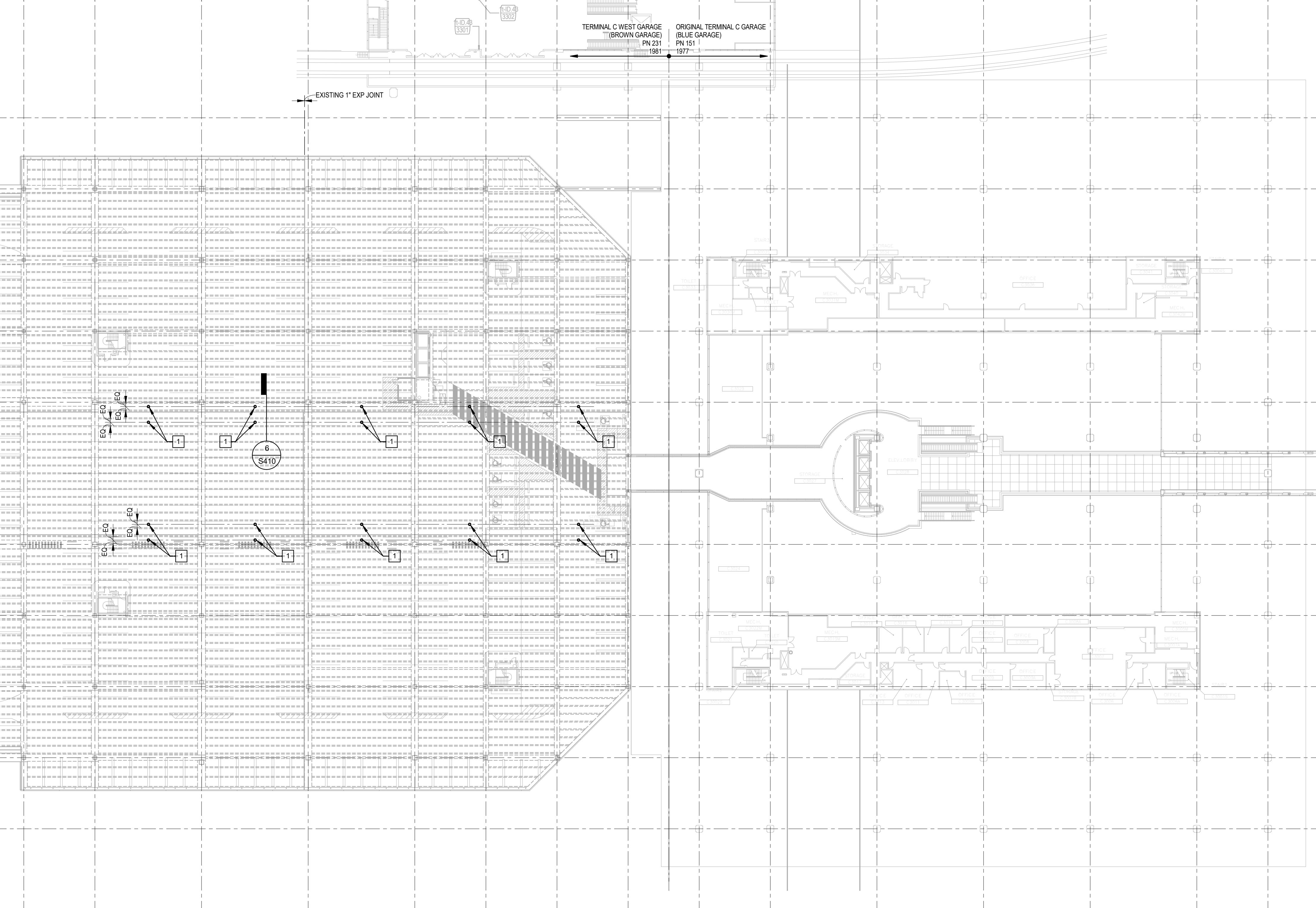
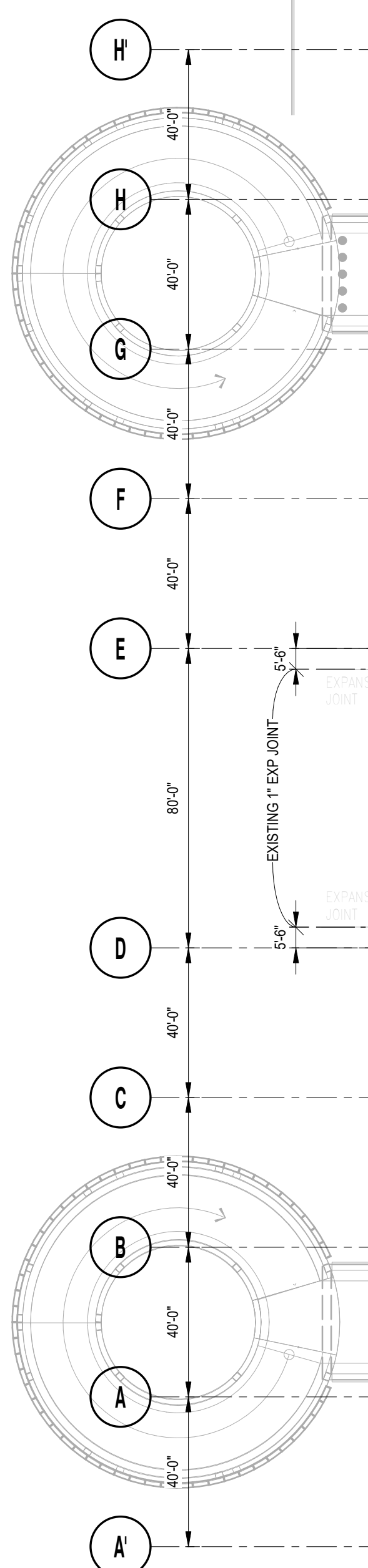
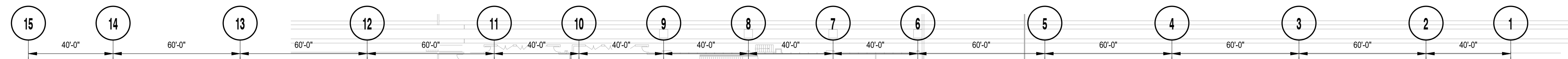
TERMINAL
"C"



SHEET NAME: LEVEL 3 FRAMING PLAN

SHEET No. S103 SCALE: As indicated

SHEET SIZE: 22"x34" ANSI-D



KEYED NOTES:

- 1 CORE 12" DIAMETER HOLE FOR NEW FLOOR DRAIN. LOCATE DRAIN AT CENTER OF SLAB SPANS BETWEEN JOISTS.

NOTES:

1. EXISTING GARAGE STRUCTURE CONSISTS OF **POST-TENSIONED** CONCRETE BEAMS, JOISTS, AND ONE-WAY SLABS. CONTRACTOR SHALL ENSURE THAT NO TENDON OR REINFORCEMENT IS CUT OR OTHERWISE DAMAGED DURING THE COURSE OF CONSTRUCTION OPERATIONS. EDGES OF CORES AND ANCHORS ARE TO BE LOCATED AS FAR AS POSSIBLE FROM TENDONS OR REINFORCING, AND IN NO CASE CLOSER THAN 2 INCHES. PRIOR TO ANY DRILLING, CORING, CHIPPING, PLACEMENT OF ANCHORS, OR ANY OTHER PENETRATION OF EXISTING CONCRETE, INSTALLER SHALL ACCURATELY DETERMINE THE LOCATION OF STEEL CABLE TENDONS AND REINFORCEMENT BY USE OF GROUND PENETRATING RADAR (GPR) OR OTHER APPROVED NON-DESTRUCTIVE METHOD.
2. REFER TO ARCHITECTURE AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.

1 IAH TERMINAL C GARAGE LEVEL 3 FRAMING PLAN
SCALE: 1/32" = 1'-0"

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FILE PATH:

OLD DOA No.:
DOA DWG FILE:

REVISIONS

No.	DESCRIPTION	DATE	BY
1	ISSUE FOR BID	01/19/2023	

DESIGNER:	ER
DRAWN BY:	HT
CHECKED BY:	ER
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APPROVAL DATE:	01/19/2023

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of
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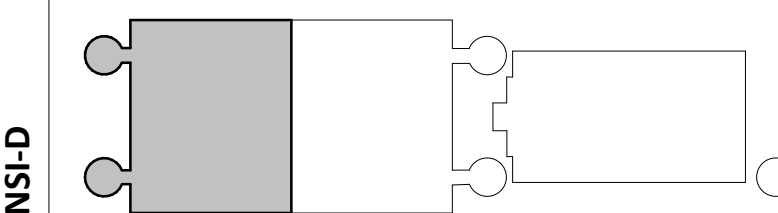
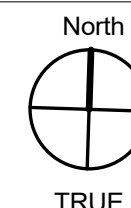
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Structural Engineers, LLC
TBPE Firm Registration No. 8755



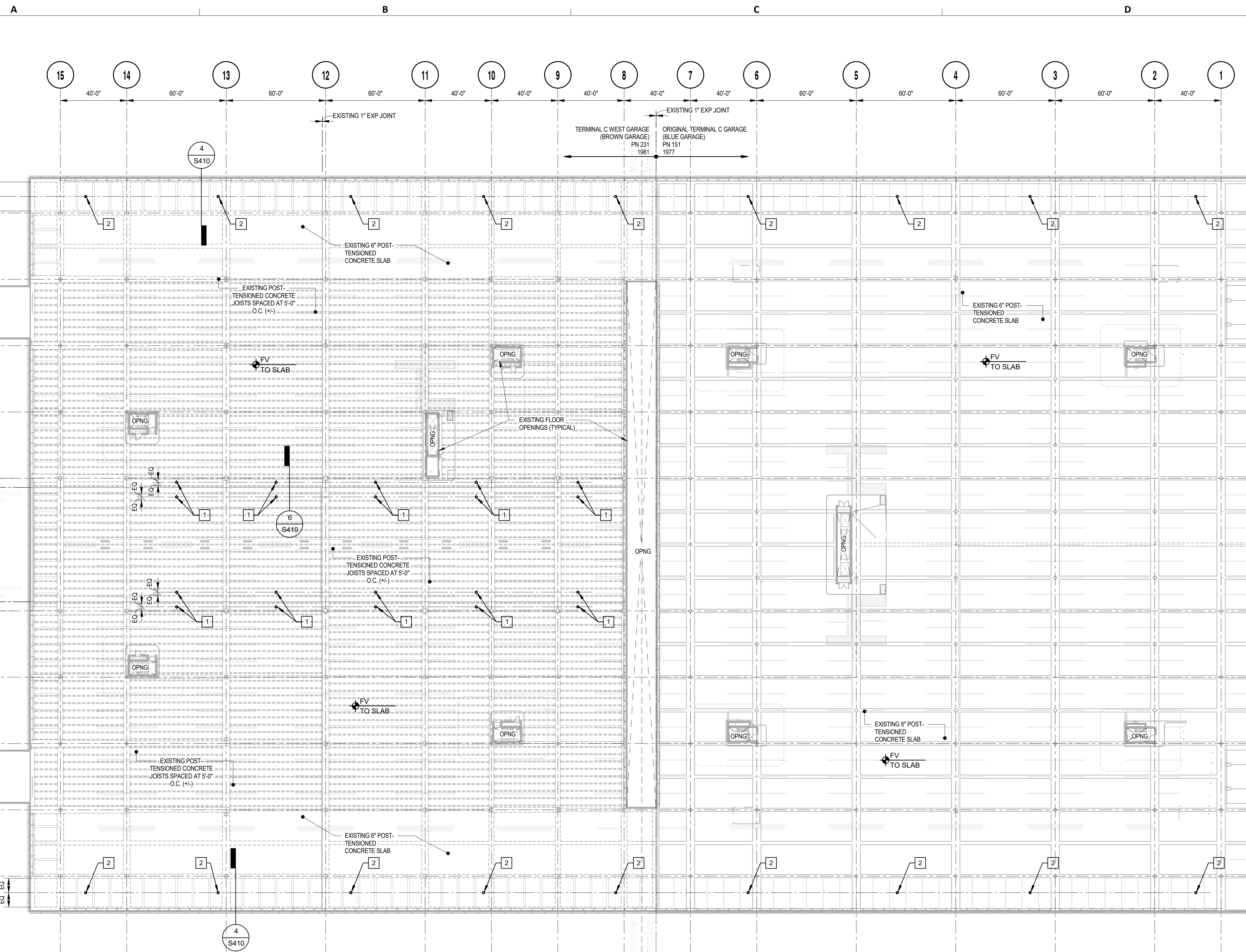
TERMINAL
"C"



SHEET NAME: LEVEL 4 FRAMING PLAN

SHEET No. S104 SCALE: As indicated

SHEET SIZE: 22"x34" ANSI-D



- KEYED NOTES:**
- 1 CORE 12" DIAMETER HOLE FOR NEW FLOOR DRAIN. LOCATE DRAIN AT CENTER OF SLAB SPANS BETWEEN JOISTS.
 - 2 CORE 12" DIAMETER HOLE FOR NEW FLOOR DRAIN. LOCATE DRAIN IN CENTER OF PARKING SPACE IN EAST-WEST DIRECTION AND AT CENTER OF SLAB SPAN IN NORTH-SOUTH DIRECTION.

- NOTES:**
- EXISTING GARAGE STRUCTURE CONSISTS OF **POST-TENSIONED** CONCRETE BEAMS, JOISTS, AND ONE-WAY SLABS. CONTRACTOR SHALL ENSURE THAT NO TENDON OR REINFORCEMENT IS CUT OR OTHERWISE DAMAGED DURING THE COURSE OF CONSTRUCTION OPERATIONS. EDGES OF CORES AND ANCHORS ARE TO BE LOCATED AS FAR AS POSSIBLE FROM TENDONS OR REINFORCING, AND IN NO CASE CLOSER THAN 2 INCHES. PRIOR TO ANY DRILLING, CORING, CHIPPING, PLACEMENT OF ANCHORS, OR ANY OTHER PENETRATION OF EXISTING CONCRETE, INSTALLER SHALL ACCURATELY DETERMINE THE LOCATION OF STEEL CABLE TENDONS AND REINFORCEMENT BY USE OF GROUND PENETRATING RADAR (GPR) OR OTHER APPROVED NON-DESTRUCTIVE METHOD.
 - REFER TO ARCHITECTURE AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.

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OLD DOA No.: DOA DWG FILE:

1 IAH TERMINAL C GARAGE LEVEL 4 FRAMING PLAN
SCALE: 1/32" = 1'-0"

REVISIONS

No.	DESCRIPTION	DATE	BY
1	ISSUE FOR BID	01/19/2023	

DESIGNER:	ER
DRAWN BY:	HT
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ISSUE DATE:	01/19/2023
APPROVED BY:	ER
APPROVAL DATE:	01/19/2023

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of
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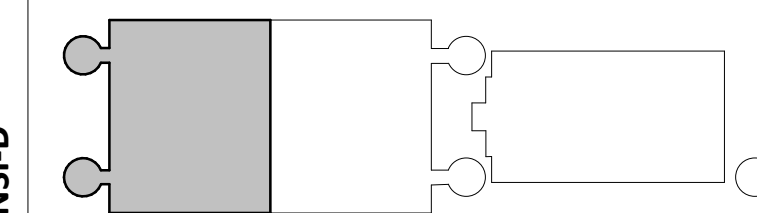
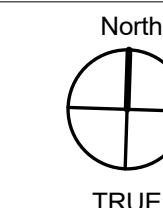
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Structural Engineers, LLC
TBPE Firm Registration No. 8755



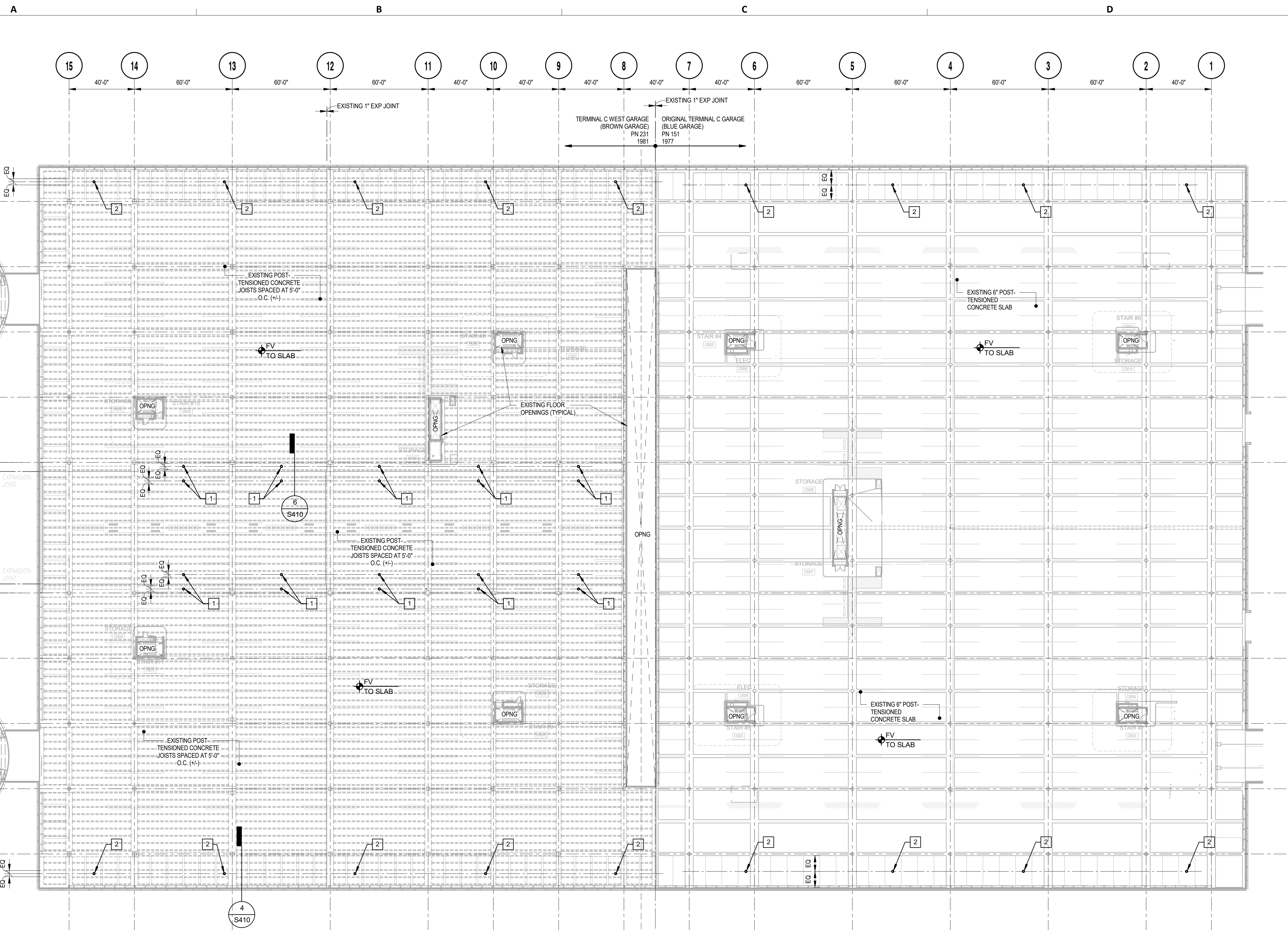
TERMINAL
"C"



SHEET NAME: LEVEL 5 FRAMING PLAN

SHEET No. S105 SCALE: As indicated

SHEET SIZE: 22"x34" ANSI-D



KEYED NOTES:

- 1 CORE 12" DIAMETER HOLE FOR NEW FLOOR DRAIN. LOCATE DRAIN AT CENTER OF SLAB SPANS BETWEEN JOISTS.
- 2 CORE 12" DIAMETER HOLE FOR NEW FLOOR DRAIN. LOCATE DRAIN IN CENTER OF PARKING SPACE IN EAST-WEST DIRECTION AND AT CENTER OF SLAB SPAN IN NORTH-SOUTH DIRECTION.

NOTES:

- 1. EXISTING GARAGE STRUCTURE CONSISTS OF **POST-TENSIONED** CONCRETE BEAMS, JOISTS, AND ONE-WAY SLABS. CONTRACTOR SHALL ENSURE THAT NO TENDON OR REINFORCEMENT IS CUT OR OTHERWISE DAMAGED DURING THE COURSE OF CONSTRUCTION OPERATIONS. EDGES OF CORES AND ANCHORS ARE TO BE LOCATED AS FAR AS POSSIBLE FROM TENDONS OR REINFORCING, AND IN NO CASE CLOSER THAN 2 INCHES. PRIOR TO ANY DRILLING, CORING, CHIPPING, PLACEMENT OF ANCHORS, OR ANY OTHER PENETRATION OF EXISTING CONCRETE, INSTALLER SHALL ACCURATELY DETERMINE THE LOCATION OF STEEL CABLE TENDONS AND REINFORCEMENT BY USE OF GROUND PENETRATING RADAR (GPR) OR OTHER APPROVED NON-DESTRUCTIVE METHOD.
- 2. REFER TO ARCHITECTURE AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.

1 IAH TERMINAL C GARAGE LEVEL 5 FRAMING PLAN

SCALE: 1/32" = 1'-0"

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OLD DOA No. : DOA DWG FILE:

REVISIONS

No.	DESCRIPTION	DATE	BY
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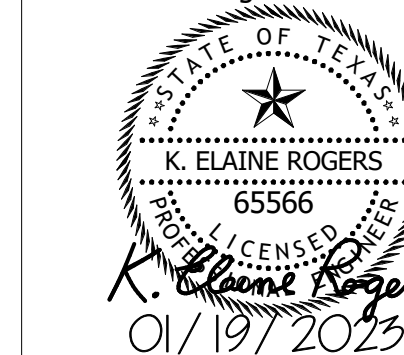
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DRAWN BY:	HT
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ISSUE DATE:	01/19/2023
APPROVED BY:	ER
APPROVAL DATE:	01/19/2023

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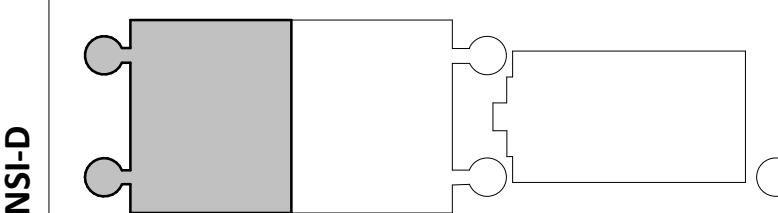
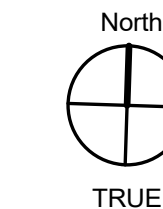
Review/ Approval Category

IFB
ISSUE FOR BID

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755



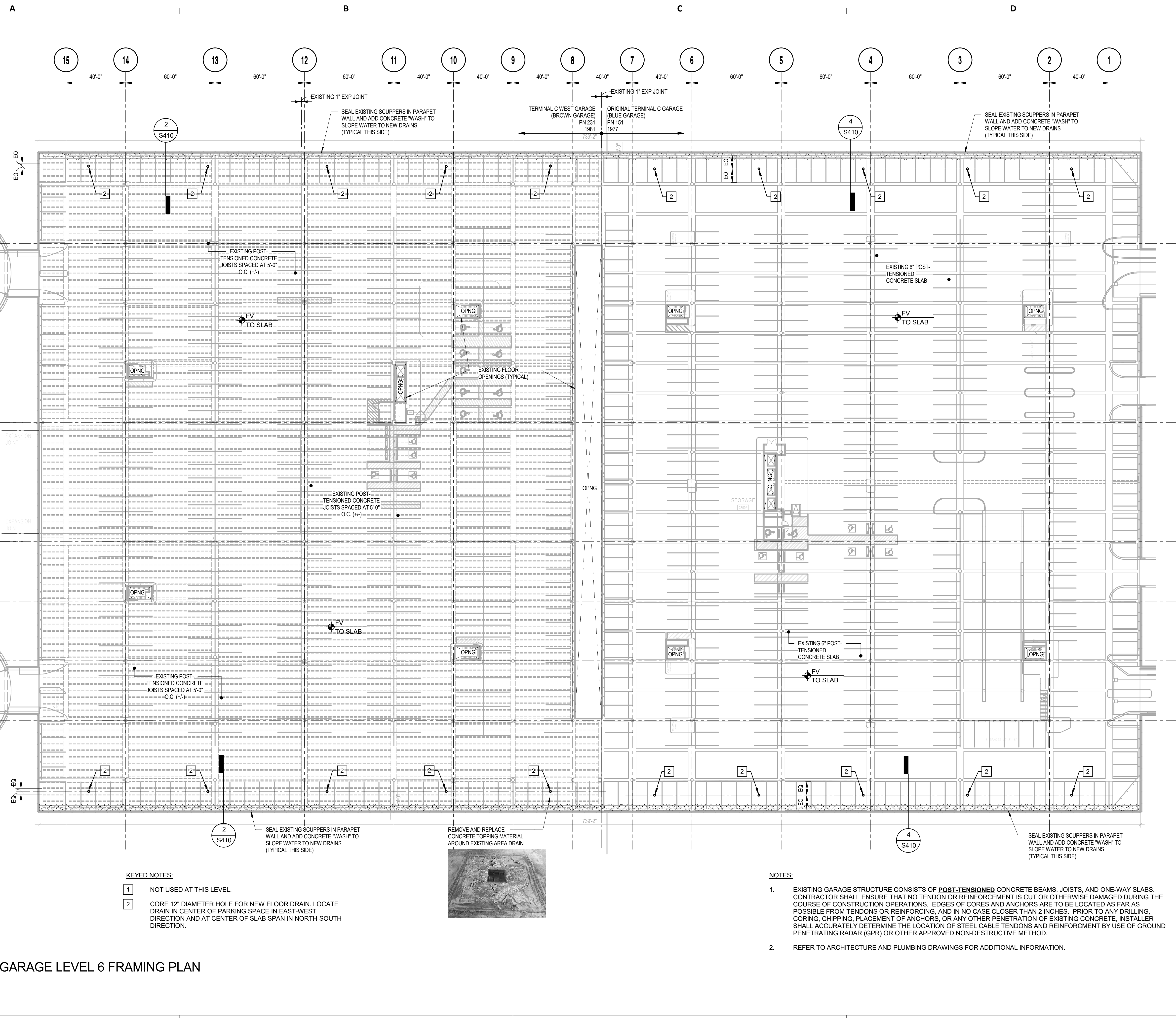
TERMINAL
"C"



SHEET NAME: LEVEL 6 FRAMING PLAN

SHEET No. S106 SCALE: As indicated

SHEET SIZE: 22"x34" ANSI-D



KEYED NOTES:

- 1 NOT USED AT THIS LEVEL.
- 2 CORE 12" DIAMETER HOLE FOR NEW FLOOR DRAIN. LOCATE DRAIN IN CENTER OF PARKING SPACE IN EAST-WEST DIRECTION AND AT CENTER OF SLAB SPAN IN NORTH-SOUTH DIRECTION.



NOTES:

- EXISTING GARAGE STRUCTURE CONSISTS OF **POST-TENSIONED** CONCRETE BEAMS, JOISTS, AND ONE-WAY SLABS. CONTRACTOR SHALL ENSURE THAT NO TENDON OR REINFORCEMENT IS CUT OR OTHERWISE DAMAGED DURING THE COURSE OF CONSTRUCTION OPERATIONS. EDGES OF CORES AND ANCHORS ARE TO BE LOCATED AS FAR AS POSSIBLE FROM TENDONS OR REINFORCING, AND IN NO CASE CLOSER THAN 2 INCHES. PRIOR TO ANY DRILLING, CORING, CHIPPING, PLACEMENT OF ANCHORS, OR ANY OTHER PENETRATION OF EXISTING CONCRETE, INSTALLER SHALL ACCURATELY DETERMINE THE LOCATION OF STEEL CABLE TENDONS AND REINFORCEMENT BY USE OF GROUND PENETRATING RADAR (GPR) OR OTHER APPROVED NON-DESTRUCTIVE METHOD.
- REFER TO ARCHITECTURE AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.

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FILE PATH:

OLD DOA No. : DOA DWG FILE:

1 IAH TERMINAL C GARAGE LEVEL 6 FRAMING PLAN
SCALE: 1/32" = 1'-0"

REVISIONS

No.	DESCRIPTION	DATE	BY
1	ISSUE FOR BID	01/19/2023	

DESIGNER:	ER
DRAWN BY:	JM
CHECKED BY:	ER
ISSUE DATE:	01/19/2023
APPROVED BY:	ER
APPROVAL DATE:	01/19/2023

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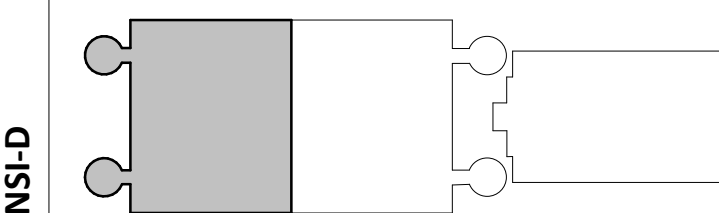
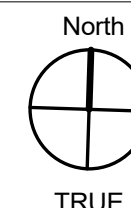
Review/Approval Category

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Structural Engineers, LLC
TBPE Firm Registration No. 8755

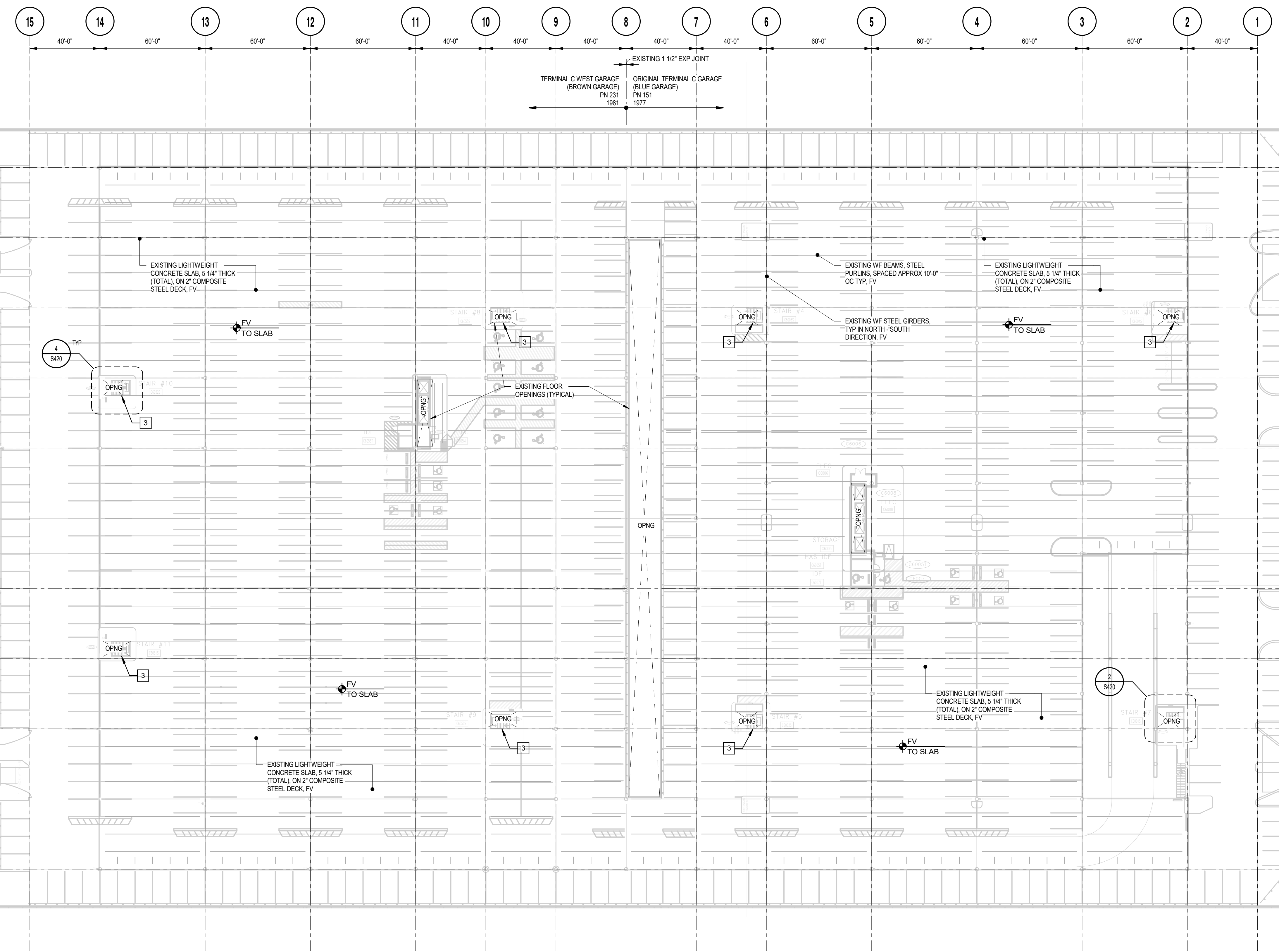


TERMINAL "C"



SHEET NAME: LEVEL 7 FRAMING PLAN

SHEET No. S107 SCALE: As indicated



KEYED NOTES:

- 1 NOT USED AT THIS LEVEL.
- 2 NOTE USED AT THIS LEVEL.
- 3 STAIR CASE ENCLOSURE. SEE S410 FOR ADDITIONAL INFORMATION AND GENERAL NOTES FOR COMPONENTS AND CLADDING WIND LOADS.

1 IAH TERMINAL C GARAGE LEVEL 7 FRAMING PLAN

SCALE: 1/32" = 1'-0"

FILE PATH: C:\Users\John.moore\Documents\200720_TERMINAL C GARAGE_R20_imooresx2yp.rvt
OLD DOA No.:
DOA DWG FILE:

REVISIONS

No.	DESCRIPTION	DATE	BY
1	ISSUE FOR BID	01/19/2023	

DESIGNER:	ER
DRAWN BY:	HT
CHECKED BY:	ER
ISSUE DATE:	01/19/2023
APPROVED BY:	ER
APPROVAL DATE:	01/19/2023

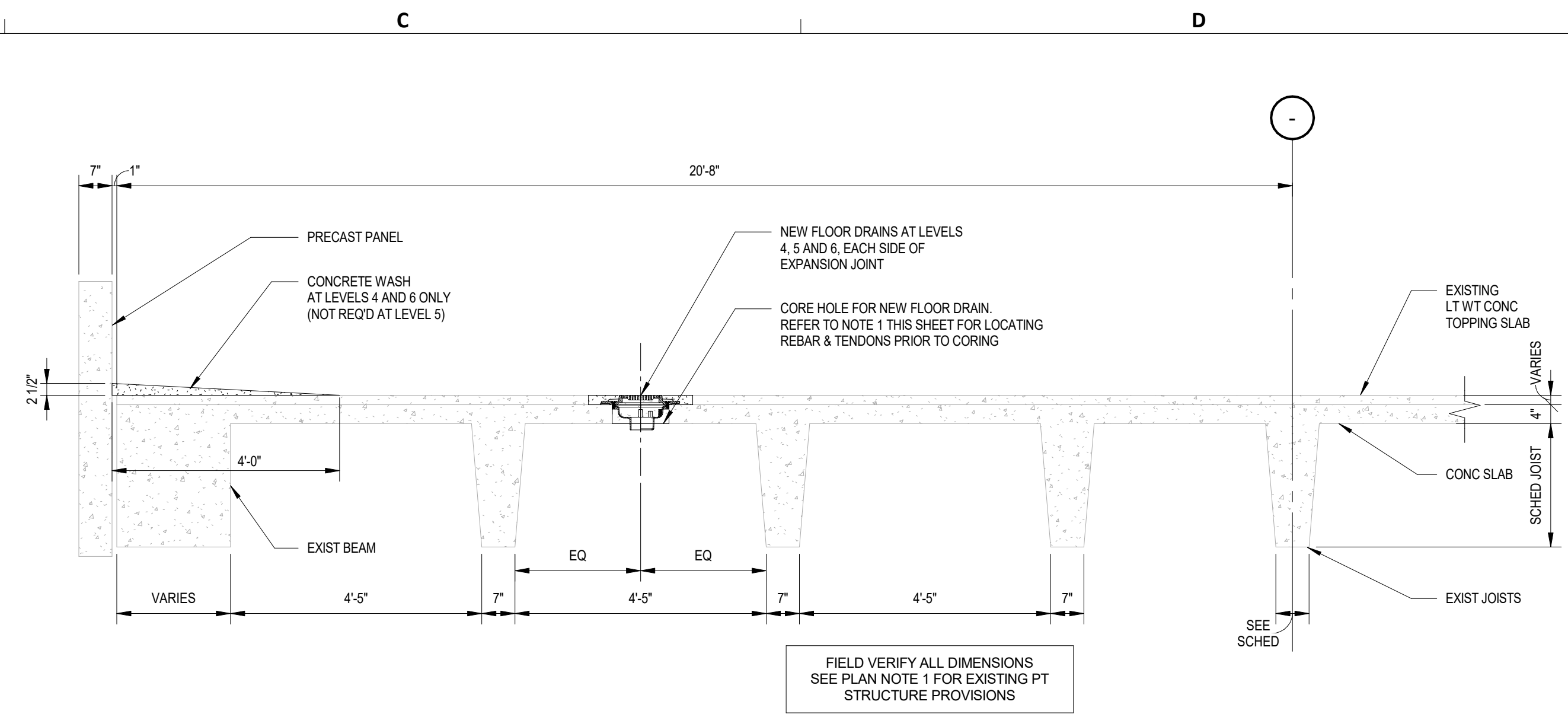
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IFB	
ISSUE FOR BID	

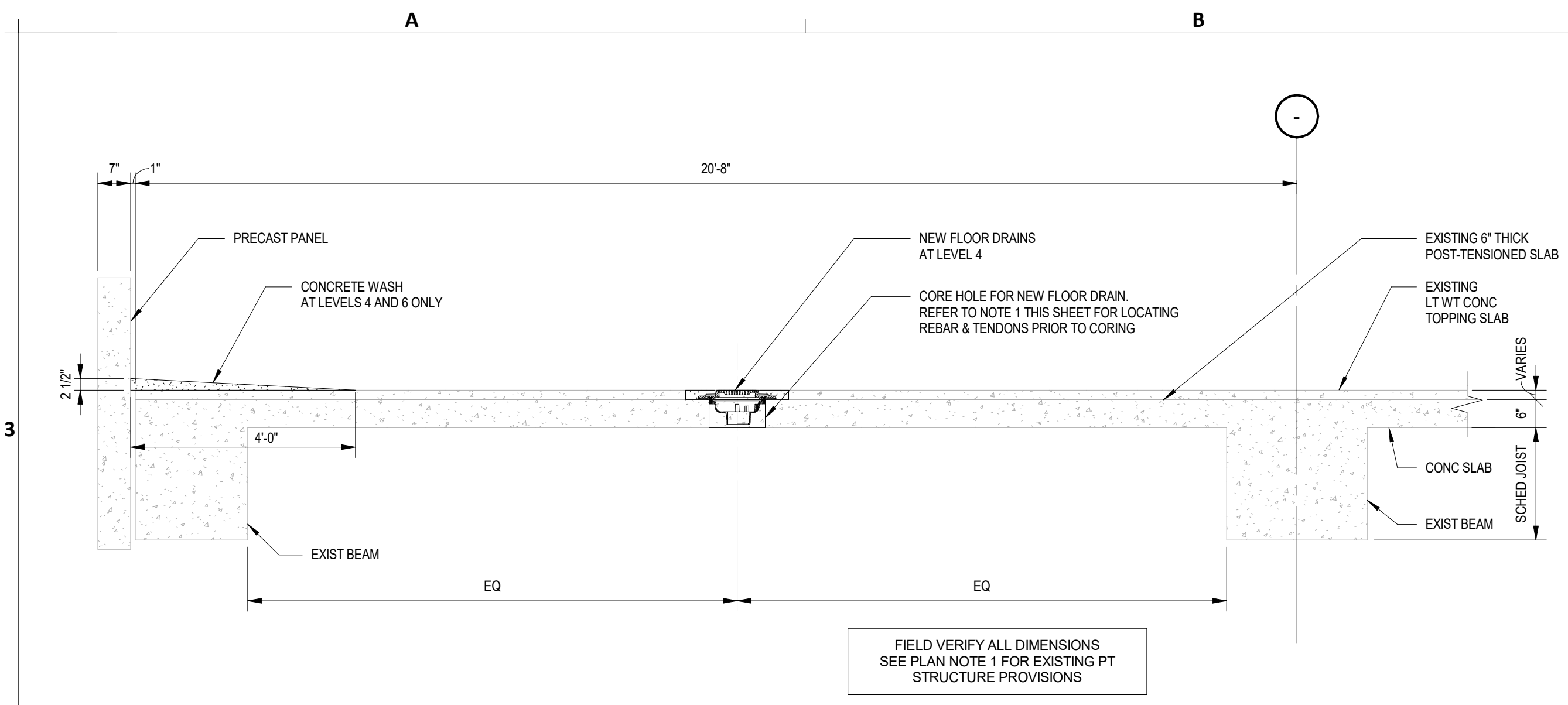
TERMINAL
"C"

SHEET NAME:	FRAMING DETAILS
SHEET No.	S410
SCALE:	As indicated

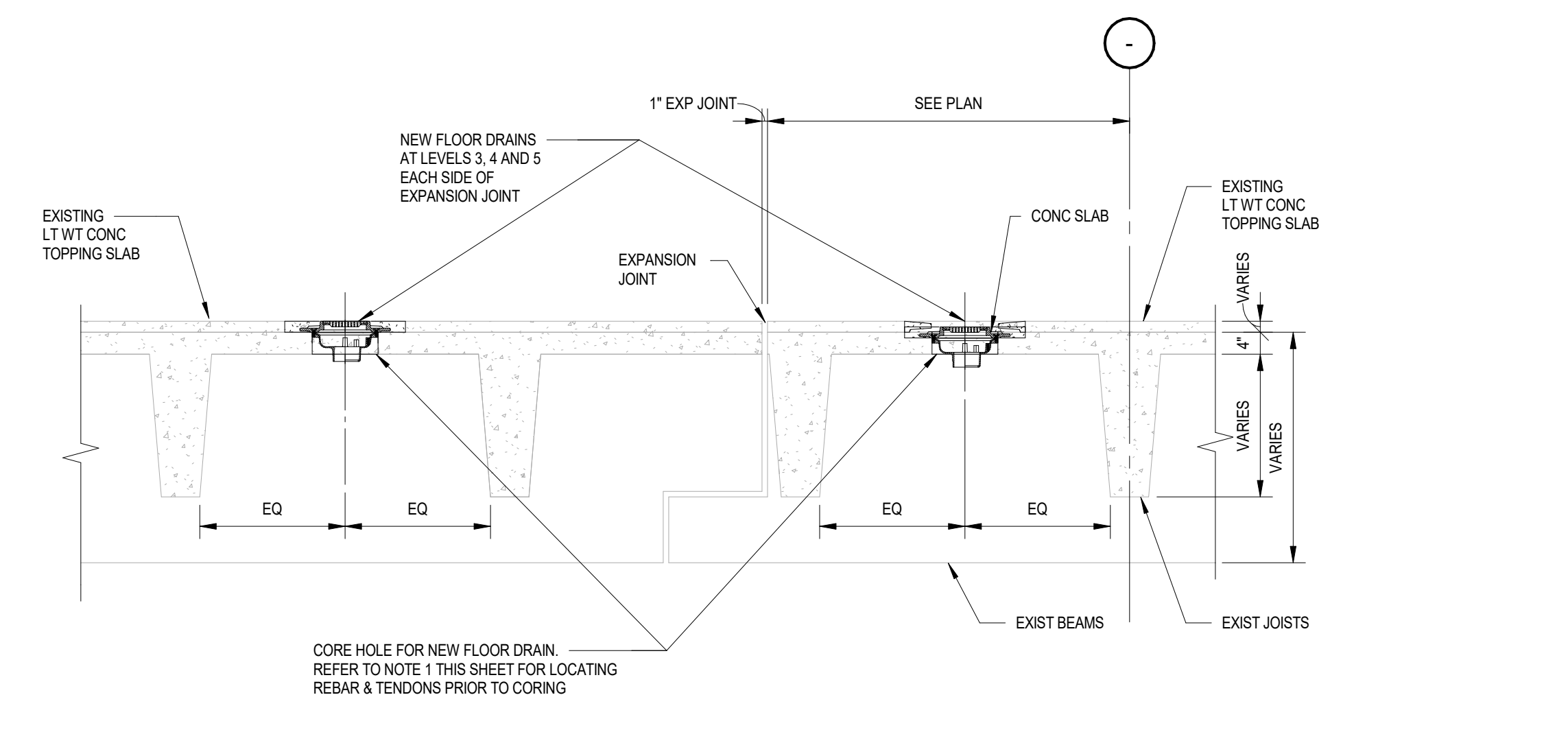
SHEET SIZE: 22"x34" ANSI-D



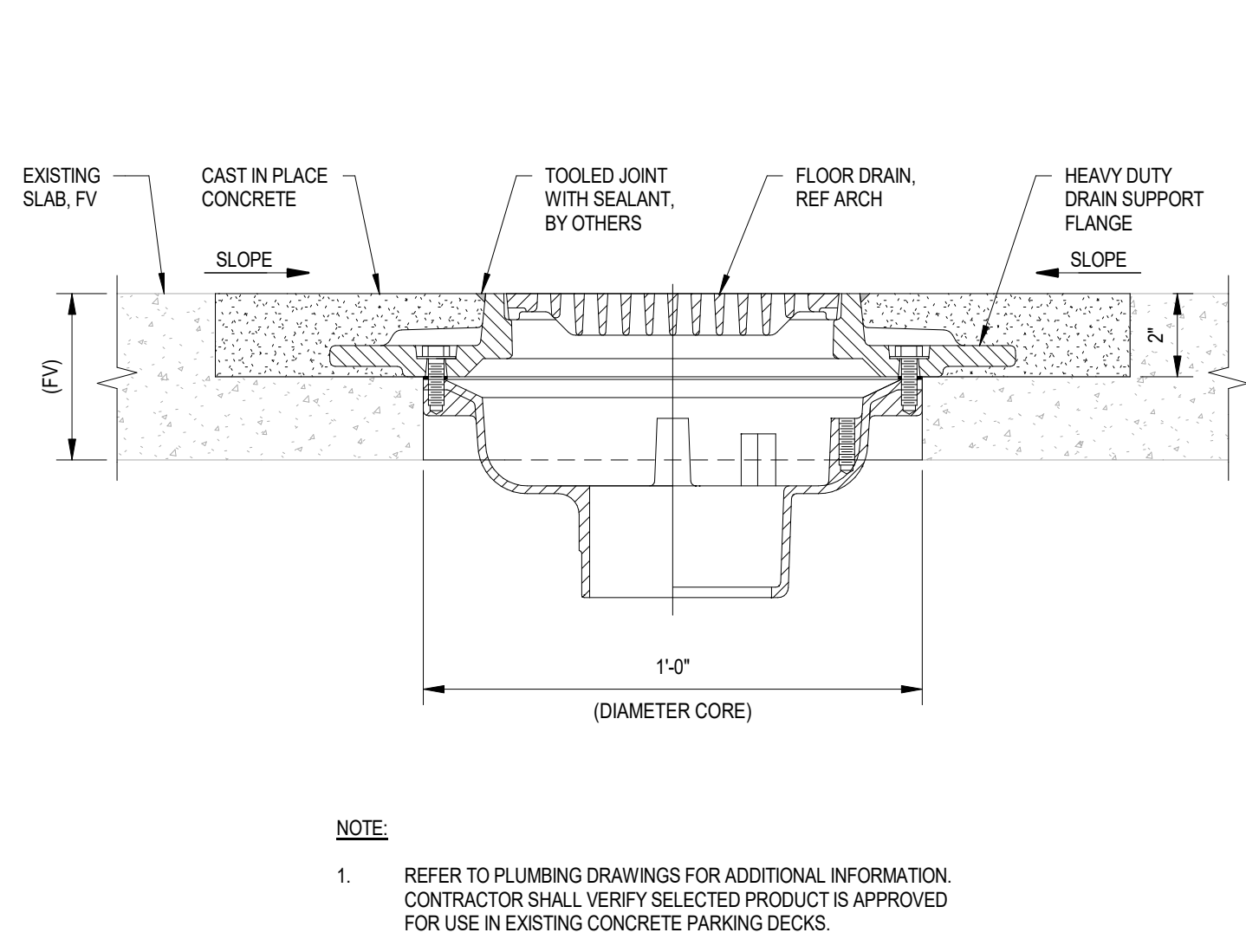
2 EXISTING CANTILEVERED STRUCTURE LEVEL 5 & LEVEL 6
SCALE: 1/2" = 1'-0"



4 EXISTING CANTILEVERED STRUCTURE LEVEL 4
SCALE: 1/2" = 1'-0"



6 DRAINS NEAR FLOOR EXPANSION JOINT (LEVELS 3, 4 & 5)
SCALE: 1/2" = 1'-0"



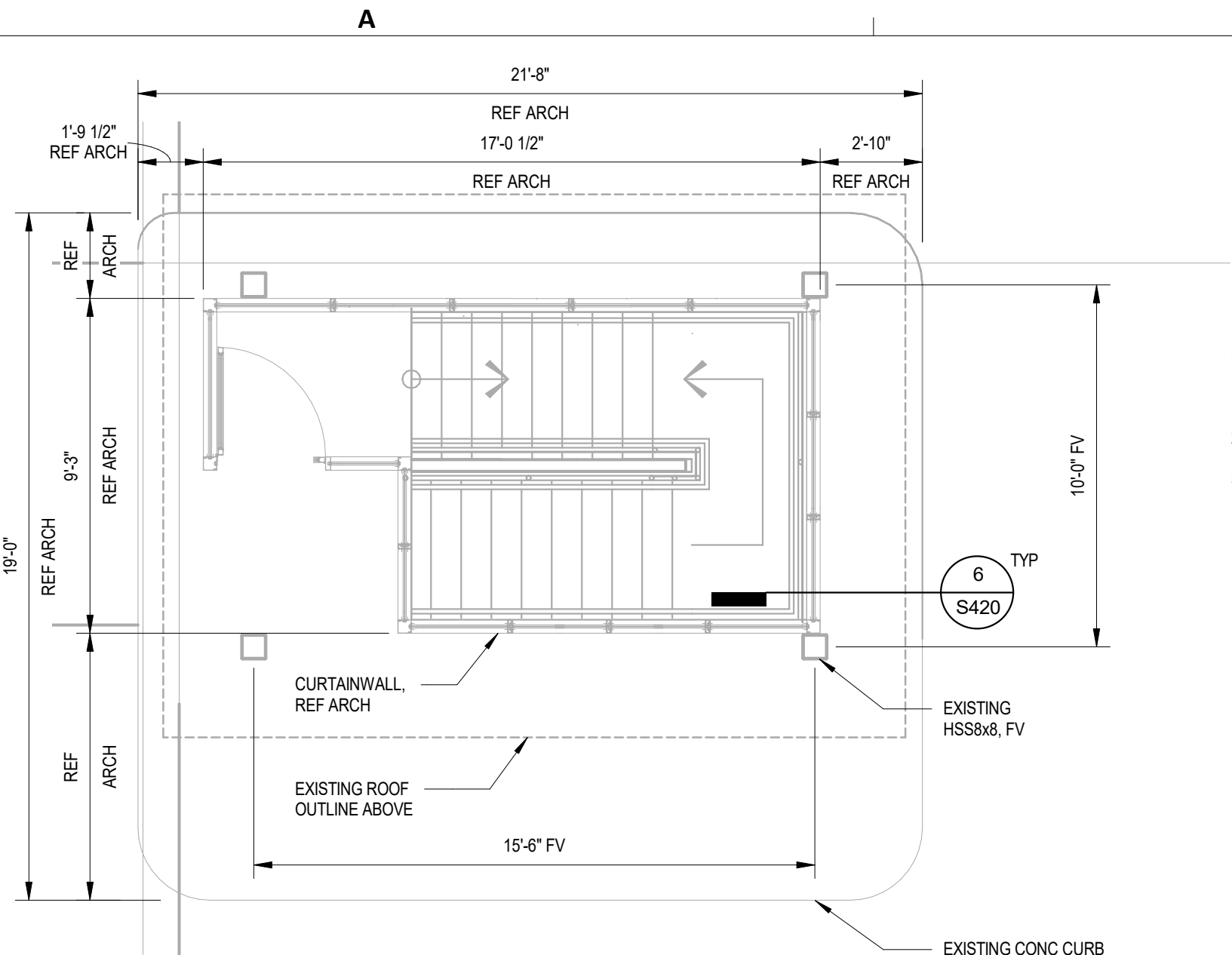
7 FLOOR DRAIN - AT EXISTING SLAB
SCALE: 3" = 1'-0"

NOTE:
1. REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
CONTRACTOR SHALL VERIFY SELECTED PRODUCT IS APPROVED
FOR USE IN EXISTING CONCRETE PARKING DECKS.

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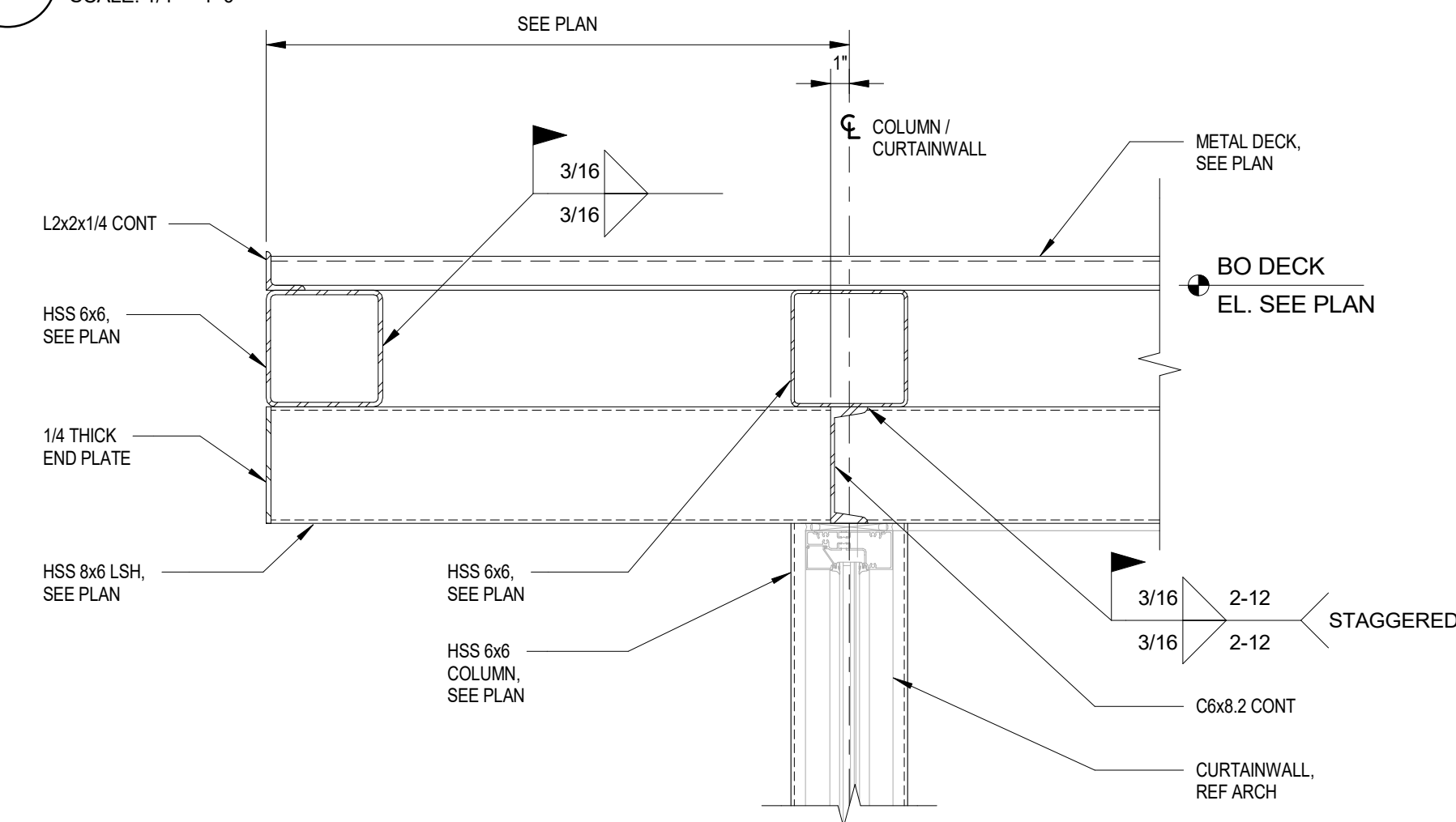
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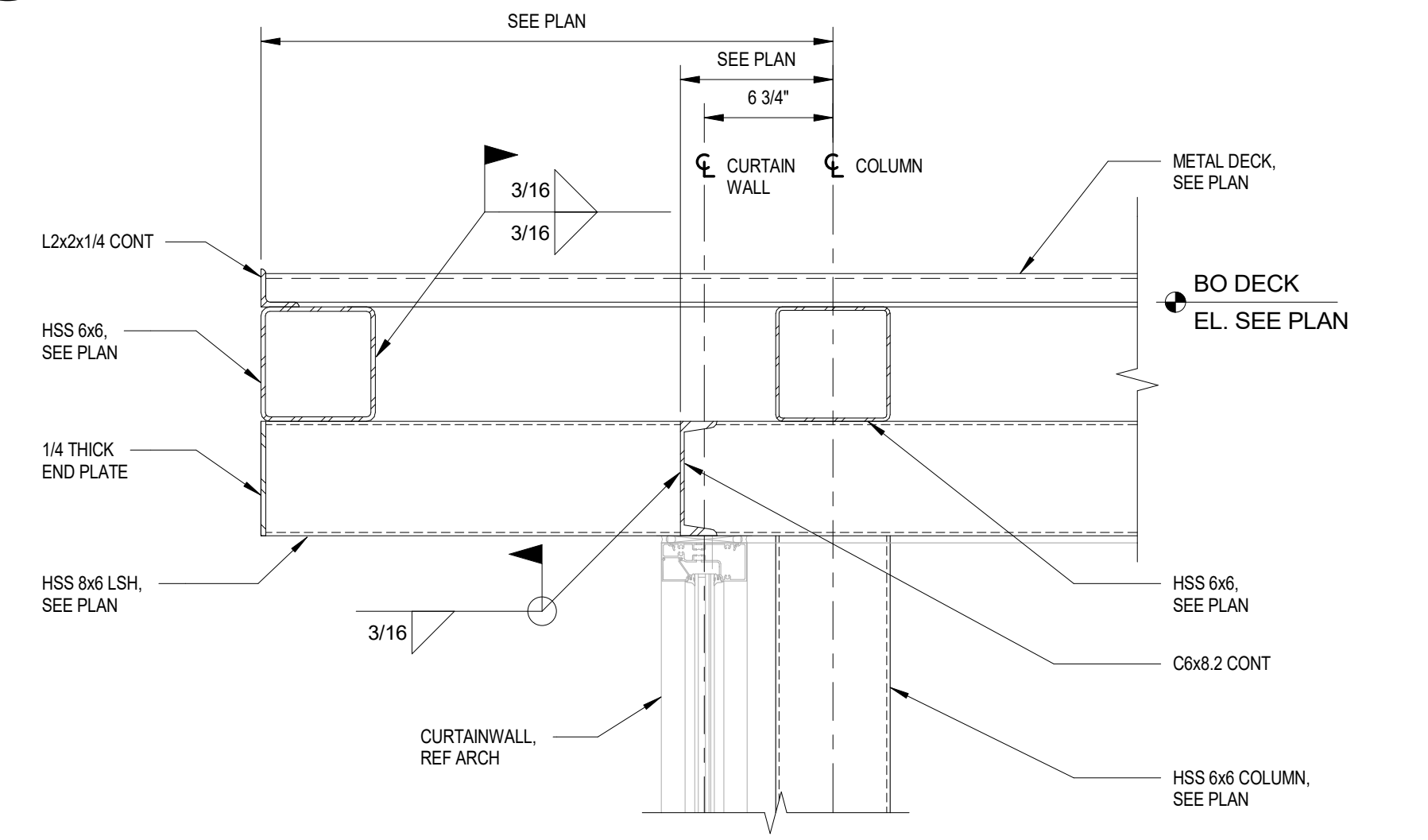
- NOTES:
- SEE GENERAL NOTES FOR COMPONENT AND CLADDING WIND LOAD PRESSURES.
 - GC TO VERIFY EXISTING CONDITIONS AND INFORM EOR OF ANY CHANGES AND/OR DISCREPANCIES. CURTAIN WALL ATTACHMENTS TO EXISTING STRUCTURE BY CURTAIN WALL MANUFACTURER.

4 TYPICAL EXISTING STAIR ENCLOSURE
SCALE: 1/4" = 1'-0"



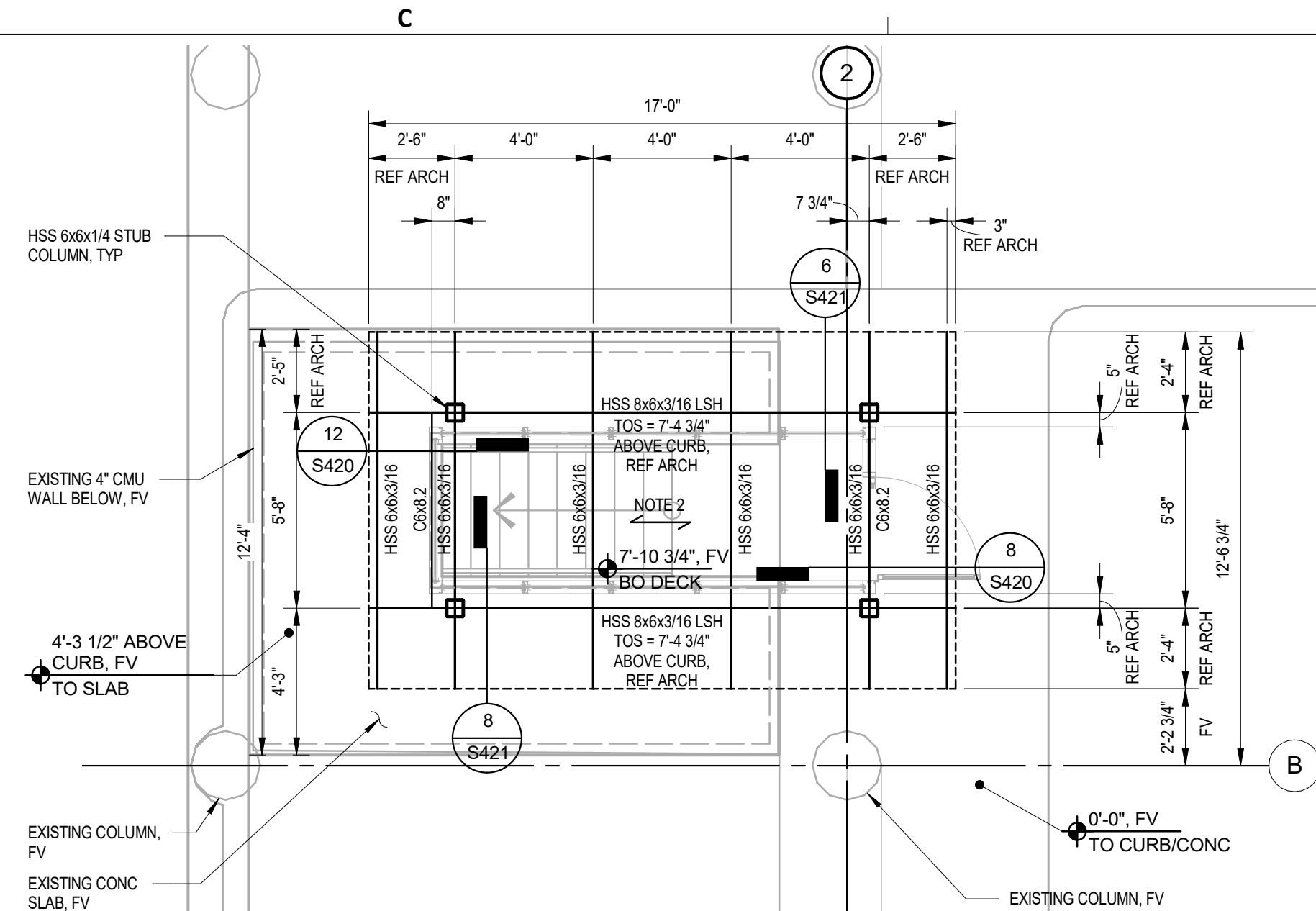
- NOTES:
- GC TO FIELD VERIFY ALL EXISTING CONDITION.
 - BENT PL IN LIEU OF ANGLE AT CONTRACTORS OPTION.
 - COORDINATE WITH CURTAINWALL MANUFACTURER CURTAINWALL HEADER ATTACHMENT REQUIREMENTS.
 - INFORM EOR OF ANY CHANGES AND DISCREPANCIES DUE TO FIELD CONDITIONS AND/OR MANUFACTURER REQUIREMENTS.
 - PAINT OR SPRAY WELDS WITH GALVANIZING COATING.

8 TYPICAL CURTAINWALL HEADER ATTACHMENT TO NEW STRUCTURE
SCALE: 1 1/2" = 1'-0"



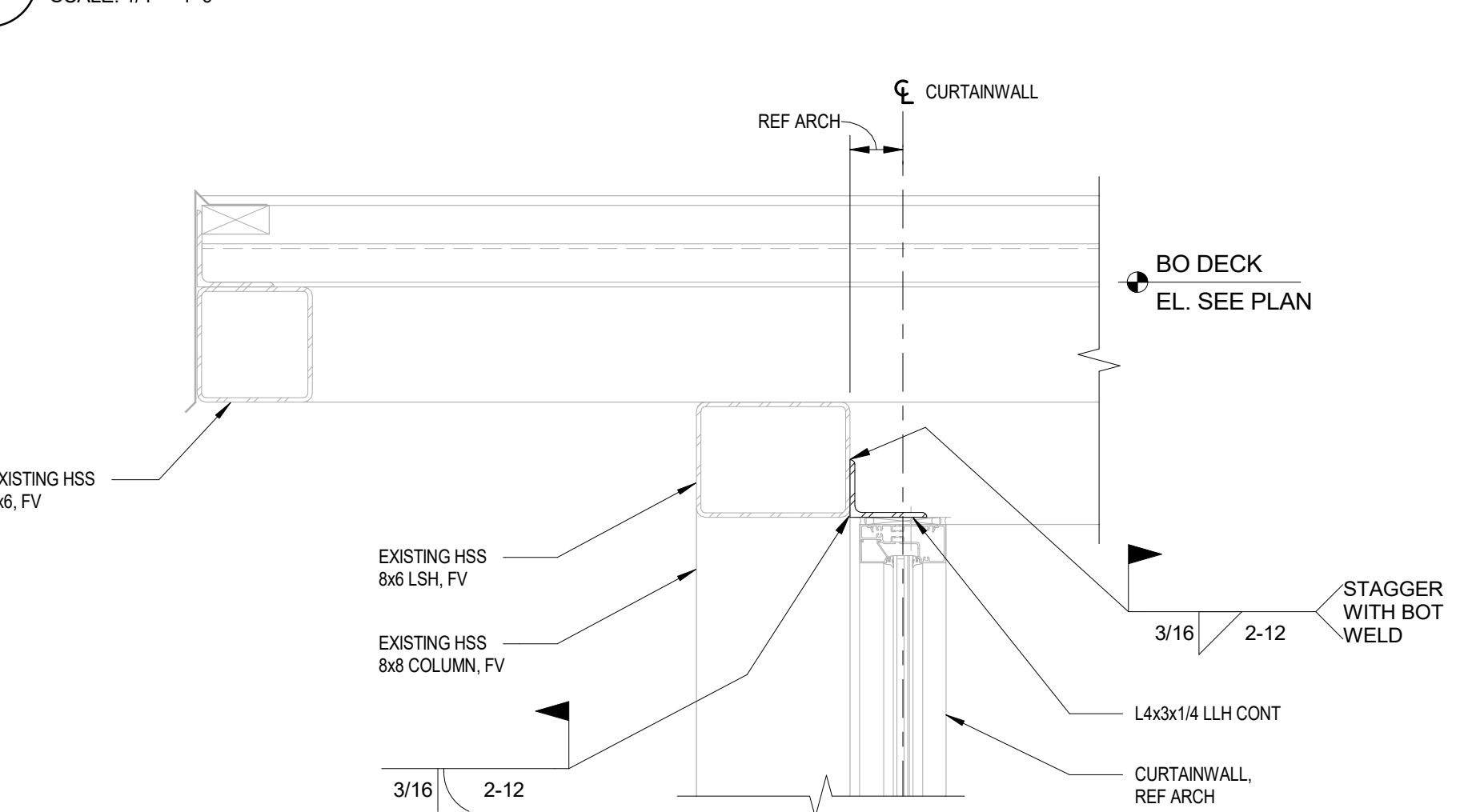
- NOTES:
- GC TO FIELD VERIFY ALL EXISTING CONDITION.
 - BENT PL IN LIEU OF ANGLE AT CONTRACTORS OPTION.
 - COORDINATE WITH CURTAINWALL MANUFACTURER CURTAINWALL HEADER ATTACHMENT REQUIREMENTS.
 - INFORM EOR OF ANY CHANGES AND DISCREPANCIES DUE TO FIELD CONDITIONS AND/OR MANUFACTURER REQUIREMENTS.
 - PAINT OR SPRAY WELDS WITH GALVANIZING COATING.

12 TYPICAL CURTAINWALL HEADER ATTACHMENT TO NEW STRUCTURE
SCALE: 1 1/2" = 1'-0"



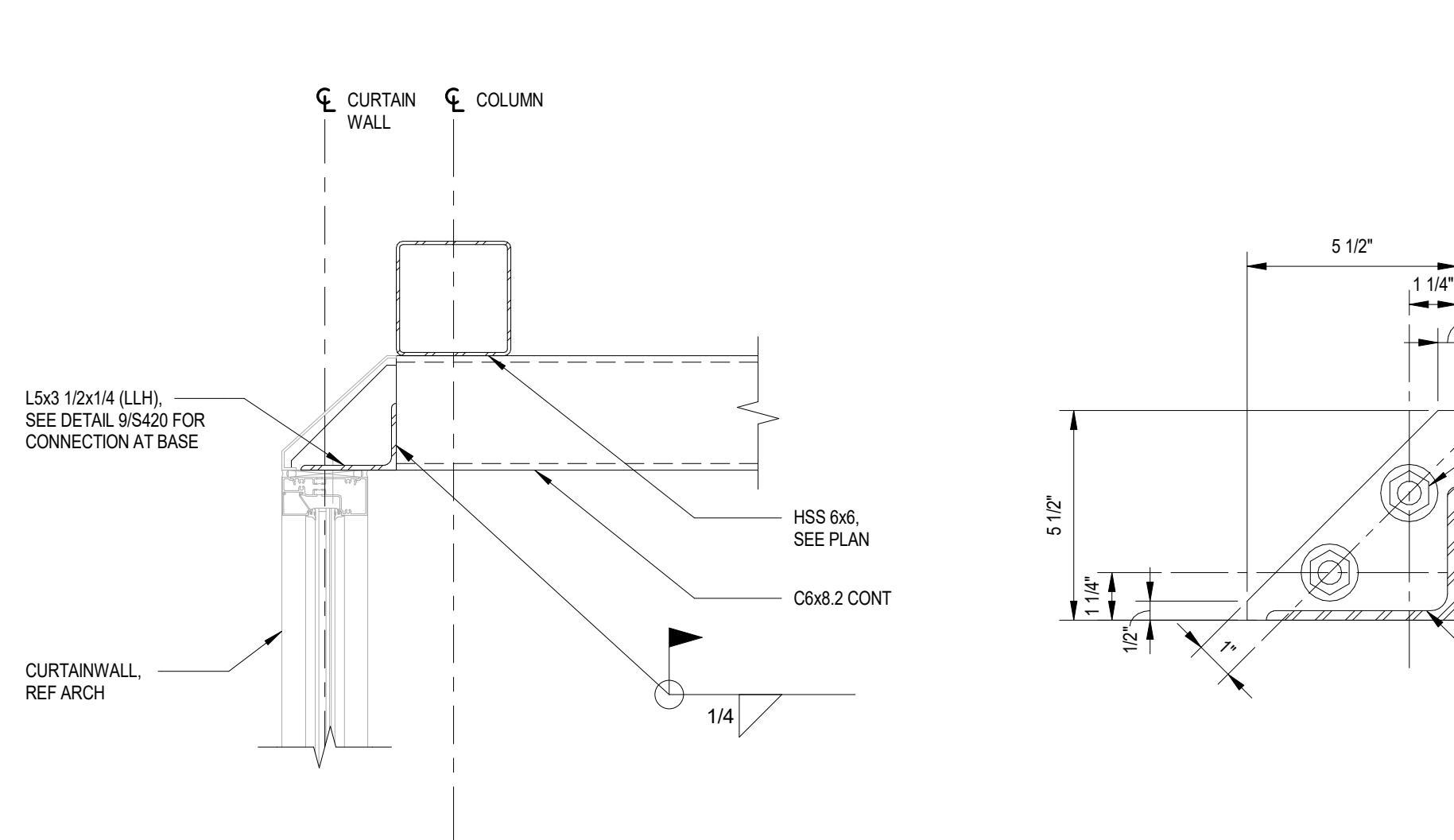
- NOTES:
- GC TO FIELD VERIFY ALL EXISTING CONDITIONS.
 - UNLESS NOTED OTHERWISE ROOF DECK SHALL BE 1 1/2" DEEP, TYPE B, 20 GAGE METAL DECK.
 - INFORM EOR OF ANY CHANGES AND DISCREPANCIES DUE TO FIELD CONDITIONS AND/OR MANUFACTURER REQUIREMENTS.
 - ALL STEEL TO BE HOT-DIP GALVANIZED.

2 NEW STAIR ENCLOSURE - PARTIAL ROOF PLAN
SCALE: 1/4" = 1'-0"

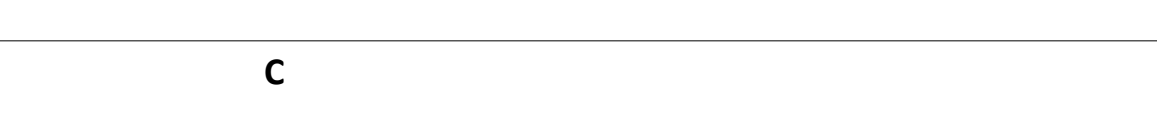


- NOTES:
- GC TO FIELD VERIFY ALL EXISTING CONDITION.
 - BENT PL IN LIEU OF ANGLE AT CONTRACTORS OPTION.
 - COORDINATE WITH CURTAINWALL MANUFACTURER CURTAINWALL HEADER ATTACHMENT REQUIREMENTS.
 - INFORM EOR OF ANY CHANGES AND DISCREPANCIES DUE TO FIELD CONDITIONS AND/OR MANUFACTURER REQUIREMENTS.
 - PAINT OR SPRAY WELDS WITH GALVANIZING COATING.

6 TYPICAL CURTAINWALL HEADER ATTACHMENT TO EXISTING STRUCTURE
SCALE: 1 1/2" = 1'-0"



10 TYPICAL CURTAINWALL JAMB ATTACHMENT AT OFFSET CORNER
SCALE: 1 1/2" = 1'-0"



9 BASE CONNECTION DETAIL
SCALE: 3" = 1'-0"



HOUSTON AIRPORTS
TERMINAL C AT IAH - 2800 N TERMINAL RD
HOUSTON, TX 77032
IAH TERMINAL C HELIX RAMP BEARING AND MISC REPAIRS
C.I.P. No. A.I.P. No.
C.O.H. No. D.O.A No.

MWA ARCHITECTS
11767 KATY FREEWAY SUITE 430
HOUSTON, TEXAS 77079 - 713-482-2338

DESIGNER PROJECT No.: 19-21
PROJECT STATUS: CONSTRUCTION DOCUMENTS

REVISIONS

No.	DESCRIPTION	DATE	BY
	ISSUE FOR BID	01/19/2023	

DESIGNER: ER
DRAWN BY: JM
CHECKED BY: ER
ISSUE DATE: 01/19/2023
APPROVED BY: ER
APPROVAL DATE: 01/19/2023

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/Approval Category
IFB
ISSUED FOR BID

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755

STATE OF TEXAS
K. ELAINE ROGERS
65566
01/19/2023

TERMINAL
"C"
North
TRUE

SHEET NAME: FRAMING DETAILS - STAIR ENCLOSURE
SHEET No. S420 SCALE: As indicated

SHEET SIZE: 22"x34" ANSI-D

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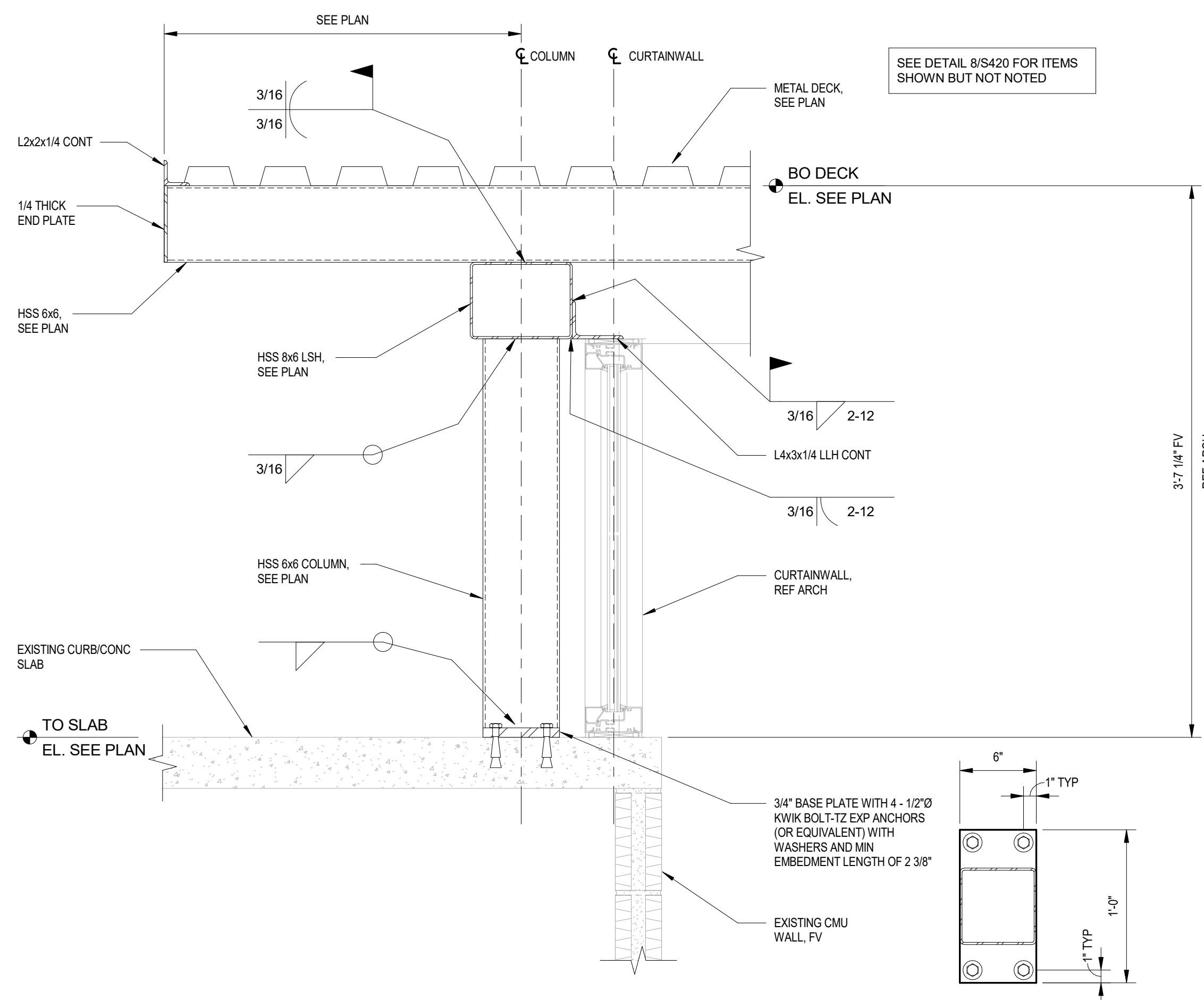
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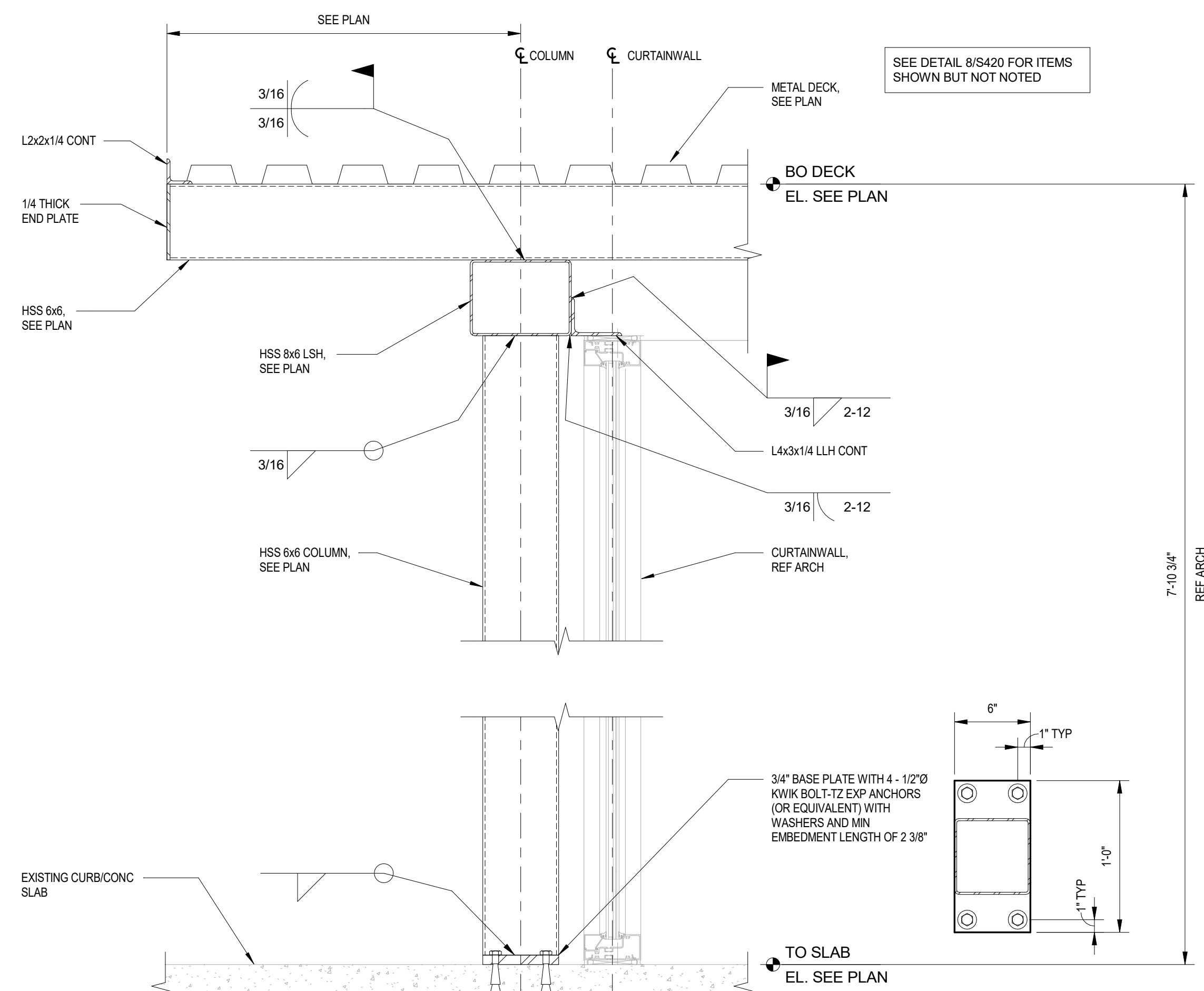
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DOA DWG FILE:



8 TYPICAL SECTION AT CURTAINWALL - NEW STRUCTURE
SCALE: 1 1/2" = 1'-0"



6 TYPICAL SECTION AT CURTAINWALL - NEW STRUCTURE
SCALE: 1 1/2" = 1'-0"



TERMINAL C AT IAH - 2800 N TERMINAL RD
HOUSTON, TX 77032
**IAH TERMINAL C HELIX RAMP
BEARING AND MISC REPAIRS**
C.I.P. No. A.I.P. No.
C.O.H. No. D.O.A No.



DESIGNER PROJECT No.: 19-21
PROJECT STATUS: CONSTRUCTION DOCUMENTS

REVISIONS		
No.	DESCRIPTION	DATE
1	ISSUE FOR BID	01/19/2023

DESIGNER: ER
DRAWN BY: JM
CHECKED BY: ER
ISSUE DATE: 01/19/2023
APPROVED BY: ER
APPROVAL DATE: 01/19/2023

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category	Henderson Rogers Structural Engineers, LLC TBPE Firm Registration No. 8755
IFB	
ISSUED FOR BID	

TERMINAL
"C"
North
TRUE

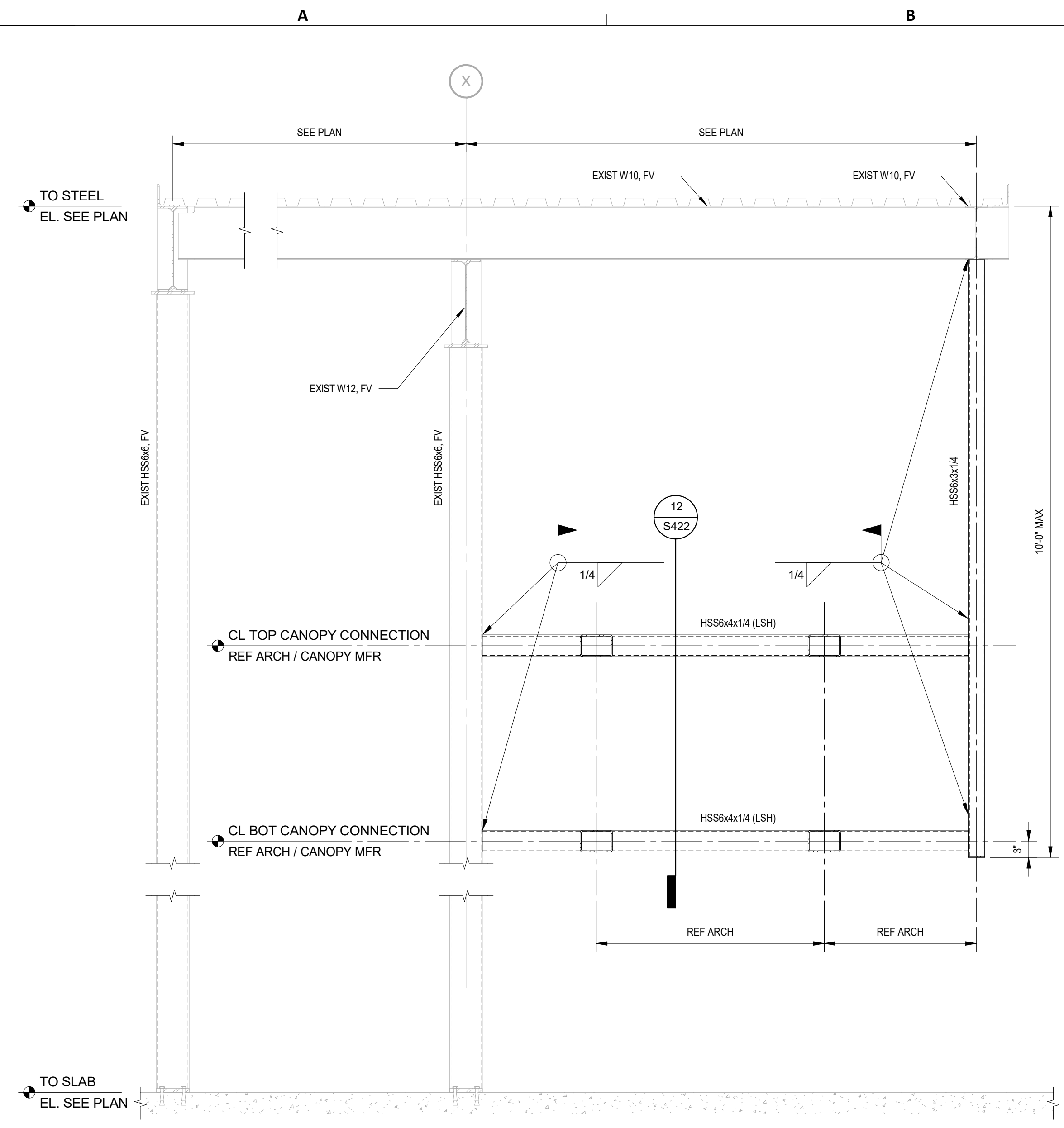
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SHEET No. S421 SCALE: 1 1/2" = 1'-0"

SHEET SIZE: 22"x34" ANSI-D

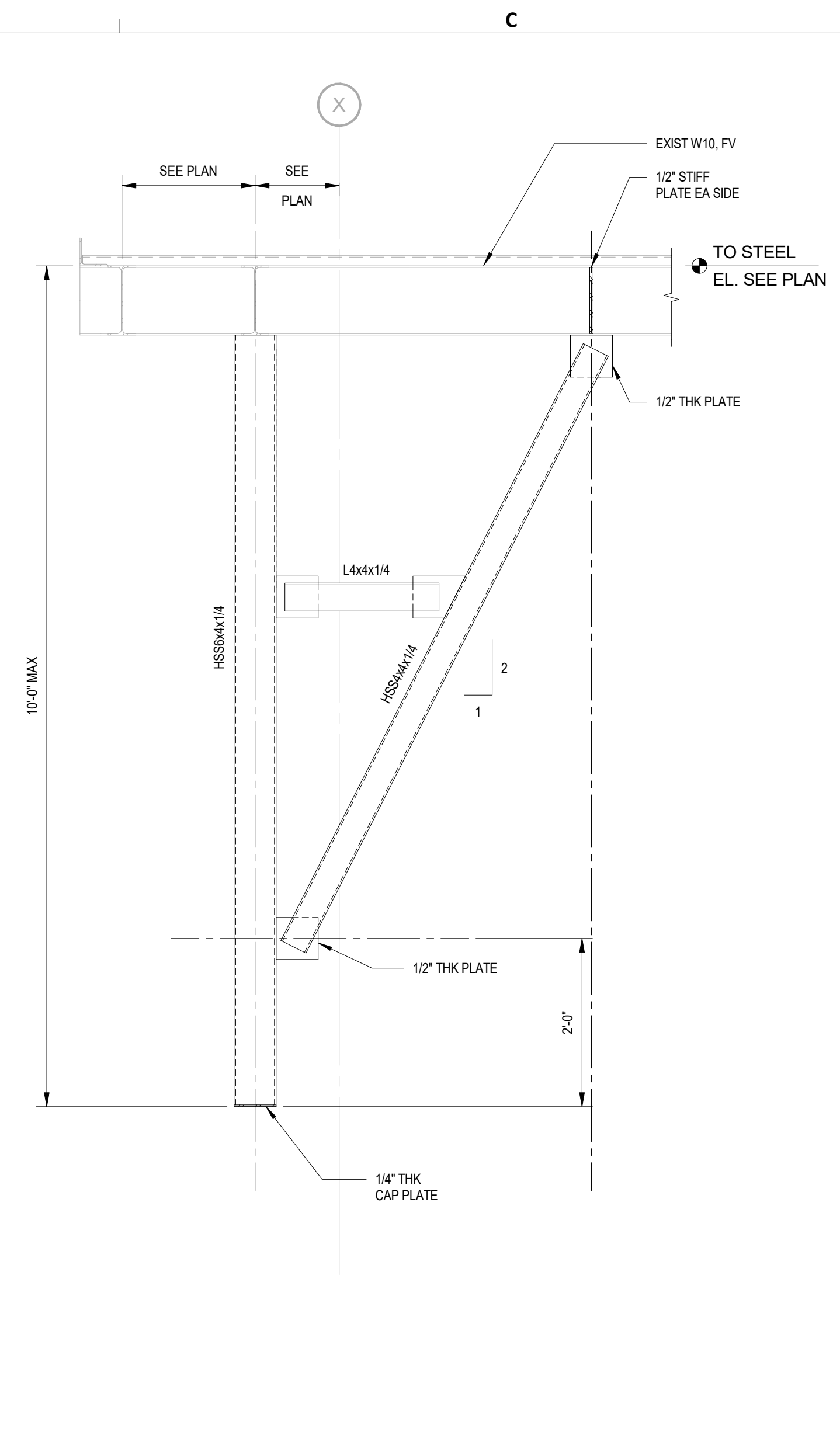
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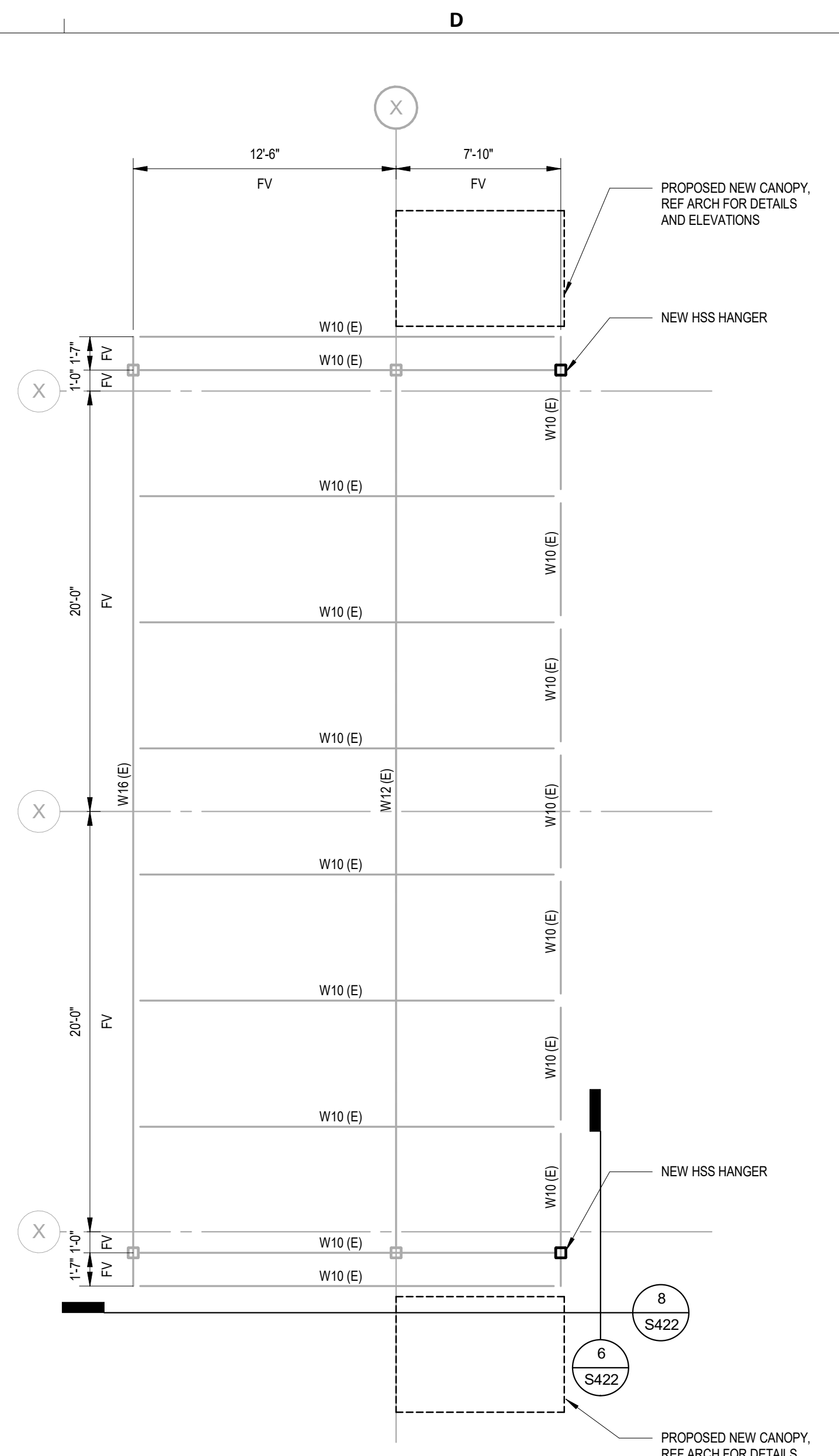
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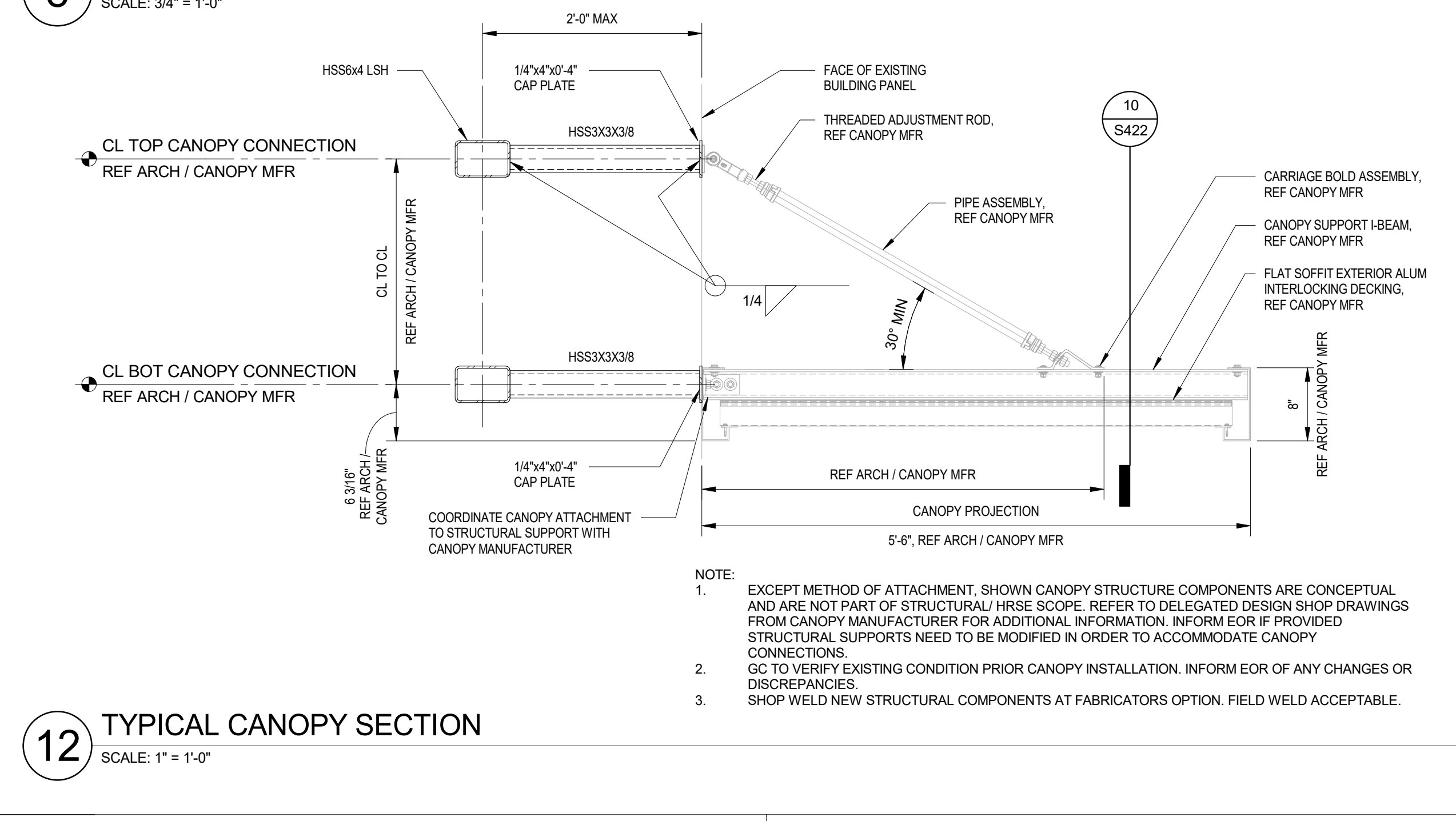
8 SECTION
SCALE: 3/4" = 1'-0"



6 SECTION
SCALE: 3/4" = 1'-0"

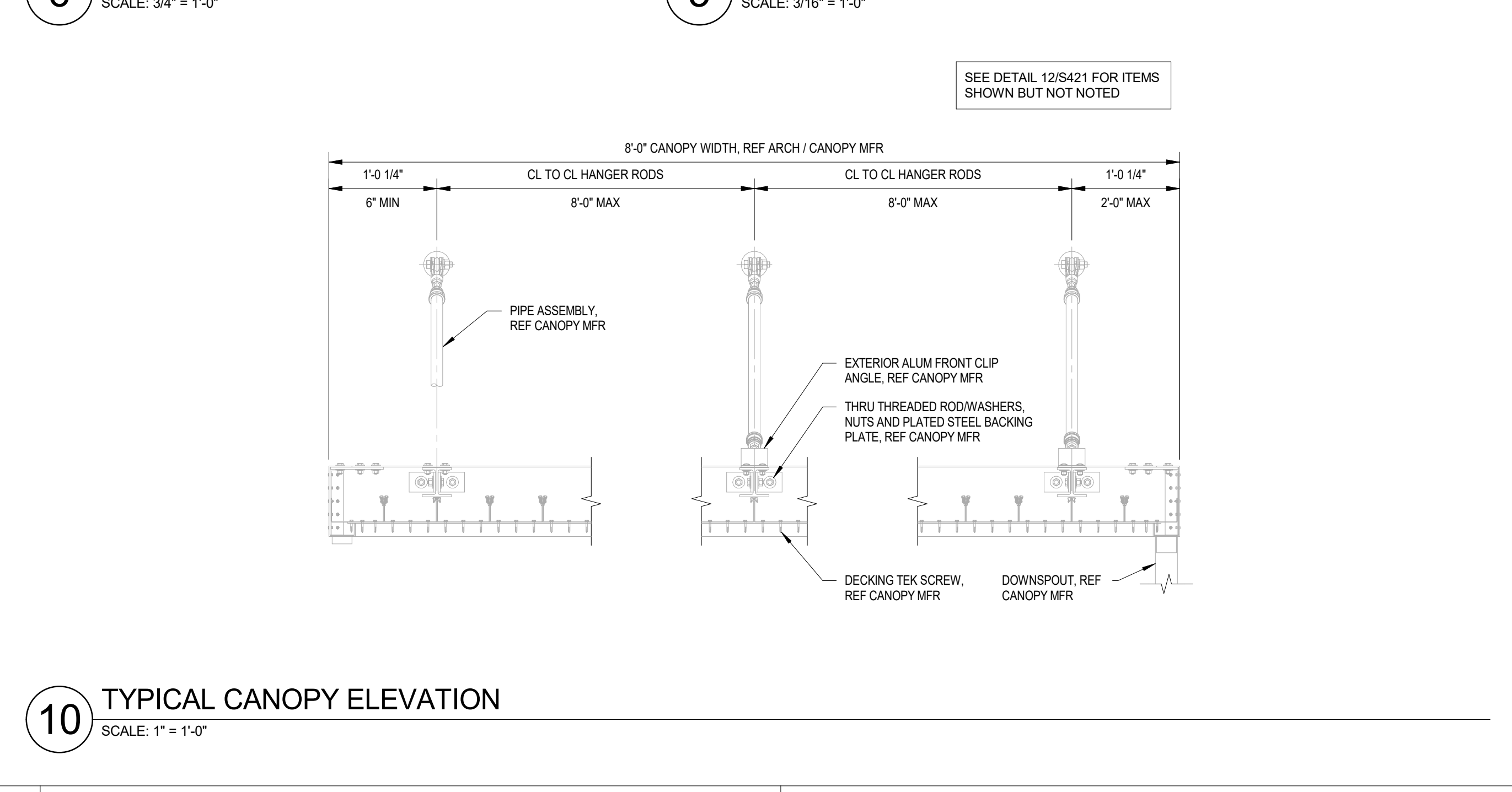


5 TYPICAL EXISTING ELEVATOR PENTHOUSE ROOF FRAMING
SCALE: 3/16" = 1'-0"



12 TYPICAL CANOPY SECTION
SCALE: 1" = 1'-0"

NOTE:
1. EXCEPT METHOD OF ATTACHMENT, SHOWN CANOPY STRUCTURE COMPONENTS ARE CONCEPTUAL AND ARE NOT PART OF STRUCTURAL/HRSE SCOPE. REFER TO DELEGATED DESIGN SHOP DRAWINGS FROM CANOPY MANUFACTURER FOR ADDITIONAL INFORMATION. INFORM EOR IF PROVIDED STRUCTURAL SUPPORTS NEED TO BE MODIFIED IN ORDER TO ACCOMMODATE CANOPY CONNECTIONS.
2. GC TO VERIFY EXISTING CONDITION PRIOR CANOPY INSTALLATION. INFORM EOR OF ANY CHANGES OR DISCREPANCIES.
3. SHOP WELD NEW STRUCTURAL COMPONENTS AT FABRICATORS OPTION. FIELD WELD ACCEPTABLE.



10 TYPICAL CANOPY ELEVATION
SCALE: 1" = 1'-0"



TERMINAL C AT IAH - 2800 N TERMINAL RD
HOUSTON, TX 77032
IAH TERMINAL C HELIX RAMP BEARING AND MISC REPAIRS
C.I.P. No. A.I.P. No.
C.O.H. No. D.O.A No.



DESIGNER PROJECT No.: 19-21
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Review/ Approval Category
IFB
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Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755

TERMINAL
"C"
North
TRUE

SHEET NAME: FRAMING DETAILS - STAIR ENCLOSURE
SHEET No. S422 SCALE: As indicated

SHEET SIZE: 22"x34" ANSI-D

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FILE PATH:

OLD DOA No. :
DOA DWG FILE:



4 CONCRETE SPALLING AT RAMP BEAM
SCALE: 3" = 1'-0"



3 CONCRETE SPALLING AT RAMP BEAM
SCALE: 3" = 1'-0"



2 CONCRETE SPALLING AT RAMP BEAM
SCALE: 3" = 1'-0"



1 CONCRETE SPALLING AT RAMP BEAM
SCALE: 3" = 1'-0"

NOTE:
CONCRETE REPAIRS OCCUR AT WEST SIDE
OF GARAGE AT LEVEL 1A AT BOTH NORTH
AND SOUTH HELICES. SEE PARTIAL PLAN
ON SHEET S502.



TERMINAL C AT IAH - 2800 N TERMINAL RD
HOUSTON, TX 77032
IAH TERMINAL C HELIX RAMP
BEARING AND MISC REPAIRS
C.I.P. No. A.I.P. No.
C.O.H. No. D.O.A No.



DESIGNER PROJECT No.: 19-21
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HOUSTON AIRPORT SYSTEM

Review/ Approval Category	Henderson Rogers Structural Engineers, LLC TBPE Firm Registration No. 8755
IFB	
ISSUE FOR BID	

TERMINAL
"C"
North
TRUE

SHEET NAME: PHOTOS OF EXISTING CONDITIONS
SHEET No. S501 SCALE: 3" = 1'-0"

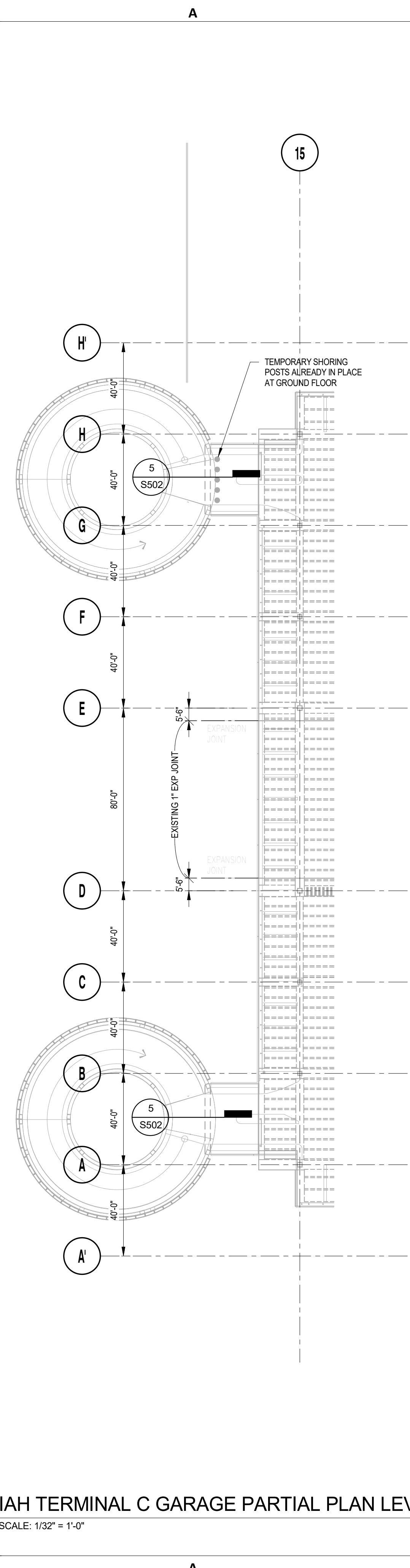
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FILE PATH:

OLD DOW No. :
DOA DWG FILE:

12 IAH TERMINAL C GARAGE PARTIAL PLAN LEVEL 1A
SCALE: 1/32" = 1'-0"



3 REPAIR AT EXPOSED REINFORCING AND SPALLS VERTICAL OR OVERHEAD SURFACES
SCALE: 3/4" = 1'-0"

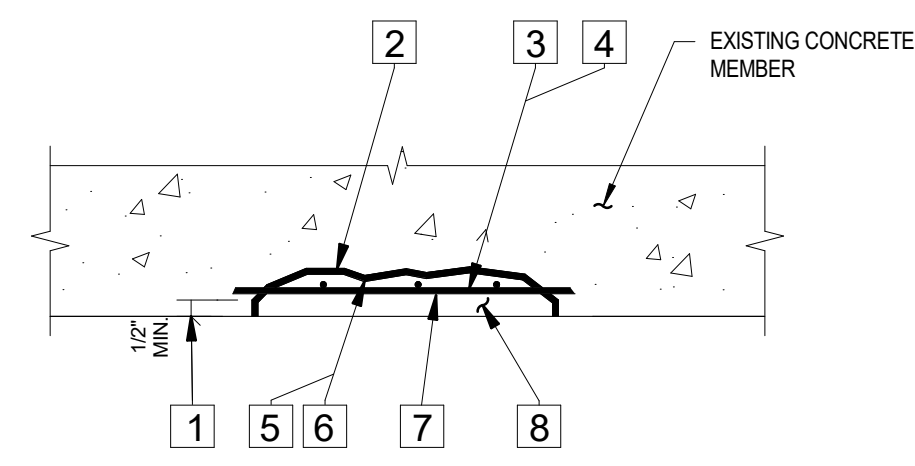
QUANTITY TABLE

- A. POSSIBLE CHANGES IN QUANTITY OF WORK
- BIDDER UNDERSTANDS THAT THE QUANTITIES SPECIFIED HEREIN FOR THE REPAIRS ARE APPROXIMATE AND THAT ACTUAL QUANTITIES IN THE FIELD MAY INCREASE OR DECREASE FROM THE QUANTITIES ESTIMATED. BIDDER HERBY AGREES TO PERFORM ALL QUANTITIES OF WORK AS EITHER INCREASED OR DECREASED, AS REQUIRED BY THE ENGINEER IN ACCORDANCE WITH THE PROVISIONS OF THE CONSTRUCTION DOCUMENTS. THE FINAL PAYMENT TO THE BIDDER SHALL BE BASED ON THE LUMP SUM/UNIT PRICES BID AND THE ACTUAL QUANTITIES COMPLETED (FOR ITEMS THAT ARE NOT LUMP SUM).
- B. BID QUANTITIES: ASSUMED QUANTITIES FOR THE BID ITEMS SHOWN ON THE DRAWINGS ARE AS INDICATED IN THE BID TABLE BELOW:

ITEM DESCRIPTION	UNIT	TOTAL QUANTITIES (WEST HELIX RAMP BEAMS)
CONCRETE REPAIR (WITH EXPOSED REBAR)	SF	80
CONCRETE REPAIR (NO EXPOSED REBAR)	SF	40
CRACK EPOXY INJECTION	LF	60

DESCRIPTION OF ABBREVIATIONS:
LF = LINEAR FEET
SF = SQUARE FEET
LS = LUMP SUM
EA = EACH

7 QUANTITIES
SCALE: 12" = 1'-0"



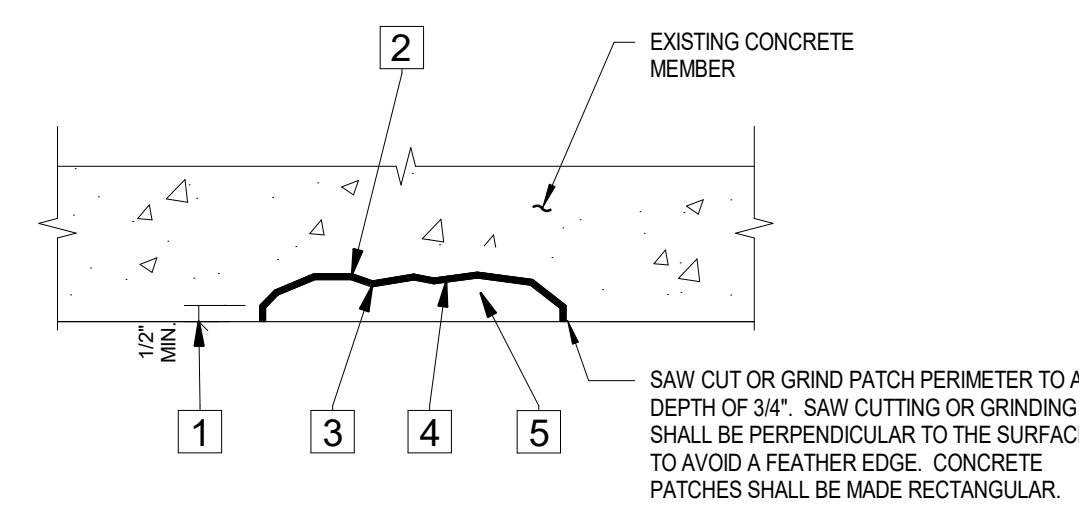
- PERIMETER SAW CUT OR GRINDING SHOULD NOT BE LESS THAN 1/2" IN DEPTH. SUBSTRATE SHALL BE CLEAN, SOUND AND LAITANCE-FREE PRIOR TO REPAIRING.
- PROVIDE A MINIMUM CLEARANCE OF 3/4" AROUND THE EXPOSED REINFORCEMENT. PROTECT EXISTING REINFORCEMENT FROM DAMAGE DURING REPAIRS. WHERE REINFORCEMENT THAT IS EXPOSED DURING SURFACE PREPARATION IS FOUND TO BE SEVERELY CORRODED OR HAS LOST 10% OR MORE OF ITS CROSS SECTIONAL AREA, SUPPLEMENTARY REINFORCEMENT MAY BE REQUIRED. REPORT CONDITION TO ENGINEER FOR REVIEW AND DESIGN OF SUPPLEMENTARY REINFORCEMENT.
- REINFORCING STEEL SHOULD BE THOROUGHLY CLEANED BY BLAST CLEANING. ROUGHEN CONCRETE SURFACE TO MINIMUM CSP 6.
- SUBSTRATE SHOULD BE SATURATED DRY (SSD) WITH NO STANDING WATER DURING APPLICATION. APPLY SCRUB COAT TO THE SUBSTRATE, FILLING ALL PORES AND VOIDS. APPLY ARIMATEC 110 EPOCEM TO ALL STEEL SURFACES.
- WHILE SCRUB COAT AND BONDING AGENT ARE STILL WET, APPLY SIKATOP 123 PLUS. SEE DETAIL 2/SF503 FOR ADDITIONAL REQUIREMENTS.

FOR APPLICATIONS GREATER THAN 1-1/2" IN DEPTH, APPLY SIKATOP 123 PLUS IN LIFTS. SCORE THE TOP SURFACE OF EACH LIFT TO PRODUCE A ROUGHENED SURFACE FOR THE NEXT LIFT. ALLOW PRECEDING LIFT TO REACH FINAL SET. REPEAT FROM STEP 3.

2 REPAIR SPALLS VERTICAL OR OVERHEAD SURFACES
SCALE: 3/4" = 1'-0"

- TYPICAL CONCRETE REPAIR NOTES:**
- FIELD VERIFY EXTENT OF CRACK AND CONCRETE SPALLING.
 - REFER TO DETAILS THIS SHEET FOR TYPICAL REPAIR TYPES AND GENERAL PROCEDURES FOR REPAIR.
 - REFER TO MANUFACTURER'S SPECIFICATIONS FOR DETAILED INSTRUCTIONS FOR SURFACE PREPARATION AND PROPER STORAGE, HANDLING AND APPLICATION OF THEIR PRODUCTS. IF ALTERNATE PRODUCT TYPES ARE NEEDED BASED ON CONDITIONS IN THE FIELD, THEY SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE DESIGN TEAM PRIOR TO USE.

6 TYPICAL CONCRETE REPAIR NOTES
SCALE: 3/4" = 1'-0"

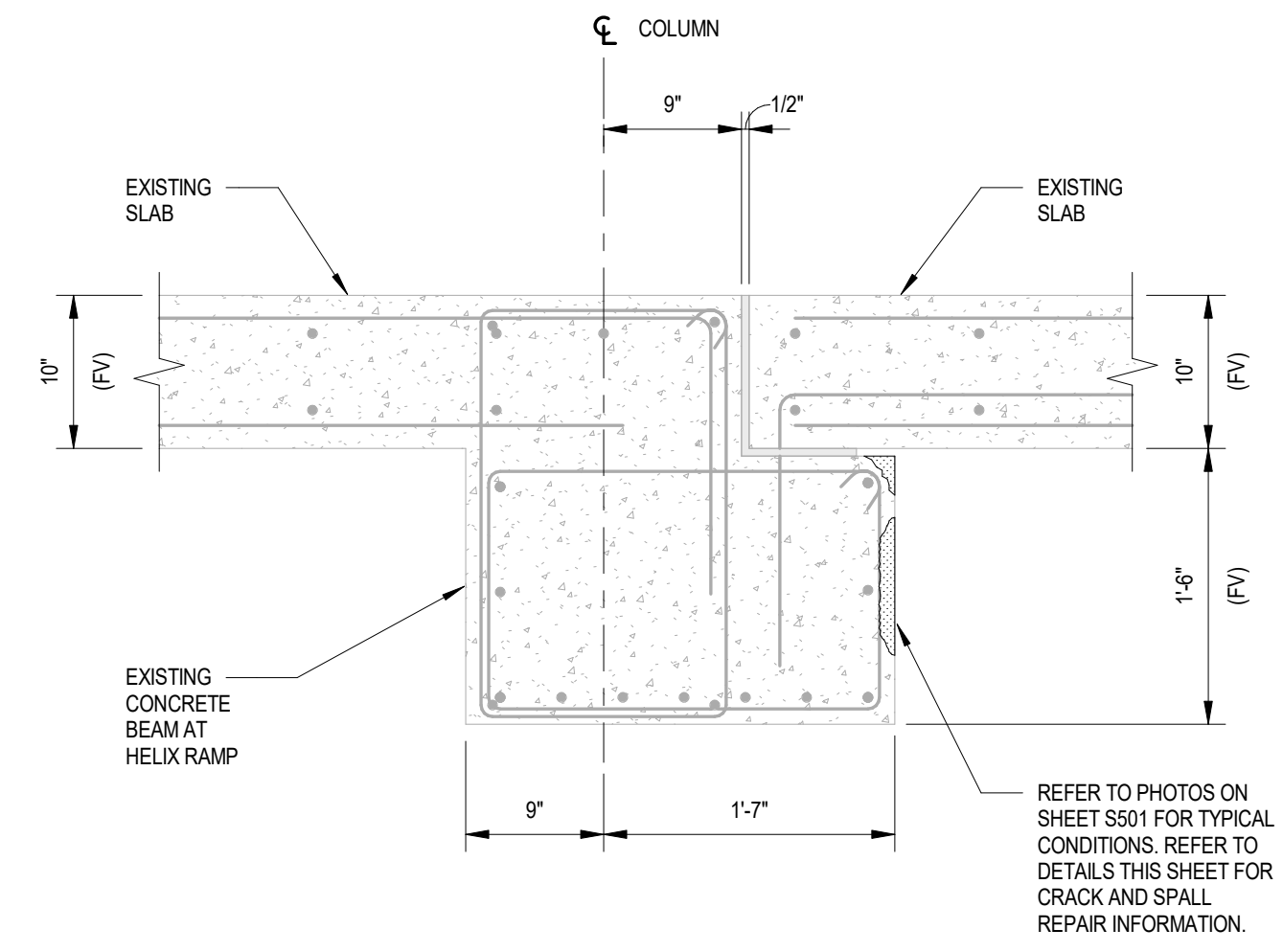


- REPAIR AREA SHOULD NOT BE LESS THAN 1/8" IN DEPTH. SUBSTRATE SHALL BE CLEAN, SOUND AND LAITANCE-FREE PRIOR TO REPAIRING.
- ROUGHEN CONCRETE SURFACE TO MINIMUM CSP 6.
- SUBSTRATE SHOULD BE SATURATED DRY (SSD) WITH NO STANDING WATER DURING APPLICATION. APPLY SCRUB COAT TO THE SUBSTRATE, FILLING ALL PORES AND VOIDS.
- WHILE SCRUB COAT (OR EPOXY BONDING AGENT) IS STILL WET APPLY SIKATOP 123 PLUS.

NOTE: IF REPAIR AREA IS TOO LARGE TO FILL WHILE SCRUB COAT IS STILL WET, USE SIKARMA 110 EPOCEM IN LIEU OF THE SCRUB COAT.

FOR APPLICATIONS GREATER THAN 1-1/2" IN DEPTH, APPLY SIKATOP 123 PLUS IN LIFTS. SCORE THE TOP SURFACE OF EACH LIFT TO PRODUCE A ROUGHENED SURFACE FOR THE NEXT LIFT. ALLOW PRECEDING LIFT TO REACH FINAL SET. REPEAT FROM STEP 4.

1 CRACK REPAIR - EPOXY INJECTION FOR CRACKS 1/32" TO 1/4" WIDE VERTICAL OR OVERHEAD SURFACES
SCALE: 3/4" = 1'-0"



5 EXISTING CONCRETE BEAM REPAIR DETAIL
SCALE: 1" = 1'-0"

HOUSTON AIRPORTS

TERMINAL C AT IAH - 2800 N TERMINAL RD
HOUSTON, TX 77032

IAH TERMINAL C HELIX RAMP BEARING AND MISC REPAIRS

C.I.P. No. A.I.P. No.
C.O.H. No. D.O.A. No.

MWA ARCHITECTS
11767 KATY FREEWAY SUITE 430
HOUSTON, TEXAS 77079 - 713-482-2338

DESIGNER PROJECT No.: 19-21
PROJECT STATUS: CONSTRUCTION DOCUMENTS

REVISIONS

No.	DESCRIPTION	DATE	BY
1	ISSUE FOR BID	01/19/2023	

DESIGNER: ER
DRAWN BY: JM
CHECKED BY: ER
ISSUE DATE: 01/19/2023
APPROVED BY: ER
APPROVAL DATE: 01/19/2023

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category

IFB
ISSUED FOR BID

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755

STATE OF TEXAS
K. ELAINE ROGERS
65566
01/19/2023

TERMINAL "C"

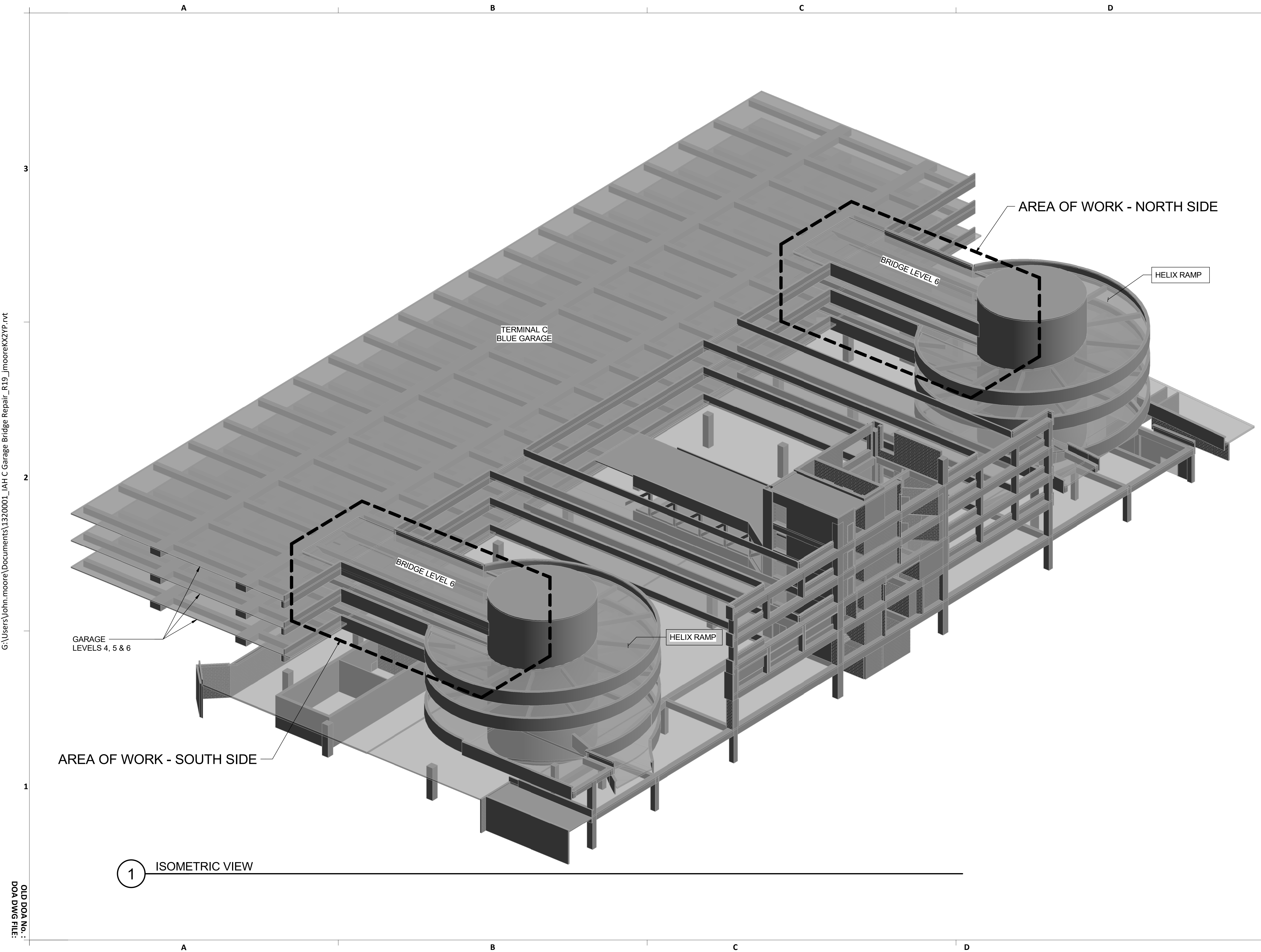
North
TRUE

HELIUM BEAM REPAIR

SHEET NAME: CONCRETE REPAIR DETAILS

SHEET No. S502 SCALE: As indicated

SHEET SIZE: 22"x34" ANSI-D



TERMINAL C AT IAH - 2800 N TERMINAL RD
HOUSTON, TX 77032

**IAH TERMINAL C HELIX RAMP
BEARING AND MISC REPAIRS**

C.I.P. No.	A.I.P. No.
C.O.H. No.	D.O.A No.



DESIGNER PROJECT No.: 19-21
PROJECT STATUS: CONSTRUCTION DOCUMENTS

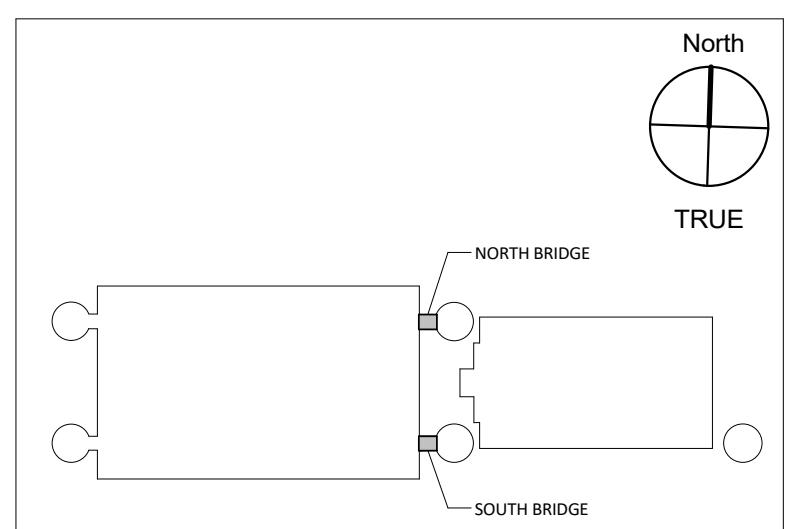
REVISIONS

No.	DESCRIPTION	DATE	BY
1	ISSUE FOR BID	01/19/2023	

DESIGNER: ER
DRAWN BY: RR
CHECKED BY: ER
ISSUE DATE: 01/19/2023
APPROVED BY: ER
APPROVAL DATE: 01/19/2023

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category	Henderson Rogers Structural Engineers, LLC TBPE Firm Registration No. 8755
IFB	
ISSUE FOR BID	



SHEET NAME: ISOMETRIC VIEW

SHEET No. SF001 SCALE:

FILE PATH: G:\Users\John.moore\Documents\1320001_IAH C Garage Bridge Repair_R19_jmooreKX2VP.rvt

OLD DOA No. : DOA DWG FILE:

1 ISOMETRIC VIEW

GENERAL STRUCTURAL NOTES - TERMINAL C HELIX BRIDGE REPAIRS

PART I - DESIGN CRITERIA

- A. GENERAL BUILDING CODE
1. THE REPAIR TO EXISTING STRUCTURE ARE BASED ON THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE 2015, WITH CITY OF HOUSTON AMENDMENTS.
2. BUILDING OCCUPANCY CATEGORY: II (PER IBC TABLE 1604.5).
B. DEAD LOADS
1. SELF WEIGHT OF STRUCTURE AND 20 PSF SUPERIMPOSED DEAD LOAD.
C. LIVE LOADS
1. DESIGN LIVE LOAD USED FOR ANALYSIS: DESIGN LIVE LOADS ARE BASED ON THE MORE RESTRICTIVE OF THE UNIFORM LOAD LISTED BELOW OR THE CONCENTRATED LOAD LISTED ACTING OVER AN AREA 20 SQUARE INCHES.
a. 50 PSF OR 2,000 LBS
D. WIND LOADS
1. WIND PRESSURES (FOR DESIGN OF SHORING SYSTEMS) SHALL BE BASED ON THE PROVISIONS OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, ASCE 7-10 AND THE FOLLOWING CRITERIA.
a. ULTIMATE DESIGN WIND SPEED (VULT): 139 MPH (3-SECOND GUST)
b. BUILDING RISK CATEGORY: II
c. WIND EXPOSURE CATEGORY: B

PART II - REINFORCED CONCRETE

- A. CLASSES OF CONCRETE
1. ALL CONCRETE SHALL CONFORM TO THE REQUIREMENTS AS NOTED BELOW UNLESS NOTED OTHERWISE ON THE DRAWINGS.
LOCATION 28 DAYS COMP STRENGTH CONC TYPE
CONCRETE TOPPING 4,000 PSI NWT
SLAB, CURBS OR WALLS
SHORING FOUNDATION 5,000 PSI NWT
NWT - NORMAL WEIGHT CONCRETE
B. HORIZONTAL CONSTRUCTION JOINTS IN CONCRETE POURS
1. THERE SHALL BE NO HORIZONTAL CONSTRUCTION JOINTS IN ANY CONCRETE POURS UNLESS SHOWN ON THE DRAWINGS. THE ARCHITECT/ENGINEER SHALL APPROVE ALL DEVIATIONS OR ADDITIONAL JOINTS IN WRITING.
C. REINFORCING STEEL
1. SUPPLEMENTAL REINFORCING STEEL SHALL BE ASTM A 615 GRADE 60 UNLESS NOTED OTHERWISE ON THE DRAWINGS OR IN THESE NOTES.
D. REINFORCING STEEL COVERAGE
1. COVER IN STRUCTURAL MEMBERS NOT SPECIFIED IN THE DETAILS SHALL CONFORM TO THE REQUIREMENTS OF ACI 318 UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS. THE REINFORCING STEEL DETAILER SHALL ADJUST REINFORCING STEEL CAGE SIZES AT INTERSECTING STRUCTURAL MEMBERS AS REQUIRED TO ALLOW CLEARANCE FOR INTERSECTING REINFORCING BAR LAYERS WITH MINIMUM SPECIFIED COVER.

PART III - REPAIRS

- A. CONCRETE CRACK AND SPALLING REPAIR NOTES:
1. SUBSTRATE SHALL BE CLEAN, SOUND, AND LATANCE-FREE PRIOR TO ANY REPAIRS. REFER TO MANUFACTURER SPECIFICATIONS FOR SURFACE PREPARATION REQUIREMENTS.
2. HAIRLINE AND NARROW CRACKS (CRACK WIDTH < 1/100) SHALL BE SEALED WITH AN APPROVED PENETRATING SEALER OR COATED PIGMENTED SEALER. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. MEDIUM AND WIDE CRACKS (CRACK WIDTH > 1/100) SHALL BE INJECTED FULL DEPTH WITH AN APPROVED EPOXY RESIN. USE SIKADUR 35, HI-MOD LV OR OTHER APPROVED PRODUCT, AS SPECIFIED.
4. FOR SPALLED CONCRETE REPAIRS, PRIME EXPOSED REBAR WITH SIKA ARMATEC 110 EPOCEM OR EQUIVALENT AND PATCH WITH APPROPRIATE CONCRETE REPAIR MATERIALS AS SPECIFIED IN REPAIR DETAILS.
5. COORDINATE WITH SUPPLIER FOR INSTALLATION METHODS AND APPLICABILITY OF PRODUCTS NOTED HERE.
6. REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.
7. CONTRACTOR TO SUBMIT ANNOTATED ELEVATIONS SHOWING CRACK LOCATIONS AND TYPE OF CRACK REPAIR MATERIAL APPLIED TO EACH CRACK. ENGINEER TO APPROVE IN SUBMITTAL AND IN FIELD PRIOR TO COMMENCEMENT OF WORK.

PART IV - STRUCTURAL OBSERVATION

- A. STRUCTURAL OBSERVATION SHALL BE PERFORMED BY THE ENGINEER RESPONSIBLE FOR THE STRUCTURAL DESIGN, OR A LICENSED ENGINEER OR ARCHITECT DESIGNATED BY THE SAID ENGINEER (CALLED THE STRUCTURAL OBSERVER).
B. A PRE-CONSTRUCTION MEETING INCLUDING THE ENGINEER RESPONSIBLE FOR THE STRUCTURAL OBSERVATION, THE STRUCTURAL OBSERVER, THE CONTRACTOR, AFFECTED SUBCONTRACTORS, AND DEPUTY INSPECTORS SHALL BE HELD TO REVIEW THE APPROVED STRUCTURAL PLANS AND AGREE UPON INSPECTION SCOPE AND SCHEDULE. THE OWNER OR OWNER'S REPRESENTATIVE SHALL COORDINATE AND CALL THE MEETING, AND THE STRUCTURAL OBSERVER SHALL PRESIDE OVER THE MEETING.
C. THE PURPOSE OF THE PRECONSTRUCTION MEETING SHALL BE TO IDENTIFY THE STRUCTURAL ELEMENTS AND CONNECTIONS THAT NEED REPAIR AND TO REVIEW SHORING REQUIREMENTS. A RECORD OF THE MEETING SHALL BE INCLUDED IN THE FIRST OBSERVATION REPORT SUBMITTED TO THE HAS REPRESENTATIVE.
D. OBSERVED DEFICIENCIES SHALL BE REPORTED IN WRITING TO THE OWNER'S REPRESENTATIVE, REGISTERED DEPUTY INSPECTOR, CONTRACTOR AND THE HAS REPRESENTATIVE.
E. UPON THE FORM PRESCRIBED BY THE HAS REPRESENTATIVE, THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE HAS REPRESENTATIVE A WRITTEN STATEMENT AT EACH SIGNIFICANT CONSTRUCTION STAGE STATING THAT THE SITE VISITS HAVE BEEN MADE AND IDENTIFYING ANY REPORTED DEFICIENCIES, WHICH, TO THE BEST OF THE STRUCTURAL OBSERVER'S KNOWLEDGE, HAVE NOT BEEN RESOLVED.
F. A FINAL REPORT BY THE STRUCTURAL OBSERVER, WHICH STATES THAT ALL OBSERVED DEFICIENCIES HAVE BEEN RESOLVED, IS REQUIRED BEFORE ACCEPTANCE OF THE WORK BY THE HAS REPRESENTATIVE.
G. AT THE CONCLUSION OF THE WORK INCLUDED IN THE PERMIT, THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE HAS REPRESENTATIVE A WRITTEN STATEMENT THAT THE SITE VISITS HAVE BEEN MADE AND SHALL IDENTIFY ANY REPORTED DEFICIENCIES THAT, TO THE BEST OF THE STRUCTURAL OBSERVER'S KNOWLEDGE, HAVE NOT BEEN RESOLVED.
H. THE STRUCTURAL OBSERVER SHALL PERFORM STRUCTURAL OBSERVATION IN ACCORDANCE WITH THE STRUCTURAL OBSERVATION REPORT FORM AND THE APPROVED PLANS. UPON COMPLETION OF STRUCTURAL OBSERVATION, THE STRUCTURAL OBSERVER OF RECORD SHALL COMPLETE THE OBSERVATION FORM.
I. STRUCTURAL OBSERVATION IS THE VISUAL OBSERVATION OF THE STRUCTURAL REPAIRS, FOR GENERAL CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS, AT SIGNIFICANT CONSTRUCTION STAGES AND AT COMPLETION OF THE STRUCTURAL REPAIRS.
J. STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY FOR THE INSPECTION REQUIRED BY THE BUILDING CODE.

PART V - SPECIAL INSPECTIONS

- A. THE OWNER'S TESTING LABORATORY SHALL PROVIDE SPECIAL INSPECTION SERVICES IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE FOR THE FOLLOWING ITEMS.
1. CONCRETE CONSTRUCTION:
a. EPOXY INJECTION FOR CRACK REPAIRS
b. CONCRETE REPAIRS

PART VI - SUBMITTALS

- A. SUBMITTAL LIST AND SCHEDULE
1. THE GENERAL CONTRACTOR SHALL PREPARE A DETAILED LIST AND SCHEDULE OF ALL SUBMITTAL ITEMS TO BE SENT TO THE STRUCTURAL ENGINEER PRIOR TO THE START OF CONSTRUCTION. THIS LIST SHALL BE UPDATED AND REVISED AND KEPT CURRENT AS THE JOB PROGRESSES. THE SUBMITTAL LIST SHALL BE ORGANIZED AS SHOWN BELOW:
a. SHOP DRAWINGS
b. DESIGN CALCULATIONS
c. PRODUCT DATA, CERTIFICATES, REPORTS, AND OTHER LITERATURE
B. SUBMITTALS TO BE PROVIDED TO STRUCTURAL ENGINEER
1. STRUCTURAL SUBMITTALS: IN ADDITION TO THE SUBMITTALS REQUIRED BY THE STRUCTURAL SPECIFICATIONS, THE FOLLOWING SUBMITTALS SHALL BE PROVIDED:
a. SUPPLEMENTAL STEEL REINFORCEMENT (IF REQUIRED)
b. CONCRETE REPAIR MATERIALS
c. EPOXY-MODIFIED CEMENTITIOUS COATING
d. EPOXY RESIN FOR CRACK INJECTION
e. EXPANSION JOINT SYSTEM
f. JOINT SEALANTS (HORIZONTAL, VERTICAL AND COVE)
g. TRAFFIC COATINGS
h. SHORING PLANS (SIGNED AND SEALED BY PROFESSIONAL ENGINEER LICENSED IN TEXAS)
2. SUBMITTAL REQUIREMENTS:
a. ALL SHOP DRAWINGS MUST BE REVIEWED AND ELECTRONICALLY STAMPED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTAL. SELECT ONE OF THE TWO OPTIONS BELOW.
b. CONTRACTOR SHALL PROVIDE THE SUBMITTAL IN ELECTRONIC PORTABLE DOCUMENT FORMAT (PDF) PER THE SPECIFICATIONS.
c. THE OMISSION FROM THE SHOP DRAWINGS OF ANY MATERIALS REQUIRED BY THE CONTRACT DOCUMENTS TO BE FURNISHED SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF FURNISHING AND INSTALLING SUCH MATERIALS, REGARDLESS OF WHETHER THE SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED.
C. REPRODUCTION
1. THE USE OF ELECTRONIC FILES OR REPRODUCTIONS OF THESE CONTRACT DOCUMENTS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES THEIR ACCEPTANCE OF ALL INFORMATION SHOWN HEREON AS CORRECT, AND OBLIGATES THEMSELVES TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS THAT MAY OCCUR HEREON.

PART VII - MISCELLANEOUS

- A. CONTRACT DOCUMENTS
1. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN ALL CONTRACT DOCUMENTS AND LATEST ADDENDA AND TO SUBMIT SUCH DOCUMENTS TO ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS, FABRICATION OF ANY STRUCTURAL MEMBERS, AND ERECTION IN THE FIELD.
2. CONTRACTOR SHALL FULLY AND PROPERLY IMPLEMENT THE ENGINEERING CONTROLS, WORK PRACTICES, AND RESPIRATORY PROTECTION AGAINST TOXIC AND HAZARDOUS SUBSTANCES INCLUDING RESPIRABLE CRYSTALLINE SILICA ACCORDING TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, OSHA 1926.1153. HENDERSON ROGERS DOES NOT HAVE CONTROL, OVER, CHARGE OF, OR RESPONSIBILITY FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. NOR SHALL HENDERSON ROGERS, OR OWNER, BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
3. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE REPAIRED STRUCTURE AND, EXCEPT WHERE SPECIFICALLY SHOWN, DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, AND SEQUENCE.
4. REFER TO DRAWINGS OTHER THAN STRUCTURAL FOR COMPLETE INFORMATION INCLUDING: FLOOR SLAB DEPRESSIONS AND CURBS, EXPANSION JOINT SYSTEMS, PREVIOUS REPAIRS PERFORMED IN THE FACILITY, PRESENCE OF POST-TENSIONING, LOCATION AND SIZE OF STRUCTURAL MEMBERS (BEAMS, CORBELS, COLUMNS, WALLS, ETC.), SLAB THICKNESS, AND OTHER INFORMATION RELEVANT TO THE PROJECT.
5. WHERE MEMBER LOCATIONS ARE NOT SPECIFICALLY DIMENSIONED, MEMBERS ARE EITHER LOCATED ON COLUMNS LINES OR ARE EQUALLY SPACED BETWEEN LOCATED MEMBERS.
6. IF CERTAIN FEATURES ARE NOT FULLY SHOWN OR SPECIFIED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS SHOWN OR SPECIFIED IN SIMILAR CONDITIONS. COORDINATE BELOW WITH ARCHITECT'S SPECIFICATIONS.
B. DRAWING CONFLICTS
1. THE GENERAL CONTRACTOR SHALL COMPARE THE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND REPORT ANY DISCREPANCY BETWEEN EACH SET OF DRAWINGS AND WITHIN EACH SET OF DRAWINGS TO THE ARCHITECT AND ENGINEER PRIOR TO THE FABRICATION AND INSTALLATION OF ANY REPLACEMENT ELEMENTS.
C. CONFLICTS IN STRUCTURAL REQUIREMENTS
1. WHERE CONFLICT EXISTS AMONG THE VARIOUS PARTS OF THE STRUCTURAL CONTRACT DOCUMENTS, STRUCTURAL DRAWINGS, GENERAL NOTES, AND SPECIFICATIONS, THE STRICTEST REQUIREMENTS, AS INDICATED BY THE ENGINEER, SHALL GOVERN.
D. EXISTING CONDITIONS
1. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS OF THE EXISTING BUILDING AT THE JOB SITE AND REPORT ANY DISCREPANCIES FROM ASSUMED CONDITIONS SHOWN ON THE DRAWINGS TO THE ARCHITECT AND ENGINEER PRIOR TO THE FABRICATION AND ERECTION OF ANY MEMBERS.
2. EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS WAS OBTAINED FROM EXISTING CONSTRUCTION DOCUMENTS AND LIMITED SITE OBSERVATION. THESE DRAWINGS OF EXISTING CONSTRUCTION ARE AVAILABLE FOR CONTRACTOR USE. HOWEVER, THE AVAILABLE DRAWINGS OF EXISTING CONSTRUCTION ARE NOT NECESSARILY COMPLETE. THE CONTRACTOR SHALL FIELD VERIFY ALL PERTINENT INFORMATION.
3. DEMOLITION, CUTTING, DRILLING, ETC. OF EXISTING WORK SHALL BE PERFORMED WITH GREAT CARE SO AS NOT TO JEOPARDIZE THE STRUCTURAL INTEGRITY OF THE EXISTING BUILDING. IF ANY ARCHITECTURAL, STRUCTURAL, OR MEP MEMBERS NOT DESIGNATED FOR REMOVAL INTERFERE WITH THE NEW WORK, THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY AND APPROVAL OBTAINED PRIOR TO REMOVAL OF THOSE MEMBERS.
4. TEMPORARY SHORING: SEE SECTION XI.
5. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION AND TAKE CARE TO PROTECT EXISTING UTILITIES AND/OR EQUIPMENT/CONVEYORS THAT ARE TO REMAIN IN SERVICE.
6. THE CONTRACTOR SHALL PROVIDE DUST, ODOR AND NOISE PROTECTION, AND SAFETY MEASURES AS NECESSARY FOR THE DURATION OF REPAIRS. PROVIDE ALL MEASURES NECESSARY TO PROTECT THE EXISTING STRUCTURE, BUILDING INTERIOR, VEHICLES, FACILITY PATRONS AND OTHER PERSONS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, TEMPORARY BRACING, SHORING, FORMWORK, PROTECTIVE ENCLOSURES AND TRAFFIC CONTROLS. CONTRACTOR SHALL PERFORM ALL WORK WITHOUT INHIBITING ANY OF THE AIRPORT OPERATIONS.
7. THE CONTRACTOR SHALL REPAIR ALL DAMAGE CAUSED DURING CONSTRUCTION WITH SIMILAR MATERIALS AND WORKMANSHIP TO RESTORE CONDITIONS TO LEVELS ACCEPTABLE TO THE ARCHITECT AND/OR OWNERS REPRESENTATIVE.
E. RESPONSIBILITY OF THE CONTRACTOR FOR CONSTRUCTION LOADS
1. THE REPAIRS HAVE BEEN DESIGNED FOR THE LOADS IDENTIFIED WITHIN THESE STRUCTURAL DRAWINGS THAT ARE ANTICIPATED TO BE APPLIED TO THE STRUCTURE ONCE COMPLETED. THE CONTRACTOR SHALL NOT OVERLOAD THE STRUCTURE DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING THE ADEQUACY OF THE STRUCTURE TO SUPPORT ANY APPLIED CONSTRUCTION LOADS, INCLUDING THOSE DUE TO CONSTRUCTION VEHICLES OR EQUIPMENT, MATERIAL HANDLING OR STORAGE, SHORING OR RESHORING, OR ANY OTHER CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL SUBMIT CALCULATIONS SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED VERIFYING THE ADEQUACY OF THE STRUCTURE FOR ANY PROPOSED CONSTRUCTION LOADS THAT ARE IN EXCESS OF THE STATED DESIGN LOADS. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE TO DESIGN OR CHECK THE STRUCTURE FOR LOADS APPLIED TO THE STRUCTURE FOR ANY CONSTRUCTION ACTIVITY.
F. CONTRACTOR SUBSTITUTIONS
1. ANY MATERIALS OR PRODUCTS SUBMITTED FOR APPROVAL THAT ARE DIFFERENT FROM THE MATERIAL OR PRODUCTS SPECIFIED IN THE STRUCTURAL CONTRACT DOCUMENTS WILL BE APPROVED ONLY IF THE FOLLOWING CRITERIA ARE SATISFIED:
A. A COST SAVINGS TO THE OWNER IS DOCUMENTED AND SUBMITTED WITH THE REQUEST.
B. THE MATERIAL OR PRODUCT HAS BEEN APPROVED BY THE INTERNATIONAL CODE COUNCIL (ICC) AND THE ICC REPORT IS SUBMITTED WITH THE REQUEST.
1) THE ICC ESR THAT IS SUBMITTED MUST REFERENCE THE BUILDING CODE UNDER WHICH THE PROJECT IS PERMITTED.
2) ICC REPORTS THAT HAVE BEEN DISCONTINUED AT THE TIME OF PRODUCT INSTALLATION WILL NOT BE ACCEPTED.

PART VII - MISCELLANEOUS (CONTINUED)

- 2. SUBMITTALS NOT SATISFYING THE ABOVE CRITERIA WILL NOT BE CONSIDERED. IN THE CHOICES BELOW.
G. THE STRUCTURAL ENGINEER'S ROLE DURING CONSTRUCTION
1. THE ENGINEER SHALL NOT HAVE CONTROL NOR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSION OF THE CONTRACTOR, SUBCONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
2. PERIODIC SITE OBSERVATION BY FIELD REPRESENTATIVES OF HENDERSON ROGERS IS SOLELY FOR THE PURPOSE OF BECOMING GENERALLY FAMILIAR WITH THE PROGRESS AND QUALITY OF THE WORK COMPLETED, AND DETERMINING, IN GENERAL, IF THE WORK OBSERVED IS BEING PERFORMED IN A MANNER INDICATING THAT THE WORK, WHEN FULLY COMPLETED, WILL BE IN ACCORDANCE WITH THE REPAIR CONTRACT DOCUMENTS. THIS LIMITED SITE OBSERVATION SHOULD NOT BE CONSTRUED AS EXHAUSTIVE OR CONTINUOUS TO CHECK THE QUALITY OR QUANTITY OF THE WORK, BUT RATHER PERIODIC IN AN EFFORT TO GUARD THE OWNER AGAINST DEFECTS OR DEFICIENCIES IN THE WORK OF THE CONTRACTOR.
H. MAINTENANCE STATEMENT
1. ALL STRUCTURES REQUIRE PERIODIC MAINTENANCE TO EXTEND LIFESPAN AND TO ENSURE STRUCTURAL INTEGRITY FROM EXPOSURE TO THE ENVIRONMENT. A PLANNED PROGRAM OF MAINTENANCE SHALL BE ESTABLISHED BY THE BUILDING OWNER. THIS PROGRAM SHALL INCLUDE ITEMS SUCH AS, BUT NOT LIMITED TO, PAINTING OF STRUCTURAL STEEL, PROTECTIVE COATINGS FOR CONCRETE, REPLACEMENT OF FAILED SEALANTS, CAULKED JOINTS, EXPANSION JOINTS, CONTROL JOINTS, REPAIR OF SPALLS AND CRACKS IN CONCRETE, AND PRESSURE WASHING OF EXPOSED STRUCTURAL ELEMENTS.

PART VIII - GENERAL SEQUENCE OF WORK

- A. CONTRACTOR RESPONSIBILITY:
THE SPECIFIC SEQUENCE OF WORK SHALL BE DEVELOPED BY THE CONTRACTOR AND SUBMITTED IN WRITING FOR APPROVAL BY DESIGN TEAM AND HOUSTON AIRPORT SYSTEM (HAS). INFORMATION PRESENTED BELOW IS FOR GENERAL PLANNING PURPOSES.
B. ASSUMPTIONS:
WORK WILL BE PERFORMED AT THE NORTH HELIX BRIDGE FIRST, AND ONCE THAT IS COMPLETED WILL BE FOLLOWED BY SIMILAR WORK AT THE SOUTH HELIX BRIDGE. ALL WORK MUST BE DONE AT NIGHT, BETWEEN THE HOURS OF 9 PM AND 6 AM, UNLESS OTHER TIMES ARE APPROVED IN WRITING BY HOUSTON AIRPORT SYSTEM. WORK WILL BE PERFORMED FROM TOP LEVEL DOWN.
1. SET UP BARRICADES, TRAFFIC CONES AND SIGNAGE AROUND WORK AREA PER HOUSTON AIRPORT SYSTEM (HAS) REQUIREMENTS.
2. PHOTOGRAPH BRIDGE STRUCTURE, CORBELS AND HELIX WALL FOR USE IN DOCUMENTING EXISTING CONDITIONS.
3. CONDUCT PRE-INSTALLATION MEETING AT SITE WITH ARCHITECT, ENGINEER AND HAS REPRESENTATIVE.
4. INSTALL HELICAL PILES AND CONCRETE PAD AT LEVEL 1, WHICH IS SPACED OCCUPIED BY UNITED AIRLINES BHS OPERATIONS. THE SECURE AREA REQUIRES PROPER CREDENTIALS FOR ACCESS.
5. INSTALL SHORING/ JACKING SYSTEM, EXTENDING FROM BOTTOM OF LEVEL 6 DOWN TO LEVEL 1. SEQUENCE WORK FROM TOP DOWN REMOVING SHORING SYSTEM AS WORK PROGRESSES TO NEXT LOWER LEVEL.
6. REPAIR CORBELS:
a. REPAIR CORBELS ON ONE LEVEL AT A TIME SO THAT ONLY ONE BRIDGE LEVEL IS ABLE TO LOAD SHORING STRUCTURE.
b. REMOVE ALL UNSOUND CONCRETE AND PORTIONS OF SOUND CONCRETE TO ACHIEVE THE REQUIRED DEPTH TO EXPOSE ALL CORRODED REINFORCEMENT.
c. NOTIFY ENGINEER ONCE REBAR HAS BEEN EXPOSED SO A SITE OBSERVATION CAN BE MADE.
d. IF NO FURTHER CONCRETE REMOVAL IS REQUIRED BY ENGINEER, CLEAN THE REBAR AND APPLY PROTECTIVE COATING.
e. PREPARE SUBSTRATE PER MANUFACTURER'S RECOMMENDATIONS AND PLACE CONCRETE OR CONCRETE REPAIR PRODUCTS TO RESTORE CORBEL BACK TO ITS ORIGINAL SIZE AND CONFIGURATION.
f. ALLOW CONCRETE OR CONCRETE REPAIR PRODUCTS TO CURE AS RECOMMENDED BY THE MANUFACTURER BUT NO LESS THAN 7 DAYS.
7. REPAIR BEARING PLATES:
a. CLEAN STEEL PLATES BY ABRASIVE BLASTING.
b. NOTIFY ENGINEER ONCE STEEL HAS BEEN CLEANED SO MEASUREMENTS AND FURTHER ASSESSMENT CAN BE MADE.
c. IF NO OTHER REMEDIAL MEASURES ARE NEEDED, APPLY CORROSION-INHIBITING COATING TO CLEANED SURFACES.
8. CLEAN GIRDETS:
a. PREPARE BOX GIRDETS WITH ABRASIVE BLAST CLEANING OR HAND AND POWER TOOLS, OR OTHER APPROVED METHOD.
b. APPLY CORROSION-INHIBITING COATING TO CLEANED SURFACES.
9. REPAIR CONCRETE SLABS AND BEAMS:
a. PREPARE CRACKS AND SPALLED AREAS TO RECEIVE REPAIR PRODUCTS.
b. APPLY PRODUCTS AND ALLOW TO CURE AS RECOMMENDED BY THE MANUFACTURER.
10. REPAIR ITEMS AT TOP SURFACES OF BRIDGE:
a. REMOVE EXISTING EXPANSION JOINTS AND CLEAN SURFACES.
b. INSTALL NEW EXPANSION JOINT SYSTEM PER MANUFACTURER'S INSTRUCTIONS.
c. REPAIR SPALLS AND CRACKS IN CONCRETE DECK AND CURBS.
d. REPAIR SPALLS AND CRACKS IN CONCRETE WALLS.
e. REPLACE JOINT SEALANT IN PRECAST PANELS.
f. REPLACE TRAFFIC COATING.
11. REPEAT PROCEDURES ABOVE FOR EACH BRIDGE LEVEL, AND AT SOUTH BRIDGE STRUCTURE.
C. EXISTING CONDITIONS:
CONTRACTOR SHALL DEVELOP FINAL SEQUENCE OF WORK AND CONSTRUCTION PROCEDURES BASED ON CONDITIONS AT THE AIRPORT (AND SPECIFICALLY AT TERMINAL C) AT TIME WORK IS TO COMMENCE. SHORING AND REPAIR WORK MUST BE COORDINATED WITH OTHER ON-GOING CONSTRUCTION ACTIVITIES TO MAINTAIN PUBLIC ACCESS TO THE TERMINAL AND GARAGE, AND TO AVOID DISRUPTION OF AIRPORT OPERATIONS. ALL PROCEDURES MUST BE COORDINATED AND APPROVED BY HOUSTON AIRPORT SYSTEM (HAS) AND UNITED AIRLINES.

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IAH TERMINAL C HELIX RAMP BEARING AND MISC REPAIRS
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C.O.H. No. D.O.A No.
MWA ARCHITECTS
11767 KATY FREEWAY SUITE 430 HOUSTON, TEXAS 77079 - 713-482-2338

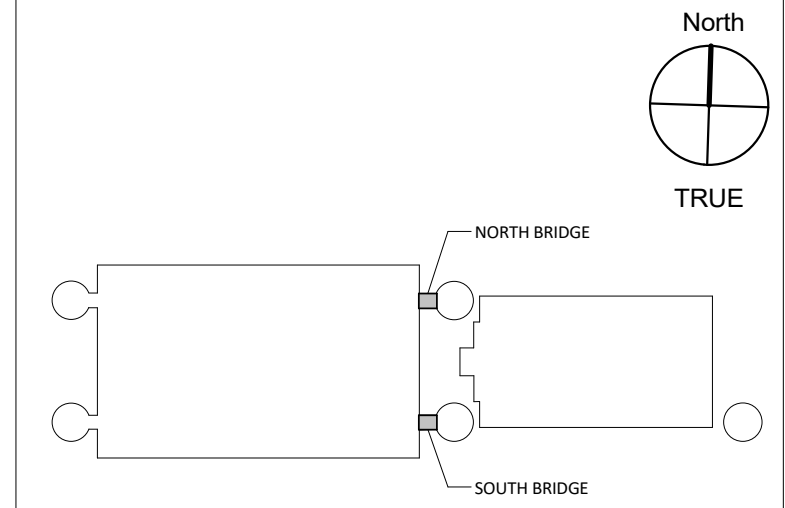
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PROJECT STATUS: CONSTRUCTION DOCUMENTS

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DIRECTOR of HOUSTON AIRPORT SYSTEM

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Henderson Rogers Structural Engineers, LLC
TBPE Firm Registration No. 8755
K. ELAINE ROGERS
LICENSED PROFESSIONAL ENGINEER
65566
01/19/2023



SHEET NAME: GENERAL NOTES TERMINAL C HELIX BRIDGE REPAIRS
SHEET No. SF002 SCALE:

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SHEET SIZE: 22"x34" ANSI-D

GENERAL STRUCTURAL NOTES - TERMINAL C HELIX BRIDGE REPAIRS

PART IX - DRAWING INTERPRETATION

PART XII - HELICAL PILES

- A. DRAWING VIEWS LABELED AS "TYPICAL"
- PARTIAL PLANS, ELEVATIONS, SECTIONS, DETAILS, OR SCHEDULES LABELED WITH "TYPICAL" AT THE BEGINNING OF THEIR TITLE SHALL APPLY TO ALL SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY SHOWN. THE APPLICABILITY OF THE CONTENT OF THESE VIEWS TO LOCATIONS ON THE PLAN CAN BE DETERMINED FROM THE TITLE OF THE VIEWS. SUCH VIEWS SHALL APPLY WHETHER OR NOT THEY ARE KEYED IN AT EACH LOCATION. DECISIONS REGARDING APPLICABILITY OF THESE "TYPICAL" VIEWS SHALL BE DETERMINED BY THE STRUCTURAL ENGINEER.
- B. STRUCTURAL ABBREVIATIONS AND NOTATIONS
- THE FOLLOWING ABBREVIATIONS AND NOTATIONS MAY APPEAR ON THE DRAWINGS:
- | | |
|--------|---|
| @ | AT |
| # | NUMBER |
| APPROX | APPROXIMATE |
| BM | BEAM |
| CL | CENTERLINE |
| COL | COLUMN |
| CONC | CONCRETE |
| CSP | CONCRETE SURFACE PROFILE |
| CONT | CONTINUOUS |
| COORD | COORDINATE |
| DIM | DIMENSION |
| EA | EACH |
| EXIST | EXISTING |
| EXP | EXPANSION |
| Fc | CONCRETE STRENGTH |
| FV | FIELD VERIFY |
| FY | YIELD STRENGTH |
| GALV | GALVANIZE (D) |
| GEN | GENERAL |
| ICRI | INTERNATIONAL CONCRETE REPAIR INSTITUTE |
| MAX | MAXIMUM |
| MIN | MINIMUM |
| NTS | NOT TO SCALE |
| OC | ON CENTER |
| PSF | POUNDS PER SQUARE FOOT |
| PSI | POUNDS PER SQUARE INCH |
| QTY | QUANTITY |
| R | REACTION |
| REINF | REINFORCEMENT |
| SPA | SPACING |
| SQ | SQUARE |
| TI | TASK ITEM |
| TOC | TOP OF CONCRETE |
| TYP | TYPICAL |

- HELICAL PILES SHALL BE DESIGNED AND MANUFACTURED IN ACCORDANCE WITH IBC 2012, WITH CITY OF HOUSTON AMENDMENTS.
- HELICAL PILES SHALL BE DESIGNED AND MANUFACTURED BY RAM JACK OR APPROVED EQUAL.
- HELICAL PILES SHALL BE RECOGNIZED BY ICC AND THE MANUFACTURER SHALL HOLD A CURRENT ICC-ES ESR REPORT SHOWING COMPLIANCE WITH AC308 AND IBC 2012.
- DIMENSIONS OF THE CENTRAL SHAFT AND THE NUMBER, SIZE, SPACING AND THICKNESS OF THE HELICAL BEARING PLATES SHALL BE DESIGNED AND FABRICATED TO SUPPORT THE SPECIFIED DESIGN LOADS.
- ONLY ROUND CENTRAL PILE SHAFTS WILL BE ALLOWED.
- MINIMUM AND MAXIMUM INSTALLATION TORQUES SHALL BE SPECIFIED BY THE HELICAL PILE MANUFACTURER. THE MINIMUM INSTALLATION TORQUE SHALL BE HIGH ENOUGH TO ACHIEVE THE REQUIRED BEARING CAPACITY, INCLUDING A SAFETY FACTOR OF 2.
- HELICAL PILES SHALL BE DESIGNED AND MANUFACTURED TO RESIST ALL STRESSES INDUCED BY INSTALLATION.
- EXISTING CONDITIONS AND UNDERGROUND OBSTRUCTIONS SHALL BE CONFIRMED BY THE PILE INSTALLER. PROBING OR SCANNING MAY BE NECESSARY TO LOCATE UNDERGROUND OBSTRUCTIONS. REPORT ANY OBSTRUCTIONS OR UNFORESEEN CONDITIONS TO THE STRUCTURAL ENGINEER.
- LOCATIONS OF PILES SHALL BE COORDINATED WITH SHORING POST PLACEMENT.
- SPECIAL INSPECTION OF THE HELICAL PILE INSTALLATION SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 1704.10 OF THE 2012 IBC. THE INSPECTOR SHALL RECORD THE FOLLOWING:
 - INSTALLATION DATE
 - PILE MANUFACTURER AND INSTALLATION CONTRACTOR
 - MINIMUM & MAXIMUM ALLOWABLE INSTALLATION TORQUE
 - CENTRAL SHAFT DIAMETER OF EACH PILE
 - HELICAL PLATE CONFIGURATION OF EACH PILE
 - ACTUAL TIP EMBEDMENT OF EACH PILE
 - ACTUAL INSTALLATION TORQUE OF EACH PILE
 - ULTIMATE AND ALLOWABLE CAPACITY OF EACH PILE AS SPECIFIED BY MANUFACTURER

PART X - QUANTITY TABLE

- A. POSSIBLE CHANGES IN QUANTITY OF WORK
- BIDDER UNDERSTANDS THAT THE QUANTITIES SPECIFIED HEREIN FOR THE REPAIRS ARE APPROXIMATE AND THAT ACTUAL QUANTITIES IN THE FIELD MAY INCREASE OR DECREASE FROM THE QUANTITIES ESTIMATED. BIDDER HERBY AGREES TO PERFORM ALL QUANTITIES OF WORK AS EITHER INCREASED OR DECREASED, AS REQUIRED BY THE ENGINEER IN ACCORDANCE WITH THE PROVISIONS OF THE CONSTRUCTION DOCUMENTS. THE FINAL PAYMENT TO THE BIDDER SHALL BE BASED ON THE LUMP SUM/UNIT PRICES BID AND THE ACTUAL QUANTITIES COMPLETED (FOR ITEMS THAT ARE NOT LUMP SUM).
- B. BID QUANTITIES: ASSUMED QUANTITIES FOR TYPICAL BID ITEMS SHOWN ON THE DRAWINGS ARE AS INDICATED IN THE BID TABLE BELOW:

ITEM DESCRIPTION	UNIT	LEVEL 4	LEVEL 5	LEVEL 6	TOTAL QUANTITIES (NORTH AND SOUTH BRIDGES)
CONCRETE REPAIR (WITH EXPOSED REBAR)	SF	40	10	30	80
CONCRETE REPAIR (NO EXPOSED REBAR)	SF	40	30	10	80
CRACK SEALER (HAIRLINE CRACKS)	LF	40	250	10	300
CRACK EPOXY INJECTION	LF	10	10	40	60
CONCRETE CORBELS	EA	4	4	4	12
STEEL BEARING PLATE AND NEOPRENE PAD REPLACEMENT (IF REQUIRED)	EA	4	4	4	12

NOTE:
THE LIST ABOVE DOES NOT INCLUDE ALL REPAIRS REQUIRED, BUT ONLY THOSE FOR WHICH UNIT PRICES ARE BEING REQUESTED. REFER TO ENTIRE BID DOCUMENT FOR COMPLETE SCOPE OF WORK.

DESCRIPTION OF ABBREVIATIONS:
LF = LINEAL FEET
SF = SQUARE FEET
LS = LUMP SUM
EA = EACH

PART XI - TEMPORARY SHORING/JACKING SYSTEM

- EACH LEVEL OF THE BRIDGE STRUCTURE MUST BE SHORED UNTIL CORBELS ON THAT LEVEL ARE REPAIRED.
- SHORING SHALL BE DESIGNED AND CONFIGURED SO THAT ONLY THE LEVEL BEING REPAIRED CAN IMPART LOAD ONTO THE SHORING POSTS.
- REFER TO SHORING PLANS FOR PROPOSED SHORING POST LOCATIONS. EXACT PLACEMENT MUST BE DETERMINED AT THE JOB SITE TAKING INTO CONSIDERATION ALL EXISTING CONDITIONS AND IN COORDINATION WITH TRAFFIC CONTROL MEASURES AND ON-GOING OPERATIONS IN UNITED AIRLINES BAGGAGE ROOM.
- REFER TO SHORING PLANS FOR REQUIRED DESIGN LOADS.
- SHORING SYSTEM MUST HAVE CAPACITY TO SECURELY JACK UP A SINGLE LEVEL OF BRIDGE TO MINIMUM HEIGHT NEEDED TO REPLACE STEEL BEARING PLATES.
- REPAIR SEQUENCE MUST ALLOW FOR SINGLE LEVEL JACKING. REPAIRS MUST BE MADE AND COMPLETED ON ANY LEVEL ABOVE THE LEVEL REQUIRED TO BE JACKED UP. THIS WAY SHORING CAN BE REMOVED BEFORE THE LOWER LEVEL IS JACKED.
- SUBMIT SHOP DRAWINGS FOR SHORING SYSTEM INDICATING DESIGN CAPACITY AND PLACEMENT PROCEDURES. DRAWINGS SHALL BE SIGNED AND SEALED BY ENGINEER LICENSED IN STATE OF TEXAS.



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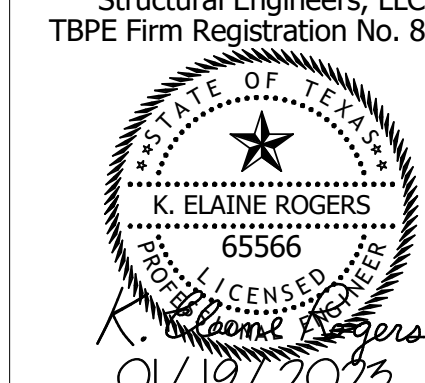
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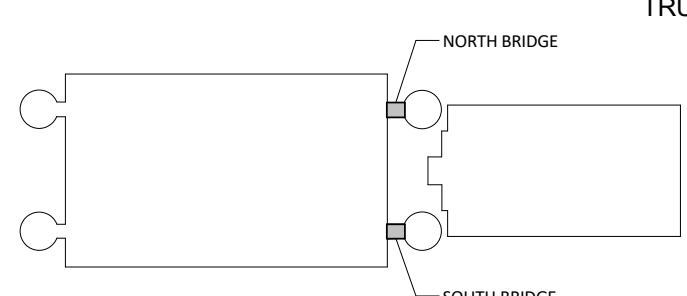
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North BRIDGE

SOUTH BRIDGE

SHEET NAME: GENERAL NOTES TERMINAL C HELIX BRIDGE REPAIRS

SHEET No. SF003 SCALE:

SHEET SIZE: 22"x34" ANSI-D

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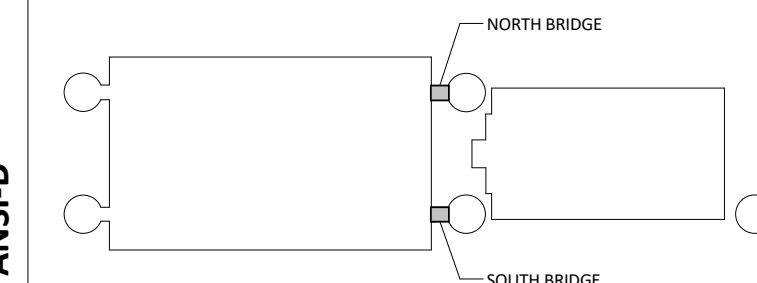
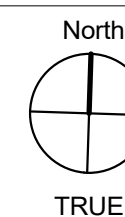
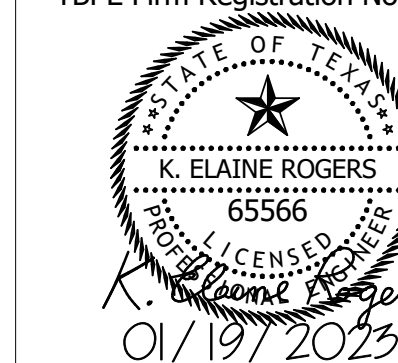
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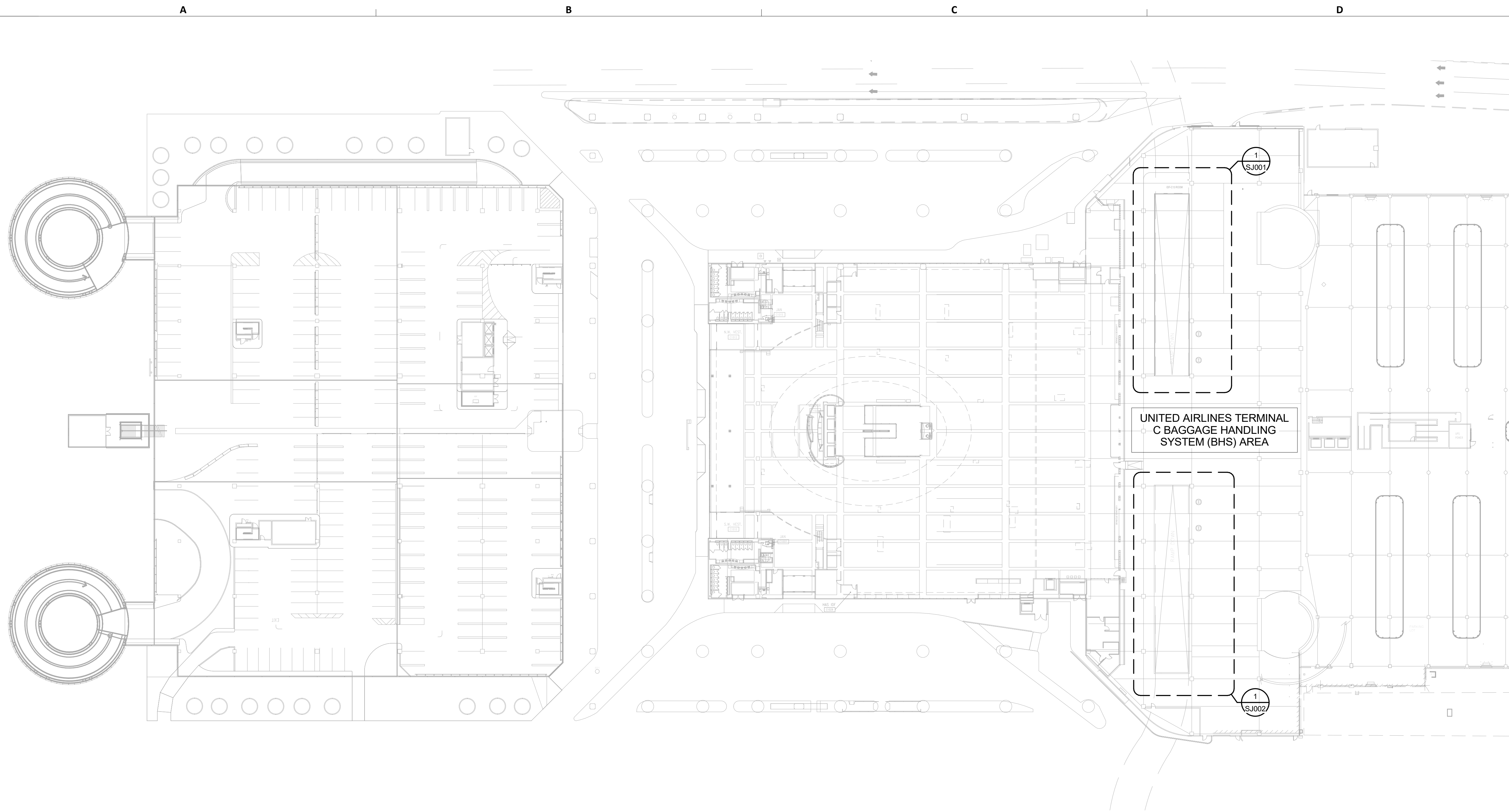
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SHEET No. SF101 SCALE: 1" = 40'-0"

SHEET SIZE: 22"x34" ANSI-D



1 OVERALL FRAMING PLAN - LEVEL 1
1" = 40'-0"

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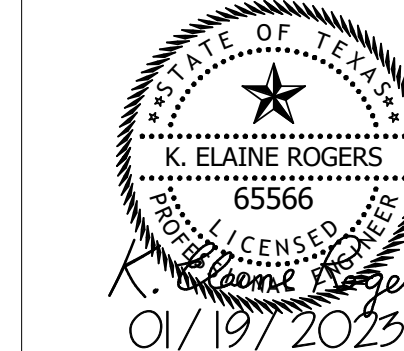
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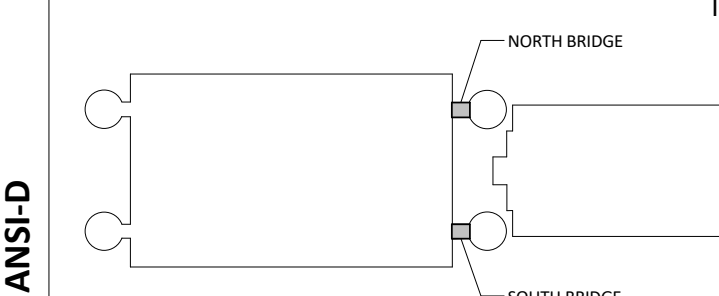
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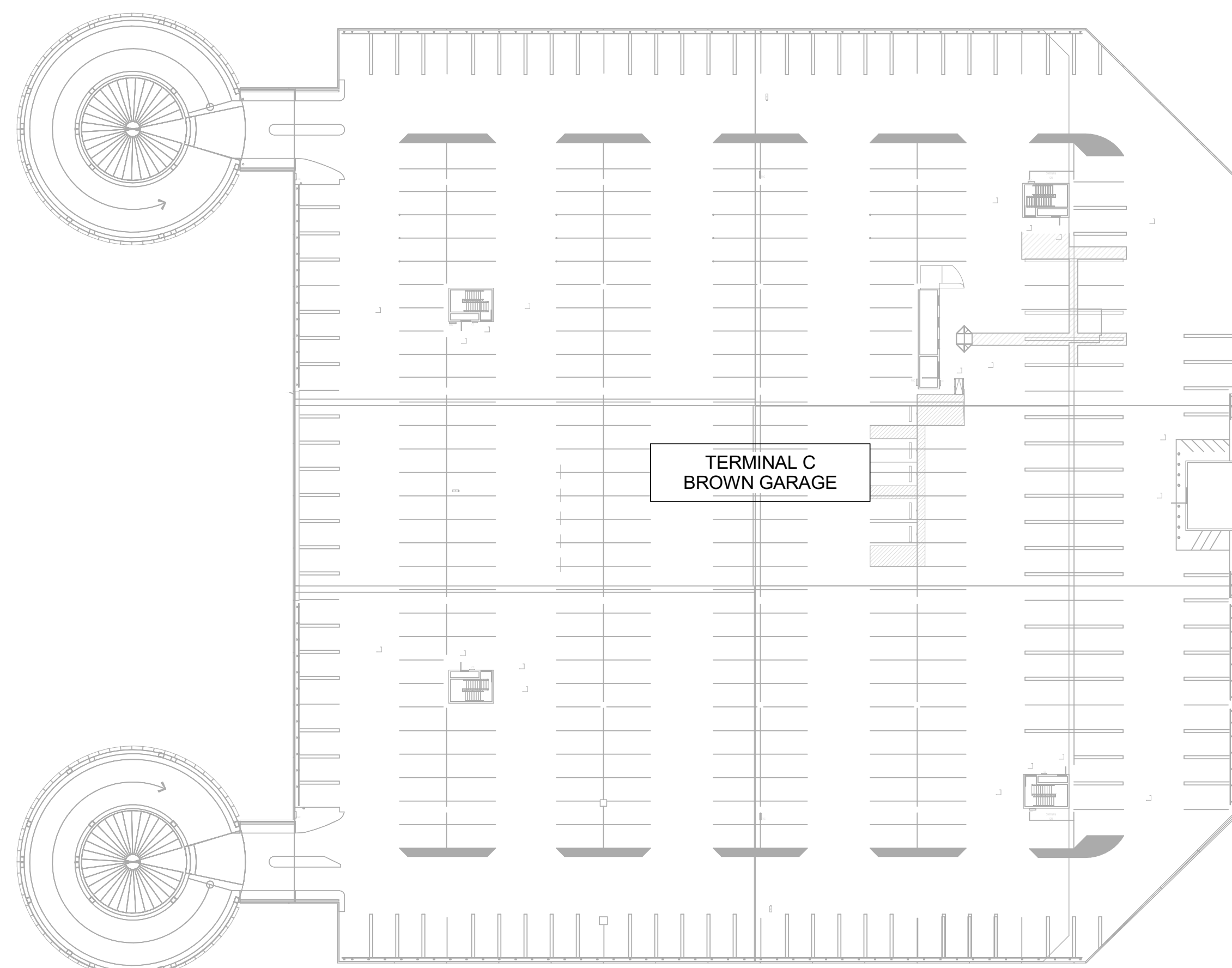
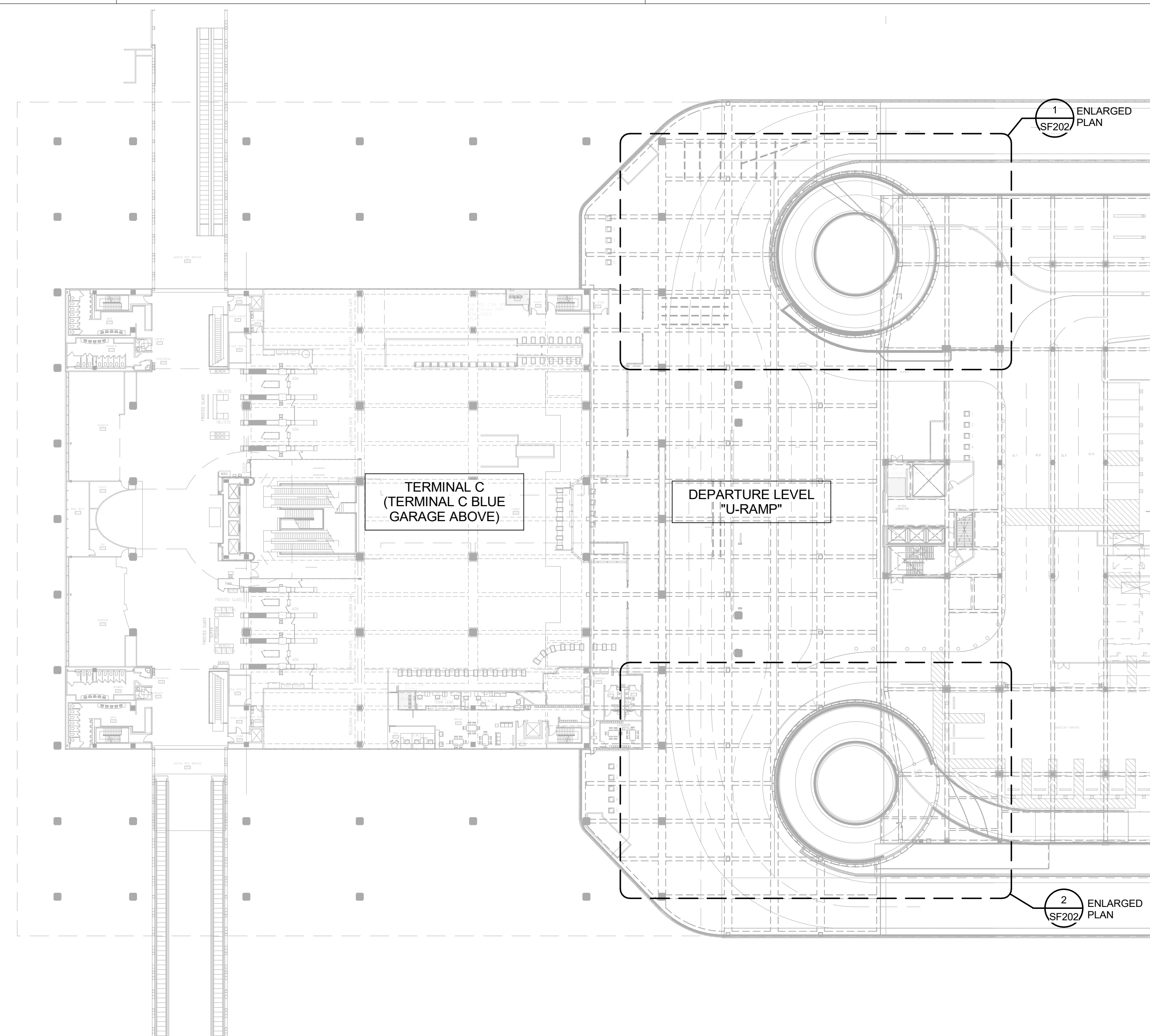
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SHEET NAME: OVERALL FRAMING PLAN - LEVEL 2

SHEET No. SF102 SCALE: 1" = 40'-0"

SHEET SIZE: 22"x34" ANSI-D



1 OVERALL FRAMING PLAN - LEVEL 2
1" = 40'-0"

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**IAH TERMINAL C HELIX RAMP
BEARING AND MISC REPAIRS**

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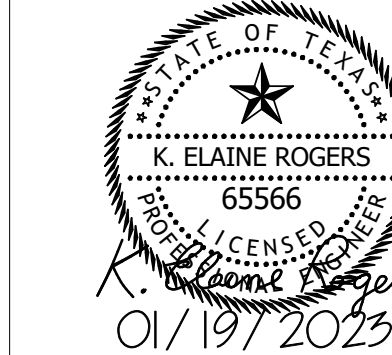
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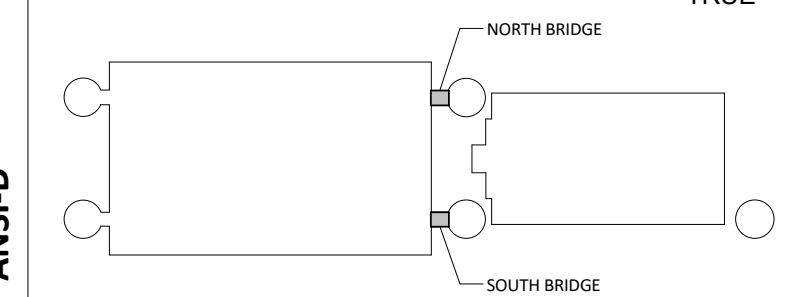
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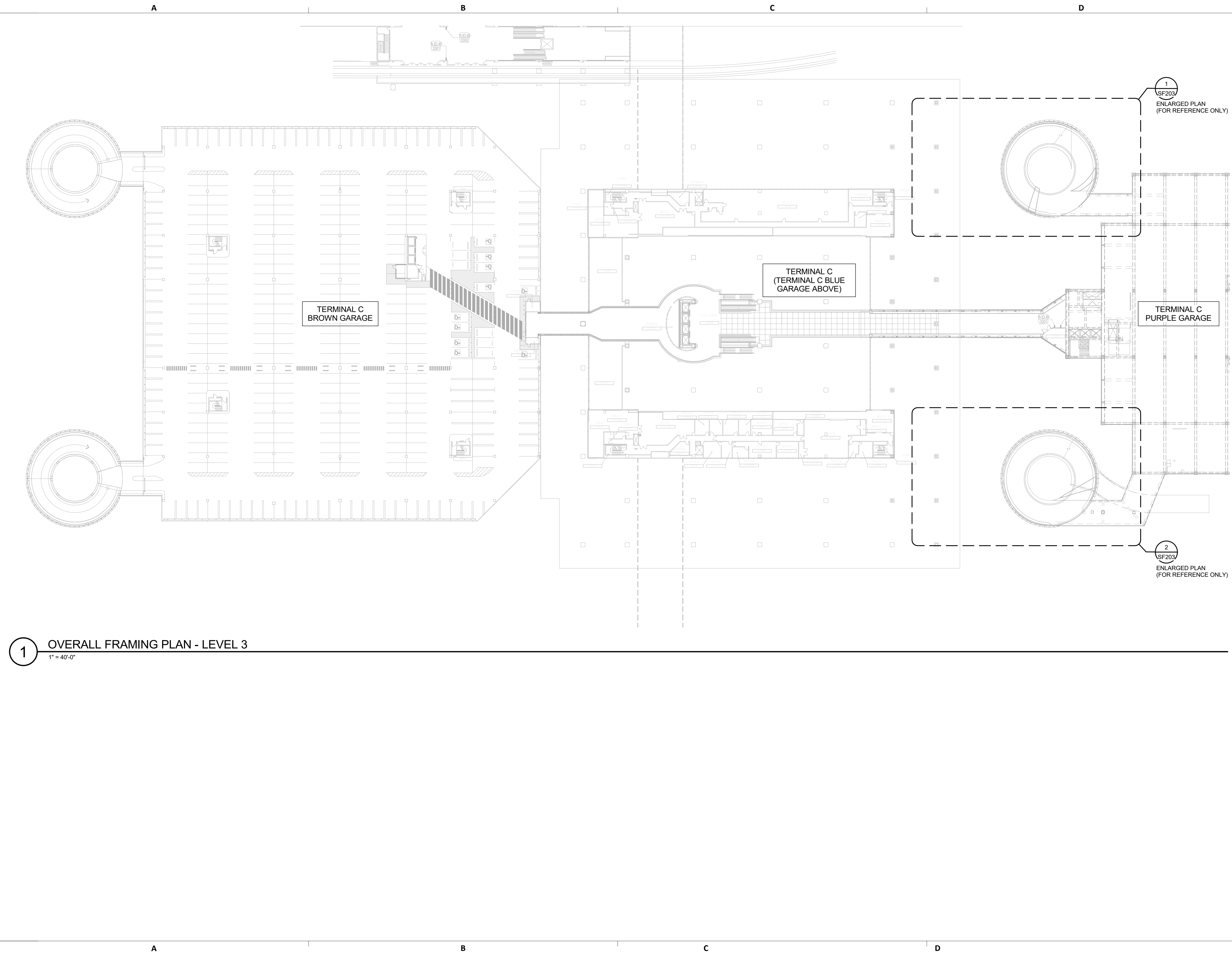
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SHEET No. SF103 SCALE: 1" = 40'-0"

SHEET SIZE: 22"x34" ANSI-D



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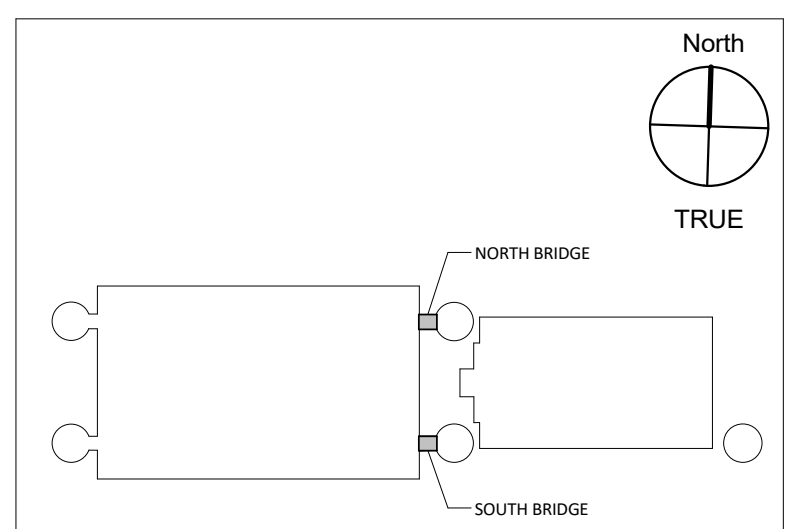
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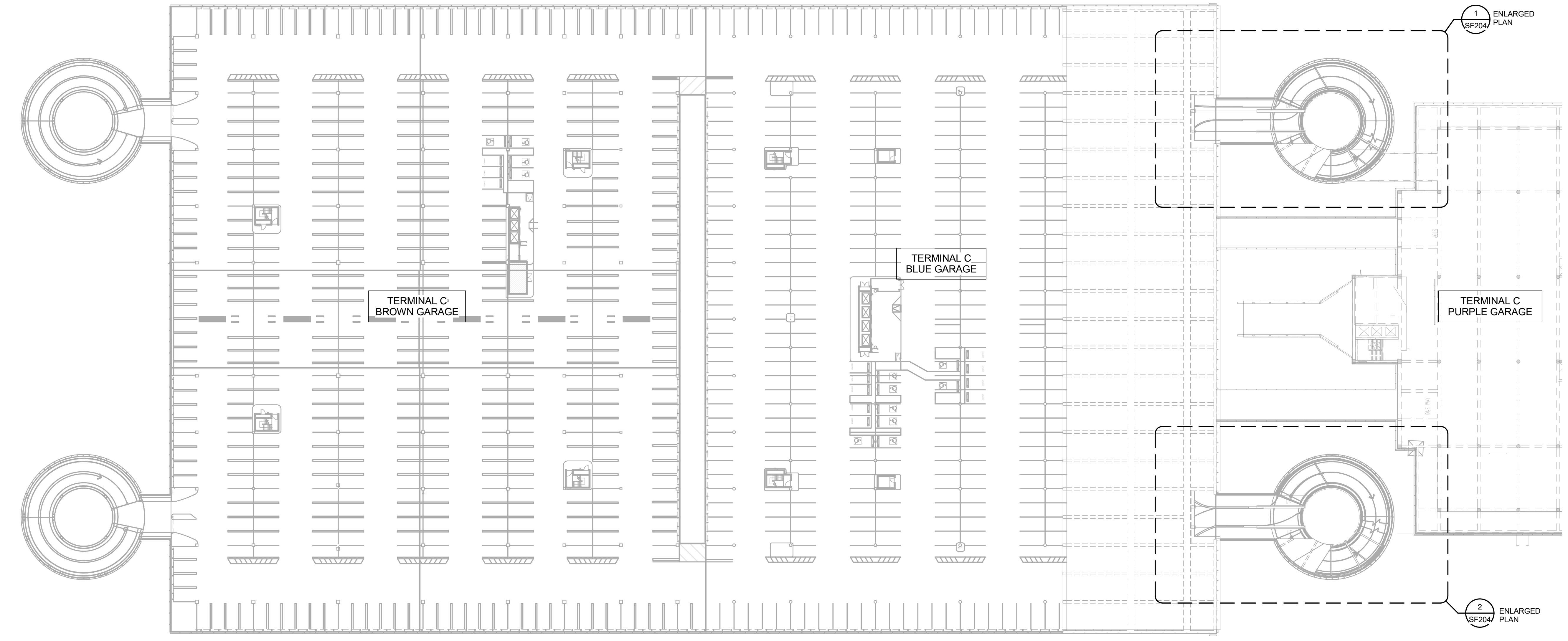
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SHEET NAME: OVERALL FRAMING PLAN - LEVEL 4

SHEET No. SF104 SCALE: 1" = 40'-0"



1 OVERALL FRAMING PLAN - LEVEL 4
1" = 40'-0"

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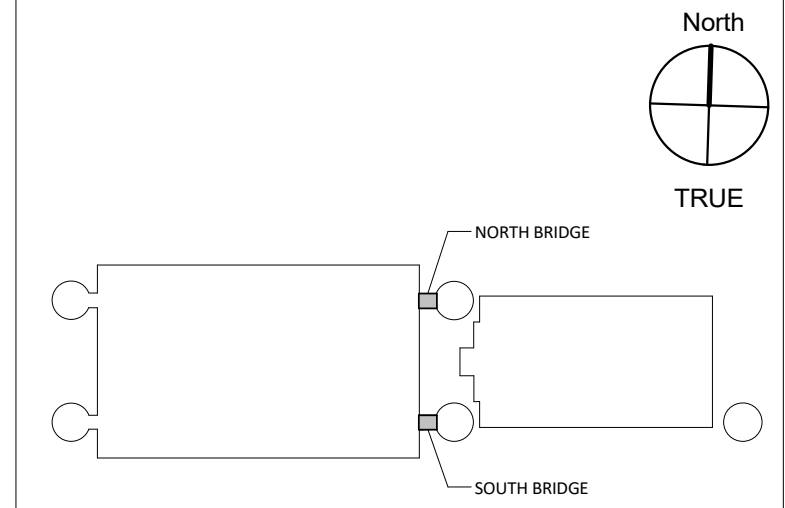
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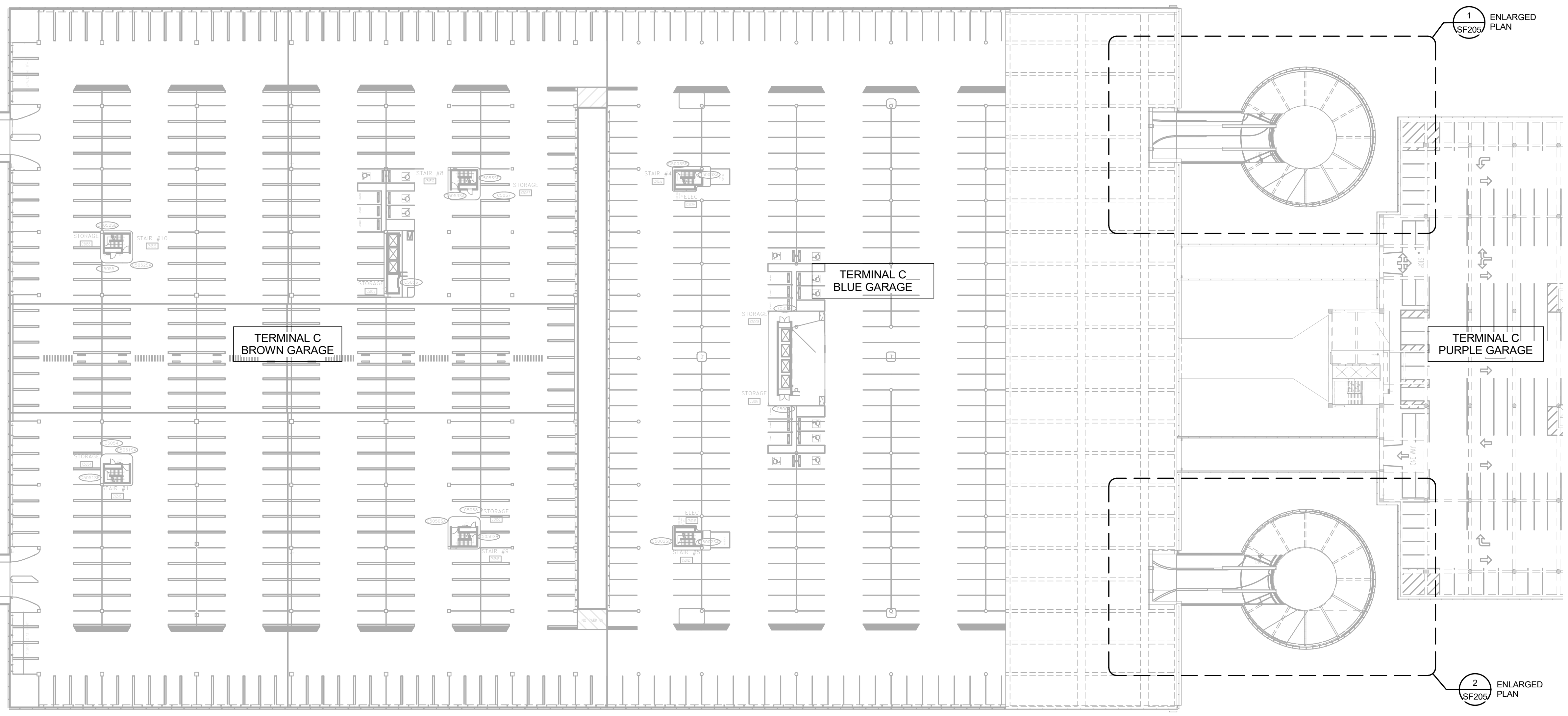
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SHEET NAME: OVERALL FRAMING PLAN - LEVEL 5

SHEET No. SF105 SCALE: 1" = 40'-0"



1 OVERALL FRAMING PLAN - LEVEL 5
1" = 40'-0"

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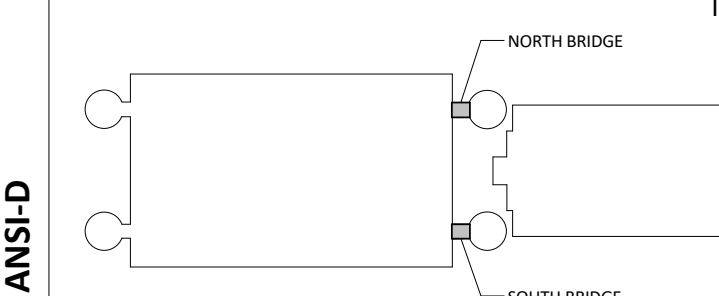
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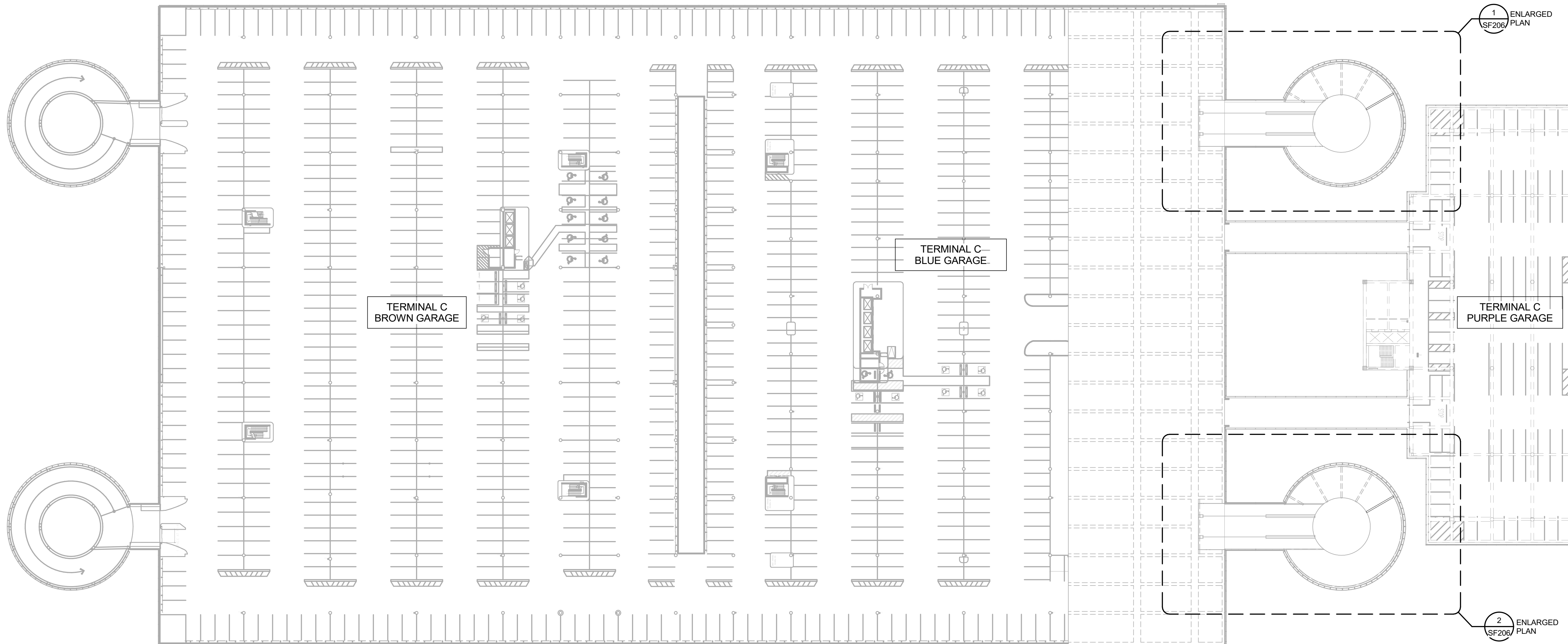
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SHEET NAME: OVERALL FRAMING PLAN - LEVEL 6

SHEET No. SF106 SCALE: 1" = 40'-0"

SHEET SIZE: 22"x34" ANSI-D



1 OVERALL FRAMING PLAN - LEVEL 6
1" = 40'-0"

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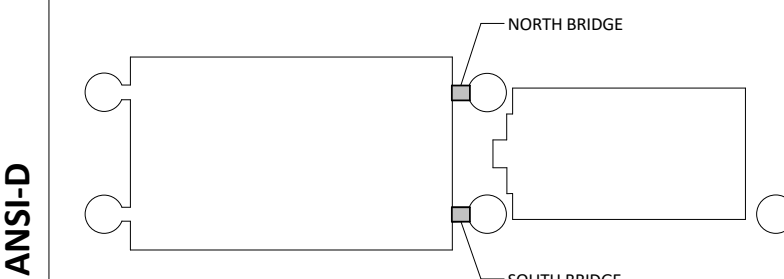
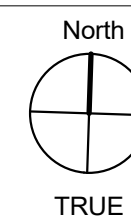
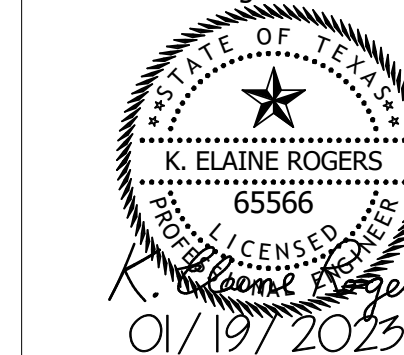
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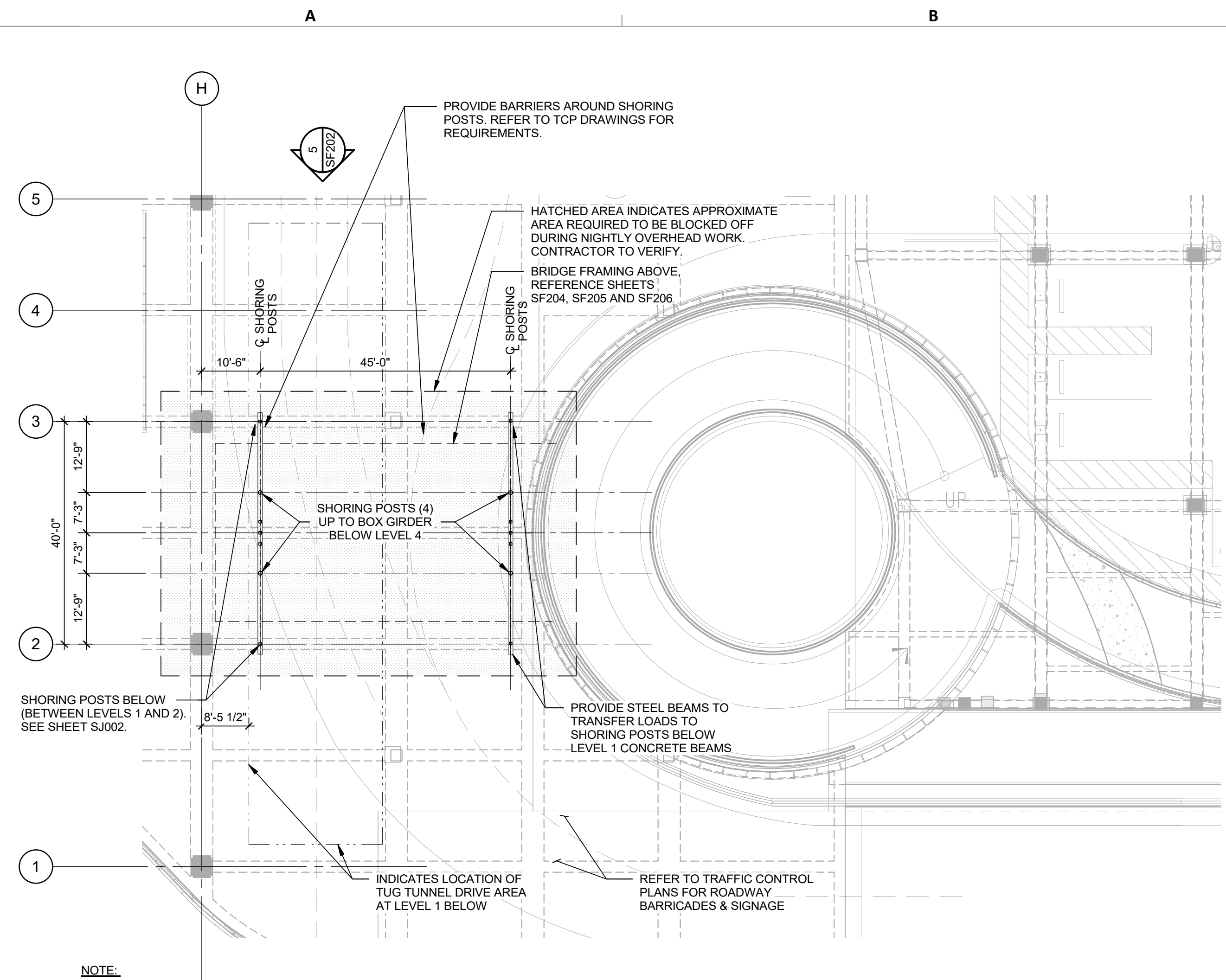
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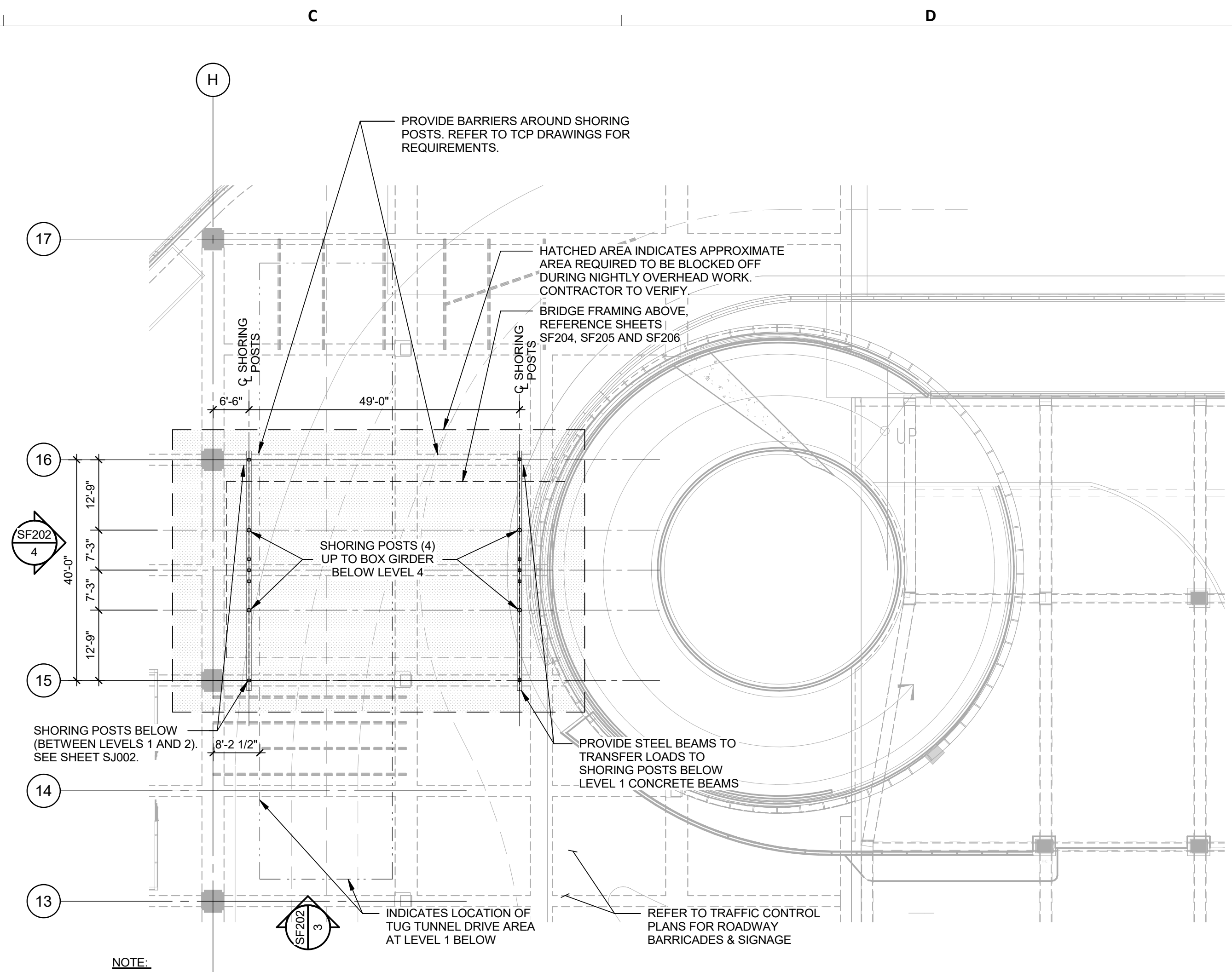


SHEET NAME: PARTIAL FRAMING PLAN - LEVEL 2

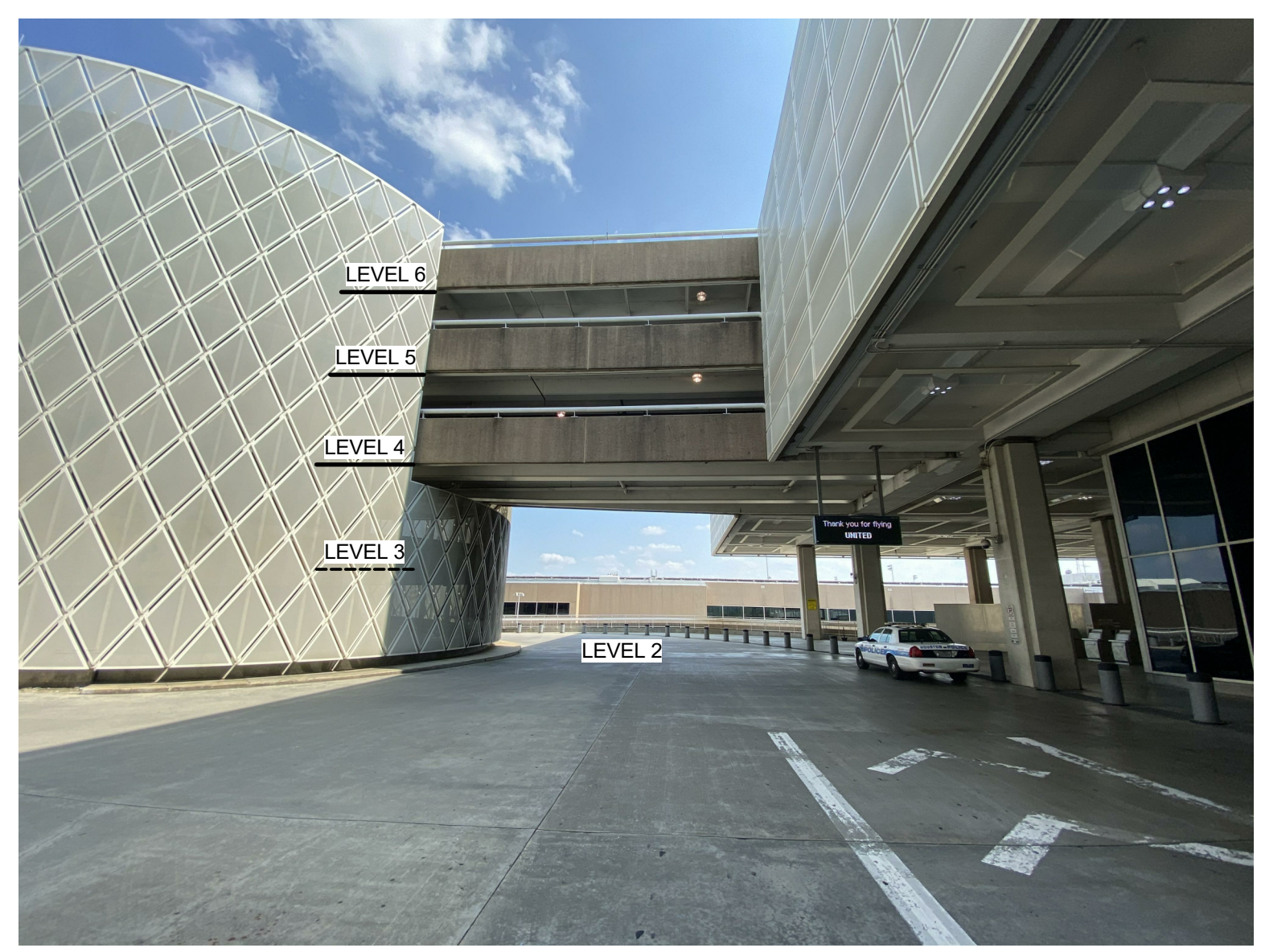
SHEET No. SF202 SCALE: As indicated



2 SOUTH PARTIAL FRAMING PLAN - LEVEL 2 (U-RAMP)
1/16" = 1'-0"



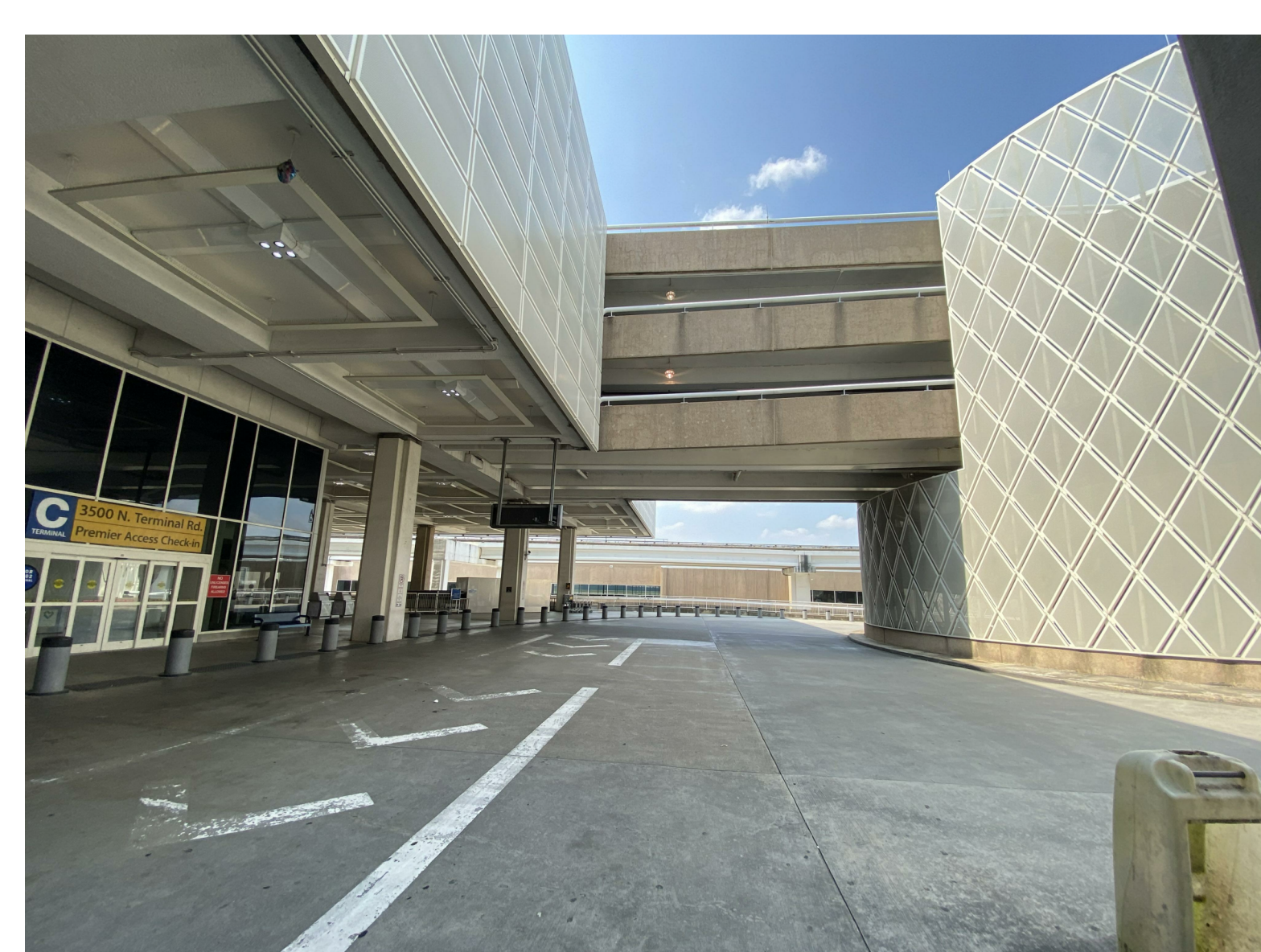
1 NORTH PARTIAL FRAMING PLAN - LEVEL 2 (U-RAMP)
1/16" = 1'-0"



5 BRIDGE AT SOUTH HELIX
NTS



4 UNDERSIDE OF BRIDGE AT NORTH HELIX
NTS



3 BRIDGE AT NORTH HELIX
NTS

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FILE PATH:

OLD DOA No. :
DOA DWG FILE:

SHEET SIZE: 22"x34" ANSI-D



TERMINAL C AT IAH - 2800 N TERMINAL RD
HOUSTON, TX 77032

IAH TERMINAL C HELIX RAMP BEARING AND MISC REPAIRS

C.I.P. No. A.I.P. No.
C.O.H. No. D.O.A No.



DESIGNER PROJECT No.: 19-21
PROJECT STATUS: CONSTRUCTION DOCUMENTS

REVISIONS

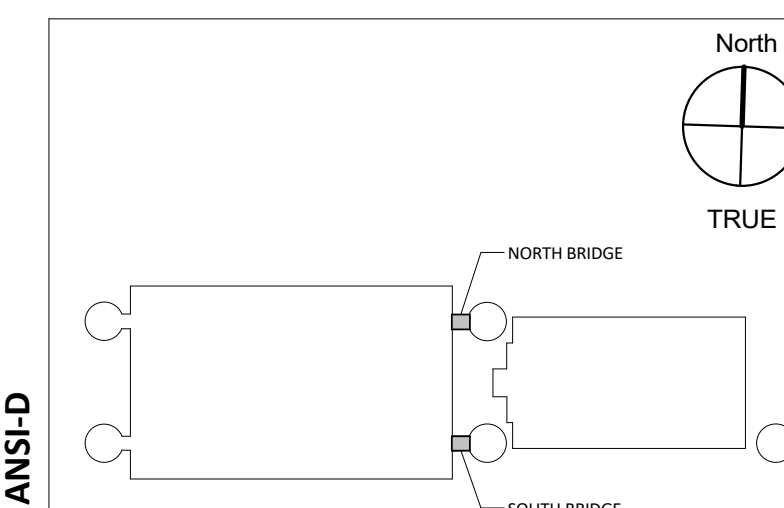
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1	ISSUE FOR BID	01/19/2023	

DESIGNER: ER
 DRAWN BY: RR
 CHECKED BY: ER
 ISSUE DATE: 01/19/2023
 APPROVED BY: ER
 APPROVAL DATE: 01/19/2023

DIRECTOR
 of
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Review/ Approval Category
IFB
 ISSUED FOR BID

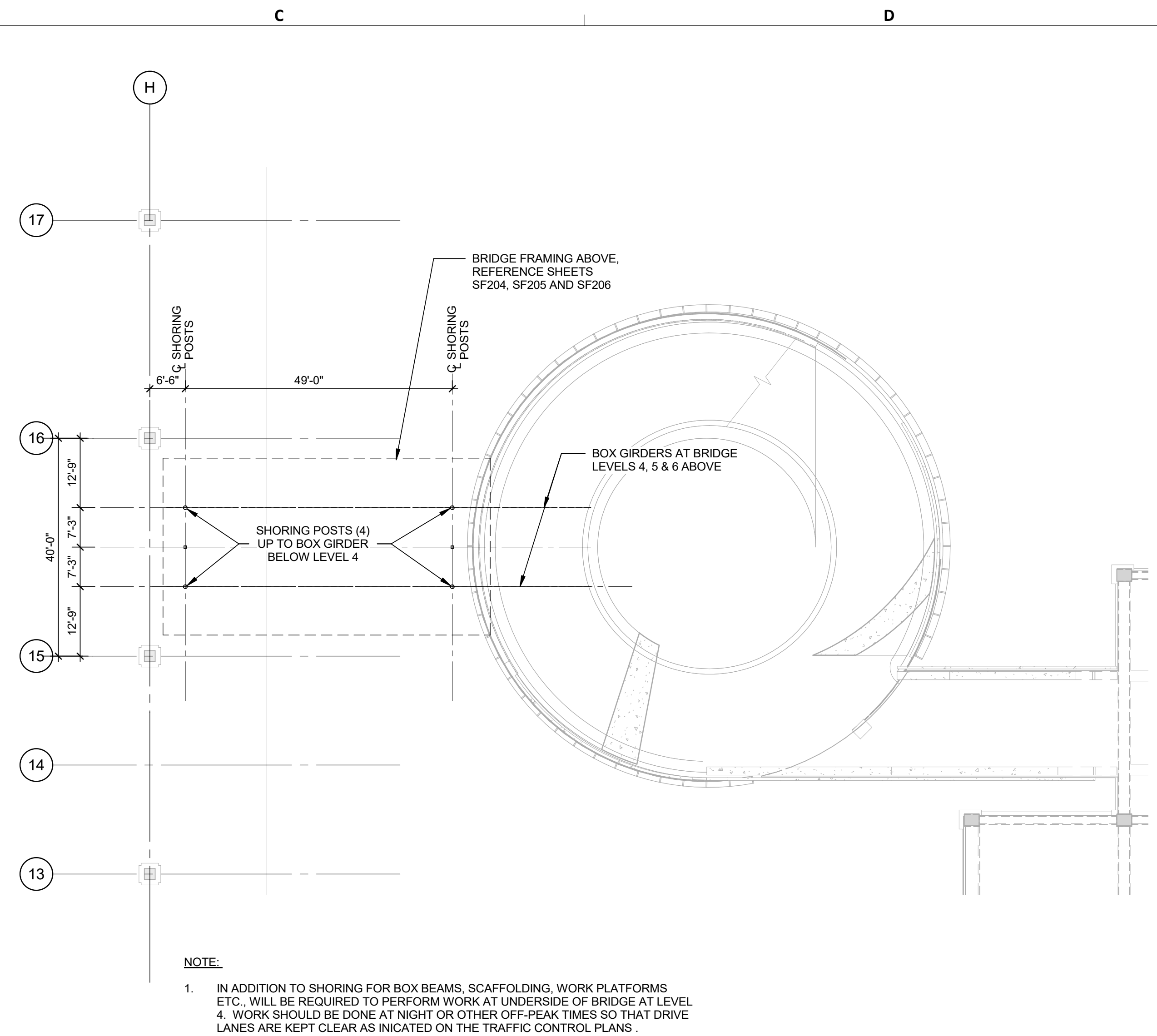
Henderson Rogers
 Structural Engineers, LLC
 TBPE Firm Registration No. 8755



SHEET NAME: PARTIAL FRAMING PLAN - LEVEL 3

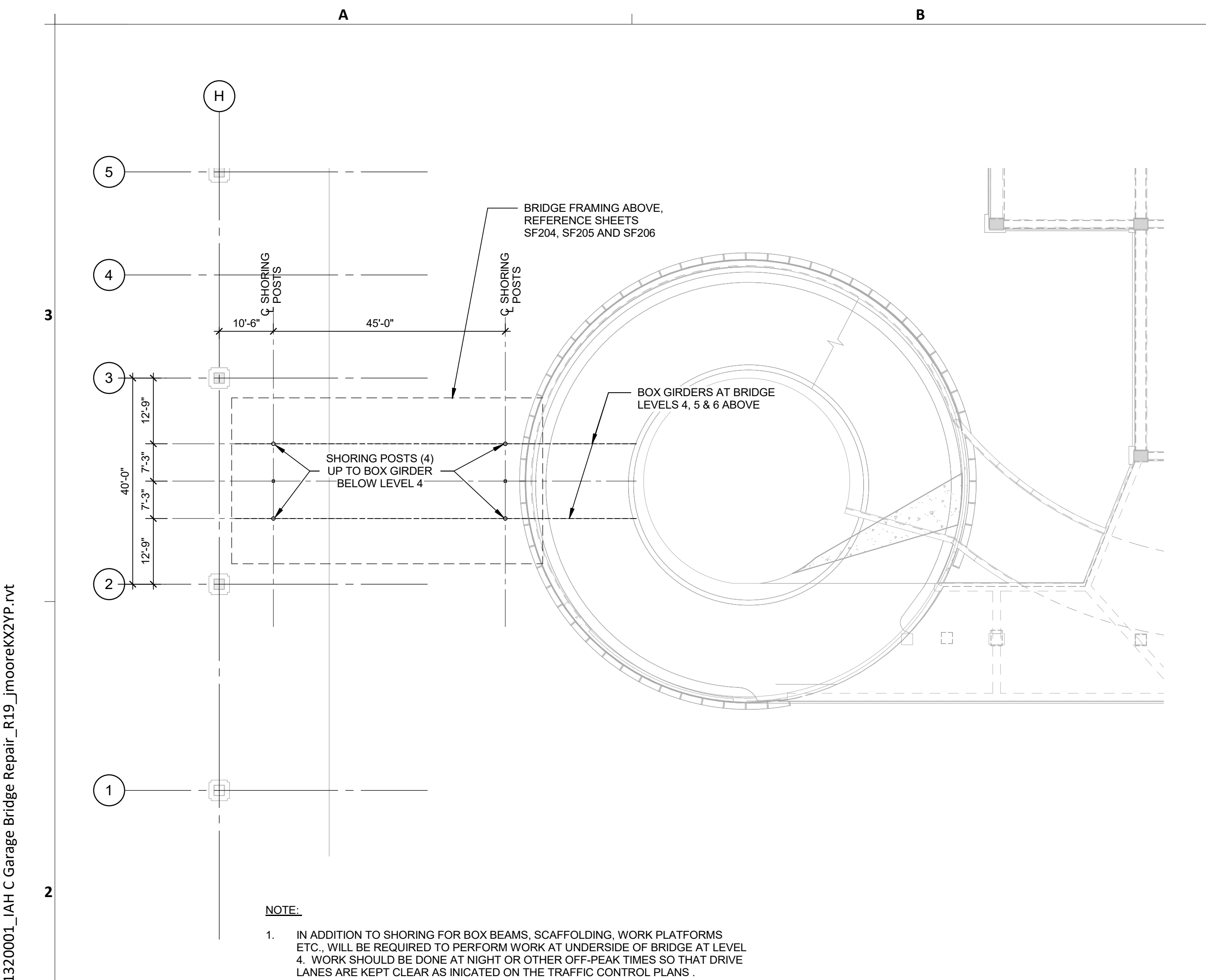
SHEET No. SF203 SCALE: 1/16" = 1'-0"

SHEET SIZE: 22"x34" ANSI-D



1 NORTH PARTIAL FRAMING PLAN - LEVEL 3 PHASE 1
1/16" = 1'-0"

NOTE:
 1. IN ADDITION TO SHORING FOR BOX BEAMS, SCAFFOLDING, WORK PLATFORMS ETC., WILL BE REQUIRED TO PERFORM WORK AT UNDERSIDE OF BRIDGE AT LEVEL 4. WORK SHOULD BE DONE AT NIGHT OR OTHER OFF-PEAK TIMES SO THAT DRIVE LANES ARE KEPT CLEAR AS INDICATED ON THE TRAFFIC CONTROL PLANS. COORDINATE AND SCHEDULE ALL WORK WITH THE OWNER'S REPRESENTATIVE.



2 SOUTH PARTIAL FRAMING PLAN - LEVEL 3 PHASE 2
1/16" = 1'-0"

NOTE:
 1. IN ADDITION TO SHORING FOR BOX BEAMS, SCAFFOLDING, WORK PLATFORMS ETC., WILL BE REQUIRED TO PERFORM WORK AT UNDERSIDE OF BRIDGE AT LEVEL 4. WORK SHOULD BE DONE AT NIGHT OR OTHER OFF-PEAK TIMES SO THAT DRIVE LANES ARE KEPT CLEAR AS INDICATED ON THE TRAFFIC CONTROL PLANS. COORDINATE AND SCHEDULE ALL WORK WITH THE OWNER'S REPRESENTATIVE.

FILE PATH: G:\Users\John.moore\Documents\1320001_IAH C Garage Bridge Repair_R19_jmooreKX2VP.rvt

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REVISIONS

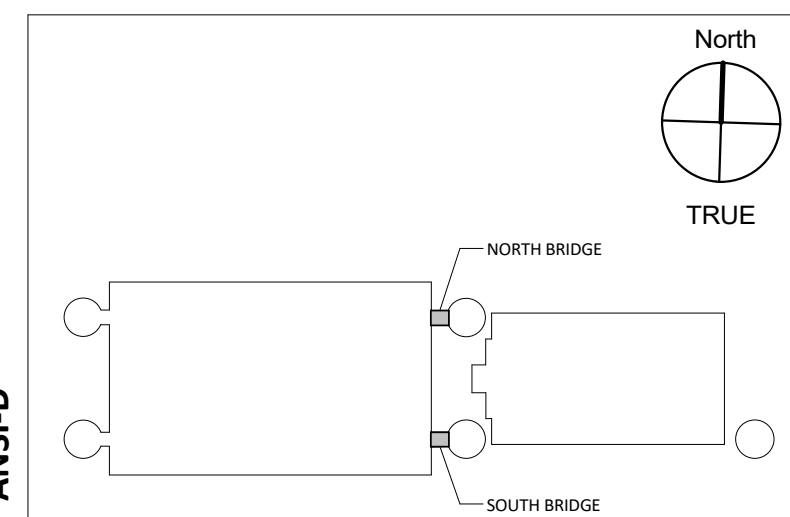
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1	ISSUE FOR BID	01/19/2023	

DESIGNER:	ER
DRAWN BY:	RR
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ISSUE DATE:	01/19/2023
APPROVED BY:	ER
APPROVAL DATE:	01/19/2023

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

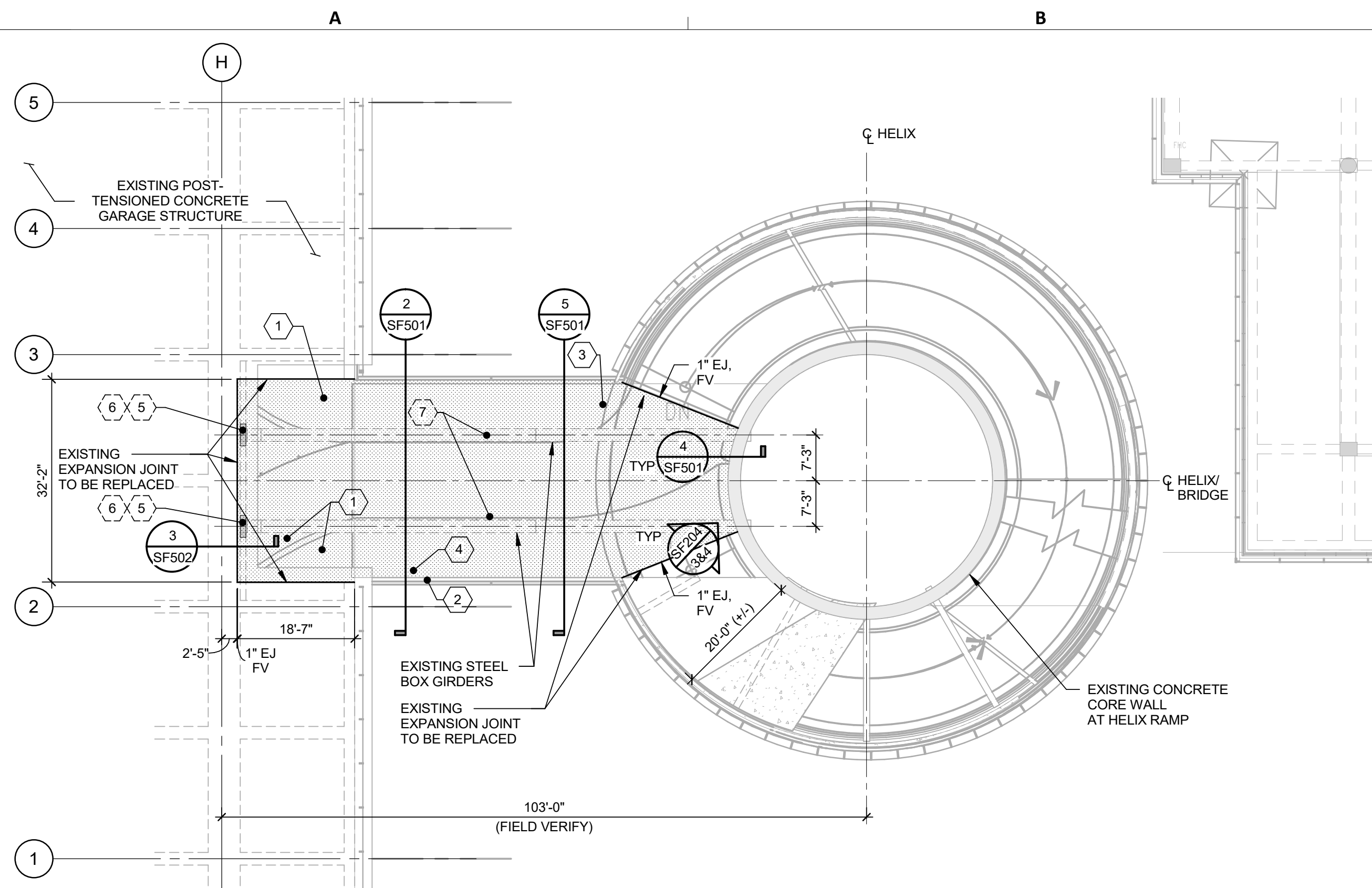
Review/ Approval Category
IFB
ISSUED FOR BID

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755

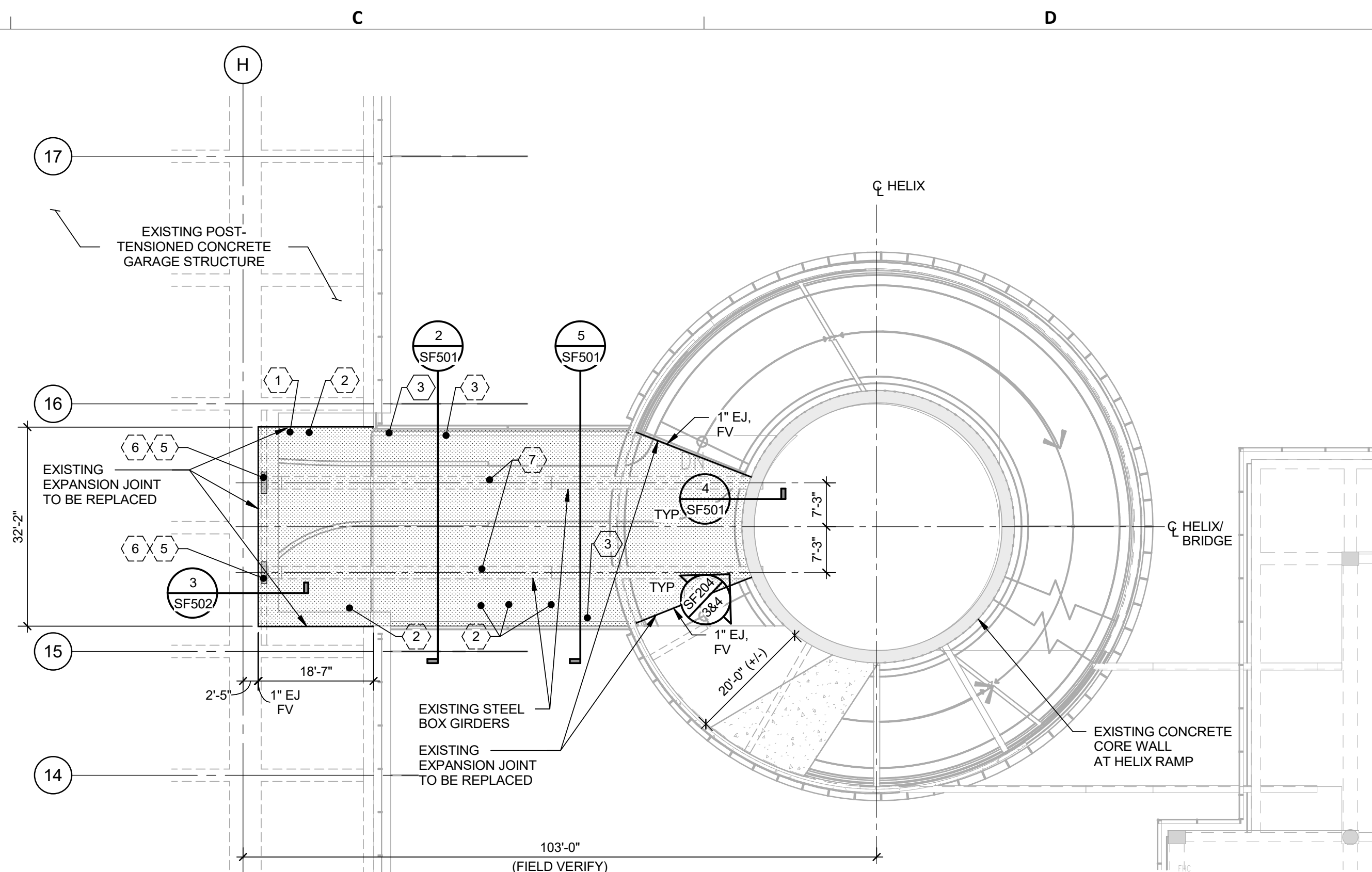


SHEET NAME: PARTIAL FRAMING PLAN - LEVEL 4

SHEET No. SF204 SCALE: As indicated



KEY		ITEM DESCRIPTION	UNIT	QUANTITY (PER GARAGE LEVEL)
FLOOR	CEILING (BELOW)			
1	1	CONCRETE REPAIR (WITH EXPOSED REBAR)	SF	30
2	2	CONCRETE REPAIR (NO EXPOSED REBAR)	SF	10
3	3	CRACK SEALER (HAIRLINE CRACKS)	LF	10
4	4	CRACK EPOXY INJECTION	LF	5
5	5	CONCRETE CORBEL REPAIRS	EA	2
6	6	STEEL BEARING PLATE REPLACEMENT (IF REQUIRED)	EA	2
7	7	CLEAN AND PAINT STEEL BOX GIRDERS	EA	2

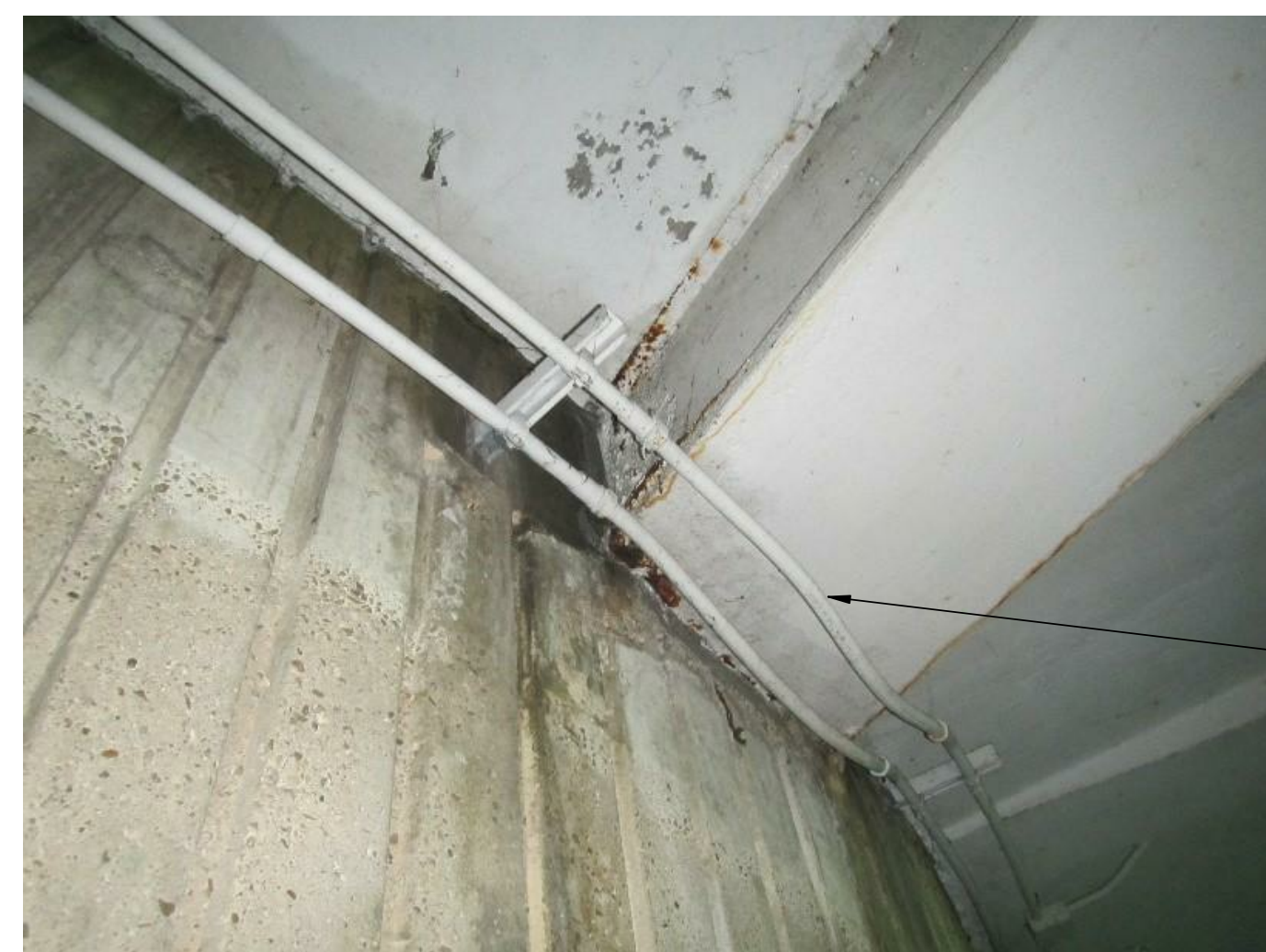


KEY		ITEM DESCRIPTION	UNIT	QUANTITY (PER GARAGE LEVEL)
FLOOR	CEILING (BELOW)			
1	1	CONCRETE REPAIR (WITH EXPOSED REBAR)	SF	10
2	2	CONCRETE REPAIR (NO EXPOSED REBAR)	SF	30
3	3	CRACK SEALER (HAIRLINE CRACKS)	LF	30
4	4	CRACK EPOXY INJECTION	LF	5
5	5	CONCRETE CORBEL REPAIRS	EA	2
6	6	STEEL BEARING PLATE REPLACEMENT (IF REQUIRED)	EA	2
7	7	CLEAN AND PAINT STEEL BOX GIRDERS	EA	2

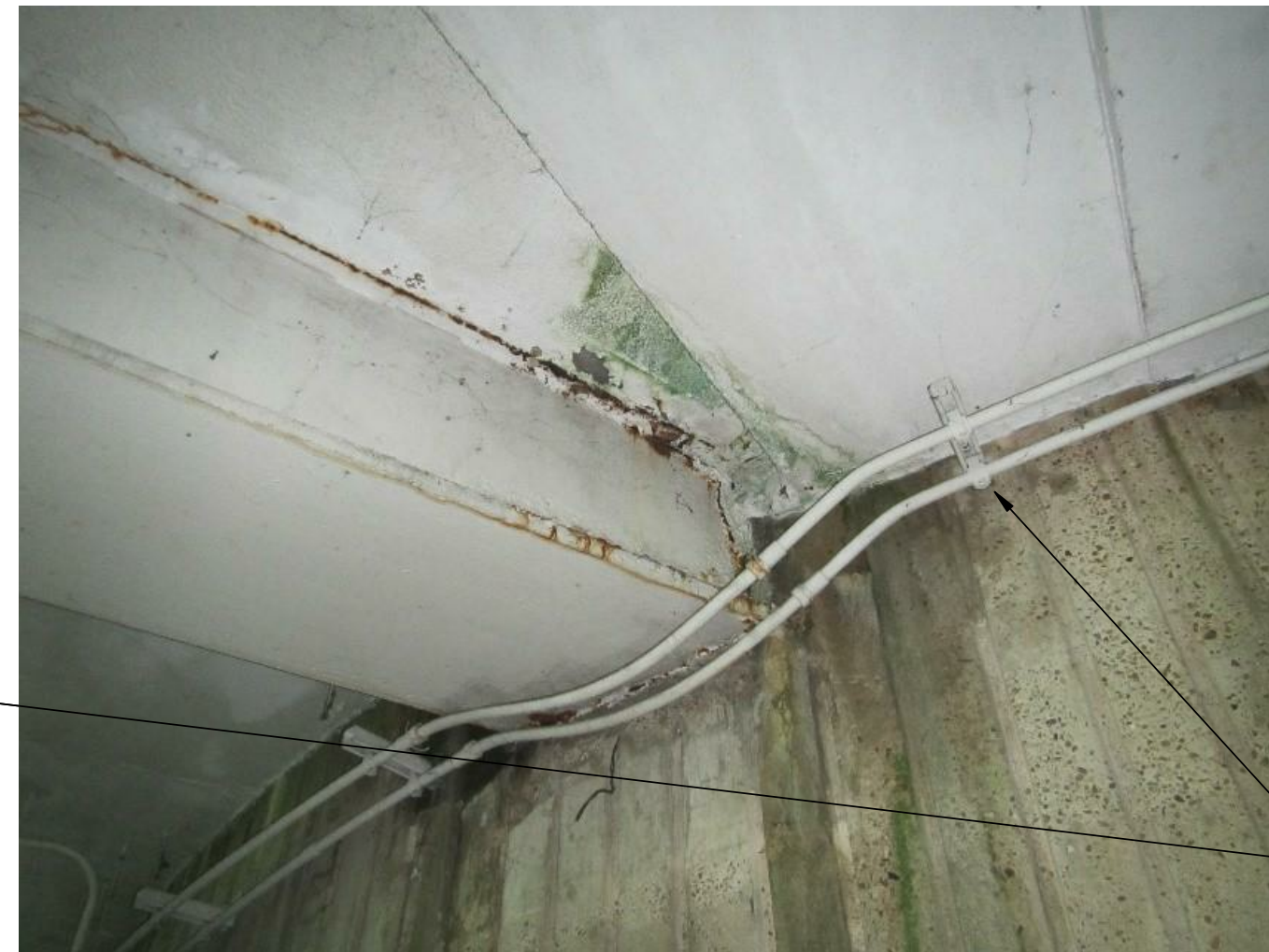
2 SOUTH PARTIAL FRAMING PLAN - LEVEL 4
1/16" = 1'-0" PHASE 2

1 NORTH PARTIAL FRAMING PLAN - LEVEL 4
1/16" = 1'-0" PHASE 1

- REPAIR WORK AT LEVEL 4 (NORTH & SOUTH):**
- REPAIR SPALLS, CRACKS & DELAMINATED CONCRETE ON TWO CORBELS - SEE DETAILS ON SHEET SF502.
 - CLEAN AND COAT STEEL BEARING PLATES AT CORBELS - SEE DETAILS ON SHEET SF502.
 - CLEAN AND COAT CORRODED STEEL BOX GIRDER - SEE DETAILS ON SHEET SF501.
 - CLEAN AND COAT CORRODED STEEL BOX GIRDER AT CONNECTION TO HELIX WALL - SEE DETAILS ON SHEET SF501.
 - REPLACE EXPANSION JOINT - SEE DETAIL 5/SF502.
 - REPLACE DETERIORATED JOINT SEALANT AT PRECAST PANEL JOINTS, COVE JOINTS AND FLOOR DRAINS.
 - CLEAN AND COAT CORRODED FLOOR DRAINS.
 - REPLACE DETERIORATED TRAFFIC COATING IN AREA INDICATED THUSLY: REFER TO SPEC SECTION 07 18 16 DECK COATING SYTEM.
 - SEE SHEET SK001 FOR PHOTOS OF TYPICAL REPAIR CONDITIONS.



4 CORROSION OF STEEL GIRDER
AT WALL CONNECTION
NTS



3 CORROSION OF STEEL GIRDER
AT WALL CONNECTION
NTS

REMOVE PIPES AND CONDUITS AS
REQUIRED TO PERFORM WORK. REINSTALL
ALL COMPONENTS AT COMPLETION OF THE
PROJECT. TYPICAL AT ALL BRIDGE LEVELS
NORTH AND SOUTH.

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FILE PATH:

OLD DOA No. :
DOA DWG FILE:

SHEET SIZE: 22"x34" ANSI-D

REVISIONS

No.	DESCRIPTION	DATE	BY
	ISSUE FOR BID	01/19/2023	

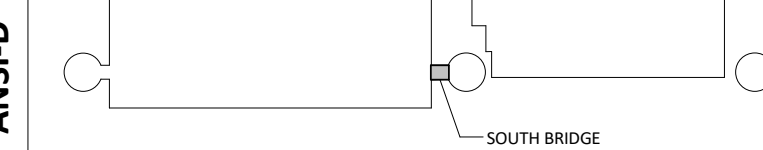
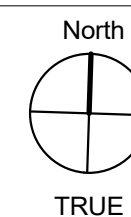
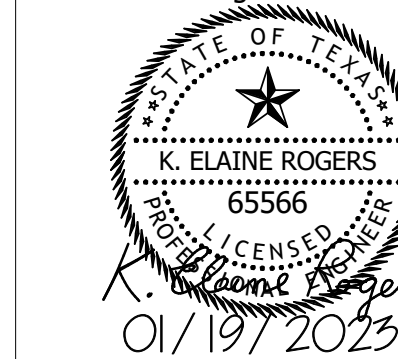
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CHECKED BY:	ER
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APPROVAL DATE:	01/19/2023

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category

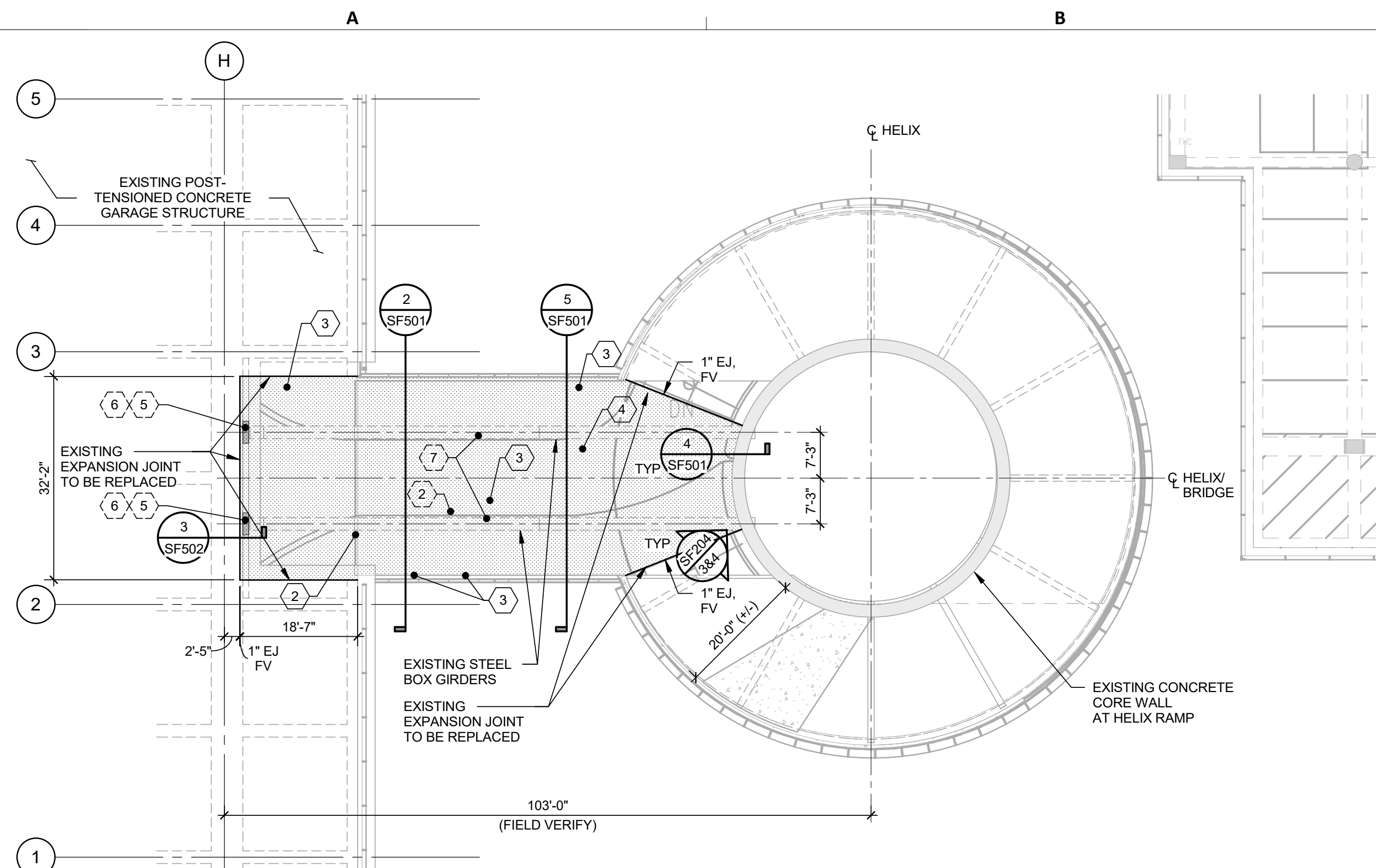
IFB
ISSUED FOR BID

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755



SHEET NAME: PARTIAL FRAMING PLAN - LEVEL 5

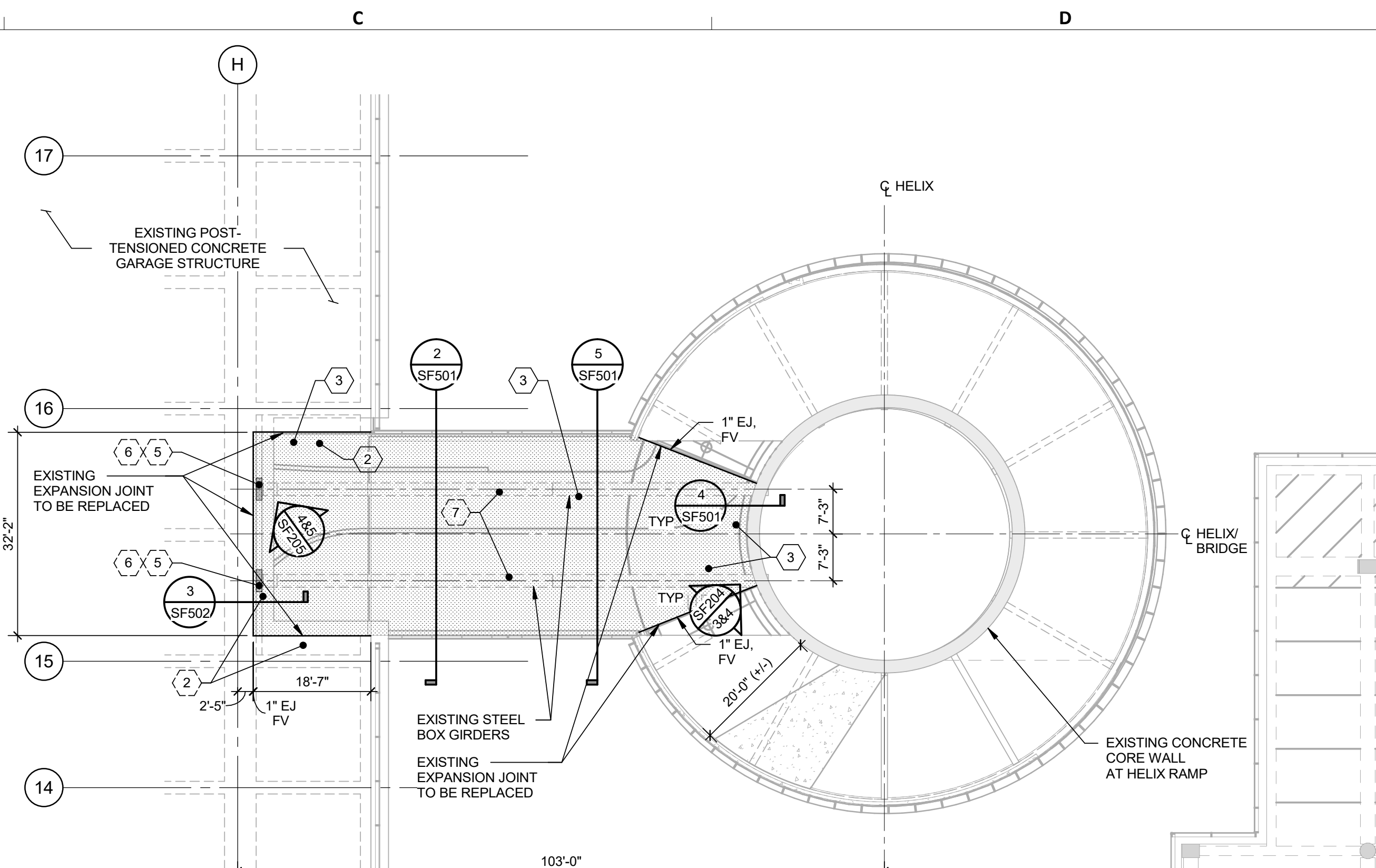
SHEET No. SF205 SCALE: As indicated



KEY		ITEM DESCRIPTION	UNIT	QUANTITY (PER GARAGE LEVEL)
FLOOR	CEILING (BELOW)			
1	1	CONCRETE REPAIR (WITH EXPOSED REBAR)	SF	5
2	2	CONCRETE REPAIR (NO EXPOSED REBAR)	SF	15
3	3	CRACK SEALER (HAIRLINE CRACKS)	LF	50
4	4	CRACK EPOXY INJECTION	LF	5
5	5	CONCRETE CORBEL REPAIR	EA	2
6	6	STEEL BEARING PLATE REPLACEMENT (IF REQUIRED)	EA	2
	7	CLEAN AND PAINT STEEL BOX GIRDERS	EA	2

2 SOUTH PARTIAL FRAMING PLAN - LEVEL 5
1/16" = 1'-0"

PHASE 2



KEY		ITEM DESCRIPTION	UNIT	QUANTITY (PER GARAGE LEVEL)
FLOOR	CEILING (BELOW)			
1	1	CONCRETE REPAIR (WITH EXPOSED REBAR)	SF	5
2	2	CONCRETE REPAIR (NO EXPOSED REBAR)	SF	15
3	3	CRACK SEALER (HAIRLINE CRACKS)	LF	200
4	4	CRACK EPOXY INJECTION	LF	5
5	5	CONCRETE CORBEL REPAIRS	EA	2
6	6	STEEL BEARING PLATE REPLACEMENT (IF REQUIRED)	EA	2
	7	CLEAN AND PAINT STEEL BOX GIRDERS	EA	2

1 NORTH PARTIAL FRAMING PLAN - LEVEL 5
1/16" = 1'-0"

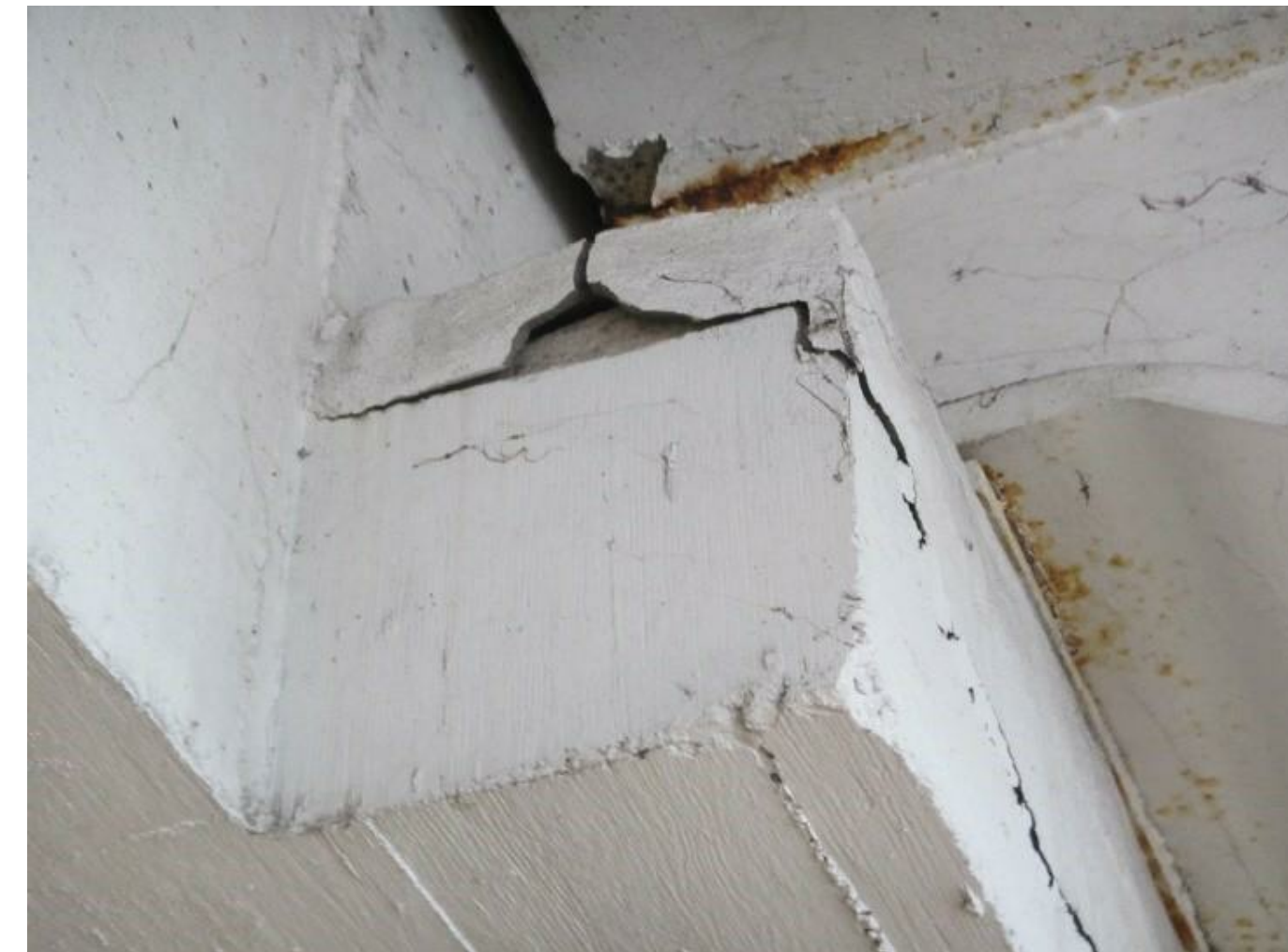
PHASE 1

REPAIR WORK AT LEVEL 5 (NORTH & SOUTH):

- REPAIR SPALLS, CRACKS & DELAMINATED CONCRETE ON TWO CORBELS - SEE DETAILS ON SHEET SF502.
- CLEAN AND COAT STEEL BEARING PLATES & NEOPRENE PADS AT CORBELS - SEE DETAILS ON SHEET SF502.
- CLEAN AND COAT CORRODED STEEL BOX GIRDER - SEE DETAILS ON SHEET SF501.
- CLEAN AND COAT CORRODED STEEL BOX GIRDER AT CONNECTION TO HELIX WALL - SEE DETAILS ON SHEET SF501.
- REPLACE EXPANSION JOINT - SEE DETAIL 5/SF502.
- REPLACE DETERIORATED JOINT SEALANT AT PRECAST PANEL JOINTS, COVE JOINTS AND FLOOR DRAINS.
- CLEAN AND COAT CORRODED FLOOR DRAINS.
- REPLACE DETERIORATED TRAFFIC COATING IN AREA INDICATED THUSLY: REFER TO SPEC SECTION 07 18 16 DECK COATING SYTEM.
- SEE SHEET SK001 FOR PHOTOS OF TYPICAL REPAIR CONDITIONS.



5 CRACKED & DELAMINATED CONCRETE AT CORBEL
NTS



4 CORROSION OF STEEL GIRDER AND CRACKED & SPALLED CONCRETE AT CORBEL
NTS



3 CORRODED STEEL PLATES IN SLIDE BEARING ASSEMBLY
NTS

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FILE PATH:

OLD DOA No.: DOA DWG FILE:

SHEET SIZE: 22"x34" ANSI-D

REVISIONS

No.	DESCRIPTION	DATE	BY
	ISSUE FOR BID	01/19/2023	

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DRAWN BY:	RR
CHECKED BY:	ER
ISSUE DATE:	01/19/2023
APPROVED BY:	ER
APPROVAL DATE:	01/19/2023

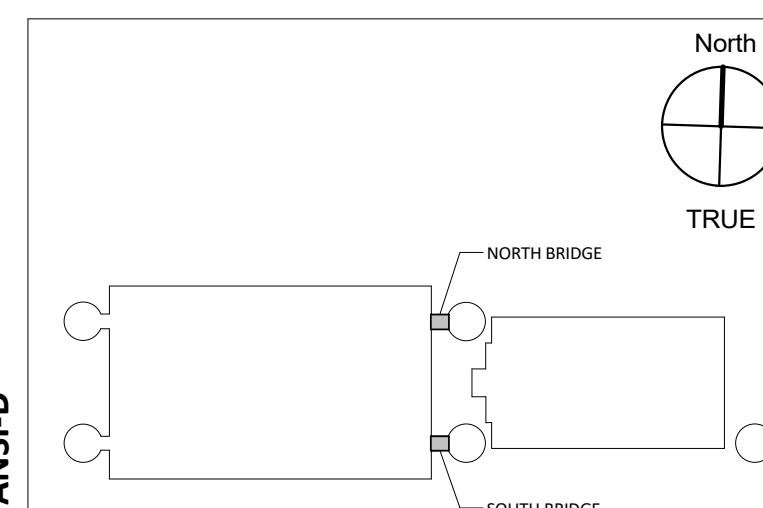
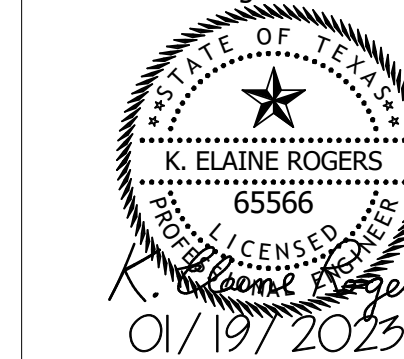
DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category

IFB

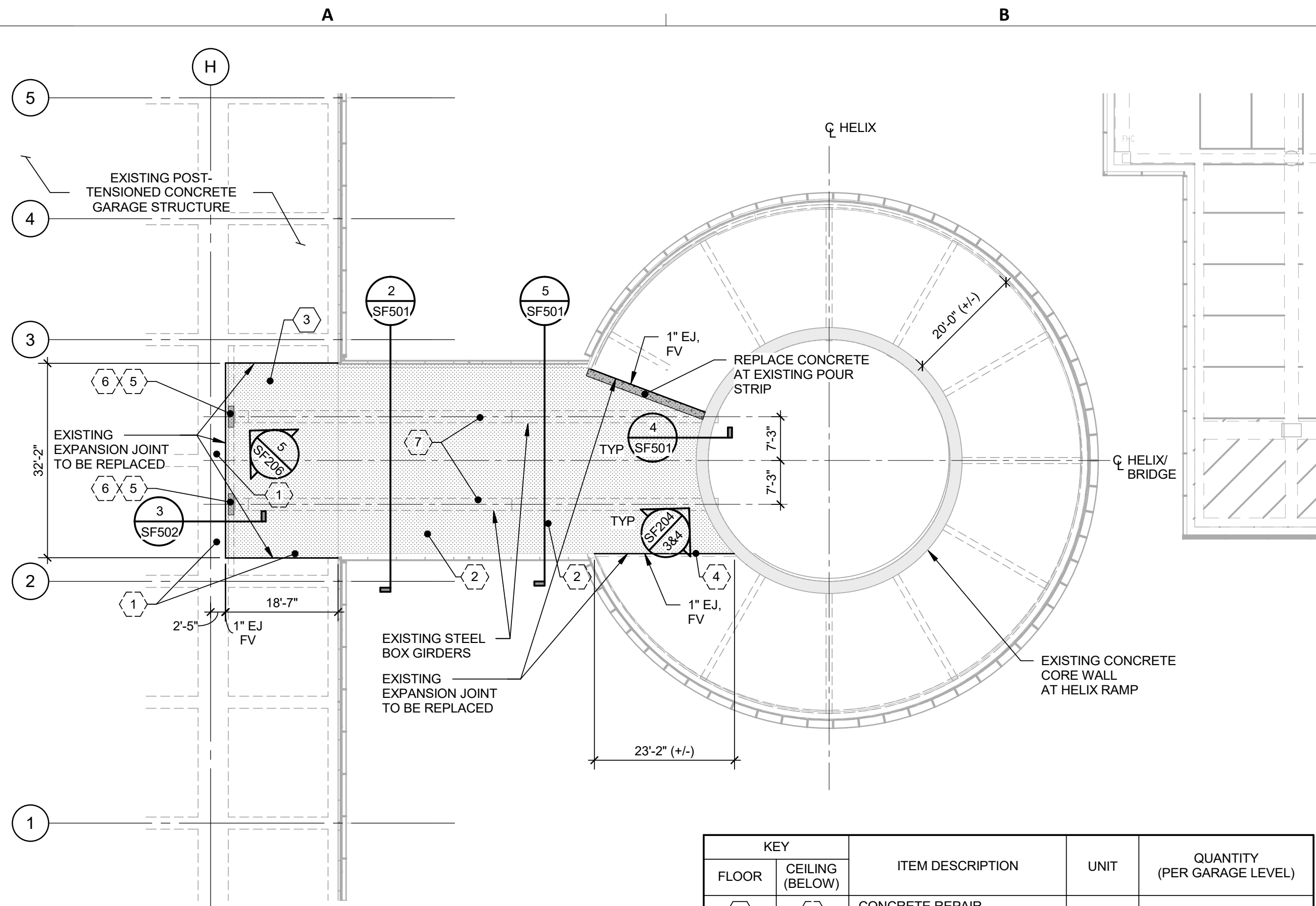
ISSUED FOR BID

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755



SHEET NAME: PARTIAL FRAMING PLAN - LEVEL 6

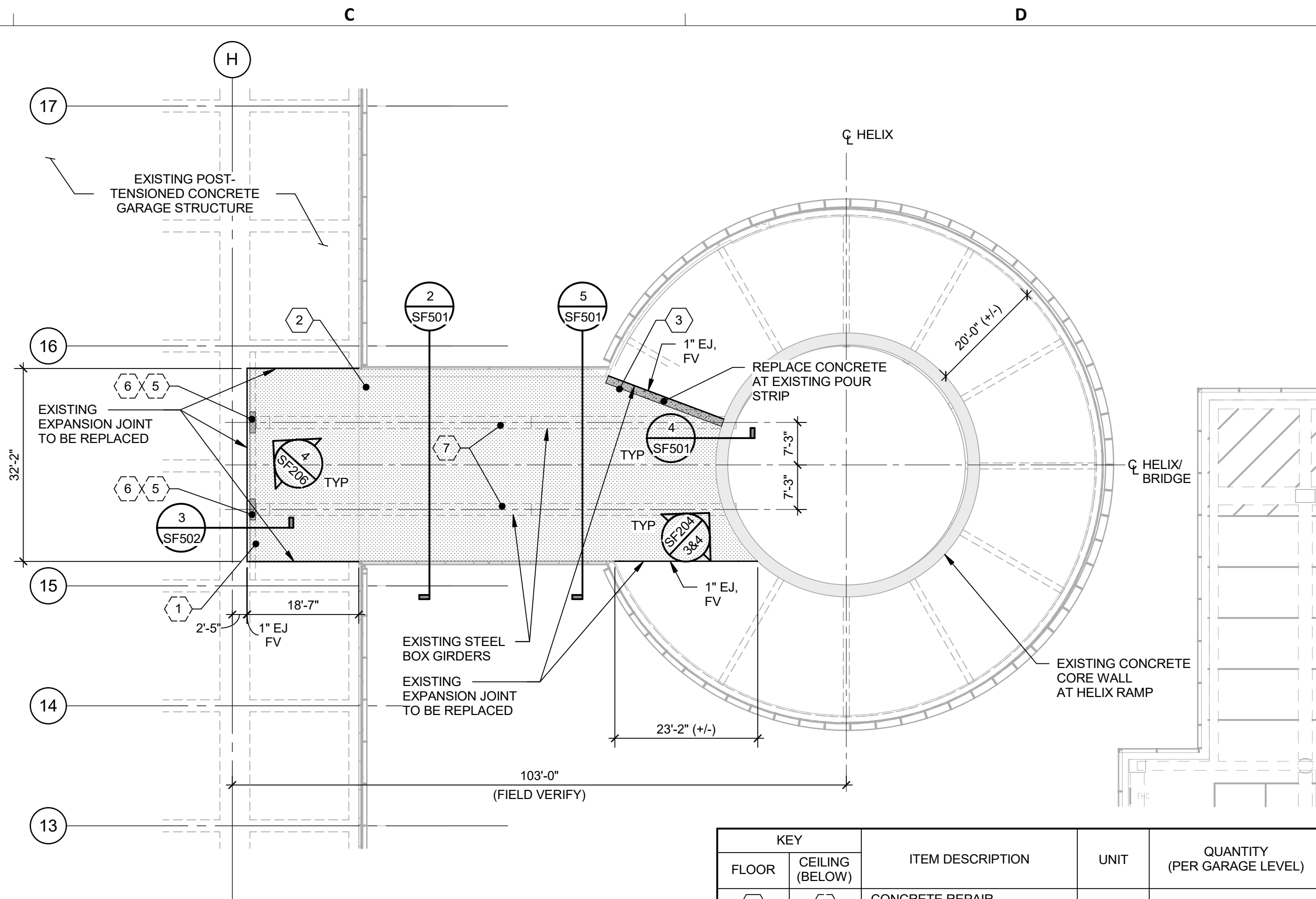
SHEET No. SF206 SCALE: As indicated



KEY		ITEM DESCRIPTION	UNIT	QUANTITY (PER GARAGE LEVEL)
FLOOR	CEILING (BELOW)			
1	1	CONCRETE REPAIR (WITH EXPOSED REBAR)	SF	20
2	2	CONCRETE REPAIR (NO EXPOSED REBAR)	SF	5
3	3	CRACK SEALER (HAIRLINE CRACKS)	LF	5
4	4	CRACK EPOXY INJECTION	LF	20
5	5	CONCRETE CORBEL REPAIR	EA	2
6	6	STEEL BEARING PLATE REPLACEMENT (IF REQUIRED)	EA	2
	7	CLEAN AND PAINT STEEL BOX GIRDERS	EA	2

NOTE:
1. ALTERNATE OPTION (*) ARE FOR THE OWNER CONSIDERATION AND AT ADDITIONAL OWNER'S COST. THIS REPAIR IS NOT STRUCTURAL.

2 SOUTH PARTIAL FRAMING PLAN - LEVEL 6
1/16" = 1'-0" PHASE 2



KEY		ITEM DESCRIPTION	UNIT	QUANTITY (PER GARAGE LEVEL)
FLOOR	CEILING (BELOW)			
1	1	CONCRETE REPAIR (WITH EXPOSED REBAR)	SF	10
2	2	CONCRETE REPAIR (NO EXPOSED REBAR)	SF	5
3	3	CRACK SEALER (HAIRLINE CRACKS)	LF	5
4	4	CRACK EPOXY INJECTION	LF	20
5	5	CONCRETE CORBEL REPAIRS	EA	2
6	6	STEEL BEARING PLATE REPLACEMENT (IF REQUIRED)	EA	2
	7	CLEAN AND PAINT STEEL BOX GIRDERS	EA	2

1 NORTH PARTIAL FRAMING PLAN - LEVEL 6
1/16" = 1'-0" PHASE 1

REPAIR WORK AT LEVEL 6 (NORTH & SOUTH):

- REPAIR SPALLS, CRACKS & DELAMINATED CONCRETE ON TWO CORBELS - SEE DETAILS ON SHEET SF502.
- CLEAN AND COAT STEEL BEARING PLATES AT CORBELS - SEE DETAILS ON SHEET SF502.
- CLEAN AND COAT CORRODED STEEL BOX GIRDER - SEE DETAILS ON SHEET SF501.
- CLEAN AND COAT CORRODED STEEL BOX GIRDER AT CONNECTION TO HELIX WALL - SEE DETAILS ON SHEET SF501.
- REPLACE EXPANSION JOINT - SEE DETAIL 5/SF502.
- REPLACE DETERIORATED JOINT SEALANT AT PRECAST PANEL JOINTS, COVE JOINTS AND FLOOR DRAINS.
- CLEAN AND COAT CORRODED FLOOR DRAINS.
- REPLACE CONCRETE POUR STRIPS AT RAMPS.
- CLEAN AND COAT CORRODED HANDRAIL CONNECTION ON NORTH BRIDGE (SEE PHOTO BELOW).
- REPLACE DETERIORATED TRAFFIC COATING IN AREA INDICATED THUSLY: REFER TO SPEC SECTION 07 18 16 DECK COATING SYTEM.
- SEE SHEET SK001 FOR PHOTOS OF TYPICAL REPAIR CONDITIONS.



5 SPALLED CONCRETE AT CORNER OF CORBEL
NTS



4 CORRODED STEEL PLATES IN SLIDE BEARING ASSEMBLY
NTS



3 CORRODED HANDRAIL CONNECTION
NTS

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FILE PATH:

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DOA DWG FILE:

SHEET SIZE: 22"x34" ANSI-D

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1

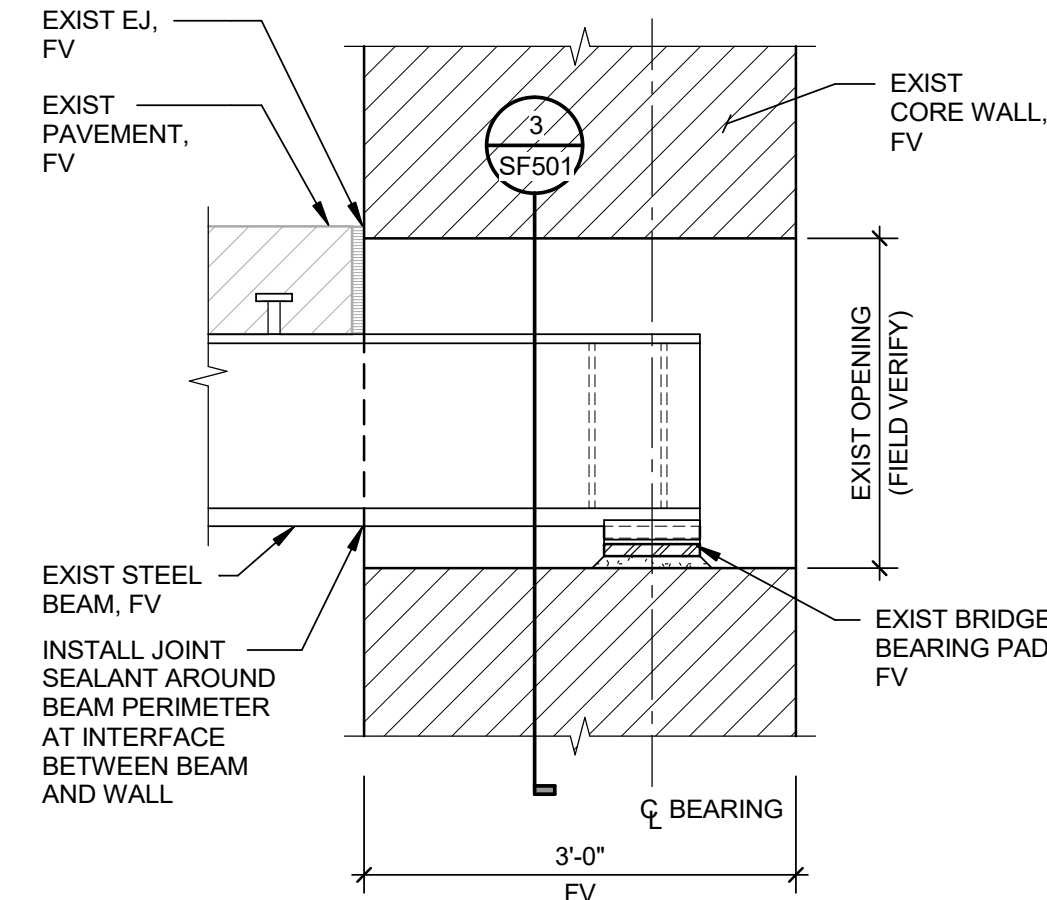
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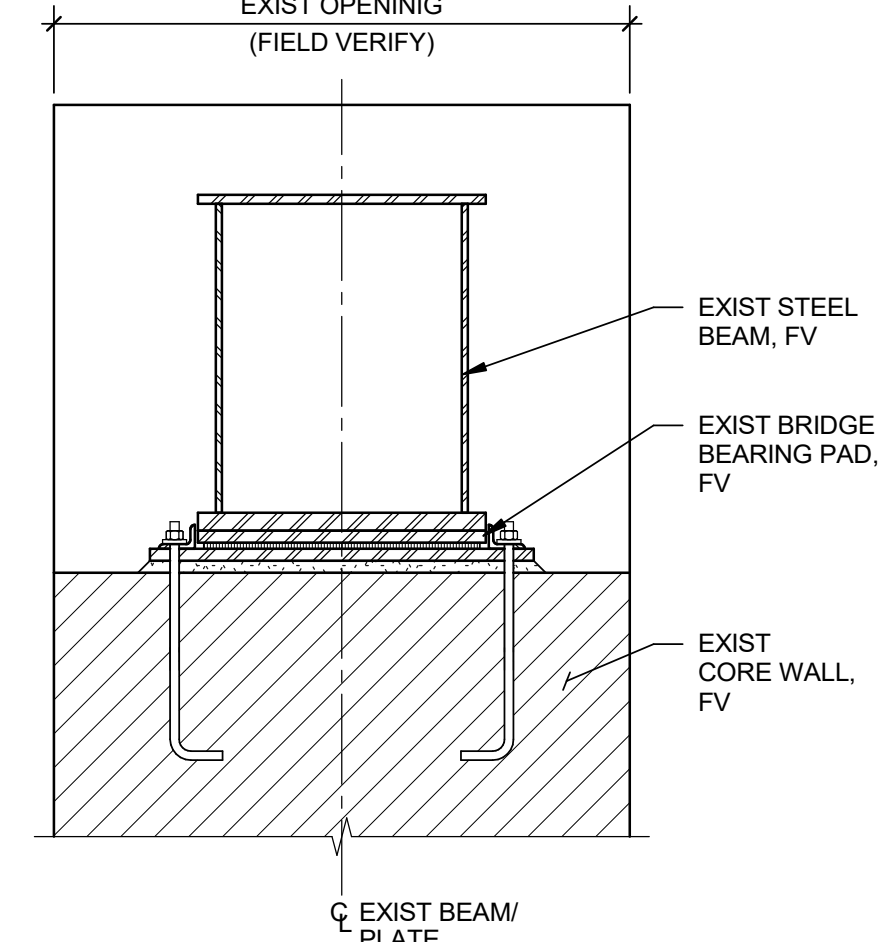
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D

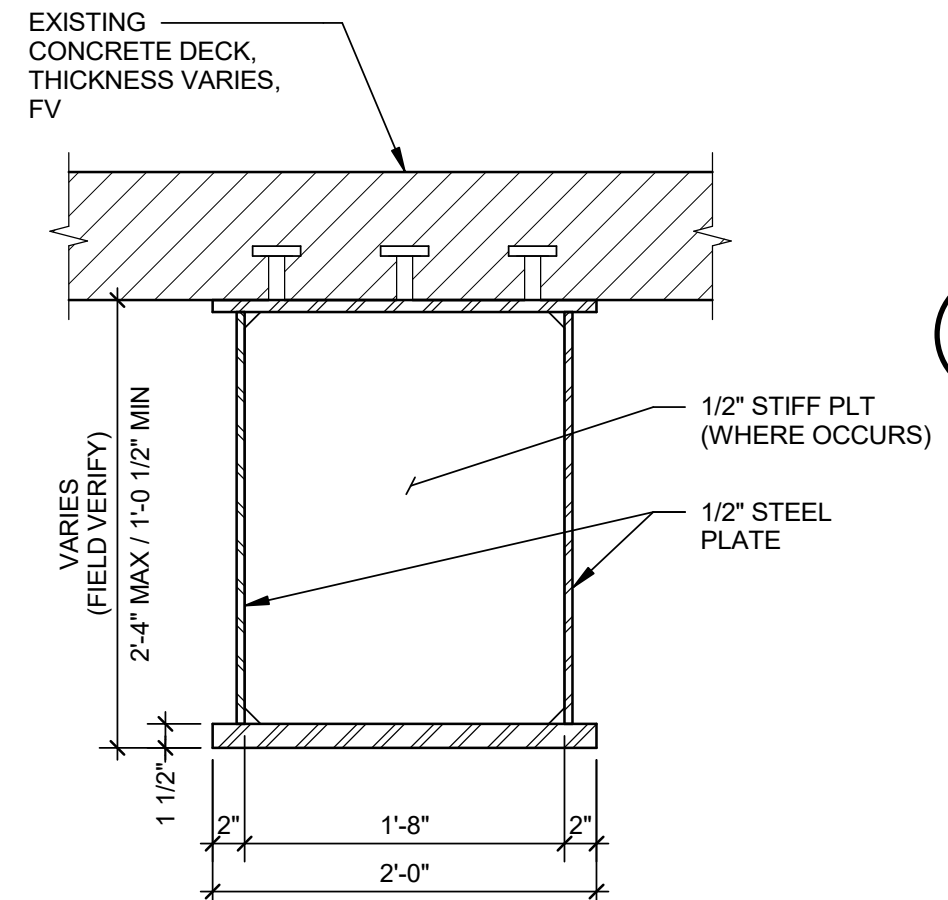
EXPOSE STEEL BEAM WHERE IT PENETRATES THE HELIX CORE WALL SO ENGINEER CAN REVIEW THE CONDITION. IF STEEL IS SOUND AND NO FURTHER REPAIR IS NEEDED, CLEAN AND COAT STEEL SURFACES BEFORE PATCHING THE WALL. INSTALL JOINT SEALANT AROUND THE BEAM PERIMETER AT INTERFACE BETWEEN BEAM AND WALL. APPLY CONCRETE PENETRATING SEALER ON THE WALL SURFACE.



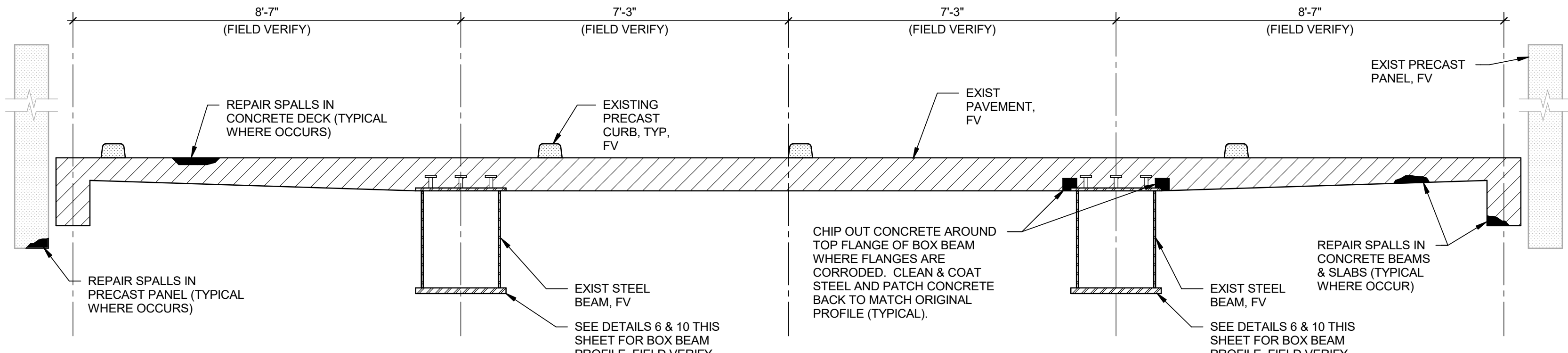
4 SECTION - AT CORE WALL
3/4" = 1'-0"



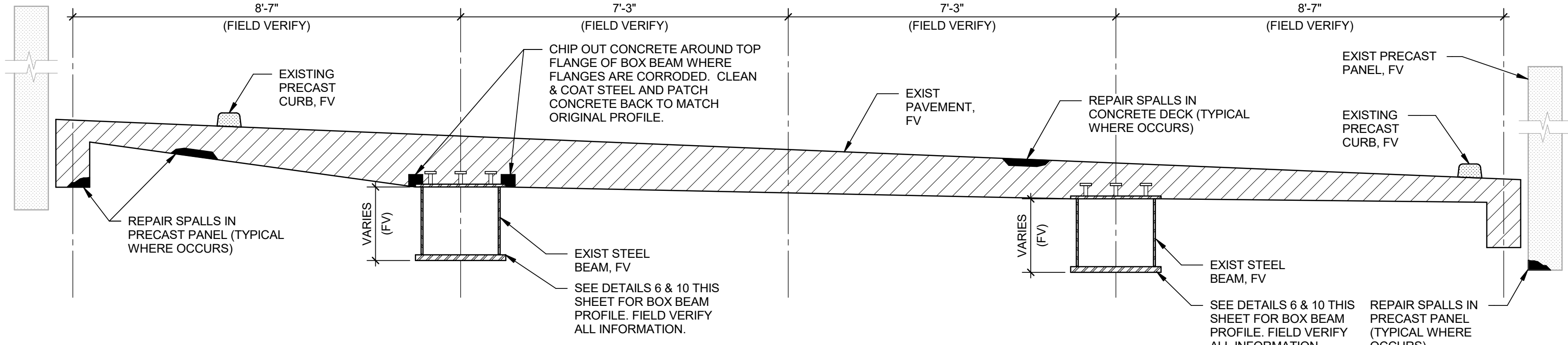
3 EXISTING BEARING PLATE
3/4" = 1'-0"



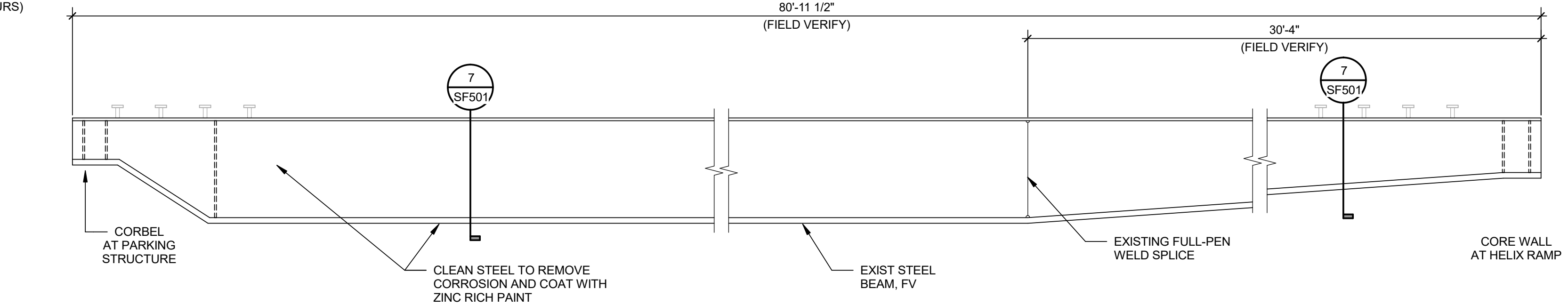
7 EXISTING STEEL BOX GIRDER
1" = 1'-0"



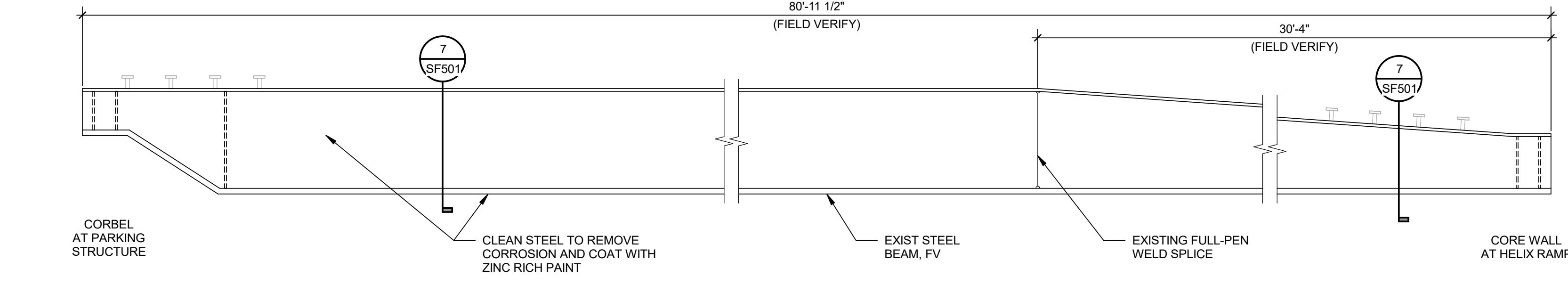
2 SECTION - AT EXISTING SPIRAL RAMP TO MAIN BUILDING BRIDGE (PARKING LEVELS 4, 5 AND 6)
1/2" = 1'-0"



5 SECTION - AT EXISTING SPIRAL RAMP TO MAIN BUILDING BRIDGE (PARKING LEVELS 4, 5 AND 6)
1/2" = 1'-0"



6 ELEVATION OF EXISTING STEEL BOX GIRDER - PROFILE TYPE 1 WITH TOP FLANGE LEVEL ACROSS BRIDGE
1/2" = 1'-0"



10 ELEVATION OF EXISTING STEEL BOX GIRDER - PROFILE TYPE 2 WITH TOP FLANGE SLOPED AT HELIX END
1/2" = 1'-0"

HOUSTON AIRPORTS
 TERMINAL C AT IAH - 2800 N TERMINAL RD
 HOUSTON, TX 77032
IAH TERMINAL C HELIX RAMP BEARING AND MISC REPAIRS
 C.I.P. No. A.I.P. No.
 C.O.H. No. D.O.A. No.

MWA ARCHITECTS
 11767 KATY FREEWAY SUITE 430
 HOUSTON, TEXAS 77079 - 713-482-2338

DESIGNER PROJECT No.: 19-21
 PROJECT STATUS: CONSTRUCTION DOCUMENTS

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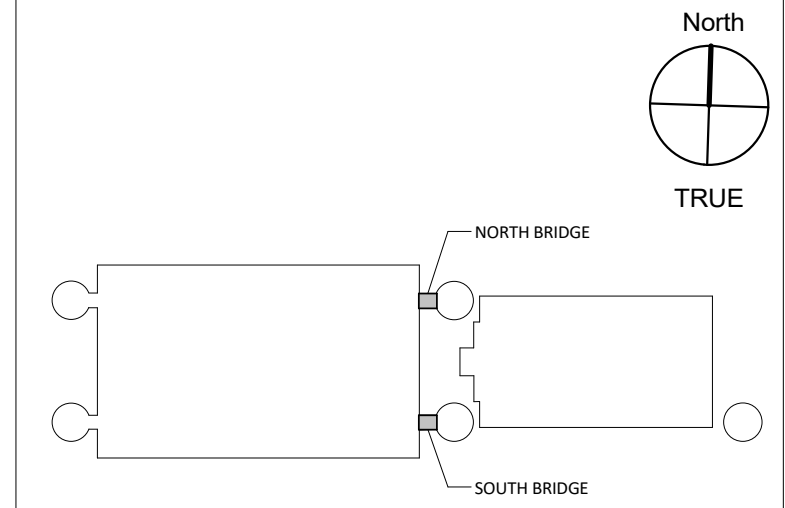
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 DRAWN BY: RR
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 ISSUE DATE: 01/19/2023
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DIRECTOR
 of
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Review/Approval Category
IFB
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Henderson Rogers
 Structural Engineers, LLC
 TBPE Firm Registration No. 8755

STATE OF TEXAS
 K. ELAINE ROGERS
 65566
 LICENSED PROFESSIONAL ENGINEER
 01/19/2023



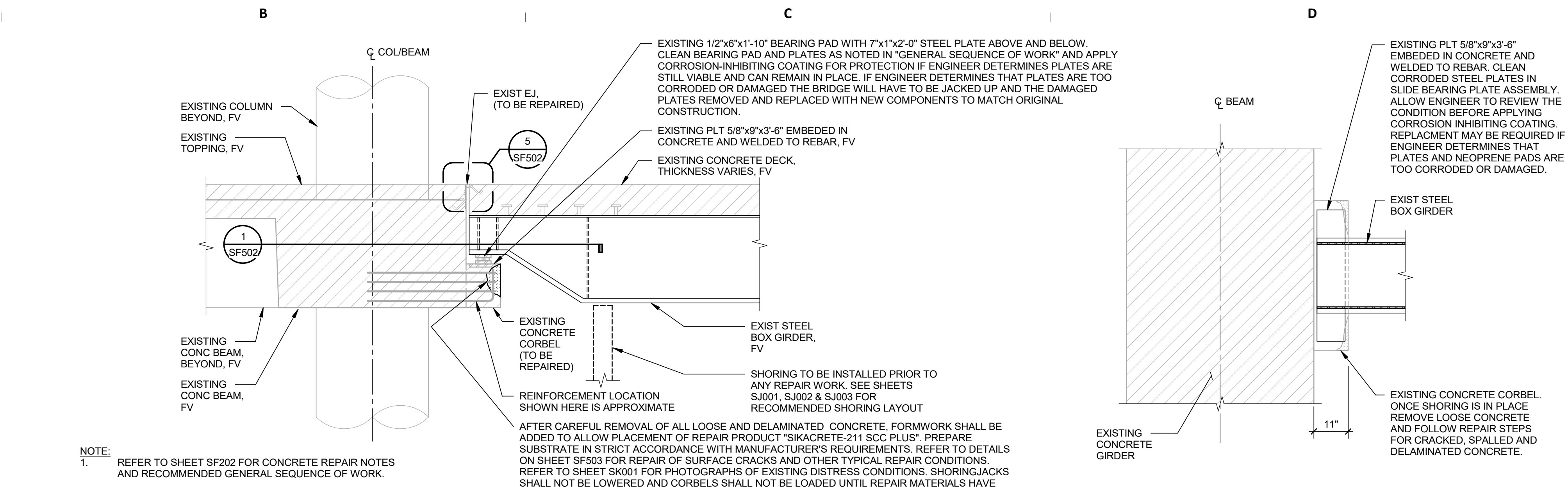
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 SHEET No. SF501 SCALE: As indicated

SHEET SIZE: 22"x34" ANSI-D

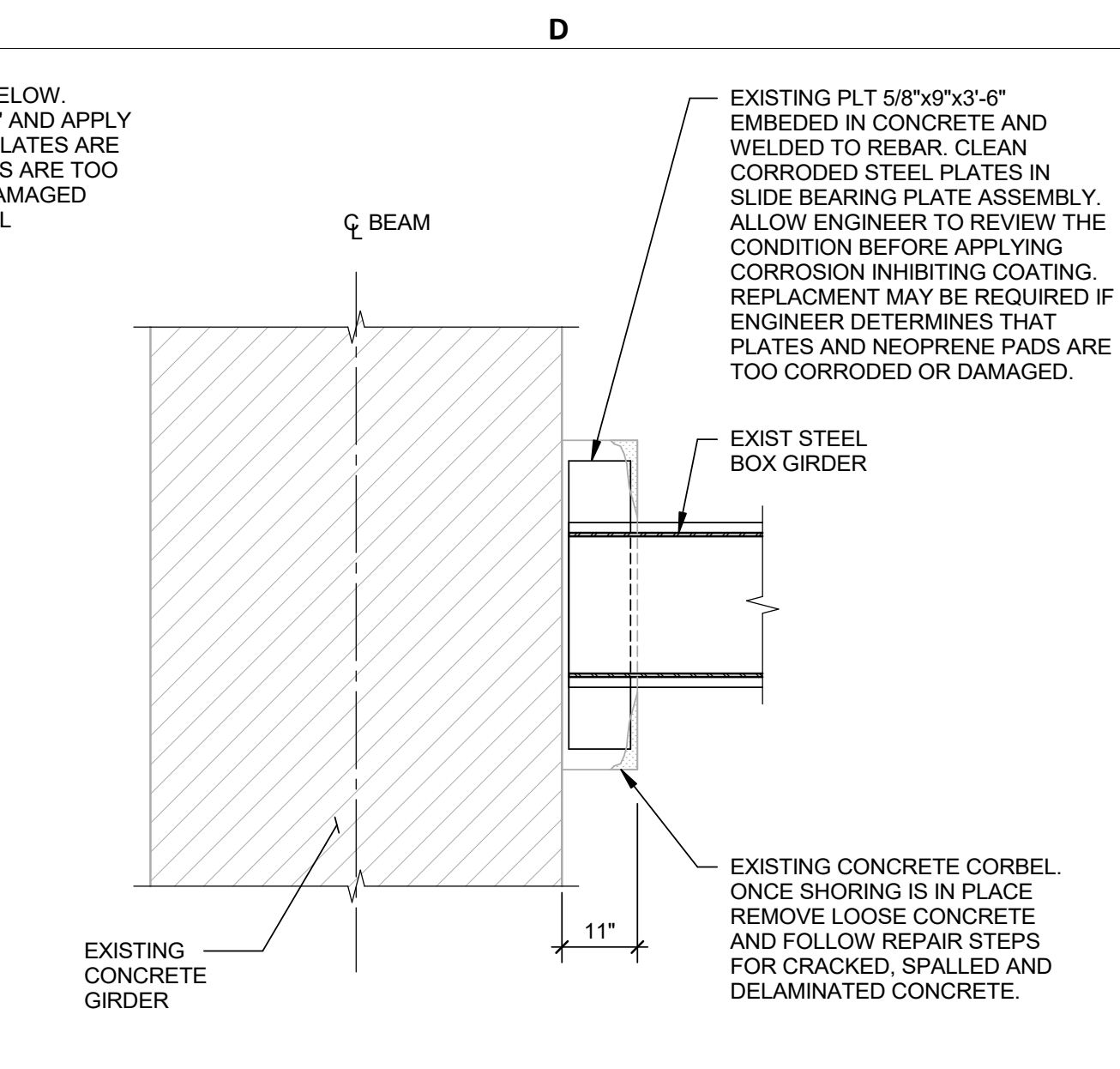
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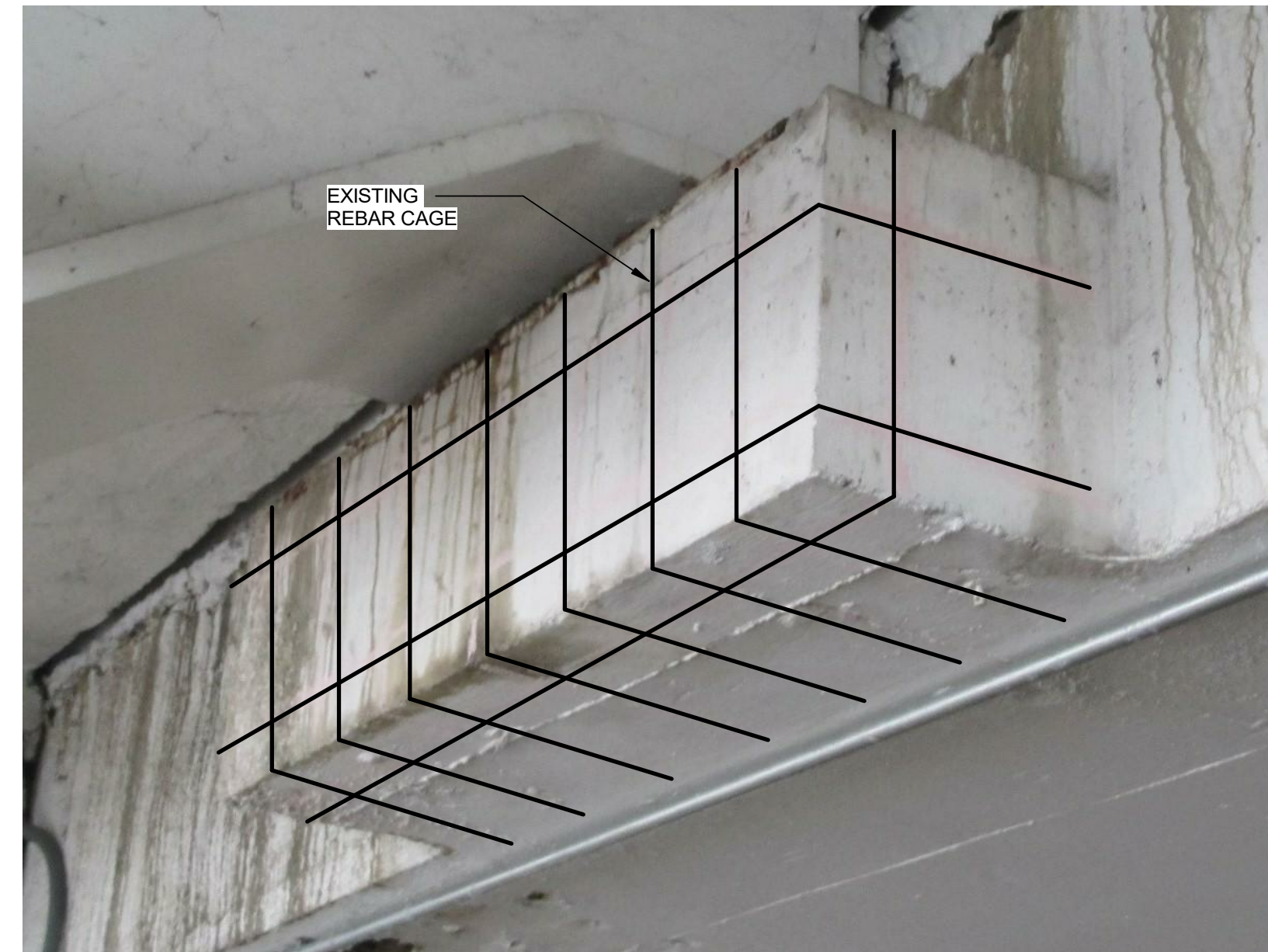
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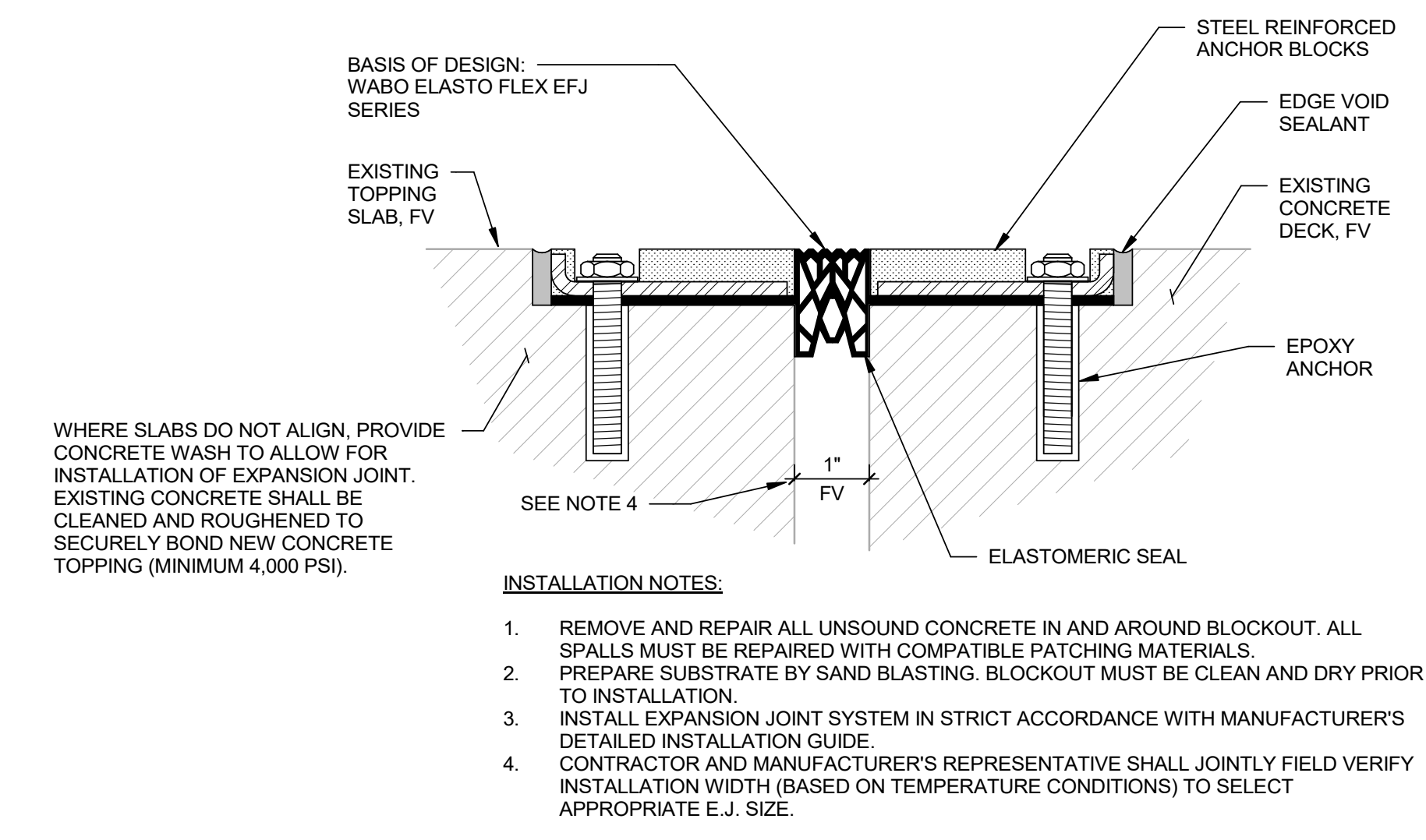
3 SECTION - AT EXISTING BOX BEAM & CONCRETE CORBEL
1/2" = 1'-0"



1 EXISTING CONCRETE CORBEL PLAN DETAIL
1/2" = 1'-0"



7 EXISTING CORBEL - REBAR IDENTIFIED DURING GPR TESTING (Approximate Locations)
NTS



5 EXPANSION JOINT DETAIL
6" = 1'-0"



11 EXISTING CORBEL - REBAR IDENTIFIED DURING GPR TESTING (Approximate Locations)
NTS



TERMINAL C AT IAH - 2800 N TERMINAL RD
HOUSTON, TX 77032
**IAH TERMINAL C HELIX RAMP
BEARING AND MISC REPAIRS**
C.I.P. No. A.I.P. No.
C.O.H. No. D.O.A No.



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1	ISSUE FOR BID	01/19/2023	

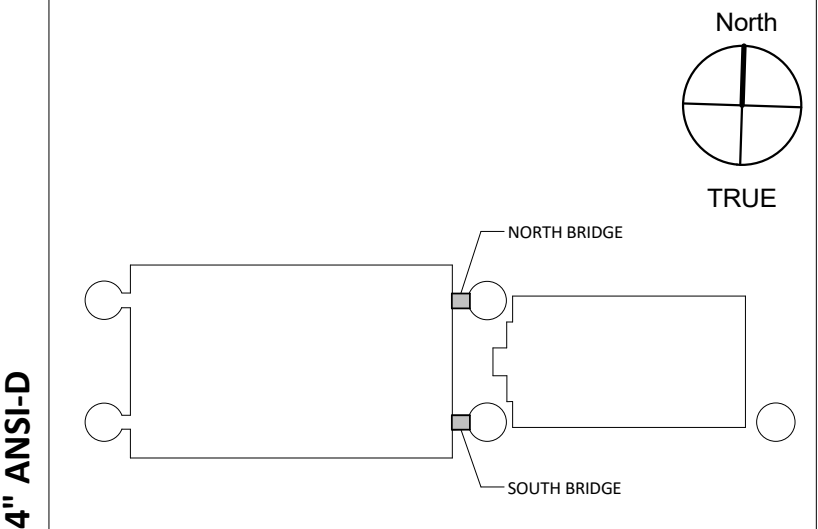
DESIGNER: ER
DRAWN BY: RR
CHECKED BY: ER
ISSUE DATE: 01/19/2023
APPROVED BY: ER
APPROVAL DATE: 01/19/2023

DIRECTOR
of
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Review/Approval Category

IFB
ISSUE FOR BID

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755



SHEET NAME: REPAIR DETAILS
SHEET No. SF502 SCALE: As indicated

SHEET SIZE: 22"x34" ANSI-D

REVISIONS

No.	DESCRIPTION	DATE	BY
1	ISSUE FOR BID	01/19/2023	

DESIGNER:	ER
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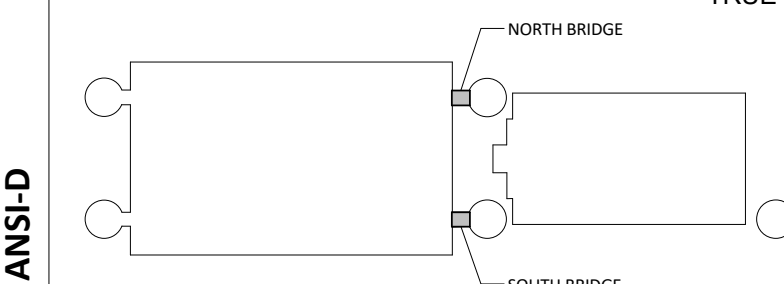
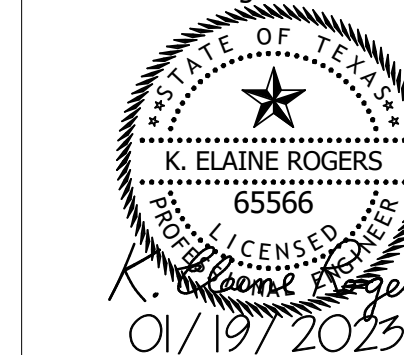
DIRECTOR
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ISSUED FOR BID

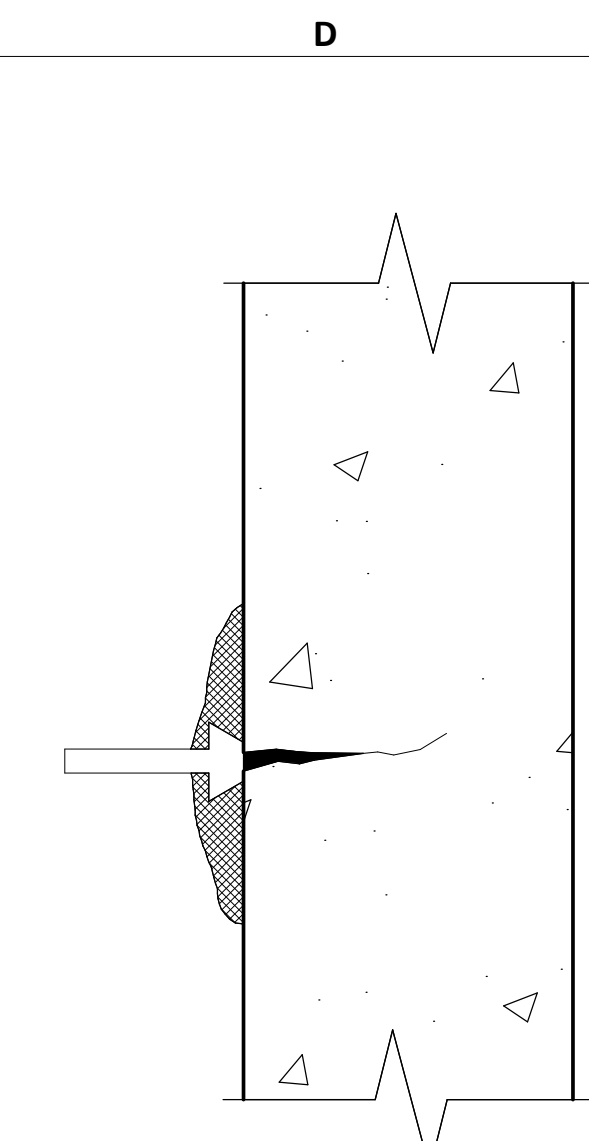
Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755



SHEET NAME: REPAIR DETAILS

SHEET No. SF503 SCALE: 3/4" = 1'-0"

SHEET SIZE: 22"x34" ANSI-D



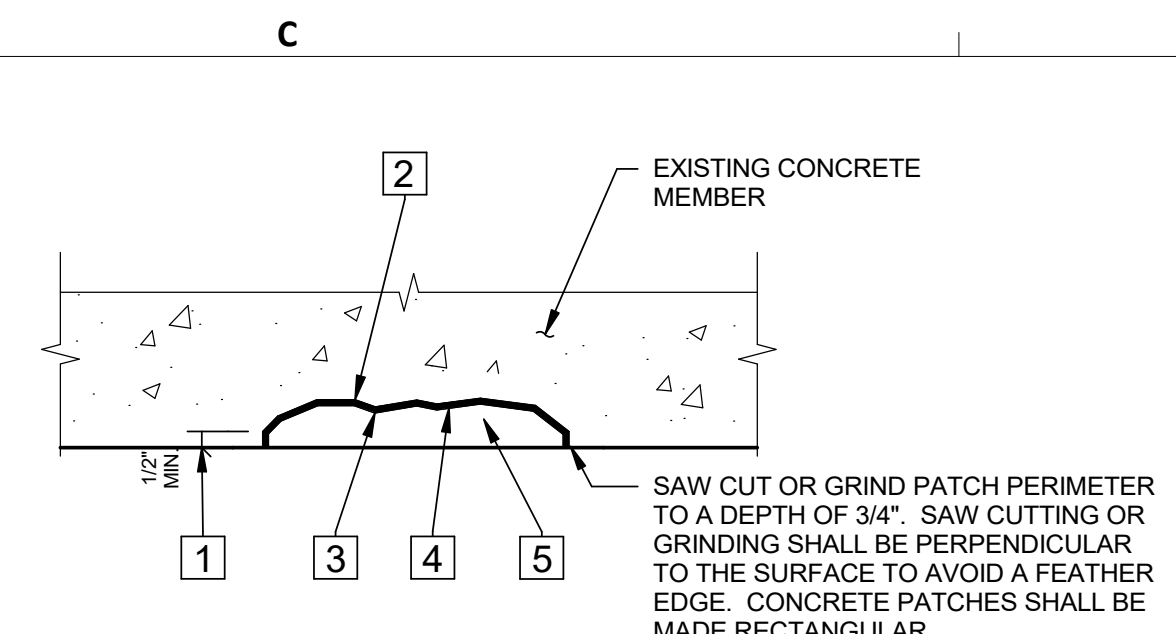
1 CRACK REPAIR - EPOXY INJECTION FOR CRACKS 1/32" TO 1/4" WIDE VERTICAL OR OVERHEAD SURFACES
3/4" = 1'-0"

- PERIMETER SAW CUT OR GRINDING SHOULD NOT BE LESS THAN 1/2" IN DEPTH. SUBSTRATE SHALL BE CLEAN, SOUND AND LAITANCE-FREE PRIOR TO REPAIRING.
- PROVIDE A MINIMUM CLEARANCE OF 3/4" AROUND THE EXPOSED REINFORCEMENT. PROTECT EXISTING REINFORCEMENT FROM DAMAGE DURING REPAIRS. WHERE REINFORCEMENT THAT IS EXPOSED DURING SURFACE PREPARATION IS FOUND TO BE SEVERELY CORRODED OR HAS LOST 10% OR MORE OF ITS CROSS SECTIONAL AREA, SUPPLEMENTARY REINFORCEMENT MAY BE REQUIRED. REPORT CONDITION TO ENGINEER FOR REVIEW AND DESIGN OF SUPPLEMENTARY REINFORCEMENT.
- REINFORCING STEEL SHOULD BE THOROUGHLY CLEANED BY BLAST CLEANING.
- ROUGHEN CONCRETE SURFACE TO MINIMUM CSP 6.
- SUBSTRATE SHOULD BE SATURATED DRY (SSD) WITH NO STANDING WATER DURING APPLICATION. APPLY SCRUB COAT TO THE SUBSTRATE, FILLING ALL PORES AND VOIDS.
- APPLY ARMATEC 110 EPOCEM TO ALL STEEL SURFACES.
- WHILE SCRUB COAT AND BONDING AGENT ARE STILL WET, APPLY SIKATOP 122 PLUS.
- SEE DETAIL 4/SF503 FOR ADDITIONAL REQUIREMENTS

FOR APPLICATIONS GREATER THAN 1" IN DEPTH, 3/8" PEA GRAVEL MAY BE USED (42# OF GRAVEL PER 0.5 CU. FT. OF SIKATOP 122 PLUS).

TYPICAL CONCRETE REPAIR NOTES:

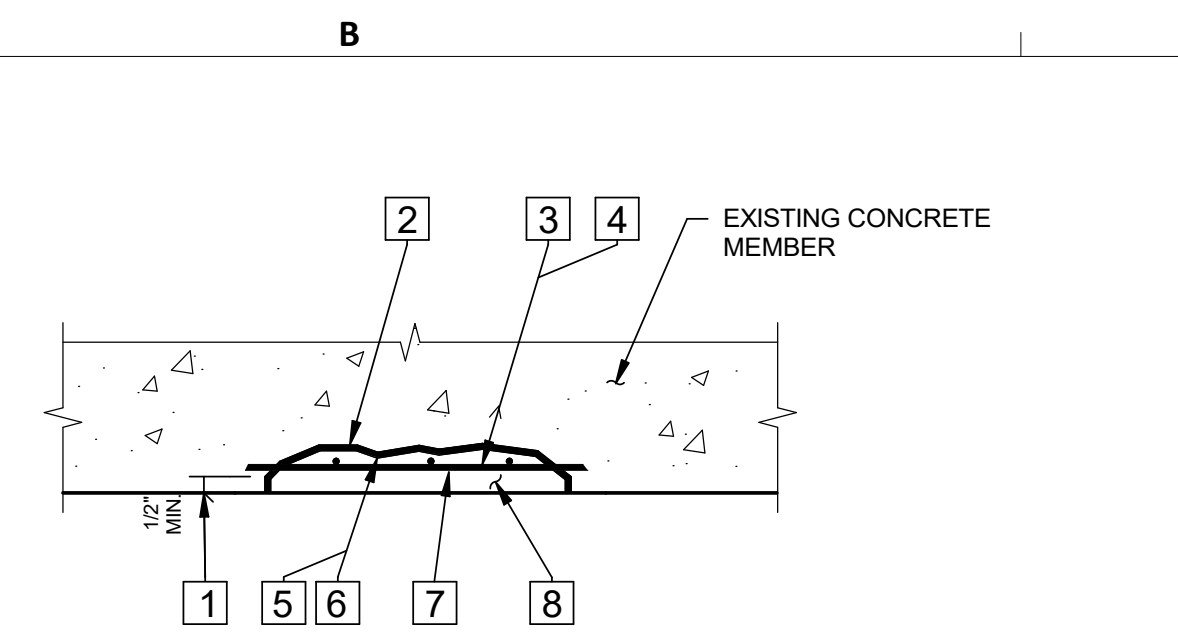
- FIELD VERIFY EXTENT OF CRACK AND CONCRETE SPALLING.
- REFER TO DETAILS THIS SHEET FOR TYPICAL REPAIR TYPES AND GENERAL PROCEDURES FOR REPAIR.
- REFER TO MANUFACTURER'S SPECIFICATIONS FOR DETAILED INSTRUCTIONS FOR SURFACE PREPARATION AND PROPER STORAGE, HANDLING AND APPLICATION OF THEIR PRODUCTS.
- IF ALTERNATE PRODUCT TYPES ARE NEEDED BASED ON CONDITIONS IN THE FIELD, THEY SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE DESIGN TEAM PRIOR TO USE.



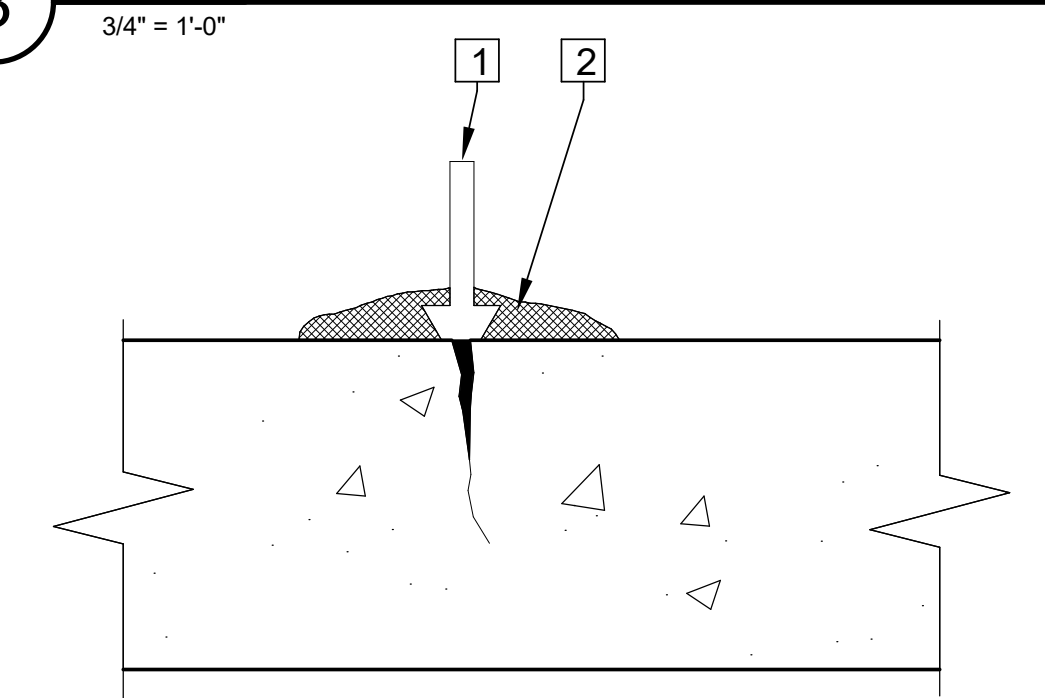
2 REPAIR SPALLS VERTICAL OR OVERHEAD SURFACES
3/4" = 1'-0"

- USE A GRINDER TO CREATE A V-SHAPED GROOVE, WITH THE CRACK CENTERED IN THE GROOVE. GROOVE SHALL BE APPROXIMATELY 3/8" DEEP.
- AFTER GROOVING, ENSURE SUBSTRATES ARE CLEAN AND SOUND. REMOVE ANY CONTAMINANTS, INCLUDING LAITANCE, OIL, DUST, DEBRIS, OR OTHER FOREIGN PARTICLES.
- FILL THE GROOVE USING A SELF-LEVELING, TWO-COMPONENT, VERY RAPID CURE, SILICONE SEALANT (SIKAFLEX-2c NS TG, OR EQUAL).
- PRODUCT IS DESIGNED TO OBTAIN ADHESION WITHOUT THE USE OF A PRIMER, HOWEVER, BEST RESULTS ARE OBTAINED WHEN HORIZONTAL JOINTS ARE PRIMED. TEST BY APPLYING THE SEALANT AND PRIMER SEALANT COMBINATION TO CONFIRM RESULTS.
- MINIMUM DEPTH OF SEALANT SHALL BE 1/4 INCH AND THE MAXIMUM DEPTH SHALL BE 1/2 INCH.
- TO CONTROL JOINT DEPTH, USE CLOSED CELL POLYETHYLENE BACKER ROD. IF JOINT DEPTH DOES NOT ALLOW FOR BACKER ROD, USE POLYETHYLENE BOND BREAKER TAPE TO PREVENT THREE-SIDED ADHESION.

6 REPAIR FOR CRACKS 1/4" TO 1/2" WIDE HORIZONTAL SURFACES
3/4" = 1'-0"

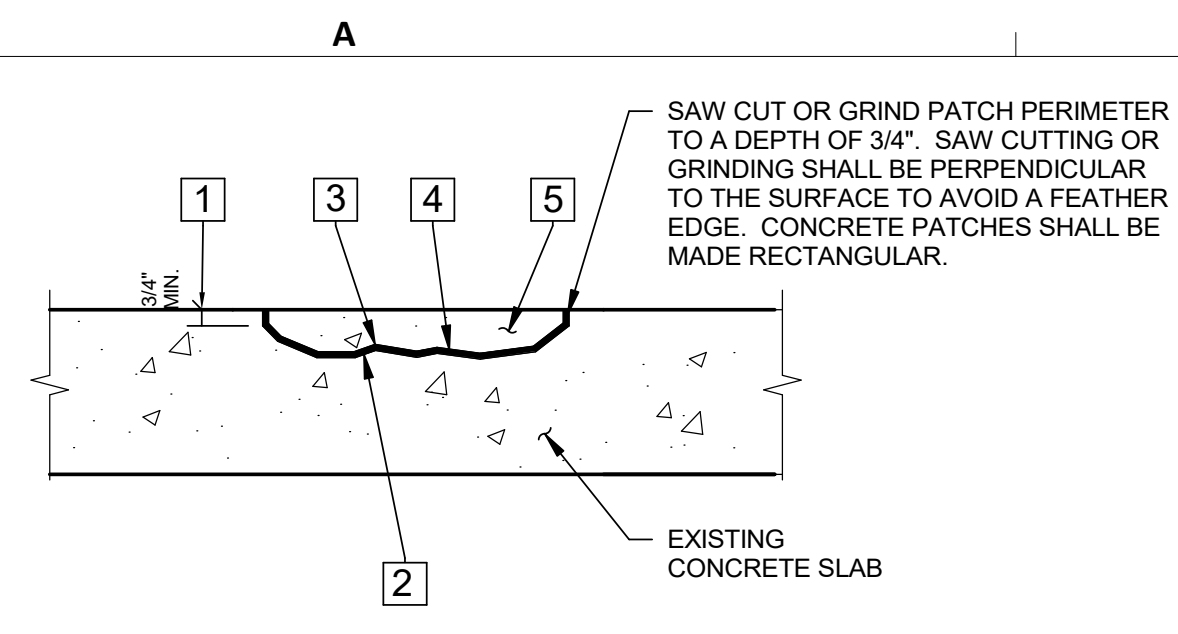


3 REPAIR AT EXPOSED REINFORCING AND SPALLS VERTICAL OR OVERHEAD SURFACES
3/4" = 1'-0"



- SET PORTING DEVICES OVER CRACKS.
- PLACE MIXED SIKADUR 31, HI-MOD GEL EPOXY RESIN ADHESIVE OVER CRACKS AND AROUND EACH INJECTION PORT A MINIMUM OF 1" WIDE BY A 1/4" THICK.
- ALLOW SUFFICIENT TIME FOR EPOXY RESIN ADHESIVE CAP SEAL TO SET BEFORE INJECTING.
- WHEN THE CAP SEAL HAS CURED, INJECT SIKADUR 52 WITH STEADY PRESSURE.
- USE AUTOMATED INJECTION EQUIPMENT OR MANUAL METHOD.
- AFTER INJECTION IS COMPLETE, REMOVE EPOXY RESIN AND PORTS FLUSH WITH CONCRETE SURFACE.

7 CRACK REPAIR - EPOXY INJECTION FOR CRACKS 1/32" TO 1/4" WIDE
3/4" = 1'-0"



4 REPAIR AT CONCRETE SPALLS HORIZONTAL SURFACES
3/4" = 1'-0"

- REPAIR AREA SHOULD NOT BE LESS THAN 3/4" IN DEPTH.
- SUBSTRATE SHALL BE CLEAN, SOUND AND LAITANCE-FREE PRIOR TO REPAIRING.
- ROUGHEN CONCRETE SURFACE TO MINIMUM CSP 6.
- SUBSTRATE SHOULD BE SATURATED DRY (SSD) WITH NO STANDING WATER DURING APPLICATION. APPLY SCRUB COAT TO THE SUBSTRATE, FILLING ALL PORES AND VOIDS.
- WHILE SCRUB COAT IS STILL WET APPLY SIKATOP 122 PLUS.

NOTE: IF REPAIR AREA IS TOO LARGE TO FILL WHILE SCRUB COAT IS STILL WET, USE SIKA ARMATEC 110 EPOCEM IN LIEU OF THE SCRUB COAT.
FOR APPLICATIONS GREATER THAN 1" IN DEPTH, 3/8" PEA GRAVEL MAY BE USED (42# OF GRAVEL PER 0.5 CU. FT. OF SIKATOP 122 PLUS).

FOR APPLICATIONS GREATER THAN 1-1/2" IN DEPTH, APPLY SIKATOP 123 PLUS IN LIFTS. SCORE THE TOP SURFACE OF EACH LIFT TO PRODUCE A ROUGHENED SURFACE FOR THE NEXT LIFT. ALLOW PRECEDING LIFT TO REACH FINAL SET. REPEAT FROM STEP 3.

NOTE: IF REPAIR AREA IS TOO LARGE TO FILL WHILE SCRUB COAT IS STILL WET, USE SIKA ARMATEC 110 EPOCEM IN LIEU OF THE SCRUB COAT.
FOR APPLICATIONS GREATER THAN 1-1/2" IN DEPTH, APPLY SIKATOP 123 PLUS IN LIFTS. SCORE THE TOP SURFACE OF EACH LIFT TO PRODUCE A ROUGHENED SURFACE FOR THE NEXT LIFT. ALLOW PRECEDING LIFT TO REACH FINAL SET. REPEAT FROM STEP 4.

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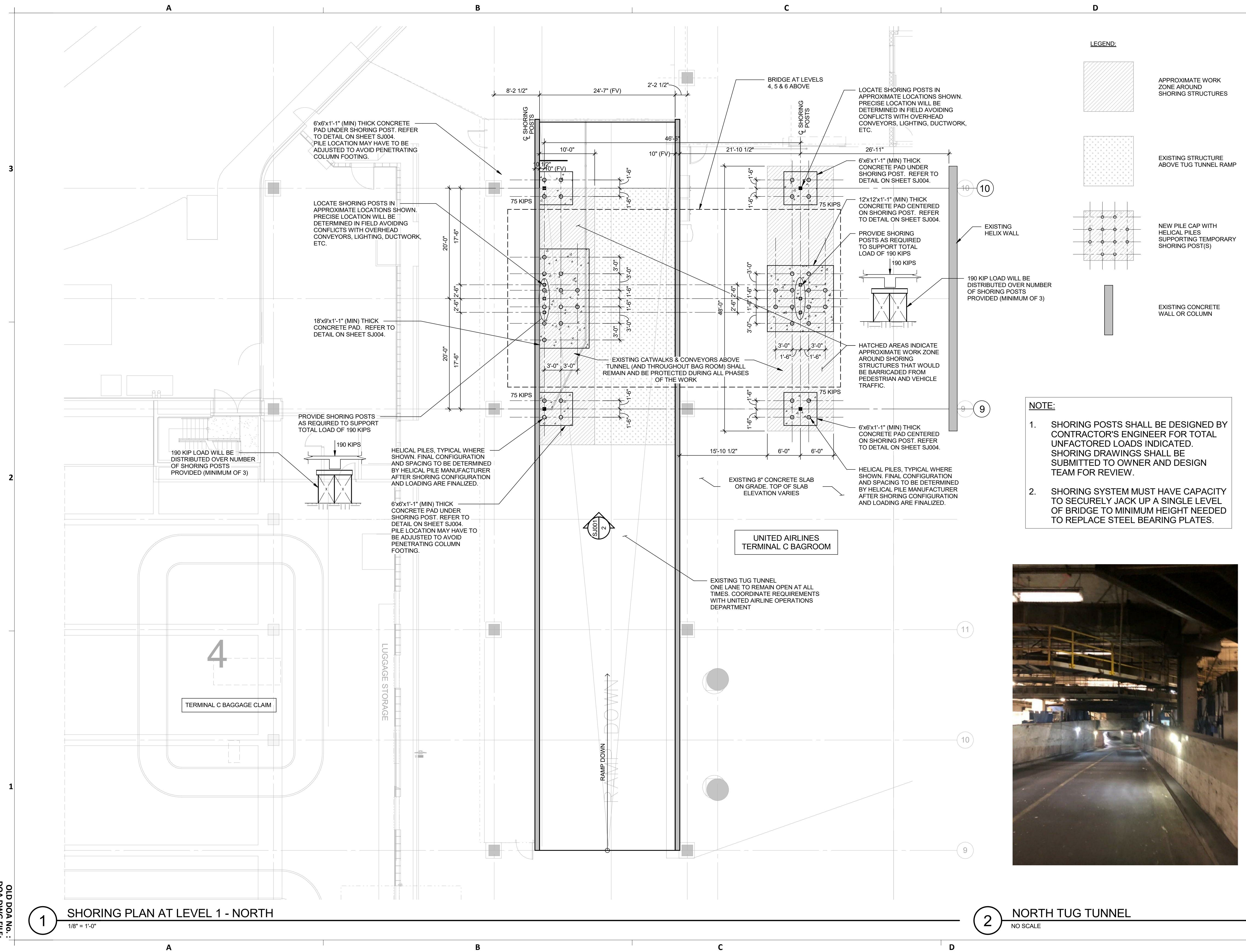
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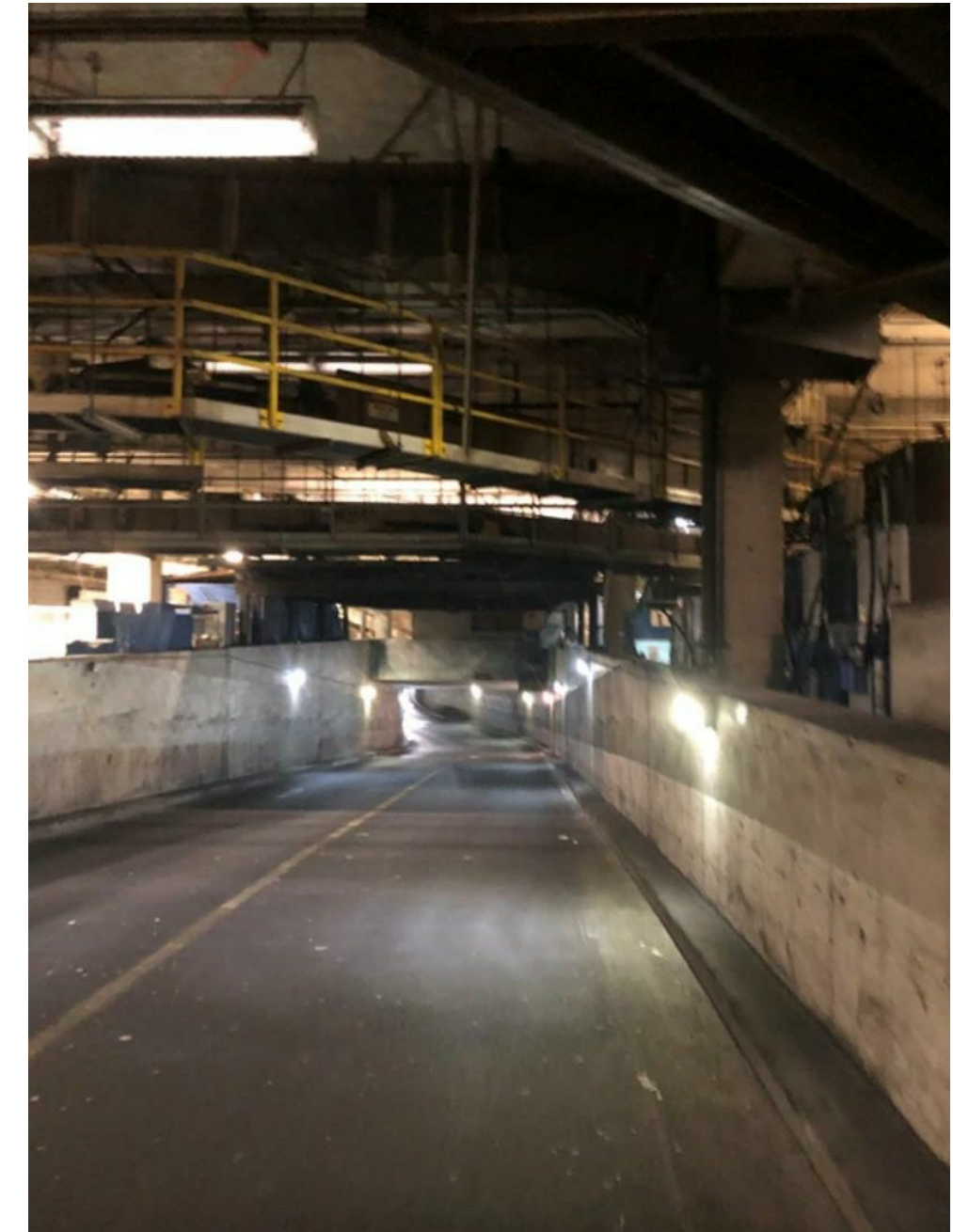


LEGEND:

- [Hatched Box] APPROXIMATE WORK ZONE AROUND SHORING STRUCTURES
- [Dotted Box] EXISTING STRUCTURE ABOVE TUG TUNNEL RAMP
- [Grid Box] NEW PILE CAP WITH HELICAL PILES SUPPORTING TEMPORARY SHORING POST(S)
- [Solid Box] EXISTING CONCRETE WALL OR COLUMN

NOTE:

- SHORING POSTS SHALL BE DESIGNED BY CONTRACTOR'S ENGINEER FOR TOTAL UNFACTORED LOADS INDICATED. SHORING DRAWINGS SHALL BE SUBMITTED TO OWNER AND DESIGN TEAM FOR REVIEW.
- SHORING SYSTEM MUST HAVE CAPACITY TO SECURELY JACK UP A SINGLE LEVEL OF BRIDGE TO MINIMUM HEIGHT NEEDED TO REPLACE STEEL BEARING PLATES.



HOUSTON AIRPORTS

TERMINAL C AT IAH - 2800 N TERMINAL RD
HOUSTON, TX 77032

IAH TERMINAL C HELIX RAMP BEARING AND MISC REPAIRS

C.I.P. No. A.I.P. No.
C.O.H. No. D.O.A. No.

MWA ARCHITECTS
11767 KATY FREEWAY SUITE 430
HOUSTON, TEXAS 77079 - 713-482-2338

DESIGNER PROJECT No.: 19-21
PROJECT STATUS: CONSTRUCTION DOCUMENTS

REVISIONS

No.	DESCRIPTION	DATE	BY
1	ISSUE FOR BID	01/19/2023	

DESIGNER: ER
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DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category

IFB
ISSUE FOR BID

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755

STATE OF TEXAS
K. ELAINE ROGERS
65566
LICENSED PROFESSIONAL ENGINEER
01/19/2023

North
TRUE

NORTH BRIDGE
SOUTH BRIDGE

SHEET NAME: SHORING PLAN AT LEVEL 1 - NORTH

SHEET No. SJ001 SCALE: As indicated

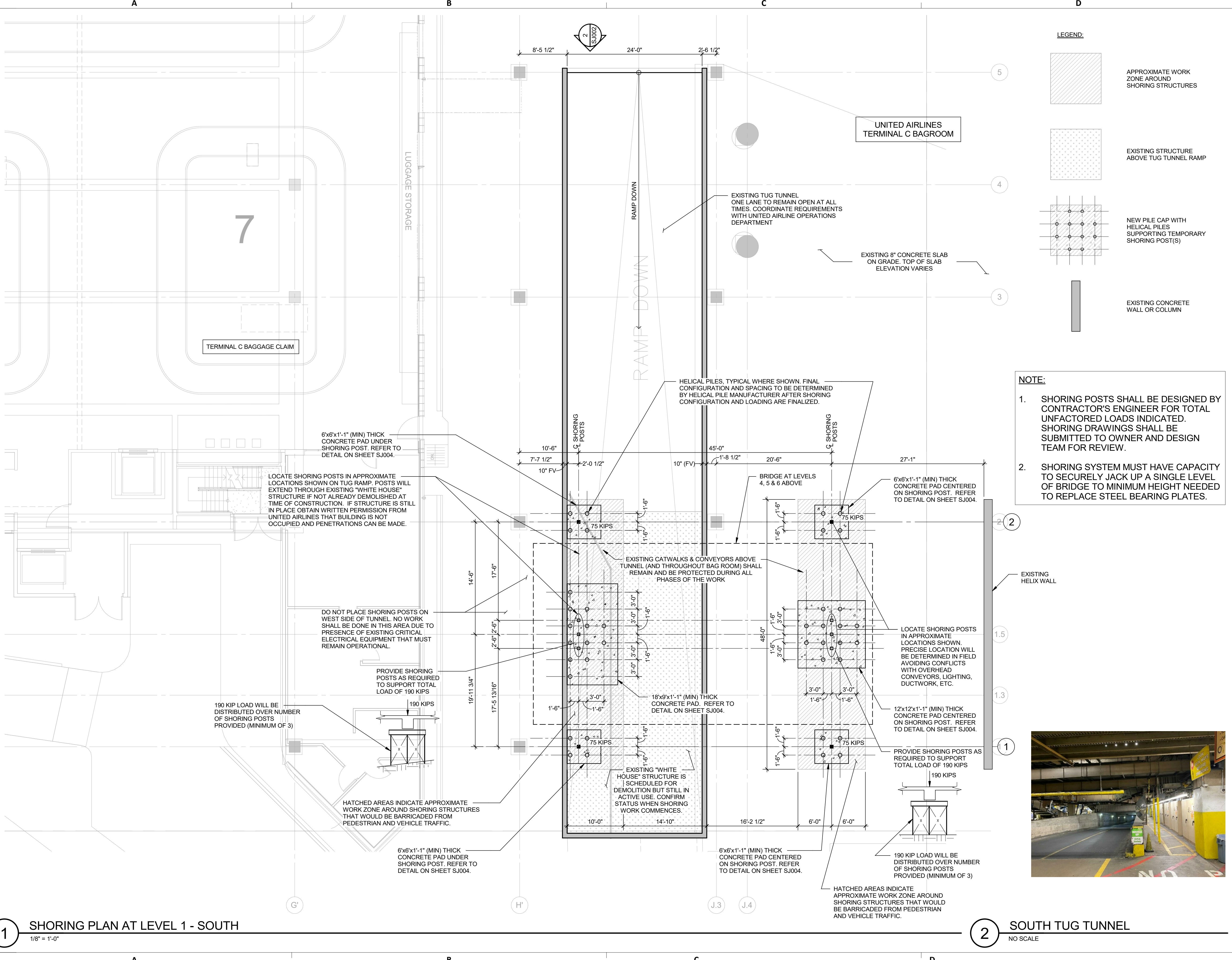
1 SHORING PLAN AT LEVEL 1 - NORTH
1/8" = 1'-0"

2 NORTH TUG TUNNEL
NO SCALE

SHEET SIZE: 22"x34" ANSI-D

FILE PATH: G:\Users\John.moore\Documents\1320001_IAH C Garage Bridge Repair_R19_jmooreKX2VP.rvt

OLD DOA No.: DOA DWG FILE:



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HOUSTON, TX 77032

**IAH TERMINAL C HELIX RAMP
BEARING AND MISC REPAIRS**

C.I.P. No. A.I.P. No.
C.O.H. No. D.O.A. No.



DESIGNER PROJECT No.: 19-21
PROJECT STATUS: CONSTRUCTION DOCUMENTS

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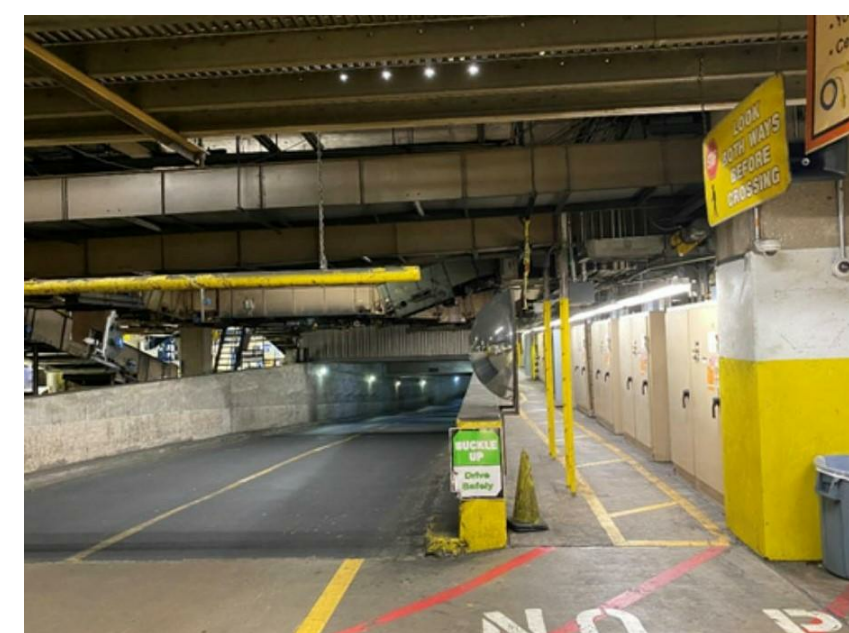
IFB
ISSUE FOR BID

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755

North
TRUE

SHEET NAME: SHORING PLAN AT LEVEL 1 - SOUTH

SHEET No. SJ002 SCALE: As indicated



DESIGNER PROJECT No.: 19-21
PROJECT STATUS: CONSTRUCTION DOCUMENTS

REVISIONS

No.	DESCRIPTION	DATE	BY
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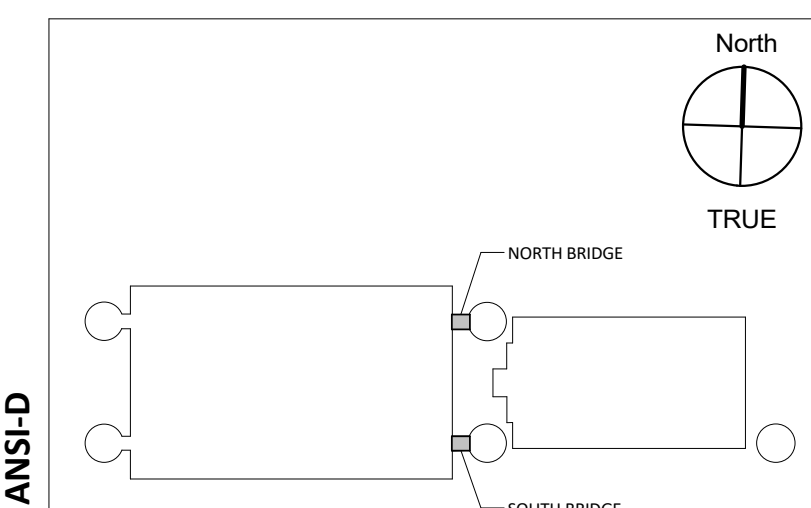
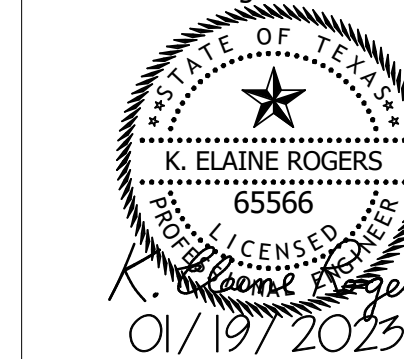
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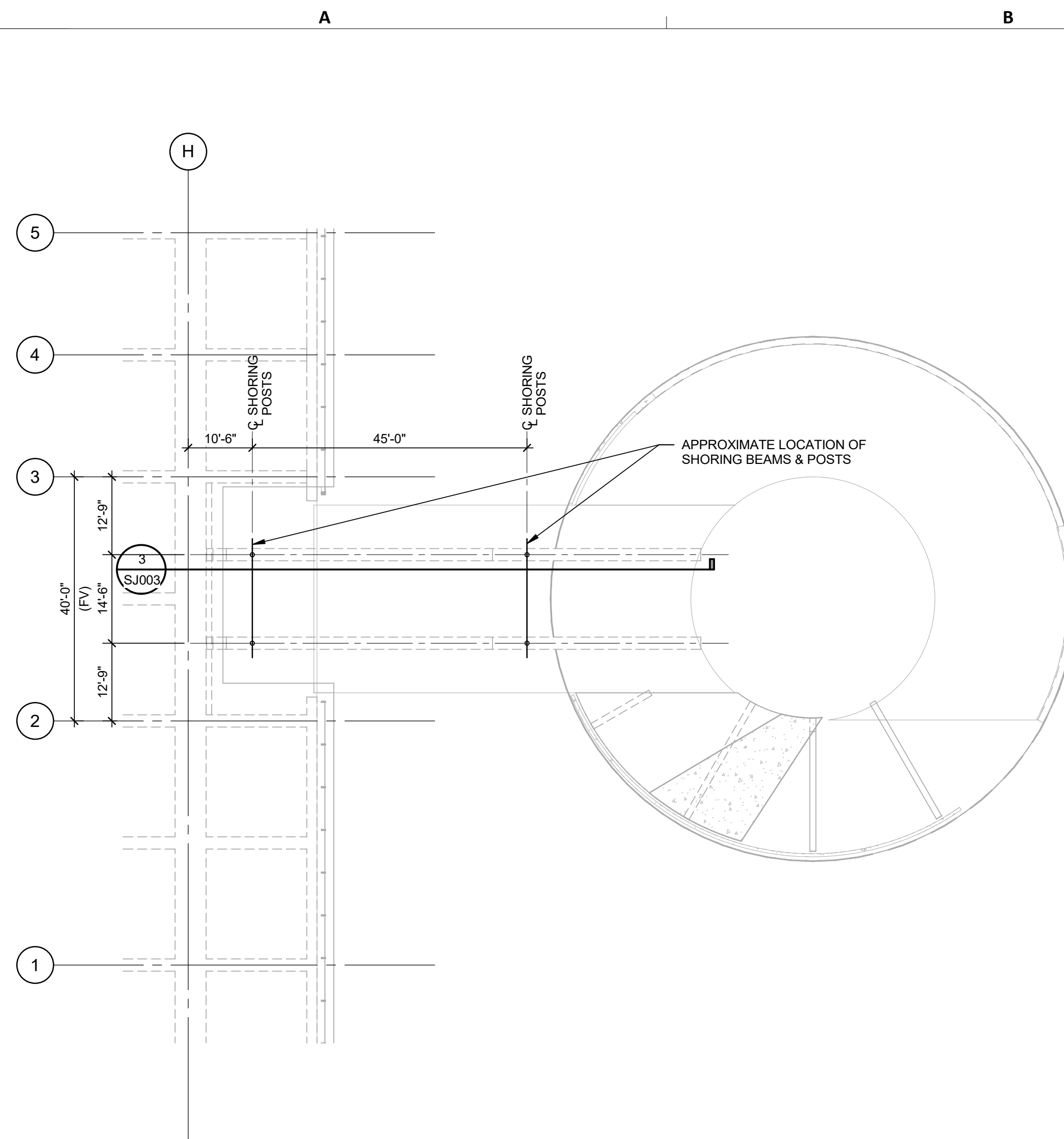
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Structural Engineers, LLC
TBPE Firm Registration No. 8755

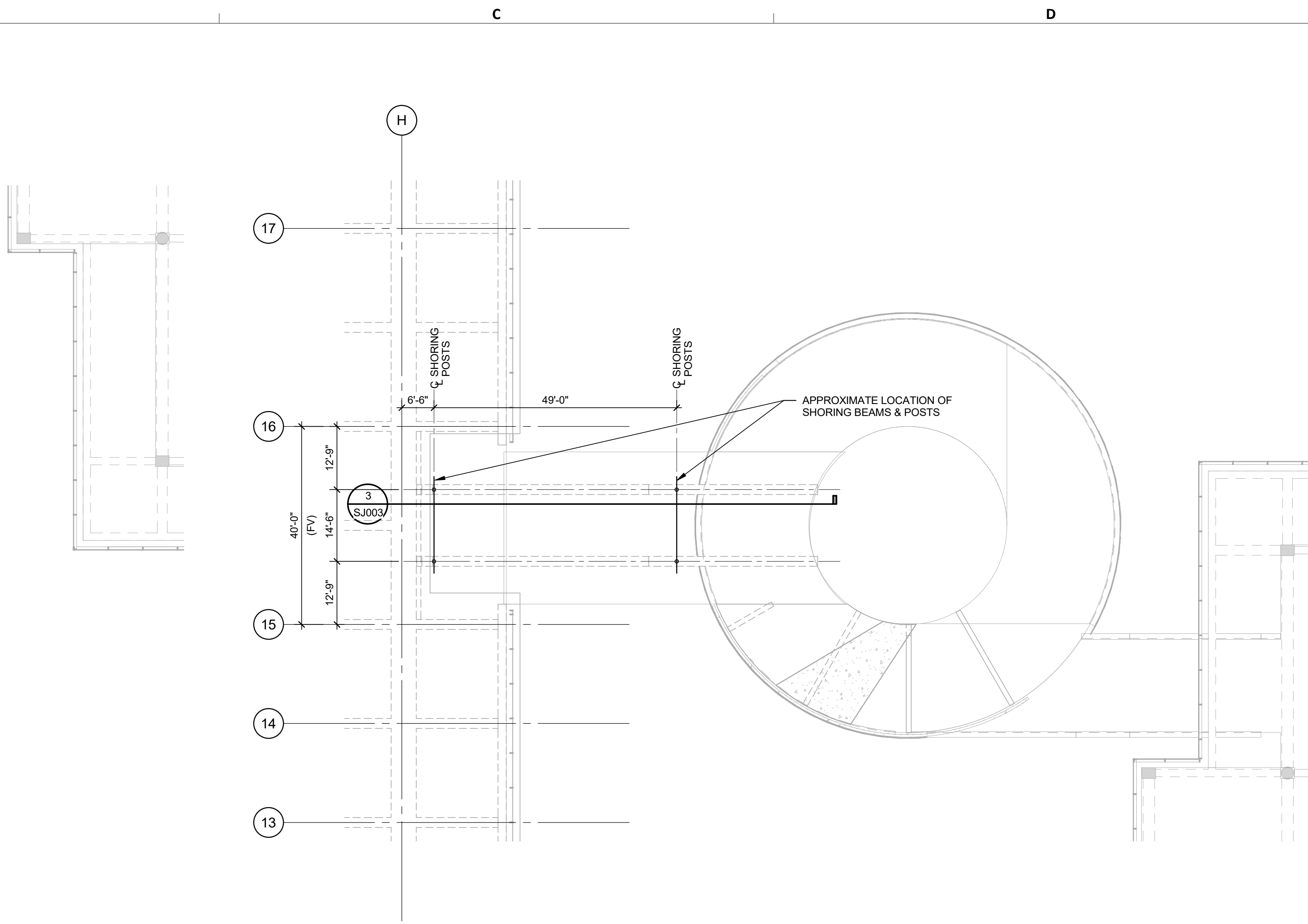


SHEET NAME: TYPICAL SHORING PLAN

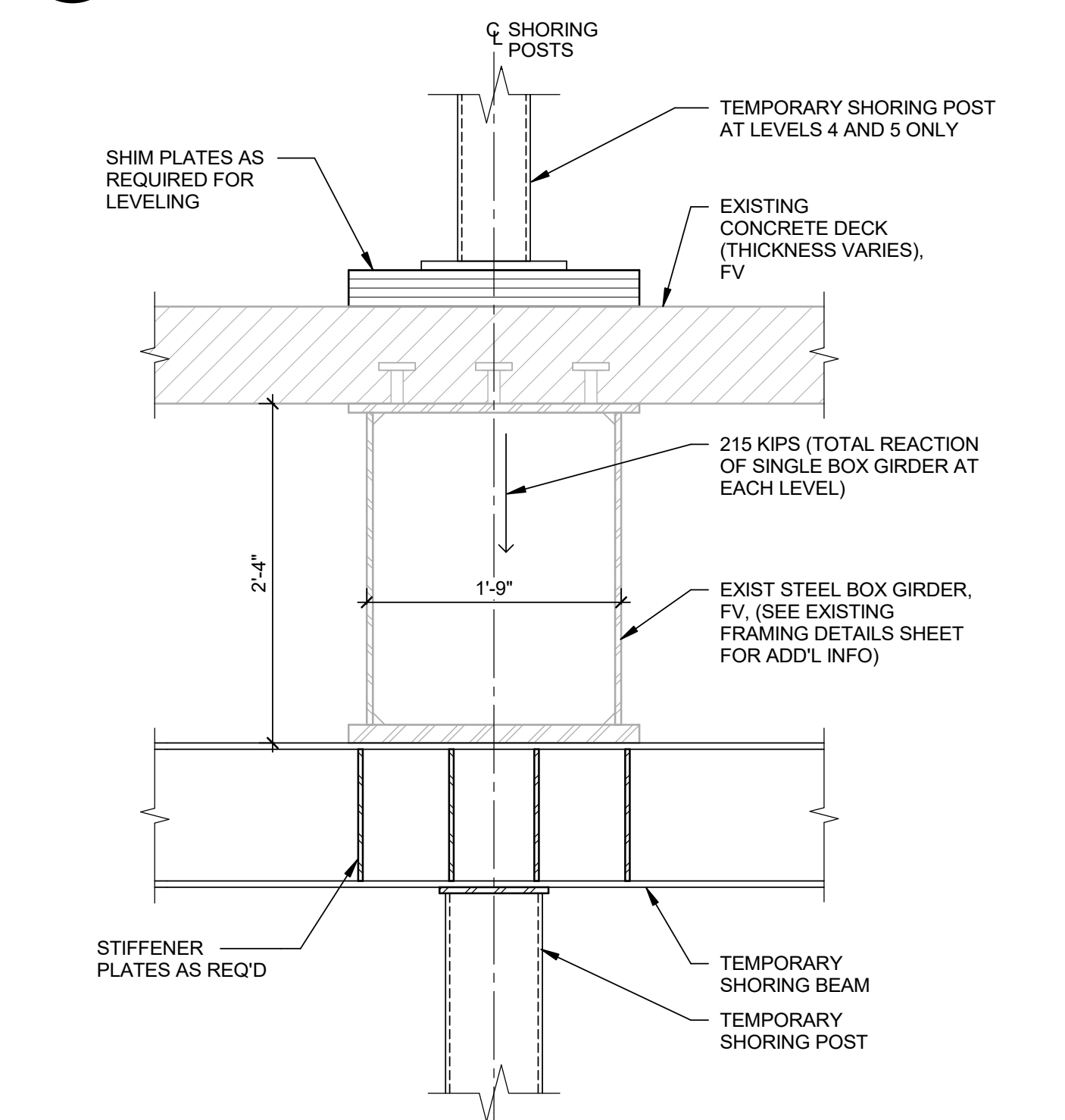
SHEET No. SJ003 SCALE: As indicated



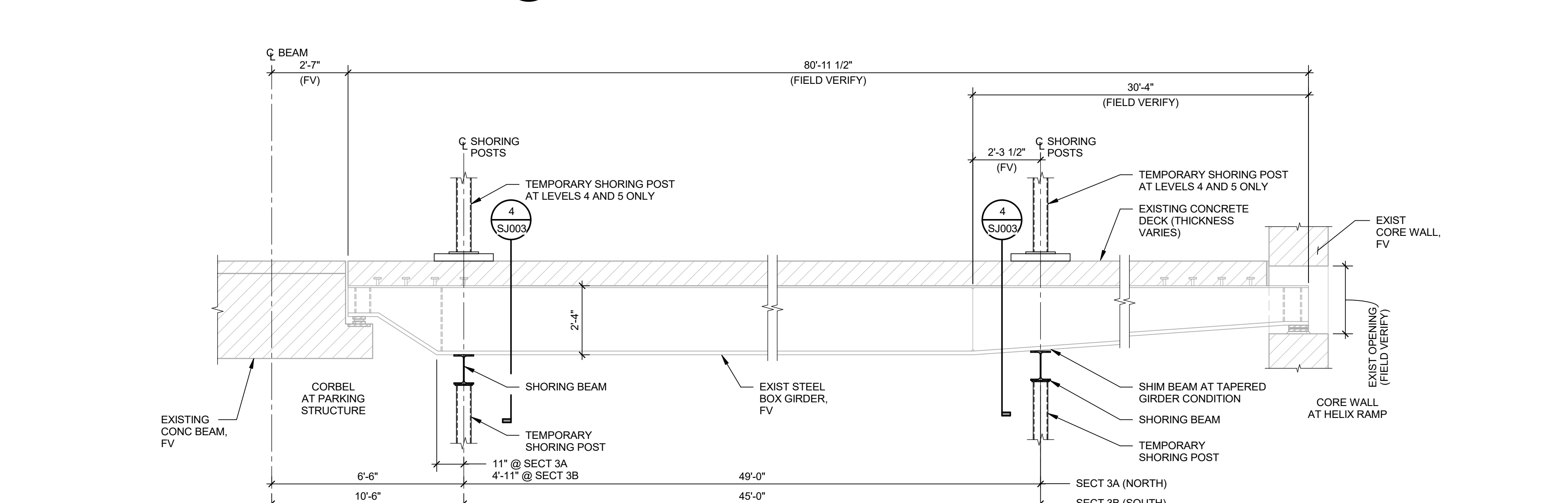
2 SOUTH SHORING PLAN (BELOW LEVELS 4, 5 & 6) PHASE 2
1/16" = 1'-0"



1 NORTH SHORING PLAN (BELOW LEVELS 4, 5 & 6) PHASE 1
1/16" = 1'-0"



4 SECTION AT TEMPORARY SHORING POST
1" = 1'-0"



3 ELEVATION OF EXISTING STEEL BOX GIRDER AT SHORING POST
3/8" = 1'-0"

- NOTES:
1. SHORE POSTS ABOVE AND BELOW STEEL BOX GIRDER SHALL BE POSITIONED SO THEY ARE ACCURATELY ALIGNED.
 2. SHORING POSTS TO REMAIN IN PLACE UNTIL CORBELS ARE REPAIRED.
 3. SEE SHEET SF003 FOR ADDITIONAL SHORING NOTES.

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SHEET SIZE: 22"x34" ANSI-D

REVISIONS

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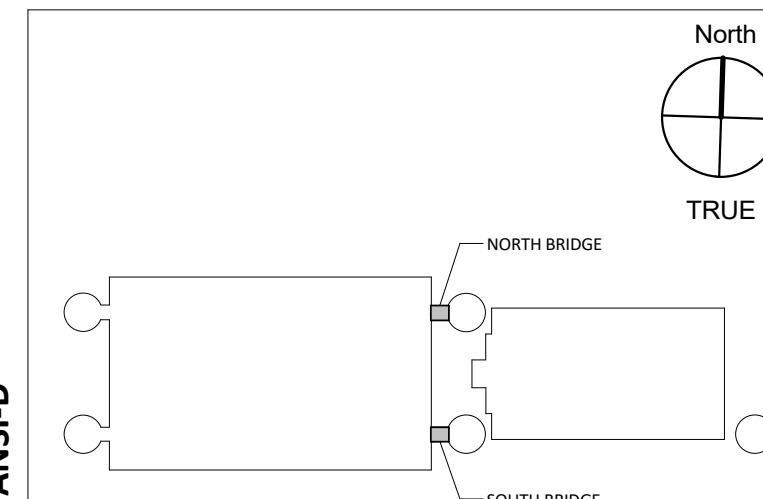
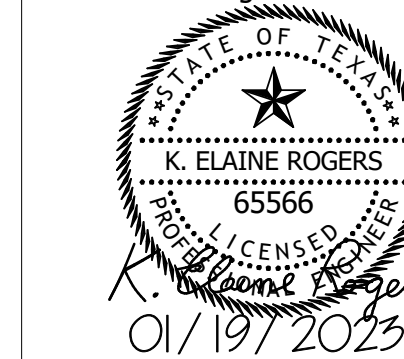
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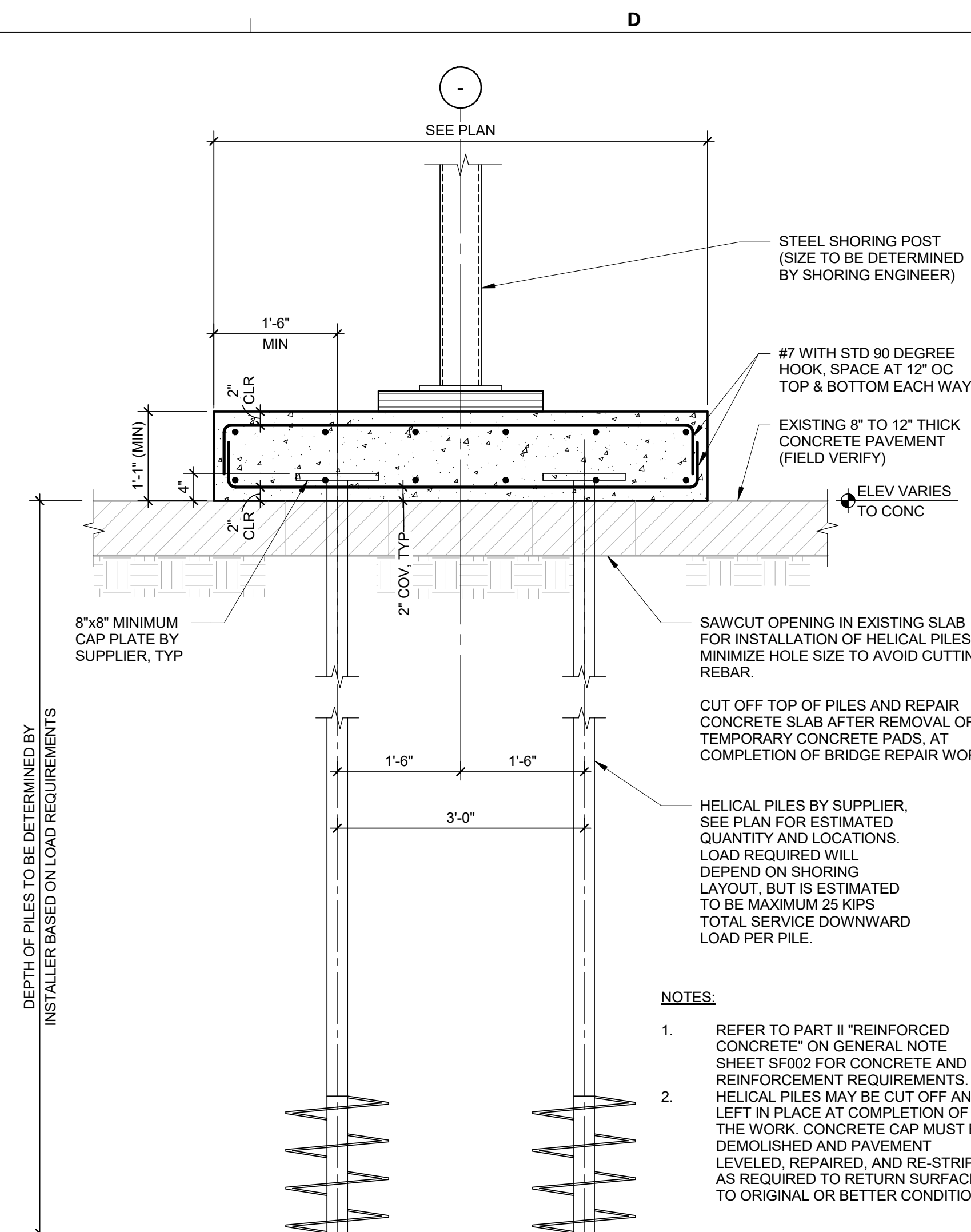
Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755



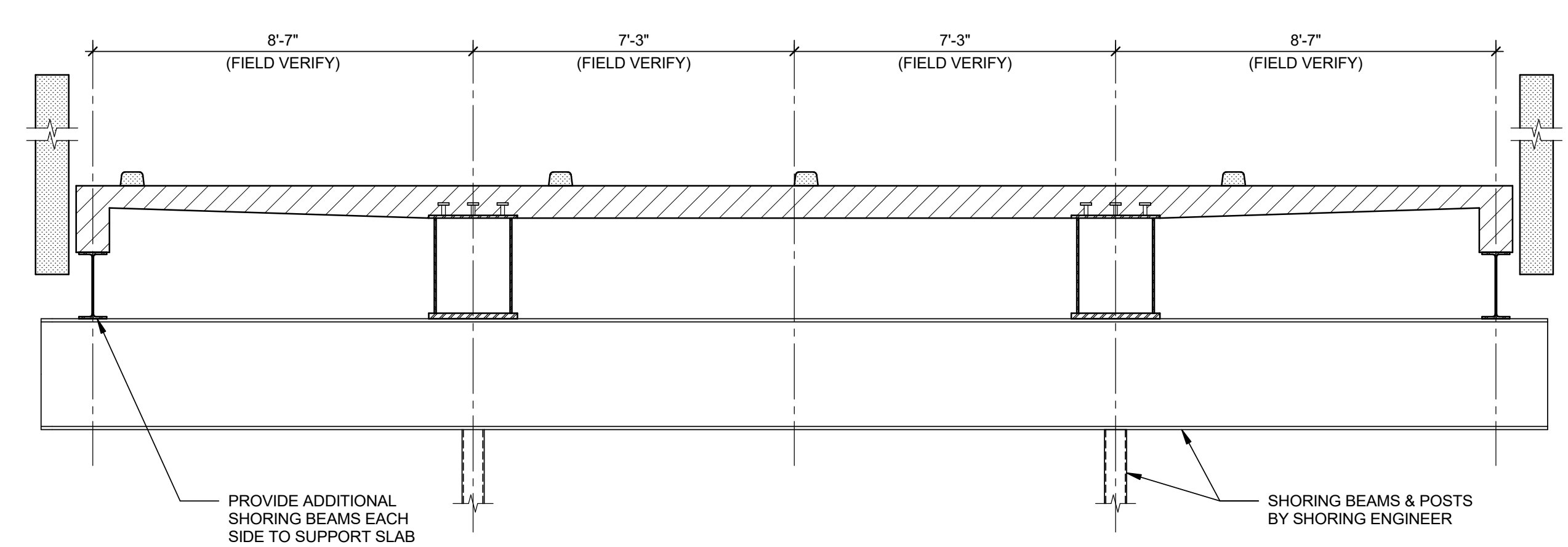
SHEET NAME: FOUNDATION DETAILS FOR SHORING SYSTEM

SHEET No. SJ004 SCALE: As indicated

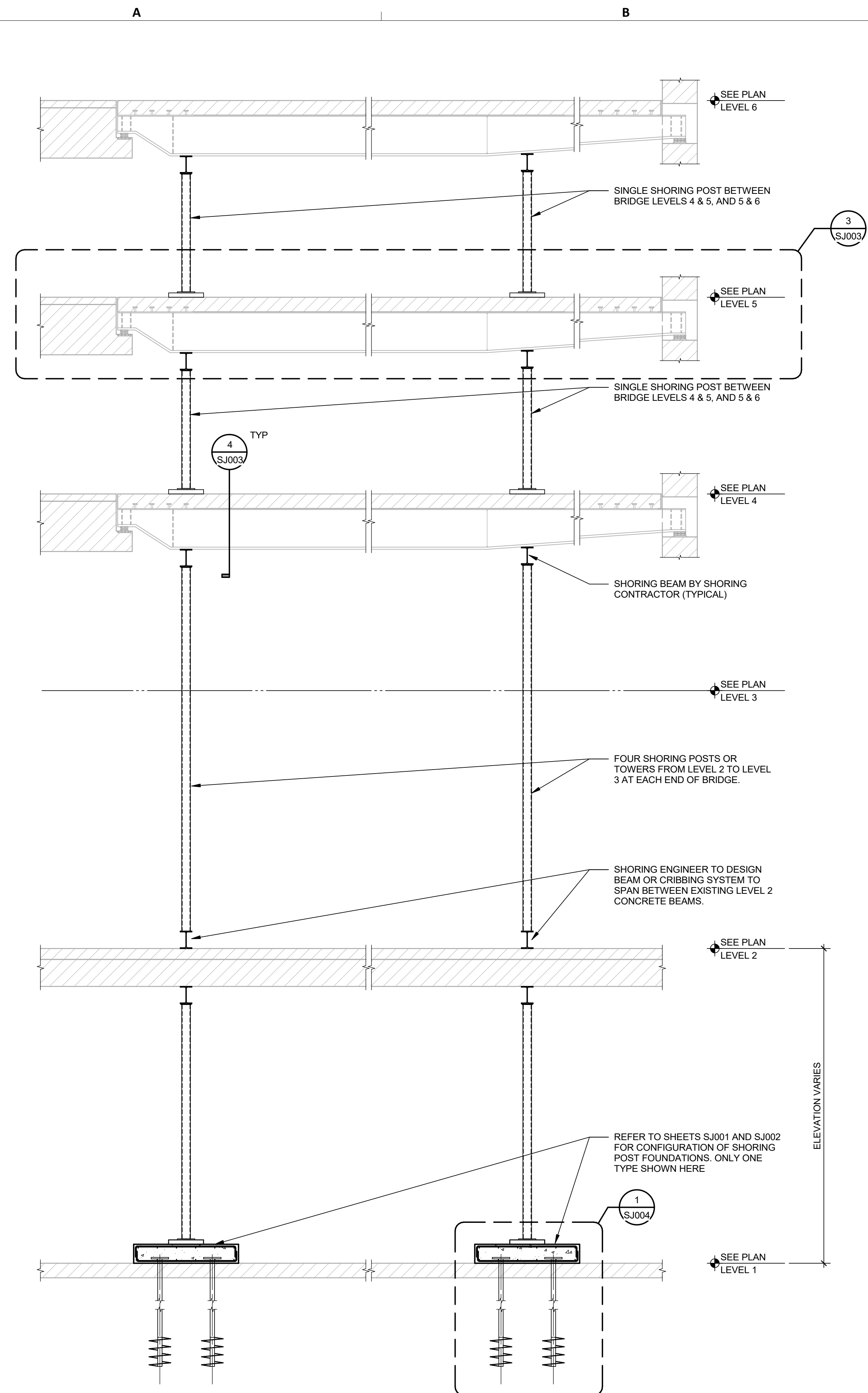
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1 SECTION AT SHORING POST & HELICAL PILE FOUNDATION
3/4" = 1'-0"



3 N-S SECTION AT SHORING POST (TYPICAL BRIDGE LEVEL)
3/8" = 1'-0"



2 SCHEMATIC ELEVATION OF SHORING SYSTEM
1/4" = 1'-0"

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OLD DOA No. : DOA DWG FILE:

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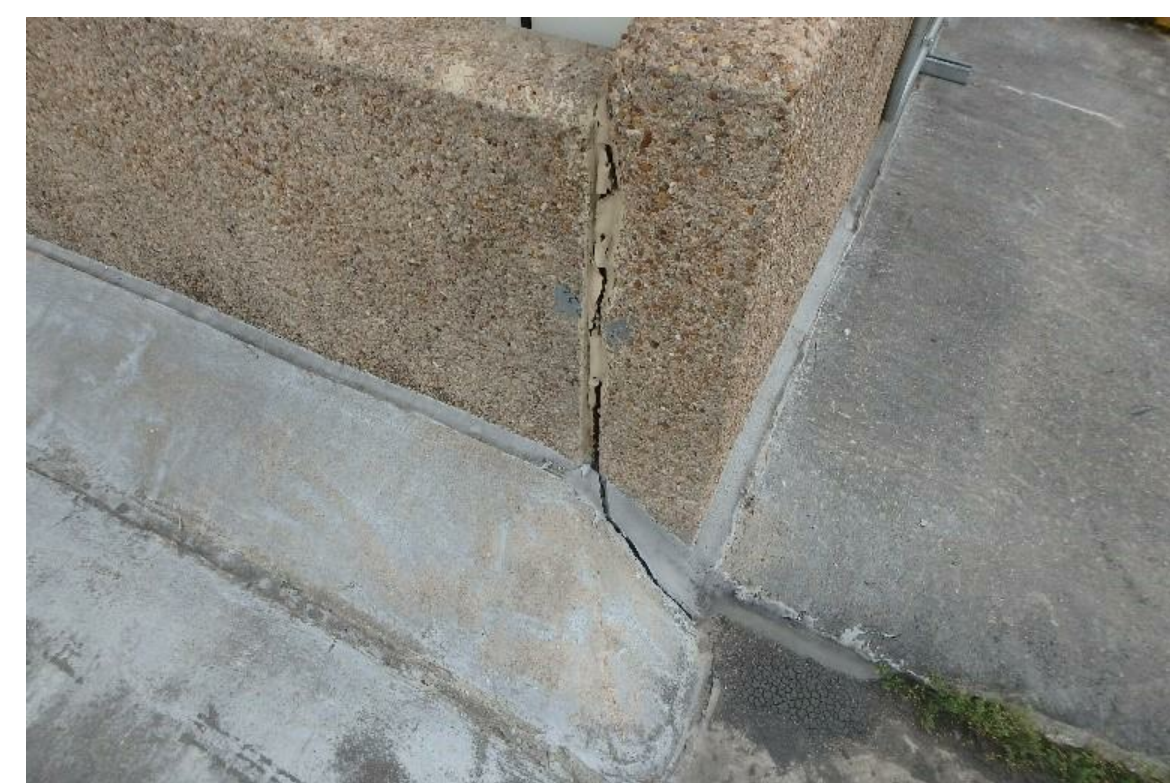
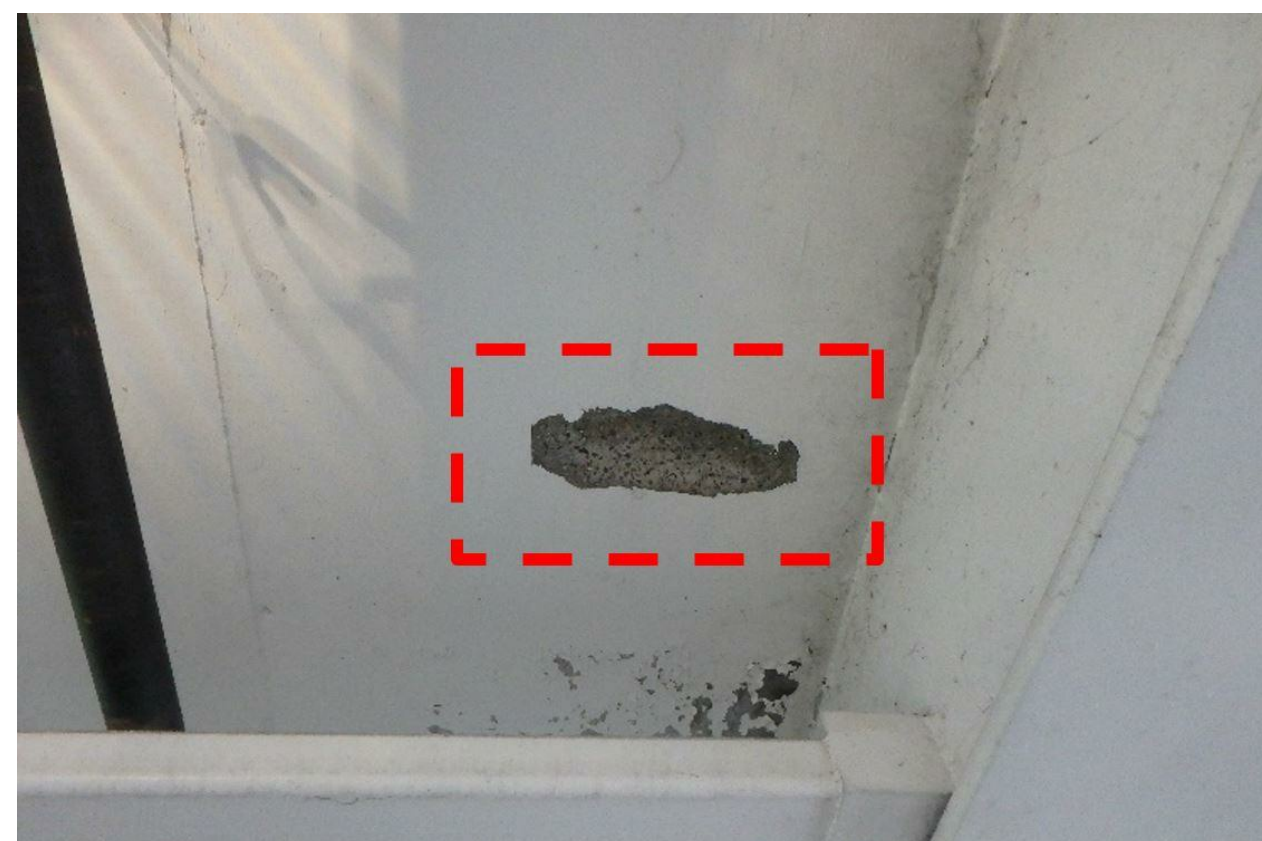


4 CORRODED STEEL PLATES IN SLIDE BEARING ASSEMBLY - LEVEL 6
NO SCALE WPM 09

3 CORRODED STEEL PLATES IN SLIDE BEARING ASSEMBLY - LEVEL 5
6" = 1'-0" WPM 15

2 SPALLED CONCRETE IN TOPPING SLAB - TYPICAL CONDITION
NO SCALE WPM 29

1 SPALLED CONCRETE AT UNDERSIDE OF BRIDGE - LEVEL 6
NO SCALE WPM 02

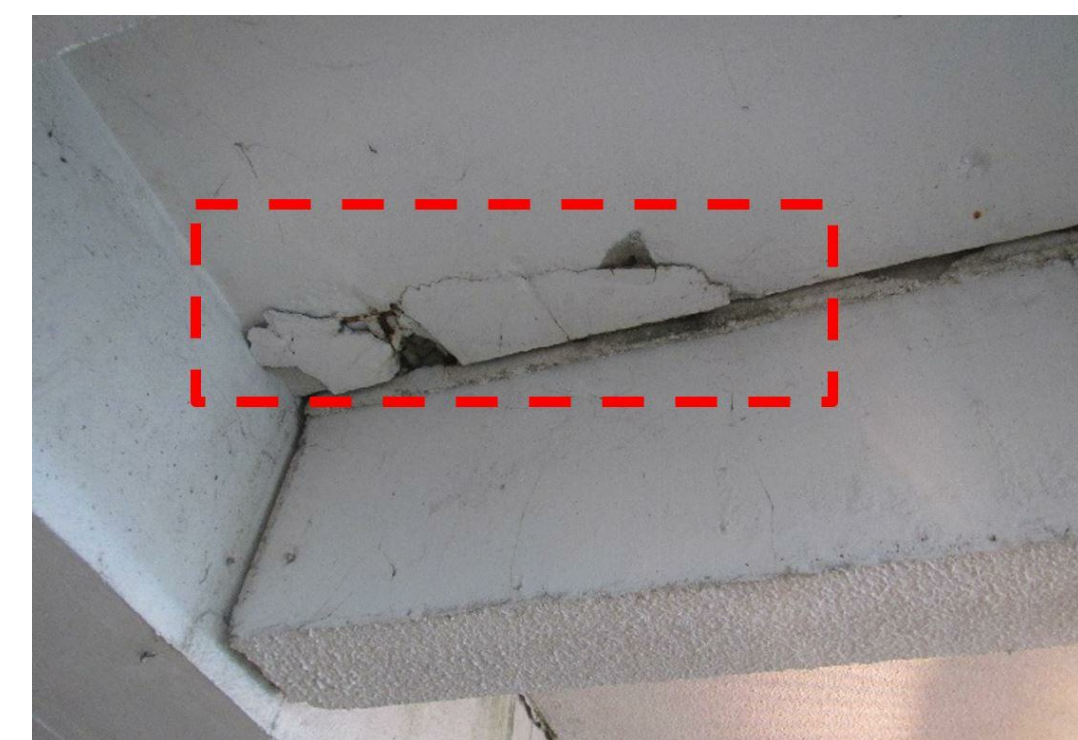
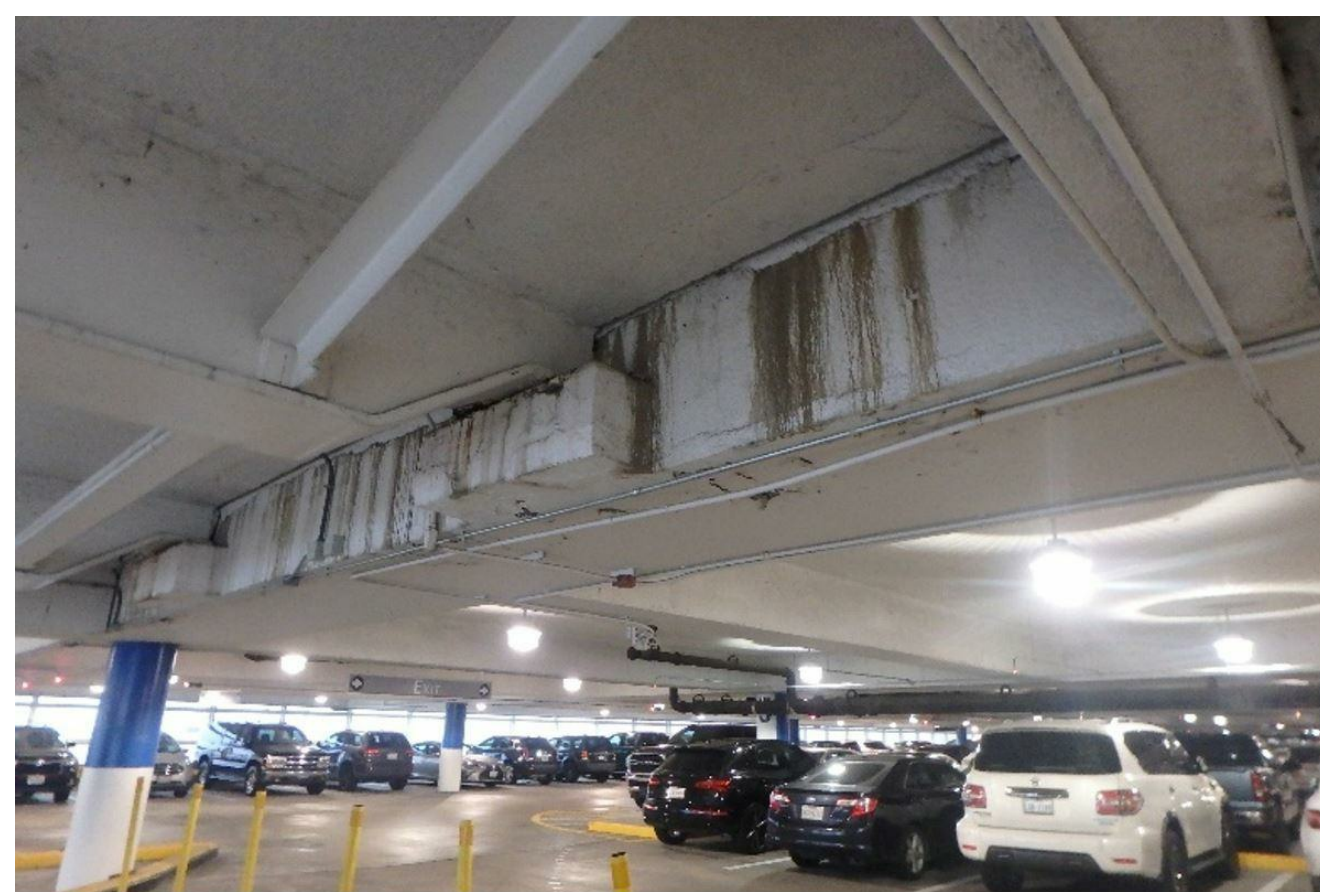


8 SPALLED CONCRETE AT UNDERSIDE OF DECK - TYPICAL CONDITION
NO SCALE WPM 24

7 CORROSION OF STEEL BOX GIRDER - TYPICAL CONDITION
NO SCALE WPM 23

6 DETERIORATED JOINT SEALANT AT PRECAST PANELS - TYPICAL CONDITION
NO SCALE WPM 36

5 CORRODED STEEL PLATES IN SLIDE BEARING ASSEMBLY - LEVEL 5
NO SCALE WPM 19



12 WATER INFILTRATION AT EXPANSION JOINT - TYPICAL CONDITION
NO SCALE WPM 35

11 EXPANSION JOINT FAILURE AND VERTICAL SEPARATION IN SLAB
NO SCALE WPM 34

10 EXPANSION JOINT DETERIORATION - TYPICAL CONDITION
NO SCALE WPM 33

9 SPALLED CONCRETE AT UNDERSIDE OF DECK - TYPICAL CONDITION
NO SCALE WPM 25

NOTE: PROVIDE CONCRETE WASH ON ONE SIDE OF EXPANSION JOINT TO PROVIDE SMOOTH TRANSITION AT EXPANSION JOINT. (TYPICAL)

NOTE: PROVIDE CONCRETE WASH ON ONE SIDE OF EXPANSION JOINT TO PROVIDE SMOOTH TRANSITION AT EXPANSION JOINT. (TYPICAL)



TERMINAL C AT IAH - 2800 N TERMINAL RD
HOUSTON, TX 77032

IAH TERMINAL C HELIX RAMP
BEARING AND MISC REPAIRS

C.I.P. No.

A.I.P. No.

C.O.H. No.

D.O.A No.



DESIGNER PROJECT No.: 19-21
PROJECT STATUS: CONSTRUCTION DOCUMENTS

REVISIONS

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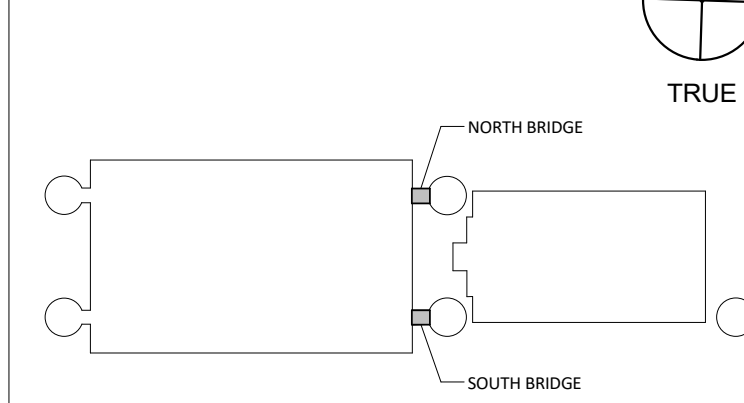
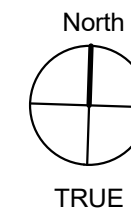
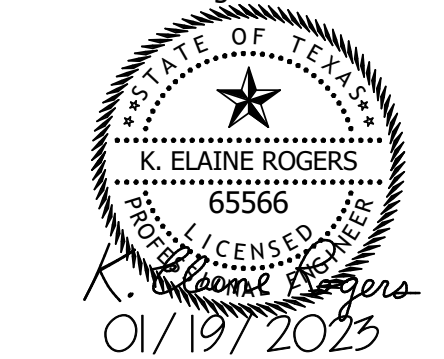
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HOUSTON AIRPORT SYSTEM

Review/ Approval Category

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ISSUE FOR BID

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Structural Engineers, LLC
TBPE Firm Registration No. 8755



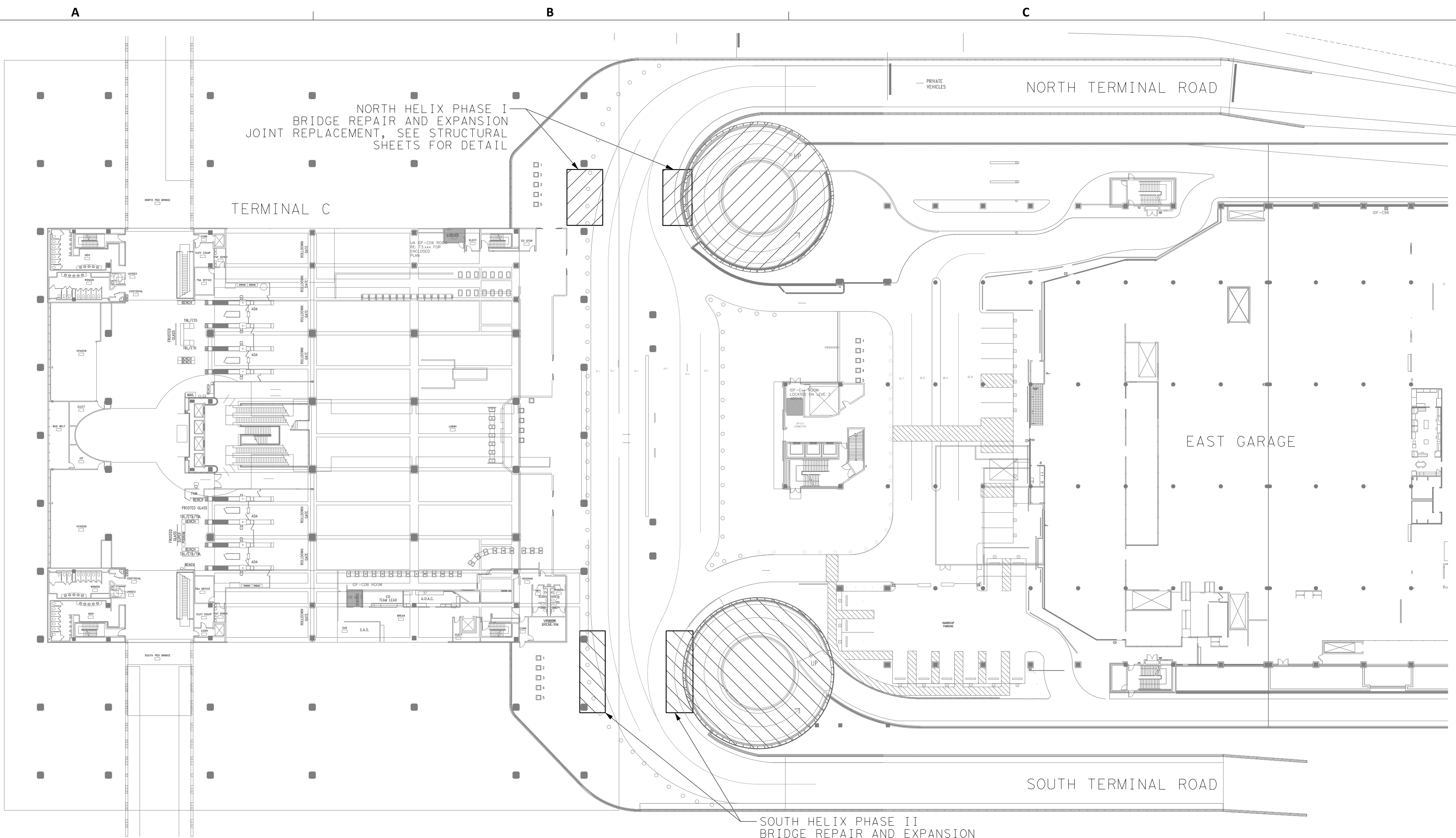
SHEET NAME: PHOTOS OF EXISTING CONDITIONS

SHEET No. SK001 SCALE: 6" = 1'-0"

SHEET SIZE: 22"x34" ANSI-D

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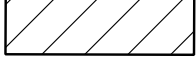
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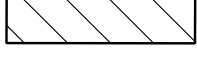


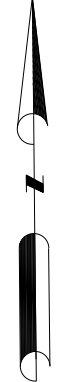
NORTH HELIX PHASE I
BRIDGE REPAIR AND EXPANSION
JOINT REPLACEMENT, SEE STRUCTURAL
SHEETS FOR DETAIL

SOUTH HELIX PHASE II
BRIDGE REPAIR AND EXPANSION
JOINT REPLACEMENT, SEE STRUCTURAL
SHEETS FOR DETAIL

LEGEND

 PHASE I

 PHASE II



PHASING NOTES:

1. THE CONTRACTOR SHALL PROVIDE SUFFICIENT MEN AND EQUIPMENT TO COMPLETE WORK IN THE TIME ALLOTTED FOR EACH PHASE. NO WORK SHALL COMMENCE UNTIL PROPER NOTIFICATION HAS BEEN GIVEN TO THE AIRPORT.
2. THE CONTRACTOR SHALL GIVE CONSTANT ATTENTION TO THE WORK TO FACILITATE THE PROGRESS THEREOF AND SHALL COOPERATE WITH THE RESIDENT ENGINEER AND AIRPORT PERSONNEL.
3. ANY SITUATION THAT, IN THE OPINION OF THE AIRPORT PERSONNEL, CONSTITUTES A HAZARD TO OPERATIONS OF THE AIRPORT WILL IMMEDIATELY CAUSE WORK AND ACTIVITY TO CEASE UNTIL THE SITUATION IS RECTIFIED. NO ADDITIONAL COMPENSATION WILL BE CONSIDERED IF THE CONTRACTOR NEEDS TO ADJUST OR CHANGE HIS WORK SCHEDULE TO ACCOMMODATE AIRPORT OPERATIONS.
4. PHASING IS SUBJECT TO CHANGE BASED ON AIRLINE/AIRPORT OPERATIONS AND OTHER CONSTRUCTION PROJECTS AT THE AIRPORT.
5. CONTRACTOR SHALL STAY WITHIN THE AREA OF LIMITS OF WORK.
6. CONTRACTOR MUST PROVIDE TEMPORARY CHAIN LINK FENCE WITH GREEN FABRIC TO PREVENT VEHICLES/ PEDESTRIANS FROM ENTERING CONSTRUCTION AREA AT EACH PHASE.
7. UP TO TWO CONTRACTOR VEHICLES WILL BE ALLOWED TO PARK WITHIN THE WORK AREAS. CONTRACTOR PERSONAL VEHICLE PARKING WILL NOT BE ALLOWED WITHIN THE CONSTRUCTION AREAS. PERSONAL VEHICLES SHALL BE PARKED AT CONTRACTOR STAGING AREA.
8. CONTRACTOR MAY NOT PARK OR STORE VEHICLES WITHIN 10 FEET OF THE SECURITY FENCE. ACCESS TO EXISTING GATES AND DRIVE AISLES MUST BE MAINTAINED AT ALL TIMES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DUST CONTROL AND TAKE APPROPRIATE MEASURES AS NECESSARY OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
10. THE CONTRACTOR SHALL CONTINUOUSLY CLEAN UP DURING EACH PHASE OF THE PROJECT AND SHALL PERFORM FINAL CLEANUP WORK PRIOR TO A FINAL INSPECTION. THE CONTRACTOR SHALL SLEEP ON A DAILY BASIS AS NECESSARY OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL ENSURE THAT ALL FOREIGN OBJECT DEBRIS (FOD) DEPOSITED BY AUTOMOBILE OR CONSTRUCTION EQUIPMENT OR BY WINDBLOWN DEBRIS OR MATERIALS ONTO THOSE ACTIVE AREAS IS IMMEDIATELY CLEANED UP. IT IS IMPERATIVE THAT NO DAMAGE BE DONE TO ANY AIRCRAFT DUE TO FOD. ANY DAMAGE TO AIRCRAFT ATTRIBUTABLE TO FOD FROM THE CONSTRUCTION AREAS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE

HOUSTON AIRPORTS
 TERMINAL C AT IAH - 16930 JFK BLVD
 HOUSTON, TX 77032

BRIDGE BEARING REPAIR

C.I.P. No. A.I.P. No.
 C.O.H. No. D.O.A No.

SP ENGINEERING, INC

4418 Bluebonnet Dr., Suite 406
 Stafford, Texas 77477
 832.867.2522
 TBPE Registration Number: F-11028

DESIGNER PROJECT No.: 19-21
PROJECT STATUS: CONSTRUCTION DOCUMENTS

REVISIONS

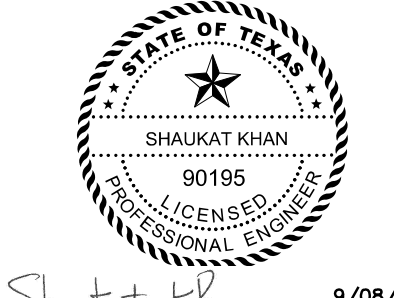
No.	DESCRIPTION	DATE	BY

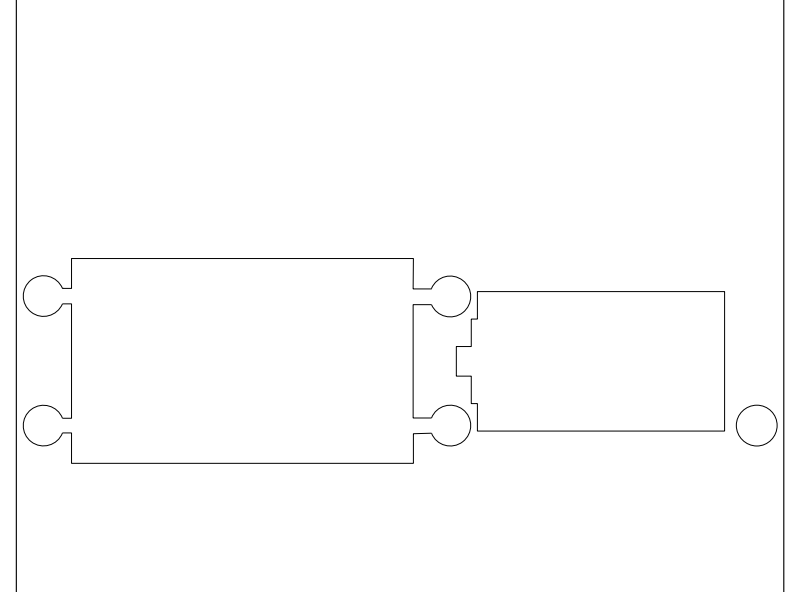
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DRAWN BY:
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ISSUE DATE:
APPROVED BY:
APPROVAL DATE:

DIRECTOR
 of
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Review/ Approval Category

AFR
 ISSUED FOR REVIEW


 Shaikat Khan 9/08/20



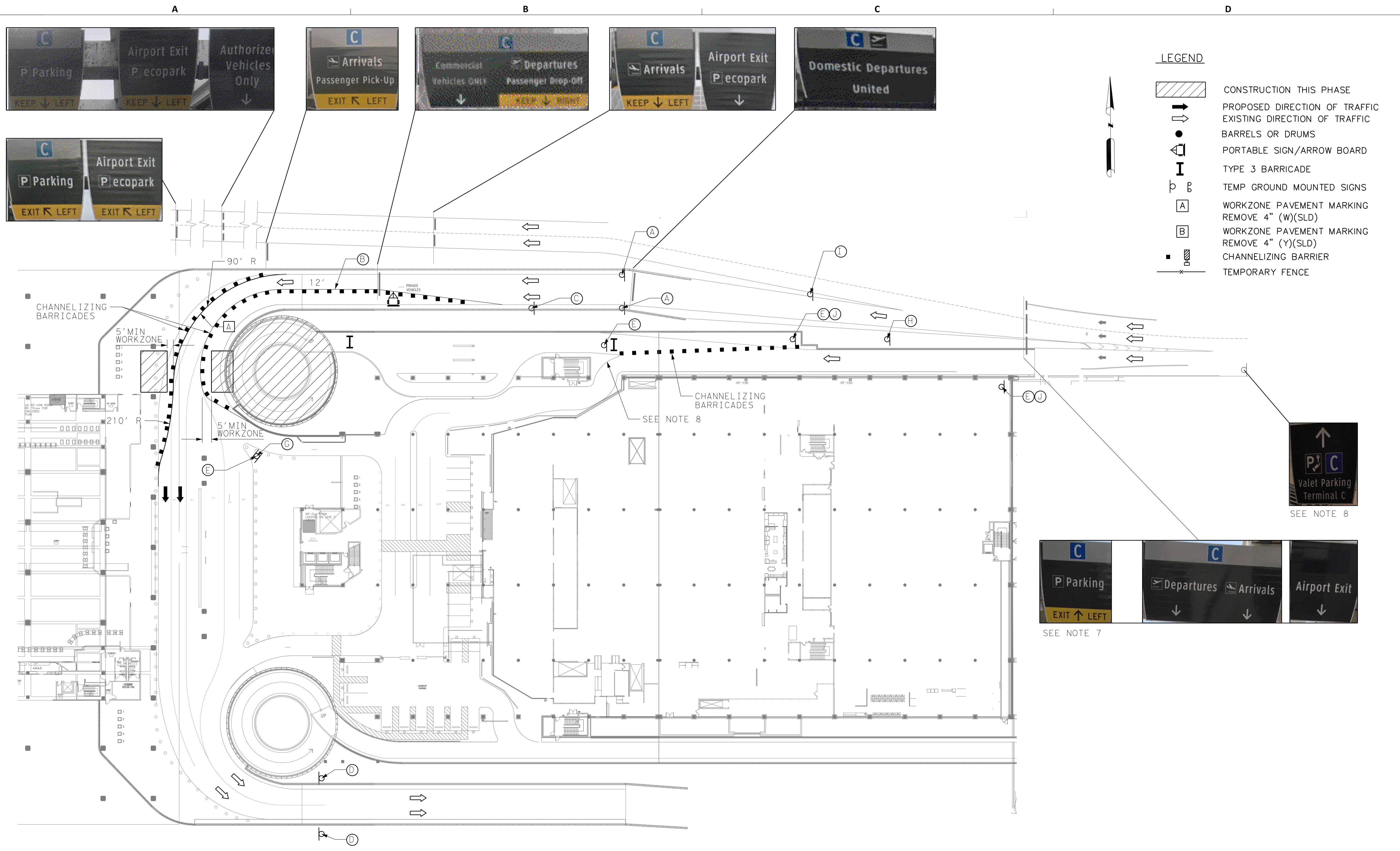
SHEET NAME: TRAFFIC CONTROL PLAN
 OVERALL LAYOUT
 PHASING PLAN (TCP-01)

SHEET No. XT001 **SCALE:** NTS

FILE PATH:

OLD DOA No. :
 DOA DWG FILE:
 PLOT DATE: 14 May 2020 5:09:35 PM

SHEET SIZE: 22" x 34" ANSI-D



LEGEND

- CONSTRUCTION THIS PHASE
- PROPOSED DIRECTION OF TRAFFIC
- EXISTING DIRECTION OF TRAFFIC
- BARRELS OR DRUMS
- PORTABLE SIGN/ARROW BOARD
- TYPE 3 BARRICADE
- TEMP GROUND MOUNTED SIGNS
- WORKZONE PAVEMENT MARKING REMOVE 4" (W)(SLD)
- WORKZONE PAVEMENT MARKING REMOVE 4" (Y)(SLD)
- CHANNELIZING BARRIER
- TEMPORARY FENCE

HOUSTON AIRPORTS

TERMINAL C AT IAH - 16930 JFK BLVD
HOUSTON, TX 77032

BRIDGE BEARING REPAIR

C.I.P. No.	A.I.P. No.
C.O.H. No.	D.O.A No.

SP ENGINEERING, INC

4418 Bluebonnet Dr., Suite 406
Stafford, Texas 77477
832.867.2522
TBPE Registration Number: F-11028

DESIGNER PROJECT No.: 19-21
PROJECT STATUS: CONSTRUCTION DOCUMENTS

REVISIONS

No.	DESCRIPTION	DATE	BY

DESIGNER: _____
DRAWN BY: _____
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ISSUE DATE: _____
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APPROVAL DATE: _____

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of
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<p>Review/ Approval Category</p> <p style="font-size: 2em; font-weight: bold;">AFR</p> <p style="font-size: x-small;">ISSUED FOR REVIEW</p>	<p style="font-size: x-small;">SHAIKAT KHAN LICENSED PROFESSIONAL ENGINEER 90195</p> <p style="font-size: x-small;">Shaikat Khan 9/08/20</p>
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- TRAFFIC CONTROL PLAN NOTES:**
1. REFER TO SHEET TRAFFIC CONTROL PLAN LAYOUT (TCP) SHEET TCP-01 TO TCP-10, SHEET TCP-11 TCP-12. FOR CONSTRUCTION TRAFFIC SIGNS AND TRAFFIC CONTROL NOTES AND DETAILS.
 2. REFER TO STRUCTURAL SHEETS FOR BRIDGE BEAMING CONCERNS STRUCTURE DETAILS.
 3. CONTRACTOR SHALL INSTALL 6' CHAIN LINK FENCE WITH GREEN FABRIC AROUND WORK AREA TO PREVENT PEDESTRIAN ACCESS. TO BE PAID UNDER TEMPORARY CONSTRUCTION ITEMS.
 4. NO WORK PERFORMED IN LEVEL 3
 5. CONTRACTOR TO MAINTAIN 11' LANES TRAVEL LANES
 6. CONTRACTOR SHALL WORK DURING HOURS OF 9 PM TO 6 AM
 7. CONTRACTOR RESPONSIBILITY TO COVER SIGN AND OVERHEAD SIGN FOR "PARKING GARAGE C" SIGN. SIGN COVERING SHALL BE COORDINATED WITH HAS WAYFINDING AND COVERING MATERIAL SHOULD BE APPROVED BY HAS WAYFINDING PRIOR TO INSTALLATION.

TERMINAL C DEPARTURE LEVEL 2
NORTH HELIX PHASE I
NORTH BRIDGE REPAIR

SHEET NAME: TRAFFIC CONTROL PLAN
TERMINAL C DEPARTURE LEVEL 2 (TCP-02)

SHEET No. XT101 SCALE: NTS

FILE PATH: _____
PLOT DATE: 14 May 2020 5:09:35 PM
OLD DOA No.: _____
DOA DWG FILE: _____

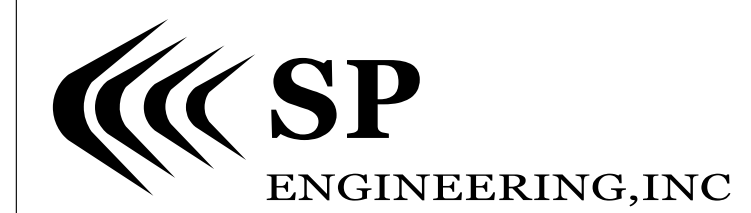
SHEET SIZE: 22" x 34" ANSI-D



TERMINAL C AT IAH - 16930 JFK BLVD
HOUSTON, TX 77032

BRIDGE BEARING REPAIR

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C.O.H. No.	D.O.A No.



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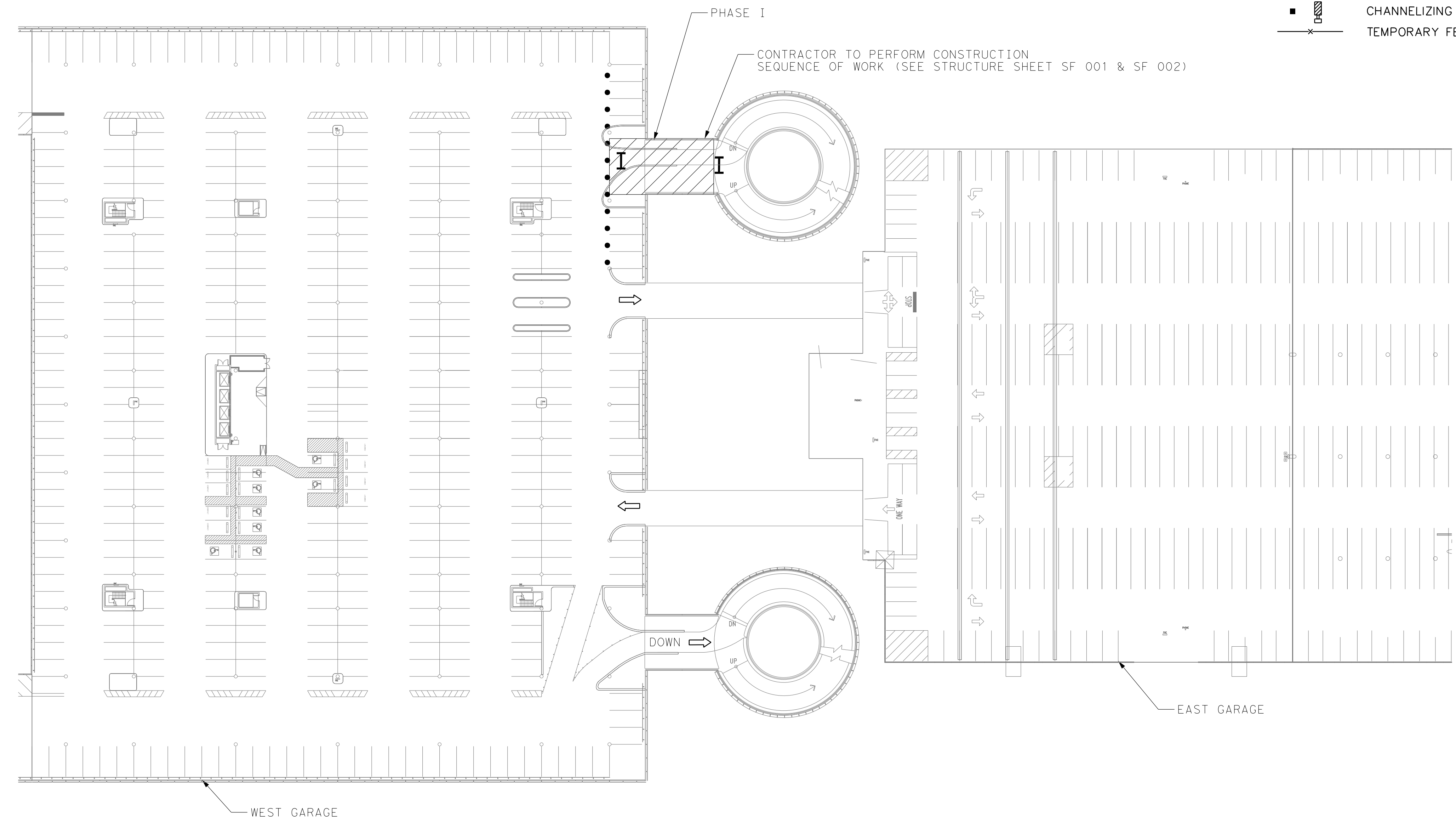
Review/ Approval Category	
AFR	
ISSUED FOR REVIEW	Shaikat Khan 9/08/20

SHEET NAME: TRAFFIC CONTROL PLAN
PARKING GARAGE LEVEL 4 (TCP-03)

SHEET No. XT102 SCALE: NTS

LEGEND

- CONSTRUCTION THIS PHASE
- PROPOSED DIRECTION OF TRAFFIC
- EXISTING DIRECTION OF TRAFFIC
- BARRELS OR DRUMS
- PORTABLE SIGN/ARROW BOARD
- TYPE 3 BARRICADE
- TEMP GROUND MOUNTED SIGNS
- WORKZONE PAVEMENT MARKING REMOVE 4" (W)(SLD)
- WORKZONE PAVEMENT MARKING REMOVE 4" (Y)(SLD)
- CHANNELIZING BARRIER
- TEMPORARY FENCE



PARKING GARAGE LEVEL 4 PHASE I NORTH BRIDGE REPAIR

TRAFFIC CONTROL PLAN NOTES:

- REFER TO SHEET TRAFFIC CONTROL PLAN LAYOUT (TCP) SHEET TCP-01 TO TCP-10, SHEET TCP-11 & TCP-12. FOR CONSTRUCTION TRAFFIC SIGNS AND TRAFFIC CONTROL NOTES AND DETAILS.
- REFER TO STRUCTURAL SHEETS FOR BRIDGE BEAMING CONCERNS STRUCTURE DETAILS.
- NO WORK PERFORMED IN LEVEL 3.
- CONTRACTOR TO MAINTAIN 11' LANES TRAVEL LANES
- CONTRACTOR SHALL WORK DURING HOURS OF 9 PM TO 6 AM
- CONTRACTOR RESPONSIBILITY TO COORDINATE WITH PARKING MANAGEMENT TO INSTALL ADDITIONAL SIGNAGE ON WEST ENTRY AREA AND LEVEL 4 FOR VALET PARKING
- CONTRACTOR RESPONSIBLE TO PROVIDE WAYFINDING WITHIN GARAGE TO ACCESS LEVEL 5 & 6

FILE PATH:

OLD DOA No. :
DOA DWG FILE:
PLOT DATE: 14 May 2020 5:09:35 PM

SHEET SIZE: 22" x 34" ANSI-D

XT104

REVISIONS

No.	DESCRIPTION	DATE	BY
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of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category

AFR

ISSUED FOR REVIEW



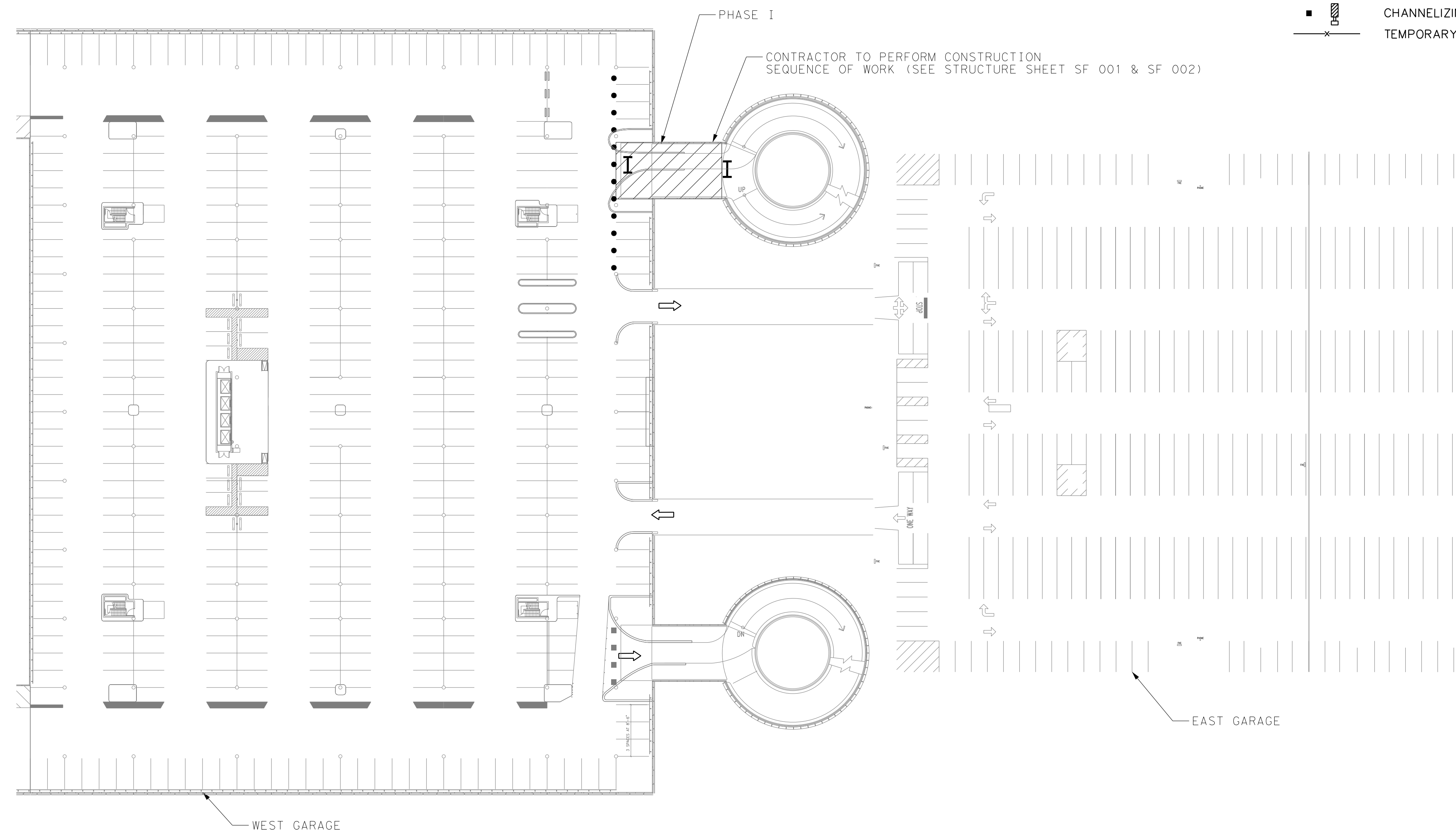
Shaikat Khan 9/08/20

SHEET NAME: TRAFFIC CONTROL PLAN PARKING GARAGE LEVEL 5 (TCP-04)	
SHEET No. XT103	SCALE: NTS

SHEET SIZE: 22"x34" ANSI-D

LEGEND

- CONSTRUCTION THIS PHASE
- PROPOSED DIRECTION OF TRAFFIC
- EXISTING DIRECTION OF TRAFFIC
- BARRELS OR DRUMS
- PORTABLE SIGN/ARROW BOARD
- TYPE 3 BARRICADE
- TEMP GROUND MOUNTED SIGNS
- WORKZONE PAVEMENT MARKING REMOVE 4" (W)(SLD)
- WORKZONE PAVEMENT MARKING REMOVE 4" (Y)(SLD)
- CHANNELIZING BARRIER
- TEMPORARY FENCE



**PARKING GARAGE LEVEL 5
PHASE IA AND IB**

NORTH BRIDGE REPAIR

TRAFFIC CONTROL PLAN NOTES:

- REFER TO SHEET TRAFFIC CONTROL PLAN LAYOUT (TCP) SHEET TCP-01 TO TCP-10, SHEET TCP-11 & TCP-12. FOR CONSTRUCTION TRAFFIC SIGNS AND TRAFFIC CONTROL NOTES AND DETAILS.
- REFER TO STRUCTURAL SHEETS FOR BRIDGE BEAMING CONCERNS STRUCTURE DETAILS.
- CONTRACTOR SHALL INSTALL 6' CHAIN LINK FENCE WITH GREEN FABRIC AROUND WORK AREA TO PREVENT PEDESTRIAN ACCESS. TO BE PAID UNDER TEMPORARY CONSTRUCTION ITEMS.
- NO WORK PERFORMED IN LEVEL 3.
- CONTRACTOR TO MAINTAIN 11' LANES TRAVEL LANES
- CONTRACTOR SHALL WORK DURING HOURS OF 9 PM TO 6 AM

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REVISIONS

No.	DESCRIPTION	DATE	BY

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DRAWN BY:
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ISSUE DATE:
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APPROVAL DATE:

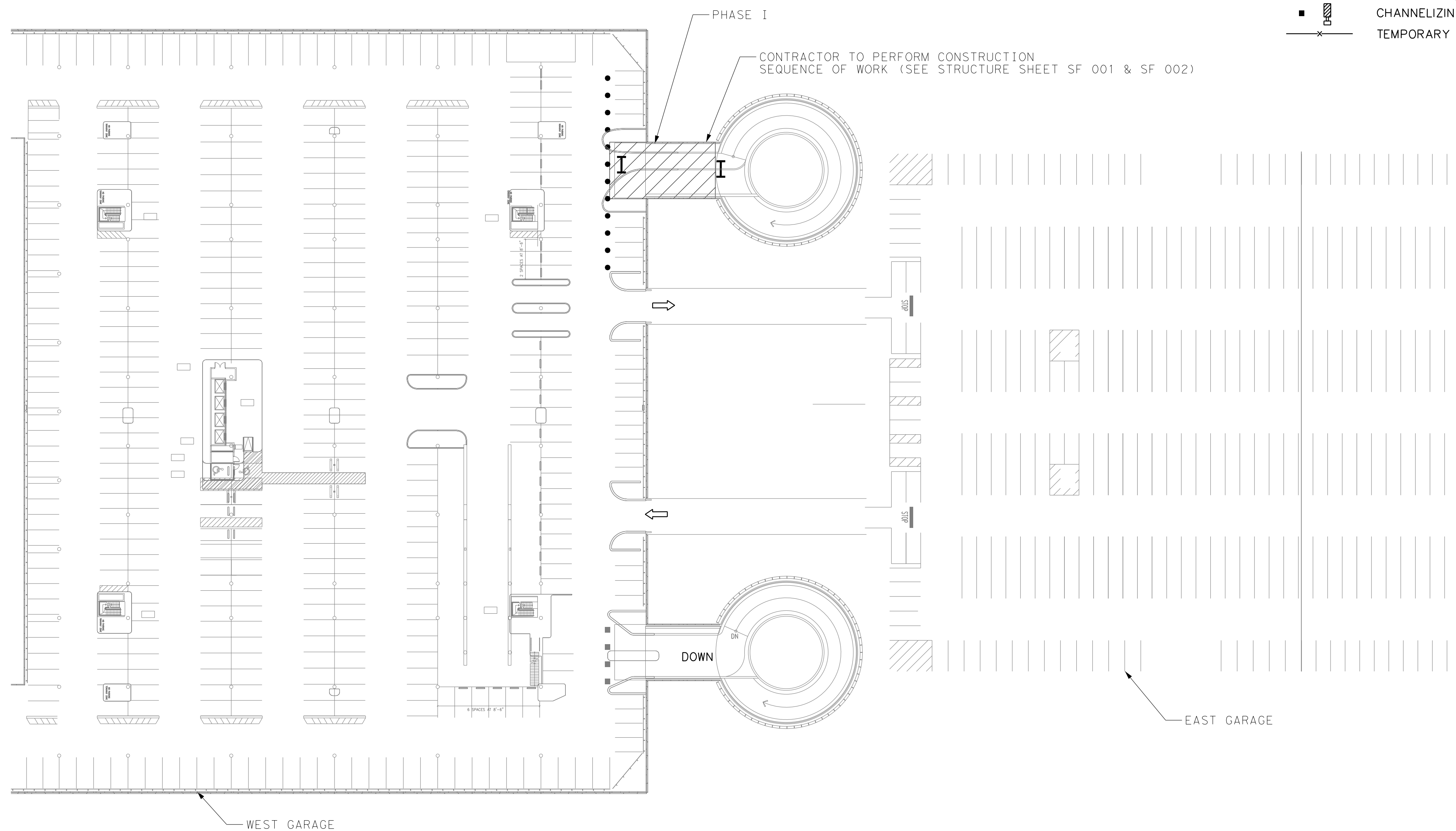
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AFR	
ISSUED FOR REVIEW	Shaikat Khan

SHEET NAME: TRAFFIC CONTROL PLAN PARKING GARAGE LEVEL 6 (TCP-05)	
SHEET No. XT104	SCALE: NTS

LEGEND

- CONSTRUCTION THIS PHASE
- PROPOSED DIRECTION OF TRAFFIC
- EXISTING DIRECTION OF TRAFFIC
- BARRELS OR DRUMS
- PORTABLE SIGN/ARROW BOARD
- TYPE 3 BARRICADE
- TEMP GROUND MOUNTED SIGNS
- WORKZONE PAVEMENT MARKING REMOVE 4" (W)(SLD)
- WORKZONE PAVEMENT MARKING REMOVE 4" (Y)(SLD)
- CHANNELIZING BARRIER
- TEMPORARY FENCE



**PARKING GARAGE LEVEL 6
PHASE I**

NORTH BRIDGE REPAIR

TRAFFIC CONTROL PLAN NOTES:

- REFER TO SHEET TRAFFIC CONTROL PLAN LAYOUT (TCP) SHEET TCP-01 TO TCP-10, SHEET TCP-11 & TCP-12. FOR CONSTRUCTION TRAFFIC SIGNS AND TRAFFIC CONTROL NOTES AND DETAILS.
- REFER TO STRUCTURAL SHEETS FOR BRIDGE BEAMING CONCERNS STRUCTURE DETAILS.
- CONTRACTOR SHALL INSTALL 6' CHAIN LINK FENCE WITH GREEN FABRIC AROUND WORK AREA TO PREVENT PEDESTRIAN ACCESS. TO BE PAID UNDER TEMPORARY CONSTRUCTION ITEMS.
- NO WORK PERFORMED IN LEVEL 3.
- CONTRACTOR TO MAINTAIN 11' LANES TRAVEL LANES
- CONTRACTOR SHALL WORK DURING HOURS OF 9 PM TO 6 AM

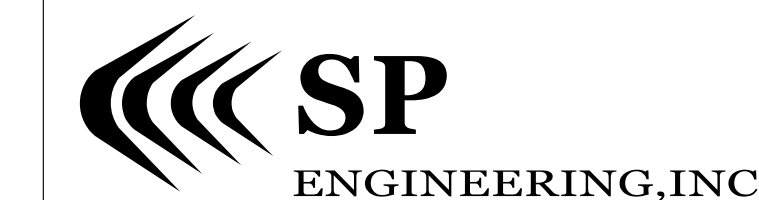
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PLOT DATE: 14 May 2020 5:09:35 PM

SHEET SIZE: 22"x34" ANSI-D

BRIDGE BEARING REPAIR

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C.O.H. No.	D.O.A No.



4418 Bluebonnet Dr., Suite 406
Stafford, Texas 77477
832.867.2522
TBPE Registration Number: F-11028

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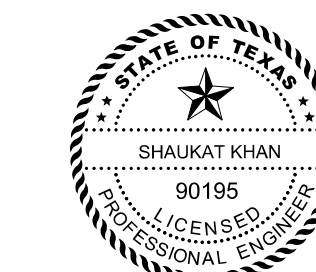
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of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category

AFR

ISSUED FOR REVIEW

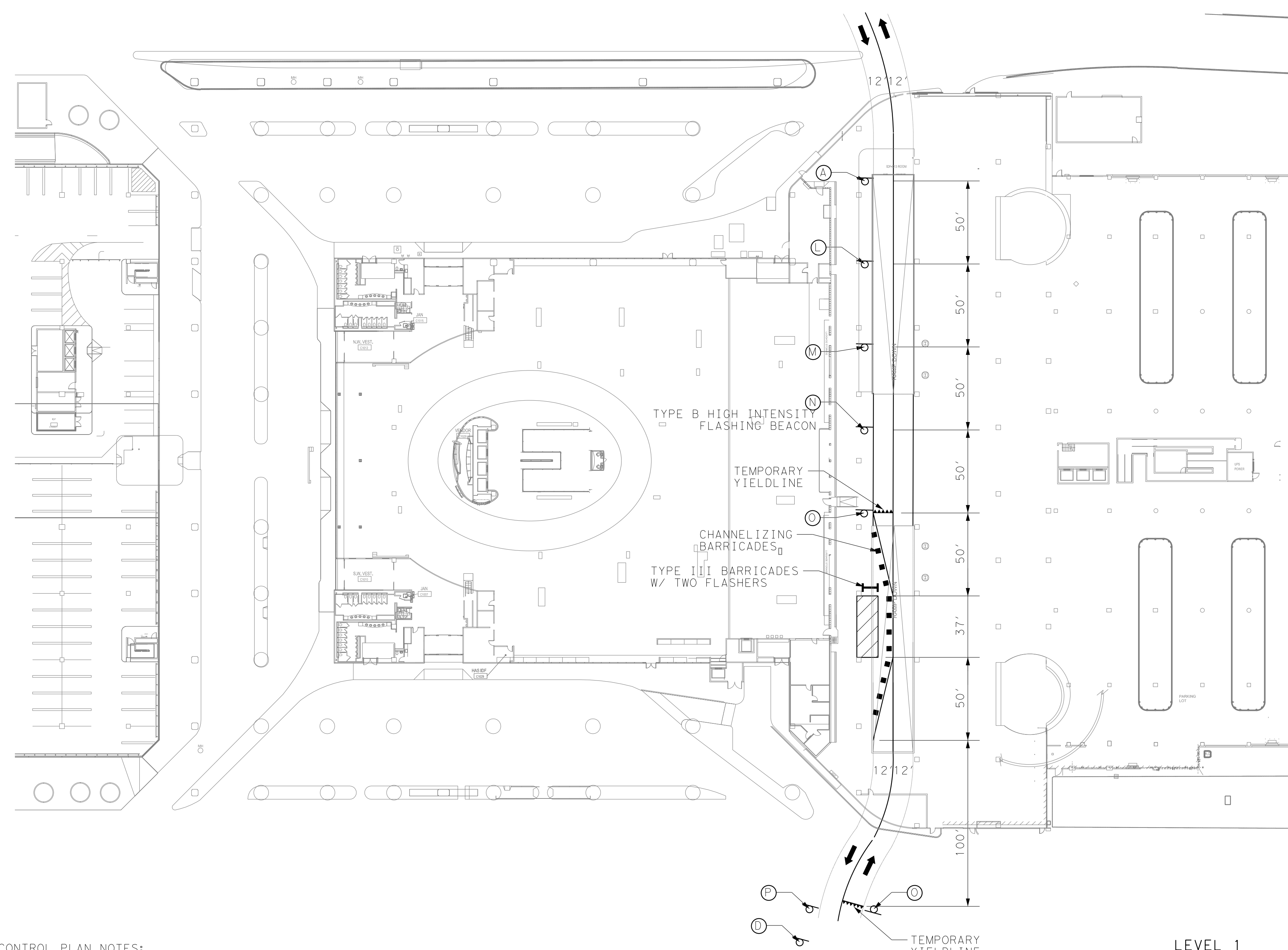


Shaikat Khan 9/08/20

SHEET NAME: TRAFFIC CONTROL PLAN
LEVEL 1
UNITED BAGGAGE HANDLING AREA (TCP-06)
SHEET No. XT201 SCALE: NTS

LEGEND

- CONSTRUCTION THIS PHASE
- PROPOSED DIRECTION OF TRAFFIC
- EXISTING DIRECTION OF TRAFFIC
- BARRELS OR DRUMS
- PORTABLE SIGN/ARROW BOARD
- TYPE 3 BARRICADE
- TEMP GROUND MOUNTED SIGNS
- WORKZONE PAVEMENT MARKING REMOVE 4" (W)(SLD)
- WORKZONE PAVEMENT MARKING REMOVE 4" (Y)(SLD)
- CHANNELIZING BARRIER
- TEMPORARY FENCE



LEVEL 1

TRAFFIC CONTROL PLAN NOTES:

1. REFER TO SHEET TRAFFIC CONTROL PLAN LAYOUT (TCP) SHEET TCP-01 TO TCP-10, SHEET TCP-11 & TCP-12. FOR CONSTRUCTION TRAFFIC SIGNS AND TRAFFIC CONTROL NOTES AND DETAILS.
2. REFER TO STRUCTURAL SHEETS FOR BRIDGE BEAMING CONCERNS STRUCTURE DETAILS.
3. CONTRACTOR SHALL INSTALL 6' CHAIN LINK FENCE WITH GREEN FABRIC AROUND WORK AREA TO PREVENT PEDESTRIAN ACCESS. TO BE PAID UNDER TEMPORARY CONSTRUCTION ITEMS.
4. NO WORK PERFORMED IN LEVEL 3.
5. CONTRACTOR TO MAINTAIN 11' LANES TRAVEL LANES
6. CONTRACTOR SHALL WORK DURING HOURS OF 9 PM TO 6 AM

FILE PATH:

OLD DOA No. :
DOA DWG FILE:
PLOT DATE: 14 May 2020 5:09:35 PM

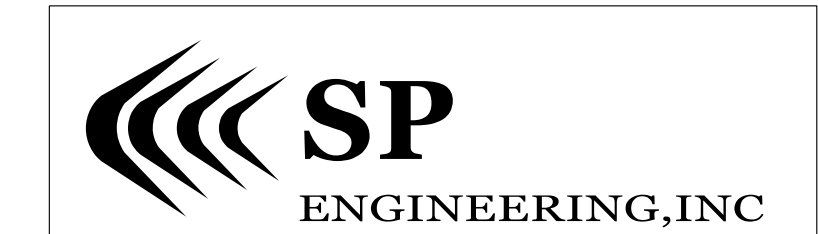
SHEET SIZE: 22"x34" ANSI-D



TERMINAL C AT IAH - 16930 JFK BLVD
HOUSTON, TX 77032

BRIDGE BEARING REPAIR

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C.O.H. No.	D.O.A No.



4418 Bluebonnet Dr., Suite 406
Stafford, Texas 77477
832.867.2522
TBPE Registration Number: F-11028

DESIGNER PROJECT No.: 19-21
PROJECT STATUS: CONSTRUCTION DOCUMENTS

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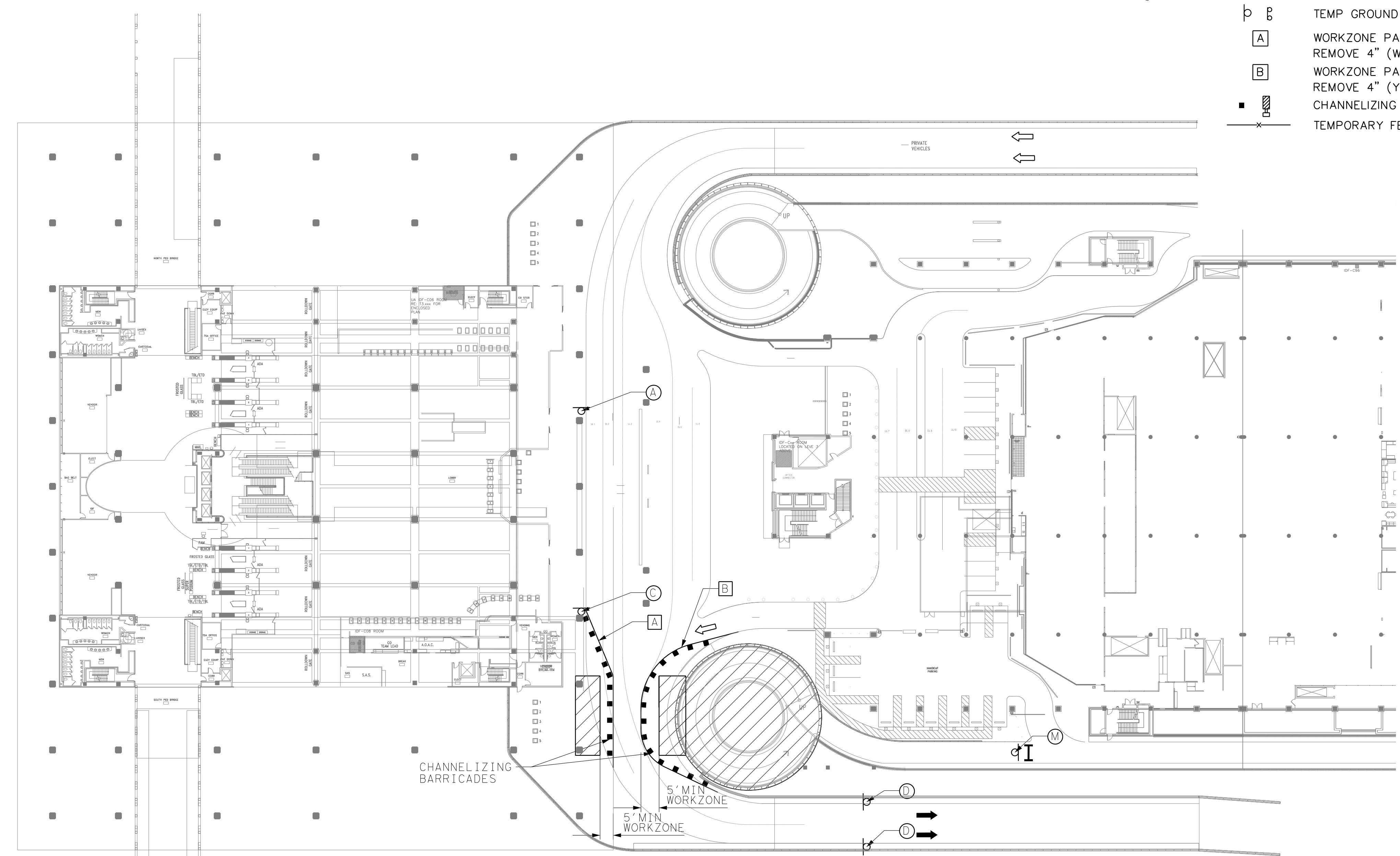
Review/ Approval Category	
AFR	
ISSUED FOR REVIEW	Shaikat Khan 9/08/20

SHEET NAME: TRAFFIC CONTROL PLAN
 TERMINAL C DEPARTURE LEVEL 2
 (TCP-07)

SHEET No. XT202 SCALE: NTS

LEGEND

- CONSTRUCTION THIS PHASE
- PROPOSED DIRECTION OF TRAFFIC
- EXISTING DIRECTION OF TRAFFIC
- BARRELS OR DRUMS
- PORTABLE SIGN/ARROW BOARD
- TYPE 3 BARRICADE
- TEMP GROUND MOUNTED SIGNS
- WORKZONE PAVEMENT MARKING REMOVE 4" (W)(SLD)
- WORKZONE PAVEMENT MARKING REMOVE 4" (Y)(SLD)
- CHANNELIZING BARRIER
- TEMPORARY FENCE



TERMINAL C DEPARTURE LEVEL 2
 SOUTH HELIX PHASE II
 SOUTH BRIDGE REPAIR

TRAFFIC CONTROL PLAN NOTES:

- REFER TO SHEET TRAFFIC CONTROL PLAN LAYOUT (TCP) SHEET TCP-01 TO TCP-10, SHEET TCP-11 & TCP-12. FOR CONSTRUCTION TRAFFIC SIGNS AND TRAFFIC CONTROL NOTES AND DETAILS.
- REFER TO STRUCTURAL SHEETS FOR BRIDGE BEAMING CONCERNS STRUCTURE DETAILS.
- CONTRACTOR SHALL INSTALL 6' CHAIN LINK FENCE WITH GREEN FABRIC AROUND WORK AREA TO PREVENT PEDESTRIAN ACCESS. TO BE PAID UNDER TEMPORARY CONSTRUCTION ITEMS.
- NO WORK PERFORMED IN LEVEL 3.
- CONTRACTOR TO MAINTAIN 11' LANES TRAVEL LANES
- CONTRACTOR SHALL WORK DURING HOURS OF 9 PM TO 6 AM

FILE PATH:

OLD DDA No. :
DOA DWG FILE:
PLOT DATE: 14 May 2020 5:09:35 PM

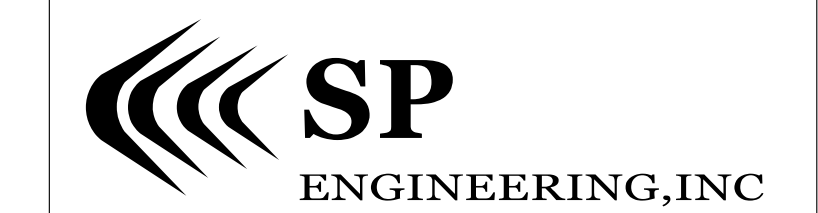
SHEET SIZE: 22" x 34" ANSI-D



TERMINAL C AT IAH - 16930 JFK BLVD
HOUSTON, TX 77032

BRIDGE BEARING REPAIR

C.I.P. No.	A.I.P. No.
C.O.H. No.	D.O.A No.



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Stafford, Texas 77477
832.867.2522
TBPE Registration Number: F-11028

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PROJECT STATUS: CONSTRUCTION DOCUMENTS

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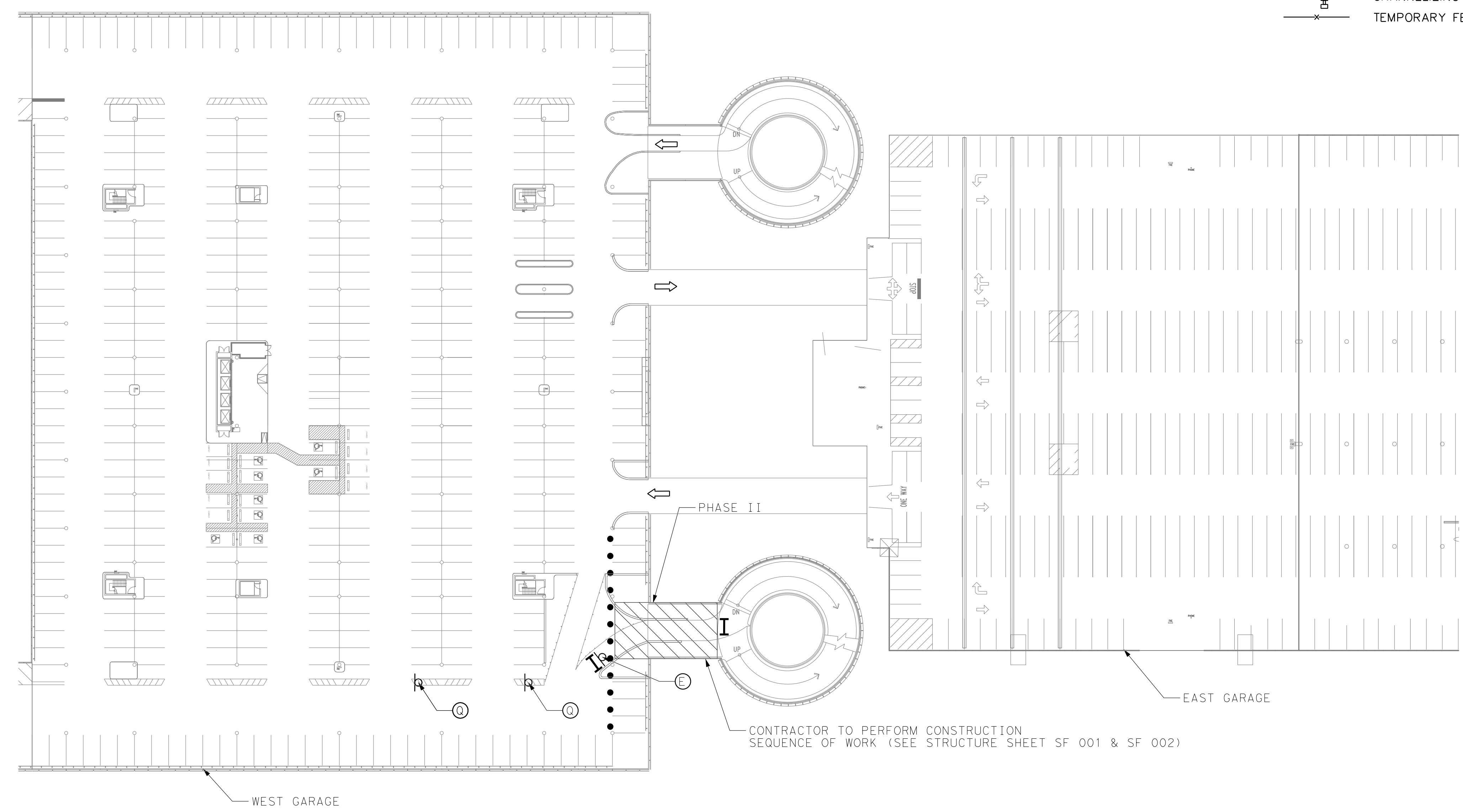
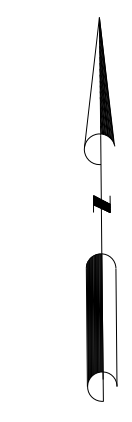
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Review/ Approval Category	
AFR	
ISSUED FOR REVIEW	Shaikat Khan 9/08/20

SHEET NAME: TRAFFIC CONTROL PLAN PARKING GARAGE LEVEL 4 (TCP-08)	
SHEET No. XT203	SCALE: NTS

LEGEND

- CONSTRUCTION THIS PHASE
- PROPOSED DIRECTION OF TRAFFIC
- EXISTING DIRECTION OF TRAFFIC
- BARRELS OR DRUMS
- PORTABLE SIGN/ARROW BOARD
- TYPE 3 BARRICADE
- TEMP GROUND MOUNTED SIGNS
- WORKZONE PAVEMENT MARKING REMOVE 4" (W)(SLD)
- WORKZONE PAVEMENT MARKING REMOVE 4" (Y)(SLD)
- CHANNELIZING BARRIER
- TEMPORARY FENCE



GARAGE PARKING LEVEL 4
SOUTH HELIX PHASE II
SOUTH BRIDGE REPAIR

TRAFFIC CONTROL PLAN NOTES:

- REFER TO SHEET TRAFFIC CONTROL PLAN LAYOUT (TCP) SHEET TCP-01 TO TCP-10, SHEET TCP-11 & TCP-12. FOR CONSTRUCTION TRAFFIC SIGNS AND TRAFFIC CONTROL NOTES AND DETAILS.
- REFER TO STRUCTURAL SHEETS FOR BRIDGE BEAMING CONCERNS STRUCTURE DETAILS.
- CONTRACTOR SHALL INSTALL 6' CHAIN LINK FENCE WITH GREEN FABRIC AROUND WORK AREA TO PREVENT PEDESTRIAN ACCESS. TO BE PAID UNDER TEMPORARY CONSTRUCTION ITEMS.
- NO WORK PERFORMED IN LEVEL 3.
- CONTRACTOR TO MAINTAIN 11' LANES TRAVEL LANES
- CONTRACTOR SHALL WORK DURING HOURS OF 9 PM TO 6 AM

NOTE:
CONTRACTOR RESPONSIBILITY TO COORDINATE WITH PARKING MANAGEMENT
TO INSTALL ADDITIONAL SIGNAGE ON LEVEL 4 FOR VALET PARKING

FILE PATH:

OLD DOA No. :
DOA DWG FILE:
PLOT DATE: 14 May 2020 5:09:35 PM

SHEET SIZE: 22"x34" ANSI-D

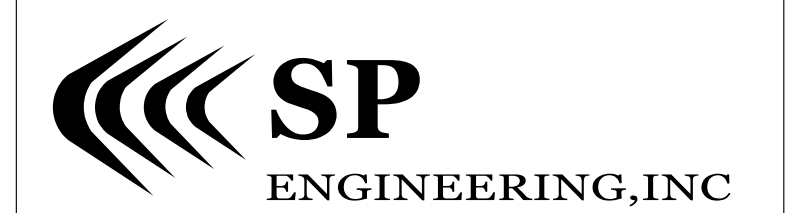
XT204



TERMINAL C AT IAH - 16930 JFK BLVD
HOUSTON, TX 77032

BRIDGE BEARING REPAIR

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C.O.H. No.	D.O.A No.



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DESIGNER PROJECT No.: 19-21
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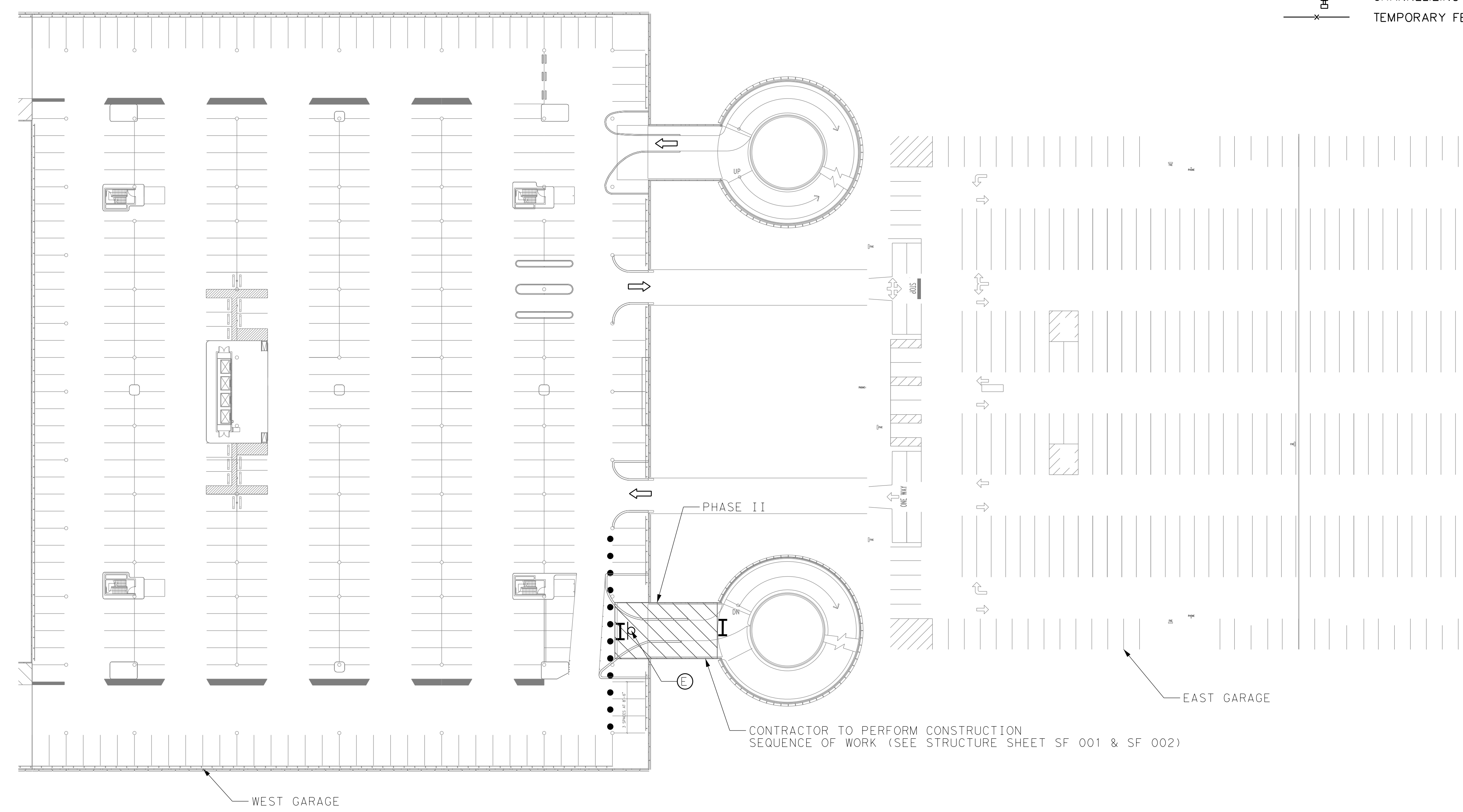
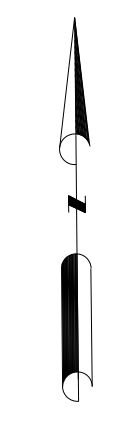
Review/ Approval Category	
AFR	
ISSUED FOR REVIEW	Shaikat Khan 9/08/20

SHEET NAME: TRAFFIC CONTROL PLAN
PARKING GARAGE LEVEL 5 (TCP-09)

SHEET No. XT 04 SCALE: NTS

SHEET SIZE: 22" x 34" ANSI-D

- LEGEND**
- CONSTRUCTION THIS PHASE
 - PROPOSED DIRECTION OF TRAFFIC
 - EXISTING DIRECTION OF TRAFFIC
 - BARRELS OR DRUMS
 - PORTABLE SIGN/ARROW BOARD
 - TYPE 3 BARRICADE
 - TEMP GROUND MOUNTED SIGNS
 - WORKZONE PAVEMENT MARKING REMOVE 4" (W)(SLD)
 - WORKZONE PAVEMENT MARKING REMOVE 4" (Y)(SLD)
 - CHANNELIZING BARRIER
 - TEMPORARY FENCE



GARAGE PARKING LEVEL 5
SOUTH HELIX PHASE II
SOUTH BRIDGE REPAIR

TRAFFIC CONTROL PLAN NOTES:

- REFER TO SHEET TRAFFIC CONTROL PLAN LAYOUT (TCP) SHEET TCP-01 TO TCP-10, SHEET TCP-11 & TCP-12. FOR CONSTRUCTION TRAFFIC SIGNS AND TRAFFIC CONTROL NOTES AND DETAILS.
- REFER TO STRUCTURAL SHEETS FOR BRIDGE BEAMING CONCERNS STRUCTURE DETAILS.
- CONTRACTOR SHALL INSTALL 6' CHAIN LINK FENCE WITH GREEN FABRIC AROUND WORK AREA TO PREVENT PEDESTRIAN ACCESS. TO BE PAID UNDER TEMPORARY CONSTRUCTION ITEMS.
- NO WORK PERFORMED IN LEVEL 3.
- CONTRACTOR TO MAINTAIN 11' LANES TRAVEL LANES
- CONTRACTOR SHALL WORK DURING HOURS OF 9 PM TO 6 AM

NOTE:
CONTRACTOR RESPONSIBILITY TO COORDINATE WITH PARKING MANAGEMENT
TO INSTALL ADDITIONAL SIGNAGE ON LEVEL 4 FOR VALET PARKING

FILE PATH:

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DOA DWG FILE:
PLOT DATE: 14 May 2020 5:09:35 PM

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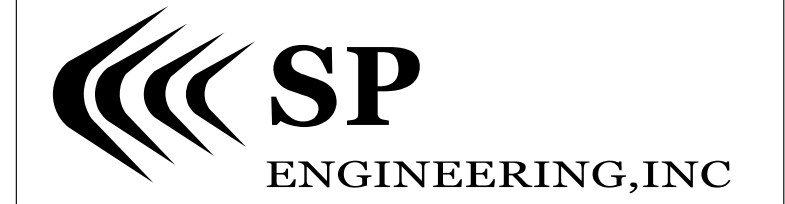
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C.I.P. No.	A.I.P. No.
C.O.H. No.	D.O.A No.



4418 Bluebonnet Dr., Suite 406
Stafford, Texas 77477
832.867.2522
TBPE Registration Number: F-11028

DESIGNER PROJECT No.: 19-21
PROJECT STATUS: CONSTRUCTION DOCUMENTS

REVISIONS			
No.	DESCRIPTION	DATE	BY

DESIGNER:
DRAWN BY:
CHECKED BY:
ISSUE DATE:
APPROVED BY:
APPROVAL DATE:

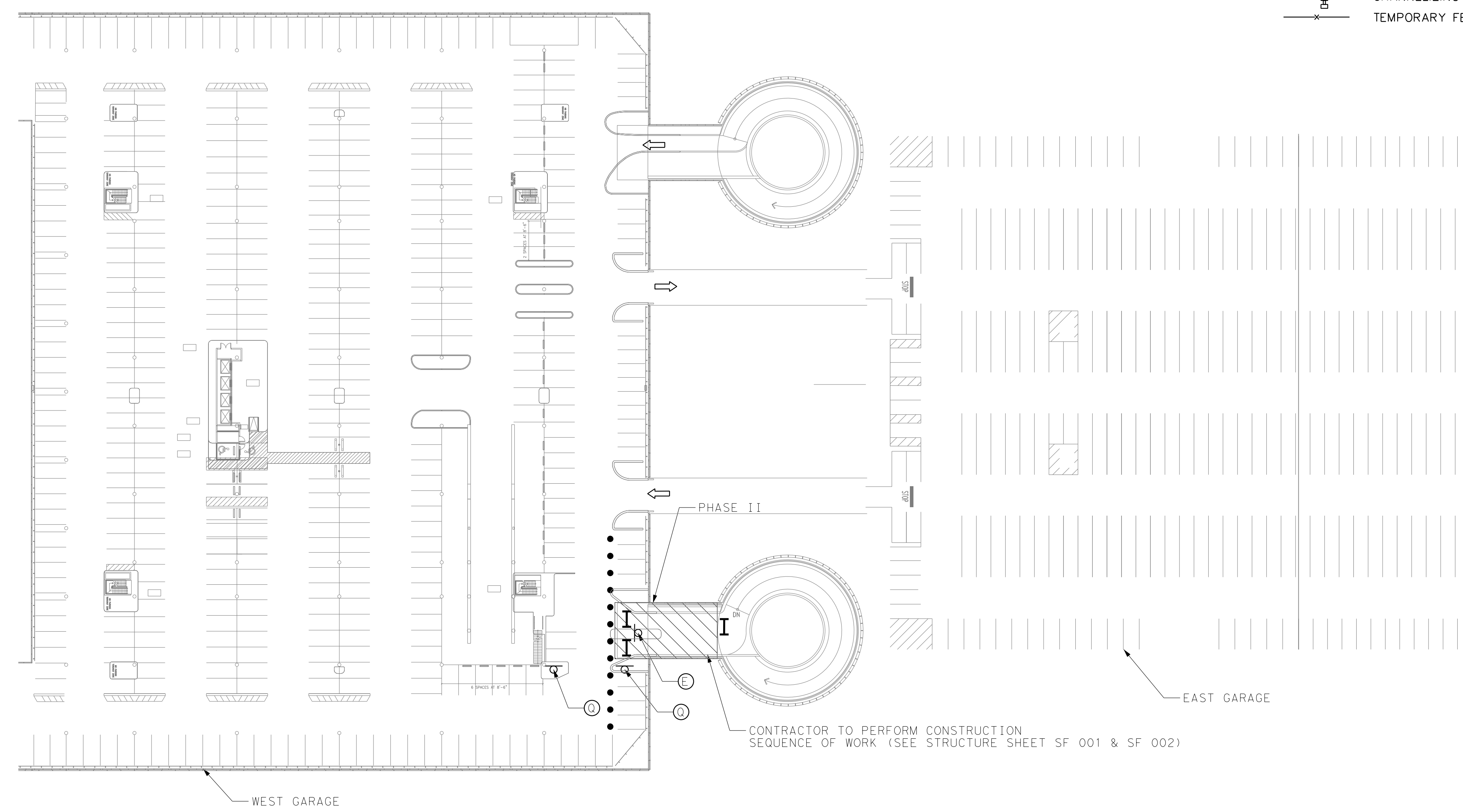
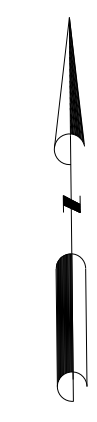
DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category	
AFR	
ISSUED FOR REVIEW	Shaikat Khan 9/08/20

SHEET NAME: TRAFFIC CONTROL PLAN PARKING GARAGE LEVEL 6 (TCP-10)	
SHEET No. XT 0	SCALE: NTS

LEGEND

- CONSTRUCTION THIS PHASE
- PROPOSED DIRECTION OF TRAFFIC
- EXISTING DIRECTION OF TRAFFIC
- BARRELS OR DRUMS
- PORTABLE SIGN/ARROW BOARD
- TYPE 3 BARRICADE
- TEMP GROUND MOUNTED SIGNS
- WORKZONE PAVEMENT MARKING REMOVE 4" (W)(SLD)
- WORKZONE PAVEMENT MARKING REMOVE 4" (Y)(SLD)
- CHANNELIZING BARRIER
- TEMPORARY FENCE



GARAGE PARKING LEVEL 6
SOUTH HELIX PHASE II
SOUTH BRIDGE REPAIR

TRAFFIC CONTROL PLAN NOTES:

- REFER TO SHEET TRAFFIC CONTROL PLAN LAYOUT (TCP) SHEET TCP-01 TO TCP-10, SHEET TCP-11 & TCP-12. FOR CONSTRUCTION TRAFFIC SIGNS AND TRAFFIC CONTROL NOTES AND DETAILS.
- REFER TO STRUCTURAL SHEETS FOR BRIDGE BEAMING CONCERNS STRUCTURE DETAILS.
- CONTRACTOR SHALL INSTALL 6' CHAIN LINK FENCE WITH GREEN FABRIC AROUND WORK AREA TO PREVENT PEDESTRIAN ACCESS. TO BE PAID UNDER TEMPORARY CONSTRUCTION ITEMS.
- NO WORK PERFORMED IN LEVEL 3.
- CONTRACTOR TO MAINTAIN 11' LANES TRAVEL LANES
- CONTRACTOR SHALL WORK DURING HOURS OF 9 PM TO 6 AM

NOTE:
CONTRACTOR RESPONSIBILITY TO COORDINATE WITH PARKING MANAGEMENT TO INSTALL ADDITIONAL SIGNAGE ON LEVEL 4 FOR VALET PARKING

FILE PATH:

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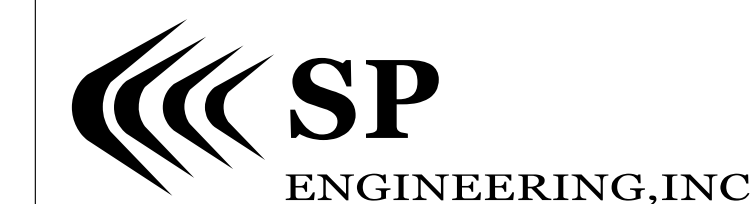
SHEET SIZE: 22"x34" ANSI-D



TERMINAL C AT IAH - 16930 JFK BLVD
HOUSTON, TX 77032

BRIDGE BEARING REPAIR

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C.O.H. No. D.O.A No.



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REVISIONS

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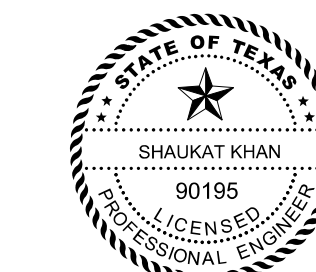
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Review/ Approval Category

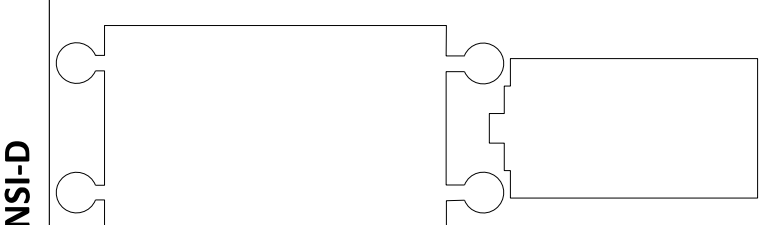
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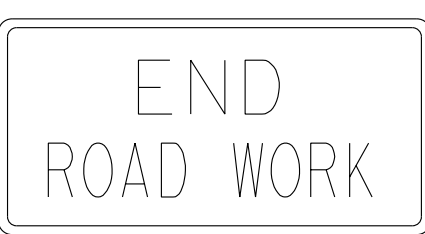
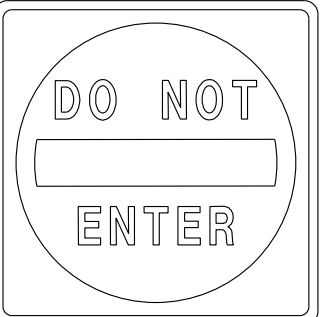
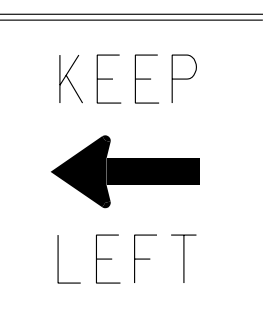
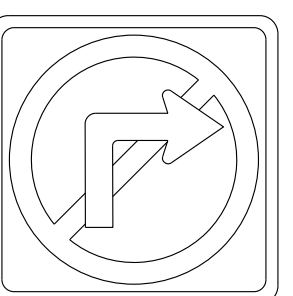
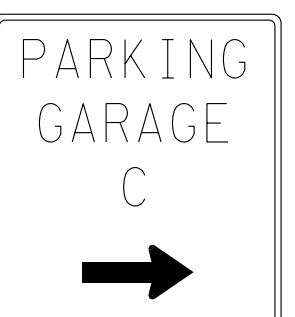
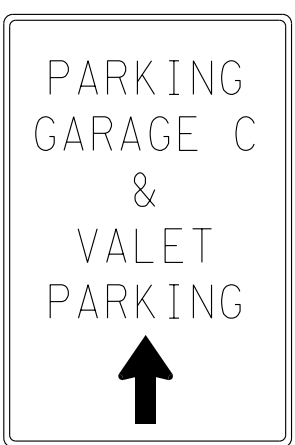




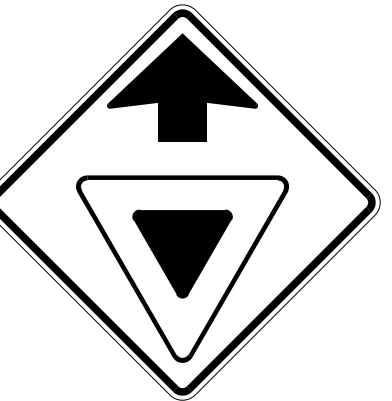
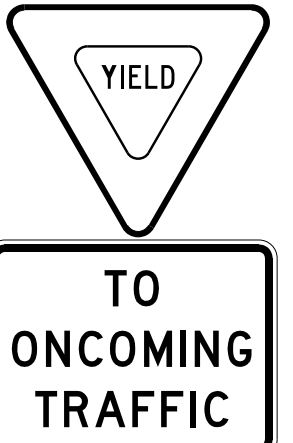




Shaikat Khan 9/08/20

SHEET SIZE: 22" x 34" ANSI-D



SHEET NAME: TRAFFIC CONTROL PLAN
SIGN DETAILS (TCP-11)
SHEET No. XT400 SCALE: NTS

<p>A</p>  <p>CW21-7D 36" x 36"</p>	<p>B</p>  <p>CW20-5R 36" x 36"</p>	<p>C</p>  <p>CW20-5L 48" x 48"</p>	<p>D</p>  <p>G20-2a 48" x 24"</p>	<p>E</p>  <p>R5-1 36" x 36"</p>	<p>F</p>  <p>R4-8 36" x 48"</p>	<p>G</p>  <p>R3-R (R) 36" x 36"</p>	<p>H</p>  <p>R3-R (R) 36" x 36"</p>
<p>I</p>  <p>36" x 36"</p>	<p>J</p>  <p>48" x 24"</p>	<p>K</p>  <p>R2-1 18" x 24" G20-5AP 24" x 18"</p>	<p>L</p>  <p>R4-1 24" x 30"</p>	<p>M</p>  <p>CW20-4D 48" x 48"</p>	<p>N</p>  <p>CW3-2 48" x 48"</p>	<p>O</p>  <p>R1-2 48" x 48" R1-2AP 48" x 48"</p>	<p>P</p>  <p>R4-2 24" x 30"</p>
<p>Q</p>  <p>24" x 30"</p>	<p>SPECIAL TRAFFIC REQUIREMENTS:</p> <ol style="list-style-type: none"> CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TEXAS MUTCD, MOST RECENT EDITION WITH REVISIONS) DURING CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE FOR REPLACING AND MAINTAINING PAVEMENT MARKINGS WHICH INCLUDE CENTERLINE, BARRIER LINES, LANE LINES AND RAISED PAVEMENT MARKINGS. THIS TRAFFIC CONTROL PLAN REPRESENTS THE MINIMUM REQUIRED BY TRAFFIC CONDITIONS IN THE FIELD. CONTRACTOR TO MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES. CONTRACTOR SHALL COVER OPEN PAVEMENT EXCAVATIONS WITH ANCHORED STEEL PLATES DURING NONWORKING HOURS, AND OPEN LANES FOR NORMAL TRAFFIC FLOW OFF-DUTY UNIFORMED POLICE OFFICERS ARE REQUIRED TO DIRECT TRAFFIC WHEN LANES ARE BLOCKED. LANE CLOSURE TIME(S) SHALL BE SPECIFIED ON THE LANE CLOSURE PERMIT. IF THE CONTRACTOR CHOOSES TO USE A DIFFERENT METHOD OF "TRAFFIC CONTROL PLANS" DURING THE CONSTRUCTION THAN WHAT IS OUTLINED IN THE CONTRACT DRAWINGS, THEY SHALL BE RESPONSIBLE TO PREPARE AND SUBMIT AN ALTERNATE SET OF PLANS* TO PLAN REVIEW SECTION FOR APPROVAL TEN WORKING DAYS PRIOR TO IMPLANTATION. *THESE PLANS SHALL BE DRAWN TO SCALE ON REPRODUCIBLE MYLARS AND SEALED BY A LICENSED ENGINEER IN THE STATE OF TEXAS. PLANS WILL BECOME A PART OF THE CONTRACT DRAWINGS. APPROVED COPIES OF TRAFFIC CONTROL PLANS AND LANE CLOSURE PERMITS SHALL BE AVAILABLE FOR INSPECTION AT JOB SITE AT ALL TIMES. CONTRACTOR MUST SECURE "LANE CLOSURE PERMITS" FROM CITY'S TRAFFIC MANAGEMENT AND MAINTENANCE BRANCH BEFORE CLOSING A LANE/SIDEWALK. THE REQUEST MUST BE MADE AT LEAST THREE BUSINESS DAYS PRIOR TO THE DATE FOR WHICH CLOSURE IS SOUGHT. NOTE THAT WORKING HOURS MAY BE RESTRICTED OR THE REQUEST MAY BE DENIED. CALL 713-837-7280 FOR AN APPLICATION. LANES SHALL BE KEPT CLOSED DURING PAVEMENT SURFACE RESTORATION AND OPENED ONLY AFTER PAVEMENT IS RESTORED COMPLETELY. 						<p>NOTES:</p> <ol style="list-style-type: none"> ALL TEMPORARY SIGNS TO BE PAID UNDER G 105-5.1 TEMPORARY CONSTRUCTION ITEMS

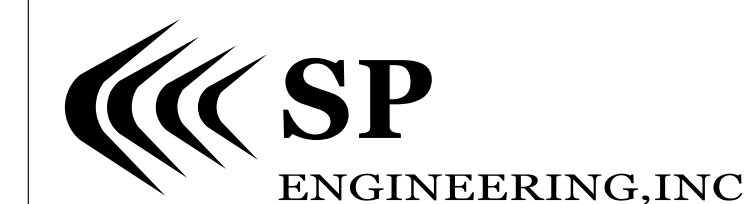
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BRIDGE BEARING REPAIR

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DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/Approval Category

AFR

ISSUED FOR REVIEW

SHEET SIZE: 22" X 34" ANSI-D

SHEET NAME: TRAFFIC CONTROL PLAN
BARRICADE STANDARDS (TCP-12)
SHEET No. XT411 SCALE: NTS

BARRICADES ARE TO BE CONSTRUCTED OF CLEAN SOUND MATERIAL ALL SURFACES ABOVE GROUND, WHICH ARE NOT STRIPED, SHALL BE WHITE EXCEPT THE UNPAINTED GALVANIZED METAL OR ALUMINUM COMPONENTS MAY BE USED. COMPONENTS MADE OF LUMBER SHALL BE PAINTED WITH A MINIMUM OF TWO COATS OF AN APPROVED BRAND OF WHITE PAINT TO SECURE THOROUGH COVERAGE AND A UNIFORM WHITE COLOR.

THE REFLECTORIZED WHITE AND REFLECTORIZED ORANGE (REFLECTORIZED RED) STRIPES FOR BARRICADES, DRUMS AND VERTICAL PANELS SHALL BE CONSTRUCTED OF "HIGH INTENSITY SHEETING AND SHALL BE MAINTAINED TO MEET THE APPEARANCE, COLOR AND REFLECTIVITY REQUIREMENTS SET BY DOT.

THE CONTRACTOR SHALL MAINTAIN EACH BARRICADE IN A CLEAN AND GOOD CONDITION.

BARRICADES SHALL BE REMOVED UPON COMPLETION OF THE WORK AND/OR THE ELIMINATION OF THE HAZARD ON ANY SECTION.

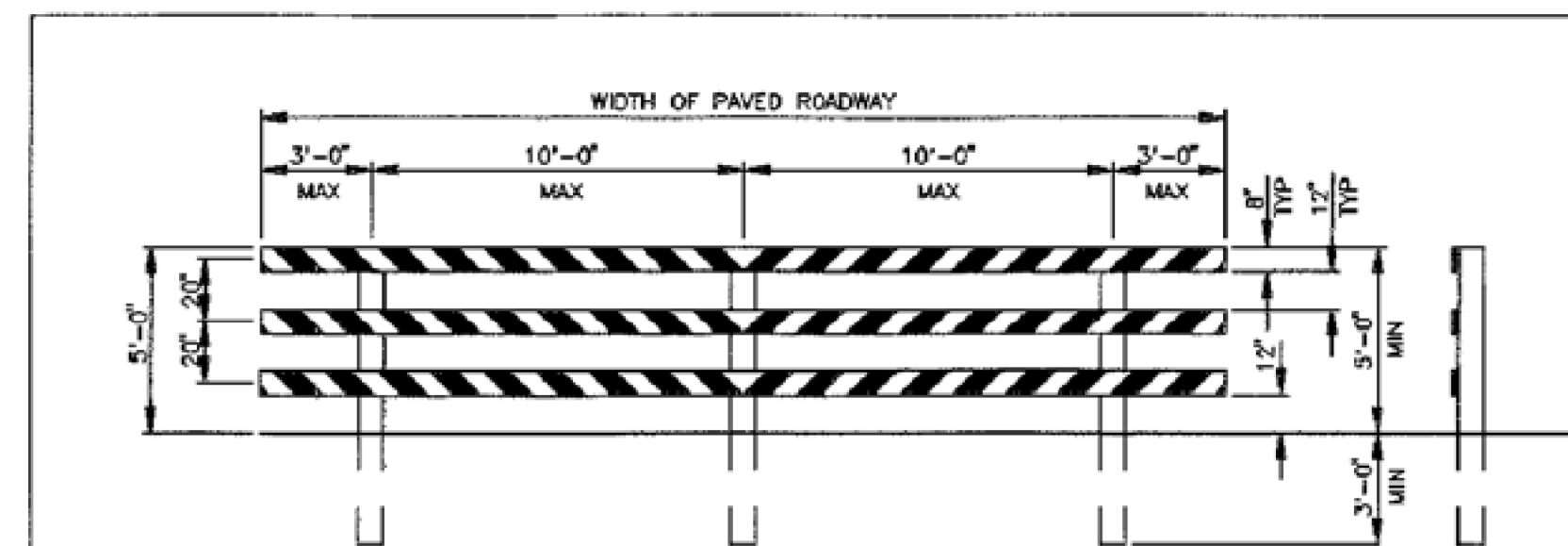
BARRICADE NOTES

THE MOST RECENT EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AND ITS REVISIONS, SHALL GOVERN THE CONSTRUCTION AND USE OF ALL ITEMS HEREIN DESCRIBED.

CHANNELIZATION DEVICES OTHER THAN BARRICADES SHOULD NORMALLY BE USED FOR CHANNELIZATION PURPOSES.

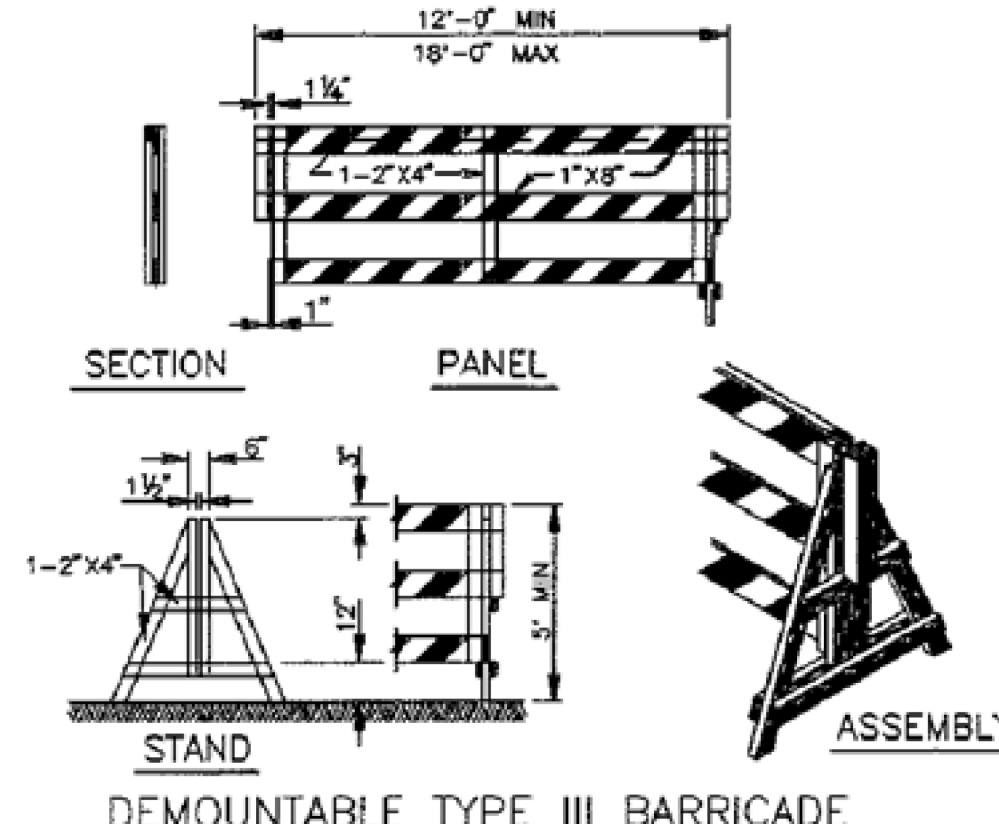
BARRICADES SHOULD NORMALLY BE PLACED PERPENDICULAR TO THE TRAFFIC FLOW. OTHER CHANNELIZING DEVICES, SUCH AS DRUMS, VERTICAL PANELS OR PORTABLE BARRIERS, SHOULD BE USED WHERE NEEDED TO SEPARATE TRAFFIC FROM THE WORK AREA. IN ALL CASES, THE BARRICADES SHOULD BE SO LOCATED AS TO MOST ADVANTAGEOUSLY WARN AND DIRECT TRAFFIC.

BARRICADES MAY BE DESIGNED AND CONSTRUCTED FROM WOOD OR ANY OTHER SUITABLE MATERIAL IN A MANNER APPROVED BY THE DEPARTMENT OF TRAFFIC AND TRANSPORTATION. THE CONSTRUCTION DETAILS SHOWN HEREON ARE TYPICAL AND ARE SUGGESTED DETAILS FOR WOOD SUPPORT SYSTEMS FOR BARRICADES. THE DETAILS OF RAIL WIDTH AND STRIPING, NUMBER AND SPACING OF RAILS, MINIMUM LENGTH AND HEIGHT (ABOVE PAVEMENT) OF RAILS MUST BE ADHERED TO WHEN ALTERNATE DESIGNS ARE USED.

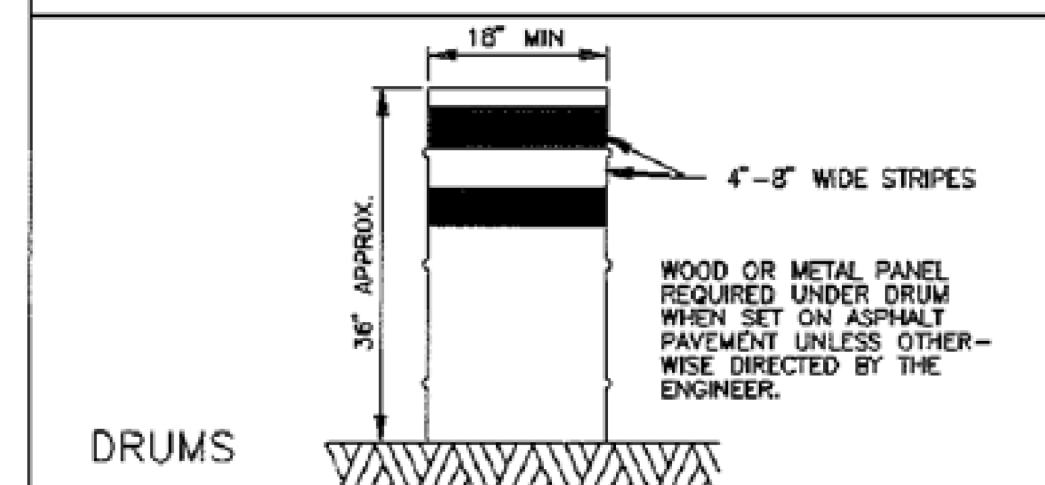


TYPE III BARRICADE FOR END OF ROAD

FOR TYPE III BARRICADE FOR END OF ROAD, THE THREE (3) RAILS SHALL BE REFLECTIVE RED AND REFLECTIVE WHITE STRIPES ON SIDE FACING TRAFFIC



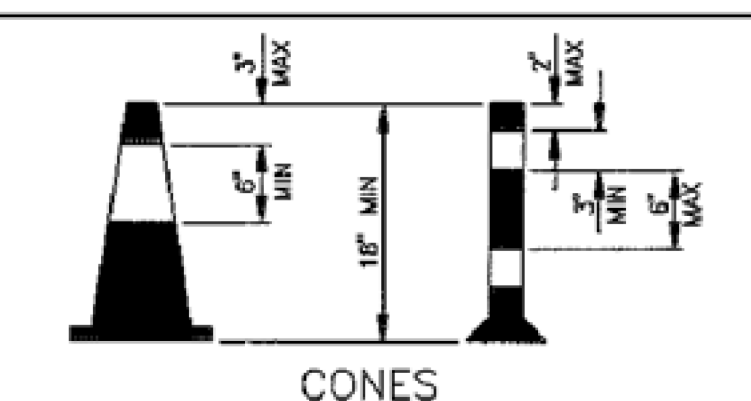
DEMOUNTABLE TYPE III BARRICADE



DRUMS

DRUMS, SET ON END, AND USED FOR TRAFFIC WARNING OR CHANNELIZATION SHALL BE APPROX 36" IN HEIGHT AND A MIN OF 18" IN DIAMETER. THE CONTRACTOR, AT HIS OPTION, MAY USE DRUMS MADE FROM STEEL BARRELS OR BLACK POLYETHYLENE PLASTIC DRUM LINERS WEIGHING APPROX EIGHT POUNDS EACH. THE MARKINGS ON DRUMS SHALL BE HORIZONTAL, CIRCUMFERENTIAL, REFLECTORIZED ORANGE AND REFLECTORIZED WHITE STRIPES, 4 TO 8 INCHES WIDE. THE FIRST REFLECTORIZED STRIPE SHOULD START WITHIN TWO (2) INCHES OF THE TOP OF THE DRUM. THERE SHALL BE AT LEAST TWO ORANGE AND TWO WHITE STRIPES ON EACH DRUM. IF THERE ARE NON-REFLECTORIZED SPACES BETWEEN THE HORIZONTAL ORANGE AND WHITE STRIPES, THEY SHALL BE NO MORE THAN 2 INCHES WIDE. METAL DRUMS SHALL BE PAINTED BLACK OR ORANGE BEFORE REFLECTORIZED STRIPES ARE ADDED. ALL DRUMS ON PROJECT WILL BE THE SAME COLOR. WHEN DRUMS ARE PLACED IN THE ROADWAY, APPROPRIATE WARNING SIGNS SHOULD BE USED. DURING HOURS OF DARKNESS, A FLASHING WARNING LIGHT SHOULD BE PLACED ON DRUMS USED SINGLY AS A WARNING DEVICE. STEADY BURN ELECTRIC LIGHTS OR DELINEATORS SHOULD BE PLACED ON DRUMS USED IN SERIES FOR TRAFFIC CHANNELIZATION. DRUMS SHALL BE WEIGHTED WITH SAND TO THE EXTENT INDICATED IN THE PLANS.

CWI-8 CHEVRON SIGNS, CWI-6A ARROW SIGNS OR VP-1 VERTICAL PANELS MOUNTED ABOVE DRUMS MAY BE USED AS SUPPLEMENTS TO DRUM DELINEATION.

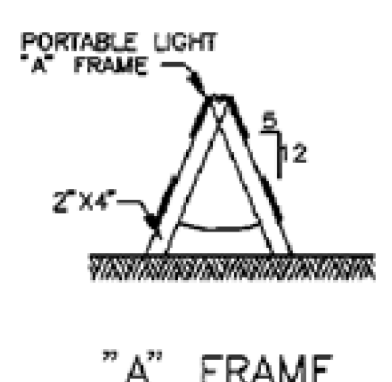


CONES

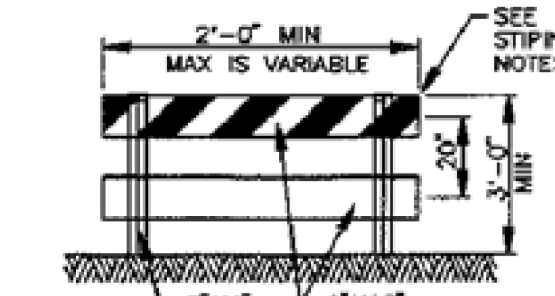
TRAFFIC CONES AND TUBULAR MARKERS SHALL BE A MIN OF 18" INCHES IN HEIGHT WITH A BROADENED BASE AND MAY BE MADE OF VARIOUS MATERIALS TO WITHSTAND IMPACT WITHOUT DAMAGE TO THEMSELVES OR TO VEHICLES. LARGER SIZES SHOULD BE USED ON FREEWAYS AND OTHER ROADWAYS WHERE SPEED ARE RELATIVELY HIGH OR WHERE EVER MORE CONSPICUOUS GUIDANCE IS NEEDED. ORANGE SHALL BE THE PREDOMINANT COLOR ON CONES AND TUBULAR MARKERS. THEY SHOULD BE KEPT CLEAN AND BRIGHT FOR MAX TARGET VALUE. FOR NIGHTTIME USE THEY SHALL BE REFLECTORIZED OR EQUIPPED WITH LIGHTING DEVICES FOR MAX VISIBILITY. REFLECTORIZED MATERIAL SHALL HAVE A SMOOTH, SEALED OUTER SURFACE WHICH WILL DISPLAY THE SAME APPROX COLOR DAY AND NIGHT.

REFLECTORIZATION OF TUBULAR MARKERS SHALL BE A MIN OF TWO THREE-INCH BANDS PLACED A MAX OF 2" FROM THE TOP WITH A MAX OF 6" BETWEEN THE BANDS. REFLECTORIZATION OF CONES SHALL BE PROVIDED BY A MIN 6" BAND PLACED A MAX OF 3" FROM THE TOP.

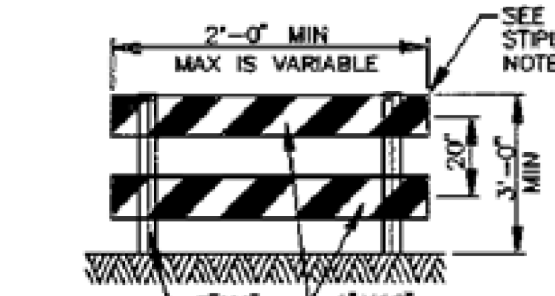
CONES OR TUBULAR MARKERS ARE GENERALLY ONLY SUITABLE FOR TEMPORARY USAGE (UP TO 8 HOURS) WITH OTHER CHANNELIZATION DEVICES SUCH AS VERTICAL PANELS OR BARRICADES PREFERRED FOR LONGER TERM USAGE. CARE SHOULD BE TAKEN TO INSURE THAT THEY REMAIN IN THEIR PROPER LOCATION AND IN AN UPRIGHT POSITION.



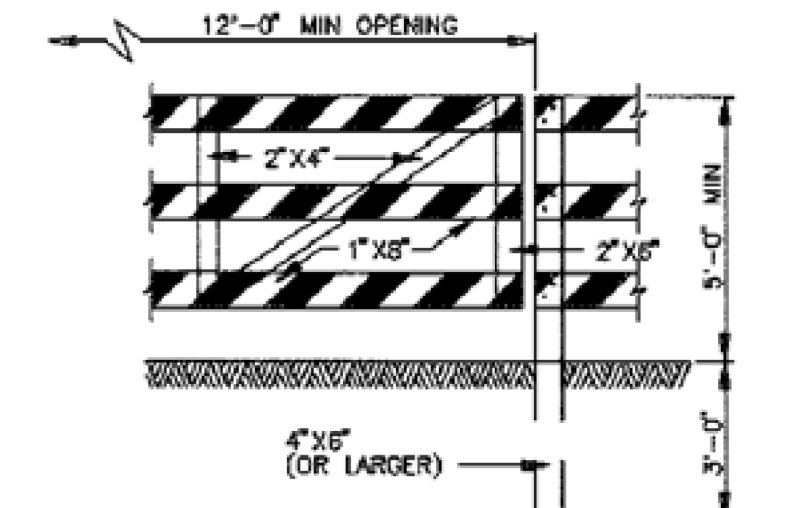
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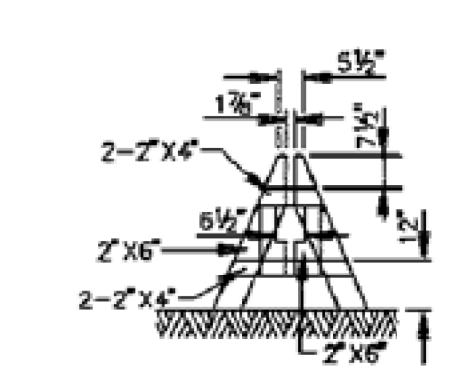
TYPE I



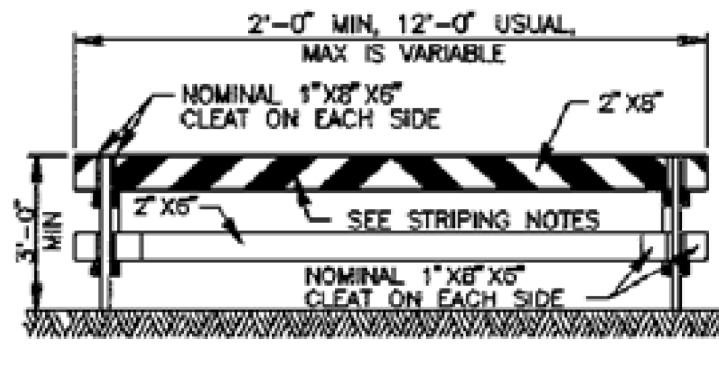
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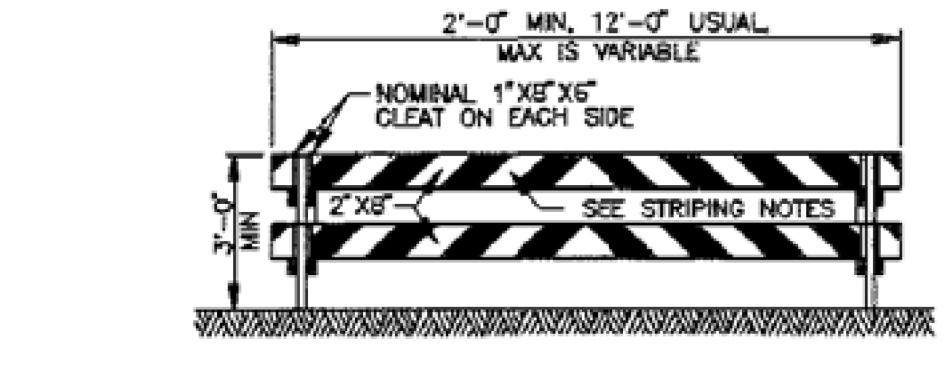
GATE FOR TYPE III BARRICADE



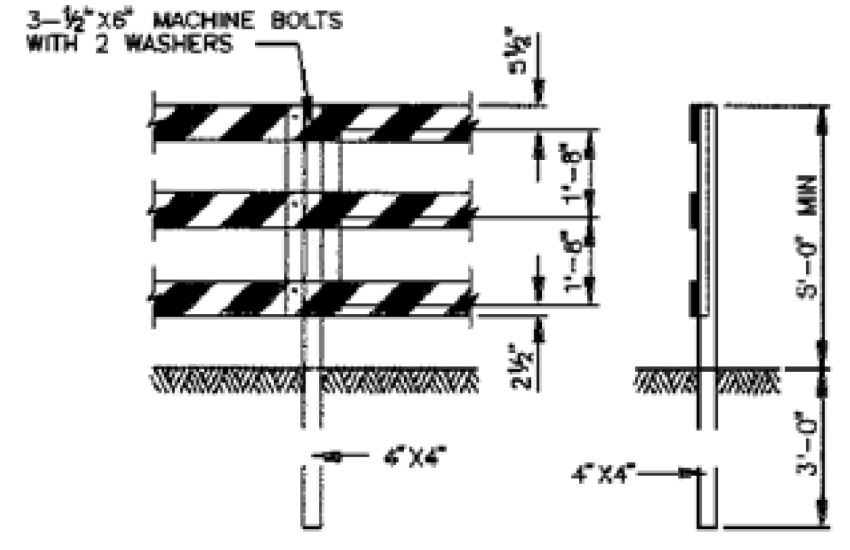
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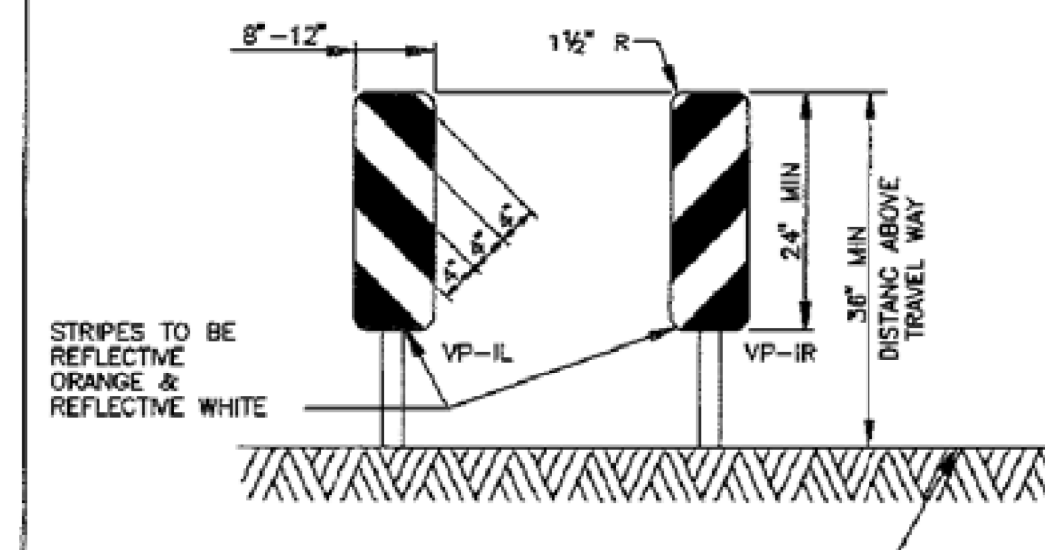
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TYPE II

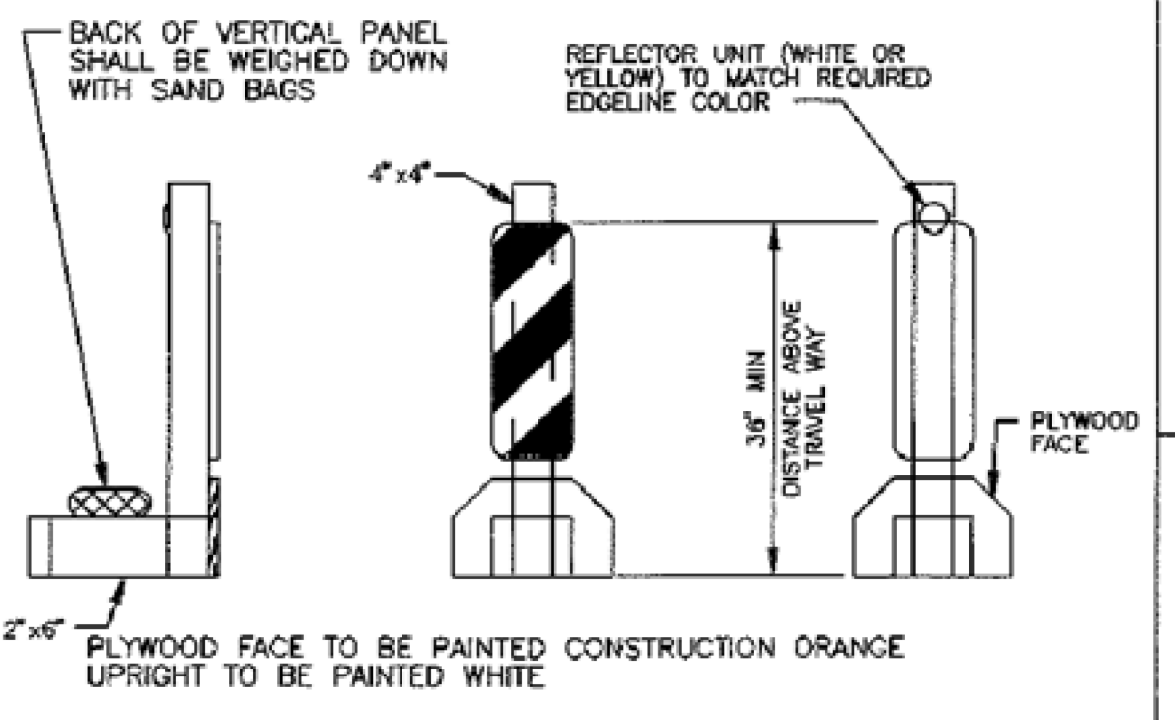


POST FOR TYPE III BARRICADE



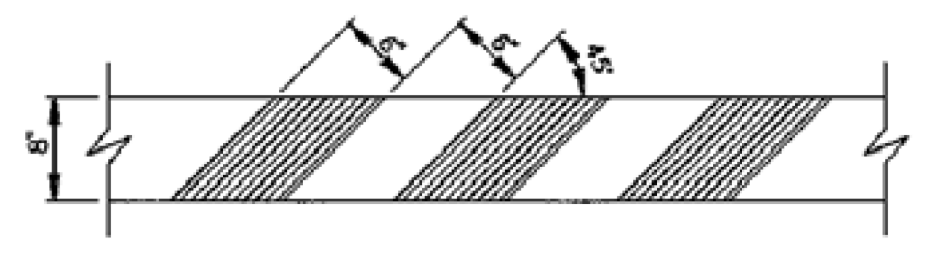
VERTICAL PANELS (VP)

VERTICAL PANELS ARE NORMALLY USED AS CHANNELIZING DEVICES TO INDICATE TANGENT OR NEARLY TANGENT ROADWAY ALIGNMENT WHERE GOOD TARGET VALUE OF A DEVICE IS NEEDED IN DAYTIME AS WELL AS THE NIGHTTIME. IN ADDITION, VERTICAL PANELS SHOULD BE USED AT THE EDGE OF SHOULDER DROP-OFFS AND OTHER SUCH AREAS AS LANE TRANSITIONS WHERE POSITIVE DAY AND NIGHT DELINEATION MAY BE REQUIRED. VERTICAL PANELS SHOULD BE MOUNTED BACK TO BACK IF USED AT THE EDGE OF CUTS ADJACENT TO TWO-WAY TWO LANE ROADWAYS. STRIPES SHOULD ALWAYS SLOPE DOWNWARD TOWARD THE TRAVELED WAY.



TYPICAL PORTABLE VERTICAL PANEL OR DELINEATOR

OTHER SIMILAR SUPPORTS MAY BE USED WHEN APPROVED OR DIRECTED BY THE COH DEPT OF TRAFFIC AND TRANSPORTATION



STRIPING FOR BARRICADE

FOR ALL TYPES OF BARRICADES WITH RAILS LESS THAN 3'-0" LONG, STRIPES 4" WIDE SHALL BE USED. IDENTIFICATION MARKINGS MAY BE SHOWN ONLY ON BACK SIDE OF BARRICADE RAILS.

STRIPING SHOULD COVER THE FULL WIDTH OF THE RAIL. STRIPING OF RAILS, PANELS, ETC. SHOULD SLOPE DOWNWARD AT AN ANGLE OF 45 DEGREES IN DIRECTIONS TRAFFIC IS TO PASS.

WHERE A BARRICADE EXTENDS ENTIRELY ACROSS A ROADWAY, IT IS DESIRABLE THAT THE STRIPES SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING. WHEN BOTH RIGHT AND LEFT TURNS ARE PROVIDED FOR, THE CHEVRON STRIPING MAY SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION

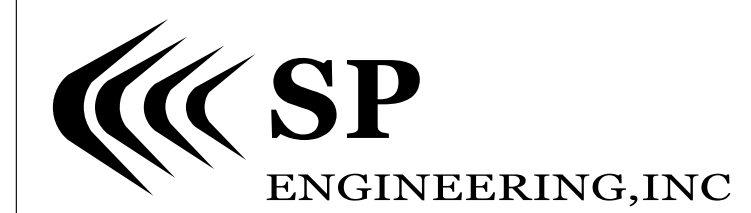
BARRICADE STANDARD
(NOT TO SCALE)

APPROVED BY: *[Signature]* CITY ENGINEER
APPROVED BY: *[Signature]* DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: OCT-01-2002 DWG NO: 01580-01

FILE PATH:

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DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category

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SHEET NAME: TRAFFIC CONTROL PLAN
NOTES CHANNELIZING DEVICES
AND BARRICADES (TCP-13)

SHEET No. XT410 SCALE: NTS

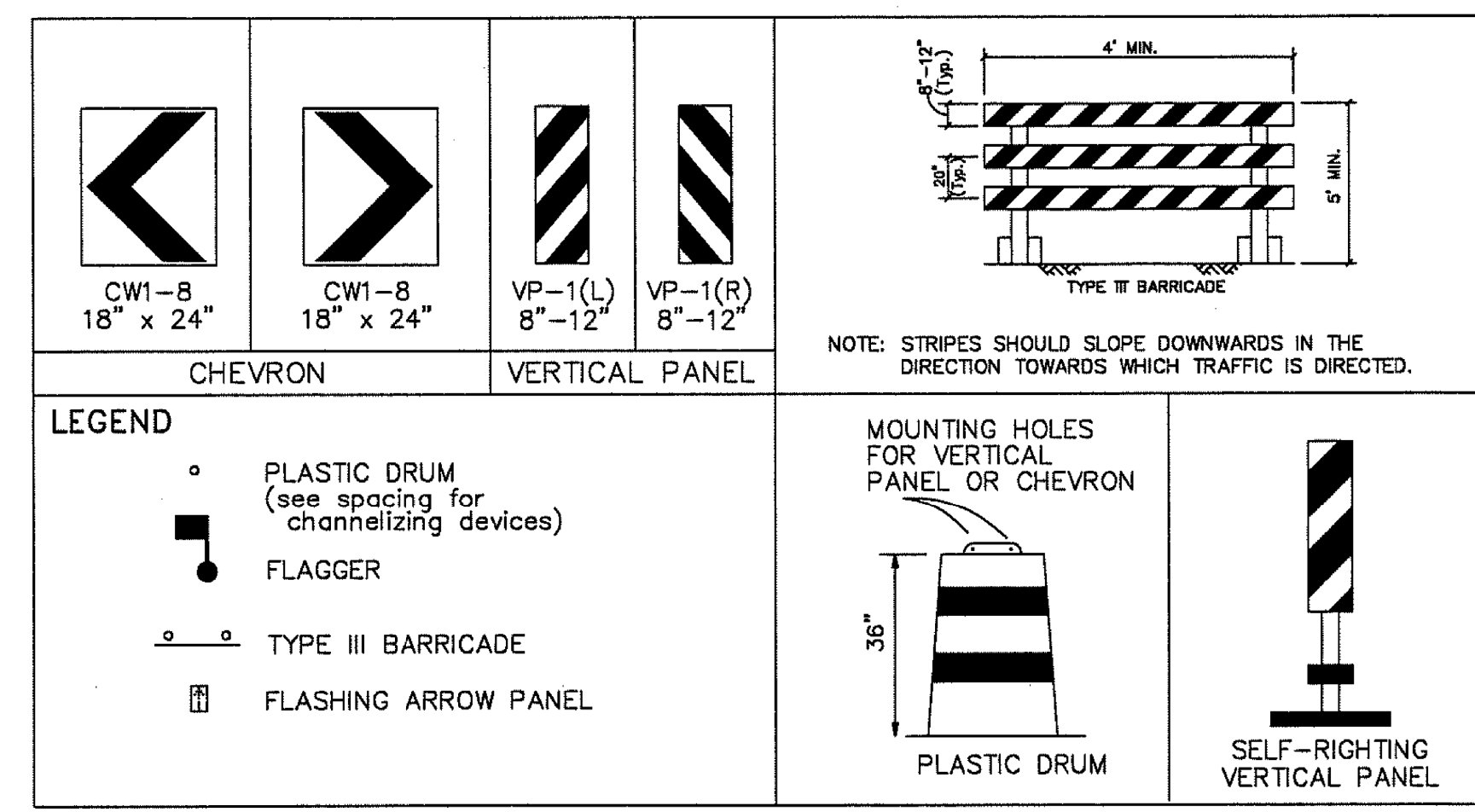
GENERAL NOTES

- The Contractor shall provide and install traffic control devices in conformance with Part VI of the Texas Manual on Traffic Control Devices (TMUTCD)
- All signs and traffic control devices shall conform the latest version of the TMUTCD
- No lanes shall be closed during the hours of 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM Monday thru Friday without approval of the City Traffic Engineer.
- No work shall be performed in residential areas from 7:00 PM to 7:00 AM.
- Contractor shall maintain approved number of through lanes of traffic in each direction during construction working hours. Traffic control plans shall include one-way and/or detour plans. Contractor shall maintain ADA compliant pedestrian access to bus stops and adequate bus access to all the bus stops.
- Contractor shall maintain traffic lanes and detours according to traffic control plans during working hours.
- Contractor shall cover open pavement excavations for minor utility work with anchored steel plate during non-working hours, and open lanes for normal traffic flow when feasible.
- If the Contractor chooses to use a different method of "Traffic Control Plans" during the construction than what is outlined in the contract drawings, the Contractor shall be responsible for prepare and submit an alternate set of traffic control plans to the City of Houston Project Manager for approval ten working days prior to implementation. These plans shall be drawn to scale and reproducible in mylars and shall be sealed by a Licensed Engineer in the State of Texas. Transportation & Drainage Operations representative approval is required to accept the proposed changes.
- Contractor shall secure lane/sidewalk/bicycle facility closure permits from Transportation & Drainage Operations (Mobility Permit Section at <http://www.gims.houstontx.gov/portalWS/MainPortal.aspx>) before implementing the traffic control plans, construction sequencing, and construction schedule with the application.
- Contractor shall have approved traffic control plan and permit at the job site for inspection at all times.
- During pavement surface restoration projects; the Contractor shall not open closed lanes until the pavement surface has cured enough to allow vehicular traffic according to City of Houston Standard Specifications.
- The Contractor is responsible for scheduling and coordinating all construction activities with stake holders in the vicinity including emergency response agencies such as Houston Police Department, Houston Fire Department, and Metropolitan Transit Authority.
- Contractor shall be responsible for issuing all work directives to all sub-contractors, utility companies, and all other entities performing construction work associated with the project.
- Nothing in these notes or plans shall relieve the Contractor of the responsibility for job site conditions during the course of construction of the project; including safety of all modes of transportation, persons, and property, and that this requirement shall apply continuously and not be limited to working hours.
- The Transportation & Drainage Operations (Mobility Permits Group) per the direction of the City Traffic Engineer have the right to demand the installation of additional traffic control devices or modifications of these plans and notes, as deemed necessary to promote the safe and orderly flow of traffic, including pedestrians and bicycles, through the construction work zone. The Contractor shall comply with these additional requests or modifications with due diligence.
- All existing traffic control signs and pavement markings shall be maintained in visible locations during construction unless prior written approval is obtained from City of Houston Project Manager. The Contractor shall restore or replace (at the discretion of the City Traffic Engineer) any pavement marking or signing damage during construction operations, including Raised Pavement Markers (RPMs).
- When entering or leaving roadways carrying public traffic, the Contractor's equipment whether empty or loaded shall in all cases yield to public traffic with assistance of Contractor provided certified flagger/peace officer.
- Access to driveways adjacent to the construction work zone shall be maintained at all times as much as possible. Additional cones delineators may be required to delineate the driveway access route through the construction zone. A minimum of a travel lane shall be maintained across the driveways, unless prior written approval is obtained from City of Houston Project Manager.
- Spillage resulting from hauling operations along or across any public traveled way shall be removed immediately by the Contractor.
- The Contractor shall submit an application for temporary parking restrictions if there are parking meters located at the proposed lane closures from Parking Management Division (832-393-8690) at least ten business days before implementation of lane closures. In addition, temporary no parking signs shall be posted 24 hours prior to commencement of work.
- Additional off duty officers/flaggers may be requested to direct traffic when lanes are blocked at the discretion of the City Project Manager even if they are not specifically identified on the project plans.
- The Contractor shall replace within 72 hours, all traffic signal loop detectors damaged during construction.
- In general, a solar powered flashing arrow board shall be required on all major thoroughfare lanes closures. Exceptions to flashing arrow boards and/or implementation on residential lane closures shall be approved by City Traffic Engineer.
- Approved traffic control plan shall be in place before starting any excavation.

SPACING FOR CHANNELIZING DEVICES

- Plastic drums on merging taper @ 30' c - c with chevron sign @ 60' c - c and warning lights for overnight closure.
- Plastic drums on downstream taper @ 30' c - c (return taper and barricade are optional and divided roadway section)
- Plastic drums on radii @ 35' c - c.
- Plastic drums on tangent @ 35' c - c with vertical panel at 70' c - c and approved warning light @ 70' c - c (for overnight closure).
- Plastic drums in front of construction zone @ 20' c - c with vertical panel at 40' c - c and approved warning light @ 40' c - c (for overnight closure).
- Concrete Traffic Barrier (CTB) or Low Profile Concrete Traffic Barrier (LPCTB) with approved reflectors @ 10' c - c if pavement drop is greater than 1 foot.
- Plastic drums w/Guard rail mounted.
- Self-Righting vertical panel spacing.
 - 4 lanes to 2 lanes undivided roadway section @ 20' c - c.
 - 4 lanes divided roadway to one side two way roadway @ 20' c - c.
 - Left lane and right lane storage bays @ 15' c - c.
- Spacing shown on traffic control shall supersede the above spacing.
- Spacing may be adjusted to provide driveways, intersections and /or median openings.

CHANNELIZATION AND BARRICADES



TYPICAL SIGN SPACING, TAPER LENGTHS, AND SUGGESTED SPACING OF CHANNELIZATION DEVICES

Posted Speed (mph)	Sign Spacing "X"	Min. Desirable Taper Length "L"			Suggested Maximum Spacing Of Device	
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent
30	120'	150'	165'	180'	30'	60' - 75'
35	160'	205'	225'	245'	35'	70' - 90'
40	240'	265'	295'	320'	40'	80' - 100'
45	320'	450'	495'	540'	45'	90' - 110'
50	400'	500'	550'	600'	50'	100' - 125'
55	500'	550'	605'	660'	55'	110' - 140'

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

TCP NOTES
CHANNELIZING DEVICES
AND BARRICADES
(NOT TO SCALE)

[Signature]
CITY TRAFFIC ENGINEER

[Signature]
DIRECTOR OF
HOUSTON PUBLIC WORKS

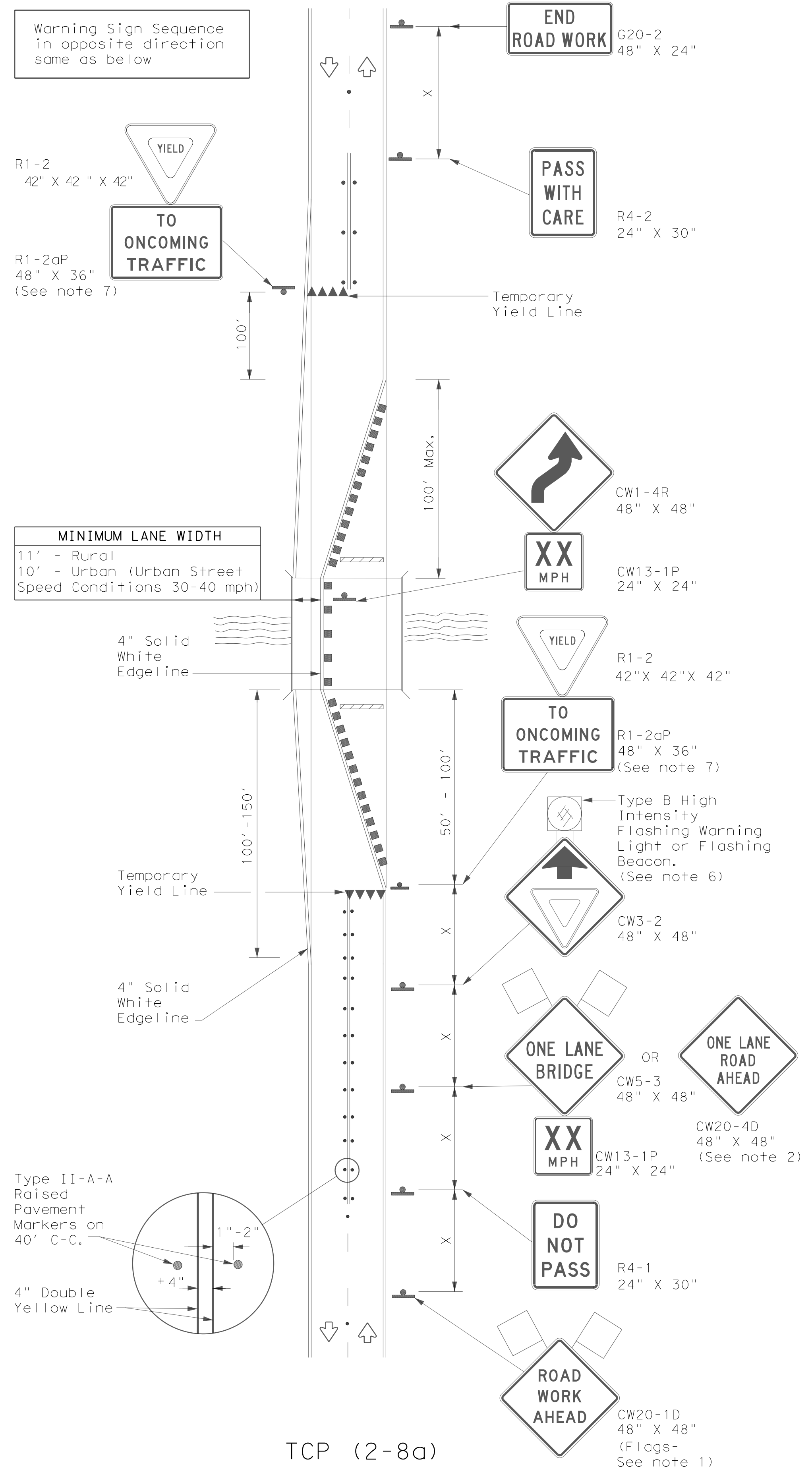
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DOA DWG FILE:
PLOT DATE: 14 May 2020 5:09:35 PM

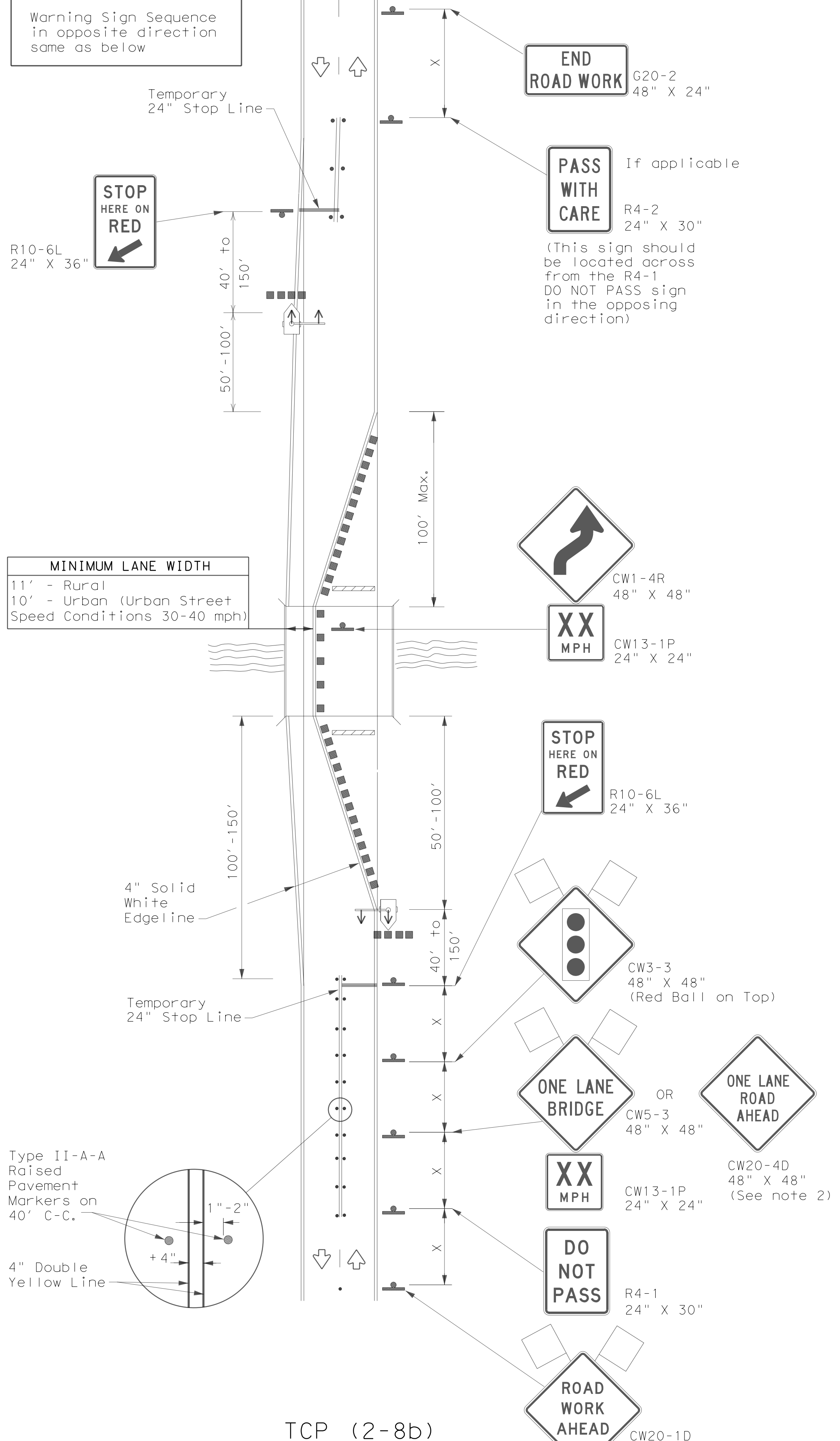
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TCP (2-8a)

ONE LANE TWO-WAY TRAFFIC CONTROL WITH YIELD SIGNS
 (Less Than 2000 ADT-See Note 5)



TCP (2-8b)

ONE LANE TWO-WAY TRAFFIC CONTROL WITH TRAFFIC SIGNAL

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Sign		Traffic Flow
	Flag		Flagger
	Raised Pavement Markers Ty II-AA		Temporary or Portable Traffic Signal

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent			
30	L = WS ² / 60	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	L = WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

* Conventional Roads Only
 ** Taper lengths have been rounded off.
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
			✓	✓

GENERAL NOTES

- Flags attached to signs where shown are REQUIRED.
 - When this TCP is used at a location which does not involve a bridge, a 48" x 48" CW20-4D "ONE LANE ROAD AHEAD" signs should be used in lieu of the CW5-3 "ONE LANE BRIDGE" signs. The CW13-1P Advisory Speed Plaque is required with either warning sign.
 - Raised pavement markers shall be placed 40 feet c-c on centerline between DO NOT PASS signs and stop or yield lines.
 - For intermediate term situations, when it is not feasible to remove and restore pavement markings, the channelization must be made dominant by using a very close spacing. This is especially important in locations of conflicting information, such as where traffic is directed over a double yellow centerline. In such locations a maximum channelizing device spacing of 20 feet is recommended. The 20 foot channelizing device spacing recommendation is intended for the area of conflicting information and not the entire work zone.
- TCP (2-8a)**
- Traffic control by CW3-2 "YIELD AHEAD" symbol signs for one lane two-way traffic control operations should be limited to work spaces less than 400 feet long and roadways with less than 2000 ADT. Otherwise, portable traffic signals should be used.
 - If power is available, a flashing beacon should be attached to the CW3-2 "YIELD AHEAD" symbol sign for emphasis.
 - The R1-2 "YIELD" and R1-2aP "TO ONCOMING TRAFFIC" signs and other regulatory signs shall be installed at 7 foot minimum mounting height.
- TCP (2-8b)**
- A list of approved Portable Traffic Signals can be found in the "Compliant Work Zone Traffic Control Devices" list.
 - Portable traffic signals should be located to provide adequate stopping sight distance for approaching motorist (See table above).

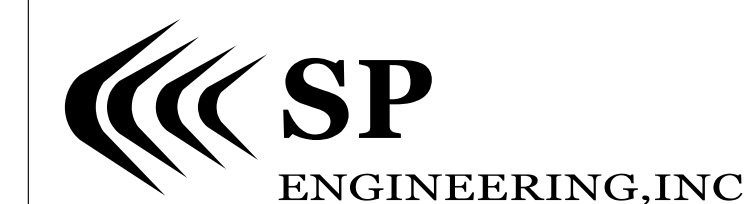


**TRAFFIC CONTROL PLAN
 LONG TERM ONE-LANE
 TWO-WAY CONTROL**

TCP (2-8) - 18 (TCP-14)

FILE: tcp2-8-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS				
8-95 3-03	DIST		COUNTY	SHEET NO.
1-97 2-12				XT421
4-98 2-18				

DATE:
 FILE:



4418 Bluebonnet Dr., Suite 406
Stafford, Texas 77477
832.867.2522
TBPE Registration Number: F-11028

DESIGNER PROJECT No.: 19-21
PROJECT STATUS: CONSTRUCTION DOCUMENTS

REVISIONS

No.	DESCRIPTION	DATE	BY

DESIGNER:

DRAWN BY:

CHECKED BY:

ISSUE DATE:

APPROVED BY:

APPROVAL DATE:

DIRECTOR
of
HOUSTON AIRPORT SYSTEM

Review/ Approval Category

AFR

ISSUED FOR REVIEW

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

TCP ONE LANE CLOSURE
PHASE 1 & 2

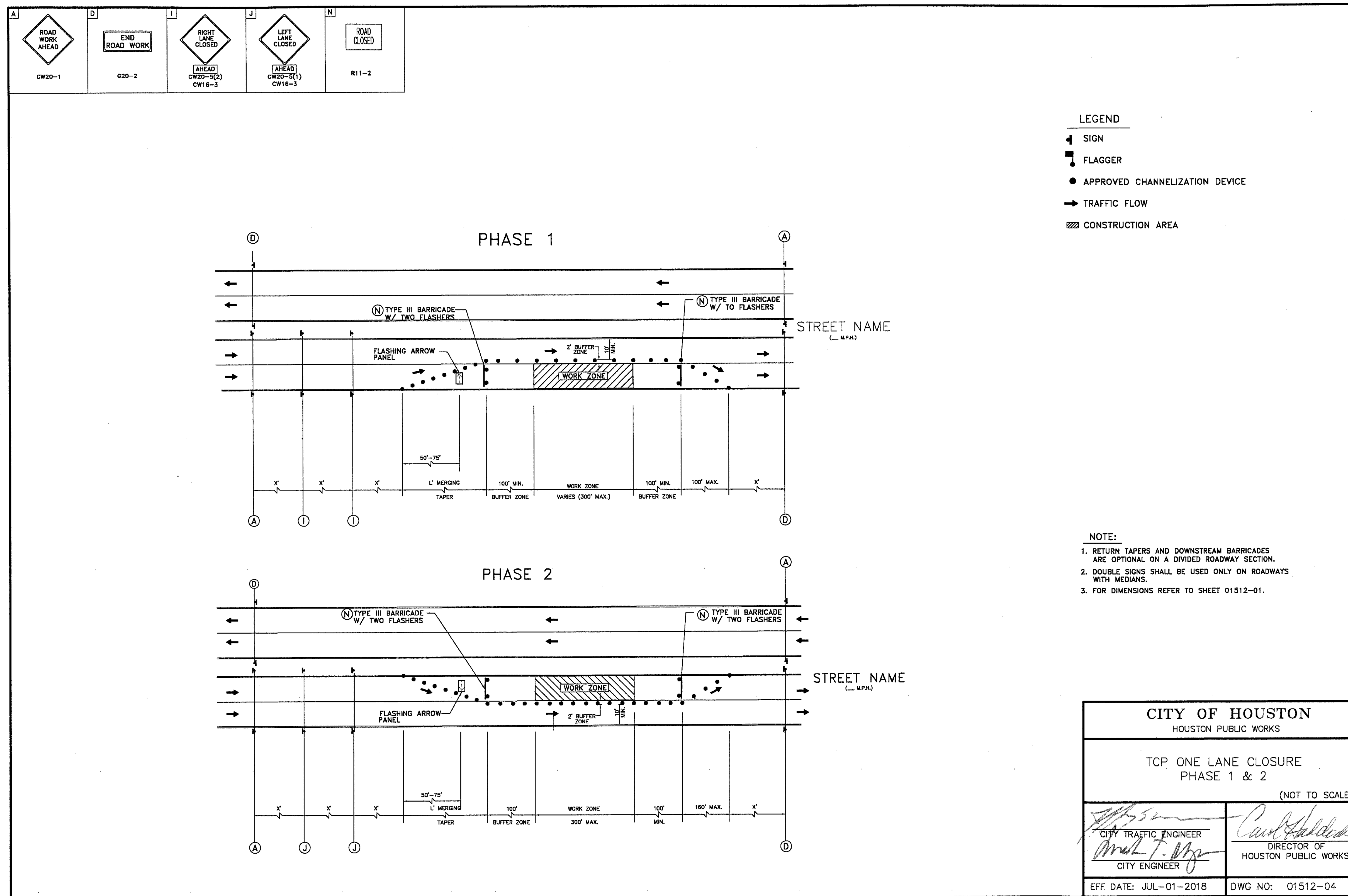
(NOT TO SCALE)

[Signature]
CITY TRAFFIC ENGINEER
[Signature]
CITY ENGINEER

[Signature]
DIRECTOR OF
HOUSTON PUBLIC WORKS

EFF DATE: JUL-01-2018

DWG NO: 01512-04



LEGEND

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- TRAFFIC FLOW
- ▨ CONSTRUCTION AREA

NOTE:

1. RETURN TAPERS AND DOWNSTREAM BARRICADES ARE OPTIONAL ON A DIVIDED ROADWAY SECTION.
2. DOUBLE SIGNS SHALL BE USED ONLY ON ROADWAYS WITH MEDIANS.
3. FOR DIMENSIONS REFER TO SHEET 01512-01.

FILE PATH:

OLD DOA No.:
DOA DWG FILE:
PLOT DATE: 14 May 2020 5:09:35 PM

SHEET SIZE: 22" x 34" ANSI-D

SHEET NAME: TRAFFIC CONTROL PLAN
TCP ONE LANE CLOSURE PH 1 & 2
(TCP-15)

SHEET No. XT420

SCALE: NTS