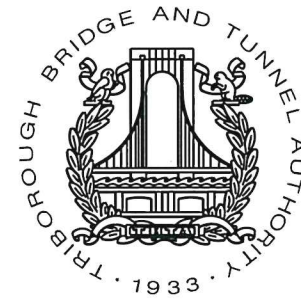
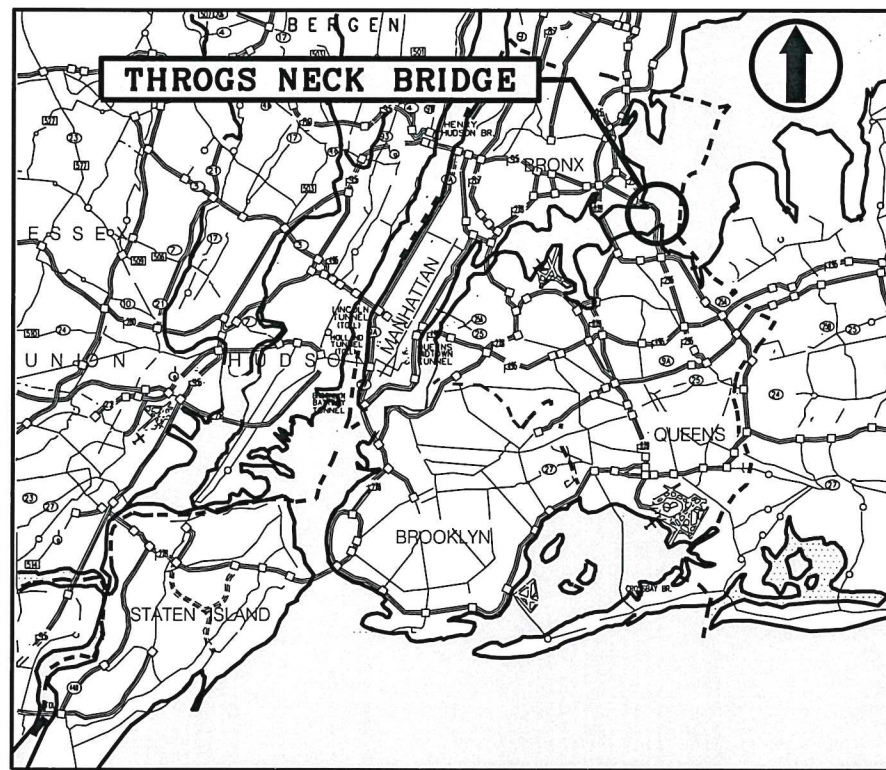


# TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY

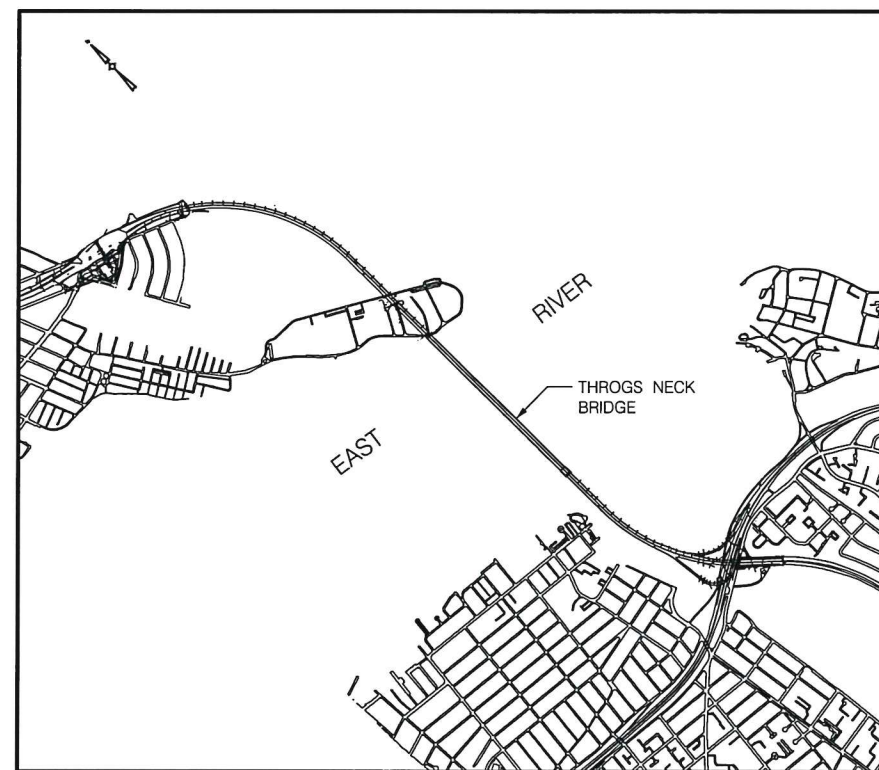


## PROJECT GFM-520N, WORK ORDER #14 BARRIER CRASH TESTING FOR PROJECT TN-49

JULY 6, 2018



LOCATION PLAN  
N.T.S.



KEY PLAN  
N.T.S.

PREPARED BY: **Thornton Tomasetti**  
40 WALL STREET, NEW YORK, NY 10005

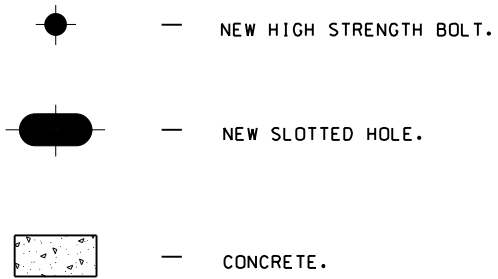
SAMUEL SUMMERVILLE, P.E.  
PRINCIPAL - THORNTON TOMASETTI

7/26/18  
DATE

DRAWING LIST

SHEET NO.	DWG. NO.	REV. NO.	DRAWING TITLE
<b>GENERAL</b>			
1	G-1	0	TITLE SHEET AND LOCATION PLAN
2	G-2	0	DRAWING LIST, SYMBOLS AND ABBREVIATIONS
3	G-3	0	GENERAL NOTES
<b>STRUCTURAL</b>			
4	S-1	0	ORTHOTROPIC DECK PANEL AND RAILING PLAN
5	S-2	0	FLOOR TRUSS DETAILS - 1
6	S-3	0	FLOOR TRUSS DETAILS - 2
7	S-4	0	LONGITUDINAL TRUSS DETAILS
8	S-5	0	DIAPHRAGM DETAILS - 1
9	S-6	0	DIAPHRAGM DETAILS - 2
10	SB-1	0	STEEL RAILING DETAILS - 1
11	SB-2	0	STEEL RAILING DETAILS - 2
12	SB-3	0	STEEL RAILING DETAILS - 3

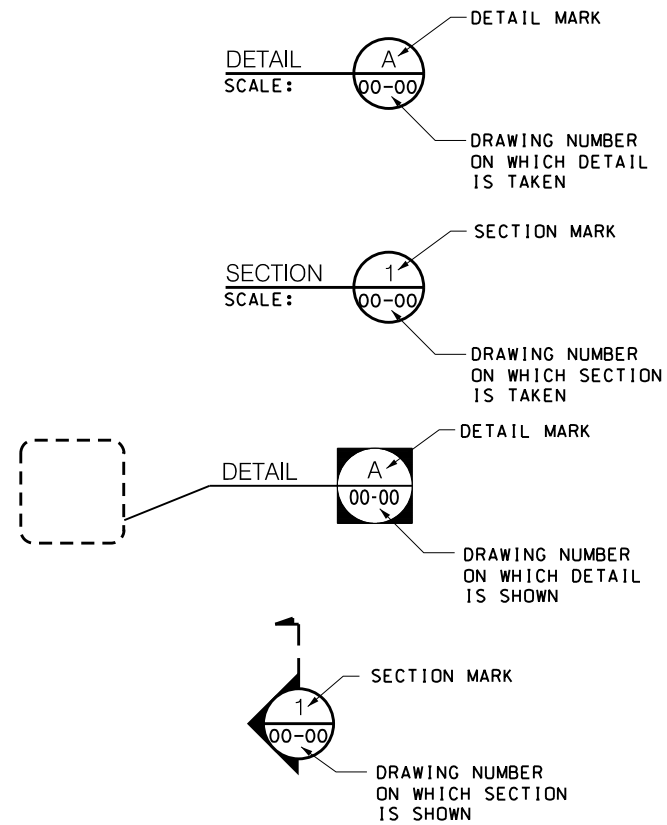
SYMBOLS



ABBREVIATIONS

ABT	-- ABOUT	NO	-- NUMBER
ANCH	-- ANCHORAGE	NOM	-- NOMINAL
AOBE	-- AS ORDERED BY ENGINEER	NS	-- NEAR SIDE
ASTM	-- AMERICAN SOCIETY OF TESTING MATERIALS	NTS	-- NOT TO SCALE
B TO B / BB	-- BACK TO BACK	OC	-- ON CENTER
BF	-- BACK FACE	OSL	-- OUTSTANDING LEG
BOT	-- BOTTOM	OPNG	-- OPENING
BRG	-- BEARING	OPP	-- OPPOSITE
BS	-- BOTH SIDES	PC	-- PIECE
BTWN	-- BETWEEN	PL	-- PLATE
C TO C / CC	-- CENTER TO CENTER	PP	-- PANEL POINT
CANT	-- CANTILEVER	PPGW	-- PARTIAL PENETRATION GROOVE WELD
CHD	-- CHORD	PTFE	-- POLYTETRAFLUOROETHYLENE
CI	-- CAST IRON	EXTER	-- EXTERIOR
CL	-- CENTER LINE	INTER	-- INTERIOR
CLR	-- CLEAR	LG	-- LENGTH
COL	-- COLUMN	PVC	-- POLYVINYLCHLORIDE
CONC	-- CONCRETE	PVMT	-- PAVEMENT
CONN	-- CONNECTION	R / RAD	-- RADIUS
CONSTR	-- CONSTRUCTION	RC	-- REINFORCED CONCRETE
CONT	-- CONTINUOUS	RDWY	-- ROADWAY
CORR	-- CORRUGATED	REF	-- REFERENCE
CPGW	-- COMPLETE PENETRATION GROOVE WELD	REINF	-- REINFORCEMENT
CTSK	-- COUNTERSUNK	REOD	-- REQUIRED
DET	-- DETAIL	RJT	-- RELIEF JOINT
DIA	-- DIAMETER	SDWK	-- SIDEWALK
DIAPH	-- DIAPHRAGM	SECT	-- SECTION
DWG	-- DRAWING	SP / SPA	-- SPACE / SPACING
ED	-- END DIAPHRAGM	SPL	-- SPLICE
EFC	-- ELECTRICAL	SQ	-- SQUARE
ELEV / EL	-- ELEVATION	SST	-- STAINLESS STEEL
EQ	-- EQUAL	STIFF	-- STIFFENER
EXIST / EXST	-- EXISTING	STL	-- STEEL
EXP	-- EXPANSION	STR / STRG	-- STRINGER
F	-- FAHRENHEIT	SYMM	-- SYMMETRICAL
FF	-- FRONT FACE	TBTA	-- TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY
FL	-- FLOOR	THD	-- THREAD
FLBM	-- FLOORBEAM	THRD	-- THREADED
FLG	-- FLANGE	THK	-- THICK
FS	-- FAR SIDE	THRU	-- THROUGH
FUT	-- FUTURE	TP	-- TURNING POINT
GALV	-- GALVANIZED	TYP	-- TYPICAL
HEX	-- HEXAGONAL	UON / UN	-- UNLESS OTHERWISE NOTED
HORIZ	-- HORIZONTAL	VERT	-- VERTICAL
HS	-- HIGH STRENGTH	WP	-- WORKING POINT
JT	-- JOINT	W/	-- WITH
MAX	-- MAXIMUM		
MIN	-- MINIMUM		
MOD	-- MODIFIED		
MPT	-- MAINTENANCE AND PROTECTION OF TRAFFIC		
NA	-- NOT APPLICABLE		
NIC	-- NOT IN CONTRACT		

LEGENDS FOR SECTION MARKS



				DRAWN BY P. MANAYATH DESIGNED BY L. HERBERT CHECKED BY C. CLARK	<b>Thornton Tomasetti</b> 40 WALL STREET NEW YORK, NY 10005	Triborough Bridge and Tunnel Authority	DRAWING TITLE  DRAWING LIST, SYMBOLS AND ABBREVIATIONS	CONTRACT NO. GFM-520N
REV.	DESCRIPTION	DATE	APP'D.	SCALE: NONE				DRAWING NO. G-2 SHEET 2 OF 12
*IT IS A VIOLATION OF THE PROFESSIONAL LICENSE LAW FOR ANY PERSON TO ALTER THIS DRAWING IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER/ARCHITECT AS APPLICABLE. THE ALTERING ENGINEER/ARCHITECT SHALL AFFIX HIS/HER SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS/HER SIGNATURE AND DATE OF ALTERATION.*						BARRIER CRASH TESTING FOR PROJECT TN-49	PROJECT NO. GFM-520N, WORK ORDER #14	REVISION NO. 0

D  
C  
B  
A

**GENERAL :**

1. THE SCOPE OF WORK IN THE PROJECT CONSISTS OF THE FOLLOWING
  - A. FABRICATION OF DECK PANEL AND 4 RAIL STEEL BARRIER.
  - B. OBTAIN SERVICES OF A SHOP INSPECTION AGENCY, ACCEPTED BY THE ENGINEER, TO WITNESS, INSPECT, AND CERTIFY THAT ALL STRUCTURAL STEEL FURNISHED HAS BEEN FABRICATED IN ACCORDANCE WITH REQUIREMENTS STIPULATED BY CONTRACT DOCUMENT AND SPECIFICATIONS.
  - C. DELIVERY OF ORTHOTROPIC DECK AND SUPPORTS, 4 RAIL STEEL BARRIER, BOLTS, ANCHORS, AND PLATES TO TESTING FACILITY.
2. IF THE CONTRACTOR DAMAGES ANY EQUIPMENT OR MATERIALS WHICH ARE TO REMAIN IN PLACE OR ARE THE PROPERTY OF THE TESTING FACILITY, DAMAGED MATERIAL SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE TESTING FACILITY AT THE EXPENSE OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL PROMPTLY REMOVE ALL EXCESS MATERIALS, CONSUMERABLES AND TOOLS FROM THE TESTING FACILITY AFTER COMPLETION OF THE WORK.
4. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE TESTING FACILITY FOR ACCESS, POSSIBLE OBSTRUCTIONS, AND STAGING AREAS BEFORE FABRICATION OF DECK PANELS AND SUPPORTING FRAMES.
5. DESIGN SPECIFICATIONS:
  - A. NYS DOT LRFD BRIDGE DESIGN SPECIFICATIONS WITH ALL PROVISIONS IN EFFECT AS OF OCTOBER 2014.
  - B. NY STATE STEEL CONSTRUCTION MANUAL (NYSSCM) AND ADDENDUMS OCTOBER 2013.
  - C. NYS DOT BRIDGE DESIGN MANUAL 4TH EDITION WITH CURRENT ADDENDUM.
  - D. AASHTO/AWS D1.5-2015 BRIDGE WELDING CODE.
  - E. AASHTO/17TH EDITION.



**STRUCTURAL STEEL :**

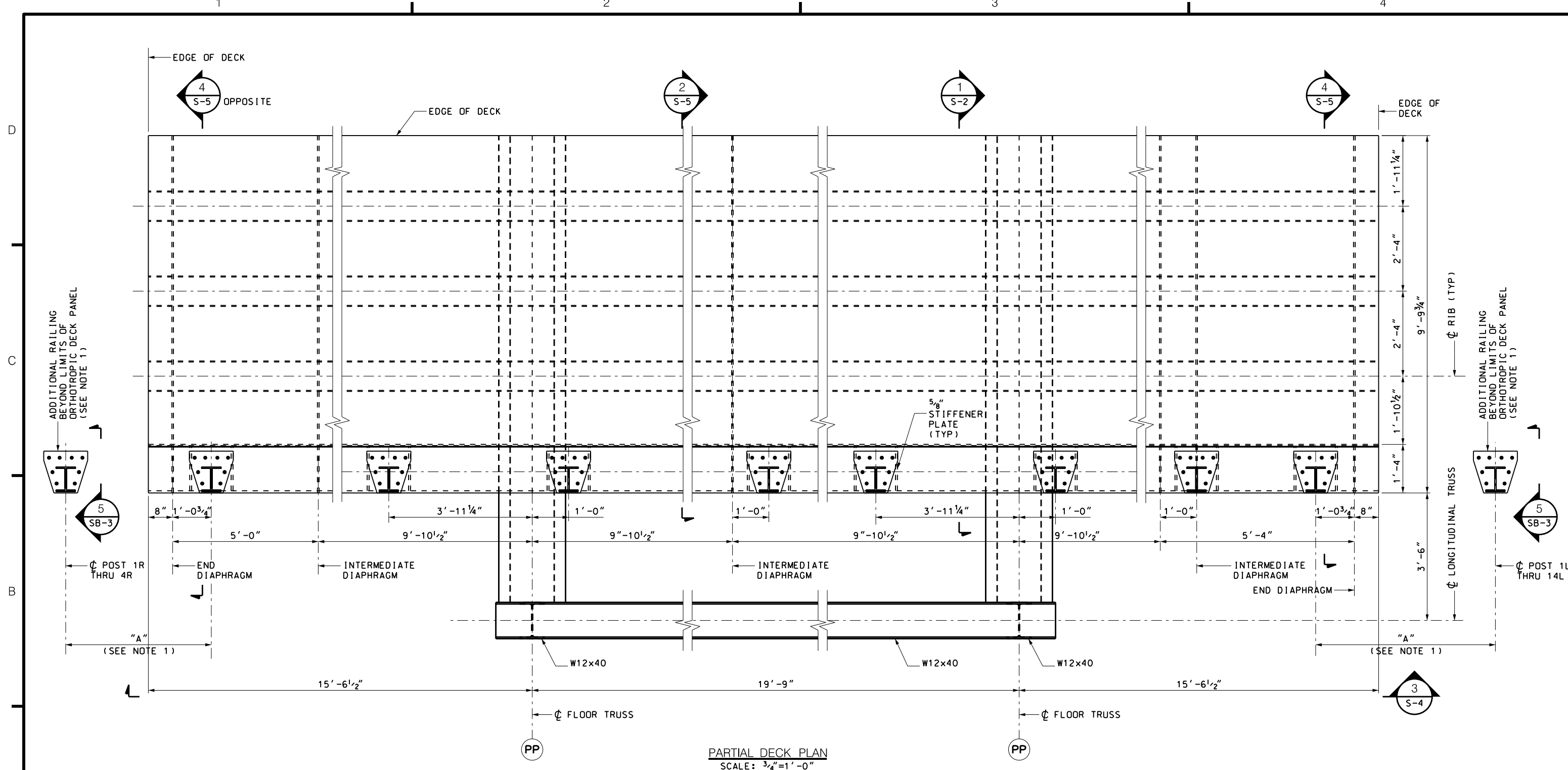
1. MATERIALS SHALL CONFORM WITH THE FOLLOWING, UNLESS OTHERWISE NOTED
  - A. ORTHOTROPIC DECK STEEL ASTM A709, GRADE 50T, ZONE 2 CVN TOUGHNESS
  - B. STRUCTURAL TUBES STEEL ASTM A500, GRADE 46B.
  - C. BARRIER TUBES STEEL ASTM A500, GRADE 46B, GALVANIZED
  - D. BARRIER POSTS STEEL ASTM A709, GRADE 50, GALVANIZED
  - E. ALL OTHER STRUCTURAL STEEL STEEL ASTM A709, GRADE 50
  - F. H.S. BOLTS ASTM F3125 GR A325, TYPE 1, GALVANIZED
  - G. NUTS ASTM A563; WASHERS ASTM F436, GALVANIZED
2. ALL FASTENERS SHALL BE 7/8" DIAMETER AND SHALL INCLUDE HEAVY HEXAGONAL NUTS AND HARDENED WASHER UNDER THE PART TURNED, UNLESS OTHERWISE NOTED. ALL FASTENERS SHALL NOT BE REUSED.
3. ALL CONNECTIONS SHALL BE SLIP-CRITICAL UNLESS OTHERWISE NOTED.
4. UNLESS OTHERWISE NOTED, ALL ANCHOR BOLTS SHALL BE HILTI KWIK BOLT TZ EXPANSION ANCHORS OR APPROVED EQUAL.
5. EXCEPT AS REQUIRED ON THE PLANS AND IN THE SPECIFICATIONS, WELDING SHALL CONFORM TO THE NYS DOT STEEL CONSTRUCTION MANUAL, LATEST EDITION INCLUDING CURRENT ADDENDA AND SPECIFICATIONS. WELDING SHALL ONLY BE ON STEEL MEMBERS PROVIDED BY THE CONTRACTOR. WELD TO STEEL PROVIDED BY THE TESTING FACILITY SHALL NOT BE ALLOWED UNLESS APPROVED BY THE ENGINEER.
6. FILLET WELD SIZES NOT INDICATED SHALL BE 5/16" MINIMUM.
7. ALL WELDS SHALL BE MADE WITH MATCHING FILLER MATERIAL, PROVIDING ZONE 2 CVN TOUGHNESS IN THE "AS WELDED CONDITION".
8. ALL WELDS SHALL BE MADE BY CERTIFIED WELDERS AND SHALL CONFORM TO AWS D1.5 UNLESS NOTED OTHERWISE. ALL WELDS SHALL DEVELOP THE FULL STRENGTH OF THE MEMBERS OR COMPONENTS BEING CONNECTED UNLESS NOTED OTHERWISE.
9. ALL WELDS SHALL BE 100% VISUALLY INSPECTED. FILLET WELDS SHALL RECEIVE 20% MT.

**HANDLING AND STORAGE MATERIALS :**

1. THE TESTING FACILITY AND CONTRACTOR ARE RESPONSIBLE FOR THE HANDLING AND STORAGE OF ALL CONSTRUCTION MATERIALS, INCLUDING ALL STEEL PIECES SUPPLIED BY THE STEEL FABRICATOR.
2. ALL STEEL PIECES SHALL BE KEPT COVERED, CLEAN, AND DRY WHILE STORED.

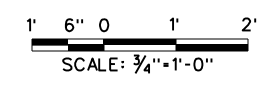
D  
C  
B  
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				DRAWN BY P. MANAYATH DESIGNED BY L. HERBERT CHECKED BY C. CLARK	 <b>Thornton Tomasetti</b> 40 WALL STREET NEW YORK, NY 10005	 Triborough Bridge and Tunnel Authority	DRAWING TITLE  GENERAL NOTES	CONTRACT NO. GFM-520N DRAWING NO. G-3 SHEET 3 OF 12
REV.	DESCRIPTION	DATE	APP'D.	SCALE: NONE				BARRIER CRASH TESTING FOR PROJECT TN-49

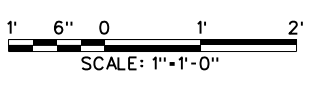
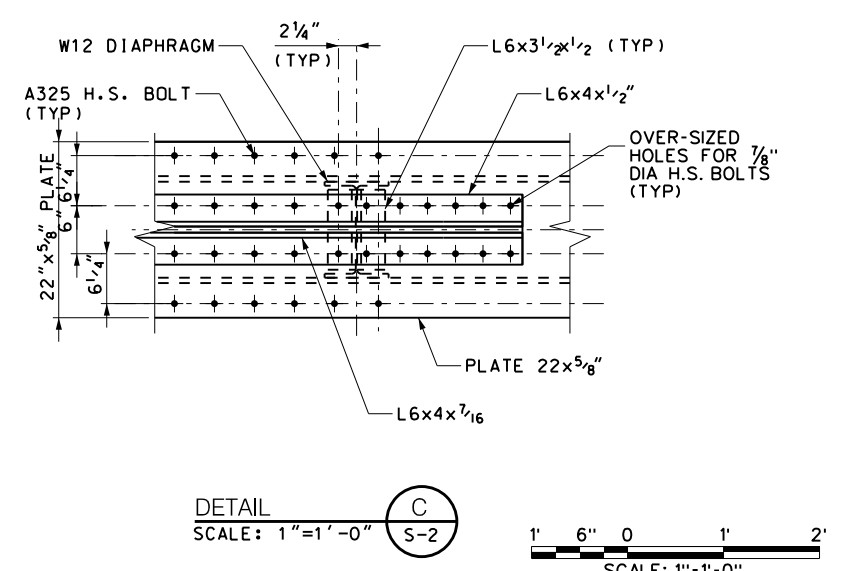
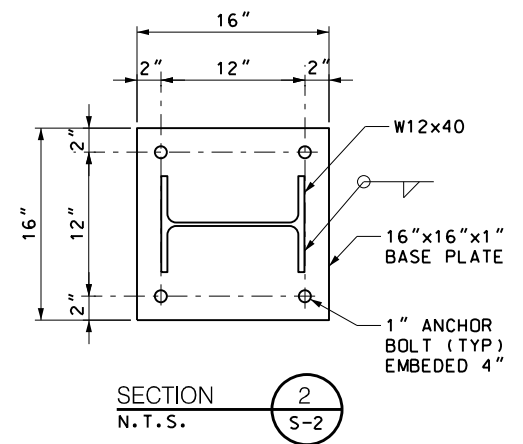
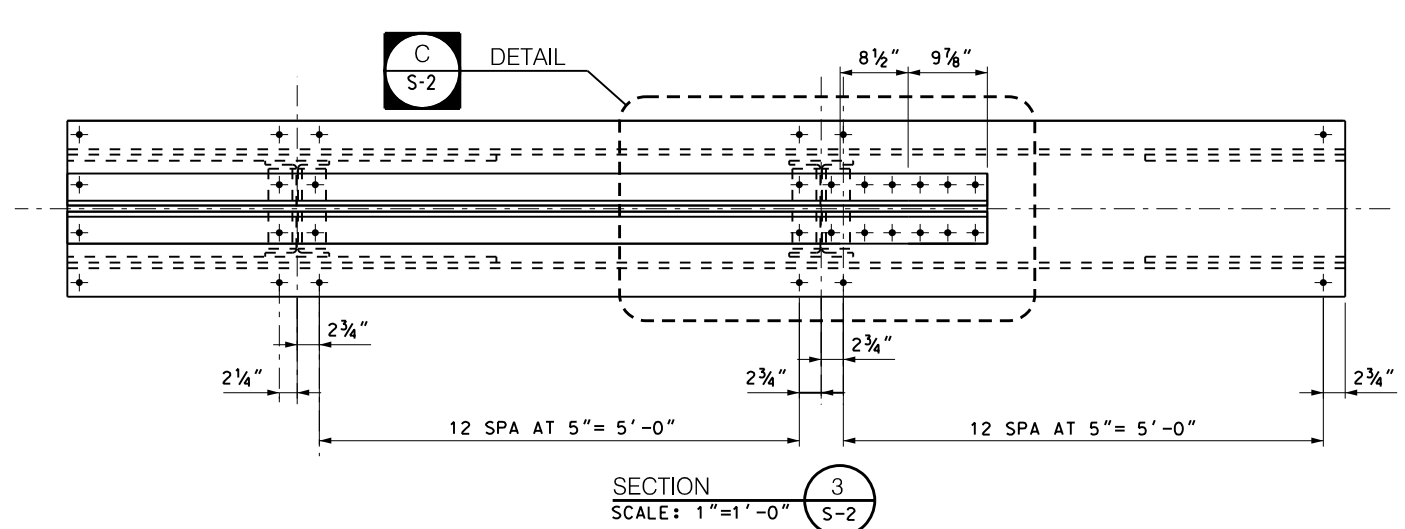
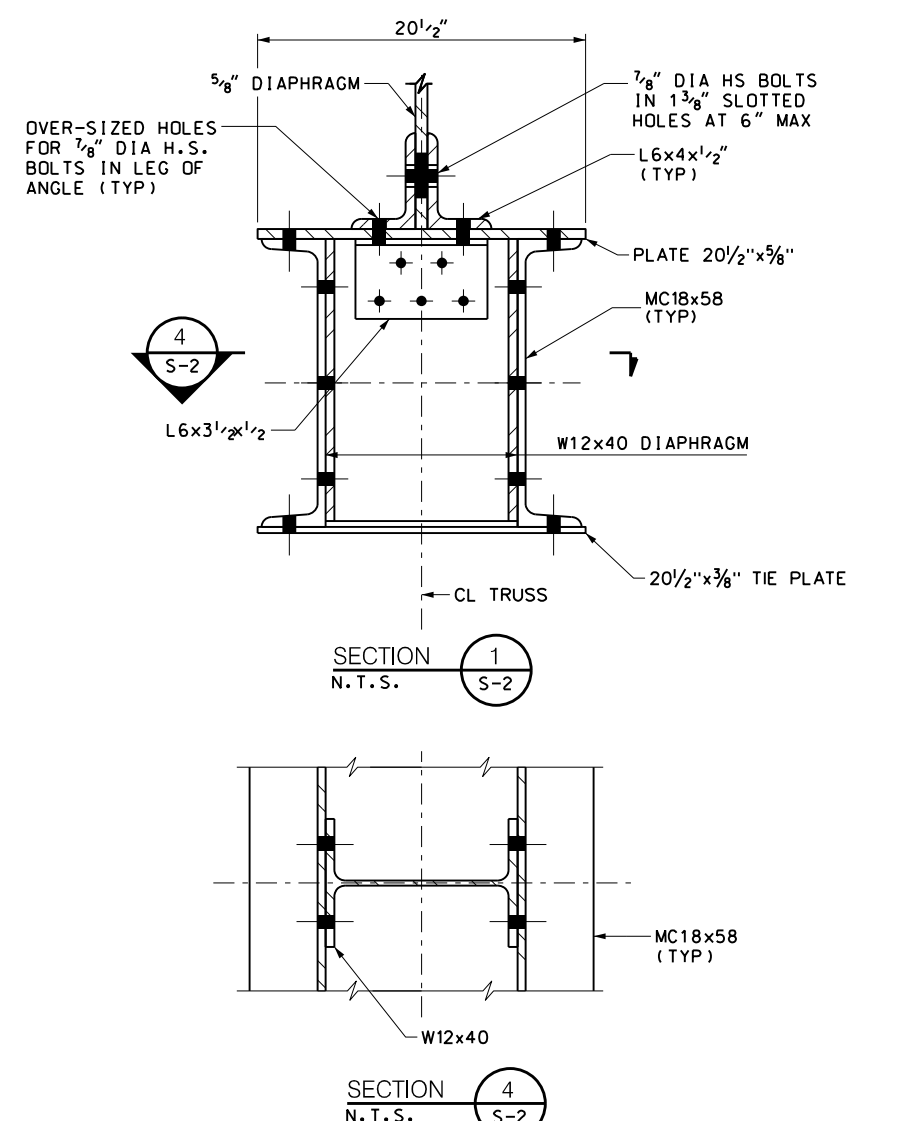
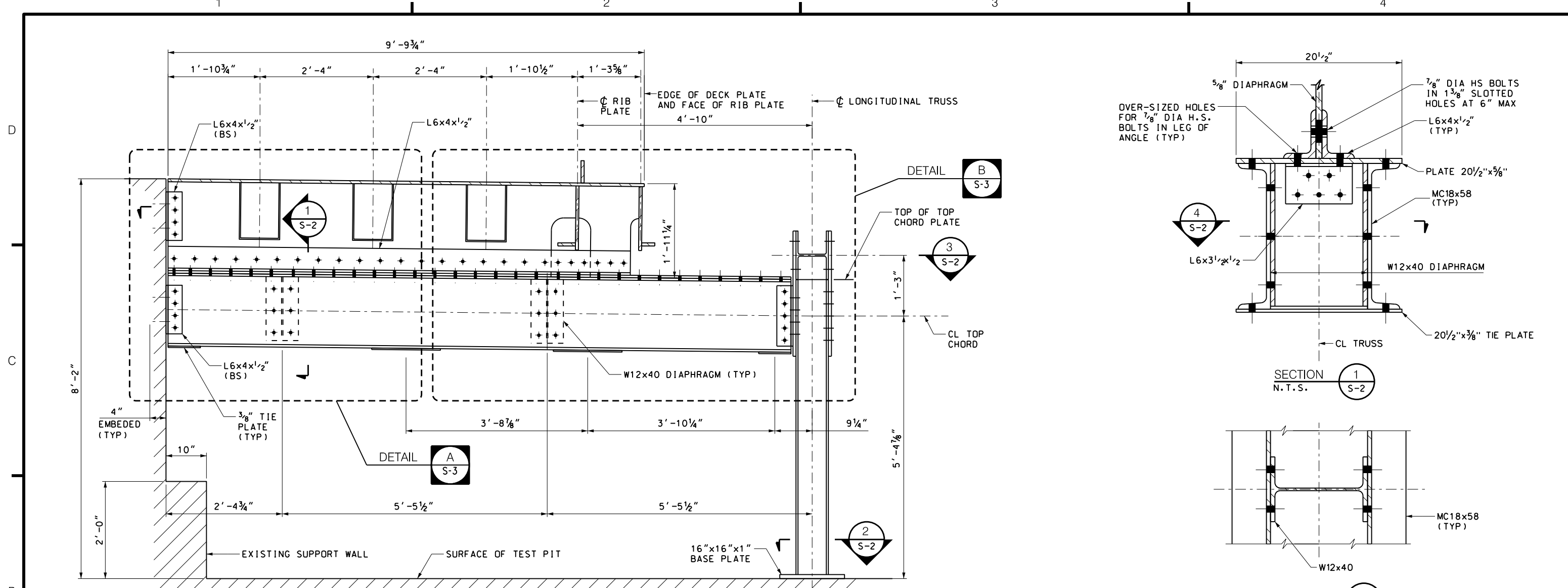


PARTIAL DECK PLAN  
SCALE: 3/4"=1'-0"

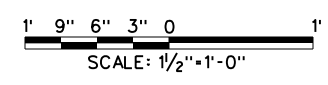
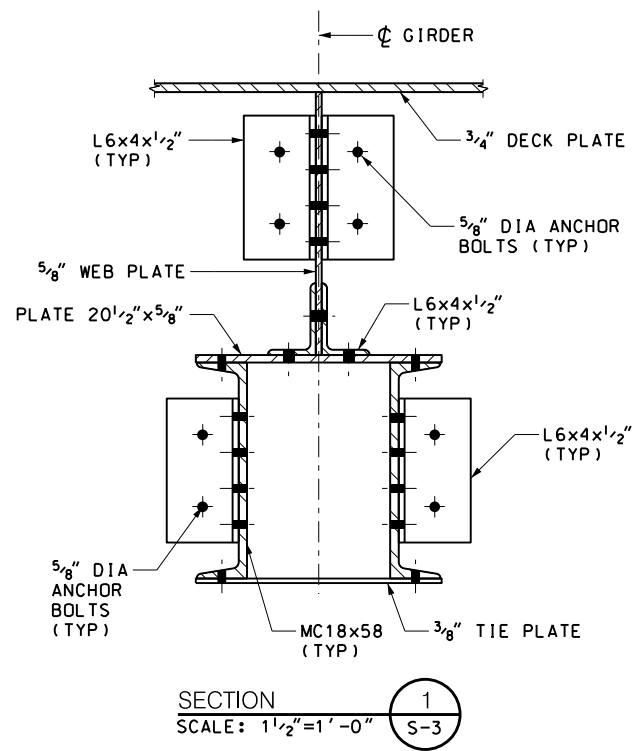
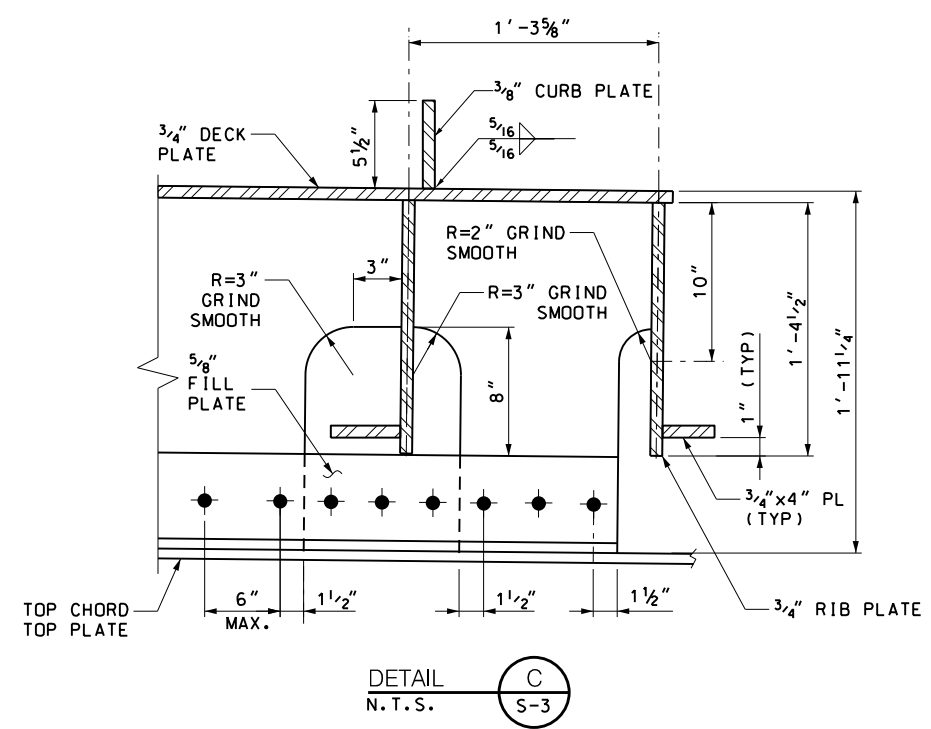
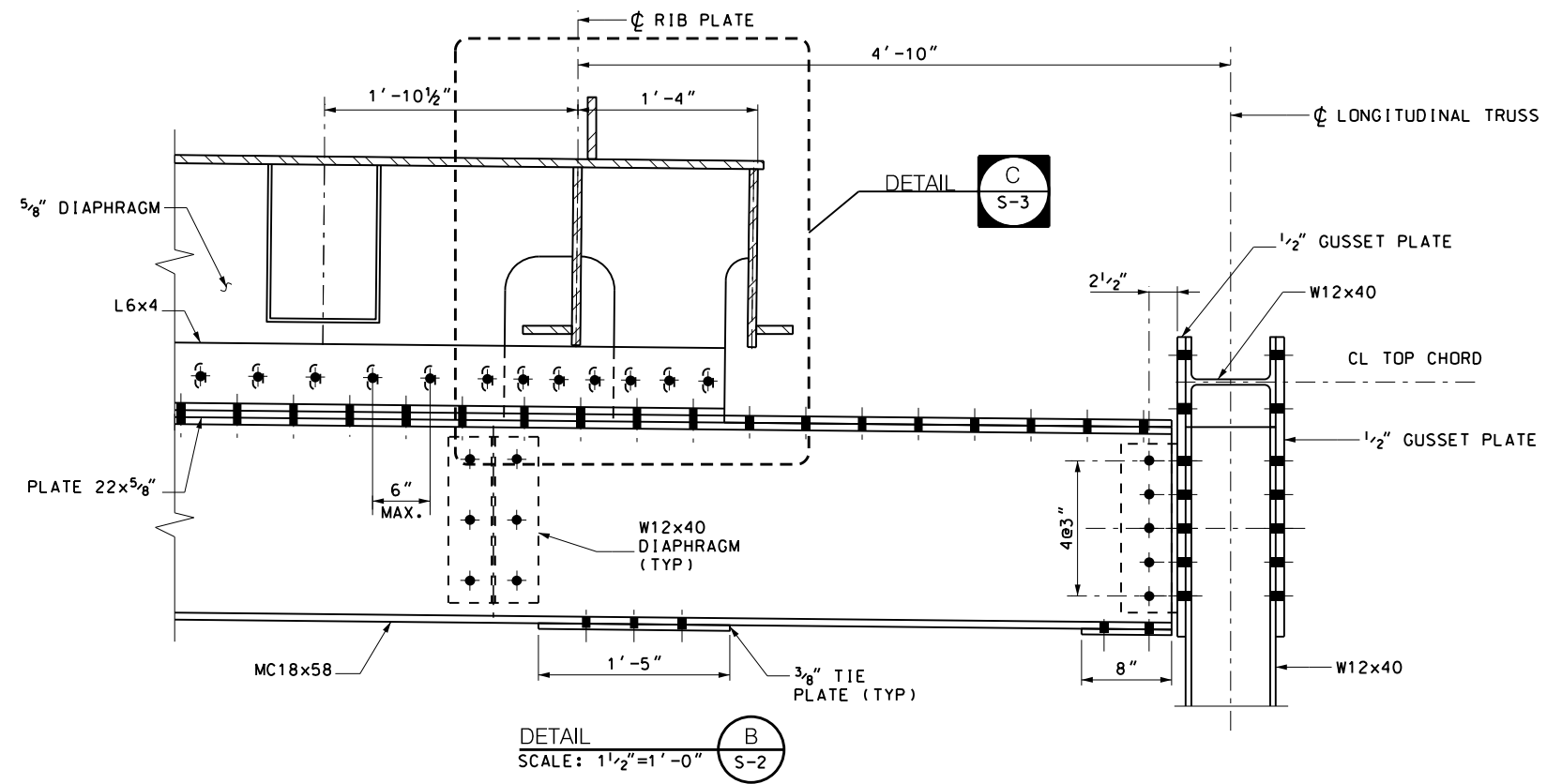
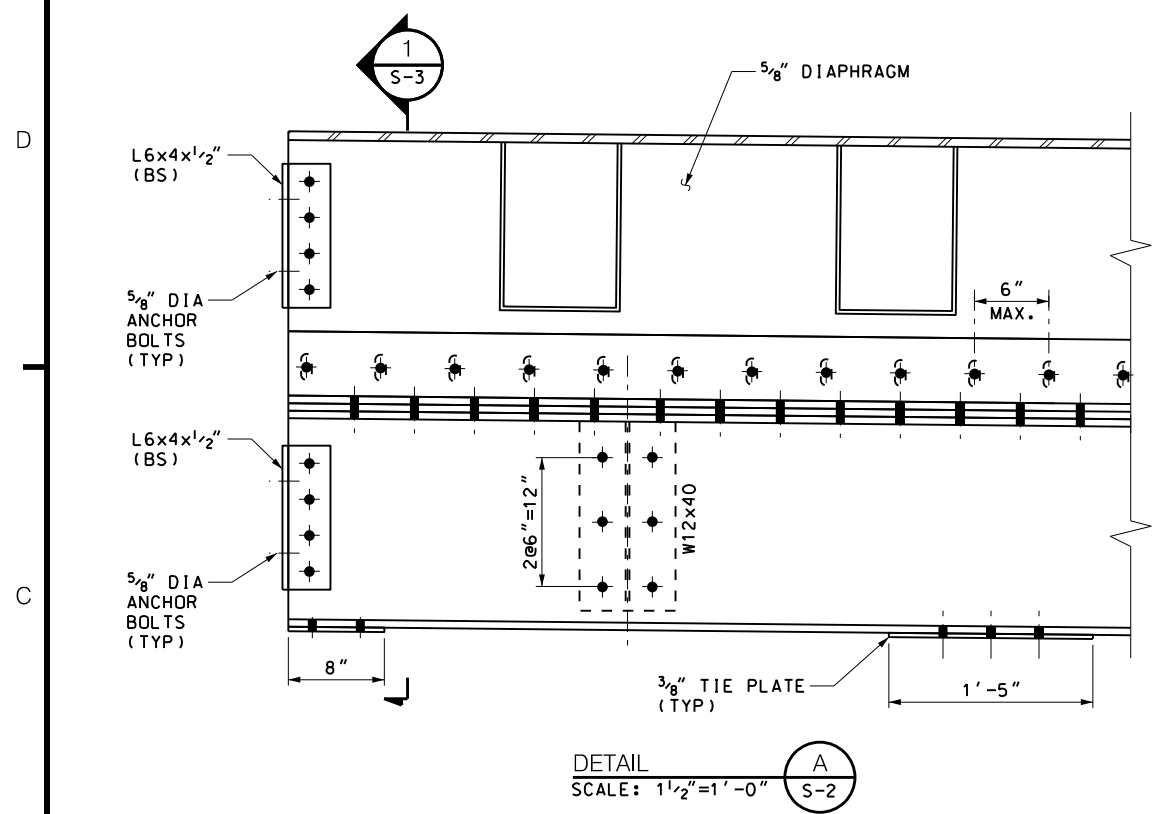
- NOTES:  
1. FOR POST LOCATION AND INSTALLATION TYPE, SEE TABLE 1 ON DWG. NO. SB-4.



DRAWN BY P. MANAYATH DESIGNED BY L. HERBERT CHECKED BY C. CLARK SCALE: 3/4"=1'-0"				<b>Thornton Tomasetti</b> 40 WALL STREET NEW YORK, NY 10005		Triborough Bridge and Tunnel Authority BARRIER CRASH TESTING FOR PROJECT TN-49		DRAWING TITLE ORTHOTROPIC DECK PANEL AND RAILING PLAN PROJECT NO. GFM-520N, WORK ORDER #14		CONTRACT NO. GFM-520N DRAWING NO. S-1 SHEET 4 OF 12 DATE JULY 6, 2018 REVISION NO. 0	
REV.	DESCRIPTION	DATE	APP'D.	"IT IS A VIOLATION OF THE PROFESSIONAL LICENSE LAW FOR ANY PERSON TO ALTER THIS DRAWING IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER/ARCHITECT AS APPLICABLE. THE ALTERING ENGINEER/ARCHITECT SHALL AFFIX HIS/HER SEAL AND THE NOTATION 'ALTERED BY' FOLLOWED BY HIS/HER SIGNATURE AND DATE OF ALTERATION."							



DRAWN BY P. MANAYATH DESIGNED BY L. HERBERT CHECKED BY C. CLARK SCALE: AS NOTED				<b>Thornton Tomasetti</b> 40 WALL STREET NEW YORK, NY 10005		Triborough Bridge and Tunnel Authority		DRAWING TITLE <b>FLOOR TRUSS DETAILS - I</b>		CONTRACT NO. GFM-520N DRAWING NO. S-2 SHEET 5 OF 12 DATE JULY 6, 2018 REVISION NO. 0	
REV. DESCRIPTION DATE APP'D.				PROJECT NO. GFM-520N, WORK ORDER #14		BARRIER CRASH TESTING FOR PROJECT TN-49		PROJECT NO. GFM-520N, WORK ORDER #14		REVISION NO. 0	
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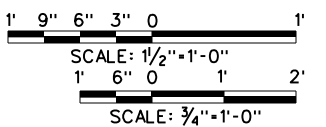
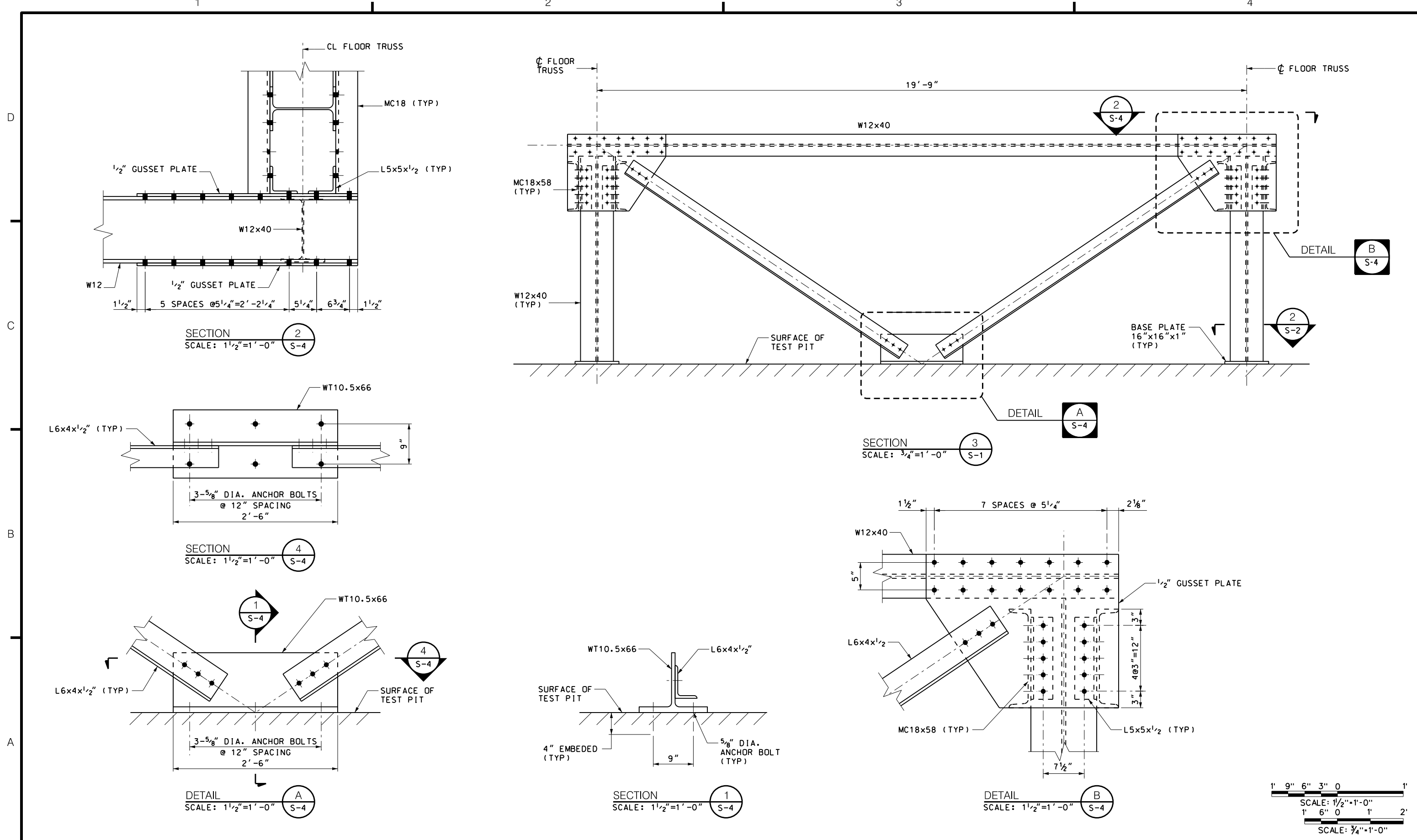
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				C. CLARK
DRAWN BY P. MANAYATH				SCALE: AS NOTED
DESIGNED BY L. HERBERT				

**Thornton Tomasetti**  
40 WALL STREET  
NEW YORK, NY 10005



BARRIER CRASH TESTING  
FOR PROJECT TN-49

DRAWING TITLE	CONTRACT NO.
FLOOR TRUSS DETAILS - 2	GFM-520N
PROJECT NO.	DRAWING NO.
GFM-520N, WORK ORDER #14	S-3
	SHEET 6 OF 12
	DATE
	JULY 6, 2018
	REVISION NO.
	0



REV.	DESCRIPTION	DATE	APP'D.	CHECKED BY
DRAWN BY P. MANAYATH				DESIGNED BY L. HERBERT
				CHECKED BY C. CLARK
				SCALE: AS NOTED

**Thornton Tomasetti**  
 40 WALL STREET  
 NEW YORK, NY 10005

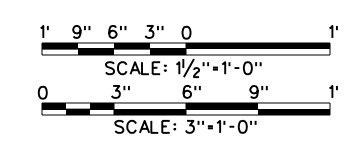
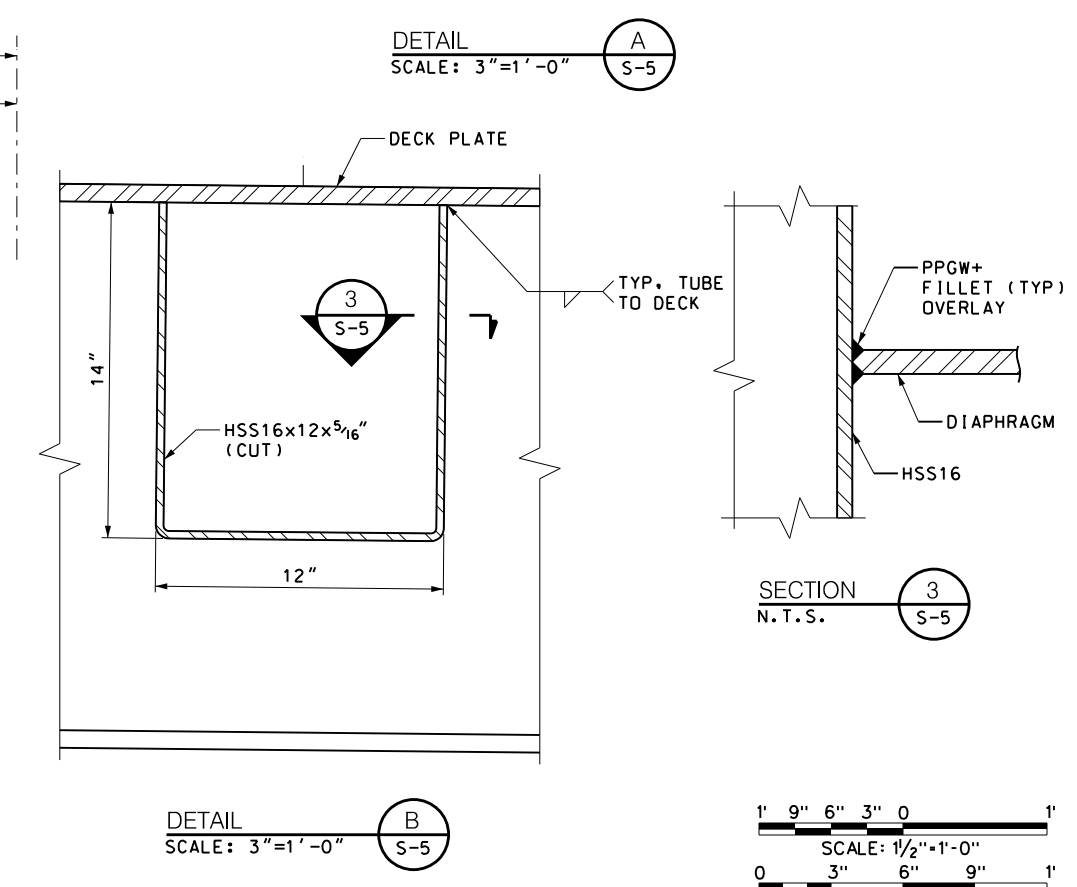
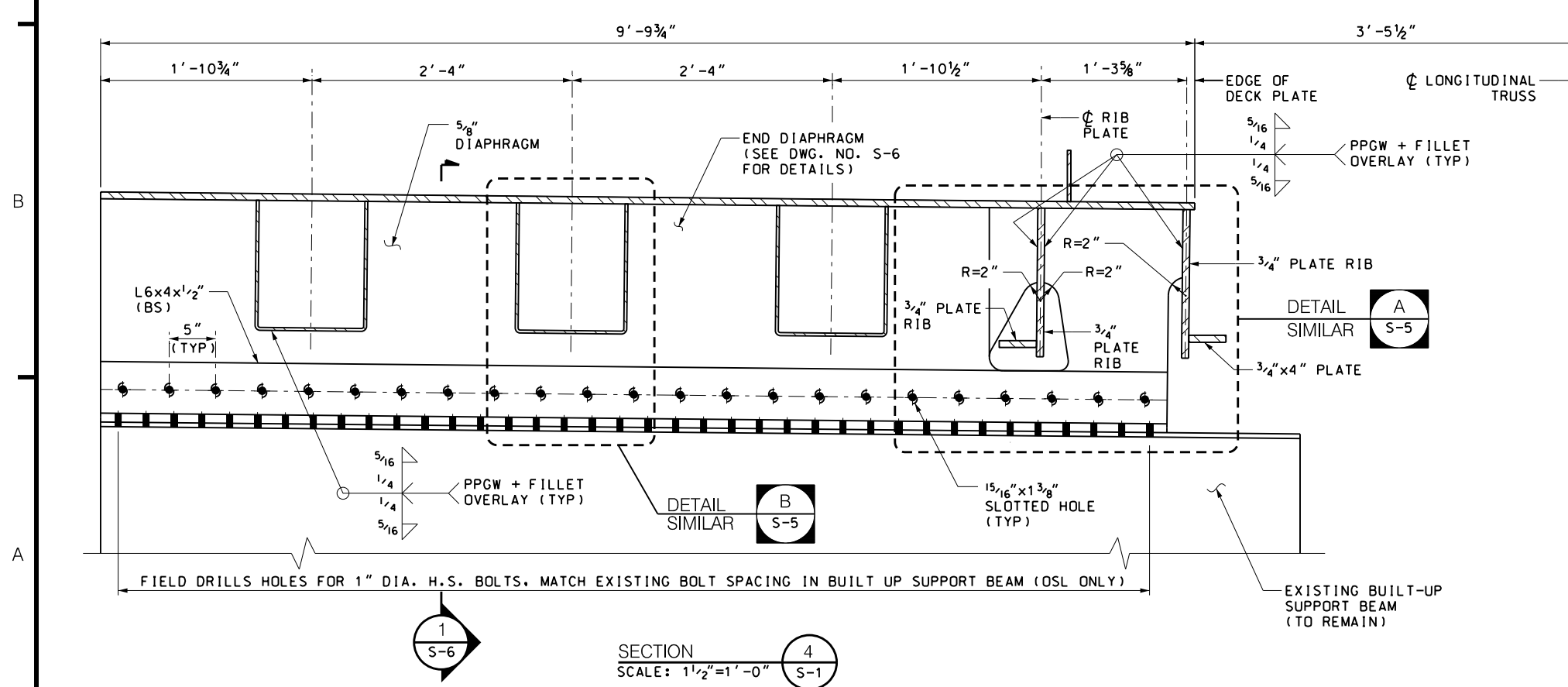
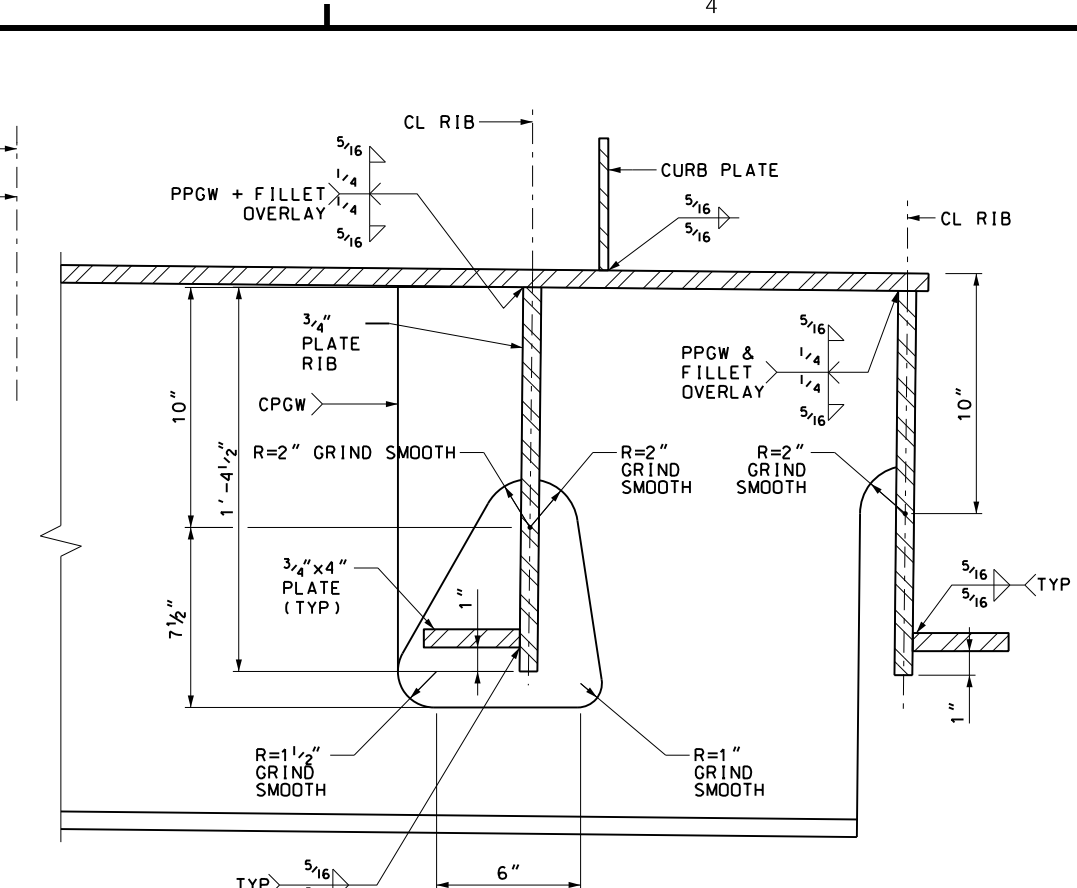
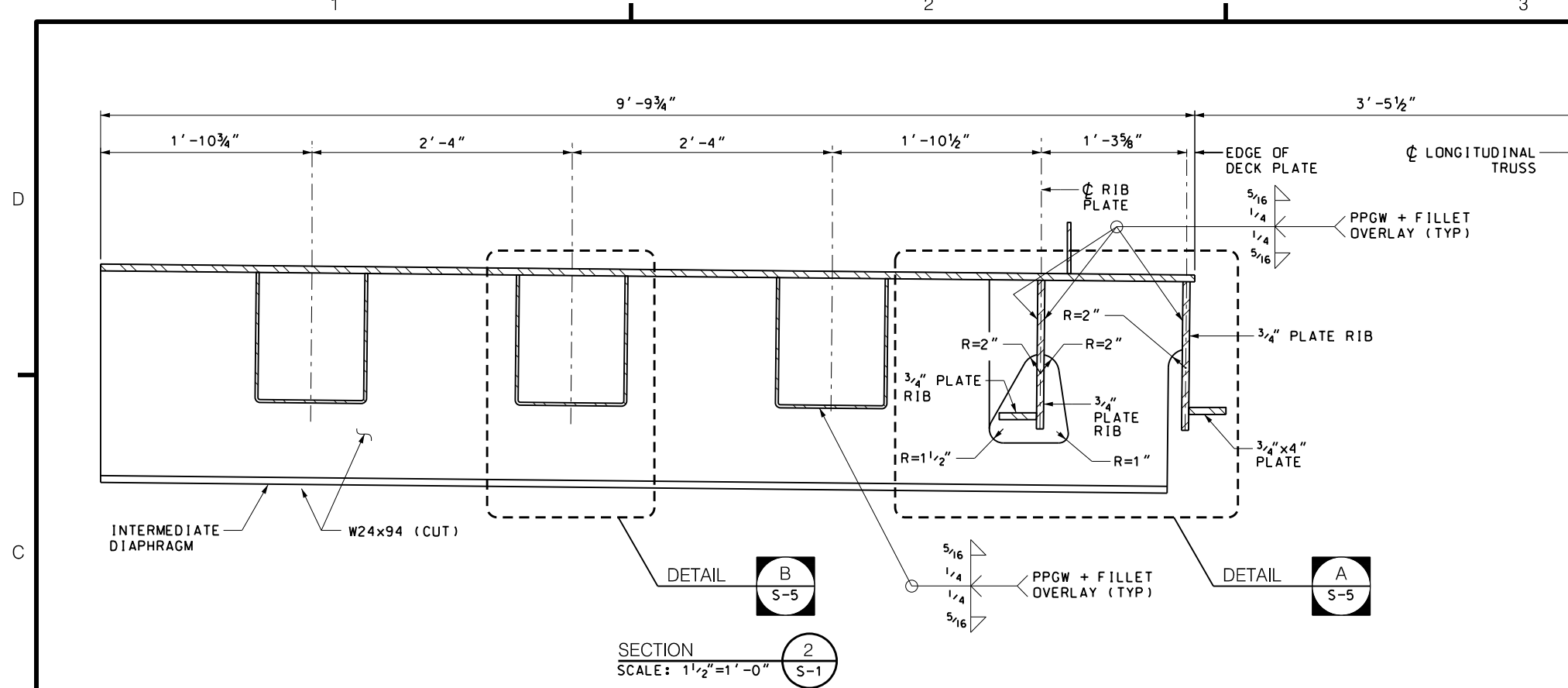


Triborough  
 Bridge and Tunnel  
 Authority

BARRIER CRASH TESTING  
 FOR PROJECT TN-49

DRAWING TITLE	CONTRACT NO.
LONGITUDINAL TRUSS DETAILS	GFM-520N
PROJECT NO.	DRAWING NO.
GFM-520N, WORK ORDER #14	S-4
	SHEET 7 OF 12
	DATE
	JULY 6, 2018
	REVISION NO.
	0

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REV.	DESCRIPTION	DATE	APP'D.	CHECKED BY

DRAWN BY P. MANAYATH  
 DESIGNED BY L. HERBERT  
 CHECKED BY C. CLARK  
 SCALE: AS NOTED

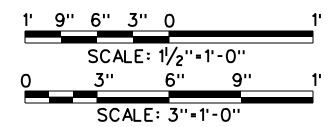
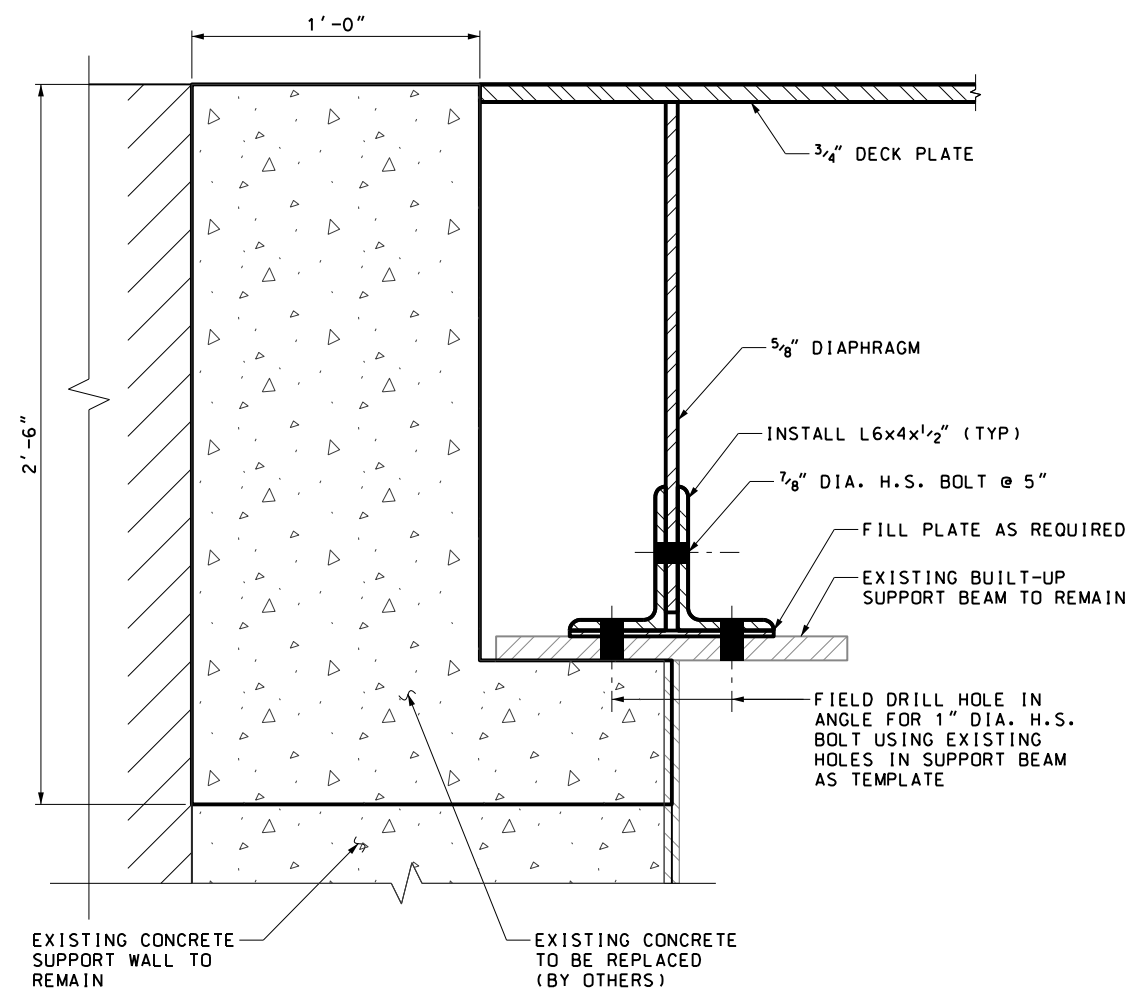
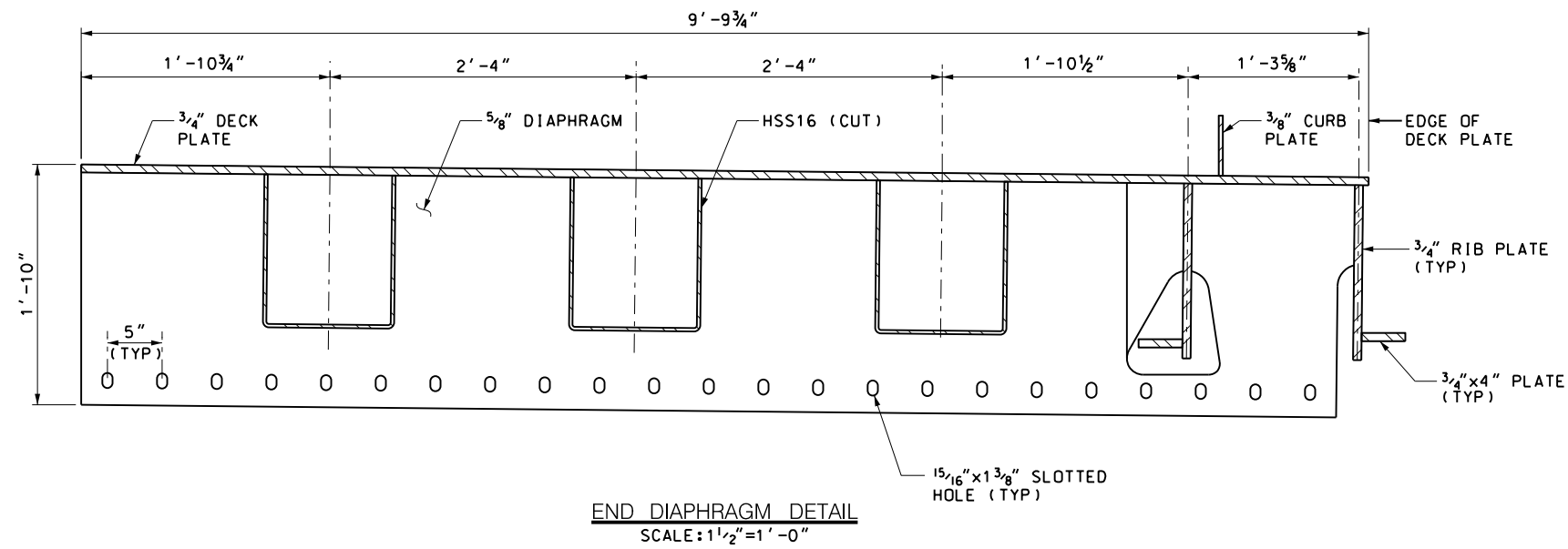
**Thornton Tomasetti**  
 40 WALL STREET  
 NEW YORK, NY 10005  
 Triborough  
 Bridge and Tunnel  
 Authority  
 BARRIER CRASH TESTING  
 FOR PROJECT TN-49

DRAWING TITLE  
 DIAPHRAGM DETAILS - 1  
 PROJECT NO.  
 GFM-520N, WORK ORDER #14

CONTRACT NO. GFM-520N  
 DRAWING NO. S-5  
 SHEET 8 OF 12  
 DATE JULY 6, 2018  
 REVISION NO. 0

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REV.	DESCRIPTION	DATE	APP'D.	CHECKED BY
DRAWN BY P. MANAYATH				DESIGNED BY L. HERBERT
CHECKED BY C. CLARK				SCALE: AS NOTED

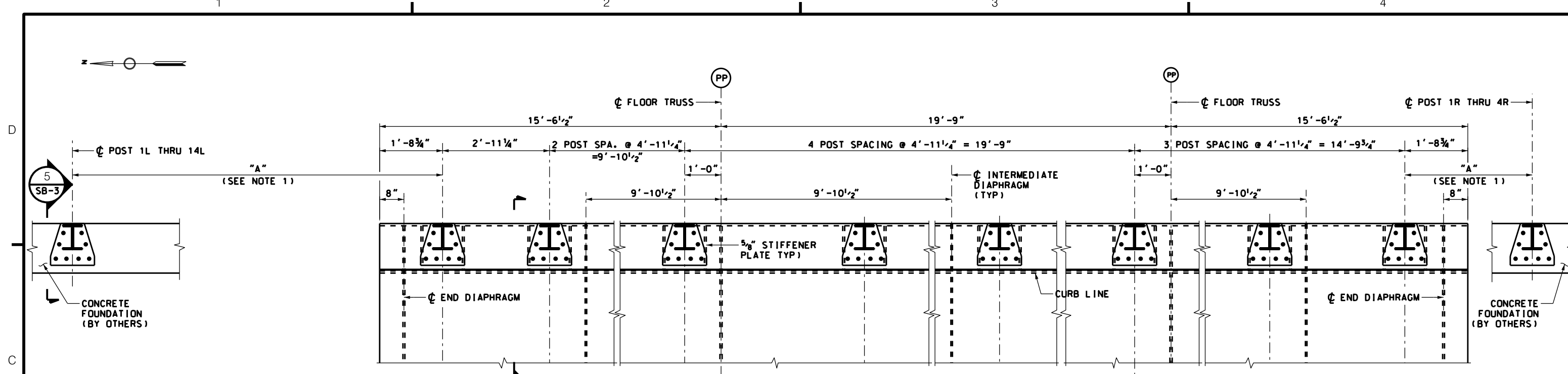
**Thornton Tomasetti**  
40 WALL STREET  
NEW YORK, NY 10005



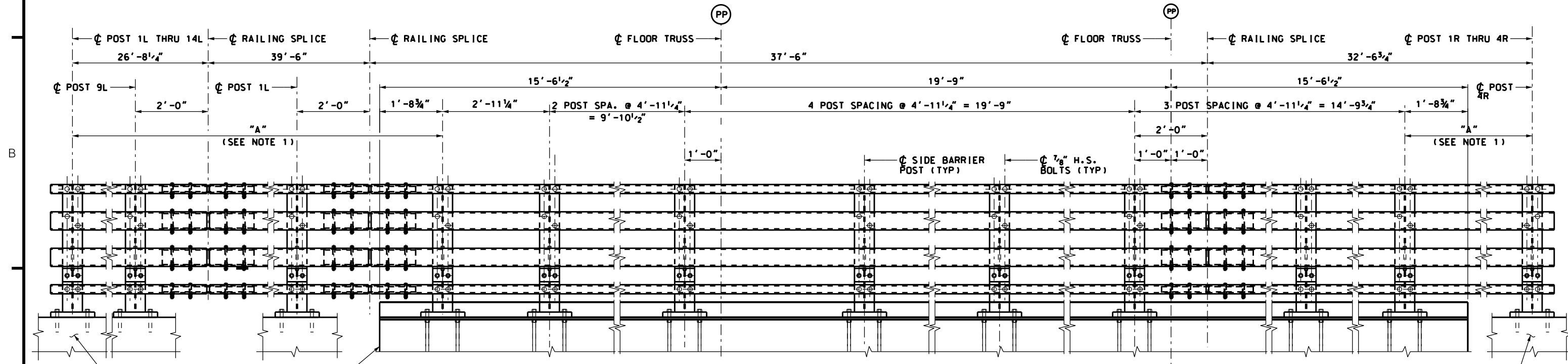
BARRIER CRASH TESTING  
FOR PROJECT TN-49

DRAWING TITLE	CONTRACT NO. GFM-520N
DIAPHRAGM DETAILS - 2	DRAWING NO. S-6
PROJECT NO. GFM-520N, WORK ORDER #14	SHEET 9 OF 12
	DATE JULY 6, 2018
	REVISION NO. 0

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SIDE BARRIER SUPPORTS AT TYPICAL PANEL  
SCALE: 3/4"=1'-0"



SIDE BARRIER ELEVATION AT TYPICAL PANEL  
SCALE: 3/4"=1'-0"

NOTES:  
1. FOR POST LOCATION AND INSTALLATION TYPE, SEE TABLE 1 ON DRAWING NO. SB-4.

1' 6" 0 1' 2"  
SCALE: 3/4"=1'-0"

1	RAILING SPLICE LOCATION	8/27/18	APP'D.	DRAWN BY P. MANAYATH
REV.	DESCRIPTION	DATE	APP'D.	DESIGNED BY L. HERBERT
				CHECKED BY C. CLARK
				SCALE: 3/4"=1'-0"

**Thornton Tomasetti**  
40 WALL STREET  
NEW YORK, NY 10005

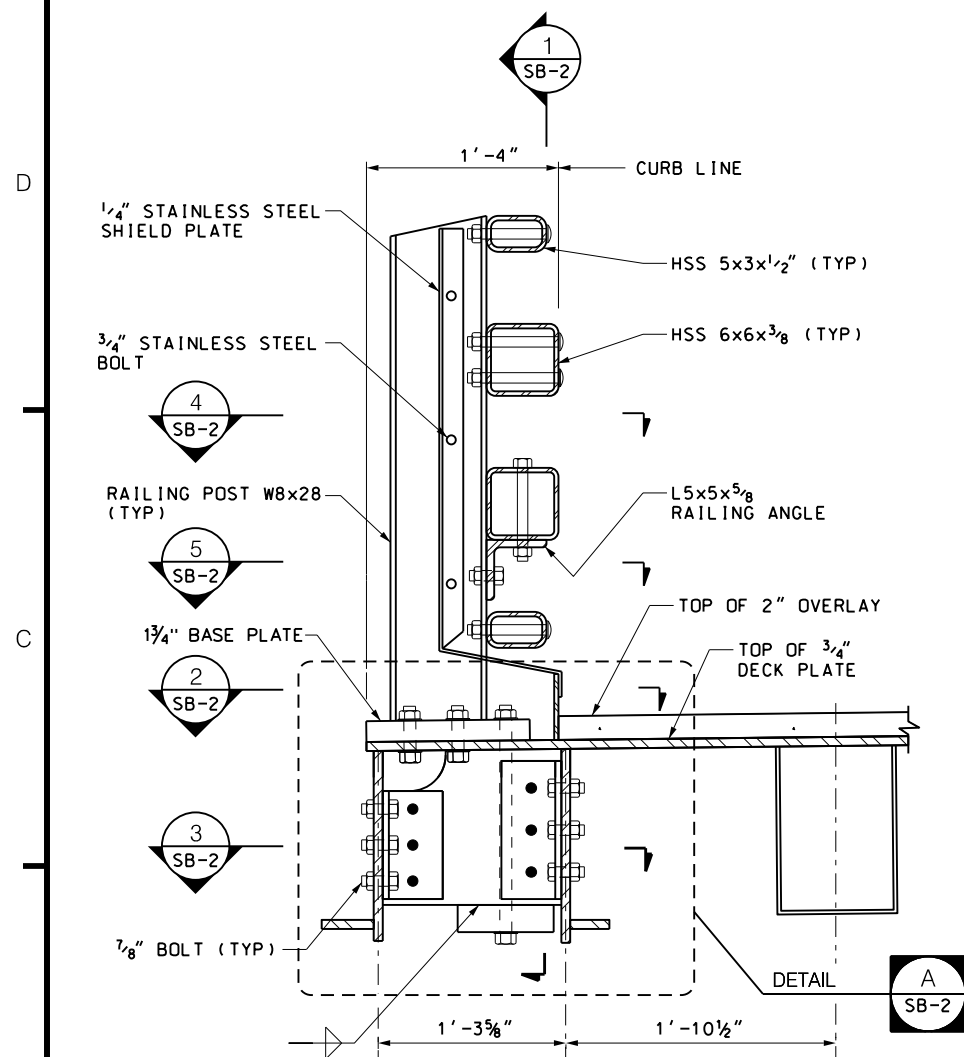


Triborough  
Bridge and Tunnel  
Authority

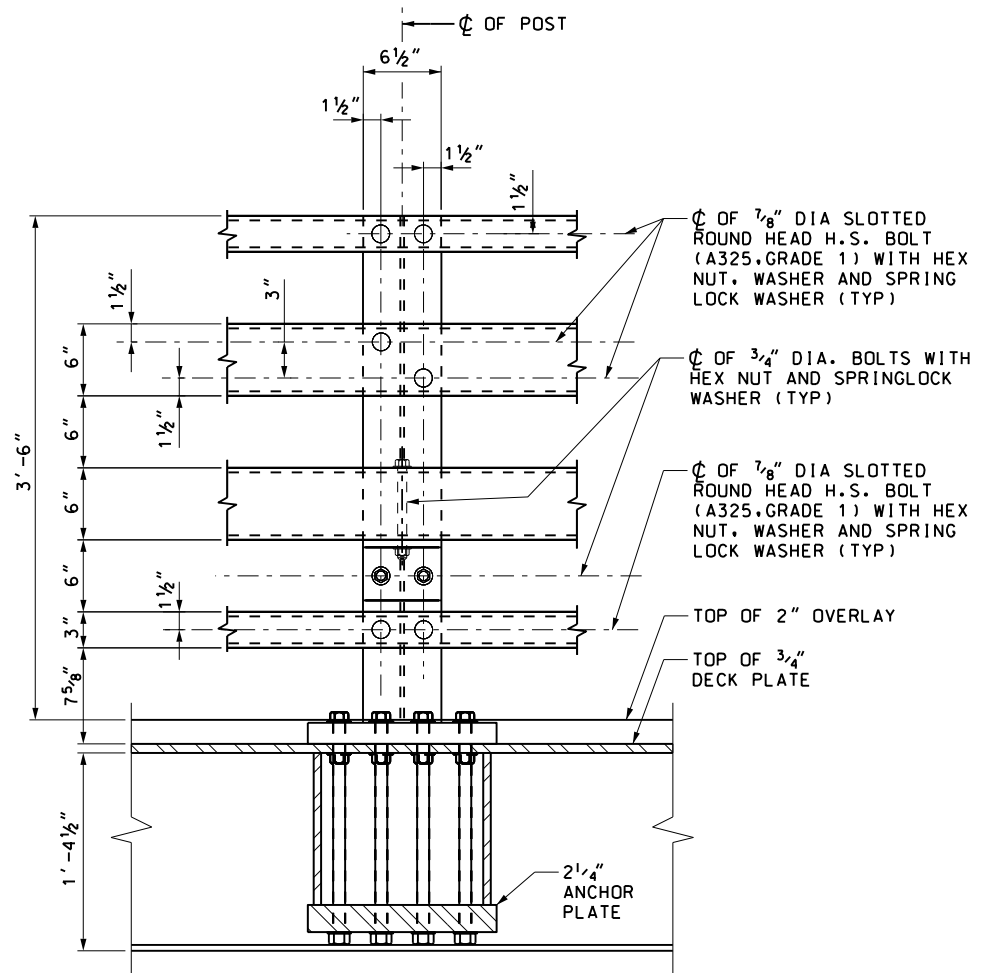
BARRIER CRASH TESTING  
FOR PROJECT TN-49

DRAWING TITLE	CONTRACT NO. GFM-520N
STEEL RAILING DETAILS - 1	DRAWING NO. SB-1R
PROJECT NO. GFM-520N, WORK ORDER #14	SHEET 10R OF 12
	DATE JULY 6, 2018
	REVISION NO. 1

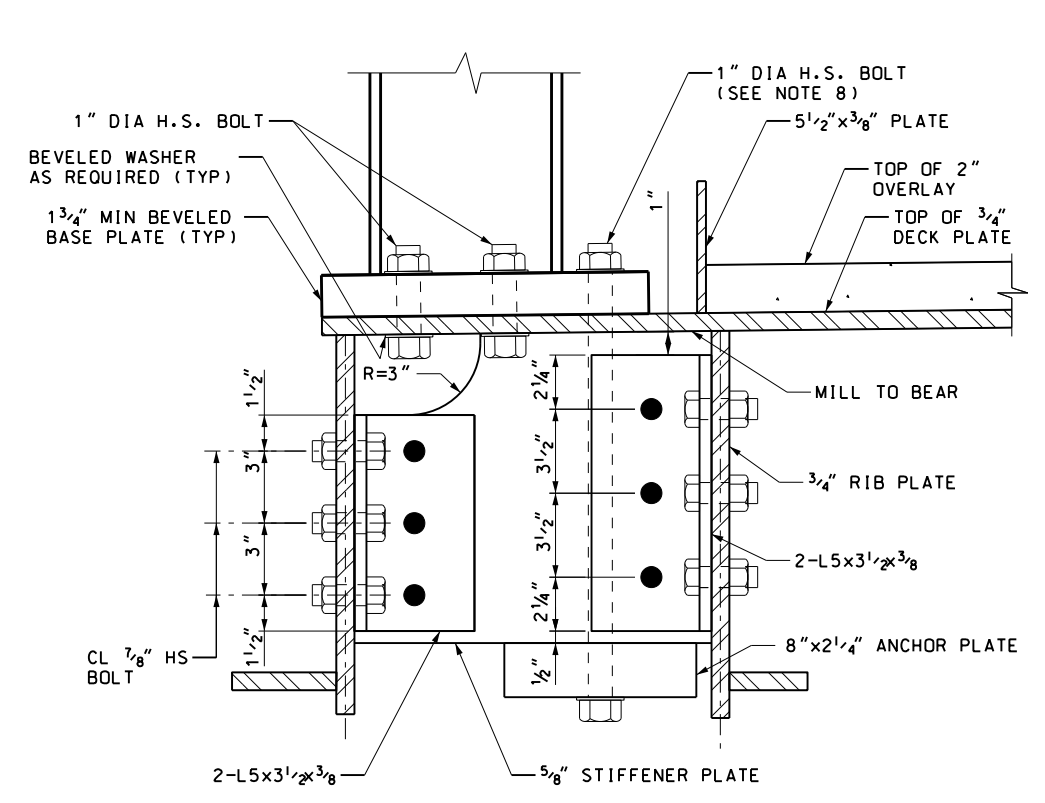
"IT IS A VIOLATION OF THE PROFESSIONAL LICENSE LAW FOR ANY PERSON TO ALTER THIS DRAWING IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER/ARCHITECT AS APPLICABLE. THE ALTERING ENGINEER/ARCHITECT SHALL AFFIX HIS/HER SEAL AND THE NOTATION 'ALTERED BY' FOLLOWED BY HIS/HER SIGNATURE AND DATE OF ALTERATION."



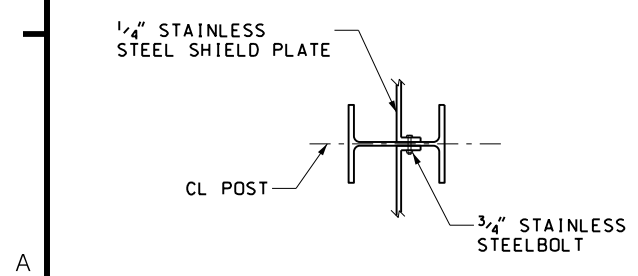
SECTION 1  
SCALE: 1 1/2" = 1'-0"  
SB-1



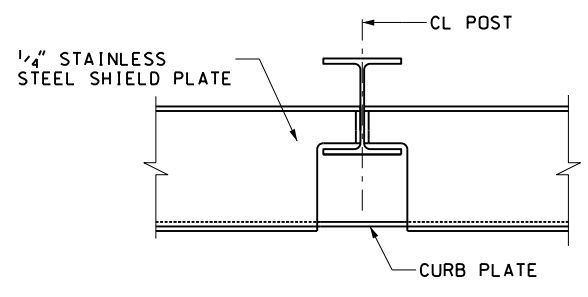
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SCALE: 1 1/2" = 1'-0"  
SB-2



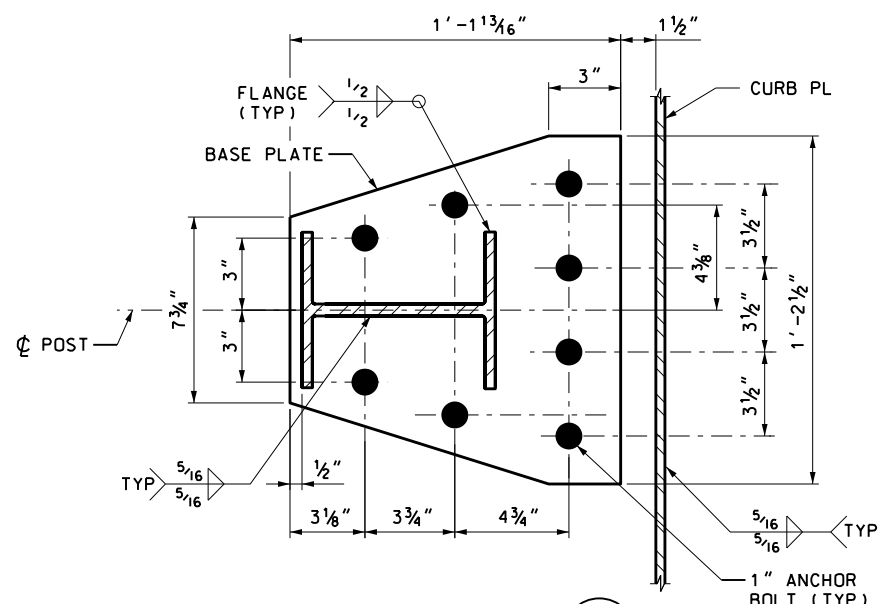
DETAIL A  
SCALE: 3" = 1'-0"  
SB-2



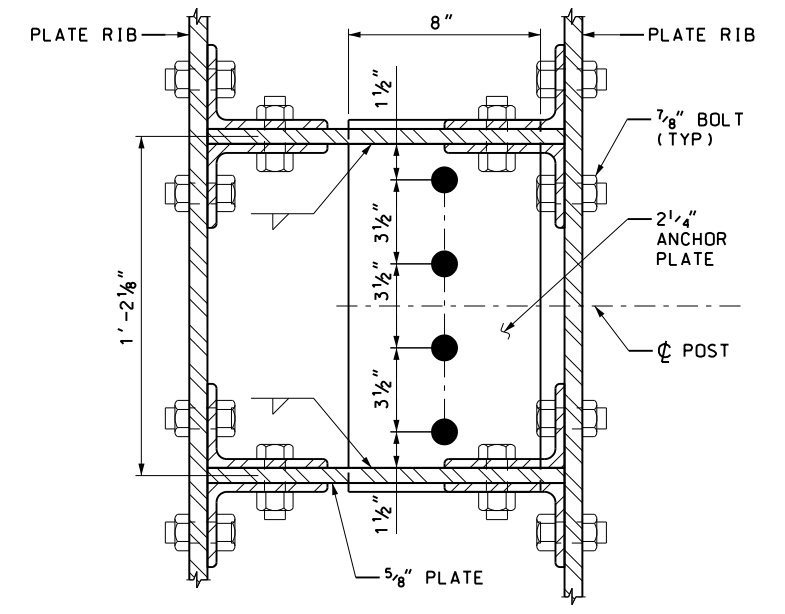
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SB-2



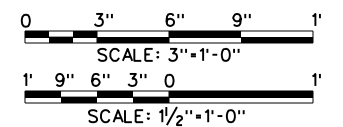
SECTION 5  
SCALE: N.T.S.  
SB-2



SECTION 2  
SCALE: 3" = 1'-0"  
SB-2



SECTION 3  
SCALE: 3" = 1'-0"  
SB-2



REV.	DESCRIPTION	DATE	APP'D.	CHECKED BY
DRAWN BY P. MANAYATH				DESIGNED BY L. HERBERT
CHECKED BY C. CLARK				SCALE: AS NOTED

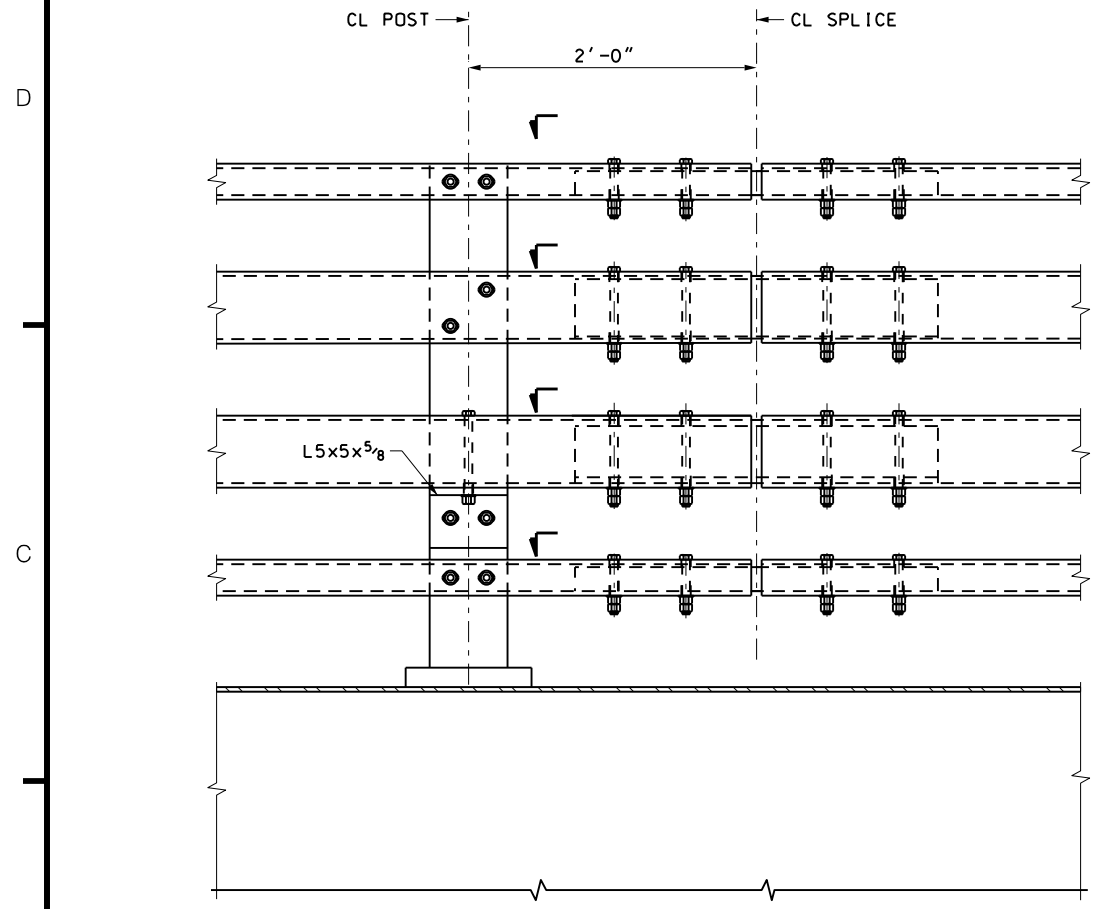
**Thornton Tomasetti**  
40 WALL STREET  
NEW YORK, NY 10005

**Triborough Bridge and Tunnel Authority**

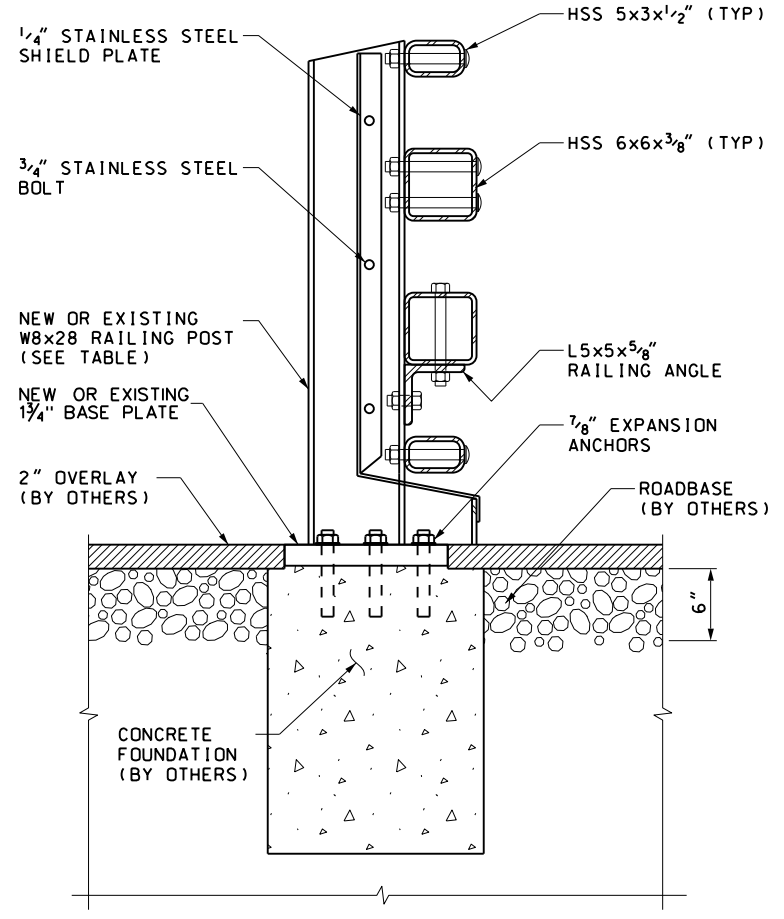
BARRIER CRASH TESTING  
FOR PROJECT TN-49

DRAWING TITLE	CONTRACT NO.
STEEL RAILING DETAILS - 2	GFM-520N
PROJECT NO.	DRAWING NO.
GFM-520N, WORK ORDER #14	SB-2
DATE	SHEET 11 OF 12
JULY 6, 2018	
REVISION NO.	
0	

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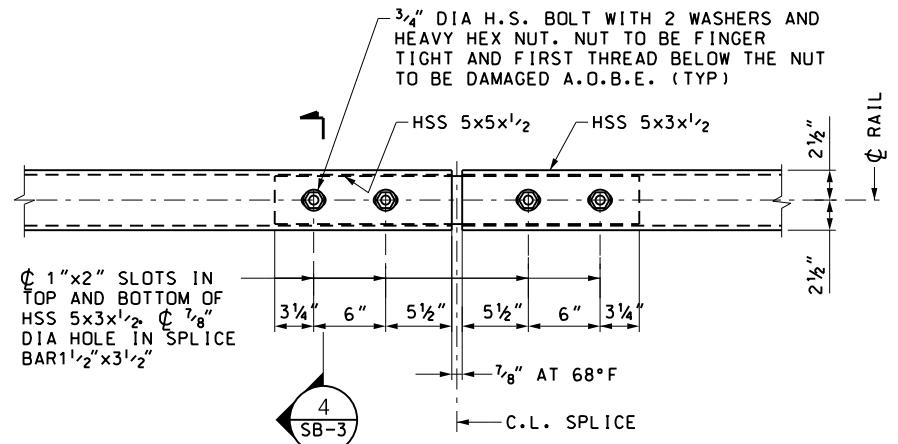
SIDE BARRIER SPLICE DETAIL  
SCALE: 1 1/2" = 1'-0"



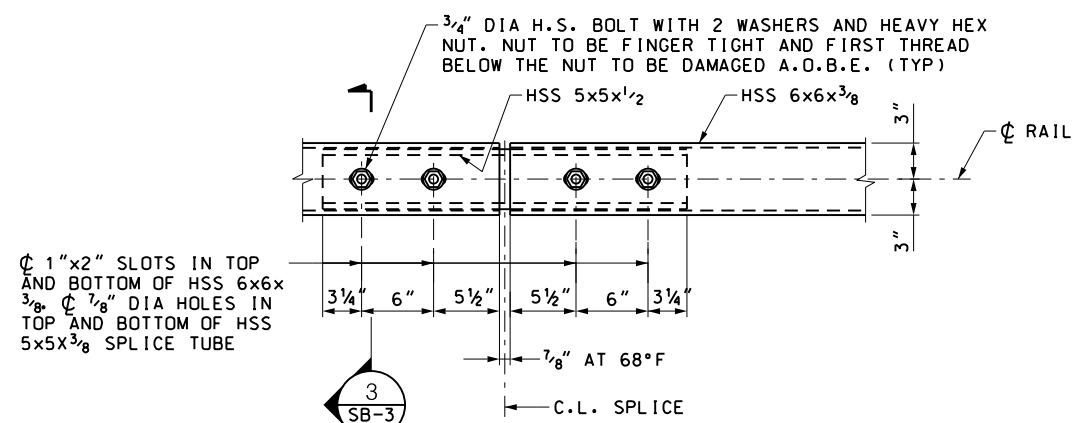
SECTION 5  
SCALE: 1 1/2" = 1'-0"

POST NUMBER	POST TYPE	"A"
1L	NEW	4' - 11 1/4"
2L	EXISTING	9' - 3 3/4"
3L	NEW	14' - 9 3/4"
4L	NEW	19' - 9"
5L	NEW	24' - 8 1/4"
6L	NEW	29' - 7 1/2"
7L	NEW	34' - 6 3/4"
8L	NEW	39' - 6"
9L	NEW	44' - 5 1/4"
10L	NEW	49' - 4 1/2"
11L	NEW	54' - 3 3/4"
12L	EXISTING	58' - 9 3/4"
13L	NEW	64' - 2 1/4"
14L	NEW	69' - 1 1/2"
1R	NEW	4' - 11 1/4"
2R	EXISTING	9' - 3 3/4"
3R	NEW	14' - 9 3/4"
4R	NEW	19' - 9"

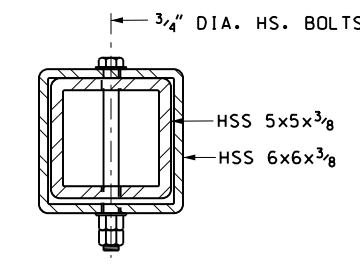
PIECE	QUANTITY	LENGTH
HSS 5x3x1/2"	2	40' - 0"
HSS 6x6x3/8"	2	40' - 0"
W8x28 POST	3	AS DETAILED
1 3/4" BASE PLATE	3	AS DETAILED
L5x5x5/8"	3	6 1/2"
1" BOLT	12	4 1/2"
1" BOLT	12	1' - 7 1/2"
7/8" BOLT	12	7"
7/8" BOLT	6	8"
3/4" BOLT	3	8"
3/4" BOLT	6	2 1/2"



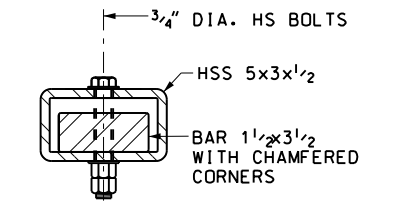
SECTION 1  
SCALE: 1 1/2" = 1'-0"



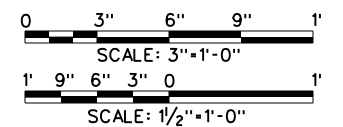
SECTION 2  
SCALE: 1 1/2" = 1'-0"



SECTION 3  
SCALE: 3" = 1'-0"



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



REV.	DESCRIPTION	DATE	APP'D.	CHECKED BY
DRAWN BY P. MANAYATH				DESIGNED BY L. HERBERT
CHECKED BY C. CLARK				SCALE: AS NOTED

**Thornton Tomasetti**  
40 WALL STREET  
NEW YORK, NY 10005

Triborough  
Bridge and Tunnel  
Authority

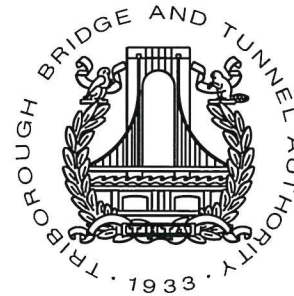
BARRIER CRASH TESTING  
FOR PROJECT TN-49

DRAWING TITLE	CONTRACT NO.
STEEL RAILING DETAILS - 3	GFM-520N
PROJECT NO.	REVISION NO.
GFM-520N, WORK ORDER #14	0

DRAWING NO.	SHEET
SB-3	12 OF 12
DATE	REVISION NO.
JULY 6, 2018	0

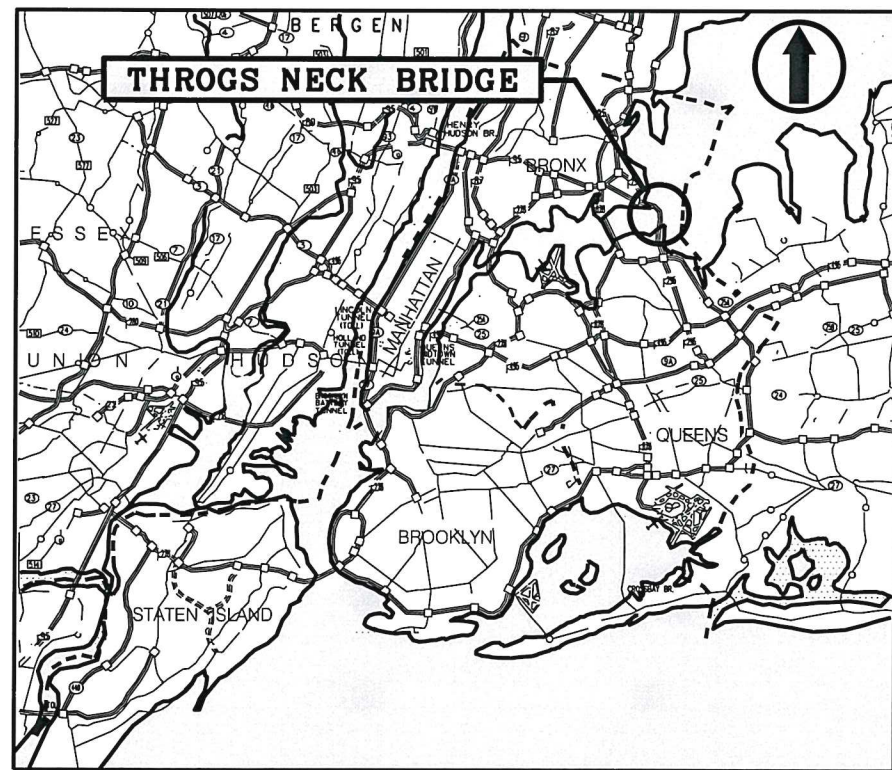
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# TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY

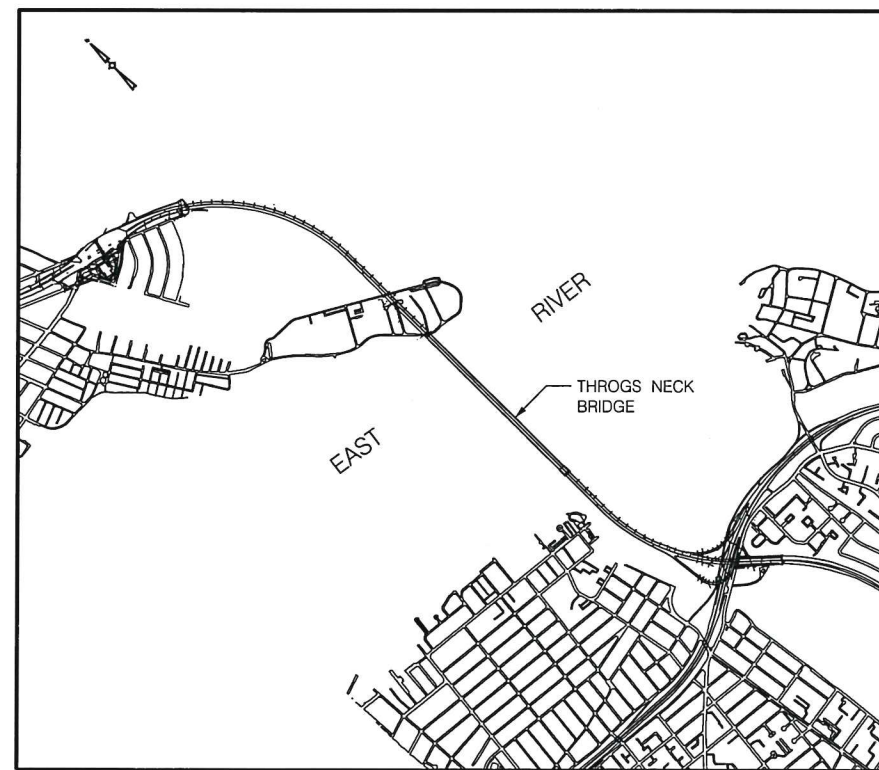


## PROJECT GFM-520N, WORK ORDER #14 TEST PIT DETAILS FOR PROJECT TN-49

JULY 6, 2018




LOCATION PLAN  
N.T.S.



KEY PLAN  
N.T.S.

PREPARED BY: **Thornton Tomasetti**  
40 WALL STREET, NEW YORK, NY 10005

  
SAMUEL SUMMERVILLE, P.E.  
PRINCIPAL - THORNTON TOMASETTI

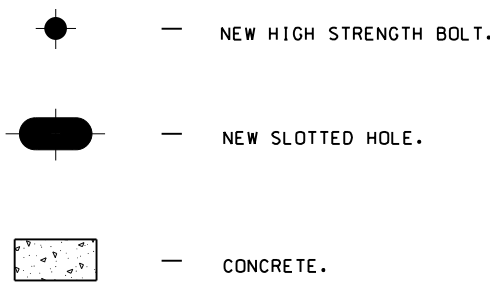
7-26-18  
DATE

DRAWING LIST

SYMBOLS

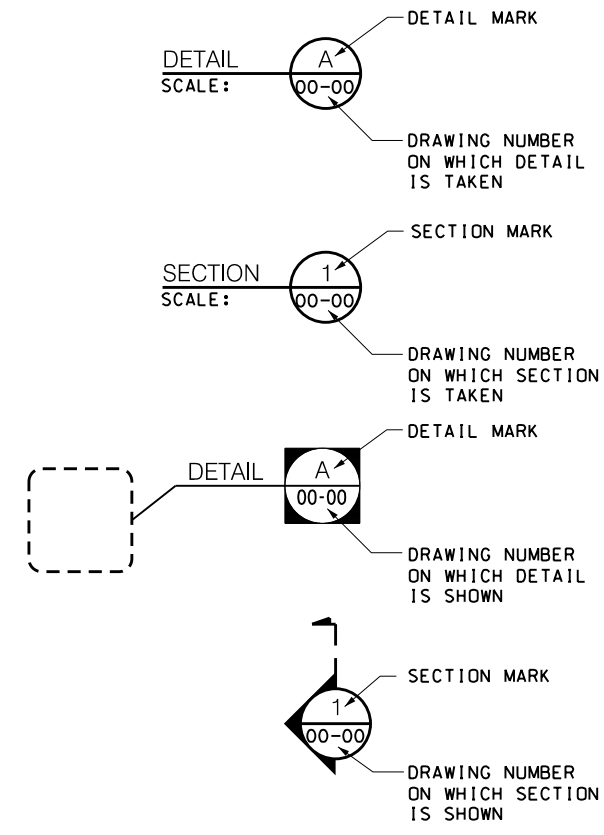
ABBREVIATIONS

SHEET NO.	DWG. NO.	REV. NO.	DRAWING TITLE
<b>GENERAL</b>			
1	G-1	0	TITLE SHEET AND LOCATION PLAN
2	G-2	0	GENERAL NOTES, DRAWING LIST, SYMBOLS AND ABBREVIATIONS
<b>STRUCTURAL</b>			
3	P-1	0	TEST PIT PLAN
4	P-2	0	FOOTING AND RETAINING WALLS DETAILS - 1
5	P-3	0	FOOTING AND RETAINING WALLS DETAILS - 2
6	P-4	0	FOOTING AND RETAINING WALLS DETAILS - 3
7	P-5	0	FOOTING AND RETAINING WALLS DETAILS - 4
8	P-6	0	REINFORCEMENT DETAILS - 1
9	P-7	0	REINFORCEMENT DETAILS - 2
10	P-8	0	STEEL RAILING POST ANCHORAGE DETAILS
<b>DEMOLITION</b>			
11	D-1	0	TEST PIT DEMOLITION PLAN
12	D-2	0	DEMOLITION DETAILS - 1
13	D-3	0	DEMOLITION DETAILS - 2
14	D-4	0	DEMOLITION DETAILS - 3
15	D-5	0	DEMOLITION DETAILS - 4



ABT	-- ABOUT	NO	-- NUMBER
ANCH	-- ANCHORAGE	NOM	-- NOMINAL
AOBE	-- AS ORDERED BY ENGINEER	NS	-- NEAR SIDE
ASTM	-- AMERICAN SOCIETY OF TESTING MATERIALS	NTS	-- NOT TO SCALE
B TO B / BB	-- BACK TO BACK	OC	-- ON CENTER
BF	-- BACK FACE	OSL	-- OUTSTANDING LEG
BOT	-- BOTTOM	OPNG	-- OPENING
BRG	-- BEARING	OPP	-- OPPOSITE
BS	-- BOTH SIDES	PC	-- PIECE
BTWN	-- BETWEEN	PL	-- PLATE
C TO C / CC	-- CENTER TO CENTER	PP	-- PANEL POINT
CANT	-- CANTILEVER	PPGW	-- PARTIAL PENETRATION GROOVE WELD
CHD	-- CHORD	PTFE	-- POLYTETRAFLUOROETHYLENE
CI	-- CAST IRON	EXTER	-- EXTERIOR
CL	-- CENTER LINE	INTER	-- INTERIOR
CLR	-- CLEAR	LG	-- LENGTH
COL	-- COLUMN	PVC	-- POLYVINYLCHLORIDE
CONC	-- CONCRETE	PVMT	-- PAVEMENT
CONN	-- CONNECTION	R / RAD	-- RADIUS
CONSTR	-- CONSTRUCTION	RC	-- REINFORCED CONCRETE
CONT	-- CONTINUOUS	RDWY	-- ROADWAY
CORR	-- CORRUGATED	REF	-- REFERENCE
CPGW	-- COMPLETE PENETRATION GROUTS WELD	REINF	-- REINFORCEMENT
CTSK	-- COUNTERSUNK	REOD	-- REQUIRED
DET	-- DETAIL	RJT	-- RELIEF JOINT
DIA	-- DIAMETER	SDWK	-- SIDEWALK
DIAPH	-- DIAPHRAGM	SECT	-- SECTION
DWG	-- DRAWING	SP / SPA	-- SPACE / SPACING
ED	-- END DIAPHRAGM	SPL	-- SPLICE
ELEC	-- ELECTRICAL	SQ	-- SQUARE
ELEV / EL	-- ELEVATION	SST	-- STAINLESS STEEL
EO	-- EQUAL	STIFF	-- STIFFENER
EXIST / EXST	-- EXISTING	STL	-- STEEL
EXP	-- EXPANSION	STR / STRG	-- STRINGER
F	-- FAHRENHEIT	SYMM	-- SYMMETRICAL
FF	-- FRONT FACE	TBTA	-- TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY
FL	-- FLOOR	THD	-- THREAD
FLBM	-- FLOORBEAM	THRD	-- THREADED
FLG	-- FLANGE	THK	-- THICK
FS	-- FAR SIDE	THRU	-- THROUGH
FUT	-- FUTURE	TP	-- TURNING POINT
GALV	-- GALVANIZED	TYP	-- TYPICAL
HEX	-- HEXAGONAL	UON / UN	-- UNLESS OTHERWISE NOTED
HORIZ	-- HORIZONTAL	VERT	-- VERTICAL
HS	-- HIGH STRENGTH	WP	-- WORKING POINT
JT	-- JOINT	W/	-- WITH
MAX	-- MAXIMUM		
MIN	-- MINIMUM		
MOD	-- MODIFIED		
MPT	-- MAINTENANCE AND PROTECTION OF TRAFFIC		
NA	-- NOT APPLICABLE		
NIC	-- NOT IN CONTRACT		

LEGENDS FOR SECTION MARKS

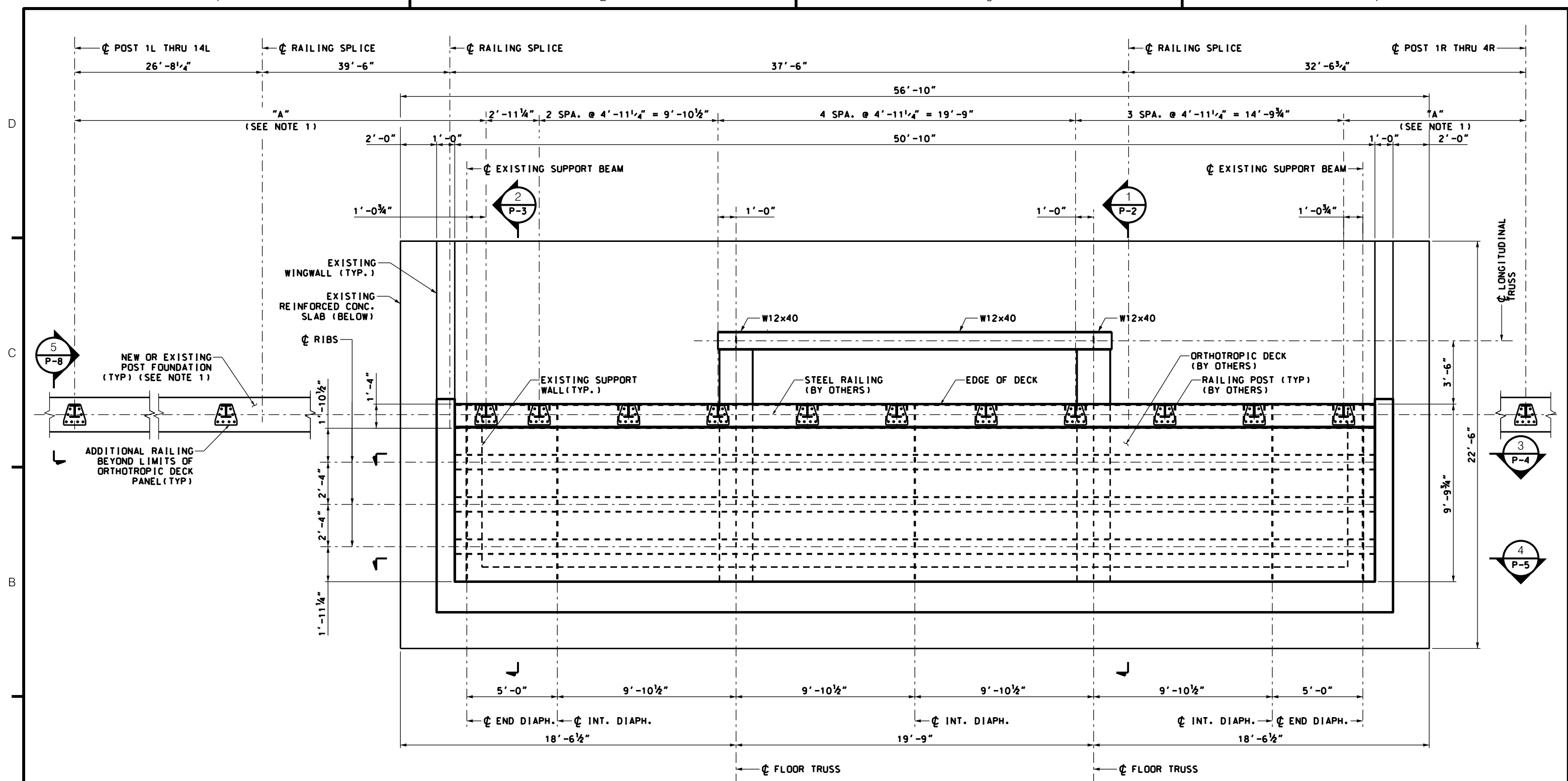


NOTES:  
**GENERAL:**  
 1. WORK THESE DRAWINGS WITH "BARRIER CRASH TESTING FOR PROJECT TN-49".  
 2. THE SCOPE OF WORK FOR THIS PROJECT CONSISTS OF FABRICATION (BY OTHERS), ERECTION, AND CRASH TESTING OF DECK PANEL AND 4 RAIL STEEL BARRIERS.  
 3. IF THE CONTRACTOR DAMAGES ANY EQUIPMENT OR MATERIALS WHICH ARE TO REMAIN IN PLACE OR ARE THE PROPERTY OF THE TESTING FACILITY, DAMAGED MATERIALS SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE TESTING FACILITY AT THE EXPENSE OF THE CONTRACTOR.  
 4. THE CONTRACTOR SHALL PROMPTLY REMOVE ALL EXCESS MATERIALS, CONSUMERABLES, AND TOOLS FROM THE TESTING FACILITY AFTER COMPLETION OF THE WORK.  
 5. THE CONTRACTOR SHALL PROVIDE WORK PLATFORMS AND SUPPORTS AS REQUIRED FOR THE ERECTION OF THE SUPPORT TRUSSES AND DECK PANEL. THE COST OF ALL PLATFORMS AND SUPPORTS SHALL BE INCLUDED IN THE BID UNIT PRICES. ALL ENGINEERING DESIGN WORK SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER CURRENTLY LICENSED IN THE STATE OF TEXAS AND SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.

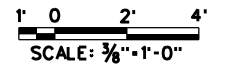
**STRUCTURAL STEEL:**  
 1. ALL STRUCTURAL STEEL, BOLTS, ANCHORS, AND PLATES SHALL BE PROVIDED BY THE STEEL FABRICATOR.  
 2. UNLESS OTHERWISE NOTED, ALL EXISTING STEEL SHALL BE REMOVED. SEE DEMOLITION DRAWINGS FOR DETAILS.

DRAWN BY P. MANAYATH				<p><b>Thornton Tomasetti</b>          40 WALL STREET          NEW YORK, NY 10005</p>	<p>Triborough          Bridge and Tunnel          Authority</p>	DRAWING TITLE		CONTRACT NO. GFM-520N
DESIGNED BY L. HERBERT						GENERAL NOES, DRAWING LIST, SYMBOLS AND ABBREVIATIONS		DRAWING NO. G-2
CHECKED BY C. CLARK						TEST PIT DETAILS FOR PROJECT TN-49		SHEET 2 OF 15
REV.	DESCRIPTION	DATE	APP'D.	SCALE: NONE	PROJECT NO. GFM-520N, WORK ORDER #14	DATE JULY 6, 2018	REVISION NO. 0	

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TEST PIT PLAN  
SCALE: 3/8"=1'-0"



REV.	DESCRIPTION	DATE	APP'D.	CHECKED BY
				C. CLARK
DRAWN BY P. MANAYATH				DESIGNED BY L. HERBERT
SCALE: 3/8"=1'-0"				

**Thornton Tomasetti**  
40 WALL STREET  
NEW YORK, NY 10005

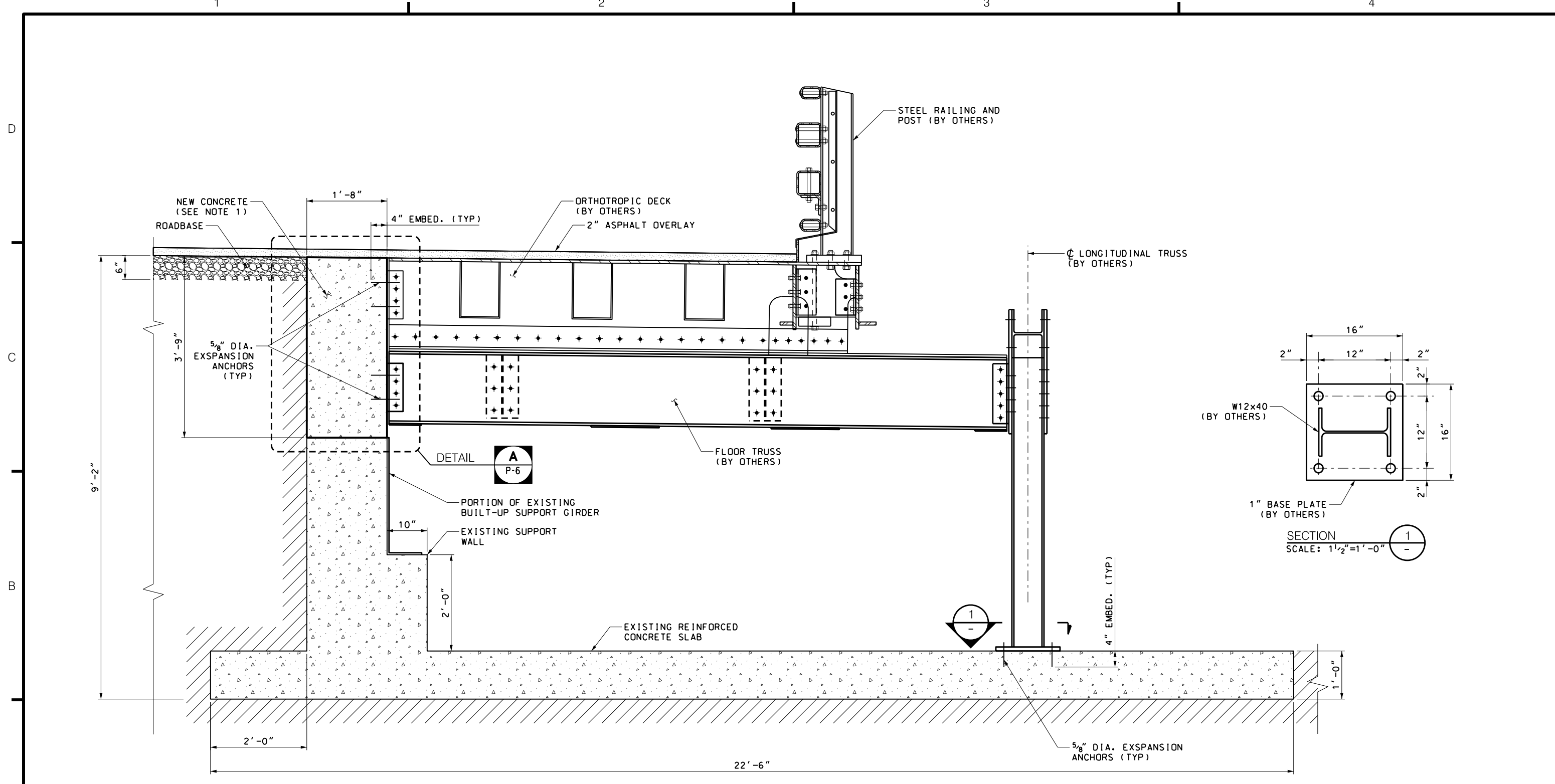


TEST PIT DETAILS  
FOR PROJECT TN-49

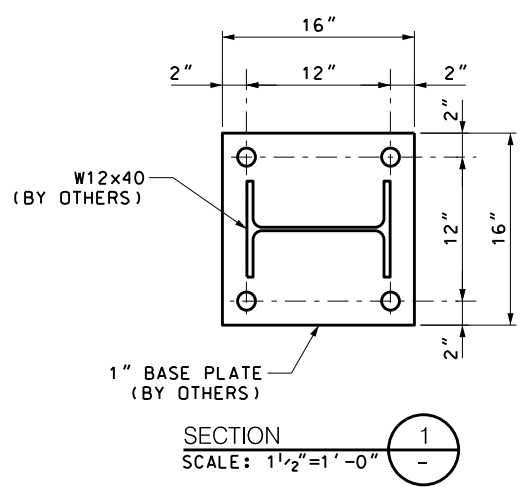
DRAWING TITLE	TEST PIT PLAN
PROJECT NO.	GFM-520N, WORK ORDER #14

CONTRACT NO.	GFM-520N
DRAWING NO.	P-1
SHEET	8 OF 15
DATE	JULY 6, 2018
REVISION NO.	0

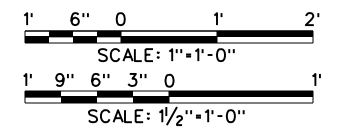
"IT IS A VIOLATION OF THE PROFESSIONAL LICENSE LAW FOR ANY PERSON TO ALTER THIS DRAWING IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER/ARCHITECT AS APPLICABLE. THE ALTERING ENGINEER/ARCHITECT SHALL AFFIX HIS/HER SEAL AND THE NOTATION 'ALTERED BY' FOLLOWED BY HIS/HER SIGNATURE AND DATE OF ALTERATION."




SECTION AT FLOOR TRUSS 1  
SCALE: 1"=1'-0" P-1

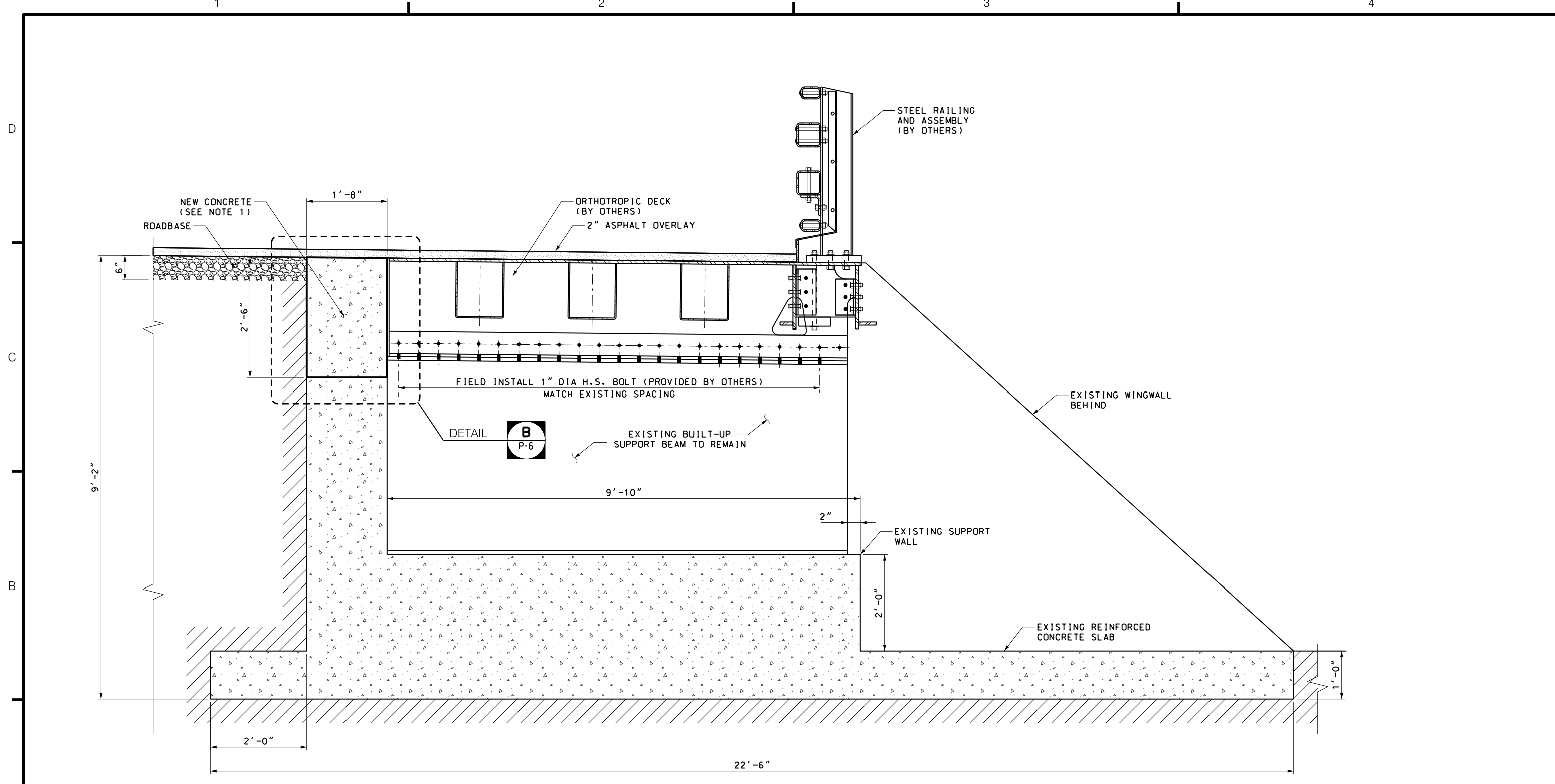


NOTES:  
1. REBAR NOT SHOWN FOR CLARITY, SEE DRAWINGS P-6 AND P-7 FOR DETAILS.



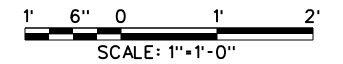
				DRAWN BY P. MANAYATH DESIGNED BY L. HERBERT CHECKED BY C. CLARK	<b>Thornton Tomasetti</b> 40 WALL STREET NEW YORK, NY 10005	 Triborough Bridge and Tunnel Authority	DRAWING TITLE FOOTING AND RETAINING WALL DETAILS - 1	CONTRACT NO. GFM-520N DRAWING NO. P-2 SHEET 4 OF 15
REV. DESCRIPTION "IT IS A VIOLATION OF THE PROFESSIONAL LICENSE LAW FOR ANY PERSON TO ALTER THIS DRAWING IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER/ARCHITECT AS APPLICABLE. THE ALTERING ENGINEER/ARCHITECT SHALL AFFIX HIS/HER SEAL AND THE NOTATION 'ALTERED BY' FOLLOWED BY HIS/HER SIGNATURE AND DATE OF ALTERATION."	DATE APP'D.	SCALE: AS NOTED	PROJECT NO. GFM-520N, WORK ORDER #14	DATE JULY 6, 2018 REVISION NO. 0				



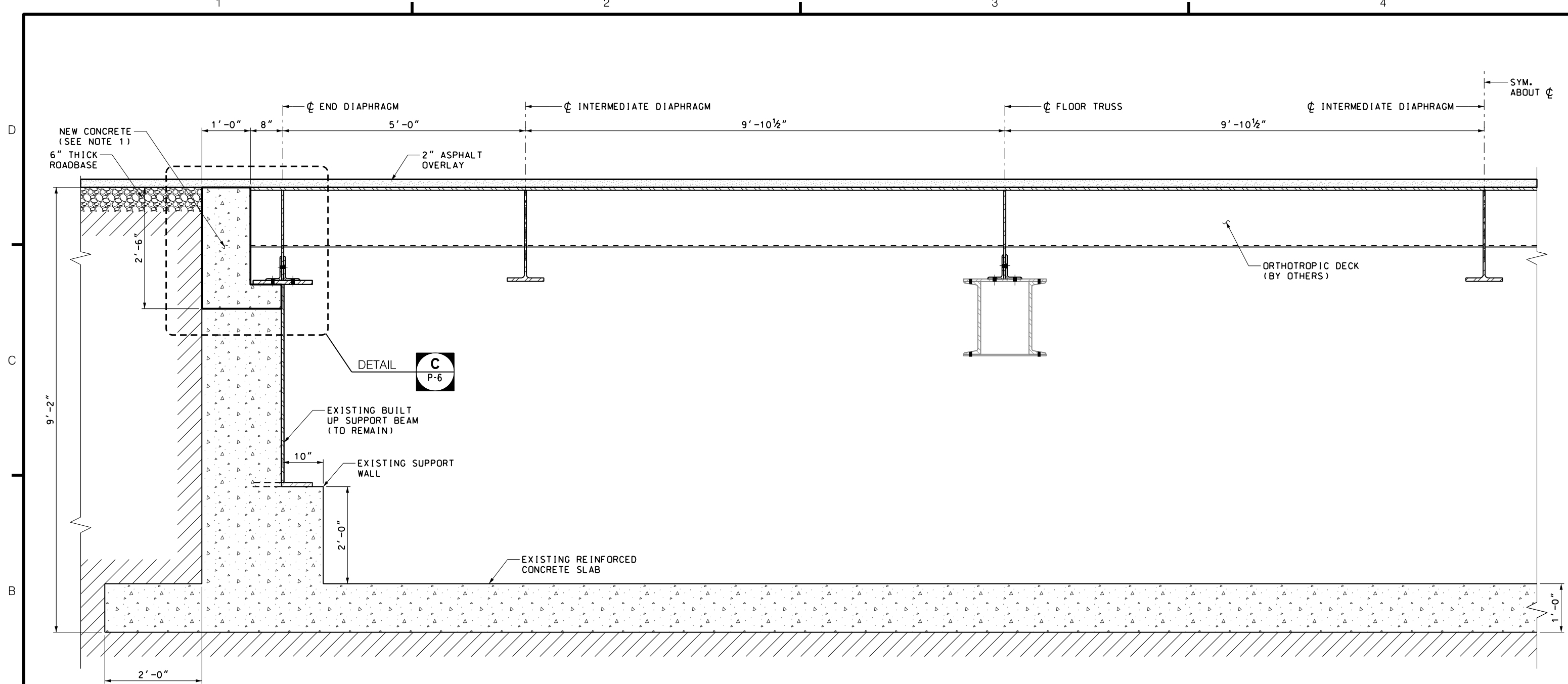


SECTION AT END DIAPHRAGM 2  
 SCALE: 1"=1'-0"  
 (INTERMEDIATE DIAPHRAGM SIMILAR)

**NOTES:**  
 1. REBAR NOT SHOWN FOR CLARITY. SEE DRAWINGS P-6 AND P-7 FOR DETAILS.

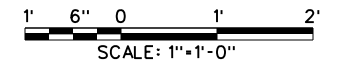



		DRAWN BY P. MANAYATH		<b>Thornton Tomasetti</b> 40 WALL STREET NEW YORK, NY 10005	 Triborough Bridge and Tunnel Authority	DRAWING TITLE	CONTRACT NO. GFM-520N
		DESIGNED BY L. HERBERT				FOOTING AND RETAINING WALL DETAILS - 2	DRAWING NO. P-3
REV.	DESCRIPTION	DATE	APP'D. CHECKED BY C. CLARK			TEST PIT DETAILS FOR PROJECT TN-49	SHEET 5 OF 15
<small>"IT IS A VIOLATION OF THE PROFESSIONAL LICENSE LAW FOR ANY PERSON TO ALTER THIS DRAWING IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER/ARCHITECT AS APPLICABLE. THE ALTERING ENGINEER/ARCHITECT SHALL AFFIX HIS/HER SEAL AND THE NOTATION 'ALTERED BY' FOLLOWED BY HIS/HER SIGNATURE AND DATE OF ALTERATION."</small>				SCALE: 1"=1'-0"		PROJECT NO. GFM-520N, WORK ORDER #14	DATE JULY 6, 2018
							REVISION NO. 0

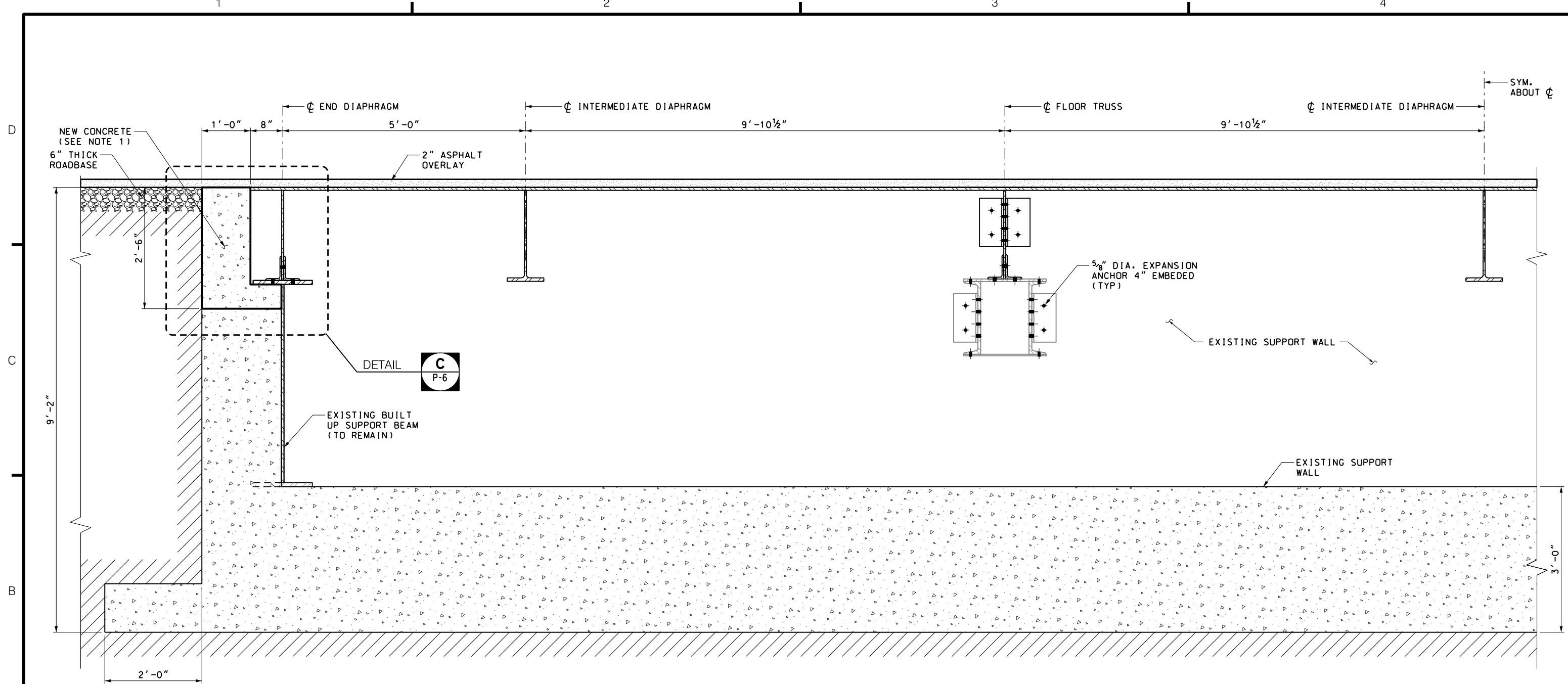


SECTION 3  
SCALE: 1"=1'-0" P-1

- NOTES:**  
1. REBAR NOT SHOWN FOR CLARITY. SEE DRAWINGS P-6 AND P-7 FOR DETAILS.

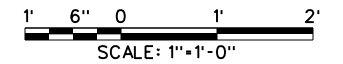


				DRAWN BY P. MANAYATH DESIGNED BY L. HERBERT CHECKED BY C. CLARK	<b>Thornton Tomasetti</b> 40 WALL STREET NEW YORK, NY 10005	 Triborough Bridge and Tunnel Authority	DRAWING TITLE FOOTING AND RETAINING WALL DETAILS - 3	CONTRACT NO. GFM-520N DRAWING NO. P-4 SHEET 6 OF 15
REV. DESCRIPTION <small>"IT IS A VIOLATION OF THE PROFESSIONAL LICENSE LAW FOR ANY PERSON TO ALTER THIS DRAWING IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER/ARCHITECT AS APPLICABLE. THE ALTERING ENGINEER/ARCHITECT SHALL AFFIX HIS/HER SEAL AND THE NOTATION 'ALTERED BY' FOLLOWED BY HIS/HER SIGNATURE AND DATE OF ALTERATION."</small>	DATE APP'D.	SCALE: 1"=1'-0"	PROJECT NO. GFM-520N, WORK ORDER #14	DATE JULY 6, 2018 REVISION NO. 0				



SECTION 4  
SCALE: 1"=1'-0" P-1

NOTES:  
1. REBAR NOT SHOWN FOR CLARITY. SEE DRAWINGS P-6 AND P-7 FOR DETAILS.



REV.	DESCRIPTION	DATE	APP'D.	CHECKED BY
				C. CLARK
DRAWN BY P. MANAYATH				DESIGNED BY L. HERBERT
SCALE: 1"=1'-0"				

**Thornton Tomasetti**  
40 WALL STREET  
NEW YORK, NY 10005

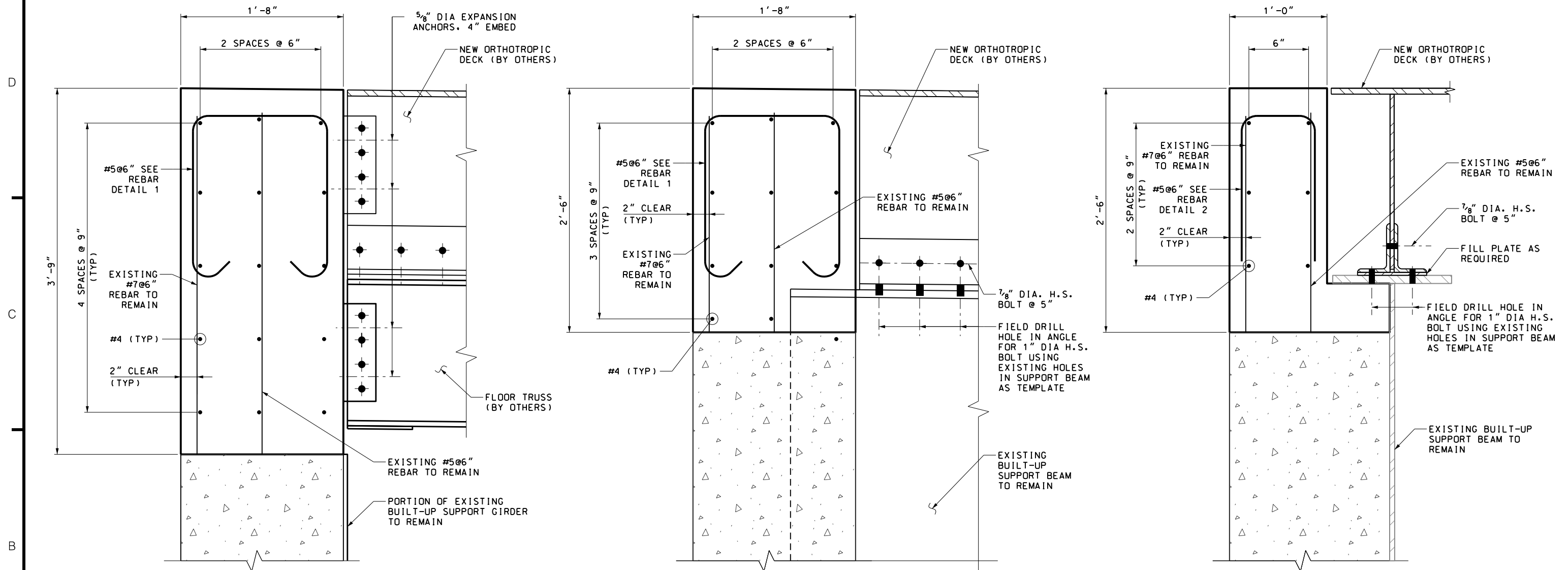


Triborough  
Bridge and Tunnel  
Authority

TEST PIT DETAILS  
FOR PROJECT TN-49

DRAWING TITLE	CONTRACT NO.
FOOTING AND RETAINING WALL DETAILS - 4	GFM-520N
PROJECT NO.	DRAWING NO.
GFM-520N, WORK ORDER #14	P-5
	SHEET 7 OF 15
	DATE
	JULY 6, 2018
	REVISION NO.
	0

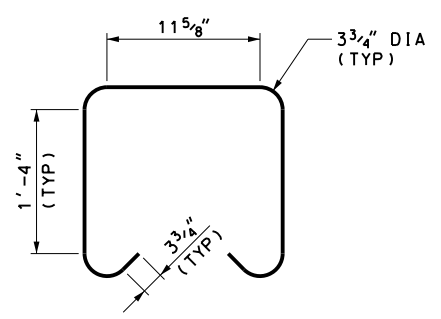
"IT IS A VIOLATION OF THE PROFESSIONAL LICENSE LAW FOR ANY PERSON TO ALTER THIS DRAWING IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER/ARCHITECT AS APPLICABLE. THE ALTERING ENGINEER/ARCHITECT SHALL AFFIX HIS/HER SEAL AND THE NOTATION 'ALTERED BY' FOLLOWED BY HIS/HER SIGNATURE AND DATE OF ALTERATION."



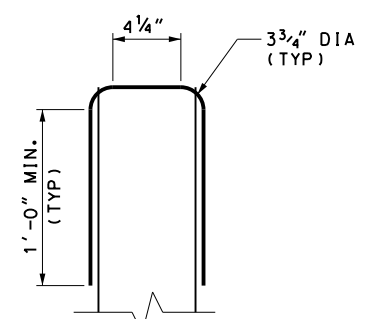
DETAIL A  
N.T.S.

DETAIL B  
N.T.S.

DETAIL C  
N.T.S.



REBAR DETAIL 1  
N.T.S.



REBAR DETAIL 2  
N.T.S.

NOTES:

1. CONCRETE SHALL BE IN ACCORDANCE WITH MINIMUM 28 DAY COMPRESSIVE STRENGTH OF  $F'c = 4000$  psi.
2. REINFORCING STEEL SHALL BE EPOXY COATED AND CONFORM TO ASTM A615, GRADE 60.
3. MINIMUM CLEAR COVER TO REINFORCING STEEL SHALL BE 2", UNLESS NOTED OTHERWISE.

REV.	DESCRIPTION	DATE	APP'D.	CHECKED BY
				C. CLARK
DRAWN BY P. MANAYATH				DESIGNED BY L. HERBERT
SCALE: NOT TO SCALE				

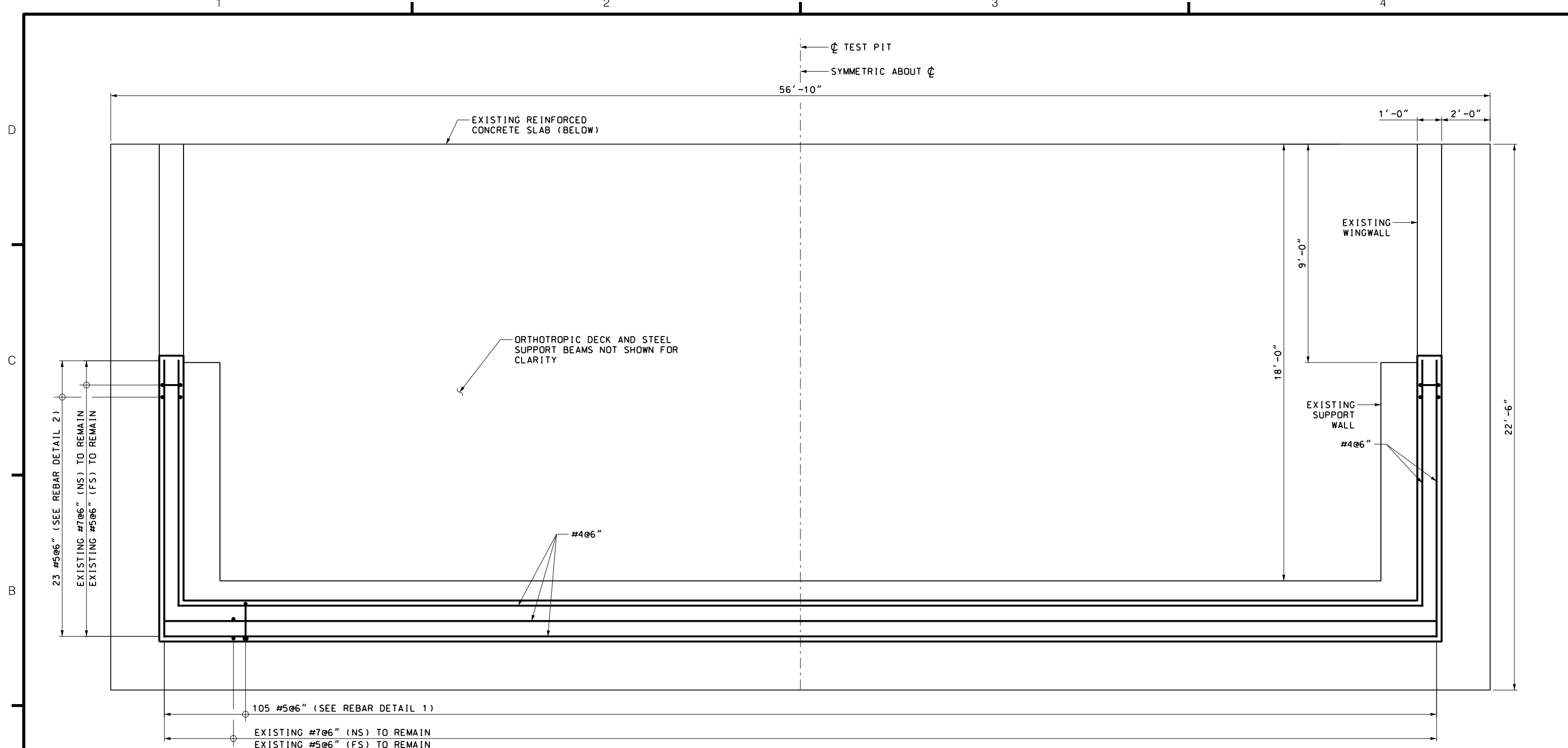
**Thornton Tomasetti**  
40 WALL STREET  
NEW YORK, NY 10005



TEST PIT DETAILS  
FOR PROJECT TN-49

DRAWING TITLE	CONTRACT NO.
REINFORCEMENT DETAILS - 1	GFM-520N
PROJECT NO.	DRAWING NO.
GFM-520N, WORK ORDER #14	P-6
	SHEET 8 OF 15
	DATE
	JULY 6, 2018
	REVISION NO.
	0

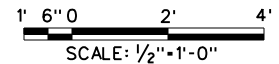
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**REINFORCEMENT PLAN**  
SCALE: 1/2"=1'-0"

**NOTES:**

1. CONCRETE SHALL BE IN ACCORDANCE WITH THE SPECIFIED MINIMUM 28-DAY COMPRESSIVE STRENGTH OF F'C = 4000 PSI, 3/4", 565.
2. REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M31 (ASTM A615) GRADE 60.
3. MINIMUM CLEAR COVER TO REINFORCING STEEL SHALL BE 2", UNLESS NOTED OTHERWISE.



REV.	DESCRIPTION	DATE	APP'D.	CHECKED BY
				C. CLARK
DRAWN BY P. MANAYATH				DESIGNED BY L. HERBERT
"IT IS A VIOLATION OF THE PROFESSIONAL LICENSE LAW FOR ANY PERSON TO ALTER THIS DRAWING IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER/ARCHITECT AS APPLICABLE. THE ALTERING ENGINEER/ARCHITECT SHALL AFFIX HIS/HER SEAL AND THE NOTATION 'ALTERED BY' FOLLOWED BY HIS/HER SIGNATURE AND DATE OF ALTERATION."				SCALE: 3/8"=1'-0"

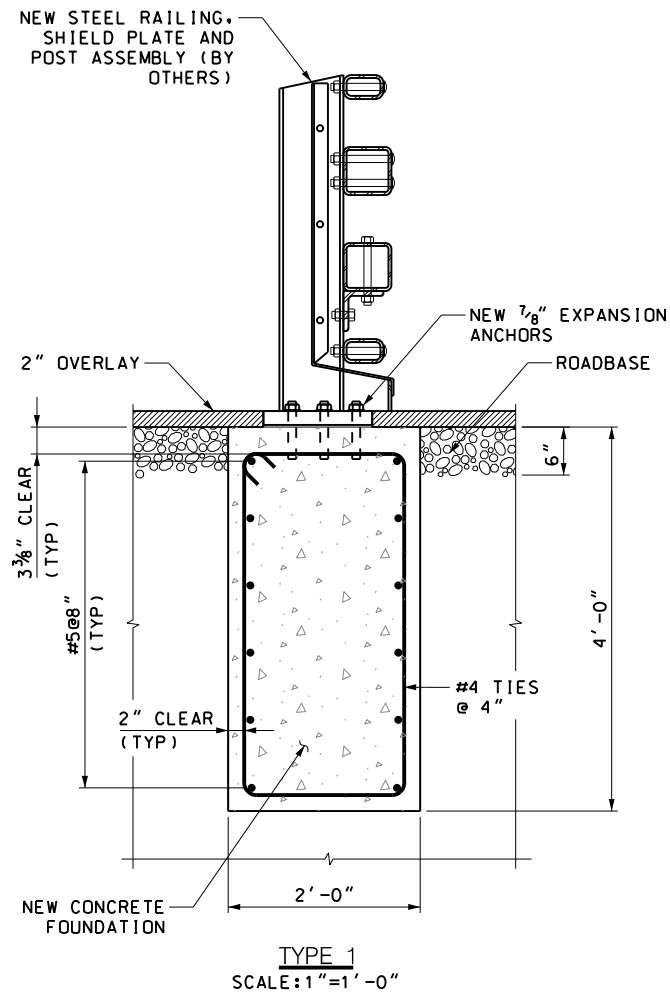
**Thornton Tomasetti**  
40 WALL STREET  
NEW YORK, NY 10005



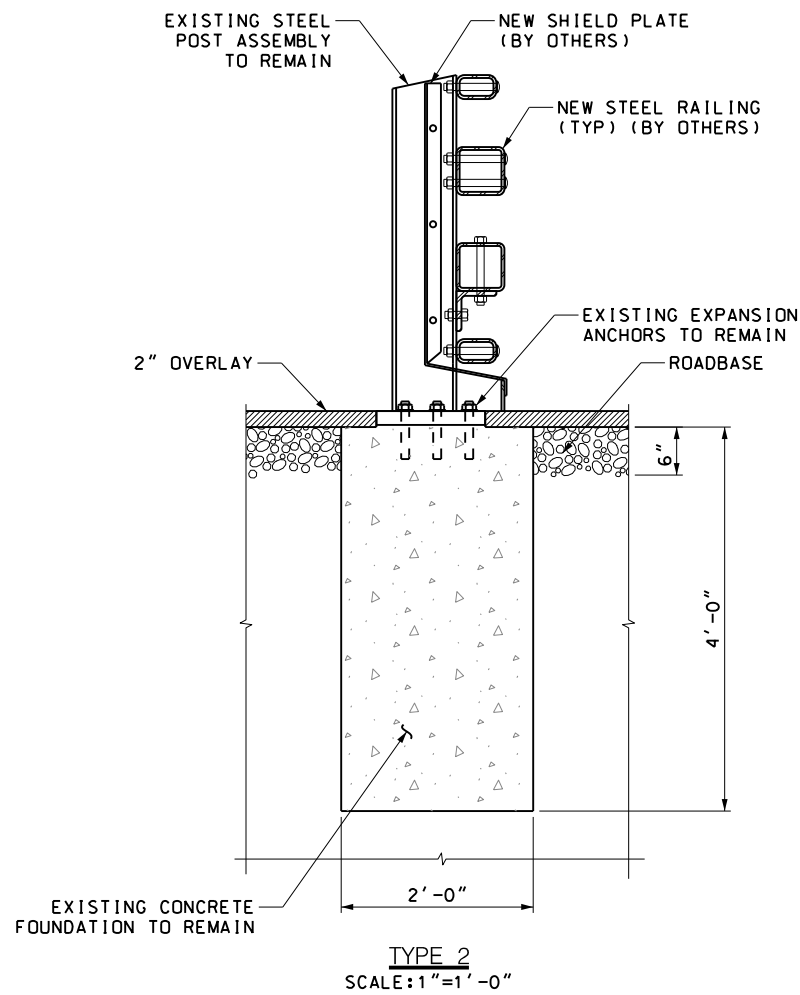
Triborough  
Bridge and Tunnel  
Authority

TEST PIT DETAILS  
FOR PROJECT TN-49

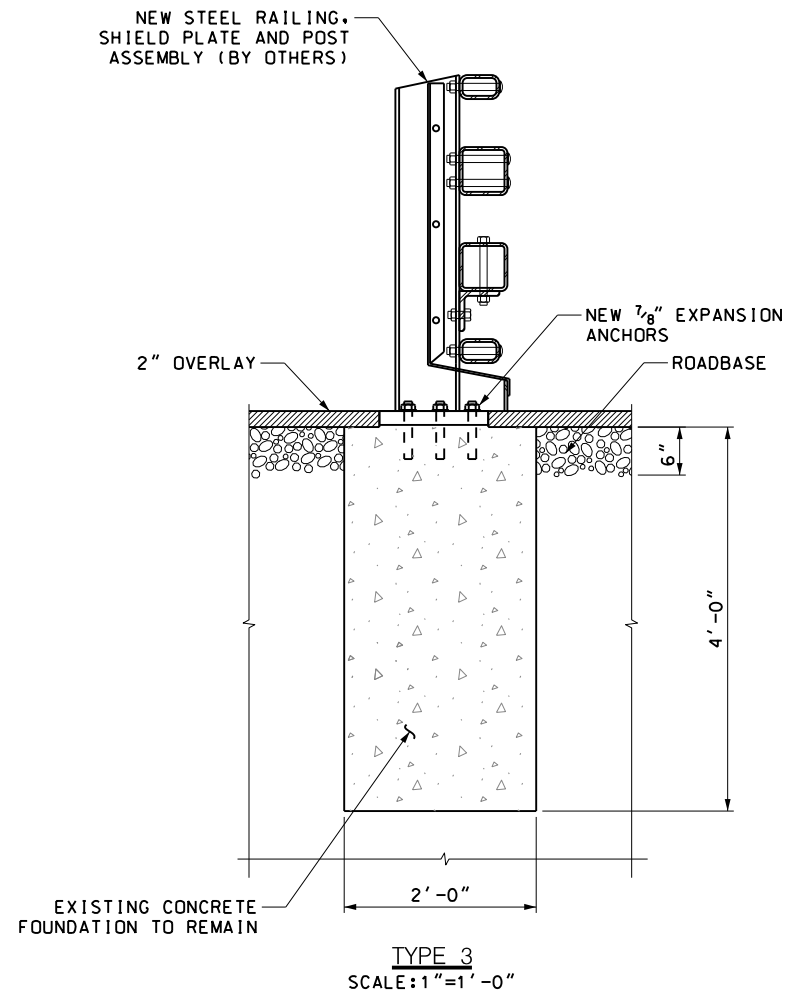
DRAWING TITLE	CONTRACT NO.
REINFORCEMENT DETAILS - 2	GFM-520N
PROJECT NO.	DRAWING NO.
GFM-520N, WORK ORDER #14	P-7
	SHEET 9 OF 15
	DATE
	JULY 6, 2018
	REVISION NO.
	0



TYPE 1  
SCALE: 1"=1'-0"



TYPE 2  
SCALE: 1"=1'-0"



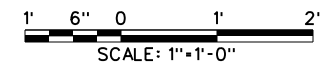
TYPE 3  
SCALE: 1"=1'-0"

SECTION 5  
SCALE: 1"=1'-0" P-1

TABLE 1 - POST INSTALLATION		
POST NUMBER	POST TYPE	"A"
1L	1	4' - 11 1/4"
2L	2	9' - 3 3/4"
3L	3	14' - 9 3/4"
4L	3	19' - 9"
5L	3	24' - 8 1/4"
6L	3	29' - 7 1/2"
7L	3	34' - 6 3/4"
8L	3	39' - 6"
9L	3	44' - 5 1/4"
10L	3	49' - 4 1/2"
11L	3	54' - 3 3/4"
12L	2	58' - 9 3/4"
13L	3	64' - 2 1/4"
14L	1	69' - 1 1/2"
1R	1	4' - 11 1/4"
2R	2	9' - 3 3/4"
3R	3	14' - 9 3/4"
4R	1	19' - 9"

NOTES:

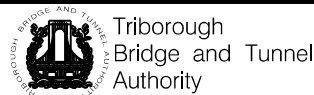
1. CONCRETE SHALL BE IN ACCORDANCE WITH MINIMUM 28 DAY COMPRESSIVE STRENGTH OF F'c=4000 psi.
2. REINFORCING STEEL SHALL BE EPOXY COATED AND CONFORM TO ASTM A615, GRADE 60.
3. MINIMUM CLEAR COVER TO REINFORCING STEEL SHALL BE 2", UNLESS NOTED OTHERWISE.



REV.	DESCRIPTION	DATE	APP'D.	CHECKED BY

DRAWN BY P. MANAYATH  
 DESIGNED BY L. HERBERT  
 CHECKED BY C. CLARK  
 SCALE: NOT TO SCALE

**Thornton Tomasetti**  
 40 WALL STREET  
 NEW YORK, NY 10005



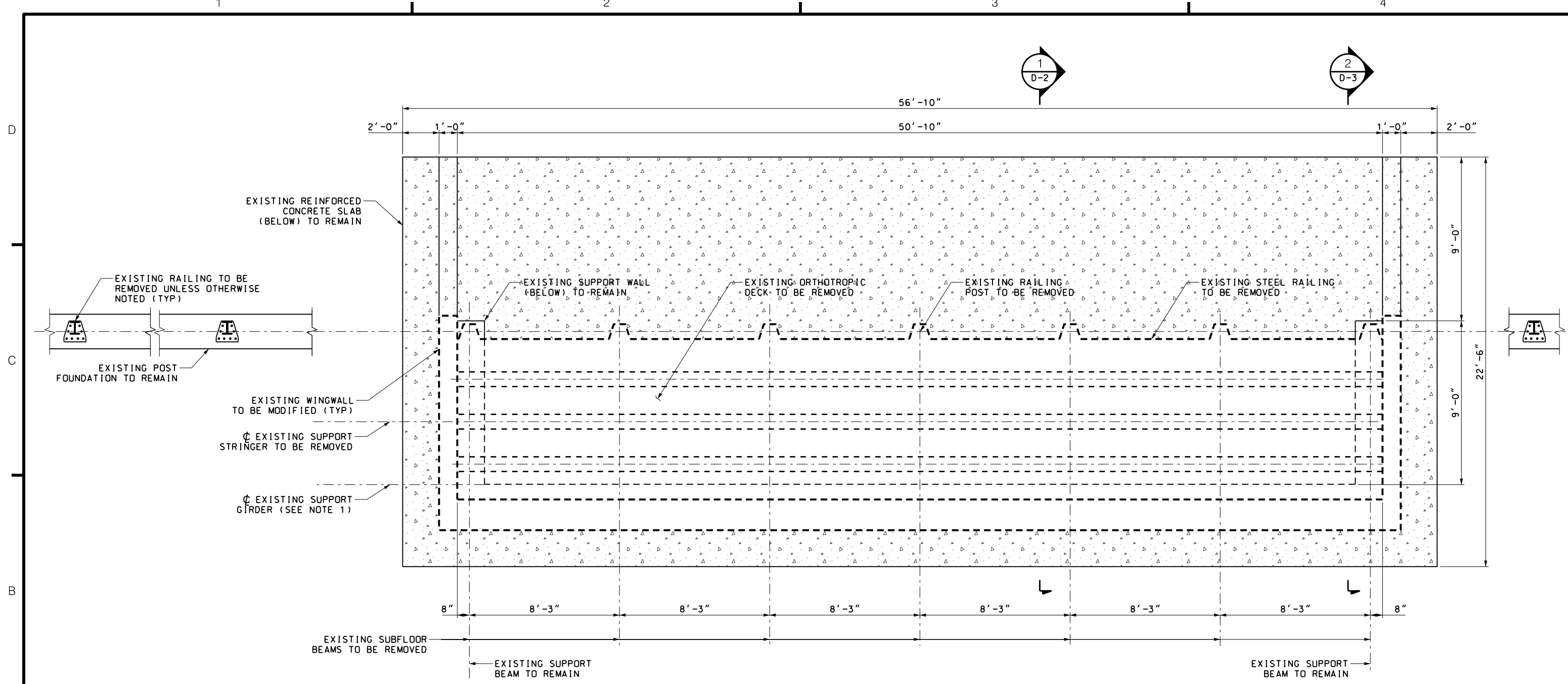
Triborough  
 Bridge and Tunnel  
 Authority

TEST PIT DETAILS  
 FOR PROJECT TN-49

DRAWING TITLE	STEEL RAILING POST ANCHORAGE DETAILS
PROJECT NO.	GFM-520N, WORK ORDER #14

CONTRACT NO.	GFM-520N
DRAWING NO.	P-8
SHEET	10 OF 15
DATE	JULY 6, 2018
REVISION NO.	0

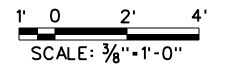
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**TEST PIT DEMOLITION PLAN**  
SCALE: 3/8"=1'-0"

**NOTES:**

- SECTIONS OF EXISTING SUPPORT GIRDER SHALL BE REMOVED TO FACILITATE THE INSTALLATION OF NEW FLOOR TRUSS SUPPORT. SEE DWG NO D-2 AND D-5 FOR DETAILS.



				DRAWN BY P. MANAYATH DESIGNED BY L. HERBERT CHECKED BY C. CLARK	<b>Thornton Tomasetti</b> 40 WALL STREET NEW YORK, NY 10005	Triborough Bridge and Tunnel Authority	DRAWING TITLE TEST PIT DEMOLITION PLAN	CONTRACT NO. GFM-520N DRAWING NO. D-1 SHEET 11 OF 15
REV. DESCRIPTION "IT IS A VIOLATION OF THE PROFESSIONAL LICENSE LAW FOR ANY PERSON TO ALTER THIS DRAWING IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER/ARCHITECT AS APPLICABLE. THE ALTERING ENGINEER/ARCHITECT SHALL AFFIX HIS/HER SEAL AND THE NOTATION 'ALTERED BY' FOLLOWED BY HIS/HER SIGNATURE AND DATE OF ALTERATION."	DATE APP'D.	SCALE: 3/8"=1'-0"	PROJECT NO. GFM-520N, WORK ORDER #14	DATE JULY 6, 2018 REVISION NO. 0				

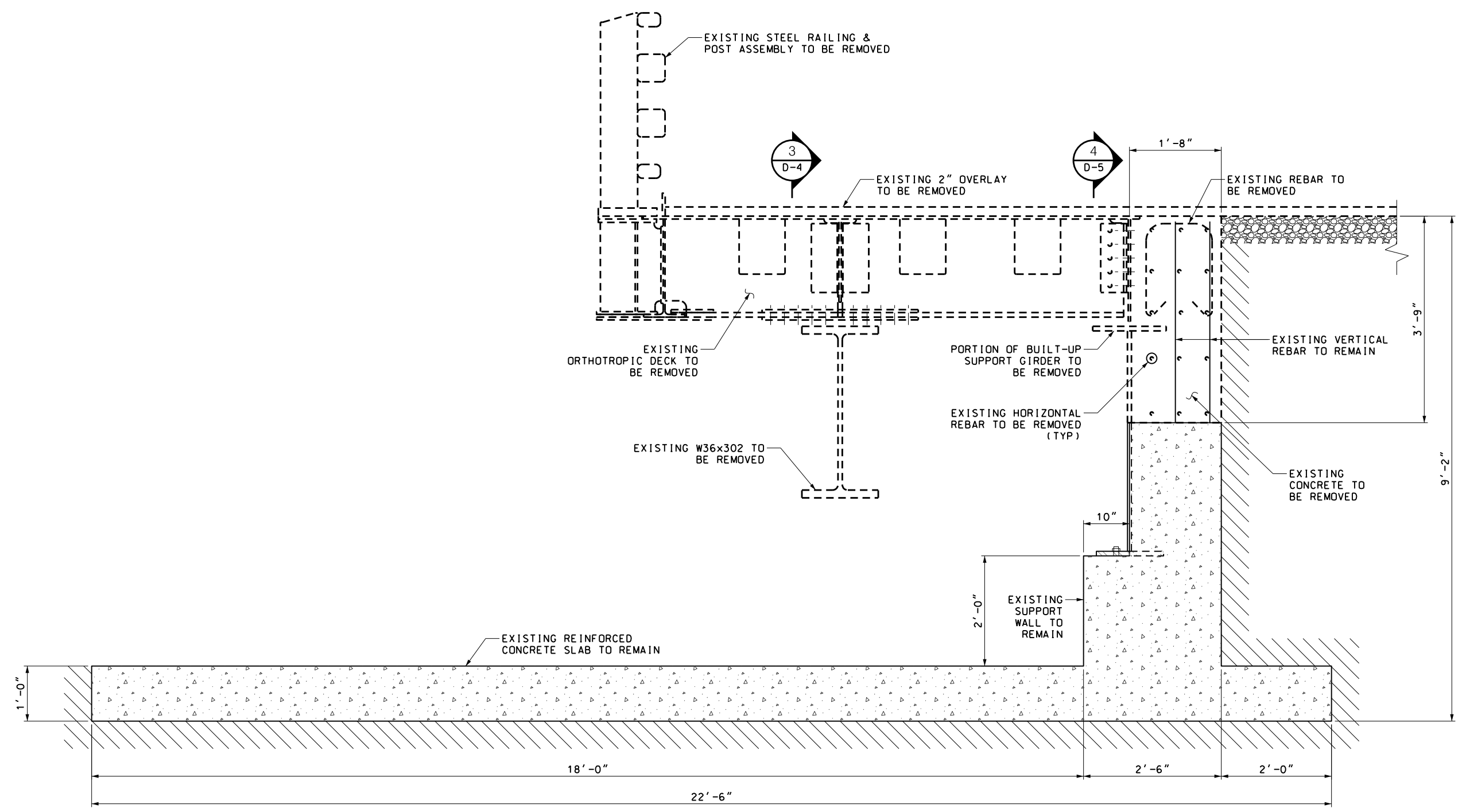
D  
C  
B  
A

1

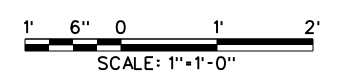
2


3

4



SECTION 1  
SCALE: 1"=1'-0" D-1



				DRAWN BY P. MANAYATH DESIGNED BY L. HERBERT CHECKED BY C. CLARK	<b>Thornton Tomasetti</b> 40 WALL STREET NEW YORK, NY 10005	 Triborough Bridge and Tunnel Authority	DRAWING TITLE DEMOLITION DETAILS - 1	CONTRACT NO. GFM-520N DRAWING NO. D-2 SHEET 12 OF 15
REV. DESCRIPTION "IT IS A VIOLATION OF THE PROFESSIONAL LICENSE LAW FOR ANY PERSON TO ALTER THIS DRAWING IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER/ARCHITECT AS APPLICABLE. THE ALTERING ENGINEER/ARCHITECT SHALL AFFIX HIS/HER SEAL AND THE NOTATION 'ALTERED BY' FOLLOWED BY HIS/HER SIGNATURE AND DATE OF ALTERATION."	DATE APP'D.	SCALE: AS NOTED	PROJECT NO. GFM-520N, WORK ORDER #14	DATE JULY 6, 2018 REVISION NO. 0				

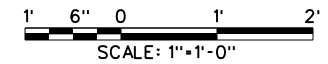
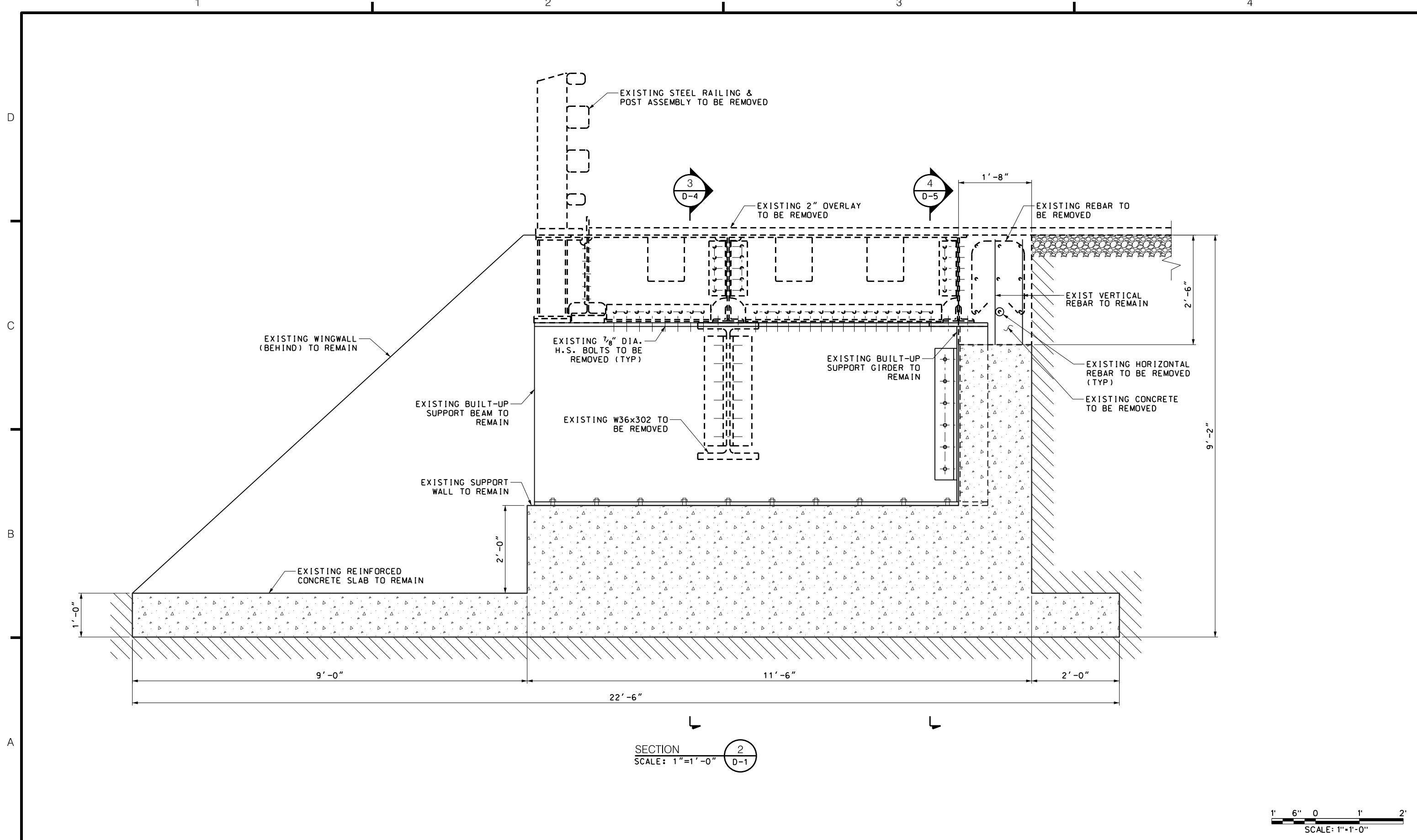
1

2


3

4

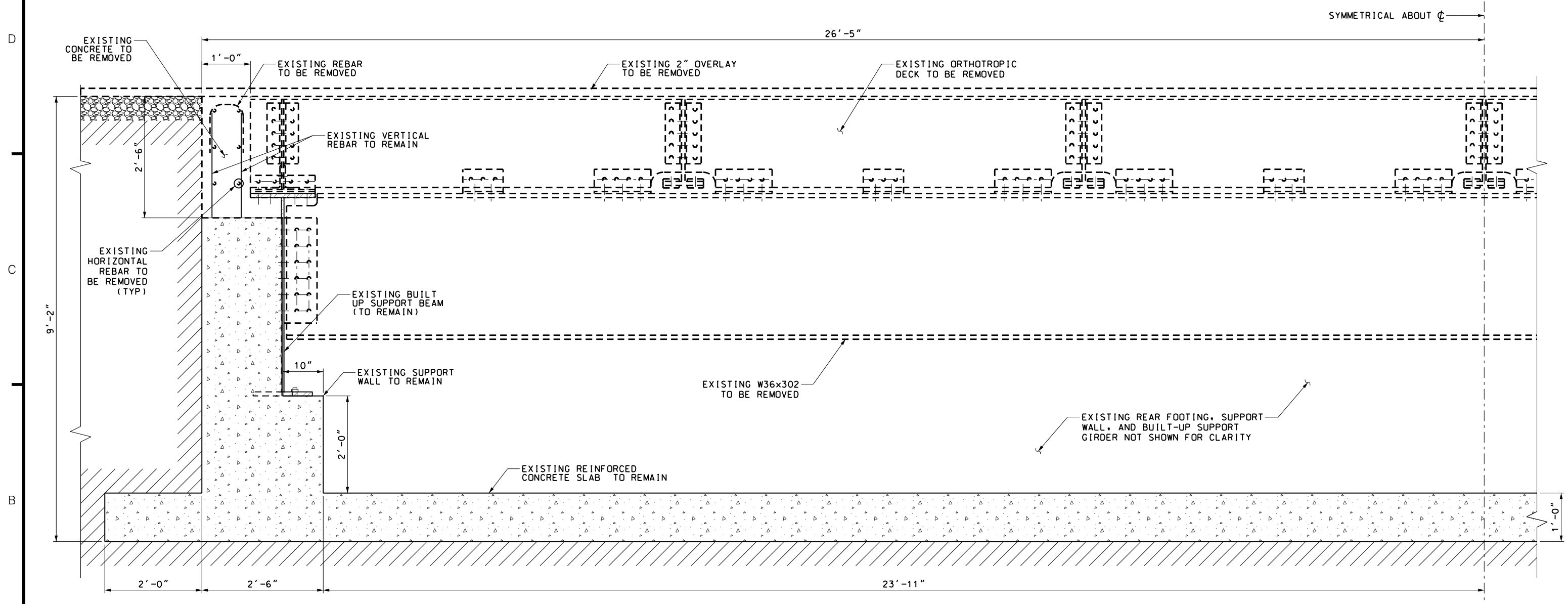




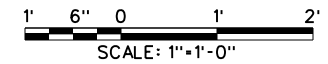
SECTION 2  
SCALE: 1"=1'-0"  
D-1

				DRAWN BY P. MANAYATH DESIGNED BY L. HERBERT CHECKED BY C. CLARK	<b>Thornton Tomasetti</b> 40 WALL STREET NEW YORK, NY 10005	 Triborough Bridge and Tunnel Authority	DRAWING TITLE  DEMOLITION DETAILS - 2	CONTRACT NO. GFM-520N
REV.	DESCRIPTION	DATE	APP'D.	SCALE: AS NOTED				TEST PIT DETAILS FOR PROJECT TN-49

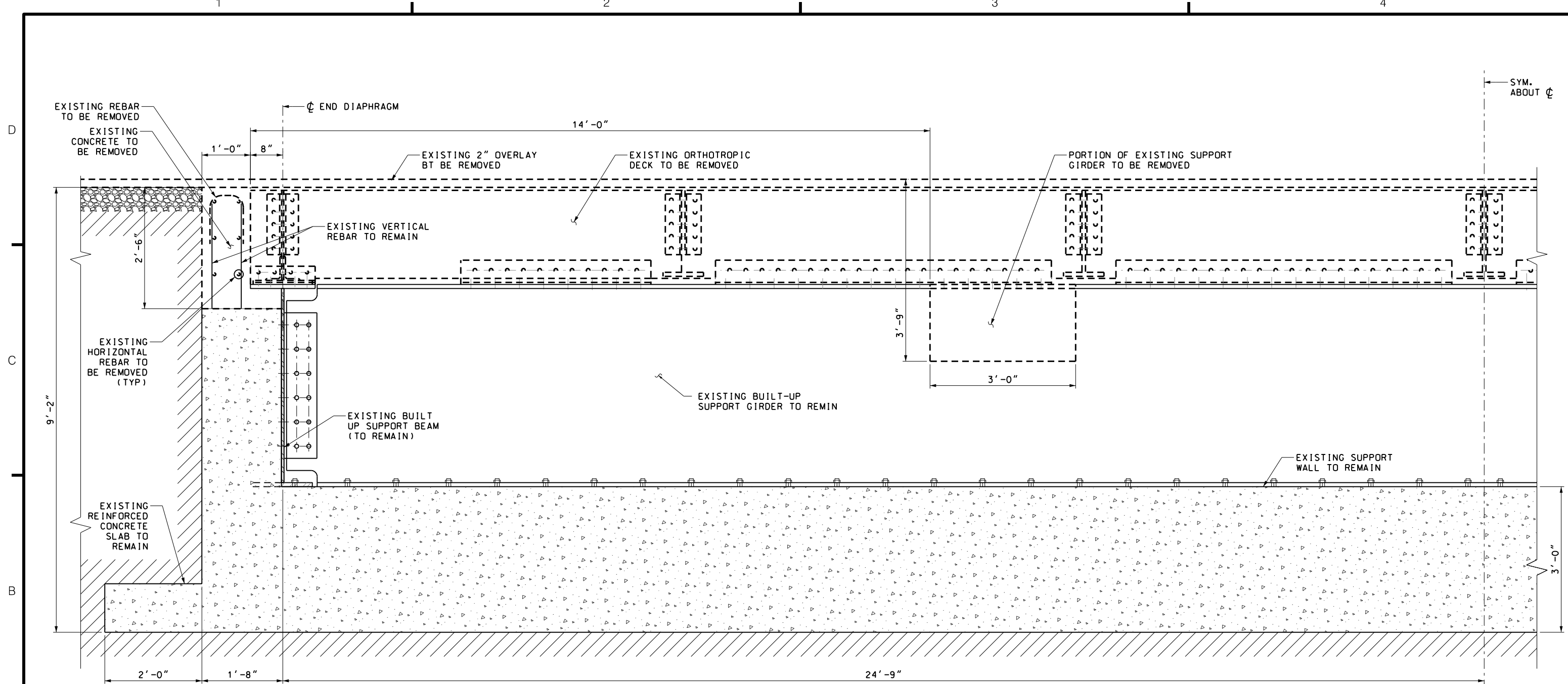
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SECTION 3 3  
 SCALE: 1"=1'-0" D-2 D-3



			<b>Thornton Tomasetti</b> 40 WALL STREET NEW YORK, NY 10005	Triborough Bridge and Tunnel Authority	DRAWING TITLE  <b>DEMOLITION DETAILS - 3</b>	CONTRACT NO. GFM-520N DRAWING NO. <b>D-4</b> SHEET 14 OF 15 DATE JULY 6, 2018	
REV.	DESCRIPTION	DATE	APP'D.	CHECKED BY C. CLARK		PROJECT NO. GFM-520N, WORK ORDER #14	REVISION NO. 0
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SECTION 4 4  
 SCALE: 1"=1'-0" D-2 D-3

1' 6" 0 1' 2'  
 SCALE: 1"=1'-0"

REV.	DESCRIPTION	DATE	APP'D.	CHECKED BY
				C. CLARK
DRAWN BY P. MANAYATH				DESIGNED BY L. HERBERT
SCALE: 1"=1'-0"				

**Thornton Tomasetti**  
 40 WALL STREET  
 NEW YORK, NY 10005



Triborough  
 Bridge and Tunnel  
 Authority

TEST PIT DETAILS  
 FOR PROJECT TN-49

DRAWING TITLE	CONTRACT NO.
DEMOLITION DETAILS - 4	GFM-520N
PROJECT NO.	DRAWING NO.
GFM-520N, WORK ORDER #14	D-5
	SHEET 15 OF 15
	DATE
	JULY 6, 2018
	REVISION NO.
	0

"IT IS A VIOLATION OF THE PROFESSIONAL LICENSE LAW FOR ANY PERSON TO ALTER THIS DRAWING IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER/ARCHITECT AS APPLICABLE. THE ALTERING ENGINEER/ARCHITECT SHALL AFFIX HIS/HER SEAL AND THE NOTATION 'ALTERED BY' FOLLOWED BY HIS/HER SIGNATURE AND DATE OF ALTERATION."