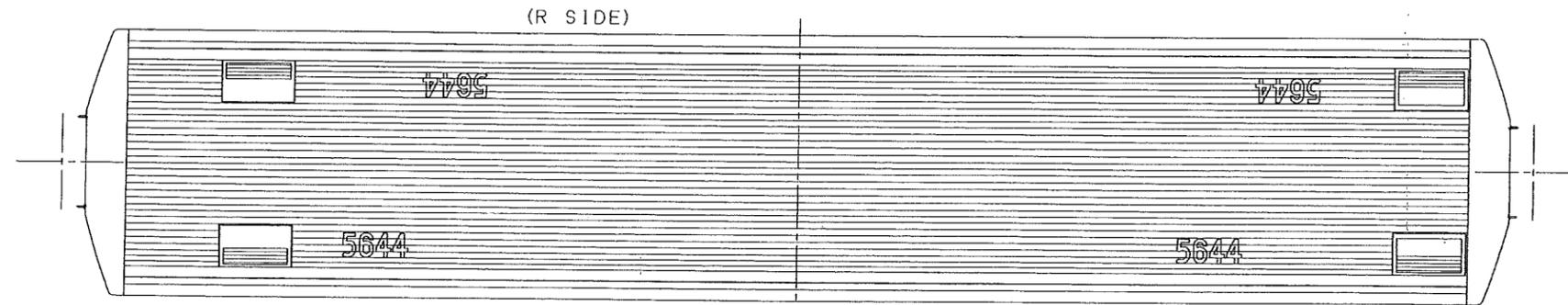
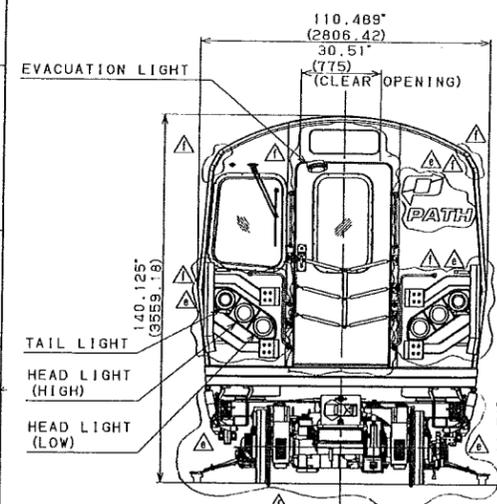


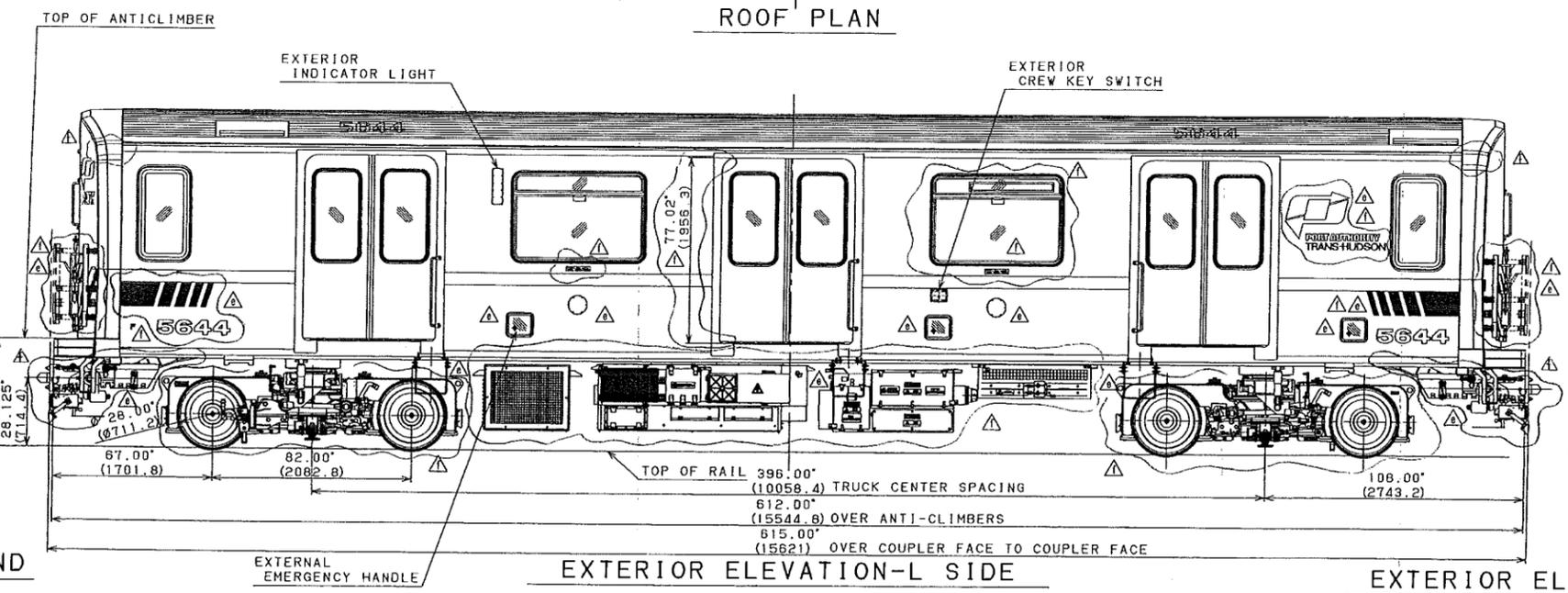
EXTERIOR ELEVATION-R SIDE



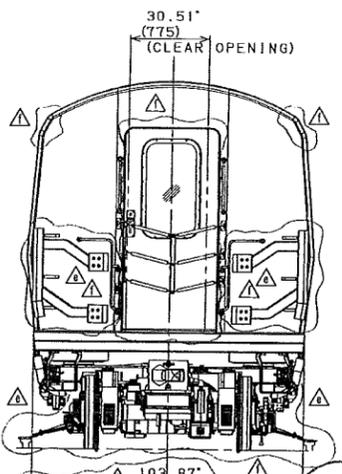
ROOF PLAN



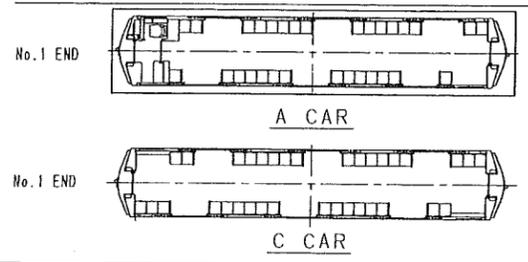
EXTERIOR ELEVATION-NO.1 END



EXTERIOR ELEVATION-L SIDE



EXTERIOR ELEVATION-NO.2 END



APPLICABLE CAR	SET/CAR	V1/CAR	EFFECTIVITY
A	1		ALL CARS
C			

Subject to the Authority's rights and Allowable Uses granted per Article 105 of the PATH New Railcar Procurement Contract (Number 460005179), KAWASAKI RAIL CAR, INC. reserves all rights in and to any patents, trademarks, trade secrets and other intellectual property and proprietary information contained in this drawing, which are the property of KAWASAKI RAIL CAR, INC. or its licensors.

UNLESS OTHERWISE SPECIFIED	
TOLERANCE OF DIMENSIONS	
0.00" - 0.12" (0.5 - 3.0)	±0.01" (0.25)
0.12" - 0.24" (3 - 6.0)	±0.01" (0.25)
0.24" - 1.20" (6 - 30.5)	±0.02" (0.51)
1.20" - 4.70" (30 - 120)	±0.03" (0.76)
4.70" - 12.5" (120 - 315)	±0.05" (1.27)
12.5" - 48.0" (315 - 1200)	±0.06" (1.52)
48.0" - 80.0" (1200 - 2000)	±0.12" (3.05)
OVER 80.0" (2000 - )	±0.25" (6.35)

CLASSIFICATION	SCALE
1	1:32
2	
3	
4	
5	

REV.	ECO. NO.	DESCRIPTION	DATE	DRAWN	CHECKED	APP'D
f	07RC0090	UPDATED.	07.07.20			
e		UPDATED.	05.05.02			
d		ADDED CAR NO. AND UPDATE.	05.01.23			
c		CHANGED PATH LOGO & END GATE.	05.11.28			
b		CHANGED CARBODY LENGTH.	05.11.16			
a		SEE 2/4.	05.10.19			

川崎重工 KAWASAKI HEAVY INDUSTRIES, LTD.

GENERAL ARRANGEMENT (A CAR)

PROJECT	SYS. CODE	SER. NO.	REVISION
PA-5	412	011	1/4



PORT AUTHORITY  
TRANS-HUDSON CORPORATION

*Robert Warshaw*  
ROBERT WARSHAW  
N.J. P. E. 10135

Parsons  
Brinckerhoff  
Engineers - Architects - Planners

Engineering Department  
Design Divisions

MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

Title  
SHOP SUPERSTRUCTURE  
TRANSVERSE SECTIONS

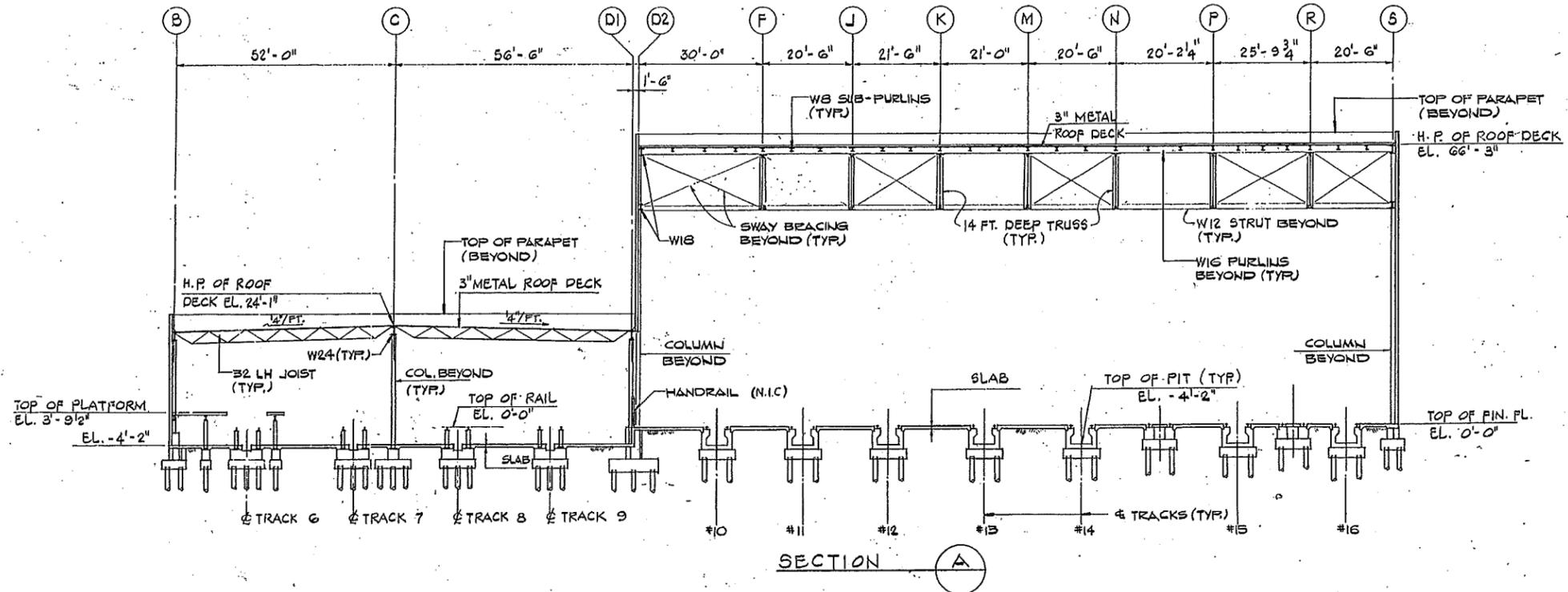
AS BUILT	N.O.
No. Date Revision	Approved

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to PATH and may not be used without its written consent.

Checked by K.U. Drawn by T.N.C. Task Leader N.S.

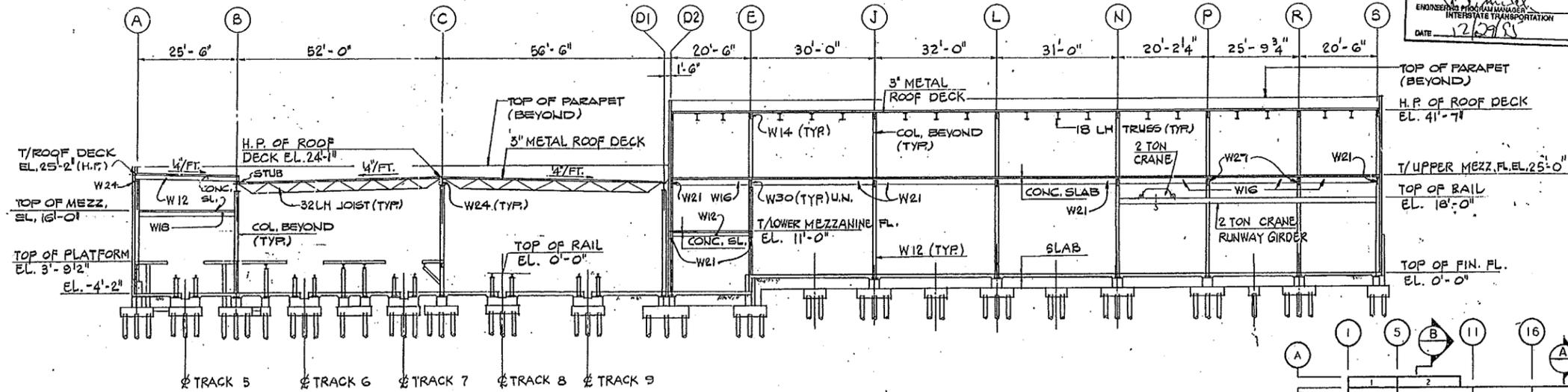
Date OCT, 15, 1987 Scale 1/16" = 1'-0"

Contract Number PAT - 150.149 Drawing Number S-42



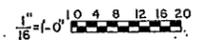
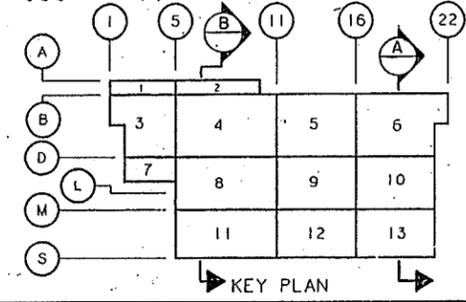
SECTION A

**CERTIFIED "AS BUILT"**  
(BASED ON CORRECTED (I.D.) DRAWINGS)  
ENGINEERING PROGRAM MANAGER  
INTERSTATE TRANSPORTATION  
DATE 12/27/88



SECTION B

**NOTE:**  
THIS DWG. SHOWS SECTIONS OF THE COMPLETED FACILITY, INCORPORATING PREVIOUSLY CONSTRUCTED WORK, PRESENT WORK AND FUTURE WORK. SEE OTHER DWGS. FOR SCOPE OF WORK UNDER THIS CONTRACT.



97  
BRUNING 44-132 63794

PORT AUTHORITY  
TRANS-HUDSON CORPORATION

ROBERT WARSHAW  
N.J. P.E. 10135

Parsons  
Brinckerhoff  
Engineers - Architects - Planners

Engineering Department
Design Divisions
MAIN REPAIR
FACILITY AND YARD
AT HARRISON
AND KEARNY

Title  
SHOP SUPERSTRUCTURE  
LONGITUDINAL SECTIONS

**CERTIFIED "AS BUILT"**  
(BASED ON CORRECTED FIELD DRAWINGS)  
ENGINEERED FOR STRUCTURAL  
INTERSTATE TRANSPORTATION  
DATE 12/9/93

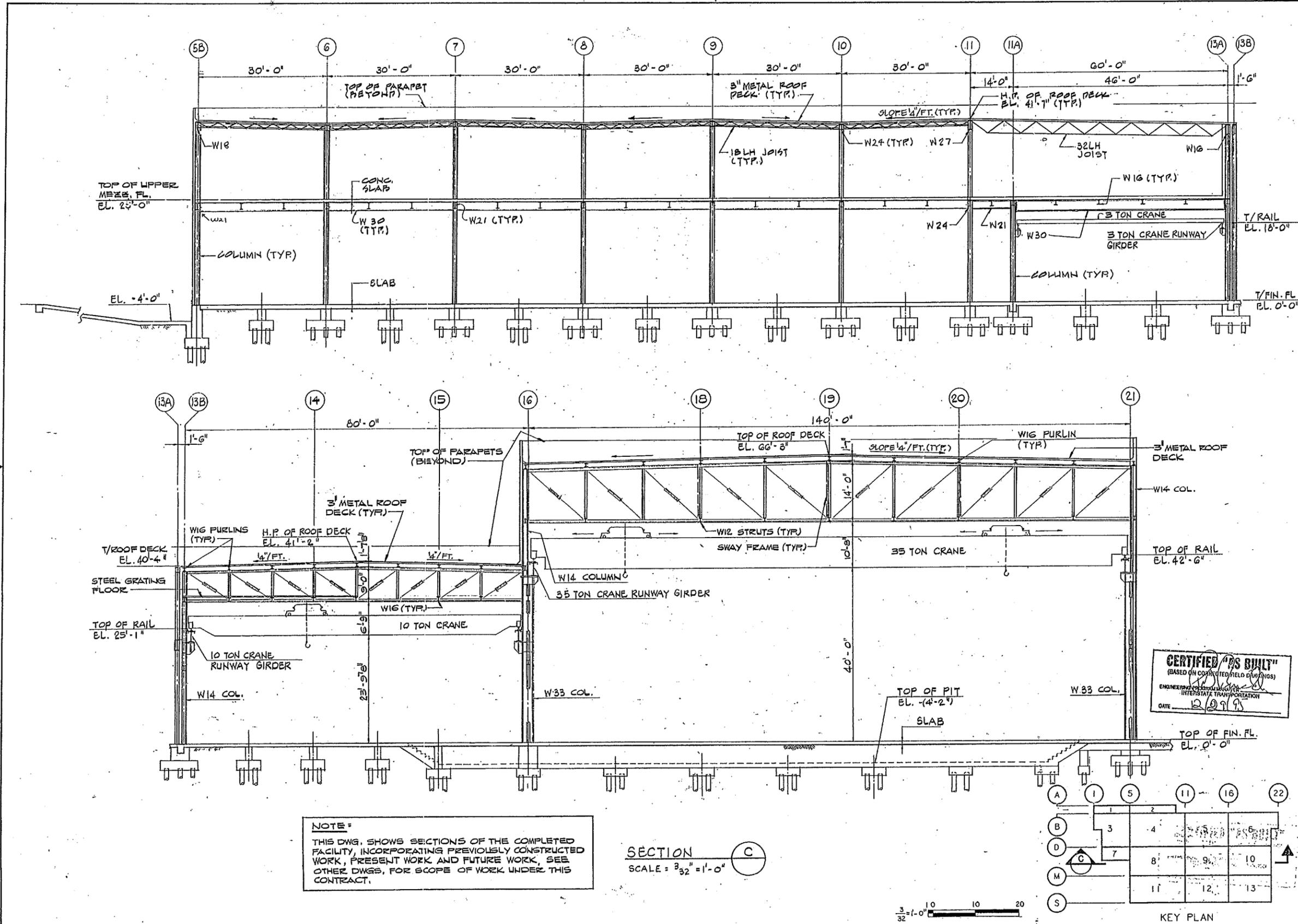
3/1/91	AS.BUILT	N.O.
No.	Date	Revision
		Approved

This drawing subject to conditions in contract.  
All inventions, ideas, designs and methods  
herein are reserved to PATH and may not be  
used without its written consent.

K.U. T.N.C. N.S.  
Checked by Drawn by Task Leader

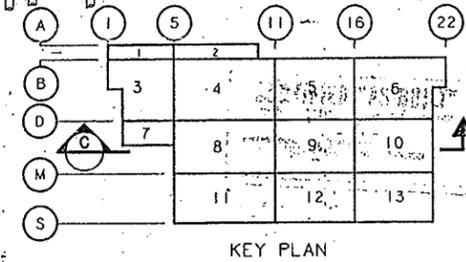
Date OCT. 15, 1987 Scale 3/32" = 1'-0"

Contract Number Drawing Number  
PAT - 150.149 S - 43



**NOTE:**  
THIS DWG. SHOWS SECTIONS OF THE COMPLETED  
FACILITY, INCORPORATING PREVIOUSLY CONSTRUCTED  
WORK, PRESENT WORK AND FUTURE WORK. SEE  
OTHER DWGS. FOR SCOPE OF WORK UNDER THIS  
CONTRACT.

SECTION C  
SCALE = 3/32" = 1'-0"



4A  
BRUNING 44-132 67724

PORT AUTHORITY  
TRANS-HUDSON CORPORATION

*Vijay Chandra*  
9/2/87  
VIJAY CHANDRA  
N.J.P.E. 30875

Parsons  
Brinckerhoff  
Engineers - Architects - Planners

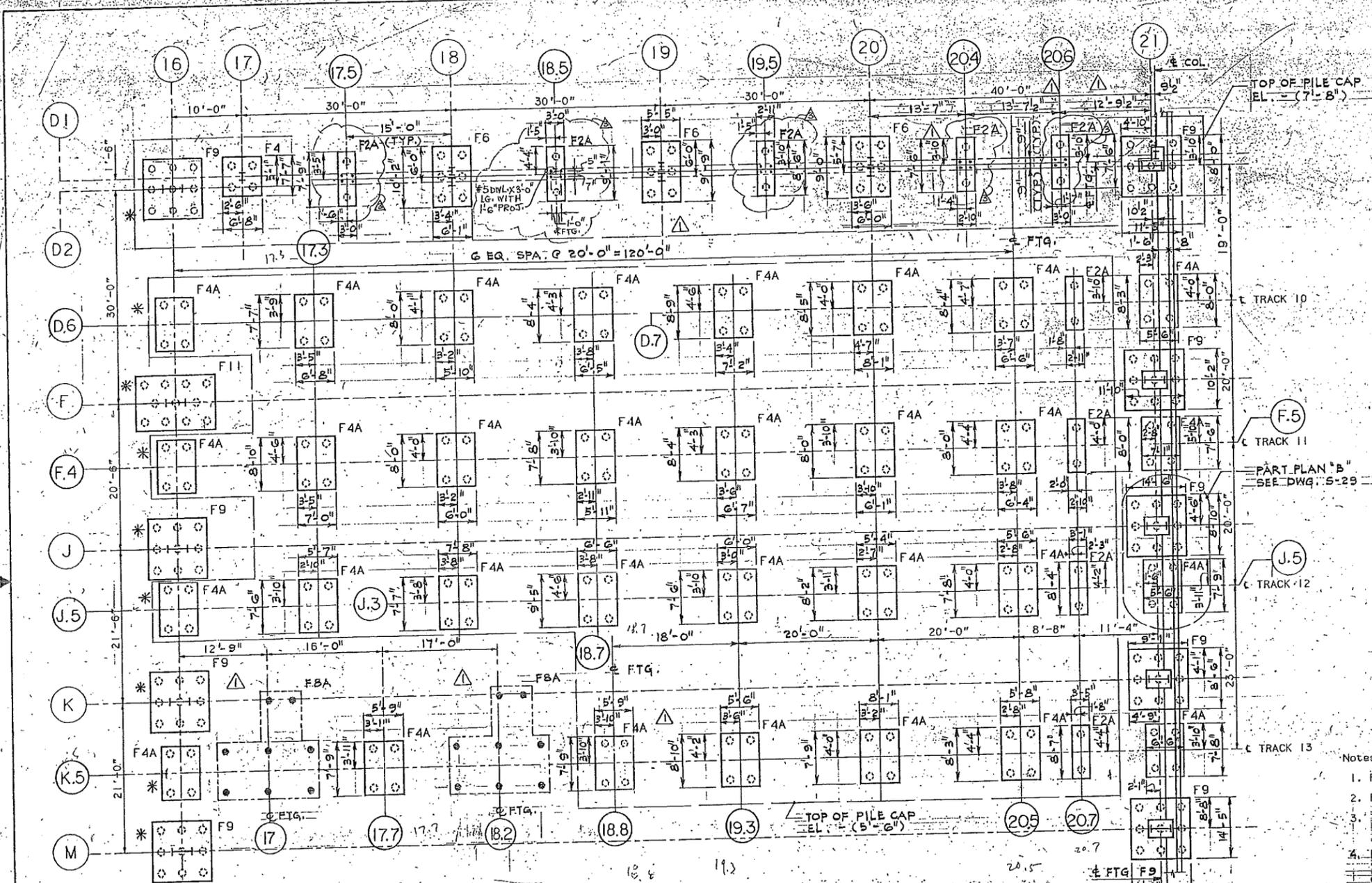
Engineering Department	
Design Divisions	
MAIN REPAIR	
FACILITY AND YARD	
AT HARRISON	
AND KEARNY	

Title  
SHOP FOUNDATIONS  
MAIN BUILDING  
FOUNDATION-PLAN  
AREA 10

4/1/91	AS BUILT	N.O.
1/29/88	ADD DOWELS	K.U.
1/21/88	ADD NOTES	K.T.U.
12/2/87	ADD NOTES RELOCATED F4A CHANGE DIMENSIONS CHANGE FGA TO FBA.	K.U.

No.	Date	Revision	Approved
KS	DV	NS	

Checked By: \_\_\_\_\_ Drawn By: \_\_\_\_\_ Task Leader  
Date: SEPT 10 1987 Scale: 1/8" = 1'-0"  
Contract Number: PAT 150.150 Drawing Number: S-10

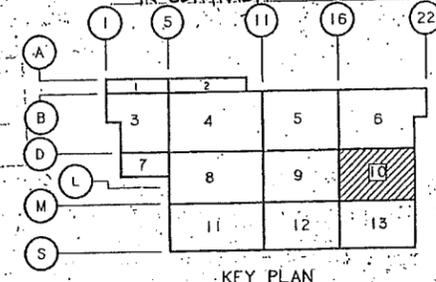


**CERTIFIED "AS BUILT"**  
(BASED ON CORRECTED FIELD DRAWINGS)  
ENGINEERING PROGRAM MANAGER  
INTERSTATE TRANSPORTATION  
DATE: 12/28/85

- Notes
- For General Notes see Dwg. S-1.
  - For Notes see Dwg. S-2.
  - Top of Pile Caps is EL. -(3'-6")  
Typ. U.N.O.
  - PILES MARKED AS  $\odot$  SHALL BE DRIVEN TO TIP EL. -(46'-0") WITH CUT-OFF EL. 0'-0"
  - PILE CAPS BROWN AS NOT IN CONTRACT

- Notes (Cont.)
- For Additional Piers see Dwg. S-39.
  - For Dowel Details on Figs. F2A (Except those on Column Line (D1) or (D2)) and F4A (Except those on Column Line (E1)) see PT2 and PT4, respectively, on Dwg. S-22.
  - For Dowel Details on Figs. F4A with Pile Cap EL. -(5'-6") see PT4A on Dwg. S-30.
  - For Pile Designations and Locations, see Data Entry Sheets 1-109.

\* SEE DWG. NO. S-9



10 2 4 6 8 10

PORT AUTHORITY  
TRANS-HUDSON CORPORATION

*Vijay Chandra*  
9/18/87  
VIJAY CHANDRA  
N.J. P.E. 30875

Parsons  
Brinckerhoff  
Engineers - Architects - Planners

Engineering Department  
Design Divisions

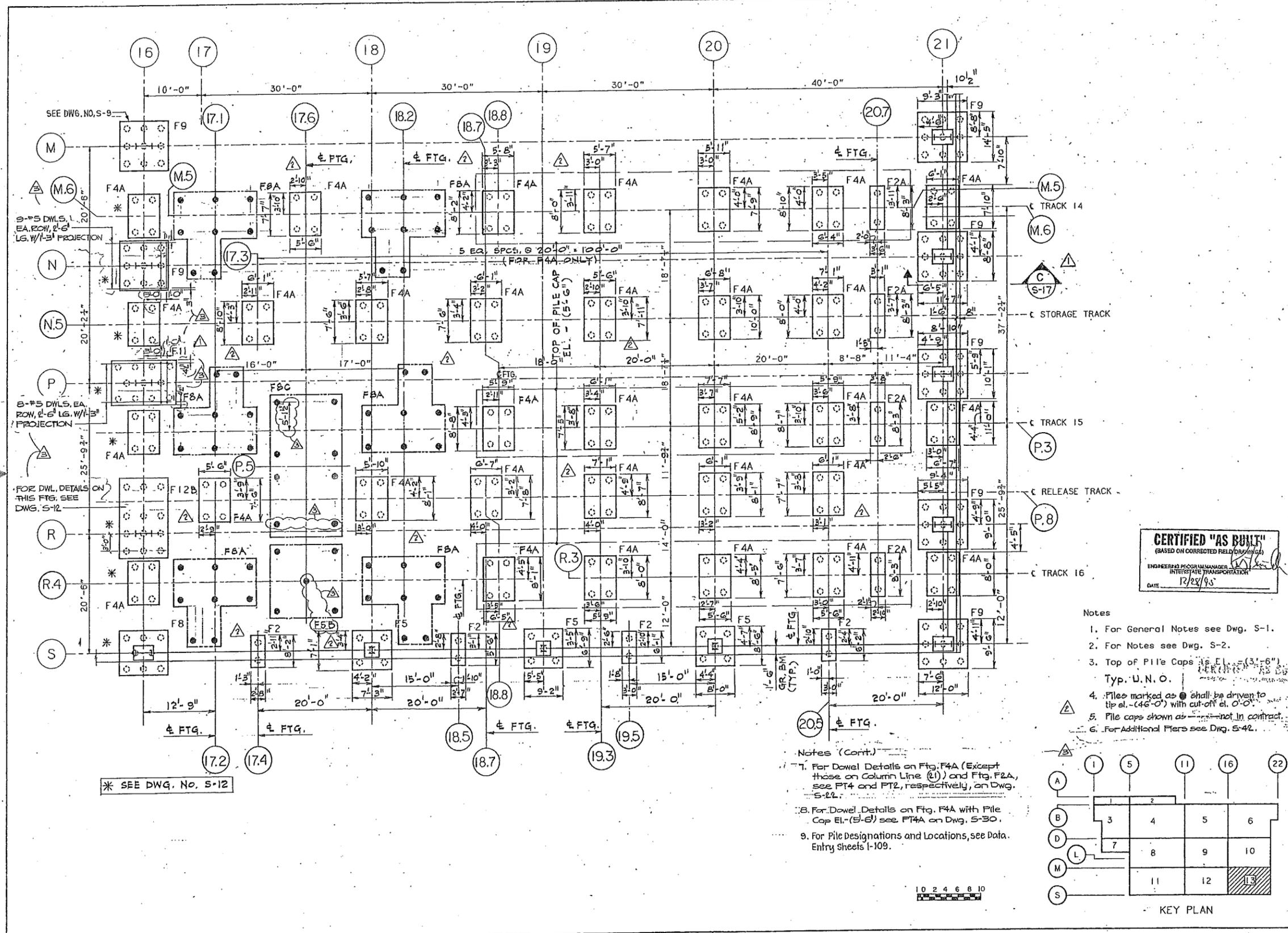
MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

Title  
SHOP FOUNDATIONS  
MAIN BUILDING  
FOUNDATION PLAN  
AREA 13

No.	Date	Revision	Approved
4/1/81		AS BUILT	N.O.
1/21/83		ADD DOWELS, TEXT & NOTES	K.U.
12/18/87		RELOCATED F4A, COMBINED 2-F4A TO 1-F4C. REMOVED F2A. REVISED DIMENSION AND FGA TO F5A. ADD NOTES & TEXT.	K.U.
11/1/87		ADD SECTION MARK C/S-17. CHANGE F9 TO F11 & COL. P-16 PER APPENDIX # 1	

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to PATH and may not be used without its written consent.

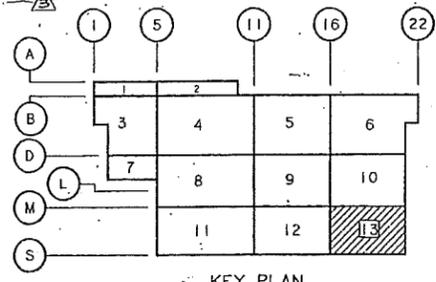
Checked By: KS DV NS  
Drawn By: Task Leader  
Date: SEPT. 10, 1987 Scale: 1/8" = 1'-0"  
Contract Number: PAT 150.150 Drawing Number: S-13



**CERTIFIED "AS BUILT"**  
(BASED ON CORRECTED FIELD DRAWINGS)  
ENGINEERING PROGRAM MANAGER  
INTERSTATE TRANSPORTATION  
DATE: 12/22/95

- Notes
- For General Notes see Dwg. S-1.
  - For Notes see Dwg. S-2.
  - Top of Pile Caps is EL. = (3'-6")  
Typ. U.N.O.
  - Piles marked as  $\odot$  shall be driven to tip el. (-4'-0") with cut-off at 0'-0".
  - Pile caps shown as  $\triangle$  not in contract.
  - For Additional Piers see Dwg. S-42.

- Notes (Cont.)
- For Dowel Details on Ftg. F4A (Except those on Column Line (L)) and Ftg. F2A, see FT4 and FT2, respectively, on Dwg. S-22.
  - For Dowel Details on Ftg. F4A with Pile Cap EL. (5'-6") see FT4A on Dwg. S-30.
  - For Pile Designations and Locations, see Data Entry Sheets I-109.



KEY PLAN

\* SEE DWG. NO. S-12

10 2 4 6 8 10

PORT AUTHORITY  
TRANS-HUDSON CORPORATION

VIJAY CHANDRA  
N.J.P.E. 30875

Parsons  
Brinckerhoff  
Engineers • Architects • Planners

Engineering Department  
Design Divisions  
MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

Title  
SHOP FOUNDATIONS  
MAIN BLDG.- CROSS  
SECTION AT GROUND  
LEVEL. SHEET 2.

AS BUILT G.H.K.

ADDED NOTE M.D.P.

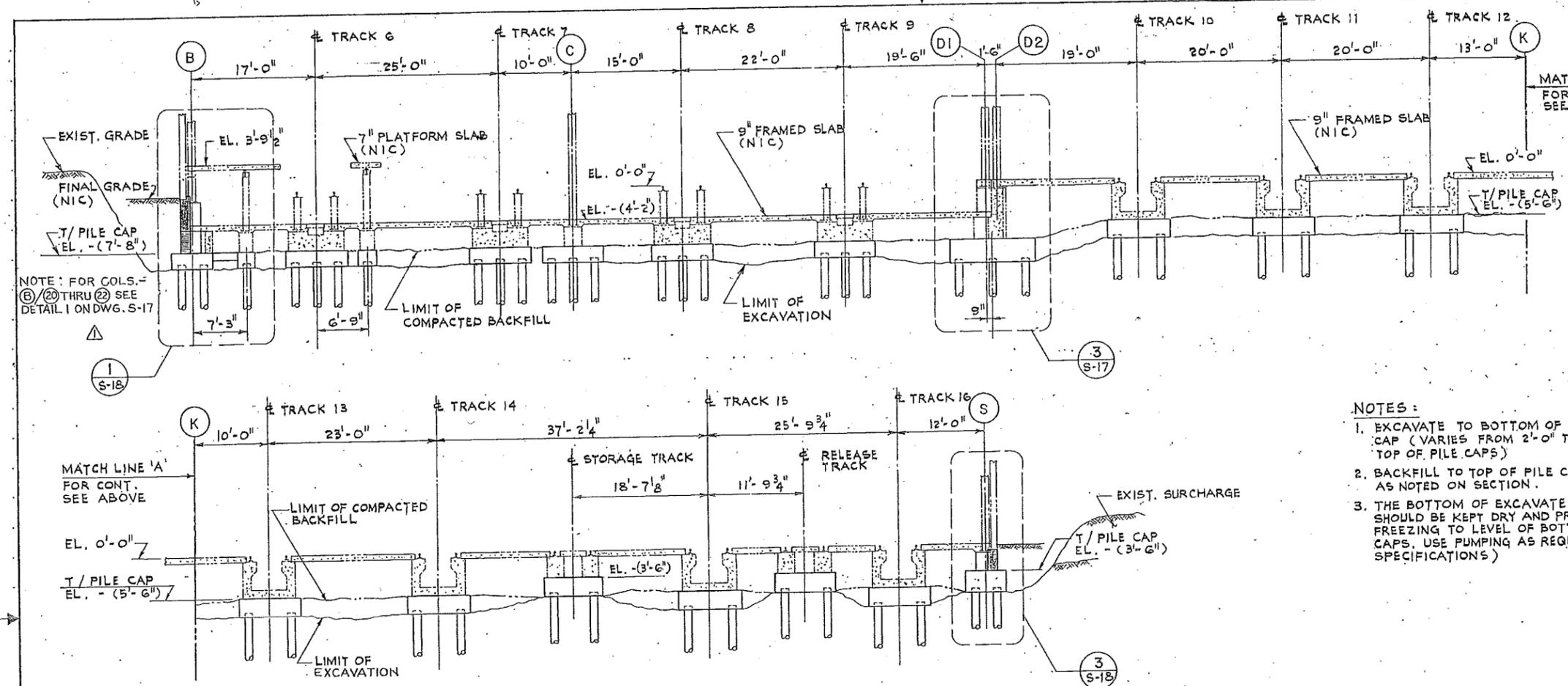
No. Date Revision Approved

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to PATH and may not be used without its written consent.

KS YFN NS  
Checked by Drawn by Task Leader

Date SEPT. 10, 1987 Scale AS SHOWN

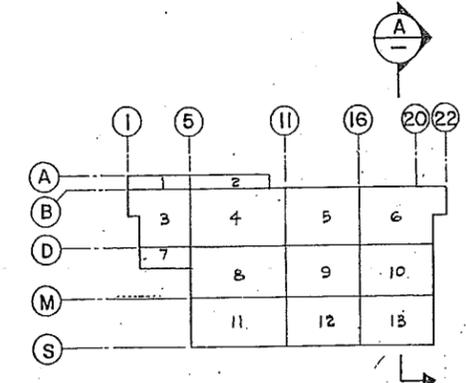
Contract Number Drawing Number  
PAT-150.150 S-15



- NOTES:
- EXCAVATE TO BOTTOM OF PILE CAP (VARIES FROM 2'-0" TO 3'-8" BELOW TOP OF PILE CAPS)
  - BACKFILL TO TOP OF PILE CAPS EXCEPT AS NOTED ON SECTION.
  - THE BOTTOM OF EXCAVATE AREAS SHOULD BE KEPT DRY AND PROTECTED FROM FREEZING TO LEVEL OF BOTTOM OF PILE CAPS. USE PUMPING AS REQUIRED (SEE SPECIFICATIONS)

SECTION A  
SCALE: 1/8" = 1'-0"  
10 2 4 6 8 10

CERTIFIED "AS BUILT"  
(BASED ON CORRECTED FIELD DRAWINGS)  
ENGINEERING PROGRAM MANAGER  
INTERSTATE TRANSPORTATION  
DATE: 12/24/95



KEY PLAN  
N.T.S.

BUILDING 44.155.0794

**CERTIFIED "AS BUILT"**  
 (BASED ON CORRECTED FIELD DRAWINGS)  
 ENGINEERING PROFESSIONAL SEAL  
 INTERSTATE TRANSPORTATION  
 DATE: 12/2/97

**PORT AUTHORITY  
 TRANS-HUDSON CORPORATION**

*Vijay Chandra*  
 7/5/87  
**VIJAY CHANDRA**  
 N.J.P.E. 30875

**Parsons  
 Brinckerhoff**  
 Engineers - Architects - Planners

Engineering Department  
 Design Divisions  
**MAIN REPAIR  
 FACILITY AND YARD  
 AT HARRISON  
 AND KEARNY**

Title  
**SHOP FOUNDATIONS  
 PILE CAP PLANS  
 AND SECTIONS  
 SHEET 1.**

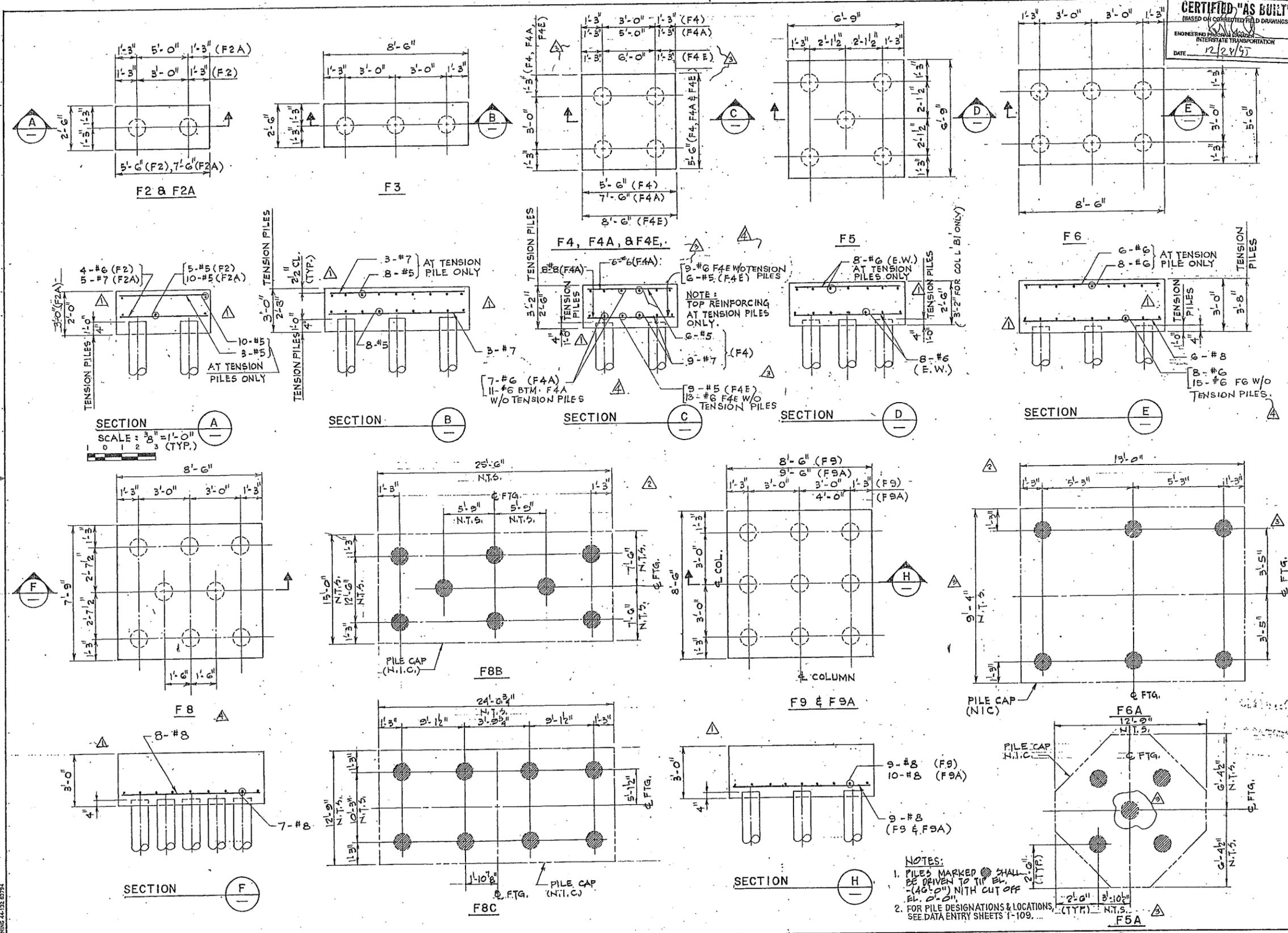
No.	Date	Revision	Approved
3	4/11/91	AS BUILT	N.O.
4	7/29/98	REVISE REINF. STEEL	K.U.
5	2/1/98	CHANGE FOOTING TYPE AND DIM.	K.U.
6	11/20/98	CHANGE FGA DIM. ADD F4F, F8B, F8C ADD NOTE.	K.U.
7	11/12/97	REMOVED TOP REINF. & BENDS OF BOT. BARS PER NEGOTIATION	

No. Date Revision Approved

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to PATH and may not be used without its written consent.

KS YFN NS  
 Checked by Drawn by Task Leader

Date SEPT.10,1997 Scale 3/8" = 1'-0"  
 Contract Number PAT-150.150 Drawing Number S-19



BRUNING 44-132 67794

PORT AUTHORITY  
TRANS-HUDSON CORPORATION

Vijay Chandra  
N.J.P.E. 30875

Parsons  
Brinckerhoff  
Engineers - Architects - Planners

Engineering Department	
Design Divisions	
MAIN REPAIR FACILITY AND YARD AT HARRISON AND KEARNY	

Title  
SHOP FOUNDATIONS  
PILE CAP SECTIONS  
AND DETAILS  
SHEET 2.

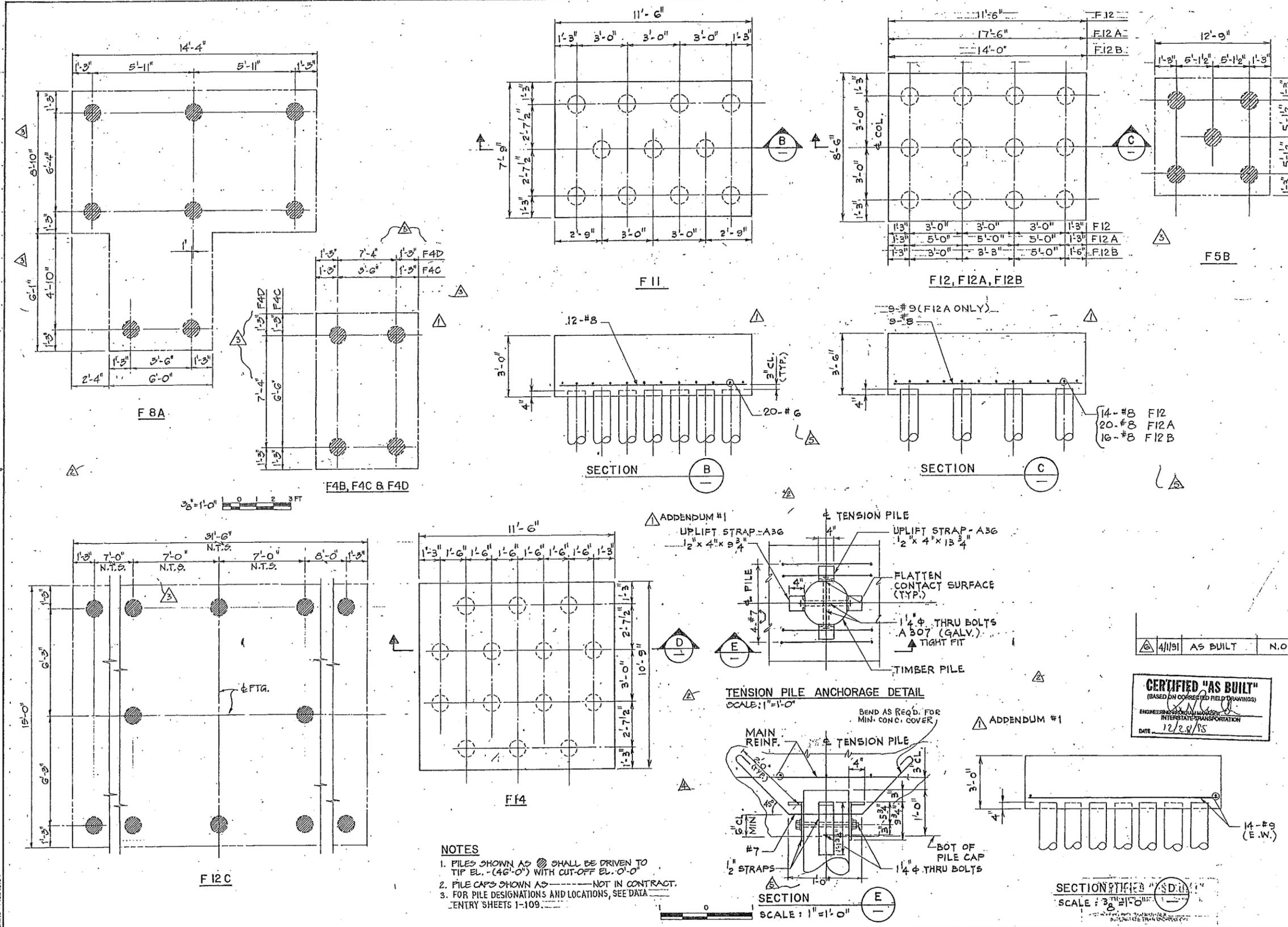
4/1/91	AS BUILT	N.O.		
3/23/88	REV. REINF.		K.U.	
1/23/88	REV. TENSION PILE ANCHORAGE DET.		K.U.	
2/1/88	ADDED FOOTING TYPE F5B, CHANGED DIMENSIONS.		K.U.	
12/30/87	ADDED NOTES, DELETED F10&F15, ADDED F4B,F4C, F4D, F8A & F12C, REVISED TENSION PILE ANCHORAGE DET.		K.U.	
11/27/87	CHANGE F15 TO F14 PER ADDENDUM #1, REMOVED TOP REINF. & BENDS OF BOT. BARS PER NEGOTIATION			

No. Date Revision Approved  
This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to PATH and may not be used without its written consent.

Checked by KS YFN NS  
Drawn by Task Leader

Date SEPT.10,1987 Scale 3/8" = 1'-0" (U.N.)

Contract Number PAT-150.150 Drawing Number S-20

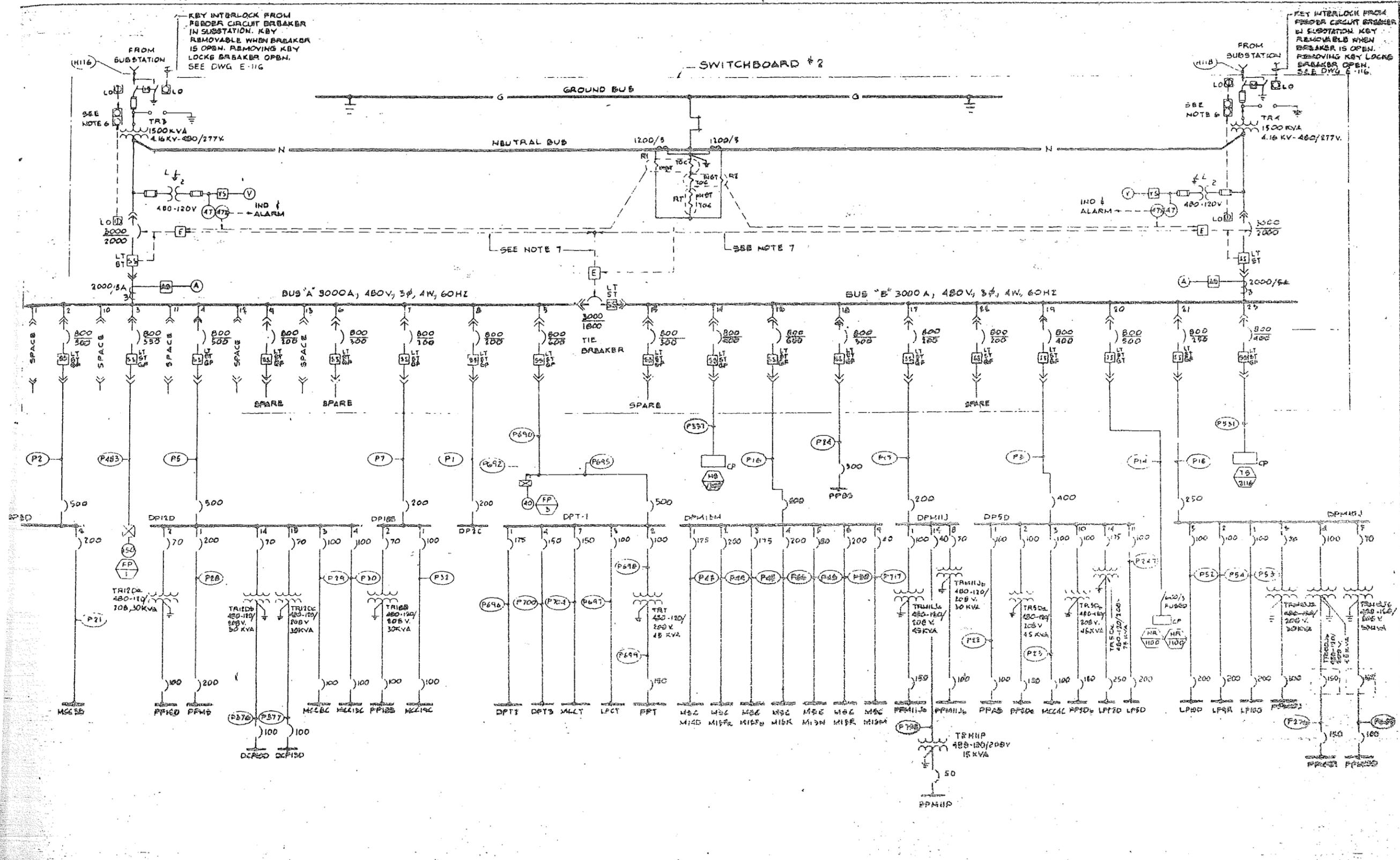


**CERTIFIED "AS BUILT"**  
(BASED ON CORRECTED FIELD DRAWINGS)  
DATE 12/28/85

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

BRUNING 44-132 6774





- NOTES**
- FOR SYMBOL LIST SEE DWG. NO. B-01 | B-02
  - FOR ABBREVIATIONS AND GENERAL NOTES SEE DWG. NO. B-03
  - FOR PANEL BOARD SCHEDULES SEE DWG. B-25 THRU B-27 AND E-232 THRU E-255.
  - FOR CABLE & CABLE SCHEDULES SEE DWG. B-42 THRU B-45
  - FOR MCC SCHEDULES SEE DWG. E-35, E-36 | E-40
  - KEY INTERLOCK TO PREVENT ENTRY TO FUSE COMPARTMENT AND TO PREVENT ACCESS TO TRANSFORMER TAP CHAMBER WHEN EITHER THE LOAD INTERRUPTER SWITCH OR THE TRANSFORMER SECONDARY MAIN BREAKER IS CLOSED
  - ELECTRICAL INTERLOCKS BETWEEN TWO MAIN CIRCUIT BREAKERS SHALL ALLOW ONLY TWO CIRCUIT BREAKERS TO BE CLOSED AT ANY TIME.

CONFORMED 12-15-88

PAUL AUTOMATIC  
MOTOR & ELECTRICAL SUPPLY CO.

**Parsons**  
Brinckerhoff  
Engineers - Architects - Planners

Engineering Department
Design Division
MAINT. REPAIR FACILITY AND YARD AT HARBOR AND KEARY

Title  
**SHOP BUILDINGS  
ONE LINE DIAGRAM  
SWITCHBOARD NO. 2**

No.	Date	Revision	Approved
-----	------	----------	----------

This drawing subject to conditions in contract. All in-entails, field designs and methods herein are referred to PART 1 and may not be used without its written consent.

ELMO BLUMBERG SE. 6684 PROFESSIONAL ENGINEER	JF Checked by	TLK Drawn by	JP Task Leader
	Date 6/9/88	Scale None	
	Contract Number	Drawing Number	
	PAT-130 153	E-00	

PORT AUTHORITY  
TRANS-HUDSON CORPORATION

Parsons  
Brinckerhoff  
Engineers, Architects & Planners

Engineering Department  
Design Divisions

MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

SHOP BUILDINGS  
GROUND LEVEL  
POWER PLAN  
AREA 10

RELOCATE ENG EE  
No. Date Revision Approved

This drawing subject to conditions in contract. All dimensions, loads, designs and methods herein are for reference to P&M and may not be used without the engineer's consent.

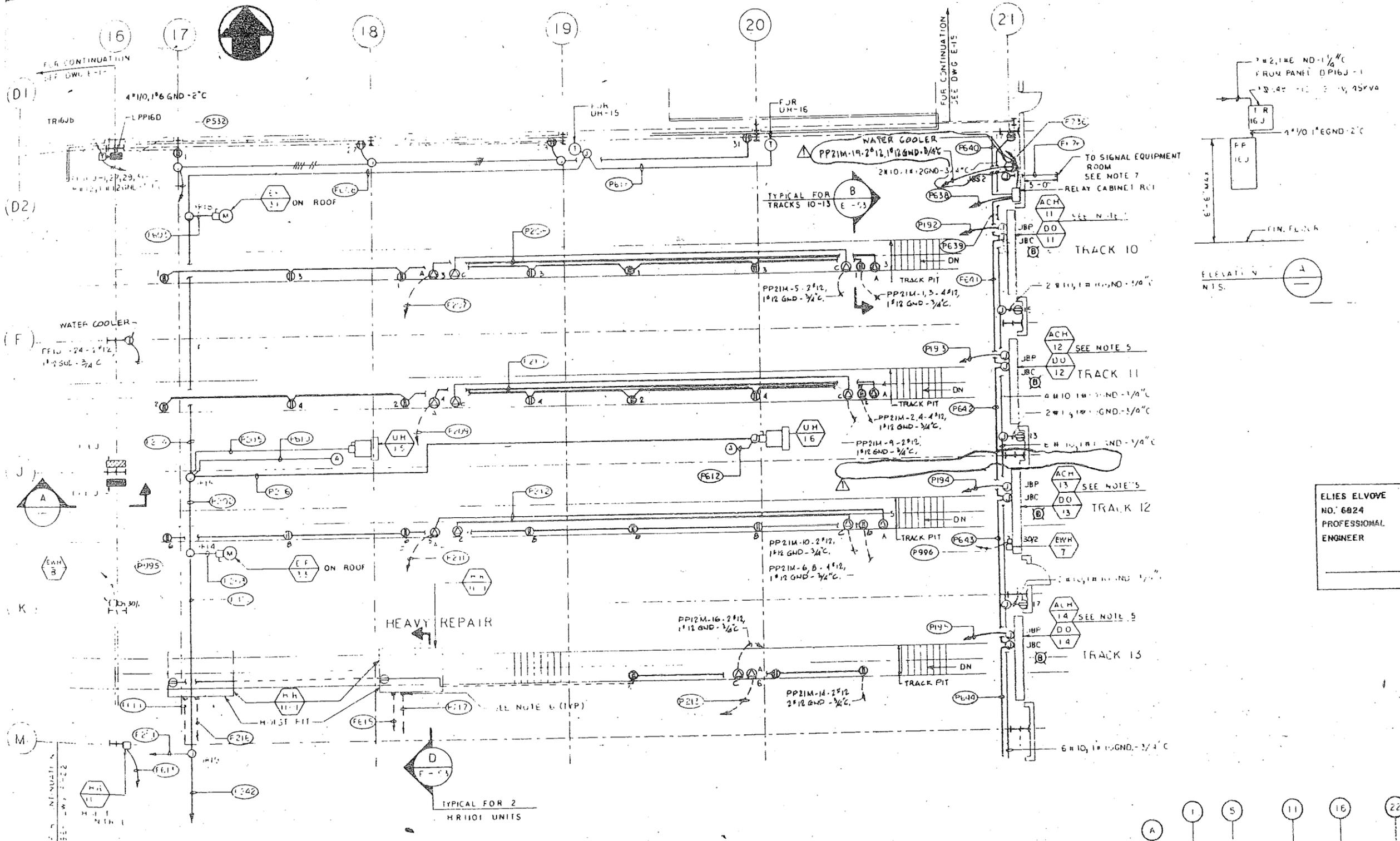
VS CL JP

Checked By: [Signature] Design By: [Signature] Job Leader

Date: 6/7/88 Scale: 1/8" = 1'-0"

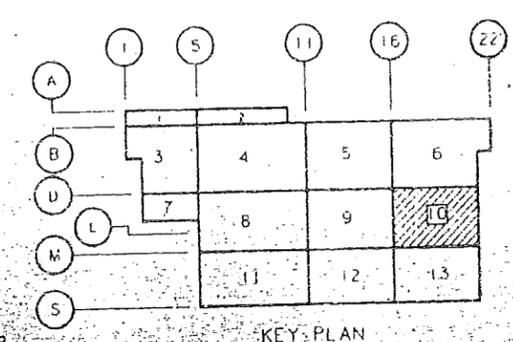
Contract Number: [Blank] Drawing Number: [Blank]

PAT-150-153 E-19



- NOTES**
- 1 FOR SYMBOLS SEE DWG'S E-01/1
  - 2 FOR ABBREVIATIONS AND GENERAL NOTES SEE DWG E-03
  - 3 FOR PANEL SCHEDULES SEE DWG E-28 THRU E-37
  - 4 FOR CONDUIT SCHEDULES SEE DWG E-42 THRU E-48
  - 5 FOR DOOR OPERATION AIR CURTAIN HEATER, ASSOCIATED EQUIPMENT & DEVICE ARRANGEMENT SEE ELEVATION A IN DWG E-57
  - 6 TERMINATE CONDUITS WITH FLUSH COUPLING 15" BELOW TOP OF FINISHED FLOOR
  - 7 EXTEND CONDUITS 5FT BEYOND BLDG AND CONNECT TO CONDUITS INSTALLED BY OTHERS.

CONFORMED 12-15-88



KEY PLAN

PORT AUTHORITY  
TRANSITATION CORPORATION

Parsons  
Brinckerhoff  
Engineering Architects Planners

Engineering Department  
Design Divisions

MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

SHOP BUILDINGS  
GROUND LEVEL  
POWER PLAN  
AREA -13

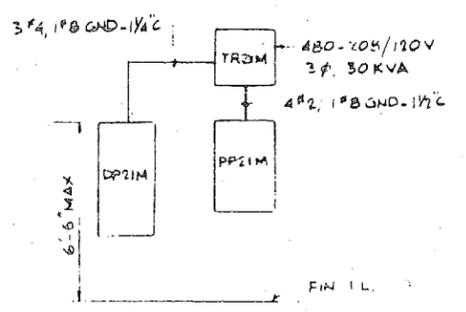
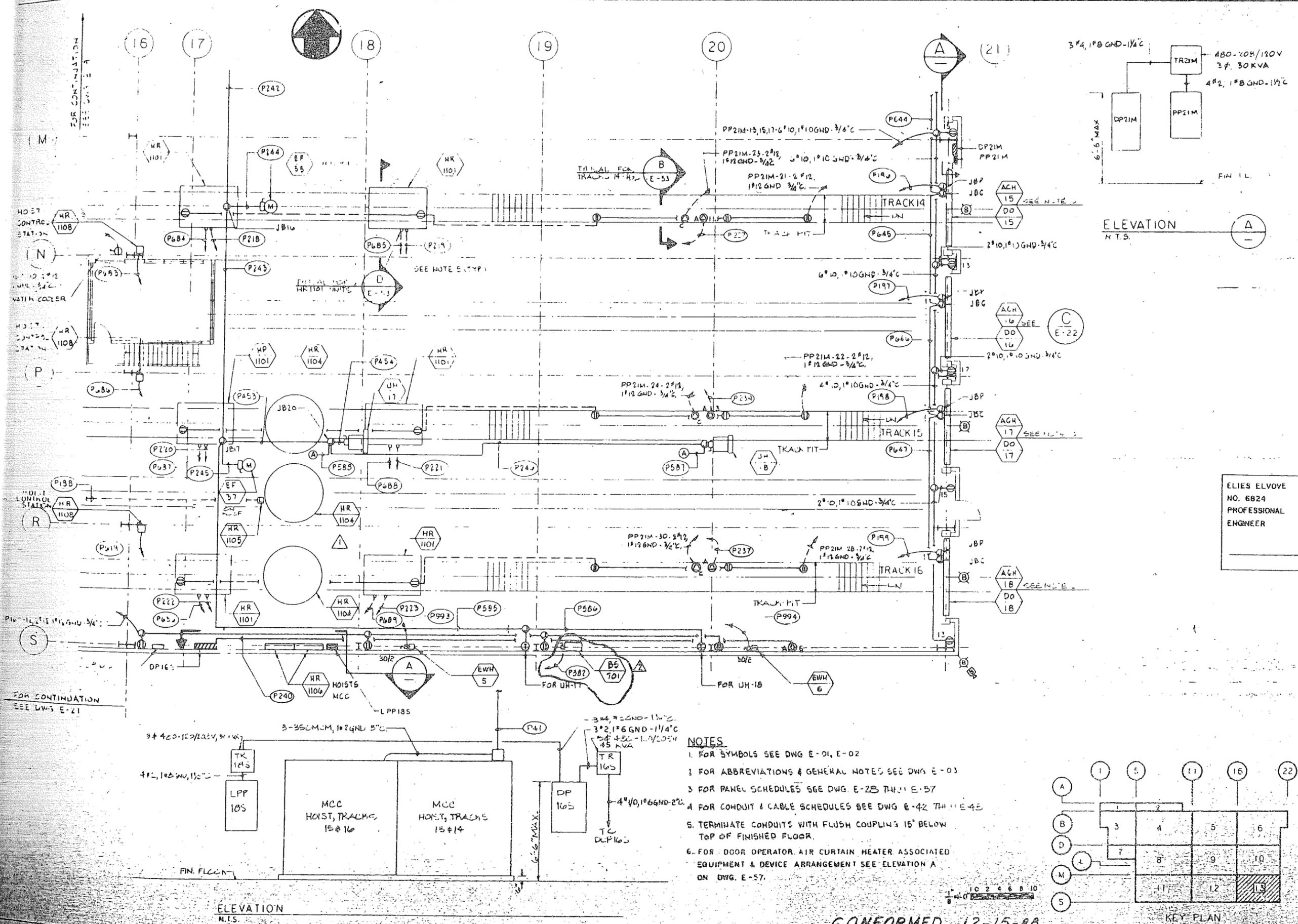
7-15-88	ADDED FORKLEIFT CHARGER	EE
7-15-88	DELETE MOTORS FOR TURNABLES	EE
Rev. Date	Revision	Approved

This drawing subject to conditions in contract. All intentions, designs and methods herein are passed to PAHA and may not be used without its written consent.

VS. EL JF

Checked By: Order By: Task Leader  
Date: 6/1/88 Scale: 1/8" = 1'-0"  
Contract Number: Drawing Number:

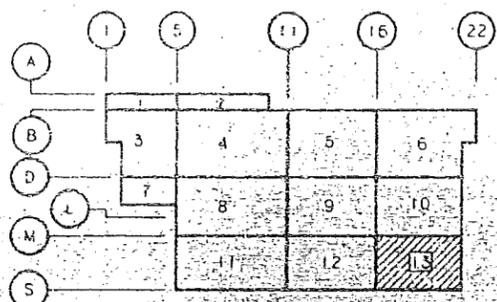
FAT-150.153 E-22



ELEVATION  
N.T.S.

ELIES ELVOYE  
NO. 6824  
PROFESSIONAL  
ENGINEER

- NOTES**
1. FOR SYMBOLS SEE DWG E-01, E-02
  2. FOR ABBREVIATIONS & GENERAL NOTES SEE DWG E-03
  3. FOR PANEL SCHEDULES SEE DWG E-28 THROUGH E-37
  4. FOR CONDUIT & CABLE SCHEDULES SEE DWG E-42 THROUGH E-45
  5. TERMINATE CONDUITS WITH FLUSH COUPLINGS 15" BELOW TOP OF FINISHED FLOOR.
  6. FOR DOOR OPERATOR AIR CURTAIN HEATER ASSOCIATED EQUIPMENT & DEVICE ARRANGEMENT SEE ELEVATION A ON DWG E-57.



KEY PLAN

CONFORMED 12-15-88

ELEVATION  
N.T.S.



PORT AUTHORITY  
TRANS HUDSON CORPORATION

Parsons  
Brinckerhoff  
Engineers - Architects - Planners

Engineering Department  
Design Divisions

MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

Title  
SHOP BUILDINGS  
GROUND LEVEL  
FIRE PROTECTION  
AREA-10

ALVIN R. JAHNELKA  
NO. 6593  
PROFESSIONAL  
ENGINEER  
*Alvin R. Jahnelka*

**CERTIFIED HAS BUILT**  
(BASED ON PROVIDED RECORD DRAWINGS)  
ENGINEER'S PROFESSIONAL SEAL  
INTERSTATE TRANSPORTATION  
DATE 6/19/88

1-20-88	AS BUILT	M.H.
6-15-89	RELOCATED SIAMESE AND FHR.	C.E.C.

No.	Date	Revision	Approved

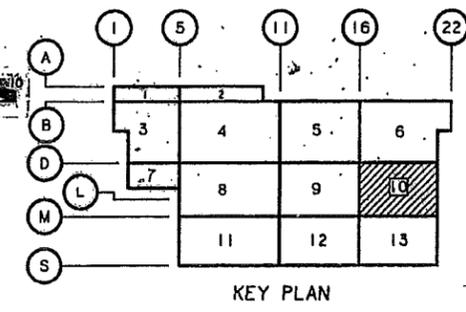
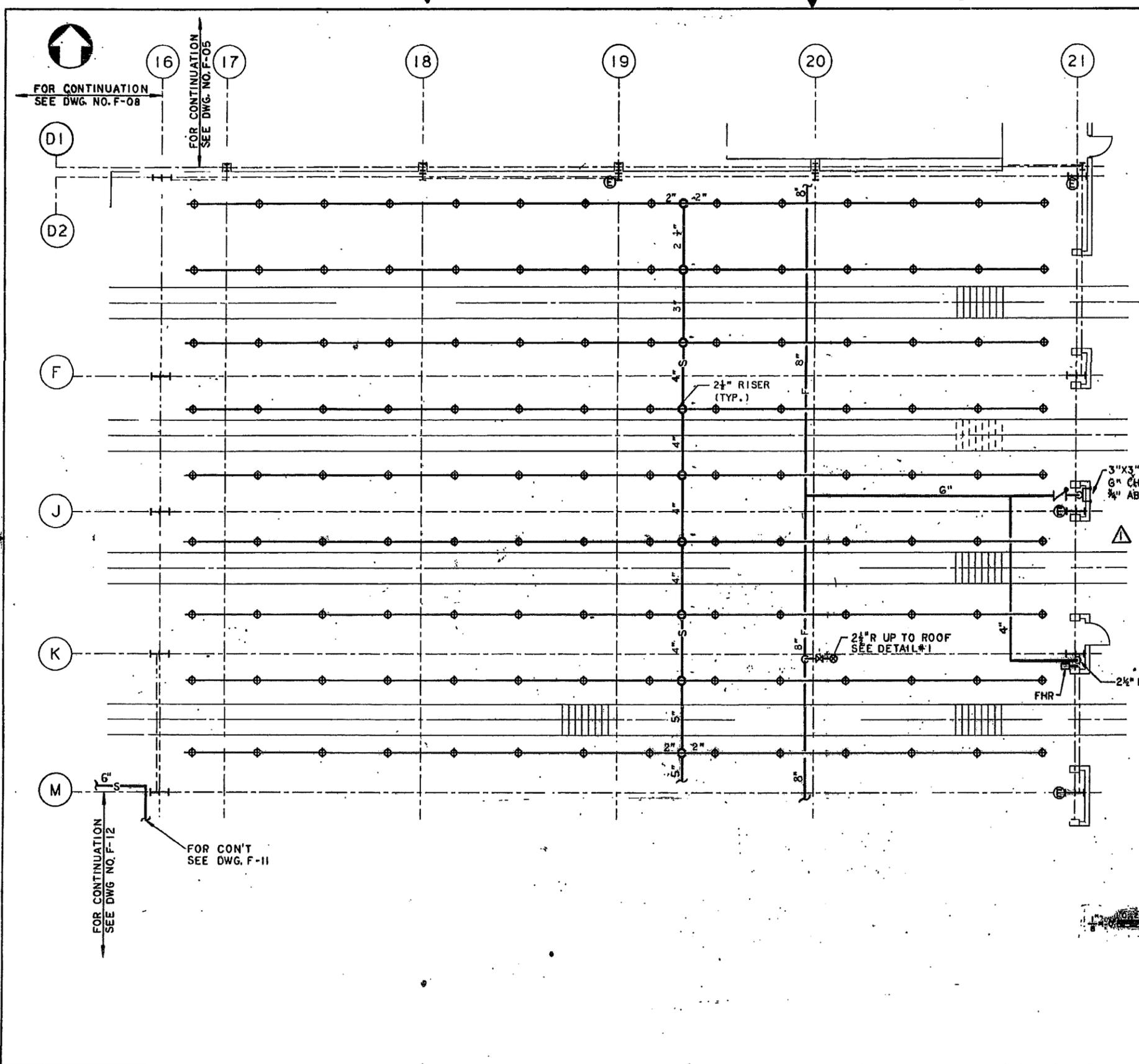
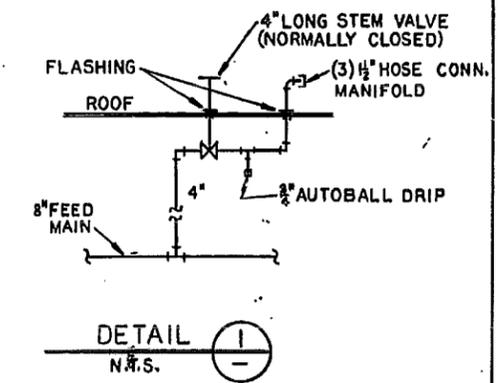
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Checked By: H.E.      Drawn By: C.E.C.      Task Leader: A.R.J.

Date: 6/7/88      Scale: 1/8" = 1'-0"

Contract Number:      Drawing Number:

PAT-150.153-F-09



PORT AUTHORITY  
TRANS-HUDSON CORPORATION

Parsons  
Brinckerhoff  
Engineers - Architects - Planners

Engineering Department  
Design Divisions

MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

Title  
SHOP BUILDINGS  
GROUND LEVEL  
FIRE PROTECTION  
AREA-13

ALVIN R. JAHNELKA  
NO. 9593  
PROFESSIONAL  
ENGINEER  
*Alvin R. Jahnelka*

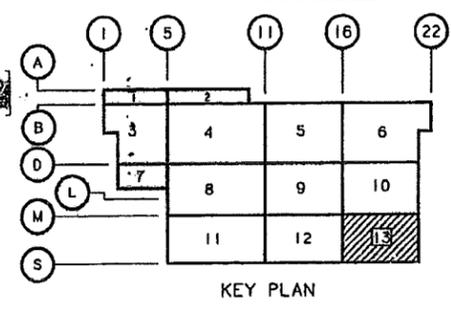
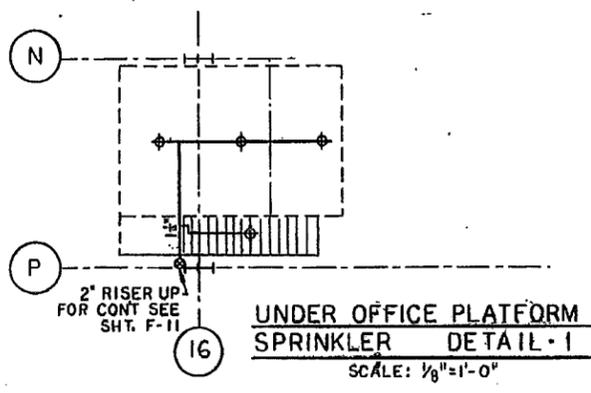
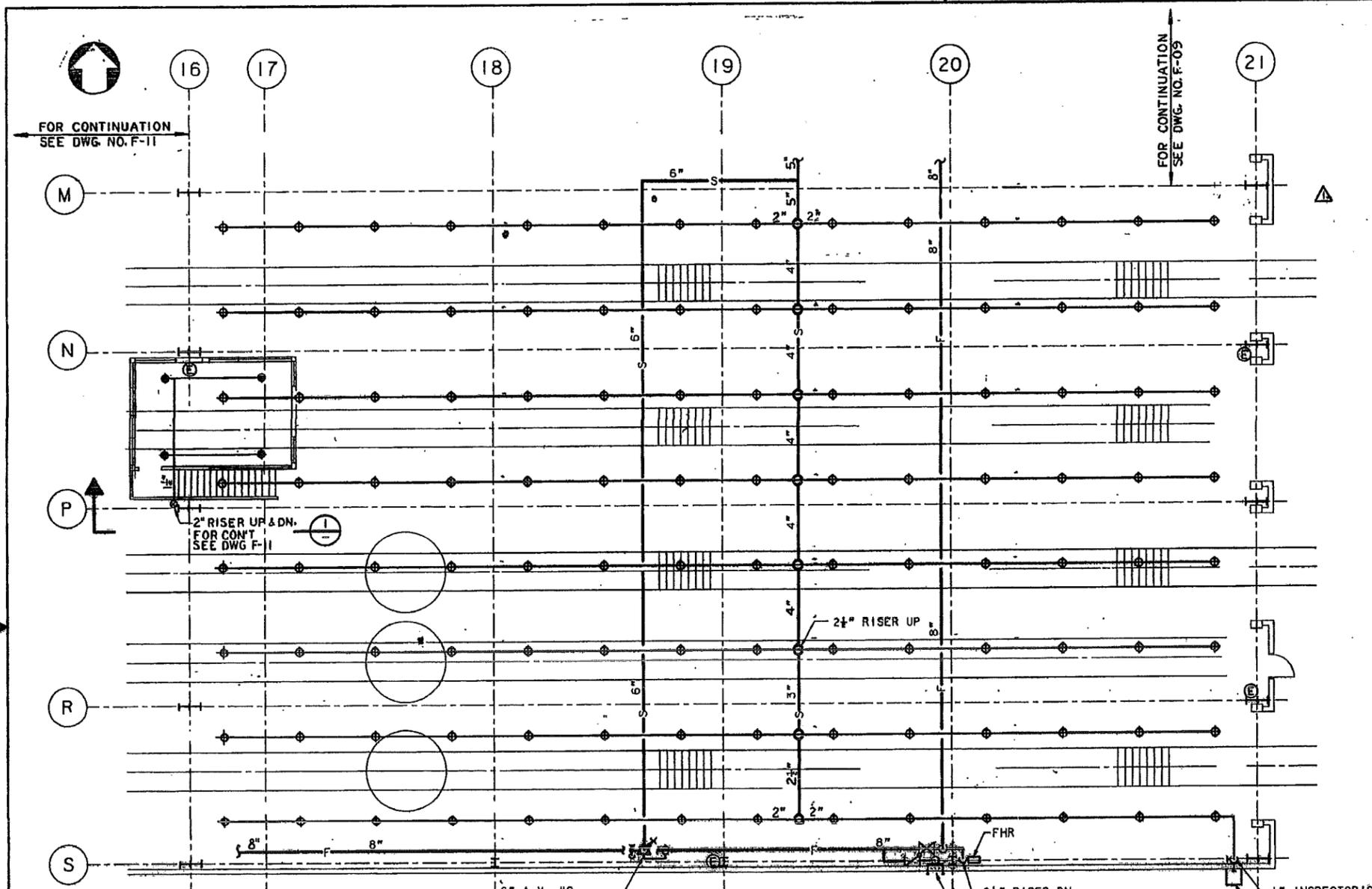
**CERTIFIED "AS BUILT"**  
(BASED ON CORRECTED FIELD DRAWINGS)  
ENGINEERED BY PARSONS BRINCKERHOFF  
INTERSTATE TRANSPORTATION  
DATE 3/19/86

1-20-85	AS BUILT	MH
6-16-86	REMOVED SIAMESE AND FHR	C.E.C.
No.	Date	Revision
		Approved

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Date: 6/7/86      Scale: 1/8" = 1'-0"  
Contract Number:      Drawing Number:

PAT-150.153 F-12



FOR CONTINUATION  
SEE DWG. NO. F-11

FOR CONTINUATION  
SEE DWG. NO. F-09

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Design Division  
**MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY**

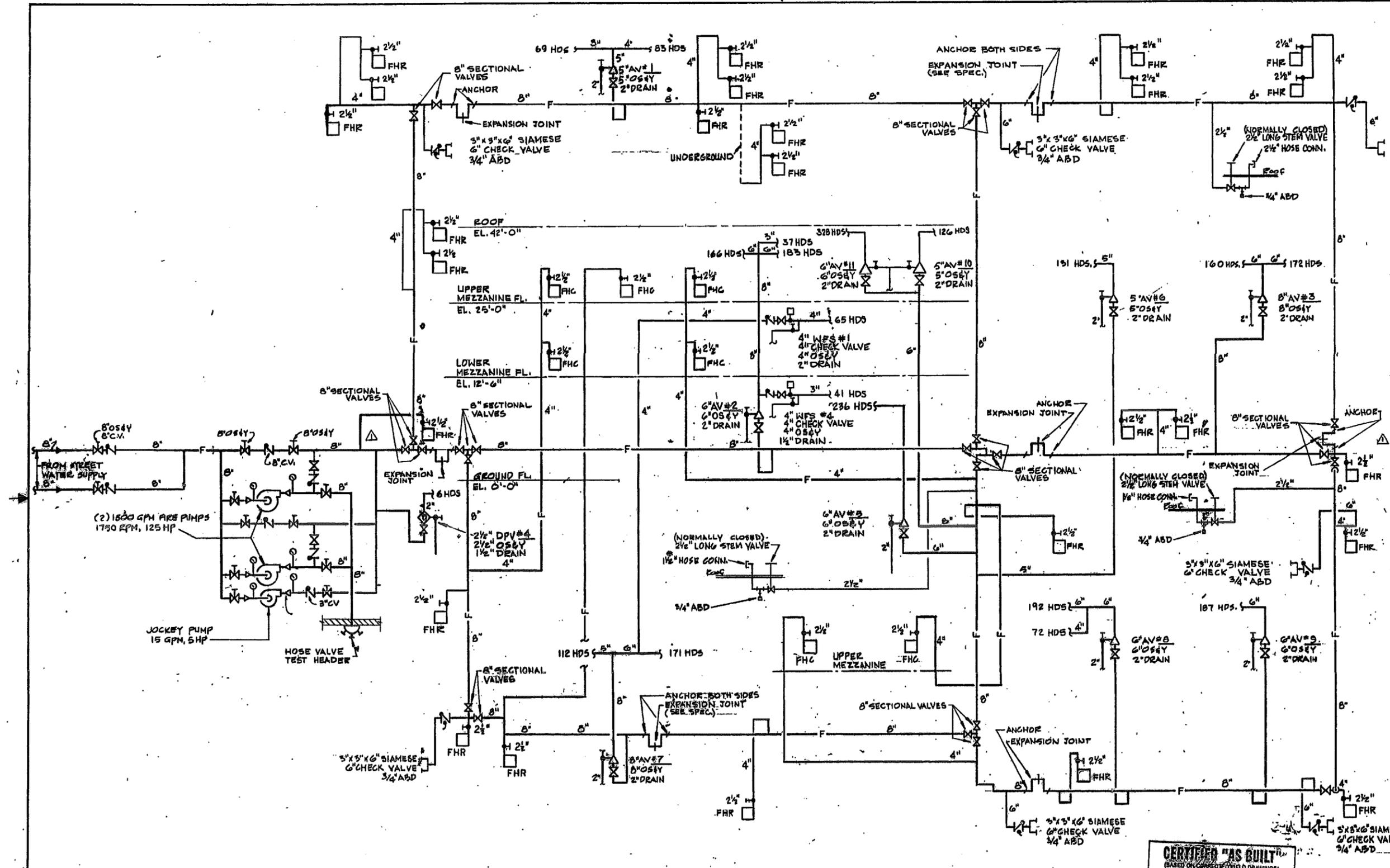
Title  
**SHOP BUILDINGS  
FIRE STANDPIPE AND  
SPRINKLER FLOW  
DIAGRAM**

1-2095	AS BUILT	M.H.
71-88	ADDED 2 GATE VALVES AS NOTED	C.E.C.
No. Date Revision	Approved	

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H.E. C.E.C. A.R.J.  
ed by Drawn by Task Leader

Date 6/7/88 Scale NONE  
Contract Number Drawing Number  
PAT-150,153 F-20



**FIRE STANDPIPE & SPRINKLER FLOW DIAGRAM**  
N.T.S.

**CERTIFIED "AS BUILT"**  
(BASED ON FIELD DRAWINGS)  
ENGINEER  
INTERNATIONAL TRANSPORTATION  
DATE 2/7/90

ALVIN R. JAHIELKA  
NO. 9393  
PROFESSIONAL  
ENGINEER  
*Alvin R. Jahielka*

7-71  
DRAWING 44-132 5/7/84

PORT AUTHORITY  
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Engineers - Architects - Planners

Engineering Department
Design Divisions
MAIN REPAIR FACILITY AND YARD AT HARRISON AND KEARNY

ALVIN R. JAHNELKA  
NO. 9393  
PROFESSIONAL ENGINEER  
*Alvin R. Jahnelka*

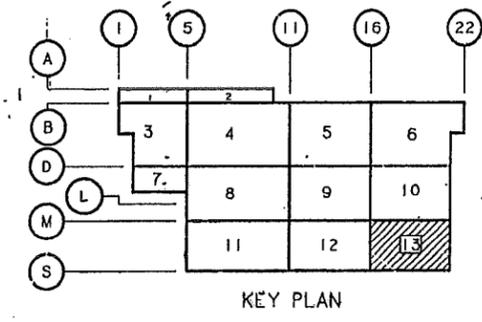
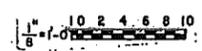
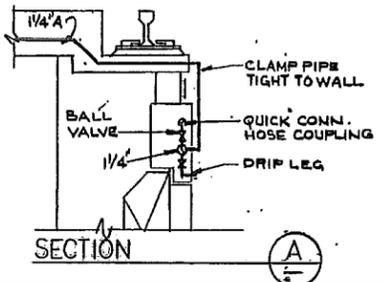
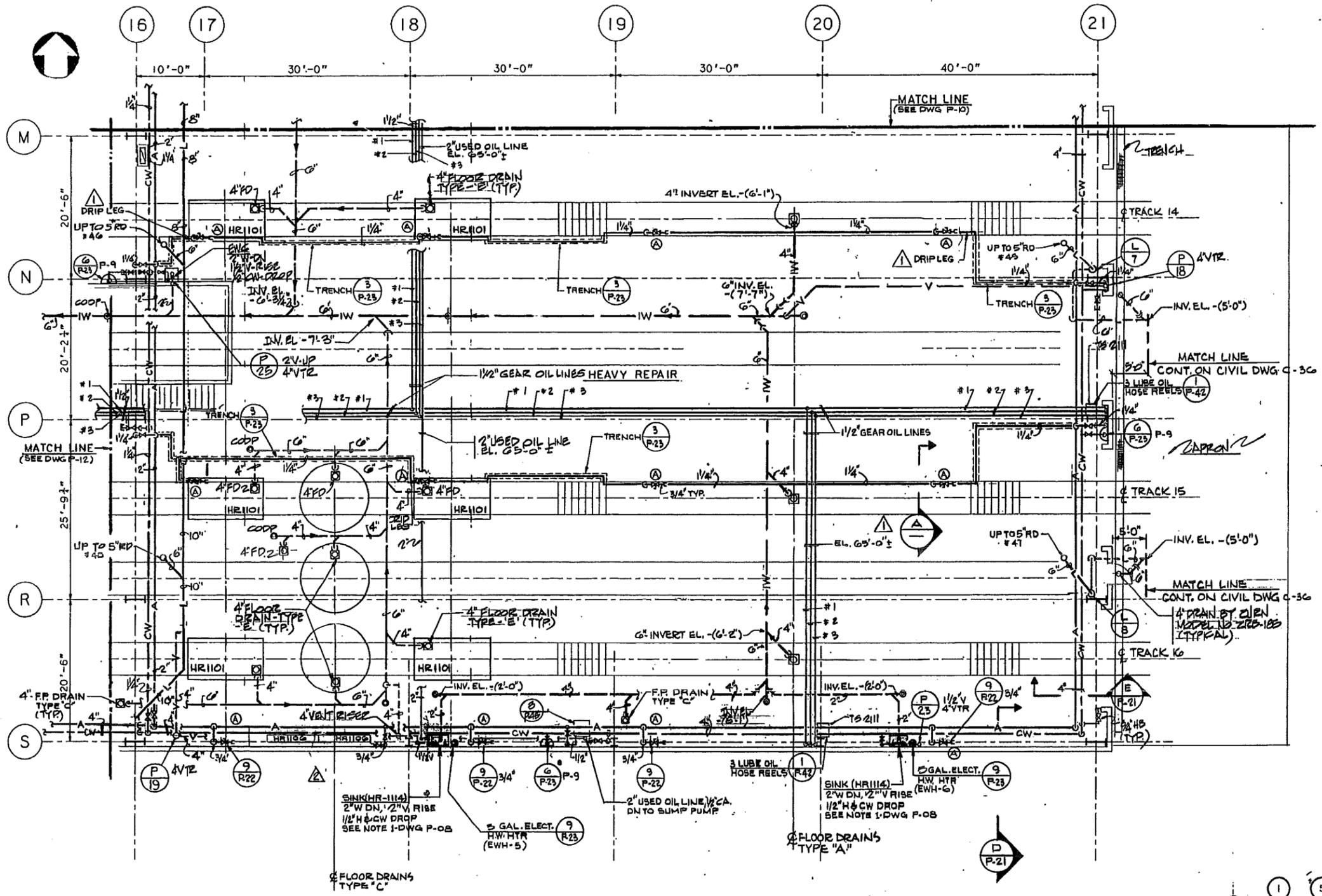
Title  
**SHOP BUILDINGS  
GROUND LEVEL  
PLUMBING  
AREA 13**

**CERTIFIED AS BUILT**  
(BASED ON CORRECTED FIELD DRAWINGS)  
ENGINEERED THROUGH THE PORT AUTHORITY  
INTERNAL TRANSPORTATION  
DATE 3/19/88

1-20-95	AS BUILT	M.H.
1-15-88	ADDED SECTION 2 REVISED AIR PIPE IN PIT	H.E.
No. Date Revision	Approved	

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H.E. N.K. A.R.J.  
Checked By \_\_\_\_\_ Drawn By \_\_\_\_\_ Task Leader \_\_\_\_\_  
Date 6/7/88 Scale 1/8" = 1'-0"  
Contract Number PAT-150.153 Drawing Number P-13



PORT AUTHORITY  
TRANS-HUDSON CORPORATION

Parsons  
Brinckerhoff  
Engineers - Architects - Planners

Engineering Department  
Design Division

MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

Title  
SHOP BUILDINGS  
INDUSTRIAL WASTE  
RISER DIAGRAM

**CERTIFIED "AS BUILT"**  
(BASED ON COMPLETED FIELD DRAWINGS)  
ENGINEER AND SURVEYOR  
INTERSTATE TRANSPORTATION  
DATE 6/18/86

ALVIN R. JAHIELKA  
NO. 9393  
PROFESSIONAL  
ENGINEER

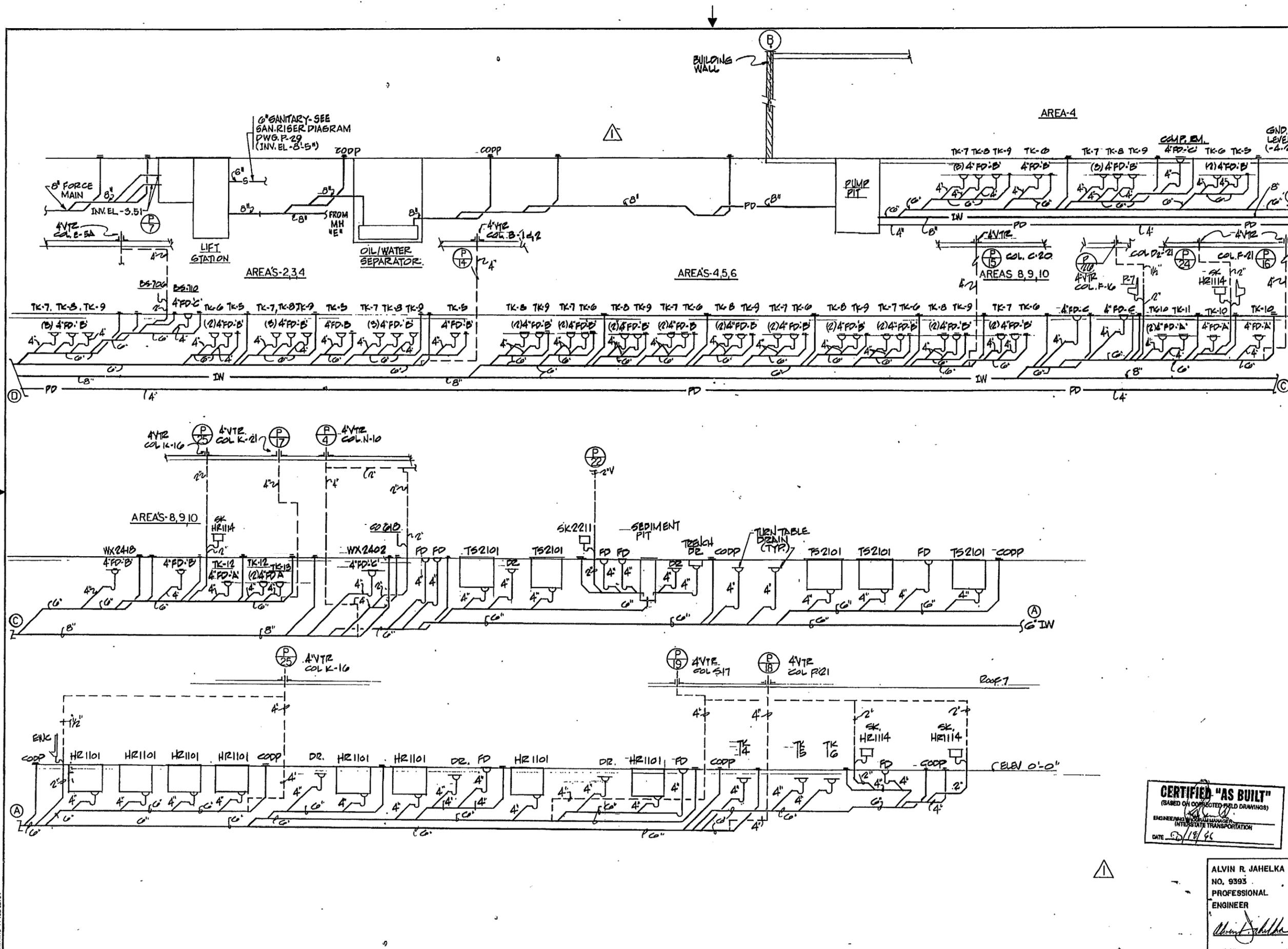
1-20-85 AS BUILT M.H.  
No. Date Revision Approved

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H.E. M.F.H. A.R.J.  
Checked by Drawn by Task Leader

Date 6/7/88 Scale None

Contract Number Drawing Number  
PAT-150.153 P-28



BRUNING 44-132 63794

**GENERAL**

1. NOT USED.
2. REFERENCE ELEVATION 0'-0" IS TOP OF RAIL ELEVATION 308.51'. SEE DRAWING C-1 FOR DATUM.
3. ALL STRUCTURES HAVE BEEN DESIGNED TO RESIST THE DESIGN LOADS ONLY AS COMPLETED STRUCTURES. THE CONTRACTOR SHALL FULLY BRACE AND OTHERWISE PROTECT WORK IN PROGRESS UNTIL THE STRUCTURES ARE COMPLETE. THE CONTRACTOR SHALL ALSO ENSURE THAT HIS OPERATIONS AND PROCEDURES PROVIDE NO LOADINGS GREATER THAN THE DESIGN LOADS ON ANY MEMBER.
4. CONTRACTOR SHALL MAINTAIN, PROTECT AND PROVIDE ADEQUATE TEMPORARY SUPPORTS AS REQUIRED FOR THE EXECUTION OF THIS CONTRACT. THE CONTRACTOR'S DESIGN CALCULATIONS AND DRAWINGS DESCRIBING THE TEMPORARY SUPPORTS, AND SEQUENCE OF CONSTRUCTION SHALL BE REVIEWED AND SIGNED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF NEW JERSEY, AND BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
5. ALL EXCAVATIONS ADJACENT TO EXISTING EQUIPMENT OR STRUCTURES OR WITH A DEPTH EXCEEDING 3'-0" SHALL BE SHORED AND/OR SUPPORTED OTHERWISE TO ENSURE THE SAFETY OF THE ADJACENT EQUIPMENT OR STRUCTURES. CONTRACTOR SHALL SUBMIT EXCAVATION SHEETING DESIGN CALCULATIONS PREPARED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF NEW JERSEY FOR APPROVAL PRIOR TO CONSTRUCTION.
6. ALL EMBEDDED ITEMS AND OPENINGS REQUIRED FOR CIVIL, INDUSTRIAL, ELECTRICAL, ARCHITECTURAL AND MECHANICAL SERVICES SHALL BE INCORPORATED INTO THE STRUCTURE, WHETHER OR NOT THEY ARE DETAILED OR INDICATED ON THE STRUCTURAL DRAWINGS. REFER TO CIVIL, ELECTRICAL, ARCHITECTURAL AND MECHANICAL DRAWINGS WHERE PROVIDED FOR DETAILS OF THESE EMBEDDED ITEMS.
7. THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH CIVIL, INDUSTRIAL ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS AND DRAWINGS RELATING TO ALL TRADES WHERE PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE TO CHECK AND COORDINATE CLEARANCES, ETC. WITH WORK OF ALL TRADES AND EXISTING FIELD CONDITIONS.
8. ALL EXISTING DOWELS (PROVIDED BY OTHERS IN PREVIOUS CONTRACTS) TO BE INCORPORATED INTO THIS CONTRACT, SHALL BE CLEANED, STRAIGHTENED AND/OR BENT TO SUIT. DOWELS NOT NEEDED SHALL BE CUT OR BURNED OFF TO A DEPTH OF AT LEAST TWO INCHES BELOW THE SURFACE OF EXISTING CONCRETE, AND THE HOLE IN THE CONCRETE SHALL BE PATCHED USING NON-SHRINK GROUT.

9. FOR ADDITIONAL GENERAL NOTES, SEE DWG. NO. A-1.

**DESIGN CRITERIA**

**1. REFERENCE CODES AND GUIDELINES**

- ALL DESIGN, UNLESS OTHERWISE NOTED, HAS BEEN BASED ON THE FOLLOWING:
- o "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE ACI 318 1983"
  - o "STEEL CONSTRUCTION MANUAL", EIGHTH EDITION (AISC 1980).
  - o "STRUCTURAL WELDING CODE" (AWS D1.1 1986).
  - o "AMERICAN NATIONAL STANDARD, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES" (ANSI A58.1, 1982).

- o AMERICAN RAILWAY ENGINEERING ASSOCIATION (AREA) "AREA MANUAL FOR RAILWAY ENGINEERING" - 1987/1988.
- o BUILDING OFFICIALS AND CODE ADMINISTRATORS INTERNATIONAL, (BOCA) BASIC BUILDING CODE 1987.
- o ASSOCIATION OF IRON AND STEEL ENGINEERS (AISE) - "GUIDE FOR THE DESIGN AND CONSTRUCTION OF MILL BUILDINGS" 1979.
- o "LIGHT AND HEAVY INDUSTRIAL BUILDINGS" BY JAMES A. FISHER (AISC 1979).

**2. DESIGN METHODS**

- o REINFORCED CONCRETE STRUCTURES HAVE BEEN DESIGNED IN ACCORDANCE WITH THE "STRENGTH METHOD".
- o STEEL STRUCTURES HAVE BEEN DESIGNED IN ACCORDANCE WITH THE "WORKING STRESS METHOD"
- o DESIGN LOADS

- LIVE LOAD
- Roof - 30 PSF SNOW
- ADDITIONAL SNOW DRIFT AS PER ANSI 58.1-1982.
- ADDITIONAL 10 PSF ALLOWANCE FOR HANGING PIPES, CONDUITS, ETC.
- ACTUAL EQUIPMENT LOADS SUPPORTED ON ROOF (IN ADDITION TO THE SNOW LOAD).
- WATER PONDING CONDITIONS, ASSUMING CLOGGED DRAINS.
- OFFICES - 100 PSF, OR A CONCENTRATED LOAD OF 2,000 LBS. AT ANY PLACE.
- FLOORS - 150 PSF (UNLESS NOTED), OR ACTUAL EQUIPMENT CONCENTRATED LOAD OR A CONCENTRATED LOAD OF 5,000 LBS. AT ANY PLACE.
- STORE ROOMS - 250 PSF (UNLESS NOTED).

- WIND LOAD ON MAIN FRAME PER ANSI 58.1 (BASIC WIND SPEED 80 MPH, 50 YEAR RETURN, "C" EXPOSURE, IMPORTANCE FACTOR "I" = 1.0, HEIGHT Z = 60'), INCLUDING GUST.
- WIND LOAD ON WALLS AND WINDOWS PER ANSI 58.1 (30 PSF MIN.).
- SEISMIC LOAD: ZONE 1.
- DESIGN CAR LOADS - PA-4 CARS 69,000 LBS. EMPTY PLUS 30,000 LBS. "LIVE LOAD" (12,375 LBS. PER WHEEL - EIGHT WHEELS). FIFTEEN PERCENT IMPACT ADDITIONAL.
- CRANE RUNWAYS - LATERAL FORCE: TWENTY PERCENT OF SUM OF LIFTED LOAD PLUS WEIGHT OF CRANE TROLLEY, ONE HALF ON EACH SIDE OF RUNWAY.
- LONGITUDINAL FORCE: TEN PERCENT OF MAX. WHEEL LOADS OF THE CRANE.
- ALL HORIZONTAL FORCES TO BE TAKEN AT TOP OF RAIL.

**CONCRETE**

**o GENERAL**

- DETAILS OF REINFORCING AND CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH "ACI DETAILING MANUAL - 1980" (PUBLICATION SP-66).
- COMPRESSIVE CONCRETE STRENGTH, F'C FOR CAST-IN-PLACE CONCRETE SHALL BE 4,000 PSI AT 28 DAYS, EXCEPT FOR THE "MUD" SLAB, WHICH SHALL BE 2,500 PSI.

**o REINFORCING STEEL**

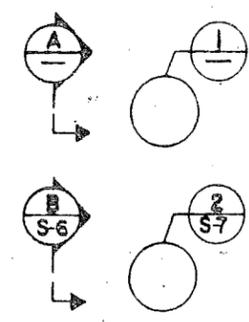
- REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60.
- WELDED WIRE FABRIC (WFF) SHALL CONFORM TO ASTM A185.
- CONCRETE COVER FOR REINFORCEMENT SHALL CONFORM TO ACI 318 AND CONTRACT DRAWINGS.
- REINFORCING STEEL SPLICES SHALL BE USED ONLY WHERE SHOWN OR APPROVED BY THE ENGINEER. ALL REINFORCING STEEL SPLICES SHALL BE CLASS C SPLICES IN ACCORDANCE WITH ACI 318-83 UNLESS NOTED OTHERWISE.
- ALL BARS SHALL BE EMBEDDED FOR THE BASIC DEVELOPMENT LENGTH IN ACCORDANCE WITH ACI 318-83 UNLESS NOTED OTHERWISE.

**o DETAILS**

- JOINTS SHALL BE PROVIDED AS SHOWN ON CONTRACT DRAWINGS OR AS APPROVED BY THE ENGINEER.
- ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4", UNLESS OTHERWISE NOTED.

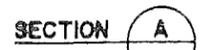
**STRUCTURAL STEEL**

- ALL CONNECTIONS SHALL BE SHOP WELDED OR HIGH STRENGTH BOLTED, UNLESS OTHERWISE NOTED.
- HIGH STRENGTH BOLTS SHALL BE ASTM A325 BLP CRITICAL. THE SIZE SHALL BE 3/4" DIAMETER FOR GIRTS AND PURLINS AND 7/8" DIAMETER FOR OTHER MEMBERS UNLESS OTHERWISE NOTED. ALL CONNECTIONS SHALL HAVE A MINIMUM OF TWO BOLTS.
- CONNECTIONS SHALL BE DESIGNED FOR THE SHEAR, THRUST AND MOMENT REACTIONS INDICATED ON THE CONTRACT DWGS. OR 50% OF THE TOTAL ALLOWABLE UNIFORM LOAD IN KIPS AS SHOWN IN PART 2 OF THE AISC MANUAL OF STEEL CONSTRUCTION, IF NO REACTIONS ARE SHOWN.
- IN ADDITION, THE DETAILS OF CONNECTIONS, SIZE AND LENGTH OF WELDS, UNLESS OTHERWISE SHOWN ON THE CONTRACT DWGS., SHALL BE IN ACCORDANCE WITH AISC PUBLICATION, "DETAILING FOR STEEL CONSTRUCTION", 1983.
- CONNECTIONS OF BRACING MEMBERS SHALL BE DESIGNED FOR THE FORCES INDICATED OR 50% OF THE TENSION CAPACITY OF THE MEMBERS OR TWO BOLTS WHICHEVER IS GREATER.
- GUSSET PLATES SHALL BE AS REQUIRED BY STRESS AND SHALL HAVE A MINIMUM THICKNESS OF 3/8"
- COLUMNS ENDS SHALL BE MILLED TO BEAR.
- ALL CONNECTIONS TO EXISTING STEEL SHALL BE BOLTED UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- ANCHOR BOLTS AND BASE PLATES SHALL BE ASTM A36.
- ALL STRUCTURAL STEEL SHALL BE ASTM A36.

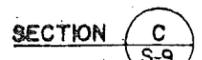
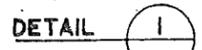


SECTION A, DETAIL 1 TAKEN AND SHOWN ON SAME SHEET.

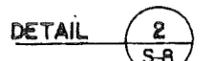
SECTION B, DETAIL 2 SHOWN ON DWGS. NO. S-6 & S-7 RESPECTIVELY.



TITLES FOR SECTION A, DETAIL 1 TAKEN AND SHOWN ON SAME SHEET.



TITLES FOR SECTION C, DETAIL 2 TAKEN ON DWGS. NO. S-9 & S-8 RESPECTIVELY.



**GENERAL (CONT'D.)**

10. STRUCTURAL STEEL, FOUNDATIONS AND ROOF DECK SHOWN AS EXISTING ON THE CONTRACT DRAWINGS ARE BEING INSTALLED UNDER SEPARATE CONTRACT AND THE WORK UNDER THE THOSE CONTRACTS MAY NOT BE COMPLETE AT THE TIME OF AWARD OF THIS CONTRACT. SEE DIVISION 1 OF THE SPECIFICATION FOR LISTING OF "AVAILABLE DOCUMENTS".

**POST AUTHORITY**  
TRANS-HUDSON CORPORATION

*Kamal Uppal*  
KAMAL UPPAL  
N.J. P. E. 32104

Parsons  
Brinckerhoff  
ENGINEERS - ARCHITECTS - PLANNERS

Engineering Department  
Design Division  
MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

Title  
**SHOP BUILDINGS  
GENERAL NOTES  
AND SYMBOLS**

No	Date	Revision	Approved

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Checked by \_\_\_\_\_ Drawn by \_\_\_\_\_ Task Leader

Date 6/7/88 Scale NONE

Contract Number \_\_\_\_\_ Drawing Number \_\_\_\_\_

PATH-150.153 S-1

CONFORMED 12-15-88

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KAMAL UPPAL  
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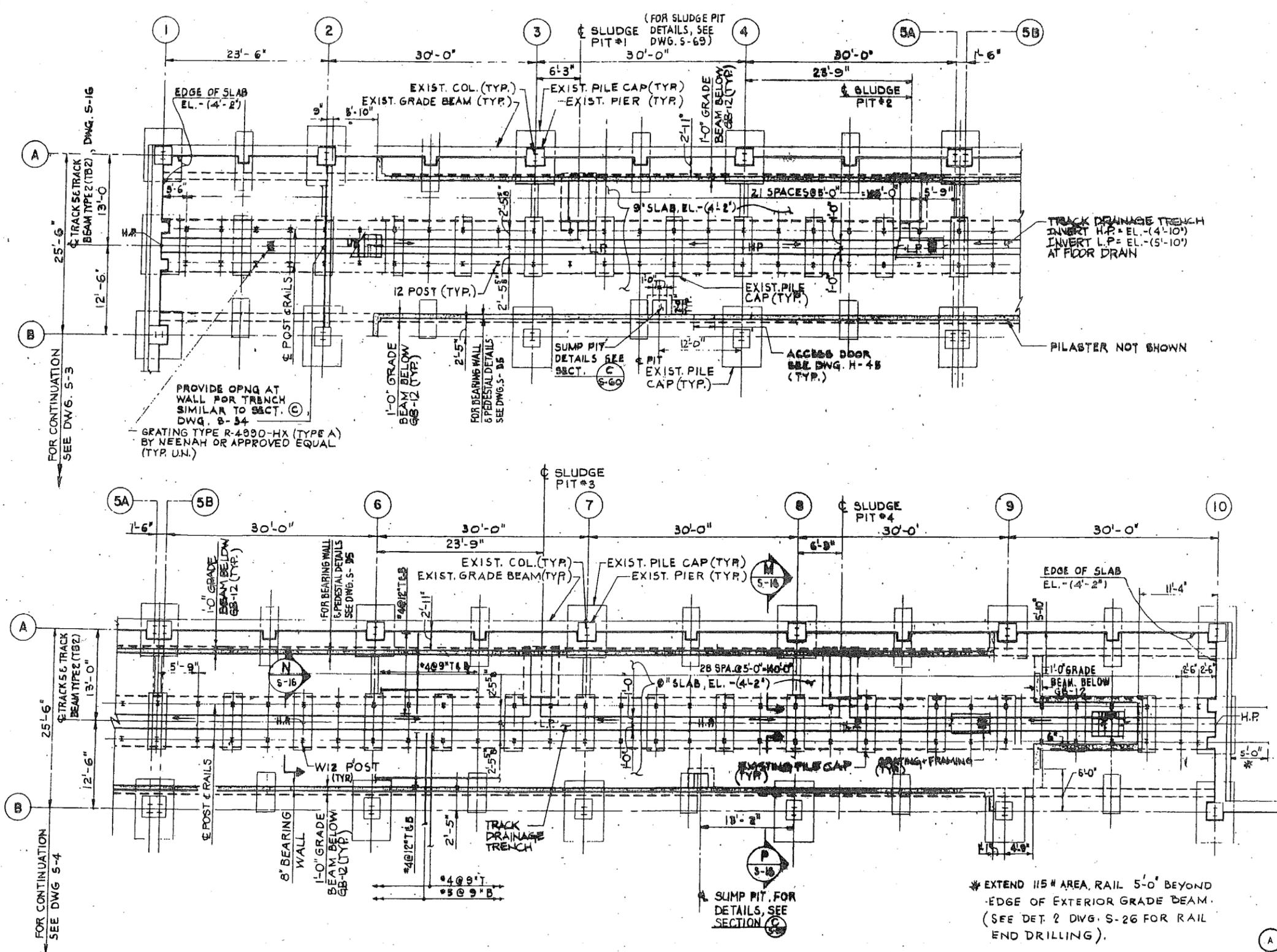
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Engineering Department  
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MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

Title  
SHOP BUILDINGS  
MAIN REPAIR SHOP  
GROUND FLOOR PLAN  
AREA 1 & 2

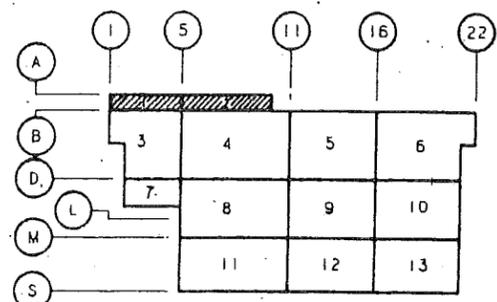
NOTES:

- FOR GENERAL NOTES, SEE DWG. S-1.
- FOR GRADE BEAM DETAILS, SEE DWG. S-18 AND S-19. FOR GRADE WALL (GW), SEE DWG. S-21 & S-22.
- FOR SLAB REINFORCEMENT DETAILS NOT SHOWN, SEE TABLE ON DWG. S-7. (MARKED WITH  $\oplus$ )
- TRENCH TO BE 1'-0" WIDE, UNLESS OTHERWISE NOTED. FOR DETAILS, SEE DWG. S-27 & S-67.
- FOR TYPICAL DETAILS, SEE DWG. S-58 AND S-67. FOR TRACK BM DETAILS, SEE S-16 & S-26.
- EXISTING HORIZONTAL AND VERTICAL DOWELS NOT SHOWN, SEE SECTIONS.
- FOR STAIRS AND RAMP DETAILS, SEE DWG. S-34.
- DIMENSIONS AND LAYOUT OF ALL STRUCTURES REQUIRED TO SUPPORT EQUIPMENT MUST BE VERIFIED WITH THE APPROVED MANUFACTURER PRIOR TO ANY CONSTRUCTION WITHIN THE AREA.
- CONTRACTOR SHALL TAKE EXTREME CARE DURING CONSTRUCTION SO AS NOT TO DISTURB SOIL AROUND EXISTING TIMBER PILES AND UNDER EXISTING FOOTINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY WORK REQUIRED DUE TO DISTURBANCE OF SOIL AROUND EXISTING PILES AND UNDER EXISTING FOOTINGS, TO THE ENGINEER'S SATISFACTION. PLANS FOR THE LAYOUT AND DIMENSIONS OF PILES AND FOOTINGS CONSTRUCTED UNDER SEPARATE CONTRACT "SHOP FOUNDATION" ARE AVAILABLE AS SPECIFIED UNDER "AVAILABLE DOCUMENTS" IN THE SPECIFICATIONS. CONTRACTOR SHALL SUBMIT DETAILS AND METHODS OF CONSTRUCTION OF STRUCTURES ADJACENT TO EXISTING PILES, PILE CAPS AND GRADE BEAMS FOR ENGINEER'S REVIEW PRIOR TO STARTING CONSTRUCTION.
- CONTRACTOR SHALL CUT-OFF TIMBER PILES INSTALLED BY OTHERS FOR EQUIPMENT FOUNDATIONS AT ELEVATIONS SHOWN ON THE CONTRACT DWGS AND DISPOSE OF THE PILE STUBS OFF THE SITE.
- FOR "STRAY CURRENT CONTROL PLAN" DETAILS, SEE DWG. S-70.
- FOR TRACK POSTS AND TRACK SUPPORT DETAILS, SEE DWG. S-26.



\* EXTEND 115" AREA RAIL 5'-0" BEYOND EDGE OF EXTERIOR GRADE BEAM. (SEE DET. 2 DWG. S-26 FOR RAIL END DRILLING).

CONFORMED 12-15-88



KEY PLAN

No.	Date	Revision	Approved

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M.D.P. M.P. N.B.  
Checked by Drawn by Task Leader

Date 6/7/88 Scale 1/8" = 1'-0"

Contract Number Drawing Number  
PAT-150.153 S-2

276

NOTE  
1. FOR NOTES, SEE DWG. S-2.

PORT AUTHORITY  
TRANSIT CORPORATION

KAMAL UPPAL  
N.J. P.E. 32104

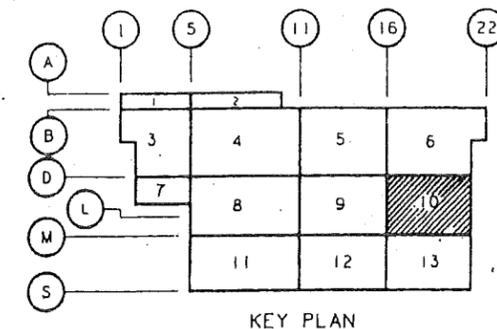
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MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

Title  
MAIN BUILDING  
GROUND FLOOR PLAN  
AREA 10

CONFORMED 12-15-88



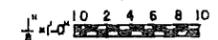
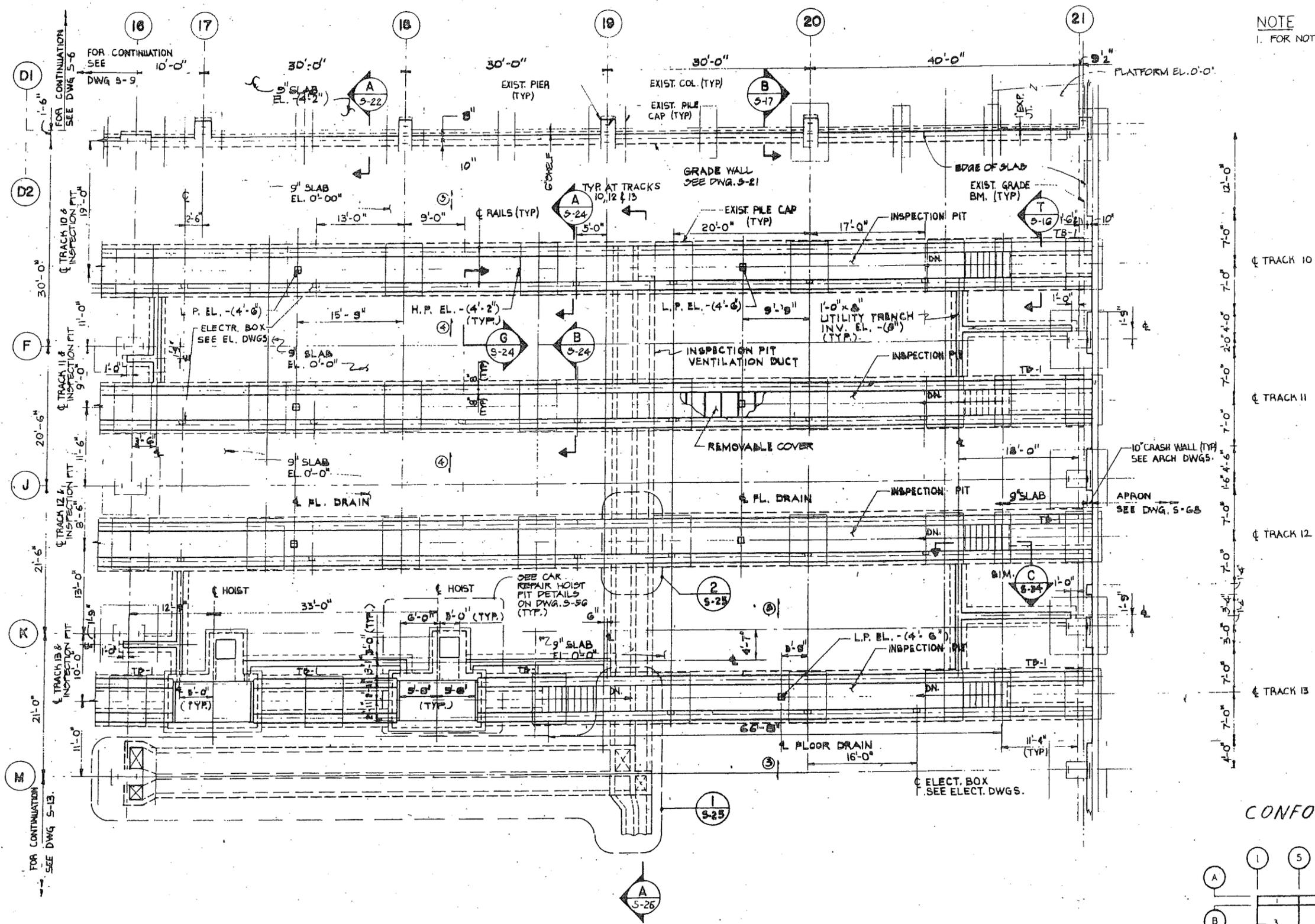
No Date Revision Approved

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M. D. P. M. A. N. S.  
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Date 4/7/88 Scale 1/8" = 1'-0"

Contract Number Drawing Number  
PAT-15Q.153 S-10



2001

DRAWING 44-132 53794

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Kamal Uppal  
KAMAL UPPAL  
N.J. P. E. 32104

**Parsons**  
BRINCKERHOFF  
Engineers, Architects, Planners

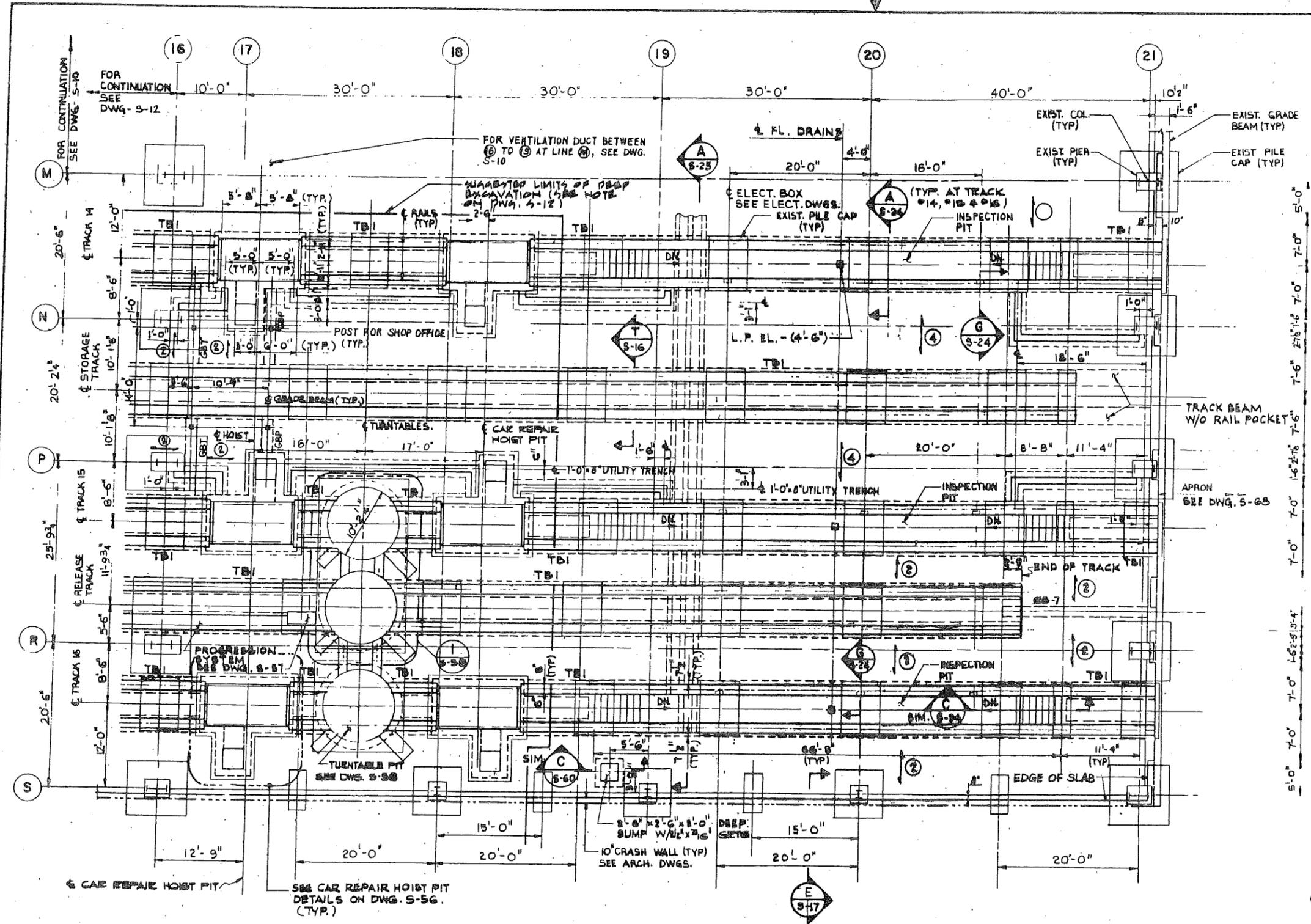
Engineering Department  
Design Divisions  
**MAIN REPAIR FACILITY AND YARD AT HARRISON AND KEARNY**

Title  
**SHOP BUILDINGS  
MAIN REPAIR SHOP  
GROUND FLOOR PLAN  
AREA 13**

No	Date	Revision	Approved

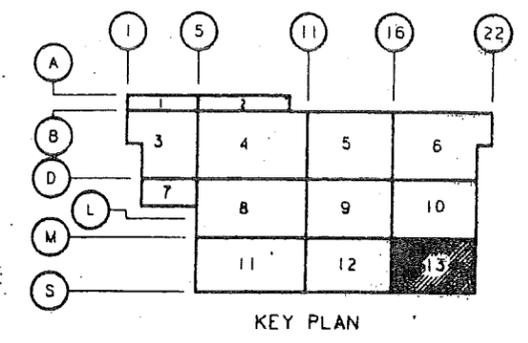
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M.D.P. M.A. N.S.  
Checked by Drawn by Task Leader  
Date 6/7/88 Scale 1/8" = 1'-0"  
Contract Number Drawing Number  
**PAT 150.153 S-13**

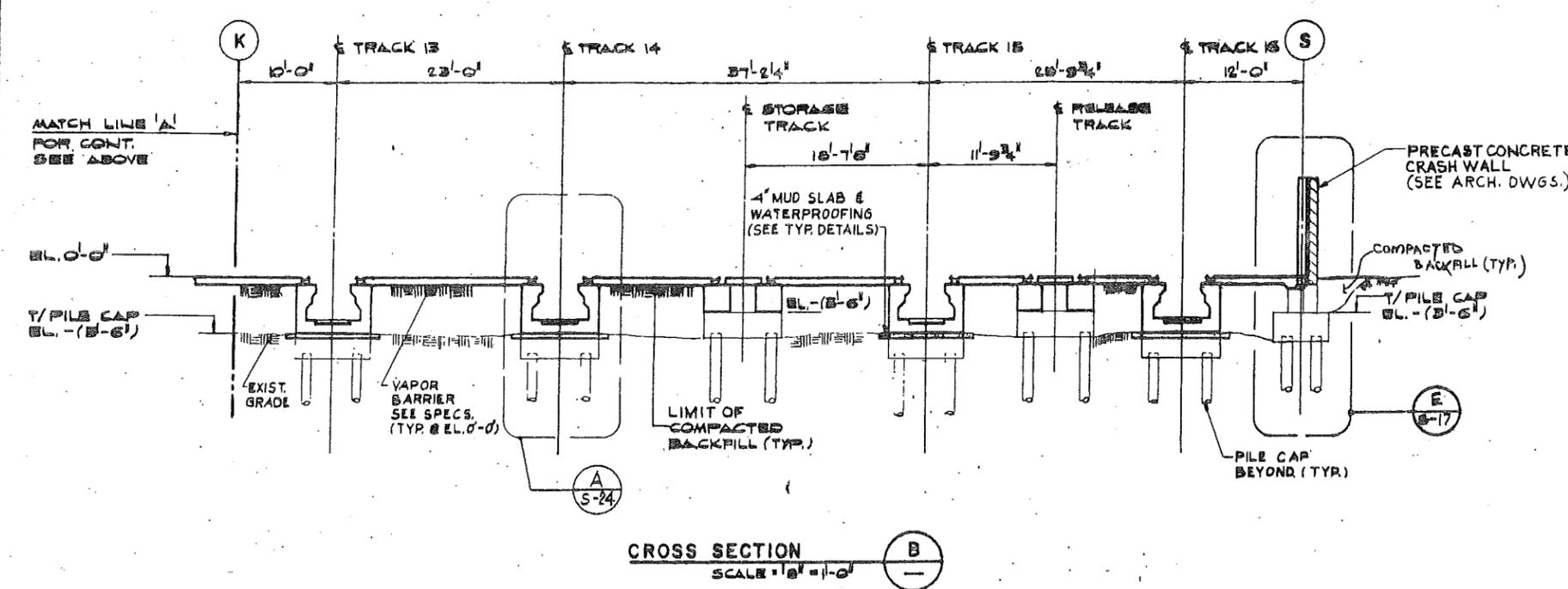
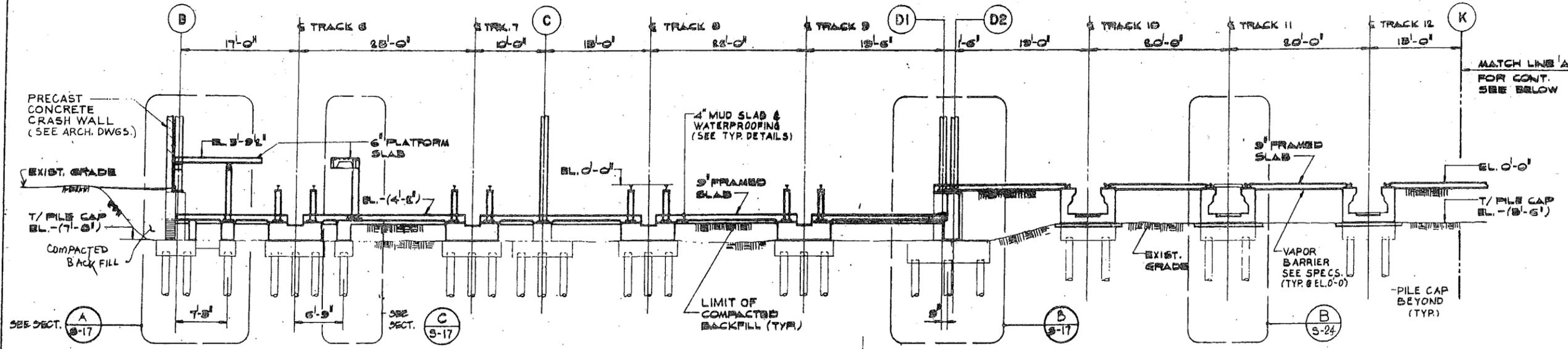


- NOTES:**
1. FOR NOTES, SEE DRAWING S-2.
  2. FOR ANCHOR BOLTS LOCATION AT SHOP OFFICE SEE DWG. S-65.

**CONFORMED 12-15-88**

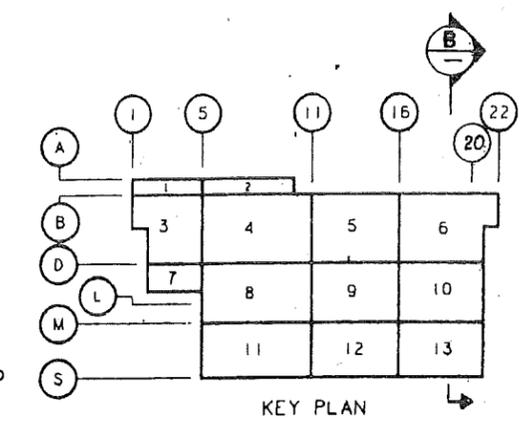


ECLIPSON 44.132 03794



CROSS SECTION B  
SCALE 1/8" = 1'-0"

CONFORMED 12-15-88



PORT AUTHORITY  
TRANSPORTATION

KAMAL UPPAL  
N.J. P.E. 32104

PARSONS  
BRINCKERHOFF  
Engineers, Architects, Planners

Engineering Department  
Design Divisions  
MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

Title  
SHOP BUILDINGS  
MAIN REPAIR SHOP  
CROSS SECTION - B

No Date Revision Approved

This drawing subject to conditions in contract  
All inventions ideas designs and methods  
herein are reserved to PATH and may not be  
used without its written consent

M.P.P. T.N.C. N.S.  
Checked by Drawn by Task Leader

Date 6/7/88 Scale 1/8" = 1'-0"

Contract Number Drawing Number  
PAT-150.153 S-15

BRUNING 44-132 63794

PORT AUTHORITY  
TRANSIT-CORPORATION

KAMAL UPPAL  
N.J. P.E. 32104

PARSONS  
BRINCKERHOFF  
ENGINEERS ARCHITECTS PLANNERS

Engineering Department  
Design Divisions

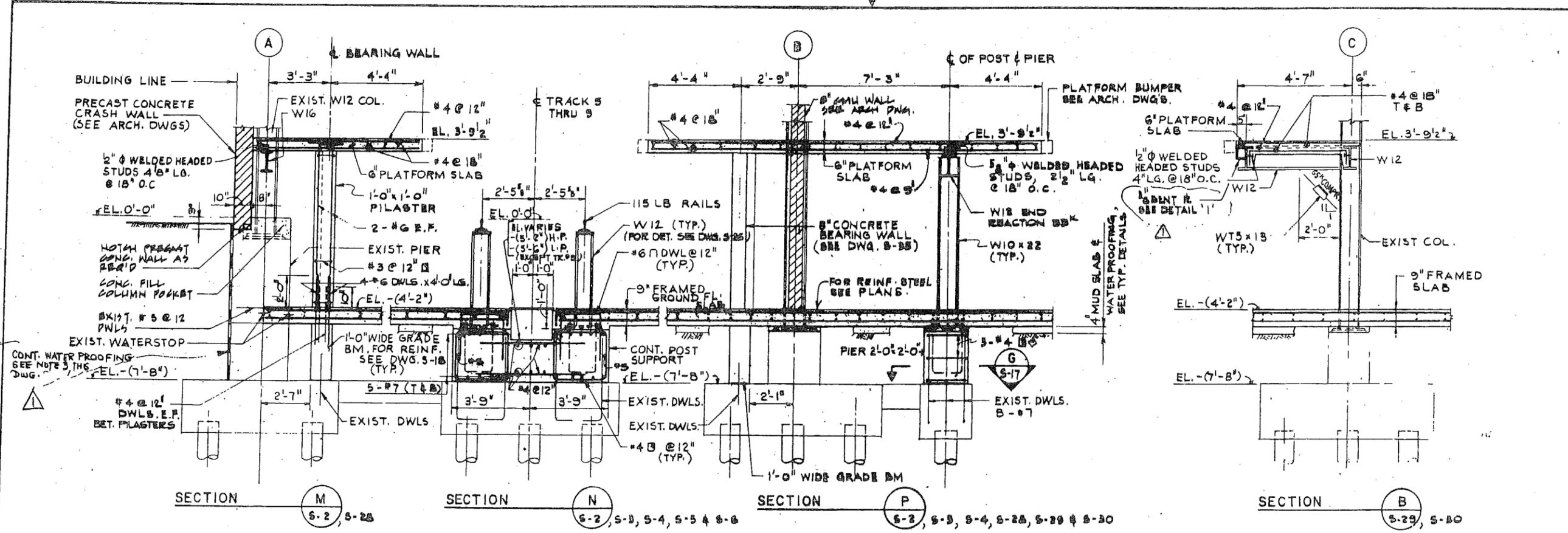
MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEANY

Title  
SHOP BUILDINGS  
MAIN REPAIR SHOP  
SECTIONS & DETAILS  
SHEET I

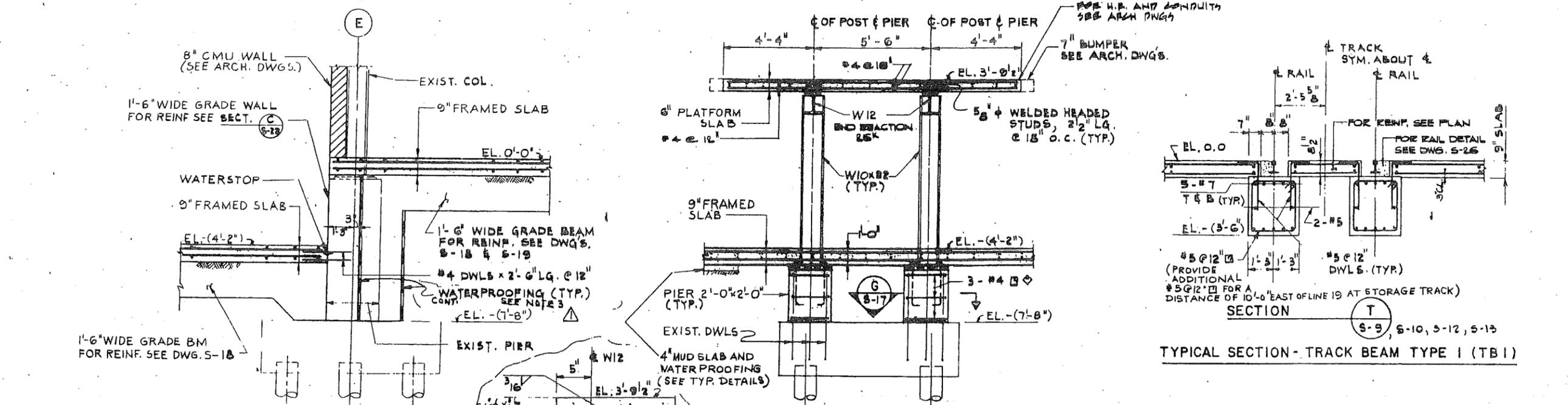
MODIFIED SLAB  
EDGE DETAIL &  
WATERPROOFING  
K.U.

No. Date Revision Approved

Checked by K.S. Drawn by M.P. Task Leader N.S.  
Date 6/7/88 Scale 3/8"=1'-0"  
Contract Number PAT-150.153 Drawing Number S-16



TYPICAL SECTION - TRACK BEAM TYPE 2 (TB2)



TYPICAL SECTION - TRACK BEAM TYPE 1 (TB1)

- NOTE: 1. FOR ANCHOR BOLTS DETAIL SEE DWG. S-19.  
2. ALL SHEAR STUDS SHALL BE 1/2" WELDED HEADED STUDS 2" LG. @ 18" O.C. U.N.  
3. PROVIDE CONTINUOUS WATER PROOFING BEHIND EXISTING WALL & PIERS ALONG LINES A, B, 1, 22 AND LINES 2 & 21 BETWEEN C & D?, LINE C BET. 1 & 2 AND LINE C BET. 21 & 22. WATER PROOFING DETAILS SIMILAR TO "DETAILS OF WATER PROOFING AROUND PITS" SHOWN ON DWG. S-58. PROVIDE WATER PROOFING BEHIND WALL ALONG LINES D & E.

CONFORMED 12-15-88

DRAWING 44132 53794



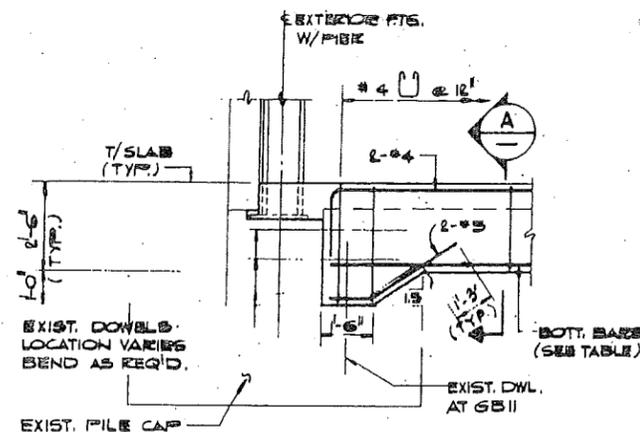
PORT AUTHORITY  
TRANS-PORTATION

KAMAL UPPAL  
N.J. P. E. 32104

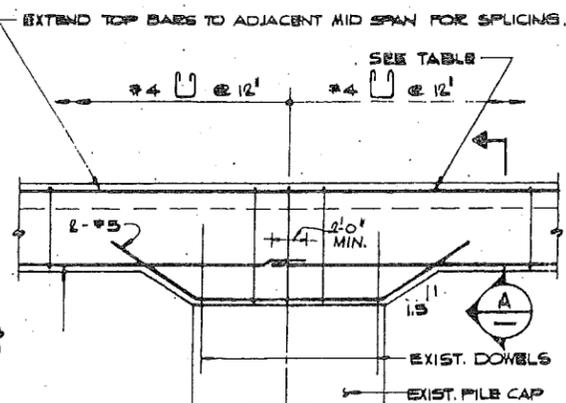
Engineering Department  
Design Divisions

MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

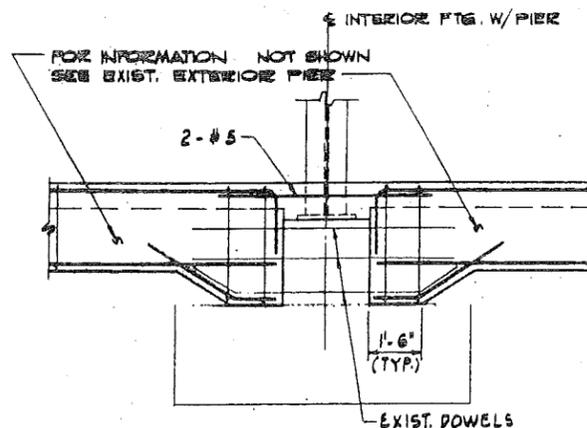
Title  
SHOP BUILDINGS  
MAIN REPAIR SHOP  
GRADE BEAM DETAILS  
SHEET 1



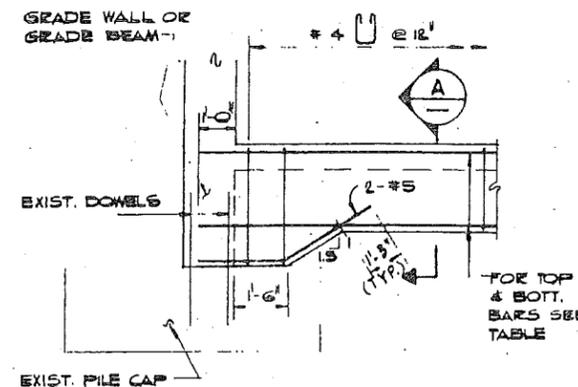
AT EXIST. EXTERIOR PIER



AT EXIST. FOOTING



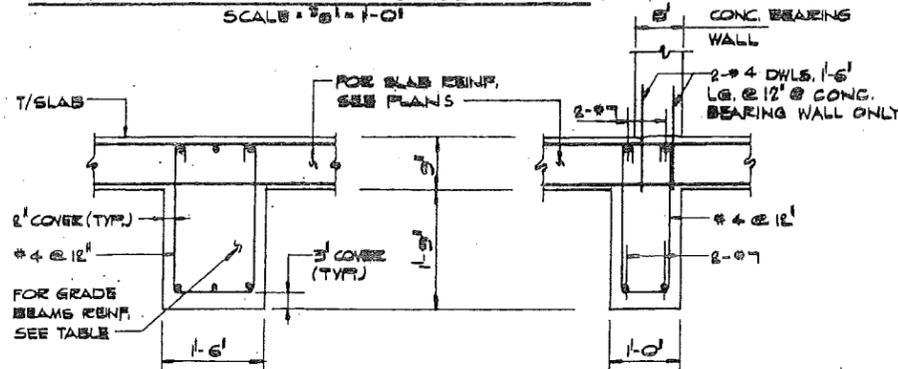
AT EXIST. INTERIOR PIER



AT GRADE WALL & GRADE BEAM

TYPICAL ELEVATION OF GRADE BEAMS

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

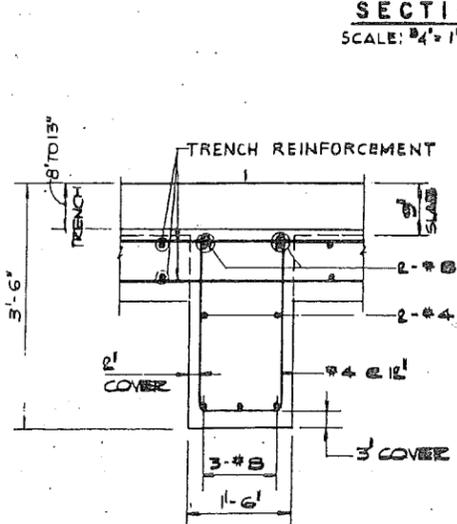


TYPICAL GRADE BEAM  
CROSS SECTION  
EXCEPT GB 12

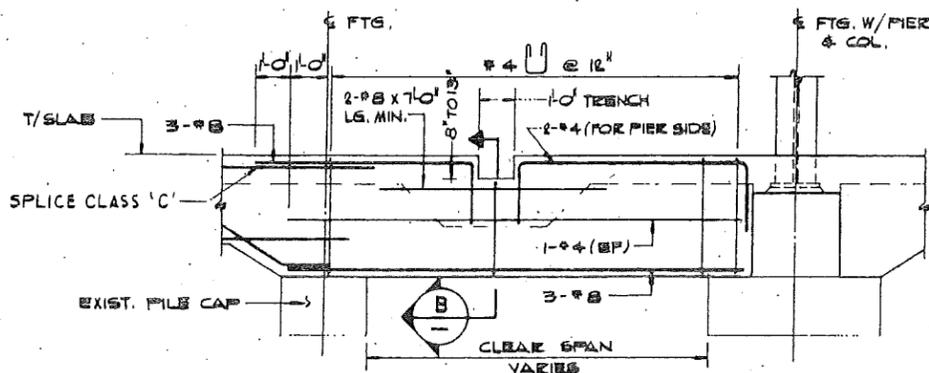
GRADE BEAM CROSS SECTION  
FOR GB 12 ONLY

TABLE OF GRADE BEAMS REINFORCEMENT			
GRADE BEAM	TOP BARS	BOTTOM BARS	REMARK
GB 1	3-#8	2-#8	
GB 2	3-#8	3-#8	
GB 3	2-#8	2-#7	
GB 4	2-#8	2-#8	
GB 5	3-#7	2-#8	
GB 6	2-#7	2-#8	
GB 7	2-#4	2-#8	
GB 8	2-#4	4-#7	
GB 9	2-#4	4-#8	
GB 10	2-#4	4-#9	
GB 11	2-#4	5-#9	
GB 12	2-#7	2-#7	1'-0" WIDE
GB T	2-#8 & 2-#4	3-#8	
GB P			SEE DWG S-19

SECTION A  
SCALE: 3/4" = 1'-0" S-19, S-22

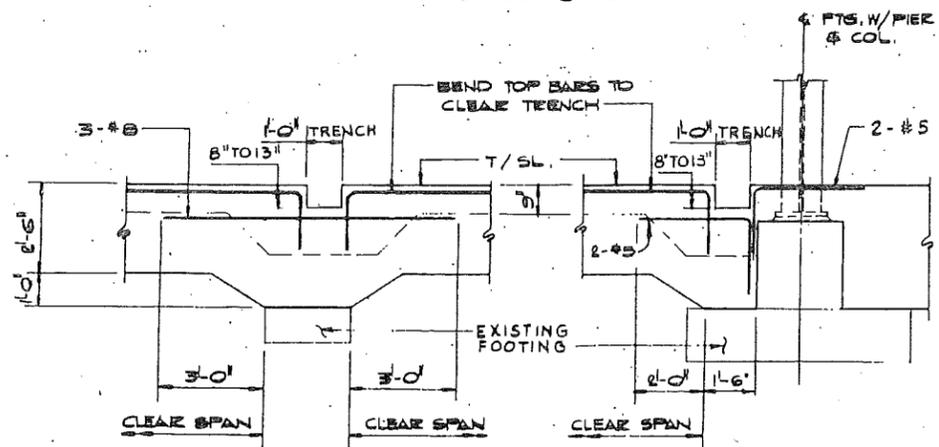


SECTION B  
SCALE: 3/4" = 1'-0"



ELEVATION

TRENCH LOCATED WITHIN CLEAR SPAN  
GRADE BEAM GB T  
SCALE: 3/8" = 1'-0"



TRENCH BEYOND CLEAR SPAN  
GRADE BEAM DETAILS AT TRENCH  
SCALE: 3/8" = 1'-0"

NOTES:

- FOR GENERAL NOTES, SEE DWG. NO S-1.
- FOR GRADE BEAM LOCATIONS, SEE DWG. NO S-2 THROUGH S-13.
- SLAB REINFORCEMENT IS NOT SHOWN FOR CLARITY.
- FOR WATERPROOFING DETAILS, SEE DWG. S-58 & S-67.
- FOR TRENCH DETAILS SEE DWG. NO S-27 AND GROUND FLOOR PLANS.

No Date Revision Approved

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R.C.H. T.N.C. N.S.  
Checked by Drawn by Task Leader

Date 6/7/88 Scale AS SHOWN

Contract Number Drawing Number

PAT-150.153 S-18

CONFORMED 12-15-88



1083

POST AUTHORITY  
VERMONT-CHEMICAL GROUP INC.

Kamal Uppal  
KAMAL UPPAL  
N.J. P.E. 32104

Parsons  
Brinckerhoff  
Engineers, Architects, Planners

Engineering Department  
Design Divisions

MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

Title  
SHOP BUILDINGS  
MAIN REPAIR SHOP  
GRADE BEAM DETAILS  
SHEET 2

No. Date Revision Approved

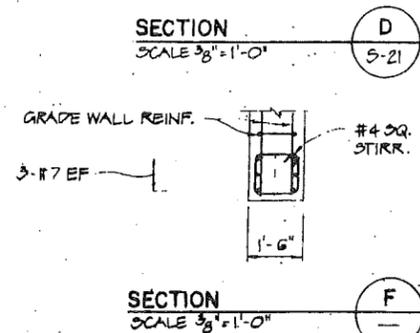
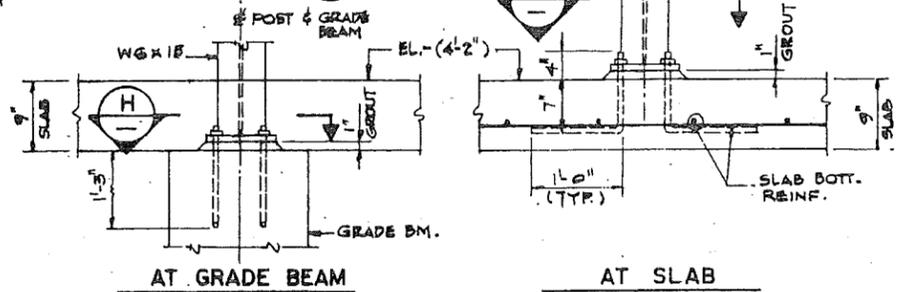
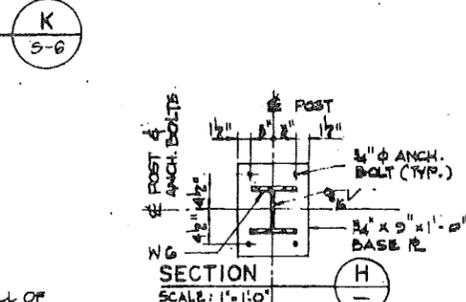
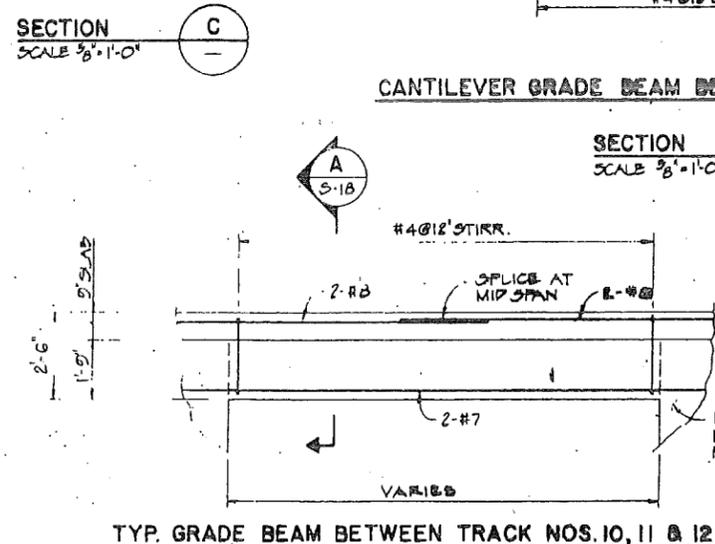
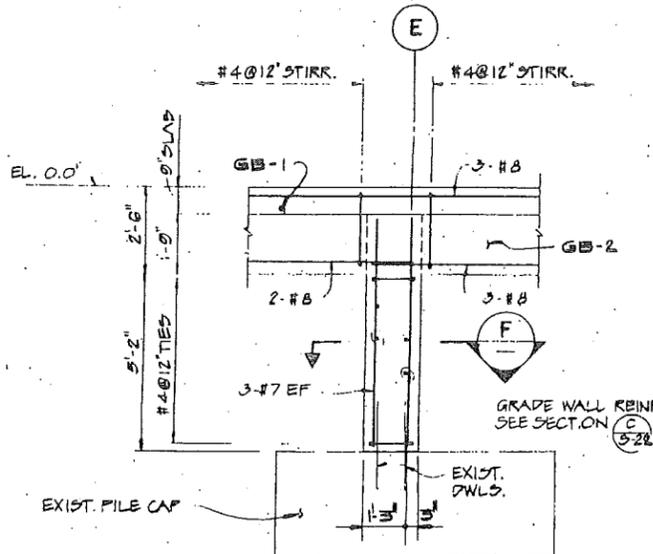
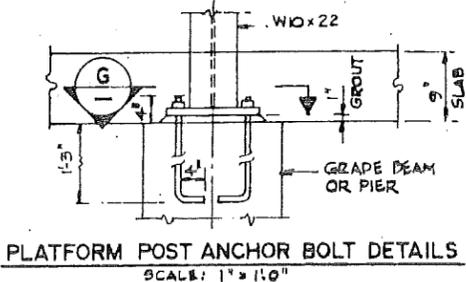
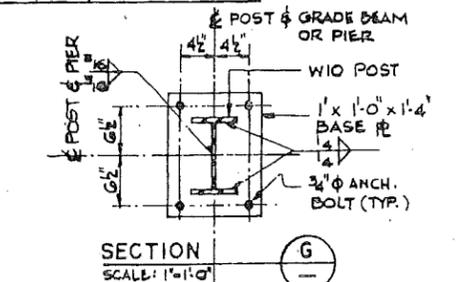
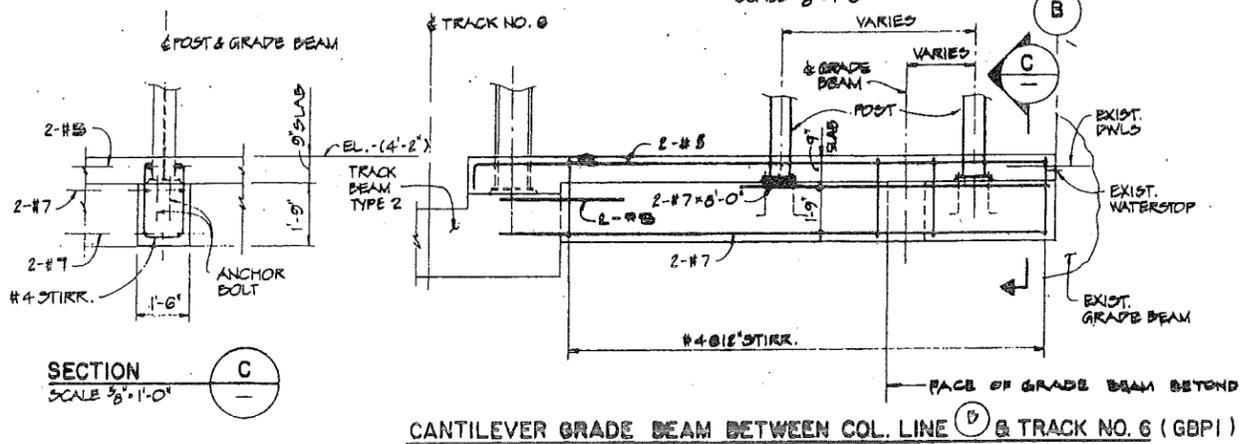
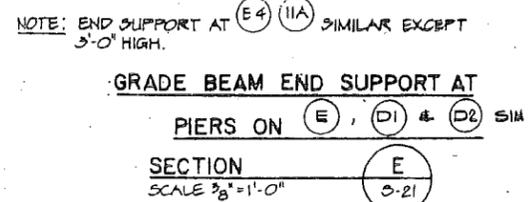
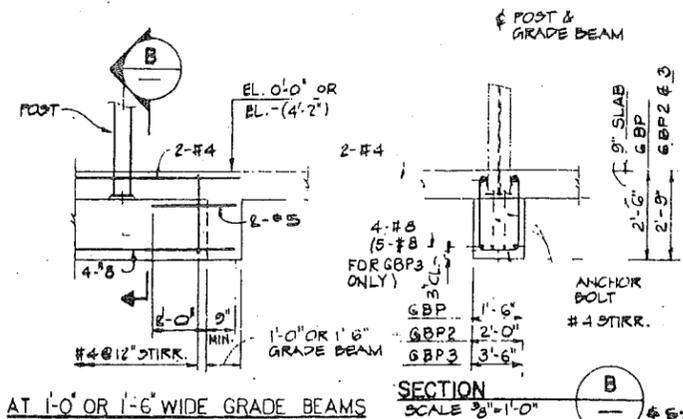
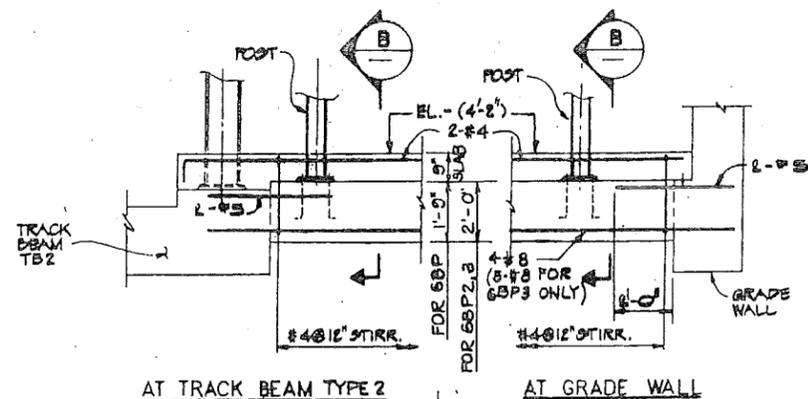
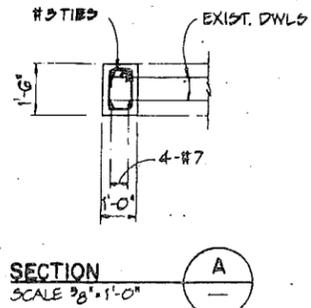
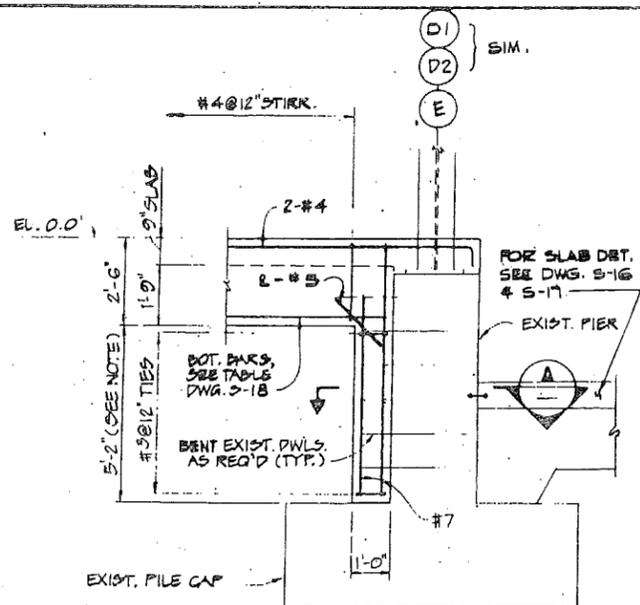
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used without its written consent

R.C.H. P.U. N.S.  
Checked by Drawn by Task Leader

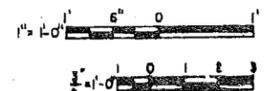
Date 6/7/88 Scale AS SHOWN

Contract Number Drawing Number

PAT-150.153 S-19



CONFORMED 12-15-88



POST AUTHORITY  
TRAVIS-CROSSON CONSULTANTS

Kamal Uppal  
N.J. P.E. 32104

Parsons  
Brinckerhoff  
Engineers - Architects - Planners

Engineering Department  
Design Divisions

MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

Title  
SHOP BUILDINGS  
MAIN REPAIR SHOP  
GRADE BEAM DETAILS  
SHEET 3

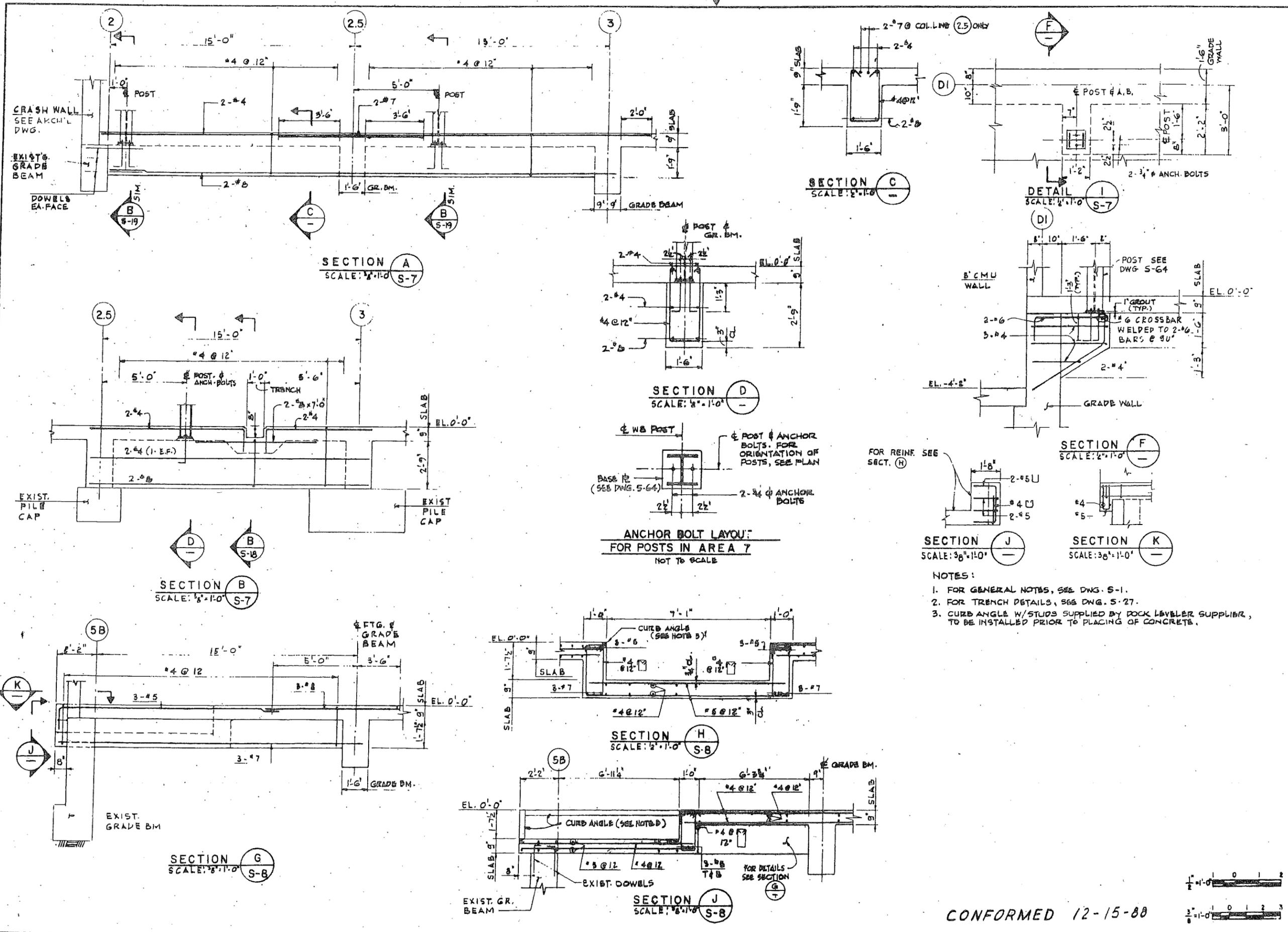
No Date Revision Approved

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All inventions, ideas, designs and methods  
herein are reserved to PATH and may not be  
used without its written consent

RCH. RT. NS  
Checked by Drawn by Task Leader

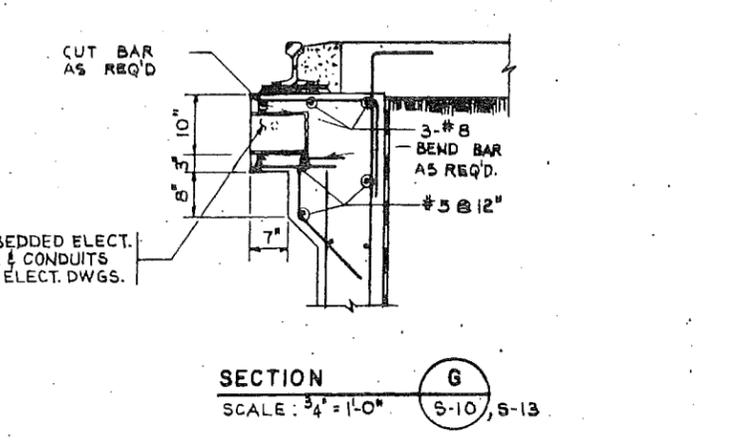
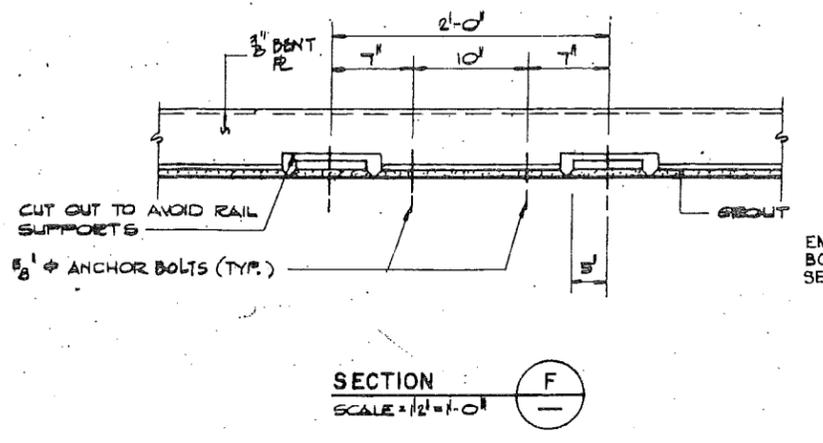
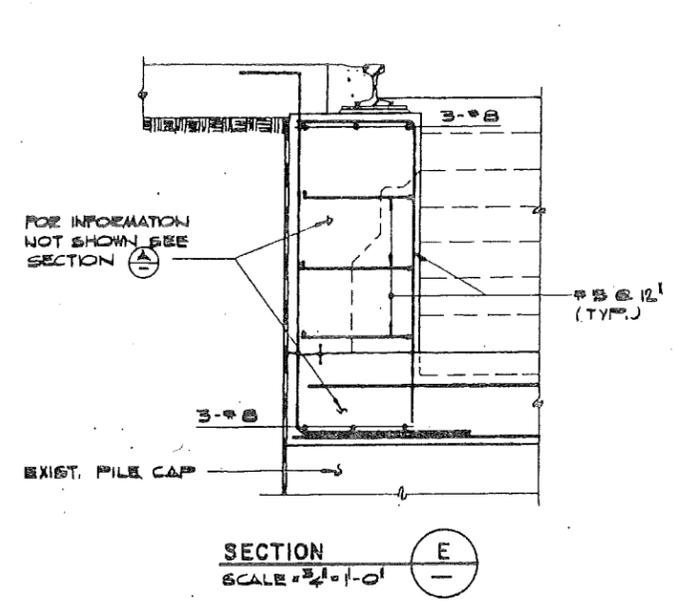
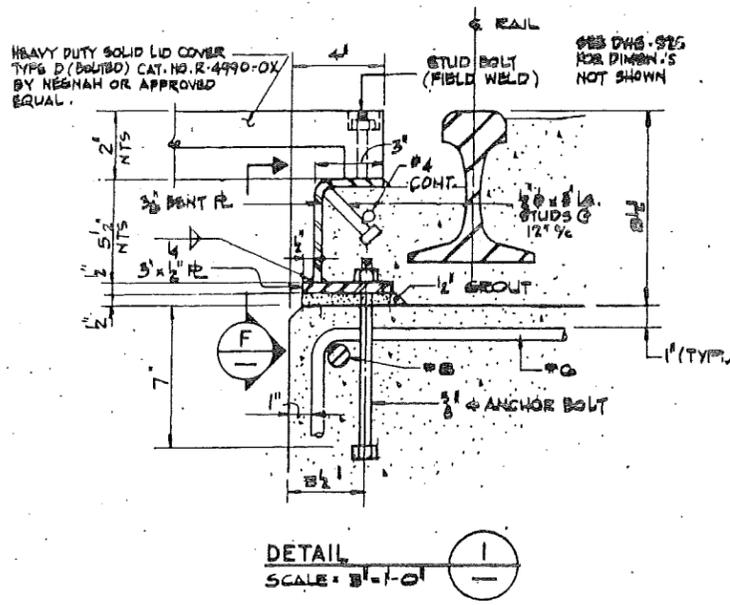
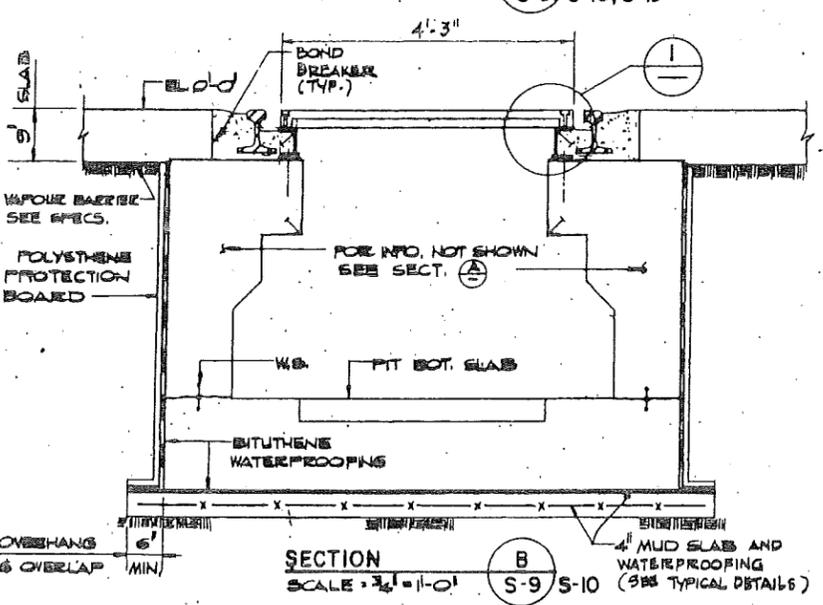
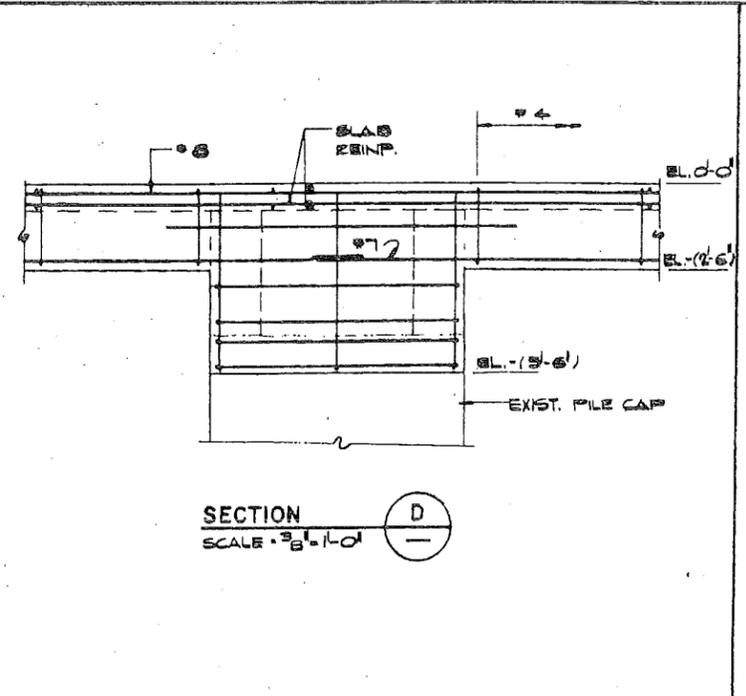
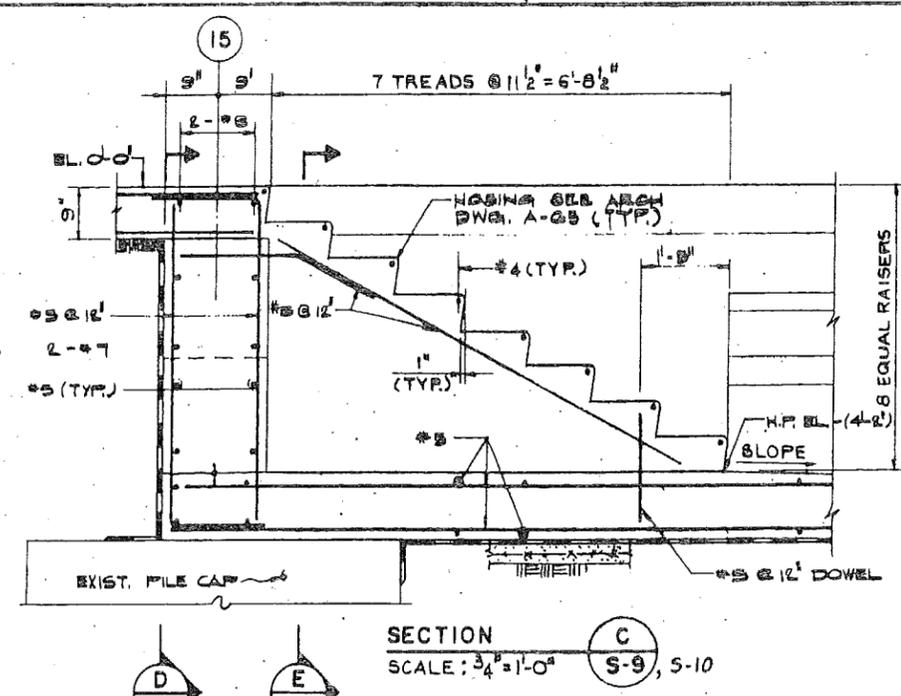
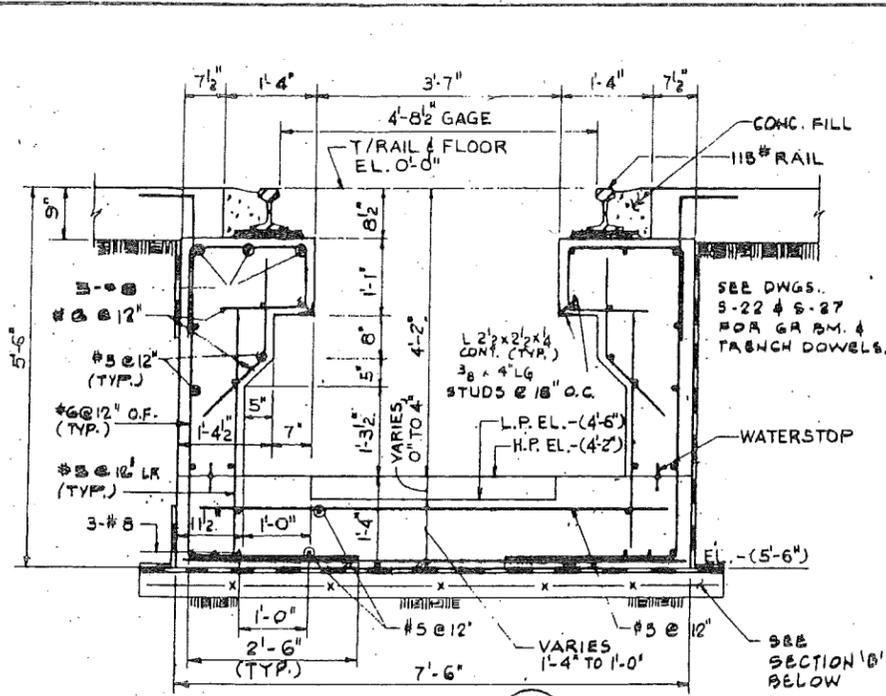
Date 6/7/88 Scale AS SHOWN

Contract Number Drawing Number  
PAT-150.153 S-20



CONFORMED 12-15-88

110  
BRUNING 44-237 67744-25



PORT AUTHORITY  
NEW YORK-KING COUNTY

Kamal Uppal  
KAMAL UPPAL  
N.J. P. E. 32104

Parsons  
BRINCKERHOFF  
Engineers Architects Planners

Engineering Department
Design Divisions
MAIN REPAIR FACILITY AND YARD AT HARRISON AND KEARNY

Title  
SHOP BUILDINGS  
MAIN REPAIR SHOP  
INSPECTION PITS  
SECTIONS AND DETAILS

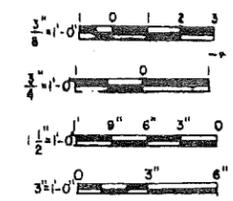
No	Date	Revision	Approved
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A.K. TNC/RB N.S.  
Checked by Drawn by Task Leader

Date 6/7/88 Scale AS SHOWN

Contract Number Drawing Number  
PAT-150,153 S-24



CONFORMED 12-15-88

PORT AUTHORITY  
MANHATTAN-KUDDUSHEIM (SOUTH) TUGS WHARF

Kamal Uppal  
KAMAL UPPAL  
N.J. P.E. 32104

Parsons  
Brinckerhoff  
ENGINEERS ARCHITECTS PLANNERS

Engineering Department  
Design Divisions

MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

Title  
SHOP BUILDINGS  
MAIN REPAIR SHOP  
VENTILATION DUCT  
SECTION AND DETAILS

No Date Revision Approved

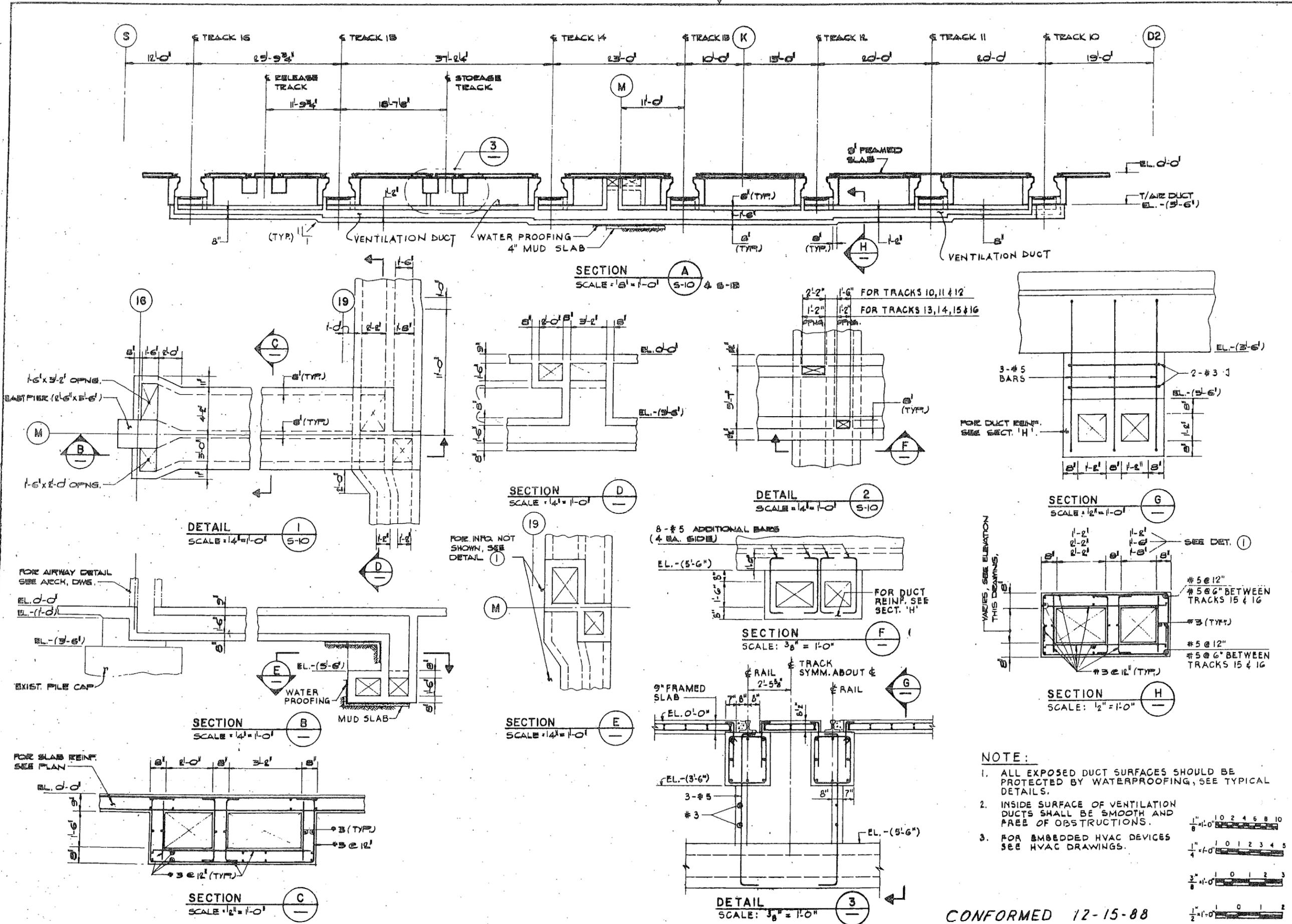
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A.K. T.N.C. N.S.  
Checked by Drawn by Task Leader

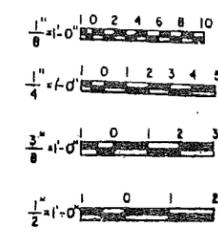
Date 6/7/88 Scale AS SHOWN

Contract Number Drawing Number

PAT-150.153 S-25

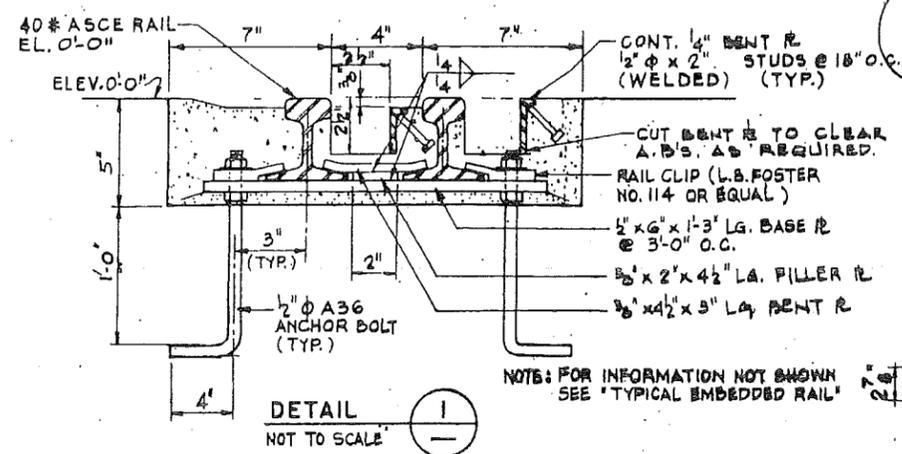
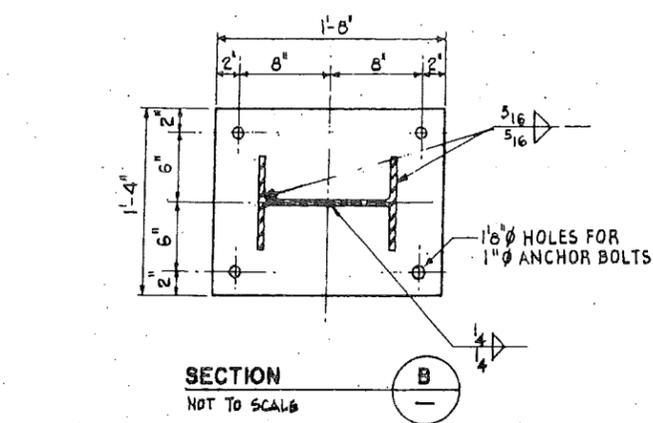
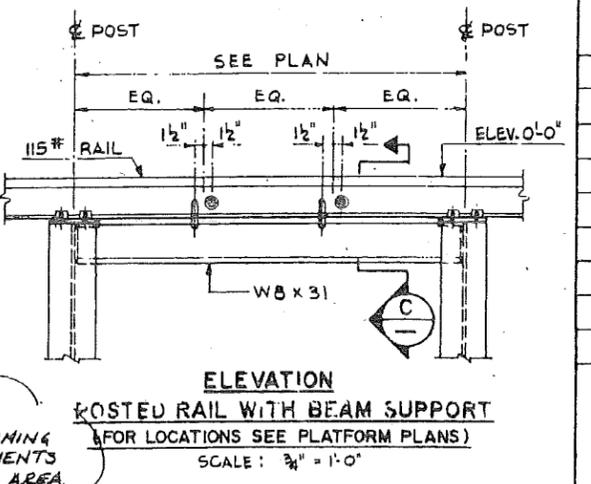
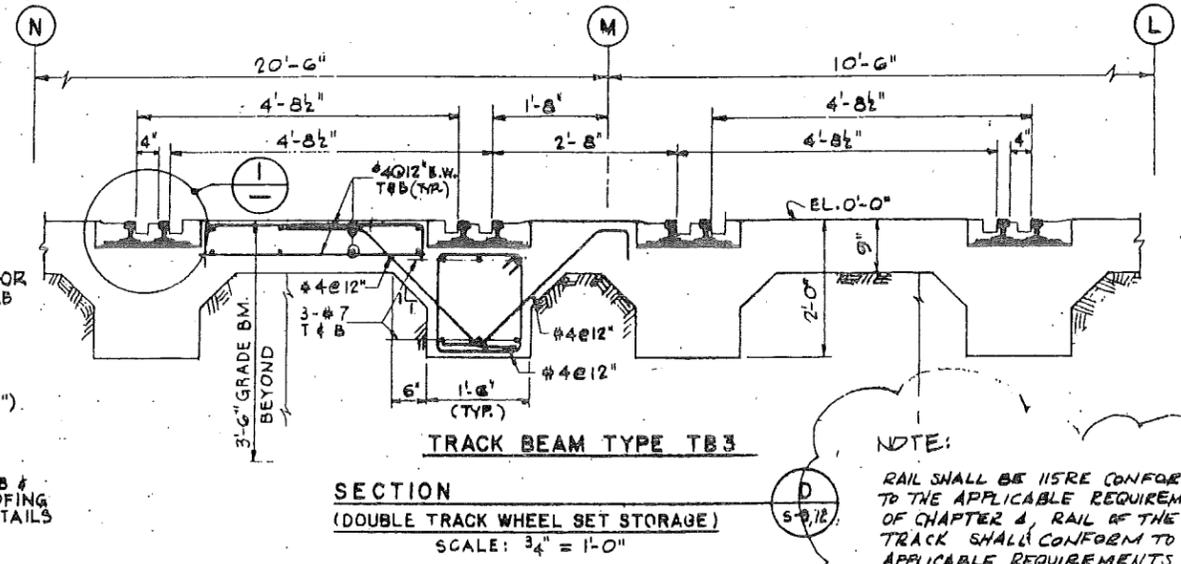
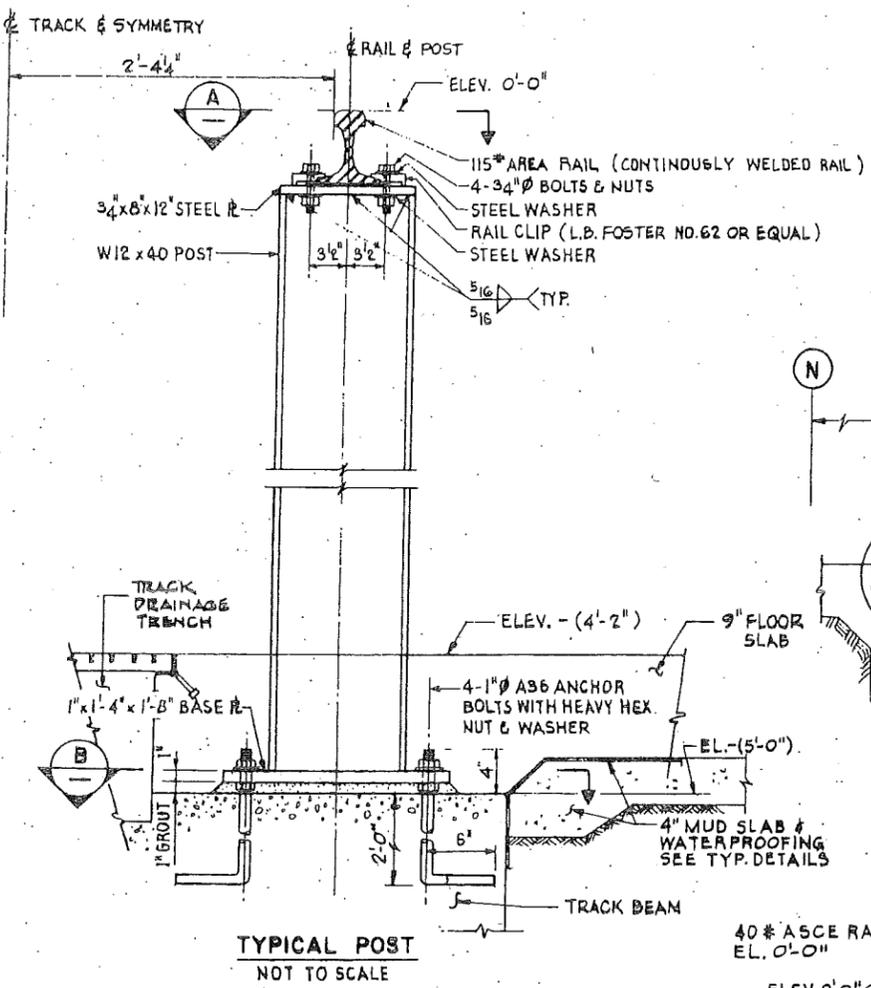
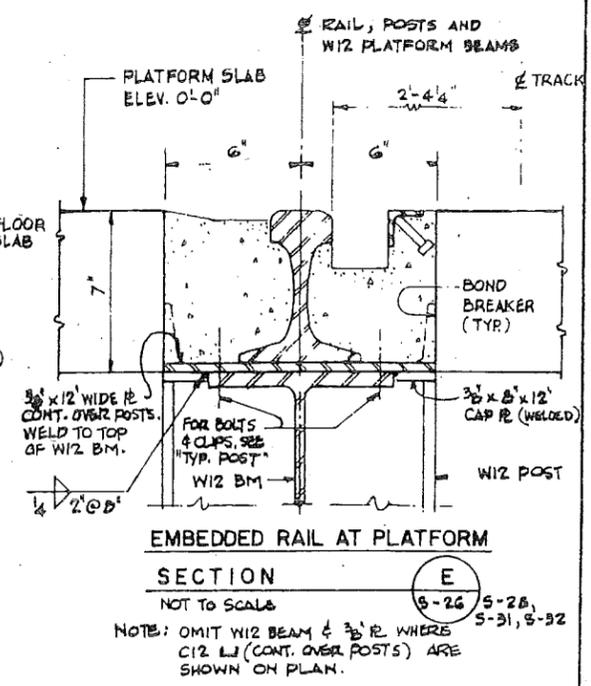
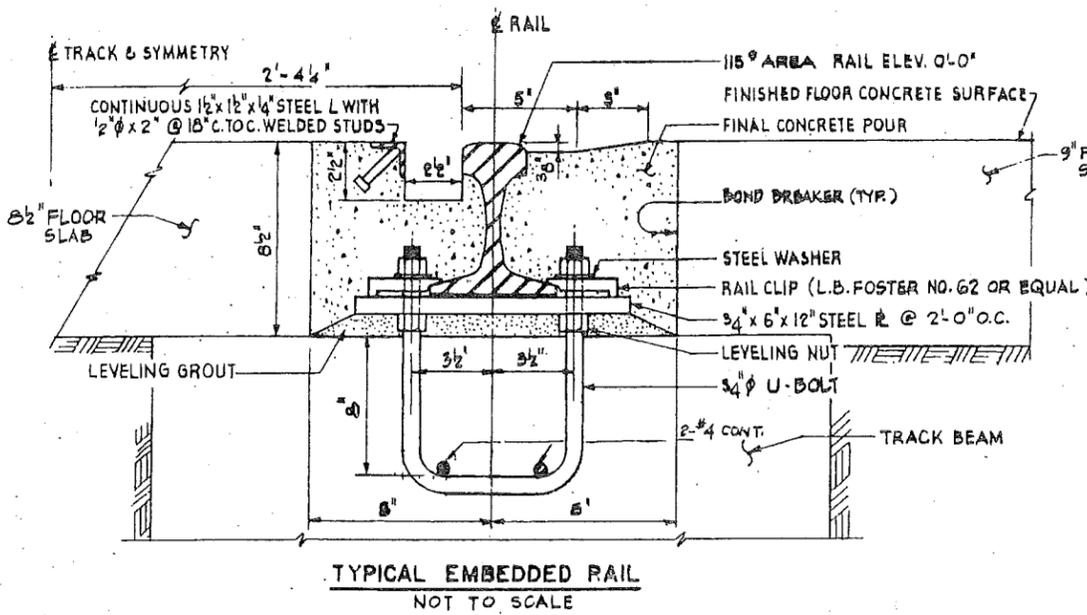
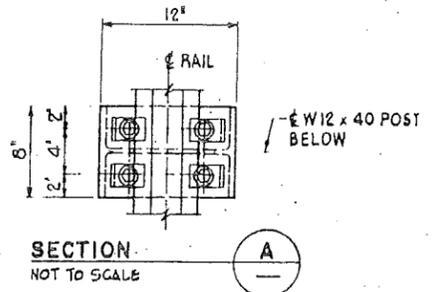


- NOTE:**
- ALL EXPOSED DUCT SURFACES SHOULD BE PROTECTED BY WATERPROOFING, SEE TYPICAL DETAILS.
  - INSIDE SURFACE OF VENTILATION DUCTS SHALL BE SMOOTH AND FREE OF OBSTRUCTIONS.
  - FOR EMBEDDED HVAC DEVICES SEE HVAC DRAWINGS.

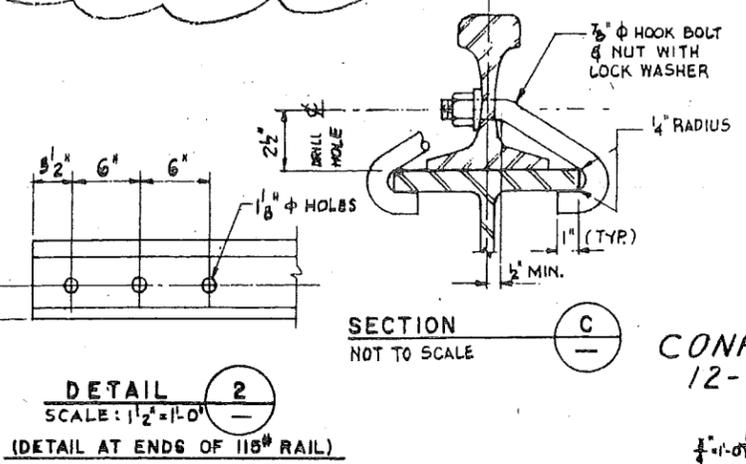


CONFORMED 12-15-88

DRAWING 44-237-377A-28



NOTE:  
RAIL SHALL BE 115# CONFORMING TO THE APPLICABLE REQUIREMENTS OF CHAPTER 4, RAIL OF THE AREA. TRACK SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF CHAPTER 5, TRACK OF THE A.R.E.A.



SECTION C: NOT TO SCALE. CONFORMED 12-15-88

POST AUTHORITY  
TRANS-AMERICAN RAILROAD

Kamal Uppal  
N.J. P.E. 32104

Parsons  
Brinckerhoff  
Engineers - Architects - Planners

Engineering Department  
Design Division  
MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

Title  
SHOP BUILDINGS  
MAIN REPAIR SHOP  
TRACK SUPPORT DETAILS

No.	Date	Revision	Approved
7/15/88		NOTE CHANGED	

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M.D.P. R.T. N.S.  
Checked by Drawn by Task Leader

Date 6/7/88 Scale AS SHOWN

Contract Number Drawing Number  
PAT-150.153 S-26

PORT AUTHORITY  
MAINTENANCE AND REPAIR FACILITY

Kamal Uppal  
KAMAL UPPAL  
N.J. P.E. 32104

Parsons  
Brinckerhoff  
Engineers - Architects

Engineering Department  
Design Division  
MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

Title  
SHOP BUILDINGS  
MAIN REPAIR SHOP  
TRENCH DETAILS

No Date Revision Approved

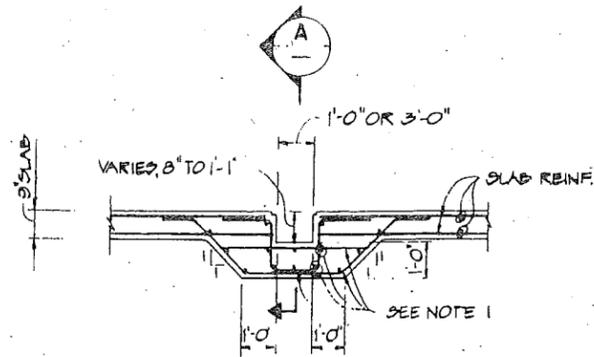
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R.C.H. P.U. N.S.  
Checked by Drawn by Task Leader

Date 6/7/88 Scale AS SHOWN

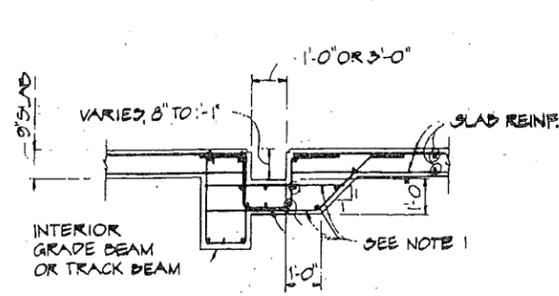
Contract Number Drawing Number

PAT-150.153 S-27

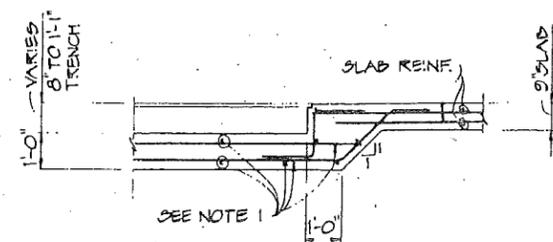
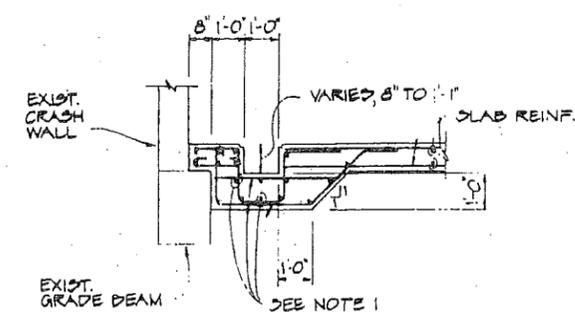
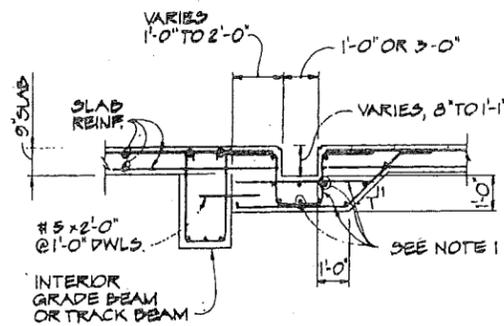


NOTE: TRENCH PERPENDICULAR TO MAIN SLAB SHOWN. TRENCH PARALLEL TO MAIN SLAB SIMILAR.

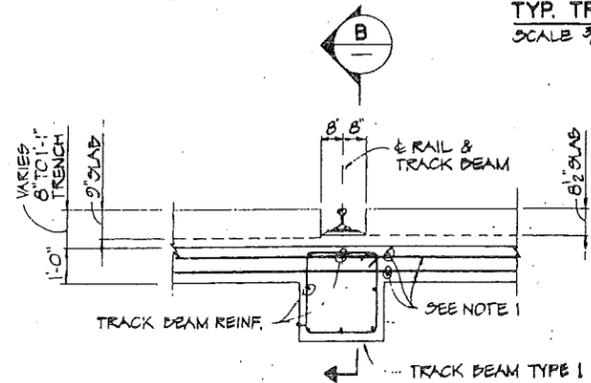
TYP. TRENCH SECTION  
SCALE 3/8" = 1'-0"



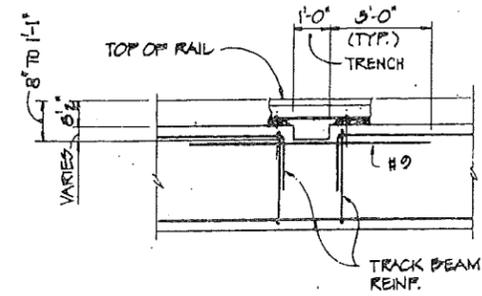
TYP. TRENCH SECTIONS ADJACENT TO GRADE BEAMS OR TRACK BEAMS  
SCALE 3/8" = 1'-0"



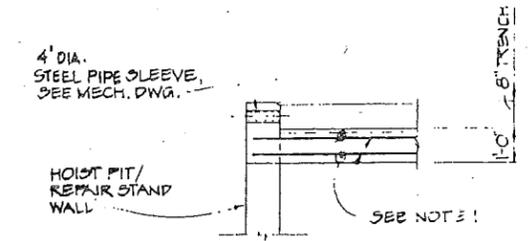
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SCALE 3/8" = 1'-0"



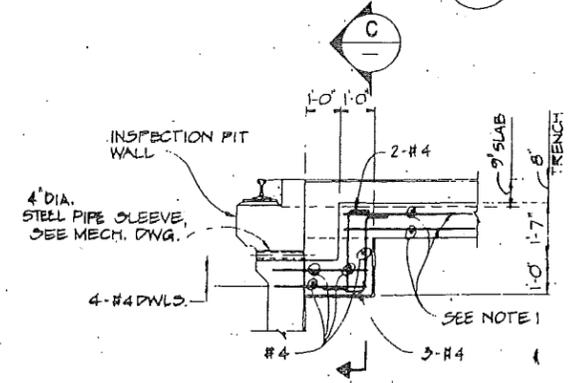
TYP. TRENCH SECTION THRU TRACK BEAM  
SCALE 3/8" = 1'-0"



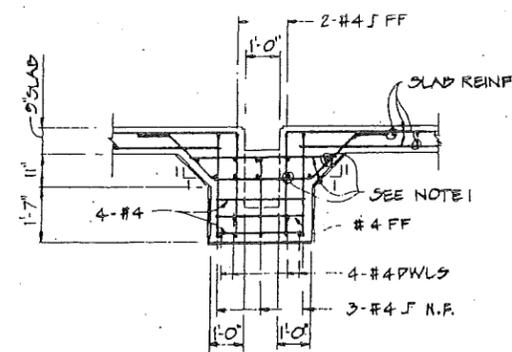
SECTION B  
SCALE 3/8" = 1'-0"



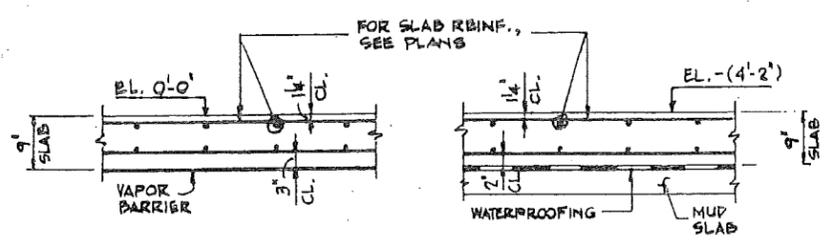
TYP. TRENCH SECTION AT  
HOIST PIT/REPAIR STAND  
SCALE 3/8" = 1'-0"



TYP. TRENCH SECTION AT INSPECTION PIT  
SCALE 3/8" = 1'-0"



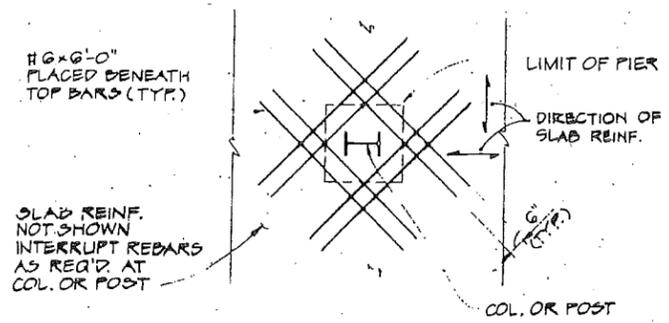
SECTION C  
SCALE 3/8" = 1'-0"



TYPICAL SLAB DETAILS  
SCALE: 3/4" = 1'-0"

NOTES

1. THE SIZE AND SPACING OF REINF. AT TRENCH TO MATCH SLAB REINF. SHOWN ON GROUND FLOOR PLANS U.N.O.
2. FOR REINF. DETAILS AT TRENCH AND GRADE BEAM INTERSECTION, SEE SECTION B.
3. FOR WATERPROOFING AND MUD SLAB DETAILS, SEE DWG. 5-67.
4. FOR TRENCH COVER DETAILS, SEE TYPICAL DETAIL ON DWG. 5-67.



TYP. DETAIL OF ADD'L. SLAB REINF. AT PIERS  
SCALE 3/8" = 1'-0"

CONFORMED 12-15-88



POST AUTHORITY  
 WILSON-RODSON GROUP

KAMAL UPPAL  
 N.J. P. E. 32104

Parsons  
 BRINCKERHOFF

Engineering Department  
 Design Divisions

MAIN REPAIR  
 FACILITY AND YARD  
 AT HARRISON  
 AND KEARNY

Title  
 SHOP BUILDINGS  
 MISCELLANEOUS DETAILS  
 SHEET 1

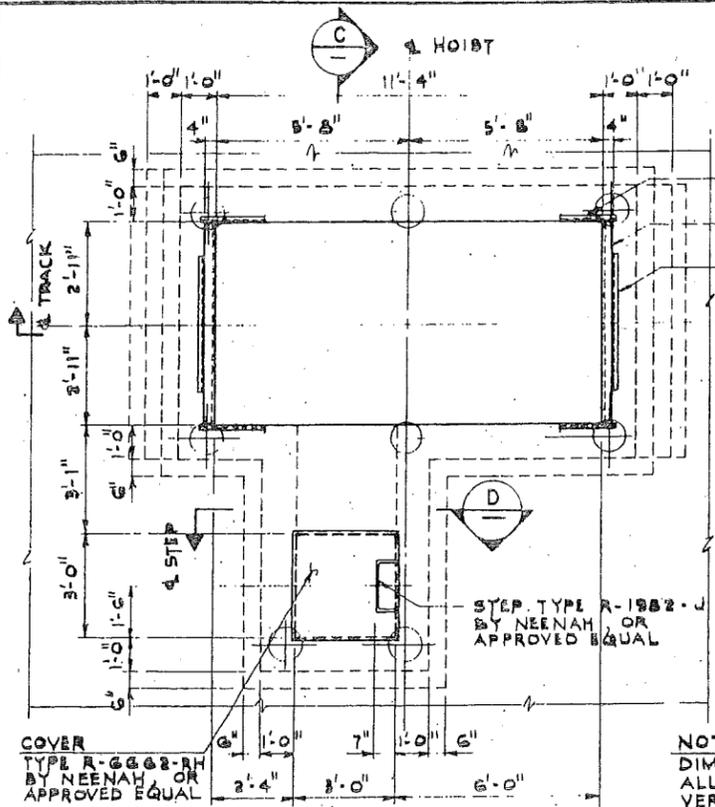
No.	Date	Revision	Approved

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Checked by	Drawn by	Task Leader

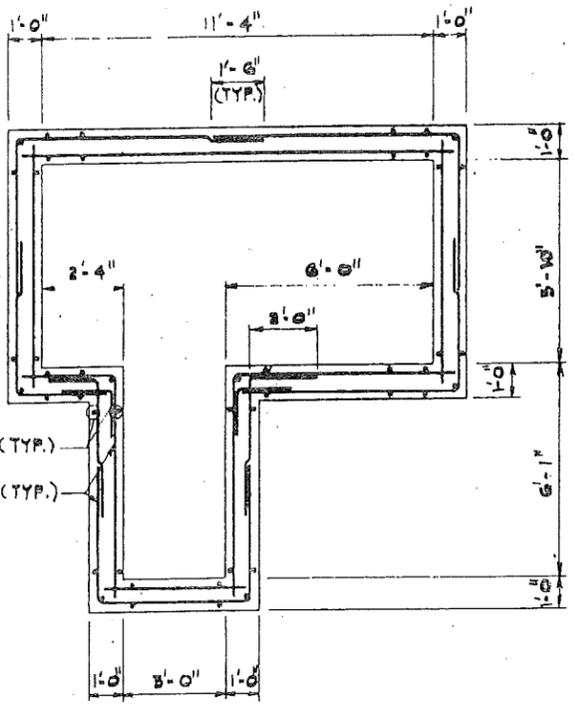
Date 6/7/88 Scale 3/8" = 1'-0"

Contract Number	Drawing Number
PAT-150.153	S-56

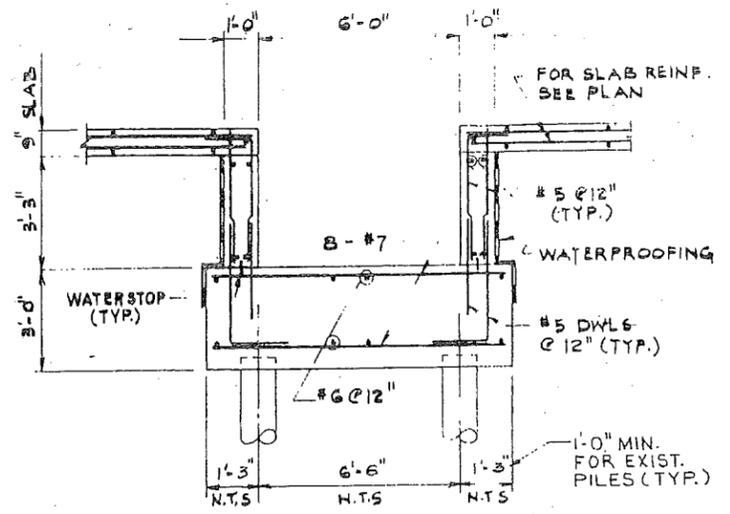


PLAN  
 CAR REPAIR HOIST PIT

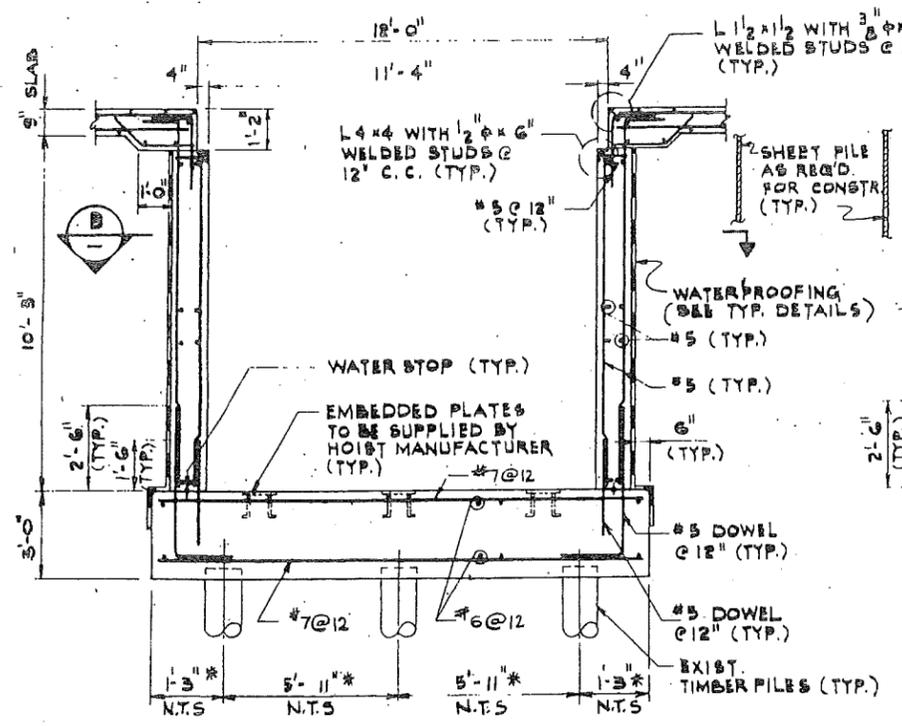
NOTE:  
 DIMENSIONS AND LAYOUT OF  
 ALL EQUIPMENT MUST BE  
 VERIFIED WITH THE APPROVED  
 MANUFACTURER PRIOR TO ANY  
 CONSTRUCTION WITHIN THE  
 AREA.



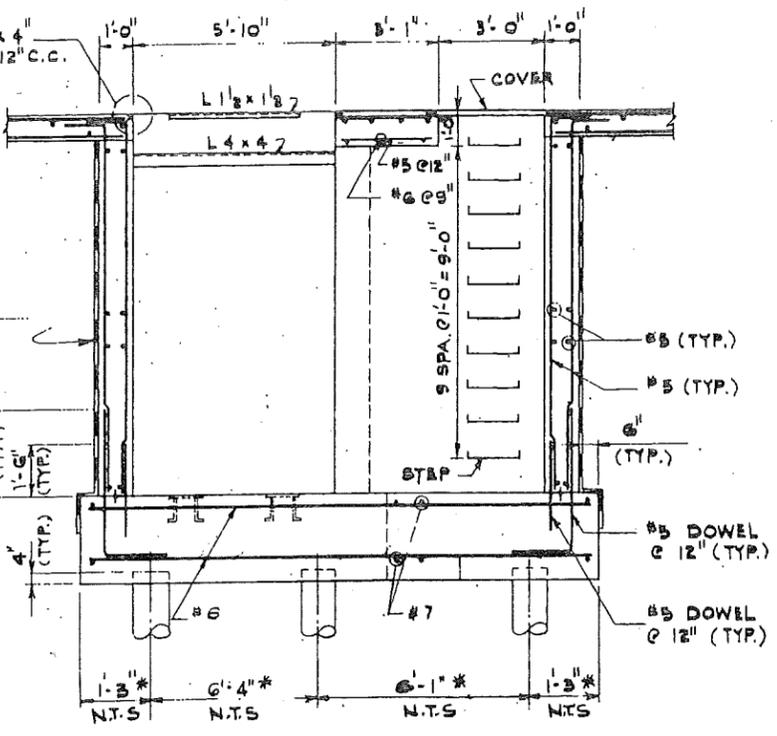
SECTION B



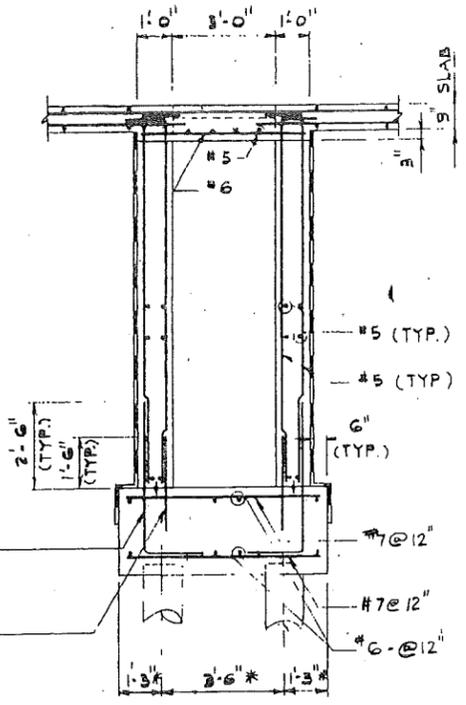
SECTION E



SECTION A



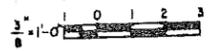
SECTION C



SECTION D

\* ACTUAL DIMENSIONS CAN BE DIFFERENT FOR EXIST. AS BUILT  
 PILES. AVERAGE AREA OF PILE CAP IS 177 F<sup>2</sup> (MIN. EDGE DISTANCE  
 TO THE CENTER OF PILE 1'-0")

CONFORMED 12-15-88



PROG AUTHORITY  
 TRAVAS-COVIDASO (2007) (10/10/00)

Kamal Uppal  
 KAMAL UPPAL  
 N.J. P. E. 32104

Parsons  
 Brinckerhoff  
 Engineers Architects Planners

Engineering Department  
 Design Divisions

MAIN REPAIR  
 FACILITY AND YARD  
 AT HARRISON  
 AND KEARNY

Title  
 SHOP BUILDINGS  
 MISCELLANEOUS DETAILS  
 SHEET 2

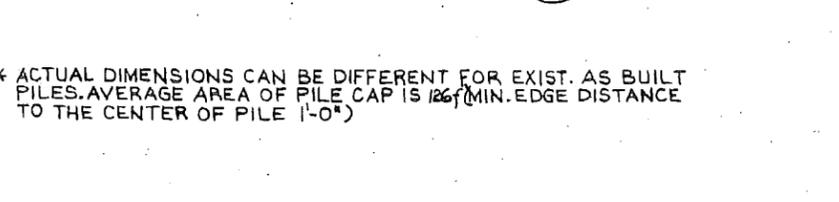
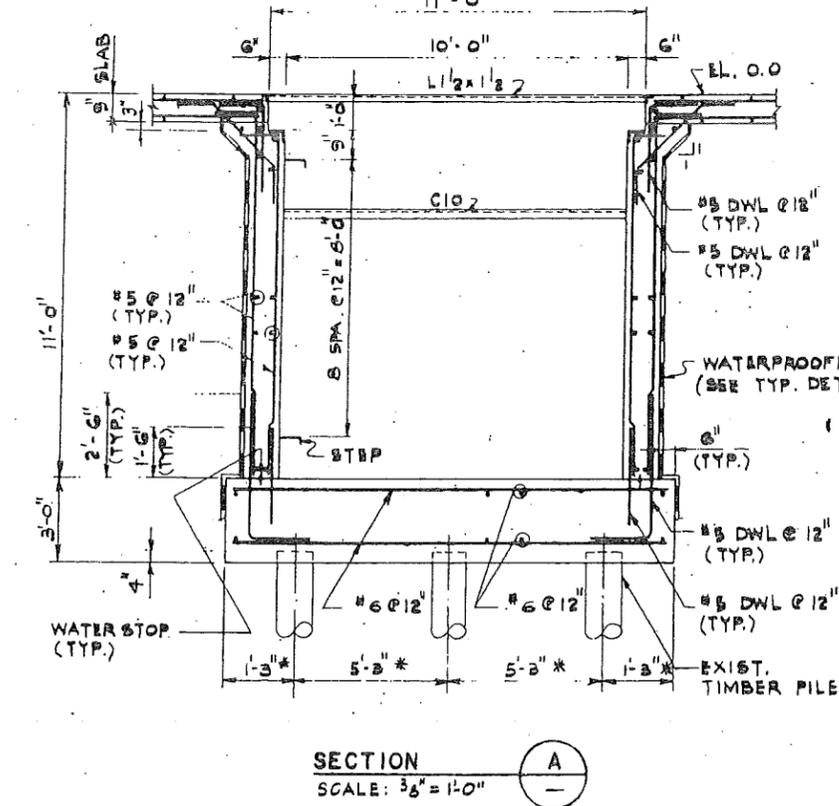
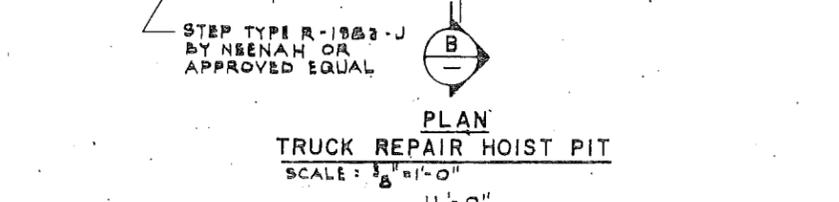
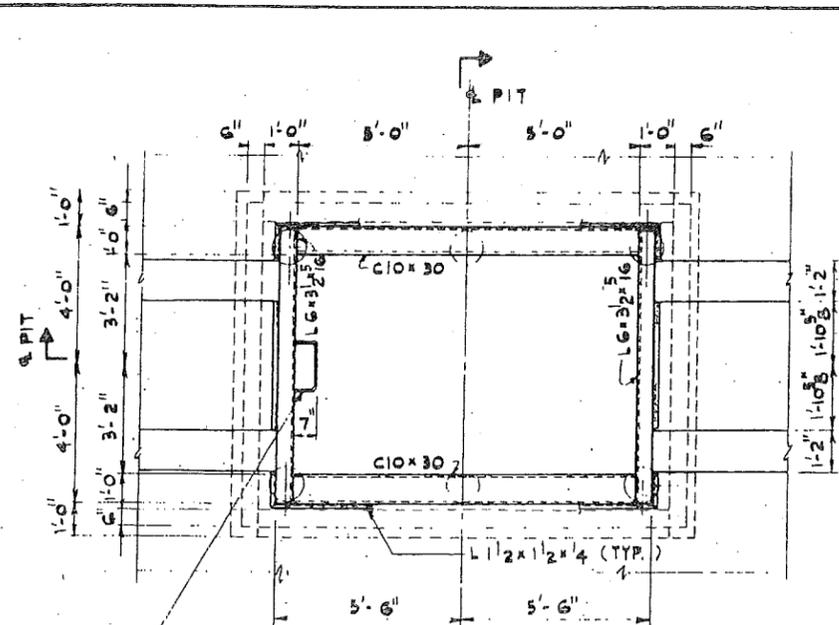
No. Date Revision Approved

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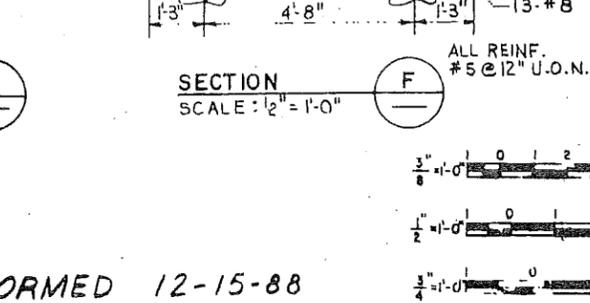
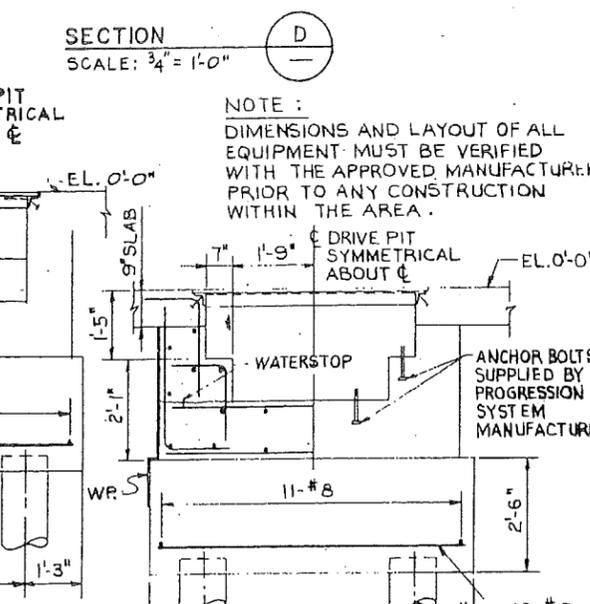
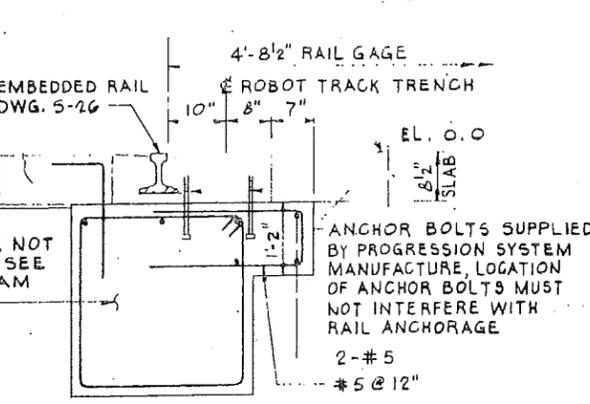
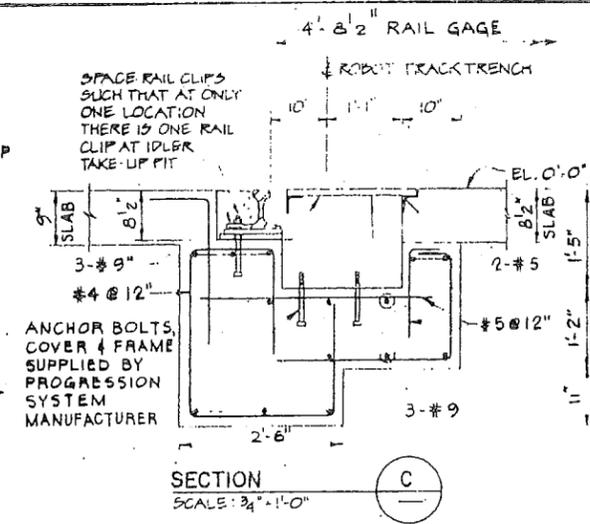
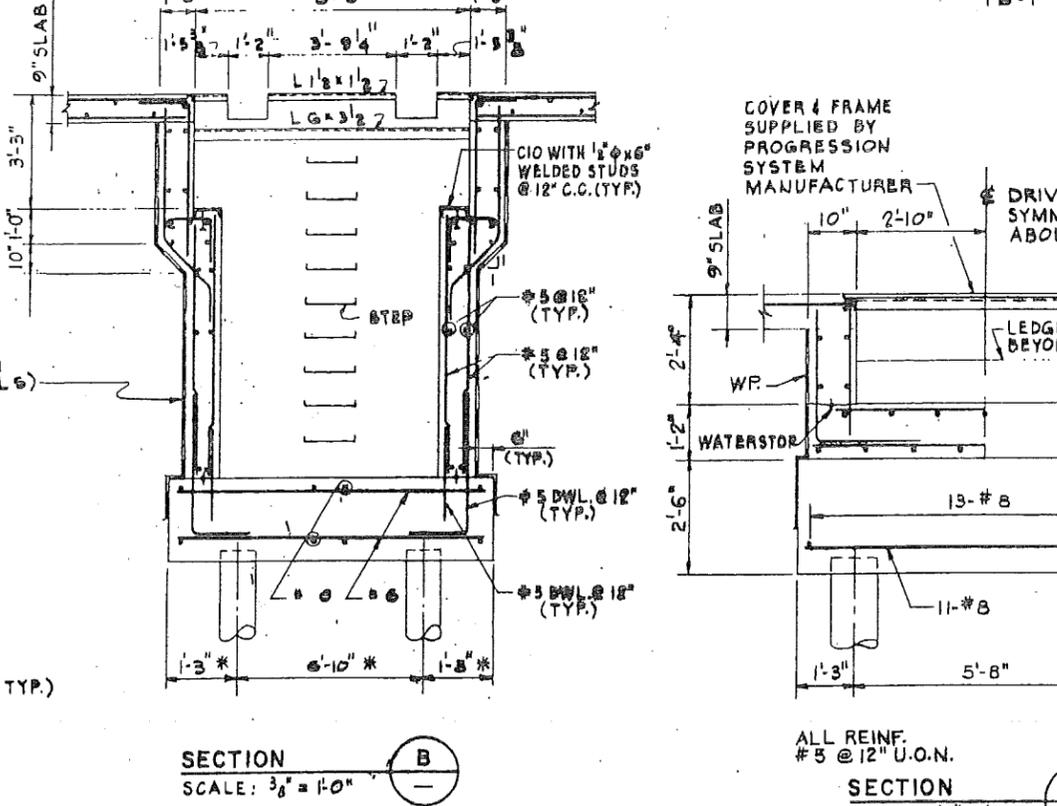
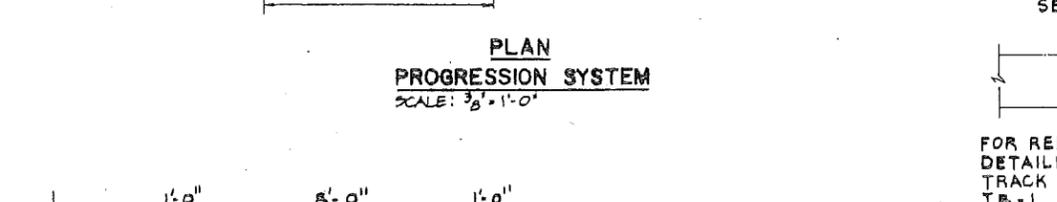
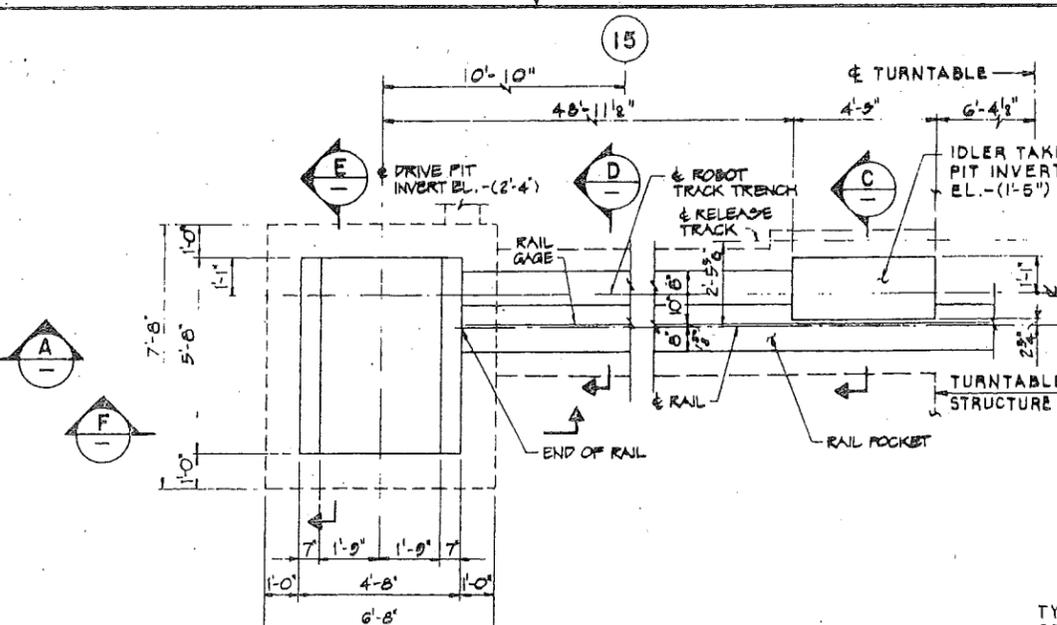
A.K./MDP Y.F.N. N.E.  
 Checked by Drawn by Task Leader

Date 6/7/88 Scale AS SHOWN

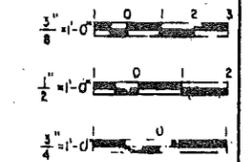
Contract Number Drawing Number  
 PAT-150,153 S-57



\* ACTUAL DIMENSIONS CAN BE DIFFERENT FOR EXIST. AS BUILT  
 PILES. AVERAGE AREA OF PILE CAP IS 126 (MIN. EDGE DISTANCE  
 TO THE CENTER OF PILE 1'-0")



CONFORMED 12-15-88



FOR CORNER LOCATION & SHAPE SEE GROUND FLOOR PLANS

KAMAL UPPAL  
N.J. P.E. 32104

PARSONS  
BRINCKERHOFF  
Engineers - Architects - Planners

Engineering Department  
Design Divisions

MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

Title  
SHOP BUILDINGS  
MISCELLANEOUS DETAILS  
SHEET 3

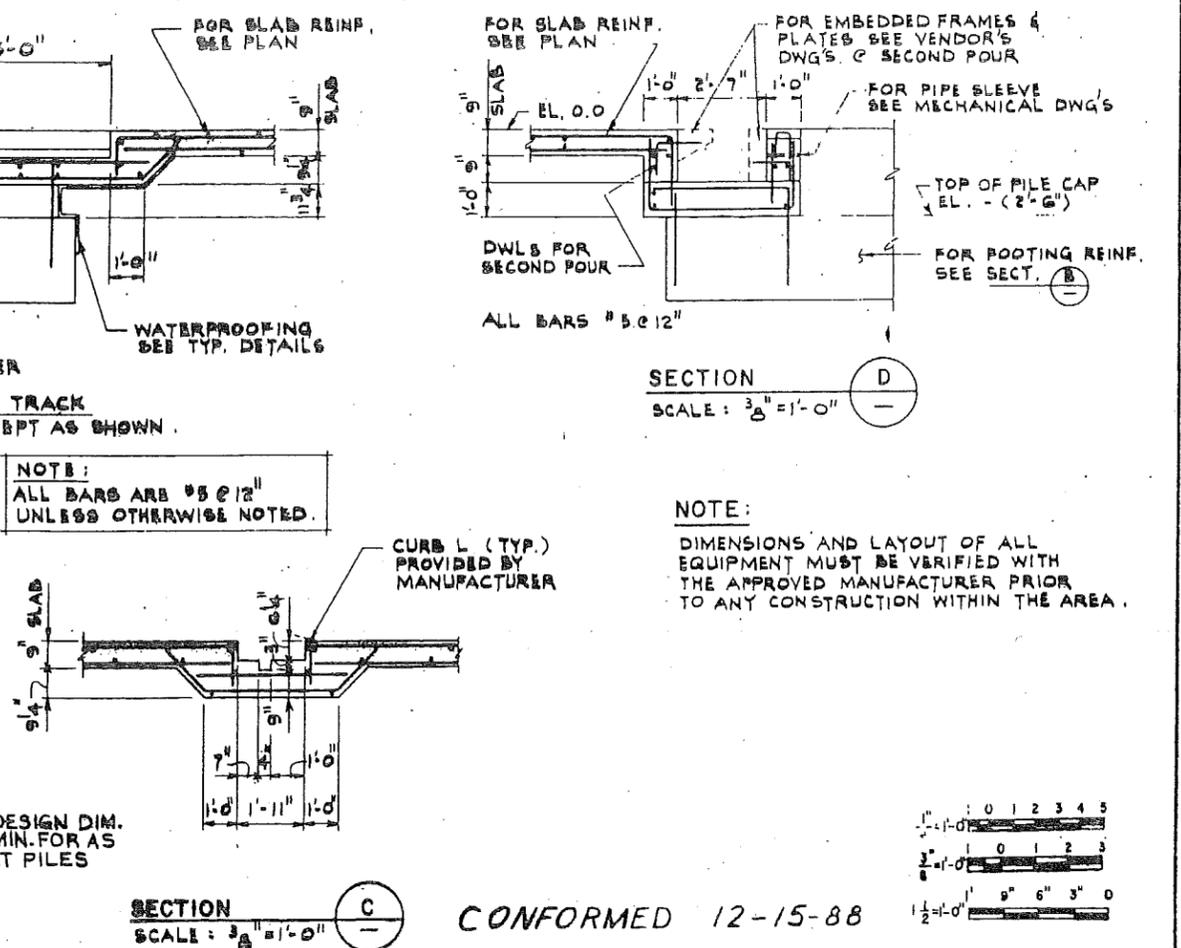
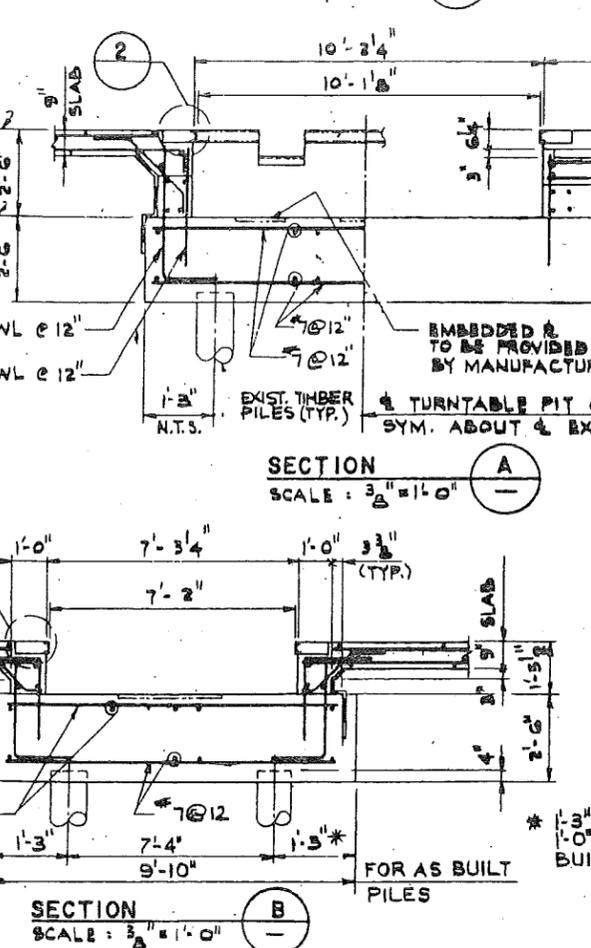
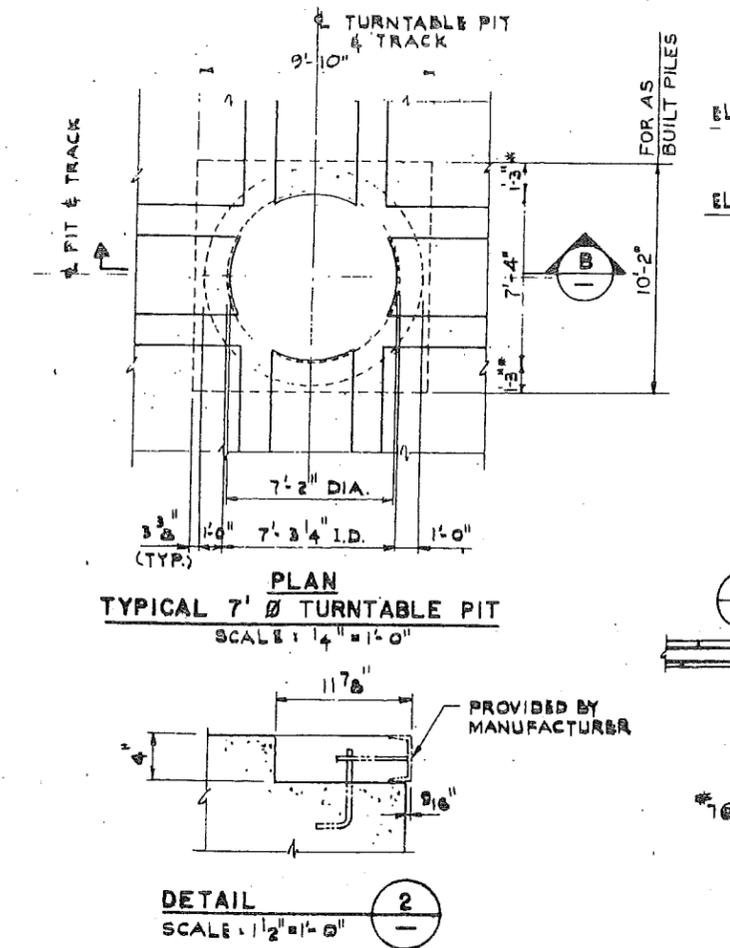
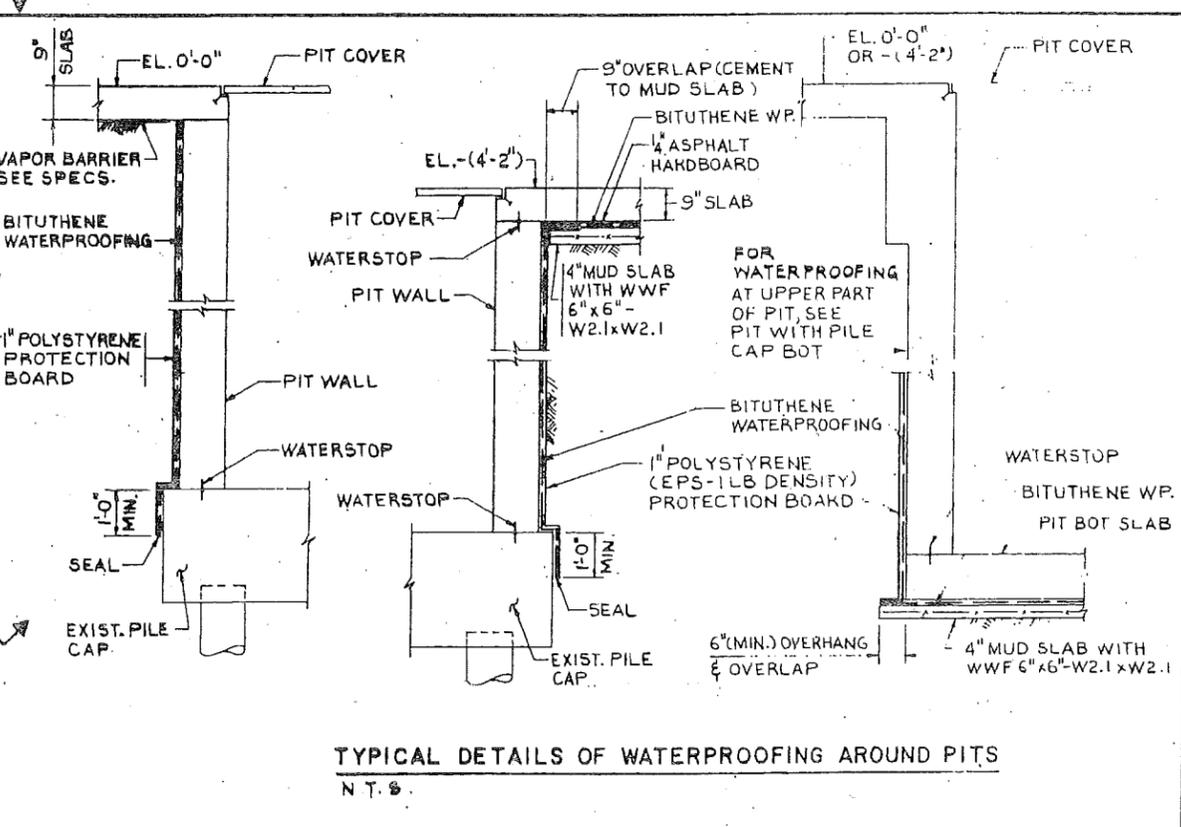
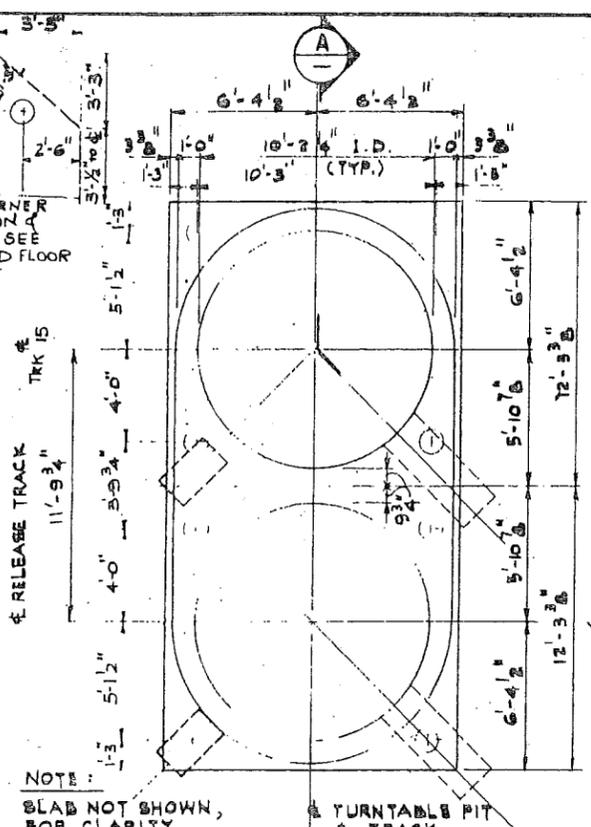
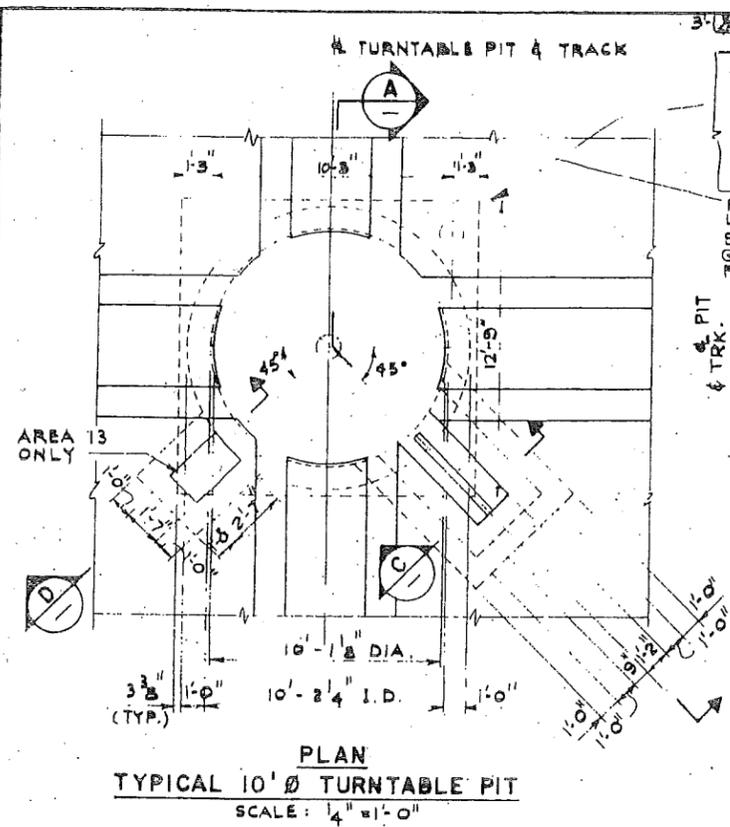
No.	Date	Revision	Approved

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A.K. Y.F.N. N.S.  
Checked by \_\_\_\_\_ Drawn by \_\_\_\_\_ Task Leader

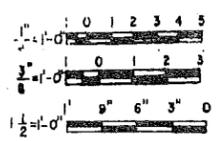
Date 6/7/88 Scale AS SHOWN

Contract Number PAT-150.153 Drawing Number S-58



NOTE:  
DIMENSIONS AND LAYOUT OF ALL EQUIPMENT MUST BE VERIFIED WITH THE APPROVED MANUFACTURER PRIOR TO ANY CONSTRUCTION WITHIN THE AREA.

CONFORMED 12-15-88





PORT AUTHORITY  
TRANS-KUBSON CORPORATION

Kamal Uppal  
KAMAL UPPAL  
N.J. P. E. 32104

Parsons  
Brinckerhoff  
Engineers - Architects - Planners

Engineering Department  
Design Divisions

MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

Title  
SHOP BUILDINGS  
MISCELLANEOUS DETAILS  
SHEET 5

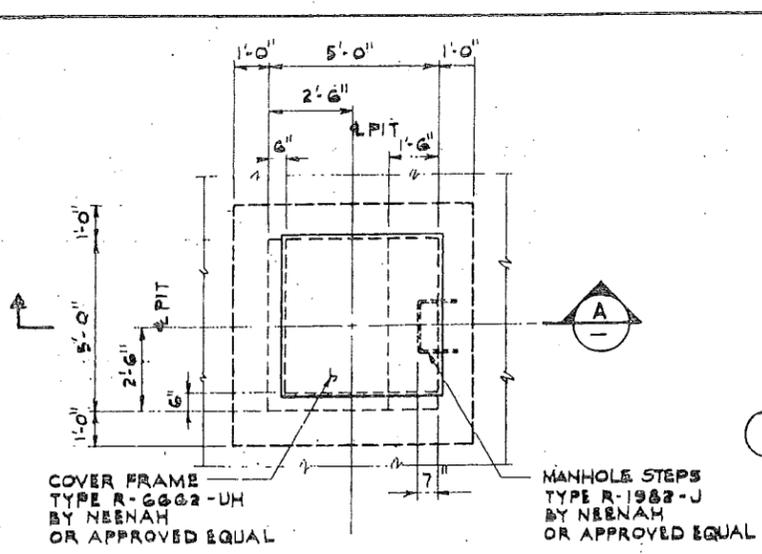
1/57/88 MAIN DRAIN LINE SUPPORT  
No Date Revision Approved

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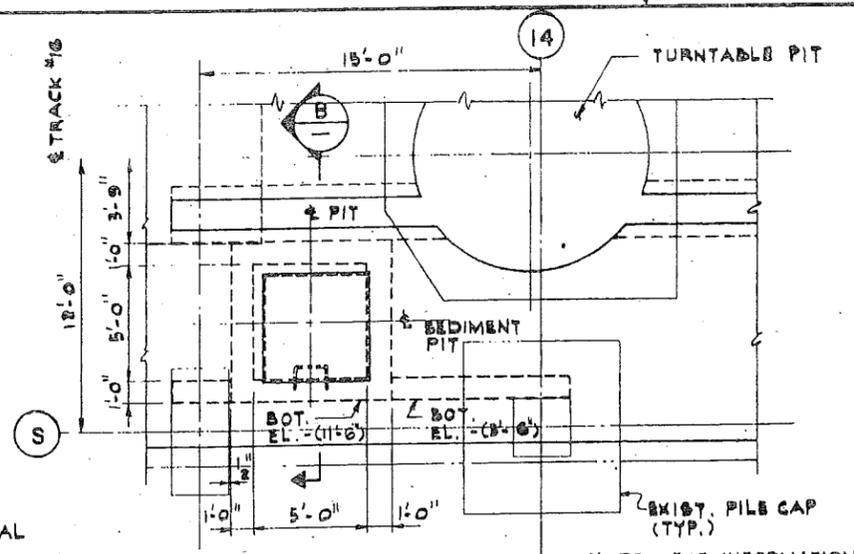
A.K. Y.F.N. N.S.  
Checked by Drawn by Task Leader

Date 6/7/88 Scale AS SHOWN  
Contract Number Drawing Number

PAT-150.153 S-60

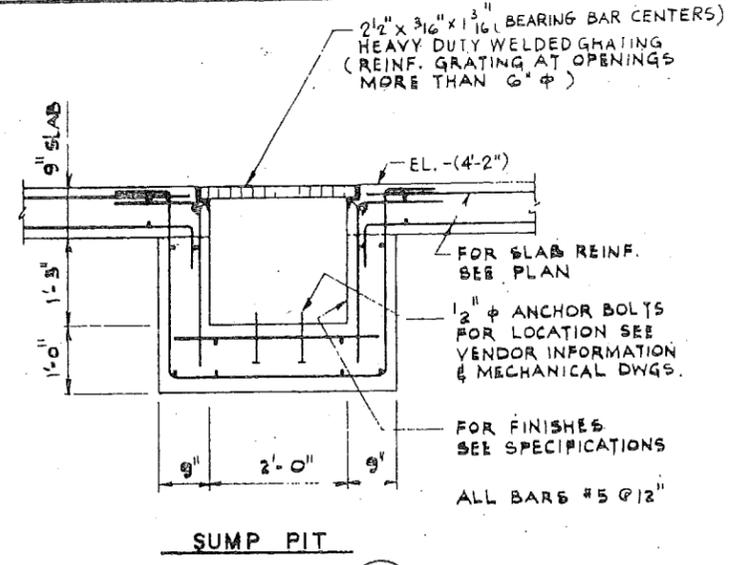


DETAIL 1  
SCALE: 3/8" = 1'-0"  
INDUSTRIAL WASTE PIT

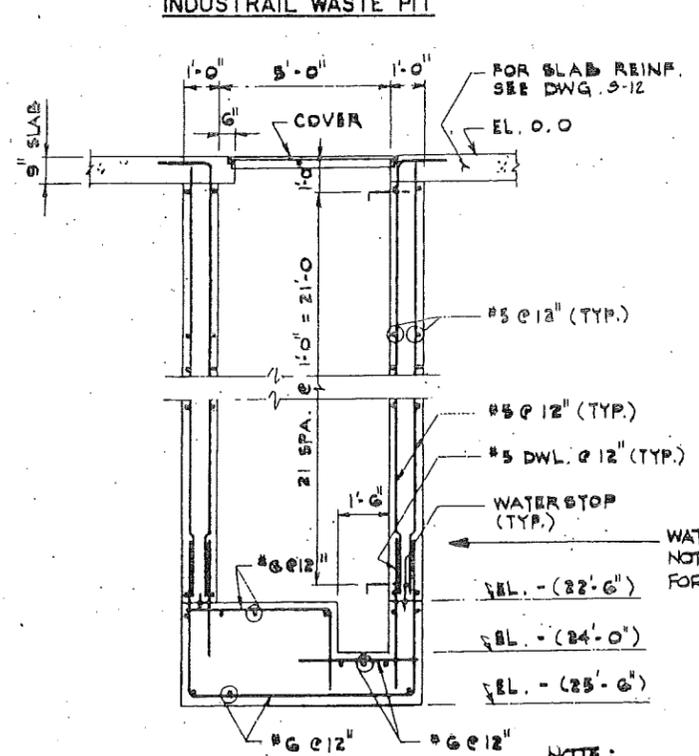


DETAIL 2  
SCALE: 1/4" = 1'-0"  
SEDIMENTATION PIT

NOTE: FOR INFORMATION NOT SHOWN, SEE DETAIL 1 THIS DWG.

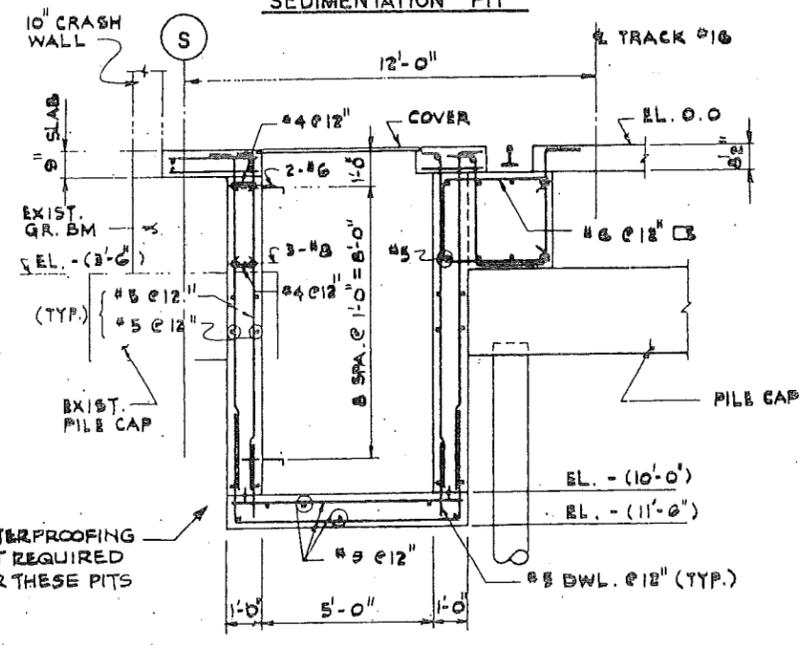


SECTION C  
SCALE: 3/4" = 1'-0"  
S-2 S-3, S-4 & S-6

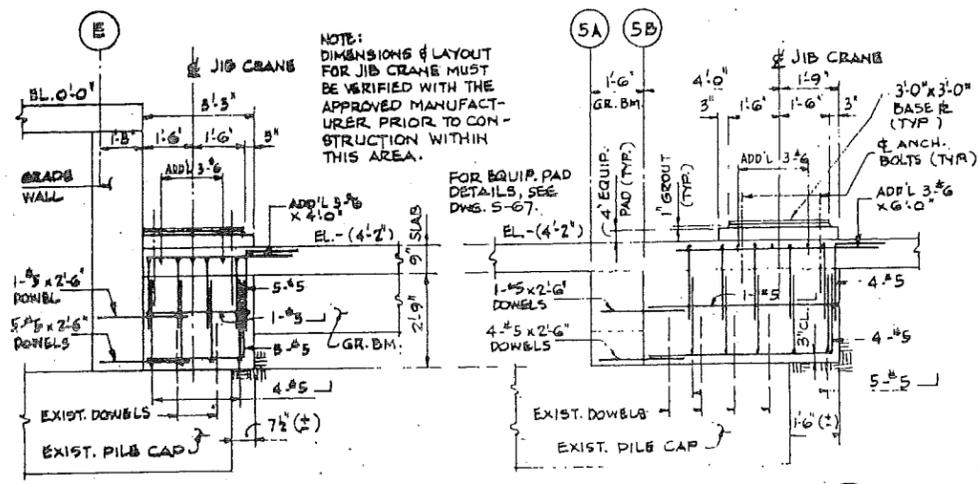


SECTION A  
SCALE: 3/8" = 1'-0"

NOTE:  
EXCAVATION FOR PITS SHALL BE WITHIN A SHEETED TRENCH. CONTRACTOR SHALL TAKE EXTRA CARE SO AS NOT TO DISTURB SOIL AROUND PILES AND UNDER EXISTING FOOTINGS.

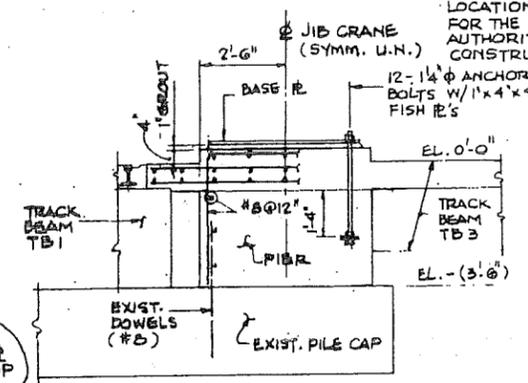


SECTION B  
SCALE: 3/8" = 1'-0"

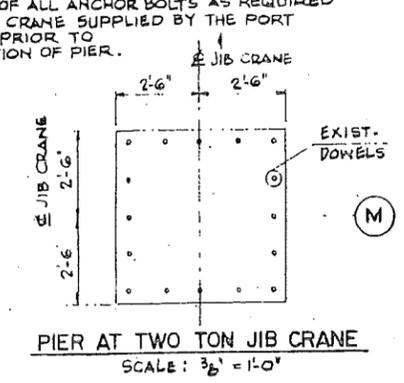


SECTION F  
SCALE: 3/8" = 1'-0"  
S-8

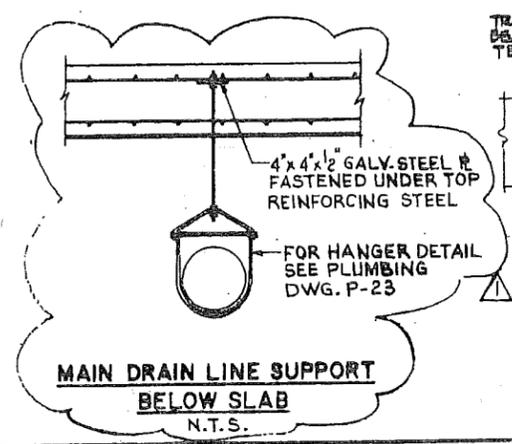
NOTE: CONTRACTOR MUST VERIFY NUMBER AND LOCATIONS OF ALL ANCHOR BOLTS AS REQUIRED FOR THE JIB CRANE SUPPLIED BY THE PORT AUTHORITY PRIOR TO CONSTRUCTION OF PIER.



SECTION E  
SCALE: 3/8" = 1'-0"  
S-9 S-12

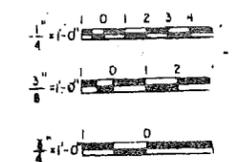


SCALE: 3/8" = 1'-0"



MAIN DRAIN LINE SUPPORT  
BELOW SLAB  
N.T.S.

CONFORMED 12-15-88



FRANK AUTHORITY  
TRANS-RODSON CORPORATION

Kamal Uppal  
KAMAL UPPAL  
N.J. P. E. 32104

Parsons  
Brinckerhoff  
Engineers, Inc.

Engineering Department  
Design Divisions

MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

Title  
SHOP BUILDINGS  
MISCELLANEOUS DETAILS  
SHEET 6

No Date Revision Approved

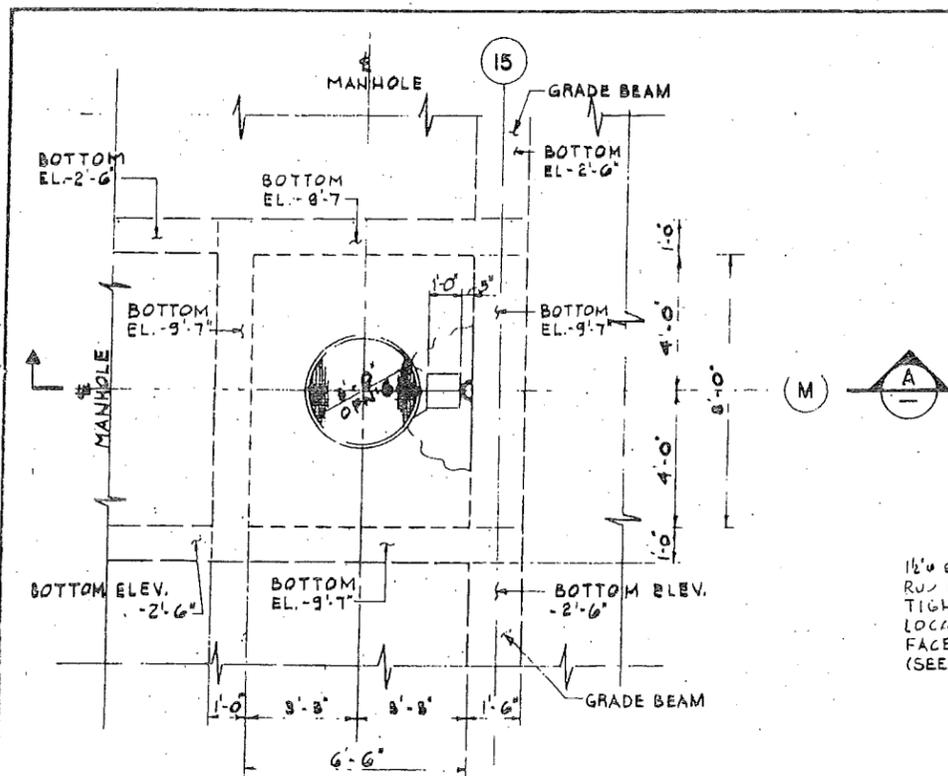
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A.K. L.L. N.S.  
Checked by Drawn by Task Leader

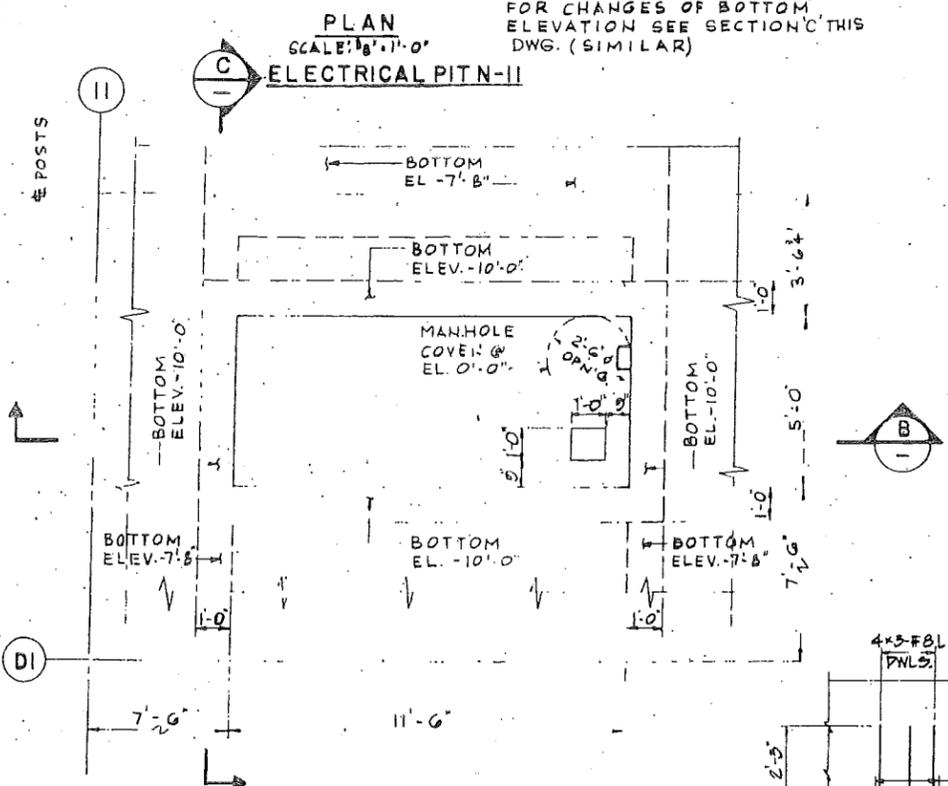
Date 6/7/88 Scale AS SHOWN

Contract Number Drawing Number

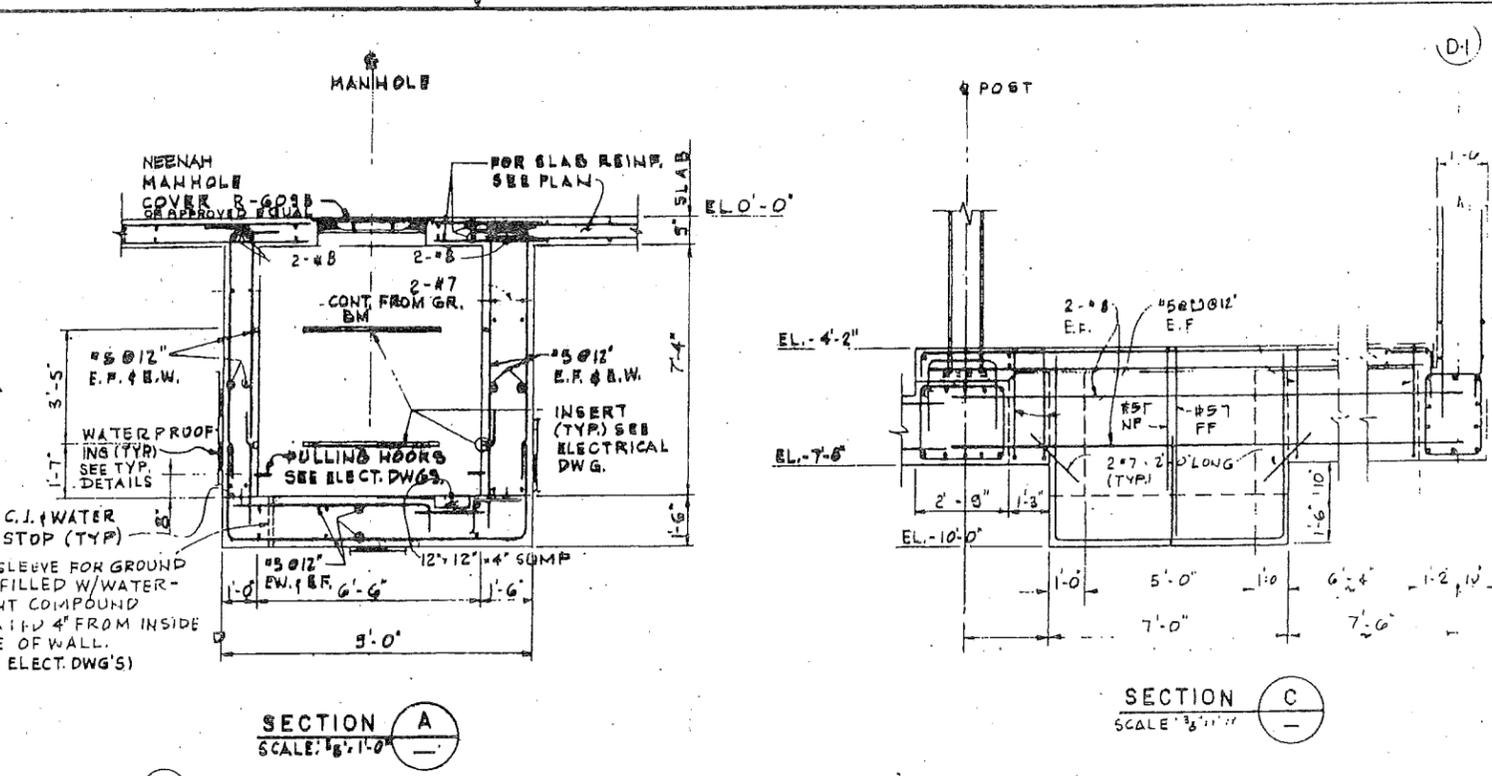
PAT-150.153 S-61



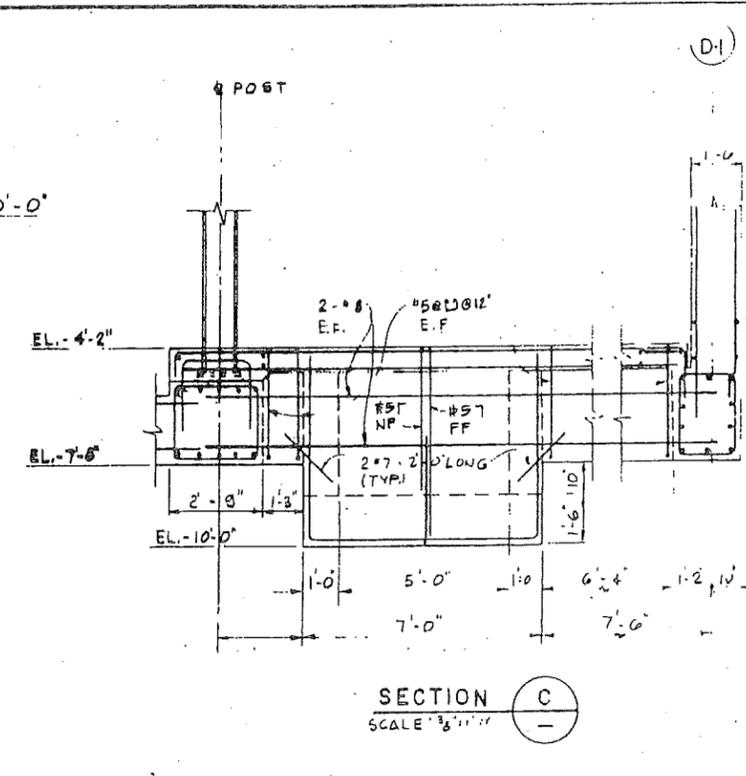
NOTE:  
FOR CHANGES OF BOTTOM  
ELEVATION SEE SECTION C THIS  
DWG. (SIMILAR)



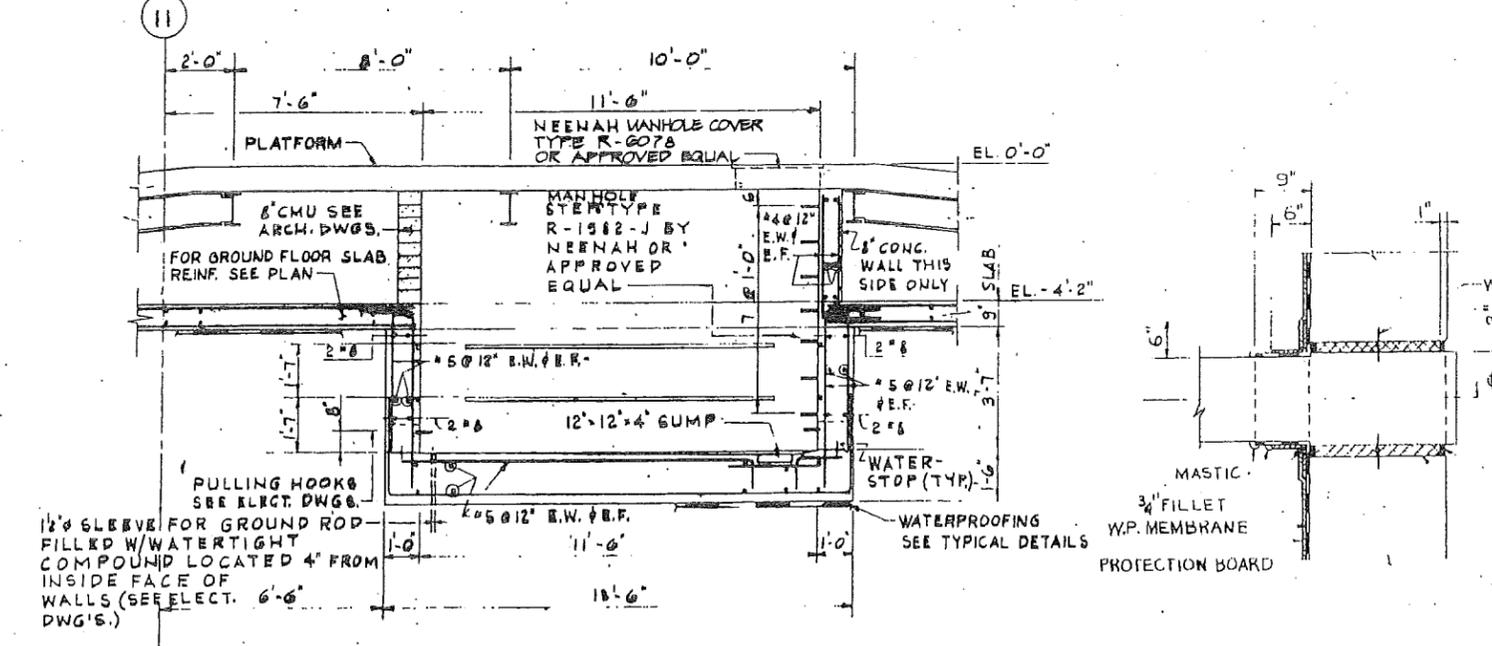
PLAN  
SCALE: 3/8"=1'-0"  
ELECTRICAL PIT N-10



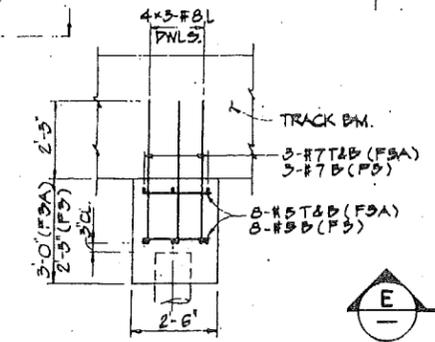
SECTION A  
SCALE: 3/8"=1'-0"



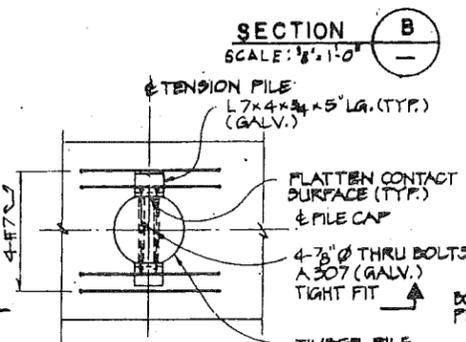
SECTION C  
SCALE: 3/8"=1'-0"



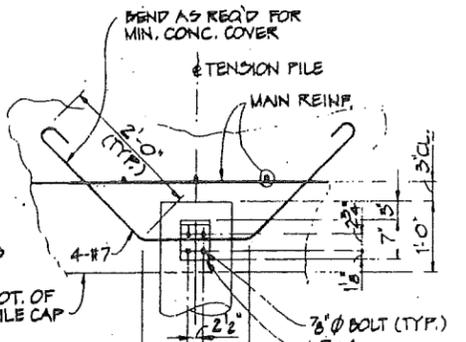
SECTION B  
SCALE: 3/8"=1'-0"



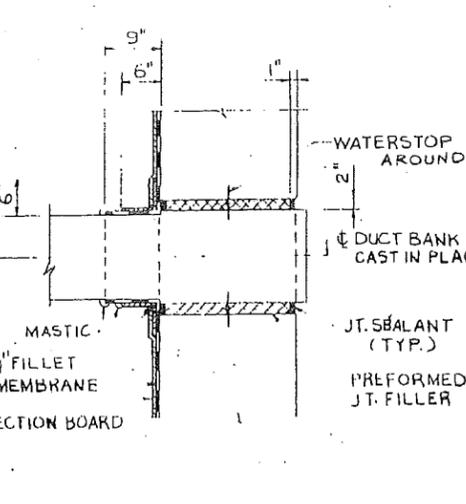
SECTION D  
SCALE: 3/8"=1'-0"



TENSION PILE DETAIL  
SCALE: 3/8"=1'-0"

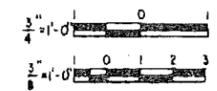


SECTION E  
SCALE: 3/4"=1'-0"



ELECTRICAL DUCT PENETRATION  
N.T.S.

CONFORMED 12-15-88



PORT AUTHORITY  
TRANS-JOBSON CORPORATION

Kamal Uppal  
KAMAL UPPAL  
N.J. P. E. 32104

Parsons  
Brinckerhoff  
Engineers - Architects - Planners

Engineering Department  
Design Division

MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARY

Title  
SHOP BUILDINGS  
MISCELLANEOUS DETAILS  
SHEET 7

No.	Date	Revision	Approved

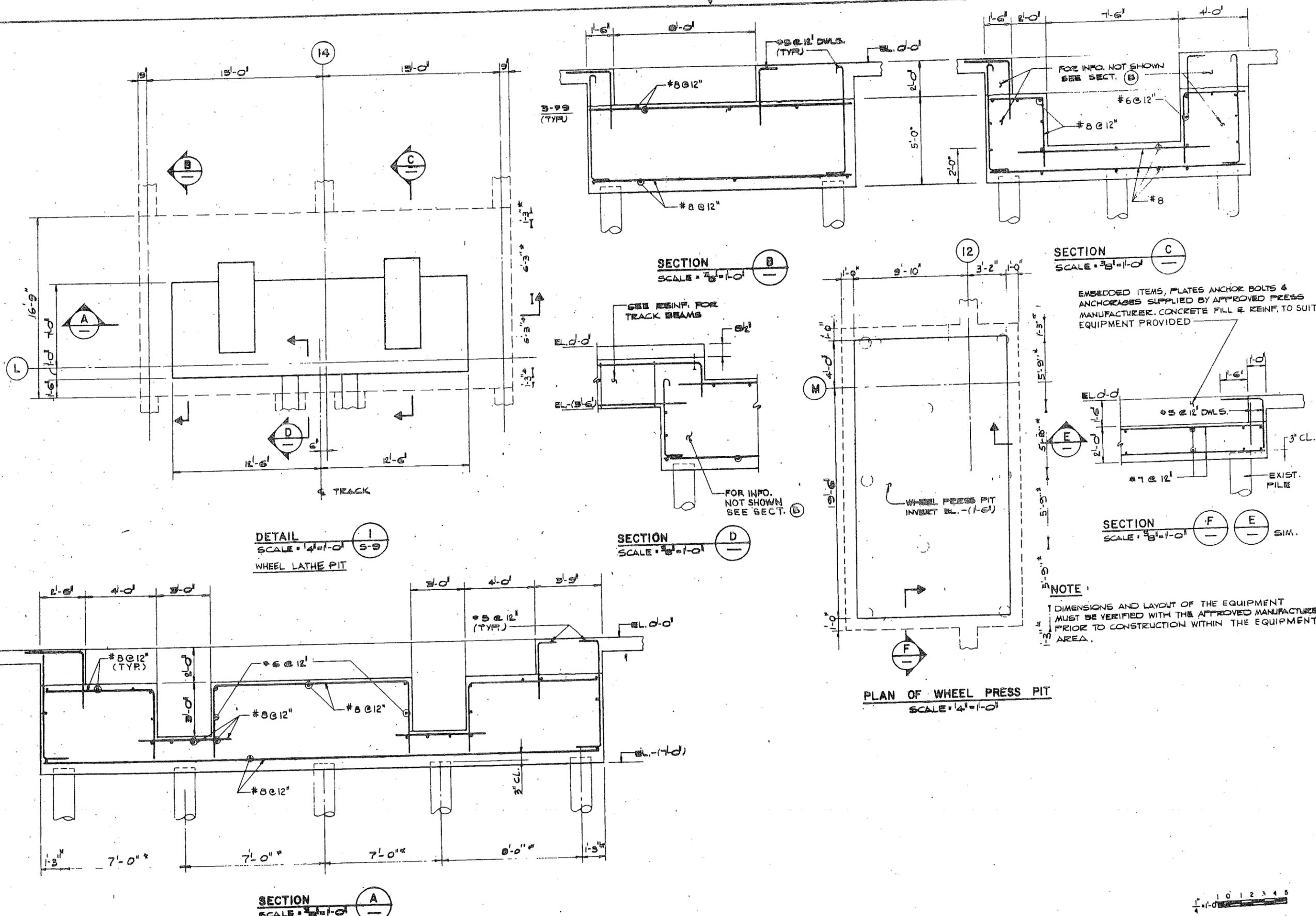
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Checked by	Drawn by	Task Leader
A.K.	T.N.C.	N.S.

Date 6/7/88 Scale AS SHOWN

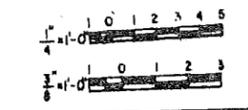
Contract Number Drawing Number

PAT-150.153 S-62

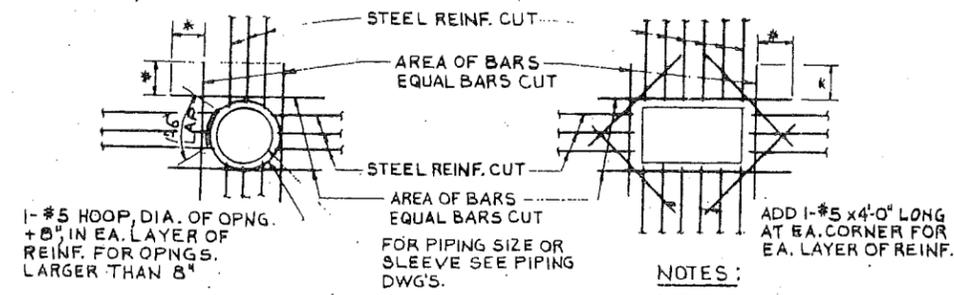


\* ACTUAL DIMENSIONS ARE DIFFERENT FOR EXIST. AS BUILT PILES (MIN EDGE DISTANCE TO THE CENTER OF PILE 1'-0")

CONFORMED 12-15-88



\* MIN. LAP AS NOTED IN SPECIFICATIONS OR SHOWN ON PLANS, 1'-0" MIN. (TYP.)

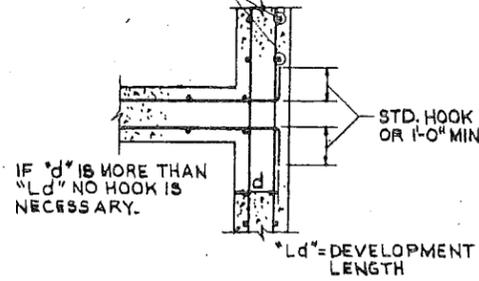


**OPENING REINFORCING**  
N.T.S.

**NOTES:**

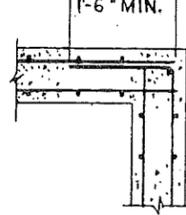
1. TYP FOR ALL OPNGS IN CONC. WALLS AND SLABS UNLESS INDICATED OTHERWISE ON PLANS.
2. DO NOT WELD REINF. TO PIPE SLEEVES & INSERTS.

VERTICAL BARS OUTSIDE OR INSIDE AS SHOWN ON DWGS.

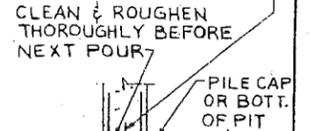


**CONCRETE WALL INTERSECTIONS**  
N.T.S.

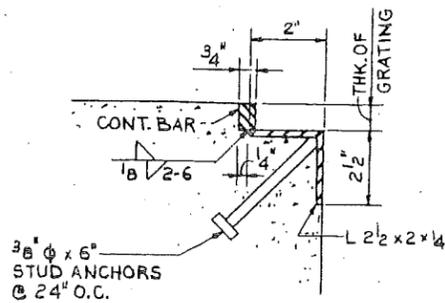
TYPE 'C' SPLICE OR 1'-6" MIN.



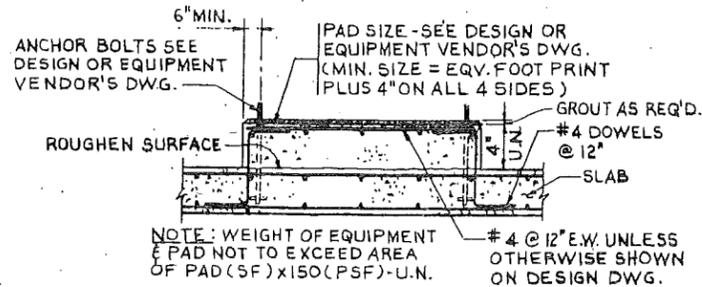
WATERSTOP TYPE RB4-316H AS MANUF. BY VINYLEX CORP. OR APPROVED EQUAL BELOW EL. -(1'-0")



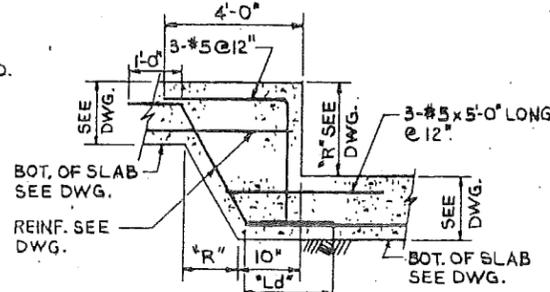
**HORIZONTAL OR VERTICAL CONSTRUCTION JOINTS**  
N.T.S.



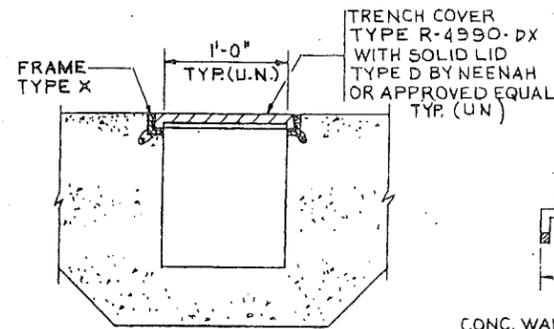
**TYPICAL DETAIL FOR GRATING COVER**  
N.T.S.



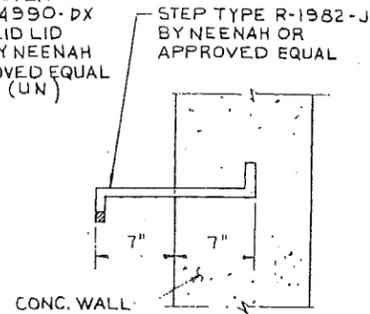
**TYPICAL EQUIPMENT PAD ON SLAB**  
N.T.S.



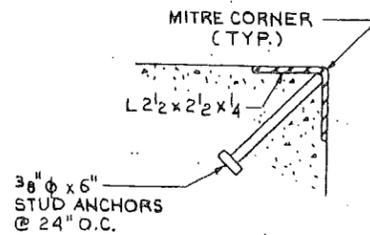
**ADDITIONAL REINFORCING AT STEP FOR SLAB ON GRADE**  
N.T.S.



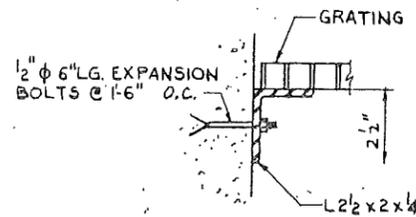
**TYPICAL UTILITY TRENCH COVER WITH SOLID LID**  
N.T.S.



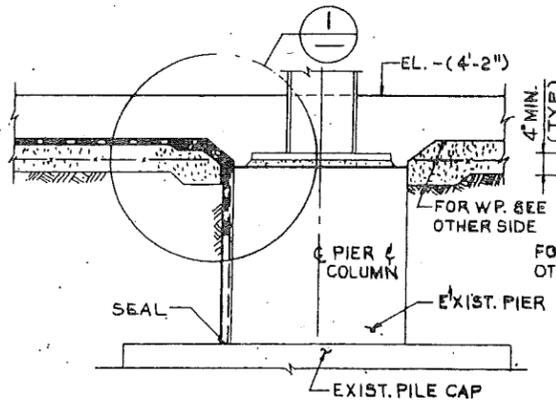
**TYPICAL STEP DETAIL**  
N.T.S.



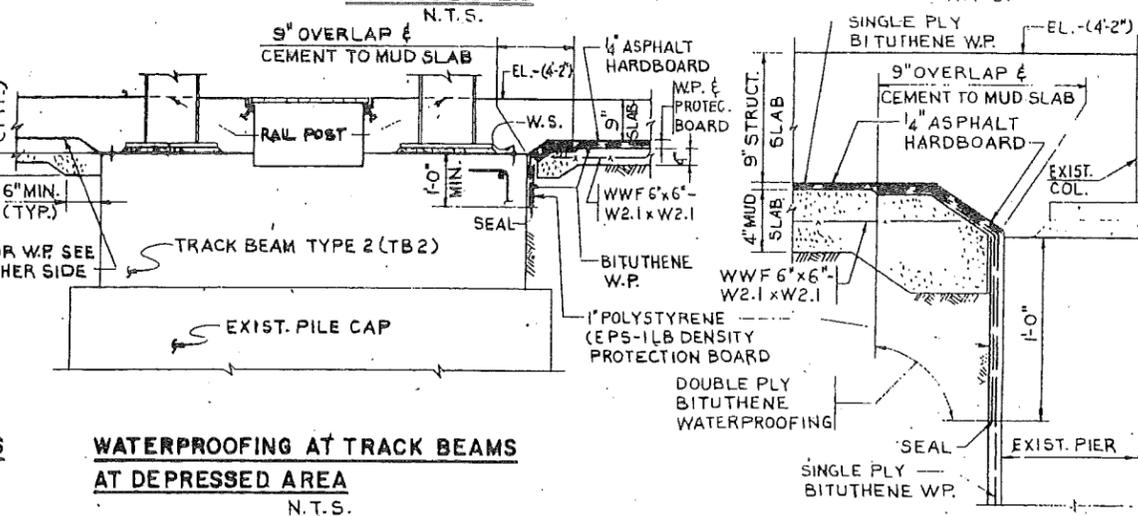
**TYPICAL CURB ANGLE**  
N.T.S.



**GRATING SUPPORT AT CONCRETE WALL**  
N.T.S.



**WATERPROOFING AROUND COLUMN PIERS AND UNDER SLAB AT DEPRESSED AREA**  
N.T.S.



**WATERPROOFING AT TRACK BEAMS AT DEPRESSED AREA**  
N.T.S.

**DETAIL**  
N.T.S.

**NOTE:**  
1. FOR ADDITIONAL TYPICAL DETAILS, SEE DWG. S-58

**PATH AUTHORITY**  
TRANS-KUDSON GROUP (INCORPORATED)

KAMAL UPPAL  
N.J. P.E. 32104

**HARRISON**  
BRUNCKENBROTH  
ENGINEERS - ARCHITECTS - PLANNERS

Engineering Department  
Design Divisions  
MAIN REPAIR  
FACILITY AND YARD  
AT HARRISON  
AND KEARNY

Title  
SHOP BUILDINGS  
TYPICAL DETAILS

No. Date Revision Approved

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to PATH and may not be used without its written consent.

N.S. R.B. N.S.  
Checked by Drawn by Task Leader

Date 6/7/88 Scale AS SHOWN

Contract Number Drawing Number

PAT-150.153 S-67

CONFORMED 12-15-88

DATE PLOTTED: 11-29-88 10:54:20