HUDSON YARDS - PLATFORM

NYC DOB SUBMISSION UPDATE
MARCH 17, 2014

Discipline Index

ZONING
LIFE SAFETY
ARCHITECTURAL
STRUCTURAL
Zoning Lot Area: 570,000 SF

PUBLIC ACCESS AREAS (sf) OPEN TO SKY PER ZR 93-71:
- Outdoor Plaza 192,828
- 11th Ave. sidewalk widening 3,399
- Connection to High Line 16,919
- Public Plaza (Uncovered Portion) 8,545
- Highline Area (uncovered portion) 25,252
- Outdoor Plaza (covered portion) 1,463
- Public Plaza (covered portion) 8,704
- 11th Ave. sidewalk widening (covered portion) 163
- Through Block Connection + atrium (covered) 25,498
- Connection to Public Plaza covered 19,465
- Connection to Public Plaza covered (street level portion) 1,522
- Highline Area - (covered portion) 9,742

Subtotal: 246,943

Percentage of Lot: 43.32%

Minimum Required: 228,000

Percentage of Lot: 40%

NOTE: WILL COMPLY WITH ALL OTHER APPLICABLE REQUIREMENTS OF ZR-33-70 INCLUSIVE

Building Location and Dimensions Subject to Change
Information Outside Zoning Lot Boundary Shown for Illustrative Purposes Only

[Diagram with additional notes and labels]
<table>
<thead>
<tr>
<th>Phase</th>
<th>Tower</th>
<th>Anticipated Cumulative Floor Area Provided</th>
<th>Public Access Area New This Phase</th>
<th>Cumulative Public Access Area Provided</th>
<th>Percentage of Total Public Access Area provided</th>
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<tbody>
<tr>
<td>Phase 1</td>
<td>Tower C</td>
<td>1,414,964</td>
<td>52,243</td>
<td>52,243</td>
<td>17%</td>
</tr>
<tr>
<td>Phase 2</td>
<td>Tower D</td>
<td>2,169,964</td>
<td>17,877</td>
<td>70,120</td>
<td>22%</td>
</tr>
<tr>
<td>Phase 3</td>
<td>Tower A &amp; Retail Podium</td>
<td>5,070,000</td>
<td>176,332</td>
<td>246,452</td>
<td>79%</td>
</tr>
<tr>
<td>Phase 4</td>
<td>Tower E</td>
<td>6,070,000</td>
<td>59,033</td>
<td>305,485</td>
<td>97%</td>
</tr>
<tr>
<td>Phase 5</td>
<td>Cultural Facility</td>
<td>6,170,000</td>
<td>8,015</td>
<td>313,500</td>
<td>100%</td>
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*FLOOR AREA PER BUILDING SUBJECT TO CHANGE*

PUBLIC ACCESS AREAS NEW THIS PHASE

PUBLIC ACCESS AREAS EXISTING PER PREVIOUS PHASE

EXISTING BUILDING PER PREVIOUS PHASE

**CONSTRUCTION FENCE WILL BE IN PLACE FOR PROTECTION AT LIMITS OF BUILDING AND PUBLIC ACCESS AREAS TO Be PROVIDED IN THIS PHASE**

NOTE: WILL COMPLY WITH ALL OTHER APPLICABLE REQUIREMENTS OF SECTION 90-79 INCLUSIVE

TOTAL ZONING LOT AREA: 570,000 SF

KEY

ZONING LOT BOUNDARY AND PROPERTY LINE

PUBLIC ACCESS AREAS

NEW BUILDING THIS PHASE

PUBLIC ACCESS AREAS EXISTING PER PREVIOUS PHASE

EXISTING BUILDING PER PREVIOUS PHASE

Date: 05/14/2014

Damian Titus

APPROVED UNDER DIRECTIVE 2 of 1975

DEPT OF BLDGS

Scan Code

Job Number

SHEET 004 OF 009
<table>
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<tr>
<th>Phase</th>
<th>Tower</th>
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*Floor area per building subject to change.

PUBLIC ACCESS AREAS
- New This Phase
- Existing per previous phase
- Existing building per previous phase

**Construction fence will be in place for protection at limits of building and public access areas to be provided in this phase.**
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**TOTAL ZONING LOT AREA:** 576,000 SF

**NOTE:** WILL COMPLY WITH ALL OTHER APPLICABLE REQUIREMENTS OF SECTION 83-79 INCLUSIVE

**KEY**

- PUBLIC ACCESS AREAS
- NEW BUILDING THIS PHASE
- PUBLIC ACCESS AREAS EXISTING PER PREVIOUS PHASE
- EXISTING BUILDING PER PREVIOUS PHASE

---

**FLOOR AREA PER BUILDING SUBJECT TO CHANGE**

**PUBLIC ACCESS AREAS BY PHASE**

---

**Construction Fences will be in place for protection at limits of building and public access areas to be provided in this phase.**

---

**APPROVED Under Directive 2 of 1975**

**Date:** 05/14/2014

**Damian Titus**

---

**DEPT OF BLDGS Job Number Scan Code**
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**TOTAL ZONING LOT AREA:** 570,000 SF

**KEY:**
- **PUBLIC ACCESS AREAS:** NEW THIS PHASE
- **PUBLIC ACCESS AREAS EXISTING PER PREVIOUS PHASE:**
- **EXISTING BUILDING PER PREVIOUS PHASE:**

**NOTE:** WILL COMPLY WITH ALL OTHER APPLICABLE REQUIREMENTS OF SECTION 83-79 INCLUSIVE
1. UNDER DIRECTIVE 2 OF 1975

2. DATE:

3. DAMIAN TITUS

4. 05/14/2014

5. APPROVED

6. 05/14/2014

7. HUDSON YARDS - PLATFORM

8. ADDRESS:

9. NEW YORK, NY

10. 530 WEST 33RD STREET

11. 216

12. 29' - 0" 16'

13. 16'

14. 31' - 2"

15. 1208

16. 27' - 0"

17. 22' - 0"

18. 8' 31' - 2"

19. 30' - 0"

20. 15' - 0"

21. 22' - 0"

22. 8'

23. 31' - 2"

24. 30' - 0"

25. 29' - 0"

26. 16' - 6"

27. PRIVATE / NON-LIRR CAPACITY

28. 30' - 0"

29. 16'

30. 30' - 0"

31. 29' - 11 1/2"

32. 30' - 0"

33. 15' - 0"

34. 16'

35. LIRR - ANCILLARY SPACE

36. 29' - 0"

37. 30' - 0"

38. 20' - 0"

39. 29' - 0"

40. 28' - 6"

41. 28' - 6"

42. 30' - 6" 13' - 0"

43. 30' - 0"

44. 30' - 0"

45. 29' - 0"

46. 28' - 6"

47. 28' - 6"

48. 39' - 1"

49. 30' - 0"

50. 29' - 0"

51. 16' - 6"

52. PRIVATE / NON-LIRR

53. CAPACITY

54. 30' - 0"

55. 16'

56. 30' - 0"

57. 29' - 0"

58. 16' - 6"

59. 30' - 0"

60. 16'

61. 30' - 0"

62. 29' - 0"

63. 16' - 6"

64. 30' - 0"

65. 16'

66. 30' - 0"

67. 29' - 0"

68. 16' - 6"

69. 30' - 0"

70. 16'

71. 30' - 0"

72. 29' - 0"

73. 16' - 6"

74. 30' - 0"

75. 16'

76. 30' - 0"

77. 29' - 0"

78. 16' - 6"

79. 30' - 0"

80. 16'

81. 30' - 0"

82. 29' - 0"

83. 16' - 6"

84. 30' - 0"

85. 16'

86. 30' - 0"

87. 29' - 0"

88. 16' - 6"

89. 30' - 0"

90. 16'

91. 30' - 0"

92. 29' - 0"

93. 16' - 6"

94. 30' - 0"

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97. 29' - 0"

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99. 30' - 0"

100. 16'

101. 30' - 0"

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178. 16' - 6"

179. 30' - 0"

180. 16'

181. 30' - 0"

182. 29' - 0"

183. 16' - 6"

184. 30' - 0"

185. 16'

186. 30' - 0"

187. 29' - 0"

188. 16' - 6"

189. 30' - 0"

190. 16'
**GENERAL NOTES**

1. HATCHED AREA DENOTES LIRR PLATFORM

2. HATCHED AREA DENOTES PROPOSED NON-LIRR AREA RESERVED FOR TOWER A & RETAIL PODIUM SERVICE

3. SYMBOl KEY

4. PLATFORM LOWER LEVEL PROVIDES THE ENCLOSURE TO LIRR TRAINYARD AREA. PLATFORM UPPER LEVEL INCLUDES TEMPORARY REQUIRED OVER THROAT AND BASE OF RETAIL PODIUM

5. NOTE FOR STAIR LAYOUT INCLUDING PHOTOLUMINESCENT EXIT PATH MARKINGS REFER TO A4-SERIES PLANS

6. ISSUE TO FDNY 12/12/2013

7. L.I.R.R. - PRE-FINAL 100% 11/22/2013

8. L.I.R.R. - 90% MOE SUBMISSION 10/04/2013

9. L.I.R.R. - 60% MOE SUBMISSION 7/12/2013

10. NYC DOB Filing 6/17/2013

11. L.I.R.R. - 30% MOE SUBMISSION 6/14/2013

**MoE-PLATFORM SUBMISSION**

**Issue Date:** 06/14/13

**Project No.:** 2198

**Drawn By:** Hojae Lee

**Sheet Number:** 1

**Drawing Title:** LIFE SAFETY PLAN

**Drawing Number:** EG-810.00

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PHOTOLUMINESCENT MARKINGS AT OBSTACLES

16' CODE/SECTION

APPROVED
Under Directive 2 of 1975
Date: 05/14/2014

AS PER LL 58/83, PROPOSED WORK IS OUTSIDE OF SPECIAL NTNS

Related Companies
NON-LIRR SPACES DESIGNED TO FLOOD ELEVATION OF 13'-4" (B.P.M.D.)

Kohn Pedersen Fox AssociatesPC
Architects & Planning Consultants
11 West 42nd Street
New York, New York 10036

CONSTRUCTION REQUIREMENTS

NYC DEPARTMENT OF BUILDINGS NOTES

FIRE RESISTANCE OF STRUCTURAL ELEMENTS MUST BE IN ACCORDANCE WITH THE FOLLOWING:

NOTIFICATION OF THE DEPARTMENT:

NOTIFICATION TO BE PROVIDED TO DEPARTMENT OF BUILDINGS 24-48 HOURS PRIOR TO COMMENCEMENT OF DAYS PRIOR TO COMMENCEMENT OF EXCAVATION WORK, AS PER BC 3304.3.2.

AND PROCEDURES HELD BY THE COMMISSIONER OF BUILDINGS, AS PER BC 104.

EXTERIOR BEARING WALLS
- SUPPORTING MORE THAN ONE LEVEL

DESIGN OF ELEVATORS TO BE COMPLIANT WITH ACCESSIBLE MEANS OF EGRESS REQUIREMENTS, AS PER BC 1007.2.1 AND

EXTERIOR NON LOAD - BEARING WALLS¹
- FIRE SEPARATION 0 TO 5 FEET

STAIRWAY DOOR OPERATION AND STAIRWAY COMMUNICATIONS SYSTEM TO BE PROVIDED, AS PER BC 403.12 AND BC 403.12.1.

PARTITION SCHEDULE FOR FURTHER INFORMATION.

HISTORIC LANDMARK STRUCTURES:

APPLICABLE ADA DIAGRAMS:

PROPOSED WORK TO APPLY WITH APPLICABLE REQUIREMENTS OF ANSI

PROPOSED WORK IS NOT WITHIN 90' OF ANY ADJACENT HISTORIC

PHOTOLUMINESCENT EXIT PATH MARKINGS TO BE PROVIDED AT ALL EXIT DOORS, EXIT PASSAGEWAYS, AND EXIT STAIRS, AS EXIT PATH MARKINGS:

SUPPORTING BEAMS AND JOISTS²

STRUCTURAL DESIGN:

STRENGTH DESIGN, LOAD AND RESISTANCE FACTOR DESIGN, ALLOWABLE STRESS DESIGN, EMPIRICAL DESIGN, OR CONVENTIONAL CONSTRUCTION

INTERIOR CORRIDORS³

MECHANICAL EQUIPMENT AND BUILDING SYSTEMS:

PLUMBING SYSTEMS:

FOOTINGS AND FOUNDATIONS:

CONCRETE COMPONENTS THAT RESIST SEISMIC FORCES DESIGNED AS PER REQUIREMENTS OF BC 1910 AND LL

CONCRETE DESIGN MIX

ASSOCIATED APPLICATIONS

EMERGENCY POWER SYSTEMS (GENERATION)

LIFE SAFETY NOTES

- CONCENTRATED (NON-FIXED CHAIRS) - STANDING ROOM

2008 NEW YORK CITY BUILDING CODE
2011 NEW YORK ELECTRICAL CODE (BASED ON 2005 NEC)

CONSTRUCTION TYPE:

ALL EXIT DOORS MUST SWING IN THE DIRECTION OF TRAVEL WHERE SERVING AN OCCUPANT

LIVE LOAD FACTOR

OCCUPANT LOAD FACTOR

RCNY 5000-01 (IA3), (IIA1)
RCNY 5000-01 (IB4), (IIB4)
RCNY 5000-01 (IC8)
RCNY 5000-01 (IB5), (IIB5)
RCNY 5000-01 (IC9)
RCNY 5000-01 (IA5), (IIA1)

EQUIPPED WITH SMOKEPROOF ENCLOSURES.
GENERAL NOTES:
1. SHEET C/O "A-301.00 TRACK LEVEL OVERALL PLAN"
2. SHEET C/O "A-302.00 PLATFORM LOWER LEVEL PLAN"
3. SHEET C/O "A-303.00 PLATFORM UPPER LEVEL PLAN"
4. SHEET C/O "A-304.00 PLATFORM LOWER LEVEL ENCLOSURES PLAN"
5. SHEET C/O "A-305.00 PLATFORM UPPER LEVEL ENCLOSURES PLAN"
6. SHEET C/O "A-306.00 PLATFORM BOUNDS ENCLOSURES PLAN"

APPROVED
Under Directive 2 of 1975
Date:
Damian Titus
05/14/2014:

ES378171228

PLATFORM

GENERAL NOTES
1. HATCHED AREA DENOTES PROPOSED LIRR AREA RESERVED FOR TRAIN YARD AND SUPPORTING FACILITIES.

3. PLATFORM LOWER LEVEL PROVIDES THE ENCLOSURE TO LIRR TRAIN YARD AREA - AN UNCONDITIONED SPACE. PLATFORM UPPER LEVEL IS FOR LIRR MAINTENANCE ACCESS ONLY.

4. ALL AREAS SHOWN AS NON-LIRR AT THIS LEVEL TO BE "DRY FLOOD-PROOFED" PER BC G106.4. ALL NON-LIRR AREAS FLOORS & ENCLOSING WALL TO BE "HYDROSTATIC & HYDRODYNAMIC WATER LOADS IMPOSED ASSUMING WATER HEIGHT TO BASE FLOOD ELEVATION.

5. NO RESIDENTIAL USES PROPOSED. NO OCCUPIABLE SPACES BENEATH BASE FLOOD ELEVATION DESIGNED AS PER ABFE 11'-4".

6. NO RESIDENTIAL USES PROPOSED OF TOWERS C AND D (SHOWN FOR REFERENCE ONLY) FILED UNDER APPLICATION # 121324290 (TOWER C) & 121331193 (TOWER D) FOR TOWERS C AND D (OUTSIDE DOB JURISDICTION).
GENERAL NOTES
1. MAJOR US HIGHWAY 238 INTERSTATE PROJECTS MEMORANDUM AREA.
2. MAJOR US HIGHWAY 238 INTERSTATE PROJECTS MEMORANDUM AREA.
3. MAJOR US HIGHWAY 238 INTERSTATE PROJECTS MEMORANDUM AREA.

AREA DOCUMENTATION

PS A-A
A-304.00
A-304.00
A-304.00
A-303.00
A-303.00
A-303.00
A-303.00
A-301.00

TO LIRR TRAINYARD AREA. PLATFORM UPPER LEVEL

PA
PB
PC
PE
PF
PH
PK
PM
PN
PP
A
A.5

BASE OF RETAIL PODIUM

13' - 0"
28' - 10"
29' - 0"
29' - 0"
29' - 0"
11TH PLATFORM
10TH PLATFORM
LIRR TRACK LEVEL
MTA 7-LINE TUNNEL
UNDER CONSTRUCTION
AMTRAK TUNNEL
RETAINING WALL ABOVE
EXISTING LIRR DC SUBSTATION TO REMAIN
EXISTING BASEMENT SUBSTATION AND
EXISTING AMTRAK EMPIRE LINE TUNNEL BELOW
PROPOSED GATEWAY TUNNEL BELOW
EXISTING AMTRAK LIRR Substation
AECOM
605 Third Avenue
New York, NY 10158
TEL: 212.973.9200 FAX: 212.682.6172
Structural Engineer
Parsons Transportation Group
77 Water Street
New York, NY 10005
TEL: 212.266.8300 FAX: 212.571.6825
Mechanical, Electrical, Plumbing, Fire Protection

SEE A-020 FOR DIAGRAMMATIC VIEW OF 3-HR SEPARATION AND EXTENT OF LIRR TRAINYARD ENCLOSURE

New York, NY 10022
TEL: 212.986.7514  FAX: 212.986.7510

SEE A-113

Construction Manager
Tishman Construction Corporation
100 Park Avenue, 5th Floor
New York, NY 10017
TEL:212.708.3600

Architect
Kohn Pedersen Fox Associates
11 West 42nd Street
New York, New York 10036
TEL: 212.977.6500  FAX: 212.956.2526

Architects & Planning Consultants

SEE SECTOR PLANS FOR WALL TYPES,
5. LIRR EMPLOYEE ACCESS STAIR PROVIDED AS PART OF TOWER C PROJECT. N.I.C.
4. LIRR EXISTING UTILITIES SHOWN FOR INFORMATION.
3. L.I.R.R. - 30% MoE SUBMISSION 6/14/2013
2. L.I.R.R. - 100% MoE-PLATFORM 11/22/2013
1. L.I.R.R. - 60% MoE SUBMISSION 7/12/2013

DOB SUBMISSION 10/18/2013
7 DOB SUBMISSION 10/04/2013
8 L.I.R.R. - 90% MoE SUBMISSION 10/22/2013
4.7
5
4
3
2
1

3-HOUR RATED WALL
2-HOUR RATED WALL
1-HOUR RATED WALL

SECTOR 03
SECTOR 07
SECTOR 04
SECTOR 08
SECTOR 01
SECTOR 02
SECTOR 05
SECTOR 06
SECTOR 09

EXISTING LIRR DC SUBSTATION TO REMAIN
EXISTING BASEMENT SUBSTATION AND
EXISTING AMTRAK EMPIRE LINE TUNNEL BELOW

SECTOR 01
SECTOR 02
SECTOR 03
SECTOR 04
SECTOR 05
SECTOR 06
SECTOR 07
SECTOR 08
SECTOR 09

LIRR 'THROAT' AREA
DATED 1982. REFER TO STRUCTURAL DRAWINGS FOR FURTHER FOUNDATION INFORMATION.

HUDSON RIVER TUNNEL
ABOVE
BELOW
HUDSON RIVER
EXTENT OF
M.O.E. SUPPORT
KEY PLAN
COORDINATION OF VENTILATION INTAKE IN TOWER D SCOPE.
VENTILATION INTAKE SHOWN FOR REFERENCE ONLY.

HUDSON YARDS - PLATFORM
ADDRESS:
530 WEST 33RD STREET
NEW YORK, NY

APPROVED
Under Directive 2 of 1975
Date:
Damian Titus
05/14/2014:
UPPER PLATFORM LEVEL OVERALL PLAN

501 WEST 30TH STREET

LEVEL 01 (PLAZA LEVEL)

TOWER C UNDER SEPARATE PERMIT

LEVEL 02 (UPPER PLATFORM LEVEL)

SECTOR 01

SECTOR 02

SECTOR 03

SECTOR 04

SECTOR 05

SECTOR 06

SECTOR 07

SECTOR 08

SECTOR 09

SECTOR 10

APPROVED
Under Directive 2 of 1975
Date:
Damian Titus
05/14/2014:
2" CONCRETE OVER 1/2" STEEL PLATE

1 1/2" STEEL CHANNEL

T.O.S. INTERMEDIATE LANDING

1' - 0" STEEL ANGLE

PRECAST LINTEL

CMU WALL

GYPSUM PARTITION OVERFRAMING EXTENDED TOLANDING AT BASE, TYP.
<table>
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<th>Date</th>
<th>Project No.</th>
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**General Notes:**
- Exterior - 5" Concrete
- Exterior - 9" Concrete
- Concrete on Insul - 2" Sheet
- Exterior - Metal Panel
- Exterior - 5" Concrete
- Exterior - 9" Concrete
- Metal Panel

**Recommendations:**
- Double 18-Gauge Studs shall be installed on each 1'-1" side of all door openings and areas that will extend steel studs to the underside of slab, see schedule for GWB height.
- Sealant both sides or fire resistant joint system, as required.
- Contiguous acoustical sealant required on both sides.
- Ceiling as scheduled.
GENERAL NOTES
1. HATCHED AREA DENOTES PROPOSED NON-LIRR AREA
2. HATCHED AREA DENOTES LIRR PLATFORM SCOPE NOT INCLUDED IN THE SCOPE OF THE SUBSTATION/CONTROL TOWER SUBMISSION TO LIRR TRAINYARD AREA. PLATFORM UPPER LEVEL BASE OF RETAIL PODIUM

SECTOR 5

SECTOR 2

SEE A-803

Upper

Lower

11th

10th

Platform

Platform

AvE

AvE

LIRR TRACK LEVEL

SEE A-804

SEE A-801

SEE A-020 FOR DIAGRAMMATIC VIEW OF 3-HR ENCLOSURE EXISTING UTILITIES BASED ON AS-BUILT DRAWINGS

1-HOUR RATED WALL

2-HOUR RATED WALL

3-HOUR RATED WALL

5. LIRR EMPLOYEE ACCESS STAIR PROVIDED AS PART OF LIRR TRAINYARD AREA.

6. WATERPROOFING TO BE INSTALLED FOR ALL NEW SLABS ON GRADE. SEE STRUCTURAL DRAWINGS FOR EXTENT.

1. NO. DESCRIPTION DATE

5. L.I.R.R. - 90% MoE SUBMISSION 10/04/2013

4. L.I.R.R. - 60% MoE SUPPLEMENT 8/02/2013

3. L.I.R.R. - 60% MoE SUBMISSION 7/12/2013

2. NYC DOB Filing 6/17/2013

No. Description Date

1. Sheet Number Project No.

2198

2241

2254

2274

CP

HYE -PL -A-800.00

FLOOR PLAN MoE

OVERALL PLAN

Drawing Title

A-800.00

A-800.00FLOOR PLAN MoE TRACK LEVEL OVERALL PLAN

Drawing Number

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APPROVED
UNDER DIRECTIVE 2 OF 1975

Date:

Damian Titus

05/14/2014:
### OVERBUILD CAPACITIES

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**Notes:**
- **A.6** OVERBUILD LOADS SHOWN IS ONLY APPLICABLE DURING POST, PLATFORM MUST HANG FROM OVERBUILD WITH TEMP. POST INSTALLED BELOW. WITHOUT POST, PLATFORM MUST HANG FROM OVERBUILD.
- **ZONE**: Key Plan
- **FILING**: Date
- **NEW YORK**: Address
- **CONSTRUCTION**: Manager
- **LIRR Substation**: PC Architects & Planning Consultants
- **LIRR Ventilation**: AECOM
- **Fire Alarm, Fire Protection, Security**: DiNapoli Group
- **New York, NY 10022**: Address
- **New York, New York 10036**: Address
- **New York, NY 10050**: Address
- **New York, NY 10158**: Address
- **Tel: 917.661.7800 Fax: 718.661.7801**: Contact Information
- **PC Architects & Planning Consultants**: Contact Information
- **AECOM**: Contact Information
- **DiNapoli Group**: Contact Information
- **SHEET 5 OF 155**: Sheet Information
NOTE:
1. STRUCTURAL SEPARATION TO ADJACENT STRUCTURES SHALL BE IN ACCORDANCE WITH NYCBC SECTION 1617.3.2 WITH A MINIMUM STRUCTURAL SEPARATION OF 1" FOR EVERY 50 FEET IN HEIGHT. GAP AT TOP OF PLATFORM SHALL MEET OR EXCEED 0.64" PER CODE. SEE ARCHITECTURAL DRAWINGS FOR SEPARATION WHICH EXCEEDS THIS VALUE.

PRELIMINARY 
NOT FOR 
CONSTRUCTION
EXISTING ROOF FRAMING OF M.O.E. BUILDING
EXISTING MOE HIGH BAY TRENCH
TO ACCOMMODATE NEW STRUCTURE
EXISTING M.O.E. STRUCTURE TO BE DEMOLISHED

LEVEL 1 - RETAIL
10TH AVE

LIRR - 30% SUBMISSION
2/15/2013
LIRR - 60% - PHASE I FDNS
3/29/2013
LIRR - 60% SUBMISSION 5/29/2013
NYC DOB FILING 6/17/2013
LIRR - 90% SUBMISSION 8/09/2013
DI-01 PHASE 1 STRUCTURE UPDATE 9/20/2013
NYC DOB FILING 10/4/2013
L.I.R.R. - PRE-FINAL 100% 11/22/2013
MoE - PLATFORM SUBMISSION
DI-02 PHASE 1 STRUCTURAL UPDATE 11/1/2013

APPROVED
Under Directive 2 of 1975
Date:
Damian Titus
05/14/2014:

PRELIMINARY NOT FOR CONSTRUCTION

DEPT OF BLDGS Job Number Scan Code
APPROVED
Under Directive 2 of 1975
Date:
Damian Titus
05/14/2014:
LEVEL 1 - RETAIL
40'-6"

DOUBLE TRUSSES SPANNING OVER THROAT EXPANSION JOINT. SEE TYP. DETAIL

FUTURE COLUMN ABOVE, TYP.
EXISTING TRACKS, TYP.

CRAWL SPACE.

PHASE II PLATFORM STRUCTURE

EXISTING EMPIRE LINE TUNNEL TRANSFER GIRDER

FUTURE COLUMN ABOVE, TYP.
EXISTING RETAINING WALL TRUSS TRANSFER GIRDER

ELEVATOR PIT

Key Plan
Project No. Drawn By
Date:

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No. Description Date

Drawing Title
Drawing Number / B-SCAN Drawing Number
LEVEL 1 - RETAIL

40'-6"

TRUSS T10A
TRUSS T10B
TRUSS T10C
TRUSS T10D
TRUSS T10E
TRUSS T10F

S-418.00

3

PHASE II PLATFORM STRUCTURE

FUTURE COLUMN ABOVE, TYP.

EXPANSION JOINT. SEE TYPICAL DETAIL

S-418.00

1

EXISTING CAISSON

CLR. 17'-6"

10TH AVE LOADING DOCK

EXIST RETAINING WALL

TRANSFER GIRDERS AT GRADE TO SPAN OVER EXIST. TUNNEL

EXISTING CAISSONS

CLR. 17'-6"

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Key Plan

Project No. Drawn By

Date:

No. Description Date

Sheet Number

Drawing Title

Drawing Number / B-SCAN Drawing Number

11/22/2013 2:49:56 PM C:\Scratch\N11330.00 - East Platform - Central_cchu.rvt

HUDSON YARDS

PLATFORM

Address 530 WEST 33RD STREET

NEW YORK, NY

02/15/2013

ELEVATION AT GRID

LINE 10

S-274.00 ELEVATION AT GRID LINE 10

HYE -PL -S-274.00

SHEET 73 OF 155

Author

N11330.00

Client

Oxford Properties Group 320 Park Avenue, 17th Floor

NEW YORK, NY 10022

Tel: 212.986.7514  Fax: 212.986.7510

Related Companies 60 Columbus Circle

New York, NY 10023

Tel: 212.801.1000  Fax: 212.801.1048

Construction Manager

Tishman Construction Corporation 100 Park Avenue, 5th Floor

NEW YORK, NY 10017

Tel: 212.708.3600

Architect

Kohn Pedersen Fox Associates PC

PC Architects & Planning Consultants

11 WEST 42ND STREET

New York, New York 10036

Tel: 212.977.6500  Fax: 212.956.2526

Structural Engineer

Thornton Tomasetti, Inc.

51 Madison Avenue

NEW YORK, NY 10010

Tel: 917.661.7800 Fax: 718.661.7801

Civil, Mechanical, Electrical, Plumbing,

Fire Alarm, Fire Protection, Security

Parsons Transportation Group

100 BROADWAY

NEW YORK, NY 10005

Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation

Ove Arup & Partners P.C.

77 WATER STREET

NEW YORK, NY 10005

Tel: 212.896.3000

LIRR Substation

AECOM

605 THIRD AVENUE

NEW YORK, NY 10158

Tel: 212-973-9200 Fax: 212.682.6172

1/8" = 1'-0"

1 ELEVATION AT GRID LINE 10

2 ELEVATION AT GRID LINE 10

10TH AVE

-
LEVEL 2
60'-6"

LEVEL 1 - RETAIL
40'-6"

EXPANSION JOINT. SEE TYP. DETAIL
OUT OF PLANE DOUBLE TRUSSES
BUILT UP A-FRAME SLOPING COLUMN
FUTURE BUILT UP A-FRAMES

PHASE II PLATFORM STRUCTURE

EXISTING TRACKS, TYP.
TRANSFER GIRDER
TRANSFER GIRDER
10TH AVE LOADING DOCK
EXIST. 10TH AVE BRIDGE
ELEVATOR PIT
CLR.
17'-6"

HUDSON YARDS
PLATFORM
Address 530 WEST 33RD STREET
NEW YORK, NY

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SHEET 77 OF 155

DI-01 PHASE 1 STRUCTURE UPDATE 9/20/2013
DI-02 PHASE 1 STRUCTURAL UPDATE 11/1/2013

NYC DOB FILING 10/4/2013

NYC DOB FILING 12/4/2013

APPROVED
Under Directive 2 of 1975

APPROVED
Under Directive 2 of 1975

05/14/2014:
05/14/2014:
LEVEL 1 - RETAIL
40'-6"

PHASE II PLATFORM STRUCTURE

EXISTING PUMP ROOM
EXISTING SUBSTATION FLOOR
EXISTING ROOF OF SUBSTATION BUILDING TO BE REMOVED TO ACCOMMODATE STRUCTURE
FUTURE COLUMN ABOVE, TYP.
COLUMNS TO PENETRATE EXISTING FLOOR STRUCTURE
CLR. 17'-6"

ELEVATION AT GRID 14.5

ELEVATION AT GRID 14.5
NOTE 1: ELEVATION OF TOP OF ROCK SOCKET IS HIGHEST ELEVATION BASED ON INFLUENCE LINE. ACTUAL TOP OF ROCK AND SOCKET TO BE FIELD VERIFIED BY CONTRACTOR AND GEOTECHNICAL ENGINEER.
PIER OVER FUTURE AMTRAK TUNNEL - TYPE A

PIER SCHEDULE

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2 1'-7" 2'-0" ABOVE GROUND (TYP)

VERTICAL REINFORCEMENT (SEE SCHEDULE)

T.O. EXIST GRADE LEVEL 3 3/16" 1'-0"

GROUND (TYP)

ADDITIONAL HORIZ. TIE (5) #6@3" O.C. (4 LEGS FOR PIERS WITH TYPE 1 AND 7 SHEAR LUGS)

(6 LEGS FOR PIERS WITH TYPE 5 AND 6 SHEAR LUGS)

SHEAR LUG, IF REQ'D (SEE COL. SCHEDULE)

T.O. AMTRAK GATEWAY TUNNEL (SEE AMTRAK DWGS)

2" MIN. CONC. COVER

HORIZ. TIES (SEE PIER SCHEDULE)

3" 3 3/8"
1. See column schedule for base plate size, orientation and thickness.
2. Base plate thickness shown on schedule is a minimum dimension after all
   tolerances have been accounted.
3. Column stability during erection is responsibility of contractor.
4. See column schedule for anchor rod size and see anchor rod detail
   for additional information.
5. Contractor's option to field weld columns to baseplates for heavy
   uplift forces.

NOTES:
12/4/2013
L.I.R.R. - PRE-FINAL 100% 11/22/2013 MoE - PLATFORM SUBMISSION
DI-02 PHASE 1 STRUCTURAL UPDATE 11/1/2013

Shear Lug Details

Anchor Rods Location Plan

Post-Tension Anchor Rod in Caisson

Typical Post-Installed Anchor Bolt

Shear Lug Detail
FUTURE COLUMN
BLOCKOUT FOR FUTURE COL & BASE PLATE TEMP FILL 3" CONC TOPPING OVER STYROFOAM
DECK SUPPORT ANGLE
PLATE GIRDER
SLAB ON METAL DECK 7 1/2"
1/2 FITTED STIFFENERS, SEE TYPICAL DETAIL 1/S-711.00
FUTURE COLUMN
DECK SUPPORT ANGLE
2" GR50 CAP PLATE FOR COLUMNS SUPPORTING PODIUM (SEE COLUMN SCHEDULE FOR CAP PLATE SIZES)
PLATFORM COL
SLAB ON METAL DECK 7 1/2" 3/8" TYP. AT PODIUM COLUMNS
DECK SUPPORT ANGLE
PLATE GIRDER
TRUSS TOP CHORD
TYPICAL DETAIL AT FUTURE COLUMN SUPPORTED ON PLATE GIRDER
TYPICAL DETAIL AT FUTURE COLUMN SUPPORTED ON TRUSS CHORD
TYPICAL DETAIL AT FUTURE PODIUM COLUMN SUPPORTED ON PLATFORM COLUMN
TYPICAL DETAIL AT FUTURE COLUMN SUPPORTED ON DOUBLE TRUSS
EXISTING WALL TO REMAIN.
CLEAN & ROUGHEN EXIST SURFACE TO 1/4" AMPLITUDE.

9" LINER MATCH BOTTOM OF EXISTING WALL KEY WALL TO SOUND ROCK (75TSF)
V.I.F. 3'-6" 10'-0" VARIES VARIES
T.O. FINISH GRADE EL. VARIES
GRADE EL. VARIES SEE ARCH DWGS

9" 9"

SEE S-363 FOR TOP WALL REINFORCING DETAILS

6" TIMBER TIES
STONE BALLAST EL. =13'-6" .
#4@9" o.c. VERT.
#4@9" o.c. HORIZ.
#3 PINS 9" o.c. HORIZ. 9" o.c. VERT. 6" EMBEDMENT WITH HILTI HY 150MAX OR APPROVED EQUAL

NEW SIDEWALK SEE CIVIL DRAWINGS.

EXISTING WALL TO REMAIN.
CLEAN & ROUGHEN EXIST SURFACE TO 1/4" AMPLITUDE.

9" LINER
CANTED BUTTRESS WALL MATCH BOTTOM OF EXISTING WALL KEY WALL TO SOUND ROCK (75TSF)
V.I.F. 3'-6" 10'-0" VARIES VARIES
2'-6" 10'-0" VARIES VARIES
T.O. FINISH GRADE EL. VARIES
GRADE EL. VARIES SEE ARCH DWGS

SEE S-363 FOR TOP WALL REINFORCING DETAILS

1'-1" 3'-0" 3'-0" 6"

6" TIMBER TIES
STONE BALLAST EL. =13'-6" .
#5@9" o.c. VERT.
#5@9" o.c. HORIZ.

BEARING PLATE EXP BEARING 3/4" DEPTH STIFFENER 2"

#4@9" o.c. HORIZ.
SECTION AT PLAZA WITH EXISTING WALL HIGHER THAN TOP OF CURB - NO LINER

SECTION AT PLAZA WITH EXISTING WALL TO BE REBUILT - NO CORBEL

SECTION AT PLAZA - EXISTING AMTRACK STAR TOWER

SECTION AT PLAZA WITH UPPER PART OF EXISTING WALL TO BE REBUILT
1. **SECTION AT TOWER A WITH UPPER PART OF EXISTING WALL TO BE REBUILT**

2. **SECTION AT TOWER A WITH EXISTING WALL LOWER THAN TOP OF CURB**

3. **SECTION AT TOWER A WITH EXISTING WALL HIGHER THAN TOP OF CURB**

4. **SECTION AT TOWER A WITH EXISTING WALL HIGHER THAN TOP OF CURB - NO LINER**
RETAINING WALL TO BE BUILT AFTER EXIST 33RD STREET ROADWAY GIRDER IS REMOVED

CONT. JOINT AT EL.22'-0"

FORM SAVER
COUPLER
TOWER E
FUTURE COLUMN ABOVE

#6@12"o.c. TYP

1/2
12

EL.8'-0"

3'-0"

6'-0"

7' - 4 9 / 16" LTS

10#7 CONT.

#11@12"o.c. FOR PANEL (A) & (B)

#10@12"o.c. FOR PANEL (C)

20#10 CONT.

T.O. ROCK V.I.F.

EL.-10'-0" FOR PANEL (A)

EL.-8'-0" FOR PANEL (B)

EL.-5'-0" FOR PANEL (C)

#6 STIRRUPS@6"o.c. (10 LEGS)

CONT. FTG.

1 1/16"

0"

#10@12"o.c. TYP

SIDEWALK BY OTHERS

TYPICAL NEW RETAINING WALL AT 33RD STREET

NYC DOB FILING 12/4/2013
ELEVATION TRUSSES T13.5A, T13.5B, T13.5C
Under Directive 2 of 1975

Date: 05/14/2014:

Diagonal: Damian Titus

Hudson Yards

Address: 530 West 33rd Street

Preliminary
Not for Construction

Client
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Structural Engineer
New York, NY 10022
Tel: 212-973-9200 Fax: 212.682.6172

1/4" = 1'-0"

DI-02 Phase 1 Structural Update 11/1/2013

NYC DOB Filing 10/4/2013

LIRR - 60% Submittal 5/29/2013

Loading Dock El. 27'-0"

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Sheet Number

Drawing Title
GRID B

Sheet 121 of 201

TRUSS TB1 ELEVATION

TRUSS TB3 ELEVATION

TRUSS TB2 ELEVATION

TRUSS TB4 ELEVATION

Legend:

Camber Tolerance for Trusses Shall be as Follows:

Prior to Installation -0, +½"

Installed, Prior to Installation of Floors -¼", +¼"

N11330.00

S-412.00

East Platform

Truss Elevations at Grid B

TF 400 V450 V100

V250

VC240 TF1400
ELEVATION VIEW AT TRUSS SUPPORTING COLUMN ABOVE (GRIDLINE D10 & AA10)
EXISTING RETAINING WALL

12" CURB

6" EXP. JT.
SECTION AT 31ST STREET

SECTION AT 11TH AVENUE

SECTION AT 11TH AVENUE

SECTION AT PAT COLUMN

1/2" STAINLESS STEEL THRESHOLD PLATE SEE ARCH DWGS.

1/4" STEEL COLUMN

EXISTING REBAR

WABO STRIP SEAL EXPANSION JOINT (OR SIMILAR APPROVED)

EXISTING REBAR

EXISTING REBAR

EXISTING LONGITUDINAL BARS TO BE REPLACED

BRIDGE RAILING ANCHOR BOLTS TO BE SAW CUT.

2" CLR. COVER

2" CLR. COVER

2"

EXISTING REBAR

MM SYSTEMS PF SERIES FIRE PROTECTION BARRIER (OR SIMILAR APPROVED) SEE ARCH DWGS.

FIRE PROTECTION SIDEWALK PRIMARY SLAB

LOCAL CUT-OUT IN SIDEWALK SLAB

NOTES: EXPANSION JOINT AND FIRE PROTECTION ARE SHOWN INDICATIVELY ONLY.

REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS. REINFORCEMENT IS INDICATIVE AND TO BE CONFIRMED BASED ON DETAILS OF SELECTED EXPANSION JOINT, FIRE PROTECTION BARRIER AND CONFIRMATION OF 11TH AVENUE VIADUCT REBAR IN SIDEWALK.
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**CL of Column:**

- 10'-0" 10'-0"
- 4'-0" 4'-0"

**CL of Splice:**

- 7'-6" C/C
- 17'-6"
- 3'-0" DIA (TYP.)

**NOTE:** FOR ALL NORTH-SOUTH PLATE GIRDER SCHEDULES & DETAILS, ON ALL THE GRIDLINES EXCEPT PC, ALLOW FOR 3'-0" DIA OPENINGS AT 7'-6" EITHER SIDE OF COLUMNS AND 4'-0" EITHER SIDE OF SPLICES. FINAL POSITION TO BE CONFIRMED FOLLOWING MECHANICAL MODELING.

**NOTE:** FOR PLATE GIRDERS ON GRIDLINES FROM PG TO PR BETWEEN GRIDLINE P3 AND P4, ALL OTHER TAPERED GIRDERS ARE SIMPLY TAPERED FROM END TO END. TYPICAL TAPERING REFERENCES TYPICAL FOR PLATE GIRDERS ON GRIDLINES FROM PG TO PR BETWEEN GRIDLINE P3 AND P4. BETWEEN COLUMNS PE8,PF8 AND PE9,PF9. BETWEEN COLUMNS PF8,PG8 AND PF10,PG11. BETWEEN COLUMNS PG9,PJ9 AND PG11,PJ11. FINAL POSITION TO BE CONFIRMED FOLLOWING MECHANICAL MODELING.

**NOTE:** SEE PLATE GIRDER CHART FOR PLATE THICKNESS.

**NOTE:** TYPICAL PLATE GIRDERS OPENINGS EXCLUDES 12" EITHER SIDE OF COLUMN AND 12" EITHER SIDE OF SPACES. FINAL POSITION TO BE CONFIRMED FOLLOWING MECHANICAL MODELING.

**NOTE:** TYPICAL PLATE GIRDER OPENINGS EXCLUDE 12" EITHER SIDE OF COLUMN AND 12" EITHER SIDE OF SPACES.

**NOTE:** TYPICAL PLATE GIRDER OPENINGS EXCLUDES 12" EITHER SIDE OF COLUMN AND 12" EITHER SIDE OF SPACES. FINAL POSITION TO BE CONFIRMED FOLLOWING MECHANICAL MODELING.
NOTE: REFER TO DRAWING S-131.00 TO S-139.00 FOR BRIDGING LAYOUT

3/4" FULL HEIGHT WEB STIFFENER POSITIONED TO ALIGN WITH BRIDGING

1 1/8" DIA. A490SC-B BOLT, TYP

END BAY BRIDGING BR2 SECTION AND DETAIL

TYPICAL BRIDGING BR1 SECTION AND DETAIL

SECTION

BRIDGING TRUSS WELDED GUSSET PLATE DETAIL

SECTION

NOTE TO BRIDGE BR1 TO BR2 FOR BRIDGING LAYOUT

NOTE TO BRIDGE BR1 TO BR2 FOR BRIDGING LAYOUT

1/2" = 1'-0"

1/2" = 1'-0"

3 BRIDGING TRUSS WELDED GUSSET PLATE DETAIL

1 1/2" = 1'-0"

1 1/2" = 1'-0"
NOTES:
1. GUSSET PLATES AND PLATE GIRDER CONNECTIONS OMITTED FOR CLARITY. REFER TO DRAWING S-523.00 FOR TYPICAL DETAILS.

Key Plan
Project No. Drawn By
Date:

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Sheet Number
Drawing Title
Drawing Number / B-SCAN Drawing Number

11/22/2013 3:19:58 PM C:\Scratch\N11330.00 - East Platform - Central_GNunziatini.rvt

HUDSON YARDS
PLATFORM
Address 530 WEST 33RD STREET
NEW YORK, NY

WEST PLATFORM
TRUSS ELEVATIONS II
S-522.00

Author

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LIRR Substation
AECOM 605 Third Avenue
New York, NY 10158
Tel: 212-973-9200 Fax:212.682.6172

1/4" = 1'-0"
3" WIDE x 6" DEEP LEDGE

9" 1/2" BRG. PAD CONT.

3" 18 GA. DECK

5 1/2" THICK PRECAST PANEL 5#@5 E.W. BOT.

LIFTING LUGS

1/2" SEALANT JOINT

3" 1/2" BRIDGING PLATE

1/2" x 6" PLATE

3/4" STUDS

12" NWT P.C. PLANK

W27 W33 STIFFENER PLATES

W33 BEYOND

STIFF PLATES

- PLATE

WT15

NOTE: BRIDGING DETAIL APPLICABLE AT EVERY LINE OF TRANSVERSE FRAMING IN THE WEST GRID AREA (BETWEEN PA AND PC) TO PROVIDE CONTINUITY IN THE EAST-WEST DIRECTION THROUGH THE UTILITY TRENCHES. REINFORCEMENT SHOWN INDICATIVELY. MIN REINFORCEMENT REQUIREMENTS PER S2 SLAB TYPE APPLY.

NOTE: REINFORCEMENT SHOWN INDICATIVELY. MIN REINFORCEMENT REQUIREMENTS PER S2 SLAB TYPE APPLY.
EX. TOWER C SLAB ON METAL DECK

EX. TOWER C FRAMING

EX. TOWER C COLUMN

CONNECT TO EXISTING COLUMN FOR FORCES SHOWN ON PLAN. COORDINATE WITH CONNECTION PREPARATION PROVIDED ON EXISTING COLUMN

#4@12" O.C. DRILL AND GROUT TO EX. TOWER C SLAB

CONC. SLAB ON METAL DECK - SEE PLAN

PLATE GIRDER - SEE PLAN

PLATE GIRDER

1" STIFFENER PLATE FULL DEPTH OF WEB

COPE GIRDER FLANGE

AROUND COLUMN

BENT PLATE EACH SIDE OF COLUMN CONNECT TO COLUMN FLANGE AND GIRDER WEB FORCE INDICATED ON TYP.

G44.2

S-540.00

W-BEAM SEE PLAN

PG SEE PLAN

EX. TOWER C FRAMING

EX. TOWER C SLAB ON METAL DECK BEYOND

#4 @12" DRILL GROUT TO EX. SLAB (TYP.)

SLAB ON METAL DECK SEE PLAN

CONNECT TO TOWER C FRAMING FOR FORCE GIVEN ON PLAN

STEP IN EX. TOWER C SLAB BEYOND. REFER TO TOWER C DWGS

EX. TOWER C SLAB ON METAL DECK BEYOND

EX. TOWER C FRAMING BEYOND

W-BEAM SEE PLAN

PLATE GIRDER SEE PLAN

EX. TOWER C COLUMN

FUTURE COLUMN

1/2" WEB REINFORCEMENT PLATE EACH SIDE OF WEB

1 1/2" FULL DEPTH STIFFENER BOTH SIDES OF WEB

3/8 N

CONNECT TO EX. TOWER C COLUMN FOR FORCE SHOWN ON PLAN

3'-8" 4'-0" 7" 7"
FLANGE PLATE CONNECTIONS

HANGER ABOVE PLATE GIRDER

FITTED STIFFENERS STRUCTURAL SLAB WEARING SLAB

FLOOR FRAMING SEE PLAN

TAPER STIFFENER TO 1" ABOVE BEAM

END PLATE CONN. STRUCTURAL SLAB WEARING SLAB CONNECTION PLATES HANGER CASING

FULL FITTED STIFFENERS TO MATCH CONN. PL. FOR HANGER SHEAR TAB GIRDER SEE PLANS BEAM SEE PLANS

2200 TENSION h 2 11/16" TAPER STIFFENER TO 1"

W14 HANGER FITTED BEAM CONTINUITY PLATES 1 5/8" HANGER CONN. PLATE

(20) 1 1/8" A490 X BOLTS 4'-0" ABOVE T.O. SLAB

1-5/8"X14" CONN. PLATES, 24" TALL 1-5/8" FITTED STIFFENERS BELOW (20) 1 1/8" A490 X BOLTS IN STD HOLES (4) L6X6X1" x SPACES @ 2'-0" O.C.

HSS 16" x 1/4" THICK SPLIT SHELL (12'-0" TALL) CONCRETE FILL SHELL SEAM TO FLOOR ABOVE 4 ksi CONC. FILL

(3/8) P TO GIRDER L (¾) P TO P L L (¾)

(4) 1-1/8" Ø A490 BOLT W14X808 TEMP. COLUMN 2"X24"X24" GR50 PL 3-1/2"X24"X24" CAP PLATE GR. 65 FUTURE COLUMN ABOVE 3'-0" (3/8) FUTURE WELD (¾) (3/8)

(4) 1-1/8" Ø A490 BOLT 1-1/4" X 18" WING PLATES 2"X24"X6" BEARING PLATE 1/4"X24"X24" SHIM PLATE 3-1/2"X36"X24" GR65 PL

1'-0" (3/8) FUTURE WELD UPPER PLATFORM LOWER PLATFORM (1) (4) FUTURE JACKS
SECTION - SLAB BARS

FUTURE TOPPING SLAB DOWELS WITH THREADED COUPLERS TO MATCH SLAB BARS STIFFENER AS REQUIRED (GR36)

BEARING PLATE & STIFFENER PER SCHEDULE ON 6/S712 COUPLE ALL SLAB BARS TO PLATFORM BARS

TOWER A INFILL FRAMING END PLATE FOR FUTURE BEAM CONNECTION TIE TO MATCH WALL BARS

(4) ADDITIONAL HORIZONTAL BARS @3" O.C. TO MATCH TYP. WALL BARS & TIES @ EACH HORIZONTAL & VERTICAL PLATFORM FRAMING CONCRETE BEARING WALL

1" = 1'-0"

SECTION AT WALL ALONG NORTH EDGE OF YARDS

PLAN DETAIL AT COLUMN L54.5
TYPICAL PLATFORM PLATE GIRDER SCHEDULE

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<td>50</td>
<td>1-1/8&quot;</td>
<td>SEE SECTION 2/S610.00</td>
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</table>

PRELIMINARY
NOT FOR
CONSTRUCTION

TYPICAL PLATFORM PLATE GIRDERS

TRANSFER GIRDER BETWEEN COLS G12 AND G10

TRANSFER GIRDER BETWEEN COLS G14 AND G12
1 TRANSFER GIRDER BETWEEN COLS H9 AND H8

2 TYPICAL TRANSFER GIRDER ALONG GRID 3

3 TYPICAL TRANSFER GIRDER ALONG GRID 3
TRANSFER GIRDER BETWEEN COLS M9 AND M8
WF+WT DETAIL BETWEEN TRUSSES

WF+PL DETAIL AT GRID 1

CRANE WT REINFORCING

WF+WT AT LOWER PLATFORM

SEE PLAN FOR SIZES.

5/16" 5/16" 2'-2"

WT MADE FROM W27X129.

SEE PLAN FOR SIZE.

5/16" TYP. PLATES, BOTH SIDES MIN. 1/2"

GRID PLATFORM FRAMING SEE PLANS.

"D1" "D1" bf tf tw Fy D1 D2

CRANE WT REINFORCING TO BE REMOVED DURING CONSTRUCTION.

2" DIA. HOLES IN WT @ 12" O.C. BOT.

CONTINUOUS SLAB REINFORCING, SEE SLAB SCHEDULE.

2" DIA. HOLES IN WT @ 6" O.C. TOP.

"D2" "D2"

WT REINFORCING d 2'-9" bf tf tw
Under Directive 2 of 1975

Damian Titus

05/14/2014:
**NOTES:**

1. PROVIDE REINFORCEMENT AS NOTED FOR OPENING TYPE. SEE FRAMING PLANS FOR OPENING TYPE.
2. PROVIDE STEEL REINFORCEMENT FOR PENETRATION. CONTRACTOR SHALL QUANTIFY SIZE AND LOCATE OPENING.
3. COLUMN PENETRATION SHALL BE SHOWN ON THE SHOP DRAWINGS FOR REVIEW BY THE ARCHITECT/ENGINEER. NO PENETRATIONS SHALL BE MADE WITHOUT PRIOR REVIEW BY THE ARCHITECT AND WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER.
4. R(MINIMUM) = 2 x WEB THICKNESS OR 5/8", WHICHEVER IS GREATER.

**TYPICAL COLUMN BEARING ON BEAM (COMPRESSION ONLY):**

1. PROVIDE 4 x DIAMETER OF OPENING PENETRATION WITH MEP DRAWINGS.
2. PROVIDE CONNECTION PLATE BOTH SIDES OF BEAM WITH WELDING PLANS.
3. PROVIDE WEB DOUBLE PLATE REINFORCEMENT.

**TYPICAL BEAM BEARING ON COLUMN (AXIAL ONLY):**

1. PROVIDE 4 x PLATE WIDTH PENETRATION WITH MEP DRAWINGS.
2. PROVIDE WEB DOUBLE PLATE REINFORCEMENT.

**HANGER (AXIAL ONLY):**

1. PROVIDE 4 x DIAMETER OF OPENING PENETRATION WITH MEP DRAWINGS.
2. PROVIDE WEB DOUBLE PLATE REINFORCEMENT.

**BEAM WEB PENETRATIONS TYPE U (UNREINFORCED):**

1. PROVIDE REINFORCEMENT AS NOTED FOR OPENING TYPE. SEE FRAMING PLANS FOR OPENING TYPE.
2. PROVIDE STEEL REINFORCEMENT FOR PENETRATION. CONTRACTOR SHALL QUANTIFY SIZE AND LOCATE OPENING.

**BEAM WEB PENETRATIONS TYPE D (WEB DOUBLER PLATE REINFORCEMENT):**

1. PROVIDE 4 x DIAMETER OF OPENING PENETRATION WITH MEP DRAWINGS.
2. PROVIDE WEB DOUBLE PLATE REINFORCEMENT.

**BEAM WEB PENETRATIONS TYPE S (STIFFENER REINFORCEMENT):**

1. PROVIDE REINFORCEMENT AS NOTED FOR OPENING TYPE. SEE FRAMING PLANS FOR OPENING TYPE.
2. PROVIDE STEEL REINFORCEMENT FOR PENETRATION. CONTRACTOR SHALL QUANTIFY SIZE AND LOCATE OPENING.

**CIRCULAR PENETRATION:**

1. PROVIDE 4 x DIAMETER OF OPENING PENETRATION WITH MEP DRAWINGS.
2. PROVIDE WEB DOUBLE PLATE REINFORCEMENT.

**RECTANGULAR PENETRATION:**

1. PROVIDE 4 x PLATE WIDTH PENETRATION WITH MEP DRAWINGS.
2. PROVIDE WEB DOUBLE PLATE REINFORCEMENT.

**SIDE STIFFENER PLATE TYPICAL SEE SCHEDULE:**

1. PROVIDE SIDE STIFFENER PLATE TYPICAL SEE SCHEDULE.

**TOP PLATE WHERE REQUIRED BY SCHEDULE:**

1. PROVIDE TOP PLATE WHERE REQUIRED BY SCHEDULE.

**WELD A:**

1. PROVIDE WELD A.

**SIDE STIFFENER PLATE TYPICAL SEE SCHEDULE:**

1. PROVIDE SIDE STIFFENER PLATE TYPICAL SEE SCHEDULE.

**TOP PLATE WHERE REQUIRED BY SCHEDULE:**

1. PROVIDE TOP PLATE WHERE REQUIRED BY SCHEDULE.

**B CIRCULAR PENETRATION A RECTANGULAR PENETRATION:**

1. PROVIDE B CIRCULAR PENETRATION A RECTANGULAR PENETRATION.

**SIDE STIFFENER PLATE TYPICAL SEE SCHEDULE:**

1. PROVIDE SIDE STIFFENER PLATE TYPICAL SEE SCHEDULE.

**TOP PLATE WHERE REQUIRED BY SCHEDULE:**

1. PROVIDE TOP PLATE WHERE REQUIRED BY SCHEDULE.

**WELD A:**

1. PROVIDE WELD A.

**SIDE STIFFENER PLATE TYPICAL SEE SCHEDULE:**

1. PROVIDE SIDE STIFFENER PLATE TYPICAL SEE SCHEDULE.

**TOP PLATE WHERE REQUIRED BY SCHEDULE:**

1. PROVIDE TOP PLATE WHERE REQUIRED BY SCHEDULE.

**WELD A:**

1. PROVIDE WELD A.

**SIDE STIFFENER PLATE TYPICAL SEE SCHEDULE:**

1. PROVIDE SIDE STIFFENER PLATE TYPICAL SEE SCHEDULE.

**TOP PLATE WHERE REQUIRED BY SCHEDULE:**

1. PROVIDE TOP PLATE WHERE REQUIRED BY SCHEDULE.

**WELD A:**

1. PROVIDE WELD A.
**APPROVED**

Under Directive 2 of 1975

**Date:**

05/14/2014:

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**BEAM WEB PENETRATION SCHEDULE**

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<th>Type</th>
<th>Column Above</th>
<th>Column Below</th>
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<tr>
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<td></td>
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</table>

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**NOTE:**

1. This refers to typical beam web penetration details.

2. The minimum clear space between the adjacent reinforcing shall be designed per the latest edition of the LIRR-ES-documents.

3. All internal beam web penetrations shall be shown on the shop draw for review of the architect/engineer. All penetrations shall be reviewed and approved by the architect/engineer.

4. See typical composite steel deck details at beam web penetrations with additional stud and slab reinforcement.

---

**TYPICAL DEEP BEAM BOTTOM FLANGE BRACING CONNECTION**

1. Design connection for forces based on column axial load

2. See plan for locations or spacing

---

**TYPICAL FULL HEIGHT FITTED STIFFENER AT SPANDREL OR BRACED BEAM CONNECTION**

1. See plan for locations

---

**TYPICAL FULL HEIGHT UNFITTED STIFFENER AT BRACED BEAM CONNECTION**

1. See plan for locations

---

**BEARING PLATE SCHEDULE**

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**TYPICAL BEAM POCKET IN FOUNDATION WALL**

1. See plan for locations

---

**TYPICAL SPANDREL OR BRACED BEAM KICKER CONNECTION**

1. See plan for locations

---

**NOTES:**

1. See plan for locations or spacing

---

**DI-02 PHASE 1 STRUCTURAL UPDATE 11/1/2013**

---

**LIRR - PRE-FINAL 100% 11/22/2013**

---

**L.I.R.R. - 90% SUBMISSION 8/09/2013**

---

**LIRR - 60% SUBMISSION 5/29/2013**

---

**LIRR - 60% - PHASE I FDNS 3/29/2013**

---

**LIRR - 30% SUBMISSION 2/15/2013**

---

**NEW YORK & JERSEY TRANSIT COMPANY**

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**Parsons Transportation Group 100 Broadway New York, NY 10005**

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**AECOM 605 Third Avenue New York, NY 10017**

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**NEW YORK CITY DEPARTMENT OF BUILDINGS**

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**SHEET 174 OF 201**

---

**SHEET 140 OF 155**

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**HIVE - PL-5-712-00**

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**S-712.00**

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**Construction Manager**

---

**Related Companies**

---

**AECOM**

---

**TYPICAL BEAM POCKET AT WALL**

---

**TYPICAL BEAM POCKET AT PILASTER**

---

**SECTION THROUGH PLASTER**

---

**TYPICAL STEEL BEAM DETAILS III**

---

**SHEET 174 OF 201**

---

**HIVE - PL-5-712-00**

---

**Related Companies**

---

**AECOM**

---

**TYPICAL STEEL BEAM DETAILS III**

---

**SHEET 174 OF 201**

---

**HIVE - PL-5-712-00**

---

**Related Companies**

---

**AECOM**

---

**TYPICAL STEEL BEAM DETAILS III**

---

**SHEET 174 OF 201**
1. SEE GENERAL NOTES FOR HEADED STUD SIZE, LENGTH AND MAXIMUM SPACING
2. HEADED STUDS IN ONE ROW SHALL BE PLACED DIRECTLY OVER THE BEAM WEB

TYPICAL SLAB EDGE OVER 2'-3" TO 3'-0"

3. SEE FRAMING PLANS AND/OR SCHEDULE OR SLAB WHERE PRESENT

GENERAL NOTES

1. SEE ADDITIONAL DETAILS FOR REINF AT CURTAIN WALL SUPPORT AND AT CORNERS
2. SLAB EDGE SERVICE LOADS NOT TO EXCEED 400 PLF

NOTES:

CONTINUOUS POUR STOP TO CHOOSE #4 CONTINUOUS
SEE SCHEDULE FOR SIZE AND NUMBER OF STUDS IS INDICATED ON FRAMING PLAN

NOT TO SCALE

4 1/2" MINIMUM MAXIMUM SPACING PER GENERAL NOTES

BEAM PARALLEL TO DECK

SPAN PARALLEL TO BEAM
TYPICAL SLAB REINFORCEMENT AT EXTERIOR COLUMN
SLAB EDGE EXTENDS 2' OR MORE BEYOND FACE OF COLUMN

TYPICAL SLAB REINFORCEMENT AT EDGES COLUMN
SLAB EDGE EXTENDS LESS THAN 2' BEYOND FACE OF COLUMN

TYPICAL SLAB REINFORCEMENT AT CORNER COLUMN
SLAB EDGE EXTENDS 2' OR MORE BEYOND FACE OF COLUMN

TYPICAL DECK SUPPORT AT COLUMN

TYPICAL DECK SUPPORT AT WET COLUMN

TYPICAL DECK SUPPORT AT BOX COLUMN

TYPICAL DECK SUPPORT AT MOMENT CONNECTION
NOTES:

1. CONDUITS ARE PERMITTED IN DECK SLABS SUBJECT TO LOCAL CODE

2. SEE TYPICAL SLAB EDGE DETAILS FOR ADDITIONAL INFORMATION

3. ROOF DECK

4. SEE PLAN OR SCHEDULE FOR OPENING SIZE

5. CLOSURE PIECE TO BE DESIGNED AND PROVIDED BY STEEL DECK CONTRACTOR COORD WITH ARCH DRAWINGS

6. FLOOR PLATE TO EXTEND 2 RIBS PAST OPENING EACH SIDE

7. TYPICAL DETAIL OF EMBEDDED CONDUITS IN SLAB

8. LINK BEAM

9. SEE PLAN

10. CONDUIT STUB OUTS UP OR DOWN SHALL BE TREATED AS A TYPICAL COMPOSITE STEEL DECK AT OPENING SEE TYPICAL DETAILS

11. TYPICAL ELEVATOR SILL DETAIL

12. TYPICAL DETAIL OF EMBEDDED CONDUITS IN SLAB

13. See Schedule

14. Wall Support

15. Option A - Deck Span Perpendicular To Wall Support

16. Option B - Deck Span Parallel To Wall Support

17. TYPICAL COMPOSITE STEEL DECK DETAILS AT WALL SUPPORT - SECTION

18. TYPICAL COMPOSITE STEEL DECK AT OPENING

19. TYPICAL ROOF DECK AT OPENING

20. TYPICAL ROOF DECK AT EDGE

TYPICAL DETAIL OF EMBEDDED CONDUITS IN SLAB

1. See Schedule

2. See TYPICAL SLAB EDGE DETAILS FOR ADDITIONAL INFORMATION

3. PREFABRICATED BENT-IN DOWEL KEYWAY SYSTEM. SUBMIT MANUFACTURER’S DATA TO ENGINEER FOR APPROVAL #4 @ 12” MINIMUM

4. CONTINUOUS BENT CLOSURE PLATE 14 GA MINIMUM

5. CONT L 4x4x3/8” WALL SUPPORT

6. END 2'-6” WALL SUPPORT

7. ELEVATION

8. SECTION A

9. 3/29/2013

10. 2/15/2013

11. 11/22/2013

12. 100% 11/22/2013

13. MoE - PLATFORM SUBMISSION

14. NYC DOB FILING

15. 10/4/2013

16. NYC DOB FILING

17. 12/4/2013

18. © 2012 KOHN PEDERSEN FOX ASSOCIATES PC. All rights reserved.
### COLUMN TYPES - BAR ARRANGEMENT

1. For all types stagger all tie hooks.
2. For all types the bars should be spaced in such a way to achieve approximately equal spacing.
3. For type D total number of bars should be spaced around the perimeter in such a way as to achieve approximately equal spacing.

### COLUMN TYPES - BAR SPACING

- **Type A**: 4 bars
- **Type B**: 8 bars
- **Type C**: 12 bars
- **Type D**: BARS EQUALLY SPACED ON ALL FACES

### NOTES:

1. For all types stagger all tie hooks.
2. For type D total number of bars should be spaced around the perimeter in such a way as to achieve approximately equal spacing.
3. For type G total number of bars should be spaced around the sides in such a way as to achieve equal spacing on the two long sides.

### PROVISIONAL

- **Type D**: COLUMN TIES SEE COLUMN SCHEDULE
- **Type G**: COLUMN TIES SEE COLUMN SCHEDULE

### ADDITIONAL TIES

- **Provide additional ties as required such that every vertical bar is tied.**

### TYPICAL BOTTOM OF COLUMN

- **Provide 90° Standard Hook if LD greater than supporting member depth minus 3 inches.**
- **S = COLUMN TIE SPACING**
- **S = COLUMN TIE SPACING**
- **S/2 = COLUMN TIE SPACING**
- **S/2 = COLUMN TIE SPACING**

### TYPICAL CONCRETE COLUMN PIER DETAILS

- **S/2 = COLUMN TIE SPACING**
- **S/2 = COLUMN TIE SPACING**
- **S/2 = COLUMN TIE SPACING**
- **S/2 = COLUMN TIE SPACING**

### EMENDATION

- **Embedment Length**
- **LDC**
- **LDC**
- **WHICHEVER IS GREATER IF HOOK IS REQ'D**

### RELATED COMMISSIONS

- **Construction Manager**
  - Tishman Construction Corporation
  - Tel: 212.708.3600
- **Architect**
  - Kohn Pedersen Fox Associates PC
  - Tel: 212.977.6500
- **Structural Engineer**
  - Thornton Tomasetti, Inc.
  - Tel: 917.661.7800
- **Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security**
  - Parsons Transportation Group
  - Tel: 212.266.8300
- **LIRR Ventilation**
  - Ove Arup & Partners P.C.
  - Tel: 212.896.3000
- **LIRR Substation**
  - AECOM
  - Tel: 212-973-9200
### Notes

1. Provide the desired quality of typical masonry surface finish in the note column. (See note 1 of Typical CMU Non-Bearing Wall Reinforcement Schedule for Design Pressure/PSF, etc.)

2. Provide the following typical masonry reinforcement schedule for design purposes. (See note 1 of Typical CMU Non-Bearing Wall Reinforcement Schedule for Design Pressure/PSF, etc.)

3. Provide full details for typical masonry reinforcement schedule for design purposes. (See note 1 of Typical CMU Non-Bearing Wall Reinforcement Schedule for Design Pressure/PSF, etc.)

4. Provide full details for typical masonry reinforcement schedule for design purposes. (See note 1 of Typical CMU Non-Bearing Wall Reinforcement Schedule for Design Pressure/PSF, etc.)

5. Provide full details for typical masonry reinforcement schedule for design purposes. (See note 1 of Typical CMU Non-Bearing Wall Reinforcement Schedule for Design Pressure/PSF, etc.)

6. Provide full details for typical masonry reinforcement schedule for design purposes. (See note 1 of Typical CMU Non-Bearing Wall Reinforcement Schedule for Design Pressure/PSF, etc.)

7. Provide full details for typical masonry reinforcement schedule for design purposes. (See note 1 of Typical CMU Non-Bearing Wall Reinforcement Schedule for Design Pressure/PSF, etc.)

### VERTICAL REINFORCEMENT

#### VERTICAL REINFORCEMENT SCHEDULE

<table>
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### WALL THICKNESS

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### CMU LAP SPlice AND TENSION EMBEDMENT LENGTH

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### TYPICAL CMU NON-BEARING WALL REINFORCEMENT SCHEDULE

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### TYPICAL CMU SILL AND LINTEL SCHEDULE (NON-BEARING WALL)

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### TYPICAL STEEL LINTEL SCHEDULE (NON-BEARING WALL)

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### TYPICAL CMU NON-BEARING WALL JAMB AND PIER ZONE SCHEDULE

#### TYPICAL CMU NON-BEARING WALL JAMB AND PIER ZONE SCHEDULE

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</table>
1. **PLATFORM**

SEE TYPICAL TOP BRACE DETAILS FOR TOP OF WALL CONNECTIONS

2#4 AT T/WALL BOND BEAM TYPICAL, UON

3. **JOINT**

TYPICAL

4. **PRELIMINARY**

NOT FOR CONSTRUCTION

5. **T/WALL**

(NON-BEARING WALL)

TYPICAL

SEE TYPICAL CMU SILL 2'-0" MINIMUM (NON-BEARING WALL) FOR REINFORCEMENT

3" MAXIMUM (3/4" CLEAR MINIMUM TO BOTTOM SHELL)

8" LINTEL BEARING STEEL OR PRECAST LINTEL TYPICAL

SEE NOTE 1

6. **T/WALL**

(JOINT)

TYPICAL

SEE NOTE 1

7. **PLAN DETAIL AT FULL HEIGHT MASONRY**

TYPICAL MASONRY NON-BEARING WALL PLAN DETAIL AT ADJACENT WALL OPENINGS

8. **PLAN DETAIL AT MASONRY WALL WITH INTERLOCKED INTERSECTIONS (SEISMIC DESIGN CATEGORY A AND WHERE NOTED ONLY)**

1. PROVIDE JOINT AND BOND BEAM REINFORCEMENT AS REQUIRED, SEE SCHEDULE

NOTES:

1. PROVIDE JOINT AND BOND BEAM REINFORCEMENT AS REQUIRED, SEE SCHEDULE

2. SUM OF OPENING WIDTHS L1 PLUS L2 ON EITHER SIDE OF PIER SHALL NOT EXCEED 24'-0", AND ANY INDIVIDUAL OPENING SHALL NOT EXCEED 12'-0" IN WIDTH. FOR CONDITIONS EXCEEDING THIS CRITERIA, ENGINEER OF RECORD SHALL BE NOTIFIED PRIOR TO CONSTRUCTION

4. PIER ZONE REFERS TO MINIMUM WIDTH OF PIER AS SCHEDULED ON TYPICAL CMU NON-BEARING WALL JAMB AND PIER ZONE SCHEDULE

11/22/2013 1:16:43 PM C:\Scratch\N11330.00 - East Platform - Central_cchu.rvt

SHEET 185 OF 201
EXISTING FOUNDATION WALL SEE TOWER C DWG'S L-1 K-1 J-1 H-1 G-1 F-1 E-1 D-1
EXISTING T.O. SLAB EL. 8'-6"
EXISTING M.O.E. WALL TO REMAIN
EXISTING M.O.E. COLUMNS
EXIST. TOWER C
EXIST. AND NEW M.O.E. STRUCTURE
30'-0" 30'-0" 30'-0" 30'-0" 30'-0" 30'-0" 30'-0" 16'-6" 13'-6" 16'-6"

LEGEND:
TB INDICATES NEW TIE BEAM
INDICATES NEW PILECAP
PCX-Y INDICATES NEW CONCRETE FILLED STEEL COLUMN
INDICATES NEW CONCRETE FILLED STEEL COLUMN
INDICATES NEW STEEL WIDE-FLANGE COLUMN
INDICATES NEW ROCK ANCHOR

SHEET NOTES:
1. SEE GENERAL NOTES FOR CONCRETE COMPRESSIVE STRENGTH
2. T/FOOTING = EL. YY'-Y", AS SHOWN ON PLAN
3. FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING DRAWINGS:
   DRAWING LISTS, GENERAL NOTES, AND S0 SERIES DRAWINGS
   LOADING DIAGRAMS
   TYPICAL FOUNDATION DETAILS
   S3 SERIES DRAWINGS
   STEEL COLUMN SCHEDULES
   S4 SERIES DRAWINGS
   STEEL TYPICAL DETAILS
   S7 SERIES DRAWINGS
4. MAXIMUM TOP OF ROCK SOCKET SHOWN ON S-310.00 TO S-313.00 IS THE HIGHEST ELEVATION AT WHICH ROCK SOCKET BEGINS.
5. ROCK COUNTOURS ARE BY LANGAN GEOTECHNICAL ENGINEERS. ACTUAL TOP OF ROCK AND SOCKET TO BE FIELD VERIFIED BY THE CONTRACTOR AND GEOTECHNICAL ENGINEER.
6. EXISTING UTILITIES, BUILDINGS AND TUNNELS ARE SHOWN FOR REFERENCE ONLY. LOCATIONS AND DIMENSIONS OF ALL EXISTING CONDITIONS ARE TO BE FIELD VERIFIED.
7. DIMENSIONS ON SHEETS S-310.00 TO S-313.00 NOTED AS CLEARANCE TO TRACK IS THE DISTANCE BETWEEN CENTERLINE OF TRACK TO FACE OF COLUMN.
8. DIMENSIONS SHOWN ON S-121.00 TO S-129.00 SHOW THE DISTANCE BETWEEN THE FACE OF EXISTING TUNNEL (V.I.F.) AND THE FACE OF PERMANENT STEEL CASING.

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