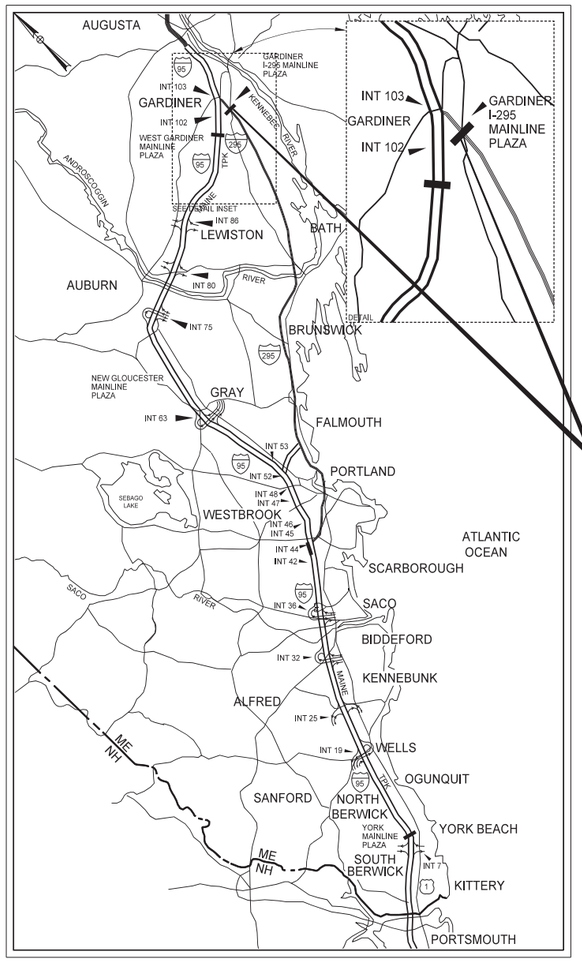
Date:3/20/2019



LOCATION MAP

INTERCHANGE 103 BARRIER TOLL PLAZA
OPEN ROAD TOLLING CONVERSION
MM 103.0

MAINE TURNPIKE

THE GOLD STAR
MEMORIAL HIGHWAY

MAINE TURNPIKE AUTHORITY

DANIEL E. WATHEN, CHAIR
ROBERT D. STONE, VICE CHAIR
MICHAEL J. CIANCHETTE, MEMBER
JOHN E. DORITY, MEMBER
ANN R. ROBINSON, MEMBER
THOMAS J. ZUKE, MEMBER
BRUCE A. VAN NOTE, MEMBER EX-OFFICIO

S. PETER MILLS, EXECUTIVE DIRECTOR

INTERCHANGE 103 BARRIER TOLL PLAZA OPEN ROAD TOLLING CONVERSION (MM 103.0) 2019.04 VOLUME 3 OF 3

CONTRACT 2019.04

INDEX OF SHEETS

VOLUME 1
HIGHWAY

VOLUME 2
HIGHWAY

VOLUME 3
PLAZA STRUCUTRAL

PLAZA FACILITIES

BUILDING ARCHITECTURAL

BUILDING STRUCTURAL

BUILDING FACILITIES

Stantec HNTB GRANT HAYS ASSOCIATES GORRILL PALMER

Filename: ...\00\HIGHWAY\MSTA_Title-3.dgn

Date:3/20/2019

TOLL PLAZA STRUCTURAL GENERAL NOTES:

SPECIFICATIONS

DESIGN -

STRUCTURAL SLAB
(CASH SLABS, ORT SLABS, AND ISLAND EXTENSION SLABS.)

- AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION

- AASHTO LRFD BRIDGE DESIGN GUIDE SPECIFICATIONS FOR GFRP-REINFORCED CONCRETE BRIDGE DECKS AND TRAFFIC RAILINGS (NOVEMBER 2009)

TOLL CANOPY

- AISC MANUAL OF STEEL CONSTRUCTION, LRFD METHOD, 14th EDITION

- ASCE 7-16 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES

CONSTRUCTION

- STATE OF MAINE, DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, NOVEMBER 2014 EDITION.

- STATE OF MAINE, DEPARTMENT OF TRANSPORTATION STANDARD DETAILS, NOVEMBER 2014 EDITION.

DESIGN LOADING

STRUCTURAL SLAB

STRUCTURAL SLAB AND FOUNDATION VEHICLE LOAD.....HL-93 MODIFIED

TOLL CANOPY

ROOF LIVE LOAD.....53 PSF

WIND LOAD - BASIC WIND SPEED (V) (RISK CATEGORY II).....110 MPH

SNOW LOAD - GROUND SNOW LOAD (Pg).....70 PSF

MATERIALS

CONCRETE

PAVEMENT AND ORT SLABS.....CLASS AAA - DECK

ALL OTHER STRUCTURAL CONCRETE.....CLASS AAA

REINFORCING STEEL

STEEL BARS.....ASTM A 615, GRADE 60 (EPOXY-COATED)
WELDED WIRE FABRIC.....ASTM A 884, CLASS A (EPOXY-COATED)
GFRP.....SEE SPECIFICATION

STRUCTURAL STEEL

STEEL SHAPES AND PLATES
(EXCEPT AS NOTED).....ASTM A 709, GRADE 50
HSS SECTIONS.....ASTM A500, GRADE B
ANCHOR RODS (CANOPY).....ASTM F1554, GRADE 55
PLATES (OVER 4" AND UP TO 8" THICK).....ASTM A36
ANCHOR RODS (SPACE FRAME).....ASTM F1554, GRADE 105
HIGH STRENGTH BOLTS.....ASTM F3125, GRADE A325, TYPE 1

BASIC DESIGN STRESSES

CONCRETE

CLASS AAA AND CLASS AAA-DECK.....f'c = 4,500 PSI

REINFORCING

REINFORCING STEEL.....Fy = 60,000 PSI
GFRP REINFORCING (MIN. TENSILE STRESS).....SEE NOTE 5

STRUCTURAL STEEL

ASTM A 709, GRADE 50.....Fy = 50,000 PSI
ASTM A 709, GRADE 36.....Fy = 36,000 PSI
ASTM A 500, GRADE B (SQUARE HSS).....Fy = 46,000 PSI
ASTM A 500, GRADE B (ROUND HSS).....Fy = 42,000 PSI
ASTM A 325.....Fu = 120,000 PSI
ASTM F 1554, GRADE 55.....Fy = 55,000 PSI
ASTM F 1554, GRADE 105.....Fy = 105,000 PSI

TOLL PLAZA CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL TAKE SPECIAL CARE AND PRECAUTION TO ENSURE THAT NO DEBRIS FALLS, SPILLS OR ROLLS ONTO THE OPEN ROADWAY DURING CONSTRUCTION.

2. ALL CONSTRUCTION SIGNING AND TRAFFIC CONTROL MEASURES SHALL BE IN PLACE BEFORE CONSTRUCTION WORK BEGINS.

3. REINFORCING SHALL HAVE CLEAR COVER AS FOLLOWS:
   - 3" FOR CONCRETE PLACED ON GRADE
   - 3" COVER TO THE TOP OF ALL STRUCTURAL SLABS
   - 2" ELSEWHERE UNLESS OTHERWISE NOTED

4. ALL STEEL REINFORCING SHALL BE EPOXY COATED.

5. ALL GFRP REINFORCING SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION, SECTION 503, REINFORCING STEEL, GFRP REINFORCING. MINIMUM TENSILE STRENGTH FOR GFRP BARS SHALL BE AS FOLLOWS:

BAR SIZE DESIGNATION	MINIMUM TENSILE STRENGTH REPORTED BY MANUFACTURER, PSI
4	100,000
5	95,000
6	90,000
7	85,000
8	80,000
9	75,000
10	70,000

6. PREMOLDED JOINT FILLER SHALL CONFORM TO ASTM DESIGNATION D1752, TYPE I OR ASTM D5249, TYPE 2. PREMOLDED JOINT FILLER SHALL BE A NON-STAINING, NON- BLEEDING TYPE. PRODUCTS SUCH AS 'CERAMAR' MANUFACTURED BY W.R. MEADOWS, OR AN APPROVED EQUAL WILL BE ACCEPTABLE. CORK IS NOT AN ACCEPTABLE JOINT FILLER MATERIAL.

7. SELF LEVELING ELASTOMERIC SEALANT SHALL BE SIKA FLEX 1C SL OR AN APPROVED EQUAL.

8. PREMOLDED JOINT FILLER AND SELF LEVELING ELASTOMERIC SEALANT SHALL BE INCIDENTAL TO ITEM 502.262, STRUCTURAL CONCRETE, CASH SLABS.

9. GRAVELS BELOW, BESIDE AND ABOVE THE TUNNEL SHALL BE COMPACTED TO 98% COMPACTION.

10. ALL CONCRETE BARRIERS, ISLANDS, BUMPERS AND BOOTH ENCLOSURES SHALL HAVE A RUBBED FINISH PRIOR TO THE APPLICATION OF THE PROTECTIVE COATING FOR CONCRETE SURFACES.

11. CHAMFER ALL EXPOSED EDGES OF CONCRETE ¾" UNLESS NOTED OTHERWISE.

12. ALL EXPOSED CONCRETE SURFACES SHALL RECEIVE A CLEAR PROTECTIVE COATING IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

13. THE CONTRACTOR SHALL PROVIDE SOFT CUT JOINTS AS NOTED ON THE PLANS OR AS DIRECTED BY THE RESIDENT. THIS WORK SHALL BE INCIDENTAL TO ITEM 502.261 - STRUCTURAL CONCRETE ORT SLABS, AND ITEM 502.262 - STRUCTURAL CONCRETE, CASH SLABS.

14. STRUCTURAL CONCRETE, CASH SLABS (ITEM 502.262) AND STRUCTURAL CONCRETE, ORT SLABS (ITEM 502.261) FOR ALL STRUCTURAL SLABS SHALL BE CLASS AAA DECK CONCRETE AND CONTAIN 5 LBS PER CY OF SYNTHETIC FIBER REINFORCEMENT.

15. AFTER THE CONCRETE SLAB AND ISLANDS HAVE BEEN PLACED AND ALLOWED TO REACH INITIAL SET, THE CONTRACTOR SHALL SAWCUT THE CONCRETE AT THE SPECIFIED LOCATIONS, AND IN ACCORDANCE WITH THE DETAILS PROVIDED. THIS WORK SHALL BE COMPLETED AS SOON AS THE CONCRETE CAN SUPPORT THE WEIGHT OF A WORKER WITHOUT DAMAGE. ALL WORK FOR SAWCUTTING AND FILLING JOINTS SHALL BE INCIDENTAL TO THE RELATED CONTRACT ITEMS.

16. ALL TRANSVERSE SLAB JOINTS SHALL BE CONSTRUCTED OR SAWN PERPENDICULAR TO THE ROADWAY CENTERLINE.

17. ALL HORIZONTAL CONSTRUCTION JOINTS LOCATED BETWEEN THE ENTERING SLAB AND ISLANDS, ISLAND AND BUMPERS, AND ISLANDS AND BOOTH ENCLOSURES, SHALL RECEIVE A RAKED FINISH WITH MINIMUM SURFACE PROFILE OF ¼". ALL OTHER CONSTRUCTION JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MAINEDOT STANDARD DETAIL 502(01). WATERSTOPS SHALL ONLY BE REQUIRED WHERE SHOWN ON THE PLANS.

18. WHERE NON-SHRINK GROUT IS SPECIFIED FOR GRANITE CURB BEDDING AND POINTING, OR AT STEEL BASE PLATE LOCATIONS, THE CONTRACTOR SHALL SELECT A PRODUCT FROM MAINEDOT'S QUALIFIED PRODUCTS LIST OF GROUT MATERIALS. THE SELECTED MATERIAL SHALL BE NON-SHRINK WITH A MINIMUM COMPRESSIVE STRENGTH OF 6,000 PSI. PAYMENT SHALL BE INCIDENTAL TO THE RELATED CONTRACT ITEMS.

19. ALL STRUCTURAL STEEL SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.

20. ALL ANCHOR RODS SHALL BE SWEDGED OR THREADED ON THE EMBEDDED PORTION OF THE ROD.

21. EXCAVATION SHALL BE MEASURED FOR PAYMENT UNDER PAY ITEM 206.082, STRUCTURAL EXCAVATION MAJOR STRUCTURES.

22. ALL AREAS OF STRUCTURAL EXCAVATION SHALL BE BACKFILLED WITH GRANULAR BORROW. MEASUREMENT SHALL BE MADE BASED ON THE STRUCTURAL EXCAVATION NEAT LINES. PAYMENT SHALL BE MADE UNDER PAY ITEM 203.25, GRANULAR BORROW.

23. ALL STRUCTURAL CONCRETE FOR STRUCTURAL SLABS SHALL BE MEASURED FOR PAYMENT UNDER PAY ITEM 502.262, STRUCTURAL CONCRETE, CASH SLABS OR ITEM 502.261, STRUCTURAL CONCRETE, ORT SLABS.

24. ALL STRUCTURAL CONCRETE FOR TOLL ISLANDS, BUMPERS, AND BOOTH ENCLOSURES SHALL BE MEASURED FOR PAYMENT UNDER PAY ITEM 502.263, STRUCTURAL CONCRETE PLAZA ISLANDS, BUMPERS AND CURTAIN WALLS.

25. GRANITE CURBING ON ISLAND SHALL BE PAID FOR UNDER PAY ITEMS 609.11, VERICAL CURB, TYPE 1 AND 609.12, VERTICAL CURB, TYPE 1-CIRCULAR.

26. ALL EXISTING MATERIALS WHICH ARE REMOVED FROM THE WORK AREA SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF BY THE CONTRACTOR IN A MANNER IN ACCORDANCE WITH THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION SOLID WASTE REQULATIONS. THESE EXISTING MATERIALS INCLUDE, BUT ARE NOT LIMITED TO, CONCRETE, METAL CASING, REINFORCING STEEL, SILT AND DEBRIS ON OR ATTACHED TO THE STRUCTURE WITHIN THE WORK AREAS. THE COST OF REMOVAL AND DISPOSAL SHALL BE INCIDENTAL TO THE COST OF THE WORK ITEMS FOR WHICH THERE REMOVALS ARE REQUIRED.

27. ALL STRUCTURAL CONCRETE AND REINFORCING STEEL FOR CAST IN PLACE BARRIER SHALL BE MEASURED FOR PAYMENT UNDER PAY ITEM 526.352 MEDIAN BARRIER TYPE II - CAST-IN-PLACE, OR PAY ITEM 526.371 MEDIAN BARRIER WITH MOUNTED LIGHT POLE TYPE 1.

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No.	Revision	By	Date

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION

STRUCTURAL GENERAL NOTES

SHEET NUMBER: S-01

CONTRACT:2019.04

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Date:3/20/2019

Filename: ...\MSTA\S-02_IndexStructDwgs.dgn

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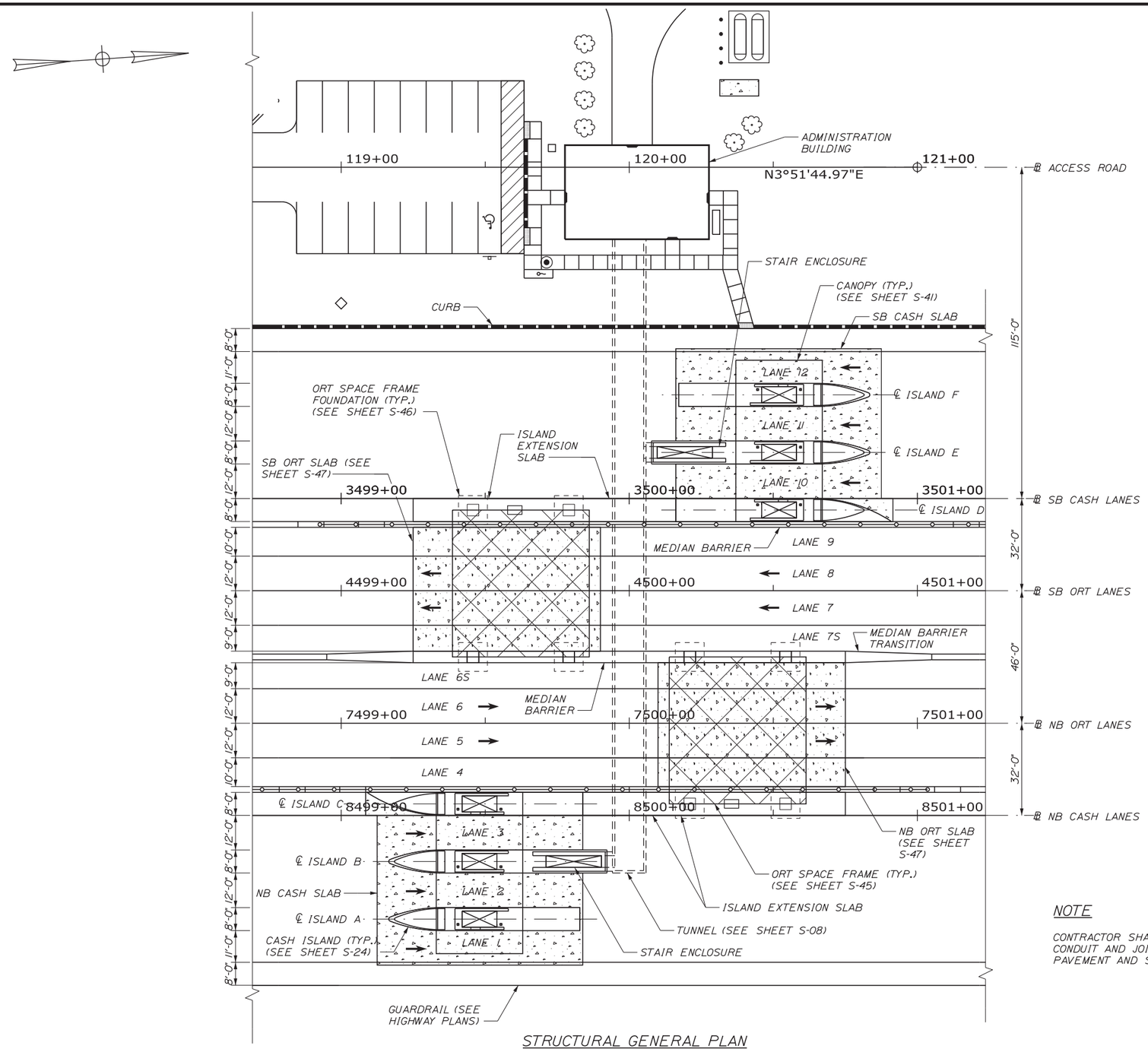
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103 ORT CONVERSION INDEX OF STRUCTURAL DRAWINGS

SHEET NUMBER: S-02

CONTRACT:2019.04



STRUCTURAL GENERAL PLAN

SCALE: 1" = 20'-0"

NOTE

CONTRACTOR SHALL COORDINATE WITH TRANSCORE TO CONFIRM CONDUIT AND JOINT PLACEMENT. PRIOR TO POURING CONCRETE PAVEMENT AND SLABS IN TOLLING AREAS.

Date:3/20/2019

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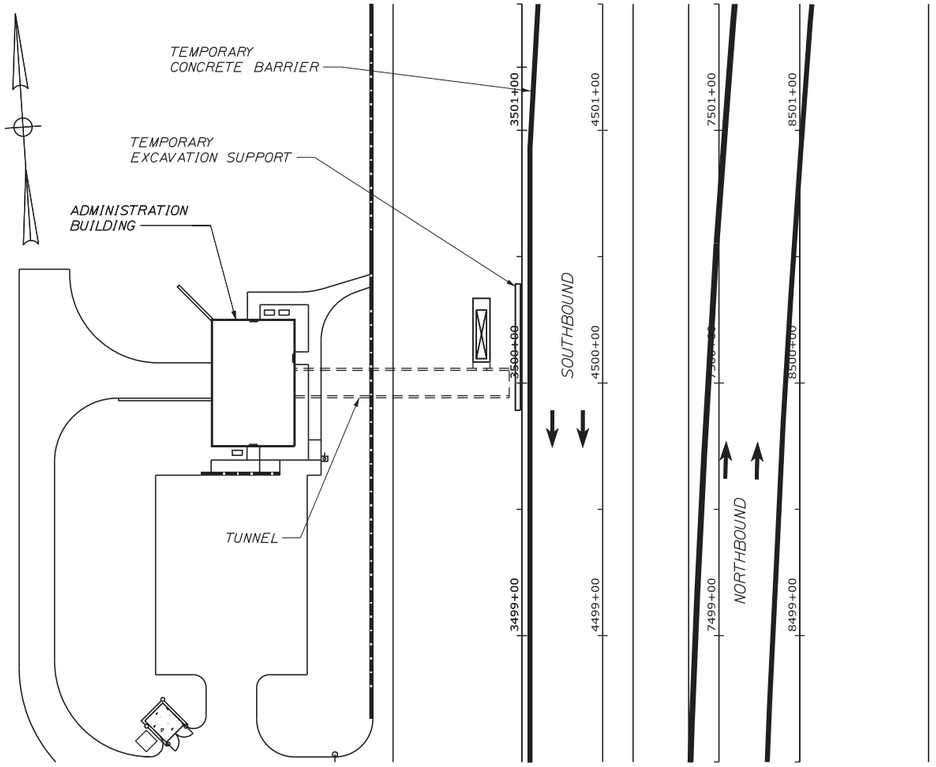
INTERCHANGE 103
ORT CONVERSION

STRUCTURAL GENERAL PLAN

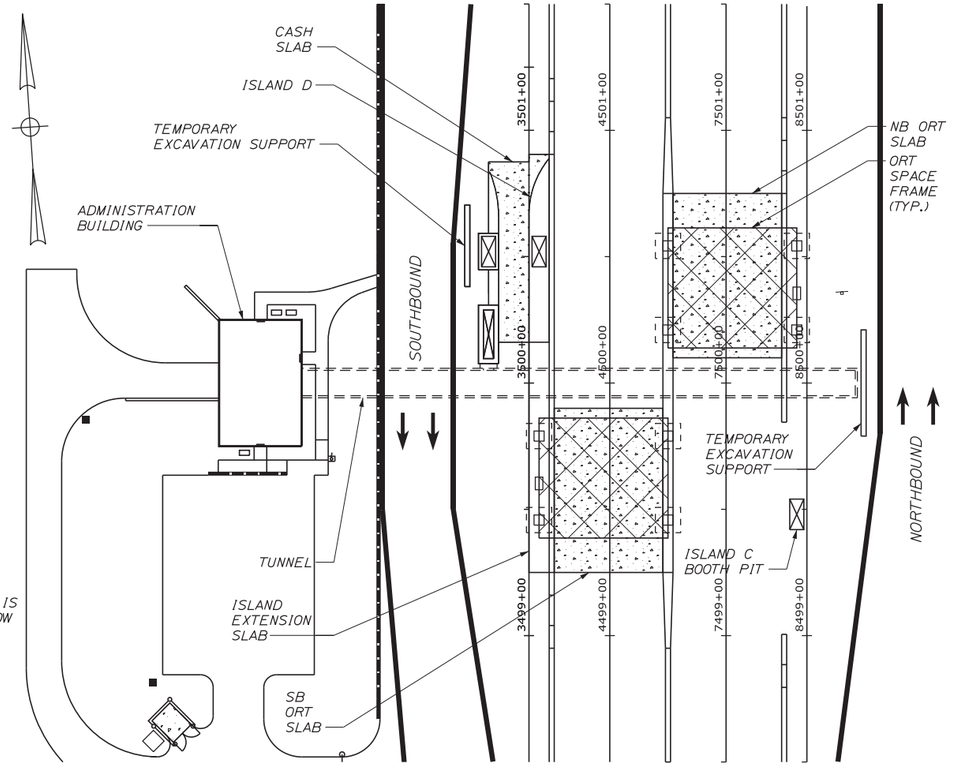
SHEET NUMBER: S-03

CONTRACT:2019.04

Date:3/20/2019



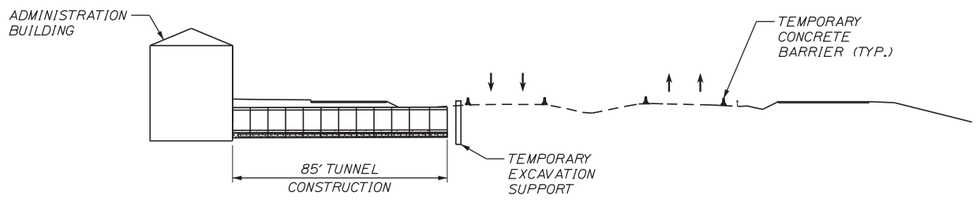
PHASE 1 - PLAN
SCALE: 1" = 30'



PHASE 2 - PLAN
SCALE: 1" = 30'

NOTES:

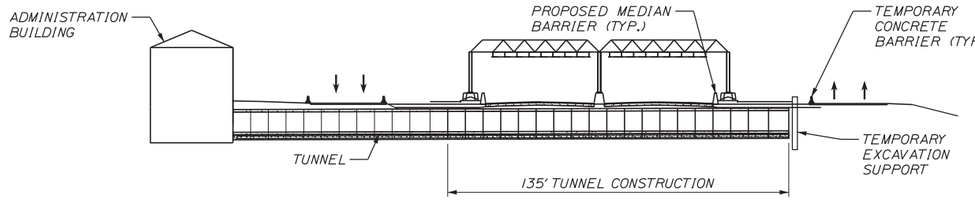
1. THE CONSTRUCTION SEQUENCE SHOWN IS SCHEMATIC AND IS INTENDED TO SHOW THE MAJOR ITEMS OF WORK ONLY.
2. THE TEMPORARY BARRIER LOCATIONS AND TRAVEL LANES SHOWN ARE SCHEMATIC AND ARE INTENDED TO SHOW THE GENERAL LIMITS OF THE WORK ZONES. FOR MAINTENANCE OF TRAFFIC PLANS AND DETAILS SEE SHEETS MOTI-01 TO MOT5-05.
3. INSTALL TEMPORARY BARRIER AND SHIFT TRAFFIC PRIOR TO EACH PHASE OF WORK.



PHASE 1 - SECTION
SCALE: 1" = 30'

PHASE 1 WORK

1. EXCAVATE:
   A. ADMINISTRATION BUILDING
   B. TUNNEL SECTIONS 1 TO 12 AND SB STAIRCASE
2. CONSTRUCT:
   A. TUNNEL SECTIONS 1 TO 12 AND SB STAIRCASE
   B. ADMINISTRATION BUILDING



PHASE 2 - SECTION
SCALE: 1" = 30'

PHASE 2 WORK

1. EXCAVATE:
   A. TUNNEL SECTIONS 13 TO 31
   B. BOOTH PITS FOR ISLANDS C, D & E
   C. SPACE FRAME PEDESTALS AND FOOTINGS
2. CONSTRUCT:
   A. TUNNEL SECTIONS 13 TO 31
   B. ORT SLABS AND PEDESTALS
   C. ISLAND D AND SB ISLAND EXTENSION SLAB
   D. BOOTH PITS FOR ISLANDS C, D & E
   E. PARTIAL SB CASH SLAB
   F. BARRIERS
   G. ORT SPACE FRAMES

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THE GOLD STAR MEMORIAL HIGHWAY

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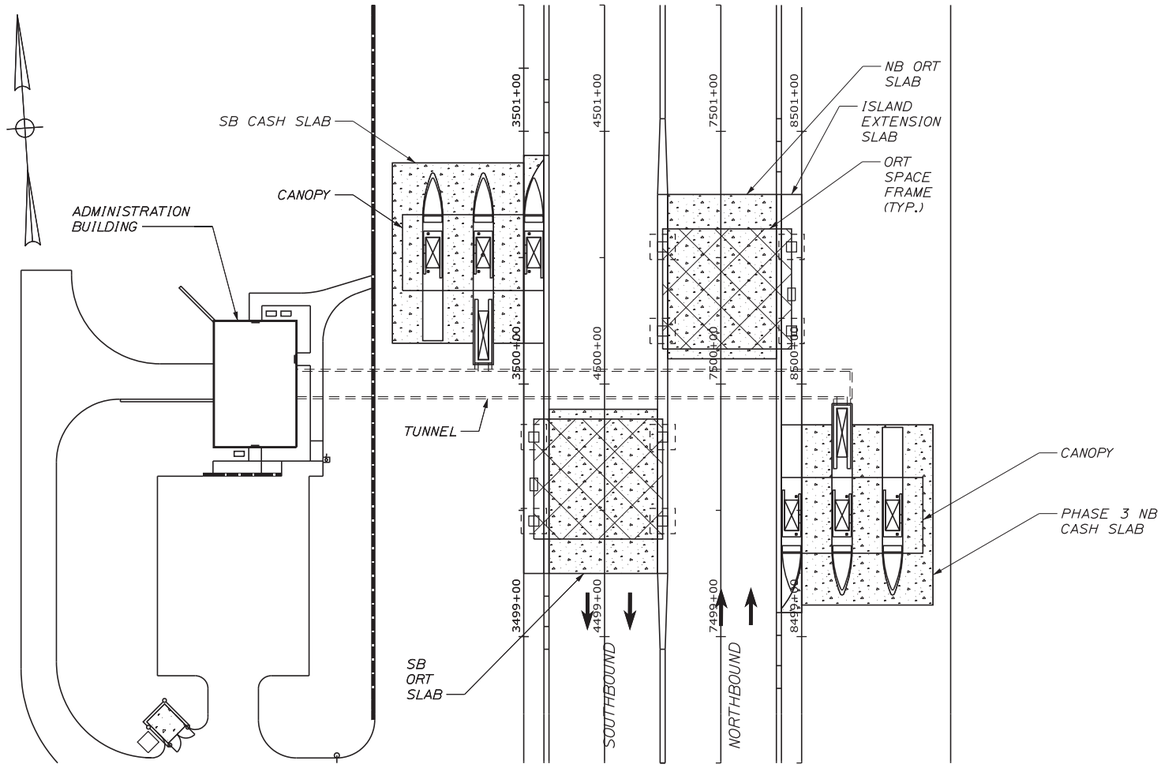
INTERCHANGE 103 ORT CONVERSION CONSTRUCTION SEQUENCE PHASE 1 AND PHASE 2

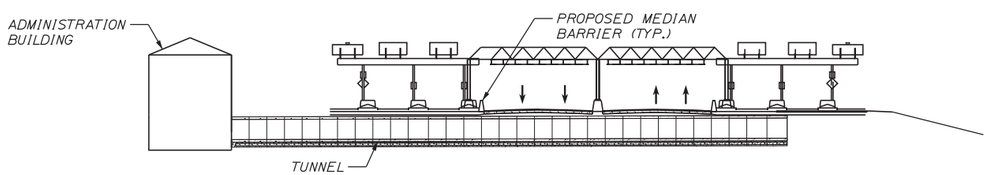
SHEET NUMBER: S-04

CONTRACT:2019.04

Date:3/20/2019



PHASE 3 - PLAN
SCALE: 1" = 30'



PHASE 3 - SECTION
SCALE: 1" = 30'

PHASE 3 WORK

1. EXCAVATE:
   A. . BOOTH PITS FOR ISLANDS A, B & F
   B. NB STAIRCASE

2. CONSTRUCT:
   A. NB STAIRCASE
   B. STAIRCASE ENCLOSURES
   C. REMAINING PORTION OF SB CASH SLAB
   D. NB CASH SLAB
   E. ISLANDS A, B, C, E & F
   F. CANOPIES
   G. REMAINING BARRIER

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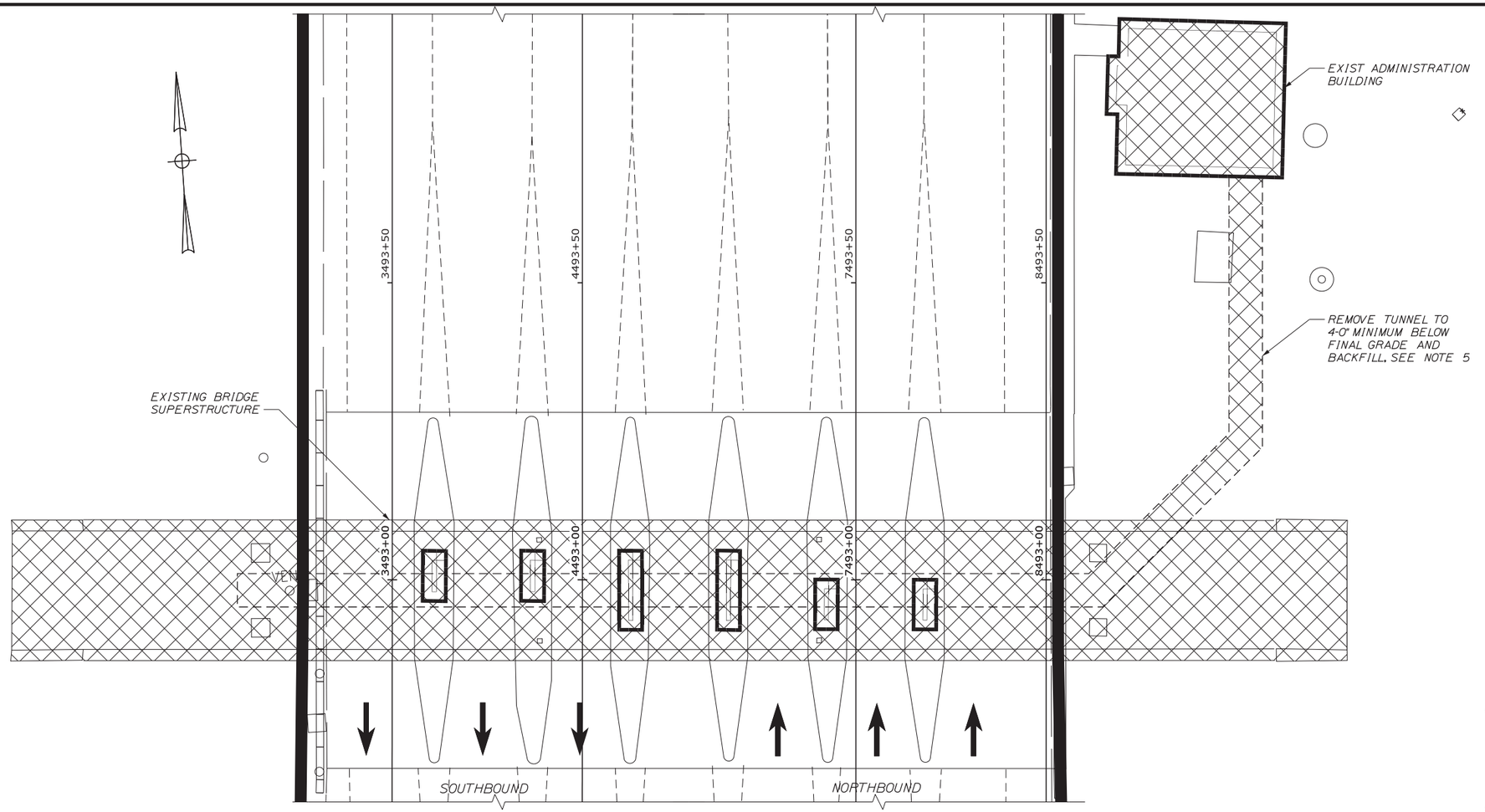
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103 ORT CONVERSION CONSTRUCTION SEQUENCE PHASE 3

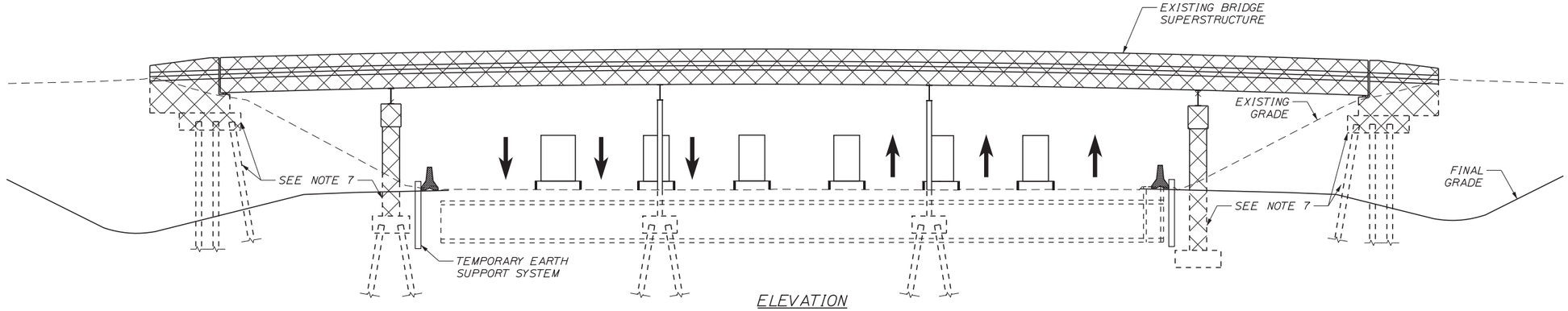
SHEET NUMBER: S-05

CONTRACT:2019.04

Date:3/20/2019



PLAN



ELEVATION

LEGEND:

PHASE 4 (PHASE 1 DEMOLITION)

NOTES:

1. SEE SPECIAL PROVISIONS FOR ITEMS TO SALVAGE.
2. BEFORE BEGINNING PLAZA DEMOLITION THE CONTRACTOR SHALL SUBMIT A DEMOLITION PLAN TO THE RESIDENT FOR APPROVAL.
3. REMOVAL OF LOOPS, CONDUIT, AND ASSOCIATED WIRING IN EXISTING CONCRETE SHALL BE INCIDENTAL TO ITEM 202.17, REMOVING EXISTING STRUCTURAL CONCRETE.
4. SEE MOT PHASE 4 FOR ADDITIONAL INFORMATION.
5. BREAK OR CUT TUNNEL FLOOR SLAB TO PROVIDE A MINIMUM OF 1 SF OF OPENING FOR EVERY 10 FEET OF TUNNEL LENGTH TO ALLOW FOR DRAINAGE THROUGH THE SLAB TO REMAIN.
6. SEE HIGHWAY PLANS FOR BACKFILL AND ROADWAY WORK.
7. REMOVE EXISTING BRIDGE SUBSTRUCTURES, INCLUDING PILES, TO 4'-0" MINIMUM BELOW FINAL GRADE.

Scale:

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THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

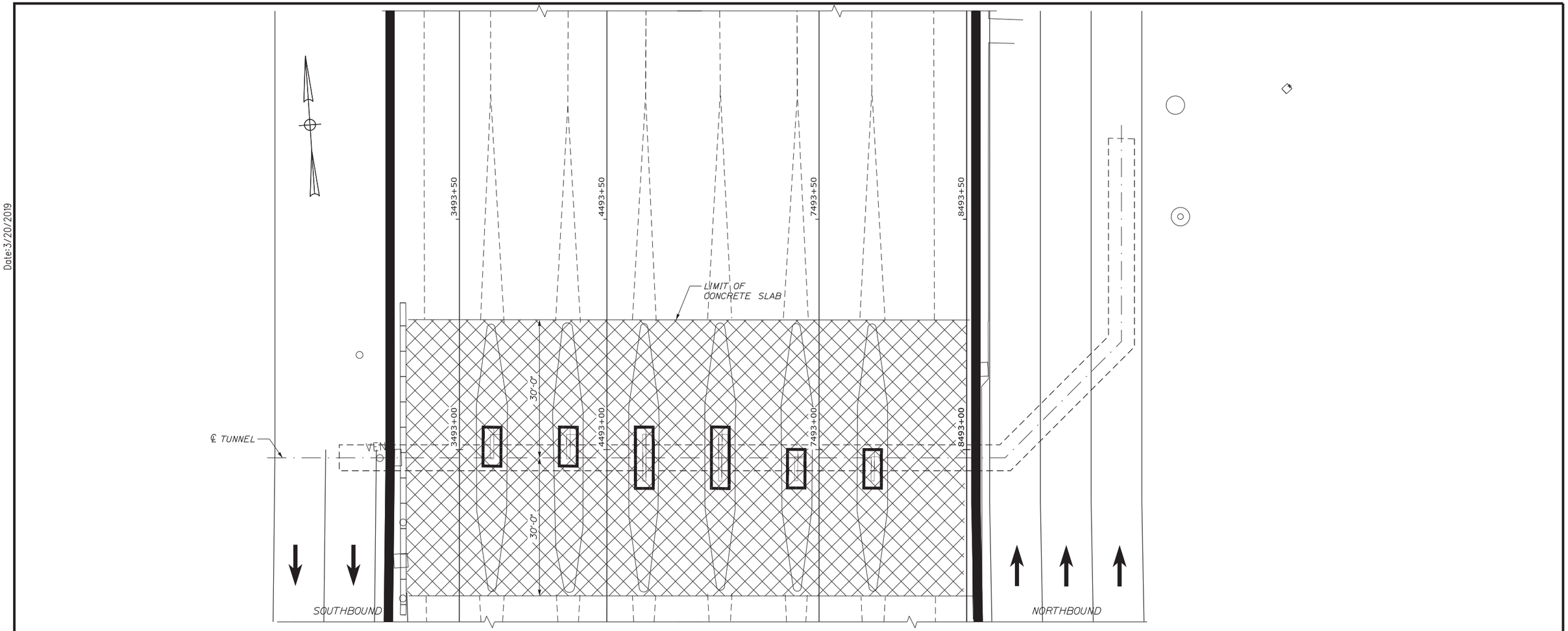
INTERCHANGE 103
ORT CONVERSION

STRUCTURAL DEMOLITION PLAN 1

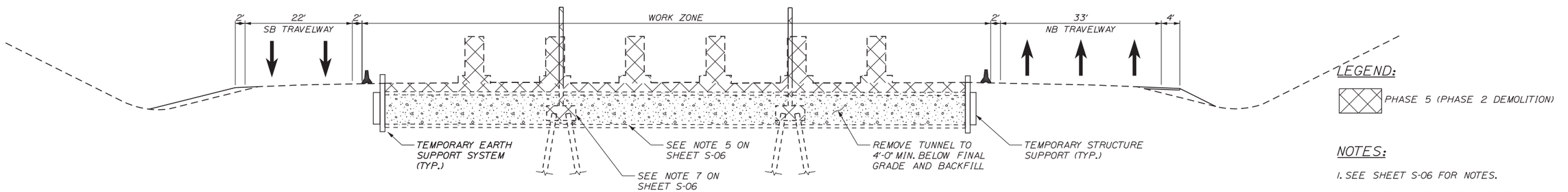
SHEET NUMBER: S-06

CONTRACT:2019.04

Filename: ...\MSTA\S-06_StructDemoPln_1.dgn



PLAN



ELEVATION

LEGEND:

PHASE 5 (PHASE 2 DEMOLITION)

NOTES:

1. SEE SHEET S-06 FOR NOTES.
2. SEE MOT PHASE 5 FOR ADDITIONAL INFORMATION.

Date:3/20/2019

Filename: ...\MSTA\S-07_Struct\DemoPln_2.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

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Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

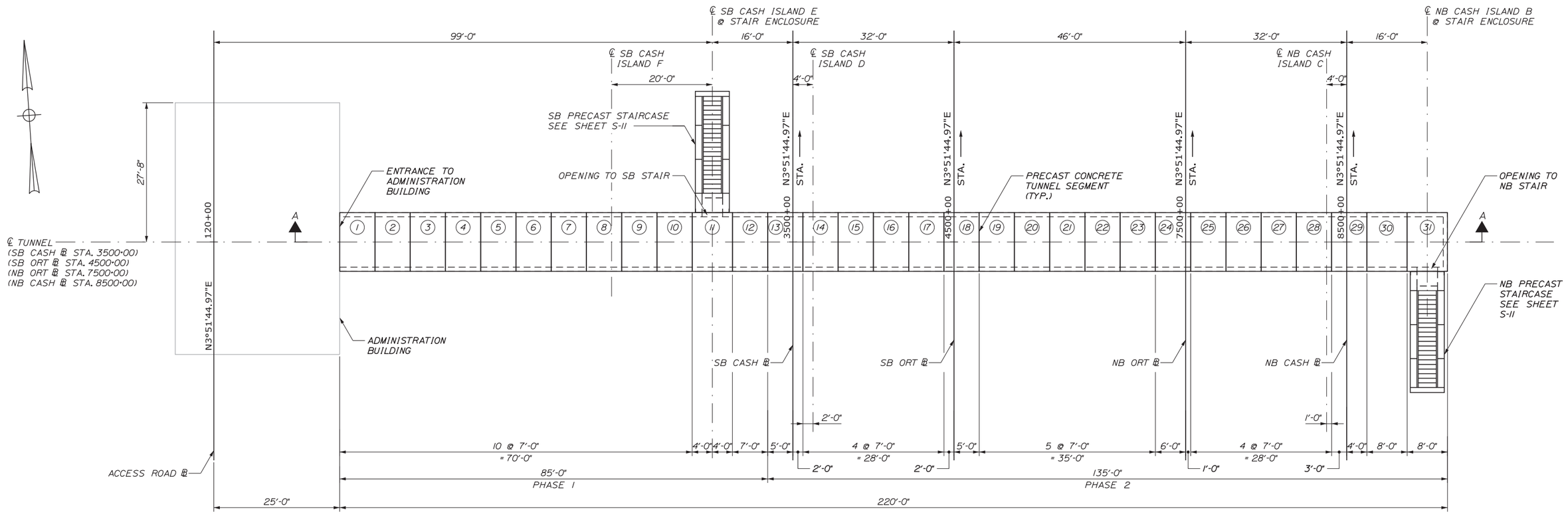
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION

STRUCTURAL DEMOLITION PLAN 2

SHEET NUMBER: S-07

CONTRACT:2019.04



TUNNEL LAYOUT PLAN

SCALE: 1" = 10'-0"

NOTES

1. SEE ADMINISTRATION BUILDING MECHANICAL DRAWINGS FOR LOCATION OF THE SUMP FOR TUNNEL DRAINAGE.
2. FIELD VERIFY THE DIMENSIONS OF SEGMENTS 10 AND 30 PRIOR TO PRECASTING TO MAKE ADJUSTMENTS NEEDED TO INSTALL THE STAIR ENCLOSURES WITHIN THE ALLOWABLE CONSTRUCTION TOLERANCES. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
3. FOR SECTION A-A SEE SHEET S-09.

Date:3/20/2019

Filename: ...\00\PLAZA\MSTA\S-08_Tunnel.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

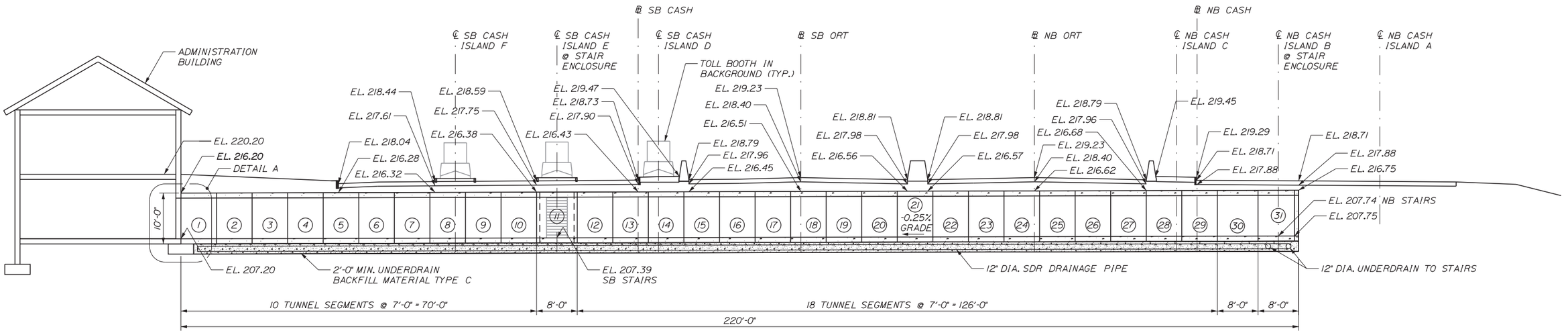
THE GOLD STAR MEMORIAL HIGHWAY

INTERCHANGE 103
ORT CONVERSION

TUNNEL LAYOUT PLAN

SHEET NUMBER: S-08

CONTRACT:2019.04

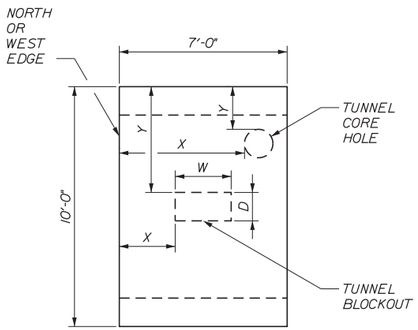


NOTE: TUNNEL FLOOR ELEVATIONS ARE AT CENTERLINE OF TUNNEL.

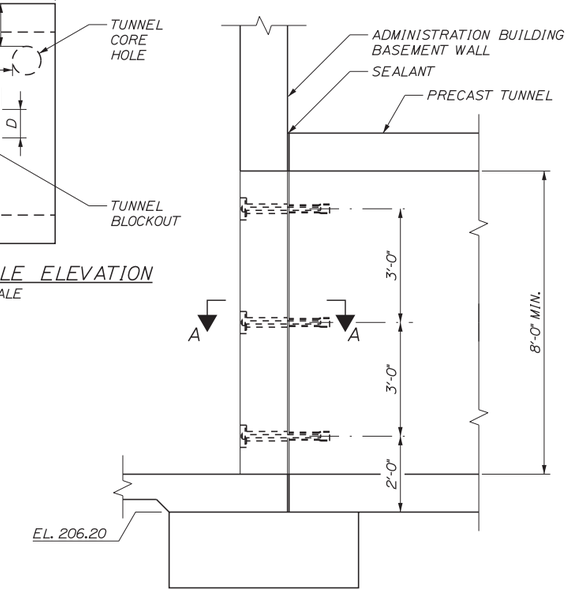
SECTION A-A
SCALE: 1" = 10'-0"

TUNNEL SIDEWALL BLOCKOUTS AND CORE HOLES (SEE BLOCKOUT/CORE HOLE ELEVATION)

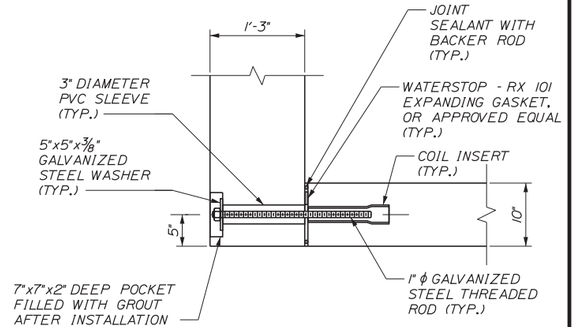
SECTION	WALL	DISTANCE FROM NORTH OR WEST EDGE (X)	DISTANCE FROM TOP (Y)	BLOCKOUT SIZE	UTILITY CHASE	CONDUIT (NUMBER - NOM. SIZE)
4	NORTH	FIELD LOCATE 1'-0" MIN.	FIELD LOCATE 1'-8" MIN.	CORE HOLE	-	(1)-3"
4	SOUTH	FIELD LOCATE 1'-0" MIN.	FIELD LOCATE 1'-8" MIN.	CORE HOLE	-	(1)-3"
14	NORTH	1'-0"	2'-8"	2'-5 1/4" x 1'-3"	A	(6)-3", (1)-6"
14	SOUTH	1'-0"	1'-10"	2'-5 1/4" x 1'-3"	C	(6)-3", (2)-1 1/2", (1)-2"
21	NORTH	2'-10"	1'-10"	2'-3" X 1'-3"	B	(6)-3", (1)-4"
21	SOUTH	2'-10"	1'-10"	2'-3" X 1'-3"	B	(6)-3", (1)-4"
28	NORTH	3'-6"	1'-10"	2'-5 1/4" x 1'-3"	C	(6)-3", (2)-1 1/2", (1)-2"
28	SOUTH	3'-6"	2'-8"	2'-5 1/4" x 1'-3"	A	(6)-3", (1)-6"
31	EAST	FIELD LOCATE 1'-0" MIN.	FIELD LOCATE 1'-8" MIN.	CORE HOLE	-	(1)-3"



BLOCKOUT/CORE HOLE ELEVATION
NOT TO SCALE



DETAIL A
SCALE: 1/2" = 1'-0"



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

NOTES:

1. SEE SHEET T-25 FOR UTILITY CHASE AND CONDUIT DETAILS.
2. FIELD LOCATE ADJACENT CORE HOLES AT 8" MIN. O.C. SPACING.
3. PROVIDE BLOCKOUTS IN THE FLOOR OF SECTION 1 FOR INSTALLATION OF FLOOR DRAIN AND CLEAN OUT. REFER TO ADMINISTRATION BUILDING PLUMBING PLAN P-103 FOR ADDITIONAL DETAILS.

Date:3/20/2019

Filename: ...\MSTAS-09_TunnelSection.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

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Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

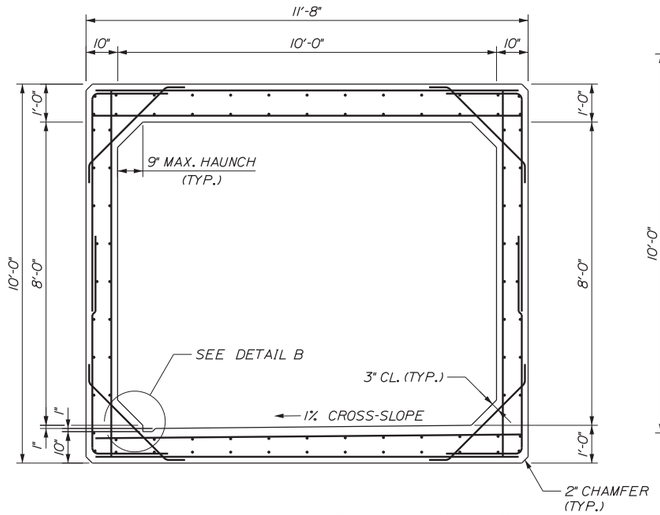
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103 ORT CONVERSION

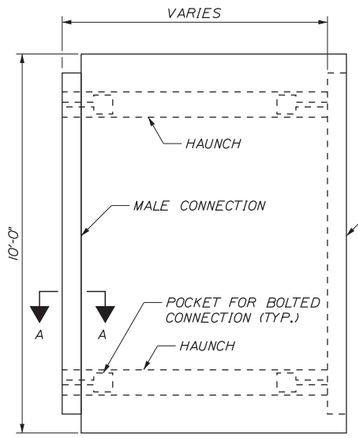
TUNNEL SECTION

SHEET NUMBER: S-09

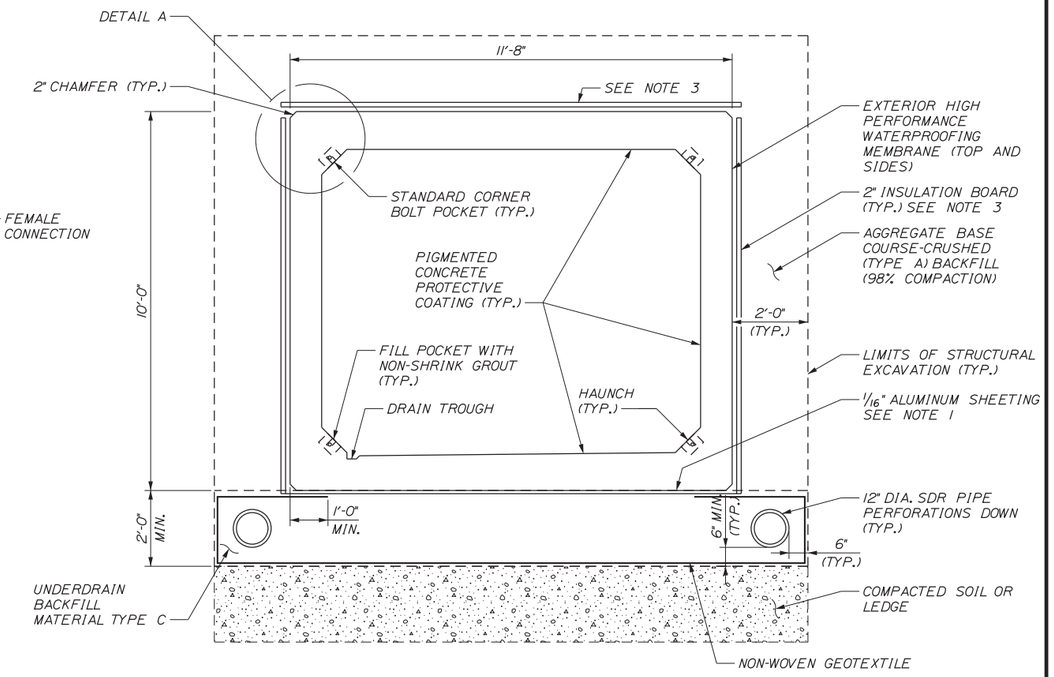
CONTRACT:2019.04



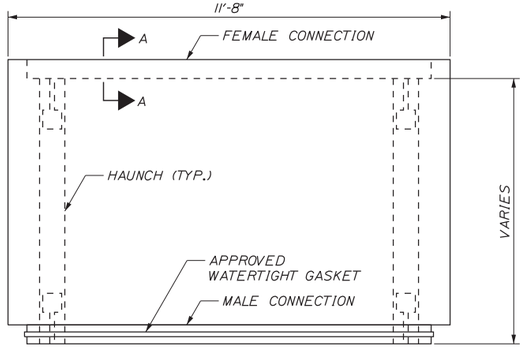
TYPICAL TUNNEL SECTION LOOKING WEST
SCALE: 1/2" = 1'-0"



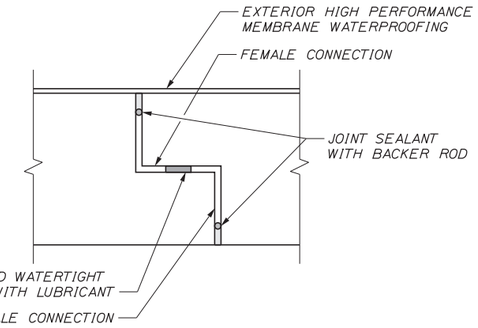
ELEVATION
SCALE: 1/2" = 1'-0"



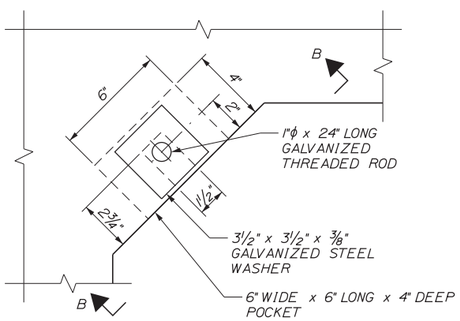
TYPICAL SECTION - LOOKING WEST
SCALE: 1/2" = 1'-0"



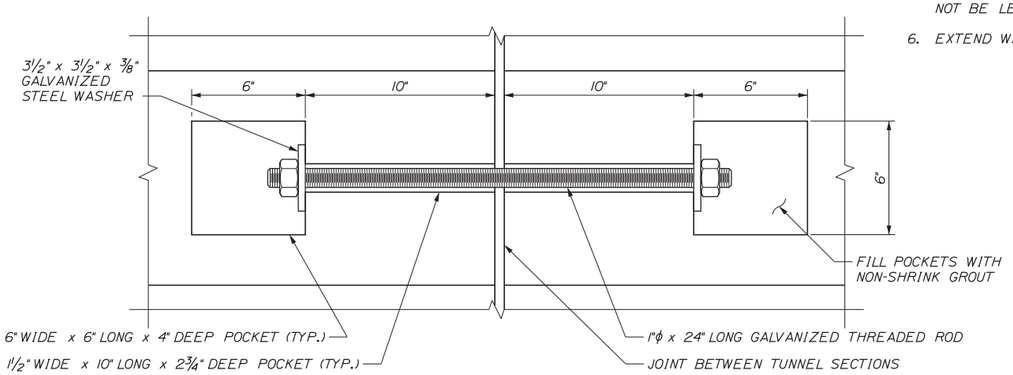
PLAN
SCALE: 1/2" = 1'-0"



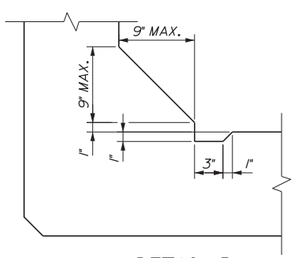
SECTION A-A
NOT TO SCALE



DETAIL A
NOT TO SCALE



SECTION B-B
NOT TO SCALE



DETAIL B
SCALE: 1 1/2" = 1'-0"

NOTES:

1. CONTRACTOR SHALL USE ALUMINUM SHEETING TO ENSURE ROCKS AND DEBRIS DO NOT ENTER TUNNEL JOINTS DURING INSTALLATION.
2. REINFORCEMENT SHOWN FOR GRAPHICAL PURPOSES ONLY.
3. PLACE 2" RIGID INSULATION BOARD OVER HIGH PERFORMANCE MEMBRANE WATERPROOFING ON EXTERIOR TOP AND SIDE SURFACES OF TUNNEL.
4. DRAIN TROUGH SHALL BE CONTINUOUS AND PASS THROUGH CONCRETE PEDESTALS FOR UTILITY CABINETS.
5. TUNNEL WALL AND SLAB THICKNESS SHOWN IN THE TYPICAL TUNNEL SECTION ARE MINIMUMS. THE PRECAST DESIGNER MAY USE THICKER SECTIONS, BUT THE INSIDE DIMENSIONS OF THE TUNNEL SHALL NOT BE LESS THAN SHOWN.
6. EXTEND WATERPROOFING MEMBRANE 2'-0" ALONG EXTERIOR FACE OF THE ADMINISTRATION BUILDING.

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

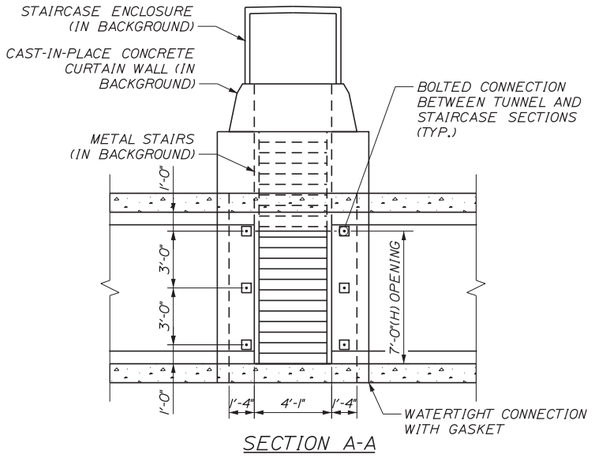
INTERCHANGE 103 ORT CONVERSION TUNNEL CROSS SECTION AND CONNECTION DETAILS

SHEET NUMBER: S-10

CONTRACT:2019.04

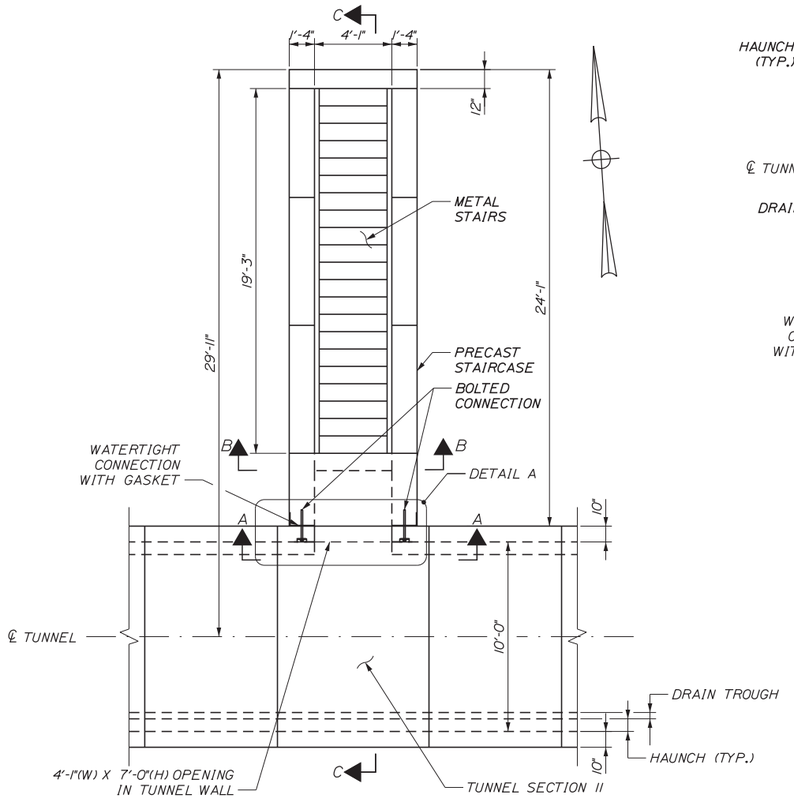
Date:3/20/2019

Filename: ...\PLAZA\MSTA\S-10_TunnelDets.dgn



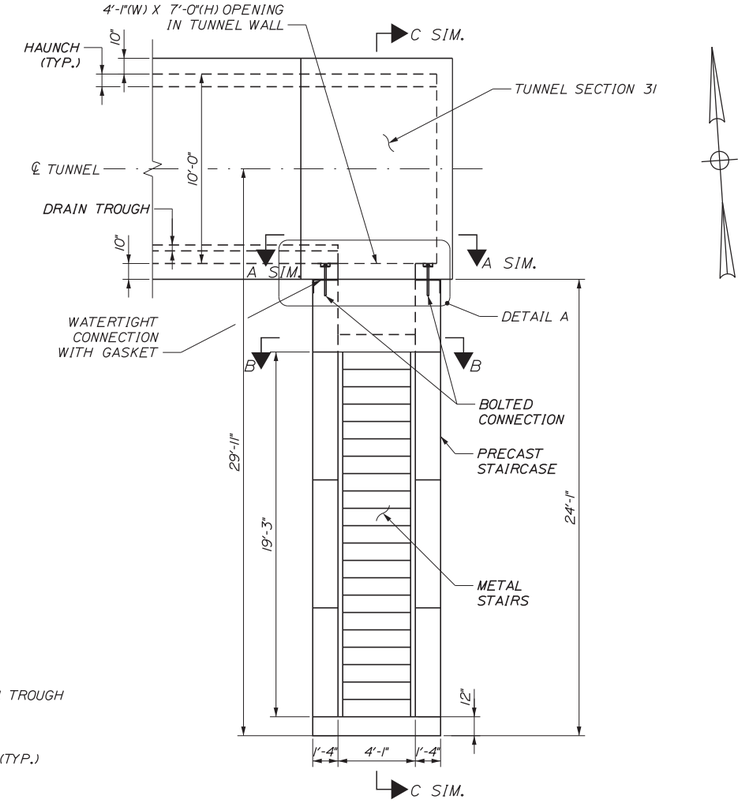
SECTION A-A

SCALE: 1/4" = 1'-0"



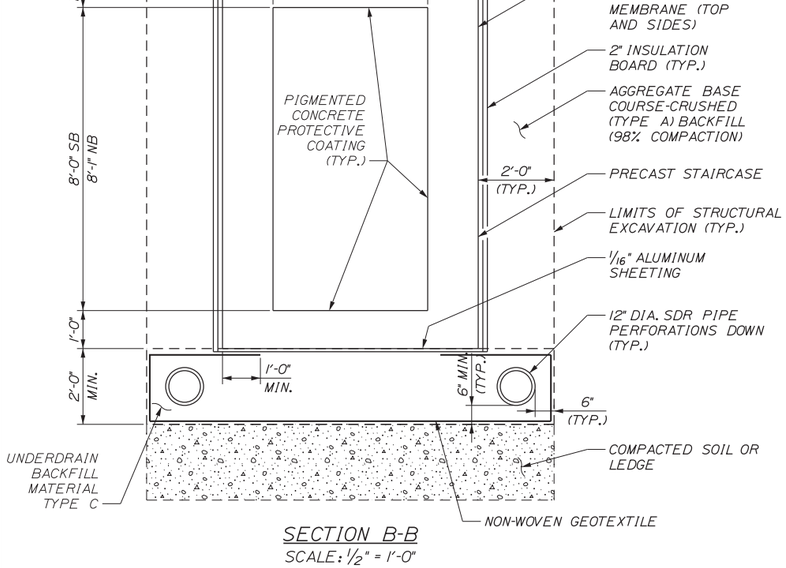
SOUTHBOUND STAIRCASE PLAN

SCALE: 1/4" = 1'-0"



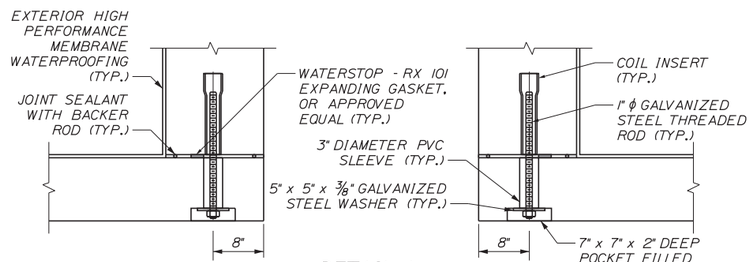
NORTHBOUND STAIRCASE PLAN

SCALE: 1/4" = 1'-0"



SECTION B-B

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



DETAIL A

SCALE: 1" = 1'-0"

NOTES:

1. CONTRACTOR SHALL USE ALUMINUM SHEETING TO ENSURE ROCKS AND DEBRIS DO NOT ENTER TUNNEL JOINTS.
2. REINFORCEMENT FOR PRECAST CONCRETE ELEMENTS TO BE DESIGNED AND PROVIDED BY THE CONTRACTOR AND MANUFACTURER.
3. STAIR ENCLOSURES SHALL HAVE A WATERTIGHT CONNECTION TO THE EXTERIOR OF THE TUNNEL SECTIONS.
4. PLACE 2" RIGID INSULATION BOARD OVER WATERPROOFING MEMBRANE ON EXTERIOR VERTICAL AND HORIZONTAL SURFACES OF THE TUNNEL AND STAIRCASES.
5. FOR SECTION C-C SHEET S-12.

Date:3/20/2019

Filename: ...\MSTA\S-11_StaircaseDets.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103 ORT CONVERSION NORTHBOUND & SOUTHBOUND STAIRCASE PLANS AND SECTIONS

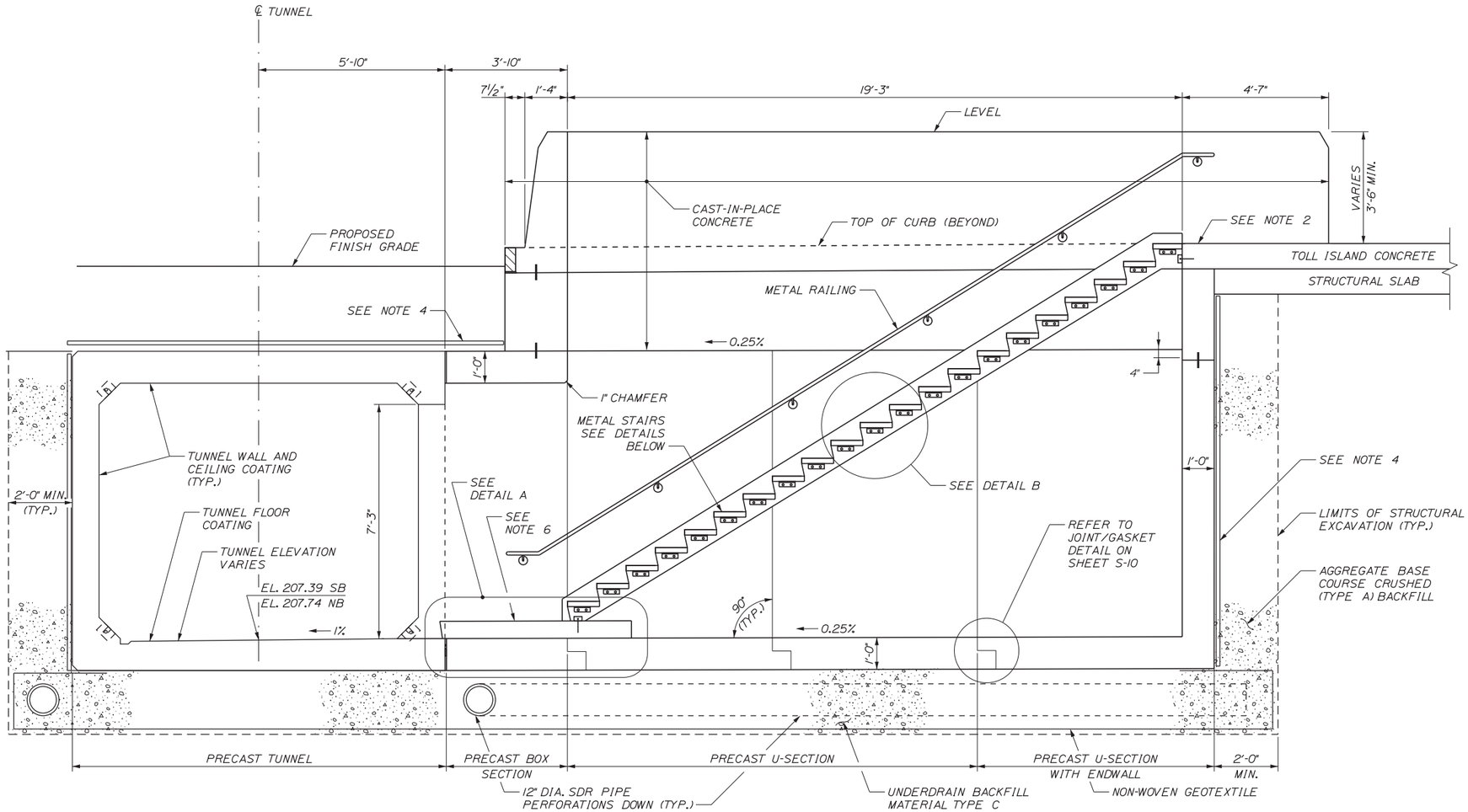
SHEET NUMBER: S-11

CONTRACT:2019.04

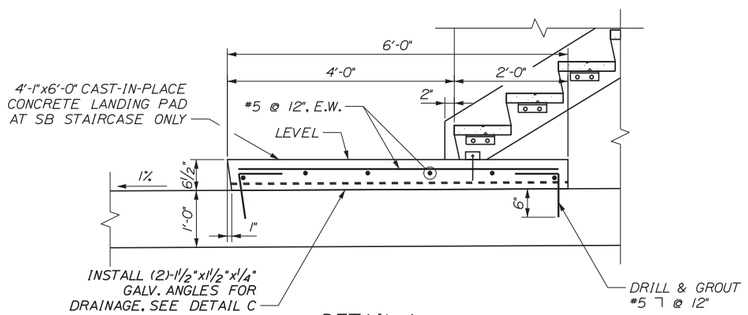
Date:3/20/2019

NOTES:

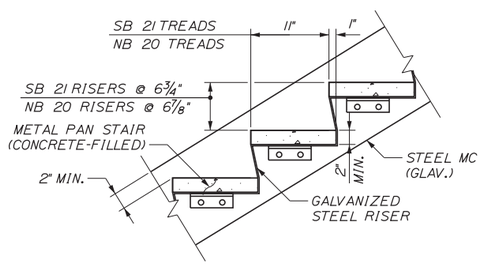
1. FOR PRECAST STAIRCASE NOTES SEE SHEET S-11.
2. FOR STAIRCASE LANDING ELEVATIONS SEE SHEET S-29.
3. WATERPROOFING NOT SHOWN FOR CLARITY.
4. PLACE 2" RIGID INSULATION BOARD OVER HIGH PERFORMANCE MEMBRANE WATERPROOFING ON EXTERIOR TOP AND SIDE SURFACES OF TUNNEL AND STAIRCASE.
5. FOR STAIRCASE PLAN SEE SHEET S-11.
6. CAST-IN-PLACE CONCRETE LANDING PAD FOR SB STAIRCASE ONLY. SEE DETAIL A. THIS SHEET. LANDING PAD SHALL BE INCIDENTAL TO ITEM 504.96, METAL STAIRS.
7. METAL STAIR SHALL INCLUDE HANDRAILS ON EACH SIDE OF THE STAIRCASE AND SUPPORTS TO THE CONCRETE WALL. COORDINATE LOCATION AND PLACEMENT OF GALVANIZED CONCRETE INSERTS IN THE STAIRCASES FOR SUPPORT OF THE METAL STAIR.
8. METAL STAIR SYSTEM SHALL INCLUDE SOLID RISERS AND METAL PANS FILLED WITH CONCRETE FOR THE TREADS. CONCRETE SHALL HAVE A BROOM FINISH AND BE COATED WITH AN APPROVED CONCRETE SEALANT. SEE ARCHITECTURAL AND ADMINISTRATION BUILDING STRUCTURAL SHEETS FOR ADDITIONAL STAIR DETAILS.
9. SEE ARCHITECTURAL PLANS FOR ADDITIONAL DETAILS ON METAL STAIRS AND RAILINGS.



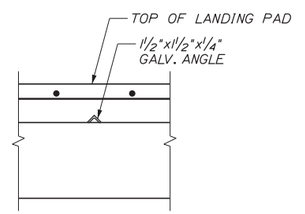
SECTION C-C
SCALE: ½" = 1'-0"



DETAIL A
SCALE: ¾" = 1'-0"



DETAIL B
NOT TO SCALE



DETAIL C
NOT TO SCALE

Scale:			
No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

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Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

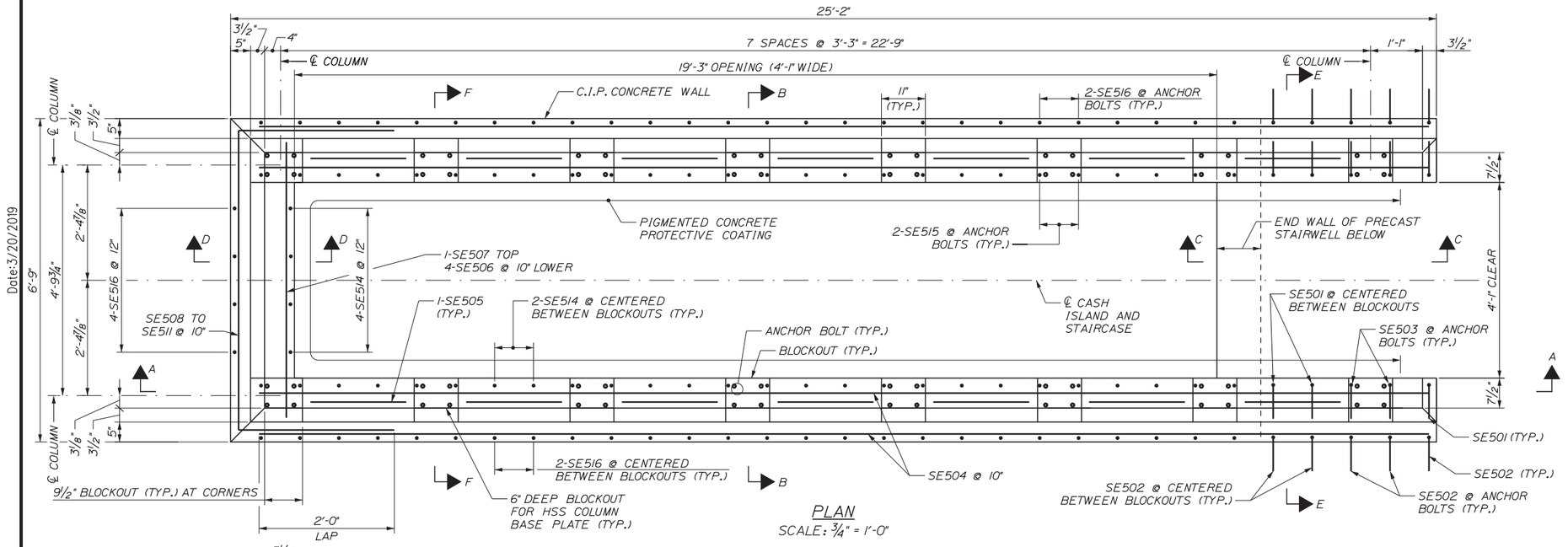
INTERCHANGE 103 ORT CONVERSION

TUNNEL STAIRCASE SECTION

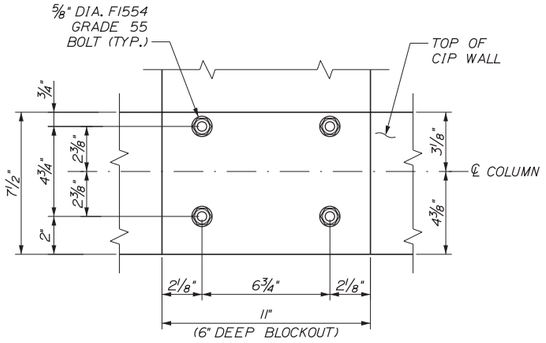
SHEET NUMBER: S-12

CONTRACT:2019.04

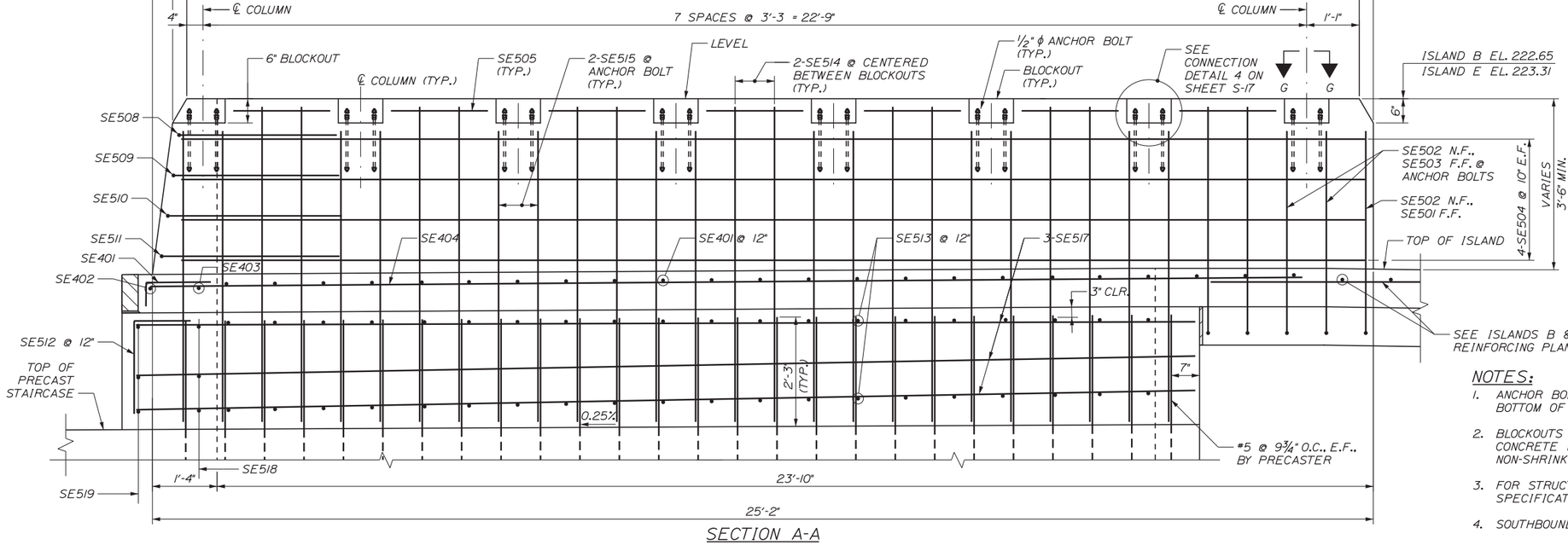
Filename: ...\MSTA\S-12_TunnelStairElev.dgn



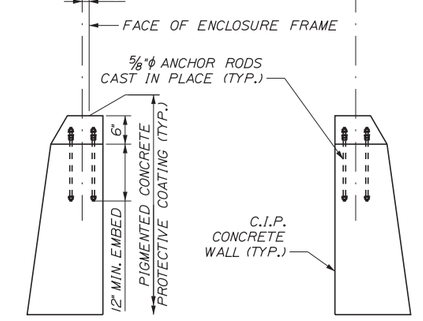
PLAN
SCALE: ¾" = 1'-0"



VIEW G-G
NOT TO SCALE



SECTION A-A
SCALE: ¾" = 1'-0"



SECTION F-F
SCALE: ¾" = 1'-0"

NOTES:

1. ANCHOR BOLTS SHALL BE CAST IN PLACE WITH NUT AND WASHER ON BOTTOM OF BOLT.
2. BLOCKOUTS FOR COLUMN BASE PLATES SHALL BE FORMED PRIOR TO CONCRETE POUR. BLOCKOUTS SHALL BE FILLED WITH APPROVED NON-SHRINK GROUT AFTER COLUMNS ARE INSTALLED.
3. FOR STRUCTURAL GENERAL NOTES SEE SHEET S-01. USE MATERIAL SPECIFICATIONS UNLESS OTHERWISE NOTED.
4. SOUTHBOUND STAIR ENCLOSURE SHOWN. NORTHBOUND SIMILAR.
5. FOR SECTIONS B-B, C-C, D-D & E-E SEE SHEET S-14.

Date: 3/20/2019

Filename: ...\S-13_Stair EnclReinf Dets.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

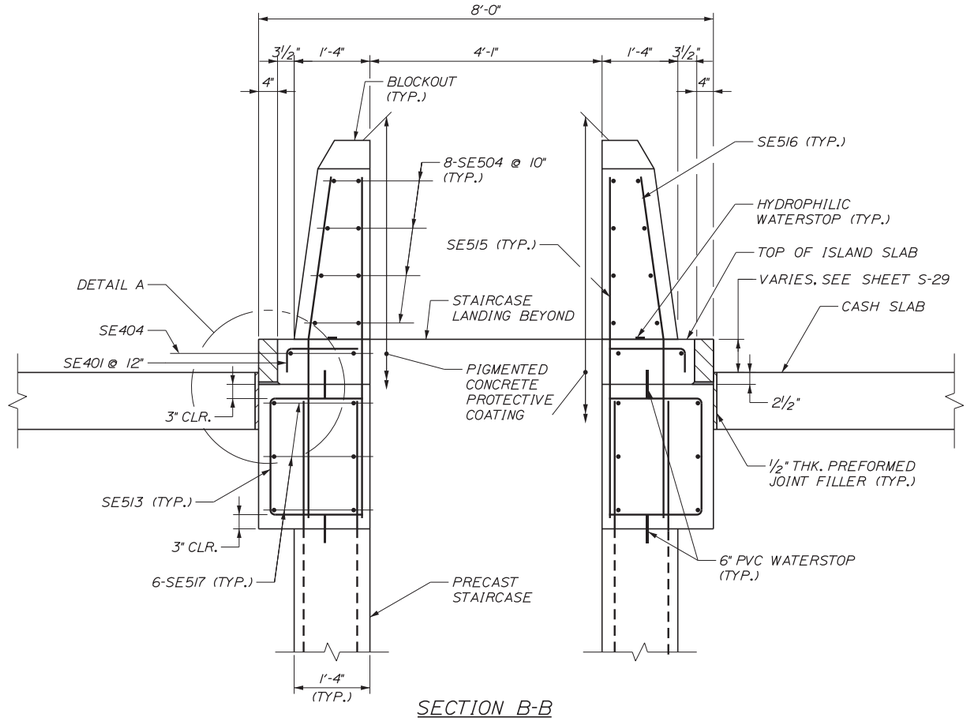
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

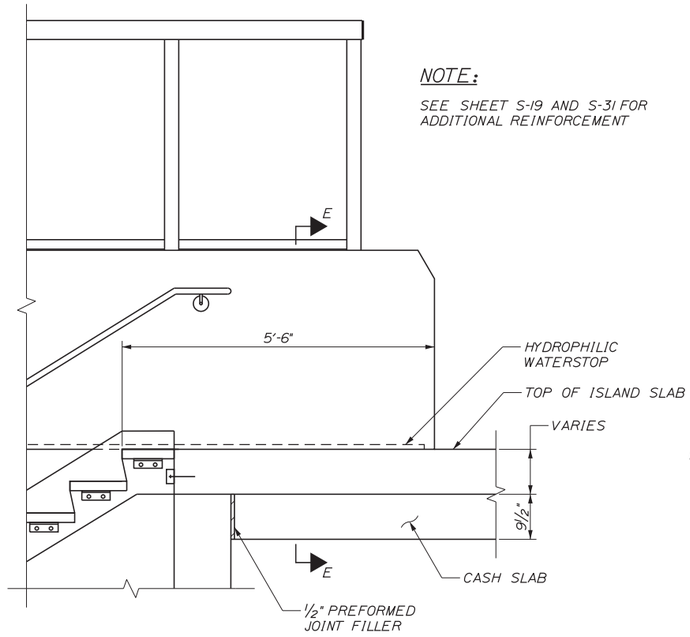
INTERCHANGE 103 ORT CONVERSION STAIR ENCLOSURE REINFORCING STEEL PLAN AND SECTIONS

SHEET NUMBER: S-13

CONTRACT: 2019.04



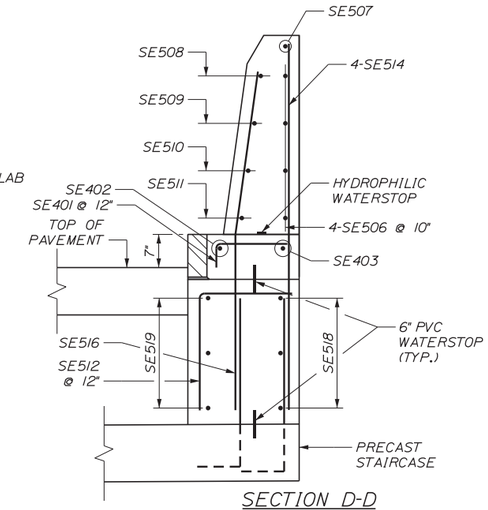
SECTION B-B
SCALE: ¾" = 1'-0"



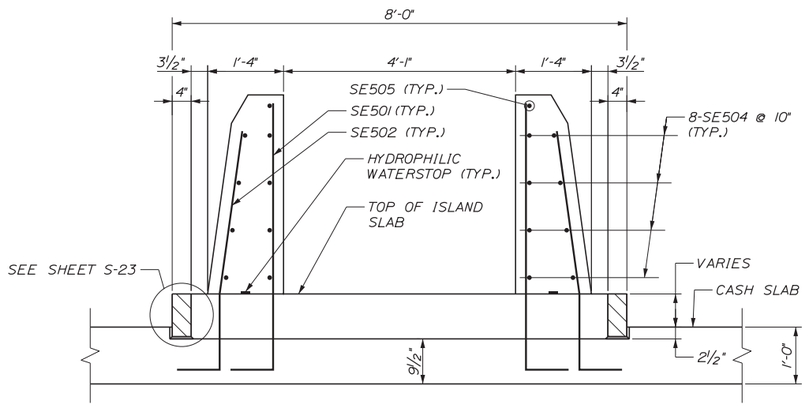
SECTION C-C
SCALE: ¾" = 1'-0"

NOTE:

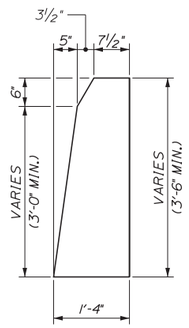
SEE SHEET S-19 AND S-31 FOR ADDITIONAL REINFORCEMENT



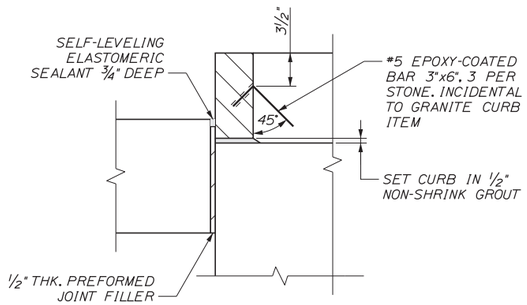
SECTION D-D
SCALE: ¾" = 1'-0"



SECTION E-E
SCALE: ¾" = 1'-0"



TYPICAL BARRIER
SCALE: ¾" = 1'-0"



DETAIL A
SCALE: 1½" = 1'-0"

NOTES:

1. FOR SECTION LOCATIONS SEE SHEET S-13.
2. CASH SLAB AND ISLAND SLAB REINFORCING NOT SHOWN FOR CLARITY. SEE SHEETS S-19, S-20, S-25, S-26, S-30, S-31, S-36, S-37, & S-38

Date:3/20/2019

Filename: ...\S-14_Stair Encl Sections.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103 ORT CONVERSION

STAIR ENCLOSURE SECTIONS

SHEET NUMBER: S-14

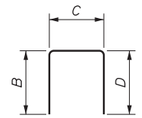
CONTRACT:2019.04

INTERCHANGE 103 NORTHBOUND - STAIR ENCLOSURE REINFORCING STEEL SCHEDULE

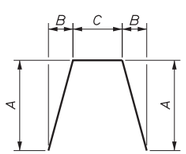
MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	INCR.	REMARKS
STAIRWAY ENCLOSURE - CURTAIN WALL													
SE401	4	3	1'-7"	17		3"	1'-4"						
SE402	4	1	10'-3"	17		1'-8"	6'-11"	1'-8"					
SE403	4	2	7'-0"	STR									
SE404	4	4	23'-1"	STR									
SE501	5	6	5'-5"	17		10"	4'-7"						
SE502	5	10	5'-1"	17E	10"	1'-3"	3'-0"	5"					
SE503	5	4	4'-11"	17		10"	4'-1"						
SE504	5	16	24'-5"	STR									
SE505	5	14	2'-0"	STR									
SE506	5	4	5'-7"	STR									
SE507	5	1	3'-10"	STR									
SE508	5	1	12'-1"	17		3'-3"	5'-7"	3'-3"					
SE509	5	1	12'-9"	17		3'-5"	5'-11"	3'-5"					
SE510	5	1	13'-3"	17		3'-7"	6'-1"	3'-7"					
SE511	5	1	13'-8"	17		3'-8"	6'-4"	3'-8"					
SE512	5	4	2'-9"	17		1'-2"	1'-7"						
SE513	5	3	4'-2"	17		1'-7"	1'-0"	1'-7"					
SE514	5	28	5'-7"	STR									
SE515	5	28	5'-1"	STR									
SE516	5	56	5'-3"	17E		2'-3"	3'-0"	5"					
SE517	5	12	21'-10"	STR									
SE518	5	3	7'-8"	STR									
SE519	5	3	11'-8"	17		2'-0"	7'-8"	2'-0"					

INTERCHANGE 103 SOUTHBOUND - STAIR ENCLOSURE REINFORCING STEEL SCHEDULE

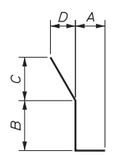
MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	INCR.	REMARKS
STAIRWAY ENCLOSURE - CURTAIN WALL													
SE401	4	3	1'-7"	17		3"	1'-4"						
SE402	4	1	10'-3"	17		1'-8"	6'-11"	1'-8"					
SE403	4	2	7'-0"	STR									
SE404	4	4	23'-1"	STR									
SE501	5	6	5'-3"	17		10"	4'-5"						
SE502	5	10	4'-11"	17E	10"	1'-1"	3'-0"	5"					
SE503	5	4	4'-9"	17		10"	3'-11"						
SE504	5	16	24'-5"	STR									
SE505	5	14	2'-0"	STR									
SE506	5	4	5'-7"	STR									
SE507	5	1	3'-10"	STR									
SE508	5	1	12'-1"	17		3'-3"	5'-7"	3'-3"					
SE509	5	1	12'-9"	17		3'-5"	5'-11"	3'-5"					
SE510	5	1	13'-3"	17		3'-7"	6'-1"	3'-7"					
SE511	5	1	13'-8"	17		3'-8"	6'-4"	3'-8"					
SE512	5	4	2'-9"	17		1'-2"	1'-7"						
SE513	5	3	4'-2"	17		1'-7"	1'-0"	1'-7"					
SE514	5	28	6'-6"	STR									
SE515	5	28	6'-0"	STR									
SE516	5	56	5'-11"	17E		2'-11"	3'-0"	5"					
SE517	5	12	21'-10"	STR									
SE518	5	3	7'-8"	STR									
SE519	5	3	11'-8"	17		2'-0"	7'-8"	2'-0"					



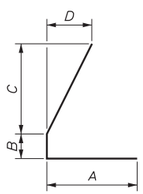
TYPE 17



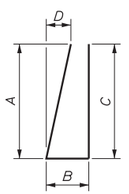
TYPE 17C



TYPE 17E



TYPE 17H



TYPE 17J

NOTE:

ALL REINFORCING IS STEEL AND EPOXY COATED UNLESS OTHERWISE NOTED.

Date:3/20/2019

Filename: ...\S-15_StairEnclReinfSched.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	KLW	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

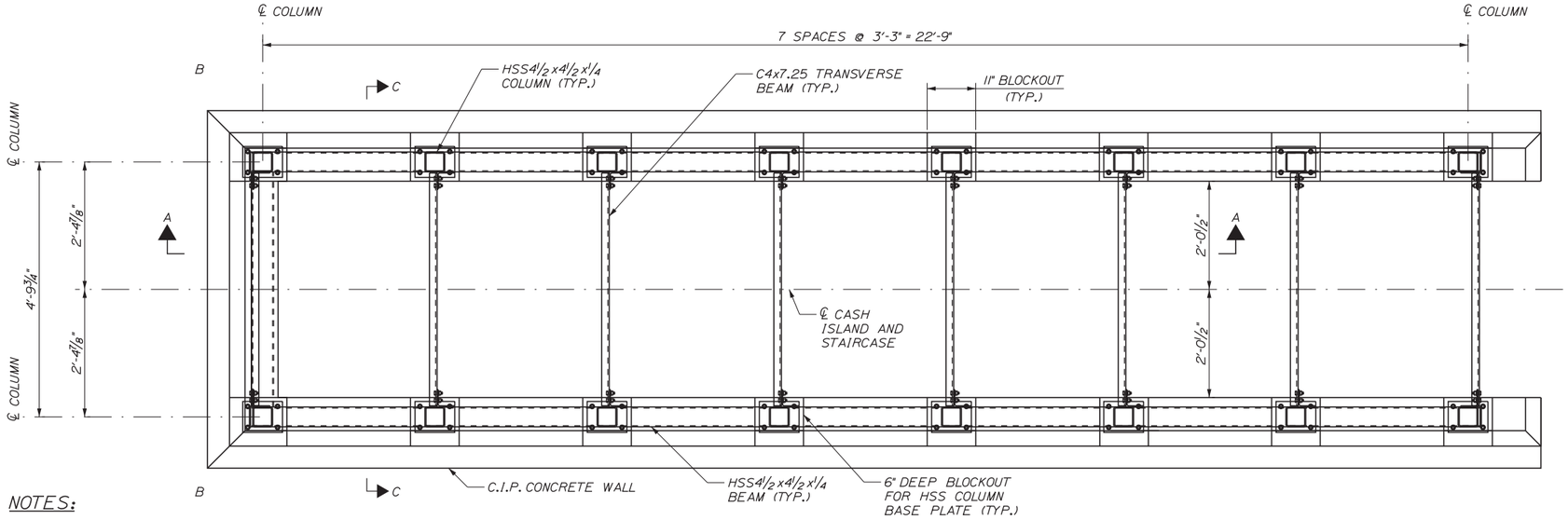
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

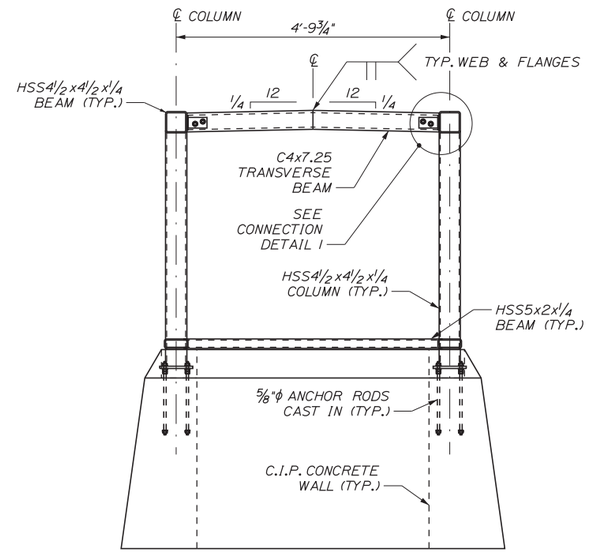
INTERCHANGE 103 ORT CONVERSION STAIR ENCLOSURE REINFORCING STEEL SCHEDULE

SHEET NUMBER: S-15

CONTRACT:2019.04



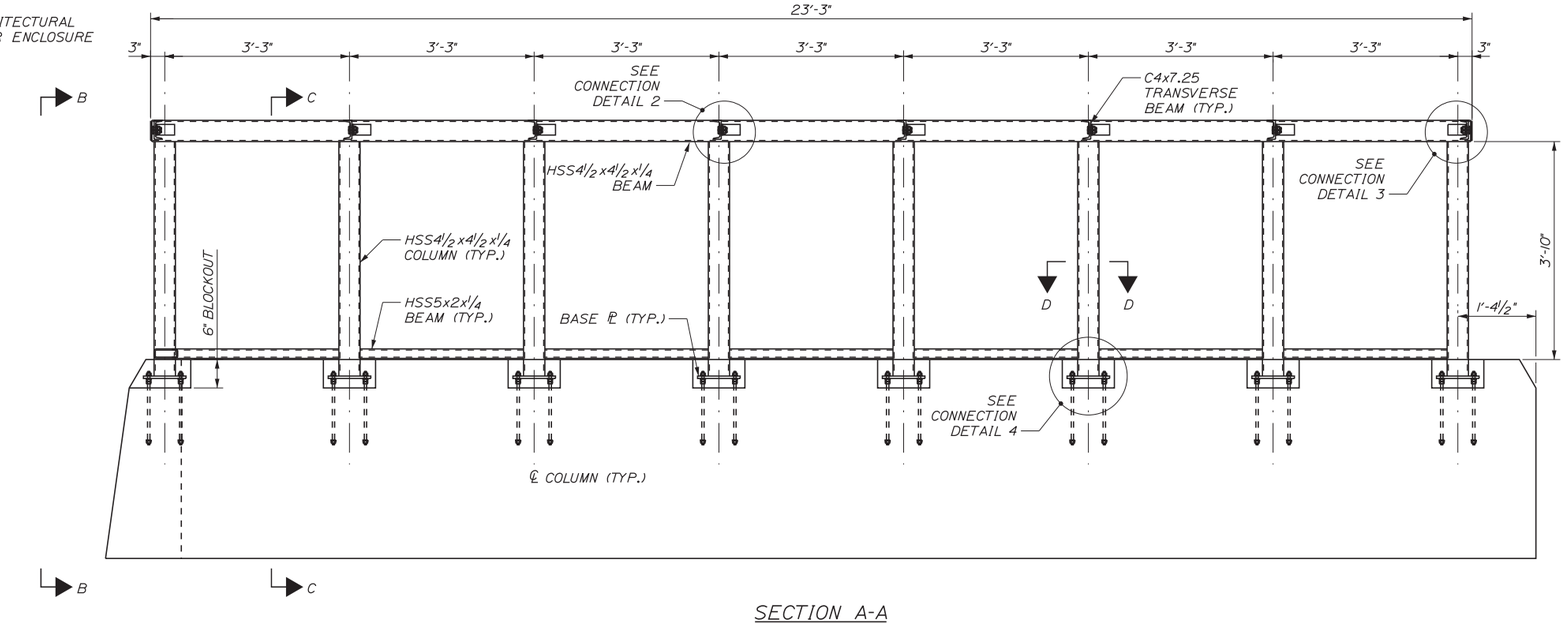
PLAN
SCALE: ¾" = 1'-0"



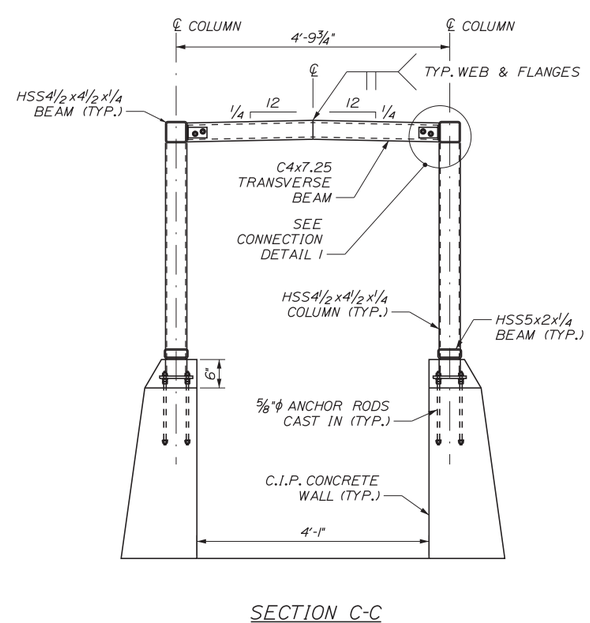
SECTION B-B
SCALE: ¾" = 1'-0"

NOTES:

1. STEEL SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
2. FOR CONNECTION DETAILS 1 TO 4 SEE SHEET S-17.
3. SEE ARCHITECTURAL PLANS FOR ENCLOSURE DETAILS.



SECTION A-A
SCALE: ¾" = 1'-0"



SECTION C-C
SCALE: ¾" = 1'-0"

Date:3/20/2019

Filename: ...\S-16_Stair Encl From Dets.dgn

Scale:			
No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

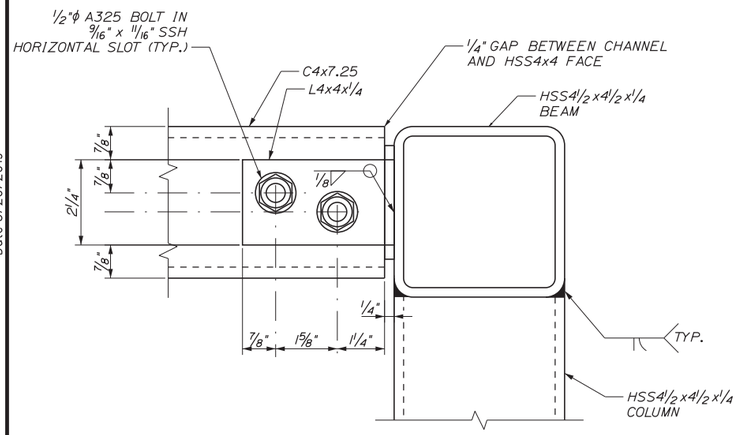
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103 ORT CONVERSION STAIR ENCLOSURE FRAME PLAN AND SECTIONS

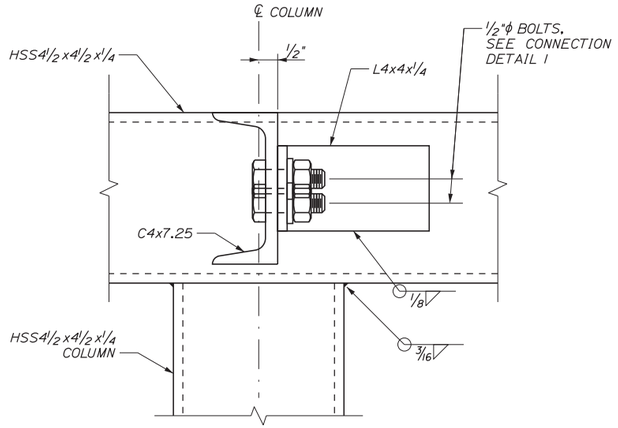
SHEET NUMBER: S-16

CONTRACT:2019.04

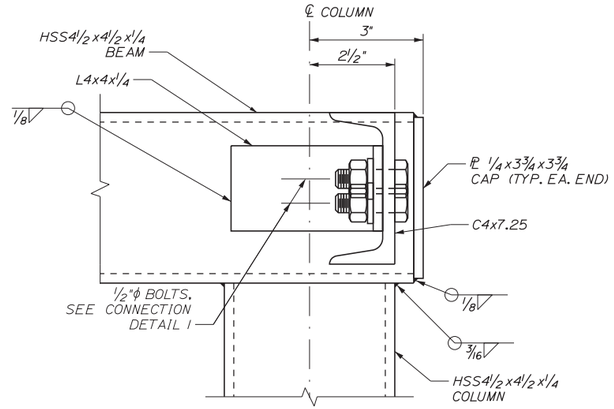
Date:3/20/2019



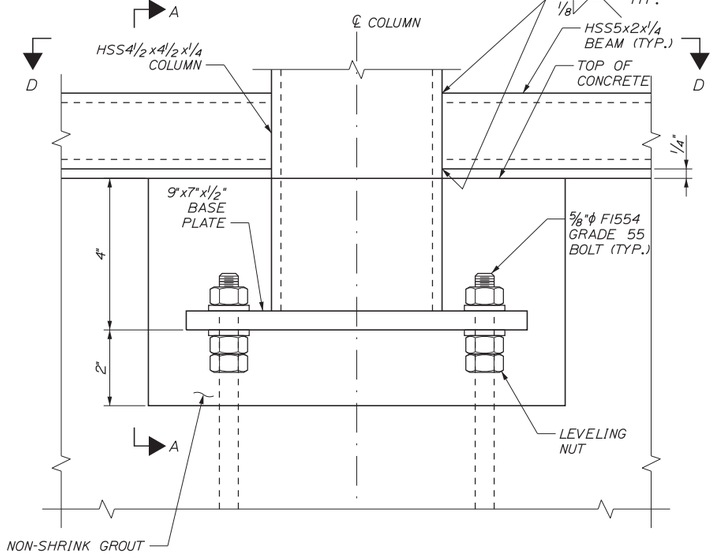
CONNECTION DETAIL 1
SCALE: 6" = 1'-0"



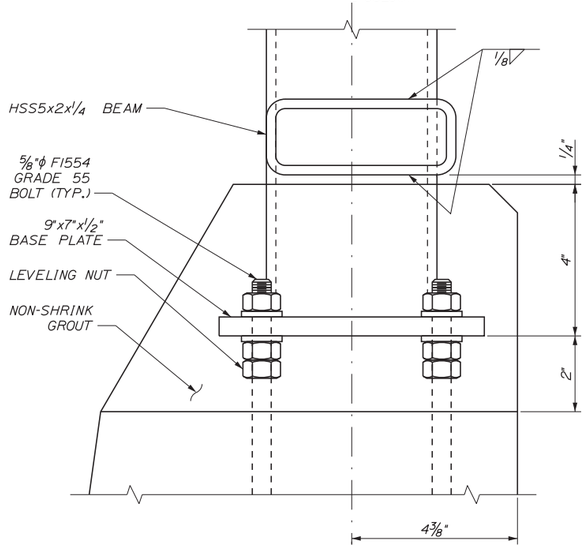
CONNECTION DETAIL 2
SCALE: 6" = 1'-0"



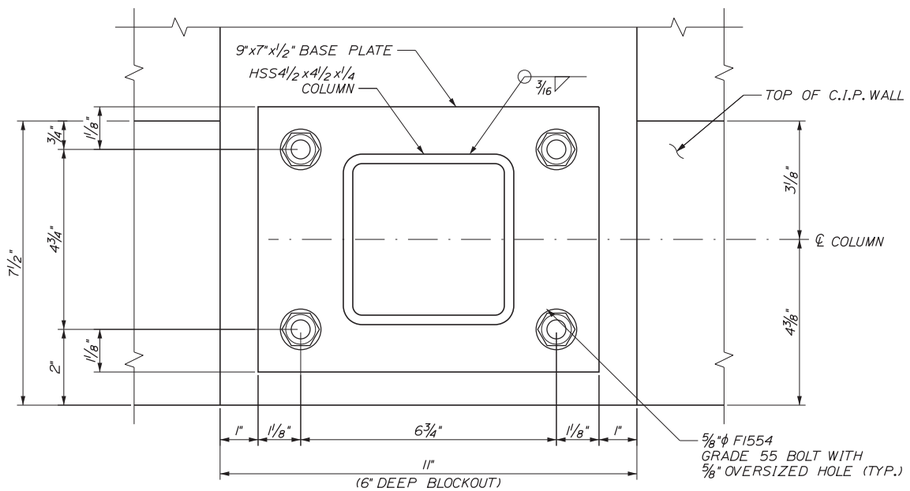
CONNECTION DETAIL 3
SCALE: 6" = 1'-0"



CONNECTION DETAIL 4
SCALE: 6" = 1'-0"



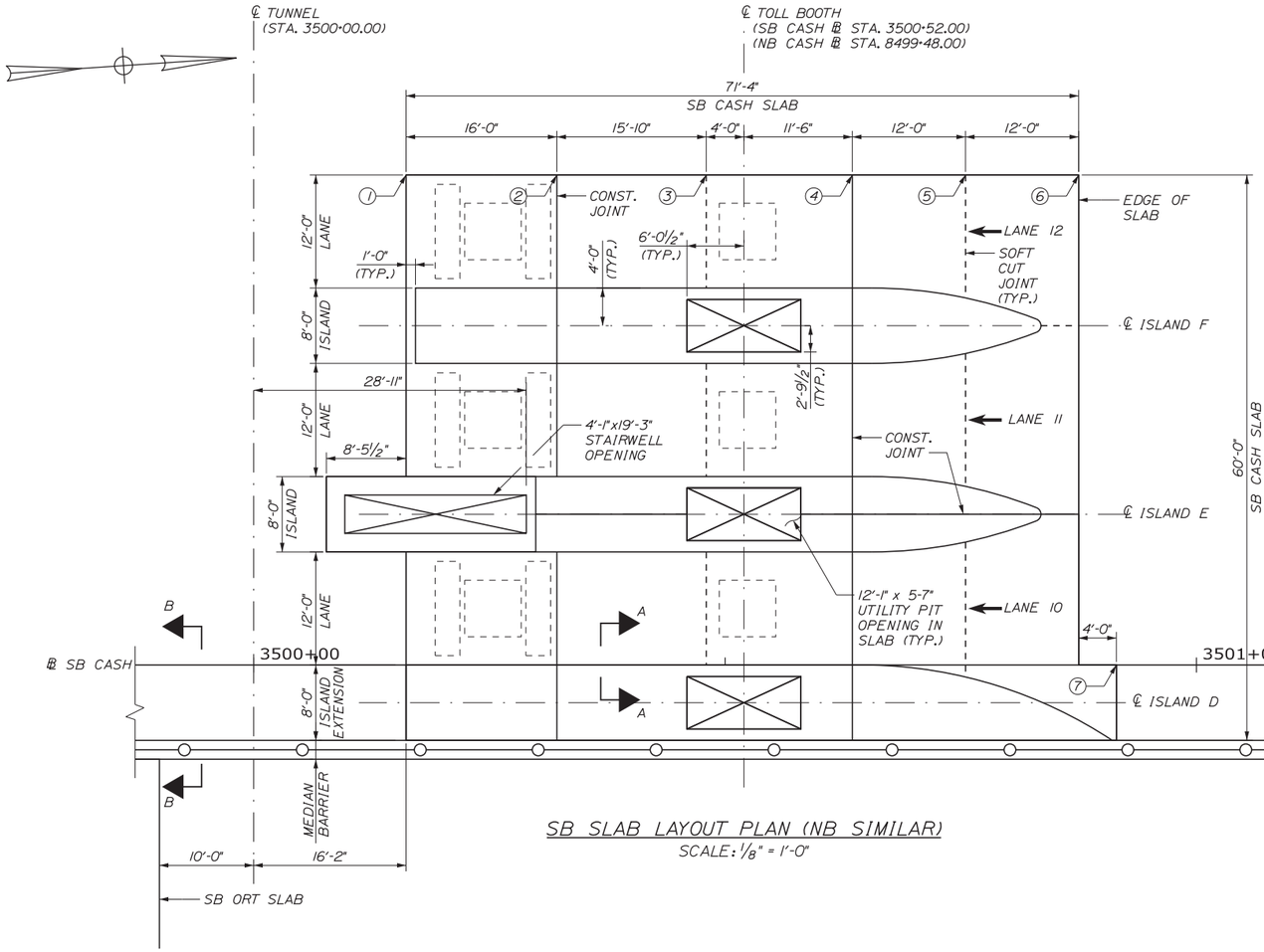
SECTION A-A
SCALE: 6" = 1'-0"



SECTION D-D
SCALE: 6" = 1'-0"

Filename: ...\MSTA\S-17_StairEnclFraDets.dgn

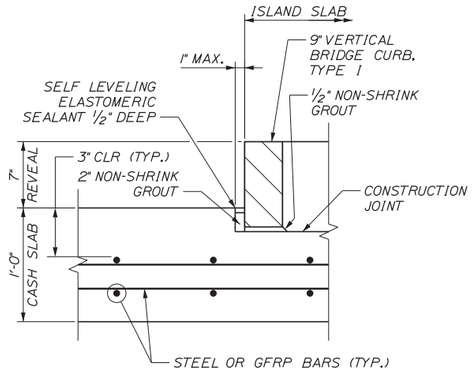
Scale:				Designed by: Stantec	STANTEC CONSULTING SERVICES INC. 482 PAYNE ROAD SCARBOROUGH, ME 04074 TEL (207) 887-3448 FAX (207) 883-3376	MAINE TURNPIKE	THE GOLD STAR MEMORIAL HIGHWAY	INTERCHANGE 103 ORT CONVERSION STAIR ENCLOSURE FRAME DETAILS
No.	Revision	By	Date					
				CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE			MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE	SHEET NUMBER: S-17
				By / Date / By / Date				CONTRACT:2019.04
				Designed MJC 3\20\19 Checked GAB 3\20\19				375 OF 503
				Drawn KLW 3\20\19 In Charge of GAE 3\20\19				



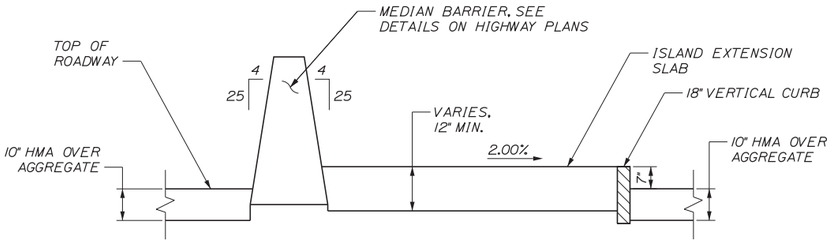
SB SLAB LAYOUT PLAN (NB SIMILAR)
SCALE: 1/8" = 1'-0"

NOTES

1. SOFT CUT JOINTS TO BE CUT WITHIN 4 TO 6 HOURS OF INITIAL CONCRETE SET.
2. CONCRETE FOR CASH SLAB SHALL BE CLASS AAA WITH 5 LB/CY OF SYNTHETIC FIBER REINFORCING.
3. CASH SLAB SHALL BE BROOM FINISHED.
4. OUTSIDE LANE IS 11'-0" PLUS 1'-0" FOR PAVEMENT MARKINGS. SEE HIGHWAY PLANS.
5. CONTRACTOR SHALL COORDINATE SIZE OF SLAB OPENING TO FIT PRECAST CONCRETE STAIRWELL . ADJUST CASH SLAB REBAR SCHEDULE ACCORDINGLY.
6. SEE HIGHWAY PLANS FOR DETAILS OF MEDIAN BARRIERS.
7. DO NOT LOCATE ANY OF THE SOFT CUT JOINTS THROUGH END OF THE SENSOR LOOPS.



SECTION A-A
(CONSTRUCTION JOINT AT ISLANDS)
NOT TO SCALE



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

CASH SLAB ELEVATIONS

POINT	NORTHBOUND		SOUTHBOUND	
	STATION	ELEV.	STATION	ELEV.
1	8499+83.83	218.51	3500+16.17	218.98
2	8499+67.83	218.63	3500+32.17	219.21
3	8499+52.00	218.66	3500+48.00	219.32
4	8499+36.50	218.57	3500+63.50	219.30
5	8499+24.50	218.42	3500+75.50	219.19
6	8499+12.50	218.24	3500+87.50	219.05
7	8499+8.50	218.18	3500+91.50	219.01

Date:3/20/2019

Filename: ...\MSTA\S-18_CashSlabLayout.dgn

No.	Revision	By	Date

Scale:

Designed by:

Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	KLW	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION

SOUTHBOUND CASH SLAB LAYOUT PLAN

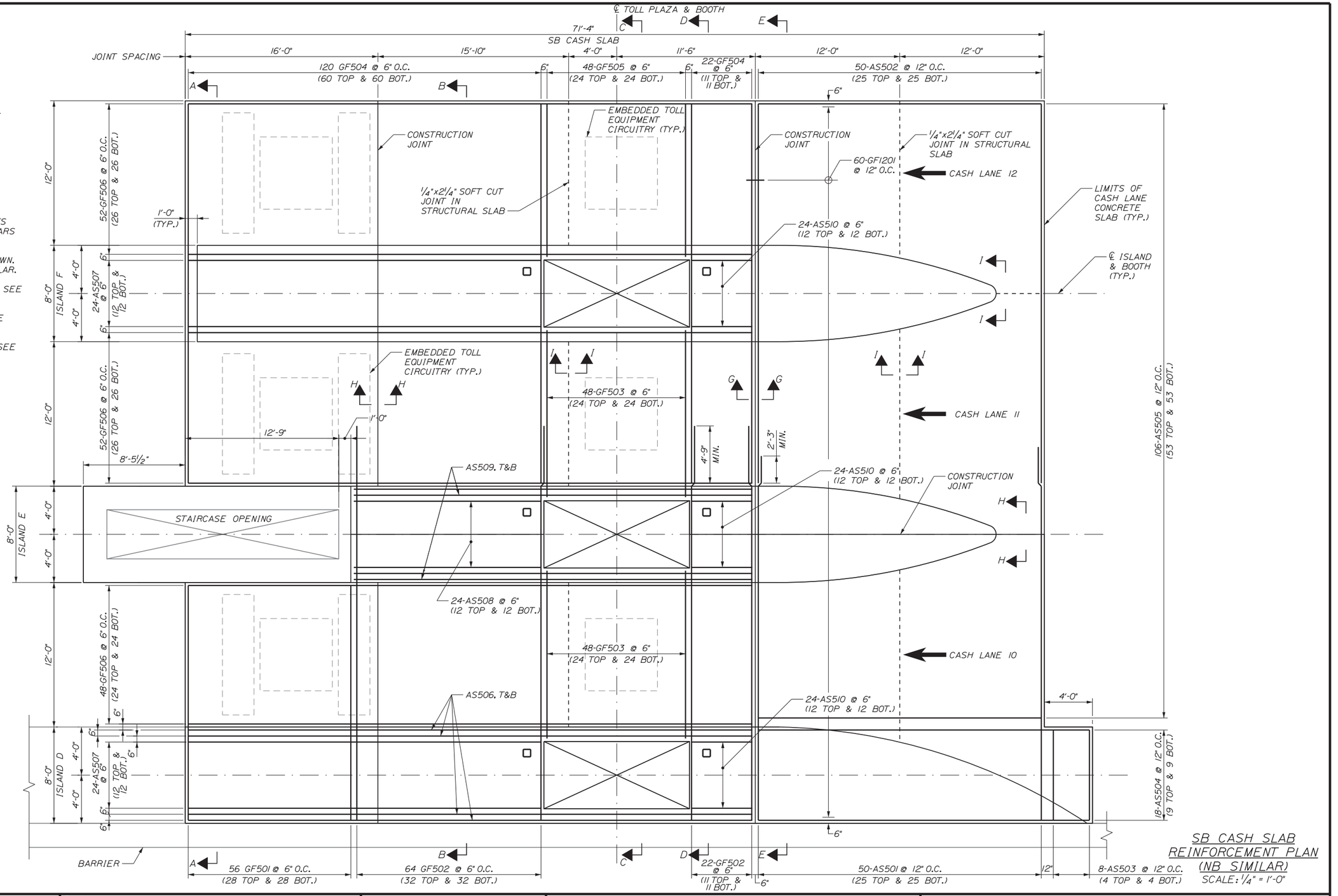
SHEET NUMBER: S-18

CONTRACT:2019.04

Date:3/20/2019

NOTES:

1. SEE ISLAND REINFORCING SHEETS S-26, S-31 AND S-37 FOR DOWEL BARS EMBEDDED IN CASH SLAB.
2. SOUTHBOUND CASH SLAB IS SHOWN. NORTHBOUND CASH SLAB IS SIMILAR.
3. FOR SECTIONS A-A, B-B AND C-C SEE SHEET S-20.
4. FOR SECTIONS D-D AND E-E SEE SHEET S-21.
5. FOR SECTIONS G-G, H-H AND I-I SEE SHEET S-22.



SB CASH SLAB REINFORCEMENT PLAN (NB SIMILAR)

SCALE: 1/4" = 1'-0"

Filename: ...\S-19_CashSlabLayoutReinf.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	KLW	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

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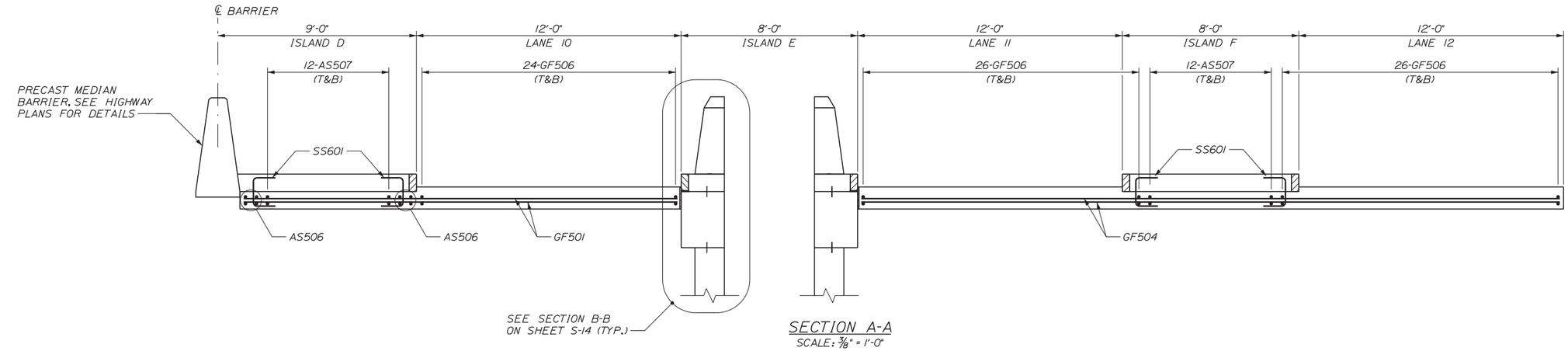
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103 ORT CONVERSION SOUTHBOUND CASH SLAB REINFORCEMENT PLAN

SHEET NUMBER: S-19

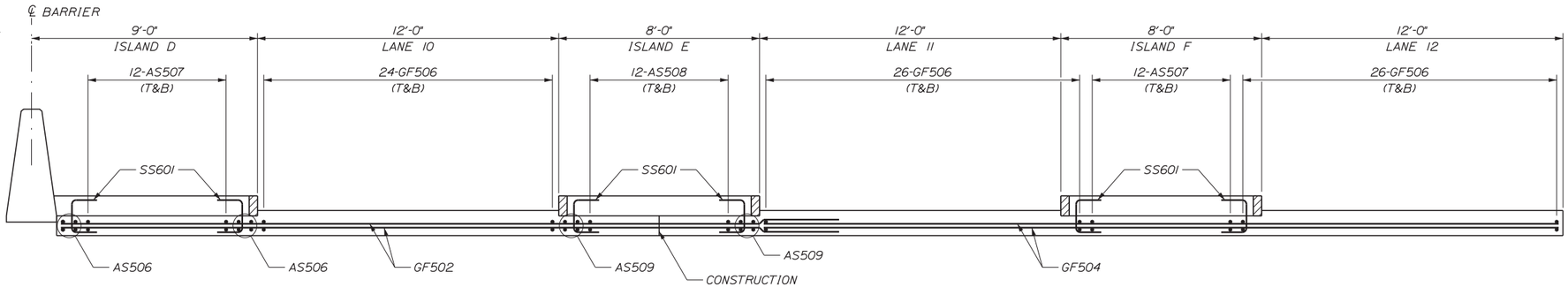
CONTRACT:2019.04



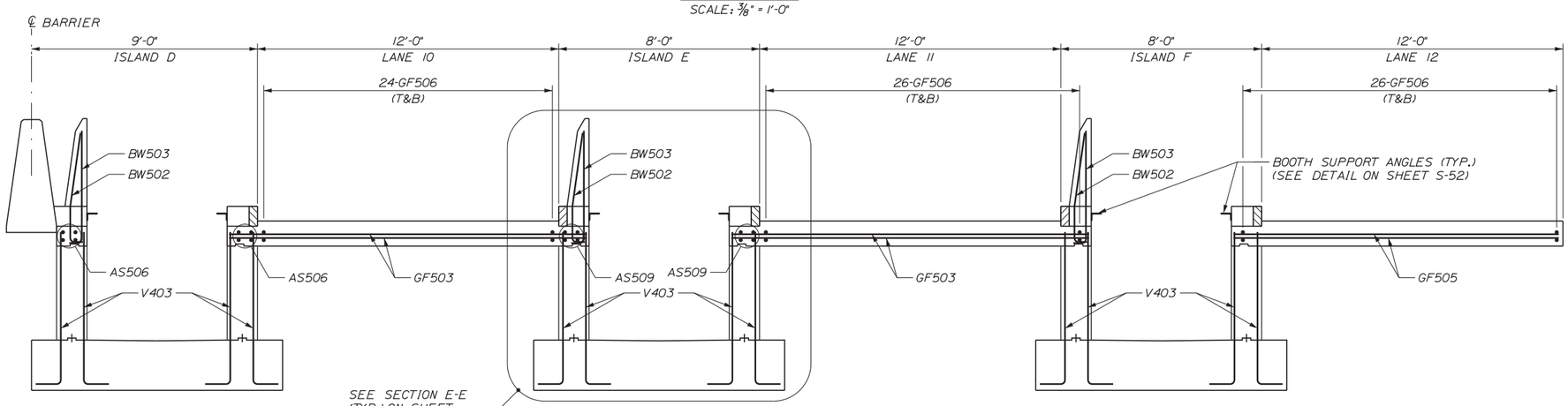
SECTION A-A
SCALE: 3/8" = 1'-0"

NOTES:

1. FOR SECTION LOCATIONS SEE SHEET S-19.



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



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

No.	Revision	By	Date

Scale:

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	KLW	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

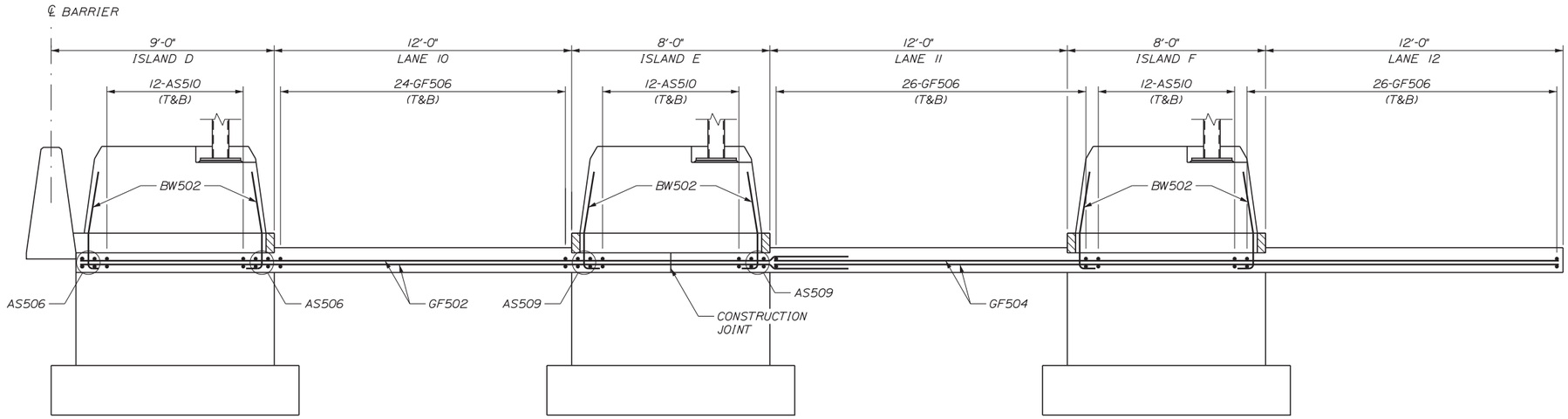
INTERCHANGE 103 ORT CONVERSION SOUTHBOUND CASH SLAB REINFORCEMENT SECTIONS 1

SHEET NUMBER: S-20

CONTRACT:2019.04

Date:3/20/2019

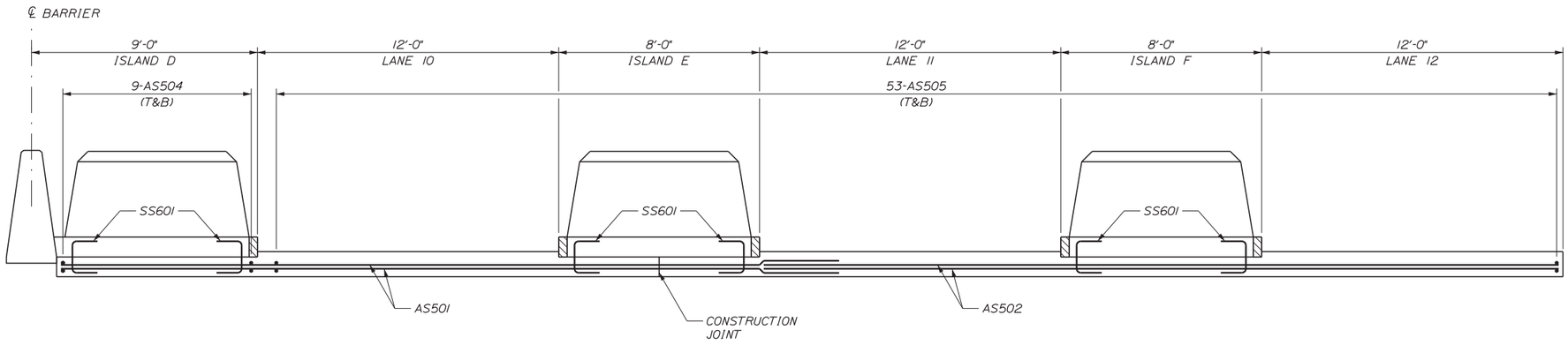
Filename: ...\S-20_CashSlabLayoutReinf_sections1.dgn



NOTES:

1. FOR SECTION LOCATIONS SEE SHEET S-19.

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



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

Date:3/20/2019

Filename: ...\S-21_CashSlabLayoutReinf_sections2.dgn

Scale:			
No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	KLW	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

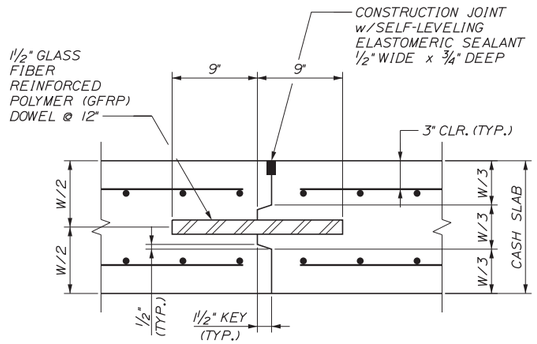
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

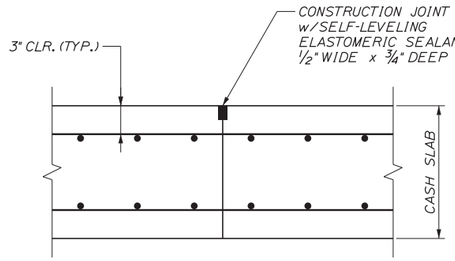
INTERCHANGE 103 ORT CONVERSION SOUTHBOUND CASH SLAB REINFORCEMENT SECTIONS 2

SHEET NUMBER: S-21

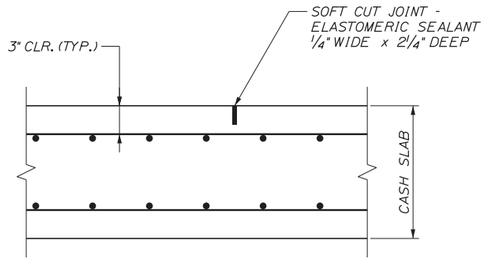
CONTRACT:2019.04



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



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



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

NOTES

1. FOR SECTION LOCATIONS SEE SHEET S-19.

Date:3/20/2019

Filename: ...\S-22_CashSlabLayoutReinf_sections3.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	KLW	3\20\19	In Charge of	GAE	3\20\19

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MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
SOUTHBOUND CASH SLAB
REINFORCEMENT SECTIONS 3

SHEET NUMBER: S-22

CONTRACT:2019.04

INTERCHANGE 103 SOUTHBOUND - CASH SLAB REINFORCING STEEL SCHEDULE

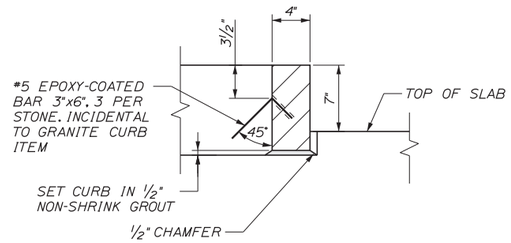
MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	INCR.	REMARKS
STRUCTURAL SLAB													
AS501	5	50	30'-2"	STR									
AS502	5	50	31'-10"	STR									
AS503	5	8	7'-8"	STR									
AS504	5	18	27'-8"	STR									
AS505	5	106	23'-6"	STR									
AS506	5	8	47'-0"	STR									
AS507	5	48	29'-5"	STR									
AS508	5	24	15'-8"	STR									
AS509	5	8	33'-2"	STR									
AS510	5	72	5'-1"	STR									
GF501	5	56	19'-8"	STR									GFRP
GF502	5	86	32'-8"	STR									GFRP
GF503	5	96	14'-1"	STR									GFRP
GF504	5	142	31'-8"	STR									GFRP
GF505	5	48	12'-10"	STR									GFRP
GF506	5	152	47'-0"	STR									GFRP
GF1201	12	60	1'-6"	STR									GFRP

INTERCHANGE 103 NORTHBOUND - CASH SLAB REINFORCING STEEL SCHEDULE

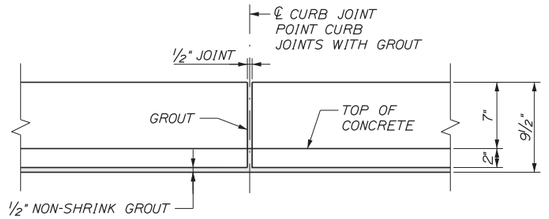
MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	INCR.	REMARKS
STRUCTURAL SLAB													
AS501	5	50	30'-2"	STR									
AS502	5	50	31'-10"	STR									
AS503	5	8	7'-8"	STR									
AS504	5	18	27'-8"	STR									
AS505	5	106	23'-6"	STR									
AS506	5	8	47'-0"	STR									
AS507	5	48	29'-5"	STR									
AS508	5	24	15'-8"	STR									
AS509	5	8	33'-2"	STR									
AS510	5	72	5'-1"	STR									
GF501	5	56	19'-8"	STR									GFRP
GF502	5	86	32'-8"	STR									GFRP
GF503	5	96	14'-1"	STR									GFRP
GF504	5	142	31'-8"	STR									GFRP
GF505	5	48	12'-10"	STR									GFRP
GF506	5	152	47'-0"	STR									GFRP
GF1201	12	60	1'-6"	STR									GFRP

NOTE:

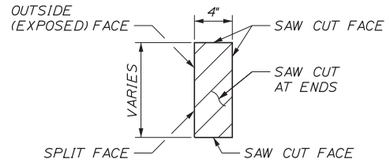
ALL REINFORCING IS STEEL AND EPOXY COATED UNLESS OTHERWISE NOTED.



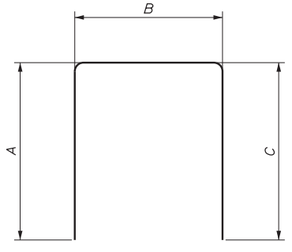
VERTICAL CURB, TYPE I SECTION
1½" = 1'-0"



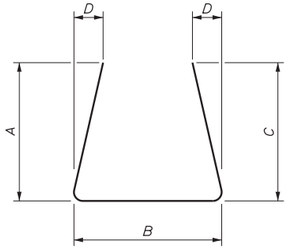
9" VERTICAL BRIDGE CURB, TYPE I ELEVATION
1½" = 1'-0"



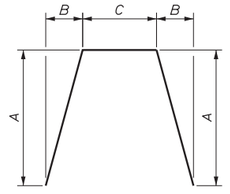
VERTICAL CURB, TYPE I CUT DETAIL
1½" = 1'-0"



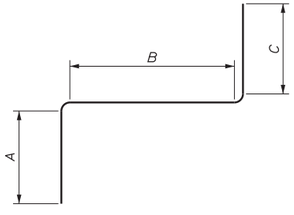
TYPE I7



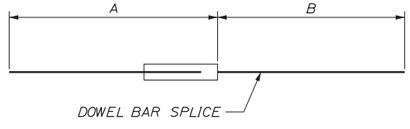
TYPE I7K



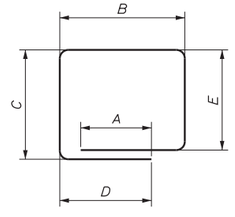
TYPE I7C



TYPE I7A



TYPE I13



TYPE TI

Date:3/20/2019

Filename: ...\S-23_SB_NB_CashSlab_ReinfSched.dgn

Scale:			
No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	KLW	3\20\19	In Charge of	GAE	3\20\19

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THE GOLD STAR MEMORIAL HIGHWAY

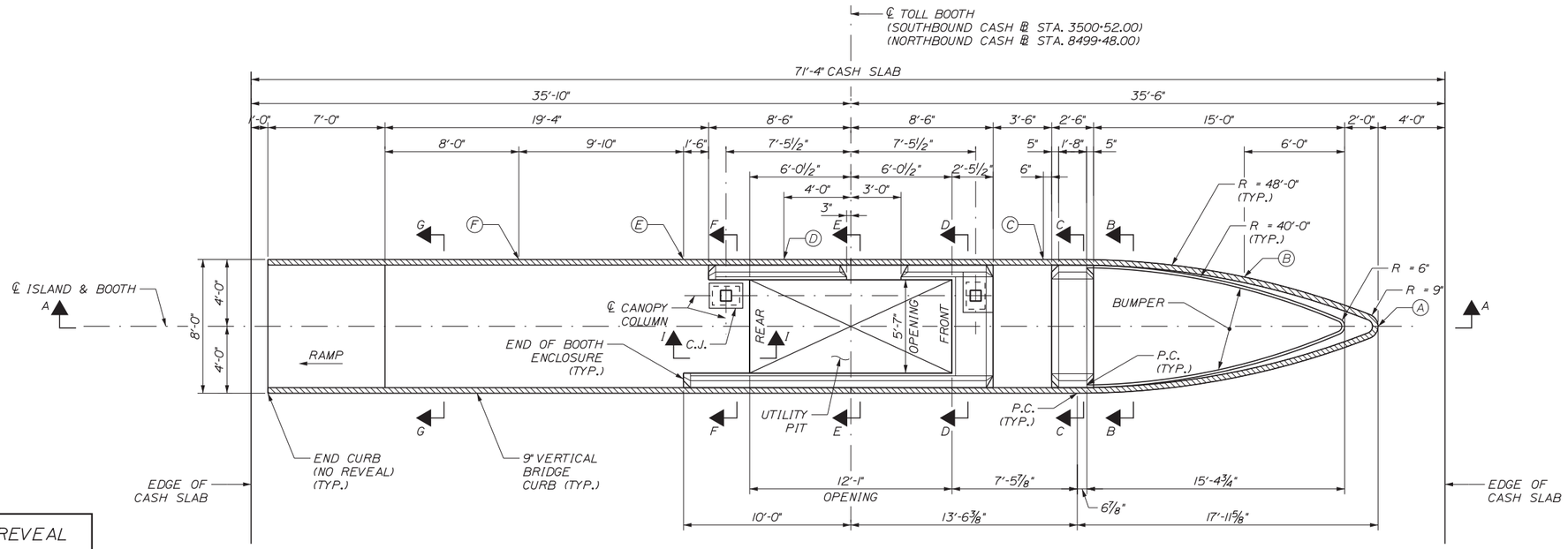
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
SOUTHBOUND & NORTHBOUND CASH SLAB
DETAILS & REINFORCING STEEL SCHEDULES

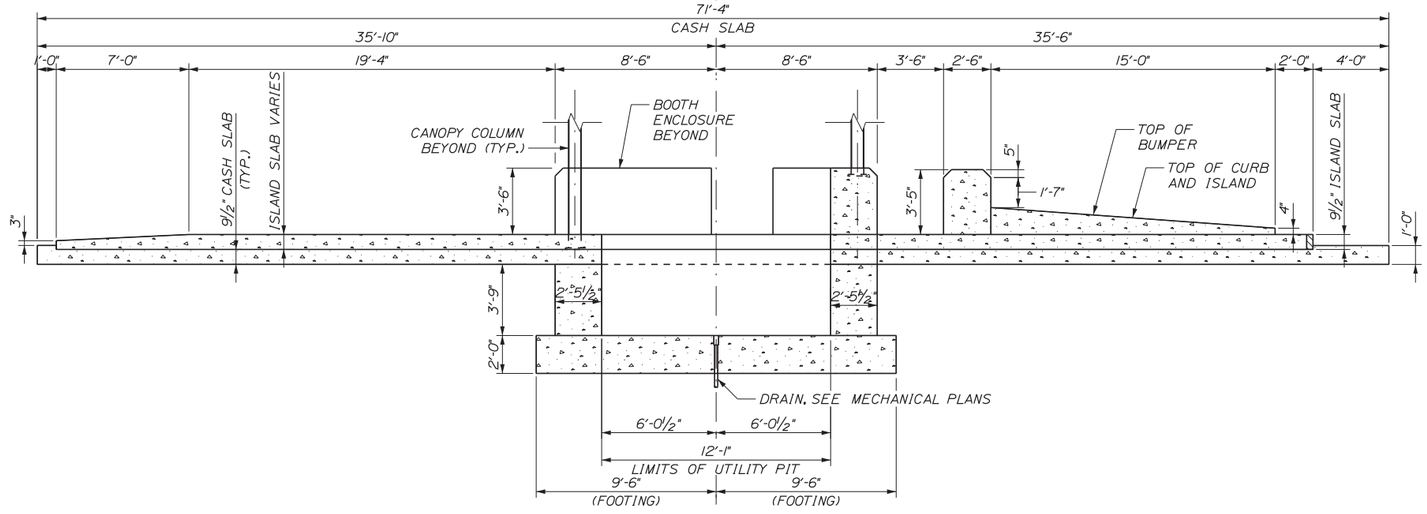
SHEET NUMBER: S-23

CONTRACT:2019.04

Date:3/20/2019



PLAN
SCALE: 1/4" = 1'-0"



SECTION A-A
SCALE: 1/4" = 1'-0"

CURB ELEVATIONS AND REVEAL

ISLAND	POINT	T.O.C.	*B.O.C	REVEAL
A	Ⓐ	218.88	218.30	7"
	Ⓑ	219.00	218.42	7"
	Ⓒ	219.25	218.57	8⅛"
	Ⓓ	219.25	218.66	7⅛"
	Ⓔ	219.25	218.65	7¼"
	Ⓕ	219.21	218.63	7"
F	Ⓐ	219.67	219.09	7"
	Ⓑ	219.77	219.19	7"
	Ⓒ	219.87	219.30	6⅞"
	Ⓓ	219.87	219.32	6⅝"
	Ⓔ	219.87	219.28	7"
	Ⓕ	219.79	219.21	7"

T.O.C. = TOP OF CURB AND ISLAND SLAB
*B.O.C. = BOTTOM OF CURB AT TOP OF ROADWAY (SEE NOTE 6)

NOTES

1. FOR REINFORCING DETAILS OF ISLANDS A & F SEE SHEETS S-26 & S-27.

2. FOR LOCATION OF ELECTRONIC TOLL COLLECTION EQUIPMENT, SEE ELECTRICAL PLANS.

3. FOR CONDUITS WITHIN ISLAND AND STRUCTURAL SLAB, SEE ELECTRICAL PLANS.

4. BARRIER WALL AND ISLAND SLABS TO HAVE ADDITIONAL CONSTRUCTION JOINTS SPACED EVERY 10 FEET OR AS DIRECTED BY THE RESIDENT.

5. FOR SECTIONS B-B, C-C, D-D, E-E, F-F, G-G & I-I SEE SHEET S-25.

6. CUT OR SHIM VERTICAL CURB AND VARY SLAB THICKNESS TO MEET TABULATED CURB ELEVATIONS BETWEEN REFERENCE POINTS A AND F.

7. FOR CONDUITS/PIPES WITHIN THE UTILITY PIT, SEE MECHANICAL AND ELECTRICAL PLANS. SEE SHEET S-52 FOR SLEEVE DETAIL FOR CONDUITS/PIPES.

Filename: ...\S-24_CashIslandPlnSec_AF.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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THE GOLD STAR MEMORIAL HIGHWAY

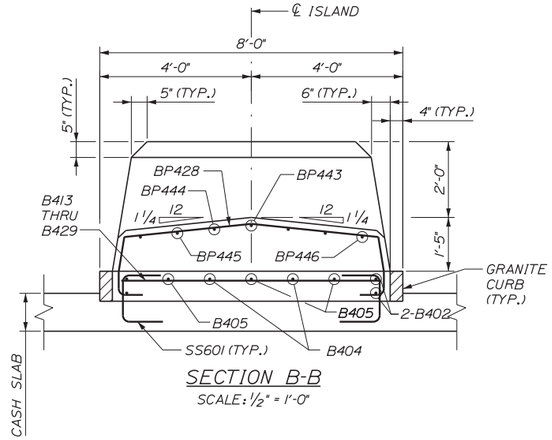
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION

CASH ISLANDS A & F PLAN & SECTION

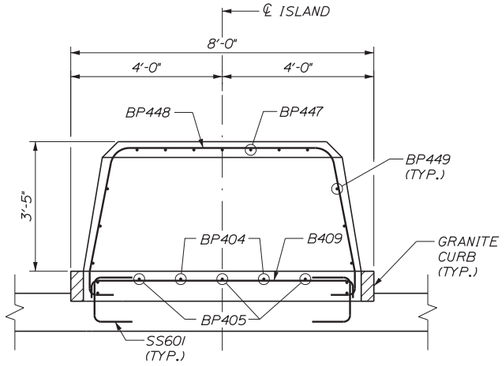
SHEET NUMBER: S-24

CONTRACT:2019.04



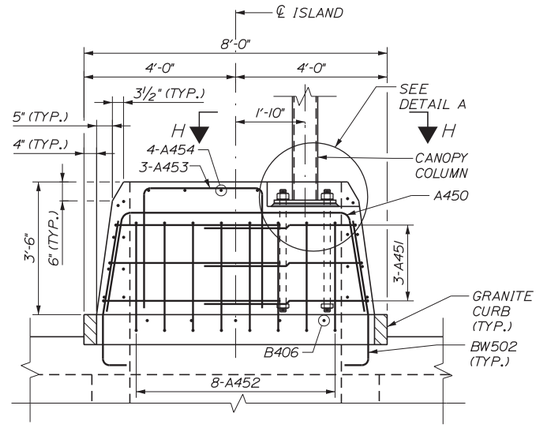
SECTION B-B

SCALE: ½" = 1'-0"



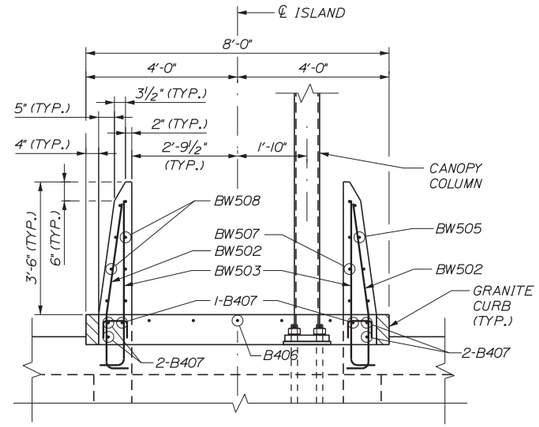
SECTION C-C

SCALE: ½" = 1'-0"



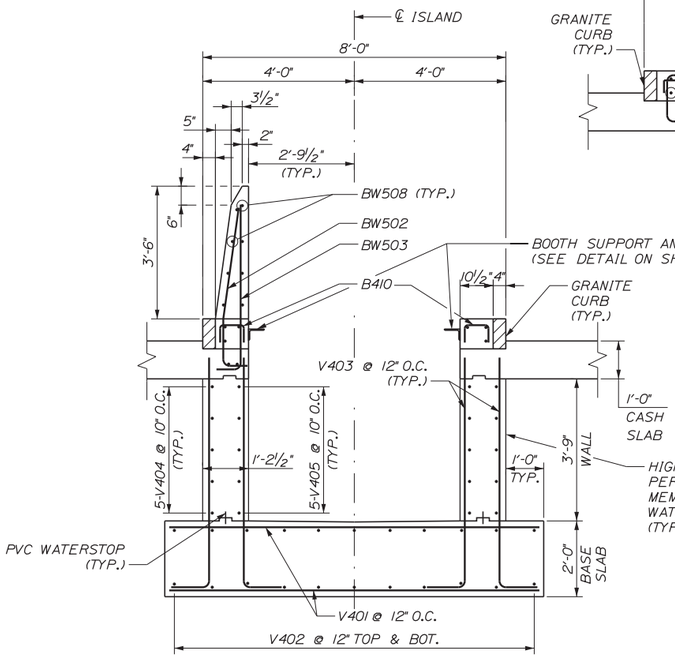
SECTION D-D

SCALE: ½" = 1'-0"



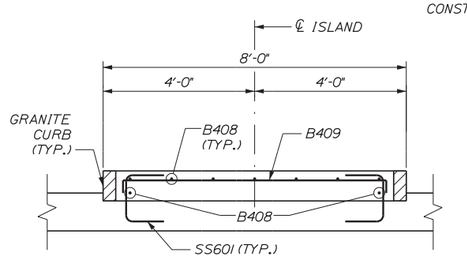
SECTION F-F

SCALE: ½" = 1'-0"



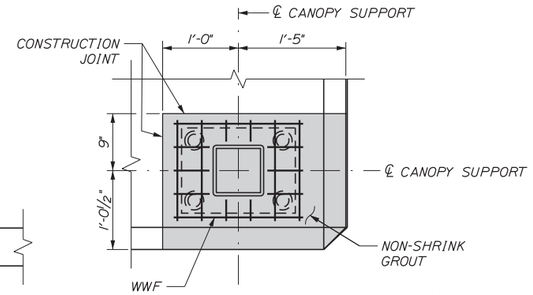
SECTION E-E

SCALE: ½" = 1'-0"



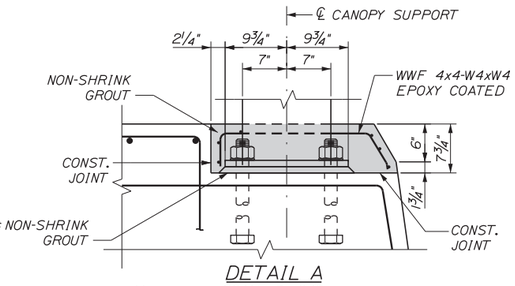
SECTION G-G

SCALE: ½" = 1'-0"



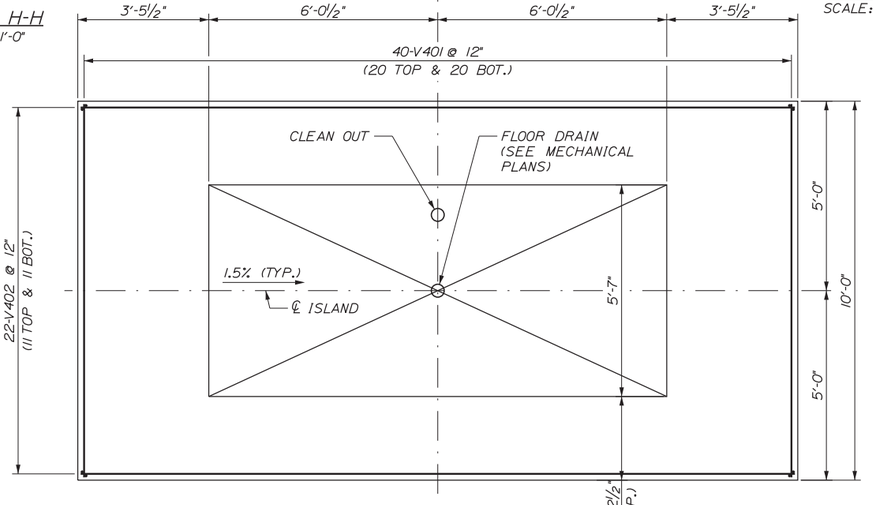
SECTION H-H

SCALE: 1" = 1'-0"



DETAIL A

SCALE: 1" = 1'-0"



SECTION I-I

SCALE: ½" = 1'-0"

UTILITY PIT FLOOR SLAB

SCALE: ½" = 1'-0"

NOTES

1. FOR LOCATION OF SECTIONS SEE SHEET S-24.
2. FOR CASH SLAB REINFORCING SEE SHEET S-19.

Date:3/20/2019

Filename: ...\S-25_CashIsland_AF_sections.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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THE GOLD STAR MEMORIAL HIGHWAY

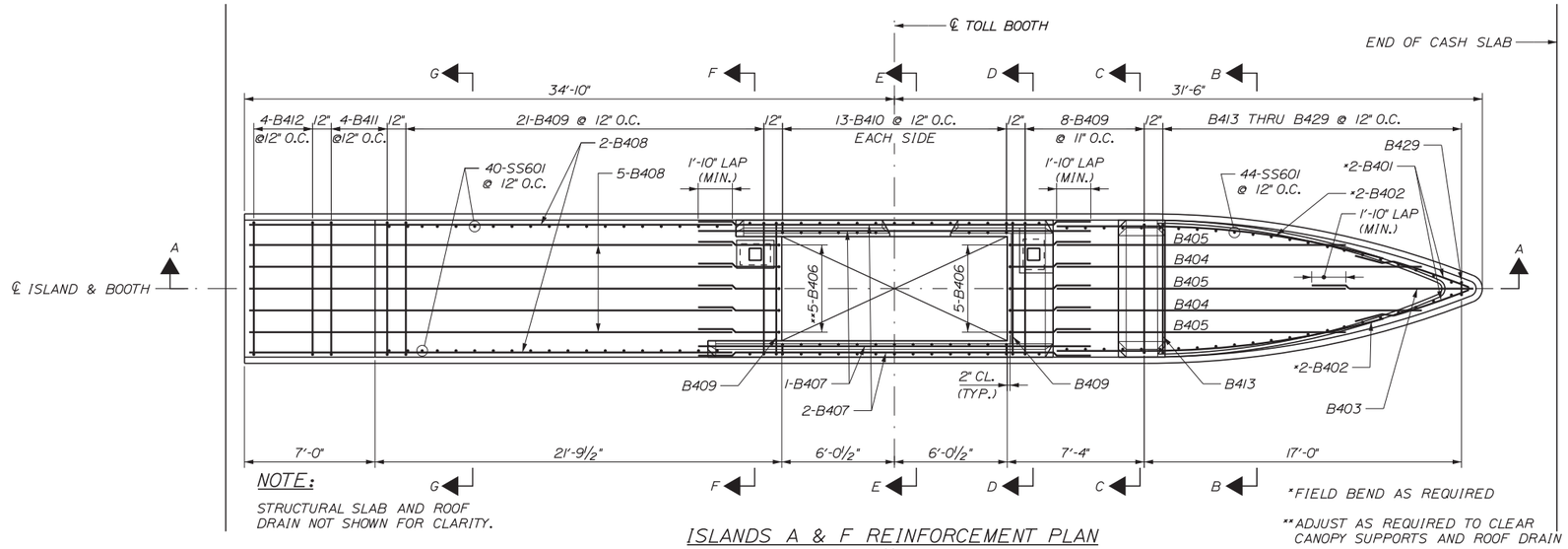
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION

CASH ISLANDS A & F SECTIONS

SHEET NUMBER: S-25

CONTRACT:2019.04



NOTE:

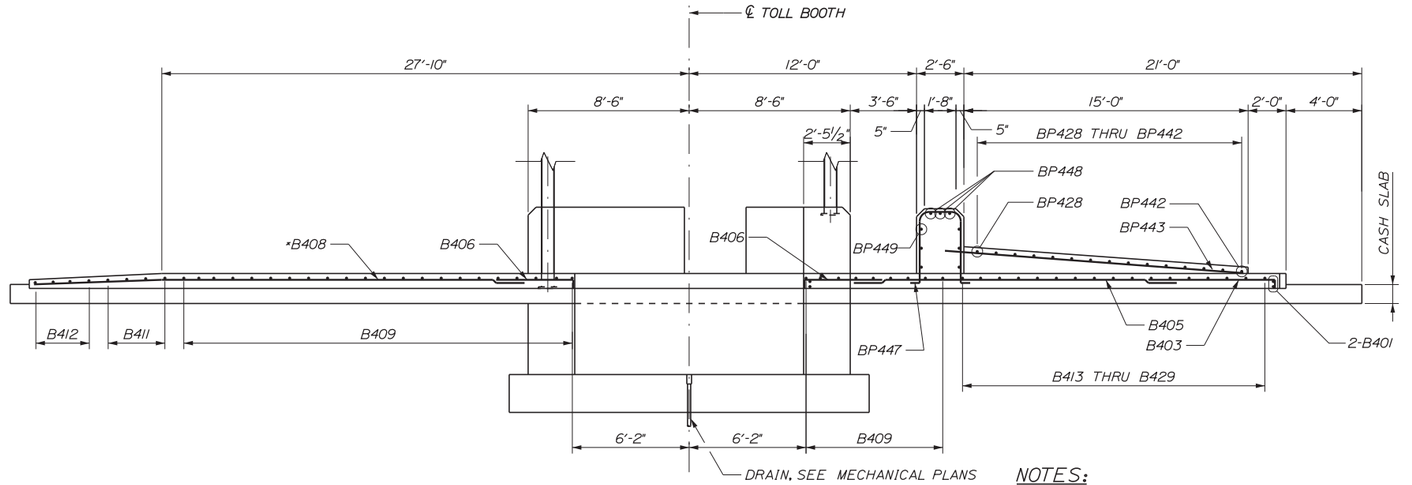
STRUCTURAL SLAB AND ROOF DRAIN NOT SHOWN FOR CLARITY.

*FIELD BEND AS REQUIRED

**ADJUST AS REQUIRED TO CLEAR CANOPY SUPPORTS AND ROOF DRAIN

ISLANDS A & F REINFORCEMENT PLAN

SCALE: 1/4" = 1'-0"



SECTION A-A

SCALE: 1/4" = 1'-0"

NOTES:

1. CASH SLAB REINFORCING NOT SHOWN FOR CLARITY.
2. FOR SECTIONS SEE SHEET NO. S-25.

Date:3/20/2019

Filename: ...\S-26_CashIsland_AF_reinf1.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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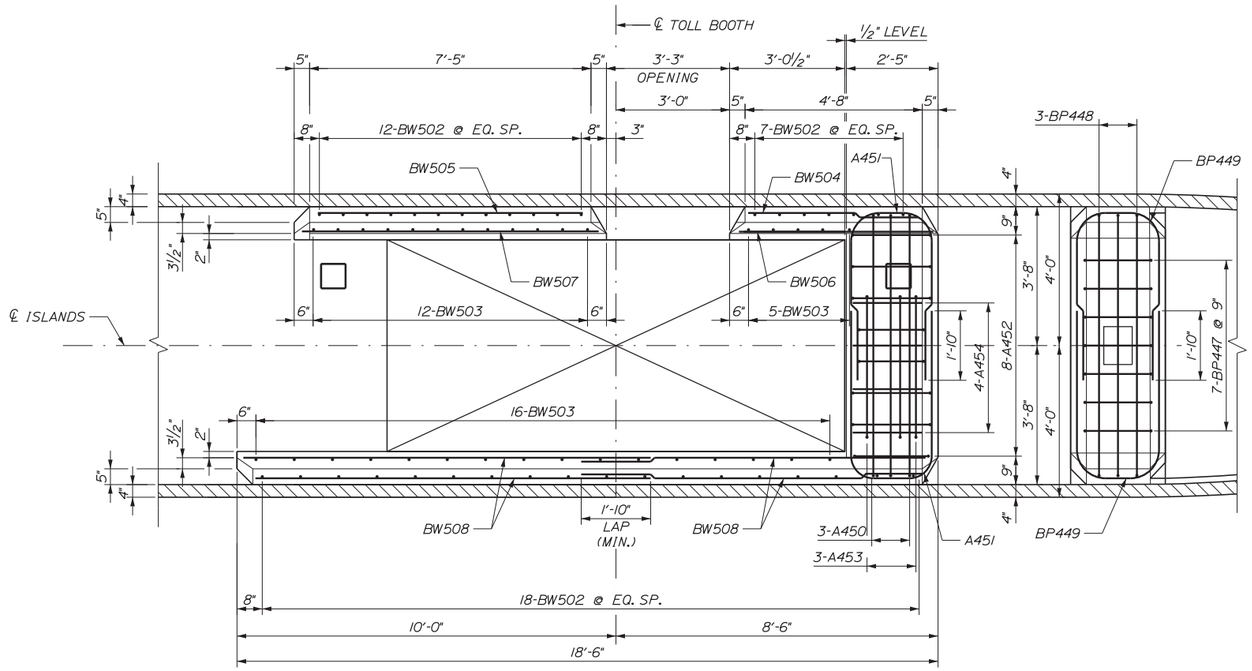
INTERCHANGE 103
ORT CONVERSION

CASH ISLANDS A & F REINFORCEMENT 1

SHEET NUMBER: S-26

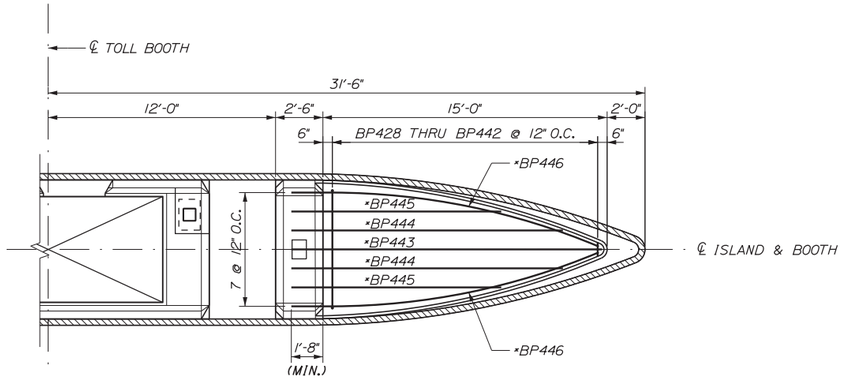
CONTRACT:2019.04

Date:3/20/2019



REINFORCEMENT LAYOUT AT BOOTH ENCLOSURE

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



BUMPER REINFORCEMENT PLAN

SCALE: 1/4" = 1'-0"

Filename: ...\S-27_CashIsland_AF_reinf2.dgn

Scale:			
No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION

CASH ISLANDS A & F REINFORCEMENT 2

SHEET NUMBER: S-27

CONTRACT:2019.04

INTERCHANGE 103 - TOLL ISLAND A & F REINFORCING STEEL SCHEDULE

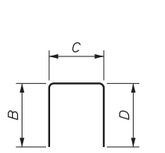
MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	INCR.	REMARKS
ISLAND - SLAB													
B401	4	4	5'-8"	STR									*FIELD BEND AS REQUIRED
B402	4	4	19'-6"	STR									*FIELD BEND AS REQUIRED
B403	4	1	7'-7 1/2"	17		5 1/2"	7'-2"						
B404	4	2	19'-6"	STR									
B405	4	3	15'-6"	STR									
B406	4	10	6'-1 1/2"	17		5 1/2"	5'-8"						
B407	4	6	23'-9"	STR									
B408	4	7	24'-8"	STR									
B409	4	31	7'-11"	17		5 1/2"	7'-0"	5 1/2"					
B410	4	26	1'-5 1/2"	17		5 1/2"	6 1/2"	5 1/2"					
B411	4	4	7'-6"	17		3"	7'-0"	3"					
B412	4	4	7'-0"	STR									
B413	4	1	7'-10"	17		5 1/2"	6'-11"	5 1/2"					
B414	4	1	7'-9"	17		5 1/2"	6'-10"	5 1/2"					
B415	4	1	7'-8"	17		5 1/2"	6'-9"	5 1/2"					
B416	4	1	7'-7"	17		5 1/2"	6'-8"	5 1/2"					
B417	4	1	7'-5"	17		5 1/2"	6'-6"	5 1/2"					
B418	4	1	7'-2"	17		5 1/2"	6'-3"	5 1/2"					
B419	4	1	6'-11"	17		5 1/2"	6'-0"	5 1/2"					
B420	4	1	6'-7"	17		5 1/2"	5'-8"	5 1/2"					
B421	4	1	6'-3"	17		5 1/2"	5'-4"	5 1/2"					
B422	4	1	5'-10"	17		5 1/2"	4'-11"	5 1/2"					
B423	4	1	5'-4"	17		5 1/2"	4'-5"	5 1/2"					
B424	4	1	4'-11"	17		5 1/2"	4'-0"	5 1/2"					
B425	4	1	4'-4"	17		5 1/2"	3'-5"	5 1/2"					
B426	4	1	3'-9"	17		5 1/2"	2'-10"	5 1/2"					
B427	4	1	3'-2"	17		5 1/2"	2'-3"	5 1/2"					
B428	4	1	2'-5"	17		5 1/2"	1'-6"	5 1/2"					
B429	4	1	1'-9"	17		5 1/2"	10"	5 1/2"					
SS601	6	84	3'-0"	17		1'-0"	1'-0"	1'-0"					

MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	INCR.	REMARKS
ISLAND - FRONT BUMPER BLOCK													
BP428	4	2	10'-11 1/2"	17D	5"	9 1/2"	7 1/2"	3'-6"	1 3/4"	8"			
BP429	4	2	10'-4 1/2"	17D	4 3/4"	8 3/4"	7 1/2"	3'-3"	1 1/2"	8"			
BP430	4	1	9'-10"	17D	4 1/4"	8 1/4"	7 1/2"	3'-0 1/4"	1 1/2"	8"			
BP431	4	1	9'-2 3/4"	17D	4"	7 1/2"	7 1/2"	2'-9 1/4"	1 1/4"	8"			
BP432	4	1	8'-7 3/4"	17D	3 3/4"	6 3/4"	7 1/2"	2'-6 1/2"	1 1/4"	8"			
BP433	4	1	8'-0 1/4"	17D	3 1/2"	6"	7 1/2"	2'-3 1/4"	1"	8"			
BP434	4	1	7'-6 1/4"	17D	3"	5 1/2"	7 1/2"	2'-0 3/4"	1"	8"			
BP435	4	1	6'-10 3/4"	17D	2 3/4"	4 3/4"	7 1/2"	1'-9 3/4"	1"	8"			
BP436	4	1	6'-4"	17D	2 1/2"	4"	7 1/2"	1'-7"	0 3/4"	8"			
BP437	4	1	5'-9"	17D	2"	3 1/2"	7 1/2"	1'-4"	0 3/4"	8"			
BP438	4	1	5'-2 1/2"	17D	1 3/4"	2 3/4"	7 1/2"	1'-1 1/4"	0 1/2"	8"			
BP439	4	1	4'-7"	17D	1 1/2"	2"	7 1/2"	10 1/4"	0 1/2"	8"			
BP440	4	1	4'-1"	17D	1 1/4"	1 3/4"	7 1/2"	7 1/2"	0 1/2"	8"			
BP441	4	1	3'-5 1/4"	17D	0 3/4"	0 3/4"	7 1/2"	4 1/2"	0 1/4"	8"			
BP442	4	1	3'-5 1/4"	17D	0 3/4"	0 3/4"	7 1/2"	4 1/2"	0 1/4"	8"			
BP443	4	1	16'-5"	STR									
BP444	4	2	14'-4"	STR									
BP445	4	2	11'-2"	STR									
BP446	4	2	16'-8"	STR									*FIELD BEND AS REQUIRED
BP447	4	7	11'-0"	17F		3'-9"	2'-2"	3'-9"	8"				R=5 1/2" (INSIDE RADIUS)
BP448	4	3	13'-9 3/4"	17B	3'-3"	5'-0"	3'-3"	7'-0"	4"	8"			R=5 1/2" (INSIDE RADIUS)
BP449	4	6	11'-1"	17A		4'-6"	2'-1"	4'-6"					R=7" (INSIDE RADIUS)

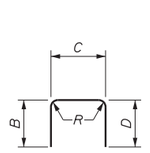
MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	INCR.	REMARKS
ISLAND - BOOTH ENCLOSURE AND BARRIER WALL													
A450	4	3	11'-0"	17C	2'-6"	4"	5'-11"						
A451	4	6	11'-5 1/2"	17A		4'-8"	2'-1 1/2"	4'-8"					R=7" (INSIDE RADIUS)
A452	4	8	9'-8 1/2"	17F		2'-10"	2'-0 1/2"	2'-10"	1'-0"				R=5 1/2" (INSDE RADIUS)
A453	4	3	9'-4"	17		3'-0"	3'-4"	3'-0"					
A454	4	4	1'-11"	STR									
BW502	5	37	4'-11 1/2"	17E	8"	1'-3"	3'-0"	5"					
BW503	5	33	5'-3"	17		10"	4'-5"						
BW504	5	4	4'-2"	STR									
BW505	5	4	7'-1"	STR									
BW506	5	4	5'-0"	STR									
BW507	5	4	7'-10"	STR									
BW508	5	16	9'-7"	STR									

INTERCHANGE 103 - UTILITY VAULT REINFORCING STEEL SCHEDULE

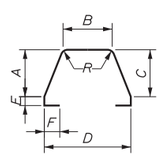
MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	INCR.	REMARKS
ISLAND - UTILITY VAULT													
V401	4	40	9'-8"	STR									
V402	4	22	18'-8"	STR									
V403	4	90	6'-9"	17		8"	6'-1"						
V404	4	10	16'-8"	STR									
V405	4	10	18'-0"	17		8"	16-8"	8"					
V406	4	10	7'-8"	STR									
V407	4	10	9'-0"	17		8"	7'-8"	8"					



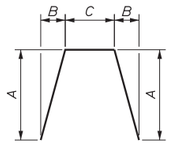
TYPE I7



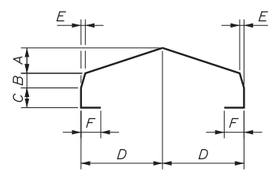
TYPE I7A



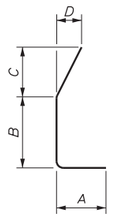
TYPE I7B



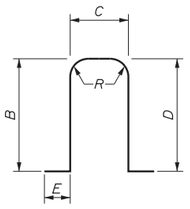
TYPE I7C



TYPE I7D



TYPE I7E



TYPE I7F

NOTE:

ALL REINFORCING IS STEEL AND EPOXY COATED UNLESS OTHERWISE NOTED.

Date:3/20/2019

Filename: ...\S-28_CashIsland_AF_ReinfSched.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	KLW	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
CASH ISLAND A & F
REINFORCING STEEL SCHEDULE

SHEET NUMBER: S-28

CONTRACT:2019.04

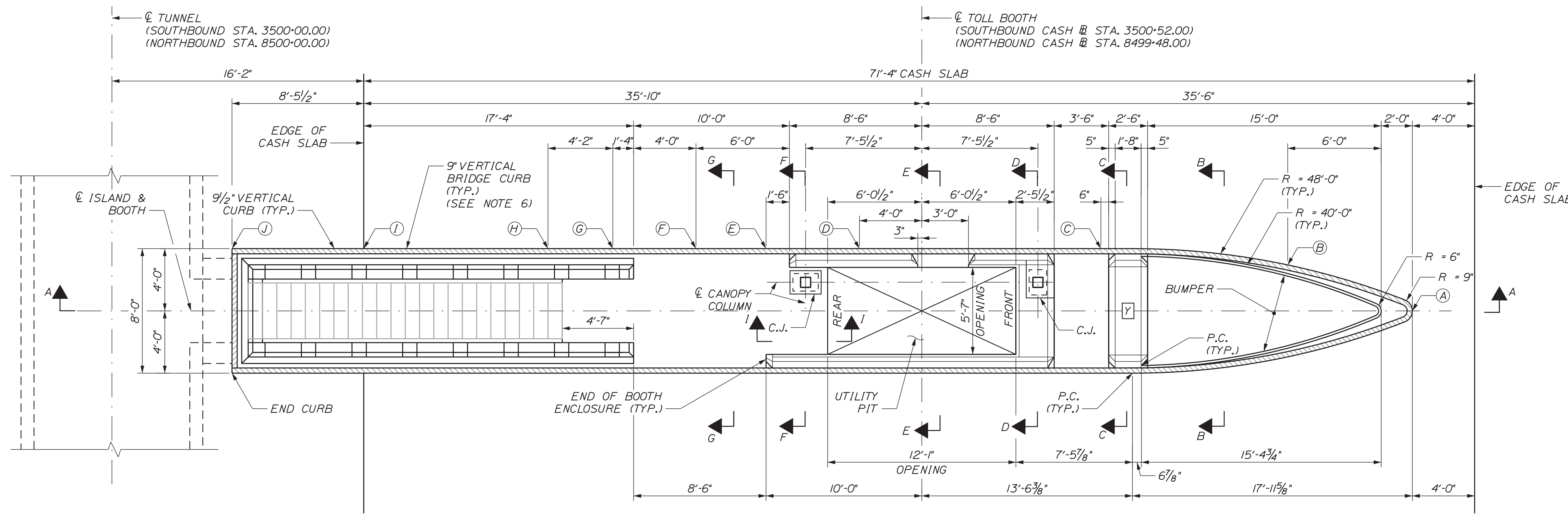
CURB ELEVATIONS AND REVEAL

ISLAND	POINT	T.O.C.	∗B.O.C	REVEAL
B	A	218.88	218.30	7"
	B	219.00	218.42	7"
	C	219.16	218.57	7 1/8"
	D	219.16	218.66	6"
	E	219.16	218.65	6 1/8"
	F	219.10	218.64	5 1/2"
	G	219.15	218.63	6 1/4"
	H	219.15	218.60	6 5/8"
	I	219.09	218.51	7"
	J	219.02	218.44	7"
E	A	219.68	219.10	7"
	B	219.77	219.19	7"
	C	219.85	219.30	6 5/8"
	D	219.85	219.32	6 3/8"
	E	219.85	219.28	6 7/8"
	F	219.76	219.25	6 1/8"
	G	219.81	219.21	7 1/4"
	H	219.81	218.15	7 7/8"
	I	219.59	218.98	7 3/8"
	J	219.43	218.85	7"

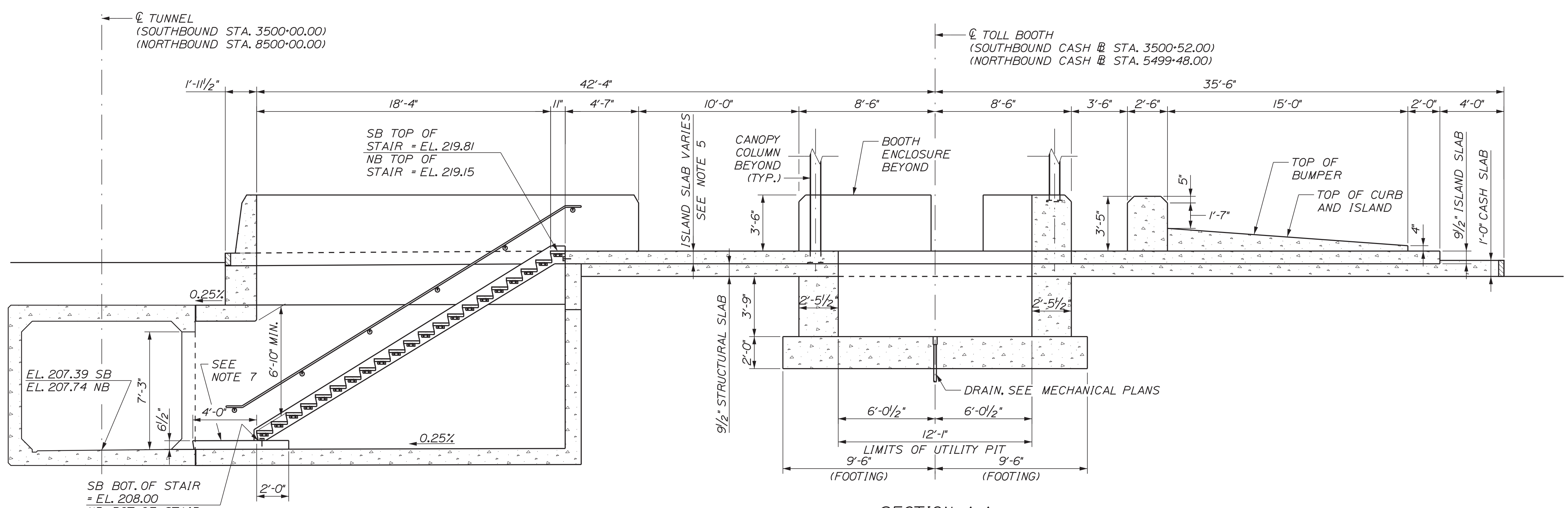
T.O.C. = TOP OF CURB AND ISLAND SLAB
∗B.O.C. = BOTTOM OF CURB AT TOP OF ROADWAY (SEE NOTE 6)

NOTES

1. FOR REINFORCING DETAILS OF ISLANDS B & E SEE SHEET S-31.
2. FOR LOCATION OF ELECTRONIC TOLL COLLECTION EQUIPMENT, SEE ELECTRICAL PLANS.
3. FOR CONDUITS WITHIN ISLAND AND STRUCTURAL SLAB, SEE ELECTRICAL PLANS.
4. BARRIER WALL AND ISLAND SLABS TO HAVE ADDITIONAL CONSTRUCTION JOINTS SPACED EVERY 10 FEET OR AS DIRECTED BY THE RESIDENT.
5. FOR SECTIONS B-B, C-C, D-D, E-E, F-F, G-G & I-I SEE SHEET S-30.
6. CUT OR SHIM VERTICAL CURB AND VARY SLAB THICKNESS TO MEET TABULATED CURB ELEVATIONS BETWEEN REFERENCE POINTS A AND J.
7. CAST-IN-PLACE CONCRETE LANDING PAD FOR SB STAIRCASE ONLY. SEE DETAILS ON SHEET S-12.
8. FOR CONDUITS/PIPES WITHIN THE UTILITY PIT, SEE MECHANICAL AND ELECTRICAL PLANS. SEE SHEET S-52 FOR SLEEVE DETAIL FOR CONDUITS/PIPES.



PLAN
SCALE: 1/4" = 1'-0"



SECTION A-A
SCALE: 1/4" = 1'-0"

Scale:			
No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION

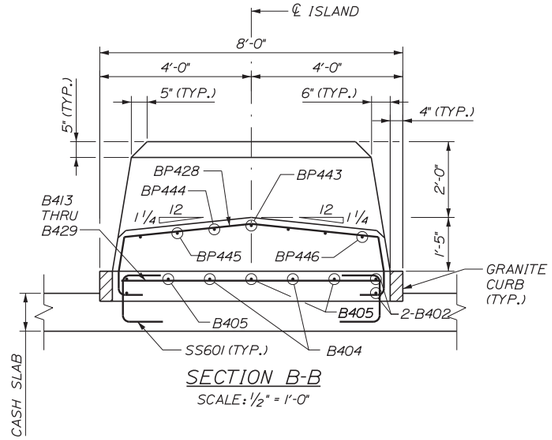
CASH ISLANDS B & E PLAN & SECTION

SHEET NUMBER: S-29

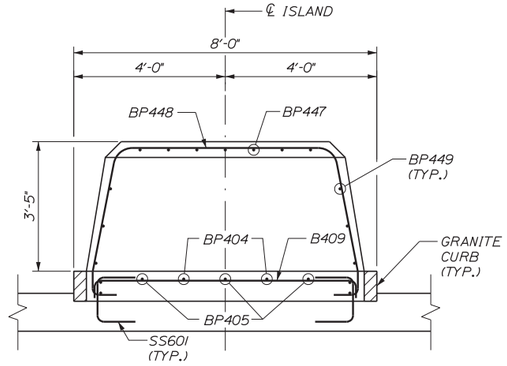
CONTRACT: 2019.04

Date: 3/20/2019

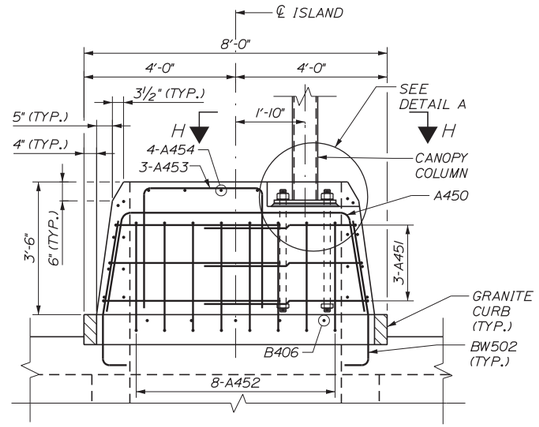
Filename: ...\MSTA\S-29_CashIsland_BE.dgn



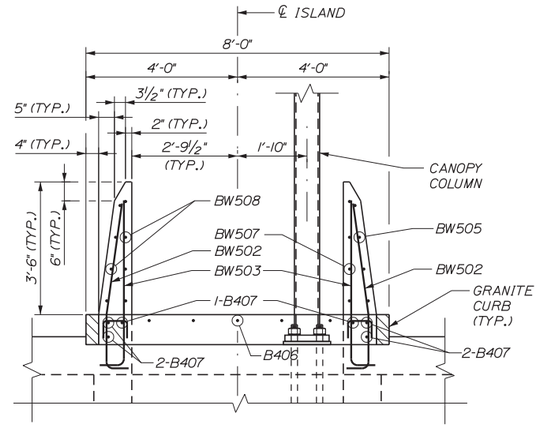
SECTION B-B
SCALE: ½" = 1'-0"



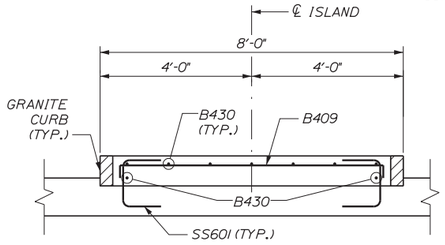
SECTION C-C
SCALE: ½" = 1'-0"



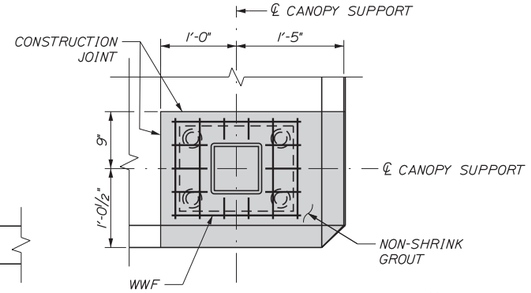
SECTION D-D
SCALE: ½" = 1'-0"



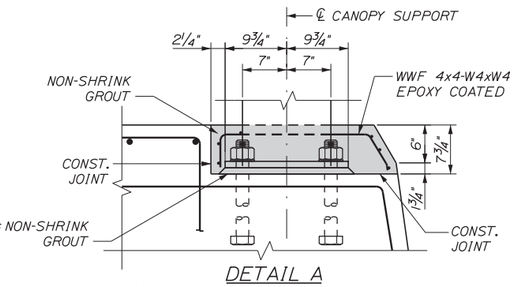
SECTION F-F
SCALE: ½" = 1'-0"



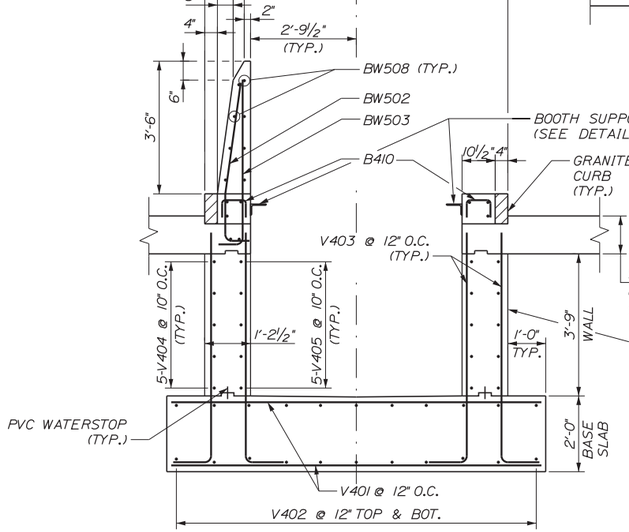
SECTION G-G
SCALE: ½" = 1'-0"



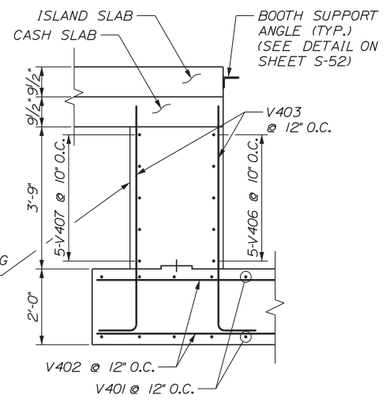
SECTION H-H
SCALE: 1" = 1'-0"



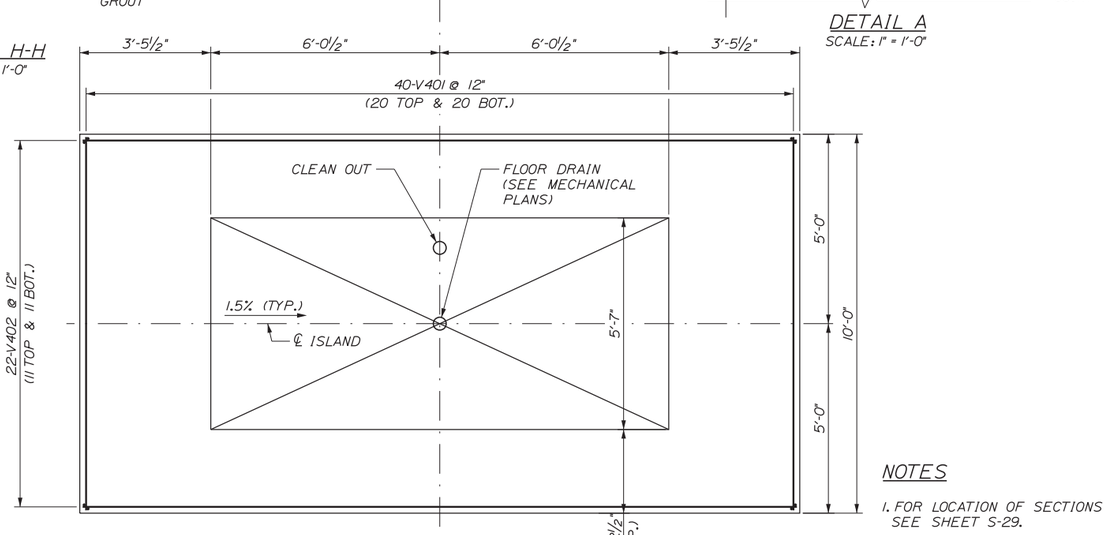
DETAIL A
SCALE: 1" = 1'-0"



SECTION E-E
SCALE: ½" = 1'-0"



SECTION I-I
SCALE: ½" = 1'-0"



UTILITY PIT FLOOR SLAB
SCALE: ½" = 1'-0"

NOTES

1. FOR LOCATION OF SECTIONS SEE SHEET S-29.
2. FOR CASH SLAB REINFORCING SEE SHEET S-19.

Date:3/20/2019

Filename: ...\S_30_CashIsland_BE_sections.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

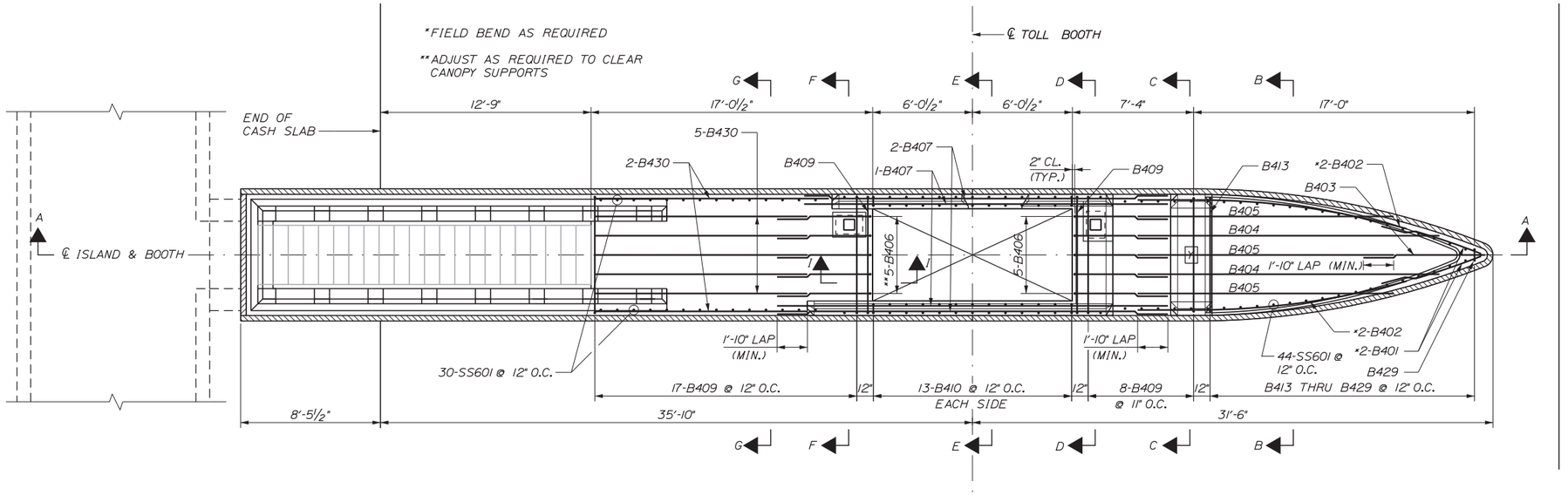
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103 ORT CONVERSION

CASH ISLANDS B & E SECTIONS

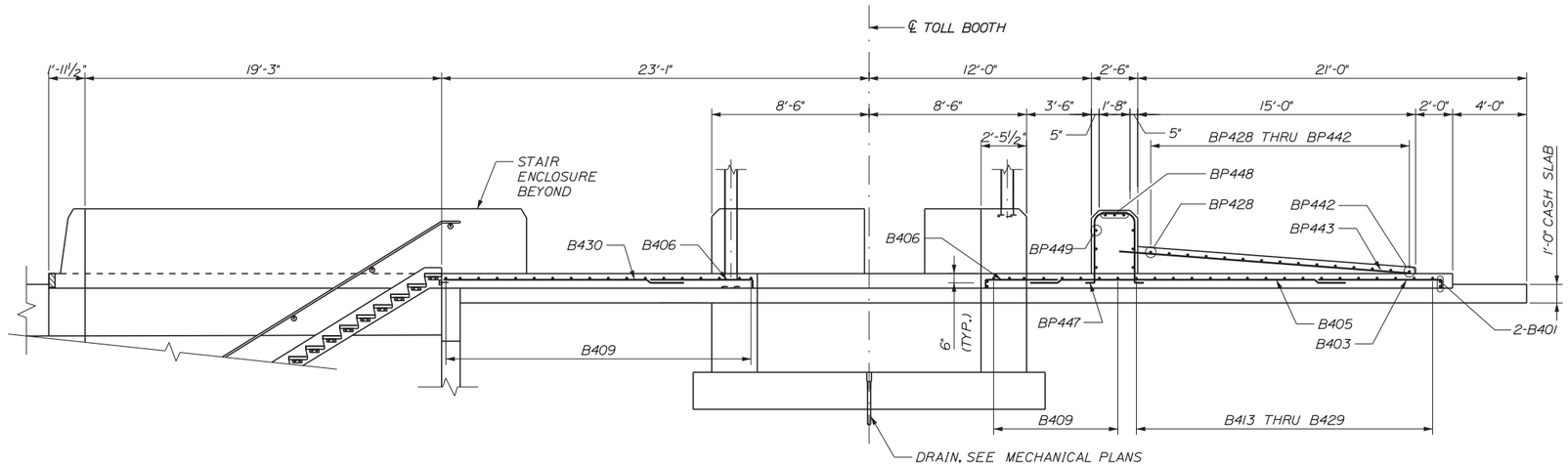
SHEET NUMBER: S-30

CONTRACT:2019.04



ISLAND TYPE B & E REINFORCEMENT PLAN

SCALE: 1/4" = 1'-0"



SECTION A-A

SCALE: 1/4" = 1'-0"

NOTES

1. CASH SLAB AND STAIR ENCLOSURE REINFORCING NOT SHOWN FOR CLARITY.
2. FOR SECTIONS B-B, C-C, D-D, E-E, F-F, G-G & I-I SEE SHEET S-30.
3. FOR ADDITIONAL REINFORCEMENT AT STAIR ENCLOSURE SEE SHEET S-13 AND S-14.

Date:3/20/2019

Filename: ...\S-31_CashIsland_BE_reinf1.dgn

No.	Revision	By	Date

Scale:

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

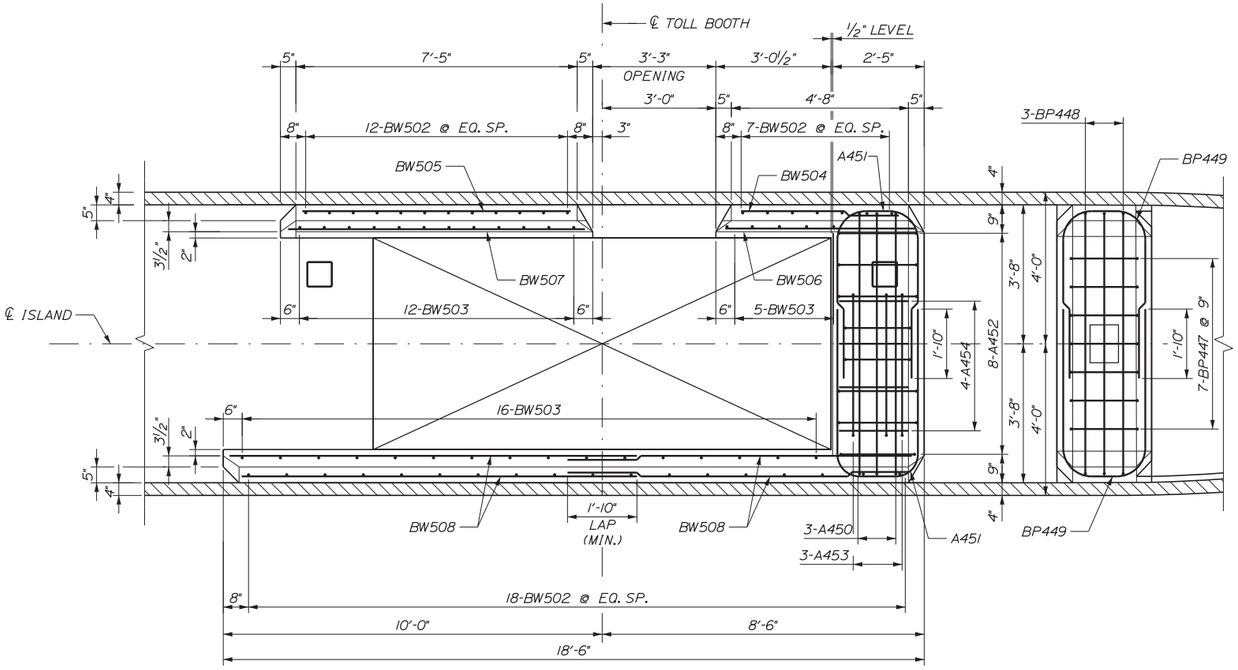
INTERCHANGE 103
ORT CONVERSION

CASH ISLANDS B & E REINFORCEMENT 1

SHEET NUMBER: S-31

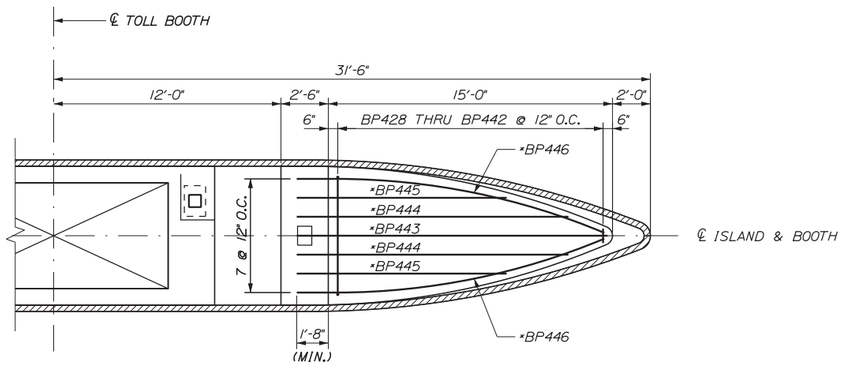
CONTRACT:2019.04

Date:3/20/2019



REINFORCEMENT LAYOUT AT BOOTH ENCLOSURE

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



*FIELD BEND AS REQUIRED

BUMPER REINFORCEMENT PLAN

SCALE: 1/4" = 1'-0"

Filename: ...\S-32_CashIsland_BE_reinf2.dgn

Scale:			
No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION

CASH ISLANDS B & E REINFORCEMENT 2

SHEET NUMBER: S-32

CONTRACT:2019.04

INTERCHANGE 103 - TOLL ISLAND B & E REINFORCING STEEL SCHEDULE

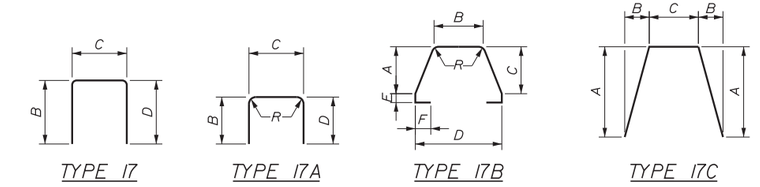
MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	INCR.	REMARKS
ISLAND - SLAB													
B401	4	4	5'-8"	STR									*FIELD BEND AS REQUIRED
B402	4	4	19'-6"	STR									*FIELD BEND AS REQUIRED
B403	4	1	7'-7 1/2"	17		5 1/2"	7'-2"						
B404	4	2	19'-6"	STR									
B405	4	3	15'-6"	STR									
B406	4	10	6'-1 1/2"	17		5 1/2"	5'-8"						
B407	4	6	23'-9"	STR									
B409	4	23	7'-11"	17		5 1/2"	7'-0"	5 1/2"					
B410	4	26	1'-5 1/2"	17		5 1/2"	6 1/2"	5 1/2"					
B413	4	1	7'-10"	17		5 1/2"	6'-11"	5 1/2"					
B414	4	1	7'-9"	17		5 1/2"	6'-10"	5 1/2"					
B415	4	1	7'-8"	17		5 1/2"	6'-9"	5 1/2"					
B416	4	1	7'-7"	17		5 1/2"	6'-8"	5 1/2"					
B417	4	1	7'-5"	17		5 1/2"	6'-6"	5 1/2"					
B418	4	1	7'-2"	17		5 1/2"	6'-3"	5 1/2"					
B419	4	1	6'-11"	17		5 1/2"	6'-0"	5 1/2"					
B420	4	1	6'-7"	17		5 1/2"	5'-8"	5 1/2"					
B421	4	1	6'-3"	17		5 1/2"	5'-4"	5 1/2"					
B422	4	1	5'-10"	17		5 1/2"	4'-11"	5 1/2"					
B423	4	1	5'-4"	17		5 1/2"	4'-5"	5 1/2"					
B424	4	1	4'-11"	17		5 1/2"	4'-0"	5 1/2"					
B425	4	1	4'-4"	17		5 1/2"	3'-5"	5 1/2"					
B426	4	1	3'-9"	17		5 1/2"	2'-10"	5 1/2"					
B427	4	1	3'-2"	17		5 1/2"	2'-3"	5 1/2"					
B428	4	1	2'-5"	17		5 1/2"	1'-6"	5 1/2"					
B429	4	1	1'-9"	17		5 1/2"	10"	5 1/2"					
B430	4	9	8'-5"	STR									
SS601	6	70	3'-0"	17		1'-0"	1'-0"	1'-0"					
SS802	8	2	2'-8"	17	1'-0"	1'-8"							

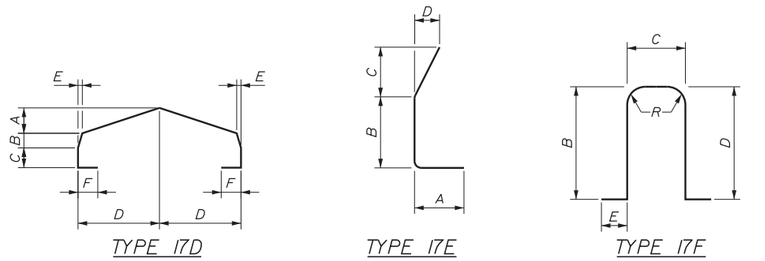
MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	INCR.	REMARKS
ISLAND - FRONT BUMPER BLOCK													
BP428	4	2	10'-11 1/2"	17D	5"	9 1/2"	7 1/2"	3'-6"	1 3/4"	8"			
BP429	4	2	10'-4 1/2"	17D	4 3/4"	8 3/4"	7 1/2"	3'-3"	1 1/2"	8"			
BP430	4	1	9'-10"	17D	4 1/4"	8 1/4"	7 1/2"	3'-0 1/4"	1 1/2"	8"			
BP431	4	1	9'-2 3/4"	17D	4"	7 1/2"	7 1/2"	2'-9 1/4"	1 1/4"	8"			
BP432	4	1	8'-7 3/4"	17D	3 3/4"	6 3/4"	7 1/2"	2'-6 1/2"	1 1/4"	8"			
BP433	4	1	8'-0 1/4"	17D	3 1/2"	6"	7 1/2"	2'-3 1/4"	1"	8"			
BP434	4	1	7'-6 1/4"	17D	3"	5 1/2"	7 1/2"	2'-0 3/4"	1"	8"			
BP435	4	1	6'-10 3/4"	17D	2 3/4"	4 3/4"	7 1/2"	1'-9 3/4"	1"	8"			
BP436	4	1	6'-4"	17D	2 1/2"	4"	7 1/2"	1'-7"	0 3/4"	8"			
BP437	4	1	5'-9"	17D	2"	3 1/2"	7 1/2"	1'-4"	0 3/4"	8"			
BP438	4	1	5'-2 1/2"	17D	1 3/4"	2 3/4"	7 1/2"	1'-1 1/4"	0 1/2"	8"			
BP439	4	1	4'-7"	17D	1 1/2"	2"	7 1/2"	10 1/4"	0 1/2"	8"			
BP440	4	1	4'-1"	17D	1 1/4"	1 3/4"	7 1/2"	7 1/2"	0 1/2"	8"			
BP441	4	1	3'-5 1/4"	17D	0 3/4"	0 3/4"	7 1/2"	4 1/2"	0 1/4"	8"			
BP442	4	1	3'-5 1/4"	17D	0 3/4"	0 3/4"	7 1/2"	4 1/2"	0 1/4"	8"			
BP443	4	1	16'-5"	STR									
BP444	4	2	14'-4"	STR									
BP445	4	2	11'-2"	STR									
BP446	4	2	16'-8"	STR									*FIELD BEND AS REQUIRED
BP447	4	7	11'-0"	17F		3'-9"	2'-2"	3'-9"	8"				R=5 1/2" (INSIDE RADIUS)
BP448	4	3	13'-9 3/4"	17B	3'-3"	5'-0"	3'-3"	7'-0"	4"	8"			R=5 1/2" (INSIDE RADIUS)
BP449	4	6	11'-1"	17A		4'-6"	2'-1"	4'-6"					R=7" (INSIDE RADIUS)

MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	INCR.	REMARKS
ISLAND - BOOTH ENCLOSURE AND BARRIER WALL													
A450	4	3	11'-0"	17C	2'-6"	4"	5'-11"						
A451	4	6	11'-5 1/2"	17A		4'-8"	2'-1 1/2"	4'-8"					R=7" (INSIDE RADIUS)
A452	4	8	9'-8 1/2"	17F		2'-10"	2'-0 1/2"	2'-10"	1'-0"				R=5 1/2" (INSDE RADIUS)
A453	4	3	9'-4"	17		3'-0"	3'-4"	3'-0"					
A454	4	4	1'-11"	STR									
BW502	5	37	4'-11 1/2"	17E	8"	1'-3"	3'-0"	5"					
BW503	5	33	5'-3"	17		10"	4'-5"						
BW504	5	4	4'-2"	STR									
BW505	5	4	7'-1"	STR									
BW506	5	4	5'-0"	STR									
BW507	5	4	7'-10"	STR									
BW508	5	16	9'-7"	STR									

INTERCHANGE 103 - UTILITY VAULT REINFORCING STEEL SCHEDULE

MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	INCR.	REMARKS
ISLAND - UTILITY VAULT													
V401	4	40	9'-8"	STR									
V402	4	22	18'-8"	STR									
V403	4	90	6'-9"	17		8"	6'-1"						
V404	4	10	16'-8"	STR									
V405	4	10	18'-0"	17		8"	16'-8"	8"					
V406	4	10	7'-8"	STR									
V407	4	10	9'-0"	17		8"	7'-8"	8"					





NOTE:

ALL REINFORCING IS STEEL AND EPOXY COATED UNLESS OTHERWISE NOTED.

Date:3/20/2019

Filename: ...\S-33_CashIsland_BE_ReinfSched.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	KLW	3\20\19	In Charge of	GAE	3\20\19

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MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
CASH ISLAND B & E
REINFORCING STEEL SCHEDULE

SHEET NUMBER: S-33

CONTRACT:2019.04

391OF 503

CURB ELEVATIONS AND REVEAL				
ISLAND	POINT	T.O.C.	*B.O.C	REVEAL
C	Ⓐ	218.76	218.18	7"
	Ⓑ	219.00	218.42	7"
	Ⓒ	219.24	218.57	8"
	Ⓓ	219.24	218.66	7"
	Ⓔ	219.24	218.65	7 1/8"
	Ⓕ	219.21	218.63	7"
	Ⓖ	219.02	218.44	7"
	Ⓗ	217.50	217.92	7"
D	Ⓐ	219.58	219.00	7"
	Ⓑ	219.77	219.19	7"
	Ⓒ	219.86	219.30	6 3/4"
	Ⓓ	219.86	219.32	6 1/2"
	Ⓔ	219.86	219.28	7"
	Ⓕ	219.79	219.21	7"
	Ⓖ	219.44	218.86	7"
	Ⓗ	218.16	217.58	7"

T.O.C. = TOP OF CURB AND ISLAND SLAB
*B.O.C. = BOTTOM OF CURB AT TOP OF ROADWAY (SEE NOTE 6)

NOTES

1. FOR REINFORCING DETAILS OF ISLANDS C & D SEE SHEET S-37.

2. FOR LOCATION OF ELECTRONIC TOLL COLLECTION EQUIPMENT, SEE ELECTRICAL PLANS.

3. FOR CONDUITS WITHIN ISLAND AND STRUCTURAL SLAB, SEE ELECTRICAL PLANS.

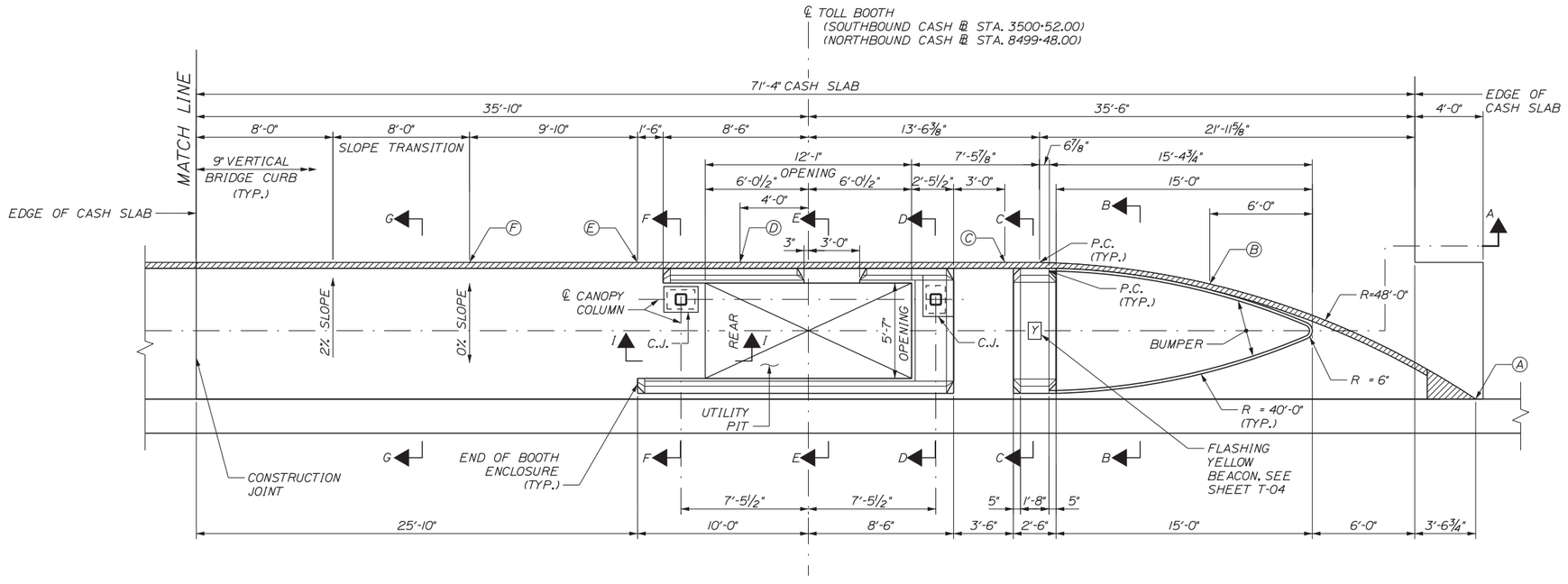
4. BARRIER WALL AND ISLAND SLABS TO HAVE ADDITIONAL CONSTRUCTION JOINTS SPACED EVERY 10 FEET OR AS DIRECTED BY THE RESIDENT.

5. FOR SECTION A-A SEE SHEET S-35.

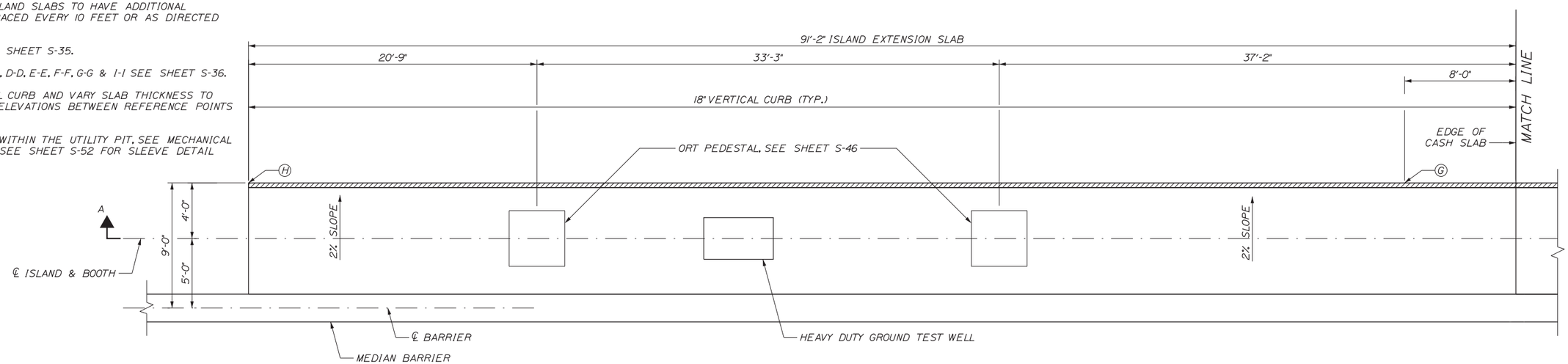
6. FOR SECTIONS B-B, C-C, D-D, E-E, F-F, G-G & I-I SEE SHEET S-36.

7. CUT OR SHIM VERTICAL CURB AND VARY SLAB THICKNESS TO MEET TABULATED CURB ELEVATIONS BETWEEN REFERENCE POINTS A AND E.

8. FOR CONDUITS/PIPES WITHIN THE UTILITY PIT, SEE MECHANICAL AND ELECTRICAL PLANS. SEE SHEET S-52 FOR SLEEVE DETAIL FOR CONDUITS/PIPES.



PLAN
SCALE: 1/4" = 1'-0"



PLAN
SCALE: 1/4" = 1'-0"

Date:3/20/2019

Filename: ...\MSTA\S-34_CashIsland_CDpln.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

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Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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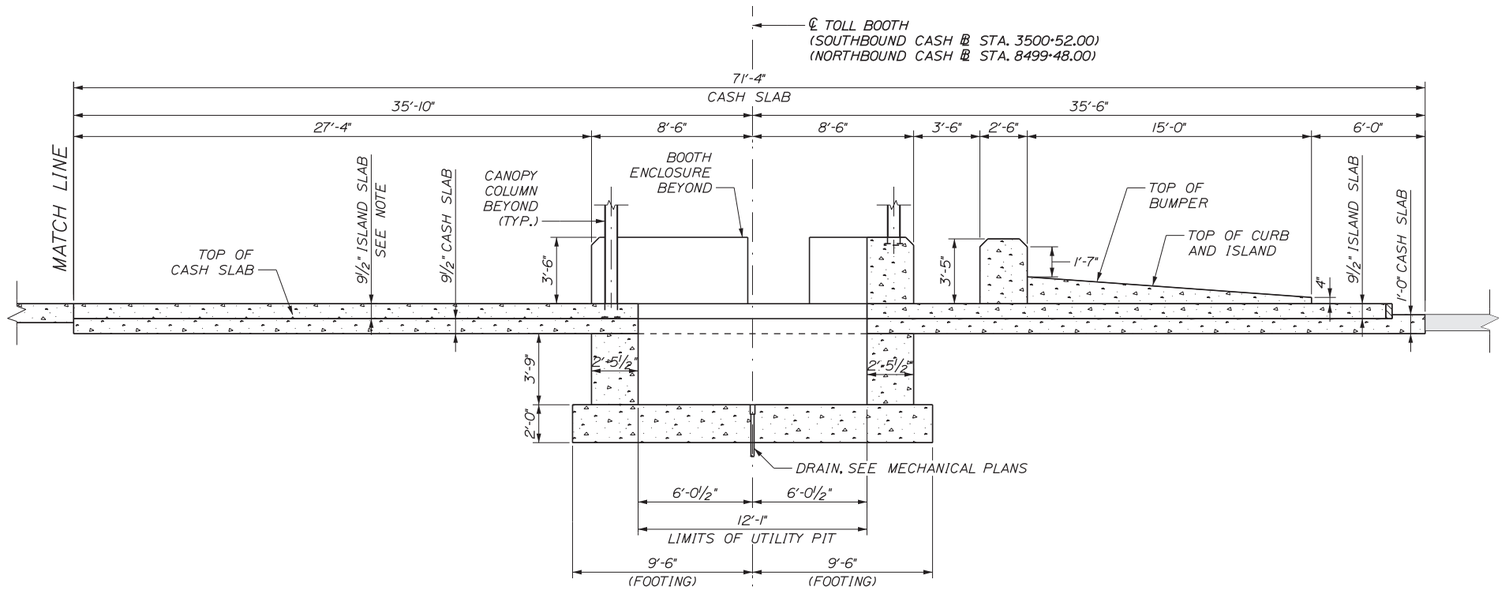
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION

CASH ISLANDS C & D PLAN

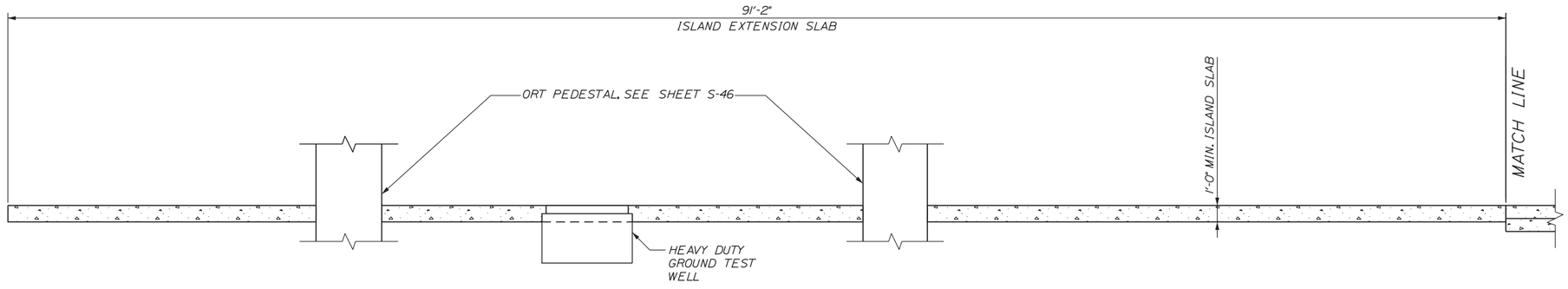
SHEET NUMBER: S-34

CONTRACT:2019.04



SECTION A-A

SCALE: 1/4" = 1'-0"



SECTION A-A

SCALE: 1/4" = 1'-0"

Date:3/20/2019

Filename: ...\MSTA\S-35_CashIsland_CDsec.dgn

Scale:			
No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

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Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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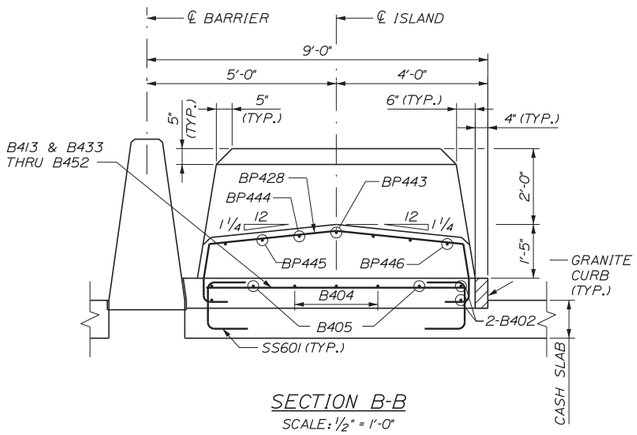
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103 ORT CONVERSION

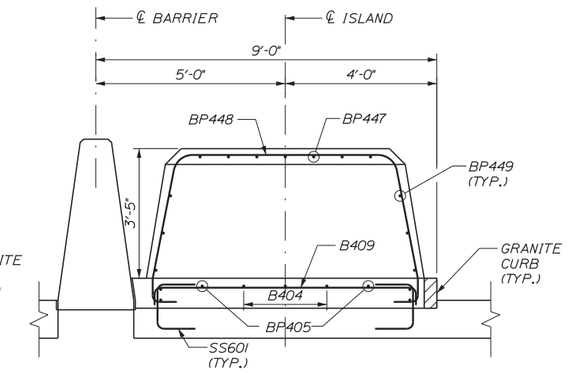
CASH ISLANDS C & D SECTION

SHEET NUMBER: S-35

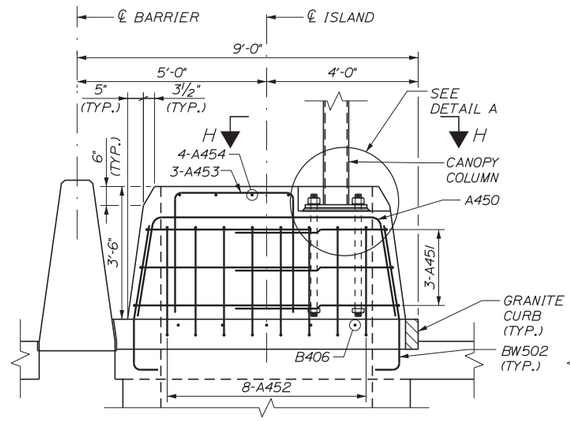
CONTRACT:2019.04



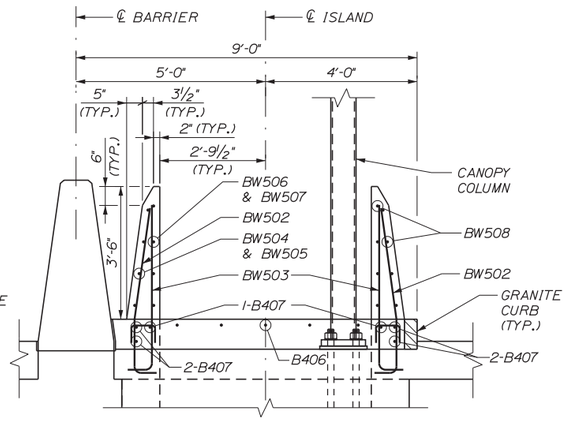
SECTION B-B
SCALE: 1/2" = 1'-0"



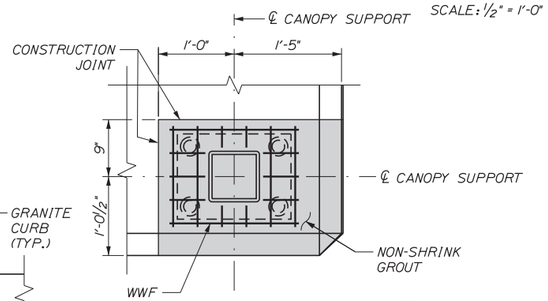
SECTION C-C
SCALE: 1/2" = 1'-0"



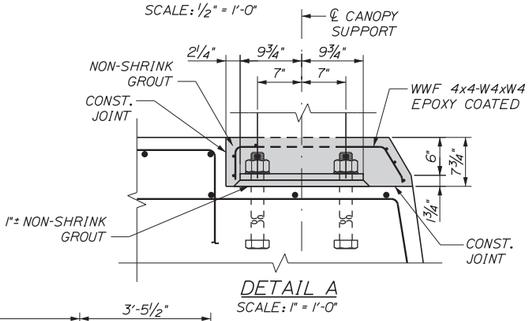
SECTION D-D
SCALE: 1/2" = 1'-0"



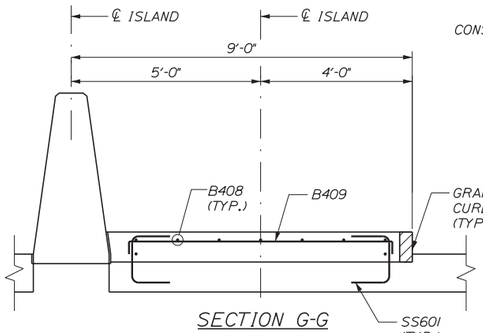
SECTION F-F
SCALE: 1/2" = 1'-0"



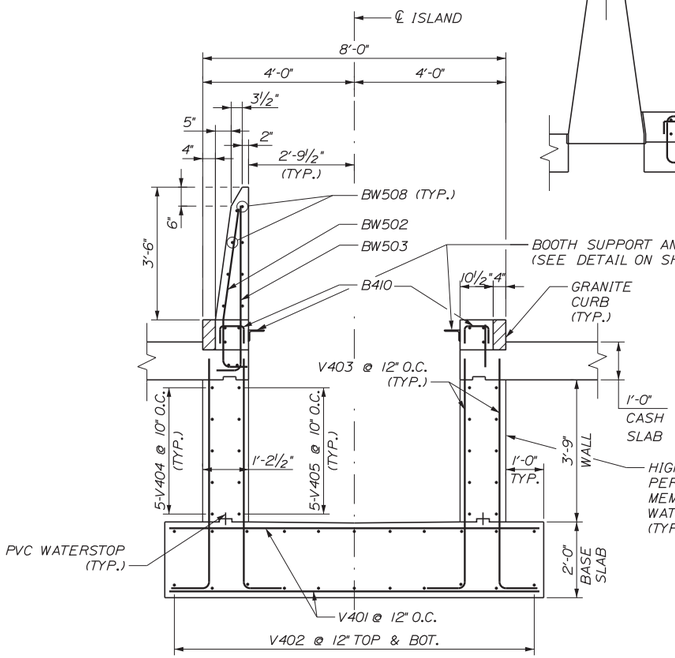
SECTION H-H
SCALE: 1" = 1'-0"



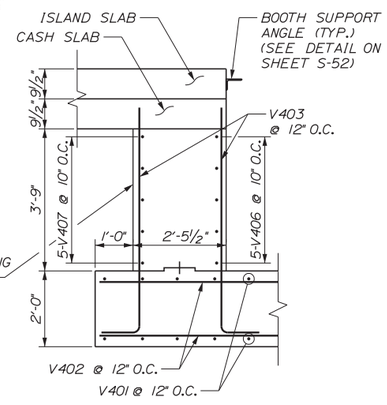
DETAIL A
SCALE: 1" = 1'-0"



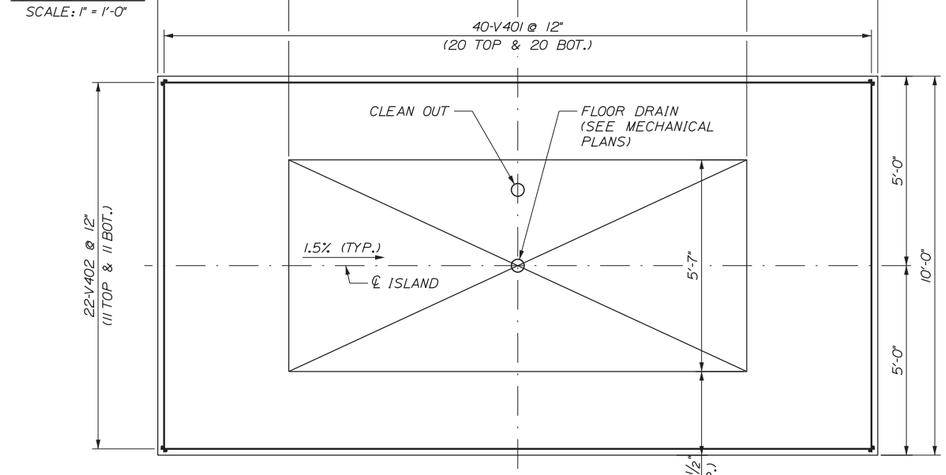
SECTION G-G
SCALE: 1/2" = 1'-0"



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



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



UTILITY PIT FLOOR SLAB
SCALE: 1/2" = 1'-0"

NOTES

1. FOR LOCATION OF SECTIONS SEE SHEET S-34.
2. FOR CASH SLAB REINFORCING SEE SHEET S-19.

Date:3/20/2019

Filename: ...\S_36_CashIsland_CD_sections.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

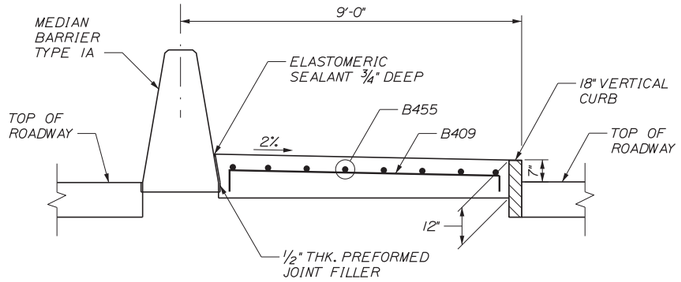
INTERCHANGE 103
ORT CONVERSION

CASH ISLANDS C & D SECTIONS

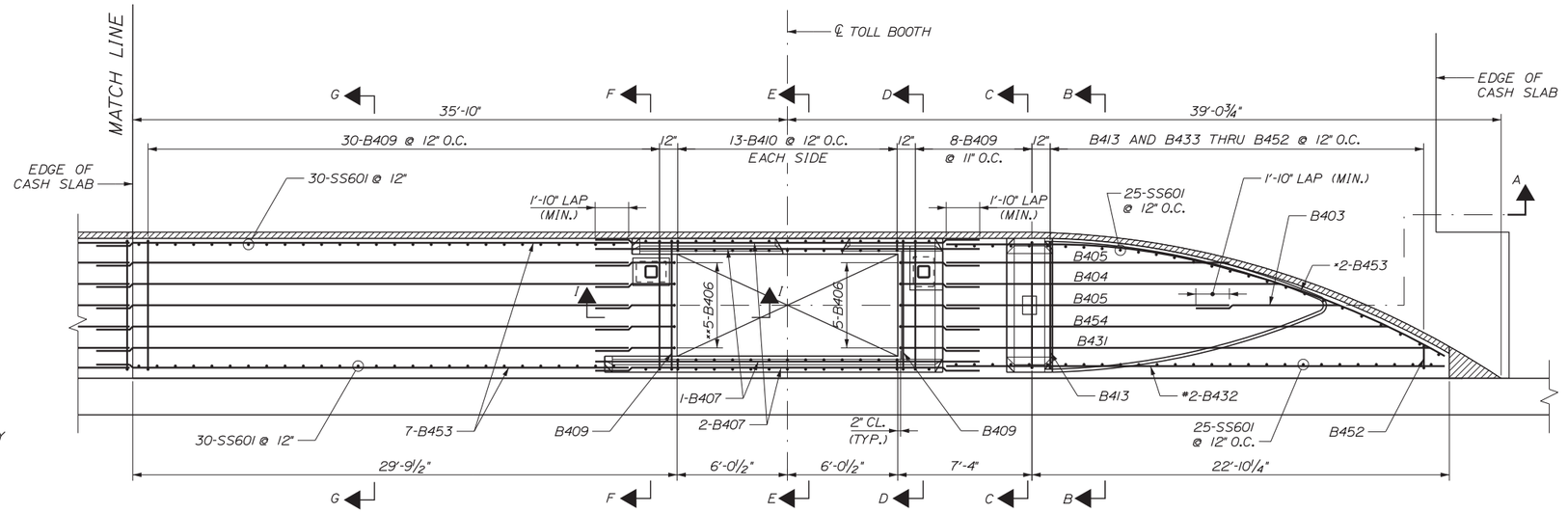
SHEET NUMBER: S-36

CONTRACT:2019.04

Date:3/20/2019



SECTION J-J
SCALE: ½" = 1'-0"



* FIELD BEND AS REQUIRED.

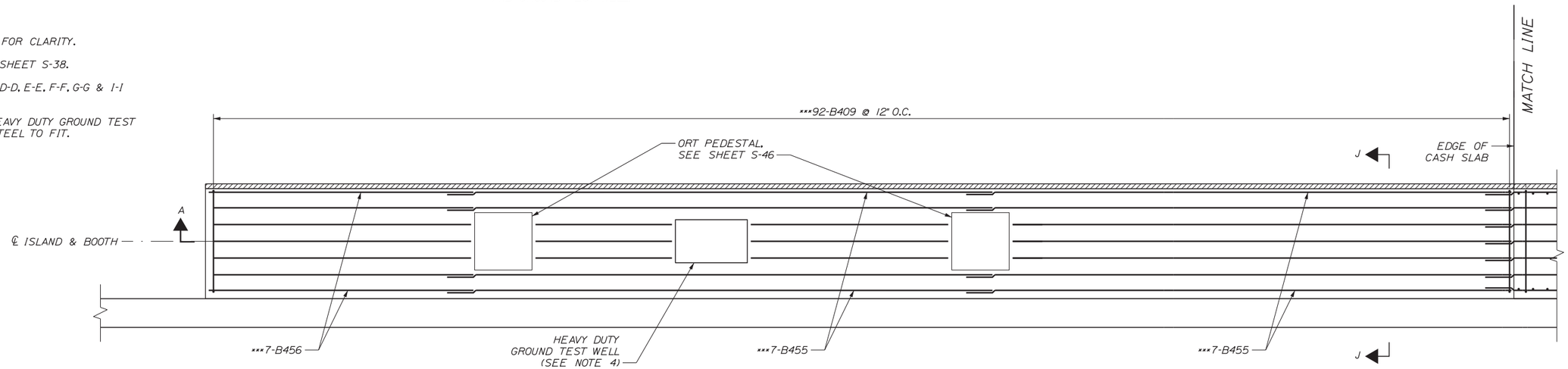
** ADJUST AS REQUIRED TO CLEAR CANOPY SUPPORTS AND ROOF DRAIN.

*** FIELD CUT TO FIT AROUND PEDESTALS AND GROUND TEST WELL.

ISLAND TYPE C & D REINFORCEMENT PLAN
SCALE: ¼" = 1'-0"

NOTES

1. ROOF DRAIN NOT SHOWN FOR CLARITY.
2. FOR SECTION A-A SEE SHEET S-38.
3. FOR SECTIONS B-B, C-C, D-D, E-E, F-F, G-G & I-I SEE SHEET S-36.
4. FIELD LOCATE 3' x 5' HEAVY DUTY GROUND TEST WELL. CUT REINFORCING STEEL TO FIT.



ISLAND TYPE C & D REINFORCEMENT PLAN
SCALE: ¼" = 1'-0"

Filename: ...\S-37_CashIsland_CDreinf1.dgn

Scale:			
No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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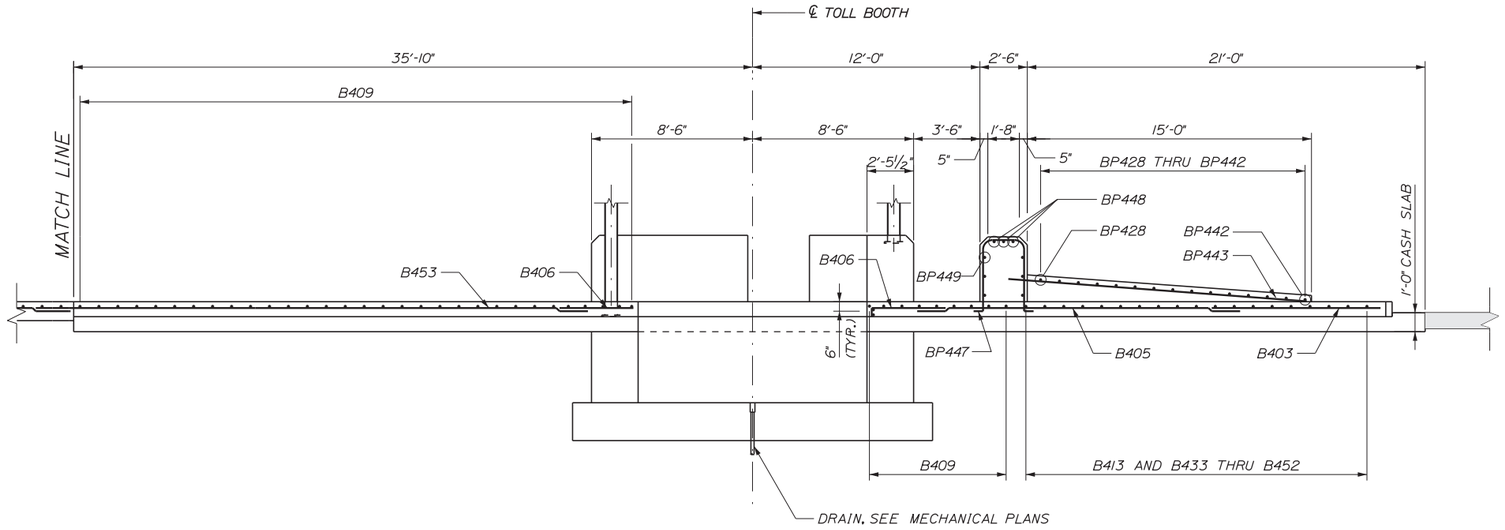
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION

CASH ISLANDS C & D REINFORCEMENT 1

SHEET NUMBER: S-37

CONTRACT:2019.04

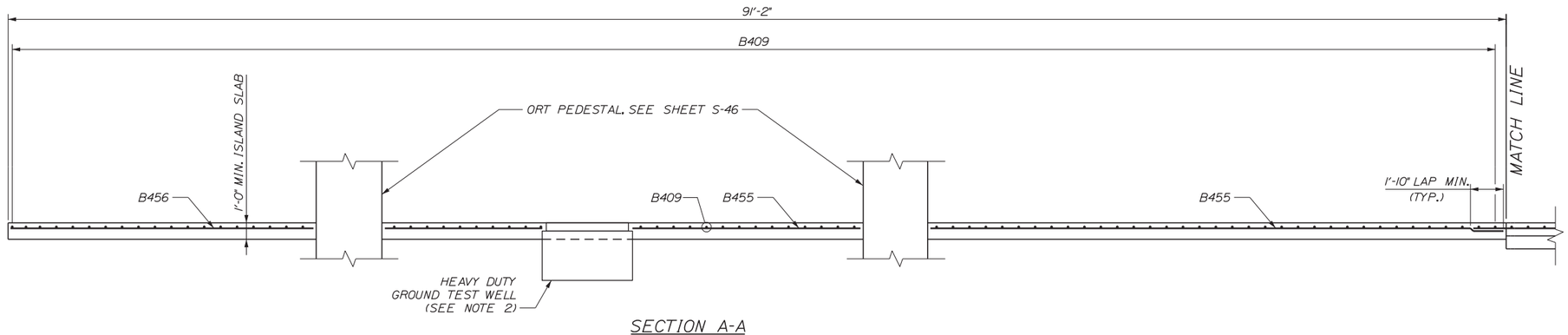


SECTION A-A
SCALE: 1/4" = 1'-0"

NOTES

1. CASH SLAB REINFORCING AND ROOF DRAIN NOT SHOWN FOR CLARITY.

2. FIELD LOCATE 3' x 5' HEAVY DUTY GROUND TEST WELL. CUT REINFORCING STEEL TO FIT.



SECTION A-A
SCALE: 1/4" = 1'-0"

Filename: ...\S-38_CashIsland_CDreinf2.dgn

Date:3/20/2019

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

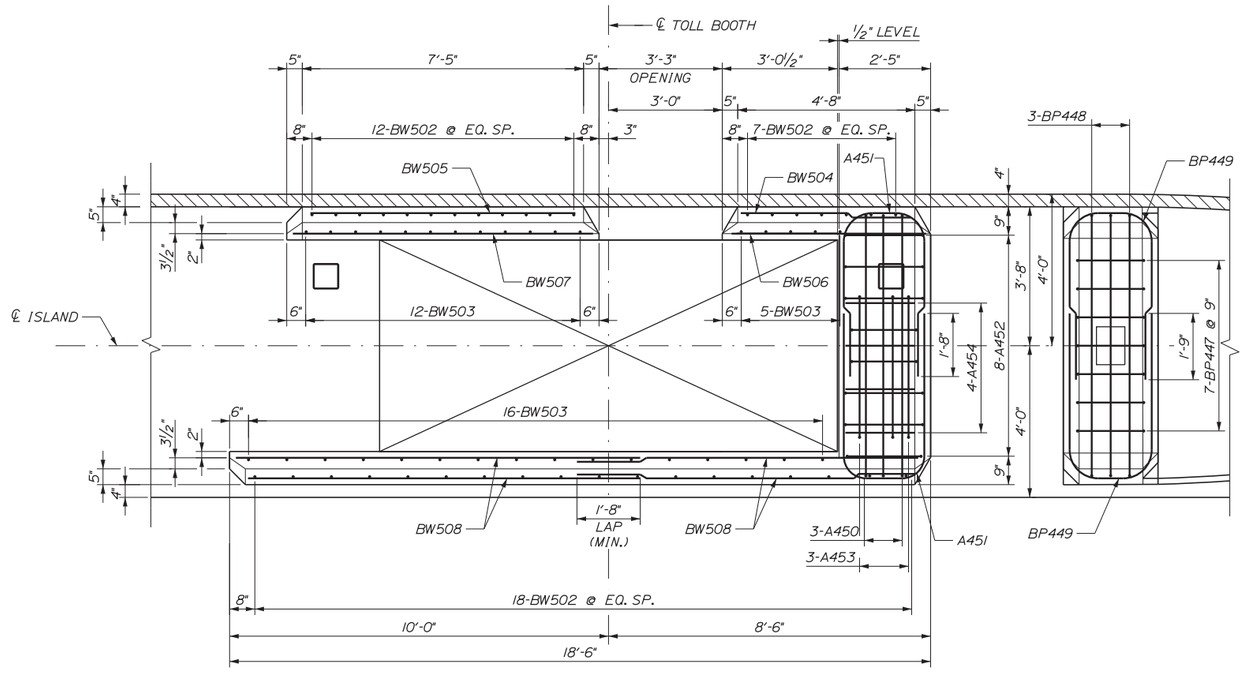
INTERCHANGE 103
ORT CONVERSION

CASH ISLANDS C & D REINFORCEMENT 2

SHEET NUMBER: S-38

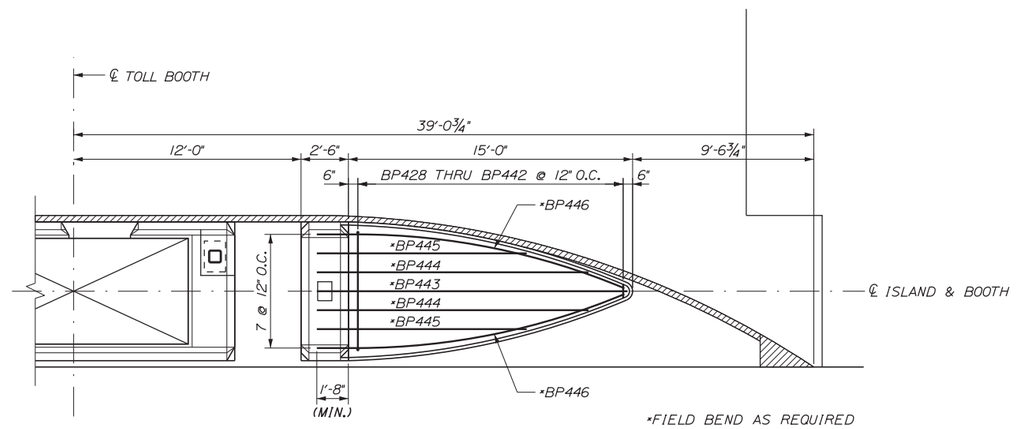
CONTRACT:2019.04

Date:3/20/2019



REINFORCEMENT LAYOUT AT BOOTH ENCLOSURE

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



BUMPER REINFORCEMENT PLAN

SCALE: 1/4" = 1'-0"

Filename: ...\S-39_CashIsland_CDreinf3.dgn

Scale:			
No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

STANTEC CONSULTING SERVICES INC.
482 PAYNE ROAD
SCARBOROUGH, ME 04074
TEL (207) 887-3448
FAX (207) 883-3376

MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103 ORT CONVERSION

CASH ISLANDS C & D REINFORCEMENT 3

SHEET NUMBER: S-39

CONTRACT:2019.04

Date:3/20/2019

INTERCHANGE 103 - TOLL ISLAND C & D REINFORCING STEEL SCHEDULE

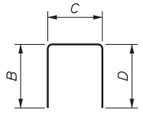
MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	INCR.	REMARKS
ISLAND - SLAB													
B403	4	1	7'-7 1/2"	17		5 1/2"	7'-2"						
B404	4	1	19'-6"	STR									
B405	4	2	15'-6"	STR									
B406	4	10	5'-11 1/2"	17		5 1/2"	5'-6"						
B407	4	6	21'-0"	STR									
B409	4	125	7'-11"	17		5 1/2"	7'-0"	5 1/2"					
B410	4	26	1'-5 1/2"	17		5 1/2"	6 1/2"	5 1/2"					
B413	4	1	7'-10"	17		5 1/2"	6'-11"	5 1/2"					
B431	4	1	25'-0"	STR									
B432	4	1	25'-7"	STR									
B433	4	1	7'-9 1/2"	17		5 1/2"	6'-10 1/2"	5 1/2"					
B434	4	1	7'-9"	17		5 1/2"	6'-10"	5 1/2"					
B435	4	1	7'-8 1/2"	17		5 1/2"	6'-9 1/2"	5 1/2"					
B436	4	1	7'-8"	17		5 1/2"	6'-9"	5 1/2"					
B437	4	1	7'-6 1/2"	17		5 1/2"	6'-7 1/2"	5 1/2"					
B438	4	1	7'-5"	17		5 1/2"	6'-6"	5 1/2"					
B439	4	1	7'-3"	17		5 1/2"	6'-4"	5 1/2"					
B440	4	1	7'-0 1/2"	17		5 1/2"	6'-1 1/2"	5 1/2"					
B441	4	1	6'-10"	17		5 1/2"	5'-11"	5 1/2"					
B442	4	1	6'-7 1/2"	17		5 1/2"	5'-8 1/2"	5 1/2"					
B443	4	1	6'-4 1/2"	17		5 1/2"	5'-5 1/2"	5 1/2"					
B444	4	1	6'-1"	17		5 1/2"	5'-2"	5 1/2"					
B445	4	1	5'-10"	17		5 1/2"	4'-11"	5 1/2"					
B446	4	1	5'-6"	17		5 1/2"	4'-7"	5 1/2"					
B447	4	1	5'-2"	17		5 1/2"	4'-3"	5 1/2"					
B448	4	1	4'-9 1/2"	17		5 1/2"	3'-10 1/2"	5 1/2"					
B449	4	1	4'-4 1/2"	17		5 1/2"	3'-5 1/2"	5 1/2"					
B450	4	1	4'-0"	17		5 1/2"	3'-1"	5 1/2"					
B451	4	1	3'-6"	17		5 1/2"	2'-7"	5 1/2"					
B452	4	1	3'-0 1/2"	17		5 1/2"	2'-1 1/2"	5 1/2"					
B453	4	7	27'-2"	STR									
B454	4	1	23'-0"	STR									
B455	4	14	38'-0"	STR									
B456	4	7	19'-8"	STR									
SS601	6	110	3'-3"	17E	1'-0"	1'-3"		1'-0"					
SS802	8	2	2'-8"	17	1'-0"	1'-8"							

MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	INCR.	REMARKS
ISLAND - FRONT BUMPER BLOCK													
BP428	4	2	10'-11 1/2"	17D	5"	9 1/2"	7 1/2"	3'-6"	1 3/4"	8"			
BP429	4	2	10'-4 1/2"	17D	4 3/4"	8 3/4"	7 1/2"	3'-3"	1 1/2"	8"			
BP430	4	1	9'-10"	17D	4 1/4"	8 1/4"	7 1/2"	3'-0 1/4"	1 1/2"	8"			
BP431	4	1	9'-2 3/4"	17D	4"	7 1/2"	7 1/2"	2'-9 1/4"	1 1/4"	8"			
BP432	4	1	8'-7 3/4"	17D	3 3/4"	6 3/4"	7 1/2"	2'-6 1/2"	1 1/4"	8"			
BP433	4	1	8'-0 1/4"	17D	3 1/2"	6"	7 1/2"	2'-3 1/4"	1"	8"			
BP434	4	1	7'-6 1/4"	17D	3"	5 1/2"	7 1/2"	2'-0 3/4"	1"	8"			
BP435	4	1	6'-10 3/4"	17D	2 3/4"	4 3/4"	7 1/2"	1'-9 3/4"	1"	8"			
BP436	4	1	6'-4"	17D	2 1/2"	4"	7 1/2"	1'-7"	0 3/4"	8"			
BP437	4	1	5'-9"	17D	2"	3 1/2"	7 1/2"	1'-4"	0 3/4"	8"			
BP438	4	1	5'-2 1/2"	17D	1 3/4"	2 3/4"	7 1/2"	1'-1 1/4"	0 1/2"	8"			
BP439	4	1	4'-7"	17D	1 1/2"	2"	7 1/2"	10 1/4"	0 1/2"	8"			
BP440	4	1	4'-1"	17D	1 1/4"	1 3/4"	7 1/2"	7 1/2"	0 1/2"	8"			
BP441	4	1	3'-5 1/4"	17D	0 3/4"	0 3/4"	7 1/2"	4 1/2"	0 1/4"	8"			
BP442	4	1	3'-5 1/4"	17D	0 3/4"	0 3/4"	7 1/2"	4 1/2"	0 1/4"	8"			
BP443	4	1	16'-5"	STR									
BP444	4	2	14'-4"	STR									
BP445	4	2	11'-2"	STR									
BP446	4	2	16'-8"	STR									*FIELD BEND AS REQUIRED
BP447	4	7	11'-0"	17F		3'-9"	2'-2"	3'-9"	8"				R=5 1/2" (INSIDE RADIUS)
BP448	4	3	13'-9 3/4"	17B	3'-3"	5'-0"	3'-3"	7'-0"	4"	8"			R=5 1/2" (INSIDE RADIUS)
BP449	4	6	11'-1"	17A		4'-6"	2'-1"	4'-6"					R=7" (INSIDE RADIUS)

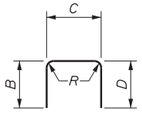
MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	INCR.	REMARKS
ISLAND - BOOTH ENCLOSURE AND BARRIER WALL													
A450	4	3	11'-0"	17C	2'-6"	4"	5'-11"						
A451	4	6	11'-5 1/2"	17A		4'-8"	2'-1 1/2"	4'-8"					R=7" (INSIDE RADIUS)
A452	4	8	9'-8 1/2"	17F		2'-10"	2'-0 1/2"	2'-10"	1'-0"				R=5 1/2" (INSDE RADIUS)
A453	4	3	9'-4"	17		3'-0"	3'-4"	3'-0"					
A454	4	4	1'-11"	STR									
BW502	5	37	4'-11 1/2"	17E	8"	1'-3"	3'-0"	5"					
BW503	5	33	5'-3"	17		10"	4'-5"						
BW504	5	4	4'-2"	STR									
BW505	5	4	7'-1"	STR									
BW506	5	4	5'-0"	STR									
BW507	5	4	7'-10"	STR									
BW508	5	16	9'-7"	STR									

INTERCHANGE 103 - UTILITY VAULT REINFORCING STEEL SCHEDULE

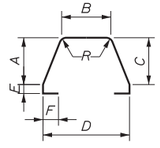
MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	INCR.	REMARKS
ISLAND - UTILITY VAULT													
V401	4	40	9'-8"	STR									
V402	4	22	18'-8"	STR									
V403	4	90	6'-9"	17		8"	6'-1"						
V404	4	10	16' 8"	STR									
V405	4	10	18'-0"	17		8"	16-8"	8"					
V406	4	10	7'-8"	STR									
V407	4	10	9'-0"	17		8"	7'-8"	8"					



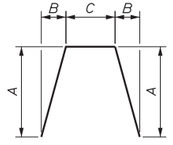
TYPE I7



TYPE I7A



TYPE I7B



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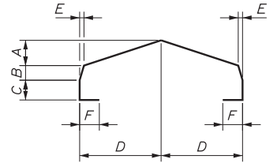

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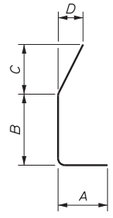
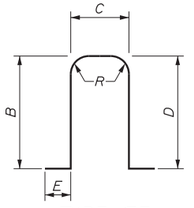


TYPE I7E



TYPE I7F

NOTE:

ALL REINFORCING IS STEEL AND EPOXY COATED UNLESS OTHERWISE NOTED.

Filename: ...\S-40_CashIsland_CD_ReinfSched.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	KLW	3\20\19	In Charge of	GAE	3\20\19

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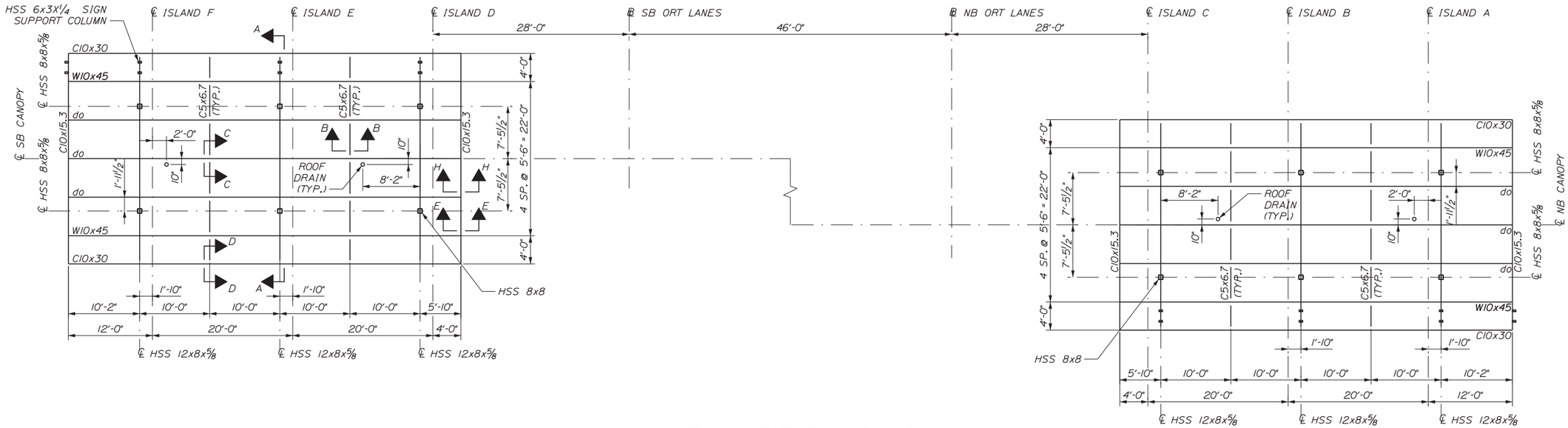
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
CASH ISLAND C & D
REINFORCING STEEL SCHEDULE

SHEET NUMBER: S-40

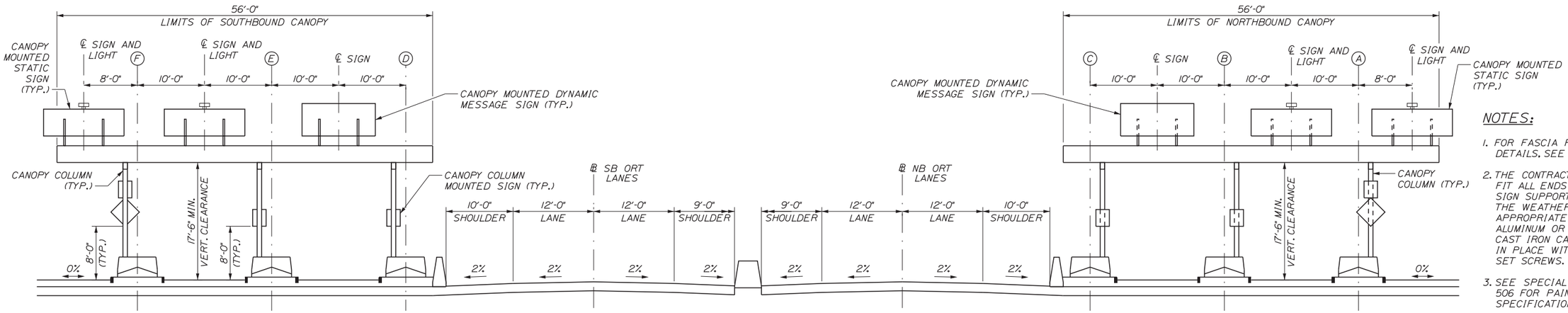
CONTRACT:2019.04



NOTE: CANOPY OFFSET NOT SHOWN TO SCALE

PLAN - TOLL PLAZA

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



ELEVATION - TOLL PLAZA

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

NOTES:

1. FOR FASCIA FINISH DETAILS, SEE SHEET S-42.
2. THE CONTRACTOR SHALL FIT ALL ENDS OF CANOPY SIGN SUPPORTS OPEN TO THE WEATHER WITH AN APPROPRIATE CAST ALUMINUM OR GALVAIZED CAST IRON CAP SECURED IN PLACE WITH STAINLESS SET SCREWS.
3. SEE SPECIAL PROVISION 506 FOR PAINTING SPECIFICATIONS.
4. FOR CANOPY SIGN SUPPORT DETAILS, SEE SHEET S-44.
5. SECTIONS A-A, B-B, C-C, D-D, E-E & H-H ARE SHOWN ON SHEET S-42.

Scale:

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CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
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INTERCHANGE 103 ORT CONVERSION NORTHBOUND & SOUTHBOUND CANOPY PLAN AND ELEVATION

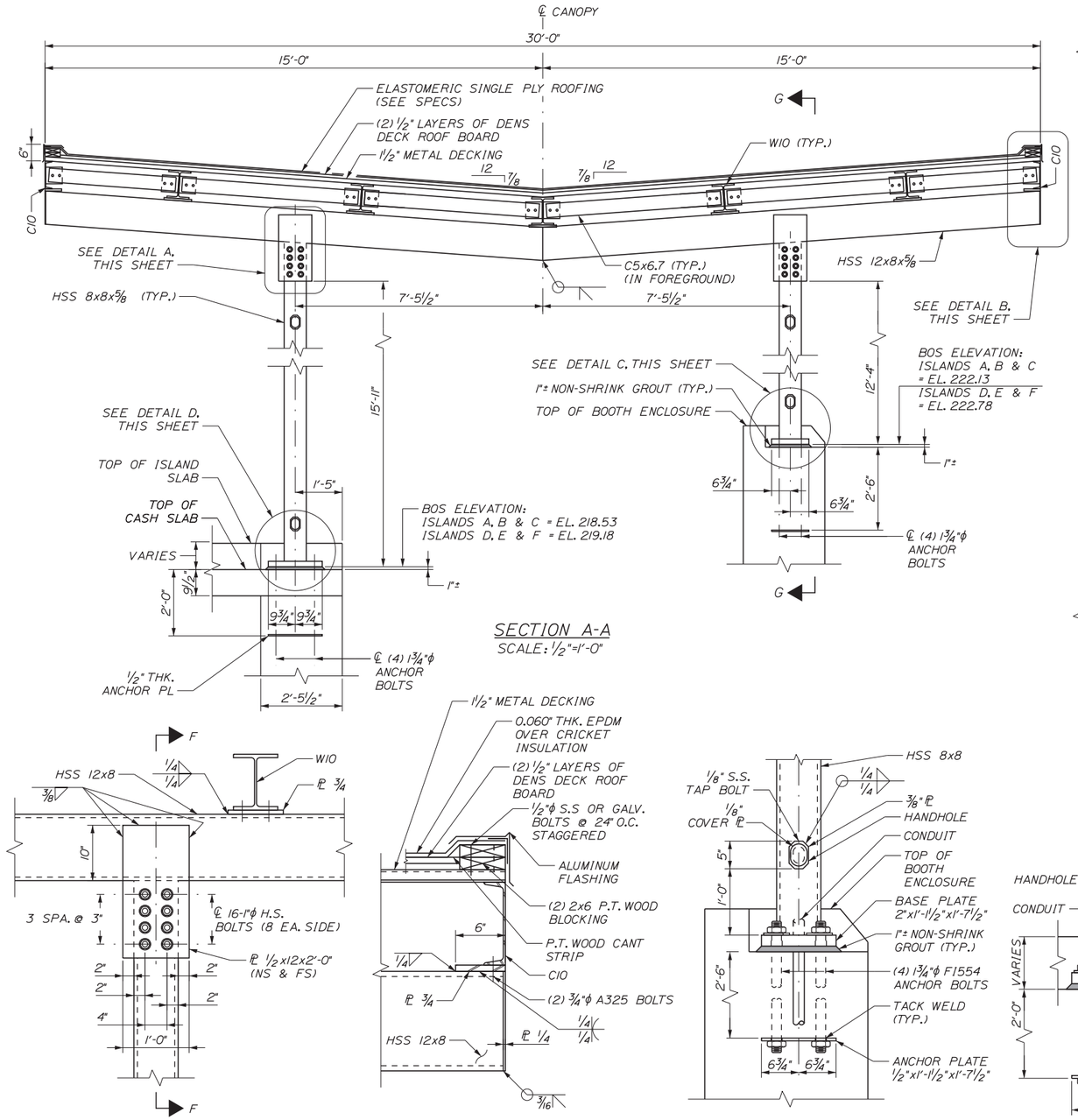
SHEET NUMBER: S-41

CONTRACT: 2019.04

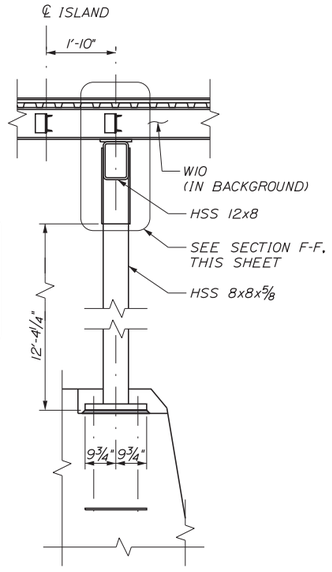
Date: 3/20/2019

Filename: ...\MSTA\S-41_NBSBCanopy P&E.dgn

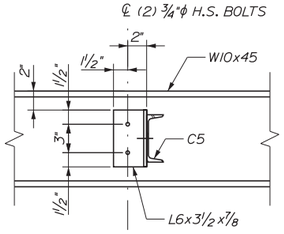
Date:3/20/2019



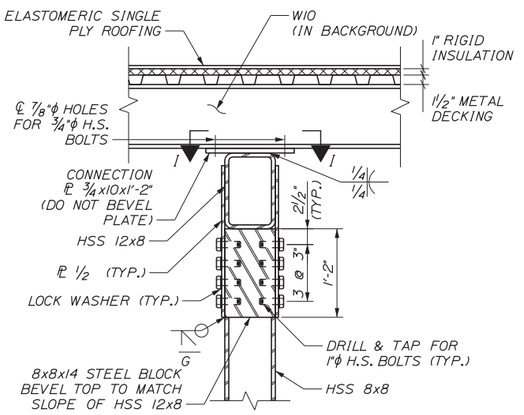
SECTION A-A
SCALE: 1/2"=1'-0"



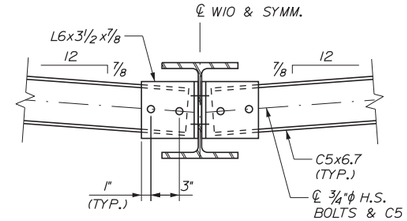
SECTION G-G
SCALE: 1/2"=1'-0"



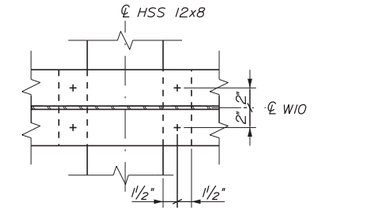
SECTION B-B
SCALE: 1 1/2"=1'-0"



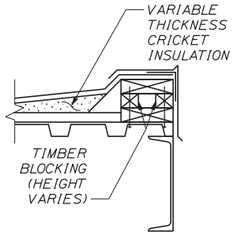
SECTION F-F
SCALE: 1"=1'-0"



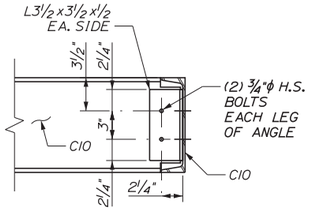
SECTION C-C
SCALE: 1 1/2"=1'-0"



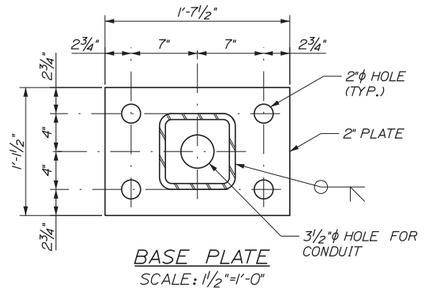
SECTION I-I
SCALE: 1 1/2"=1'-0"



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

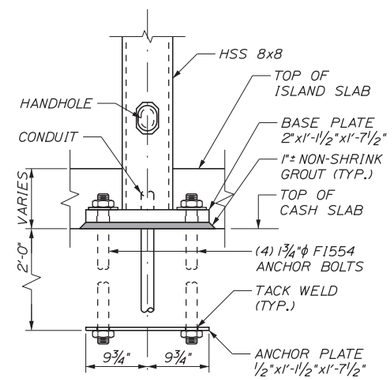


SECTION D-D
SCALE: 1 1/2"=1'-0"

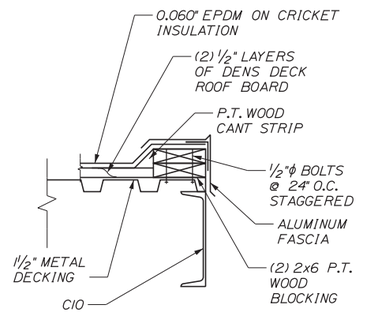


BASE PLATE
SCALE: 1 1/2"=1'-0"

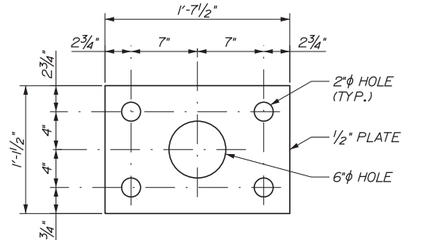
DETAIL C
SCALE: 1"=1'-0"



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



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



ANCHOR PLATE
SCALE: 1 1/2"=1'-0"

DETAIL A
SCALE: 1"=1'-0"

DETAIL B
SCALE: 1 1/2"=1'-0"

Filename: ...\S-42_NBSBCanopy Sec_Dets.dgn

Scale:			
No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
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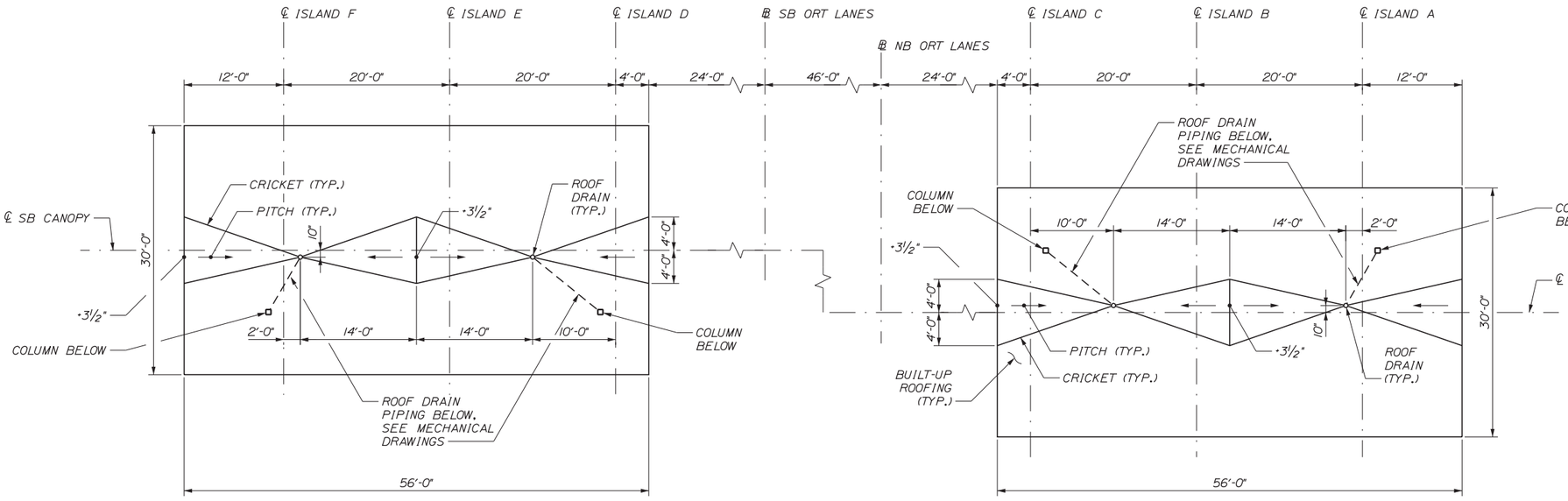
INTERCHANGE 103 ORT CONVERSION NORTHBOUND & SOUTHBOUND CANOPY SECTION AND DETAILS

SHEET NUMBER: S-42

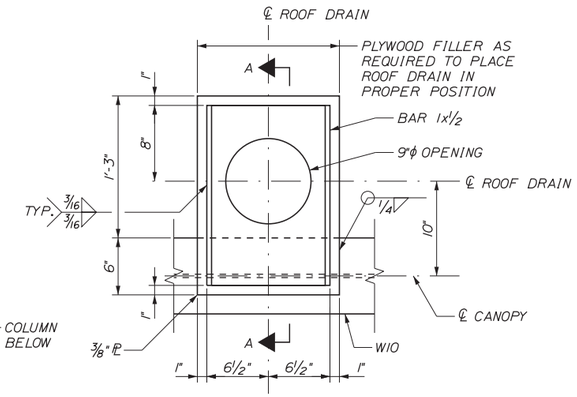
CONTRACT:2019.04



NOTE: CANOPY OFFSET NOT SHOWN TO SCALE

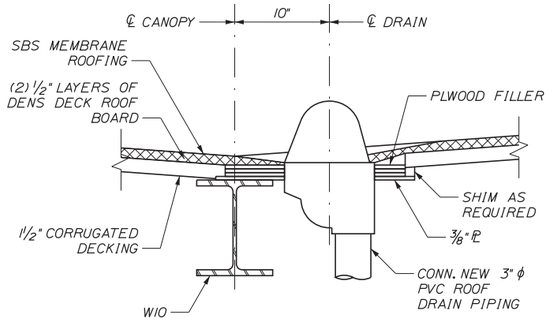
CANOPY ROOF PLAN

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



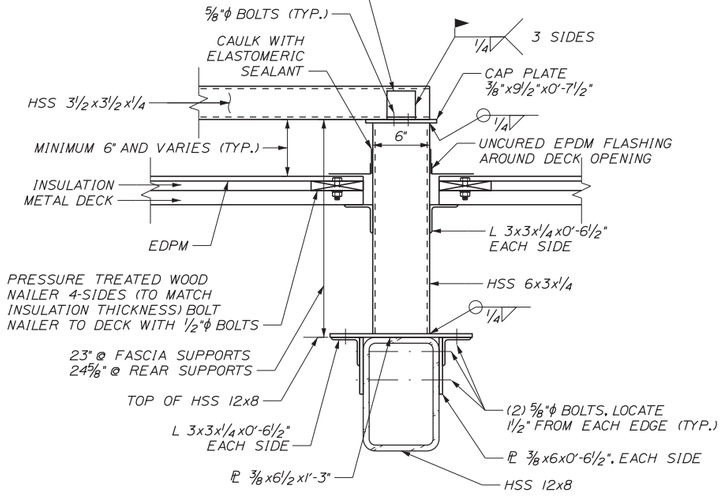
ROOF DRAIN PLAN

SCALE: 1½"=1'-0"



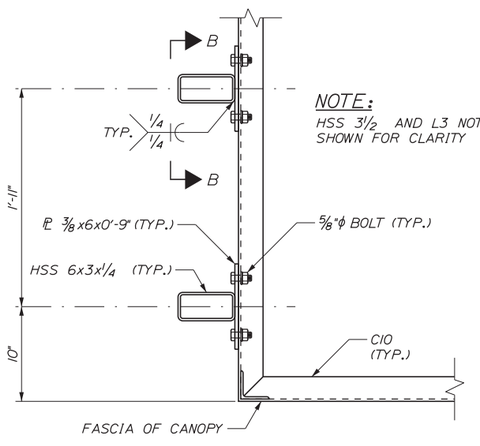
SECTION A-A

SCALE: 1½"=1'-0"



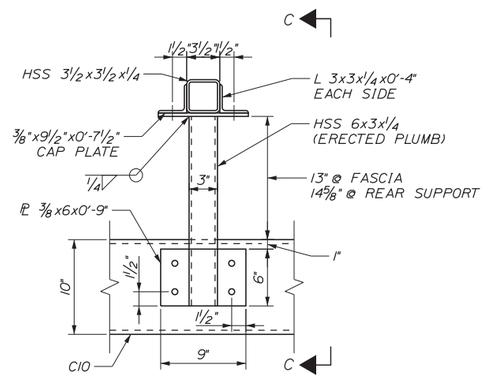
CANOPY MOUNTED - INTERIOR SIGN COLUMN

SCALE: 1½" = 1'-0"

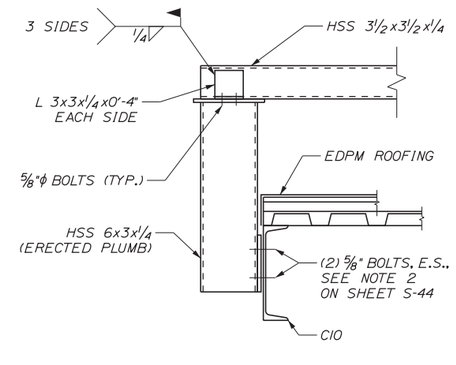


NOTE:
HSS 3½ AND L3 NOT SHOWN FOR CLARITY

PLAN VIEW



SECTION B-B



SECTION C-C

CANOPY MOUNTED - EXTERIOR SIGN COLUMN

SCALE: 1½" = 1'-0"

Date:3/20/2019

Filename: ...\S-43_NBSBCanopy Roof_SignDets.dgn

Scale:			
No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	KLW	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

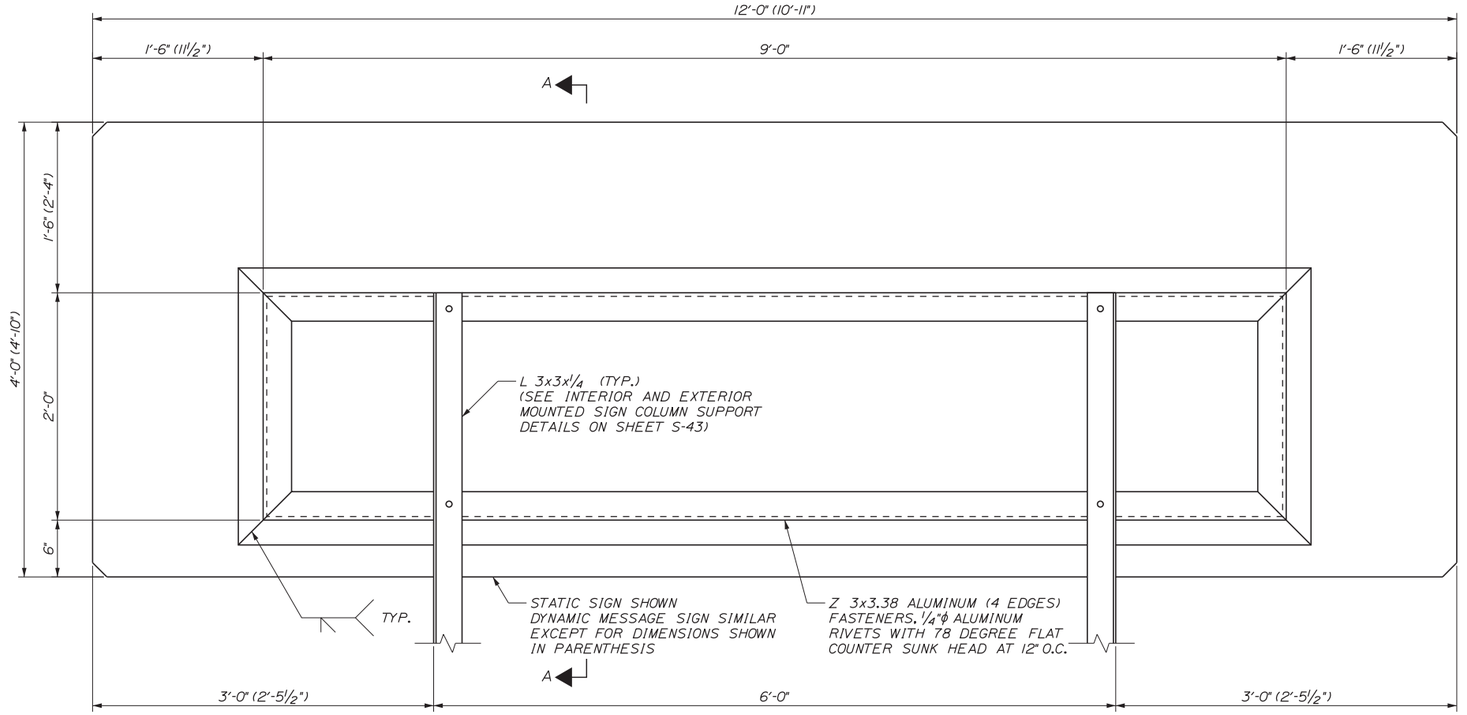
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103 ORT CONVERSION NORTHBOUND & SOUTHBOUND CANOPY ROOF PLAN AND SIGN SUPPORT DETAILS

SHEET NUMBER: S-43

CONTRACT:2019.04

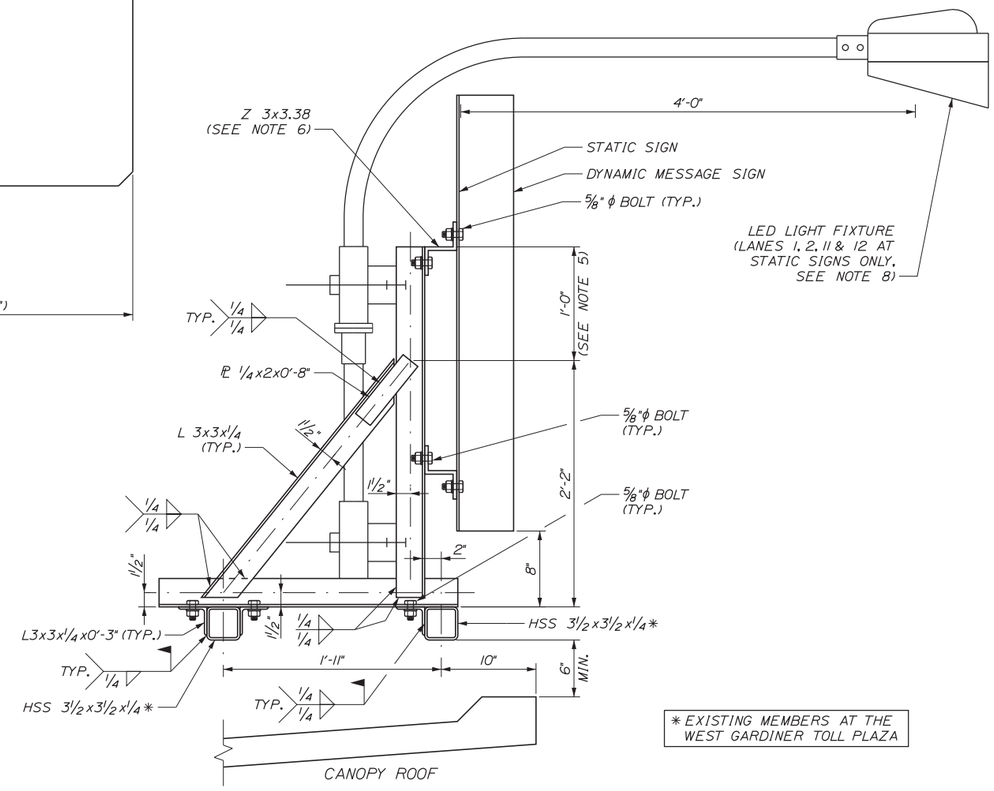


CANOPY SIGN SUPPORT ELEVATION

SCALE: 1½" = 1'-0"

NOTES:

1. CONTRACTOR TO SUBMIT FLASHING DETAILS FOR REVIEW PRIOR TO CONSTRUCTION.
2. HOLES FOR SIGN COLUMN SUPPORT SHALL BE FIELD DRILLED PRIOR TO ROOF MEMBRANE INSTALLATION. HOLES IN MEMBRANE SHALL BE SEALED WITH APPROVED PRODUCTS.
3. LENGTH OF PROPOSED CANOPY MOUNTED SIGN COLUMNS SHALL BE SELECTED SUCH THAT THE FRONT AND REAR SIGN SUPPORT TUBES ARE AT THE SAME ELEVATION.
4. FOR SIGN SUPPORT LOCATIONS SEE SHEET S-41.
5. ADJUST AND INCREASE HEIGHT OF L3x3x¼ TO ACCOMMODATE MOUNTING DETAILED SUPPLIED DYNAMIC MESSAGE SIGN.
6. CHANGE Z 3x3.8 TO SUITABLE STRUCTURAL SHAPE TO ACCOMMODATE MOUNTING DETAIL SUPPLIED WITH DYNAMIC MESSAGE SIGN. SUBJECT TO THE APPROVAL OF THE AUTHORITY.
7. SIGN WEIGHT NOT TO EXCEED 500 LBS MAXIMUM.
8. LED LIGHT FIXTURE SHALL BE A HOLOPHANE CATALOG NUMBER SVLED2-PNL-PKI-MVOLT-40K-AMT-GYSDP-AO. REFER TO ELECTRICAL DRAWINGS FOR WIRING DETAILS.
9. CONTRACTOR SHALL ALSO FURNISH AND INSTALL SUPPORTS FOR DYNAMIC MESSAGE SIGNS AT LANES 2 AND 7 AT THE WEST GARDINER TOLL PLAZA, AS DETAILED BELOW.



* EXISTING MEMBERS AT THE WEST GARDINER TOLL PLAZA

SECTION A-A

SCALE: 1½" = 1'-0"

Date:3/20/2019

Filename: ...\S-44_NBSBCanopy SignSuppDets.dgn

Scale:			
No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

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MAINE TURNPIKE

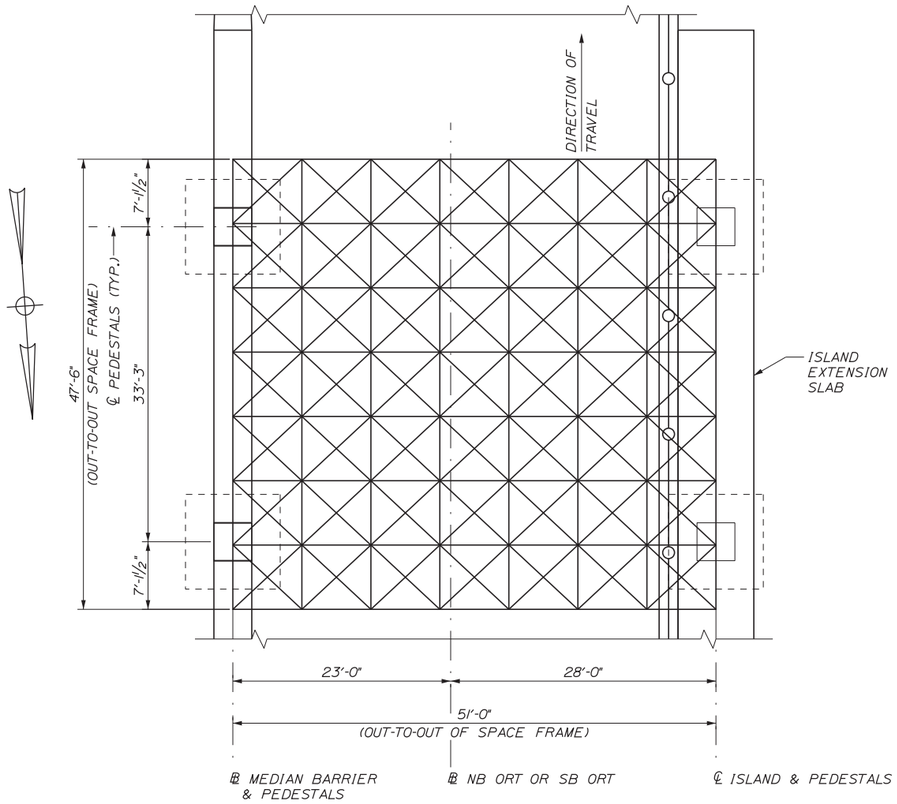
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

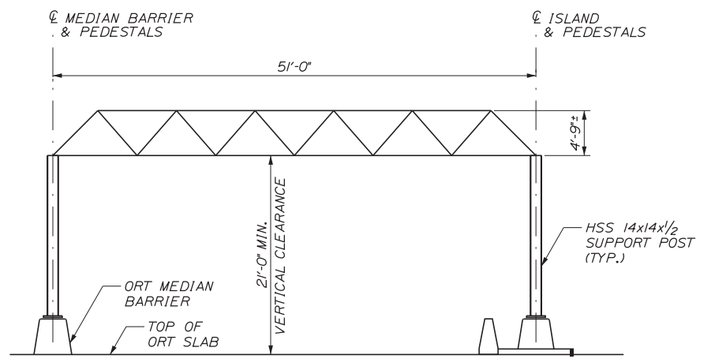
INTERCHANGE 103
ORT CONVERSION
NORTHBOUND & SOUTHBOUND
CANOPY SIGN SUPPORT DETAILS

SHEET NUMBER: S-44

CONTRACT:2019.04



ORT SPACE FRAME - TYPICAL PLAN
(SOUTHBOUND ORT SHOWN, NORTHBOUND SIMILAR)
SCALE: 1/8" = 1'-0"



ORT SPACE FRAME - TYPICAL ELEVATION
(SOUTHBOUND ORT SHOWN, NORTHBOUND SIMILAR)
SCALE: 1/8" = 1'-0"

ORT SPACE FRAME NOTES:

1. THE ORT SPACE FRAMES SHOWN ON THESE PLANS ARE CONCEPTUAL LAYOUTS TO ESTABLISH DESIGN CRITERIA AND GEOMETRIC LIMITS OF THE TWO PROPOSED STRUCTURES. IT IS FOR INFORMATIONAL PURPOSES ONLY, NOT TO BE USED FOR CONSTRUCTION. THE CONTRACTOR SHALL USE THESE PLANS AND DETAILS IN ACCORDANCE WITH THE SPECIFICATIONS TO MEET THE PROJECT'S DESIGN AND CONSTRUCTION INTENT, QUALITY, AND CHARACTER.

2. ALL DESIGN AND DETAILS OF CONSTRUCTION SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING:

SPECIFICATIONS:

A. AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS (1ST EDITION).

B. 2015 AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, 4th EDITION.

WIND LOAD:

A. DESIGN WIND SPEED, V = 110 MPH
IMPORTANCE FACTOR, Ip = 1.0
RISK CATEGORY II

B. A PROVISIONAL AREA FOR SIGN PANELS OF 4' HIGH x 51' LONG AT THE ON-COMING TRAFFIC END OF THE SPACE FRAME.

ICE LOAD:

A. 3 PSF APPLIED VERTICALLY ON FULL CIRCUMFERENCE OF ALL MEMBERS AND VERTICAL FACES OF SIGN PANELS.

DEAD LOAD:

A. 10 PSF DEAD LOAD APPLIED OVER THE ENTIRE PLAN AREA OF THE SPACE FRAME IN ADDITION TO THE SELF WEIGHT OF THE STRUCTURE.

B. A SINGLE 200 LB DEAD LOAD APPLIED TO ANY NODE, CHORD OR CONNECTION ON THE SPACE FRAME. SEE ORT EQUIPMENT DETAIL LAYOUT FOR APPROXIMATE QUANTITY AND LOCATION OF LOADING.

C. A PROVISIONAL DEAD LOAD OF 100 LB PER FOOT FOR SIGN PANELS OVER THE ON-COMING TRAFFIC END OF THE SPACE FRAME.

STRUCTURAL STEEL:

A. STRUCTURAL STEEL PLATES AND SHAPES SHALL BE ASTM A572 GR. 50 AND SHALL MEET THE REQUIREMENTS OF AWS D1.1 SECTION 4 PART D FOR CVN TESTING.

B. STRUCTURAL TUBING SHALL BE MINIMUM ASTM A500, GRADE 5 (Fy = 46 ksi), DIAMETER PER FABRICATOR DESIGN.

C. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.

WELDING:

AMERICAN WELDING SOCIETY (AWS) D1.1 STRUCTURAL WELDING CODE - STEEL.

BOLTED CONNECTIONS:

UNLESS OTHERWISE NOTED, ALL BOLTED CONNECTIONS SPECIFYING BOLT DIAMETER 1/2" AND LARGER SHALL BE:
BOLTS - ASTM F3125, GRADE A325 TYPE 1 (THREADS EXCLUDED FROM SHEAR PLANE).
NUTS - ASTM A563
WASHERS - ASTM F436
NUTS, BOLTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153.

ANCHOR BOLTS:

ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 GR. 105. NUTS SHALL CONFORM TO ASTM A563 AND PLATE WASHERS SHALL CONFORM TO ASTM A709, GR. 50. NUTS, BOLTS AND PLATE WASHERS SHALL BE FULLY GALVANIZED IN ACCORDANCE WITH ASTM A153.

SHOP DRAWINGS:

THE SHOP DRAWINGS AND DESIGN CALCULATIONS FOR THE SPACE FRAME SELECTED BY THE CONTRACTOR SHALL BE PREPARED UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MAINE AND SHALL HAVE THE SIGNATURE AND SEAL OF THAT PROFESSIONAL ENGINEER. FOR METAL FABRICATION WORK, APPROVED SHOP DRAWINGS SHALL BE AT THE METAL FABRICATOR'S SHOP PRIOR TO COMMENCEMENT OF FABRICATION. THE APPROVED SHOP DRAWINGS SHALL BE AVAILABLE AND ACCESSIBLE TO MAINE TURNPIKE INSPECTORS AT ALL TIMES AND MAY BE PHOTOCOPIED.

CAMBER:

THE SPACE FRAME SHALL HAVE A RESIDUAL UPWARD CAMBER OF SPAN/1000 IN LONGITUDINAL AND TRANSVERSE DIRECTIONS.

MANUFACTURER:

THE DESIGN, FABRICATION AND FURNISHING OF THE SPACE FRAME STRUCTURES SHALL BE PERFORMED BY THE FABRICATORS LISTED IN THE CONTRACT SPECIFICATIONS OR AN APPROVED EQUAL.

DESIGN LOADS:

THE CONTRACTOR SHALL FURNISH FINAL SPACE FRAME CANOPY DESIGN REACTIONS TO THE RESIDENT WITHIN 30 DAYS OF AWARD OF CONTRACT FOR ENGINEER'S VERIFICATION AND CONFIRMATION OF THE SUBSTRUCTURE DESIGN.

ERECTION:

THE CONTRACTOR AND SPACE FRAME FABRICATOR ARE TO CAREFULLY REVIEW THESE PLANS AND SPECIFICATIONS. CONDITIONS AT THE PROPOSED CONSTRUCTION SITE ALLOW LIMITED AREA FOR STAGING AND ASSEMBLY OF THE SPACE FRAME. THE SITE CONDITIONS MAY PRECLUDE SINGLE STAGE ERECTION OF THE SPACE FRAME.

Date:3/20/2019

Filename: ...\S-45_ORT Space Frame P&E.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	KLW	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION

ORT SPACE FRAME PLAN AND ELEVATION

SHEET NUMBER: S-45

CONTRACT:2019.04

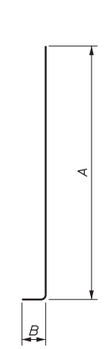
Date:3/20/2019

INTERCHANGE 103 ORT SPACE FRAME FOUNDATION REINFORCING STEEL SCHEDULE

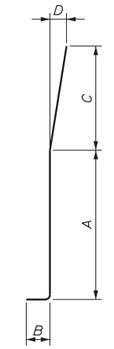
MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	INCR.	REMARKS
F100	6	352	9'-6"	STR.									
P100	8	64	10'-3"	118	8'-10"	1'-5"							
P101	8	96	10'-3 1/2"	119	5'-3"	1'-5"	3'-7"	7"					
P102	4	32	15'-5"	100	3'-8"	3'-8"							
P103a to d	4	32	MAX. 15'-5" MIN. 13'-0"	100	MAX. 3'-8" MIN. 2'-5 1/2"	3'-8"							

NOTE:

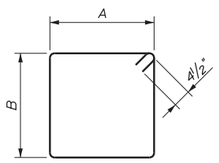
ALL REINFORCING IS STEEL AND EPOXY COATED UNLESS OTHERWISE NOTED.



TYPE 118



TYPE 119



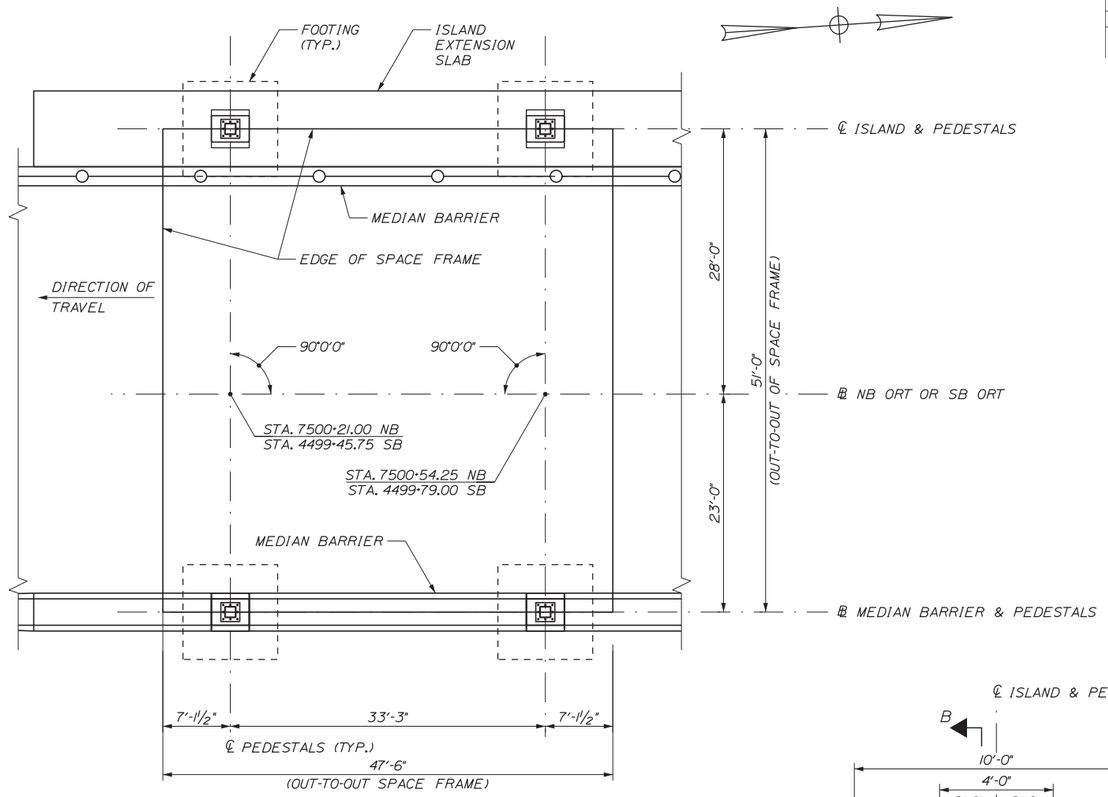
TYPE 100

	PEDESTAL ELEVATION 'A'	
	23.00' LT	28.00' RT
NB STA. 7500+21.00	222.73	222.73
NB STA. 7500+54.25	223.02	223.02
SB STA. 4499+45.75	221.91	221.91
SB STA. 4499+79.00	222.30	222.30

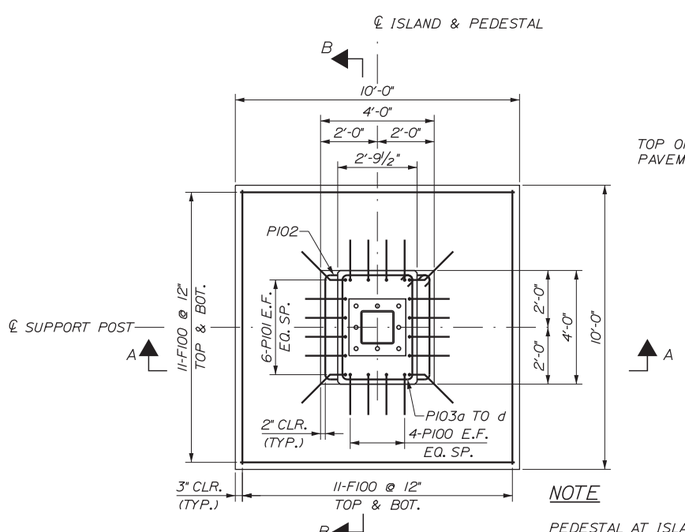
NOTES

1. SEE SHEET S-50 FOR ORT BASEPLATE AND ANCHOR PLATE DETAILS.

2. SEE ELECTRICAL PLANS FOR CONDUITS IN PEDESTAL AND TOLL ISLAND SLAB.



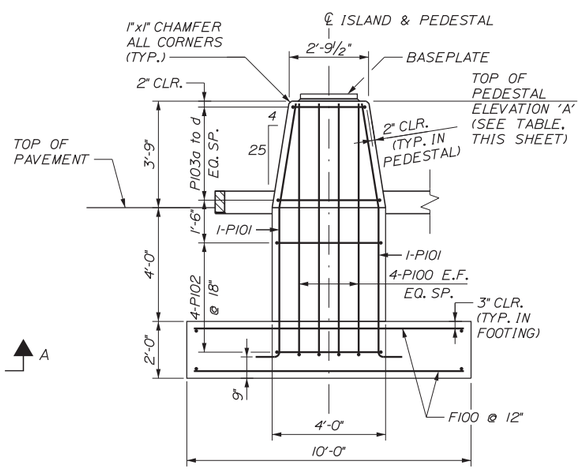
ORT FOUNDATION LOCATION PLAN
(SOUTHBOUND ORT SHOWN, NORTHBOUND SIMILAR)
SCALE: 1/8" = 1'-0"



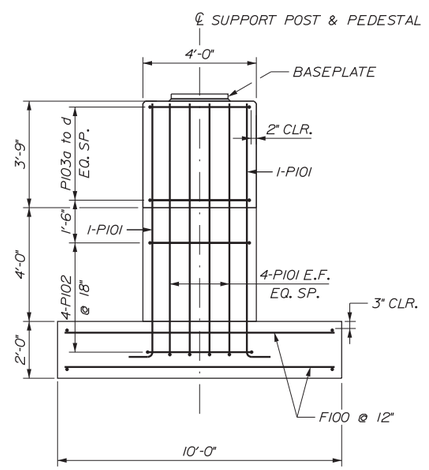
PLAN VIEW
SCALE: 3/8" = 1'-0"

NOTE

PEDESTAL AT ISLANDS SHOWN.
OTHERS SIMILAR EXCEPT AS NOTED.
BARRIER, SLABS AND TOLL ISLAND
NOT SHOWN FOR CLARITY.



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



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

No.	Revision	By	Date

Scale:

Designed by:

Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	JTB	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103 ORT CONVERSION ORT SPACE FRAME FOUNDATION PLAN AND SECTIONS

SHEET NUMBER: S-46

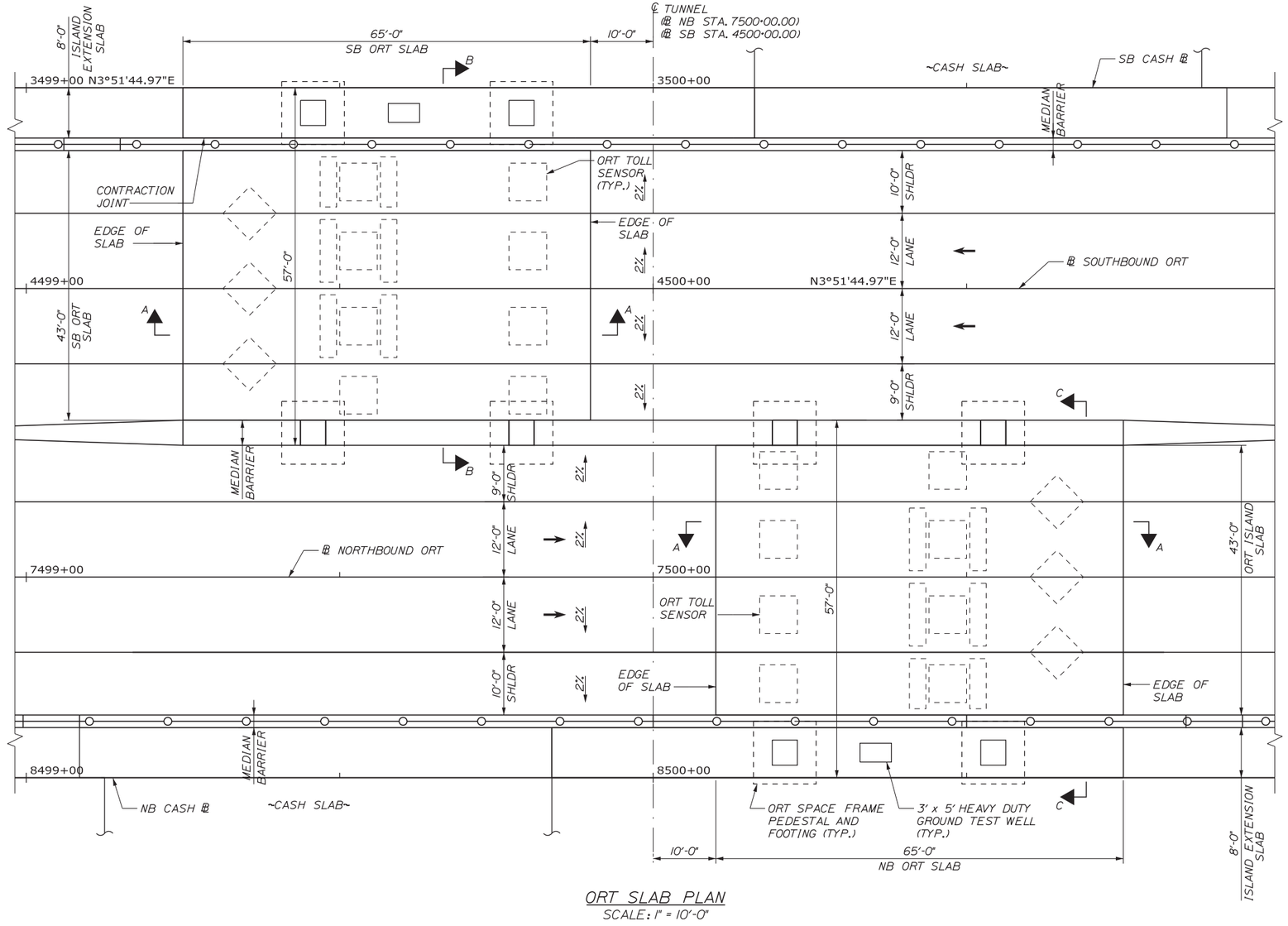
CONTRACT:2019.04

Filename: ...\S-46_ORT Space Frame Fndn Dets.dgn

Date:3/20/2019

NOTES

1. TUNNEL NOT SHOWN FOR CLARITY.
2. TOLL SENSOR LAYOUT SHOWN FOR REFERENCE ONLY.
3. FOR SECTIONS A-A, B-B & C-C SEE SHEET S-49.



ORT SLAB PLAN
SCALE: 1" = 10'-0"

Filename: ...\MSTA\S-47_ORTSlabLayout.dgn

Scale:			
No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	KLW	3\20\19	In Charge of	GAE	3\20\19

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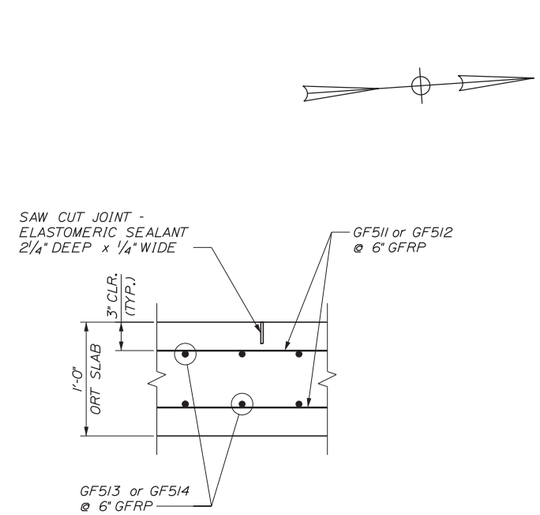
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103 ORT CONVERSION

ORT SLAB LAYOUT PLAN

SHEET NUMBER: S-47

CONTRACT:2019.04

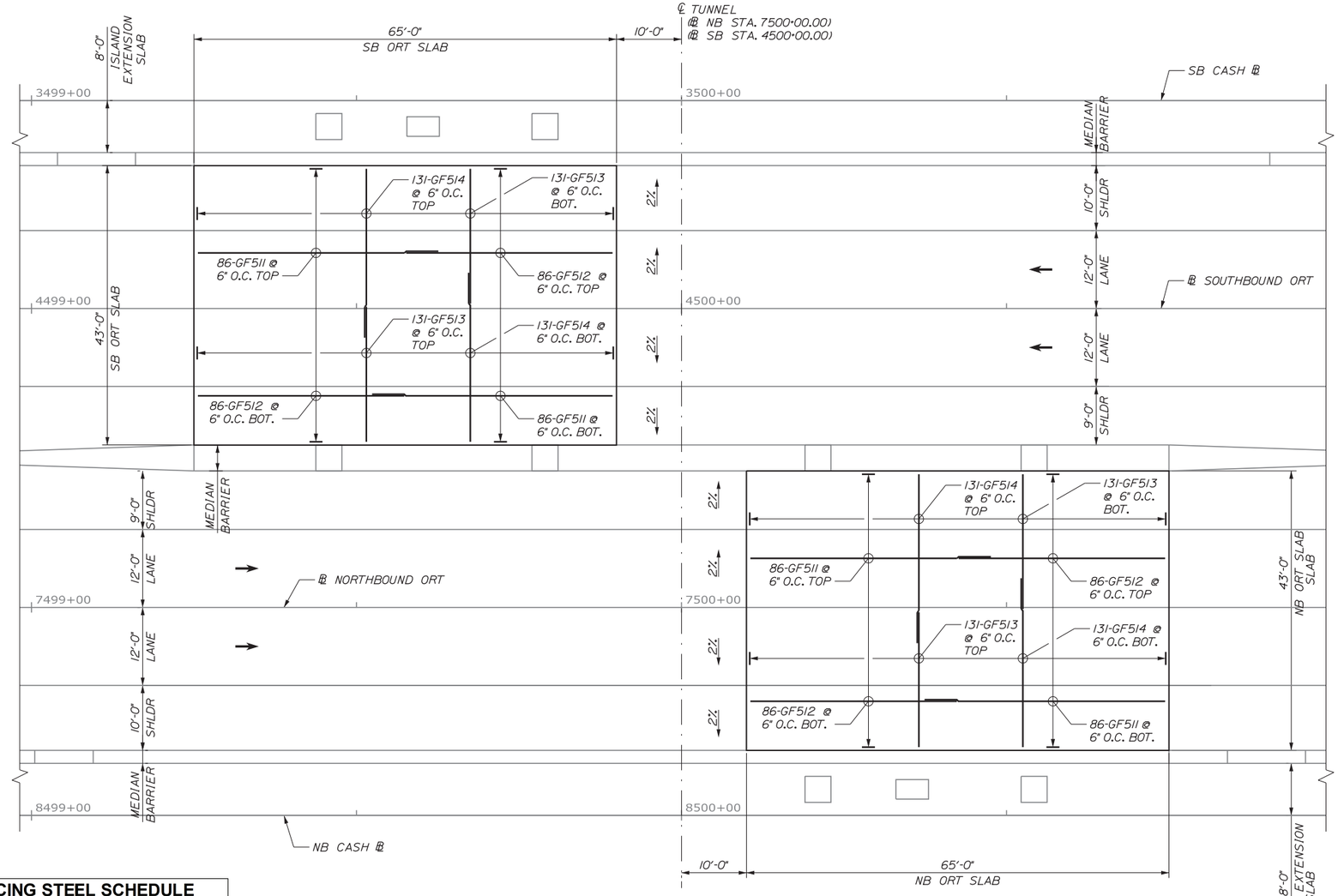


SLAB LONGITUDINAL SECTION

SCALE: 1½" = 1'-0"

NOTES:

1. THE CONTRACTOR SHALL CONSTRUCT TWO ORT SLABS, ONE IN EACH DIRECTION NORTHBOUND AND SOUTHBOUND, AS SHOWN ON THE PLANS. EACH SLAB WILL HAVE CROWN LINES BETWEEN THE TRAVEL LANES AND THE SHOULDER AS PER SLOPES SHOWN ON THE PLANS.
2. EACH ORT SLAB SHALL BE PLACED IN ONE CONTINUOUS PLACEMENT. CONSTRUCTION JOINTS ARE NOT ALLOWED. SOFT CUT JOINTS SHALL BE CONSTRUCTED AT APPROXIMATE 10 FOOT SPACING, AS DIRECTED BY THE RESIDENT.
3. FINISHING OF ORT SLABS SHALL ADHERE TO WEARING SURFACE TOLERANCES PER 502 SPECIAL PROVISION (501.14).
4. CONCRETE FOR ORT SLABS SHALL BE CLASS AAA DECK WITH 5 LBS/CY OF SYNTHETIC FIBER REINFORCING.
5. ORT SLAB SHALL HAVE A BROOMED FINISH IN TRANSVERSE DIRECTION.
6. ALL REINFORCING BARS SHALL BE GFRP.
7. ALL REINFORCING BAR SUPPORTS AND TIES SHALL BE NON-METALLIC.
8. FENCE ATOP MEDIAN BARRIER NOT SHOWN FOR CLARITY.
9. ADJUST SPACING OF OUTER BARS AS NECESSARY TO FIT INTO ALLOCATED LOCATION FOR GIVEN BAR SPACING.



ORT SLAB REINFORCING PLAN

SCALE: 1" = 10'-0"

INTERCHANGE 103 SOUTHBOUND - ORT STRUCTURAL SLAB REINFORCING STEEL SCHEDULE

MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	INCR.	REMARKS
STRUCTURAL SLAB													
GF511	5	172	37'-0"	STR									GFRP
GF512	5	172	32'-0"	STR									GFRP
GF513	5	262	21'-0"	STR									GFRP
GF514	5	262	26'-0"	STR									GFRP

INTERCHANGE 103 NORTHBOUND - ORT STRUCTURAL SLAB REINFORCING STEEL SCHEDULE

MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	INCR.	REMARKS
STRUCTURAL SLAB													
GF511	5	172	37'-0"	STR									GFRP
GF512	5	172	32'-0"	STR									GFRP
GF513	5	262	21'-0"	STR									GFRP
GF514	5	262	26'-0"	STR									GFRP

Date:3/20/2019

Filename: ...\S-48_ORTSlabLayout_Reinf.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
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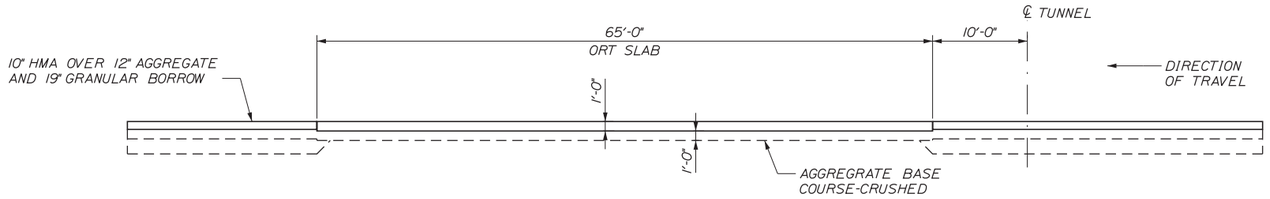
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION

ORT SLAB REINFORCEMENT PLAN

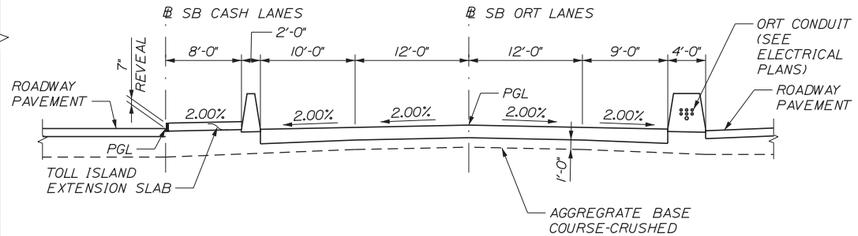
SHEET NUMBER: S-48

CONTRACT:2019.04



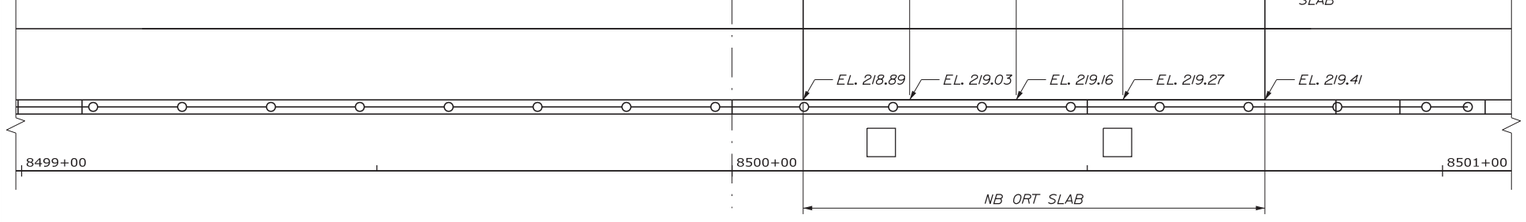
SECTION A-A

(SOUTHBOUND ORT SLAB SHOWN, NORTHBOUND ORT SLAB SIMILAR)
SCALE: 1/8" = 1'-0"



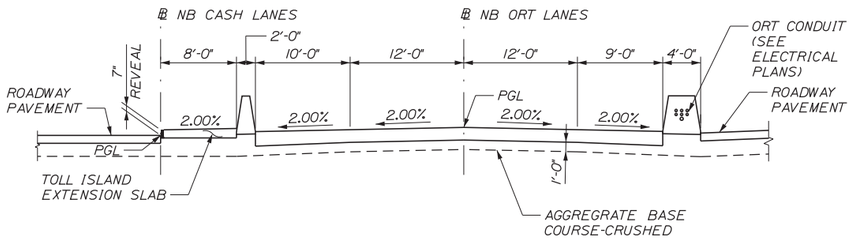
SECTION B-B

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



ORT SLAB ELEVATIONS PLAN

SCALE: 3/32" = 1'-0"



SECTION C-C

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

NOTES:

1. LIMITS OF AGGREGATE BASE COURSE-CRUSHED TYPICAL FOR NORTHBOUND AND SOUTHBOUND ORT SLABS.
2. CONTRACTOR SHALL USE A NON-VIBRATORY ROLLER FOR COMPACTING GRAVEL (AGGREGATE BASE COURSE-CRUSHED) OVER TUNNEL.
3. SEE SHEET S-47 FOR LOCATION OF SECTIONS A-A, B-B AND C-C.

Date:3/20/2019

Filename: ...\MSTA\S-49_ORTSlabSections.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	KLW	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103 ORT CONVERSION ORT SLAB ELEVATIONS PLAN & SECTIONS

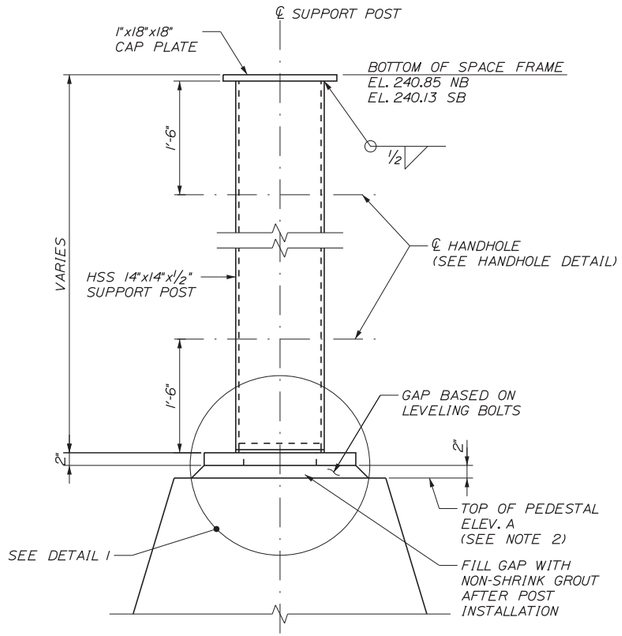
SHEET NUMBER: S-49

CONTRACT:2019.04

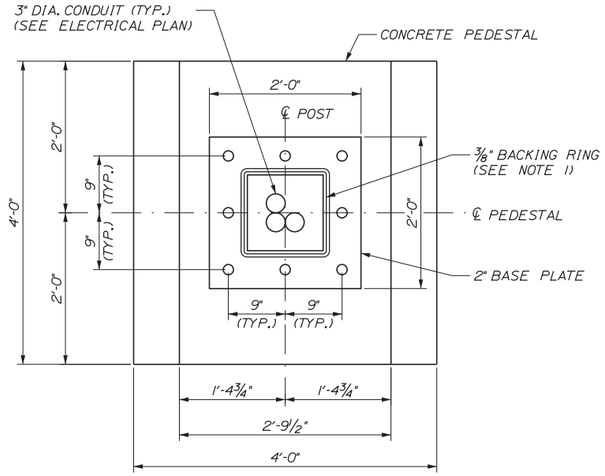
Date:3/20/2019

NOTES:

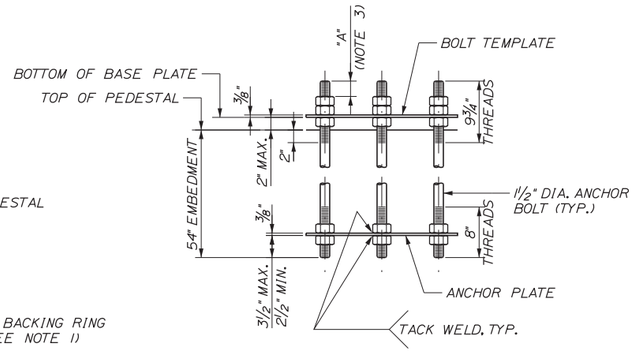
1. FULL PENETRATION WELDED SUPPORT POST TO BASE PLATE CONNECTION WITH THE BACKING RING ATTACHED TO THE BASE PLATE WITH A CONTINUOUS FILLET WELD AROUND THE INTERIOR FACE OF THE BACKING RING. THE THICKNESS OF THE BACKING RING SHALL NOT EXCEED 3/8".
2. FOR PEDESTAL ELEVATIONS. SEE SHEET S-46.
3. DIMENSION "A" SHALL BE BETWEEN 1" MAX. AND 1/2" MIN. ONCE THE 2" THK. BASE PLATE HAS BEEN INSTALLED.
4. ALL STEEL COMPONENTS AND HARDWARE SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 AND ASTM A153 AS APPLICABLE.

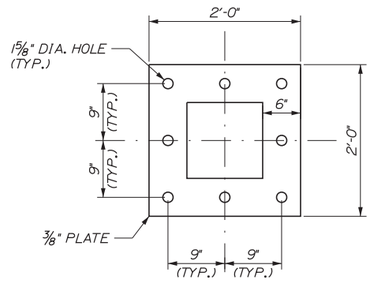


SUPPORT POST ELEVATION
SCALE: 1" = 1'-0"

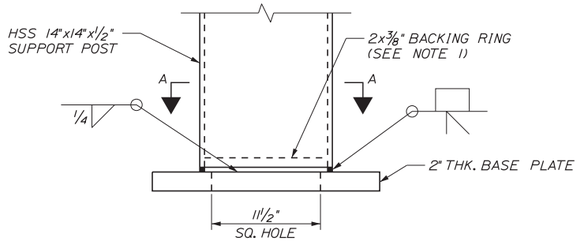


PEDESTAL PLAN VIEW
SCALE: 1" = 1'-0"

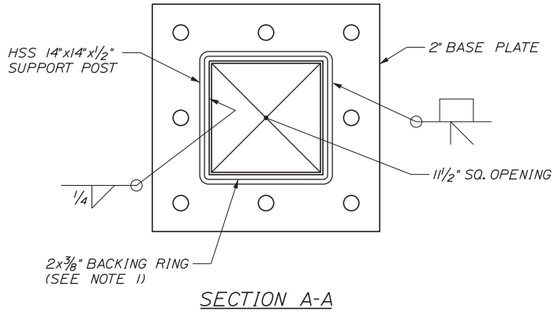




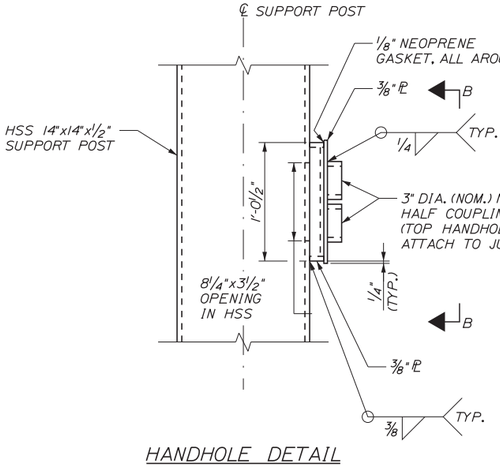
ANCHOR PLATE/BOLT TEMPLATE DETAIL
SCALE: 1" = 1'-0"



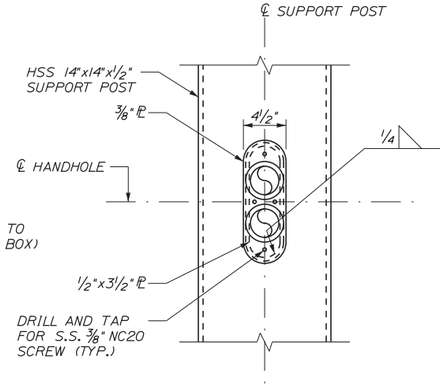
DETAIL 1
SCALE: 1 1/2" = 1'-0"



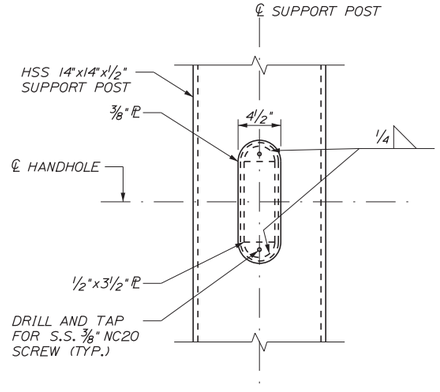
SECTION A-A
SCALE: 1 1/2" = 1'-0"



HANDHOLE DETAIL
SCALE: 1 1/2" = 1'-0"



TOP HANDHOLE



BOTTOM HANDHOLE

VIEW B-B
SCALE: 1 1/2" = 1'-0"

Filename: ...\S-50_ORT_SpaceFrdPostDets.dgn

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	KLW	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

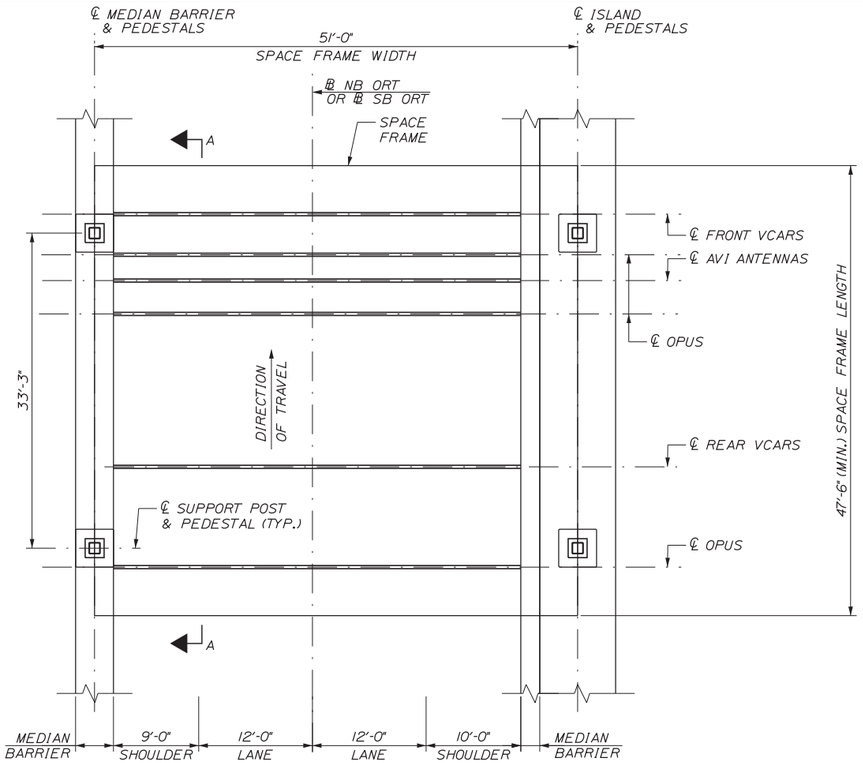
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION

ORT SPACE FRAME POST DETAILS

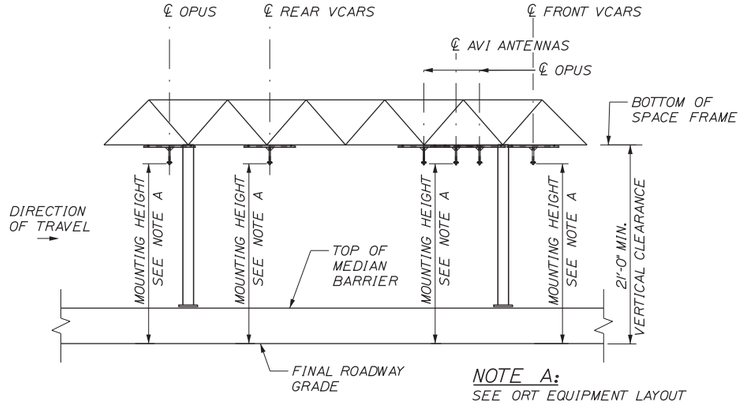
SHEET NUMBER: S-50

CONTRACT:2019.04



ORT PLAN

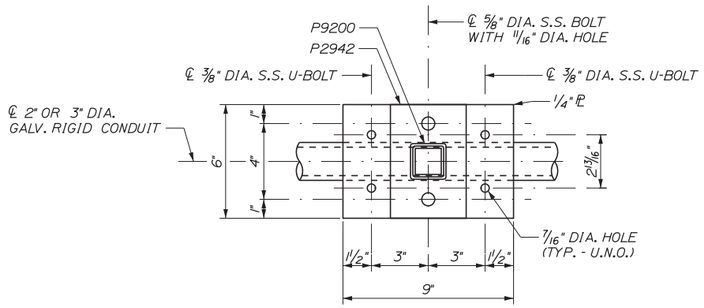
(NORTHBOUND ORT SHOWN, SOUTHBOUND SIMILAR)
1/8" = 1'-0"



SECTION A-A

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

NOTE A:
SEE ORT EQUIPMENT LAYOUT SHEET (T-11) FOR SENSOR LAYOUT AND LOCATION AND EQUIPMENT MOUNTING REQUIREMENTS.

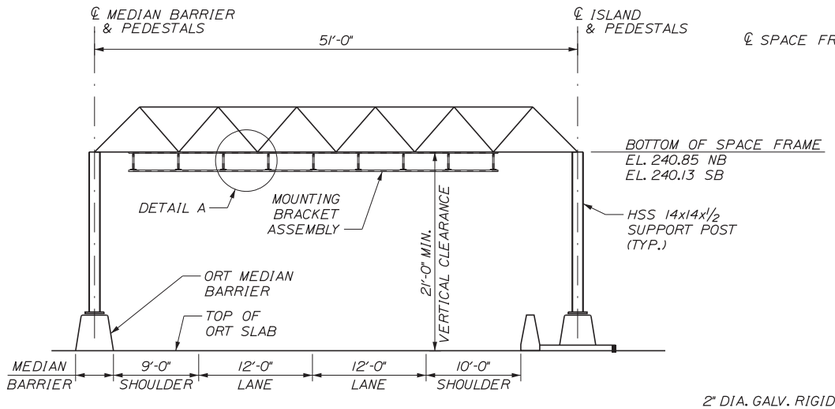


SECTION B-B

SCALE: 3" = 1'-0"

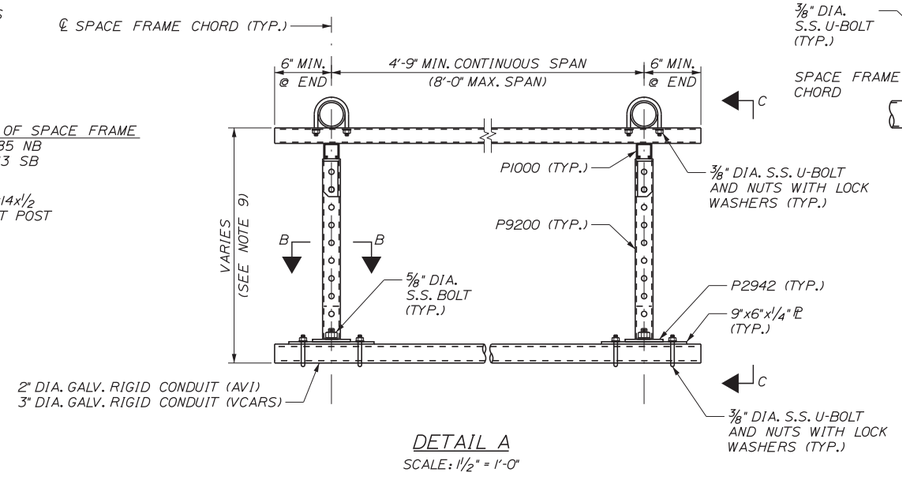
NOTES:

1. MOUNTING BRACKET ASSEMBLIES SHALL BE CONSTRUCTED OF GALVANIZED UNISTRUT BRAND MATERIALS, OR AN APPROVED EQUAL.
2. SEE ELECTRICAL PLANS FOR LAYOUT OF VCARS, AVI ANTENNAS, OPUS AND DVAS CAMERAS. SEE ORT EQUIPMENT LAYOUT FOR MOUNTING DETAILS.
3. HORIZONTAL SUPPORTS FOR EQUIPMENT MUST REMAIN WITHIN MOUNTING HEIGHT TOLERANCES. DISCONTINUITY OF 2" DIA. PIPE IS PERMISSIBLE TO ACHIEVE MOUNTING HEIGHTS.
4. PIPE SHALL CONFORM TO ASTM A53, GALVANIZED.
5. S.S. U-BOLTS AND BOLTS SHALL CONFORM TO ASTM A276, TYPE 304.
6. STEEL PLATE SHALL CONFORM TO ASTM A572, GRADE 50, GALVANIZED.
7. THE VCARS (REAR AND FRONT) UNITS, OPUS AND DVAS CAMERAS WILL BE PROVIDED BY TRANSCORE. THE AVI ANTENNAS WILL BE PROVIDED BY MTA.
8. CLEARANCE FOR VCARS UNITS SHALL BE 6" ON THE SIDES AND 2'-0" ABOVE.
9. ALL MOUNTING BRACKET ASSEMBLIES SHALL BE CAPABLE OF ±12" OF VERTICAL ADJUSTMENT.



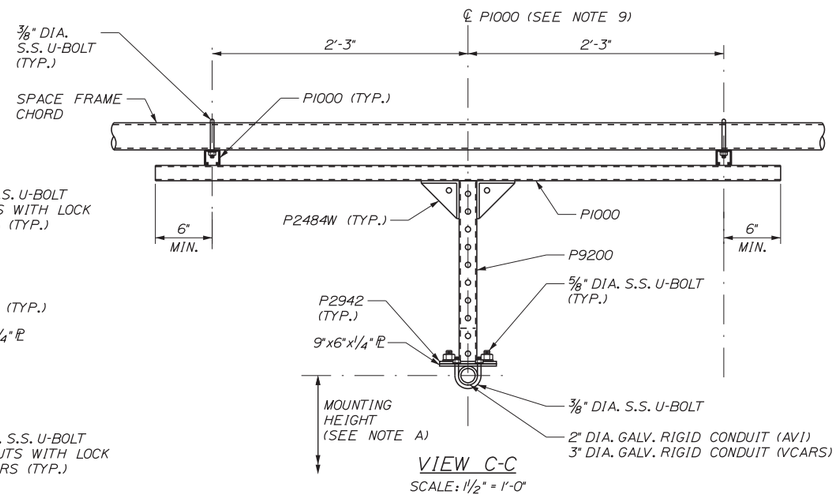
ELEVATION

(NORTHBOUND ORT SHOWN, SOUTHBOUND SIMILAR)
SCALE: 1/8" = 1'-0"



DETAIL A

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



VIEW C-C

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

Date:3/20/2019

Filename: ...\S-51_ORT_SpaceFrameMountBracketDets.dgn

Scale:			
No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	KLW	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

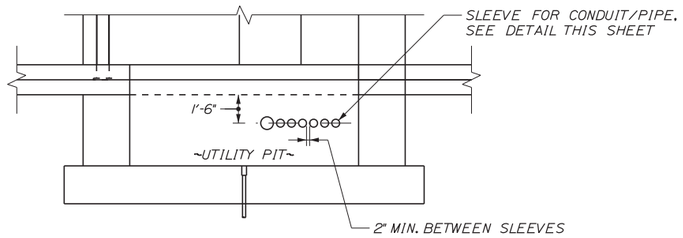
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

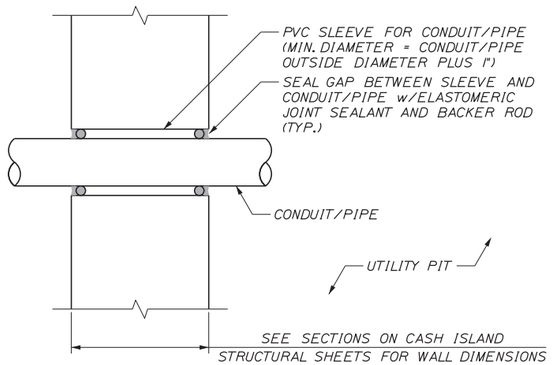
INTERCHANGE 103
ORT CONVERSION
ORT SPACE FRAME
MOUNTING BRACKET ASSEMBLY

SHEET NUMBER: S-51

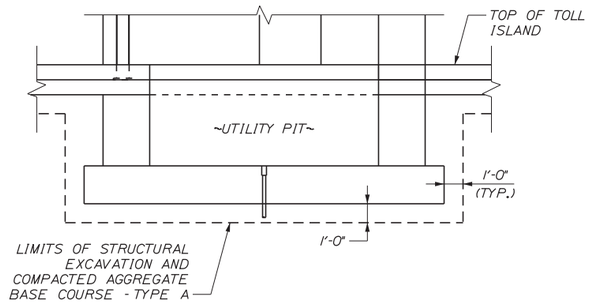
CONTRACT:2019.04



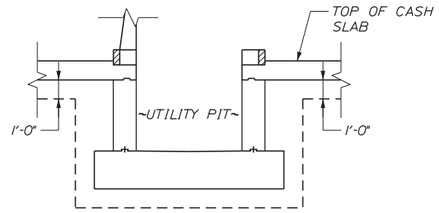
TYPICAL DETAIL UTILITY PIT
CONDUIT/PIPE SLEEVES
SCALE: 1/4" = 1'-0"



TYPICAL DETAIL FOR CONDUIT/PIPE
PENETRATIONS IN UTILITY PIT WALLS
SCALE: 1 1/2" = 1'-0"

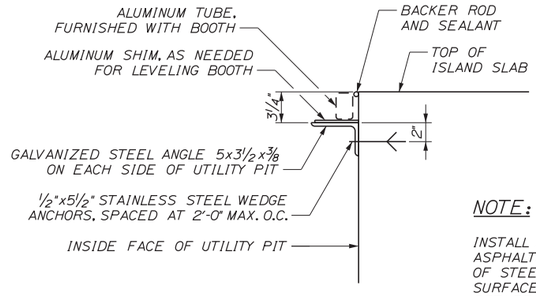


LONGITUDINAL SECTION



TRANSVERSE SECTION

PAY LIMITS FOR EXCAVATION AND
BACKFILL AT CASH ISLAND UTILITY PITS
SCALE: 1/4" = 1'-0"



NOTE:

INSTALL ICE/WATER SHIELD OR ASPHALTIC PAINT BETWEEN TOP OF STEEL ANGLES AND ALUMINUM SURFACES TO CREATE A BARRIER BETWEEN DISSIMILAR METALS.

TYPICAL TOLL BOOTH ANGLE SUPPORT DETAIL
SCALE: 1 1/2" = 1'-0"

Date:3/20/2019

Filename: ...\MSTA\S-52_Misc_Details.dgn

Scale:			
No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	MJC	3\20\19	Checked	GAB	3\20\19
Drawn	KLW	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR
MEMORIAL HIGHWAY

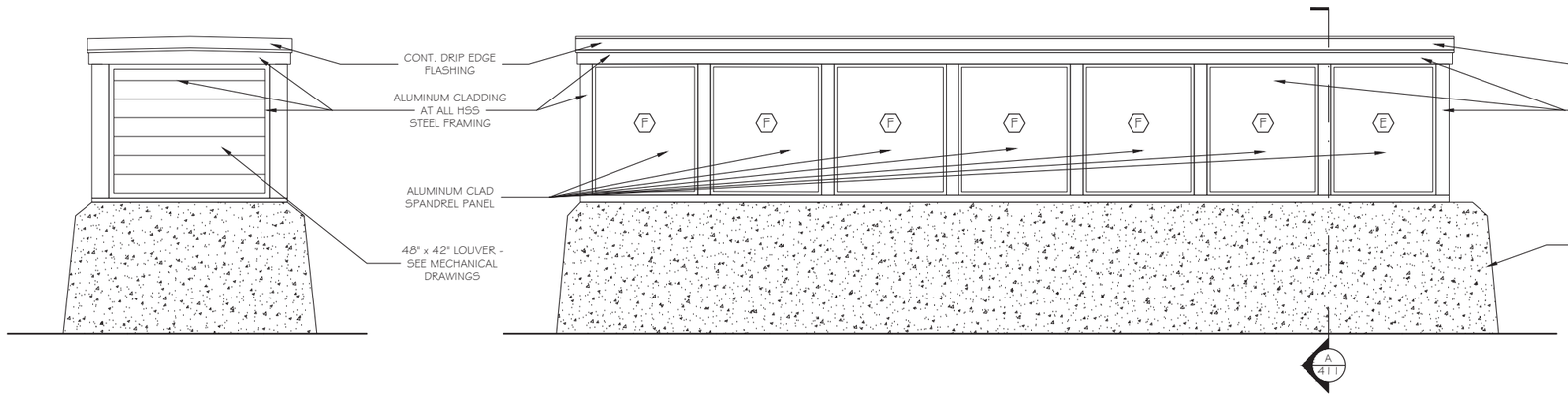
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION

MISCELLANEOUS DETAILS

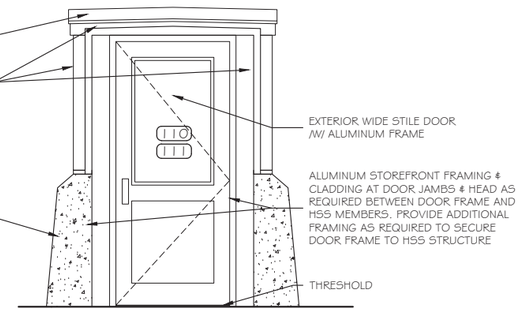
SHEET NUMBER: S-52

CONTRACT:2019.04

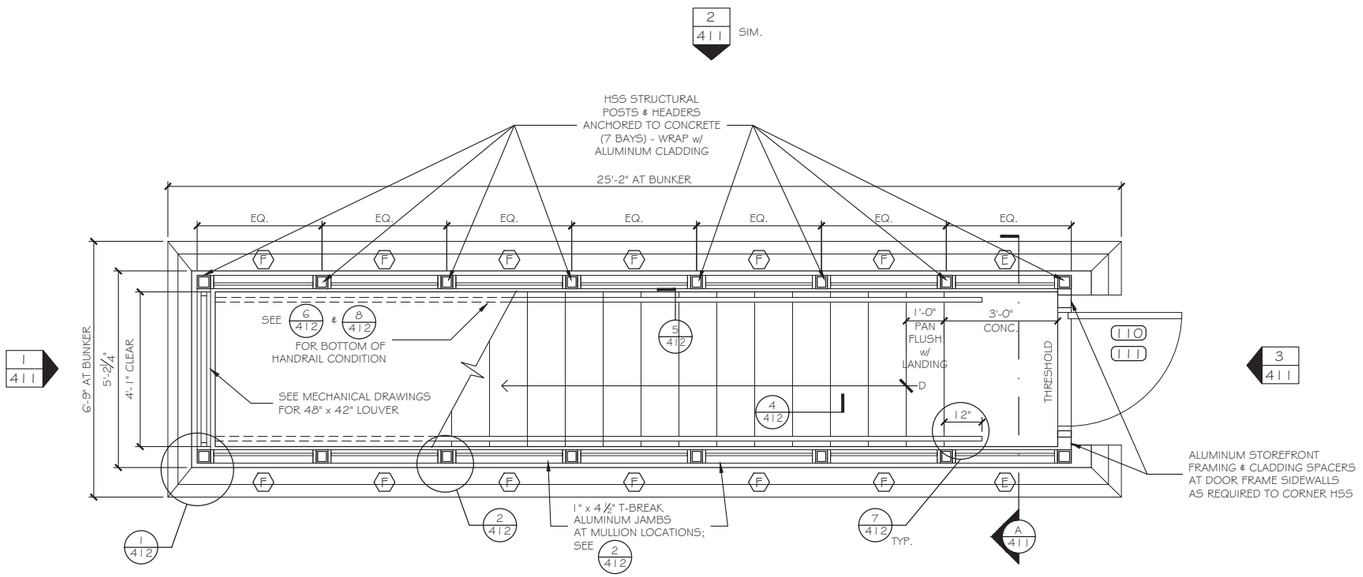


1 WEST ELEVATION
SCALE: 1/2" = 1'-0"

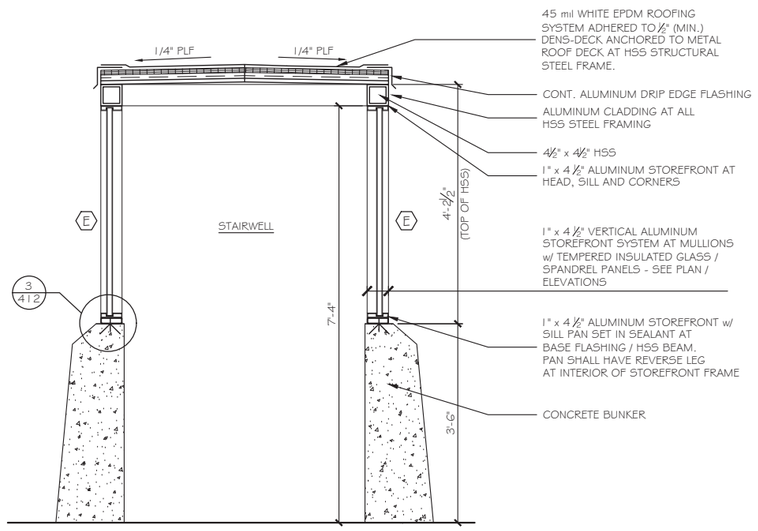
2 NORTH / SOUTH ELEVATIONS
SCALE: 1/2" = 1'-0"



3 EAST ELEVATION
SCALE: 1/2" = 1'-0"



STAIR ENCLOSURE PLAN
SCALE: 1/2" = 1'-0"



A SECTION AT STAIR ENCLOSURE
SCALE: 3/4" = 1'-0"

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SEAL

LICENSED ARCHITECT
MICHAEL F. HAYS
No. 1724
STATE OF MAINE
Michael F. Hays

REVISIONS

PROJECT NAME

CONTRACT NO.: 2019.04
MAINE TURNPIKE TOLL ADMINISTRATION BUILDING
MILE MARKER (MM) 103
GARDINER
MAINE 04345

SHEET
STAIR ENCLOSURE ELEVATIONS & SECTIONS

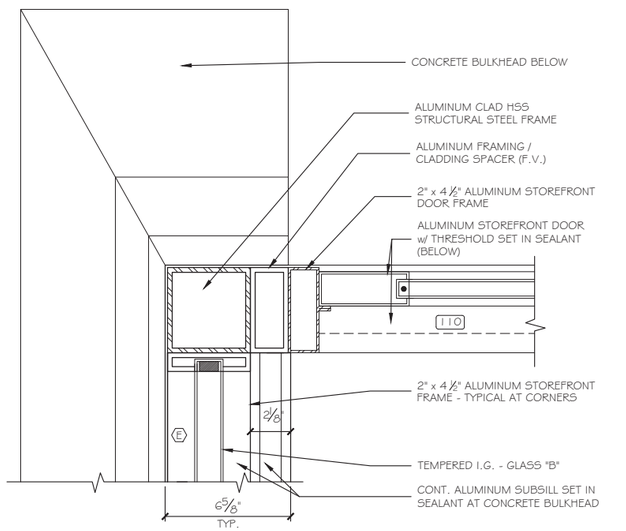
DATE
20 MAR 2019

SCALE
AS NOTED

DRAWN
MFH / mgk

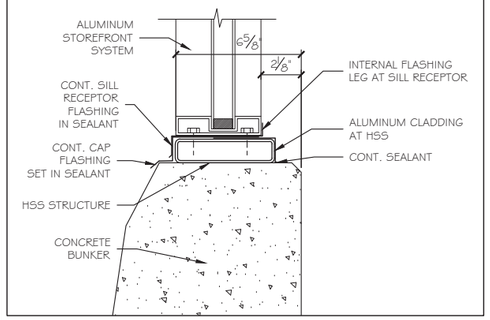
JOB NO.
180203

SHEET
411
OF 503

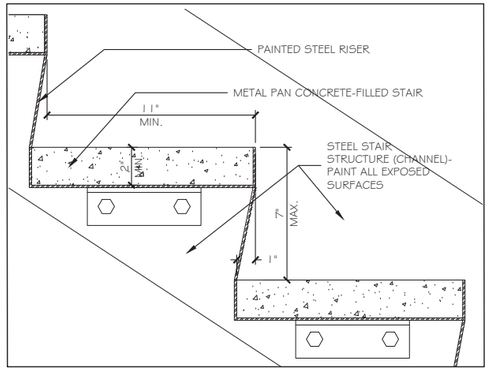


NOTE: PROVIDE LGMF OR ALUMINUM FRAMING SECTIONS w/ ALUMINUM CLADDING SUFFICIENT TO ANCHOR ALUMINUM DOOR FRAME TO HSS STRUCTURE - TYPICAL AT DOOR JAMBS & HEAD

① DOOR JAMB DETAIL 3"= 1'-0"



③ SILL DETAIL AT ALUMINUM STOREFRONT 3"= 1'-0"



④ STAIR TREAD / RISER DETAIL 3"= 1'-0"

DOOR SCHEDULE

ABBREVIATIONS

AL	ALUMINUM	HM	HOLLOW METAL	V	VINYL
DW	DRYWALL	INSUL	INSULATED	W	WIRE
(E)	EXISTING	SS	STAINLESS STEEL	WD	WOOD
ES	EDGE STRIP	T	TEMPERED	W/	WITH
EMHO	ELECTRO MAGNETIC HOLD OPENER	TB	THERMAL BREAK		
GL	GLASS	TH	THERMAL INSULATED		
		TS	TRANSITION STRIP		

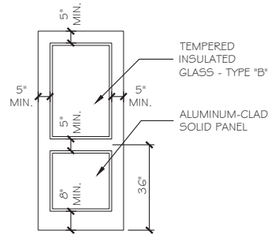
DOORS										FRAMES					THRESHOLDS		
NO.	TYPE	SIZE (w x h)	THK.	INSUL	HDWE	FR	GLASS TYPE	GLASS SIZE	REMARKS	TYPE	FR	PROFILE	DETAILS HEAD	DETAILS JAMB	MATERIAL	DETAILS SILL	DETAILS FIN
110	A	3070	1 ¾"	NO	HW-1	NO	T/TH	24x36	SOLID BOTTOM PANEL	A	NO	ALUM	1-412 SIM	1-412	ALUM	ADA	——
111	A	3070	1 ¾"	NO	HW-1	NO	T/TH	24x36	SOLID BOTTOM PANEL	A	NO	ALUM	1-412 SIM	1-412	ALUM	ADA	——

WINDOW SCHEDULE

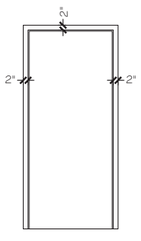
ABBREVIATIONS

AL	ALUMINUM	MTL	METAL
CMT	CASEMENT	TEMP	TEMPERED
DH	DOUBLE HUNG	V	VINYL
(E)	EXISTING	WG	WIRE GLASS
FIX	FIXED SASH	WD	WOOD
INSUL	INSULATED	W/	WITH

NO.	TYPE	MANUFACTURER MFGR	MANUFACTURER MODEL	NOMINAL SIZE WIDTH	NOMINAL SIZE HEIGHT	DETAILS HEAD	DETAILS JAMB	DETAILS SILL	MUNT	MULL	REMARKS
E	FIXED	ALUMINUM	THERMAL BREAK	2'-8" +/-	3'-8"	2-412 SIM	2-412	2-412			*F.V. w/ STRUCTURE
F	FIXED	ALUMINUM	THERMAL BREAK	2'-8" +/-	3'-8"	2-412 SIM	2-412	2-412			*F.V. w/ STRUCTURE

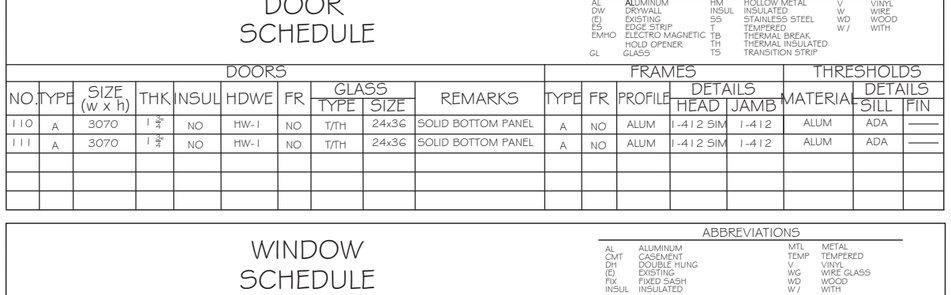


(A1) EXTERIOR WIDE STILE DOOR 2" x 4 ½" (NOM)

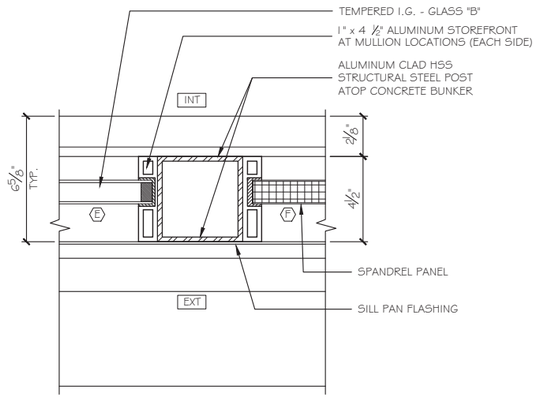


(A) ALUMINUM FRAME 2" x 4 ½" (NOM)

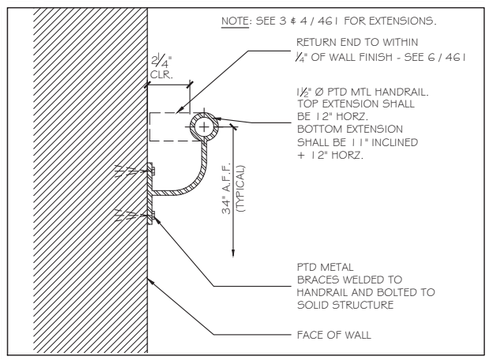
DOOR & FRAME TYPES NO SCALE



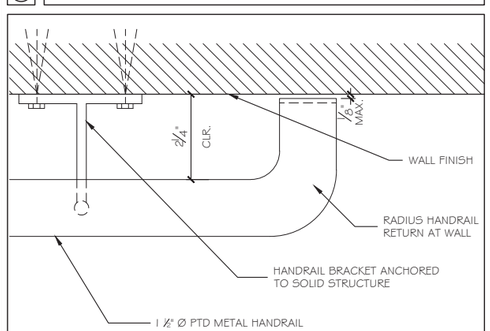
FIXED THERMAL-BREAK ALUMINUM NORTH/SOUTH ELEVATION



② MULLION DETAIL 3"= 1'-0"

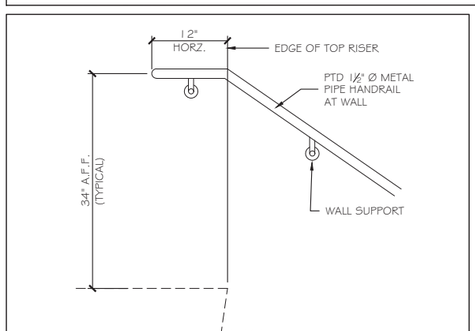


⑤ TYPICAL WALL HANDRAIL SECTION 3"= 1'-0"

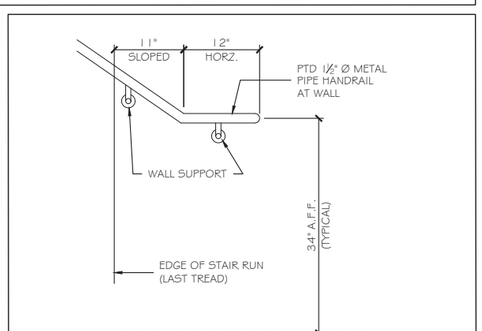


⑥ TYPICAL HANDRAIL RETURN AT WALL 6"= 1'-0"

WINDOW TYPES NO SCALE



⑦ TYPICAL WALL HANDRAIL - TOP 1"= 1'-0"



⑧ TYPICAL WALL HANDRAIL - BOTTOM 1"= 1'-0"

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SEAL

LICENSED ARCHITECT
MICHAEL F. HAYS
No. 1724
STATE OF MAINE

Michael F. Hays

REVISIONS

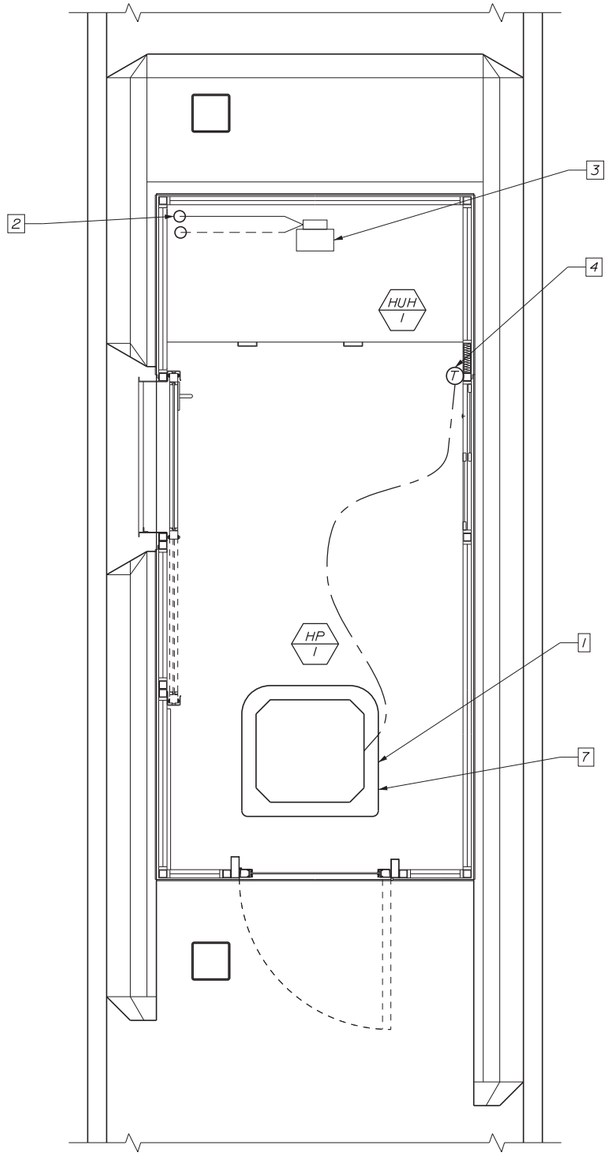
PROJECT NAME

CONTRACT NO.: 2019.04
MAINE TURNPIKE TOLL ADMINISTRATION BUILDING
MILE MARKER (MM) 103
GARDINER
MAINE 04345

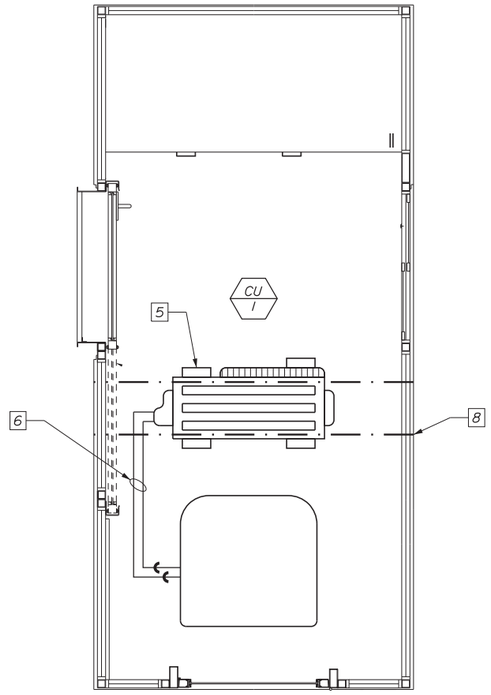
SHEET

STAIR ENCLOSURE DETAILS

DATE
20 MAR 2019
SCALE
AS NOTED
DRAWN
MFH / mgk
JOB NO.
180203
SHEET
412
OF 503



PROPOSED TOLL BOOTH
SCALE: 3/4" = 1'-0"



PROPOSED TOLL BOOTH ROOF
SCALE: 3/4" = 1'-0"

KEY NOTES

1. INSTALL 4-WAY CASSETTE UNIT IN DESIGNATED SECTION OF THE PRE-FABRICATED TOLL BOOTH. FIELD VERIFY OPENING SIZE PRIOR TO INSTALLATION OF CASSETTE UNIT. CONTRACTOR SHALL ENSURE CASSETTE UNIT SHALL FIT PRIOR TO PURCHASE. INSTALL UNIT PER MANUFACTURER'S GUIDELINES.
2. 1 1/4" HWS&R PIPING DN THROUGH FLOOR. FOR PIPE CONTINUATION, SEE SHEET ME-04.
3. INSTALL HW UNIT HEATER (HUH-1) IN PRE-FABRICATED TOLL BOOTH. FIELD VERIFY SIZE AND LOCATION PRIOR TO INSTALLATION. PROVIDE SPEED CONTROLLER AND INTEGRAL THERMOSTAT WITH UNIT.
4. REMOTE WALL-MOUNTED, FROST PROTECTED THERMOSTAT.
5. SUPPORT AIR-COOLED CONDENSING UNIT ON UNISTRUT BASE. UNISTRUT FRAME SHALL SPAN BOOTH ROOF AND BE ANCHORED TO THE BOOTH ROOF AND BE ANCHORED TO THE BOOTH WALLS AT THE LIFTING EYES. CONTRACTOR TO USE SINGLE EYE AND NOT DRILL ADDITIONAL HOLES. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES. COORDINATE INSTALLATION OF CONDENSING UNIT ABOVE ESTIMATED SNOW LEVEL.
6. 1/2"RS, 1/4"RL INSTALLATION AND SIZING SHALL BE IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES.
7. INSTALL 1-1/4" CONDENSATE DRAIN PIPING/ CONDENSATE DRAIN SHALL DISCHARGE TO EXTERIOR OF THE TOLL BOOTH. DISCHARGE LOCATION SHALL BE FIELD VERIFIED. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES AND RECOMMENDATIONS.

GENERAL NOTES

1. THE ROOF OF THE TOLL BOOTH IS NOT STRUCTURALLY BUILT AND CONTRACTOR IS RESPONSIBLE FOR PROVIDING REQUIRED STAGING AND TEMPORARY SUPPORTS FOR ROOF ACCESS.
2. CONTRACTORS SHALL NOT ACCESS ROOF WITHOUT TEMPORARY SUPPORTS.
3. SEE MECHANICAL BUILDING DRAWING SET FOR LEGEND.

Date:3/20/2019

Filename: ...\MSTA\ME-01_mech-booth.dgn

Scale: 3/4" = 1'-0"

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	PLP	3\20\19	Checked	LEM	3\20\19
Drawn	EJB	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

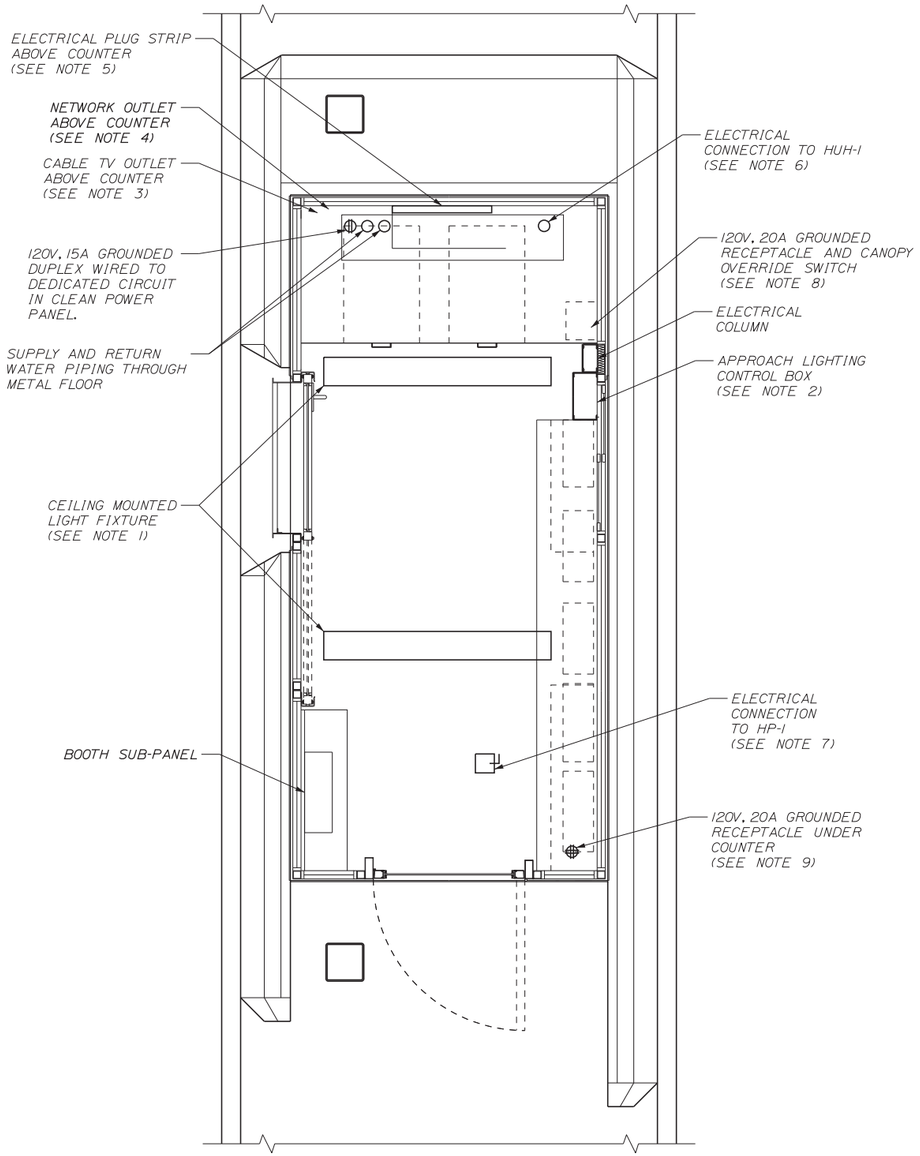
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION

MECHANICAL BOOTH PLAN

SHEET NUMBER: ME-01

CONTRACT:2019.04



PROPOSED TOLL BOOTH
SCALE: 3/4" = 1'-0"

KEY NOTES

1. FURNISH AND INSTALL NEW CEILING MOUNTED LIGHT FIXTURES IN PROPOSED BOOTHS. LIGHTS SHALL BE CREE *SMK-LE-S/SMK-LE-EC/CR-LE-32L-35K-10V, OR APPROVED EQUAL.
2. AT THE PROPOSED BOOTHS, FURNISH AND INSTALL APPROACH LIGHTING CONTROL SWITCHES ADJACENT TO THE ELECTRICAL COLUMN. INSTALL A 0-10 VOLT DIMMER WIRED TO THE CEILING LIGHTS. WIRE THE CEILING LIGHTS TO A 20A/1P BREAKER IN THE RESPECTIVE BOOTH SUB-PANEL.
3. FURNISH AND INSTALL A COAX OUTLET WITH RG6 CABLE EXTENDED THROUGH THE TUNNEL TO THE TELEPHONE BOARD IN THE PLAZA BUILDING.
4. FURNISH AND INSTALL A CAT5e NETWORK OUTLET WITH THREE CAT5e CABLE EXTENDED THROUGH THE TUNNEL TO THE TELEPHONE BOARD IN THE PLAZA BUILDING.
5. FURNISH AND INSTALL PLUG-STRIP ABOVE THE BOOTH COUNTER. PLUG STRIP SHALL BE LEGRAND *2000 USB SERIES. PLUG STRIP SHALL HAVE A DUPLEX USB JACK AT ONE END AND FOUR 15A, GROUNDED ELECTRICAL OUTLETS SPACED ALONG THE REMAINING LENGTH. WIRE THE PLUG STRIP TO A 20A/1P BREAKER IN THE RESPECTIVE BOOTH SUB-PANEL.
6. VERIFY EXACT LOCATION OF ELECTRICAL CONNECTION POINT FOR HUH-1. WIRE HUH-1 TO A 15A/1P BREAKER IN THE RESPECTIVE BOOTH SUB-PANEL.
7. FURNISH AND INSTALL A 30A/1P WEATHERPROOF DISCONNECT SWITCH AT THE ROOF-TOP HP-1. WIRE HP-1 TO A 20A/1P BREAKER IN THE RESPECTIVE BOOTH SUB-PANEL.
8. FURNISH AND INSTALL A 120V, 20A DUPLEX RECEPTACLE IN THE ELECTRICAL COLUMN 18" ABOVE THE FLOOR. CONNECT THE RECEPTACLE TO A 20A/1P BREAKER IN THE RESPECTIVE BOOTH SUB-PANEL. INSTALL CANOPY OVERRIDE SWITCH ABOVE DUPLEX RECEPTACLE.
9. FURNISH AND INSTALL A 120V, 20A DUPLEX RECEPTACLE INSTALLED UNDER THE COUNTER. CONNECT THE RECEPTACLE TO THE PLUG STRIP CIRCUIT (SEE NOTE 5).
10. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET 493.

Date:3/20/2019

Filename: ...\MSTA\ME-02_elect-booth.dgn

Scale: 3/4" = 1'-0"

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	PLP	3\20\19	Checked	LEM	3\20\19
Drawn	EJB	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

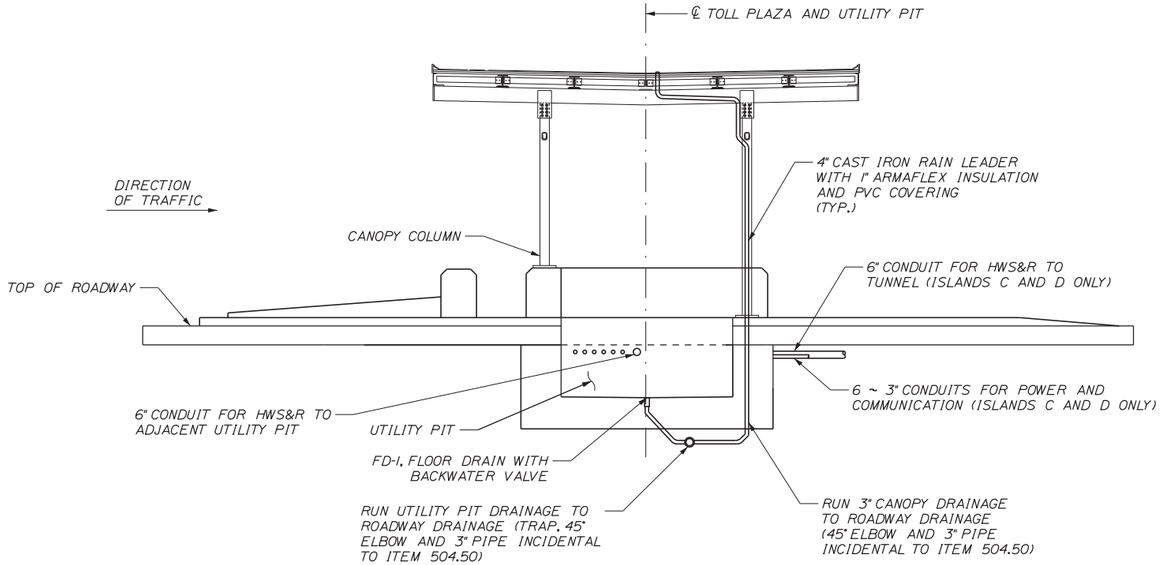
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION

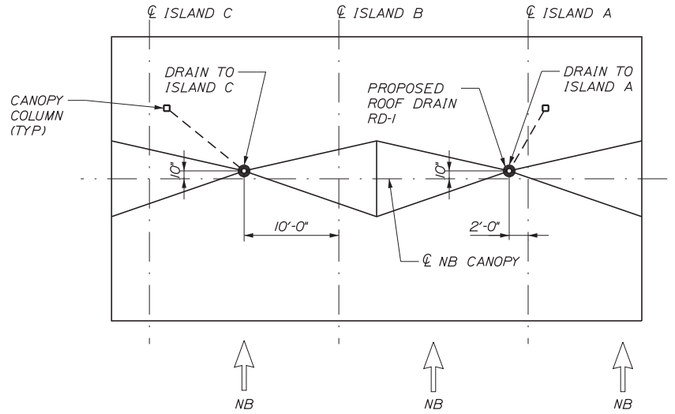
ELECTRICAL BOOTH PLAN

SHEET NUMBER: ME-02

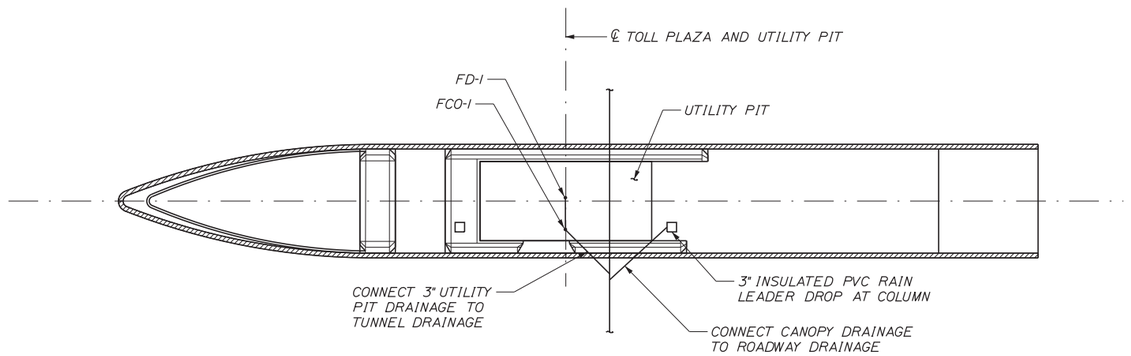
CONTRACT:2019.04



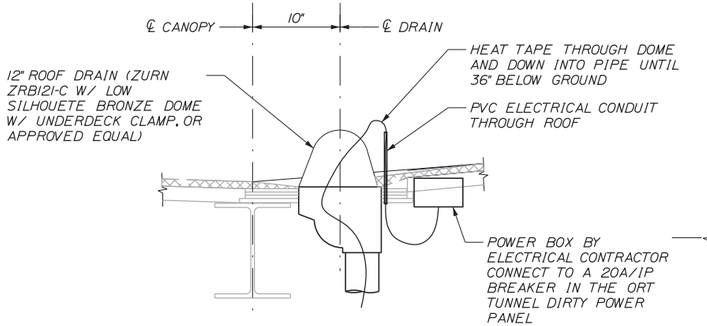
ISLAND ELEVATION
3/16" = 1'-0"



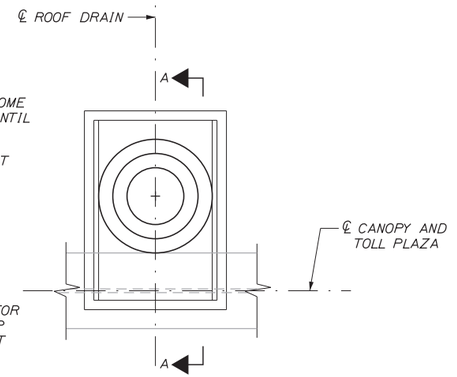
NB CANOPY ROOF PLAN
(SB SIMILAR)
1/8" = 1'-0"



ISLAND PLAN
3/16" = 1'-0"



SECTION A - A
NTS



ROOF DRAIN PLAN
NTS

Date:3/20/2019

Filename: ...\MSTA\ME-03_mechelect-dets.dgn

Scale: AS NOTED			
No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	PLP	3\20\19	Checked	LEM	3\20\19
Drawn	EJB	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103 ORT CONVERSION MECHANICAL & ELECTRICAL BOOTH & CANOPY DETAILS

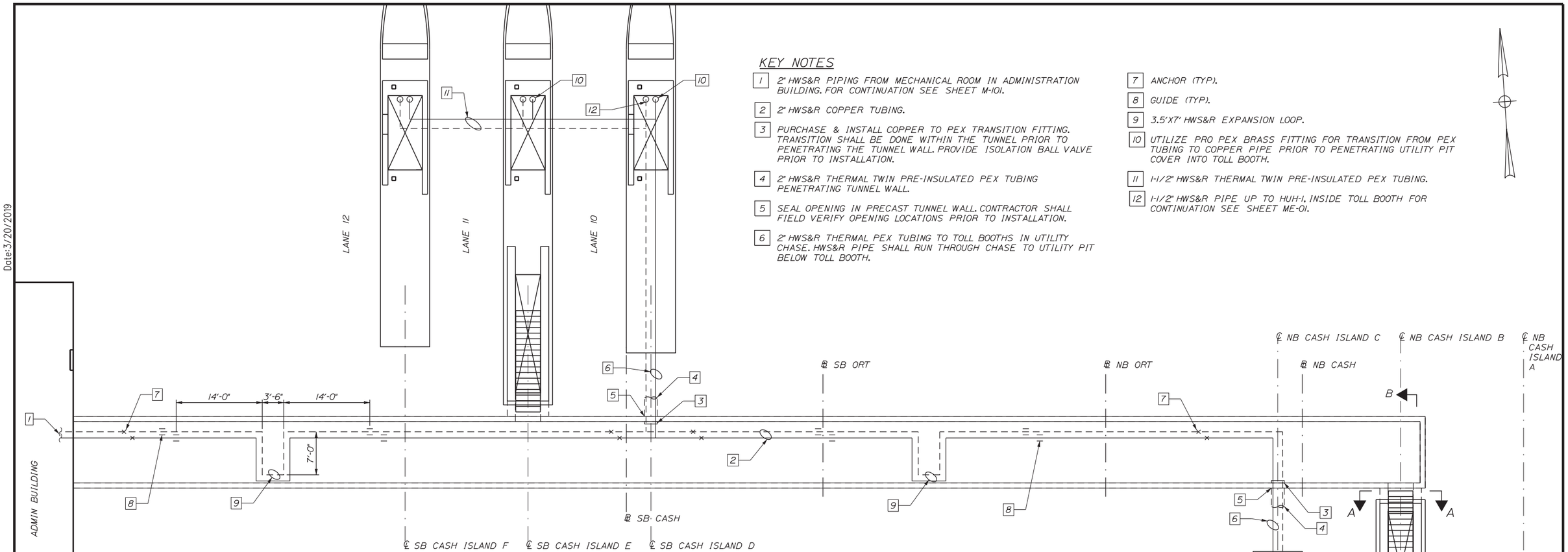
SHEET NUMBER: ME-03

CONTRACT:2019.04

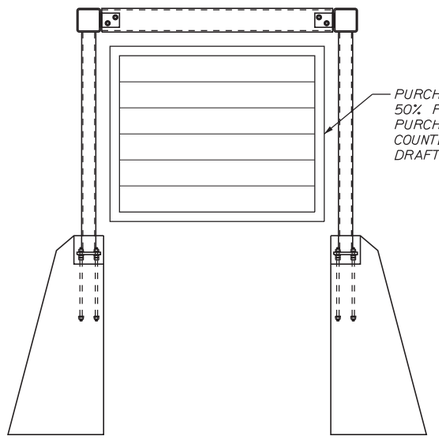
Date:3/20/2019

KEY NOTES

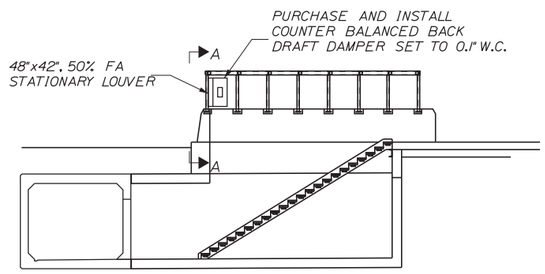
1. 2" HWS&R PIPING FROM MECHANICAL ROOM IN ADMINISTRATION BUILDING. FOR CONTINUATION SEE SHEET M-101.
2. 2" HWS&R COPPER TUBING.
3. PURCHASE & INSTALL COPPER TO PEX TRANSITION FITTING. TRANSITION SHALL BE DONE WITHIN THE TUNNEL PRIOR TO PENETRATING THE TUNNEL WALL. PROVIDE ISOLATION BALL VALVE PRIOR TO INSTALLATION.
4. 2" HWS&R THERMAL TWIN PRE-INSULATED PEX TUBING PENETRATING TUNNEL WALL.
5. SEAL OPENING IN PRECAST TUNNEL WALL. CONTRACTOR SHALL FIELD VERIFY OPENING LOCATIONS PRIOR TO INSTALLATION.
6. 2" HWS&R THERMAL PEX TUBING TO TOLL BOOTHS IN UTILITY CHASE. HWS&R PIPE SHALL RUN THROUGH CHASE TO UTILITY PIT BELOW TOLL BOOTH.
7. ANCHOR (TYP).
8. GUIDE (TYP).
9. 3.5'X7' HWS&R EXPANSION LOOP.
10. UTILIZE PRO PEX BRASS FITTING FOR TRANSITION FROM PEX TUBING TO COPPER PIPE PRIOR TO PENETRATING UTILITY PIT COVER INTO TOLL BOOTH.
11. 1-1/2" HWS&R THERMAL TWIN PRE-INSULATED PEX TUBING.
12. 1-1/2" HWS&R PIPE UP TO HUH-1. INSIDE TOLL BOOTH FOR CONTINUATION SEE SHEET ME-01.



TUNNEL PLAN VIEW
1/8" = 1'-0"



SECTION A-A
3/4" = 1'-0"



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

Filename: ...\MSTA\ME-04_mech-tunnel.dgn

Scale: AS NOTED			
No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	CMF	2/15/19	Checked	MWT	2/15/19
Drawn	DB	2/15/19	In Charge of	AAH	2/15/19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE

INTERCHANGE 103
ORT CONVERSION

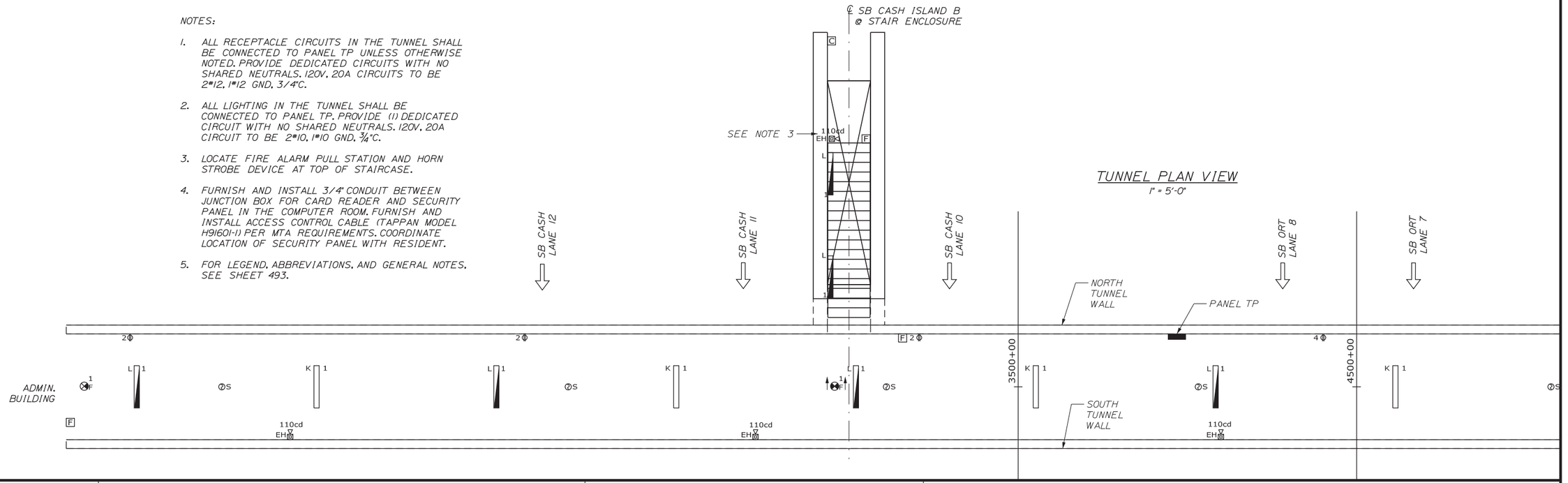
MECHANICAL TUNNEL & BOOTH PLAN

SHEET NUMBER: ME-04

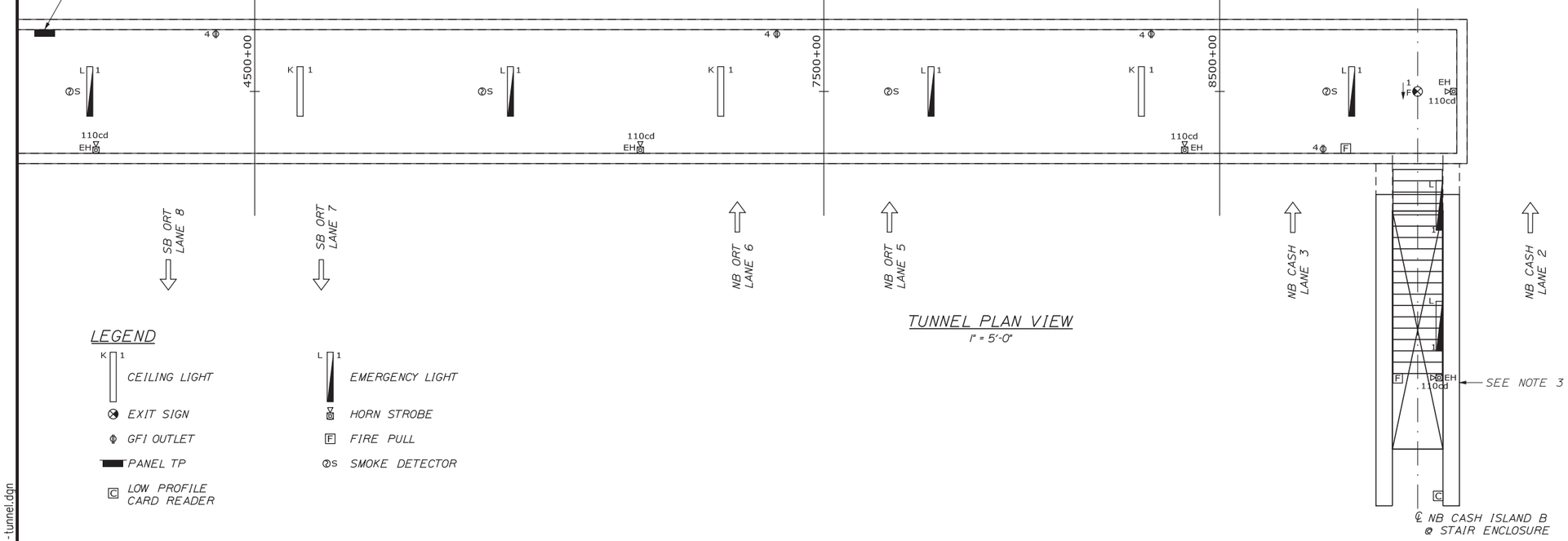
CONTRACT:2019.04

NOTES:

1. ALL RECEPTACLE CIRCUITS IN THE TUNNEL SHALL BE CONNECTED TO PANEL TP UNLESS OTHERWISE NOTED. PROVIDE DEDICATED CIRCUITS WITH NO SHARED NEUTRALS. 120V. 20A CIRCUITS TO BE 2#12, 1#12 GND. 3/4"C.
2. ALL LIGHTING IN THE TUNNEL SHALL BE CONNECTED TO PANEL TP. PROVIDE (1) DEDICATED CIRCUIT WITH NO SHARED NEUTRALS. 120V. 20A CIRCUIT TO BE 2#10, 1#10 GND. 3/4"C.
3. LOCATE FIRE ALARM PULL STATION AND HORN STROBE DEVICE AT TOP OF STAIRCASE.
4. FURNISH AND INSTALL 3/4" CONDUIT BETWEEN JUNCTION BOX FOR CARD READER AND SECURITY PANEL IN THE COMPUTER ROOM. FURNISH AND INSTALL ACCESS CONTROL CABLE (TAPPAN MODEL H9160I-I) PER MTA REQUIREMENTS. COORDINATE LOCATION OF SECURITY PANEL WITH RESIDENT.
5. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET 493.



TUNNEL PLAN VIEW
1" = 5'-0"



TUNNEL PLAN VIEW
1" = 5'-0"

LEGEND

- CEILING LIGHT
- EXIT SIGN
- GFI OUTLET
- PANEL TP
- LOW PROFILE CARD READER
- EMERGENCY LIGHT
- HORN STROBE
- FIRE PULL
- SMOKE DETECTOR

Scale: 5 0 5 10
Scale of Feet

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	PLP	3\20\19	Checked	LEM	3\20\19
Drawn	EJB	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103 ORT CONVERSION

ELECTRICAL TUNNEL PLAN

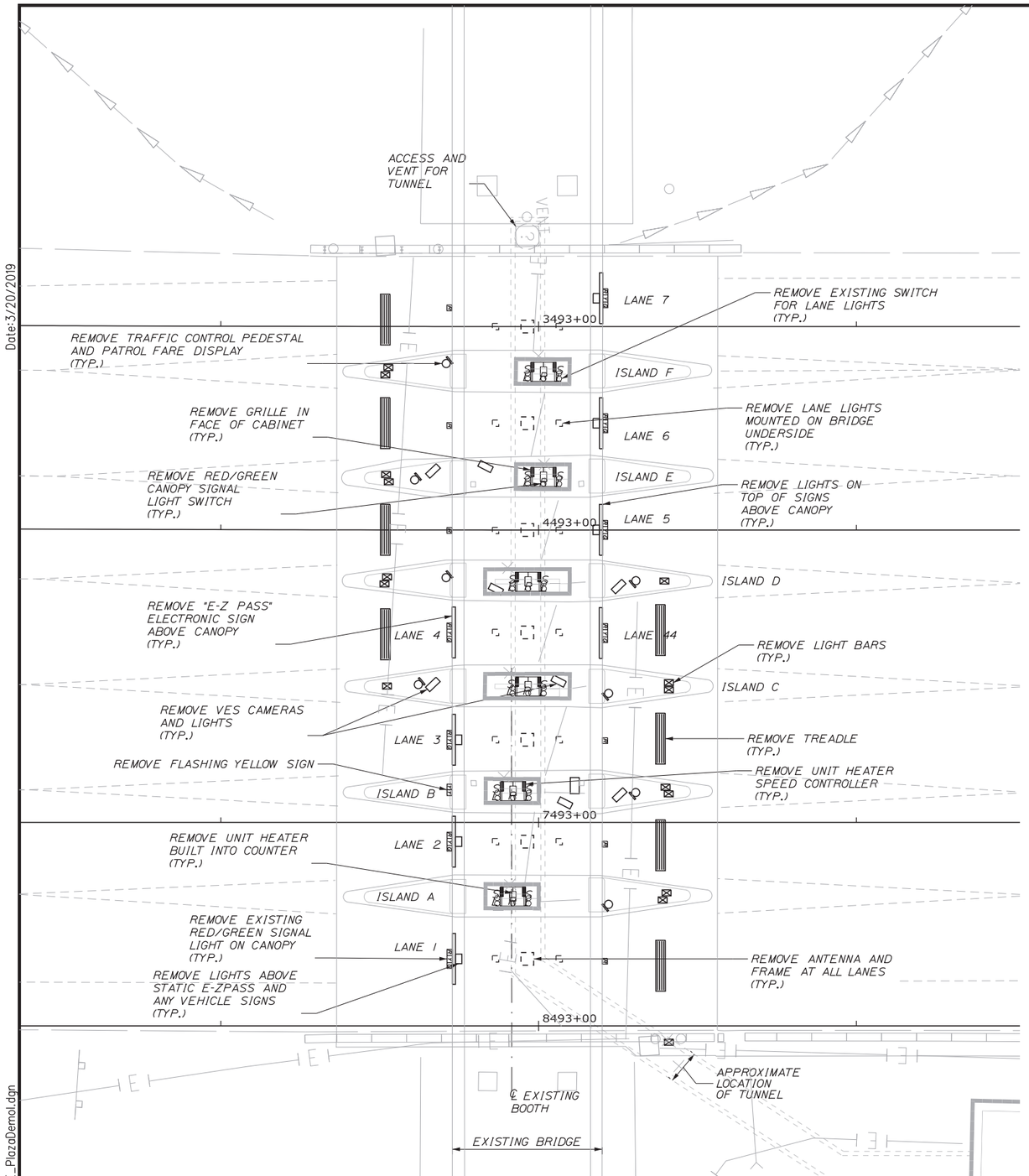
SHEET NUMBER: ME-05

CONTRACT:2019.04

417 OF 503

Date:3/20/2019

Filename: ...\MSTA\ME-05_elec-tunnel.dgn



NOTES:

1. BEFORE ELECTRICAL AND MECHANICAL DEMOLITION, CONTRACTOR SHALL SUBMIT A DEMOLITION PLAN TO THE RESIDENT FOR APPROVAL. REMOVAL SALVAGING, DISPOSAL, AND/OR DELIVERY OF MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE PAID FOR UNDER ITEMS 800.10 ELECTRICAL DEMOLITION AND 800.20 MECHANICAL DEMOLITION.
2. DEMOLITION CANNOT BEGIN WITHOUT APPROVAL FROM THE AUTHORITY, THE SYSTEM INTEGRATOR, AND THE RESIDENT.
3. REFER TO THE TOLLING NOTES FOR SALVAGE AND DISPOSAL INSTRUCTION OF SPECIFIC ITEMS. ITEMS TO BE DISPOSED OF MUST BE DONE SO IN A LEGAL LAWFUL MANNER BY THE CONTRACTOR.
4. REMOVE ALL EXISTING EQUIPMENT TO BE SALVAGED, DISPOSED OF AND/OR RELOCATED AS DIRECTED BY THE RESIDENT OR INDICATED ON THE DRAWINGS.
5. EQUIPMENT TO BE SALVAGED SHALL BE CAREFULLY PACKED AND DELIVERED TO THE SIGN SHOP OR TRANSCORE'S WAREHOUSE AS DESCRIBED IN THE TOLLING NOTES.
6. ANY EXISTING WIRING AND CONDUIT DISCONTINUED UNDER THIS PROJECT SHALL BE COMPLETELY REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR.
7. NOT SHOWN: REMOVE LANE CONTROLLER CABINETS, TRANFORMER BOXES AND COS BOX. SEE SPECIFICATIONS FOR MORE INFORMATION.
8. LOCATION AND NUMBER OF UNDERGROUND CONDUITS ARE APPROXIMATE. DIG SAFE/DIG SMART TO BE CONTACTED TO LOCATE UNDERGROUND UTILITIES PRIOR TO DEMOLITION.
9. CLEAN AND DIRTY POWER PANELS, LANE CONTROLLER CABINETS AND ALL OTHER EQUIPMENT, WIRING AND COMMUNICATION ASSOCIATED WITH TOLLING IN EXISTING CASH LANES SHALL BE REMOVED BY THE CONTRACTOR. CONTRACTOR SHALL COORDINATE WITH THE RESIDENT CONCERNING WHICH EQUPMENT SHALL BE REMOVED AND WHEN. PAYMENT FOR THIS WORK SHALL BE INCIDENTAL TO ITEM 800.10 ELECTRICAL DEMOLITION.
10. REFER TO THE ASBESTOS DEMOLITION IMPACT ASSESMENT, MAINE TURNPIKE AUTHORITY EXIT 103, WEST GARDINER, MAINE, DATED JULY 14, 2018 IN THE CONTRACT APPENDICES FOR INFORMATION REGARDING ASBESTOS AND LEAD TESTING.

TOLLING NOTES

1. THE CONTRACTOR SHALL REMOVE AND LEGALLY DISPOSE THE FOLLOWING ITEMS FROM LANES 1, 2, 3, 4, 44, 5, 6, AND 7:
   A. TREADLE FRAME
   B. BOOTH DIRTY POWER PANELS
   C. ASSOCIATED WIRING, CONDUIT, COUPLINGS AND ATTACHMENT HARDWARE FOR POWER AND COMMUNICATION LINES
   D. LANE CONTROLLER ENCLOSURE
   E. TRANSFORMER BOXES
   F. LIGHTING FIXTURES MOUNTED UNDERNEATH CANOPY
2. THE CONTRACTOR SHALL SALVAGE THE FOLLOWING ITEMS FROM LANES 1, 2, 3, 4, 44, 5, 6, AND 7 AND DELIVER TO THE MAINE TURNPIKE SIGN SHOP AT MILE MARKER 58.3 NB:
   A. SIGNS TO BE REMOVED
   B. CANOPY MOUNTED SIGNS AND BRACKETS
   C. MISCELLANEOUS ITEMS INSIDE BOOTHS (COUNTERS,DOORS,HEATERS,ETC.) AS DIRECTED BY THE RESIDENT
   D. RED/GREEN CANOPY LANE SIGNALS (AS DIRECTED)
   E. FLASHING YELLOW SIGNAL AT ISLANDS (AS DIRECTED)
   F. RED CANOPY LANE SIGNALS (AS DIRECTED)
   G. PATRON FARE DISPLAY
   H. ISLAND TRAFFIC SIGNAL
   I. LIGHT CURTAINS, HEIGHT DETECTORS AND ENCLOSURES
   J. VIOLATION ENFORCEMENT SYSTEM (VES CAMERAS,LIGHTS AND MOUNTING HARDWARE AND PEDESTALS
   K. LANE CONTROLLERS
3. THE CONTRACTOR SHALL SALVAGE FROM LANES 1, 2, 3, 4, 44, 5, 6, AND 7 THE FOLLOWING ITEMS AND DELIVER TO THE TRANCORE WAREHOUSE AT TRANSCORE INC, 1190 REVERSIDE ST. SUITE 38, PORTLAND, ME:
   A. CANOPY OVERRIDE SWITCH
   B. AVI ANTENNAS
   C. TREADLE INSERT (AS DIRECTED)
   D. OVERHEAD SCANNER IF PRESENT
4. TRANSCORE SHALL REMOVE AND SALVAGE THE FOLLOWING ITEMS:
   A. MANUAL LANE TERMINAL
   B. EXISTING AVI READER AND RF MODULES
   C. RECIEPT PRINTERS
   D. LANE CONTROLLER COMPUTERS FROM LANE CONTROLLER ENCLOSURES
   E. VIOLATION ENFORCEMENT SYSTEM AND SYSTEM CONTROLLER AND CABINET

Date:3/20/2019

Filename: ...\MSTA\ME-06_ME_PlazaDemol.dgn

Scale:
10 0 10 20
Scale of Feet

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, PE

	By	Date		By	Date
Designed	PLP	3\20\19	Checked	LEM	3\20\19
Drawn	EJB	3\20\19	In Charge of	GAE	3\20\19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION

ELECTRICAL & MECHANICAL
PLAZA DEMOLITION

SHEET NUMBER: ME-06

CONTRACT:2019.04

TOLLING - ORT

1. SYSTEM INTEGRATOR SHALL PROVIDE THE FOLLOWING ITEMS TO BE INSTALLED BY THE CONTRACTOR:

   A. 16 VCARS CAMERAS
   B. ENCLOSURES AND MOUNTING KITS FOR VCARS
   C. IVIS LOOP SENSORS AND ASSOCIATED TEMPLATES FOR CUTTING CONCRETE
   D. EPOXY LOOP SEALANT FOR INSTALLATION OF LOOPS
   E. 2 ORT HOFFMAN CABINETS (TUNNEL ENCLOSURES)
   F. MOUNTING CLEATS FOR ORT CABINETS
   G. COSTAR ENCLOSURES AND PELCO MOUNTING HOOKS FOR DVAS CAMERAS
   H. 18 OPUS SCANNERS AND MOUNTING HARDWARE

2. THE CONTRACTOR SHALL PROVIDE AND INSTALL THE FOLLOWING ITEMS:

   A. AVI ANTENNA BRACKETS FOR MOUNTING TO 2" PIPE
   B. 2 ENCLOSURES FOR AVI READERS
   C. ALL REQUIRED JUNCTION BOXES, CONDUIT AND ASSOCIATED WIRING
   D. LEVELING PAD FOR ORT CABINETS
   E. HOMERUN CABLES FOR IVIS LOOP SENSORS
   F. WIRING FOR HALF DIAMOND SENSORS
   G. KLIK-ITS FOR HOME RUN TERMINATION

3. THE MAINE TURNPIKE AUTHORITY SHALL PROVIDE THE FOLLOWING ITEMS TO BE INSTALLED BY THE CONTRACTOR:

   A. 14 AVI ANTENNAS AND LANE KITS
   B. AVI READERS (MTA RESPONSIBLE FOR LANE TUNING AND READER SYNCHRONIZATION)

4. SYSTEM INTEGRATOR SHALL PROVIDE, INSTALL AND TERMINATE THE FOLLOWING ITEMS:

   A. DVAS CAMERAS
   B. NEW ORT LANE SERVERS AND ASSOCIATED CONTROLLERS AND SWITCHES

5. ALL IVIS SENSOR LOOPS SHALL HAVE AN EPOXY OVERLAY PER SECTION 515 OF SPECIAL PROVISIONS.

TOLL SYSTEM INTEGRATOR

1. THE CONTRACTOR'S SCHEDULE OF WORK SHALL ACCOUNT FOR THE INSTALLATION OF THE NEW TOLLING EQUIPMENT IN EACH CASH LANE (14 CALENDAR DAYS PER LANE). ALL CIVIL WORK IN A CASH LANE SHALL BE COMPLETED BY THE CONTRACTOR PRIOR TO THE INSTALLATION OF THE NEW TOLLING EQUIPMENT IN THE RESPECTIVE LANE. NEW TOLLING EQUIPMENT IS TO BE INSTALLED, TERMINATED, AND TESTED BY THE TOLL SYSTEM INTEGRATOR.

2. THE CONTRACTOR'S SCHEDULE OF WORK SHALL ACCOUNT FOR THE INSTALLATION OF THE NEW TOLLING EQUIPMENT IN EACH ORT ZONE (126 CALENDAR DAYS FOR BOTH ORT ZONES, IF DONE CONCURRENTLY. 126 CALENDER DAYS PER ORT ZONE, IF DONE SEPARATELY). ALL CIVIL WORK IN A ORT ZONES SHALL BE COMPLETED BY THE CONTRACTOR PRIOR TO THE INSTALLATION OF THE NEW TOLLING EQUIPMENT IN THE RESPECTIVE ZONES (NB/SB). NEW TOLLING EQUIPMENT IS TO BE INSTALLED, TERMINATED, AND TESTED BY THE TOLL SYSTEM INTEGRATOR.

3. A CASH/ORT LANE SHALL NOT BE OPENED TO TRAFFIC UNTIL ALL NEW TOLLING EQUIPMENT HAS BEEN INSTALLED IN THE RESPECTIVE LANE, HAS BEEN TESTED, AND COMMISSIONING HAS BEEN ACCEPTED BY THE MTA.

4. THE TOLL SYSTEM INTEGRATOR WILL HAVE 14 CALENDAR DAYS PER CASH LANE AND 126 CALENDER DAYS PER ORT ZONE (UNLESS DONE CONCURRENTLY). THE CONTRACTOR WILL NEED TO ACCOUNT FOR THE TOLL SYSTEM INTEGRATOR WITHIN THEIR SCHEDULE OF WORK.

TOLLING - CASH LANE

1. SYSTEM INTEGRATOR SHALL PROVIDE THE FOLLOWING ITEMS TO BE INSTALLED BY THE CONTRACTOR:

   A. PELCO MOUNTING HOOK FOR THE DVAS CAMERA
   B. IVIS LOOP SENSORS AND ASSOCIATED TEMPLATES FOR CUTTING CONCRETE
   C. EPOXY LOOP SEALANT FOR INSTALLATION OF LOOPS
   D. 6 LANE CONTROLLER ENCLOSURES
   E. MLT VGA AND AUDIO CABLES
   F. 6 TRAFFIC CONTROL PEDESTALS (SUPPLY AND TERMINATE ONLY)
   G. 6 CANOPY OVERIDE SWITCHES

2. THE CONTRACTOR SHALL PROVIDE AND INSTALL THE FOLLOWING ITEMS:

   A. ALL REQUIRED JUNCTION BOXES, CONDUIT AND ASSOCIATED COMMUNICATION AND ELECTRICAL WIRING
   B. RED "X" /GREEN "ARROW" CANOPY LIGHTS ON FRONT OF CANOPY.
   C. TRAFFIC CONTROL PEDESTAL (INSTALL ONLY)
   D. LANE CONTROLLER ENCLOSURES AND METAL CLEATS (INSTALL ONLY)
   E. 2 ENCLOSURES FOR AVI READERS

3. SYSTEM INTEGRATOR SHALL PROVIDE, INSTALL AND TERMINATE (DATA ONLY) THE FOLLOWING ITEMS:

   A. DVAS CAMERA
   B. LANE CONTROLLERS
   C. TRAFFIC CONTROL PEDESTAL (PROVIDE TCP AND TERMINATE DATA ONLY)
   D. MANUAL LANE TERMINAL AND STAND
   E. RECEIPT PRINTER

4. THE MAINE TURNPIKE AUTHORITY SHALL PROVIDE THE FOLLOWING ITEMS TO BE INSTALLED BY THE CONTRACTOR:

   A. 6 AVI ANTENNAS AND LANE KITS
   B. AVI READER (MTA RESPONSIBLE FOR LANE TUNING AND READER SYNCHRONIZATION)

5. ALL IVIS SENSOR LOOPS SHALL HAVE AN EPOXY OVERLAY PER SECTION 515 OF SPECIAL PROVISIONS.

ELECTRICAL

1. LOOP GRADIENT SENSOR CONDUIT STUB-UPS WILL BE CONNECTED TO A HOME RUN CONDUIT VIA A 3" SANITARY TEE OR 90 PVC DWV.

2. ALL CONDUIT LOCATED IN THE TOLL LANES SHALL BE INSTALLED IN THE ROADWAY SUBBASE, BELOW THE CONCRETE SLAB. THE ONLY CONDUIT LOCATED WITHIN THE CONCRETE SLAB IS FOR STUB-UPS.

3. "KEY SWITCHES" WILL BE INSTALLED IN EACH CASH LANE FOR THE INLINE CLEAN POWER OF EACH DVAS AND VES. POWER AND DATA CABLES FROM THE CASH LANE CONTROLLERS TO THE DVAS SHALL BE ROUTED UP THROUGH CANOPY SUPPORT COLUMNS. ANY CABLES AND/OR WIRES RUN TO DEVICES ON CANOPIES AND SPACE FRAMES SHALL BE RUN IN CONDUIT.

TOLLING - GENERAL

1. COORDINATE LOOP LOCATIONS WITH SI FOR SOFT CUT JOINTS TO PREVENT SOFT CUTS THROUGH LOOPS.

TOLLING - DEMOLITION OF OLD PLAZA

1. EQUIPMENT TO BE SALVAGED AND DELIVERED TO THE MTA CUMBERLAND MAINTENANCE (SIGN SHOP) FACILITY BY CONTRACTOR

   A. ISLAND TRAFFIC SIGNALS AND MOUNTING POLES
   B. LIGHT CURTAINS, HEIGHT DETECTORS AND ENCLOSURES
   C. PATRON FARE DISPLAY
   D. RED/GREEN LANE USE SIGNALS
   E. RECEIPT PRINTER (BOOTH)
   F. AVI ANTENNA (CANOPY)
   G. CANOPY OVERRIDE SWITCH (BOOTH)
   H. AVI READERS
   I. POWER AND DATA CABLING THAT CAN BE REUSED (TUNNEL, BOOTH, LANE)
   J. MANUAL LANE TERMINAL
   K. VIOLATION ENFORCEMENT AND SYSTEM CONTROLLERS AND CABINETS
   L. EXISTING LANE CONTROLLERS

2. PAYMENT FOR ALL EQUIPMENT SALVAGED WILL BE INCIDENTAL TO ITEM 800.311 TOLL PLAZA TUNNEL AND ADMINISTRATION BUILDING DEMOLITION.

Date:3/18/2019

Filename: 419_Tolling Notes.dgn

Scale: NO SCALE

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
Designed	ARG	02/19	Checked	RBM	02/19
Drawn	MHP	02/19	In Charge of	RAL	02/19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

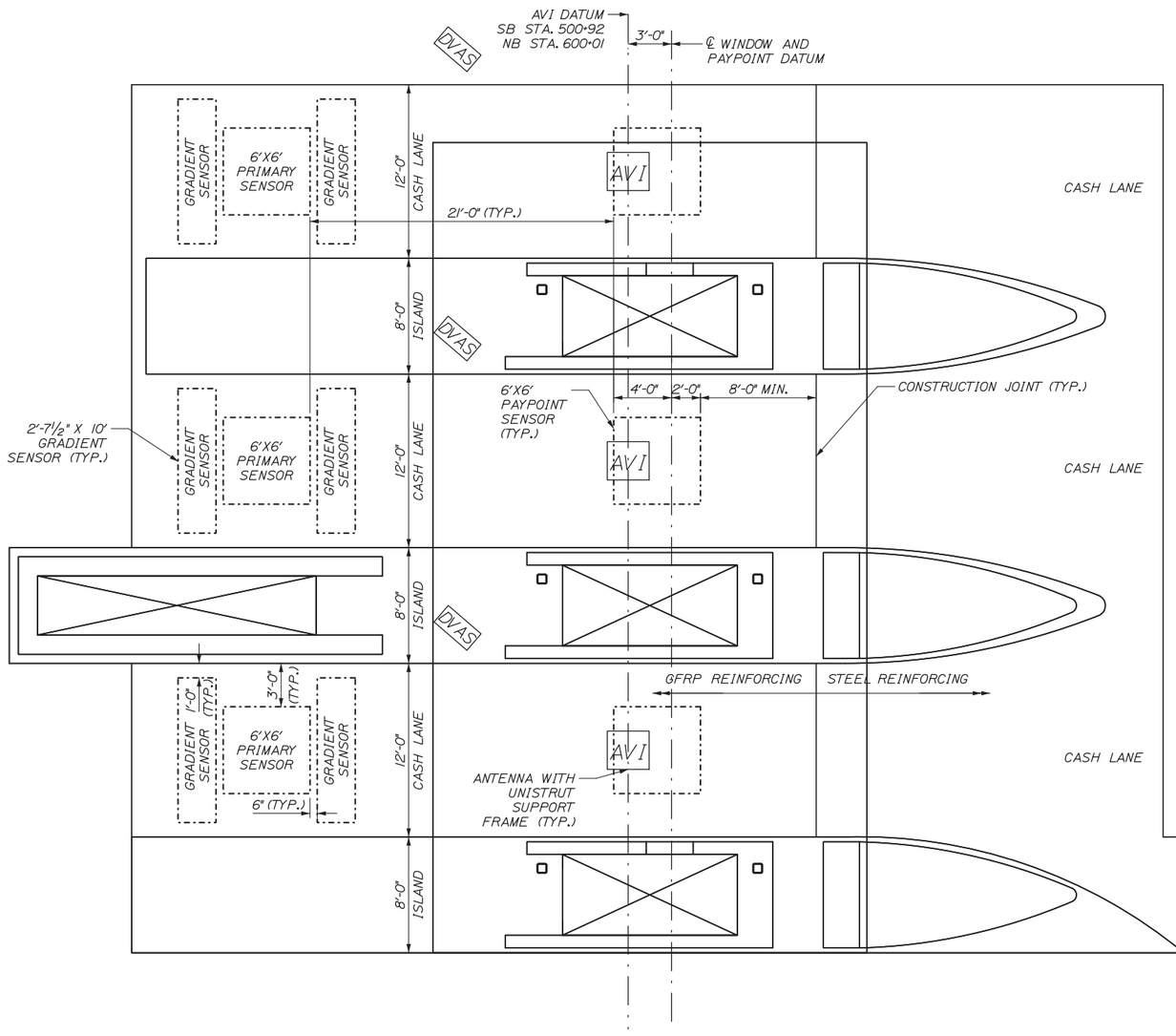
MTA PROJECT MANAGER: William Yates

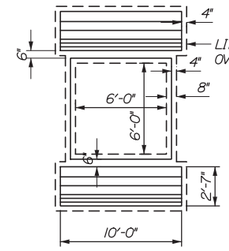
INTERCHANGE 103
ORT CONVERSION

TOLL GENERAL NOTES

SHEET NUMBER: T-01

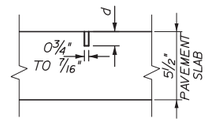
CONTRACT:2019.04





LOOP DETAIL AND EPOXY OVERLAY

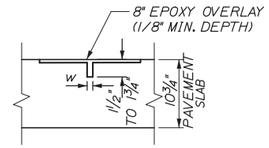
N.T.S



d = 1¼" TO 1½" FOR SINGLE LEAD CUT
2½" FOR MULTIPLE LEAD CUT
3" AT PITCH POCKET ENTRY

LEAD-IN CUT

SCALE: 2" = 1'



SENSOR CUT

SCALE: 2" = 1'

w = ½" FOR GRADIENT ENDS
⅜" FOR ALL OTHER CUTS

NOTES:

1. SYSTEM INTEGRATOR SHALL INJECT EPOXY INTO SAW CUT BEFORE INSTALLING SENSORS AND LEADS. SYSTEM INTEGRATOR SHALL PROVIDE EQUIPMENT, TEMPLATES AND EPOXY. SEE SPECIAL PROVISIONS SECTION 655 FOR MORE INFORMATION.

2. ALL LAYOUT FOR PRIMARY AND GRADIENT SENSORS SHALL BE VERIFIED BY SYSTEM INTEGRATOR PRIOR TO CUTTING CONCRETE.

3. ¼" DEPRESSION FOR EPOXY OVERLAY SHALL BE COMPLETED AFTER SAW CUTTING CONCRETE FOR LOOPS.

4. MEASUREMENT FOR ACCEPTED QUANTITY FOR ITEM 515.23 EPOXY OVERLAY SHALL BE 11.5 SY PER LANE.

5. LOOP LAYOUT IS TYPICAL FOR ALL ENTRY LANES.

6. DVAS MOUNTING HARDWARE AND INSTALLATION IS INCIDENTAL TO ITEM 655.02 DVAS MOUNT INSTALLATION.

Date:3/18/2019

Filename: 420_CashLaneSensorLayout.dgn

Scale: 5 0 5 10
Scale of Feet

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

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MAINE TURNPIKE

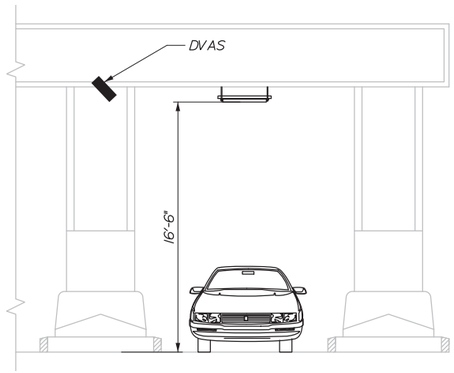
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: William Yates

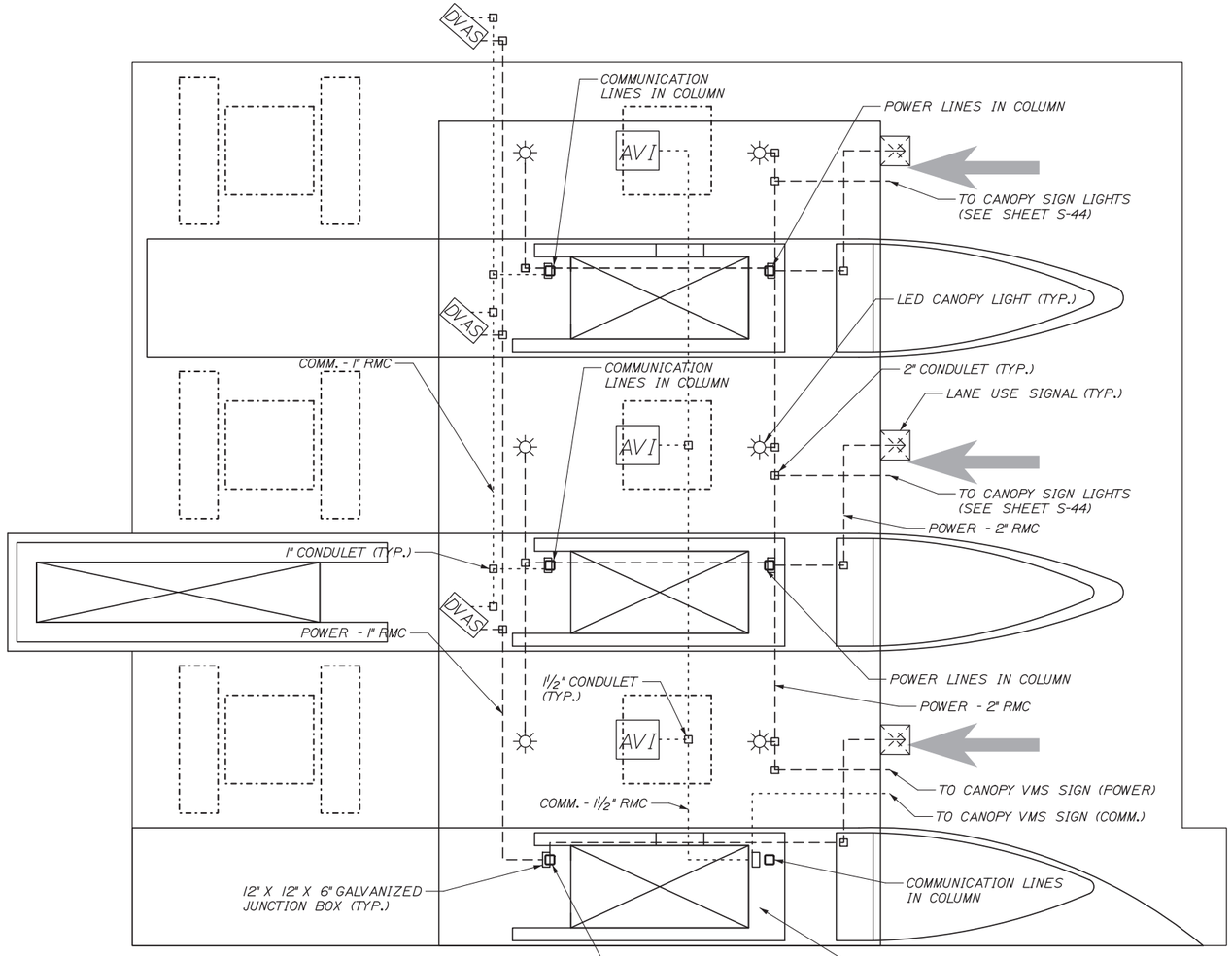
INTERCHANGE 103
ORT CONVERSION
PROPOSED CASH LANE
TYPICAL SENSOR LAYOUT

SHEET NUMBER: T-02

CONTRACT:2019.04

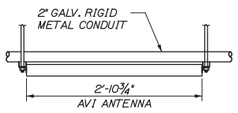


SECTION VIEW
N.T.S

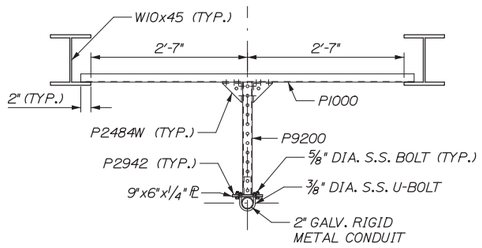


SOUTHBOUND CASH LANES CONDUIT DETAILS

NORTHBOUND SIMILAR
SCALE AS NOTED



AVI ANTENNA ELEVATION
N.T.S



CASH LANE AVI ANTENNA FRAME
N.T.S

CASH OVERHEAD ELECTRICAL NOTES:

1. CANOPY NOT SHOWN FOR CLARITY. REFER TO STRUCTURAL PLANS FOR CANOPY DETAILS.
2. LIQUID TIGHT METALLIC FLEXIBLE CONDUITS SHALL BE THE FOLLOWING SIZES:

- DVAS POWER AND COMMUNICATION ¾"
- AVI COMMUNICATION 1½" WITH 2" FITTINGS FOR SINGLE LMR CABLE. 2" FOR 2 CABLES
- LANE USE SIGNAL ¾"
- CANOPY LIGHTS ¾"

3. FOR OVERHEAD LANE LIGHTS SEE SPECIFICATION 655. FEED WITH 1" RMC. LIGHTS ARE SURFACE MOUNTED TO STRUCTURAL STEEL.

4. LED CANOPY LIGHTS SHALL BE CREE LED 304 SERIES PKG-304-40-DM-06-E-UL-BZ-350-J-40K OR APPROVED EQUIVALENT.

Scale: 5 0 5 10
Scale of Feet

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: William Yates

INTERCHANGE 103
ORT CONVERSION

CANOPY ELECTRICAL PLAN
CASH LANES

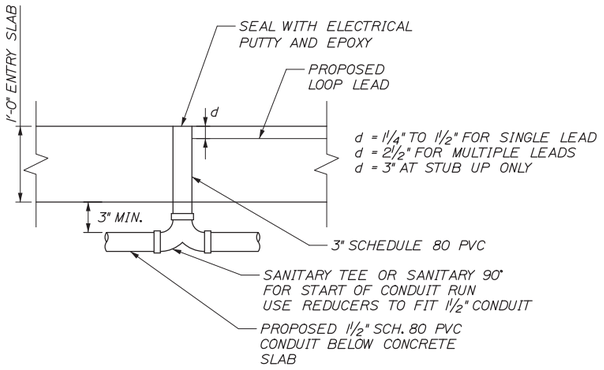
SHEET NUMBER: T-03

CONTRACT:2019.04

421OF 503

Date:3/18/2019

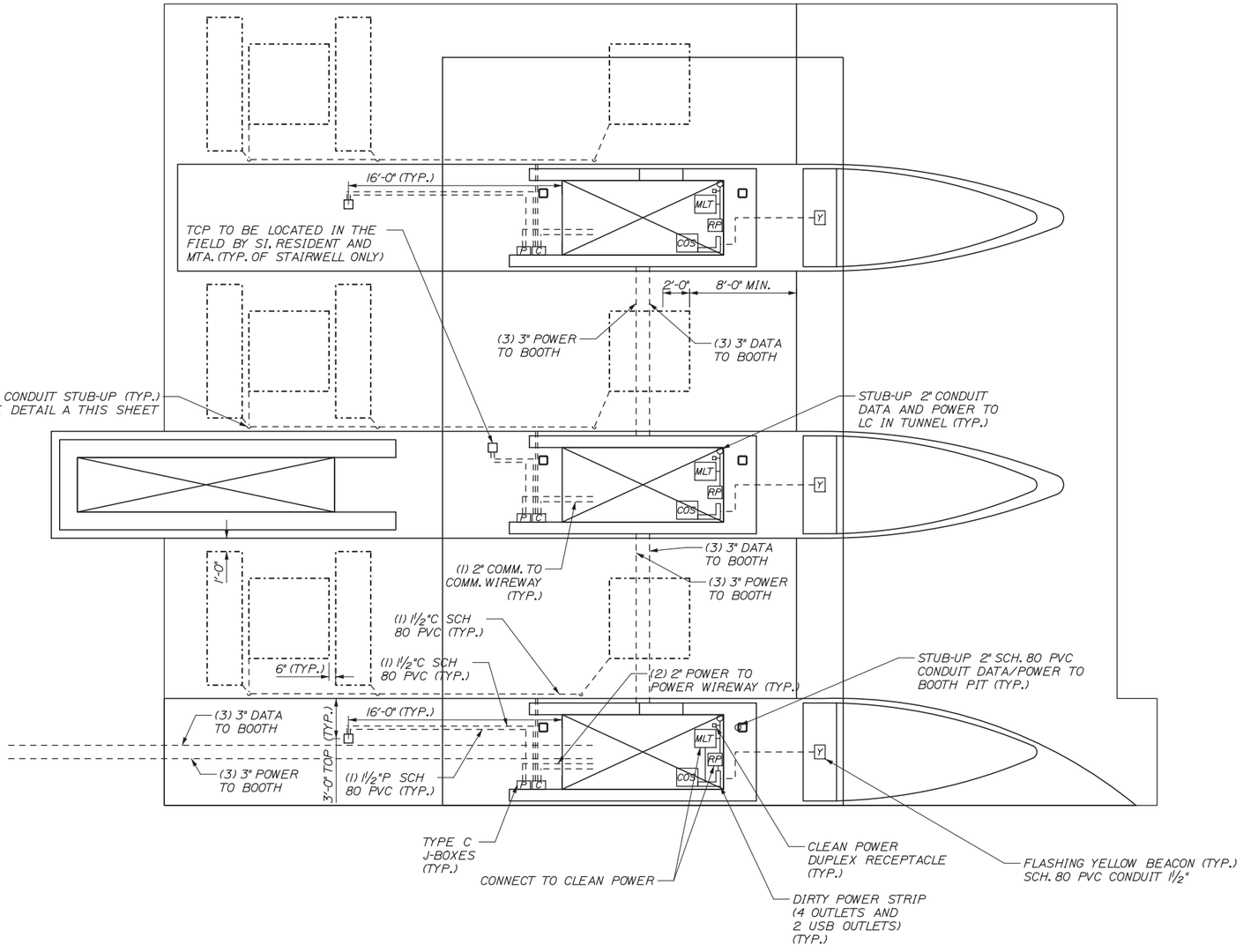
Filename: 421_CashLaneOverheadElectricalPlan.dgn



DETAIL A
STUB UP IN CASH LANE SLAB
SECTION VIEW

N.T.S

NOTE: SEALING STUB-UPS SHALL BE INCIDENTAL TO THE PVC PAY ITEM.



SOUTHBOUND (NORTHBOUND SIMILAR)
SCALE AS NOTED

NOTES:

1. SEE GENERAL NOTES FOR ITEMS TO BE SUPPLIED BY MTA, SYSTEM INTEGRATOR AND CONTRACTOR. SEE GENERAL NOTES FOR ITEMS TO BE SALVAGED.
2. SENSOR LOOP LOCATIONS ARE APPROXIMATE. SEE SHEET T-02 FOR EXACT LOOP LOCATION.
3. THE TRAFFIC CONTROL PEDESTAL SHALL BE LOCATED AT LEAST 36" FROM THE CURB.
4. KLIK-ITS (POWER & TEL ENTERPRISE PART # C8820) SHALL BE USED AT ALL LOOPWIRE SPLICE LOCATIONS.

Date:3/18/2019

Filename: 422_CashLaneUndergroundElectricalPlan.dgn

Scale: 5 0 5 10 Scale of Feet

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

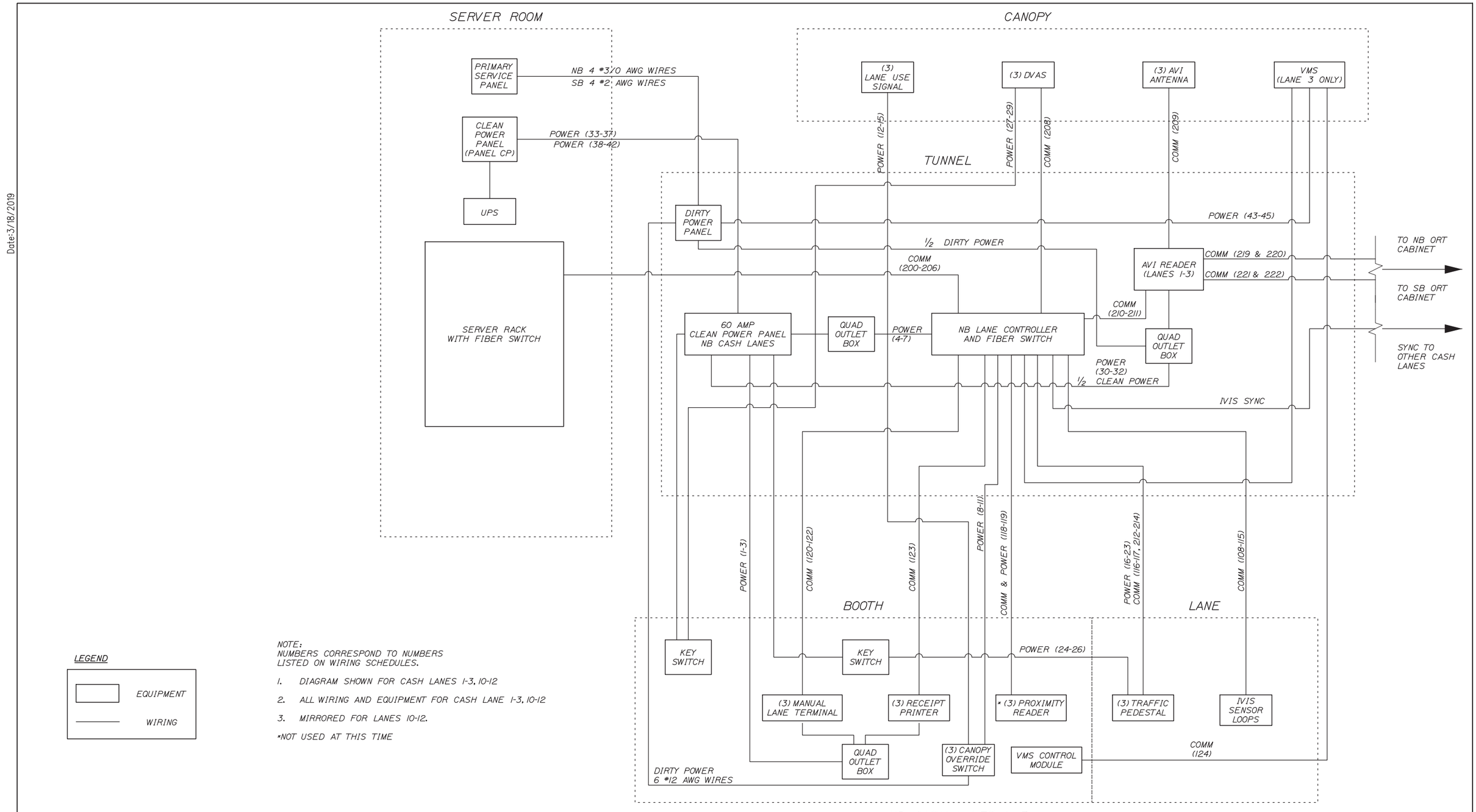
MTA PROJECT MANAGER: William Yates

INTERCHANGE 103 ORT CONVERSION

UNDERGROUND ELECTRICAL PLAN CASH LANES

SHEET NUMBER: T-04

CONTRACT:2019.04



LEGEND

EQUIPMENT

WIRING

NOTE:
NUMBERS CORRESPOND TO NUMBERS LISTED ON WIRING SCHEDULES.

1. DIAGRAM SHOWN FOR CASH LANES 1-3, 10-12
2. ALL WIRING AND EQUIPMENT FOR CASH LANE 1-3, 10-12
3. MIRRORED FOR LANES 10-12.

*NOT USED AT THIS TIME

NB CASH LANES 1-3
TOLLING EQUIPMENT SYSTEMS DIAGRAM

SCALE: NTS

Date:3/18/2019

Filename: 423_WiringDiagram.dgn

Scale: NOT TO SCALE

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: William Yates

INTERCHANGE 103
ORT CONVERSION

CASH LANE POWER & COMMUNICATION RISER DIAGRAM

SHEET NUMBER: T-05

CONTRACT:2019.04

Date:3/18/2019

WIRING SHOWN IS FOR CASH LANE. REPLICATE FOR SIMILAR LANES.

ATT/ETC DISCRETE WIRING SCHEDULE - DATA: DOOR WIRING LOGIC, SERIAL, VIDEO, AUDIO (Primary Server)

Intelligent Vehicle Identification System (IVIS) (For Wiring Only. Home Run Lead supplied as part of Sensor)

	WIRE LABEL	DESCRIPTION	AWG	COLOR	CORE	STANDARD	FROM	TO	LANE SERVER TERMINAL #
100	T4-49.G1	NOT USED						SENSORS COME WITH 80' PIGTAIL. IF ADDITIONAL WIRE NEEDED SPLICE TO IMSA-50-2 TYPE CABLE. INSTALL THE HOME RUN CABLE FROM THE LANE GROUND BOX TO THE LANE SERVER CONNECTION SPECIFIED IN THE ADJ COLUMN. ALL SPLICES MUST BE SOLDERED, TIGHTLY TWISTED, AND INSULATED TO BE WATER RESISTANT. FOR LANES NOT HAVING PRE_CLASSIFICATION, DELETE REQUIREMENTS FOR PRE_CLASSIFICATION SENSORS AND INTELLIGENT QUEUING SENSOR	T4-49
101	T4-50.G1								T4-50
102	T4-51.P1	NOT USED							T4-51
103	T4-52.P1								T4-52
104	T4-53.G2	NOT USED							T4-53
105	T4-54.G2								T4-54
106	T4-55.IQ	NOT USED							T4-55
107	T4-56.IQ								T4-56
108	T4-57.PP	PAYPOINT PRIMARY SENSOR	16	BLACK	STRANDED	IMSA50-2	PAYPOINT PRIMARY SENSOR		T4-57
109	T4-58.PP								T4-58
110	T4-59.G3	POST CLASSIFICATION GRADIENT SENSOR #1	16	BLACK	STRANDED	IMSA50-2	POST-CLASSIFICATION GRADIENT SENSOR #1		T4-59
111	T4-60.G3								T4-60
112	T4-61.P4	POST CLASSIFICATION PRIMARY SENSOR	16	BLACK	STRANDED	IMSA50-2	POST-CLASSIFICATION PRIMARY SENSOR		T4-61
113	T4-62.P4								T4-62
114	T4-63.G4	POST CLASSIFICATION GRADIENT SENSOR #2	16	BLACK	STRANDED	IMSA50-2	POST-CLASSIFICATION GRADIENT SENSOR #2		T4-63
115	T4-64.G4								T4-64

Toll Booth Peripheral Cables (MLT, Printer, PC Prox, PTD Display)

116	S3.1.PTD	PATRON FORE DISPLAY	Cat5e	BARE WIRE AT PEDESTAL	FIELD WIRED - ONLY FOUR PINS USED: PIN 3 - DEVICE RECEIVE, PIN 5 - GROUND, PINS 7 AND 8 JUMPERED	RS232	PEDESTAL WIRE CENTER TA - PTD DATA PEDESTAL WIRE CENTER TA - PTD DATA	TBD
117	Lane(#)TR	LANE TRIGGER	Cat5e	BARE WIRE	Pin to Pin	TTL(optically Isolated)	Wire to Designated Trigger Terminals for Front and Rear Trigger (+/-) in Pedestal Wire Center	TBD
118	S8.PROX	MANUAL LANE TERMINAL PCPROX CARD READER	Cat5e	DB9 (MALE)	SERIAL	RS232		S-8
119	PROXPWR	MANUAL LANE TERMINAL PCPROX CARD READER POWER	Cat5e	PS2 (FEMALE)	SERIAL	RS232		PS/2
120	S9.MLT	TOLL BOOTH MANUAL LANE TERMINAL (MLT) COMMUNICATIONS	Cat5e	RJ-45	SERIAL	RS232		TBD
121	MLTVGA	TOLL BOOTH MANUAL LANE TERMINAL VIDEO	Cat5e	DB15(VGA) (MALE)	VGA/SVGA/XGA analog	VIDEO	PREFAB VIDEO CABLE - NOT TO EXCEED 100 FT	MONITOR
122	MLTAUDIO	TOLL BOOTH MANUAL LANE TERMINAL SPEAKER	5mm Plug (MAL	3.5mm Plug (MALE)	AUDIO	AUDIO	PREFAB AUDIO CABLE	AUDIO
123	S10.RP	TOLL BOOTH RECEIPT PRINTER COMMUNICATIONS	RJ-45	DB25 (MALE)	NULL MODEM	RS232	PREFAB NULL MODEM CABLE - NOT TO EXCEED 100 FT	TBD
124	VMS 1	VMS CONTROL MODULE COMMUNICATIONS	Cat5e	RJ-45	PIN TO PIN	RJ-45	CANOPY MOUNTED VMS	N/A

Filename: 424_Cash Lane Data Schedule.dgn

Scale: NO SCALE

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

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MTA PROJECT MANAGER: William Yates

INTERCHANGE 103
ORT CONVERSION

CASH LANE DATA SCHEDULE

SHEET NUMBER: T-06

CONTRACT:2019.04

WIRING SHOWN IS FOR TYPICAL CASH LANE. REPLICATE FOR SIMILAR LANES.

ATT/ETC LANE TYPE POWER WIRING SCHEDULE

	WIRE LABEL (SOURCE CIRCUIT DESTINATION)	DESCRIPTION	AWG	COLOR	CORE	JACKET	VOLTAGE	CIRCUIT BREAKER	FROM	TO	LANE SERVER TERMINAL #	TERMINATION REQUIREMENTS	TERMINATIONS
	BOOTH QUAD OUTLET												
1	(LANE CONTROLLER) .L.BQUAD	PERIPHERAL POWER (HOT, NON-SWITCHED)	12	BLACK	STRANDED	THHW	120 VAC	20	CLEAN POWER PANEL	BOOTH QUAD OUTLET LOCATE WITHIN 3 FT OF ATTENDANT WORK AREA	N/A	QUAD OUTLET	TUNNEL/POWER PANEL
2	(LANE CONTROLLER) .N.BQUAD	PERIPHERAL POWER (NEUTRAL)		WHITE									TUNNEL/POWER PANEL
3	(LANE CONTROLLER) .G.BQUAD	PERIPHERAL POWER (GROUND)		GREEN									TUNNEL/POWER PANEL
	LANE SERVER												
4	(LANE CONTROLLER).LS.T1-1	LANE SERVER POWER (HOT, NON-SWITCHED)	12	BLACK	STRANDED	THHW	120 VAC	20	BOOTH or MAIN POWER DISTRIBUTION PANEL and ISOLATED GROUND BAR	LANE CONTROLLER FIELD WIRING (T1) TERMINAL BLOCK	T1-1	BARE WIRE (Capped and Taped for termination by UTS)	TUNNEL/POWER PANEL
5	(LANE CONTOLLER) .N.LS.T1-2	LANE SERVER POWER (NEUTRAL)		WHITE							T1-2		TUNNEL/POWER PANEL
6	(LANE CONTROLLER) .LS.T1-3	LANE SERVER POWER (GROUND)		GREEN							T1-4		TUNNEL/POWER PANEL
7	(LANE CONTROLLER)IG.LS.T1-4	LANE SERVER POWER (ISOLATED GROUND)		GREEN W/ WHITE STRIPE							T1-3		TUNNEL/POWER PANEL
	CANOPY LANE USE SIGNAL												
9	COS.CTS-G.SIG	GREEN CANOPY TRAFFIC SIGNAL POWER (HOT, SWITCHED)	12	BLUE	STRANDED	THHW	120 VAC	N/A	LANE CONTROLLER (T1) TERMINAL BLOCK	CANOPY OVERRIDE SWITCH	T1-10	BARE WIRE	TUNNEL/POWER PANEL
10	COS.CTS-N.SIG	CANOPY TRAFFIC SIGNAL POWER (NEUTRAL)		WHITE							T1-11		TUNNEL/POWER PANEL
12	COS.CTS-R.SIG	RED CANOPY TRAFFIC SIGNAL POWER (HOT, SWITCHED)	12	RED	STRANDED	THHW	120 VAC	N/A	CANOPY OVERRIDE SWITCH	CANOPY LANE USE SIGNAL		BARE WIRE	COS
13	COS.CTS-G.SIG	GREEN CANOPY TRAFFIC SIGNAL POWER (HOT, SWITCHED)		BLUE									COS
14	COS.CTS-N.SIG	CANOPY TRAFFIC SIGNAL POWER (NEUTRAL)		WHITE									COS
15	COS.CTS-CG.SIG	CANOPY TRAFFIC SIGNAL POWER (COMMON GROUND)		GREEN									COS
	TRAFFIC CONTROL PEDESTAL (TCP)												
16	ITS.LS.T1-12	VIOLATION BEACON (HOT)	12	BLACK	STRANDED	THHW	120 VAC	-	LANE CONTROLLER (T1) TERMINAL BLOCK	TRAFFIC CONTROL PEDESTAL FIELD WIRING TERMINAL BLOCK 'TA'	T1-12	TA - TH BLACK	TUNNEL/POWER PANEL
17	ITS.LS.T1-13	LANE 1 ISLAND TRAFFIC SIGNAL RED LIGHT POWER (HOT, SWITCHED)		RED							T1-13	TA - TH RED	TUNNEL/POWER PANEL
18	ITS.LS.T1-14	LANE 1 ISLAND TRAFFIC SIGNAL AMBER LIGHT POWER (HOT, SWITCHED)		YELLOW							T1-14	TA - TH AMBER	TUNNEL/POWER PANEL
19	ITS.LS.T1-15	LANE 1 ISLAND TRAFFIC SIGNAL GREEN LIGHT POWER (HOT, SWITCHED)		BLUE							T1-15	TA - TH BLUE	TUNNEL/POWER PANEL
20	ITS.LS.T1-16	LANE 1 ISLAND TRAFFIC SIGNAL POWER (NEUTRAL)		WHITE							T1-16	TA - TH (N)	TUNNEL/POWER PANEL
21	PTD.LS.T1-6	LANE 1 PATRON TOLL DISPLAY POWER (HOT, NON-SWITCHED)	12	BLACK	STRANDED	THHW	120 VAC	-	LANE CONTROLLER (T1) TERMINAL BLOCK	TRAFFIC CONTROL PEDESTAL FIELD WIRING TERMINAL BLOCK 'TA'	T1-6	TA - PTD (H)	TUNNEL/POWER PANEL
22	PTD.LS.T1-7	LANE 1 PATRON TOLL DISPLAY POWER (NEUTRAL)		WHITE							T1-7	TA - PTD (N)	TUNNEL/POWER PANEL
23	PTD.LS.T1-8	LANE 1 PATRON TOLL DISPLAY POWER (GROUND)		GREEN							T1-8	TA - PTD / VIOL (G)	TUNNEL/POWER PANEL
24	(Primary Power Panel).TCP	VES/TCP POWER (HOT, KEY SWITCHED)	12	BLACK	STRANDED	THHW	120 VAC	-	CLEAN POWER FEED	TRAFFIC CONTROL PEDESTAL FIELD WIRING TERMINAL BLOCK 'TB'	N/A	TB - 120V (H)	TUNNEL/POWER PANEL
25	(Primary Power Panel)N.TCP	VES/TCP POWER (NEUTRAL)		WHITE							N/A	TB - 120V (N)	TUNNEL/POWER PANEL
26	(Primary Power Panel)G.TCP	VES/TCP POWER (GROUND)		GREEN							N/A	TB - 120V (G)	TUNNEL/POWER PANEL
	LANE DIGITAL VIDEO AND AUDIT CAMERA (DVAS)												
27	(Primary Power Panel).PP	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (HOT - KEY SWITCHED)	12	BLACK	STRANDED	THHW	120 VAC	N/A	CLEAN POWER FEED	DVAS CAMERA ENCLOSURE FIELD WIRING POWER STRIP (UP TO 6 CAMERAS ON 1 CIRCUIT)	N/A	BARE WIRE (Capped and Taped for termination by UTS)	TUNNEL/POWER PANEL
28	(Primary Power Panel)N.PP	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (NEUTRAL)		WHITE									TUNNEL/POWER PANEL
29	(Primary Power Panel)G.PP	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (GROUND)		GREEN									TUNNEL/POWER PANEL
	AUTOMATIC VEHICLE IDENTIFICATION (AVI)												
30	(Primary Power Panel)L.AVI	LANE AVI READER QUAD POWER (AC HOT)	12	BLACK	STRANDED	THHW	120 VAC	20	CLEAN POWER FEED	AVI READER (LANES 6-10)	N/A	QUAD OUTLET	TUNNEL/POWER PANEL
31	(Primary Power Panel)N.AVI	LANE AVI READER QUAD POWER (AC NEUTRAL)		WHITE									TUNNEL/POWER PANEL
32	(Primary Power Panel) G.AVI	LANE AVI QUAD READER (GROUND)		GREEN									TUNNEL/POWER PANEL
	60 AMP PANEL SERVING NB CASH LANE												
33	(Panel#) (Ckt #)H1.UPS	POWER(120V-HOT)	#1/0	BLACK	STRANDED	THHW	240 VAC		UPS	60 AMP CLEAN POWER SUB-PANEL ASSIGNED CIRCUIT BREAKER	N/A	PER LOCAL CODE	60 AMP POWER PANEL
34	(Panel#) (Ckt #)H2.UPS	POWER(120V-HOT)		RED									
35	(Panel#) (Ckt #)N.UPS	POWER(120V-NEUTRAL)		WHITE									
36	(Panel#).G	GROUND		GREEN									
37	(Panel#).IG	ISOLATED GROUND	#2	GREEN W/ YELLOW STRIPE									
	60 AMP PANEL SERVING SB CASH LANE												
38	(Panel#) (Ckt #)H1.UPS	POWER(120V-HOT)	#2	BLACK	STRANDED	THHW	240 VAC		UPS	60 AMP CLEAN POWER SUB-PANEL ASSIGNED CIRCUIT BREAKER	N/A	PER LOCAL CODE	60 AMP POWER PANEL
39	(Panel#) (Ckt #)H2.UPS	POWER(120V-HOT)		RED									
40	(Panel#) (Ckt #)N.UPS	POWER(120V-NEUTRAL)		WHITE									
41	(Panel#).G	GROUND		GREEN									
42	(Panel#).IG	ISOLATED GROUND	#4	GREEN W/ YELLOW STRIPE									
	CANOPY MOUNTED VARIABLE MESSAGE SIGN (VMS)												
43	(Dirty Power Panel)L.VMS	VMS (AC HOT)	12	BLACK	STRANDED	THHW	120 VAC	20	DIRTY POWER FEED	VMS	N/A	PER LOCAL CODE	TUNNEL/POWER PANEL
44	(Dirty Power Panel)N.VMS	VMS (AC NEUTRAL)		WHITE									TUNNEL/POWER PANEL
45	(Dirty Power Panel) G.VMS	VMS (GROUND)		GREEN									TUNNEL/POWER PANEL

Date:3/18/2019

Filename: 425_Cash Lane Power Schedule.dgn

Scale: NO SCALE

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
Designed	ARG	02/19	Checked	RBM	02/19
Drawn	MHP	02/19	In Charge of	RAL	02/19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: William Yates

INTERCHANGE 103
ORT CONVERSION

CASH LANE POWER SCHEDULE

SHEET NUMBER: T-07

CONTRACT:2019.04

WIRING SHOWN IS FOR CASH LANE. REPLICATE FOR SIMILAR LANES.

ATT-ETC LANE NETWORK WIRING SCHEDULE

LANE SERVER MULTIMODE FIBER (FOR REMOTE SWITCH ACCESS)

	WIRE LABEL	DESCRIPTION	COLOR	CONNECTOR AT FX PATCH PANEL (COMPUTER ROOM)	COMMUNICATIONS SWITCH IN THE LANE SERVER	WIRING CONVENTION	PROTOCOL	FIELD WIRING INSTRUCTIONS	STATUS
200	(Ln#)LS	LANE SERVER NETWORK CONNECTION - SEND	BLUE	ST (MALE)	ST (MALE)	6-FIBER (TYP) (4 Min Fiber) MULTI-MODE 100mbs	62.5/125 MICRONS INDOOR/OUTDOOR RISER RATED	FROM PLAZA COMMUNICATIONS RACK FIBER (FX) PATCH PANEL TO THE BOOTH LANE SERVER FIBER LINE INTERFACE UNIT (LIU) IN THE CABINET OR GUTTER. PROVIDE 1 EA 3M DUPLEX FX PATCH CABLE (STM to STM) FROM THE LIU TO THE LANE 1 LANE SERVER NETWORK SWITCH.	NEW
201		LANE SERVER NETWORK CONNECTION - RECEIVE	ORANGE						NEW
202		LANE SERVER NETWORK CONNECTION - SPARE SEND	GREEN						NEW
203		LANE SERVER NETWORK CONNECTION - SPARE RECEIVE	BROWN						NEW
204		LANE SERVER NETWORK CONNECTION - SPARE SEND (optional)	SLATE						NEW
205		LANE SERVER NETWORK CONNECTION - SPARE RECEIVE (optional)	WHITE						NEW
	LANE SERVER ETHERNET CONNECTION (FOR LOCAL SWITCH -SAME ROOM- ACCESS)								
206	(Ln#).LS	LANE SERVER NETWORK CONNECTION (CAT5E/6 CABLE ALTERNATIVE TO FIBER ABOVE IF LOCAL SWITCH PROVIDED AND CONNECTION IS LESS THAN 300 FEET)	CAT5E COLOR STANDARD	RJ-45 (MALE)	RJ-45 (MALE)	CAT5E/6 DIRECT BURIAL	UTP	CAT5E BULK CABLE FROM THE SERVER ROOM TO THE LANE CABINET FIBER SWITCH LANE SERVER SWITCH. TERMINATE AND TEST CABLE RUN.	NEW
	DIGITAL VIDEO AUDIT SYSTEM (DVAS)								
208	DVAS.(Ln#).PP	LANE DVAS PAYPOINT CAMERA NETWORK CONNECTIONS	CAT5E COLOR STANDARD	RJ-45 (MALE)	RJ-45 (MALE)	CAT5E/6 DIRECT BURIAL	UTP	CAT5E BULK CABLE FROM THE LANE CONTROLLER AND FIBER SWITCH TO THE LANE DVAS PAYPOINT CAMERA. TERMINATE AND TEST CABLE RUN. ALLOW 10' OF CABLE TO REACH FROM THE DVAS DATA JUNCTION BOX TO THE LANE 1 CAMERA ENCLOSURE.	NEW
	AUTOMATIC VEHICLE IDENTIFICATION (AVI)								
209	ORT(ORT#).AVI.LN(#)	TRAVEL LANE AVI ANTENNA RF CABLE	BLACK	LANE ANTENNA IN THE GANTRY	"N" CONNECTOR (MALE)	LMR 400	PVC	CAT5E BULK CABLE FROM THE LANE CONTROLLER CONNECTION PANEL AVI 110 JACK TO THE LANE AVI READER SERIAL TO ETHERNET CONVERTER	NEW
210	(Ln#).AVIE	LANE AVI READER ETHERNET DATA CONNECTION	CAT5E COLOR STANDARD	RJ-45 (MALE)	RJ-45 (MALE)	CAT5E/6 DIRECT BURIAL	10/100 UTP	CAT5E BULK CABLE FROM THE LANE CONTROLLER CONNECTION PANEL AVI 110 JACK TO THE LANE AVI READER SERIAL TO ETHERNET CONVERTER	NEW
211	(Ln#).AVIS	LANE AVI READER DATA CONNECTION	CAT5E COLOR STANDARD	RJ-45 (MALE)	RJ-45 (MALE)	CAT5E/6 DIRECT BURIAL	10/100 UTP	CAT5E BULK CABLE FROM THE LANE CONTROLLER CONNECTION PANEL AVI 110 JACK TO THE LANE AVI READER SERIAL TO ETHERNET CONVERTER	NEW
212	AVI SYNC	AVI READER SYNC CABLE (FROM CASH SB READER AVI TO CASH NB AVI READER)	CAT5E COLOR STANDARD	RJ-45 (MALE)	RJ-45 (MALE)	CAT5E/6 DIRECT BURIAL	10/100 UTP	CAT5E BULK CABLE FROM THE LANE CONTROLLER CONNECTION PANEL AVI 110 JACK TO THE LANE AVI READER SERIAL TO ETHERNET CONVERTER	NEW
213	AVI SYNC	AVI READER SYNC CABLE (FROM CASH SB READER AVI TO ORT SB AVI READER)	CAT5E COLOR STANDARD	RJ-45 (MALE)	RJ-45 (MALE)	CAT5E/6 DIRECT BURIAL	10/100 UTP	CAT5E BULK CABLE FROM THE LANE CONTROLLER CONNECTION PANEL AVI 110 JACK TO THE LANE AVI READER SERIAL TO ETHERNET CONVERTER	NEW
214	AVI SYNC	AVI READER SYNC CABLE (FROM CASH SB READER AVI TO ORT NB AVI READER)	CAT5E COLOR STANDARD	RJ-45 (MALE)	RJ-45 (MALE)	CAT5E/6 DIRECT BURIAL	10/100 UTP	CAT5E BULK CABLE FROM THE LANE CONTROLLER CONNECTION PANEL AVI 110 JACK TO THE LANE AVI READER SERIAL TO ETHERNET CONVERTER	NEW
219-220	AVI NETWORK	AVI NETWORK CABLE FROM NB CASH READER TO NB ORT CABINET	CAT5E COLOR STANDARD	RJ-45 (MALE)	RJ-45 (MALE)	CAT5E/6 DIRECT BURIAL	10/100 UTP	CAT5E BULK CABLE FROM THE LANE CONTROLLER CONNECTION PANEL AVI 110 JACK TO THE LANE AVI READER SERIAL TO ETHERNET CONVERTER	NEW
221-222	AVI NETWORK	AVI NETWORK CABLE FROM SB CASH READER TO SB ORT CABINET	CAT5E COLOR STANDARD	RJ-45 (MALE)	RJ-45 (MALE)	CAT5E/6 DIRECT BURIAL	10/100 UTP	CAT5E BULK CABLE FROM THE LANE CONTROLLER CONNECTION PANEL AVI 110 JACK TO THE LANE AVI READER SERIAL TO ETHERNET CONVERTER	NEW
	TRAFFIC CONTROL PEDESTAL (TCP) MAINTENANCE PORT								
216	(Ln#).TCPFVES	LANE TRAFFIC CONTROL PEDESTAL VES CAMERA CONNECTION	CAT5E COLOR STANDARD	RJ-45 (MALE)	RJ-45 (MALE)	CAT5E/6 DIRECT BURIAL	GIGABIT UTP	CAT5E BULK CABLE FROM THE LANE CONTROLLER CONNECTION PANEL VES 110 JACK TO THE LANE ISLAND TRAFFIC CONTROL PEDESTAL FRONT CAMER PORT.	NEW
217	(Ln#).TCPRVES	LANE TRAFFIC CONTROL PEDESTAL VES CAMERA CONNECTION	CAT5E COLOR STANDARD	RJ-45 (MALE)	RJ-45 (MALE)	CAT5E/6 DIRECT BURIAL	GIGABIT UTP	CAT5E BULK CABLE FROM THE LANE CONTROLLER CONNECTION PANEL VES 110 JACK TO THE LANE ISLAND TRAFFIC CONTROL PEDESTAL REAR CAMER PORT.	NEW
218	(Ln#).TCPM	LANE TRAFFIC CONTROL PEDESTAL MAINTENANCE NETWORK CONNECTION	CAT5E COLOR STANDARD	RJ-45 (MALE)	RJ-45 (MALE)	CAT5E/6 DIRECT BURIAL	GIGABIT UTP	CAT5E BULK CABLE FROM THE LANE CONTROLLER AND FIBER SWITCH TO THE LANE ISLAND TRAFFIC CONTROL PEDESTAL MAINTENANCE PORT.	NEW

NOTES:

1). ALL NETWORK CABLES ARE GIGABIT COMPLIANT, SUITABLE FOR OUTDOOR/WET ENVIRONMENT, OSP GRADE FOR DIRECT BURIAL

2). STRADDLE ANTENNAS/READERS ARE LOCATED BETWEEN LANES ABOVE THE STRIPE. IF STRADDLE ANTENNAS/READERS ARE OMITTED BY PLANS, WIRING MAY BE OMITTED

2). ALL AVI SYNC CABLES ARE THE SAME LENGTH

Date:3/18/2019

Filename: 426_Cash Lane Network Wiring Schedule.dgn

Scale: NO SCALE

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
Designed	ARG	02/19	Checked	RBM	02/19
Drawn	MHP	02/19	In Charge of	RAL	02/19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

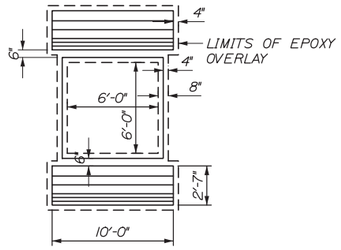
MTA PROJECT MANAGER: William Yates

INTERCHANGE 103
ORT CONVERSION

CASH LANE NETWORK WIRING SCHEDULE

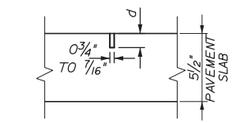
SHEET NUMBER: T-08

CONTRACT:2019.04



LOOP DETAIL AND EPOXY OVERLAY

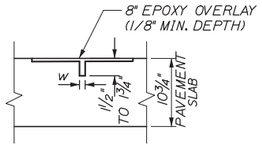
N.T.S.



d = 1 1/4" TO 1 1/2" FOR SINGLE LEAD CUT
2 1/2" FOR MULTIPLE LEAD CUT
3" AT PITCH POCKET ENTRY

LEAD-IN CUT

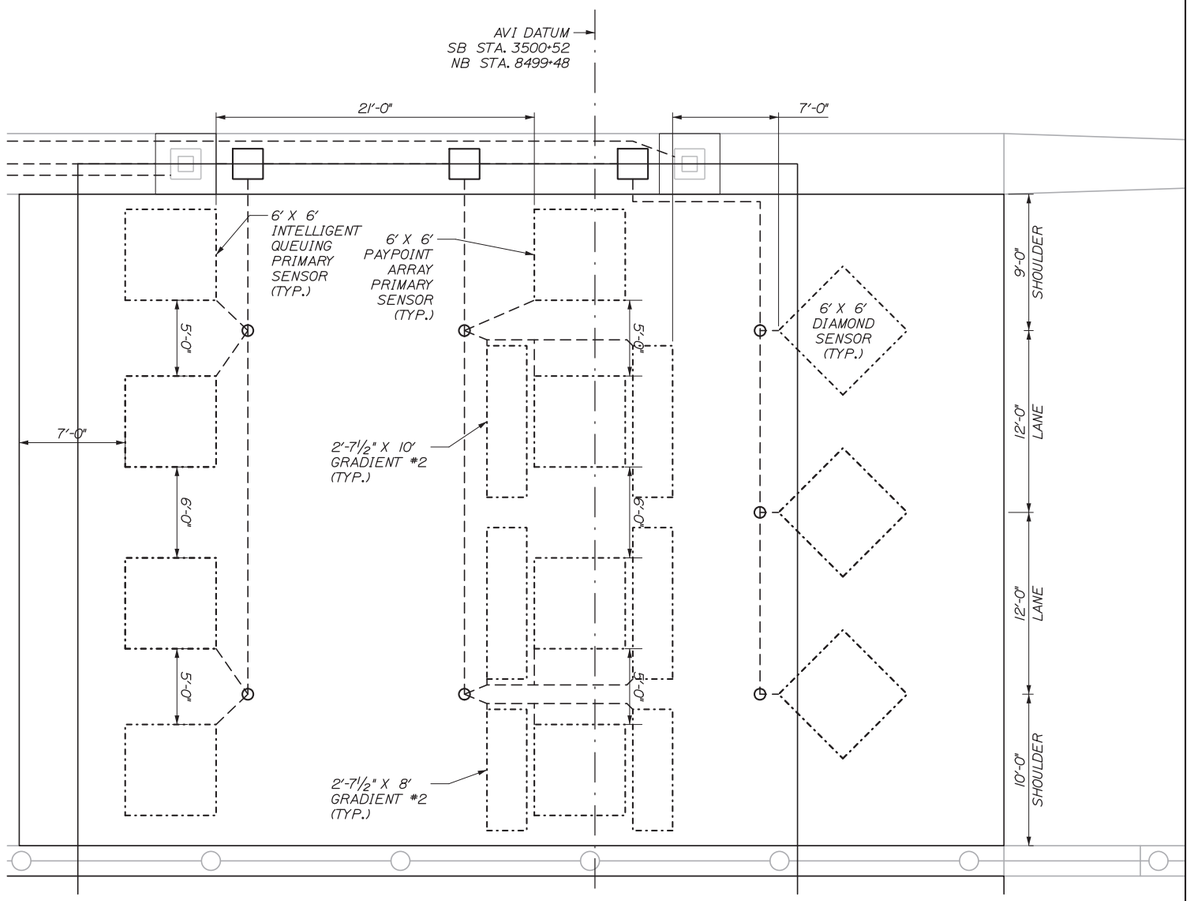
SCALE: 2" = 1'



SENSOR CUT

SCALE: 2" = 1'

w = 1/2" FOR GRADIENT ENDS
3/8" FOR ALL OTHER CUTS



ORT SLAB SENSOR LOOP LAYOUT

SCALE AS NOTED

NOTES:

1. REFER TO SPACE FRAME PLANS FOR MOUNTING ASSEMBLIES.
2. REFER TO ELECTRICAL PLANS FOR CONNECTIONS OF POWER AND COMMUNICATION LINES.
3. SYSTEM INTEGRATOR WILL PROVIDE VCARS UNITS, ENCLOSURES AND MOUNTING KITS. THE CONTRACTOR SHALL INSTALL AND CONNECT UNITS TO POWER AND COMMUNICATIONS LINES.
4. THE MTA WILL PROVIDE AVI ANTENNAS. CONTRACTOR WILL PROVIDE NECESSARY CONNECTION HARDWARE AND CONNECT POWER AND COMMUNICATION LINES.
5. SYSTEM INTEGRATOR WILL PROVIDE DVAS UNITS, ENCLOSURES AND MOUNTING HOOKS. THE CONTRACTOR SHALL CONNECT POWER AND COMMUNICATION LINES.
6. SYSTEM INTEGRATOR WILL PROVIDE IVIS SENSOR LOOPS. REFER TO SPECIAL PROVISION 655 FOR MORE INFORMATION.
7. BOTH REAR AND FRONT VCARS MOUNTING POSITIONS ARE FIXED. THE AVI ANTENNA ARRAY SHALL HAVE THE ABILITY TO MOVE 3' LONGITUDINAL TO TRAFFIC AND 1' VERTICALLY.
8. SYSTEM INTEGRATOR WILL PROVIDE OPUS SENSORS. ALL OPUS MOUNTING POSITIONS ARE FIXED LONGITUDINALLY TO TRAFFIC AND HAVE THE ABILITY TO MOVE 1" VERTICALLY.
9. FOR THE EPOXY OVERLAY, THE 1/8" DEPRESSION SHALL BE COMPLETED AFTER THE SAW CUTS FOR LOOPS. GRADIENTS WILL BE CUT AFTER THE EPOXY OVERLAY

CONCRETE CUTTING NOTES:

1. SYSTEM INTEGRATOR SHALL PLACE EPOXY INTO SAW CUT BEFORE INSTALLING SENSORS AND LEADS. SYSTEM INTEGRATOR SHALL PROVIDE EQUIPMENT, TEMPLATES AND EPOXY. SEE SPECIAL PROVISION SECTION 655 FOR MORE INFORMATION.

Scale: 5 0 5 10 Scale of Feet

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
Designed	ARG	02/19	Checked	RBM	02/19
Drawn	MHP	02/19	In Charge of	RAL	02/19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: William Yates

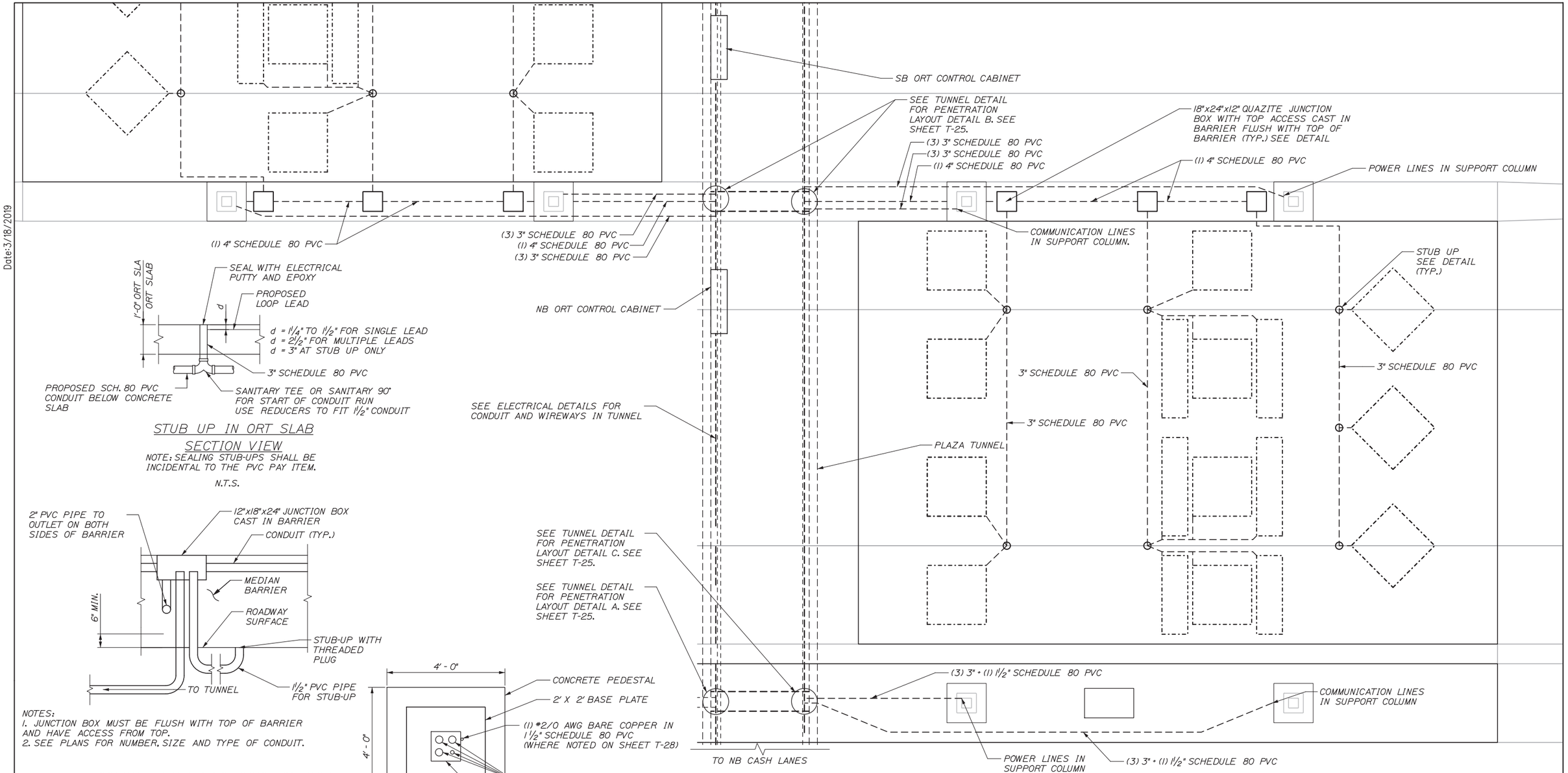
INTERCHANGE 103 ORT CONVERSION

ORT SENSOR LAYOUT

SHEET NUMBER: T-09

CONTRACT:2019.04

Filename: 427_ORT EquipmentLayout.dgn



STUB UP IN ORT SLAB
SECTION VIEW

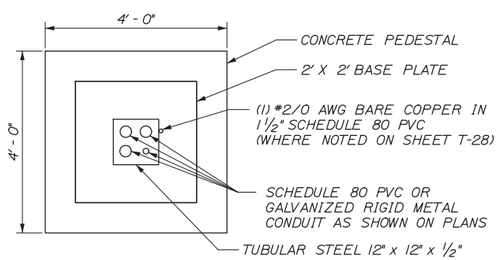
NOTE: SEALING STUB-UPS SHALL BE INCIDENTAL TO THE PVC PAY ITEM.

N.T.S.

NOTES:
1. JUNCTION BOX MUST BE FLUSH WITH TOP OF BARRIER AND HAVE ACCESS FROM TOP.
2. SEE PLANS FOR NUMBER, SIZE AND TYPE OF CONDUIT.

CONDUIT ENTERING JUNCTION BOX IN MEDIAN BARRIER

N.T.S.



NOTE: CONDUITS EXTEND 6" MAX. ABOVE SPACE FRAME PEDESTAL. WIRING CONTINUES THROUGH TUBE STEEL.

SPACEFRAME COLUMN PLAN VIEW

N.T.S.

NB PLAN, SB SAME

1" = 5'

NOTES:
1. CONTRACTOR SHALL CONFIRM LOCATIONS OF JOINTS AND STUB UPS PRIOR TO SETTING STUB UPS.
2. CONTRACTOR SHALL VERIFY ALL CONDUIT STUB UP LOCATIONS WITH SYSTEM INTEGRATOR PRIOR TO INSTALLATION.
3. SENSOR LOOP LEAD WIRES MUST BE BRIDGED AT ALL JOINTS.
4. CONDUITS BETWEEN PIERS TO BE IN CAST IN PLACE MEDIAN BARRIER OR ISLANDS.

Date:3/18/2019

Filename: 428_ORT Underground Electrical Plan.DGN

Scale: AS NOTED

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
Designed	ARG	02/19	Checked	RBM	02/19
Drawn	MHP	02/19	In Charge of	RAL	02/19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: William Yates

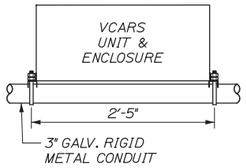
INTERCHANGE 103
ORT CONVERSION

ORT UNDERGROUND ELECTRICAL PLAN

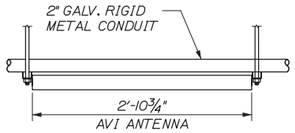
SHEET NUMBER: T-10

CONTRACT:2019.04

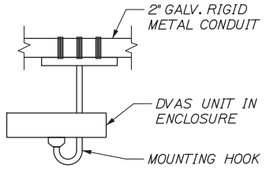
428 OF 503



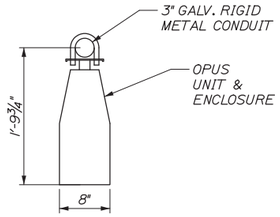
VCARS
ELEVATION
N.T.S



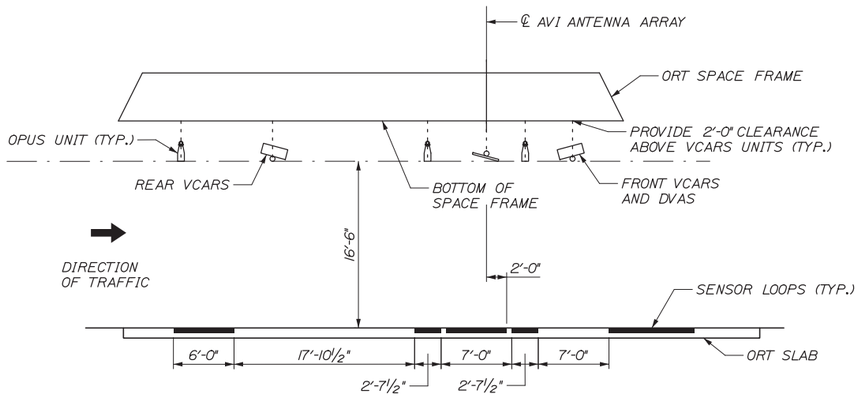
AVI ANTENNA
ELEVATION
N.T.S



DVAS
ELEVATION
N.T.S

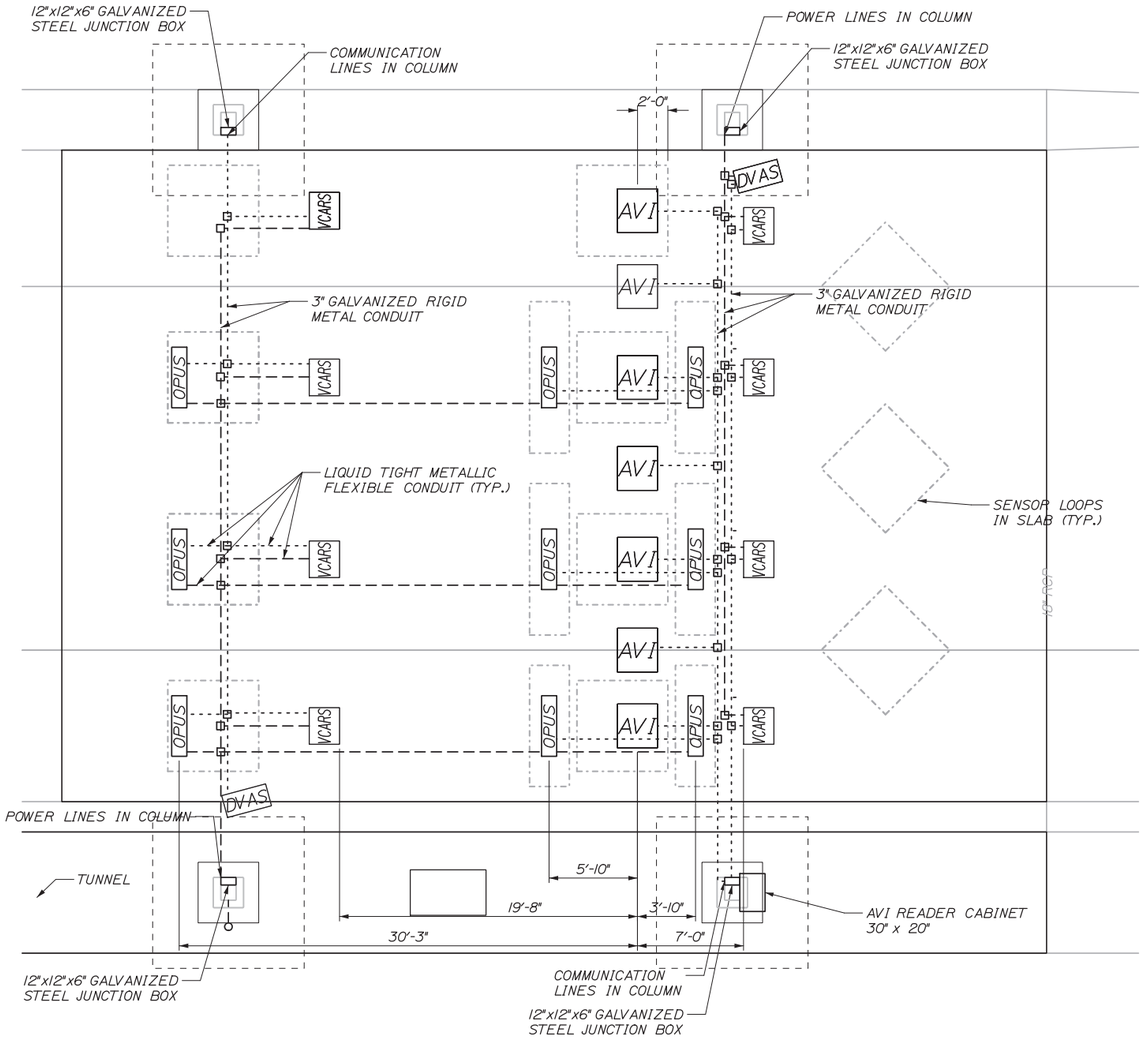


OPUS
ELEVATION
N.T.S



NOTE:
1. AVI MUST HAVE ABILITY TO ADJUST ± 1.5', FROM 16' TO 17'-6"

NB PROFILE VIEW
(MIRROR FOR SB)
N.T.S.



ORT OVERHEAD ELECTRICAL:
1" = 5'

ORT OVERHEAD ELECTRICAL NOTES:

1. SPACE FRAME NOT SHOWN FOR CLARITY. REFER TO STRUCTURAL PLANS FOR SPACE FRAME DETAILS.
2. SYSTEM INTEGRATOR SHALL MAKE CONNECTION FROM THE FLEXIBLE CONDUIT TO THE VCARS AND DVAS EQUIPMENT
3. LIQUID TIGHT METALLIC FLEXIBLE CONDUITS SHALL BE THE FOLLOWING SIZES:

- AVI COMMUNICATION	¾"	- DVAS POWER	½"
- VCARS POWER	½"	- DVAS COMMUNICATION	½"
- VCARS COMMUNICATION	½"	- OPUS COMM/POWER	½"

Date:3/18/2019

Filename: 429_ORT Overhead Electrical.DGN

Scale: AS NOTED

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
Designed	ARG	02/19	Checked	RBM	02/19
Drawn	MHP	02/19	In Charge of	RAL	02/19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: William Yates

INTERCHANGE 103
ORT CONVERSION

ORT OVERHEAD ELECTRICAL PLAN

SHEET NUMBER: T-11

CONTRACT:2019.04

Date:3/18/2019

NOTES

1. LIGHTING FIXTURES TO BE * XPGP-S-LED-S-LED-68-CW-UE-MSV BY LSI LIGHTING OR APPROVED EQUAL.

2. THE CONTRACTOR SHALL SUBMIT A PROPOSED METHOD OF ATTACHING ALL ANCILLARY COMPONENTS TO THE SPACE FRAME TO THE RESIDENT FOR APPROVAL. THE PROPOSED ATTACHMENT METHOD SHALL NOT REQUIRE DRILLING, WELDING OR OTHER ATTACHMENT METHODS THAT WILL DAMAGE THE SPACE FRAME OR ITS GALVANIZED COATING. ANY AREAS OF GALVANIZED COATING THAT ARE DAMAGED BY THE CONTRACTOR DURING INSTALLATION OF ANCILLARY COMPONENTS SHALL BE REPAIRED IN ACCORDANCE WITH ASTM A780.

3. FINAL MOUNTING LOCATIONS TO BE APPROVED BY RESIDENT.

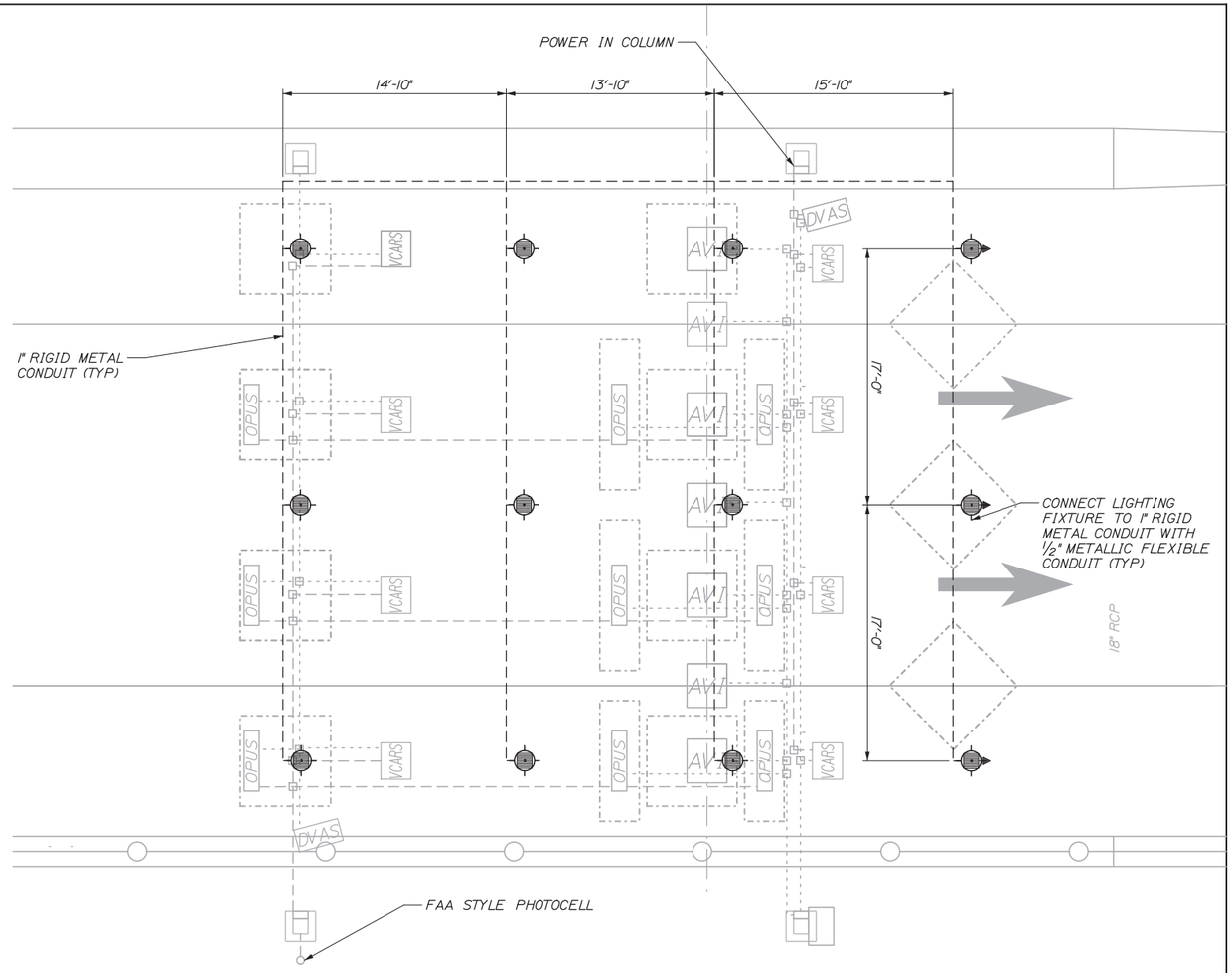
4. PHOTOCELL CONTROL SHALL BE PROVIDED FOR BOTH NB & SB ORT SPACE FRAME LIGHTING. PAYMENT WILL BE INCIDENTAL TO ITEM 655.90.

5. LIGHTS TO BE CONTROLLED BY RIPLEY 6390-FAA OR EQUIVALENT PHOTOEYE.

LEGEND

SPACE FRAME LIGHT FIXTURE

– – – (3) #12 AWG IN 1" GALVANIZED RIGID METAL CONDUIT



NOTE: SPACE FRAME NOT SHOWN FOR CLARITY

NB PLAN, SB SAME

SCALE AS NOTED

Filename: 430_Space Frame Lighting.DGN

Scale: 5 0 5 10 Scale of Feet

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
Designed	ARG	02/19	Checked	RBM	02/19
Drawn	MHP	02/19	In Charge of	RAL	02/19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: William Yates

INTERCHANGE 103
ORT CONVERSION

ORT SPACE FRAME LIGHTING

SHEET NUMBER: T-12

CONTRACT:2019.04

Date:3/18/2019

LEGEND

EQUIPMENT

WIRING

PLAZA LOCATION

NB SPACE FRAME

(7) AVI | (8) VCARS | (9) OPUS | (2) DVAS | SPACE FRAME LIGHTS

SB SPACE FRAME

SPACE FRAME LIGHTS | (2) DVAS | (9) OPUS | (8) VCARS | (7) AVI

CLEAN POWER (247-252, 270-275, 293-298)

COMM (154-160)

NB ORT LANES

OPUS POWER CABINET

IVIS SENSOR LOOPS

LOOP LEADS

BARRIER JUNCTION BOXES

NB AVI CABINET

AVI READER NB ORT

QUAD OUTLET BOX

SB AVI CABINET

AVI READER SB ORT

SB ORT LANES

IVIS SENSOR LOOPS

OPUS POWER CABINET

BARRIER JUNCTION BOXES

HOMERUN CABLES (103-120)

COMM (161 & 163)

I/2 CLEAN POWER (302-309)

CLEAN POWER (230-237, 253-260, 276-283)

COMM (121-144)

COMM (145-153)

COMM (164-171)

CLEAN POWER (224-229, 238-243, 261-266, 284-289)

DIRTY POWER (299-301)

SERVER ROOM IN UTILITY BUILDING

UPS

CLEAN POWER PANEL (PANEL CP)

L5-30R RECEPTACLE

CLEAN POWER (201)

SERVER RACK (WITH FIBER SWITCH)

PRIMARY SERVICE PANEL

TUNNEL

NB AVI READERS CASH LANES

AVI SYNC CABLE (175)

AVI SYNC CABLE (174)

I/2 DIRTY POWER

COMM (177)

COMM (178)

DIRTY POWER PANEL SERVING ORT NB/SB

TO CASH AVI READER

CASH COMM (219 & 220)

NB ORT LANE CONTROLLER (WITH THREE 20AMP CIRCUITS TO THREE QUAD OUTLET BOXES)

60 AMP CLEAN POWER PANEL (ORT LANES)

SB ORT LANE CONTROLLER (WITH THREE 20AMP CIRCUITS TO THREE QUAD OUTLET BOXES)

CLEAN POWER (207-215)

CLEAN POWER (244-246, 267-269, 290-292)

CLEAN POWER (202-206)

IVIS SYNC CABLE (172)

AVI SYNC CABLE (176)

4 #2/0 AWG WIRES

SB AVI READER CASH LANES

IVIS SYNC CABLE (173)

CASH COMM (221 & 222)

TO CASH AVI READER

ORT LAN NETWORK FIBER (102)

ORT LAN NETWORK FIBER (102)

CASH LANE LAN NETWORK FIBER (101)

CASH LANE LAN NETWORK FIBER (101)

CASH LANE LAN NETWORK FIBER (101)

CASH LANE LAN NETWORK FIBER (101)

LANE 1 LANE CONTROLLER — SYNC — LANE 2 LANE CONTROLLER — SYNC — LANE 3 LANE CONTROLLER

LANE 10 LANE CONTROLLER — SYNC — LANE 11 LANE CONTROLLER — SYNC — LANE 12 LANE CONTROLLER

Filename: 431_ORT Riser Diagram.dgn

Scale: NO SCALE

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
Designed	ARG	02/19	Checked	RBM	02/19
Drawn	MHP	02/19	In Charge of	RAL	02/19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: William Yates

INTERCHANGE 103 ORT CONVERSION

ORT RISER DIAGRAM

SHEET NUMBER: T-13

CONTRACT:2019.04

Wiring Shown Below is for one Cash Lane only. Duplicate for all Other Lanes

CASH LANE LAN Network Fiber (Install MM Fiber, 6 strands minimum, direct between each ORT and HOST Switch)

RISER DIAGRAM NUMBER	WIRE LABEL	DESCRIPTION	STRAND	COLOR	CORE	JACKET	FROM	TO	TERMINATION
101	(Lane #) (Sw#. /H(Sw#)	PRIMARY LAN NETWORK CONNECTION (Gigabit) (Multimode Fiber 6 Strands(TYP), 62.5/125 MICRONS INDOOR/OUTDOOR RISER RATED) See Notes.	6 Strand	BLUE ORANGE GREEN BROWN (SLATE) (WHITE)	N/A	Direct Burial Grade (see Note)	PLAZA NETWORK SERVER FIBER PATCH PANEL, SWITCH BLADE, OR FIBER LINE TERMINATION UNIT	CASH LANE (LANE #) SERVER CABINET/BACK PANEL FIBER LINE TERMINATION UNIT OR FIBER PATCH PANEL	TERMINATE ST EACH END (ALL STRANDS), SUPPLY DUPLEX 6M ST-ST PATCH CORD

Wiring Shown Below is for one direction of ORT travel only. Duplicate for second ORT direction of travel.

ORT SYSTEMS NETWORK AND DATA WIRING

ORT LAN Network Fiber (Install MM Fiber, 6 strands minimum, direct between each ORT and HOST Switch)

RISER DIAGRAM NUMBER	WIRE LABEL	DESCRIPTION	STRAND	COLOR	CORE	JACKET	FROM	TO	TERMINATION
102	(ORT#)(Sw#. /H(Sw#)	PRIMARY LAN NETWORK CONNECTION (Gigabit) (Multimode Fiber 6 Strands(TYP), 62.5/125 MICRONS INDOOR/OUTDOOR RISER RATED) See Notes.	6 Strand	BLUE ORANGE GREEN BROWN (SLATE) (WHITE)	N/A	Direct Burial Grade (see Note)	PLAZA NETWORK SERVER FIBER PATCH PANEL, SWITCH BLADE, OR FIBER LINE TERMINATION UNIT	LANE EQUIPMENT ROOM ORT SERVER CABINET/BACK PANEL FIBER LINE TERMINATION UNIT OR FIBER PATCH PANEL	TERMINATE ST EACH END (ALL STRANDS), SUPPLY DUPLEX 6M ST-ST PATCH CORD

Intelligent Vehicle Identification System (IVIS™) (Install Home Run Lead between Lane Sensor Junction Box and ORT Lane Server Rack Tip Out - Leave 10' service loop in Electrical Gutter)

RISER DIAGRAM NUMBER	WIRE LABEL	DESCRIPTION	AWG	COLOR	CORE	JACKET	FROM	TO	LANE SERVER TERMINAL #
103	ORT(ORT#).LSIQ	LEFT SHOULDER ORT INTELLIGENT QUEUING (IQ) PRIMARY SENSOR	IMSA 50-2 #16	BLACK	STRANDED	LDPE (TYP)	SHOULDER IQ PRIMARY SENSOR JUNCTION BOX	ORT CABINET - IVIS SENSOR LEADS ARE SPLICED TO A HOME RUN CABLE (IMSA 50-2, 16AWG) AT THE JUNCTION BOX. THE HOME RUN CABLE IS TERMINATED BY UTS AT THE ORT SERVER FIELD WIRING RACK. LEAVE 10' SLACK LOOP IN ELECTRICAL GUTTER.	Integrator to terminate
104	ORT(ORT#).L1PP	LEFT SHOULDER ORT PAYPOINT ARRAY PRIMARY SENSOR	IMSA 50-2 #16	BLACK	STRANDED	LDPE (TYP)	SHOULDER PAYPOINT ARRAY PRIMARY SENSOR JUNCTION BOX	ORT CABINET - IVIS SENSOR LEADS ARE SPLICED TO A HOME RUN CABLE (IMSA 50-2, 16AWG) AT THE JUNCTION BOX. THE HOME RUN CABLE IS TERMINATED BY UTS AT THE ORT SERVER FIELD WIRING RACK. LEAVE 10' SLACK LOOP IN ELECTRICAL GUTTER.	Integrator to terminate
105	ORT(ORT#).L1IQ	TRAVEL LANE 1 ORT INTELLIGENT QUEUING (IQ) PRIMARY SENSOR	IMSA 50-2 #16	BLACK	STRANDED	LDPE (TYP)	SHOULDER IQ PRIMARY SENSOR JUNCTION BOX	ORT CABINET - IVIS SENSOR LEADS ARE SPLICED TO A HOME RUN CABLE (IMSA 50-2, 16AWG) AT THE JUNCTION BOX. THE HOME RUN CABLE IS TERMINATED BY UTS AT THE ORT SERVER FIELD WIRING RACK. LEAVE 10' SLACK LOOP IN ELECTRICAL GUTTER.	Integrator to terminate
106	ORT(ORT#).L1G1	TRAVEL LANE 1 ORT PAYPOINT ARRAY GRADIENT SENSOR #1	IMSA 50-2 #16	BLACK	STRANDED	LDPE (TYP)	SHOULDER PAYPOINT ARRAY GRADIENT SENSOR #1 JUNCTION BOX	ORT CABINET - IVIS SENSOR LEADS ARE SPLICED TO A HOME RUN CABLE (IMSA 50-2, 16AWG) AT THE JUNCTION BOX. THE HOME RUN CABLE IS TERMINATED BY UTS AT THE ORT SERVER FIELD WIRING RACK. LEAVE 10' SLACK LOOP IN ELECTRICAL GUTTER.	Integrator to terminate
107	ORT(ORT#).L1PP	TRAVEL LANE 1 ORT PAYPOINT ARRAY PRIMARY SENSOR					SHOULDER PAYPOINT ARRAY PRIMARY SENSOR JUNCTION BOX		
108	ORT(ORT#).L1G2	TRAVEL LANE 1 ORT PAYPOINT ARRAY GRADIENT SENSOR #2					SHOULDER PAYPOINT ARRAY GRADIENT SENSOR #2 JUNCTION BOX		
109	ORT(ORT#).L1IQ	TRAVEL LANE 2 ORT INTELLIGENT QUEUING (IQ) PRIMARY SENSOR	IMSA 50-2 #16	BLACK	STRANDED	LDPE (TYP)	SHOULDER IQ PRIMARY SENSOR JUNCTION BOX	ORT CABINET - IVIS SENSOR LEADS ARE SPLICED TO A HOME RUN CABLE (IMSA 50-2, 16AWG) AT THE JUNCTION BOX. THE HOME RUN CABLE IS TERMINATED BY UTS AT THE ORT SERVER FIELD WIRING RACK. LEAVE 10' SLACK LOOP IN ELECTRICAL GUTTER.	Integrator to terminate
110	ORT(ORT#).L1G1	TRAVEL LANE 2 ORT PAYPOINT ARRAY GRADIENT SENSOR #1	IMSA 50-2 #16	BLACK	STRANDED	LDPE (TYP)	SHOULDER PAYPOINT ARRAY GRADIENT SENSOR #1 JUNCTION BOX	ORT CABINET - IVIS SENSOR LEADS ARE SPLICED TO A HOME RUN CABLE (IMSA 50-2, 16AWG) AT THE JUNCTION BOX. THE HOME RUN CABLE IS TERMINATED BY UTS AT THE ORT SERVER FIELD WIRING RACK. LEAVE 10' SLACK LOOP IN ELECTRICAL GUTTER.	Integrator to terminate
111	ORT(ORT#).L1PP	TRAVEL LANE 2 ORT PAYPOINT ARRAY PRIMARY SENSOR					SHOULDER PAYPOINT ARRAY PRIMARY SENSOR JUNCTION BOX		
112	ORT(ORT#).L1G2	TRAVEL LANE 2 ORT PAYPOINT ARRAY GRADIENT SENSOR #2					SHOULDER PAYPOINT ARRAY GRADIENT SENSOR #2 JUNCTION BOX		

FOR NOTES, SEE DATA WIRING SCHEDULE 5.

Date:3/18/2019

Filename: 432_ORT Data Wiring Schedule 1.dgn

Scale: NO SCALE

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
Designed	ARG	02/19	Checked	RBM	02/19
Drawn	MHP	02/19	In Charge of	RAL	02/19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: William Yates

INTERCHANGE 103
ORT CONVERSION

ORT DATA WIRING SCHEDULE 1

SHEET NUMBER: T-14

CONTRACT:2019.04

Date:3/18/2019

Wiring Shown Below is for one direction of ORT travel only. Duplicate for second ORT direction of travel.

Intelligent Vehicle Identification System Continued...(IVIS™) (Install Home Run Lead between Lane Sensor Junction Box and ORT Lane Server Rack Tip Out - Leave 10' service loop in Electrical Gutter)

RISER DIAGRAM NUMBER	WIRE LABEL	DESCRIPTION	AWG	COLOR	CORE	JACKET	FROM	TO	LANE SERVER TERMINAL #
113	ORT(ORT#).RSIQ	RIGHT SHOULDER ORT INTELLIGENT QUEUING (IQ) PRIMARY SENSOR	IMSA 50-2 #16	BLACK	STRANDED	LDPE (TYP)	SHOULDER IQ PRIMARY SENSOR JUNCTION BOX	ORT CABINET - IVIS SENSOR LEADS ARE SPLICED TO A HOME RUN CABLE (IMSA 50-2, 16AWG) AT THE JUNCTION BOX. THE HOME RUN CABLE IS TERMINATED BY UTS AT THE ORT SERVER FIELD WIRING RACK. LEAVE 10' SLACK LOOP IN ELECTRICAL GUTTER.	Integrator to terminate
114	ORT(ORT#).RSG1	RIGHT SHOULDER ORT PAYPOINT ARRAY GRADIENT SENSOR #1	IMSA 50-2 #16	BLACK	STRANDED	LDPE (TYP)	SHOULDER PAYPOINT ARRAY GRADIENT SENSOR #1 JUNCTION BOX	ORT CABINET - IVIS SENSOR LEADS ARE SPLICED TO A HOME RUN CABLE (IMSA 50-2, 16AWG) AT THE JUNCTION BOX. THE HOME RUN CABLE IS TERMINATED BY UTS AT THE ORT SERVER FIELD WIRING RACK. LEAVE 10' SLACK LOOP IN ELECTRICAL GUTTER.	Integrator to terminate
115	ORT(ORT#).RSPP	RIGHT SHOULDER ORT PAYPOINT ARRAY PRIMARY SENSOR					SHOULDER PAYPOINT ARRAY PRIMARY SENSOR JUNCTION BOX		
116	ORT(ORT#).RSG2	RIGHT SHOULDER ORT PAYPOINT ARRAY GRADIENT SENSOR #2					SHOULDER PAYPOINT ARRAY GRADIENT SENSOR #2 JUNCTION BOX		
117	ORT(ORT#).MS/1_D1	MEDIAN SHOULDER/ TRAVEL LANE 1 ORT DIAMOND SENSOR	IMSA 50-2 #16	BLACK	STRANDED	LDPE (TYP)	SHOULDER DIAMOND SENSOR JUNCTION BOX	ORT CABINET - IVIS SENSOR LEADS ARE SPLICED TO A HOME RUN CABLE (IMSA 50-2, 16AWG) AT THE JUNCTION BOX. THE HOME RUN CABLE IS TERMINATED BY UTS AT THE ORT SERVER FIELD WIRING RACK. LEAVE 10' SLACK LOOP IN ELECTRICAL GUTTER.	Integrator to terminate
118	ORT(ORT#).1/RS_D2	TRAVEL LANE 1/TRAVEL LANE 2 ORT DIAMOND SENSOR	IMSA 50-2 #16	BLACK	STRANDED	LDPE (TYP)	SHOULDER DIAMOND SENSOR JUNCTION BOX	ORT CABINET - IVIS SENSOR LEADS ARE SPLICED TO A HOME RUN CABLE (IMSA 50-2, 16AWG) AT THE JUNCTION BOX. THE HOME RUN CABLE IS TERMINATED BY UTS AT THE ORT SERVER FIELD WIRING RACK. LEAVE 10' SLACK LOOP IN ELECTRICAL GUTTER.	Integrator to terminate
119	ORT(ORT#).1/RS_D3	TRAVEL LANE 2/LEFT SHOULDER ORT DIAMOND SENSOR	IMSA 50-2 #16	BLACK	STRANDED	LDPE (TYP)	SHOULDER DIAMOND SENSOR JUNCTION BOX	ORT CABINET - IVIS SENSOR LEADS ARE SPLICED TO A HOME RUN CABLE (IMSA 50-2, 16AWG) AT THE JUNCTION BOX. THE HOME RUN CABLE IS TERMINATED BY UTS AT THE ORT SERVER FIELD WIRING RACK. LEAVE 10' SLACK LOOP IN ELECTRICAL GUTTER.	Integrator to terminate
120	ORT(ORT#).OS_D6	RIGHT SHOULDER OUTSIDE HALF DIAMOND	IMSA 50-2 #16	BLACK	STRANDED	LDPE (TYP)	SHOULDER DIAMOND SENSOR JUNCTION BOX	ORT CABINET - HALF DIAMOND SENSOR LEADS ARE SPLICED TO A HOME RUN CABLE (IMSA 50-2, 16AWG) AT THE JUNCTION BOX. THE HOME RUN CABLE IS TERMINATED BY UTS AT THE ORT SERVER FIELD WIRING RACK. LEAVE 10' SLACK LOOP IN ELECTRICAL GUTTER.	Integrator to terminate

Wiring Shown Below is for one direction of ORT travel only. Duplicate for second ORT direction of travel.

ORT SYSTEMS NETWORK AND DATA WIRING (CONTINUED)

Video Capture and Recognition System (VCARS™)

RISER DIAGRAM NUMBER	WIRE LABEL	DESCRIPTION	WIRE	TO	SIGNAL TYPE	ROUTING INSTRUCTIONS	TERMINATION
121	(ORT#)MSH.FVA	MEDIAN SHOULDER VCARS™ FRONT LICENSE PLATE CAMERA A - GIGABIT DATA	4pr/24AWG CAT-5e Burial Grade	RJ45 Both Ends, From VCARS™ Connector Panel Blue 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET	In Gantry, route the 3 cables before connector attachment to VCARS™ Junction Box. Extend using flexible weathertight conduit to VCARS™ access panel cover. Punch and attach weathertight conduit. Attach end connector (RJ45) each end and test to Gigabit specification.	Termination by Integrator
122	(ORT#)MSH.FVST	MEDIAN SHOULDER VCARS™ FRONT UNIT CONTROL NETWORK AND TRIGGER		RJ45 Both Ends, From VCARS™ Connector Panel Yellow 110 Jack to Designated Switch Port 110 Jack	10/100 ETHERNET 24V DC SWITCHED		Termination by Integrator
123	(ORT#)MSH.FVB	MEDIAN SHOULDER VCARS™ FRONT LICENSE PLATE CAMERA B - GIGABIT DATA		RJ45 Both Ends, From VCARS™ Connector Panel Red 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET		Termination by Integrator
124	(ORT#)MSH.RVA	MEDIAN SHOULDER VCARS™ REAR LICENSE PLATE CAMERA A - GIGABIT DATA	4pr/24AWG CAT-5e Burial Grade	RJ45 Both Ends, From VCARS™ Connector Panel Blue 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET	In Gantry, route the 3 cables before connector attachment to VCARS™ Junction Box. Extend using flexible weathertight conduit to VCARS™ access panel cover. Punch and attach weathertight conduit. Attach end connector (RJ45) each end and test to Gigabit specification.	Termination by Integrator
125	(ORT#)MSH.RVST	MEDIAN SHOULDER VCARS™ REAR UNIT CONTROL NETWORK AND TRIGGER		RJ45 Both Ends, From VCARS™ Connector Panel Yellow 110 Jack to Designated Switch Port 110 Jack	10/100 ETHERNET 24V DC SWITCHED		Termination by Integrator
126	(ORT#)MSH.RVB	MEDIAN SHOULDER VCARS™ REAR LICENSE PLATE CAMERA B - GIGABIT DATA		RJ45 Both Ends, From VCARS™ Connector Panel Red 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET		Termination by Integrator

FOR NOTES, SEE DATA WIRING SCHEDULE 5.

100% SUBMISSION
FEBRUARY, 2019

Filename: 433_ORT Data Wiring Schedule 2.dgn

Scale: NO SCALE

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
Designed	ARG	02/19	Checked	RBM	02/19
Drawn	MHP	02/19	In Charge of	RAL	02/19

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MAINE TURNPIKE

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MTA PROJECT MANAGER: William Yates

INTERCHANGE 103
ORT CONVERSION

ORT DATA WIRING SCHEDULE 2

SHEET NUMBER: T-15

CONTRACT:2019.04

Wiring Shown Below is for one direction of ORT travel only. Duplicate for second ORT direction of travel.

ORT SYSTEMS NETWORK AND DATA WIRING (CONTINUED)

Video Capture and Recognition System (VCARS™)

RISER DIAGRAM NUMBER	WIRE LABEL	DESCRIPTION	WIRE	TO	SIGNAL TYPE	ROUTING INSTRUCTIONS	TERMINATION
127	(ORT#)L1.FVA	LANE 1 VCARS™ FRONT LICENSE PLATE CAMERA A - GIGABIT DATA	4pr/24AWG CAT-5e Burial Grade	RJ45 Both Ends, From VCARS™ Connector Panel Blue 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET	In Gantry, route the 3 cables before connector attachment to VCARS™ Junction Box. Extend using flexible weathertight conduit to VCARS™ access panel cover. Punch and attach weathertight conduit. Attach end connector (RJ45) each end and test to Gigabit specification.	Termination by Integrator
128	(ORT#)L1.FVST	LANE 1 VCARS™ FRONT UNIT CONTROL NETWORK AND TRIGGER		RJ45 Both Ends, From VCARS™ Connector Panel Yellow 110 Jack to Designated Switch Port 110 Jack	10/100 ETHERNET 24V DC SWITCHED		Termination by Integrator
129	(ORT#)L1.FVB	LANE 1 VCARS™ FRONT LICENSE PLATE CAMERA B - GIGABIT DATA		RJ45 Both Ends, From VCARS™ Connector Panel Red 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET		Termination by Integrator
130	(ORT#)L1.RVA	LANE 1 VCARS™ REAR LICENSE PLATE CAMERA A - GIGABIT DATA	4pr/24AWG CAT-5e Burial Grade	RJ45 Both Ends, From VCARS™ Connector Panel Blue 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET	In Gantry, route the 3 cables before connector attachment to VCARS™ Junction Box. Extend using flexible weathertight conduit to VCARS™ access panel cover. Punch and attach weathertight conduit. Attach end connector (RJ45) each end and test to Gigabit specification.	Termination by Integrator
131	(ORT#)L1.RVST	LANE 1 VCARS™ REAR UNIT CONTROL NETWORK AND TRIGGER		RJ45 Both Ends, From VCARS™ Connector Panel Yellow 110 Jack to Designated Switch Port 110 Jack	10/100 ETHERNET 24V DC SWITCHED		Termination by Integrator
132	(ORT#)L1.RVB	LANE 1 VCARS™ REAR LICENSE PLATE CAMERA B - GIGABIT DATA		RJ45 Both Ends, From VCARS™ Connector Panel Red 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET		Termination by Integrator
133	(ORT#)L1.FVA	LANE 2 VCARS™ FRONT LICENSE PLATE CAMERA A - GIGABIT DATA	4pr/24AWG CAT-5e Burial Grade	RJ45 Both Ends, From VCARS™ Connector Panel Blue 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET	In Gantry, route the 3 cables before connector attachment to VCARS™ Junction Box. Extend using flexible weathertight conduit to VCARS™ access panel cover. Punch and attach weathertight conduit. Attach end connector (RJ45) each end and test to Gigabit specification.	Termination by Integrator
134	(ORT#)L1.FVST	LANE 2 VCARS™ FRONT UNIT CONTROL NETWORK AND TRIGGER		RJ45 Both Ends, From VCARS™ Connector Panel Yellow 110 Jack to Designated Switch Port 110 Jack	10/100 ETHERNET 24V DC SWITCHED		Termination by Integrator
135	(ORT#)L1.FVB	LANE 2 VCARS™ FRONT LICENSE PLATE CAMERA B - GIGABIT DATA		RJ45 Both Ends, From VCARS™ Connector Panel Red 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET		Termination by Integrator
136	(ORT#)L1.RVA	LANE 2 VCARS™ REAR LICENSE PLATE CAMERA A - GIGABIT DATA	4pr/24AWG CAT-5e Burial Grade	RJ45 Both Ends, From VCARS™ Connector Panel Blue 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET	In Gantry, route the 3 cables before connector attachment to VCARS™ Junction Box. Extend using flexible weathertight conduit to VCARS™ access panel cover. Punch and attach weathertight conduit. Attach end connector (RJ45) each end and test to Gigabit specification.	Termination by Integrator
137	(ORT#)L1.RVST	LANE 2 VCARS™ REAR UNIT CONTROL NETWORK AND TRIGGER		RJ45 Both Ends, From VCARS™ Connector Panel Yellow 110 Jack to Designated Switch Port 110 Jack	10/100 ETHERNET 24V DC SWITCHED		Termination by Integrator
138	(ORT#)L1.RVB	LANE 2 VCARS™ REAR LICENSE PLATE CAMERA B - GIGABIT DATA		RJ45 Both Ends, From VCARS™ Connector Panel Red 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET		Termination by Integrator
139	(ORT#)L1.FVA	OUTSIDE SHOULDER VCARS™ FRONT LICENSE PLATE CAMERA A - GIGABIT DATA	4pr/24AWG CAT-5e Burial Grade	RJ45 Both Ends, From VCARS™ Connector Panel Blue 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET	In Gantry, route the 3 cables before connector attachment to VCARS™ Junction Box. Extend using flexible weathertight conduit to VCARS™ access panel cover. Punch and attach weathertight conduit. Attach end connector (RJ45) each end and test to Gigabit specification.	Termination by Integrator
140	(ORT#)OSH.FVST	OUTSIDE SHOULDER VCARS™ FRONT UNIT CONTROL NETWORK AND TRIGGER		RJ45 Both Ends, From VCARS™ Connector Panel Yellow 110 Jack to Designated Switch Port 110 Jack	10/100 ETHERNET 24V DC SWITCHED		Termination by Integrator
141	(ORT#)OSH.FVB	OUTSIDE SHOULDER VCARS™ FRONT LICENSE PLATE CAMERA B - GIGABIT DATA		RJ45 Both Ends, From VCARS™ Connector Panel Red 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET		Termination by Integrator
142	(ORT#)OSH.RVA	OUTSIDE SHOULDER VCARS™ REAR LICENSE PLATE CAMERA A - GIGABIT DATA	4pr/24AWG CAT-5e Burial Grade	RJ45 Both Ends, From VCARS™ Connector Panel Blue 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET	In Gantry, route the 3 cables before connector attachment to VCARS™ Junction Box. Extend using flexible weathertight conduit to VCARS™ access panel cover. Punch and attach weathertight conduit. Attach end connector (RJ45) each end and test to Gigabit specification.	Termination by Integrator
143	(ORT#)OSH.RVST	OUTSIDE SHOULDER VCARS™ REAR UNIT CONTROL NETWORK AND TRIGGER		RJ45 Both Ends, From VCARS™ Connector Panel Yellow 110 Jack to Designated Switch Port 110 Jack	10/100 ETHERNET 24V DC SWITCHED		Termination by Integrator
144	(ORT#)OSH.RVB	OUTSIDE SHOULDER VCARS™ REAR LICENSE PLATE CAMERA B - GIGABIT DATA		RJ45 Both Ends, From VCARS™ Connector Panel Red 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET		Termination by Integrator

FOR NOTES, SEE DATA WIRING SCHEDULE 5.

Date:3/18/2019

Filename: 434_ORT Data Wiring Schedule 3.dgn

Scale: NO SCALE

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
Designed	ARG	02/19	Checked	RBM	02/19
Drawn	MHP	02/19	In Charge of	RAL	02/19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: William Yates

INTERCHANGE 103
ORT CONVERSION

ORT DATA WIRING SCHEDULE 3

SHEET NUMBER: T-16

CONTRACT:2019.04

Wiring Shown Below is for one direction of ORT travel only. Duplicate for second ORT direction of travel.

LASER SCANNER (OPUS) DATA WIRING SCHEDULE

RISER DIAGRAM NUMBER	WIRE LABEL	DESCRIPTION	WIRE	TO	SIGNAL TYPE	ROUTING INSTRUCTIONS	TERMINATION
145	(ORT#)	LANE 1 OPUS P3 SCANNER 10/100	4pr/24AWG CAT-5e Burial Grade	RJ45 Both Ends, From OPUS Connector Panel Blue 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET	In Gantry, route the 3 cables before connector attachment to OPUS Junction Box. Extend using flexible weathertight conduit to OPUS access panel cover. Punch and attach weathertight conduit. Attach end connector (RJ45) each end and test to Gigabit specification.	Termination by Integrator
146	(ORT#)	LANE 1 OPUS P4 LEAD SCANNER 10/100		RJ45 Both Ends, From OPUS Connector Panel Yellow 110 Jack to Designated Switch Port 110 Jack	10/100 ETHERNET 24V DC SWITCHED		Termination by Integrator
147	(ORT#)	LANE 1 OPUS P4 TRAIL SCANNER 10/100		RJ45 Both Ends, From OPUS Connector Panel Red 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET		Termination by Integrator
148	(ORT#)	LANE 2 OPUS P3 SCANNER 10/100	4pr/24AWG CAT 5e Burial Grade	RJ45 Both Ends, From OPUS Connector Panel Blue 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET	In Gantry, route the 3 cables before connector attachment to OPUS Junction Box. Extend using flexible weathertight conduit to OPUS access panel cover. Punch and attach weathertight conduit. Attach end connector (RJ45) each end and test to Gigabit specification.	Termination by Integrator
149	(ORT#)	LANE 2 OPUS P4 LEAD SCANNER 10/100		RJ45 Both Ends, From OPUS Connector Panel Yellow 110 Jack to Designated Switch Port 110 Jack	10/100 ETHERNET 24V DC SWITCHED		Termination by Integrator
150	(ORT#)	LANE 2 OPUS P4 TRAIL SCANNER 10/100		RJ45 Both Ends, From OPUS Connector Panel Red 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET		Termination by Integrator
151	(ORT#)	OUTER SHOULDER OPUS P3 SCANNER 10/100	4pr/24AWG CAT-5e Burial Grade	RJ45 Both Ends, From OPUS Connector Panel Blue 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET	In Gantry, route the 3 cables before connector attachment to OPUS Junction Box. Extend using flexible weathertight conduit to OPUS access panel cover. Punch and attach weathertight conduit. Attach end connector (RJ45) each end and test to Gigabit specification.	Termination by Integrator
152	(ORT#)	OUTER SHOULDER OPUS P4 LEAD SCANNER 10/100		RJ45 Both Ends, From OPUS Connector Panel Yellow 110 Jack to Designated Switch Port 110 Jack	10/100 ETHERNET 24V DC SWITCHED		Termination by Integrator
153	(ORT#)	OUTER SHOULDER OPUS P4 TRAIL SCANNER 10/100		RJ45 Both Ends, From OPUS Connector Panel Red 110 Jack to TipOut Designated 110 Jack	GIGABIT ETHERNET		Termination by Integrator

ORT SYSTEMS NETWORK AND DATA WIRING (CONTINUED)

Automatic Vehicle Identification System (AVI) (Specifications are for Mark IV Reader)

RISER DIAGRAM NUMBER	WIRE LABEL	DESCRIPTION	AWG	COLOR	CORE	JACKET	FROM	TO	TERMINATION
154	ORT(ORT#).AVI.LSH	LEFT SHOULDER AVI ANTENNA RF CABLE	LMR 400	BLACK	SOLID	PVC	ORT AVI READER	LANE ANTENNA ON THE SPACE FRAME	"N" CONNECTOR (MALE)
155	ORT(ORT#).AVI.LSH/L	LEFT SHOULDER/LANE STRADDLE AVI ANTENNA RF CABLE							
156	ORT(ORT#).AVI.LN(#)	TRAVEL LANE 1 AVI ANTENNA RF CABLE							
157	ORT(ORT#).AVI.LN(#)/LN(#)	LANE 1/LANE 2 STRADDLE AVI ANTENNA RF CABLE							
158	ORT(ORT#).AVI.LN(#)	TRAVEL LANE 2 AVI ANTENNA RF CABLE							
159	ORT(ORT#).AVI.LN(#)/LN(#)	LANE 2/RIGHT SHOULDER STRADDLE AVI ANTENNA RF CABLE							
160	ORT(ORT#).AVI.RSH	RIGHT SHOULDER AVI ANTENNA RF CABLE							
161	ORT(ORT#).AVI DATA P	AVI SERIAL DATA PRIMARY	4pr/24	N/A	STRANDED	PVC	ORT AVI READER	CORRESPONDING ORT CABINET SERIAL TO ETHERNET AVI SWITCH PORT	Integrator to terminate
162	ORT(ORT#).AVI DATA S	AVI SERIAL DATA SECONDARY	4pr/24	N/A	STRANDED	PVC	ORT AVI READER	OPPOSITE DIRECTION ORT CABINET SERIAL TO ETHERNET AVI SWITCH PORT	Integrator to terminate
163	ORT(ORT#).AVI DATA M	AVI SERIAL DATA MAINTENANCE	4pr/24	N/A	STRANDED	PVC	ORT AVI READER	CORRESPONDING ORT CABINET SERIAL TO ETHERNET AVI SWITCH PORT	Integrator to terminate

FOR NOTES, SEE DATA WIRING SCHEDULE 5.

Date:3/18/2019

Filename: 435_ORT Data Wiring Schedule 4.dgn

Scale: NO SCALE

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
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THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: William Yates

INTERCHANGE 103
ORT CONVERSION

ORT DATA WIRING SCHEDULE 4

SHEET NUMBER: T-17

CONTRACT:2019.04

Wiring Shown Below is for one direction of ORT travel only. Duplicate for second ORT direction of travel.

Digital Video Audit System (DVAS)

RISER DIAGRAM NUMBER	WIRE LABEL	DESCRIPTION	AWG	COLOR	CORE	JACKET	FROM	TO	TERMINATION
164	ORT#.PPDVAS.NET	LEFT SHOULDER ORT PAYPOINT DVAS DATA	4pr/24	BLACK	CAT5e STRANDED	Direct Burial Grade (see Note)	DVAS Camera Housing via Gantry Junction Box (Allow sufficient wire length for flexible conduit extension to camera location)	ORT NB/SB CABINET	RJ-45 both ends
165	ORT#.PPDVAS.NET	LEFT SHOULDER ORT PAYPOINT DVAS DATA	4pr/24	BLACK	CAT5e STRANDED	Direct Burial Grade (see Note)	DVAS Camera Housing via Gantry Junction Box (Allow sufficient wire length for flexible conduit extension to camera location)	ORT NB/SB CABINET	RJ-45 both ends
166	ORT#.PPDVAS.NET	LANE 1 ORT PAYPOINT DVAS DATA	4pr/24	BLACK	CAT5e STRANDED	Direct Burial Grade (see Note)	DVAS Camera Housing via Gantry Junction Box (Allow sufficient wire length for flexible conduit extension to camera location)	ORT NB/SB CABINET	RJ-45 both ends
167	ORT#.PPDVAS.NET	LANE 1 ORT PAYPOINT DVAS DATA	4pr/24	BLACK	CAT5e STRANDED	Direct Burial Grade (see Note)	DVAS Camera Housing via Gantry Junction Box (Allow sufficient wire length for flexible conduit extension to camera location)	ORT NB/SB CABINET	RJ-45 both ends
168	ORT#.PPDVAS.NET	LANE 2 ORT PAYPOINT DVAS DATA	4pr/24	BLACK	CAT5e STRANDED	Direct Burial Grade (see Note)	DVAS Camera Housing via Gantry Junction Box (Allow sufficient wire length for flexible conduit extension to camera location)	ORT NB/SB CABINET	RJ-45 both ends
169	ORT#.PPDVAS.NET	LANE 2 ORT PAYPOINT DVAS DATA	4pr/24	BLACK	CAT5e STRANDED	Direct Burial Grade (see Note)	DVAS Camera Housing via Gantry Junction Box (Allow sufficient wire length for flexible conduit extension to camera location)	ORT NB/SB CABINET	RJ-45 both ends
170	ORT#.PPDVAS.NET	RIGHT SHOULDER ORT PAYPOINT DVAS DATA	4pr/24	BLACK	CAT5e STRANDED	Direct Burial Grade (see Note)	DVAS Camera Housing via Gantry Junction Box (Allow sufficient wire length for flexible conduit extension to camera location)	ORT NB/SB CABINET	RJ-45 both ends
171	ORT#.PPDVAS.NET	RIGHT SHOULDER ORT PAYPOINT DVAS DATA	4pr/24	BLACK	CAT5e STRANDED	Direct Burial Grade (see Note)	DVAS Camera Housing via Gantry Junction Box (Allow sufficient wire length for flexible conduit extension to camera location)	ORT NB/SB CABINET	RJ-45 both ends

System Synchronization Cables (Only one of each required per system. Do not duplicate for second ORT zone)

RISER DIAGRAM NUMBER	WIRE LABEL	DESCRIPTION	AWG	COLOR	CORE	JACKET	FROM	TO	TERMINATION
172	ORTNB/ORTSB SYNC	IVIS SYNCHRONIZATION CABLE	4pr/24 CAT5e	BLACK	STRANDED	Direct Burial Grade (see Note)	ORT NB CABINET (LEAVE 10' SLACK LOOP in CABINET)	ORT SB CABINET (LEAVE 10' SLACK LOOP IN CABINET)	TERMINATION BY INTEGRATOR
173	ORT NB/ CASHLN11 SYNC	IVIS SYNCHRONIZATION CABLE	4pr/24 CAT5e	BLACK	STRANDED	Direct Burial Grade (see Note)	ORT NB/SB CABINET (LEAVE 10' SLACK LOOF in CABINET)	CASH LANE 2/11 LANE CONTROLLER CABINET LOCATION	TERMINATION BY INTEGRATOR
174	ORT NB/ORTSB AVI SYNC	MARK IV READER SYNCHRONIZATION CABLE NB ORT TO SB ORT	4pr/24	BLACK	STRANDED	Direct Burial Grade (see Note)	ORT NB AVI READER CABINET (LEAVE 6' SLACK LOOP in CABINET)	ORT SB AVI READER CABINET (LEAVE 6' SLACK LOOP IN CABINET)	TERMINATION BY INTEGRATOR
175	ORT NB/ CASH LN2 SYNC	MARK IV READER SYNCHRONIZATION CABLE NB ORT TO LANE 2	4pr/24	BLACK	STRANDED	Direct Burial Grade (see Note)	ORT NB AVI READER CABINET (LEAVE 6' SLACK LOOP in CABINET)	LANE 2 AVI READER CABINET (LEAVE 6' SLACK LOOP IN CABINET)	TERMINATION BY INTEGRATOR
176	ORT SB/ CASH LN11 SYNC	MARK IV READER SYNCHRONIZATION CABLE SB ORT TO LANE 11	4pr/24	BLACK	STRANDED	Direct Burial Grade (see Note)	ORT SB AVI READER CABINET (LEAVE 6' SLACK LOOP in CABINET)	LANE 11 AVI READER CABINET (LEAVE 6' SLACK LOOP IN CABINET)	TERMINATION BY INTEGRATOR

NOTES:

1) Lane Numbering as shown in plan set. Replace in label with correct lane #.
2) IVIS HOME RUN: THE SENSOR LEADS ARE TO BE TWISTED TIGHT, SOLDERED, SHRINK-WRAPPED (WATERPROOFED) AND ENCLOSED IN A KLIK-IT WIRING DEVICE TO THE IVIS "HOMERUN" CABLE (IMSA 50-2, # 16AWG) AT THE JUNCTION BOX.
3) ALL WIRE INSTALLED IN CONDUIT MUST BE BURIAL GRADE, SUITABLE FOR WET LOCATIONS.
4) LEAVE 3' SLACK LOOPS IN JUNCTION BOXES. LEAVE 6' CABLE AT JUNCTION BOX IF TERMINATION NOT SPECIFIED. FOR FIBER TO EXISTING CASH LANE CONTROLLERS LEAVE 6' OF SLACK LOOPED TO PREPARE FOR FUTURE INSTALLATIONS.
5) Direct Burial cable may not be extended more than 50' exposec into a structure due to fire codes. Check with local fire/electrical code before installing.

Date:3/18/2019

Filename: 436_ORT Data Wiring Schedule 5.dgn

Scale: NO SCALE

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

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INTERCHANGE 103
ORT CONVERSION

ORT DATA WIRING SCHEDULE 5

SHEET NUMBER: T-18

CONTRACT:2019.04

Date:3/18/2019

Plaza Host Server Equipment Room (Electrician Responsibilities - Includes pull strings, wire, conduit, trays, boxes and termination)

SERVER RACK PDU (Required when omitting supplied internal server cabinet UPS)

RISER DIAGRAM NUMBER	WIRE LABEL (SOURCE.CIRCUIT.DESTINATION)	DESCRIPTION	AWG or PER CODE	COLOR	CORE	JACKET	VOLTAGE	CIRCUIT BREAKER	FROM	TO	TERMINATION REQUIREMENTS
201	N/A	TRIPPLITE 2430 PDU OR EQUIVALENT PDU WITH MINIMUM 8 OUTLETS (1U, 30A PDU with L5-30P, 15' cable). See Note #3	N/A				120 VAC	30A	L5-30R DEDICATED WALL RECEPTACLE	COMMUNICATIONS/SERVER CABINET REAR PANEL	MOUNT IN SEVER CABINET REAR

60 AMP PANEL SERVING ORT CABINETS

202	(Panel#) (Ckt #)H1.UPS	POWER(120V-HOT)	#2/0	BLACK	STRANDED	THHW	240 VAC		UPS	60 AMP CLEAN POWER SUB-PANEL ASSIGNED CIRCUIT BREAKER	PER LOCAL CODE
203	(Panel#) (Ckt #)H2.UPS	POWER(120V-HOT)		RED							
204	(Panel#) (Ckt #)N.UPS	POWER(120V-NEUTRAL)		WHITE							
205	(Panel#).G	GROUND		GREEN							
206	(Panel#).IG	ISOLATED GROUND	#1	GREEN W/ YELLOW STRIPE							

NOTES:

GENERAL NOTES:	1) WORKSTATION AND LIVE VIEWER STATION, MISC PRINTER POWER WILL UTILIZE EXISTING 120V WALL OUTLETS IN PLAZA BUILDING
	2) Electrical installer to provide and install panels, breakers, disconnects, outlets, wire, conduit, junction boxes noted above.
	3) Deleting the UTS supplied UPS requires installation of a 30A PDU with L5-30P, not supplied by UTS. Cabinet Power Monitoring Function will not be available with PDU.
LABELING NOTES:	(Panel#) (Ckt #) will have to be replaced with the Panel ID and circuit/breaker number that this wire is connected to.

Wiring Shown is for one direction of travel only. Duplicate for second ORT direction of travel.

ORT ZONE EQUIPMENT ROOM (Electrician Responsibilities - Includes pull strings, wire, conduit, trays, boxes and termination)

ORT (Lane Equipment) (APC 3000) RECEPTACLE (3ea 20A circuits to individual Quad Outlet Boxes mounted in ORT cabinet)

RISER DIAGRAM NUMBER	WIRE LABEL (SOURCE.CIRCUIT.DESTINATION)	DESCRIPTION	AWG or PER CODE	COLOR	CORE	JACKET	VOLTAGE	CIRCUIT BREAKER	FROM	TO	TERMINATION REQUIREMENTS
207	(Panel#) (Ckt #)H.ORT(#)Q1	ORT TIPOUT 1-4 DEDICATED RECEPTACLE POWER(120V-HOT)	#12	BLACK	STRANDED	THHW	120 VAC	20A	CLEAN POWER SUBPANEL ASSIGNED CIRCUIT BREAKER	ORT CABINET 1 QUAD OUTLET#1	STANDARD QUAD OUTLET WITH RECEPTACLES COLOR CODED FOR CLEAN POWER
208	(Panel#) (Ckt #)N.ORT(#)Q1	ORT TIPOUT 1-4 DEDICATED RECEPTACLE POWER(120V-NEUTRAL)		WHITE							
209	(Panel#).G	GROUND		GREEN							
210	(Panel#) (Ckt #)H.ORT(#)Q2	ORT TIPOUT 5-6 DEDICATED RECEPTACLE POWER(120V-HOT)	#12	BLACK	STRANDED	THHW	120 VAC	20A	CLEAN POWER SUBPANEL ASSIGNED CIRCUIT BREAKER	ORT CABINET 1 QUAD OUTLET#2	STANDARD QUAD OUTLET WITH RECEPTACLES COLOR CODED FOR CLEAN POWER
211	(Panel#) (Ckt #)N.ORT(#)Q2	ORT TIPOUT 5-6 AND SWITCH DEDICATED RECEPTACLE POWER(120V-NEUTRAL)		WHITE							
212	(Panel#).G	GROUND		GREEN							
213	(Panel#) (Ckt #)H.ORT(#)Q3	ACCESSORY/FANS RECEPTACLE POWER(120V-HOT)	#12	BLACK	STRANDED	THHW	120 VAC	20A	CLEAN POWER SUBPANEL ASSIGNED CIRCUIT BREAKER	ORT CABINET 1 QUAD OUTLET#3	STANDARD QUAD OUTLET WITH RECEPTACLES COLOR CODED FOR CLEAN POWER
214	(Panel#) (Ckt #)N.ORT(#)Q3	ACCESSORY/FANS DEDICATED RECEPTACLE POWER(120V-NEUTRAL)		WHITE							
215	(Panel#).G	GROUND		GREEN							

NOTES:

	1) Electrical installer to provide and install outlets, wire, conduit, junction boxes noted above.
	2) Lane Server Power Ground (Pin 3 of TipOut connector) should be an isolated ground from plaza UPS Electrical Distribution Panel to avoid electrical noise getting into power distribution. A separate ground is suggested for electrical safety to connect
LABELING NOTES:	(Panel#) (Ckt #) will have to be replaced with the Panel ID and circuit/breaker number that this wire is connected to. (#) is to be replaced with ORT NB or SB or ORT designator as assigned.

FOR NOTES, SEE POWER WIRING SCHEDULE 6.

Filename: 437_ORT Power Wiring Schedule 1.dgn

Scale: NO SCALE

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
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THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: William Yates

INTERCHANGE 103
ORT CONVERSION

ORT POWER WIRING SCHEDULE 1

SHEET NUMBER: T-19

CONTRACT:2019.04

Date:3/18/2019

Wiring Shown is for one direction of travel only. Duplicate for second ORT direction of travel.

MEDIAN SHOULDER ORT LANE TYPE GANTRY POWER WIRING SCHEDULE (Electrician Responsibilities - Includes pull strings, wire, conduit, trays, boxes and termination)

FRONT VCARS™

RISER DIAGRAM NUMBER	WIRE LABEL (SOURCE.CIRCUIT.DESTINATION)	DESCRIPTION	MIN AWG *1	COLOR	CORE	JACKET	VOLTAGE	CIRCUIT BREAKER	FROM	TO	TERMINAL #	TERMINATION REQUIREMENTS
216	(Panel#) (Ckt #).(ORT#)FVLMS	FRONT VCARS™ POWER (HOT, NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	VCARS™ FIELD WIRING TERMINATION CONNECTOR	V1-1	6X5X4 JUNCTION BOX WITH 6' of 1/2" LIQUID TIGHT FLEX CABLE TO VCARS™ LOCATION. LEAVE 8' SLACK IN BOX
217	(Panel#)-.N.(ORT#)FVLMS	FRONT VCARS™ POWER (NEUTRAL)		WHITE							V1-2	
218	(Panel#).IG.(ORT#)FVLMS	FRONT VCARS™ POWER (EQUIPMENT/FACILITY GROUND)		GREEN							V1-3	
219	(Panel#).G.(ORT#)FVLMS	FRONT VCARS™ POWER (ISOLATED (UPS) GROUND)		GREEN W/ YELLOW STRIPE							V1-4	
REAR VCARS™												
220	(Panel#) (Ckt #).(ORT#)RVLMS	REAR VCARS™ POWER (HOT, NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	VCARS™ FIELD WIRING TERMINATION CONNECTOR	V1-1	6X5X4 JUNCTION BOX WITH 6' of 1/2" LIQUID TIGHT FLEX CABLE TO VCARS™ LOCATION. LEAVE 8' SLACK IN BOX
221	(Panel#)-.N.(ORT#)RVLMS	REAR VCARS™ POWER (NEUTRAL)		WHITE							V1-2	
222	(Panel#).IG.(ORT#)RVLMS	REAR VCARS™ POWER (FACILITY GROUND)		GREEN							V1-3	
223	(Panel#).G.(ORT#)RVLMS	REAR VCARS™ POWER (UPS ISOLATED GROUND)		GREEN W/ YELLOW STRIPE							V1-4	
LANE DIGITAL VIDEO AND AUDIT CAMERA (DVAS)												
224	(Panel#).H.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLCSURE POWER (HOT - NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	DVAS CAMERA VIA POWER JUNCTION BOX	AC	6X5X4 JUNCTION BOX WITH 6' of 1/2" LIQUID TIGHT FLEX CABLE TO CAMERA LOCATION. LEAVE 8' SLACK IN BOX
225	(Panel#).N.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLCSURE POWER (NEUTRAL)		WHITE						INSTALL 3A IN-LINE FUSE, EXTERNAL BELL SWITCH AND TRANSITION TO #14AWG FROM BOX TO CAMERA	IN	
226	(Panel#).G.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLCSURE POWER (GROUND)		GREEN							Case Gnd Lug Only*/2	
LANE DIGITAL VIDEO AND AUDIT CAMERA (DVAS)												
227	(Panel#).H.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLCSURE POWER (HOT - NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	DVAS CAMERA VIA POWER JUNCTION BOX	AC	6X5X4 JUNCTION BOX WITH 6' of 1/2" LIQUID TIGHT FLEX CABLE TO CAMERA LOCATION. LEAVE 8' SLACK IN BOX
228	(Panel#).N.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLCSURE POWER (NEUTRAL)		WHITE						INSTALL 3A IN-LINE FUSE, EXTERNAL BELL SWITCH AND TRANSITION TO #14AWG FROM BOX TO CAMERA	IN	
229	(Panel#).G.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLCSURE POWER (GROUND)		GREEN							Case Gnd Lug Only*/2	

FOR NOTES, SEE POWER WIRING SCHEDULE 6.

Filename: 438_ORT Power Wiring Schedule 2.dgn

Scale: NO SCALE

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
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INTERCHANGE 103
ORT CONVERSION

ORT POWER WIRING SCHEDULE 2

SHEET NUMBER: T-20

CONTRACT:2019.04

Date:3/18/2019

Wiring Shown is for one direction of travel only. Duplicate for second ORT direction of travel.

LANE 1 ORT LANE TYPE GANTRY POWER WIRING SCHEDULE

FRONT VCARS™

RISER DIAGRAM NUMBER	WIRE LABEL (SOURCE.CIRCUIT.DESTINATION)	DESCRIPTION	MIN AWG *1	COLOR	CORE	JACKET	VOLTAGE	CIRCUIT BREAKER	FROM	TO	TERMINAL #	TERMINATION REQUIREMENTS
230	(Panel#).(Ckt #).FVL1	FRONT VCARS™ POWER (HOT, NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	VCARS™ FIELD WIRING TERMINATION CONNECTOR	V1-1	6X6X4 JUNCTION BOX WITH 6' of 1/2" LIQUID TIGHT FLEX CABLE TO VCARS™ LOCATION. LEAVE 8' SLACK IN BOX
231	(Panel#)-.N.FVL1	FRONT VCARS™ POWER (NEUTRAL)		WHITE							V1-2	
232	(Panel#).IG.FVL1	FRONT VCARS™ POWER (EQUIPMENT/FACILITY GROUND)		GREEN							V1-3	
233	(Panel#).G.FVL1	FRONT VCARS™ POWER (ISOLATED (UPS) GROUND)		GREEN W/ YELLOW STRIPE							V1-4	

REAR VCARS™

234	(Panel#).(Ckt #).RVL1	REAR VCARS™ POWER (HOT, NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	VCARS™ FIELD WIRING TERMINATION CONNECTOR	V1-1	6X6X4 JUNCTION BOX WITH 6' of 1/2" LIQUID TIGHT FLEX CABLE TO VCARS™ LOCATION. LEAVE 8' SLACK IN BOX
235	(Panel#)-.N.RVL1	REAR VCARS™ POWER (NEUTRAL)		WHITE							V1-2	
236	(Panel#).IG.RVL1	REAR VCARS™ POWER (FACILITY GROUND)		GREEN							V1-3	
237	(Panel#).G.RVL1	REAR VCARS™ POWER (UPS ISOLATED GROUND)		GREEN W/ YELLOW STRIPE							V1-4	

LANE DIGITAL VIDEO AND AUDIT CAMERA (DVAS)

238	(Panel#).H.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (HOT - NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	DVAS CAMERA VIA POWER JUNCTION BOX	AC	6X6X4 JUNCTION BOX WITH 6' of 1/2" LIQUID TIGHT FLEX CABLE TO CAMERA LOCATION. LEAVE 8' SLACK IN BOX
239	(Panel#).N.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (NEUTRAL)		WHITE						INSTALL 3A IN-LINE FUSE, EXTERNAL BELL SWITCH AND TRANSITION TO #14AWG FROM BOX TO CAMERA	N	
240	(Panel#).G.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (GROUND)		GREEN							Case Gnd .ug Only*/2	

LANE DIGITAL VIDEO AND AUDIT CAMERA (DVAS)

241	(Panel#).H.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (HOT - NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	DVAS CAMERA VIA POWER JUNCTION BOX	AC	6X6X4 JUNCTION BOX WITH 6' of 1/2" LIQUID TIGHT FLEX CABLE TO CAMERA LOCATION. LEAVE 8' SLACK IN BOX
242	(Panel#).N.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (NEUTRAL)		WHITE						INSTALL 3A IN-LINE FUSE, EXTERNAL BELL SWITCH AND TRANSITION TO #14AWG FROM BOX TO CAMERA	N	
243	(Panel#).G.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (GROUND)		GREEN							Case Gnd .ug Only*/2	

OPUS SCANNER POWER WIRING SCHEDULE

RISER DIAGRAM NUMBER	WIRE LABEL (SOURCE.CIRCUIT.DESTINATION)	DESCRIPTION	MIN AWG *1	COLOR	CORE	JACKET	VOLTAGE	CIRCUIT BREAKER	FROM	TO	TERMINAL #	TERMINATION REQUIREMENTS
244	(Panel#).H.(ORT#)	LANE 1 OPUS SCANNER AC POWER (HOT-NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	18X18X8 JUNCTION BOX WITH 6' of 1/2" LIQUID TIGHT FLEX CABLE TO CAMERA LOCATION. LEAVE 8' SLACK IN BOX	AC	TDK-LAMBDA 48V TRANFORMER
245	(Panel#).N.(ORT#)	LANE 1 OPUS SCANNER AC POWER (NEUTRAL)		WHITE							N	
246	(Panel#).G.(ORT#)	LANE 1 OPUS SCANNER AC POWER (GROUND)		GREEN							Case Gnd .ug Only*/2	
247-252		LANE 1 OPUS SCANNER DC POWER	10	BLACK AND RED	STRANDED	THHW or SOW	48VDC	10	18X18X8 JUNCTION BOX	OPUS SCANNER(1-3)	OPUS TERMINALS	INDIVIDUAL OPUS SCANNER

Filename: 439_ORT Power Wiring Schedule 3.dgn

Scale: NO SCALE

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
Designed	ARG	02/19	Checked	RBM	02/19
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THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: William Yates

INTERCHANGE 103
ORT CONVERSION

ORT POWER WIRING SCHEDULE 3

SHEET NUMBER: T-21

CONTRACT:2019.04

Wiring Shown is for one direction of travel only. Duplicate for second ORT direction of travel.

LANE 2 ORT LANE TYPE GANTRY POWER WIRING SCHEDULE

FRONT VCARS™

RISER DIAGRAM NUMBER	WIRE LABEL (SOURCE.CIRCUIT.DESTINATION)	DESCRIPTION	MIN AWG *1	COLOR	CORE	JACKET	VOLTAGE	CIRCUIT BREAKER	FROM	TO	TERMINAL #	TERMINATION REQUIREMENTS
253	(Panel#) (Ckt #).FVL1	FRONT VCARS™ POWER (HOT, NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	VCARS™ FIELD WIRING TERMINATION CONNECTOR	V1-1	6X6X4 JUNCTION BOX WITH 6' of 1/2" LIQUID TIGHT FLEX CABLE TO VCARS™ LOCATION. LEAVE 8' SLACK IN BOX
254	(Panel#)-.N.FVL1	FRONT VCARS™ POWER (NEUTRAL)		WHITE							V1-2	
255	(Panel#).IG.FVL1	FRONT VCARS™ POWER (EQUIPMENT/FACILITY GROUND)		GREEN							V1-3	
256	(Panel#).G.FVL1	FRONT VCARS™ POWER (ISOLATED (UPS) GROUND)		GREEN W/ YELLOW STRIPE							V1-4	

REAR VCARS™

257	(Panel#) (Ckt #).RVL1	REAR VCARS™ POWER (HOT, NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	VCARS™ FIELD WIRING TERMINATION CONNECTOR	V1-1	6X6X4 JUNCTION BOX WITH 6' of 1/2" LIQUID TIGHT FLEX CABLE TO VCARS™ LOCATION. LEAVE 8' SLACK IN BOX
258	(Panel#)-.N.RVL1	REAR VCARS™ POWER (NEUTRAL)		WHITE							V1-2	
259	(Panel#).IG.RVL1	REAR VCARS™ POWER (FACILITY GROUND)		GREEN							V1-3	
260	(Panel#).G.RVL1	REAR VCARS™ POWER (UPS ISOLATED GROUND)		GREEN W/ YELLOW STRIPE							V1-4	

LANE DIGITAL VIDEO AND AUDIT CAMERA (DVAS)

RISER DIAGRAM NUMBER	WIRE LABEL (SOURCE.CIRCUIT.DESTINATION)	DESCRIPTION	MIN AWG *1	COLOR	CORE	JACKET	VOLTAGE	CIRCUIT BREAKER	FROM	TO	TERMINAL #	TERMINATION REQUIREMENTS
261	(Panel#).H.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (HOT - NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	DVAS CAMERA VIA POWER JUNCTION BOX	AC	6X6X4 JUNCTION BOX WITH 6' of 1/2" LIQUID TIGHT FLEX CABLE TO CAMERA LOCATION. LEAVE 8' SLACK IN BOX
262	(Panel#).N.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (NEUTRAL)		WHITE						INSTALL 3A IN-LINE FUSE, EXTERNAL BELL SWITCH AND TRANSITION TO #14AWG FROM BOX TO CAMERA	IN	
263	(Panel#).G.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (GROUND)		GREEN							Case Gnd Lug Only*/2	

LANE DIGITAL VIDEO AND AUDIT CAMERA (DVAS)

264	(Panel#).H.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (HOT - NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	DVAS CAMERA VIA POWER JUNCTION BOX	AC	6X6X4 JUNCTION BOX WITH 6' of 1/2" LIQUID TIGHT FLEX CABLE TO CAMERA LOCATION. LEAVE 8' SLACK IN BOX
265	(Panel#).N.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (NEUTRAL)		WHITE						INSTALL 3A IN-LINE FUSE, EXTERNAL BELL SWITCH AND TRANSITION TO #14AWG FROM BOX TO CAMERA	IN	
266	(Panel#).G.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (GROUND)		GREEN							Case Gnd Lug Only*/2	

OPUS SCANNER POWER WIRING SCHEDULE

RISER DIAGRAM NUMBER	WIRE LABEL (SOURCE.CIRCUIT.DESTINATION)	DESCRIPTION	MIN AWG *1	COLOR	CORE	JACKET	VOLTAGE	CIRCUIT BREAKER	FROM	TO	TERMINAL #	TERMINATION REQUIREMENTS
267	(Panel#).H.(ORT#)	LANE 2 OPUS P3 SCANNER ENCLOSURE POWER (HOT - NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	OPUS SCANNER VIA POWER JUNCTION BOX	AC	6X6X4 JUNCTION BOX WITH 6' of 1/2" LIQUID TIGHT FLEX CABLE TO CAMERA LOCATION. LEAVE 8' SLACK IN BOX
268	(Panel#).N.(ORT#)	LANE 2 OPUS P4 LEAD SCANNER ENCLOSURE POWER (NEUTRAL)		WHITE						INSTALL 3A IN-LINE FUSE, EXTERNAL BELL SWITCH AND TRANSITION TO #14AWG FROM BOX TO SCANNER	IN	
269	(Panel#).G.(ORT#)	LANE 2 OPUS P4 TRAIL SCANNER ENCLOSURE POWER (GROUND)		GREEN							Case Gnd Lug Only*/2	
270-275		LANE 2 OPUS SCANNER DC POWER	10	BLACK AND RED	STRANDED	THHW or SOW	48VDC	10	18X18X8 JUNCTION BOX	OPUS SCANNER(1-3)	OPUS TERMINALS	INDIVIDUAL OPUS SCANNER

Date:3/18/2019

Filename: 440_ORT Power Wiring Schedule 4.dgn

Scale: NO SCALE

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
Designed	ARG	02/19	Checked	RBM	02/19
Drawn	MHP	02/19	In Charge of	RAL	02/19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: William Yates

INTERCHANGE 103
ORT CONVERSION

ORT POWER WIRING SCHEDULE 4

SHEET NUMBER: T-22

CONTRACT:2019.04

Date:3/18/2019

Wiring Shown is for one direction of travel only. Duplicate for second ORT direction of travel.

OUTSIDE SHOULDER ORT LANE TYPE GANTRY POWER WIRING SCHEDULE

FRONT VCARS™

RISER DIAGRAM NUMBER	WIRE LABEL (SOURCE.CIRCUIT.DESTINATION)	DESCRIPTION	MIN AWG *1	COLOR	CORE	JACKET	VOLTAGE	CIRCUIT BREAKER	FROM	TO	TERMINAL #	TERMINATION REQUIREMENTS
276	(Panel#) (Ckt #).FVLMS	FRONT VCARS™ POWER (HOT, NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	VCARS™ FIELD WIRING TERMINATION CONNECTOR	V1-1	6X6X4 JUNCTION BOX WITH 6' of 1/2" LIQUID TIGHT FLEX CABLE TO VCARS™ LOCATION. LEAVE 8' SLACK IN BOX
277	(Panel#)-.N.FVLMS	FRONT VCARS™ POWER (NEUTRAL)		WHITE							V1-2	
278	(Panel#).IG.FVLMS	FRONT VCARS™ POWER (EQUIPMENT/FACILITY GROUND)		GREEN							V1-3	
279	(Panel#).G.FVLMS	FRONT VCARS™ POWER (ISOLATED (UPS) GROUND) *see note 2		GREEN W/ YELLOW STRIPE							V1-4	
REAR VCARS™												
280	(Panel#) (Ckt #).RVOSH	REAR VCARS™ POWER (HOT, NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	VCARS™ FIELD WIRING TERMINATION CONNECTOR	V1-1	6X6X4 JUNCTION BOX WITH 6' of 1/2" LIQUID TIGHT FLEX CABLE TO VCARS™ LOCATION. LEAVE 8' SLACK IN BOX
281	(Panel#)-.N.RVOSH	REAR VCARS™ POWER (NEUTRAL)		WHITE							V1-2	
282	(Panel#).IG.RVOSH	REAR VCARS™ POWER (FACILITY GROUND)		GREEN							V1-3	
283	(Panel#).G.RVOSH	REAR VCARS™ POWER (UPS ISOLATED GROUND)		GREEN W/ YELLOW STRIPE							V1-4	
LANE DIGITAL VIDEO AND AUDIT CAMERA (DVAS)												
284	(Panel#).H.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (HOT - NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	DVAS CAMERA VIA POWER JUNCTION BOX	AC	6X6X4 JUNCTION BOX WITH 6' of 1/2" LIQUID TIGHT FLEX CABLE TO CAMERA LOCATION. LEAVE 8' SLACK IN BOX
285	(Panel#).N.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (NEUTRAL)		WHITE						INSTALL 3A IN-LINE FUSE, EXTERNAL BELL SWITCH AND TRANSITION TO #14AWG FROM BOX TO CAMERA	IN	
286	(Panel#).G.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (GROUND)		GREEN							Case Gnd Lug Only*/2	
LANE DIGITAL VIDEO AND AUDIT CAMERA (DVAS)												
287	(Panel#).H.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (HOT - NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	DVAS CAMERA VIA POWER JUNCTION BOX	AC	6X6X4 JUNCTION BOX WITH 6' of 1/2" LIQUID TIGHT FLEX CABLE TO CAMERA LOCATION. LEAVE 8' SLACK IN BOX
288	(Panel#).N.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (NEUTRAL)		WHITE						INSTALL 3A IN-LINE FUSE, EXTERNAL BELL SWITCH AND TRANSITION TO #14AWG FROM BOX TO CAMERA	IN	
289	(Panel#).G.(ORT#)PPDLMS	LANE DVAS PAYPOINT CAMERA ENCLOSURE POWER (GROUND)		GREEN							Case Gnd Lug Only*/2	

OPUS SCANNER POWER WIRING SCHEDULE

RISER DIAGRAM NUMBER	WIRE LABEL (SOURCE.CIRCUIT.DESTINATION)	DESCRIPTION	MIN AWG *1	COLOR	CORE	JACKET	VOLTAGE	CIRCUIT BREAKER	FROM	TO	TERMINAL #	TERMINATION REQUIREMENTS
290	(Panel#).H.(ORT#)	RIGHT SHOULDER OPUS P3 SCANNER ENCLOSURE POWER (HOT - NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	OPUS SCANNER VIA POWER JUNCTION BOX	AC	6X6X4 JUNCTION BOX WITH 6' of 1/2" LIQUID TIGHT FLEX CABLE TO CAMERA LOCATION. LEAVE 8' SLACK IN BOX
291	(Panel#).N.(ORT#)	RIGHT SHOULDER OPUS P4 LEAD SCANNER ENCLOSURE POWER (NEUTRAL)		WHITE						INSTALL 3A IN-LINE FUSE, EXTERNAL BELL SWITCH AND TRANSITION TO #14AWG FROM BOX TO SCANNER	IN	
292	(Panel#).G.(ORT#)	RIGHT SHOULDER OPUS P4 TRAIL SCANNER ENCLOSURE POWER (GROUND)		GREEN							Case Gnd Lug Only*/2	
293-298		RIGHT SHOULDER OPUS SCANNER DC POWER	10	BLACK AND RED	STRANDED	THHW or SOW	48VDC	10	18X18X3 JUNCTION BOX	OPUS SCANNER(1-3)	OPUS TERMINALS	INDIVIDUAL OPUS SCANNER

Filename: 441_ORT Power Wiring Schedule 5.dgn

Scale: NO SCALE

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
Designed	ARG	02/19	Checked	RBM	02/19
Drawn	MHP	02/19	In Charge of	RAL	02/19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: William Yates

INTERCHANGE 103
ORT CONVERSION

ORT POWER WIRING SCHEDULE 5

SHEET NUMBER: T-23

CONTRACT:2019.04

Date:3/18/2019

Wiring Shown is for one direction of travel only. Duplicate for second ORT direction of travel.

SPACE FRAME LIGHTING POWER WIRING SCHEDULE

SPACE FRAME LIGHTING

RISER DIAGRAM NUMBER	WIRE LABEL (SOURCE.CIRCUIT.DESTINATION)	DESCRIPTION	MIN AWG *1	COLOR	CORE	JACKET	VOLTAGE	CIRCUIT BREAKER	FROM	TO	TERMINATION REQUIREMENTS
299	(Panel#) (Ckt #).LHT	SPACE FRAME LIGHTING POWER (HOT, NON-SWITCHED)	12	BLACK	STRANDED	THHN	120 VAC	20A	DIRTY POWER PANEL IN TUNNEL SERVING CASH LANE 8	LED LIGHTING FIXUTRES IN CANOPY	ACCORDING TO MANUFACTURERS RECOMMENDATION
300	(Panel#)-.N.LHT	SPACE FRAME LIGHTING POWER (NEUTRAL)		WHITE							
301	(Panel#).G.LHT	SPACE FRAME LIGHTING POWER (GROUND)		GREEN							

AVI READER POWER WIRING SCHEDULE

AVI JANUS SPR READER™

RISER DIAGRAM NUMBER	WIRE LABEL (SOURCE.CIRCUIT.DESTINATION)	DESCRIPTION	MIN AWG *1	COLOR	CORE	JACKET	VOLTAGE	CIRCUIT BREAKER	FROM	TO	TERMINATION REQUIREMENTS
302	(Panel#) (Ckt #).AVI	AVI BADGER READER™ POWER (HOT, NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	QUAD OUTLET BOX IN AVI READER CABINET	ACCORDING TO MANUFACTURERS RECOMMENDATION
303	(Panel#)-.N.AVI	AVI BADGER READER™ POWER (NEUTRAL)		WHITE							
304	(Panel#).IG.AVI	AVI BADGER READER™ POWER (EQUIPMENT/FACILITY GROUND)		GREEN							
305	(Panel#).G.AVI	AVI BADGER READER™ POWER (ISOLATED (UPS) GROUND)		GREEN W/ YELLOW STRIPE							
306	(Panel#) (Ckt #).AVI	AVI BADGER READER™ POWER (HOT, NON-SWITCHED)	12	BLACK	STRANDED	THHW or SOW	120 VAC	15	CLEAN (UPS) POWER DISTRIBUTION PANEL CIRCUIT BREAKER	QUAD OUTLET BOX IN AVI READER CABINET	ACCORDING TO MANUFACTURERS RECOMMENDATION
307	(Panel#)-.N.AVI	AVI BADGER READER™ POWER (NEUTRAL)		WHITE							
308	(Panel#).IG.AVI	AVI BADGER READER™ POWER (EQUIPMENT/FACILITY GROUND)		GREEN							
309	(Panel#).G.AVI	AVI BADGER READER™ POWER (ISOLATED (UPS) GROUND)		GREEN W/ YELLOW STRIPE							

NOTES:

GENERAL NOTES:	1) Wire to be sized and colored according to local codes and breaker current limits. VCARS™ requires 10A service minimum. Breakers and Wire Size Shown is typical.		
	2) Power Ground to VCARS™ should be an isolated ground from plaza UPS electrical distribution panel to avoid electrical noise getting into power distribution. A separate ground is suggested for electrical safety. If only one ground is		
LABELING NOTES:	Label format identifies: Source Device-Connector-(Pin). (Hot, Neutral, Ground, Isolated Ground).Destination Device-Connector-(Pin)		

Filename: 442_ORT Power Wiring Schedule 6.dgn

Scale: NO SCALE

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
Designed	ARG	02/19	Checked	RBM	02/19
Drawn	MHP	02/19	In Charge of	RAL	02/19

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

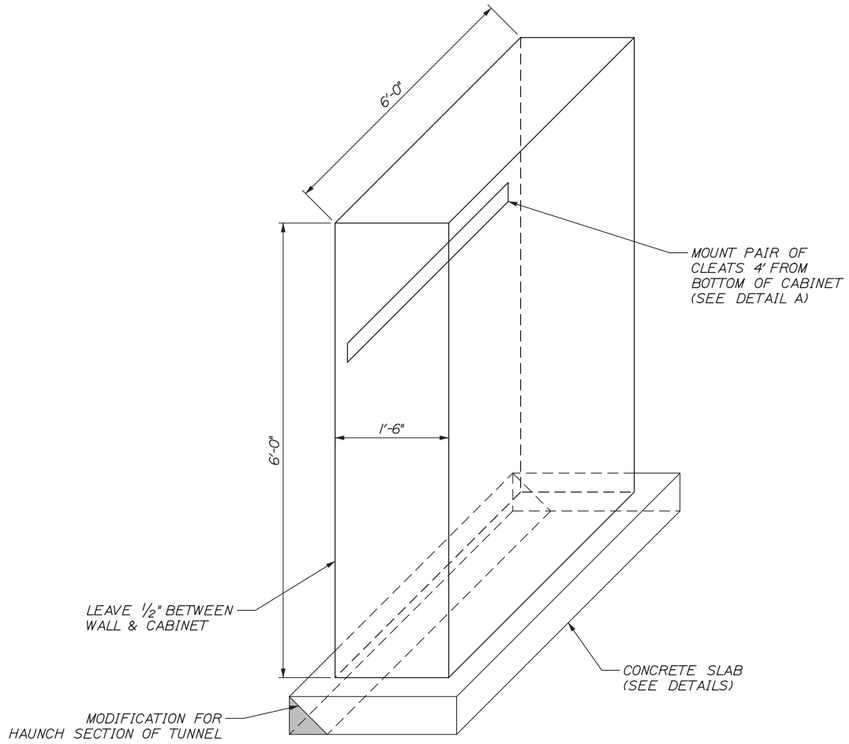
MTA PROJECT MANAGER: William Yates

INTERCHANGE 103
ORT CONVERSION

ORT POWER WIRING SCHEDULE 6

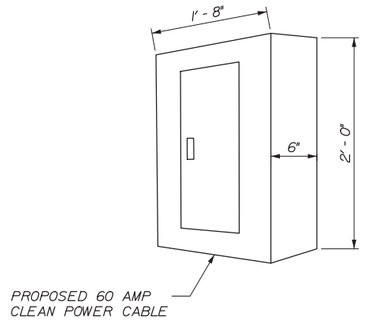
SHEET NUMBER: T-24

CONTRACT:2019.04

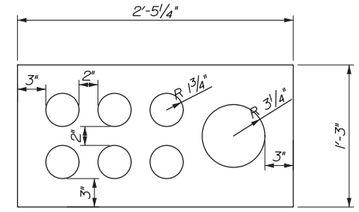


NORTHBOUND & SOUTHBOUND ORT CONTROL CABINET

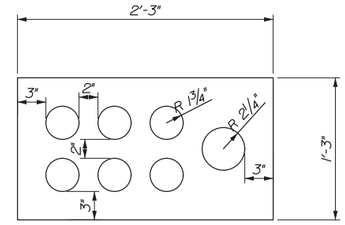
NOTE: CONTRACTOR SHALL MAINTAIN TUNNEL FLOOR THROUGH LOCATIONS AT ORT CABINET SLABS, SEE TUNNEL PLANS FOR ADDITIONAL INFORMATION



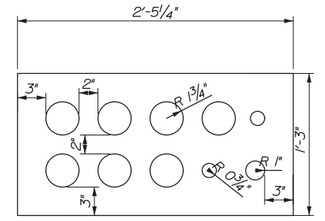
60 AMP CLEAN POWER PANEL BOARD



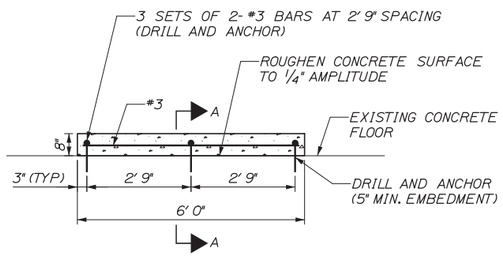
UTILITY CHASE DETAIL A



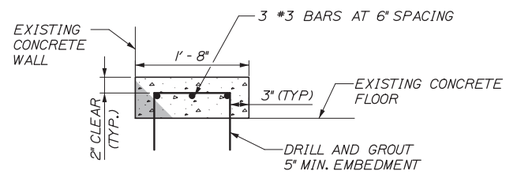
UTILITY CHASE DETAIL B



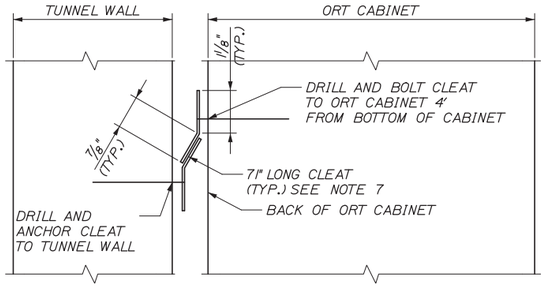
UTILITY CHASE DETAIL C



ELEVATION



SECTION A-A



DETAIL A
ORT CABINET CLEATS

CONCRETE SLAB DETAILS

NOTE: ALL CORNERS SHALL BE CHAMFERED ¾".

NOTES:

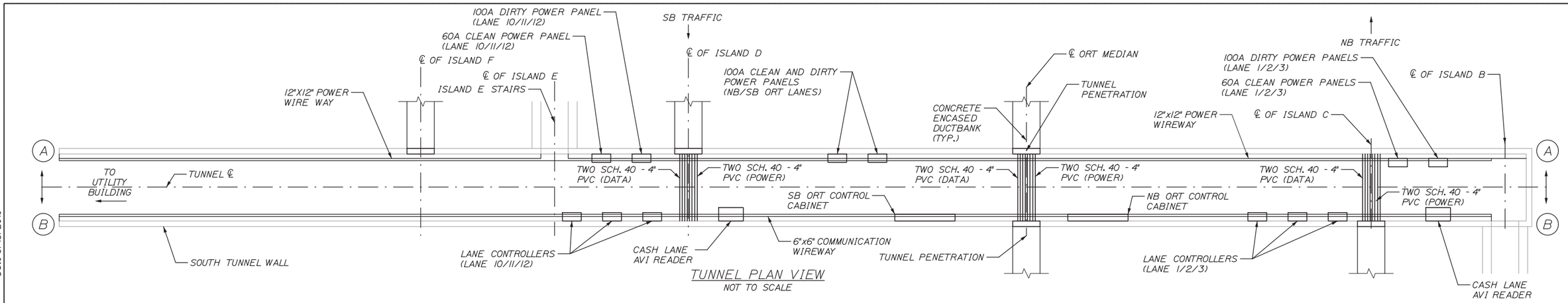
1. FINAL LOCATIONS OF ORT CABINETS AND 60 AMP CLEAN POWER PANEL BOARD SHALL BE DETERMINED BY THE RESIDENT, SYSTEM INTEGRATOR, AND MTA.
2. PROPOSED CONDUIT AND WIREWAYS ARE NOT SHOWN. SEE ELECTRICAL DETAILS.
3. CONTRACTOR SHALL MOVE SYSTEM INTEGRATOR PROVIDED ORT CONTROL CABINETS DURING PHASE 3 WHEN TUNNEL ACCESS IS AVAILABLE THROUGH END OF TUNNEL. EACH CABINET WILL CONTAIN SENSITIVE TOLLING EQUIPMENT AND WILL WEIGH AN ESTIMATED 900 POUNDS. THIS SHALL BE INCIDENTAL TO ITEM 655.01, MOUNTING AND INSTALLATION OF ORT LANE CONTROLLER CABINET.
4. CONSTRUCTION OF CONCRETE SLAB, MOVING ORT CABINETS TO FINAL LOCATIONS AND SECURING CABINETS WITH CLEATS TO TUNNEL WALL SHALL BE INCIDENTAL TO ITEM 655.01, MOUNTING AND INSTALLATION OF ORT LANE CONTROLLER CABINET.
5. THE CONTRACTOR SHALL PROTECT ORT CABINETS FROM DAMAGE.
6. SYSTEM INTEGRATOR SHALL PROVIDE CONTRACTOR A PAIR OF CLEATS FOR EACH ORT CABINET. CLEATS WILL HAVE FIVE ⅜" HOLES PREDRILLED. CONTRACTOR SHALL ATTACH CLEATS TO TUNNEL WALL AND ORT CABINET BY METHOD APPROVED BY RESIDENT. SCREWS, BOLTS AND NUTS SHALL BE GALVANIZED.
7. 4 STAINLESS STEEL HILTI BOLTS MAY BE SUBSTITUTED FOR CLEATS AS APPROVED BY THE RESIDENT.

Date:3/18/2019

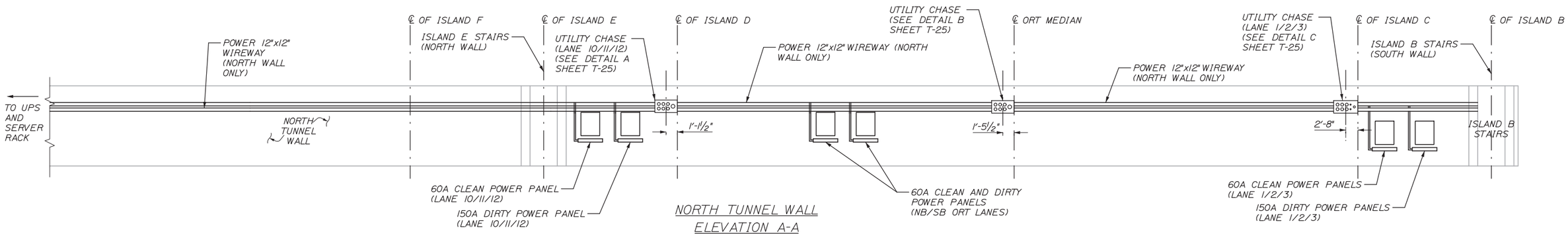
Filename: 443_ORT Cabinet Details.dgn

Scale: NO SCALE	Designed by: HNTB	HNTB CORPORATION 340 County Road, Suite 6-C Westbrook, ME 04092 TEL (207) 774-5155 FAX (207) 228-0909	MAINE TURNPIKE	THE GOLD STAR MEMORIAL HIGHWAY	INTERCHANGE 103 ORT CONVERSION
	CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.				ORT CONTROL CABINET DETAILS
	Designed: By ARG Date 02/19 — Checked: By RBM Date 02/19			MTA PROJECT MANAGER: William Yates	SHEET NUMBER: T-25
	Drawn: By MHP Date 02/19 — In Charge of: By RAL Date 02/19				CONTRACT:2019.04 443 OF 503

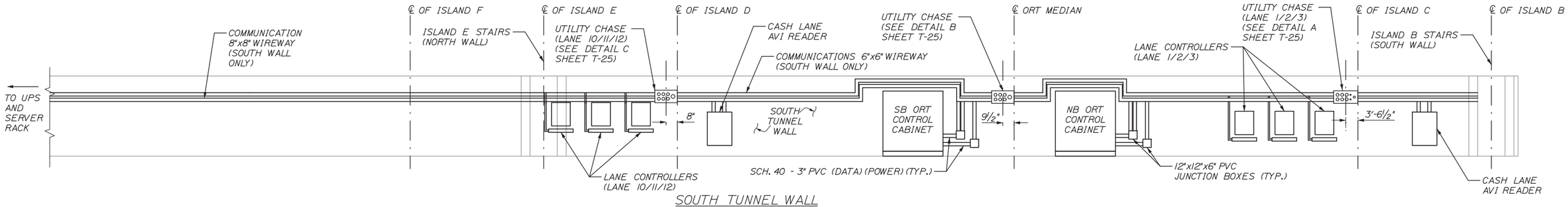
No.	Revision	By	Date



TUNNEL PLAN VIEW
NOT TO SCALE



NORTH TUNNEL WALL
ELEVATION A-A
NOT TO SCALE



SOUTH TUNNEL WALL
ELEVATION B-B
NOT TO SCALE

ELECTRICAL NOTES:

1. CLEAN POWER PANEL LANES 1, 2 AND 3: FEED WIRING SHALL BE 5 AWG #2/0, CONNECTED TO A NEW 60A/3P 120/208 V CIRCUIT BOARD.
2. CLEAN POWER PANEL LANES 10, 11 AND 12: FEED WIRING SHALL BE 5 AWG #2, CONNECTED TO A NEW 60A/3P 120/208 V CIRCUIT BOARD.
3. CLEAN POWER PANEL ORT NB AND SB: FEED WIRING SHALL BE: 5 AWG #2/0, CONNECTED TO A NEW 100A/3P 120/208 V CIRCUIT BOARD.
4. DIRTY POWER PANEL LANES 1, 2 AND 3: FEED WIRING SHALL BE: 5 AWG #4/0, CONNECTED TO A NEW 150A/3P 120/208 V CIRCUIT BOARD.
5. DIRTY POWER PANEL LANES 10, 11 AND 12: FEED WIRING SHALL BE: 5 AWG #2/0, CONNECTED TO A NEW 150A/3P 120/208 V CIRCUIT BOARD.
6. DIRTY POWER PANEL ORT NB AND SB: FEED WIRING SHALL BE: 5 AWG #2/0, CONNECTED TO A NEW 100A/3P 120/208 V CIRCUIT BOARD.
7. ALL WIRING SHALL BE ENCLOSED IN PROPOSED TUNNEL WIRE WAYS OR PROPOSED CONDUITS TO CASH OR ORT LANES.

ELECTRICAL NOTES:

1. LOCATIONS OF PROPOSED COMPONENTS SHOWN ARE APPROXIMATE AND FINAL LOCATIONS OF PROPOSED EQUIPMENT SHALL BE APPROVED BY THE RESIDENT AND MTA.
2. COMPONENTS NECESSARY FOR ATTACHING POWER PANEL, JUNCTION BOXES, CONDUIT AND WIREWAYS TO TUNNEL WALL AND ROOF ARE INCIDENTAL TO THE ITEM.
3. COMPONENTS NECESSARY FOR ATTACHING CONDUITS AND WIREWAYS TO JUNCTION BOXES, CABINETS AND THE POWER PANEL ARE INCIDENTAL TO THE CONDUIT AND WIREWAYS.
4. ALL TUNNEL WIREWAYS SHALL BE HEAVY DUTY PVC AND ALL CONNECTORS AND JOINTS SHALL BE FACTORY MANUFACTURED.
5. LOCATIONS FOR CABINETS AND PANELS ARE APPROXIMATE. FINAL LOCATION SHALL BE APPROVED BY THE RESIDENT AND THE MTA.

Scale: NOT TO SCALE

Designed by: HNTB

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
Designed	ARG	02/19	Checked	RBM	02/19
Drawn	MHP	02/19	In Charge of	RAL	02/19

HNTB CORPORATION
340 County Road, Suite 6-C
Westbrook, ME 04092
TEL (207) 774-5155
FAX (207) 228-0909

MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: William Yates

INTERCHANGE 103 ORT CONVERSION

TUNNEL ELECTRICAL DETAILS

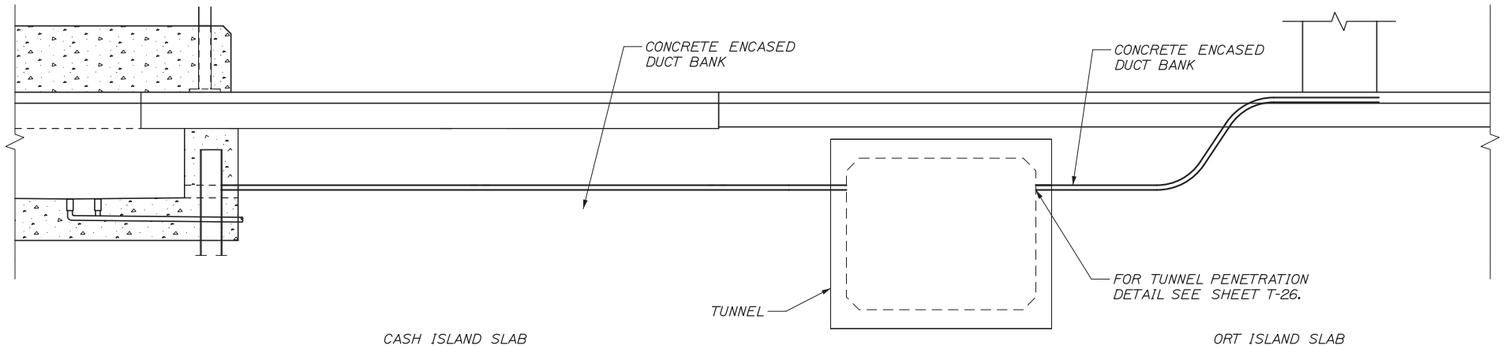
SHEET NUMBER: T-26

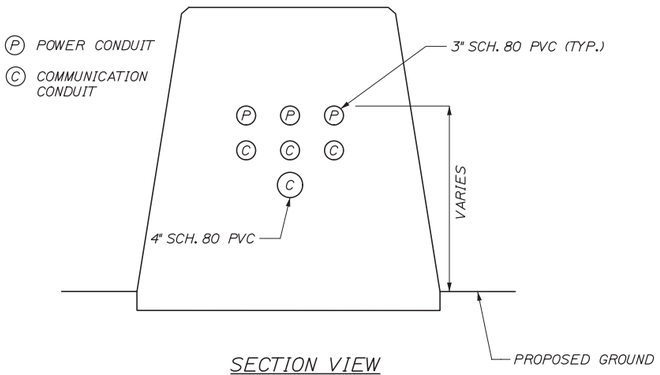
CONTRACT:2019.04

444 OF 503

Date:3/18/2019

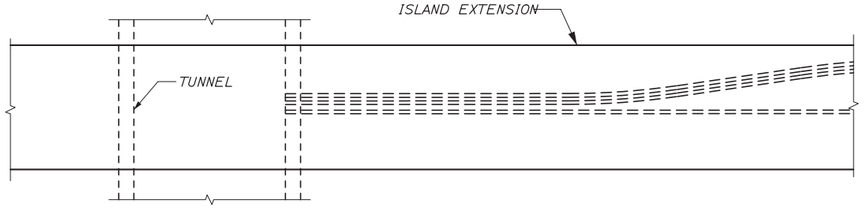
Filename: 444_TunnelElectricalDetails.DGN





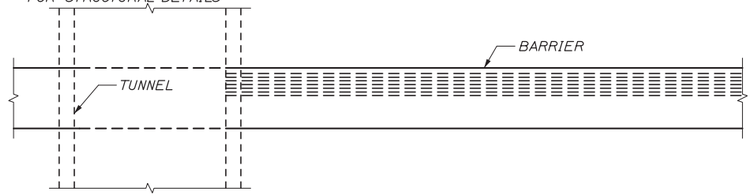
SECTION VIEW
MEDIAN BARRIER CONDUIT DETAIL
PROPOSED BARRIER
(NOT TO SCALE)

SECTION VIEW
CONDUIT SWEEP DETAIL



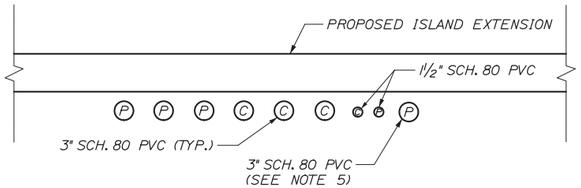
PLAN VIEW

TUNNEL PENETRATION NOTES
1. CONDUIT PATH WAYS ARE SCHEMATIC ONLY - SEE STRUCTURE PLAN SHEETS FOR STRUCTURAL DETAILS



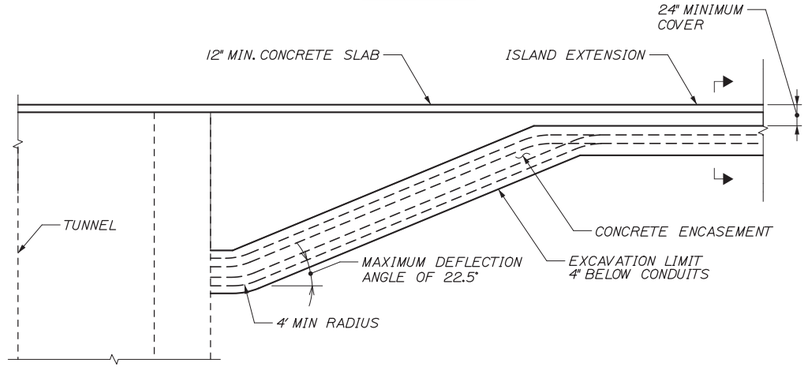
PLAN VIEW

BARRIER NOTES:
1. CONDUIT CONFIGURATION RUN IN CONCRETE BARRIER SHALL BE FIELD DETERMINED.

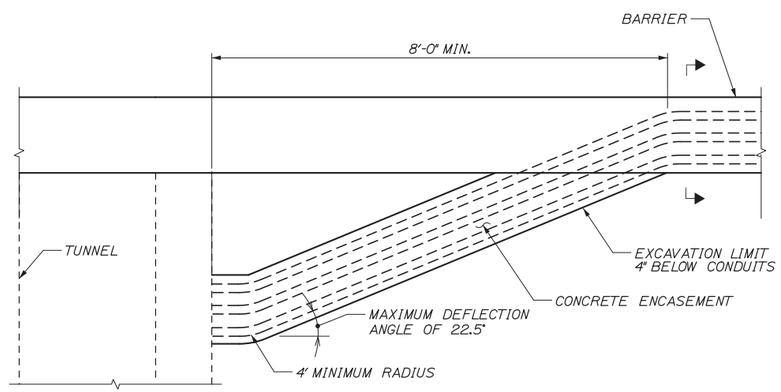


(P) POWER CONDUIT
(C) COMMUNICATION CONDUIT

SECTION VIEW
ISLAND EXTENSION CONDUIT DETAIL
PROPOSED ISLAND EXTENSION
(NOT TO SCALE)



ELEVATION VIEW



ELEVATION VIEW

ISLAND EXTENSION NOTES:
1. HORIZONTAL SPACING BETWEEN CONDUITS SHALL BE 3" MIN. CLEARANCE FROM EDGE OF ISLAND EXTENSION SHALL BE 3".
2. DEPTH OF CONDUIT VARIES AT THE TUNNEL PENETRATION TO ENCASEMENT IN THE ISLAND EXTENSION.
3. CONDUIT INSTALLED IN THE ISLAND EXTENSION SLAB SHALL BE INSTALLED SIDE BY SIDE.
4. SEE SPECIFICATION 655 CONCRETE ENCASED CONDUIT.
5. 3" CONDUIT RUN TO HIGHWAY LIGHTS - LIGHT I72BB AND I80BB.

Scale: NO SCALE

No.	Revision	By	Date

Designed by: HNTB

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
Designed	ARG	02/19	Checked	RBM	02/19
Drawn	MHP	02/19	In Charge of	RAL	02/19

HNTB CORPORATION
340 County Road, Suite 6-C
Westbrook, ME 04092
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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: William Yates

INTERCHANGE 103
ORT CONVERSION

TUNNEL CONDUIT SCHEMATIC DETAIL

SHEET NUMBER: T-27

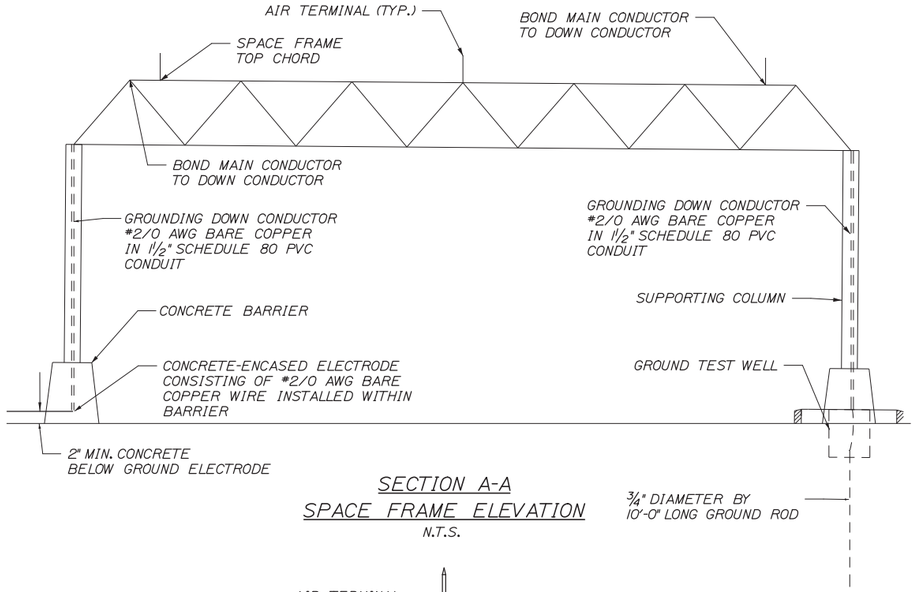
CONTRACT:2019.04

445 OF 503

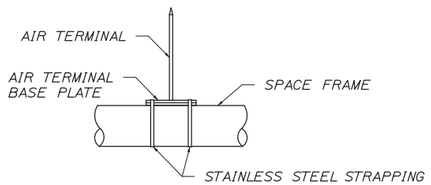
Date:3/18/2019

Date:3/18/2019

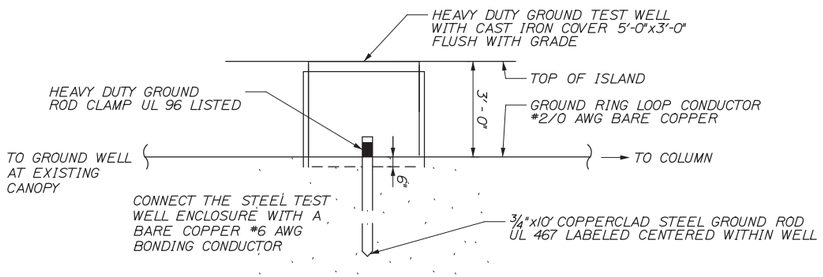
Filename: 445_Tunnel Conduit Detail.dgn



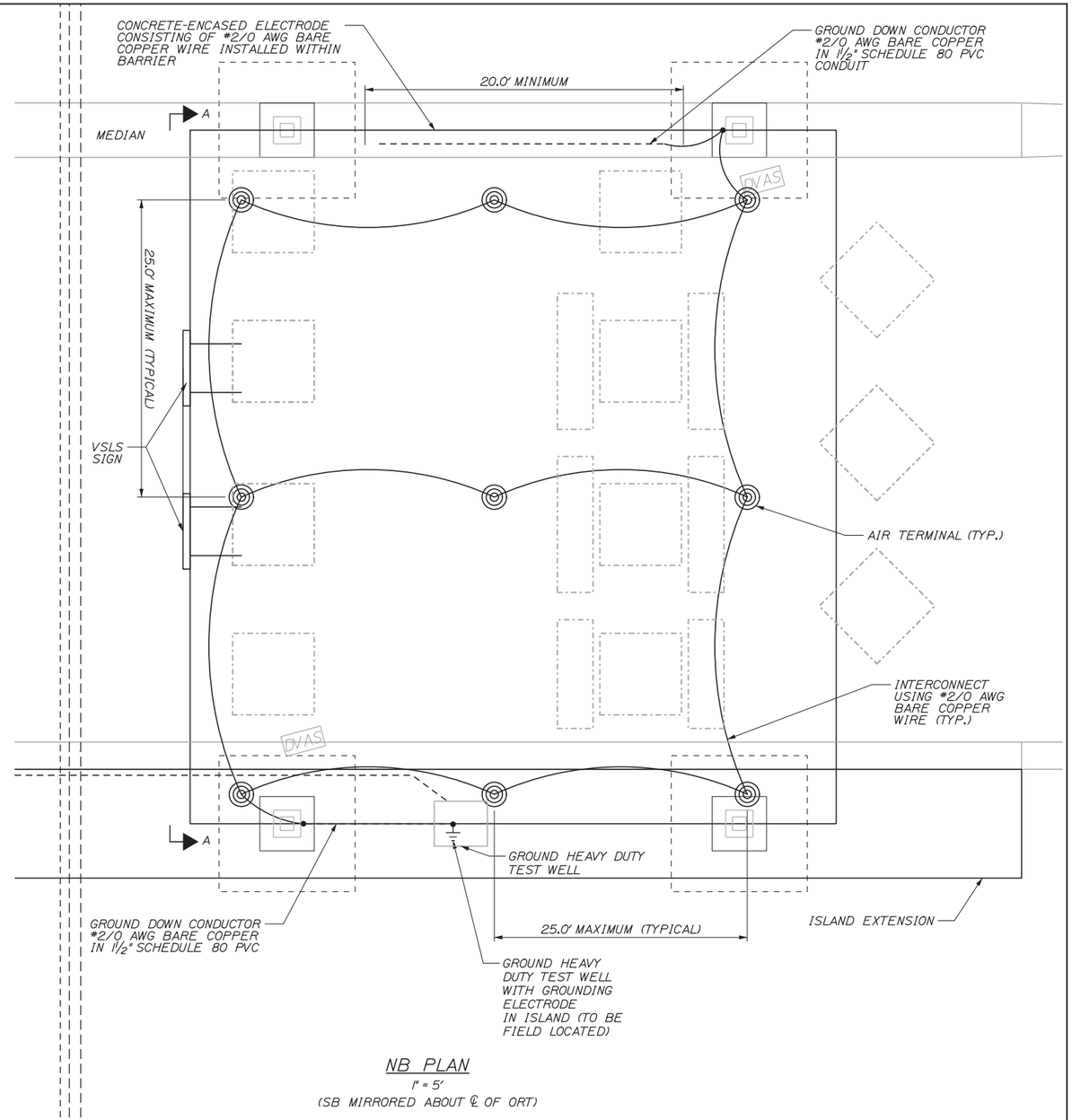
SECTION A-A
SPACE FRAME ELEVATION
N.T.S.



AIR TERMINAL MOUNTING DETAIL
N.T.S.



HEAVY DUTY GROUND TEST WELL DETAILS
N.T.S.



NB PLAN
1" = 5'
(SB MIRRORED ABOUT ℄ OF ORT)

NOTES:

1. ALL WORK SHALL BE PROVIDED IN FULL CONFORMANCE WITH UL96A AND WITH NFPA 780.
2. SPACING OF AIR TERMINALS SHALL NOT EXCEED 25 FEET ON CENTERS.
3. CONDUCTOR BENDS SHALL NOT FORM AN INCLUDED ANGLE LESS THAN 90 DEGREES OR HAVE A RADIUS OF BEND LESS THAN 8 INCHES.
4. PROVIDE A #2/0 AWG BARE COPPER CONDUCTOR IN 1½" SCHEDULE 80 PVC CONDUIT UNDERGROUND TO CONNECT THE GROUNDING ELECTRODES AT THE TEST WELL AT THE SPACE FRAME AND THE TEST WELL AT THE EXISTING CANOPY. SEE SHEET T-10.
5. LIGHTNING PROTECTION AIR TERMINALS TO BE INSTALLED AT THE ORT VSLS SIGN SHALL BE 10' TALL. LIGHTNING PROTECTION AIR TERMINALS TO BE INSTALLED ON THE SPACE FRAME SHALL BE 24" TALL.

LEGEND

AIR TERMINAL

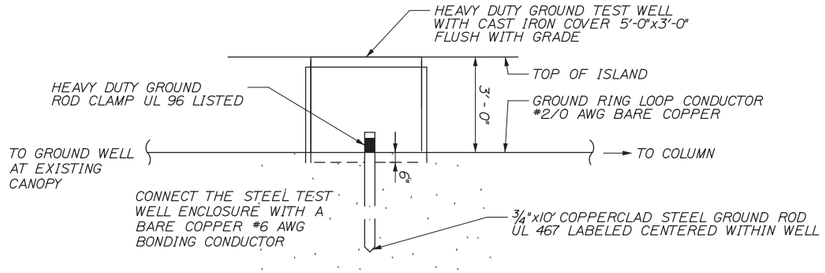
#2/0 AWG BARE COPPER WIRE

Date:3/18/2019

Filename: 446_ORTLightning Suppression System.dgn

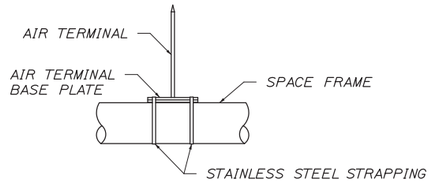
Scale: AS NOTED	Designed by: HNTB	HNTB CORPORATION 340 County Road, Suite 6-C Westbrook, ME 04092 TEL (207) 774-5155 FAX (207) 228-0909	MAINE TURNPIKE	THE GOLD STAR MEMORIAL HIGHWAY	INTERCHANGE 103 ORT CONVERSION
	CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.				ORT LIGHTNING SUPPRESSION SYSTEM
	Designed ARG 02/19 — Checked RBM 02/19				SHEET NUMBER: T-28
	Drawn MHP 02/19 — In Charge of RAL 02/19			MTA PROJECT MANAGER: William Yates	CONTRACT:2019.04 446 OF 503

No.	Revision	By	Date



HEAVY DUTY GROUND TEST WELL DETAILS

N.T.S



AIR TERMINAL MOUNTING DETAIL

N.T.S

LIGHTNING SUPPRESSION ON NEW CANOPY NOTES:

1. A NEW GROUNDING WELL SHALL BE INSTALLED IN THE AREA TO BE EXCAVATED FOR THE INSTALLATION OF THE CONDUIT THROUGH ISLANDS A AND E (SEE SHEETS T-09 AND T-10).

2. A SECOND GROUNDING WELL SHALL BE INSTALLED IN THE APPROACH SIDE WALKWAY PORTION OF ISLANDS B AND D. THE PATH OF THE NEW GROUND DOWN CONNECTOR SHALL BE ATTACHED TO THE SUPPORT COLUMNS.

3. THE GROUNDING WELLS SHALL CONSIST OF A 17"X10 1/8"X16 1/4". TRI5 QUAZITE JUNCTION BOX WITH A SINGLE ¾"X10' COPPER CLAD STEEL GROUNDING ROD UL 467 COMPLIANT CENTERED WITHIN THE WELL.

4. BOND EACH SIGN MOUNTING FRAME MEMBER WITH #2/0 AWG BARE COPPER WIRE (TYP.).

5. ALL LIGHTNING PROTECTION WORK SHALL BE PROVIDED IN FULL CONFORMANCE WITH UL 96A AND WITH NFPA 780.

6. LIGHTNING PROTECTION CONDUCTOR BENDS SHALL NOT FORM AN INCLUDED ANGLE LESS THAN 90 DEGREES OR HAVE A RADIUS BEND LESS THAN 8".

7. LIGHTNING PROTECTION AIR TERMINALS TO BE INSTALLED ON THE CANOPY SIGN LIGHTING FIXTURES SHALL BE 10 INCHES TALL. LIGHTNING PROTECTION AIR TERMINALS TO BE INSTALLED ON THE CANOPY ROOF SHALL BE 24 INCHES TALL.

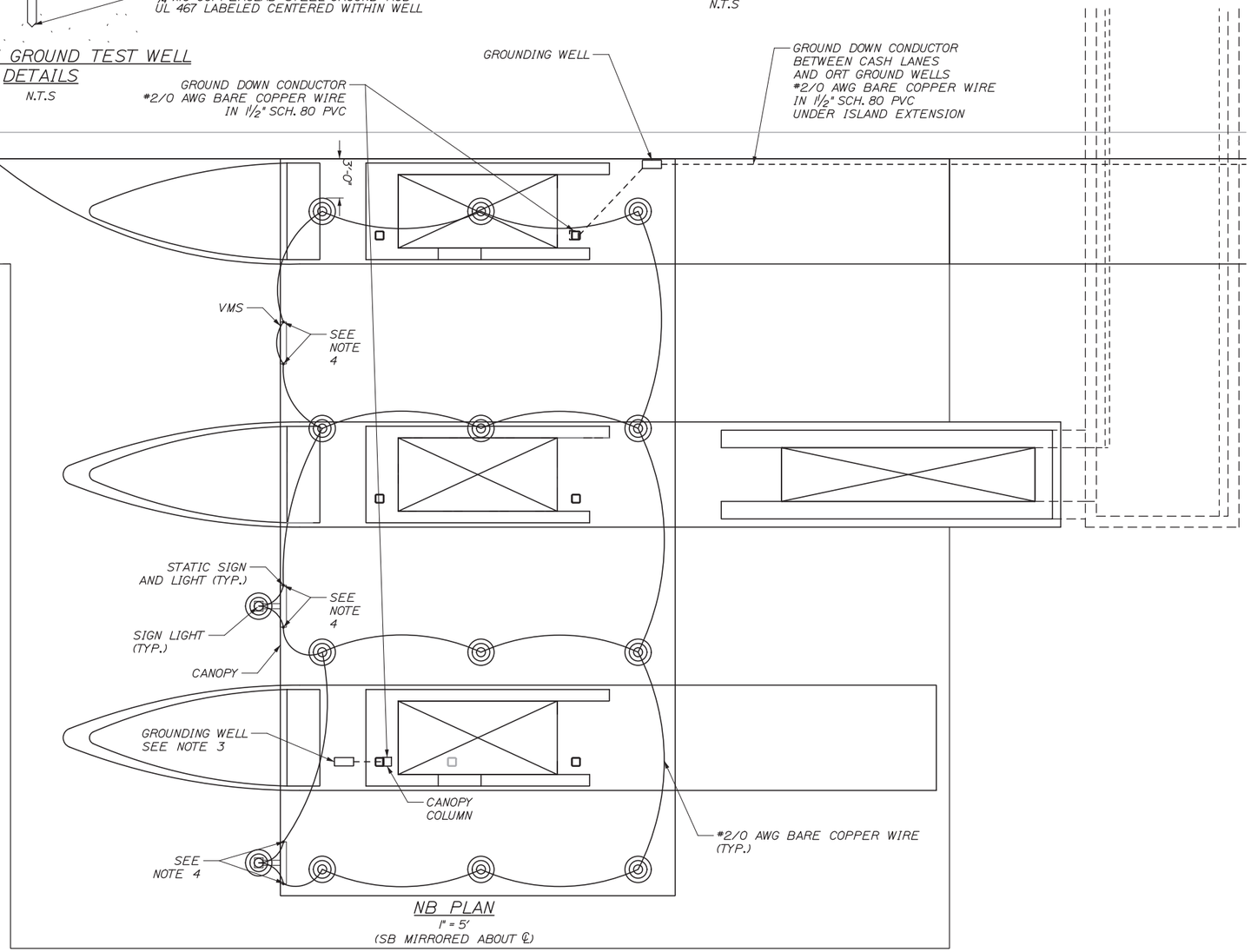
8. CONTRACTOR TO PROVIDE LIGHTNING SUPPRESSION SYSTEM FOR LANES 10, 11 AND 12. THE CANOPY IS SIMILAR TO THE SYSTEM SHOWN FOR LANES 1, 2 AND 3 BELOW.

9. A ROOF PENETRATION TO ACCOMMODATE A 1½" CONDUIT IS REQUIRED FOR GROUNDING DOWN LANES 10, 11 AND 12 CONDUCTOR. THE REPAIR OF THE ROOF SHALL BE INCIDENTAL TO THE LIGHTNING SUPPRESSION SYSTEM. THE ROOF SHALL BE REQUIRED BY THE ROOFING SUBCONTRACTOR OR AS DIRECTED BY THE RESIDENT.

LEGEND

AIR TERMINAL

#2/0 AWG BARE COPPER WIRE



NB PLAN

1" = 5'

(SB MIRRORED ABOUT ℄)

Date:3/18/2019

Filename: 447_CashLaneLightningSuppression.dgn

Scale: AS NOTED	Designed by: HNTB	HNTB CORPORATION 340 County Road, Suite 6-C Westbrook, ME 04092 TEL (207) 774-5155 FAX (207) 228-0909	MAINE TURNPIKE	THE GOLD STAR MEMORIAL HIGHWAY	INTERCHANGE 103 ORT CONVERSION

CASH LANE LIGHTNING SUPPRESSION

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: R. Bruce Munger, P.E.

	By	Date		By	Date
Designed	ARG	02/19	Checked	RBM	02/19
Drawn	MHP	02/19	In Charge of	RAL	02/19

MTA PROJECT MANAGER: William Yates

CONTRACT:2019.04

SHEET NUMBER: T-29

447 OF 503

ABBREVIATIONS

&	AND
∠	ANGLE
@	AT
<	CENTER LINE
~	DIAMETER OR ROUND
#	POUND OR NUMBER
ACOUS	ACOUSTICAL
A.C.T.	ACOUSTICAL CEILING TILE
A.F.F.	ABOVE FINISHED FLOOR
ALUM	ALUMINUM
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
BD	BOARD
BLDG	BUILDING
BLKG	BLOCKING
C.J.	CONTROL JOINT
CLG	CEILING
CLO	CLOSET
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CO	CASED OPENING
CONC	CONCRETE
CONSTR	CONSTRUCTION
CONT.	CONTINUOUS
CONTR	CONTRACTOR
CT	CERAMIC TILE
CU. FT.	CUBIC FEET
DET	DETAIL
D.F.	DRINKING FOUNTAIN
DIA	DIAMETER
DIM	DIMENSION
DISP	DISPENSER
DN	DOWN
DS	DOWNSPOUT
DWG	DRAWING
EA	EACH
EXP. JT.	EXPANSION JOINT
ELEC	ELECTRICAL
ELEV	ELEVATION
EP	ELECTRICAL PANEL
EQ	EQUAL
EQPT	EQUIPMENT
EXIST.	EXISTING
EXP.	EXPANSION
EXT	EXTERIOR
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FIN. FL.	FINISH FLOOR
GA	GAUGE
GALV	GALVANIZED
GWB	GYPSUM WALL BOARD
HGT	HEIGHT
HM	HOLLOW METAL
HP	HANDICAPPED
ID	INSIDE DIMENSION
INSUL	INSULATION, INSULATED
INT	INTERIOR
JT	JOINT
LAM	LAMINATE(D)
LAV	LAVATORY
MAX	MAXIMUM
MECH	MECHANICAL
MEMB	MEMBER
MTL	METAL
MFR	MANUFACTURER
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MO	MASONRY OPENING
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
O.C.	ON CENTER
OD	OUTSIDE DIAMETER
OPG	OPENING
OPP	OPPOSITE
OVHD	OVERHEAD
P.LAM	PLASTIC LAMINATE
PL	PLATE
PLYWD	PLYWOOD
PTD	PAINTED
R	RISER
RAD	RADIUS
REINF	REINFORCED
REQ'D	REQUIRED
SAF.	SAFETY
SH	SHELF
SHT(S)	SHEET (SHEETS)
SIM	SIMILAR
SPEC	SPECIFICATION
SST	STAINLESS STEEL
ST	STORAGE
STD	STANDARD
STL	STEEL
STRUCT.	STRUCTURAL
SUSP	SUSPENDED
TH	THICK
TOC	TOP OF CURB
TOS	TOP OF SLAB
TR	TREAD
TS	TUBE SHAPE
TYP	TYPICAL
VCT	VINYL COMPOSITION TILE
W/	WITH
WC	WATER CLOSET
WD	WOOD

MAINE STATE PLUMBING CODE/UPC

Occupancy Classification:	Business Office w/ancillary Storage
Occupancy Area:	4,800 sf Net
Occupancy Load:	34 Occupants
Office:	34 Occupants (17 Male/17 Female) (12 max per shift - 6 Male/6 Female)

FIXTURES	TOILETS	URINALS	LAVS
Men's Toilet Room	1	1	1
Women's Toilet Room	1	0	1

Drinking Fountain: 1 Required per 150 occupants - Beverage Station

NFPA 101 LIFE SAFETY CODE - 2015 EDITION

Building Classification:	Business - (4,800 sf)
Construction Type:	V/000
Hazard Classification:	Ordinary Hazard
Occupant Loads:	2700 sf Office @ 100 sf/occupant = 27 Occupants 2100 sf Storage @ 500 sf/occupant = 5 Occupants
Janitor, Mech, Stor Rating:	1 hour if over 100 sf
Minimum Headroom:	7'-6" at occupied areas

Building Uses	Business
Max. Allowable Travel Distance:	150'
Max. Allowable Common Path:	75'
Max. Dead End Corridor Length:	20'
Minimum Egress Corridor Width:	36" (Less than 50 occupants)
Minimum Number of Required Exits	2 (1 if exit distance is less than 75')
Minimum Exit Access Corridor rating:	1 hr
Separation of exits:	0.5 diagonal distance = 30'-0"
Minimum Egress Door Width:	36"
Minimum Stair Width:	36" (Less than 50 occupants)
Stair Riser:	7" maximum
Stair Tread:	11" minimum
Handrails:	34"-36" AFF with 12"/23" extensions
Exit Lighting:	Required
Emergency Lighting:	Not Required
Fire Alarm System:	Not Required
Fire Sprinkler System:	Not Required
Portable Fire Extinguishers:	Required

2015 INTERNATIONAL BUILDING CODE

Use Group Classification:	Business - 4,800 sf
Occupant Loads:	100 sf/occupant @ 2700 sf business = 27 occupants 300 sf/occupant @ 2100 sf storage = 7 occupants
Janitor, Mech & Storage Rooms:	1 hour if over 50 sf but under 100 sf

Building Limitations	
Construction Type:	VB
Maximum Height:	2 Story/40'
Maximum Area / Floor:	9,000 sf

Fire Resistance Ratings	
Structural Frame	None
Load Bearing Exterior Walls:	None
Load Bearing Interior Walls:	None
Mechanical Rooms:	1 hour
Exit Corridors:	1 hour
Roof/Floor Structure	None
Minimum Number of Exits:	2
Maximum Exit Travel Distance:	200'
Maximum Dead End Corridor Length:	20'
Maximum Common Travel Path:	75'
Minimum Corridor Width:	36" (Under 50 occupants)
Minimum Stair Width:	36" (Less than 50 occupants)
Stair Riser:	7" maximum
Stair Tread:	11" minimum
Handrails:	34"-36" AFF with 12"/23" extensions
Fire Alarm/Detection System:	Not Required
Fire Sprinkler System:	Not Required
Portable Fire Extinguishers:	Required
Exit Lights	Required
Emergency Lighting	Required

Building Live Loads	
Offices:	100 psf
Corridors:	80 psf

2015 INTERNATIONAL ENERGY EFFICIENCY CODE (IECC)

MUBEC (Maine Uniform Building Energy Code)

MINIMUM INSULATION VALUES
Per 2009 IECC; Table 502.1.2, 502.2(1) and 502.3

ZONE 6A	R-VALUE	U-FACTOR	SHGC
Exterior wall	13 + 7.5ci	0.064	NA
Roof	30.0	0.033	NA
Slab (24" band)	10.0	0.100	NA
Frost Wall (ci)	10.0	0.100	NA
Doors - Opaque	1.4	0.70	NA
Windows	1.8	0.55	0.40
Storefront (window)2.2	0.45	0.40	
Storefront (door)	1.25	0.80	0.40

MATERIALS

CONCRETE

CONCRETE MASONRY UNIT

BATT INSULATION

PRECAST STONE

BRICK

EARTH

GRAVEL

PLYWOOD

RIGID INSULATION

METAL

ROUGH WOOD

FINISHED WOOD

SYMBOLS

XXX — ROOM NUMBER

XXX — DOOR NUMBER

X — REVISION NUMBER

X — WINDOW TYPE

X — PARTITION TYPE

ELEVATION NUMBER — X / AX / X — INTERIOR ELEVATIONS

SECTION NUMBER — X / XXX — SHEET NUMBER — BUILDING SECTION

SECTION NUMBER — X / XXX — SHEET NUMBER — WALL SECTION

X — DETAIL REFERENCE

DETAIL NUMBER — X / XXX — SHEET NUMBER — DETAIL REFERENCE

FIN. FL. ELEV. XXX.X — FINISH FLOOR ELEVATION ON PLAN

FIN. FL. ELEV. XXX.X — FINISH FLOOR ELEVATION ON SECTIONS & ELEVATIONS

GENERAL NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS PRIOR TO COMMENCING THE WORK AND REPORT ANY DISCREPANCIES TO THE ARCHITECT. CONTRACTOR SHALL PROCEED WITH THE WORK ONLY AFTER SUCH DISCREPANCIES HAVE BEEN RESOLVED BY THE ARCHITECT. CONTRACTOR SHALL ALLOW A 48 HOUR TIME FRAME FOR RESOLVING DISCREPANCIES ONCE THE ARCHITECT HAS ACKNOWLEDGED THE CONDITION.
2. CONTRACTOR SHALL REVIEW AND VERIFY ALL EXISTING CONDITIONS PRIOR TO STARTING THE WORK IN ANY GIVEN AREA.
3. WORK WITH GIVEN DIMENSIONS AND LARGE SCALE DETAILS. DO NOT SCALE THE DRAWINGS AS THE REPRODUCTIVE PROCESS TENDS TO DISTORT THE ACCURACY OF THE GRAPHIC SCALE INDICATED.
4. ALL WOOD IN CONTACT WITH MASONRY OR CONCRETE SHALL BE PRESSURE PRESERVATIVE TREATED.
5. INSTALL SOLID BLOCKING AT WALL FRAMING BEHIND ALL SURFACE MOUNTED FIXTURES, TRIM AND HANDRAILS.
6. ALL GRAB BARS SHALL BE ABLE TO SUPPORT A DEAD WEIGHT OF 250 LBS AT ANY POINT.
7. THE LOCATION OF ANY DOOR JAMBS NOT DIMENSIONED SHALL BE 6" FROM ADJACENT PERPENDICULAR WALL.
8. ALL WALL PARTITIONS SHALL EXTEND FLOOR TO STRUCTURE ABOVE, UNLESS OTHERWISE NOTED.
9. ALL NEW SHEETROCK IN WET AREAS (PLUMBING FIXTURES) SHALL BE MOISTURE RESISTANT TYPE, UNLESS OTHERWISE NOTED.
10. REFER TO ACCESSIBILITY DETAIL SHEET FOR AMERICANS WITH DISABILITIES ACT (ADA) CONSTRUCTION CRITERIA.
11. MAINE TURNPIKE AUTHORITY TOLLING & COMMUNICATION ROOM SHALL BE TWO HOUR (2 HR) FIRE RATED.

GRANT HAYS ASSOCIATES
ARCHITECTURE & INTERIOR DESIGN
P.O. BOX 6179 FALMOUTH MAINE 04105
207.871.5900 www.granthays.com

SEAL

LICENSED ARCHITECT — MICHAEL F. HAYS No. 1724 — STATE OF MAINE

Michael F. Hays

REVISIONS

PROJECT NAME

CONTRACT NO.: 2019.04

MAINE TURNPIKE TOLL ADMINISTRATION BUILDING
MILE MARKER (MM) 103
GARDINER — MAINE 04345

SHEET

ABBREVIATIONS, LEGENDS & SYMBOLS

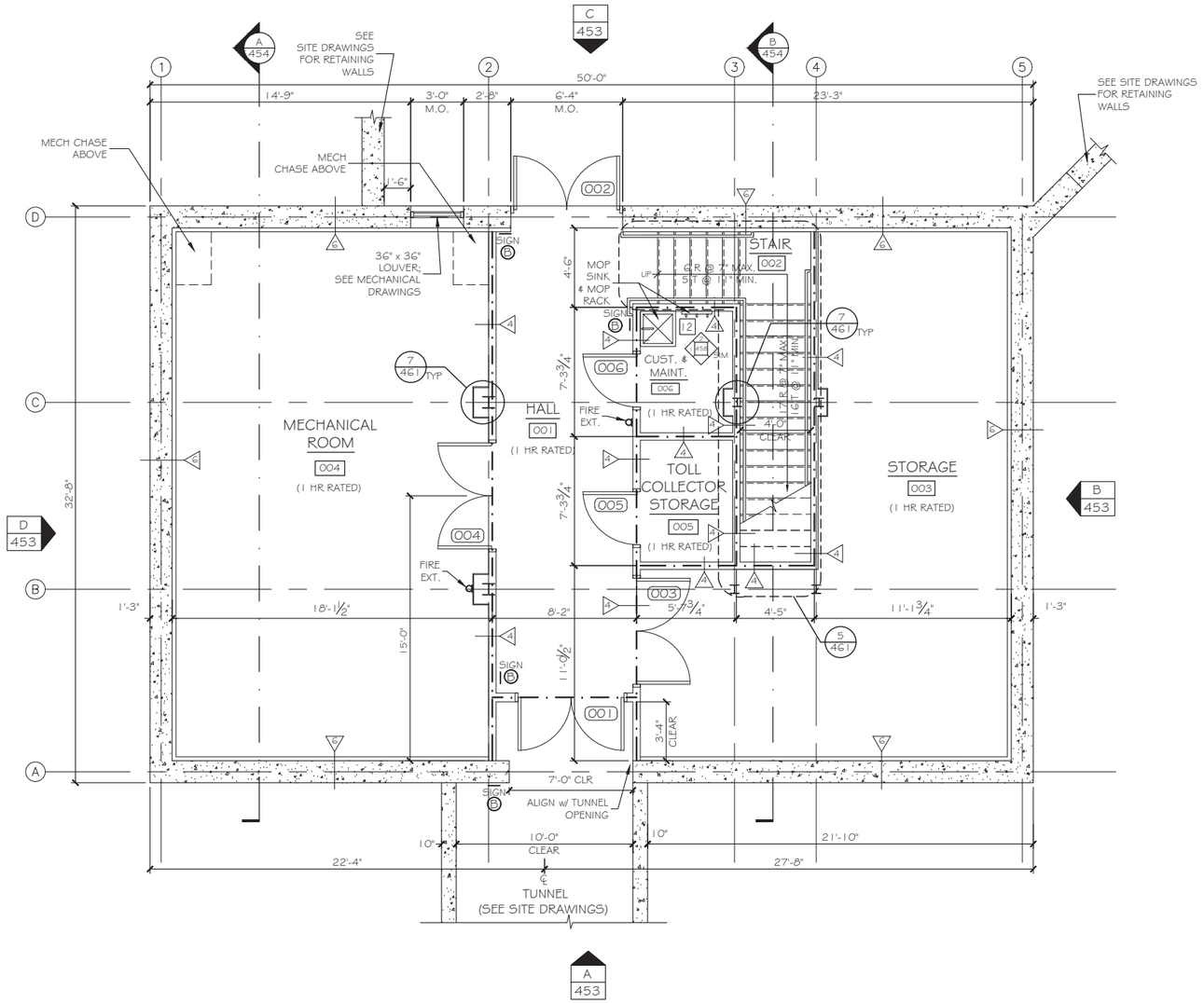
DATE
20 MAR 2019

SCALE
NO SCALE

DRAWN
MFH / mgk

JOB NO.
180203

SHEET
448
OF 503



BASEMENT FLOOR PLAN

SCALE: 1/4" = 1'-0" F.F.E.: 207.20'

PLAN NORTH

NOTES:

1. WATERPROOF ENTIRE PERIMETER OF BUILDING FOUNDATION w/ SAME MATERIAL AS TUNNEL.
2. SEE SITE DRAWINGS FOR UTILITY LOCATIONS INTO BUILDING & PERIMETER DRAINAGE LOCATIONS.

EQUIPMENT TYPES:

1	WATER DISPENSER - N.I.C.
2	REFRIGERATOR
3	MICROWAVE
4	COFFEE MAKER - N.I.C.
5	"DAY" & "NIGHT" SAFE - N.I.C.
6	BULLETIN BOARD (N.I.C.) INSTALL BLOCKING @ FRAMING
7	CURRENCY SCANNER - N.I.C.
8	COIN SORTER - N.I.C.
9	2 - TIER LOCKERS
10	ROLLING CHAIR - N.I.C.
11	STORAGE SHELF UNITS - N.I.C.
12	MOP RACK
13	TRASH & RECYCLE RECEPTACLES - N.I.C.

1 HR FIRE RATED ASSEMBLY

2 HR FIRE RATED ASSEMBLY

PARTITION TYPES

TAG	DETAIL
1	9/460
2	10/460
3	11/460
4	12/460
5	13/460
6	14/460
7	15/460
8	8/461

NOTES:

1. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS & SIZES OF ALL DIFFUSERS, GRILLES, & EQUIPMENT.
2. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS & SIZES OF ALL LIGHT FIXTURES & DEVICES.
3. REFER TO ELECTRICAL DRAWINGS FOR HEAT TAPE AT GUTTERS.
4. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS OF FIRE ALARM DEVICES.
5. REFER TO SHEET 458 FOR BREAK ROOM 103 KITCHEN CABINETS.
6. REFER TO SHEET 458 FOR CUSTODIAL 109 INTERIOR ELEVATION.
7. REFER TO SHEET 457 FOR WOMEN'S 105 & MEN'S 104 INTERIOR ELEVATIONS.
8. REFER TO SHEET 462 FOR MOUNTING HEIGHTS OF ACCESSORIES AND APPURTENANCES.
9. N.I.C. = NOT IN CONTRACT (PROVIDED BY THE AUTHORITY)
10. REFER TO SHEET 462 FOR SIGNAGE.
11. INSTALL PTD FIRE-RETARDANT PLYWOOD BACKER PANELS TO 8'-0" A.F.F. AT ENTIRE PERIMETER OF ROOM 108
12. SEE SHEET 462 FOR DRINKING FOUNTAIN / BOTTLE FILLER (DF) MOUNTING HEIGHT.

GRANT HAYS ASSOCIATES
ARCHITECTURE & INTERIOR DESIGN
P.O. BOX 6179 FALMOUTH MAINE 04105
207.871.5900 www.granthays.com

SEAL

LICENSED ARCHITECT
MICHAEL F. HAYS
No. 1724
STATE OF MAINE
Michael F. Hays

REVISIONS

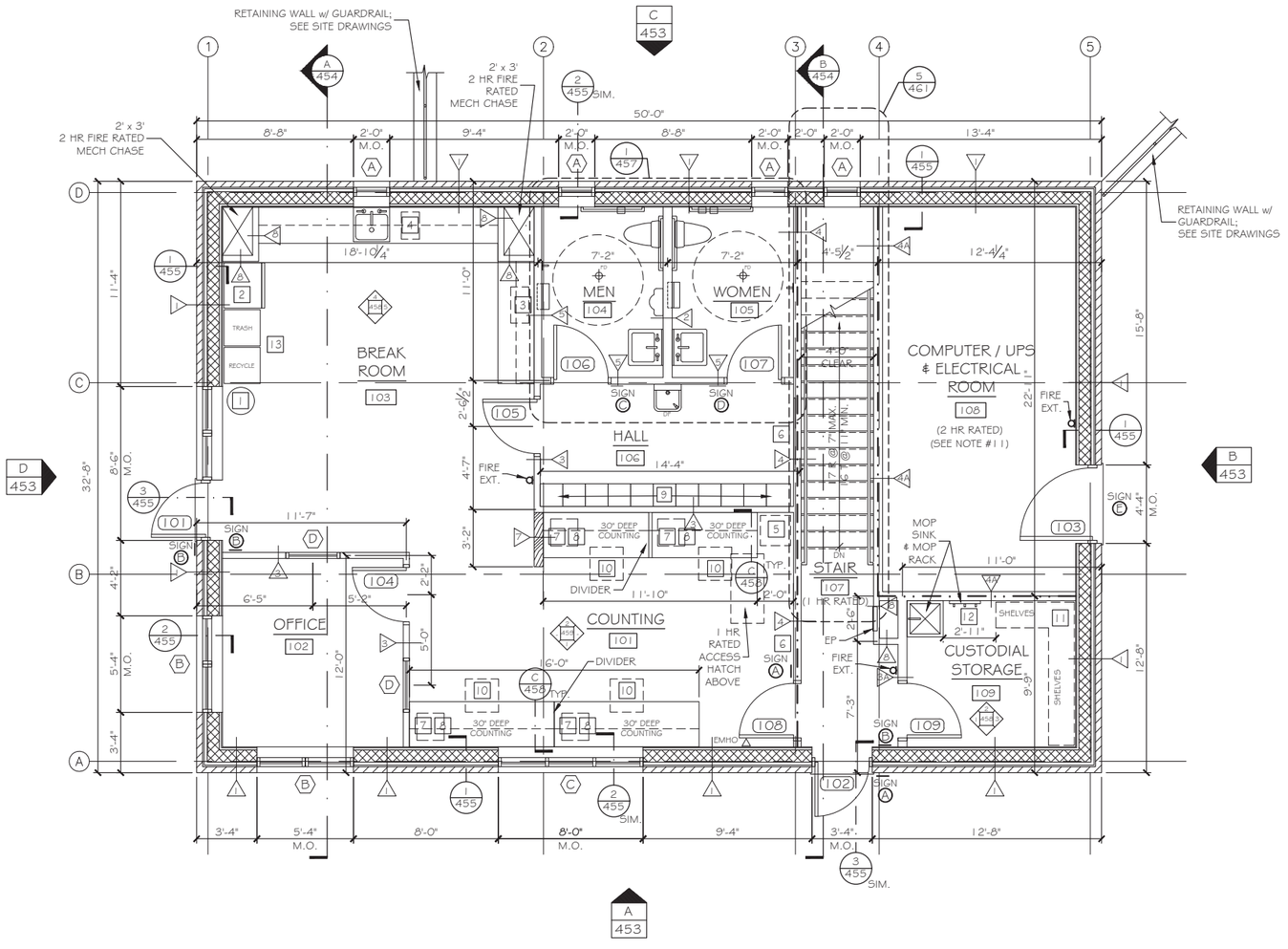
PROJECT NAME

CONTRACT NO.: 2019.04
MAINE TURNPIKE TOLL ADMIN/TRATION BUILDING
MILE MARKER (MM) 103
GARDINER MAINE 04345

SHEET

BASEMENT FLOOR PLAN

DATE
20 MAR 2019
SCALE
1/4"=1'-0"
DRAWN
MFH / mgk
JOB NO.
180203
SHEET
449
OF 503



FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0" F.F.E.=220.20'

PLAN NORTH

EQUIPMENT TYPES:

1. WATER DISPENSER - N.I.C.
2. REFRIGERATOR
3. MICROWAVE
4. COFFEE MAKER - N.I.C.
5. "DAY" & "NIGHT" SAFE - N.I.C.
6. BULLETIN BOARD (N.I.C.) INSTALL BLOCKING @ FRAMING
7. CURRENCY SCANNER - N.I.C.
8. COIN SORTER - N.I.C.
9. 2 - TIER LOCKERS
10. ROLLING CHAIR - N.I.C.
11. STORAGE SHELF UNITS - N.I.C.
12. MOP RACK
13. TRASH & RECYCLE RECEPTACLES - N.I.C.

1 HR FIRE RATED ASSEMBLY

2 HR FIRE RATED ASSEMBLY

PARTITION TYPES	
TAG	DETAIL
1	9/460
2	10/460
3 & 3A	11/460
4 & 4A	12/460
5	13/460
6	14/460
7	15/460
8	8/461

NOTES:

1. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS & SIZES OF ALL DIFFUSERS, GRILLES, & EQUIPMENT.
2. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS & SIZES OF ALL LIGHT FIXTURES & DEVICES.
3. REFER TO ELECTRICAL DRAWINGS FOR HEAT TAPE AT GUTTERS.
4. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS OF FIRE ALARM DEVICES.
5. REFER TO SHEET 458 FOR BREAK ROOM 103 KITCHEN CABINETS.
6. REFER TO SHEET 458 FOR CUSTODIAL 109 INTERIOR ELEVATION.
7. REFER TO SHEET 457 FOR WOMEN'S 105 & MEN'S 104 INTERIOR ELEVATIONS.
8. REFER TO SHEET 462 FOR MOUNTING HEIGHTS OF ACCESSORIES AND APPURTENANCES.
9. N.I.C. = NOT IN CONTRACT (PROVIDED BY THE AUTHORITY)
10. REFER TO SHEET 462 FOR SIGNAGE.
11. INSTALL PTD FIRE-RETARDANT PLYWOOD BACKER PANELS TO 8'-0" A.F.F. AT ENTIRE PERIMETER OF ROOM 108
12. SEE SHEET 462 FOR DRINKING FOUNTAIN / BOTTLE FILLER (DF) MOUNTING HEIGHT.

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SEAL

LICENSED ARCHITECT
MICHAEL F. HAYS
No. 1724
STATE OF MAINE
Michael F. Hays

REVISIONS

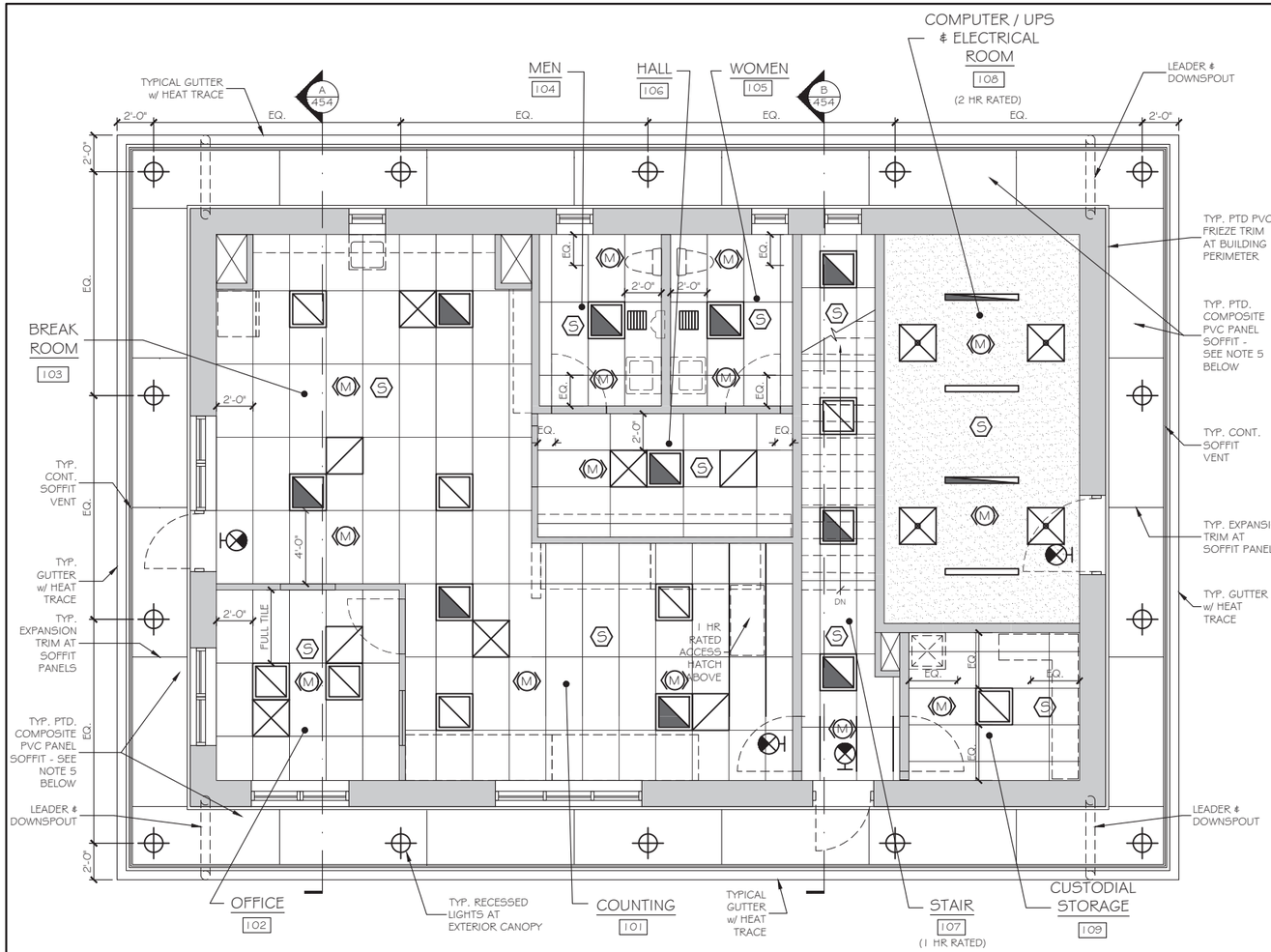
PROJECT NAME

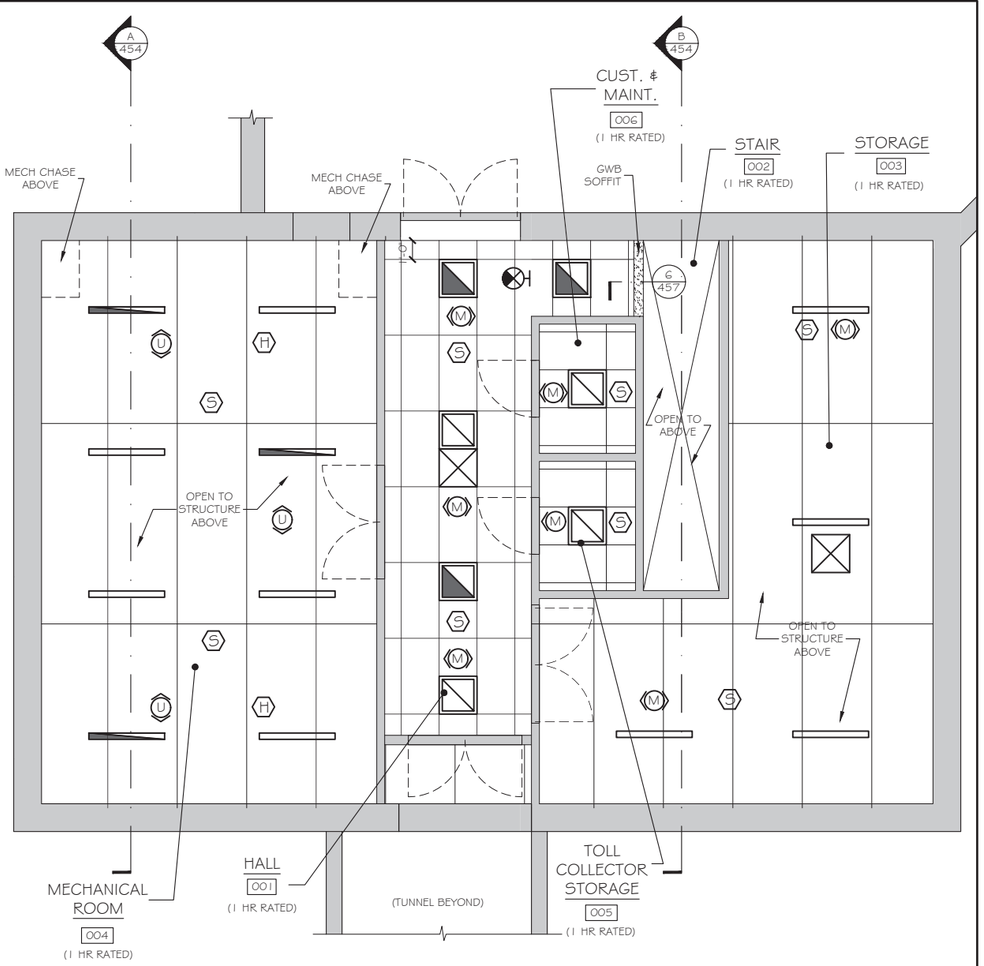
CONTRACT NO.: 2019.04
MAINE TURNPIKE TOLL ADMINISTRATION BUILDING
MILE MARKER (MM) 103
GARDINER
MAINE 04345

SHEET

FIRST FLOOR PLAN

DATE
20 MAR 2019
SCALE
1/4"=1'-0"
DRAWN
MFH / mgk
JOB NO.
180203
SHEET
450
OF 503





FIRST FLOOR REFLECTED CEILING PLAN

SCALE: 1/4" = 1'-0"

NOTES: SEE (4/457) FOR F.C. GWB / 1 HR RATED ASSEMBLY AT ROOF TRUSSES - ENTIRE BUILDING

SEE (5/457) FOR F.C. GWB / 2 HR RATED ASSEMBLY AT ROOF TRUSSES - COMPUTER / UPS ELECTRICAL ROOM 105

PLAN NORTH

BASEMENT REFLECTED PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH

NOTES:

1. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS & SIZES OF ALL DIFFUSERS, GRILLES, & EQUIPMENT.
2. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS & SIZES OF ALL LIGHT FIXTURES & DEVICES.
3. REFER TO ELECTRICAL DRAWINGS FOR HEAT TAPE AT GUTTERS.
4. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS OF FIRE ALARM DEVICES.
5. PROVIDE EXPANSION TRIM ACCESSORIES & ANCHORS PER SOFFIT PANEL MANUFACTURER INSTRUCTIONS AT ALL EXTERIOR COMPOSITE PVC SOFFIT PANEL LOCATIONS.

LEGEND:

- PAINTED SHEETROCK CEILING (RATED)
- SUSPENDED ACOUSTICAL CEILING
- PAINTED SHEETROCK SOFFIT @ 7'-4" A.F.F. (MIN) SEE (6/457)
- SOFFIT LIGHT FIXTURE
- EXIT LIGHT FIXTURE
- SURFACE LIGHT FIXTURE (EMERGENCY POWERED)
- LAY-IN LIGHT FIXTURE
- (EMERGENCY POWERED)
- CUH — CABINET UNIT HEATER
- DUAL SUPPLY / RETURN
- HVAC SUPPLY
- HVAC RETURN
- EXHAUST FAN
- (M) (U) — SENSORS; SEE ELECTRICAL DRAWINGS
- (S) (H) — SMOKE / HEAT DETECTORS; SEE ELECTRICAL DRAWINGS

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SEAL

LICENSED ARCHITECT — MICHAEL F. HAYS No. 1724 — STATE OF MAINE

REVISIONS

PROJECT NAME

CONTRACT NO.: 2019.04

MAINE TURNPIKE TOLL ADMINISTRATION BUILDING MILE MARKER (MM) 103

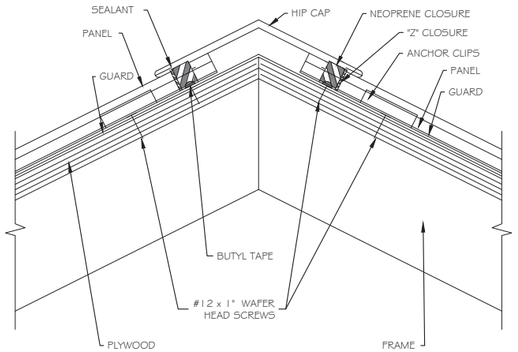
MAINE 04345

GARDINER

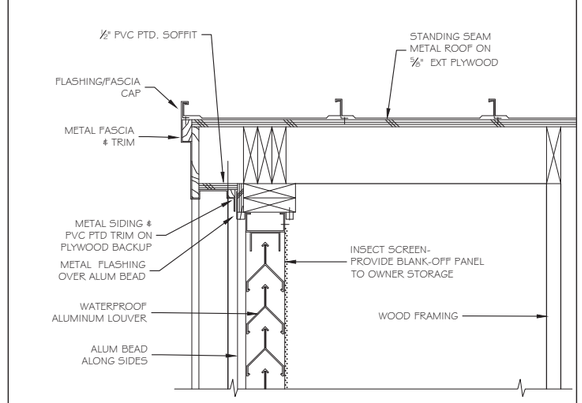
SHEET

REFLECTED CEILING PLANS

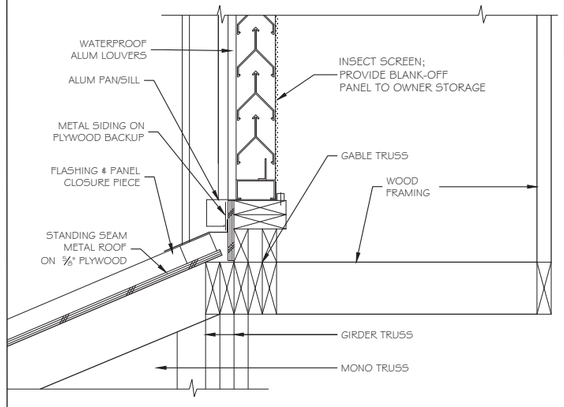
DATE: 20 MAR 2019
SCALE: 1/4"=1'-0"
DRAWN: MFH / mgk
JOB NO.: 180203
SHEET: 451 OF 503



① ROOF HIP / RIDGE DETAIL 3"= 1'-0"

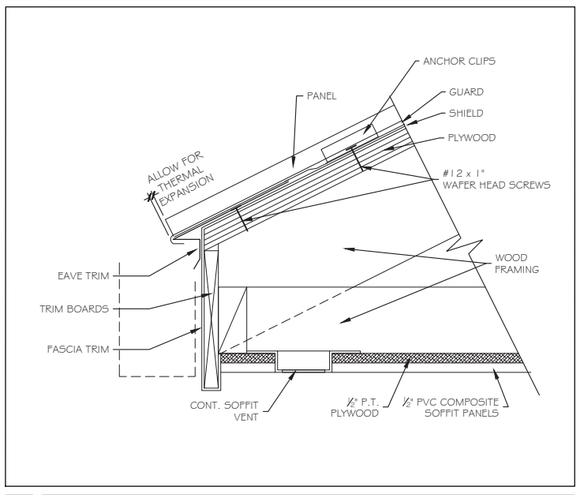


④ GABLE LOUVER RAKE DETAIL 3"= 1'-0"

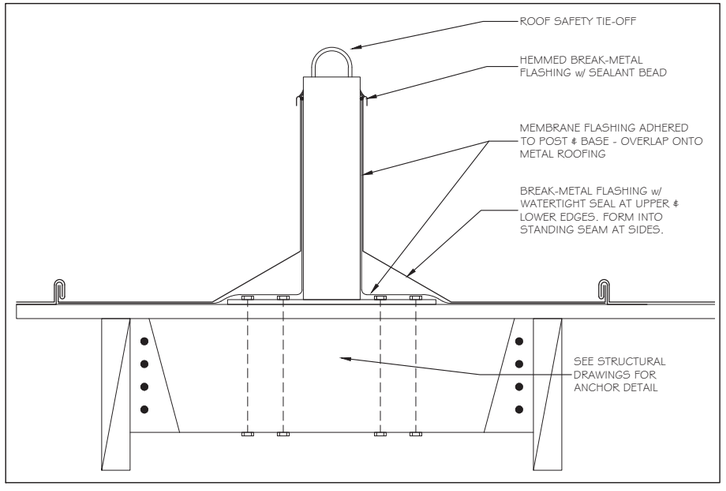


⑤ GABLE LOUVER SILL DETAIL 3"= 1'-0"

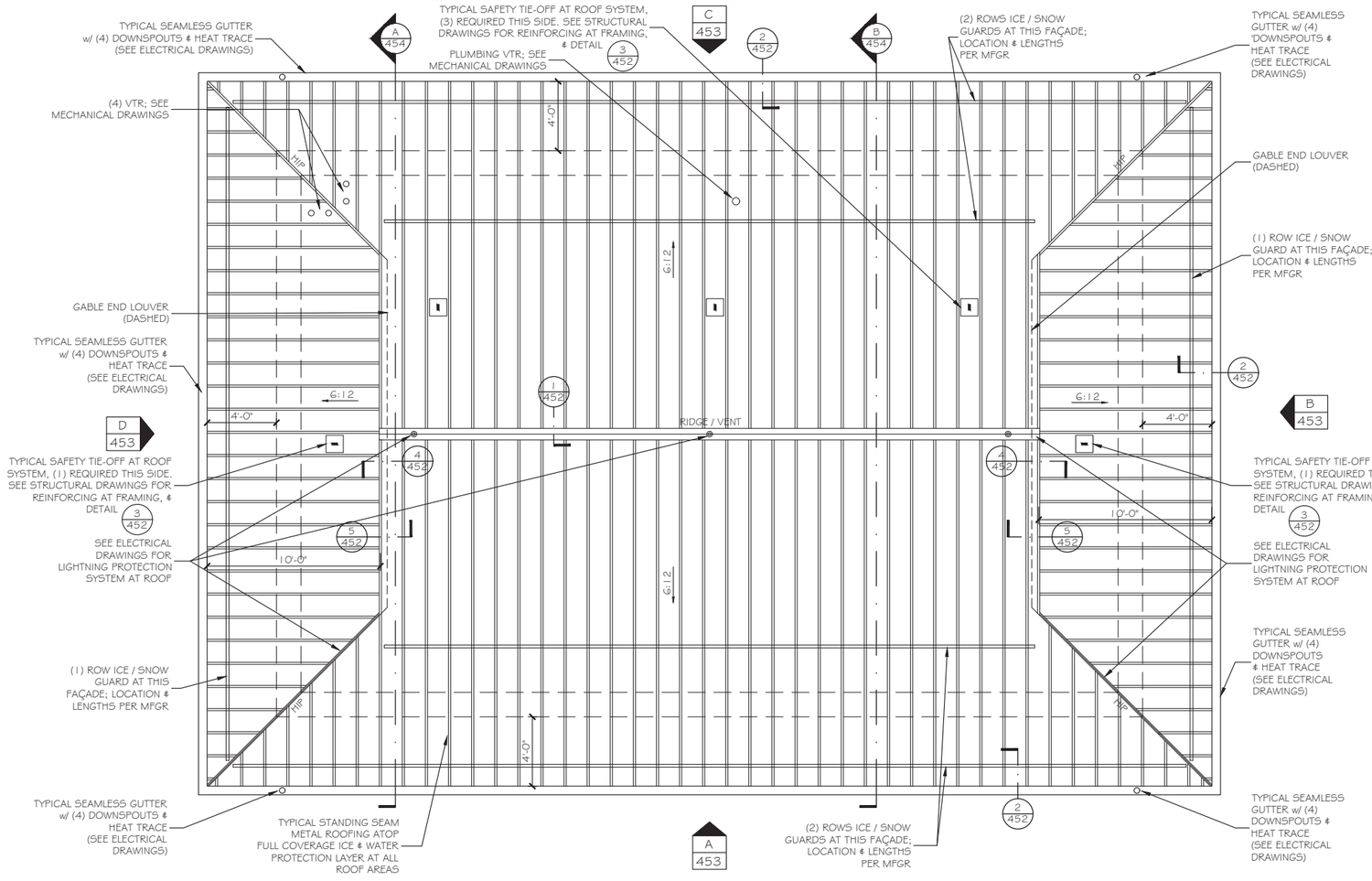
⑥



② ROOF EAVE DETAIL 3"= 1'-0"



③ FLASHING AT ROOF SAFETY TIE-OFF 3"= 1'-0"



ROOF PLAN
SCALE: 1/4" = 1'-0"

PLAN NORTH

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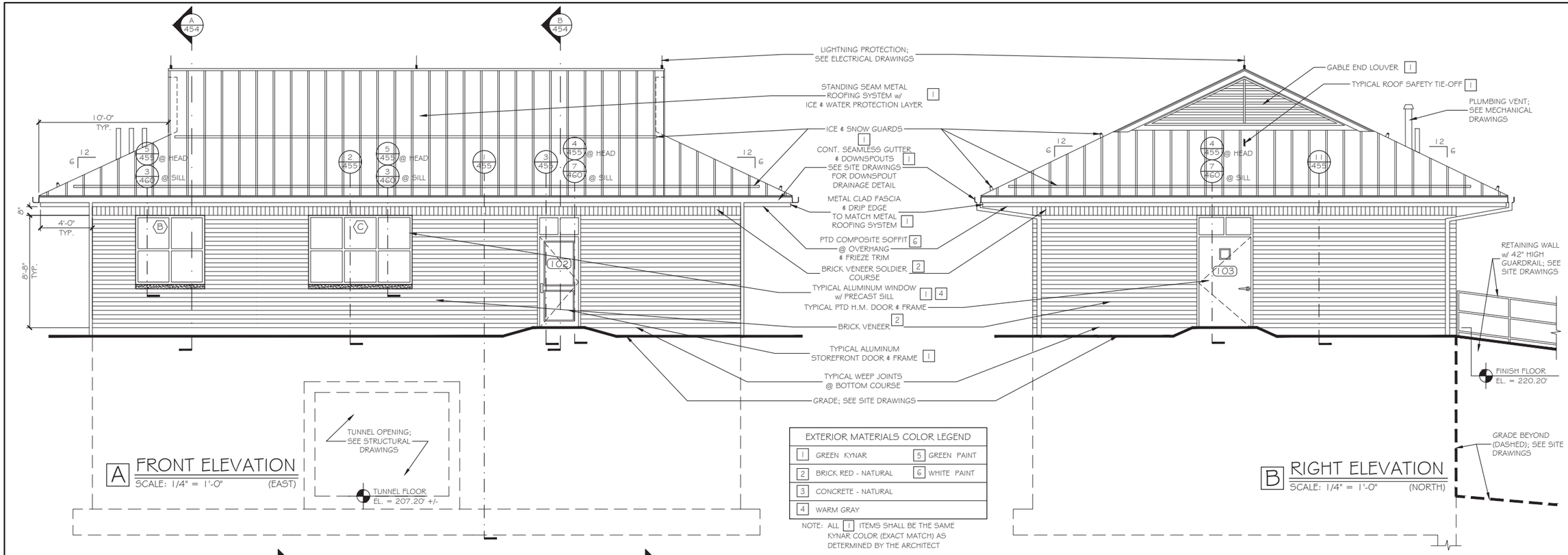
MILE MARKER (MM) 103
GARDINER MAINE 04345

SHEET

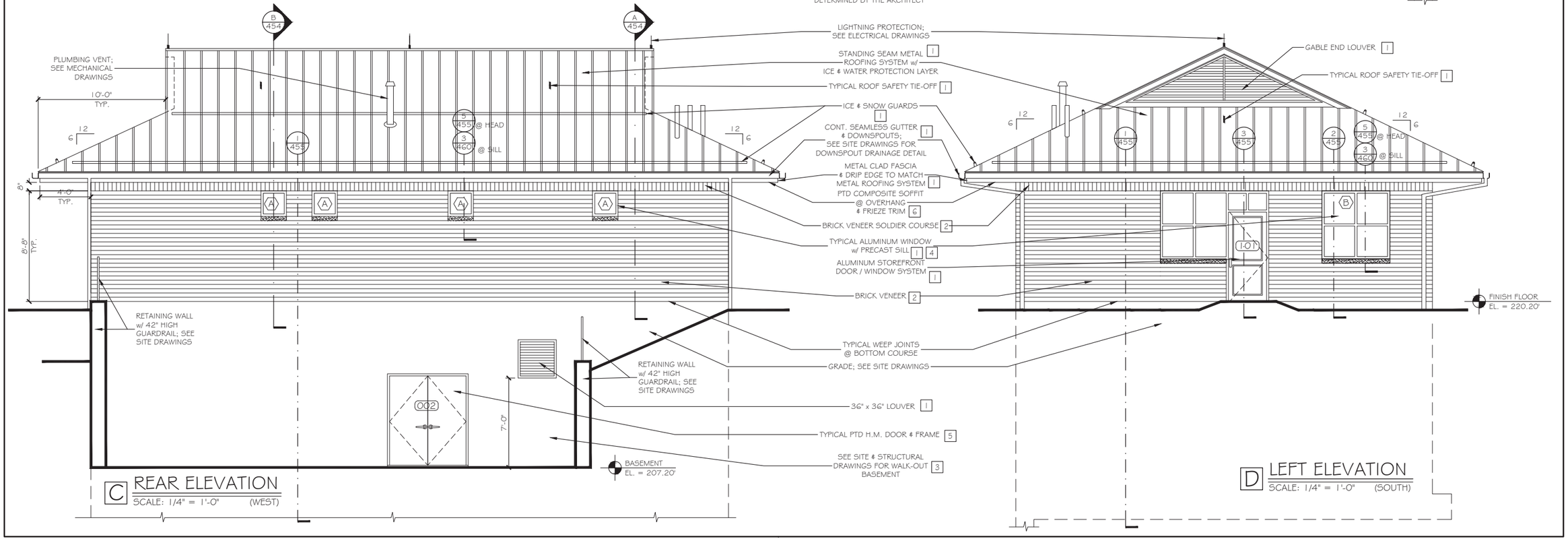
ROOF PLAN AND DETAILS

DATE
20 MAR 2019
SCALE
AS NOTED
DRAWN
MFH / mgk
JOB NO.
180203
SHEET
452
OF 503



EXTERIOR MATERIALS COLOR LEGEND			
1	GREEN KYNAR	5	GREEN PAINT
2	BRICK RED - NATURAL	6	WHITE PAINT
3	CONCRETE - NATURAL		
4	WARM GRAY		

NOTE: ALL 1 ITEMS SHALL BE THE SAME KYNAR COLOR (EXACT MATCH) AS DETERMINED BY THE ARCHITECT



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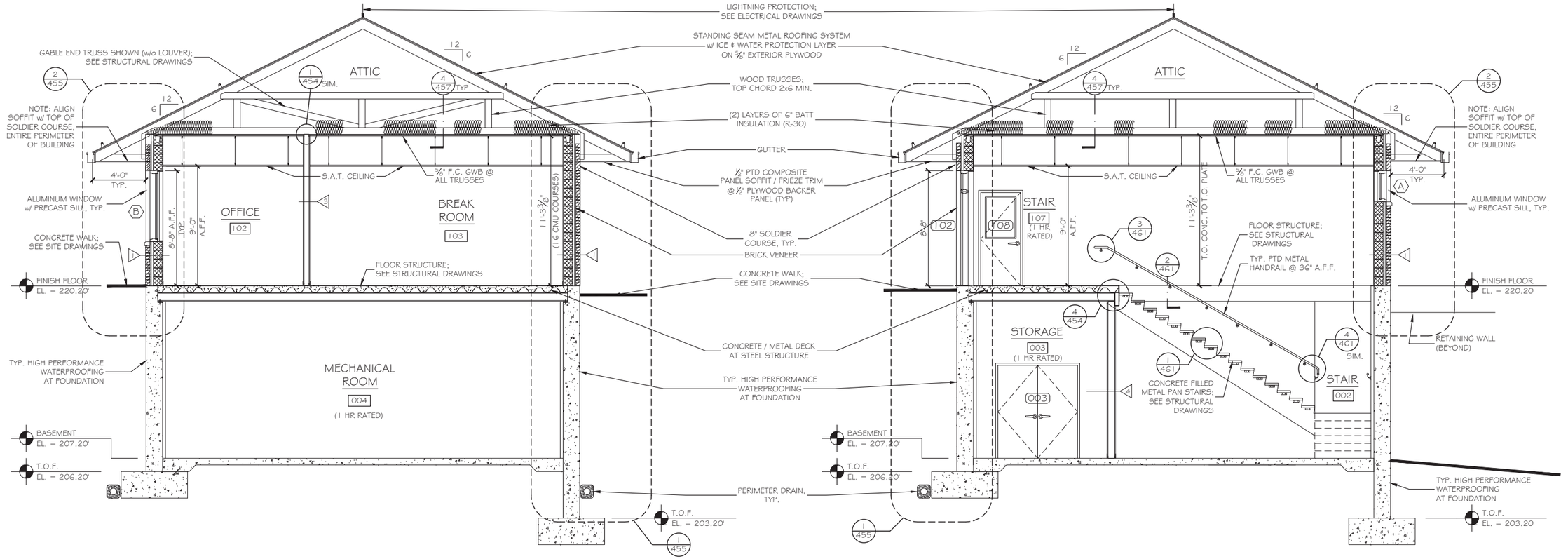
MILE MARKER (MM) 103
GARDINER MAINE 04345

SHEET

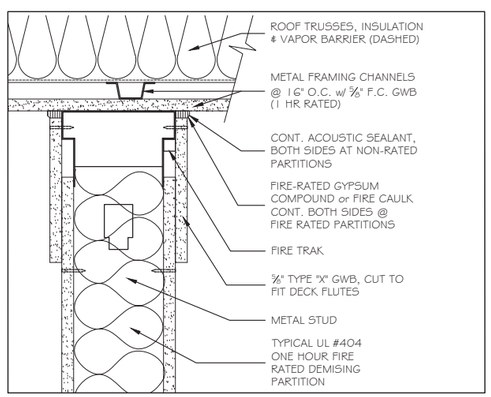
BUILDING ELEVATIONS

DATE
20 MAR 2019
SCALE
1/4"=1'-0"
DRAWN
MFH / mgk
JOB NO.
180203
SHEET
453
OF 503

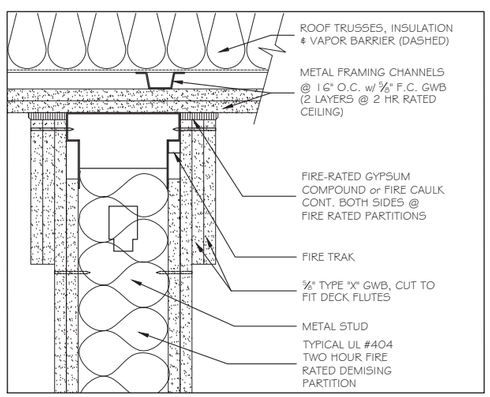


Ⓐ BUILDING SECTION A
SCALE: 1/4" = 1'-0"

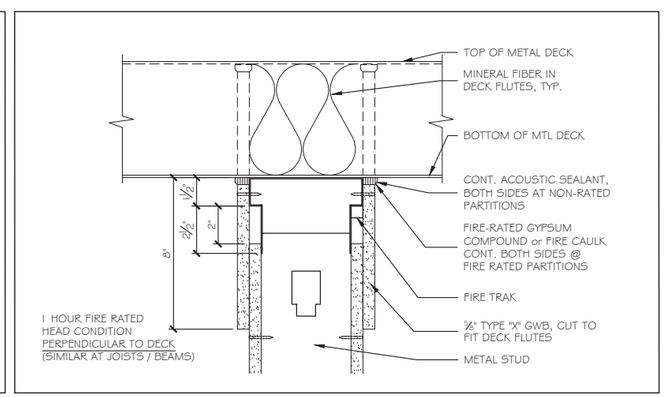
Ⓑ BUILDING SECTION B
SCALE: 1/4" = 1'-0"



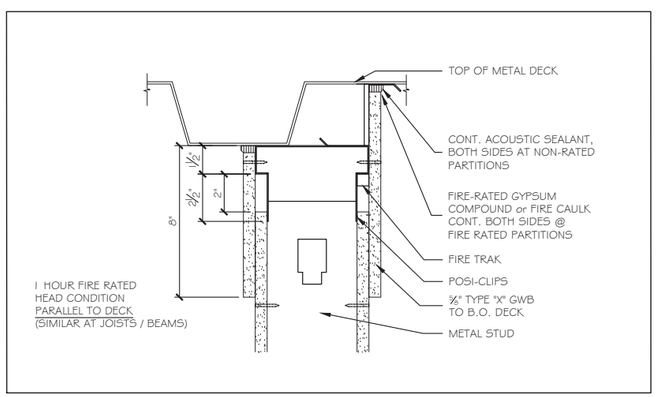
① 1 HR FIRE RATED HEAD CONDITION AT ROOF TRUSSES 3"=1'-0"



② 2 HR FIRE RATED HEAD CONDITION AT ROOF TRUSSES 3"=1'-0"



③ 1 HR RATED HEAD CONDITION PERPENDICULAR TO DECK 3"=1'-0"



④ 1 HR RATED HEAD CONDITION PARALLEL TO DECK 3"=1'-0"

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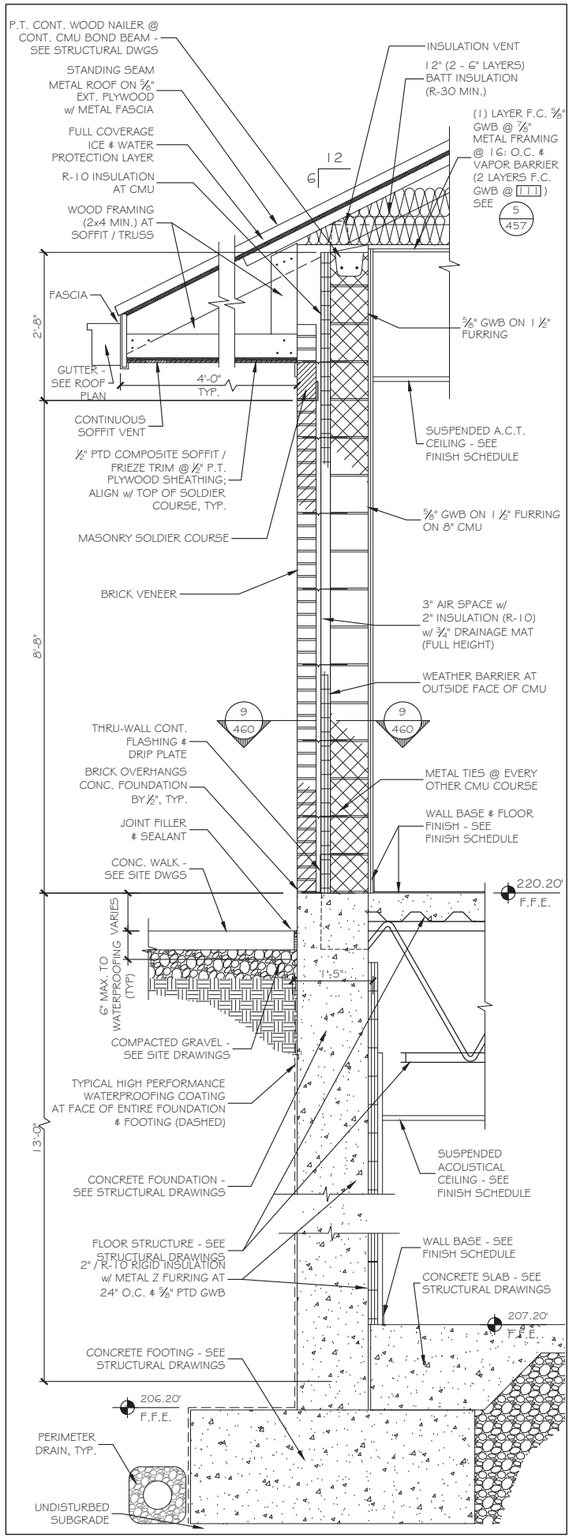
REVISIONS

PROJECT NAME
MAINE TURNPIKE TOLL ADMINISTRATION BUILDING MILE MARKER (MM) 103
GARDINER MAINE 04345

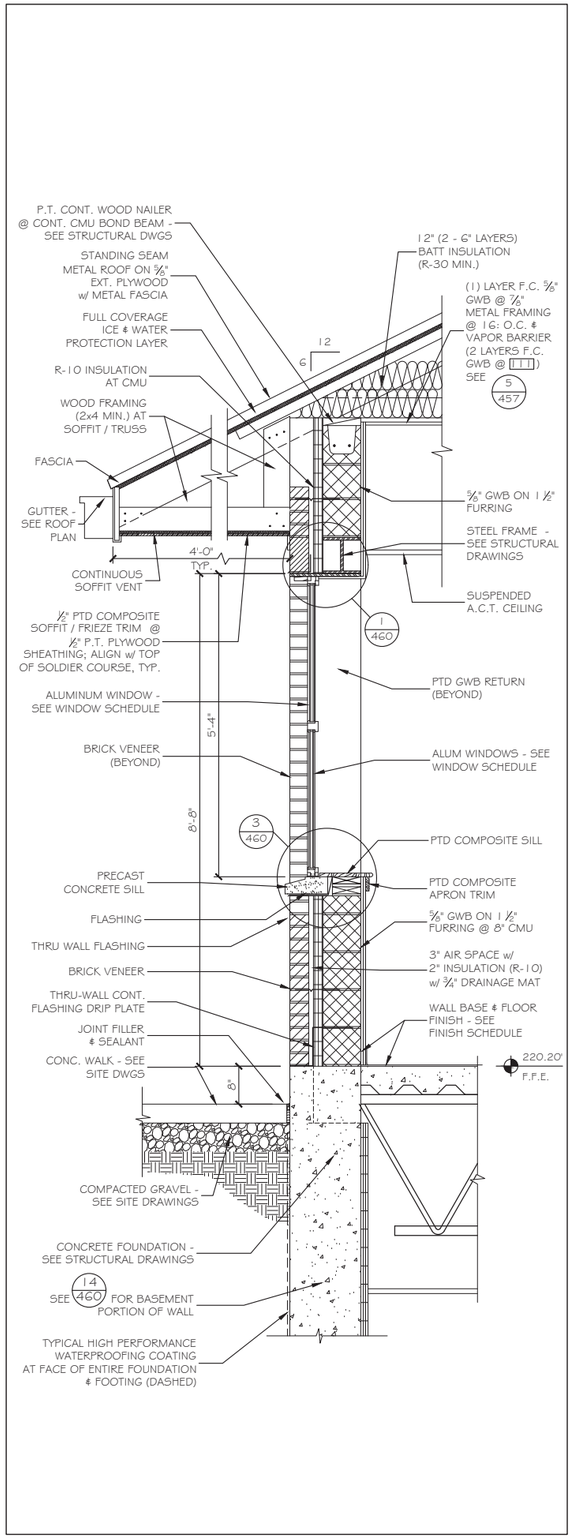
CONTRACT NO.: 2019.04

SHEET
BUILDING SECTIONS

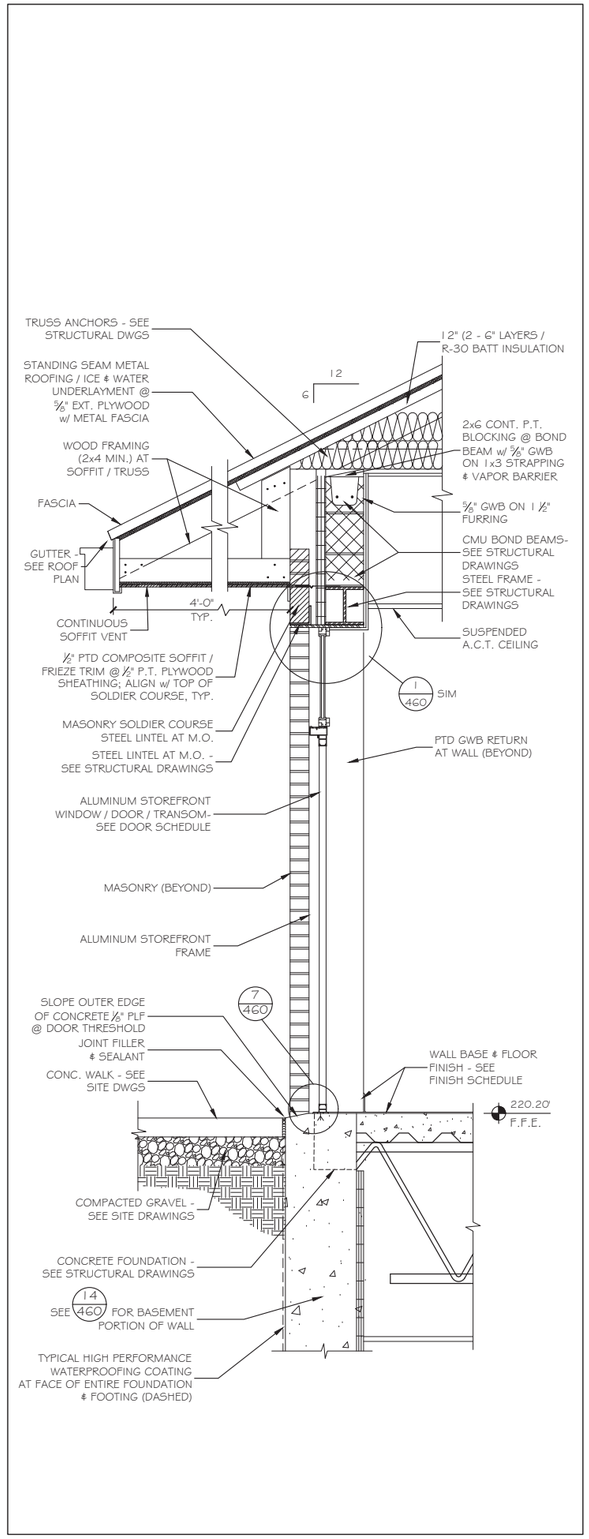
DATE
20 MAR 2019
SCALE
1/4"=1'-0"
DRAWN
MFH / mgk
JOB NO.
180203
SHEET
454
OF 503



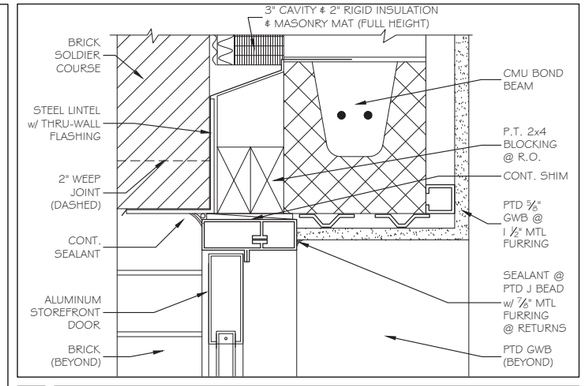
① TYPICAL EXTERIOR WALL SECTION 3/4"= 1'-0"



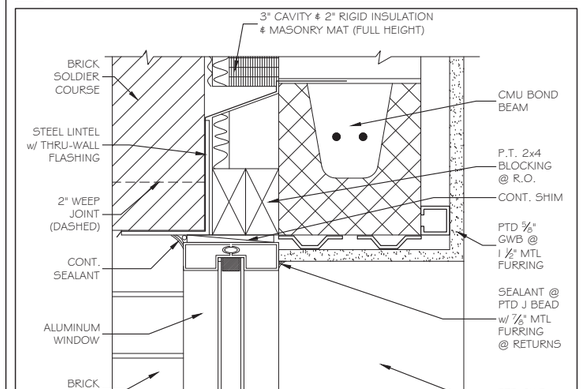
② EXTERIOR WINDOW WALL SECTION 3/4"= 1'-0"



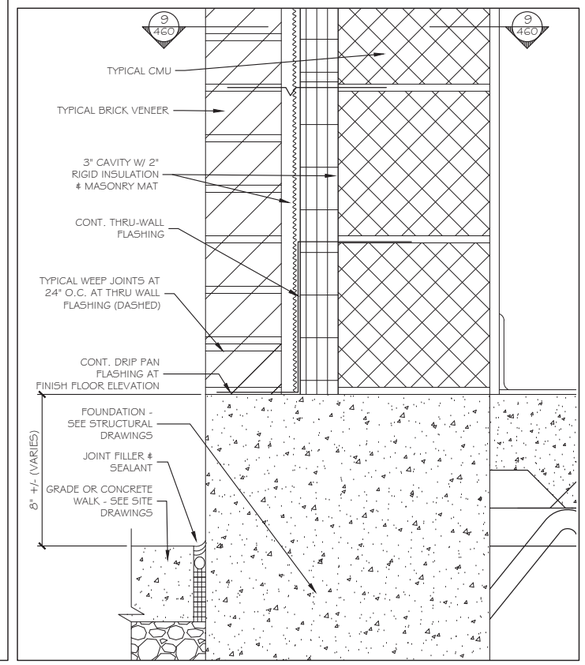
③ EXTERIOR DOOR WALL SECTION 3/4"= 1'-0"



④ EXTERIOR DOOR HEAD @ MASONRY 3" = 1'-0"



⑤ EXTERIOR WINDOW HEAD @ MASONRY 3" = 1'-0"



⑥ CAVITY WALL SECTION DETAIL 3"= 1'-0"

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REVISIONS

PROJECT NAME

CONTRACT NO.: 2019.04

MAINE TURNPIKE TOLL ADMINISTRATION BUILDING
MILE MARKER (MM) 103
GARDINER MAINE 04345

SHEET

WALL SECTIONS & PARTITION TYPES

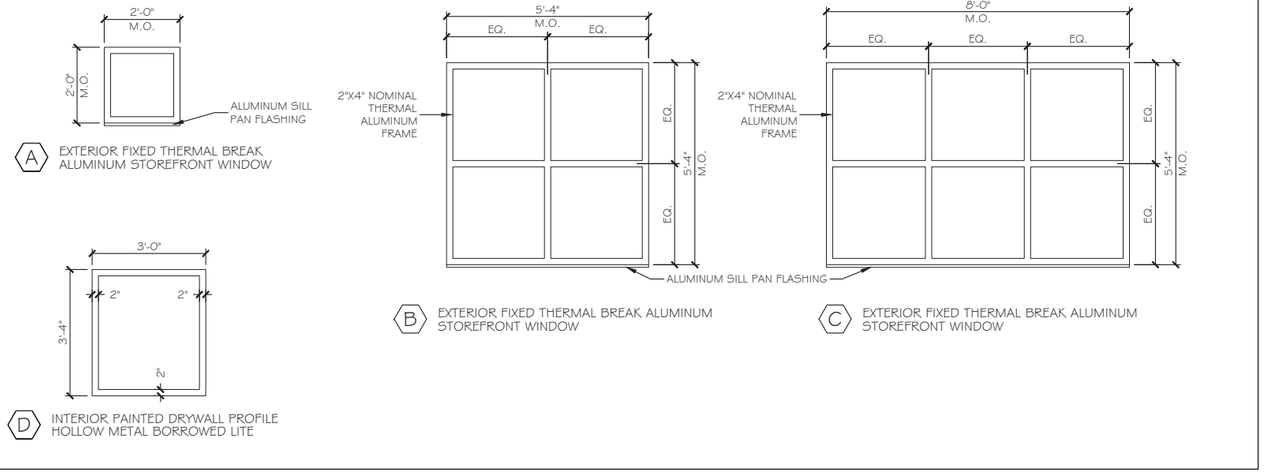
DATE
20 MAR 2019

SCALE
AS NOTED

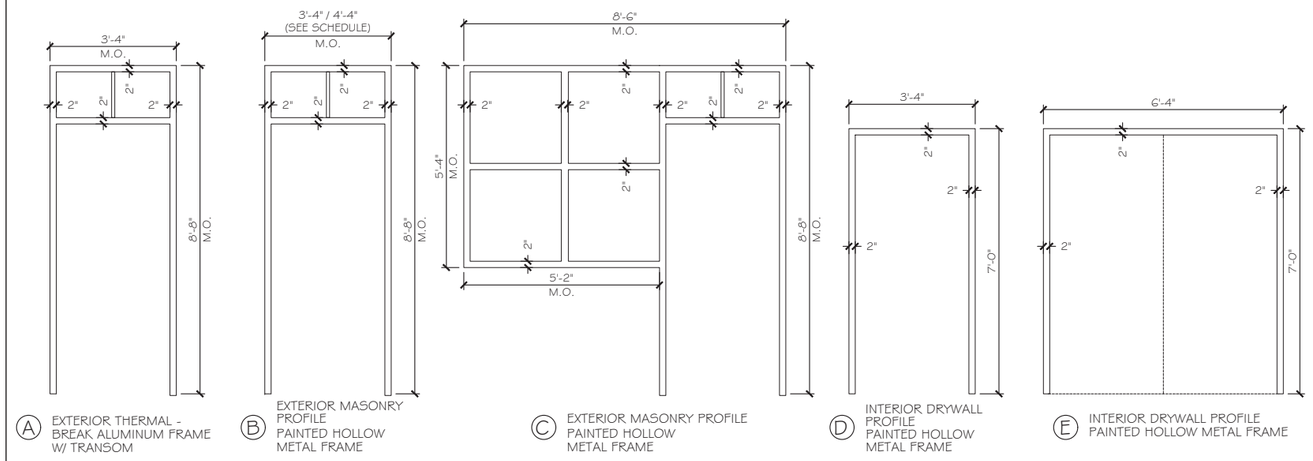
DRAWN
MFH / mgk

JOB NO.
180203

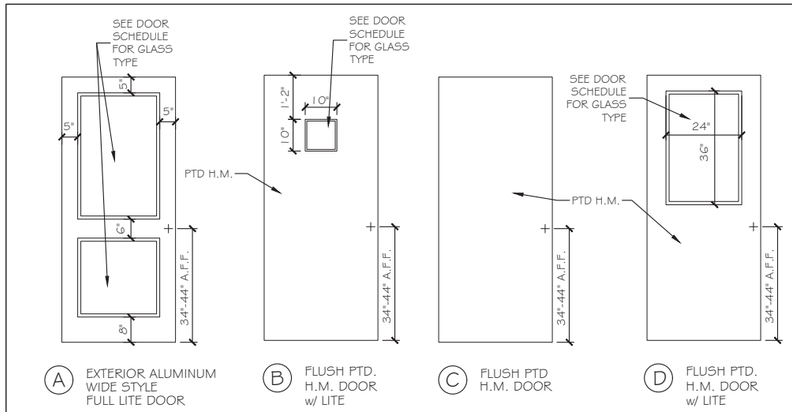
SHEET
455
OF 503



WINDOW TYPES — NO SCALE



DOOR FRAME TYPES — 3/8" = 1'-0"



NOTE: INTERIOR DOOR UNDERCUT SHALL NOT EXCEED 3/4" (MAX.)

TYPE "A" - CLEAR TINTED INSULATED GLASS

TYPE "B" - CLEAR TINTED TEMPERED INSULATED GLASS

TYPE "C" - OBSCURE TINTED INSULATED GLASS

TYPE "D" - CLEAR SINGLE PANE TEMPERED GLASS

TYPE "E" - CLEAR FIRE RATED SINGLE PANE GLASS

TYPE "F" - SPANDREL PANEL

DOOR TYPES — NO SCALE

3 GLASS TYPES NO SCALE

DOOR SCHEDULE

ABBREVIATIONS

AL	ALUMINUM	T	TEMPERED
E	EXISTING	TH	THERMAL INSULATED
EMHO	ELECTRO MAGNETIC HOLD OPENER	V	VINYL
GL	GLASS	W	WIRE
HM	HOLLOW METAL	WD	WOOD
INSUL	INSULATED	W /	WITH
SS	STAINLESS STEEL		

DOORS										FRAMES					THRESHOLDS		
							GLASS						DETAILS			DETAILS	
NO.	TYPE	SIZE (w x h)	THK.	INSUL	HDWE	FR	TYPE	SIZE	REMARKS	TYPE	FR	PROFILE	HEAD	JAMB	MATERIAL	SILL	FIN
001	B	6070 PR	1 3/4"	NO	HW-8	1 HR	FIRE	10x10	RATED GLASS "E"	E	1 HR	DW	8-460	8-460	NONE	-	CONC
002	C	6070 PR	1 3/4"	NO	HW-9	-	"	-		E	-	MAS	5-460	5-460	NONE	7-460	ALUM
003	C	6070 PR	1 3/4"	NO	HW-10	1 HR	"	-		E	1 HR	DW	8-460	8-460	NONE	-	CONC
004	C	6070 PR	1 3/4"	NO	HW-10	1 HR	"	-		E	1 HR	DW	8-460	8-460	NONE	-	CONC
005	C	3070	1 3/4"	NO	HW-11	1 HR	"	-		D	1 HR	DW	8-460	8-460	NONE	-	CONC
006	C	3070	1 3/4"	NO	HW-11	1 HR	"	-		D	1 HR	DW	8-460	8-460	NONE	-	CONC
101	A	3070	1 3/4"	NO	HW-1	-	T/TH	FULL	GLASS "B"	C	-	ALUM	5-460	6-460	ALUM	7-460	-
102	A	3070	1 3/4"	NO	HW-1	-	T/TH	FULL	GLASS "B"	A	-	ALUM	5-455	6-460	ALUM	7-460	-
103	C	4070	1 3/4"	YES	HW-2	-	-	-	GLASS "B"	B	-	MAS	5-455	6-460	ALUM	7-460	-
104	D	3070	1 3/4"	NO	HW-3	-	-	24x36	GLASS "D"	D	-	DW	-	-	-	-	-
105	D	3070	1 3/4"	NO	HW-4	-	-	24x36	GLASS "D"	D	-	DW	-	-	-	-	-
106	C	3070	1 3/4"	NO	HW-5	-	-	-	-	D	-	DW	8-460	8-460	NONE	-	TILE
107	C	3070	1 3/4"	NO	HW-5	-	-	-	-	D	-	DW	8-460	8-460	NONE	-	TILE
108	D	3070	1 3/4"	NO	HW-6	1 HR	FIRE	24x36	RATED GLASS "E"	D	1 HR	DW	8-460	8-460	NONE	-	-
109	C	3070	1 3/4"	NO	HW-7	-	-	-	-	D	-	DW	8-460	8-460	NONE	-	TILE

WINDOW SCHEDULE

ABBREVIATIONS

AL	ALUMINUM	T	TEMPERED
E	EXISTING	TH	THERMAL INSULATED
EMHO	ELECTRO MAGNETIC HOLD OPENER	V	VINYL
GL	GLASS	W	WIRE
HM	HOLLOW METAL	WD	WOOD
SS	STAINLESS STEEL	W /	WITH

NO.	TYPE	MANUFACTURER		NOMINAL SIZE		DETAILS					REMARKS
		MATERIAL	MODEL	WIDTH	HEIGHT	HEAD	JAMB	SILL	MUNT	MULL	
A	FIXED	ALUMINUM	T- BREAK	2'-0"	2'-0"	1-460	2-460	3-460	-	-	TYPE "A" GLASS
B	FIXED	ALUMINUM	T- BREAK	5'-4"	5'-4"	1-460	2-460	3-460	-	-	TYPE "A" GLASS
C	FIXED	ALUMINUM	T- BREAK	8'-0"	5'-4"	1-460	2-460	3-460	-	-	TYPE "A" GLASS
D	FIXED	HOLLOW METAL	DW PROFILE	3'-0"	3'-4"	8-460	8-460	8-460	SIMILAR		TYPE "D" GLASS

FINISH SCHEDULE

ABBREVIATIONS

C	CARPET	FRP	FIBERGLASS REINFORCED PANELS	QT	QUARRY TILE
CH	CONCRETE W/ HARDENER	FV	FIELD VERIFY	SS	STAINLESS STEEL
CMU	CONCRETE MASONRY UNIT	GL	GLASS	VCB	VINYL COVE BASE
CT	CERAMIC TILE	GWB	GYPSUM WALL BOARD	VCT	VINYL COMPOSITION TILE
E	EXISTING	P	PAINT	VWC	VINYL WALL COVERING
EP	EPOXY PAINT	PCS	PAINT COAT SYSTEM	WC( )	WALL COVERING (TYPE)
FCS	FLOOR COATINGS SYSTEM	RCB	RUBBER COVE BASE	WD	WOOD

NO.	NAME	WALLS				FLOOR				CLG A		CLG B		REMARKS
		N	E	S	W	MATL	BASE	MATL	BASE	TYPE	HT	TYPE	HT	
001	HALL	P	P	P	P	CONC	VCB	-	-	SAT	10'-0"	-	-	
002	STAIR	P	P	P	P	RUBBER	VCB	-	-	P	12'-0+/-	-	-	1 HR RATED
003	STORAGE ROOM	P	P	P	P	CONC	VCB	-	-	STRUCT	13'-8+/-	-	-	2 HR RATED
004	MECHANICAL ROOM	P	P	P	P	CONC	VCB	-	-	STRUCT	13'-8+/-	-	-	1 HR RATED
005	TOLL COLLECTOR STOR.	P	P	P	P	CONC	VCB	-	-	STRUCT	13'-8+/-	-	-	1 HR RATED
006	CUST. / MAINTENANCE	P	P	P	P	CONC	VCB	-	-	STRUCT	13'-8+/-	-	-	1 HR RATED
101	COUNTING ROOM	P	P	P	P	CT	VCB	MAT	-	SAT	9'-0"	-	-	
102	OFFICE	P	P	P	P	CT	VCB	-	-	SAT	9'-0"	-	-	
103	BREAK ROOM	P	P	P	P	CT	VCB	-	-	SAT	9'-0"	-	-	
104	MEN'S	P/CT	P/CT	P/CT	P/CT	CT	CT	-	-	SAT	9'-0"	-	-	SEE 1-465 FOR CT. HT.
105	WOMEN'S	P/CT	P/CT	P/CT	P/CT	CT	CT	-	-	SAT	9'-0"	-	-	SEE 1-465 FOR CT. HT.
106	HALL	P	P	P	P	CT	VCB	-	-	SAT	9'-0"	-	-	
107	STAIR	P	P	P	P	RUBBER	VCB	-	-	SAT	12'-0+/-	-	-	1 HR RATED
108	COMP. / UPS / ELECT.	P	P	P	P	EPOXY	VCB	-	-	P/GWB	11'-4"	-	-	2 HR RATED (AT STRUCTURE)
109	CUSTODIAL	P	P	P/FRP	P/FRP	CT	VCB	-	-	SAT	9'-0"	-	-	FRP TO 48" A.F.F.

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REVISIONS

PROJECT NAME

CONTRACT NO.: 2019.04
MAINE TURNPIKE TOLL
ADMINISTRATION BUILDING
MILE MARKER (MM) 103
GARDINER
MAINE 04345

SHEET

DOORS, WINDOWS & DETAILS

DATE
20 MAR 2019
SCALE
AS NOTED
DRAWN
MFH / mgk
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456
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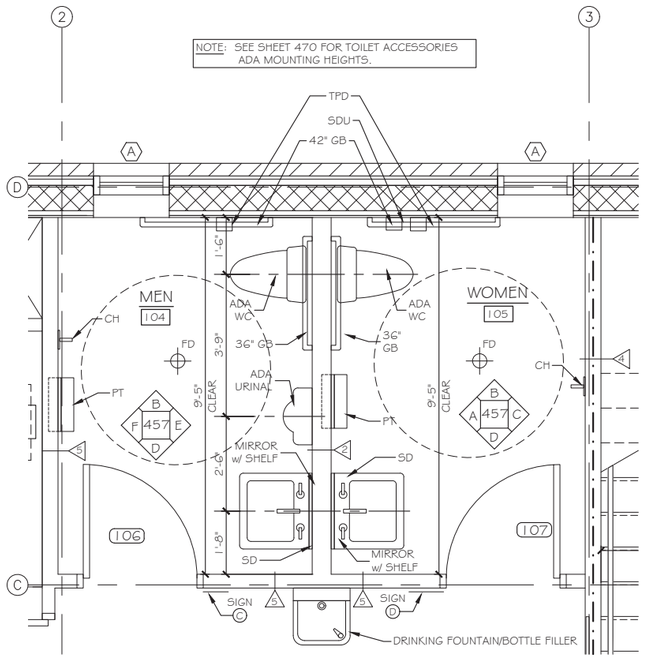
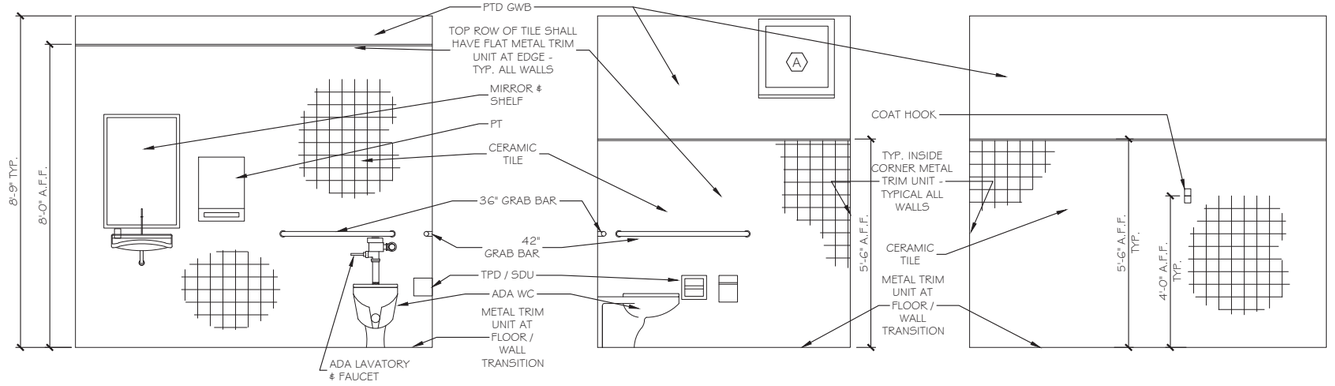


TOILET ACCESSORY ABBREVIATIONS	
TPD	TOILET PAPER DISPENSER
SDU	SANITARY DISPOSAL UNIT
G.B.	GRAB BAR
SD	SOAP DISPENSER
PT	PAPER TOWEL DISPENSER
CH	COAT HOOK

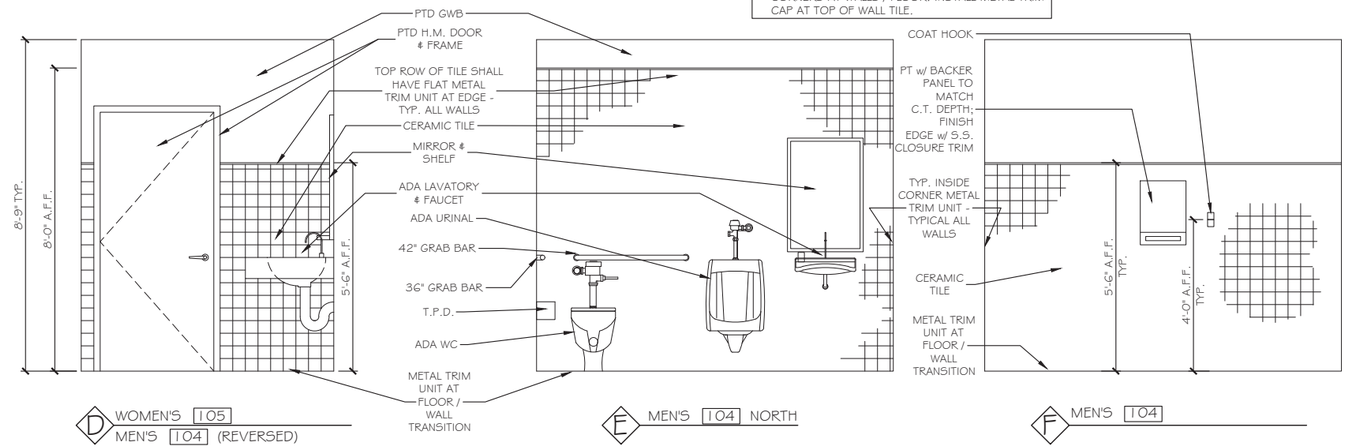


A WOMEN'S 105 SOUTH

B WOMEN'S 105 / MEN'S 104 (REVERSED)

C WOMEN'S 105

NOTES:
1. SEE SHEET 462 FOR TOILET ACCESSORIES ADA MOUNTING HEIGHTS.
2. INSTALL METAL TRIM UNITS AT ALL INTERIOR TILE CORNERS AT WALLS / FLOOR. INSTALL METAL TRIM CAP AT TOP OF WALL TILE.



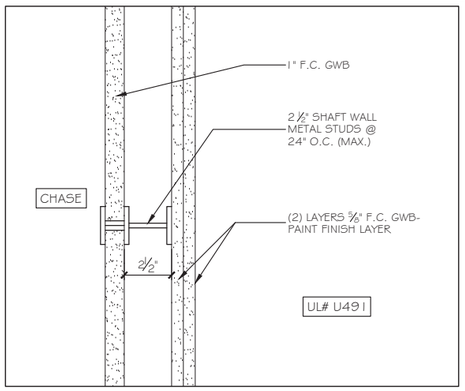
D WOMEN'S 105 / MEN'S 104 (REVERSED)

E MEN'S 104 NORTH

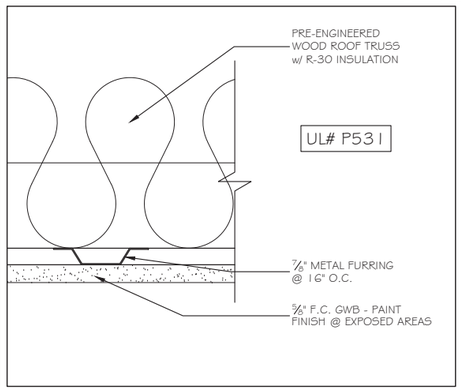
F MEN'S 104

1 MENS 104 AND WOMENS 105 PLANS — 1/2" = 1'-0"

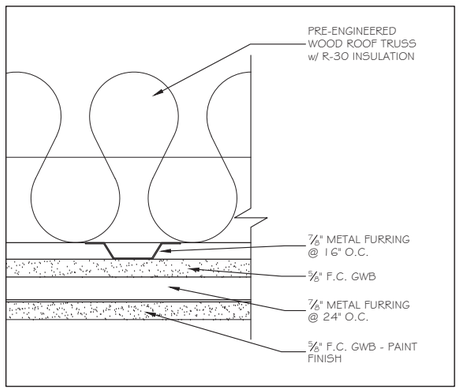
2 WOMEN'S 106 / MEN'S 107 FLOOR PLAN ELEVATIONS — 1/2" = 1'-0"



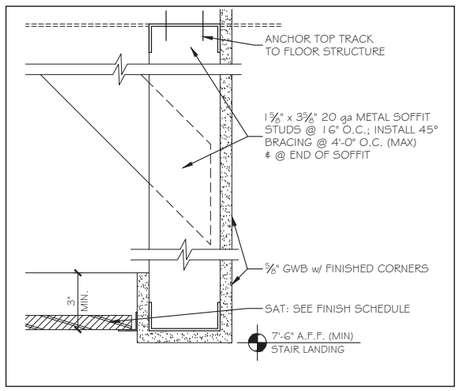
3 2 HR FIRE RATED SHAFT WALL — 3"= 1'-0"



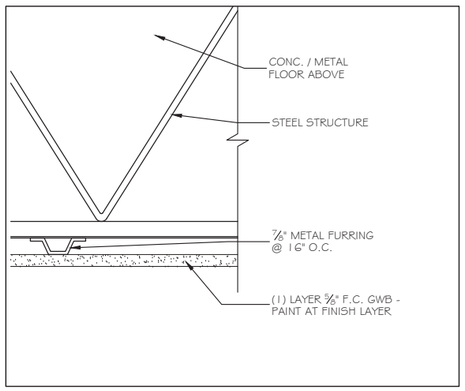
4 1 HR RATED ROOF TRUSS DETAIL — 3"= 1'-0"



5 2 HR RATED CEILING DETAIL AT WOOD TRUSS — 3"= 1'-0"



6 SOFFIT DETAIL AT STAIR 002 / 107 — 3"= 1'-0"



7 1 HR RATED CEILING DETAIL AT STEEL JOIST — 3"= 1'-0"

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MAINE 04345

SHEET

TOILET ROOMS & DETAILS

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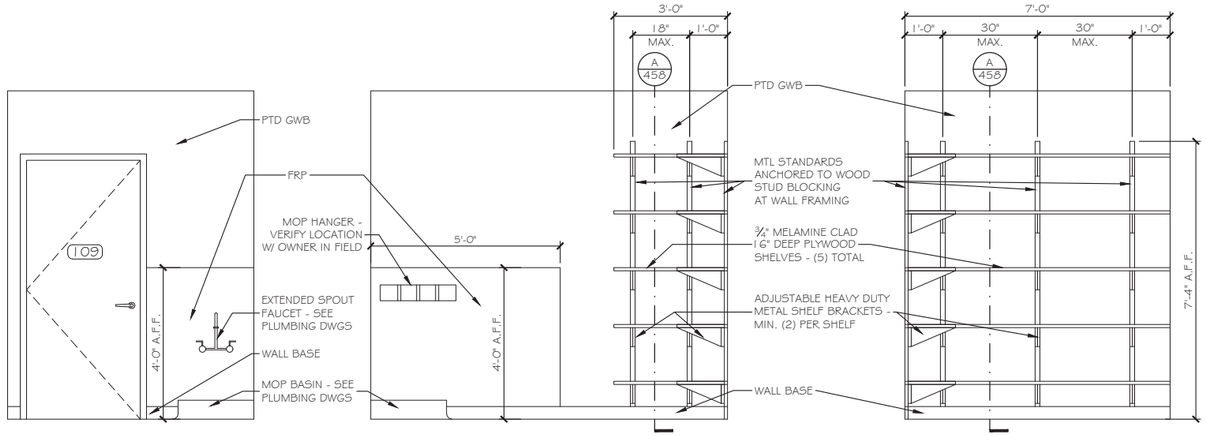


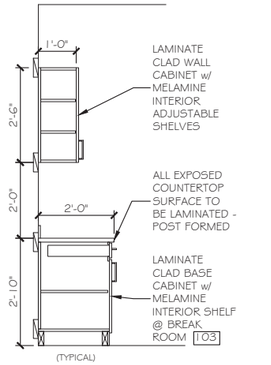
1 CUSTODIAL 109 @ MOP BASIN
CUST. & MAINT. 006 (SIM)

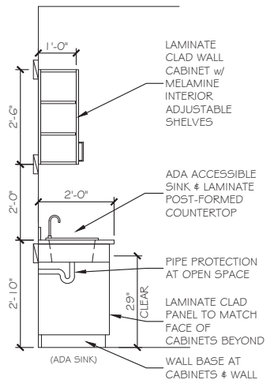
NOTE: 48" HIGH FRP WAINSCOT SHALL EXTEND TO DOOR FRAME EDGE AT WEST WALL & 5'-0" AT NORTH WALL

2 STORAGE 109 @ SHELVES
CUST. & MAINT. 006 (SIM)
(SIM-MOP BASIN & RACK)

3 STORAGE 109 @ SHELVES

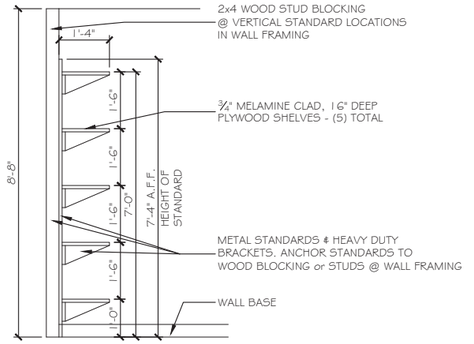
1 CUSTODIAL / STORAGE 109 INTERIOR ELEVATIONS — 1/2" = 1'-0"



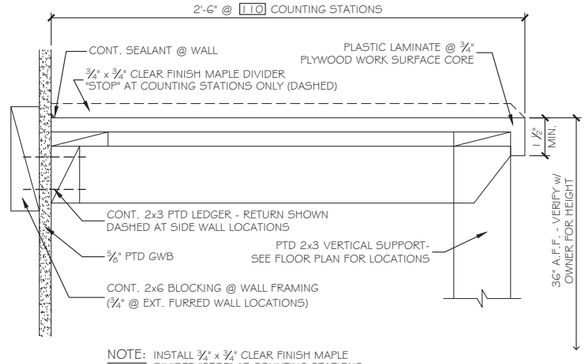


KITCHEN CABINET SECTIONS
SCALE: 1/2" = 1'-0"

NOTE: PROVIDE SOLID WOOD BLOCKING AT WALL FRAMING AT ALL CABINETS

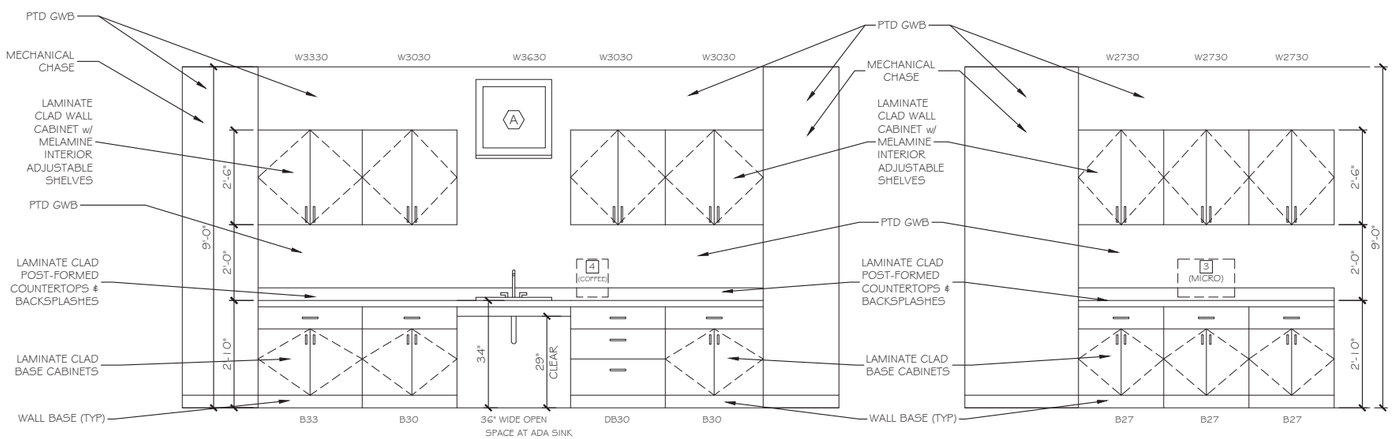


A SECTION AT CUSTODIAL / STORAGE 109 SHELVES
SCALE: 1/2" = 1'-0"



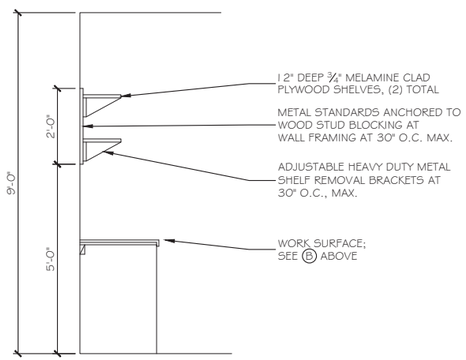
NOTE: INSTALL ¾" x ¾" CLEAR FINISH MAPLE DIVIDER "STOP" AT COUNTING STATIONS.

B SECTION AT WORK SURFACES / COUNTING
SCALE: 3" = 1'-0"



4 KITCHEN CABINET ELEVATION AT BREAK ROOM 103
SCALE: 1/2" = 1'-0"

5 KITCHEN CABINET ELEVATION AT BREAK ROOM 103
SCALE: 1/2" = 1'-0"



C SECTION AT COUNTING 101
SCALE: 1/2" = 1'-0"

2 KITCHEN CABINETS — 1/2" = 1'-0"

3 SHELVES AT 101 COUNTING & 107 STORAGE — AS NOTED

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GARDINER
MAINE 04345

SHEET

INTERIOR ELEVATIONS & SECTIONS

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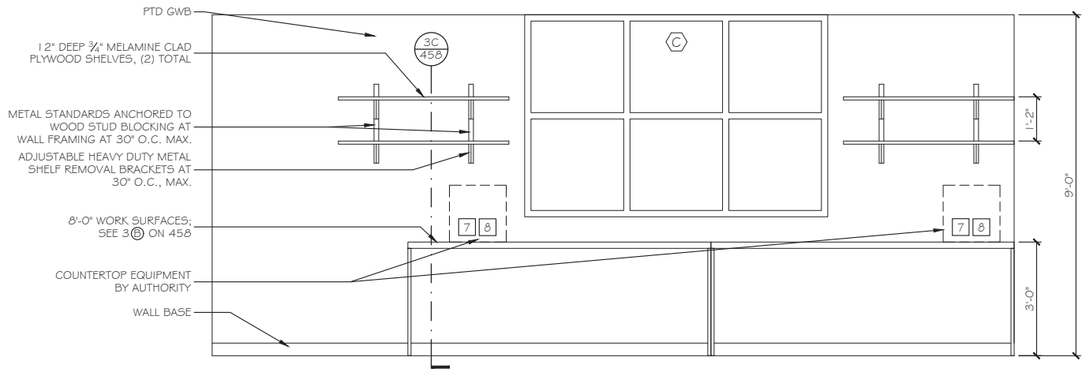
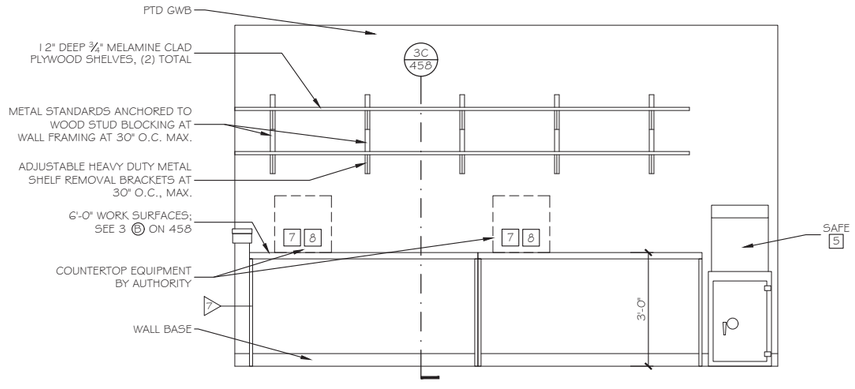


1 ELEVATION AT COUNTING 101
SCALE: 1/2" = 1'-0"



2 ELEVATION AT COUNTING 101
SCALE: 1/2" = 1'-0"

1 COUNTING 101 INTERIOR ELEVATIONS 1/2" = 1'-0"

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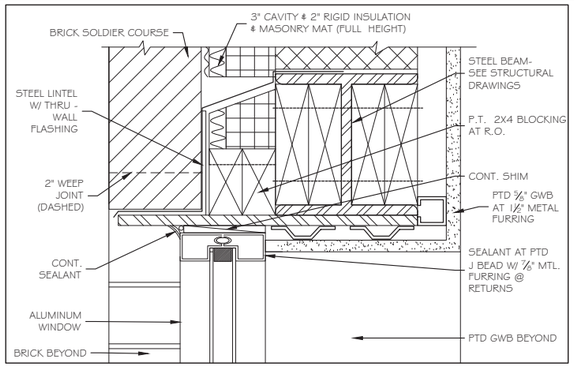
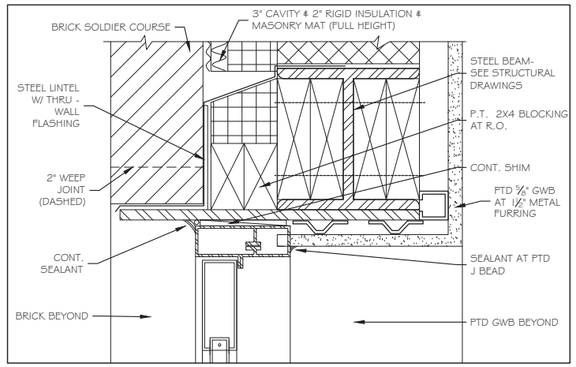
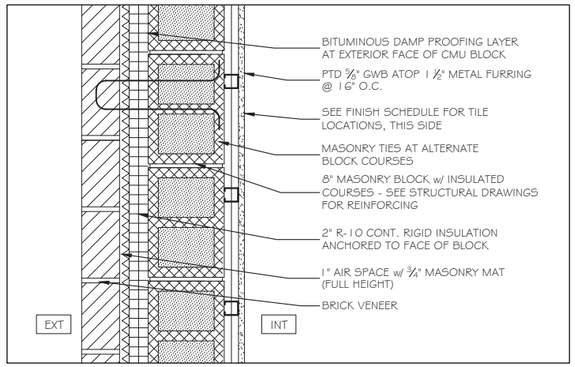


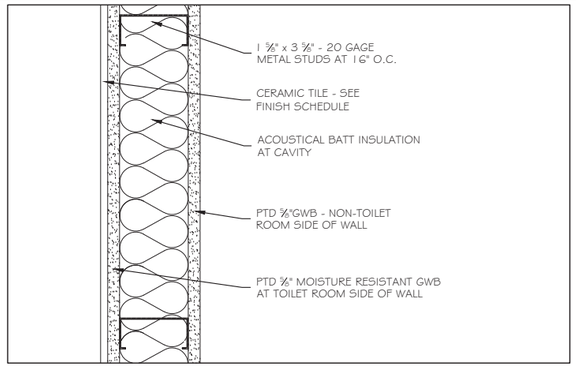
① EXTERIOR WINDOW HEAD @ STEEL FRAME 3" = 1'-0"



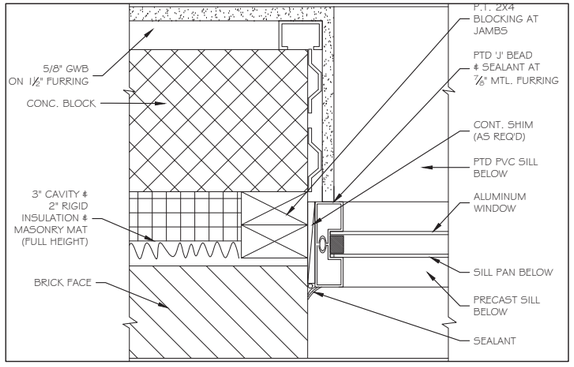
⑤ EXTERIOR DOOR HEAD @ STEEL FRAME 3" = 1'-0"



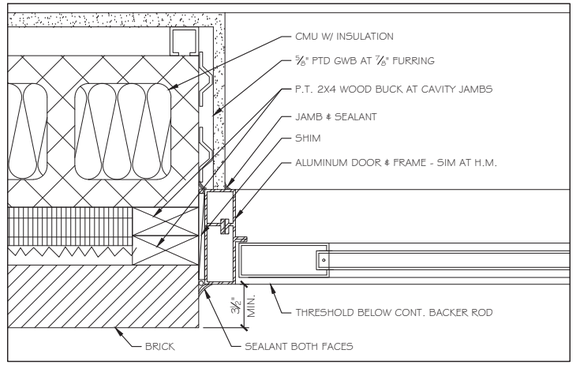
⑨ EXTERIOR WALL TYPE 1 1 1/2"=1'-0"



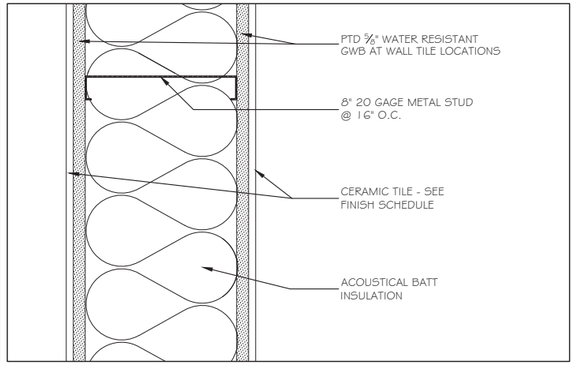
⑬ WATER RESISTANT PARTITION TYPE 5 3"=1'-0"



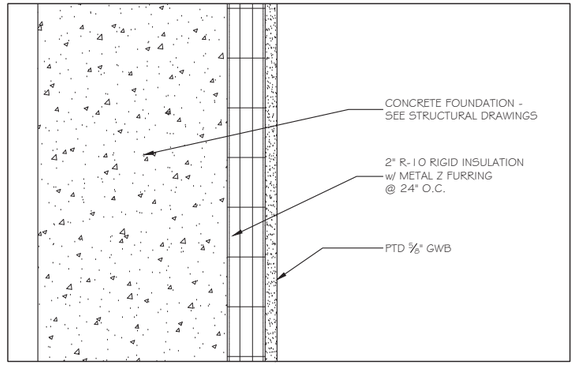
② EXTERIOR WINDOW JAMB 3" = 1'-0"



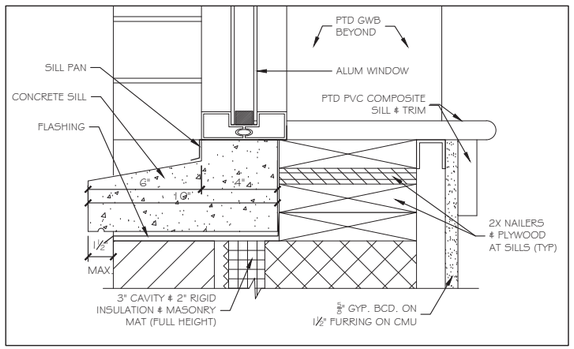
⑥ EXTERIOR DOOR JAMB DETAIL 3" = 1'-0"



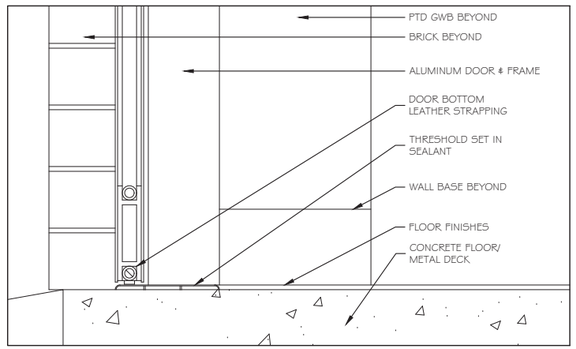
⑩ PLUMBING PARTITION TYPE 2 3"=1'-0"



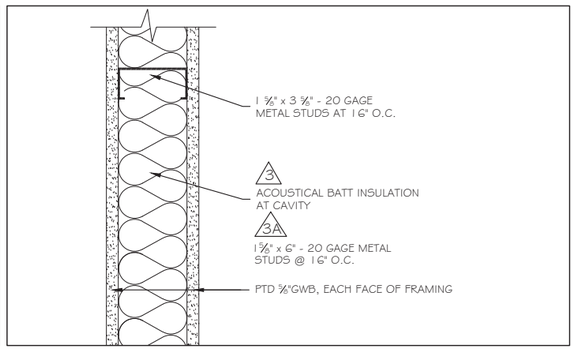
⑭ INTERIOR PARTITION TYPE 6 3"=1'-0"



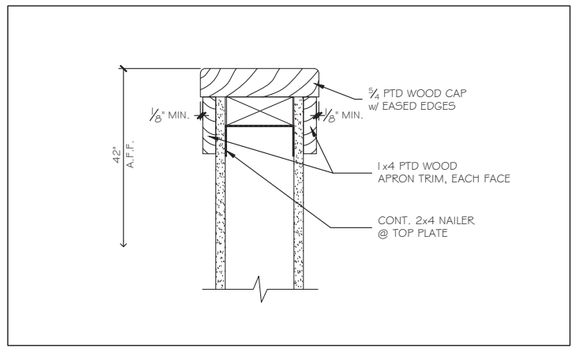
③ EXTERIOR WINDOW SILL 3" = 1'-0"



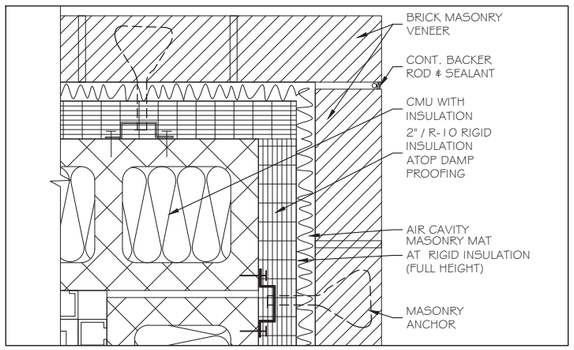
⑦ THRESHOLD DETAIL 3" = 1'-0"



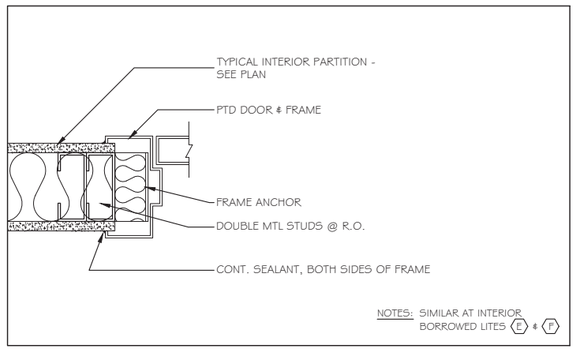
⑪ INTERIOR PARTITION TYPE 3 3A 3"=1'-0"



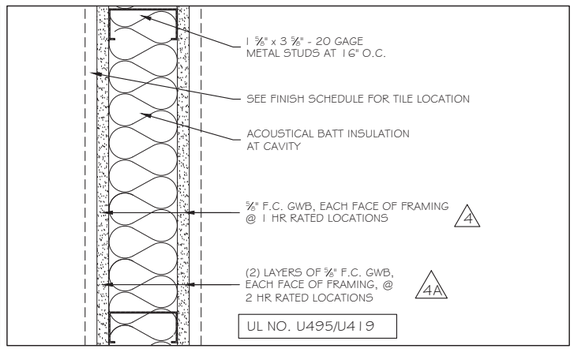
⑮ HALF WALL TYPE 7 3" = 1'-0"



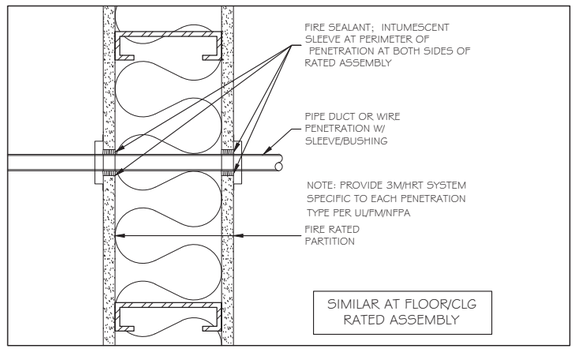
④ MASONRY EXPANSION JOINT DETAIL 3" = 1'-0"



⑧ TYP. INTERIOR H.M. JAMB (HEAD SIM) 3" = 1'-0"



⑫ FIRE RATED PARTITION 1 HR/TYPE 4 2 HR/TYPE 4A 3"=1'-0"



⑯ FIRE SEALANT AT PENETRATIONS 3" = 1'-0"

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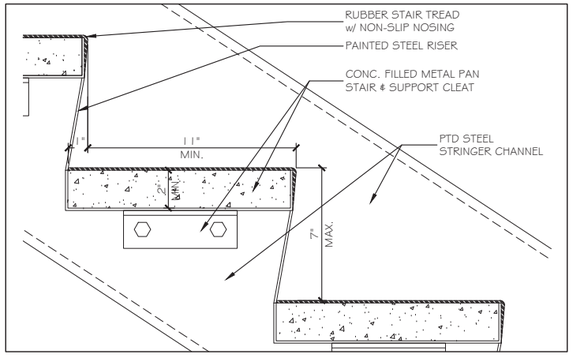
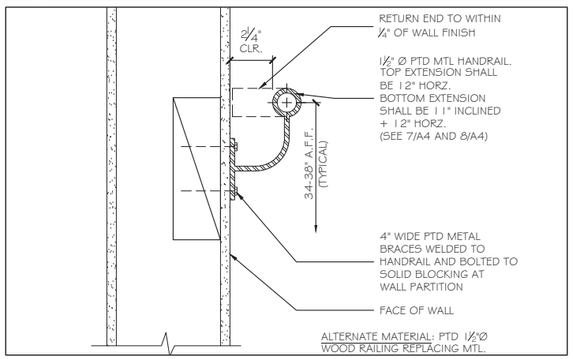
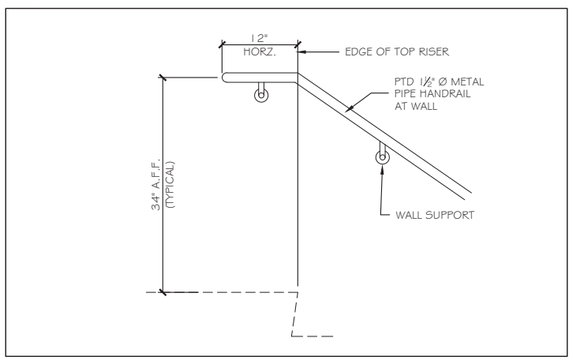


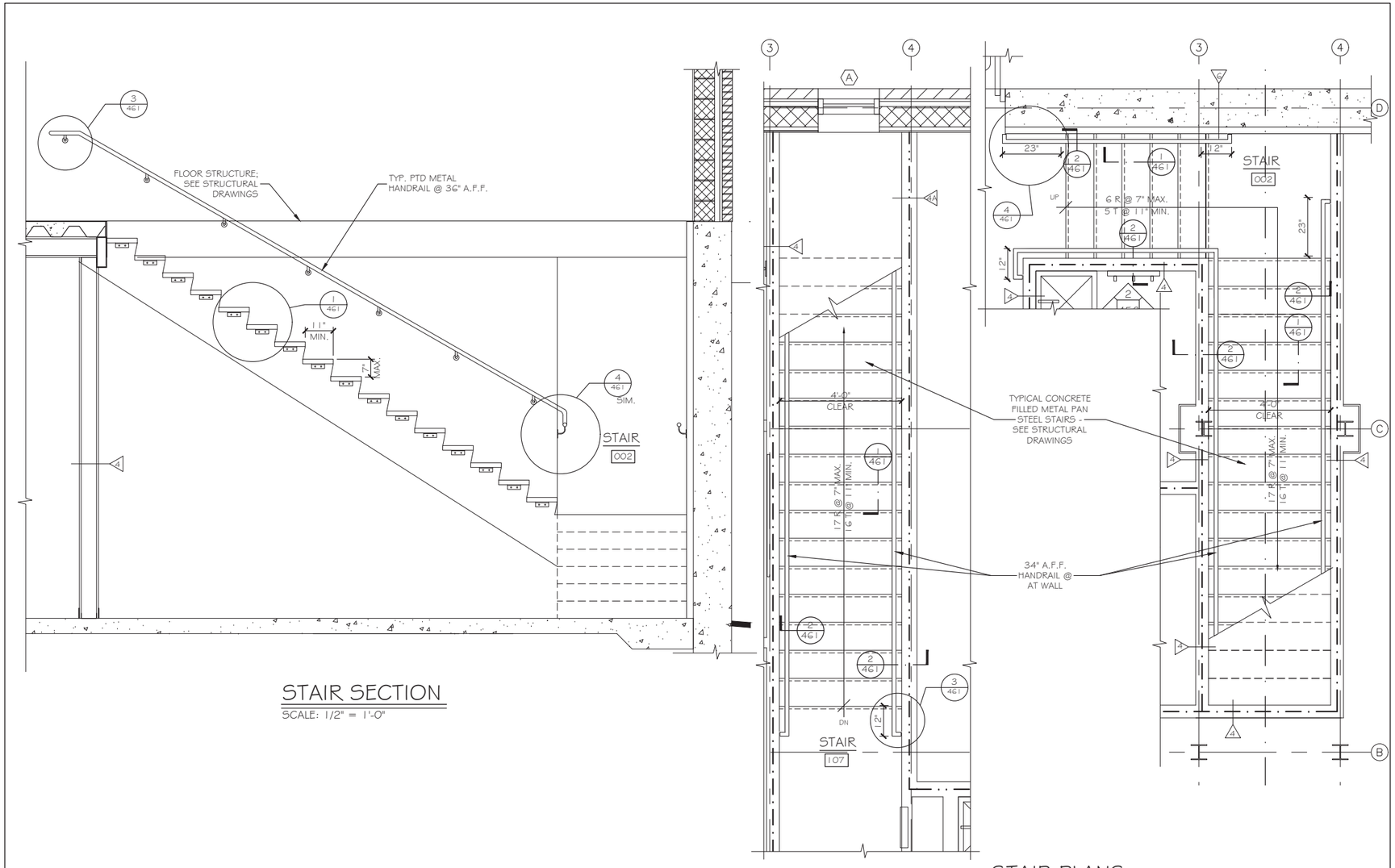
1 STAIR RISER / TREAD DETAIL 3"= 1'-0"



2 TYPICAL WALL HANDRAIL SECTION 3"= 1'-0"



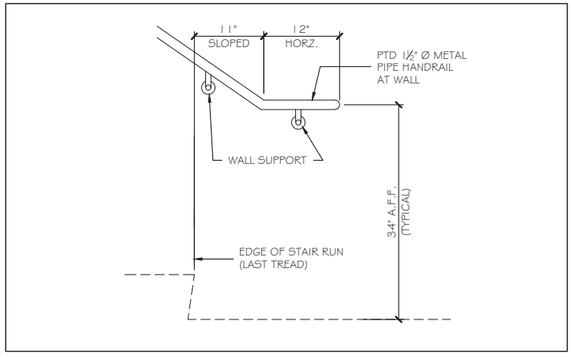
3 TYPICAL WALL HANDRAIL - TOP 1"= 1'-0"



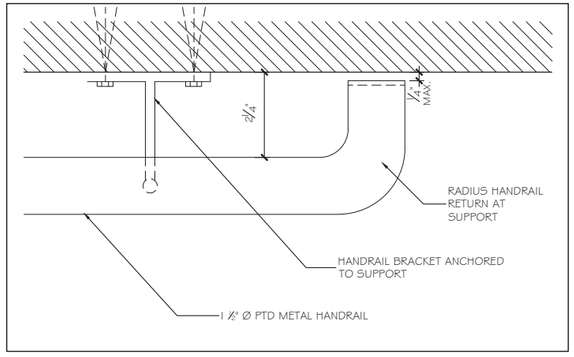
STAIR SECTION
SCALE: 1/2" = 1'-0"

STAIR PLANS
SCALE: 1/2" = 1'-0"

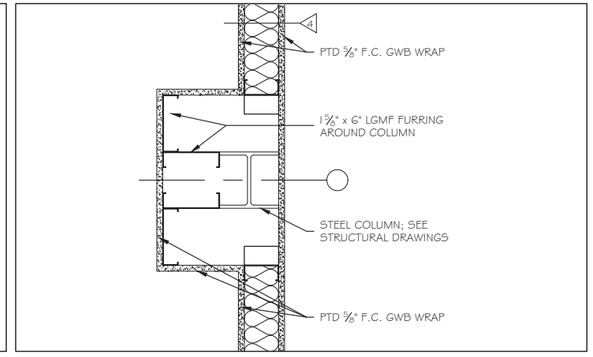
5 STAIR PLANS AND SECTION 1/2" = 1'-0"



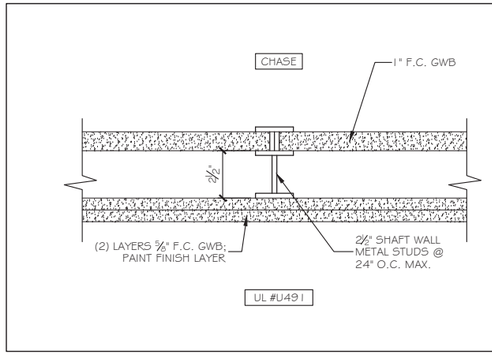
4 TYPICAL WALL HANDRAIL - BOTTOM 1"= 1'-0"



6 HANDRAIL RETURN AT WALL 6"= 1'-0"



7 1 HR FIRE RATING AT COLUMNS 1½" = 1'-0"



8 2 HR RATED PARTITION TYPE A 3" = 1'-0"

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SEAL

LICENSED ARCHITECT
MICHAEL F. HAYS
No. 1724
STATE OF MAINE
Michael F. Hays

REVISIONS

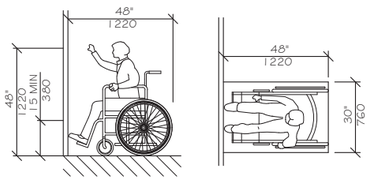
PROJECT NAME

CONTRACT NO.: 2019.04
MAINE TURNPIKE TOLL
ADMINISTRATION BUILDING
MILE MARKER (MM) 103
GARDINER
MAINE 04345

SHEET

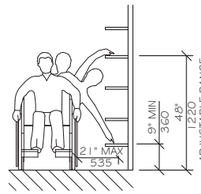
STAIR PLAN, SECTION & DETAILS

DATE
20 MAR 2019
SCALE
AS NOTED
DRAWN
MFH / mgk
JOB NO.
180203
SHEET
461
OF 503



HIGH FORWARD REACH LIMIT

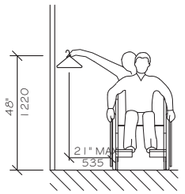
NTS



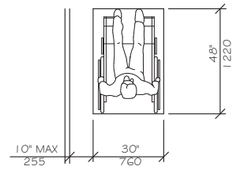
SHELVES

STORAGE SHELVES AND CLOSETS

NTS

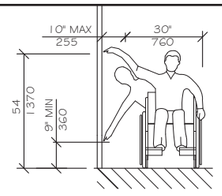


CLOSETS



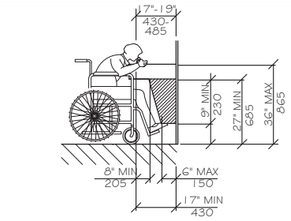
CLEAR FLOOR SPACE
PARALLEL APPROACH

NTS



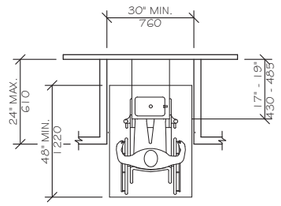
HIGH AND LOW
SIDE REACH LIMITS

NTS



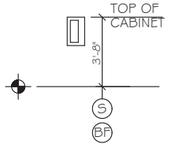
EQUIPMENT PERMITTED IN SHADED AREA
DRINKING FOUNTAIN SPOUT HEIGHT
AND KNEE CLEARANCE

NTS



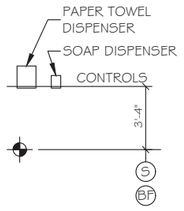
DRINKING FOUNTAIN

NTS



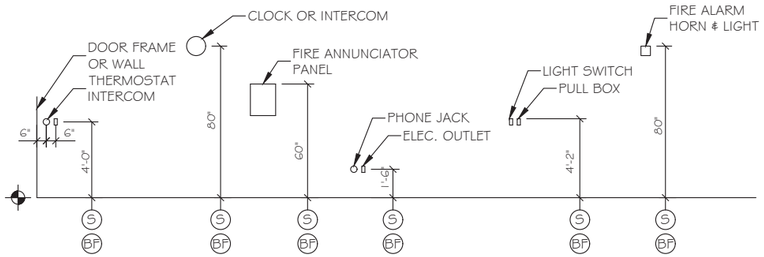
FIRE EXTINGUISHER
CABINET (FEC)

NTS



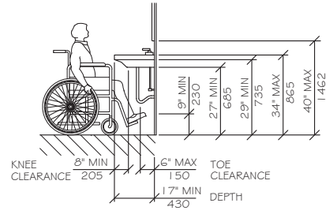
TOWEL & SOAP DISPENSERS

NTS



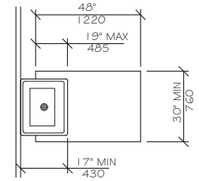
ELECTRICAL & FIRE PROTECTION DEVICES
TYPICAL UNLESS NOTED OTHERWISE

NTS



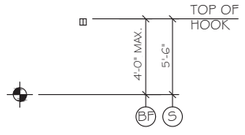
LAVATORY CLEARANCES

NTS



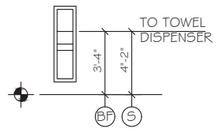
CLEAR FLOOR SPACE
AT LAVATORIES

NTS



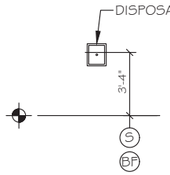
CLOTHES HOOK

NTS



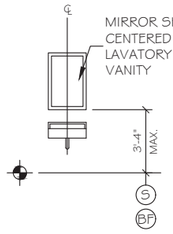
TOWEL DISPENSER
DISPOSAL UNIT

NTS



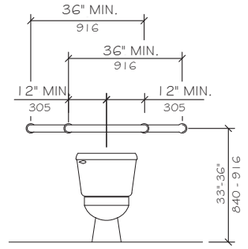
SANITARY
DISPOSAL UNIT

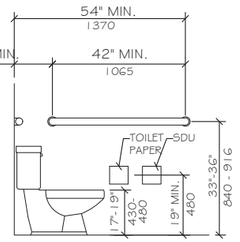
NTS



MIRROR OR MEDICINE CABINET

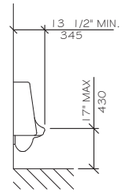
NTS





GRAB BARS AT WATER CLOSETS

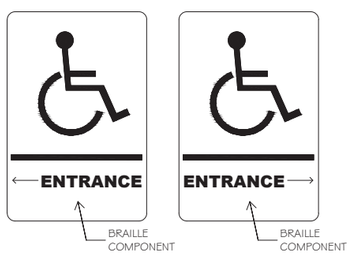
NTS



WALL HUNG TYPE

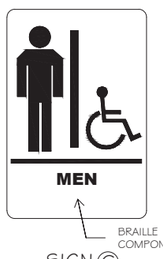
HEIGHT AND DEPTH OF URINAL

NTS



SIGN Ⓐ

SIGN Ⓑ

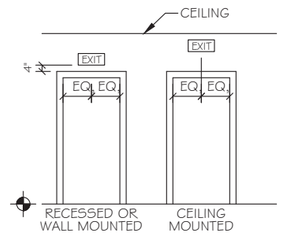


SIGN Ⓒ

SIGN Ⓓ

SIGN Ⓔ

Ⓘ ACCESSIBILITY SIGNAGE DETAILS NO SCALE



EXIT SIGNS
(TYPICAL UNLESS OTHERWISE NOTED)

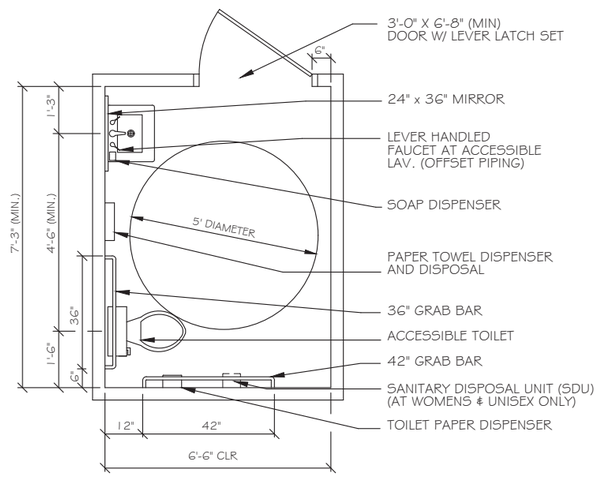
NTS

LEGEND

- Ⓢ STANDARD MOUNTING HEIGHT
- Ⓑⓕ BARRIER FREE ADULT MOUNTING HEIGHT
- FINISH FLOOR LINE

NOTE

MOUNT ALL FIXTURES AT STANDARD MOUNTING HEIGHT UNLESS INDICATED ON PLAN BY A ♿ SYMBOL. A ♿ SYMBOL AT ANY ROOM SHALL INCLUDE ONE OF ANY FIXTURE AND ACCESSORY WITHIN THE ROOM.



Ⓘ TYPICAL ACCESSORIES

NTS

ACCESSIBILITY ACCESSORY MOUNTING HEIGHTS

GRAB BARS	33"-36"
TOILET PAPER HOLDER	19" MIN
TOWEL BAR/PAPER TOWEL DISPENSER	48" MAX
BUILT IN PAPER TOWEL DISPENSER	48" MAX
SOAP DISH/DISPENSER AT WALL	48" MAX
SANITARY DISPOSAL UNIT	19" MAX
MIRROR (BOTTOM)	40" MAX
SHELVES/STORAGE	48" MAX
ELECTRICAL SWITCHES/OUTLETS	48" MAX
COAT HOOKS/RODS	48" MAX
SIGNAGE (TO BRAILLE COMPONENT)	60" MAX

ACCESSIBILITY GENERAL NOTES

1. DOORWAYS SHALL HAVE A MINIMUM CLEAR WIDTH OF 32" WITH THE DOOR OPEN 90 DEGREES. MEASURED BETWEEN THE FACE OF THE DOOR AND THE OPPOSITE STOP.
2. ALL DOORS SHALL HAVE LEVER HANDLE HARDWARE, EXCEPT AT SECURED STORAGE ROOMS, MECHANICAL ROOMS, AND ELEVATOR MACHINE ROOMS,
3. ALL CLOSERS SHALL BE 5LB PULL MAXIMUM AT DOORS EQUIPPED WITH LEVER HANDLE HARDWARE.
4. ALL DOORS WITH CLOSERS SHALL HAVE 18" CLEAR DISTANCE FROM THE LATCHSIDE OF THE OPENING TO ANY ADJACENT WALL OR OBSTRUCTION ON THE PULL SIDE OF THE OPENING.
5. ALL DOORS WITH CLOSERS SHALL HAVE 12" CLEAR DISTANCE FROM THE LATCHSIDE OF THE OPENING TO ANY ADJACENT WALL OR OBSTRUCTION ON THE PUSH SIDE OF THE OPENING.
6. ALL SIGNAGE SHALL BE MOUNTED 60" AFF TO BRAILLE COMPONENT AT LATCH-SIDE WALL OF DOORS AND OPENINGS.
7. COMPLY WITH 2010 EDITION OF THE AMERICANS WITH DISABILITIES ACT.

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SEAL

LICENSED ARCHITECT
MICHAEL F. HAYS
No. 1724
STATE OF MAINE
Michael F. Hays

REVISIONS

PROJECT NAME

CONTRACT NO.: 2019.04
MAINE TURNPIKE TOLL
ADMINISTRATION BUILDING
MILE MARKER (MM) 103
GARDINER
MAINE 04345

SHEET
ACCESSIBILITY
DETAILS
& NOTES

DATE
20 MAR 2019
SCALE
NO SCALE
DRAWN
MFH / mgk
JOB NO.
180203
SHEET
462
OF 503

Date: Tuesday, March 19, 2019

ADMINISTRATION BUILDING GENERAL STRUCTURAL NOTES:

1. WORK SHALL BE DONE IN COMPLIANCE WITH THE LATEST EDITION OF IBC-2015.
2. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL AND CIVIL DRAWINGS. ANY INCONSISTENCIES WITH THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH THE AFFECTED PORTIONS OF THE WORK.
3. THE CONTRACTOR SHALL VISIT THE SITE AT THE DESIGNATED TIME APPROVED BY THE OWNER TO VERIFY EXISTING CONDITIONS, DIMENSIONS, LOCATIONS OF EXISTING UTILITIES, ETC. THE CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES WITHOUT EXCEPTION.
4. THE STRUCTURE HAS BEEN DESIGNED AS A SELF-SUPPORTING SYSTEM ONCE ALL WORK CONTAINED ON THESE DRAWINGS HAS BEEN COMPLETED. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ERECTION PROCEDURES AND SEQUENCE OF INSTALLATION TO ENSURE SAFETY OF THE BUILDING AND ITS OCCUPANTS DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS AND METHODS AND TEMPORARY SHORING. PRECAUTIONS DURING BUILDING OPERATIONS, PROTECTION OF PUBLIC AND WORKERS, REMOVAL OF WASTE MATERIAL, PROTECTION OF ADJACENT PROPERTY, PROTECTION OF HAZARDOUS OPENINGS, SAFETY PRECAUTIONS AND SANITARY PROVISIONS OF EMPLOYEES AND SUBCONTRACTORS AS REQUIRED FOR THE DURATION OF THE CONTRACT.
5. WORK SHALL BE DONE IN AN ORDERLY AND PROFESSIONAL MANNER. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL WORK TO BE DONE BY SUBCONTRACTORS, LOCAL AUTHORITIES, STATE AGENCIES AND/OR UTILITY COMPANIES WHICH MAY HAVE JURISDICTION OVER THIS PROJECT.
6. UTILITY EXTENSIONS AND CONNECTIONS SHALL BE IN ACCORDANCE WITH STATE AND LOCAL CODES OR AS INDICATED ON THE DRAWINGS.
7. CONTRACTOR SHALL REVIEW AND SUBMIT COMPLETE SHOP DRAWINGS FOR ALL SPECIFIED PARTS OF THE WORK, INCLUDING SHORING AND CONSTRUCTION METHODS/SEQUENCING WHERE APPLICABLE. NO PORTION OF THE WORK COVERED BY THESE SHOP DRAWINGS SHALL COMMENCE UNTIL RETURNED APPROVED SHOPS ARE RECEIVED BY THE CONTRACTOR. SEE STRUCTURAL NOTES FOR SPECIFIC SHOP SUBMITTAL REQUIREMENTS.
8. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY EXISTING ITEMS DAMAGED BY NEW CONSTRUCTION AND FOR ANY INCIDENTAL REPAIRS OF EXISTING FINISHED SURFACES DISTURBED BY NEW CONSTRUCTION. SUCH REPAIRS SHALL MATCH EXISTING TO THE OWNERS SATISFACTION.
9. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING, HANDLING AND STORAGE OF ITEMS/MATERIALS TO REMAIN THE PROPERTY OF THE OWNER WITH THE OWNERS REPRESENTATIVE.
10. BUILDING CODE:

    A. MAINE UNIFORM BUILDING CODE.
    B. INTERNATIONAL BUILDING CODE - 2015 EDITION.
    C. ASCE 7-16 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.

11. MINIMUM LOADING REQUIREMENTS:

    A. ROOF SNOW LOADS: (EXCEPT AT DRIFTING SNOW LOCATIONS AND THOSE LISTED BELOW)
    a. GROUND SNOW LOAD: P = 70.0 PSF
    i. IMPORTANCE FACTOR/OCCUPANCY CATEGORY II: I= 1.0
    ii. WARM ROOF SLOPE FACTOR: Cs = 0.7
    iii. THERMAL FACTOR: C = 1.1
    iv. EXPOSURE FACTOR: C = 0.9
    v. TERRAIN CATEGORY: C

    B. ROOF DEAD LOAD: 20.0 PSF

    C. ROOF LIVE LOAD:
    a. STANDARD ROOF LIVE LOAD: 20.0 PSF
    AT TOP & BOTTOM CHORD

    D. FLOOR LIVE LOADS:

	UNIFORM	CONCENTRATED	PARTITION
a. OFFICE BUILDINGS			
i. COMPUTER ROOM & FIRST FLOOR CORRIDORS	100 PSF	2,000#	
ii. OFFICES	50 PSF	2,000#	15 PSF

    E. WIND: a. FACTORS

    i. BASIC WIND SPEED: 110 MPH
    ii. RISK CATEGORY: II
    iii. BUILDING HEIGHT: <25'

    b. WIND DESIGN PRESSURE
    i. MWFRS
    1. END ZONE WIDTH: 6 FEET
    2. TRANSVERSE
    a. INTERIOR ZONE 27.7 PSF
    b. END ZONE 20.6 PSF
    3. LONGITUDINAL
    a. INTERIOR ZONE 27.7 PSF
    b. END ZONE 20.6 PSF

    ii. COMPONENTS AND CLADDING
    1. END ZONE WIDTH 3 FEET
    2. WALLS
    a. FIELD 26.0 PSF
    b. END ZONES 35.5 PSF

    ii. ROOF UPLIFT (IBC 2015)
    1. FIELD 20 FEET
    2. PERIMETER 41 PSF
    3. CORNERS 74 PSF
    4. STRIP WIDTH 3 FEET

    F. SEISMIC : a. COEFFICIENTS & FACTORS
    i. RESPONSE SPECTRAL ACC. (0.2 sec) S = 0.293 g
    ii. RESPONSE SPECTRAL ACC. (1.0 sec) S = 0.077 g
    iii. SOIL CLASSIFICATION: C
    iv. SDS = 0.235g; SD1 = 0.087g
    v. SEISMIC DESIGN CATEGORY = B
    vi. SEISMIC RESPONSE COEFFICIENT, Cs= 0.12
    vii. RESPONSE MODIFICATION FACTOR, R= 2.0
    viii. SYSTEM OVER STRENGTH FACTOR, Ω=2 1/2
    ix. LATERAL SUPPORT SYSTEM = INTERMEDIATE REINFORCED MASONRY SHEARWALLS

ADMINISTRATION BUILDING GENERAL STRUCTURAL NOTES (CONT.):

12. STRUCTURAL STEEL SHALL BE DESIGNED USING THE 13TH EDITION OF THE AISC STEEL CONSTRUCTION MANUAL.
13. SEE ARCHITECTURAL WALL SECTIONS AND DETAILS FOR MISCELLANEOUS STEEL.
14. STRUCTURAL WOOD TO CONFORM TO THE LATEST NDS STANDARDS.
15. PLYWOOD TO CONFORM TO THE LATEST APA STANDARDS.
16. A QUALIFIED PERSON APPROVE BY THE BUILDING OFFICIALS SHALL MAKE SPECIAL INSPECTIONS IN ACCORDANCE WITH CHAPTER 17 OF THE IBC 2015 AND AS DEFINED. SPECIAL INSPECTOR SHALL OBSERVE WORK FOR CONFORMANCE WITH THE APPROVED DRAWINGS AND SPECIFICATIONS.
17. INSPECTION REPORTS SHALL BE FURNISHED TO THE OWNER, BUILDING OFFICIAL, ARCHITECT AND SER. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR AND IF NOT CORRECTED, SHALL BE REPORTED TO THE OWNER, BUILDING OFFICIAL, ARCHITECT AND SER.
18. THE FOLLOWING TYPES OF WORK SHALL RECEIVE SPECIAL INSPECTION OVERSIGHT: INSTALLATION OF MASONRY, INSTALLATION OF REINFORCING STEEL FOR CONCRETE AND MASONRY, ALL CONCRETE PLACEMENT AND STRUCTURAL FILL PLACEMENT.

STRUCTURAL STEEL NOTES:

1. STEEL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH "SPECIFICATION FOR STRUCTURAL STEEL BUILDING," AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) - LATEST EDITION.
2. STRUCTURAL STEEL W-SHAPES SHALL CONFORM TO ASTM A992, MINIMUM YIELD STRENGTH fy=50 KSI.
3. HOLLOW STRUCTURAL SECTIONS SHALL CONFORM TO ASTM A500, GRADE B, MINIMUM YIELD STRENGTH fy=46 KSI.
4. STRUCTURAL STEEL MISCELLANEOUS SECTIONS, INCLUDING BUT NOT LIMITED TO CHANNELS, ANGLES AND PLATES SHALL CONFORM TO ASTM A36, MINIMUM YIELD STRENGTH fy=36 KSI.
5. WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY (AWS) STRUCTURAL WELDING CODE, D1.1, LATEST EDITION. ELECTRODE: E70.
6. ALL CONNECTION BOLTS SHALL BE A MINIMUM OF 3/4" DIAMETER ASTM A325 HIGH STRENGTH BOLTS.
7. DESIGN OF ALL CONNECTIONS SHALL BE THE RESPONSIBILITY OF THE STEEL FABRICATOR. COMPLETE CALCULATIONS SHALL BE PREPARED BY A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE STATE MAINE AND SHALL BE SUBMITTED TO THE ENGINEER-OF-RECORD FOR REVIEW PRIOR TO ANY FABRICATION.
8. BEAM FRAMING CONNECTIONS SHALL SUPPORT A MINIMUM OF HALF THE ALLOWABLE UNIFORM LOAD CAPACITY OF THE BEAM AS PER AISC 14TH EDITION, PART 2 TABLE OF ALLOWABLE UNIFORM LOADS FOR BEAMS LATERALLY SUPPORTED.
9. NO FIELD CUTTING, BURNING, OR OTHER ALTERATION OF NEW STRUCTURAL STEEL SHALL BE DONE WITHOUT WRITTEN APPROVAL OF THE ENGINEER.
10. SHOP PRIME STRUCTURAL STEEL MEMBERS USING TNEMEC PRIMERS SERIES VERSION 10. SEE SECTION 051200-STRUCTURAL STEEL FRAMING AND SECTION 099123 PAINTING FOR SURFACE PREPARATION, PRIME AND FINISH COAT DETAILS.

CONCRETE NOTES:

1. CONCRETE SHALL COMPLY WITH MAINE DOT CLASS AA, f'c = 4,000 PSI.
2. CONTRACTOR SHALL PROVIDE TIES AND BRACING WHERE NECESSARY DURING CONSTRUCTION TO REMAIN IN PLACE UNTIL THE STRUCTURES ARE COMPLETE.
3. VAPOR BARRIER/RETARDER: STEGO WRAP BY STEGO INDUSTRIES, LLC. 10 MIL. THICK VAPOR RETARDER OR EQUAL.
    a. PERMEANCE RATING: ASTM E 96, 0.036 PERMS OR LOWER.
    b. PUNCTURE RESISTANCE: ASTM E 1745, MINIMUM 2340 GRAMS.
    c. TENSILE STRENGTH: ASTM E 1745, MINIMUM 54.4 LBF/IN.
    d. MEETS TO ASTM E 1745, CLASS A AND B STANDARDS FOR UNDERSLAB VAPOR RETARDERS.
4. PROVIDE PVC SLEEVES WHERE PIPES PASS THROUGH CONCRETE WALLS OR SLABS.
5. REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 60 DEFORMED BARS AND SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH ACI 315-LATEST EDITION.
6. COMPLETE SHOP DRAWINGS AND SCHEDULES OF ALL REINFORCING STEEL SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO COMMENCEMENT OF THAT PORTION OF THE WORK. ALL ACCESSORIES MUST BE SHOWN ON THE SHOP DRAWINGS.
7. FLOOR SLAB CONTROL JOINTS SHALL BE PLACED AS SHOWN ON THE FOUNDATION PLAN (SLAB ON GRADE) OR AS DIRECTED BY THE ENGINEER. UNLESS OTHERWISE NOTED, CONTROL JOINTS WILL BE SPACED NOT TO EXCEED 15'-0" ON-CENTER IN BOTH DIRECTIONS AND SHALL BE FILLED WITH SEALANT AT THE COMPLETION OF THE PROJECT.
8. CONTRACTOR WILL CHECK WITH EACH TRADE TO ASSURE CORRECT LOCATION, SIZE, LINE AND ELEVATION OF SLEEVES, BOND-OUTS, ECT. REQUIRED IN CONCRETE FLOORS AND WALLS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FLOOR DRAIN SETTING AND EXTENTS OF AREA SLOPE TO DRAIN DEVELOPMENT. SEE ARCHITECTURAL AND PLUMBING PLANS TO ENSURE COMPLETE AREA DRAINAGE.
10. WELDING OF REINFORCEMENT IS NOT PERMITTED.
11. EXPOSED CONCRETE SHALL BE NEATLY FINISHED-RUBBED.
12. MECHANICAL EQUIPMENT RESTING ON THE CONCRETE FLOOR SLAB SHALL HAVE A 4 INCH HIGH CONCRETE PAD UNDERNEATH, EXTENDING A MINIMUM OF 6 INCHES BEYOND UNIT EDGE (EACH DIRECTION). REINFORCED WITH #3 BARS AT 18 INCHES ON-CENTER EACH WAY.
13. ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL NOT BE USED. CONCRETE SHALL NOT BE IN DIRECT CONTACT WITH ALUMINUM.
14. PROVIDE IN SLABS ON GRADE (2) #5 BARS 4'-0" LONG AT EACH REENTRANT CORNER AND BOTH SIDES OF DOOR OPENING.
15. REFER TO ACI 318 (LATEST EDITION) FOR MINIMUM CONCRETE COVER FOR REINFORCING STEEL.
16. UNLESS OTHERWISE NOTED, REINFORCING LAP SPLICES SHALL BE ACI CLASS B SPLICES USING THE FOLLOWING LAP LENGTHS:

BAR SIZE	3	4	5	6	7	8	9	10	11
LAP IN.	22	29	36	43	63	72	80	89	98

17. COORDINATE SLAB DEPRESSIONS AND ALL INTERIOR FLOOR SLOPES TO DRAIN LOCATIONS WITH ARCHITECTURAL DRAWINGS.
18. SLAB THICKNESS (ELEVATED OR ON-GRADE) INDICATED ON THE DRAWINGS ARE MINIMUMS. PROVIDE SUFFICIENT CONCRETE TO ACCOUNT FOR STRUCTURE DEFLECTION AND/OR SUBGRADE FLUCTUATIONS IN ORDER TO OBTAIN SPECIFIED SLAB ELEVATIONS AT THE FLATNESS AND LEVELNESS INDICATED IN THE SPECIFICATION.
19. ANCHOR BOLTS SHALL CONFORM TO ASTMF1554, GR. 36 HOT DIPPED GALVANIZED UNLESS NOTED OTHERWISE ON PLAN.
20. DRILLED-IN ANCHOR BOLTS OR REBAR DOWELS SHALL BE INSTALLED AS FOLLOWS:
    - LOCATE ANCHOR BOLTS OR REBAR DOWELS TO AVOID CUTTING EXISTING REBAR.
    - DEPTH IS BASED ON A CLEAN HOLE WITH ROUGH SIDES. ROTARY PERCUSSION EQUIPMENT AND COURSE ROCK CUTTING CHISELS ARE RECOMMENDED. DIAMOND CORE BITS SHOULD BE AVOIDED AS EMBEDMENT LENGTHS MAY NEED TO BE INCREASED. HOLE SIZE TO BE PER MANUFACTURERS RECOMMENDATIONS.
    - CLEAN HOLES WITH COMPRESSED AIR OR VACUUM. REMOVE ANY FREE-STANDING WATER AND ALLOW HOLE TO DRY.
    - GROUT ANCHOR BOLTS OR DOWELS WITH HILTI HIT HY-200 ADHESIVE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS (HILTI HVA ADHESIVE CAPSULE MAY BE SUBSTITUTED FOR THE HILTI HIT HY-200 ADHESIVE).

STEEL DECK NOTES:

1. COMPOSITE FLOOR DECK SHALL BE GALVANIZED 2" DEEP, 18 GAGE, TYPE C, COMPOSITE, 3-SPAN, 36" COVERAGE STEEL DECK WITH NORMAL WEIGHT CONCRETE. DECK ATTACHMENT TO ALL SUPPORTS SHALL BE 5/8" PUDDLE WELDS SPACED IN A 36/4 PATTERN WITH 3-#10 SIDE LAP TEK SCREWS PER SPAN OF ALL SUPPORTS.
2. COMPLY WITH PROVISIONS OF THE LATEST EDITION OF THE FOLLOWING CODES AND STANDARDS:
    a. AMERICAN IRON AND STEEL INSTITUTE (AISI) "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS"
    b. STEEL DECK INSTITUTE (SDI) "DESIGN MANUAL FOR FLOOR DECKS AND ROOF DECKS"
    c. FACTORY MUTUAL
3. GALVANIZING SHALL CONFORM TO ASTM A924 COATING CLASS G60. FIELD TOUCH-UP ALL WELDS, SCUFFS, AND ABRASIONS WITH RUST INHIBITIVE PAINT.
4. PROVIDE ALL OTHER ACCESSORIES INCLUDING METAL AND FLEXIBLE CLOSURE STRIPS, ETC. NECESSARY FOR A COMPLETE INSTALLATION.
5. TEK SCREWS FOR DECK FASTENING SHALL BE GALVANIZED #10 SELF-TAPPING SCREWS. ALL SCREWS SHALL HAVE A 0.19" THREAD DIAMETER, 0.4" MINIMUM NOMINAL HEAD DIAMETER AND AN AVERAGE TESTED TENSILE STRENGTH OF 2,500 LB.
6. REINFORCE OPENINGS IN ROOF DECK LESS THAN OR EQUAL TO 12" DIAMETER PER SDI REQUIREMENTS. REINFORCE OPENINGS IN ROOF DECK GREATER THAN 12" DIAMETER AS INDICATED ON DRAWINGS.

ABBREVIATIONS:

Ø	AT	HORIZ.	HORIZONTAL
A.B.	ANCHOR BOLT	HSS	HOLLOW STRUCTURAL SECTION
ADD'L	ADDITIONAL	INSUL.	INSULATION
AHU	AIR HANDLING UNIT	INT.	INTERIOR
ARCH.	ARCHITECTURAL	JT.	JOINT
BFE	BOTTOM OF FOOTING ELEVATION	LOC.	LOCATION
BLDG.	BUILDING	LWC	LIGHTWEIGHT CONCRETE
BM.	BEAM	MANUF.	MANUFACTURER
BOT.	BOTTOM	MAX.	MAXIMUM
CJ	CONSTRUCTION JOINT	MIN.	MINIMUM
CMU	CONCRETE MASONRY UNIT	N/A	NOT APPLICABLE
COL.	COLUMN	NO., #	NUMBER
COMPR.	COMPRESSIBLE	O.C.	ON CENTER
CONC.	CONCRETE	OPNG.	OPENING
CONT.	CONTINUOUS	PL.	PLATE
COORD.	COORDINATE	POLY.	POLYETHYLENE
C	CENTER LINE	PREFAB.	PREFABRICATED
DIA.	DIAMETER	REINF.	REINFORCEMENT
DIAG.	DIAGONAL	REQ'D.	REQUIRED
DIMS.	DIMENSIONS	SCHED.	SCHEDULE
DWG.	DRAWING	SECT.	SECTION
DWGS.	DRAWINGS	SHT.	SHEET
EA.	EACH	SL.	SLOPE
E.F.	EACH FACE	S.O.G	SLAB ON GRADE
E.J.	EXPANSION JOINT	SQ.	SQUARE
EL.	ELEVATION	SST	STAINLESS STEEL
EMBED.	EMBEDMENT	STIFF.	STIFFENER
EQ.	EQUAL	T&B	TOP AND BOTTOM
E.W.	EACH WAY	THK.	THICK
EXT.	EXTERIOR	T.O.	TOP OF
FFL	FINISHED FLOOR ELEVATION	T.O.S.	TOP OF STEEL
FIN.	FINISHED	T.O.W.	TOP OF WALL
FTG.	FOOTING	TYP.	TYPICAL
GALV.	GALVANIZED	U.N.O.	UNLESS NOTED OTHERWISE
HOR.	HORIZONTAL	VERT.	VERTICAL
		W/	WITH
		WWF	WELDED WIRE FABRIC

Filename: S-001-02.dwg

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	GGB		Checked	GMB	
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THE GOLD STAR MEMORIAL HIGHWAY

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INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

STRUCTURAL NOTES – SHEET 1 OF 2

SHEET NUMBER: S-001

CONTRACT: 2019.04

Date: Tuesday, March 19, 2019

FOUNDATION NOTES:

1. ALL FOUNDATIONS SHALL BE SUPPORTED BY SPREAD FOOTINGS OR STRIP FOUNDATIONS.
2. THE FOOTINGS SHALL BE SIZED USING A NET ALLOWABLE BEARING PRESSURE OF 2 KIPS PER SQUARE FOOT (KSF).
3. SLABS ON GRADE SHALL BEAR ON A MINIMUM OF 12" OF COMPACTED STRUCTURAL FILL OR COMPACTED 3/8" CRUSHED STONE. IF LOOSE OR UNDESIRABLE FILLS ARE ENCOUNTERED AT THE SLAB SUBGRADE LEVEL, THEY SHALL BE OVER EXCAVATED TO THE SURFACE OF THE NATURAL SOIL AND REPLACED WITH STRUCTURAL FILL. REFER TO DRAWINGS FOR VAPOR BARRIER REQUIREMENTS. MOIST CURE SLABS IN ACCORDANCE WITH ACI.
4. STRUCTURAL FILL SHALL BE USED AT ALL LOCATIONS BELOW FOOTINGS AND SLABS AND ADJACENT TO THE FOUNDATION WALLS. PRIOR TO PLACEMENT OF STRUCTURAL FILL, REMOVE ALL TOPSOIL AND OTHER UNSUITABLE MATERIAL. COMPACTED STRUCTURAL FILL SHALL CONSIST OF CLEAN GRANULAR MATERIAL FREE OF ORGANICS, LOAM, TRASH, SNOW, ICE, FROZEN SOIL OR ANY OTHER QUESTIONABLE MATERIAL. IT SHALL BE WELL GRADED WITHIN THE FOLLOWING LIMITS.

SCREEN OR SEIVE SIZE	PERCENT FINER BY WEIGHT
6 INCH	100
3 INCH	70 - 100
NO. 4	35 - 70
NO. 40	5 - 35
NO. 200	0 - 5

5. STRUCTURAL FILL (OR 3/8" CRUSHED STONE) BENEATH SLABS SHALL BE PLACED IN LAYERS NOT EXCEEDING 6 INCHES IN LOOSE MEASURE AND COMPACTED BY SELF-PROPELLED COMPACTION EQUIPMENT AT APPROXIMATE OPTIMUM MOISTURE CONTENT TO A DRY DENSITY OF AT LEAST 95% OF THE MAXIMUM IN PLACE DRY DENSITY AS DETERMINED BY THE MODIFIED PROCTOR TEST (ASTM D-1557) FOR STRUCTURAL FILL OR 100% OF THE RODDED UNIT WEIGHT AS DETERMINED BY ASTM C-29 FOR 3/6" CRUSHED STONE.
6. UNDERDRAINS SHALL BE PLACED AS SHOWN ON THE SITE DRAWINGS. UNDERDRAINS SHALL BE INSTALLED TO POSITIVELY DRAIN TO A SUITABLE DISCHARGE POINT AWAY FROM THE STRUCTURE. REFER TO SITE DRAWINGS FOR ADDITIONAL INFORMATION.
7. EXTERIOR CONCRETE SLABS ON GRADE, SHALL BE UNDERLAIN BY AT LEAST ONE FOOT OF STRUCTURAL FILL MEETING GRADATION AND COMPACTION REQUIREMENTS NOTED ABOVE. REINFORCE SLABS WITH #4 @ 12" EACH WAY AT CENTER OF SLAB.
8. FOUNDATION WALL REINFORCING WILL BE ADJUSTED AS REQUIRED NOT TO INTERFERE WITH BASE PLATE ANCHOR BOLTS.
9. EXCAVATIONS FOR BUILDING FOUNDATIONS AND STRUCTURES SHALL BE IN ACCORDANCE WITH OSHA REQUIREMENTS. BRACED EXCAVATIONS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROJECT STATE. DO NOT UNDERMINE EXISTING ADJACENT FOUNDATIONS.
10. INTERSECTING CONCRETE WALLS SHALL BE TIED WITH #4 L-BARS 3'-0" LONG (BENT 18 INCHES - 18 INCHES), SPACED AT 12 INCHES ON-CENTER OUTSIDE FACE ONLY.
11. IN NO CASE SHALL HEAVY EQUIPMENT BE PERMITTED CLOSER THAN 8'-0" FROM ANY FOUNDATION/BASEMENT WALL. IF THE CONTRACTOR DEEMS IT NECESSARY TO OPERATE SUCH EQUIPMENT CLOSER THAN 8'-0", THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND AT HIS OWN EXPENSE, PROVIDE ADEQUATE SUPPORTS OR WALL BRACES TO WITHSTAND THE ADDITIONAL LOADS SUPERIMPOSED FROM SUCH HEAVY EQUIPMENT.
12. CONCRETE SHALL NOT BE PLACED ON FROZEN GROUND OR IN WATER.

TRUSS NOTES:

1. ALL WOOD TRUSSES SHALL COMPLY WITH THE FOLLOWING CODES AND REGULATIONS:
   a. "TIMBER CONSTRUCTION MANUAL" BY THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION.
   b. "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION" BY THE NATIONAL FOREST PRODUCTS ASSOCIATION.
   c. "DESIGN SPECIFICATIONS FOR METAL PLATE CONNECTED WOOD TRUSSES" BY THE TRUSS PLATE INSTITUTE.
2. CHORD MEMBERS SHALL COMPLY WITH ONE OF THE FOLLOWING:
   2x6 MINIMUM SIZE:
   a. SELECT STRUCTURAL SOUTHERN PINE (E=1,800,000 PSI; Fb=2550 PSI SINGLE MEMBER USE).
   b. MACHINE STRESS RATED (MSR) 2100f-1.8E (E=1,800,000 PSI; Fb=2100 PSI SINGLE MEMBER USE).
   c. MACHINE EVALUATED LUMBER (MEL) M-19 (E=1,600,000 PSI; Fb=2000 PSI SINGLE MEMBER USE).
   d. APPROVED EQUAL OR BETTER THAN ABOVE.
3. WEB MEMBERS SHALL COMPLY WITH ONE OF THE FOLLOWING:
   2x4 MINIMUM SIZE:
   a. NO. 2 SOUTHERN PINE (E=1,600,000 PSI; Fb=1500 PSI FOR SINGLE MEMBER USE).
   MACHINE STRESS RATED (MSR) 1650f-1.5E (E=1,500,000 PSI;
   b. Fb=1650 PSI SINGLE MEMBER USE).
   MACHINE EVALUATED LUMBER (MEL) M-13 (E=1,400,000 PSI;
   c. Fb=1600 PSI SINGLE MEMBER USE).
4. PREFABRICATED WOOD TRUSSES SHALL BE FABRICATED IN AN ENCLOSED STRUCTURE UNDER CONTROLLED CONDITIONS BY AN EXPERIENCED FABRICATOR. THE TRUSS FABRICATOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO COMMENCING FABRICATION. TRUSSES SHALL NOT BE FABRICATED UNTIL ALL SHOP DRAWINGS HAVE BEEN APPROVED. ALL SHOP DRAWINGS MUST BEAR THE STAMP OF A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE STATE OF MAINE.
5. THE TRUSS FABRICATOR SHALL DESIGN THE TRUSSES BASED ON THE DESIGN LOADS AND THE CONFIGURATION GIVEN ON PLANS. DESIGN AND FABRICATE EACH TRUSS TYPE IN TWO PIECES TO BE FIELD SPLICED. CONTRACTOR AND FABRICATOR TO COORDINATE ALL SHIPPING OPTIONS, ACCESS TO SITE, AND ERECTION PROCEDURES.
6. THE TRUSS FABRICATOR SHALL SELECT THE GUSSET PLATE TO BE USED AT EACH JOINT AS WELL AS PLATES REQUIRED TO FIELD-SPLICE TRUSS. ALL PLATES MUST HAVE A WORKING CAPACITY OF AT LEAST 125% OF THE DESIGN LOADS.
7. THE TRUSS FABRICATOR SHALL ACCOUNT FOR THE COMBINED EFFECTS OF BENDING AND AXIAL STRESSES IN CHORD MEMBERS DUE TO UNIFORMLY APPLIED LOADS.
8. WOOD TRUSSES SHALL BE HANDLED, INSTALLED AND BRACED IN ACCORDANCE WITH "HANDLING, INSTALLING AND BRACING METAL PLATE CONNECTED WOOD TRUSSES BCSI 1-03" OF THE TRUSS PLATE INSTITUTE. THE TRUSS FABRICATOR SHALL FURNISH A COPY OF THIS MANUAL AND SHALL SHIP IT IN A WATERTIGHT CONTAINER WITH THE TRUSSES.
9. SHOP DRAWINGS SHALL SHOW TRUSS CONFIGURATION, MEMBER SIZES, MEMBER FORCES AND SPECIES, GRADE AND STRESSES OF LUMBER. A DIMENSIONED PLACEMENT PLAN SHALL BE SUBMITTED WITH THE TRUSS SHOP DRAWINGS SHOWING TRUSSES AND TRUSS BRACING.
10. THE CONTRACTOR SHALL INSTALL ALL TEMPORARY BRACING AS RECOMMENDED BY BCSI 1-03. THIS TEMPORARY BRACING SHALL BECOME PERMANENT BRACING WHEREVER POSSIBLE. PERMANENT BRACING SHALL MEET ALL REQUIREMENTS OF HIB-91 AND THE WORKING DRAWINGS AND SPECIFICATIONS, WHICHEVER ARE THE MORE STRINGENT.
11. ROOF DIAPHRAGM:

    ALL ROOF SHEATHING SHALL BE 5/8" THICK APA-RATED, EXTERIOR GRADE PLYWOOD. SHEATHING SHALL BE ORIENTED WITH LONG SPAN OF SHEET PERPENDICULAR TO SUPPORTING MEMBERS AND VERTICAL SEAMS, STAGGERED AT 48" ON CENTER. BLOCKING SHALL BE USED TO SUPPORT ALL DIRECT EDGES OF THE PANEL. ROOF SHEATHING SHALL BE FASTENED WITH 10d COMMON NAILS AT 4" ON CENTER MAXIMUM AROUND ALL DIRECT EDGES AND 6" ON CENTER MAXIMUM AT ALL INTERMEDIATE SUPPORTS.
12. FASTENING PER IBC 2015, CHAPTER 23, UNLESS OTHERWISE NOTED.
13. TRUSS CONFIGURATIONS SHOWN ARE DIAGRAMMATIC. FINAL CONFIGURATION SHALL BE BY TRUSS MANUFACTURER. WHERE REQUIRED, TRUSSES SHALL BE FABRICATED IN MULTIPLE PIECES TO FACILITATE TRANSPORTATION TO THE SITE, AND SHALL BE FIELD-SPLICED AT THE SITE, IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS.

MASONRY NOTES:

1. PROVIDE AND INSTALL MASONRY LINTELS FOR MASONRY WALL OPENINGS FOR PROVIDED MASONRY LINTEL SCHEDULE NOTED ON DRAWING UNLESS INDICATED OTHERWISE ON DRAWINGS. PROVIDE MASONRY LINTELS OF SIZE AND REINFORCEMENT AS FOLLOWS.
2. INSTALL FOR OPENINGS AND PENETRATIONS IN BRICK WALLS UP TO 3'-11" WIDE (UNLESS OTHERWISE NOTED) 4"x3-1/2"x1/4" STEEL ANGLE LINTEL FOR OPENINGS AND PENETRATIONS BETWEEN 4'-0" AND 8'-0" WIDE (UNLESS OTHERWISE NOTED) (1) 6"x3-1/2"x1/4" STEEL ANGLE LINTEL.
3. CONCRETE MASONRY BLOCK WALLS WITH REINFORCING AND ALL BLOCKS BELOW GRADE, SHALL HAVE CORES FILLED WITH 3000 PSI CONCRETE. INSTALLATION OF REINFORCEMENT SHALL BE CONTINUOUS AND RUN UNOBSTRUCTED BY BAR JOIST SEAT/BEARING PLATE ARRANGEMENTS. HORIZONTAL REINFORCEMENT SHALL BE PROVIDED @ 16-INCHES ON-CENTER VERTICALLY.
4. OMIT REBAR/GROUTING IN MASONRY CELLS WHICH SHALL RECEIVE ROOF DRAIN LEADERS, CONDUITS, ECT. REQUIRED REINFORCEMENT SHALL BE INSTALLED IN THE ADJACENT CELL AND SHALL BE GROUTED SOLID.
5. ALL HOLLOW LOAD BEARING CONCRETE MASONRY UNITS SHALL BE ASTM C90 GRADE N, TYPE I STANDARD WEIGHT STANDARD BLOCKS INCLUDING STRETCHERS & CORNER BLOCKS UNLESS NOTED OTHERWISE.
6. HOLLOW CONCRETE BLOCK UNITS: GRADE N, 2000 PSI, MINIMUM COMPRESSIVE STRENGTH. WALL DESIGN STRENGTH, FM = 1500 PSI.
7. LAY UNITS IN RUNNING BOND - CORNERS SHALL HAVE A STANDARD BOND BY OVERLAPPING UNITS.
8. MORTAR: TYPE S (ASTM C270).
9. REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 60 DEFORMED BARS AND SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH ACI 315-LATEST EDITION.
10. GROUT: (3000) PSI MINIMUM 28 DAY COMPRESSIVE STRENGTH. ROD GROUT IMMEDIATELY AFTER POURING AND AGAIN APPROXIMATELY 5 MINUTES LATER.
11. MAXIMUM GROUT LIFT WITHOUT CLEANOUTS SHALL NOT EXCEED 4'-0" IN BLOCK WALLS.
12. TIE VERTICAL REINFORCING AT EACH END AND AT 8'-0" MAXIMUM VERTICAL SPACING USING SINGLE WIRE AND LOOP TYPE TIES AS MANUFACTURED BY A.A. WIRE PRODUCTS COMPANY OR APPROVED EQUAL.
13. IN 8-INCH WALLS PROVIDE VERTICAL REINFORCING IN CENTER OF GROUT, AT CENTER OF WALL, CONTINUOUS FULL HEIGHT OF WALL AS FOLLOWS:
    a. (1) #5 VERTICAL AT CORNERS, INTERSECTIONS, WALL ENDS, JAMBS AND EACH SIDE OF EXPANSION OR CONTROL JOINTS.
    b. (1) #5 VERTICAL AT 32-INCHES ON-CENTER TYPICAL (UNLESS NOTED ON PLAN).
    c. (1) #5 VERTICAL IN EACH CORE WITHIN 12-INCHES OF WALL CORNERS.
    d. FOOTING DOWELS TO MATCH VERTICAL REINFORCEMENTS.
14. ALL MASONRY REINFORCEMENT SHALL BE SPLICED 48 BAR DIAMETERS.
15. PLACE BOND BEAM REINFORCING CONTINUOUS THROUGH EXPANSION AND CONTROL JOINTS, WRAPPING BARS WITH 1/8-INCH THICK BOND BREAKING TAPE 24-INCHES BOTH SIDES OF JOINT. DO NOT SPLICE BOND BEAM REINFORCING WITHIN 6'-0" OF AN EXPANSION OR CONTROL JOINT.
16. PROVIDE CONTINUOUS WIRE LATH GROUT BARRIERS AS REQUIRED UNDER FIRST COURSE OF GROUTED (3000 PSI) CONC.) CELLS.
17. PROVIDE LADDER TYPE #9 JOINT REINFORCING AT 16-INCHES VERTICAL SPACING AT EXTERIOR WALLS.
18. PROVIDE HORIZONTAL KNOCK-OUT BOND BEAMS WITH 2-#5 HORIZONTAL BARS AT TOP, BOTTOM AND MIDDLE OF WALL AT 48" MAXIMUM SPACING.

OPEN WEB STEEL JOIST NOTES:

1. STEEL JOISTS SHALL BE FABRICATED AND ERECTED PER THE LATEST ISSUE OF THE STEEL JOIST INSTITUTE SPECIFICATIONS FOR OPEN WEB STEEL JOISTS (K AND KCS SERIES), AS ADOPTED BY THE STEEL JOIST INSTITUTE (SJI) AND AISC. REFER TO THE DRAWINGS FOR THE TYPE, LOCATIONS, AND ANY SPECIAL CONDITIONS REQUIRED.
2. JOIST BEARING ENDS SHALL BE DETAILED TO PROVIDE FULL AND LEVEL BEARING ON THE SUPPORTING MEMBER. BOTH ENDS OF ALL JOISTS SHALL BE WELDED TO BEARING WITH A MINIMUM OF 1/8" FILLET 3" LONG ON EACH SIDE.
3. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT AND THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION. ANY FABRICATION DONE PRIOR TO CONTRACTOR'S RECEIPT OF REVIEWED SHOP DRAWINGS WILL BE DONE AT THE CONTRACTOR'S RISK.
4. PROVIDE JOIST BRACING AND BRIDGING AS RECOMMENDED BY SJI. BRACING AND BRIDGING SHALL BE LOCATED AND DESIGNED BY THE JOIST MANUFACTURER. STEEL JOISTS AND BRIDGING SHALL BE DESIGNED FOR A "NET" UPLIFT LOAD OF 22 PSF.
5. JOIST DESIGN SHALL INCLUDE A LOAD CASE FOR A DEAD LOAD OF 12 PSF PLUS A CONCENTRATED LIVE LOAD OF 2000 LBS. APPLIED TO ANY PANEL POINT PER ASCE 7.

WELDING NOTES:

1. ALL WELDING SHALL BE DONE USING ETO SERIES LOW HYDROGEN RODS AND BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY STANDARDS.
2. ALL WELDING SHALL BE PERFORMED BY WELDERS HOLDING CURRENT CERTIFICATES ACCEPTABLE TO THE ENGINEER AND TO THE REGULATING BUILDING DEPARTMENT. ALL WELDS SHALL BE CLEANED OF SLAG TO PERMIT VISUAL INSPECTION. SEE SPECIFICATIONS FOR INSPECTION REQUIREMENTS.

Filename: S-001-02.dwg

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
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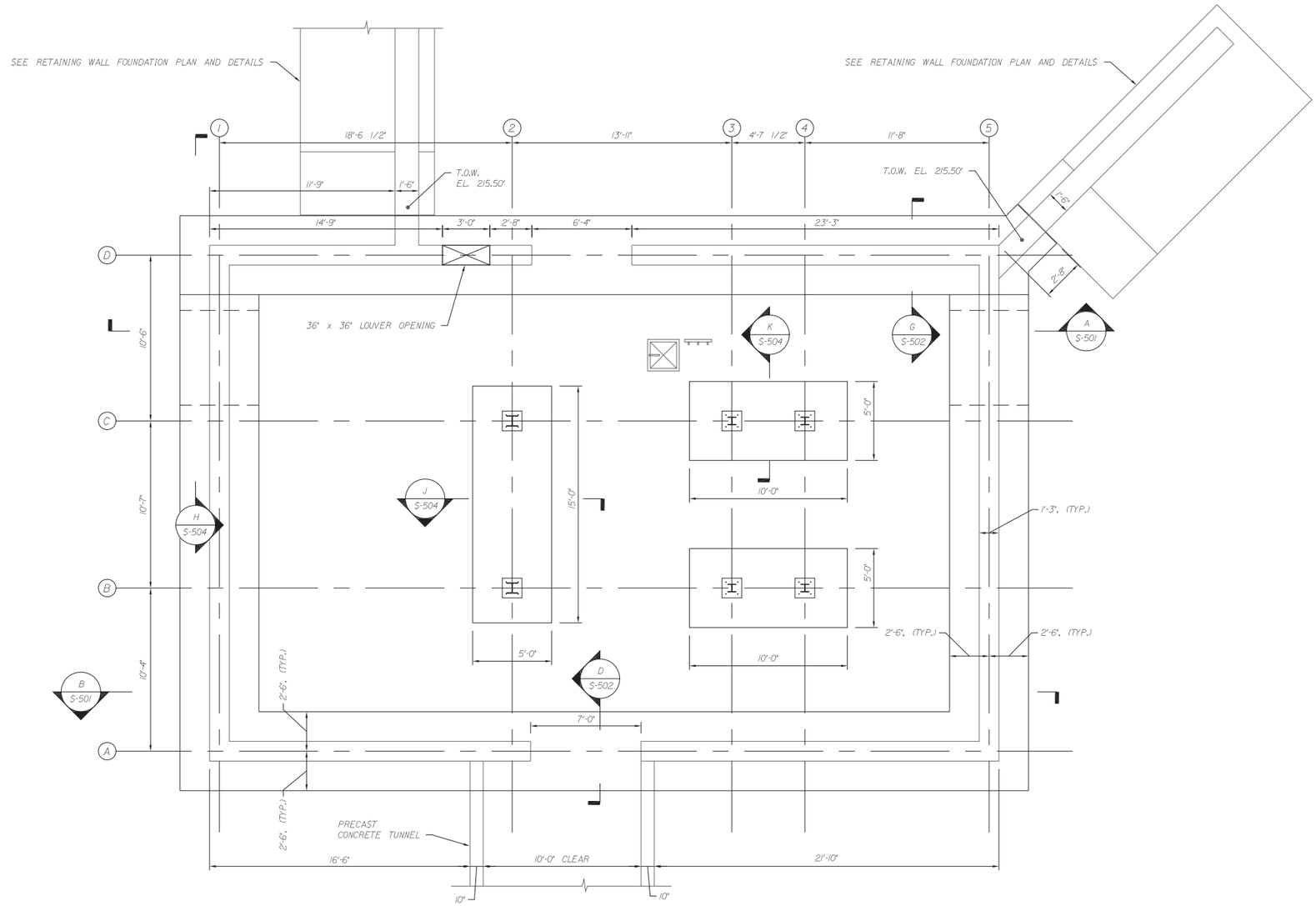
INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

STRUCTURAL NOTES – SHEET 2 OF 2

SHEET NUMBER: S-002

CONTRACT: 2019.04



FOUNDATION PLAN

1/4" = 1'-0"

Date: Tuesday, March 19, 2019

Filename: S-101.dwg

Scale: 1/4"=1'-0" (0, 4', 8')

No.	Revision	By	Date

Designed by: Stantec

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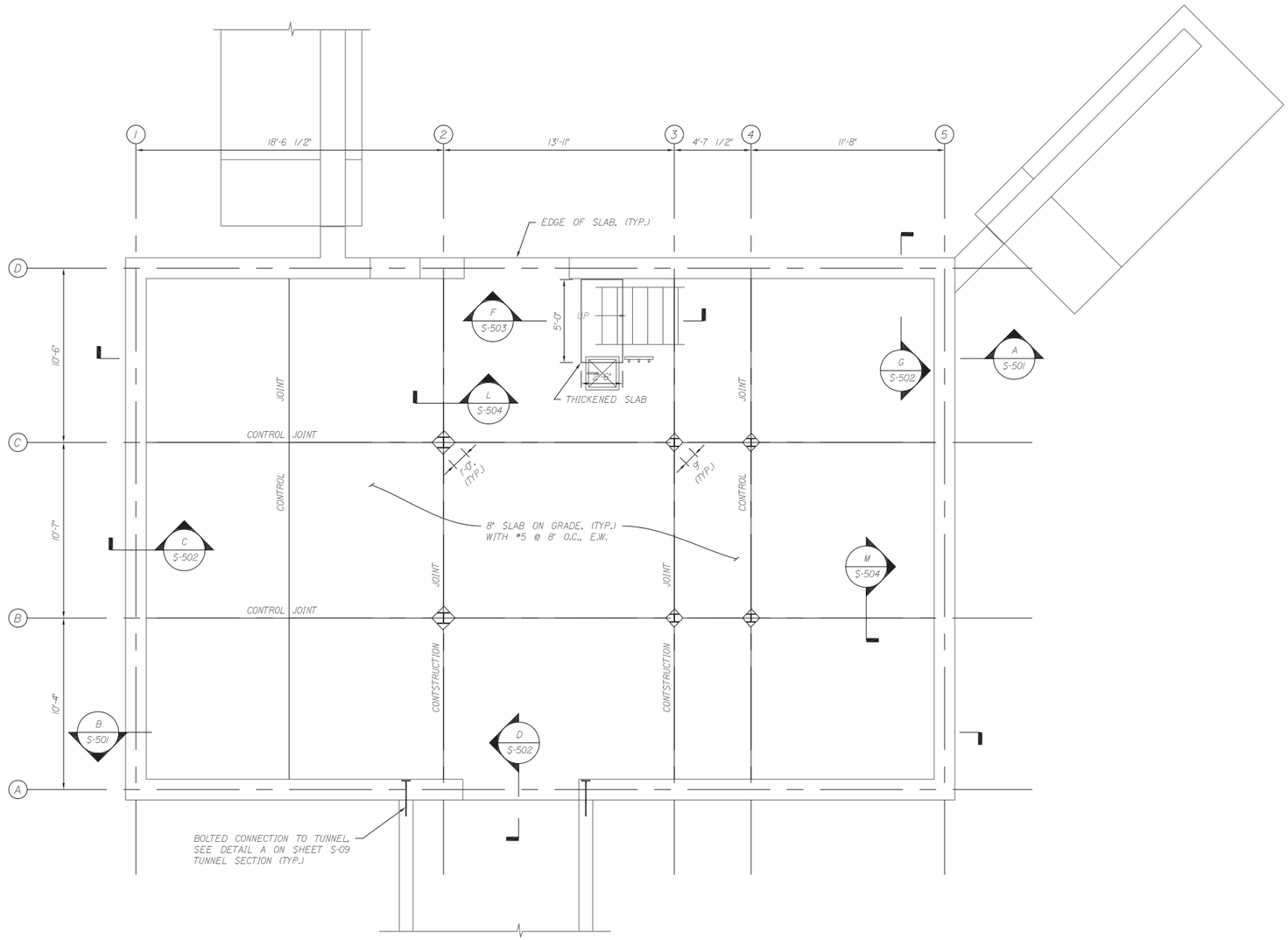
INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

FOUNDATION PLAN

SHEET NUMBER: S-101

CONTRACT: 2019.04

Date: Tuesday, March 19, 2019



BASEMENT PLAN

1/4" = 1'-0"

Filename: S-102.dwg

Scale: 1/4"=1'-0" (0, 4', 8')

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

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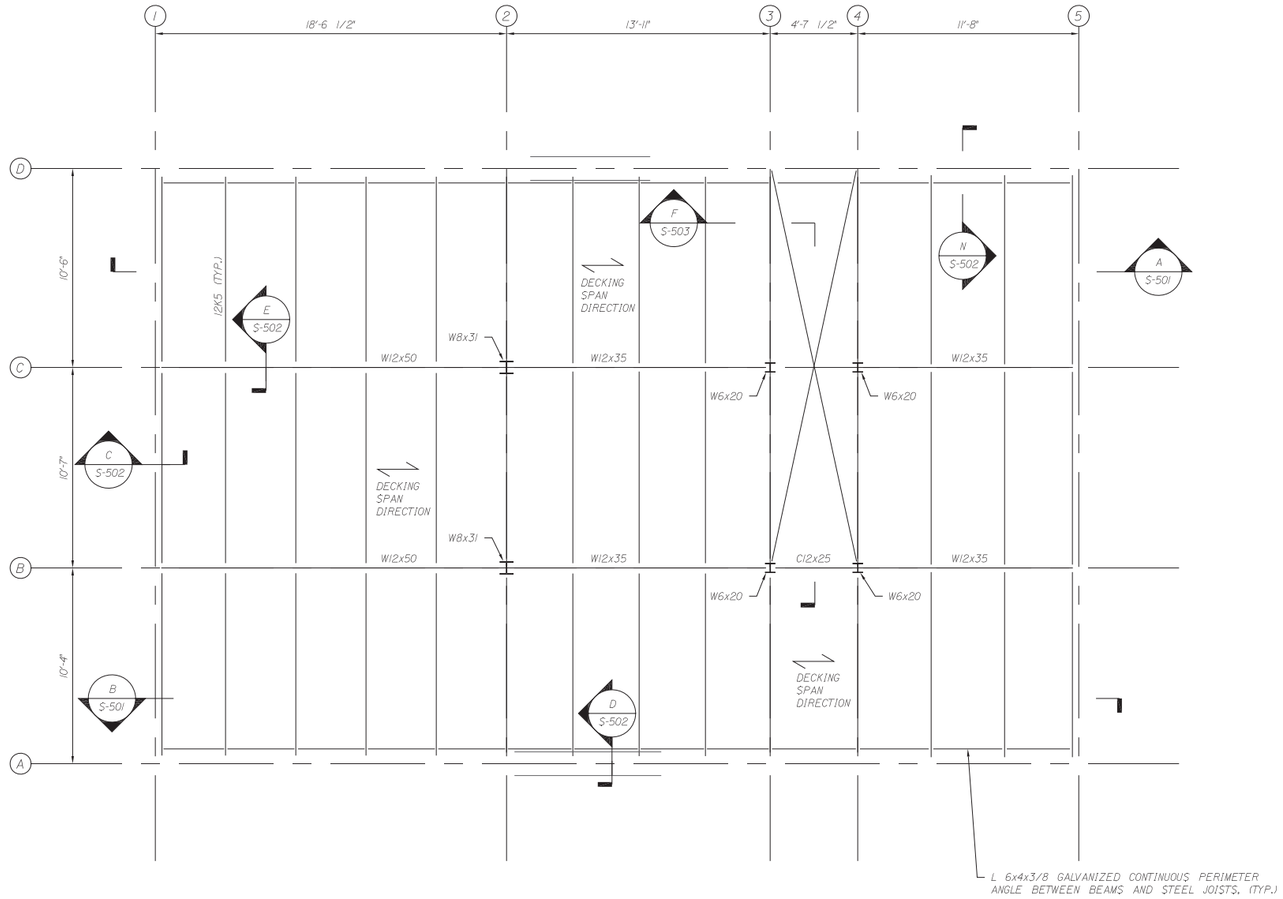
INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

BASEMENT PLAN

SHEET NUMBER: S-102

CONTRACT: 2019.04

Date: Tuesday, March 19, 2019



FIRST FLOOR FRAMING PLAN

1/4" = 1'-0"

Filename: S-103.dwg

Scale: 1/4"=1'-0" 0 4' 8'

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	GGB		Checked	GMB	
Drawn	HBF		In Charge of	DMD	

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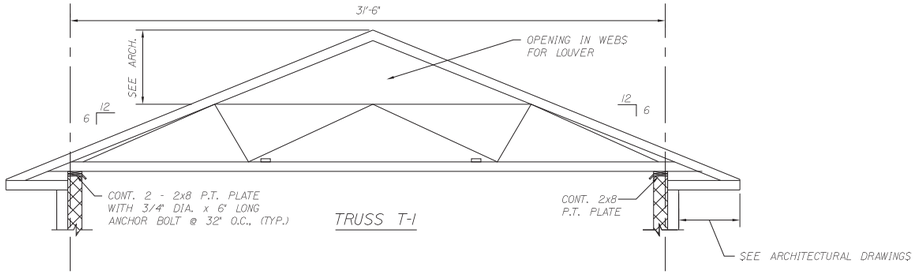
MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

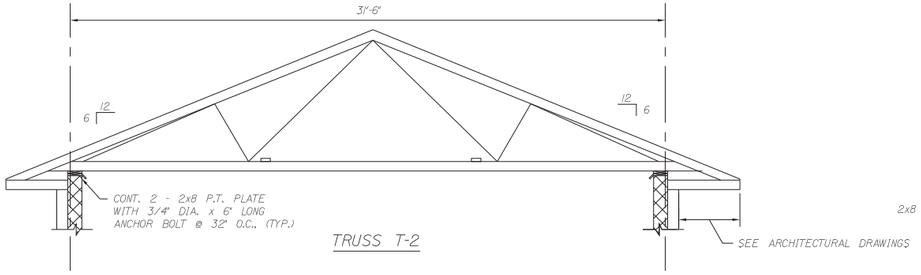
FIRST FLOOR FRAMING PLAN

SHEET NUMBER: S-103

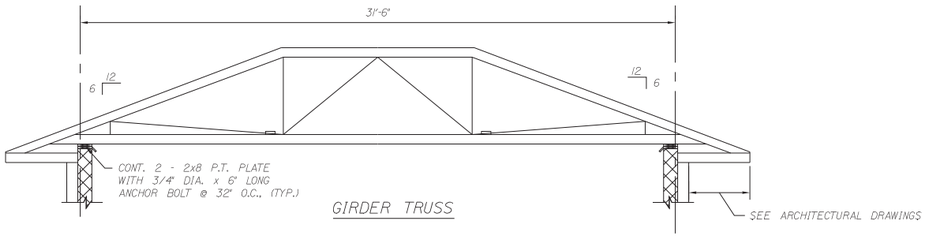
CONTRACT: 2019.04



TRUSS T-1



TRUSS T-2



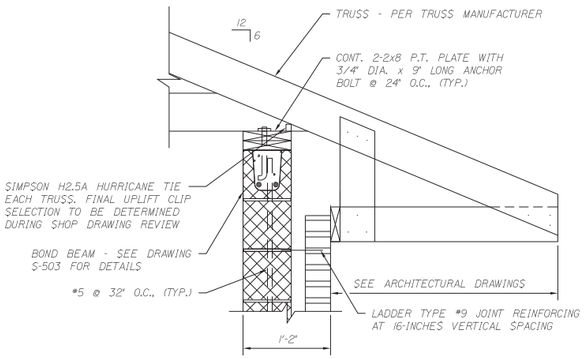
GIRDER TRUSS

TRUSS PROFILE SCHEMATICS

1/4" = 1'-0"

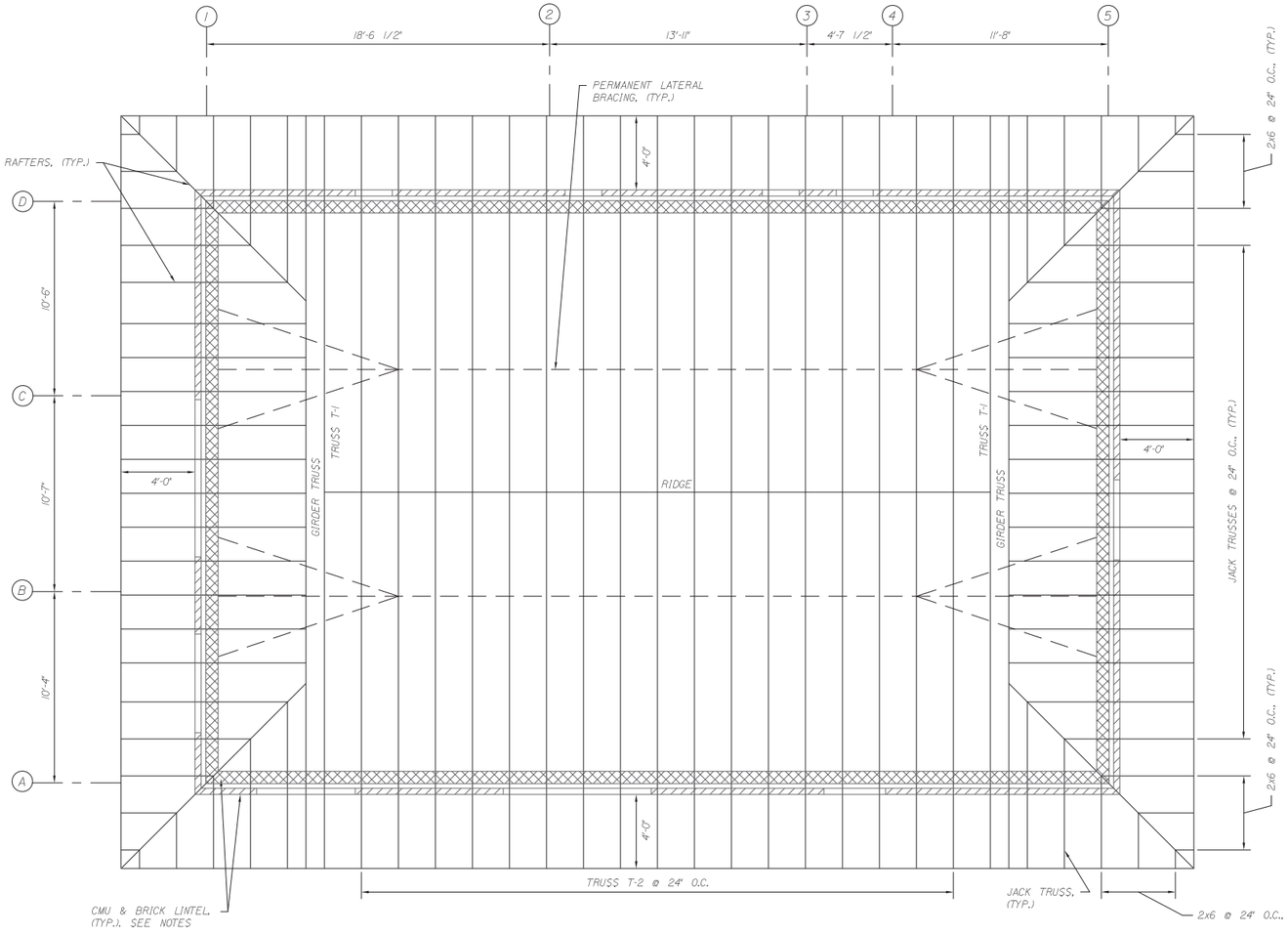
BRICK VENEER LINTEL SCHEDULE		
OPENING	ANGLE SIZE (GALV.)	BEARING (EACH END)
0' - 3' - 11"	L 4" x 4" x 1/4"	8" MINIMUM
4' - 7" - 11"	L 6" x 4" x 5/16" (LLV)	8" MINIMUM
8' - 11" - 11"	L 6" x 4" x 5/8" (LLV)	8" MINIMUM

FASTEN L SECTION WITH 5/8" EXP. ANCHORS @ 12" O.C MIN., (TYP.)



TYPICAL TRUSS BEARING DETAIL

1" = 1'-0"



ROOF PLAN

1/4" = 1'-0"

Date: Tuesday, March 19, 2019

Filename: S-104.dwg

Scale: 1/4"=1'-0" (0, 4', 8')

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	GGB		Checked	GGB	
Drawn	HBF		In Charge of	DMD	

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

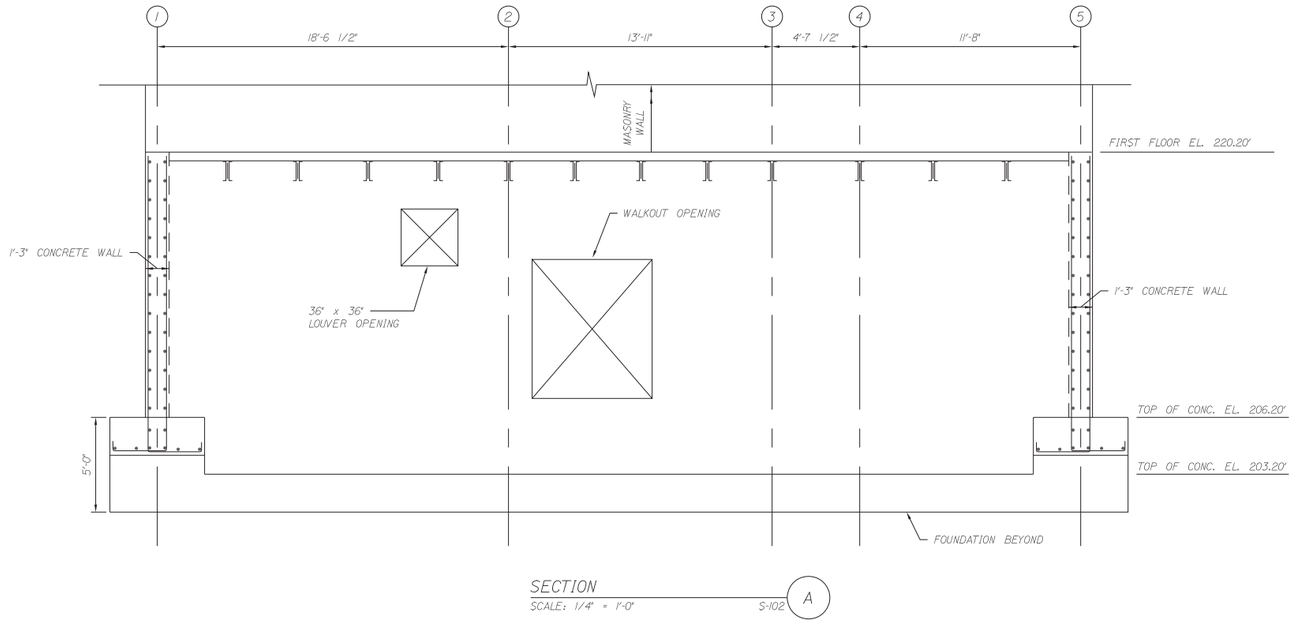
MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103 ORT CONVERSION ADMINISTRATION BUILDING

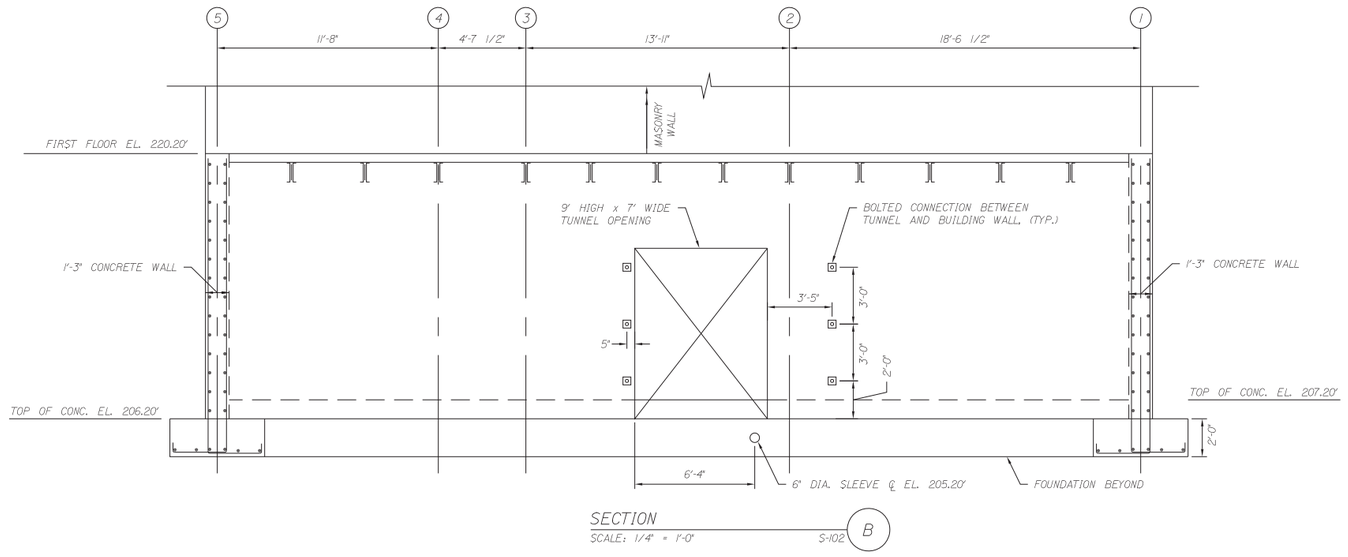
ROOF FRAMING PLAN

SHEET NUMBER: S-104

CONTRACT: 2019.04



SECTION
SCALE: 1/4" = 1'-0"
S-102 A



SECTION
SCALE: 1/4" = 1'-0"
S-102 B

Date: Tuesday, March 19, 2019

Filename: S-501.dwg

Scale: 1/4"=1'-0" (0, 4', 8')

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	GGB		Checked	GBG	
Drawn	HBF		In Charge of	DMD	

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MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

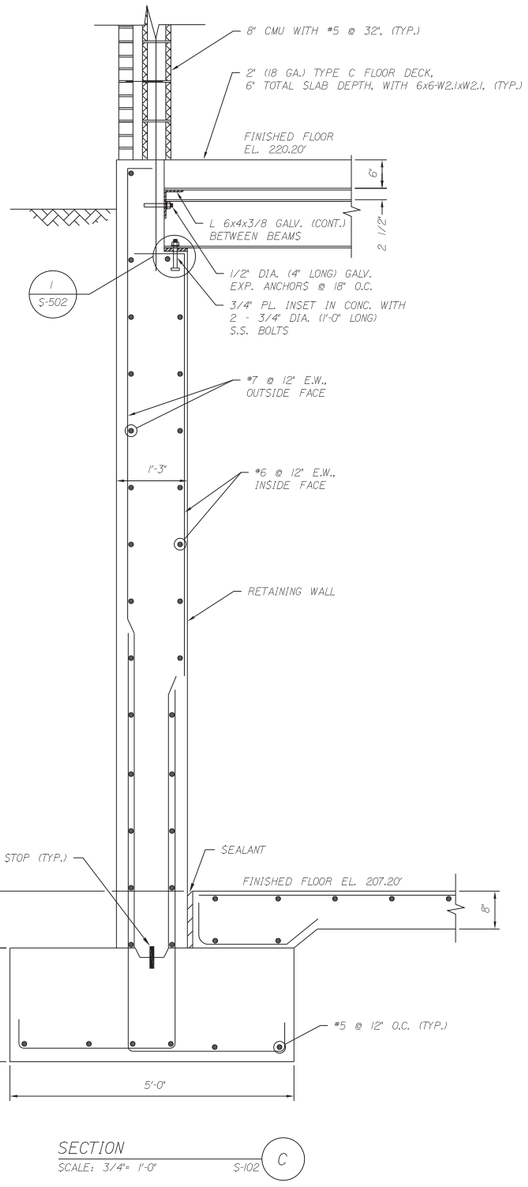
INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

STRUCTURAL DETAILS – SHEET 1 OF 4

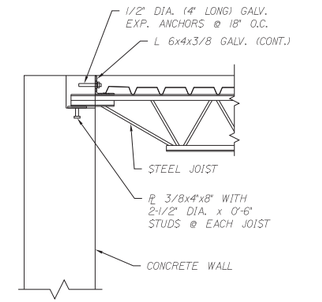
SHEET NUMBER: S-501

CONTRACT: 2019.04

Date: Tuesday, March 19, 2019



SECTION
SCALE: 3/4"= 1'-0" S-102 C



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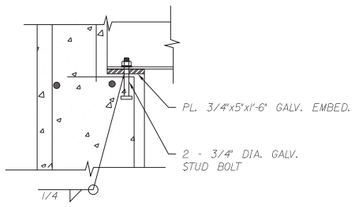
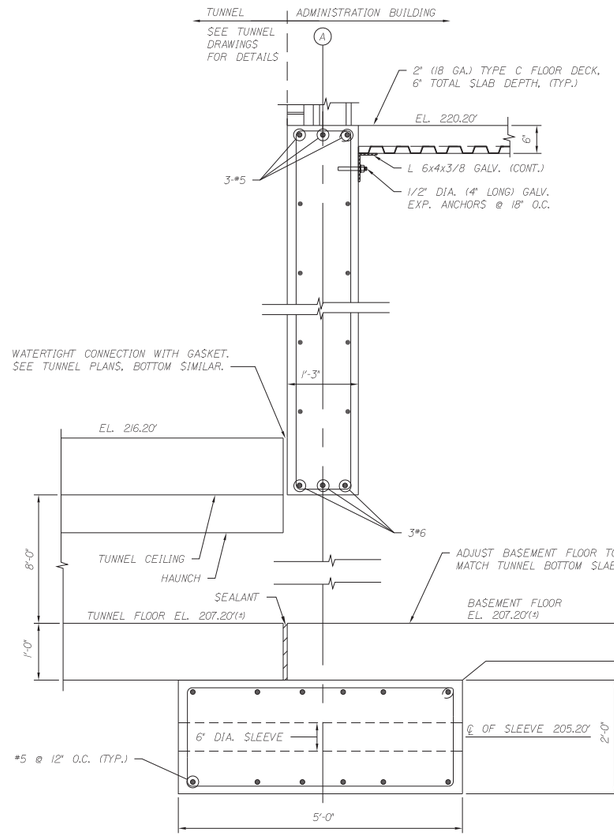


DETAIL
SCALE: 1"= 1'-0" S-502 1



SECTION
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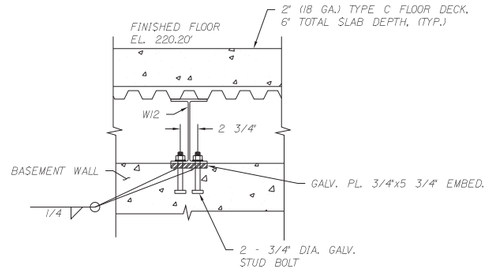

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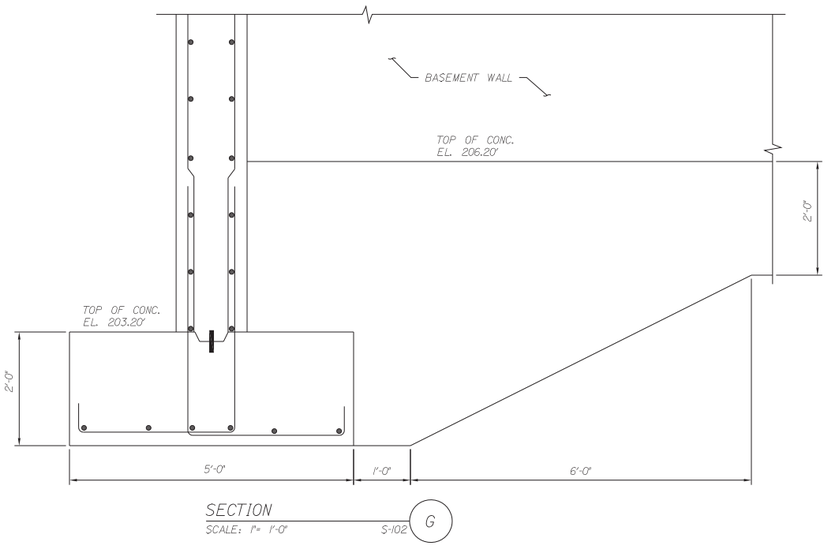

SECTION
SCALE: 1"= 1'-0" S-102 G

Filename: S-502.dwg

Scale: 3/4"=1'-0" (0, 1', 2', 4') 1"=1'-0" (0, 1', 3')

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	GGB		Checked	GMB	
Drawn	HBF		In Charge of	DMD	

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MAINE TURNPIKE

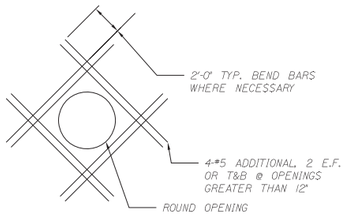
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

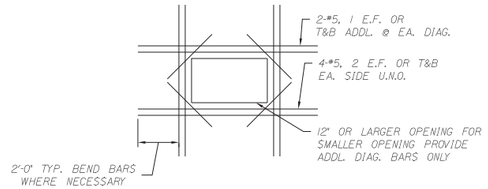
INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

STRUCTURAL DETAILS – SHEET 2 OF 4

SHEET NUMBER: S-502
CONTRACT: 2019.04
470 OF 503



REINFORCING AT ROUND OPENINGS
NOT TO SCALE



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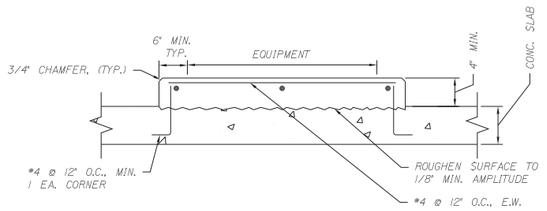
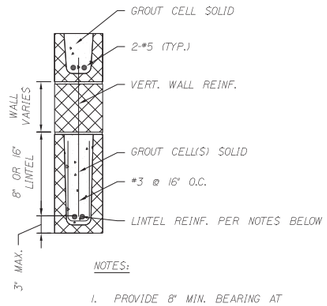


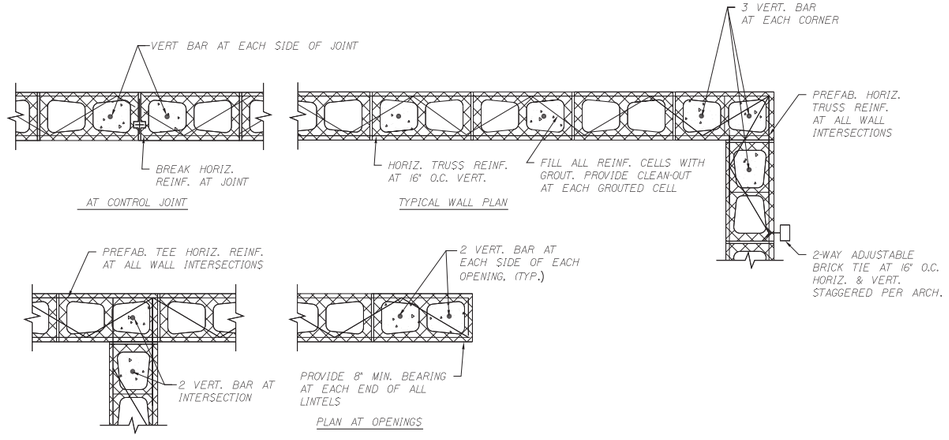
TYPICAL INTERIOR EQUIPMENT PAD DETAIL
NOT TO SCALE



NOTES:

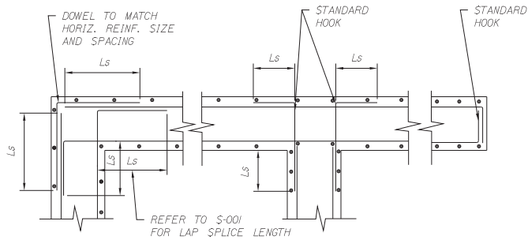
1. PROVIDE 8" MIN. BEARING AT EACH END OF ALL LINTELS.
2. FOR OPENING OF 4'-0" MAX. LINTEL IS 8"x8" WITH 2-#5.
3. FOR OPENING OF 4'-0" TO 8'-0" LINTEL IS 8"x16" WITH 2-#5.

MASONRY LINTEL DETAIL
NOT TO SCALE

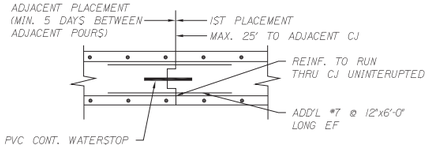


TYPICAL INTERSECTING WALL PLAN

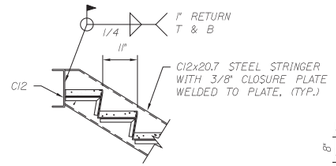
TYPICAL CMU WALL DETAILS
NOT TO SCALE

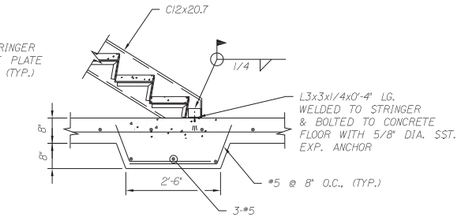


TYPICAL DOUBLE LAYER REINFORCEMENT DETAIL
NOT TO SCALE



TYPICAL WALL JOINT REINFORCEMENT DETAIL
NOT TO SCALE

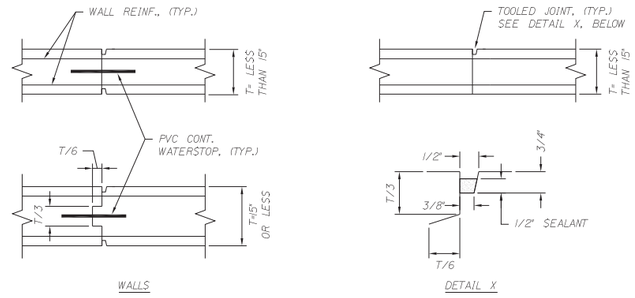




NOTE:

POSTS AND RAILS NOT SHOWN. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS.

SECTION
SCALE: NOT TO SCALE S-102, S-103 (F)



TYPICAL WALL CONSTRUCTION JOINT DETAIL
NOT TO SCALE

Scale:	Designed by:	STANTEC CONSULTING SERVICES INC. 482 PAYNE ROAD SCARBOROUGH, ME 04074 TEL (207) 887-3448 FAX (207) 883-3376	THE GOLD STAR MEMORIAL HIGHWAY	INTERCHANGE 103 ORT CONVERSION ADMINISTRATION BUILDING
	Stantec		MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE	STRUCTURAL DETAILS – SHEET 3 OF 4

No.	Revision	By	Date

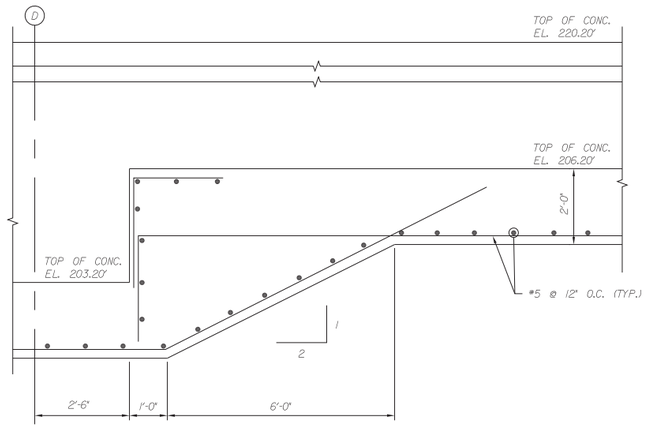
CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	GGB		Checked	GMB	
Drawn	HBF		In Charge of	DMD	

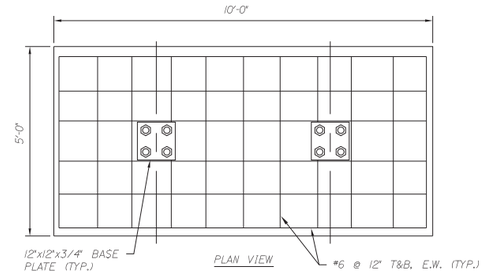
SHEET NUMBER: S-503
CONTRACT: 2019.04
471 OF 503

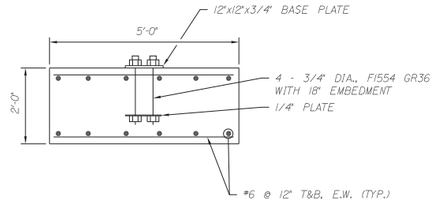
Filename: S-503.dwg

Date: Tuesday, March 19, 2019



SECTION
SCALE: 1/2" = 1'-0"
S-101
H





SECTION
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S-101
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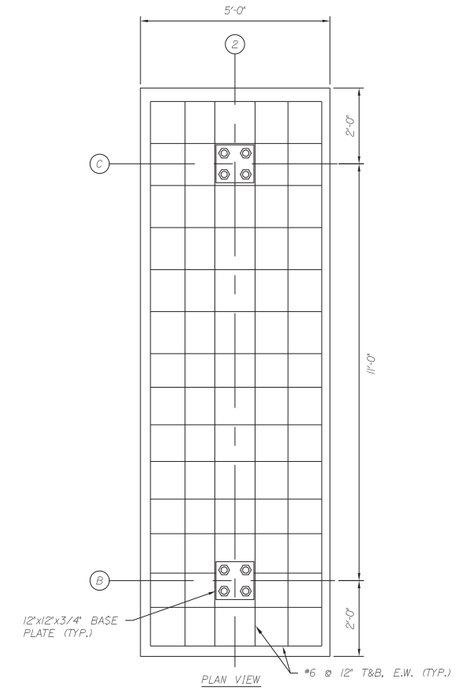

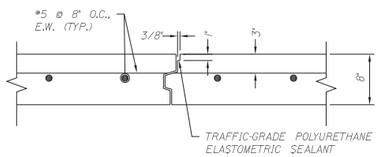

SECTION
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S-102
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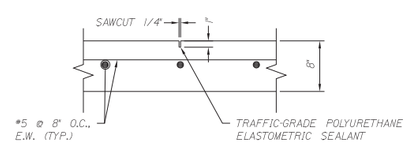

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S-102
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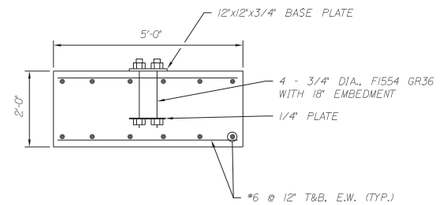

SECTION
SCALE: 1/2" = 1'-0"
S-101
J

Filename: S-504.dwg

Scale: 1/4"=1'-0" (0, 4', 8')

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	GGB		Checked	GGB	
Drawn	HBF		In Charge of	DMD	

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

STRUCTURAL DETAILS – SHEET 4 OF 4

SHEET NUMBER: S-504

CONTRACT: 2019.04

Date: Tuesday, March 19, 2019

ABBREVIATIONS

ACT	ACOUSTICAL CEILING TILE
AFF	ABOVE FINISH FLOOR
AP	ACCESS PANEL
ARCH	ARCHITECT
B	BOILER
BLDG	BUILDING
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CL	CENTER LINE
CLG	CEILING
CO	CLEANOUT
CONC	CONCRETE
CONT	CONTINUATION
CONTR	CONTRACTOR
CTE	CONNECT TO EXISTING
CW	COLD WATER
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DHW	DOMESTIC HOT WATER
DI	DUCTILE IRON
DIA	DIAMETER
DN	DOWN THROUGH SUB OR FLOOR
DR	DROP WITHIN SOME FLOOR LEVEL
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
EC	ELECTRICAL CONTRACTOR
EL/ELEV.	ELEVATION
ET	EXPANSION TANK
EX	EXISTING
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FFE	FINISH FLOOR ELEVATION
FLR	FLOOR
FS	FLOW SWITCH
FT	FOOT
FV	FLUSH VALVE
G	NATURAL GAS PIPING
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GCO	GRADE CLEANOUT
GPF	GALLON PER FLUSH
GPM	GALLON PER MINUTE
GV	GAS VENT PIPING
HB	HOSE BIB
HW	HOT WATER
HWR	HOT WATER RETURN
HX	HEAT EXCHANGER
ID	INSIDE DIAMETER
INV	INVERT
IW	INDIRECT WASTE
LPC	LIMIT OF PLUMBING CONTRACTOR
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
MSB	MOP SERVICE BASIN
MV	MIXING VALVE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
NIC	NOT IN CONTRACT
OED	OPEN END DRAIN
OD	OUTSIDE DIAMETER
P-*	FIXTURE NUMBER
P	PUMP
PC	PLUMBING CONTRACTOR
PG	PRESSURE GAGE
PLBG	PLUMBING
PRV	PRESSURE REDUCING/REGULATING VALVE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
RD	ROOF DRAIN
RL	RAIN LEADER
RPBFP	REDUCED PRESSURE BACKFLOW PREVENTER
SA	SHOCK ABSORBER
SAN	SANITARY
SH	SHOWER
SK	SINK
SS	SOIL STACK
SPEC	SPECIFICATION
ST.ST.	STAINLESS STEEL
T&P	TEMPERATURE AND PRESSURE RELIEF VALVE
TW	TEMPERED WATER
TYP	TYPICAL
V	VENT
VAC	VACUUM PIPING
VB	VACUUM BREAKER
VIF	VERIFY IN FIELD
VS	VENT STACK
VTR	VENT THRU ROOF
W	WASTE OR WATT
WC	WATER CLOSET OR WATER COLUMN
WCO	WALL CLEANOUT
WG	WATER GAGE
WH	WALL HYDRANT
X	EXISTING EQUIPMENT TO BE REMOVED
XM	EXISTING EQUIPMENT TO BE MAINTAINED
XN	NEW LOCATION OF EXISTING EQUIPMENT
XR	EXISTING EQUIPMENT TO BE RELOCATED

GENERAL NOTES

1. PLUMBING WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE PLUMBING AND GAS CODE INCLUDING ALL LOCAL AMENDMENTS.
2. OBTAIN ALL STATE PERMITS AND PAY ALL FEES ASSOCIATED WITH THIS WORK PRIOR TO COMMENCEMENT.
3. PIPING AND EQUIPMENT IS SHOWN DIAGRAMMATICALLY. THE ACTUAL ROUTING OF PIPING AND EXACT LOCATION OF EQUIPMENT SHALL BE DETERMINED IN THE FIELD.
4. IN ADDITION TO REVIEWING AND COORDINATING WITH THE OTHER TRADES (CIVIL, STRUCTURAL, ARCHITECTURAL, FIRE PROTECTION, HVAC, AND ELECTRICAL) THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH DETAILS OF CONSTRUCTION.
5. FURNISH AND INSTALL ALL NECESSARY PIPING, EQUIPMENT SUPPORTS AND ANY EQUIPMENT NOT SHOWN ON DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS BUT NECESSARY TO PROVIDE A COMPLETE AND WORKABLE SYSTEM.
6. PURCHASE AND INSTALL ACCESSIBLE SHUTOFF VALVES ON ALL BRANCH PIPING AND ON ALL SUPPLY PIPING TO INDIVIDUAL FIXTURES AND EQUIPMENT.
7. PROVIDE ACCESS TO ALL EQUIPMENT REQUIRING PERIODIC SERVICE AND MAINTENANCE.
8. FURNISH ACCESS PANELS TO THE GENERAL CONTRACTOR FOR INSTALLATION UNDER THE RELATED TRADES.
9. PITCH ALL WATER LINES TO DRAIN.
10. INSTALL HORIZONTAL RUNS OF WATER PIPING AS HIGH AS POSSIBLE AND PROVIDE DRAIN-OFFS AT ALL LOW POINTS.
11. PURCHASE AND INSTALL DRAIN VALVE ON HOUSE SIDE OF WATER METER.
12. PIPING SHALL RUN CONCEALED IN ALL AREAS WITH THE EXCEPTION OF MECHANICAL ROOMS, AREAS WHERE NO CEILING EXISTS OR WHERE NOTED ON THE PLANS.
13. PURCHASE AND INSTALL DIELECTRIC COUPLINGS BETWEEN DISSIMILAR MATERIALS.
14. PURCHASE AND INSTALL DANDY CLEANOUTS AT THE BASE OF ALL SANITARY STACKS.
15. PURCHASE AND INSTALL DRIP LEGS FOR ALL GAS RISERS.
16. AN AIR GAP OF AT LEAST TWICE THE EFFECTIVE DIAMETER OF THE DRAIN SERVED SHALL BE PROVIDED ON ALL EQUIPMENT DRAINS PIPED TO FLOOR DRAINS.
17. ALL SANITARY LINES SHALL BE PITCHED AT A MINIMUM OF 1/8-IN/FT.
18. REQUIRED FIRE RESISTANCE RATING OF FLOORS, WALLS AND CEILINGS SHALL BE MAINTAINED WHEN PIPE PENETRATIONS ARE MADE.
19. REFER TO RISER DIAGRAMS AND DETAILS FOR PIPE AND EQUIPMENT SIZES NOT SHOWN ON THE PLANS.
20. ALL WORK SHOWN ON RISER DIAGRAMS BUT NOT ON PLANS OR VICE VERSA SHALL BE INCLUDED AS IF SHOWN ON BOTH.
21. SEE SPECIFICATIONS FOR OTHER REQUIREMENTS.

Filename: P-001-02.dwg

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	CMF		Checked	PJD	
Drawn	CMF		In Charge of	AAH	

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING
PLUMBING LEGEND, ABBREVIATIONS AND GENERAL NOTES – SHEET 1 OF 2

SHEET NUMBER: P-001

CONTRACT: 2019.04

Date: Tuesday, March 19, 2019

PIPE LEGEND

- FLOOR DRAIN
- AREA DRAIN
- CLEANOUT
- FLOOR CLEANOUT
- GRADE CLEANOUT
- P-TRAP
- ELBOW UP OR RISE
- ELBOW DOWN OR DROP
- CAP OR END OF PIPE
- HB — HOSE BIBB
- WH — WALL HYDRANT
- TEE LOOKING DOWN
- TEE LOOKING UP
- UNION
- DOUBLE CHECK VALVE ASSEMBLY
- REDUCED PRESSURE ZONE BACKFLOW PREVENTER
- WATER HAMMER ARRESTOR/SHOCK ABSORBER
- FLOW IN DIRECTION OF ARROW
- DIRECTION OF SLOPE
- PIPE ANCHOR
- PIPE GUIDE
- EJ — EXPANSION JOINT
- FLEXIBLE CONNECTOR
- FM — FLOW METER
- STRAINER
- BALL VALVE
- GATE VALVE
- OUTSIDE SCREW AND YOKE VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- BALL VALVE (GAS)

PIPE LEGEND

- GAS COCK
- PLUG VALVE
- MIXING VALVE
- BALANCING VALVE
- ANGLE VALVE
- TEMPERATURE AND PRESSURE RELIEF VALVE
- VACUUM RELIEF VALVE
- AQUASTAT
- THERMOMETER
- PRESSURE REDUCING/REGULATING VALVE
- PRESSURE GAUGE
- BACK WATER VALVE
- GLOBE VALVE
- FLOW SWITCH
- SOLENOID VALVE

PIPING TYPES

- POTABLE COLD WATER
- POTABLE COLD WATER BELOW GROUND
- POTABLE HOT WATER
- POTABLE HOT WATER BELOW GROUND
- POTABLE HOT WATER RETURN
- POTABLE HOT WATER RETURN BELOW GROUND
- SANITARY OR WASTE ABOVE GROUND
- SANITARY OR WASTE BELOW GROUND
- VENT ABOVE GROUND
- VENT BELOW GROUND
- IW — INDIRECT WASTE
- IW — INDIRECT WASTE BELOW GROUND
- G — NATURAL GAS PIPING
- GV — GAS VENT PIPING

GENERAL SYMBOLOGY

- CONNECT NEW TO EXISTING
- LIMIT OF PLUMBING WORK
- NEW WORK INDICATED BY A HEAVY LINEWIEGHT
- EXISTING WORK INDICATED BY A MEDIUM LINEWIEGHT
- HIDDEN WORK INDICATED BY A LIGHT LINEWIEGHT
- X / X — SECTION DESIGNATION / SHEET NUMBER
- LIMIT OF SECTION
- 1 — REVISION NUMBER

SCHEDULED EQUIPMENT TAG REQUIRING ELECTRICAL CONNECTIVITY

X / X — EQUIPMENT TYPE / EQUIPMENT NUMBER

SCHEDULED EQUIPMENT TAG NOT REQUIRING ELECTRICAL CONNECTIVITY

X / X — EQUIPMENT TYPE / EQUIPMENT NUMBER

DETAIL CALLOUT

X / X — DETAIL NUMBER / SHEET NUMBER OF DETAIL LOCATION

NEW WORK NOTE CALLOUT

X — DRAWING NOTE NUMBER

Filename: P-001-02.dwg

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	CMF		Checked	PJD	
Drawn	CMF		In Charge of	AAH	

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

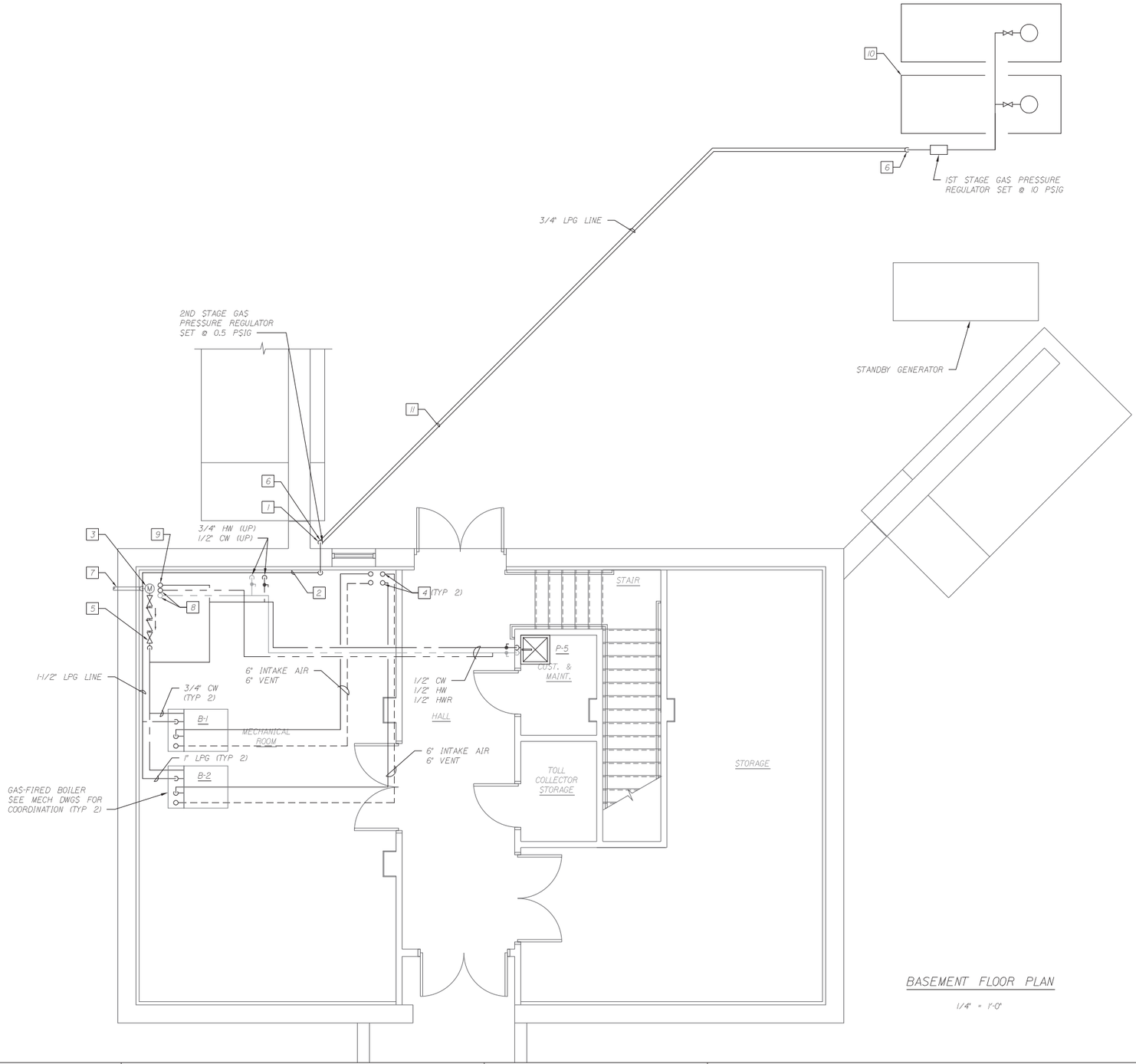
MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

PLUMBING LEGEND, ABBREVIATIONS AND GENERAL NOTES – SHEET 2 OF 2

SHEET NUMBER: P-002

CONTRACT: 2019.04



BASEMENT FLOOR PLAN

1/4" = 1'-0"

KEYNOTES:

1. PURCHASE AND INSTALL GAS PRESSURE REGULATOR FOR THE ADMINISTRATION BUILDING. SEE DRAWING P-501, FOR CONNECTION DETAILS. PROTECTION SHALL BE PROVIDED AROUND THE REGULATOR ASSEMBLY TO PREVENT ANY PHYSICAL DAMAGE TO THE EQUIPMENT.
2. 1-1/2" LPG SERVICE PIPING TO B-1 & B-2.
3. SERVICE WATER MAIN UTILITY METER.
4. 6" COMBUSTION AIR AND VENT PIPE UP. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. FOR CONTINUATION, SEE DRAWING P-101.
5. 2" RPBFP, SEE DRAWING P-501, FOR CONNECTION DETAIL.
6. PURCHASE AND INSTALL ANODELESS RISER AND REGULATOR ASSEMBLY FOR TRANSITION FROM BURIED PE PIPE TO ABOVE GROUND STEEL PIPE. SEE ANODELESS RISER DETAIL ON DRAWING P-502.
7. BURIED SERVICE WATER MAIN. SEE SITE PLAN DRAWING SP-03, FOR CONTINUATION OF BURIED SERVICE WATER LINE. CONTRACTOR SHALL COORDINATE AND FIELD VERIFY LOCATION OF WATER SERVICE ENTRANCE INTO ADMINISTRATION BUILDING.
8. 3/4" HW AND 1/2" HWR PIPE UP TO FIRST FLOOR. FOR CONTINUATION, SEE DRAWING P-102.
9. 1-1/2" CW PIPE UP TO FIRST FLOOR. FOR CONTINUATION, SEE DRAWING P-102.
10. INSTALL TWO (2) 1000-GALLON ABOVEGROUND LP GAS (PROPANE) STORAGE TANKS SUPPLIED BY THE MTA. TANKS SHALL BE MOUNTED A MINIMUM DISTANCE OF 10 FT FROM ANY BUILDINGS, ADJOINING PROPERTY LINE OR GAS-FIRED EQUIPMENT. TANKS SHALL BE SUPPORTED BY MANUFACTURER PROVIDED SADDLES AND SECURED TO CONCRETE PAD. TANKS SHALL BE MOUNTED AT MINIMUM HEIGHT OF 3 FT ABOVE THE HEIGHT OF THE SLAB ELEVATION. THE TANKS SHALL BE INSTALLED ACCORDANCE WITH THE MANUFACTURER GUIDELINES AND RECOMMENDATIONS, AS WELL AS ALL GOVERNING LOCAL AND STATE CODES. SEE SITE UTILITY DRAWING SP-03 FOR TANK LOCATION.
11. BURIED LP GAS SERVICE MAIN FROM STORAGE TANK TO THE ADMINISTRATION BUILDING.

Date: Tuesday, March 19, 2019

Filename: P-101-02.dwg

Scale: 1/4"=1'-0" (0, 4', 8')

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	CMF		Checked	PJD	
Drawn	CMF		In Charge of	AAH	

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MAINE TURNPIKE

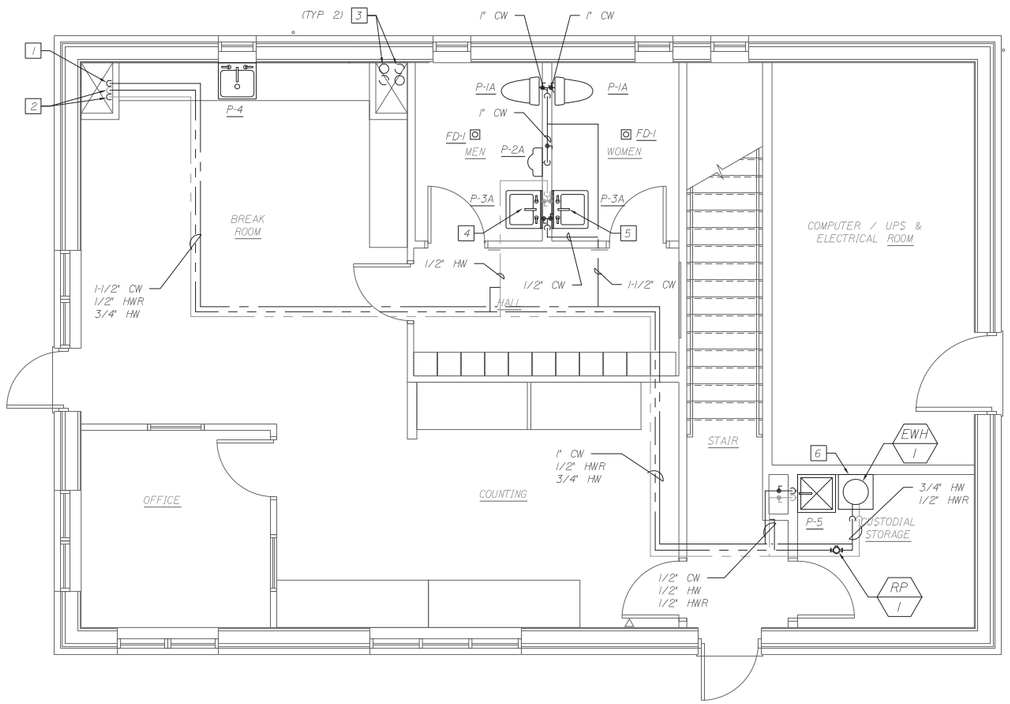
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING
DOMESTIC WATER AND PROPANE
BASEMENT FLOOR PLAN

SHEET NUMBER: P-101

CONTRACT: 2019.04



FIRST FLOOR PLAN

1/4" = 1'-0"

KEYNOTES:

1. 1-1/2" CW PIPE DN THRU SHAFT TO FIRST FLOOR. FOR CONTINUATION OF THE PIPE, SEE DRAWING P-102.
2. 3/4" HW & 1/2" HWR PIPE DN THRU SHAFT TO FIRST FLOOR. FOR CONTINUATION OF THE PIPE, SEE DRAWING P-102.
3. 6" COMBUSTION AIR AND VENT PIPE UP THROUGH ROOF. TERMINATE WITH VERTICAL CONCENTRIC VENT KIT AS APPROVED BY BOILER MANUFACTURER. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
4. PURCHASE AND INSTALL WATER SAVER TRAP PRIMER FROM THE LAVATORY TO SERVE THE FD-1 IN THE MEN'S ROOM. RUN 1/4" TUBING FROM SINK TRAP TO FD-1.
5. PURCHASE AND INSTALL WATER SAVER TRAP PRIMER FROM THE LAVATORY TO SERVE THE FD-1 IN THE WOMEN'S ROOM. RUN 1/4" TUBING FROM SINK TRAP TO FD-1.
6. INSTALL EWH-1 ABOVE MOP SINK WITHIN CUSTODIAL STORAGE ROOM LOCATED ON THE 1ST FLOOR. EWH-1 IS SHOW OFF-SET ON THE DRAWINGS FROM ABOVE THE MOP SINK FOR CLARITY. EWH-1 SHALL DRAIN INDIRECTLY TO MOP SINK BELOW.

Date: Tuesday, March 19, 2019

Filename: P-101-02.dwg

Scale: 1/4"=1'-0" 0 4' 8'

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	CMF		Checked	PJD	
Drawn	CMF		In Charge of	AAH	

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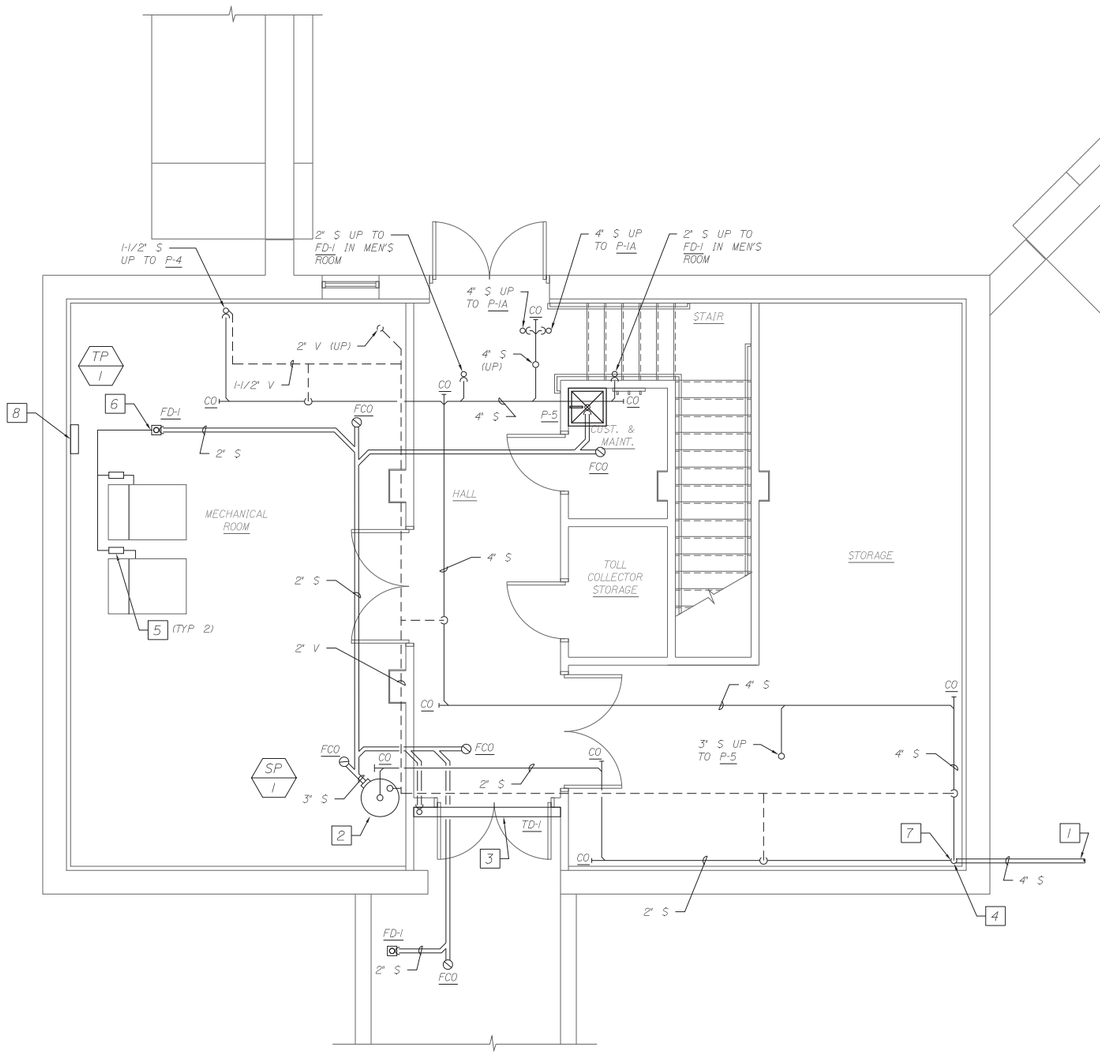
INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

DOMESTIC WATER FIRST FLOOR PLAN

SHEET NUMBER: P-102

CONTRACT: 2019.04



BASEMENT FLOOR PLAN

1/4" = 1'-0"

KEYNOTES:

1. FOR CONTINUATION OF 4" SANITARY PIPE OUTSIDE 5 FT FROM THE BUILDING FOOTPRINT SEE SITE PLAN DWG SP-04.
2. PURCHASE AND INSTALL GRINDER PUMP WITH A 24" DIA. VENTILATED COVER. THE REQUIRED SUMP PIT DEPTH SHALL BE FIELD VERIFIED. THE SUMP PIT SHALL BE SEALED AND VENTED. SEE PLUMBING DWG P-501 FOR CONNECTION DETAILS.
3. PURCHASE AND INSTALL TRENCH DRAIN AT THE LOW POINT OF TUNNEL. DRAIN GRATING SHALL BE INSTALLED FLUSH WITH THE FINISHED FLOOR ELEVATION OF THE TUNNEL.
4. PURCHASE AND INSTALL VERTICAL CLEANOUT ON 4" SANITARY STACK PRIOR TO FLOOR SLAB PENETRATION
5. PURCHASE AND INSTALL MFR'S BOILER CONDENSATE NEUTRALIZATION KIT.
6. PURCHASE AND INSTALL INDIRECT CD DISCHARGE FROM B-1&2 TO FD-2 IN MECHANICAL ROOM.
7. CONNECT 2" S PIPE FROM SP-1 TO 4" SANITARY STACK.
8. PURCHASE AND INSTALL TRAP PRIMER FOR FD-2 LOCATED IN THE MECHANICAL ROOM.

Filename: P-103-04.dwg

Scale: 1/4"=1'-0" (0, 4', 8')

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	CMF		Checked	PJD	
Drawn	CMF		In Charge of	AAH	

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INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING
SANITARY, WASTE AND VENT
BASEMENT FLOOR PLAN

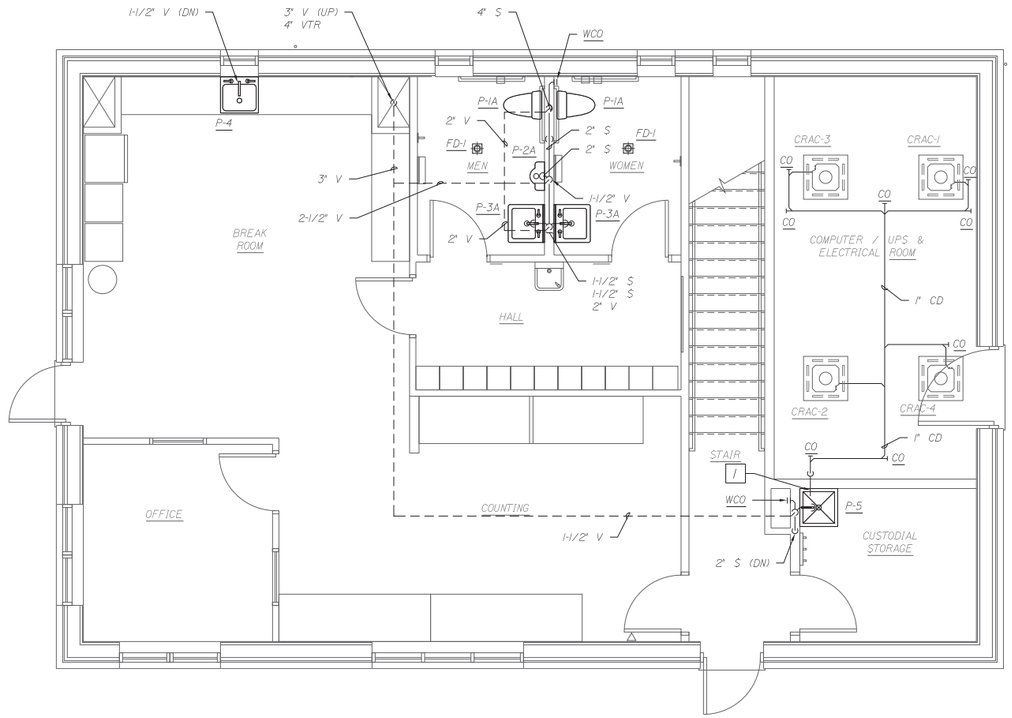
SHEET NUMBER: P-103

CONTRACT: 2019.04

Date: Tuesday, March 19, 2019

KEYNOTES:

1 PURCHASE AND INSTALL 1" INDIRECT CD DISCHARGE FROM CRAC-1,2,3&4 TO MOP SINK.



FIRST FLOOR PLAN

1/4" = 1'-0"

Filename: P-103-04.dwg

Scale: 1/4"=1'-0" 0 4' 8'

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	CMF		Checked	PJD	
Drawn	CMF		In Charge of	AAH	

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MAINE TURNPIKE

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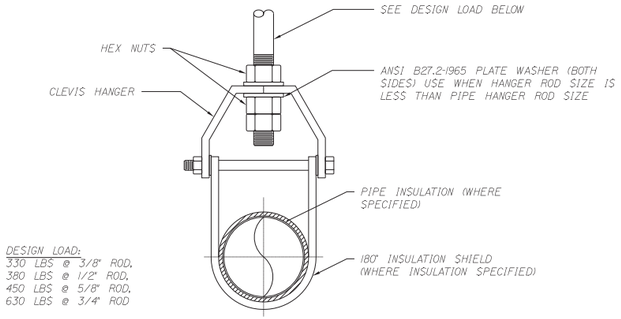
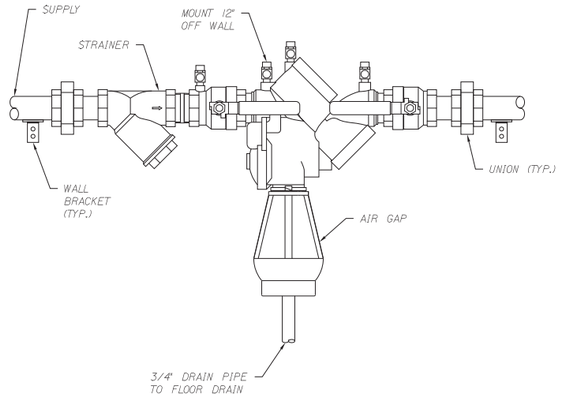
INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING
SANITARY, WASTE AND VENT FIRST FLOOR PLAN

SHEET NUMBER: P-104

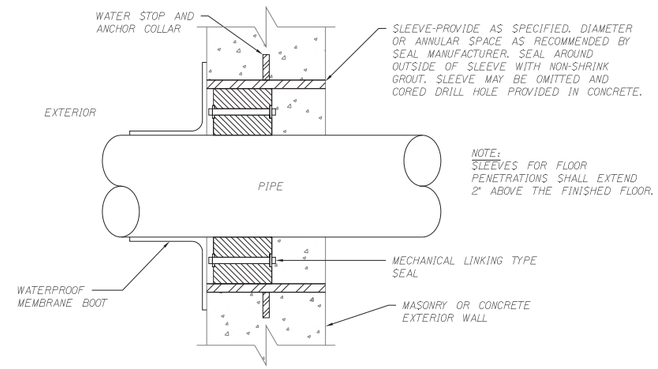
CONTRACT: 2019.04



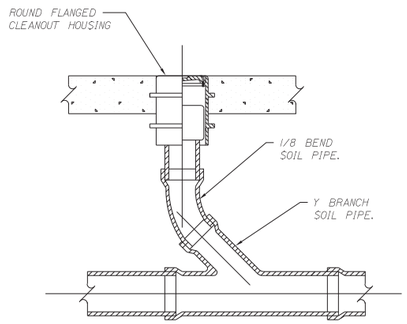
TYPICAL PIPE SUPPORT — 1
SCALE: NTS



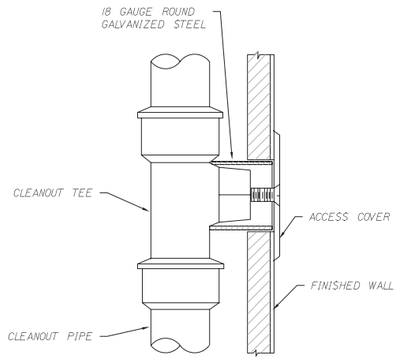
REDUCED PRESSURE BACKFLOW PREVENTOR — 2
SCALE: NTS



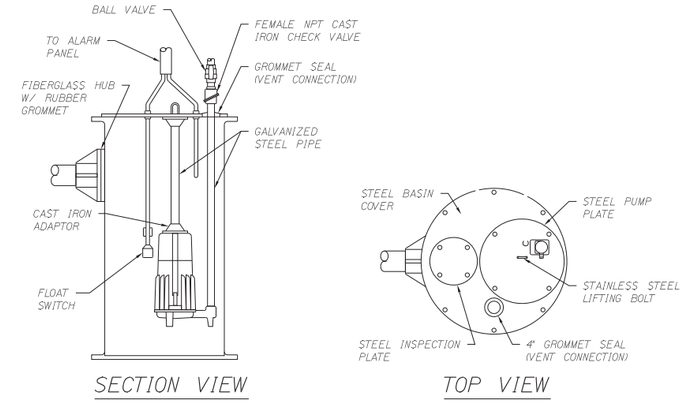
TYPICAL PENETRATION THRU FLOOR/EXT. WALL — 3
SCALE: NTS



SANITARY CLEANOUT FLOOR SLAB — 4
SCALE: NTS



WALL CLEANOUT — 5
SCALE: NTS



GRINDER PUMP PACKAGE DETAIL — 6
SCALE: NTS

Filename: P-501-02.dwg

Scale:

Designed by: Stantec

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
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Drawn	CMF		In Charge of	AAH	

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

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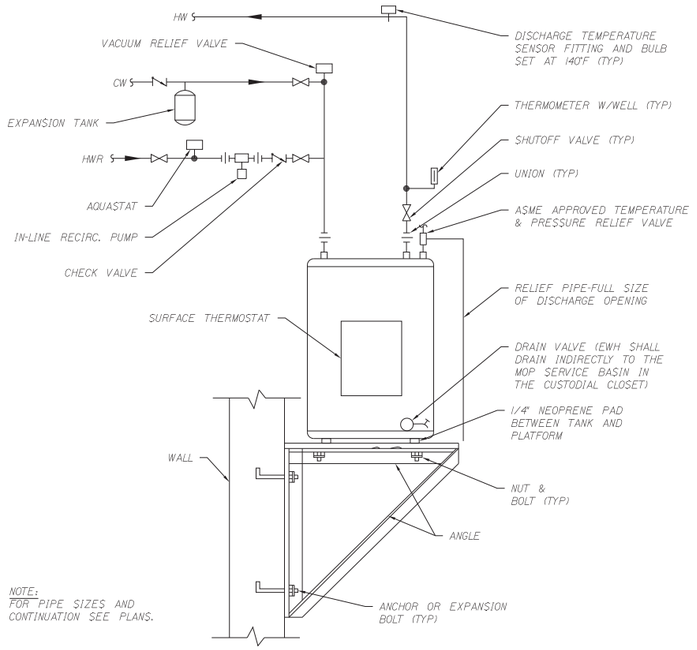
INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

PLUMBING DETAILS – SHEET 1 OF 2

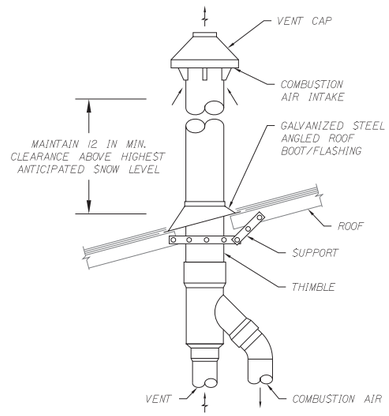
SHEET NUMBER: P-501

CONTRACT: 2019.04



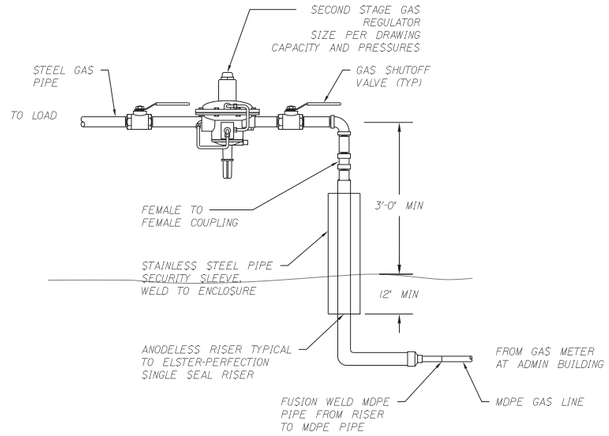
NOTE:
FOR PIPE SIZES AND CONTINUATION SEE PLANS.

ELECTRIC DOMESTIC WATER HEATER 7
SCALE: NTS

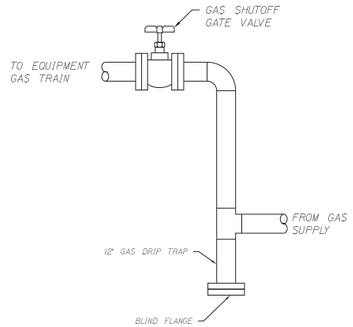


NOTES:
1. CONCENTRIC VENT SHALL BE INSTALL PER THE MANUFACTURER'S GUIDELINES AND RECOMMENDATIONS.
2. INSTALLATION SHALL COMPLY WITH NFPA AND ANY OTHER APPLICABLE LOCAL CODES.
3. FIELD VERIFY THE ROOF PITCH PRIOR TO SELECTING THE ANGLED FLASHING.
4. ROOF FLASHING SHALL BE INSTALLED PER THE ROOFING CONTRACTORS GUIDELINES AND RECOMMENDATIONS.

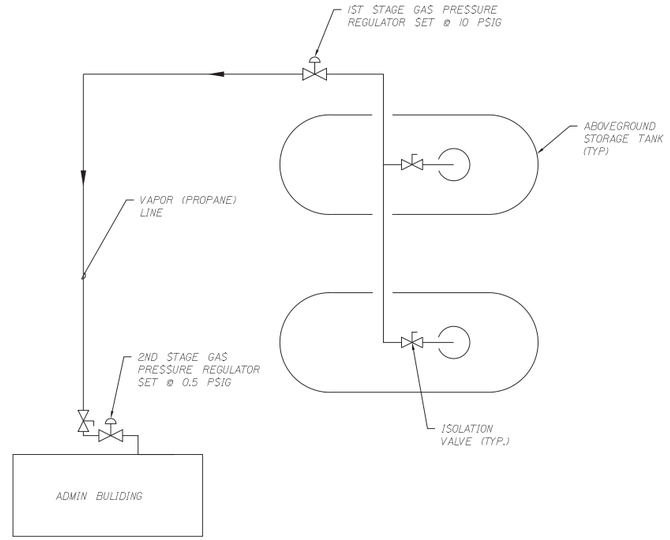
VERTICAL CONCENTRIC VENT DETAIL THRU ROOF 8
SCALE: NTS



GAS REGULATOR W/ ANODELESS RISER DETAIL (IST STAGE REG DETAIL) 9
SCALE: NTS



GAS DRIP LEG 10
SCALE: NTS



PROPANE GAS SYSTEM 11
SCALE: NTS

Date: Tuesday, March 19, 2019

Filename: P-501-02.dwg

Scale:

Designed by: Stantec

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	CMF		Checked	PJD	
Drawn	CMF		In Charge of	AAH	

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THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

PLUMBING DETAILS – SHEET 2 OF 2

SHEET NUMBER: P-502

CONTRACT: 2019.04

Date: Tuesday, March 19, 2019

ELECTRIC WATER HEATER SCHEDULE

TAG NO.	LOCATION	TANK STORAGE (GAL)	TYPE	INPUT (KW)	RECOVERY RATE (GPH) AT 90° RISE	ELECTRICAL DATA			MANUFACTURER & MODEL NUMBER (BASIS OF DESIGN)	NOTES
						VOLTS	PH	HZ		
EWH-1	CUSTODIAL STRORAGE	6	TANK	1.65	8	120	1	60	AO SMITH EJC-6	SEE NOTES

NOTES:

1) PURCHASE AND INSTALL STAINLESS STEEL TANK AND HEAT EXCHANGER AND UNIT CONTROLLER

TRAP PRIMER SCHEDULE

TAG NO.	LOCATION	TYPE	NUMBER OF OUTLETS	MIN. PRESSURE (PSI)	MAX. WORKING PRESSURE (PSI)	ELECTRICAL DATA		MANUFACTURER & MODEL NUMBER (BASIS OF DESIGN)	NOTES
						VOLTS	PHASE		
TP-1	MECH RM	ELECTRONIC	3	3	3	120	1	ZURN - Z1020	SEE NOTES

NOTES:

1) PURCHASE AND INSTALL WITH MOUNTING BOX AND COVER. BALL VALL TYPE STOP VALVES. 24VAC SLOW CLOSING SOLENOID VALVE WITH INTEGRAL STRAINER. 120-24VAC TRANSFORMER. BRASS ATMOSPHERIC VACUUM BREAKER. PEX WATERWAY AND ANTI-SCALING MULTI-PORT HEADER WITH 1/2" OUTLET CONNECTIONS.

RECIRC. PUMP SCHEDULE

TAG	LOCATION	TYPE	FLOW (GPM)	WPD (FT HD)	ELECTRICAL					MANUFACTURER & MODEL NUMBER	NOTES
					V	PH	HZ	HP	RPM		
RP-1	MECHANICAL ROOM	CIRC	5	10	120	3	60	1/25	3250	TACO-007-F5	SEE NOTES

NOTES:

1 REFER TO SPECIFICATIONS, DETAILS AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.

PLUMBING FIXTURE SCHEDULE

FIXTURE NO.	FIXTURE TYPE	PIPE SIZE				BASIS OF DESIGN		REMARKS	REMARKS
		SOIL WASTE	COLD WATER	HOT WATER	VENT	MANUFACTURER	MODEL		
P-1A	ADA WATER CLOSET	4"	1"	-	2"	AMERICAN STANDARD	CADET 3 FLOWISE	1.28 GPF, ADA COMPLIANT, FLOOR MOUNTED, MANUAL FLUSH VALVE, ELONGATED EXTRA HEAVY DUTY BOWL, OPEN FRONT ELONGATED SEAT, VITREOUS CHINA	SEE NOTES 1 & 5
P-2A	ADA URINAL	2"	3/4"	-	1-1/2"	AMERICAN STANDARD	TRIMBROOK	1 GPF, ADA COMPLIANT, TOP SPUD URINAL, POLISHED CHROME MANUAL FLUSH VALVE, VITREOUS CHINA	SEE NOTES 1 & 5
P-3A	ADA LAVATORY	1-1/2"	1/2"	1/2"	1-1/2"	AMERICAN STANDARD	DECORUM	20"x18" 3-HOLE VITREOUS CHINA LAVATORY, ADA COMPLIANT, WALL MOUNTED, 2-HANDLE POLISHED CHROME MANUAL FAUCET, DRAIN, WATER STOPS	SEE NOTES 1,2,3,5 & 6
P-4	KITCHEN SINK	1-1/2"	1/2"	1/2"	1-1/2"	AMERICAN STANDARD	COLONY	25"X22" DROP-IN STAINLESS STEEL KITCHEN SINK, 3-HOLE SINGLE BOWL, ADA COMPLIANT, 8" BOWL, 3-HOLE CHROME FAUCET, DRAIN, WATER STOPS	SEE NOTES 1 & 5
P-5	MOP SERVICE BASIN	3"	1/2"	1/2"	1-1/2"	MUSTEE	63M	24"X24" ONE-PIECE, FIBERGLASS, SERVICE MOP BASIN, 10" BOWL, DRAIN, CHROME PLATED BRASS DUAL HANDLE FAUCET	SEE NOTES 1 & 5
FD-1	FLOOR DRAIN	2"	-	-	-	ZURN	Z550	9" DIA. TOP DRAIN, DURA-COATED CAST IRON BODY W/ BOTTOM OUTLET, SEEPAGE PAN AND COMBINATION MEMBRANE FLASHING CLAMP AND FRAME FOR MEDIUM-DUTY, CAST IRON, HEEL-PROOF SLOTTED GRATE	SEE NOTE 4
TD-1	TRENCH DRAIN	2"	-	-	-	ZURN	Z667	6" WIDE TOP SECTIONAL TRENCH DRAIN, DURA-COATED CAST IRON BOTTOM OUTLET SECTION, CAST IRON DRAIN SECTION WITH SEEPAGE PAN AND MEMBRANE CLAMP, MEDIUM-DUTY SLOTTED GRATING	SEE NOTE 4
CO	CLEANOUT	-	-	-	-	ZURN	Z1456	NICKEL BRONZE BODY, A POLISHED SCORIATED TOP, W/ SCORIATED DECK PLUG AND O-RING SEAL	-
WCO	WALL CLEAN OUT	4"	-	-	-	ZURN	Z1446	CLEANOUT TEE, DURA-COATED CAST IRON BODY, GAS AND WATERTIGHT ABS TAPERED THREAD PLUG, AND ROUND, SMOOTH STAINLESS STEEL WALL ACCESS COVER WITH SECURING SCREW	-

NOTES:

1. PURCHASE AND INSTALL WATER SHUTOFF VALVES FOR HOT AND COLD WATER LINES TO ALL FIXTURES. ALL VALVES SHALL BE ACCESSIBLE.
2. LAVATORY SHALL BE EQUIPPED WITH THERMOSTATIC MIXING VALVE.
3. LAVATORY SHALL BE INSTALLED TO PREVENT UPLIFTING. WALL BOLTS SHALL BE TIGHT AND PROPERLY INSTALLED.
4. PURCHASE AND INSTALL TRAP PRIMER CONNECTION.
5. PURCHASE AND INSTALL TAIL PIECE AND DRAIN.
6. PURCHASE AND INSTALL WATER SAVER TRAP PRIMER.

GRINDER PUMP PACKAGE SCHEDULE

TAG	SERVICE	LOCATION	TYPE	CAPACITY		ELECTRICAL DATA					MANUFACTURER & MODEL NUMBER (BASIS OF DESIGN)	NOTES
				FLOW (GPM)	WPD (FT HD)	RPM	V	PH	HZ	HP		
SP-1	TUNNEL	MECH RM	SUBMERSIBLE GRINDER	13	20	3450	115	1	60	1/2	ZOELLER MODEL 915 GRINDER PACKAGE	SEE NOTES

NOTES:

1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.
2. PURCHASE AND INSTALL SIMPLEX GRINDER PUMP, BASIN AND 24" DIA. VENTED COVER. SUMP PIT DEPTH TO BE FIELD VERIFIED.
3. PURCHASE AND INSTALL FLOAT SWITCH AND ALARM.
4. PURCHASE AND INSTALL STAINLESS STEEL CUTTER AND DISC ASSEMBLY.

Filename: P-601.dwg

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
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THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

PLUMBING SCHEDULES

SHEET NUMBER: P-601

CONTRACT: 2019.04

Date: Tuesday, March 19, 2019

ABBREVIATIONS

GENERAL

AD	ACCESS DOOR
ADD'L	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
ALT	ALTITUDE OR ALTERNATE
AMP	AMPERE
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
ARCH	ARCHITECT
ATC	AUTOMATIC TEMPERATURE CONTROL
ATM	ATMOSPHERE
AVE	AVERAGE
BHP	BRAKE HORSEPOWER
BI	BACKWARDS INCLINED
BLDG	BUILDING
BOD	BOTTOM OF DUCT
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
C TO C	CENTER TO CENTER
CENT	CENTRIFUGAL
CF	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
CL	CENTERLINE
CLG	CEILING OR COOLING
CO	CARBON MONOXIDE
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONTR	CONTRACTOR
D	DRAIN OR DEPTH
DB	DRY BULB TEMPERATURE
DEG	DEGREE
DDC	DIRECT DIGITAL CONTROL
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DP	DIFFERENTIAL PRESSURE
EA	EACH OR EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
ECM	ELECTRONIC COMMUTATED MOTOR
EFF	EFFICIENCY
ELEC	ELECTRICAL
ELEV	ELEVATION
EMER	EMERGENCY
ENT	ENTER
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
EXIST.	EXISTING
EXT	EXTERNAL
EXP	EXPANSION
F	FAHRENHEIT
FA	FREE AREA
FC	FLEXIBLE CONNECTION
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FLOW SWITCH
FT	FEET
FT-HD	FEET HEAD
G	GAS
GA	GAUGE
GAL	GALLONS
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GRD	GRADE
HB	HOSE BIBB CONN.
HD	HEAD
HGT	HEIGHT
HP	HORSEPOWER OR HIGH POINT
HR	HOUR
HTG	HEATING
HZ	HERTZ (FREQUENCY, CYCLES PER SECOND)
ID	INSIDE DIAMETER
IN	INCHES
KW	KILOWATT
L	LENGTH
LAT	LEAVING AIR TEMPERATURE
LB	POUND
LF	LINEAR FEET
LP	LOW POINT
LRA	LOCKED ROTOR AMPS
LUVR	LOUVER
LVDR	LOUVERED DOOR
LVG	LEAVING
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BTU/H
MCA	MINIMUM CIRCUIT AMPS
MECH	MECHANICAL
MFR	MANUFACTURE
MFR'D	MANUFACTURED
MFR'R	MANUFACTURER
MIN	MINIMUM
MU	MAKE-UP WATER
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED OR NOISE CRITERIA
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
No.	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAI	OUTSIDE AIR INTAKE
OC	ON CENTER
OD	OUTSIDE DIAMETER
ODP	OPEN DRIP PROOF
OV	OUTLET VELOCITY
PCF	POUNDS PER CUBIC FOOT
PD	PRESSURE DROP
PH	PHASE
PBG	PLUMBING
POS	PROVIDED BY OTHER SECTION
PS	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSID	POUNDS PER SQUARE INCH DIFFERENTIAL
PSIG	POUNDS PER SQUARE INCH GAUGE
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
R	RADIUS
RA	RETURN AIR
RET	RETURN
REQ'D	REQUIRED
RH	RELATIVE HUMIDITY
RLA	RUNNING LOAD AMPS
RLF	RELIEF
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
SCH	SCHEDULE
SCR	SCREEN
SD	SMOKE DETECTOR
SEN	SENSIBLE
SHC	SENSIBLE HEAT CAPACITY
SP	STATIC PRESSURE
SPECS	SPECIFICATIONS
SQ	SQUARE
SF	SQUARE FEET
SS	STAINLESS STEEL
STL	STEEL
SUP	SUPPLY
T	TEMPERATURE
TEL	TELEPHONE
TEFC	TOTALLY ENCLOSED FAN COOLED
TEMP	TEMPERATURE
TSTAT	THERMOSTAT
TON	12,000 BTU/H COOLING CAPACITY
TOT	TOTAL
TYP	TYPICAL
UC	UNDERCUT DOOR
V	VOLTS (ELECTRICAL)
VEL	VELOCITY
VIF	VERIFY IN FIELD
W	WIDTH OR WATT
W/	WITH
WB	WET BULB TEMPERATURE
WC	WATER COLUMN
WG	WATER GAUGE
W/O	WITHOUT
WPD	WATER PRESSURE DROP
X	EXISTING EQUIPMENT TO BE REMOVED
XM	EXISTING EQUIPMENT TO REMAIN
XN	NEW LOCATION OF RELOCATED EQUIPMENT
XR	EXISTING EQUIPMENT TO BE RELOCATED

BOILER

B	BOILER
BP	BOILER FEED PUMP

DUCTWORK

ACD	AUTOMATIC CONTROL DAMPER
AFMS	AIR FLOW MEASURING STATION
AL	ACOUSTICAL DUCT LINER
BDD	BACKDRAFT DAMPER
BOD	BOTTOM OF DUCT
CD	CEILING DIFFUSER
CV	CONSTANT VOLUME (SUPPLY)
CVE	CONSTANT VOLUME (EXHAUST)
DIFF	DIFFUSER
EA	EXHAUST AIR
EG	EXHAUST GRILLE
ER	EXHAUST REGISTER
FD	FIRE DAMPER (W/ ACCESS DOOR)
LD	LINEAR DIFFUSER
MD	MOTOR OPERATED DAMPER
MUA	MAKE-UP AIR
OA	OUTSIDE AIR
OAI	OUTSIDE AIR INTAKE
OBD	OPPOSED BLADE DAMPER
OED	OPEN END DUCT
RA	RETURN AIR
RG	RETURN GRILLE
RR	RETURN REGISTER
SA	SUPPLY AIR
SD	SMOKE DAMPER
SFD	COMBINATION AUTOMATIC SMOKE/FIRE DAMPER WITH ACCESS DOOR
SG	SUPPLY GRILLE
SGD	SLIDE GATE DAMPER
SR	SUPPLY REGISTER
TA	THROW AWAY OR TRANSFER AIR
TOD	TOP OF DUCT
TR	TRANSFER
TSP	TOTAL STATIC PRESSURE (IN. WG)
TV	TURNING VANES
VD	VOLUME DAMPER
VAV	VARIABLE AIR VOLUME (SUPPLY)
VVE	VARIABLE AIR VOLUME (EXHAUST)
WMS	WIRE MESH SCREEN

EQUIPMENT

AC	AIR CONDITIONER
ACCU	AIR COOLED CONDENSING UNIT
AF	AIR FILTER OR AIR FOIL
AHU	AIR HANDLING UNIT
AS	AIR SEPARATOR
CC	COOLING COIL
CDP	CONDENSATE DRAIN PUMP
CRAC	COMPUTER ROOM AIR CONDITIONING UNIT
CSF	CHEMICAL SHOT FEEDER
CUH	CABINET UNIT HEATER
DDC	DIRECT DIGITAL CONTROL
DWDI	DOUBLE WIDTH DOUBLE INLET
EF	EXHAUST FAN
ET	EXPANSION TANK
F	FAN
HC	HEATING COIL
HP	HEAT PUMP
HWC	HOT WATER HEATING COIL
HWP	HOT WATER PUMP
HV	HEATING & VENTILATING UNIT
HX	HEAT EXCHANGER
MCC	MOTOR CONTROL CENTER
MERV	MINIMUM EFFICIENCY REPORTING VALUE
MUA	MAKE-UP AIR UNIT
P	PUMP
PRV	PRESSURE REDUCING VALVE
REG	REGISTER
RF	RETURN FAN
RHC	REHEAT COIL
RTU	ROOF TOP UNIT
SA	SOUND ATTENUATOR
SF	SUPPLY FAN
SWSI	SINGLE WITH SINGLE INLET
UH	UNIT HEATER
VFD	VARIABLE FREQUENCY DRIVE

GLYCOL WATER

GMU	GLYCOL MAKE-UP
GR	GLYCOL RETURN
GS	GLYCOL SUPPLY

HOT WATER

HW	HOT WATER
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY

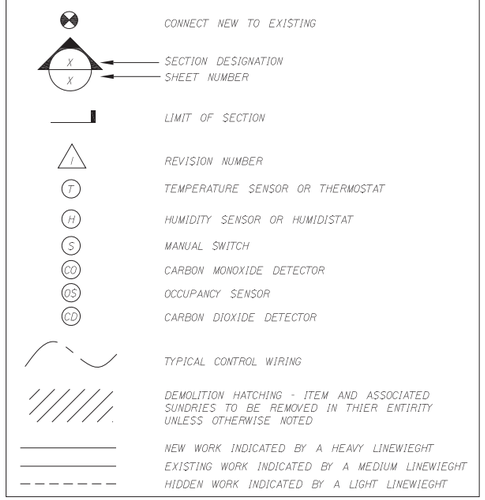
PIPING

AAV	AUTOMATIC AIR VENT
ACV	AUTOMATIC CONTROL VALVE
ATV	ATMOSPHERIC VENT
BOP	BOTTOM OF PIPE
CO	CLEAN-OUT
DOV	DRAIN-OFF VALVE
FCV	FLOW CONTROL VALVE
MAV	MANUAL AIR VENT
MU	MAKE-UP WATER
TOP	TOP OF PIPE
V	VENT

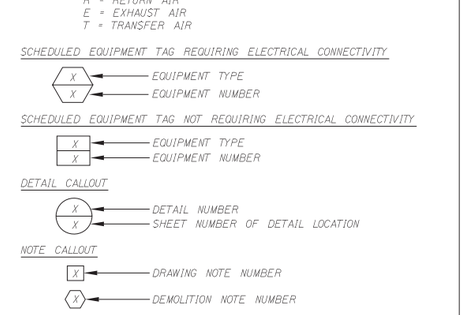
REFRIGERATION

DX	DIRECT EXPANSION
RD	REFRIGERANT DISCHARGE (HOT GAS)
RG	REFRIGERANT GAS
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
SST	SATURATED SUCTION TEMPERATURE

GENERAL SYMBOLOGY



GENERAL SYMBOLOGY



GENERAL NOTES

1. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, SPECIFIED AND AS REQUIRED BY CODE.
2. CONTRACT DOCUMENTS DRAWINGS FOR MECHANICAL WORK ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY.
3. INSTALL ALL MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS, CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.
4. PURCHASE AND INSTALL VIBRATION ISOLATION FOR ALL MECHANICAL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.
5. PURCHASE AND INSTALL VIBRATION ISOLATORS FOR ALL PIPING SUPPORTS CONNECTED TO, AND WITHIN 50 FT. OF, ISOLATED EQUIPMENT (EXCEPT AT BASE ELBOW SUPPORTS AND ANCHOR POINTS) THROUGHOUT MECHANICAL EQUIPMENT ROOMS.
6. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL WORK, ETC., SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS.
7. MAINTAIN A MINIMUM 6'-8" CLEARANCE TO THE UNDERSIDE OF PIPES, DUCTS CONDUITS, SUSPENDED EQUIPMENT, ETC., THROUGHOUT ACCESS ROUTES IN MECHANICAL ROOMS.
8. ALL TESTS SHALL BE COMPLETED BEFORE INSULATING ANY MECHANICAL EQUIPMENT OR PIPING.
9. LOCATE ALL TEMPERATURE, PRESSURE, AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH THE STRAIGHT SECTION OF PIPE OR DUCT UP/DOWNSTREAM AS RECOMMENDED BY THE MFR.
10. TESTING, ADJUSTING, AND BALANCING AGENCY SHALL BE A MEMBER OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). TESTING, ADJUSTING, AND BALANCING SHALL BE PERFORMED IN ACCORDANCE WITH THE AABC STANDARDS.
11. WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED THE PRODUCT OF ONE MANUFACTURER SHALL BE USED.
12. COORDINATE ALL EQUIPMENT CONNECTIONS WITH MFRS' CERTIFIED DRAWINGS. COORDINATE AND INSTALL ALL DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
13. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE AND DIVISION 16 OF THE SPECIFICATION.
14. CONCRETE HOUSEKEEPING PADS TO SUIT MECHANICAL EQUIPMENT SHALL BE SIZED AND LOCATED BY THE CONTRACTOR. PAD SHALL EXTEND BEYOND EQUIPMENT A MINIMUM OF 6" ON EACH SIDE.
15. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE ENGINEER PRIOR TO INSTALLATION. DO NOT SCALE DRAWINGS.
16. ALL MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION AND AS SHOWN IN DETAILS FOR PIPING, DUCTWORK, AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
17. PURCHASE AND INSTALL ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS WHERE REQUIRED, TO SERVICE DAMPERS, VALVES, SMOKE DETECTORS, AND OTHER CONCEALED MECHANICAL EQUIPMENT.
18. ALL EQUIPMENT, PIPING, DUCTWORK, ETC., SHALL BE SUPPORTED AS DETAILED, SPECIFIED, AND REQUIRED TO PROVIDE A VIBRATION-FREE INSTALLATION.
19. MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING SHALL NOT BE SUPPORTED FROM A METAL DECK.
20. LOCATIONS AND SIZES OF ALL FLOOR, WALL, AND ROOF OPENINGS SHALL BE COORDINATED WITH ALL OTHER TRADES INVOLVED.
21. ALL OPENINGS IN FIRE WALLS DUE TO DUCTWORK, PIPING, CONDUIT, ETC., SHALL BE FIRE STOPPED.
22. ALL AIR CONDITIONING CONDENSATE DRAIN LINES FOR EACH AIR HANDLING UNIT AND CRAC UNIT SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET, WITH 'P' TRAP, AND PIPE TO THE NEAREST DRAIN. SEE THE DETAILS SHOWN IN THE DRAWINGS OR CONTRACT SPECIFICATIONS FOR THE DEPTH OF THE AIR CONDITIONING CONDENSATE TRAP.
23. REFER TO TYPICAL DETAILS FOR DUCTWORK, PIPING, AND EQUIPMENT INSTALLATION.
24. CONTRACTOR SHALL FIELD VERIFY SIZE OF EQUIPMENT PRIOR TO PURCHASE AND INSTALLATION.

Filename: M-001-02.dwg

Scale:

Designed by: Stantec

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
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THE GOLD STAR MEMORIAL HIGHWAY

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INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING
MECHANICAL LEGEND, ABBREVIATIONS & GENERAL NOTES – SHEET 1 OF 2

SHEET NUMBER: M-001

CONTRACT: 2019.04

Date: Tuesday, March 19, 2019

DUCTWORK

SINGLE LINE		DOUBLE LINE
W x D	RECTANGULAR DUCT W=WIDTH, D=DEPTH (INCHES UNLESS NOTED OTHERWISE) AS VIEWED	W D 10x6
DIA"ø	ROUND DUCT (DIA=INSIDE DIAMETER)	DIA 10"Ø
	RECTANGULAR SUPPLY DUCT UP THROUGH ROOF	
	SUPPLY DUCT UP THROUGH FLOOR	
	SUPPLY DUCT DOWN	
	STANDARD RADIUS ELBOW (R = W) SUPPLY/RETURN/EXHAUST	R W
	FULL LENGTH SPLITTER VANES (R < W) SUPPLY/RETURN/ EXHAUST	R W
	RECTANGULAR WYE SUPPLY	
10x6 6"ø	RECTANGULAR DUCT TO ROUND SUPPLY/RETURN/ EXHAUST	10x6 6"Ø
VD	DUCT WITH CIELING MOUNTED DIFFUSER/GRILLE	VD
VD	TAKE-OFF TO DIFFUSER/GRILLE	VD HARD ELBOW
VD	DIFFUSER/GRILLE UNDER DUCT PROVIDE TAKEOFF AND RUNOUT	VD
	ACOUSTICALLY LINED DUCT	
	FLEXIBLE DUCT	

SINGLE LINE		DOUBLE LINE
	ROUND DUCT UP THROUGH ROOF	
	ROUND DUCT UP THROUGH FLOOR	
	ROUND DUCT DOWN	
	RETURN/EXHAUST DUCT UP THROUGH ROOF	
	RETURN/EXHAUST DUCT UP THROUGH FLOOR	
	RETURN/EXHAUST DUCT DOWN	
	HORIZONTAL OFFSET SUPPLY/RETURN/EXHAUST	
R/D	CHANGE OF ELEVATION (R)RISE OR (D)ROP SUPPLY/RETURN/ EXHAUST	R/D
	45° TAP TAKE-OFF	
	90° TAP TAKE-OFF	45° TAKEOFF; 45° TAKE-OFF TRANSITION TO ROUND; SQUARE TO ROUND CONNECTION; BELLMOUTH CONNECTION
	CONVERGE RETURN/EXHAUST W/45° TAKE-OFFS	
	SIDEWALL DUCT MOUNTED REGISTER/GRILLE	
VD VD	SUPPLY CEILING LINEAR DIFFUSER (W/SHEETMETAL PLENUM, LINING & BRANCH CONN. FOR EVERY 4' OF LINEAR.)	VD VD PLENUM BY LD MF'R
	OPEN END DUCT W/ 1/2"x1/2" WMS	

AFMS	AIR FLOW MONITORING STATION		STANDARD 4-WAY BLOW SUPPLY DIFFUSER
BDD	BACKDRAFT DAMPER		3-WAY BLOW SUPPLY DIFFUSER
CBBD	COUNTER BALANCED BACKDRAFT DAMPER	OR	2-WAY BLOW SUPPLY DIFFUSER
VD	MANUAL VOLUME DAMPER		ONE-WAY BLOW SUPPLY DIFFUSER
FD	SELF-CLOSING FIRE DAMPER W/ ACCESS DOOR		RETURN/EXHAUST GRILLE OR REGISTER
ASD	AUTOMATIC SMOKE DAMPER W/ ACCESS DOOR	UC 1/2"	UNDERCUT DOOR
SFD	COMBINATION SMOKE/FIRE DAMPER W/ ACCESS DOOR	LVDR 1.5 SF	LOUVERED DOOR (FREE AREA)
SD	DUCT MOUNTED SMOKE DETECTOR		RETURN OR EXHAUST AIR FLOW
MD	MOTORIZED DAMPER W/ACCESS DOOR		SUPPLY AIR FLOW

PIPING LEGEND

	BALL VALVE
	BUTTERFLY VALVE
	HOSE END BALL VALVE WITH CAP AND CHAIN
PS	PRESSURE SWITCH
	THERMOMETER
VB	VACUUM BREAKER
PT	PRESSURE/THERMOMETER WELL
AV	AIR VENT - AUTOMATIC
MV	AIR VENT - MANUAL
TAV	THERMOSTATIC AIR VENT (STEAM ONLY)
	DIRECTION OF FLOW
EJ	EXPANSION JOINT
	FLEXIBLE CONNECTOR
	PIPE ANCHOR
	PIPE GUIDE
	PIPE CONNECTION - TOP
	PIPE CONNECTION - BOTTOM
	PIPE - DOWN
	PIPE - UP
R	PITCH OF PIPE - (R) RISE OR (D) DROP
	REDUCER - CONCENTRIC
	REDUCER - ECCENTRIC
CO	CLEANOUT FOR CONDENSATE DRAIN
	DIRT LEG
	PIPE BREAK (SINGLE LINE) WITH PIPE CROSSING UNDER
	PIPE BREAK (SINGLE LINE) WITH PIPE CROSSING ABOVE
	TYPICAL SUPPLY PIPING
	TYPICAL RETURN PIPING
	TYPICAL CONDENSATE PIPING
	PLUG VALVE
	PRESSURE REDUCING VALVE
	ANGLE VALVE (SECTION VIEW)
	ANGLE VALVE (PLAN VIEW)
	GLOBE ANGLE VALVE

CONTROL POINT DESCRIPTOR LEGEND

TAG	ATC CONTRACTOR PROVIDED DDC POINT AND HARDWARE
TAG ELEC PLBG	CONTROL DEVICE FURNISHED BY ELECTRICAL OR PLUMBING CONTRACTOR BUT INTERFACED TO DDC SYSTEM BY ATC CONTRACTOR
TAG	ATC CONTRACTOR INTERFACE TO EQUIPMENT MANUFACTURER'S HARDWARE
TAG	ATC CONTRACTOR PROVIDED LOCAL CONTROL POINT

PIPING LEGEND

	CHECK VALVE (SILENT CHECK TYPE ON PUMP DISCHARGE)
	STRAINER WITH HOSE END BLOWOFF VALVE, CAP AND CHAIN
SD	SUCTION DIFFUSER/STRAINER (NON-REDUCING) WITH BLOWOFF
S	SOLENOID VALVE
	2-WAY AUTOMATIC CONTROL VALVE (MODULATING)
	2-WAY AUTOMATIC CONTROL VALVE (TWO POSITION)
	3-WAY AUTOMATIC CONTROL VALVE (MODULATING)
	3-WAY AUTOMATIC CONTROL VALVE (TWO POSITION)
	AUTOMATIC FLOW CONTROL VALVE (PRESSURE INDEPENDENT)
	COMBINATION FLOW METER/BALANCING VALVE (CIRCUIT SETTER)
	TRIPLE DUTY PUMP VALVE, CHECK, BALANCING (FLOW METER), SHUT-OFF
FMT	FLOW METER/TRANSMITTER (HOT TAP TYPE WITH VALVE)
	ORIFICE FLOW METER
FS	FLOW SWITCH
	RELIEF/SAFETY SWITCH
	UNION
	BLIND FLANGE
	PIPE - CAPPED
	PRESSURE GAUGE (W/ BALL VALVE(S) OR SNUBBER)

DIAGRAM EQUIPMENT SYMBOLS

	FILTER BANK
H C	HEATING COIL
C C	COOLING COIL
	CABINET HEATER
	UNIT HEATER
AV	AIR SEPARATOR
	CHEMICAL FEED SYSTEM
	PUMP
	CENTRIFUGAL FAN
	INLINE CENTRIFUGAL FAN
	ROOF FAN
	EXPANSION TANK
	OPPOSED BLADE DAMPER W/ TWO POSITION ACTUATOR
	OPPOSED BLADE DAMPER W/ MODULATING ACTUATOR
	PARALLEL BLADE DAMPER W/ TWO POSITION ACTUATOR
	PARALLEL BLADE DAMPER W/ MODULATING ACTUATOR
	BACKDRAFT DAMPER
	COUNTER BALANCED BACKDRAFT DAMPER

CONTROL ABBREVIATIONS

ACD	AUTOMATIC CONTROL DAMPER
ACV	AUTOMATIC CONTROL VALVE
ADJ	ADJUSTABLE
AFMS	AIR FLOW MEASURING STATION
ALM	ALARM
ASD	AUTOMATIC SMOKE DAMPER
ATC	AUTOMATIC TEMPERATURE CONTROL
BAS	BUILDING AUTOMATION SYSTEM
BDD	BACKDRAFT DAMPER (ADJUSTABLE COUNTERWEIGHT)
BIBO	BAG-IN BAG-OUT
BMS	BUILDING MANAGEMENT SYSTEM
BV	BYPASS VALVE
CD	CARBON DIOXIDE SENSOR
CO	CARBON MONOXIDE SENSOR
CT	CURRENT TRANSFORMER (STATUS FEEDBACK)
CV	COOLING COIL CONTROL VALVE
DAT	DISCHARGE AIR TEMPERATURE SENSOR
DDC	DIRECT DIGITAL CONTROL
DDCFP	DIRECT DIGITAL CONTROL FIELD PANEL
DPS	DIFFERENTIAL PRESSURE SWITCH
DPT	DIFFERENTIAL PRESSURE SENSOR/TRANSMITTER
DPV	DIFFERENTIAL PRESSURE BYPASS VALVE
DSP	DISCHARGE STATIC PRESSURE SENSOR
EAD	EXHAUST AIR DAMPER
ES	END SWITCH
H	HUMIDITY SENSOR
HALM	HOOD ALARM
HCLT	HEATING COIL LEAVING AIR TEMPERATURE SENSOR
HEGA	HIGH EFFICIENCY GAS ABSORBER FILTER
HEPA	HIGH EFFICIENCY PARTICULATE AIR FILTER
HGB	HOT GAS BYPASS
HHL	HIGH HUMIDITY LIMIT SENSOR
HIV	HUMIDIFIER ISOLATION VALVE
HLH	HIGH/LOW HUMIDITY LIMIT SENSOR
HOA	HAND-OFF AUTOMATIC SWITCH
HR	HUMIDITY SENSOR (ROOM)
HSPS	HIGH STATIC PRESSURE SWITCH
HUV	HUMIDIFIER CONTROL VALVE
HV	HEATING COIL CONTROL VALVE
HWRT	HOT WATER RETURN TEMPERATURE SENSOR
HWST	HOT WATER SUPPLY TEMPERATURE SENSOR
IFBD	INTEGRAL FACE & BYPASS DAMPER
IGV	INLET GUIDE VANES
LAT	LEAVING AIR TEMPERATURE SENSOR
LSPS	LOW STATIC PRESSURE SWITCH
LS	LEVEL SENSOR OR LIGHT SWITCH INTERFACE
LSHA	LEVEL SENSOR HIGH ALARM
LSHS	LEVEL SENSOR HIGH SWITCH
LSLA	LEVEL SENSOR LOW ALARM
LSLS	LEVEL SENSOR LOW SWITCH
NC	NORMALLY CLOSED (ON LOSS OF POWER)
NO	NORMALLY OPEN (ON LOSS OF POWER)
MUWV	MAKE-UP WATER VALVE
MD	MOTION DETECTOR
OAD	OUTSIDE AIR DAMPER
OAT	OUTSIDE AIR TEMPERATURE SENSOR (DRY BULB)
RAD	RETURN AIR DAMPER
RAT	RETURN AIR TEMPERATURE SENSOR
RV	REHEAT CONTROL VALVE
RH	RELATIVE HUMIDITY
RI	RUN INDICATOR
RSID	RETURN SMOKE ISOLATION DAMPER
S	SWITCH
SAD	SUPPLY AIR DAMPER
SD	SMOKE DETECTOR
SFD	SMOKE/FIRE DETECTOR
SP	STATIC PRESSURE SENSOR
S/S	START/STOP
S/SH	START/STOP HIGH SPEED
S/SL	START/STOP LOW SPEED
SSID	SUPPLY SMOKE ISOLATION DAMPER
SSP	SUCTION STATIC PRESSURE SENSOR
T	TEMPERATURE SENSOR/THERMOSTAT
TR	TEMPERATURE SENSOR/THERMOSTAT (ROOM)
VS	VIBRATION SWITCH
WC	WATER COLUMN

Filename: M-001-02.dwg

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	CMF		Checked	PJD	
Drawn	CMF		In Charge of	AAH	

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

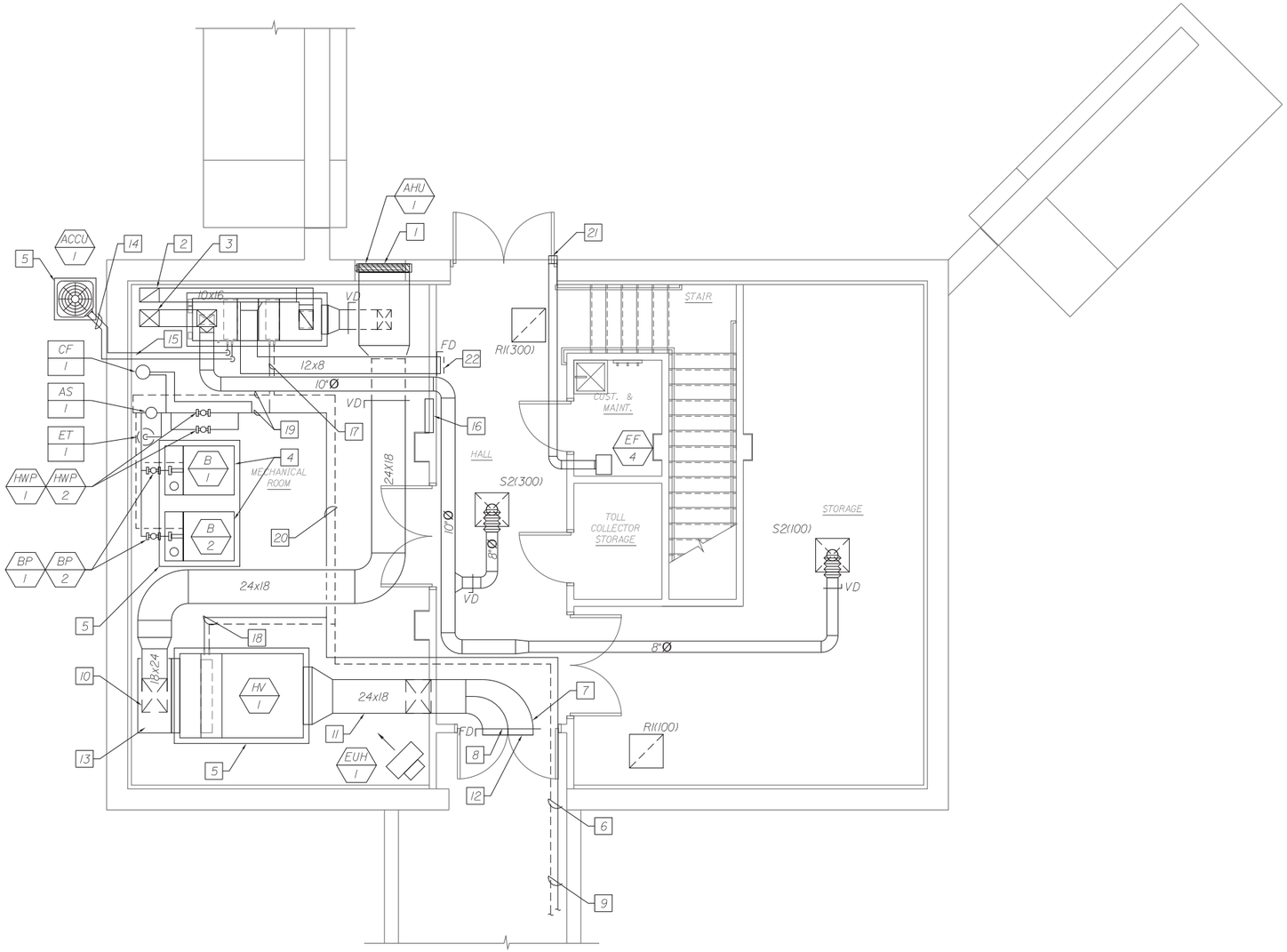
MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103 ORT CONVERSION ADMINISTRATION BUILDING

MECHANICAL LEGEND, ABBREVIATIONS & GENERAL NOTES – SHEET 2 OF 2

SHEET NUMBER: M-002

CONTRACT: 2019.04



BASEMENT FLOOR PLAN

1/4" = 1'-0"

KEYNOTES:

1. 36x36x60" LOUVER (MIN FREE AREA: 4.5 S.F.)., SEE DRAWING M-501. FOR LOUVER CONNECTION DETAIL.
2. 16x10 RA DUCT DN FROM 1ST FLOOR. FOR CONTINUATION, SEE DRAWING M-102.
3. 14x12 SA DUCT UP TO 1ST FLOOR. FOR CONTINUATION, SEE DRAWING M-102.
4. CLEARANCE SHALL BE PROVIDED AROUND BOILER, CONNECTIONS AND ACCESSORIES IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS.
5. CONCRETE HOUSEKEEPING PAD. SEE STRUCTURAL DRAWING S-503, FOR PAD DETAIL.
6. 2" HWS&R PIPING. ALL PIPING PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL BE SLEEVED AND SEALED FIRE STOPPING IN ACCORDANCE WITH SPECIFICATIONS.
7. 36x18 SUPPLY DUCT THRU WALL. ALL DUCT PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL BE SEALED WITH FIRE STOPPING IN ACCORDANCE WITH SPECIFICATIONS.
8. 2-HR RATED FIRE DAMPER AT PENETRATION BETWEEN RATED ASSEMBLIES.
9. 2" HWS&R PIPING TO TUNNEL. PIPING SHALL BE INSTALLED TIGHT TO THE TUNNEL CEILING. FOR CONTINUATION OF PIPING SEE MECHANICAL DRAWING ME-04.
10. 24x18 OA INTAKE DUCT CONNECTION TO HV-1.
11. PROVIDE MIN. STRAIGHT LENGTHS OF DUCT 2.5 X DIA FROM OUTLET.
12. OED WITH WIRE MESH SCREEN. TERMINATE DUCTWORK FLUSH WITH WALL ABOVE DOORWAY.
13. PROVIDE 48x24x30" PLENUM BOX FOR OA INLET CONNECTION TO HV-1.
14. 3/4" RS & 1/2" RL PIPING SHALL BE SIZED PER MANUFACTURER'S GUIDELINES.
15. WALL SLEEVES FOR RS&RL PIPE PENETRATIONS THROUGH EXTERIOR WALL. ALL PENETRATIONS SHALL BE SEALED WATER TIGHT.
16. ATC PANEL.
17. 1-1/2" HWS & HWR CONNECTIONS TO AHU-1 HOT WATER COILS. FOR HOT WATER COIL CONNECTION DETAILS, SEE MECHANICAL DRAWING M-501.
18. 1-1/2" HWS & HWR CONNECTIONS TO HV-1 HOT WATER COILS. FOR HOT WATER COIL CONNECTION DETAILS, SEE MECHANICAL DRAWING M-501.
19. 3" HWS & HWR.
20. 2-1/2" HWS & HWR
21. PURCHASE AND INSTALL RAIN CAP AND BIRD SCREEN FOR EXHAUST FAN.
22. OED WITH WIRE MESH SCREEN.

Date: Tuesday, March 19, 2019

Filename: M-101-02.dwg

Scale: 1/4"=1'-0" (0, 4', 8')

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	CMF		Checked	PJD	
Drawn	CMF		In Charge of	AAH	

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MAINE TURNPIKE

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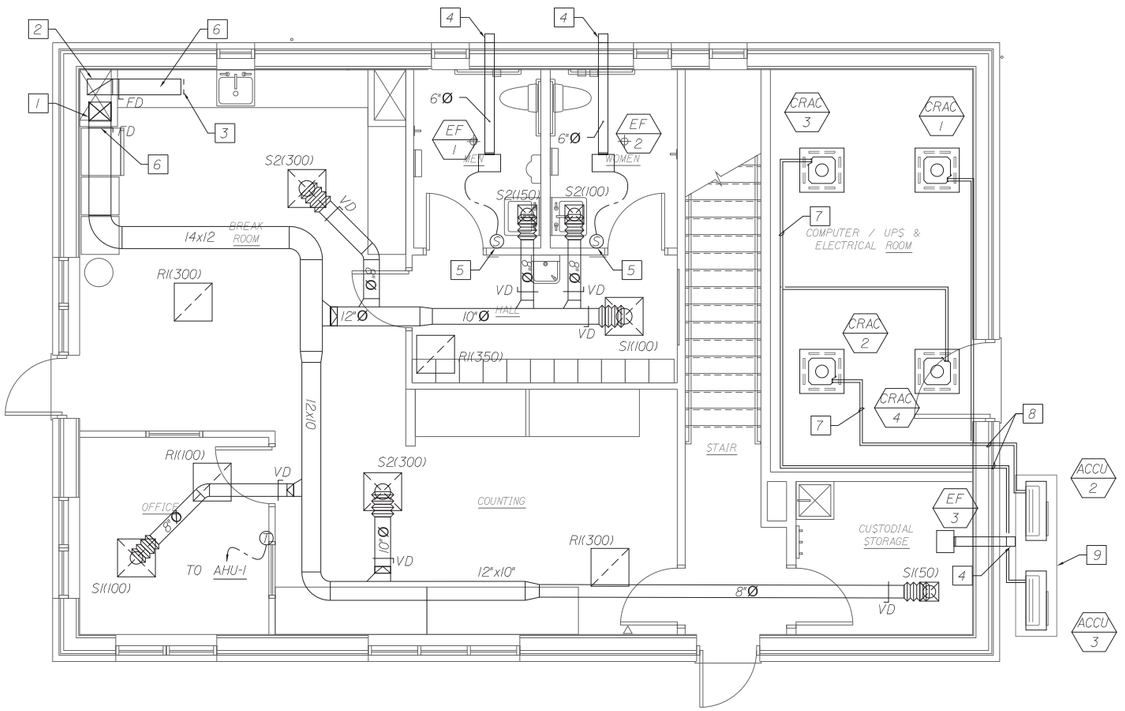
INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

MECHANICAL BASEMENT FLOOR PLAN

SHEET NUMBER: M-101

CONTRACT: 2019.04



FIRST FLOOR PLAN

1/4" = 1'-0"

KEYNOTES:

1. 14x12 SA DN TO AHU-1 LOCATED IN MECHANICAL ROOM IN THE BASEMENT. FOR CONTINUATION, SEE DRAWING M-101.
2. 16x10 RA DN TO AHU-1 LOCATED IN MECHANICAL ROOM IN THE BASEMENT. FOR CONTINUATION, SEE DRAWING M-101.
3. 16x10 RA OED WITH WMS ABOVE FINISHED CEILING.
4. PURCHASE AND INSTALL RAIN CAP AND BIRD SCREEN FOR EXHAUST FAN.
5. TOILET EXHAUST FAN CONTROL SHALL BE TIED INTO LIGHT SWITCH.
6. 2-HR RATED FIRE DAMPER AT PENETRATION BETWEEN RATED ASSEMBLIES.
7. 3/4" RS & 1/2" RL PIPING SHALL BE SIZED PER MANUFACTURER'S GUIDELINES.
8. WALL SLEEVES FOR RS&RL PIPE PENETRATIONS THROUGH EXTERIOR WALL. ALL PENETRATIONS SHALL BE SEALED WATER TIGHT.
9. CONCRETE HOUSEKEEPING PAD. SEE STRUCTURAL DRAWING S-503, FOR PAD DETAIL.

Filename: M-101-02.dwg

Scale: 1/4"=1'-0" (0, 4', 8')

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	CMF		Checked	PJD	
Drawn	CMF		In Charge of	AAH	

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

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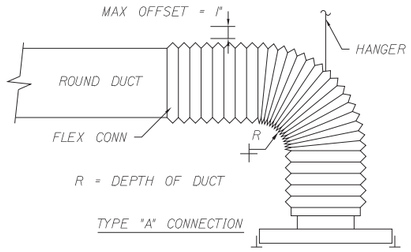
INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

MECHANICAL FIRST FLOOR PLAN

SHEET NUMBER: M-102

CONTRACT: 2019.04

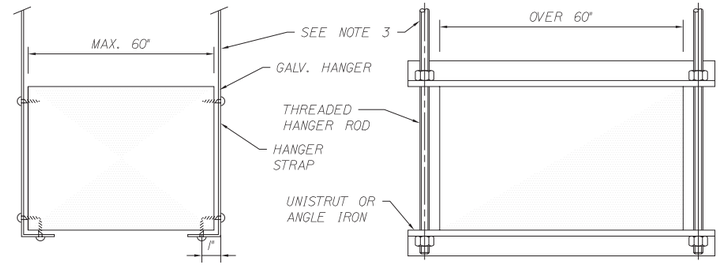


NOTES:

1. THESE DETAILS ALLOW DUCTWORK TO BE PROVIDED BEFORE CEILING GRID IS INSTALLED THEN DIFFUSER/REGISTER CAN BE POSITIONED INTO GRID.
2. INSTALL INSULATED TRANSITION ROUND TO SQUARE IF REQUIRED AT DIFFUSER.
3. INSTALL NYLON TY-WRAP TOOL OR REUSABLE SS DRAW BAND PER SPECS.
4. FLEX DUCT SHALL NOT HAVE MORE THAN 1/2" SAG PER FOOT.
5. LENGTH OF FLEX DUCT SHALL NOT EXCEED 5'-0".
6. INSTALL DUCT MOUNTED VOLUME DAMPER WHERE SHOWN.

TYP. SUPPLY DIFFUSER DUCTWORK & CONNECTION — 1

SCALE: NTS



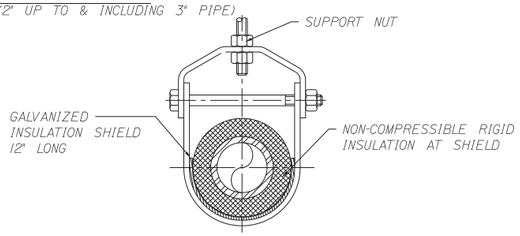
NOTES:

1. ON DUCTS OVER 48" WIDE, BOTTOM SHALL BE BRACED BY ANGLE. FOR CROSS SECTION AREA MORE THAN 8 SQ FT, DUCT SHALL BE BRACED BY ANGLES ON ALL FOUR SIDES.
2. CUTTING AND PATCHING SHALL BE LIMITED TO A MINIMUM AS REQUIRED FOR PROPER INSTALLATION.
3. SUPPORTS SHALL BE SPACED AND SIZED AS PER SMACNA.

DUCT HANGER SUPPORT — 2

SCALE: NTS

HEAVY DUTY CLEVIS HANGER
(FOR 1/2" UP TO & INCLUDING 3" PIPE)



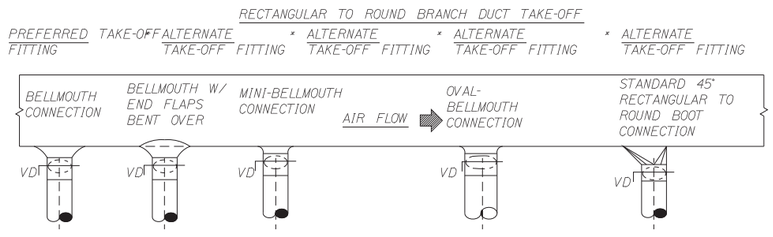
NOTES:

1. SEE SPECIFICATION FOR HANGER SIZES.

PIPE HANGER SUPPORT — 3

SCALE: NTS

RECTANGULAR TO ROUND BRANCH DUCT TAKE-OFF



DUCT SIZE	HOLE SIZE	MINIMUM DUCT HEIGHT
5 6	8 9	9
7 8	10	10
9	11	11
10	12	12
12	13	13
14	15	14
16	17	16
	19	18
		20

DUCT SIZE	HOLE SIZE	MINIMUM DUCT HEIGHT
5 6	-	-
7 8	7	9 -
9	9	11
10	9	-
12	12	13
14	11	-
16	16	-
	-	-

DUCT SIZE	HOLE SIZE	MINIMUM DUCT HEIGHT
5 6	-	-
7 8	-	-
9	9 x 10-9/16	10"
10	9 x 12-1/8	10"
12	9 x 13-11/16	10"
14	9 x 15-1/4	10"
16	9 x 18-3/8	10"
	9 x 21-1/2	10"
	9 x 24-5/8	10"

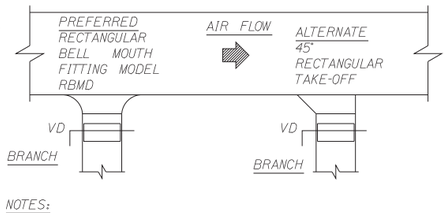
DUCT SIZE	HOLE SIZE	MINIMUM DUCT HEIGHT
5 6	5 x 10	7
7 8	6 x 12"	8
9	6 x 12"	8
10	6-1/2 x 12	8-1/2
12	6-1/2 x 14	8-1/2
14	6-1/2 x 16	8-1/2
16	8-1/2 x 18	8-1/2
	10 x 20	10-1/2
	-	12

TYPICAL DUCT TAKE-OFF — 4

SCALE: NTS

RECTANGULAR BRANCH DUCT TAKE-OFF

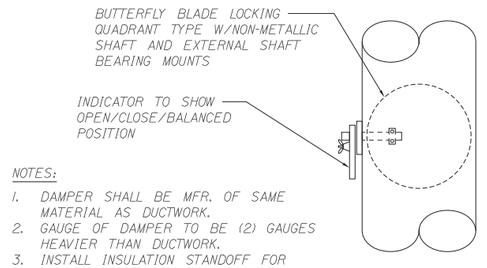
DUCT SIZE	HOLE SIZE	MINIMUM DUCT HEIGHT
6 x 4	7.5 x 5.5	7.5
10 x 4	11.5 x 5.5	7.5
16 x 4	17.5 x 5.5	7.5
24 x 4	25.5 x 5.5	7.5
6 x 5	7.5 x 6.5	8.5
10 x 5	11.5 x 6.5	8.5
16 x 5	17.5 x 6.5	8.5
24 x 5	25.5 x 6.5	8.5
6 x 6	7.5 x 7.5	9.5
10 x 6	11.5 x 7.5	9.5
16 x 6	17.5 x 7.5	9.5
24 x 6	25.5 x 7.5	9.5
8 x 8	9.5 x 9.5	11.5
16 x 8	17.5 x 9.5	11.5
24 x 8	25.5 x 9.5	11.5
10 x 10	11.5 x 11.5	13.5
16 x 10	17.5 x 11.5	13.5
24 x 10	25.5 x 11.5	13.5



NOTES:

ALL ROUND AND RECTANGULAR BELLMOUTH FITTINGS SHALL BE INCLUDED WITH THE FOLLOWING STANDARD FEATURES:

1. NEOPRENE GASKET TO MINIMIZE AIR LEAKAGE.
2. PRE-DRILLED HOLES FOR QUICK MOUNTING.
3. CONSTRUCTED OF HEAVY GALVANIZED STEEL.
4. 26 GAUGE GALV. QUADRANT VOLUME DAMPER W/ TIGHT FITTING GASKETING TO MINIMIZE LEAKAGE AT DAMPER PIVOT POINTS. (FOR LOW PRESSURE DUCTWORK)



NOTES:

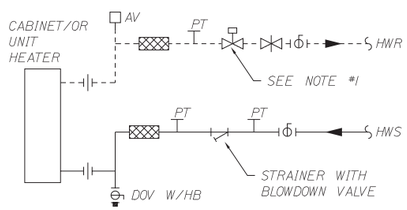
1. DAMPER SHALL BE MFR. OF SAME MATERIAL AS DUCTWORK.
2. GAUGE OF DAMPER TO BE (2) GAUGES HEAVIER THAN DUCTWORK.
3. INSTALL INSULATION STANDOFF FOR DUCTWORK WITH EXTERIOR INSULATION.

ROUND VOLUME DAMPER DETAIL — 5

SCALE: NTS

NOTE:

1. REFER TO AUTOMATIC CONTROL DRAWINGS AND SPECIFICATIONS FOR CONTROL VALVE REQUIREMENTS.
2. TWO FOOT LONG STAINLESS STEEL BRAIDED FIRE RETARDANT HOSE KITS MAY BE USED (PRE-PIPED WITH ALL COMPONENTS AS SHOWN) PROVIDING ALL COMPONENTS MEET THEIR INDIVIDUAL SPECIFICATION REQUIREMENTS.
3. INSTALL REDUCERS AS REQUIRED.
4. FOLLOW MANUFACTURERS PIPING PACKAGE INSTALLATION INSTRUCTION IF PROVIDED.

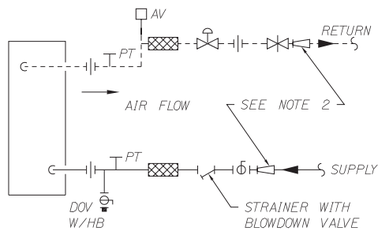


HOT WATER UNIT HEATER CONNECTION DETAIL — 6

SCALE: NTS

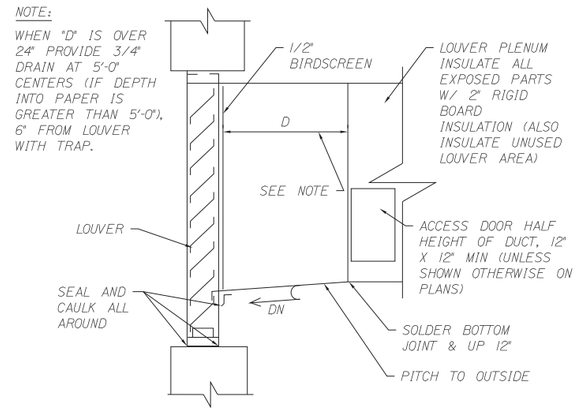
NOTES:

1. TWO FOOT LONG STAINLESS STEEL BRAIDED FIRE RETARDANT HOSE KITS MAY BE USED (PRE-PIPED WITH ALL COMPONENTS AS SHOWN) PROVIDING ALL COMPONENTS MEET THEIR INDIVIDUAL SPECIFICATION REQUIREMENTS.
2. INSTALL REDUCERS AS REQUIRED.



HOT WATER COIL DETAIL — 7

SCALE: NTS



LOUVER CONNECTION DETAIL (MAU & AHU) — 8

SCALE: NTS

Filename: M-501-03.dwg

No.	Revision	By	Date

Scale:

Designed by:

Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

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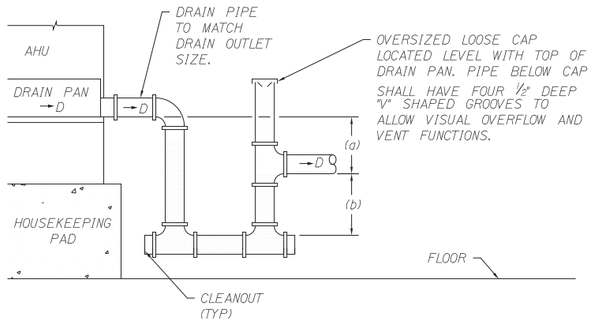
MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

MECHANICAL DETAILS – SHEET 1 OF 3

SHEET NUMBER: M-501

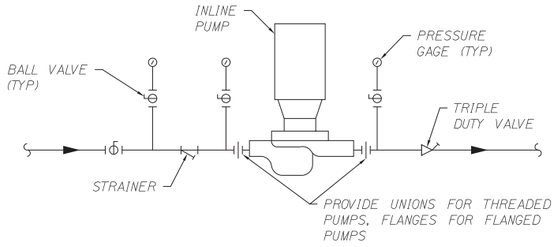
CONTRACT: 2019.04



NOTES:

1. (a) - THIS DIMENSION IN INCHES MUST BE 1" GREATER THAN THE MAXIMUM FAN SUCTION STATIC PRESSURE IN INCHES W.C. (WITH DIRTY FILTERS, COILS, AND MAXIMUM AIR FLOW).
2. (b) - THIS DIMENSION IN INCHES MUST BE AT LEAST 1/2 OF (a).

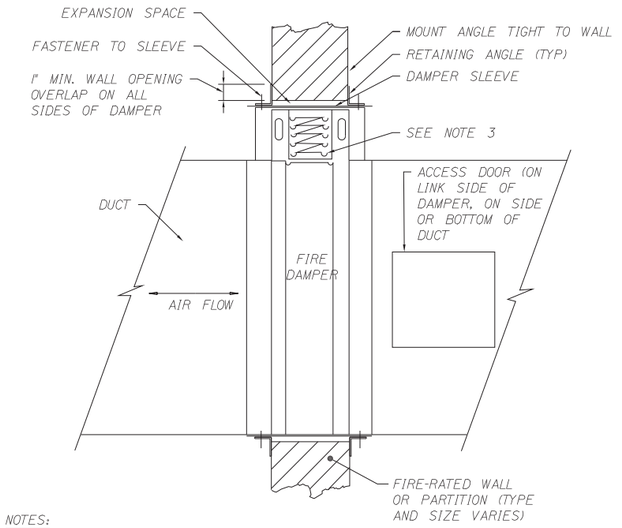
DRAW THRU CONDENSATE TRAP — 9
SCALE: NTS



NOTES:

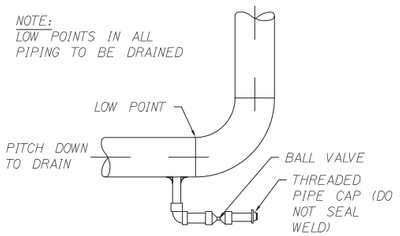
1. VALVES SHALL BE SAME SIZE AS PIPE, REDUCE TO PUMP CONNECTIONS AS REQUIRED.
2. FOR PUMPS OVER ¼ HP: PUMP & PIPE WITHIN 20' SHALL HAVE SPRING-ISOLATOR SUPPORTS
3. SUBSTITUTE BUTTERFLY VALVES FOR BALL VALVES FOR PIPING GREATER THAN 2".

INLINE BOILER PUMP PIPING DETAIL — 10
SCALE: NTS

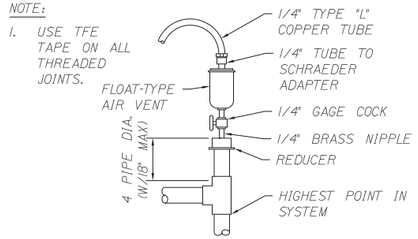


NOTES:

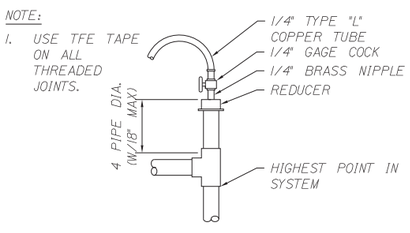
1. WALL OPENING SHALL BE SIZED TO MAINTAIN MANUFACTURER'S REQUIRED EXPANSION SPACE AROUND DAMPER.
2. DAMPER BLADES SHALL BE OUT OF AIRSTREAM TYPE "3A,3B,7 OR 8" (SEE SMACNA FIRE DAMPER AND HEAT STOP GUIDE - 2ND EDITION PAGE 9 OR NEWER VERSION IF APPLICABLE)
3. INSTALL SPRING LOADED CLOSURE FOR ALL FIRE DAMPERS.
4. WHEN DUCTWORK IS INSULATED OR LINED, PROVIDE INSULATED ACCESS DOOR.
5. ACCESS DOOR SHALL BE 12" X 12" OR LARGER IF REQUIRED FOR FUSIBLE LINK REPLACEMENT.
6. INSTALLATION SHOWN AS AN EXAMPLE. SPECIFIC INSTALLATION REQUIREMENTS, INCLUDING BREAKAWAY CONNECTIONS, SHALL CONFORM WITH MANUFACTURER'S UL APPROVED INSTRUCTIONS.



LOW POINT DRAIN DETAIL — 11
SCALE: NTS

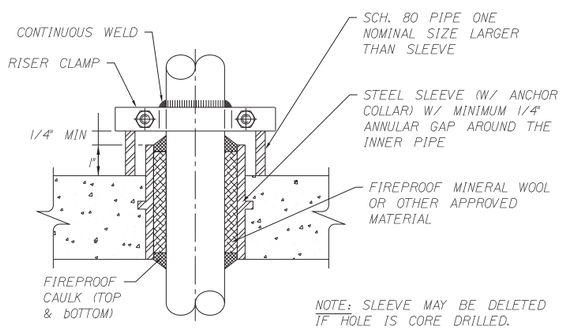


AUTOMATIC AIR VENT ASSEMBLY — 12
SCALE: NTS

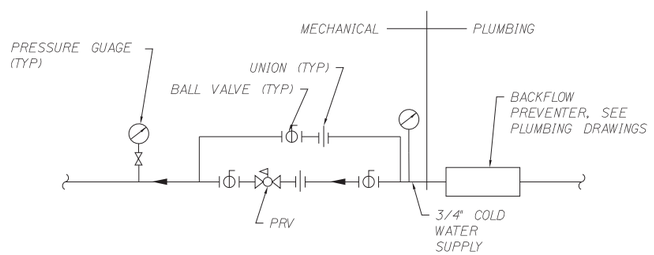


MANUAL AIR VENT ASSEMBLY — 13
SCALE: NTS

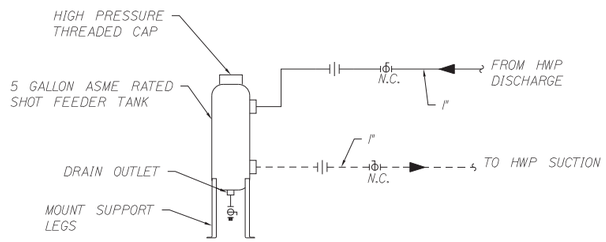
FIRE DAMPER DETAIL — 14
SCALE: NTS



PIPE RISER SUPPORT — 21
SCALE: NTS



MAKEUP WATER PIPING — 22
SCALE: NTS



CHEMICAL FEED (SHOT FEEDER) — 23
SCALE: NTS

Date: Tuesday, March 19, 2019

Filename: M-501-03.dwg

Scale:				Designed by: Stantec						
No.	Revision	By	Date							
				CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.						
					By	Date		By	Date	
				Designed	CMF		Checked	PJD		
				Drawn	CMF		In Charge of	AAH		

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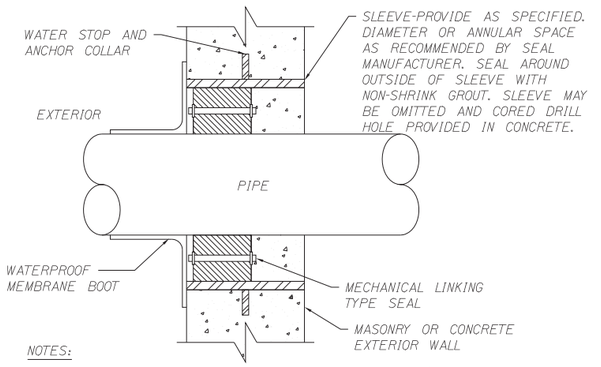
MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

MECHANICAL DETAILS – SHEET 2 OF 3

SHEET NUMBER: M-502

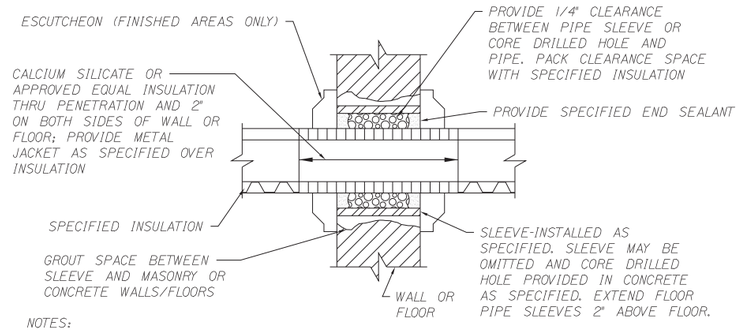
CONTRACT: 2019.04



NOTES:

1. INSULATION NOT SHOWN FOR CLARITY, PURCHASE AND INSTALL AS REQUIRED PER CONTRACT DOCUMENTS.

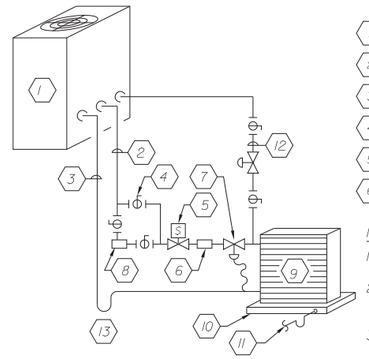
EXTERIOR WALL PIPE PENETRATIONS — 15
SCALE: NTS



NOTES:

1. AT FIRE RATED PARTITIONS ADD ADDITIONAL LAYER OF FIRE SAFING INSULATION AROUND PENETRATIONS SO AS TO FILL CAVITY.
2. DUCT AND PIPE PENETRATIONS THROUGH CORRIDOR WALLS ABOVE THE CEILING ARE TO BE FIRE STOPPED AROUND THE PENETRATION.

INTERIOR WALL-FLOOR PIPE PENETRATIONS — 16
SCALE: NTS

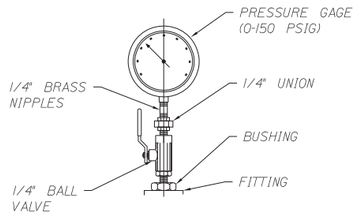


1. CONDENSING UNIT
2. LIQUID LINE
3. INSULATED SUCTION LINE
4. BALL SHUT-OFF VALVES
5. SOLENOID VALVE
6. SIGHT GLASS
7. THERMAL EXPANSION VALVE WITH EQUALIZER LINE
8. FILTER DRYER
9. COOLING COIL
10. DRAIN PAN
11. DRAIN LINE-TRAP & ROUTE TO NEAREST DRAIN
12. HOT GAS BYPASS LINE AND VALVE
13. TRAP

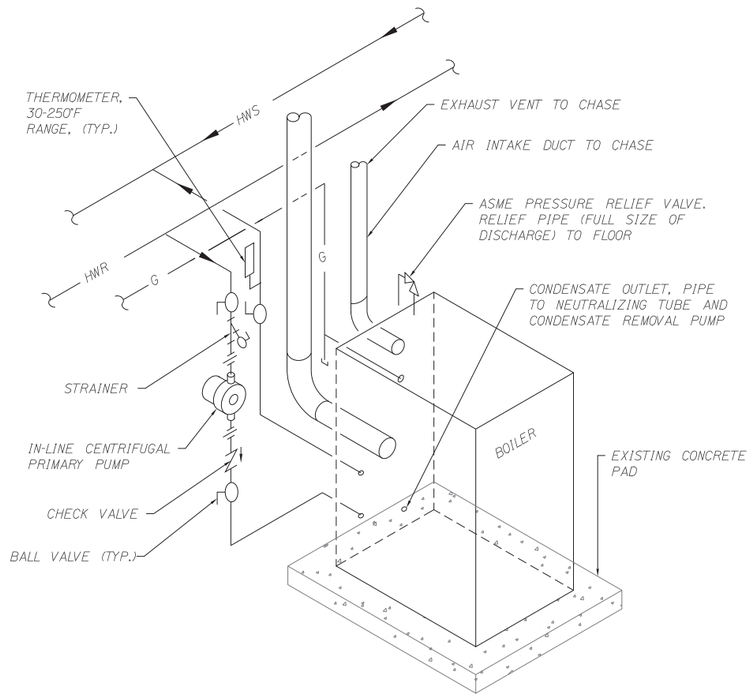
NOTES:

1. PIPING SHOWN IS FOR LEAD CIRCUIT. ADDITIONAL CIRCUITS ARE SIMILAR, EXCEPT NO HOT GAS BYPASS.
2. PIPE SIZING ON DRAWINGS ARE APPROXIMATE, CONFIRM ALL PIPE SIZES WITH UNIT MANUFACTURER BASED ON ACTUAL FIELD ROUTING.
3. INSTALL BYPASS CIRCUIT, CONTROL EQUIPMENT, ANY REQUIRED DOUBLE SECTION RISERS TRAPS, AND APPURTENANCES AS RECOMMENDED SIZED AND DIAGRAMMED BY THE UNIT MANUFACTURER

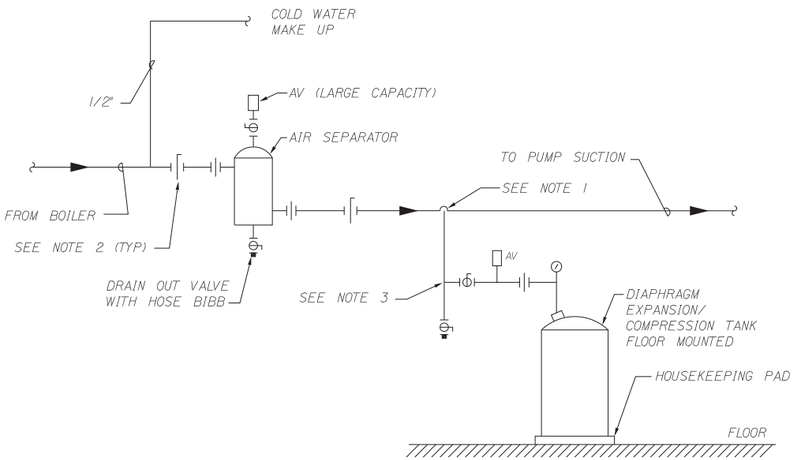
REFRIGERANT PIPING DETAIL — 17
SCALE: NTS



PRESSURE GAUGE — 18
SCALE: NTS



GAS-FIRED HOT WATER BOILER — 19
SCALE: NTS



NOTES:

1. CONNECT TO SIDE OF MAIN TO PREVENT AIR OR DEBRIS FROM ENTERING PIPE TO TANK. TOP OR BOTTOM CONNECTION NOT PERMITTED.
2. INSTALL BUTTERFLY VALVES FOR 2-1/2" PIPES AND LARGER; BALL VALVES FOR 2" PIPES AND SMALLER (SEE SPECS).
3. FOR HOT WATER SYSTEMS, IF ELEVATION AT INLET TO TANK IS NOT BELOW MAIN BY 24", PROVIDE 24" TRAP TO PREVENT GRAVITY HEATING OF TANK.

AIR SEPARATOR, MAKE-UP WATER & DIAPHRAGM EXPANSION TANK DETAIL — 20
SCALE: NTS

Filename: M-501-03.dwg

Scale:				Designed by: Stantec						
No.	Revision	By	Date							
				CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.						
					By	Date		By	Date	
				Designed	CMF		Checked	PJD		
				Drawn	CMF		In Charge of	AAH		

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

MECHANICAL DETAILS – SHEET 3 OF 3

SHEET NUMBER: M-503

CONTRACT: 2019.04

Date: Tuesday, March 19, 2019

AIR HANDLING UNIT SCHEDULE

TAG	SERVICE	LOCATION	FAN DATA					DX COOLING COIL										HOT WATER COIL									MOTOR DATA							MANUFACTURER AND MODEL NUMBER (BASIS OF DESIGN)	CONDENSING UNIT													MANUFACTURER AND MODEL NUMBER (BASIS OF DESIGN)	NOTES
			CFM		STATIC PRESS. (IN. WG)		TYPE	CAPACITY (MBH)		FACE VEL (FPM)	SAT. SUCTION TEMP (°F)	SUPER-HEAT (°F)	REFRIG TYPE	AIR DATA				ROWS	CAPACITY (MBH)	FACE VEL (FPM)	AIR DATA			HOT WATER DATA				ROWS	RPM	HP	MOCP	MCA	ELECTRICAL					TAG	NO. OF FANS	CFM	DESIGN AMBIENT TEMP (°F)	SAT. SUCTION TEMP (°F)	SUPER-HEAT (°F)	REFRIG TYPE	HP	MOCP	MCA	ELECTRICAL					
			TOTAL	MIN. O.A.	EXT	DIRTY FILTER ALLOW.		TOTAL	SENS					EAT (°F)		LAT (°F)		P.D. (IN.WG)			EAT (°F)	LAT (°F)	P.D. (IN.WG)	GPM	EWT (°F)	LWT (°F)	P.D. (FT.)						V	PH	HZ												V	PH	HZ		
														DB	WB	DB	WB																															
AHU-1	ADMIN BLDG	MECH ROOM	1500	300	1.25	0.39	FC	33	29.7	468	42	-	R410A	78	62	55	54	0.27	3	52	466	58	88	0.08	5.20	180	160	3.9	1	1750	1	15	4.5	208	3	60	VTS - AVS016E	ACCU-1	1	3150	95	42	-	R410A	1/8	15	10	208	3	60	AMERICAN STANDARD - 4A7C3030A	SEE NOTES

NOTES:

1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.
2. PURCHASE AND INSTALL REMOTE TEMPERATURE SENSOR
3. 40% PROPYLENE GLYCOL SOLUTION
4. CONTRACTOR SHALL PROVIDE AHU ARRANGEMENT AS SHOWN IN DETAIL 17 ON DRAWING M-503.

HEATING & VENTILATION UNIT SCHEDULE

TAG	LOCATION	CFM		STATIC PRESS. (IN. WG)		OUTLET VELOCITY (FPM)	WHEEL		HEATING COIL DATA						MOTOR DATA							MANUFACTURER & MODEL NUMBER (BASIS OF DESIGN)	NOTES
		TOTAL CFM	MIN. O.A. (CFM)	EXT	DIRTY FILTER ALLOWANCE		DIA. (IN.)	TYPE	MBH	AIR SIDE			WATER SIDE				RPM	HP	MOCP	MCA	ELECTRICAL				
										EAT (°F)	LAT (°F)	P.D. (IN. WG)	EWT (°F)	LWT (°F)	P.D. (FT)	FLOW (GPM)					V	PH	HZ		
HV-1	MECH ROOM	3000	3000	1	0.39	532	-	FC	300	-3.0	87	0.16	180	160	8.9	30.5	1750	2	15	9	208	3	60	VTS - AVS030E	SEE NOTES

NOTES:

1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.
2. PURCHASE AND INSTALL REMOTE TEMPERATURE SENSOR
3. 40% PROPYLENE GLYCOL SOLUTION

COMPUTER ROOM AIR CONDITIONER UNIT (SPLIT SYSTEM) SCHEDULE

TAG	LOCATION	CFM	COOLING				ELECTRICAL DATA				MANUFACTURER AND MODEL NUMBER (BASIS OF DESIGN)	REFRIGERANT		CONDENSING UNIT								MANUFACTURER AND MODEL NUMBER (BASIS OF DESIGN)	NOTES
			EAT(°F)		TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	TOTAL CAPACITY (MBH)	W	V	PH	HZ		TYPE	CHARGE (OZ)	TAG	RATED CAPACITY		DESIGN AMBIENT TEMP (°F)	MOCP	V	PH	HZ		
			DB	WB												COOLING (MBH)	HEATING (MBH)							
CRAC-1	COMPUTER/ELEC RM	396	80	67	19.1	-	2.15	30	208	1	60	LG - ARNUM3TQC4	R410A	-	ACCU-1	38	42	95	40	208	1	60	LG - ARUN03BGSS4	SEE NOTES
CRAC-2	COMPUTER/ELEC RM	396	80	67	19.1	-	2.15	30	208	1	60	LG - ARNUM3TQC4	R410A	-	-	-	-	-	-	-	-	-	-	SEE NOTES
CRAC-3	COMPUTER/ELEC RM	396	80	67	19.1	-	2.15	30	208	1	60	LG - ARNUM3TQC4	R410A	-	ACCU-2	38	42	95	40	208	1	60	LG - ARUN03BGSS4	SEE NOTES
CRAC-4	COMPUTER/ELEC RM	396	80	67	19.1	-	2.15	30	208	1	60	LG - ARNUM3TQC4	R410A	-	-	-	-	-	-	-	-	-	-	SEE NOTES

NOTES:

1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.
2. PURCHASE AND INSTALL CONDENSATE PUMP (SHIPPED LOOSE) FOR EACH UNIT EQUIPPED WITH CHECK VALVE. UNITS SHALL BE PROVIDED WITH MOUNTING BRACKET.
3. PURCHASE AND INSTALL LOW AMBIENT WIND BAFFLE KIT FOR OPERATION DOWN TO -9.9 DEGREE F
4. PURCHASE AND INSTALL SYSTEM CONTROLS TO INCLUDE A PROGRAMMABLE CONTROLLER TYPICAL TO LG PREMIUM CONTROLLER M/N PREMTA000

BOILER (HOT WATER) SCHEDULE

TAG	LOCATION	INPUT CAPACITY	OUTPUT CAPACITY (GROSS I-B=R)		PROPANE (LP GAS)			EFFICIENCY (%)	PRESS. (PSIG)		WATER					BURNER		MOTOR			MANUFACTURER AND MODEL NUMBER (BASIS OF DESIGN)	NOTES
		MBH	MBH	BHP	INPUT (CFH)	MIN. PRESSURE (IN. WC)	MAX PRESSURE (IN. WC)		MAX WORKING	RELIEF VALVE	ENT (°F)	LVG (°F)	GPM	P.D. (FT-HD)	FLUID	TYPE	TURN DOWN	V	PH	HZ		
B-1	MECH RM	500	438	-	200	11	14	87	125	-	160	180	47	0.27	40% PROP	LPG	10:1	120	1	60	CLEAVER BROOKS - CFCE 500	SEE NOTES
B-2	MECH RM	500	438	-	200	11	14	87	125	-	160	180	47	0.27	40% PROP	LPG	10:1	120	1	60	CLEAVER BROOKS - CFCE 500	SEE NOTES

NOTES:

1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.
2. PURCHASE AND INSTALL CONDENSATE NEUTRALIZATION KIT.
3. PURCHASE AND INSTALL VERTICAL CONCENTRIC VENT KIT
4. UNIT SHALL BE PROVIDED WITH A MINIMUM WATER CONTENT OF 92 GALLONS.

PUMP SCHEDULE

TAG	SERVICE	LOCATION	PUMP TYPE	FLUID		GPM	NPSHR (FT.)	HEAD (FT.)	SHUT-OFF HEAD (FT.)	IMPELLER SIZE (IN.)	WORKING PRESS. (PSIG)	MOTOR						MANUFACTURER AND MODEL NUMBER (BASIS OF DESIGN)	NOTES
				TYPE	TEMP (°F)							RPM	BHP	HP	V	PH	HZ		
BP-1	BOILER	MECH ROOM	INLINE	40% PROP	180	47	-	10	-	-	-	3170	-	1/4	115	1	60	GRUNDFOS - MAGNA3 40-80	SEE NOTES
BP-2	BOILER	MECH ROOM	INLINE	40% PROP	180	47	-	10	-	-	-	3170	-	1/4	115	1	60	GRUNDFOS - MAGNA3 40-80	SEE NOTES
HWP-1	HOT WATER	MECH ROOM	INLINE	40% PROP	180	80	-	25	-	-	-	1750	-	1	115	1	60	GRUNDFOS - MAGNA3 50-150	SEE NOTES
HWP-2	HOT WATER	MECH ROOM	INLINE	40% PROP	180	80	-	25	-	-	-	1750	-	1	115	1	60	GRUNDFOS - MAGNA3 50-150	SEE NOTES

NOTES:

1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.
2. 40% PROPYLENE GLYCOL SOLUTION.
3. THE BP-1, BP-2, HWP-1, AND HWP-2 BASIS OF DESIGN ARE PROVIDED WITH AN INTELLIGENT ECM MOTOR. IF CONTRACTOR SELECTS ALTERNATIVE PUMPS WITH STANDARD MOTORS, CONTRACTOR SHALL PURCHASE AND INSTALL VARIABLE FREQUENCY DRIVES AND COORDINATE ACCORDINGLY WITH THE ELECTRICAL CONTRACTOR.

Filename: M-601-02.dwg

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	CMF		Checked	PJD	
Drawn	CMF		In Charge of	AAH	

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

MECHANICAL SCHEDULES – SHEET 1 OF 2

SHEET NUMBER: M-601

CONTRACT: 2019.04

Date: Tuesday, March 19, 2019

DUCTWORK PRESSURE CLASS AND SEAL CLASS

PRESSURE CLASS	STATIC PRESSURE CLASS	SMACNA SEAL CLASS	SMACNA LEAKAGE CLASS	DESIGN VELOCITY LIMITS
4"	4" POS. OR NEG.	A	6	3000 FPM OR LESS
3"	3" POS. OR NEG.	A	6	2500 FPM OR LESS
2"	2" POS. OR NEG.	A	6	2000 FPM OR LESS

UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE DRAWINGS, USE THE FOLLOWING PRESSURE CLASSIFICATIONS FOR THE TYPES OF DUCTWORK LISTED BELOW

4" (POS) CLASS:	ALL SUPPLY DUCTWORK BETWEEN THE DISCHARGE OF AIR SUPPLY UNITS TO THE INLETS OF SUPPLY TERMINAL VOLUME BOXES.
4" (NEG AND POS):	ALL SUCTION AND DISCHARGE FUME HOOD, KITCHEN EXHAUST DUCTWORK AND FOR MEDIUM PRESSURE EXHAUST AND RETURN SYSTEMS, ALL DUCTWORK BETWEEN AIR EXHAUST AND RETURN UNITS TO OUTLETS OF EXHAUST AND RETURN TERMINAL VOLUME BOXES.
2" CLASS:	ALL OTHER DUCTWORK.

NOTES:
1. CONTRACTOR SHALL LEAK TEST (SUBMIT REPORT) A MINIMUM OF 25% OF THE SURFACE AREA FOR ALL DUCTWORK ABOVE PRESSURE CLASS 3".
2. FOR NEGATIVE PRESSURE OVER 3"W.G., REFER TO SMACNA ROUND AND RECTANGULAR INDUSTRIAL DUCT CONSTRUCTION STANDARDS FOR JOINT AND INTERMEDIATE REINFORCEMENT REQUIREMENTS.
3. FOR ROUND DUCTWORK, NEGATIVE PRESSURE OVER 2"W.G., REFER TO SMACNA ROUND INDUSTRIAL DUCT CONSTRUCTION STANDARDS AND BUILD TO NEGATIVE RATING SPECIFIED (-4"W.G. MIN.).
4. LEAKAGE CLASS AND THE ASSOCIATED DUCT SEALING FOR DUCTWORK SERVING LABORATORIES, HOSPITAL OPERATING ROOMS, AND CLEAN ROOMS SHALL ALLOW FOR ½ THE LEAKAGE LISTED: I.E., ALL PRESSURE CLASSES WOULD HAVE LEAKAGE CLASS 3.
5. REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.

DIAPHRAGM EXPANSION TANK SCHEDULE

TAG	SERVICE	LOCATION	FLUID	SYSTEM TEMP (°F)		VOLUME (GALLONS)		MAX OPERATING TEMP (PSIG)	MAX WORKING PRESSURE (PSIG)	MANUFACTURER AND MODEL NUMBER (BASIS OF DESIGN)	NOTES
				MIN	MAX	TANK	ACCEPTANCE				
ET-1	HW	MECH RM	40% PROP	160	180	21	11.3	240	125	AMTROL EXTROL AX-40	SEE NOTES

NOTES:
1. REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.

AIR SEPARATOR SCHEDULE

TAG	SERVICE	LOCATION	FLUID	WATER FLOW (GPM)	WPD (FT WG)	MAXIMUM OPERATING TEMPERATURE (°F)	MAXIMUM WORKING PRESSURE (PSIG)	MANUFACTURER AND MODEL NUMBER (BASIS OF DESIGN)	NOTES
AS-1	HW	MECH RM	40% PROP	90		270	150	SPIROTHERM VSR 250 MT	SEE NOTES

NOTES:
1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.

CHEMICAL SHOT FEEDER

TAG	SERVICE	LOCATION	CAPACITY (GAL)	FILTER (Y) OR (NO)	MAXIMUM OPERATING TEMPERATURE (°F)	MAXIMUM WORKING PRESSURE (PSIG)	MANUFACTURER AND MODEL NUMBER (BASIS OF DESIGN)	NOTES
CF-1	HW	MECH RM	5	NO	200	300	NEPTUNE - DBF-5NP	SEE NOTES

NOTES:
1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.
2. PURCHASE AND INSTALL WITH HIGH PRESSURE REMOVABLE THREADED CAP.
3. PURCHASE AND INSTALL UNIT WITH FULL BOTTOM DRAIN.
4. PURCHASE AND INSTALL UNIT WITH MOUNTING LEGS.
5. PURCHASE AND INSTALL ASME CERTIFICATION AND STAMP IN ACCORDANCE WITH ASME BPVC SECTION IV.

HEAT PUMP SCHEDULE

EVAPORATOR (INDOOR UNIT)																	CONDENSING UNIT (OUTDOOR UNIT)												
TAG	SERVICE	LOCATION	COOLING DATA			HEATING DATA			FAN DATA		ELECTRIC DATA				MANUFACTURER AND MODEL NUMBER (BASIS OF DESIGN)	TAG	LOCATION	REFRIGERANT	COMPRESSOR		CONDENSER FANS		ELECTRIC SERVICE				MANUFACTURER AND MODEL NUMBER (BASIS OF DESIGN)	NOTES
			TOTAL MBH	SENS. MBH	EAT DB (°F) / WB (°F)	MBH	INDOOR TEMP. DB (°F)	OUTDOOR TEMP. DB (°F)	CFM	DRIVE	V	HZ	PH	W					MAX KW HEAT	MAX KW COOL	QTY	HP EA.	V	HZ	PH	MCA	MOCP		
HP-1	TOLL BOOTHS	TOLL BOOTHS	15	-	80 / 67	18	70	47	390	-	208	60	1	20	MITSUBISHI SLZ-KA15NA	CU-1	TOLL BOOTH ROOF	R410A	2.0	1.5	1	-	208	60	1	12	15	MITSUBISHI SUZ-KA15NA	SEE NOTES

NOTES:
1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.
2. BASED ON MITSUBISHI ELECTRIC SPLIT SYSTEM RATED CONDITIONS PER AHRI STANDARDS. COOLING: 80°F DB/67°F WB (INDOOR), 95°F DB/75°F WB (OUTDOOR), HEATING: 70°F DB (INDOOR)/43°F DB (OUTDOOR)
3. PURCHASE AND INSTALL LOW AMBIENT OPTION WITH OUTDOOR CONDENSING UNIT. HEATING CAPACITY DE-REATED AT LOW AMBIENT TEMPERATURES. HEATING: 70°F DB (INDOOR)/17°F DB (OUTDOOR)
4. PURCHASE AND INSTALL REMOTE WALL MOUNTED THERMOSTAT.
5. PURCHASE AND INSTALL INTEGRAL CONDENSATE PUMP AND ACCESSORIES.
6. SOUND BLOWERS SHALL BE LIMITED TO 46 dBA ON HIGH SPEED.
7. PURCHASE AND INSTALL UNITS WITH WASHABLE FILTERS.
8. INSTALL IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES AND RECOMMENDATIONS.
9. USE ONLY MANUFACTURER APPROVED FITTINGS, CABLES AND ACCESSORIES AS INDICATED IN THE IOM.
10. FIELD COORDINATE INSTALLATION OF CEILING MOUNTED CASSETTE UNITS WITH GC. UNITS SHALL BE INSTALLED IN LOCATIONS IDENTIFIED BY TOLL BOOTH MANUFACTURER.
11. INDOOR AND OUTDOOR UNIT SHALL POWER SEPARATELY.

EXHAUST FAN SCHEDULE

TAG	LOCATION	CFM	E.S.P. (IN. WG)	FAN		MOTOR					MANUFACTURER AND MODEL NUMBER (BASIS OF DESIGN)	NOTES
				TYPE	DRIVE	RPM	W	V	PH	HZ		
EF-1	MENS	110	0.125	FC	DIRECT	950	24	120	1	60	GREENHECK SP-A110-VG	SEE NOTES
EF-2	WOMENS	50	0.125	FC	DIRECT	950	22	120	1	60	GREENHECK SP-A50-VG	SEE NOTES
EF-3	CUST. STOR.	50	0.125	FC	DIRECT	950	22	120	1	60	GREENHECK SP-A50-VG	SEE NOTES
EF-2	CUST. MAINT.	50	0.125	FC	DIRECT	950	22	120	1	60	GREENHECK SP-A50-VG	SEE NOTES

NOTES:
1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.
2. COORDINATE GRILLE WITH OWNER AND ARCHITECT.
3. PURCHASE AND INSTALL ALUMINUM WALL WITH BUILT-IN BIRD SCREEN.
4. PURCHASE AND INSTALL WASHABLE FILTERS.
5. PURCHASE AND INSTALL ROUND DISCHARGE DUCT CONNECTOR.
6. COMBINATION SWITCH SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR.
7. FAN SHALL BE UL LISTED.
8. ALL FANS SHALL HAVE AMCA CERTIFIED RATINGS.

DIFFUSER, GRILLE & REGISTER SCHEDULE

TAG	SELECTION RANGE (CFM)	NECK SIZE (IN.)	OVERALL SIZE (IN.)	SERVICE	MOUNTING	ACCESSORIES	MANUFACTURER AND MODEL NUMBER (BASIS OF DESIGN)	NC OR AIR PRESSURE DROP NOT TO EXCEED	NOTES
S1	0-150	6X6	12X12	SUPPLY	SURFACE	-	NAILOR 6200-1V	NC-30	SEE NOTES 1,2&4
S2	151-400	8X8	24X24	SUPPLY	SURFACE	-	NAILOR 6200-1V	NC-30	SEE NOTES 1,2&4
R1	0-400	8X8	24X24	RETURN	SURFACE	-	NAILOR 5145H	NC-30	SEE NOTES 1&3

NOTES:
1. REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.
2. PURCHASE AND INSTALL SQUARE TO ROUND TRANSITION COLLAR. COORDINATE BORDER TYPE AND STYLE WITH ARCHITECT AND OWNER.
3. PURCHASE AND INSTALL ALUMINUM 0° DEFLECTION GRILLE WITH 3/4" BLADE SPACING.
4. SEE DRAWINGS FOR FLOW PATTERN SELECTIONS.

ELECTRIC UNIT HEATER SCHEDULE

TAG	LOCATION	INPUT (kW)	OUTPUT (MBH)	AIR			MOTOR	ELECTRIC SERVICE					MANUFACTURER AND MODEL NUMBER (BASIS OF DESIGN)	NOTES
				CFM	EAT (°F)	LAT (°F)	RPM	HP	V	PH	HZ	AMPS		
EUH-1	MECH ROOM	5	17	350	60	105	1600	1/100	208	3	60	24	QMARK - MUH05-81	SEE NOTES

NOTES:
1 REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.
2 PURCHASE AND INSTALL WALL MOUNTING BRACKET AND INTEGRAL THERMOSTAT.

UNIT HEATER SCHEDULE (HOT WATER)

TAG	LOCATION	TYPE	OUTPUT MBH	AIR			MOTOR		ELECTRIC SERVICE			WATER				MANUFACTURER AND MODEL NUMBER (BASIS OF DESIGN)	NOTES
				CFM	EAT (°F)	LAT (°F)	RPM	HP	HZ	V	PH	GPM	EWT (°F)	LWT (°F)	P.D. (FT.)		
HUH-1	TOLL BOOTH	HW	45.6	1120	60	97	1550	1/12	60	115	1	4.7	180	160	0.6	MODINE - HC 63	SEE NOTES

NOTES:
1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.
2. INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. RECOMMENDED CLEARANCE REQUIREMENTS SHALL BE PROVIDE DURING INSTALLATION.
3. PURCHASE AND INSTALL THROW AWAY FILTERS.
4. PURCHASE AND INSTALL THERMAL CUT-OUTS.
5. PURCHASE AND INSTALL BUILT-IN TWO STAGE SNAP ACTION THERMOSTAT. THERMOSTAT SHALL NOT BE ACCESSIBLE BY END USER

Filename: M-601-02.dwg

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	CMF		Checked	PJD	
Drawn	CMF		In Charge of	AAH	

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

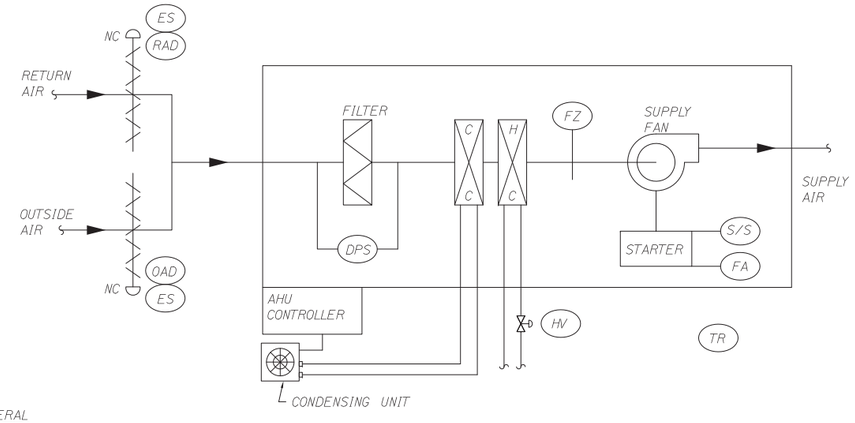
MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

MECHANICAL SCHEDULES – SHEET 2 OF 2

SHEET NUMBER: M-602

CONTRACT: 2019.04



GENERAL

1. AHU-1 SHALL BE INSTALLED WITH FACTORY CONTROL TO CONTROL CONDENSING UNIT AND COOLING COIL OPERATION. FACTORY CONTROLS SHALL BE ABLE TO ACCOMPLISH THE SEQUENCE INDICATED HEREIN ELSE THE CONTRACTOR SHALL PROVIDE A CONTROLLER TO ACCOMPLISH THE SEQUENCE.
2. THE FACILITY IS A 24/7 OPERATION THEREFORE IT IS ALWAYS OCCUPIED.
3. ON A CALL FOR BACKUP POWER, THE AHU AND ASSOCIATED CONDENSING UNIT SHALL MAINTAIN A 3 SECOND (ADJ) DELAYED START PRIOR TO ENERGIZING.

OPERATION

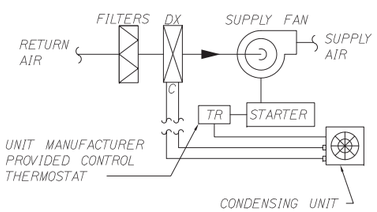
1. OAD AND RAD SHALL OPEN, AHU-1 FAN SHALL ENERGIZE AND RUN CONTINUOUSLY.
2. UPON A CALL FOR COOLING VIA ROOM MOUNTED THERMOSTAT (TR), AHU SHALL CYCLE THE AIR COOLED CONDENSING UNIT TO MAINTAIN A SPACE TEMPERATURE OF 75°F (ADJ).
3. IF OAT IS BELOW 60°F (ADJ) AND UPON A CALL FOR HEATING, HV SHALL MODULATE TO MAINTAIN A ROOM AIR TEMPERATURE OF 70°F (ADJ.). IF OAT IS ABOVE 60°F (ADJ), HV SHALL BE CLOSED.

ALARMS

1. IF AHU-1 MOTOR FAILS, THE CONDENSING UNIT SHALL DE-ENERGIZE, HV SHALL FULLY CLOSE, THE OAD AND RAD SHALL CLOSE AND AN ALARM SHALL BE SENT TO THE AHU CONTROLLER.
2. IF DPS INDICATES A DIRTY FILTER AN ALARM SHALL BE SENT TO THE AHU CONTROLLER.
3. IF FZ DETECTS A TEMPERATURE OF 40°F (ADJ) FAN SHALL DE-ENERGIZE, OAD SHALL FULLY CLOSE, RAD SHALL FULLY OPEN, HV SHALL FULLY OPEN, AND AN ALARM SHALL BE SENT TO THE AHU CONTROLLER.

AIR HANDLING UNIT SEQUENCE OF OPERATIONS

SCALE: NTS



DUCTLESS SPLIT SYSTEM AIR CONDITIONING CONTROLS:

GENERAL:

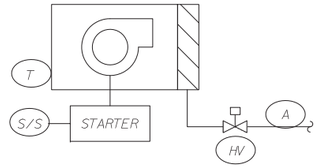
1. UNIT SHALL BE CONTROLLED VIA THE MANUFACTURER'S PACKAGED CONTROL SYSTEM.
2. WIRE AND TEST UNIT MANUFACTURER'S CONTROLS. PER MANUFACTURERS INSTRUCTIONS
3. ON A CALL FOR BACKUP POWER, THE HEAT PUMP AND CONDENSING UNIT SHALL MAINTAIN A 3 SECOND (ADJ) DELAYED START PRIOR TO ENERGIZING.

CONTROL:

1. THE DUCTLESS HEAT PUMP SHALL BE ENERGIZED TO MAINTAIN SPACE SET POINT. THE UNIT SHALL CYCLE EITHER IT'S COOLING OR HEATING CYCLE BASED ON MANUFACTURERS CONTROLS TO MAINTAIN SPACE SETPOINTS.

DUCTLESS HEAT PUMP SEQUENCE OF OPERATIONS

SCALE: NTS



GENERAL:

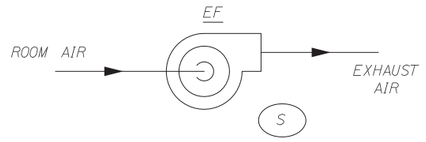
1. THE HEATER SHALL BE CONTROLLED BY A UNIT MOUNTED THERMOSTAT.

SEQUENCE:

1. ON A CALL FOR HEATING FROM THE UNIT MOUNTED THERMOSTAT, SET AT 60°F (ADJ.), THE UNIT SHALL ENERGIZE AND OPEN THE HEATING VALVE (HV). UPON PROOF OF HOT WATER FLOW AS SENSED BY A STRAP ON AQUASTAT SET AT 90°F, THE FAN SHALL BE TURNED ON TO MAINTAIN SPACE TEMPERATURE SETPOINT.
2. THE REVERSE SHALL OCCUR UPON A RISE IN TEMPERATURE

UNIT HEATER (UH) SEQUENCE OF OPERATIONS

SCALE: NTS



MEN/WOMENS RM FAN - SEQUENCE OF OPERATION

GENERAL

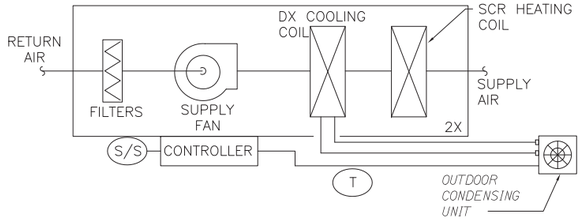
1. TOILET EXHAUST FAN SHALL BE CONTROLLED VIA LIGHT SWITCH AS PROVIDED FOR THE BATHROOM LIGHTING SYSTEM.

FAN CONTROL

1. FAN SHALL RUN CONTINUOUSLY WHEN LIGHT SWITCH IS TURNED ON.

TOILET EXHAUST FAN SEQUENCE OF OPERATIONS

SCALE: NTS



GENERAL

1. THERE ARE TWO INDOOR EVAPORATOR UNITS TO EVERY ONE OUTDOOR AIR-COOLED CONDENSING UNIT. SYSTEM IS DESIGNED FOR FULL REDUNDANCY (LEAD - STANDBY). UNITS SHALL ALTERNATE AS LEAD EVERY 500 HOURS OF RUNTIME.
2. LEAD CRAC UNITS SHALL RUN CONTINUOUSLY AND MAINTAIN COOLING AND HEATING SETPOINTS OF 75°F (ADJ.). UNITS SHALL BE CONTROLLED BY MANUFACTURERS STANDARD FACTORY CONTROL SEQUENCES TO MAINTAIN SETPOINTS.
3. ATC SHALL COORDINATE WITH BUILDING OWNER REGARDING THE PROGRAMMING OF THE CRAC UNITS UTILIZING UNIT CONTROLLER AS INDICATED ON THE SCHEDULES AND INTEGRATE bacNET CONTROLS WITH THE BUILDING CONTROLS FOR MONITORING AND ALARMS.
4. ON A CALL FOR BACKUP POWER, THE COMPUTER ROOM AC UNITS AND CONDENSING UNIT SHALL MAINTAIN A 3 SECOND (ADJ) DELAYED START PRIOR TO ENERGIZING.

CRAC SEQUENCE OF OPERATIONS

SCALE: NTS

Date: Tuesday, March 19, 2019

Filename: M-701-02.dwg

No.	Revision	By	Date

Scale:

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

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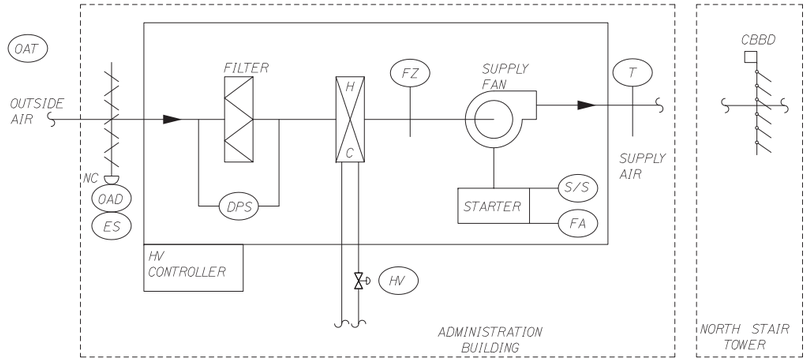
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING
MECHANICAL SEQUENCES OF CONTROL – SHEET 1 OF 2

SHEET NUMBER: M-701

CONTRACT: 2019.04



GENERAL

1. HV SHALL BE INSTALLED WITH FACTORY CONTROLS. FACTORY CONTROLS SHALL BE ABLE TO ACCOMPLISH THE SEQUENCE INDICATED HEREIN ELSE THE CONTRACTOR SHALL PROVIDE A CONTROLLER TO ACCOMPLISH THE SEQUENCE.
2. THE FACILITY IS A 24/7 OPERATION THEREFORE IT IS ALWAYS OCCUPIED.

OPERATION

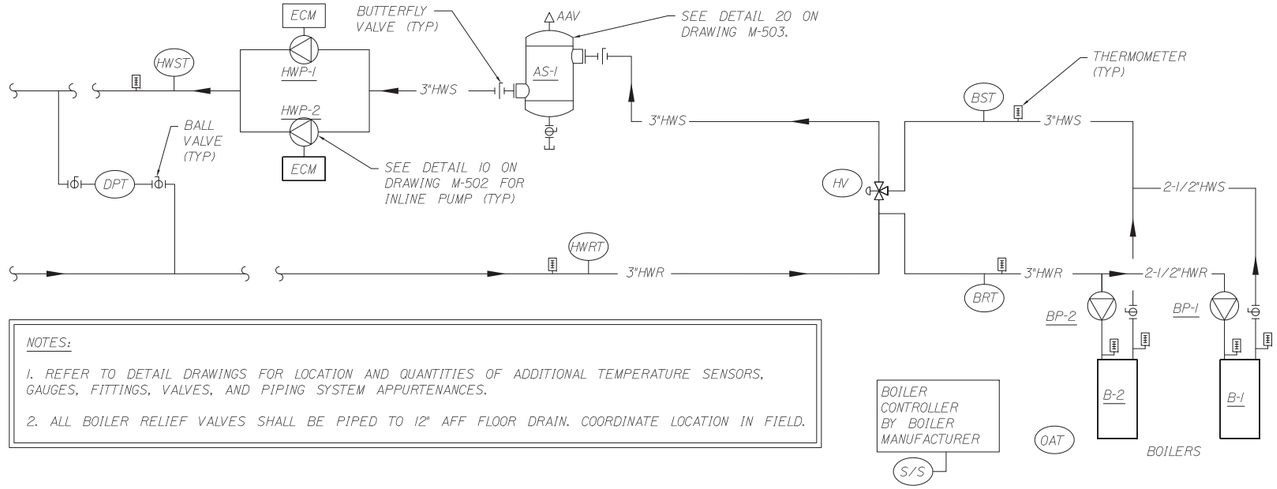
1. HV-1 FAN SHALL ENERGIZE AND RUN CONTINUOUSLY.
2. IF OAT IS BELOW 60°F (ADJ), UPON A CALL FOR HEATING, HV SHALL MODULATE TO MAINTAIN A SUPPLY AIR TEMPERATURE OF 65°F (ADJ.). IF OAT IS ABOVE 60°F (ADJ), HV SHALL BE CLOSED.

ALARMS

1. IF HV MOTOR FAILS, THE HV SHALL FULLY CLOSE, THE OAD SHALL FULLY CLOSE AND AN ALARM SHALL BE SENT TO THE HV CONTROLLER.
2. IF DPS INDICATES A DIRTY FILTER AN ALARM SHALL BE SENT TO THE CONTROLLER.
3. IF FZ DETECTS A TEMPERATURE OF 40°F (ADJ) FAN SHALL DE-ENERGIZE, THE OAD SHALL FULLY CLOSE, HV SHALL FULLY OPEN, AND AN ALARM SHALL BE SENT TO THE MAU CONTROLLER.

HV UNIT SEQUENCE OF CONTROL

SCALE: NTS



NOTES:

1. REFER TO DETAIL DRAWINGS FOR LOCATION AND QUANTITIES OF ADDITIONAL TEMPERATURE SENSORS, GAUGES, FITTINGS, VALVES, AND PIPING SYSTEM APPURTENANCES.
2. ALL BOILER RELIEF VALVES SHALL BE PIPED TO 12" AFF FLOOR DRAIN. COORDINATE LOCATION IN FIELD.

GENERAL

1. BOILERS SHALL BE INSTALLED WITH FACTORY CONTROLS TO INTERLINK BOTH BOILERS AND ACCOMPLISH THE SEQUENCE OF OPERATION INDICATED. BOILER CONTROLLER SHALL BE INSTALLED WITH A BACNET INTERFACE MODULE OR CARD.
2. HWP-1 AND HWP-2 SHALL ALTERNATE AS LEAD/STANDBY PUMPS EVERY 500 HOUR OF RUN TIME.
3. B-1 AND B-2 AND THEIR RESPECTIVE PUMPS (BP-1/BP-2)SHALL ALTERNATE AS LEAD/LAG BOILER EVERY 500 HOUR OF RUN TIME.
4. INSTALL TEMPERATURE SENSORS AND OTHER DEVICES SHOWN AND COORDINATE ALL SENSOR INSTALLATION LOCATIONS.
5. CONTRACTOR SHALL INSTALL AND WIRE ALL BOILER EMERGENCY SHUT-OFF SWITCHES, GAS DETECTION SENSORS AND FIRESTATS (NOT SHOWN) AS REQUIRED PER BUILDING CODE.
6. BOILER CONTROLS SHALL ACTIVATE WHEN THE OUTDOOR AIR (OA) AS SENSED BY THE OA SENSOR IS BELOW 60° F (ADJ.) FOR 2 HOURS.
7. THE BP-1, BP-2, HWP-1, AND HWP-2 BASIS OF DESIGN ARE PROVIDED WITH AN INTELLIGENT ECM MOTOR. IF CONTRACTOR SELECTS ALTERNATIVE PUMP THIS SEQUENCE OF OPERATION SHALL BE ACCOMPLISHED BY UTILIZING VARIABLE FREQUENCY DRIVES.

BOILER SYSTEM

1. THE BOILER SHALL OPERATE BASED ON THE MANUFACTURES SEQUENCE TO MAINTAIN THE SUPPLY WATER TEMPERATURE.
2. CONTROLLER SHALL ENABLE/DISABLE, MONITOR STATUS, AND DISPLAY ALARM SIGNALS FOR FLAME FAILURE AND LOW WATER ALARM.
3. WHEN OUTSIDE SPACE TEMPERATURE IS BELOW 60°F (ADJ.) FOR A PERIOD OF 2 HOURS (ADJ.), THE LEAD BOILER SHALL ENERGIZE AND MAINTAIN A SUPPLY WATER TEMPERATURE SETPOINT AS SENSED BY THE BST SENSOR, THE LEAD BOILER RESPECTIVE BOILER PUMP SHALL ENERGIZE AND RUN CONTINUOUSLY.
4. THE BOILER SUPPLY WATER TEMPERATURE SETPOINT AT SENSOR BST SHALL BE INITIALLY SET TO 190° F (MAXIMUM) AT 0°F OAT AND RESET LINEARLY BY OAT TO A MINIMUM OF 120°F AT 60°F OAT.
5. IF THE LEAD BOILER CAN NOT MAINTAIN BST SETPOINT LAG BOILER AND ITS RESPECTIVE BOILER PUMP SHALL ENERGIZE TO MAINTAIN BST.

HOT WATER SYSTEM CONTROL

1. UPON ENERGIZING OF THE LEAD BOILER, THE LEAD HOT WATER PUMP SHALL ENERGIZE AND MAINTAIN FLOW BASED ON DIFFERENTIAL PRESSURE AS SENSED BY DPT. IF PUMP FAILS, STANDBY PUMP SHALL BE STARTED AND THE CONTROLLER SHALL ALARM.
2. OPERATING SPEED FOR HWP-1/HWP-2 SHALL BE THE LOWEST REQUIRED TO MAINTAIN THE MINIMUM SETPOINT OF THE REMOTE DIFFERENTIAL PRESSURE SENSOR (DPT) LOCATED 3/4 THE DISTANCE BETWEEN THE BOILER AND THE FURTHEST COIL. COORDINATE WITH THE BALANCING CONTRACTOR AND THE ATC TO PROVIDE THE DIFFERENTIAL PRESSURE SETPOINT NEEDED TO GET FULL FLOW TO THE MOST REMOTE COIL (WITH THE COILS CONTROL VALVE NO MORE THAN 100% OPEN).
3. HV SHALL MODULATE TO MAINTAIN HWST 10°F LOWER THAN THE BST AT ALL TIMES.

ALARMS

1. IN ADDITION TO THE ALARMS PREVIOUSLY LISTED, ALL SENSORS AND VARIABLES SHALL BE CAPABLE OF HIGH/LOW ALARM POINTS. AS A MINIMUM, THE FOLLOWING SHALL BE ALARMED AFTER APPROPRIATE TIME DELAYS:
   A. IF ANY PIECE OF EQUIPMENT IS INDICATED AS OFF WHEN IT SHOULD BE ON.
   B. IF HWST IS 10 DEGREES ABOVE OR BELOW THE SET POINT RANGE DURING HEATING CYCLE. IGNORE THIS ALARM IF CYCLE HAS JUST BEEN STARTED WITHIN 15 MINUTES.
   C. IF ANY PIECE OF EQUIPMENT IS ON THAT IS INDICATED AS OFF OR FAILS.
2. ALARM MESSAGES SHALL BE DISPLAYED AT THE LOCAL DDC PANEL AND AT THE CENTRAL BAS CONSOLE AND PRINTER.

HOT WATER BOILER SYSTEM SEQUENCE OF OPERATIONS & FLOW DIAGRAM

SCALE: NTS

Date: Tuesday, March 19, 2019

Filename: M-701-02.dwg

Scale:

Designed by: Stantec

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	CMF		Checked	PJD	
Drawn	CMF		In Charge of	AAH	

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INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

MECHANICAL SEQUENCES OF CONTROL – SHEET 2 OF 2

SHEET NUMBER: M-702

CONTRACT: 2019.04

LEGEND:

DEMOLITION

EXISTING WIRING AND CONDUIT AND/OR EQUIPMENT TO BE REMOVED

POWER

JUNCTION BOX

DUPLEX RECEPTACLE NEMA 5-20R

DOUBLE DUPLEX RECEPTACLE NEMA 5-20R
XX = CIRCUIT DESIGNATION
● = MOUNT 6" ABOVE SINK OR COUNTER
GF = GROUND FAULT CIRCUIT PROTECTION
WP= WEATHERPROOF

20A TWIST LOCK RECEPTACLE - CEILING MOUNTED

SURFACE MOUNTED PANELBOARD

MOTOR

METER

CONTROL PANEL

GROUNDING ELECTRODE CONDUCTOR

GROUND BUS BAR - 2"H x 1/4" THICK x 24"L. MOUNTED 24" AFF WITH 2" SPACE BETWEEN GROUND BUS AND WALL

GENERATOR RUNNING BEACON LIGHT

SWITCH

MANUAL MOTOR STARTER WITH THERMAL OVERLOAD HEATER. -1 POLE UNLESS OTHERWISE NOTED; "P" INDICATES WITH PILOT LIGHT. "2" INDICATES TWO POLE.
INDICATES FLEXIBLE CONDUIT CONNECTOR
(DIAGRAMATICALLY SHOWN, CONTRACTOR SHALL FIELD LOCATE)

NON-FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE
AMPERE RATING SHALL BE 30A MINIMUM AND SIZED PER EQUIPMENT NAMEPLATE
(DIAGRAMATICALLY SHOWN, CONTRACTOR SHALL FIELD LOCATE)

FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE
AMPERE RATING SHALL BE 30A MINIMUM AND SIZED PER EQUIPMENT NAMEPLATE
(DIAGRAMATICALLY SHOWN, CONTRACTOR SHALL FIELD LOCATE)

DIGITAL LOW VOLTAGE DIMMING SWITCH
a = CONTROL DESIGNATION

HARD WIRED MOTION SENSOR SWITCH
a = CONTROL DESIGNATION

LIGHTING

INDOOR LIGHT FIXTURES:

A = FIXTURE TYPE PER LUMINAIRE SCHEDULE

/ = BRANCH CIRCUIT DESIGNATION

a = CONTROL DESIGNATION

TC = FIXTURE CONTROLLED BY DIGITAL ASTRONOMICAL TIME SWITCH

HALF SHADING DENOTES EMERGENCY POWERED

DIGITAL LOW VOLTAGE MOTION SENSOR CEILING MOUNTED
a = CONTROL DESIGNATION

DIGITAL LOW VOLTAGE MOTION SENSOR CORNER MOUNTED
a = CONTROL DESIGNATION

OPEN LOOP DIGITAL LOW VOLTAGE PHOTOSENSOR CEILING MOUNTED TO FACE WINDOW
a = CONTROL DESIGNATION

WEATHERPROOF PHOTOCELL, STUB MOUNTED ON CONDUIT ON THE ROOF FACING NORTH
pc = CONTROL DESIGNATION

SELF-CONTAINED EXIT LIGHT WITH DIRECTIONAL ARROW AS INDICATED ON PLANS, SHADED AREA INDICATES SIGN FACE
/ = BRANCH CIRCUIT DESIGNATION
⊢ = WALL MOUNTED

SEMI-RECESSED, IN GROUND, DIRECTED UPLIGHT
/ = BRANCH CIRCUIT DESIGNATION
J = FIXTURE TYPE PER LUMINAIRE SCHEDULE
pc = CONTROL DESIGNATION

6" RECESSED DOWNLIGHT
/ = BRANCH CIRCUIT DESIGNATION
H = FIXTURE TYPE PER LUMINAIRE SCHEDULE
pc = CONTROL DESIGNATION

REMOTE EMERGENCY BATTERY UNIT
/ = BRANCH CIRCUIT DESIGNATION
G = FIXTURE TYPE PER LUMINAIRE SCHEDULE

LEGEND: (CONTINUED)

CONDUIT

CONDUIT RUN HIDDEN

CONDUIT RUN EXPOSED

CONDUIT TURNING UP

CONDUIT TURNING DOWN

HOMERUN TO PANELBOARD "LPE" CIRCUIT No.'s 1 AND 3 SLASH LINES INDICATE 2#12 & 1#12GND., 3/4"C.. REQUIRED GROUND CONDUCTORS ARE NOT INDICATED. MINIMUM SIZE No. 12AWG AND 3/4" CONDUIT UNLESS NOTED OTHERWISE.

LPE-1,3

FIRE

CM — FIRE ALARM CONTROL MODULE

MM — FIRE ALARM MONITORING MODULE

F — FIRE ALARM ADA COMPATIBLE MANUAL PULL STATION

EH — FIRE ALARM HORN / STROBE

KB — FIRE ALARM KNOX BOX

M — FIRE ALARM MASTERBOX

F — FIRE ALARM WEATHERPROOF EXTERIOR FIRE BEACON

FAA — FIRE ALARM ANNUNCIATOR PANEL

FIRE ALARM ADA COMPATIBLE, WALL MOUNTED STROBE UNIT 15cd

ELECTRICALLY HELD DOOR MAGNET

S — FIRE ALARM SMOKE DETECTOR

FIRE ALARM HEAT DETECTOR

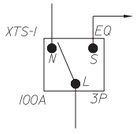
FACP — FIRE ALARM CONTROL PANEL

FIRE ALARM LED INDICATOR

ONE LINE/RISER DIAGRAM

FRAME / TRIP

LOW VOLTAGE AIR OR MOLDED CASE CIRCUIT BREAKER, 3 POLE UNLESS OTHERWISE NOTED.



AUTOMATIC TRANSFER SWITCH:

"N"	- NORMAL OR PREFERRED SOURCE
"S"	- STANDBY OR ALTERNATE SOURCE
"L"	- DENOTES LOAD SIDE
100A	- CONTINUOUS CURRENT RATING
"BP"	- DENOTES BYPASS ISOLATION SWITCH
"LS"	- DENOTES LIFE SAFETY BRANCH
"EQ"	- DENOTES EQUIPMENT BRANCH
"X-RAY"	- DENOTES X-RAY EQUIPMENT BRANCH
"ELEV"	- DENOTES ELEVATOR BRANCH
"LSP"	- DENOTES LIFE SUPPORT BRANCH
"4P"	- DENOTES NUMBER OF POLES
"ATS"	- DENOTES AUTOMATIC TRANSFER SWITCH
"MTS"	- DENOTES MANUAL TRANSFER SWITCH

GENERATOR, RATINGS AND CONNECTIONS AS NOTED

DRAWING LEGEND

/ — NEW WORK NOTES

2 — DRAWING CALLOUT AND NOTE DESIGNATIONS;

LEADERLINES ADDED OR REMOVED AS NEEDED

/ — CONDUIT WIRE TABLE OR DEMO NOTES

GENERAL NOTES:

1. ALL SURFACE MOUNTED PANELS AND PANELBOARDS ON THE INSIDE OF THE EXTERIOR WALLS ABOVE GRADE OR IN OTHER LOCATIONS CONSIDERED AS DAMP, SHALL BE MOUNTED SO AS TO MAINTAIN A 1/4" AIR SPACE BETWEEN THE ENCLOSURE AND THE WALL.
2. LIGHTING FIXTURES SHALL BE MOUNTED ACCORDING TO THE MOUNTING HEIGHT GIVEN ON THE DRAWINGS, WITH THE DISTANCE BEING MEASURED FROM THE BOTTOM OF THE LIGHTING FIXTURE TO THE FINISHED FLOOR.
3. IN GENERAL CONDUIT ROUTING FOR EQUIPMENT AND DEVICES IS NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ROUTING ALL CONDUITS WHICH SHALL INCLUDE CONDUITS SHOWN ON ONE-LINE AND RISER DIAGRAMS AND HOME-RUNS SHOWN ON PLAN DRAWINGS. REFER TO SPECIFICATIONS FOR MATERIALS AND INSTALLATION REQUIREMENTS.

ABBREVIATIONS:

AFG	ABOVE FINISHED GRADE
AM	AMMETER
AS	AMMETER SWITCH
AUX	AUXILIARY
BKR	BREAKER
CO	CUT OFF SWITCH
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CS	CONTROL SWITCH
CT	CURRENT TRANSFORMER
DAS	DATA ACQUISITION SYSTEM
ENC	IP TO VIDEO ENCODER
ER	ELECTRIC RESET
ETSW	ETHERNET SWITCH
FACP	FIRE ALARM CONTROL PANEL
FVNR	FULL VOLTAGE NON-REVERSING
FPP	FIBER PATCH PANEL
GALV	GALVANIZED
GEC	GROUNDING ELECTRODE CONDUCTOR
GND	GROUNDING
G	GROUND FAULT CIRCUIT INTERRUPTER
HV	HIGH VOLTAGE
IA	INTRUSION ALARM
I	INTERCOM
IT	INFORMATION TECHNOLOGY
K	KIRK INTERLOCK
KW	KILOWATT
ISW	ISOLATING SWITCH
LBS	LOAD BREAK SWITCH
LF	LINEAR FOOT
LP	LIGHTING PANEL
LV	LOW VOLTAGE
MAX	MAXIMUM
MIN	MINIMUM
MV	MEDIUM VOLTAGE
MMU	MICRO-PROCESSOR METERING UNIT
OHT	OVERHEAD TELEPHONE/COMMUNICATIONS
PAA	PERSONNEL ACKNOWLEDGMENT ALARM
PP	POWER PANEL
PRI	FIBER OPTIC CABLE PAIR 1
PT OR VT	POTENTIAL OR VOLTAGE TRANSFORMER
PC	PROGRAMMABLE CONTROLLER
PV	PHOTOVOLTAIC
PVC	POLYVINYLCHLORIDE
PQM	POWER QUALITY METER
RECEP	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
RVNR	REDUCED VOLTAGE NON-REVERSING
T	TIME METER
TP	TRAP PRIMER
TYP	TYPICAL
VAR	VARMETER (ON LINE)
VM	VOLTMETER
VS	VOLTMETER SWITCH
WHM	WATTHOUR METER
WHDM	WATTHOUR DEMAND METER
WM	WATTMETER
WP	WEATHER PROOF

COMMUNICATION

DATA COMMUNICATION CONNECTION

TELEPHONE/DATA CONNECTION

C — RECESSED JUNCTION BOX FOR SECURITY CARD READER

D — JUNCTION BOX WITH 15 FT. SPOOL OF CAT 6 CABLE ABOVE THE CEILING

LIGHTNING PROTECTION AND GROUNDING

ROOF MOUNTED AIR TERMINAL

3/4"X10' COPPER CLAD GROUND ROD

PROJECT NOTES:

1. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, TOOLS AND ALL OTHER EQUIPMENT REQUIRED TO INSTALL THE WORK SHOWN AND SPECIFIED. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ITEMS NECESSARY FOR A COMPLETE ELECTRICAL SYSTEM AND PLACE ALL EQUIPMENT IN PROPER WORKING ORDER. ALL MATERIALS SHALL BE NEW AND SHALL BEAR THE REGISTERED UL MARK. ALL WORK SHALL CONFORM WITH THE NATIONAL FIRE PROTECTION ASSOCIATION STANDARD 70, THE NATIONAL ELECTRICAL CODE (NEC), AND ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES. CONTRACTOR SHALL SECURE ALL PERMITS AND PAY THE FEES REQUIRED TO CARRY OUT HIS WORK. THE CONTRACTOR SHALL FURNISH COPIES OF ALL CERTIFICATES AND PERMITS TO THE ENGINEER.
2. THE DRAWINGS AND SPECIFICATIONS INDICATE THE INTENT OF THE DESIGN AND SHALL BE CONSIDERED AS DIAGRAMMATIC ONLY. EXACT LOCATIONS FOR ALL OUTLETS AND EQUIPMENT SHALL BE DETERMINED AT THE SITE AS WORK PROGRESSES. ALL DIMENSIONS AND CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE. ALL FINAL WORK SHALL BE DOCUMENTED ON AS BUILT RECORD DRAWINGS.
3. ALL PIPING, CONDUITS AND EQUIPMENT OF ALL TRADES SHALL BE PROPERLY COORDINATED AND SET TO MAINTAIN THE CLEARANCES REQUIRED BY ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES.
4. ALL CONDUITS SHALL BE TERMINATED SO AS TO PERMIT NEAT CONNECTIONS TO MOTORS AND OTHER EQUIPMENT.
5. NO CONDUIT SMALLER THAN 3/4" PIPE SIZE NOR WIRE SMALLER THAN #12 AWG SHALL BE USED UNLESS OTHERWISE NOTED.
6. CONDUIT AND/OR WIRE (NOT SHOWN) INTERCONNECTING THE LIGHTING FIXTURES AND/OR RECEPTACLES SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR AND SHALL BE:
   a. 3/4" (MIN.) CONDUIT RUN
      1. EXPOSED IN UNFINISHED AREAS.
      2. CONCEALED ABOVE HUNG CEILINGS AND IN WALLS IN FINISHED AREAS.
   b. No. 12 CU. WIRE (MIN.) TYPE THWN, NUMBER OF WIRES AS REQUIRED.
   c. SEE SPECIFICATION FOR USE OF TYPE MC CABLE.
7. ALL CONDUIT RUNS CROSSING EXPANSION JOINTS SHALL HAVE EXPANSION OR EXPANSION AND DEFLECTION TYPE FITTINGS AS REQUIRED. VERIFY EXISTING JOINTS BY FIELD MEASUREMENTS.
8. ALL CONDUITS SHALL HAVE PROPERLY SIZED EQUIPMENT GROUNDING CONDUCTORS.
9. ALL RACEWAYS AND WIRING SHALL BE RUN CONCEALED IN ALL FINISHED SPACES UNLESS OTHERWISE NOTED.
10. SPACES FOR LOAD CENTERS, PANELBOARDS AND SWITCHBOARDS SHALL INCLUDE AN EXCLUSIVELY DEDICATED SPACE EXTENDING FROM THE FLOOR TO THE STRUCTURAL CEILING WITH A WIDTH AND DEPTH THAT OF THE EQUIPMENT, INCLUDING ANY ADDITIONAL SPACE DESCRIBED IN SECTION 110.26 OF THE NEC. NO PIPING, DUCTS OR EQUIPMENT FOREIGN TO THE ELECTRICAL EQUIPMENT OR ARCHITECTURAL APPURTENANCES SHALL BE PERMITTED TO BE INSTALLED IN, ENTER OR PASS THROUGH SUCH SPACE.
11. ALL CONDUIT AND EQUIPMENT SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRICAL CODE.
12. THE WIRING DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUIT REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED. THE BASIC SEQUENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS AND/OR SPECIFICATIONS.
13. PANELBOARDS SHALL BE MOUNTED SO THAT THE DISTANCE FROM THE TOP CIRCUIT BREAKER OPERATING HANDLE TO THE FLOOR SHALL NOT EXCEED 6'-6".
14. ALL RECEPTACLES INSTALLED IN UNFINISHED AREAS SHALL BE GFI TYPE, MOUNTED 4'-0" ABOVE FINISHED FLOOR.
15. EXIT SIGNS AND EMERGENCY LIGHTING UNITS SHALL BE UNSWITCHED.
16. ALL CIRCUITS SHALL HAVE THEIR OWN NEUTRAL CONDUCTOR. COMMON NEUTRALS WILL NOT BE ALLOWED.
17. RECEPTACLES, SWITCHES, LIGHTING FIXTURES, SMOKE DETECTORS, ETC. INDICATE QUANTITY, EXACT LOCATIONS OF ALL DEVICES SHALL BE DETERMINED IN THE FIELD.
18. CONTRACTOR SHALL FURNISH AND INSTALL ARC-FLASH HAZARD WARNING LABELS AND AVAILABLE FAULT CURRENT VALUES. REFER TO SPECIFICATIONS FOR REQUIREMENTS.

Date: Tuesday, March 19, 2019

Filename: E-001.dwg

Scale:

Designed by: Stantec

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	TJM		Checked	BDS	
Drawn	TJM		In Charge of	BDS	

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING
ELECTRICAL LEGEND, ABBREVIATIONS AND GENERAL NOTES

SHEET NUMBER: E-001

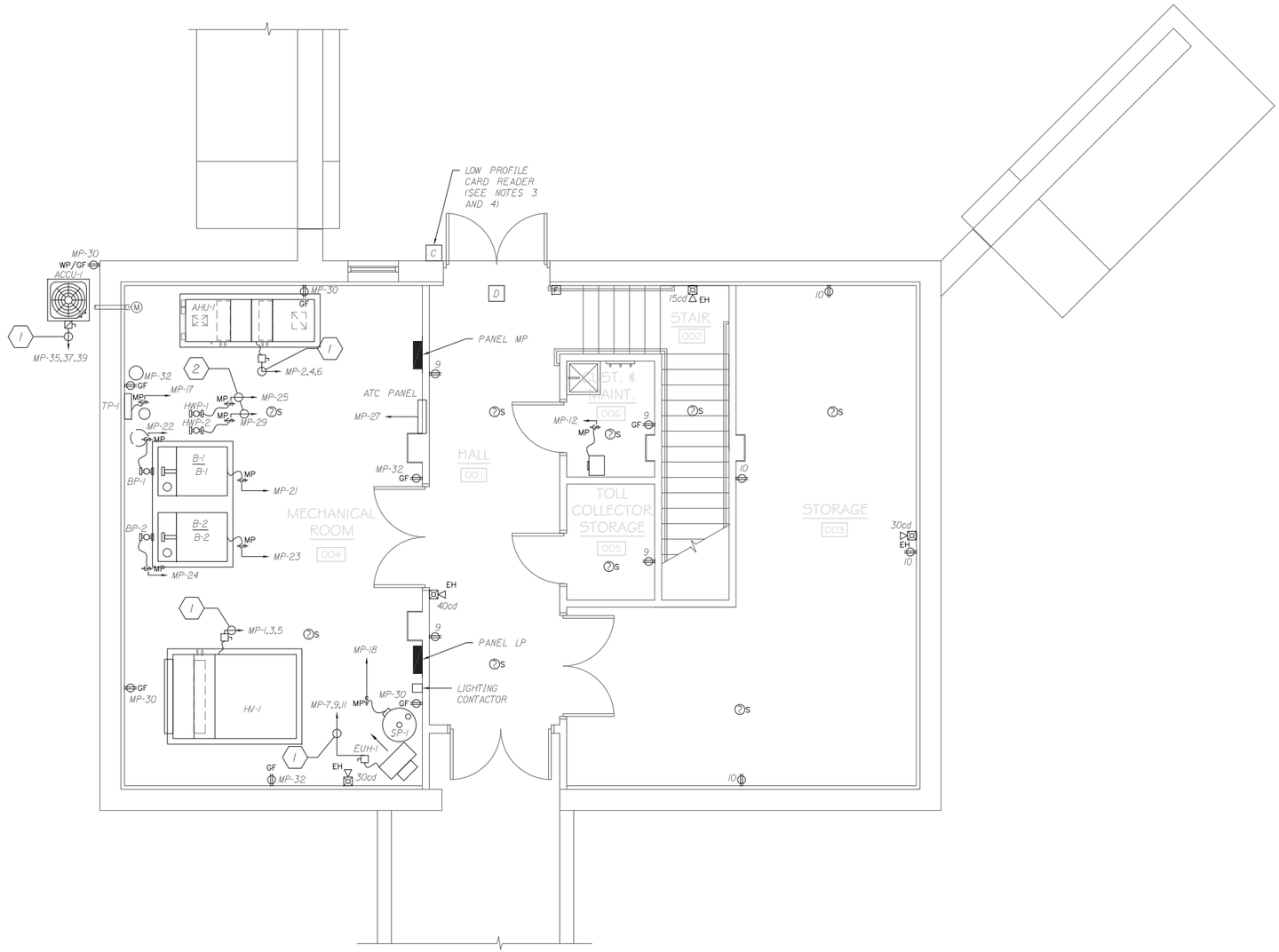
CONTRACT: 2019.04

Date: Tuesday, March 19, 2019

CONDUIT AND WIRE SCHEDULE FOR ELECTRICAL FLOOR PLANS (COPPER CONDUCTORS)		
FEED TAG ⬡	CONDUCTORS	RACEWAY SIZE
⬡1	3#12 & 1#12 GND	3/4"
⬡2	2#10 & 1#10 GND	3/4"
⬡3	2#8 & 1#8 GND	3/4"
⬡4	4#10 & 1#10 GND	3/4"

NOTES:

1. CONNECT ALL CIRCUITS TO PANEL HP UNLESS OTHERWISE NOTED. FURNISH AND INSTALL DEDICATED CIRCUITS WITH NO SHARED NEUTRALS. ALL 120V, 20A CIRCUITS TO BE 2#12, 1#12 GND, 3/4"C UNLESS OTHERWISE NOTED.
2. FURNISH AND INSTALL 3/4" CONDUIT SLEEVE IN WALL FROM EACH TEL/DATA JACK TO THE CEILING SPACE. INSTALL (2) CAT 6 CABLE FROM EACH JACK TO THE IT RACK IN THE COMPUTER ROOM. INSTALL PUSH-ON PVC BUSHING ON STUB-UP TO PROTECT CABLES.
3. FURNISH AND INSTALL 3/4" CONDUIT BETWEEN JUNCTION BOX FOR CARD READER AND CEILING JUNCTION BOX FOR DOOR. PROVIDE 3/4" CONDUIT BETWEEN CEILING JUNCTION BOX AND SECURITY PANEL IN THE COMPUTER ROOM. FURNISH AND INSTALL ACCESS CONTROL CABLE (TAPPAN MODEL H9160I-I) PER MTA REQUIREMENTS. COORDINATE LOCATION OF SECURITY PANEL WITH RESIDENT.
4. SEE PRODUCT DATA SHEETS IN CONTRACT SPECIFICATIONS FOR LOW PROFILE CARD READER PRODUCT REQUIREMENTS.



BASEMENT FLOOR PLAN

1/4" = 1'-0"

Filename: E-101-02.dwg

Scale: 1/4"=1'-0" (0, 4", 8")

Designed by: Stantec

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	TJM		Checked	BDS	
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INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

ELECTRICAL BASEMENT FLOOR PLAN

SHEET NUMBER: E-101

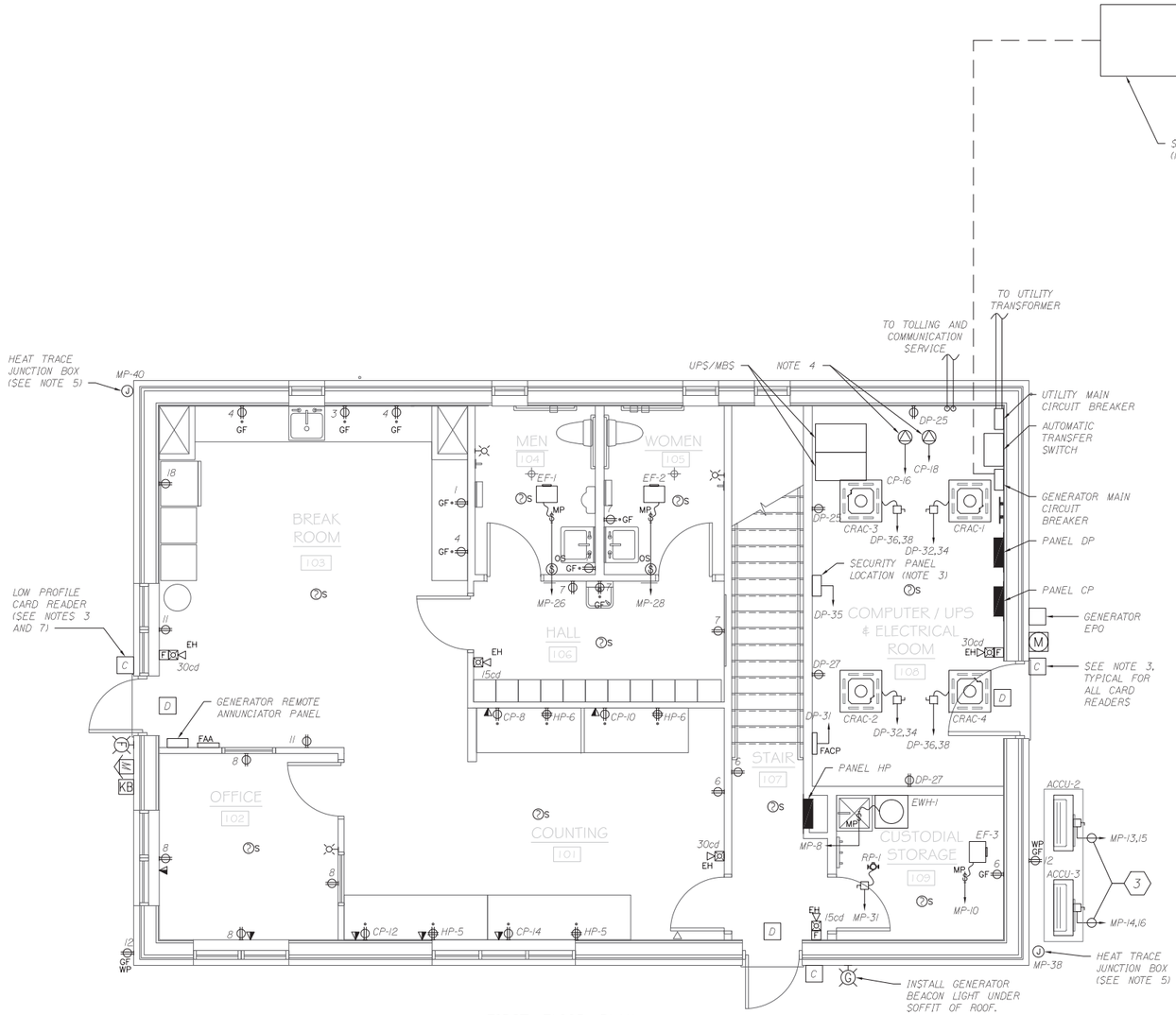
CONTRACT: 2019.04

Date: Tuesday, March 19, 2019

CONDUIT AND WIRE SCHEDULE FOR ELECTRICAL FLOOR PLANS (COPPER CONDUCTORS)		
FEED TAG ⬡	CONDUCTORS	RACEWAY SIZE
⬡1	3#12 & 1#12 GND	3/4"
⬡2	2#10 & 1#10 GND	3/4"
⬡3	2#8 & 1#8 GND	3/4"
⬡4	4#10 & 1#10 GND	3/4"

NOTES:

1. CONNECT ALL CIRCUITS TO PANEL HP UNLESS OTHERWISE NOTED. REFER TO SHEET E-102 FOR LOCATION. FURNISH AND INSTALL DEDICATED CIRCUITS WITH NO SHARED NEUTRALS. ALL 120V, 20A CIRCUITS TO BE 2#12, 1#12 GND, 3/4"C UNLESS OTHERWISE NOTED.
2. FURNISH AND INSTALL 3/4" CONDUIT SLEEVE IN WALL FROM EACH TEL/DATA JACK TO THE CEILING SPACE. INSTALL (2) CAT 6 CABLE FROM EACH JACK TO THE IT RACK IN THE COMPUTER ROOM. INSTALL PUSH-ON PVC BUSHING ON STUB-UP TO PROTECT CABLES.
3. FURNISH AND INSTALL 3/4" CONDUIT BETWEEN JUNCTION BOX FOR CARD READER AND CEILING JUNCTION BOX FOR DOOR. PROVIDE 3/4" CONDUIT BETWEEN CEILING JUNCTION BOX AND SECURITY PANEL IN THE COMPUTER ROOM. FURNISH AND INSTALL ACCESS CONTROL CABLE (TAPPAN MODEL H91601-1) PER MTA REQUIREMENTS. COORDINATE LOCATION OF SECURITY PANEL WITH RESIDENT.
4. COORDINATE LOCATION OF UPS/MBS AND CEILING MOUNTED RECEPTACLES WITH RESIDENT ENGINEER.
5. FURNISH AND INSTALL A HEAT TRACE SYSTEM ALONG ALL GUTTERS AND DOWN SPOUTS. PROVIDE TWO HEAT TRACE CIRCUITS AND WIRE TO THE INDICATED CIRCUIT NUMBER VIA JUNCTION BOXES AS SHOWN. COORDINATE LOCATION WITH RESIDENT AND INSTALL SYSTEM PER MANUFACTURER REQUIREMENTS.
6. LOCATION OF GENERATOR IS SHOWN FOR DIAGRAMMATIC PURPOSES. REFER TO SITE PLAN FOR EXACT LOCATION.
7. SEE PRODUCT DATA SHEETS IN CONTRACT SPECIFICATIONS FOR LOW PROFILE CARD READER PRODUCT REQUIREMENTS.



FIRST FLOOR PLAN

1/4" = 1'-0"

Filename: E-101-02.dwg

Scale: 1/4"=1'-0" (0, 4', 8')

Designed by: Stantec

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	TJM		Checked	BDS	
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INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

ELECTRICAL FIRST FLOOR PLAN

SHEET NUMBER: E-102

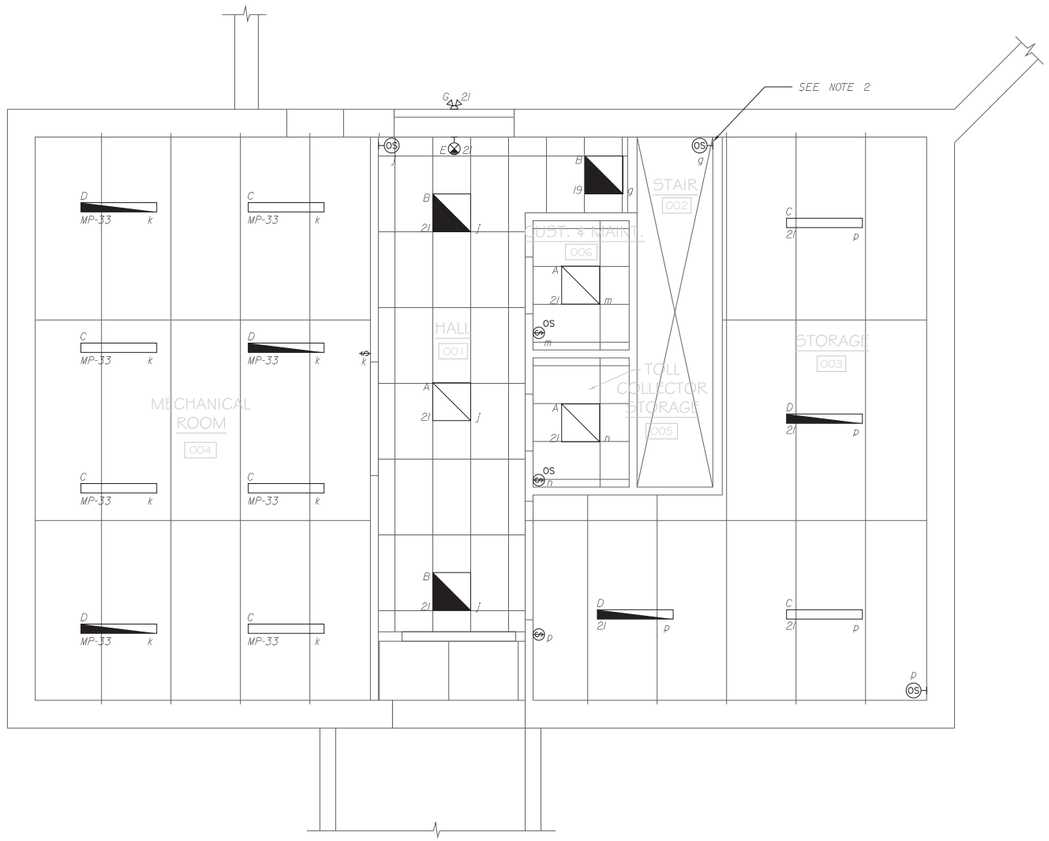
CONTRACT: 2019.04

Date: Tuesday, March 19, 2019

NOTES:

1. CONNECT ALL CIRCUITS TO PANEL HP UNLESS OTHERWISE NOTED. FURNISH AND INSTALL DEDICATED CIRCUITS WITH NO SHARED NEUTRALS. 120V, 20A CIRCUITS TO BE 2#12, 1#12 GND, 3/4"C.

2. TIE LIGHTING CONTROLS TOGETHER WITH OTHER FIRST FLOOR LIGHTING CONTROLS DESIGNATED 'g' ON SHEET E-103.



BASEMENT FLOOR PLAN

1/4" = 1'-0"

Filename: E-103-04.dwg

Scale: 1/4"=1'-0" 0 4' 8'

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

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INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

LIGHTING BASEMENT FLOOR PLAN

SHEET NUMBER: E-103

CONTRACT: 2019.04

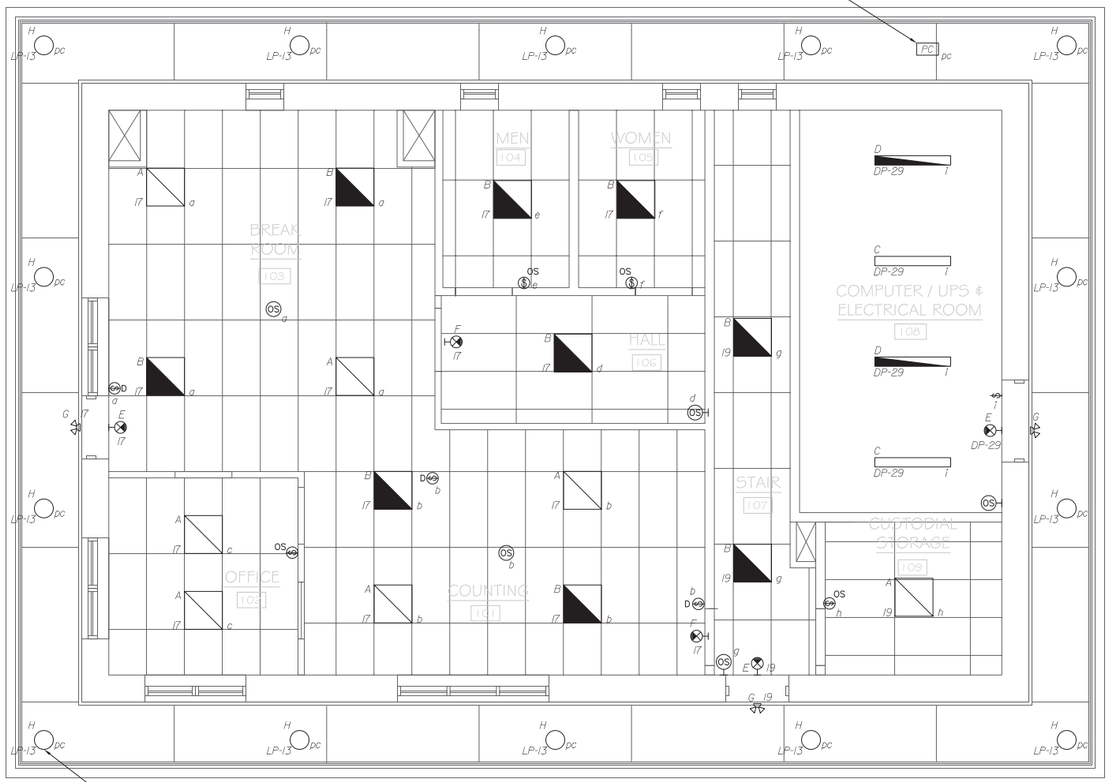
Date: Tuesday, March 19, 2019

NOTES:

1. CONNECT ALL CIRCUITS TO PANEL HP UNLESS OTHERWISE NOTED. FURNISH AND INSTALL DEDICATED CIRCUITS WITH NO SHARED NEUTRALS. 120V, 20A CIRCUITS TO BE 2#12, 1#12 GND, 3/4"C.

2. CONTROL EXTERNAL LIGHTS VIA THE WEATHERPROOF PHOTOCELL MOUNTED TO THE EXTERIOR OF THE BUILDING CONTROLLING A 20A RATED LIGHTING CONTACTOR WITH A HAND-OFF-AUTO SWITCH MOUNTED ON THE WALL ADJACENT TO PANEL LP.

FURNISH AND INSTALL PHOTOCELL FOR CONTROL OF THE LIGHTING CONTACTOR IN THE SOFFIT CENTERED BETWEEN LIGHT FIXTURES. COORDINATE WITH THE RESIDENT ENGINEER FOR EXACT LOCATION.



FIRST FLOOR PLAN

1/4" = 1'-0"

Filename: E-103-04.dwg

Scale: 1/4"=1'-0" (0, 4', 8')

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
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INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

LIGHTING FIRST FLOOR PLAN

SHEET NUMBER: E-104

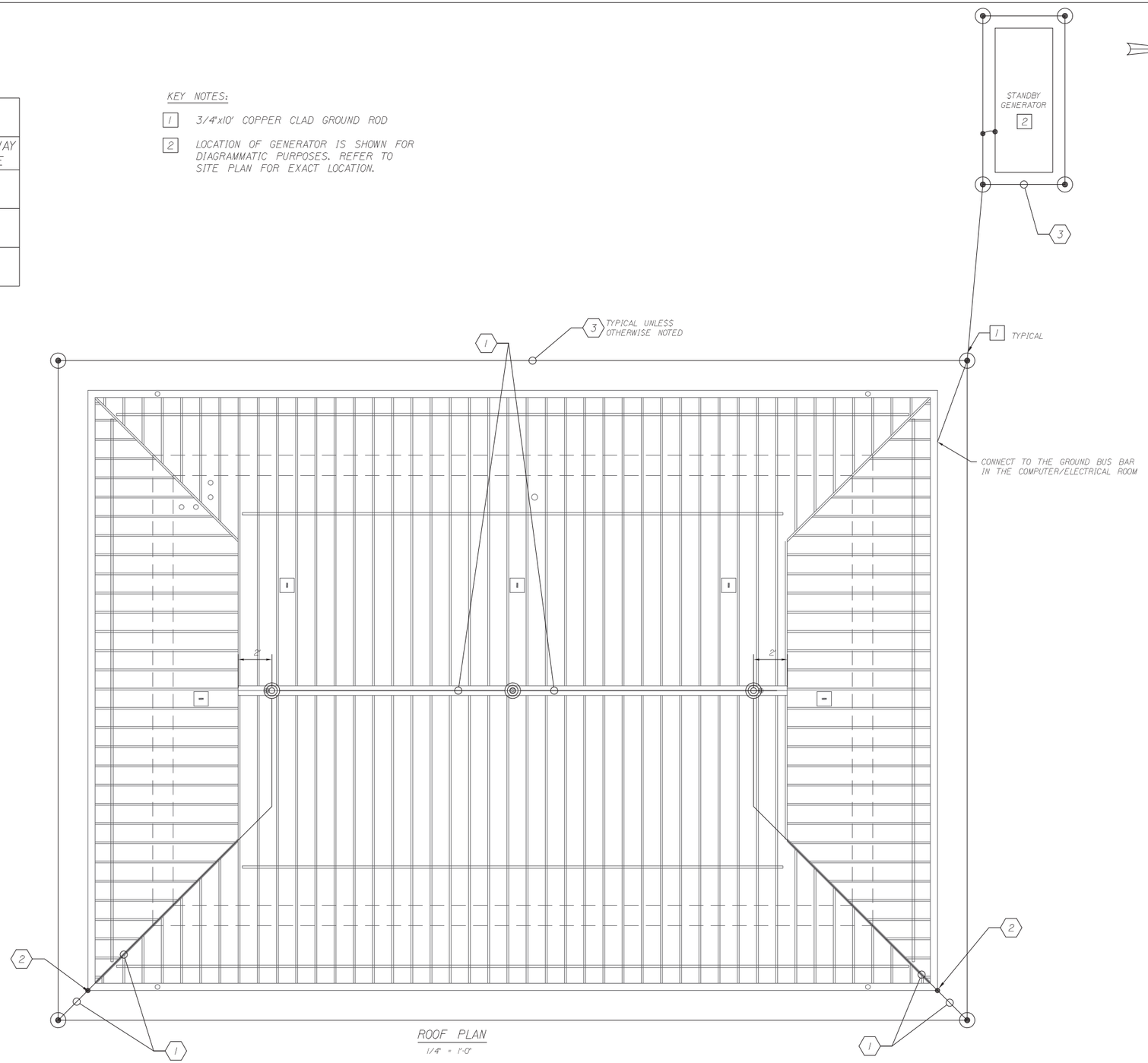
CONTRACT: 2019.04

Date: Tuesday, March 19, 2019

CONDUIT AND WIRE SCHEDULE (COPPER CONDUCTORS)		
FEED TAG ⬡	CONDUCTORS	RACEWAY SIZE
⬡1	#2 BARE COPPER	NONE
⬡2	#2 BARE COPPER RUN INSIDE SCHEDULE 80 PVC CONDUIT DOWN EXTERIOR OF WALL (NO ROOF PENETRATION)	1"
⬡3	#4/0 BARE COPPER DIRECT BURIED	NONE

KEY NOTES:

1. 3/4"x10' COPPER CLAD GROUND ROD
2. LOCATION OF GENERATOR IS SHOWN FOR DIAGRAMMATIC PURPOSES. REFER TO SITE PLAN FOR EXACT LOCATION.



ROOF PLAN
1/4" = 1'-0"

Scale: 1/4"=1'-0" (0, 4', 8')

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

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Drawn	TJM		In Charge of	BDS	

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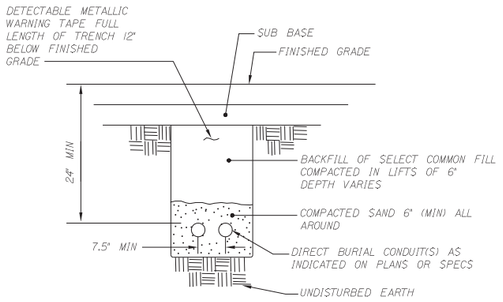
MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING
LIGHTNING PROTECTION AND GROUNDING PLAN

SHEET NUMBER: E-105

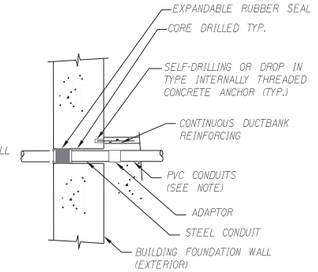
CONTRACT: 2019.04

Filename: E-105.dwg



DIRECT BURIED CONDUIT

NOT TO SCALE

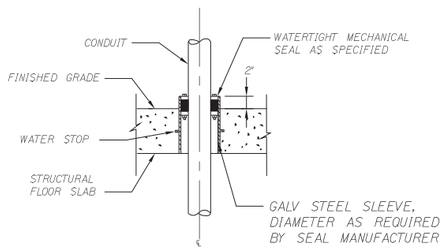


NOTE:

1. WHERE PVC CONDUIT IS USED IN DUCTLINE, CONVERT TO STEEL CONDUIT USING AN APPROPRIATE ADAPTER FITTING WITHIN 3'-0" OF WALL.

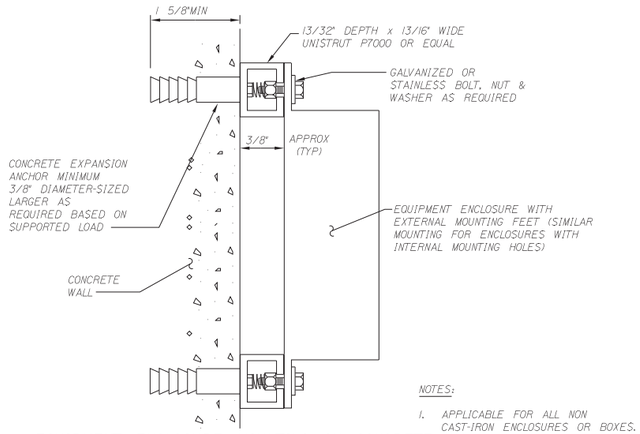
CONDUIT WALL ENTRANCE SEAL

NOT TO SCALE



CONDUIT PENETRATION BETWEEN FLOORS

NOT TO SCALE

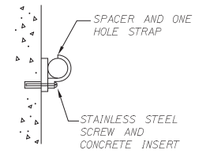


NOTES:

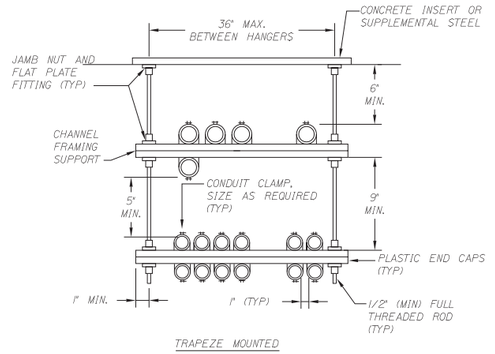
1. APPLICABLE FOR ALL NON CAST-IRON ENCLOSURES OR BOXES.

EQUIPMENT ENCLOSURE MOUNTING ON CONCRETE WALL

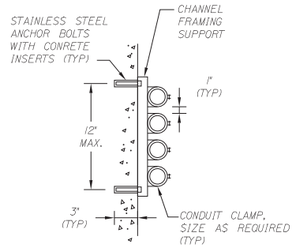
NOT TO SCALE



CEILING OR WALL MOUNTED



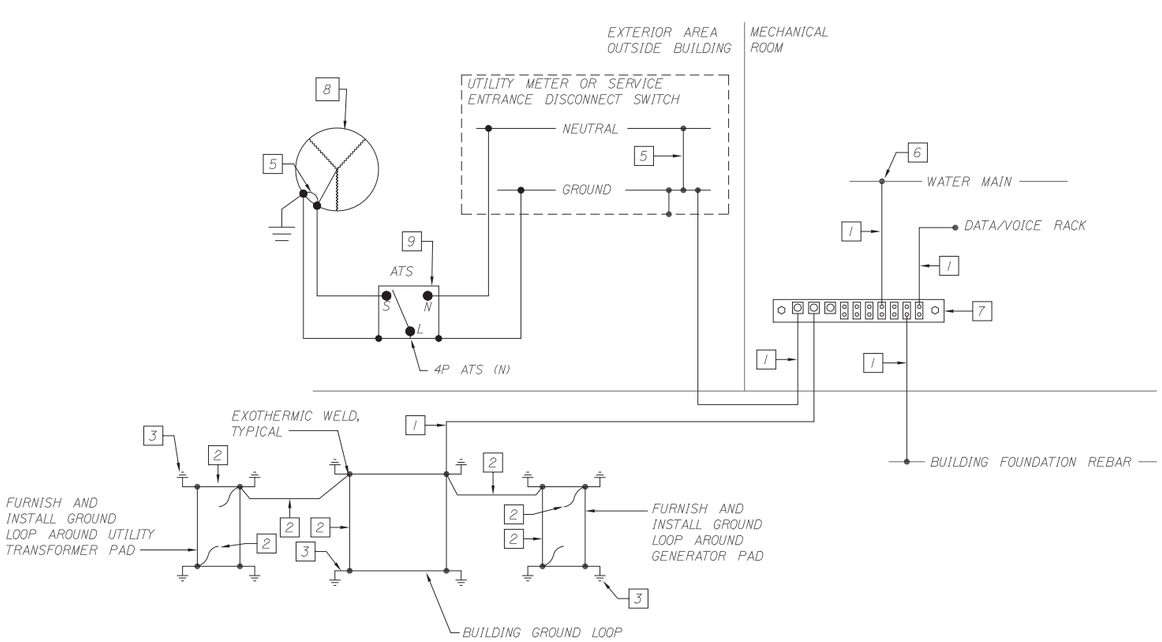
TRAPEZE MOUNTED



WALL MOUNTED

CONDUIT MOUNTING

NOT TO SCALE



SERVICE ENTRANCE GROUNDING DETAIL

NOT TO SCALE

GROUNDING KEY NOTES:

1. FURNISH AND INSTALL #4/0 GROUNDING ELECTRODE CONDUCTOR IN 1"C.
2. FURNISH AND INSTALL #4/0 GROUNDING ELECTRODE CONDUCTOR.
3. FURNISH AND INSTALL UL LISTED 10'-0" x 3/4" COPPER CLAD GROUND ROD. DRIVE 12" BELOW GRADE (TYPICAL).
4. NOT USED.
5. FURNISH AND INSTALL MAIN BONDING JUMPER WITHIN ENCLOSURE.
6. FURNISH AND INSTALL #4/0 BONDING JUMPERS AND GROUNDING CLAMPS FOR MAIN METALLIC WATER SERVICE PIPES AS REQUIRED.
7. FURNISH AND INSTALL WALL MOUNTED COPPER BUS BAR. PROVIDE 4" WIDE X 12" LONG X 1/4" THICK BUS BAR WITH STANDOFF WALL ISOLATION MOUNTS. MOUNT BUS BAR 12" AFF. SEE BUS BAR MOUNTING DETAIL ON THIS DRAWING.
8. STANDBY GENERATOR SHALL BE SOLIDLY GROUNDED AS SEPARATELY DERIVED SYSTEM. BOND GENERATOR NEUTRAL TO GROUND AND TO GROUND RING.
9. ATS SHALL BE 4 POLE TYPE WITH SWITCHED NEUTRAL TO ISOLATE STANDBY POWER SYSTEM FROM UTILITY SERVICE GROUNDED CONDUCTOR.

Filename: E-501.dwg

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	TJM		Checked	BDS	
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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

ELECTRICAL DETAILS

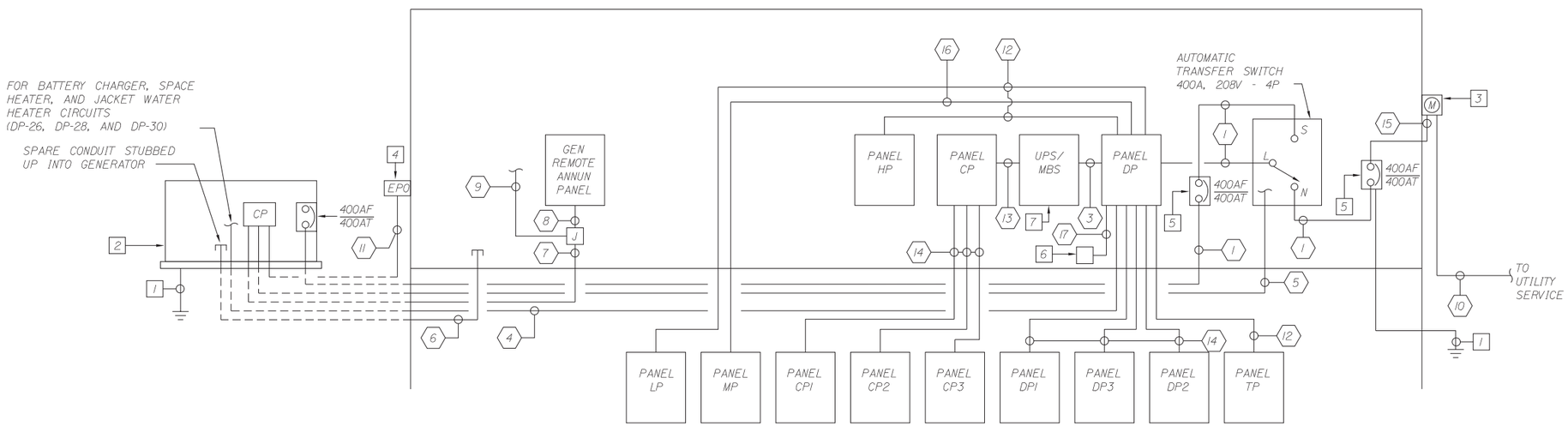
SHEET NUMBER: E-501

CONTRACT: 2019.04

Date: Tuesday, March 19, 2019

CONDUIT AND WIRE SCHEDULE FOR POWER RISER DIAGRAM (COPPER CONDUCTORS)

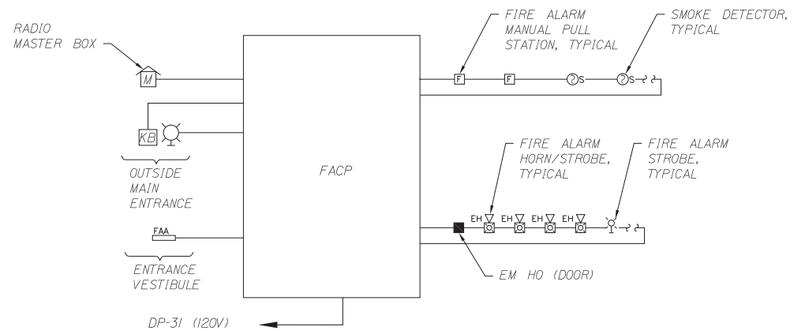
FEED TAG	CONDUCTORS	RACEWAY SIZE
1	4#250KCM & 1#3 GND IN EACH OF (2) CONDUITS	(2) 3"
2	NOT USED	NA
3	4#1 & 1#6 GND	2"
4	8#10 & 1#8 GND	1 1/2"
5	4#10 (GENERATOR START WIRING)	1"
6	SPARE CONDUIT WITH PULL STRING	2"
7	GENERATOR ANNUNICIATOR WIRING ((2) BELDEN 8471 CABLES & 2#12 PER MANUFACTURER'S REQUIREMENTS) AND GENERATOR REMOTE STATUS (GENERATOR RUN AND COMMON FAILURE) WIRING (8#10 (2) SETS ACTIVE, (2) SETS SPARE))	2"
8	GENERATOR ANNUNICIATOR WIRING ((2) BELDEN 8471 CABLES & 2#12 PER MANUFACTURER'S REQUIREMENTS)	1"
9	GENERATOR REMOTE STATUS (GENERATOR RUN AND COMMON FAILURE) WIRING (8#10 (2) SETS ACTIVE, (2) SETS SPARE) TO BAS SYSTEM PANEL	1"
10	8#350KCM	(3) 4" (2 SPARE)
11	4#12 & 1#12 GND	1"
12	4#1, 1#8 GND	2"
13	4#1, 1#6 GND, 1#6 ISOLATED GROUND	1 1/2"
14	SEE SHEET T-26 FOR CONDUIT AND WIRE SIZING	
15	4#250KCM & 1#1/0 GND IN EACH OF (2) CONDUITS	(2) 3"
16	4#1/0 & 1#6 GND	1 1/2"
17	SIZE AND QUANTITY PER SPD MANUFACTURER REQUIREMENTS	1"



POWER RISER DIAGRAM
NOT TO SCALE

POWER RISER DIAGRAM KEY NOTES:

1. FURNISH AND INSTALL (1)#4/0 IN 1"C TO BUILDING GROUND LOOP.
2. FURNISH AND INSTALL 105KW/130KVA, 208/120V, 3Ø, 4W DIESEL STANDBY GENERATOR. PROVIDE CONCRETE REINFORCED PAD AND GROUNDING FOR GENERATOR.
3. FURNISH AND INSTALL CLASS 320 SECONDARY METER SOCKET IN ACCORDANCE WITH UTILITY (CMP) REQUIREMENTS. CONFIRM AND COORDINATE EXACT REQUIREMENTS AND LOCATION WITH CMP PRIOR TO PURCHASE AND INSTALLATION.
4. FURNISH AND INSTALL EMERGENCY POWER OFF PUSHBUTTON IN WEATHERPROOF BOX. INSTALL ON SIDE OF BUILDING 25 FEET FROM GENERATOR.
5. FURNISH AND INSTALL ENCLOSED CIRCUIT BREAKER IN NEMA 1 ENCLOSURE. UTILITY MAIN CIRCUIT BREAKER SHALL BE SERVICE ENTRANCE RATED. CIRCUIT BREAKER SHALL BE 22KAIC MINIMUM.
6. SURGE PROTECTION DEVICE (SPD) SHALL BE UL 1449, 3RD EDITION, TYPE 1 LISTED, AND SHALL CONTAIN THERMALLY PROTECTED METAL OXIDE VARISTORS (MOV), WITH A MINIMUM SURGE CURRENT CAPACITY OF 100KA PER PHASE (L-N PLUS L-G) AND 50KA PER MODE (L-N, L-G, L-L AND N-G). SPDS SHALL BE INCLUDE A SURGE COUNTER AND SHALL BE AS MANUFACTURED BY LEA INTERNATIONAL INC - SP SERIES, CURRENT TECHNOLOGY - CGP SERIES, OR APPROVED EQUAL.
7. MTA SHALL FURNISH A 20KVA UPS AND MAINTENANCE BYPASS SWITCH FOR INSTALLATION BY THE CONTRACTOR. COORDINATE WIRING REQUIREMENTS WITH THE RESIDENT AND PER MANUFACTURERS REQUIREMENTS.



FIRE ALARM RISER DIAGRAM
NOT TO SCALE

FIRE ALARM RISER NOTES:

1. FOR LEGEND, GENERAL NOTES AND ABBREVIATIONS, SEE DRAWING E-001.
2. REFER TO THE FLOOR PLANS FOR EXACT LOCATIONS AND QUANTITIES OF ALL DEVICES. FURNISH AND INSTALL ALL WIRING IN ACCORDANCE WITH THE MANUFACTURER'S WIRING DIAGRAMS AND SHOP DRAWINGS. RUN ALL WIRING IN 3/4" MINIMUM SIZE CONDUIT UNLESS OTHERWISE NOTED.
3. ALL WIRING AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND NFPA 72. DEVICE LOCATIONS SHOWN ON THE PLANS SHALL BE COORDINATED WITH OTHER TRADES. ROUTE ALL WIRING TO THE DEVICES AND EQUIPMENT SHOWN ON THE PLANS AND TO FURNISH AND INSTALL ALL NECESSARY WIRING, RACEWAY, PULL BOXES AND ACCESSORIES/MODULES TO MAKE COMPLETE AND OPERATIONAL SYSTEMS.
4. ALL CONDUIT AND WIRE ROUTING SHOWN IS DIAGRAMMATIC. COORDINATE ALL ELECTRIC WORK, CONDUIT AND WIRE ROUTING WITH HVAC EQUIPMENT, DUCTWORK, PLUMBING AND STRUCTURAL ELEMENTS.
5. COORDINATE ALL FIRE ALARM SYSTEM REQUIREMENTS, REPORTING AND DEVICE LOCATIONS WITH THE LOCAL FIRE DEPARTMENT PRIOR TO PROCUREMENT AND INSTALLATION OF EQUIPMENT.

Filename: E-601.dwg

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	TJM		Checked	BDS	
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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

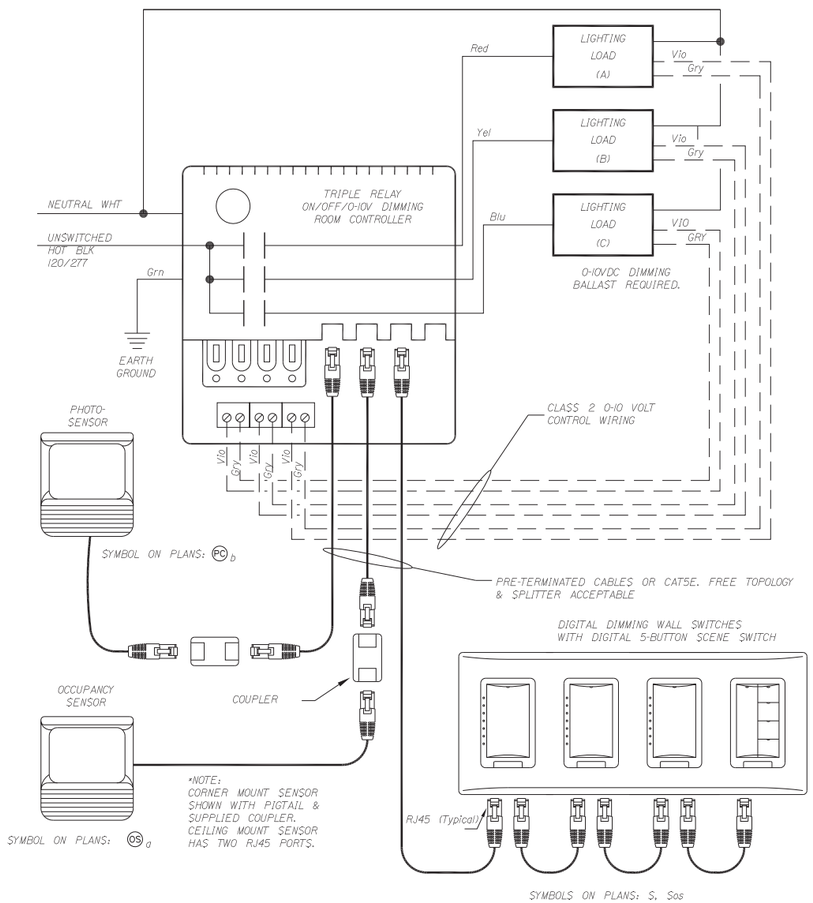
RISER DIAGRAMS

SHEET NUMBER: E-601

CONTRACT: 2019.04

Date: Tuesday, March 19, 2019

TRIPLE RELAY
0-10V DIMMING WIRING DIAGRAM



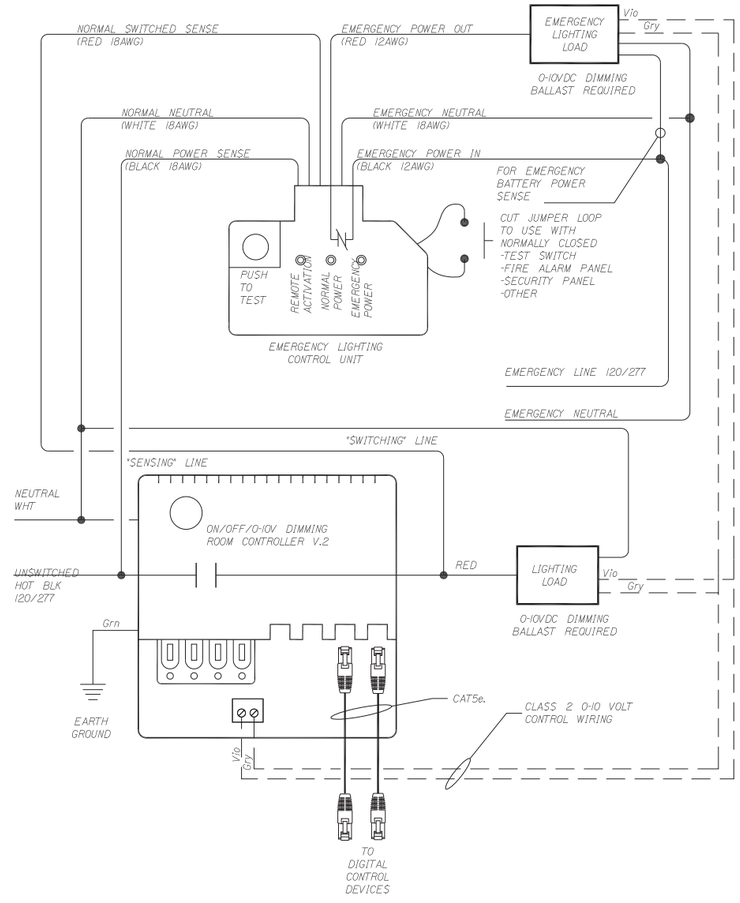
SEQUENCE OF OPERATION:

MULTI-LEVEL AUTOMATIC-ON/AUTOMATIC-OFF OPERATION. LOAD (A), (B) & (C) DEFAULTS ON AT OCCUPANCY; ALL RELAYS TURN OFF AUTOMATICALLY AFTER 20 MINUTES. ROOM CONTROLLERS SHALL SUPPORT UP TO 64 LOADS AND 48 DEVICES PER DLM LOCAL NETWORK.

AT SYSTEM STARTUP, DEFAULT DIMMING PARAMETERS ARE ESTABLISHED INCLUDING: LEVELS FOR PRESETS 1-4; FADE TIMES; AND FADE AND RAMP RATES (MAX 13%). DIMMING AND SYSTEM PARAMETERS SHALL BE CUSTOMIZED.

DIMMING WIRING SCHEMATIC
NOT TO SCALE

ENHANCED ROOM CONTROLLER (V.2)
WITH EMERGENCY BYPASS



SEQUENCE OF OPERATION:

UPON THE LOSS OF NORMAL POWER, THE EMERGENCY LIGHTING CONTROL UNIT WILL BYPASS THE ROOM CONTROLLER AND FORCE THE EMERGENCY FIXTURES ON. THE ROOM CONTROLLER WILL FORCE THE DIMMED EMERGENCY FIXTURE TO 100%. THE EMERGENCY LIGHTING CONTROL UNIT IS UL924 LISTED.

EMERGENCY BYPASS WIRING SCHEMATIC
NOT TO SCALE

Filename: E-602.dwg

Scale:

Designed by: Stantec

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	TJM		Checked	BDS	
Drawn	TJM		In Charge of	BDS	

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING

LIGHTING CONTROL WIRING DIAGRAM

SHEET NUMBER: E-602

CONTRACT: 2019.04

Date: Tuesday, March 19, 2019

PANEL: DP

LOCATION: COMPUTER/UPS ELECTRICAL ROOM | FEEDER BRANCH: NORMAL | DESCRIPTION: MAIN DISTRIBUTION PANEL
SERVICE - 120V/208V, 3PH, 4W + G | BUS CAPACITY: 400A | ENCLOSURE: NEMA-1
AIC RATING: 22000 A | MAIN O.C. RATING: 400A MCB | MOUNTING: SURFACE

CKT	LOAD DESCRIPTION	VA - A	VA-B	VA -C	CB	PH	CB	VA - A	VA-B	VA -C	LOAD DESCRIPTION	CKT
1	PANEL HP	4900			100/3	A	100/3	6667			UPS FEED	2
3			3700			B			6667		(20 kVA)	4
5				3200		C				6667		6
7	PANEL DP1	3200			60/3	A	60/3	3200			PANEL DP2	8
9			2700			B			2700			10
11				3100		C				3100		12
13	PANEL TP	1200			60/3	A	60/3	700			PANEL DP3	14
15			1500			B			700			16
17				0		C				700		18
19	PANEL MP	11800			150/3	A	100/3	6000			PANEL LP	20
21			9200			B			6800			22
23				10100		C				5900		24
25	COMPUTER ROOM RECEPS.	360			20/1	A	20/1	1000			GENERATOR SPACE HEATER	26
27	COMPUTER ROOM RECEPS		360		20/1	B	20/1		1000		GENERATOR JACKET HEATER	28
29	COMPUTER ROOM LIGHTS			168	20/1	C	20/1			1000	GENERATOR BATTERY CHARGER	30
31	FIRE ALARM	1000			20/1	A	20/2	60			CRAC-1, CRAC-2	32
33	SECURITY		300		20/1	B			60			34
35	SPARE				20/1	C	20/2			0	CRAC-3, CRAC-4	36
37	SPARE				20/1	A		0			(REDUNDANT STANDBY UNITS)	38
39	SPARE				20/1	B	20/1				SPARE	40
41	SPARE				20/1	C	20/1				SPARE	42
	SUBTOTALS (VA)	22460	17760	16568				17627	17927	17367		

CONNECTED TOTALS	KVA	AMPS
PHASE-A	40.1	334.1
PHASE-B	35.7	297.4
PHASE-C	33.9	282.8

TOTAL CONNECTED: 109.71-KVA 304.7-A
TOTAL DEMAND: 114.52-KVA 318.1-A

DEMAND TYPE	CONNECTED LOAD (VA)
MISC.	85701
LIGHTING	19228
RECEPTACLE	3360
HVAC	1420

NOTES:
1. PROVIDE "HACR" RATED TYPE BREAKERS FOR MECHANICAL MOTOR LOADS SUCH AS EXHAUST FANS
2. PROVIDE GFCI BREAKERS FOR THE FOLLOWING CIRCUITS:

PANEL: HP

LOCATION: FIRST FLOOR | FEEDER BRANCH: NORMAL | DESCRIPTION: ADMIN BUILDING HOUSE PANEL
SERVICE - 120V/208V, 3PH, 4W + G | BUS CAPACITY: 100A | ENCLOSURE: NEMA-1
AIC RATING: 22000 A | MAIN O.C. RATING: 100A MCB | MOUNTING: FLUSH

CKT	LOAD DESCRIPTION	VA - A	VA-B	VA -C	CB	PH	CB	VA - A	VA-B	VA -C	LOAD DESCRIPTION	CKT
1	MICROWAVE	1500			20/1	A	20/1	1500			REFRIGERATOR	2
3	COFFEE MAKER		1500		20/1	B	20/1		420		RM 103 RECEPTACLES	4
5	RM 101 RECEPTACLES			720	20/1	C	20/1			1260	RM 101, 107, 109 RECEPTACLES	6
7	RM 104, 105, 106 RECEPTACLES	900			20/1	A	20/1	720			RM 102 RECEPTACLES	8
9	RM 001, 005, 006 RECEPTACLES		720		20/1	B	25/1		720		RM 003 RECEPTACLES	10
11	RM 103 RECEPTACLES			360	20/1	C	20/1			360	EXTERIOR RECEPTACLES	12
13	SPARE				20/1	A	20/1				SPARE	14
15	SPARE				20/1	B	20/1				SPARE	16
17	LIGHTING			468	20/1	C	20/1				SPARE	18
19	LIGHTING	308			20/1	A	20/1				SPARE	20
21	LIGHTING		344		20/1	B	20/1				SPARE	22
23	SPARE				20/1	C	20/1				SPARE	24
25	SPARE				20/1	A	20/1				SPARE	26
27	SPARE				20/1	B	20/1				SPARE	28
29	SPARE				20/1	C	20/1				SPARE	30
31	SPARE				20/1	A	20/1				SPARE	32
33	SPARE				20/1	B	20/1				SPARE	34
35	SPARE				20/1	C	20/1				SPARE	36
37	SPARE				20/1	A	20/1				SPARE	38
39	SPARE				20/1	B	20/1				SPARE	40
41	SPARE				20/1	C	20/1				SPARE	42
	SUBTOTALS (VA)	2708	2564	1548				2220	1140	1620		

CONNECTED TOTALS	KVA	AMPS
PHASE-A	4.9	41.1
PHASE-B	3.7	30.9
PHASE-C	3.2	26.4

TOTAL CONNECTED: 11.80-KVA 32.8-A
TOTAL DEMAND: 12.08-KVA 33.6-A

KITCHEN UNITS: 2

DEMAND TYPE	CONNECTED LOAD (VA)
RECEPTACLE	5460
KITCHEN	4500
LIGHTING	1120
MISC.	720

NOTES:
1. PROVIDE "HACR" RATED TYPE BREAKERS FOR MECHANICAL MOTOR LOADS SUCH AS EXHAUST FANS
2. PROVIDE GFCI BREAKERS FOR THE FOLLOWING CIRCUITS:

NOTES:
1. FOR SELECTION OF CIRCUIT BREAKER TYPES, REFER TO SPECIFICATION SECTION 262416.

PANEL: CP

LOCATION: COMPUTER/UPS ELECTRICAL ROOM | FEEDER BRANCH: NORMAL | DESCRIPTION: UPS CLEAN POWER PANEL
SERVICE - 120V/208V, 3PH, 4W + G + IG | BUS CAPACITY: 100A | ENCLOSURE: NEMA-1
AIC RATING: 22000 A | MAIN O.C. RATING: 100A MCB | MOUNTING: SURFACE

CKT	LOAD DESCRIPTION	VA - A	VA-B	VA -C	CB	PH	CB	VA - A	VA-B	VA -C	LOAD DESCRIPTION	CKT
1	PANEL CP1	1000			60/3	A	60/3	1000			PANEL CP2	2
3			1000			B			1000			4
5				1000		C				1000		6
7	PANEL CP3	1000			60/3	A	20/1	180			COUNTING AREA RECEP.	8
9			1000			B	20/1		180		COUNTING AREA RECEP.	10
11				1000		C	20/1			180	COUNTING AREA RECEP.	12
13	SPARE				20/1	A	20/1	180			COUNTING AREA RECEP.	14
15	SPARE				20/1	B	20/1		180		CLG. MTD. TWIST LOCK RECEPT.	16
17	SPARE				20/1	C	20/1			180	CLG. MTD. TWIST LOCK RECEPT.	18
19	SPARE				20/1	A	20/1				SPARE	20
21	SPARE				20/1	B	20/1				SPARE	22
23	SPARE				20/1	C	20/1				SPARE	24
25	SPARE				20/1	A	20/1				SPARE	26
27	SPARE				20/1	B	20/1				SPARE	28
29	SPARE				20/1	C	20/1				SPARE	30
	SUBTOTALS (VA)	2000	2000	2000				1360	1360	1360		

CONNECTED TOTALS	KVA	AMPS
PHASE-A	3.4	28.0
PHASE-B	3.4	28.0
PHASE-C	3.4	28.0

TOTAL CONNECTED: 10.08-KVA 28.0-A
TOTAL DEMAND: 10.08-KVA 28.0-A

DEMAND TYPE	CONNECTED LOAD (VA)
MISC.	9000
RECEPTACLE	1080

NOTES:
1. PROVIDE "HACR" RATED TYPE BREAKERS FOR MECHANICAL MOTOR LOADS SUCH AS EXHAUST FANS
2. PROVIDE GFCI BREAKERS FOR THE FOLLOWING CIRCUITS:

PANEL: TP

LOCATION: TUNNEL | FEEDER BRANCH: NORMAL | DESCRIPTION: TJNNEL ELECTRICAL PANEL
SERVICE - 120V/208V 3PH, 4W + G | BUS CAPACITY: 100A | ENCLOSURE: NEMA-1
AIC RATING: 22000 A | MAIN O.C. RATING: 60A MCB | MOUNTING: SURFACE

CKT	LOAD DESCRIPTION	VA - A	VA-B	VA -C	CB	PH	CB	VA - A	VA-B	VA -C	LOAD DESCRIPTION	CKT
1	LIGHTING	496			20/1	A	20/1	720			SOUTH RECEPTACLES	2
3	SUMP PUMP		828		20/1	B	20/1		720		NORTH RECEPTACLES	4
5	SPARE				20/1	C	20/1				SPARE	6
7	SPARE				20/1	A	20/1				SPARE	8
9	SPARE				20/1	B	20/1				SPARE	10
11	SPARE				20/1	C	20/1				SPARE	12
13	SPARE				20/1	A	20/1				SPARE	14
15	SPARE				20/1	B	20/1				SPARE	16
17	SPARE				20/1	C	20/1				SPARE	18
19	SPARE				20/1	A	20/1				SPARE	20
21	SPARE				20/1	B	20/1				SPARE	22
23	SPARE				20/1	C	20/1				SPARE	24
25	SPARE				20/1	A	20/1				SPARE	26
27	SPARE				20/1	B	20/1				SPARE	28
29	SPARE				20/1	C	20/1				SPARE	30
	SUBTOTALS (VA)	496	828	0				720	720	0		

CONNECTED TOTALS	KVA	AMPS
PHASE-A	1.2	10.1
PHASE-B	1.5	12.9
PHASE-C	0.0	0.0

TOTAL CONNECTED: 2.76-KVA 7.7-A
TOTAL DEMAND: 2.89-KVA 8.0-A

DEMAND TYPE	CONNECTED LOAD (VA)
RECEPTACLE	1440
HVAC	828
LIGHTING	496

Filename: E-603-04.dwg

No.	Revision	By	Date

Scale:
Designed by:
Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
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MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING
ELECTRICAL PANEL SCHEDULES - SHEET 1 OF 2

SHEET NUMBER: E-603
CONTRACT: 2019.04

Date: Tuesday, March 19, 2019

PANEL: MP

LOCATION: MECHANICAL ROOM				FEEDER BRANCH: NORMAL				DESCRIPTION: ADMIN BUILDING MECHANICAL PANEL				
SERVICE - 120V/208V, 3PH, 4W + G				BUS CAPACITY: 150A				ENCLOSURE: NEMA-1				
AIC RATING: 22000 A				MAIN O.C. RATING: 150A MCB				MOUNTING: SURFACE				
CKT	LOAD DESCRIPTION	VA - A	VA-B	VA -C	CB	PH	CB	VA - A	VA-B	VA -C	LOAD DESCRIPTION	CKT
1	HV-1	1080			20/3	A	15/3	540			AHU-1	2
3			1080			B			540			4
5				1080		C				540		6
7	EUH-1	1667			20/3	A	20/1	1650			EWH-1	8
9			1667			B	20/1		22		EF-3	10
11				1667		C	20/1			22	EF-4	12
13	ACCU-2	2132			40/2	A	40/2	0			ACCU-3	14
15			2132			B			0		(REDUNDANT STANDBY UNIT)	16
17	TP-1			40	20/1	C	20/1			805	SP-1	18
19	SPARE				20/1	A	20/1				SPARE	20
21	B-1		335		20/1	B	20/1		667		BP-1	22
23	B-2			335	20/1	C	20/1			667	BP-2	24
25	HWP-1	1840			20/1	A	20/1	24			EF-1	26
27	ATC PANEL		200		20/1	B	20/1		22		EF-2	28
29	HWP-2			1840	20/1	C	20/1			720	MECH ROOM RECEPTACLES	30
31	RP-1	115			20/1	A	20/1	540			MECH ROOM RECEPTACLES	32
33	MECH ROOM LIGHTING		328		20/1	B	20/1				SPARE	34
35	ACCU-1			1200	15/3	C	20/1				SPARE	36
37		1200				A	20/1	1000			HEAT TRACE	38
39			1200			B	20/1		1000		HEAT TRACE	40
41	SPARE				20/1	C	20/1			1200	SP-1	42
	SUBTOTALS (VA)	8034	6942	6162				3754	2251	3954		

CONNECTED TOTALS	KVA	AMPS
PHASE-A	11.8	98.2
PHASE-B	9.2	76.6
PHASE-C	10.1	84.3

TOTAL CONNECTED: 31.10-KVA 86.4-A
TOTAL DEMAND: 32.00-KVA 88.9-A

	DEMAND	CONN-ECTED LOAD (VA)
TYPE	HVAC	25994
	MISC.	2643
	MOTOR	1200
	RECEPTACLE	1260

NOTES:
1 PROVIDE "HACR" RATED TYPE BREAKERS FOR MECHANICAL MOTOR LOADS SUCH AS EXHAUST FANS
2 PROVIDE GFCI BREAKERS FOR THE FOLLOWING CIRCUITS: 38, 40 (30mA)

PANEL: LP

LOCATION: MECHANICAL ROOM				FEEDER BRANCH: NORMAL				DESCRIPTION: ROADWAY LIGHTING PANEL				
SERVICE - 120V/208V, 3PH, 4W + G				BUS CAPACITY: 100A				ENCLOSURE NEMA-1				
AIC RATING: 22000 A				MAIN O.C. RATING: 100A MCB				MOUNTING SURFACE				
CKT	LOAD DESCRIPTION	VA - A	VA-B	VA -C	CB	PH	CB	VA - A	VA-B	VA -C	LOAD DESCRIPTION	CKT
1	ROADWAY LIGHTING	947			20/1	A	20/1	806			ROADWAY LIGHTING	2
3	ROADWAY LIGHTING		947		20/1	B	20/1		806		ROADWAY LIGHTING	4
5	ROADWAY LIGHTING			1088	20/1	C	20/1			532	ROADWAY LIGHTING	6
7	ROADWAY LIGHTING	1346			20/1	A	20/1	939			ROADWAY LIGHTING	8
9	ROADWAY LIGHTING		1362		20/1	B	20/1		939		ROADWAY LIGHTING	10
11	ROADWAY LIGHTING			1080	20/1	C	20/1			806	ROADWAY LIGHTING	12
13	EXTERIOR LIGHTING	340			20/1	A	20/1	399			ROADWAY LIGHTING	14
15	FLAG POLE LIGHTING		120		20/1	B	20/1		399		ROADWAY LIGHTING	16
17	PARKING LOT LIGHTING			133	20/1	C	20/1			399	ROADWAY LIGHTING	18
19	OVERHEIGHT SIGN	100			20/1	A	20/1	814			ROADWAY LIGHTING	20
21	ACCESS ROAD LIGHTING		399		20/1	B	20/1		814		ROADWAY LIGHTING	22
23	ACCESS ROAD LIGHTING			266	20/1	C	20/1			1362	ROADWAY LIGHTING	24
25	ACCESS ROAD LIGHTING	266			20/1	A	20/1				SPARE	26
27	ACCESS GATE		1000		20/1	B	20/1				SPARE	28
29	EXIT 103 RAMP LIGHTING			266	20/1	C	20/1				SPARE	30
	SUBTOTALS (VA)	2999	3828	2833				2958	2958	3099		

CONNECTED TOTALS	KVA	AMPS
PHASE-A	6.0	49.6
PHASE-B	6.8	56.6
PHASE-C	5.9	49.4

TOTAL CONNECTED: 18.68-KVA 51.9-A
TOTAL DEMAND: 23.82-KVA 66.2-A

	DEMAND	CONN-ECTED LOAD (VA)
TYPE	LIGHTING	17575
	MOTOR	1000
	MISC.	100

NOTES:
1. PROVIDE "HACR" RATED TYPE BREAKERS FOR MECHANICAL MOTOR LOADS SUCH AS EXHAUST FANS
2. PROVIDE GFCI BREAKERS FOR THE FOLLOWING CIRCUITS:

NOTES:

1. FOR SELECTION OF CIRCUIT BREAKER TYPES, REFER TO SPECIFICATION SECTION 262416.

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	CONTROLS	LAMP	MINIMUM RATED LIFE (L70)	MOUNTING	LUMENS/ WATT	MINIMUM LUMENS	MANUFACTURER - CATALOG NUMBER
A	2x2 RECESSED SINGLE BASKET VOLUMETRIC TROFFER - 4000K CCT, MIN 90 CRI, 22 GA COLD ROLLED STEEL HOUSING, FINISH TO BE A HIGHLY REFLECTIVE NON-GLARE MATTE WHITE POLYESTER COAT BONDED TO PHOSPHATE-FREE MULTI-STAGE PRETREATED METAL. DLC QUALIFIED. 5 YEAR WARRANTY	VACANCY SENSING, PHOTOCELL, 0-10V DIMMING, TYPICAL UNLESS OTHERWISE INDICATED ON PLANS	LED	50,000 HRS	RECESSED	120	4200	BASIS OF DESIGN - LITHONIA 2VTL2 40L ADP GZI LP840
B	2x2 RECESSED SINGLE BASKET VOLUMETRIC TROFFER - 4000K CCT, MIN 90 CRI, 22 GA COLD ROLLED STEEL HOUSING, FINISH TO BE A HIGHLY REFLECTIVE NON-GLARE MATTE WHITE POLYESTER COAT BONDED TO PHOSPHATE-FREE MULTI-STAGE PRETREATED METAL. DLC QUALIFIED. 1400 LUMEN OUTPUT EMERGENCY BATTERY PACK. 5 YEAR WARRANTY	VACANCY SENSING, PHOTOCELL, 0-10V DIMMING, TYPICAL UNLESS OTHERWISE INDICATED ON PLANS	LED	50,000 HRS	RECESSED	120	4200	BASIS OF DESIGN - LITHONIA 2VTL2 40L ADP GZI LP840 ELI4LSD
C	4' SURFACE MOUNTED AMBIENT LUMINAIRE - 4000K CCT, MIN 80 CRI, DAMP LOCATION RATED. DLC QUALIFIED. 5 YEAR WARRANTY	HARDWIRED SWITCH, OCCUPANCY SENSING	LED	50,000 HRS	SURFACE	130	5500	BASIS OF DESIGN - LITHONIA ZLID L48 5000LM FST MVOLT 40K 80CRI
D	4' SURFACE MOUNTED AMBIENT LUMINAIRE - 4000K CCT, MIN 80 CRI, DAMP LOCATION RATED. DLC QUALIFIED. 1400 LUMEN OUTPUT EMERGENCY BATTERY PACK. 5 YEAR WARRANTY	HARDWIRED SWITCH, OCCUPANCY SENSING	LED	50,000 HRS	SURFACE	130	5500	BASIS OF DESIGN - LITHONIA ZLID L48 5000LM FST MVOLT 40K 80CRI ELSWLCP
E	BATTERY BACK-UP REMOTE CAPABLE EXIT SIGN, 5W, INJECTION MOLDED ENGINEERING-GRADE UV-STABLE THERMOPLASTIC, UL94V-0 FLAME RATING, 90 MINUTE 11 WATT OUTPUT FOR REMOTE EMERGENCY LIGHTING. 5 YEAR WARRANTY	ALWAYS ON	LED	50,000 HRS	UNIVERSAL	NA	NA	BASIS OF DESIGN - JUNO LIGHTING NAVILITE NXPB3RWHHO
F	BATTERY BACK-UP EXIT SIGN, 5W, INJECTION MOLDED, ENGINEERING-GRADE, UV-STABLE THERMOPLASTIC, UL94V-0 FLAME RATING, 5 YEAR WARRANTY	ALWAYS ON	LED	50,000 HRS	UNIVERSAL	NA	NA	BASIS OF DESIGN - JUNO LIGHTING NAVILITE NXPB3RWH
G	REMOTE DUAL HEAD EMERGENCY LIGHT, POWERED BY LUMINAIRE TYPE K, INJECTION MOLDED ENGINEERING-GRADE UV-STABLE THERMOPLASTIC, GASKETED TEMPERED GLASS LENS, SEALED AND GASKETED JUNCTION BOX COVER, WET LOCATION RATED, 5 YEAR WARRANTY	EMERGENCY	(2) 6V 5.4W INCANDESCENT	NA	WALL - ABOVE DOOR	NA	NA	BASIS OF DESIGN - JUNO LIGHTING NAVILITE NRWP2GY6V5
H	6" OUTDOOR WIDE FLOOD DISTRIBUTION DOWNLIGHT - 4000K CCT, MIN 80 CRI, WET LOCATION RATED, ALUMINUM HOUSING, 5 YEAR WARRANTY	BUILDING EXTERIOR PHOTOCELL	LED	50,000 HRS	RECESSED IN ROOF SOFFIT	95	2300	BASIS OF DESIGN - INDY LIGHTING L6 23LM 40K MVOLT G4 80CRI ZT HW CS WET
J	NOT USED	NA	NA	NA	NA	NA	NA	NA
K	4' SURFACE MOUNTED AMBIENT LUMINAIRE - 4000K CCT, MIN 80 CRI, DAMP LOCATION RATED. DLC QUALIFIED. 5 YEAR WARRANTY	HARDWIRED SWITCH, OCCUPANCY SENSING	LED	50,000 HRS	SURFACE	130	4000	BASIS OF DESIGN - LITHONIA ZLID L48 3000LM FST MVOLT 40K 80CRI
L	4' SURFACE MOUNTED AMBIENT LUMINAIRE - 4000K CCT, MIN 80 CRI, DAMP LOCATION RATED. DLC QUALIFIED. 1400 LUMEN OUTPUT EMERGENCY BATTERY PACK. 5 YEAR WARRANTY	HARDWIRED SWITCH, OCCUPANCY SENSING	LED	50,000 HRS	SURFACE	130	4000	BASIS OF DESIGN - LITHONIA ZLID L48 3000LM FST MVOLT 40K 80CRI ELSWLCP

Filename: E-603-04.dwg

Scale:

No.	Revision	By	Date

Designed by: Stantec

CONSULTANT PROJECT MANAGER: LAUREN MEEK, P.E.

	By	Date		By	Date
Designed	TJM		Checked	BDS	
Drawn	TJM		In Charge of	BDS	

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH C. NORWOOD, IV, PE, PTOE

INTERCHANGE 103
ORT CONVERSION
ADMINISTRATION BUILDING
ELECTRICAL PANEL SCHEDULES – SHEET 2 OF 2

SHEET NUMBER: E-604

CONTRACT: 2019.04