

ADDENDUM #4: November 15, 2019

FROM: Allied Engineering, Inc.
160 Veranda Street
Portland, Maine 04103
Telephone: (207) 221-2260

TO: Prospective Bidders, Suppliers, and Other Parties

RE: Addendum No. **Four (4)** to the Bidding Documents for:
NEW MECHANICS GARAGE LITCHFIELD MAINTENANCE FACILITY MILE
MARKER 92.7

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated October 15, 2019. Acknowledge receipt of this Addendum in the space provided on the Proposal Form. Failure to do so may subject Bidder to disqualification.

GENERAL:

1. **DELETE** the term "Architect" throughout the Project specification and Project Drawings. **ADD** in its place the term "Authority".

PROPOSAL:

1. **DELETE** Proposal Sheet SP-49 thru SP-50 in its entirety. **ADD** in its place Proposal Sheets SP-49 thru SP-50 (Revised 11/15/19). Deleted 1.1 RELATED DOCUMENTS in its entirety from each of the specifications in divisions 1 thru 41.

PLANS

1. DRAWING C-402 DETAILS 2: **DELETE** in its entirety and **ADD** in its place the revised sheets attached to this addendum. Drawing C-402 has been updated to clarify the submersible pump and well casing scope relative to the water tank system.
2. DRAWING S-000 STRUCUTRAL NOTES: **DELETE** Masonry Note 9 in its entirety. **ADD** in its place the revised Masonry Note 9 as follows:

"9. *IN 8-INCH WALLS, PROVIDE VERTICAL REINFORCING IN CENTER OF GROUT, AT CENTER OF WALL, CONTINUOUS FULL HEIGHT OF WALL AS FOLLOWS:*

A - (1) #6 VERTICAL IN TWO END CORES AT INTERSECTIONS, WALL ENDS, JAMBS AND EACH SIDE OF EXPANSION OR CONTROL JOINTS.

B - (1) #6 VERTICAL AT 24-INCHES ON-CENTER TYPICAL. (UNLESS NOTED ON PLAN)

C - (1) #6 VERTICAL IN EACH CORE WITHIN 12-INCHES OF WALL CORNERS."

3. DRAWING SB-100 STRUCUTRAL - FOUNDATION PLAN: **DELETE** in its entirety and **ADD** in its place the revised sheet attached to this addendum. Drawing SB-100 has been updated to incorporate masonry wall and footing changes
4. DRAWING SB-100 STRUCUTRAL - FOUNDATION PLAN: Hand markup of potential portal and rod bracing opportunity locations.

5. DRAWING SB-500 STRUCUTRAL - FOUNDATION DETAILS: **DELETE** in its entirety and **ADD** in its place the revised sheet attached to this addendum. Drawing SB-500 has been updated to incorporate masonry wall and footing changes
6. DRAWING SF-500 STRUCUTRAL - DETAILS: **DELETE** in its entirety and **ADD** in its place the revised sheet attached to this addendum. Drawing SF-500 has been updated to incorporate masonry wall changes
7. DRAWING EP-100 POWER AND SYSTEMS PLAN: **DELETE** in its entirety and **ADD** in its place the revised sheet attached to this addendum. Drawing EP-100 has been updated to incorporate mechanical equipment location changes.
8. DRAWING MH-100 MECHANICAL PLANS: **DELETE** in its entirety and **ADD** in its place the revised sheet attached to this addendum. Drawing MH-100 has been updated for MAU-1 and EF-4 unit and ductwork changes.
9. DRAWING MP-100 MECHANICAL PLANS: **DELETE** in its entirety and **ADD** in its place the revised sheet attached to this addendum. Drawing MP-100 has been updated to reflect HWS/R piping changes.
10. DRAWING PP-100 DOMESTIC PIPING PLAN: Refer to Sketch SKP-05: LP gas piping changes associated with MAU-1 relocation.

SPECIFICATIONS

1. Section 203.18 Method of Measurement: **DELETE** Addendum 2 revision in its entirety. **ADD** in its place the following:

~~Allowance No. 1 — \$7,500:~~ Carry in the base bid excavation of 100 cubic yards of petroleum contaminated soil as specified in Specification Section 31 23 16 "Excavation". During the execution of the contract, the Contract Amount shall be adjusted for actual yardage of contaminated soil removal authorized by the Owner in excess or below the quantities depicted above based upon the following:

1. *For quantities in excess of those presented above, the Contract Amount shall be adjusted by the addition of the excess quantity of contaminated soil removed based upon the unit price ~~of \$75~~ per cubic yard offered in the Bid Form.*
2. *For quantities which result in a total excavation below those presented above, the Contract Amount shall be adjusted by a credit to the Owner at the unit price ~~of \$70~~ per cubic yard offered in the Bid Form.*

203.18 Basis of Payment

The following paragraph is added:

Removal and Disposal of Contaminated Soils will be paid for at the Contract unit price per cubic yard which shall be full compensation for all materials, tools, equipment labor, and all incidentals necessary for the completion of the work to the satisfaction of the Owner.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
203.201	Removal and Disposal of Contaminated Soils	Cubic Yard

2. Section 011000 – SUMMARY: **DELETE** Section 1.4.2.2 sub paragraphs 2 and 3 in their entirety. These items were changed to be included in the 203.13 Bid Item and allowance in Addendum 2.

3. Section 014100 – SPECIAL INSPECTIONS: **DELETE** Section in its entirety. These services will not be incorporated. State of Maine Department of Transportation, “Standard Specifications,” Revision December 2014, and any revisions thereto, will apply for all required testing.

CONTRACTOR QUESTIONS/RESPONSES

1. See Attached Question & Response Table

ATTACHMENTS

A. Addendum Summary Document	(3 Pages)
B. Proposal Sheets	(2 Pages)
C. Plan Sheets and Sketches	(9 Pages)
D. Specifications	(0 Pages)
E. Questions/Response Table	(3Pages)
Total Page Count	<u>17 Pages</u>

SPECIAL PROVISIONSSECTION 800Litchfield Maintenance Garage800.1 Description

Division 800 specifies materials, procedures and requirements for the construction of the Maintenance Building, complete with all appurtenances, including any and all associated utilities and services within the limits as shown on the Drawings.

The Contractor shall submit to the Resident for approval a cost breakdown of the major components of work for the Litchfield Maintenance Garage by standard specification Division lines items from 01 to 41. This breakdown will be used as a basis for monthly pay estimates.

A building walk-thru shall occur 30 days prior to anticipated completion of the building. Contractor shall allow the MTA access to the new building to furnish and install necessary equipment for toll operations. This shall be one week prior to the completion of the building.

The Contractor shall ensure and be responsible for the total and complete coordination of all work in the Litchfield Vehicle Maintenance building. The Contractor shall generate coordination drawings for the Mechanical Room of the Building. Coordination drawings shall:

1. Be computer generated.
2. Show a dimensionally accurate representation of all equipment that was approved by the shop drawing process.
3. Show architectural features, structural features, piping, conduit, ductwork and any other items that require coordination which shall be accurately sized.
4. Be submitted to and approved by the MTA prior to the purchasing of any approved equipment.

Through Addendum 4, Contractor shall DELETE section 1.1 RELATED DOCUMENTS from all Division 01 through 41 specification sections referenced in Part III Division 800 Specifications.

800.2 Work Included

The work consists of the following:

1. Construction of an approximate 10,400 square foot pre-engineered building consisting of a 4-bay equipment maintenance garage, 1 drive-thru wash bay, and a 1,975 SF mezzanine.
2. All site work, grading, drainage, paving, septic field, underground power, power utility services and site utilities.

Litchfield Maintenance Garage construction includes, but is not necessarily limited to, the following:

- The work includes all building structure, mechanical, electrical, and plumbing, as well as all site work, grading, pavement, lighting, utilities, and all other work incidental thereto in accordance with the Plans and Specifications.
- Excavating, filling and backfilling for building utilities, services, foundations.

- Construction of reinforced concrete footings, pier, foundation walls, and slabs-on-grade including exterior concrete aprons and entry foundation/slab systems.
- Construction of the Litchfield Maintenance Garage proper, including all equipment and interior and exterior finishes.
- Furnishing and installing plumbing, heating, ventilating, air conditioning, electrical, and telephone, complete with all appurtenances and accessories.
- Coordinating with the utility to provide a transformer and connections.
- Furnishing and installing secondary power conduit and wiring from the nearby utility transformer to the building including trenching and backfilling, conduit, wire, supports, brackets, junction boxes, etc. required to provide all work.

Note: The conduits outside of these limits are paid for separately.

800.3 Method of Measurement

The Litchfield Maintenance Garage will be measured for payment by the lump sum, complete and accepted.

The horizontal pay limit shall within 5 feet of the defined perimeter of the building, entries and concrete aprons. The vertical pay limit for this work shall be above the bottom of footing level or bottom of footing subbase, if required.

All work within this pay limit, including utilities, excavation, backfilling, etc., will be included in this pay item. Work outside of the horizontal pay limit shall be performed under other portions of the Contract documents with the exception of:

- All work associated with the installation of the utility transformer and secondary service line into the building.

The work described above which shall be included in the Litchfield Maintenance Garage pay item.

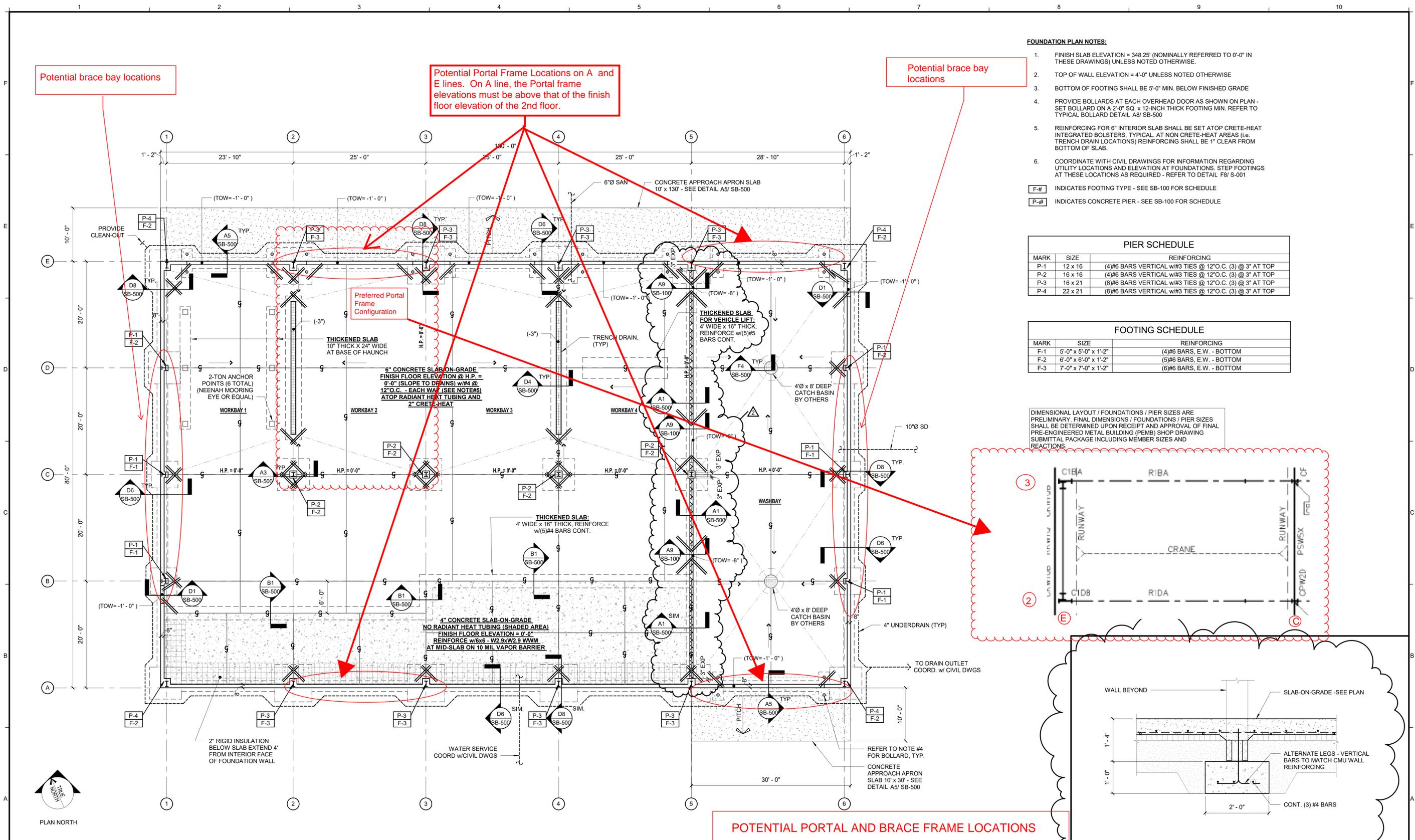
800.4 Basis of Payment

Litchfield Maintenance Garage construction will be paid for at the lump sum price bid which shall be full compensation for the cost of furnishing all materials, equipment, supplies, tools, incidentals, labor and supervision necessary to satisfactorily complete the work in all respects, to the satisfaction of the Resident.

Mobilization shall not be within the lump sum pay limit but will be paid for and meet the specifications of pay item 659.10.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
800.01 Litchfield Maintenance Garage	Lump Sum

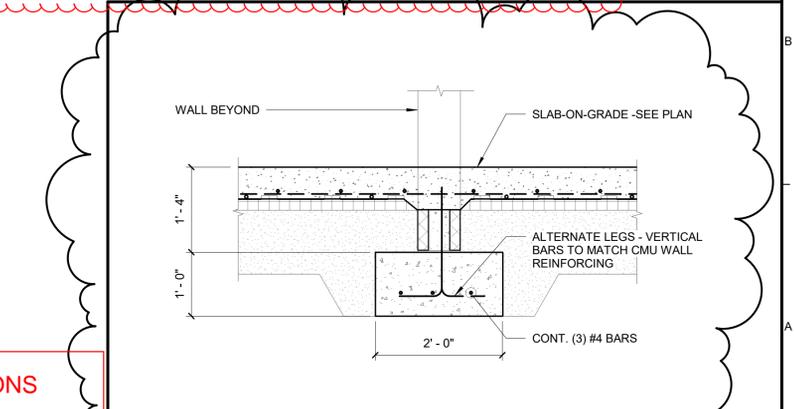
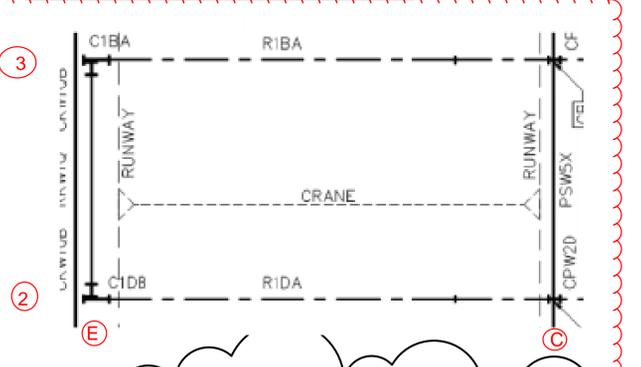


- FOUNDATION PLAN NOTES:**
1. FINISH SLAB ELEVATION = 348.25' (NOMINALLY REFERRED TO 0'-0" IN THESE DRAWINGS) UNLESS NOTED OTHERWISE.
 2. TOP OF WALL ELEVATION = 4'-0" UNLESS NOTED OTHERWISE
 3. BOTTOM OF FOOTING SHALL BE 5'-0" MIN. BELOW FINISHED GRADE
 4. PROVIDE BOLLARDS AT EACH OVERHEAD DOOR AS SHOWN ON PLAN - SET BOLLARD ON A 2'-0" SQ. x 12-INCH THICK FOOTING MIN. REFER TO TYPICAL BOLLARD DETAIL A8/ SB-500
 5. REINFORCING FOR 6" INTERIOR SLAB SHALL BE SET ATOP CRETE-HEAT INTEGRATED BOLSTERS, TYPICAL AT NON CRETE-HEAT AREAS (i.e. TRENCH DRAIN LOCATIONS) REINFORCING SHALL BE 1" CLEAR FROM BOTTOM OF SLAB.
 6. COORDINATE WITH CIVIL DRAWINGS FOR INFORMATION REGARDING UTILITY LOCATIONS AND ELEVATION AT FOUNDATIONS. STEP FOOTINGS AT THESE LOCATIONS AS REQUIRED - REFER TO DETAIL F8/ S-001
- F-# INDICATES FOOTING TYPE - SEE SB-100 FOR SCHEDULE
P-# INDICATES CONCRETE PIER - SEE SB-100 FOR SCHEDULE

PIER SCHEDULE		
MARK	SIZE	REINFORCING
P-1	12 x 16	(4)#6 BARS VERTICAL w/#3 TIES @ 12"O.C. (3) @ 3" AT TOP
P-2	16 x 16	(4)#6 BARS VERTICAL w/#3 TIES @ 12"O.C. (3) @ 3" AT TOP
P-3	16 x 21	(8)#6 BARS VERTICAL w/#3 TIES @ 12"O.C. (3) @ 3" AT TOP
P-4	22 x 21	(8)#6 BARS VERTICAL w/#3 TIES @ 12"O.C. (3) @ 3" AT TOP

FOOTING SCHEDULE		
MARK	SIZE	REINFORCING
F-1	5'-0" x 5'-0" x 1'-2"	(4)#6 BARS, E.W. - BOTTOM
F-2	6'-0" x 6'-0" x 1'-2"	(5)#6 BARS, E.W. - BOTTOM
F-3	7'-0" x 7'-0" x 1'-2"	(6)#6 BARS, E.W. - BOTTOM

DIMENSIONAL LAYOUT / FOUNDATIONS / PIER SIZES ARE PRELIMINARY. FINAL DIMENSIONS / FOUNDATIONS / PIER SIZES SHALL BE DETERMINED UPON RECEIPT AND APPROVAL OF FINAL PRE-ENGINEERED METAL BUILDING (PEMB) SHOP DRAWING SUBMITTAL PACKAGE INCLUDING MEMBER SIZES AND REACTIONS.



A1 STRUCTURAL ~ FOUNDATION PLAN
1/8" = 1'-0"

A9 DETAIL AT CMU WALL BASE AT DOOR
3/4" = 1'-0"

No.	Revision	By	Date
1	ISSUED FOR BID	AEI	10/15/19
2	ADDENDUM-#4	AEI	11/15/19

Designed by:
WILLIAM P. FAUCHER, P.E.

Designed: JPM 10/15/19
Checked: WPF 10/15/19
Drawn: PED 10/15/19

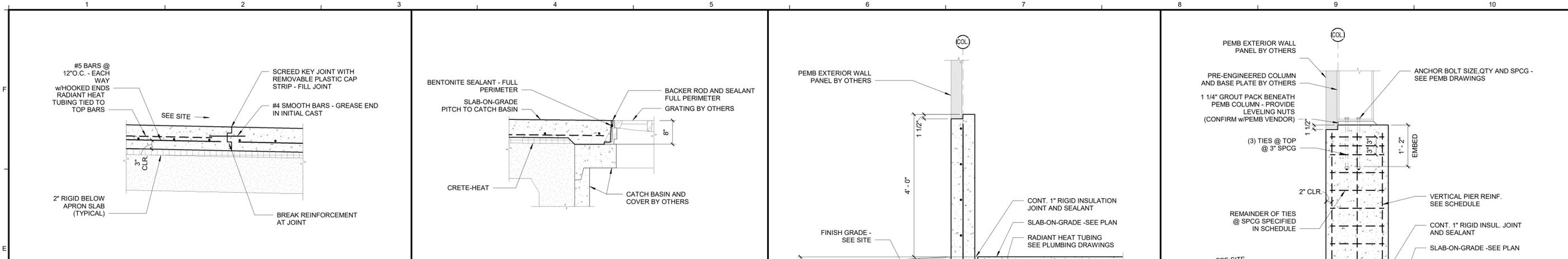
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MAINE TURNPIKE

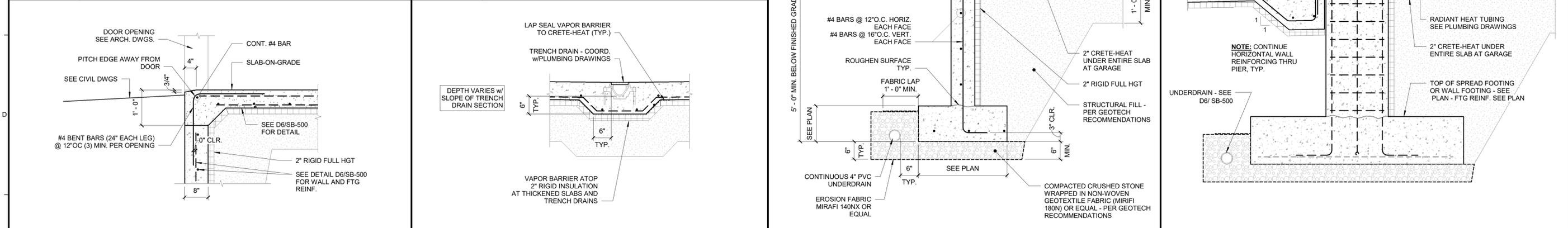
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Brian A. Taddeo, P.E.

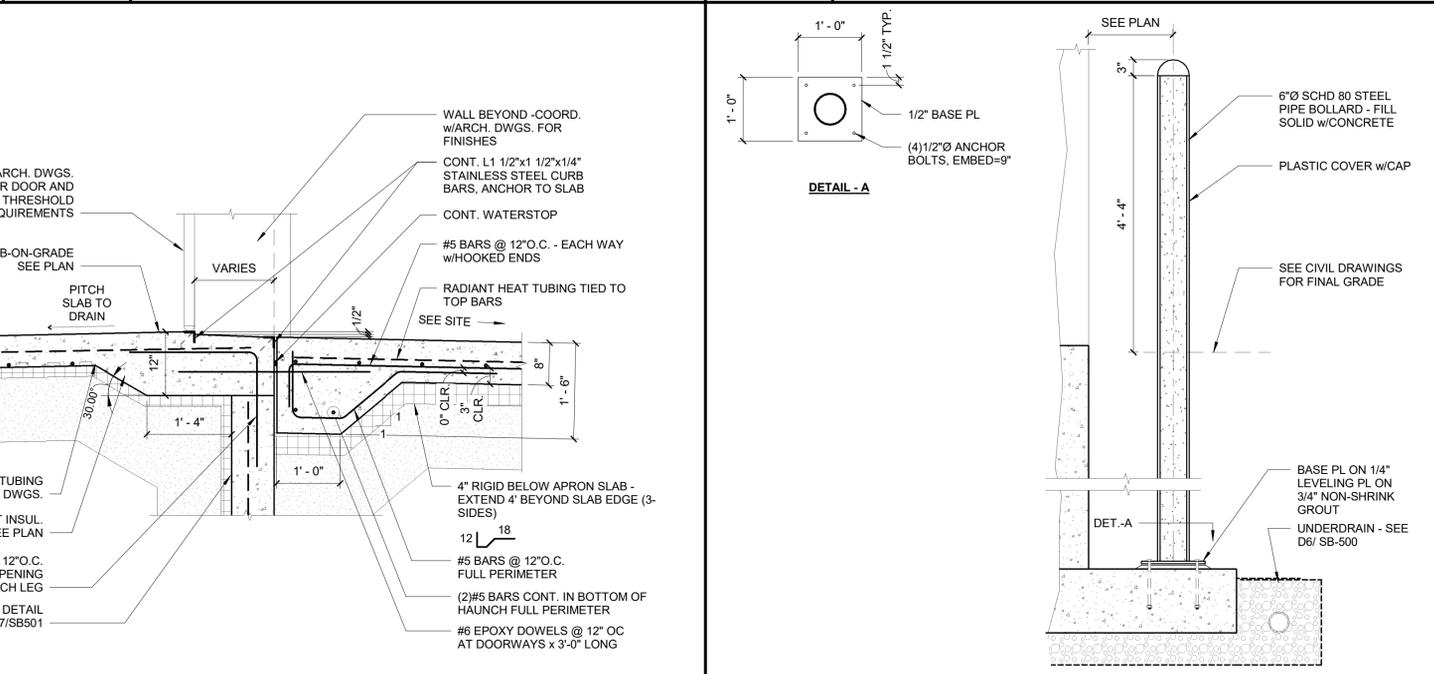
CONTRACT 2019.12, NEW MECHANICS GARAGE
LITCHFIELD MAINTENANCE YARD, MILE MARKER 92.7
STRUCTURAL - FOUNDATION PLAN
ADDENDUM 4 - NOVEMBER 15, 2019
SHEET NUMBER: SB-100
CONTRACT: 2019.12
24 OF 41



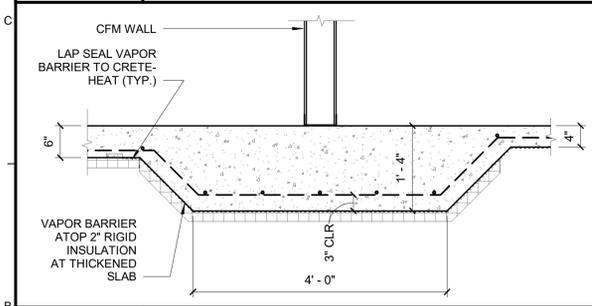
F1 CONSTRUCTION JOINT IN APRON SLAB 3/4" = 1'-0"
F4 SLAB AT CATCH BASIN 3/4" = 1'-0"



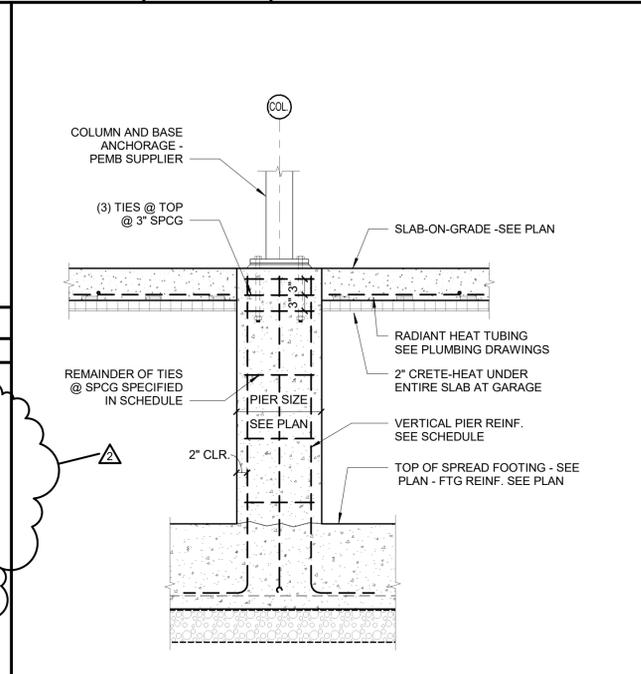
D1 TYPICAL EXTERIOR SLAB DETAIL AT ENTRY 3/4" = 1'-0"
D4 DETAIL AT TRENCH DRAIN 3/4" = 1'-0"



D6 TYPICAL FOUNDATION WALL SECTION 3/4" = 1'-0"
D8 SECTION THROUGH PIER AT WALL 3/4" = 1'-0"



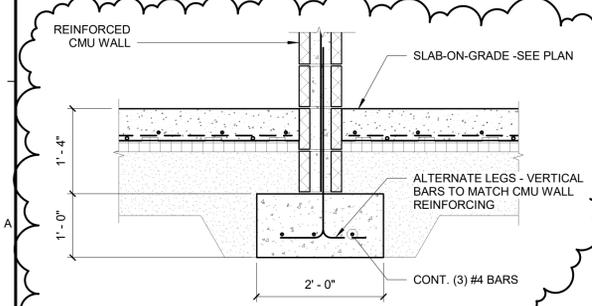
B1 DETAIL AT THICKENED SLAB AT CFM 3/4" = 1'-0"



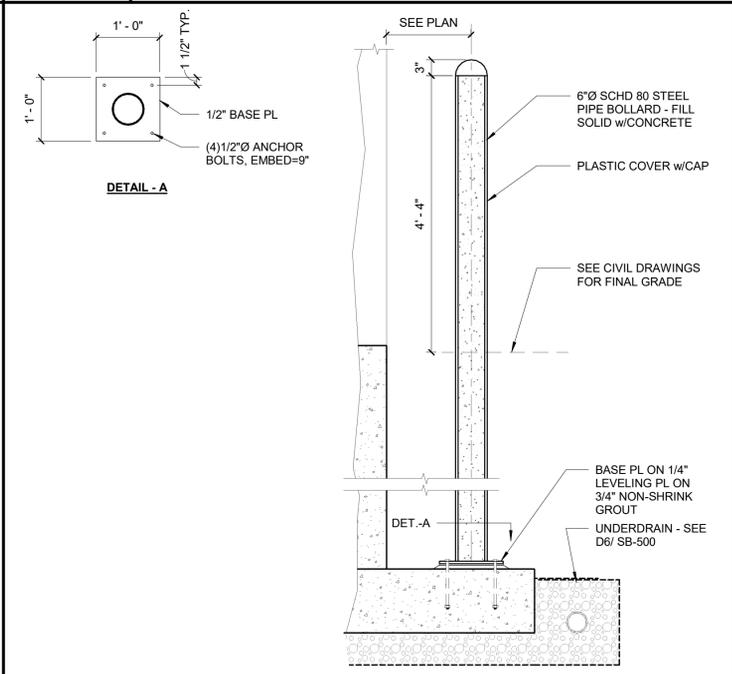
A3 TYPICAL PIER DETAIL 3/4" = 1'-0"



A5 TYPICAL EXT. FND WALL AT OH DOOR 3/4" = 1'-0"



A1 DETAIL AT CMU WALL BASE 3/4" = 1'-0"



A8 TYPICAL BOLLARD DETAIL 3/4" = 1'-0"

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

No.	Revision	By	Date
1	ISSUED FOR BID	AEI	10/15/19
2	ADDENDUM-#4	AEI	11/15/19

Designed by:
 WILLIAM P. FAUCHER, P.E.

By	Date	Checked	Date
JPM	10/15/19	WPF	10/15/19
PED	10/15/19		

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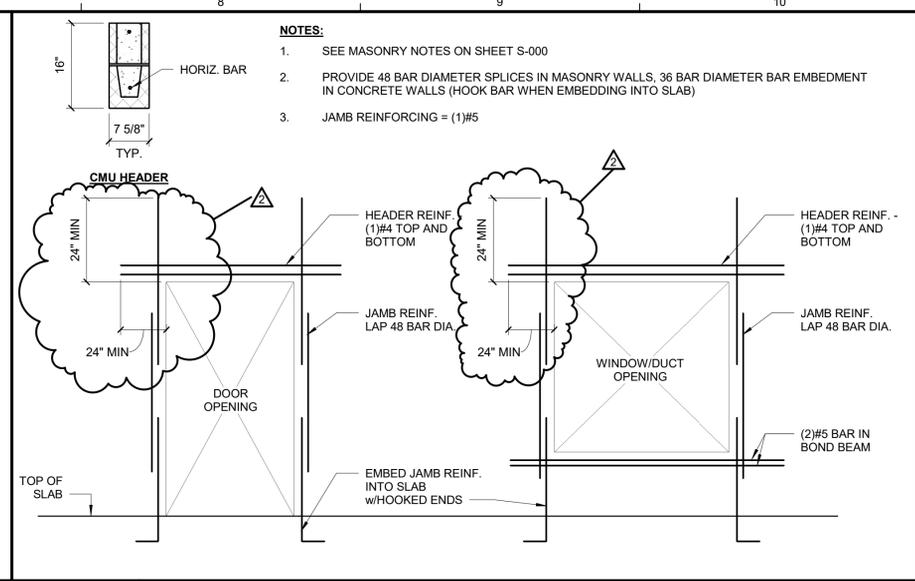
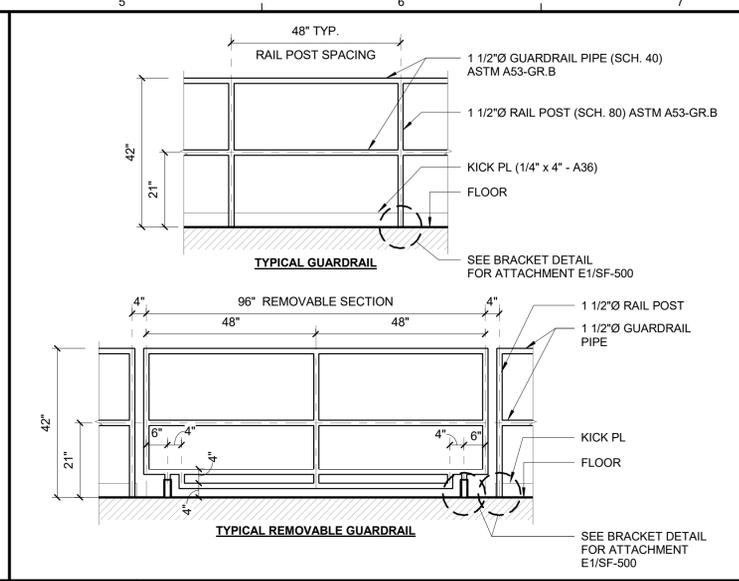
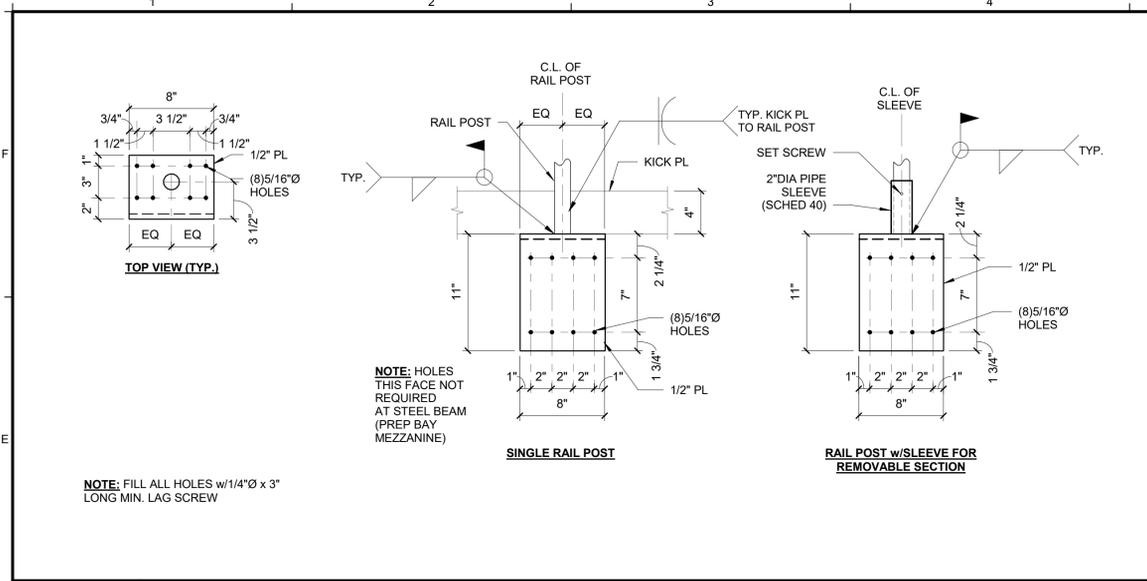
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Brian A. Taddeo, P.E.

CONTRACT 2019.12, NEW MECHANICS GARAGE
 LITCHFIELD MAINTENANCE YARD, MILE MARKER 92.7
 STRUCTURAL - FOUNDATION DETAILS

SHEET NUMBER: SB-500

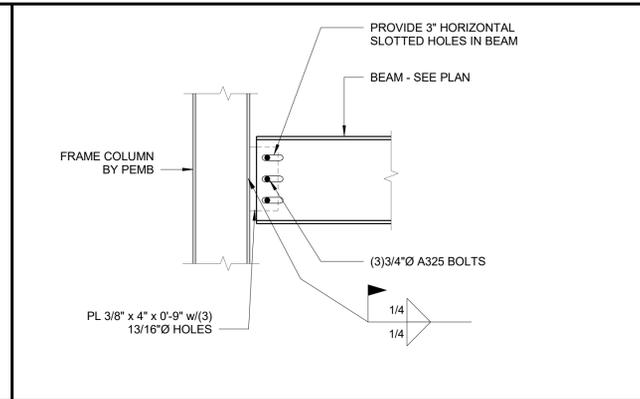
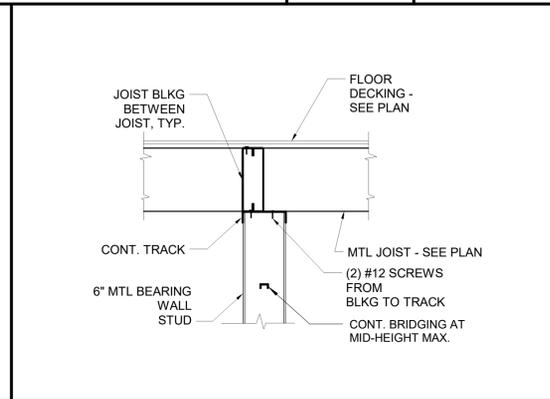
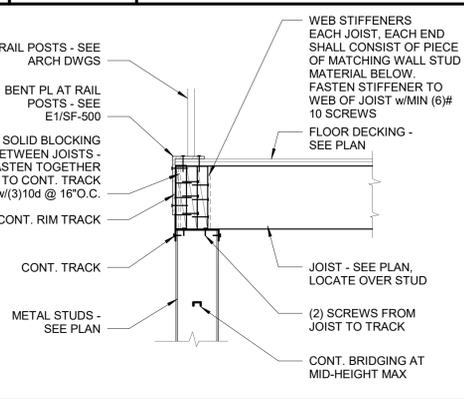
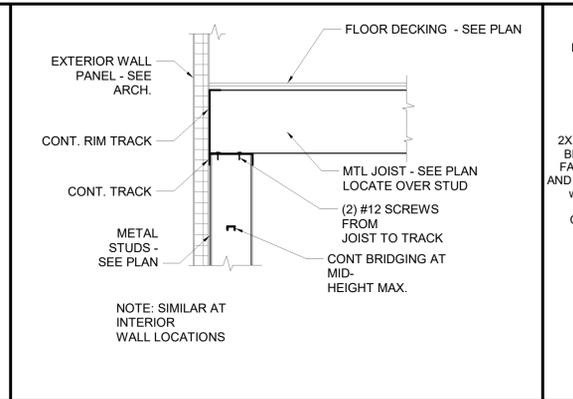
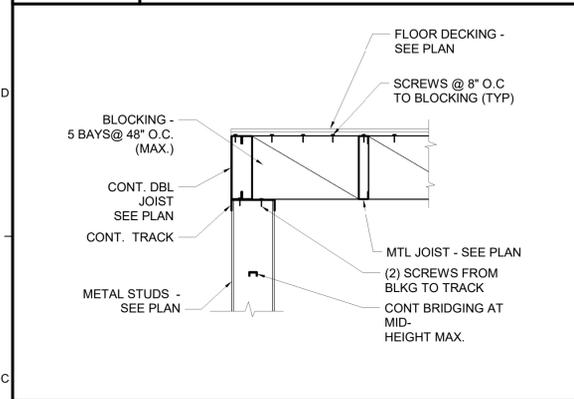
CONTRACT: 2019.12 25 OF 41



E1 BRACKET DETAIL
1 1/2" = 1'-0"

E5 GUARDRAIL DETAILS
1/2" = 1'-0"

E8 CMU HEADER SCHEDULE
3/4" = 1'-0"



C1 CFMF NON BEARING JOIST
3/4" = 1'-0"

C3 CFMF BEARING DETAIL AT EXTERIOR WALL
3/4" = 1'-0"

C5 CFMF BEARING DETAIL
3/4" = 1'-0"

C7 CFMF AT INTERIOR BEARING WALL
3/4" = 1'-0"

C9 DIVIDER SUPPORT BEAM TO PEMB FRAME COLUMN
1" = 1'-0"

CFMF FASTENERS AND CONNECTORS:

CONNECTOR	SUBSTRATE	DESCRIPTION	PRODUCT
SCREWS	METAL TRACK	#12 x 5/8" PAN HEAD	GENERIC
	STUD-TO-STUD	#12 x 5/8" HEX HEAD	GENERIC
	METAL TO STRUCT. STEEL	#12-24 x 1 1/4" HEX HEAD, #5 TIP	BUILDDEX "TEKS" HILTI KWIK-PRO
	WOOD FRMG or PLWD	#12-20 x 2 3/4" PHILLIPS FLAT HEAD, #4 WINGS	BUILDDEX "TEKS" HILTI KWIK-PRO
P.A.F.'s	CONCRETE or GROUTED CMU	0.157"Ø x 1 1/4"	HILTI X-U
	STRUCTURAL STEEL	0.157"Ø x 5/8"	HILTI X-U

MEMBER IDENTIFICATION:

NOTES:
1. MEMBER TYPES AND SIZES SHOWN IN THIS DRAWING SET FOLLOW THE STEEL STUD MANUFACTURERS ASSOCIATION (SSMA) STANDARDS. ANY MANUFACTURER WHOSE PRODUCT GEOMETRIES MEET OR EXCEED SSMA STANDARDS ARE ACCEPTABLE.

SSMA	GAUGE	DESIGN	MINIMUM	COLOR CODING
33 mils	20	0.0346"	0.0329"	WHITE
43 mils	18	0.0451"	0.0428"	YELLOW
54 mils	16	0.0566"	0.0538"	GREEN
68 mils	14	0.0713"	0.0677"	ORANGE
97 mils	12	0.1017"	0.0966"	RED

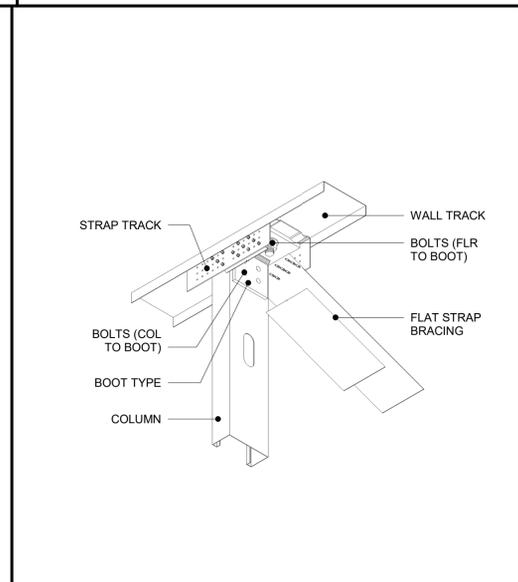
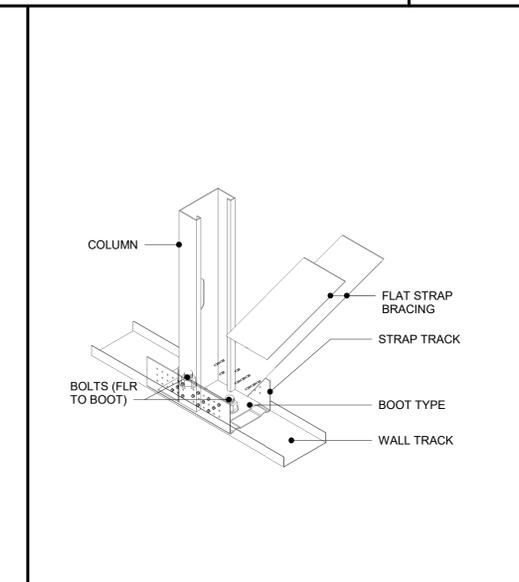
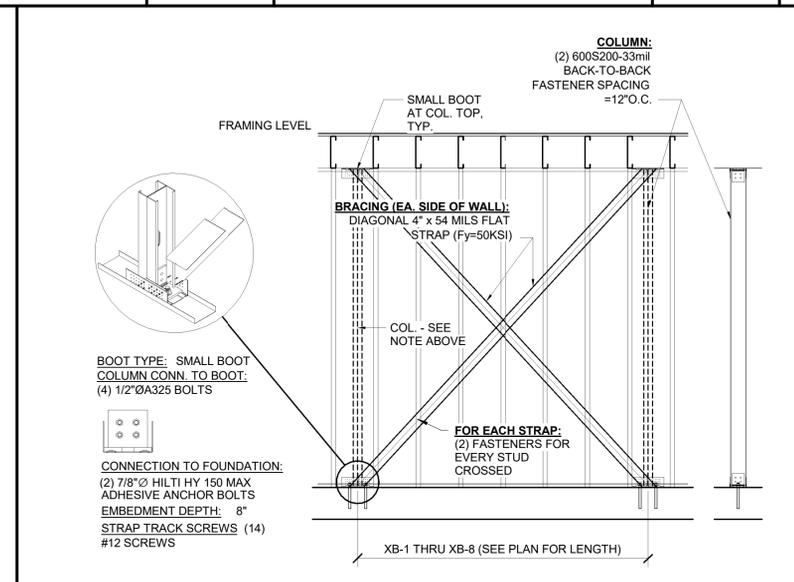
THE LAST TWO NUMBERS INDICATE THE STEEL THICKNESS

362 S 162 - 33

WEB SIZE

MEMBER TYPE:
S=STUD OR JOIST SECTIONS
T=TRACK SECTIONS

FLANGE SIZE THICKNESS (mils)



A1 TYP. CFMF CONNECTION SCHEDULE wMEMBER IDEN
1/8" = 1'-0"

A4 CFMF (X-BRACE) SCHEMATIC
3/8" = 1'-0"

A7 BASE OF COLUMN CONNECTION
3/4" = 1'-0"

A9 TOP OF COLUMN CONNECTION
3/4" = 1'-0"

Scale: As indicated

No.	Revision	By	Date
1	ISSUED FOR BID	AEI	10/15/19
2	ADDENDUM-#4	AEI	11/15/19

Designed by: WILLIAM P. FAUCHER, P.E.

Designed: JPM 10/15/19
Checked: WPF 10/15/19
Drawn: PED 10/15/19

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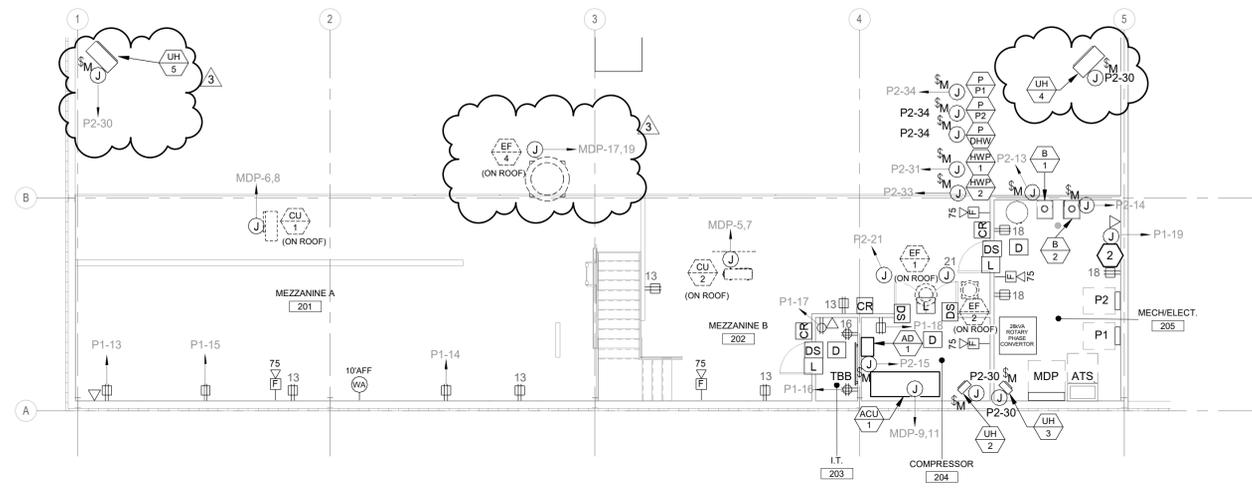
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Brian A. Taddeo, P.E.

CONTRACT 2019.12, NEW MECHANICS GARAGE
LITCHFIELD MAINTENANCE YARD, MILE MARKER 92.7
STRUCTURAL - DETAILS

SHEET NUMBER: SF-500

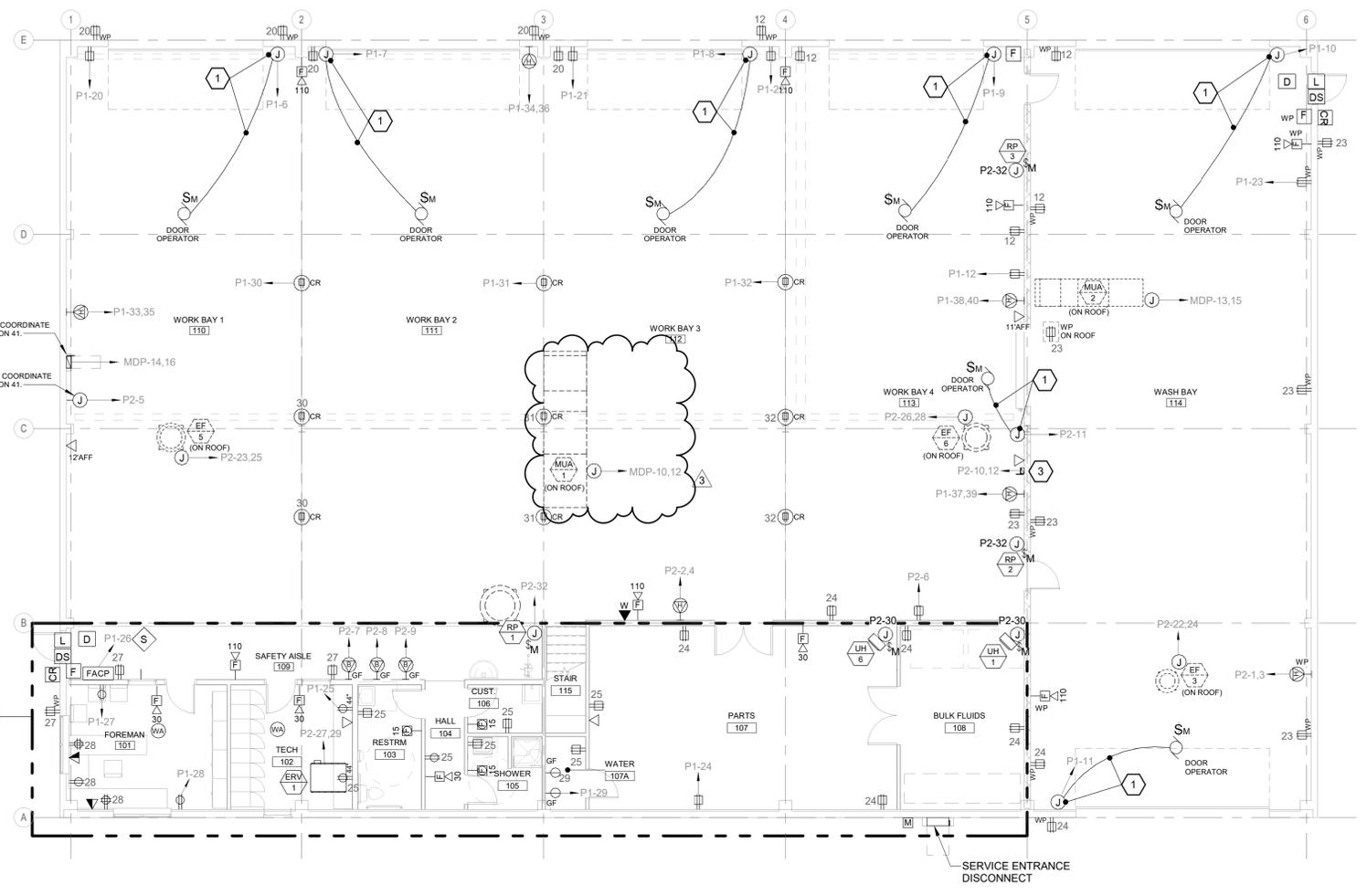
CONTRACT: 2019.12
27 OF 41



- ① PROVIDE SINGLE GANG J-BOX FOR CONTROLS 44" AFF AND 1-1/2" CONDUIT TO DOOR OPERATOR. CONTROLS AND CONTROL WIRING BY OTHERS.
- ② HVAC CONTROLS CIRCUIT. PROVIDE J-BOX 44" AFF.
- ③ 2 POST LIFT- 2POLE DISCONNECT 30A/30A, WIRING SHALL BE 2 #10, 1 #10G

E1 POWER PLAN - MEZZANINE
1/8" = 1'-0"

E8 ELECTRICAL KEYNOTES



A1 POWER AND SYSTEMS PLAN - FIRST FLOOR
1/8" = 1'-0"

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

No.	Revision	By	Date
1	ISSUED FOR BID	AEI	10/15/19
2	ADDENDUM #1	AEI	11/01/19
3	ADDENDUM #4	AEI	11/15/19

Designed by:
CATHY FAUCHER, P.E.

Designed: SRM 10/15/19
Checked: CAF 10/15/19
Drawn: PMC 10/15/19

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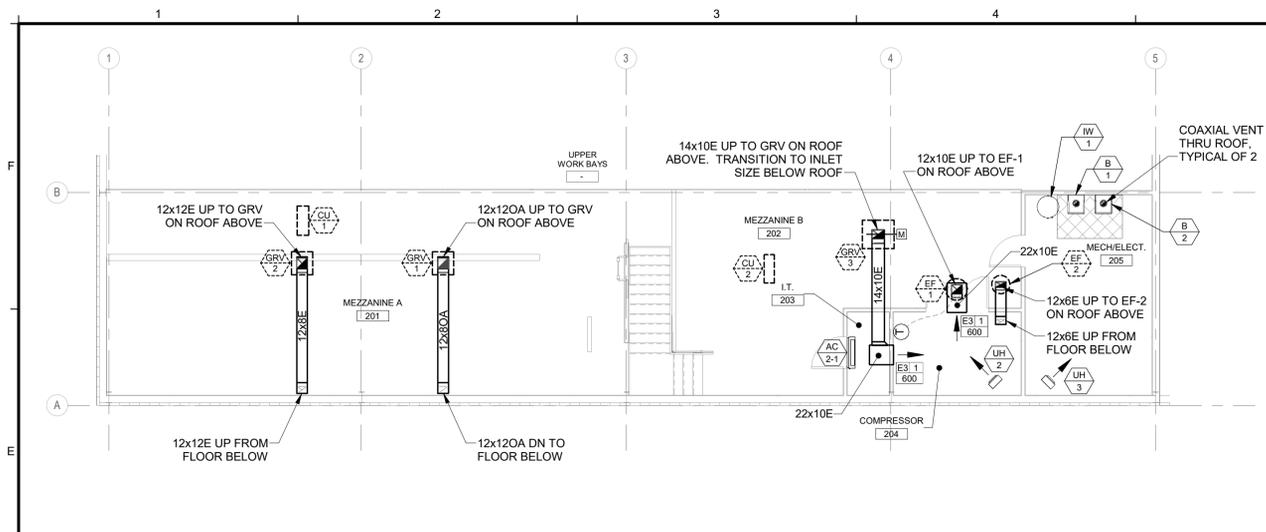
MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

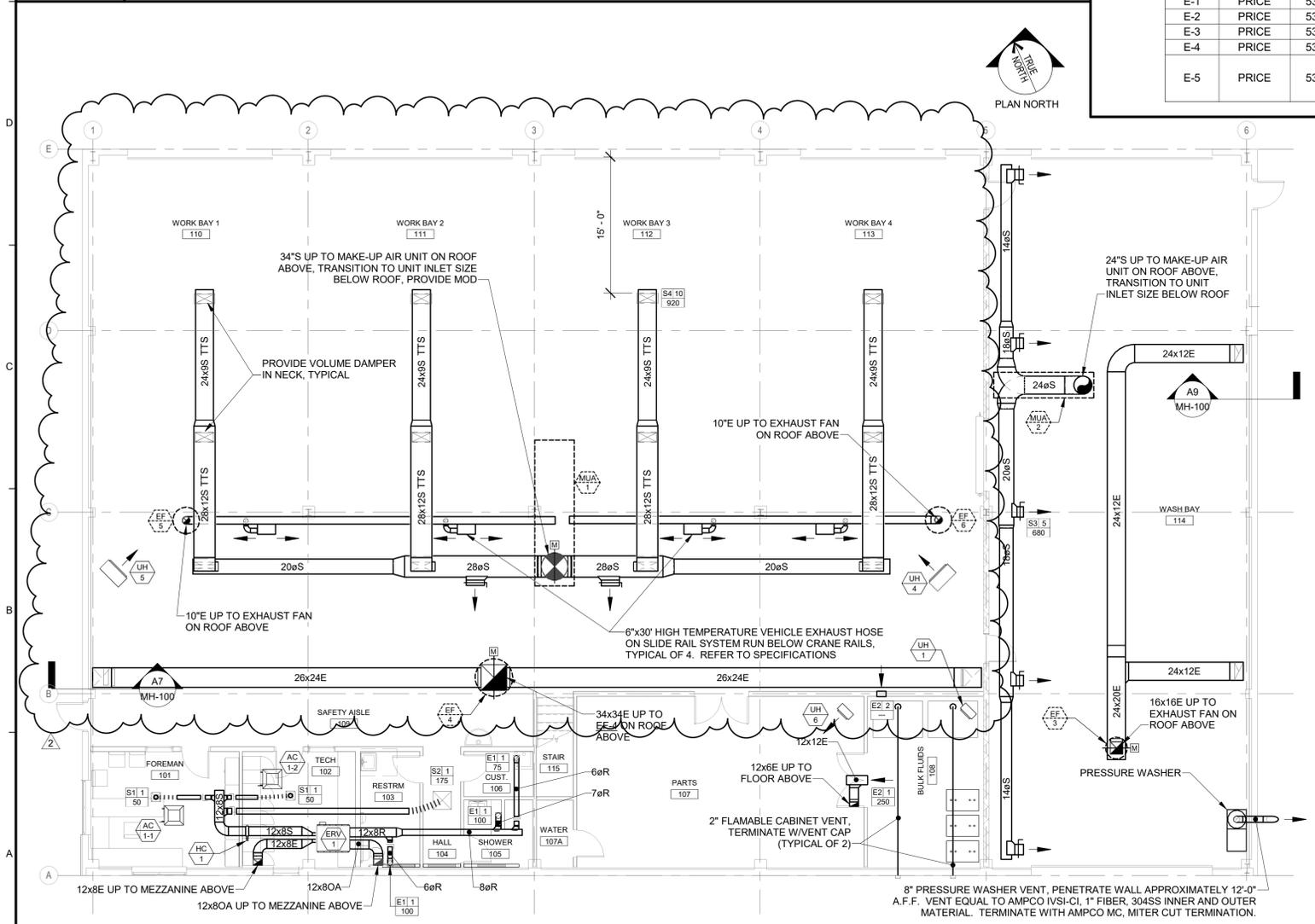
MTA PROJECT MANAGER: Brian A. Taddeo, P.E.

CONTRACT 2019.12, NEW MECHANICS GARAGE
LITCHFIELD MAINTENANCE YARD, MILE MARKER 92.7
POWER AND SYSTEMS PLANS

SHEET NUMBER: EP-100
CONTRACT: 2019.12
38 OF 41



E6 MECHANICAL PART PLAN - MEZZANINE
1/8" = 1'-0"

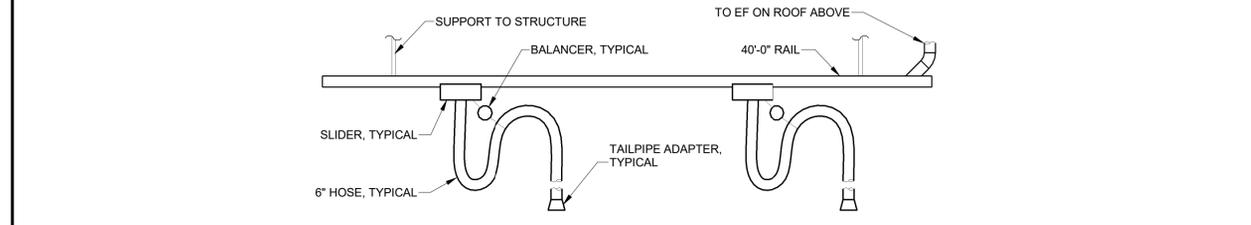


A1 MECHANICAL PLAN - FIRST FLOOR
1/8" = 1'-0"

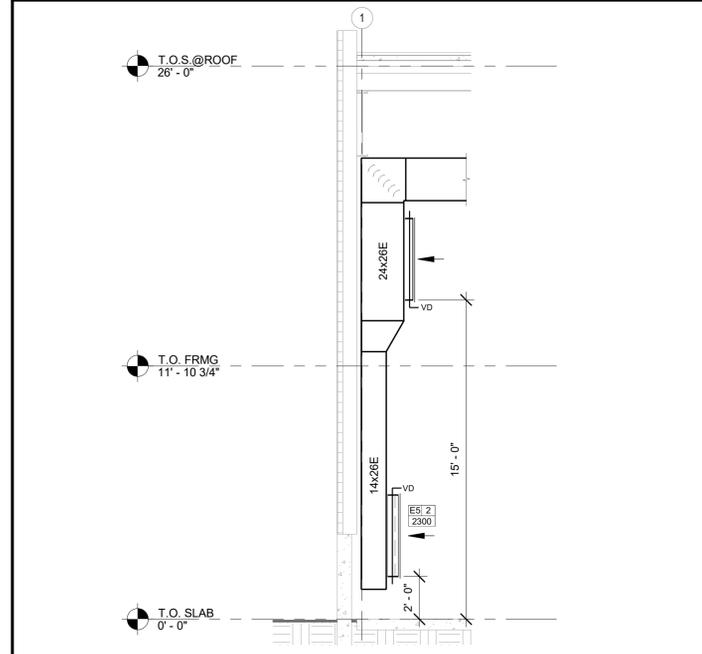
HYDRONIC PUMP SCHEDULE																
TAG	SYSTEM	MFR.	MODEL	SUCT X DISCH	TYPE	PUMPED FLUID	PERFORMANCE			ELECTRICAL		ELECTRICAL COORDINATION			NOTES	
							GPM	HEAD	BHP	MOTOR HP	VOLTS/PH (60 Hz.)	VFD FURN. BY	STARTER FURN. BY	BOTH PUMPS RUN?		DISC. SWITCH FURN BY
P-P1	BOILER PRIMARY PUMP	GRUNDFOS	UPS 26-99FC	1.25" X 1.25"	3 SPEED CIRCULATOR	WATER	20	14	NA	1/6	115/1	NA	NA	NO, LEAD-LAG	DIV 26	3
P-P2	BOILER PRIMARY PUMP	GRUNDFOS	UPS 26-99FC	1.25" X 1.25"	3 SPEED CIRCULATOR	WATER	20	14	NA	1/6	115/1	NA	NA	NO, LEAD-LAG	DIV 26	3
HWP-1	HEATING SECONDARY PUMP	GRUNDFOS	MAGNA3 40-180-F	1.5" X 1.5"	INLINE	WATER	30	30	NA	347 W	115/1	INTEGRAL	NA	NO, LEAD-LAG	DIV 26	
HWP-2	HEATING SECONDARY PUMP	GRUNDFOS	MAGNA3 40-180-F	1.5" X 1.5"	INLINE	WATER	30	30	NA	347 W	115/1	INTEGRAL	NA	NO, LEAD-LAG	DIV 26	
P-DHW	INDIRECT WATER HEATER	GRUNDFOS	UPS 26-99FC	1.25" X 1.25"	3 SPEED CIRCULATOR	WATER	13.2	15	NA	179 W	115/1	NA	NA	NO, LEAD-LAG	DIV 26	
RP-1	RADIANT MF 1 WORK BAY	GRUNDFOS	MAGNA1 32-60	.75" X .75"	INLINE	WATER	4.5	18	NA	73W	115-230/1	NA	NA	NA	DIV 26	
RP-2	RADIANT MF 2 WORK BAY	GRUNDFOS	MAGNA1 32-60	.75" X .75"	INLINE	WATER	4	18	NA	73W	115-230/1	NA	NA	NA	DIV 26	
RP-3	RADIANT MF 3 WASH BAY	GRUNDFOS	MAGNA1 32-60	.75" X .75"	INLINE	WATER	3.5	18	NA	73W	115-230/1	NA	NA	NA	DIV 26	

NOTES:
1. PROVIDE VARIABLE FLOW MODE.
2. PROVIDE SUPPORT STAND
3. PROVIDE WITH BOILER PACKAGE

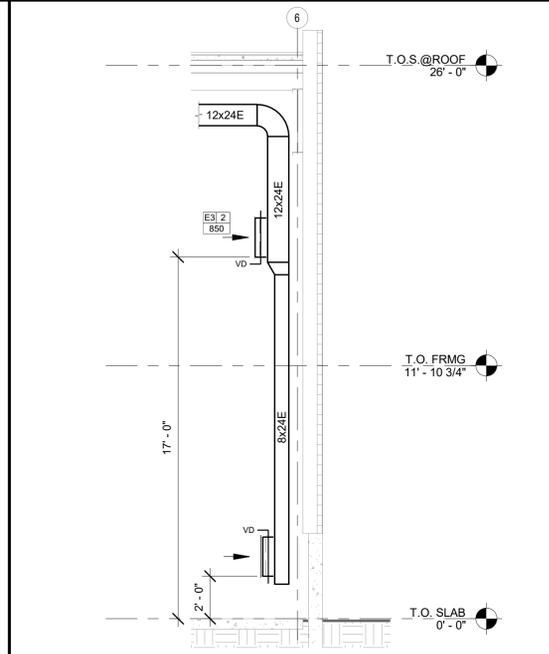
REGISTERS - GRILLES - DIFFUSERS (RGD) SCHEDULE											
TAG	MFR.	MODEL	TYPE	NECK SIZE	FACE SIZE	MAX CFM	MAX TOTAL P.D. (IN.W.C.)	MAX NC LEVEL	BORDER TYPE	BLOW	NOTES
S-1	PRICE	SMDA	SQ. CEILING SUPPLY DIFFUSER, ADJUSTABLE	6 X 6 / 6" DIA	12" X 12"	100	0.07"	15	LAY-IN		ROUND NECK ADAPTER
S-2	PRICE	SMDA	SQ. CEILING SUPPLY DIFFUSER, ADJUSTABLE	9 X 9 / 8" DIA	24" X 24"	270	0.09"	20	LAY-IN		ROUND NECK ADAPTER
S-3	PRICE	520	STEEL DOUBLE DEFL. SUPPLY	18" X 10"	19.75" X 11.75"	680	0.10"	19	SURFACE MT.	ADJUSTABLE	
S-4	PRICE	520	STEEL DOUBLE DEFL. SUPPLY	24" X 12"	19.75" X 11.75"	950	0.10"	16	SURFACE MT.	ADJUSTABLE	
E-1	PRICE	530	STEEL RETURN, 3/4" SPACING, 45 DEG VANES	8" X 8"	9.75" X 9.75"	110	0.05"	20	SURFACE MT.		6" DIA RUNOUT
E-2	PRICE	530	STEEL RETURN, 3/4" SPACING, 45 DEG VANES	12" X 12"	13.75" X 13.75"	360	0.05"	20	SURFACE MT.		
E-3	PRICE	530	STEEL RETURN, 3/4" SPACING, 45 DEG VANES	16" X 16"	17.75" X 17.75"	850	0.05"	20	LAY-IN		12" DIA RUNOUT
E-4	PRICE	530	STEEL RETURN, 3/4" SPACING, 45 DEG VANES	22" X 22"	23.75" X 23.75"	1,020	0.05"	20	SURFACE MT.		SEE PLANS
E-5	PRICE	530	STEEL RETURN, 3/4" SPACING, 45 DEG VANES	46" X 22"	47.75" X 23.75"	2,300	0.02"	20	SURFACE MT.		SEE PLANS, FACE BLADES PARALLEL TO SHORT DIMENSION



C7 DETAIL - VEHICLE EXHAUST EXTRACTION
NOT TO SCALE



A7 DETAIL - WORK BAY HIGH/LOW RETURN
1/4" = 1'-0"



A9 DETAIL - WASH BAY HIGH/LOW RETURN
1/4" = 1'-0"

Scale: As indicated

No.	Revision	By	Date
1	ISSUED FOR BID	AEI	10/15/19
2	ADDENDUM #4	AEI	11/15/19

Designed by:
ANTHONY DAVIS, P.E.

Designed: HAG 10/15/19
Checked: ASD 10/15/19
Drawn: REW 10/15/19

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MAINE TURNPIKE

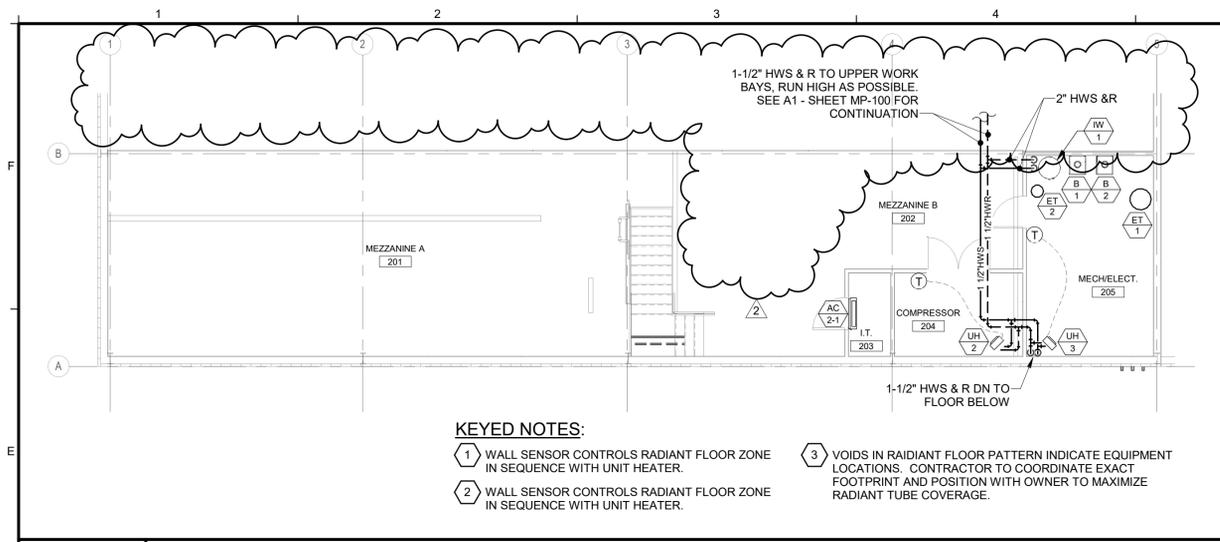
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Brian A. Taddeo, P.E.

CONTRACT 2019.12, NEW MECHANICS GARAGE
LITCHFIELD MAINTENANCE YARD, MILE MARKER 92.7
MECHANICAL PLANS

SHEET NUMBER: MH-100

CONTRACT: 2019.12 31 OF 41



KEYED NOTES:

1 WALL SENSOR CONTROLS RADIANT FLOOR ZONE IN SEQUENCE WITH UNIT HEATER.

2 WALL SENSOR CONTROLS RADIANT FLOOR ZONE IN SEQUENCE WITH UNIT HEATER.

3 VOIDS IN RADIANT FLOOR PATTERN INDICATE EQUIPMENT LOCATIONS. CONTRACTOR TO COORDINATE EXACT FOOTPRINT AND POSITION WITH OWNER TO MAXIMIZE RADIANT TUBE COVERAGE.

E1 MECHANICAL PIPING PLAN - MEZZANINE
1/8" = 1'-0"

DUCT HEATING COIL SCHEDULE

TAG	SERVES	AIRFLOW	LENGTH	HEIGHT	FACE VEL	EDB	LDB	MBH	MAX APD	GPM	EWT	LWT	MAX WPD
HC-1	ERV-1	275	12	8	413	40	75	10.4	0.2"	0.7	140	110	3'

NOTES:

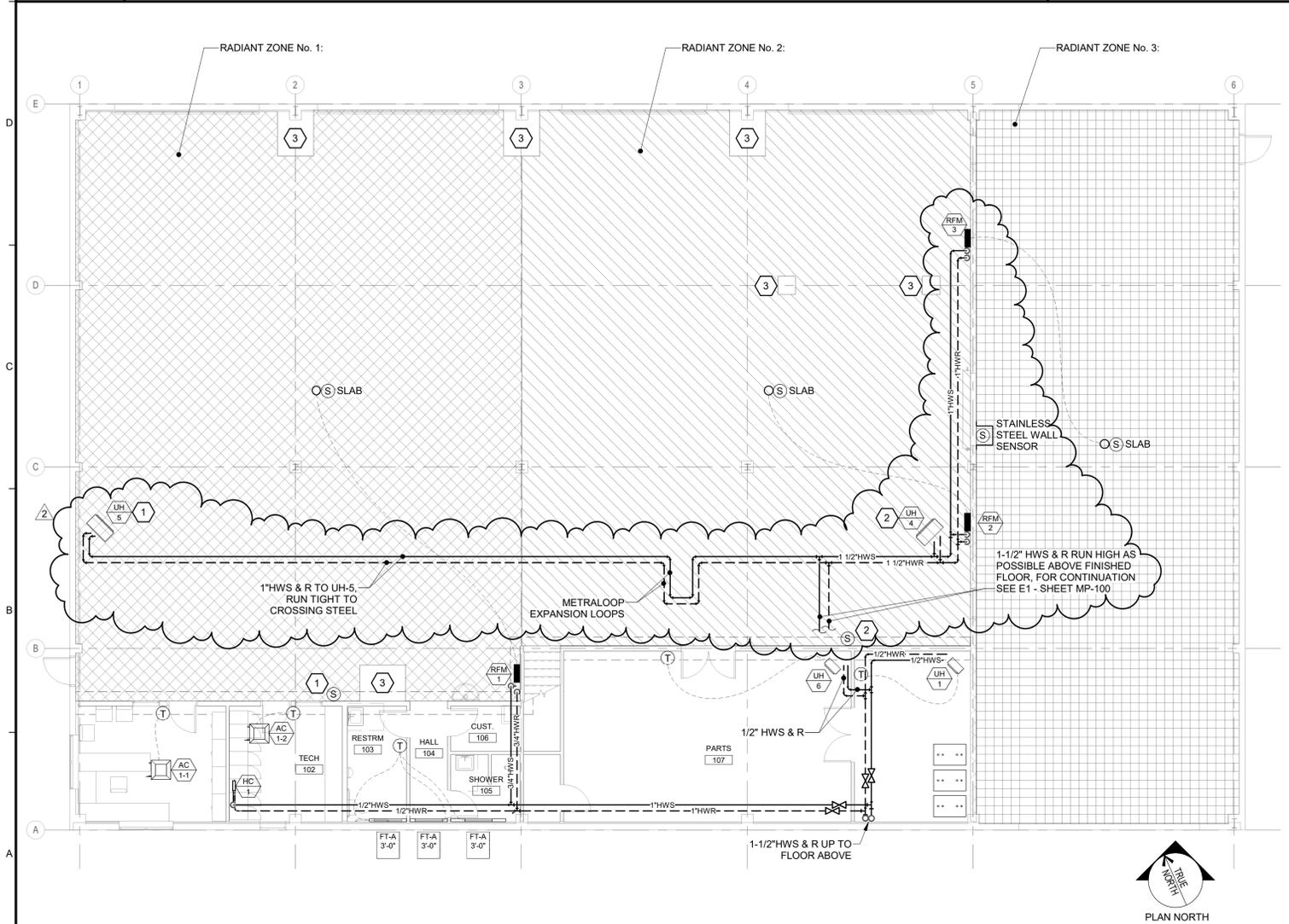
AIR CONTROL - EXPANSION/BUFFER TANK SCHEDULE

SYSTEM	PRIMARY HEATING	DHW
PIPE MAIN SIZE	2"	NA
AIR SEPARATOR	AS-1	NA
MFR-MODEL	TACO 4902AD-125	NA
INLET/OUTLET	2"	NA
STRAINER	YES	NA
BLADDER-TYPE EXPANSION TANK	ET-1	ET-2
MFR-MODEL	TACO CA-450	TACO PAX-30
SYSTEM HEIGHT, FT	25	25
STATIC PRESSURE AT TANK, PSI	10.8	10.8
PSI REQ'D. AT HIGHEST SYS POINT	10	5
TANK PRE-CHARGE PRESSURE	20.8	15.8
TANK DIAMETER	24	14
TANK HEIGHT	78	25
ACCEPTANCE VOLUME	119	8
WATERLOGGED WEIGHT (LBS.)	--	--
ASME PRESSURE RATING	125	150

SPLIT A/C UNIT SCHEDULE - 238130

UNIT	AC-2-1
SERVES	IT
COOLING BTUH	12,000
COOLING BTUH, MINIMUM	5,800
HEATING AT 47F	-----
HEATING AT 5F	-----
REFRIGERANT	R410A
SEER	21.0
INDOOR UNIT:	WALL MOUNT
MITSUBISHI MODEL NO.	PKA-A12HA7
WEIGHT, LBS.	29
CFM	335
EXT. SP. IN. WC.	0"
VOLTAGE/PHASE	208/1
MCA	1.0
OUTDOOR COND. UNIT:	CU-2
MITSUBISHI MODEL NO.	PUY-A12NKA7-BS
WEIGHT, LBS.	92
LIQUID LINE SIZE	1/4"
HOT GAS LINE SIZE	1/2"
VOLTAGE/PHASE	208/1
MCA	11
MOCP	28
NOTES	1, 2, 3

NOTES:
1. POWER TO CU'S BY DIV 26. WIRING BETWEEN AC/CU PROVIDED BY DIV 23. TO THE ELECTRIC HEATER.
2. PROVIDE WIND Baffle OPTION; 100% CAPACITY COOLING SHALL BE AVAILABLE AT -20F OUTDOORS.
3. PROVIDE 3-POLE FUSED DISCONNECT SWITCH.



A1 MECHANICAL PIPING PLAN - FIRST FLOOR
1/8" = 1'-0"

BOILER SCHEDULE

TAG	B-1	B-2
TYPE	CONDENSING	CONDENSING
MANUFACTURER	VISSMANN	VISSMANN
BOILER MODEL	200W-B2HA-100	200W-B2HA-100
GROSS INPUT (MBH)	352	352
GROSS OUTPUT (MBH)	333	333
THERMAL EFFICIENCY (%)	93.9%	93.9%
TEMP RISE, DEG F	33.3	33.3
FLOW, GPM	20	20
WATER P.D., FT-H2O	9	9
FLUID	WATER	WATER
WEIGHT (LBS)	194	194
OVERALL DEPTH (IN.)	21"	21"
WIDTH (IN.)	19"	19"
HEIGHT (IN.)	43-1/2"	43-1/2"
VENT CONN. DIA (IN.)	4-3/8"	4-3/8"
AIR INLET CONN. (IN.) - COAXIAL	6"	6"
HWS & R CONN. (IN.)	1 1/2"	1 1/2"
GAS CONN. (IN.)	1"	1"
COND. DRAIN CONN. (IN.)	3/4"	3/4"
2-STAGE or FULL MOD.	FULL MOD: 27% to 100%	FULL MOD: 27% to 100%
GAS	LP	LP
MIN / MAX GAS PRS. IN. WG.	4"/14"	4"/14"
ELECTRICAL	120/1/60	120/1/60
TOTAL AMPS		

Thermal Efficiency in accordance with: CSA thermal/combustion efficiency ANSI Z21.13/CSA 4.9

MULTI - SPLIT A/C UNIT SCHEDULE

INDOOR UNITS	AC-1-1	AC-1-2
SERVES	FOREMAN 101	TECH 102
ARRANGEMENT	CEILING CASSETTE	CEILING CASSETTE
COOLING BTUH	9,145	9,145
HEATING BTUH @ 47F	9,838	9,838
HEATING BTUH @ -5F		
MITSUBISHI MODEL NO.	SLZ-KF09NA	SLZ-KF09NA
DIMENSIONS - H X W X D	9 1/4" X 22 7/16" X 22 7/16"	9 1/4" X 22 7/16" X 22 7/16"
WEIGHT, LBS.	36	36
CFM	320	320
ELECTRICAL	208/230-1	208/230-1
ELECTRICAL, MCA	.23 A	.23 A
COND. DRAIN SIZE	3/4"	3/4"
LIQUID LINE SIZE	1/4"	1/4"
GAS LINE SIZE	3/8"	3/8"

OUTDOOR COND. UNIT: CU-1

MITSUBISHI COND UNIT MODEL NO.	MXZ-2C20NAHZ2-U1
BRANCH SELECTOR BOX (BSB)...	NA
COOLING BTUH	20,000
HEATING BTUH	25,000
REFRIGERANT	R410A
ELECTRICAL	208/230
MCA	17.2
MOP	20
SOUND dBA - HIGH	50
DIMENSIONS (H x W x D)	27 15/16" X 33 1/16" X 13"
WEIGHT, LBS.	66

NOTES:
1. POWER TO CU'S BY DIV 26. WIRING BETWEEN AC AND CU PROVIDED BY DIV 23.

FINNED TUBE RADIATION SCHEDULE (HOT WATER)

TAG	STERLING MODEL No.	GRADE	ENCLOSURE HEIGHT	MOUNTING HEIGHT, TOP OF ENCLOSURE	DEPTH FROM WALL	No. OF TIERS	BTU / FT	GPM	AWT	EAT	ELEMENT	FIN DIMENSION S	FINS/FT	NOTES
FT-A	SYNERGY SG-500	LOW TEMP RESIDENTIAL...	9-1/16"	9-1/16"	3-13/16"	1	567	1.0	150	70	3/4"...	3-1/4" SQ.	51	

NOTES:
1. PROVIDE RETURNS WITHIN ENCLOSURE WHERE APPLICABLE.

UNIT HEATER SCHEDULE

TAG	SERVES	MFR.-MODEL	SIZE	TYPE	MBH	CFM	EAT (DEG.-F)	LAT (DEG.-F)	GPM	FLUID	EWT	LWT	MOTOR TYPE	MOTOR HP	ELECT	MAX WPD	CONTROL VALVE	NOTES
UH-1	BULK FLUIDS 108	TRANE UHS	18	HORIZ. UH	9.5	500	60	77.6	0.5	WATER	140	110.0	TEAO	16W	120-1-60	0.3	2-WAY	1
UH-2	COMPRESSOR 204	TRANE UHS	8	HORIZ. UH	4.1	245	60	75.5	0.5	WATER	140	110.0	TEAO	16 W	120-1-60	0.3	2-WAY	1
UH-3	MECH/ELEC 205	TRANE UHS	8	HORIZ. UH	4.1	245	60	75.5	0.5	WATER	140	110.0	TEAO	16 W	120-1-60	0.3	2-WAY	1
UH-4	WORKBAYS 3/4	TRANE UHS	108	HORIZ. UH	41.6	1,800	60	81.4	5.0	WATER	140	110.0	TEAO	1/12 HP	120-1-60	0.14	2-WAY	1
UH-5	WORK BAYS 4/5	TRANE UHS	108	HORIZ. UH	41.6	1,800	60	81.4	5.0	WATER	140	110.0	TEAO	1/12 HP	120-1-60	0.14	2-WAY	1
UH-6	PARTS 107	TRANE UHS	8	HORIZ. UH	4.1	245	60	75.5	0.5	WATER	140	110.0	TEAO	16 W	120-1-60	0.3	2-WAY	1

NOTES:
1. POWER WIRING TO UNIT HEATER BY DIV 26. ALL LOW VOLTAGE CONTROL WIRING, THERMOSTAT, RELAYS, AND TRANSFORMERS BY DIV. 23. DISCONNECT SWITCH: PROVIDE BY UNIT HEATER MANUFACTURER.

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

No.	Revision	By	Date
1	ISSUED FOR BID	AEI	10/15/19
2	ADDENDUM #4	AEI	11/15/19

Designed by:
ANTHONY DAVIS, P.E.

Designed: HAG 10/15/19
Checked: ASD 10/15/19
Drawn: REW 10/15/19

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MAINE TURNPIKE

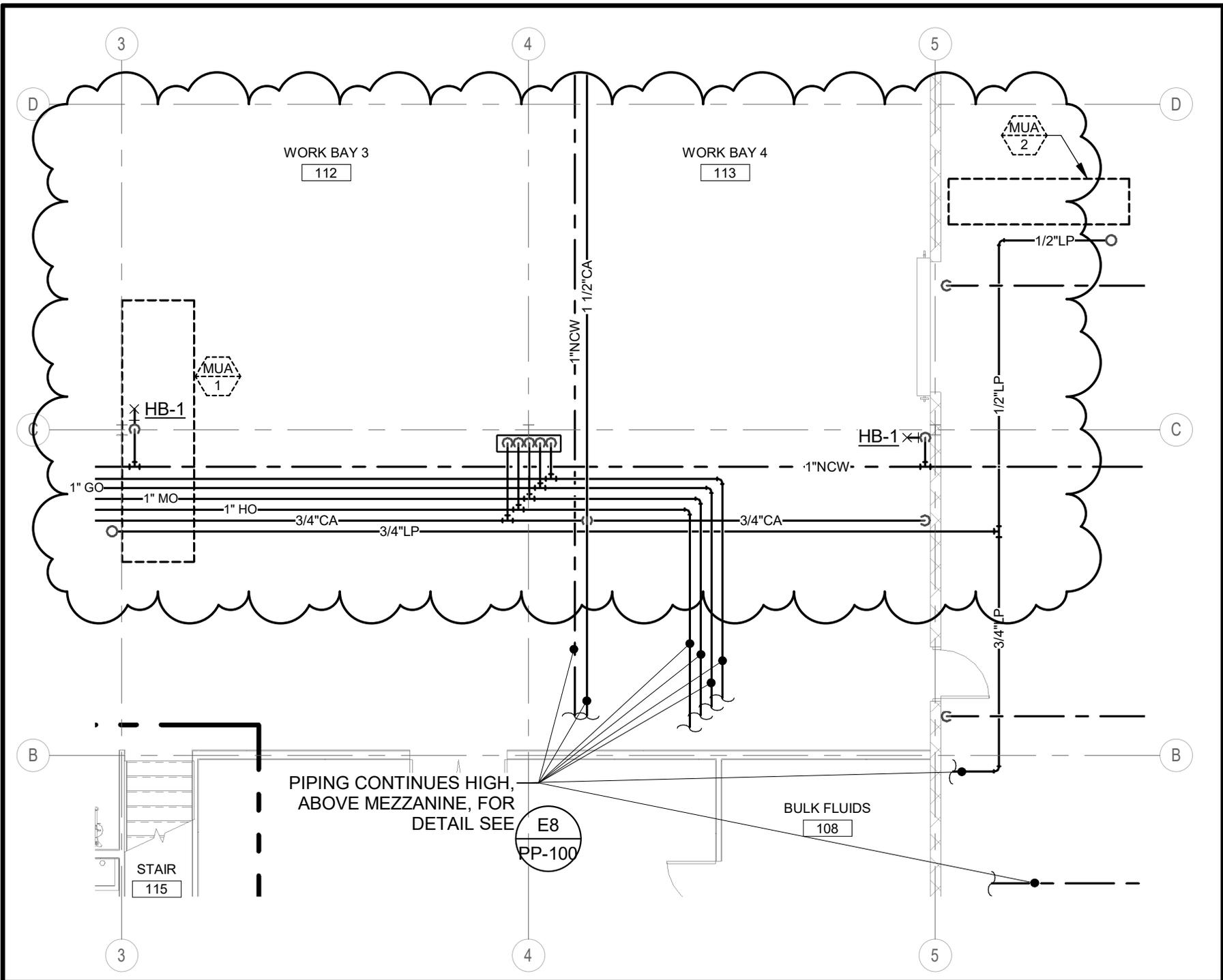
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Brian A. Taddeo, P.E.

CONTRACT 2019.12, NEW MECHANICS GARAGE
LITCHFIELD MAINTENANCE YARD, MILE MARKER 92.7
MECHANICAL PIPING PLANS

SHEET NUMBER: MP-100

CONTRACT: 2019.12 32 OF 41



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REVISED MUA-1 GAS PIPING - A1 - SHEET PP-100	
CONTRACT 2019.12, NEW MECHANICS GARAGE LITCHFIELD MAINTENANCE YARD, MILE MARKER 92.7	
Scale: 1/8" = 1'-0"	Project No: 18080
Date: 11/15/19	CAD File:

SKP-05
 ADDENDUM #4

MTA Addenda 4 Questions - Contract 2019.12

MTA Addenda 4 Questions - Contract 2019.12					
		15-Nov-19			
		Litchfield Maintenance Garage			
	Contractor/Vendor	Sheet	Plan/Spec	Question	AEI Team Response/Resolution
1	Great Falls Construction			Can you confirm that the building will not need to be sprinkled? I am not seeing any fire sprinkler spec or drawings for this division.	GHA: Per the Code Analysis on Sheet A-0, a sprinkler system is not required.
2	Sheridan Corp			There is a discrepancy between the insulated metal wall panels in the specs and in the drawings. The drawings show a 3" R-21 corrugated insulated metal panel. Specification 133419 calls for a smooth flat insulated metal panel with a U-factor of 0.052, which is a R-19. Which is correct?	GHA: Panels shall be 3" thick; R-21 in profile per Addenda 2
3				When do you anticipate the release of Addendum #2? I know we are past the RFI deadline, but can you address the following, it dovetails with a previous question we asked:	AEI/MTA: Addendum #2 was lifted to the MTA aite on 11-11-19, at 11:45 am
4				SB-100 has a note that reads: "Dimensional layout/foundations/pier sizes are preliminary. Final dimensions/foundations/pier sizes shall be determined upon receipt and approval of final pre-engineered metal building (PEMB) shop drawing submittal package including member sizes and reactions". Please confirm that pricing is to be based upon the SB-100 foundation plan and that any required modifications or changes that result in more/less cost will be handled via change order.	AEI: Should changes result to the foundations from PEMB design load calculations, then yes, a change order for foundation changes at pier locations may result."
5				Drawing EP-100, 38 of 40, depicts duplex cord reel outlets overhead of the work bays. Please confirm if only a duplex receptacle is desired, or if a cord reels is also intended to be furnished and installed. If a cord reel is required, please provide a specification.	AEI Cord reel was added to spec in addenda 1
6	Sheridan Nov 13, 2019			1. Please confirm that all structure including masonry walls and mezzanine are NOT structurally supported or attached to the PEMB framing.	AEI: See individual responses below.
7				a. Detail on SF-100 of welding masonry wall parallel to the frame at grid 5 will not be allowed due to incompatible systems.	AEI: Understood. Masonry wall is designed as a free standing element with CFM wall system above. PEMB shall accommodate a continuous lateral load to the bottom fprange of the frame beam on Grid 5 of 35 plf. Change deflection track to a 800T300-54 (50 ksi) along the top of this CFM wall.
8				b. It's recommended that the masonry wall by-pass the building Frame 5. The wall should be built towards Frame 6 (inside the Wash Bay) to allow for the bridge crane in the Garage.	AEI: bridge crane will be installed at an elevation that is above the Top of Masonry. Stops shall be provided on the maitenance bay side of the party wall to the wash bay. Required overrun of the brige crane rail beams will need to be boxed out on the washbay side of the wall with metal framing and finishes to match wash bay side requirements.
9				c. Adequate separation between structures is required to allow these systems to be independent both laterally and longitudinally Movement may be 4.5"+/- in all directions under building design loading for crane or wind.	AEI: Provide L/120 on all lateral drift designs: crane, wind and seismic. Provide gap between Masonry and stel of 1". Backer rod & sealant for joint end masonry to steel.
10				d. Please confirm if there are any special deflection requirements or if the PEMB manufacturer can design per industry standards.	AEI: Provide L/120 on all lateral drift designs: crane, wind and seismic.
11				2. Specifications have identified no x-bracing but supplied no detail or foundations for standard portal frame foundations.	AEI: See individual responses below.
12				a. Please identify what bays are allowed to have portal frames, and that footings for these portal frames are allowed.	AEI: See Markup of Sheet SB-100 for recommendations for both Portal frame and bracing locations. Portal frames shall be as depicted on the cutout. Should changes result to the foundations from PEMB design load calculations, then yes, a change order for foundation changes at pier locations may result."
13				i. Flush portal frames will interfere with splice plates and stiffeners.	AEI: We disagree as we have completed a duplicate installation with no such interferences.

MTA Addenda 4 Questions - Contract 2019.12

MTA Addenda 4 Questions - Contract 2019.12				
		15-Nov-19		
		Litchfield Maintenance Garage		
Contractor/Vendor	Sheet	Plan/Spec	Question	AEI Team Response/Resolution
14			ii. Partial height portal frames at the crane elevation will interfere with the door operation and invoke x-bracing above the crane system.	AEI: We disagree with this assessment as we have completed a similar installation with no interference between portal frame and overhead door runs. Overhead doors were made to run straight up wall and roof line.
15			b. Please confirm that interior bracing from the crane to the roof is allowed.	AEI: See individual responses below.
16			i. X-bracing will be required above the crane to the roof to provide direct load path for crane loads.	AEI: AEI takes not exception as this is a part of the PEMB design considerations. However, we have requested that the gantry run on top of rail beams. We are assuming that the noted bracing would be run on the centerline of columns and begin at or above the 16' AFF level.
17			3. Specification calls out for Expandable Endwalls, but Drawings show what appears to be non-expandable rigid EW's with all columns turned as endpost.	AEI: No future additions or end wall expansions are planned for with this building.
18			a. Please confirm if all columns on Grid 1 and 6 are permanent or if some are to be removed. This could highly complicate crane framing for Grid 1 as brackets for the crane cannot be put on a column weak Axis.	AEI: No future additions or end wall expansions are planned for with this building. If column rotation is required for major axis connections, this can be accommodated on pie foundaiton modifications once design loads are provided. Foundations will be updated to reflect accordingly.
19			b. In case of future addition, please confirm if wall panel and secondary are to remain.	AEI: No future additions or end wall expansions are planned for with this building.
20			c. Please confirm if Grid 1 and 6 are intended to be loaded for expansion as they are shown as perimeter endpost columns sitting on piers and not like the typical frames.	AEI: No future additions or end wall expansions are planned for with this building.
21			d. In case of future addition, please confirm intended bay widths for the future expansion at both endwalls.	AEI: No future additions or end wall expansions are planned for with this building.
22			4. Please confirm if there are column depth or shape limits.	AEI: See individual responses below.
23			a. Specifications identify columns as tapered, drawings allude straight but show no column restrictions.	AEI/Mike: All columns shall be non-tapered elements.
24			5. Please confirm clear height limits for the crane.	AEI: See individual responses below.
25			a. Specs call for a minimum crane hook height of 16' AFF. It is assumed that since the OH Doors are 16' tall, the bottom of crane runway beams must also be 16' AFF. Based upon MH-100, there appears to be a 32" dia. spiral duct under Frame 4 in the crane area.	AEI: Correct on Crane hook height v. height of OHDs. Mechanical distribution ducting and return air system ducting has been revised to reflect this consideration. See revised MH-100 and MP-100 (attached) for further clarification.
26			6. Please confirm there are no Domestic Supplier (Buy American Act, STAA, ARRA or other).	AEI/MTA: There is no requirement on this project for use of domestic suppliers.
27			7. Please confirm there is no special coatings required for fasteners	AEI: See individual responses below.
28			a. Specification notes some bolts to be plated. All bolts will be provided as standard primer for main framing. Per the finish schedule on A-9, it is understood that exposed steel in the Wash Bay will receive Epoxy Paint. It is assumed that the Epoxy Paint will be field applied to all steel members, including the underside of the galvanized roof deck.	AEI: That is acceptable.
29			8. PEMB will be manufactured per IAS AC472 requirements as specified. Please confirm that there are no additional testing requirements.	AEI: That is acceptable.
30			9. Per A-2, there will be 20' high Wash Bay divider curtains. Please confirm the bottom elevation of the W12x30 support beam depicted on SF-100.	AEI: Asked and Answered in Addendum #1. "Revise to reflect W12x30 bottom of beam elevation to 16'0" AFF. "
31	Sheridan Nov 13, 2019		Is emergency back up required in the lighting fixtures even with the backup generator?	AEI (Elect) Yes, battery back up required. The generator is non life safety/standby only without life safety requirements(separate life safety ATS, Level 1 starting and alarms,etc)
32			Are the UL924 devices required with the backup generator?	AEI (Elect) No, the generator does not supply life safety rated back up power.

MTA Addenda 4 Questions - Contract 2019.12

		15-Nov-19			
		Litchfield Maintenance Garage			
	Contractor/Vendor	Sheet	Plan/Spec	Question	AEI Team Response/Resolution
33	Great Falls Construction			The U value of .32 is basically unattainable with a double hung window. Most windows are closer to .55. Is the U value negotiable?	GHA: Acceptable U-value will be based on submitted manufacturer's test data for thermal-break frame and low-E insulated glass per Specification 085113; 2.3.C and 2.3.D. MUBEC/IECC 2009 for Zone 6A requires a minimum window U-factor of 0.35.
34				The window finish is wide open in the spec. Can the finish can be narrowed down to something specific or at least to "manufacturers standard options" instead of "industry standard" ?	GHA: Window finish is specified in Section 085113;2.7.B
35	Blaine Casey			Please confirm that the well drilling & casing is part of the new well pump system being installed by the MTA.	GPCEI: Correct. The new well drilling and casing associated with the well pump system is by a separate MTA contract
36	Nickerson & Oday		MTA Add #2	The answers to RFI questions 26 and 27 seem to be conflicting. Please explain exactly regarding structural fill under the building.	GPCEI: Structural fill shall be carried in the bid form under pay item 304.105. Structural Fill is not carried in Division 800.
37			Painting	Do the beams and girts in the work bays need to be painted? If yes what paint product is to be used?	GHA: Yes. Specification Section 099123 - Interior Painting. 3.6.B.1 at Roof Structure; 3.6.B.2 at all other exposed structure; except 3.6.B.3 at the Wash Bay.
38			Railings	1 1/2" schedule 40 pipe is 1.9" OD vs 1 1/4" schedule 40 pipe is 1.6" OD and is normally used for 1 1/2" rail please verify which size pipe is to be used for rails.	GHA: 1-1/4" diameter
39			Railings	The base plates for the rails are butted together to form a 90 degree bend with no welding symbol. Need to verify that a 5/16" partial penetration weld on the outside will be acceptable as any weld on the inside edge will make a tight fit to the edge unlikely.	AEI: This is acceptable.
	C.H. Stevenson, Inc.			The \$7,500 (\$75/CY) allowance is barely enough to cover contractor's cost to truck and dispose of, assuming excavation is paid under common excavation item and contaminated soil can be used as cover at landfill. If contaminants are too high to allow landfill to use as cover the price goes up exponentially and allowance would not be enough to cover contractor's cost for trucking and disposal. If excavation is supposed to be included in the allowance neither scenario covers necessary costs at the allowed unit price. Please advise.	AEI/MTA: Allowance removed through Addendum 4. The quantity of 100 cy is maintained on the bid form, however, we are not asking for the contractor to supply a \$/CY value for consideration with the bid, based on the 100 CY quantity.

END Addendum 4 Questions/Responses