GENERAL STRUCTURAL NOTES:

1. DESIGN CODES AND CRITERIA:
THE MINIMUM STRUCTURAL DESIGN SHALL BE IN ACCORDANCE WITH THE CONNECTICUT BUILDING CODE, IBC 2015 AND ASCE 7-10.
2. IN ADDITION TO THE BUILDING DEAD LOADS, THE STRUCTURES ARE DESIGNED FOR THE FOLLOWING LOADS:

LIVE LOADS

STAIRS, LANDINGS, ELEVATED PLATFORM	100 PSF
MECHANICAL/ELECTRICAL EQUIPMENT (480 V SUBSTATION)	450 PSF
FOUNDATION SLAB	60 PSF
GRADE SLAB (M8 BUILDING)	250 PSF

SNOW LOADS

GROUND SNOW LOAD, Pg	30 PSF
SNOW EXPOSURE FACTOR, Ce	1.1
THERMAL COEFFICIENT FACTOR, Ct	1.0
SNOW IMPORTANCE FACTOR, Is	1.0

WIND LOADS

BASIC WIND SPEED, V	115 ~~110~~ MPH
WIND IMPORTANCE FACTOR, Iw	1.15
WIND EXPOSURE CATEGORY	C

SEISMIC LOAD (2016 CONNECTICUT STATE BUILDING CODE)

SEISMIC DESIGN CATEGORY	D
SHORT PERIOD SPECTRAL ACCELARATION, Ss	~~0.181~~ 0.186
1-SECOND PERIOD SPECTRAL ACCELARATION, S1	0.062
IMPORTANCE FACTOR, I	1.5
SITE CLASS	E
BASIC SEISMIC FORCE RESISTING SYSTEM:	ASCE 7-10
LONGITUDINAL:	ORDINARY CONCENTRICALLY BRACED FRAME
TRANSVERSE:	ORDINARY CONCENTRICALLY BRACED FRAME

3. LIVE LOAD REDUCTION SHALL BE IN ACCORDANCE WITH ASCE 7-10.

4. FUTURE EXPANSION: NO FUTURE EXPANSION.

STRUCTURAL STEEL:

1. ALL STRUCTURAL STEEL SHALL CONFORM TO THE SPECIFICATIONS FOR DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL USING THE 'MANUAL OF STRUCTURAL STEEL CONSTRUCTION', 13TH EDITION, BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (LRFD).

2. ALL STRUCTURAL STEEL SHALL BE NEW STEEL CONFORMING TO ASTM STANDARD SPECIFICATIONS, "STRUCTURAL STEEL" AS AMENDED TO DATE, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

3. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING:

ROLLED SHAPES & PLATES	ASTM A992 OR A588, GR 50
TUBE SECTIONS	ASTM A500, GR B
ANCHOR BOLTS	ASTM F1554, GR 55
HIGH STRENGTH BOLTS	ASTM A325

4. SHAPES NOTED AS "GALV" SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123. ALL STRUCTURAL AND MISCELLANEOUS STEEL EXPOSED TO WEATHER SHALL BE GALVANIZED UNLESS NOTED OTHERWISE. REFER TO RELATED DRAWINGS AND SPECIFICATIONS FOR PAINTING REQUIREMENTS.

5. WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 CODE FOR WELDING IN BUILDING CONSTRUCTION. (LATEST EDITION) WELDING ELECTRODES WILL BE E70XX. WELDERS, TACKERS AND WELDING OPERATORS MUST BE AWS CERTIFIED WITHIN THE PAST SIX MONTHS.

6. SHOP CONNECTIONS MAY BE BOLTED OR WELDED, UNLESS THE CONNECTION METHOD IS SPECIFICALLY INDICATED ON THE STRUCTURAL DRAWINGS. MAKE SHOP CONNECTIONS WELDED AND FIELD CONNECTIONS WITH $\frac{3}{4}$" DIAMETER ASTM A325 HIGH STRENGTH BOLTS WITH HOLES $\frac{1}{16}$" LARGER, UNLESS SPECIFICALLY INDICATED ON THE STRUCTURAL DRAWINGS. INSTALL ONE HARDENED WASHER UNDER THE ELEMENT TURNED IN TIGHTENING. IF TC BOLTS ARE USED, THE SLIP CRITICAL BOLT CAPACITY SHALL BE USED IN THE CONNECTION DESIGN. FIELD WELDING OF STRUCTURAL MEMBERS, NOT INDICATED ON THE STRUCTURAL DRAWINGS, IS NOT PERMITTED.

7. UNLESS INDICATED ON THE DRAWINGS, ALL SIMPLY SUPPORTED BEAM-TO-COLUMN AND BEAM-TO-BEAM CONNECTIONS SHALL BE STANDARD AISC DOUBLE ANGLE CONNECTION. THE MINIMUM NUMBER OF BOLTS IN ANY CONNECTION OF SECONDARY MEMBER SHALL BE TWO $\frac{3}{4}$" DIAMETER A325 BOLTS.

8. ALL BOLTED CONNECTIONS OF ALL MEMBERS IN BRACED FRAMES SHALL BE MADE WITH A325 SLIP CRITICAL BOLTS.

9. ALL BEAM CONNECTIONS SHALL BE DESIGNED FOR THE MAXIMUM UNIFORM LOAD-CARRYING CAPACITY OF THE MEMBER.

10. UNLESS OTHERWISE SHOWN, PROVIDE $\frac{1}{2}$" THICK STIFFENER PLATES ON EACH SIDE OF BEAM WHEN COLUMN OCCURS ABOVE OR BELOW BEAM, STIFFENER PLATES SHALL BE ALIGNED WITH COLUMN FLANGES WHERE WEBS ARE PARALLEL AND ALIGNED WITH COLUMN WEB WHERE WEBS ARE PERPENDICULAR.

11. ALL FILLET WELDS SHALL BE A MINIMUM OF $\frac{5}{16}$" UNLESS NOTED OTHERWISE.

12. ALL COLUMN ENDS SHALL BE MILLED TO BEAR.

13. STRUCTURAL BEAM OVER COLUMN CONNECTIONS SHALL HAVE A $\frac{3}{4}$" CAP PLATE WITH (4) $\frac{3}{4}$" DIAMETER HIGH STRENGTH BOLTS UNLESS NOTED OTHERWISE.

14. ALL ANCHOR BOLTS SHALL HAVE TWO HEAVY HEX NUTS AND ONE WASHER UNLESS INDICATED OTHERWISE ON THE DRAWINGS. PROVIDE ANCHOR BOLTS, SETTING PLATES AND EMBEDDED PLATES TO BE SET BY OTHERS. PROVIDE $\frac{1}{4}$" THICK LEVELING PLATES FOR USE IN ALIGNING AND SETTING ANCHOR BOLTS AND BASE PLATES.

15. UNLESS NOTED OTHERWISE, ALL COLUMNS SHALL HAVE BASE PLATES SET ON $\frac{3}{4}$" NON-SHRINK GROUT AND (4) $\frac{3}{4}$" DIAMETER ANCHOR BOLTS EMBEDDED 12" MINIMUM.

16. TOP-OF-STEEL ELEVATIONS INDICATED ON THE DRAWINGS REFER TO TOP OF BEAM.

STRUCTURAL STEEL (CONTINUED):

17. THE CONTRACTOR SHALL PROVIDE ALL EMBEDDED PLATES, SLEEVES, BOX-OUTS, CONDUITS ETC. REQUIRED BY OTHER TRADES IN THE CONCRETE STRUCTURE.

18. TEMPORARY CONSTRUCTION BRACING OF THE STRUCTURAL STEEL FRAME SHALL REMAIN IN PLACE UNTIL AFTER THE PERMANENT BRACING SYSTEM HAS BEEN COMPLETED.

19. FIELD WELDING OF STRUCTURAL MEMBERS, NOT INDICATED ON THE STRUCTURAL DRAWINGS, IS NOT PERMITTED.

CAST IN PLACE CONCRETE:

1. PROPORTIONING OF REINFORCED CONCRETE MEMBERS AND THEIR STEEL REINFORCEMENT IS BASED ON ULTIMATE STRENGTH DESIGN IN ACCORDANCE WITH BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318-14).

2. MINIMUM 28 DAY COMPRESSIVE STRENGTHS f'c (28 DAYS)

FOUNDATION SLABS/BEAMS, CLASS 'F' CONCRETE	4,400 PSI
SLAB-ON-GRADE, CLASS 'F' CONCRETE	4,400 PSI
MEP DUCT BANKS, BLOCKING & ENCASEMENT	3,300 PSI

ALL CONCRETE SHALL BE CLASSIFIED AS NORMAL WEIGHT, EXCEPT AS NOTED, WITH A UNIT WEIGHT OF 145 PCF.

3. ALL FORMWORK SHALL REMAIN IN PLACE UNTIL CONCRETE HAS ATTAINED AT LEAST 75% OF ITS 28-DAY COMPRESSIVE STRENGTH (SEE SPECIFICATIONS).

4. ALL CONSTRUCTION AND CONTROL JOINTS MUST BE SHOWN ON SHOP DRAWINGS AND APPROVED BY THE ENGINEER.

5. CONSTRUCTION JOINTS NOT SHOWN ON THE DRAWINGS SHALL BE LOCATED SO AS TO LEAST IMPAIR THE STRENGTH OF THE STRUCTURE AND SHOULD GENERALLY BE LOCATED AT POINTS OF MINIMUM SHEAR.

6. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4" UNLESS NOTED OTHERWISE.

7. ALL KEYS SHALL BE 2" x 4" WITH SQUARED SIDES, UNLESS NOTED OTHERWISE.

8. NO HORIZONTAL CONSTRUCTION JOINTS SHALL BE PERMITTED IN BEAMS, UNLESS SHOWN SPECIFICALLY ON DRAWINGS. FOR VERTICAL CONSTRUCTION JOINTS, REFER TO ACI 318.

9. ALL REINFORCEMENT WILL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS. REFER TO TYPICAL DETAILS ON STR-010.

10. CAST SLABS, WALLS AND BEAMS MONOLITHICALLY, UNLESS INDICATED.

11. NOT ALL OPENINGS THROUGH CONCRETE SLABS ARE SHOWN ON THE STRUCTURAL DRAWINGS. OPENINGS INDICATED OR ANY ADDITIONAL OPENINGS OR INSERTS REQUIRED MUST BE VERIFIED WITH RESPECTIVE TRADES BEFORE POURING OF CONCRETE. NO CONCRETE SHALL BE CAST PRIOR TO DESIGNER'S REVIEW AND APPROVAL OF THE COORDINATED SUBMITTAL TO INCLUDE REINFORCEMENT, SLAB OPENINGS AND EMBEDDED ITEMS.

12. USE NON-SHRINK, NON-METALLIC GROUT HAVING A MINIMUM COMPRESSIVE STRENGTH OF 8,000 PSI, WHERE INDICATED ON THE PLANS AND IN THE SPECIFICATIONS.

13. PROVIDE SEALANTS IN JOINTS EXPOSED TO VIEW, CONSTRUCTION JOINTS, CONTROL JOINTS AND SHEAR KEYS.

14. ALL CONCRETE SHALL BE CONTROLLED CONCRETE, MIXED AND PLACED UNDER THE SUPERVISION OF AN APPROVED CONCRETE TESTING AGENCY.

15. ALL CONCRETE EXPOSED TO WEATHER SHALL CONTAIN AIR ENTRAINMENT ADMIXTURE.

CAST IN PLACE CONCRETE REINFORCING:

1. SHOP DRAWINGS AND SCHEDULES OF REINFORCING STEEL SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF THAT PORTION OF THE WORK. ALL ACCESSORIES MUST BE SHOWN ON THE SHOP DRAWINGS.

2. REINFORCING BARS SHALL CONFORM TO ASTM A615 OR A706 GRADE 60 AND SHALL BE EPOXY COATED.

3. THE FOLLOWING MINIMUM CLEAR COVER SHALL BE PROVIDED UNLESS NOTED OTHERWISE ON THE DRAWINGS:

CONCRETE PLACED AGAINST GROUND - ALL BAR SIZES	3"
CONCRETE EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	
#6 OR LARGER	2"
#5 OR SMALLER	1-1/2"

4. UNLESS NOTED OTHERWISE, BARS SHALL BE CONTINUOUS AND SHALL RUN CONTINUOUSLY AROUND CORNERS. BARS SHALL HAVE STANDARD HOOKS AT DISCONTINUOUS ENDS.

5. SPLICES SHALL GENERALLY OCCUR AT MID-SPAN FOR TOP AND MIDDLE BARS AND AT THE SUPPORT FOR BOTTOM BARS AND SHALL BE STAGGERED. PROVIDE CLASS B SPLICES FOR ALL CONTINUOUS REINFORCEMENT, UNLESS NOTED OTHERWISE.

6. BARS SHALL NOT BE CUT OR OMITTED FOR SLEEVE OR DUCT OPENINGS IN FLOORS. BARS MAY BE MOVED LATERALLY WITHOUT CHANGING THE DISTANCE FROM THE FACE OF CONCRETE. BEND NO BARS IN FIELD WITHOUT APPROVAL OF THE ENGINEER.

7. ALL REINFORCING SHALL BE DETAILED IN ACCORDANCE WITH AC1 315 MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES. PROVIDE BAR SUPPORTS, SPACERS AND ACCESSORIES RECOMMENDED IN THE ACI DETAILING MANUAL, PUBLICATION SP-66. ALL REINFORCEMENT DETAILING, LAP SPLICES AND EMBEDMENTS SHALL CONFORM TO THIS MANUAL. ALL ACCESSORIES, SUCH AS SLAB BOLSTERS, BEAM AND SLAB CHAIRS IN CONTACT WITH EXPOSED SURFACES SHALL BE PLASTIC COATED.

8. SET AND TIE ALL REINFORCEMENT BEFORE PLACING CONCRETE. SETTING DOWELS AND REINFORCEMENT INTO WET CONCRETE IS PROHIBITED.

9. MINIMUM ANCHORAGE, SPLICE REQUIREMENTS FOR REINFORCING BARS AND TEMPERATURE REINFORCEMENT IN ALL CONCRETE SLABS SHALL CONFORM TO REQUIREMENTS OF ACI 318, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

CAST IN PLACE CONCRETE REINFORCING (CONTINUED)

10. NO CONCRETE SHALL BE PLACED BEFORE REVIEW AND APPROVAL OF THE REINFORCING AND EMBEDDED ITEMS HAS BEEN OBTAINED FROM THE ENGINEER.

11. ANY ADDITIONAL DRILLING OR CORING SHALL NOT DAMAGE REINFORCING BARS.

12. CONTRACTOR SHALL SET ANCHOR BOLTS AND EMBEDDED PLATES REQUIRED FOR CONNECTION OF WORK BY OTHERS.

FOUNDATION:

1. FOUNDATION DESIGN IS BASED UPON SOIL EXPLORATION AND REPORT BY STV INCORPORATED, DATED OCTOBER 2018.

2. SOIL BEARING CAPACITY: 1.75 KSF (STORAGE/CART BUILDING)
1.25 KSF (M8 PARTS STORAGE STRUCTURE)
3.00 KSF (STANDBY POWER SUBSTATION)
2.75 KSF (ACCESS PLATFORMS)

3. ALL BACKFILL UNDER STRUCTURAL SLAB, MATS AND OTHER FOUNDATION ELEMENTS SHALL BE COMPACTED IN SPECIFIED LIFTS TO 95 PERCENT OF MAXIMUM DRY DENSITY, UNLESS NOTED OTHERWISE OR INDICATED. FOUNDATION ELEMENTS SHALL REST ON SUITABLE UNDISTURBED OR GRANULAR FILL. REFER TO SPECIFICATIONS FOR FILL REQUIREMENTS.

4. PROVIDE 12" MINIMUM GRANULAR FILL OR $\frac{3}{8}$" CRUSHED STONE AND GEOTEXTILE UNDER FOUNDATION AND GRADE SLABS, SEE DWG NOS. STR-006, STR-009 AND STR-013, FOR ADDITIONAL DETAILS.

5. PROVIDE SHEETING, BRACING AND UNDERPINNING TO PROTECT ADJACENT UTILITY STRUCTURES, AS REQUIRED.

6. OPEN EXCAVATIONS AROUND BUILDING PERIMETER MUST REMAIN DRY. REMOVE WATER FROM OPEN EXCAVATIONS PRIOR TO BACKFILLING.

7. SHORING AND BRACING FOR LATERAL SUPPORT OF EXCAVATION SHALL REMAIN IN PLACE UNTIL ALL PERMANENT STRUCTURAL SYSTEMS ARE COMPLETE AND APPROVED BY THE ENGINEER.

8. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR ALL FOUNDATION ELEMENTS DURING BACKFILLING AND COMPACTION.

9. PROVIDE PVC WATERSTOPS IN ALL CONSTRUCTION AND EXPANSION JOINTS WHERE INDICATED ON THE DRAWINGS.

10. ALL REQUIRED INSERTS, SLEEVES, CONDUITS, EMBEDMENTS AND PENETRATIONS MUST BE VERIFIED WITH RESPECTIVE TRADES BEFORE CASTING CONCRETE.

11. COORDINATE UNDERDRAIN REQUIREMENTS WITH MECHANICAL DRAWINGS.

12. NO FOUNDATION ELEMENT SHALL BE PLACED ON FROZEN SOIL OR IN STANDING WATER.

13. OLD FOUNDATIONS OR OTHER OBSTRUCTIONS MAY BE ENCOUNTERED DURING EXCAVATION AND PILE DRIVING WORK. SUCH FOUNDATIONS AND OBSTRUCTIONS SHALL BE REMOVED TO A MINIMUM OF 2 FEET BELOW THE BOTTOM OF NEW FOUNDATION OR AS DIRECTED BY THE ENGINEER.

14. THE OWNER AND ENGINEER ASSUME NO RESPONSIBILITY FOR THE VALIDITY OF THE SUBSURFACE CONDITIONS DESCRIBED ON THE DRAWINGS, SPECIFICATIONS, BORING LOGS OR TEST PITS. THE DATA IS INCLUDED ONLY TO ASSIST THE CONTRACTOR DURING THE BIDDING AND SUBSEQUENT CONSTRUCTION AND REPRESENT CONDITIONS ONLY OF THE SPECIFIED LOCATIONS AT THE PARTICULAR TIME THEY WERE MADE.

15. LOCALIZED DEWATERING MAY BE NECESSARY UNTIL FOUNDATIONS ARE PLACED AND SHALL CONTINUE UNTIL CONCRETE FORMS ARE REMOVED.

GENERAL CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE AND REPORT ANY DISCREPANCIES TO THE ENGINEER FOR CLARIFICATION BEFORE PROCEEDING WITH THE AFFECTED PART OF WORK.

2. SHORE, SHEET AND BRACE EXCAVATION AS REQUIRED TO ASSURE THE COMPLETE SAFETY AGAINST COLLAPSE OF EARTH AND DAMAGE TO ADJACENT PROPERTY INCLUDING BUT NOT LIMITED TO EXISTING STREETS, BUILDINGS AND UTILITY LINES.

3. THE CONTRACTOR SHALL BE COMPLETELY RESPONSIBLE FOR THE SAFETY OF ADJACENT STRUCTURES, PROPERTY AND THE PUBLIC. IN AREAS OF PUBLIC ACCESS, THE PUBLIC WAY SHALL BE PROTECTED FROM CONSTRUCTION AND DEMOLITION WORK AT ALL TIMES.

4. COORDINATE THE STRUCTURAL INFORMATION SHOWN ON THESE DRAWINGS WITH OTHER INTERFACING TRADES (CIVIL, UTILITIES, TRACTION POWER, COMMUNICATIONS, ETC.) PRIOR TO SUBMITTAL OF SHOP DRAWINGS AND CONSTRUCTION.

5. WORK NOT INDICATED ON A PART OF THE DRAWINGS, BUT REASONABLY IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING LOCATIONS, SHALL BE INCLUDED. DETAILS SHOWN AS TYPICAL ARE APPLICABLE TO ALL SIMILAR CONDITIONS.

6. DEMOLITION WORK SHALL BE DONE WITH CAUTION. PROVIDE ALL SHORING AND ENCLOSURES NECESSARY PRIOR TO COMMENCEMENT OF WORK.

7. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH APPROVED SHOP DRAWINGS.

8. DO NOT SCALE CONTRACT DRAWINGS FOR THE PURPOSE OF ESTABLISHING DIMENSIONS.

9. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH SHOP DRAWINGS, PROJECT SPECIFICATIONS, CIVIL, UTILITY, TRACTION POWER, TRACK, COMMUNICATIONS AND OTHER DRAWINGS. CONSULT THESE DRAWINGS FOR LOCATIONS AND DIMENSIONS OF OPENINGS, CHASES, INSERTS, REGLETS, SLEEVES, DEPRESSIONS AND OTHER DETAILS NOT SHOWN ON THE STRUCTURAL DRAWINGS.

STATE OF CONNECTICUT EUGENE Y. CHUANG NO. 23258 LICENSED PROFESSIONAL ENGINEER

Digitally signed by Eugene Chuang
DN: c=US, st=Connecticut, l=Rocky Hill, o=Garg Consulting Services Inc, cn=Eugene Chuang, email=jda@gargin c.com
Date: 2019.03.13 12:47:24 -04'00'

ADDENDUM NO. 2

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
1	03/08/2019	WIND SPEED AND SHORT PERIOD SPECTRAL ACC. REVISED	08.02.A2

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 3/13/2019

DESIGNER/DRAFTER: ASD
CHECKED BY: PDG
NOT TO SCALE

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\STR-001_CNS_SHEET_0300-0138.dgn

SIGNATURE/BLOCK: STATE OF CONNECTICUT EUGENE Y. CHUANG NO. 23258 LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS WEST END YARD

TOWN: **NEW HAVEN**

DRAWING TITLE: **STRUCTURAL GENERAL NOTES - 1**

PROJECT NO. **0300-0138**
DRAWING NO. **STR-001**
SHEET NO. **08.02.A2**

PANEL: MDP-1

LOCATION: CART GARAGE
MOUNTING: FLUSH

208/120V, 3 PHASE, 4 WIRE
400A COPPER BUS
400A MAIN CIRCUIT BREAKER
GROUND BUS, HINGED TRIM, 65KAIC

CIR	DESCRIPTION	KVA	C/B	A	B	C	C/B	KVA	DESCRIPTION	CIR
1	OHD-1 CART GARAGE	1,150	20A	/			20A	1,150	OHD-2 CART GARAGE	2
3	OHD-3 SOAP STORAGE	1,150	20A		/		20A	1,080	WALL OUTLETS - CART GARAGE	4
5	OFFICE OUTLETS	720	20A			/	20A	360	UTILITY ROOM OUTLETS	6
7	SOAP & PLUMBING STORAGE OUTLETS	720	20A	/			30A	2,250	HOT WATER HEATER	8
9	OHD LTGS CART GARAGE	1,200	20A		/		20A	360	RESTROOM OUTLETS	10
11	REST ROOM LIGHTS	720	20A			/	20A	720	OVERHEAD LIGHTS - CART GARAGE	12
13	OFFICE AND UTILITY ROOM LIGHTS	360	20A	/			20A	2,400	EXTERIOR LIGHTS	14
15	SOAP STORAGE LIGHTS	720	20A		/		20A	720	PLUMBING STORAGE LIGHTS	16
17	HEATPUMP, HP/AHU-1	5,700	45A			/	20A	2,000	ABOVEGROUND BACKFLOW ENCLOSURE	18
19		5,700	45A	/			20A	500	HRV-1	20
21	SPARE	–	–		/		20A	180	EXHAUST FAN CART GARAGE	22
23	EXHAUST FAN RESTROOMS	180	20A			/	20A	1,200	FIRE ALARM PANEL	24
25	COMMUNICATION CABINET	3,400	20A	/			50A	6,000	COMPACTOR WITH EMERGENCY STOP	26
27		3,400	20A		/		50A	6,000		28
29	UNIT HEATER UH-2, PLUMBING	3,000	40A			/	50A	6,000		30
31	STORAGE	3,000	40A	/			20A	500	MATIT CABINET	32
33	UNIT HEATER UH-1, CART GARAGE	3,000	40A		/		–	–	SPARE	34
35		3,000	40A			/	–	–	SPARE	36
37		12,000	100A	/			–	–	SPARE	38
39	COMM. SPLICE CHAMBER SERVICE	12,000	100A		/		–	–	SPARE	40
41		12,000	100A			/	–	–	SPARE	42

TOTAL A = 39,130 KVA
B = 29,810 KVA
C = 35,600 KVA
TOTAL = 104,540 KVA

ELECTRICAL AND LIGHTING LEGEND

SYMBOL	MANU-FACTURER	MODEL NUMBER	DESCRIPTION
A	LITHONIA OR APPROVED EQUAL	2TL233L	2X2 LED TROFFER
B	LITHONIA OR APPROVED EQUAL	ZLIN-L48-500OM	INDUSTRIAL, 4FT LED
C1	LITHONIA OR APPROVED EQUAL	WST-LED P2 VW	LED WALLPACK
C2	LITHONIA OR APPROVED EQUAL	WST-LED P1 VW	LED WALLPACK
D	LITHONIA OR APPROVED EQUAL	KACM-20C-700MA	LED CANOPY LIGHTING
EM E1	LITHONIA OR APPROVED EQUAL	ELM2	2 HEAD EMERGENCY- LED
RH E2	LITHONIA OR APPROVED EQUAL	ELATQWP LO304 SD	2 HEAD REMOTE- LED
F	LITHONIA OR APPROVED EQUAL	LHQM	EXIT-LED
C	LITHONIA OR APPROVED EQUAL	2TL - LED	2x2 CEILING LIGHTS

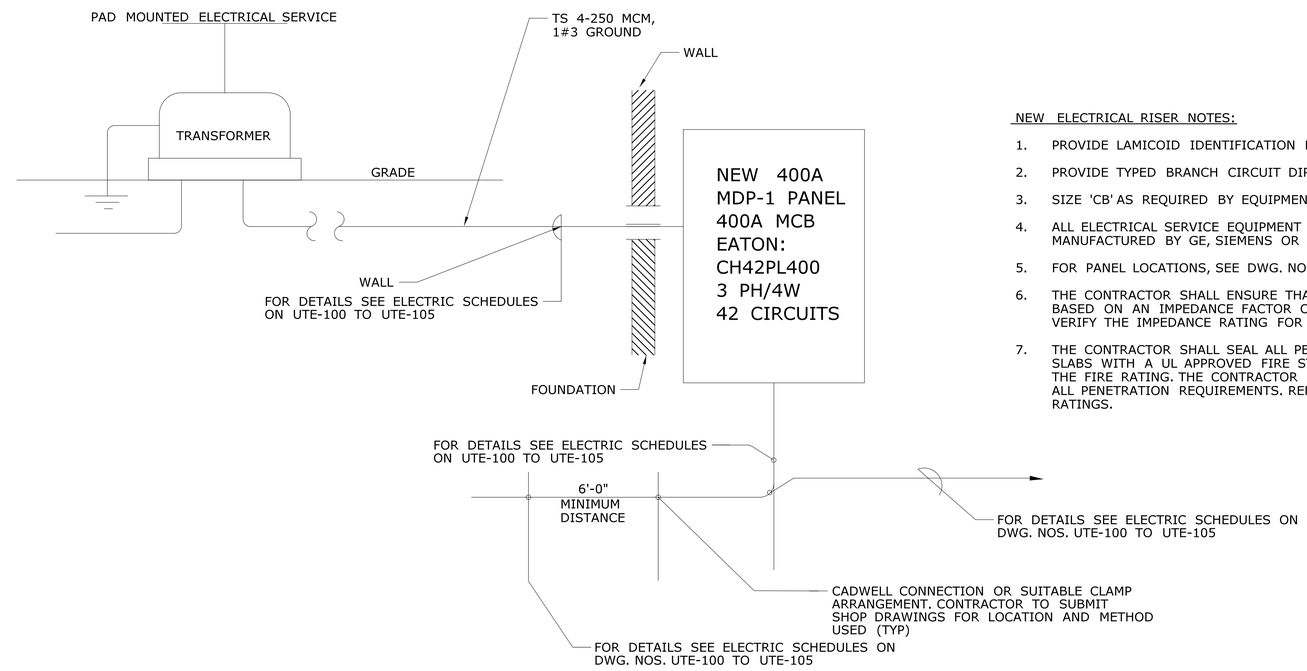
WIRING, AMPERAGE AND RACEWAY CHART

OCP	WIRE SIZE	MAX CONT LOAD	GRND WIRE	RACEWAY	VOLTAGE
20A	12	16	12	3/4" C	120V, 1P
30A	10	24	10	3/4" C	120V, 1P
30A	10	24	10	3/4" C	120V, 1P
30A	10	24	10	3/4" C	120V, 1P
50A	8	40	10	1" C	120V, 1P

CONDUCTORS BASED ON 75 DEGREES TERMINAL RATINGS

ELECTRICAL GENERAL NOTES:

1. THIS PROJECT IS NEW BUILDING USED FOR CLEANING STORAGE AND CART GARAGE AND SUPPLIES.
2. ALL DIMENSIONS AND EXACT EQUIPMENT SHALL BE VERIFIED WITH MECHANICAL AND ARCHITECTURAL DRAWINGS AND CONDITIONS IN THE FIELD.
3. THE CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES AND PROVIDE OTHERS WITH NECESSARY INFORMATION TO COMPLETE THIS INSTALLATION.
4. VERIFY AND COORDINATE EXACT LOCATIONS OF PANELS, OUTLETS AND JUNCTION BOXES WITH INSTALLER OF THE EQUIPMENT TO BE SERVED. OUTLETS SHOWN ON DRAWINGS ARE FOR ROUGH-IN PURPOSE. PROVIDE COMPLETE CONNECTIONS TO THE EQUIPMENT FROM OUTLET BOXES.
5. PROVIDE FIRE PROOF SEALANT AROUND CONDUITS PENETRATING FIRE RATED WALLS.
6. RECEPTACLES WITHIN SIX FEET OF A SINK SHALL BE GFI TYPE OR WIRED TO A GFCI CIRCUIT BREAKER.
7. INSTALL EMT CONDUIT IN OFFICE SPACE AND RGS CONDUIT IN STORAGE GARAGE.
8. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF ALL MECHANICAL, PLUMBING, FIRE PROTECTION AND OWNER FURNISHED EQUIPMENT, WITH RELEVANT TRADE DRAWINGS.
9. IN AREAS WHERE ONE FIXTURE IS SHOWN TO BE CONTROLLED BY A SWITCH OR SWITCHES, ALL OTHER CEILING MOUNTED FIXTURES IN THAT SPACE SHALL BE CONTROLLED BY THE SAME SWITCH(ES).
10. OCCUPANCY SENSORS SHALL CONTROL ALL LIGHT FIXTURES WITHIN RESTROOMS WITH 20 MINUTE DELAY OFF.
11. ALL EXIT LIGHT CHEVRONS SHALL BE VISIBLE TO A MINIMUM DISTANCE OF 40'-0" PER NFPA 101. POWER SHALL BE PROVIDED BY BRANCH CIRCUITS AHEAD OF SWITCHES.
12. ALL DIRECTIONAL, EMERGENCY LIGHTING LUMINAIRES SHALL BE AIMED TO PROVIDE EMERGENCY ILLUMINATION AT PATH(S) OF EGRESS. POWER SHALL BE PROVIDED BY BRANCH CIRCUITS AHEAD OF SWITCHES.
13. MC CABLE TO BE USED ONLY IN FURRED OUT WALLS AND HUNG CEILING AREAS FOR LIGHTING.
14. SWITCHES SHALL BE MOUNTED AT 4'-0" AND RECEPTACLES AT 1'-6" ABOVE FINISHED FLOOR AT THE CENTER OF BOX UNLESS OTHERWISE NOTED.
15. ALL BRANCH CIRCUIT WIRES AND FEEDERS SHALL BE PERMANENTLY TAGGED AT THE PANEL CONNECTION WITH "BRADY" MARKERS.
16. ALL WIRE SIZES ARE BASED ON COPPER THHN 90˚C; ALUMINUM IS NOT TO BE USED.
17. ALL EMPTY CONDUIT SYSTEMS SHALL CONTAIN A PULL WIRE FROM WALL OUTLET TO CEILING FOR FUTURE PULLING OF PHONE AND DATA CONDUCTORS AND TAG FOR FINAL LOCATION.



ELECTRICAL RISER DIAGRAM
SCALE: NONE

NEW ELECTRICAL RISER NOTES:

1. PROVIDE LAMICOID IDENTIFICATION LABELS FOR ALL NEW PANELBOARDS.
2. PROVIDE TYPED BRANCH CIRCUIT DIRECTORIES FOR ALL PANELBOARDS.
3. SIZE 'CB' AS REQUIRED BY EQUIPMENT MANUFACTURER.
4. ALL ELECTRICAL SERVICE EQUIPMENT AND PANELBOARDS SHALL BE AS MANUFACTURED BY GE, SIEMENS OR APPROVED EQUAL.
5. FOR PANEL LOCATIONS, SEE DWG. NO. ELE-002 & ELE-003.
6. THE CONTRACTOR SHALL ENSURE THAT ALL SHORT CIRCUIT RATINGS ARE BASED ON AN IMPEDANCE FACTOR OF 5.0 AND THE CONTRACTOR SHALL VERIFY THE IMPEDANCE RATING FOR THE PAD MOUNTED TRANSFORMER.
7. THE CONTRACTOR SHALL SEAL ALL PENETRATIONS THROUGH WALLS AND SLABS WITH A UL APPROVED FIRE STOP TO MAINTAIN THE INTEGRITY OF THE FIRE RATING. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL PENETRATION REQUIREMENTS. REFER TO SPECIFICATIONS FOR FIRE RATINGS.

ADDENDUM NO. 2

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
1	03/08/2019	TYPE C LIGHT FIXTURE ADDED	08.20.A2

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 3/13/2019

DESIGNER/DRAFTER: JH
CHECKED BY: ASD
NONE

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

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SIGNATURE/BLOCK:

STATE OF CONNECTICUT EUGENE Y. CHUNG NO. 23258 LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS WEST END YARD

TOWN: **NEW HAVEN**

DRAWING TITLE: **STORAGE AND CART GARAGE SCHEDULE & DETAILS**

PROJECT NO. **0300-0138**
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