ENGINEERING DEPARTMENT

**ADDENDUM TO THE CONTRACT**

**for the**

**Capital Transit Facility Renovation and Addition**
**Contract No. E16-016**

**ADDENDUM NO.:** **TWO**

**CURRENT DEADLINE FOR BIDS:**
**March 30, 2016**

**PREVIOUS ADDENDA:** **ONE**

**ISSUED BY:**
City and Borough of Juneau
ENGINEERING DEPARTMENT
155 South Seward Street
Juneau, Alaska 99801

**DATE ADDENDUM ISSUED:** **March 22, 2016**

The following items of the contract are modified as herein indicated. All other items remain the same. This addendum has been issued and is posted online. Please refer to the CBJ Engineering Contracts Division webpage at: http://www.juneau.org/engineering_ftp/contracts/Contracts.php

**INFORMATON:** Provided are the Final Shop Drawings for Capital Transit – Juneau Alaska Equipment Layout, NS Wash Systems (Page 1- 3) for Contractor's Reference. The text is small at 11 x 17 please view at the Website to enlarge.

**PROJECT MANUAL:**

Item No. 1 SECTION 00030 NOTICE INVITING BIDS – DESCRIPTION OF WORK, Additive Alternate No. 1 ***Delete*** "and the concrete apron outside the bus wash"

Item No. 2 SECTION 01230 – ALTERNATES, PART 3 – EXECUTION, Article 3.1 SCHEDULE OF ALTERNATES, Paragraph, 1. Alternate bid 1: ***Delete*** "and the concrete apron outside the bus wash"

Item No. 3 SECTION 08313 SECTIONAL DOORS, PART 2 – PRODUCTS, Article 2.2 TRACKS, SUPPORTS, AND ACCESSORIES, ***Add***, Paragraph F. Provide a 22ga stainless steel cover over motor to protect from moisture.

Item No. 4 SECTION 221006 PLUMBING PIPING SPECIALTIES, PART 2- PRODUCTS, Article 2.9 SUMPS AND INTERCEPTORS, Paragraph B. Oil Interceptors: Letter h. ***Change to*** "Inlet/Outlet size: 6-inch."

Item No. 5 SECTION 01010 SUMMARY OF WORK, PART 1 – GENERAL, Article 1.2 WORK COVERED BY CONTRACT DOCUMENTS, Paragraph A. DESCRIPTION OF WORK, last paragraph, ***Delete*** "The bus wash is to be commissioned, complete and operational by October 15, 2016" and ***replace*** with "The bus wash is to be commissioned, complete and operational by October 1, 2016."

**DRAWINGS:**

Item No. 1 Sheet A001 MECHANICAL SHEET INDEX, ***Delete*** and **replace** with the attached Sheet A001 MECHANICAL SHEET INDEX, labeled Addendum No. 2.

Item No. 2 Sheet A201 OVERALL FIRST FLOOR PLAN, ***Delete*** and **replace** with the attached Sheet A201 OVERALL FIRST FLOOR PLAN, labeled Addendum No. 2, dated March 2016.

Item No. 3 Sheet A403 ENLARGED FLOOR PLAN, ***Delete*** and **replace** with the attached Sheet A403 ENLARGED FLOOR PLAN, labeled Addendum No. 2, dated March 2016.

Item No. 4 Sheet C302 ENLARGED SITE PLAN, Sewer Pipe Summary Table, ***Revise*** Pipe SP-2 and SP-3 to be 6" diameter PVC pipe.

Item No. 5 Sheet C302 ENLARGED SITE PLAN, SSCO-2 Information Box, ***Revise*** SSCO-2 to be 6" diameter sanitary sewer cleanout.

Item No. 6 Sheet C303 ENLARGED SITE PLAN, Sewer Pipe Summary Table, ***Revise*** Pipe SP-2 to be 6"diameter PVC pipe.

Item No. 7 Sheet C500 CONSTRUCTION DETAILS, Detail No. 1A, ***Delete*** "Alternate" from the detail title.

Item No. 8 Sheet C500 CONSTRUCTION DETAILS, Detail No. 1B, ***Delete*** "Base-Bid" from the detail title.

Item No. 9 Sheet C501 CONSTRUCTION DETAILS, Detail No. 6, Sanitary Sewer Drop Manhole, ***Revise*** all references to 4" PVC to Read 6" PVC.

Item No. 10 Sheet C501 CONSTRUCTION DETAILS, Detail No. 6, Sanitary Sewer Drop Manhole, Note 7 ***Add*** the following: Drop piping shall be 6" diameter piping.

Item No. 11 Sheet S211 PARTIAL FOUNDATION PLAN, ***Delete*** and **replace** with the attached Sheet S211 PARTIAL FOUNDATION PLAN, Revision 2, labeled Addendum No. 2, dated February 2016.

Item No. 12 Sheet S311 BUS WASH FOUNDATION DETAILS, ***Delete*** and **replace** with the attached Sheet S311 BUS WASH FOUNDATION DETAILS, with Revision 2 for Detail A, labeled Addendum No. 2, dated February 2016.

Item No. 13 ***Add*** Sheet S313 TRENCH AND SAND PIT SECTIONS, Revision 2, labeled Addendum No. 2, dated February 2016.

Item No. 14 Sheet M100 FOUNDATION PLAN,

- ***Add*** Sheet note: "1. ADJUST WASH BAY WASTE LINE LAYOUTS TO ACCOMMODATE WASH BAY EQUIPMENT SUMP LOCATION. REFERENCE WASH BAY SHOP DRAWINGS."
- ***Add*** Sheet note: "2. UPSIZE 4" WASTE FROM WASH BAY SUMP TO OWS-1 TO 6". UPSIZE 4" WASTE FROM OWS-1 TO CITY SEWER TO 6" WASTE. UPSIZEALL 4"FCOS SERVICING 6" WASTE TO 6"FCO. SANITARY DISCHARGE FROM THE WASH BAY EQUIP. IS 6" SIZE."

Item No. 15 Sheet M101 PIPING PLAN,

- ***Add*** note to WSPR, CW and RD piping spanning 122-Bus Storage, 123-Bus Storage. "MAINTAIN APPROXIMATELY 14'-0" CLEARANCE AFF BELOW PIPING. HANG WSPR, CW PIPING WITHIN 24" OF CEILING STRUCTURE. MATCH PITCH OF ROOF AS NECESSARY."

Item No. 16 Sheet M102 VENTILATION PLAN

- ***Add*** note to F-4 Ductwork: "SUPPLY AND RETURN DUCTWORK TO BE APPROXIMATELY 15'-0" AFF (BASE)".
- ***Change*** note to F-4 ductwork at Grid-C': "WASH BAY EQUIPMENT TAKES POSITIONAL PRIORITY OVER DUCTWORK."
- ***Add*** detail callout next to EF-2, EF-3, EF-4, EF-5, and EF-6 to direct to Drawing 4 of Sheet M402.

Item No. 17 Sheet M103 ROOF PLAN

- ***Change*** detail callout for "2"VTR FOR DT-1" at Grids 7a &A to direct to Drawing-6, Sheet M402.
- ***Add*** 2"VTR at Grids 1a.5&A for new toilet room as indicated by sheet M303 with Detail callout to Drawing-6, Sheet M402.

Item No. 18 Sheet M301 ENLARGED MECHANICAL ROOM PLANS

- ***Change*** Detail callout on Drawing-1 next to F-1 chimney to indicate Drawing-7 of sheet M402.
- ***Change*** Detail callout on Drawing-2 next to DT-1 to indicate Drawing-2 of sheet M401.
- ***Add*** detail callout on Drawing-2 next to DT-1 VTR to indicate Drawing-6 of sheet M402.

Item No. 19 Sheet M302 RADIANT PIPING PLAN

- ***Add*** sheet note: "1. ADJUST WASH BAY WASTE LINE LAYOUTS TO ACCOMMODATE WASH BAY EQUIPMENT SUMP LOCATION. REFERENCE WASH BAY SHOP DRAWINGS."
- ***Add*** sheet note: "2. UPSIZE 4" WASTE FROM WASH BAY SUMP TO OWS-1 TO 6". UPSIZE 4" WASTE FROM OWS-1 TO CITY SEWER TO 6" WASTE. UPSIZE ALL 4"FCOS SERVICING 6" WASTE TO 6"FCO. SANITARY DISCHARGE FROM THE WASH BAY EQUIP. IS 6" SIZE."
- ***Add*** sheet note: "3. WASH BAY EQUIPMENT FOUNDATION REQUIREMENTS TAKES PRIORITY OVER RADIANT TUBING LAYOUTS. COORDINATE RADIANT TUBING INSTALLATION WITH WASH BAY MANUFACTURERS INSTALLER."
- ***Add*** sheet note:"4. REFERENCE DRAWING-2, SHEET M402 FOR TYPICAL RADIANT TUBE INSTALLATION."

Item No. 20 Sheet M303 ENLARGED ADA TOILET ROOM PLAN

- ***Add*** 12"x12"access hatch to wall of 001-Toilet in front of TP(trap primer).
- ***Show*** isolation valves for HW/CW in mezzanine at approximately Grids-2a.6 & A.

Item No. 21 Sheet E100 SHEET INDEX, LEGEND, GENERAL NOTES, ***Add*** the following to note 10: "This also applies to the Bus Wash Mechanical Room."

Item No. 22 Sheet E204 ENLARGED FLOOR PLAN – POWER, ***Add*** the following to key note no. 5:

"Feed the Blower System Control Panel (Item No. R) from a new 175/3 circuit breaker in the existing MDP in the mezzanine with 2-1/2" C, 4 no. 4/0, and 1 no. 6 GND. Feed the Main Control Panel (Item No. Q) from a 60/3 circuit breaker in panel HN with 1-1/2"C, 4 no. 4, and 1 no. 10 GND. Feed the Reclaim Control Panel (Item No. P) from a 50/3 circuit breaker in panel HN with 1-1/2"C, 4 no. 6, and 1 no. 10 GND. Feed the Air Compressor (Item No. T) from a 15/3 circuit breaker in panel HN with ¾"C, 4 no. 12 & 1 no. 12 GND via a 30/3 heavy duty safety switch mounted next to the compressor. Feed the compressor with flexible conduit from the safety switch. See the Bus Wash Shop Drawing No. 9329-EQUIP for the locations of the equipment. See the Bus Wash Shop Drawing No. 9329-ELEC for the bus wash electrical requirements. Provide all wiring shown on the bus wash shop drawings. Provide all disconnects shown on the bus wash shop drawings and as required per NEC. Provide heavy duty, 600V rated disconnects for all three phase motors. Provide 120V, 20A, single pole switches with weather proof covers for all 120V, single phase motors. Provide all bus wash wiring in conduit. Provide dedicated home runs from all bus wash equipment to the bus wash panel that feeds it. Increase conduit size and conductor size from what is shown to meet NEC and as required. Comply with all project requirements (copper conductors with XHHW insulation, PVC conduit, flexible non-metallic conduit, 316 stainless steel disconnects, etc.) for bus wash electrical. All of the bus wash control wiring is 120V, therefore provide all bus wash control wiring."

Item No. 23 Sheet E206 SINGLE LINE DIAGRAM, ***Add*** a new 175/3 circuit breaker to existing MDP in mezzanine. Show it feeding the Bus Wash Blower System Control Panel in the bus wash room 124 with 2-1/2" C, 4 no. 4/0, and 1 no. 6 GND.

Item No. 24 Sheet E207 PANEL SCHEDULES, Make the following changes to existing panel LA panel schedule:

- ***Change*** 100/3 circuit breaker feeding panel LA1 to a 150/3 circuit breaker, very high interrupting.
- ***Add*** a note: "ALL CIRCUIT BREAKERS SHOWN ARE NEW"

Item No. 25 Sheet E212 ROOF HEAT TRACE DRAIN ASSEMBLY DETAIL AND PANEL HN, ***Add*** (1) 50/3 circuit breaker, (1) 60/3 circuit breaker, & (1) 15/3 circuit breaker to Panel HN starting at circuit 7. Label the circuit breakers with the equipment they feed per note 5 on Sheet E204.

By: _____
Greg Smith,
Contract Administrator

Total number of pages contained within this Addendum: 13

# City & Borough of Juneau

# CAPITAL TRANSIT FACILITY RENOVATION & ADDITION

## Juneau, Alaska

## CBJ Contract No. E16-016

## February 16, 2016


**ARCHITECT**
JENSEN YORBA LOTT, INC
522 WEST 10TH STREET
JUNEAU, ALASKA 99801
(907) 586-1070
FAX (907) 586-3959

**CIVIL ENGINEER**
R&M ENGINEERING, INC.
6205 GLACIER HIGHWAY
JUNEAU, ALASKA 99801
(907) 780-6060
FAX (907) 780-4611

**STRUCTURAL ENGINEER**
PND ENGINEERS, INC.
9360 GLACIER HIGHWAY, SUITE 100
JUNEAU, ALASKA 99801
(907) 586-2093
FAX (907) 586-2099

**MECHANICAL ENGINEER**
MURRAY & ASSOCIATES, P.C.
P.O. BOX 21081
JUNEAU, AK 99802
(907) 780-6151
FAX (907) 780-6182

**ELECTRICAL ENGINEER**
MORRIS ENGINEERING GROUP, LLC
P.O. BOX 210049
JUNEAU, ALASKA 99821
(907) 789-3350
FAX (907) 789-3360

**ABATEMENT ENGINEER**
CARSON DORN
712 WEST 12TH STREET
JUNEAU, ALASKA 99801
(907) 586-4447
FAX (907) 586-5917


## SHEET INDEX



⚠ 1

⚠

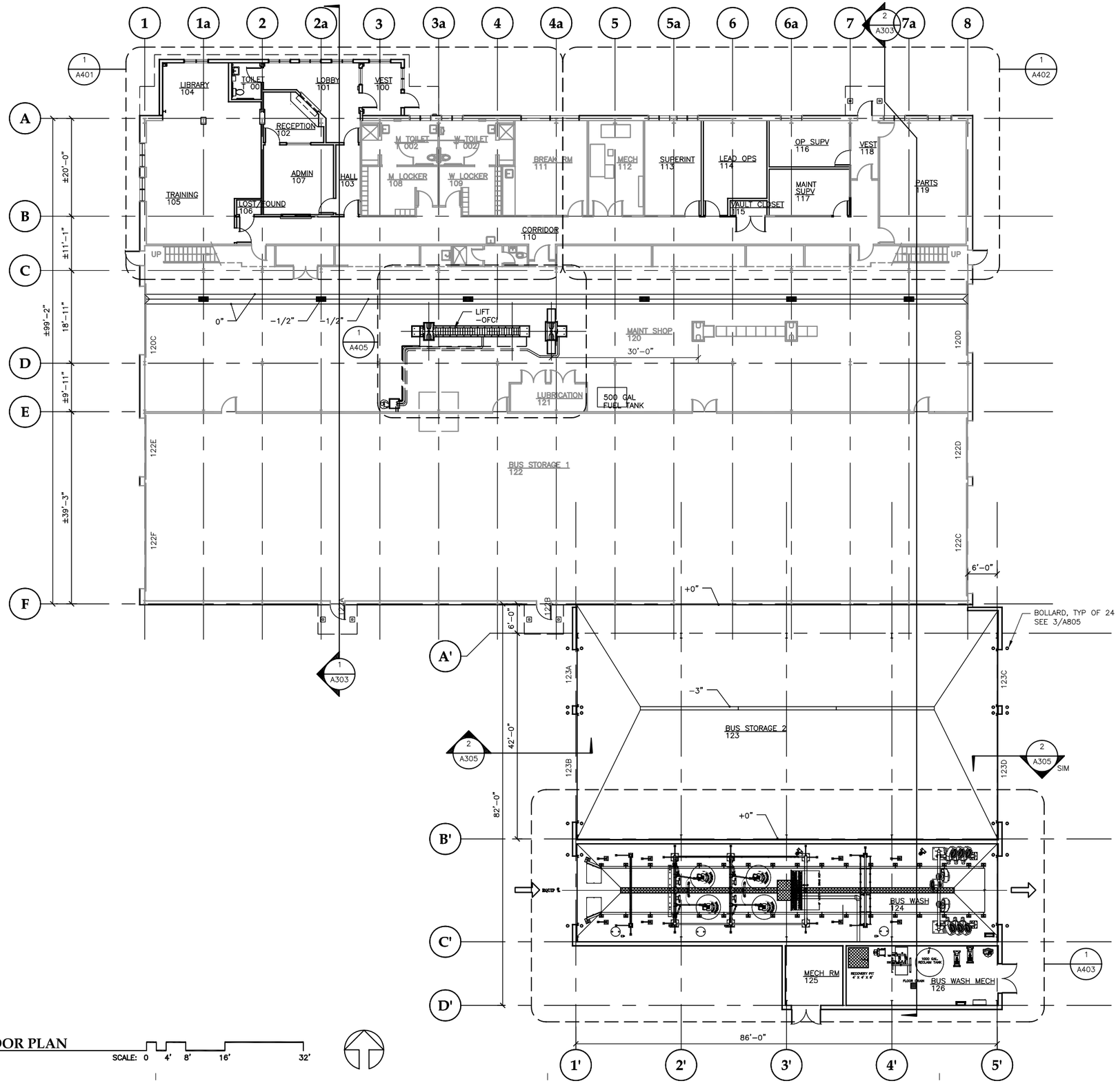
STATE OF ALASKA
ANTONIO V. YORBA
Mar. 22, 16
NO. A 7597
REGISTERED PROFESSIONAL ARCHITECT

Addendum No. 2


**Jensen Yorba Lott Inc.**
522 West 10th Street
Juneau, Alaska 99801
phone 907-586-1070
fax 907-586-3959
jensenyorbalott.com


FILE: 15019

**A001**




1 OVERALL FIRST FLOOR PLAN

SCALE: 0 4' 8' 16' 32'


Jensen Yorba Lott Inc.

522 West 10th Street
Juneau, Alaska 99801
phone 907-586-1070
fax 907-586-3959
jensenyorbalott.com


STATE OF ALASKA 49TH
ANTONIO E. YORBA
Mar. 18, 16
NO. A 7597
REGISTERED PROFESSIONAL ARCHITECT

City & Borough of Juneau
CAPITAL TRANSIT FACILITY
RENOVATION & ADDITION
Juneau, Alaska
CBJ Contract No. E16-016

ADDENDUM #2

REVISIONS
1 .
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SHEET TITLE
OVERALL FIRST FLOOR PLAN
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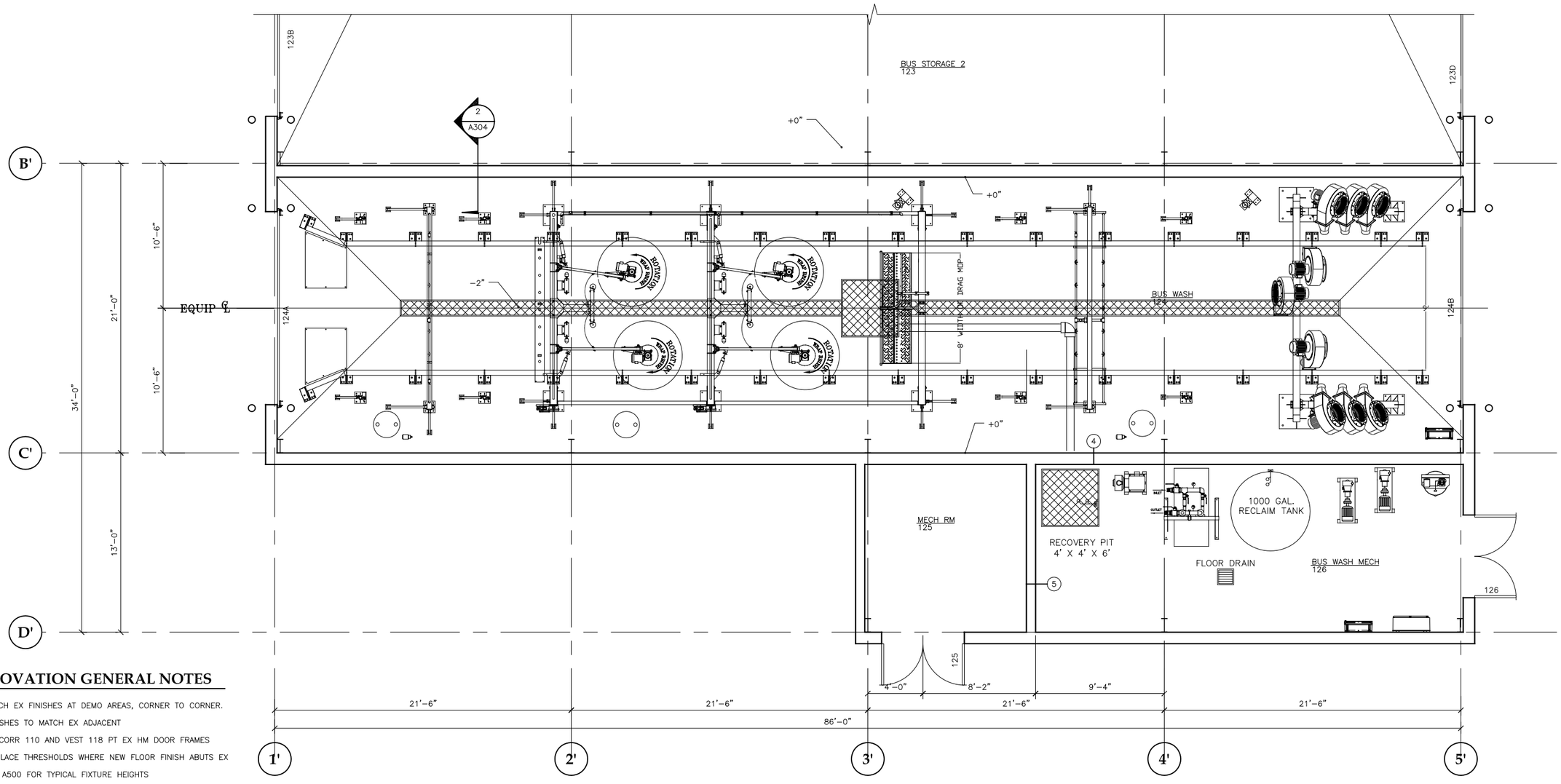
DATE: March 2016
FILE: 15019

A201




## RENOVATION GENERAL NOTES

1. PATCH EX FINISHES AT DEMO AREAS, CORNER TO CORNER.
2. FINISHES TO MATCH EX ADJACENT
3. AT CORR 110 AND VEST 118 PT EX HM DOOR FRAMES
3. REPLACE THRESHOLDS WHERE NEW FLOOR FINISH ABUTS EX
4 SEE A500 FOR TYPICAL FIXTURE HEIGHTS
5. SEE A003/A004 FOR ROOM FINISH & DOOR SCHEDULES

## RENOVATION KEY NOTES

1 GWB @ EX COLUMN

2 SHELVING, SEE 6/A901

3 VAULT – OFOI

**1 ENLARGED FLOOR PLAN**

SCALE: 0 2' 4' 8'


Jensen Yorba Lott Inc.

522 West 10th Street
Juneau, Alaska 99801
phone 907-586-1070
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49TH
ANTONIO F. YORBA
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NO. A 7597
REGISTERED PROFESSIONAL ARCHITECT

City & Borough of Juneau
CAPITAL TRANSIT FACILITY
RENOVATION & ADDITION
Juneau, Alaska
CBJ Contract No. E16-016

ADDENDUM #2

REVISIONS
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SHEET TITLE
ENLARGED
FLOOR PLAN
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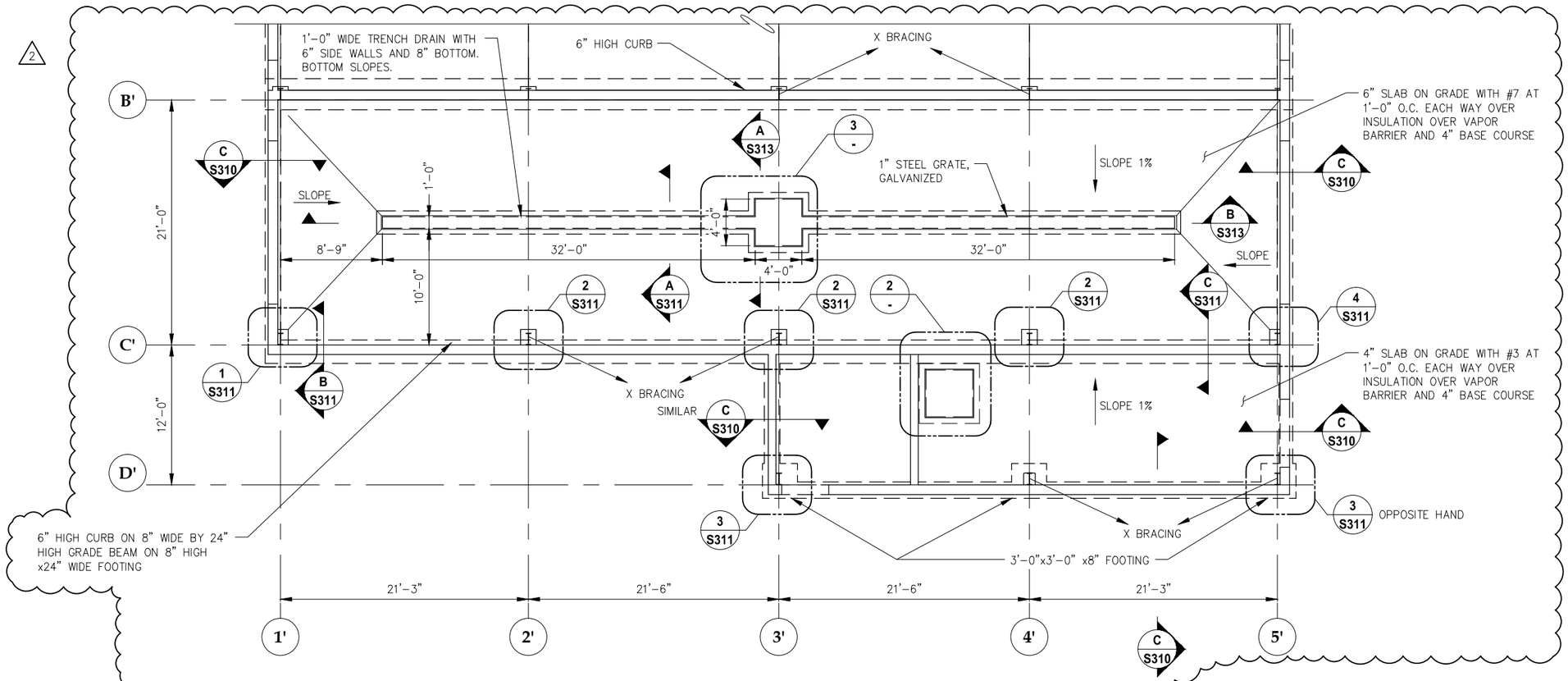
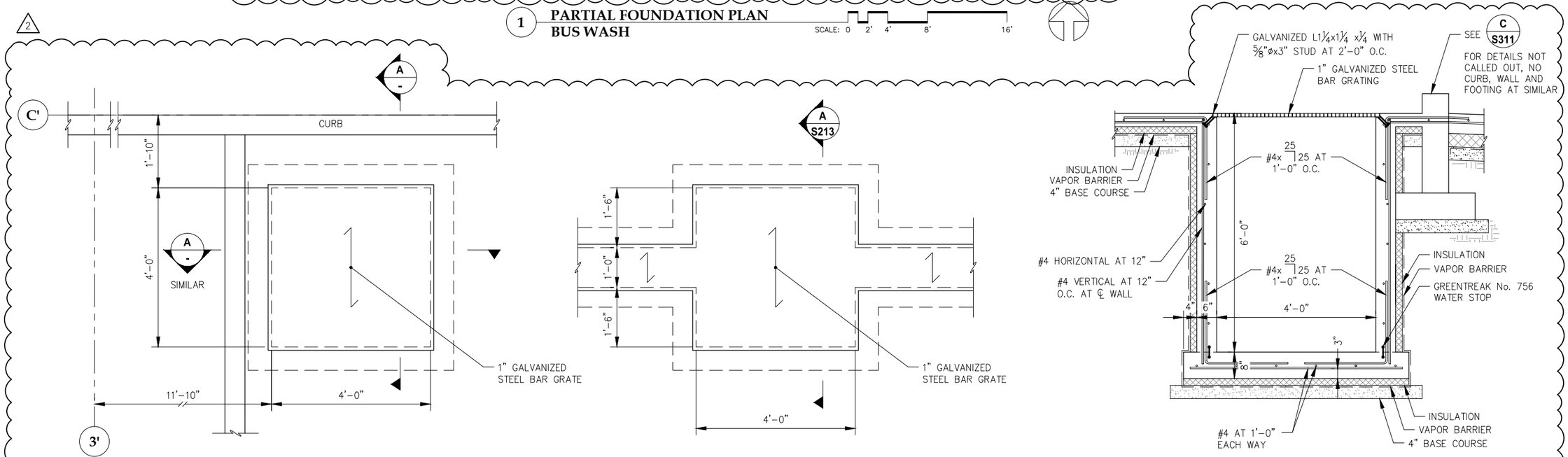
DATE: March 2016
FILE: 15019

**A403**




## 1 PARTIAL FOUNDATION PLAN BUS WASH

SCALE: 0 2' 4' 8' 16'




## 2 RECOVERY PIT PLAN

SCALE: 0 6" 1' 2' 4'

## 3 SAND PIT LAYOUT

SCALE: 0 6" 1' 2' 4'

## A RECOVERY PIT SECTION

SCALE: 0 6" 1' 2' 4'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Juneau, Alaska 99801
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fax 907-586-3959
jensenyorbalott.com

PND ENGINEERS, INC.
9360 Glacier Highway, Ste. 100
JUNEAU, ALASKA 99801
PHONE (907) 586-2093
FAX (907) 586-2099
PND Project No. 152029

STATE OF ALASKA 49TH
Christopher Gianotti
SE-14256
REGISTERED PROFESSIONAL ENGINEER


City &Borough of Juneau
CAPITAL CITY TRANSIT FACILITY
RENOVATION & ADDITION
Juneau, Alaska
CBJ Project No. E16-016

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REVISIONS
2 ADDENDA 2
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SHEET TITLE
**PARTIAL FOUNDATION PLAN**
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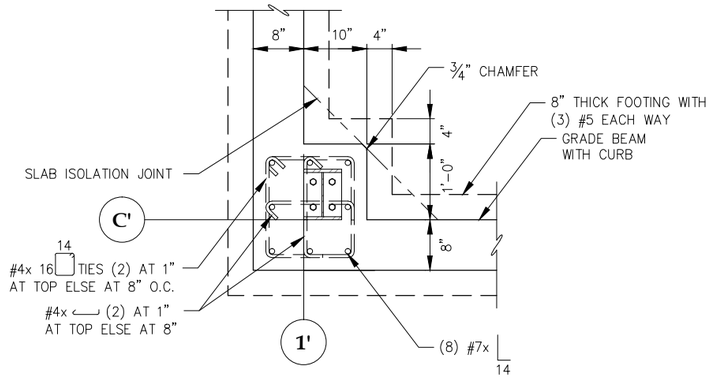
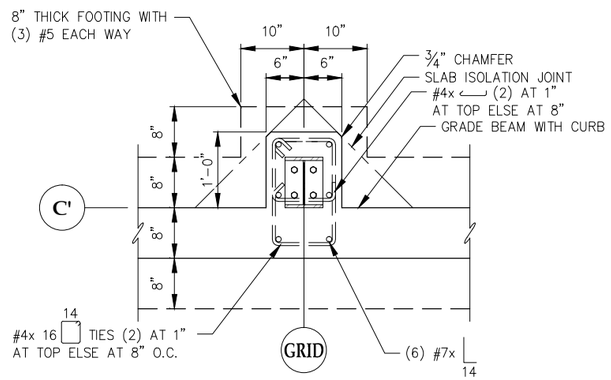
DATE: February 2016
FILE: 15019

**S211**




**1 BUS WASH CORNER COLUMN PILASTER**

SCALE: 0 6" 1' 2'




**2 BUS WASH SIDE WALL COLUMN PILASTER**

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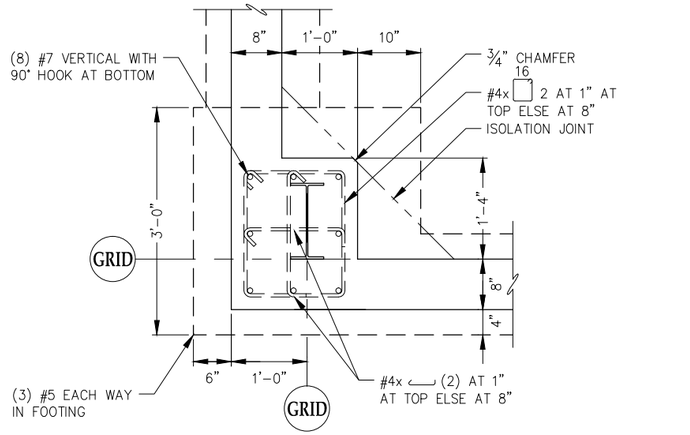


**3 BUS WASH MECHANICAL CORNER COLUMN PILASTER DETAILS**

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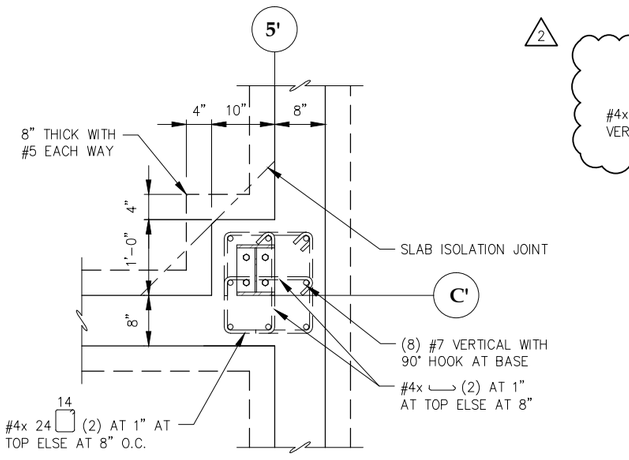


**4 COLUMN PILASTER BUS WASH/ BUS MECHANICAL**

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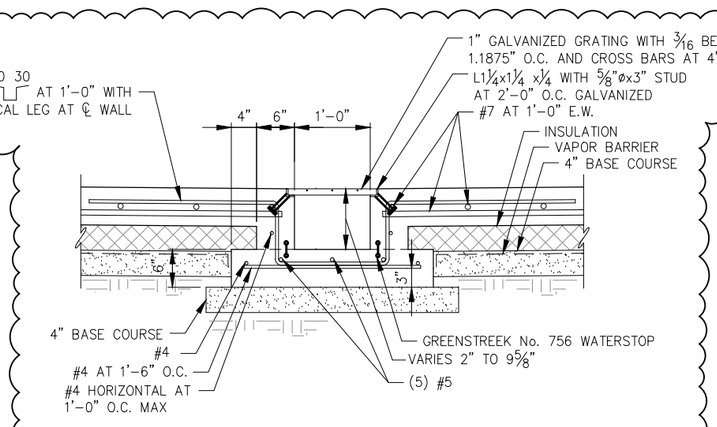


**A BUS WASH TRENCH SECTION**

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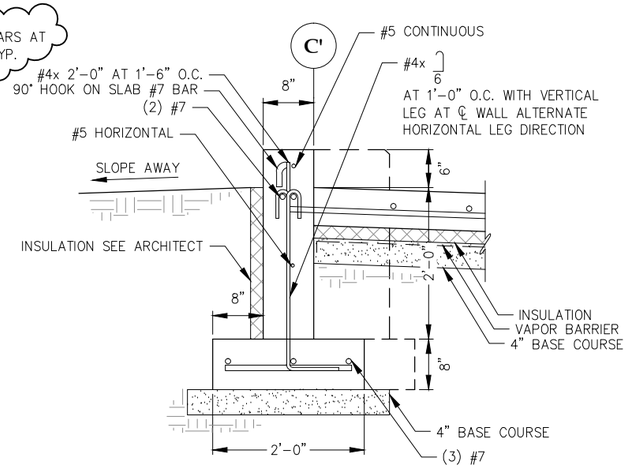


**B BUS WASH FOUNDATION WALL**

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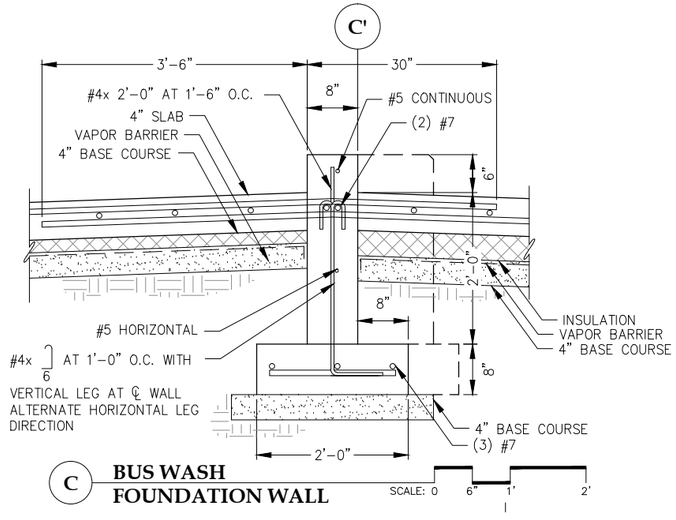


**C BUS WASH FOUNDATION WALL**

SCALE: 0 6" 1' 2'

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522 West 10th Street
Juneau, Alaska 99801
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fax 907-586-3959
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City &Borough of Juneau
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CBJ Project No. E16-016

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REVISIONS
2 ADDENDA 2
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SHEET TITLE
BUS WASH FOUNDATION DETAILS
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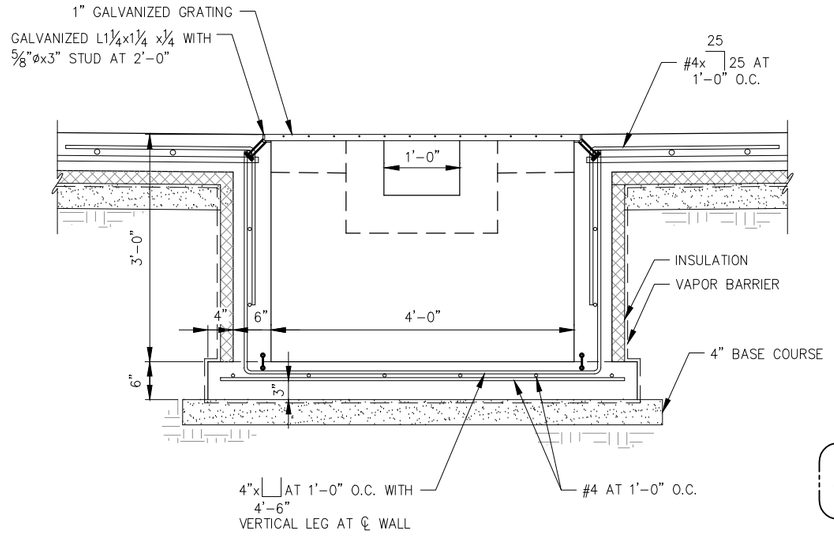
DATE: February 2016
FILE: 15019

S311




**A** **SAND PIT SECTION**

SCALE: 0 6" 1' 2'

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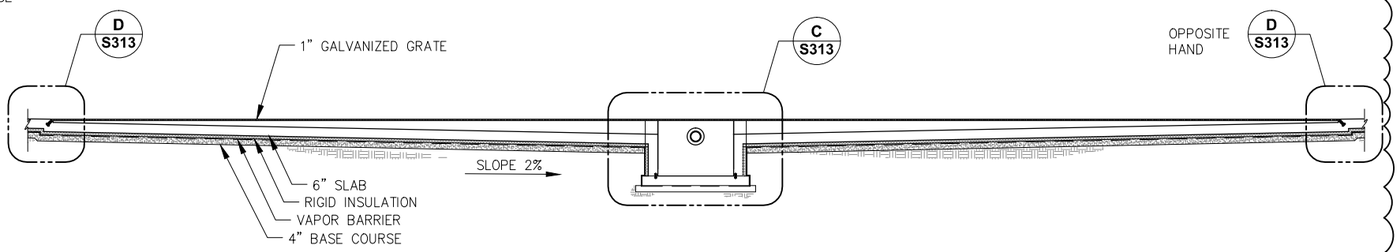


**B** **TRENCH AND SAND PIT SECTION**

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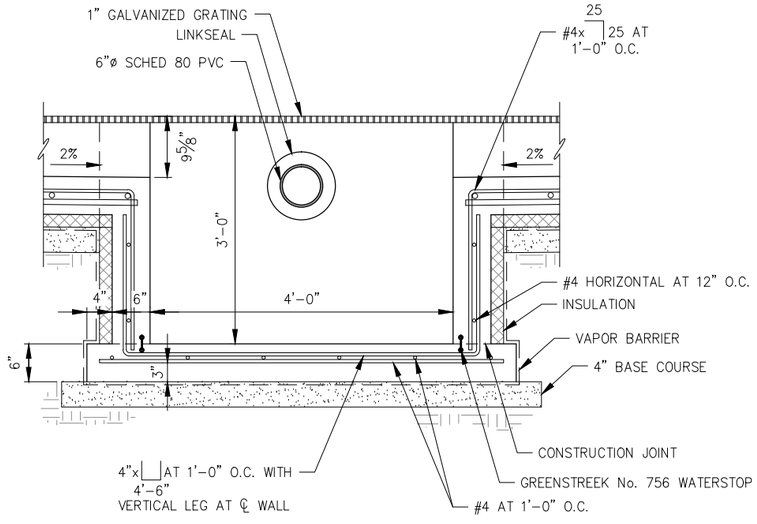


**C** **SAND PIT SECTION**

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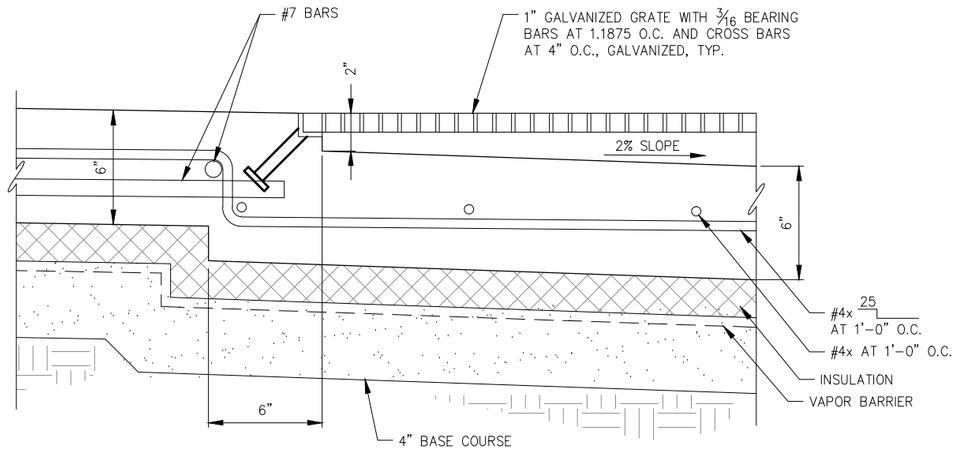


**D** **TRENCH DRAIN END SECTION**

SCALE: 0 3" 6" 12"


Jensen Yorba Lott Inc.

522 West 10th Street
Juneau, Alaska 99801
phone 907-586-1070
fax 907-586-3959
jensenyorbalott.com

PND ENGINEERS, INC.
9360 Glacier Highway, Ste. 100
JUNEAU, ALASKA 99801
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FAX (907) 586-2099
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STATE OF ALASKA 49TH
Christopher Gianotti
SE-14256
REGISTERED PROFESSIONAL ENGINEER

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CBJ Project No. E16-016

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REVISIONS
2 ADDENDA 2
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SHEET TITLE
**TRENCH AND SAND PIT SECTIONS**
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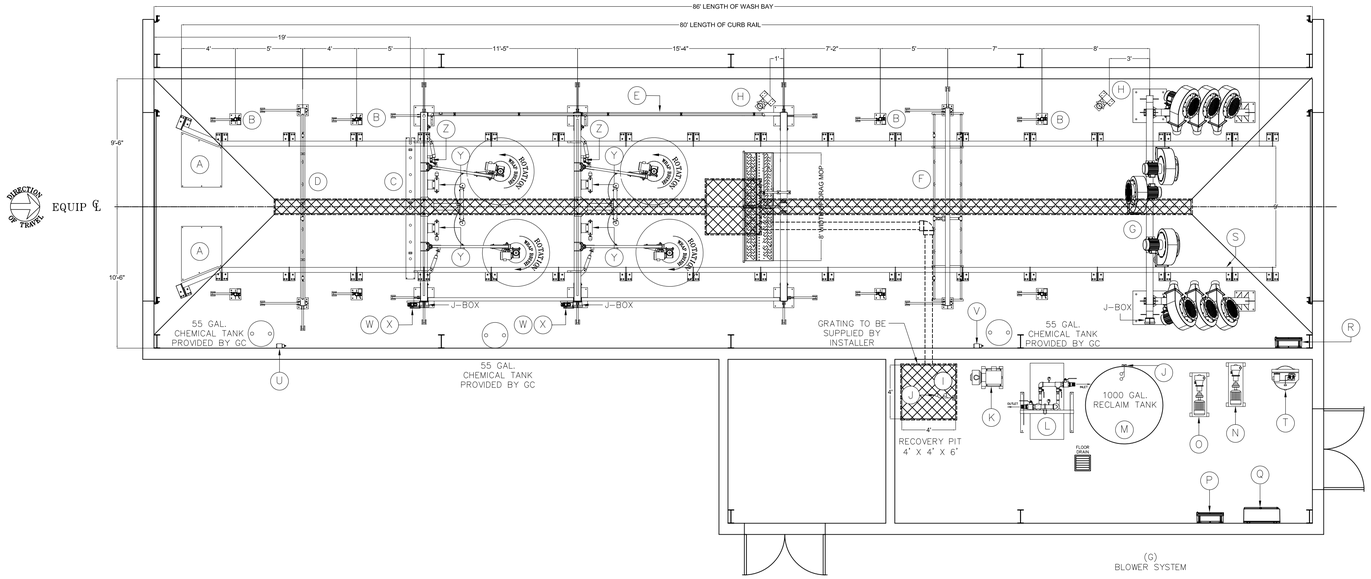
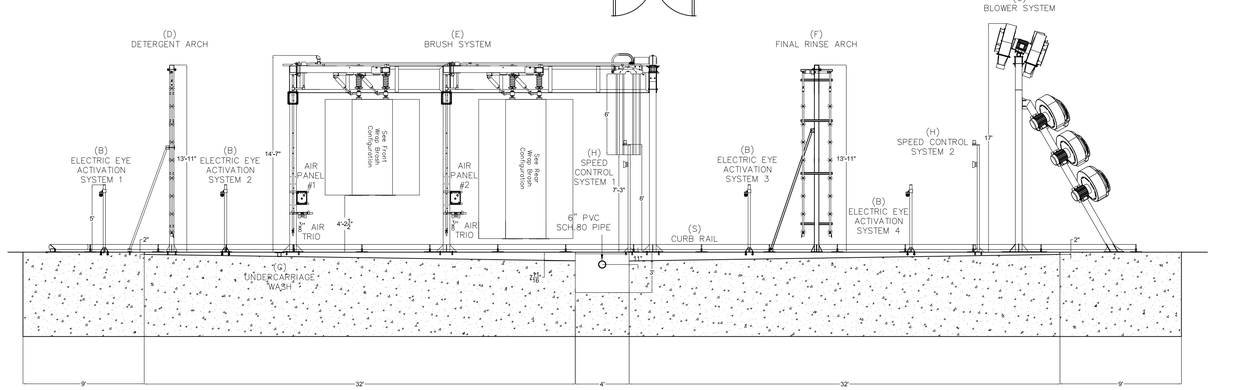
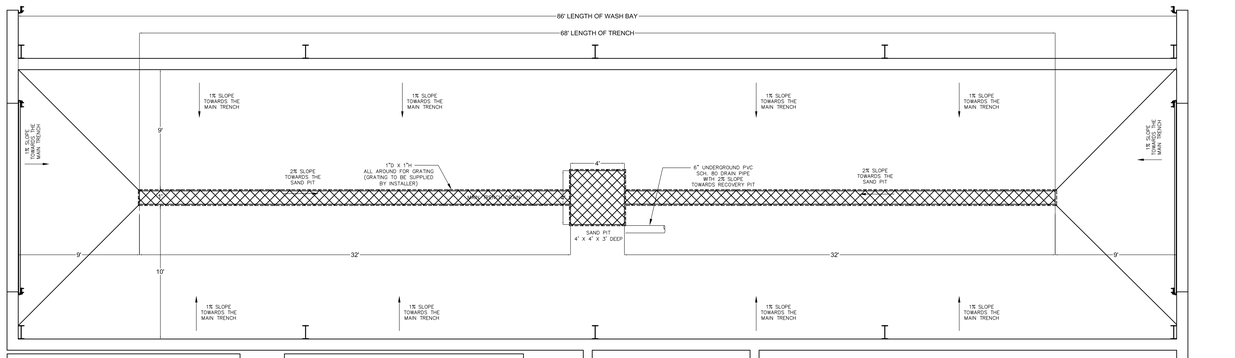
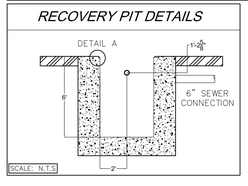
DATE: **February 2016**
FILE: **15019**

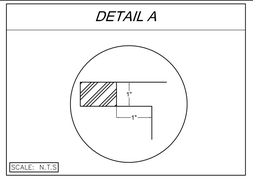
**S313**

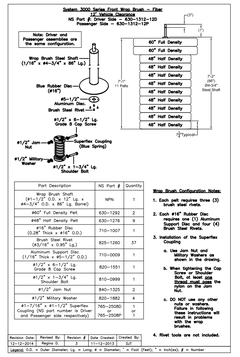


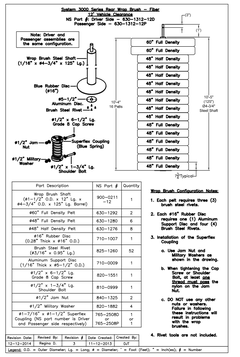



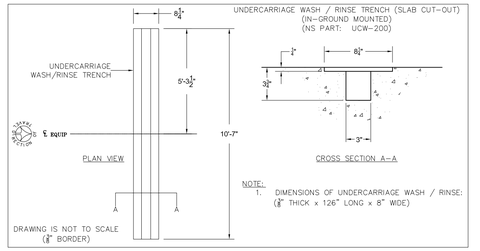




| ANCHOR BOLT REQUIREMENTS | | | | | | |
|---|---|---|---|---|---|---|
| ANCHOR BOLTS: NS RECOMMENDS TO USE CARBON STEEL ANCHOR BOLTS | | | | | | |
| SYSTEM / ARCH | SIZE | #1/2" X 3-3/4" LG. | #5/8" X 5" LG. | #5/8" X 4" LG. | #1" X 6" LG. | SUPPLIED BY |
| | COMMENT(S) | CARBON STEEL ANCHOR BOLT QUANTITY | | | | |
| BRUSH SYSTEM | (SYS-3000-12) ALUM. (6"X6") VERTICAL LEG | --- | 24 | --- | --- | INSTALLER |
| | KNEE BRACES ALUM. (1.5"X1.5") | 10 | --- | --- | --- | INSTALLER |
| ELECTRIC EYE ACTIVATION SYSTEM | (SYS-90-T) Ø2-3/8" ALUM., 5'H SUPPORT | 16 | --- | --- | --- | INSTALLER |
| SPEED CONTROL SYSTEM | (SCS-00) STAND | 8 | --- | --- | --- | INSTALLER |
| FINAL RINSE ARCH | (FOR-500-12) ALUM. (4"X4") LEG | 8 | --- | --- | --- | INSTALLER |
| | KNEE BRACES ALUM. (1.5"X1.5") | 6 | --- | --- | --- | INSTALLER |
| UNDERCARRIAGE WASH | (UCW-200) INGROUND MOUNTED | 4 | --- | --- | --- | INSTALLER |
| SKID PLATES | (GSP-500) STAINLESS STEEL | --- | --- | 12 | --- | INSTALLER |
| CURB RAIL | (RCR-500) STEEL CLEATS | --- | 204 | --- | --- | INSTALLER |
| AIR COMPRESSOR | (HP-5.0) AIR COMPRESSOR STRUCTURE | 4 | --- | --- | --- | INSTALLER |
| BLOWER SYSTEM | (BDH-5000) ALUM. A-FRAME | --- | 8 | --- | 8 | INSTALLER |
| 20HP UNDERCARRIAGE PUMP | (PMP-020) ALUM. STAND ASSEMBLY | 4 | --- | --- | --- | INSTALLER |
| 10HP WASH PUMP | (PMP-010) ALUM. STAND ASSEMBLY | 4 | --- | --- | --- | INSTALLER |
| 15HP SEPARATOR PUMP | (520-1704) ALUM. STAND ASSEMBLY | 4 | --- | --- | --- | INSTALLER |
| TWIN CYCLONIC FILTER | CYCLONIC FILTER STAND | 4 | --- | --- | --- | INSTALLER |
| TOTAL | --- | 72 | 236 | 12 | 8 | INSTALLER |

INSTALLATION NOTES:

1. IF THE SLOPE OF THE FINISH FLOOR DOES NOT RESULT IN TANK TILTING VISIBLY, THEN INSTALL TANKS AS IS. HOWEVER, IF THE SLOPE OF THE FINISH FLOOR DOES RESULT IN TANK TILTING VISIBLY, THEN HOUSE KEEPING PAD IS REQUIRED FOR LEVELING. ALL HOUSE KEEPING PAD IS RESPONSIBLE BY OTHERS OR BY G.C.
2. OTHERS / G.C. IS TO PROVIDE 4" HIGH CONCRETE PADS WITH CHAMFERED EDGES UNDER WASH EQUIPMENT IN THE WASH BAY & IN EQUIPMENT ROOM FOR ALL FLOOR MOUNTED EQUIPMENT IF REQUIRED. NS DOES NOT REQUIRE ANY 4" HIGH CONCRETE PADS FOR ANY NS WASH EQUIPMENTS.
3. ALL DETERGENT DRUMS ARE TO BE PROVIDED BY OTHERS & MUST INSTALL NEXT TO / UNDER ALL DETERGENT PUMPS / DEMA BYPASS LOOPS FOR DETERGENT INJECTION TO MIN. THE FRICTION LOSS.
4. FLOAT SWITCHES INSTALLATION: FOR ABOVE GROUND TANK ==> USE N.C. (YELLOW) FOR HI LEVEL/MID LEVEL & USE N.O. (BLACK) FOR LOW LEVEL. FOR PIT ==> USE N.O. (BLACK) FOR HI/MID/LOW LEVEL.

G.C. ==> GENERAL CONTRACTOR

GENERAL WASH EQUIPMENT NOTES:

1. ALL ELECTRICAL INTER-CONNECTIONS BETWEEN N/S SUPPLIED VEHICLE WASH COMPONENTS ARE THE RESPONSIBILITY OF E.C. SEE ELECTRICAL LAYOUT FOR DETAILS.
2. ALL PLUMBING INTER-CONNECTIONS TO BETWEEN N/S SUPPLIED VEHICLE WASH COMPONENTS ARE THE RESPONSIBILITY OF P.C. SEE PLUMBING / FLOW / PIPING LAYOUT FOR DETAILS.
3. PRESSURIZED AIR LINE CONNECTIONS TO MACHINE IS THE RESPONSIBILITY OF P.C. (IF APPLIED)
4. MINIMUM WATER SUPPLY TO MACHINE WITHOUT OPTIONAL PUMP SYSTEM IS: SEE "TABLE 1: NOZZLE SCHEDULE" IN THE DRAWINGS FOR DETAILS.
5. ALL CONNECTIONS TO MACHINE SHALL BE FLEXIBLE. ALL CONNECTIONS TO & FROM PUMPS SYSTEM SHALL BE MADE FLEXIBLE.
6. WATER LINES CAN BE S.S. PIPE, GALV. PIPE, COPPER PIPE OR PER PROJECT REQUIREMENT OR PER APPROVED DRAWINGS. UNLESS OTHERWISE SPECIFIED ON FLOW/PLUMBING/PIPING LAYOUT.
7. N/S RECOMMENDS THAT ALL ELECTRICAL CONNECTIONS COMING INTO OUR PANEL BOXES SHOULD BE MADE INTO THE BOTTOM OF THE ENCLOSURE.
8. ALL ANCHOR BOLTS ARE THE RESPONSIBILITY OF INSTALLER (ERECTION). (SEE "ANCHOR BOLTS REQUIREMENT" IN THE DRAWINGS FOR DETAILS)
9. MAIN POWER FEEDERS WITH CIRCUIT BREAKER/MAIN DISTRIBUTION PANEL WITH CIRCUIT BREAKER/ POWER SOURCE WITH CIRCUIT BREAKER TO NS SUPPLIED CONTROL PANELS ARE THE RESPONSIBILITY OF GENERAL CONTRACTOR.
10. FRESH WATER & COMPRESSED AIR SUPPLY TO WASH BAY TO BE SUPPLIED BY GENERAL CONTRACTOR. (MUST FOLLOW LOCAL CODE FOR FRESH WATER SUPPLY).
11. EACH RESPONSIBILITY OF THE WORK FOR E.C. & P.C. IS LISTED ON EACH LAYOUT. PLEASE SEE THE LAYOUTS FOR DETAILS.

E.C. ==> GENERAL CONTRACTOR SUB-ELECTRICAL CONTRACTOR

P.C. ==> GENERAL CONTRACTOR SUB-PLUMBING CONTRACTOR

| LEGEND | | |
|---|---|---|
| CONTRACTOR | RESPONSIBILITY | ABBREVIATION |
| N/S | NS SUB-PLUMBING CONTRACTOR | NS-P.C. |
| | NS SUB-ELECTRICAL CONTRACTOR | NS-E.C. |
| GENERAL CONTRACTOR | GENERAL CONTRACTOR SUB-PLUMBING CONTRACTOR | G.C.-P.C. |
| | GENERAL CONTRACTOR SUB-ELECTRICAL CONTRACTOR | G.C.-E.C. |
| INSTALLER | NS TECHNICIANS | NS INSTALLER |
| | NS DISTRIBUTORS | NS INSTALLER |
| | GENERAL CONTRACTOR | GC INSTALLER |

| EQUIPMENT LIST – TO BE SUPPLIED BY NS UNLESS OTHERWISE NOTED | | | | | |
|---|---|---|---|---|---|
| ITEM # | PART / ITEM DESCRIPTION | NS PART # | NS EQUIPMENT DETAILS DESCRIPTION | VOLTAGE | QTY. |
| A | ¼" S.S. SKID PLATE | GSP-500 | ¼" STAINLESS STEEL SKID PLATE-SURFACE MOUNTED | --- | 1 SET |
| B | ELECTRIC EYE ACTIVATION SYSTEM | SYS-90-T | 1) ELECTRIC EYE EMITTER & RECEIVER 2) CYLINDRICAL TUBING STAND 3) 3D BRACKET (NS PART #: 630-0004) | 115V-1ϕ | 4 SETS |
| C | UNDERCARRIAGE WASH (IN-GROUND MOUNTED) | UCW-200 | UNDERCARRIAGE WASH CONTAINS: 1) ALUM. PLATE (¼" X 126"L X 8"W) 2) Ø1" GALV. SCH. 40 SPRAY PIPE W. BRASS NOZZLE TYPE | --- | 1 |
| D | DETERGENT ARCH | PAR-500-12 | DETERGENT ARCH CONTAINS: 1) ALUM. SUPPORT FRAME (TUBING, ¼" X 4" X 4") 2) ALUM. TOP BULKHEAD (TUBING, ¼" X 4" X 4") 3) DETERGENT ARCH DEMA LOOP 4) Ø1" GALV. SCH 40 PIPE WITH (21) BRASS SPRAY NOZZLES | --- | 1 |
| E | BRUSH SYSTEM (CUSTOM) | SYS-3000-12 (SINGLE FIXED CURTAIN, 8" LONG RACK, PASSENGER SIDE CONNECTIONS & SHORT FRONT WRAP BRUSHES) | BRUSH SYSTEM CONTAINS: 1) RUGGED SIX-LEGGED STRUCTURAL ALUMINUM FRAME 2) SINGLE DRAG MOP ASSEMBLY 3) TWO PAIRS OF WRAP BRUSH ASSEMBLY (FRONT W/ 11 PELTS AND REAR W/ 16 PELTS) 4) BRUSH PACKAGE DEMA LOOP 5) AIR RETRACT SYSTEM WITH AUTOMATIC ACTIVATION 6) AIR TRIO | 480V-3ϕ | 1 |
| F | FINAL RINSE ARCH | POR-500-12 | FINAL RINSE ARCH CONSISTS OF: 1) ALUM. SUPPORT FRAME (TUBING, ¼" X 4" X 4") 2) ALUM. TOP BULKHEAD (TUBING, ¼" X 4" X 4") 3) Ø1-1/2" GALV. SCH. 40 PIPE WITH (32) BRASS SPRAY NOZZLES ON SIDES AND (10) ON TOP | --- | 1 |
| G | BLOWER SYSTEM | BDH-5000 AIR-10-D AIR-10-P | BLOWER SYSTEM CONSISTS OF: 1) (9) 10HP BLOWERS MOUNTED ON A HEAVY DUTY A-FRAME BLOWER ARCH. (3) BLOWERS MOUNTED ON TOP, (3) BLOWERS MOUNTED ON EACH SIDE | 480V-3ϕ | 1 SET |
| H | SPEED CONTROL SYSTEM (CUSTOM) | SCS-00 (LED) | SPEED CONTROL SYSTEM WITH (2) STANDS WITH TRIPLE COLOR LIGHTS, EACH WITH 1 RED W/ HORN, 1 AMBER & 1 GREEN | 115V-1ϕ | 2 |
| I | BARREL SCREEN FILTER W/ CHAIN | 460-0064 (WWS-220) | 1) BARREL SCREEN (Ø16" X 48"H) W/ CHAIN TO INSTALL IN THE PIT (TO PREVENT BIG PARTICLE FROM ENTERING INTO PUMP) 2) 3" VERTICAL CHECK VALVE 3) 3" STRAINER 4) 3" BRASS CAM COUPLER QUICK DISCONNECT | --- | 1 |
| J | FLOAT SWITCH & WEIGHT | 240-0042 => N.C. 240-0042A => N.O. 240-0043-B => WEIGHT | FLOAT SWITCH W/ WEIGHT – REQUIRED: (2) N.C. (YELLOW); (2) N.O. (BLACK) & (4) WEIGHTS | 115V-1ϕ | 2 N.C. 2 N.O. 4 WT. |
| K | 15HP SEPARATOR PUMP | 520-1704 (WWS-220) | 15HP SELF PRIMING PUMP 3450RPM TEFC MOTOR | 480V-3ϕ | 1 |
| L | TWIN CYCLONIC SEPARATOR | 900-9247 (STAND) 460-0067 (SEPARATORS) 940-1320 (SLUDGE CART) (WWS-220) | 1) ALUM. STAND ASSEMBLY (ALUM. TUBE: ¼" X 4" X 4") 2) TWIN CYCLONE SEPARATOR (FILTERS) ASSEMBLY 3) 1 CU. YD. SLUDGE CONTAINER | --- | 1 SET |
| M | 1000 GAL. RECLAIM TANK | 940-1284 (WWS-220) | 1000 GAL. RECLAIM TANK Ø64" X 81"H | --- | 1 |
| N | 20HP UNDERCARRIAGE PUMP | PMP-020 | 20HP FREE-STANDING PUMP SYSTEM WITH IN-LINE STAINLESS STEEL SCREEN FILTER ON SUCTION SIDE | 480V-3ϕ | 1 |
| O | 10HP WASH PUMP | PMP-010 (WWS-220) | 10HP FREE-STANDING PUMP SYSTEM WITH IN-LINE STAINLESS STEEL SCREEN FILTER ON SUCTION SIDE | 480V-3ϕ | 1 |
| P | RECLAIM PANEL | NPN | RECLAIM SYSTEM CONTROL PANEL NEMA 4X STAINLESS STEEL ENCLOSURE | 480V-3ϕ | 1 |
| Q | MAIN CONTROL PANEL | NPN | MAIN CONTROL PANEL INCLUDES: 1) NEMA 4X STAINLESS STEEL ENCLOSURE 2) COMPACT STARTER/OVERLOADS 3) CIRCUIT BREAKER 4) RELAYS, FUSES, TRANSFORMER, TERMINAL BLOCKS, ETC... | 480V-3ϕ | 1 |
| R | BLOWER SYSTEM CONTROL PANEL | ECS-AF-B ECS-AF-10-1 | BLOWER SYSTEM CONTROL PANEL INCLUDES: 1) NEMA 4X STAINLESS STEEL ENCLOSURE WITH MAIN DISCONNECT SWITCH AND SELECTOR SWITCH 2) SMART RELAY FOR STAGGER START OF MOTOR STARTERS | 480V-3ϕ | 1 |
| S | 7"H CURB RAIL (Ø4" X 7"H) (6 HOLE CLEAT) | RCR-500 | 7"H CURB RAIL CONTAINS: 1) 3' SECTION: TO BE INSTALLED AT THE ENTRY & AT AN ANGLE; 2) 5' SECTION: TO BE INSTALLED AFTER 3' SECTION & STRAIGHT. 3) CLEATS W. 3/8" GALV. STEEL BASE PLATE (BRACKETS): TO SUPPORT ALL SECTIONS. NOTE: ALL SECTIONS ARE GALV. SCH. 40 PIPE & EACH CLEAT SUPPORTS W. (6) 5/8"ø ANCHOR BOLT. | --- | 1 SET (80') |
| T | AIR COMPRESSOR | HP-5.0 | AIR COMPRESSOR CONTAINS: 1) 5HP COMPRESSOR (2 STAGE) 2) 80 GALLON VERTICAL TANK 3) MOTOR STARTER | 480V-3ϕ | 1 |
| U | CHEMICAL PUMP | 520-2006 | BLUE-WHITE MODEL: C15N404X CHEMICAL PUMP (WALL-MOUNTED) CONSISTS OF: 1) MAX VOLUME = 10.6 OZ/MIN 2) MAXIMUM PSI = 70 3) ⅜" O.D. SUCTION/DISCHARGE; CHEMICAL TUBING (⅜" O.D. X ¼" I.D.) 4) 55 GAL. CHEMICAL DRUM (PROVIDED BY GC) | 115V-1ϕ | 1 |
| V | DRYING AID PUMP | 520-2006 | BLUE-WHITE MODEL: C15N404X DRYING AID PUMP (WALL-MOUNTED) CONSISTS OF: 1) MAX VOLUME = 10.6 OZ/MIN 2) MAXIMUM PSI = 70 3) ⅜" O.D. SUCTION/DISCHARGE; CHEMICAL TUBING (⅜" O.D. X ¼" I.D.) 4) 55 GAL. CHEMICAL DRUM (PROVIDED BY GC) | 115V-1ϕ | 1 |
| W | ⅜" AIR TRIO (AIR RETRACT SYSTEM) | 460-0082 (ARTB-500) | ⅜" AIR TRIO: ⅜" AIR TRIO (⅜" NPT CONNECTION) W. FITTING | --- | 1 SET |
| X | AIR PANELS (AIR RETRACT SYSTEM) | CP-AIR-115 (ARTB-500) | AIR PANEL INCLUDES: 1) NEMA 4X FIBERGLASS ENCLOSURE 2) AIR 4-WAY SOLENOID VALVE 3) TIMER, TERMINAL BLOCKS, ETC... | 115V-1ϕ | 1 SET |
| Y | AIR CYLINDER ASSEMBLY (AIR RETRACT SYSTEM) | 440-1252 (CYLINDER) 900-0481 (HOLDER) (ARTB-500) | AIR CYLINDER ASSEMBLY INCLUDES: 1) ALUM. CYLINDER HOLDER ASSEMBLY 2) AIR CYLINDER W. 2½" BORE & 1" ROD SIDE 3) FLEXIBLE AIR LINE/TUBING CONNECTION | --- | 2 SETS |
| Z | LIMIT SWITCHES (AIR RETRACT SYSTEM) | 240-0005 (ARTB-500) | LIMIT SWITCH INCLUDES: 1) SINGLE POLE W/ (1) N.O. & (1) N.C. 2) PLUG-IN TYPE 3) SIDE ROTARY OPERATING HEAD TYPE 4) PLUG-IN ADJUSTABLE LEVER | 115V-1ϕ | 1 SET |

INSERTION SCALE FACTOR: 64 FILE LOCATION/FILE NAME:

BRUSH SYSTEM SYS-3000-12-CUSTOM
FOR PROPOSAL ONLY

REVISION: 2
- CORRECTED DIMENSIONS OF WASH BAY
- REVISED SLAB LAYOUT WITH CORRECT WASH BAY DIMENSIONS.
- SHOWED GRATING & SPECIFIED WHO SHOULD PROVIDE GRATING FOR PITS

DATE: 3-14-2016 BY: DJT

REVISION: 1
- ADDED DISCONNECTS COLUMN TO POWER REQUIREMENT TABLE.
- ADDED WIRE NOTES TO CLARIFY WIRING OF MOTOR, AIR PANEL, MOTOR, AIR PANEL, LIMIT SWITCH AND BLOWER SYSTEM.
- REVISED PUMP WIRE SIZES.
- REVISED GENERAL IMPORTANT NOTES
- REVISED WIRING OF BLOWER SYSTEM

DATE: 3-10-2016 BY: DJT

REVISIONS

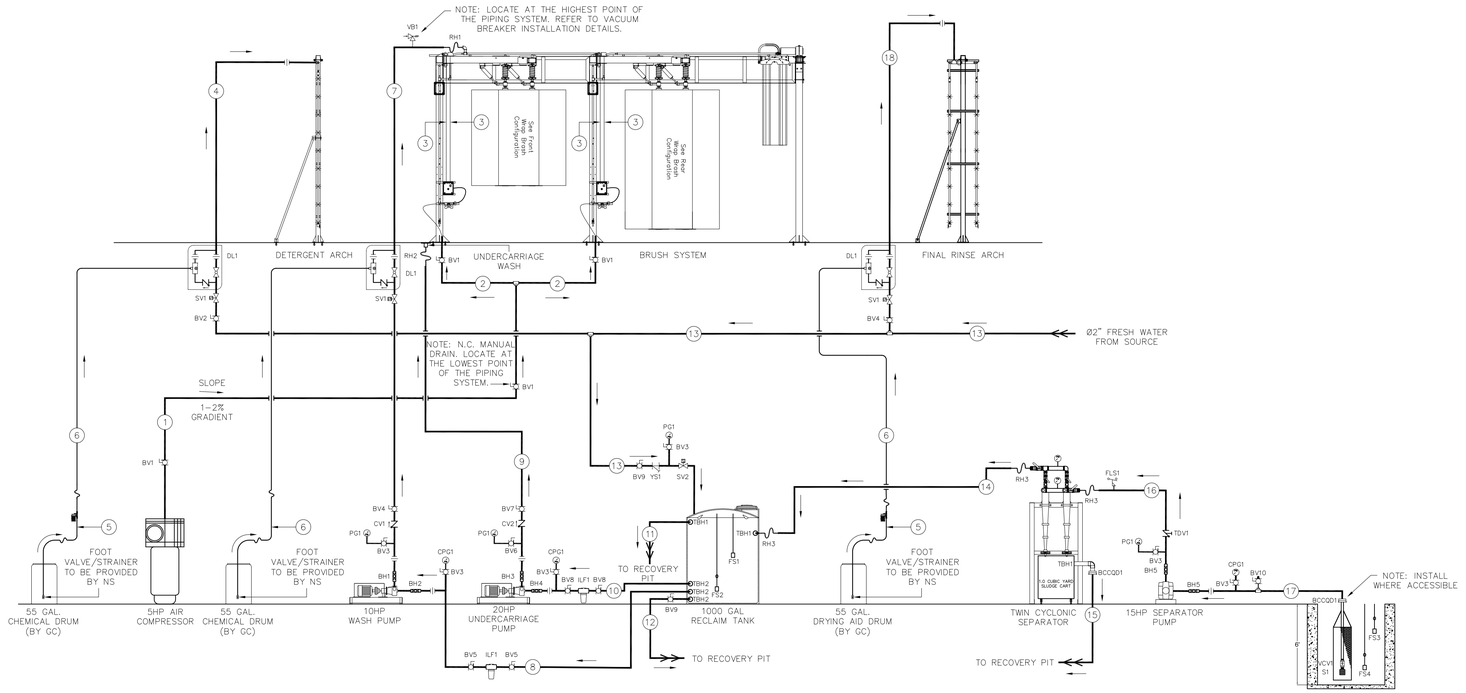
DRAWN DJT
DATE 3/2/2016
SCALE 3/16"=1'

NS WASH SYSTEMS — successful manufacturing of vehicle wash equipment since 1961
235 WEST FLORENCE AVENUE, INGLEWOOD, CALIFORNIA 90301
TELEPHONE: (310) 412-7074
FAX: (310) 673-0276

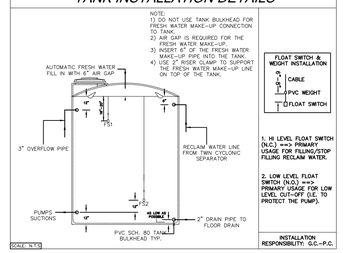
GENERAL CONTRACTOR

TITLE
CAPITAL TRANSIT – JUNEAU ALASKA
EQUIPMENT LAYOUT

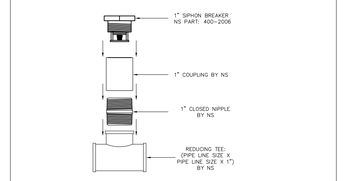
DWG. No.
9329-EQUIP
1 OF 3



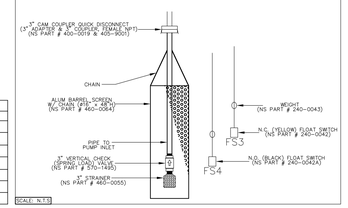

## TANK INSTALLATION DETAILS




## VACUUM BREAKER INSTALLATION DETAILS




## BARREL SCREEN DETAIL




| FITTINGS / VALVES / COMPONENTS TABLE | | | | | | |
|---|---|---|---|---|---|---|
| VALVE / FITTING TAG | LOCATION (ON FLOW LINE #:) | SIZE (ø) | DESCRIPTION / SPECIFICATIONS | NS PART # OR MANUFACTURER MODEL # OR EQUAL | TOTAL QTY. | TO BE PROVIDED BY |
| BCCQD1 | 15, 17 | 3" | BRASS CAM COUPLER QUICK DISCONNECT (ADAPTER & COUPLER) | 400–0019 & 405–9001 | 2 | NS |
| BH1 | 7 | 1–1/2" | BRAIDED HOSE (RATED @ MIN. 150 PSI) | --- | 1 | G.C.–P.C. |
| BH2 | 8 | 2" | BRAIDED HOSE (RATED @ MIN. 150 PSI) | --- | 1 | G.C.–P.C. |
| BH3 | 9 | 1–1/2" | BRAIDED HOSE (RATED @ MIN. 200 PSI) | --- | 1 | G.C.–P.C. |
| BH4 | 10 | 2" | BRAIDED HOSE (RATED @ MIN. 200 PSI) | --- | 1 | G.C.–P.C. |
| BH5 | 16, 17 | 3" | BRAIDED HOSE (RATED @ MIN. 150 PSI) | --- | 2 | G.C.–P.C. |
| BV1 | 1, 2 | 1/2" | BALL VALVE FOR AIR CONNECTION | --- | 4 | G.C.–P.C. |
| BV2 | 4 | 1–1/2" | BALL VALVE (GALV. SCH. 40) (RATED @ MIN. 150 PSI) | --- | 1 | G.C.–P.C. |
| BV3 | 7, 8, 10, 13, 16, 17 | 1/4" | BRASS BALL VALVE (RATED @ MIN. 150 PSI) | --- | 6 | G.C.–P.C. |
| BV4 | 7, 18 | 1–1/2" | BRASS BALL VALVE (RATED @ MIN. 150 PSI) | --- | 2 | G.C.–P.C. |
| BV5 | 8 | 2" | BRASS BALL VALVE (RATED @ MIN. 150 PSI) | --- | 2 | G.C.–P.C. |
| BV6 | 9 | 1/4" | BRASS BALL VALVE (RATED @ MIN. 200 PSI) | --- | 1 | G.C.–P.C. |
| BV7 | 9 | 1–1/2" | BRASS BALL VALVE (RATED @ MIN. 200 PSI) | --- | 1 | G.C.–P.C. |
| BV8 | 10 | 2" | BRASS BALL VALVE (RATED @ MIN. 150 PSI) | --- | 2 | G.C.–P.C. |
| BV9 | 12, 13 | 2" | BRASS BALL VALVE (RATED @ MIN. 150 PSI) | --- | 2 | G.C.–P.C. |
| BV10 | 17 | 3/4" | BRASS BALL VALVE (RATED @ MIN. 150 PSI) | --- | 1 | G.C.–P.C. |
| CPG1 | 8, 10, 17 | 1/4" | COMPOUND PRESSURE GAUGE – LIQUID–FILLED (–30 TO 0 IN.HG & 0 TO 30 PSI) | --- | 3 | NS |
| CV1 | 7 | 1–1/2" | NON–SLAM CHECK VALVE (RATED @ MIN. 150 PSI) | --- | 1 | G.C.–P.C. |
| CV2 | 9 | 1–1/2" | NON–SLAM CHECK VALVE (RATED @ MIN. 200 PSI) | --- | 1 | G.C.–P.C. |
| DL1 | 4, 7, 18 | 3/4", 1–1/2" | DEMA LOOP | --- | 3 | NS |
| FLS1 | 16 | 1" | GENERAL PURPOSE LIQUID FLOW SWITCH | --- | 1 | NS |
| ILF1 | 8, 10 | 2" | IN–LINE FILTER WITH 20 WIRE MESH | --- | 2 | NS |
| PG1 | 7, 9, 13, 16 | 1/4" | PRESSURE GAUGE – LIQUID–FILLED 0–200 PSI RANGE | --- | 4 | NS |
| RH1 | 7 | 1–1/2" | RUBBER HOSE (RATED @ MIN. 150 PSI) | --- | 1 | G.C.–P.C. |
| RH2 | 9 | 1–1/2" | RUBBER HOSE (RATED @ MIN. 200 PSI) | --- | 1 | G.C.–P.C. |
| RH3 | 14, 16 | 3" | RUBBER HOSE (RATED @ MIN. 150 PSI) | --- | 3 | G.C.–P.C. |
| S1 | 17 | 3" | STRAINER | 460–0055 | 1 | NS |
| SV1 | 4, 7, 18 | 1–1/2" | SOLENOID VALVE (115V, NORMALLY CLOSED) | 570–1110 | 3 | NS |
| SV2 | 13 | 2" | SOLENOID VALVE (115V, NORMALLY CLOSED) | 570–1118–A | 1 | NS |
| TBH1 | 11, 14, 15 | 3" | PVC SCH. 80 BULKHEAD | 400–1520 | 3 | G.C.–P.C. |
| TBH2 | 8, 10, 12 | 2" | PVC SCH. 80 BULKHEAD | 400–1510 | 3 | G.C.–P.C. |
| TDV1 | 16 | 3" | CAST IRON TRIPLE DUTY VALVE (MAX. PRESSURE: 200 PSI, MAX. TEMP: 212°F) | 570–1417 | 1 | NS |
| VB1 | 7 | 1" | VACUUM (SIPHON) BREAKER 8033 BSSV STAINLESS STEEL | 400–2006 | 1 | NS |
| VCV1 | 17 | 3" | VERTICAL CHECK VALVE | 570–1495 | 1 | NS |
| YS1 | 13 | 2" | Y–STRAINER (100 MESH) | N/A | 1 | G.C.–P.C. |

LEGEND: # – NUMBER, ø – DIAMETER, QTY. – QUANTITY, @ – AT

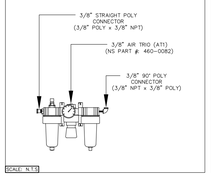
| LEGEND | | |
|---|---|---|
| CONTRACTOR | RESPONSIBILITY | ABBREVIATION |
| N/S | NS SUB–PLUMBING CONTRACTOR | NS–P.C. |
| | NS SUB–ELECTRICAL CONTRACTOR | NS–E.C. |
| GENERAL CONTRACTOR | GENERAL CONTRACTOR SUB–PLUMBING CONTRACTOR | G.C.–P.C. |
| | GENERAL CONTRACTOR SUB–ELECTRICAL CONTRACTOR | G.C.–E.C. |
| INSTALLER | NS TECHNICIANS | NS INSTALLER |
| | NS DISTRIBUTORS | NS INSTALLER |
| | GENERAL CONTRACTOR | GC INSTALLER |

PLUMBING IMPORTANT NOTE:

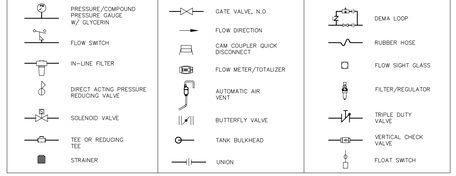
1. G.C.–P.C. IS TO PROVIDE ALL PIPINGS SHOWN & CALLED OUT ON THE FLOW LAYOUT / PLUMBING / PIPING LAYOUT & INCLUDING ALL CONNECTIONS TO WASH EQUIPMENT.
2. GENERAL CONTRACTOR TO PROVIDE & INSTALL AN APPROVED A BACKFLOW DEVICE ON CITY FRESH WATER LINE TO A WASH BAY (IF REQUIRED BY LOCAL CODE). NS DRAWINGS REQUIRE ALL CITY FRESH WATER LINE TO THE TANKS / SUMPS MUST HAVE AN AIR GAP TO PREVENT THE WATER FROM FLOWING BACKWARD.
3. ALL NEW PITS, TRENCH DRAINS, & BURIED DRAINAGE PIPING ARE PROVIDED BY GENERAL CONTRACTOR IF REQUIRED FOR THE WASH BAY.
4. G.C.–P.C. IS TO PROVIDE & INSTALL A SHUT–OFF VALVE (BALL VALVE/GATE VALVE) & UNION PRIOR TO ANY CONNECTION TO NS EQUIPMENT.
5. ALL CHECK VALVES & SOLENOID VALVES/CVA–VAL MUST HAVE UNION ISOLATION.
6. ANY ADDITIONAL VENTS THAT MAY BE REQUIRED BY CODE FOR DRAIN LINES ARE PROVIDED BY GENERAL CONTRACTOR.
7. ALL CONNECTIONS TO NS EQUIPMENT SHALL BE FLEXIBLE. ALL CONNECTIONS TO PUMP SHALL BE MADE FLEXIBLE. FLEXIBLE CONNECTIONS ARE PROVIDED BY G.C.–P.C.
8. THE PLUMBING / FLOWING ROUTING IN THESE DRAWINGS ARE IN DIAGRAM FORM. ROUTING OF PLUMBING IS BY G.C.–P.C.
9. G.C.–P.C. IS TO PROVIDE ALL PIPES, REDUCINGS, FITTINGS, PIPE HANGERS, ETC. TO APPLY & TO CONNECT TO NS EQUIPMENT WHERE IT NECESSARY.
10. G.C.–P.C. IS TO PROVIDE ALL FLANGES & HARDWARE TO NS EQUIPMENT THAT REQUIRE FLANGED CONNECTION.
11. ALL VALVES TO BE SITE LOCATED.
12. G.C.–P.C. IS RESPONSIBLE FOR COMPLETING THE PIPINGS OF THE VEHICLE WASH FLOW LAYOUT WHICH INCLUDING ALL INTERCONNECTING PIPINGS & INTERCONNECTING PLUMBING COMPONENTS AS INDICATED.
13. G.C.–P.C. IS RESPONSIBLE FOR CUTTING HOLES ON THE TANKS & INSTALLING TANKS' BULKHEAD FITTINGS WHERE IT NECESSARY.
14. ALL FLEXIBLE CONNECTIONS ON THE DISCHARGE OF PUMPS/THE INLET OF ARCHES OR BRUSH PACKAGE ARE RECOMMENDED TO BE BRAIDED HOSE TYPE & SUPPLIED BY G.C.–P.C. UNLESS OTHERWISE SPECIFIED ON FLOW/PLUMBING/PIPING LAYOUT.
15. ANY VALVES THAT INDICATE "BY G.C.–P.C." ON THE FLOW LAYOUT / PLUMBING / PIPING LAYOUT ARE TO BE SUPPLIED BY G.C.–P.C. (VALVES CAN BE BALL VALVES, CHECK VALVES, BRAIDED HOSE, FLEXIBLE CONNECTION (HOSE), "PRESSURE GAUGE"...)
16. EACH RESPONSIBILITY OF THE WORK FOR P.C. IS LISTED ON THE FLOW LAYOUT / PLUMBING / PIPING LAYOUT. PLEASE SEE THE LAYOUT FOR DETAILS.

G.C.–P.C. ==> GENERAL CONTRACTOR & NS CORP SUB–PLUMBING CONTRACTOR

## 3/8" AIR TRIO (NS PART #: 460-0082)




## LEGEND




## NOZZLE SCHEDULE

| PART/ITEM DESCRIPTION | | NOZZLE TYPE | FLOW RATE AND PRESSURE | WATER USAGE | PUMP USED |
|---|---|---|---|---|---|
| BRUSH SYSTEM (SYS–3000–12) | ENTRANCE SET OF SPRAY PIPES | (8) 1/4" – 5005 BRASS VEEJET NOZZLE (H1/4VV–5005) (RIGHT SIDE SPRAY PIPE)<br>(8) 1/4" – 5005 BRASS VEEJET NOZZLE (H1/4VV–5005) (LEFT SIDE SPRAY PIPE) | 31 GPM @ 119 PSI | RECLAIM WATER | 10HP WASH PUMP |
| | MIDDLE SET OF SPRAY PIPES | (8) 1/4" – 5005 BRASS VEEJET NOZZLE (H1/4VV–5005) (RIGHT SIDE SPRAY PIPE)<br>(8) 1/4" – 5005 BRASS VEEJET NOZZLE (H1/4VV–5005) (LEFT SIDE SPRAY PIPE) | | | |
| | END SET OF SPRAY PIPES | (5) 1/4" – 5005 BRASS VEEJET NOZZLE (H1/4VV–5005) (TOP SPRAY PIPE) | | | |
| | | TOTAL: 37, 5005 NOZZLES | | | |
| DETERGENT ARCH (PAR–500–12) | AT THE ENTRANCE OF THE WASH BAY | (8) 1/4" – 5010 BRASS VEEJET NOZZLE (H1/4VV–5010) (RIGHT SIDE SPRAY PIPE)<br>(8) 1/4" – 5010 BRASS VEEJET NOZZLE (H1/4VV–5010) (LEFT SIDE SPRAY PIPE)<br>(5) 1/4" – 5010 BRASS VEEJET NOZZLE (H1/4VV–5010) (TOP SPRAY PIPE)<br>TOTAL: 21, 5010 NOZZLES | 25 GPM @ 60 PSI | FRESH WATER | FRESH WATER SOURCE |
| FINAL RINSE ARCH (FOR–500–12) | AT THE EXIT OF THE WASH BAY | (8) 1/4" – 5010 BRASS VEEJET NOZZLE (H1/4VV–5010) (FRONT–RIGHT SPRAY PIPE)<br>(8) 1/4" – 5010 BRASS VEEJET NOZZLE (H1/4VV–5010) (FRONT–LEFT SPRAY PIPE)<br>(8) 1/4" – 5010 BRASS VEEJET NOZZLE (H1/4VV–5010) (REAR–RIGHT SPRAY PIPE)<br>(8) 1/4" – 5010 BRASS VEEJET NOZZLE (H1/4VV–5010) (REAR–LEFT SPRAY PIPE)<br>(5) 1/4" – 5010 BRASS VEEJET NOZZLE (H1/4VV–5010) (FRONT–TOP SPRAY PIPE)<br>(5) 1/4" – 5010 BRASS VEEJET NOZZLE (H1/4VV–5010) (REAR–TOP SPRAY PIPE)<br>TOTAL: 42, 5010 NOZZLES | 50 GPM @ 60 PSI | FRESH WATER | FRESH WATER SOURCE |
| UNDERCARRIAGE WASH (UCW–200) | UNDER FIRST ARCH OF BRUSH SYSTEM | (7) 1/4" – 4010 BRASS VEEJET NOZZLE (H1/4U–4010)<br>TOTAL: 7, 4010 NOZZLES | 14 GPM @ 176 PSI | RECLAIM WATER | 20HP UNDERCARRIAGE PUMP |

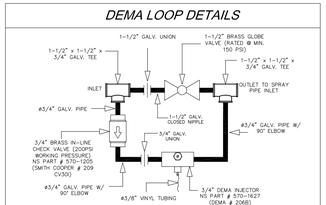
FRESH WATER REQUIRES: 60 PSI DYNAMIC PRESSURE

LEGEND: W/ = WITH; @ = AT | NOTE: THE ACTUAL FLOW RATE / PRESSURE MIGHT BE DIFFERENT FROM THE SPECIFIED VALUES DUE TO THE PIPING METHODS

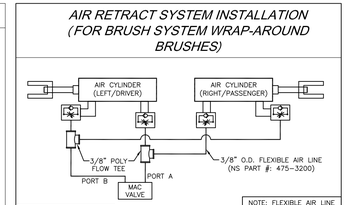
PUMP START–UP NOTE:

1. BEFORE PLACING ANY PUMP IN SERVICE THE PUMP MUST BE PRIMED. ALSO, AFTER CLEANING THE CHECK VALVE/FOOT VALVE/Y–STRAINER/ IN–LINE FILTER & AFTER MANUALLY DRAINING THE STORAGE TANK OR THE SUMP PIT, PUMPS MUST BE RE–PRIMED BASED ON THE MANUFACTURER RECOMMENDATIONS.
2. TO PRIME / RE–PRIME THE PUMPS, FOLLOW THE FOLLOWING STEPS:
   - A. FOR THE PUMPS THAT DRAW WATER FROM THE PIT / SUMP:
     - i. TO PRIME THE PUMPS ==> REMOVE THE NUT, ADD WATER TO THE PUMPS UNTIL IT OVERFLOWS AND THEN TIGHTEN THE NUT.
     - ii. TO PRIME THE SUCTION ==> OPEN 3/4" BALL VALVE, ADD WATER UNTIL IT OVERFLOWS & THEN CLOSE THE BALL VALVE.
   - B. FOR THE PUMPS THAT DRAW WATER FROM ABOVE GROUND STORAGE TANK.
     - i. TO PRIME THE PUMPS ==> OPEN THE ALL BALL VALVES ON THE SUCTION / DISCHARGE LINE OF THE PUMPS, OPEN THE PETCOCK / HEX NUT ON THE PUMPS TO BLEED THE AIR UNTIL LOTS OF WATER FLOW OUT & THEN CLOSE THE PETCOCK / HEX NUT.

## DEMA LOOP DETAILS




## AIR RETRACT SYSTEM INSTALLATION (FOR BRUSH SYSTEM WRAP–AROUND BRUSHES)




## LIST OF FLOAT SWITCH W. WEIGHT – SUPPLIED BY NS – TO BE INSTALLED BY G.C.–P.C.

| FLOAT SWITCH TAG | FLOAT SWITCH TAG DESCRIPTION | FLOAT SWITCH CONTACTS | NS PART # | VOLTAGE | FLOAT SWITCH SPEC: | LOCATED (TO BE INSTALLED AT...) | FLOAT SWITCH RECOMMENDED HEIGHT SETTING | QTY |
|---|---|---|---|---|---|---|---|---|
| FS1 | 1000 GAL. RECLAIM TANK HIGH LEVEL | N.C | 240–0042 | 115V | N.C. FLOAT SWITCH SPEC: YELLOW BODY W. N.C. CONTACT, 14' SO CORD ATTACHED | FS1: INSIDE 1000 GAL. RECLAIM TANK | FS1: 16"–20" FROM THE TOP OF THE TANK | 1 |
| FS2 | 1000 GAL. RECLAIM TANK LOW LEVEL | N.O. | 240–0042A | 115V | N.O. FLOAT SWITCH SPEC: BLACK BODY W. N.O. CONTACT, 25' SO CORD ATTACHED | FS2: INSIDE 1000 GAL. RECLAIM TANK | FS2: 12" ABOVE THE SUCTION OF THE PUMP | 3 |
| FS3 | RECOVERY PIT HIGH LEVEL | | | | | FS3: INSIDE RECOVERY PIT | FS3: FIELD LOCATED | |
| FS4 | RECOVERY PIT LOW LEVEL | | | | | FS4: INSIDE RECOVERY PIT | FS4: 12" ABOVE THE SUCTION OF THE PUMP | |
| WT | --- | --- | 240–0043–B | --- | WEIGHT SPEC: PVC BODY | INSTALLED ON EACH FLOAT SWITCH | --- | 4 |

LEGEND: N.O. = NORMALLY OPEN; N.C. = NORMALLY CLOSED; WT = WEIGHT; FS = FLOAT SWITCH; QTY = QUANTITY; W/ = WITH; @ = AT

| CONNECTIONS TABLE | | | | | |
|---|---|---|---|---|---|
| FLOW LINE # | CONNECTION SIZE (ø) | MATERIAL | PLUMBING RESPONSIBILITY | | COMMENTS |
| | | | MATERIAL | INSTALLATION | |
| 1 | 1/2" | GALV. SCH. 40 | G.C.–P.C. | G.C.–P.C. | --- |
| 2 | 1/2" O.D. X 0.35" I.D. | POLY FLOW TUBING | G.C.–P.C. | G.C.–P.C. | CONNECTION BETWEEN 1/2" BALL VALVE AND AIR PANEL (2 PLACES) |
| 3 | 1/2" O.D. X 0.35" I.D. | POLY FLOW TUBING | G.C.–P.C. | G.C.–P.C. | CONNECTION BETWEEN THE AIR PANEL & PNEUMATIC ACTUATORS (4 PLACES) |
| 4 | 1–1/2" | GALV. SCH. 40 | G.C.–P.C. | G.C.–P.C. | --- |
| 5 | 3/8" O.D. x 1/4" I.D. | POLY FLOW TUBING | NS | G.C.–P.C. | 8' POLYTUBING BY NS (2 PLACES) |
| 6 | 3/8" O.D. x 1/4" I.D. | POLY FLOW TUBING | NS | G.C.–P.C. | 20' POLYTUBING BY NS (3 PLACES) |
| 7 | 1–1/2" | GALV SCH. 40 | G.C.–P.C. | G.C.–P.C. | --- |
| 8 | 2" | PVC SCH. 80 | G.C.–P.C. | G.C.–P.C. | --- |
| 9 | 1–1/2" | GALV SCH. 40 | G.C.–P.C. | G.C.–P.C. | --- |
| 10 | 2" | PVC SCH. 80 | G.C.–P.C. | G.C.–P.C. | --- |
| 11 | 3" | PVC SCH. 80 | G.C.–P.C. | G.C.–P.C. | --- |
| 12 | 2" | PVC SCH. 80 | G.C.–P.C. | G.C.–P.C. | --- |
| 13 | 2" | GALV. SCH. 40 | G.C.–P.C. | G.C.–P.C. | --- |
| 14 | 3" | GALV. SCH. 40 | G.C.–P.C. | G.C.–P.C. | --- |
| 15 | 3" | PVC SCH. 80 | G.C.–P.C. | G.C.–P.C. | --- |
| 16 | 3" | GALV SCH. 40 | G.C.–P.C. | G.C.–P.C. | --- |
| 17 | 3" | PVC SCH. 40 | G.C.–P.C. | G.C.–P.C. | --- |
| 18 | 1–1/2" | GALV SCH. 40 | G.C.–P.C. | G.C.–P.C. | --- |

LEGEND: # – NUMBER, ø – DIAMETER, GALV. – GALVANIZED, SCH. – SCHEDULE

FILE LOCATION/FILE NAME:
INSERTION SCALE FACTOR: 64

BRUSH SYSTEM SYS–3000–12–CUSTOM
FOR PROPOSAL ONLY

REVISION: 2
– CORRECTED DIMENSIONS OF WASH BAY
– REVISED SLAB LAYOUT WITH CORRECTED WASH BAY DIMENSIONS
– SHOWED GRATING & SPECIFIED WHO SHOULD PROVIDE GRATING FOR PITS
DATE: 3–14–2016 BY: DJT

REVISION: 1
– ADDED DISCONNECTS COLUMN TO POWER REQUIREMENT TABLE
– ADDED NOTE TO CLARIFY CONNECTIONS TO BRUSH SYSTEM MOTOR, AIR PANEL, LIMIT SWITCH AND SOLENOID VALVES
– REVISED PUMP WIRE SIZES
– REVISED ELECTRICAL IMPORTANT NOTES
– REVISED WIRING OF BLOWER SYSTEM
DATE: 3–10–2016 BY: DJT

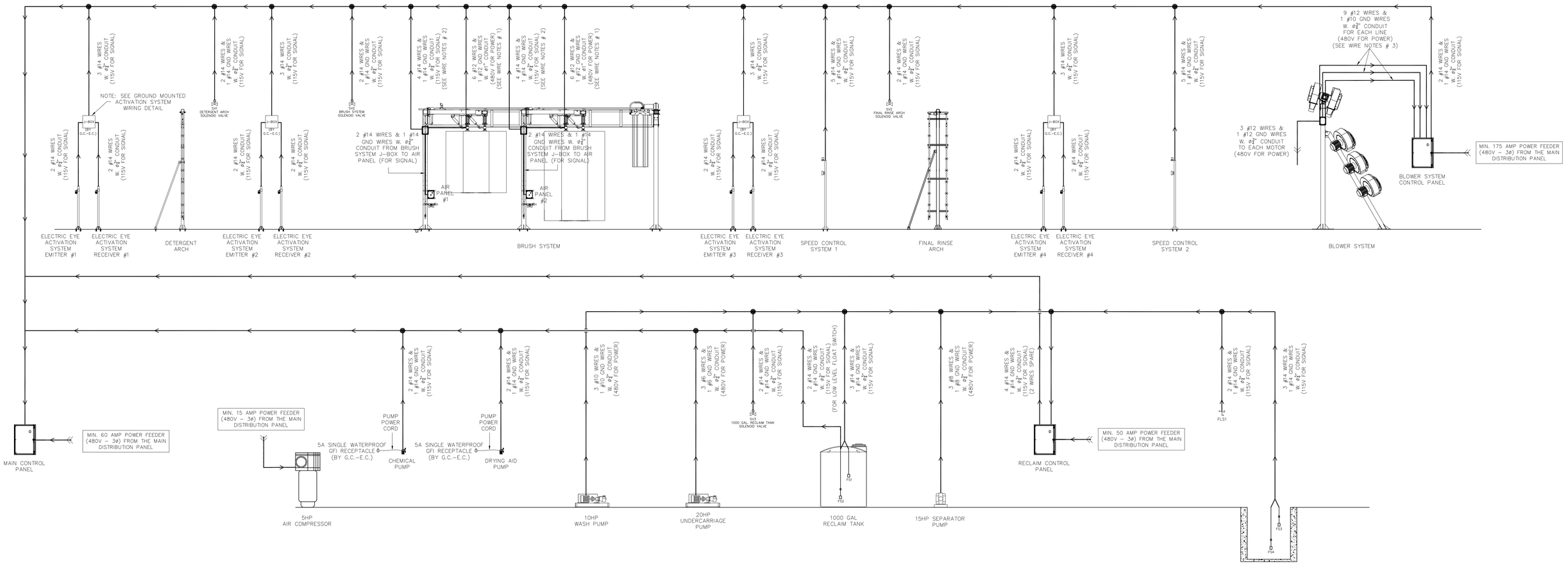
REVISIONS
DRAWN DJT
DATE 3/2/16
CHKD
SCALE 3/16"=1'

NS WASH SYSTEMS — successful manufacturing of vehicle wash equipment since 1961
235 WEST FLORENCE AVENUE, INGLEWOOD, CALIFORNIA 90301
TELEPHONE: (310) 412–7074
FAX: (310) 673–0276

GENERAL CONTRACTOR

TITLE
CAPITAL TRANSIT – JUNEAU ALASKA
FLOW LAYOUT

DWG. No.
9329–FLOW
2 OF 3




| LEGEND | | |
|---|---|---|
| CONTRACTOR | RESPONSIBILITY | ABBREVIATION |
| N/S | NS SUB-PLUMBING CONTRACTOR | NS-P.C. |
| | NS SUB-ELECTRICAL CONTRACTOR | NS-E.C. |
| GENERAL CONTRACTOR | GENERAL CONTRACTOR SUB-PLUMBING CONTRACTOR | G.C.-P.C. |
| | GENERAL CONTRACTOR SUB-ELECTRICAL CONTRACTOR | G.C.-E.C. |
| INSTALLER | NS TECHNICIANS | NS INSTALLER |
| | NS DISTRIBUTORS | NS INSTALLER |
| | GENERAL CONTRACTOR | GC INSTALLER |

WIRE NOTES:

1. 6 WIRES ARE FOR: 3 WIRES = EACH 1-1/2HP MOTOR (2 X 3 MOTORS = 6 WIRES)
2. 4 WIRES ARE FOR: 2 WIRES = AIR PANEL; 2 WIRES = LIMIT SWITCH
3. 9 WIRES ARE FOR: 3 WIRES = EACH 10HP MOTOR (3 X 3 MOTORS = 9 WIRES); 3 MOTORS PER CONDUIT

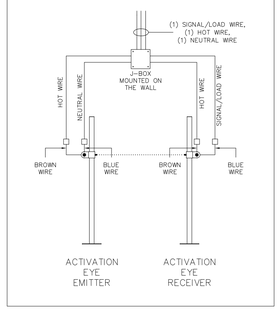
G.C.-E.C. ==> GENERAL CONTRACTOR SUB-ELECTRICAL CONTRACTOR
ALL WIRING SHALL BE PERFORMED BY G.C.-E.C.

NOTE: G.C.-E.C. IS RESPONSIBLE FOR PROVIDING LOCAL DISCONNECTS NEAR ALL THE EQUIPMENT (EASILY ACCESSIBLE) THAT REQUIRE POWER PER LOCAL CODES.

ELECTRICAL IMPORTANT NOTES:

1. PLAN SHOWS ELECTRICAL WORK TO BE PERFORMED BY G.C.-E.C. AS PERTAINING TO VEHICLE WASH EQUIPMENT.
2. ALL WORK SHOWN ON THESE DRAWINGS SHALL BE THE RESPONSIBILITY OF G.C.-E.C. & ALL WORK MUST CONFORM TO NATIONAL & LOCAL CODES.
3. G.C.-E.C. TO SUPPLY ALL CONNECTING WIRING, CONDUIT, FITTINGS, ADDITIONAL J-BOXES ETC. & MAKE ALL CONNECTIONS AS SHOWN.
4. THE ELECTRICAL ROUTING IN THESE DRAWINGS ARE IN DIAGRAM FORM. ROUTING OF WIRING IS BY G.C.-E.C.
5. ALL ELECTRICAL SAFETY SWITCHES ENCLOSURE, DISCONNECTS, TERMINAL BOXES & J-BOXES SHALL BE NEMA 4X OR PERTAIN TO THE PROJECT REQUIREMENT.
6. UNLESS OTHERWISE SPECIFIED, USE RIGID GALVANIZED CONDUITS OR PER PROJECT REQUIREMENTS.
7. G.C.-E.C. MUST PROVIDE LOCAL DISCONNECT SWITCHES ON ALL MOTORS THAT ARE NOT WITHIN THE EYE SIGHT OF POWER SOURCE AND MUST BE LOCATED NEXT TO ITS PUMPS OR MOTORS.
8. ALL DISCONNECTS SHALL BE 600VAC HEAVY DUTY SAFETY SWITCHES, 316 STAINLESS STEEL, OUTDOOR RATED (ALL DISCONNECTS SHALL BE PROVIDED BY G.C.-E.C.)
9. ELECTRICAL CONDUITS CALLED OUT ON THIS DRAWING MUST COMPLY WITH THE PROJECT REQUIREMENT & SHALL BE PROVIDED BY E.C. THE MINIMUM REQUIRED OF ELECTRICAL CONDUIT IS LISTED ON FIELD ELECTRICAL WORKS.
10. MAIN POWER FEEDERS WITH CIRCUIT BREAKER / MAIN DISTRIBUTION PANEL WITH CIRCUIT BREAKER / POWER SOURCE WITH CIRCUIT BREAKER TO NS SUPPLIED CONTROL PANELS ARE THE RESPONSIBILITY OF GENERAL CONTRACTOR.
11. N/S RECOMMENDS THAT ALL CONNECTIONS COMING INTO NS PANEL BOXES SHOULD BE MADE INTO THE BOTTOM OF ENCLOSURE.
12. G.C.-E.C. MUST PROVIDE LOCAL DISCONNECT SWITCHES ON ALL MOTORS THAT ARE NOT WITHIN EYE SIGHT OF POWER SOURCE.
13. CONDUITS & WIRE SIZES CALLED OUT IN THESE DRAWINGS ARE BASED ON THE N.E.C. & WIRE SIZES ARE BASED ON 100' RUN.
14. USE NEXT LARGER SIZE WIRE IF THE CONDUIT RUN EXCEEDS EVERY 100 FT TO PREVENT VOLTAGE DROP.
15. G.C.-E.C. MUST TERMINATE ALL WIRES AT ELECTRICAL J-BOXES, CONTROL PANELS, SENSORS, MOTORS, ETC...
16. ALL CONNECTIONS TO ALL EQUIPMENT SHALL BE WITH FLEXIBLE CONDUIT FROM J-BOX MOUNTED TO THE STRUCTURAL WALL OR CEILING.
17. USE LIQUID TIGHT FLEXIBLE CONDUIT W. EXTRUDED POLY VINYL CHLORIDE JACKET OVER INTERLOCKING GALVANIZED CONDUIT FOR ALL EXTERIOR & ALL INTERIOR CONNECTIONS TO ANY EQUIPMENT SUBJECT TO MOVEMENT OR VIBRATION.

*GROUND MOUNTED ELECTRIC EYE ACTIVATION SYSTEM WIRING DETAIL*




CAPITAL TRANSIT
POWER REQUIREMENT

| COMPONENT | COMPONENT DESCRIPTION | QTY. | 480V, 3ϕ, 60HZ F.L.A. (AMPERE) | 480V, 3ϕ, 60HZ MIN. C/B (AMPERE) | 480V, 3ϕ, 60HZ DISCONNECT (AMPERE) (TO BE PROVIDED BY G.C.-E.C.) | 115V, 1ϕ, 60HZ F.L.A. (AMPERE) (CONTROL SIGNAL) | 115V, 1ϕ, 60HZ MIN. C/B (AMPERE) (CONTROL SIGNAL) | QTY. OF CONTROL PANEL |
|---|---|---|---|---|---|---|---|---|
| MAIN CONTROL PANEL | BRUSH SYSTEM FRONT BRUSHES: 1-1/2HP MOTOR | 2 | 6.00 | --- | 30.00 | --- | --- | 1 |
| | BRUSH SYSTEM REAR BRUSHES: 1-1/2HP MOTOR | 2 | 6.00 | --- | 30.00 | --- | --- | |
| | 20HP UNDERCARRIAGE PUMP | 1 | 27.0 | --- | 60.00 | --- | --- | |
| | CHEMICAL PUMP | 1 | --- | --- | --- | 0.74 | --- | |
| | DRYING AID PUMP | 1 | --- | --- | --- | 0.74 | --- | |
| | AIR PANEL | 2 | --- | --- | --- | 0.12 | --- | |
| | ELECTRIC EYE ACTIVATION SYSTEM | 8 | --- | --- | --- | 0.16 | --- | |
| | FLOAT SWITCH (FS2) | 1 | --- | --- | --- | 0.00 | --- | |
| | SPEED WARNING LIGHT | 2 | --- | --- | --- | 0.8 | --- | |
| | SPEED WARNING HORN | 2 | --- | --- | --- | 2.04 | --- | |
| | SOLENOID VALVES (SV1 & SV2) | 3 | --- | --- | --- | 0.21 | --- | |
| | 750VA TRANSFORMER (480V/120V) | 1 | 1.5625 <---------- 4.80 | | | | | |
| | TOTAL F.L.A. & MIN. C/B | --- | 40.5625 | 60.00 | --- | --- | --- | |
| RECLAIM CONTROL PANEL | 15HP SEPARATOR PUMP | 1 | 21.00 | --- | 60.00 | --- | --- | 1 |
| | 10HP WASH PUMP | 1 | 14.00 | --- | 60.00 | --- | --- | |
| | FLOW SWITCH (FLS1) | 1 | --- | --- | --- | 0.00 | --- | |
| | FLOAT SWITCH (FS1, FS2, FS3 & FS4) | 4 | --- | --- | --- | 0.00 | --- | |
| | SOLENOID VALVE (SV3) | 1 | --- | --- | --- | 0.07 | --- | |
| | 150VA TRANSFORMER (480V/120V) | 1 | 0.3125 <---------- 0.07 | | | | | |
| | TOTAL F.L.A. & MIN. C/B | --- | 35.3125 | 50.00 | --- | --- | --- | |
| BLOWER CONTROL PANEL | 10HP MOTOR | 9 | 126.00 | --- | 60.00 | --- | --- | 1 |
| | TOTAL F.L.A. & MIN. C/B | --- | 126.00 | 175.00 | --- | --- | --- | |
| AIR COMPRESSOR | 5HP MOTOR | 1 | 7.60 | --- | 30.00 | --- | --- | 1 |
| | TOTAL F.L.A. & MIN. C/B | --- | 7.60 | 15.00 | --- | --- | --- | |

LEGEND: QTY. = QUANTITY; V = VOLTAGE; ϕ = ELECTRICAL PHASE; HZ = HERTZ; F.L.A. = FULL LOADED AMPERE; MIN. = MINIMUM; C/B = CIRCUIT BREAKER

INSERTION SCALE FACTOR: 64 FILE LOCATION/FILE NAME:

BRUSH SYSTEM SYS-3000-12-CUSTOM

FOR PROPOSAL ONLY

REVISION: 2
- CORRECTED DIMENSIONS OF WASH BAY
- REVISED SLAB LAYOUT WITH CORRECTED WASH BAY DIMENSIONS.
- SHOWED GRATING & SPECIFIED WHO SHOULD PROVIDE GRATING FOR PITS

DATE: 3-14-2016 BY: DJT

REVISION: 1
- ADDED DISCONNECTS COLUMN TO POWER REQUIREMENT TABLE
- ADDED WIRE NOTES TO CLARIFY CONNECTIONS TO BRUSH SYSTEM J-BOX, OVERALL LIMIT SWITCH AND BLOWER SYSTEM
- REVISED PUMP WIRE SIZES
- REVISED ELECTRICAL IMPORTANT NOTES
- REVISED WIRING OF BLOWER SYSTEM

DATE: 3-10-2016 BY: DJT

REVISIONS

| | |
|---|---|
| DRAWN | DJT |
| DATE | 3/2/2016 |
| WORK ORDER | |
| SCALE | 3/16"=1' |

NS WASH SYSTEMS — successful manufacturing of vehicle wash equipment since 1961
235 WEST FLORENCE AVENUE, INGLEWOOD, CALIFORNIA 90301 | TELEPHONE: (310) 412-7074 FAX: (310) 673-0276

GENERAL CONTRACTOR

TITLE
CAPITAL TRANSIT – JUNEAU ALASKA
ELECTRICAL LAYOUT

DWG. No.
9329-ELEC
3 OF 3