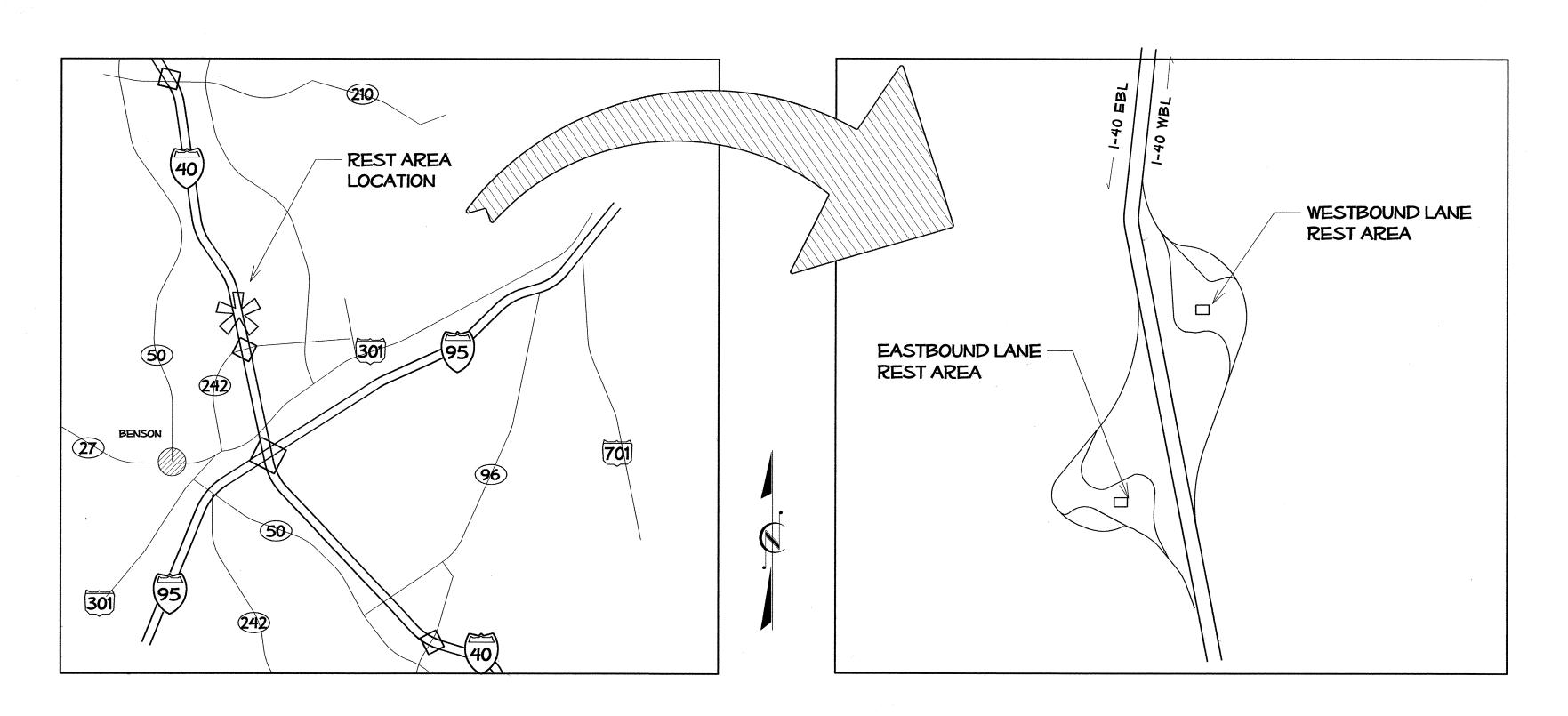
# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

JOHNSTON COUNTY

LOCATION: I-40 JOHNSTON COUNTY REST AREA PAIR, WEST OF EXIT 325- BENSON, NC TYPE OF WORK: RENOVATION OF EXISTING BLDGS. AND SITE WORK



VICINITY MAPS

			KOPETSKY
REST AREA PROJECT DEVELOPMENT	SITE / LANDSCAPE DESIGN	ARCHITECTURAL / ENGINEERING	Scale  n/a  Date
REST AREA SECTION	LANDSCAPE DESIGN & DEVELOPMENT	ARCHITECT: NCDOT GENERAL SERVICES - FACILITIES DESIGN	8 14 1
ROADSIDE ENVIRONMENTAL UNIT	ROADSIDE ENVIRONMENTAL UNIT	1 S. WILMINGTON STREET RALEIGH, NC 27601 919.715.0400	JAN.15, 2013 2012 Standard Specificati
1557 MAIL SERVICE CENTER RALEIGH, NORTH CAROLINA 27699-1557 OFFICE (919) 770-2920 FAX (919) 715-2554	1557 MAIL SERVICE CENTER RALEIGH, NORTH CAROLINA 27699-1557 OFFICE (919) 770-2920 FAX (919) 715-2554	MECHANICAL/ELECTRICAL/PLUMBING.: BURKE DESIGN GROUP, PA  3305-109 DURHAM DRIVE  RALEIGH, NC 27603 919.771.1916	Sheet Description TITLE SHEET Sheet #

STATE NC
WBS # F.A. Project # Description

41533.1.1

P.E.

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41533.3.1

IMS-040-5(49)325

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North Carolina Department of Transportat

Division of Highways

DEPARTHER TO DEPARTHER TO THE PART TO THE

I-40 JOHNSTON COUNTY REST AREA RENOVATIONS

# INDEX OF DRAWINGS

STATE NC \*K-5001 P.E. R/W 41533.3.1 IMS-040-5(49)325 CONST.

**Transportation** 

fo

Carolina

North

Raleigh,

- PROJECT TITLE SHEET & VICINITY MAPS
- INDEX OF SHEETS AND STANDARD SPEC REFERENCES
- SUMMARY OF QUANTITIES

# SITE DEVELOPMENT PLANS

#### L-01 TITLE SHEET

L-02 WBL EXISTING SITE PLAN L-03 WBL PROPOSED SITE PLAN L-04 WBL SITE DEMOLITION PLAN L-05 WBL GRADING & DRAINAGE PLAN L-06 WBL LAYOUT & DIMENSION PLAN L-07 WBL LANDSCAPE PLAN

L-08 EBL EXISTING SITE PLAN L-09 EBL PROPOSED SITE PLAN L-10 EBL SITE DEMOLITION PLAN L-11 EBL GRADING & DRAINAGE PLAN L-12 EBL LAYOUT & DIMENSION PLAN L-13 EBL LANDSCAPE PLAN

#### WBL & EBL COMMON DETAIL SHEETS

LD-01 RETAINING WALL DETAILS LD-02 PLANTING DETAILS LD-03 HARDSCAPE DETAILS LD-04 DRAINAGE DETAILS

# BUILDING CONSTRUCTION PLANS

#### DESIGN DATA & ABBREVIATION

DEMOLITION PLAN A2 FLOOR PLAN **CLERESTORY PLAN EXTERIOR ELEVATIONS BUILDING SECTIONS** WALL SECTIONS & DETAILS

ENLARGED TOILET PLAN & DETAILS DOOR AND WINDOW SCHEDULE / DETAILS INTERIOR ELEVATION/ COLOR SCHEDULE (KEY PLAN)

A10 INTERIOR ELEVATIONS (MEN'S & WOMEN'S TOILET)
A11 INTERIOR ELEVATIONS (MEN'S & WOMEN'S TOILET)

FOUNDATION PLAN & DETAILS FRAMING PLAN & DETAILS

FOUNDATION & FRAMING DETAILS

PLUMBING SCHEDULES & DETAILS

PLUMBING SUPPLY & WASTE PLAN - EBL & WBL PLUMBING WASTE RISER & DETAILS - EBL & WBL

PLUMBING SUPPLY RISER-EBL & WBL

MECHANICAL SCHEDULES & NOTES M2 MECHANICAL PLAN & DETAILS

ELECTRICAL NOTES, DETAILS & LEGEND

LIGHTING & POWER PLAN E3 ELECTRICAL PANEL SCHEDULES

SITE UTILITY PLAN - EBL

U2 SITE UTILITY PLAN - WBL U3 SITE UTILITY DETAILS

## 2012 ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS APPEAR IN 'ROADWAY STANDARD DRAWINGS" - HIGHWAY DESIGN BRANCH -NC DEPARTMENT OF TRANSPORTATION - RALEIGH, NC DATED JANUARY, 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE ARE HEREBY CONSIDERED PART OF THESE PLANS:

#### STND# TITLE

CONCRETE DROP INLET 840.14 840.16 DROP INLET FRAMES AND GRATES PRECAST DRAINAGE STRUCTURE 840 45

CONCRETE SIDEWALK 848.01

**CURB RAMP** 848.05

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of Highways

Division

North

COUNTY 1-40 ON RE 0 |-つい

	KOPETSKY	
	Scale	
	n/a	
	Date	
	8 / 14 / 12	
	Letting Date	
	- NAME - A	
	Sheet Description	
-	INDEX OF DRAWINGS	
	Sheet #	
	2	

Plans Drawn By:

# REST AREA PROJECT DEVELOPMENT REST AREA SECTION

ROADSIDE ENVIRONMENTAL UNIT 1557 MAIL SERVICE CENTER RALEIGH, NORTH CAROLINA 27699-1557 OFFICE (919) 770-2920 FAX (919) 715-2554 SITE / LANDSCAPE DESIGN

## LANDSCAPE DESIGN & DEVELOPMENT

ROADSIDE ENVIRONMENTAL UNIT 1557 MAIL SERVICE CENTER RALEIGH, NORTH CAROLINA 27699-1557 OFFICE (919) 770-2920 FAX (919) 715-2554 ARCHITECTURAL / ENGINEERING

ARCHITECT: NCDOT GENERAL SERVICES - FACILITIES DESIGN

1 S. WILMINGTON STREET

RALEIGH, NC 27601 919.715.0400

MECHANICAL/ELECTRICAL/PLUMBING .: BURKE DESIGN GROUP, PA

3305-109 DURHAM DRIVE

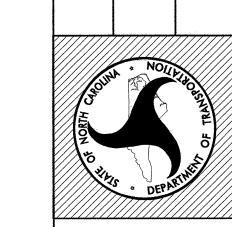
RALEIGH, NC 27603 919.771.1916

STATE NC	T.I.P. #K-5001 SHEET #	3 of 00
WBS #	F.A. Project #	Description
		P.E.
		R/W
41533.3.1	IMS-040-5(49)325	CONST.

# SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203016					
ItemNumber	Sec #	Quantity	Unit	Description	
0000100000-N	800	Lump Sum		MOBILIZATION	
2591000000-Е	848	690	SY	4" CONCRETE SIDEWALK	
2605000000-N	848	4	EA	CONCRETE CURB RAMP	
6000000000-Е	1605	200	LF	TEMPORARY SILT FENCE	
6012000000-Е	1610	20	TON	SEDIMENT CONTROL STONE	
6015000000-Е	1615	1 .	ACR	TEMPORARY MULCHING	
6036000000-Е	1631	2,500	SY	MATTING FOR EROSION CONTROL	
604200000-Е	1632	100	LF	1/4" HARDWARE CLOTH	
6084000000-Е	1660	1	ACR	SEEDING & MULCHING	
6650000000-E	1670	250	CY	MULCH FOR PLANTING	
6665000000-E	1670	4,360	SY	POSTEMERGENT HERBICIDAL TREAT- MENT FOR PLANT BEDS	
6670000000-E	1670	4,360	SY	PREEMERGENT HERBICIDAL TREAT- MENT FOR PLANT BEDS	
6674000000-N	SP	Lump Sum		GENERIC PLANTING ITEM (LS) LANDSCAPE & SITE GRADING - EBL/WBL	
6675000000-E	SP	18	SY	GENERIC PLANTING ITEM 9" CONCRETE BORDER	
669000000-E	SP	1,300	LF	GENERIC PLANTING ITEM TREE PROTECTION FENCE	
6900000000-Е	SP	370	CY	TOPSOIL	
6970000000-N	SP	4	EA	GENERIC REST AREA ITEM PICNIC TABLE, REMOVAL & STOCK- PILE	
6975000000-N	SP	Lump Sum		GENERIC REST AREA ITEM ELECTRICAL INSTALLATION REST AREA SERVICE BUILDINGS EBL/WBL	
6975000000-N	SP	Lump Sum		GENERIC REST AREA ITEM GENERAL CONSTRUCTION REST AREA SERVICE BUILDINGS EBL/WBL	
6975000000-N	SP	Lump Sum		GENERIC REST AREA ITEM GENERAL CONSTRUCTION VENDING BLDG RENOVATIONS EBL/WBL	
6975000000-N	SP	Lump Sum		GENERIC REST AREA ITEM HVAC INSTALLATION REST AREA SERVICE BUILDINGS EBL/WBL	

ItemNumber 	Sec #	Quantity	Unit	Description
6975000000-N	SP	Lump Sum		GENERIC REST AREA ITEM PLUMBING INSTALLATION REST AREA SERVICE BUILDINGS EBL/WBL
6975000000-N	SP	Lump Sum		GENERIC REST AREA ITEM REST AREA SOLAR HOT WATER SYSTEM EBL/WBL
6975000000-N	SP	Lump Sum		GENERIC REST AREA ITEM SITE DEMOLITION - EBL/WBL
6975000000-N	SP	Lump Sum		GENERIC REST AREA ITEM SITE STORMWATER DRAINAGE - EBL/WBL
6980000000-Е	SP	200	LF	GENERIC REST AREA ITEM 3" PVC SLEEVE
6980000000-E	SP	60	LF	GENERIC REST AREA ITEM REPLACEMENT AS NEEDED OF VEND- ING BLDG WALL & SILL PLATE FRAMING
6982000000-E	SP	2,000	SF	GENERIC REST AREA ITEM DECORATIVE CONCRETE PAVERS
6982000000-Е	SP	200	SF	GENERIC REST AREA ITEM SEGMENTED RETAINING WALL



Plans Drawn By:

	KOPETSKY
ARCHITECTURAL / ENGINEERING	Scale <b>n/a</b>
AICOITTEOTOICAE / DIAGINEETCING	Date
ARCHITECT: NCDOT GENERAL SERVICES - FACILITIES DESIGN	8 / 14 / 12
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1 S. WILMINGTON STREET	en e
RALEIGH, NC 27601 919.715.0400	2012 Standard Specifications
WE CHANGE OF THE CORDINAL VEHICLE PURISH DECICAL CROUP DA	Sheet Description
MECHANICAL/ELECTRICAL/PLUMBING .: BURKE DESIGN GROUP, PA	SUMMARY
3305-109 DURHAM DRIVE	OF QUANTITIES

REST AREA SECTION ROADSIDE ENVIRONMENTAL UNIT 1557 MAIL SERVICE CENTER RALEIGH, NORTH CAROLINA 27699-1557 OFFICE (919) 770-2920 FAX (919) 715-2554

REST AREA PROJECT DEVELOPMENT

ROADSIDE ENVIRONMENTAL UNIT 1557 MAIL SERVICE CENTER RALEIGH, NORTH CAROLINA 27699-1557 OFFICE (919) 770-2920 FAX (919) 715-2554

LANDSCAPE DESIGN & DEVELOPMENT

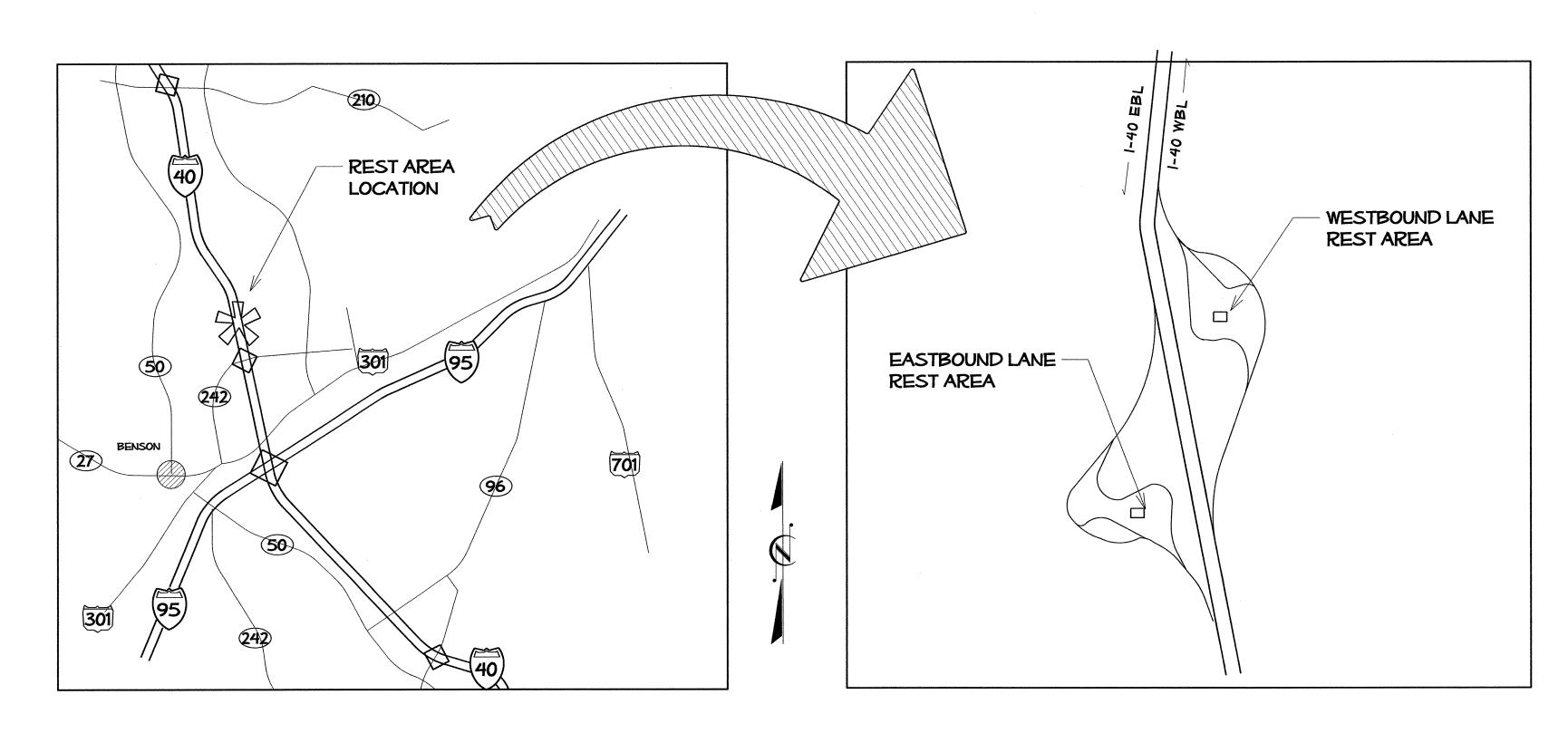
SITE / LANDSCAPE DESIGN

3305-109 DURHAM DRIVE RALEIGH, NC 27603 919.771.1916

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

JOHNSTON COUNTY

LOCATION: I-40 JOHNSTON COUNTY REST AREA PAIR, WEST OF EXIT 325- BENSON, NC TYPE OF WORK: RENOVATION OF EXISTING BLDGS. AND SITE WORK



VICINITY MAPS

ALL CONTRACTOR SITE DEVELOPMENT WORK SHALL BE COMPLETED BY SEPTEMBER 1, 2013.

ACCESS FOR SEPARATE SITE DEVELOPMENT CONTRACTOR(S) (AND NCDOT PERSONNEL) WILL BE GRANTED BY THE PRIMARY CONTRACTOR (AS DIRECTED BY THE CONTRACT AND THE NCDOT ENGINEER).

DEPARTITUDE OF THE PROPERTY OF

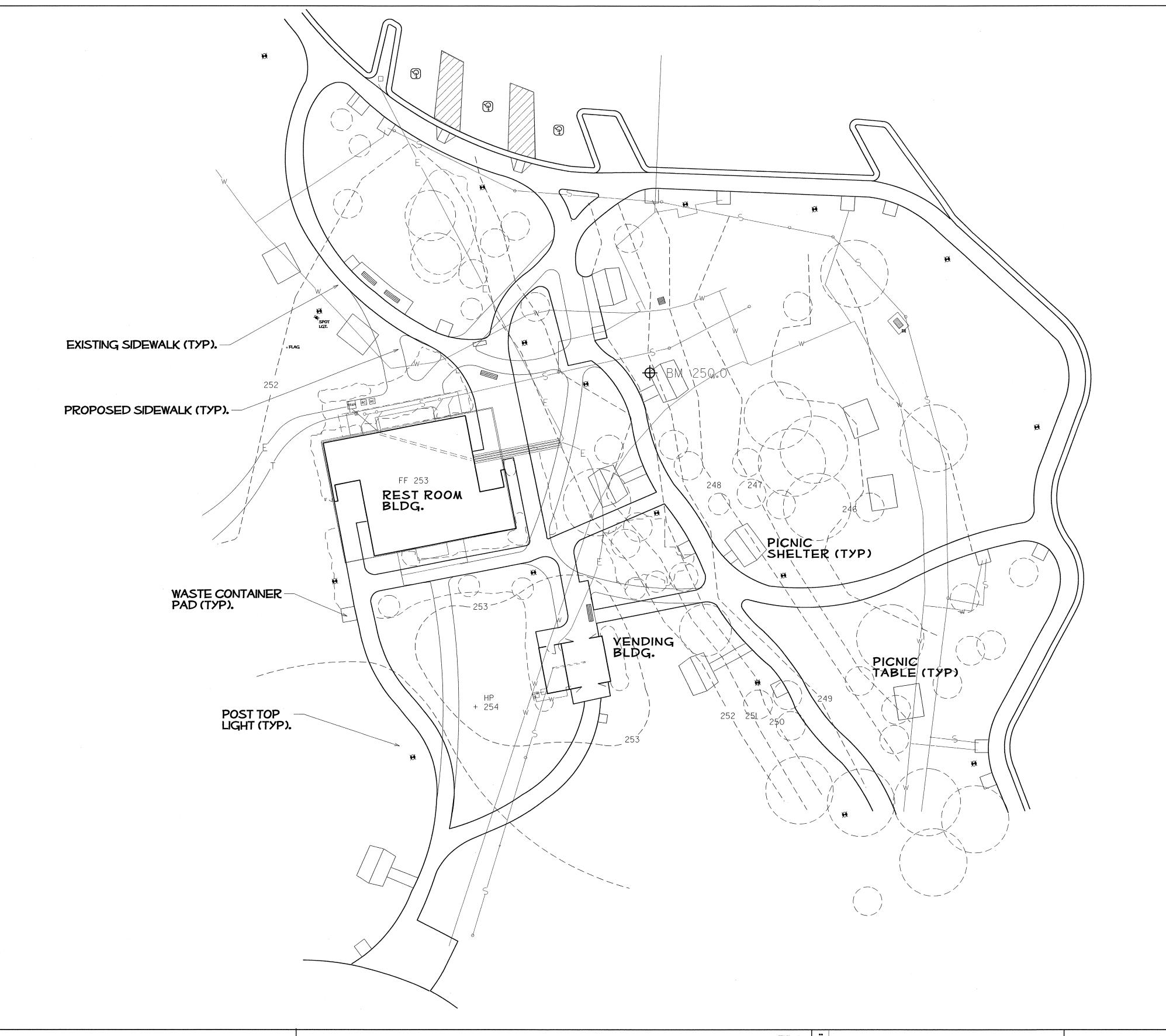
41533.1.1

IMS-040-5(49)325

I-40 JOHNSTON COUNTY ST AREA RENOVATIONS

L-01

ARCHITECTURAL / ENGINEERING REST AREA PROJECT DEVELOPMENT SITE / LANDSCAPE DESIGN 8 / 14 / 12 REST AREA SECTION ARCHITECT: NCDOT GENERAL SERVICES - FACILITIES DESIGN LANDSCAPE DESIGN & DEVELOPMENT 1 S. WILMINGTON STREET RALEIGH, NC 27601 919.715.0400 ROADSIDE ENVIRONMENTAL UNIT ROADSIDE ENVIRONMENTAL UNIT 2012 Standard Specifications 1557 MAIL SERVICE CENTER 1557 MAIL SERVICE CENTER Sheet Description MECHANICAL/ELECTRICAL/PLUMBING .: BURKE DESIGN GROUP, PA RALEIGH, NORTH CAROLINA 27699-1557 RALEIGH, NORTH CAROLINA 27699-1557 TITLE SHEET 3305-109 DURHAM DRIVE OFFICE (919) 770-2920 FAX (919) 715-2554 OFFICE (919) 770-2920 FAX (919) 715-2554 RALEIGH, NC 27603 919.771.1916 Sheet #



PARKING SUMMARY

CAR- 53 (INCLUDES 3 H/C ACCESSIBLE = 1 VAN & 2 CAR) LONG VEHICLE (CARS W/TRAILERS & REC. VEH.) - 7

TRACTOR TRAILER - 15

NOTES

EXSTING SIDEWALKS IN BOLD LINE WGT; PROPOSED SIDEWALKS SHOWN IN LIGHTER LINE WEIGHT.

DASHED CONTOUR LINES REPRESENT EXISTING GRADES (PRE CONST)

EXISTING TREES OR SHRUBS.

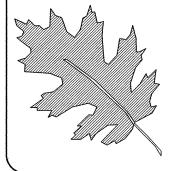
**EXISTING UTILITIES:** 

WATER

SEWER

ELECTRICAL

TELEPHONE



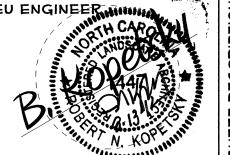
NCDOT - ROADSIDE ENVIRONMENTAL UNIT LANDSCAPE DESIGN & DEVELOPMENT

1557 MAIL SERVICE CENTER RALEIGH NC 27699-1557 PH: 919-733-2920 FAX: 919-733-9810

HTTP://WWW.NCDOT.ORG/DOH/OPERATIONS/DP\_CHIEF\_ENG/ROADSIDE/

I- 40 Johnston Co REST AREA RENOVATION

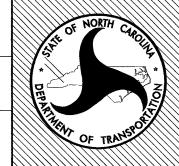
PROJECT #:



PREL DESIGN DATE:	MAY/ 2012
CHECKED BY & DATE:	DW

FINAL DESIGN DATE: 8-14-12

I-40 WBL RENOVATION EXISTING SITE PLAN

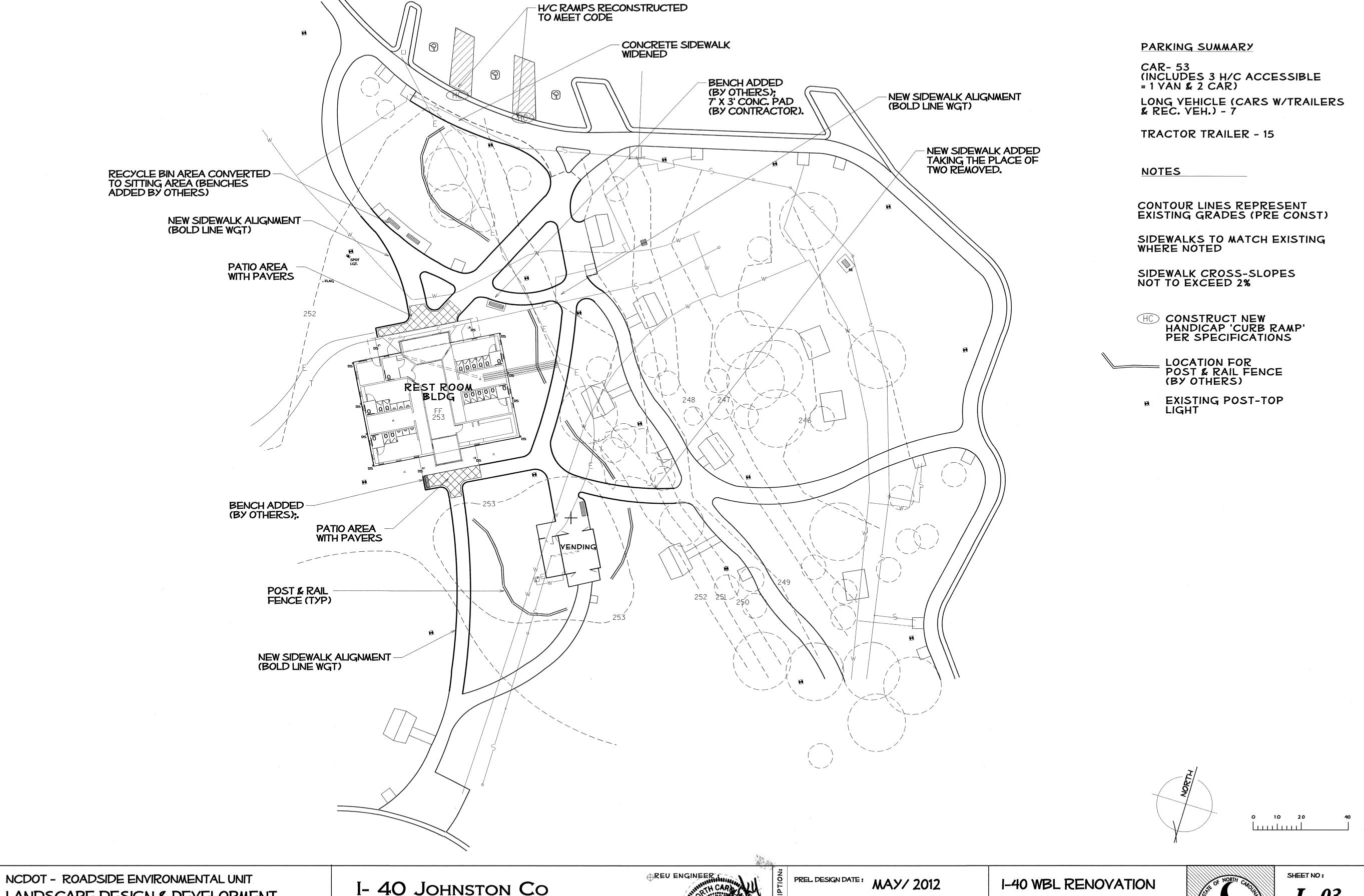


SHEET NO: *L-02* 

TOTAL SHEET NO:

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41533.3.1



LANDSCAPE DESIGN & DEVELOPMENT 1557 MAIL SERVICE CENTER RALEIGH NC 27699-1557 PH: 919-733-2920 FAX: 919-733-9810

HTTP://WWW.NCDOT.ORG/DOH/OPERATIONS/DP\_CHIEF\_ENG/ROADSIDE/

I- 40 Johnston Co REST AREA RENOVATION

41533.3.1 PROJECT #:



PROPOSED SITE PLAN



**L-03** 

NEW SIDEWALKS IN BOLD LINE WGT

NEW SIDEWALKS AND/OR PAYEMENT TO MATCH EXISTING WHERE NOTED

SIDEWALK CROSS-SLOPES NOT TO EXCEED 2%

ALL FOUNDATION PLANTINGS ARE TO BE REMOVED



TREES OR SHRUBS
TO REMOVE



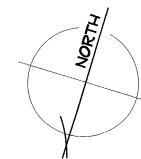
PAYEMENT OR SIDEWALKS TO REMOVE



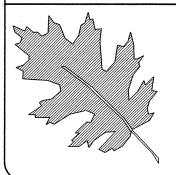
TREE PROTECTION FENCE; ERECT BEFORE BEGINNING CONSTRUCTION.

DO NOT DISTURB ROOT ZONES OF EXISTING PLANTS/TREES (NOT DESIGNATED FOR REMOVAL)

DO NOT DISTURB UNDERGROWN UTILITIES OR POST TOP LIGHTS.



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NCDOT - ROADSIDE ENVIRONMENTAL UNIT LANDSCAPE DESIGN & DEVELOPMENT

1557 MAIL SERVICE CENTER RALEIGH NC 27699-1557 PH: 919-733-2920 FAX: 919-733-9810

HTTP://WWW.NCDOT.ORG/DOH/OPERATIONS/DP\_CHIEF\_ENG/ROADSIDE/

I- 40 JOHNSTON CO REST AREA RENOVATION

PROJECT #: 41533.3.1



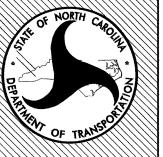
PREL DESIGN DATE: MAY/ 2012

FINAL DESIGN DATE: 8-14-12

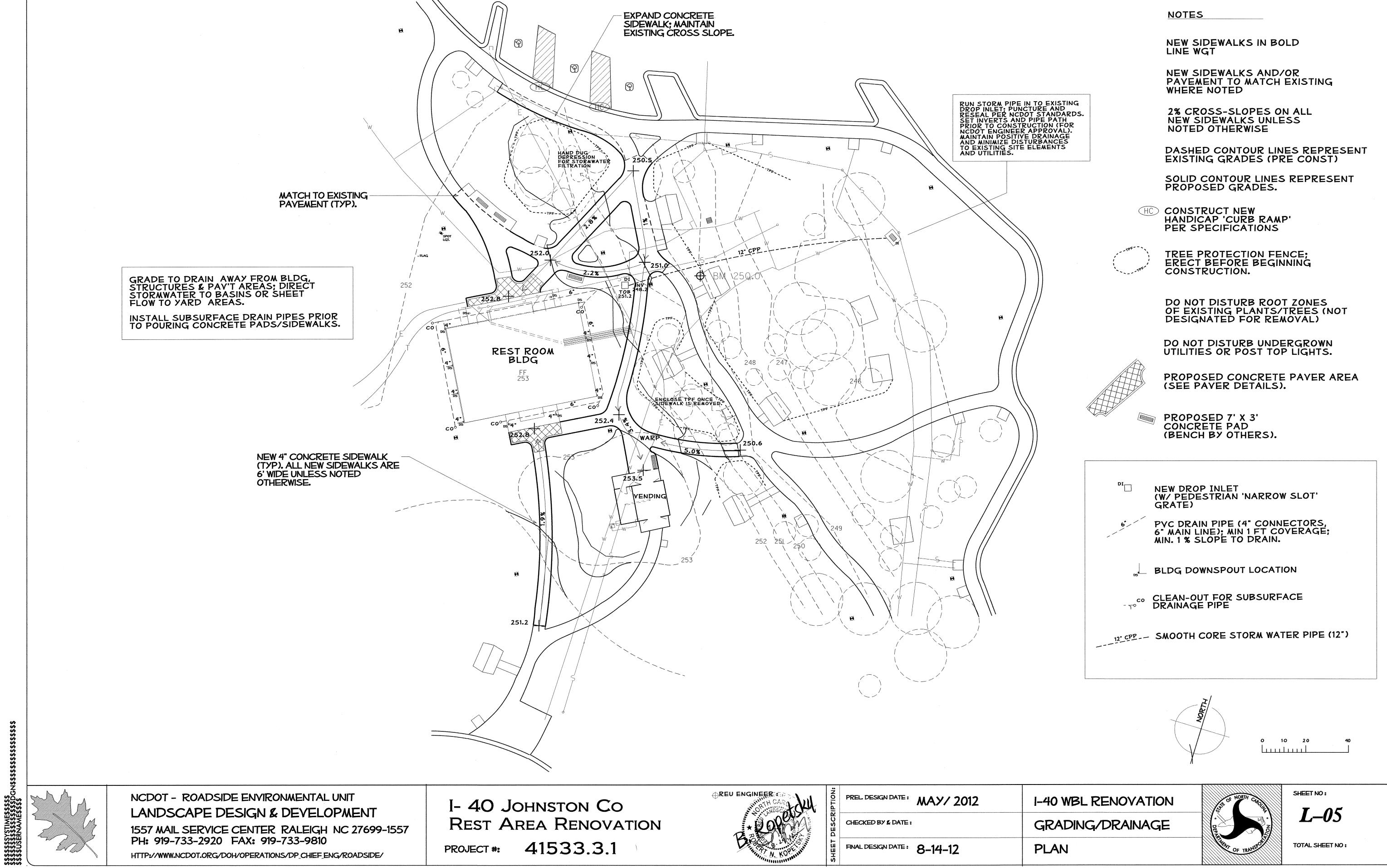
CHECKED BY & DATE:

I-40 WBL RENOVATION

SITE DEMOLITION PLAN



I.\_04



LANDSCAPE DESIGN & DEVELOPMENT

1557 MAIL SERVICE CENTER RALEIGH NC 27699-1557 PH: 919-733-2920 FAX: 919-733-9810

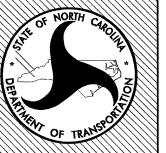
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I- 40 Johnston Co REST AREA RENOVATION 41533.3.1 PROJECT #:



	rices design date.	MAY/ 2012
2	CHECKED BY & DATE:	
- 1 1	FINAL DESIGN DATE:	8-14-12

I-40 WBL RENOVATION GRADING/DRAINAGE **PLAN** 



**L-05** 

NEW SIDEWALKS IN BOLD LINE WGT

NEW SIDEWALKS AND/OR PAVEMENT TO MATCH AT EXISTING JOINT.

2% CROSS-SLOPES ON ALL NEW SIDEWALKS UNLESS NOTED OTHERWISE

DASHED CONTOUR LINES REPRESENT EXISTING GRADES (PRE CONST)

SOLID CONTOUR LINES REPRESENT PROPOSED GRADES.

HC CONSTRUCT NEW HANDICAP 'CURB RAMP' PER SPECIFICATIONS

PROPOSED CONCRETE PAVER AREA (SEE PAVER DETAILS).

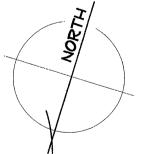
PROPOSED 7' X 3' CONCRETE PAD (BENCH BY OTHERS).

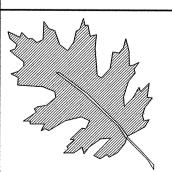
3" PVC SLEEVE

LAYOUT ALL HARDSCAPE ITEMS, FOR NCDOT ENGINEER APPROVAL, PRIOR TO THEIR CONSTRUCTION.

ALL 4" SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.

ALL SIDEWALK INTERSECTING CORNERS HAVE A 3' RADIUS UNLESS NOTED OTHERWISE.





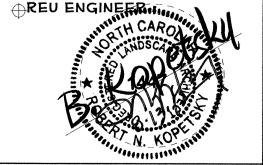
NCDOT - ROADSIDE ENVIRONMENTAL UNIT LANDSCAPE DESIGN & DEVELOPMENT

1557 MAIL SERVICE CENTER RALEIGH NC 27699-1557 PH: 919-733-2920 FAX: 919-733-9810

HTTP://WWW.NCDOT.ORG/DOH/OPERATIONS/DP\_CHIEF\_ENG/ROADSIDE/

I- 40 Johnston Co REST AREA RENOVATION

41533.3.1 PROJECT #:



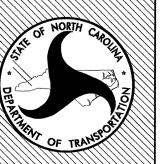
PREL DESIGN DATE: WAY/ 2012

FINAL DESIGN DATE: 8-14-12

I-40 WBL RENOVATION

LAYOUT & DIMENSION

PLAN



L-06

DASHED CONTOUR LINES REPRESENT EXISTING GRADES (PRE CONST)

SOLID CONTOUR LINES REPRESENT PROPOSED GRADES.

HC CONSTRUCT NEW HANDICAP 'CURB RAMP' PER SPECIFICATIONS



PROPOSED RETATINING WALL (EBL FACILITY ONLY).

LOCATION FOR POST & RAIL FENCE (BY OTHERS)

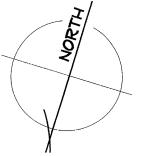
---- 3" PYC SLEEYE

DENOTES PLANT BED LOCATION.
CONTRACTOR SHALL REMOVE TURF OR
UNDERGOWTH (APPLY HERBIDE
TREATMENTS AS DIRECTED), EDGE
BED OUTLINE, ADD 6" OF TOPSOIL,
AND 4' OF MULCH. LANDSCAPE
PLANTINGS WILL BE COMPLETED
BY OTHERS.

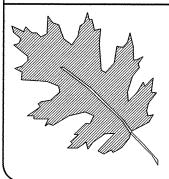
ALL TURF AREAS SHALL BE OVERSOWN WITH HYBRED BERMUDA AS SPECIFIED.

ALL PLANT BED AREAS ADJOINING TURF SHALL BE EDGED PER DETAIL.

ALL SITE AND LANDSCAPE WORK SHALL BE COMPLETED BY SEPTEMBER 1, 2013.



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NCDOT - ROADSIDE ENVIRONMENTAL UNIT

LANDSCAPE DESIGN & DEVELOPMENT

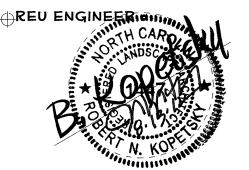
1557 MAIL SERVICE CENTER RALEIGH NC 27699-1557

PH: 919-733-2920 FAX: 919-733-9810

HTTP://WWW.NCDOT.ORG/DOH/OPERATIONS/DP\_CHIEF\_ENG/ROADSIDE/

I- 40 JOHNSTON CO REST AREA RENOVATION

PROJECT #: 41533.3.1



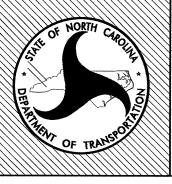
PREL DESIGN DATE: MAY/ 2012

CHECKED BY & DATE:

FINAL DESIGN DATE: 8-14-12

I-40 WBL RENOVATION

LANDSCAPE PLAN



SHEET NO: **L-07** 

TOTAL SHEET NO:

\$\$\$\$\$\$\$YSTIME\$\$\$\$\$ \$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$ \$\$\$USERNAME\$\$\$

NCDOT - ROADSIDE ENVIRONMENTAL UNIT LANDSCAPE DESIGN & DEVELOPMENT

1557 MAIL SERVICE CENTER RALEIGH NC 27699-1557 PH: 919-733-2920 FAX: 919-733-9810

HTTP://WWW.NCDOT.ORG/DOH/OPERATIONS/DP\_CHIEF\_ENG/ROADSIDE/

I- 40 Johnston Co REST AREA RENOVATION

41533.3.1 PROJECT #:



PREL DESIGN DATE: MAY/ 2012

CHECKED BY & DATE:

FINAL DESIGN DATE: 8-14-12

I-40 EBL RENOVATION EXISTING SITE PLAN



WATER

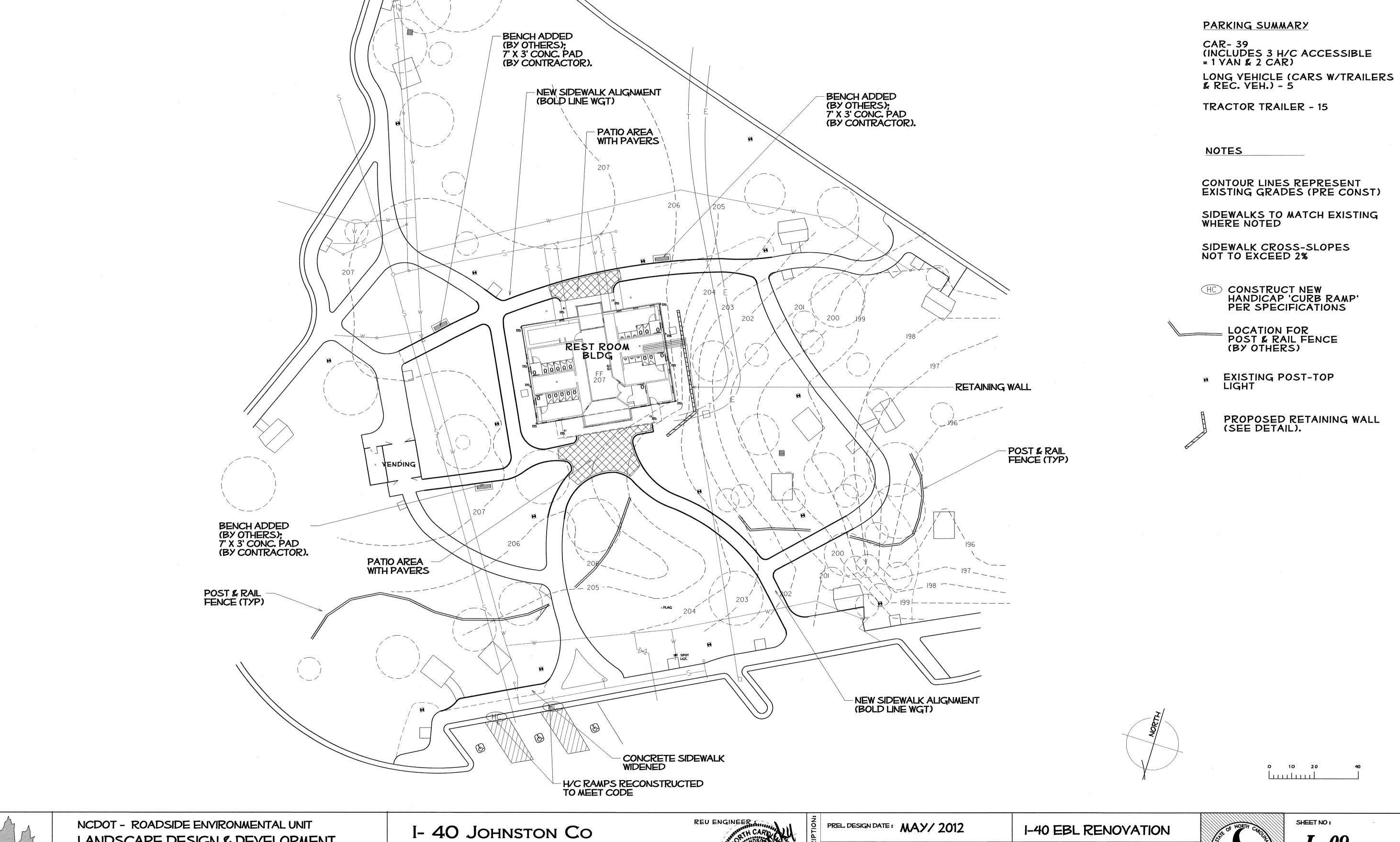
ELECTRICAL

SEWER

TELEPHONE

SHEET NO:

**L-08** 



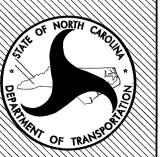
LANDSCAPE DESIGN & DEVELOPMENT 1557 MAIL SERVICE CENTER RALEIGH NC 27699-1557 PH: 919-733-2920 FAX: 919-733-9810

HTTP://WWW.NCDOT.ORG/DOH/OPERATIONS/DP\_CHIEF\_ENG/ROADSIDE/

REST AREA RENOVATION 41533.3.1 PROJECT #:



PREL DESIGN DATE: MAY/ 2012	I-40 EBL RENOVATI
CHECKED BY & DATE:	PROPOSED SITE PI
FINAL DESIGN DATE: 8-14-12	



NEW SIDEWALKS IN BOLD LINE WGT

NEW SIDEWALKS AND/OR PAYEMENT TO MATCH EXISTING WHERE NOTED

SIDEWALK CROSS-SLOPES NOT TO EXCEED 2%

ALL FOUNDATION PLANTINGS ARE TO BE REMOVED



TREES OR SHRUBS TO REMOVE



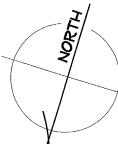
PAYEMENT OR SIDEWALKS TO REMOVE

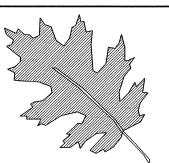


TREE PROTECTION FENCE; ERECT BEFORE BEGINNING CONSTRUCTION.

DO NOT DISTURB ROOT ZONES OF EXISTING PLANTS/TREES (NOT DESIGNATED FOR REMOVAL)

DO NOT DISTURB UNDERGROWN UTILITIES OR POST TOP LIGHTS.



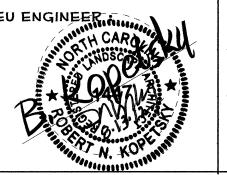


NCDOT - ROADSIDE ENVIRONMENTAL UNIT LANDSCAPE DESIGN & DEVELOPMENT

1557 MAIL SERVICE CENTER RALEIGH NC 27699-1557 PH: 919-733-2920 FAX: 919-733-9810 HTTP://WWW.NCDOT.ORG/DOH/OPERATIONS/DP\_CHIEF\_ENG/ROADSIDE/

I- 40 Johnston Co REST AREA RENOVATION

41533.3.1



DESCRIPTION:	PREL DESIGN DATE: MAY/ 2012	I-40 EBL RENOVATION
	CHECKED BY & DATE:	SITE DEMOLITION PLAN
Ь	FINAL DESIGNIDATE.	



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I- 40 Johnston Co REST AREA RENOVATION 41533.3.1 PROJECT #:



REL DESIGN DATE:	MAY/	2012	

**PLAN** 

FINAL DESIGN DATE: 8-14-12

CHECKED BY & DATE:



TOTAL SHEET NO:

**L**–11

NEW SIDEWALKS IN BOLD LINE WGT

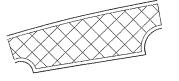
NEW SIDEWALKS AND/OR PAVEMENT TO MATCH AT EXISTING JOINT.

2% CROSS-SLOPES ON ALL NEW SIDEWALKS UNLESS NOTED OTHERWISE

DASHED CONTOUR LINES REPRESENT EXISTING GRADES (PRE CONST)

SOLID CONTOUR LINES REPRESENT PROPOSED GRADES.

HC CONSTRUCT NEW HANDICAP 'CURB RAMP' PER SPECIFICATIONS



PROPOSED PAVER AREA WITH 9" CONCRETE BAND (SEE PAVER DETAIL).



PROPOSED RETAINING WALL (SEE DETAIL).



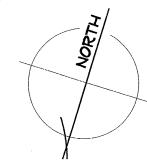
PROPOSED 7' X 3'
CONCRETE PAD
(BENCH BY OTHERS).

3" PVC SLEEVE

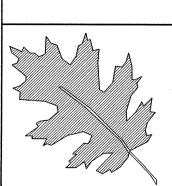
LAYOUT ALL HARDSCAPE ITEMS, FOR NCDOT ENGINEER APPROVAL, PRIOR TO THEIR CONSTRUCTION.

ALL 4" SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.

ALL SIDEWALK INTERSECTING CORNERS HAVE A 3' RADIUS UNLESS NOTED OTHERWISE.



0 10 20 40



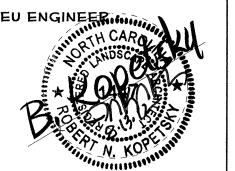
NCDOT - ROADSIDE ENVIRONMENTAL UNIT
LANDSCAPE DESIGN & DEVELOPMENT

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I- 40 JOHNSTON CO REST AREA RENOVATION

PROJECT #: 41533.3.1



PREL DESIGN DATE: MAY/ 2012

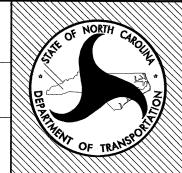
KED BY & DATE:

FINAL DESIGN DATE: 8-14-12

I-40 EBL RENOVATION

LAYOUT & DIMENSION





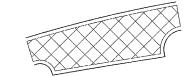
**L-12** 



DASHED CONTOUR LINES REPRESENT EXISTING GRADES (PRE CONST)

SOLID CONTOUR LINES REPRESENT PROPOSED GRADES.

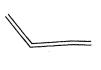
CONSTRUCT NEW HANDICAP 'CURB RAMP' PER SPECIFICATIONS



PROPOSED PAVER AREA WITH 9" CONCRETE BAND (SEE PAVER DETAIL).



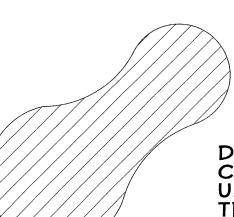
PROPOSED RETATINING WALL (SEE DETAIL).



LOCATION FOR POST & RAIL FENCE (BY OTHERS)



3" PVC SLEEVE

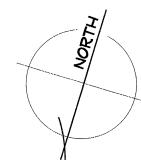


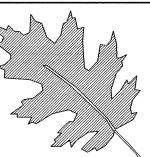
DENOTES PLANT BED LOCATION.
CONTRACTOR SHALL REMOVE TURF OR UNDERGOWTH (APPLY HERBIDE TREATMENTS AS DIRECTED), EDGE BED OUTLINE, ADD 6" OF TOPSOIL, AND 4' OF MULCH. LANDSCAPE PLANTINGS WILL BE COMPLETED BY OTHERS.

ALL TURF AREAS SHALL BE OVERSOWN WITH HYBRED BERMUDA AS SPECIFIED.

ALL PLANT BED AREAS ADJOINING TURF SHALL BE EDGED PER DETAIL.

ALL SITE AND LANDSCAPE WORK SHALL BE COMPLETED BY SEPTEMBER 1, 2013.





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I- 40 Johnston Co REST AREA RENOVATION



PREL DESIGN DATE: WAY/ 2012 CHECKED BY & DATE:

FINAL DESIGN DATE:

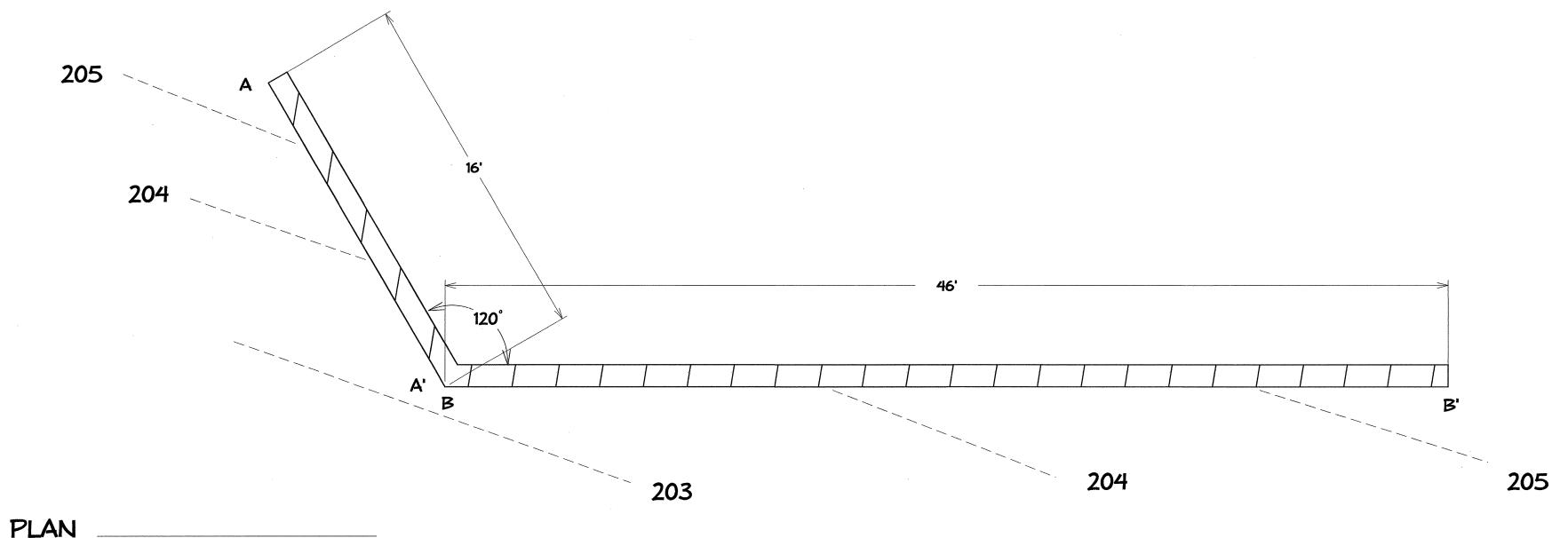
I-40 EBL RENOVATION LANDSCAPE PLAN

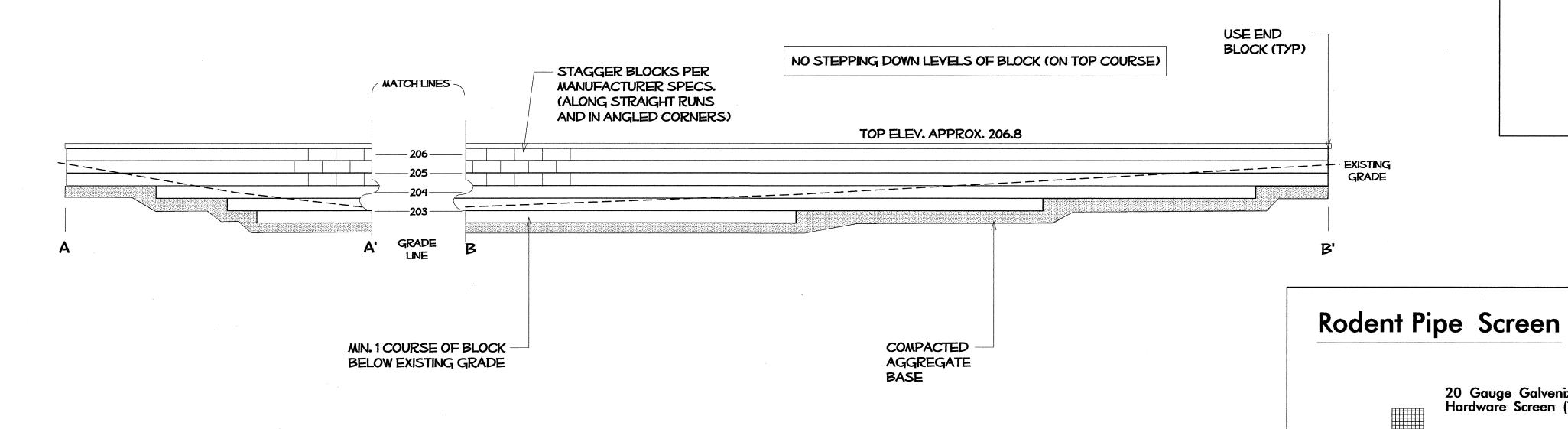
SHEET NO: **L-13** 

TOTAL SHEET NO:

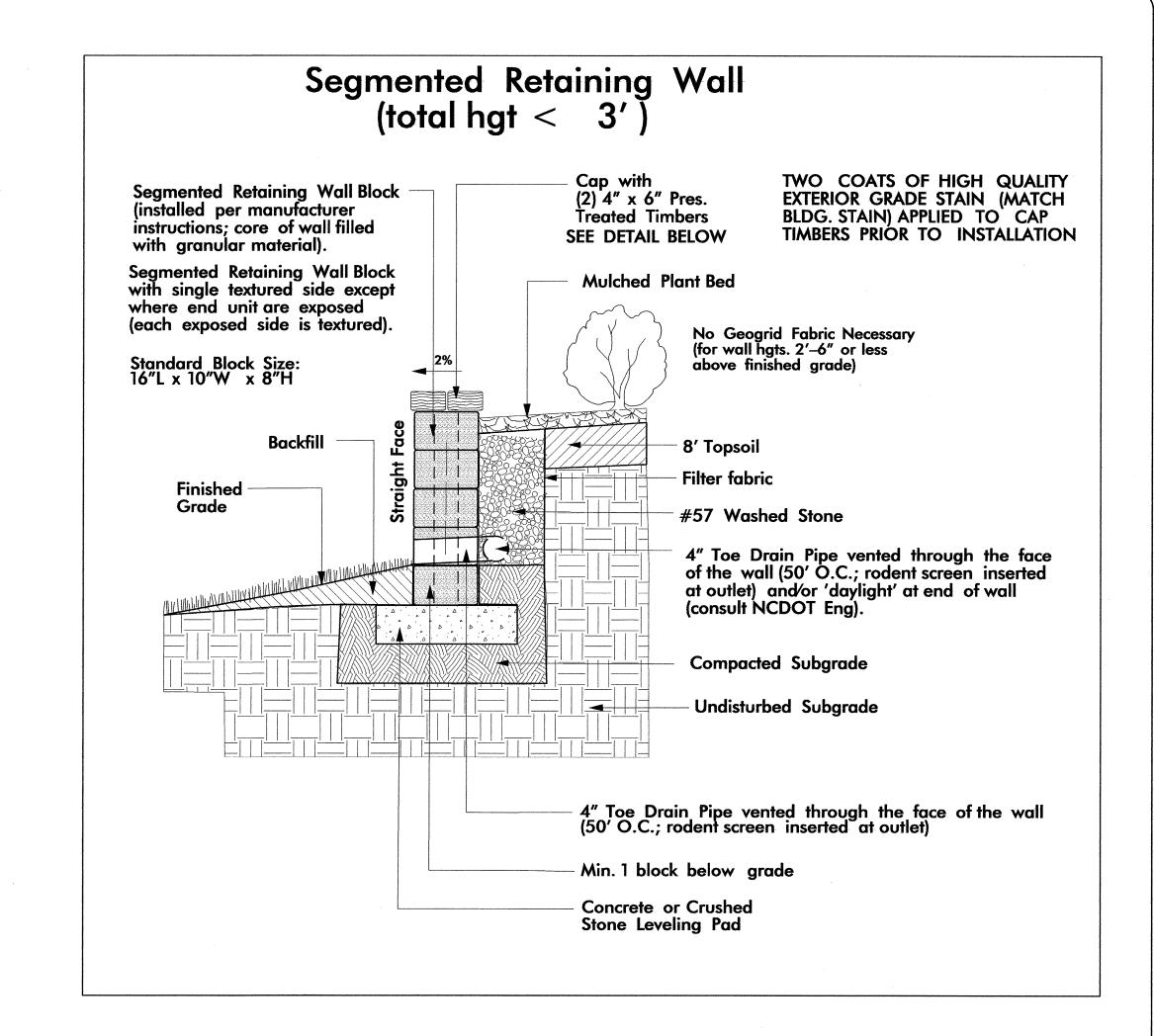
41533.3.1 PROJECT #:

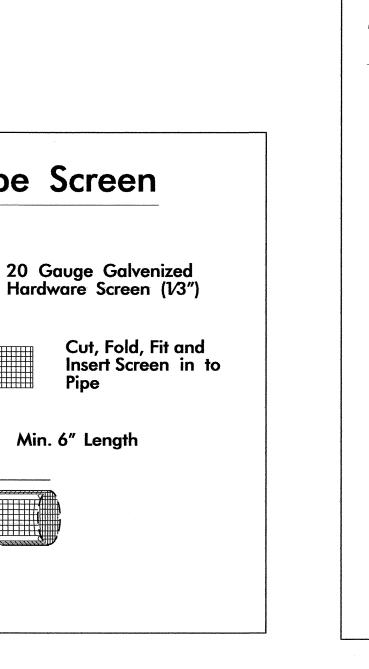
8-14-12

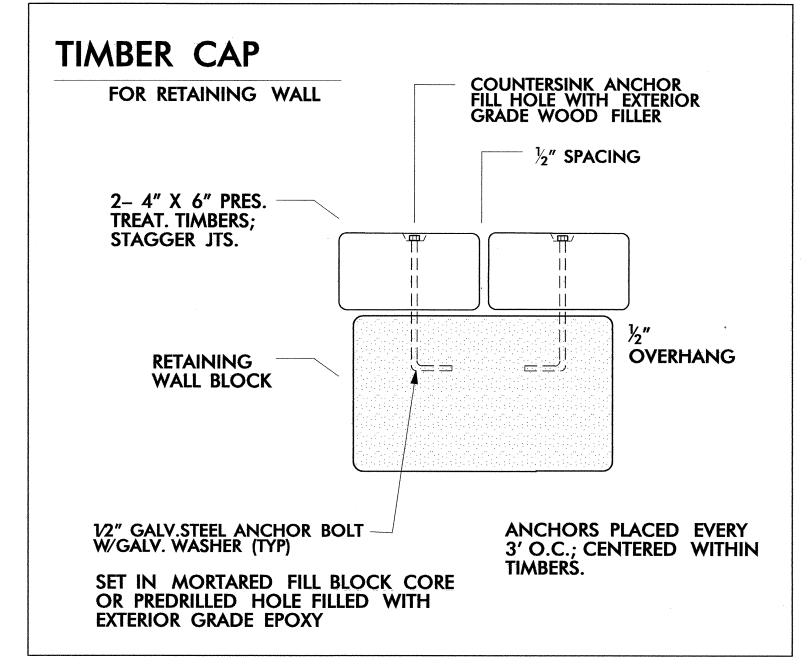


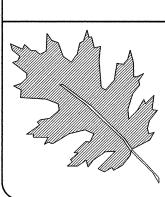


SEGMENTED RETAINING WALL









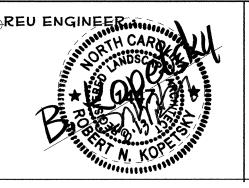
**ELEVATIONS** 

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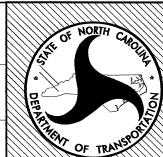
I- 40 Johnston Co REST AREA RENOVATION PROJECT #: 41533.3.1



PREL DESIGN DATE:	MAY/ 201
CHECKED BY & DATE:	DW

SEGMENTED RETAINING WALL DETAILS FINAL DESIGN DATE: 8-14-12

**REST AREA RENOVATION** 



K-5001 41533.3.1 FED I.D. #

SECTION OF RUBBER HOSE OR **GUY TIE DETAIL MANUFACTURED TIES BETWEEN** WIRES AND TREE BARK \*EXACT LENGTH 14 GUAGE WITHIN INDICATED STEEL WIRE RANGE TO BE **DETERMINED BY ENGINEER IN** FIELD RUBBER HOSE SECTION RUBBER HOSE SECTION AND 14 GAUGE WIRE OR FLEXIBLE TIE MATERIAL APPROVED BY ENGINEER. 14 GAUGE STEEL WIRE STRANDS TWISTED AROUND EACH OTHER

> 3/4" X 1 3/4" WOODEN STAKE **PLAN VIEW** PLAN VIEW

UNTIL WIRES ARE TAUT.

13/4" X13/4" WOODEN STAKE, 18-24" LG. STAKE TO BE 4-6"

STAKING DETAIL (TREES 6'-10')

USE AS DIRECTED BY FIELD ENGINEER

(LEYEL GROUND)

**GUYING DETAIL** (TREES 10' OR LARGER) USE AS DIRECTED BY FIELD ENGINEER

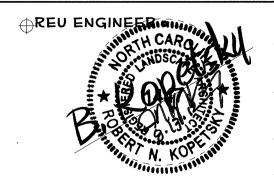
PROJECT #:

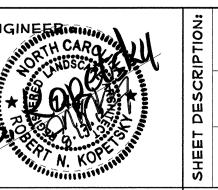
TREE OR SHRUB PLANTING DETAIL

(SLOPING GROUND)

I- 40 Johnston Co

41533.3.1





4" MULCH

INSTALL SHRUB SO THAT 1/8 OF

SCARIFY BED TO A MINIMUM DEPTH OF 6".

MULCH - SEE DETAIL

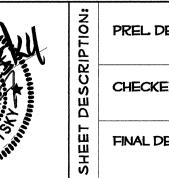
WATER RETENTION RING -

FINISH GRADE

COMPACT BACKFILL

ROOT BALL IS ABOVE FINISH GRADE.

FINISH GRADE





**REST AREA RENOVATION** PLANTING DETAILS PLANT BED EDGE DETAIL

TOPSOIL

OF TRUNK OR STEM. MULCH DETAIL

#### NOTES:

DO NOT PLACE MULCH WITHIN 2"

SCHEDULE FOR PLANT HOLE SIZE: PLANT HOLE WIDTH (X) TO BE TWICE THE ROOT BALL SIZE OR CONTAINER DIAMETER.

SEE STANDARD SPECIFICATIONS FOR PLANT BED FUMIGATION AND HERBICIDAL TREATMENT.

APPLY FERTILIZER AT PLANTING TIME IN THE FORM OF A SLOW RELEASE PELLET OR TABLET. APPLY AT RATE RECOMMENDED BY MANUFACTURER. BOTH RATE AND FORMULATION MUST BE APPROVED BY FIELD ENGINEER PRIOR TO APPLICATION.

REMOVE WIRE BASKET AND FOLD BURLAP BACK FROM TOP OF ROOT BALL BEFORE BACKFILLING IS COMPLETE.

ALL PRUNING TO FOLLOW STANDARD ARBORICULTURAL PRACTICES AS SPECIFIED BY INTERNATIONAL SOCIETY OF ARBORICULTURE.

DO NOT ATTEMPT TO STRAIGHTEN A TREE THAT HAS BEEN PLANTED AT AN ANGLE WITH THE USE OF STAKING OR GUYING. DIG TREE AND REPLANT TO UPRIGHT POSITION.

SHRUB BED PLANTING DETAIL

NOTE: PLANTS MAY BE INSTALLED

GREATER.

GROUND COYER/BEDDING

PLANT DETAIL

BEFORE OR AFTER MULCHING OPERATION

BEFORE PLANTING, SCARIFY SOIL TO MIN. DEPTH OF 6" OR 2" DEEPER THAN

CONTAINER SIZE, WHICHEVER IS

PLANT HOLE WIDTH (X) TO

BE TWICE THE ROOT BALL

SIZE OR CONTAINER DIAMETER

MULCH



WASHED RIVER STONE (MIN. 2 INCH - MAX 6 INCH DIAM) ON FILTER FABRIC LINER IN DITCH. PLACE STONE FLUSH WITH DITCH GRADE FOR MAXINUM WATER FLOW.

## RIVERSTONE DITCH LINING DETAIL

3' MIN. TO 5' MAX. NATURAL

STONE TO BE BURIED 1/3 IN

GROUND AND 2/3 EXPOSED.

WEATHERED STONE.

PLANT BED OR NATURAL AREAS

WIDTH OF PLANT BED VARIES

3:1 BACK-SLOPE

(MAY YARY)

EDGE OF PLANT

6" DEEP PLANT BED EDGE (MOW/MULCH RING)

COMPACT SOIL BACK FILL AND SLOPE TO DRAIN

PLANT BED EDGE DETAIL

**EXISTING GROUND LEVEL** 

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REST AREA RENOVATION

BOULDER PLACEMENT DETAIL

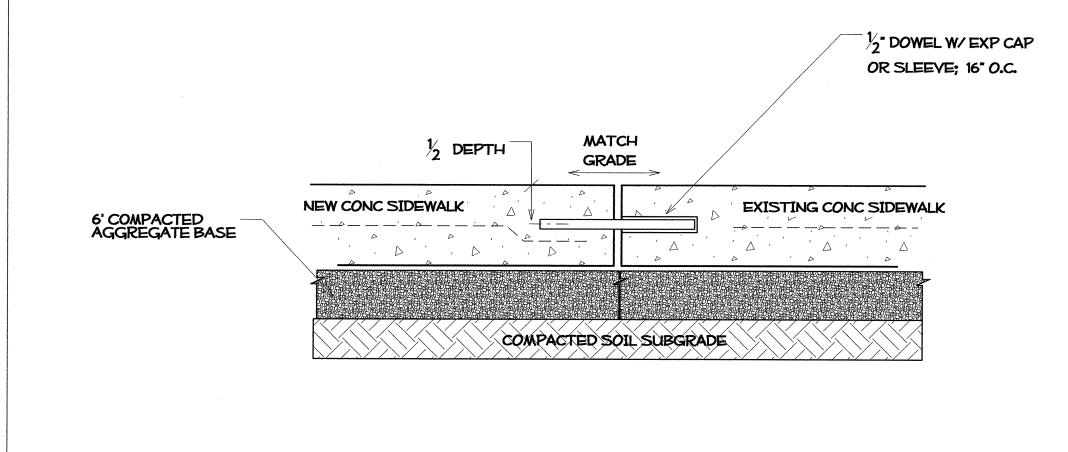
**TYPICAL** 

VARIABLE GRADE

(LEVEL TO SLOPING)

K-5001 41533.3.1 FED LD. #

> TOTAL SHEET NO: **LD**-2



MATCHING NEW CONCRETE SIDEWALK TO EXISTING FOR ALL LOCATIONS WHERE EXISTING NTS SIDEWALK ADJOINS NEW CONC

- CONSULT ENGINEER -

SAND SWEPT JOINTS -1" BEDDING SAND CONCRETE PAVERS, 23/8" THICK -COMPACTED AGGREGATE BASE, MIN. 4" DEPTH SNAP EDGE PAVER EDGE RESTRAINT ANCHORED W/8" OR 10" SPIKE COMPACTED SOIL SUBGRADE

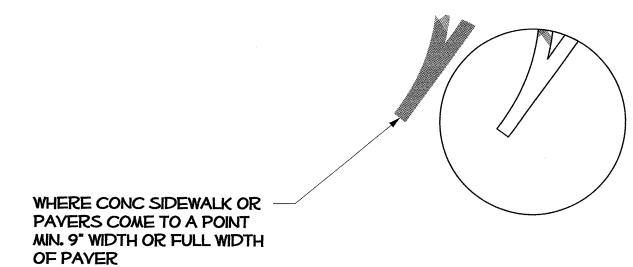
# CONCRETE PAVER DETAIL A

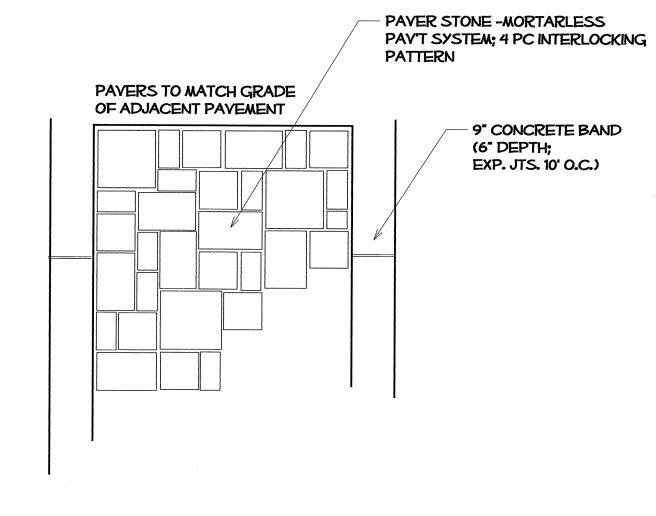
REFER TO CP2 & CP3

NTS

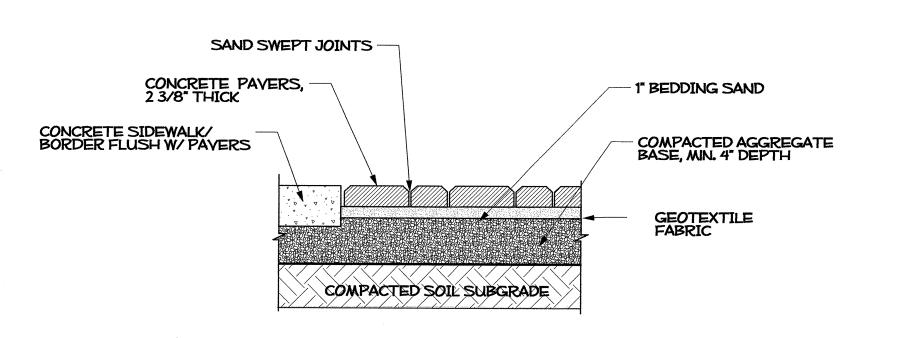
#### **GENERAL NOTES:**

- 1) SIDEWALK AS SPECIFIED BY SITE/HARDSCAPE PLANS.
- 2) CONCRETE PAYER AREA AS SHOWN WITH 9" CAST IN PLACE CONCRETE BORDER. PAYERS TO BE A BLEND, COLOR, AND SIZE AS SPECIFIED.
- 3) STANDARD 4" THICK CONCRETE SIDEWALK; CONTROL JOINT EVERY 5' (OR AS NOTED) AND EXPANSION JOINT EVERY 30'.
- 4) ALL HARDSCAPE SURFACES SHALL BE GRADED PROPERLY TO DRAIN TO DESIGNATED LANDSCAPE AREAS OR DROP INLETS.

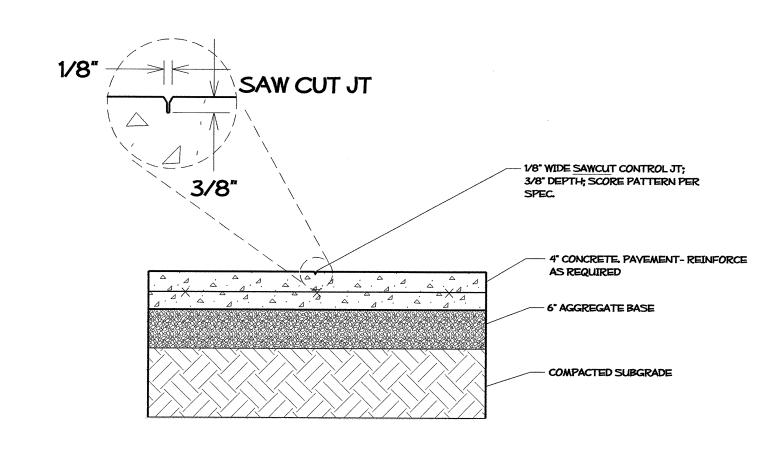




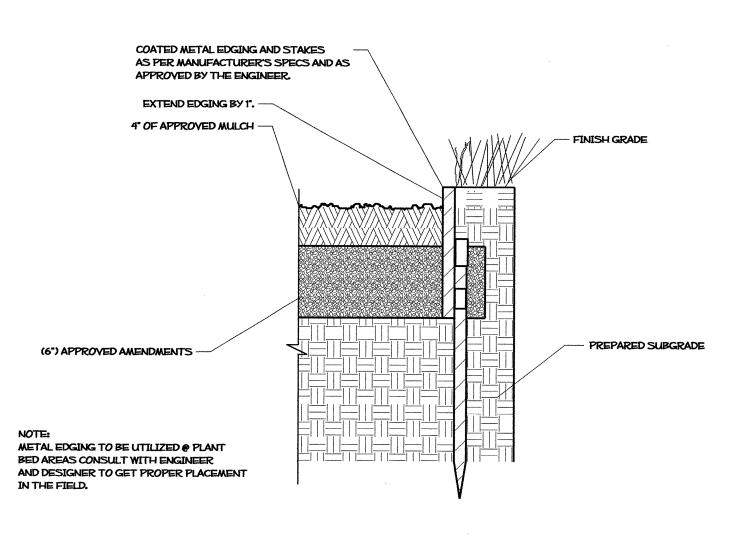




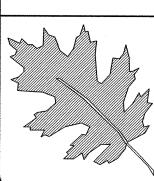












NCDOT - ROADSIDE ENVIRONMENTAL UNIT LANDSCAPE DESIGN & DEVELOPMENT

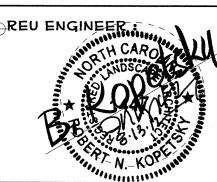
HTTP://WWW.NCDOT.ORG/DOH/OPERATIONS/DP\_CHIEF\_ENG/ROADSIDE/

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PROJECT #: 41533.3.1

REST AREA RENOVATION

I- 40 Johnston Co



CHECKED BY & DATE:

PREL DESIGN DATE: WAY/ 2012

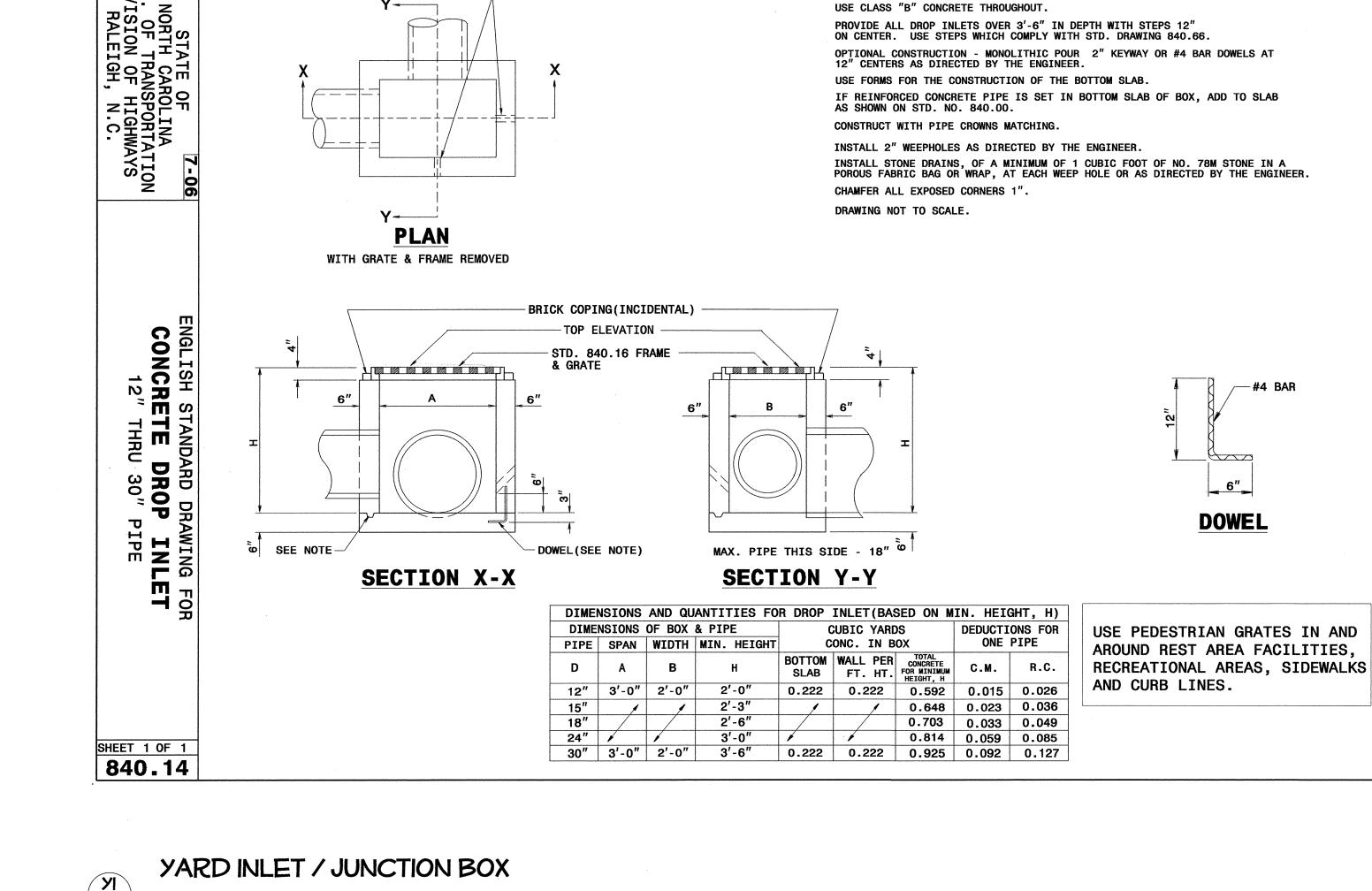
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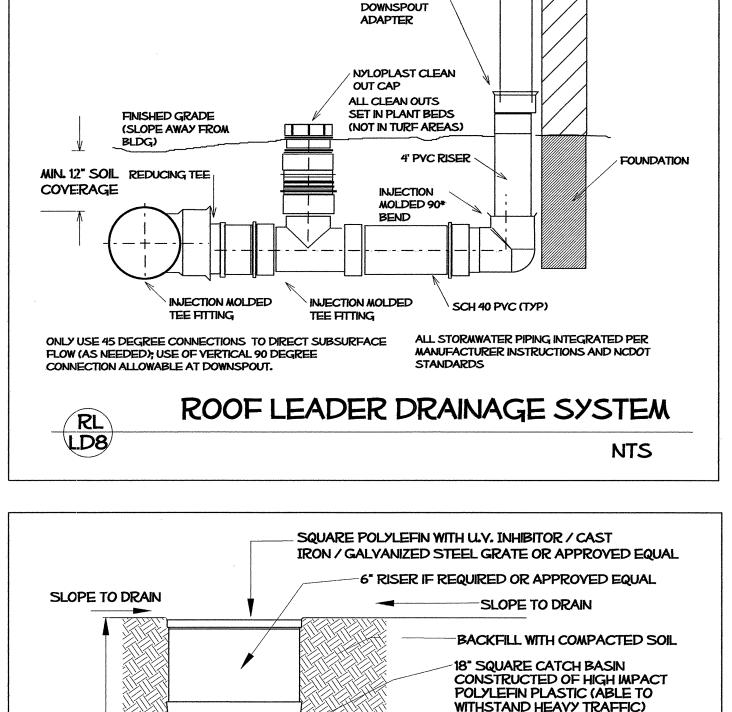
**REST AREA RENOVATION** HARDSCAPE DETAILS



T.I.P. # K-5001 41533.3.1 FED I.D. # SHEET NO: TOTAL SHEET NO: **LD**-3

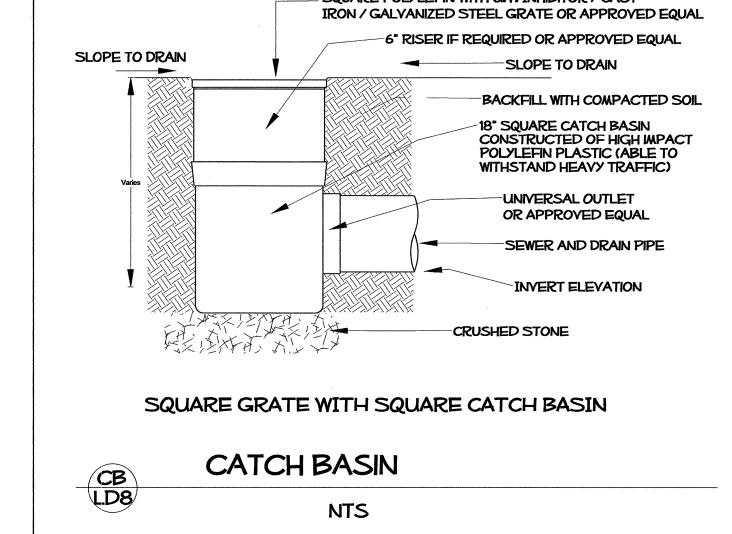
8-14-12





DOWNSPOUT

OFFSET PVC





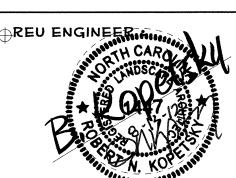
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I- 40 Johnston Co REST AREA RENOVATION

41533.3.1



RAWING FOR SINCE

ENGLISH STANDARD DRA CONCRETE DROP 12" THRU 30" P

SHEET 1 OF 1

840.14

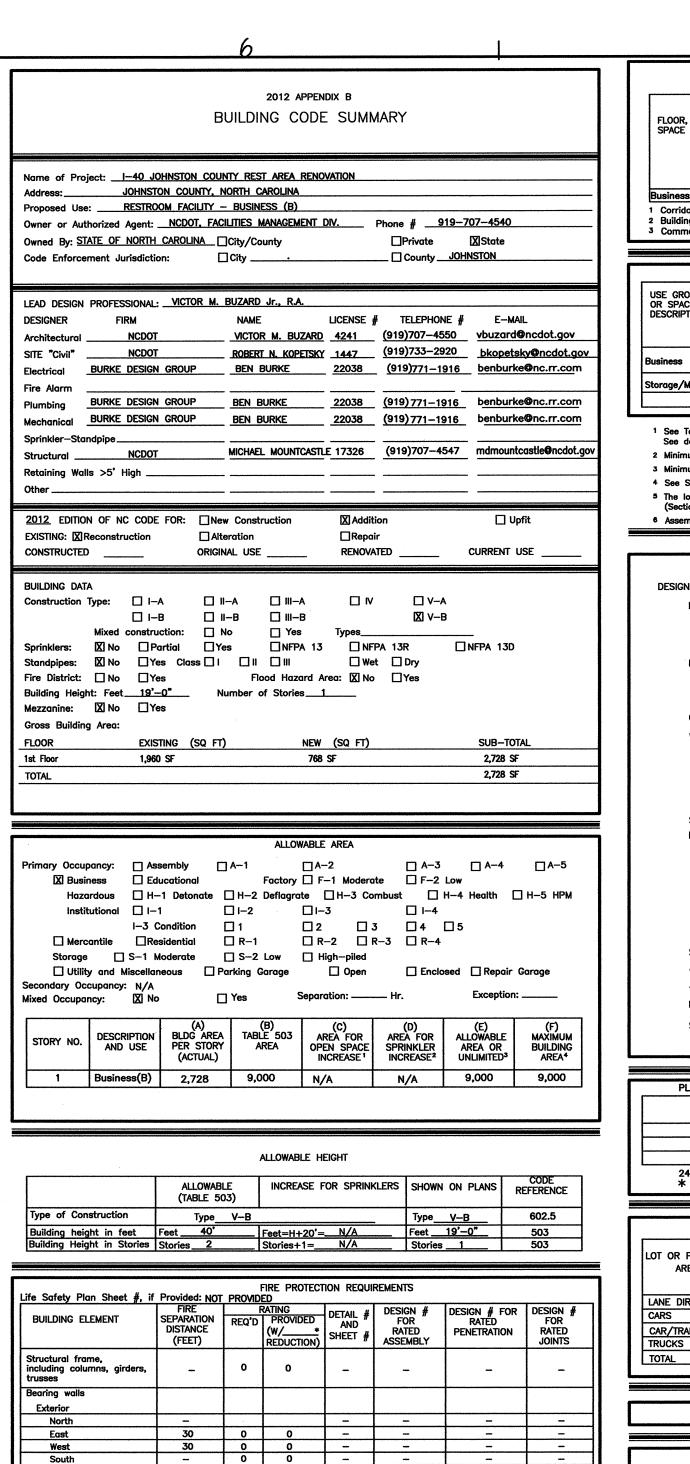
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CEL DESIGN DATE: MAY/ 2012 REST AREA RENOVATION HECKED BY & DATE: DRAINAGE DETAILS 8-14-12



T.I.P. # K-5001 WBS # 41533.3.1 TOTAL SHEET NO:

LD-4



ife Safety Plan Sheet #, if		PROVID		ION REQUI			
BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	REQ'D	RATING PROVIDED (W/* REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
Structural frame, including columns, girders, trusses		0	0	-	-	-	-
Bearing walls							
Exterior							
North	_	<u> </u>		-		-	
East	30	0	0				
West	30	0	0			_	-
South	_	0	0		-		
Interior		0	0				
Nonbearing Walls and Partitions Exterior Walls							
North	30	0	0	_	-	_	_
East				_	-	-	_
West					-		
South	30	0	0	-			_
Interior Walls and partitions				-	-	-	-
Floor construction Including supporting beams and joist	-	0	o	-	_	-	_
Roof construction Including supporting beams and joist	-	0	0		_	_	_
Shaft Enclosures—Exit	-	-	-	-	_	_	_
Shaft Enclosures-Other	-	_	_	_		out-	-
Corridor Separation	-	_	_	_		_	-
Occupancy Separation	_	-	_	-	_	_	_
Party/Fire Wall Separation	_	_	-	_	-	-	_
Smoke Barrier Separation	_	_		-	-		-
Tenant Separation	-	_		-		-	-
Incidental Use Separation	-	_	-	_	_	-	_
Fire Barrier		_	-	-	-	-	-
* Indicate section number pe	rmitting reduct	ion				<del></del>	· · · · · · · · · · · · · · · · · · ·
•	-		····				

# FLOOR, ROOM OR SPACE DESIGNATION REQUIRED SHOWN ON PLANS Susiness 1 2 200' 64' N/A 66' 1 Corridor dead ends (Section 1018.4) Buildings with single exits (Table 1021.2), Spaces with one means of egress (Table 1015.1) EGRESS (SECTION 1014.2) ARRANGEMENT MEANS OF 1,3 ACTUAL TRAVEL DISTANCE BETWEEN EXIT DOORS (TABLE 1016.1) ACTUAL TRAVEL DISTANCE BETWEEN EXIT DOORS PLANS 1 Corridor dead ends (Section 1018.4) 2 Buildings with single exits (Table 1021.2), Spaces with one means of egress (Table 1015.1) 3 Common Path of Travel (Section 1004.1.1)

			EXI	r width					
USE GROUP	(A)	(B)		(C)		EXIT WIDTH (in) 2,3,4,5,6			
OR SPACE DESCRIPTION	AREA1 SQ. FT.	AREA 1 PER OCCUPANT (TABLE	CALCULATED OCCUPANT LOAD	EGRESS WIDTH PER OCCUPANT (TABLE 1005.1)		REQUIRED WIDTH (SECTION 1005.1) (a+b)xc		ACTUAL WIDTH SHOWN ON PLANS	
		1004.1.1)		STAIR	LEVEL	STAIR	LEVEL	STAIR	LEVEL
Business	2,048	100	21	N/A	.2	N/A	4.2"	N/A	66*
Storage/Mech	680	300	3	N/A	.2	N/A	.6"	N/A	66"
			24						

- 1 See Table 1004.1.1 to determine whether net or gross area is applicable
- 2 Minimum stairway width (Section 1009.1); min. corridor width (Section 1017.2); min. door width (Section 1008.1
- 3 Minimum width of exit passageway (Section 1021.2) 4 See Section 1004.5 for converging exits.
- 5 The loss of one means of egress shall not reduce the available capacity to less than 50 percent of the total required
- (Section 1005.1)

# 

USE	WATERCI	OSETS	URINALS	LAVATORIES		SHOWERS/	DRINKING FOUNTAINS	
MALE		MALE FEMALE		MALE	FEMALE	TUBS	REGULAR	ACCESSIBLE
EXISTING	-			-				
NEW-SHOWN	6	12	6	8	8	-	1	1
REQUIRED	0	1	1	_	1	1		

LOT OR PARKING	TOTAL# O	F PARKIN	G SPACE	s	# OF AC	ACCESSIBLE				
AREA	REQUIRE	)	PROVI	DED	REGULAR ACCESS		VAN SPACE			OVIDED AL #
LANE DIRECTION	E.B.L	W.B.L	E.B.L	W.B.L	E.B.L	W.B.L	E.B.L	W.B.L	E.B.L	W.B.I
CARS			39	53	3	3				
CAR/TRAILER										
TRUCKS										
TOTAL			39	53	3	3				

#### SPECIAL APPROVALS: N/A

ENERGY SUMMARY
ENERGY REQUIREMENTS:  The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If energy cost budget method, state the annual energy cost budget vs allowable annual energy cost budget.
THERMAL ENVELOPE

Method of Compliance:

☑ Prescriptive ☐ Performance ☐ Energy Cost Budget
Climate Zone: 7a

Heating Degree days (base 65 degrees F): 3611
Cooling Degree days (base 50 degrees F): 4154
Project Type: New Construction
Vertical Glazing/Wall Area Pct.: N/A
Building Type: Office (Rest Area)

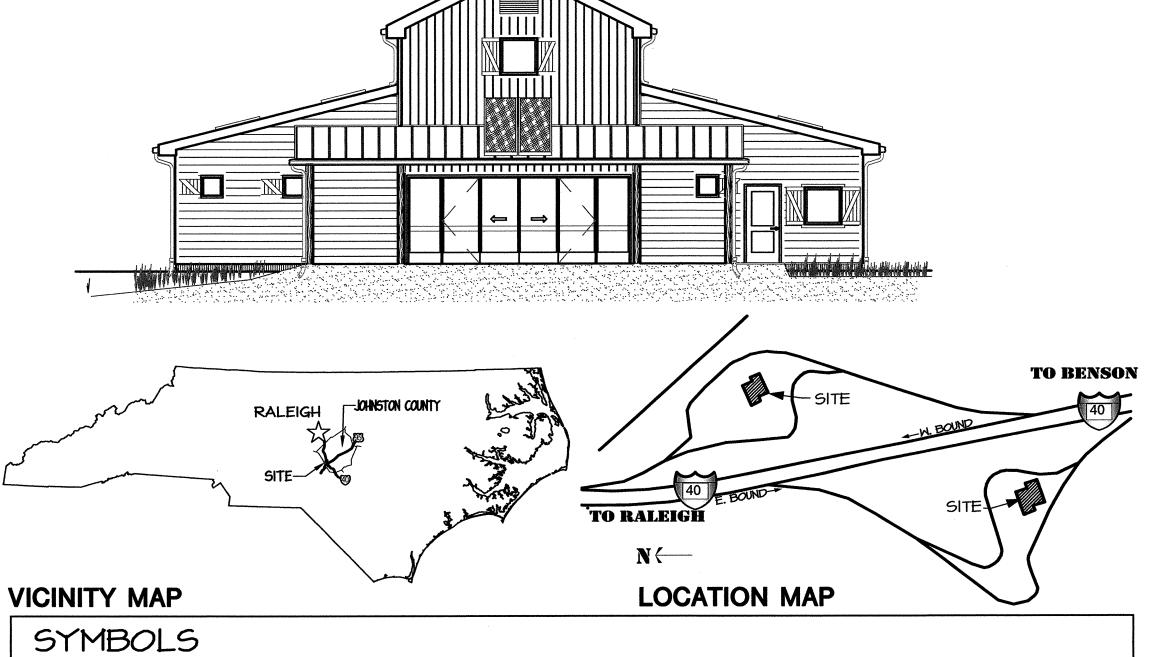
COMPONENT NAME / DESCRIPTION	GROSS AREA		CONT. R-VALUE	PROPOSED U-FACTOR	BUDGET U-FACTOR
ROOF 1: ATTIC ROOF WITH WOOD JOIST	1,743	0.0	38.0	0.025	0.027
ROOF 2: INSULATION ENTIRELY ABOVE DECK	931		40.0	0.025	0.048
SKYLIGHT 1: WOOD FRAME, DOUBLE PANE, TINTED W/ CURB SHGC 0.35	43			0.440	1.170
EXTERIOR WALL 1: WOOD-FRAMED, 16" O.C.	2614	0.0	26.0	0.034	0.089
WINDOW 1: WOOD FRAME, DOUBLE PANE W/ LOW-E, CLEAR, SHGC 0.88, PF 0.24	250			0.480	0.650
DOOR 1: GLASS; (>50% GLAZING): METAL FRAME, CLEAR, ENTRANCE DOOR, SHGC 0.25, PF 0.43	180			0.320	0.900
FLOOR 1: UNHEATED, SLAB-ON-GRADE, HORIZ. W/ VERT. INSUL 3FT.	212		7.5		
FMVELODE DASSES: DESIGN 6% RETTER THAN CODE	•	•	•	h	A

ELECTRICAL SUMMARY: SEE ELECTRICAL

MECHANICAL SUMMARY: SEE MECHANICAL

# I-40 REST AREA RENOVATION

NEW REST AREA BLDG. & VENDING BLDG. RENOVATION JOHNSTON COUNTY, NORTH CAROLINA



RIGID INSULATION

BATT INSULATION / BLOWN

DRYWALL OR PLASTER

UNDISTURBED EARTH

COMPACTED FILL

GRAVEL



	<	ANGLE
	AL.	ALUMINUM
	AB.	ANCHOR BOLT
	APPROX.	APPROXIMATE
	ARCH.	ARCHITECTURAL
	_	AT
	AVG.	AVERAGE
		BACK TO BACK
	BSMT.	BASEMENT
		BEARING
		BENCH MARK
		BLOCKING
	BD.	BOARD
-		BUILDING
		CEILING HEIGHT
	7	CENTER LINE
		CENTER TO CENTER
		CAST IRON
		COLUMN
		CONCRETE
	CMU	CONCRETE MASONRY UNIT
	CONT.	CONTINUOUS
	CJ	CEILING JOIST
	C/J	CONSTRUCTION JOINT
	CRS	COURSES
	DET.	DETAIL
	DIA.	DIAMETER

DOUBLE

DOWN SPOUT

----- SILT FENCE

\_\_\_\_\_\_ EXISTING CONTOURS

EXISTING ELEVATION

NEW CONTOURS

NEW ELEVATION

EXISTING TREE

FIRE EXTINQUISHER

**ELEVATION MARK** 

\_\_\_ DRAINAGE / SLOPE ARROW

EA.	EACH
EW	EYE WASH
ELEC.	ELECTRICAL
ELEV.	ELEVATION
EXIST.	EXISTING
EMC	ELECTRIC WATER COOLER
E/J	EXPANSION JOINT
EBC	EXTENDED BOTTOM CHORD
EXT.	EXTERIOR
FFE	FINISH FLOOR ELEVATION
	FINISH FLOOR
	FIRE EXTINGUISHER
F.D.	FLOOR DRAIN
	FOOTING
FRGWB	FIRE RATED GYPSUM WALLBOAR
GALY.	GALYANIZED
GA.	GAUGE
GL.	GLASS
<i>6</i> P.	GLAZED PAVER TILE
<i>G</i> WB	GYPSUM SHEATHING
GYP.	<b>GYPSUM</b>
HM	HOLLOW METAL

HORIZONTAL HOSE BIBB

INTERIOR

LAVATORY

MAN HOLE

MAT.	MATERIAL	STG.	STORAGE
MAX.	MAXIMUM	5.A.C.	SUSPENDED A
MIN.	MINIMUM	T\$6	TONGUE AND
MTD.	MOUNTED	T.O.F.	TOP OF FOOT
MLDG.	MOULDING	T.O.J.	TOP OF JOIST
N.T.S.	NOT TO SCALE	T.O.S.	TOP OF STEEL
NO.	NUMBER	T.O.W.	TOP OF WALL
O.C.	ON CENTER	Т.	TREAD
OPNG.		TYP.	TYPICAL
PNL.	PANEL	UNFIN.	UNFINISHED
PLASLAN	1PLASTIC LAMINATE	U.O.N.	UNLESS OTHER
F2	PLATE	VERT.	VERTICAL
PLMB.	PLUMBING	M.M.M.	WELDED WIRE
PLYWD.	PLYWOOD	W	MITH
	POUND	MD.	MOOD
PREFAB.	PREFABRICATED	102	2004/224
P.S.I.	POUNDS PER SQUARE INCH	102	ROOM/SPACE
<b>REQ'D</b>	REQUIRED		
R.	RISER	⟨B⟩	WINDOW TYPE
	SANITARY	<u> </u>	DOOR TYPE
	SECTION	2	DOOR TIPE
	SHEET		CENTER LINE
	SHEATHING		
SIM.			HIDDEN LINE
SPEC.	SPECIFICATIONS		

REVISION NUMBER

ELEVATION NUMBER

DRAWING NUMBER

MASONRY OPENING

DRAWING SHEET NUMBER

DRAWING SHEET NUMBER

DRAWING SHEET REFERENCE NUMBER

BUILDING OR WALL SECTION NO.

STL. STEEL
STG. STORAGE
S.A.C. SUSPENDED ACOUSTICAL CEILING
T&G TONGUE AND GROOVE
T.O.F. TOP OF FOOTING
T.O.J. TOP OF JOIST
T.O.S. TOP OF STEEL
T.O.W. TOP OF WALL
T. TREAD
TYP. TYPICAL
UNFIN. UNFINISHED
U.O.N. UNLESS OTHERWISE NOTED
VERT. VERTICAL
W.W.M. WELDED WIRE MESH
W WITH
WD. WOOD

IO2 ROOM/SPACE NUMBER

BREAK LINE

CONCRETE

ROUGH CARPENTRY

STEEL

PROJECT:

JOHNSTON COUNTY

D ACOUSTICAL CEILING
ND GROOVE
COTING
DIST
TEEL
ALL

ARCHITECT/ENGINEERS:

FACILITIES
1 SOUT
RALEIGH,
(919) 707-0400

I-40 REST AREA

JOHNSTON COUNTY

NORTH CAROLINA

SCALE: 1" = 10'-0"

INDEX OF DRAWINGS

DEMOLITION PLAN

CLERESTORY PLAN

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EXTERIOR ELEVATIONS

WALL SECTIONS & DETAILS

FOUNDATION PLAN & DETAILS

FOUNDATION & FRAMING DETAILS

PLUMBING SCHEDULES & DETAILS

PLUMBING SUPPLY RISER - EBL & WBL

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MECHANICAL SCHEDULES & NOTES

MECHANICAL PLAN & DETAILS

ELECTRICAL PANEL SCHEDULES

LIGHTING & POWER PLAN

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FRAMING PLAN & DETAILS

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INTERIOR ELEVATION / COLOR SCHEDULE (KEY PLAN)

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INTERIOR ELEVATIONS (MEN'S & WOMEN'S TOILET)

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PLUMBING WASTE RISER & DETAILS - EBL & WBL

FLOOR PLAN

DESIGN DATA & ABBREVIATION

FACILITIES DESIGN

**EXIT** 

**LIFE SAFETY PLAN** 

FACILITIES MANAGEMENT DIVISION, NCDOT

1 SOUTH WILMINGTON STREET

RALEIGH, NORTH CAROLINA 27601

(919) 707-0400 FAX (919) 715-0399

DRAWING TITLE: DESIGN DATA & ABBREVIATION

4

\_\_\_\_

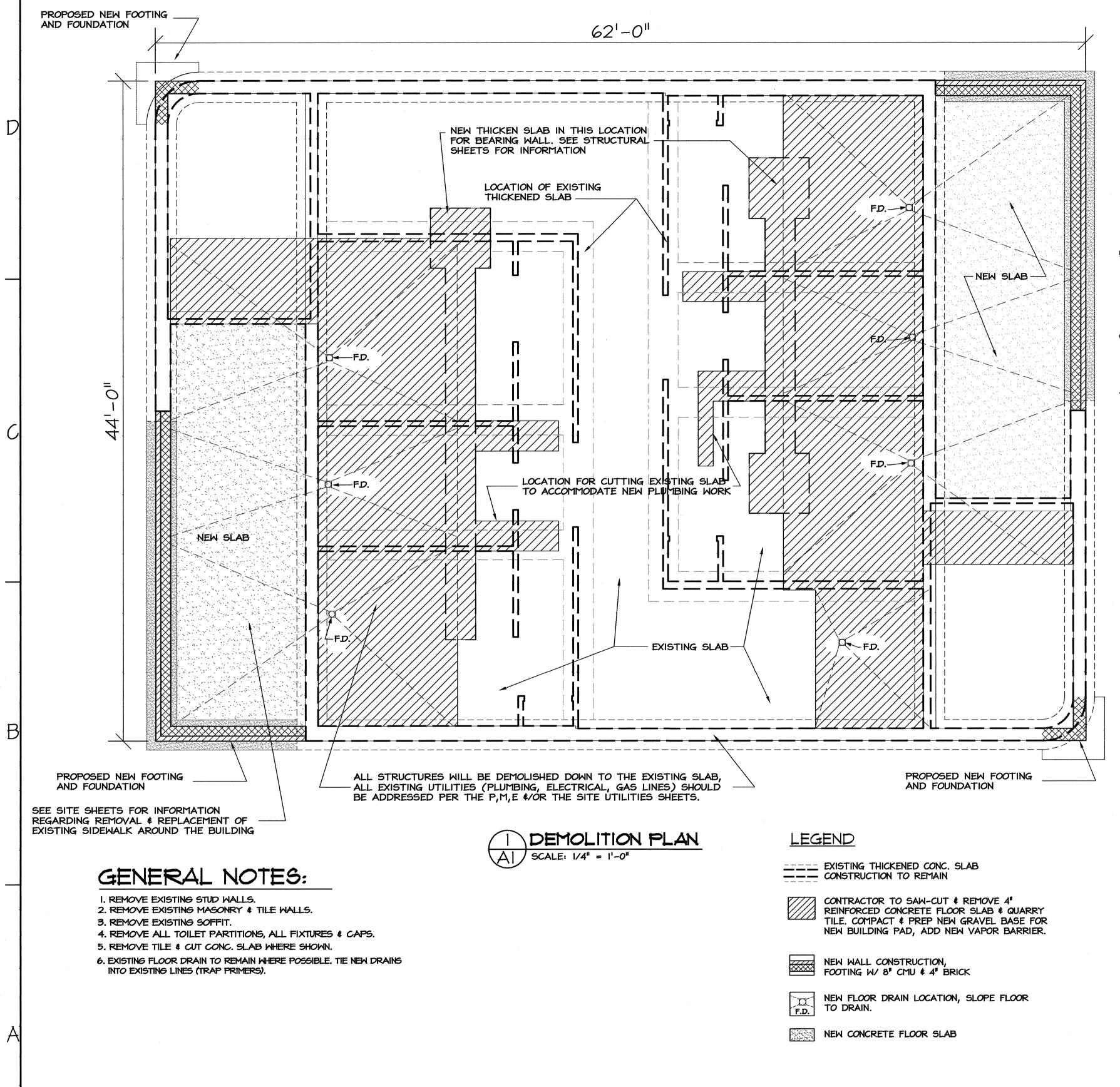
SQUARE

STANDARD

SERVICE SINK

2

CONSTRUCTION FENCE



#### GENERAL NOTES:

- THE PME DEMOLITION SCOPE DOES NOT REQUIRE REMOVAL OF ANY PIPE OR CONDUIT LOCATED INSIDE BUILDING AND BELOW FINISHED FLOOR ELEVATION UNLESS SPECIFICALLY NOTED OR REQUIRED TO COMPLETE OTHER WORK. UNLESS OTHERWISE NOTED, ALL DEMO'D CONDUIT AND PIPE ENTERING/EXITING FLOOR SHALL BE CUT OFF AT OR JUST BELOW FLOOR LEVEL AND PERMANENTLY SEALED IN A MANNER THAT DOES NOT INTERFERE WITH OR ADVERSELY AFFECT THE CONSTRUCTION AND FINISHES REQUIRED IN RENOVATED BLDG AND IN A MANNER THAT MEETS APPLICABLE CODE
- 2. THE FLOOR DRAINS AND UNDERGROUND WASTE LINES SHALL REMAIN FULLY FUNCTIONAL FOLLOWING DEMOLITION AND RENOVATION.
- 3. PIPE AND CONDUIT MAY BE ABANDONED IN SLAB PROVIDED PIPE IS DRAINED, WIRE IS REMOVED FROM CONDUIT, AND BOTH ARE SEALED. BOTH SHALL BE CLEARLY LABELED AS ABANDONED AT EXPOSED LOCATIONS AND AT EACH END.
- 4. ALL PENETRATIONS, DAMAGE, AND OPENINGS IN WALLS, CEILINGS, ROOFS, FLOORS, OR DOORS WHICH RESULTS FROM DEMOLITION SHALL BE REPAIRED, SEALED AND FINISHED IN A MANNER WHICH IS CONSISTENT WITH THE CONSTRUCTION AND FINISHES REQUIRED FOR BUILDING RENOVATION. ALL FIRE BARRIER RATINGS SHALL BE MAINTAINED.
- REMOVAL OF ANY DEVICE OR EQUIPMENT INCLUDES THE REMOVAL OF ALL RELATED ELECTRICAL, PLUMBING, AND MECHANICAL SYSTEM COMPONENTS. THIS INCLUDES, BUT IS NOT LIMITED TO, MOUNTING BOLTS, CLAMPS, SUPPORTS, FASTENERS, WIRING (UP TO CIRCUIT BREAKER), CONDUIT (UP TO FEEDER PANEL), SWITCHES, DISCONNECTS, CONTROLS, DUCT, DAMPERS, REGISTERS, GRILLS, DIFFUSERS, PIPE, VALVES, INSULATION, ETC. ASSOCIATED WITH THAT DEVICE UNLESS SPECIFICALLY NOTED OTHERWISE. PROVIDE ALL PLUMBING VALVES TO OWNER REP.(G. HARRELL OR HIS DESIGNEE).
- GENERAL CONTRACTOR (GC) HAS OVERALL RESPONSIBILITY FOR COORDINATING DEMOLITION AND COMPLETING ALL DEMOLITION. TRADE RESPONSIBILITY FOR SPECIFIC DEMOLITION SCOPE/TASKS SHALL BE THE SAME CONTRACTOR/TRADE WHO WOULD BE RESPONSIBLE FOR INSTALLING/RENOVATING SIMILAR ITEMS AS PER THIS PROJECTS DESIGN PLANS AND SPECIFICATIONS.
- 7. CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH LOCAL UTILITIES.

#### A. EQUIPMENT DEMOLITION

REMOVE AIR HANDLER (AHU), CONDENSER, EXHAUST FAN, HEATER(S) (INCLUDING ANY BASEBOARD OR DUCT HEATERS), AND ELECTRIC WATER COOLER (EWC). THE CONDENSER SHALL BE PROVIDED TO OWNER (G HARRELL OR HIS DESIGNEE)

#### B. COLD WATER (CW) SUPPLY & DISTRIBUTION

EXISTING WATER SUPPLY RISER ENTERS BLDG AT THIS LOCATION. REMOVE ALL EXISTING CW PIPING AND COMPONENTS BEYOND APPROXIMATE 61 ABOVE MECHANICAL ROOM FLOOR. SEE PLUMBING RISER (SUPPLY WATER & BACKFLOW PREVENTER DETAIL) ON DRAWING . CW PIPING REMOVAL INCLUDES ALL PIPING TO ELEC. WATER HEATER (EWH), URINALS, WATER CLOSETS, BATHROOM SINKS, ELECTRIC WATER COOLER (EWC), HOSEBIBBS, ETC. IN EXISTING BUILDING.

#### ELECTRIC WATER HEATER (EWH), HOT WATER (HW) PIPE, AND TEMPERED WATER (TW) PIPE

BOTH EWH'S (EAST & WEST BOUND) WILL BE REMOVED, INCLUDING ALL PIPE, SOUTHBOUND EWH SHALL BE PROVIDED TO OWNER'S REP. (G.HARRELL OR DESIGNEE). REMOVE PIPING AND DEVICES FOR HW SUPPLY AND TEMPERED WATER BETWEEN EWH AND ALL OTHER PLUMBING FIXTURES IN BUILDING. THIS INCLUDES REMOVAL OF ALL PIPING TO AND FROM SOLAR COLLECTION/ PANEL

#### PLUMBING FIXTURES

REMOVE ALL SINKS, URINALS, WATER CLOSETS, HOSE BIBBS, ETC. IN MEN'S AND WOMEN'S BATHROOMS INCLUDING ALL PLUMBING PIPE, VALVES, FIXTURES, AND THEIR SUPPORTS / CARRIERS. SEE SEPARATE NOTES FOR PIPING FOR CW, HW, WASTE, AND VENTS.

#### E. WASTE & VENT PIPING

JACKS FROM THIS BUILDING.

E.I REMOVE ALL EXPOSED WASTE & VENT LINES IN ROOMS AND IN ATTIC. ALL EXISTING VTR'S TO BE REMOVED.

E.2 PERMANENTLY PLUG EXISTING WASTE LINES FROM WATER COOLERS (EWC), BATHROOM SINKS, WATER CLOSETS, AND URINALS CONSISTENT WITH REQUIREMENTS FOR FINAL WALL AND FLOOR FINISHES WHEN BUILDING IS RENOVATED. WASTE LINES SHALL BE PLUGGED BELOW FLOOR LEVEL WHERE THEY ENTER FLOOR INSIDE A ROOM (INCLUDING PIPE CHASE ROOMS). OTHERWISE, THEY SHALL BE PLUGGED IN WALLS.

#### ELECTRICAL - LIGHTING \$ MISCELLANEOUS

F.I DO NOT REMOVE EXTERIOR AREA LIGHTING SUPPLIED FROM EXTG PANEL "A". IT REMAINS ON PANEL "A" (SEE DRAWING VE-2).

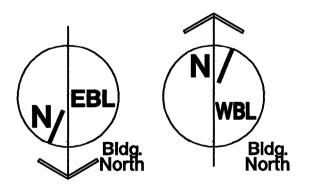
F.2 UNLESS NOTED OTHERWISE, REMOVE ALL INTERIOR LIGHTING, EXTERIOR PENDANT LIGHTING, EXIT SIGNS, EMERGENCY LIGHTING, AND OTHER MISCELLANEOUS LIGHTING & DEVICES INSTALLED INSIDE THIS BUILDING OR MOUNTED ON THE EXTERIOR OF THIS BUILDING.

F.3 UNLESS OTHERWISE NOTED, REMOVE ALL MISCELLANEOUS ELECTRICAL DEVICES INCLUDING ELECTRIC HAND DRYERS, ELECTRICAL OUTLETS, AUTOMATIC FLUSH DEVICES, AND SINK FAUCET CONTROLS

F.4 DO NOT REMOVE EXISTING PHONE SERVICE, WIRING, DEVICES, OR

#### G. SOLAR COLLECTION SYSTEM FOR WATER HEATING

REMOVE ALL SOLAR PANELS FROM ROOF INCLUDING ALL PIPING \$ REMOVE ALL PUMPS, HEAT EXCHANGERS, TANKS, CONTROLS, EQUIPMENT, THERMOSTATS, INSULATION, PENETRATIONS, TANKS, ETC, FROM BLDG.



# I-40 REST AREA

JOHNSTON COUNTY

NORTH CAROLINA

ARCHITECT/ENGINEERS:

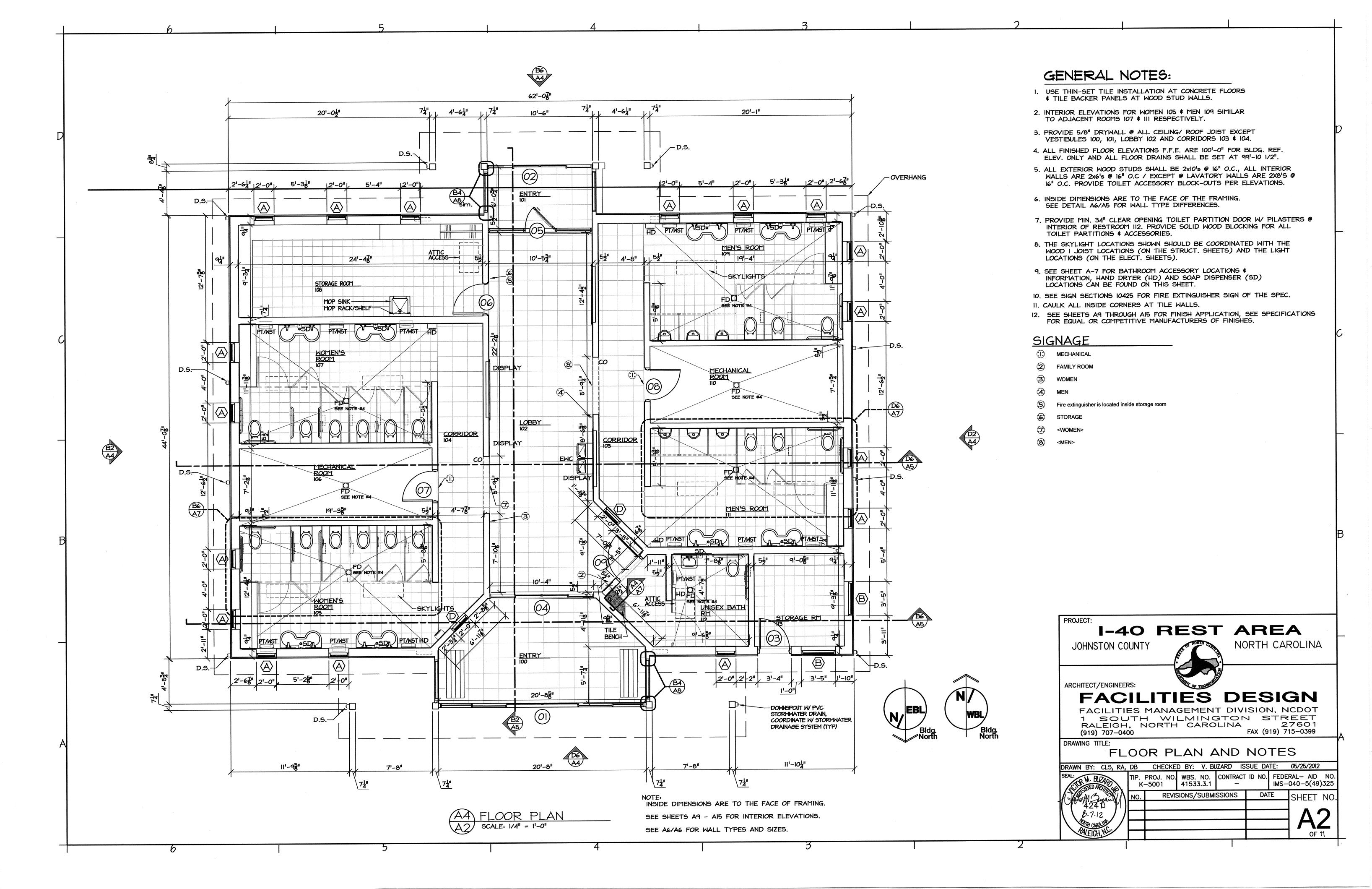
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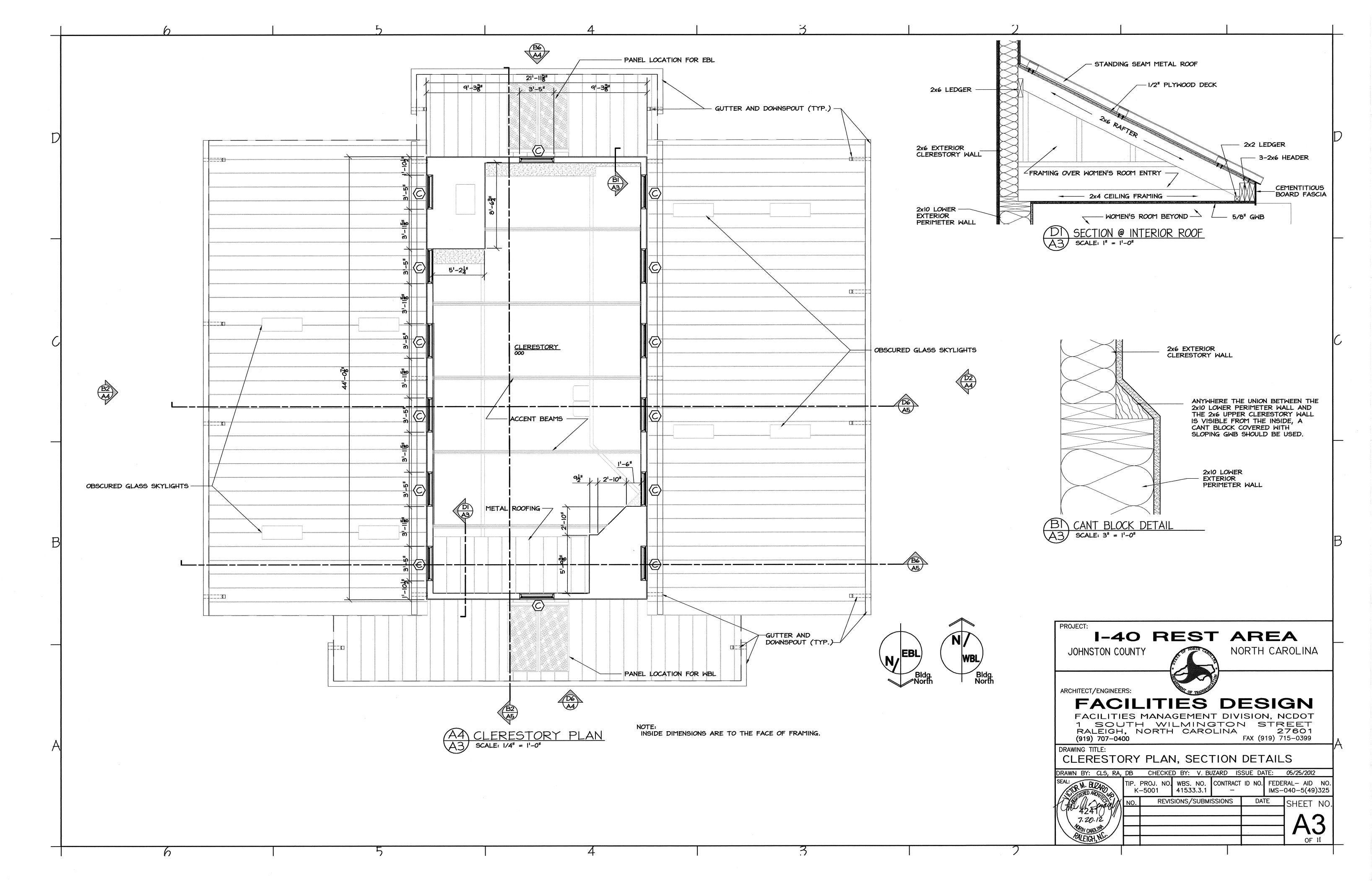
FACILITIES MANAGEMENT DIVISION, NCDOT 1 SOUTH WILMINGTON STREET RALEIGH, NORTH CAROLINA 27601 FAX (919) 715-0399 (919) 707-0400

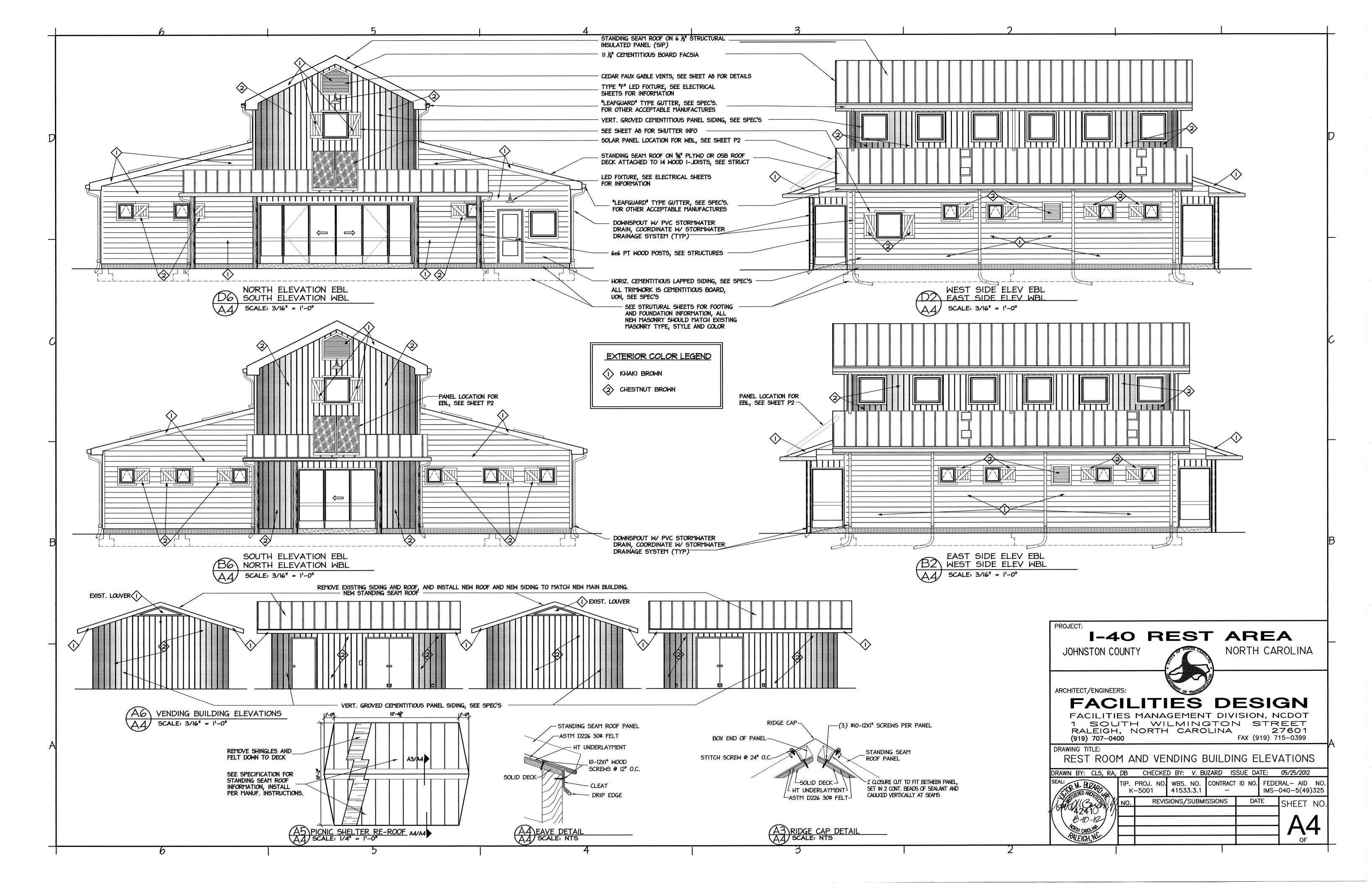
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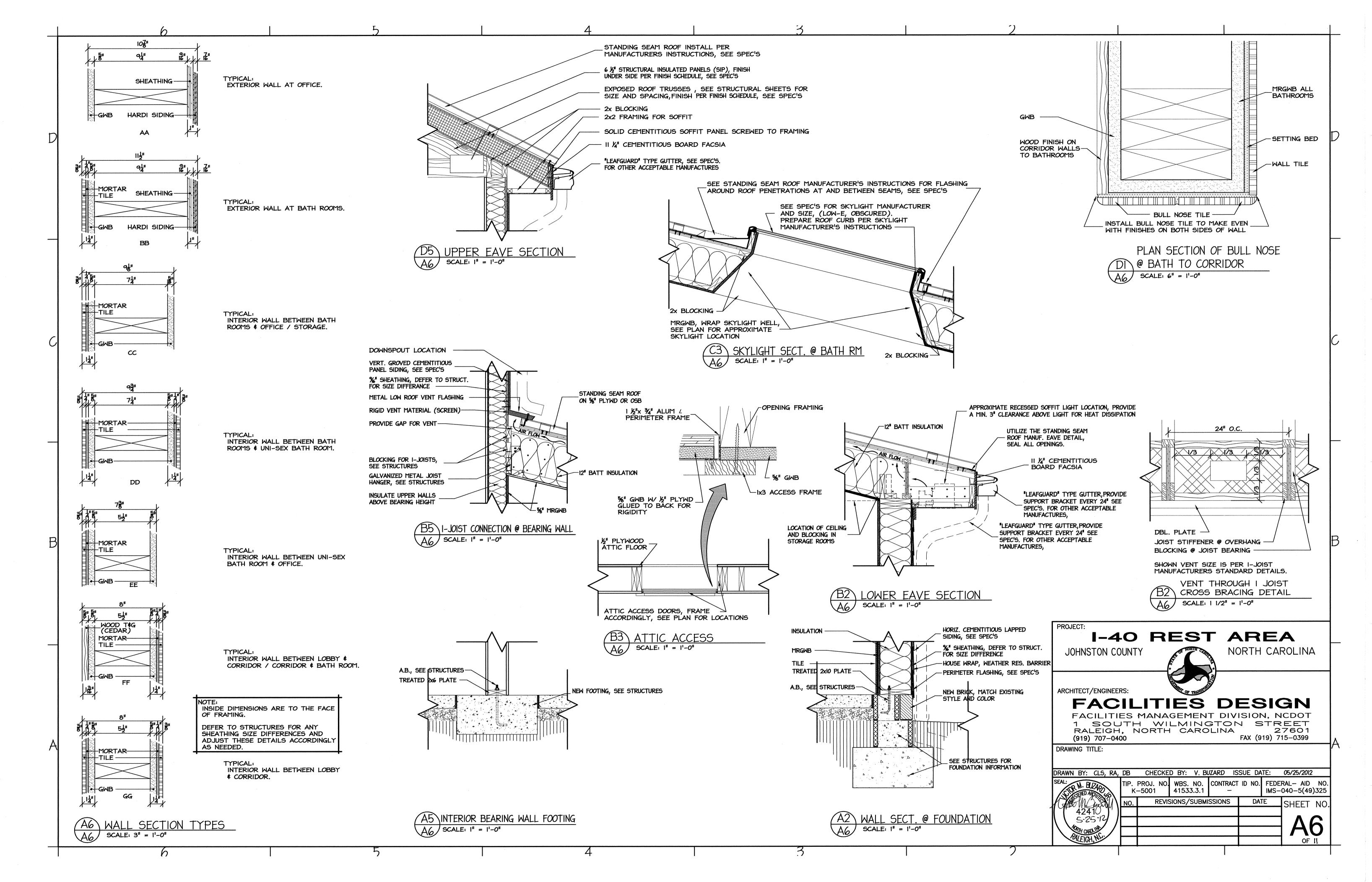
#### DEMOLITION PLAN AND NOTES

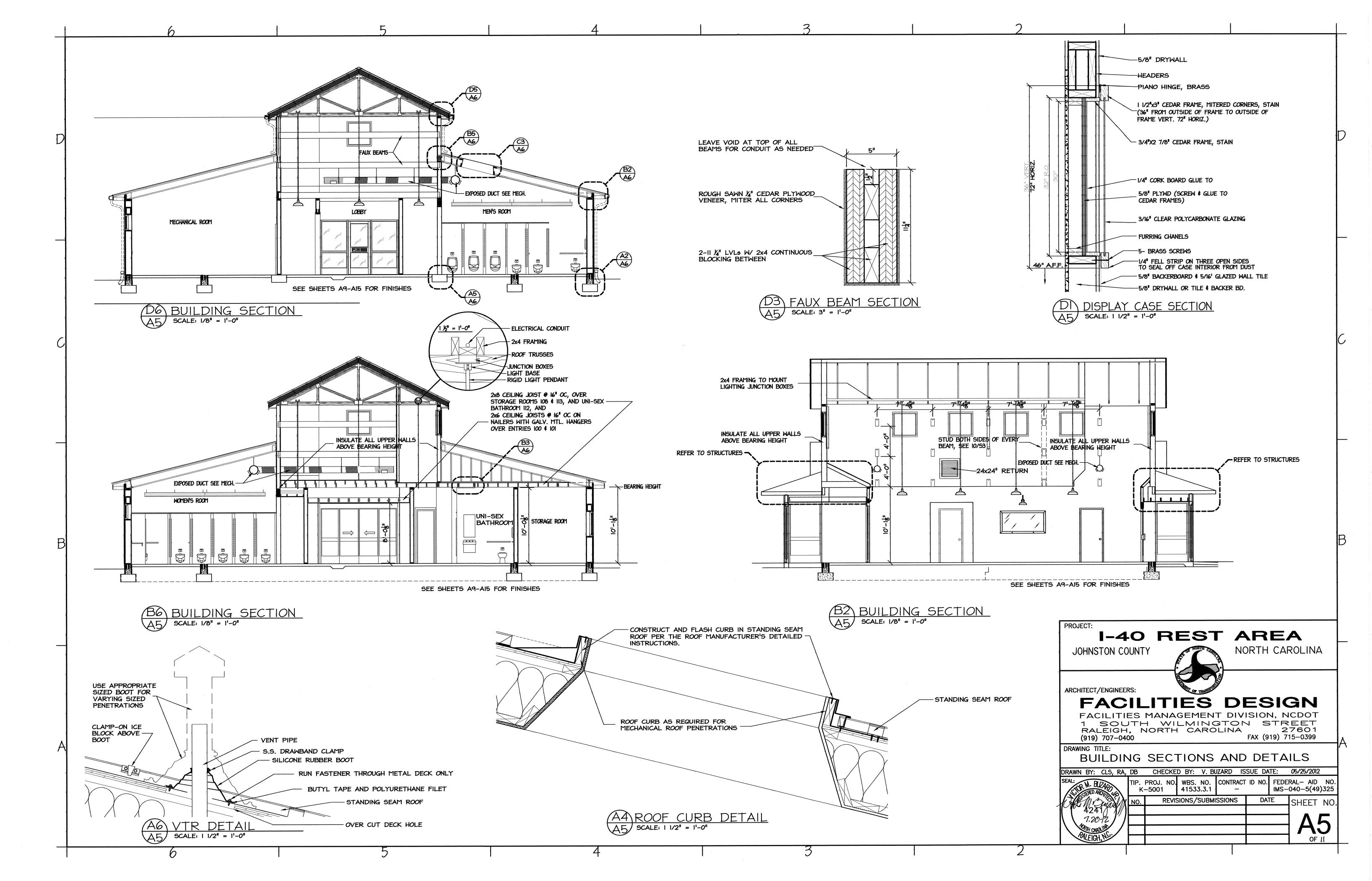
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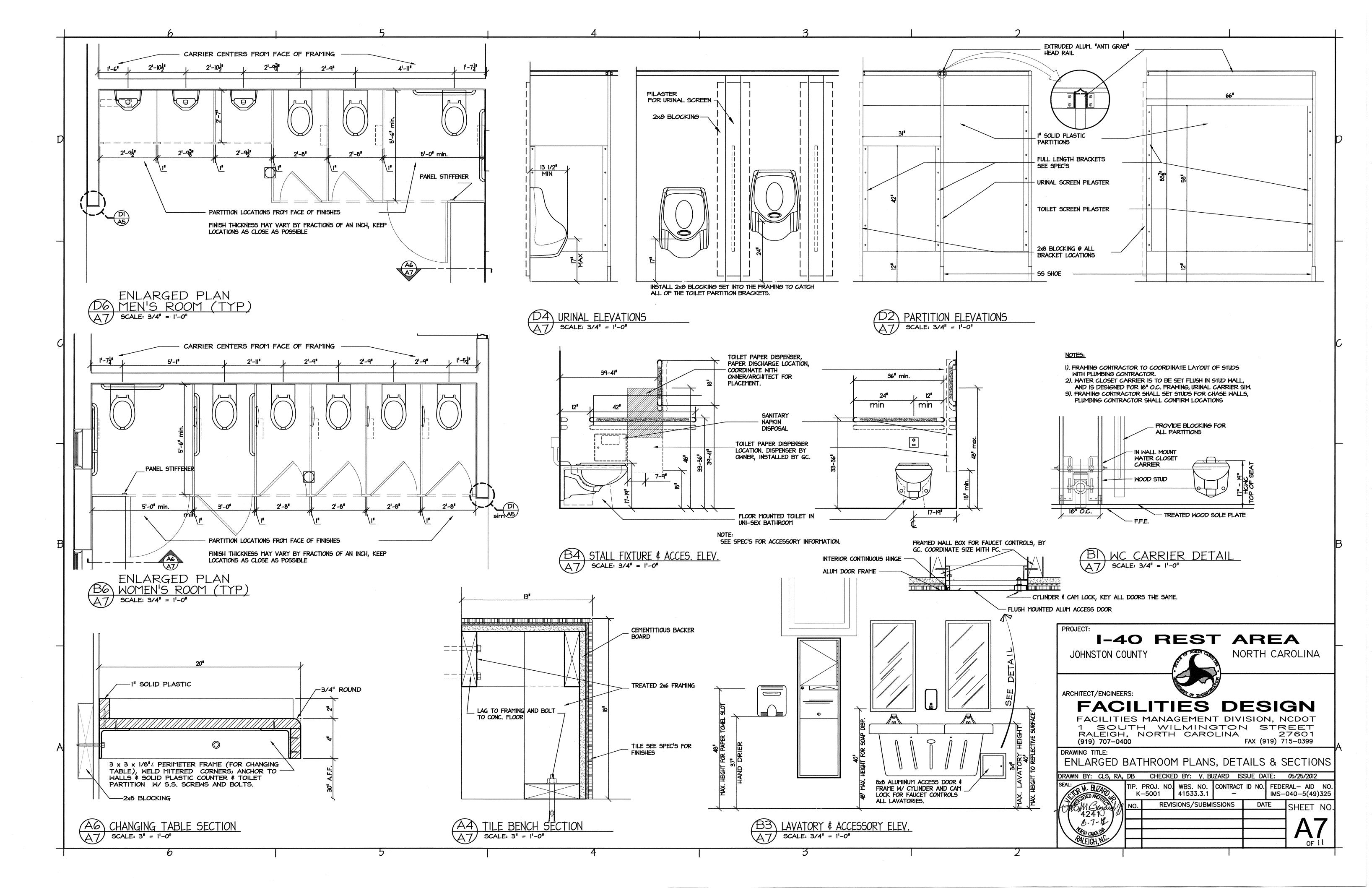


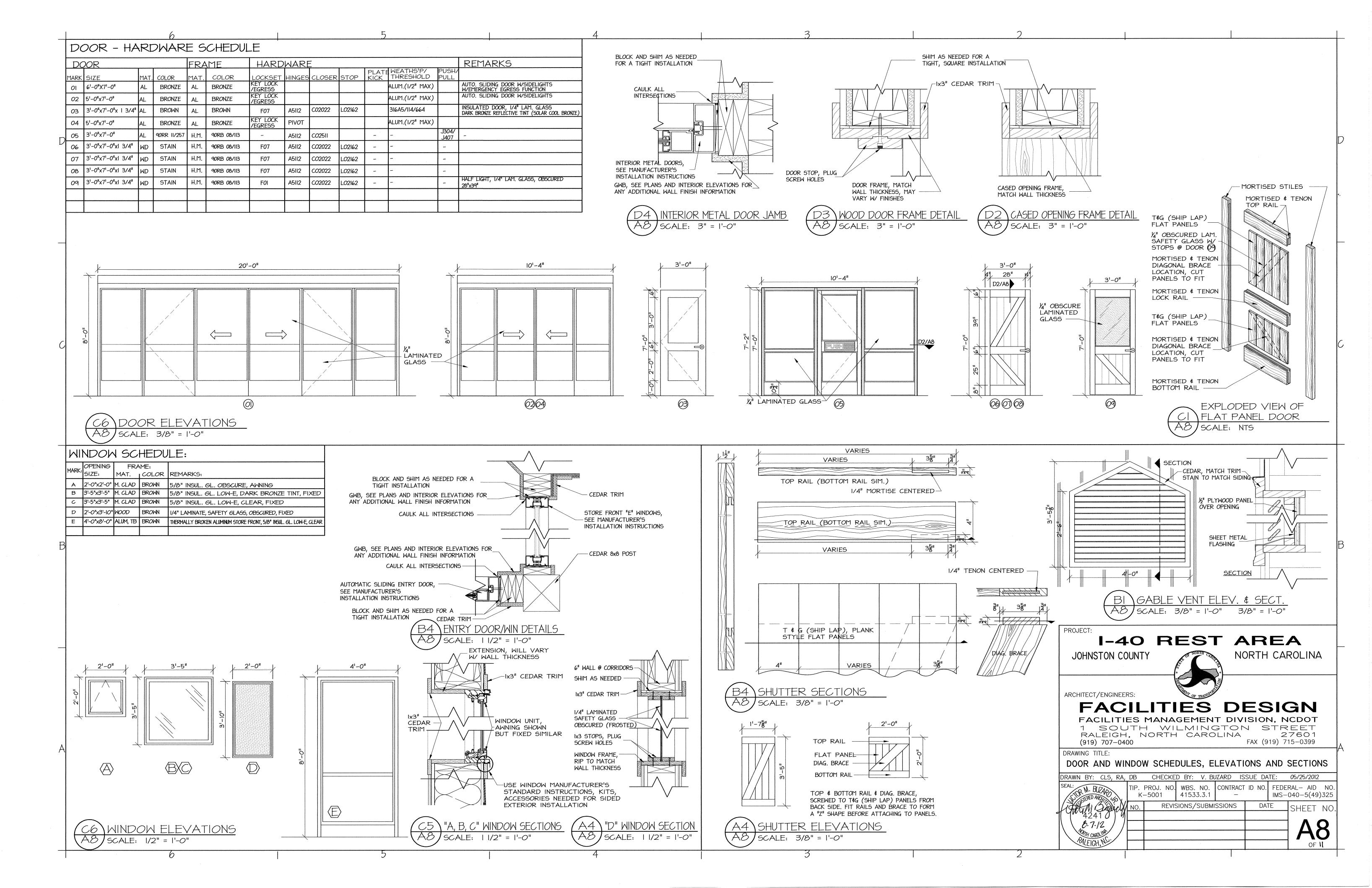


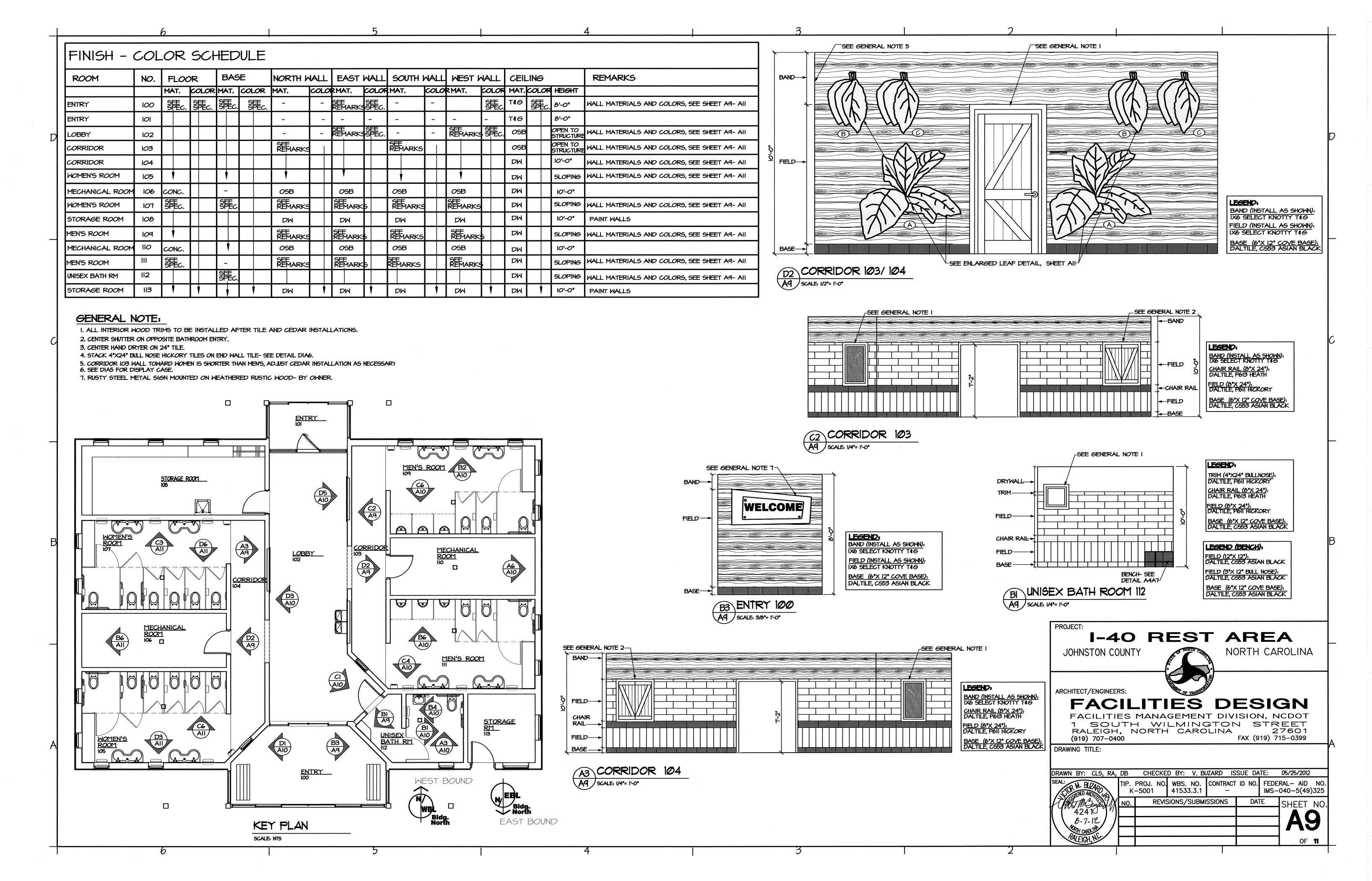


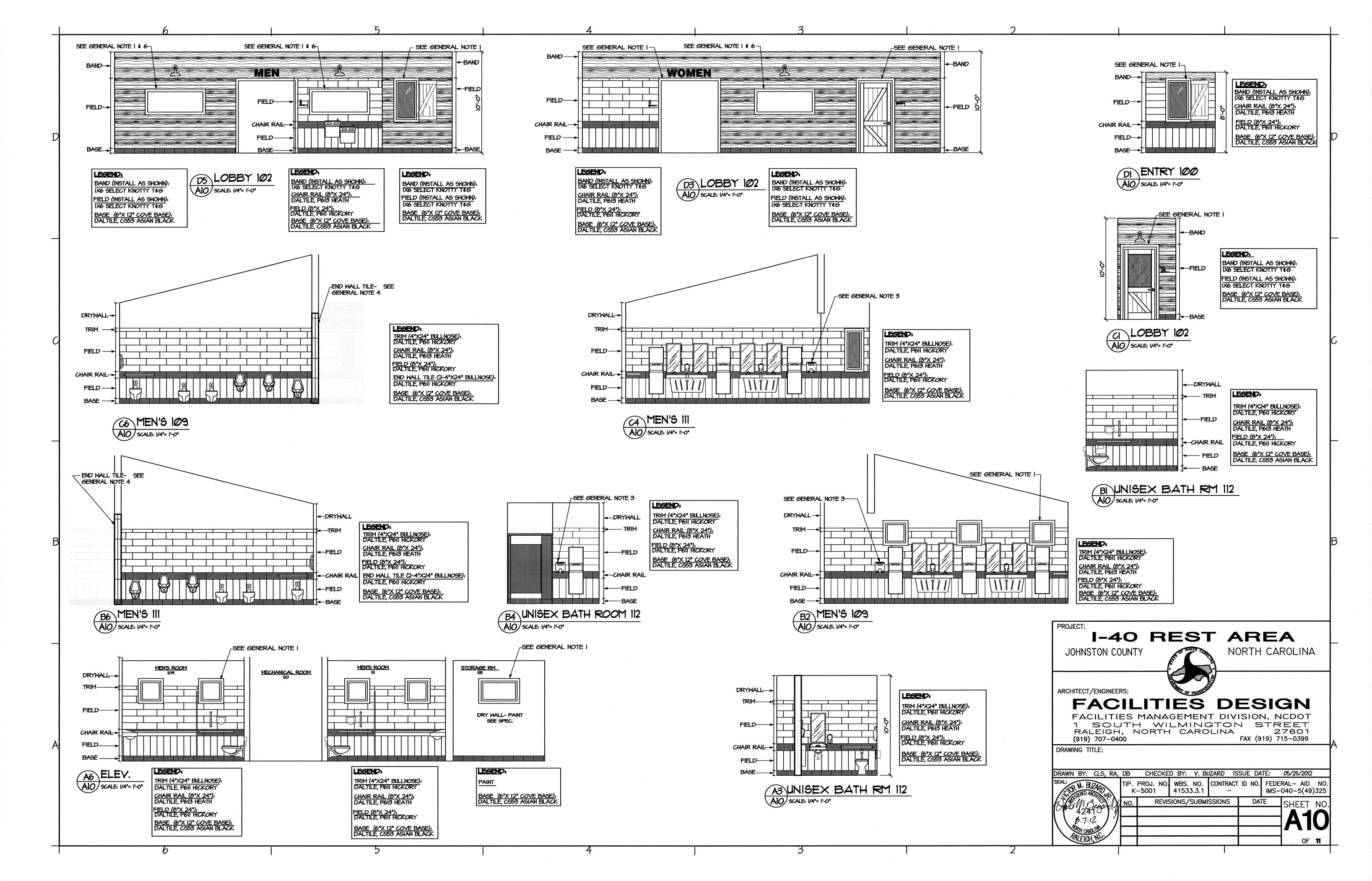


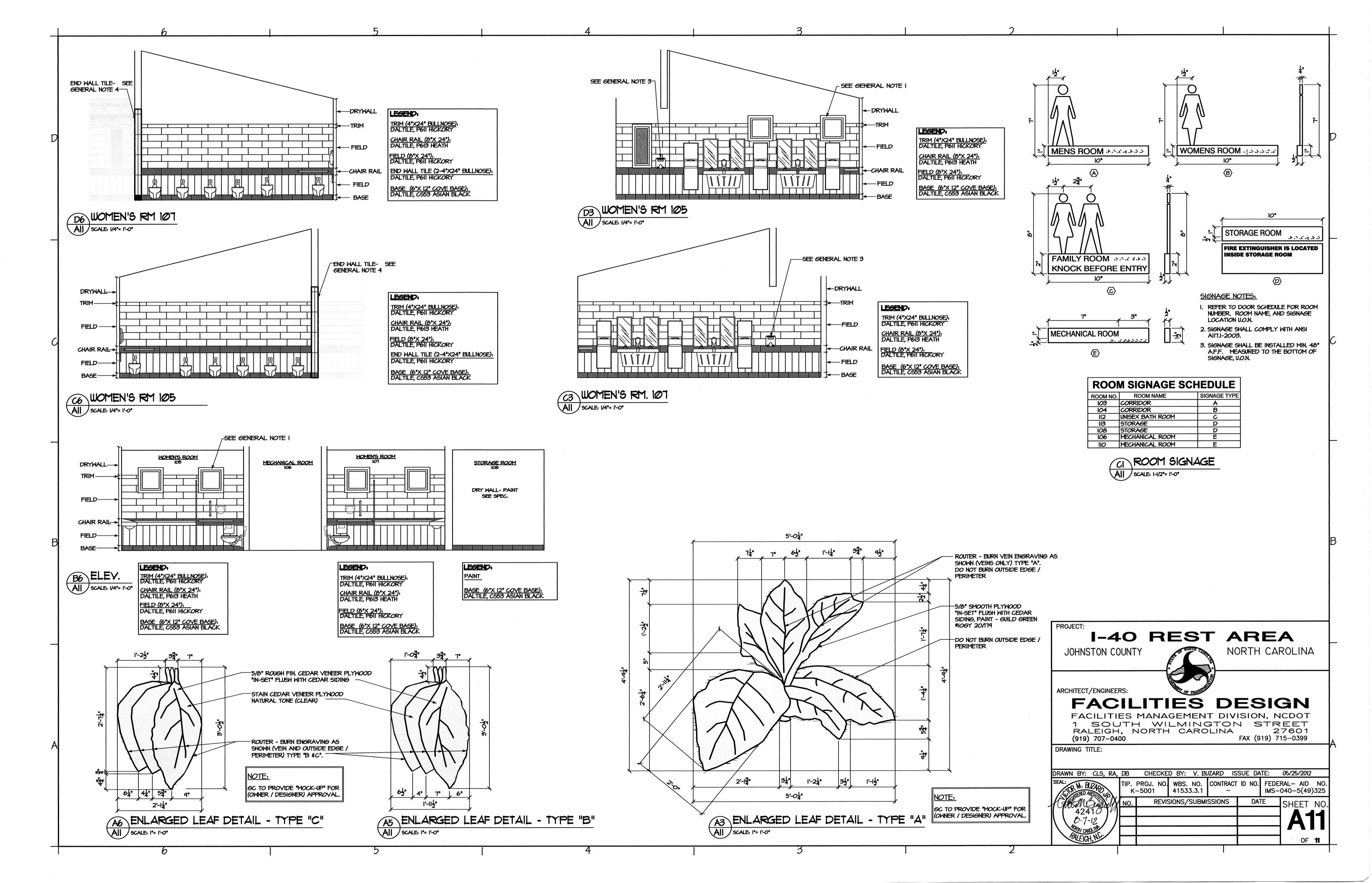


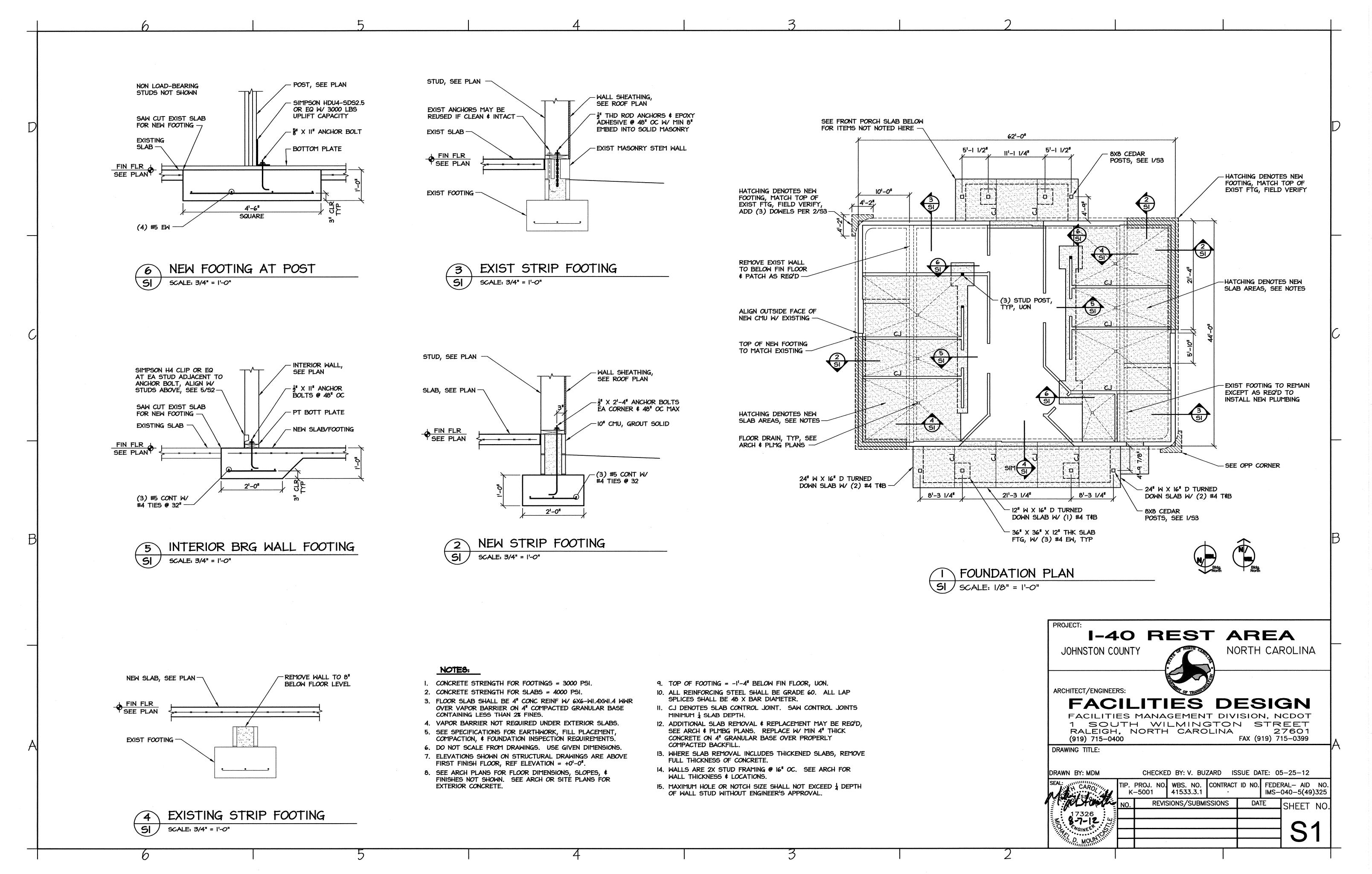


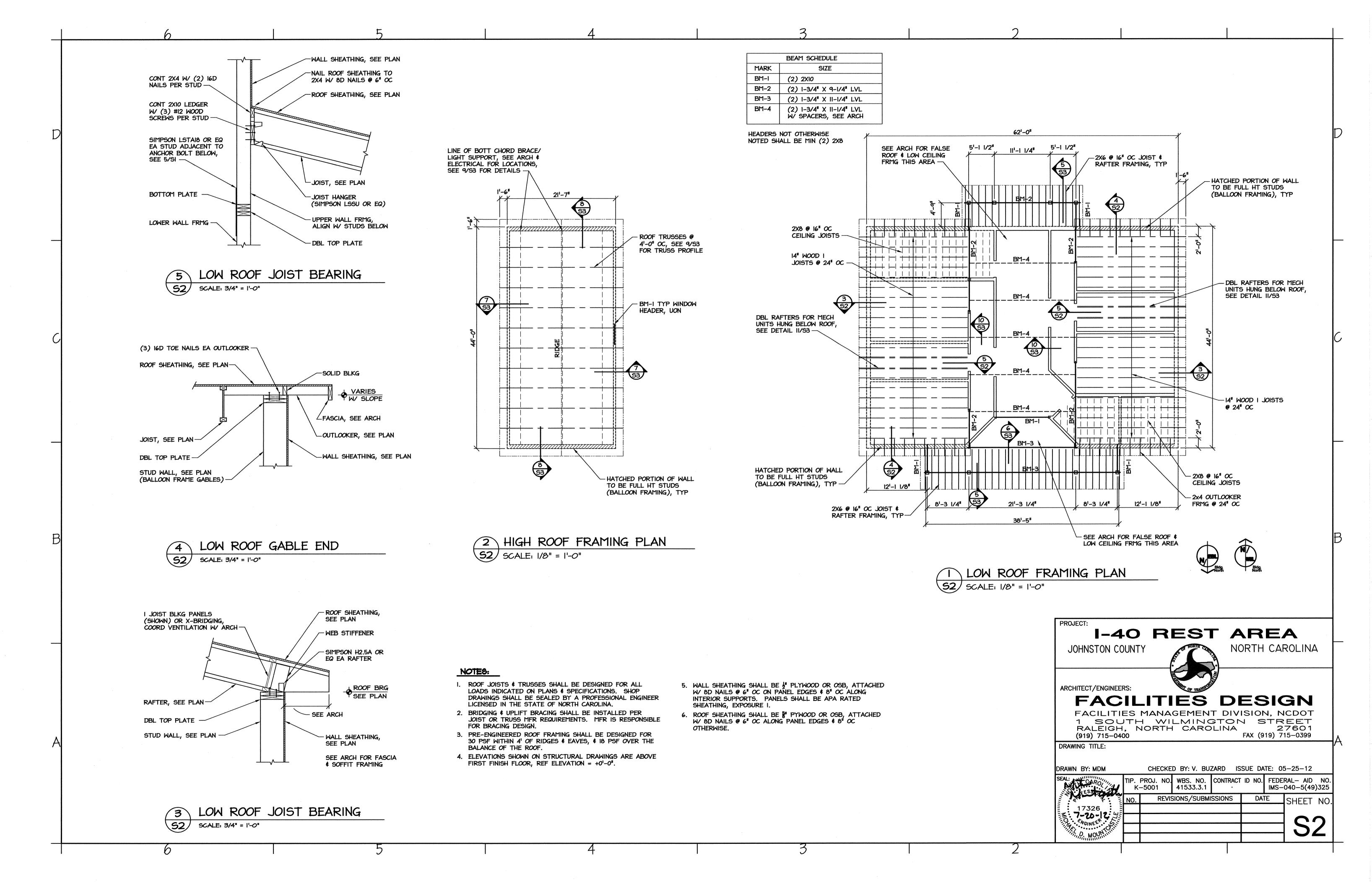


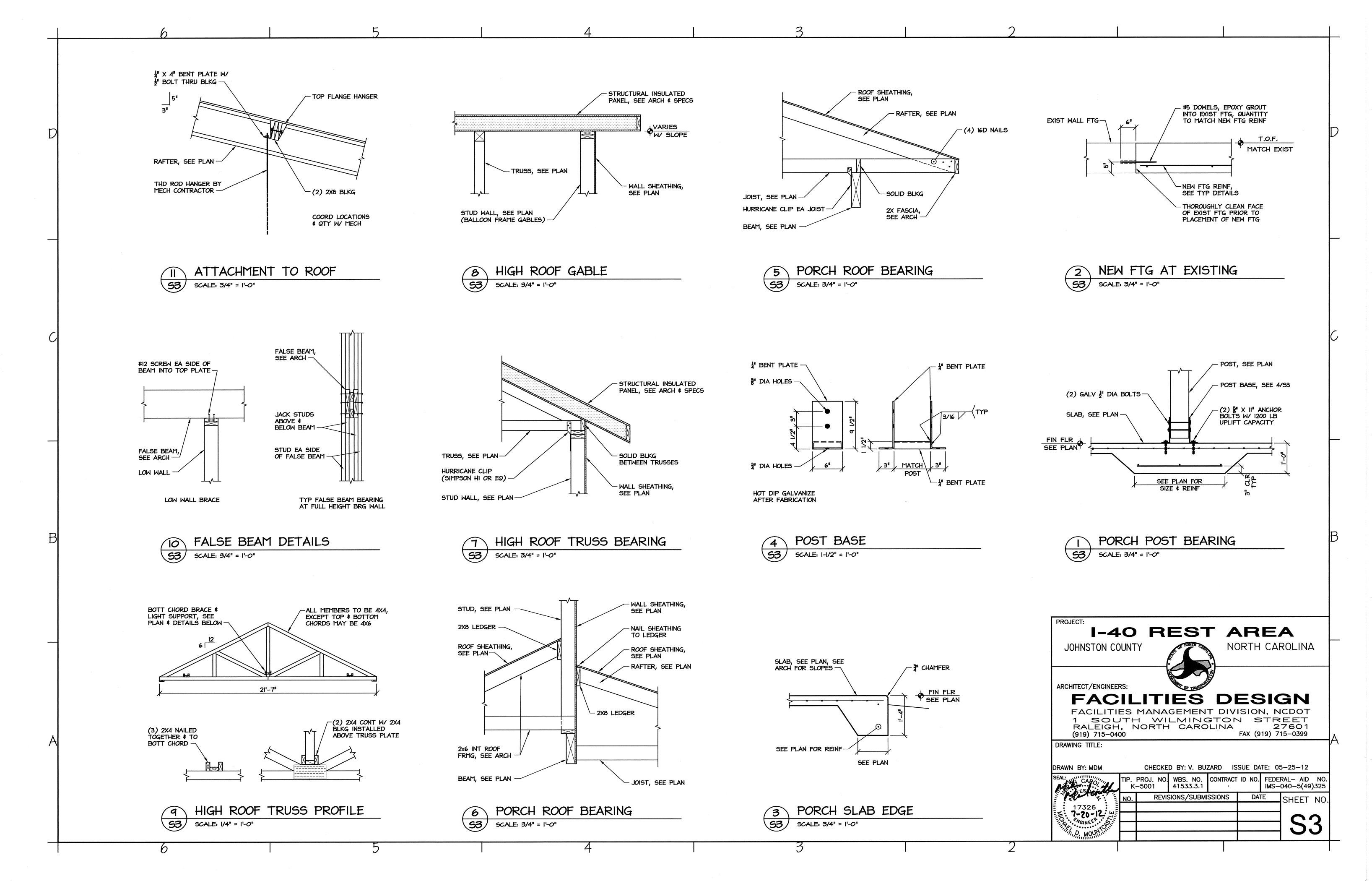








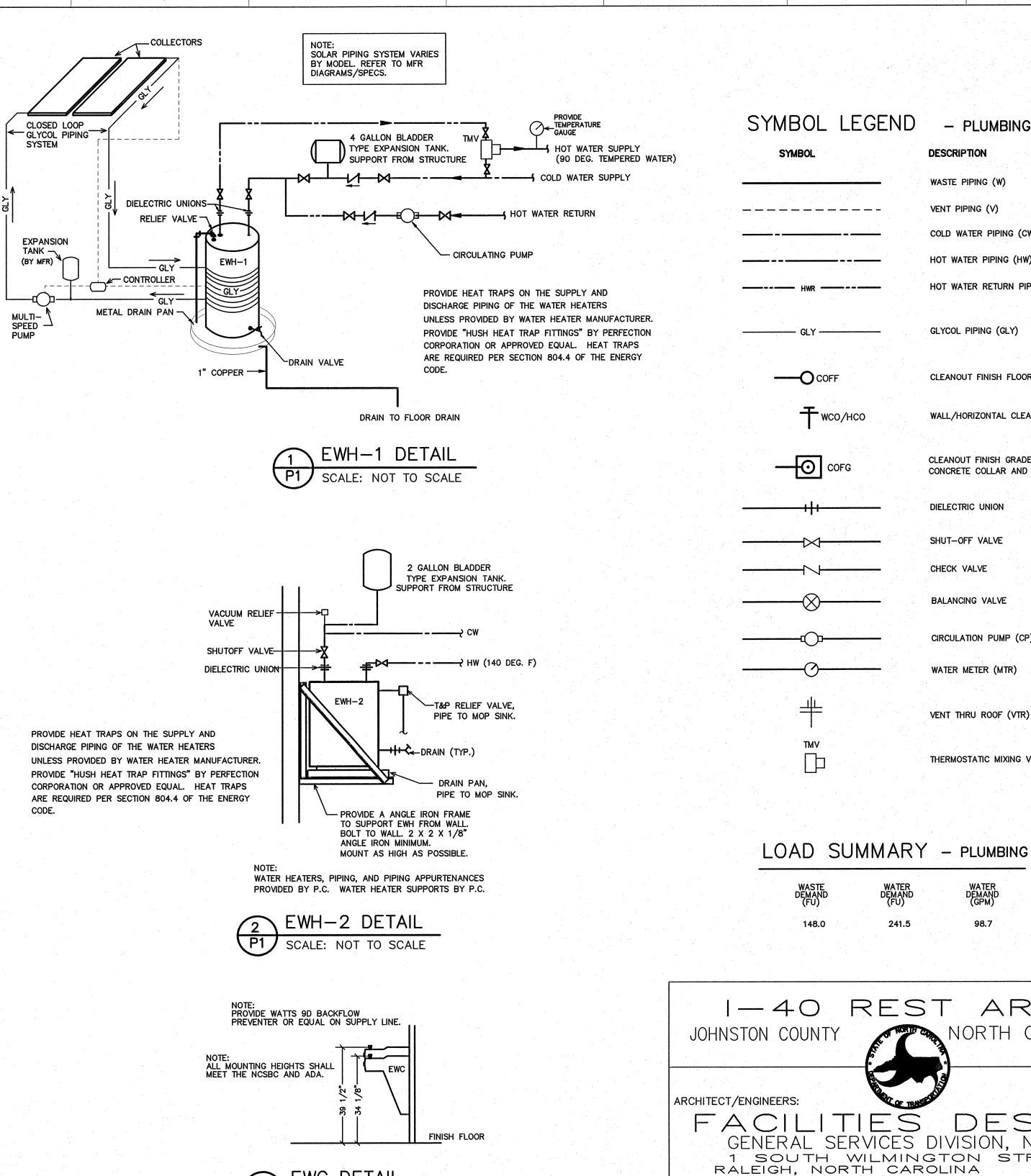




PLUMBING FIXTURE SCHEDULE ALTERNATE MANUFACTURER/MODEL ALTERNATE MANUFACTURER/MODEL DESCRIPTION AMERICAN STANDARD "AFWALL FLOWISE 1.28 GPF" #3353.128, ELONGATED BOWL, VITREOUS CHINA, AND 1 1/2" BACK SPUD. WCHC TO BE ADA COMPLIANT. PROVIDE OPEN FRONT SEAT, AND SENSOR W/ MANUAL OVERRIDE FLUSH VALVE, EQUAL TO HYDROTEK H-8000C-CB-WB FLUSH VALVE W/ELEC. WALL BOX. ZURN #Z5617 FIXTURE. ZURN #ZEMS6140AV KOHLER KINGSTON #K-4329 FIXTURE. SLOAN WCHC FLUSH VALVE. REGAL OPTIMA MODEL 152-1.28ES-S VALVE. WC-1 AMERICAN STANDARD "MADERA FLOWISE 1.28 GPF" #3461.128, ELONGATED BOWL, VITREOUS CHINA, AND 1 1/2" TOP SPUD, ADA COMPLIANT. PROVIDE OPEN FRONT SEAT, AND SENSOR W/ MANUAL OVERRIDE FLUSH VALVE EQUAL TO ZURN #Z5665 FIXTURE. ZURN #ZEMS6000IS KOHLER HIGHCREST #K-4302 FIXTURE. FLUSH VALVE. REGAL OPTIMA MODEL 153-1.28ES-S VALVE. HYDROTEK H-8000C-CT-WB FLUSH VALVE. CAROMA MODEL #H2ZERO. AMERICAN STANDARD "FLOWISE FLUSH-FREE" WATERLESS URINAL #6150.100, VITREOUS SLOAN MODEL #WES-1000. CHINA, WALL HUNG, ADA COMPLIANT. LAVATORY (ACCESSIBLE, WALL HUNG)
AMERICAN STANDARD "LUCERNE" # 0355.012 WHITE WITH CONCEALED ARM KOHLER GREENWICH #K-2032 WITH ELJER MURRAY II #051-0244 WITH CARRIER AND DRAIN ASSEMBLY (7723.018). ADA COMPLIANT. SLOAN SENSOR FAUCET #ETF-80. AMERICAN STANDARD INNSBROOK #6059.205. FURNISH WITH HYDROTEK 2603C AC POWERED FAUCET. PROVIDE ACCESSORIES AS REQUIRED. COORDINATE TRIM AND SINK FAUCET DRILLING FOR SINGLE HOLE OR AS REQUIRED PER OWNER. 2- STATION LAVATORY (ACCESSIBLE) BRADLEY MODEL #EXD-2N, TERREON ACRYLIC MODIFIED POLYESTER RESIN DOUBLE SLOAN SLOANSTONE #ELS-42000 WITH MODULE SINK SYSTEM (COORDINATE COLOR W/ARCH.), 50" x 21" WALL HUNG LAVATORY. ACORN MERIDIAN #3792-1-SO SLOAN SENSOR FAUCËT #ETF-80. ADA COMPLIANT WITH WALL HANGER SUPPORT FRAME. WITH INTEGRATED AC SENSOR FURNISH WITH HYDROTEK 2603C AC POWERED FAUCET. PROVIDE ACCESSORIES AS REQUIRED. FAUCETS. COORDINATE TRIM AND SINK FAUCET DRILLING FOR SINGLE HOLE OR AS REQUIRED PER OWNER. ACORN # TRH-303006, 30"X30"X6" TERRAZZO SERVICE BASIN WITH REDUCED HEIGHT AND STAINLESS STEEL GRID STRAINER AND 3" PIPE CONNECTION.
FAUCET: ACORN MODEL KFC CHROME PLATED SERVICE FAUCET WITH VACUUM BREAKER, INTEGRAL STOPS, ADJUSTABLE WALL BRACE, PAIL HOOK AND 3/4" HOSE THREAD ON SPOUT. HOSE & HOSE BRACKET: ACORN MODEL KH36 LONG FLEXIBLE 5/8" RUBBER HOSE, CLOTH REINFORCED. CRANE MOP SINK #TSB-3002 WITH #830-AA FAUCET, #832-AA HOSE, #1453-BB STRAINER, #889-CC MOP HANGER, #E-77-AA BUMPER GUARD, AND STAINLESS STEEL SPLASH GUARD. FLORESTONE MOP SINK #92 WITH SPEAKMAN #MR-371 FAUCET, HOSE AND MOP HANGER. BELL & GOSSET, SERIES NBF-22 IN-LINE CIRCULATOR PUMP, 1/12 HP, 115 VAC, FLA=0.8 TACO MODEL #110. ARMSTRONG MODEL #S-25. 1 Ph., 3/4" CONN., WITH A MAXIMUM OF 22 GPM AND 15' TDH. PUMP TO BE ALL BRONZE CONSTRUCTION, COORDINATE WITH ELEC. CONTRACTOR FOR POWER FEED. PROVIDE DISCONNECT SWITCH. HIGH/LOW ELECTRIC WATER COOLER HALSEY TAYLOR #HAC8BL-Q. ELKAY MODEL #EZSTL8LC. OASIS DUAL LEVEL ELECTRIC WATER COOLER. MODEL # P8ACSL, ADA COMPLIANT. PIPE TO SINGLE DRAIN AND SUPPLY LINE. TRAP PRIMER VALVE JOSAM #88300. WATTS #A200. PPP INC. MODEL# PR-500, 1/2" INLET, 1/2" OUTLET WATER CLOSET SUPPORTS JOSAM STD. 4" HUB AND SPIGOT, 2" VENT. ZURN #1204 JR SMITH MODEL# 0542F, VERTICAL HUB AND SPIGOT. US ZURN #1221. JOSAM #17550. SMITH MODEL# 0637 TMV THERMOSTATIC MIXING VALVE WATTS MMV SERIES. TACO 5000 SERIES. LEONARD TM-15-E MIXING VALVE WITH CHECKSTOPS. INSTALL IN ACCESSIBLE LOCATION. SET OUTFLOW TO SPECIFIED TEMPERATURE (90 DEG F.). INSTALL PER MANUFACTURER'S SPECIFICATIONS. HOSE BIBB HB WATTS #HY-330. JAY R. SMITH #5509QT. ZURN Z-1330-C, 3/4" WALL HYDRANT WITH VANDAL RESISTANT VACUUM BREAKER. ENCASED WITH KEY LOCK. SOLAR ELECTRIC WATER HEATER EWH-1 RHEEM SOLPAK MODEL# RS80-48BP SOLAR WATER HEATING SYSTEM, 80 GALLONS, 4500W, 208V SINGLE ELEMENT BACKUP. PROVIDE STATE MODEL# ETC-5X EXPANSION TANK ON CW SUPPLY. BRADFORD WHITE ECOSTOR SINGLE COIL SYSTEM AO SMITH CIRREX SOLAR ELECTRIC SYSTEM. AO SMITH PMC-5 EXPANSION TANK. AMTROL ST-12-C EXPANSION TANK. INSTALL CLOSED LOOP GLYCOL SYSTEM PER MFR SPECS/RECOMMENDATIONS. ELECTRIC WATER HEATER A.O. SMITH MODEL EJC-10, 10 GALLON, 1,650 WATT, 3/4" INLET AND OUTLET, 120V. MOUNT ON WALL. MODEL# PMC-2 EXPANSION TANK. RHEEM #81VP10S. AMTROL ST-5-C EXPANSION TANK. BRADFORD WHITE #M-1-10U6SS. STATE ETC-2X EXPANSION TANK. ZURN ZN-415. PROVIDE WITH DEEP SEAL P-TRAP, AND TYPE "B" STRAINER. PROVIDE VANDAL-JOSAM #30000A. JAY R. SMITH #2005-A. PROOF TOP. PROVIDE MODEL WITH TRAP PRIMER CONNECTION ONLY FOR FLOOR DRAINS IN AREAS NOTED ON SHEET P2. WATER METER PARK ENVIRONMENTAL EQUIP. 2" TURBINE. HERSEY HORIZON 2" TURBINE. NEPTUNE, 2", MODEL T-10. METER INDICATION SHALL BE WITH BOTTOM OF GAUGE TOWARD FLOOR. FREEZE-PROOF HOSEBIBB **FPHB** ZURN Z-1320-C, 3/4" NON FREEZE WALL HYDRANT WITH VANDAL RESISTANT JAY R. SMITH #5509QT. WATTS HY-725. VACUUM BREAKER. ENCASED WITH KEY LOCK. 3" REDUCED PRESSURE BACKFLOW PREVENTER ZURN #375-3" FEBCO #860-3" WATTS MODEL #009QT-3" REDUCED PRESSURE BACKFLOW PREVENTER, IRON CONSTRUCTION.

\*OR APPROVED EQUAL

B



98.7 241.5 I-40 REST AREA NORTH CAROLINA JOHNSTON COUNTY ACILITIES DESIGI GENERAL SERVICES DIVISION, NCDOT DESIGN 1 SOUTH WILMINGTON STREET RALEIGH, NORTH CAROLINA 2760 27601 (919) 715-0400 FAX (919) 715-0399 DRAWING TITLE: EASTBOUND/WESTBOUND PLUMBING SCHEDULES/DETAILS DRAWN BY: DS CHECKED BY: BEB ISSUE DATE: 20 AUG 12 TIP. PROJ. NO. WBS. NO. COTRACT ID NO. FEDERAL- AID NO k-5001 41533.3.1 IMS-040-5(49)325 REVISIONS/SUBMISSIONS DATE SHEET NO. SEAL 22038 1 OF 4

PLUMBING

COLD WATER PIPING (CW)

HOT WATER PIPING (HW)

GLYCOL PIPING (GLY)

CLEANOUT FINISH FLOOR

DIELECTRIC UNION

SHUT-OFF VALVE

BALANCING VALVE

CIRCULATION PUMP (CP)

WATER METER (MTR)

VENT THRU ROOF (VTR)

WATER DEMAND (GPM)

THERMOSTATIC MIXING VALVE (TMV)

CHECK VALVE

wco/Hco

WALL/HORIZONTAL CLEANOUT

CLEANOUT FINISH GRADE - PROVIDE FLUSH

CONCRETE COLLAR AND BRONZE COVER

HOT WATER RETURN PIPING (HWR)

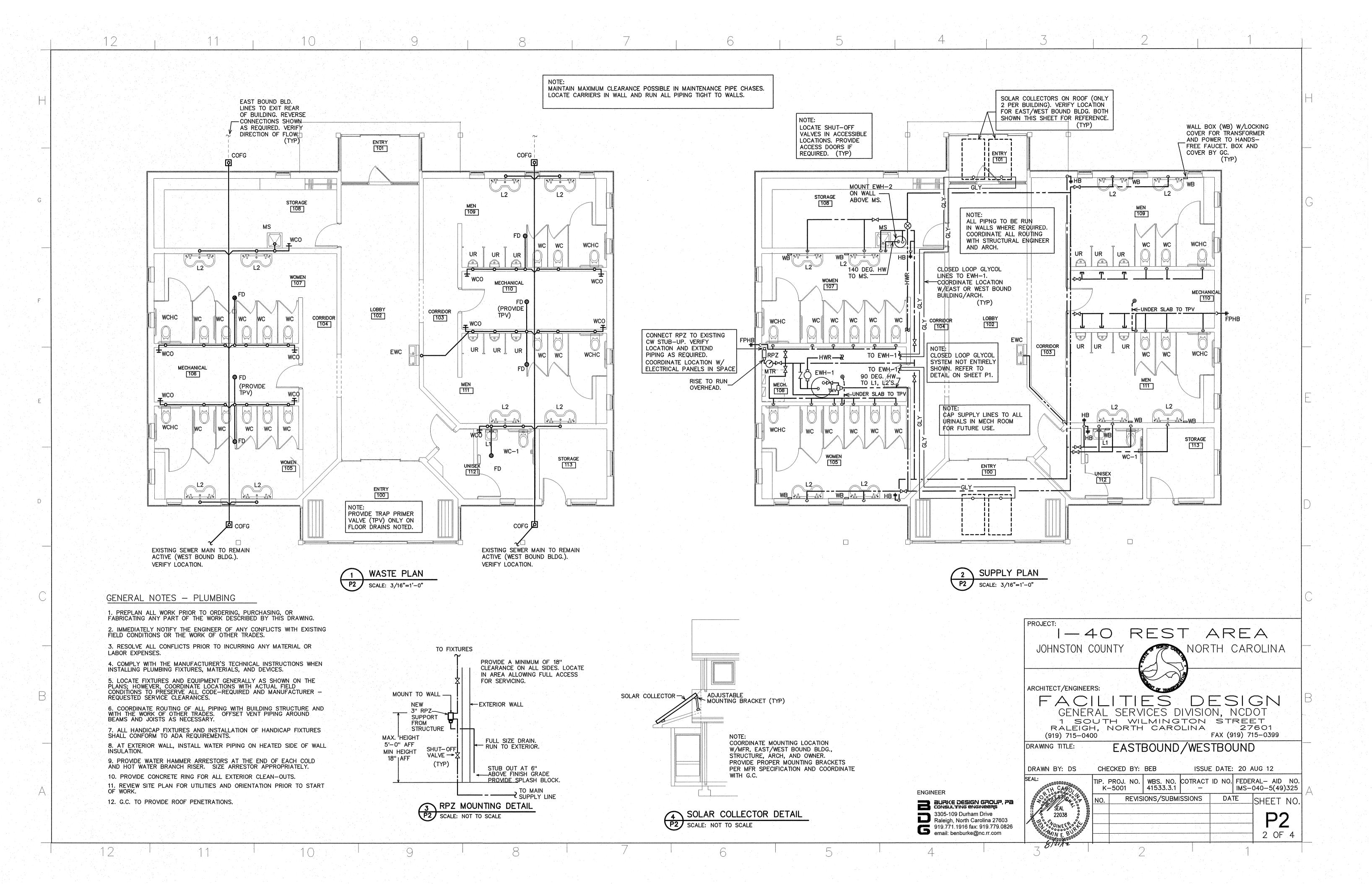
DESCRIPTION

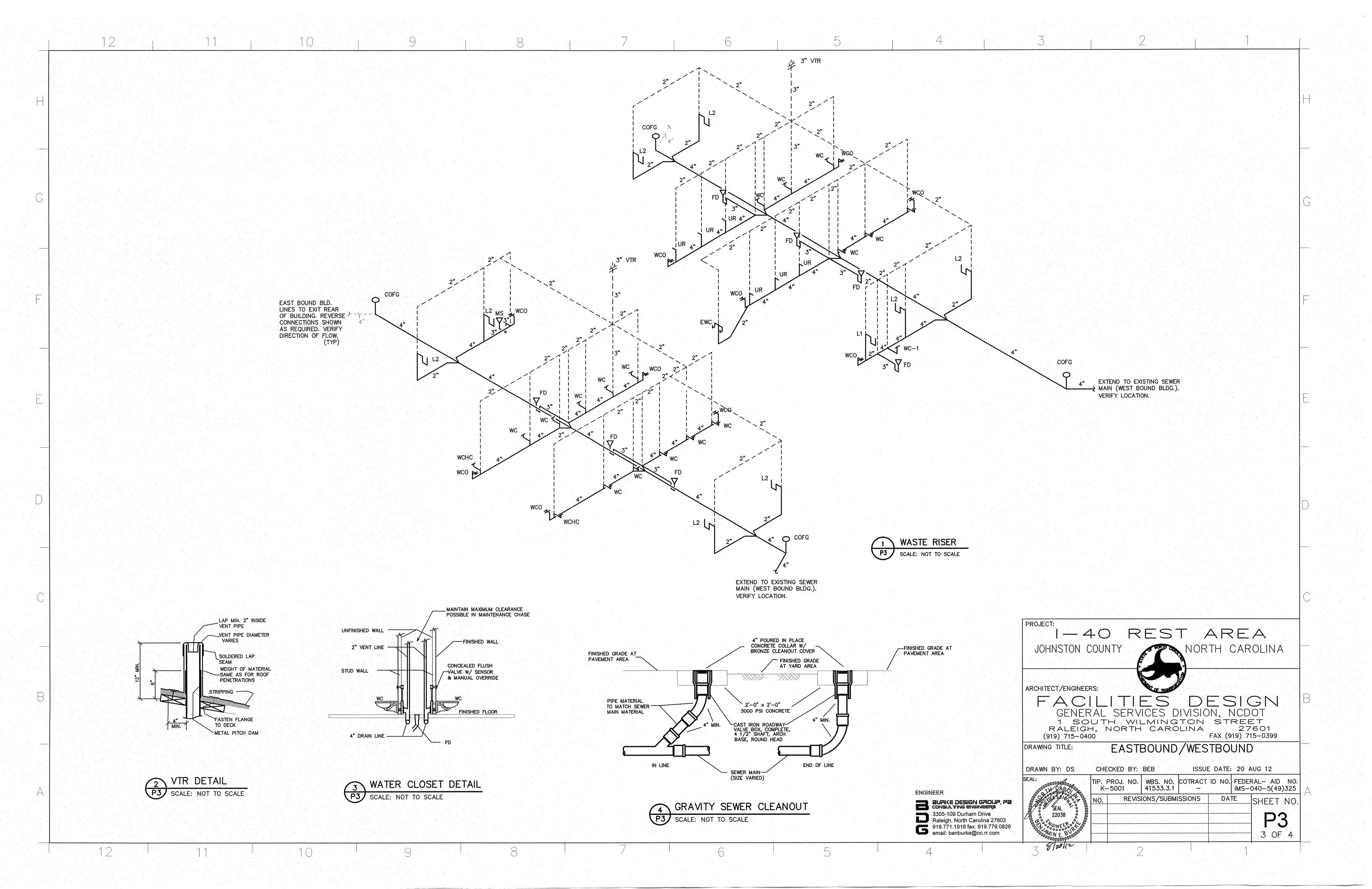
WASTE PIPING (W)

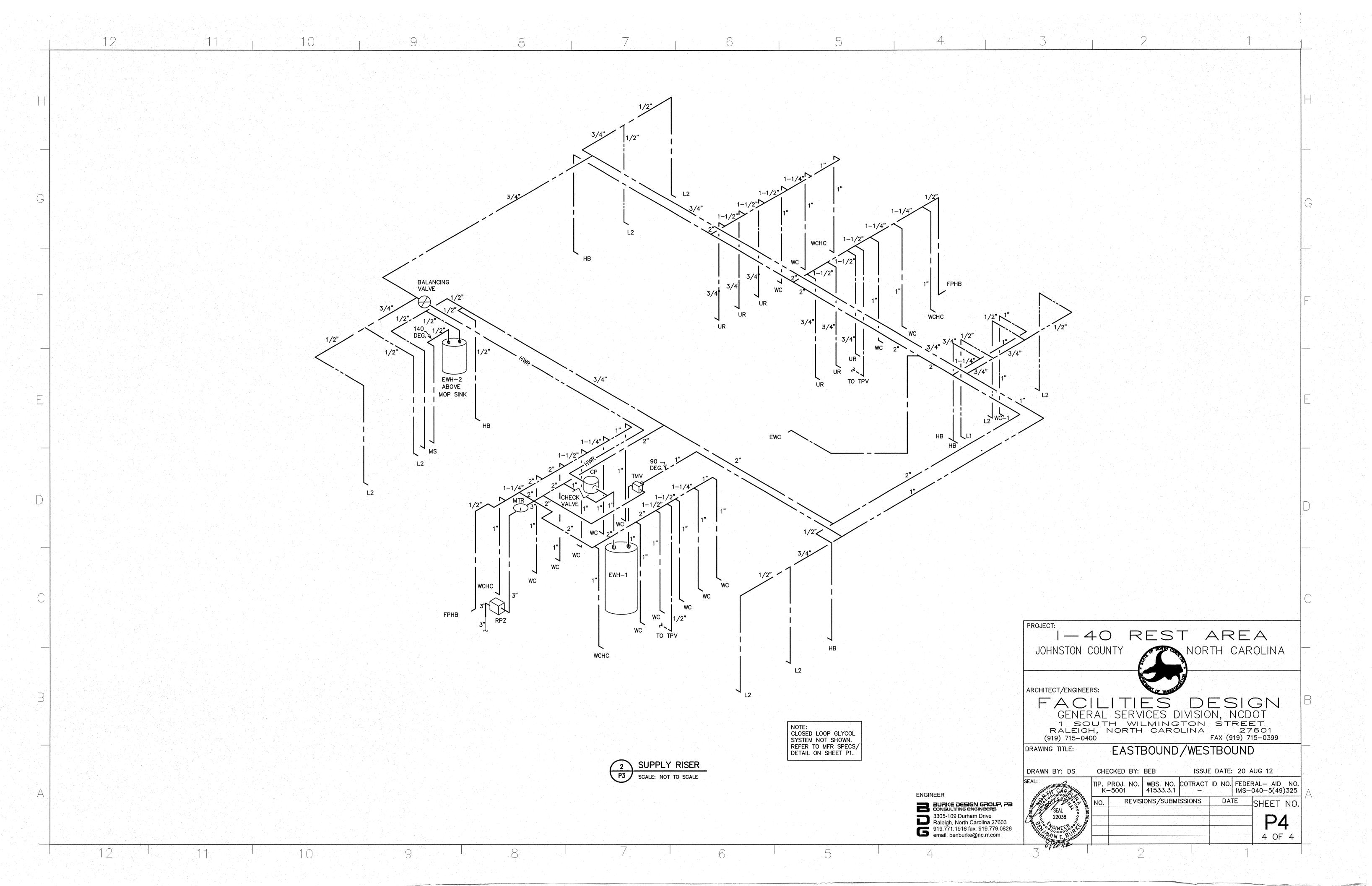
VENT PIPING (V)

**ENGINEER** 

BURKE DESIGN GROUP, Pa consulting engineers 3305-109 Durham Drive Raleigh, North Carolina 27603 919.771.1916 fax: 919.779.0826 email: benburke@nc.rr.com







COORDINATE BORDER TYPE WITH THE CEILING/WALL TYPE. SEE ARCH SHEETS PROVIDE DUCT TRANSITIONS AS REQUIRED.

\* OR APPROVED EQUAL BY TUTTLE & BAILEY, OR METALAIRE

## DUCTLESS SPLIT SYSTEM HEAT PUMP SCHEDULE

DIRECT EXPANSION

OUTDOOR HEAT PUMP UNIT

DHP-1

CARRIER MODEL #40GXQ012-1-01 FAN COIL UNIT. NET COOLING CAPACITY = 12,000 BTUH, 245 CFM LO TO 415 CFM HI 1 TON NOMINAL, PROVIDE WIRED PROGRAMMABLE THERMOSTAT. FAN MOTOR 0.45, FLA 115 VOLT. SINGLE PH.

\* CARRIER MODEL #38GXQ012-1-01, 1 TON OUTDOOR HEAT PUMP UNIT, 16 SEER. PROVIDE ALL FACTORY ACCESSORIES REQUIRED FOR LOW AMBIENT OPERATION. 115 VOLT, 1 PHASE, OUTDOOR HP UNIT 20A MCA, 25A MOCP.
FAN COIL UNIT IS POWERED VIA FIELD PROVIDED WRING FROM OUTDOOR UNIT.

\* OR APPROVED EQUAL

### EXHAUST FAN SCHEDULE

EF-1

**EXHAUST** 

\* CARNES MODEL# VCDD010C EXHAUST FAN, 93 CFM @ 1/4" SP, 640 RPM, 1.1 AMPS, 120V. THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE SWITCH AND WIRE THE UNIT. THE HVAC CONTRACTOR SHALL PROVIDE UNIT, 6" RIGID DUCT TO EXTERIOR ROOF CAP. LOCATE EXHAUST TERMINATION A

\* OR APPROVED EQUAL

#### MECHANICAL SYSTEMS AND EQUIPMENT

#### METHOD OF COMPLIANCE:

Prescriptive

Energy Cost Budget

winter dry bulb 93 F summer dry bulb

Exterior Design Conditions

Thermal Zone

Interior Design Conditions

winter dry bulb summer dry bulb 75 F relative humidity 50%

Building Heating Load

-126,458 BTU/hr (heat wheel reduction) 22,642 BTU/hr

149,100 BTU/hr

Building Cooling Load 147,100 BTU/hr -59,310 BTU/hr (heat wheel reduction) 87,790 BTU/hr

Mechanical Spacing Conditioning System

Unitary — The building is served by (2) 4 ton split system heat pumps with an energyy recovery ventilator.

Boiler — Not applicable to this project. Chiller - Not applicable to this project.

Equipment efficiencies

Efficiencies and outputs are listed on equipment schedules - See drawings.

Equipment schedules with motors.

Motors used on this project are included in the efficiency rating of the unit. See drawings for efficiencies.

### GENERAL NOTES - MECHANICAL

- 1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE CODE AND ALL LOCAL AND OTHER APPLICABLE CODES.
- 2. ANY PERMITS AND INSPECTION FEES SHALL BE SECURED AND PAID FOR BY THE MECHANICAL CONTRACTOR (MC).
- ALL WORK SHALL BE PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMEN. THE MC SHALL COORDINATE ALL OF HIS WORK WITH THE GENERAL CONTRACTOR (GC) AND OTHER TRADES.
- 4. THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES.
- THESE PLANS ARE DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. FOR DIMENSIONS REFER TO THE ARCHITECTURAL PLANS.
- 6. THE MC SHALL BE RESPONSIBLE FOR ALL ELECTRICAL STARTERS INTERLOCKS, CONTROL WIRING CONDUIT AND POWER WIRING FROM DISCONNECTS TO HIS EQUIPMENT, USING A LICENSED
- THE MC SHALL USE FIRE DAMPERS FOR PROTECTION OF THE OPENING IN ACCORDANCE WITH STATE AND LOCAL CODES IN ALL LOCATIONS WHERE PENETRATIONS OF RATED WALLS AND FLOORS OCCUR. SEE ARCHITECTURAL PLANS FOR RATED WALL AND FLOOR LOCATIONS. PROVIDE ACCESS DOORS AT ALL DAMPER LOCATIONS. LOCATE DOORS FOR EASY ACCESS. THERE ARE NO RATED WALLS PENETRATED IN THIS HVAC UPFIT.
- 8. INSTALL FLEXIBLE CONNECTORS ON SUPPLY AND RETURN DUCTWORK AHU. ALL MECHANICAL EQUIPMENT SHALL OPERATE FREE OF OBJECTIONAL NOISE AND VIBRATION.
- 9. INSTALL TURNING VANES IN SUPPLY DUCTS AT ALL ELBOWS AND SPLITTER DAMPERS. PROVIDE BALANCING DAMPERS IN ALL DUCTS WHERE SHOWN OR REQUIRED FOR SYSTEM BALANCING. PROVIDE SPIN IN STARTING COLLARS WITH DAMPERS AT ALL SUPPLY TAKEOFFS.
- 10. DUCT DIMENSIONS ARE SHOWN INSIDE CLEAR. COORDINATE EXACT SIZE WITH SPACE AVAILABLE DUCT INSULATION SHALL BE 2" FIBERGLASS EXTERIOR DUCT INSULATION WITH FOIL FACING.
- THERMOSTAT, WIRING AND CONDUIT ARE TO BE FURNISHED BY THE MC. MOUNT THERMOSTAT 48" ABOVE THE FINISHED FLOOR. COORDINATE LOCATION WITH OWNER. PROVIDE AUTO CHANGEOVER THERMOSTAT WITH UNIT OFF POSITION AS MINIMUM. PROVIDE AN EMERGENCY SHUT-OFF SWITCH ABOVE THE THERMOSTAT. PROPERLY LABEL
- THE MC SHALL KEEP THE PREMISES CLEAR OF DEBRIS FROM HIS WORK DURING CONSTRUCTION AND LEAVE THE AREA AND BUILDING CLEAN AT THE COMPLETION OF HIS WORK. HE SHALL ALSO LEAVE CLEAN ALL EXPOSED EQUIPMENT IN HIS CONTRACT.
- 13. COORDINATE DIFFUSER AND CEILING EXHAUST GRILLE LOCATIONS WITH LIGHTS AND GRID. COORDINATE MOUNTING FRAME WITH CEILING TYPE.
- 14. THE M.C. SHALL COORDINATE WITH AND PROVIDE EQUIPMENT SPEC. SHEETS TO THE GENERAL AND ELECTRICAL CONTRACTORS FOR REVIEW PRIOR TO ORDERING EQUIPMENT.
- 15. PROPERLY SUPPORT FLEXIBLE DUCT, MINIMUM 75% DEFORMATION. PROVIDE SHEET METAL ELBOWS AT ALL
- 16. ALL DUCT JOINTS SHALL BE SEALED AIRTIGHT WITH FIBER ENPREGNATED MASTIC OR HARDCAST AND TAPE.
- 17. SUPPORT AHU, EXHAUST FANS, HEAT WHEEL AND ALL DUCTWORK, ETC. FROM STRUCTURE. PIPE STRAPPING WILL NOT BE ALLOWED.

# LEGEND - MECHANICAL SUPPLY DUCTWORK FLEXIBLE DUCTWORK SUPPLY DIFFUSER RETURN GRILLE THERMOSTAT WITH LOCKING, VANDAL PROOF COVER REMOTE WALL MOUNTED TEMPERATURE SENSOR

#### FLEXIBLE DUCTWORK NOTES

- I) INSTALL FLEXIBLE DUCTWORK RUNS AS STRAIGHT AS POSSIBLE.
- 2) DO NOT ALLOW FELXIBLE DUCT TO SAG BETWEEN SUPPORTS. 3) DO NOT STRETCH A SHORT SECTION TO FIT A SLIGHTLY LONGER SECTION. THIS DISTORTS THE DUCT SHAPE AND IMPEADS AIR FLOW.
- 4) DO NOT CRUSH DUCTWORK TO FIT IN A SPACE SMALLER THAN ITS ORIGINAL OUTSIDE DIAMETER, MAXIMUM ALLOWABLE DEFORMATION IS 15% OF ORIGINAL VOLUME.
- 5) USE RIGID 90 DEGREE ELBOWS AT ANY LOCATION WHERE THE DUCTWORK BECOMES DISTORTED.
- © EXTREME CARE SHALL BE TAKEN TO ELIMINATE ANY REDUCTION IN FLOW WITHIN THE FLEXIBLE DUCTS. THE MECH. CONTRACTOR WILL BE REQUIRED TO REPLACE THE FLEXIBLE DUCT WITH RIGID IF PROPER FLOW IS NOT OBTAINED.

FLEXIBLE DUCTWORK SIZES										
SIZES	SUPPLY	RETURN								
8"	150	100								
10"	200	150								
12"	350	300								
14"	550	450								
16"	NA	<b>45</b> 0								
18"	NA	85 <i>0</i>								
20"	NA	1200								

#### HVAC EQUIPMENT SCHEDULE

THERMAL PERFORMANCE

75F / 50%

ROOM AIR TEMP (F) & HUMIDITY

(DB) / (WB OR RH)

SUMMER WINTER

72F / 50%

DESIGN CONDITIONS

EQUIP.	INDOOR UNIT															OUTDOOR UNIT					
NUMBER	LIMBER		FAN COOLING C					ELECTRICAL HEATING				FAN MOTOR		FUSE/			COMPRESSOR FUSE/		FUSE/		
	MODEL NO.	CFM	HP	POWER	MIN TOTAL	MIN SENS.	HEATING CAPACITY	MODEL #	CAPACITY	HEATER (AMPS)	VOLTAGE		MCA	CB MAX	MODEL NO.	POWER	(RLA)	МСА	СВ МАХ	SEER	
AHU-1/HP-1	CARRIER FX4DNF061T00	1600@1/2"WC	3/4	208/230-1	48.5 MBH	34.8 MBH	26.2/43 MBH @ 17/47F	KFCEH0901N10	25.5 MBH (7.5 KW)	36.2	240-1	6	53.8	60 A	CARRIER 25HBC548A003	208/230-1	21.8	28.5	40 A	15	
AHU-2/HP-2	CARRIER FX4DNF061T00	1600@1/2"WC	3/4	208/230-1	48.5 MBH	34.8 MBH	26.2/43 MBH @ 17/47F	KFCEH0901N10	25.5 MBH (7.5 KW)	36.2	2401	6	53.8	60 A	CARRIER 25HBC548A003	208/230-1	21.8	28.5	40 A	15	

- 1. PROVIDE WITH DISCONNECT SWITCH, ELECTRONIC NON-PROGRAMMABLE THERMOSTAT WITH LOCKING COVER, TIME DELAY RELAY,
- FILTER RACK WITH FILTERS, AND HEAD PRESSURE CONTROLLER AND SINGLE POINT POWER CONNECTIONS.
- 2. PROVIDE MINIMUM OUTDOOR AIR FLOW SETTINGS AS PER PLAN. 3. AHU'S ARE BASED ON 1/2" EXT. WATER COLUMN STATIC.
- 4. OR EQUAL BY TRANE OR YORK
- 5. PROVIDE SHUTDOWN RELAY SWITCH WITH A MAXIMUM OF 60 SECOND DELAY ON HEATING CYCLE, TO BE WRED TO THE DUCT SMOKE DETECTORS AS PROVIDED BY THE ELECTRICAL CONTRACTOR.
- 6. SPECIFIED COOLING CAPACITIES ARE BASED ON STANDARD CONDITIONS: EAT= DB/WB = 80/67 F; AMBIENT = 95 F. COIL HEATING CAPACITIES ARE BASED ON 65 F EDB. ELECTRIC HEATER RATINGS

PHASE/

1 PH

18.5 A

25 A

ARE AT 240V. 7. PROVIDE NON-PROGRAMMABLE, AUTOMATIC CHANGEOVER, DIGITAL THERMOSTATS FOR AHU-1/2. FAN SHALL BE SET IN "ON" POSITION.

FANS / MOTORS

16.4 A

## OUTDOOR AIR CALCULATIONS

STATE BUILDING CODE: MECHANICAL CODE.

APPLICATION

CFM/SQ.FT. APPLICATION

## OUTDOOR VENTILATION AIR PROVIDED PER TABLE 403.3, 2012 NORTH CAROLINA

CFM/FLUSHING FIXTURE **TOLIET ROOMS** 70 CFM EACH 25 FLUSHING FIXTURES X 70 CFM = 1750 CFM

0.06 CFM/SQ.FT. 970 SQ. FT. X 0.06 CFM/SQ.FT. = 58 CFM

TOTAL OUTSIDE AIR REQUIRED - 1808 CFM AHU #1 = 1000 CFM PROVIDED AHU #2 = 1000 CFM PROVIDED

ARCHITECT/ENGINEERS:

JOHNSTON COUNTY

FACILITIES DESIGN GENERAL SERVICES DIVISION, NCDO7 1 SOUTH WILMINGTON STREET RALEIGH, NORTH CAROLINA FAX (919) 715-0399 (919) 715-0400

DRAWING TITLE:

EASTBOUND/WESTBOUND

I-40 REST AREA

NORTH CAROLINA

DRAWN BY: DS CHECKED BY: BEB ISSUE DATE: 20 AUG 12 TIP. PROJ. NO. WBS. NO. COTRACT ID NO. FEDERAL- AID NO.

"SEAL" 22038

K-5001 IMS-040-5(49)325 | 41533.3.1 | DATE REVISIONS/SUBMISSIONS SHEET NO 01-10-13 CORRECTION

1 OF 2

#### NOTES:

1. FLOW & LOADS BASED ON ARI-1060 PERFORMANCE & CERTIFIED CORE.

ENERGY RECOVERY UNIT SCHEDULE

- 3. VENTILATION TYPE: STATIC PLATE, HEAT & HUMIDITY TRANSFER. 4. INCLUDE INTEGRAL DISPOSABLE FILTERS (OUTSIDE AND ROOM AIR) WITH MERV8 OR BETTER RATING.

(1) FOR WHEEL

- 5. INCLUDE SINGLE POINT ELECTRICAL POWER CONNECTION.
- 6. HOUSING SHALL BE GALVANIZED, .20 GAUGE (OR THICKER) STEEL WITH LAPPED CORNERS. 7. OR EQUALS BY SEMCO, OR THYBAR.

PRESSURE

0.50IN H2C

- 8. SERVICE ACCESS DOORS SHALL BE GASKETED & PROVIDE ACCESS FOR MAINTENANCE OF ALL COMPONENTS. 9. INCLUDE INSULATION ON ALL CASE WALLS & DOORS.
- 10. INCLUDE THERMALLY PROTECTED MOTORS WITH STARTERS.
- 11. UL LISTED 1995 12. PROVIDE WITH FUSED DISCONNECT SWITCH.

HE2X1NH

OUTSIDE AIR TEMP(F) & HUMIDITY

(DB) / (WB OR RH)

93F / 76F

WINTER

16F / 13

ERV OUTLET CONDITIONS

LEAVING AIR TEMP(F) & HUMIDITY

(DB) / (WB)

79.3F / 68.3F | 57.1F / 48.1

SUMMER WINTER

ENERGY RECOVERY (THERMAL) CAPACITY

COOLING CAPACITY HEATING CAPACITY

TOTAL

63.22

(MBH / TON)

29.6/2.4

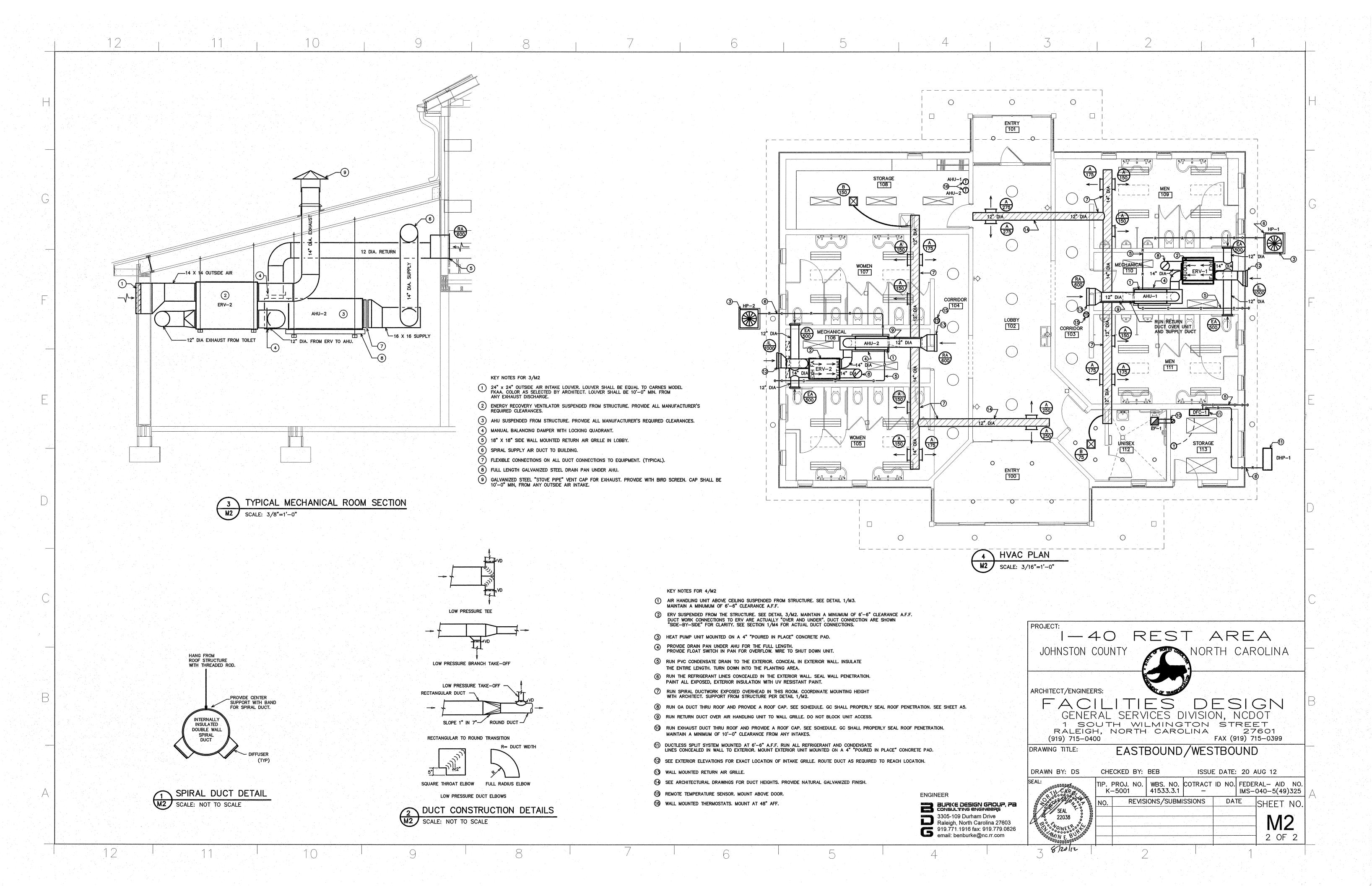
**ENGINEER** 

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3305-109 Durham Drive Raleigh, North Carolina 27603

919.771.1916 fax: 919.779.0826 email: benburke@nc.rr.com



DIVISION 16 - ELECTRICAL GENERAL LEGEND PART 1 - GENERAL PART 2 - PRODUCTS AND MATERIALS 3.4 IDENTIFICATION NAMEPLATES GENERAL NOTES 1.1 DESCRIPTION OF THE WORK 2.1 GENERAL A. Provide permanent name plates for all panelboards, safety switches, A. Work under this section includes, but is not necessarily A. All material shall be new and shall bear the manufacturer's name. wiring troughs, etc., for identification of equipment controlled, limited to, furnishing and installing the following: trade name, and UL label where such standard has been established 1 ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL 2X4 SUSPENDED LIGHT FIXTURE services, etc. Nameplates shall be securely and permanently 1. Lighting and power distribution system. for the particular material. Materials shall be the standard ELECTRICAL CODE AND ALL LOCAL CODES HAVING JURISDICTION. attached to equipment with stainless steel screws. 2. Provide lighting fixtures selected by owner products of manufacturer's regularly engaged in the manufacturer REFER TO LIGHTING PLAN AND LIGHT FIXTURE SCHEDULE (LETTER B. All empty conduit runs shall be identified and indicated with lamps to match. of the required type of equipment and the manufacturer's latest 2 ALL BRANCH CIRCUIT CONDUCTORS TO BE COPPER (SERVICE CONDUCTORS DENOTES THE TYPE OF LIGHT FIXTURE). 3. Wiring devices, boxes, cover plates, etc. where they terminate. 4. Source of power for all items of equipment. approved design. MAY BE ALUMINUM WITH SAME AMPACITY AS COPPER CONDUCTORS. C. Provide typewritten directory in each panelboard to 1. Boxes installed in concealed locations shall be set flush with RE-SIZE CONDUCTERS AND CONDUIT PER NEC.) clearly identify each circuit, service, etc. CEILING MOUNTED CABINET EXHAUST FAN 6. Other requirements and/or systems where shown. the finished surfaces. 3.5 JUNCTION AND/OR PULL BOXES B. All work shall be complete and items, equipment, etc., 2. Provide rated boxes in all fire barriers & walls installed per code. 3 ALL CIRCUITS TO BE 2 #12, 1 #12 GND IN 1/2" EMT CONDUIT AS A MINIMUM. DUPLEX RECEPTACLE - 120V; MOUNT 18" TO CENTER AFF shall be electrically connected for proper and correct A. Boxes shall be installed where necessary to avoid excessive runs 2.2 CONDUCTORS PROVIDE WIRING FOR LARGER CIRCUITS AS REQUIRED BY NEC. RIGID UNLESS NOTED OTHERWISE; WP INDICATES WEATHER PROOF, and/or too many bends between outlets. CONDUIT IS REQUIRED WHERE EXPOSED BELOW 8'-0" A.F.F. A. Conductors shall be color coded, sizes #8 and larger may be color GFI INDICATES GROUND FAULT CURRENT INTERRUPT PROTECTED. C. All work under this contract shall be installed in accordance taped on the job. Color coding shall be: Standard Practice. 3.6 PULL WIRE with the latest edition of the following codes and 4 ALL EMPTY CONDUIT RUNS IN EXCESS OF 10 FEET SHALL BE PROVIDED WITH B. Conductors shall be manufactured by Dodge, Southwire or approved A. Leave pull wire in each empty conduit run. standards insofar as they apply: QUADRAPLEX RECEPTACLE - 120V A PULL WIRE OR FISH TAPE/CORD. equal. Conductors shall meet the latest requirements of NEMA and 1. The 2008 National Electrical Code. IPCEA and shall be UL approved. A. All grounding shall be in accordance with Article 250 of the NEC. 2. The National Electrical Safety Code. 5 CONTRACTOR SHALL VERIFY THAT ALL DOOR SWINGS ARE CORRECT BEFORE LIGHT SWITCH - 120V C. Metallic sheathed "MC" cable cannot be used for this project. except 3. Underwriter's Laboratories, Inc., Standards and In addition, the following requirements shall be met: INSTALLING LIGHT SWITCH OUTLETS. for light whips 6'-0" or less. approved listinas. 1. Grounding conductors shall be installed as to permit the D. Conductors shall be spliced and taped as follows: NUMBER DENOTES THREE-WAY, FOUR-WAY, ETC. SWITCHING; 4. Electrical Testing Labatories standards. shortest and most direct path from equipment to ground. 6 ALL BRANCH CIRCUIT CONDUCTORS FROM THE PANEL TO THE FIRST OUTLET (M) DENOTES A SWITCH WITH INTEGRAL MOTION SENSOR FOR 1. Size #10 and #12, use Ideal "Wing Nuts" or T&B 5. 2012 North Carolina Building Codes, Latest Edition and Revisions All connections to grounding conductors shall be accessible. SHALL BE INCREASED TO THE NEXT LARGER SIZE WHERE THE LENGTH OF AUTOMATIC SHUT-OFF WITH UP TO 2 HOUR ADJUSTABLE DELAY. "Piggy" connectors. Connectors shall be rated for 6. 2012 North Carolina Energy Code. THE HOME RUN EXCEEDS 120 FEET ON 120V AND 208V CIRCUITS. 150 degrees C for use in recessed lighting fixtures. 2. Equipment ground continuity shall be maintained through D. The Electrical Contractor shall be licensed in the State of 2. Size #8 and larger shall be solderless screw and flexible metal conduit. MOTOR RATED SWITCH North Carolina and have all local licenses required for the 7 THE CORRECT NUMBER OF WIRES MAY NOT BE INDICATED FOR ALL CIRCUITS, screw-clamping type, smoothly covered and shaped 3. All wiring devices equipped with grounding connection shall ONLY THOSE WHERE CLARIFICATION IS NECESSARY. THE ELECTRICAL CONTRACTOR with rubber gum type with final cover vinyl plastic be solidly grounded to ground system with grounding E. Obtain all permits, licenses, inspections, etc., required SHALL PROVIDE ALL WIRES NECESSARY FOR THE PROPER FUNCTION OF THE JUNCTION BOX electrical type. In lieu of rubber gum and viny conductors. for the work and pay for the same. Furnish final SYSTEM WHETHER INDICATED ON DRAWINGS OR NOT. plastic type, factory fabricated approved preformed 4. The frame of all lighting fixtures shall be securely grounded certificate of inspection and approval from the electrical TELE/DATA OUTLET - PROVIDE J-BOX AND insulating covers may be used. All connectors shall to the equipment ground system with grounding conductors. inspector having jurisdiction prior to acceptance of the work. CONDUIT ABOVE THE LAY-IN CEILING. 8 THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS be UL approved. 5. All equipment enclosures, and non-current metallic parts of F. All work shall be done by skilled mechanics and shall PROVIDE CAT 5E WIRING BACK TO MTP. IN THE PANELBOARDS. 3. No split-bolt type connectors may be used. electrical equipment, raceway systems, etc., shall be present a neat, trim, workmanlike condition when complete. E. All branch wire and connections shall be copper and sized per effectively and adequately bonded to ground. SINGLE-POLE HOMERUN TO PANELBOARD 9 THE ELECTRICAL CONTRACTOR SHALL VERIFY THE TYPE OF CEILING SYSTEM WITH 1.2 INTENT National Electric Code. 6. All equipment enclosures, and non-current metallic parts of A. The intent of these specifications and the accompanying drawings F. All conductors shall be continuous without splice between junction, THE GENERAL CONTRACTOR TO INSURE THAT ALL LIGHTING FIXTURES ARE TWO-POLE OR 3-POLE HOMERUN TO PANELBOARD electrical equipment, raceway systems, etc., shall be outlet, device boxes, etc. No splicing will be permitted in COMPATIBLE WITH THE CEILING SYSTEM BEING INSTALLED. LIGHTING FIXTURES is to convey as reasonably as possible the requirements for a effectively and adequately bonded to ground. EXIT complete job ready for the building to operate. The Electrical panelboard cabinets, safety switches, etc. SHOULD NOT BE ORDERED UNTIL TYPE OF CEILING HAS BEEN VERIFIED. Contractor shall take this into consideration and include in his base G. All wiring in mechanical spaces shall be plenum rated. COMBINATION EXIT SIGN & EMERGENCY LIGHT 3.8 ELECTRICAL WORK IN CONNECTION WITH OTHER WORK bid allowance for contingencies as will allow him to provide H. Provide GFI protection within 6'-0" of any sink. 10 ELECTRICAL REQUIREMENTS INDICATED ON DRAWINGS MAY DIFFER FROM ACTUAL A. PLUMBING WORK: The Electrical Contractor shall furnish minor pieces of equipment and labor not specifically indicated but I. All multi-wire branch circuits shall comply with 2008 NEC, 210.4(B). EQUIPMENT FURNISHED. IF FURNISHED EQUIPMENT DIFFERS FROM RATINGS and install switches and devices as shown and electrically **EMERGENCY LIGHT** required for the job to operate properly, at no additional cost 2.3 WIRING DEVICES ON DRAWINGS CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER FOR connect electric water heaters, etc. All other electrical work to the Owner. APPROPRIATE ACTION TO BE TAKEN. A. Wiring devices shall be commercial grade by Bryant, Leviton, or required will be performed by the PLUMBING CONTRACTOR. EXIT EXIT LIGHT 1.3 COORDINATION approved equal. With matching cover. Color by Architect. B. HEATING AND AIR CONDITIONING WORK: The Electrical A. Coordinate work with other contractors. Notify Architect 2.4 CONDUIT Contractor shall provide all disconnect switches, starters, and 11 IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO BRANCH CIRCUIT WIRING of apparent conflicts early to expedite construction. A. EMT conduit shall be used where N.E.C. approved. associated hardware for the equipment furnished including all line and COORDINATE EXACT BREAKER REQUIREMENTS FOR ALL EQUIPMENT PRIOR TO If structural damage appears imminent, stop work and load side wiring and conduit. Final connections to the equipment will PART 3 - EXECUTION ---- SWITCH LEG ORDERING PANEL. ADJUST BREAKER AND WIRE SIZES AS REQUIRED. notify Architect for a decision before resuming be by the HVAC contractor. All control wiring will be accomplished by 3.1 CIRCUIT GROUNDING the HVAC contractor. Coordinate all work associated with the HVAC GROUND CONNECTION A. All circuits shall contain an insulated, green, copper grounding B. Locations shown are approximate. The drawings do not contractor. 12 PROVIDE BOXES, JACKS, WIRING AND CONDUIT FROM LOCATIONS SHOWN TO MTP conductor, sized in accordance with Table 250-95 of the NEC. give exact details as to elevations and locations of 3.9 CLEAN UP LOCATION. VERIFY EXACT REQUIREMENTS WITH OWNER. DISTRIBUTION PANELBOARD Grounding conductors shall be connected to equipment grounding A. During construction, keep the site clean of debris. Upon various pipes, fittings, ducts, conduit, etc., and do not bus in panelboard and securely attached and grounded to the completion, and before final inspection, clean up show all offsets and other installation details which may 13 ELECTRICAL CONTRACTOR SHALL PROVIDE ALL DISCONNECTS FOR MECHANICAL & PLUMBING MAIN TELEPHONE PANEL - PROVIDE FIRE RESISTANT 2'X2'X3/4" device or enclosure at the other end. the premises to remove all evidence of work. In addition be required. Coordinate all locations with architect before any PLYWOOD BACKBOARD, TWO 2" CONDUITS BACK TO TELEPHONE EQUIPMENT. DISCONNECTS SHALL BE PER MANUFACTURES RECOMMENDATIONS AND FUSED 3.2 GROUNDING TYPE CONVENIENCE OUTLETS AND SWITCHES upon completion of construction leave equipment clean. PER NAME PLATE. PROVIDE NEMA 3R ENCLOSURES ON EXTERIOR. COORDINATE FUSE SIZES. SERVICE ENTRY POINT AND ONE 2" CONDUIT BACK TO CABLE 1.4 SHOP DRAWINGS A. Outlets and switches shall be solidly grounded to equipment grounding 3.10 GUARANTEE TV SERVICE ENTRY POINT. FIELD VERIFY EXACT LOCATIONS. A. Shop drawings shall be submitted for all electrical equipment installed system with a green colored insulated conductor. Electrical connections A. Guarantee all materials and labor included in the electrical work 14 THE EC SHALL MEET WITH THE ARCHITECT AND TENANT PRIOR TO INSTALLING OUTLET including, wiring devices, and cover plates. These may consist of the shall be continuous from equipment around bus in panelboard to the hex for a period of one year from date of final acceptance by the BOXES TO VERIFY LOCATIONS AND MOUNTING HEIGHTS OF RECEPTACLES AND TELEPHONE DISCONNECTING MEANS AS REQUIRED BY CODE; 208V, CLASS 3130 manufacturer's standard catalog or tear sheets and shall have the nut on the convenience outlet or switch. Owner. Any part or parts of the work or equipment which prove to exact items being offered clearly identified. be defective during the guarantee period shall be replaced at no 3.3 MOTORS LIGHT SENSOR. ORIENTATION AS DIRECTED BY MANUFACTURER. additional cost to the Owner. A. All motors shall be connected to conduit system with short length (minimum length 24" and maximum length 36") of flexible liquidtight EXTERIOR PHOTOCELL. PROVIDE PHOTOCELL(S) AS REQUIRED conduit. TO SWITCH EXTERIOR FIXTURES. PROVIDE SHIELDING AS REQUIRED TO BLOCK ARTIFICIAL LIGHT. COORDINATE LOCATION. - STRUCTURAL CEILING 30" MINIMUM WIDTH OF EQUIP NO PIPING, DUCTS, OR EQUIPMENT INTERIOR LIGHTING LOAD CALCULATIONS FOREIGN TO THE ELECTRICAL INSTALLATION **ELECTRICAL SYSTEMS AND EQUIPMENT** SHALL PENETRATE THIS ZONE. PROJECT Johnston County I-40 Rest Area METHOD OF COMPLIANCE - SUSPENDED CEILING PRESCRIPTIVE X PERFORMANCE ENERGY COST BUDGET 2706 Provide a standard riser diagram which indicates designated points for check metering -SPACE CONTINUES THRU Provide a standard panel schedule description which identifies different enduse loads. SPECIFIED W/TRACK (@ 30W/FT) FEET OF TRACK SUSPENDED CEILING. - ELECTRICAL EQUIPMENT LAY-IN CEILING WATTS PER # INTERIOR FIXTURES Lighting schedule: - EVEN WITH FRONT EDGE - ELECTRICAL EQUIPMENT SPACE SHALL OF EQUIPMENT BE NOT LESS THAN THE WIDTH AND DEPTH OF THE EQUIPMENT. lamp type required in fixture number of lamps in fixture ballast type used in fixture - DEDICATED ELECTRICAL number of ballasts in fixture 1744 SPECIFIED EQUIP. WORKING CLEARANCE 1-40 REST AREA TOTAL (w) total wattage in fixture total interior wattage specified vs. allowed 1744 va / 2047 va DEDICATED ELECTRICAL NORTH CAROLINA ADDITIONAL (w) 0 EXPLAIN SPACE-ABOVE AND BELOW JOHNSTON COUNTY ALLOWED (w/sf) Equipment schedules with motors ( not used for mechanical systems) NA 0.95 (Electrical/Mechanical) 0.65 (Corridor/Transition) number of phases 0.63 (Active Storage) minimum efficiency TOTAL (w) 2047 ALLOWED motor type 303 REMAINING THIS FIGURE ILLUSTRATES THE WORKING - FLOOR # of poles ARCHITECT/ENGINEERS: SPACE IN FRONT OF THE ELECTRICAL CONNECTED TRACK EQUIPMENT REQUIRED BY SECTION 110.26 OTHER TIES OF THE N.E.C. DESIGN DESIGNER STATEMENT TOTAL ELECTRICAL EQUIPMENT DEDICATED SPACE 800 CONNECTED 125% GENERAL SERVICES DIVISION, NCDOT I hereby certify that the design of this building complies WHERE THE CONDITIONS ARE AS FOLLOWS: PER ARTICLE 110.26.F.1 OF N.E.C. with the electrical systems, services systems, and ELECTRICAL EQUIPMENT WORKING CLEARANCE EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING SPACE AND NO LIVE OR GROUNDED PARTS ON THE 1 SOUTH WILMINGTON STREET equipment requirements of the 2012 North Carolina State TABLE 220.12 (w/sf) PER ARTICLE 110.26 OF N.E.C. Building Code, Energy Edition. TOTAL (w) RALEIGH, NORTH CAROLINA 27601 DEDICATED SPACE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE 6765 TABLE 220.12 PARTS ON BOTH SIDES OF THE WORKING SPACE THAT

BURICE DESIGN GROU CONSULTING ENGINEERS 3305-109 Durham Drive Raleigh, North Carolina 27603

FAX (919) 715-0399 (919) 715-0400 EASTBOUND/WESTBOUND DRAWING TITLE: DRAWN BY: WBT CHECKED BY: BEB ISSUE DATE: 20 AUG 12 TIP. PROJ. NO. | WBS. NO. |COTRACT ID NO. | FEDERAL— AID NO 41533.3.1 IMS-040-5(49)325 K-5001 REVISIONS/SUBMISSIONS DATE SHEET NO. BURKE DESIGN GROUP, Pa SEAL 22038

919.771.1916 fax: 919.779.0826 email: benburke@nc.rr.com

**ENGINEER** 

ARE EFFECTIVELY GUARDED BY INSULATING MATERIALS.

EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING

SPACE AND GROUNDED PARTS ON THE OTHER SIDE

OF THE WORKING SPACE. CONCRETE, BRICK OR TILE WALLS SHALL BE CONSIDERED AS GROUNDED.

EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK

VOLTAGE TO

SCALE: NOT TO SCALE

ELECTRICAL CLEARANCES

WORKING CLEARANCES

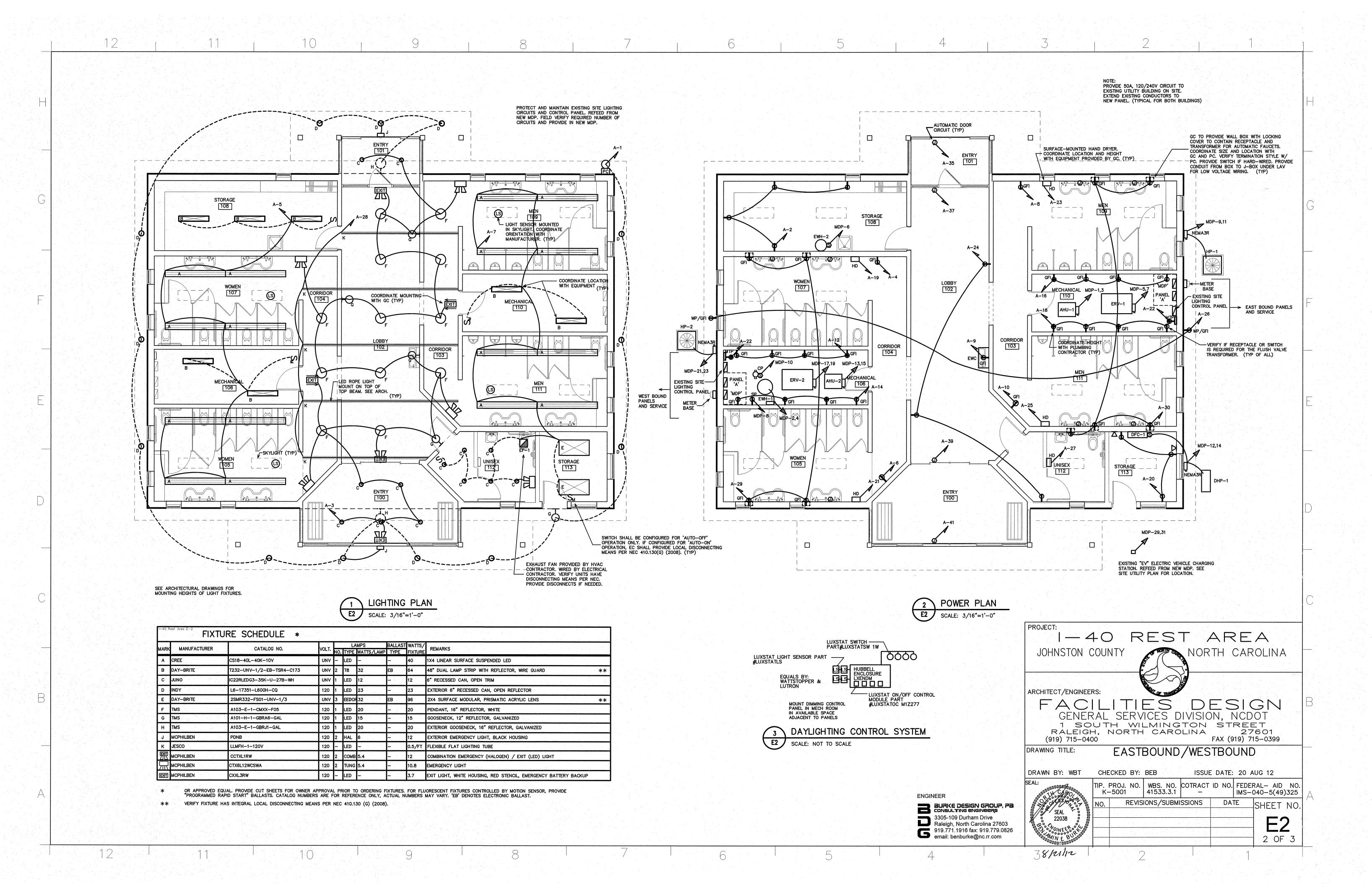
CONDITION: 1

MIN. CLEAR DISTANCE IN FEET

3-1/2

SCALE: NOT TO SCALE

1 OF 3

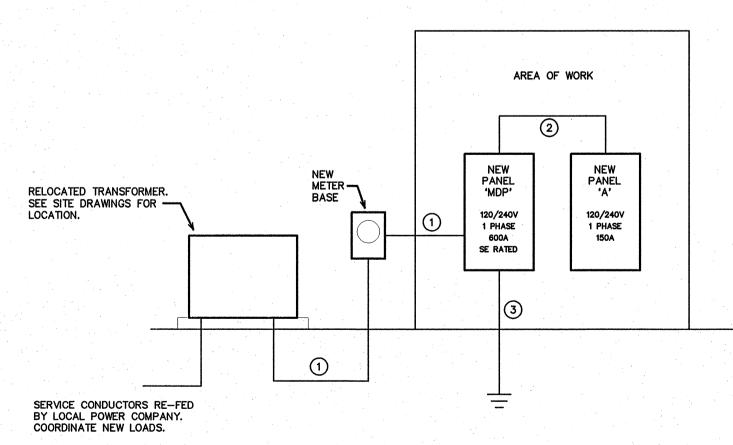


MAKE: CUTLER HAMMER RATING: 120/240V 1 PHASE 3 WIRE 600A MAIN CIRCUIT BREAKER NEW PANEL 'MDP' TYPE: CH LOAD CENTER MOUNTING: SURFACE EQUIPMENT GROUND BUS \_\_\_\_\_XYES 🗆 NO OR APPROVED EQUAL | MINIMUM AIC: VERIFY SERVICE ENTRY RATED \_\_\_\_ \_⊠YES □NO FED FROM: 600A SERVICE CKT WATTS PER PHASE | CKT | NEUTRAL | CKT | WATTS PER PHASE | CKT SERVICE BRKR A B NO A B NO A B BRKR SERVICE 1 2 2250 30A EWH-1 5628 3 4 FAN 6.9 FLA, HEAT 40.0 FLA 2250 5 6 1650 984 20A EWH-2 (1.65 KW) 15A 984 | 7 | - | 8 | 540 20A SOLAR PUMP 20A CIRC PUMP 0.8 FLA 40A 1296 20A DUCTLESS SPLIT SYSTEM COMP 19.9 RLA, FAN 1.2 FLA 10.8 FLA 60A 30A ROADWAY LIGHTS FAN 6.9 FLA, HEAT 40.0 FLA 1175 984 15A 984 | 19 | 19 | 20 | 1175 21 22 1175 2532 23 24 25 26 1175 40A COMP 19.9 RLA, FAN 1.2 FLA 1175 ROADWAY LIGHTS VENDING BUILDING 60A 5760 27 28 1175 29 30 1175 5760 EV CHARGING STATION 60A 5760 | 31 | - | 32 | \_\_\_\_ SITE UTILITY BUILDING 3000 50A 3000 35 36 250 20A ROADWAY LIGHTING CONTROLS 37 | --- 38 | ---20A ---SPACE 20A PANEL 'A' 150A 41 42 11599 20A 600A BUS 21591 21172 SUB-TOTALS 'A' SUB-TOTALS 'B' 32808 32808 600A LUGS 32808 32808 SUB-TOTALS 'B' TOTAL CONNECTED LOAD 600A FEED 54399 53980 GRAND TOTAL VERIFY SIZE 453A 450A AMPS/PHASE NEC ALLOWABLE DEMAND FACTORS DIVERSIFIED LOAD SUMMARY 1 DEMAND FACTORS PER NEC 220 B TOTAL DIVERSIFIED LOAD FACTOR ① 2 LARGEST OF: NEC TABLE 220.12 OR ② 125% 3383 3382 125% 5875 5875 ≤10KVA@100% 2160 1800 GENERAL LIGHTING SITE LIGHTING CONNECTED LOAD (3) NEC TABLE 220.56 GENERAL USE | SIGN | (4) NEC 220.51 (5) NEC 220.43A, 200 VA/LINEAR FT 6 NON-COINCIDENT LOADS, LARGEST OF THE TWO LOADS IS COUNTED PHASE (TOTAL VA) 59530 58193 117723 496A 485A ② 2706 SQ.FT. X 2.0 W/SQ.FT. X 125% = 6765 VA

1-40 Rest Area E-3			AMMER R				E 3 WRE			UIT BREAKER				
NEW PANEL— 'A'	TYPE: _	CH LOAD	CENTER M	OUNTIN	G: SURFA	CE		EQUIPMENT GROUND BUSXYES □NO						
FED FROM: PANEL 'MDP'	OR AP	PROVED E	QUAL M	INIMUM	AIC: VE	RIFY		SERVICE EI	NTRY R	ATED□YES ⊠NO				
LOAD	CKT	WATTS P	ER PHASE	CKT	NEUTR/	AL CKT	WATTS	PER PHASE	CKT	LOAD				
SERVICE	BRKR	A	В	NO	A B	NO	A	В	BRKR	SERVICE				
XTERIOR LIGHTS	20A	359		1		<b>∽</b> 2	720		20A	REC: STORAGE				
IGHTS	i i		404	3		<b>-</b>		360		REC: WOMENS				
IGHTS		640	\$4. J	5		$\bigcirc$ 6	360			REC: WOMENS				
IGHTS			832	7		<b>∽</b> 8		360		REC: MENS				
wc		600		9			360			REC: MENS				
UTOMATIC DOOR			600	11		12		300		FLUSH VALVE CONTROLS				
UTOMATIC DOOR		600		13		- 14	300			FLUSH VALVE CONTROLS				
UTOMATIC DOOR			600	15		<u> 16</u>		300		FLUSH VALVE CONTROLS				
UTOMATIC DOOR		600		17		<b>√</b> 18	300			FLUSH VALVE CONTROLS				
IAND DRYER		11.	2300	19				540		REC: STORAGE				
AND DRYER		2300		21			360			REC: MTP				
AND DRYER		· · · · · · · · · · · · · · · · · · ·	2300	23		<u></u>		540		REC: CORRIDOR				
AND DRYER		2300		25		<u> </u>	360			REC: EXTERIOR				
AND DRYER			2300	27		<u> </u>		400		LED ROPE LIGHT				
UTOMATIC FAUCETS	- V	720		29		<u>√ 30</u>	720		<b>V</b>	AUTOMATIC FAUCETS				
PACE				31		$\bigcirc$ 32		****		SPACE				
PACE		<del></del>		33		$\overline{}$ 34				SPACE				
PACE				35		<u>√ 36</u>				SPACE				
PACE				37		$\overline{}$ 38				SPACE				
PACE				39		$\overline{}$ 40				SPACE				
PACE				41		<u> </u>				SPACE				
	TALS 'B'	7399	9336		150A	BUS	3480	2800	SUB-	TOTALS 'A'				
				IXXX	_150A	LUGS	8119	9336	TTO SUB_TOTALS 'P'					
					150A	FEED	11599	12136		TOTAL CONNECTED LOAD				
					VERIF		97A	101A		S/PHASE				
NEC ALLOWABLE DEMAND	EACTO	De l	DIVERS	EIED	LOAD SI		<del></del>		1 / Mil 5	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
THEC ALLOWABLE DEMAND	TACIO	1/3				DEMAND	<del></del>		T					
① DEMAND FACTORS PER NEC			LOAD	TYPI	E	FACTOR	A	В	TOTAL DIVERSIFIED LOAD					
2 LARGEST OF: NEC TABLE 22 CONNECTED LOAD	20.12 OR		GENERAL L		2		3383	3382		6765				
3) NEC TABLE 220.56			TRACK LIG			125% ≤10KVA@100%	2160	1800		 3960				
			RECEPTACL	ES		>10KVA@50%				ation days there				
(4) NEC 220.51 (5) NEC 220.43A, 200 VA/LINE/	AR FT		MOTORS A	_	RGEST	125%	750 7840	165 8700		915 16540				
6) NON-COINCIDENT LOADS, LA	ATERS	1. OTHERS	125%	7840										
OF THE TWO LOADS IS COU	KITCHEN E													
		FIX. ELEC.												
		SIGN	=		125%									
			MISC	PHASE (	100%	14133	14047		 28180					
		l		<del></del>	FILASE (	TOTAL VA			VO	T AMOS TOTAL				
2706 SQ.FT. X 2.0 W/SQ.FT. X 1	25% = 67	65 VA				AMPS	118A	117A		VOLTS = 117A AMPS				

g												
EQUIPMENT WIRING SCHEDULE												
EQUIPMENT	MCA	МОСР	VOLTS	PH	WIRE SIZE							
AHU-1 & 2	58.5A	60A	240V	1	2-#6, 1-#10 GND IN 3/4" CONDUIT							
CU-1 & 2	26.0A	40A	240V	1	2-#8, 1-#10 GND IN 3/4" CONDUIT							
ERV-1 & 2	10.25A	20A	240V	1	2-#12, 1-#12 GND IN 1/2" CONDUIT							
EWH-1		30A	240V	1	2-#10, 1-#10 GND IN 1/2" CONDUIT							

THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL EQUIPMENT ELECTRICAL REQUIREMENTS INCLUDING VOLTAGE, PHASE & AMPERAGE PRIOR TO ROUGH-IN AND RELEASING GEAR. ADJUST BREAKER, WIRE SIZES, ETC. AS REQUIRED.

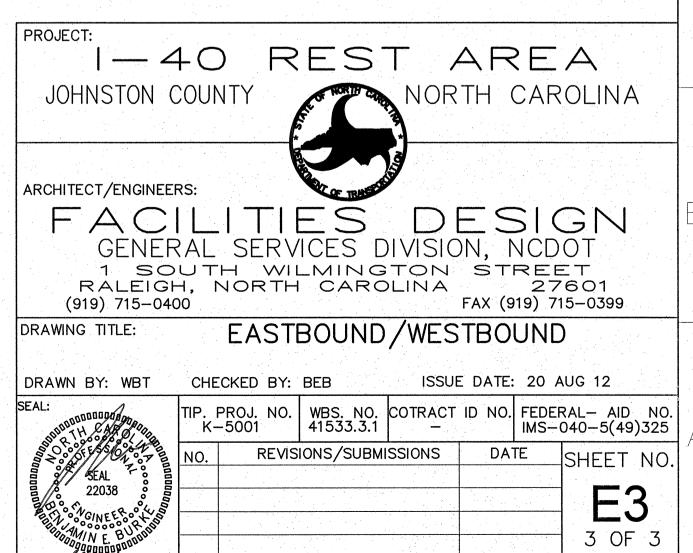


RISER DIAGRAM

#### RISER WIRING SCHEDULE

- (1) 600A: (2 SETS) 3-#350MCM IN 2 1/2" CONDUIT
- 2) 150A: 3-#1/0, 1-#6 CU GND, IN 2" CONDUIT
- 3) #1 CU GND TO BUILDING STEEL, FOUNDATION STEEL AND METALLIC WATER MAIN AND #6 CU GND TO 10' X 5/8" DRIVEN GROUND ROD

NOTE:
UNLESS OTHERWISE NOTED ALL OTHER CIRCUITS ARE 20A, 120VOLT.
PROVIDE 2-#12, 1-#12 CU GND IN 1/2" CONDUIT. SEE EQUIPMENT SCHEDULES FOR ADDITIONAL WIRE SIZES.



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