STATE	T.I.P. #	SHEET #	of
NC	K-4906	1	

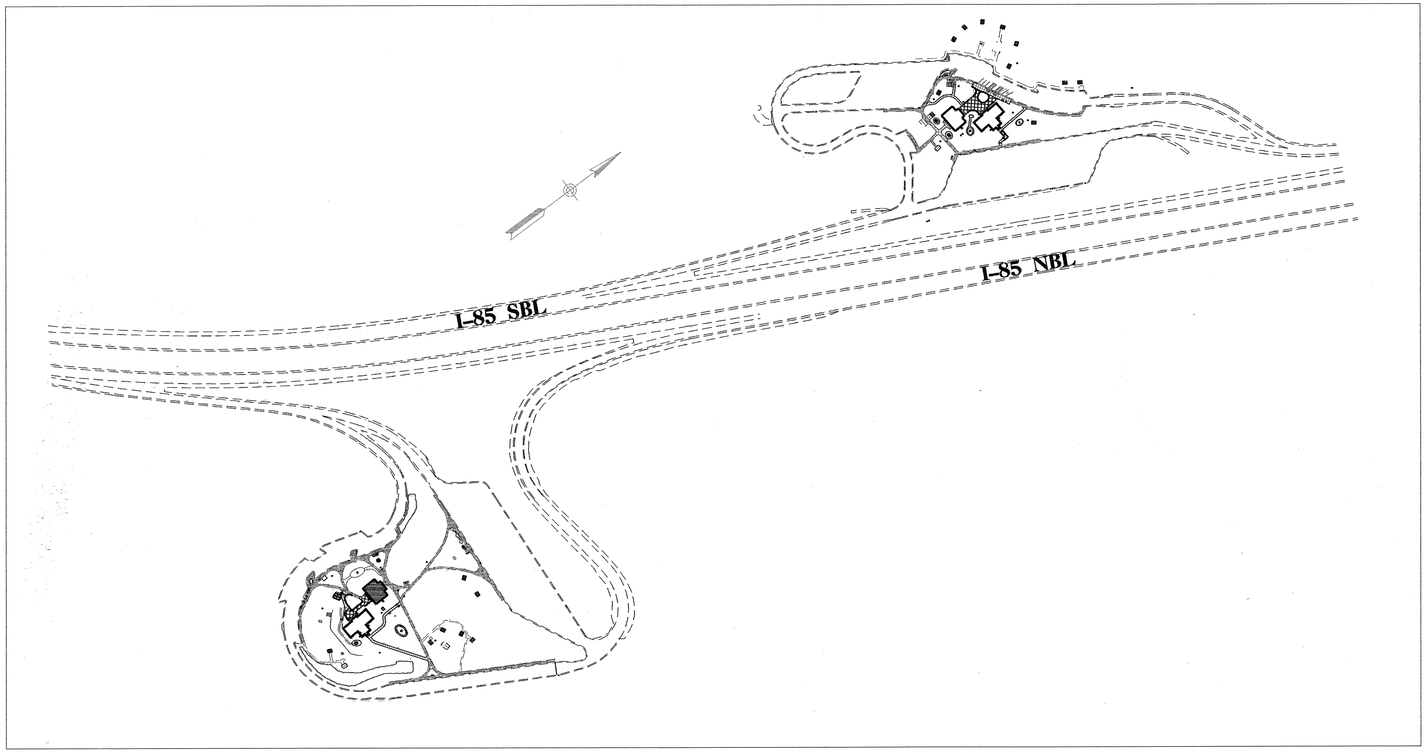
WBS #	F.A. Project #	Description
39928.1.1		P.E.
		R/W
39928.3.ST1	STM-085-2(70)59	CONST.

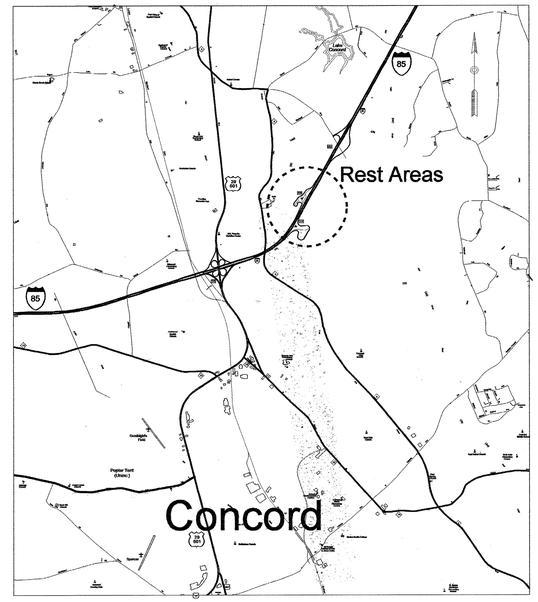
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CABARRUS COUNTY

Location: Rest Area I–85 North and South Bound Lanes, north of NC – 3 in Concord

Type of Work: Rest Area Renovation; New Building, Renovation of Old Service Building, Site, and Utility Work





2006 Standard Specifications

Letting Date

OCTOBER 20, 2009

Site /Landscape Design	Site /Utility Design	Architectural/Engineering
LANDSCAPE DESIGN & DEVELOPMENT	***REST AREA SECTION***	***FACILITIES DESIGN***
Roadside Environmental Unit 1 South Wilmington Street 1557 Mail Service Center Raleigh, North Carolina 27601 Office (919) 733–2920 Fax (919) 733–9810	Roadside Environmental Unit 1 South Wilmington Street 1557 Mail Service Center Raleigh, North Carolina 27601 Office (919) 733–2920 Fax (919) 733–9810	General Services Division, NCDOT 1 South Wilmington Street 1525 Mail Service Center Raleigh, North Carolina 27601 Office (919) 715–0400 Fax (919) 715–0399

Contract : C202460 K - 4906 I-85 NBL/SBL, Cabarrus County Rest Areas

North Carolina Department of Transportation
Division of Highways
1 South Wilmington Street Raleigh, North Carolina

Cabarrus County, I – 85
North and South Bound Lanes
Rest Area Renovation

Plan :

Plans Drawn By:	CSM – NR
Scale	Not to Scale
Date	4 / 30 / 09
Letting Date	OCTOBER 20, 2009
Sheet Description	Title Sheet
Sheet #	1

ROADWAY STANDARD DRAWINGS

The following Roadway Standards appear in 'Roadway Standard Drawings' - Highway Design Branch - N. C. Department of Transportation - Raleigh, N.C., July, 2006 Edition and are applicable to this project and by reference hereby are considered a part of these plans:

Standard Number	Title
840.00	Concrete Base Pad for Drainage Structure
840.15	Brick Drop Inlet
840.16	Drop Inlet Frame and Grates
846.01	Concrete Curb, Gutter and Curb & Gutter
848.05	Wheelchair Ramp

INDEX OF SHEETS

Sheet Number	Sheet Name
1	Title Sheet
2	Index of Sheets and List of Standard Drawings
3	Summary of Quantities
	Site Drawings
L - NBL - 1	Existing Site Plan
L - NBL - 2	Proposed Site Plan
L - NBL - 3	Construction Limits and Staging Plan
L - NBL - 4A	Demolition Plan A
L - NBL - 4B	Demolition Plan B
L - NBL - 5	Grading Plan
L - NBL - 6A	Layout and Dimension Plan A
L - NBL - 6B	Layout and Dimension Plan B
L - NBL - 7A	Planting Plan A
L - NBL - 7B	Planting Plan B
L - NBL - 7C	Planting Plan C
L - SBL - 1	Existing Site Plan
L - SBL - 2	Proposed Site Plan
L - SBL - 3	Construction Limits and Staging Plan
L - SBL - 4	Demolition Plan
L - SBL - 5	Grading Plan
L - SBL - 6	Layout and Dimension Plan
L - SBL - 7A	Planting Plan A
L - SBL - 7B	Planting Plan B
L - 1	Picnic Shelter Detail
L - 2	Picnic Table Detail
L - 3	NBL Wall Details
L - 4	SBL Wall Details
L - 5	Wall Details
L - 6	Wall Details
L - 7	Wall Details
L - 8	Wall Details
L - 9	Sidewalk and Plaza Pavement Details
L - 10	Concrete Steps, Cheek Walls and Handrail Details
L - 11	Miscellaneous Details
L - 12	Split Rail Fence Details
L - 13	Rain Garden Details
L - 14	Planting Details
SU - NBL - 1	NBL Existing Site Utility Plan
SU - NBL - 2	NBL Proposed Site Utility Plan
SU - NBL - 3	NBL Proposed Storm Water Plan
SU - SBL - 1	SBL Existing Site Utility Plan
SU - SBL - 2	SBL Proposed Site Utility Plan
SU - SBL - 3	SBL Proposed Storm Water Plan
EC - 1	Erosion Control Plan NBL
EC - 2	Erosion Control Plan SBL
	Building Drawings
T1 - T2	Building Title Sheet and Design Data
A1 - A6	Rest Area Building Plans
S1 - S3	Rest Area Structural Plans
P1 - P5	Rest Area Plumbing Plans
M1 - M2	Rest Area Mechanical Plans
E1 - E2	Rest Area Electrical Plans
VA1 - VA4	Vending Building Plans
VP1	Vending Building Plumbing Plans
VM1	Vending Building Mechanical Plans
VE1	Vending Building Electrical Plans

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 – 85 Cabarrus County Rest Area Renovation

REU ENGINEER : CONNIE MORGAN

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # : K – 4906

FEDERAL I.D. # : IMS – 085–2(64)59

FINAL DESIGN DATE : April 30, 2009

SHEET DESCRIPTION: I – 85 Cabarrus Rest Area

Index of Sheets and List of Standard Drawings

SHEET NO : 2

TOTAL SHEET NO : 3

$$$$$$SYSTIME$$$$$$
$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
$$$$$$USERNAME$$$$$$

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT

SUMMARY OF QUANTITIES

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0022000000-E	225	650	CY	UNCLASSIFIED EXCAVATION
0248000000-N	SP	Lump Sum		GENERIC GRADING ITEM LANDSCAPE GRADING
2286000000-N	840	7	EA	MASONRY DRAINAGE STRUCTURES
2364000000-N	840	7	EA	FRAME WITH TWO GRATES, STD 840.16
2535000000-E	846	16.7	LF	**"X **" CONCRETE CURB (6" X 15")
2549000000-E	846	82	LF	2'-6" CONCRETE CURB & GUTTER
2591000000-E	848	659	SY	4" CONCRETE SIDEWALK
2605000000-N	848	3	EA	CONCRETE WHEELCHAIR RAMPS
2738000000-E	SP	359	SY	GENERIC PAVING ITEM 4" CONCRETE PAVEMENT
3575000000-E	SP	1,110	LF	GENERIC FENCING ITEM TEMPORARY CHAIN LINK FENCE, 72" FABRIC
3578000000-N	SP	2	EA	GENERIC FENCING ITEM DOUBLE GATES, 72" HIGH, 8' WIDE, 16' OPENING
5691200000-E	1520	355	LF	6" SANITARY GRAVITY SEWER
5768000000-N	1520	6	EA	SANITARY SEWER CLEAN-OUT
6000000000-E	1605	1,560	LF	TEMPORARY SILT FENCE
6006000000-E	1610	70	TON	STONE FOR EROSION CONTROL, CLASS A
6012000000-E	1610	45	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	0.5	ACR	TEMPORARY MULCHING
6018000000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	0.25	TON	FERTILIZER FOR TEMPORARY SEED-ING
6030000000-E	1630	55	CY	SILT EXCAVATION
6084000000-E	1660	0.5	ACR	SEEDING & MULCHING
6087000000-E	1660	0.5	ACR	MOWING
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
6102000000-E	1664	3,636	SY	SODDING
6108000000-E	1665	0.25	TON	FERTILIZER TOPDRESSING
6640000000-N	1670	4	EA	GENERIC PLANTING ITEM ARCTOSAPHYLOS UVA-URSI 'MASSA-CHUSETTS' 6-12", #1 CONT
6640000000-N	1670	26	EA	GENERIC PLANTING ITEM ATHYRIUM NIPONICUM 'PICTUM' #1 CONT
6640000000-N	1670	3	EA	GENERIC PLANTING ITEM BERGENIA CORDIFOLIA #1 CONT
6640000000-N	1670	35	EA	GENERIC PLANTING ITEM CALLICARPA DICHOTOMA 'ISSAI' 18-24", #3 CONT
6640000000-N	1670	1	EA	GENERIC PLANTING ITEM CALYCANTHUS FLORIDUS 'ATHENS' 18-24", #3 CONT
6640000000-N	1670	3	EA	GENERIC PLANTING ITEM CERCIS CANADENSIS 'HEARTS OF GOLD' PPAF 5-6', B&B OR CONT
6640000000-N	1670	1	EA	GENERIC PLANTING ITEM CHAMAECYPARIS OBTUSA 'CONFU-CIOUS' 18-24", N, #3 CONT
6640000000-N	1670	2	EA	GENERIC PLANTING ITEM CHIONANTHUS VIRGINICUS 'EMER-ALD KNIGHT' 4-5', B&B OR CONT
6640000000-N	1670	26	EA	GENERIC PLANTING ITEM CLETHRA ALNIFOLIA 'HUMMING-BIRD' 18-24", #3 CONT
6640000000-N	1670	8	EA	GENERIC PLANTING ITEM COTONEASTER DAMMERI 'STRIEB'S FINDING' 18-24", #3 CONT
6640000000-N	1670	12	EA	GENERIC PLANTING ITEM CROCOSMIA 'LUCIFER' #1 CONT
6640000000-N	1670	3	EA	GENERIC PLANTING ITEM CRYPTOMERIA JAPONICA 'LITTLE DIAMOND' #3 CONT
6640000000-N	1670	6	EA	GENERIC PLANTING ITEM ECHINACEA PURPUREA 'KIM'S KNEE HIGH' #SP4
6640000000-N	1670	13	EA	GENERIC PLANTING ITEM FOTHERGILLA GARDENII 18-24", #3 CONT
6640000000-N	1670	5	EA	GENERIC PLANTING ITEM GARDENIA JASMINOIDES 'CHUCK HAYES' 18-24", #3 CONT
6640000000-N	1670	13	EA	GENERIC PLANTING ITEM HELLEBORUS ORIENTALIS #1 CONT
6640000000-N	1670	32	EA	GENERIC PLANTING ITEM HEUCHERA X 'FROSTED VELVET' #1 CONT
6640000000-N	1670	39	EA	GENERIC PLANTING ITEM HOSTA 'DREAM WEAVER' #1 CONT
6640000000-N	1670	32	EA	GENERIC PLANTING ITEM ILEX CORNUTA 'CARISSA' 18-24", #3 CONT
6640000000-N	1670	32	EA	GENERIC PLANTING ITEM ILEX VERTICILLATA 'RED SPRITE' (10% TO BE JIM DANDY)* 18-24", #3 CONT
6640000000-N	1670	14	EA	GENERIC PLANTING ITEM ILEX X 'LIBERTY' TM PP#12009 3-4', #5 CONT
6640000000-N	1670	1	EA	GENERIC PLANTING ITEM ILEX X 'ROBIN' TM PP#9486 3-4', #5 CONT
6640000000-N	1670	3	EA	GENERIC PLANTING ITEM ILLICIUM FLORIDANUM 'HALLEY'S COMET' 18-24", #3 CONT, MIN 4 CANES
6640000000-N	1670	58	EA	GENERIC PLANTING ITEM IRIS GERMANICA 'SUGAR BLUES' 2-3 FAN, BR
6640000000-N	1670	343	EA	GENERIC PLANTING ITEM IRIS SIBERICA 'CAESAR'S BROTH-ER' 2-3 FAN, BR
6640000000-N	1670	21	EA	GENERIC PLANTING ITEM JUNCUS EFFUSUS #SP4, DEEP POT
6640000000-N	1670	8	EA	GENERIC PLANTING ITEM JUNIPERUS HORIZONTALIS 'WIL-TONII' 12-15", #1 CONT
6640000000-N	1670	12	EA	GENERIC PLANTING ITEM JUNIPERUS PROCUMBENS 'NANA' 12-15", #1 CONT
6640000000-N	1670	6	EA	GENERIC PLANTING ITEM LAGERSTROEMIA INDICA 'APALA-CHEE' 5-6', B&B
6640000000-N	1670	13	EA	GENERIC PLANTING ITEM LAGERSTROEMIA INDICA X FAUR-IERI 'MUSKOGEE', 5-6' B&B
6640000000-N	1670	23	EA	GENERIC PLANTING ITEM LEUCOTHOE FONTANESIANA 'NANA' 18-24", #3 CONT
6640000000-N	1670	2	EA	GENERIC PLANTING ITEM LOROPETALUM CHINENSE 'GREEN ELF' #3 CONT
6640000000-N	1670	3	EA	GENERIC PLANTING ITEM LYSIMACHIA NUMMULARIA 'AUREA' 9-12", #SP4, MIN 3 RUNNERS
6640000000-N	1670	1,336	EA	GENERIC PLANTING ITEM MUHLENBERGIA CAPILLARIS #SP3 28/FLAT, DEEP POTS
6640000000-N	1670	41	EA	GENERIC PLANTING ITEM PHLOX SUBULATA 'EMERALD CUSH-ION BLUE' #SP4, MIN 3 RUNNERS
6640000000-N	1670	7	EA	GENERIC PLANTING ITEM QUERCUS NUTTALLI 2-1/2 - 3" CALIPER, B&B
6640000000-N	1670	14	EA	GENERIC PLANTING ITEM RHODODENDRON X 'PJM' 18-24", #3 CONT
6640000000-N	1670	4	EA	GENERIC PLANTING ITEM ROSA 'MEIPSIDUE' PP#11583 18-24", #3 CONT, MIN 3 CANES
6640000000-N	1670	49	EA	GENERIC PLANTING ITEM ROSA 'RADCOR' PP# PPAF 18-24", #3 CONT, MIN 3 CANES
6640000000-N	1670	26	EA	GENERIC PLANTING ITEM TERNSTROEMIA GYMNANTHERA 2-3', #7 CONT
6640000000-N	1670	1	EA	GENERIC PLANTING ITEM THUJA OCCIDENTALIS 'GOLDEN TUFFET' #3 CONT
6640000000-N	1670	6	EA	GENERIC PLANTING ITEM THUJA OCCIDENTALIS 'SMARAGD' 3-4', #5 CONT
6640000000-N	1670	1	EA	GENERIC PLANTING ITEM VIBURNUM TINUS 'SPRING BOU-QUET' 24-30", #5 CONT
6640000000-N	1670	18	EA	GENERIC PLANTING ITEM VITEX AGNUS-CASTUS ABBEVILLE BLUE 4-5', B&B OR CONT MATCHED 3-5 STEM
6640000000-N	1670	2	EA	GENERIC PLANTING ITEM YUCCA FILIMENTOSA 'COLOR GUARD' #3 CONT
6645000000-N	SP	28	EA	GENERIC PLANTING ITEM INSTALLATION #7 OR #10 JAPAN-ESE MAPLES
6650000000-E	1670	495	CY	MULCH FOR PLANTING
6655000000-E	1670	16	M/G	WATER FOR PLANTING
6665000000-E	1670	3,448	SY	POSTEMERGENT HERBICIDAL TREAT-MENT FOR PLANT BEDS
6670000000-E	1670	3,448	SY	PREEMERGENT HERBICIDAL TREAT-MENT FOR PLANT BEDS
6677000000-E	SP	1.5	TON	GENERIC PLANTING ITEM GRANITE SCREENINGS
6677000000-E	SP	19	TON	GENERIC PLANTING ITEM RAIN GARDEN CREEK STONE
6677000000-E	SP	1	TON	GENERIC PLANTING ITEM RAIN GARDEN DRYSTACK STONE
6895000000-E	SP	36.6	LF	HANDRAIL ON STEPS
6900000000-E	SP	379	CY	TOPSOIL
6910000000-N	SP	1	EA	PICNIC SHELTER, SINGLE PICNIC TABLE
6970000000-N	SP	2	EA	GENERIC REST AREA ITEM 1" GATE VALVE AND BOX
6970000000-N	SP	2	EA	GENERIC REST AREA ITEM 3" GATE VALVE AND BOX
6970000000-N	SP	21	EA	GENERIC REST AREA ITEM 4" STORM DRAIN CLEANOUT
6970000000-N	SP	1	EA	GENERIC REST AREA ITEM 8" PVC/ABS-DWV, SCH40 DRAIN PIPE WITH CONCRETE APRON
6970000000-N	SP	2	EA	GENERIC REST AREA ITEM CONNECTION TO SEWER MANHOLE/ SEWER LINE
6970000000-N	SP	1	EA	GENERIC REST AREA ITEM ELECTRICAL JUNCTION BOX 12"
6970000000-N	SP	2	EA	GENERIC REST AREA ITEM FLAGPOLE
6970000000-N	SP	4	EA	GENERIC REST AREA ITEM FLAGPOLE SPOTLIGHTS
6970000000-N	SP	3	EA	GENERIC REST AREA ITEM RELOCATE PAYPHONE AND PEDESTAL
6970000000-N	SP	4	EA	GENERIC REST AREA ITEM RELOCATE POST TOP LIGHT AND POLE
6975000000-N	SP	Lump Sum		GENERIC REST AREA ITEM ELECTRICAL INSTALLATION FOR THE N & SBL REST AREA SERVICE BUILDING
6975000000-N	SP	Lump Sum		GENERIC REST AREA ITEM ELECTRICAL INSTALLATION FOR THE N & SBL VENDING BUILDING
6975000000-N	SP	Lump Sum		GENERIC REST AREA ITEM GENERAL CONSTRUCTION FOR THE N & SBL I-85 REST AREA BUILDING
6975000000-N	SP	Lump Sum		GENERIC REST AREA ITEM GENERAL CONSTRUCTION FOR THE N & SBL I-85 VENDING BUILDING
6975000000-N	SP	Lump Sum		GENERIC REST AREA ITEM HEAT & AIR COND INSTALLATION FOR THE N & SBL REST AREA SERVICE BUILD-ING
6975000000-N	SP	Lump Sum		GENERIC REST AREA ITEM HEAT AND AIR COND INSTALLATION FOR THE N & SBL VENDING BUILD-ING
6975000000-N	SP	Lump Sum		GENERIC REST AREA ITEM LANDSCAPE CLEARING & GRUBBING
6975000000-N	SP	Lump Sum		GENERIC REST AREA ITEM PLUMBING INSTALLATION FOR THE N & SBL REST AREA BUILDING
6975000000-N	SP	Lump Sum		GENERIC REST AREA ITEM PLUMBING INSTALLATION FOR THE N & SBL VENDING BUILDING
6975000000-N	SP	Lump Sum		GENERIC REST AREA ITEM SITE DEMOLITION
6980000000-E	SP	235	LF	GENERIC REST AREA ITEM 1" PVC WATER PIPE, SCH 80
6980000000-E	SP	263	LF	GENERIC REST AREA ITEM 12" PVC/ABS-DWV, SCH 40 DRAIN PIPE
6980000000-E	SP	66	LF	GENERIC REST AREA ITEM 2" SLEEVE FOR UNDERGROUND ELEC/PHONE SERVICE (SCH 40 PVC)
6980000000-E	SP	356	LF	GENERIC REST AREA ITEM 3" PVC WATER PIPE, SCH 80
6980000000-E	SP	334	LF	GENERIC REST AREA ITEM 4" PVC SCH 40 SIDEWALK SLEEVE PIPE
6980000000-E	SP	1,411	LF	GENERIC REST AREA ITEM 6" PVC/ABS-DWV, SCH 40 DRAIN PIPE
6980000000-E	SP	55	LF	GENERIC REST AREA ITEM 6" TRENCH DRAIN
6980000000-E	SP	302	LF	GENERIC REST AREA ITEM 8" PVC/ABS-DWV, SCH 40 DRAIN PIPE
6980000000-E	SP	720	LF	GENERIC REST AREA ITEM PRECAST CONCRETE WALL COPING
6980000000-E	SP	25	LF	GENERIC REST AREA ITEM PVC WATER PIPE, SCH 80 REPAIR
6980000000-E	SP	165	LF	GENERIC REST AREA ITEM SPLIT RAIL FENCE
6980000000-E	SP	1,678	LF	GENERIC REST AREA ITEM TREE PROTECTION FENCE
6982000000-E	SP	1,167	SF	GENERIC REST AREA ITEM DECORATIVE PAVER ON CONCRETE BASE
6982000000-E	SP	328	SF	GENERIC REST AREA ITEM FREESTANDING SEAT WALL
6982000000-E	SP	1,092	SF	GENERIC REST AREA ITEM RETAINING WALL
6982000000-E	SP	251	SF	GENERIC REST AREA ITEM RETAINING/PLANTER SEAT WALL
6985000000-E	SP	4.1	CY	GENERIC REST AREA ITEM CONCRETE STEPS WITH CONCRETE CHEEK WALLS
6985000000-E	SP	194	CY	GENERIC REST AREA ITEM PLANTER SOIL MIX
6985000000-E	SP	120	CY	GENERIC REST AREA ITEM RAIN GARDEN SOIL MIX

NCDOT - ROADSIDE ENVIRONMENTAL UNIT
LANDSCAPE DESIGN & DEVELOPMENT
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HTTP://WWW.NCDOT.ORG/DOH/OPERATIONS/DP_CHIEF_ENG/ROADSIDE/

I – 85 Cabarrus County Rest Area Renovation

REU ENGINEER : CONNIE MORGAN

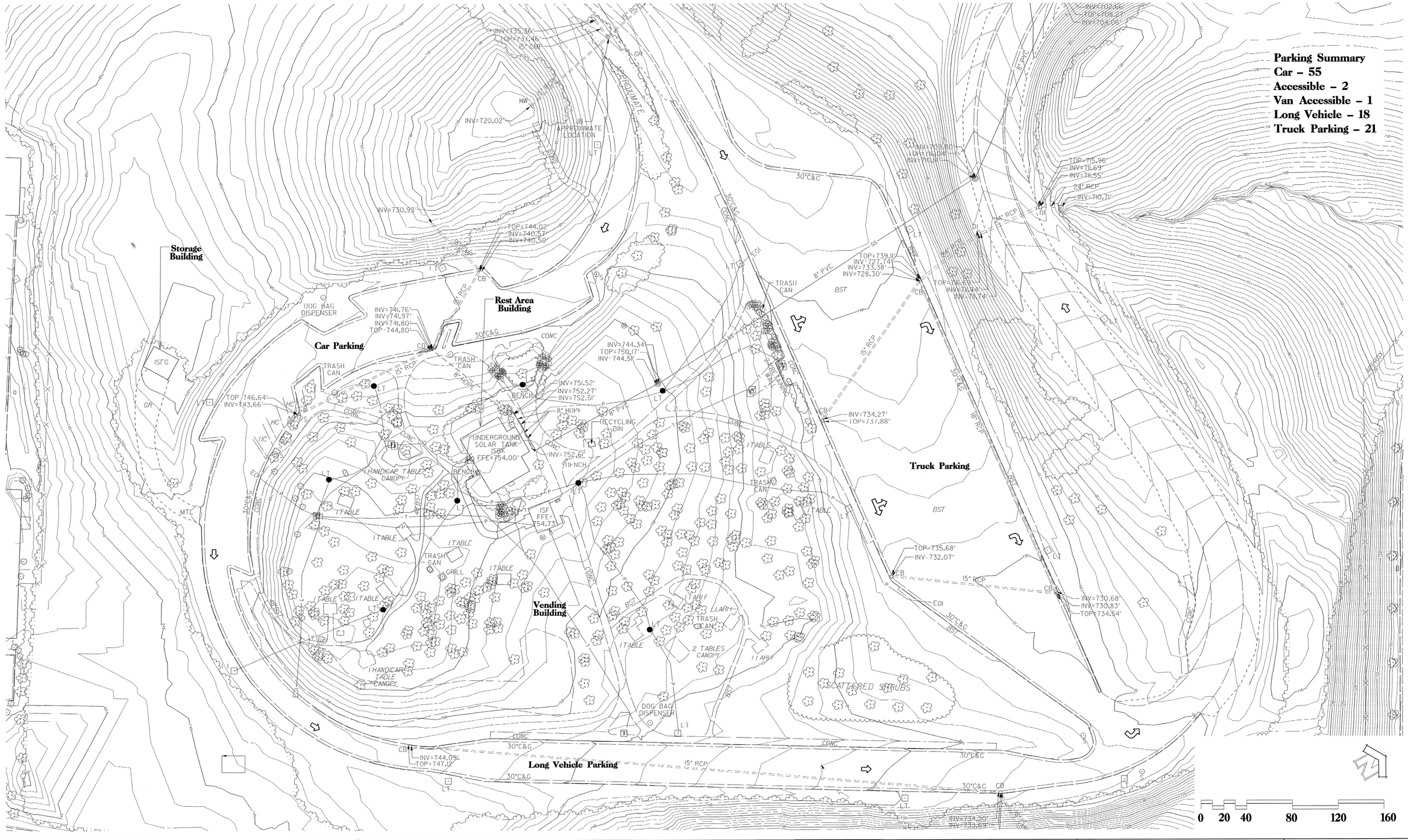
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # : K - 4906
FEDERAL I.D. # : IMS - 085-2(64)59
FINAL DESIGN DATE : April 30, 2009

SHEET DESCRIPTION: I – 85 Cabarrus Rest Area — Summary of Quantities

SHEET NO : 3
TOTAL SHEET NO : 3

$$$$$$SYSTIME$$$$$ $$$$$$$$$$$$DGN$$$$$$$$$$$$$ $$$$USERNAME$$$$$



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I – 85 Cabarrus County Rest Area Renovation

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1447 ROBERT N. KOPETSKY 5-14-09

CONNIE MORGAN

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # :	K – 4906
FEDERAL I.D. # :	IMS – 085–2(64)59
FINAL DESIGN DATE :	April 30, 2009

SHEET DESCRIPTION:

I – 85 Cabarrus Rest Area
North Bound Lane
Existing Site Plan

SHEET NO : L – NBL – 1

TOTAL SHEET NO : 11

Proposed Recycling Center and Relocated Trash Receptacle (Recycling Container to be furnished by NCDOT)

Existing Sidewalk

Proposed Rain Garden F (Rooftop runoff treatment) See Rain Garden Details

Proposed Relocation of 2 Telephone Pedestals and 1 Trash Receptacle

Flag Pole with Spot Lights, Concrete Curb, Low Retaining Wall and Granite Screenings; See Detail

Truck Parking

Car Parking

Existing Trees

Tree Protection Fence

Proposed 4" Concrete sidewalk, Match to existing sidewalk

Wooded Area

Existing Sidewalk

Proposed HC Picnic Shelter

Existing Rest Area Building Renovated to Vending and Storage Building FFE 754.0

Tree Protection Fence

Preserve Specimen Oak

Proposed Retaining and Seat Wall H

Relocated Trash Receptacle

Proposed 4" Concrete sidewalk, Match to existing sidewalk

Split Rail Fence, return end rails to ground within plant bed

Proposed Plaza Area; 4" Concrete Pavement and Decorative Pavers

Proposed Seat Wall F

Trench Drain

Relocated Magazine Rack

Proposed Seat Wall G

Drop Inlet

Proposed Rest Area Building FFE 753.5

Proposed 8" PVC Drain Pipe with Concrete Aprons

Wooded Area

Proposed Retaining Wall I

Drainage Swale

Relocated Post Top Light

Proposed Rain Garden G (Rooftop runoff treatment) See Rain Garden Details

Drainage Swale

Split Rail Fence

Proposed Sleeves

Wooded Area

Proposed 4" Concrete Sidewalk

Drop Inlet

Relocated Post Top Light

Split Rail Fence, return end rails to ground within plant bed

Proposed 4" Concrete sidewalk, Match to existing sidewalk

Existing Sidewalk

Existing Sidewalk

Existing Asphalt Path and Picnic Facilities

Daylily Bed (to stay)

Pet Waste Disposal Station

Existing Street Light

Long Vehicle and Truck HC Parking

Note:
Existing site contains three trash receptacles and 3 Ash Urns that will be relocated to locations indicated on the plan, or if not shown, they will be located as directed by the Engineer in the field. Two post top lights will be relocated as shown.

0 10 20 40 60 80 100

Key

- Dashed – Existing
- Solid – Proposed or Relocated
- Ash Urn
- Trash Receptacle
- Picnic Table
- Picnic Shelter
- Accessible Picnic Table or Shelter
- Yard Hydrant
- Irrigation Hydrant
- Pet Waste Disposal Station
- Recycling Center
- Flag Pole
- Wood Bench
- Telephone Booth
- Telephone Pedestal
- Accent Light or Spot Light
- Post Top Light
- Street Light
- Wheelchair Ramp
- Wheelchair Ramp
- Depressed Curb
- Accessible Parking Space
- FO Fiber Optic Line
- G Gas Line
- P Power Line
- S Storm Sewer
- SS Sanitary Sewer
- T Telephone Line
- W Water Line
- CB Drainage Box: Catch Basin(CB), Drop Inlet(DI), Junction Box(JB)
- SS Manhole: Sanitary Sewer(SS), Telephone(T), etc.
- Water Meter
- Water Valve
- Water /Fire Hydrant
- CO Clean – Out
- Telephone Box
- Power Transformer
- HVAC Unit
- Indicates Removal
- Underground Sleeve

$$$$USERNAME$$$$
$$$$SYSTIME$$$$
$$$$DGN$$$$

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I – 85 Cabarrus County Rest Area Renovation

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1447 5.14.09 ROBERT N. KOPETSKY

ENGINEER : CONNIE MORGAN

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # : K – 4906

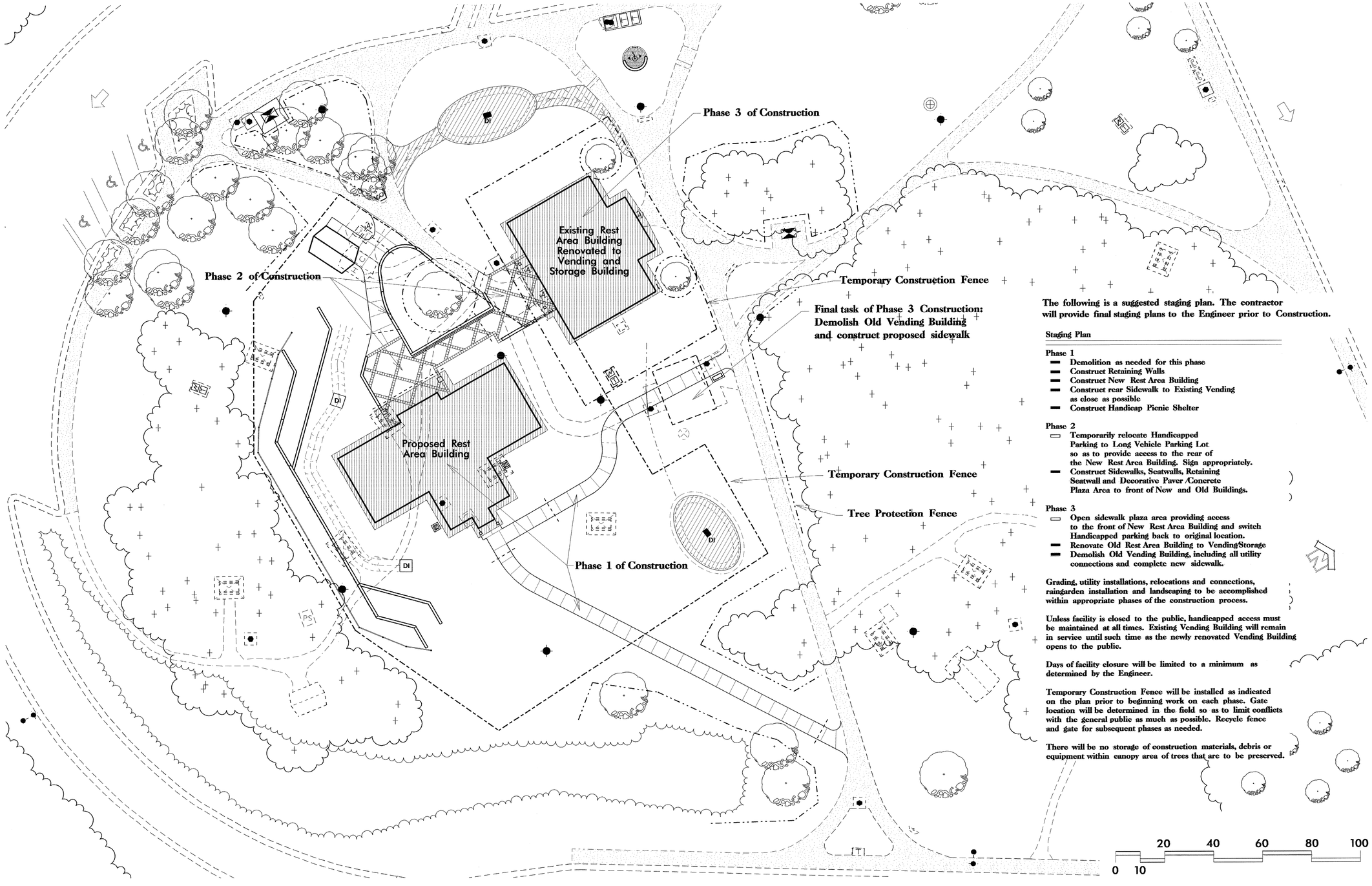
FEDERAL I.D. # : IMS – 085–2(64)59

FINAL DESIGN DATE : April 30, 2009

SHEET DESCRIPTION: I – 85 Cabarrus Rest Area / North Bound Lane / Proposed Site Plan

SHEET NO : L – NBL – 2

TOTAL SHEET NO : 11



The following is a suggested staging plan. The contractor will provide final staging plans to the Engineer prior to Construction.

Staging Plan

Phase 1
- Demolition as needed for this phase
- Construct Retaining Walls
- Construct New Rest Area Building
- Construct rear Sidewalk to Existing Vending as close as possible
- Construct Handicap Picnic Shelter

Phase 2
- Temporarily relocate Handicapped Parking to Long Vehicle Parking Lot so as to provide access to the rear of the New Rest Area Building. Sign appropriately.
- Construct Sidewalks, Seatwalls, Retaining Seatwall and Decorative Paver /Concrete Plaza Area to front of New and Old Buildings.

Phase 3
- Open sidewalk plaza area providing access to the front of New Rest Area Building and switch Handicapped parking back to original location.
- Renovate Old Rest Area Building to Vending/Storage
- Demolish Old Vending Building, including all utility connections and complete new sidewalk.

Grading, utility installations, relocations and connections, raingarden installation and landscaping to be accomplished within appropriate phases of the construction process.

Unless facility is closed to the public, handicapped access must be maintained at all times. Existing Vending Building will remain in service until such time as the newly renovated Vending Building opens to the public.

Days of facility closure will be limited to a minimum as determined by the Engineer.

Temporary Construction Fence will be installed as indicated on the plan prior to beginning work on each phase. Gate location will be determined in the field so as to limit conflicts with the general public as much as possible. Recycle fence and gate for subsequent phases as needed.

There will be no storage of construction materials, debris or equipment within canopy area of trees that are to be preserved.

Key

- Dashed – Existing
- Solid – Proposed or Relocated
- Ash Urn
- Trash Receptacle
- Picnic Table
- Picnic Shelter
- Accessible Picnic Table or Shelter
- Yard Hydrant
- Irrigation Hydrant
- Pet Waste Disposal Station
- Recycling Center
- Flag Pole
- Wood Bench
- Telephone Booth
- Telephone Pedestal
- Accent Light or Spot Light
- Post Top Light
- Street Light
- WCR — Wheelchair Ramp
- Wheelchair Ramp
- DC — Depressed Curb
- Accessible Parking Space
- FO — Fiber Optic Line
- G — Gas Line
- P — Power Line
- S — Storm Sewer
- SS — Sanitary Sewer
- T — Telephone Line
- W — Water Line
- CB — Drainage Box: Catch Basin(CB), Drop Inlet(DI), Junction Box(JB)
- SS — Manhole: Sanitary Sewer(SS), Telephone(T), etc.
- Water Meter
- Water Valve
- Water /Fire Hydrant
- CO — Clean – Out
- Telephone Box
- Power Transformer
- HVAC Unit
- Indicates Removal
- Underground Sleeve

$$$$$$SYSTIME$$$$$
$$$$$$USERNAME$$$$$

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/

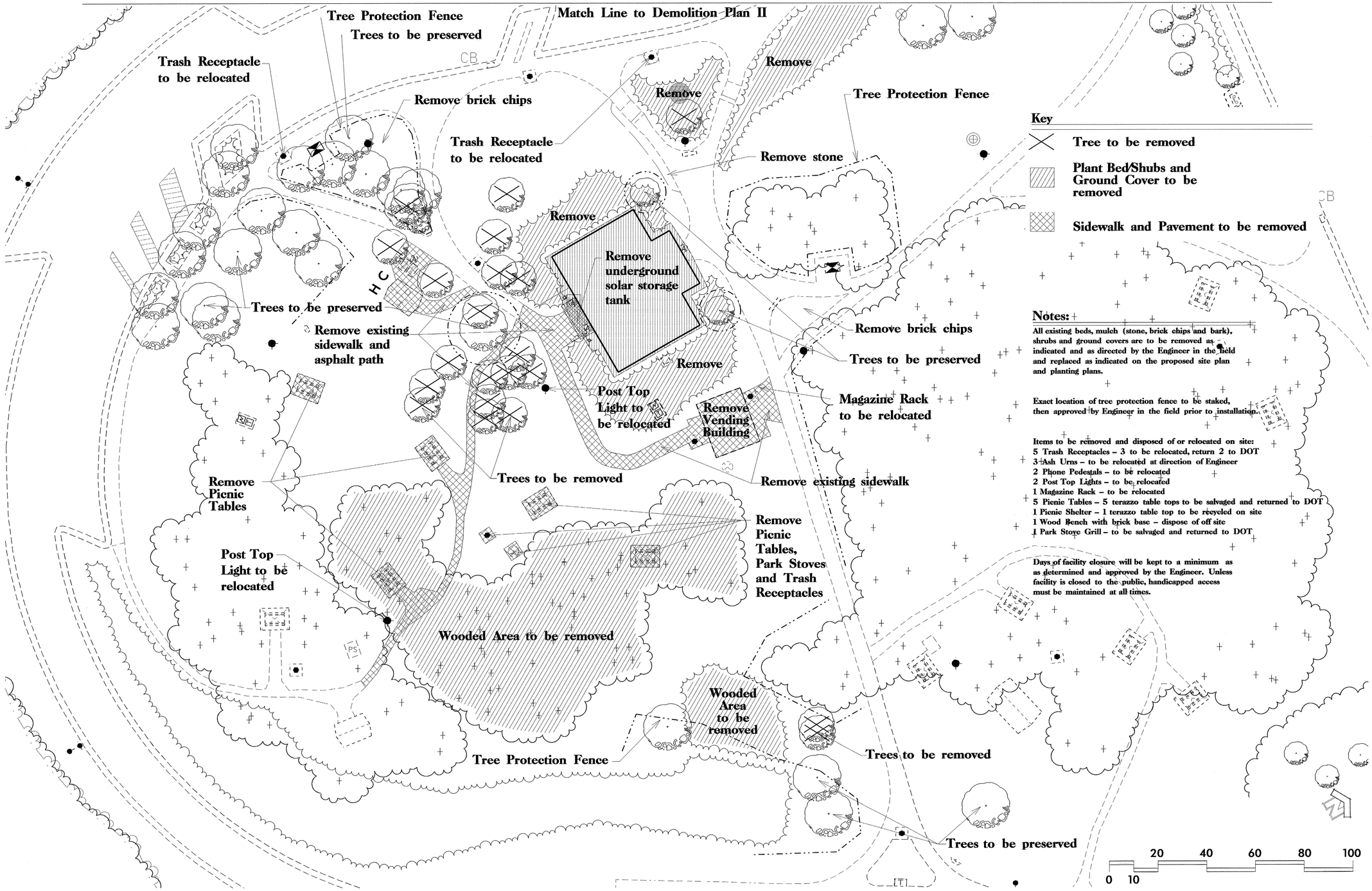
I – 85 Cabarrus County Rest Area Renovation

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 15447 ROBERT N. KOPETSKI 5-14-09

CONNIE MORGAN

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # :	K – 4906
FEDERAL I.D. # :	IMS – 085–2(64)59
FINAL DESIGN DATE :	April 30, 2009
SHEET DESCRIPTION:	I – 85 Cabarrus Rest Area North Bound Lane Construction Limits and Staging Plan
SHEET NO :	L – NBL – 3
TOTAL SHEET NO :	11



Key

- Tree to be removed
- Plant Bed/Shubs and Ground Cover to be removed
- Sidewalk and Pavement to be removed

Notes:

All existing beds, mulch (stone, brick chips and bark), shrubs and ground covers are to be removed as indicated and as directed by the Engineer in the field and replaced as indicated on the proposed site plan and planting plans.

Exact location of tree protection fence to be staked, then approved by Engineer in the field prior to installation.

Items to be removed and disposed of or relocated on site:
5 Trash Receptacles – 3 to be relocated, return 2 to DOT
3 Ash Urns – to be relocated at direction of Engineer
2 Phone Pedestals – to be relocated
2 Post Top Lights – to be relocated
1 Magazine Rack – to be relocated
5 Picnic Tables – 5 terazzo table tops to be salvaged and returned to DOT
1 Picnic Shelter – 1 terazzo table top to be recycled on site
1 Wood Bench with brick base – dispose of off site
1 Park Stove Grill – to be salvaged and returned to DOT

Days of facility closure will be kept to a minimum as as determined and approved by the Engineer. Unless facility is closed to the public, handicapped access must be maintained at all times.

Key

- Dashed – Existing
- Solid – Proposed or Relocated
- Ash Urn
- Trash Receptacle
- Picnic Table
- Picnic Shelter
- Accessible Picnic Table or Shelter
- Yard Hydrant
- Irrigation Hydrant
- Pet Waste Disposal Station
- Recycling Center
- Flag Pole
- Wood Bench
- Telephone Booth
- Telephone Pedestal
- Accent Light or Spot Light
- Post Top Light
- Street Light
- Wheelchair Ramp
- Wheelchair Ramp
- Depressed Curb
- Accessible Parking Space
- FO — Fiber Optic Line
- G — Gas Line
- P — Power Line
- S — Storm Sewer
- SS — Sanitary Sewer
- T — Telephone Line
- W — Water Line
- CB — Drainage Box: Catch Basin(CB), Drop Inlet(DI), Junction Box(JB)
- SS — Manhole: Sanitary Sewer(SS), Telephone(T), etc.
- Water Meter
- Water Valve
- Water /Fire Hydrant
- CO — Clean – Out
- T — Telephone Box
- Power Transformer
- HVAC Unit
- Indicates Removal
- Underground Sleeve

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I – 85 Cabarrus County Rest Area Renovation

ENGINEER : CONNIE MORGAN

NORTH CAROLINA LANDSCAPE ARCHITECT SEAL 1447 ROBERT N. KOPETSKY 5-14-09

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

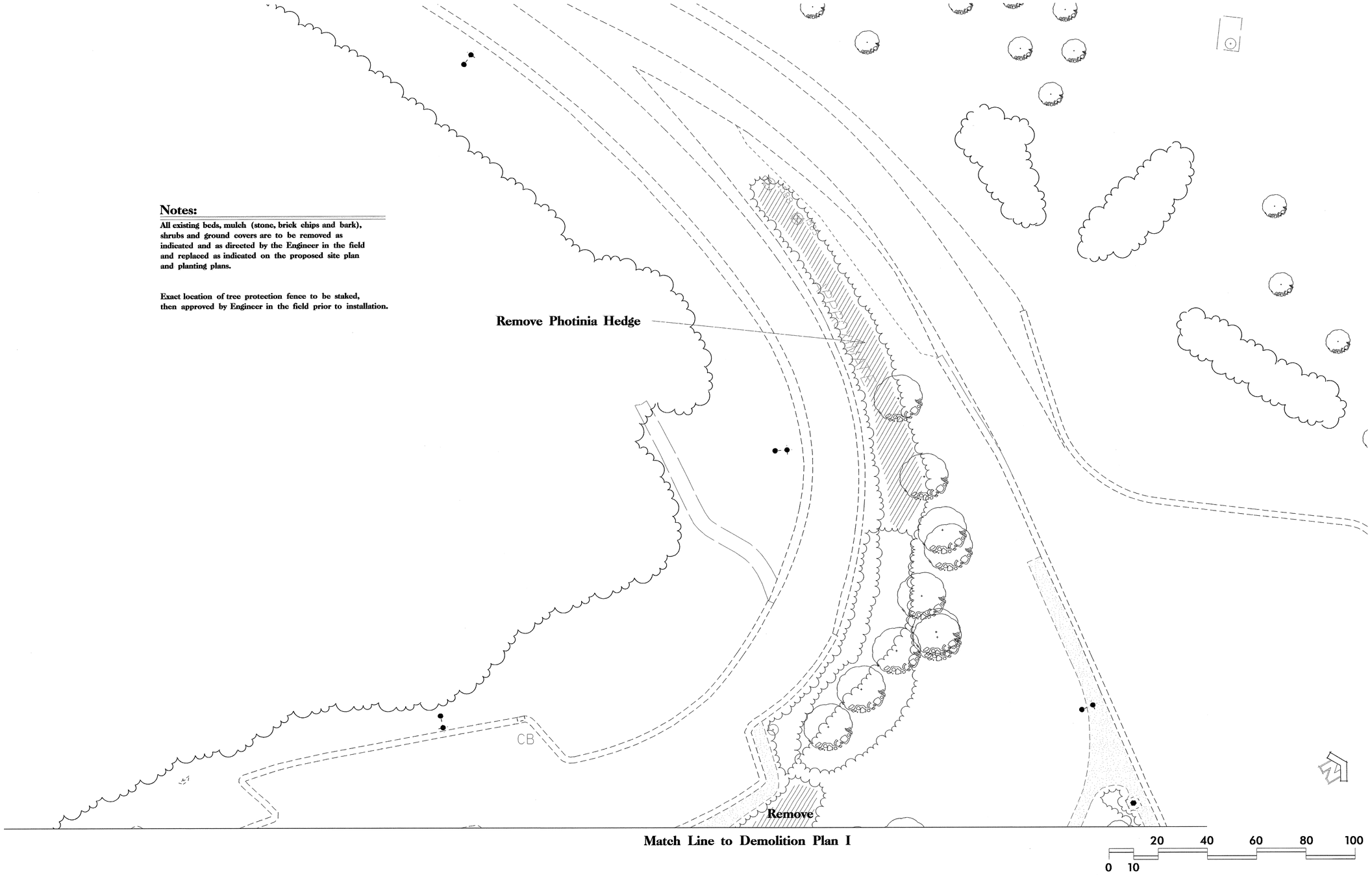
TIP # :	K – 4906
FEDERAL I.D. # :	IMS – 085–2(64)59
FINAL DESIGN DATE :	April 30, 2009
SHEET DESCRIPTION:	I – 85 Cabarrus Rest Area North Bound Lane Demolition Plan A
SHEET NO :	L – NBL – 4A
TOTAL SHEET NO :	11

$$$$$$$SYSTEM$$$$$$$
$$$$$$$DESIGN$$$$$$$$$$$$$$$$$$
$$$$$$$USERNAME$$$$$$$

Notes:

All existing beds, mulch (stone, brick chips and bark), shrubs and ground covers are to be removed as indicated and as directed by the Engineer in the field and replaced as indicated on the proposed site plan and planting plans.

Exact location of tree protection fence to be staked, then approved by Engineer in the field prior to installation.



Key

- Dashed – Existing
- Solid – Proposed or Relocated
- Ash Urn
- Trash Receptacle
- Picnic Table
- Picnic Shelter
- Accessible Picnic Table or Shelter
- Yard Hydrant
- Irrigation Hydrant
- Pet Waste Disposal Station
- Recycling Center
- Flag Pole
- Wood Bench
- Telephone Booth
- Telephone Pedestal
- Accent Light or Spot Light
- Post Top Light
- Street Light
- WCR — Wheelchair Ramp
- Wheelchair Ramp
- DC — Depressed Curb
- Accessible Parking Space
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I – 85 Cabarrus County Rest Area Renovation

NORTH CAROLINA LANDSCAPE ARCHITECT 1447 ROBERT N. KOPETSKY 5-14-09

ENGINEER : CONNIE MORGAN

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # :	K – 4906
FEDERAL I.D. # :	IMS – 085–2(64)59
FINAL DESIGN DATE :	April 30, 2009
SHEET DESCRIPTION:	I – 85 Cabarrus Rest Area North Bound Lane Demolition Plan B
SHEET NO :	L – NBL – 4B
TOTAL SHEET NO :	11

$$$$USERNAME$$$$ $$$$SYSTIME$$$$ $$$$DGN$$$$$$$$$$$$$$$$$$$$

Truck Parking

Key

- - - -	Dashed – Existing
——	Solid – Proposed or Relocated
Ⓐ	Ash Urn
	Trash Receptacle
	Picnic Table
	Picnic Shelter
	Accessible Picnic Table or Shelter
	Yard Hydrant
△	Irrigation Hydrant
	Pet Waste Disposal Station
	Recycling Center
	Flag Pole
	Wood Bench
	Telephone Booth
T	Telephone Pedestal
	Accent Light or Spot Light
	Post Top Light
	Street Light
WCR	Wheelchair Ramp
	Wheelchair Ramp
DC	Depressed Curb
	Accessible Parking Space
—FO—	Fiber Optic Line
— G —	Gas Line
— P —	Power Line
— S —	Storm Sewer
—SS—	Sanitary Sewer
— T —	Telephone Line
— W —	Water Line
CB	Drainage Box: Catch Basin(CB), Drop Inlet(DI), Junction Box(JB)
SS	Manhole: Sanitary Sewer(SS), Telephone(T), etc.
	Water Meter
	Water Valve
	Water /Fire Hydrant
CO	Clean – Out
T	Telephone Box
	Power Transformer
	HVAC Unit
	Indicates Removal
- - - -	Underground Sleeve

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I – 85 Cabarrus County Rest Area Renovation

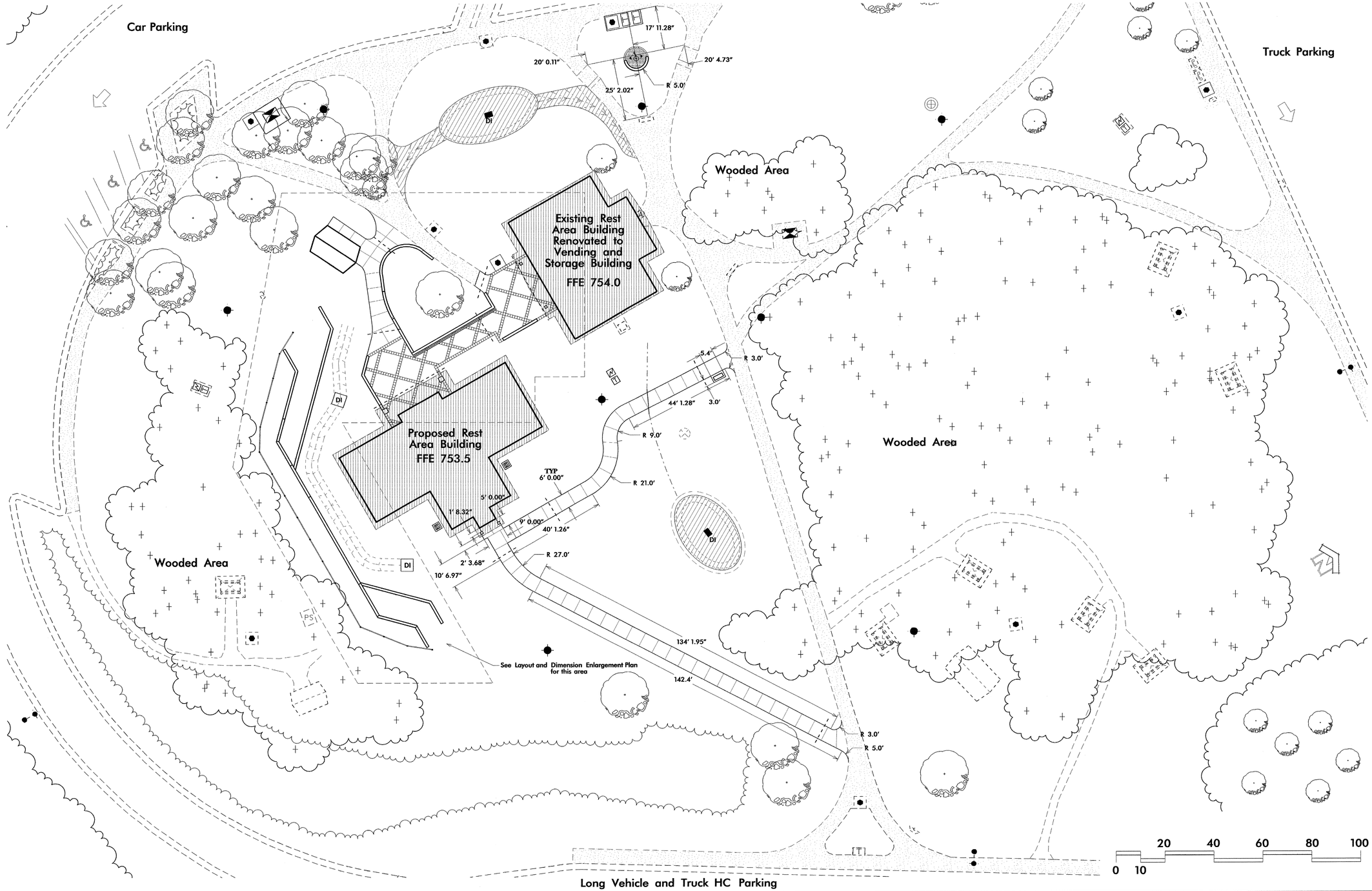
NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1447 ROBERT N. KOPETSKY 5-14-09

ENGINEER : CONNIE MORGAN

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # : K – 4906	SHEET DESCRIPTION:	I – 85 Cabarrus Rest Area	SHEET NO : L – NBL – 5
FEDERAL I.D. # : IMS – 085-2(64)59		North Bound Lane	
FINAL DESIGN DATE : April 30, 2009		Grading Plan	TOTAL SHEET NO : 11

$$$$$$SYSTIME$$$$$$
$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$
$$$$$USERNAME$$$$$



Key

- - - -	Dashed – Existing
———	Solid – Proposed or Relocated
	Ash Urn
	Trash Receptacle
	Picnic Table
	Picnic Shelter
	Accessible Picnic Table or Shelter
	Yard Hydrant
	Irrigation Hydrant
	Pet Waste Disposal Station
	Recycling Center
	Flag Pole
	Wood Bench
	Telephone Booth
	Telephone Pedestal
	Accent Light or Spot Light
	Post Top Light
	Street Light
WCR	Wheelchair Ramp
	Wheelchair Ramp
DC	Depressed Curb
	Accessible Parking Space
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	Water Meter
	Water Valve
	Water /Fire Hydrant
CO	Clean – Out
	Telephone Box
	Power Transformer
	HVAC Unit
	Indicates Removal
- - - -	Underground Sleeve

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$$$USERNAME$$$$$

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I – 85 Cabarrus County Rest Area Renovation

ENGINEER : CONNIE MORGAN

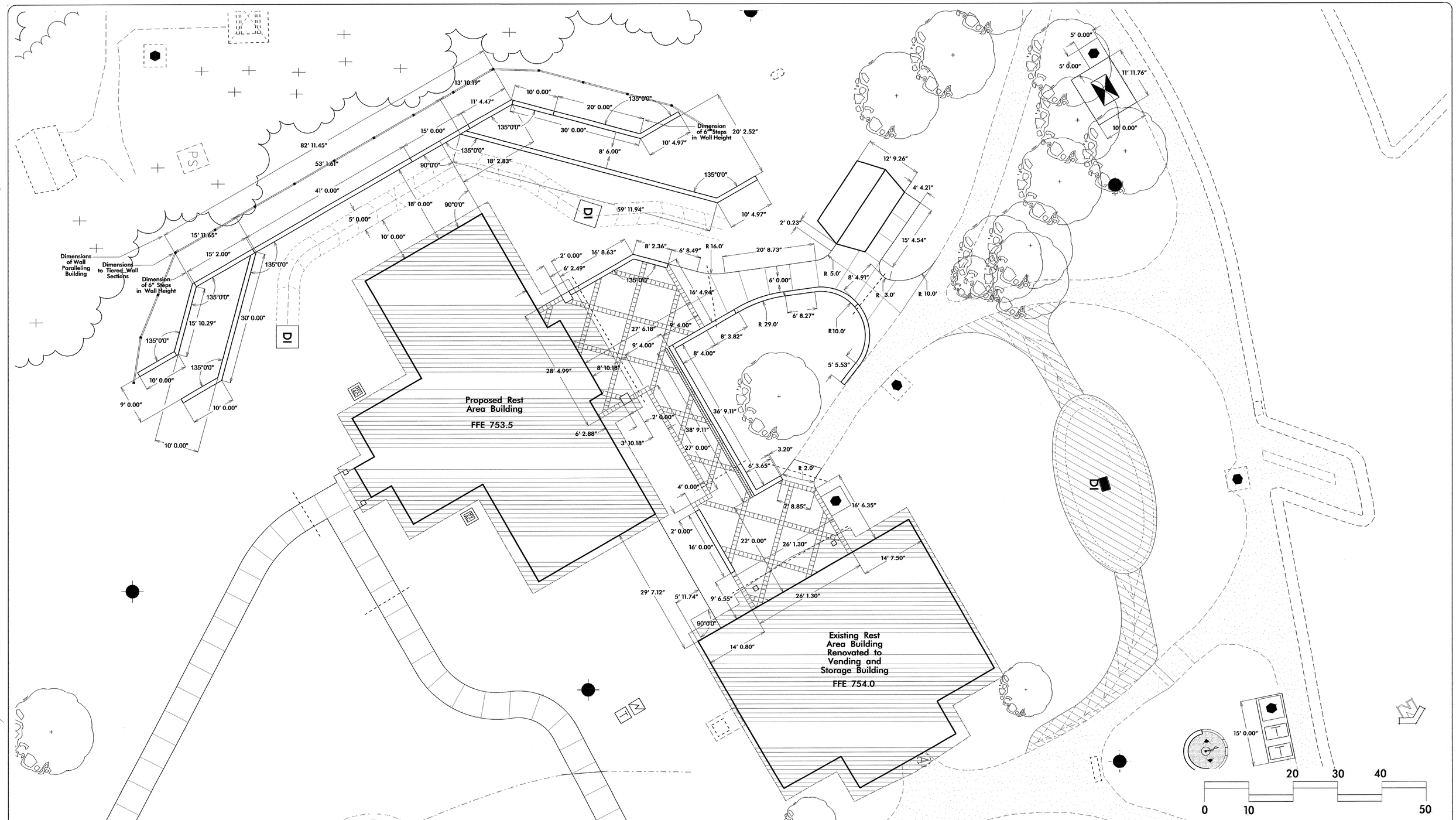
NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER 14471 ROBERT N. KOPETSKY 5-14-09

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # :	K – 4906
FEDERAL I.D. # :	IMS – 085–2(64)59
FINAL DESIGN DATE :	April 30, 2009

SHEET DESCRIPTION:
I – 85 Cabarrus Rest Area
North Bound Lane
Layout and Dimension Plan A

SHEET NO : L – NBL – 6A
TOTAL SHEET NO : 11



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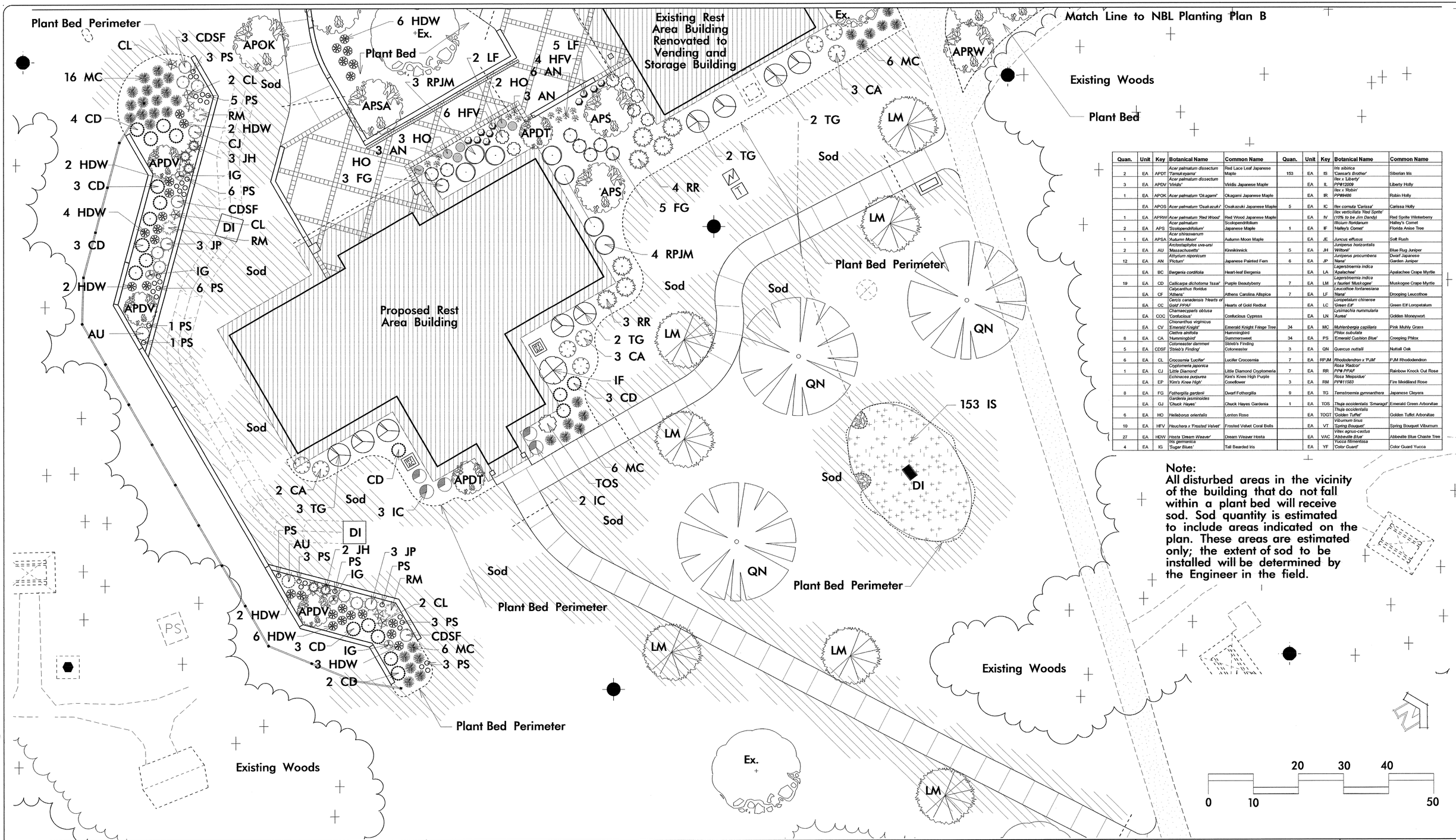
I – 85 Cabarrus County Rest Area Renovation

ENGINEER : CONNIE MORGAN

TIP # :	K – 4906
FEDERAL I.D. # :	IMS – 085-2(64)59
FINAL DESIGN DATE :	April 30, 2009
SHEET DESCRIPTION:	I – 85 Cabarrus Rest Area North Bound Lane Layout and Dimension Plan B
SHEET NO :	L – NBL – 6B
TOTAL SHEET NO :	11



Quan.	Unit	Key	Botanical Name	Common Name	Quan.	Unit	Key	Botanical Name	Common Name
			Acer palmatum dissectum					*Iris sibirica*	
2	EA	APDT	*'Tamukeyama'*	Red Lace Leaf Japanese Maple	153	EA	IS	*'Caesar's Brother'*	Siberian Iris
			Acer palmatum dissectum					*Ilex x 'Lib erty'*	
3	EA	APDV	*'Viridis'*	Viridis Japanese Maple		EA	IL	*PP#12009*	Liberty Holly
								Ilex x 'Robin'	
1	EA	APOK	*Acer palmatum 'Ok agami'*	Okagami Japanese Maple		EA	IR	*PP#9486*	Robin Holly
	EA	APOS	*Acer palmatum 'Osak azuki'*	Osakazuki Japanese Maple	5	EA	IC	*Ilex cornuta 'Carissa'*	Carissa Holly
1	EA	APRW	*Acer palmatum 'Red Wood'*	Red Wood Japanese Maple		EA	IV	*Ilex verticillata 'Red Sprite' (10% to be Jim Dandy)*	Red Sprite Winterberry
			Acer palmatum					*Illicium floridanum*	Halley's Comet
2	EA	APS	*'Scolopendrifolium'*	Japanese Maple	1	EA	IF	*'Halley's Comet'*	Florida Anise Tree
			Acer shirasawanum						
1	EA	APSA	*'Autumn Moon'*	Autumn Moon Maple		EA	JE	*Juncus effusus*	Soft Rush
			Arctostaphylos uva-ursi					*Juniperus horizontalis*	
2	EA	AU	*'Massachusetts'*	Kinnikinnick	5	EA	JH	*'Wiltonii'*	Blue Rug Juniper
			Athyrium niponicum					*Juniperus procumbens*	Dwarf Japanese
12	EA	AN	*'Pictum'*	Japanese Painted Fern	6	EA	JP	*'Nana'*	Garden Juniper
								Lagerstroemia indica	
	EA	BC	*Bergenia cordifolia*	Heart-leaf Bergenia		EA	LA	*'Apalachee'*	Apalachee Crape Myrtle
								Lagerstroemia indica	
19	EA	CD	*Callicarpa dichotoma 'Issai'*	Purple Beautyberry	7	EA	LM	*x fauriei 'Muskogee'*	Muskogee Crape Myrtle
			Calycanthus floridus					*Leucothoe fontanesiana*	
	EA	CF	*'Athens'*	Athens Carolina Allspice	7	EA	LF	*'Nana'*	Drooping Leucothoe
			Cercis canadensis 'Hearts of					*Loropetalum chinense*	
	EA	CC	*Gold' PPAF*	Hearts of Gold Redbud		EA	LC	*'Green Elf'*	Green Elf Loropetalum
			Chamaecyparis obtusa					*Lysimachia nummularia*	
	EA	COC	*'Confucious'*	Confucious Cypress		EA	LN	*'Aurea'*	Golden Moneywort
			Chionanthus virginicus						
	EA	CV	*'Emerald Knight'*	Emerald Knight Fringe Tree	34	EA	MC	*Muhlenbergia capillaris*	Pink Muhly Grass
			Clethra alnifolia	Hummingbird				*Phlox subulata*	
8	EA	CA	*'Hummingbird'*	Summersweet	34	EA	PS	*'Emerald Cushion Blue'*	Creeping Phlox
			Cotoneaster dammeri	Strieb's Finding					
5	EA	CDSF	*'Strieb's Finding'*	Cotoneaster	3	EA	QN	*Quercus nuttalii*	Nuttall Oak
6	EA	CL	*Crocosmia 'Lucifer'*	Lucifer Crocosmia	7	EA	RPJM	*Rhododendron x 'PJM'*	PJM Rhododendron
			Cryptomeria japonica					*Rosa 'Radcor'*	
1	EA	CJ	*'Little Diamond'*	Little Diamond Cryptomeria	7	EA	RR	*PP# PPAF*	Rainbow Knock Out Rose
			Echinacea purpurea	Kim's Knee High Purple				*Rosa 'Meipsidue'*	
	EA	EP	*'Kim's Knee High'*	Coneflower	3	EA	RM	*PP#11583*	Fire Meidiland Rose
8	EA	FG	*Fothergilla gardenii*	Dwarf Fothergilla	9	EA	TG	*Ternstroemia gymnanthera*	Japanese Cleyera
			Gardenia jasminoides						
	EA	GJ	*'Chuck Hayes'*	Chuck Hayes Gardenia	1	EA	TOS	*Thuja occidentalis 'Smaragd'*	Emerald Green Arborvitae
								Thuja occidentalis	
6	EA	HO	*Helleborus orientalis*	Lenten Rose		EA	TOGT	*'Golden Tuffet'*	Golden Tuffet Arborvitae
								Viburnum tinus	
10	EA	HFV	*Heuchera x 'Frosted Velvet'*	Frosted Velvet Coral Bells		EA	VT	*'Spring Bouquet'*	Spring Bouquet Viburnum
								Vitex agnus-castus	
27	EA	HDW	*Hosta 'Dream Weaver'*	Dream Weaver Hosta		EA	VAC	*'Abbeville Blue'*	Abbeville Blue Chaste Tree
			Iris germanica					*Yucca filimentosa*	
4	EA	IG	*'Sugar Blues'*	Tall Bearded Iris		EA	YF	*'Color Guard'*	Color Guard Yucca

Note:
All disturbed areas in the vicinity of the building that do not fall within a plant bed will receive sod. Sod quantity is estimated to include areas indicated on the plan. These areas are estimated only; the extent of sod to be installed will be determined by the Engineer in the field.

$$$$SYSTIME$$$$
$$$$USERNAME$$$$
$$$$DGN$$$$

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I – 85 Cabarrus County Rest Area Renovation

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1447 ROBERT N. KOPCINSKY 5.14.09

ENGINEER : CONNIE MORGAN

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # :	K – 4906
FEDERAL I.D. # :	IMS – 085–2(64)59
FINAL DESIGN DATE :	April 30, 2009
SHEET DESCRIPTION:	I – 85 Cabarrus Rest Area North Bound Lane Planting Plan A
SHEET NO :	L – NBL – 7A
TOTAL SHEET NO :	11

Match Line to NBL Planting Plan C

Note:
All disturbed areas in the vicinity of the building that do not fall within a plant bed will receive sod. Sod quantity is estimated to include areas indicated on the plan. These areas are estimated only; the extent of sod to be installed will be determined by the Engineer in the field.

Quan.	Unit	Key	Botanical Name	Common Name	Quan.	Unit	Key	Botanical Name	Common Name
	EA	APDT	*Acer palmatum dissectum 'Tamukeyama'*	Red Lace Leaf Japanese Maple	151	EA	IS	*Iris sibirica 'Caesar's Brother'*	Siberian Iris
1	EA	APDV	*Acer palmatum dissectum 'Viridis'*	Viridis Japanese Maple		EA	IL	*Ilex x 'Liberty' PP#12009*	Liberty Holly
1	EA	APOK	*Acer palmatum 'Okagami'*	Okagami Japanese Maple		EA	IR	*Ilex x 'Robin' PP#9486*	Robin Holly
2	EA	APOS	*Acer palmatum 'Osakazuki'*	Osakazuki Japanese Maple	2	EA	IC	*Ilex cornuta 'Carissa'*	Carissa Holly
2	EA	APRW	*Acer palmatum 'Red Wood'*	Red Wood Japanese Maple	13	EA	IV	*Ilex verticillata 'Red Sprite' (10% to be Jim Dandy)*	Red Sprite Winterberry
	EA	APS	*Acer palmatum 'Scolopendrifolium'*	Scolopendrifolium Japanese Maple	1	EA	IF	*Illicium floridanum 'Halley's Comet'*	Halley's Comet Florida Anise Tree
	EA	APSA	*Acer shiraswanum 'Autumn Moon'*	Autumn Moon Maple	6	EA	JE	*Juncus effusus*	Soft Rush
	EA	AU	*Arctostaphylos uva-ursi 'Massachusetts'*	Kinnikinnick		EA	JH	*Juniperus horizontalis 'Wiltonii'*	Blue Rug Juniper
14	EA	AN	*Athyrium niponicum 'Pictum'*	Japanese Painted Fern		EA	JP	*Juniperus procumbens 'Nana'*	Dwarf Japanese Garden Juniper
	EA	BC	*Bergenia cordifolia*	Heart-leaf Bergenia		EA	LA	*Lagerstroemia indica 'Apalachee'*	Apalachee Crape Myrtle
7	EA	CD	*Callicarpa dichotoma 'Issai'*	Purple Beautyberry		EA	LM	*Lagerstroemia indica x faurieri 'Muskogee'*	Muskogee Crape Myrtle
	EA	CF	*Calycanthus floridus 'Athens'*	Athens Carolina Allspice	13	EA	LF	*Leucothoe fontanesiana 'Nana'*	Drooping Leucothoe
	EA	CC	*Cercis canadensis 'Hearts of Gold' PPAF*	Hearts of Gold Redbut		EA	LC	*Loropetalum chinense 'Green Elf'*	Green Elf Loropetalum
	EA	COC	*Chamaecyparis obtusa 'Confucious'*	Confucious Cypress		EA	LN	*Lysimachia nummularia 'Aurea'*	Golden Moneywort
	EA	CV	*Chionanthus virginicus 'Emerald Knight'*	Emerald Knight Fringe Tree	717	EA	MC	*Muhlenbergia capillaris*	Pink Muhly Grass
3	EA	CA	*Clethra alnifolia 'Hummingbird'*	Hummingbird Summersweet		EA	PS	*Phlox subulata 'Emerald Cushion Blue'*	Creeping Phlox
	EA	CDSF	*Cotoneaster dammeri 'Strieb's Finding'*	Strieb's Finding Cotoneaster	1	EA	QN	*Quercus nuttalli*	Nuttall Oak
	EA	CL	*Crocosmia 'Lucifer'*	Lucifer Crocosmia	2	EA	RPJM	*Rhododendron x 'PJM'*	PJM Rhododendron
	EA	CJ	*Cryptomeria japonica 'Little Diamond'*	Little Diamond Cryptomeria	6	EA	RR	*Rosa 'Radcor' PP# PPAF*	Rainbow Knock Out Rose
	EA	EP	*Echinacea purpurea 'Kim's Knee High'*	Kim's Knee High Purple Coneflower		EA	RM	*Rosa 'Meipsidue' PP#11583*	Fire Meidiland Rose
2	EA	FG	*Fothergilla gardenii*	Dwarf Fothergilla	6	EA	TG	*Ternstroemia gymnanthera*	Japanese Cleyera
2	EA	GJ	*Gardenia jasminoides 'Chuck Hayes'*	Chuck Hayes Gardenia		EA	TOS	*Thuja occidentalis 'Smaragd'*	Emerald Green Arborvitae
3	EA	HO	*Helleborus orientalis*	Lenten Rose		EA	TOGT	*Thuja occidentalis 'Golden Tuffet'*	Golden Tuffet Arborvitae
12	EA	HFV	*Heuchera x 'Frosted Velvet'*	Frosted Velvet Coral Bells		EA	VT	*Viburnum tinus 'Spring Bouquet'*	Spring Bouquet Viburnum
7	EA	HDW	*Hosta 'Dream Weaver'*	Dream Weaver Hosta	9	EA	VAC	*Vitex agnus-castus 'Abbeville Blue'*	Abbeville Blue Chaste Tree
	EA	IG	*Iris germanica 'Sugar Blues'*	Tall Bearded Iris		EA	YF	*Yucca filimentosa 'Color Guard'*	Color Guard Yucca

Match Line to NBL Planting Plan A

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I – 85 Cabarrus County Rest Area Renovation

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1447 ROBERT N. KOPETSKY 5·14·09

ENGINEER : CONNIE MORGAN

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # :	K – 4906
FEDERAL I.D. # :	IMS – 085-2(64)59
FINAL DESIGN DATE :	April 30, 2009

SHEET DESCRIPTION: I – 85 Cabarrus Rest Area / North Bound Lane / Planting Plan B

SHEET NO : L – NBL – 7B

TOTAL SHEET NO : 11

Match Line to NBL Planting Plan B

Car Parking

Ex.

Retain Existing Plant Bed; tie proposed bed into existing bed

6 IL

3 LA

3 IL

3 LA

5 IL

Plant Bed Perimeter

Remove Existing Tree

Plant Bed Perimeter

Truck Parking

		Key	Botanical Name	Common Name	Quan.	Unit	Key	Botanical Name	Common Name	Quan.	Unit
			Cornus florida	Flowering Dogwood		EA					
		APDT	Acer palmatum 'Tamukeyama' dissectum	Tamukeyama Japanese Maple		EA					
			Hamamelis virginiana	Witch Hazel							
		APDV	Acer palmatum dissectum 'Viridis'	Viridis Japanese Maple	14	EA					
		APOK	Acer palmatum 'Okagami'	Okagami Japanese Maple		EA					
		APOS	Acer palmatum 'Osakazuki'	Osakazuki Japanese Maple		EA	IC	Ilex cornuta 'Dessa'	Dessa's Boxwood		EA
		APOW	Acer palmatum 'Red Wood'	Red Wood Japanese Maple		EA	IV	Ilex verticillata 'Red Sprite'	Red Sprite Winterberry		EA
		APSC	Acer palmatum 'Scolopendrifolium'	Scolopendrifolium Japanese Maple		EA	IF	Juniper officinalis 'Hetzii'	Hetzii Juniper		EA
		APSA	Acer palmatum 'Autumn Moon'	Autumn Moon Maple		EA	JE	Juniper officinalis 'Japonica Nobcorabs'	Soft Rush		EA
		AU	Aesculus parviflora	Bottlebrush Buckeye		EA	JH	Juniper procumbens 'Nana'	Dwarf Japanese Juniper		EA
		AN	Asimina triloba 'Pitcher'	Pitcher Paw Paw		EA	JP	Juniper procumbens 'Nana'	Dwarf Japanese Juniper		EA
		BC	Bergenia cordifolia	Heart-leaf Bergenia	6	EA	LA	Lagerstroemia indica 'Apalachee'	Apalachee Crape Myrtle		EA
		CD	Calycanthus floridus 'Athens'	Athens Carolina Allspice		EA	LM	Lagerstroemia indica 'Muskogee'	Muskogee Crape Myrtle		EA
		CF	Cercis canadensis 'Hearts of Gold' PP16F	Hearts of Gold Redbud		EA	LF	Liriope muscari 'Variegata'	Variegated Lilyturf		EA
		CC	Chamaecyparis obtusa 'Crippsii'	Crippsii Hinoki Cypress		EA	LG	Liriope muscari 'Green Elf'	Green Elf Lilyturf		EA
		COO	Chamaecyparis obtusa 'Compacta'	Compacta Hinoki Cypress		EA	LM	Liriope muscari 'Monroe'	Golden Moneywort		EA
		CV	Clethra alnifolia 'Ethereal Knight' PP6F	Ethereal Knight Fragrant Clethra		EA	MC	Muhlenbergia capillaris	Pink Muhly Grass		EA
		CA	Cornus alternifolia 'Argentea'	Silverleaved Dogwood		EA	PS	Panicum virgatum 'Shenandoah'	Red Switch Grass		EA
		CCMB	Cornus mas 'Golden Glory'	Golden Glory Cornelian Cherry		EA	QN	Quercus nuttallii	Nuttall Oak		EA
		CL	Cotoneaster lucidus	Lucid Cotoneaster		EA	RR	Rhododendron x 'P.J.M.'	P.J.M. Rhododendron		EA
		CJ	Echinacea purpurea 'Kim's Knee High'	Little Diamond Cryptomeria		EA	RR	Rhododendron x 'PPA' PPA PPAF	Rainbow Knock Out Rose		EA
		EP	Ilex x 'Nellie R. Stevens'	Nellie R. Stevens Holly		EA	TO	Teinturier germanitrix	Japanese Clayera		EA
		FG	Gaillardia grandiflora 'Goblin'	Dwarf Fellenglia		EA	TOS	Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae		EA
		GU	Gaura lindheimeri 'Whirling Butterflies'	Whirling Butterflies Gaura		EA	TODT	Thuja occidentalis 'Sunkist'	Golden Tuffet Arborvitae		EA
		HO	Helleborus orientalis	Lenten Rose		EA	VT	Viburnum tinus 'Spring Bouquet'	Spring Bouquet Viburnum		EA
		HPV	Heuchera x 'Palace Purple'	Frosted Violet Coral Bells		EA	VTC	Viburnum tinus 'Compacta'	Compacta Viburnum		EA
		HDW	Hosta 'Dream Weaver'	Dream Weaver Hosta		EA	YC	Yucca x 'Color Guard'	Adelaide Blue Chenille Tree		EA
		IG	Iris germanica 'Stage Blast'	Tall Bearded Iris		EA	YF	Yucca filamentosa 'Color Guard'	Color Guard Yucca		EA

Note:
All disturbed areas in the vicinity of the building that do not fall within a plant bed will receive sod. Sod quantity is estimated to include areas indicated on the plan. These areas are estimated only; the extent of sod to be installed will be determined by the Engineer in the field.

0 10 20 30 40 50

N

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I – 85 Cabarrus County Rest Area Renovation

PROFESSIONAL ENGINEER : CONNIE MORGAN

NORTH CAROLINA ENGINEERING SEAL 14471 ROBERT N. KOPETSKY 5-14-09

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # : K – 4906

FEDERAL I.D. # : IMS – 085–2(64)59

FINAL DESIGN DATE : April 30, 2009

I – 85 Cabarrus Rest Area

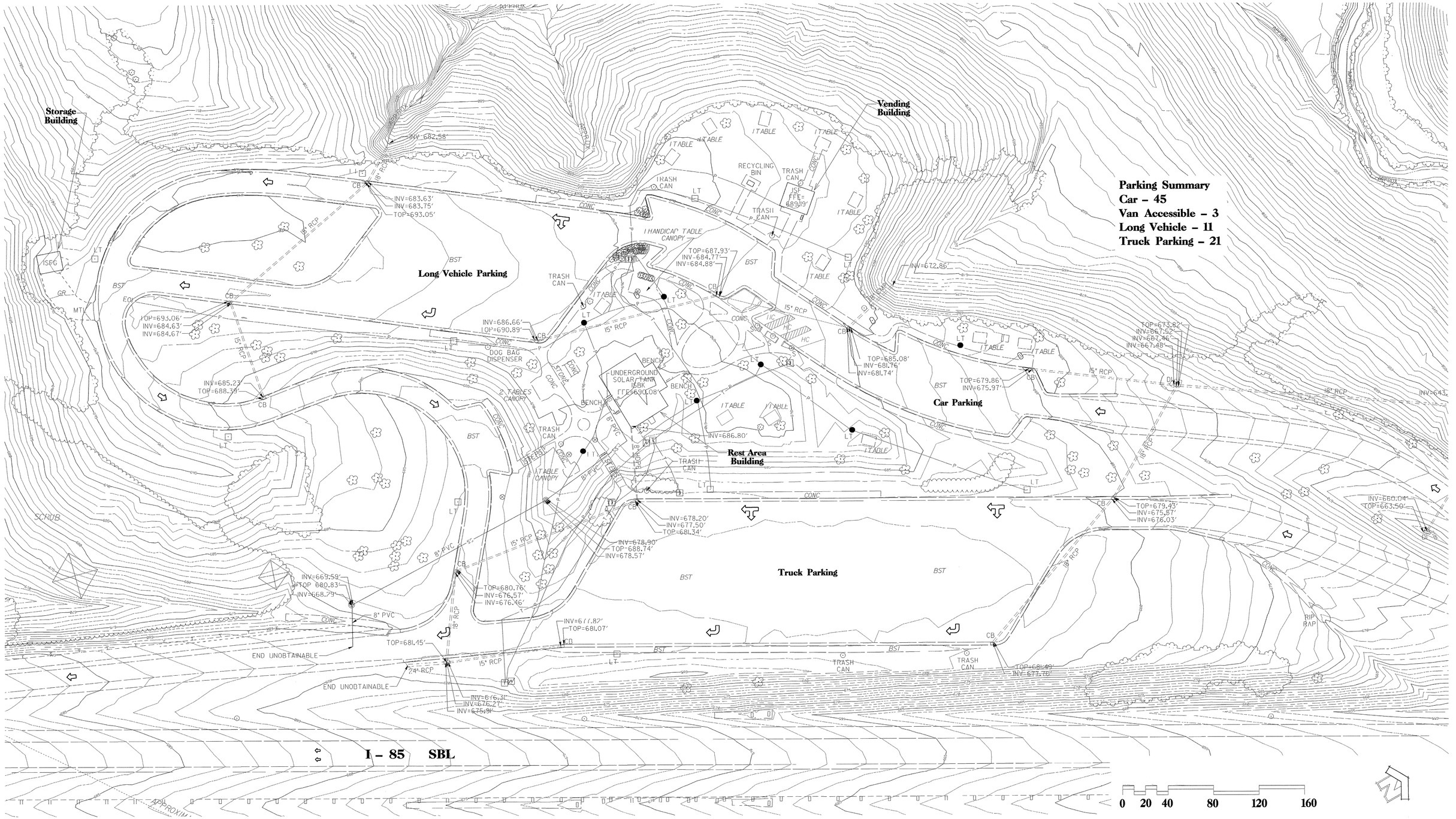
North Bound Lane

Planting Plan C

SHEET NO : L – NBL – 7C

TOTAL SHEET NO : 11

SSSSSSSSYSTEMNAMESSSSS
SSSSSSSSDESIGNSSSSSSSSS
SSSSSSUSERNAMESSSSSS



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I – 85 Cabarrus County Rest Area Renovation

ENGINEER : CONNIE MORGAN

TIP # :	K – 4906
FEDERAL I.D. # :	IMS – 085–2(64)59
FINAL DESIGN DATE :	April 30, 2009

SHEET DESCRIPTION:

I – 85 Cabarrus Rest Area	
South Bound Lane	
Existing Site Plan	

SHEET NO : L – SBL – 1

TOTAL SHEET NO : 8

$$$$$$$SYSTIMES$$$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$
$$$$$$USERNAME$$$$$$

Note:
Existing site contains two trash receptacles that will be relocated. Two new receptacles will be furnished by NCDOT to the contractor for placement as indicated. Four existing ash urns will also be relocated on site. Locations not indicated on plans will be determined by the Engineer in the field. Two post top lights will be relocated as shown.

Long Vehicle and Truck HC Parking

Proposed Plaza Area; 4" Concrete Pavement and Decorative Pavers

Proposed Seat Wall A

Proposed Freestanding Wall B

Proposed Flag Pole w/Spot Lights

Proposed Trash Receptacle (furnished by others for placement by contractor)

Trench Drain

Proposed Seat Wall/Planter C

Proposed Parking Area Renovation, Island removal by contractor, Paving, striping and installation of Signs by others. 3 Van Accessible Parking Spaces added

3 R7 – 8E Signs mounted at 84" height by others

Proposed 4" Concrete Sidewalk

Match to existing sidewalk

Relocated Post Top Light

Existing Sidewalk

Existing Street Light

Pet Waste Disposal Station

Tree Protection

Relocated Trash Receptacle

Proposed 4" Concrete Sidewalk

Relocated Payphone and Pedestal

Relocated Ash Urn and Trash Receptacle

Proposed Decorative Pavement Edge

Match New Sidewalk to Existing Sidewalk

Existing Sidewalk

Car Parking

Rain Garden D

Existing Rest Area Building Renovated to Vending and Storage Building

FFE 690.08

Rain Garden A

Proposed Seat Wall D

Proposed Rest Area Building FFE 689.58

Proposed Seat Wall E

Proposed Sleeves

Relocated Post Top Light

Proposed 4" Concrete Sidewalk

Existing Trees

Rain Garden C

Rain Garden B

Rain Garden E

Proposed 4" Concrete Sidewalk, Match to existing sidewalk

Car Parking

Proposed Rain Gardens (Rooftop runoff treatment) See Rain Garden Detail

Tree Protection

Existing Tree

Proposed 4" Concrete Sidewalk

Proposed Concrete Steps, Cheek Walls and Handrails

Existing Sidewalk

Proposed Sleeves

Proposed Trash Receptacle (furnished by others for placement by contractor)

Truck Parking

0 10 20 40 60 80 100

Key

- Dashed – Existing
- Solid – Proposed or Relocated
- Ash Urn
- Trash Receptacle
- Picnic Table
- Picnic Shelter
- Accessible Picnic Table or Shelter
- Yard Hydrant
- Irrigation Hydrant
- Pet Waste Disposal Station
- Recycling Center
- Flag Pole
- Wood Bench
- Telephone Booth
- Telephone Pedestal
- Accent Light or Spot Light
- Post Top Light
- Street Light
- Wheelchair Ramp
- Wheelchair Ramp
- Depressed Curb
- Accessible Parking Space
- FO — Fiber Optic Line
- G — Gas Line
- P — Power Line
- S — Storm Sewer
- SS — Sanitary Sewer
- T — Telephone Line
- W — Water Line
- CB — Drainage Box: Catch Basin(CB), Drop Inlet(DI), Junction Box(JB)
- SS — Manhole: Sanitary Sewer(SS), Telephone(T), etc.
- Water Meter
- Water Valve
- Water /Fire Hydrant
- CO — Clean – Out
- Telephone Box
- Power Transformer
- HVAC Unit
- Indicates Removal
- Underground Sleeve

$$$$USERNAME$$$$
$$$$SYSTIME$$$$
$$$$DESIGN$$$$

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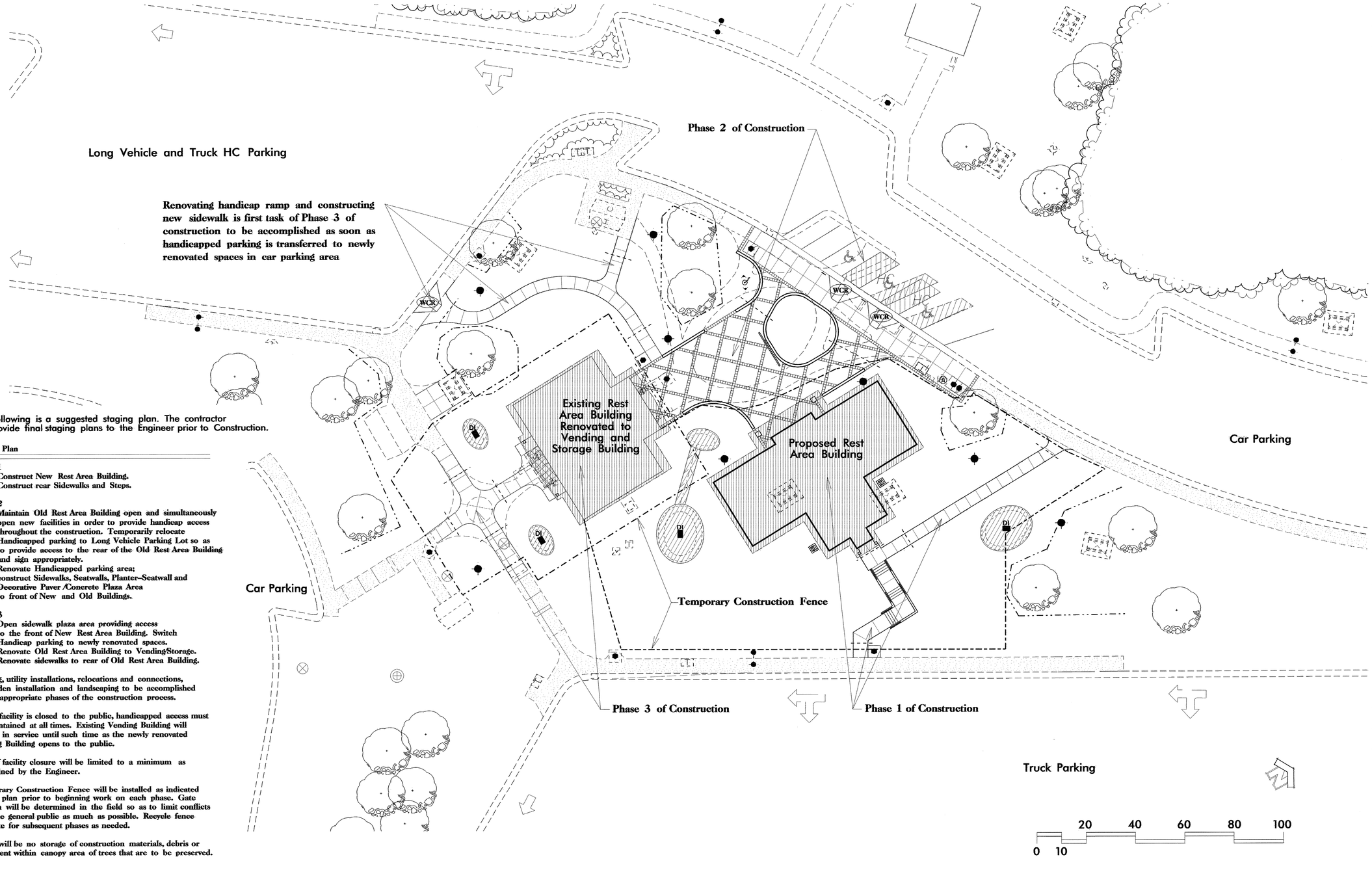
I – 85 Cabarrus County Rest Area Renovation

ENGINEER : CONNIE MORGAN

TIP # :	K – 4906
FEDERAL I.D. # :	IMS – 085–2(64)59
FINAL DESIGN DATE :	April 30, 2009
SHEET DESCRIPTION:	I – 85 Cabarrus Rest Area
	South Bound Lane
	Proposed Site Plan
SHEET NO :	L – SBL – 2
TOTAL SHEET NO :	8



The following is a suggested staging plan. The contractor will provide final staging plans to the Engineer prior to Construction.

Staging Plan

Phase 1
- Construct New Rest Area Building.
- Construct rear Sidewalks and Steps.

Phase 2
- Maintain Old Rest Area Building open and simultaneously open new facilities in order to provide handicap access throughout the construction. Temporarily relocate Handicapped parking to Long Vehicle Parking Lot so as to provide access to the rear of the Old Rest Area Building and sign appropriately.
- Renovate Handicapped parking area; construct Sidewalks, Seatwalls, Planter–Seatwall and Decorative Paver /Concrete Plaza Area to front of New and Old Buildings.

Phase 3
- Open sidewalk plaza area providing access to the front of New Rest Area Building. Switch
- Handicap parking to newly renovated spaces.
- Renovate Old Rest Area Building to Vending/Storage.
- Renovate sidewalks to rear of Old Rest Area Building.

Grading, utility installations, relocations and connections, raingarden installation and landscaping to be accomplished within appropriate phases of the construction process.

Unless facility is closed to the public, handicapped access must be maintained at all times. Existing Vending Building will remain in service until such time as the newly renovated Vending Building opens to the public.

Days of facility closure will be limited to a minimum as determined by the Engineer.

Temporary Construction Fence will be installed as indicated on the plan prior to beginning work on each phase. Gate location will be determined in the field so as to limit conflicts with the general public as much as possible. Recycle fence and gate for subsequent phases as needed.

There will be no storage of construction materials, debris or equipment within canopy area of trees that are to be preserved.

Key

----	Dashed – Existing
———	Solid – Proposed or Relocated
	Ash Urn
	Trash Receptacle
	Picnic Table
	Picnic Shelter
	Accessible Picnic Table or Shelter
	Yard Hydrant
	Irrigation Hydrant
	Pet Waste Disposal Station
	Recycling Center
	Flag Pole
	Wood Bench
	Telephone Booth
	Telephone Pedestal
	Accent Light or Spot Light
	Post Top Light
	Street Light
WCR	Wheelchair Ramp
	Wheelchair Ramp
DC	Depressed Curb
	Accessible Parking Space
—FO—	Fiber Optic Line
— G —	Gas Line
— P —	Power Line
— S —	Storm Sewer
—SS—	Sanitary Sewer
— T —	Telephone Line
— W —	Water Line
CB	Drainage Box: Catch Basin(CB), Drop Inlet(DI), Junction Box(JB)
SS	Manhole: Sanitary Sewer(SS), Telephone(T), etc.
	Water Meter
	Water Valve
	Water /Fire Hydrant
CO	Clean – Out
T	Telephone Box
	Power Transformer
	HVAC Unit
	Indicates Removal
----	Underground Sleeve

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I – 85 Cabarrus County Rest Area Renovation

REGISTERED LANDSCAPE ARCHITECT 1447 ROBERT N. KOPETSKY

PROJECT ENGINEER : CONNIE MORGAN

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # : K – 4906

FEDERAL I.D. # : IMS – 085–2(64)59

FINAL DESIGN DATE : April 30, 2009

SHEET DESCRIPTION: I – 85 Cabarrus Rest Area; South Bound Lane; Construction Limits and Staging Plan

SHEET NO : L – SBL – 3

TOTAL SHEET NO : 8

$$$$USERNAME$$$$ $$$$DATE$$$$ $$$$TIME$$$$

Notes:

All existing beds, mulch (stone, brick chips and bark), shrubs and ground covers are to be removed as indicated and as directed by the Engineer in the field and replaced as indicated on the proposed site plan and planting plans.

Exact location of tree protection fence to be staked, then approved by Engineer in the field prior to installation.

Items to be removed and disposed of or relocated on site:
2 Trash Receptacles – to be salvaged and returned to DOT
4 Ash Urns – to be relocated at direction of Engineer
1 Phone Pedestals – to be relocated
2 Post Top Lights – to be relocated
2 Picnic Tables – 2 terazzo table tops to be salvaged and returned to DOT
3 Wood Bench with brick base – dispose of off site

Days of facility closure will be kept to a minimum as as determined and approved by the Engineer. Unless facility is closed to the public, handicapped access must be maintained at all times.

Key

(X symbol)	Tree to be removed
(hatched)	Plant Bed/Shubs and Ground Cover to be removed
(crosshatched)	Sidewalk and Pavement to be removed

Key

- - - -	Dashed – Existing
———	Solid – Proposed or Relocated
Ⓐ	Ash Urn
	Trash Receptacle
	Picnic Table
	Picnic Shelter
	Accessible Picnic Table or Shelter
▲	Yard Hydrant
△	Irrigation Hydrant
	Pet Waste Disposal Station
	Recycling Center
	Flag Pole
	Wood Bench
	Telephone Booth
T	Telephone Pedestal
	Accent Light or Spot Light
	Post Top Light
	Street Light
WCR	Wheelchair Ramp
	Wheelchair Ramp
DC	Depressed Curb
♿	Accessible Parking Space
—FO—	Fiber Optic Line
— G —	Gas Line
— P —	Power Line
— S —	Storm Sewer
—SS—	Sanitary Sewer
— T —	Telephone Line
— W —	Water Line
CB	Drainage Box: Catch Basin(CB), Drop Inlet(DI), Junction Box(JB)
SS	Manhole: Sanitary Sewer(SS), Telephone(T), etc.
	Water Meter
⊗	Water Valve
	Water /Fire Hydrant
CO	Clean – Out
T	Telephone Box
	Power Transformer
	HVAC Unit
	Indicates Removal
	Underground Sleeve

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I – 85 Cabarrus County Rest Area Renovation

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1447 ROBERT N. KOPETSKY 5.14.09

ENGINEER : CONNIE MORGAN

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # :	K – 4906	SHEET DESCRIPTION:	I – 85 Cabarrus Rest Area	SHEET NO : L – SBL – 4
FEDERAL I.D. # :	IMS – 085-2(64)59		South Bound Lane	
FINAL DESIGN DATE :	April 30, 2009		Demolition Plan	TOTAL SHEET NO : 8

$$$$$$SYSTIME$$$$$$ $$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$ $$$$USERNAME$$$$

Key

Symbol	Description
- - - -	Dashed – Existing
———	Solid – Proposed or Relocated
	Ash Urn
	Trash Receptacle
	Picnic Table
	Picnic Shelter
	Accessible Picnic Table or Shelter
	Yard Hydrant
	Irrigation Hydrant
	Pet Waste Disposal Station
	Recycling Center
	Flag Pole
	Wood Bench
	Telephone Booth
	Telephone Pedestal
	Accent Light or Spot Light
	Post Top Light
	Street Light
WCR	Wheelchair Ramp
	Wheelchair Ramp
DC	Depressed Curb
	Accessible Parking Space
—FO—	Fiber Optic Line
— G —	Gas Line
— P —	Power Line
— S —	Storm Sewer
—SS—	Sanitary Sewer
— T —	Telephone Line
— W —	Water Line
CB	Drainage Box: Catch Basin(CB), Drop Inlet(DI), Junction Box(JB)
SS	Manhole: Sanitary Sewer(SS), Telephone(T), etc.
	Water Meter
	Water Valve
	Water /Fire Hydrant
CO	Clean – Out
T	Telephone Box
	Power Transformer
	HVAC Unit
	Indicates Removal
- - - -	Underground Sleeve

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I – 85 Cabarrus County Rest Area Renovation

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1447 ROBERT N. KOPETSKY 5.14.09

ENGINEER : CONNIE MORGAN

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # :	K – 4906	SHEET DESCRIPTION: I – 85 Cabarrus Rest Area	SHEET NO : L – SBL – 5
FEDERAL I.D. # :	IMS – 085–2(64)59	South Bound Lane	
FINAL DESIGN DATE :	April 30, 2009	Grading Plan	TOTAL SHEET NO : 8

$$$$$SYSTIME$$$$$
$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$$

Existing Rest Area Building Renovated to Vending and Storage Building

FFE 690.08

Proposed Rest Area Building

FFE 689.58

WCR

WCR

WCR

DI

DI

DI

Match to Existing Width

Match to Existing Width

0 10 20 30 40 50

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I – 85 Cabarrus County Rest Area Renovation

ENGINEER : CONNIE MORGAN

NORTH CAROLINA LANDSCAPE ARCHITECT 1447 ROBERT N. KOPETSKY 5/14/09

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # : K – 4906

FEDERAL I.D. # : IMS – 085–2(64)59

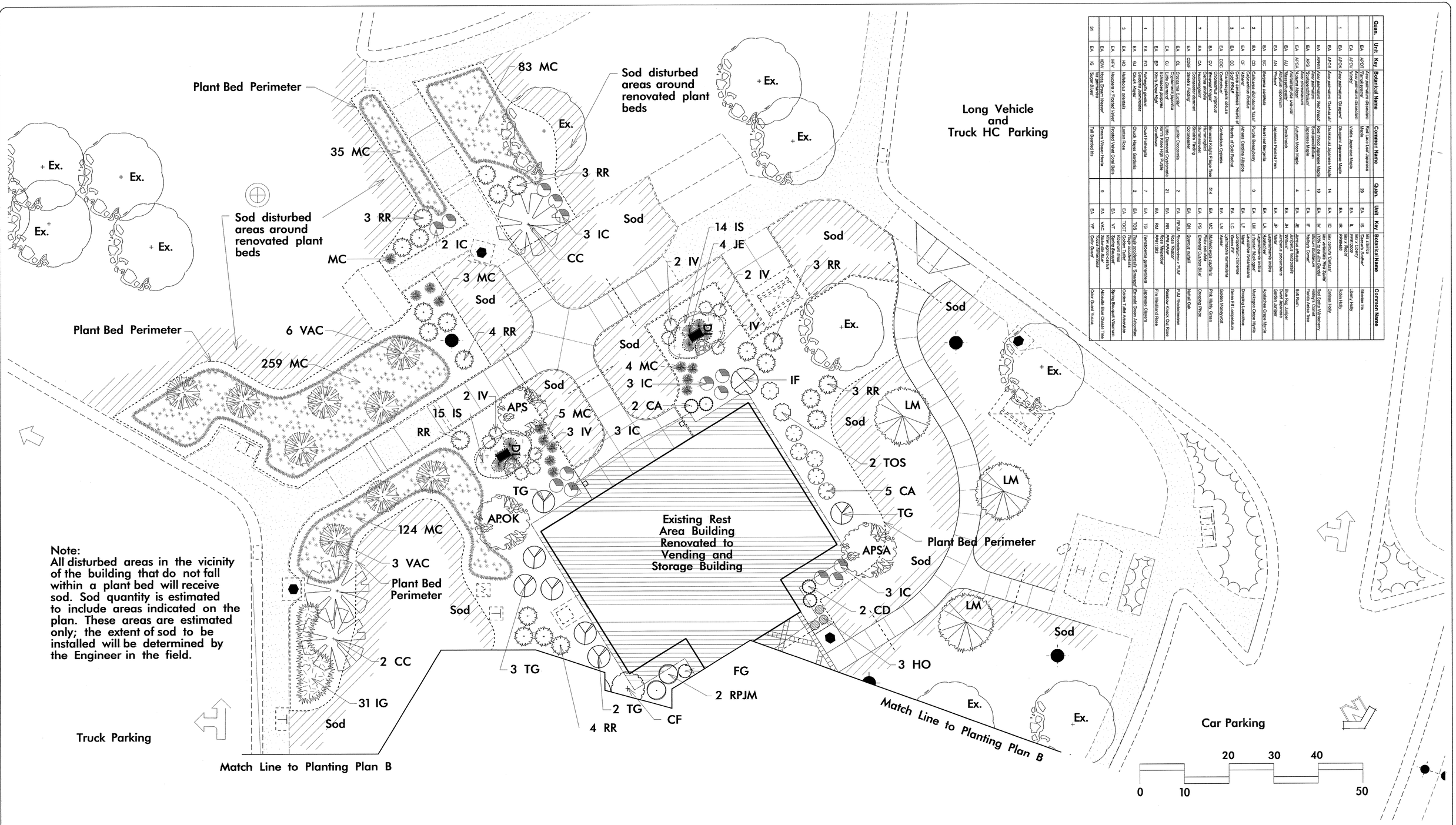
FINAL DESIGN DATE : April 30, 2009

SHEET DESCRIPTION: I – 85 Cabarrus Rest Area / South Bound Lane / Layout and Dimension Plan

SHEET NO : L – SBL – 6

TOTAL SHEET NO : 8

$$$$USERNAME$$$$



Quan.	Unit	Key	Botanical Name	Common Name
31	EA	APDJ	*Acer palmatum dissectum* 'Red Lace'	Red Lace Leaf Japanese Maple
	EA	APDJ	*Acer palmatum dissectum* 'Viridis'	Viridis Japanese Maple
1	EA	APDK	*Acer palmatum* Okagami'	Okagami Japanese Maple
	EA	APDO	*Acer palmatum* 'Osakazuki'	Osakazuki Japanese Maple
	EA	APRW	*Acer palmatum* 'Red Wood'	Red Wood Japanese Maple
1	EA	APS	*Acer palmatum* 'Sangokaku'	Coralbark Japanese Maple
1	EA	APSA	*Acer saccharum* 'Autumn Moon'	Autumn Moon Maple
	EA	AU	*Aronia melanocarpa* 'Autumn Magic'	Autumn Magic Chokeberry
	EA	AN	*Pteruis*	Japanese Painted Fern
	EA	BC	*Bergenia cordifolia*	Heartleaf Bergenia
2	EA	CD	*Caryopteris x clandonensis* 'Jason'	Purple Sweetspire
1	EA	CF	*Cercis canadensis* 'Forest Pansy'	Eastern Redbud
3	EA	CC	*Chamaecyparis obtusa* 'Graf Pfaff'	Hearts of Gold Redbud
	EA	COC	*Chamaecyparis obtusa* 'Crippsii'	Cordelious Cypress
	EA	CV	*Cryptomeria japonica* 'Emerald Knight'	Emerald Knight Fringe Tree
7	EA	CA	*Cryptomeria japonica* 'Hummingbird'	Hummingbird Summersweet
	EA	CDSF	*Cupressocyparis dommeri* 'Silhouette'	Silhouette Dommeri
	EA	CL	*Cryptomeria japonica* 'Lucifer'	Lucifer Cryptomeria
	EA	CJ	*Echinacea purpurea* 'Little Diamond'	Little Diamond Cryptomeria
	EA	EP	*Echinacea purpurea* 'Kim's Knee High'	Kim's Knee High Purple Coneflower
1	EA	FG	*Fothergilla gardenii* 'Dwarf Fothergilla'	Dwarf Fothergilla
	EA	GJ	*Gelsemium sempervirens* 'Chuck Hayes'	Chuck Hayes Gelsmia
3	EA	HO	*Helleborus orientalis*	Lenten Rose
	EA	HFV	*Heuchera x Frosted Violet*	Frosted Violet Coral Bells
	EA	HDV	*Hibiscus x 'Dream Weaver'*	Dream Weaver Hosta
	EA	IS	*Iris sibirica* 'Tall Bearded Iris'	Tall Bearded Iris
	EA	IS	*Iris x Liberty'*	Siberian Iris
	EA	IL	*Ilex x 'Nellie R. Stevens'*	Liberty Holly
	EA	IR	*Ilex crenata* 'Compacta'	Robin Holly
	EA	IC	*Ilex verticillata* 'Red Sprite'	Cassia Holly
	EA	IV	*Ilex verticillata* 'Red Sprite' (QTR. B by Jim Dandy)	Red Sprite Winterberry
	EA	IF	*Ilex x 'Nellie R. Stevens'*	Nellie Stevens Holly
	EA	JE	*Juniperus horizontalis* 'Bar Harbor'	Bar Harbor Juniper
	EA	JH	*Juniperus procumbens* 'Nana'	Dwarf Japanese Garden Juniper
	EA	JP	*Juniperus x media* 'Pfitzerana Aurea'	Pfitzer Juniper
	EA	LA	*Lagerstroemia indica* 'Acoma'	Acoma Crape Myrtle
3	EA	LM	*Lagerstroemia indica x fauriei* 'Natchez'	Natchez Crape Myrtle
	EA	LF	*Leucothoe axillaris* 'Nana'	Dwarf Leucothoe
	EA	LG	*Leucothoe fontanesiana* 'Green Ef'	Drooping Leucothoe
	EA	LM	*Liriope muscari* 'Aurea'	Green Ef Longeddum
	EA	MC	*Miscanthus sacchariflorus* 'Purpurascens'	Golden Moneywort
	EA	PS	*Pennisetum alopecuroides* 'Emerald Cushion Blue'	Pink Muhly Grass
514	EA	MC	*Muhlenbergia capillaris* 'Pink Flamingo'	Creeping Phlox
	EA	GN	*Quercus nuttallii*	Nuttall Oak
2	EA	RP-H	*Rhododendron x 'PJM'*	PJM Rhododendron
21	EA	RR	*Rosa 'PINK DRIFT'*	Rainbow Knock Out Rose
	EA	RM	*Rosa 'Meipocos'*	Pink Meidiland Rose
7	EA	TG	*Taxodium germanicum*	Japanese Clayera
	EA	TOS	*Thuja occidentalis 'Smaragd'*	Emerald Green Arborvitae
	TOGT		*Tsuga x 'Gentsch White'*	Golden Tuffet Arborvitae
	EA	VT	*Viburnum tinus* 'Spring Bouquet'	Spring Bouquet Viburnum
2	EA	VAC	*Abbeville Blue*	Abbeville Blue Cheesh Tree
	EA	YF	*Yucca filamentosa* 'Color Guard'	Color Guard Yucca
9				

Note:
All disturbed areas in the vicinity of the building that do not fall within a plant bed will receive sod. Sod quantity is estimated to include areas indicated on the plan. These areas are estimated only; the extent of sod to be installed will be determined by the Engineer in the field.

$$$$$$$$$$STIMESSSS
$$$$$$$$$$DESIGNSSSSSSSSSSSSSSSSSS
$$$$$$$$$$USERNAMESSSSS

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LANDSCAPE DESIGN & DEVELOPMENT
1557 MAIL SERVICE CENTER RALEIGH NC 27699-1557
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I – 85 Cabarrus County Rest Area Renovation

NORTH CAROLINA LANDSCAPE ARCHITECT 1447 ROBERT N. KOPELSON

REGISTERED LANDSCAPE ARCHITECT : CONNIE MORGAN

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # : K – 4906

FEDERAL I.D. # : IMS – 085–2(64)59

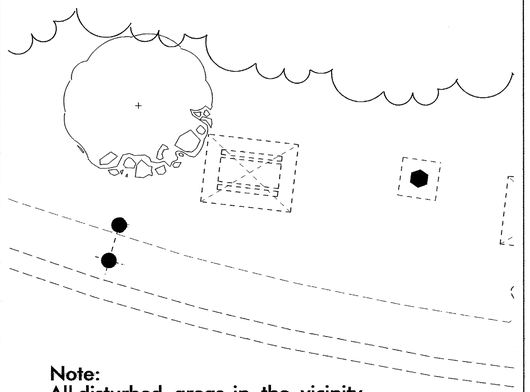
FINAL DESIGN DATE : April 30, 2009

SHEET DESCRIPTION: I – 85 Cabarrus Rest Area | South Bound Lane | Planting Plan A

SHEET NO : L – SBL – 7A

TOTAL SHEET NO : 8

Quan.	Unit	Key	Botanical Name	Common Name
	EA	APDT	*Acer palmatum dissectum 'Tamukeyama'*	Red Lace Leaf Japanese Maple
1	EA	APDV	*Acer palmatum dissectum 'Viridis'*	Viridis Japanese Maple
	EA	APOK	*Acer palmatum 'Okagami'*	Okagami Japanese Maple
1	EA	APOS	*Acer palmatum 'Osakazuki'*	Osakazuki Japanese Maple
6	EA	APRW	*Acer palmatum 'Red Wood'*	Red Wood Japanese Maple
1	EA	APS	*Acer palmatum 'Scolopendrifolium'*	Scolopendrifolium Japanese Maple
	EA	APSA	*Acer shirawanum 'Autumn Moon'*	Autumn Moon Maple
2	EA	AU	*Arctostaphylos uva-ursi 'Massachusetts'*	Kinnikinnick
	EA	AN	*Athyrium niponicum 'Pictum'*	Japanese Painted Fern
3	EA	BC	*Bergenia cordifolia*	Heart-leaf Bergenia
7	EA	CD	*Callicarpa dichotoma 'Issai'*	Purple Beautyberry
	EA	CF	*Calycanthus floridus 'Athens'*	Athens Carolina Allspice
	EA	CC	*Cercis canadensis 'Hearts of Gold PPAF'*	Hearts of Gold Redbud
1	EA	COC	*Chamaecyparis obtusa 'Confucious'*	Confucious Cypress
2	EA	CV	*Chionanthus virginicus 'Emerald Knight'*	Emerald Knight Fringe Tree
8	EA	CA	*Clethra alnifolia 'Hummingbird'*	Hummingbird Summersweet
3	EA	CDSF	*Cotoneaster dammeri 'Streib's Finding'*	Streib's Finding Cotoneaster
6	EA	CL	*Crocosmia 'Lucifer'*	Lucifer Crocosmia
2	EA	CJ	*Cryptomeria japonica 'Little Diamond'*	Little Diamond Cryptomeria
6	EA	EP	*Echinacea purpurea 'Kim's Knee High'*	Kim's Knee High Purple Coneflower
2	EA	FG	*Fothergilla gardenii*	Dwarf Fothergilla
3	EA	GJ	*Gardenia jasminoides 'Chuck Hayes'*	Chuck Hayes Gardenia
1	EA	HO	*Helleborus orientalis*	Lenten Rose
10	EA	HFV	*Heuchera x 'Frosted Velvet'*	Frosted Velvet Coral Bells
5	EA	HDW	*Hosta 'Dream Weaver'*	Dream Weaver Hosta
23	EA	IG	*Iris germanica 'Sugar Blues'*	Tall Bearded Iris
163	EA	IS	*Iris sibirica 'Caesar's Brother'*	Siberian Iris
	EA	IL	*Ilex x 'Liberty' PP#12009*	Liberty Holly
	EA	IR	*Ilex x 'Robin' PP#9496*	Robin Holly
11	EA	IC	*Ilex cornuta 'Carissa'*	Carissa Holly
9	EA	IV	*Ilex verticillata 'Red Sprite' (10% to be Jim Dandy)*	Red Sprite Winterberry
	EA	IF	*Illicium floridanum 'Halley's Comet'*	Halley's Comet Florida Anise Tree
11	EA	JE	*Juncus effusus*	Soft Rush
3	EA	JH	*Juniperus horizontalis 'Wiltonii'*	Blue Rug Juniper
6	EA	JP	*Juniperus procumbens 'Nana'*	Dwarf Japanese Garden Juniper
	EA	LA	*Lagerstroemia indica 'Apalachee'*	Apalachee Crape Myrtle
3	EA	LM	*Lagerstroemia indica x fauriei 'Muskogee'*	Muskogee Crape Myrtle
	EA	LC	*Leucothoe fontanesiana 'Nana'*	Drooping Leucothoe
2	EA	LC	*Loropetalum chinense 'Green Elf'*	Green Elf Loropetalum
3	EA	LN	*Lysimachia nummularia 'Aurea'*	Golden Moneywort
71	EA	MC	*Muhlenbergia capillaris*	Pink Muhly Grass
7	EA	PS	*Phlox subulata 'Emerald Cushion Blue'*	Creeping Phlox
3	EA	QN	*Quercus nuttalli*	Nuttall Oak
3	EA	RP,IM	*Rhododendron x 'PJM'*	PJM Rhododendron
15	EA	RR	*Rosa 'Radcor' PP# PPAF*	Rainbow Knock Out Rose
1	EA	RM	*Rosa 'Meipsidue' PP#11583*	Fire Meidiland Rose
4	EA	TG	*Temstroemia gymnanthera*	Japanese Cleyera
3	EA	TOS	*Thuja occidentalis 'Smaragd'*	Emerald Green Arborvitae
1	EA	TOGT	*Thuja occidentalis 'Golden Tuffet'*	Golden Tuffet Arborvitae
1	EA	VT	*Viburnum tinus 'Spring Bouquet'*	Spring Bouquet Viburnum
2	EA	VAC	*Vitex agnus-castus 'Abbeville Blue'*	Abbeville Blue Chaste Tree
4	EA	YF	*Yucca filimentosa 'Color Guard'*	Color Guard Yucca



Note:
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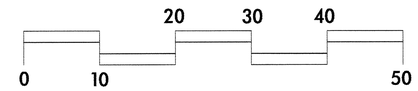

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I – 85 Cabarrus County Rest Area Renovation

ENGINEER : CONNIE MORGAN

TIP # :	K – 4906
FEDERAL I.D. # :	IMS – 085–2(64)59
FINAL DESIGN DATE :	April 30, 2009

SHEET DESCRIPTION:

I – 85 Cabarrus Rest Area	
South Bound Lane	
Planting Plan B	

SHEET NO : L – SBL – 7B

TOTAL SHEET NO : 8

$$$$USERNAME$$$$
$$$$DATE$$$$
$$$$TIME$$$$

1 CONC. PAD & ROOF PLAN
No Scale

2 SECTION
1/2"=1'–0"

3 SECTION
1/2"=1'–0"

4 JOINT DETAIL
1/2"=1'–0"

5 FRAMING PLAN
1/2"=1'–0"

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I – 85 Cabarrus County
Rest Area Renovation

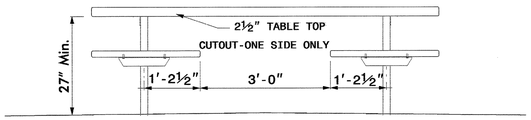
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 028878 KENNETH D. PACE

CONNIE MORGAN

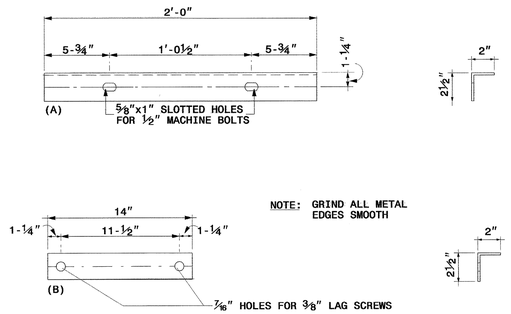
TIP # :	K – 4906
FEDERAL I.D. # :	IMS – 085-2(64)59
FINAL DESIGN DATE :	April 30, 2009

SHEET DESCRIPTION:
I – 85 Cabarrus Rest Area
Detail Sheet
Picnic Shelter

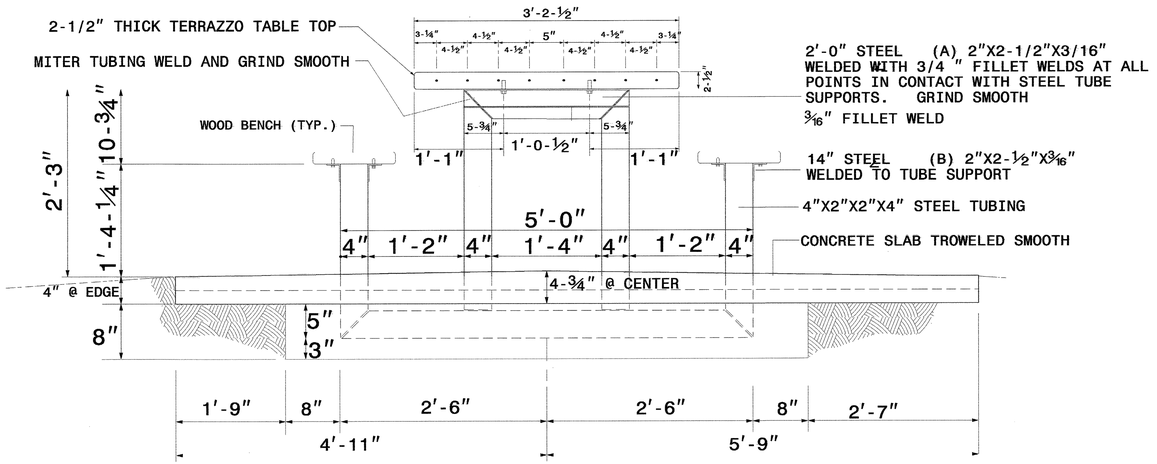
SHEET NO : L – 1
TOTAL SHEET NO : 14



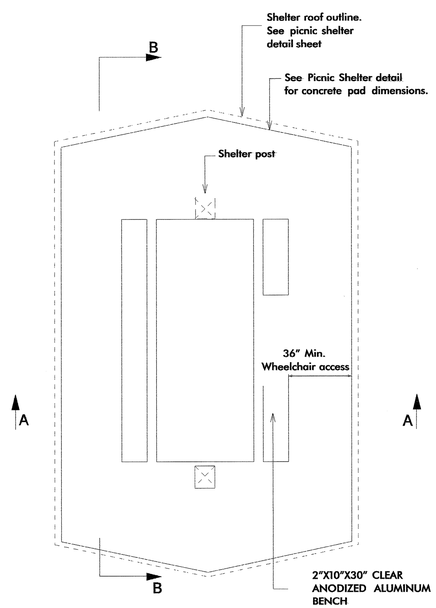
HANDICAP ACCESSIBLE PICNIC TABLE



2" X 212" X 316" STEEL ∠ DETAILS

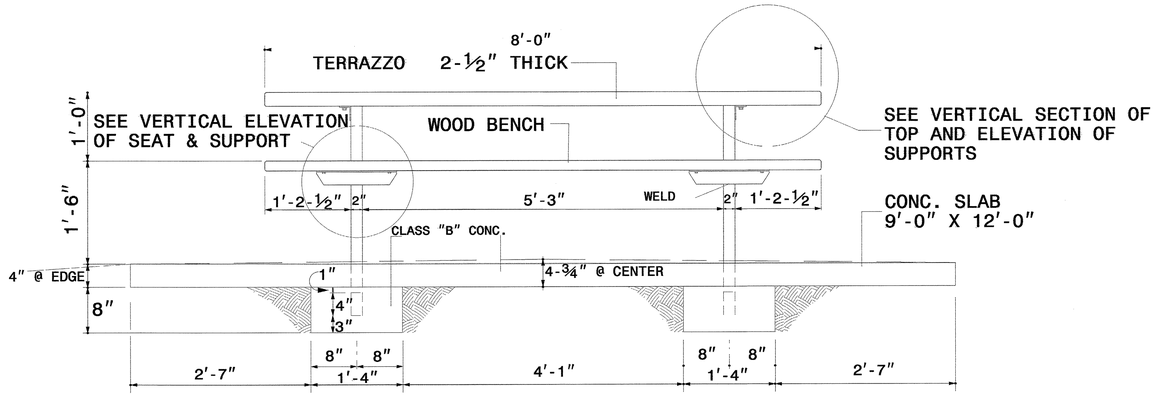


SECTION A-A VERT. CROSS SECTION THROUGH CONC. PAD, TABLE, & BENCHES



PLAN OF HANDICAP ACCESSIBLE TABLE, BENCHES, & CONCRETE PAD

SLOPES SAME AS LONGITUDINAL SECTION



SECTION B-B VERT. LONGITUDINAL SECT. THROUGH CONC. PAD LOOKING TOWARD BENCH &TABLE

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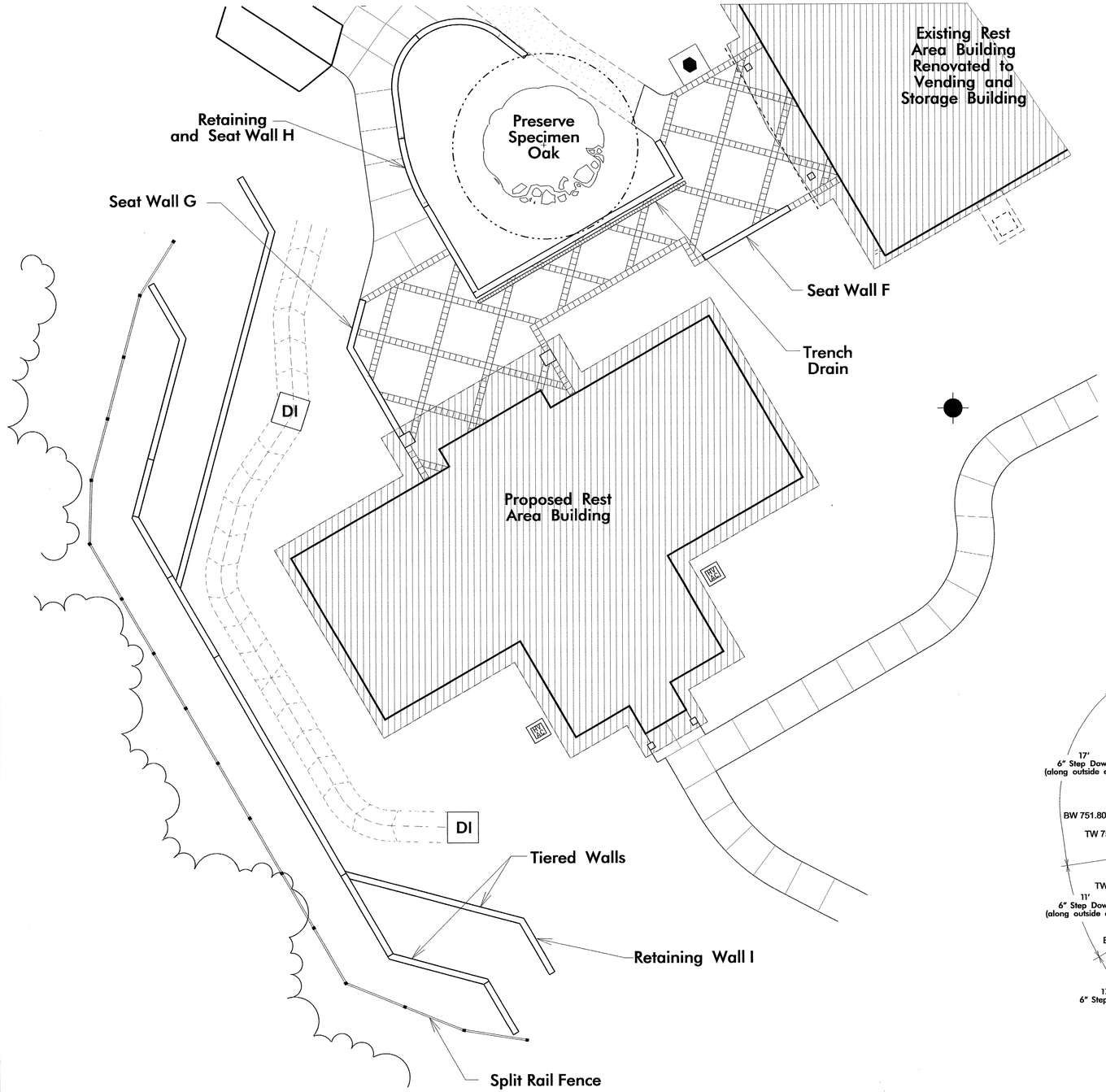
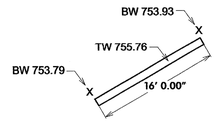
I – 85 Cabarrus County Rest Area Renovation

PROJECT ENGINEER: CONNIE MORGAN

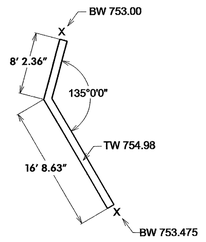
TIP # :	K – 4906	I – 85 Cabarrus Rest Area	SHEET NO : L – 2
FEDERAL I.D. # :	IMS – 085–2(64)59	Detail Sheet	TOTAL SHEET NO : 14
FINAL DESIGN DATE :	April 30, 2009	Picnic Table	

SHEET DESCRIPTION:

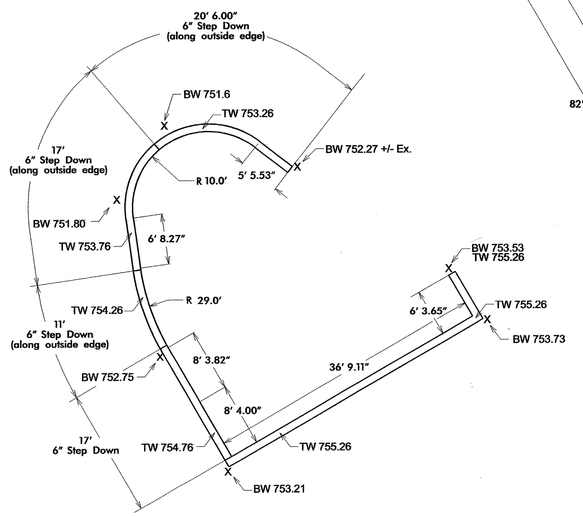




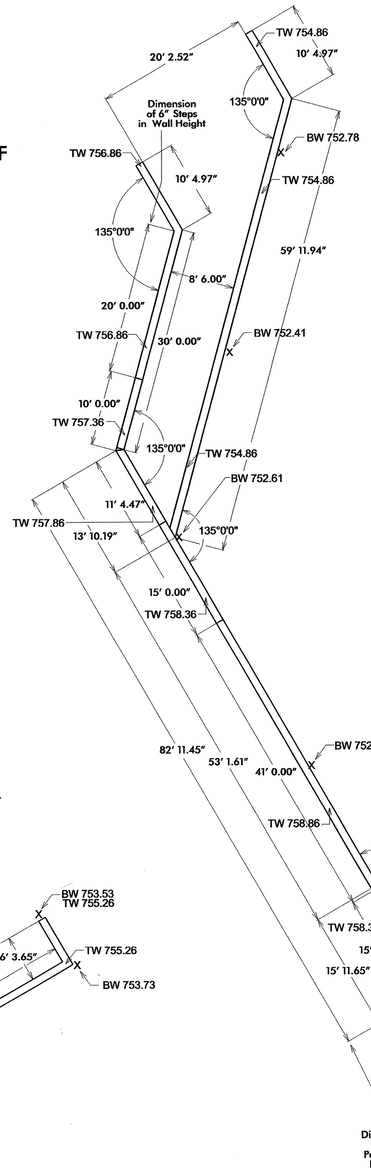
Proposed Seat Wall F



Seat Wall G



Retaining and Seat Wall H



Retaining Wall I

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I – 85 Cabarrus County Rest Area Renovation

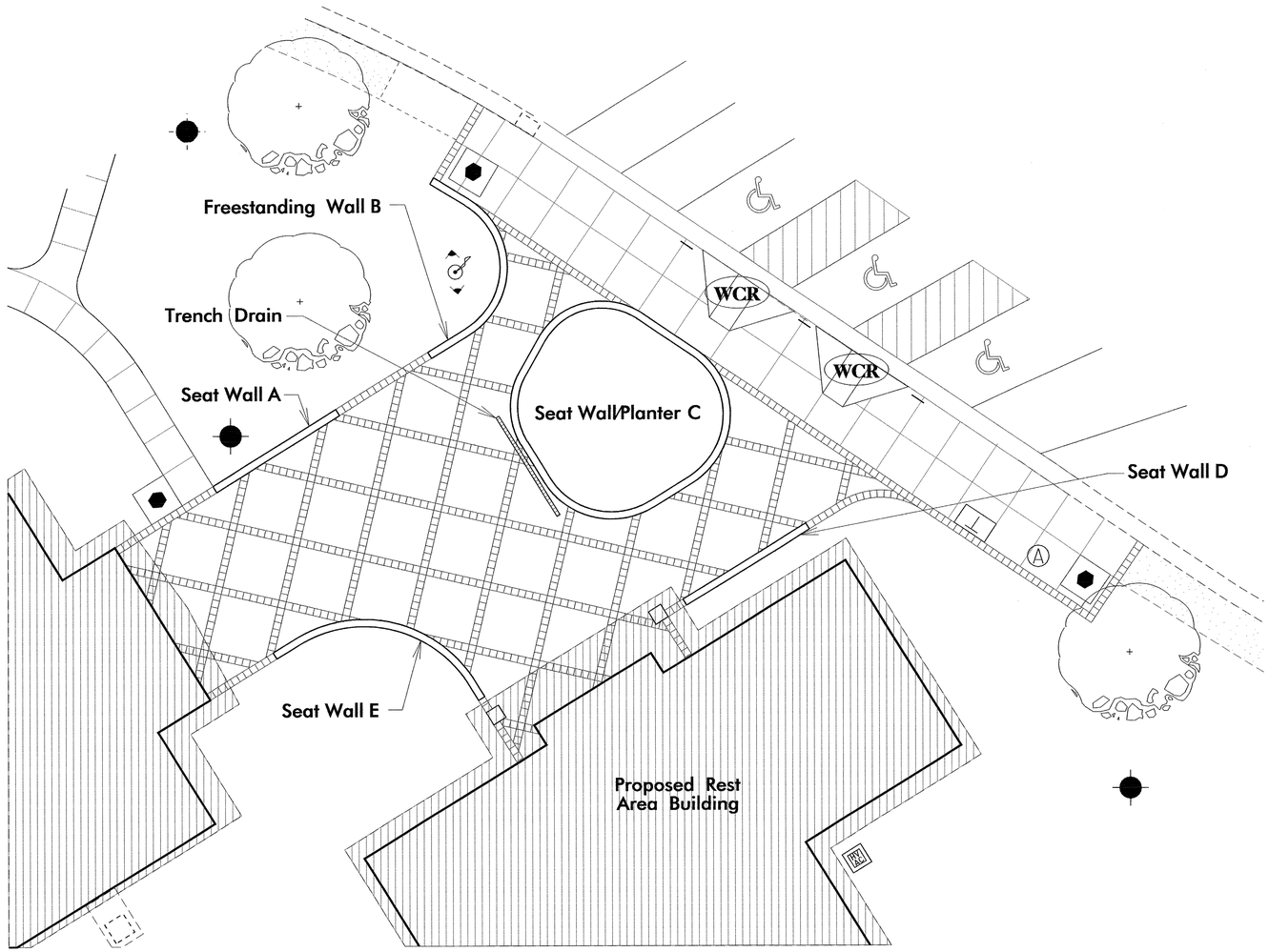
NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1447 ROBERT N. KOPETSKY 5.14.09

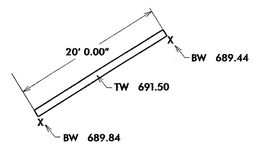
CONNIE MORGAN

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

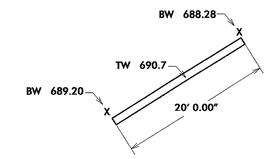
TIP # :	K – 4906
FEDERAL I.D. # :	IMS – 085–2(64)59
FINAL DESIGN DATE :	April 30, 2009
SHEET DESCRIPTION:	I – 85 Cabarrus Rest Area
	Detail Sheet
	NBL Walls
SHEET NO :	L – 3
TOTAL SHEET NO :	14

$$$$USERNAME$$$$ $$$$DGN$$$$ $$$$TIME$$$$

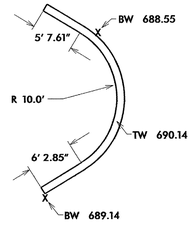




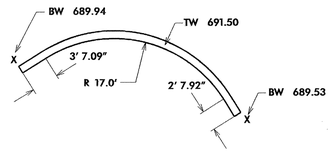
Seat Wall A



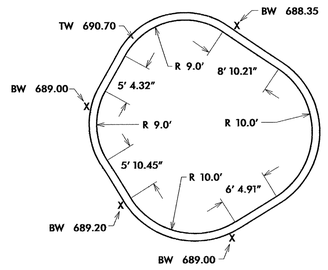
Seat Wall D



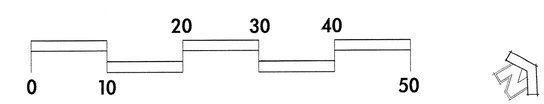
Freestanding Wall B



Seat Wall E



Seat Wall/Planter C



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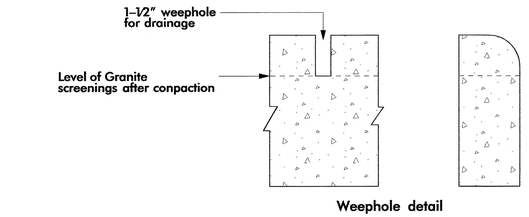
I – 85 Cabarrus County Rest Area Renovation

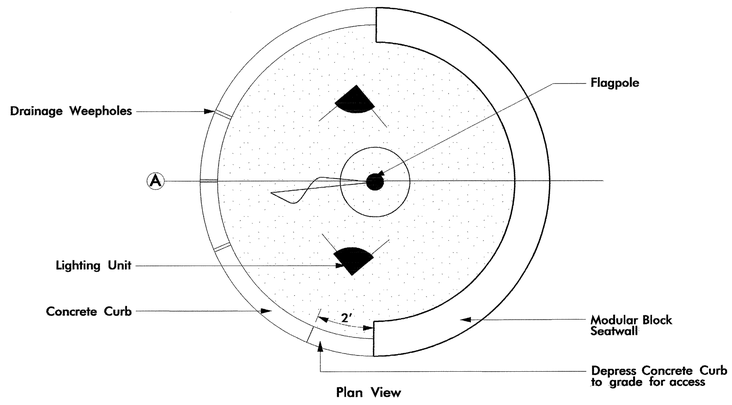
ENGINEER: CONNIE MORGAN

TIP # :	K – 4906	SHEET DESCRIPTION: I – 85 Cabarrus Rest Area	SHEET NO : L – 4
FEDERAL I.D. # :	IMS – 085–2(64)59	Detail Sheet	TOTAL SHEET NO : 14
FINAL DESIGN DATE :	April 30, 2009	SBL Walls	

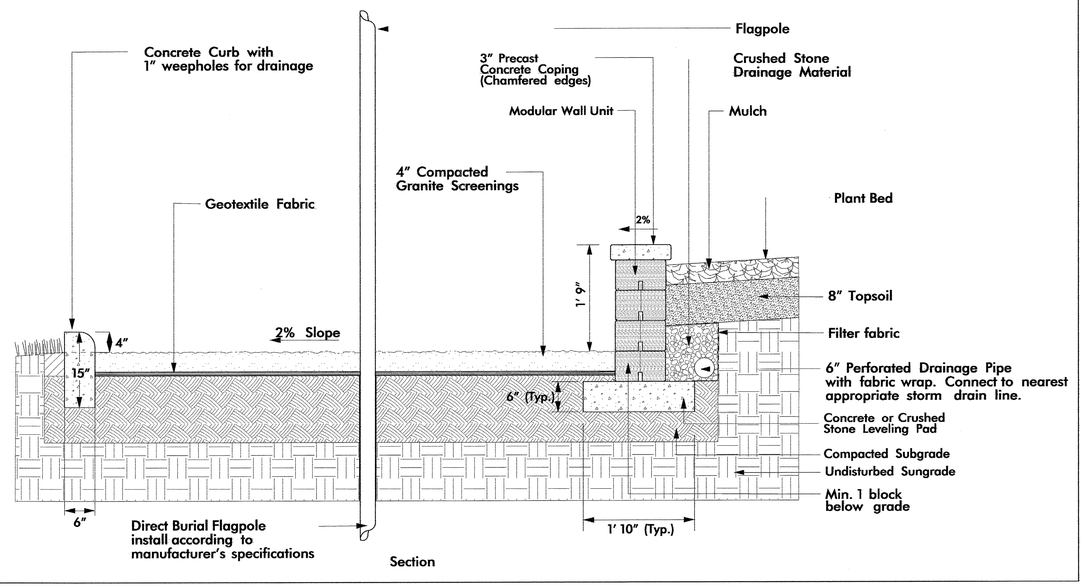
NBL Flagpole Area Detail



Weephole detail

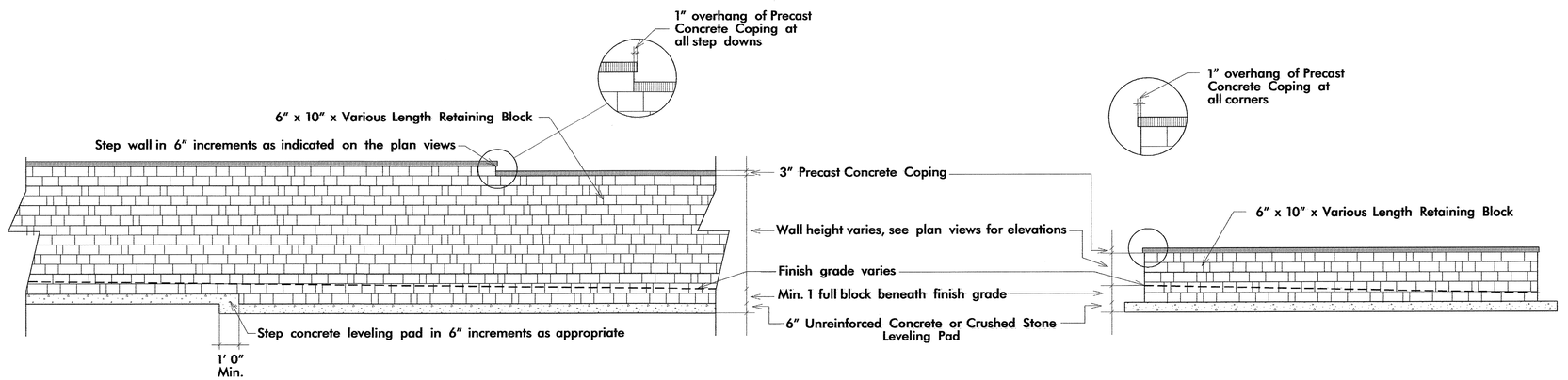


Plan View



Section

Typical Wall Profiles



Note:
Block pattern is graphic representation only, use manufacturers recommendations for creating pattern and wall stability.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16394 6-14-09 WILLIAM RATTERREE

$$$$USERNAME$$$$
$$$$SYSTIMES$$$$
$$$$DESIGNFILES$$$$

NCDOT - ROADSIDE ENVIRONMENTAL UNIT
LANDSCAPE DESIGN & DEVELOPMENT
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I – 85 Cabarrus County Rest Area Renovation

RBU

CONNIE MORGAN

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # :	K – 4906
FEDERAL I.D. # :	IMS – 085–2(64)59
FINAL DESIGN DATE :	April 30, 2009

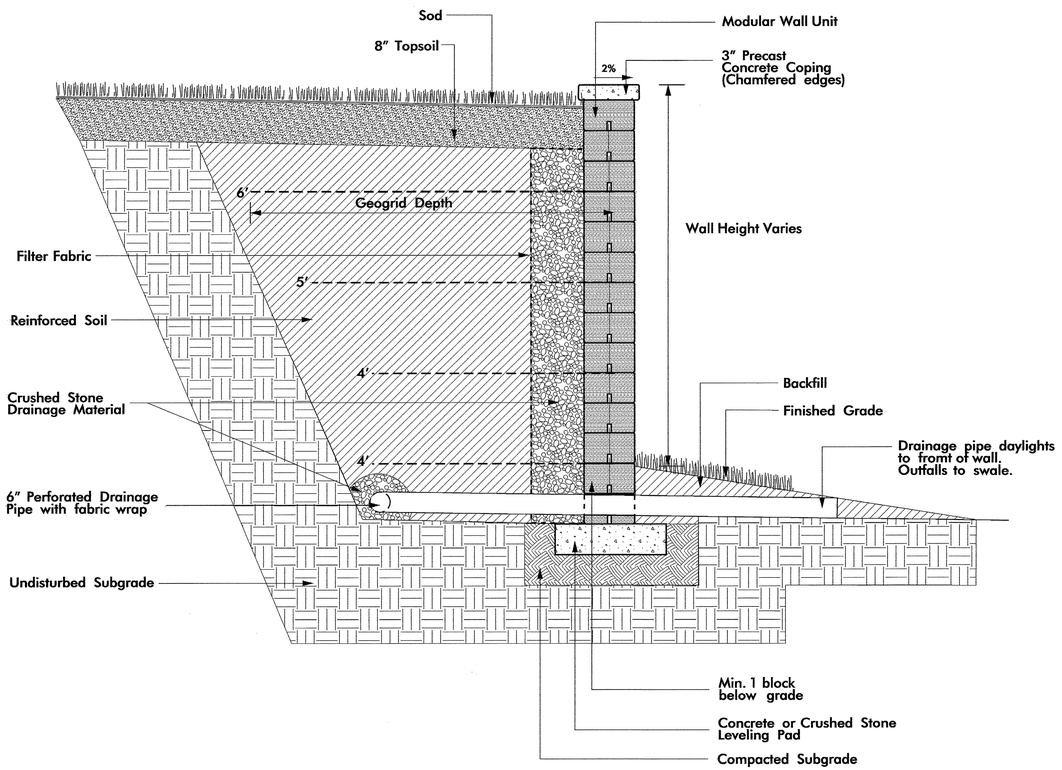
SHEET DESCRIPTION:

I – 85 Cabarrus Rest Area	
Detail Sheet	
Wall Details	

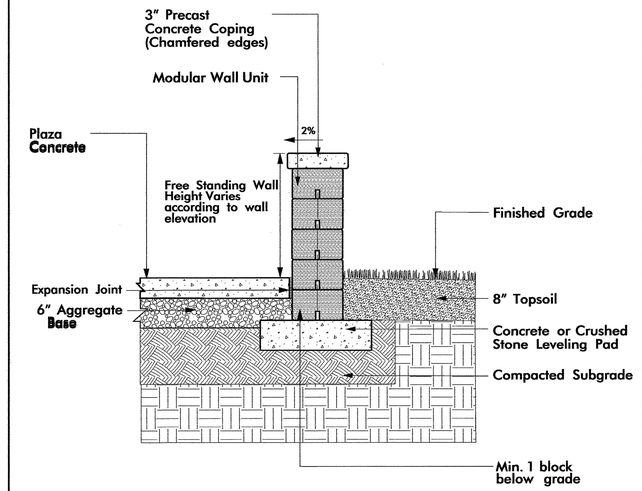
SHEET NO : L – 5

TOTAL SHEET NO : 14

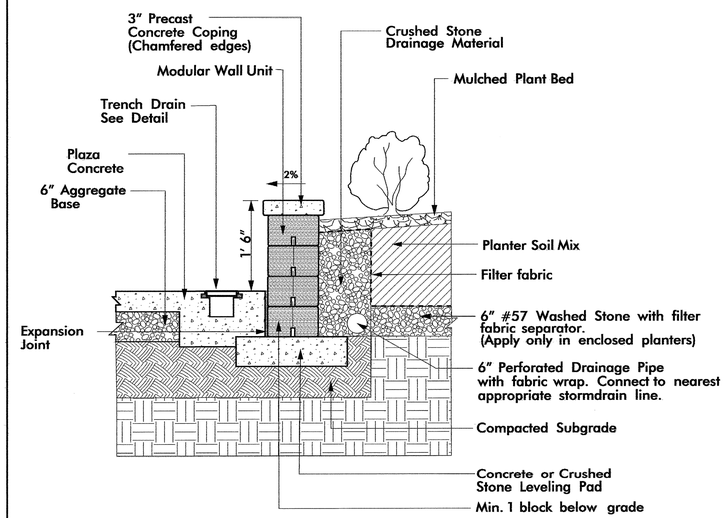
Retaining Wall



Freestanding SeatWall



Retaining /Planter Seat Wall



NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16394 5-18-09 WILLIAM RATTERREE

18-MAY-2009 11:43
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NRING
AT RENV231813

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I – 85 Cabarrus County Rest Area Renovation

REU

CONNIE MORGAN

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

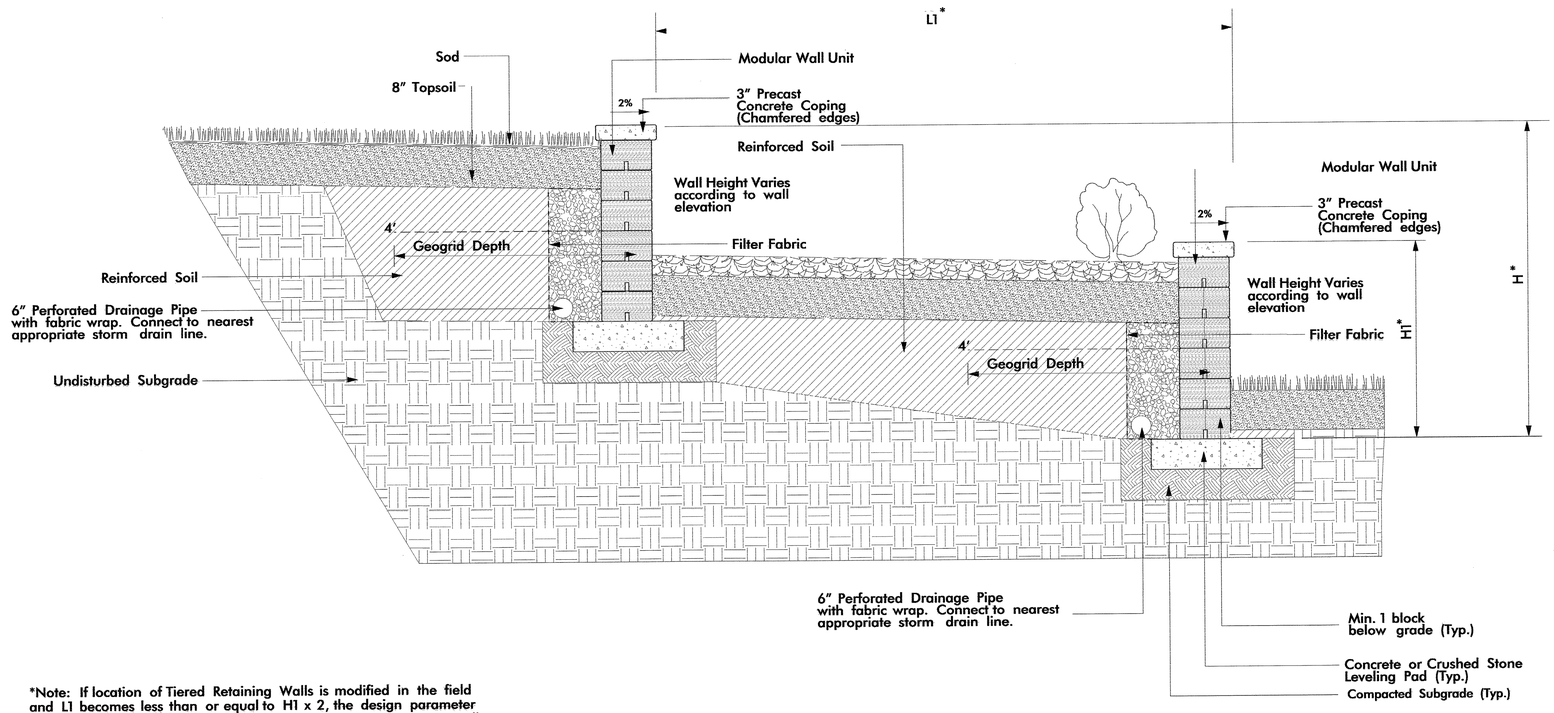
TIP # :	K – 4906
FEDERAL I.D. # :	IMS – 085–2(64)59
FINAL DESIGN DATE :	April 30, 2009

SHEET DESCRIPTION

I – 85 Cabarrus Rest Area
Detail Sheet
Wall Details

SHEET NO : L – 6
TOTAL SHEET NO : 14

Retaining Wall
(Tiered)



*Note: If location of Tiered Retaining Walls is modified in the field and L1 becomes less than or equal to H1 x 2, the design parameter changes and the walls will need to be considered a composite wall system instead of individual walls. Consequently the geogrid reinforcement will need to be redesigned. Consult Structural Engineer should this occur.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16394 5-27 ENGINEER WILLIAM RATTERREE

$$$$$$$SYSTIME$$$$$$
$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$
$$$$$$$$$$$$$$$$$$$USERNAME$$$$$$

NCDOT - ROADSIDE ENVIRONMENTAL UNIT
LANDSCAPE DESIGN & DEVELOPMENT
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I – 85 Cabarrus County Rest Area Renovation

REU

CONNIE MORGAN

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # : K – 4906

FEDERAL I.D. # : IMS – 085–2(64)59

FINAL DESIGN DATE : April 30, 2009

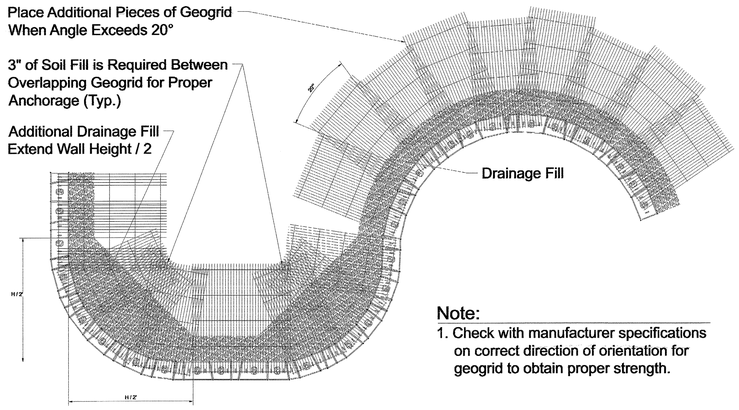
SHEET DESCRIPTION: I – 85 Cabarrus Rest Area

Detail Sheet

Wall Details

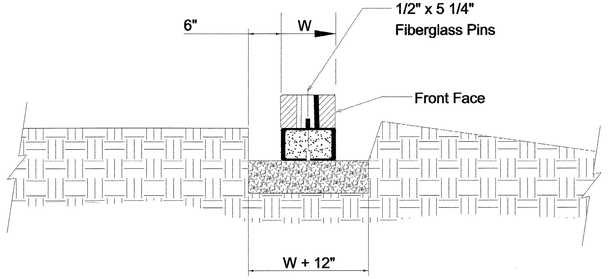
SHEET NO : L – 7

TOTAL SHEET NO : 14



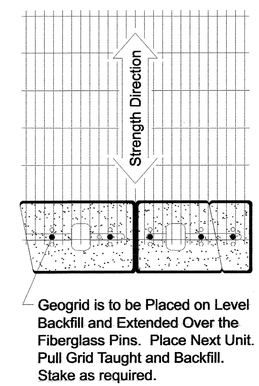
Note:
1. Check with manufacturer specifications on correct direction of orientation for geogrid to obtain proper strength.

Geogrid Installation on Curves

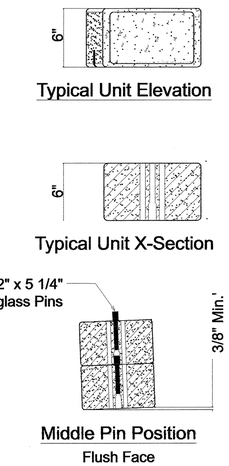


Section

Leveling Pad Detail

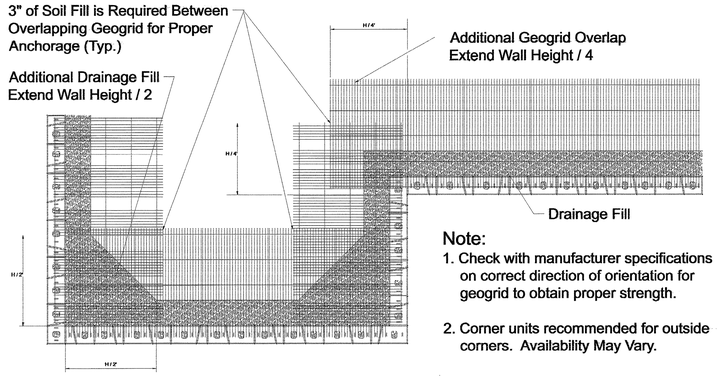


Grid & Pin Connection



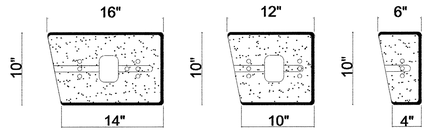
Middle Pin Position
Flush Face

Fiberglass Pin Alignment and Interconnection

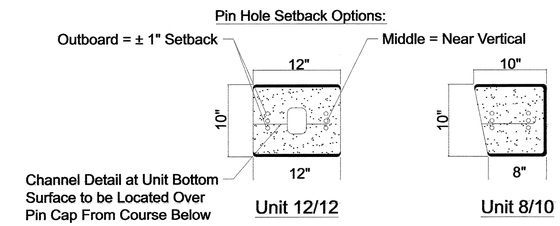


Note:
1. Check with manufacturer specifications on correct direction of orientation for geogrid to obtain proper strength.
2. Corner units recommended for outside corners. Availability May Vary.

Geogrid Installation at Corners



Unit 14/16 Unit 10/12 Unit 4/6



Unit 12/12 Unit 8/10

Unit Sizes

$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$

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I – 85 Cabarrus County Rest Area Renovation

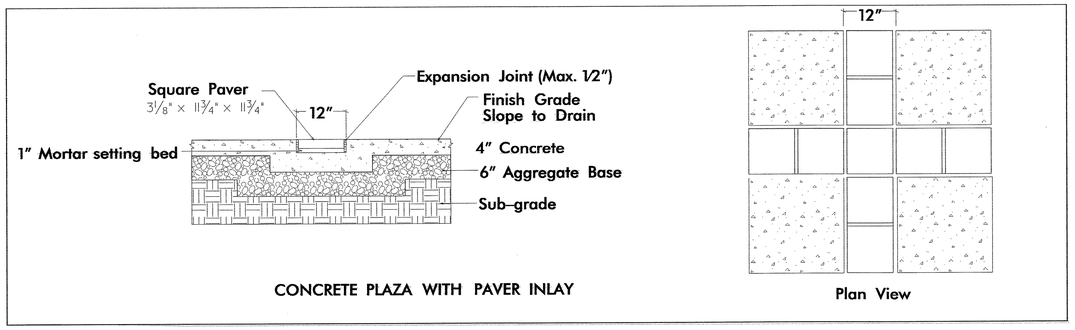
REU

CONNIE MORGAN

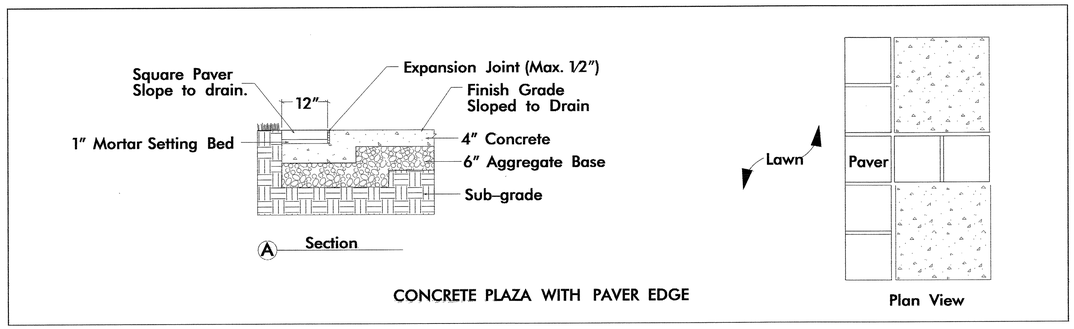
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # :	K – 4906	SHEET DESCRIPTION:	I – 85 Cabarrus Rest Area
FEDERAL I.D. # :	IMS – 085–2(64)59		Detail Sheet
FINAL DESIGN DATE :	April 30, 2009		Wall Details

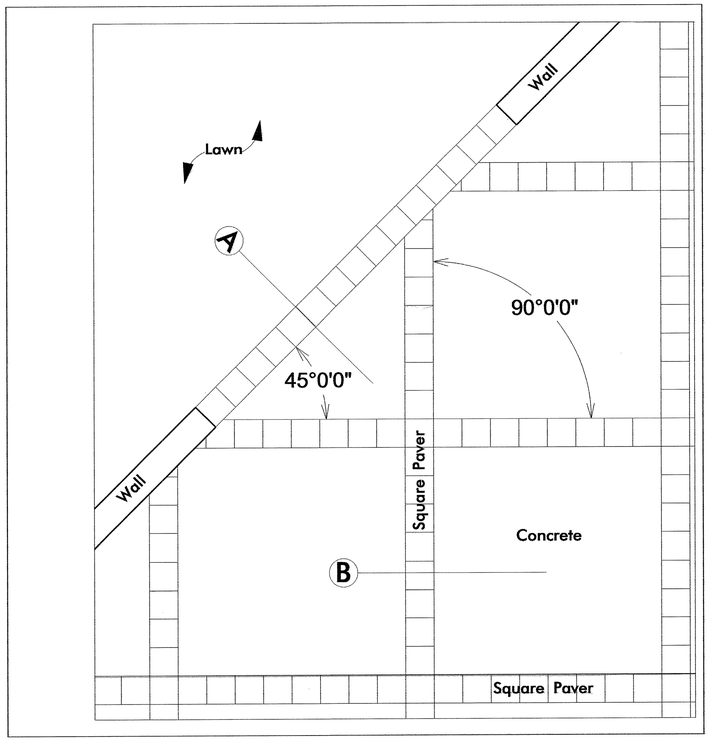
SHEET NO : L – 8
TOTAL SHEET NO : 14

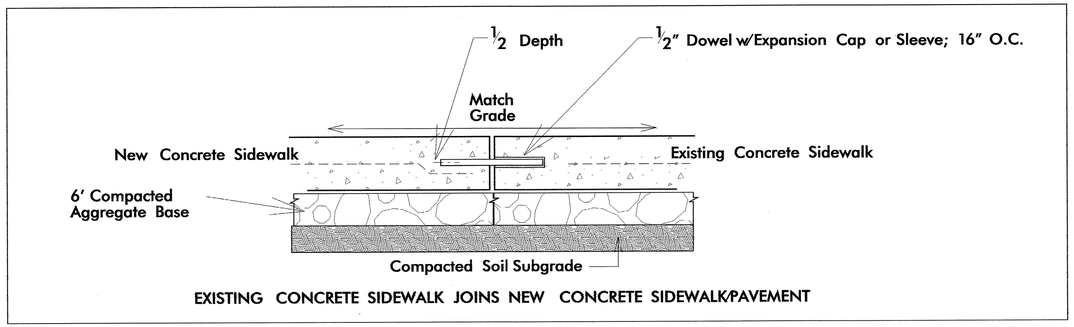


CONCRETE PLAZA WITH PAVER INLAY



CONCRETE PLAZA WITH PAVER EDGE





EXISTING CONCRETE SIDEWALK JOINS NEW CONCRETE SIDEWALK/PAVEMENT

Not to Scale

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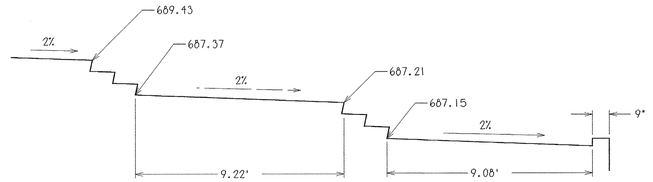
I – 85 Cabarrus County Rest Area Renovation

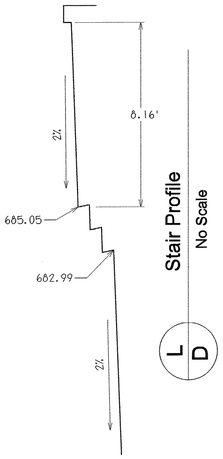
ENGINEER: CONNIE MORGAN

TIP # :	K – 4906	SHEET DESCRIPTION:	I – 85 Cabarrus Rest Area
FEDERAL I.D. # :	IMS – 085–2(64)59		Detail Sheet
FINAL DESIGN DATE :	April 30, 2009		Sidewalk and Plaza Pavement

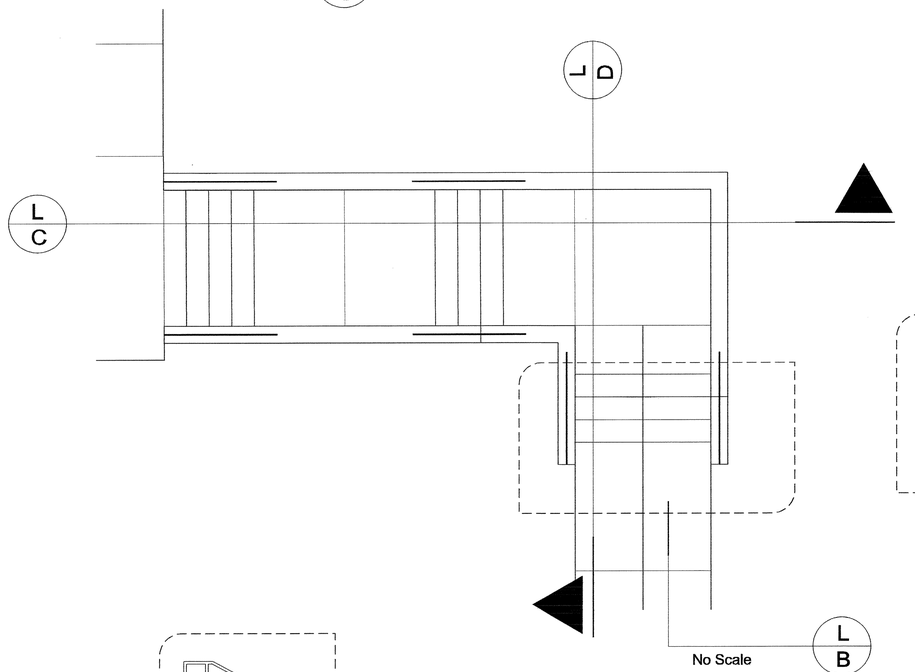
SHEET NO : L – 9
TOTAL SHEET NO : 14

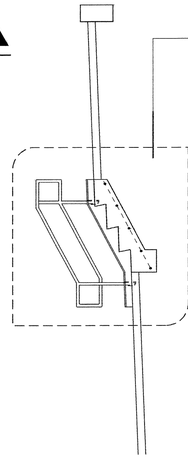


L C **Stair Profile**
No Scale

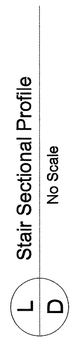


L D **Stair Profile**
No Scale

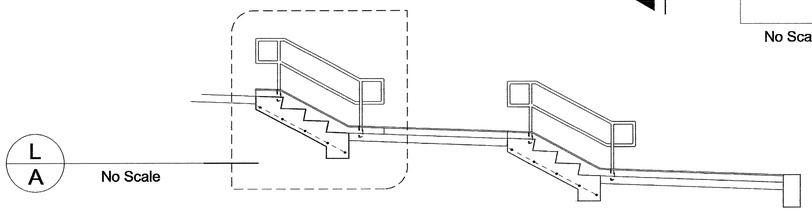




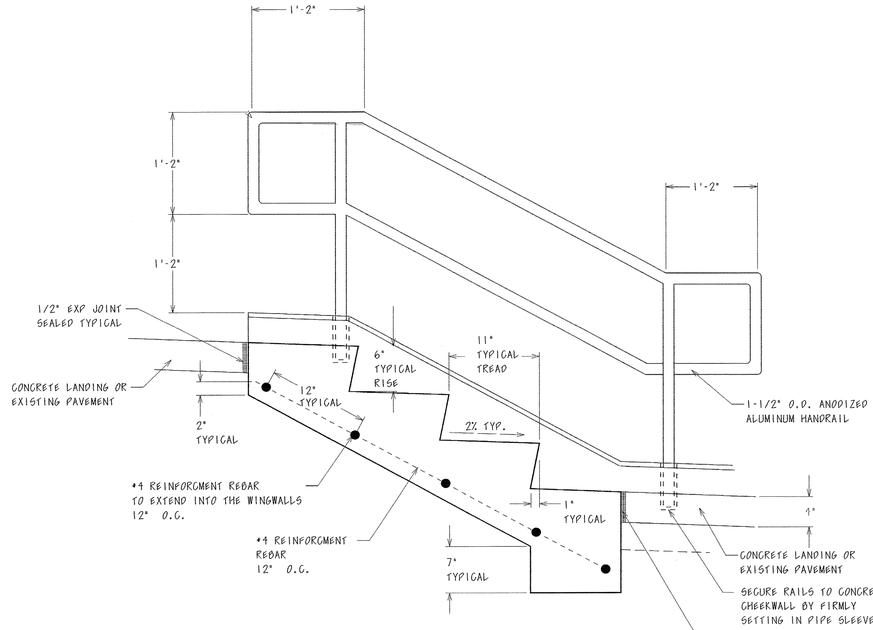
L A **No Scale**



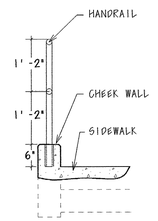
Stair Sectional Profile
No Scale

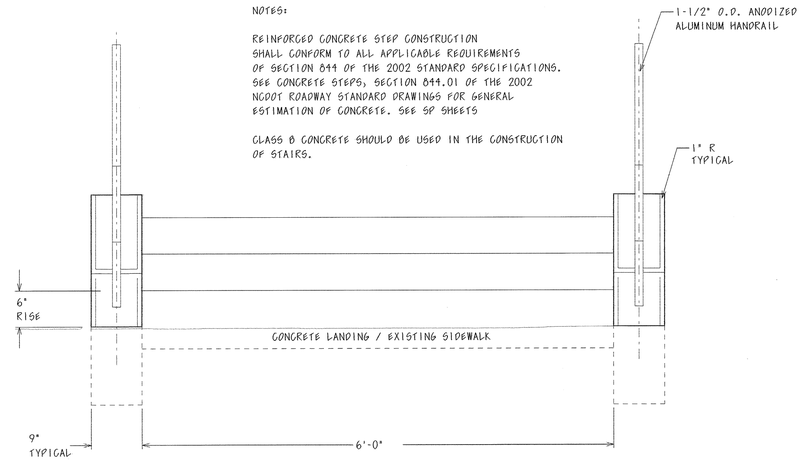


L C **Stair Sectional Profile**
No Scale



L A **Cross Section Stair Detail**
No Scale





L B **Front Elevation Stair Detail**
No Scale

$$$$$$$$$$SYSTEMNAME$$$$$$$$$$
$$$$$$$$$$DESIGN$$$$$$$$$$
$$$$$$$$$$USERNAME$$$$$$$$$$

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I – 85 Cabarrus County Rest Area Renovation

NORTH CAROLINA LANDSCAPE ARCHITECT SEAL 1447 ROBERT N. KOPELSKY 5/14/09

ENGINEER : CONNIE MORGAN

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # : K – 4906

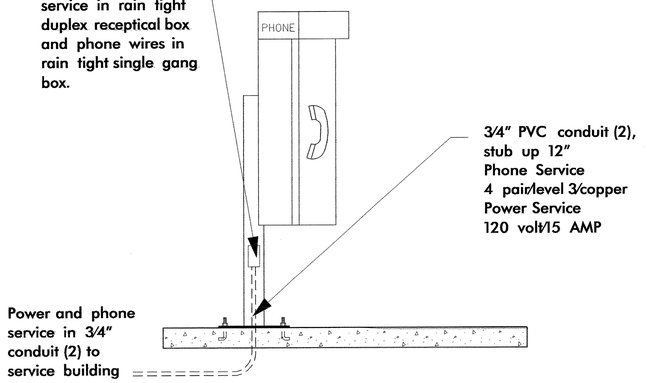
FEDERAL I.D. # : IMS – 085-2(64)59

FINAL DESIGN DATE : April 30, 2009

SHEET DESCRIPTION: I – 85 Cabarrus Rest Area
Detail Sheet
Concrete Steps, Cheekwalls and Handrails

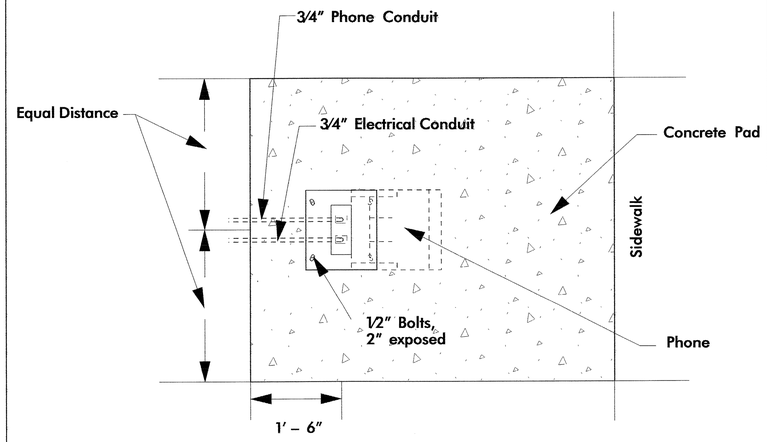
SHEET NO : L – 10

TOTAL SHEET NO : 14



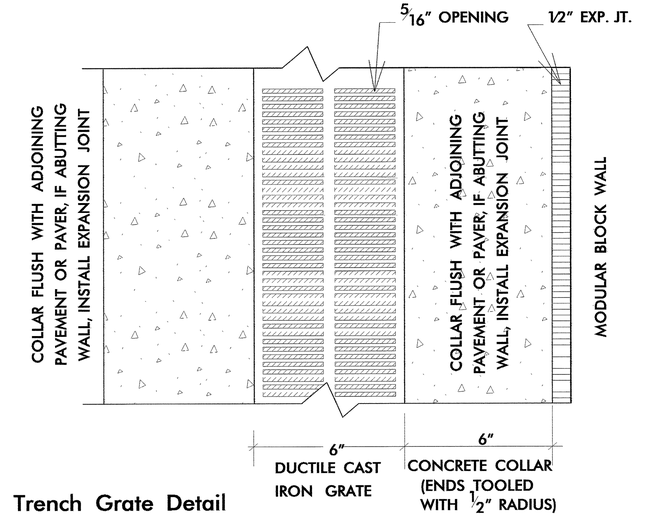
All telephones will meet state and federal handicap accesibility requirements.

Phone Relocation – Elevation / Section

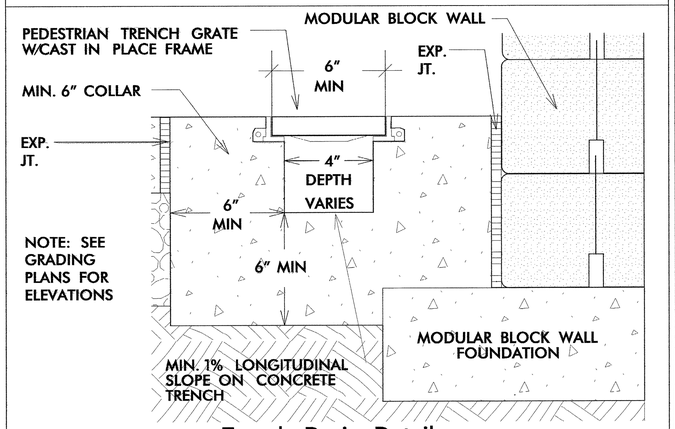


Note: see Plans for exact locations and concrete pad dimensions.

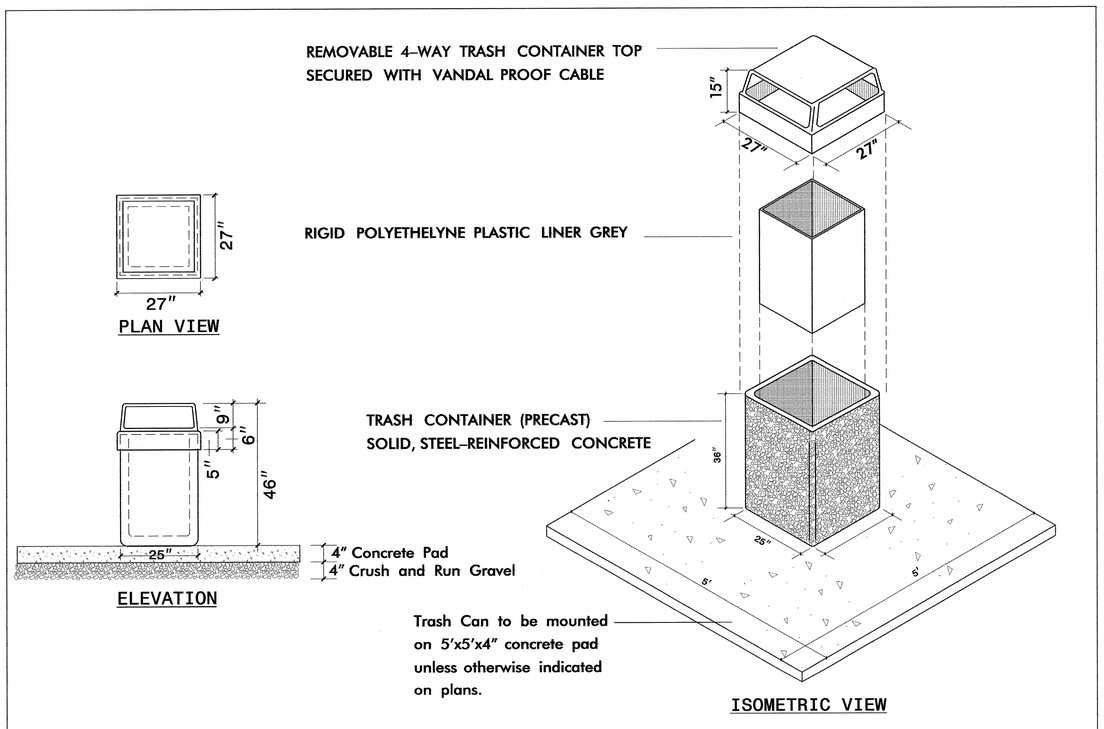
Phone Relocation – Plan (Typical Installation)



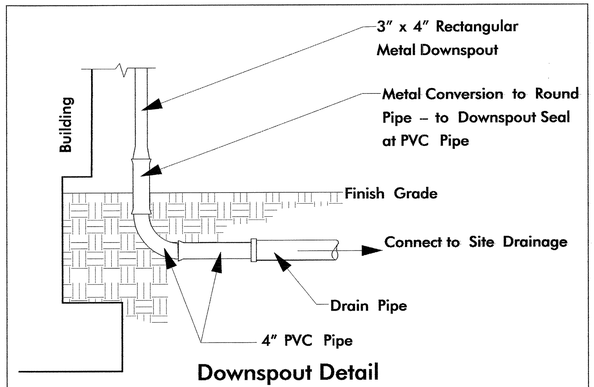
Trench Grate Detail



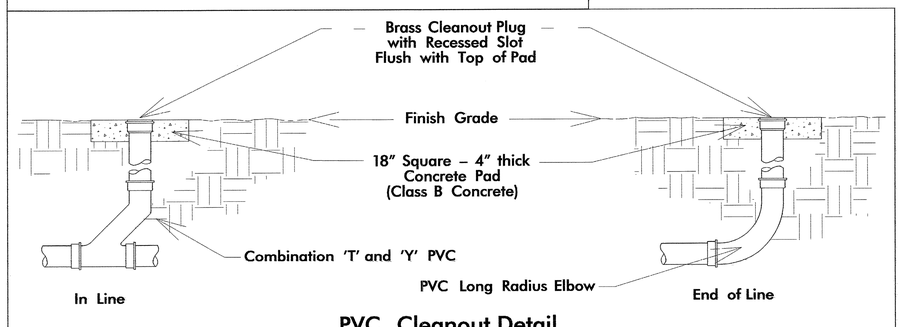
Trench Drain Detail



PRE-CAST EXPOSED AGGREGATE – TRASH RECEPTACLE



Downspout Detail



PVC Cleanout Detail

Not To Scale

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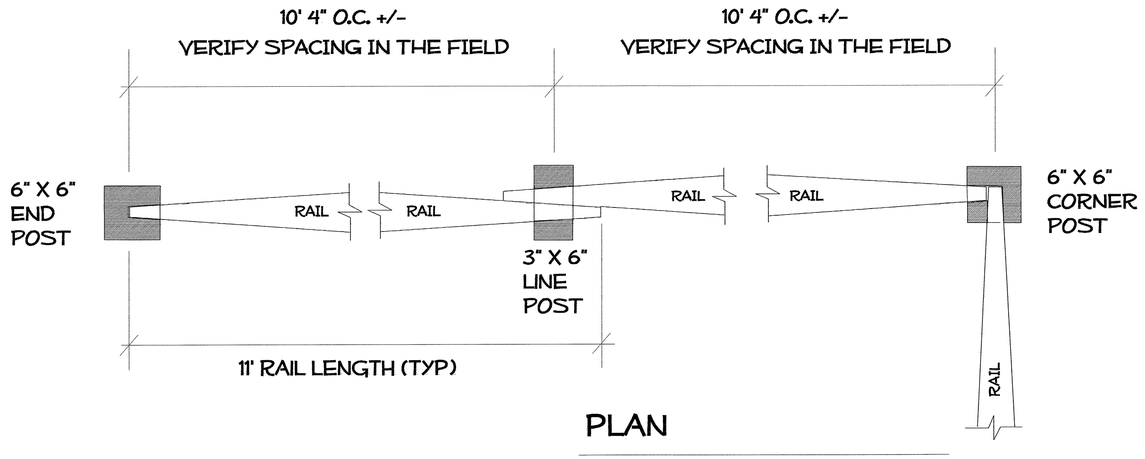
I – 85 Cabarrus County Rest Area Renovation

ENGINEER: CONNIE MORGAN

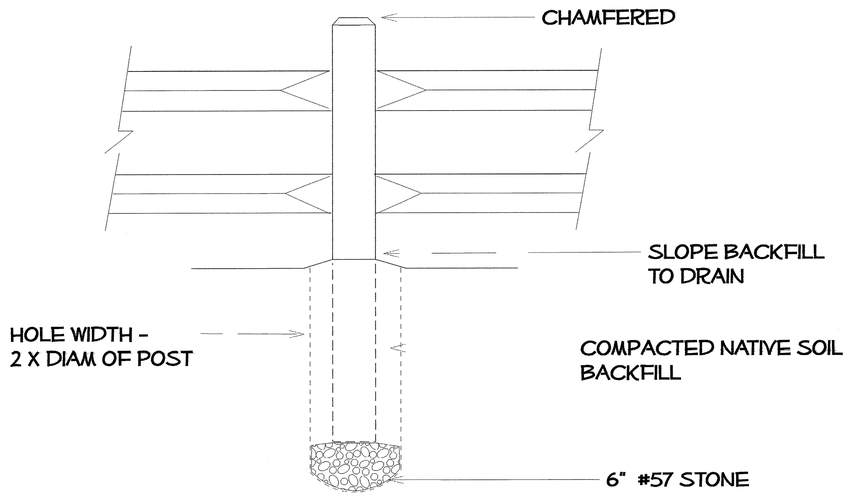
TIP # :	K – 4906	SHEET DESCRIPTION:	I – 85 Cabarrus Rest Area
FEDERAL I.D. # :	IMS – 085-2(64)59		Detail Sheet
FINAL DESIGN DATE :	April 30, 2009		Miscellaneous

SHEET NO : L – 11

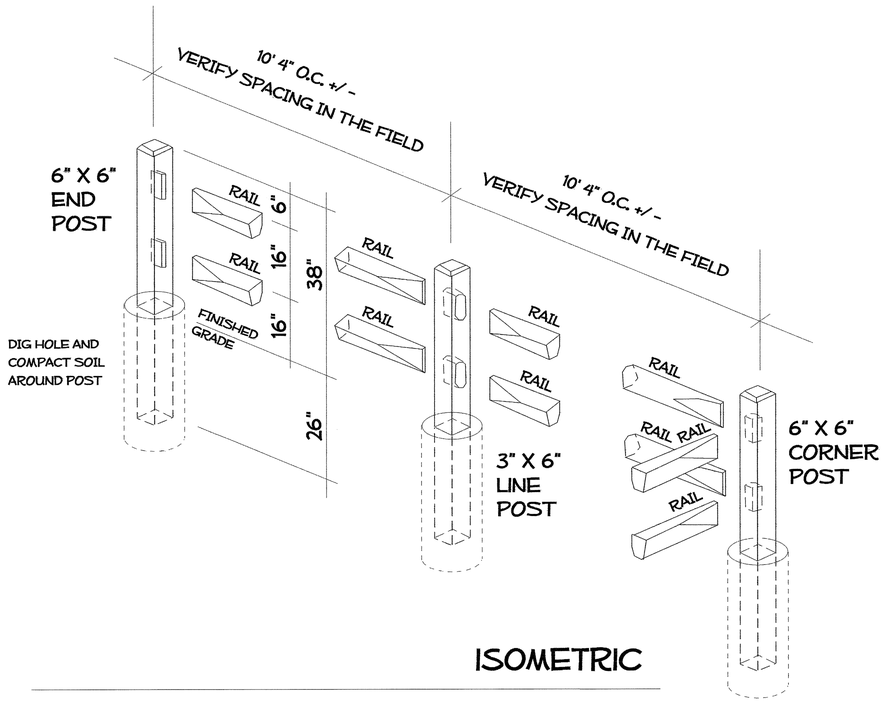
TOTAL SHEET NO : 14



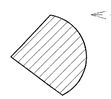
PLAN



ELEVATION



ISOMETRIC



ROUNDED BACK & ANGLED SPLIT/SAWN FRONT;
RAIL NARROWS AT EACH END FOR PLACEMENT
IN POST

POST SECTION

TYP

NOTES

WOOD SPECIFICATION:
POSTS - LOCUST
RAILS- CEDAR OR HEMLOCK

PREDRILL RAIL AND TOENAIL
TO POSTS W/ GALVENIZED
16 D NAILS

USE CORNER POSTS FOR
TURNS OF 90 DEGREES; USE
TWO ABUTTING LINE POSTS
FOR ANGLED TURNS GREATER
THAN 90 DEGREES

POSTS - SET PLUMB
RAILS- SET TRUE TO GRADE

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I – 85 Cabarrus County Rest Area Renovation

NORTH CAROLINA PROFESSIONAL LANDSCAPE ARCHITECT 1447 ROBERT N. KOPET JR. 5-14-09

EU ENGINEER : CONNIE MORGAN

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # :	K – 4906
FEDERAL I.D. # :	IMS – 085–2(64)59
FINAL DESIGN DATE :	April 30, 2009
SHEET DESCRIPTION:	I – 85 Cabarrus Rest Area
	Detail Sheet
	Split Rail Fence
SHEET NO :	L – 12
TOTAL SHEET NO :	14

$$$$$$$$SYSTEM$$$$$$$$
$$$$$$$$LOGIN$$$$$$$$
$$$$$$$$USERNAME$$$$$$$$

Endwall Section

Endwall Elevation

Typical Rain Garden Plan View

See Site Plan, Grading Plan and Planting Plan for specific information on each Rain Garden.

Typical Rain Garden Cross Section

Downspout Outlet Section

Basin Dimension Section

Berm Section

Rain Garden	Top of Basin Elevation	Top of Overflow Elevation	Top of 9" Storage Capacity Elevation	Basin Floor Elevation
A	688.50		688.25	687.50
B	687.83	687.63	687.58	686.83
C	688.50	688.33	688.25	687.50
D	688.50	688.33	688.25	687.50
E	687.83	687.63	687.58	686.83
F	749.00	748.83	748.75	748.00
G	750.70	750.53	750.45	749.70

Not to Scale

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I – 85 Cabarrus County Rest Area Renovation

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1447 ROBERT N. KOPETSKY 5.14.09

ENGINEER : CONNIE MORGAN

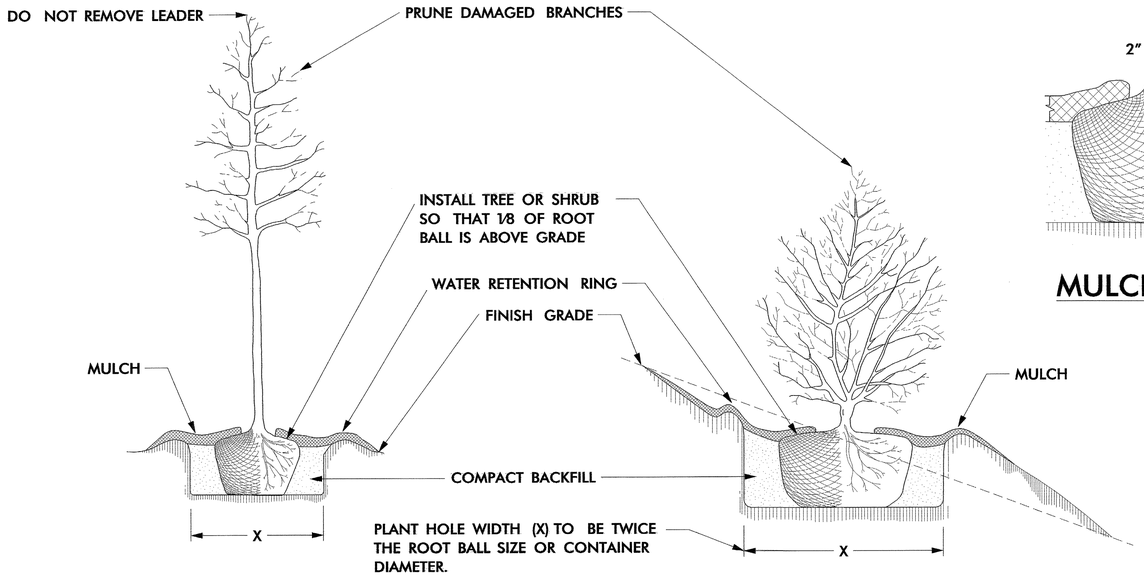
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # : K – 4906
FEDERAL I.D. # : IMS – 085-2(64)59
FINAL DESIGN DATE : April 30, 2009

SHEET DESCRIPTION: I – 85 Cabarrus Rest Area / Detail Sheet / Rain Garden Details

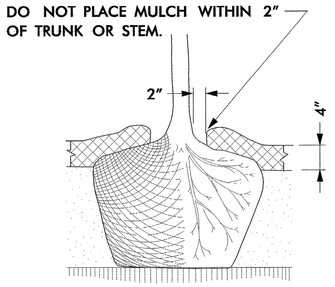
SHEET NO : L – 13
TOTAL SHEET NO : 14

$$$$$$SYSTIME$$$$$ $$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$ $$$$USERNAME$$$$

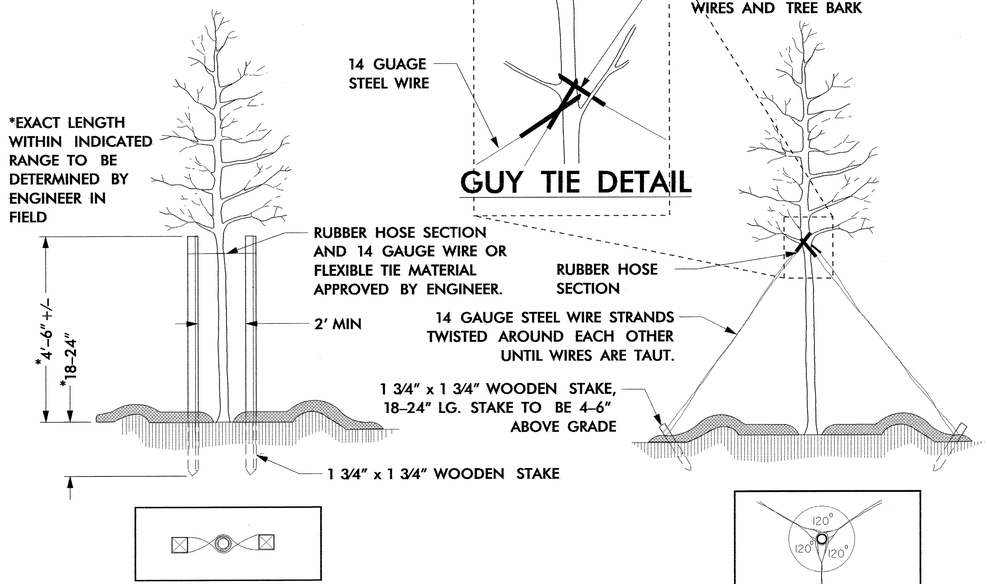


TREE OR SHRUB PLANTING DETAIL
(LEVEL GROUND)

TREE OR SHRUB PLANTING DETAIL
(SLOPING GROUND)



MULCH DETAIL

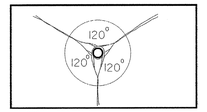


PLAN VIEW

STAKING DETAIL
(TREES 6'–10')

USE AS DIRECTED BY FIELD ENGINEER

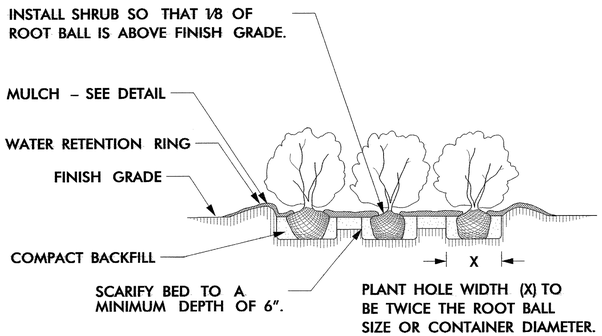
GUY TIE DETAIL



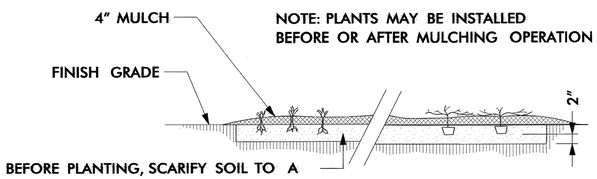
PLAN VIEW

GUYING DETAIL
(TREES 10' OR LARGER)

USE AS DIRECTED BY FIELD ENGINEER



SHRUB BED PLANTING DETAIL



GROUND COVER/BEDDING PLANT DETAIL

NOTES:

- 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.

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HTTP://WWW.NCDOT.ORG/DOH/OPERATIONS/DP_CHIEF_ENG/ROADSIDE/

I – 85 Cabarrus County Rest Area Renovation

NORTH CAROLINA LANDSCAPE ARCHITECT SEAL 5440 ROBERT N. KOPETSKY — ENGINEER : CONNIE MORGAN

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP # :	K – 4906
FEDERAL I.D. # :	IMS – 085–2(64)59
FINAL DESIGN DATE :	April 30, 2009
SHEET DESCRIPTION:	I – 85 Cabarrus Rest Area
	Detail Sheet
	Planting
SHEET NO :	L – 14
TOTAL SHEET NO :	14

$$$$$$$$$$SYSTIMES$$$$$$$$$$
$$$$$$$$$$SYSNAMES$$$$$$$$$$
$$$$$$$$$$USERNAMES$$$$$$$$$$

All existing utility services are approximate and based on original rest area plans. Contractor to field verify prior to construction beginning.

All Site Lighting and Telephones must remain operational during construction. Power Service must be maintained to the Vending Building during construction. Overhead power may be used to keep Vending building operational if necessary, since the building will be demolished after completion of existing restroom building renovation.

Key:

Existing Power Line-	P
Existing Water Line-	W
Exisitng Sewer Line-	SS
Exisitng Telephone Line-	T

REU

NCDOT - ROADSIDE ENVIRONMENTAL UNIT
REST AREA SECTION
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 – 85 Cabarrus County
Rest Area Renovation

DRAWN BY: J PITTS

NORTH CAROLINA PROFESSIONAL SEAL 028878 ENGINEER KENNETH D. PACE

REU ENGINEER : 5/28/09

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP#: **K-4906**
FEDERAL ID #: **IMS-085-2(64)59**
FINAL DESIGN DATE : **April 30, 2009**

SHEET DESCRIPTION: **I-85 Cabarrus Rest Area** / **North Bound Lane** / **Existing Site Utility Plan**

SHEET NO : **SU-NBL-1**
TOTAL SHEET NO : **3**

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$$USERNAME$$$$$

Car Parking

Proposed Relocation of 2 Telephone Pedestals and Trash Receptacle Reset

INV=744.34'
TOP=750.17'
INV=744.51'

Truck Parking

Proposed Flag Pole w/2 100w. spotlights

Proposed Raingarden (Rooftop runoff treatment)

TOP=746.64'

8" HDPE

New 1" Line

New Picnic Shelter

New 6" PVC Sanitary Sewer

Existing Rest Area Building Renovated to Vending and Storage Building

FFE 754.0

Trench Drain

Existing Meter Serves Both NBL & SBL

INV=
TOP

New Transformer

Relocate Post Top to new location

Current Vending Building

Vending building must stay operational during construction. May maintain power with overhead line if necessary. Completely remove all utilities associated with vending building during it's demolition phase.

Power Company will reroute Main Service to New Transformer. Old Line to be removed during demolition.

New 3" Water Line

Proposed Rest Area Building FFE 753.5

Telephone Pedestal– New line to each bldg. and to each payphone location as needed. Phones must stay operational during construction.

Drain Pipe

Drop Inlet

Drainage Swale

New Location Post Top Light

Phone Co. to reroute telephone line to Pedestal

New 1" water line connect to existing line

Relocate Post Top to new location. Intercept wiring in new junction box for reconnection of wiring.

Power Service to New Building

Existing water line

Drop Inlet

Abandon Water Line

New Location Post Top Light

Cap and Abandon Water line as shown and as needed

Long Vehicle and Truck HC Parking

Key:

P- New Power Line
P- Existing Power Line

W- New Water Line
W- Existing Water Line

SS- New Sewer Line
SS- Existing Sewer Line

T- New Telephone Line
T- Existing Telephone Line

New Gate Valve -

New Sanitary Sewer Clean Out -

Note:
Where new Water or Phone lines cross below concrete they shall be in conduit of the appropriate size.
All Power Lines are to be installed in Conduit of the appropriate size.

0 10 20 40 60 80 100

N

REU

NCDOT - ROADSIDE ENVIRONMENTAL UNIT
REST AREA SECTION
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 – 85 Cabarrus County Rest Area Renovation

DRAWN BY: J PITTS

REU ENGINEER :

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 028878 KENNETH D. PRICE 5/26/09

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP#	K-4906
FEDERAL ID #:	IMS-085-2(64)59
FINAL DESIGN DATE :	April 30, 2009

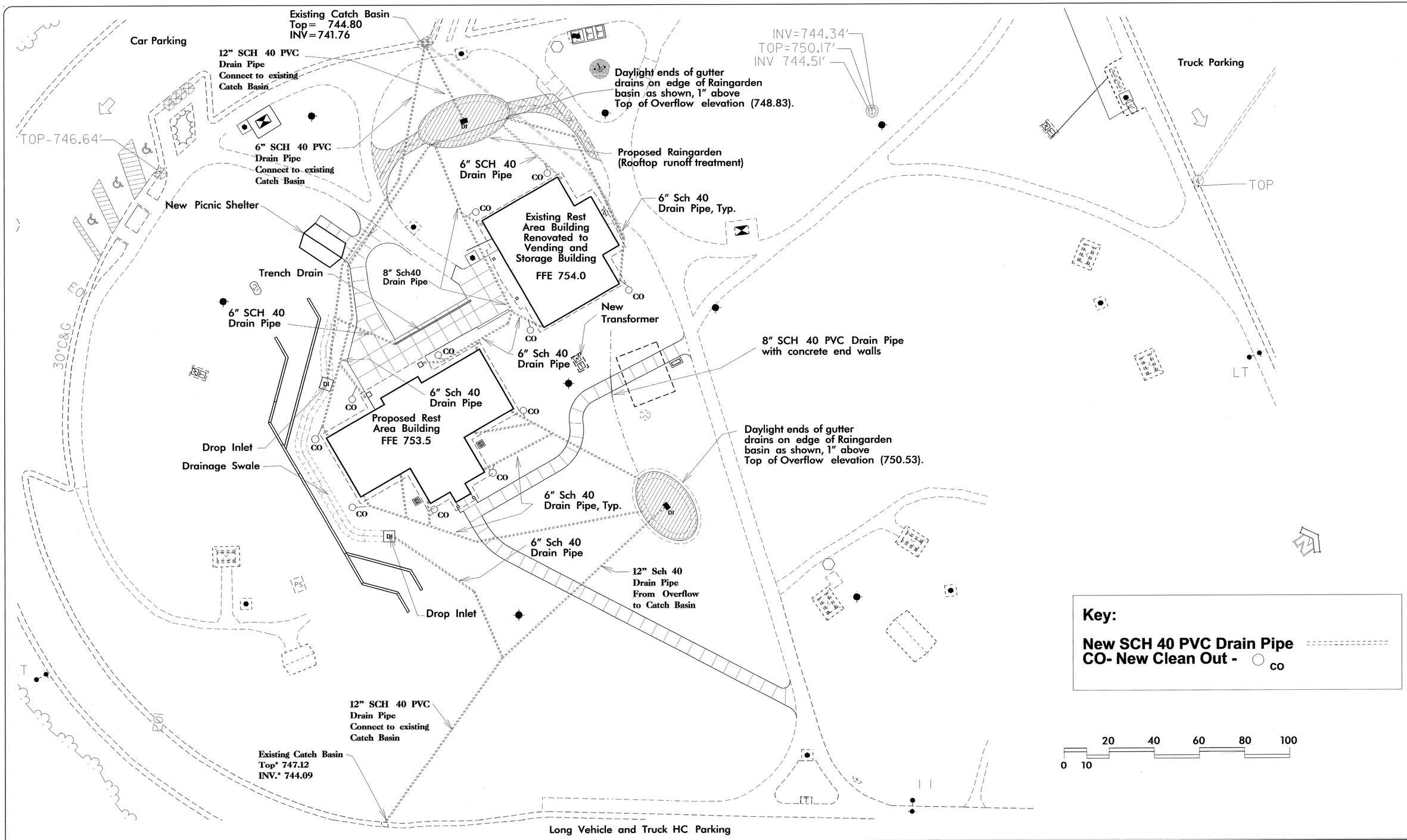
SHEET DESCRIPTION:

I - 85 Cabarrus Rest Area
North Bound Lane
Proposed Site Utility Plan

SHEET NO : **SU-NBL-2**

TOTAL SHEET NO : **3**

$$$$$$$$SYSTIMES$$$$$$$$
$$$$$$$$USERNAME$$$$$$$$



REU

NCDOT - ROADSIDE ENVIRONMENTAL UNIT
REST AREA SECTION
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 – 85 Cabarrus County Rest Area Renovation

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1447 ROBERT N. KOPELSON
BY: J PITTS
REU ENGINEER :

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

TIP#	K-4906
FEDERAL ID #:	IMS-085-2(64)59
FINAL DESIGN DATE :	April 30, 2009

SHEET DESCRIPTION:

I - 85 Cabarrus Rest Area
North Bound Lane
Proposed Storm Water Plan

SHEET NO : **SU-NBL-3**

TOTAL SHEET NO : **3**

$$$$$$$$SYSTIME$$$$$$
$$$$$$$$$$$$$$$$$$$$DGNNAME$$$$$
$$$$$$$$USERNAME$$$$

All exisitng utility services are approximate and based on original rest area plans. Contractor to field verify prior to construction beginning.

REU

NCDOT - ROADSIDE ENVIRONMENTAL UNIT
REST AREA SECTION
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/

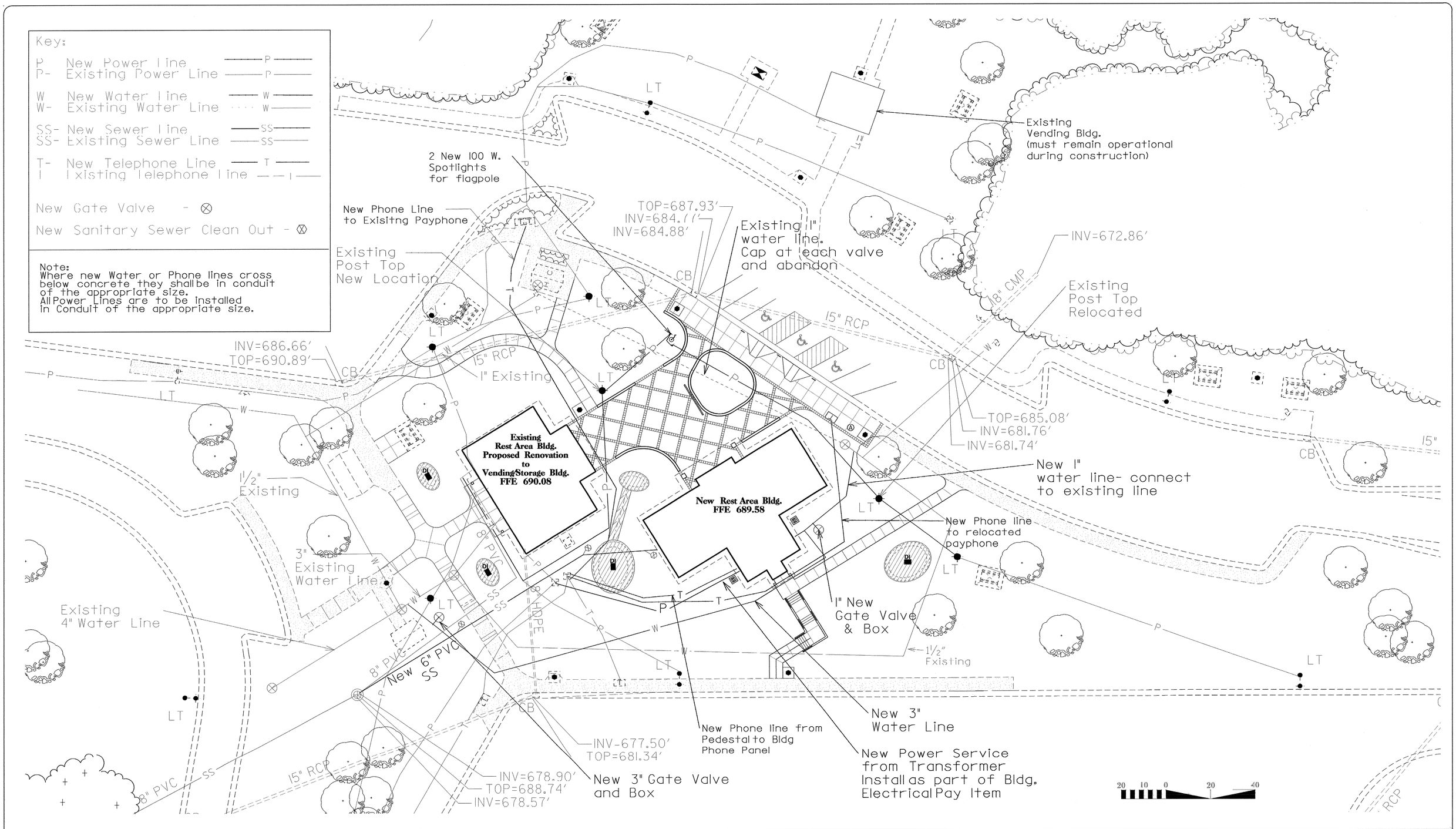
I – 85 Cabarrus County
Rest Area Renovation

DRAWN BY: J PITTS
REU ENGINEER : 5/28/09

TIP#	K-4906
FEDERAL ID #:	IMS-085-2(64)59
FINAL DESIGN DATE :	April 30, 2009

SHEET DESCRIPTION:
I-85 Cabarrus Rest Area
South Bound Lane
Existing Site Utility Plan

SHEET NO : SU-SBL-1
TOTAL SHEET NO : 3



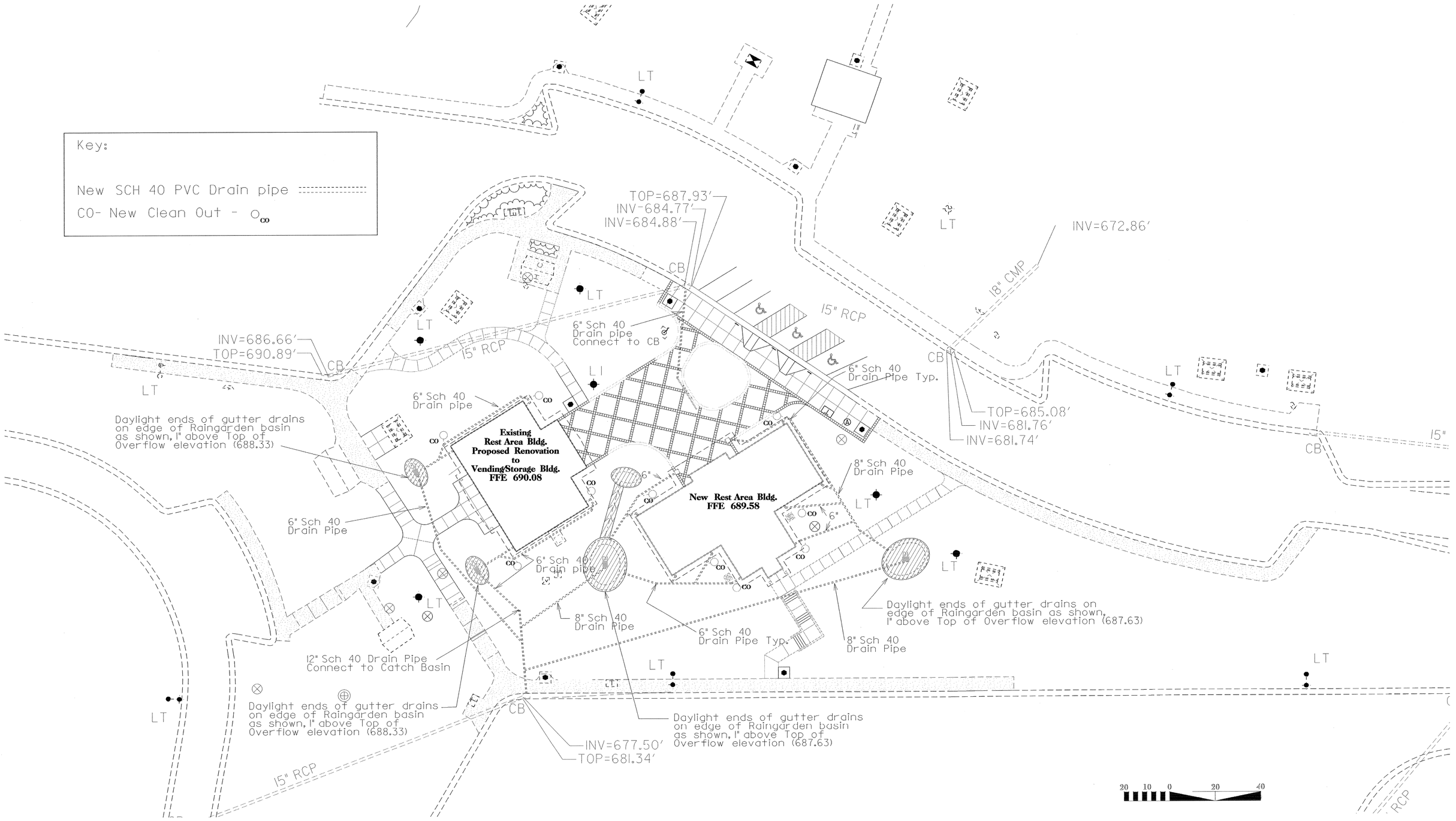
REU	NCDOT - ROADSIDE ENVIRONMENTAL UNIT REST AREA SECTION 1557 MAIL SERVICE CENTER RALEIGH NC 27699-1557 PH: 919-733-2920 FAX: 919-733-9810 HTTP://WWW.NCDOT.ORG/DOH/OPERATIONS/DP_CHIEF_ENG/ROADSIDE/	**I – 85 Cabarrus County Rest Area Renovation**	DRAWN BY: J PITTS REU ENGINEER: 5/28/09	TIP#: K-4906 FEDERAL ID #: IMS-085-2(64)59 FINAL DESIGN DATE: April 30, 2009	SHEET DESCRIPTION: I-85 Cabarrus Rest Area South Bound Lane Proposed Site Utility Plan

SHEET NO: SU-SBL-2
TOTAL SHEET NO: 3

Key:

New SCH 40 PVC Drain pipe

CO- New Clean Out - O_{CO}



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REST AREA SECTION
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I – 85 Cabarrus County Rest Area Renovation

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1447 ROBERT N. KOPETSKY

ENGINEER : JENNIFER PITTS

TIP# K-4906

FEDERAL ID #: IMS-085-2(64)59

FINAL DESIGN DATE : April 30, 2009

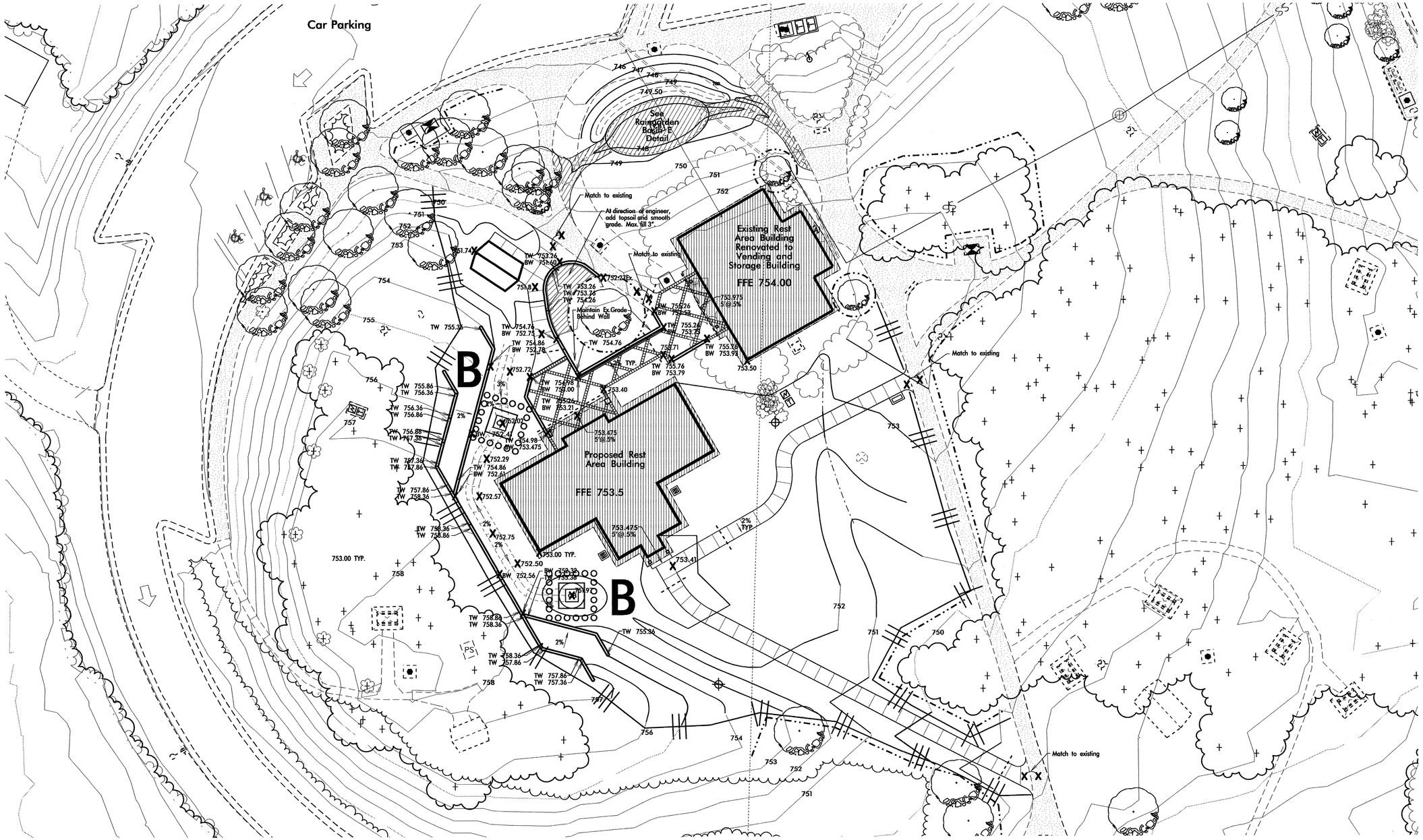
SHEET DESCRIPTION: I-85 Cabarrus Rest Area — South Bound Lane — Proposed Storm Water Plan

SHEET NO : SU-SBL-3

TOTAL SHEET NO : 3

PROJECT REFERENCE NO.	SHEET NO.
K-4906	EC-1

K–4906 EROSION CONTROL PLAN NBL

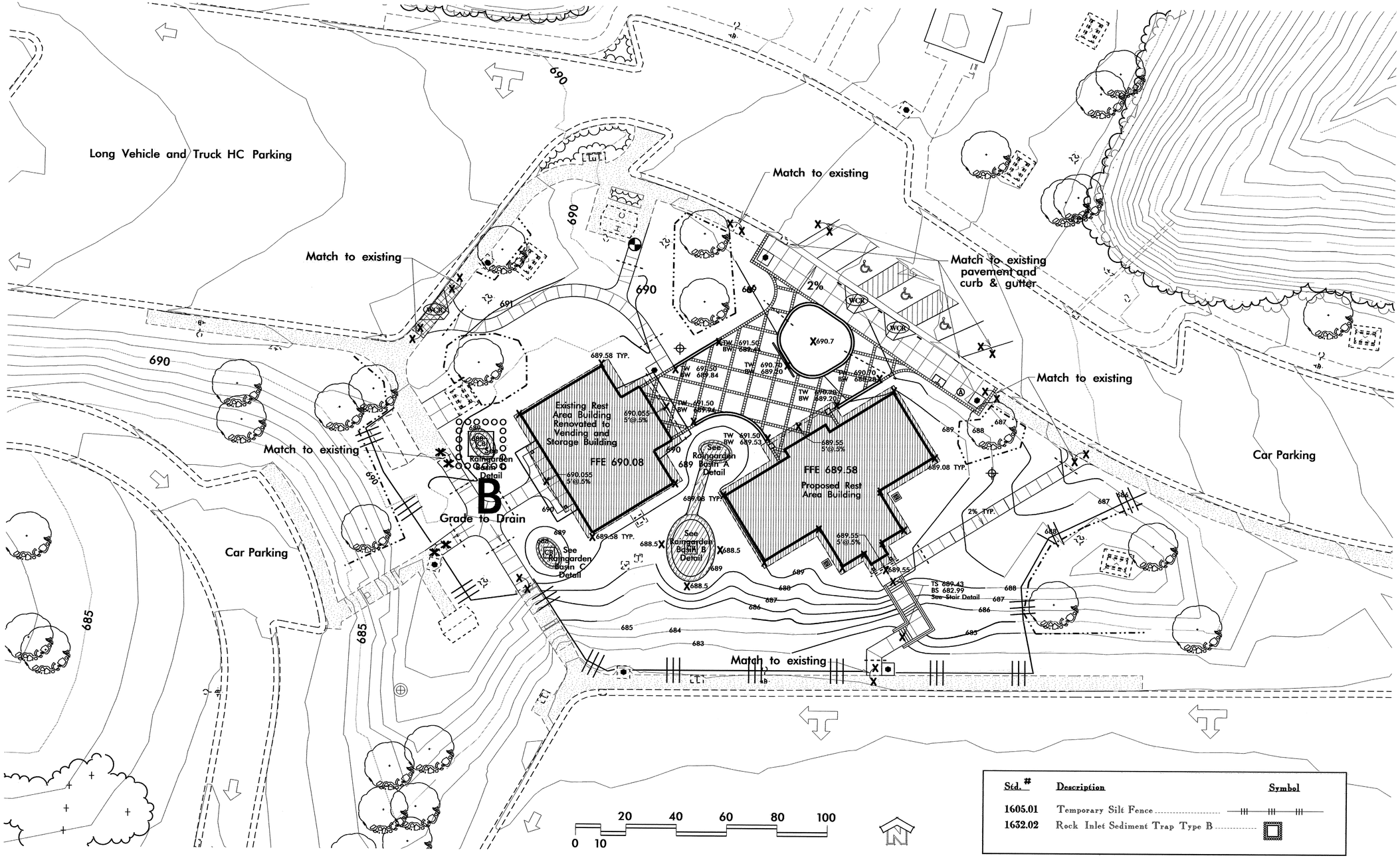


0 10 20 40 60 80 100

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1632.02	Rock Inlet Sediment Trap Type B	

PROJECT REFERENCE NO.	SHEET NO.
K-4906	EC-2

K-4906 EROSION CONTROL PLAN SBL



Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1632.02	Rock Inlet Sediment Trap Type B	

I-85 REST AREA & VENDING

NEW REST AREA BLDG. & VENDING BLDG. REMODELING

CABARRUS COUNTY, NORTH CAROLINA

INDEX OF DRAWINGS

T1 DESIGN DATA FOR REST AREA BLDG. & ABBREVIATION
T2 DESIGN DATA FOR VENDING BLDG.

A1 FLOOR PLAN
A2 ELEVATIONS (INT. & EXT.)
A3 ELEVATIONS/ WALL SECTION
A4 BUILDING SECTIONS
A5 SCHEDULES/ DETAILS
A6 REFLECTED CEILING PLAN & DETAILS

S1 FOUNDATION PLAN & SECTIONS
S2 ROOF FRAMING PLAN & SECTIONS
S3 DETAILS AND SECTIONS

P1 NORTH BOUND PLUMBING PLAN
P2 SOUTH BOUND PLUMBING PLAN
P3 NORTH BOUND PLUMBING WASTE RISER DIAGRAM & DETAILS
P4 SOUTH BOUND PLUMBING WASTE RISER DIAGRAM & DETAILS
P5 PLUMBING WATER RISER DIAGRAM & DETAILS

M1 MECHANICAL PLAN & NOTES
M2 MECHANICAL DETAILS & NOTES

E1 ELECTRICAL PLANS & DETAILS
E2 ELECTRICAL PLANS & RISER

VA1 FLOOR PLAN/ SCHEDULES
VA2 ELEVATIONS
VA3 CEILING PLAN
VA4 DEMO PLAN

VP1 VENDING PLUMBING PLAN AND RISERS
VM1 VENDING BUILDING MECAHNICAL PLAN
VE1 VENDING ELECTRICAL PLAN

APPENDIX B
BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: I-85 REST AREA & VENDING
Address: CABARRUS, NORTH CAROLINA
Proposed Use: BUSINESS (REST AREA)
Owner or Authorized Agent: GENERAL SERVICES, NCDOT Phone # 919-715-0400
Owned By: STATE OF NORTH CAROLINA ☐City/County ☐Private ☒State
Code Enforcement Jurisdiction: ☐City CONCORD ☐County CABARRUS

LEAD DESIGN PROFESSIONAL: VICTOR M. BUZZARD Jr., R.A.

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural	NC DOT	VICTOR M. BUZZARD	424	(919) 715-9339	vbuzard@ncdot.gov
SITE "Civil"	NC DOT	Robert N. Kopetsky	1447	(919) 733-2920	bkopetsky@ncdot.gov
Electrical	BURKE DESIGN GROUP, PA	Benjamin E. Burke	22038	(919) 771-1916	benburke@nc.rr.com
Fire Alarm					
Plumbing	BURKE DESIGN GROUP, PA	Benjamin E. Burke	22038	(919) 771-1916	benburke@nc.rr.com
Mechanical	BURKE DESIGN GROUP, PA	Benjamin E. Burke	22038	(919) 771-1916	benburke@nc.rr.com
Sprinkler-Standpipe					
Structural	NC DOT	W.E. RATTERREE	16394	(919) 715-9341	bratterree@ncdot.gov
Retaining Walls >5' High					
Other					

2006 EDITION OF NC CODE FOR: ☒New Construction ☐Addition ☐Upfit
EXISTING: ☐Reconstruction ☐Alteration ☐Repair
CONSTRUCTED _____ ORIGINAL USE _____ RENOVATED _____ CURRENT USE _____

BUILDING DATA
Construction Type: ☐ I-A ☐ II-A ☐ III-A ☐ IV ☐ V-A
☐ I-B ☐ II-B ☐ III-B ☒ V-B
Mixed construction: ☒ No ☐ Yes Types _____
Sprinklers: ☒ No ☐ Partial ☐ Yes ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
Standpipes: ☒ No ☐ Yes Class ☐ I ☐ II ☐ III ☐ Wet ☐ Dry
Fire District: ☒ No ☐ Yes Flood Hazard Area: ☒ No ☐ Yes
Building Height: Feet 11'-7" Number of Stories 1
Mezzanine: ☒ No ☐ Yes
Gross Building Area:

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
1st Floor		2,720 SF	2,720 SF
TOTAL		2,720 SF	2,720 SF

ALLOWABLE AREA
Primary Occupancy: ☐ Assembly ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
☒ Business ☐ Educational Factory ☐ F-1 Moderate ☐ F-2 Low
Hazardous ☐ H-1 Detonate ☐ H-2 Deflagrate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM
Institutional ☐ I-1 ☐ I-2 ☐ I-3 ☐ I-4
I-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
☐ Mercantile ☐ Residential ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
Storage ☐ S-1 Moderate ☐ S-2 Low ☐ High-piled
☐ Utility and Miscellaneous ☐ Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage
Secondary Occupancy: N/A
Mixed Occupancy: ☒ No ☐ Yes Separation: _____ Hr. Exception: _____

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 503 AREA	(C) AREA FOR OPEN SPACE INCREASE[1]	(D) AREA FOR SPRINKLER INCREASE[2]	(E) ALLOWABLE AREA OR UNLIMITED[3]	(F) MAXIMUM BUILDING AREA[4]
1	Business(B)	2,720	9,000	NOT USED	NOT USED	9,000	9,000

ALLOWABLE HEIGHT

	ALLOWABLE (TABLE 503)	INCREASE FOR SPRINKLERS	SHOWN ON PLANS	CODE REFERENCE
Type of Construction	Type V-B		Type V-B	503
Building height in feet	Feet 40'	Feet=H+20'= N/A	Feet 11'-7"	503
Building Height in Stories	Stories 2	Stories+1= N/A	Stories 1	503

FIRE PROTECTION REQUIREMENTS
Life Safety Plan Sheet #, if Provided: N/A

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING 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	20–30	0	0	–	–	–	–
East	20–30	0	0	–	–	–	–
West	20–30	0	0	–	–	–	–
South	20–30	0	0	–	–	–	–
Interior	–	0	0	–	–	–	–
Nonbearing Walls and Partitions							
Exterior Walls							
North	20–30	0	0	–	–	–	–
East	20–30	0	0	–	–	–	–
West	20–30	0	0	–	–	–	–
South	20–30	0	0	–	–	–	–
Interior Walls and partitions	–	0	0	–	–	–	–
Floor construction including supporting beams and joist	–	0	0	–	–	–	–
Roof construction including supporting beams and joist	–	0	0	–	–	–	–
Shaft Enclosures–Exit	–	N/A	–	–	–	–	–
Shaft Enclosures–Other	–	N/A	–	–	–	–	–
Corridor Separation	–	N/A	–	–	–	–	–
Occupancy Separation	–	N/A	–	–	–	–	–
Party/Fire Wall Separation	–	N/A	–	–	–	–	–
Smoke Barrier Separation	–	N/A	–	–	–	–	–
Tenant Separation	–	N/A	–	–	–	–	–
Incidental Use Separation	–	N/A	–	–	–	–	–
Fire Barrier	–	N/A	–	–	–	–	–

* Indicate section number permitting reduction

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting:	☐ NO	☒ YES
Exit Signs:	☐ NO	☒ YES
Fire Alarm:	☒ NO	☐ YES
Smoke Detection Systems:	☐ NO	☒ YES
Panic Hardware:	☒ NO	☐ YES

EXIT REQUIREMENTS
NUMBER AND ARRANGEMENT OF EXITS

FLOOR, ROOM OR SPACE DESIGNATION	MINIMUM[2] NUMBER OF EXITS		TRAVEL DISTANCE		EGRESS (SECTION 1014.2) ARRANGEMENT MEANS OF[1,3]	
	REQUIRED	SHOWN ON PLANS	ALLOWABLE TRAVEL DISTANCE (TABLE 1015.1)	ACTUAL TRAVEL DISTANCE SHOWN ON PLANS	REQUIRED DISTANCE BETWEEN EXIT DOORS	ACTUAL DISTANCE SHOWN ON PLANS
Business 28–occupants	1	2	200'	41'	N/A	30'

1 Corridor dead ends (Section 1016.3)
2 Single exits (Table 1018.2)
3 Common Path of Travel (Section 1013.3)

EXIT WIDTH

USE GROUP OR SPACE DESCRIPTION	(A) AREA[1] SQ. FT.	(B) AREA[1] PER OCCUPANT (TABLE 1004.1.2)	CALCULATED OCCUPANT LOAD	(C) EGRESS WIDTH PER OCCUPANT (TABLE 1005.1)		EXIT WIDTH (in)[2,3,4,5,6] REQUIRED WIDTH (SECTION 1005.1) (a+b)xc		ACTUAL WIDTH SHOWN ON PLANS	
				STAIR	LEVEL	STAIR	LEVEL	STAIR	LEVEL
Business	2,427	100	24	N/A	.2	N/A	4.9"	N/A	66"
Storage/Mech	293	300	1	N/A	.2	N/A	.19"	N/A	33"

STRUCTURAL DESIGN

DESIGN LOADS:
Importance Factors: Wind (I_w) 1.0
Snow (I_s) 1.0
Seismic (I_E) 1.0
Live Loads: Roof 20 psf Ext. Deck NA psf
Mezzanine NA psf Attic Floor 10 psf
Floor 100 psf
Snow Load: 10 psf
Wind Load: Basic Wind Speed 90 mph (ASCE-7-02)
Exposure Category B
Wind Base Shears (for MWFRS) Vx = 6,500# Vy = 8,700#
SEISMIC DESIGN CATEGORY: A
Compliance with Section 1616.4 only? ☐YES ☐NO
SEISMIC DESIGN CATEGORY ☐B ☒C ☐D
Provide the following Seismic Design Parameters:
Seismic Use Group 1
Spectral Response Acceleration S_S 0.300 %g S_1 0.100 %g
Site Classification D ☐Field Test ☒Presumptive
Basic structural system (check one)
X Bearing Wall ____Dual w/Special Moment Frame
____Building Frame ____Dual w/Intermediate R/C or Special Steel
____Moment Frame ____Inverted Pendulum
Seismic base shear Vx= 8,200# Vy= 8,200#
Analysis Procedure X Simplified ____Equivalent Lateral Force ____Modal
Architectural, Mechanical, Components anchored? YES
LATERAL DESIGN CONTROL: Earthquake ____ Wind X
SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) 2000 psf

Rest Area Total Occupants is 29 Persons x 75% = 22 Persons by Code, [fixtures #'s provided]

USE	WATERCLOSETS		URINALS	LAVATORIES		SHOWERS/ TUBS	DRINKING FOUNTAINS	
	MALE	FEMALE		MALE	FEMALE		REGULAR	ACCESSIBLE
EXISTING	–	–	–	–	–	–	–	–
NEW	8	16	8	8	8	N/A	1	1
REQUIRED	1	2	0	1	1	N/A	–	–

ACCESSIBLE PARKING

LOT OR PARKING AREA	TOTAL# OF PARKING SPACES				# OF ACCESSIBLE SPACES PROVIDED				ACCESSIBLE PROVIDED TOTAL #	
	REQUIRED		PROVIDED		REGULAR WITH 5' ACCESS AISLE		VAN SPACES WITH 8' ACCESS AISLE			
LANE DIRECTION	N.B.L.	S.B.L.	N.B.L	S.B.L	N.B.L	S.B.L	N.B.L	S.B.L	N.B.L	S.B.L
CARS			47	56	2	0	1	3	3	3
CAR/TRAILER			18	11						
TRUCKS			21	21						
TOTAL			86	88						

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): 3497
Cooling Degree days (base 50 degrees F): 4586
Project Type: New Construction
Vertical Glazing/Wall Area Pct.: N/A
Building Type: Office (Rest Area)

COMPONENT NAME / DESCRIPTION	GROSS AREA	CAVITY R-VALUE	CONT. R-VALUE	PROPOSED U-FACTOR	BUDGET U-FACTOR
ROOF 1: ATTIC ROOF W/ WOOD JOISTS	2975	0.0	38.0	0.032	0.034
SKYLIGHT 1: WOOD FRAME, DOUBLE PANE, CLEAR WITHOUT CURB, SHGC 0.01	64	–	–	0.800	0.890
EXTERIOR WALL 1: WOOD FRAME, 16" O.C.	1691	0.0	19.0	0.044	0.089
WINDOW 1: WOOD FRAME, DOUBLE PANE WITH LOW-E CLEAR, SHGC 0.70, PF 1.00	361	–	–	0.590	.570
FLOOR 1: UNHEATED SLAB-ON-GRADE, HORIZONTAL WITHOUT VERTICAL 2 FT.	228	–	7.5	–	–

ENVELOPE PASSES: DESIGN 28% BETTER THAN CODE

ELECTRICAL SUMMARY: SEE ELECTRICAL

MECHANICAL SUMMARY: SEE MECHANICAL

SYMBOLS

- SILT FENCE
- ELEVATION MARK
- DRAINAGE / SLOPE ARROW
- 80 EXISTING CONTOURS
- EXISTING ELEVATION
- 80 NEW CONTOURS
- NEW ELEVATION
- EXISTING TREE
- FIRE EXTINGUISHER
- RIGID INSULATION
- BATT INSULATION / BLOWN
- DRYWALL OR PLASTER
- GRAVEL
- UNDISTURBED EARTH
- COMPACTED FILL
- 1 REVISION NUMBER
- E2 / RAS ELEVATION NUMBER / DRAWING SHEET NUMBER
- B / RAS DRAWING NUMBER / DRAWING SHEET REFERENCE NUMBER
- E2 / RAI BUILDING OR WALL SECTION NO. / DRAWING SHEET NUMBER
- CMU
- CONCRETE
- STEEL
- ROUGH CARPENTRY
- FINISH CARPENTRY

ABBREVIATIONS & SYMBOLS

<	ANGLE
AL.	ALUMINUM
AB.	ANCHOR BOLT
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURAL
@	AT
AVG.	AVERAGE
B/B	BACK TO BACK
BSMT.	BASEMENT
BRG.	BEARING
BM.	BENCH MARK
BLKG.	BLOCKING
BD.	BOARD
BLDG.	BUILDING
CH	CEILING HEIGHT
℄	CENTER LINE
CC	CENTER TO CENTER
C.I.	CAST IRON
COL.	COLUMN
CONC.	CONCRETE
CMU	CONCRETE MASONRY UNIT
CONT.	CONTINUOUS
C.J	CEILING JOIST
C/J	CONSTRUCTION JOINT
CRS	COURSES
DET.	DETAIL
DIA.	DIAMETER
DBL.	DOUBLE
DS	DOWN SPOUT
EA.	EACH
EH	EYE WASH
ELEC.	ELECTRICAL
ELEV.	ELEVATION
EXIST.	EXISTING
EWC	ELECTRIC WATER COOLER
E/J	EXPANSION JOINT
EBC	EXTENDED BOTTOM CHORD
EXT.	EXTERIOR
FFE	FINISH FLOOR ELEVATION (BLDG. REF.)
FIN.FL.	FINISH FLOOR
F.E.	FIRE EXTINGUISHER
F.D.	FLOOR DRAIN
FTG.	FOOTING
FRGWB	FIRE RATED GYPSUM WALLBOARD
GALV.	GALVANIZED
GA.	GAUGE
GL.	GLASS
GP.	GLAZED PAVER TILE
GWB	GYPSUM SHEATHING
GYP.	GYPSUM
HM	HOLLOW METAL
HOR.	HORIZONTAL
H.B.	HOSE BIBB
INSUL.	INSULATION
INT.	INTERIOR
JST.	JOIST
LAV.	LAVATORY
M.H.	MAN HOLE
M.O.	MASONRY OPENING
MAT.	MATERIAL
MAX.	MAXIMUM
MIN.	MINIMUM
MTD.	MOUNTED
MLDG.	MOULDING
N.T.S.	NOT TO SCALE
NO.	NUMBER
O.C.	ON CENTER
OPNG.	OPENING
PNL.	PANEL
PLASLAM	PLASTIC LAMINATE
PL	PLATE
PLMB.	PLUMBING
PLYWD.	PLYWOOD
LB.(#)	POUND
PREFAB.	PREFABRICATED
P.S.I.	POUNDS PER SQUARE INCH
REQ'D	REQUIRED
R.	RISER
SAN.	SANITARY
SEC.	SECTION
SHT.	SHEET
SHTHG.	SHEATHING
SIM.	SIMILAR
SPEC.	SPECIFICATIONS
SQ.	SQUARE
SS	SERVICE SINK
STD.	STANDARD
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
F.C.	FIBER CEMENT
102	ROOM/SPACE NUMBER
B	WINDOW TYPE
2	DOOR TYPE
———	CENTER LINE
- - -	HIDDEN LINE
——\/——	BREAK LINE
-x-x-	CONSTRUCTION FENCE

PROJECT:
I-85 REST AREA
CABARRUS COUNTY NORTH CAROLINA

ARCHITECT/ENGINEERS:
FACILITIES DESIGN
GENERAL SERVICES DIVISION, NCDOT
1 SOUTH WILMINGTON STREET
RALEIGH, NORTH CAROLINA 27601
(919) 715-0400 FAX (919) 715-0399

DRAWING TITLE:
BUILDING CODE SUMMARY

DRAWN BY: RA CHECKED BY: V. BUZARD ISSUE DATE: 30 APRIL 09

SEAL: VICTOR M. BUZZARD JR. REGISTERED ARCHITECT 4241 6-15-07 NORTH CAROLINA RALEIGH, N.C.

TIP. PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL– AID NO.
K-4906	39928.3.1		IMS-085-2(64)59

NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. T1 1 OF 2

S:\FDIREST AREA, WELCOME CENTERS\I-85 Cabbarus Co\Arch\T1.dwg, 6/15/2009 11:17:09 AM

I-85 REST AREA & VENDING

NEW REST AREA BLDG. & VENDING BLDG. REMODELING

CABARRUS COUNTY, NORTH CAROLINA

APPENDIX B
BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: I-85 REST AREA & VENDING
Address: CABARRUS, NORTH CAROLINA
Proposed Use: STORAGE (VENDING BLDG.)
Owner or Authorized Agent: GENERAL SERVICES, NCDOT Phone # 919-715-0400
Owned By: STATE OF NORTH CAROLINA ☐City/County ☐Private ☒State
Code Enforcement Jurisdiction: ☐City CONCORD ☐County CABARRUS

LEAD DESIGN PROFESSIONAL: VICTOR M. BUZARD Jr., R.A.					
DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural	NC DOT	VICTOR M. BUZARD	424	(919) 715-8339	vbuzard@ncdot.gov
SITE "Civil"	NC DOT	Robert N. Kopatsky	1447	(919) 733-2920	blkopatsky@ncdot.gov
Electrical	BURKE DESIGN GROUP, PA	Benjamin F. Burke	22038	(919) 771-1916	benburke@nc.rr.com
Fire Alarm					
Plumbing	BURKE DESIGN GROUP, PA	Benjamin F. Burke	22038	(919) 771-1916	benburke@nc.rr.com
Mechanical	BURKE DESIGN GROUP, PA	Benjamin F. Burke	22038	(919) 771-1916	benburke@nc.rr.com
Sprinkler--Standpipe					
Structural	NC DOT	W.E. RATTERREE	16384	(919) 715-9341	brotterree@ncdot.gov
Retaining Walls >5' High					
Other					

2006 EDITION OF NC CODE FOR: ☐New Construction ☐Addition ☐Upfit
EXISTING: ☐Reconstruction ☐Alteration ☐Repair
CONSTRUCTED ____ ORIGINAL USE ____ RENOVATED X CURRENT USE ____

BUILDING DATA
Construction Type: ☐ I-A ☐ II-A ☐ III-A ☐ IV ☐ V-A
☐ I-B ☐ II-B ☐ III-B ☒ V-B
Mixed construction: ☒ No ☐ Yes Types____
Sprinklers: ☒ No ☐Partial ☐Yes ☐NFPA 13 ☐NFPA 13R ☐NFPA 13D
Standpipes: ☒ No ☐Yes Class ☐ I ☐ II ☐ III ☐Wet ☐Dry
Fire District: ☒ No ☐Yes Flood Hazard Area: ☒ No ☐Yes
Building Height: Feet 11'-0" Number of Stories 1
Mezzanine: ☒ No ☐Yes
Gross Building Area:

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
1st Floor	1,557sf		1,557sf
TOTAL	1,557sf		1,557sf

ALLOWABLE AREA

Primary Occupancy: ☐ Assembly ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
☐ Business ☐ Educational Factory ☐ F-1 Moderate ☐ F-2 Low
Hazardous ☐ H-1 Detonate ☐ H-2 Deflagrate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM
Institutional ☐ I-1 ☐ I-2 ☐ I-3 ☐ I-4
☐ I-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
☐ Mercantile ☐ Residential ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
Storage ☐ S-1 Moderate ☒ S-2 Low ☐ High-piled
☐ Utility and Miscellaneous ☐ Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage
Secondary Occupancy: N/A
Mixed Occupancy: ☒ No ☐ Yes Separation: ____ Hr. Exception: ____

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 503 AREA	(C) AREA FOR OPEN SPACE INCREASE*	(D) AREA FOR SPRINKLER INCREASE*	(E) ALLOWABLE AREA OR UNLIMITED*	(F) MAXIMUM BUILDING AREA*
1	Storage	1,557	13,500	NOT USED	NOT USED	13,500	13,500

ALLOWABLE HEIGHT

	ALLOWABLE (TABLE 503)	INCREASE FOR SPRINKLERS	SHOWN ON PLANS	CODE REFERENCE
Type of Construction	Type V-B		Type V-B	503
Building height in feet	Feet 40'	Feet+H+20'= N/A	Feet 18'-8"	503
Building Height in Stories	Stories 2	Stories+1= N/A	Stories 1	503

FIRE PROTECTION REQUIREMENTS

Life Safety Plan Sheet #, If Provided: N/A

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING 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	20-30	0	0	–	–	–	–
East	20-30	0	0	–	–	–	–
West	20-30	0	0	–	–	–	–
South	20-30	0	0	–	–	–	–
Interior	–	0	0	–	–	–	–
Nonbearing Walls and Partitions							
Exterior Walls							
North	20-30	0	0	–	–	–	–
East	20-30	0	0	–	–	–	–
West	20-30	0	0	–	–	–	–
South	20-30	0	0	–	–	–	–
Interior Walls and partitions	–	0	0	–	–	–	–
Floor construction including supporting beams and joist	–	0	0	–	–	–	–
Roof construction including supporting beams and joist	–	0	0	–	–	–	–
Shaft Enclosures--Exit	–	N/A	–	–	–	–	–
Shaft Enclosures--Other	–	N/A	–	–	–	–	–
Corridor Separation	–	N/A	–	–	–	–	–
Occupancy Separation	–	N/A	–	–	–	–	–
Party/Fire Wall Separation	–	N/A	–	–	–	–	–
Smoke Barrier Separation	–	N/A	–	–	–	–	–
Tenant Separation	–	N/A	–	–	–	–	–
Incidental Use Separation	–	N/A	–	–	–	–	–
Fire Barrier	–	N/A	–	–	–	–	–

* Indicate section number permitting reduction

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting:	☐ NO	☒ YES
Exit Signs:	☐ NO	☒ YES
Fire Alarm:	☒ NO	☐ YES
Smoke Detection Systems:	☐ NO	☒ YES
Panic Hardware:	☒ NO	☐ YES

EXIT REQUIREMENTS
NUMBER AND ARRANGEMENT OF EXITS

FLOOR, ROOM OR SPACE DESIGNATION	MINIMUM NUMBER OF EXITS		TRAVEL DISTANCE		EGRESS (SECTION 1014.2) ARRANGEMENT MEANS OF [2,3]	
	REQUIRED	SHOWN ON PLANS	ALLOWABLE TRAVEL DISTANCE (TABLE 1015.1)	ACTUAL TRAVEL DISTANCE SHOWN ON PLANS	REQUIRED DISTANCE BETWEEN EXIT DOORS	ACTUAL DISTANCE SHOWN ON PLANS
Storage S--occupants	1	2	200'	33'	N/A	39'

1 Corridor dead ends (Section 1016.3)
2 Single exits (Table 1018.2)
3 Common Path of Travel (Section 1013.3)

EXIT WIDTH

USE GROUP OR SPACE DESCRIPTION	(A) AREA[1] SQ. FT.	(B) AREA[1] PER OCCUPANT (TABLE 1004.1.2)	CALCULATED OCCUPANT LOAD	(C) EGRESS WIDTH PER OCCUPANT (TABLE 1005.1)		EXIT WIDTH (in)[2,3,4,5,6] REQUIRED WIDTH (SECTION 1005.1) (o+b)xc		ACTUAL WIDTH SHOWN ON PLANS	
				STAIR	LEVEL	STAIR	LEVEL	STAIR	LEVEL
VENDING	1,557	300	–	N/A	.2	N/A	1.04"	N/A	132"

STRUCTURAL DESIGN: N/A

Adjacent Rest Area provides fixtures for the 6 occupants that may occupy the bldg. temporarily.

ACCESSIBLE PARKING: SEE SHEET T1

SPECIAL APPROVALS: N/A

ENERGY SUMMARY: EXISTING BUILDING

PROJECT:
I-85 REST AREA
CABARRUS COUNTY NORTH CAROLINA

ARCHITECT/ENGINEERS:

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

DRAWING TITLE:
BUILDING CODE SUMMARY

DRAWN BY: RA CHECKED BY: V. BUZARD ISSUE DATE: 30 APRIL 09

SEAL: VICTOR M. BUZARD, JR. REGISTERED ARCHITECT 4241 6-15-09 NORTH CAROLINA RALEIGH, N.C.

TIP. PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL- AID NO.
K-4906	39928.3.1		IMS-085-2(64)59

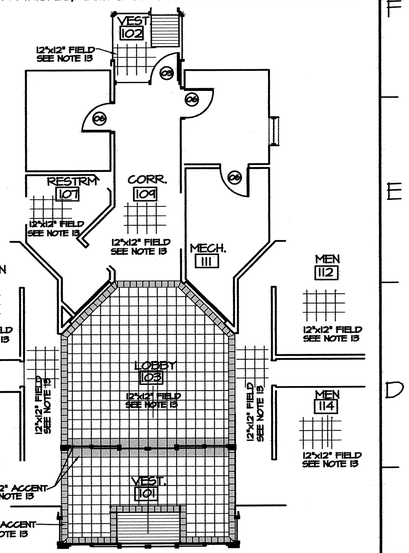
NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. **T2** 2 OF 2

S:\FD\REST AREA, WELCOME CENTERS\I-85 Cabbarus Co\Arch\T2.dwg, 6/15/2009 11:17:39 AM

GENERAL NOTES:

1. USE THIN-SET TILE INSTALLATION AT CONCRETE FLOORS & TILE BACKER PANELS AT WOOD STUD WALLS.
2. INTERIOR ELEVATIONS FOR WOMEN 104 & MEN 114 SIMILAR TO ADJACENT ROOMS 106 & 112 RESPECTIVELY.
3. PROVIDE 5/8" DRYWALL @ ALL CEILING/ROOF JOIST.
4. ALL FINISHED FLOOR ELEVATIONS F.F.E. ARE 100'-0" FOR BLDG. REF. ELEV. ONLY AND ALL FLOOR DRAINS SHALL BE SET AT 99'-10 1/2"(99'-11 1/2" @ 107).
5. ALL EXTERIOR WOOD STUDS SHALL BE 2x6's @ 16" O.C. / EXCEPT @ LAVATORY WALLS ARE 2X8'S @ 16" O.C. PROVIDE TOILET ACCESSORY BLOCK-OUTS PER ELEVATIONS.
6. DIMENSIONS ARE NOMINAL AND ARE TO ALLOW FOR FINISHES.
7. PROVIDE MIN. 34" CLEAR OPENING TOILET PARTITION DOOR W/ PILASTERS @ INTERIOR OF RESTROOM 107. PROVIDE SOLID WOOD BLOCKING FOR ALL TOILET PARTITIONS & ACCESSORIES.
8. CENTER FLOOR ACCENT GLAZED PAVERS OFF ENTRY & PIPE CHASE DOORS.
9. PAINT SUPPORT COLUMNS AGAINST GLASS BLOCK GRAY.
10. PROVIDE ENTRANCE MAT. & ALUM. RECESS FRAME. (SEE F2A2).
11. SEE SIGN SECTIONS 10425 FOR FIRE EXTINGUISHER SIGN OF THE SPEC.
12. CAULK ALL INSIDE CORNERS AT TILE.
13. SEE SPECIFICATIONS FOR FINISHES, EQUAL OR COMPETITIVE MANUFACTURERS.



03/A1 DETAIL- TILE PATTERN
SCALE 1/2" = 1'-0"

PROJECT:
I-85 REST AREA
CABARRUS COUNTY — NORTH CAROLINA

ARCHITECT/ENGINEERS:
FACILITIES DESIGN
GENERAL SERVICES DIVISION, NCDOT
1 SOUTH WILMINGTON STREET
RALEIGH, NORTH CAROLINA 27601
(919) 715-0400 FAX (919) 715-0399

DRAWING TITLE:
FLOOR PLAN

DRAWN BY: RA | CHECKED BY: V. BUZARD | ISSUE DATE: 30 APRIL 09

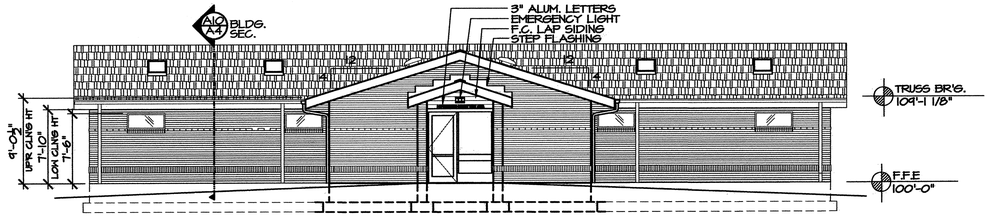
SEAL: VICTOR M. BUZARD, REGISTERED ARCHITECT, 4240, 9.18.09, NORTH CAROLINA, RALEIGH, N.C.

TIP. PROJ. NO.	WBS. NO.	FEDERAL- AID NO.
K-4906	39928.3.STI1	STM-085-2(70)59

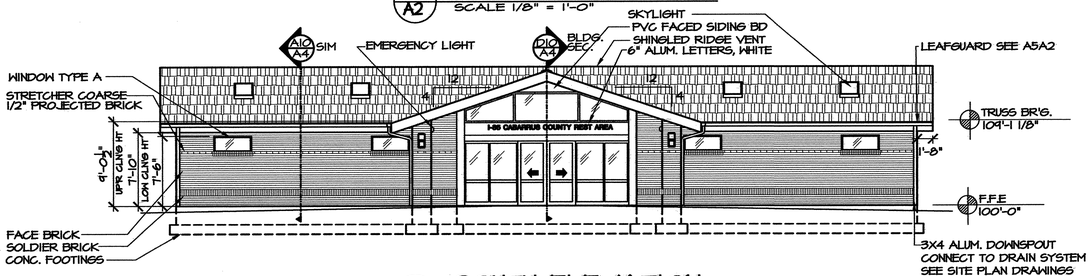
NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. A1 1 OF 1

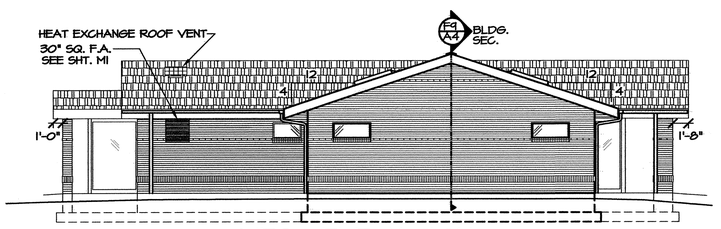
A4/A1 FLOOR PLAN
SCALE 1/4" = 1'-0"



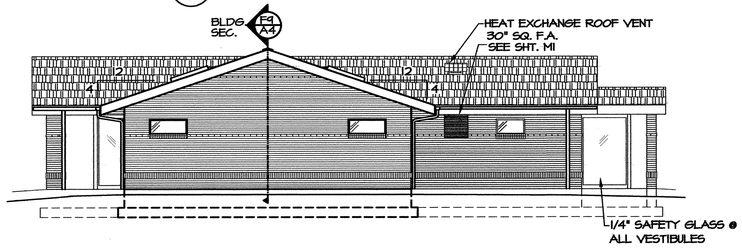
610/A2 NORTH ELEVATION
SCALE 1/8" = 1'-0"

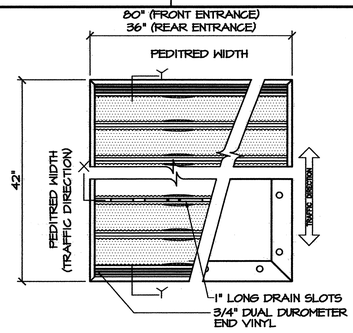


E10/A2 SOUTH ELEVATION
SCALE 1/8" = 1'-0"



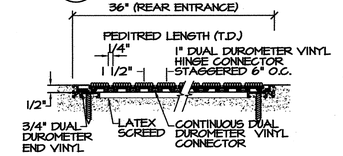
66/A2 WEST ELEVATION
SCALE 1/8" = 1'-0"



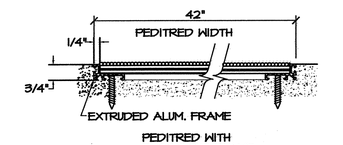


PEDITRED WITH BLOCK OUT FRAME

F2/A2 PLAN DETAIL
SCALE 1/2" = 1'-0"



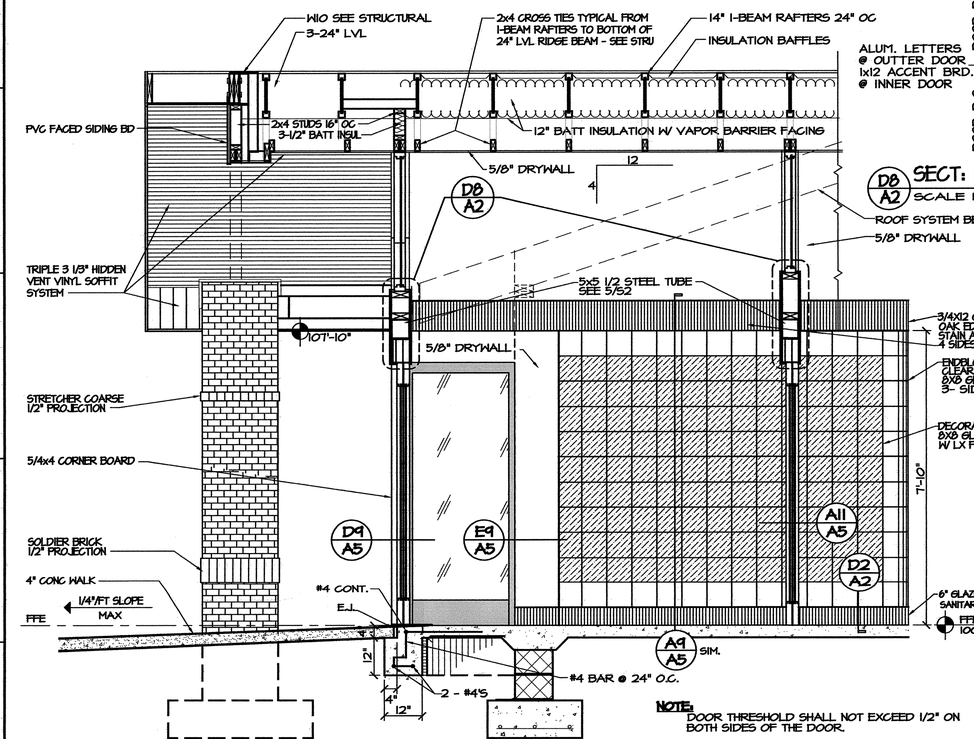
SECTION Y-Y



PEDITRED WITH BLOCK OUT FRAME

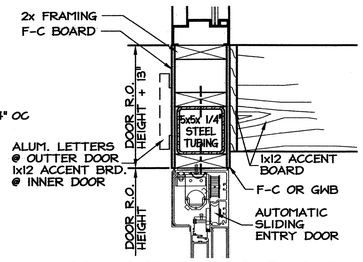
SECTION X-X

D2/A2 PEDITRED DETAIL
SCALE 1/2" = 1'-0"

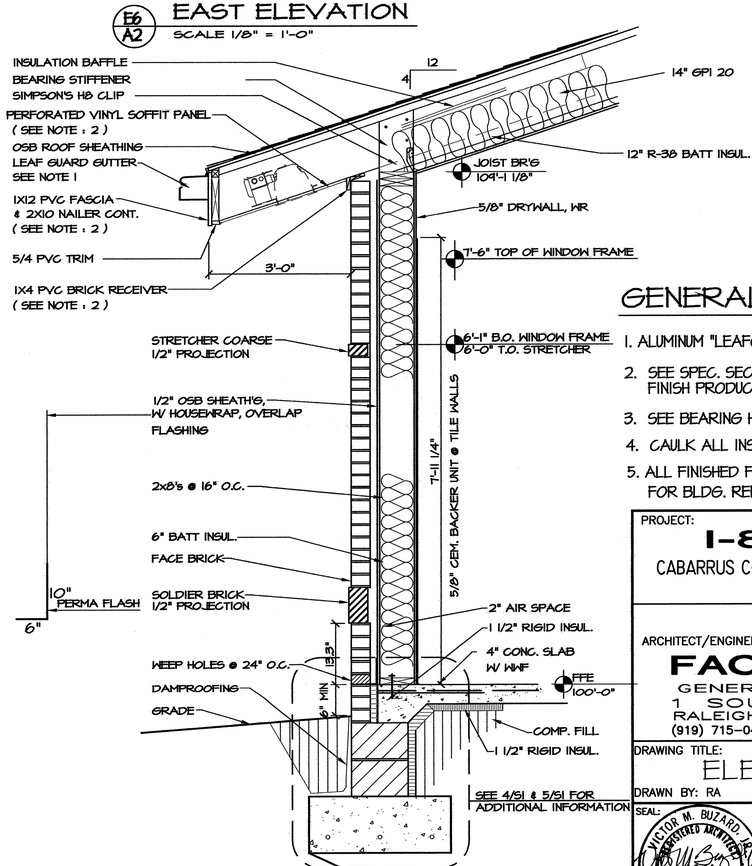


NOTE: DOOR THRESHOLD SHALL NOT EXCEED 1/2" ON BOTH SIDES OF THE DOOR.

A10/A2 SECTION- ENTRY
SCALE 1/2" = 1'-0"



D8/A2 SECT: HEADER ABOVE DOOR
SCALE 1 1/2" = 1'-0"



A5/A2 WALL SECTION
SCALE 3/4" = 1'-0"

GENERAL NOTES:

1. ALUMINUM "LEAFGUARD" GUTTER, W/ ANCHOR AT 24" O.C.
2. SEE SPEC. SECTION 07460 FOR EQUAL OR COMPETITIVE FINISH PRODUCT MANUFACTURING.
3. SEE BEARING HEIGHT NOTE ON SHEET S2.
4. CAULK ALL INSIDE CORNERS AT TILE.
5. ALL FINISHED FLOOR ELEVATIONS F.F.E. ARE 100'-0" FOR FOR BLDG. REF. ELEV. ONLY

PROJECT:
I-85 REST AREA
CABARRUS COUNTY — NORTH CAROLINA

ARCHITECT/ENGINEERS:
FACILITIES DESIGN
GENERAL SERVICES DIVISION, NCDOT
1 SOUTH WILMINGTON STREET
RALEIGH, NORTH CAROLINA 27601
(919) 715-0400 FAX (919) 715-0399

DRAWING TITLE: ELEVATIONS (INT. & EXT.)

DRAWN BY: RA CHECKED BY: V. BUZARD ISSUE DATE: 30 APRIL 09

SEAL: VICTOR M. BUZARD, JR. REGISTERED ARCHITECT 9-18-09 NORTH CAROLINA RALEIGH, N.C.

TIP. PROJ. NO.	WBS. NO.		FEDERAL- AID NO.
K-4906	39928.3.STI		STM-085-2(70)59

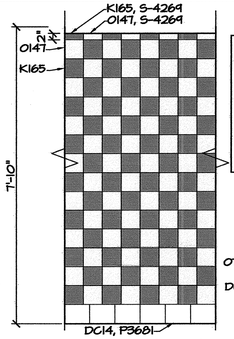
NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. A2 OF 6

GENERAL NOTES:

1. PROVIDE 5/8" DRYWALL @ ALL CEILING/ROOF JOIST.
2. ALL EXTERIOR WOOD STUDS SHALL BE 2x6's @ 16" O.C. EXCEPT @ LAVATORIES SHALL BE 2X8'S.
3. SECURE 3 x 3 x 1/8"ø PERIMETER FRAME (FOR CHANGING TABLE), WELD MITERED CORNERS; ANCHOR TO WALLS & SOLID PLASTIC COUNTER & TOILET PARTITION W/ S.S. SCREWS AND BOLTS. SEE SPEC. FOR EQUAL OR COMPETITIVE MANUFACTURERS.
4. ALUMINUM "LEAFGUARD" GUTTER, W/ ANCHOR AT 24" O.C. SEE SPEC. FOR EQUAL OR COMPETITIVE MANUFACTURERS.
5. PVC TRIM & FASCIA BOARDS, SEE SPEC. FOR EQUAL OR COMPETITIVE MANUFACTURERS.
6. DO NOT OVERLAP FIXTURE ELECTRONIC CONTROLS WITH GRAB BARS.
7. CAULK ALL INSIDE CORNERS AT TILE.
8. FOR TOILET ACCESSORIES, SEE SPEC. FOR EQUAL OR COMPETITIVE MANUFACTURERS.

NOTE:
SEE SPEC. FOR APPROVED EQUAL MANUFACTURERS

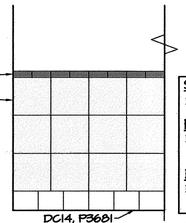


TRIM (TOP): 2X6 BULLNOSE
DALTILE: PEPPER WHITE 0147, S-4269
DALTILE: ALMOND K165, S-4269

FIELD 6"X 6":
DALTILE: PIPPER WHITE 0147
DALTILE: ALMOND K165

BASE 6"X 8":
DALTILE: BLACK DC14, P3681

F12/A3 TILE PATTERN
SCALE 1/2" = 1'-0"

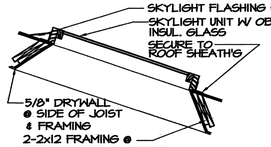


SHELF RAIL: 2X6
DALTILE: MATTE ARCTIC WHITE 0790

FIELD 12"X 12":
DALTILE: TAUPE DC04

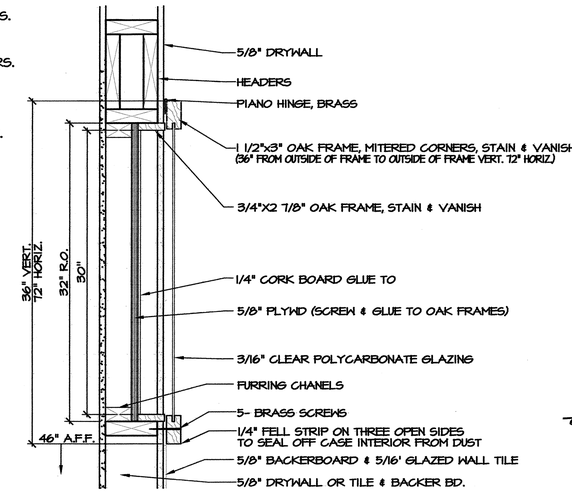
BASE 6"X 8":
DALTILE: BLACK DC14, P3681

F11/A3 WALL ELEVATION
SCALE 1/2" = 1'-0"

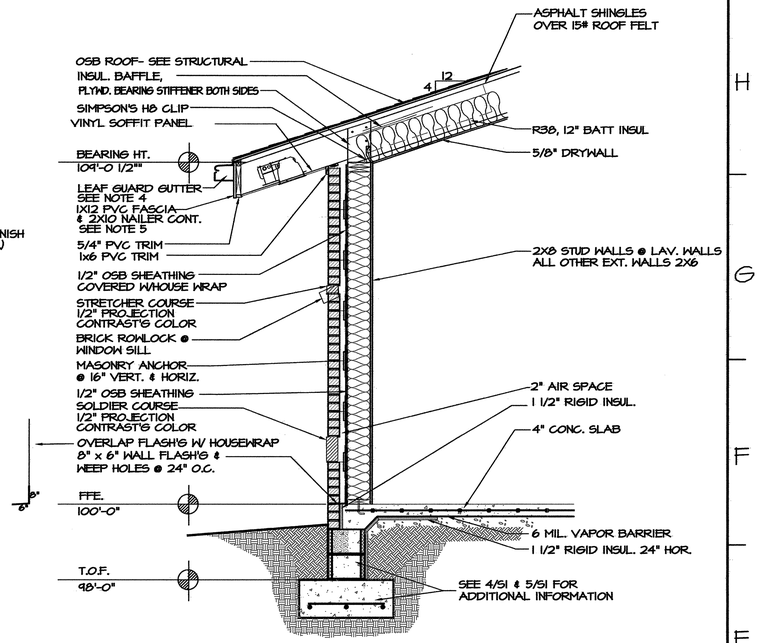


NOTE:
LOCATE SKYLIGHT IN THE APPROXIMATE LOCATION SHOWN

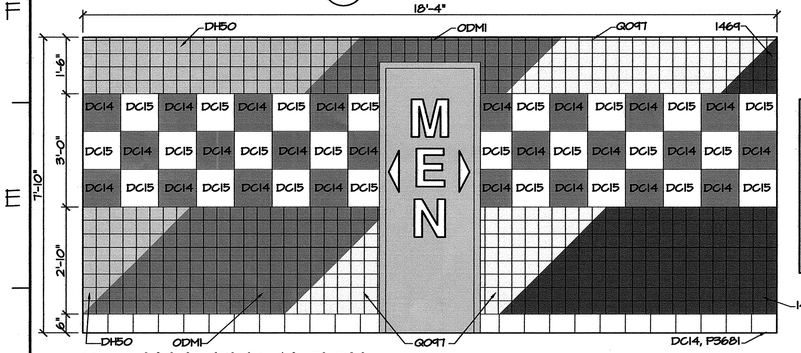
E8/A3 DETAIL- SKYLIGHT
SCALE 1/2" = 1'-0"



E6/A3 DETAIL- DISPLAY CASE
SCALE 1-1/2" = 1'-0"



E4/A3 WALL SECTION
SCALE 1/2" = 1'-0"

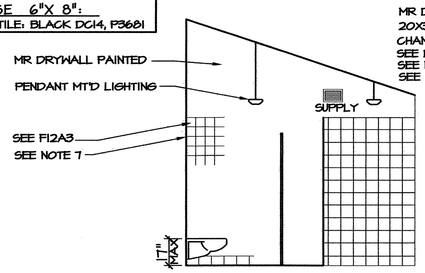


FIELD 4 1/4"X 4 1/4":
DALTILE: SUNFLOWER DH50
DALTILE: VERMILLION ODMI
DALTILE: ORANGE BURST QO97
DALTILE: GALAXY 1469

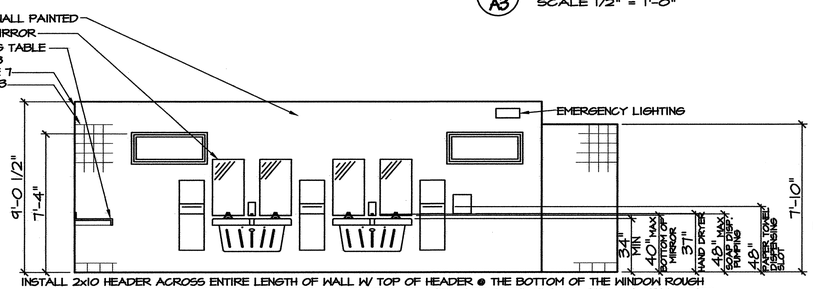
ACCENT 12"X 12":
DALTILE: WHITE DC15
DALTILE: BLACK DC14

BASE 6"X 8":
DALTILE: BLACK DC14, P3681

D12/A3 WALL ELEVATION
SCALE 1/2" = 1'-0"

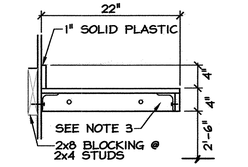


C8/A3 ELEVATION-WOMEN
SCALE 1/4" = 1'-0"

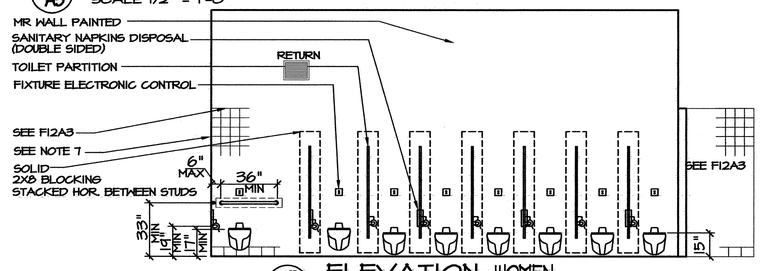


INSTALL 2x10 HEADER ACROSS ENTIRE LENGTH OF WALL W/ TOP OF HEADER @ THE BOTTOM OF THE WINDOW ROUGH OPENING HEIGHT W/ 2x8 WALL STUDS @ 16" CNTRS, & ON WINDOW FRAMINGS ABOVE THE HEADER AND 2x8 WALL STUDS LOCATED AS NEEDED FOR RECESSED ACCESSORIES AND LAVATORY CARRIERS BUT NO GREATER THAN 16" APART BELOW THE HEADER. ON ALL LAVATORY WALLS.

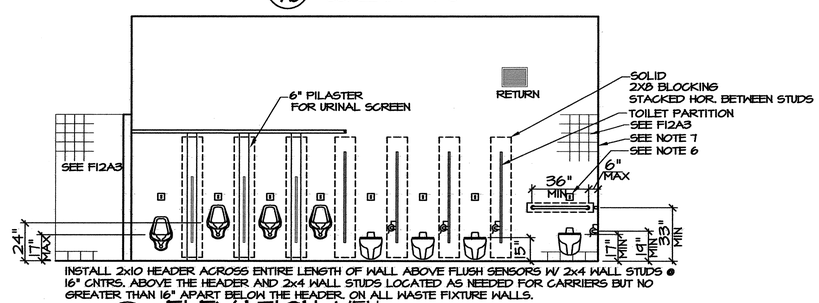
C5/A3 ELEVATION-WOMEN 106 (SEE NOTE 2 ON A1)
SCALE 1/4" = 1'-0"



D2/A3 DETAIL- COUNTER
SCALE 1" = 1'-0"

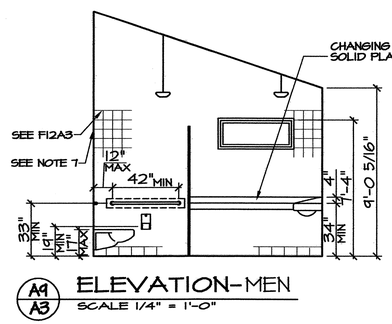


C11/A3 ELEVATION-WOMEN
SCALE 1/4" = 1'-0"

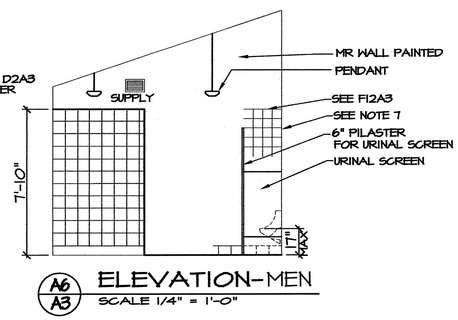


INSTALL 2x10 HEADER ACROSS ENTIRE LENGTH OF WALL ABOVE FLUSH SENSORS W/ 2x4 WALL STUDS @ 16" CNTRS. ABOVE THE HEADER AND 2x4 WALL STUDS LOCATED AS NEEDED FOR CARRIERS BUT NO GREATER THAN 16" APART BELOW THE HEADER. ON ALL WASTE FIXTURE WALLS.

A12/A3 ELEVATION-MEN
SCALE 1/4" = 1'-0"



A9/A3 ELEVATION-MEN
SCALE 1/4" = 1'-0"



A6/A3 ELEVATION-MEN
SCALE 1/4" = 1'-0"

NOTE:
BOTTOM OF TOILET PAPER DISPENSER TO BE 24" A.F.F. EXCEPT IN HANDICAPPED STALLS (19" MIN. TO CENTER LINE)

PROJECT:
I-85 REST AREA
CABARRUS COUNTY — NORTH CAROLINA

ARCHITECT/ENGINEERS:
FACILITIES DESIGN
GENERAL SERVICES DIVISION, NCDOT
1 SOUTH WILMINGTON STREET
RALEIGH, NORTH CAROLINA 27601
(919) 715-0400 FAX (919) 715-0399

DRAWING TITLE:
ELEVATIONS/ WALL SECTION

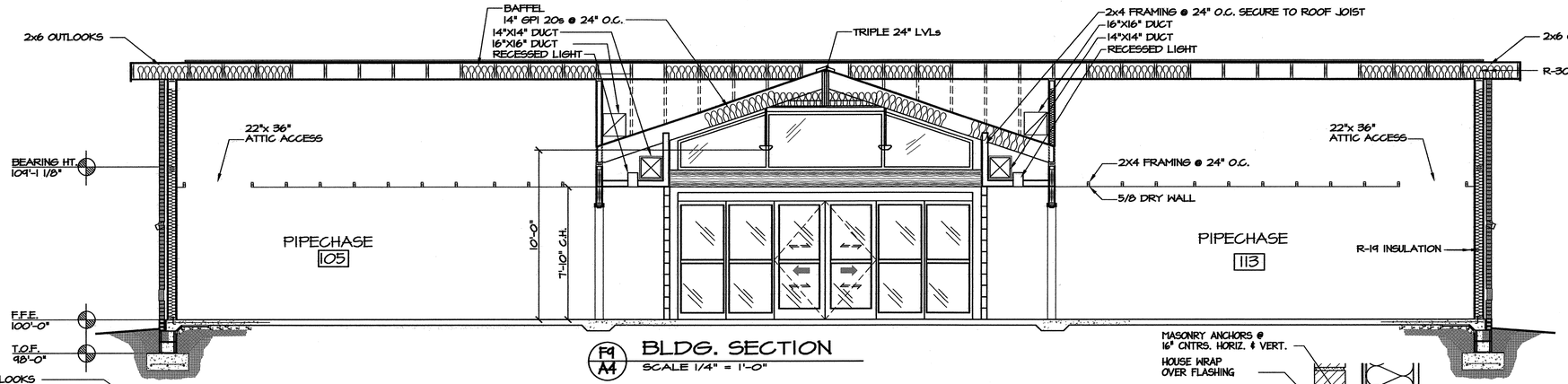
DRAWN BY: RA CHECKED BY: V. BUZARD ISSUE DATE: 30 APRIL 09

SEAL: VICTOR M. BUZARD, REGISTERED ARCHITECT, 4241, 9-18-09, NORTH CAROLINA, RALEIGH, N.C.

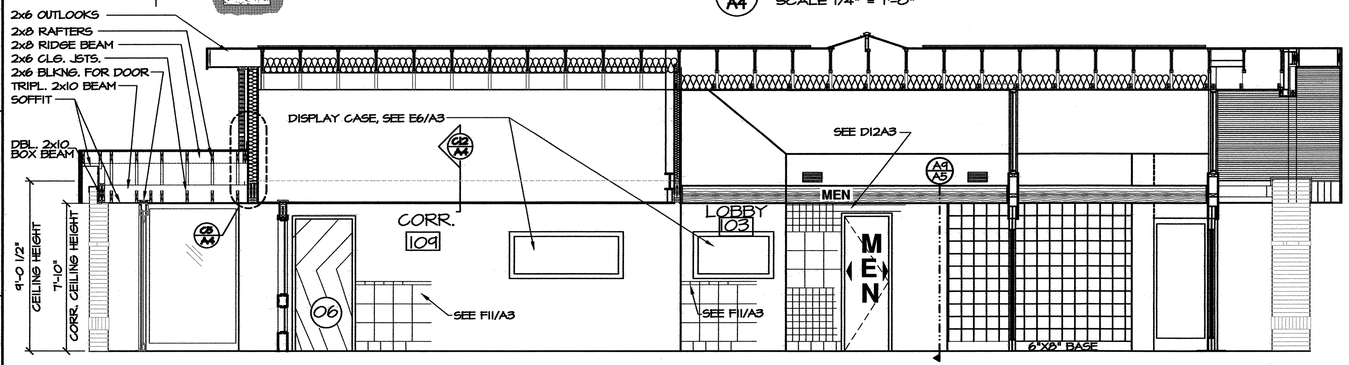
TIP. PROJ. NO.	WBS. NO.		FEDERAL- AID NO.
K-4906	39928.3.ST1		STM-085-2(70)59

NO.	REVISIONS/SUBMISSIONS	DATE

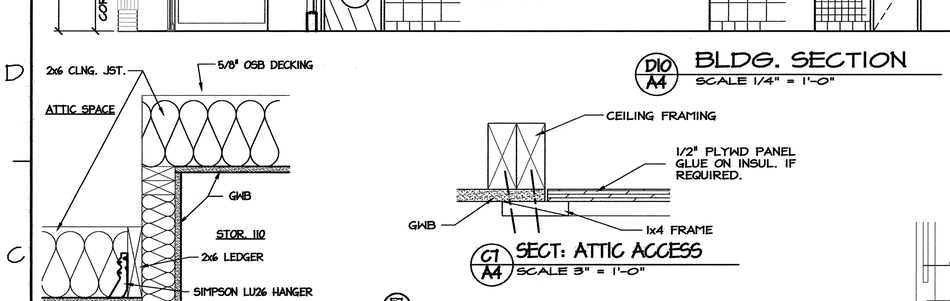
SHEET NO. A3 OF 6



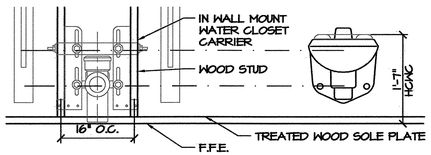
F1/A4 BLDG. SECTION
SCALE 1/4" = 1'-0"



D10/A4 BLDG. SECTION
SCALE 1/4" = 1'-0"

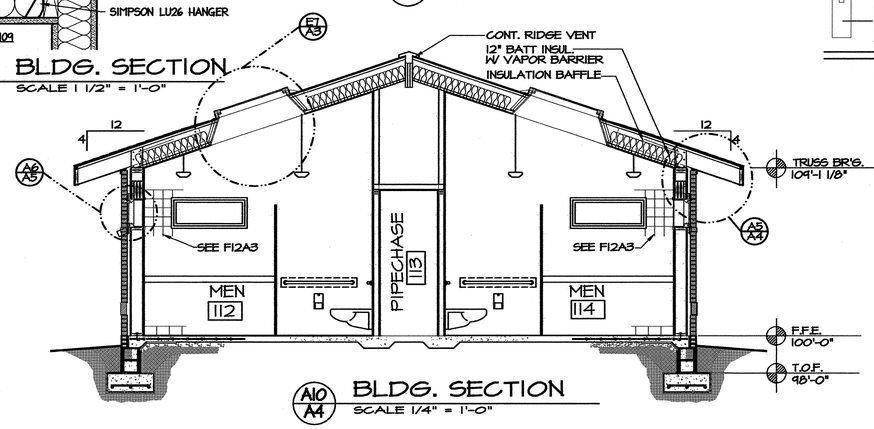


C1/A4 SECT: ATTIC ACCESS
SCALE 3" = 1'-0"

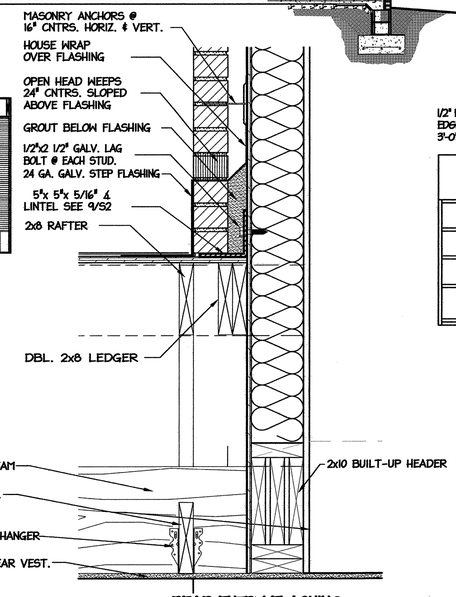


NOTES:
1). FRAMING CONTRACTOR TO COORDINATE LAYOUT OF STUDS WITH PLUMBING CONTRACTOR.
2). WATER CLOSET CARRIER IS TO BE SET FLUSH IN STUD WALL, AND IS DESIGNED FOR 16" O.C. FRAMING
3). FRAMING CONTRACTOR SHALL SET STUDS FOR CHASE WALLS, PLUMBING CONTRACTOR SHALL CONFIRM LOCATIONS

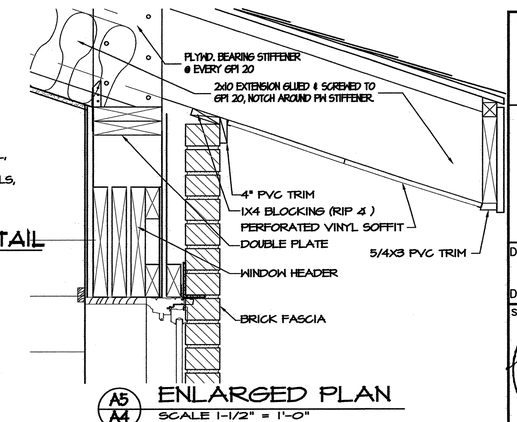
B8/A4 TYPICAL CHASE WALL WATER CLOSET CARRIER DETAIL
SCALE: 3/4" = 1'-0"



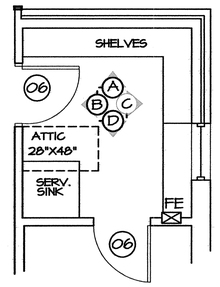
A10/A4 BLDG. SECTION
SCALE 1/4" = 1'-0"



C5/A4 SECT: REAR ENTRY FLASHING & LINTEL DETAIL
SCALE 1 1/2" = 1'-0"

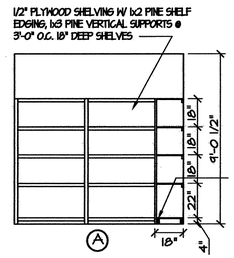


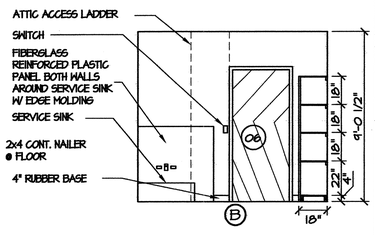
A5/A4 ENLARGED PLAN
SCALE 1-1/2" = 1'-0"

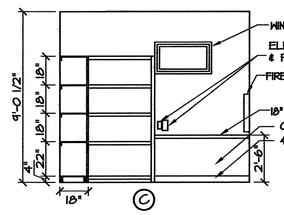


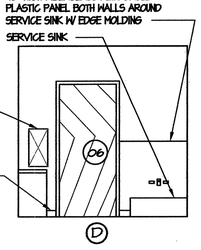
STOR. 110

F2/A4 ELEVATION-STORAGE 110
SCALE 1/4" = 1'-0"









PROJECT:
I-85 REST AREA
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RALEIGH, NORTH CAROLINA 27601
(919) 715-0400 FAX (919) 715-0399

DRAWING TITLE:
BLDG. SECTIONS

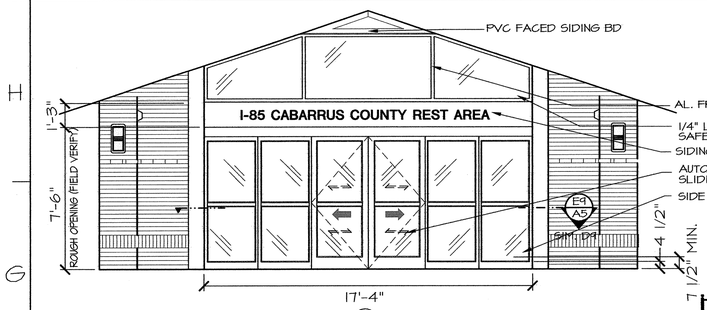
DRAWN BY: RA CHECKED BY: V. BUZARD ISSUE DATE: 30 APRIL 09

SEAL: VICTOR M. BUZARD REGISTERED ARCHITECT 4241 9-18-09 NORTH CAROLINA RALEIGH, N.C.

TIP. PROJ. NO.	WBS. NO.		FEDERAL- AID NO.
K-4906	39928.3.STI		STM-085-2(70)59

NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. A4 OF 6



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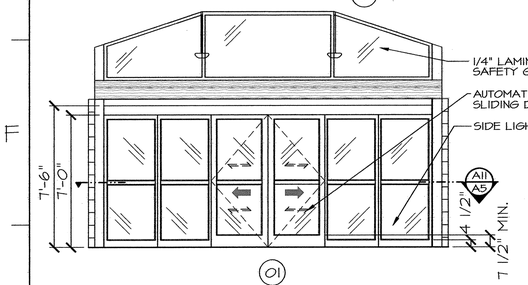

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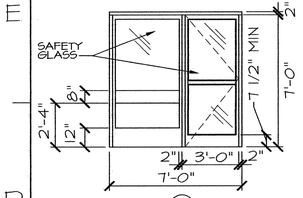

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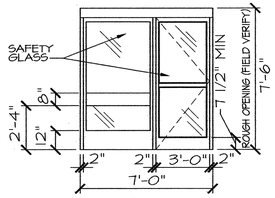

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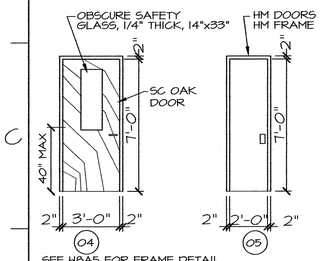
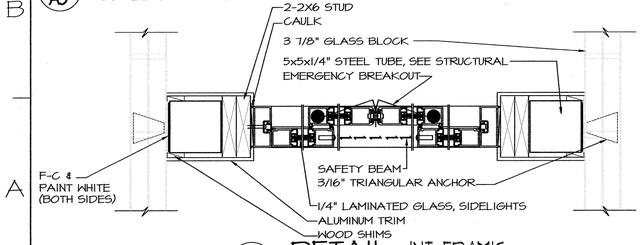


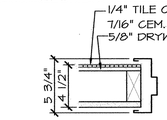
04 05 06

SEE H8A5 FOR FRAME DETAIL
SEE G8A5 FOR FRAME DETAIL

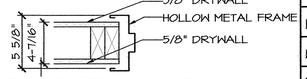
DOOR TYPES
BI2 / A5 — SCALE 1/4" = 1'-0"



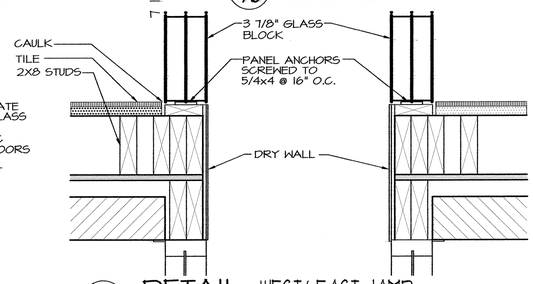
DETAIL- INT. FRAM'G
A11 / A5 — SCALE 1 1/2" = 1'-0"



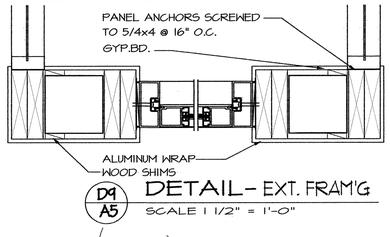
DETAIL- INT. H.M.
H8 / A5 — SCALE 1 1/2" = 1'-0"



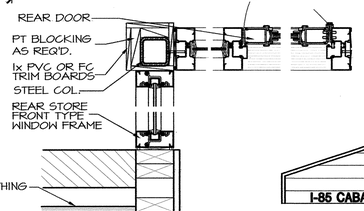
DETAIL- INT. H.M.
G8 / A5 — SCALE 1 1/2" = 1'-0"



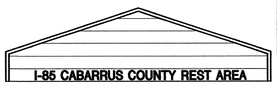
DETAIL- WEST/ EAST JAMB
E9 / A5 — SCALE 1 1/2" = 1'-0"



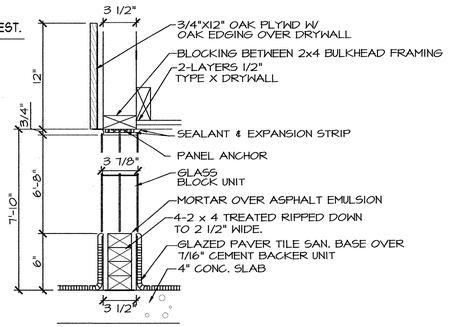
DETAIL- EXT. FRAM'G
D9 / A5 — SCALE 1 1/2" = 1'-0"



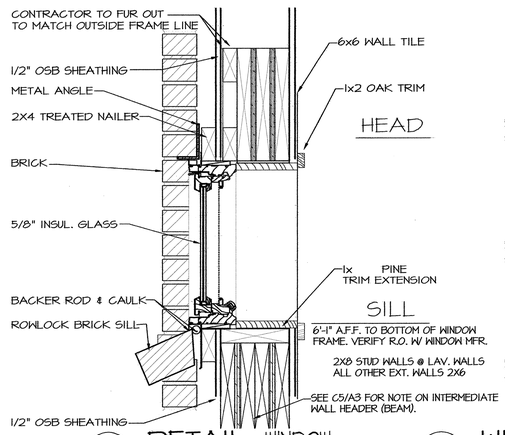
DETAIL- FRAM'G @ REAR VEST.
C10 / A5 — SCALE 1 1/2" = 1'-0"



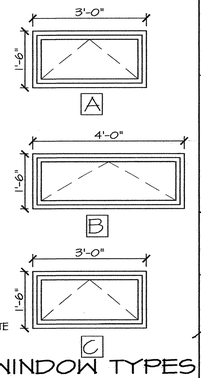
DETAIL- F-C LAP SIDING
C9 / A5 — SCALE 1/2" = 1'-0"



DETAIL- SILL/ HEAD (GLASS BLOCK)
A9 / A5 — SCALE = NTS



DETAIL- WINDOW
A6 / A5 — SCALE 1 1/2" = 1'-0"



WINDOW TYPES
A4 / A5 — SCALE 1/4" = 1'-0"

FINISH - COLOR SCHEDULE

ROOM	NO.	FLOOR MAT.	FLOOR COLOR	BASE MAT.	BASE COLOR	NORTH WALL MAT.	NORTH WALL COLOR	EAST WALL MAT.	EAST WALL COLOR	SOUTH WALL MAT.	SOUTH WALL COLOR	WEST WALL MAT.	WEST WALL COLOR	CEILING MAT.	CEILING COLOR	HEIGHT	REMARKS
VESTIBULE	101	G.P.	SEE SPEC.	G.P.	SEE SPEC.	-	SEE SPEC.	GLZ GB DW	SEE SPEC.	-	SEE SPEC.	GLZ GB DW	SEE SPEC.	DW	SEE SPEC.	VARIES	
VESTIBULE	102	G.P.		G.P.		-		GLZ DW		-		GLZ DW		DW		VARIES	
LOBBY	103	G.P.		G.P.		-		GT GB DW		-		GT GB DW		DW		VARIES	
WOMEN'S RESTRM	104	G.P.		G.P.		GT/DW		GT/DW		GT/DW		GT/DW		DW		VARIES	WALL TILE W/ ACCENT BAND, SEE E12A3
PIPECHASE	105	CONC.		-		OSB		OSB		OSB		OSB		DW		7'-10"	
WOMEN'S RESTRM	106	G.P.		G.P.		GT/DW		GT/DW		GT/DW		GT/DW		DW		VARIES	WALL TILE W/ ACCENT BAND, SEE E12A3
RESTROOM	107	G.P.		G.P.		GT/DW		GT/DW		GT/DW		GT/DW		DW		9'-0 1/2"	WALL TILE W/ ACCENT BAND, SEE E12A3
MECHANICAL	108	CONC.		R		DW		DW		DW		DW		DW		9'-0 1/2"	
CORRIDOR	109	G.P.		G.P.		-		GT/DW		-		GT/DW		DW		7'-10"	
STORAGE	110	VCT		R		DW		DW		DW		DW		DW		9'-0 1/2"	PAINT WOOD SHELVING
MECHANICAL	111	VCT		R		DW		DW		DW		DW		DW		9'-0 1/2"	
MEN'S RESTRM	112	G.P.		G.P.		GT/DW		GT/DW		GT/DW		GT/DW		DW		VARIES	WALL TILE W/ ACCENT BAND, SEE E12A3
PIPECHASE	113	CONC.		-		OSB		OSB		OSB		OSB		DW		7'-10"	PAINT WALLS
MEN'S RESTRM	114	G.P.		G.P.		GT/DW		GT/DW		GT/DW		GT/DW		DW		VARIES	WALL TILE W/ ACCENT BAND, SEE E12A3

DOOR - HARDWARE SCHEDULE

DOOR MARK	DOOR SIZE	DOOR MAT.	DOOR COLOR	FRAME MAT.	FRAME COLOR	HARDWARE LOCKSET	HINGES	CLOSER	STOP	PLATE KICK	WEATHS'P/ THRESHOLD	PUSH/ PULL	REMARKS
1	6'-0"X7'-0"	AL	SEE SPEC.	AL	SEE SPEC.	KEY LOCK/EGRESS					ALUM.(1/2" MAX)		AUTO. SLIDING DOOR W/SIDELIGHTS W/EMERGENCY EGRESS FUNCTION
2	3'-0"x7'-0"	AL		AL		KEY LOCK/EGRESS					ALUM.(1/2" MAX)		1/4" SAFETY GLASS
3	3'-0"x7'-0"	AL		AL			A5112	C02022	L02162		316A5/114/664		1/4" SAFETY GLASS
4	3'-0"x7'-0"x1 3/4"	SC		H.M.		F04	A5112	C02022	L02162	-	3/8" MARBLE	-	OBSCURE SAFETY GLASS, 1/4" THICK, 14"x33"
5	2'-0"x7'-0"x1 3/4"	H.M.		H.M.		F17	A5112	C02511		-	3/8" MARBLE	J403	DEAD BOLT LOCKSET & FLUSH PULL
6	3'-0"x7'-0"x1 3/4"	SC		H.M.		F01	A5112	C02022	L02162	-	3/8" MARBLE	-	

WINDOW SCHEDULE:

MARK:	OPENING SIZE:	FRAME: MAT.	FRAME: COLOR	REMARKS:
A	3'-0"x1'-6"	M. CLAD	SEE SPEC.	5/8" INSUL. GL. OBSCURE
B	4'-0"x 1'-6"	M. CLAD		5/8" INSUL. GL. OBSCURE
C	3'-0"x 1'-6"	M. CLAD		5/8" INSUL. GL. CLEAR

ABBREVIATIONS:

AL.	ALUMINUM
CONC.	CONCRETE, EXPOSED SLAB
DW	DRYWALL PAINTED (GLIDDEN, OR EQUAL TO DEVOS, MOORE, P&L, OR SW, SEE SPEC)
GT	GLAZED TILE / WALL (DAL TILE OR EQUAL TO AMER. OLEAN OR FLORIDA TILE, SEE SPEC.)
H.M.	HOLLOW METAL DOORS & FRAMES
SC	SOLID CORE WOOD, OAK (ICI GLIDDEN "CHERRY" OR EQUAL, P&L OR SW)
G.P.	GLAZED PAVERS / FLOOR & BASE (DAL-TILE OR EQUAL, SEE SPEC.)
F-C	FIBER-CEMENT / SIDING PANELS & TRIM CEDAR MILL EXTERIOR SIDING & TRIM
GLZ	GLAZING
GB	GLASS BLOCK
R	RUBBER

PROJECT:

I-85 REST AREA

CABARRUS COUNTY — NORTH CAROLINA

ARCHITECT/ENGINEERS:

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

DRAWING TITLE:

SCHEDULES/ DETAILS

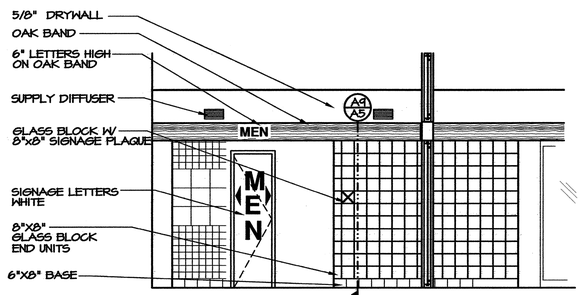
DRAWN BY: RA — CHECKED BY: V. BUZARD — ISSUE DATE: 30 APRIL 09

SEAL: VICTOR M. BUZARD REGISTERED ARCHITECT 4240 9-21-09 NORTH CAROLINA RALEIGH, N.C.

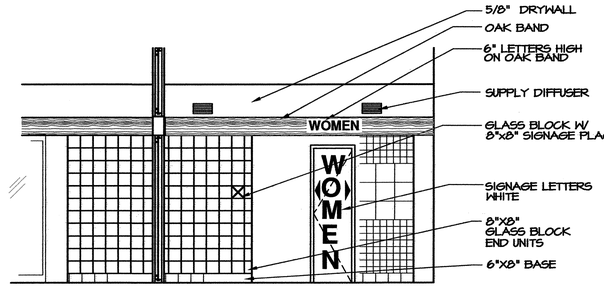
TIP. PROJ. NO.	WBS. NO.		FEDERAL- AID NO.
K-4906	39928.3.STI		STM-085-2(70)59

NO.	REVISIONS/SUBMISSIONS	DATE

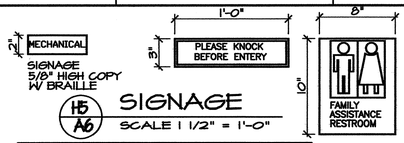
SHEET NO. **A5** 5 OF 6



F11 A6 EAST ELEV.- LOBBY
SCALE 1/4" = 1'-0"

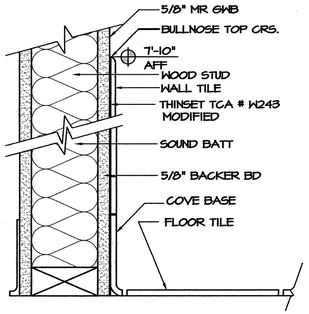


F9 A6 WEST ELEV.- LOBBY
SCALE 1/4" = 1'-0"

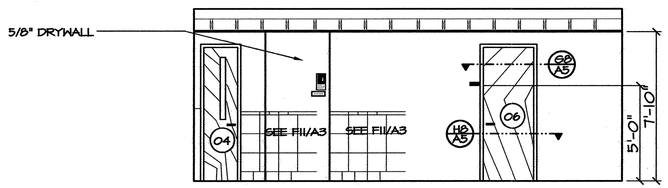


H5 A6 SIGNAGE
SCALE 1 1/2" = 1'-0"

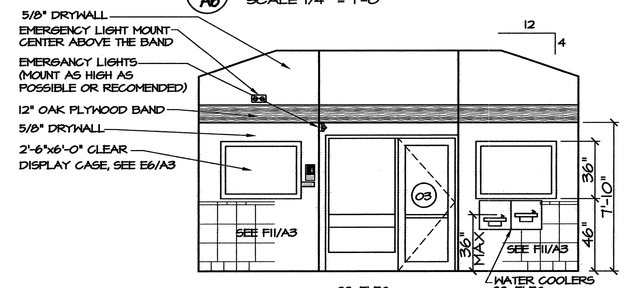
NOTE:
SEE SPEC. FOR APPROVED EQUAL MANUFACTURERS



F5 A6 SECTION.-TILE
SCALE 3" = 1'-0"



G8 A6 WEST ELEV.- CORR 109
SCALE 1/4" = 1'-0"



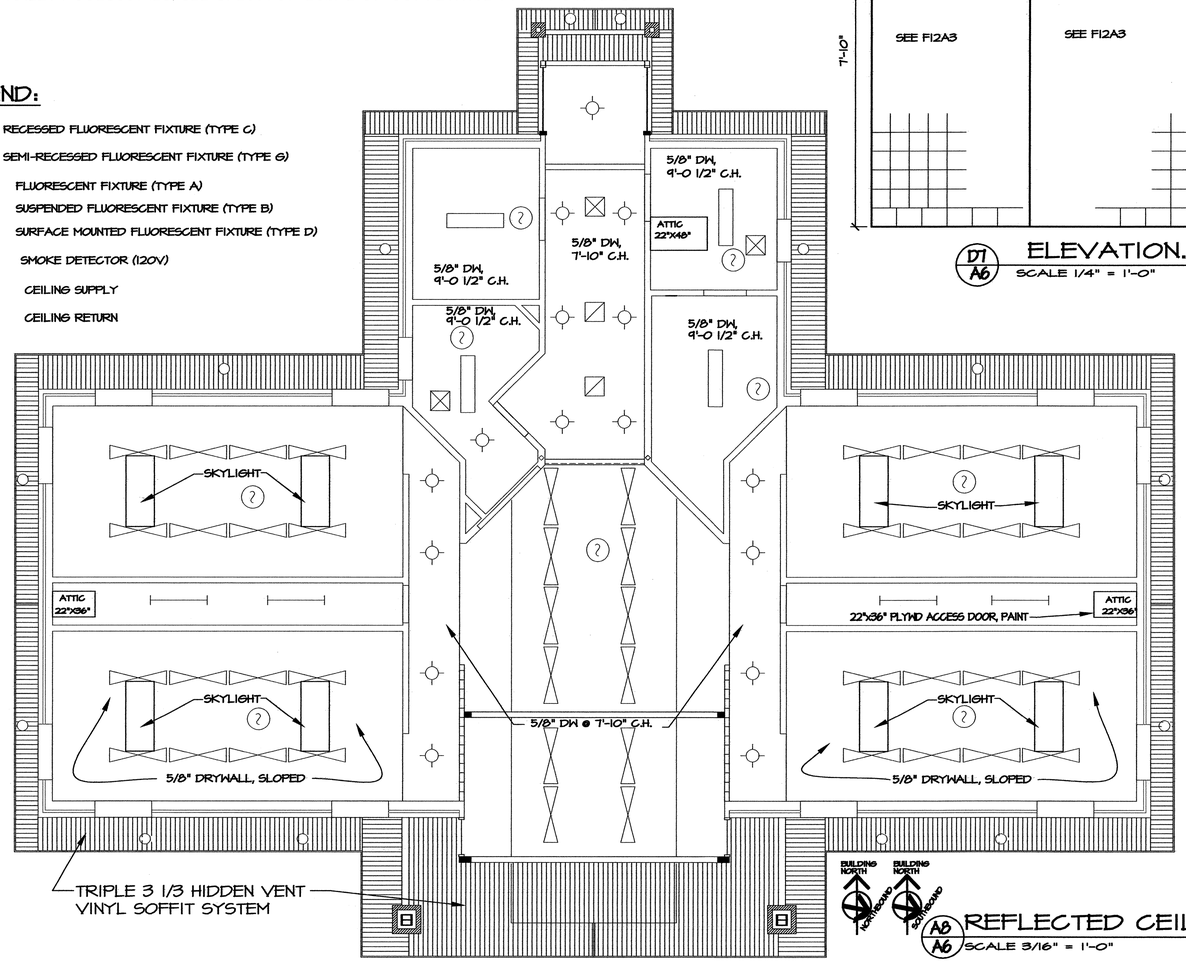
E2 A6 NORTH ELEV.- LOBBY
SCALE 1/4" = 1'-0"

GENERAL NOTES:

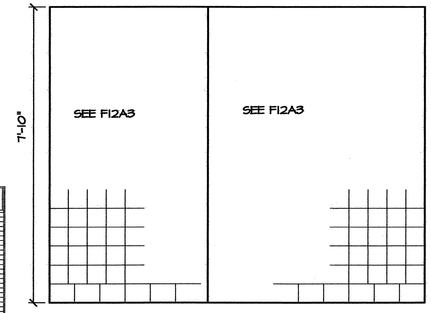
1. PROVIDE FRAMING FOR FIRE EXTINGUISHER CABINET PER MANUFACTURES RECOMMENDATIONS, SEE SPEC. FOR EQUAL OR COMPETITIVE MANUFACTURERS.
2. SEE ALTERNATE NO. 2 FOR PVC TRIM & SOFFIT BOARDS, SEE SPEC. FOR EQUAL OR COMPETITIVE MANUFACTURERS.
3. LOCATE SKYLIGHT IN THE APPROXIMATE LOCATION SHOWN, SEE SPEC. FOR EQUAL OR COMPETITIVE MANUFACTURERS.
4. FOR TOILET ACCESSORIES, SEE SPEC. FOR EQUAL OR COMPETITIVE MANUFACTURERS.

LEGEND:

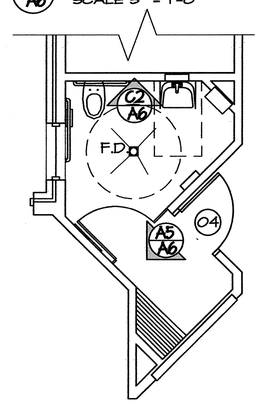
- RECESSED FLUORESCENT FIXTURE (TYPE C)
- SEMI-RECESSED FLUORESCENT FIXTURE (TYPE G)
- FLUORESCENT FIXTURE (TYPE A)
- SUSPENDED FLUORESCENT FIXTURE (TYPE B)
- SURFACE MOUNTED FLUORESCENT FIXTURE (TYPE D)
- (2) SMOKE DETECTOR (120V)
- CEILING SUPPLY
- CEILING RETURN



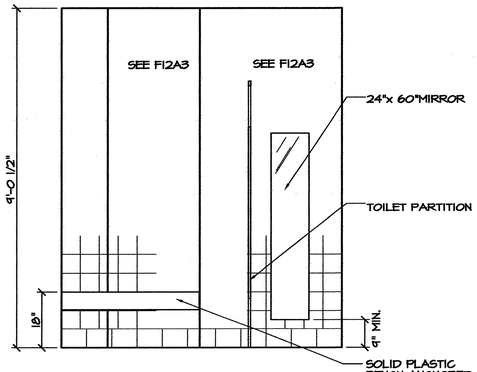
A8 A6 REFLECTED CEILING PLAN
SCALE 3/16" = 1'-0"



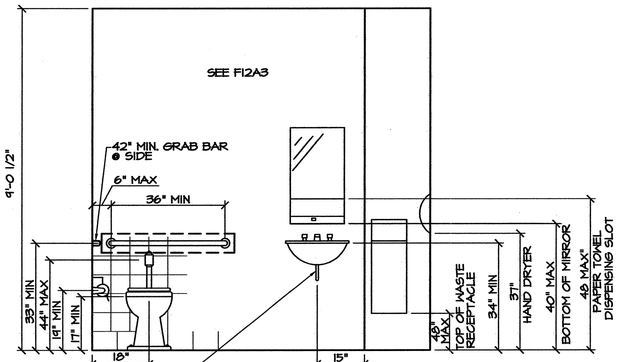
D7 A6 ELEVATION.
SCALE 1/4" = 1'-0"



D6 A6 ENLARGED PLAN- UNISEX
SCALE 1/4" = 1'-0"



A5 A6 SOUTHWEST ELEV.
SCALE 1/2" = 1'-0"



C2 A6 NORTH ELEV.- UNISEX
SCALE 1/2" = 1'-0"

PROJECT:
I-85 REST AREA
CABARRUS COUNTY NORTH CAROLINA

ARCHITECT/ENGINEERS:
FACILITIES DESIGN
GENERAL SERVICES DIVISION, NCDOT
1 SOUTH WILMINGTON STREET
RALEIGH, NORTH CAROLINA 27601
(919) 715-0400 FAX (919) 715-0399

DRAWING TITLE:
REFLECTED CEILING PLAN & DETAILS

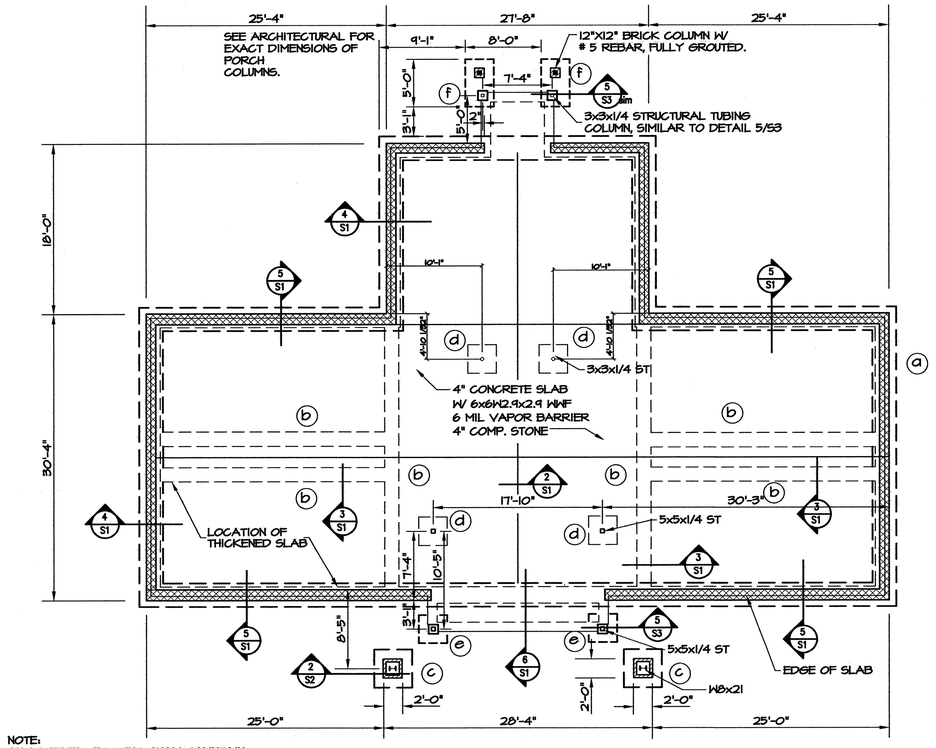
DRAWN BY: RA CHECKED BY: V. BUZARD ISSUE DATE: 30 APRIL 09

SEAL: VICTOR M. BUZARD, JR. REGISTERED ARCHITECT 4241 9-18-09 NORTH CAROLINA RALEIGH, N.C.

TIP. PROJ. NO.	WBS. NO.		FEDERAL- AID NO.
K-4906	39928.3.STI		STM-085-2(70)59

NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. **A6** 6 OF 6



NOTE:
ANY STEPPED FOOTING SHALL MAINTAIN TOP OF FOOTING @ 2' BELOW GRADE.
REINFORCING SHALL BE INCREASED IN THIS AREA PER 4/S1 AND 5/S1.

NOTE: SEE ARCHITECTURAL FOR FLOOR DRAIN LACATIONS AND SLOPE OF RESTROOM FLOORS.

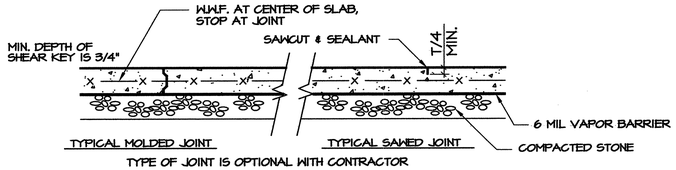
1/S1 FOUNDATION PLAN

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

FOOTING SCHEDULE

MARK	SIZE	REINFORCING
(a)	2'-6" x 12" CONT'	3 -#5'S CONT. W/ #4 TIES 24" O.C.
(b)	18" x 12" CONT' LUG FOOTING	6 -#4'S CONT. W/ #4 TIES 12" O.C.
(c)	4'-0" x 4'-0" x 1'-0"	4 -#5'S EACH WAY, TOP & BOTTOM
(d)	3'-0" x 3'-0" x 1'-0" LUG FOOTING	3 -#4'S EACH WAY
(e)	3'-0" x 3'-0" x 1'-0" FOOTING	3 -#4'S EACH WAY, TOP & BOTTOM
(f)	3'-0" x 5'-0" x 1'-0" FOOTING	6 -#4'S SHORT WAY, TOP & BOTTOM 3 -#4'S LONG WAY, TOP & BOTTOM

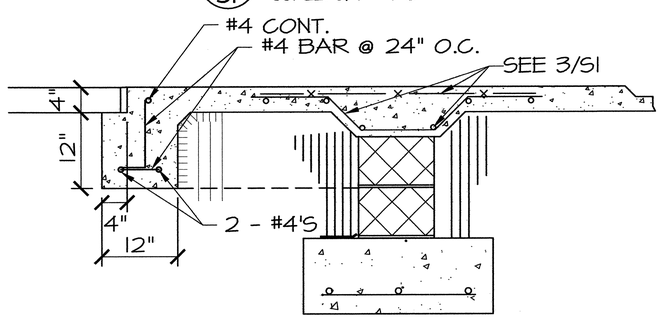
NOTE: ALL FOOTINGS ARE (a) U.O.N.



TYPE OF JOINT IS OPTIONAL WITH CONTRACTOR
"T" INDICATES THICKNESS OF SLAB.

2/S1 TYP. CONTROL JOINT

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



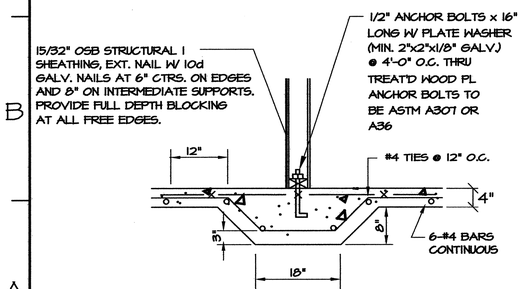
6/S1 THICKENED SLAB @ ENTRY

SCALE: 1" = 1'-0"

NOTES:

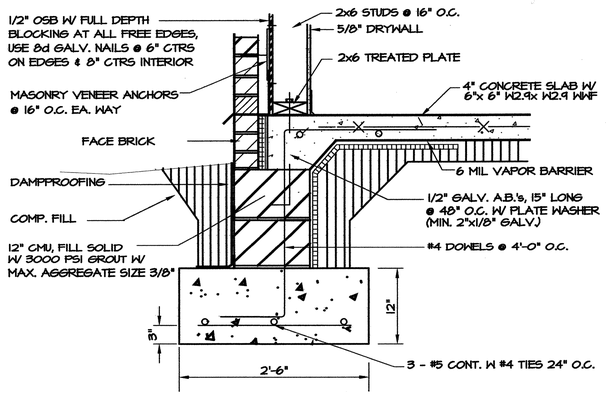
1. DESIGN SOIL BEARING CAPACITY = 2000 PSF (PRESUMPTIVE)
2. DESIGN FLOOR SLAB LIVE LOAD = 100 PSF
3. DESIGN ROOF LIVE LOAD = 20 PSF
4. DESIGN GROUND SNOW LOAD, Pg = 10 PSF
5. DESIGN WIND VELOCITY = 90 MPH, WIND EXPOSURE CAT. B.
6. COMPRESSIVE STRENGTH OF CONCRETE f'c IN FLOOR SLAB SHALL BE MIN. OF 3000 PSI AT 28 DAYS.
7. CONTRACTOR SHALL VERIFY THAT ALL UNDER SLAB PIPING IS IN PLACE PRIOR TO POURING SLAB.
8. DO NOT SCALE FROM DRAWINGS. USE GIVEN DIMENSIONS FOR EXACT LOCATIONS. (SEE ARCHITECTURAL DIMENSIONS UON)
9. FOOTINGS SHALL BE CENTERED ON CORRESPONDING MASONRY WALLS.
10. COMPRESSIVE STRENGTH OF CONCRETE f'c IN FOOTINGS SHALL BE MIN. OF 3000 PSI AT 28 DAYS.
11. FINISH FLOOR REFERENCE (ELEVATION) OF SLAB SHALL BE 100.0' U.O.N.
12. ALL REINFORCING STEEL SHALL BE GRADE 60.
13. TOP OF FOOTING SHALL BE 2'-0 BELOW F.F.E. U.O.N.
14. STEEL "W" SHAPES, ANGLE & PLATES SHALL BE ASTM A36. STRUCTURAL STEEL TUBING SHALL BE ASTM A 500, GRADE B. STEEL ANCHOR BOLTS SHALL BE ASTM A36 OR A307.

NOTE: ALL HARDWARE AND/OR FASTENERS THAT COME IN CONTACT WITH ANY TREATED LUMBER WILL BE HOT DIPPED GALVANIZED OR STAINLESS STEEL.



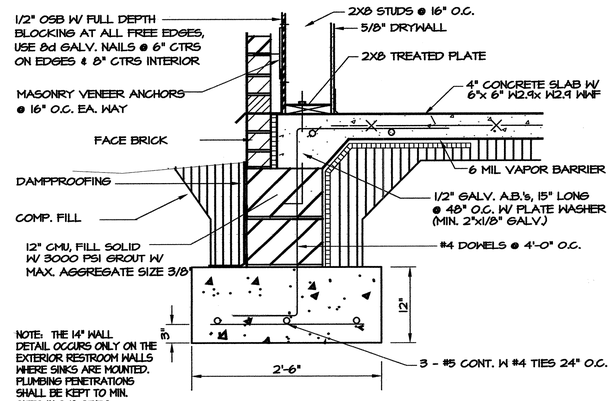
3/S1 DETAIL- INTERIOR FOOTING

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



4/S1 TYP. WALL DETAIL

SCALE: 1" = 1'-0"



NOTE: THE 14" WALL DETAIL OCCURS ONLY ON THE EXTERIOR RESTROOM WALLS WHERE SINKS ARE MOUNTED. PLUMBING PENETRATIONS SHALL BE KEPT TO MIN. SIZES IN 2X8 STUDS.

5/S1 14" WALL DETAIL

SCALE: 1" = 1'-0"

PROJECT:

I-85 REST AREA

CABARRUS COUNTY — NORTH CAROLINA

ARCHITECT/ENGINEERS:

FACILITIES DESIGN

GENERAL SERVICES DIVISION, NCDOT
1 SOUTH WILMINGTON STREET
RALEIGH, NORTH CAROLINA 27601
(919) 715-0400 FAX (919) 715-0399

DRAWING TITLE:

FOUNDATION PLAN & SECTIONS

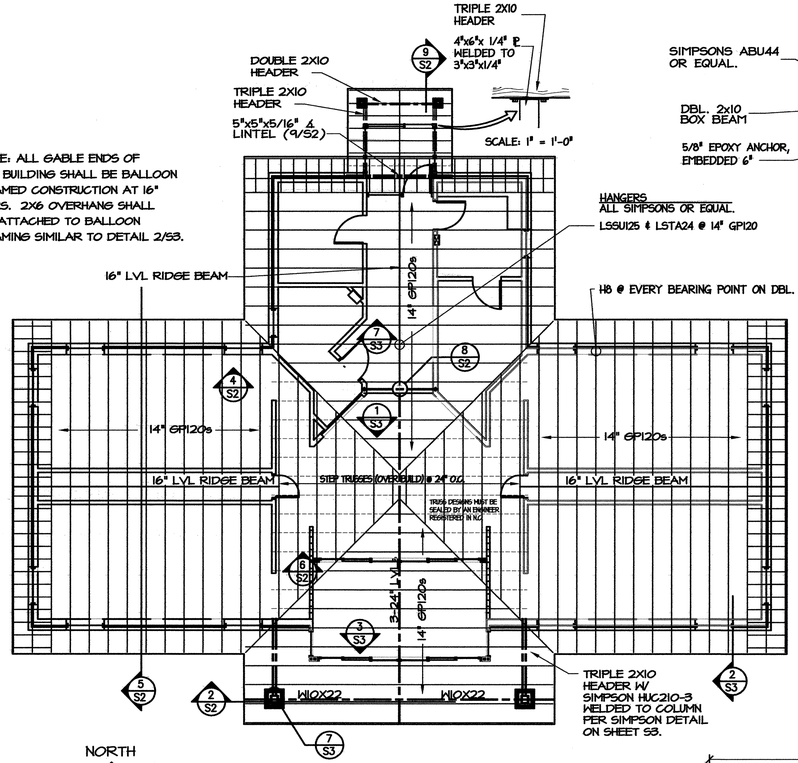
DRAWN BY: CLS CHECKED BY: WER ISSUE DATE: 30 APRIL 09

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16394 6-15-09 WILLIAM RATTERREE

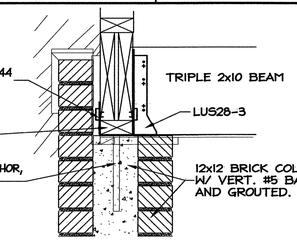
TIP. PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL- AID NO.
K-4906	39928.3.1		IMS-085-2(64)59

NO.	REVISIONS/SUBMISSIONS	DATE

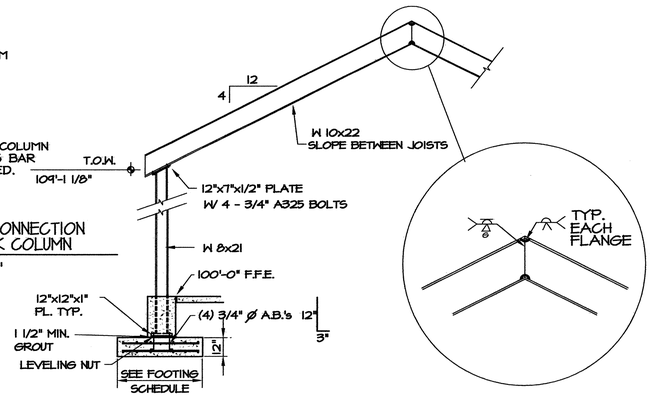
SHEET NO. S1



1 / S2 ROOF FRAMING PLAN
SCALE: 1/8" = 1'-0"

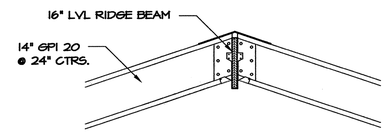


9 / S2 DETAIL- BEAM CONNECTION @ BRICK COLUMN
SCALE: 1 1/2" = 1'- 0"

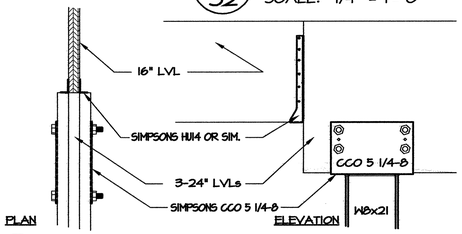


2 / S2 DETAIL- COLUMN & BEAM
SCALE: 1/4" = 1'- 0"

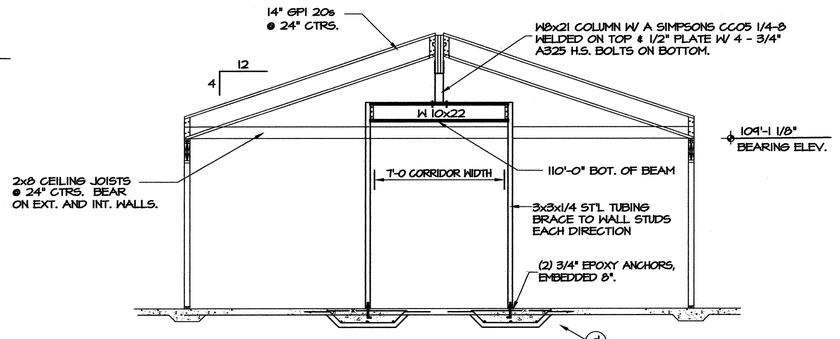
NOTE: 9'-1 1/8" BEARING HEIGHT IS BASED ON A 104 5/8" STUD LENGTH, IF STANDARD STUDS ARE SHIPPED WITH A FRACTIONAL VARIATION, IT WILL BE THE GC's RESPONSIBILITY TO MAKE THE MINOR BEARING HEIGHT ADJUSTMENTS AND INFORM THE STEEL FABRICATOR AND ANY OTHER TRADE THIS MINOR ADJUSTMENT MAY INVOLVE.



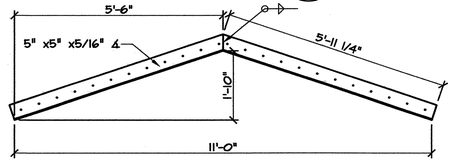
7 / S2 DETAIL- ROOF RIDGE OVER CORRIDOR
SCALE: 1/2" = 1'- 0"



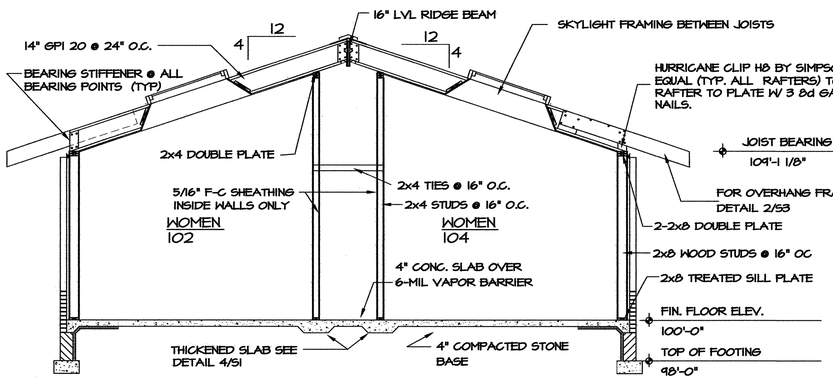
8 / S2 DETAIL- ROOF RIDGE CONNECTION
SCALE: 1" = 1'- 0"



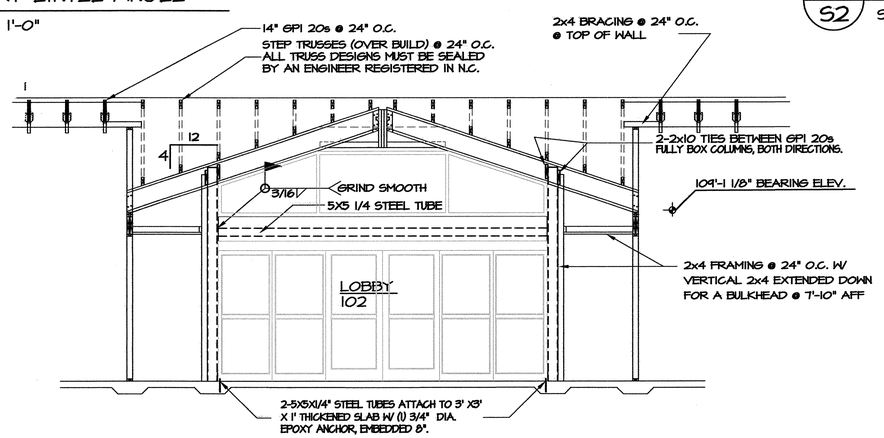
4 / S2 DETAIL- CORRIDOR COLUMN
SCALE: 1/4" = 1'- 0"



9 / S2 REAR ENTRY LINTEL ANGLE
SCALE: 1/2" = 1'-0"



5 / S2 BLDG. SECTION
SCALE 1/4" = 1'-0"



6 / S2 TYP. AIRLOCK SECTION
SCALE 1/4" = 1'-0"

PROJECT:
I-85 REST AREA
CABARRUS COUNTY NORTH CAROLINA

ARCHITECT/ENGINEERS:
FACILITIES DESIGN
GENERAL SERVICES DIVISION, NCDOT
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RALEIGH, NORTH CAROLINA 27601
(919) 715-0400 FAX (919) 715-0399

DRAWING TITLE:
ROOF FRAMING PLAN & SECTIONS

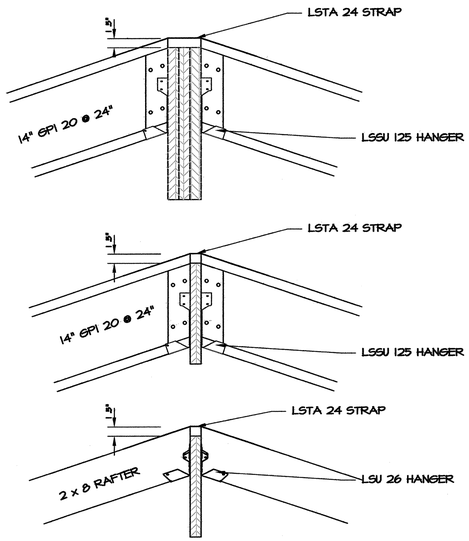
DRAWN BY: CLS CHECKED BY: WER ISSUE DATE: 30 APRIL 09

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16394 6-15-09 WILLIAM RATTERREE

TIP. PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL- AID NO.
K-4906	39928.3.1		IMS-085-2(64)59

NO.	REVISIONS/SUBMISSIONS	DATE

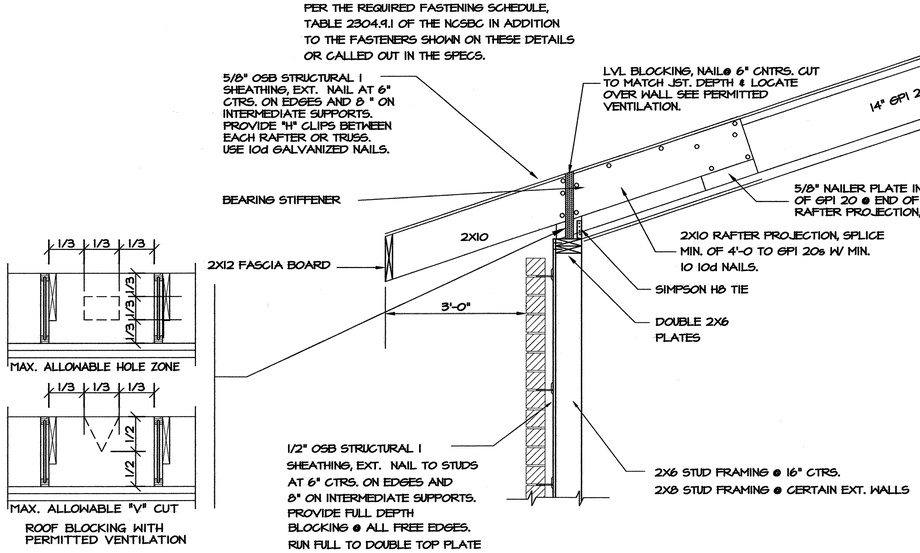
SHEET NO. S2



1/S3 RIDGE CONN., LVL BEAMS

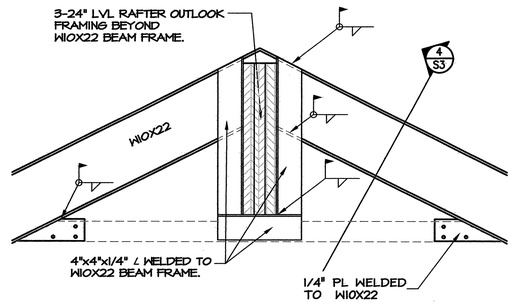
SCALE: 1" = 1'-0"

NOTE: SPLICES OF TOP AND BOTTOM PLATES SHALL BE SPACED A MAX. OF 3' APART. ALL FRAMING MEMBERS SHALL BE FASTENED PER THE REQUIRED FASTENING SCHEDULE, TABLE 2304.9.1 OF THE NCSBC IN ADDITION TO THE FASTENERS SHOWN ON THESE DETAILS OR CALLED OUT IN THE SPECS.



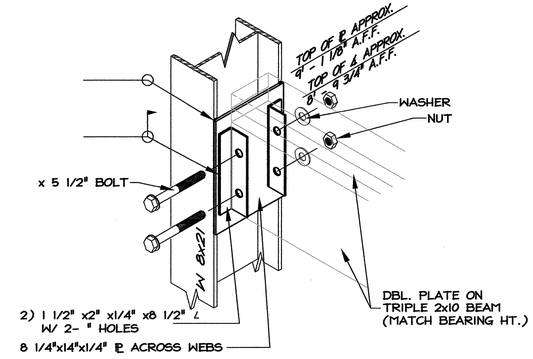
2/S3 DETAIL: TYP. EAVE SECT.

SCALE 3/4" = 1'-0"



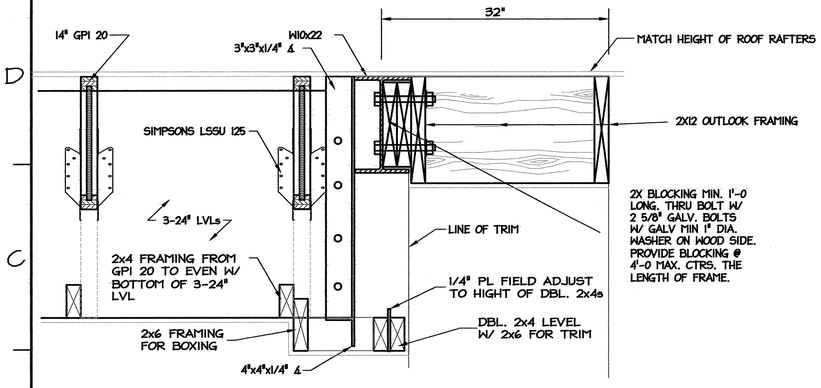
3/S3 DETAIL: TYP. EAVE SECT.

SCALE 1" = 1'-0"



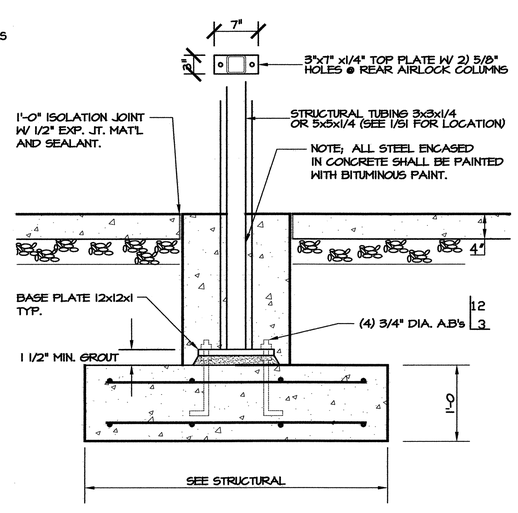
7/S3 DETAIL- MOUNTING BRACKET @ FRONT COLUMN

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



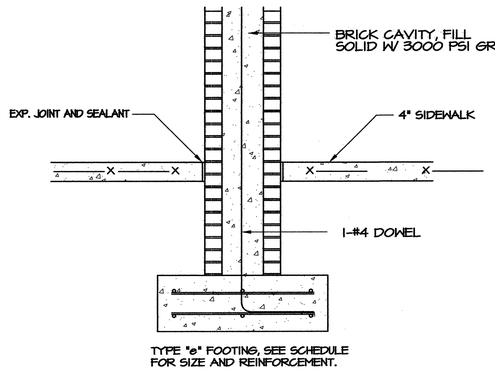
4/S3 DETAIL: TYP. EAVE SECT.

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



5/S3 DETAIL: EXT. AIRLOCK COLUMN

SCALE 1" = 1'-0"



6/S3 DETAIL- COLUMN FOOTING

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

NOTE: ALL HARDWARE AND/OR FASTENERS THAT COME IN CONTACT WITH ANY TREATED LUMBER WILL BE HOT DIPPED GALVANIZED OR STAINLESS STEEL.

MASONRY WALL LINTEL SCHEDULE

OPENINGS	LINTEL		BEARING
0'-0" TO 1'-4"	1 P-3/8 x 3 1/2	(GALV'D.) *	8"
1'-4" TO 4'-0"	1 L-3 1/2 x 3 1/2 x 5/16	(GALV'D.) *	8"
4'-0" TO 6'-8"	1 L-4 x 3 1/2 x 5/16	(GALV'D.) *	8"
6'-8" TO 8'-0"	1 L-5 x 3 1/2 x 5/16	(GALV'D.) *	8"

HEADER SCHEDULE / WOOD FRAMING

FRAMING	OPENING SIZE	HEADER SIZE
2X4	TO 10'-0"	2 2x12's W/ 1 1/2" PLYW'D ℄
2X6	TO 10'-0"	3 2x12's W/ 2 1/2" PLYW'D ℄'S
2X8	TO 10'-0"	4 2x10's W/ 2 5/8" PLYW'D ℄'S

PROJECT:

I-85 REST AREA

CABARRUS COUNTY — NORTH CAROLINA

ARCHITECT/ENGINEERS:

FACILITIES DESIGN

GENERAL SERVICES DIVISION, NCDOT
1 SOUTH WILMINGTON STREET
RALEIGH, NORTH CAROLINA 27601
(919) 715-0400 FAX (919) 715-0399

DRAWING TITLE:

DETAILS & SECTIONS

DRAWN BY: CLS | CHECKED BY: WER | ISSUE DATE: 30 APRIL 09

SEAL: NORTH CAROLINA PROFESSIONAL SEAL 16394 ENGINEER WILLIAM RATTERREE

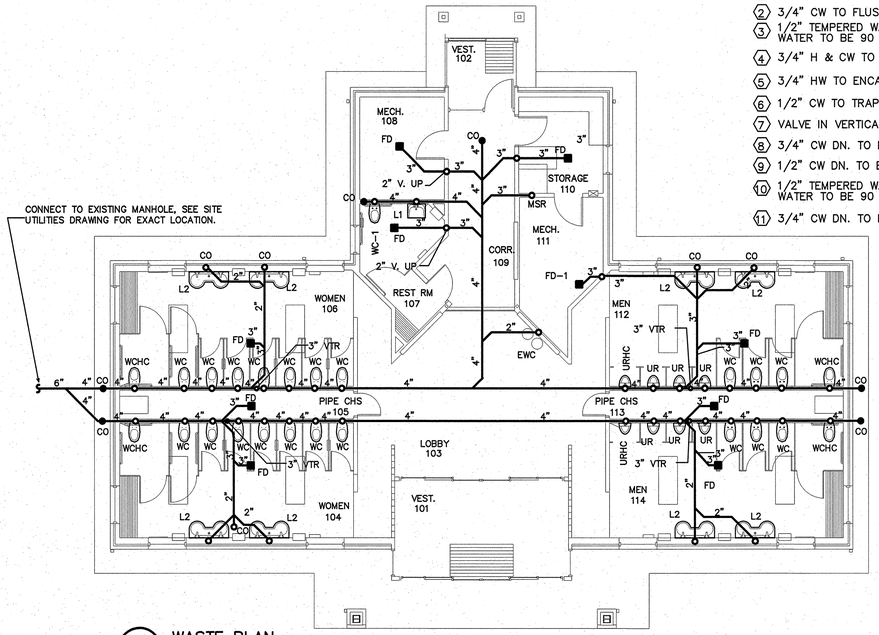
TIP. PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL- AID NO.
K-4906	39928.3.1		IMS-085-2(64)59

NO.	REVISIONS/SUBMISSIONS	DATE

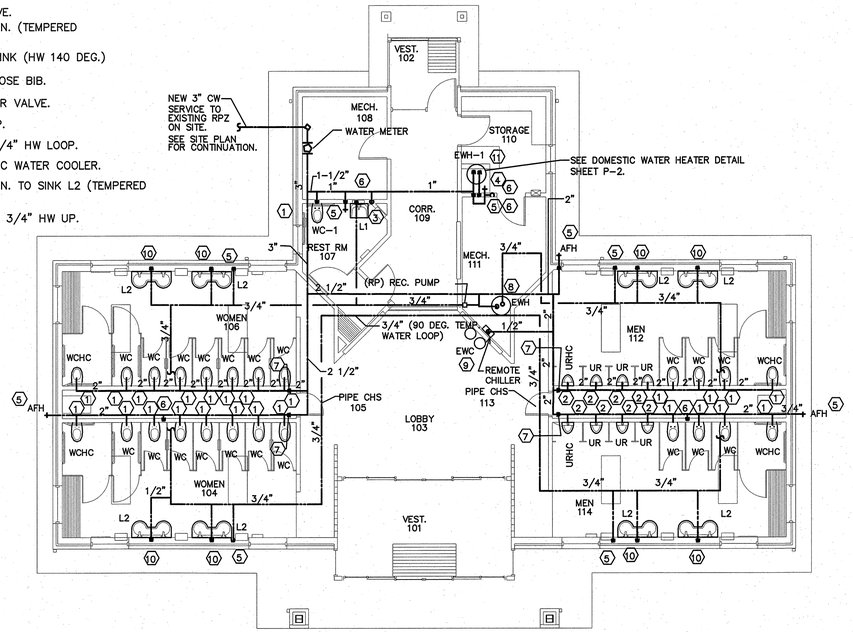
SHEET NO. **S3**

PLUMBING KEY NOTES – WATER

1. 1" CW TO FLUSH VALVE.
2. 3/4" CW TO FLUSH VALVE.
3. 1/2" TEMPERED WATER DN. (TEMPERED WATER TO BE 90 DEG.)
4. 3/4" H & CW TO MOP SINK (HW 140 DEG.)
5. 3/4" HW TO ENCASED HOSE BIB.
6. 1/2" CW TO TRAP PRIMER VALVE.
7. VALVE IN VERTICAL DROP.
8. 3/4" CW DN. TO EWH, 3/4" HW LOOP.
9. 1/2" CW DN. TO ELECTRIC WATER COOLER.
10. 1/2" TEMPERED WATER DN. TO SINK L2 (TEMPERED WATER TO BE 90 DEG.)
11. 3/4" CW DN. TO EWH–1, 3/4" HW UP.



1 P1 WASTE PLAN
SCALE: 1/8"=1'–0"



2 P1 WATER PLAN
SCALE: 1/8"=1'–0"

NOTE:
MAINTAIN MAXIMUM CLEARANCE POSSIBLE IN MAINTENANCE PIPE CHASES. LOCATE CARRIERS IN WALL AND RUN ALL PIPING TIGHT TO WALLS.

THE HVAC DUCTWORK MUST BE INSTALLED FIRST THROUGH THE ROOF SYSTEM PRIOR TO THE INSTALLATION OF ANY PIPING.

GENERAL NOTES – PLUMBING

1. PREPLAN ALL WORK PRIOR TO ORDERING, PURCHASING, OR FABRICATING ANY PART OF THE WORK DESCRIBED BY THIS DRAWING.
2. IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS WITH EXISTING FIELD CONDITIONS OR THE WORK OF OTHER TRADES.
3. RESOLVE ALL CONFLICTS PRIOR TO INCURRING ANY MATERIAL OR LABOR EXPENSES.
4. COMPLY WITH THE MANUFACTURER'S TECHNICAL INSTRUCTIONS WHEN INSTALLING PLUMBING FIXTURES, MATERIALS, AND DEVICES.
5. LOCATE FIXTURES AND EQUIPMENT GENERALLY AS SHOWN ON THE PLANS; HOWEVER, COORDINATE LOCATIONS WITH ACTUAL FIELD CONDITIONS TO PRESERVE ALL CODE–REQUIRED AND MANUFACTURER – REQUESTED SERVICE CLEARANCES.
6. COORDINATE ROUTING OF ALL PIPING WITH BUILDING STRUCTURE AND WITH THE WORK OF OTHER TRADES. OFFSET VENT PIPING AROUND BEAMS AND JOISTS AS NECESSARY.
7. ALL HANDICAP FIXTURES AND INSTALLATION OF HANDICAP FIXTURES SHALL CONFORM TO ADA REQUIREMENTS.
8. AT EXTERIOR WALL, INSTALL WATER PIPING ON HEATED SIDE OF WALL INSULATION.
9. PROVIDE WATER HAMMER ARRESTORS AT THE END OF EACH COLD AND HOT WATER BRANCH RISER. SIZE ARRESTOR APPROPRIATELY.
10. PROVIDE CONCRETE RING FOR ALL EXTERIOR CLEAN–OUTS.
11. REVIEW SITE PLAN FOR UTILITIES AND ORIENTATION PRIOR TO START OF WORK.

PLUMBING LOAD SUMMARY

WASTE FIXTURE UNITS	= 206
WATER FIXTURE UNITS	= 348
TOTAL DEMAND G.P.M.	= 117

UWASTE AND VENT LEGEND:

- COLD WATER PIPE
- HOT WATER PIPE
- NEW HOT RETURN
- BALL VALVE
- HOSE BIBB
- WATER HYDRANT
- NEW VENT
- NEW WASTE
- C.O. — CLEAN OUT–PROVIDE CONCRETE RING FOR EXTERIOR CLEANOUTS
- W.C.O. — WALL CLEAN OUT
- FLOOR DRAIN
- VTR — VENT THROUGH ROOF
- TPC — TRAP PRIMER CONNECTION
- CONNECT TO EXISTING
- 1 — KEY NOTE NUMBER

FIXTURE SCHEDULE - PLUMBING

SYMBOL	DESCRIPTION
WC	WATER CLOSET (See note 1 below) AMERICAN STANDARD "AFWALL FLOWISE 1.28 GPF" #3353.128, ELONGATED BOWL, VITREOUS CHINA, AND 1 1/2" BACK SPUD, PROVIDE OPEN FRONT SEAT, AND SENSOR W/ MANUAL OVERRIDE FLUSH VALVE, EQUAL TO SLOAN REGAL OPTIMA MODEL 152–1.6ES–S W/ INDIVIDUAL TRANSFORMER AND ELEC BOX POSITIONING KIT. PROVIDE JR SMITH MODEL 0533F COMPACT FIXTURE SUPPORT.
WCHC	
WC–1	WATER CLOSET (HANDICAPPED) (See note 1 below) AMERICAN STANDARD "MADERA FLOWISE 1.28 GPF" #3461.128, ELONGATED BOWL, VITREOUS CHINA, AND 1 1/2" TOP SPUD. PROVIDE OPEN FRONT SEAT, AND SENSOR W/ MANUAL OVERRIDE FLUSH VALVE SLOAN #8111–1.28 (BATTERY POWERED). ADA COMPLIANT.
UR	URINAL (See note 1 below) AMERICAN STANDARD "WASHBROOK FLOWISE 0.5 GPF" #6515.005, VITREOUS CHINA, 3/4" BACK SPUD, AND SENSOR W/ MANUAL OVERRIDE FLUSH VALVE SLOAN #195–0.5–ES–S–OR (AC POWERED).
URHC	URINAL (HANDICAPPED) (See note 1 below) AMERICAN STANDARD "WASHBROOK FLOWISE 0.5 GPF" #6515.005, VITREOUS CHINA, 3/4" BACK SPUD, AND SENSOR W/ MANUAL OVERRIDE FLUSH VALVE SLOAN #195–0.5–ES–S–OR (AC POWERED). ADA COMPLIANT.
L1	LAVATORY (HANDICAPPED WALL HUNG)(See note 1 below) AMERICAN STANDARD "LUCERNE" # 0355.012 WHITE WITH CONCEALED ARM CARRIER AND DRAIN ASSEMBLY (7723.018). ADA COMPLIANT. FURNISH WITH SLOAN OPTIMA PLUS #EBF–187 BATTERY SENSOR FAUCET. COORDINATE TRIM AND SINK FAUCET DRILLING FOR 4" SPACING.
L2	2– STATION LAVATORY (HANDICAPPED)(See note 1 below) BRADLEY MODEL #EXD–2N, TERREON ACRYLIC MODIFIED POLYESTER RESIN DOUBLE MODULE SINK SYSTEM (LANNONS STONE), 50" x 21" WALL HUNG LAVATORY. ADA COMPLIANT WITH WALL HANGER SUPPORT FRAME. FURNISH WITH SLOAN OPTIMA PLUS #EBF–187 BATTERY SENSOR FAUCET. COORDINATE TRIM AND SINK FAUCET DRILLING FOR 4" SPACING.
MSR	MOP SINK (See note 1 below) ACORN NO. TDF36–SSC, 36"X36"X12" TERRAZZO SERVICE BASIN WITH 6" DROP FRONT AND STAINLESS STEEL CAPS ON CURBS. 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.
EWC	ELECTRIC WATER COOLER (See note 5 below) HAWS # H1011.8, DUAL SST DRINKING FOUNTAIN W/ #4 FINISH, WALL HUNG, WITH REMOTE CHILLER, 120V/1PH/60HZ, 564W, FLA=4.7, USE HAWS HCR8 CHILLER.
RP	CIRCULATING PUMP (See note 7 below) BELL & GOSSET, SERIES 100 IN–LINE HOT WATER PUMP, 1/12 HP, 115 VAC, FLA=1.75 1 Ph., 3/4" CONN., WITH A MINIMUM OF 13 GPM AND 8' TDH. PUMP TO BE ALL BRONZE CONSTRUCTION, COORDINATE WITH ELEC. CONTRACTOR FOR POWER FEED. PROVIDE DISCONNECT SWITCH.
MTR	WATER METER (OR EQUAL) NEPTUNE, 3", MODEL T–10 (OR EQUAL). METER INDICATION SHALL BE WITH BOTTOM OF GAUGE TOWARD FLOOR.
TPV	TRAP PRIMER VALVE (See note 6 below) PPP INC. MODEL# PR–500, 1/2" INLET, 1/2" OUTLET
WS	WATER CLOSET SUPPORTS (See note 8 below) JR SMITH MODEL# 0533F COMPACT, HORIZONTAL NO HUB.
US	URINAL SUPPORTS (See note 8 below) SMITH MODEL# 0637
HB	HOSE BIBB (See note 4 below) ZURN Z–1330–C, 3/4" WALL HYDRANT WITH VANDAL RESISTANT VACUUM BREAKER. ENCASED WITH KEY LOCK.
EWH	ELECTRIC WATER HEATER (See note 2 below) STATE WATER # P6–52–20RT–2, 50 GALLONS, 4500W, 3/4" INLET AND OUTLET, ELECTRIC, 240V, 1 PHASE, MODEL# ETC–2X EXPANSION TANK.
EWH–1	ELECTRIC WATER HEATER (See note 2 below) A.O. SMITH MODEL ELJC–10, 10 GALLON, 1,500 WATT, 3/4" INLET AND OUTLET, 120V, 1 PH. MOUNT ON WALL. MODEL# ETC–2X EXPANSION TANK.
FD	FLOOR DRAIN (See note 3 below) ZURN ZN–415–P. PROVIDE WITH DEEP SEAL P–TRAP, AND TYPE "B" STRAINER. TRAP PRIMER CONNECTION REQUIRED ONLY FOR FLOOR DRAINS IN CHASES, MECH & STORAGE.
FD–1	FLOOR DRAIN (See note 3 below) ZURN ZN–415–P. PROVIDE WITH DEEP SEAL P–TRAP, AND TYPE "I" STRAINER, WITH TRAP PRIMER CONNECTION
AFH	ANTI–FREEZE HOSEBIBB (See note 4 below) ZURN Z–1320–C, 3/4" NON FREEZE WALL HYDRANT WITH VANDAL RESISTANT VACUUM BREAKER. ENCASED WITH KEY LOCK.

NOTES:
1. Or equal by Kohler, Eljer
   Flush Valve: Zurn or Sloan.
   Mop Sink: Zurn, Fiat, Stern Williams or Speakman
   Mop Sink Faucet: Chicago, Symmons or Delta
2. Or equal by A.O.Smith, Rheem, Lochinvar or Braford White.
3. Or equal by Josam, Wade or JR Smith
4. Or equal by Wade, Woodford or J.R. Smith
5. Or equal by Oasis, Sunroc, or Halsey Taylor
6. Or equal by Sioux Chief, J.R. Smith or Zurn.
7. Or equal by Ingersoll Rand or Weinman.
8. Or equal by Zurn, J.R. Smith or American Standard.

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DRAWING TITLE:
NORTHBOUND PLUMBING PLAN

DRAWN BY: DS CHECKED BY: BEB ISSUE DATE: 30 APRIL 09

SEAL: NORTH CAROLINA PROFESSIONAL SEAL 22038 ENGINEER BENJAMIN E BURKE 5/4/09

TIP. PROJ. NO.	WBS. NO.	CONTRACT ID NO.	FEDERAL– AID NO.
K–4906	39928.3.1		IMS–085–2(64)59

NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. P1 OF 5

PLUMBING KEY NOTES – WATER

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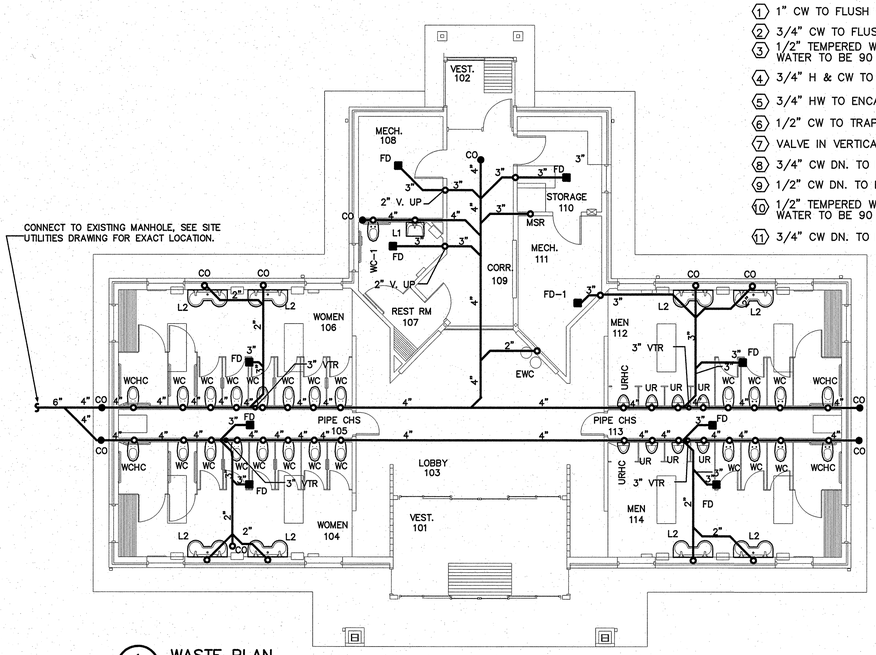
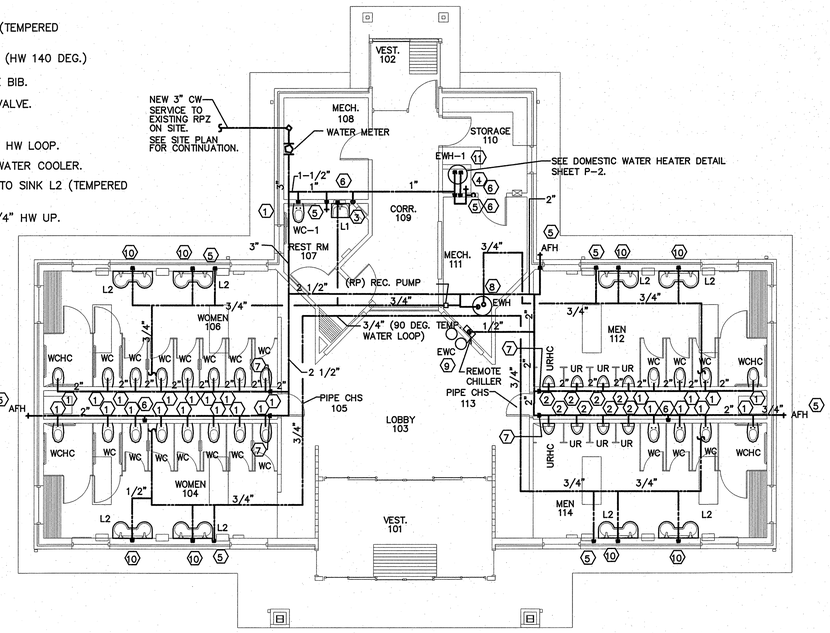


1 / P1 WASTE PLAN
SCALE: 1/8"=1'-0"



2 / P1 WATER PLAN
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PLUMBING LOAD SUMMARY

WASTE FIXTURE UNITS =	206
WATER FIXTURE UNITS =	348
TOTAL DEMAND G.P.M. =	117

UWASTE AND VENT LEGEND:

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W.C.O.	WALL CLEAN OUT
	FLOOR DRAIN
VTR	VENT THROUGH ROOF
TPC	TRAP PRIMER CONNECTION
	CONNECT TO EXISTING
1	KEY NOTE NUMBER

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DRAWING TITLE: NORTHBOUND PLUMBING PLAN

DRAWN BY: DS CHECKED BY: BEB ISSUE DATE: 30 APRIL 09

SEAL: NORTH CAROLINA PROFESSIONAL SEAL 22038 ENGINEER BENJAMIN E. BURKE

TIP. PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL– AID NO.
K–4906	39928.3.1		IMS–085–2(64)59

NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. P1 OF 6

PLUMBING KEY NOTES – WATER

1. 1" CW TO FLUSH VALVE.
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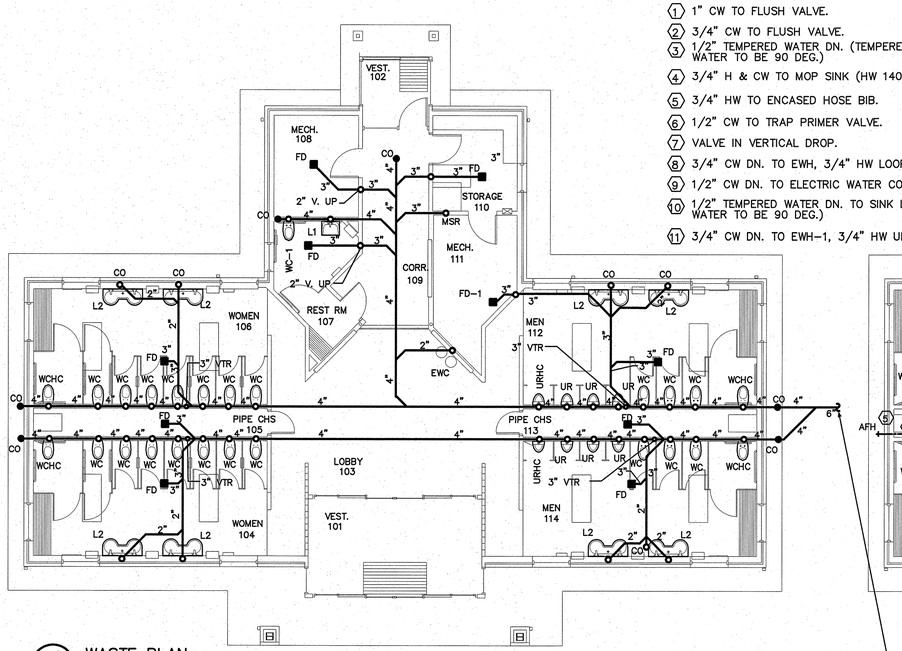
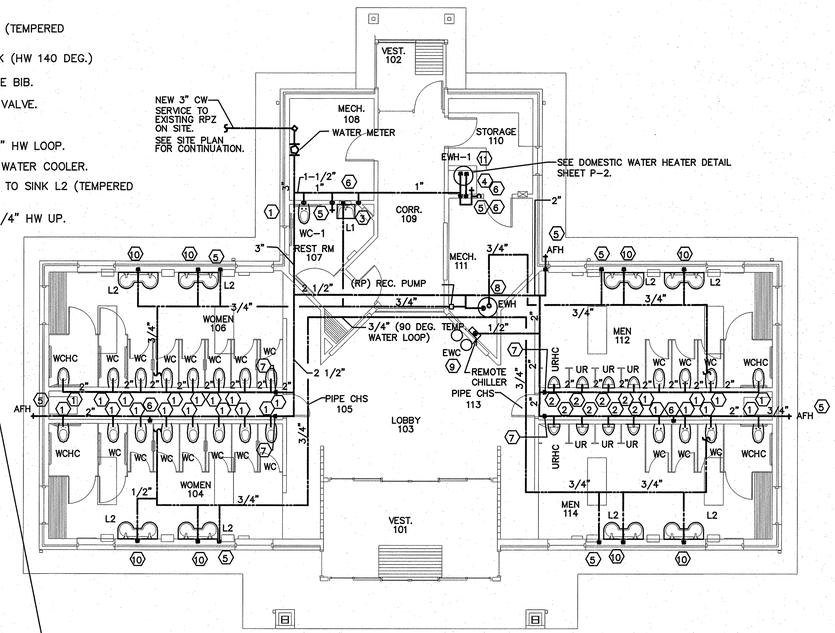


1 P2 WASTE PLAN
SCALE: 1/8"=1'–0"



2 P2 WATER PLAN
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WATER FIXTURE UNITS =	348
TOTAL DEMAND G.P.M. =	117

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DRAWING TITLE: SOUTHBOUND PLUMBING PLAN

DRAWN BY: DS CHECKED BY: BEB ISSUE DATE: 30 APRIL 09

SEAL: NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER SEAL 22038 BENJAMIN E. BURKE 8/10/09

TIP. PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL– AID NO.
K–4906	39928.3.1		IMS–085–2(64)59

NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. P2 OF 6

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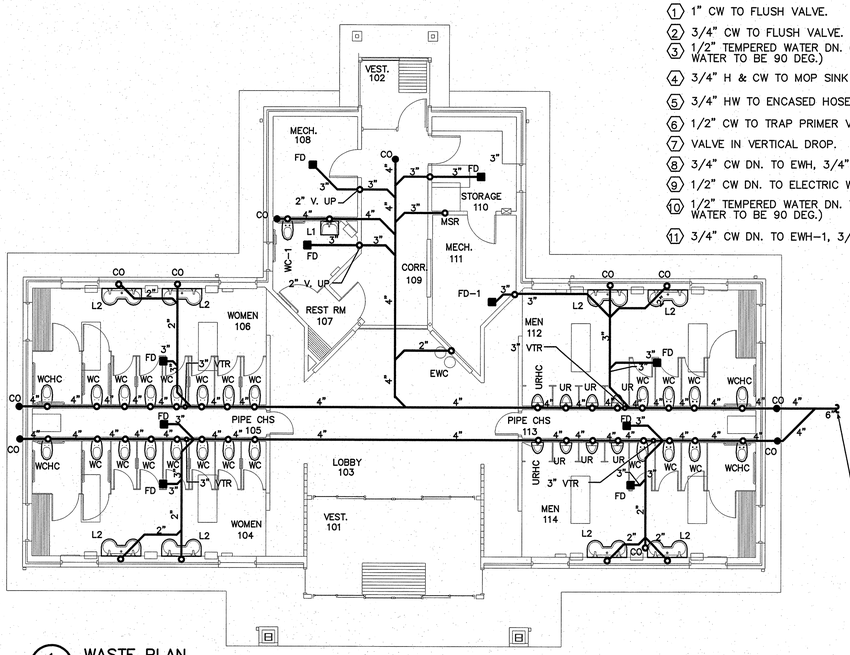
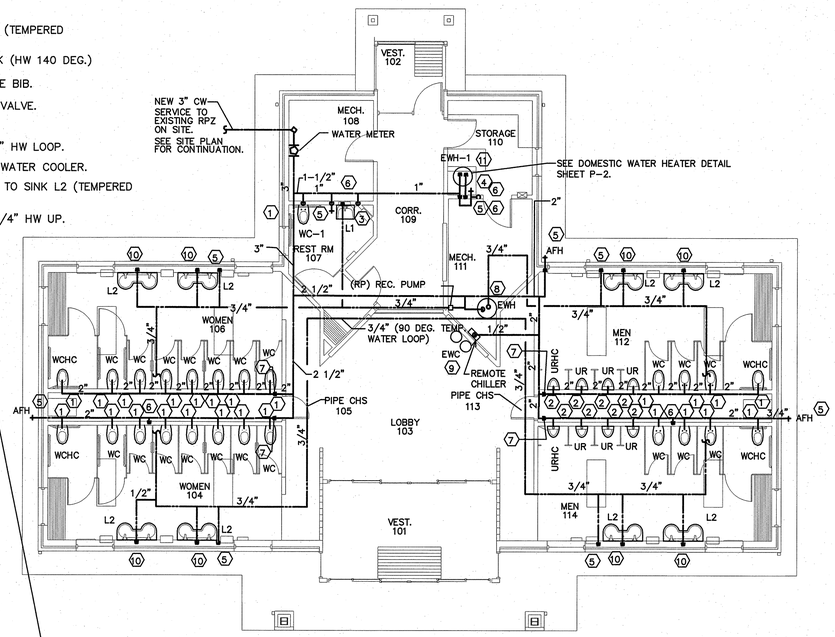


1 P2 WASTE PLAN
SCALE: 1/8"=1'–0"



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- NEW WASTE
- C.O. — CLEAN OUT–PROVIDE CONCRETE RING FOR EXTERIOR CLEANOUTS
- W.C.O. — WALL CLEAN OUT
- FLOOR DRAIN
- VTR — VENT THROUGH ROOF
- TPC — TRAP PRIMER CONNECTION
- CONNECT TO EXISTING
- 1 — KEY NOTE NUMBER

FIXTURE SCHEDULE - PLUMBING

SYMBOL — DESCRIPTION

WC / WCHC — WATER CLOSET (See note 1 below)
AMERICAN STANDARD "AFWALL FLOWISE 1.28 GPF" #3353.128, ELONGATED BOWL, VITREOUS CHINA, AND 1 1/2" BACK SPUD. PROVIDE OPEN FRONT SEAT, AND SENSOR W/ MANUAL OVERRIDE FLUSH VALVE, EQUAL TO SLOAN REGAL OPTIMA MODEL 152–1.6ES–S W/ INDIVIDUAL TRANSFORMER AND ELEC BOX POSITIONING KIT. PROVIDE JR SMITH MODEL 0533F COMPACT FIXTURE SUPPORT.

WC–1 — WATER CLOSET (HANDICAPPED) (See note 1 below)
AMERICAN STANDARD "MADERA FLOWISE 1.28 GPF" #3461.128, ELONGATED BOWL, VITREOUS CHINA, AND 1 1/2" TOP SPUD. PROVIDE OPEN FRONT SEAT, AND SENSOR W/ MANUAL OVERRIDE FLUSH VALVE SLOAN #8111–1.28 (BATTERY POWERED). ADA COMPLIANT.

UR — URINAL (See note 1 below)
AMERICAN STANDARD "WASHBROOK FLOWISE 0.5 GPF" #6515.005, VITREOUS CHINA, 3/4" BACK SPUD, AND SENSOR W/ MANUAL OVERRIDE FLUSH VALVE SLOAN #195–0.5–ES–S–OR (AC POWERED).

URHC — URINAL (HANDICAPPED) (See note 1 below)
AMERICAN STANDARD "WASHBROOK FLOWISE 0.5 GPF" #6515.005, VITREOUS CHINA, 3/4" BACK SPUD, AND SENSOR W/ MANUAL OVERRIDE FLUSH VALVE SLOAN #195–0.5–ES–S–OR (AC POWERED). ADA COMPLIANT.

L1 — LAVATORY (HANDICAPPED WALL HUNG)(See note 1 below)
AMERICAN STANDARD "LUCERNE" # 0355.012 WHITE WITH CONCEALED ARM CARRIER AND DRAIN ASSEMBLY (7723.018). ADA COMPLIANT.
FURNISH WITH SLOAN OPTIMA PLUS #EBF–187 BATTERY SENSOR FAUCET.
COORDINATE TRIM AND SINK FAUCET DRILLING FOR 4" SPACING.

L2 — 2– STATION LAVATORY (HANDICAPPED)(See note 1 below)
BRADLEY MODEL #EXD–2N, TERREON ACRYLIC MODIFIED POLYESTER RESIN DOUBLE MODULE SINK SYSTEM (LANNONS STONE), 50" x 21" WALL HUNG LAVATORY.
ADA COMPLIANT WITH WALL HANGER SUPPORT FRAME.
FURNISH WITH SLOAN OPTIMA PLUS #EBF–187 BATTERY SENSOR FAUCET.
COORDINATE TRIM AND SINK FAUCET DRILLING FOR 4" SPACING.

MSR — MOP SINK (See note 1 below)
ACORN NO. TDF36–SSC, 36"X36"X12" TERRAZZO SERVICE BASIN WITH 6" DROP FRONT AND STAINLESS STEEL CAPS ON CURBS.
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.

EWC — ELECTRIC WATER COOLER (See note 5 below)
HAWS # H1011.8, DUAL SST DRINKING FOUNTAIN W/ #4 FINISH, WALL HUNG, WITH REMOTE CHILLER, 120V/1PH/60HZ, 564W, FLA=4.7, USE HAWS HCR8 CHILLER.

RP — CIRCULATING PUMP (See note 7 below)
BELL & GOSSET, SERIES 100 IN–LINE HOT WATER PUMP, 1/12 HP, 115 VAC, FLA=1.75 1 Ph., 3/4" CONN., WITH A MINIMUM OF 13 GPM AND 8' TDH. PUMP TO BE ALL BRONZE CONSTRUCTION, COORDINATE WITH ELEC. CONTRACTOR FOR POWER FEED. PROVIDE DISCONNECT SWITCH.

MTR — WATER METER (OR EQUAL)
NEPTUNE, 3", MODEL T–10 (OR EQUAL). METER INDICATION SHALL BE WITH BOTTOM OF GAUGE TOWARD FLOOR.

TPV — TRAP PRIMER VALVE (See note 6 below)
PPP INC. MODEL# PR–500, 1/2" INLET, 1/2" OUTLET

WS — WATER CLOSET SUPPORTS (See note 8 below)
JR SMITH MODEL# 0533F COMPACT, HORIZONTAL NO HUB.

US — URINAL SUPPORTS (See note 8 below)
SMITH MODEL# 0637

HB — HOSE BIBB (See note 4 below)
ZURN Z–1330–C, 3/4" WALL HYDRANT WITH VANDAL RESISTANT VACUUM BREAKER. ENCASED WITH KEY LOCK.

EWH — ELECTRIC WATER HEATER (See note 2 below)
STATE WATER # P6–52–20RT–2, 50 GALLONS, 4500W, 3/4" INLET AND OUTLET, ELECTRIC, 240V, 1 PHASE, MODEL# ETC–2X EXPANSION TANK.

EWH–1 — ELECTRIC WATER HEATER (See note 2 below)
A.O. SMITH MODEL ELJC–10, 10 GALLON, 1,500 WATT, 3/4" INLET AND OUTLET, 120V, 1 PH. MOUNT ON WALL. MODEL# ETC–2X EXPANSION TANK.

FD — FLOOR DRAIN (See note 3 below)
ZURN ZN–415–P. PROVIDE WITH DEEP SEAL P–TRAP, AND TYPE "B" STRAINER. TRAP PRIMER CONNECTION REQUIRED ONLY FOR FLOOR DRAINS IN CHASES, MECH & STORAGE.

FD–1 — FLOOR DRAIN (See note 3 below)
ZURN ZN–415–P. PROVIDE WITH DEEP SEAL P–TRAP, AND TYPE "I" STRAINER, WITH TRAP PRIMER CONNECTION

AFH — ANTI–FREEZE HOSEBIBB (See note 4 below)
ZURN Z–1320–C, 3/4" NON FREEZE WALL HYDRANT WITH VANDAL RESISTANT VACUUM BREAKER. ENCASED WITH KEY LOCK.

NOTE:
MAINTAIN MAXIMUM CLEARANCE POSSIBLE IN MAINTENANCE PIPE CHASES. LOCATE CARRIERS IN WALL AND RUN ALL PIPING TIGHT TO WALLS.
THE HVAC DUCTWORK MUST BE INSTALLED FIRST THROUGH THE ROOF SYSTEM PRIOR TO THE INSTALLATION OF ANY PIPING.

NOTES:
1. Or equal by Kohler, Eljer
   Flush Valves: Zurn or Sloan.
   Mop Sink: Zurn, Fiat, Stern Williams or Speakman
   Mop Sink Faucet: Chicago, Symmons or Delta
2. Or equal by A.O.Smith, Rheem, Lochinvar or Braford White.
3. Or equal by Josam, Wade or JR Smith
4. Or equal by Wade, Woodford or J.R. Smith
5. Or equal by Oasis, Sunroc, or Halsey Taylor
6. Or equal by Sioux Chief, J.R. Smith or Zurn.
7. Or equal by Ingersoll Rand or Weinman.
8. Or equal by Zurn, J.R. Smith or American Standard.

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PROJECT:
I–85 REST AREA
CABARRUS COUNTY — NORTH CAROLINA

ARCHITECT/ENGINEERS:
FACILITIES DESIGN
GENERAL SERVICES DIVISION, NCDOT
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RALEIGH, NORTH CAROLINA 27601
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DRAWING TITLE: SOUTHBOUND PLUMBING PLAN

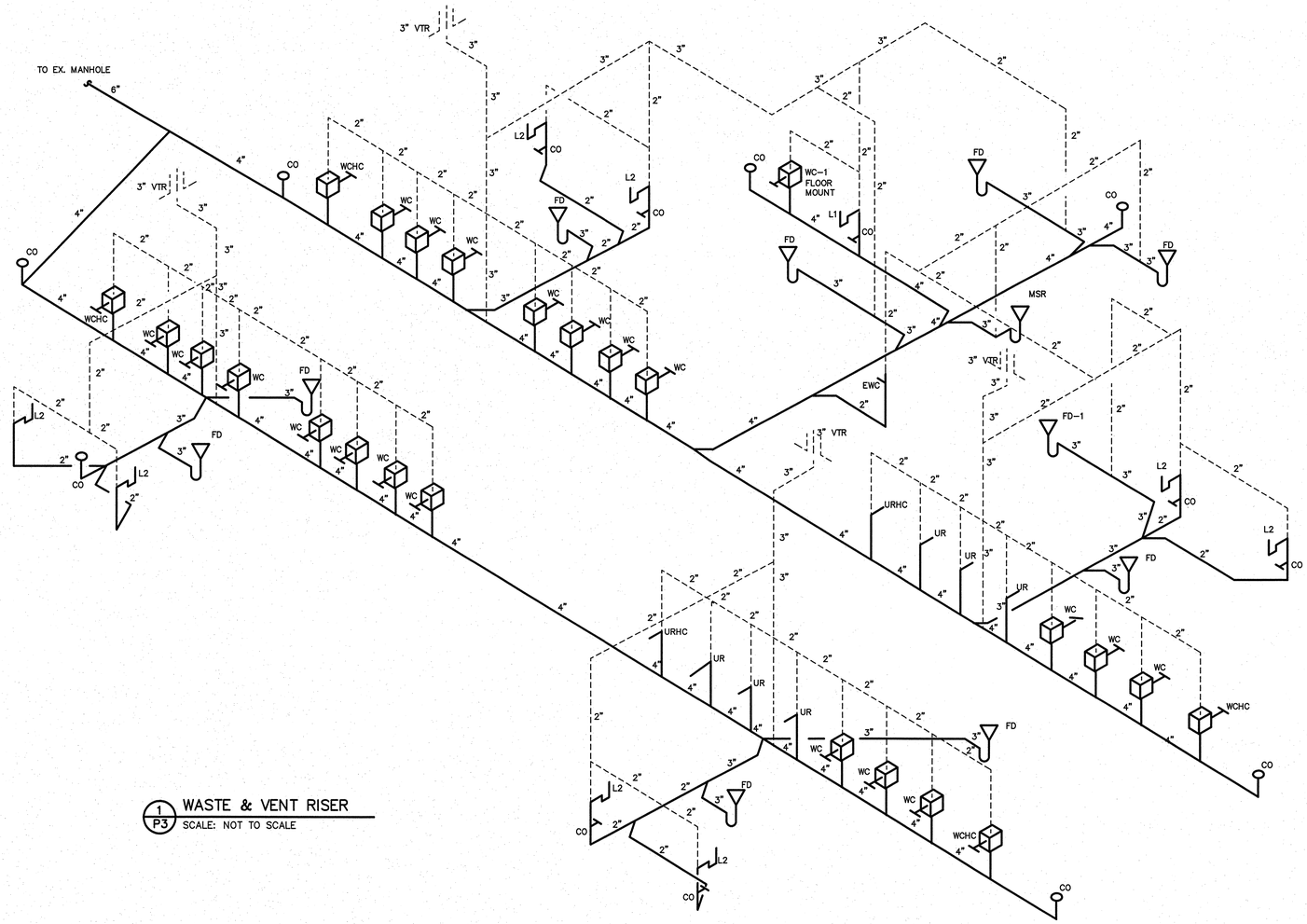
DRAWN BY: DS | CHECKED BY: BEB | ISSUE DATE: 30 APRIL 09

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22038 BENJAMIN E BURKE 5/11/09

TIP. PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL– AID NO.
K–4906	39928.3.1		IMS–085–2(64)59

NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. P2 OF 5



1 P3 WASTE & VENT RISER
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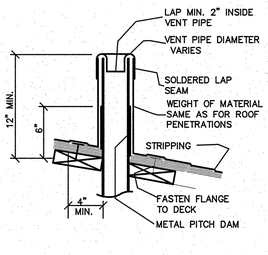

2 P3 VTR DETAIL
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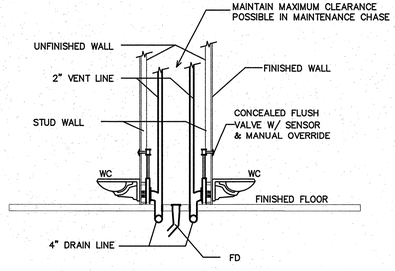
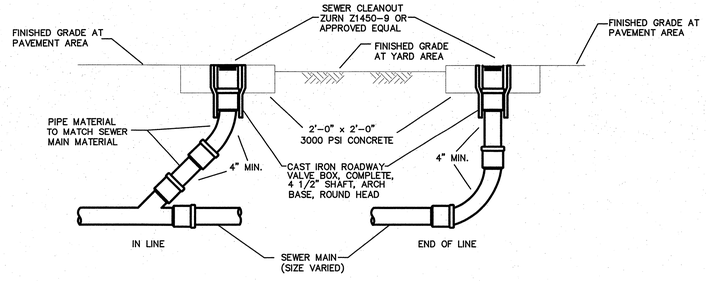


3 P3 WATER CLOSET DETAIL
SCALE: NOT TO SCALE



4 P3 GRAVITY SEWER CLEANOUT
SCALE: NOT TO SCALE

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PROJECT:
I-85 REST AREA
CABARRUS COUNTY NORTH CAROLINA

ARCHITECT/ENGINEERS:
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DRAWING TITLE:
NORTHBOUND PLUMBING WASTE RISER

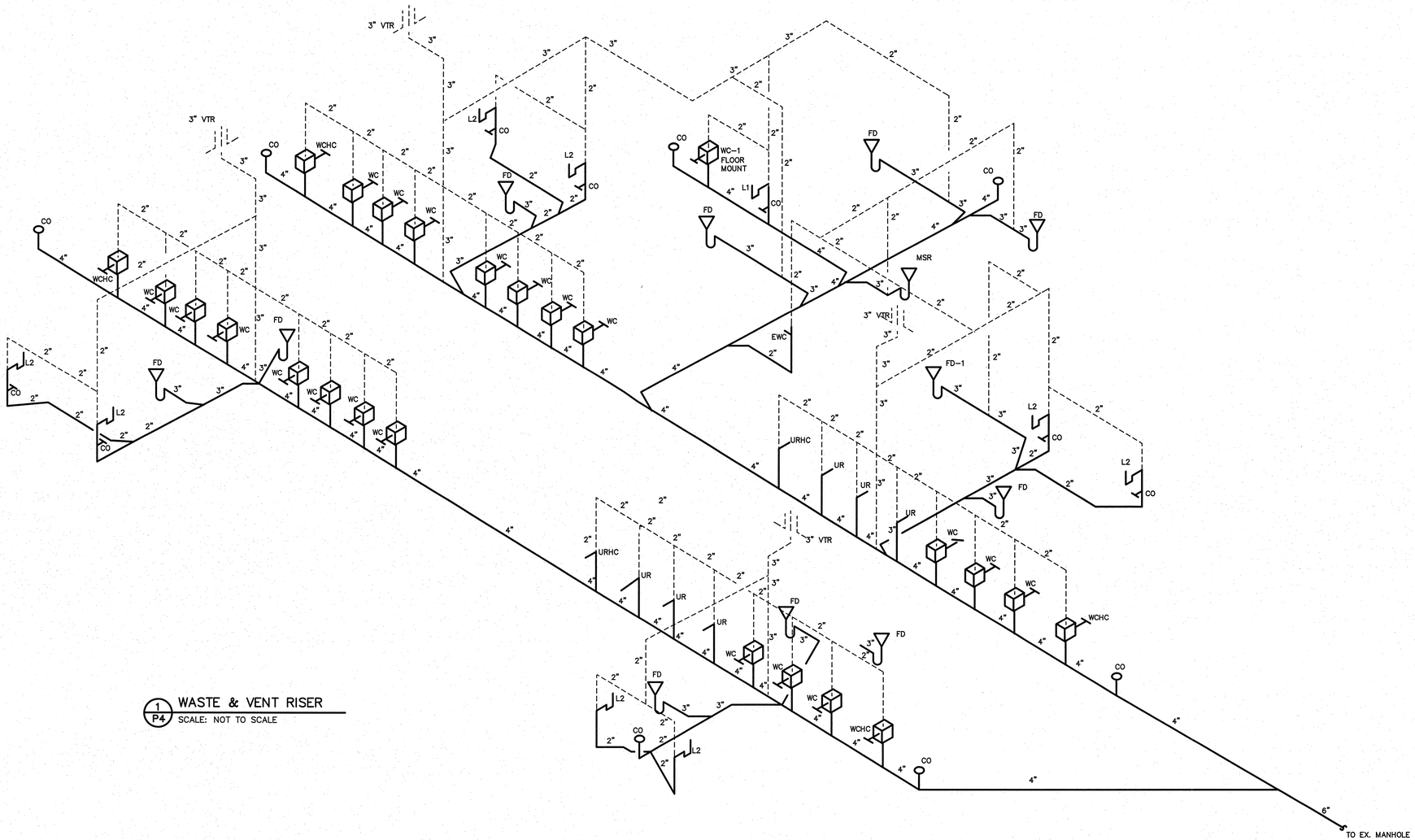
DRAWN BY: DS CHECKED BY: BEB ISSUE DATE: 30 APRIL 09

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER 22038 BENJAMIN E. BURKE 6/15/09

TIP. PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL- AID NO.
K-4906	39928.3.1		IMS-085-2(64)59

NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO.
P3
OF 5



1 P4 WASTE & VENT RISER
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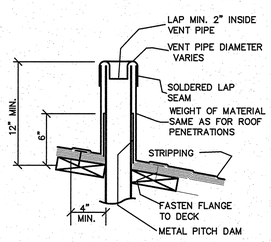

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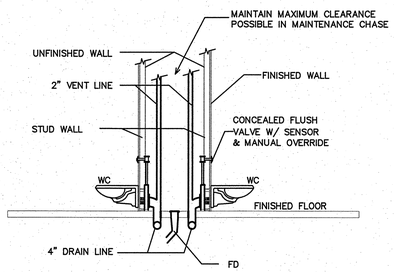
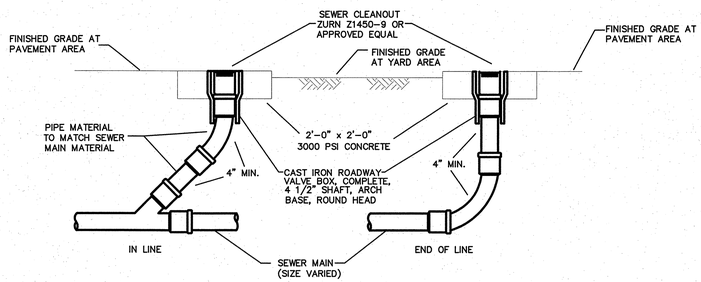


3 P4 WATER CLOSET DETAIL
SCALE: NOT TO SCALE



4 P4 GRAVITY SEWER CLEANOUT
SCALE: NOT TO SCALE

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I-85 REST AREA
CABARRUS COUNTY NORTH CAROLINA

ARCHITECT/ENGINEERS:
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DRAWING TITLE:
SOUTHBOUND PLUMBING WASTE RISER

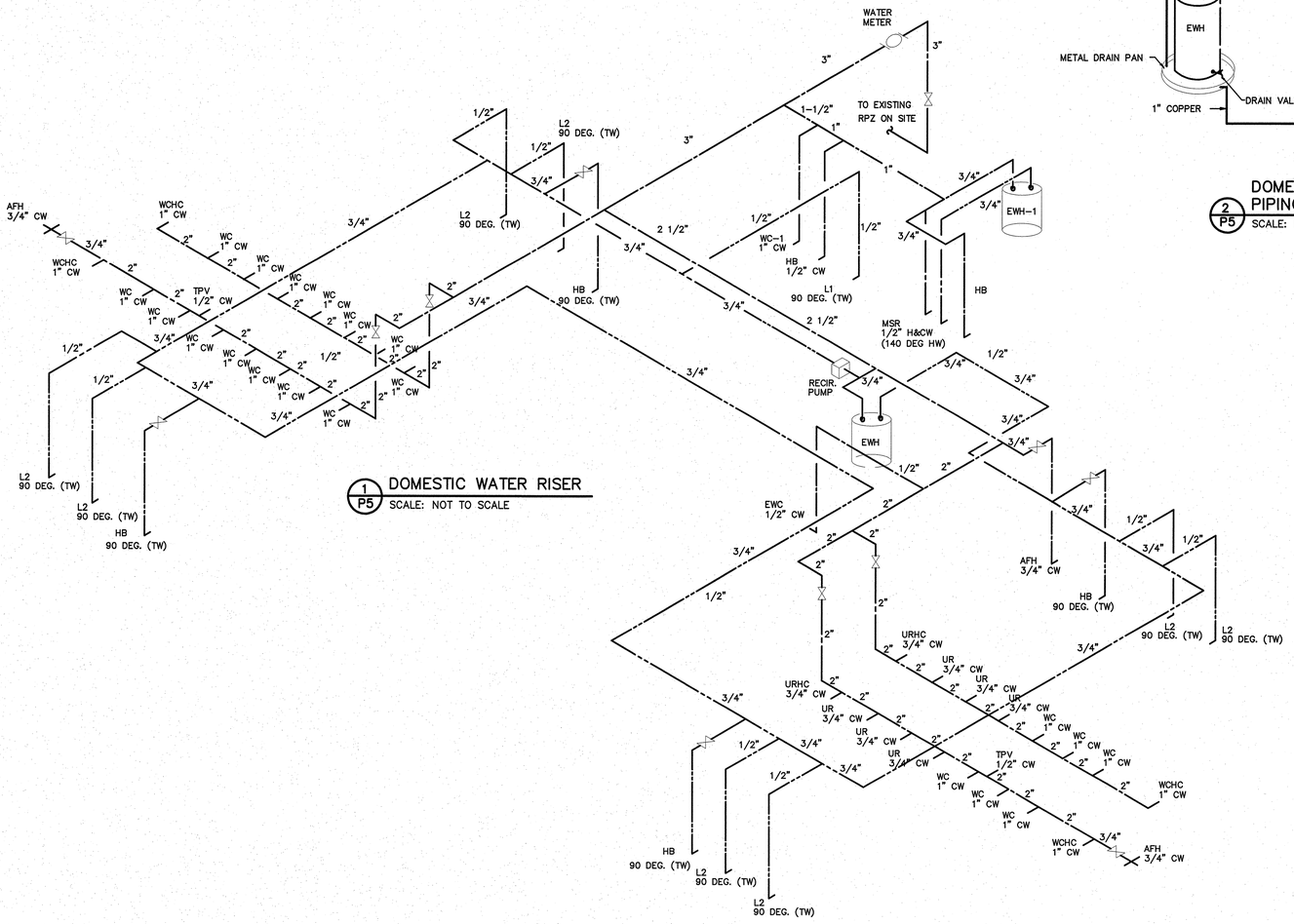
DRAWN BY: DS CHECKED BY: BEB ISSUE DATE: 30 APRIL 09

SEAL:

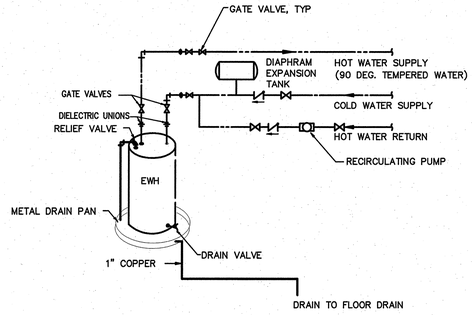
TIP. PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL-AID NO.
K-4906	39928.3.1		IMS-085-2(64)59

NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO.
P4
OF 5

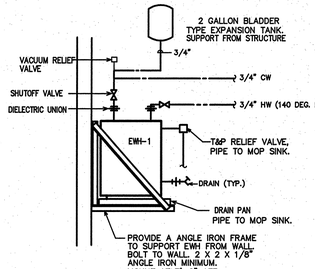


1 P5 DOMESTIC WATER RISER
SCALE: NOT TO SCALE



2 P5 DOMESTIC WATER HEATER PIPING SCHEMATIC
SCALE: NOT TO SCALE

PROVIDE HEAT TRAPS ON THE SUPPLY AND DISCHARGE PIPING OF THE WATER HEATERS UNLESS PROVIDED BY WATER HEATER MANUFACTURER. PROVIDE "HUSH HEAT TRAP FITTINGS" BY PERFECTION CORPORATION OR APPROVED EQUAL. HEAT TRAPS ARE REQUIRED PER SECTION 804.4 OF THE ENERGY CODE.



NOTE:
WATER HEATERS, PIPING, AND PIPING APPURTENANCES PROVIDED BY P.C. WATER HEATER SUPPORTS BY P.C.

3 P5 DOMESTIC WATER HEATER PIPING SCHEMATIC
SCALE: NOT TO SCALE

PROJECT:
I-85 REST AREA
CABARRUS COUNTY NORTH CAROLINA

ARCHITECT/ENGINEERS:
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DRAWING TITLE: NORTHBOUND/SOUTHBOUND WATER SUPPLY RISER

DRAWN BY: DS CHECKED BY: BEB ISSUE DATE: 30 APRIL 09

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22038 BENJAMIN E. BURKE 5/15/09

TIP. PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL- AID NO.
K-4906	39928.3.1	-	IMS-085-2(64)59

NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. P5 OF 5

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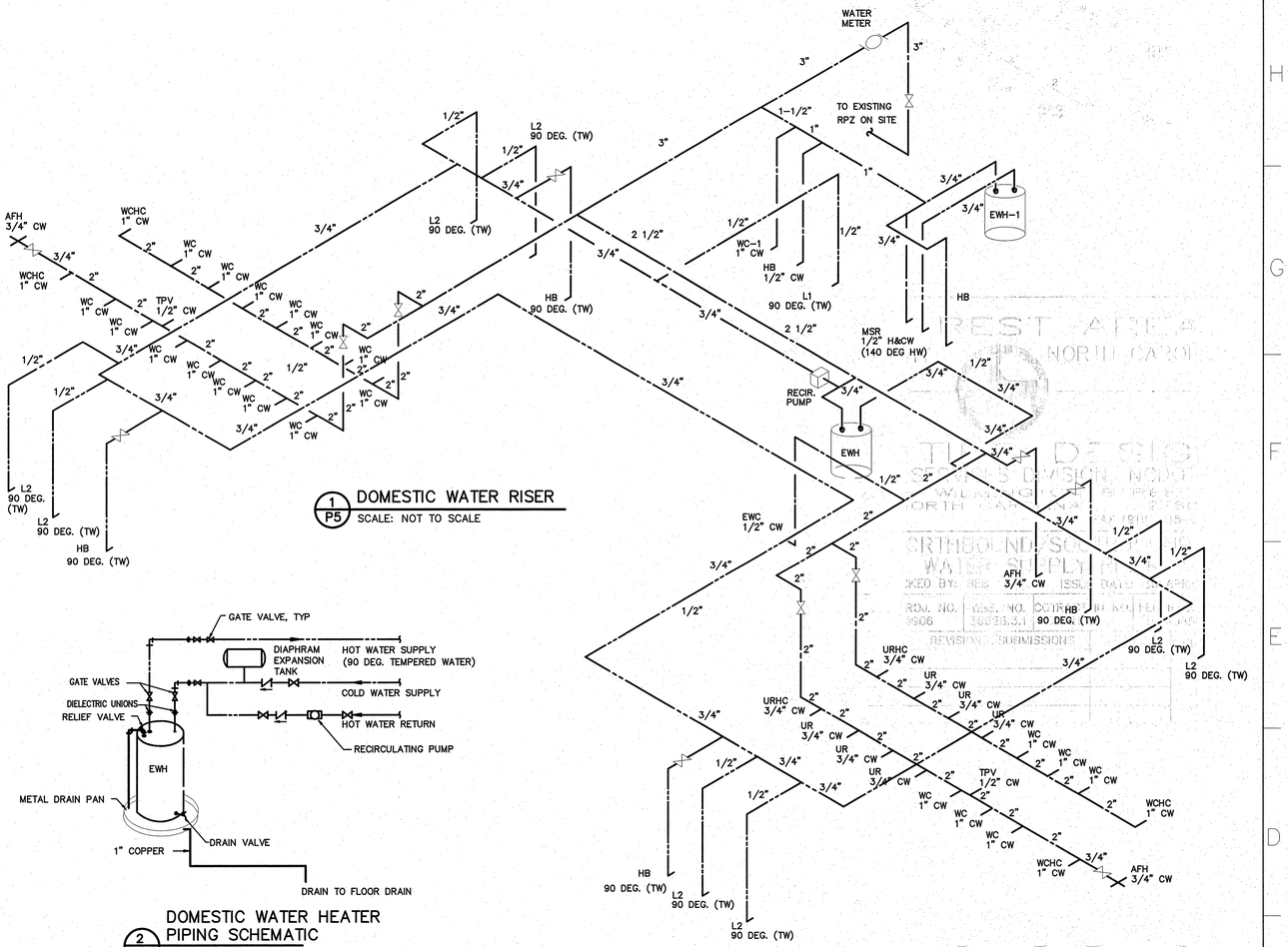
PLUMBING FIXTURE SCHEDULE

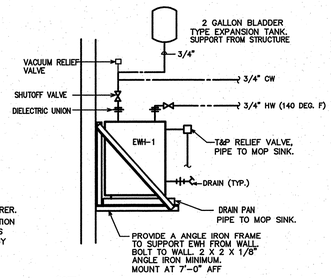
MARK	DESCRIPTION	ALTERNATE MANUFACTURER/MODEL	ALTERNATE MANUFACTURER/MODEL
WC WCHC	WATER CLOSET AMERICAN STANDARD "AFWALL FLOWISE 1.28 GPF" #3353.128, ELONGATED BOWL, VITREOUS CHINA, AND 1 1/2" TOP SPUD. PROVIDE OPEN FRONT SEAT, AND SENSOR W/ MANUAL OVERRIDE FLUSH VALVE, EQUAL TO SLOAN REGAL OPTIMA MODEL 152-1.6ES-S W/ INDIVIDUAL TRANSFORMER AND ELEC BOX POSITIONING KIT. PROVIDE JR SMITH MODEL 0533F COMPACT FIXTURE SUPPORT. ADA COMPLIANT.	ZURN #Z5617 WITH ZURN #ZEMS6252PEV FLUSH VALVE.	KOHLER KINGSTON #K-4329. TOTO #TET2GN31 FLUSH VALVE.
WC-1	WATER CLOSET (ADA) AMERICAN STANDARD "MADERA FLOWISE 1.28 GPF" #3461.128, ELONGATED BOWL, VITREOUS CHINA, AND 1 1/2" TOP SPUD. PROVIDE OPEN FRONT SEAT, AND SENSOR W/ MANUAL OVERRIDE FLUSH VALVE. SLOAN #8111-1.28 (BATTERY POWERED). ADA COMPLIANT.	ZURN #Z5665 WITH ZURN #ZTS6200EV FLUSH VALVE.	TOTO #CT705EL WITH TOTO #TET1LN32 FLUSH VALVE.
UR URHC	URINAL AMERICAN STANDARD "WASHBROOK FLOWISE 0.5 GPF" #6515.005, VITREOUS CHINA, 3/4" BACK SPUD, AND SENSOR W/ MANUAL OVERRIDE FLUSH VALVE SLOAN #195-0.5-ES-S-OR (AC POWERED). ADA COMPLIANT.	ZURN #Z5799 WITH INTEGRATED FLUSH VALVE.	TOTO #UT447EV WITH TOTO #TEU2LN11 FLUSH VALVE.
L1	LAVATORY (ACCESSIBLE, WALL HUNG) AMERICAN STANDARD "LUCERNE" # 0355.012 WHITE WITH CONCEALED ARM CARRIER AND DRAIN ASSEMBLY (7723.018). ADA COMPLIANT. FURNISH WITH SLOAN OPTIMA PLUS #EBF-187 BATTERY SENSOR FAUCET. COORDINATE TRIM AND SINK FAUCET DRILLING FOR 4" SPACING.	KOHLER GREENWICH #K-2032 WITH AMERICAN STANDARD BATTERY SENSOR FAUCET #6055.205.	ELJER MURRAY II #051-0244 WITH ZURN BATTERY SENSOR FAUCET #Z6915.
L2	2- STATION LAVATORY (ACCESSIBLE) BRADLEY MODEL #EXO-2N, TERREON ACRYLIC MODIFIED POLYESTER RESIN DOUBLE MODULE SINK SYSTEM (LANNONS STONE), 50" x 21" WALL HUNG LAVATORY. ADA COMPLIANT WITH WALL HANGER SUPPORT FRAME. FURNISH WITH ZURN #Z6915 BATTERY SENSOR FAUCETS. COORDINATE TRIM AND SINK FAUCET DRILLING FOR 4" SPACING.	SLOAN SLOANSTONE #ELS-42000 WITH SLOAN BATTERY SENSOR FAUCETS #EBF-187.	ACORN MERIDIAN #3792-1-SO-BAT WITH INTEGRATED BATTERY SENSOR FAUCETS.
MSR	MOP SINK ACORN NO. TDF36-SSC, 36"X36"X12" TERRAZZO SERVICE BASIN WITH 6" DROP FRONT AND STAINLESS STEEL CAPS ON CURBS. 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.	FLORESTONE MOP SINK #92 WITH SPEAKMAN #MR-371 FAUCET, HOSE AND MOP HANGER.	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.
EWC	ELECTRIC WATER COOLER HAWS # H1011.8, DUAL SST DRINKING FOUNTAIN W/ #4 FINISH, WALL HUNG, WITH REMOTE CHILLER, 120V/1PH/60HZ, 564W, FLA=4.7, USE HAWS HCR8 CHILLER.	HALSEY TAYLOR #OVL-II SEBPFR FOUNTAIN WITH HALSEY TAYLOR #SJ8-Q REMOTE CHILLER.	ELKAY #EDFP217C FOUNTAIN WITH ELKAY #ECH8 REMOTE CHILLER.
RP	CIRCULATING PUMP BELL & GOSSET, SERIES NBF-22 IN-LINE CIRCULATOR PUMP, 1/12 HP, 115 VAC, FLA=0.8 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.	TACO MODEL #110.	ARMSTRONG MODEL #S-25.
MTR	WATER METER NEPTUNE, 2", MODEL T-10. METER INDICATION SHALL BE WITH BOTTOM OF GAUGE TOWARD FLOOR.	PARK ENVIRONMENTAL EQUIP. 2" TURBINE.	HERSEY HORIZON 2" TURBINE.
TPV	TRAP PRIMER VALVE PPP INC. MODEL# PR-500, 1/2" INLET, 1/2" OUTLET	JOSAM #88300.	WATTS #A200.
WS	WATER CLOSET SUPPORTS JR SMITH MODEL# 0542F, VERTICAL HUB AND SPIGOT.	ZURN #1204	JOSAM STD. 4" HUB AND SPIGOT, 2" VENT.
US	URINAL SUPPORTS SMITH MODEL# 0637	ZURN #1221.	JOSAM #17550.
HB	HOSE BIBB ZURN Z-1330-C, 3/4" WALL HYDRANT WITH VANDAL RESISTANT VACUUM BREAKER. ENCASED WITH KEY LOCK.	WATTS #HY-330.	JAY R. SMITH #5509QT.
EWH	ELECTRIC WATER HEATER STATE WATER # P6-52-20RT-2, 50 GALLONS, 4500W, 3/4" INLET AND OUTLET, ELECTRIC, 240V, 1 PHASE, MODEL# ETC-2X EXPANSION TANK.	AO SMITH #DEL-50. AMTROL ST-5-C EXPANSION TANK.	BRADFORD WHITE #LD-50S3-3. AO SMITH PMC-2 EXPANSION TANK.
EWH-1	ELECTRIC WATER HEATER A.O. SMITH MODEL ELJC-10, 10 GALLON, 1,500 WATT, 3/4" INLET AND OUTLET, 120V, 1 PH. MOUNT ON WALL. MODEL# ETC-2X EXPANSION TANK.	RHEEM #81VP10S. AMTROL ST-5-C EXPANSION TANK.	BRADFORD WHITE #M-1-10U6SS. AO SMITH PMC-2 EXPANSION TANK.
FD	FLOOR DRAIN ZURN ZN-415-P. PROVIDE WITH DEEP SEAL P-TRAP, AND TYPE "B" STRAINER. TRAP PRIMER CONNECTION REQUIRED ONLY FOR FLOOR DRAINS IN CHASES, MECH & STORAGE.	JOSAM #30000A.	JAY R. SMITH #2005-A.
FD-1	FLOOR DRAIN ZURN ZN-415-P. PROVIDE WITH DEEP SEAL P-TRAP, AND TYPE "I" STRAINER, WITH TRAP PRIMER CONNECTION	JOSAM #30000E1.	JAY R. SMITH #2005-F37.
AFH	ANTI-FREEZE HOSEBIBB ZURN Z-1320-C, 3/4" NON FREEZE WALL HYDRANT WITH VANDAL RESISTANT VACUUM BREAKER. ENCASED WITH KEY LOCK.	JAY R. SMITH #5509QT.	WATTS HY-725.



1 P5 DOMESTIC WATER RISER
SCALE: NOT TO SCALE

2 P5 DOMESTIC WATER HEATER PIPING SCHEMATIC
SCALE: NOT TO SCALE

PROVIDE HEAT TRAPS ON THE SUPPLY AND DISCHARGE PIPING OF THE WATER HEATERS UNLESS PROVIDED BY WATER HEATER MANUFACTURER. PROVIDE "HUSH HEAT TRAP FITTINGS" BY PERFECTION CORPORATION OR APPROVED EQUAL. HEAT TRAPS ARE REQUIRED PER SECTION 804.4 OF THE ENERGY CODE.



NOTE:
WATER HEATERS, PIPING, AND PIPING APPURTENANCES PROVIDED BY P.C. WATER HEATER SUPPORTS BY P.C.

3 P5 DOMESTIC WATER HEATER PIPING SCHEMATIC
SCALE: NOT TO SCALE

PROJECT:
I-85 REST AREA
CABARRUS COUNTY NORTH CAROLINA

ARCHITECT/ENGINEERS:
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DRAWING TITLE:
NORTHBOUND/SOUTHBOUND WATER SUPPLY RISER

DRAWN BY: DS CHECKED BY: BEB ISSUE DATE: 30 APRIL 09

SEAL:

TIP. PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL- AID NO.
K-4906	39928.3.1		IMS-085-2(64)59

NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO.
P5
OF 6

ENGINEER
BURKE DESIGN GROUP, PA
CONSULTING ENGINEERS
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Raleigh, North Carolina 27603
919.771.1916 fax: 919.779.0826
email: benburke@nc.rr.com

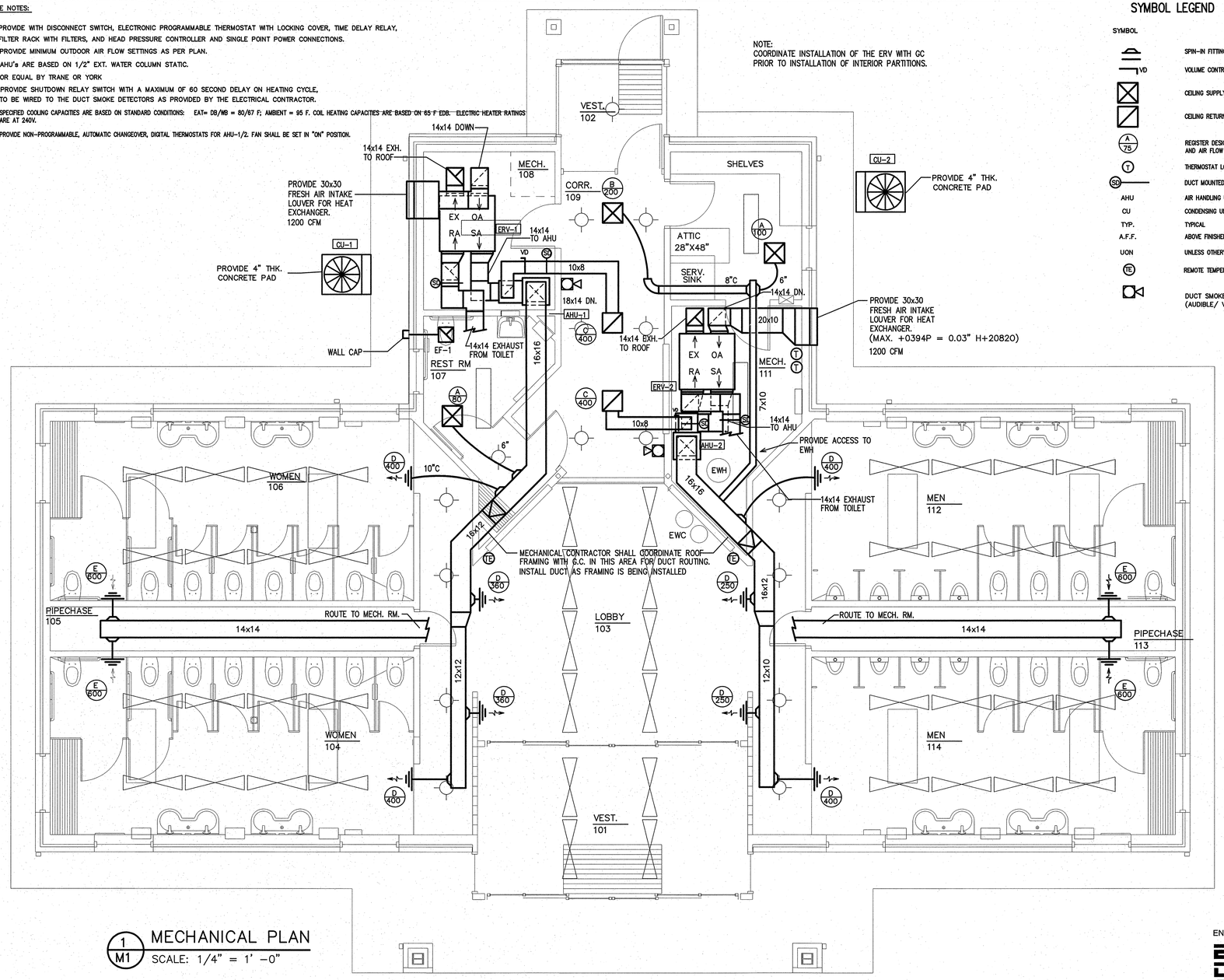
8/10/09

HVAC SCHEDULE

EQUIP. NUMBER	INDOOR UNIT											OUTDOOR UNIT				NOTES
	MODEL NO.	FAN			COOLING CAPACITY		COIL HEATING CAPACITY	ELECTRICAL HEATING		VOLTAGE	MCA	FUSE/ CB MAX	MODEL NO.	POWER	MCA	FUSE/ CB MAX	
		CFM	HP	POWER	MIN TOTAL	MIN SENS.		MODEL #	CAPACITY								
AHU-1/CU-1	CARRIER FX4BNF048010AAAA	1600@1/2"WC	3/4	208/230-1	44.2 MBH	34.7 MBH	26/43 MBH @ 17/47F	KFCEH0901N10	34 MBH (10 KW)	208/230-1	58.5	60 (TD)	CARRIER 25HBA342A0030	208/230-1	26.0	40 A (TD)	1,2,3,4,5,6,7
AHU-2/CU-2	CARRIER FX4BNF048010AAAA	1600@1/2"WC	3/4	208/230-1	44.2 MBH	34.7 MBH	26/43 MBH @ 17/47F	KFCEH0901N10	34 MBH (10 KW)	208/230-1	58.5	60 (TD)	CARRIER 25HBA342A0030	208/230-1	26.0	40 A (TD)	1,2,3,4,5,6,7

SCHEDULE NOTES:

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



1 / M1 MECHANICAL PLAN
SCALE: 1/4" = 1'-0"

SYMBOL LEGEND – MECHANICAL

SYMBOL	DESCRIPTION
	SPIN-IN FITTING
VD	VOLUME CONTROL DAMPER
	CEILING SUPPLY
	CEILING RETURN
A / 75	REGISTER DESIGNATION AND AIR FLOW RATE
T	THERMOSTAT LOCATION
SD	DUCT MOUNTED SMOKE DETECTOR
AHU	AIR HANDLING UNIT
CU	CONDENSING UNIT
TYP.	TYPICAL
A.F.F.	ABOVE FINISHED FLOOR
UON	UNLESS OTHERWISE NOTED
TE	REMOTE TEMPERATURE SENSOR
	DUCT SMOKE DETECTOR ALARM (AUDIBLE/ VISIBLE)

REGISTER SCHEDULE

MARK	MANUFACTURER MODEL NO.	FACE SIZE	NECK SIZE	MATERIAL	SERVICE	NOTES
A	PRICE – ASCD	12x12	6"C	ALUM	SUPPLY	1,2
B	PRICE – ASCD	12x12	8"C	ALUM	SUPPLY	1,2
C	PRICE – 630	18x18	–	ALUM	RETURN	1
D	PRICE – 610 DAL	12x8	–	ALUM	SUPPLY	1,2
E	PRICE – 630 DAL	16x12	–	ALUM	EXHAUST	1,2
G	LOREN COOK CO. "GR"	24x28	12 X 12	ALUM	EXHAUST CAP	3

1. COLOR TO BE OFF-WHITE; PROVIDE BORDER FOR GYP. CEILING.
2. PROVIDE VOLUME DAMPER ACCESSIBLE FROM DIFFUSER FACE.
3. PROVIDE WITH BIRD SCREEN. MATCH COLOR TO TRIM (SEE ARCHITECTURAL).

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 INSPECTION SHALL BE COORDINATED WITH THE DESIGNER BY THE MECHANICAL CONTRACTOR (MC) WITH A 48 HRS NOTICED.
3. 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. EQUIPMENT SHALL BE INSTALLED IN THE GENERAL LOCATION SHOWN IN ROOMS AND ALONG DESIGNATED WALLS.
5. 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 ELECTRICIAN
7. 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 CEILING OCCUR. SEE ARCHITECTURAL PLANS FOR RATED WALL AND CEILING LOCATIONS.
8. INSTALL FLEXIBLE CONNECTORS ON SUPPLY AND RETURN DUCTWORK AT ALL UNITS. ALL MECHANICAL EQUIPMENT SHALL OPERATE FREE OF OBJECTIONAL NOISE AND VIBRATION.
9. INSTALL TURNING VANES IN SUPPLY, RETURN, AND EXHAUST DUCTS AT ALL ELBOWS AND SPLITTER DAMPERS. PROVIDE BALANCING DAMPERS IN DUCTS AS SHOWN OR REQ'D FOR SYSTEM BALANCING.
10. DUCT DIMENSIONS ARE SHOWN INSIDE CLEAR.
11. ALL THERMOSTATS, WIRING AND CONDUIT ARE TO BE FURNISHED BY THE MC. MOUNT ALL THERMOSTATS 48" ABOVE THE FINISHED FLOOR.
12. 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 APPROVAL PRIOR TO CONSTRUCTION.
15. THE M.C. IS RESPONSIBLE FOR PATCHING, SEALING, SLEEVING AND FIRE CAULKING ALL PENETRATIONS WHERE HIS EQUIPMENT IS INSTALLED TO MEET CODE. SEAL REQUIRED PENETRATIONS WITH 3M FIRE/SMOKE STOP MATERIAL OR EQUAL PRODUCT. SEE ARCH. PLANS FOR WALL/CEILING RATINGS.
16. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL BE 8'-0". PROVIDE SHEET METAL ELBOWS AT ALL 90 DEGREE BENDS.
17. MECHANICAL CONTRACTOR SHALL DRILL ALL OPENINGS REQUIRED FOR DUCT/PIPING. COORDINATE ALL LOCATIONS WITH GENERAL CONTRACTOR. MECHANICAL CONTRACTOR TO PROVIDE DIMENSIONAL LAYOUT WITHIN SEVEN DAYS OF START OF PROJECT. PROVIDE DUCT COLLARS AT ALL PENETRATIONS.
18. DUCT DETECTOR SHALL BE EQUAL TO SYSTEM SENSOR MODEL DH100ACDCI WITH REMOTE ALARM INDICATING DEVICE EQUAL TO SYSTEM SENSOR MODEL SSK451 WITH PS12/24LENSW ADD ON STROBE. INTERCONNECT ALL DUCT DETECTORS FOR COMMON ALARM.

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PROJECT:
I–85 REST AREA
CABARRUS COUNTY NORTH CAROLINA

ARCHITECT/ENGINEERS:
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DRAWING TITLE: NORTHBOUND/SOUTHBOUND MECHANICAL PLAN

DRAWN BY: DS CHECKED BY: BEB ISSUE DATE: 30 APRIL 09

SEAL: NORTH CAROLINA PROFESSIONAL SEAL 22038 ENGINEER BENJAMIN E. BURKE 5/5/09

TIP. PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL– AID NO.
K–4906	39928.3.1		IMS–085–2(64)59

NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. M1 OF 2

HVAC SCHEDULE

EQUIP. NUMBER	INDOOR UNIT											OUTDOOR UNIT				NOTES
	MODEL NO. (BASIS OF DESIGN)	FAN			COOLING CAPACITY		COIL HEATING CAPACITY	ELECTRICAL HEATING		VOLTAGE	MCA	FUSE/ CB MAX	MODEL NO. (BASIS OF DESIGN)	POWER	MCA	FUSE/ CB MAX	
		CFM	HP	POWER	MIN TOTAL	MIN SENS.		MODEL #	CAPACITY								
AHU-1/CU-1	CARRIER FX4BNF048010AAAA *	1600@1/2"WC	3/4	208/230-1	44.2 MBH	34.7 MBH	26/43 MBH @ 17/47F	KFCEH0901N10	34 MBH (10 KW)	208/230-1	58.5	60 (TD)	CARRIER 25HBA342A0030 **	208/230-1	26.0	40 A (TD)	1,2,3,4,5,6,7
AHU-2/CU-2	CARRIER FX4BNF048010AAAA *	1600@1/2"WC	3/4	208/230-1	44.2 MBH	34.7 MBH	26/43 MBH @ 17/47F	KFCEH0901N10	34 MBH (10 KW)	208/230-1	58.5	60 (TD)	CARRIER 25HBA342A0030 **	208/230-1	26.0	40 A (TD)	1,2,3,4,5,6,7

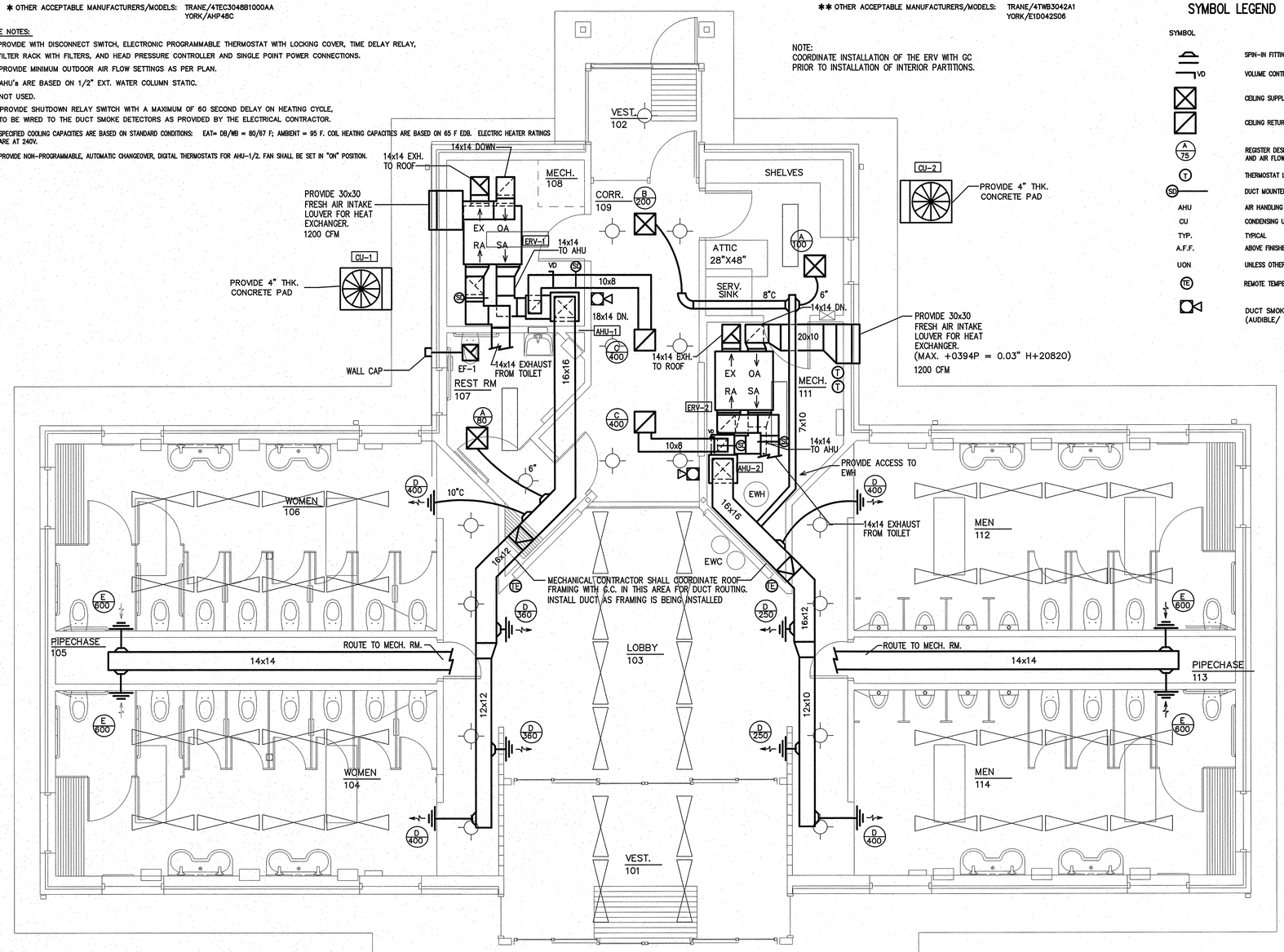
* OTHER ACCEPTABLE MANUFACTURERS/MODELS: TRANE/4TEC3048B1000AA
YORK/AHP48C

** OTHER ACCEPTABLE MANUFACTURERS/MODELS: TRANE/4TWB3042A1
YORK/E1D042S06

SCHEDULE NOTES:

1. PROVIDE WITH DISCONNECT SWITCH, ELECTRONIC 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. NOT USED.
5. PROVIDE SHUTDOWN RELAY SWITCH WITH A MAXIMUM OF 60 SECOND DELAY ON HEATING CYCLE, TO BE WIRED 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 ARE AT 240V.
7. PROVIDE NON-PROGRAMMABLE, AUTOMATIC CHANGEOVER, DIGITAL THERMOSTATS FOR AHU-1/2. FAN SHALL BE SET IN "ON" POSITION.

NOTE:
COORDINATE INSTALLATION OF THE ERV WITH GC PRIOR TO INSTALLATION OF INTERIOR PARTITIONS.



1/M1 MECHANICAL PLAN
SCALE: 1/4" = 1' -0"

SYMBOL LEGEND - MECHANICAL

SYMBOL	DESCRIPTION
	SPIN-IN FITTING
VD	VOLUME CONTROL DAMPER
	CEILING SUPPLY
	CEILING RETURN
A / 75	REGISTER DESIGNATION AND AIR FLOW RATE
T	THERMOSTAT LOCATION
SD	DUCT MOUNTED SMOKE DETECTOR
AHU	AIR HANDLING UNIT
CU	CONDENSING UNIT
TYP.	TYPICAL
A.F.F.	ABOVE FINISHED FLOOR
UON	UNLESS OTHERWISE NOTED
TE	REMOTE TEMPERATURE SENSOR
	DUCT SMOKE DETECTOR ALARM (AUDIBLE/ VISIBLE)

REGISTER SCHEDULE

MARK	MANUFACTURER MODEL NO.	FACE SIZE	NECK SIZE	MATERIAL	SERVICE	NOTES
A	PRICE - ASCD CARNES - SFAB METALAIRE - 5800 AL	12x12	6"ø	ALUM	SUPPLY	1,2
B	PRICE - ASCD CARNES - SFAB METALAIRE - 5800 AL	12x12	8"ø	ALUM	SUPPLY	1,2
C	PRICE - 630 CARNES - RAAAH METALAIRE - RHE-1	18x18	-	ALUM	RETURN	1
D	PRICE - 610 DAL CARNES - RNDAH METALAIRE - H4000A-AF-1 OBDA	12x8	-	ALUM	SUPPLY	1,2
E	PRICE - 630 DAL CARNES - RNAAH METALAIRE - RHE-1 OBDA	16x12	-	ALUM	EXHAUST	1,2
G	LOREN COOK CO. "GR" CARNES - "GE" GREENHECK - "FGR"	24x28	12 X 12	ALUM	EXHAUST CAP	3

1. COLOR TO BE OFF-WHITE; PROVIDE BORDER FOR GYP. CEILING.
2. PROVIDE VOLUME DAMPER ACCESSIBLE FROM DIFFUSER FACE.
3. PROVIDE WITH BIRD SCREEN. MATCH COLOR TO TRIM (SEE ARCHITECTURAL).

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16. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL BE 8'-0". PROVIDE SHEET METAL ELBOWS AT ALL 90 DEGREE BENDS.
17. MECHANICAL CONTRACTOR SHALL DRILL ALL OPENINGS REQUIRED FOR DUCT/PIPING. COORDINATE ALL LOCATIONS WITH GENERAL CONTRACTOR. MECHANICAL CONTRACTOR TO PROVIDE DIMENSIONAL LAYOUT WITHIN SEVEN DAYS OF START OF PROJECT. PROVIDE DUCT COLLARS AT ALL PENETRATIONS.
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PROJECT:
I-85 REST AREA
CABARRUS COUNTY NORTH CAROLINA

ARCHITECT/ENGINEERS:
FACILITIES DESIGN
GENERAL SERVICES DIVISION, NCDOT
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SEAL: NORTH CAROLINA PROFESSIONAL SEAL 22038 ENGINEER BENJAMIN E BURKE

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NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. M1 OF 3

ENGINEER
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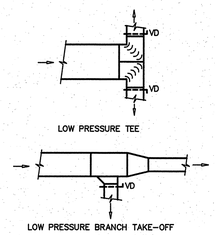
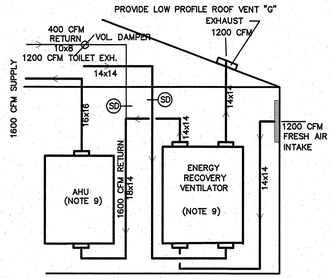
ENERGY RECOVERY UNIT SCHEDULE

		FANS / MOTORS							THERMAL PERFORMANCE						
									ENERGY RECOVERY (THERMAL) CAPACITY		INLET / OUTLET CONDITIONS				
EQUIP. NUMBER	MODEL NO.	FLOW	STATIC PRESSURE (EXTERNAL)	FAN MOTORS FAN MOTORS	FLA (FOR UNIT SINGLE POINT)	VOLTS/ PHASE/ HZ	MCA	FUSE/CB MAX	COOLING CAPACITY (MBH / TON)	HEATING CAPACITY (MBH)	OUTSIDE AIR TEMP(F) & HUMIDITY (DB) / (WB OR RH)		ROOM AIR TEMP (F) & HUMIDITY (DB) / (WB OR RH)		NOTES:
									TOTAL	TOTAL	SUMMER	WINTER	SUMMER	WINTER	
ERV-1 & 2	MICROMETL EVDGCCC090000A	1200 CFM	0.75IN H_2O	(2) FOR FANS (1) FOR WHEEL	8.2 A	208-230V 1 PH 60 HZ	10.25 A	15 A	33.3/2.8	64.15	92F / 75F	18F / 17	75F / 50%	68F / 50%	ALL

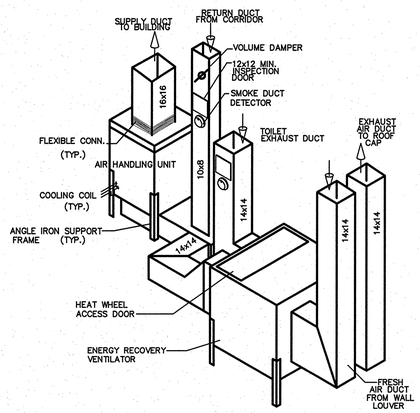
NOTES:
1. FLOW & LOADS BASED ON ARI-1060 PERFORMANCE & CERTIFIED CORE.
2. SHUT DOWN ALL FANS ON DUCT SMOKE DETECTOR ALARM CONDITION.
3. VENTILATION TYPE: ERV WHEEL, HEAT & HUMIDITY TRANSFER.
4. INCLUDE INTEGRAL DISPOSABLE FILTERS (OUTSIDE AND ROOM AIR) WITH MERV8 OR BETTER RATING.
5. INCLUDE SINGLE POINT ELECTRICAL POWER CONNECTION.
6. HOUSING SHALL BE GALVANIZED, .20 GAUGE (OR THICKER) STEEL WITH LAPPED CORNERS.
7. OR EQUALS BY SEMCO, OR THYBAR.
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.



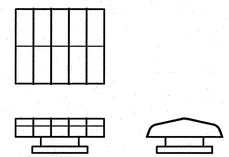
1 M2 DUCT CONSTRUCTION DETAILS
SCALE: NOT TO SCALE



2 M2 HVAC DIAGRAM
SCALE: NOT TO SCALE



3 M2 HVAC EQUIP. DETAIL
SCALE: NOT TO SCALE



4 M2 ROOF TOP VENT CAP "G"
SCALE: NOT TO SCALE

GENERAL NOTES:
1. PROVIDE 3/4" CONDENSATE P-TRAP ON CONDENSATE DRAIN LINE AND PIPE TO FLOOR DRAIN. USE COPPER PIPING AT FLOOR LEVEL.
2. PROVIDE EMERGENCY SHUT-OFF KEY SWITCH PER ADA & MOUNT 48"AFF.
3. ROUTE REFRIGERANT LINES TO CONDENSER ABOVE CEILING AND TURN DOWN IN EXTERIOR WALL.
4. PROVIDE SERVICE CLEARANCES AROUND UNIT AS PER MANU-FACTURERS RECOMMENDATIONS.
5. SUPPORT AIR HANDLING UNITS ON 3x3x1/4" ANGLE IRON FRAME. PRIME AND PAINT BLACK ALL CARBON STEEL TO PREVENT RUSTING. SUPPORTING AHU OR HEAT RECOVERY UNIT WITH DUCT IS UNACCEPTABLE. NO UL LABELS MAY BE OBSCURED BY OR COVERED WITH SUPPORT FRAME.
6. PROVIDE PARTICULATE FILTER WITH CHANGEOUT ACCESS IN THE RETURN PLENUM JUST PRIOR ENTERING EACH AHU.
7. MC TO PROVIDE SMOKE DUCT DETECTORS LOCATED ON EXHAUST AND RETURN DUCTS. EACH AIR HANDLER AND ENERGY RECOVERY UNIT SHALL SHUT DOWN UPON SMOKE DETECTION. PROVIDE A MIN 12x12 ACCESS OPENING EASILY ACCESIBLE FOR INSPECTION. VISIBLE/AUDIBLE ALARM SHALL ACTIVATE IN LOBBY AREA ON ALARM.
8. THIS DETAIL IS SCHEMATIC AND ACTUAL CONFIGURATION SHALL VARY IN FIELD AS NECESSARY TO INSTALL SUPPLIED EQUIPMENT AND DUCT.
9. SEE VENDOR INFORMATION FOR ACTUAL SIZE & LOCATION OF CONNECTIONS AND THE ACTUAL SIZE OF ALL EQUIPMENT.
10. IF A SUBSTITUTE ERV IS SUBMITTED, THE CONTRACTOR MUST SUBMIT A FULL SHOP DRAWING INCLUDING ERV SPECIFICATIONS, DUCT LAYOUTS AND ROUTING WITH SERVICE CLEARANCES NOTED. FULL MAINTENANCE ACCESS MUST BE MAINTAINED.

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

METHOD OF COMPLIANCE:

PRESCRIPTIVE ☒ ENERGY COST BUDGET ☐

THERMAL ZONE	7A
EXTERIOR DESIGN CONDITIONS	
WINTER DRY BULB	16D F
SUMMER DRY BULB	92D F (75D F WB)
INTERIOR DESIGN CONDITIONS	
WINTER DRY BULB	72 DF
SUMMER DRY BULB	75 DF
RELATIVE HUMIDITY	50%
BUILDING HEATING LOAD (50%)	133 MBH
BUILDING COOLING LOAD (50%)	127 MBH
MECHANICAL SPACE CONDITIONING SYSTEM	
SPLIT SYSTEM	

AHU-1/CU-1 AND AHU-2/CU-2 (2 COMPLETE SYSTEMS)

DESCRIPTION OF UNIT	SPLIT HEAT PUMP W/ ENERGY RECOVERY VENTILATOR
HEATING EFFICIENCY	COP = 3.4@47DF, 8.4 HSPF (6.8 CODE MIN.)
COOLING EFFICIENCY	SEER = 13.0
HEAT OUTPUT OF EACH AHU/CU	47 MBH + 10 KW ELEC
COOLING OUTPUT OF EACH AHU/CU	3 1/2 TON

LIST EQUIPMENT EFFICIENCIES

COP AND SEER ARE LISTED ABOVE

EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS)

MOTORS USED IN THIS PROJECT ARE INCLUDED IN THE EFFICIENCY RATING OF THE UNITS
MOTOR HORSEPOWERS ARE ON EQUIPMENT SCHEDULE

EXHAUST FAN SCHEDULE

DESIG.	MANUFACTURER	MODEL NO.	TYPE	CFM	TSP IN H_2O	SONES	RPM	HP	VOLTAGE	SERVES	CONTROL	REMARKS
EF 1	GREENHECK	SP-B80-QD	CEILING MOUNTED	80	0.125	1.9	900	54 WATTS	120/1	UNISEX BATHROOM	1A	3,4,5

REMARKS:
1. CONTROLS SHALL BE AS FOLLOWS:
   A. FAN TO BE CONTROLLED BY WALL MOUNTED SWITCH.
2. PROVIDE N.E.C. RATED U.L. APPROVED STARTER/DISCONNECT.
3. PROVIDE WITH BIRD SCREEN (1/4" MIN. MESH) AND GRAVITY BACKDRAFT DAMPER.
4. OR EQUAL BY POWERLINE OR CARNES FANS.

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CABARRUS COUNTY NORTH CAROLINA

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DRAWING TITLE: NORTHBOUND/SOUTHBOUND MECHANICAL NOTES & DETAILS
DRAWN BY: DS CHECKED BY: BEB ISSUE DATE: 30 APRIL 09

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22038 BENJAMIN E. BURKE 5/5/09

TIP. PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL- AID NO.
K-4906	39928.3.1		IMS-085-2(64)59

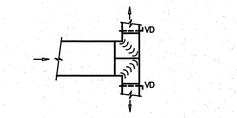
NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. M2 OF 2

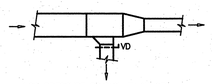
ENERGY RECOVERY UNIT SCHEDULE

EQUIP. NUMBER	MODEL NO.	FANS / MOTORS: FLOW	STATIC PRESSURE (EXTERNAL)	FAN MOTORS FAN MOTORS	FLA (FOR UNIT SINGLE POINT)	VOLTS/ PHASE/ HZ	MCA	FUSE/CB MAX	THERMAL PERFORMANCE: ENERGY RECOVERY (THERMAL) CAPACITY: COOLING CAPACITY (MBH / TON) TOTAL	HEATING CAPACITY (MBH) TOTAL	INLET / OUTLET CONDITIONS: OUTSIDE AIR TEMP(F) & HUMIDITY (DB) / (WB OR RH) SUMMER	OUTSIDE AIR TEMP(F) & HUMIDITY (DB) / (WB OR RH) WINTER	ROOM AIR TEMP (F) & HUMIDITY (DB) / (WB OR RH) SUMMER	ROOM AIR TEMP (F) & HUMIDITY (DB) / (WB OR RH) WINTER	NOTES:
ERV-1 & 2	MICROMETL EVDGCC0690000A	1200 CFM	0.75IN H_2O	(2) FOR FANS (1) FOR WHEEL	8.2 A	208-230V 1 PH 60 HZ	10.25 A	15 A	33.3/2.8	64.15	92F / 75F	18F / 17	75F / 50%	68F / 50%	ALL

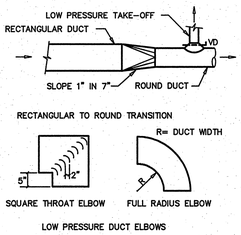
NOTES:
1. FLOW & LOADS BASED ON ARI-1060 PERFORMANCE & CERTIFIED CORE.
2. SHUT DOWN ALL FANS ON DUCT SMOKE DETECTOR ALARM CONDITION.
3. VENTILATION TYPE: ERV WHEEL, HEAT & HUMIDITY TRANSFER.
4. INCLUDE INTEGRAL DISPOSABLE FILTERS (OUTSIDE AND ROOM AIR) WITH MERV8 OR BETTER RATING.
5. INCLUDE SINGLE POINT ELECTRICAL POWER CONNECTION.
6. HOUSING SHALL BE GALVANIZED, .20 GAUGE (OR THICKER) STEEL WITH LAPPED CORNERS.
7. OR EQUALS BY SEMCO, OR THYBAR.
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.



LOW PRESSURE TEE

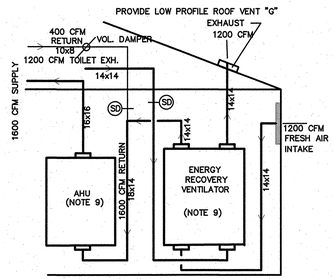


LOW PRESSURE BRANCH TAKE-OFF

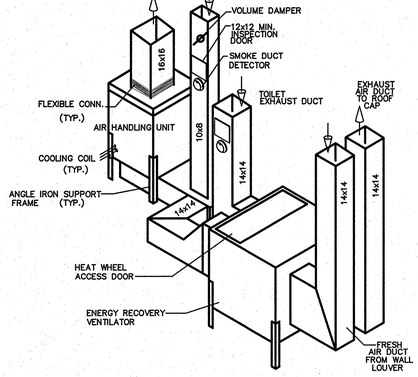


LOW PRESSURE DUCT ELBOWS

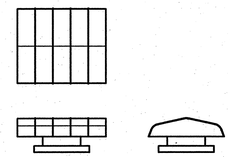
1 M2 DUCT CONSTRUCTION DETAILS
SCALE: NOT TO SCALE



2 M2 HVAC DIAGRAM
SCALE: NOT TO SCALE



3 M2 HVAC EQUIP. DETAIL
SCALE: NOT TO SCALE



4 M2 ROOF TOP VENT CAP "G"
SCALE: NOT TO SCALE

GENERAL NOTES:
1. PROVIDE 3/4" CONDENSATE P-TRAP ON CONDENSATE DRAIN LINE AND PIPE TO FLOOR DRAIN. USE COPPER PIPING AT FLOOR LEVEL.
2. PROVIDE EMERGENCY SHUT-OFF KEY SWITCH PER ADA & MOUNT 48"AFF.
3. ROUTE REFRIGERANT LINES TO CONDENSER ABOVE CEILING AND TURN DOWN IN EXTERIOR WALL.
4. PROVIDE SERVICE CLEARANCES AROUND UNIT AS PER MANU-FACTURERS RECOMMENDATIONS.
5. SUPPORT AIR HANDLING UNITS ON 3x3x1/4" ANGLE IRON FRAME. PRIME AND PAINT BLACK ALL CARBON STEEL TO PREVENT RUSTING. SUPPORTING AHU OR HEAT RECOVERY UNIT WITH DUCT IS UNACCEPTABLE. NO UL LABELS MAY BE OBSCURED BY OR COVERED WITH SUPPORT FRAME.
6. PROVIDE PARTICULATE FILTER WITH CHANGEOUT ACCESS IN THE RETURN PLENUM JUST PRIOR ENTERING EACH AHU.
7. MC TO PROVIDE SMOKE DUCT DETECTORS LOCATED ON EXHAUST AND RETURN DUCTS. EACH AIR HANDLER AND ENERGY RECOVERY UNIT SHALL SHUT DOWN UPON SMOKE DETECTION. PROVIDE A MIN 12x12 ACCESS OPENING EASILY ACCESIBLE FOR INSPECTION. VISIBLE/AUDIBLE ALARM SHALL ACTIVATE IN LOBBY AREA ON ALARM.
8. THIS DETAIL IS SCHEMATIC AND ACTUAL CONFIGURATION SHALL VARY IN FIELD AS NECESSARY TO INSTALL SUPPLIED EQUIPMENT AND DUCT.
9. SEE VENDOR INFORMATION FOR ACTUAL SIZE & LOCATION OF CONNECTIONS AND THE ACTUAL SIZE OF ALL EQUIPMENT.
10. IF A SUBSTITUTE ERV IS SUBMITTED, THE CONTRACTOR MUST SUBMIT A FULL SHOP DRAWING INCLUDING ERV SPECIFICATIONS, DUCT LAYOUTS AND ROUTING WITH SERVICE CLEARANCES NOTED. FULL MAINTENANCE ACCESS MUST BE MAINTAINED.

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

METHOD OF COMPLIANCE:

PRESCRIPTIVE ☒ ENERGY COST BUDGET ☐

THERMAL ZONE	7A
EXTERIOR DESIGN CONDITIONS	
WINTER DRY BULB	16D F
SUMMER DRY BULB	92D F (75D F WB)
INTERIOR DESIGN CONDITIONS	
WINTER DRY BULB	72 DF
SUMMER DRY BULB	75 DF
RELATIVE HUMIDITY	50%
BUILDING HEATING LOAD (50%)	133 MBH
BUILDING COOLING LOAD (50%)	127 MBH
MECHANICAL SPACE CONDITIONING SYSTEM	
SPLIT SYSTEM	

AHU-1/CU-1 AND AHU-2/CU-2 (2 COMPLETE SYSTEMS)

DESCRIPTION OF UNIT	SPLIT HEAT PUMP W/ ENERGY RECOVERY VENTILATOR
HEATING EFFICIENCY	COP = 3.4@47DF, 8.4 HSPF (6.8 CODE MIN.)
COOLING EFFICIENCY	SEER = 13.0
HEAT OUTPUT OF EACH AHU/CU	47 MBH +-10 KW ELEC
COOLING OUTPUT OF EACH AHU/CU	3 1/2 TON

LIST EQUIPMENT EFFICIENCIES

COP AND SEER ARE LISTED ABOVE

EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS)

MOTORS USED IN THIS PROJECT ARE INCLUDED IN THE EFFICIENCY RATING OF THE UNITS

MOTOR HORSEPOWERS ARE ON EQUIPMENT SCHEDULE

EXHAUST FAN SCHEDULE

DESIG.	MANUFACTURER (BASIS OF DESIGN)	MODEL NO. (BASIS OF DESIGN)	TYPE	CFM	TSP IN H_2O	SONES	RPM	HP	VOLTAGE	SERVES	CONTROL	REMARKS
EF 1	GREENHECK *	SP-B90-Q0 *	CEILING MOUNTED	75	0.25	1.9	700	50 WATTS	120/1	UNISEX BATHROOM	1A	1,2,3

* OTHER ACCEPTABLE MANUFACTURERS/MODELS: CARNES/VCDD10C ACME/VQ80

REMARKS:
1. CONTROLS SHALL BE AS FOLLOWS:
   A. FAN TO BE CONTROLLED BY WALL MOUNTED SWITCH.
2. PROVIDE N.E.C. RATED U.L. APPROVED STARTER/DISCONNECT.
3. PROVIDE WITH BIRD SCREEN (1/4" MIN. MESH) AND GRAVITY BACKDRAFT DAMPER.

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SHEET NO. M2 OF 3

ELECTRICAL GENERAL NOTES

WORK SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC).

MATERIALS AND EQUIPMENT SHALL BE NEW AND LISTED BY A TESTING AGENCY APPROVED BY THE AUTHORITY HAVING JURISDICTION, WHERE SUCH LISTING EXISTS.

20 AMP, 120 VOLT CIRCUITS LONGER THAN 100 FEET IN TOTAL CONDUIT LENGTH SHALL BE #10 AWG MINIMUM.

CONDUCTORS ARE SIZED PER THE COPPER, 75° CELSIUS TABLES IN THE NEC.

CONDUITS ARE SIZED PER THE THWN/THHN INSULATION TABLES IN THE NEC.

INSTALL CIRCUIT BREAKERS AND FUSES ON ALL EQUIPMENT BASED ON THE ACTUAL NAMEPLATE DATA ON THE EQUIPMENT OR ON THE NEC REQUIREMENTS IF THERE IS NO NAMEPLATE DATA. FUSES SHALL BE TIME-DELAY, DUAL-ELEMENT TYPE, CLASS RK-5, UON.

INSTALL A NEC SIZED GROUND WIRE IN ALL RACEWAYS, UNLESS OTHERWISE NOTED. GROUNDING CONDUCTORS ARE NOT REQUIRED IN TELEDATA CONDUITS.

INDICATE CIRCUITS IN PANELS, SERVING EMERGENCY AND EXIT LIGHTS.

REVIEW ARCHITECTURAL DRAWINGS AND ELEVATIONS TO LOCATE RECEPTACLES, SWITCHES, & FIRE ALARM DEVICES, MUST COMPLY WITH NEC & NFPA.

ITEMS USED AS SERVICE ENTRANCE EQUIPMENT SHALL BE LISTED AND LABELED FOR THAT PURPOSE.

BALLASTS SHALL HAVE A MINIMUM POWER FACTOR OF 0.90.

MINIMUM WIRE SIZE SHALL BE #12 AWG, UON.

EC SHALL REVIEW THE ELECTRICAL REQUIREMENTS FOR ALL EQUIPMENT PROVIDED BY OTHERS WITH RESPECT TO MINIMUM CIRCUIT AMPACITY, MAXIMUM OVERCURRENT PROTECTION, VOLTAGE, & PHASE PRIOR TO INSTALLING HIS WORK. ANY DISCREPANCIES WITH THE ELECTRICAL DESIGN SHALL B COORDINATED WITH THE ELECTRICAL ENGINEER.

ALL DISCONNECT SWITCHES SHALL BE HEAVY DUTY TYPE. PROVIDE NEMA 3R WHERE LOCATED OUTSIDE & WHERE OTHERWISE NOTED.

PROVIDE A MINIMUM OF 10% EXTRA FUSES FOR EACH SIZE & CLASS, WITH A MINIMUM OF AT LEAST ONE SET OF EACH.

PROVIDE HAND-OFF-AUTO SWITCHES FOR ALL LIGHTING CONTACTORS.

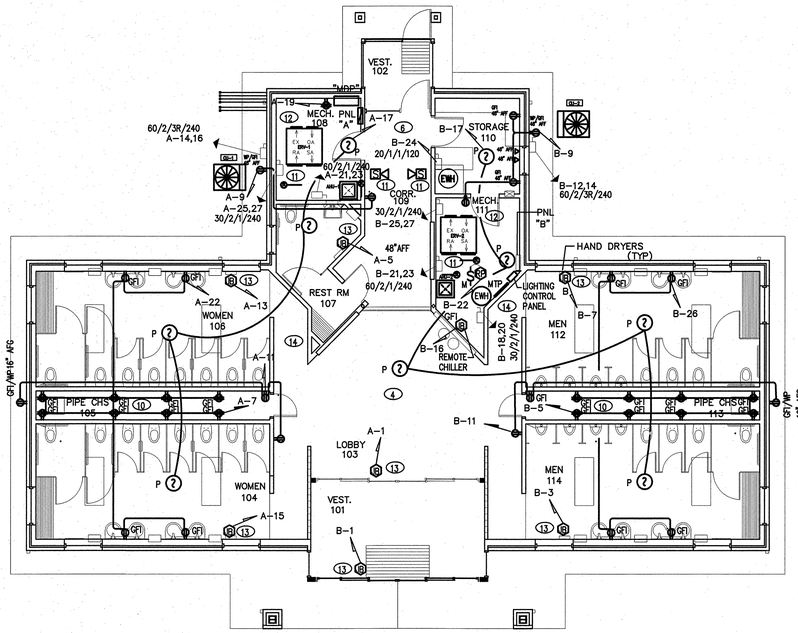
PROVIDE MAGNETIC TRACER RIBBON FOR ALL UNDER GROUND UTILITIES BURIED 12" BELOW FINISH GRADE.

RUN #6 CU GROUND TO PHONE/DATA FROM BUILDING SERVICE GROUNDING POINT. PROVIDE 8' OF CONDUCTOR AT TELEPHONE BOARD.

COORDINATE LOCATION OF SMOKE DETECTORS WITH THE MECHANICAL CONTRACTOR. POSITION ALL SMOKE DETECTORS MIN. 3 FT. FROM SUPPLY DIFFUSERS & RETURN GRILLES.

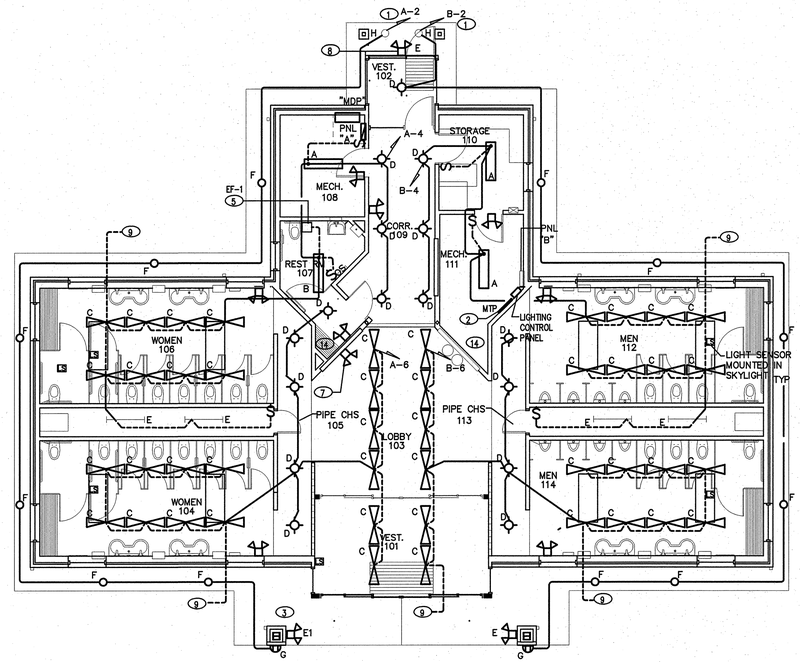
AIC RATINGS SHOWN ON THE PANEL SCHEDULES ARE BASED ON FULLY RATED PANELS & CIRCUIT BREAKERS.

WHERE PHOTOCELLS ARE SHOWN ON THE DRAWING, THE EC SHALL PROVIDE RELAYS AND/OR LIGHTING CONTACTORS AS REQUIRED. THE MAXIMUM WATTS SWITCHED DIRECTLY THROUGH A PHOTOCELL SHALL BE 2000 FOR INCANDESCENT FIXTURES AND 1000 FOR HID AND FLUORESCENT FIXTURES.



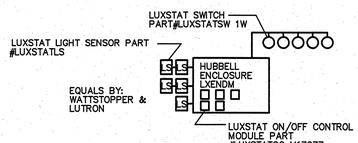
2 E1 POWER PLAN–NEW BUILDING

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



1 E1 LIGHTING PLAN–NEW BUILDING

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



3 E1 DAYLIGHTING CONTROL SYSTEM

SCALE: NOTTO SCALE

ELECTRICAL SYMBOL LEGEND

- EMERGENCY LIGHTING, WALL MTD. – BATTERY POWERED, UON. CONNECT TO LOCAL LIGHTING CIRCUIT AHEAD OF SWITCHING.
- COMMUNICATIONS OUTLET. 16" AFF TO BOTTOM, UON (CAT6) DUAL PORT, WIRE BACK TO MTP
- 30/3/1/240 DISCONNECT SWITCH – HEAVY DUTY, FUSIBLE (INCLUDE FUSES), UON. CURRENT RATING/POLES/NEMA RATING/VOLTAGE
- MDP MAIN DISTRIBUTION PANEL
- MTP MAIN TELEPHONE PANEL 4'x8'x3/4" PLYWOOD BACKBOARD (FIRE PROOF)
- PNL PANEL BOARD (PANEL)
- JB JUNCTION BOX SIZE PER NEC
- DUPLEX RECEPTACLE, NEMA 5-20R. 16" AFF TO BOTTOM, UON.
- QUAD (DOUBLE DUPLEX) RECEPTACLE, NEMA 5-20R. 16" TO BOTTOM, UON.
- GFI DUPLEX RECEPTACLE, NEMA 5-20R, GROUND FAULT CIRCUIT INTERRUPTER.
- WP DUPLEX RECEPTACLE, NEMA 5-20R, GROUND FAULT CIRCUIT INTERRUPTER (GFCI) WITH WEATHERPROOF COVER
- EWC DUPLEX RECEPTACLE, NEMA 5-20R, FOR ELECTRIC WATER COOLER. COORDINATE RECEPTACLE LOCATION WITH EWC SO THAT RECEPTACLE IS MOUNTED INSIDE EWC IF CORD AND PLUG PERMIT.
- SURFACE MOUNT FLUORESCENT FIXTURE
- SUSPENDED FLUORESCENT FIXTURE
- STRIP FLUORESCENT FIXTURE
- RECESSED FLUORESCENT FIXTURE (TYPE C)
- SEMI-RECESSED FLUORESCENT FIXTURE (TYPE G)
- SEMI-RECESSED FLUORESCENT EXTERIOR FIXTURE (TYPE GE)
- $S SINGLE-POLE WALL SWITCH. 48" TO TOP, UON.
- $3 THREE WAY WALL SWITCH. 48" TO TOP, UON.
- $M SINGLE-POLE MOTOR RATED SWITCH. A "2" SUBSCRIPT INDICATES A 2-POLE SWITCH.
- $OS OCCUPANCY SENSOR, MOTION AND INFRARED DETECTION ADJUSTABLE DURATION.
- HOMERUN – 120V, 1-POLE, 2-#12, 1-#12G, 1/2"C, UON (MINIMUM REQUIREMENTS MUST MEET NEC.)
- HOMERUN – 240V, CIRCUIT WIRES AS INDICATED (MINIMUM REQUIREMENTS MUST MEET NEC.)
- SWITCHED CIRCUIT
- UNSWITCHED CIRCUIT
- P (2) SMOKE DETECTOR (120V)
- MTP MAIN TELEPHONE PANEL
- AFF ABOVE FINISHED FLOOR
- AFG ABOVE FINISHED GRADE
- HD ELECT. HAND DRYER (BY GC, POWER BY EC)
- UON UNLESS OTHERWISE NOTED
- EWC ELECT. WATER COOLER
- UG UNDERGROUND
- EXIST EXISTING
- HOA HAND-OFF-AUTOMATIC SWITCH

FIXTURE SCHEDULE

MARK	DESCRIPTION	MFG. & CATALOG #	EQUALS	VOLTAGE	LAMP	REMARKS	WATTS
A	TURRENT INDUSTRIAL	COLUMBIA CSR4-232-*-EU-CSRWG4	HOLOPHANE HSM SERIES LEGION 2600 SERIES	120 V	2-32W T8	WITH WIRE GUARD & REFLECTOR	64
B	1x4 SURFACE MOUNT	COLUMBIA SM14-232-FSA12-EU	HOLOPHANE LS SERIES LEGION 41 SERIES		2-32W T8	MODULAR BOX FIXTURE	64
C	SUSPENDED FLUORESCENT	ALERA ALS-278*/*-CM*-LD-EU-MW	LITECONTROL LC94 SERIES DAYOLITE AD3510-DI SERIES		2-32W T8	.	64
D	6" RECESSED CAN	PRESCOLITE CFR6126EB-ST372A1	KIRLIN RR80602 SERIES KURT VERSEN P632 SERIES		1-26W CF	. (1)	26
E	4' STRIP	COLUMBIA CS4-132-EU-CSWG4	PROGRESS P7267 SERIES LEGION 350 SERIES		2-32W T8	.	64
F	8"- 2 LAMP RECESSED CAN W/LENS	PRESCOLITE CFR826UEB-ST492A	KIRLIN RR80907 KURT VERSEN P642 SERIES		2-26W CF	. (1)	52
G	WALL SCONCE	LUMINAIRE SPC818***-2PLC26-***-OP-BRZ-WET	RAVEN SERIES AMERICANA SERIES		2-26W CF	. (1)	52
H	6" RECESSED CAN W/LENS	PRESCOLITE CFR6126EB-ST372A1 (W/LENS)	KIRLIN RR80602 SERIES KURT VERSEN P632 SERIES		1-26W CF	. (1)	26
NOTES: 1. FIXTURES & BALLAST MUST BE REMOVABLE FROM INACCESSIBLE CEILING.							
	EMERGENCY LIGHT	EU-MR-3R	LUNA SERIES NEMA SERIES	120 V		.	
E	EMERGENCY LIGHT EXTERIOR	DUAL LITE PGZ-HTR	MULE MAKO-3-CW HIGH LITES PLURALUX SERIES			.	
	NOT USED	.	.			.	
P (2)	SMOKE DETECTOR	KIDDE MODEL 1235E	EST ADEM CO			CEILING MNT. NFPA 72 IONIZATION TYPE, LOCAL ALARMS, 120V	<5

LIGHT FIXTURE NOTES

(1) ALL COMPACT FLUORESCENT FIXTURES SHALL HAVE INTERCHANGEABLE 26 WATT LAMPS.

ELECTRICAL NOTES

(1) SWITCH WITH PHOTO CELL.

(2) 4'X4'X3/4" FIRE RATED TELEPHONE BOARD

(3) WIRE EXTERIOR EMERGENCY FIXTURE TO EXTERIOR LIGHTING CIRCUIT, TYP.

(4) COORDINATE LOCATION OF SMOKE DETECTORS WITH MECHANICAL PLANS SO POSITION IS 3' FROM SUPPLY DIFFUSERS AND GRILLES.

(5) LOCATE DISCONNECT SWITCH AT FAN FOR SERVICE IF NOT PROVIDED WITH FAN

(6) EQUIPMENT SHOWN OUT OF POSITION FOR PLAN CLARITY.

(7) CENTER FIXTURE ON OAK BOARD BAND.

(8) SEE ARCHITECTURAL ELEVATIONS FOR EXACT MOUNTING LOCATION.

(9) TO DAYLIGHTING CONTROL PANEL

(10) PROVIDE POWER TO FLUSH VALVE SENSORS. TRANSFORMERS BY PC. PROVIDE 4X4 J-BOX FOR THE SENSOR INSTALLATION. COORDINATE ALL WORK W/ PC TO ALLOW A COMPLETE OPERABLE INSTALLATION. PROVIDE ALL WIRING.

(11) DUCT SMOKE DETECTOR AND REMOTE AUDIBLE AND VISUAL ALARM PROVIDED BY THE MECHANICAL CONTRACTOR. SHOWN FOR REFERENCE ONLY.

(12) COORDINATE LOCATION OF DISCONNECTS AND RECEPTACLES WITH EQUIPMENT SERVED. DO NOT MOUNT ON EQUIPMENT ACCESS PANELS. LOCATE IN ACCESSIBLE POSITIONS.

(13) VERIFY POWER CONNECTION REQUIREMENTS AND LOCATION WITH EQUIPMENT SERVED PRIOR TO ROUGH-IN

(14) THE HVAC DUCTWORK MUST BE INSTALLED FIRST THROUGH THE ROOF SYSTEM PRIOR TO THE INSTALLATION OF ANY CONDUITS.

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SHEET NO. E1 OF 2

5/11/09

Cabarrus E2

NEW PANEL–'MDP'

MAKE: CUTLER HAMMER
TYPE: CH LOAD CENTER
RATING: 120/240 1 PHASE 3 WIRE
MOUNTING: SURFACE
MINIMUM AIC: 22,000 AMPS
MLO MAIN CIRCUIT BREAKER (FRAME) ___
EQUIPMENT GROUND BUS ___ ☒YES ☐NO
SERVICE ENTRY RATED ___ ☐YES ☐NO

LOAD SERVICE	WATTS PER PHASE A	WATTS PER PHASE B	FR SIZE	CKT BRKR	CKT NO	NEUTRAL A B	CKT NO	CKT BRKR	FR SIZE	WATTS PER PHASE A	WATTS PER PHASE B	LOAD SERVICE
PANEL 'A'	19456		225A	225A	1		2	225A	225A	13826		PANEL 'B'
120/240V 1PH		18078			3		4				16628	120/240V 1PH
3" SPACE	---				5		6			---		SPACE
SPACE		---			7		8				---	SPACE
3" SPACE	---				9		10			---		SPACE
SPACE		---			11		12				---	SPACE
NOTES	19456	18078	SUB–TOTALS 'B'		400A	BUS	SUB–TOTALS 'A'			13826	16628	
					400A	LUGS	SUB–TOTALS 'B'			19456	18078	TOTAL CONNECTED LOAD
					400A	S/N	GRAND TOTAL			33282	34706	
					VERIFY FEED		AMPS/PHASE			277A	289A	277A 289A

NEC ALLOWABLE DEMAND FACTORS

1. DEMAND FACTORS PER NEC 220
2. LARGEST OF: NEC TABLE 220.12 OR CONNECTED LOAD
3. NEC TABLE 220.56
4. NEC 220.51
5. NEC 220.43A, 200 VA/LINEAR FT
6. NON–COINCIDENT LOADS, LARGEST OF THE TWO LOADS IS COUNTED

DIVERSIFIED LOAD SUMMARY

LOAD TYPE		NEC DEM FACTOR①	A	B	TOTAL DIVERSIFIED LOAD
GENERAL LIGHTING ②		125%	4100	4100	8200
GENERAL USE RECEPT.		≤10KVA@100%	1080	1440	2520
		>10KVA@50%	---	---	---
MOTORS AND EQUIPMENT	LARGEST	125%	2985	2985	5970
	ALL OTHERS	100%	7618	7218	14836
WATER HEATERS		125%	2813	4688	7501
KITCHEN EQUIPMENT ②		100%	---	---	---
FIX. ELEC. SPACE HEAT.④		100%	10000	10000	20000
SHOW WINDOW LIGHTS ⑤		100%	---	---	---
SIGN		125%	---	---	---
MISC		100%	4400	6200	10600
	PHASE (TOTAL VA)		32996	36631	69627
	TOTAL AMPS		275A	305A	VOLT AMPS / VOLTS = 290A TOTAL AMPS

EQUIPMENT WIRING SCHEDULE

EQUIPMENT	MCA	MOCP	VOLTS	PH	WIRE SIZE
AHU–1	58.5A	60A	240V	1	3–#6, 1–#10 GND IN 1" CONDUIT
CU–1	26.0A	40A	240V	1	3–#8, 1–#10 GND IN 3/4" CONDUIT
AHU–2	58.5A	60A	240V	1	3–#6, 1–#10 GND IN 1" CONDUIT
CU–2	26.0A	40A	240V	1	3–#8, 1–#10 GND IN 3/4" CONDUIT
ERV–1	10.25A	15A	240V	1	3–#12, 1–#12 GND IN 1/2" CONDUIT
ERV–2	10.25A	15A	240V	1	3–#12, 1–#12 GND IN 1/2" CONDUIT
EWH	(4500W)	30A	240V	1	2–#10, 1–#10 GND IN 1/2" CONDUIT

NOTE:
THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL EQUIPMENT ELECTRICAL REQUIREMENTS PRIOR TO ROUGH–IN AND RELEASING GEAR. ADJUST BREAKER, WIRE SIZES, ETC. AS REQUIRED.

Cabarrus E2

NEW PANEL–'A'

MAKE: CUTLER HAMMER
TYPE: CH LOAD CENTER
RATING: 120/240 1 PHASE 3 WIRE
MOUNTING: SURFACE
MINIMUM AIC: 22,000 AMPS
MLO MAIN CIRCUIT BREAKER (FRAME) ___
EQUIPMENT GROUND BUS ___ ☒YES ☐NO
SERVICE ENTRY RATED ___ ☐YES ☒NO

LOAD SERVICE	WATTS PER PHASE A	WATTS PER PHASE B	FR SIZE	CKT BRKR	CKT NO	NEUTRAL A B	CKT NO	CKT BRKR	FR SIZE	WATTS PER PHASE A	WATTS PER PHASE B	LOAD SERVICE
AUTO SLIDING DOOR–GFI (FRONT INNER)	600		70A	20A	1		2	20A	70A	542		LTS – SOFFIT
SPARE		---		20A	3		4	20A			1170	LTS
HAND DRYER	1500			20A	5		6	20A		1546		LTS
FLUSH VALVE CONTROLS		600		20A	7		8				---	SPACE
REC	360			25A	9		10			---		SPACE
REC		540		20A	11		12				---	SPACE
HAND DRYER	1500			20A	13		14	40A		3120		CU–1
HAND DRYER		1500		20A	15		16				3120	240V 1PH
L SMOKE DETECTORS	100			20A	17		18	40A		3120		CU–2
REC – MTP		360		20A	19		20				3120	240V 1PH
H AHU–1	6084			60A	21		22	20A		720		TOILET REC
240V 1PH		6084			23		24	20A			---	SPARE
H ERV–1	984			15A	25		26			---		SPACE
240V 1PH		984			27		28				---	SPACE
SPARE	---			20A	29		30			---		SPACE
SPARE		---		20A	31		32				---	SPACE
SPARE	---			20A	33		34			---		SPACE
SPACE		---			35		36				---	SPACE
SPACE	---				37		38			---		SPACE
SPACE		---			39		40				---	SPACE
SPACE	---				41		42			---		SPACE
NOTES	11128	10668	SUB–TOTALS 'B'		225A	BUS	SUB–TOTALS 'A'			8328	7410	
L BREAKER LOCK					225A	LUGS	SUB–TOTALS 'B'			11128	10668	TOTAL CONNECTED LOAD
H HACR TYPE BREAKER					225A	S/N	GRAND TOTAL			19456	18078	
					VERIFY FEED		AMPS/PHASE			162A	151A	162A 151A

NEC ALLOWABLE DEMAND FACTORS

1. DEMAND FACTORS PER NEC 220
2. LARGEST OF: NEC TABLE 220.12 OR CONNECTED LOAD
3. NEC TABLE 220.56
4. NEC 220.51
5. NEC 220.43A, 200 VA/LINEAR FT
6. NON–COINCIDENT LOADS, LARGEST OF THE TWO LOADS IS COUNTED

DIVERSIFIED LOAD SUMMARY

LOAD TYPE		NEC DEM FACTOR①	A	B	TOTAL DIVERSIFIED LOAD
GENERAL LIGHTING ②		125%	2050	2050	4100
GENERAL USE RECEPT.		≤10KVA@100%	360	900	1260
		>10KVA@50%	---	---	---
MOTORS AND EQUIPMENT	LARGEST	125%	2985	2985	5970
	ALL OTHERS	100%	4638	5238	9876
WATER HEATERS		125%	---	---	---
KITCHEN EQUIPMENT ②		100%	---	---	---
FIX. ELEC. SPACE HEAT.④		100%	5000	5000	10000
SHOW WINDOW LIGHTS ⑤		100%	---	---	---
SIGN		125%	---	---	---
MISC		100%	3700	2100	5800
	PHASE (TOTAL VA)		18733	18273	37006
	TOTAL AMPS		156A	152A	VOLT AMPS / VOLTS = 154A TOTAL AMPS

Cabarrus E2

NEW PANEL–'B'

MAKE: CUTLER HAMMER
TYPE: CH LOAD CENTER
RATING: 120/240 1 PHASE 3 WIRE
MOUNTING: SURFACE
MINIMUM AIC: 22,000 AMPS
MLO MAIN CIRCUIT BREAKER (FRAME) ___
EQUIPMENT GROUND BUS ___ ☒YES ☐NO
SERVICE ENTRY RATED ___ ☐YES ☒NO

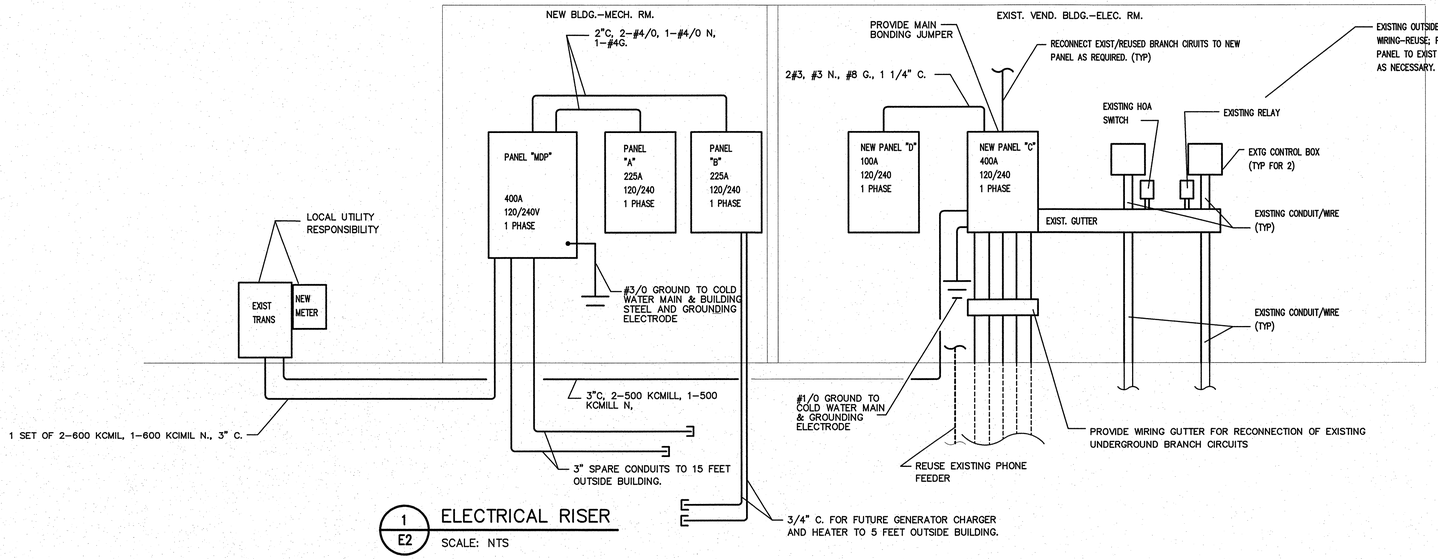
LOAD SERVICE	WATTS PER PHASE A	WATTS PER PHASE B	FR SIZE	CKT BRKR	CKT NO	NEUTRAL A B	CKT NO	CKT BRKR	FR SIZE	WATTS PER PHASE A	WATTS PER PHASE B	LOAD SERVICE
AUTO SLIDING DOOR–GFI (FRONT OUTER)	600			20A	1		2	20A	70A	542		LTS – SOFFIT
HAND DRYER		1500		20A	3		4	20A			1170	LTS
FLUSH VALVE CONTROLS	700			20A	5		6	20A		1546		LTS
HAND DRYER		1500		20A	7		8	20A			500	TELEPHONE EQUIPMENT
REC	720			20A	9		10			---		SPACE
REC		540		20A	11		12				---	SPACE
SPACE	---				13		14			---		SPACE
SPACE		---			15		16	20A			600	EWC
L SMOKE DETECTORS	100			20A	17		18	30A		2250		EWH
SPACE		---			19		20				2250	240V 1PH
H AHU–2	6084			60A	21		22	20A		300		RECIRCULATION PUMP
240V 1PH		6084			23		24	20A			1500	EWH–1
H ERV–2	984			15A	25		26	20A		720		TOILET REC
240V 1PH		984			27		28	20A			---	SPARE
SPACE	---				29		30	20A		---		SPACE
SPACE		---			31		32				---	SPACE
SPACE	---				33		34			---		SPACE
SPACE		---			35		36				---	SPACE
SPACE	---				37		38			---		SPACE
SPACE		---			39		40				---	SPACE
SPACE	---				41		42			---		SPACE
NOTES	9188	10608	SUB–TOTALS 'B'		225A	BUS	SUB–TOTALS 'A'			4638	6020	
L BREAKER LOCK					225A	LUGS	SUB–TOTALS 'B'			9188	10608	TOTAL CONNECTED LOAD
H HACR TYPE BREAKER					225A	S/N	GRAND TOTAL			13826	16628	
					VERIFY FEED		AMPS/PHASE			115A	139A	115A 139A

NEC ALLOWABLE DEMAND FACTORS

1. DEMAND FACTORS PER NEC 220
2. LARGEST OF: NEC TABLE 220.12 OR CONNECTED LOAD
3. NEC TABLE 220.56
4. NEC 220.51
5. NEC 220.43A, 200 VA/LINEAR FT
6. NON–COINCIDENT LOADS, LARGEST OF THE TWO LOADS IS COUNTED

DIVERSIFIED LOAD SUMMARY

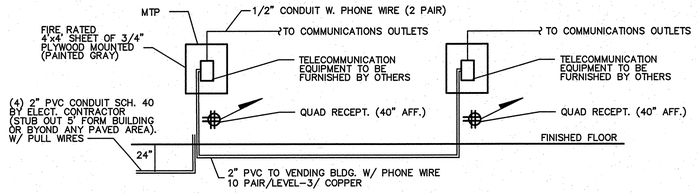
LOAD TYPE		NEC DEM FACTOR①	A	B	TOTAL DIVERSIFIED LOAD
GENERAL LIGHTING ②		125%	2050	2050	4100
GENERAL USE RECEPT.		≤10KVA@100%	720	540	1260
		>10KVA@50%	---	---	---
MOTORS AND EQUIPMENT	LARGEST	125%	1245	1245	2490
	ALL OTHERS	100%	1984	984	2968
WATER HEATERS		125%	2813	4688	7501
KITCHEN EQUIPMENT ②		100%	---	---	---
FIX. ELEC. SPACE HEAT.④		100%	5000	5000	10000
SHOW WINDOW LIGHTS ⑤		100%	---	---	---
SIGN		125%	---	---	---
MISC		100%	700	4100	4800
	PHASE (TOTAL VA)		14512	18607	33119
	TOTAL AMPS		121A	155A	VOLT AMPS / VOLTS = 138A TOTAL AMPS



1/E2 ELECTRICAL RISER
SCALE: NTS

NOTES:

① ALL UNDER GROUND CONDUITS INSTALLED BY THE EC SHALL B ENCASED IN MINIMUM 3" CONCRETE. PROVIDE MAGNETIC TRACER RIBBON 12" BLOW GRADE.



2/E2 TELEPHONE RISER
SCALE: NTS

PROJECT:
I–85 REST AREA
CABARRUS COUNTY NORTH CAROLINA

ARCHITECT/ENGINEERS:
FACILITIES DESIGN
GENERAL SERVICES DIVISION, NCDOT
1 SOUTH WILMINGTON STREET
RALEIGH, NORTH CAROLINA 27601
(919) 715–0400 FAX (919) 715–0399

DRAWING TITLE: NORTHBOUND/SOUTHBOUND ELECTRICAL PANELS & RISERS

DRAWN BY: DS CHECKED BY: BEB ISSUE DATE: 30 APRIL 09

ENGINEER
BURKE DESIGN GROUP, PA
CONSULTING ENGINEERS
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SEAL: NORTH CAROLINA PROFESSIONAL SEAL 22038 ENGINEER BENJAMIN E. BURKE 5/5/09

TIP. PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL– AID NO.
K–4906	39928.3.1		IMS–085–2(64)59

NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. E2 OF 2

GENERAL NOTES:

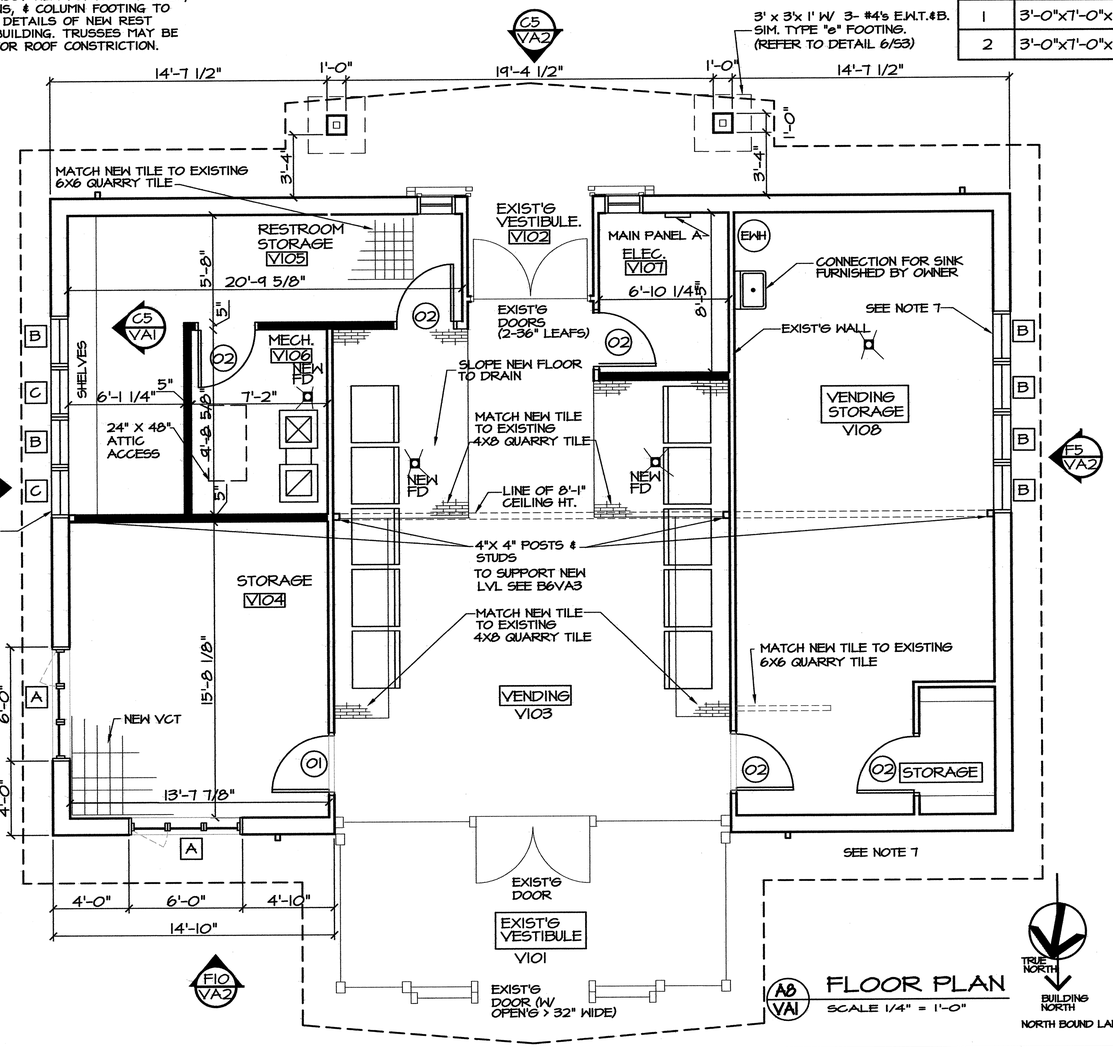
1. REMOVE BRICK & STUD WALL & INSTALL NEW WINDOW, WINDOW SILL. (SEE DEMO PLAN VA4).
2. FUR-OUT EXISTING STUD/ TILE WALLS W/ IX3 FURRING STRIPS @ 16" O.C. INSTALL NEW 5/8" DW, PAINT. PROVIDE IX3 F.C. BASE @ ROOMS V103, V105, V108. PROVIDE RUBBER BASE @ ROOM 104.
3. NEW STUD WALL W/ F-C PANELING ON BOTH SIDES W/ INSUL., PAINT. (SEE NOTE 2 FOR FINISHING).
4. NEW WOOD SHELVING SEE VA1.
5. ALL CEILINGS SHALL BE OVERLAID W/ 1-LAYER OF 5/8" DRYWALL.
6. FLOOR AT RM. V104 - REMOVE TILE, POUR CONC.TOPPING FLUSH W/ OLD CERAMIC TILE. PROVIDE NEW VCT.
7. REPAIR ALL DAMAGED EXISTING SOFFIT & FASCIA AND REPAINT. REPLACE ALL WINDOWS AND PAINT.
8. FUR-OUT EXISTING STUD/ TILE WALLS W/ IX3 FURRING STRIPS @ 16" O.C. INSTALL NEW F-C PANELING SIERRA-8, PAINT. PROVIDE IX3 BASE & IX3 CEILING TRIM @ ROOM V103 CEILING SHALL BE REPLACED W/ 1- LAYER OF 1/2" PLYWOOD.

WALL LEGEND:

EXIST'G WALLS TO REMAIN

NEW 2X4 FRAMED WALL W/ 5/8" GYP.

STRUCTURAL NOTE:
CONSTRUCT NEW PORTION OF ROOF, COLUMNS, & COLUMN FOOTING TO MATCH DETAILS OF NEW REST AREA BUILDING. TRUSSES MAY BE USED FOR ROOF CONSTRICTION.



A8 VA1 **FLOOR PLAN**
SCALE 1/4" = 1'-0"

TRUE NORTH — BUILDING NORTH — NORTH BOUND LANE

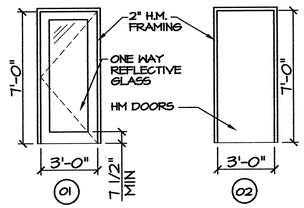
TRUE NORTH — BUILDING NORTH — SOUTH BOUND LANE

FINISH - COLOR SCHEDULE

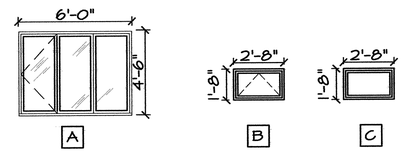
ROOM	NO	FLOOR MAT.	FLOOR COLOR	BASE MAT.	BASE COLOR	NORTH WALL MAT.	NORTH WALL COLOR	EAST WALL MAT.	EAST WALL COLOR	SOUTH WALL MAT.	SOUTH WALL COLOR	WEST WALL MAT.	WEST WALL COLOR	CEILING MAT.	CEILING COLOR	HEIGHT	REMARKS
EXIST'G VISTIBULE	V101	EXIST'G QT	SEE SPEC.	EXIST'G QT	SEE SPEC.		SEE SPEC.		SEE SPEC.		SEE SPEC.		SEE SPEC.	-	SEE SPEC.	VARIES	GLASS ENTRY WAY
EXIST'G VISTIBULE	V102	EXIST'G QT		EXIST'G QT				F-C				FC		-		8'-1"	GLASS ENTRY WAY
VENDING	V103	CONC.		IX3 F.C.		-		F-C		FC		FC		PLY		VARIES	MATCH EXIST'G PLYWOOD CLG'S SEE NOTE 8
STORAGE	V104	VCT		RUB.		DW		DW		DW		DW		DW*		9'-4"	SEE NOTE 2/ * SEE NOTE 5
RESTROOM STOR.	V105	EXIST'G 6X6 TILE		IX3 F.C.		DW		DW		DW		DW		DW*		9'-4"	" " " "
MECH.	V106	NEW CONC.		-		DW		DW		DW		DW		DW*		9'-4"	" " " "
ELEC.	V107	EXIST'G CONC.		-		-		-		DW		-		-		9'-4"	PAINT ALL EXIST'G DRYWALLS
VENDING STORAGE	V108	EXIST'G 6X6 TILE		IX3 F.C.		DW		DW		DW		DW		DW*		9'-4"	SEE NOTE 2/ * SEE NOTE 5

DOOR - HARDWARE SCHEDULE

DOOR MARK	DOOR SIZE	DOOR MAT.	DOOR COLOR	FRAME MAT.	FRAME COLOR	HARDWARE LOCKSET	HINGES	CLOSER	STOP	PLATE KICK	WEATHS'P/ THRESHOLD		REMARKS
1	3'-0"x7'-0"xl 3/4"	H.M.	10BB 13/250	H.M.	10BB 13/250	F04	A5112	C02511	L02162	-			ONE WAY REFLECTIVE GLASS
2	3'-0"x7'-0"xl 3/4"	H.M.	10BB 13/250	H.M.	10BB 13/250	F04	A5112	C02511	L02162	-			



E6 VA1 **DOOR TYPES- (MARK)**
SCALE 1/4" = 1'-0"

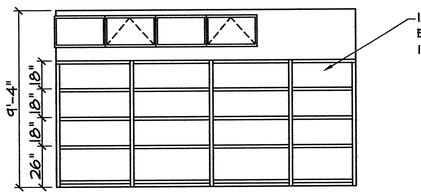


WINDOW SCHEDULE:

A METAL CLAD FIXED / OPERABLE WINDOW, BROWN FINISH. INSULATED GLASS SOLAR COOL GLARE

B METAL CLAD OPERABLE WINDOW, BROWN FINISH. INSULATED GLASS SOLAR COOL GLARE, MATCH EXIST. SIZE.

C METAL CLAD FIXED WINDOW, BROWN FINISH. INSULATED GLASS SOLAR COOL GLARE, MATCH EXIST. SIZE.



C5 VA1 **ELEVATION-STORAGE V105**
SCALE 1/4" = 1'-0"

PROJECT:
I-85 REST AREA
CABARRUS COUNTY — NORTH CAROLINA

ARCHITECT/ENGINEERS:
FACILITIES DESIGN
GENERAL SERVICES DIVISION, NCDOT
1 SOUTH WILMINGTON STREET
RALEIGH, NORTH CAROLINA 27601
(919) 715-0400 FAX (919) 715-0399

DRAWING TITLE: **FLOOR PLAN & SCHEDULE**

DRAWN BY: RA CHECKED BY: V. BUZARD ISSUE DATE: 30 APRIL 09

SEAL: VICTOR M. BUZARD, JR. REGISTERED ARCHITECT 12410 NORTH CAROLINA RALEIGH, N.C. 6.29.09

SEAL 16394 PROFESSIONAL ENGINEER WILLIAM RATTERREE

TIP. PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL- AID NO.
K-4906	39928.3.1		IMS-085-2(64)59

NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. **VA1** 1 OF 4

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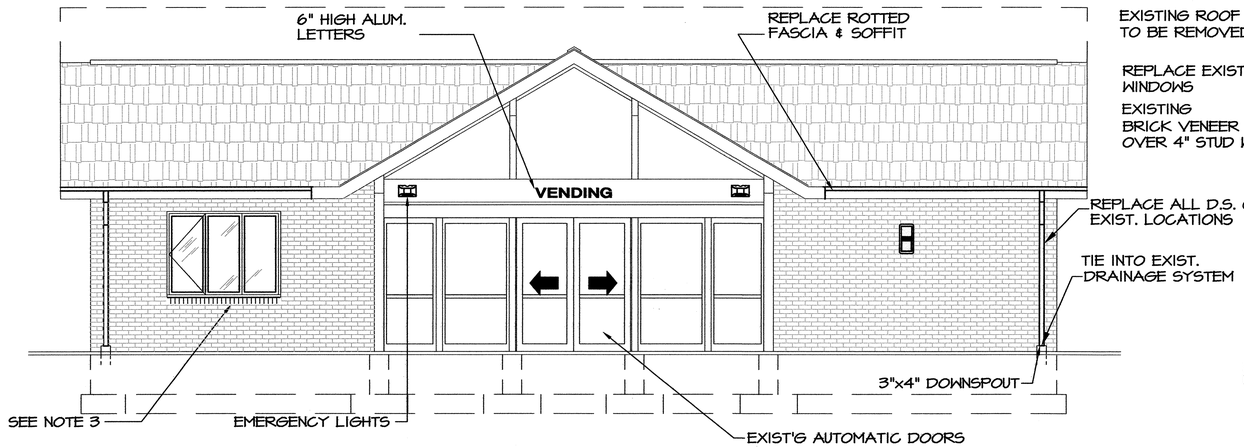
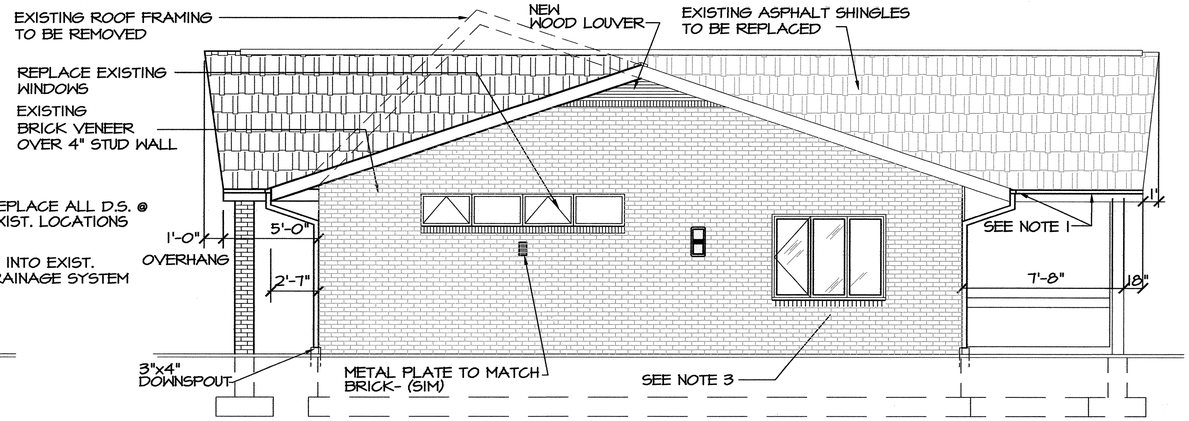
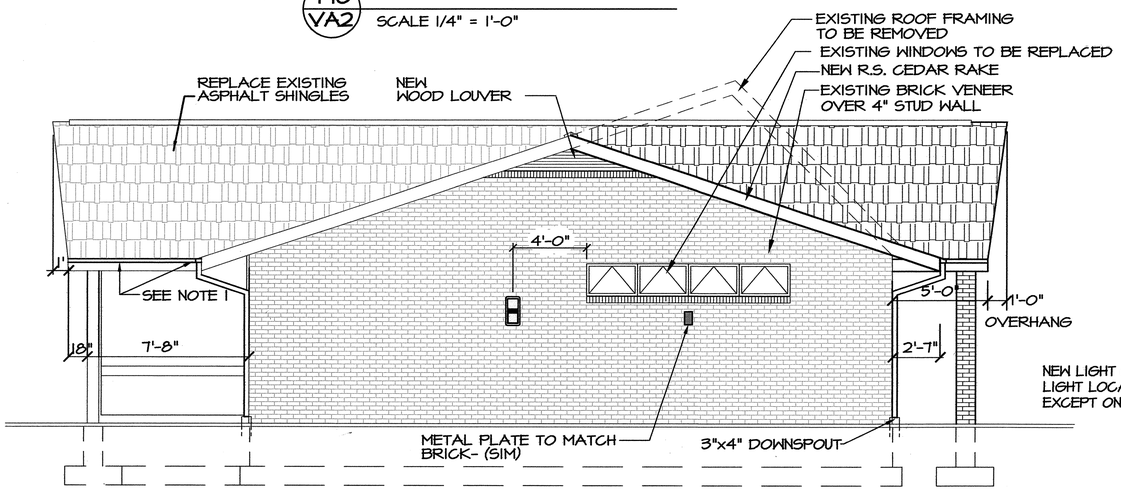


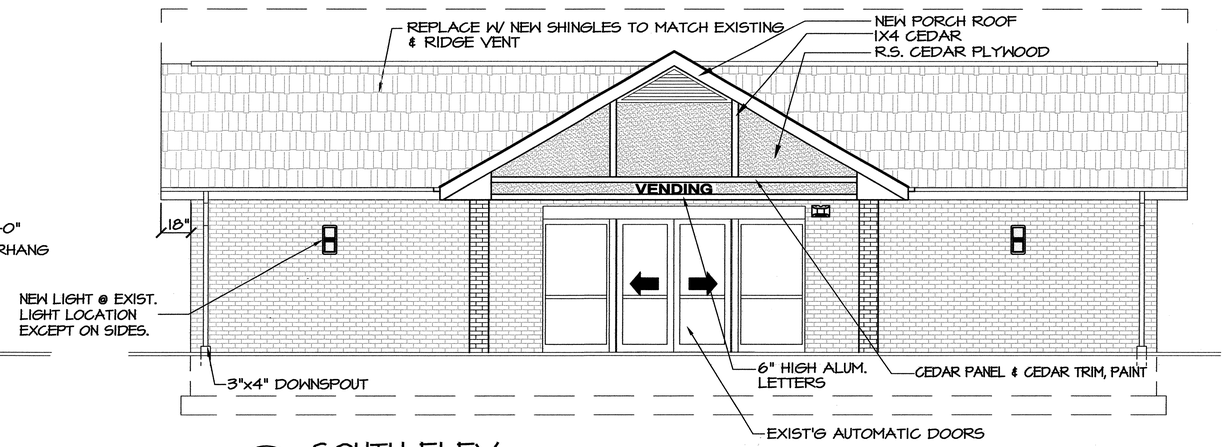
F10 VA2 NORTH ELEV.
SCALE 1/4" = 1'-0"



F5 VA2 EAST ELEV.
SCALE 1/4" = 1'-0"



C10 VA2 WEST ELEV.
SCALE 1/4" = 1'-0"



C5 VA2 SOUTH ELEV.
SCALE 1/4" = 1'-0"

GENERAL NOTES:

1. REPLACE EXISTING GUTTERS W/ NEW LEAFGUARD GUTTERS.
2. EXISTING SHINGLES TO BE REPLACED
3. NEW WINDOW W/ LINTEL (∠ 3 1/2 X 3 1/2 X 3/8"), TOOTH-IN BRICK JAMBS & NEW BRICK ROLOCK SILL.

PROJECT:
I-85 REST AREA
CABARRUS COUNTY NORTH CAROLINA

ARCHITECT/ENGINEERS:
FACILITIES DESIGN
GENERAL SERVICES DIVISION, NCDOT
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RALEIGH, NORTH CAROLINA 27601
(919) 715-0400 FAX (919) 715-0399

DRAWING TITLE:
ELEVATIONS

DRAWN BY: RA CHECKED BY: V. BUZARD ISSUE DATE: 30 APRIL 09

SEAL: VICTOR M. BUZARD, JR. REGISTERED ARCHITECT 4241 5-8-09 NORTH CAROLINA RALEIGH, N.C.

TIP. PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL- AID NO.
K-4906	39928.3.1		IMS-085-2(64)59

NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO.
VA2
2 OF 4

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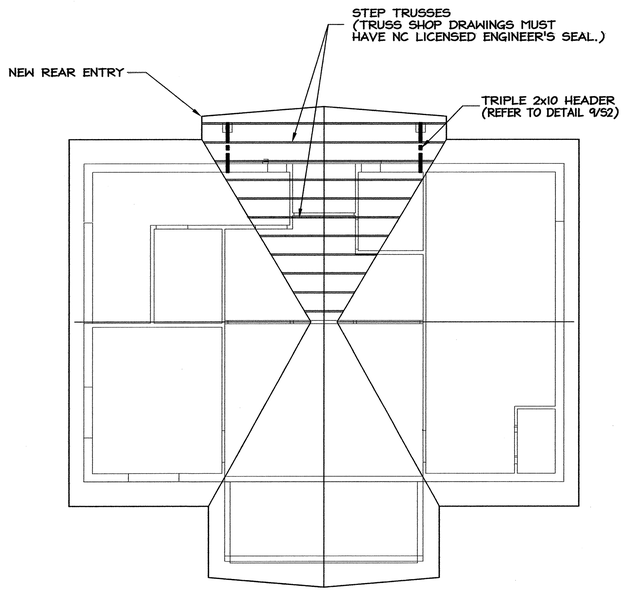
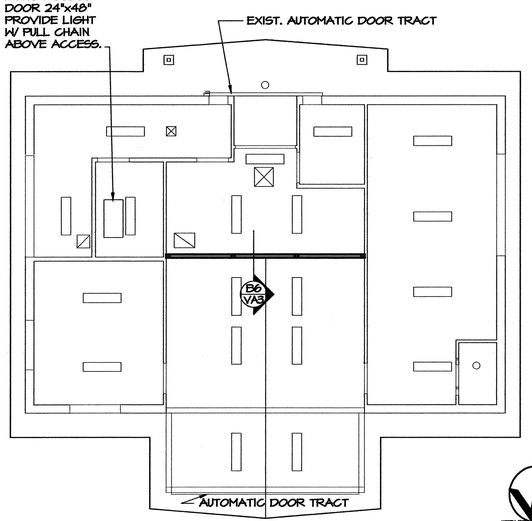


E10 / VA3 TRUSS OVER BUILD PLAN

SCALE 1/8" = 1'-0"

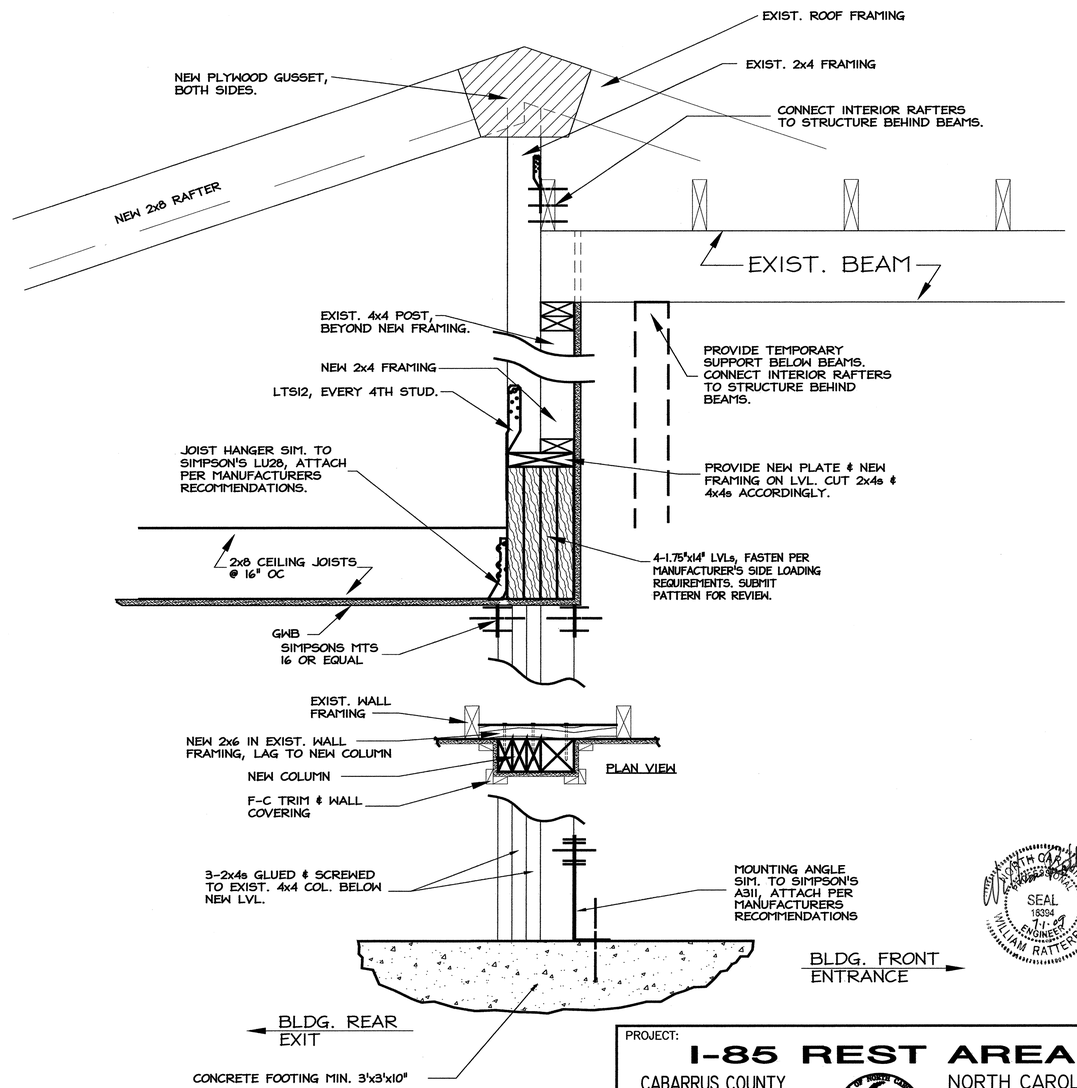
LEGEND:

- 1x4 SURFACE MOUNT
- SUSPENDED FLUORESCENT
- RECESSED CAN WLENS
- SUPPLY DIFFUSER
- RETURN GRILLE



A10 / VA3 REFLECTED CEILING PLAN

SCALE 1/8" = 1'-0"



B6 / VA3 STRUCTURAL SECT.

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

PROJECT:

I-85 REST AREA

CABARRUS COUNTY — NORTH CAROLINA

ARCHITECT/ENGINEERS:

FACILITIES DESIGN

GENERAL SERVICES DIVISION, NCDOT
1 SOUTH WILMINGTON STREET
RALEIGH, NORTH CAROLINA 27601
(919) 715-0400 FAX (919) 715-0399

DRAWING TITLE: **CEILING PLAN**

DRAWN BY: RA | CHECKED BY: V. BUZARD | ISSUE DATE: 30 APRIL 09

SEAL: VICTOR M. BUZARD, JR. REGISTERED ARCHITECT 4245 7-1-09 NORTH CAROLINA RALEIGH, N.C.

SEAL 18354 7-1-09 ENGINEER WILLIAM RATTERREE NORTH CAROLINA PROFESSIONAL ENGINEER

TIP. PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL- AID NO.
K-4906	39928.3.1		IMS-085-2(64)59

NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. VA3 3 OF 4

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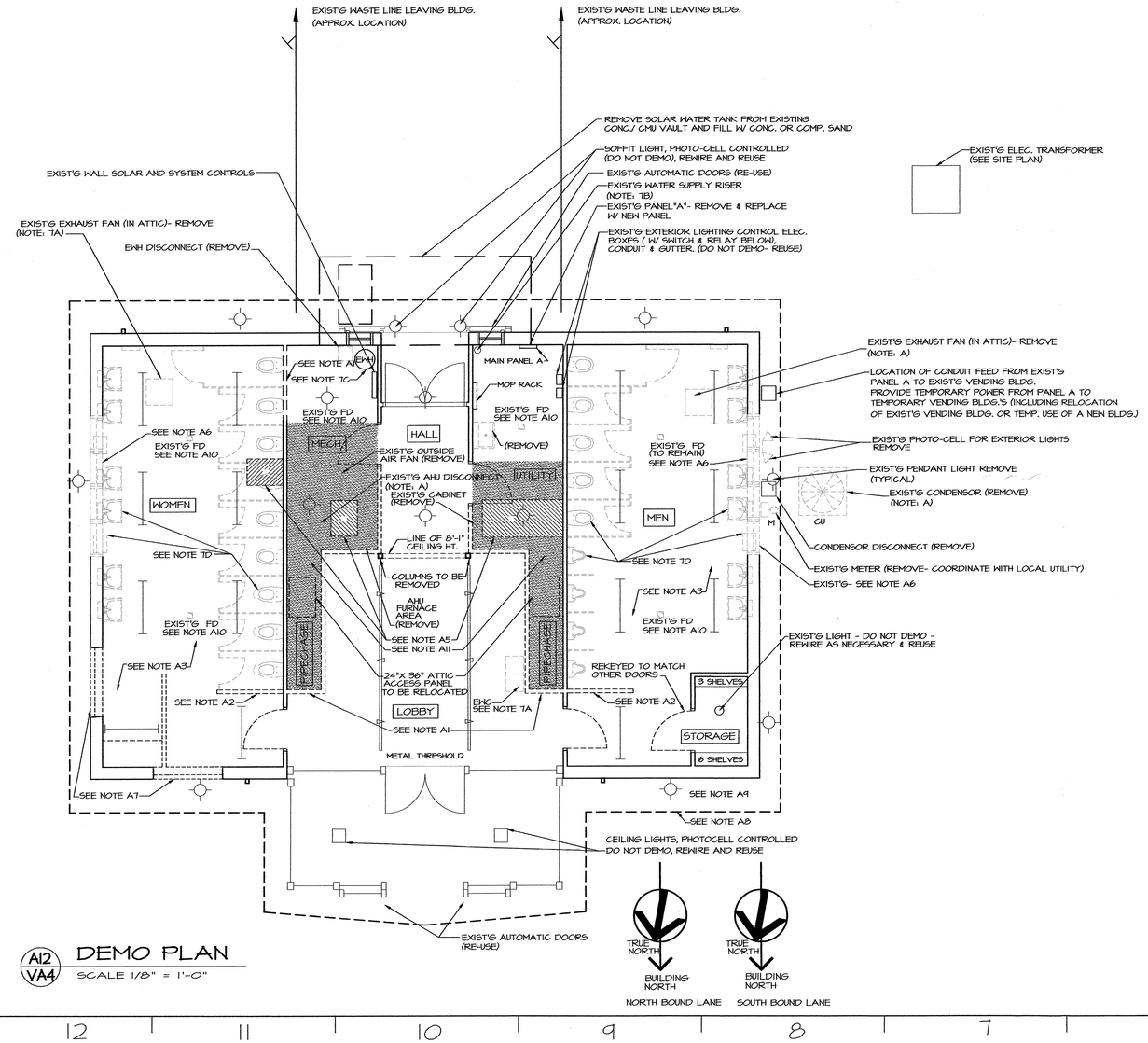
GENERAL NOTES:

A1. REMOVE EXISTING STUD WALLS.
A2. REMOVE EXISTING TILE WALLS.
A3. REMOVE EXISTING CEILING DRYWALL AND ATTIC INSULATION, PROVIDE NEW INSULATION AND NEW 5/8" DRYWALL AND PAINT.
A4. REMOVE ALL TOILET PARTITIONS, ALL FIXTURES (SEE NOTE: 7D).
A5. REMOVE TILE & CONC. SLAB AT OLD WOMEN'S RESTROOM & LOBBY FOR NEW FLOOR DRAIN, SEE SHEET VP1.
A6. REMOVE & REPLACE EXISTING WINDOWS (SEE SHEET VA1).
A7. REMOVE BRICK & MASONRY WALL AND INSTALL NEW WINDOW, WINDOW SILL.
A8. REPAIR & REPAINT ALL DAMAGED FASCIA, SOFFIT TO MATCH NEW BUILDING.
A9. REMOVE & REPLACE EXISTING SHINGLES TO MATCH NEW BUILDING.
A10. EXISTING FD; CAP & SEAL TO MATCH ARCH. FINISHES.
A11. REMOVE TOP SURFACE OF CONC. FLOOR & TILE, TO MATCH EXISTING TILE FLOOR.

WALL LEGEND:

---------- WALL TO BE REMOVE



A12 / VA4 DEMO PLAN
SCALE 1/8" = 1'-0"

PME GENERAL NOTES

1. 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 ENTE RING/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 REQUI REMENTS.

2. THE FLOOR DRAINS AND UNDERGROUND WASTE LINES SHALL REMAIN FULLY FUNCTIONAL FOLLOWING DEMOLITION AND RENOVATION.

3. PIPE AND CONDUIT MAY BE ABANDONED IN WALLS 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 RENOVATIO N. ALL FIRE BARRIER RATINGS SHALL BE MAINTAINED.

5. 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 ORHIS DESIGNEE).

6. 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/RENOVATI NG 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), CONDENSOR, EXHAUST FAN, HEATER(S) (INCLUDING ANY BASEBOARD OR DUCT HEATERS), AND ELECTRIC WATER COOLER (EWC). THE SOUTHBOUND CONDENSOR 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 6" ABOVE MECHANICAL ROOM FLOOR. SEE PLUMBING RISER (SUPPLY WATER & BACKFLOW PREVENTER DETAIL) ON DRAWING VP-1. CW PIPING REMOVAL INC LUDES ALL PIPING TO ELEC. WATER HEATER (EWH), URINALS, WATER CLOSETS, BATHROOM SINKS, ELECTRIC WATER COOLER (EWC), HOSEBIBBS, ETC. IN EXISTING BUILDING.

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

BOTH EWH'S (NORTH & SOUTH BOUND) WILL BE REMOVED, INCLUDING ALL PIPE, SOUTHBOUND EWH SHALL BE PROVIDED TO OWNER'S REP. (G.HARRELL OR DESIGNEE). NORTHBOUND EWH SHALL BE DISCARDED.

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 SYSTEM.

D. 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, ANDVENTS.

E. WASTE & VENT PIPING

E.1 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 LEVELWHERE ROOM (INCLUDING PIPE CHASE ROOMS). OTHERWISE, THEY SHALL BE PLUGGED IN WALLS.

F. ELECTRICAL – LIGHTING & MISCELLANEOUS

F.1 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 JACKS FROM THIS BUILDING.

G. SOLAR COLLECTION SYSTEM FOR WATER HEATING

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

PROJECT:
I-85 REST AREA
CABARRUS COUNTY NORTH CAROLINA

ARCHITECT/ENGINEERS:
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DRAWING TITLE:
DEMO PLAN

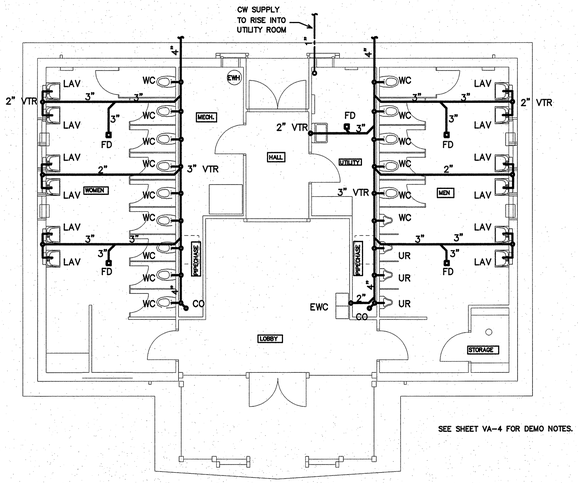
DRAWN BY: RA CHECKED BY: V. BUZARD ISSUE DATE: 30 APRIL 09

SEAL: VICTOR M. BUZARD, REGISTERED ARCHITECT, 42410, 9.21.09, NORTH CAROLINA, RALEIGH, N.C.

TIP. PROJ. NO.	WBS. NO.		FEDERAL- AID NO.
K-4906	39928.3.STI		STM-085-2(70)59

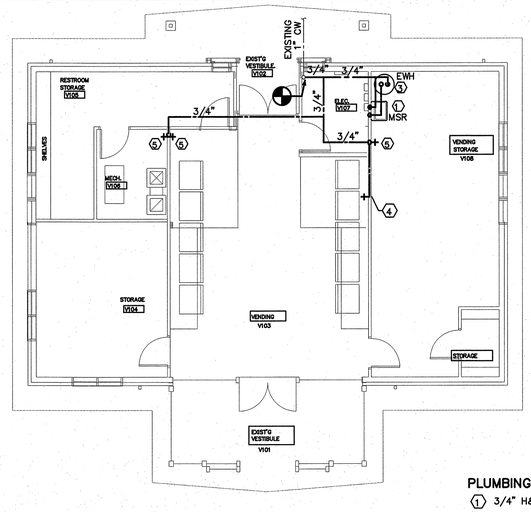
NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. VA4
4 OF 4

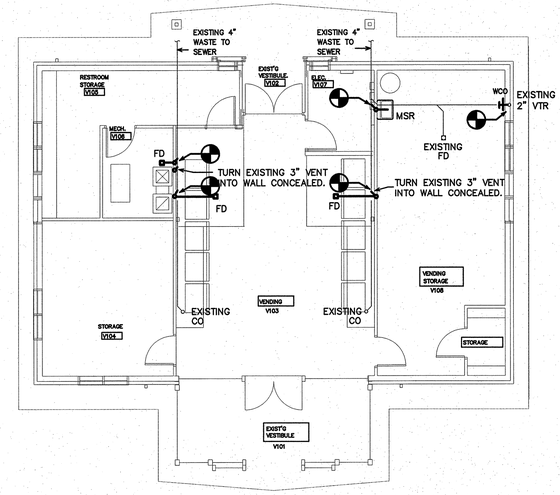


SEE SHEET VA-4 FOR DEMO NOTES.

3 VP1 EXISTING PLUMBING PLAN
SCALE: 1/8"=1'-0"



2 VP1 PLUMBING PLAN–WATER
SCALE: 1/8"=1'-0"



1 VP1 PLUMBING PLAN–WASTE
SCALE: 1/8"=1'-0"

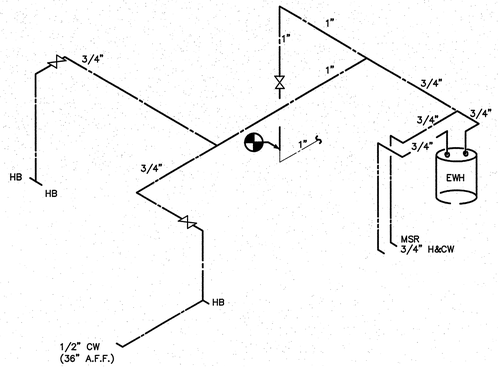
PLUMBING KEY NOTES – WATER

1. 3/4" H&CW DN. TO MSR (HW 140 DEG. F)
2. NOT USED.
3. 3/4" CW DN TO EWH
4. 1/2" CW DN TO COFFEE MAKER BOX. MOUNT 36" A.F.F. COORDINATE EXACT LOCATION WITH EQUIPMENT SERVED.
5. 3/4" CW DOWN TO HB

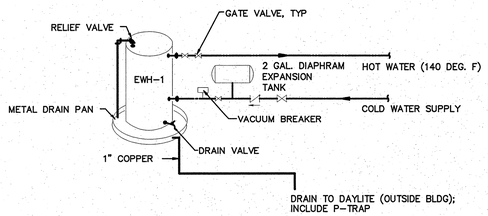
PLUMBING LOAD SUMMARY
WASTE FIXTURE UNITS = 11
WATER FIXTURE UNITS = 3
TOTAL DEMAND G.P.M. = 6.5

WASTE AND VENT LEGEND:

- COLD WATER PIPE
- HOT WATER PIPE
- BALL VALVE
- HOSE BIBB
- WATER HYDRANT
- NEW VENT
- NEW WASTE
- C.O. CLEAN OUT–PROVIDE CONCRETE RING FOR EXTERIOR CLEANOUTS
- W.C.O. WALL CLEAN OUT
- FLOOR DRAIN
- VTR VENT THROUGH ROOF
- TPC TRAP PRIMER CONNECTION (TIE POINT)
- CONNECT TO EXISTING
- (1) KEY NOTE NUMBER
- GATE VALVE



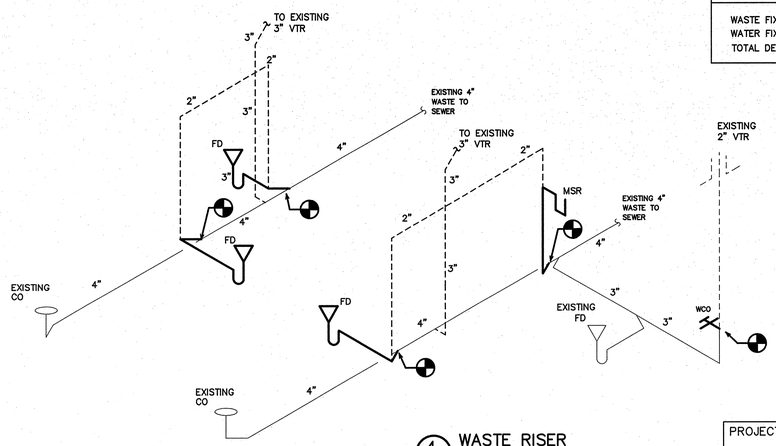
5 VP1 DOMESTIC WATER RISER
SCALE: NOT TO SCALE



5 VP1 DOMESTIC WATER HEATER PIPING SCHEMATIC
SCALE: NOT TO SCALE

GENERAL NOTES – PLUMBING

1. PREPLAN ALL WORK PRIOR TO ORDERING, PURCHASING, OR FABRICATING ANY PART OF THE WORK DESCRIBED BY THIS DRAWING.
2. IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS WITH EXISTING FIELD CONDITIONS OR THE WORK OF OTHER TRADES.
3. RESOLVE ALL CONFLICTS PRIOR TO INCURRING ANY MATERIAL OR LABOR EXPENSES.
4. COMPLY WITH THE MANUFACTURER'S TECHNICAL INSTRUCTIONS WHEN INSTALLING PLUMBING FIXTURES, MATERIALS, AND DEVICES.
5. LOCATE FIXTURES AND EQUIPMENT GENERALLY AS SHOWN ON THE PLANS; HOWEVER, COORDINATE LOCATIONS WITH ACTUAL FIELD CONDITIONS TO PRESERVE ALL CODE-REQUIRED AND MANUFACTURER – REQUESTED SERVICE CLEARANCES.
6. COORDINATE ROUTING OF ALL PIPING WITH BUILDING STRUCTURE AND WITH THE WORK OF OTHER TRADES. OFFSET VENT PIPING AROUND BEAMS AND JOISTS AS NECESSARY.
7. AT EXTERIOR WALL, INSTALL WATER PIPING ON HEATED SIDE OF WALL INSULATION.
8. PROVIDE WATER HAMMER ARRESTORS AT THE END OF EACH COLD AND HOT WATER BRANCH RISER. SIZE ARRESTOR APPROPRIATELY.
9. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR THE FINAL ELECTRICAL CONNECTIONS TO ALL EQUIPMENT INSTALLED AS PART OF HIS CONTRACT. UNLESS OTHERWISE NOTED, THIS CONTRACTOR SHALL WIRE FROM HIS EQUIPMENT TO DISCONNECT SWITCHES, JUNCTIONBOXES, OR PANELBOARD CIRCUIT BREAKERS AS PROVIDED BY THE ELECTRICAL CONTRACTOR.
10. DO NOT INSTALL ANY WATER PIPING IN THE MECHANICAL ROOM ABOVE ELECTRICAL PANELS, DISCONNECTS, OR MDPE.
11. LOCATION OF EXISTING PLUMBING IS APPROXIMATE.



4 VP1 WASTE RISER
SCALE: NOT TO SCALE

FIXTURE SCHEDULE – PLUMBING

HB HOSE BIBB (SEE NOTE 4 BELOW)
ZURN Z-1330-C, 3/4" WALL HYDRANT WITH VANDAL RESISTANT VACUUM BREAKER. ENCASED WITH KEY LOCK.

EWH ELECTRIC WATER HEATER (SEE NOTE 2 BELOW)
A.O. SMITH MODEL ELJC-10, 10 GALLON, 1,500 WATT, 3/4" INLET AND OUTLET, 120V, 1 PH. MOUNT ON WALL. MODEL# ETC-2X EXPANSION TANK.

MSR MOP SINK (SEE NOTE 1 BELOW)
CRANE PLUMBING #MSB-2424, 24"x24"x10" FLOOR TYPE WITH #830-AA FAUCET/VACUUM BREAKER, #832-AA HOSE AND HOSE BRACKET, #1453-BB STRAINER, #889-CC MOP HANGER, # E-77-AA BUMPER GUARD, AND STAINLESS STEEL WALL SPLASH GUARD.

FD FLOOR DRAIN (SEE NOTE 3 BELOW)
ZURN ZN-415 PROVIDE WITH DEEP SEAL P-TRAP, AND TYPE "B" STRAINER.

NOTES:

1. Or equal by Kohler, Eljer
   Flush Valve: Hydrotech, Zurn or Sloan.
   Mop Sink: Zurn, Fiat, Stern Williams or Speakman
   Mop Sink Faucet: Chicago, Symmons or Delta
2. Or equal by A.O.Smith, Rheem, Lochinvar or Braford White.
3. Or equal by Josam, Wade or JR Smith
4. Or equal by Wade, Woodford or J.R. Smith
5. Or equal by Oasis, Sunroc, or Halsey Taylor
6. Or equal by Sloux Chief, J.R. Smith or Zurn.
7. Or equal by Ingersoll Rand or Weinman.
8. Or equal by Zurn, J.R. Smith or American Standard.
9. Or equal by Sprax, Lawler, Bradley or Holby.

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3305-109 Durham Drive
Raleigh, North Carolina 27603
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PROJECT:
I–85 REST AREA
CABARRUS COUNTY NORTH CAROLINA

ARCHITECT/ENGINEERS:
FACILITIES DESIGN
GENERAL SERVICES DIVISION, NCDOT
1 SOUTH WILMINGTON STREET
RALEIGH, NORTH CAROLINA 27601
(919) 715-0400 FAX (919) 715-0399

DRAWING TITLE: NORTHBOUND/SOUTHBOUND PLUMBING PLAN

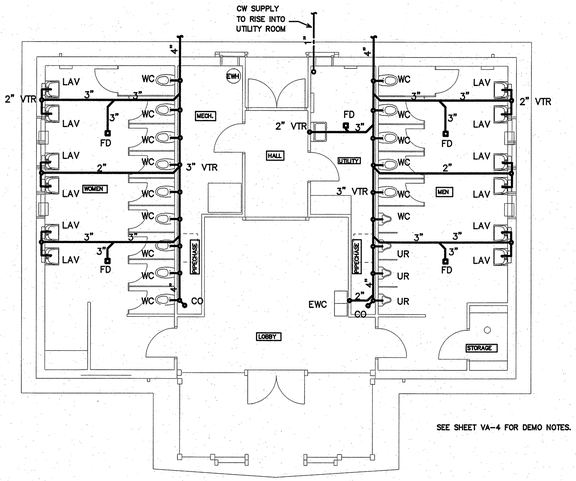
DRAWN BY: DS CHECKED BY: BEB ISSUE DATE: 30 APRIL 09

SEAL: NORTH CAROLINA PROFESSIONAL SEAL 22038 ENGINEER BENJAMIN E. BURKE 5/11/09

TIP, PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL- AID NO.
K-4906	39928.3.1		IMS-085-2(64)59

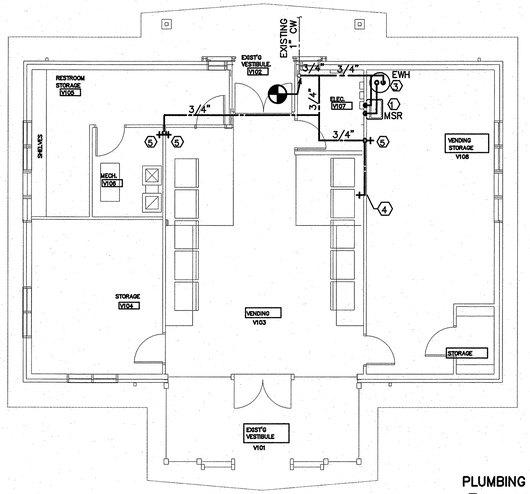
NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. VP1 OF 1

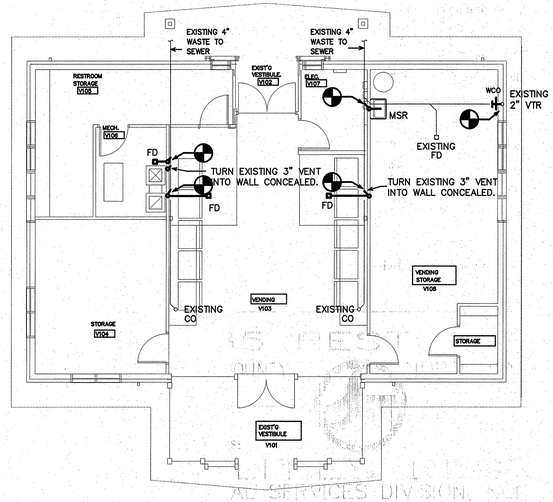


SEE SHEET VA-4 FOR DEMO NOTES.

3 VP1 EXISTING PLUMBING PLAN
SCALE: 1/8"=1'-0"



2 VP1 PLUMBING PLAN–WATER
SCALE: 1/8"=1'-0"



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

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1. 3/4" H&CW DN. TO MSR (HW 140 DEG. F)
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3. 3/4" CW DN TO EWH
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5. 3/4" CW DOWN TO HB

PLUMBING LOAD SUMMARY

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WATER FIXTURE UNITS =	3
TOTAL DEMAND G.P.M. =	6.5

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- HOT WATER PIPE
- BALL VALVE
- HOSE BIBB
- WATER HYDRANT
- NEW VENT
- NEW WASTE
- C.O. CLEAN OUT–PROVIDE CONCRETE RING FOR EXTERIOR CLEANOUTS
- W.C.O. WALL CLEAN OUT
- FD FLOOR DRAIN
- VTR VENT THROUGH ROOF
- TPC TRAP PRIMER CONNECTION (TIE POINT)
- CONNECT TO EXISTING
- 1 KEY NOTE NUMBER
- GATE VALVE

GENERAL NOTES – PLUMBING

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2. IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS WITH EXISTING FIELD CONDITIONS OR THE WORK OF OTHER TRADES.
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7. AT EXTERIOR WALL, INSTALL WATER PIPING ON HEATED SIDE OF WALL INSULATION.
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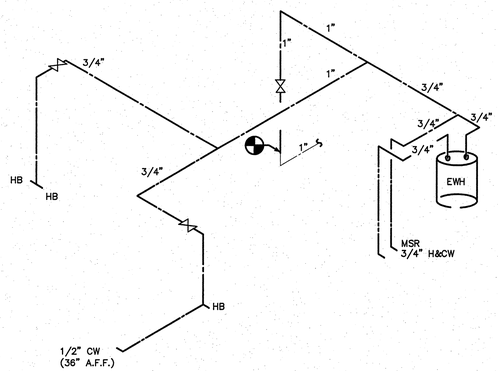
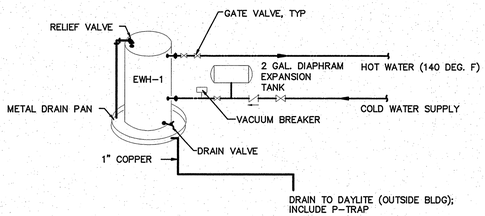


5 VP1 DOMESTIC WATER RISER
SCALE: NOT TO SCALE

4 VP1 WASTE RISER
SCALE: NOT TO SCALE



5 VP1 DOMESTIC WATER HEATER PIPING SCHEMATIC
SCALE: NOT TO SCALE

PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	ALTERNATE MANUFACTURER/MODEL	ALTERNATE MANUFACTURER/MODEL
HB	HOSE BIBB ZURN Z-1330-C, 3/4" WALL HYDRANT WITH VANDAL RESISTANT VACUUM BREAKER. ENCASED WITH KEY LOCK.	WATTS #HY-330.	JAY R. SMITH #5509QT.
EWH	ELECTRIC WATER HEATER A.O. SMITH MODEL ELJC-10, 10 GALLON, 1,500 WATT, 3/4" INLET AND OUTLET, 120V, 1 PH. MOUNT ON WALL. MODEL# ETC-2X EXPANSION TANK.	RHEEM #81VP10S.	BRADFORD WHITE #M-1-10U6SS.
MSR	MOP SINK CRANE PLUMBING #MSB-2424, 24"x24"x10" FLOOR TYPE WITH #830-AA FAUCET/VACUUM BREAKER, #832-AA HOSE AND HOSE BRACKET, #1453-BB STRAINER, #889-CC MOP HANGER, #E-77-AA BUMPER GUARD, AND STAINLESS STEEL WALL SPLASH GUARD.	FLORESTONE MOP SINK #83 WITH SPEAKMAN #MR-371 FAUCET, HOSE AND MOP HANGER.	ACORN MODEL #TRH-242410 WITH #KFC FAUCET, VACUUM BREAKER, HOSE #KH36 AND PAIL HOOK.
FD	FLOOR DRAIN ZURN ZN-415-P. PROVIDE WITH DEEP SEAL P-TRAP, AND TYPE "B" STRAINER. TRAP PRIMER CONNECTION REQUIRED ONLY FOR FLOOR DRAINS IN CHASES, MECH & STORAGE.	JOSAM #30000A.	JAY R. SMITH #2005-A.

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K–4906	39928.3.1	C202154	IMS–085–2(64)59

NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. VP1 OF 6

5/1/09

AIR DISTRIBUTION SCHEDULE

DESIGNATION	MANUFACTURER	MODEL NO.	TYPE	PANEL SIZE	NECK SIZE	MAX CFM	MAX NC	REMARKS
A	PRICE	ASCD	CEILING SUPPLY	12 x 12	8"C	200	30	GYP. CEILING
B	PRICE	ASCD	CEILING SUPPLY	24 x 24	10"C	400	30	GYP. CEILING
C	PRICE	PDDR	RETURN GRILLE	16 x 16	8"C	200	30	GYP. CEILING
D	PRICE	520-D	SUPPLY REGISTER	14 x 10	–	350	30	SIDEWALL
E	PRICE	530	RETURN GRILLE	26 x 18	–	1450	30	GYP. CEILING

PROVIDE ALL SUPPLY DIFFUSERS WITH VOLUME DAMPER ACCESSIBLE FROM DIFFUSER FACE.

DUCTLESS SPLIT SYSTEM HEAT PUMP SCHEDULE

DESIGNATION	MANUF.	MODEL NO.	CFM	COOLING CAPACITY		HEATING CAPACITY	ELECTRICAL DATA					
				TOTAL BTUH	SEER	TOTAL BTUH	AHU			CU		
							MCA	MOCP	VOLTAGE	MCA	MOCP	VOLTAGE
DSAH-1/DSCU-1	MITSUBISHI	MSZ09UN	297	8800	12	12300	0.5	15	120/1	14	15	208/1
DSAH-2/DSCU-2	MITSUBISHI	MSZ09UN	297	8800	12	12300	0.5	15	120/1	14	15	208/1

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT METHOD OF COMPLIANCE:

PRESCRIPTIVE [X] ENERGY COST BUDGET [ ]

THERMAL ZONE 7A

EXTERIOR DESIGN CONDITIONS
- WINTER DRY BULB 16D F
- SUMMER DRY BULB 92D F (75 F WB)

INTERIOR DESIGN CONDITIONS
- WINTER DRY BULB 68 F
- SUMMER DRY BULB 75F
- RELATIVE HUMIDITY 50%

BUILDING HEATING LOAD 27 MBH

BUILDING COOLING LOAD 5.8 TONS

MECHANICAL SPACE CONDITIONING SYSTEM

SPLIT SYSTEM

U AHU-1/CU-1

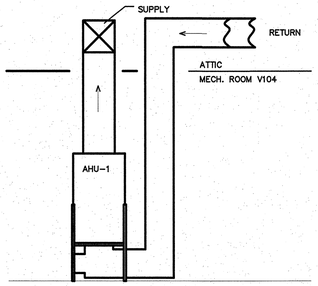
- DESCRIPTION OF UNIT SPLIT SYSTEM HEAT PUMP
- HEATING EFFICIENCY COP = 3.5
- COOLING EFFICIENCY SEER = 13.0
- HEAT OUTPUT OF UNIT 43.5 MBH
- COOLING OUTPUT OF UNIT 45.5 MBH

LIST EQUIPMENT EFFICIENCIES

EFFICIENCIES ARE LISTED ON EQUIPMENT SCHEDULES

EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS)

MOTORS USED IN THIS PROJECT ARE INCLUDED IN THE EFFICIENCY RATING OF THE UNITS



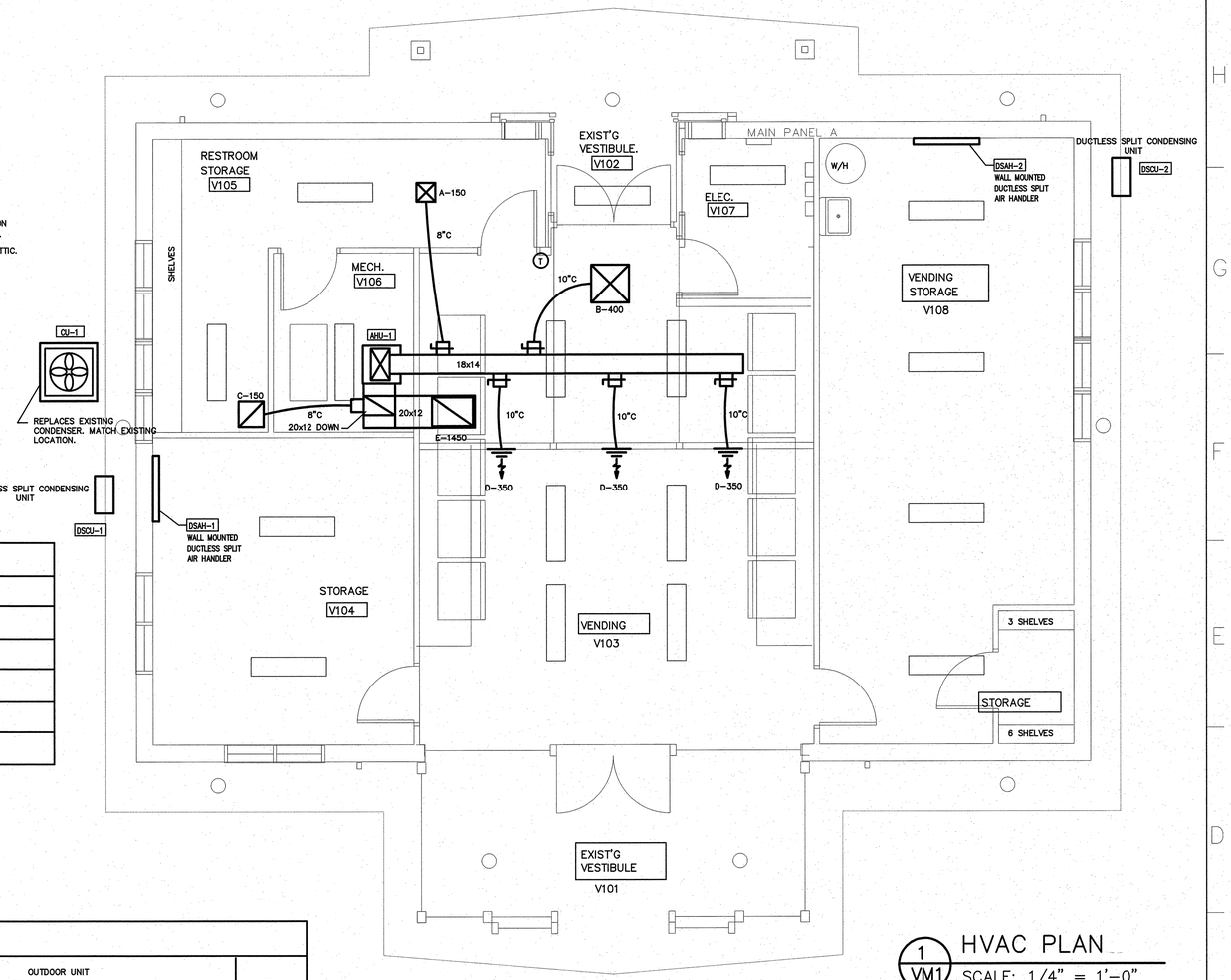
3 / VM1 AHU-1 DETAIL
SCALE: NOT TO SCALE

LEGEND - DUCTWORK/ACCESSORIES

⊠	SUPPLY DIFFUSER
⊘	RETURN GRILLE
	LOCKING MANUAL BALANCING DAMPER
Ⓣ	THERMOSTAT
	VOLUME DAMPER (SPIN IN) (LOCKING)
	VOLUME DAMPER (LOCKING)

GENERAL NOTES

1. PROVIDE LOCKING COVER FOR THERMOSTAT.
2. GENERAL NOTES AND DUCT CONSTRUCTION DETAILS ON DRAWINGS M1 AND M2 APPLY TO THIS DRAWING ALSO.
3. ROUTE SUPPLY, EXHAUST, AND RETURN DUCTS IN ATTIC.
4. ROUTE CONDENSATE TO FLOOR DRAIN IN MECH. RM. USE COPPER PIPE (1" MIN.)



1 / VM1 HVAC PLAN
SCALE: 1/4" = 1'-0"

HVAC SCHEDULE

EQUIP. NUMBER	INDOOR UNIT											OUTDOOR UNIT				NOTES
	MODEL NO.	FAN			COOLING CAPACITY		COIL HEATING CAPACITY	ELECTRICAL HEATING		VOLTAGE	MCA	FUSE/ CB MAX	MODEL NO.	POWER	MCA	FUSE/ CB MAX	
		CFM	HP	POWER	MIN TOTAL	MIN SENS.		MODEL #	CAPACITY								
AHU-1/CU-1	CARRIER FX4BNF048010AAAA	1600@1/2"WC	3/4	208/230-1	46.5 MBH	35.35 MBH	30/48 MBH @ 17/47F	KFCEH0901N10	34 MBH (10 KW)	208/230-1	58.5	60 (TD)	CARRIER 25HBA342A0030	208/230-1	35.4	50 A (TD)	1,2,3,4,5,6,7,8,9

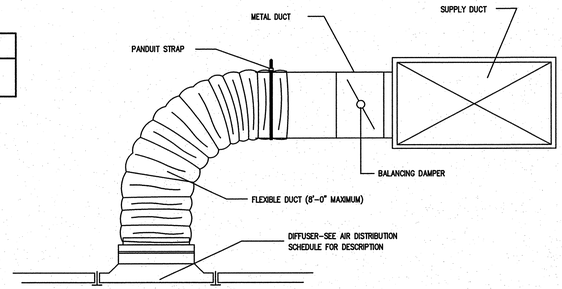
HVAC SCHEDULE NOTES:

1. PROVIDE WITH DISCONNECT SWITCH, AND 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 WIRED 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 ARE AT 240V.
7. PROVIDE NON-PROGRAMMABLE, AUTOMATIC CHANGEOVER, DIGITAL THERMOSTATS WITH LOCKING COVER FOR AHU-1 FAN SHALL BE SET IN "ON" POSITION.
8. PROVIDE SIDE RETURN UNIT STAND FOR BOTTOM RETURN. (SUPPORTING AIR HANDLING UNIT WITH DUCT IS NOT ACCEPTABLE.)
9. PROVIDE CONCRETE EQUIPMENT PAD FOR OUTSIDE CONDINSING UNIT (SIZE PER EQUIPMENT MANUF. RECOMENDATIONS).
10. PROVIDE NEW REFRIGERANT LINES. RUN CONCEALED IN EXTERIOR WALL AND ATTIC TO NEW AHU LOCATION. PAINT ALL EXPOSED REFRIGERANT LINE INSULATION WITH UV RESISTANT PAINT. TYPICAL FOR ALL UNITS.

OUTSIDE AIR CALCULATION

DUCTED OUTSIDE AIR NOT REQUIRED.

BUILDING MEETS REQUIREMENT FOR NATURAL VENTILATION.



2 / VM1 DIFFUSER DETAIL
SCALE: NOT TO SCALE

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

PROJECT:
I-85 REST AREA
CABARRUS COUNTY NORTH CAROLINA

ARCHITECT/ENGINEERS:
FACILITIES DESIGN
GENERAL SERVICES DIVISION, NCDOT
1 SOUTH WILMINGTON STREET
RALEIGH, NORTH CAROLINA 27601
(919) 715-0400 FAX (919) 715-0399

DRAWING TITLE: NORTHBOUND/SOUTHBOUND MECHANICAL PLAN

DRAWN BY: DS CHECKED BY: BEB ISSUE DATE: 30 APRIL 09

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22038 BENJAMIN E. BURKE 5/15/09

TIP. PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL- AID NO.
K-4906	39928.3.1		IMS-085-2(64)59

NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. VM1 OF 1

AIR DISTRIBUTION SCHEDULE

DESIGNATION	MANUFACTURER – MODEL NO.	TYPE	PANEL SIZE	NECK SIZE	MAX CFM	MAX NC	REMARKS
A	PRICE – ASCD CARNES – SF48 METALAIRE – 5800 AL	CEILING SUPPLY	12 x 12	8"ϕ	200	30	GYP. CEILING
B	PRICE – ASCD CARNES – SF48 METALAIRE – 5800 AL	CEILING SUPPLY	24 x 24	10"ϕ	400	30	GYP. CEILING
C	PRICE – PDDR CARNES – SPRB224 METALAIR – 7300 R	RETURN GRILLE	16 x 16	8"ϕ	200	30	GYP. CEILING
D	PRICE – 610 DAL CARNES – RNDAH METALAIRE – H4000A–AF–1 OBDA	SUPPLY REGISTER	14 x 10	–	350	30	SIDEWALL
E	PRICE – 630 CARNES – RAAAH METALAIRE – RHE–1	RETURN GRILLE	26 x 18	–	1450	30	GYP. CEILING

PROVIDE ALL SUPPLY DIFFUSERS WITH VOLUME DAMPER ACCESSIBLE FROM DIFFUSER FACE.

DUCTLESS SPLIT SYSTEM HEAT PUMP SCHEDULE

DESIGNATION	MANUF.	MODEL NO.	CFM	COOLING CAPACITY		HEATING CAPACITY	ELECTRICAL DATA					
				TOTAL BTUH	SEER	TOTAL BTUH	AHU			CU		
							MCA	MOCP	VOLTAGE	MCA	MOCP	VOLTAGE
DSAH–1/DSCU–1	MITSUBISHI ✱	MSZ09UN ✱	297	8800	12	12300	0.5	15	120/1	14	15	208/1
DSAH–2/DSCU–2	MITSUBISHI ✱	MSZ09UN ✱	297	8800	12	12300	0.5	15	120/1	14	15	208/1

✱ OTHER ACCEPTABLE MANUFACTURERS/MODELS: SANYO/09KHS71
CARRIER/40MVQ009–3–01 (INDOOR UNIT),38MVQ009–3–01 (OUTDOOR UNIT)

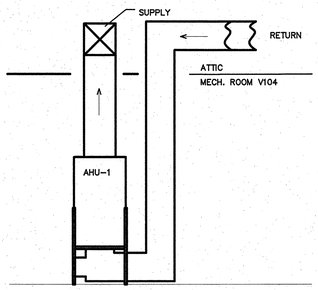
MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT METHOD OF COMPLIANCE:

PRESCRIPTIVE [X] ENERGY COST BUDGET [ ]

THERMAL ZONE	7A
EXTERIOR DESIGN CONDITIONS	
WINTER DRY BULB	16D F
SUMMER DRY BULB	92D F (75 F WB)
INTERIOR DESIGN CONDITIONS	
WINTER DRY BULB	68 F
SUMMER DRY BULB	75F
RELATIVE HUMIDITY	50%
BUILDING HEATING LOAD	27 MBH
BUILDING COOLING LOAD	5.8 TONS
MECHANICAL SPACE CONDITIONING SYSTEM	
SPLIT SYSTEM	
U AHU–1/CU–1	
DESCRIPTION OF UNIT	SPLIT SYSTEM HEAT PUMP
HEATING EFFICIENCY	COP = 3.5
COOLING EFFICIENCY	SEER = 13.0
HEAT OUTPUT OF UNIT	43.5 MBH
COOLING OUTPUT OF UNIT	45.5 MBH

LIST EQUIPMENT EFFICIENCIES
EFFICIENCIES ARE LISTED ON EQUIPMENT SCHEDULES

EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS)
MOTORS USED IN THIS PROJECT ARE INCLUDED IN THE EFFICIENCY RATING OF THE UNITS

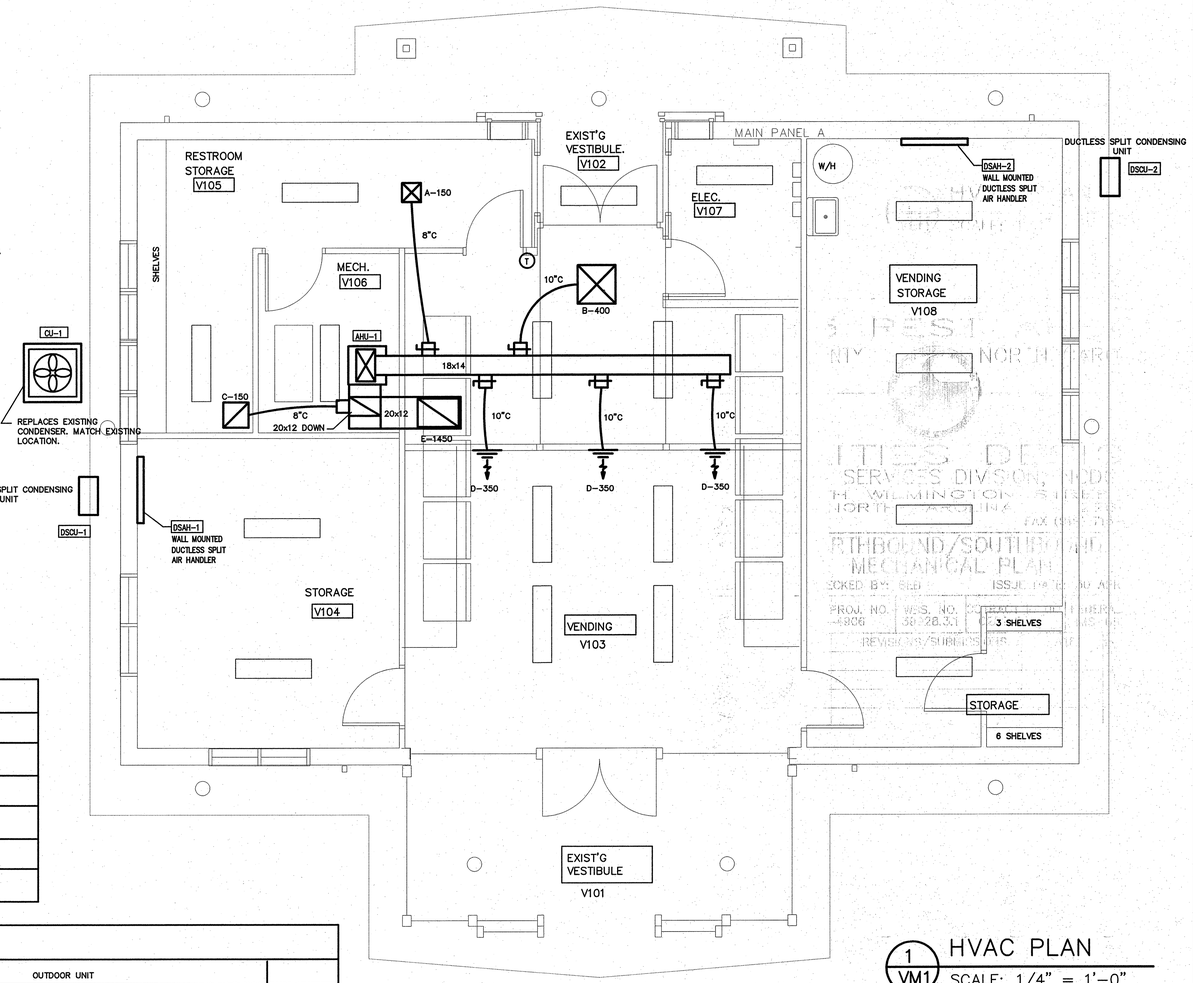


3 VM1 AHU–1 DETAIL
SCALE: NOT TO SCALE

GENERAL NOTES

1. PROVIDE LOCKING COVER FOR THERMOSTAT.
2. GENERAL NOTES AND DUCT CONSTRUCTION DETAILS ON DRAWINGS M1 AND M2 APPLY TO THIS DRAWING ALSO.
3. ROUTE SUPPLY, EXHAUST, AND RETURN DUCTS IN ATTIC.
4. ROUTE CONDENSATE TO FLOOR DRAIN IN MECH. RM. USE COPPER PIPE (1" MIN.)

LEGEND – DUCTWORK/ACCESSORIES	
⊠	SUPPLY DIFFUSER
⊘	RETURN GRILLE
⊏	LOCKING MANUAL BALANCING DAMPER
Ⓣ	THERMOSTAT
⊏	VOLUME DAMPER (SPIN IN) (LOCKING)
/	VOLUME DAMPER (LOCKING)



1 VM1 HVAC PLAN
SCALE: 1/4" = 1'–0"

HVAC SCHEDULE

EQUIP. NUMBER	INDOOR UNIT											OUTDOOR UNIT				NOTES
	MODEL NO.	FAN			COOLING CAPACITY		COIL HEATING CAPACITY	ELECTRICAL HEATING								
		CFM	HP	POWER	MIN TOTAL	MIN SENS.		MODEL #	CAPACITY	VOLTAGE	MCA	FUSE/ CB MAX	MODEL NO.	POWER	MCA	FUSE/ CB MAX	
AHU–1/CU–1	CARRIER FX4BNF048010AAAA ✱	1600@1/2"WC	3/4	208/230–1	46.5 MBH	35.35 MBH	30/48 MBH @ 17/47F	KFCEH0901N10	34 MBH (10 KW)	208/230–1	58.5	60 (TD)	CARRIER 25HBA348A0030 ✱✱	208/230–1	35.4	50 A (TD)	1,2,3,4,5,6,7,8,9

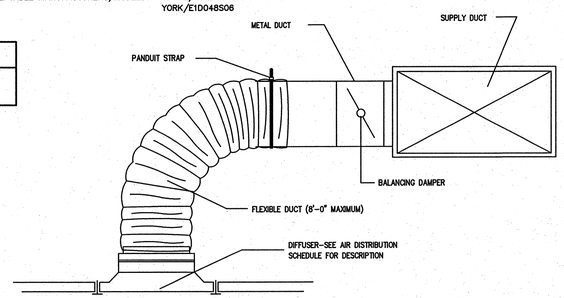
✱ OTHER ACCEPTABLE MANUFACTURERS/MODELS: TRANE/4TEC3048B1000AA
YORK/AHP48C

✱✱ OTHER ACCEPTABLE MANUFACTURERS/MODELS: TRANE/4TWB3048A1
YORK/E1D048S06

HVAC SCHEDULE NOTES:

1. PROVIDE WITH DISCONNECT SWITCH, AND 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. NOT USED
5. PROVIDE SHUTDOWN RELAY SWITCH WITH A MAXIMUM OF 60 SECOND DELAY ON HEATING CYCLE, TO BE WIRED 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 ARE AT 240V.
7. PROVIDE NON–PROGRAMMABLE, AUTOMATIC CHANGEOVER, DIGITAL THERMOSTATS WITH LOCKING COVER FOR AHU–1 FAN SHALL BE SET IN "ON" POSITION.
8. PROVIDE SIDE RETURN UNIT STAND FOR BOTTOM RETURN. (SUPPORTING AIR HANDLING UNIT WITH DUCT IS NOT ACCEPTABLE.)
9. PROVIDE CONCRETE EQUIPMENT PAD FOR OUTSIDE CONDINSING UNIT (SIZE PER EQUIPMENT MANUF. RECOMENDATIONS).
10. PROVIDE NEW REFRIGERANT LINES. RUN CONCEALED IN EXTERIOR WALL AND ATTIC TO NEW AHU LOCATION. PAINT ALL EXPOSED REFRIGERANT LINE INSULATION WITH UV RESISTANT PAINT. TYPICAL FOR ALL UNITS.

OUTSIDE AIR CALCULATION
DUCTED OUTSIDE AIR NOT REQUIRED.
BUILDING MEETS REQUIREMENT FOR NATURAL VENTILATION.



2 VM1 DIFFUSER DETAIL
SCALE: NOT TO SCALE

ENGINEER
BURKE DESIGN GROUP, PA
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3305-109 Durham Drive
Raleigh, North Carolina 27603
919.771.1916 fax: 919.779.0826
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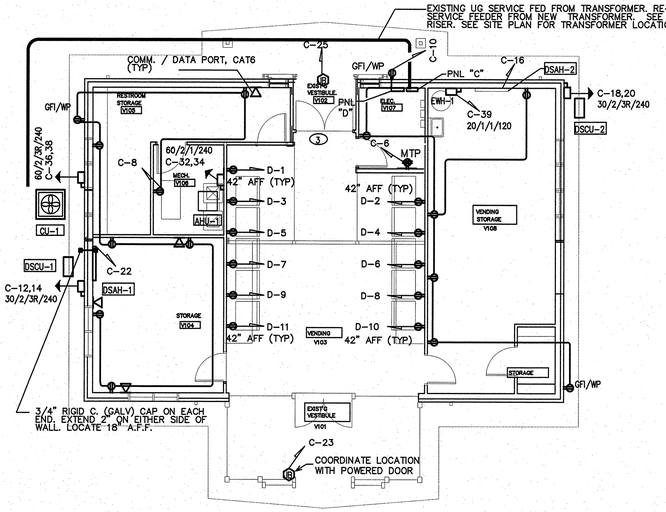
DRAWING TITLE: NORTHBOUND/SOUTHBOUND MECHANICAL PLAN
DRAWN BY: DS CHECKED BY: BEB ISSUE DATE: 30 APRIL 09

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22038 BENJAMIN E. BURKE

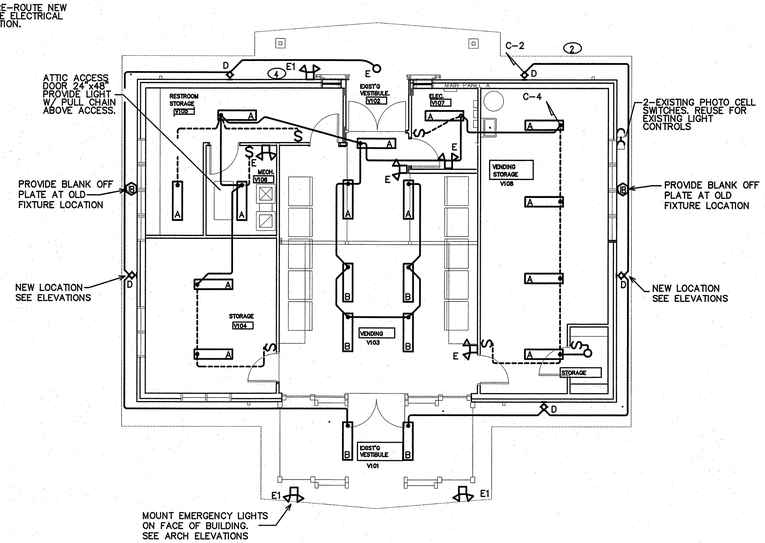
TIP. PROJ. NO.	WBS. NO.	COTRACT ID NO.	FEDERAL– AID NO.
K–4906	39928.3.1		IMS–085–2(64)59

NO.	REVISIONS/SUBMISSIONS	DATE

SHEET NO. VM1 OF 3



2 VE1 POWER PLAN– RENOVATION TO EXIST. BLDG.
SCALE: 1/8"=1'–0"



1 VE1 LIGHTING PLAN– RENOVATION TO EXIST. BLDG.
SCALE: 1/8"=1'–0"

ELECTRICAL NOTES

1. COORDINATE LOCATION OF SMOKE DETECTORS WITH MECHANICAL PLANS SO POSITION IS 3' FROM SUPPLY DIFFUSERS AND GRILLES.
2. SWITCH WITH PHOTO CELL.
3. SEE RISER, SHEET E-2, FOR DETAILS ON REMOVAL OF EXISTING ELECTRICAL DEVICES AND ADDITION OF NEW GUTTER TO SERVE EXISTING BRANCH CIRCUITS. EXISTING GUTTER, CONDUITS & CONTROLS FOR LIGHTS TO REMAIN.
4. WIRE EXTERIOR EMERGENCY FIXTURE TO EXTERIOR LIGHTING CIRCUIT, TYP.

Cabarrus VE1revised
NEW PANEL 'C'

MAKE: CUTLER HAMMER
TYPE: CH LOAD CENTER
RATING: 120/240 1 PHASE 3 WIRE
MOUNTING: FLUSH
MINIMUM AIC: 22,000 AMPS
400A MAIN CIRCUIT BREAKER (FRAME) ___
EQUIPMENT GROUND BUS ____ ☒YES ☐NO
SERVICE ENTRY RATED ____ ☐YES ☒NO

LOAD SERVICE	WATTS PER PHASE A	WATTS PER PHASE B	FR SIZE	CKT BRKR	CKT NO	NEUTRAL A B	CKT NO	CKT BRKR	FR SIZE	WATTS PER PHASE A	WATTS PER PHASE B	LOAD SERVICE
SPACE	---		70A		1		2	20A	70A	1660		LTS– SOFFIT, EXTERIOR/FRONT VEST.
EXISTING EXTERIOR LIGHTS		1100		30A	3		4	20A			1158	LTS– NEW, STORAGE RM
2 POLE, YARD (NOTE 1)	1100				5		6	20A		500		NEW TELEPHONE EQUIP
EXISTING EXTERIOR LIGHTS		1100		30A	7		8	20A			1440	REC
2 POLE, YARD (NOTE 1)	1100				9		10	20A		1260		REC
EXISTING EXTERIOR LIGHTS		1100		30A	11		12	20A			1456	DSCU–1
2 POLE, YARD (NOTE 1)	1100				13		14			1456		2 POLE
EXISTING EXTERIOR LIGHTS		1100		30A	15		16	20A			60	DSAH–2
2 POLE, YARD (NOTE 1)	1100				17		18	20A		1456		DSCU–2
EXST EXTR LTG CONTROL (PHOTOCELL)		100		20A	19		20				1456	2 POLE
EXST TELEPHONE BOOTHS	2000				21		22	20A		60		DSAH–1
* EXST AUTO DOOR (FRONT)		322			23		24				---	SPACE
* EXST AUTO DOOR (REAR)	322				25		26			---		SPACE
SPACE		---			27		28				---	SPACE
SPACE	---				29		30			---		SPACE
EXST UTILITY BUILDING		4800		50A	31		32	60A			6360	NEW AHU–1
2 POLE	4800				33		34			6360		2 POLE
SPARE		---		20A	35		36	40A			3000	NEW CU–1
SPARE	---			20A	37		38			3000		2 POLE
EWH–1		1650		20A	39		40	100A			2500	PANEL D
SPARE	---			20A	41		42			3000		2 POLE
NOTES	11522	11372	SUB–TOTALS 'B'		400A BUS		SUB–TOTALS 'A'			18752	17430	TOTAL CONNECTED LOAD
* GFCI BREAKER					400A LUGS		SUB–TOTALS 'B'			11522	11372	
					400A S/N		GRAND TOTAL			30274	28802	
					VERIFY FEED		AMPS/PHASE			252A	240A	252A 240A

NEC ALLOWABLE DEMAND FACTORS

1. DEMAND FACTORS PER NEC 220
2. LARGEST OF: NEC TABLE 220.12 OR CONNECTED LOAD
3. NEC TABLE 220.56
4. NEC 220.51
5. NEC 220.43A, 200 VA/LINEAR FT
6. NON–COINCIDENT LOADS, LARGEST OF THE TWO LOADS IS COUNTED

DIVERSIFIED LOAD SUMMARY

LOAD TYPE	NEC DEM FACTOR①	A	B	TOTAL DIVERSIFIED LOAD
GENERAL LIGHTING ②	125%	7825	7198	15023
GENERAL USE RECEPT.	≤10KVA@100%	1260	1440	2700
	>10KVA@50%	---	---	---
MOTORS AND EQUIPMENT LARGEST	125%	3750	3750	7500
MOTORS AND EQUIPMENT ALL OTHERS	100%	4624	4854	9478
WATER HEATERS	125%	---	2063	2063
KITCHEN EQUIPMENT ③	100%	---	---	---
FIX. ELEC. SPACE HEAT. ④	100%	5000	5000	10000
SHOW WINDOW LIGHTS ⑤	100%	---	---	---
SIGN	125%	---	---	---
MISC	100%	10100	7300	17400
PHASE (TOTAL VA)	TOTAL	32559	31605	64164
	TOTAL AMPS	271A	263A	VOLT AMPS / VOLTS = 267A TOTAL AMPS

NOTES: (1) PHOTO–CELL CONTROLLED LIGHTS (PHOTO–CELL CONTROLS ARE EXISTING.)

Cabarrus VE1revised
NEW PANEL 'D'

MAKE: CUTLER HAMMER
TYPE: CH LOAD CENTER
RATING: 120/240 1 PHASE 3 WIRE
MOUNTING: FLUSH
MINIMUM AIC: 22,000 AMPS
MLO MAIN CIRCUIT BREAKER (FRAME) ___
EQUIPMENT GROUND BUS ____ ☐YES ☒NO
SERVICE ENTRY RATED ____ ☐YES ☒NO

LOAD SERVICE	WATTS PER PHASE A	WATTS PER PHASE B	FR SIZE	CKT BRKR	CKT NO	NEUTRAL A B	CKT NO	CKT BRKR	FR SIZE	WATTS PER PHASE A	WATTS PER PHASE B	LOAD SERVICE
* REC– VENDING	500		70A	20A	1		2	20A	70A	500		REC– VENDING *
* REC– VENDING		500			3		4				500	REC– VENDING *
* REC– VENDING	500				5		6			500		REC– VENDING *
* REC– VENDING		500			7		8				500	REC– VENDING *
* REC– VENDING	500				9		10			500		REC– VENDING *
* REC– VENDING		500			11		12				---	SPACE
SPACE	---				13		14			---		SPACE
SPACE		---			15		16				---	SPACE
SPACE	---				17		18			---		SPACE
SPACE		---			19		20				---	SPACE
SPACE	---				21		22			---		SPACE
SPACE		---			23		24				---	SPACE
SPACE	---				25		26			---		SPACE
SPACE		---			27		28				---	SPACE
SPACE	---				29		30			---		SPACE
NOTES	1500	1500	SUB–TOTALS 'B'		100A BUS		SUB–TOTALS 'A'			1500	1000	TOTAL CONNECTED LOAD
* GFCI BREAKER					100A LUGS		SUB–TOTALS 'B'			1500	1500	
					100A S/N		GRAND TOTAL			3000	2500	
					VERIFY FEED		AMPS/PHASE			25A	21A	25A 21A

NEC ALLOWABLE DEMAND FACTORS

1. DEMAND FACTORS PER NEC 220
2. LARGEST OF: NEC TABLE 220.12 OR CONNECTED LOAD
3. NEC TABLE 220.56
4. NEC 220.51
5. NEC 220.43A, 200 VA/LINEAR FT
6. NON–COINCIDENT LOADS, LARGEST OF THE TWO LOADS IS COUNTED

DIVERSIFIED LOAD SUMMARY

LOAD TYPE	NEC DEM FACTOR①	A	B	TOTAL DIVERSIFIED LOAD
GENERAL LIGHTING ②	125%	---	---	---
GENERAL USE RECEPT.	≤10KVA@100%	---	---	---
	>10KVA@50%	---	---	---
MOTORS AND EQUIPMENT LARGEST	125%	---	---	---
MOTORS AND EQUIPMENT ALL OTHERS	100%	---	---	---
WATER HEATERS	125%	---	---	---
KITCHEN EQUIPMENT ③	100%	---	---	---
FIX. ELEC. SPACE HEAT. ④	100%	---	---	---
SHOW WINDOW LIGHTS ⑤	100%	---	---	---
SIGN	125%	---	---	---
MISC	100%	3000	2500	5500
PHASE (TOTAL VA)	TOTAL	3000	2500	5500
	TOTAL AMPS	25A	21A	VOLT AMPS / VOLTS = 23A TOTAL AMPS

FIXTURE SCHEDULE

MARK	DESCRIPTION	MFG. & CATALOG #	EQUALS	VOLTAGE	LAMP	REMARKS	WATTS
A	1x4 SURFACE MOUNT	COLUMBIA SM14–232–FSA12–EU	HOLOPHANE LS SERIES LEGION 41 SERIES	120 V	2–32W T8	MODULAR BOX FIXTURE .	64
B	SUSPENDED FLUORESCENT	ALERA ALS–2T8*/*–CM*–LD–EU–MW	LITECONTROL LC94 SERIES DAYOLITE AD3510–DI SERIES		2–32W T8	.	64
C	8"– 2 LAMP RECESSED CAN W/LENS	PRESCOLITE CFR826UEB–ST492A	KIRLIN RR80907 KURT VERSEN P642 SERIES		2–26W CF	. . ①	52
D	WAL SCONCE	LUMINAIRE SPC818***– 2PLC26–***–OP–BRZ–WET	RAVEN SERIES AMERICANA SERIES		2–26W CF	. ①	52
E	EXISTING INCANDESCENT CAN	PROGRESS # P–6696–29	N/A EXISTING		1–100W INC.	FOR REFERENCE ONLY; EXISTING INCANDESCENT; REUSE	100
NOTES: 1. FIXTURES & BALLAST MUST BE REMOVABLE FROM INACCESSIBLE CEILING.							
E	EMERGENCY LIGHT .	EU–MR–3R .	LUNA SERIES NEMA SERIES	120 V		. .	
E	EMERGENCY LIGHT EXTERIOR	DUAL LITE PGZ–HTR	MULE MAKO–3–CW HIGH LITES PLURALUX SERIES			. .	
P ②	SMOKE DETECTOR .	KIDDE MODEL 1235E	EST ADEM CO			CEILING MNT. NFPA 72 IONIZATION TYPE, LOCAL ALARMS, FOR	<5

LIGHT FIXTURE NOTES

① ALL COMPACT FLUORESCENT FIXTURES SHALL HAVE INTERCHANGEABLE 26 WATT LAMPS.

Cabarrus VE1revised
EQUIPMENT WIRING SCHEDULE

EQUIPMENT	MCA	MOCP	VOLTS	PH	WIRE SIZE
AHU–1	58.5A	60A	240V	1	3–#6, 1–#10 GND IN 1" CONDUIT
CU–1	26.0A	40A	240V	1	3–#8, 1–#10 GND IN 3/4" CONDUIT
DSCU–1	14.0A	15A	240V	1	2–#12, 1–#12 GND IN 1/2" CONDUIT
DSCU–2	14.0A	15A	240V	1	2–#12, 1–#12 GND IN 1/2" CONDUIT
EWH	(4500W)	30A	240V	1	2–#10, 1–#10 GND IN 1/2" CONDUIT

NOTE:
THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL EQUIPMENT ELECTRICAL REQUIREMENTS PRIOR TO ROUGH–IN AND RELEASING GEAR. ADJUST BREAKER, WIRE SIZES, ETC. AS REQUIRED.

PROJECT:
I–85 REST AREA
CABARRUS COUNTY NORTH CAROLINA

ARCHITECT/ENGINEERS:
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DRAWN BY: DS CHECKED BY: BEB ISSUE DATE: 30 APRIL 09

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NO.	REVISIONS/SUBMISSIONS	DATE

TIP. PROJ. NO. K–4906 | WBS. NO. 39928.3.1 | COTRACT ID NO. | FEDERAL– AID NO. IMS–085–2(64)59

SHEET NO. VE1 OF 1